BRIDGE REPLACEMENT - PPCB LETTING DATE 07-15-2020
NHS-080-6(343)239--11-52

JOHNSON COUNTY - DESIGN 518 & 519

JOHNSON COUNTY

LEGEND

INTERSTATE HIGHWAY	
PRIMARY HIGHWAY-DIVIDED	
PRIMARY HIGHWAY	
PORTLAND CEMENT CONCRETE ROAD	
ASPHALT ROAD	
BITUMINOUS ROAD	
GRAVEL ROAD	
EARTHEN ROAD	
INTERSTATE HIGHWAY	80
UNITED STATES HIGHWAY	65
STATE HIGHWAY	175
COUNTY HIGHWAY	S27
RAILROAD	
PIPELINE	
AIRPORT	
HYDROLOGY	
BRIDGE	
STATE BOUNDARY	
COUNTY BOUNDARY	
CORPORATE BOUNDARY	
TOWNSHIP LINE	
SECTION LINE	
ROAD NAMES	ABBEY ROAD
UNINCORPORATED PLACE	ELWOOD

IOWA DOT
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

JOHNSON COUNTY

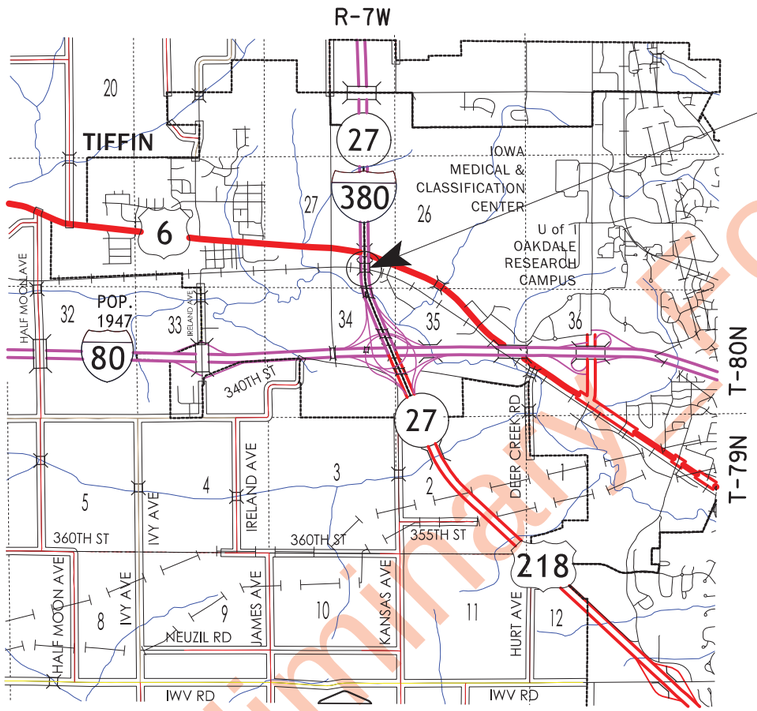
BRIDGE REPLACEMENT - PPCB

I-380 NB & SB OVER IOWA INTERSTATE RR

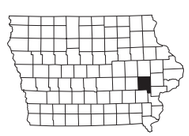
STAGE II

FRA NO. 6080IIW

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.



LOCATION MAP



PROJECT DIRECTORY NAME: 5208001002

PROJECT WEBSITE:
http://www.e-Builder.net
ACCESS TO THE PROJECT WEBSITE FOR SUBCONTRACTORS, FABRICATORS, AND SUPPLIERS SHALL BE GRANTED BY THE PRIME CONTRACTOR.

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS AND FALSEWORK DRAWINGS SHALL BE SUBMITTED THROUGH THE PROJECT WEBSITE AND WILL BE REVIEWED BY:
PARSONS
10 SOUTH RIVERSIDE, SUITE 400
CHICAGO, IL 60606

ENGLISH STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED

REVISIONS

TOTAL SHEETS
120
PROJECT NUMBER
NHS-080-6(343)239--11-52
R.O.W. PROJECT NUMBER
PROJECT IDENTIFICATION NUMBER
02-52-080-010

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET - DESIGN NO. 518
2-45	DESIGN NO. 518
46	ESTIMATE SHEET - DESIGN NO. 519
46-88	DESIGN NO. 519
SPS.1-4	SOIL PROFILE SHEETS
C.1	ESTIMATE SHEET FOR ROADWAY
A.1-L.1	ROADWAY SHEETS

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STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER C.2

DESIGN DATA RURAL

REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION.

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	ROBERT A. MAGLIOLA	STRUCTURAL DESIGN
A.1	JASON STRUM	ROADWAY DESIGN
SPS. 1	JUSTIN D. HUMKE	GEOTECHNICAL DESIGN

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER
Robert A. Magliola
15398
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature _____ Date _____
Printed or Typed Name Robert A. Magliola
My license renewal date is December 31, 2021
Pages or sheets covered by this seal: SHEETS 1 THRU 88

PRELIMINARY NOT FOR CONSTRUCTION

DESIGN TEAM PARSONS	ENGLISH	IOWA DOT * OFFICE OF BRIDGES AND STRUCTURES	FILE NO. 30864	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	179	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	209.3	
4	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	584.7	
5	2404-7775000	REINFORCING STEEL	LB	85305	
6	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	162744	
7	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	1811	
8	2407-0550000	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, SBTB55.22	EACH	1	
9	2407-0550000	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, SBTB75.29	EACH	1	
10	2407-0550000	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, SBTB90.36	EACH	1	
11	2407-0562855	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB55	EACH	8	
12	2407-0562875	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB75	EACH	8	
13	2407-0562890	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB90	EACH	8	
14	2408-7800000	STRUCTURAL STEEL	LB	10070	
15	2414-6424119	CONCRETE BARRIER RAILING, AESTHETIC	LF	241.9	
16	2433-0001042	CONCRETE DRILLED SHAFT, 42 IN. DIAMETER	LF	780	
17	2433-0003000	DEMONSTRATION SHAFT	LF	98	
18	2499-2300001	DECK DRAINS	LS	1.0	
19	2501-0201274	PILES, STEEL, HP 12 X 74	LF	2015	
20	2501-6335010	PREBORED HOLES	LF	290	
21	2526-8285000	CONSTRUCTION SURVEY	LS	1.0	
22	2533-4980005	MOBILIZATION	LS	1.0	
23	2595-0005135	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR IOWA INTERSTATE RAILROAD LTD.	LS	1.0	

ITEM NO. ESTIMATE REFERENCE INFORMATION

1 INCLUDES THE REMOVAL OF THE EXISTING 163'-10 X 40'-0 NORTHBOUND BRIDGE. INCLUDES REMOVAL OF TYPE "A" SHORING PLACED IN STAGE I (DESIGN NO. 917).

3 INCLUDES CONCRETE FOR THE ABUTMENT FOOTINGS AND WINGS, AND PIERS. INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), FLOODABLE BACKFILL, POROUS BACKFILL, GEOTEXTILE FABRIC, WATER FLOODING, AND SUBDRAIN OUTLET AT ABUTMENTS. INCLUDES FURNISHING AND PLACING 3 INCH DIAMETER PVC PLASTIC PIPE AND EXPANDING FOAM IN THE ABUTMENT WINGS. INCLUDES ROUGHENING EXISTING STAGE I CONCRETE AT ABUTMENTS PRIOR TO CASTING STAGE II CONCRETE. INCLUDES ALL RESILIENT JOINT FILLER REQUIRED.

4 INCLUDES THE CONCRETE FOR THE SLAB, ABUTMENT DIAPHRAGMS AND PIER DIAPHRAGMS. REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.

5,6 SEE MECHANICAL BAR SPLICE SYSTEM NOTES AND STOCKPILE NOTES ON THIS SHEET.

8,9,10 NONSTANDARD BEAM LENGTHS ARE USED FOR THESE BEAMS. ONE BEAM AT 55.22 FT, ONE BEAM AT 75.29 FT, AND ONE BEAM AT 90.36 FT.

8-13 INCLUDES PIER AND ABUTMENT BEARING MATERIAL AND COIL TIES. NONSTANDARD STIRRUP LENGTHS ARE USED FOR THESE BEAMS. INCLUDES CONTRACTOR FILLING OUT BEAM NUMBERS BY LOCATION AND BEAM SEAT ELEVATIONS IN "PPC BEAM DATA SPREADSHEET" AND FORWARDING ELECTRONIC SPREADSHEET TO THE ENGINEER.

14 INCLUDES INTERMEDIATE DIAPHRAGMS.

15 IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS. INCLUDES 510 FT. OF 2" DIAMETER RIGID STEEL CONDUIT. INCLUDES LABOR AND MATERIALS REQUIRED FOR CONSTRUCTING THE AESTHETIC TREATMENT AS DETAILED ON DESIGN SHEET 40 AND IN THE SPECIAL PROVISIONS FOR "AESTHETIC TREATMENT OF CONCRETE BARRIER".

16 SUBMITTAL OF A DRILLED SHAFT INSTALLATION PLAN SHALL BE REQUIRED. LENGTH MEASURED FROM BOTTOM OF DRILLED SHAFT TO CONSTRUCTION JOINT. INCLUDES ALL COSTS OF MATERIALS AND LABOR INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION AND EXCAVATION INCIDENTALS INCLUDING CASING AND C.S.L. TESTING OF THE SHAFT.

17 THE DEMONSTRATION SHAFT SHALL BE AS DETAILED ON DESIGN SHEET 18. INCLUDES ALL COSTS OF MATERIALS AND LABOR INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION AND EXCAVATION INCIDENTALS INCLUDING CASING AND C.S.L. TESTING OF THE SHAFT. ITEM MAY BE DELETED IF CONTRACTOR CAN DEMONSTRATE SUFFICIENT EXPERIENCE PER ARTICLE 2433.03, K, 6 OF THE STANDARD SPECIFICATIONS.

18 INCLUDES ALL NEW DECK DRAINS. REFER TO DESIGN SHEETS 24 AND 39 FOR LOCATION, MATERIALS AND DETAILS OF THEIR CONSTRUCTION. MEASUREMENT WILL BE THE LUMP SUM FOR ALL DECK DRAINS REQUIRED AS SPECIFIED IN THE PLANS. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR AND FOR PERFORMANCE OF ALL WORK NECESSARY FOR FABRICATING AND INSTALLING THE DECK DRAINS AS PER PLAN.

19 INCLUDES FURNISHING AND INSTALLING STEEL PILE POINTS AT ABUTMENTS.

MECHANICAL BAR SPLICE SYSTEM NOTES:

MECHANICAL BAR SPLICE SYSTEMS (SYSTEMS) CONSIST OF ALL COMPONENTS AND PREPARATION TO COUPLE/SPLICE REINFORCING BARS ACROSS STAGED CONSTRUCTION JOINTS. THE CONTRACTOR SHALL ADOPT THE SYSTEMS USED BY THE PRIOR STAGE CONTRACTOR. MATING PARTS (IF ANY) FOR SYSTEMS USED IN THE PRIOR STAGE HAVE BEEN STOCKPILED FOR THE CONTRACTOR TO RETRIEVE. SEE STOCKPILE NOTES. IF NECESSARY, THE CONTRACTOR SHALL ADJUST (LENGTHENING, SHORTENING, BENDING, THREADING) REINFORCING BARS, TO THE APPROVAL OF THE ENGINEER, TO ACCOMMODATE THE SELECTED SYSTEM. SYSTEMS SHALL BE EPOXY COATED WHEN BARS BEING SPLICED ARE EPOXY COATED. IF SPLICER BARS ARE USED, THEY SHALL BE LONG ENOUGH TO PROVIDE THE LAPS GIVEN IN THE TABLE BELOW.

BAR SIZE, DESIGNATION	UNCOATED BAR LAP LENGTH	EPOXY COATED BAR LAP LENGTH
#4 (13)	2'-5	2'-11
#5 (16)	3'-0	3'-8
#6 (19)	3'-7	4'-5
#7 (22)	4'-6	5'-6
#8 (25)	5'-11	7'-2
#9 (29)	7'-6	9'-1
#10 (32)	9'-6	11'-6

ALL COST FOR MECHANICAL BAR SPLICE SYSTEMS INCLUDING ADJUSTING REINFORCING BARS IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL" OR, "REINFORCING STEEL EPOXY COATED" AS APPROPRIATE AND NO SEPARATE PAYMENT WILL BE MADE.

STOCKPILE NOTES:

THE BRIDGE CONTRACTOR FOR PRIOR CONSTRUCTION STAGE MAY HAVE USED MECHANICAL BAR SPLICE SYSTEMS THAT HAVE MATING PARTS (MATERIAL) TO BE USED IN THIS CONSTRUCTION STAGE. IF THIS IS THE CASE, THE BRIDGE CONTRACTOR SHALL TAKE POSSESSION OF THIS MATERIAL AT THE IOWA DOT CORALVILLE MAINTENANCE GARAGE AT 2600 CORAL RIDGE AVE, CORALVILLE, IA 52241. CONTACT TIMOTHY ZEIMET, PHONE NUMBER (319) 626-2386, 48 HOURS PRIOR TO RETRIEVAL. THE BRIDGE CONTRACTOR SHALL PRESERVE LABELING THAT IDENTIFIES THE BRIDGE AND LOCATION IN THE CONSTRUCTION THE MATERIAL IS TO BE USED. ALL COSTS TO RETRIEVE THESE MATERIALS IS INCLUDED IN THE BID ITEM "REINFORCING STEEL" AND "REINFORCING STEEL, EPOXY COATED" AS APPROPRIATE.

ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

INDEX OF SHEETS

DESIGN HISTORY AT THIS SITE
(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
168	ORIGINAL DESIGN
678	BRIDGE DECK OVERLAY
591	RETROFIT BARRIER RAILS
917	STAGE I N.B. BRIDGE
518	STAGE II N.B. BRIDGE

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

ESTIMATED QUANTITIES

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 44 FILE NO. 30864 DESIGN NO. 518

SUMMARY OF CONCRETE QUANTITIES

LOCATION	STRUCTURAL CONCRETE	HPC STRUCTURAL CONCRETE
SOUTH ABUT. FTG.	37.6	———
NORTH ABUT. FTG.	35.4	———
BRIDGE DECK + ABUT. & PIER DIAPHAGMS	———	584.7
ABUTMENT WINGS	3.8	———
PIER #1	66.6	———
PIER #2	65.9	———
TOTAL (CU. YDS.)	209.3	584.7

SUMMARY OF REINFORCING STEEL

LOCATION	NON-COATED REINFORCING STEEL	STAINLESS STEEL REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
BRIDGE DECK + ABUT. FTG. **	237	———	155060
ABUTMENT WINGS	———	———	2 AT 198
EAST BARRIER RAIL	———	1427	6640
EAST BARRIER RAIL END SECTION	———	2 AT 192	2 AT 324
PIER #1	42455	———	———
PIER #2	42613	———	———
** INCLUDES ABUTMENT AND PIER DIAPHRAGMS			
TOTAL (LBS.)	85305	1811	162744

SUMMARY OF EXCAVATION

LOCATION	CLASS 20 EXCAVATION	CLASS ___ EXCAVATION
SOUTH ABUTMENT	92	———
NORTH ABUTMENT	87	———
TOTAL (CU. YDS.)	179	———

SUMMARY OF FOUNDATIONS

LOCATION	SUBSTRUCTURE TYPE	FOUNDATION TYPE	NUMBER	LENGTH (LIN. FT.)	TOTAL (LIN. FT.)
SOUTH ABUTMENT	INTEGRAL ABUTMENT	HP12x74	11	85	935
NORTH ABUTMENT	INTEGRAL ABUTMENT	HP12x74	12	90	1080
PIER #1	FRAME PIER	42 INCH DRILLED SHAFT	4	97.5	390
PIER #2	FRAME PIER	42 INCH DRILLED SHAFT	4	97.5	390

SUMMARY OF STRUCTURAL STEEL

LOCATION	TOTAL (LBS.)
INTERMEDIATE DIAPHRAGMS	10070
TOTAL (LBS.)	10070

SUMMARY OF BEARINGS

LOCATION	BEARING TYPE	NUMBER	ASSOCIATED BID ITEM
SOUTH ABUTMENT	3 x 3 BAR	9	INCIDENTAL ITEM
NORTH ABUTMENT	3 x 3 BAR	9	INCIDENTAL ITEM
PIER #1	PLAIN NEOPRENE 1"	18	INCIDENTAL ITEM
PIER #2	PLAIN NEOPRENE 1"	18	INCIDENTAL ITEM

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SUMMARY QUANTITIES SHEET

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 44 FILE NO. 30864 DESIGN NO. 518

GENERAL NOTES:

THIS DESIGN INVOLVES THE CONSTRUCTION OF A 224'-0 X VARIES PRESTRESSED CONCRETE BEAM BRIDGE FOR THE NORTHBOUND I-380 OVER IOWA INTERSTATE RAILROAD. THIS CONTRACT REPRESENTS STAGE II CONSTRUCTION FOR THE REPLACEMENT OF THE EXISTING 163'-10 X 40'-0 PPCB BRIDGE FOR THE NORTHBOUND LANES, DESIGN NO. 168 WITH A YEAR OF CONSTRUCTION OF 1969. ELECTRONIC PLANS OF THE EXISTING STRUCTURE AND THE STAGE I DESIGN ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" INCLUDE REMOVAL OF EXISTING SUPERSTRUCTURE, ABUTMENTS, PIERS AND TYPE "A" SHORING PLACED IN STAGE I (DESIGN NO. 917).

REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS.

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

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. HOLES SHALL BE BORED TO 10 FEET (S. ABUT.) AND 15 FEET (N. ABUT.) BELOW THE BOTTOM OF ABUTMENT FOOTING AT THE CORRESPONDING PILE LOCATION. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE GREATER OF PILE CONTRACT LENGTH OR THE SPECIFIED DESIGN BEARING RESISTANCE UNLESS PILES REACH REFUSAL.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a) IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

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.

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03,03,A,2 OF THE STANDARD SPECIFICATIONS. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

CAST IN-ONE-PIECE STEEL PILE POINTS ARE REQUIRED FOR THE ABUTMENT PILES IN ACCORDANCE WITH ARTICLE 4167.02 OF THE CURRENT STANDARD SPECIFICATIONS AND MATERIALS IM 468.

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 VERTICAL.

THE BRIDGE CONTRACTOR SHALL WORK IN SUCH A MANNER THAT EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE ABOVE THE RAILROAD TRACK AREA SHALL BE COORDINATED WITH THE RAILROAD.

TYPE "A" SHORING PLACED IN STAGE I SHALL BE REMOVED PRIOR TO BEGINNING CONSTRUCTION OF THE STAGE II ABUTMENTS. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS APPLIES. ALL REMOVED SHORING MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

GENERAL NOTES CONTINUED:

STAINLESS STEEL REBAR SHALL BE SHIPPED, HANDLED AND PLACED SUCH THAT CARBON STEEL DOES NOT COME IN CONTACT WITH THE STAINLESS STEEL REBAR. PADDING SHALL BE USED TO SEPARATE CARBON STEEL BUNDLING BANDS OR LIFTING DEVICES FROM THE STAINLESS STEEL REBAR. WIRE ROPE SHALL NOT BE USED IN LIFTING OR HANDLING THE STAINLESS STEEL REINFORCING. COVER STAINLESS STEEL REBAR WITH TARPS DURING OUTSIDE STORAGE. USE WOODEN SPACERS TO SEPARATE BUNDLES OF STAINLESS STEEL REBAR FROM OTHER TYPES OF REBAR. USE WOODEN SUPPORTS TO STORE STAINLESS STEEL REBAR OFF THE GROUND OR SHOP FLOOR.

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

PROJECT	TYPE OF WORK
IM-080-6(355)239--13-52	BRIDGE NEW - STEEL GIRDER
IM-080-6(243)239--13-52	GRADING
IM-080-6(399)239--13-52	TRAFFIC SIGNS
IM-080-6(400)239--13-52	LIGHTING
IMN-080-6(425)239--0E-52	STREAM MITIGATION
IM-080-6(392)239--13-52	BRIDGE WIDENING
ITS-080-6(465)239--25-52	DYNAMIC MESSAGE SIGNS
NHS-080-6(336)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(339)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(354)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(357)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(359)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(361)239--11-52	BRIDGE WIDENING
NHS-080-6(379)239--11-52	BRIDGE WIDENING
NHS-080-6(329)239--11-52	BRIDGE NEW - STEEL GIRDER
NHS-080-6(332)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(342)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(345)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(371)239--11-52	PCC PAV'T - GR. & REPLACE
NHS-080-6(401)239--11-52	TRAFFIC SIGNS
NHS-080-6(402)239--11-52	LIGHTING

HEAVY CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED ON THE NEW BRIDGE OR ADJACENT EXISTING BRIDGES DURING CONSTRUCTION UNLESS PRIOR WRITTEN APPROVAL OF THE ENGINEER IS OBTAINED. APPROVAL SHALL BE OBTAINED BY SUBMITTING A WRITTEN REQUEST TO THE ENGINEER. THIS REQUEST SHALL INCLUDE THE FOLLOWING:

1. A DETAILED PLAN ADEQUATELY DESCRIBING THE EQUIPMENT AND HOW IT IS PROPOSED TO BE USED. THIS PLAN SHALL CONTAIN, AS A MINIMUM, THE FOLLOWING INFORMATION:
   - A. THE CONFIGURATION AND WEIGHT OF THE EQUIPMENT PROPOSED TO BE PLACED ON THE BRIDGE.
   - B. THE PROPOSED LOCATION(S) OF THE EQUIPMENT ON THE BRIDGE DURING ALL LIFTING OPERATIONS.
   - C. THE WEIGHT OF ALL PROPOSED LIFTS TO BE MADE BY THE EQUIPMENT.
   - D. THE LOAD TO ALL WHEELS/AXLES/OUTRIGGERS/CRAWLERS RESULTING FROM THE PROPOSED LIFTING OPERATIONS, DURING ALL CRITICAL PHASES OF THE LIFTING OPERATIONS.
2. THE NECESSARY CALCULATIONS TO VERIFY THAT NO COMPONENT OF THE BRIDGE WILL BE OVERSTRESSED DURING THE PROPOSED USE OF THE EQUIPMENT ON THE BRIDGE. THE CALCULATIONS SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED TO PRACTICE ENGINEERING IN THE STATE OF IOWA.

BRIDGE DECK DIMENSIONS TABLE

	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	227.0
2	MINIMUM DECK WIDTH	L.F.	74.9
3	MAXIMUM DECK WIDTH	L.F.	79.4
4	DECK AREA	S.F.	17520

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
2, 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

SPECIFICATIONS:

DESIGN: AASHTO LRFD 7TH ED, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDING DEVELOPMENTAL SPECIFICATIONS FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES", "CONSTRUCTION PROGRESS SCHEDULE" AND SPECIAL PROVISIONS FOR "AESTHETIC TREATMENT OF CONCRETE BARRIER", "E-BUILDER" AND "WORK ON RAILROAD RIGHT-OF-WAY (IOWA INTERSTATE RAILROAD)" SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH ED, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60 FOR EPOXY COATED AND NON-COATED AND GRADE 60 OR 75 FOR STAINLESS.

CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c = 4.0 KSI, EXCEPT PRESTRESSED BEAM CONCRETE AS NOTED.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET 30.

BRIDGE DECK CONCRETE f'c = 4.0 KSI

STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

SHOP DRAWINGS SHALL BE SUBMITTED WITH THE FOLLOWING NAMING CONVENTION:
(Paren)_County_DesignNumber_SubmittalDescription.pdf
Example: (343)_Johnson_Design518_DeckDrains.pdf

1	INTERMEDIATE STEEL DIAPHRAGMS
2	DECK DRAINS

POLLUTION PREVENTION PLAN INCLUDED IN THE TIED ROAD PLANS, PROJECT NO. NHS-080-6(373)239--11-52.

TRAFFIC CONTROL PLAN

THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLANS INCLUDED IN THE TIED ROAD PLANS, PROJECT NO. NHS-080-6(373)239--11-52.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

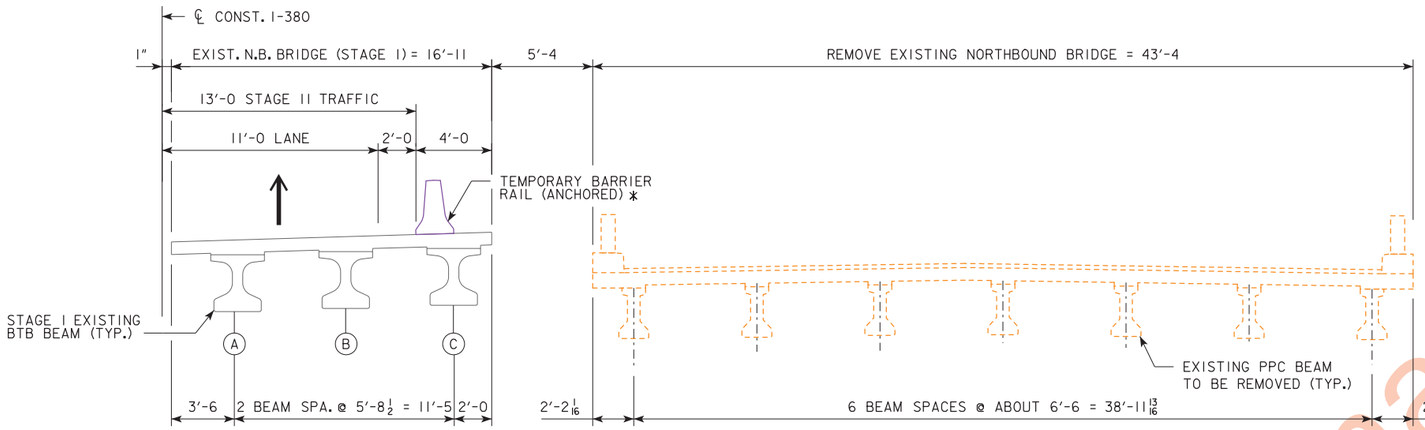
GENERAL NOTES

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

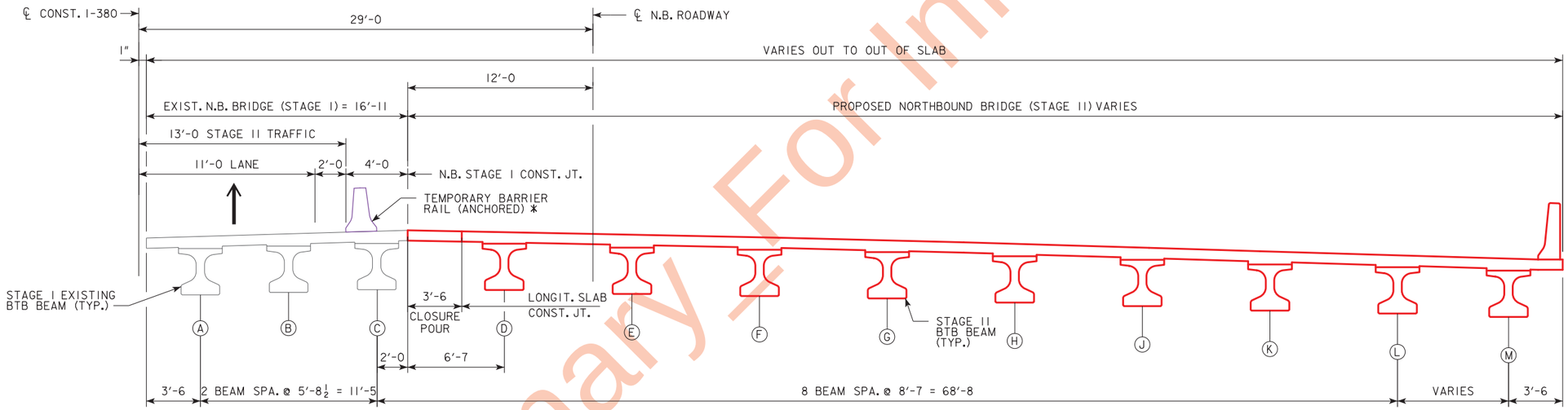
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 44 FILE NO. 30864 DESIGN NO. 518



CROSS SECTION - STAGE II NORTHBOUND REMOVAL & TRAFFIC

(LOOKING NORTH)



CROSS SECTION - STAGE II NORTHBOUND CONSTRUCTION & TRAFFIC

(LOOKING NORTH)

* SEE STANDARD ROAD PLAN BA-401.
REFER TO NHS-080-6(373)239--11-52
FOR TRAFFIC CONTROL PLAN.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

STAGING TYPICAL SECTION

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 44 FILE NO. 30864 DESIGN NO. 518

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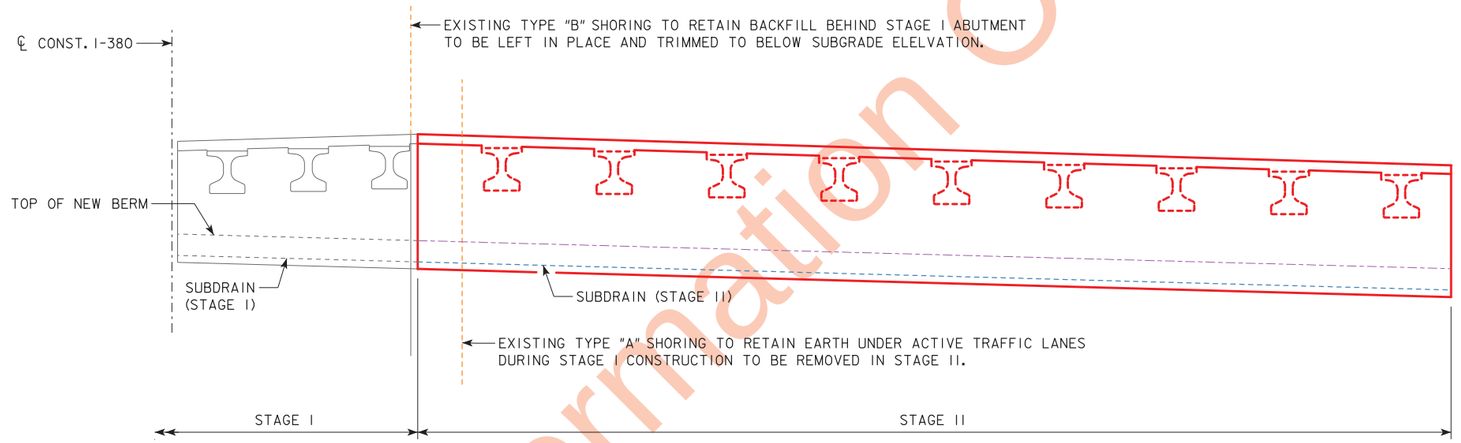
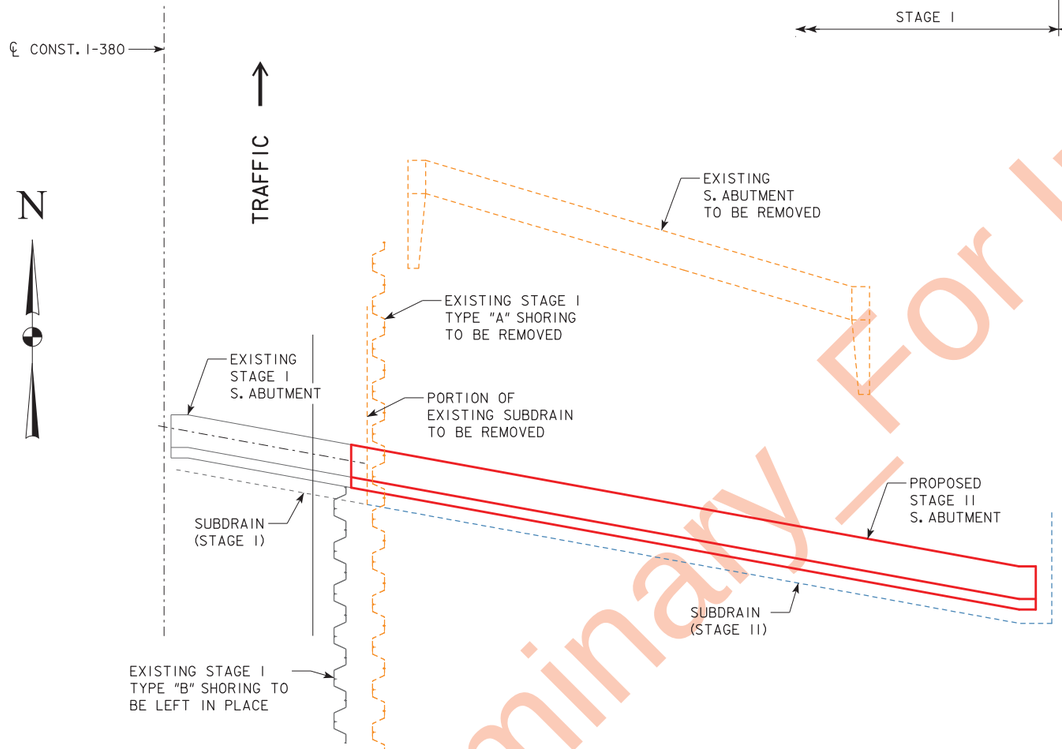


ELEVATION VIEW
(LOOKING NORTH)



EXISTING SHORING
(SOUTH ABUT. SHOWN, NORTH ABUT. SIMILAR)

NOTES:

EXISTING STAGE I TYPE "A" SHORING SHALL BE REMOVED PRIOR TO CONSTRUCTING THE STAGE II ABUTMENT.

EXISTING STAGE I TYPE "B" SHORING IS TO BE LEFT IN PLACE BELOW THE SUBGRADE ELEVATION. THE SHORING IS TO BE CUT OFF AT THE TOP OF THE SUBGRADE ELEVATION AFTER BACKFILLING AND PLACEMENT OF SUBGRADE IS COMPLETE FOR STAGE II.

FOR SUBDRAIN DETAILS, SEE DESIGN SHEET 44.

FOR ABUTMENT BACKFILL DETAILS, SEE DESIGN SHEET 43.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

EXISTING SHORING

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 44 FILE NO. 30864 DESIGN NO. 518

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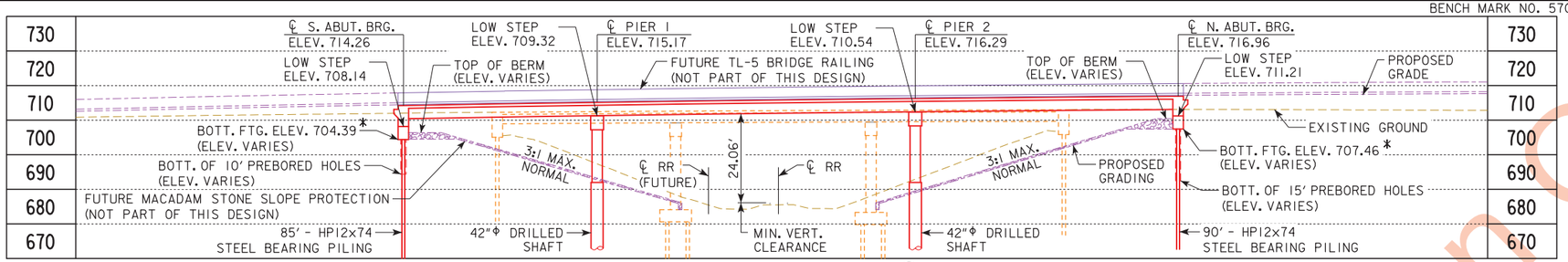
BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922



LONGITUDINAL SECTION ALONG ℄ N.B. ROADWAY

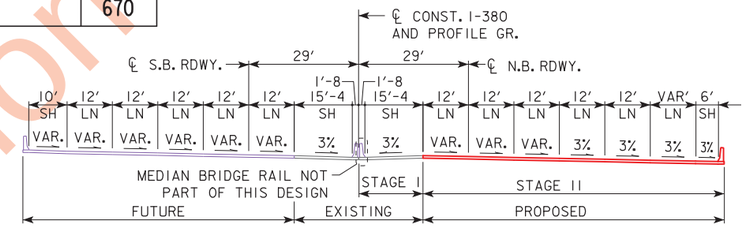
* LOW ELEVATION

NOTE: TO ACCOUNT FOR CROSS SLOPE, THE TOP OF BRIDGE DECK AT CENTERLINE N.B. ROADWAY NORTH OF STA. 1198+49.86 IS +0.24' ABOVE PROFILE GRADE. FROM STA. 1197+89.86 TO STA. 1198+19.86, THIS DISTANCE VARIES FROM +0.12' TO +0.18' ABOVE PROFILE GRADE. FROM STA. 1198+19.86 TO STA. 1198+49.86, THIS DISTANCE VARIES FROM +0.18' TO +0.24' ABOVE THE PROFILE GRADE.

+2.4997% -1.1734%

VPI STA. = 1200+60.00
VPI ELEV. = 721.00
VC = 910'

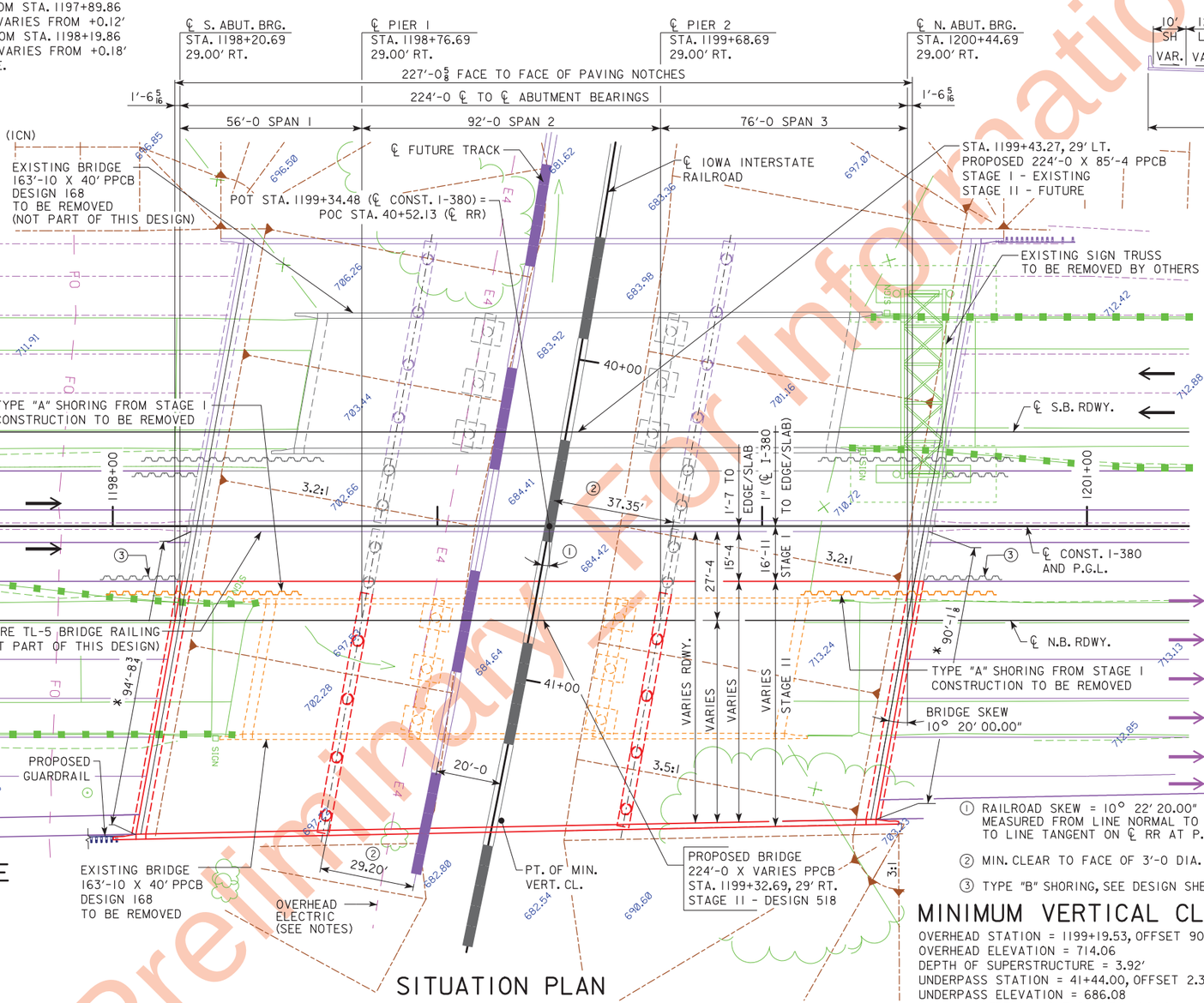
PROPOSED PROFILE GRADE I-380



TYPICAL BRIDGE SECTION

UTILITIES LEGEND:

E4 - POWER - MIDAMERICAN ENERGY
FO - FIBER OPTIC - STATE OF IOWA (ICN)



SITUATION PLAN

TRAFFIC ESTIMATE

I-380 (NORTHBOUND)

2015 AADT	25,650	V.P.D.
2040 AADT	37,270	V.P.D.
202_ DHV	_	V.P.H.
TRUCKS	17	%
TOTAL DESIGN ESALs	_	

NOTES:
TL-5 MEDIAN BRIDGE RAIL TO BE CONSTRUCTED WITH THE S.B. BRIDGE STAGE II CONSTRUCTION.

SEE DESIGN SHEET 24 FOR DECK DRAIN LOCATIONS.

SUPERELEVATION TRANSITION OCCURS ON THE BRIDGE SOUTH OF STA. 1198+49.86. SEE DESIGN SHEET 26 FOR SUPERELEVATION TRANSITION.

MACADAM STONE SLOPE PROTECTION FOR BOTH BRIDGES TO BE INSTALLED WITH THE S.B. BRIDGE STAGE II CONSTRUCTION.

SEE DESIGN SHEET 8 FOR TOP OF RAIL ELEVATIONS AND RAILROAD GENERAL NOTES.

EXISTING MIDAMERICAN ENERGY OVERHEAD ELECTRIC TO BE RELOCATED. SEE UTILITY GENERAL NOTES SHEET U.NN (MIDAME-2).

* ROADWAY WIDTH ALONG END OF DECK

CURVE DATA

I-380
PI STA. 1191+13.06
Δ = 22° 38' 40.61" (RT)
T = 655.54'
L = 1293.98'
E = 64.98'
R = 3274.04'
e = 5.2%
l = 312'
x = 150'
PC STA. 1184+57.52
PT STA. 1197+51.50

CURVE DATA

RAILROAD
PI STA. 46+75.67
Δ = 30° 52' 29.31" (RT)
T = 1582.21'
L = 3087.48'
E = 214.45'
R = 5729.58'
SC STA. 30+93.46
CS STA. 61+80.94

LOCATION

N

N.B. I-380 OVER IOWA INTERSTATE RR
T-80N R-7W
SECTION 27
CLEAR CREEK TOWNSHIP
JOHNSON COUNTY
FHWA NO. 600391
FRA NO. 608011W
LATITUDE 41.703630°
LONGITUDE -91.642006°

① RAILROAD SKEW = 10° 22' 20.00" MEASURED FROM LINE NORMAL TO ℄ CONST. I-380 TO LINE TANGENT ON ℄ RR AT P.O.I.

② MIN. CLEAR TO FACE OF 3'-0 DIA. COLUMN

③ TYPE "B" SHORING, SEE DESIGN SHEET 5.

MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 1199+19.53, OFFSET 90.69' RT.
OVERHEAD ELEVATION = 714.06
DEPTH OF SUPERSTRUCTURE = 3.92'
UNDERPASS STATION = 41+44.00, OFFSET 2.35' LT.
UNDERPASS ELEVATION = 686.08
MINIMUM VERTICAL CLEARANCE = 24.06'

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SITUATION PLAN

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 44 FILE NO. 30864 DESIGN NO. 518

DESIGN TEAM PARSONS KRP/EJ/SC JOHNSON COUNTY PROJECT NUMBER NHS-080-6(343)239--11-52 SHEET NUMBER 7

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BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922

BERM SLOPE LOCATION TABLE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	1199+11.55	0.00′	686.19	1199+56.30	0.00′	684.13
A2	1198+94.56	97.69′ RT	684.0	1199+38.95	96.81′ RT	686.0
B1	1198+30.55	0.00′	708.59	1200+45.40	0.00′	711.22
B2	1198+12.44	99.34′ RT	706.35	1200+28.08	95.02′ RT	709.39
W1	1198+00.25	99.58′ RT	711.79	1200+42.13	94.74′ RT	715.13

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

℄ IOWA INTERSTATE RAILROAD
℄ FUTURE TRACK

℄ S. ABUT. BRG.
STA. 1198+20.69
29.00′ RT.

EXISTING BRIDGE
163′-10 X 40′ PPCB
DESIGN 168
TO BE REMOVED
(NOT PART OF THIS DESIGN)

STA. 1199+43.27, 29′ LT.
PROPOSED 224′-0 X 85′-4 PPCB
STAGE I - EXISTING
STAGE II - FUTURE

℄ N. ABUT. BRG.
STA. 1200+44.69
29.00′ RT.

EXISTING SIGN TRUSS
TO BE REMOVED BY OTHERS

POT STA. 1199+34.48 (℄ CONST. I-380) =
POC STA. 40+52.13 (℄ RR)

℄ S.B. RDWY.

℄ CONST. I-380
AND PGL

℄ N.B. RDWY.

PROPOSED
GUARDRAIL

EXISTING BRIDGE
163′-10 X 40′ PPCB
DESIGN 168
TO BE REMOVED

PROPOSED BRIDGE
224′-0 X VARIES PPCB
STA. 1199+32.69, 29′ RT.
STAGE II - DESIGN 518

EXISTING 72"Φ
RCP CULVERT
TO BE REMOVED BY OTHERS

PROPOSED 72"Φ
STEEL PIPE CULVERT BY OTHERS

SITE PLAN

N

DESIGN FOR 10°20′ SKEW L.A.

224′-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56′-0, 76′-0 END SPANS 92′-0 CENTER SPAN

SITUATION PLAN - SITE

STA. 1199+32.69, 29′ RIGHT ℄ CONST. I-380 APRIL, 2020

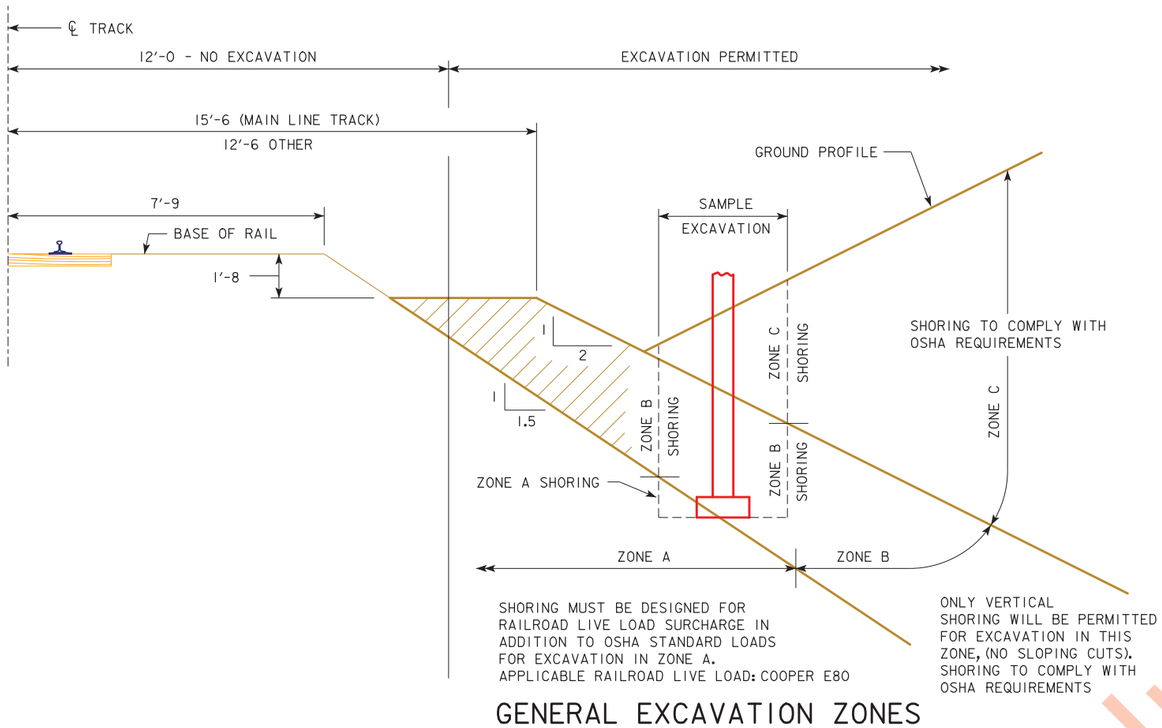
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 7 OF 44 FILE NO. 30864 DESIGN NO. 518

REVISED 09-13 - RAILROAD CHANGED THE MINIMUM VERTICAL CONSTRUCTION CLEARANCE TO 21'-6. DISTANCE FROM MAINLINE TRACK TO EDGE OF EMBANKMENT CHANGED TO 15'-6.
REVISED 06-2017 - ADDED NOTE OUTSIDE OF SHEET BORDER TO EXPLAIN THE USE OF THIS STANDARD SHEET WITH ARCHIVED METHODS MEMO MM201.
ENGLISHMISCELLANEOUSBRIDGES.DGN - 1067 - THIS SHEET ISSUED 12-08.

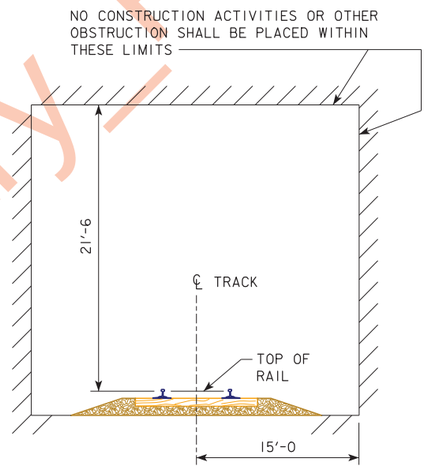
BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD. DOT BUTTON SE. WING BR. ELEV. 714.922



GENERAL EXCAVATION ZONES

RAILROAD GENERAL NOTES:

1. RAILROAD REVIEW AND APPROVAL OF SHORING, ERECTION, DEMOLITION, AND FALSEWORK IS REQUIRED. ALLOW A MINIMUM OF FOUR WEEKS FOR THE REVIEW AND APPROVAL OF EACH SUBMITTAL.
2. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.
3. THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD.
5. ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
6. ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.
7. ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
8. ALL CONSTRUCTION PHASING THAT MAY IMPACT THE RAILROAD OPERATIONS SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
9. FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.
10. ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.
11. FOR RAILROAD COORDINATION PLEASE REFER TO THE RAILROAD COORDINATION REQUIREMENTS AS PART OF SPECIAL PROVISIONS.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

TOP OF RAIL ELEVATIONS

(STATIONS INCREASE WITH MILEPOST INCREASE)

IAIS RR STATION	STATION	CENTER/ TRACK	LEFT RAIL	RIGHT RAIL
12872+88.63	30+52.00	684.53	-----	-----
12872+63.92	30+76.71	684.52	-----	-----
12872+40.89	30+99.74	684.51	-----	-----
12872+12.57	31+28.06	684.51	-----	-----
12871+85.97	31+54.66	684.50	-----	-----
12871+59.72	31+80.91	684.53	-----	-----
12871+26.39	32+14.24	684.50	-----	-----
12870+98.00	32+42.63	684.54	-----	-----
12870+57.45	32+83.18	684.60	-----	-----
12870+32.88	33+07.75	684.60	-----	-----
12870+02.49	33+38.14	684.65	-----	-----
12869+67.64	33+72.99	684.68	-----	-----
12869+40.90	33+99.73	684.73	-----	-----
12869+15.64	34+24.99	684.73	-----	-----
12869+15.43	34+25.20	684.73	-----	-----
12868+98.61	34+42.02	684.75	-----	-----
12868+70.52	34+70.11	684.74	-----	-----
12868+42.12	34+98.51	684.80	-----	-----
12868+17.42	35+23.21	684.81	-----	-----
12867+93.23	35+47.40	684.83	-----	-----
12867+69.52	35+71.11	684.85	-----	-----
12867+43.43	35+97.20	684.88	-----	-----
12867+18.59	36+22.04	684.91	-----	-----
12866+91.95	36+48.68	684.97	-----	-----
12866+67.56	36+73.07	684.94	-----	-----
12866+42.76	36+97.87	685.03	-----	-----
12866+16.28	37+24.35	685.03	-----	-----
12865+91.58	37+49.05	685.06	-----	-----
12865+66.66	37+73.97	685.09	-----	-----
12865+38.31	38+02.32	685.15	-----	-----
12865+12.15	38+28.48	685.16	-----	-----
12864+83.77	38+56.86	685.17	-----	-----
12864+58.79	38+81.84	685.27	685.94	685.84
12864+30.29	39+10.34	685.28	685.95	685.86
12864+07.66	39+32.97	685.32	685.99	685.91
12863+81.00	39+59.63	685.38	686.04	685.95
12863+54.29	39+86.34	685.45	686.09	686.02
12863+29.99	40+10.64	685.47	686.13	686.05
12863+05.46	40+35.17	685.42	686.08	686.02
12862+78.40	40+62.23	685.46	686.11	686.06

TOP OF RAIL ELEVATIONS

(STATIONS INCREASE WITH MILEPOST INCREASE)

IAIS RR STATION	STATION	CENTER/ TRACK	LEFT RAIL	RIGHT RAIL
12862+51.91	40+88.72	685.51	686.14	686.09
12862+25.45	41+15.18	685.44	686.09	686.03
12862+00.86	41+39.77	685.43	686.09	686.02
12861+74.38	41+66.25	685.39	686.05	685.99
12861+47.84	41+92.79	685.39	686.06	685.96
12861+21.48	42+19.15	685.45	686.12	686.03
12860+98.43	42+42.20	685.50	-----	-----
12860+72.15	42+68.48	685.52	-----	-----
12860+45.41	42+95.22	685.60	-----	-----
12860+20.71	43+19.92	685.63	-----	-----
12859+92.99	43+47.64	685.71	-----	-----
12859+64.81	43+75.82	685.78	-----	-----
12859+41.60	43+99.03	685.79	-----	-----
12859+18.73	44+21.90	685.79	-----	-----
12858+94.69	44+45.94	685.87	-----	-----
12858+94.25	44+46.38	685.89	-----	-----
12858+69.42	44+71.21	685.96	-----	-----
12858+43.20	44+97.43	686.02	-----	-----
12858+16.81	45+23.82	686.09	-----	-----
12857+89.90	45+50.73	686.14	-----	-----
12857+61.95	45+78.68	686.26	-----	-----
12857+35.12	46+05.51	686.32	-----	-----
12857+02.83	46+37.80	686.38	-----	-----
12857+02.06	46+38.57	686.37	-----	-----
12856+86.29	46+54.34	686.42	-----	-----
12856+55.37	46+85.26	686.51	-----	-----
12856+24.29	47+16.34	686.53	-----	-----
12856+02.88	47+37.75	686.60	-----	-----
12855+80.26	47+60.37	686.69	-----	-----
12855+51.91	47+88.72	686.84	-----	-----
12855+23.51	48+17.12	686.96	-----	-----
12854+94.40	48+46.23	687.08	-----	-----
12854+62.85	48+77.78	687.20	-----	-----
12854+36.44	49+04.19	687.33	-----	-----
12854+08.09	49+32.54	687.44	-----	-----
12853+80.38	49+60.25	687.50	-----	-----
12853+55.05	49+85.58	687.61	-----	-----
12853+24.57	50+16.06	687.72	-----	-----
12852+94.44	50+46.19	687.77	-----	-----

GENERAL SHORING NOTES:

1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO TRACK.
2. PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE RAILROAD DETAILED PLANS INDICATING THE NATURE AND EXTENT OF THE TRACK PROTECTION SHORING PROPOSED. THE CONTRACTOR SHALL INSTALL THE TEMPORARY SHORING SYSTEM PER THE APPROVED PLANS. DESIGN OF THE TEMPORARY SHORING SYSTEM TO COMPLY WITH GUIDELINES FOR TEMPORARY SHORING.
3. FOR EXCAVATIONS WHICH ENCROACH INTO ZONE A OR B, SHORING PLANS SHALL BE ACCOMPANIED BY DESIGN CALCULATIONS. PLANS AND CALCULATIONS MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IOWA.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

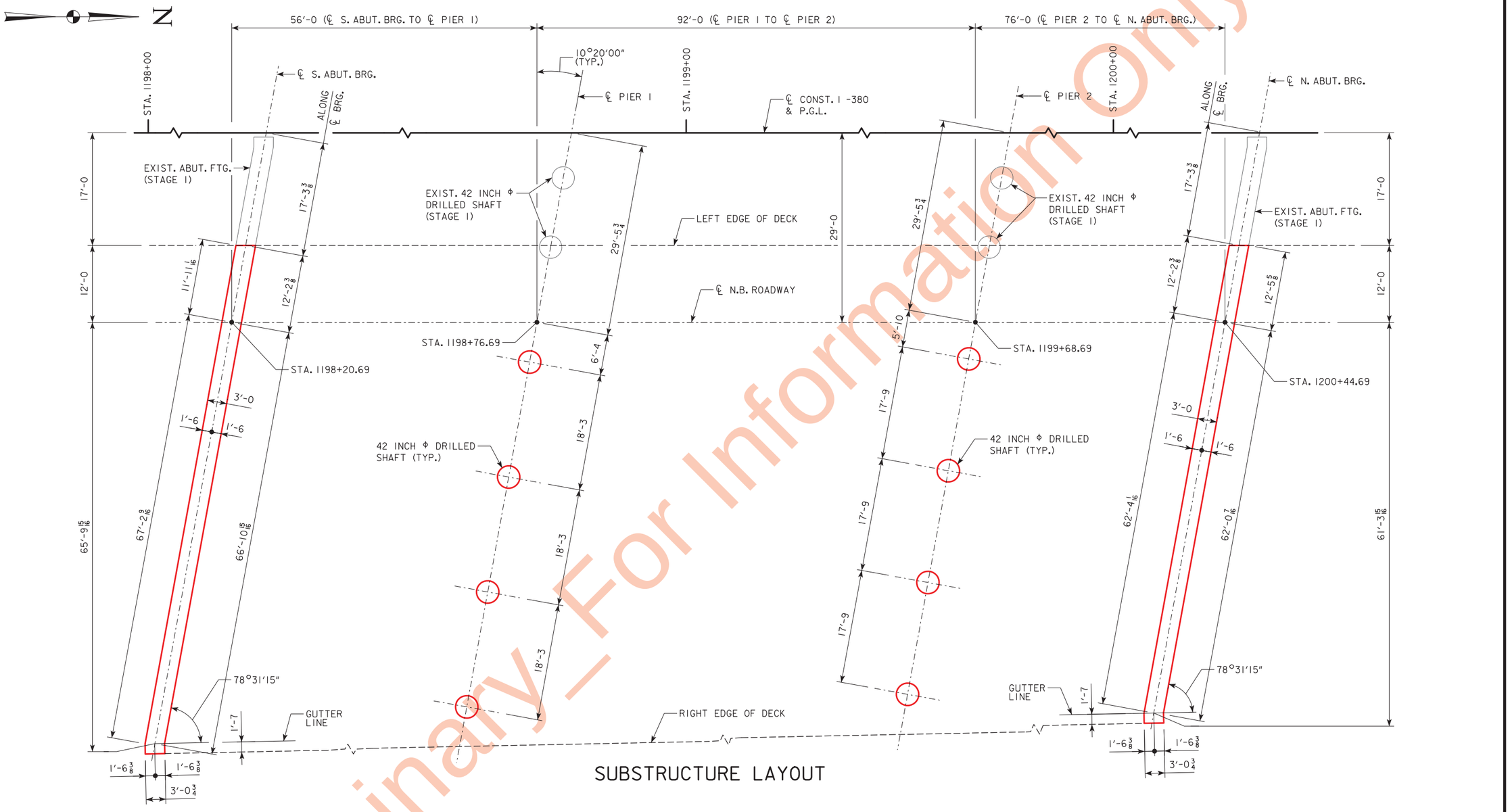
RAILROAD GENERAL NOTES

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 8 OF 44 FILE NO. 30864 DESIGN NO. 518



SUBSTRUCTURE LAYOUT

BRIDGE COORDINATES

LOCATION	℄ S. ABUT. BRG.	℄ PIER 1	℄ PIER 2	℄ N. ABUT. BRG.
LEFT EDGE OF DECK	E=2147737.411 N=626011.120	E=2147736.308 N=626067.109	E=2147734.498 N=626159.091	E=2147733.002 N=626235.076
℄ N.B. ROADWAY	E=2147749.451 N=626009.168	E=2147748.349 N=626065.157	E=2147746.538 N=626157.140	E=2147745.042 N=626233.125
RIGHT EDGE OF DECK	E=2147817.096 N=625998.206	E=2147814.866 N=626054.377	E=2147811.202 N=626146.660	E=2147808.175 N=626222.893

NOTE: AN ELECTRONIC FILE CONTAINING THE BRIDGE COORDINATE DATA IS AVAILABLE AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY THESE COORDINATES WITH THE PROJECT HORIZONTAL CONTROL INFORMATION PROVIDED IN THE ROAD PLANS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

SUBSTRUCTURE LAYOUT

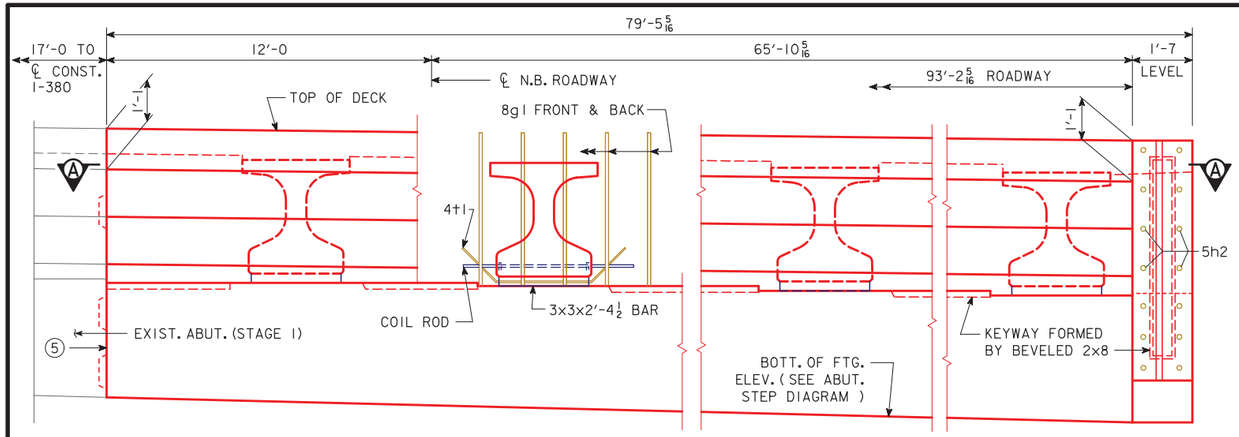
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

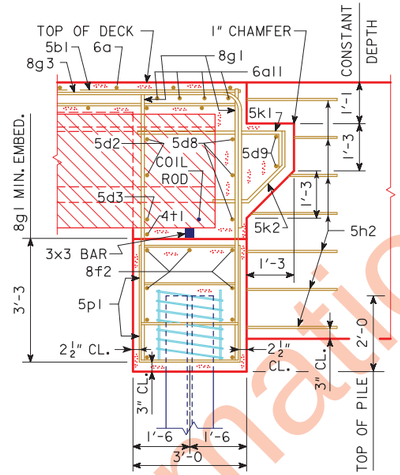
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 9 OF 44 FILE NO. 30864 DESIGN NO. 518

CORRECTION 04-14 - ADDED CONCRETE QUANTITY TABLE & REFERRAL NOTE TO SUMMARY QUANTITY SHEET. REMOVED DESIGN BEARING NOTE FOR ABUT. PILING FROM ABUTMENT NOTES.
ENGLISHBTINTEGRALBRIDGES.DGN - 2080-BTB - THIS SHEET ISSUED 02-08.

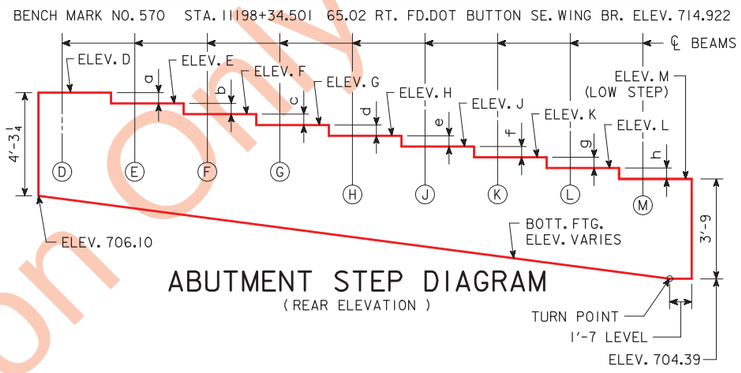


PART REAR ELEVATION AT ABUTMENT



PART SECTION B-B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - L 7/8 x 7/8 x 8 SPACERS PUNCHED TO HOLD SPIRAL.



ABUTMENT STEP DIAGRAM

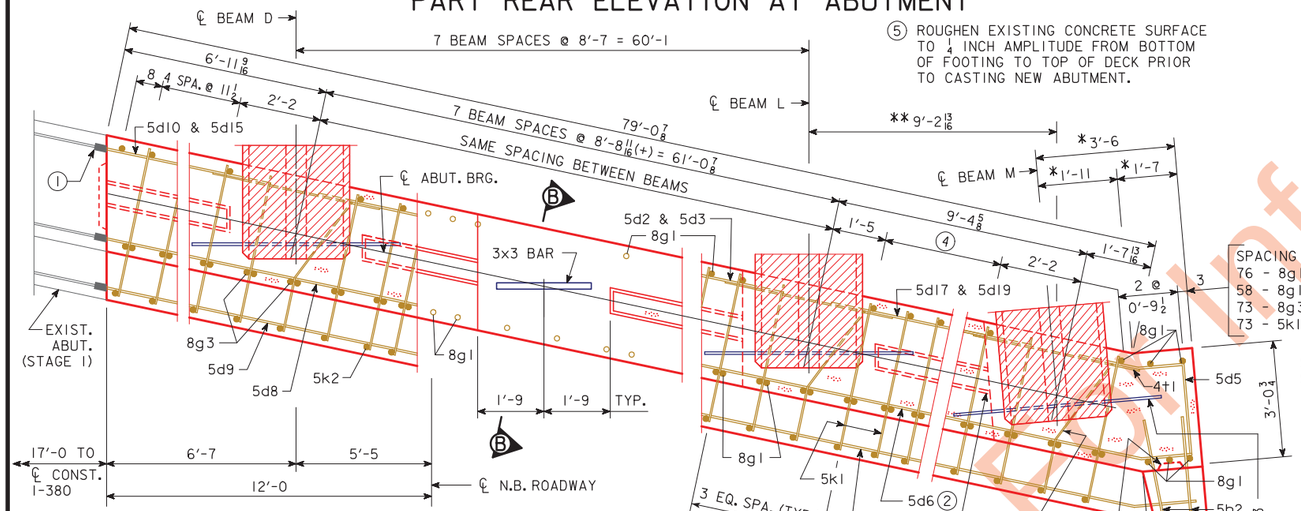
(REAR ELEVATION)

TABLE OF ABUTMENT STEPS

STEP	SOUTH ABUT.
a	2 7/8
b	2 15/16
c	3
d	3 5/16
e	3 1/2
f	3 1/2
g	3 1/2
h	4 1/16

TABLE OF ABUTMENT ELEVATIONS

POINT	SOUTH ABUT.
ELEV. D	710.37
ELEV. E	710.13
ELEV. F	709.88
ELEV. G	709.63
ELEV. H	709.36
ELEV. J	709.06
ELEV. K	708.77
ELEV. L	708.48
ELEV. M	708.14



PART SECTION A-A

(1) STAGE I MECHANICAL SPLICE (TYP.)
(2) LAP WITH 5d8 - MIN. LAP = 2'-2
(3) LAP WITH 5d9 - MIN. LAP = 2'-2
(4) 6 EQ. SPA. THIS BAY & 5 EQ. SPA. ELSEWHERE BETWEEN BEAMS

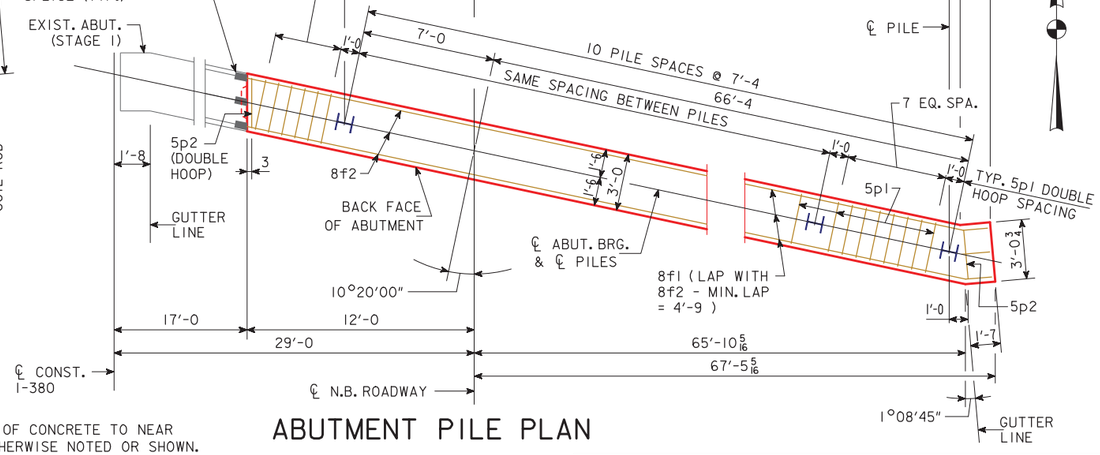
* MEASURED NORMAL TO ℄ BEAM M.
** MEASURED NORMAL FROM ℄ BEAM L TO INTERSECTION POINT OF ℄ ABUT. BRG. AND ℄ BEAM M.

NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE.

NOTE:
SHIFT 8g1 BARS IN F.F. AS NECESSARY TO MISS BEAMS. PLACE 8g3 BARS PARALLEL TO LONGIT. STEEL.

(5) ROUGHEN EXISTING CONCRETE SURFACE TO 1/4 INCH AMPLITUDE FROM BOTTOM OF FOOTING TO TOP OF DECK PRIOR TO CASTING NEW ABUTMENT.

SPACING FOR :
76 - 8g1 BACK FACE
58 - 8g1 FRONT FACE
73 - 8g3 BACK FACE
73 - 5k1 & 5k2 BACK FACE



ABUTMENT PILE PLAN

ABUTMENT NOTES:

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

IF 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 AT NO EXTRA COST TO THE STATE.

STEEL PILE POINTS ARE REQUIRED FOR THE STEEL H-PILES AT THE ABUTMENTS.

REINFORCING BAR ENDS DENOTED WITH "MECHANICAL SPLICE" SHALL BE COUPLED/SPLICED TO MATING BARS IN PRIOR STAGE CONSTRUCTION WITH A MECHANICAL BAR SPLICE SYSTEM (REFER TO "MECHANICAL BAR SPLICE SYSTEM NOTES" ON DESIGN SHEET 1). A TOTAL OF 18-8f2, 6-5d8 AND 4-5d9 ARE TO BE COUPLED/SPLICED. (BOTH ABUTMENTS ACCOUNTED FOR)

FOR FRAMING PLAN, SEE DESIGN SHEET 20.

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.

NOTES:

THE CONTRACT LENGTH OF 85 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 205 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING. TO ACCOUNT FOR SOIL CONSOLIDATION UNDER THE NEW FILL, THE FACTORED AXIAL LOAD INCLUDES A FACTORED DOWNDRAG LOAD OF 66 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH ABUTMENT PILES IS 185 TONS AT END OF DRIVE. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

11 - HP 12 X 74 STEEL BEARING PILING REQUIRED AT SOUTH ABUTMENT.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

SOUTH ABUTMENT DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 10 OF 44 FILE NO. 30864 DESIGN NO. 518

DESIGN TEAM PARSONS	KRP/EJ/SC	"BTB" BEAMS INTEGRAL ABUT. DETAILS - (L.A.) 7°31'-15° SKEW	STANDARD SHEET 2080-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 11

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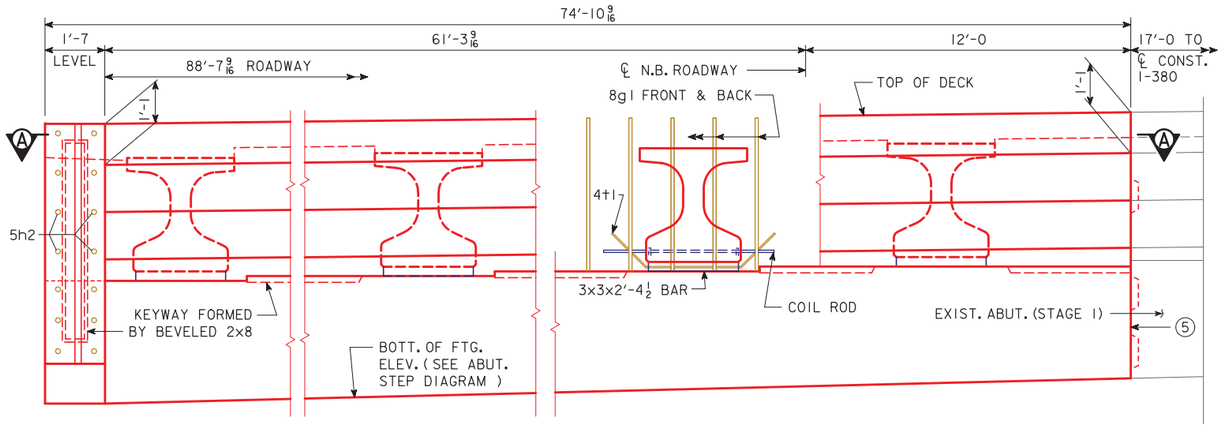
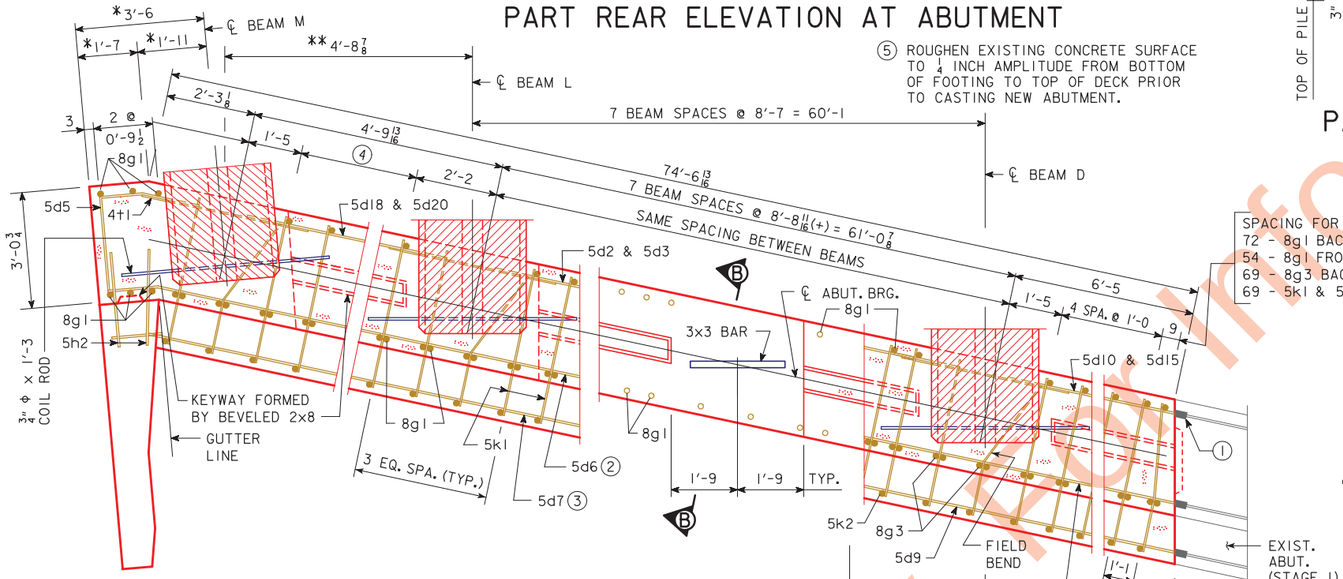


PART REAR ELEVATION AT ABUTMENT



PART SECTION A-A

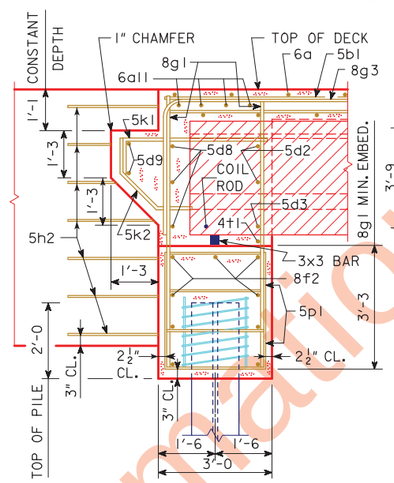
NOTE:
SHIFT 8g1 BARS IN F.F. AS NECESSARY TO MISS BEAMS. PLACE 8g3 BARS PARALLEL TO LONGIT. STEEL.

① STAGE I MECHANICAL SPLICE (TYP.)
② LAP WITH 5d8 - MIN. LAP = 2'-2
③ LAP WITH 5d9 - MIN. LAP = 2'-2
④ 2 EQ. SPA. THIS BAY & 5 EQ. SPA. ELSEWHERE BETWEEN BEAMS

⑤ ROUGHEN EXISTING CONCRETE SURFACE TO 1/4 INCH AMPLITUDE FROM BOTTOM OF FOOTING TO TOP OF DECK PRIOR TO CASTING NEW ABUTMENT.

* MEASURED NORMAL TO ℄ BEAM M.
** MEASURED NORMAL FROM ℄ BEAM L TO INTERSECTION POINT OF ℄ ABUT. BRG. AND ℄ BEAM M.

NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE.

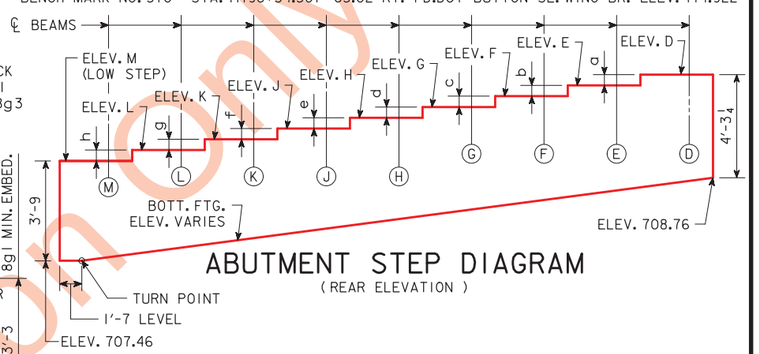


PART SECTION B-B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - L 7/8 x 7/8 x 1/8 SPACERS PUNCHED TO HOLD SPIRAL.

SPACING FOR :
72 - 8g1 BACK FACE
54 - 8g1 FRONT FACE
69 - 8g3 BACK FACE
69 - 5k1 & 5k2 BACK FACE

BENCH MARK NO. 570 STA. 1198+34.50 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922



ABUTMENT STEP DIAGRAM

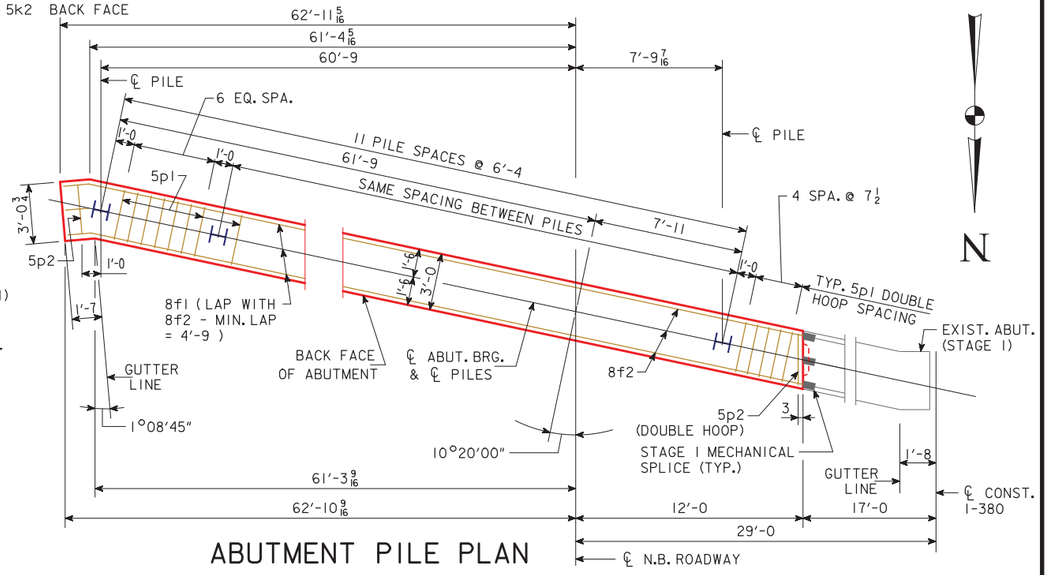
(REAR ELEVATION)

TABLE OF ABUTMENT STEPS

STEP	NORTH ABUT.
a	2 3/16
b	2 3/16
c	2 11/16
d	3
e	3 1/4
f	3 1/4
g	3 1/4
h	2 1/16

TABLE OF ABUTMENT ELEVATIONS

POINT	NORTH ABUT.
ELEV. D	713.03
ELEV. E	712.85
ELEV. F	712.66
ELEV. G	712.44
ELEV. H	712.19
ELEV. J	711.92
ELEV. K	711.65
ELEV. L	711.38
ELEV. M	711.21



ABUTMENT PILE PLAN

NOTES:

THE CONTRACT LENGTH OF 90 FEET FOR THE NORTH ABUTMENT PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 262 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING. TO ACCOUNT FOR SOIL CONSOLIDATION UNDER THE NEW FILL, THE FACTORED AXIAL LOAD INCLUDES A FACTORED DOWNDRAG LOAD OF 114 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH ABUTMENT PILES IS 250 TONS AT END OF DRIVE. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

12 - HP 12 X 74 STEEL BEARING PILING REQUIRED AT NORTH ABUTMENT.

ABUTMENT CONCRETE QUANTITY

LOCATION	QUANTITY
SOUTH ABUTMENT FOOTING	37.6
NORTH ABUTMENT FOOTING	35.4
TOTAL (CU. YDS.)	73.0

NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

NORTH ABUTMENT DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 11 OF 44 FILE NO. 30864 DESIGN NO. 518

CORRECTION 04-14 - ADDED CONCRETE QUANTITY TABLE & REFERRAL NOTE TO SUMMARY QUANTITY SHEET. REMOVED DESIGN BEARING NOTE FOR ABUT. PILING FROM ABUTMENT NOTES.
ENGLISHBTINTEGRALBRIDGES.DGN - 2080-BTB - THIS SHEET ISSUED 02-08.

DESIGN TEAM PARSONS	KRP/EJ/SC	"BTB" BEAMS INTEGRAL ABUT. DETAILS - (L.A.) 7°31'-15° SKEW	STANDARD SHEET 2080-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 12

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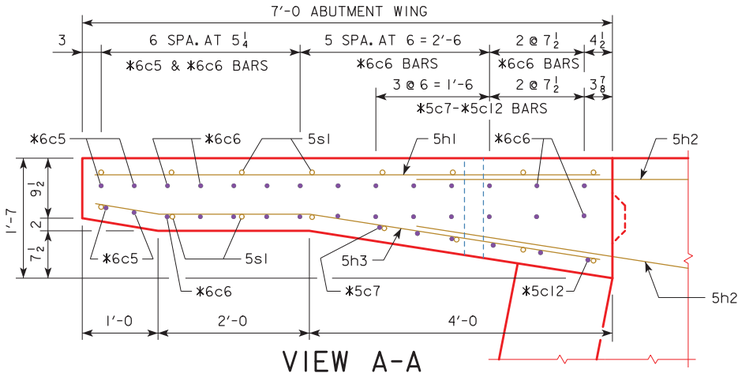
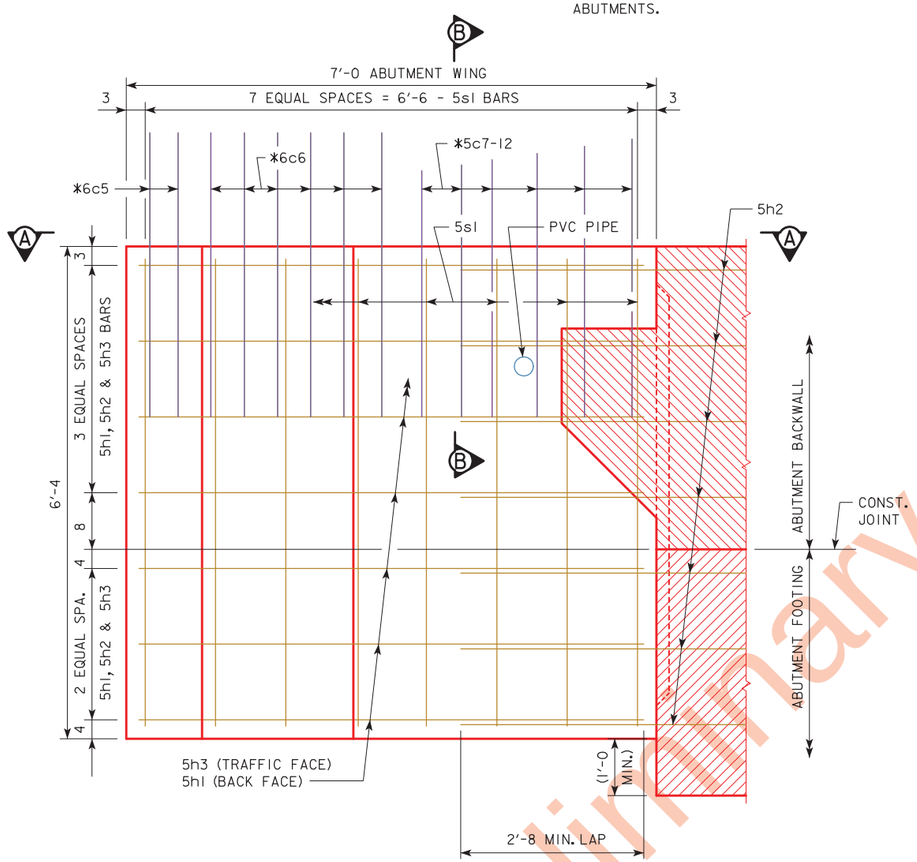
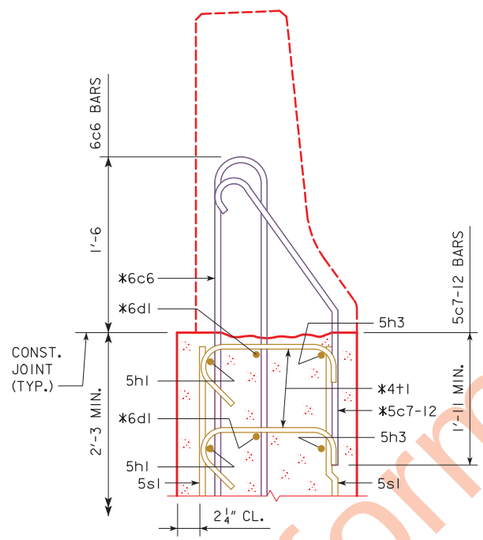


VIEW A-A

NOTE:
PLUG 3"Φ PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.



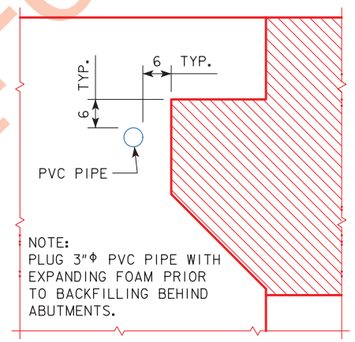
ABUTMENT WING - ELEVATION VIEW



SECTION B-B

* BARRIER RAIL END SECTION BARS TO BE PLACED WITH ABUTMENT WING.

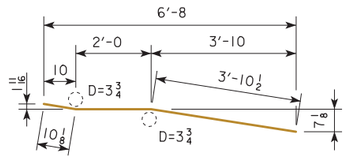
SEE BARRIER RAIL END SECTION SHEET IN THESE PLANS FOR DETAILS OF REINFORCING BARS 6c5, 6c6, 5c7-12, 6d1 & 4t1.



PVC PIPE LOCATION

REINFORCING BAR LIST - ONE ABUT. WING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5h1	HORIZONTAL BACK FACE		7	6'-8	49
5h3	HORIZONTAL TRAFFIC FACE		7	6'-9	49
5s1	VERTICAL BOTH FACES		16	6'-0	100
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				198



5h3

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

BENT BAR DETAILS

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
ONE ABUTMENT WING	1.9
TOTAL (CU. YDS.)	1.9

NOTE:

CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

ABUTMENT WING DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 12 OF 44 — FILE NO. 30864 — DESIGN NO. 518

CORRECTION 04-14 - ADDED REFERRAL NOTE TO SUMMARY QUANTITIES SHEET.
ENGLISH\MISCELLANEOUSBRIDGES.DGN - 2111 - THIS SHEET ISSUED 02-08.

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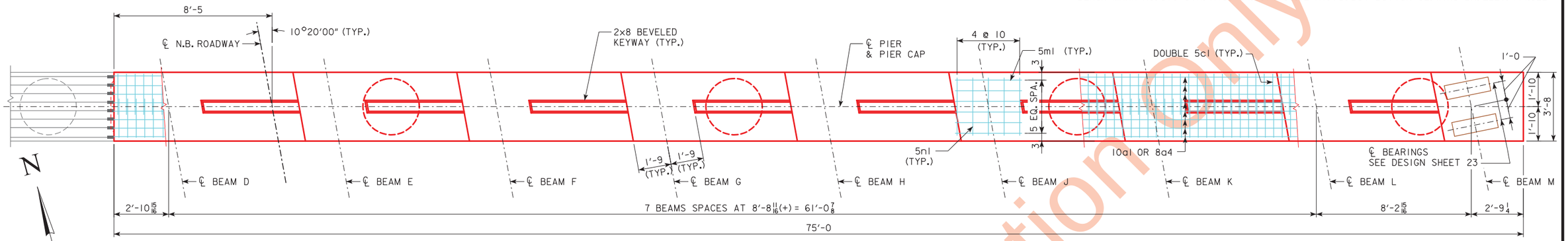
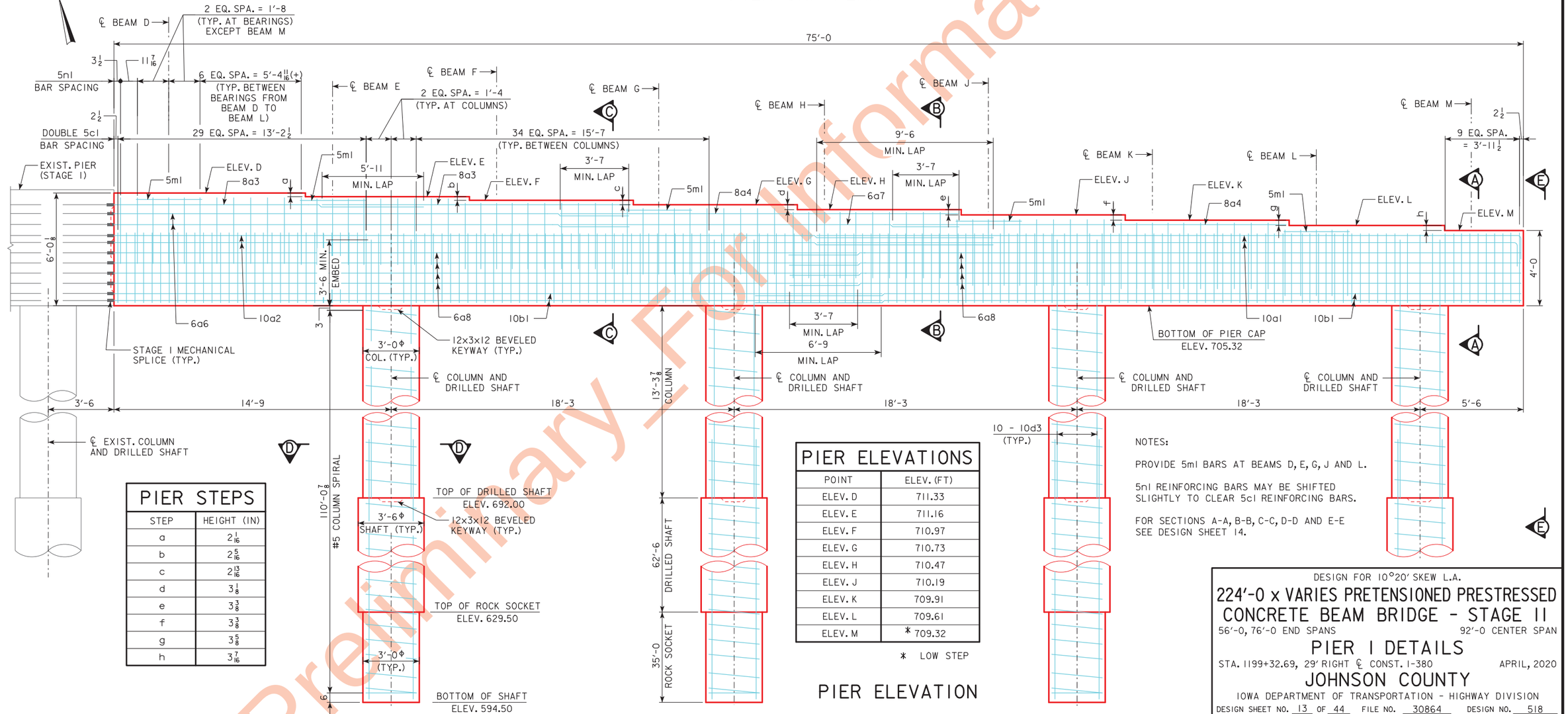
BENCH MARK NO. 570 STA. 1198+34.50L 65.02 RT. FD. DOT BUTTON SE. WING BR. ELEV. 714.922



PIER CAP PLAN



PIER STEPS

STEP	HEIGHT (IN)
a	2 1/16
b	2 5/16
c	2 13/16
d	3 1/8
e	3 3/8
f	3 3/8
g	3 5/8
h	3 7/16

PIER ELEVATIONS

POINT	ELEV. (FT)
ELEV. D	711.33
ELEV. E	711.16
ELEV. F	710.97
ELEV. G	710.73
ELEV. H	710.47
ELEV. J	710.19
ELEV. K	709.91
ELEV. L	709.61
ELEV. M	* 709.32

* LOW STEP

PIER ELEVATION

NOTES:

PROVIDE 5ml BARS AT BEAMS D, E, G, J AND L.

5nl REINFORCING BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 5cl REINFORCING BARS.

FOR SECTIONS A-A, B-B, C-C, D-D AND E-E SEE DESIGN SHEET 14.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

PIER I DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 13 OF 44 — FILE NO. 30864 — DESIGN NO. 518

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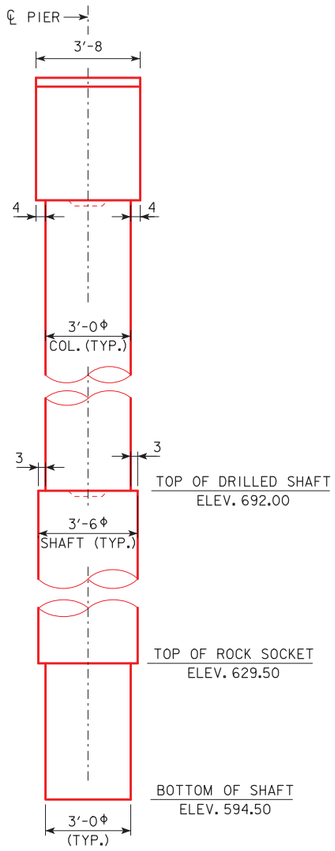
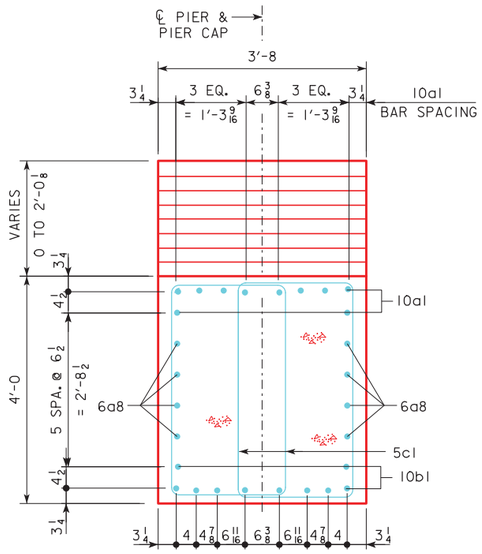
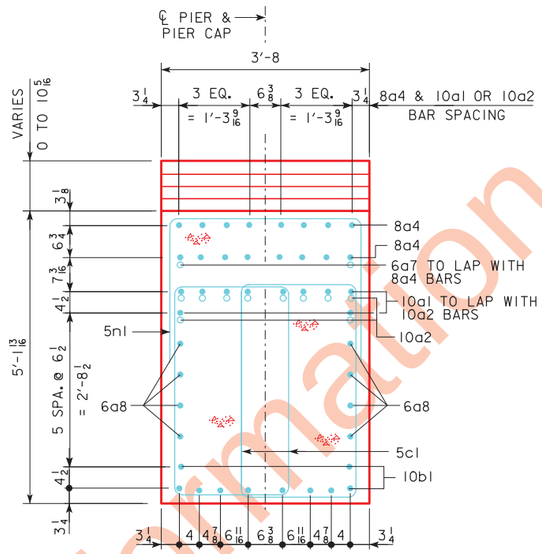
BENCH MARK NO. 570 STA. 1198+34.50 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922



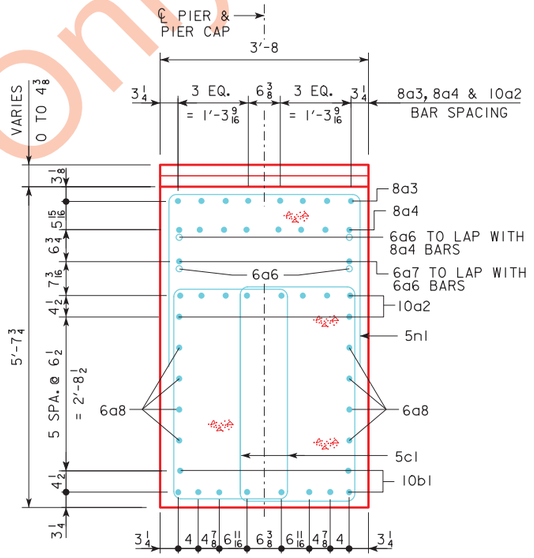
VIEW E-E



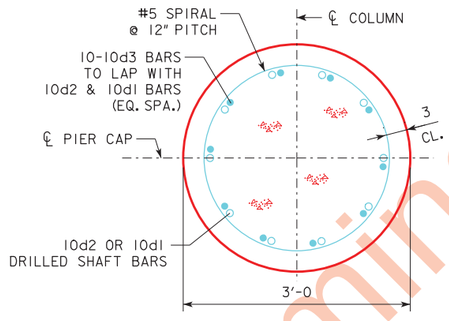
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 1 REINFORCING DETAILS

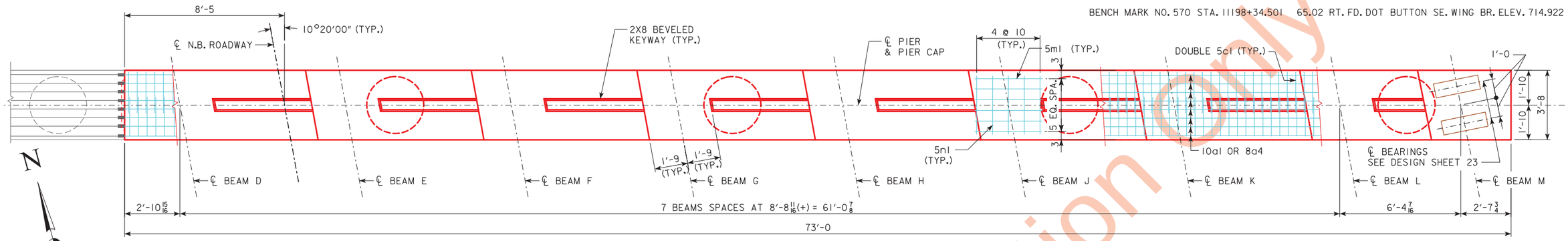
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

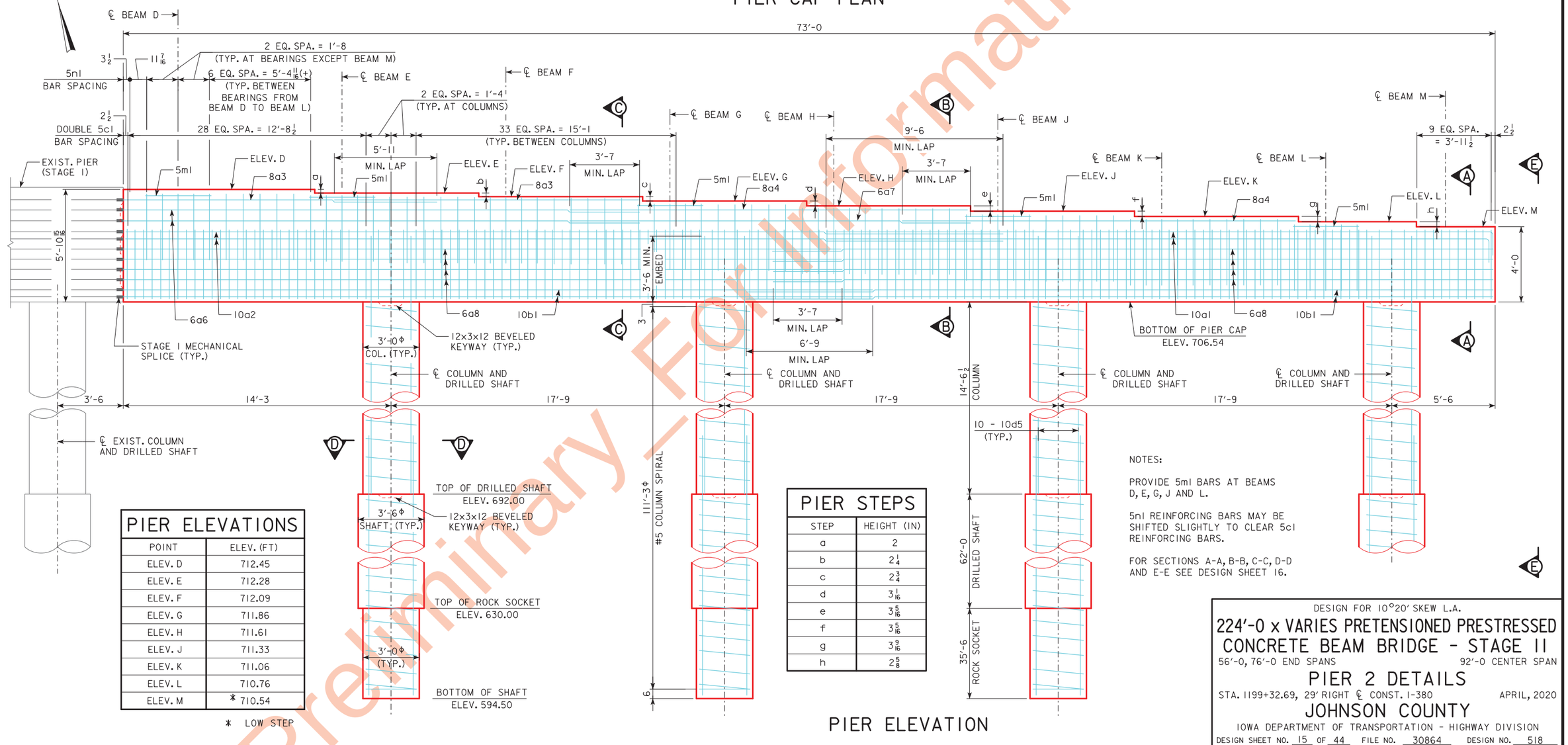
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 14 OF 44 FILE NO. 30864 DESIGN NO. 518

BENCH MARK NO. 570 STA. 1198+34.50l 65.02 RT. FD. DOT BUTTON SE. WING BR. ELEV. 714.922



PIER CAP PLAN



PIER ELEVATIONS	
POINT	ELEV. (FT)
ELEV. D	712.45
ELEV. E	712.28
ELEV. F	712.09
ELEV. G	711.86
ELEV. H	711.61
ELEV. J	711.33
ELEV. K	711.06
ELEV. L	710.76
ELEV. M	* 710.54

* LOW STEP

PIER STEPS	
STEP	HEIGHT (IN)
a	2
b	2 1/4
c	2 3/4
d	3 1/16
e	3 5/16
f	3 5/16
g	3 9/16
h	2 5/8

PIER ELEVATION

NOTES:

PROVIDE 5ml BARS AT BEAMS D, E, G, J AND L.

5nl REINFORCING BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 5cl REINFORCING BARS.

FOR SECTIONS A-A, B-B, C-C, D-D AND E-E SEE DESIGN SHEET 16.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 2 DETAILS

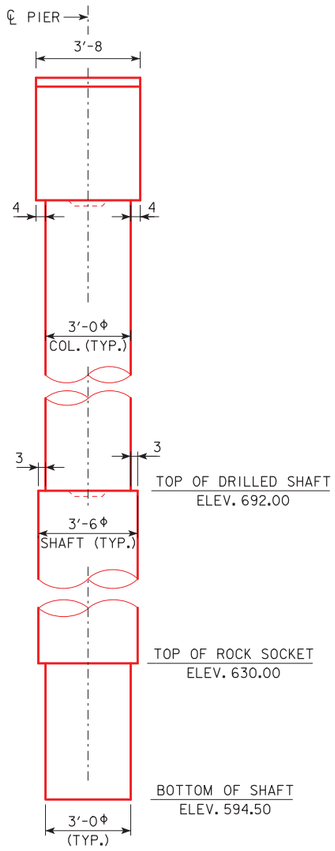
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

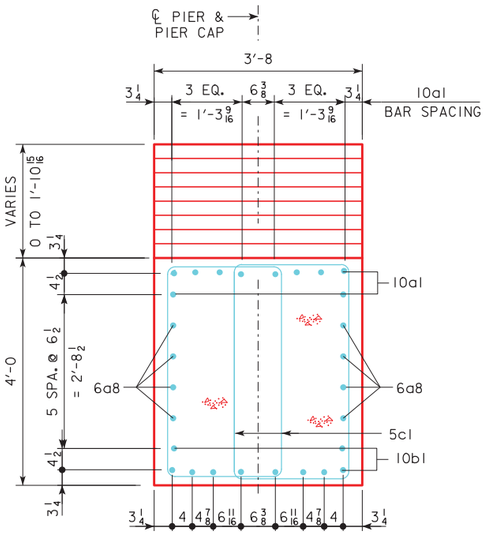
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 15 OF 44 FILE NO. 30864 DESIGN NO. 518

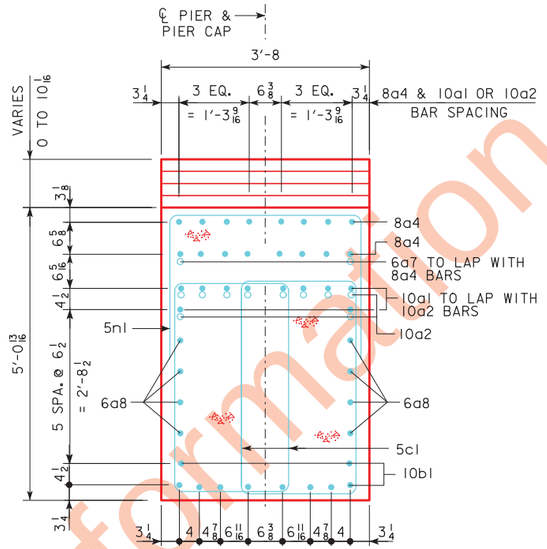
BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922



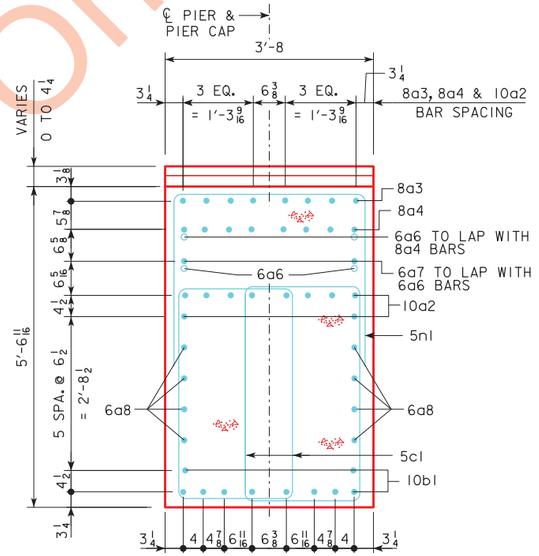
VIEW E-E



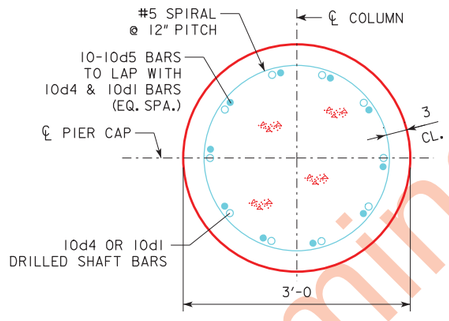
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 2 REINFORCING DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 16 OF 44 FILE NO. 30864 DESIGN NO. 518

REINFORCING BAR LIST - PIER 1

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP, LONGIT., TOP		10	39'-10	1714
10a2	CAP, LONGIT., TOP		10	47'-0	2022
8a3	CAP, LONGIT., TOP		16	17'-0	726
8a4	CAP, LONGIT., TOP		16	21'-6	918
6a6	CAP, LONGT., SIDES		4	28'-0	168
6a7	CAP, LONGT., SIDES		2	21'-0	63
6a8	CAP, LONGT., SIDES		16	39'-6	949
10b1	CAP, LONGIT., BOTTOM		20	41'-6	3571
5c1	CAP, HOOP		314	13'-6	4421
10d1	DRILLED SHAFT, VERTICAL		40	60'-0	10327
10d2	DRILLED SHAFT, VERTICAL		40	51'-0	8778
10d3	COLUMN, VERTICAL		40	16'-10	2897
5m1	CAP, LONGIT., STEP (BEAMS D, E, G, J & L)		30	3'-8	115
5n1	CAP, TRANSV., STEP		76	10'-4	819
#5	COLUMN & DRILLED SHAFT, SPIRAL		4	895'-3	3735
	COLUMN & DRILLED SHAFT, SPIRAL SPACERS L7/8x7/8x1/8 (0.7 LB/FT)		16	110'-0	1232
	REINFORCING STEEL - TOTAL (LBS.)				42455

REINFORCING BAR LIST - PIER 2

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP, LONGIT., TOP		10	39'-10	1714
10a2	CAP, LONGIT., TOP		10	47'-0	2022
8a3	CAP, LONGIT., TOP		16	17'-0	726
8a4	CAP, LONGIT., TOP		16	21'-6	918
6a6	CAP, LONGT., SIDES		4	28'-0	168
6a7	CAP, LONGT., SIDES		2	21'-0	63
6a8	CAP, LONGT., SIDES		16	39'-6	949
10b1	CAP, LONGIT., BOTTOM		20	41'-6	3571
5c1	CAP, HOOP		306	13'-6	4309
10d1	DRILLED SHAFT, VERTICAL		40	60'-0	10327
10d4	DRILLED SHAFT, VERTICAL		40	51'-0	8778
10d5	COLUMN, VERTICAL		40	18'-1	3113
5m1	CAP, LONGIT., STEP (BEAMS D, E, G, J & L)		30	3'-8	115
5n1	CAP, TRANSV., STEP		76	10'-4	819
#5	COLUMN & DRILLED SHAFT, SPIRAL		4	904'-11	3775
	COLUMN & DRILLED SHAFT, SPIRAL SPACERS L7/8x7/8x1/8 (0.7 LB/FT)		16	111'-3	1246
	REINFORCING STEEL - TOTAL (LBS.)				42613

PIER NOTES:

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A $\frac{3}{4}$" DRESSED AND BEVELED STRIP.

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

ALL REINFORCING IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS POURED.

FORMS FOR PIER CAP 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 STRENGTH IS AT LEAST 2.50 KSI.

CONCRETE STRENGTH SHALL BE VERIFIED BY FLEXURAL STRENGTH ACCORDING TO MATERIALS I.M. 316 WITH A MINIMUM FLEXURAL STRENGTH OF 0.343 KSI 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 ATTAIN A MINIMUM CONCRETE STRENGTH OF 4.00 KSI BEFORE BEING SUBJECTED TO EXTERIOR LOADS. PIER CAP CONCRETE SHALL BE SUBJECTED TO EXTERIOR LOADS IN ACCORDANCE WITH ARTICLE 2403.03, N, OF THE STANDARD SPECIFICATIONS.

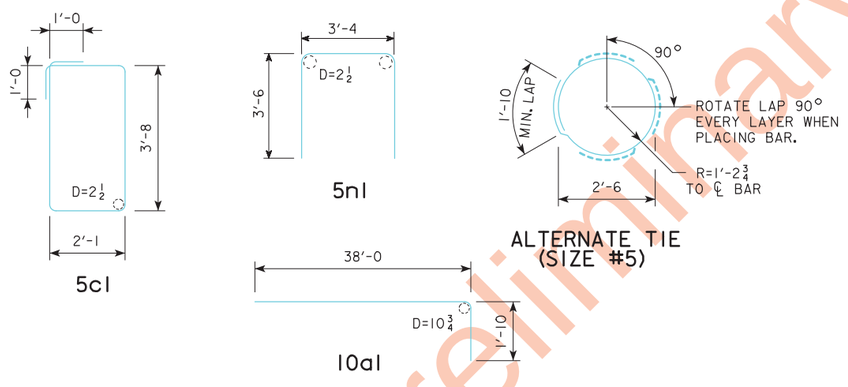
REINFORCING BAR ENDS DENOTED WITH "MECHANICAL SPLICE" SHALL BE COUPLED/SPLICED TO MATING BARS IN PRIOR STAGE CONSTRUCTION WITH A MECHANICAL BAR SPLICE SYSTEM (REFER TO "MECHANICAL BAR SPLICE SYSTEM NOTES" ON DESIGN SHEET 1). A TOTAL OF 20-10a2, 16-8a3, 20-10b1, 8-6a6 AND 16-6a8 ARE TO BE COUPLED/SPLICED. (BOTH PIERS ACCOUNTED FOR)

CONCRETE PLACEMENT QUANTITIES

LOCATION	PIER 1	PIER 2
CAP	52.7	50.7
COLUMN	13.9	15.2
TOTAL (C.Y.)	66.6	65.9

NOTE:
CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIA.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 1 & 2 REINFORCING DETAILS

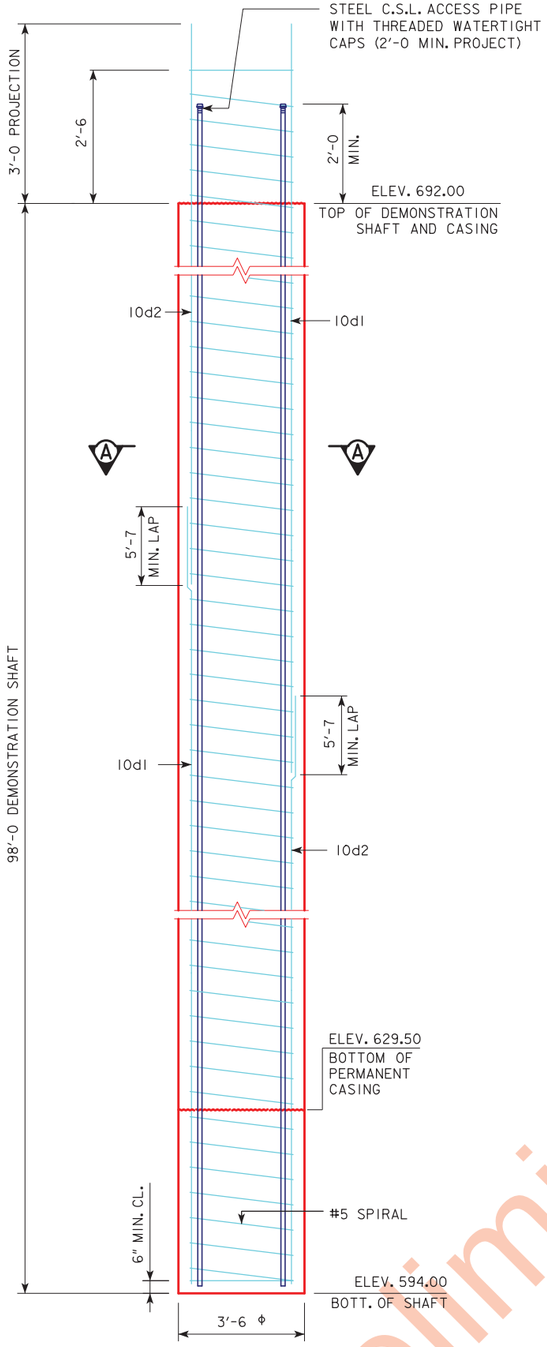
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 17 OF 44 FILE NO. 30864 DESIGN NO. 518

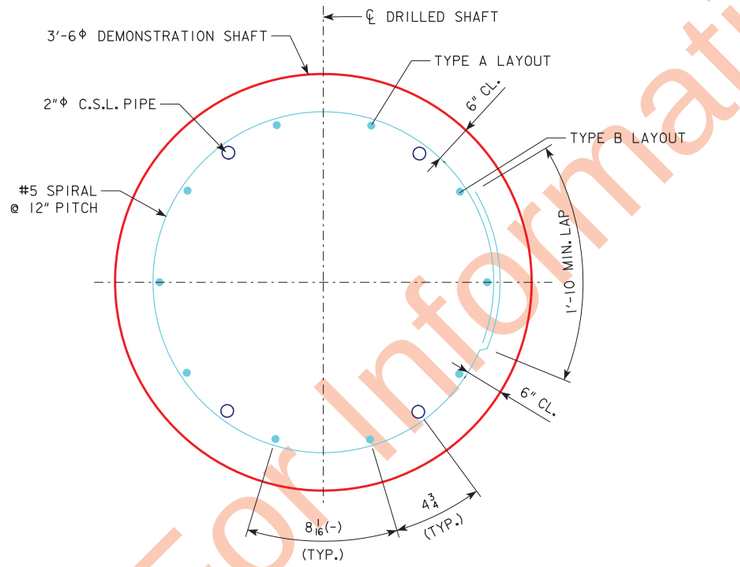
BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD. DOT BUTTON SE. WING BR. ELEV. 714.922



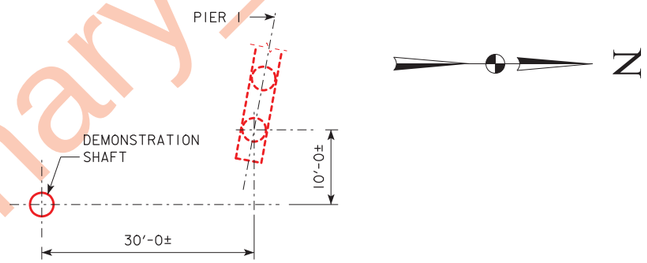
DEMONSTRATION SHAFT REINFORCING DETAILS

REINFORCING BAR LIST

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10d1	DEMOSTRATION SHAFT, VERTICAL		10	60'-0	2582
10d2	DEMOSTRATION SHAFT, VERTICAL		10	47'-0	2022
#5	DEMOSTRATION SHAFT, SPIRAL		1	815'-6	851
	DEMOSTRATION SHAFT, SPIRAL SPACERS $L\frac{7}{8}\times\frac{7}{8}\times\frac{1}{8}$ (0.7 LB/FT)		4	100'-0	280
				TOTAL (LBS.)	5735



SECTION A-A



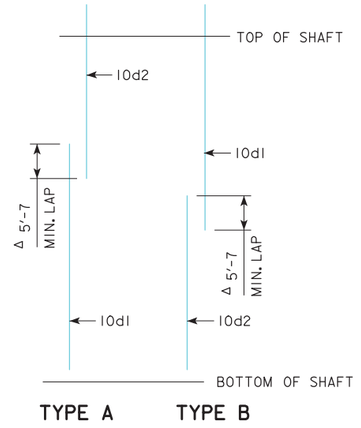
LOCATION MAP

DEMONSTRATION SHAFT NOTES:

THE PRICE BID FOR "DEMONSTRATION SHAFT" SHALL INCLUDE ALL COSTS OF MATERIALS AND LABOR INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION AND EXCAVATION INCIDENTALS (INCLUDING CASING), AND C.S.L. TESTING OF THE SHAFT.

THE DEMONSTRATION SHAFT SHALL BE CONSTRUCTED USING THE METHODS INTENDED FOR CONSTRUCTION OF THE PRODUCTION SHAFT.

AFTER APPROVAL BY ENGINEER THE CONTRACTOR SHALL REMOVE THE TOP PORTION OF THE DEMONSTRATION SHAFT TO ELEV. 685.00 FT.



LONGITUDINAL BAR LAYOUT

Δ 10' MIN. STAGGER OF LAPS

DEMONSTRATION SHAFT REINFORCING NOTES:

SPIRAL REINFORCING IS TO BE NO. 5 BAR WITH 2'-6 O.D., 12" PITCH WITH 4 EQUALLY SPACED $L\frac{7}{8}\times\frac{7}{8}\times\frac{1}{8}$ SPACERS PUNCHED TO HOLD SPIRALS. SPIRALS ARE TO HAVE $1\frac{1}{2}$ EXTRA TURNS AT TOP AND BOTTOM DRILLED SHAFT.

THE SPIRAL REINFORCING MAY BE SPLICED BY LAPPING 1'-10. THE LENGTH OF THE SPIRAL SHOWN DOES NOT INCLUDE THE LAPPED LENGTH OF THE SPLICES. THE COST OF THE LAPS AT SPLICES IS TO BE INCLUDED IN THE PRICE BID FOR DEMONSTRATION SHAFT.

DEMONSTRATION SHAFT TIES SPACED AT 12" CENTERS MAY BE SUBSTITUTED FOR THE SPIRAL REINFORCEMENT. PAYMENT WILL BE BASED ON THE WEIGHT OF SPIRAL REINFORCEMENT. NO ADJUSTMENTS IN REINFORCING STEEL PAY WEIGHT WILL BE ALLOWED. SEE BENT BAR DETAILS FOR ALTERNATE TIE ON DESIGN SHEET 17.

THE SPIRALS/TIES USED FOR THE DEMONSTRATION SHAFT SHALL MATCH THE TYPE USED FOR THE PRODUCTION SHAFTS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

DEMONSTRATION SHAFT DETAILS

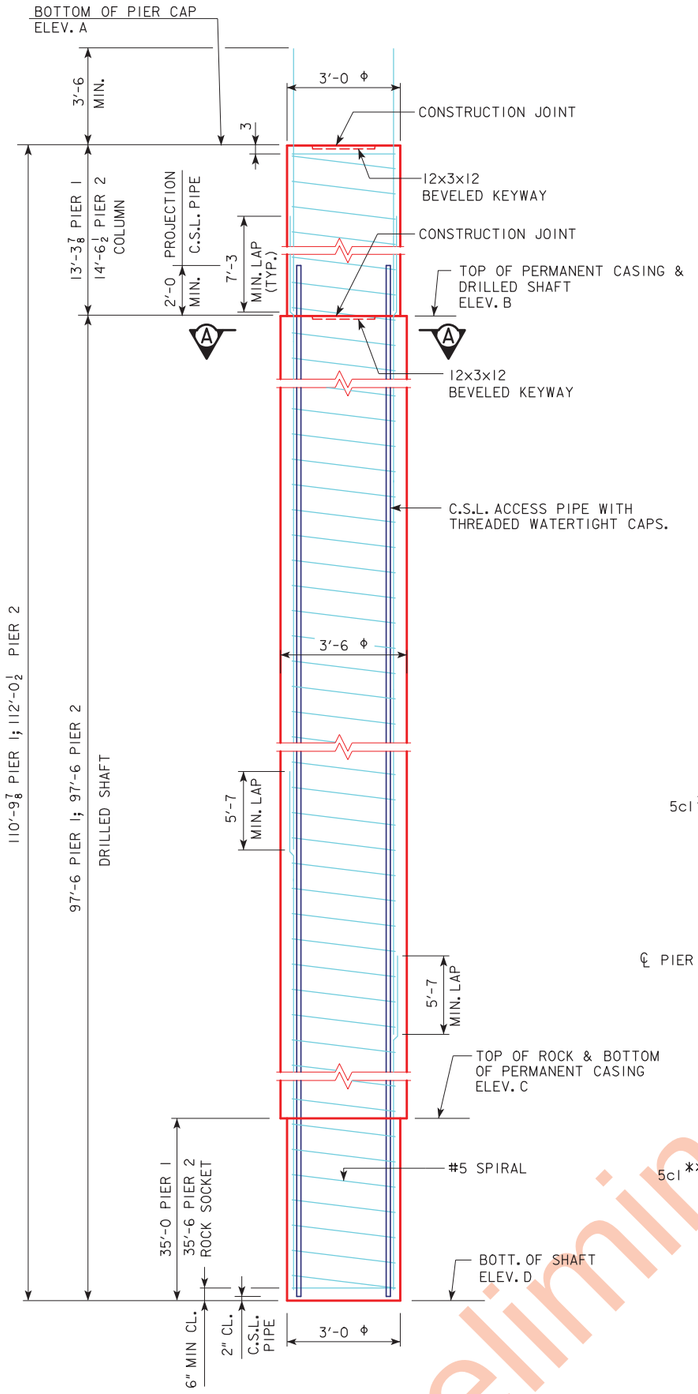
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

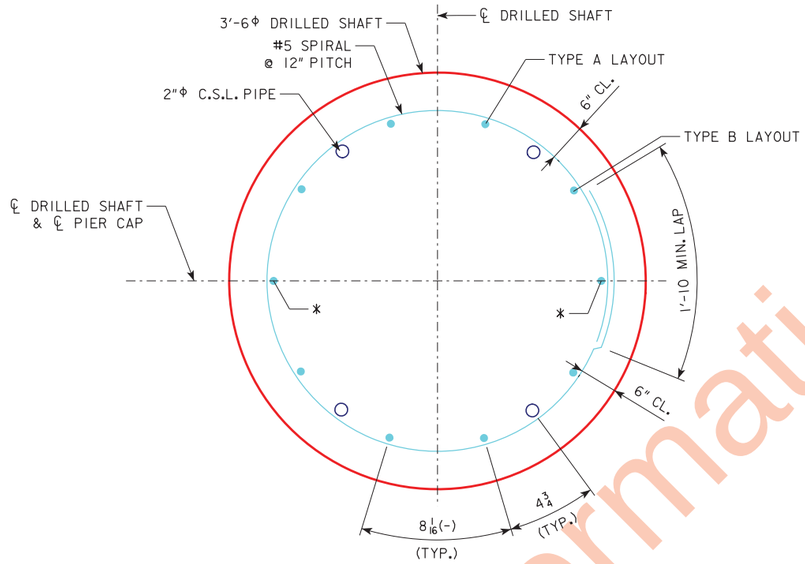
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 18 OF 44 FILE NO. 30864 DESIGN NO. 518

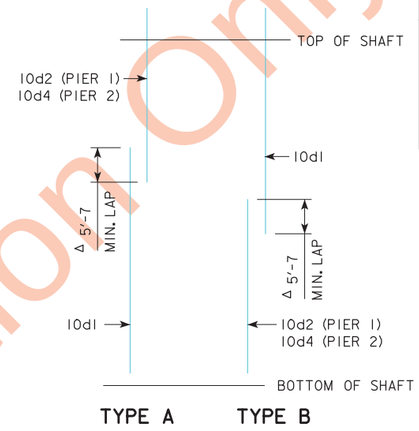
BENCH MARK NO. 570 STA. 1198+34.50L 65.02 RT. FD. DOT BUTTON SE. WING BR. ELEV. 714.922



DRILLED SHAFT REINFORCING DETAILS



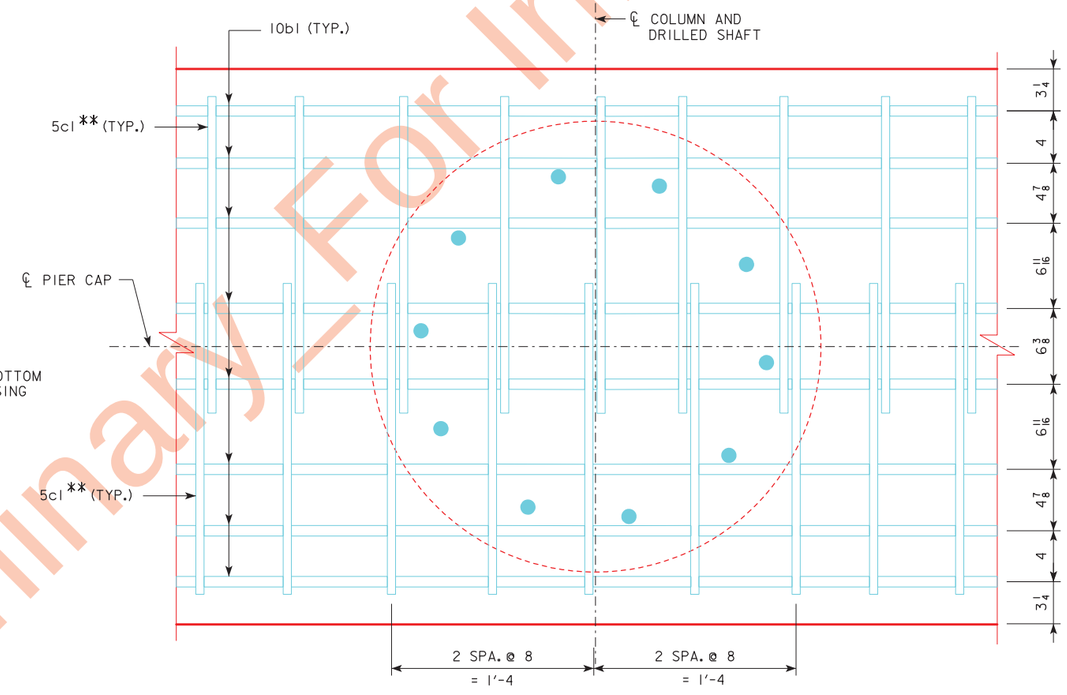
SECTION A-A



LONGITUDINAL BAR LAYOUT

Δ 10' MIN. STAGGER OF LAPS

PIER ELEVATIONS		
LOCATION	PIER 1	PIER 2
ELEV. A	705.32	706.54
ELEV. B	692.00	692.00
ELEV. C	629.50	630.00
ELEV. D	594.50	594.50



PART PLAN SHOWING TIGHT CLEARANCE BETWEEN COLUMN AND CAP REINFORCING

NOTES:

SPIRAL REINFORCING IS TO BE NO. 5 BAR WITH 2'-6 O.D., 12" PITCH WITH 4 EQUALLY SPACED L 7/8 × 7/8 × 1/8 SPACERS PUNCHED TO HOLD SPIRALS. SPIRALS ARE TO HAVE 1 1/2 EXTRA TURNS AT TOP AND BOTTOM COLUMNS OR DRILLED SHAFT.

THE SPIRAL REINFORCING MAY BE SPLICED BY LAPPING 1'-10. THE LENGTH OF THE SPIRAL SHOWN DOES NOT INCLUDE THE LAPPED LENGTH OF THE SPLICES. THE COST OF THE LAPS AT SPLICES IS TO BE INCLUDED IN THE PRICE BID FOR OTHER REINFORCEMENT.

COLUMN AND DRILLED SHAFT TIES SPACED AT 12" CENTERS MAY BE SUBSTITUTED FOR THE SPIRAL REINFORCEMENT. PAYMENT WILL BE BASED ON THE WEIGHT OF SPIRAL REINFORCEMENT. NO ADJUSTMENTS IN REINFORCING STEEL PAY WEIGHT WILL BE ALLOWED. SEE BENT BAR DETAILS FOR ALTERNATE TIE ON DESIGN SHEET 17.

PERMANENT STEEL CASING SHALL BE ACCORDING TO ASTM A 252, GRADE 2, PRODUCED BY ELECTRIC SEAM, BUTT, OR SPIRAL WELDING. THE MINIMUM WALL THICKNESS SHALL BE AS REQUIRED TO RESIST THE ANTICIPATED INSTALLATION AND DEWATERING STRESSES, AS DETERMINED BY THE CONTRACTOR, BUT SHALL BE A MINIMUM OF 1/4 IN. CASING EXTENDS INTO RAILROAD SHORING ZONE A AND MUST BE DESIGNED FOR RAILROAD LIVE LOAD SURCHARGE. SEE "RAILROAD GENERAL NOTES" ON DESIGN SHEET 8.

* ALIGN THESE BARS WITH ℄ PIER CAP AT TOP OF DRILLED SHAFT TO AVOID INTERFERENCE OF COLUMN BARS WITH CAP REINFORCEMENT.

** FOR 5c SPACING IN REMAINDER OF CAP, SEE DESIGN SHEET 13 FOR PIER 1 AND DESIGN SHEET 15 FOR PIER 2.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

DRILLED SHAFT DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 19 OF 44 FILE NO. 30864 DESIGN NO. 518

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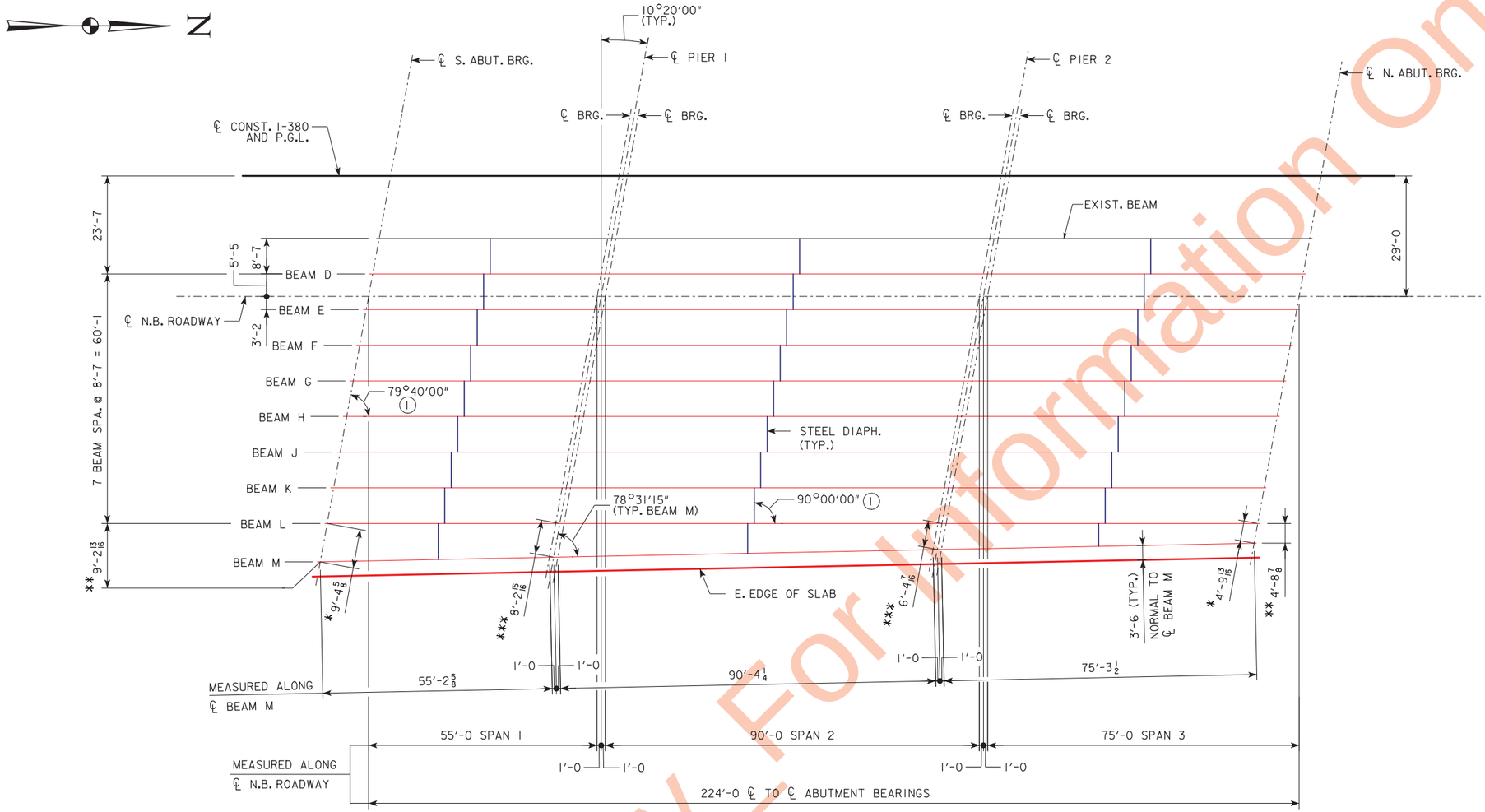


FRAMING PLAN

NOTES:

* MEASURED ALONG ℄ BEARING.

** MEASURED NORMAL FROM ℄ BEAM L TO INTERSECTION POINT OF ℄ ABUTMENT BEARING & ℄ BEAM M.

*** MEASURED ALONG ℄ PIER.

(1) TYPICAL BEAMS D TO L.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

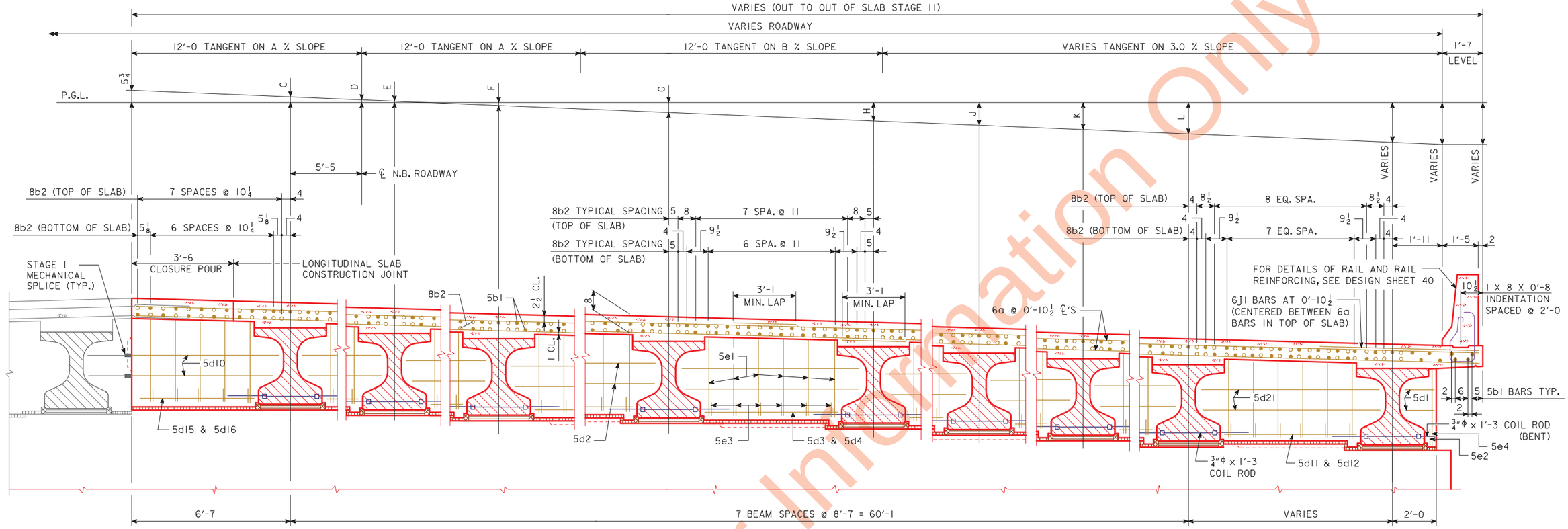
FRAMING PLAN

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

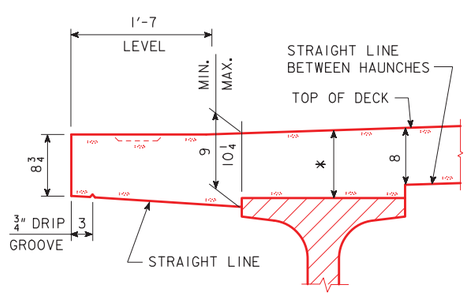
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 20 OF 44 FILE NO. 30864 DESIGN NO. 518



SECTION NEAR PIER 1

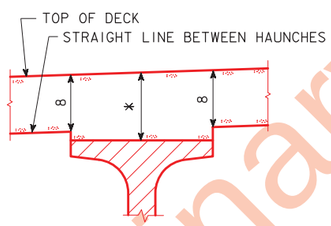
(SEE DESIGN SHEET 22 FOR VALUES A THRU L)



EXTERIOR BEAMS

TYPICAL DECK AND HAUNCH DETAIL

* FOR DECK THICKNESS OVER BEAMS SEE HAUNCH AND CAMBER DETAILS ON DESIGN SHEET 28.



INTERIOR BEAMS

DECK AREA = VARIES FROM 50.20 TO 53.20 SQ. FT.
DECK AREA DOES NOT INCLUDE THE HAUNCH.

SUPERSTRUCTURE NOTES:

THE BRIDGE DECK AS SHOWN INCLUDES ½" INTEGRAL WEARING SURFACE.

THE PIER AND ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITHICALLY WITH THE BRIDGE DECK.

COST OF ALL RESILIENT EXPANSION JOINT FILLER MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".

ALL BEAMS ARE TO BE SET VERTICAL.

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

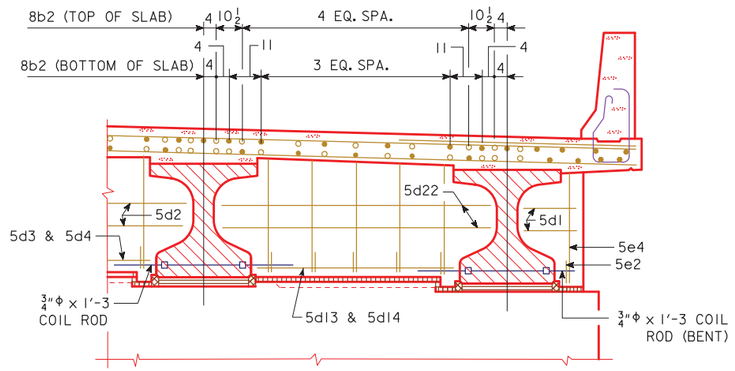
CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

ALL DECK AND DIAPHRAGM REINFORCING IS TO BE WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF DECK. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF DECK. 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 BAR HIGH CHAIRS OR DECK BOLSTERS SPACED 4'-0 APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND DECK BOLSTERS.

FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEETS 37 & 38.

REINFORCING BAR ENDS DENOTED WITH "MECHANICAL SPLICE" SHALL BE COUPLED/SPLICED TO MATING BARS IN PRIOR STAGE CONSTRUCTION WITH A MECHANICAL BAR SPLICE SYSTEM (REFER TO "MECHANICAL BAR SPLICE SYSTEM NOTES" ON DESIGN SHEET 1). A TOTAL OF 12-5d10 BARS ARE TO BE COUPLED/SPLICED. (BOTH PIER DIAPHRAGMS ACCOUNTED FOR)



PARTIAL SECTION NEAR PIER 2

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BRIDGE DECK CROSS SECTION

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 21 OF 44 FILE NO. 30864 DESIGN NO. 518

DESIGN TEAM PARSONS EJ/JB/SC	44' RDWY. PPCB (BTB BEAMS - INTEGRAL ABUT.) CROSS SECTION (SPANS 30' - 100')	STANDARD SHEET 4384-BTB-6 MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 22

CORRECTION 04-14 - ADDED REFERRAL NOTE TO SUMMARY QUANTITIES SHEET FOR THE DRAIN WEIGHT. NOTE ABOUT CHOICE OF EPOXY OR STAINLESS STEEL DECK TO BARRIER RAIL BARS.
ENGLISHBTINTEGRALBRIDGES.DGN - 4384-BTB-6 - THIS SHEET ISSUED 02-08.

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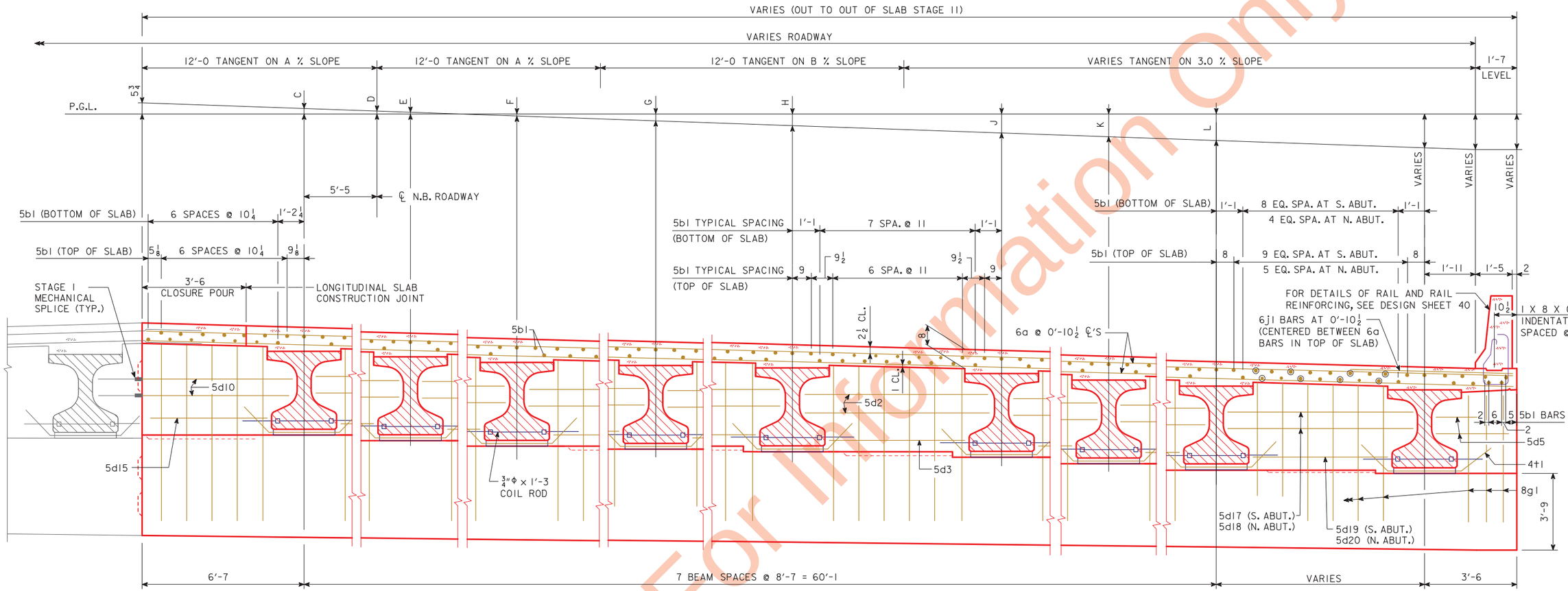
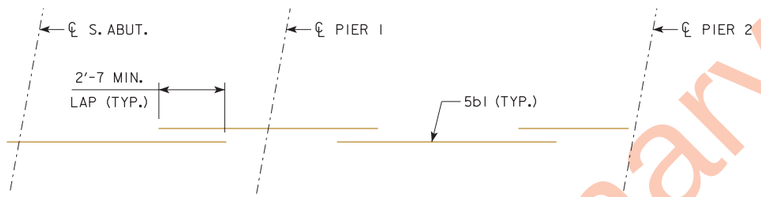
ENGLISHBTINTEGRALBRIDGES.DGN - 4384-BTB-6 - THIS SHEET ISSUED 02-08.



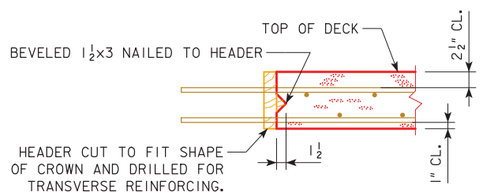
SECTION NEAR ABUTMENT



LAP DIAGRAM FOR BARS TO BE CUT OFF

SUPERELEVATION TRANSITION											
STATION	A	B	C	D	E	F	G	H	J	K	L
1197+89.86	3.0%	3.0%	3 3/8	1 7/16	5/16	-2 13/16	-5 7/8	-9	-1'-0 1/16	-1'-3 3/16	-1'-6 1/4
1198+19.86	2.5%	2.5%	3 3/4	2 1/8	1 3/16	-1 3/8	-3 15/16	-6 1/2	-9 1/8	-11 11/16	-1'-2 1/4
1198+49.86	2.0%	2.5%	4 3/16	2 7/8	2 1/8	1/16	-2 1/2	-5 1/16	-7 11/16	-10 1/4	-1'-0 13/16

NOTE: NEGATIVE VALUE INDICATES VALUE IS BELOW P.G.L. LINE



LONGITUDINAL SLAB CONSTRUCTION JOINT

SUPERSTRUCTURE NOTES:

FOR SUPERSTRUCTURE NOTES SEE DESIGN SHEET 21.

LEGEND:

- BAR TO BE CUT OFF, SEE DIAGRAM FOR LOCATION
- BAR TO BE EXTENDED FULL LENGTH

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BRIDGE DECK CROSS SECTION

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

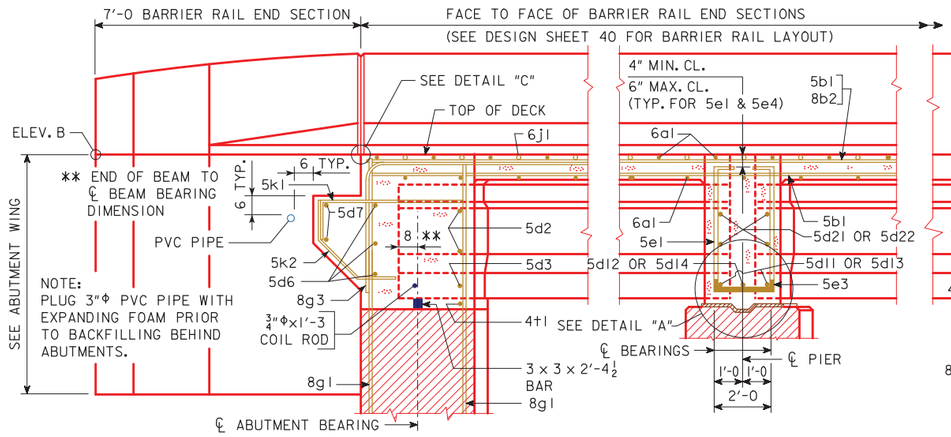
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 22 OF 44 FILE NO. 30864 DESIGN NO. 518

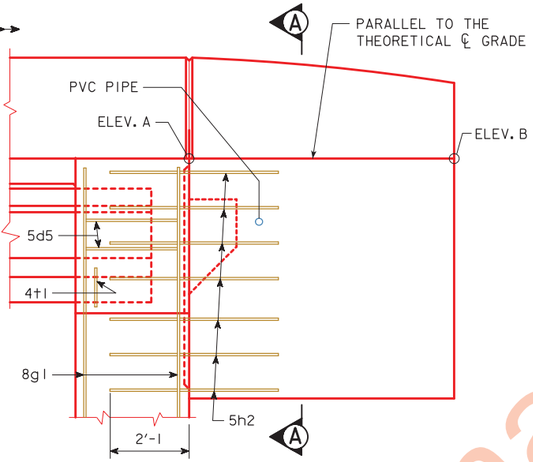
DESIGN TEAM PARSONS	EJ/JB/SC	44' RDWY. PPCB (BTB BEAMS - INTEGRAL ABUT.) CROSS SECTION (SPANS 30' - 100')	STANDARD SHEET 4384-BTB-6 MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 23

BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922

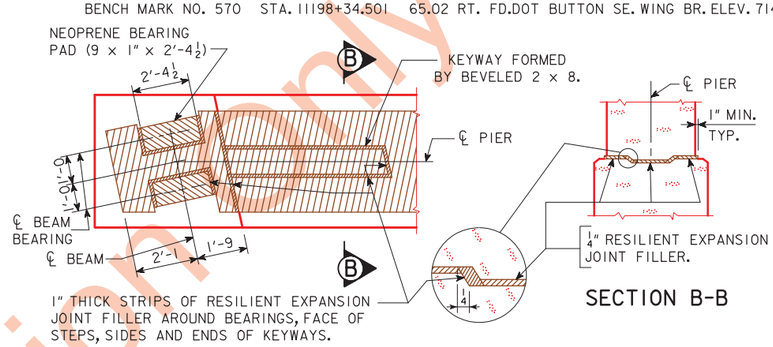


PART LONGITUDINAL SECTION NEAR GUTTER

(FOR DETAILS OF INTERMEDIATE DIAPHRAGM SEE DESIGN SHEETS 37 & 38)

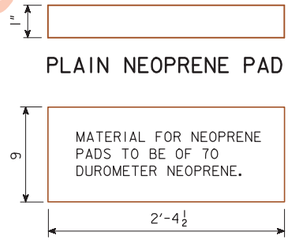


PART END VIEW AT ABUTMENT

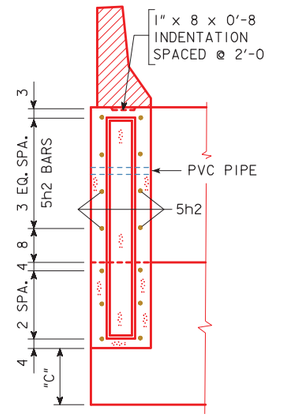


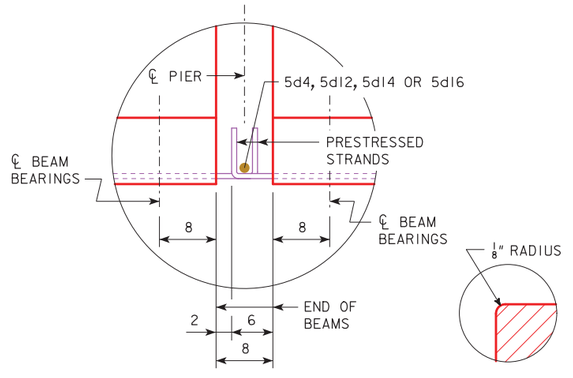
PART PLAN

TOP OF PIER DETAILS



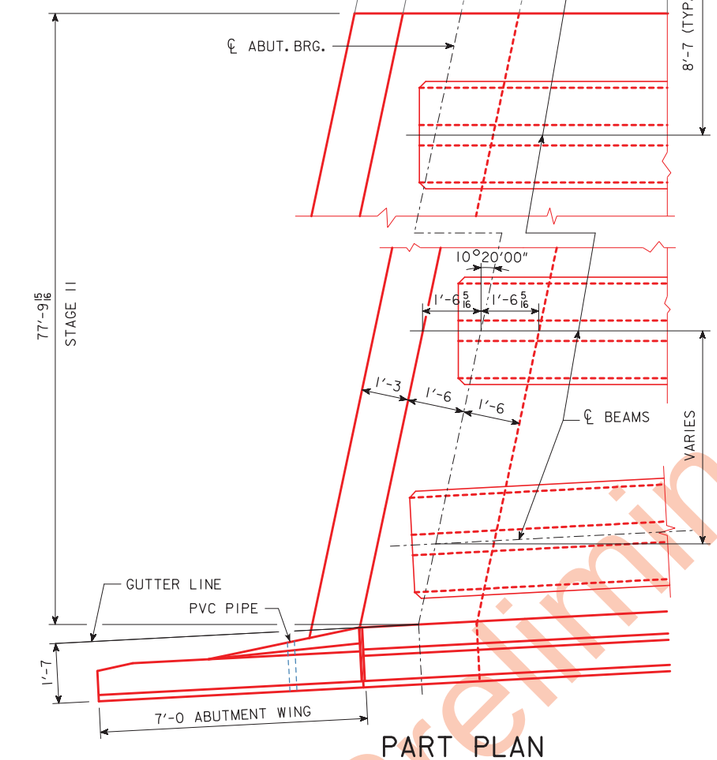
FIXED PIER BEARING PAD





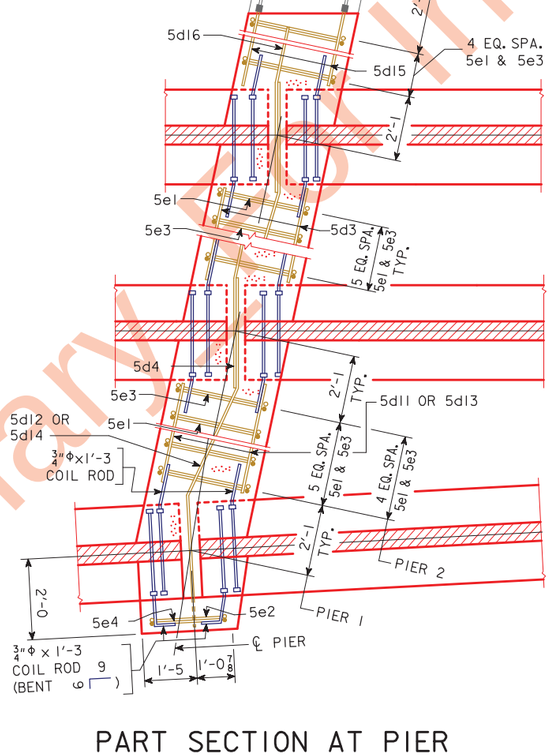
NOTE: FOR FRAMING PLAN, SEE DESIGN SHEET 20.

TABLE OF WING ELEVATIONS			
LOCATION	DIM "C"	ELEV. A	ELEV. B
S.E. CORNER	1'-2⅝	712.10	711.94
N.E. CORNER	1'-5 13/16	715.23	715.28



PART PLAN

(S. ABUT. SHOWN, N. ABUT. SIMILAR)



PART SECTION AT PIER

(SEE CROSS SECTION THRU DECK FOR NUMBER OF DIAPHRAGM HOOP BARS BETWEEN BEAMS)

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

ABUT. & PIER DIAPHRAGM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 23 OF 44 FILE NO. 30864 DESIGN NO. 518

DESIGN TEAM PARSONS JB/EJ/SC	"BTB" BEAMS - PART PLAN & LONGIT. SECTION - (L.A.) 7°31' - 15° SKEW	STANDARD SHEET 4502-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 24

ENGLISHBTINTEGRALBRIDGES.DGN - 4502-BTB - THIS SHEET ISSUED 02-08.

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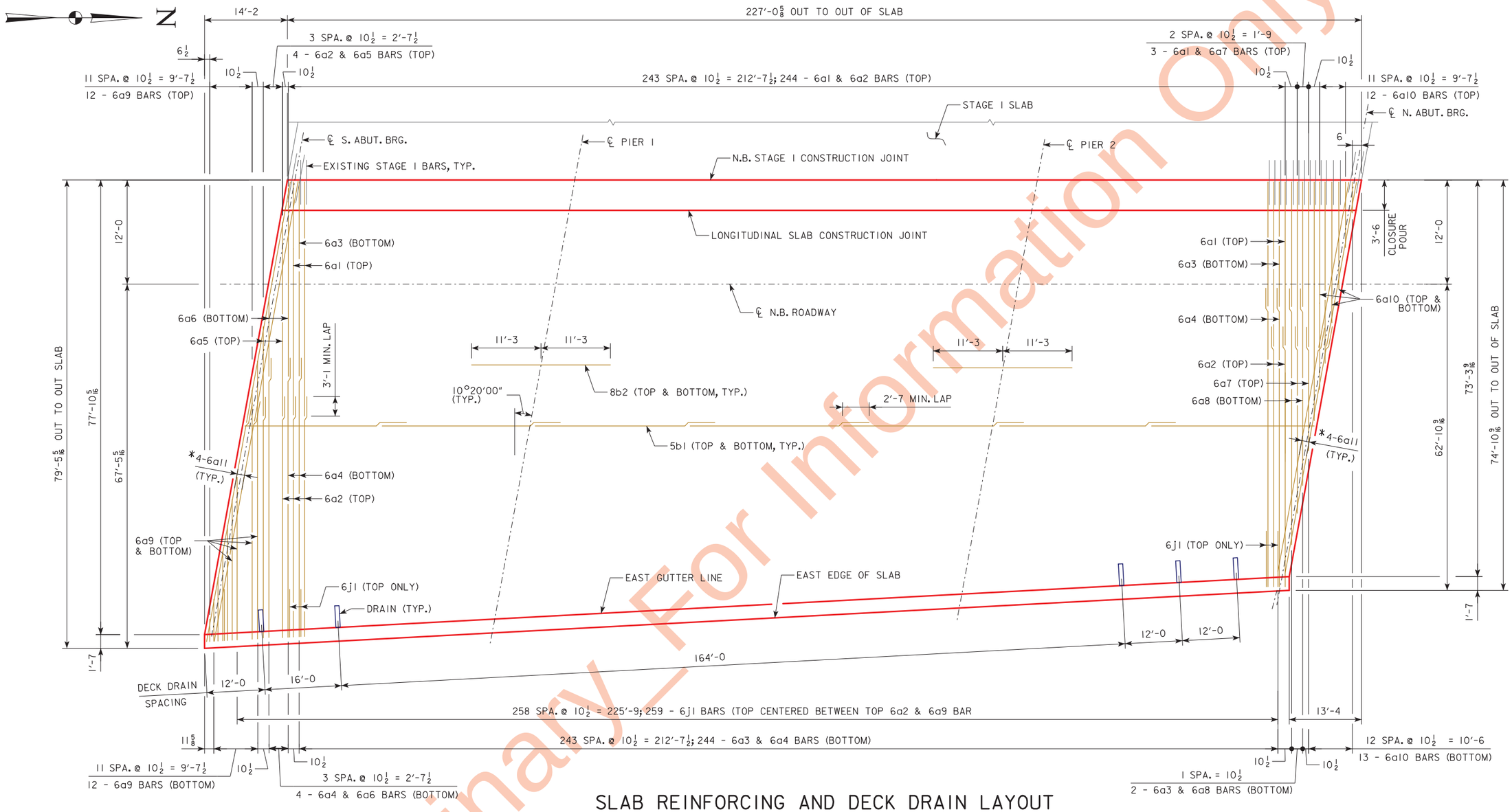


SLAB REINFORCING AND DECK DRAIN LAYOUT

* SEE PART SECTION B-B ON DESIGN SHEETS 10 AND 11 FOR LOCATION.

NOTES:

FOR LONGITUDINAL BAR SPACING AND TRANSVERSE BAR LAP SPLICE LOCATIONS, SEE DESIGN SHEETS 21 AND 22.

FOR CONCRETE PLACEMENT DIAGRAM, SEE DESIGN SHEET 25.

FOR DETAILS OF DECK DRAINS SEE DESIGN SHEET 39.

LAP 6a1, 6a3, 6a10 AND 6a11 BARS WITH EXISTING STAGE I BARS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

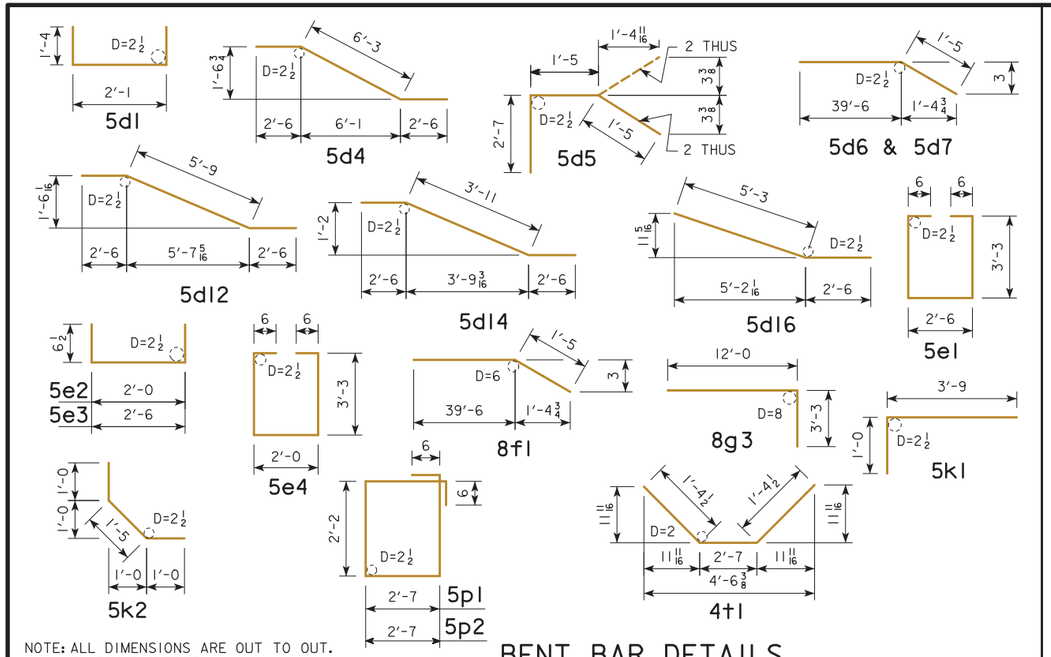
SLAB REINFORCING LAYOUT

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 24 OF 44 FILE NO. 30864 DESIGN NO. 518



NOTE: ALL DIMENSIONS ARE OUT TO OUT.
D= PIN DIAMETER.

BENT BAR DETAILS

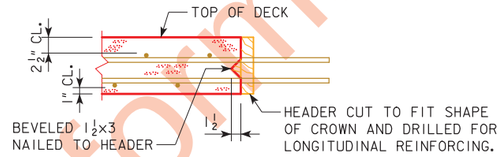
NON-COATED REINFORCING BAR LIST

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
#2	PILE SPIRAL		23	38'-6	148
	SPIRAL SPACERS, L 7/8 x 7/8 x 1/8 x 0.70		69	1'-10	89
	REINFORCING STEEL - TOTAL (LBS.)				237

HIGH PERFORMANCE CONCRETE PLACEMENT QUANTITIES

LOCATION	QUANTITY
SECTION 1, DECK & S. ABUT. DIAPH.	129.1
SECTION 2, DECK	136.8
SECTION 3, DECK & N. ABUT. DIAPH.	161.9
SECTION 4, DECK & PIER 1 DIAPH.	69.5
SECTION 5, DECK & PIER 2 DIAPH.	67.8
SECTION 6, CLOSURE POUR	19.6
TOTAL (CU. YDS.)	584.7

NOTE: CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

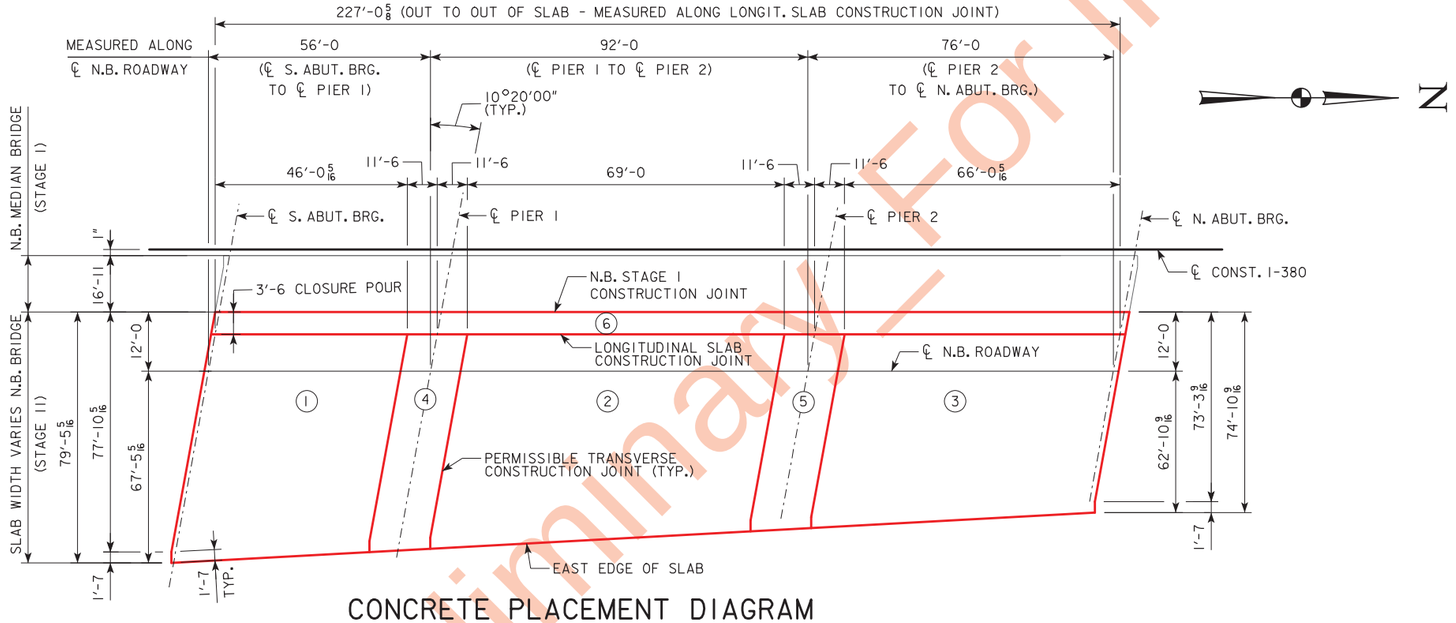


PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

REINFORCING BAR LIST

EPOXY COATED REINFORCING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	DECK TRANSV. TOP		247	38'-3	14191
6a2	DECK TRANSV. TOP		248	43'-11	16359
6a3	DECK TRANSV. BOTT.		246	42'-6	15703
6a4	DECK TRANSV. BOTT.		248	39'-8	14776
6a5	DECK TRANSV. TOP (SOUTH END)		4	VARIES	164
6a6	DECK TRANSV. BOTT. (SOUTH END)		4	VARIES	204
6a7	DECK TRANSV. TOP (NORTH END)		3	VARIES	142
6a8	DECK TRANSV. BOTT. (NORTH END)		2	VARIES	82
6a9	DECK TRANSV. TOP & BOTT (SOUTH END)		24	VARIES	1120
6a10	DECK TRANSV. TOP & BOTT (NORTH END)		25	VARIES	1148
6a11	DECK TRANSV. ENDS		16	41'-2	989
5b1	SLAB LONGIT. TOP & BOTT.		1159	34'-9	42007
8b2	SLAB LONGIT. TOP & BOTT.		364	22'-6	21867
5d1	PIER DIAPH. ENDS		4	4'-9	20
5d2	PIER & ABUT. DIAPH. LONGIT.		84	7'-10	686
5d3	PIER & ABUT. DIAPH. LONGIT.		42	5'-10	256
5d4	PIER DIAPH. LONGIT.		14	11'-3	164
5d5	ABUT. DIAPH. ENDS		4	5'-5	23
5d6	ABUT. DIAPH. LONGIT. B.F.		6	40'-11	256
5d7	PAVING NOTCH LONGIT.		4	40'-11	171
5d8	ABUT. DIAPH. LONGIT. B.F.		6	41'-8	261
5d9	PAVING NOTCH LONGIT.		4	41'-8	174
5d10	PIER & ABUT. DIAPH. LONGIT.		12	6'-3	78
5d11	PIER DIAPH. LONGIT.		2	5'-4	11
5d12	PIER DIAPH. LONGIT.		1	10'-9	11
5d13	PIER DIAPH. LONGIT.		2	3'-5	7
5d14	PIER DIAPH. LONGIT.		1	8'-11	9
5d15	PIER & ABUT. DIAPH. LONGIT.		6	5'-3	33
5d16	PIER DIAPH. LONGIT.		2	7'-9	16
5d17	ABUT. DIAPH. LONGIT.		2	8'-5	18
5d18	ABUT. DIAPH. LONGIT.		2	3'-11	8
5d19	ABUT. DIAPH. LONGIT.		1	6'-5	7
5d20	ABUT. DIAPH. LONGIT.		1	1'-11	2
5d21	PIER DIAPH. LONGIT.		4	7'-4	31
5d22	PIER DIAPH. LONGIT.		4	5'-5	23
5e1	PIER DIAPH. HOOPS		105	10'-0	1095
5e2	PIER DIAPH. TIES ENDS		2	3'-1	6
5e3	PIER DIAPH. TIES		105	3'-7	392
5e4	PIER DIAPH. HOOPS ENDS		2	9'-6	20
8f1	ABUT. FOOTING LONGIT. BOTH F.		18	40'-11	1966
8f2	ABUT. FOOTING LONGIT. BOTH F.		18	44'-3	2127
8g1	ABUT. VERT. BOTH F.		260	7'-2	4975
8g3	ABUT. DIAPH. VERT. B.F.		142	15'-3	5782
5h2	ABUT. TO WING ANCHOR		28	4'-11	144
6j1	TOP OF DECK TRANSV. (AT E. EDGE)		259	6'-3	2431
5k1	PAVING NOTCH		142	4'-9	704
5k2	PAVING NOTCH		142	3'-5	506
5p1	ABUT. HOOPS		336	10'-6	3680
5p2	ABUT. HOOPS AT ENDS		8	10'-6	88
4t1	UNDER BEAM AT ABUTMENTS		18	5'-4	64
	DECK DRAINS, (4-#5 EA. DRAIN)		20	3'-0	63
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				155060



CONCRETE PLACEMENT DIAGRAM

NOTE:

CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. (AN APPROVED ALTERNATE PROCEDURE IS TO PLACE THE CONCRETE DECK IN THREE POURS BEGINNING AT ONE END OF THE BRIDGE. POUR 1 SHALL CONSIST OF SECTIONS 1, 4 AND 2. POUR 2 SHALL CONSIST OF SECTIONS 5 AND 3. POUR 3 SHALL CONSIST OF SECTION 6. THERE SHALL BE A TWO DAY WAITING PERIOD BETWEEN SUBSEQUENT POURS.) ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS. THE BRIDGE ENGINEER SHALL REVIEW ANY ALTERNATE PROCEDURES. THE COST OF ANY ADDITIONAL ANALYSIS AND PLAN MODIFICATIONS SHALL BE PAID FOR BY CONTRACTOR. THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

DECK, ABUT. & DIAPH. QUANTITIES

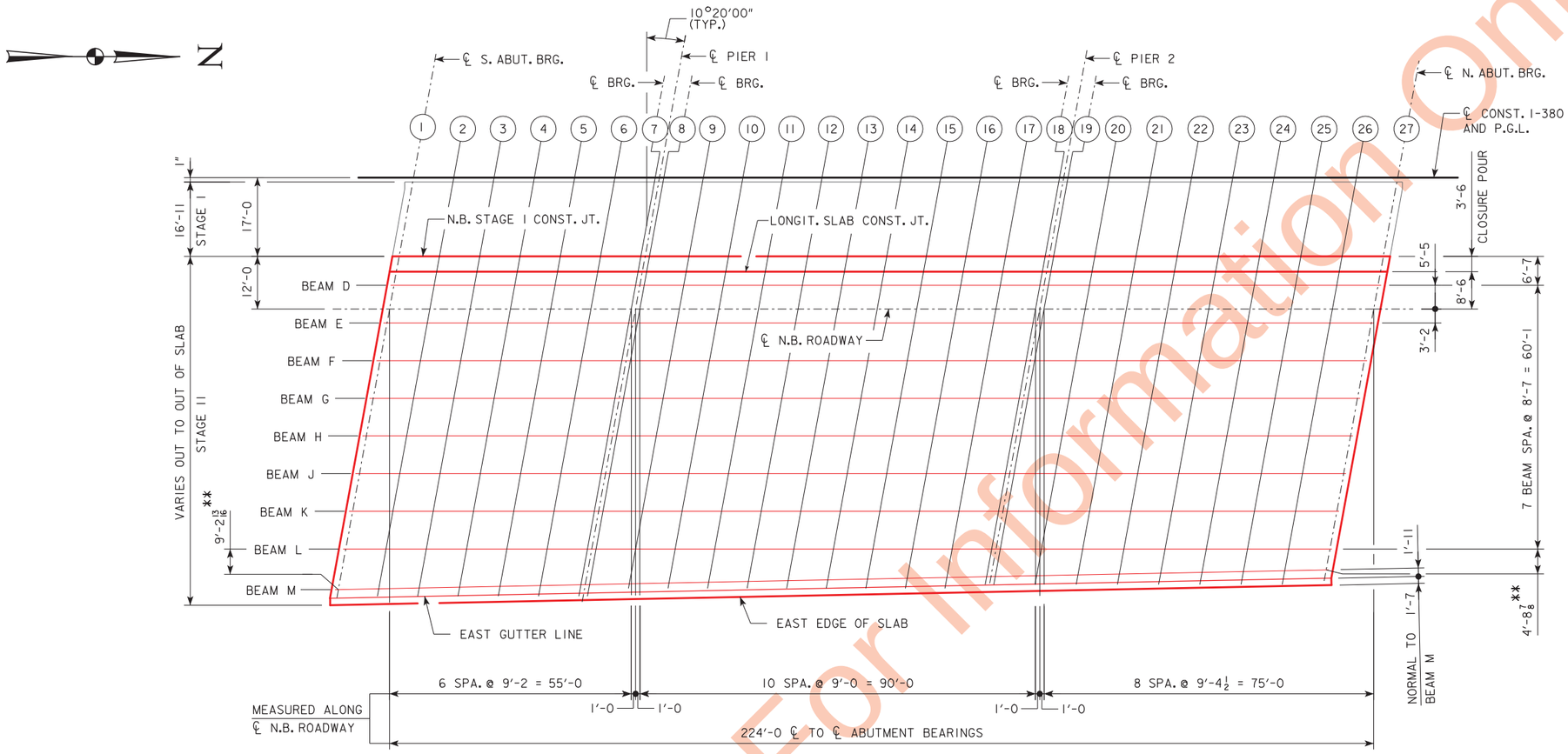
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

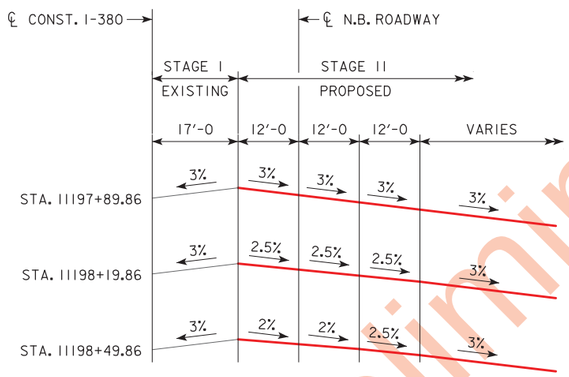
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 25 OF 44 — FILE NO. 30864 — DESIGN NO. 518

REVISED 07-2015 - CHANGED CONCRETE PLACEMENT NOTE TO ACCOUNT FOR THE POSSIBLE ADDITION OF A RETARDING ADMIXTURE TO THE CONCRETE.
ENGLISHBTINTEGRALBRIDGES.DGN - 4516-BTB - THIS SHEET ISSUED 02-08.



TOP OF SLAB AND HAUNCH ELEVATION LOCATIONS



SUPERELEVATION TRANSITION

NOTE: WORK THIS SHEET WITH FRAMING PLAN ON DESIGN SHEET 20.

** MEASURED NORMAL FROM ℄ BEAM L TO INTERSECTION POINT OF ℄ ABUTMENT BEARING AND ℄ BEAM M.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

TOP OF SLAB ELEVATIONS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 26 OF 44 FILE NO. 30864 DESIGN NO. 518

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BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922

TABLE OF TOP OF SLAB ELEVATIONS

BEAM LINE	℄ S. ABUT. BEARING	SPAN 1					℄ PIER 1 BEARINGS		SPAN 2									℄ PIER 2 BEARINGS		SPAN 3							℄ N. ABUT. BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26	LINE 27
N.B. STAGE I CONST. JT.	714.59	714.74	714.88	715.02	715.16	715.29	715.42	715.45	715.58	715.70	715.81	715.93	716.04	716.14	716.25	716.35	716.45	716.54	716.56	716.65	716.74	716.83	716.91	716.99	717.07	717.14	717.21
LONGIT. SLAB CONST. JT.	714.50	714.65	714.80	714.95	715.08	715.22	715.35	715.37	715.50	715.62	715.74	715.85	715.96	716.07	716.17	716.27	716.37	716.46	716.48	716.58	716.67	716.76	716.84	716.92	716.99	717.07	717.14
℄ BEAM D	714.41	714.57	714.72	714.87	715.01	715.15	715.28	715.30	715.43	715.55	715.67	715.78	715.89	716.00	716.10	716.20	716.30	716.40	716.42	716.51	716.60	716.69	716.77	716.85	716.93	717.00	717.07
℄ N.B. ROADWAY	714.26	714.43	714.59	714.75	714.89	715.02	715.15	715.18	715.31	715.43	715.55	715.66	715.77	715.88	715.98	716.08	716.18	716.28	716.30	716.39	716.48	716.57	716.66	716.74	716.81	716.89	716.96
℄ BEAM E	714.17	714.34	714.51	714.67	714.82	714.95	715.08	715.11	715.24	715.36	715.47	715.59	715.70	715.81	715.91	716.02	716.11	716.21	716.23	716.32	716.42	716.50	716.59	716.67	716.74	716.82	716.89
℄ BEAM F	713.93	714.11	714.29	714.47	714.62	714.76	714.89	714.92	715.04	715.16	715.28	715.40	715.51	715.62	715.72	715.83	715.92	716.02	716.04	716.14	716.23	716.32	716.40	716.48	716.56	716.63	716.70
℄ BEAM G	713.67	713.86	714.05	714.23	714.39	714.52	714.65	714.68	714.81	714.93	715.05	715.16	715.28	715.39	715.49	715.60	715.69	715.79	715.81	715.91	716.00	716.09	716.17	716.26	716.33	716.41	716.48
℄ BEAM H	713.40	713.59	713.78	713.96	714.12	714.26	714.39	714.42	714.55	714.67	714.79	714.91	715.02	715.13	715.23	715.34	715.44	715.54	715.56	715.65	715.75	715.84	715.92	716.00	716.08	716.16	716.23
℄ BEAM J	713.11	713.30	713.49	713.67	713.84	713.98	714.11	714.14	714.27	714.39	714.51	714.63	714.74	714.85	714.96	715.06	715.16	715.26	715.28	715.38	715.47	715.56	715.65	715.73	715.81	715.89	715.96
℄ BEAM K	712.81	713.02	713.20	713.38	713.56	713.70	713.83	713.86	713.99	714.11	714.23	714.35	714.46	714.58	714.68	714.79	714.89	714.99	715.01	715.11	715.20	715.29	715.38	715.46	715.54	715.62	715.69
℄ BEAM L	712.52	712.73	712.91	713.09	713.27	713.42	713.55	713.58	713.71	713.83	713.95	714.07	714.19	714.30	714.41	714.51	714.61	714.71	714.73	714.83	714.93	715.02	715.11	715.19	715.27	715.35	715.42
℄ BEAM M	712.20	712.42	712.61	712.80	712.99	713.15	713.29	713.32	713.45	713.58	713.71	713.83	713.96	714.07	714.19	714.30	714.41	714.51	714.53	714.64	714.74	714.84	714.93	715.02	715.11	715.19	715.27
EAST GUTTER LINE	712.14	712.35	712.55	712.74	712.92	713.08	713.22	713.25	713.39	713.52	713.65	713.77	713.89	714.01	714.13	714.24	714.35	714.45	714.47	714.58	714.68	714.78	714.87	714.96	715.05	715.13	715.21

DESIGN FOR 10°20′ SKEW L.A.

224′-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56′-0, 76′-0 END SPANS 92′-0 CENTER SPAN

TOP OF SLAB ELEVATIONS

STA. 1199+32.69, 29′ RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

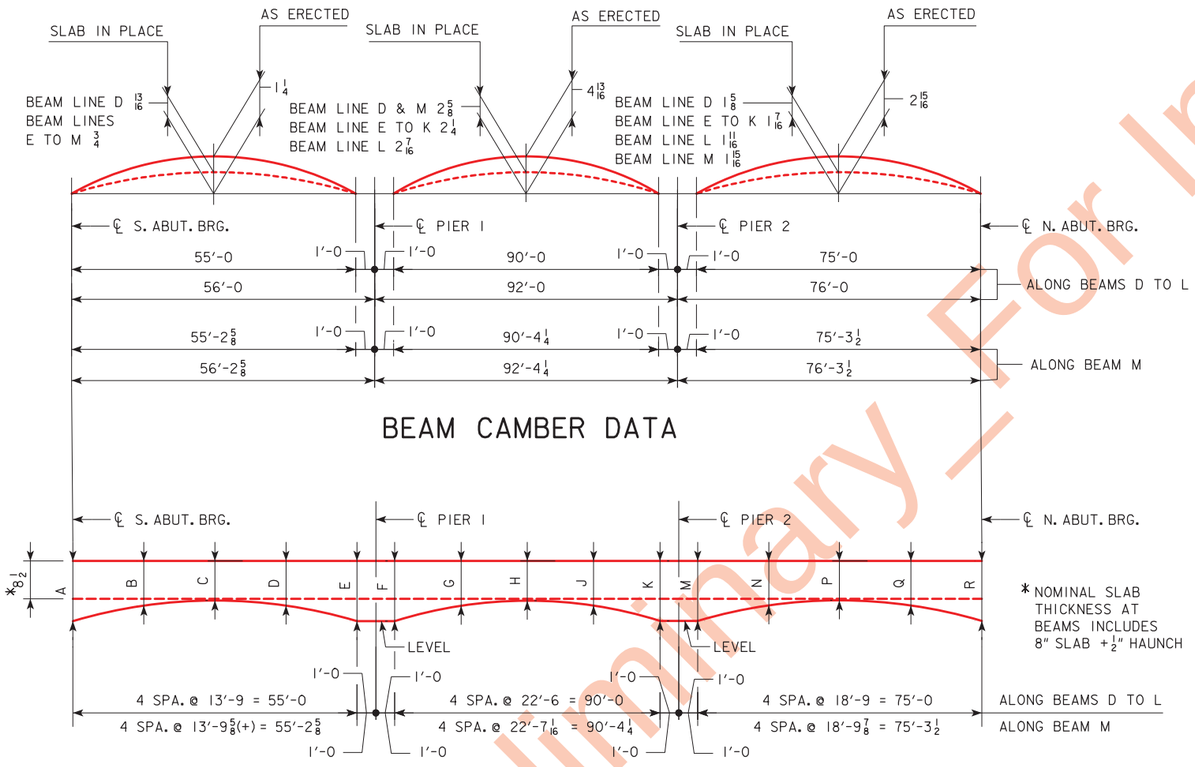
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

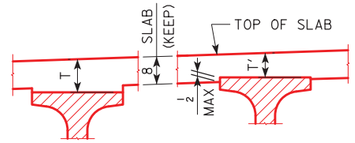
DESIGN SHEET NO. 27 OF 44 FILE NO. 30864 DESIGN NO. 518

BENCH MARK NO. 570 STA. 1198+34.501 65.02 RT. FD. DOT BUTTON SE. WING BR. ELEV. 714.922

TABLE OF BEAM LINE SLAB HAUNCH ELEVATIONS

BEAM LINE	℄ S. ABUT. BEARING	SPAN 1					℄ PIER 1 BEARINGS		SPAN 2									℄ PIER 2 BEARINGS		SPAN 3						℄ N. ABUT. BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26	LINE 27
D	713.75	713.92	714.09	714.24	714.38	714.50	714.61	714.64	714.82	714.99	715.15	715.29	715.41	715.51	715.59	715.65	715.69	715.73	715.75	715.89	716.01	716.12	716.21	716.29	716.34	716.38	716.40
E	713.50	713.70	713.88	714.05	714.19	714.31	714.42	714.44	714.64	714.82	714.98	715.13	715.25	715.35	715.42	715.48	715.51	715.54	715.56	715.71	715.84	715.95	716.05	716.12	716.17	716.20	716.22
F	713.26	713.46	713.66	713.84	713.99	714.11	714.22	714.25	714.44	714.62	714.79	714.93	715.06	715.16	715.23	715.29	715.33	715.35	715.37	715.52	715.65	715.77	715.86	715.93	715.98	716.02	716.04
G	713.01	713.22	713.42	713.60	713.76	713.88	713.99	714.01	714.21	714.39	714.56	714.70	714.82	714.92	715.00	715.06	715.10	715.12	715.15	715.29	715.42	715.54	715.63	715.71	715.76	715.79	715.81
H	712.73	712.95	713.15	713.33	713.49	713.61	713.73	713.75	713.95	714.13	714.30	714.44	714.57	714.67	714.74	714.80	714.84	714.87	714.89	715.03	715.17	715.28	715.38	715.45	715.50	715.54	715.56
J	712.44	712.66	712.86	713.04	713.21	713.33	713.45	713.47	713.67	713.85	714.02	714.17	714.29	714.39	714.47	714.52	714.56	714.59	714.62	714.76	714.90	715.01	715.11	715.18	715.23	715.27	715.29
K	712.15	712.37	712.57	712.76	712.93	713.05	713.17	713.19	713.39	713.57	713.74	713.89	714.01	714.11	714.19	714.25	714.29	714.32	714.34	714.49	714.62	714.74	714.84	714.91	714.96	715.00	715.02
L	711.85	712.08	712.28	712.47	712.64	712.77	712.89	712.91	713.10	713.28	713.45	713.60	713.72	713.82	713.90	713.96	714.01	714.05	714.07	714.21	714.33	714.45	714.54	714.62	714.68	714.72	714.75
M	711.54	711.77	711.98	712.18	712.36	712.50	712.62	712.65	712.84	713.02	713.19	713.34	713.47	713.58	713.67	713.74	713.80	713.84	713.87	714.00	714.13	714.25	714.35	714.43	714.50	714.56	714.61





SLAB THICKNESS DETAILS

NOTE: THE SLAB THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER AND DEFLECTIONS. THESE VALUES ARE USED BY THE DESIGNER TO SET BEAM ELEVATIONS AND ESTIMATE CONCRETE QUANTITIES. REFER TO THE MISCELLANEOUS DATA DETAILS SHEET FOR ADDITIONAL INFORMATION TO AID THE CONTRACTOR IN SETTING THE FIELD HAUNCHES REQUIRED FOR CONSTRUCTION.

TABLE OF SLAB THICKNESS AT BEAMS

BEAM LINE	℄ S. ABUT. BEARING	SPAN 1			℄ PIER 1 BEARINGS		SPAN 2			℄ PIER 2 BEARINGS		SPAN 3			℄ N. ABUT. BEARING
	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R
D	9 1/2	9 5/16	9 7/16	9 11/16	10 5/16	10 11/16	8 15/16	8 7/16	8 13/16	10 3/8	10 5/8	9 5/16	8 3/4	8 3/4	9 1/2
E	9 1/2	9 3/8	9 9/16	9 11/16	10 1/16	10 7/16	8 15/16	8 1/2	8 13/16	10 1/8	10 3/8	9 5/16	8 7/8	8 7/8	9 1/2
F	9 1/2	9 1/2	9 3/4	9 7/8	10 1/16	10 7/16	8 15/16	8 1/2	8 13/16	10 1/8	10 3/8	9 5/16	8 7/8	8 7/8	9 1/2
G	9 1/2	9 1/2	9 3/4	9 7/8	10 1/16	10 7/16	8 15/16	8 1/2	8 13/16	10 1/8	10 3/8	9 5/16	8 7/8	8 7/8	9 1/2
H	9 1/2	9 1/2	9 3/4	9 15/16	10 1/16	10 7/16	8 15/16	8 1/2	8 13/16	10 1/8	10 3/8	9 5/16	8 7/8	8 7/8	9 1/2
J	9 1/2	9 1/2	9 3/4	9 15/16	10 1/16	10 7/16	8 15/16	8 1/2	8 13/16	10 1/8	10 3/8	9 5/16	8 7/8	8 7/8	9 1/2
K	9 1/2	9 9/16	9 11/16	10	10 1/16	10 7/16	8 15/16	8 1/2	8 13/16	10 1/8	10 3/8	9 5/16	8 7/8	8 7/8	9 1/2
L	9 1/2	9 5/8	9 13/16	10 3/16	10 5/16	10 11/16	9 1/16	8 5/8	8 15/16	10 3/8	10 5/8	9 5/16	8 3/4	8 3/4	9 1/2
M	9 3/4	9 7/8	10 1/16	10 1/2	10 9/16	10 15/16	9 3/16	8 5/8	9	10 5/8	10 7/8	9 3/8	8 11/16	8 13/16	9 3/4

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SLAB HAUNCH DATA DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 28 OF 44 FILE NO. 30864 DESIGN NO. 518

REVISED 06-2017 - REMOVED CENTER 6b BAR FROM UNDER "#4 BAR IN BEAM" IN "SECTION THRU SLAB HAUNCH" DETAIL. (WAS THREE 6b BARS NOW TWO).
ENGLISHMISCELLANEOUSBRIDGES.DGN - 1065 - THIS SHEET ISSUED 02-08.

12/24/2019 4:13:10 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520518s028 11x17_pdf.pltcfg

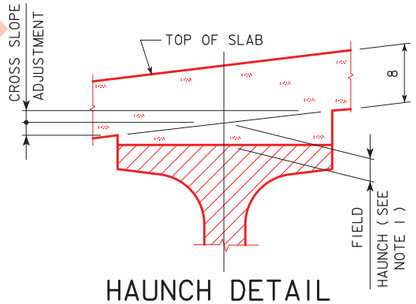
REVISED 06-12 - THE ALLOWABLE FIELD HAUNCH MAX. & MIN. WAS CHANGED TO INCHES & DECIMALS OF FEET. NOTE & NOTE 1 WERE CHANGED. THE SLAB HAUNCH LOCATIONS EXAMPLE WAS REPLACED WITH A NOTE.
ENGLISH\MISCELLANEOUSBRIDGES.DGN - 1066 - THIS SHEET ISSUED 02-08.

MISCELLANEOUS DATA TABLE

	BEAM LINE	℄ S. ABUT. BEARING	SPAN 1					℄ PIER 1 BEARINGS		SPAN 2									℄ PIER 2 BEARINGS		SPAN 3	
		LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21
ANTICIPATED DEFLECTION DUE TO SLAB (IN.)	D	0	1/4	3/8	7/16	3/8	1/4	0	0	11/16	1 5/16	1 13/16	2 1/8	2 3/16	2 1/8	1 13/16	1 5/16	11/16	0	0	1/2	15/16
	E-K	0	1/4	7/16	1/2	7/16	1/4	0	0	13/16	1 1/2	2 1/16	2 7/16	2 9/16	2 7/16	2 1/16	1 1/2	13/16	0	0	9/16	1 1/16
	L	0	1/4	7/16	1/2	7/16	1/4	0	0	3/4	1 7/16	1 15/16	2 1/4	2 3/8	2 1/4	1 15/16	1 7/16	3/4	0	0	1/2	7/8
	M	0	1/4	7/16	1/2	7/16	1/4	0	0	11/16	1 5/16	1 3/4	2 1/16	2 3/16	2 1/16	1 3/4	1 5/16	11/16	0	0	3/8	11/16
CROSS SLOPE ADJUSTMENTS (IN.)	D	7/16	3/8	3/8	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
	E	7/16	3/8	3/8	3/8	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
	F, G	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16
	H, J, K, L, M	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
ALLOWABLE FIELD HAUNCH (IN. & FT.)	MAX D-K	2 1/2 (0.208)				3 1/2 (0.292)				2 1/2 (0.208)									3 1/2 (0.292)		2 1/2 (0.208)	
	MAX L	2 1/2 (0.208)				3 1/2 (0.292)				2 1/2 (0.208)									3 1/2 (0.292)		2 1/2 (0.208)	
	MAX M	2 1/2 (0.208)				3 1/2 (0.292)				2 1/2 (0.208)									3 1/2 (0.292)		2 1/2 (0.208)	
	MIN D	-1/16 (-0.005)	-1/8 (-0.010)		-3/16 (-0.016)	1/2 (0.042)				-3/16 (-0.016)									1/2 (0.042)		-3/16 (-0.016)	
	MIN E	-1/16 (-0.005)	-1/8 (-0.010)			1/2 (0.042)				-3/16 (-0.016)									1/2 (0.042)		-3/16 (-0.016)	
	MIN F, G	-1/16 (-0.005)				1/2 (0.042)				-1/16 (-0.005)									1/2 (0.042)		-1/16 (-0.005)	
	MIN H, J, K, L	0 (0.001)				1/2 (0.042)				0 (0.001)									1/2 (0.042)		0 (0.001)	
	MIN M	0 (0.001)				1/2 (0.042)				0 (0.001)									1/2 (0.042)		0 (0.001)	

MISCELLANEOUS DATA TABLE

	BEAM LINE	SPAN 3					℄ N. ABUT. BEARING
		LINE 22	LINE 23	LINE 24	LINE 25	LINE 26	LINE 27
ANTICIPATED DEFLECTION DUE TO SLAB (IN.)	D	1 3/16	1 5/16	1 3/16	15/16	1/2	0
	E-K	1 3/8	1 1/2	1 3/8	1 1/16	9/16	0
	L	1 1/8	1 1/4	1 1/8	7/8	1/2	0
	M	7/8	1	7/8	11/16	3/8	0
CROSS SLOPE ADJUSTMENTS (IN.)	D	5/16	5/16	5/16	5/16	5/16	5/16
	E	5/16	5/16	5/16	5/16	5/16	5/16
	F, G	7/16	7/16	7/16	7/16	7/16	7/16
	H, J, K, L, M	1/2	1/2	1/2	1/2	1/2	1/2
ALLOWABLE FIELD HAUNCH (IN. & FT.)	MAX D-K	2 1/2 (0.208)					
	MAX L	2 1/2 (0.208)					
	MAX M	2 1/2 (0.208)					
	MIN D	-3/16 (-0.016)					
	MIN E	-3/16 (-0.016)					
	MIN F, G	-1/16 (-0.005)					
	MIN H, J, K, L	0 (0.001)					
	MIN M	0 (0.001)					



HAUNCH DETAIL

NOTE:
BRIDGE SEAT ELEVATIONS ARE SET BASED ON THEORETICAL CAMBER AND BEAM DEFLECTIONS. THESE BRIDGE SEATS WILL PROVIDE A THEORETICAL BEAM HAUNCH WITHIN DESIGN PARAMETERS. FIELD HAUNCHES ARE DETERMINED USING SURVEYED TOP OF BEAM ELEVATIONS AND "BEAM LINE HAUNCH ELEVATION" DATA. ALLOWABLE MAXIMUM AND MINIMUM "FIELD HAUNCH" VALUES ARE GIVEN IN INCHES AND DECIMALS OF FEET IN THE "MISCELLANEOUS DATA" TABLE. "CROSS SLOPE ADJUSTMENT" VALUES WILL AID THE CONTRACTOR IN DETERMINING ACTUAL FORMED HAUNCH DIMENSIONS AT THE EDGES OF THE TOP FLANGE.

NOTE 1:
TO CALCULATE FIELD HAUNCH REQUIRED AT EACH LOCATION, SURVEY THE BEAM TOPS CONSISTENT WITH THE SPACINGS SHOWN ON THE "TOP OF SLAB ELEVATIONS LAYOUT". SUBTRACT THE SURVEYED BEAM SHOT FROM THE "BEAM LINE HAUNCH ELEVATION". THIS VALUE WILL BE THE HAUNCH NEEDED (SEE "FIELD HAUNCH" IN HAUNCH DETAIL). THE "BEAM LINE HAUNCH ELEVATION" INCLUDES ADJUSTMENTS FOR SLAB THICKNESSES AND ANTICIPATED DEFLECTIONS. NO ADDITIONAL CALCULATIONS ARE REQUIRED. IF THE FIELD HAUNCH EXCEEDS THE MAXIMUMS AND MINIMUMS SHOWN IN INCHES AND DECIMALS OF FEET IN THE MISCELLANEOUS DATA TABLE, ADJUSTMENTS TO THE GRADE OR ADDITIONAL HAUNCH REINFORCEMENT WILL BE REQUIRED.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

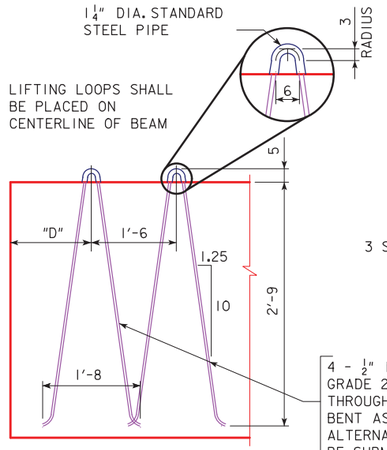
MISCELLANEOUS DATA DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

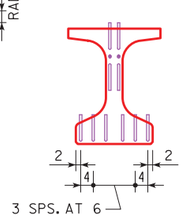
DESIGN SHEET NO. 29 OF 44 FILE NO. 30864 DESIGN NO. 518



TYPICAL AT EACH END OF BEAM

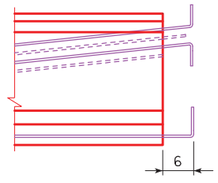
4 - ½" NOMINAL DIA. GRADE 270 STRANDS THREADED THROUGH EACH PIPE SLEEVE BENT AS SHOWN AFTER THREADING. ALTERNATE LIFTING DEVICES MAY BE SUBMITTED FOR APPROVAL (SEE LIFTING LOOP TABLE).

LIFTING LOOP DETAIL



3 SPS. AT 6

THE TOP AND BOTTOM FOR 2 ROWS OR THE TOP AND 3rd ROWS OF DEFLECTED STRANDS ARE TO BE CUT WITH 1'-6 PROJECTIONS WHICH ARE TO BE SHOP BENT AS SHOWN. THE SECOND ROW IS TO BE CUT WITH A 5" PROJECTION AND THE REMAINING TOP DEFLECTED STRANDS IN ROWS 4 AND BELOW ARE TO BE CUT FLUSH WITH BEAM FACE. 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.



TYPICAL AT BOTH BEAM ENDS

STRAND PROJECTION AT BEAM ENDS WHEN EMBEDDED IN CONCRETE END DIAPHRAGMS

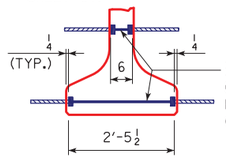
LIFTING LOOP AND OVERHANG TABLE

BEAMS	LIFTING LOOPS EACH END	# OF STRANDS PER LOOP	D	BEAM OVERHANG (FT)
BTB55, BTB75	1	4	2'-0	**
BTB90	2	4	2'-6	9

** IN ACCORDANCE WITH ARTICLE 2407.03, K OF THE STANDARD SPECIFICATIONS.

LIFTING LOOPS SHALL CARRY LOADS EQUALLY.

NUMBER AND EXACT LOCATION OF COIL TIES TO BE AS DETAILED ON DESIGN SHEET 37.



COIL TIE DETAIL

ΔΔ 5b1, 5b5, 6b3, AND 6b7 BARS TO BE EPOXY COATED
* 6b3, 6b4, and 6b7 BARS TO BE USED IN PAIRS

BTB BEAM DATA

BTB BEAM	SPAN LENGTH ℄-℄ BEARING	OVERALL BEAM LENGTH (L)	CONCRETE STRENGTH f'ci (ksi)	CONCRETE STRENGTH f'c (ksi)	STRAND SIZE DIA. (in)	NO. OF STRAND STRAIGHT	NO. OF STRAND DEFLECTED	TOTAL INITIAL PRESTRESS ③ kips	HOLD DOWN FORCE-kips	CAMBER (in) AT RELEASE	CAMBER (in) AFTER LOSSES	DEFLECTION (in) Δ D IMMEDIATE ① (ELASTIC) Δi STEEL DIAPHRAGM	DEFLECTION (in) Δ D TIME ② (PLASTIC) ΔT STEEL DIAPHRAGM	PERMISSIBLE MAXIMUM SPACING HL-93 LOADING STEEL DIAPHRAGM	WEIGHT (TONS)	CONCRETE (CU YD.)	REINFORCING STEEL (WEIGHT-LBS)
BTB55	55'-0	56'-4	4.50	5.00	0.60	16	—	681	——	0.71	1.27	0.46	0.11	9'-3	18.5	9.2	1381
SBTB55.22	55'-2⅝	56'-6⅜	4.50	5.00	0.60	16	—	681	——	0.71	1.27	0.46	0.11	9'-3	18.6	9.2	1384
BTB75	75'-0	76'-4	5.50	6.50	0.60	22	4	1106	13.0	1.65	2.92	1.36	0.34	9'-3	25.1	12.4	1761
SBTB75.29	75'-3½	76'-7½	5.50	6.50	0.60	22	4	1106	13.0	1.65	2.92	1.36	0.34	9'-3	25.2	12.4	1767
BTB90	90'-0	91'-4	7.50	8.50	0.60	30	8	1616	18.6	2.71	4.81	2.46	0.62	9'-3	30.0	14.8	2098
SBTB90.36	90'-4¼	91'-8¼	7.50	8.50	0.60	30	8	1616	18.6	2.71	4.81	2.46	0.62	9'-3	30.2	14.9	2104

① DEFLECTIONS AT MID-SPAN DUE TO WEIGHT OF SLAB AND DIAPHRAGM. THE DEFLECTIONS SHOWN ARE FOR A SLAB (8 in) AND HAUNCH (1.5 in) WEIGHT OF:
0.98 kips/ft FOR 9'-3 BEAM SPACING
AND ONE STEEL DIAPHRAGM (0.500 kips) AT ℄ OF SPAN.
FOR DIFFERENT SLAB AND DIAPHRAGM WEIGHTS, DEFLECTIONS WILL BE DIRECTLY PROPORTIONAL.

② DEFLECTIONS DUE TO THE COMBINED EFFECT OF CREEP DUE TO WEIGHT OF SLAB AND SHRINKAGE OF SLAB.
TOTAL BEAM DEFLECTIONS AT ℄ OF SPAN, Δ_D , DUE TO WEIGHT OF SLAB AND DIAPHRAGMS FOR DETAILING PURPOSE:
(A) $\Delta_D = \Delta_I + \Delta_T$ FOR SIMPLE SPAN.
(B) $\Delta_D = \Delta_I + \frac{3}{4}\Delta_T$ FOR END SPANS OF CONTINUOUS BRIDGE.
(C) $\Delta_D = \Delta_I + \frac{1}{2}\Delta_T$ FOR INTERIOR SPANS OF CONTINUOUS BRIDGE.

③ TOTAL INITIAL PRESTRESS IS BASED ON 72.6% f's, f's. = 270 ksi. AND As = 0.217 in^2.

CALCULATED DESIGN CAMBERS HAVE BEEN REDUCED FROM THEIR THEORETICAL VALUES BY 15% TO AID CONSTRUCTABILITY.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE TO BE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2007.
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: A.A.S.H.T.O. LRFD, SERIES OF 2007, 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.

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 IM570.

BEARINGS SHALL BE AS DETAILED ON OTHER DESIGN SHEETS.

BEAMS TO BE USED IN BRIDGES MADE CONTINUOUS BY THE POURED IN PLACE FLOOR, ARE TO BE AT LEAST 28 DAYS OLD BEFORE THE FLOOR 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".

HOLES MUST BE CAST IN THE WEB TO ACCOMMODATE THE STEEL DIAPHRAGM ATTACHMENTS AS DETAILED ON THE STEEL DIAPHRAGM DETAIL SHEET.

MINIMUM CONCRETE f'c (AT 28 DAYS) AND MINIMUM f'ci AT RELEASE ARE LOCATED IN THE BTB 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.

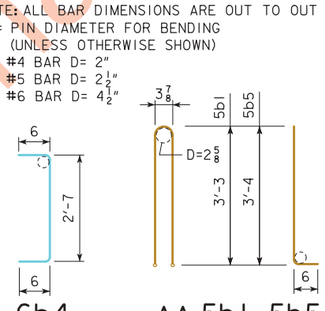
NOTE: FOR MODIFIED STIRRUP EXTENSIONS, SEE "BENT BAR DETAILS" AND BEAM DETAIL SHEETS FOR DIMENSIONS AND LOCATIONS.

REINFORCING BAR LIST

	BEAM		BTB55		SBTB55.22		BTB75		SBTB75.29		BTB90		SBTB90.36	
	BAR	SHAPE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
	5a1		12	29'-2	12	29'-4	12	39'-2	12	39'-4	12	27'-9	12	27'-11
	5a2		-	-	-	-	-	-	-	-	6	40'-0	6	40'-2
ΔΔ	5b1		23	7'-8	23	7'-8	57	7'-8	43	7'-8	69	7'-8	57	7'-8
ΔΔ	5b5		16	7'-10	16	7'-10	-	-	14	7'-10	-	-	12	7'-10
ΔΔ *	6b3		18	4'-3	18	4'-3	16	4'-3	16	4'-3	-	-	-	-
*	6b4		4	3'-7	4	3'-7	8	3'-7	8	3'-7	16	3'-7	16	3'-7
ΔΔ *	6b7		18	4'-4	18	4'-4	16	4'-4	16	4'-4	32	4'-4	32	4'-4
	4c1		71	2'-7	71	2'-7	95	2'-7	95	2'-7	109	2'-7	109	2'-7
	4d1		59	6'-5	59	6'-5	77	6'-5	77	6'-5	91	6'-5	91	6'-5
	4e1		24	3'-2	24	3'-2	24	3'-2	24	3'-2	26	3'-2	26	3'-2
	4h1		4	8'-0	4	8'-0	4	8'-0	4	8'-0	4	8'-0	4	8'-0

BENT BAR DETAILS

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT
D = PIN DIAMETER FOR BENDING (UNLESS OTHERWISE SHOWN)
#4 BAR D= 2"
#5 BAR D= 2½"
#6 BAR D= 4½"



DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB BEAM DETAILS

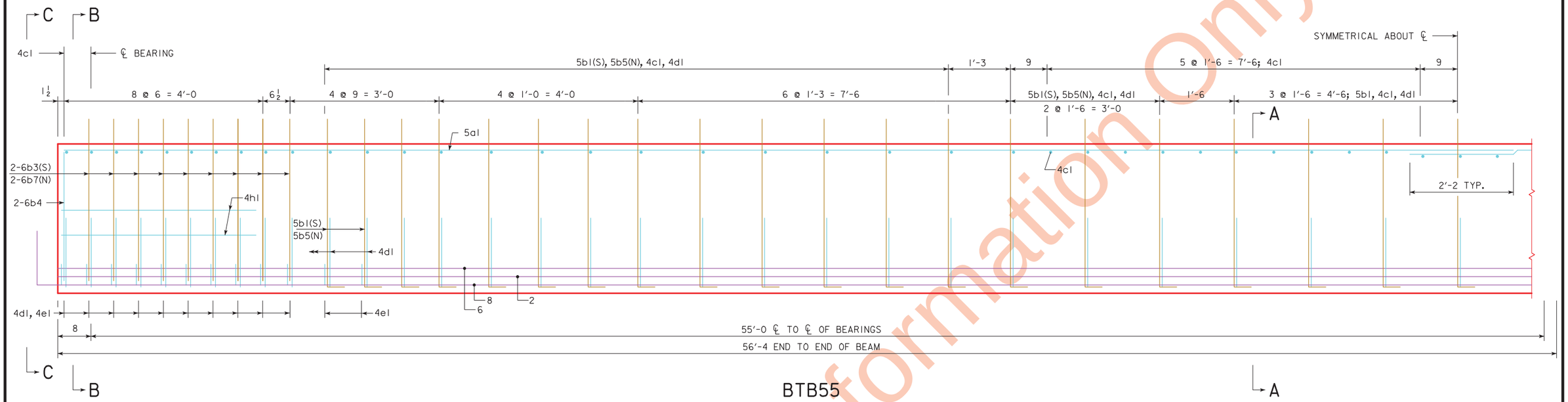
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 30 OF 44 FILE NO. 30864 DESIGN NO. 518

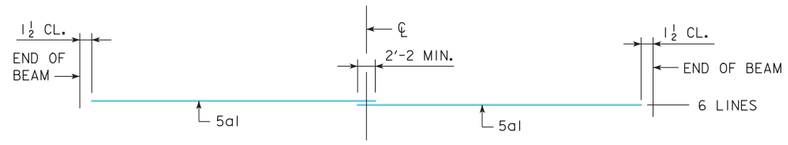
CORRECTION 12-13 - COIL TIE DETAIL WAS CHANGED TO REFLECT THE DISTANCE BETWEEN COIL TIE ANCHORS EMBEDDED ¼ INCH.
ENGLISHBEAMS.DGN - 4750 - THIS SHEET ISSUED 02-08.



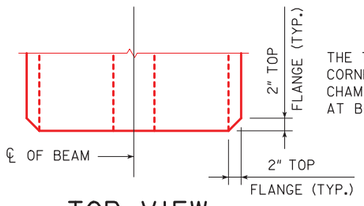
BTB55

(N) APPLICABLE TO NORTH END OF BEAM ONLY
(S) APPLICABLE TO SOUTH END OF BEAM ONLY

NOTE STIRRUP EXTENSION

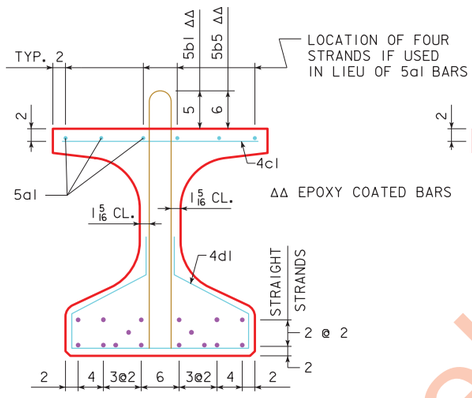


TOP FLANGE LONGITUDINAL BAR LAYOUT

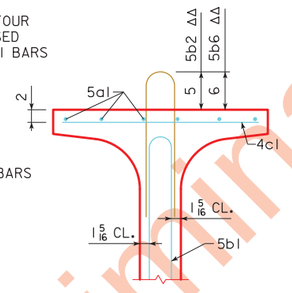


THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

TOP VIEW

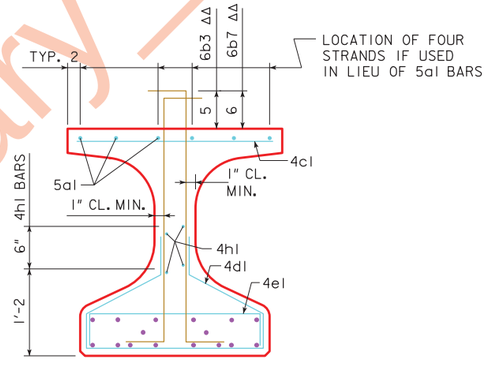


SECTION A-A

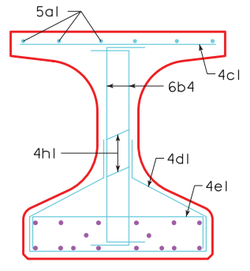


SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 30.



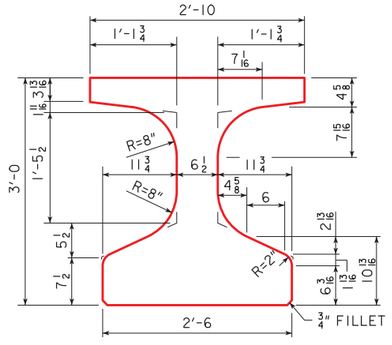
SECTION B-B



SECTION C-C

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

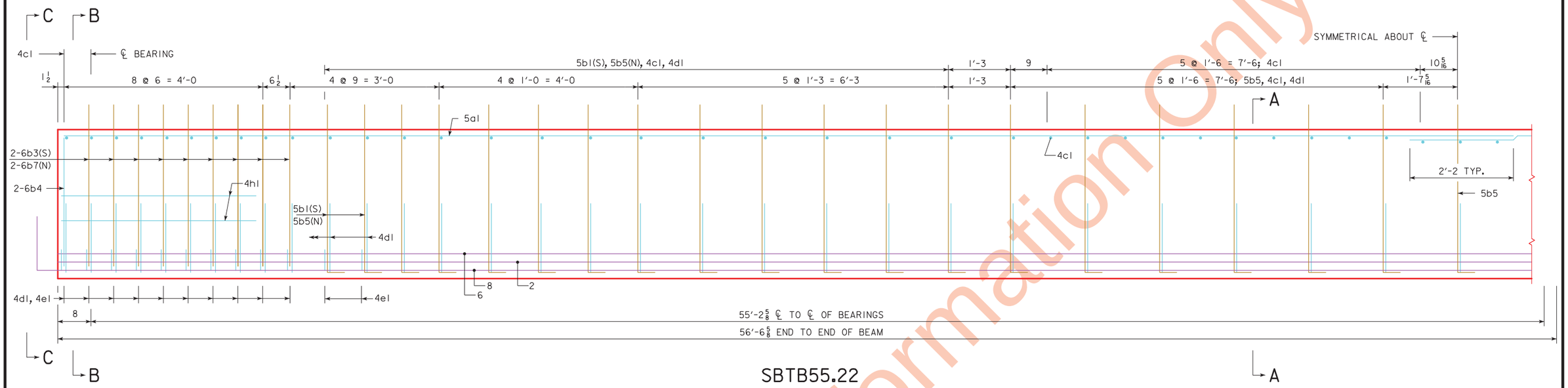
BTB55 BEAM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

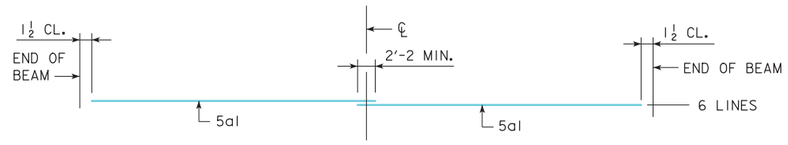
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 31 OF 44 FILE NO. 30864 DESIGN NO. 518



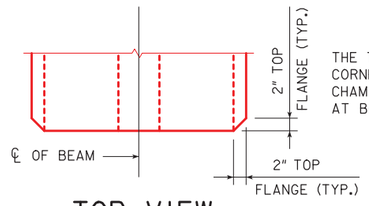
SBTB55.22

(N) APPLICABLE TO NORTH END OF BEAM ONLY
(S) APPLICABLE TO SOUTH END OF BEAM ONLY



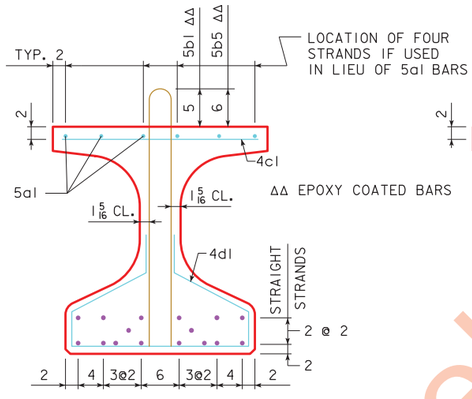
TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

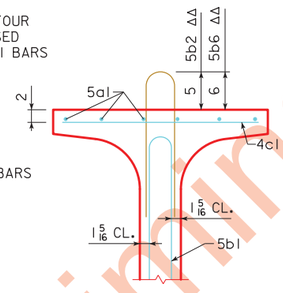


TOP VIEW

THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

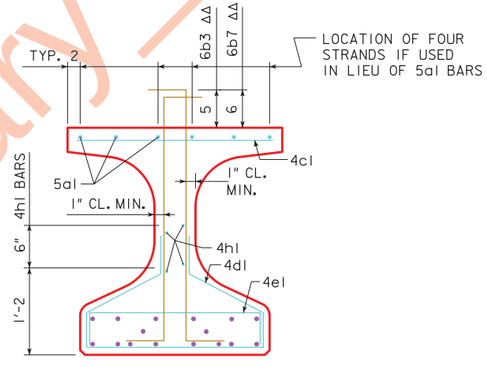


SECTION A-A

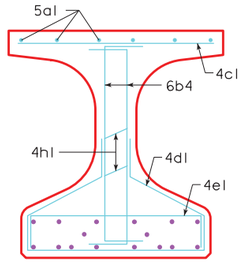


SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 30.



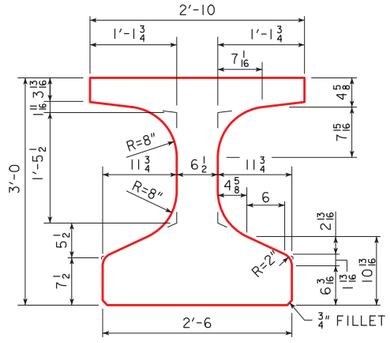
SECTION B-B



SECTION C-C

AREA = 631.7 in²
ȳb = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

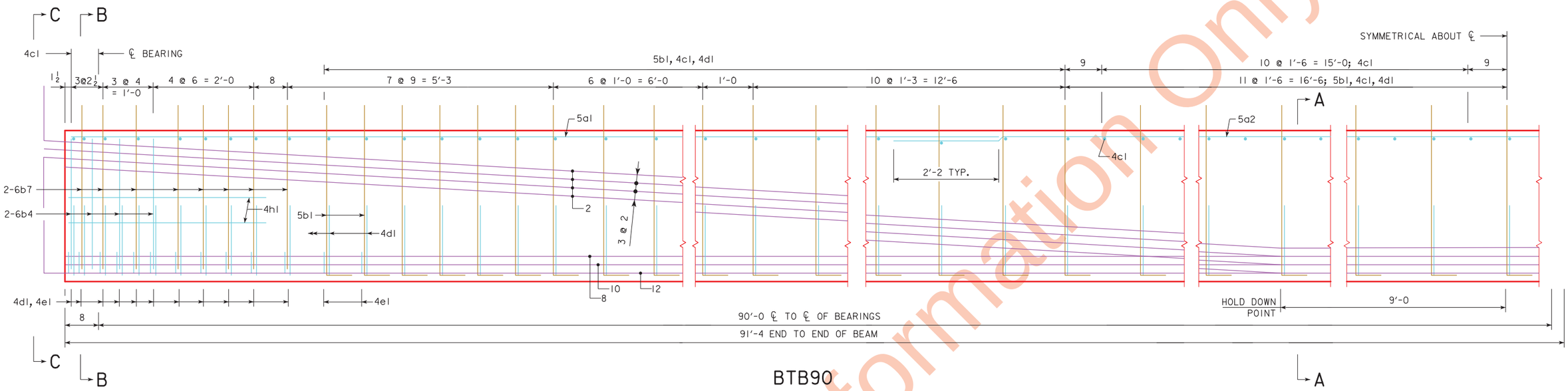
SBTB55.22 BEAM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

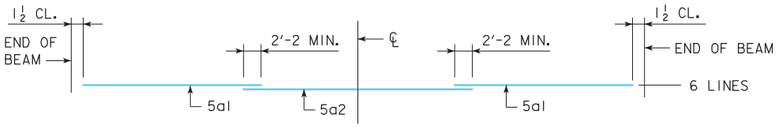
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 32 OF 44 — FILE NO. 30864 — DESIGN NO. 518

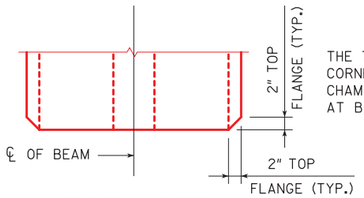


BTB90



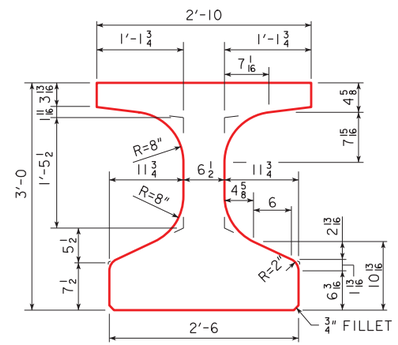
TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

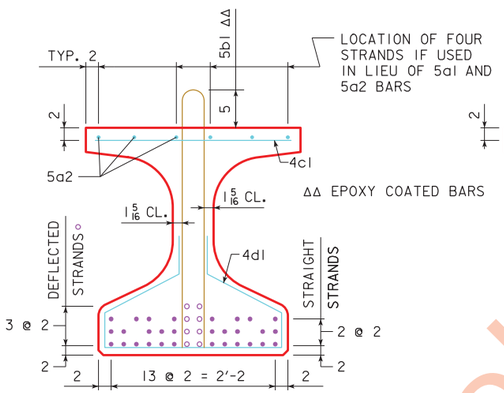


TOP VIEW

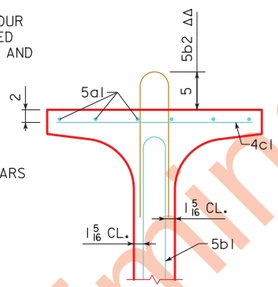
THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.



BTB BEAM CROSS SECTION

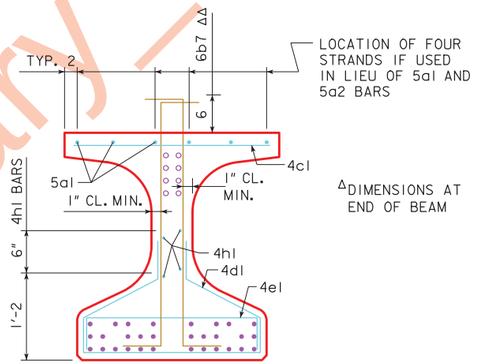


SECTION A-A



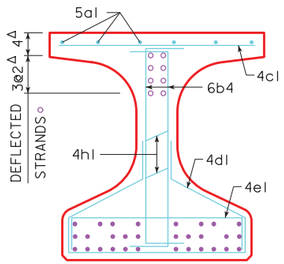
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 30.



SECTION B-B

ΔDIMENSIONS AT END OF BEAM



SECTION C-C

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB90 BEAM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

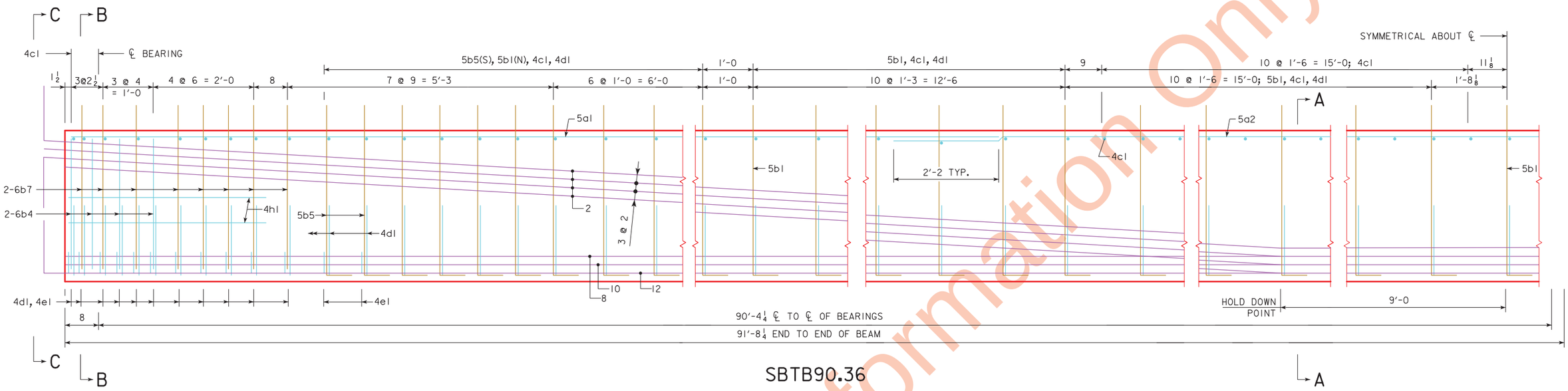
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

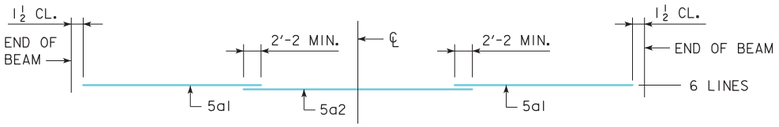
DESIGN SHEET NO. 33 OF 44 — FILE NO. 30864 — DESIGN NO. 518

REVISED 08-09 - ADDED STRANDS TO SECTIONS A-A, B-B, & C-C.
ENGLISHBEAMS.DGN - 4763 - THIS SHEET ISSUED 02-08.

12/24/2019 4:13:21 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520518s033 11x17_pdf.pltcfg

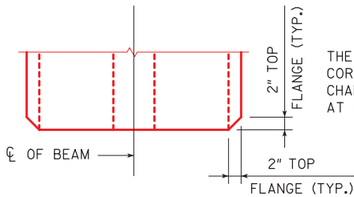


SBTB90.36



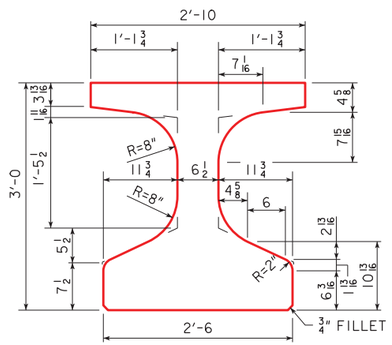
TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

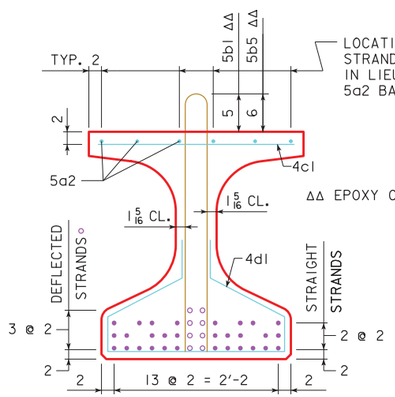


TOP VIEW

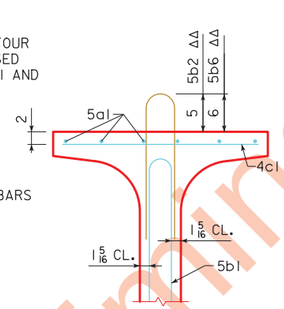
THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.



BTB BEAM CROSS SECTION

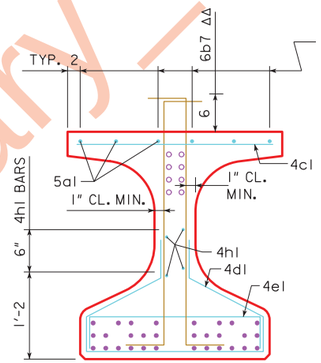


SECTION A-A



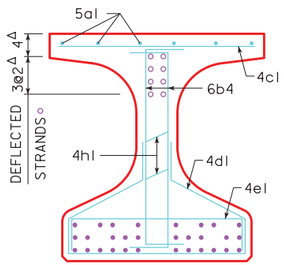
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 30.



SECTION B-B

ΔDIMENSIONS AT END OF BEAM



SECTION C-C

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

SBTB90.36 BEAM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

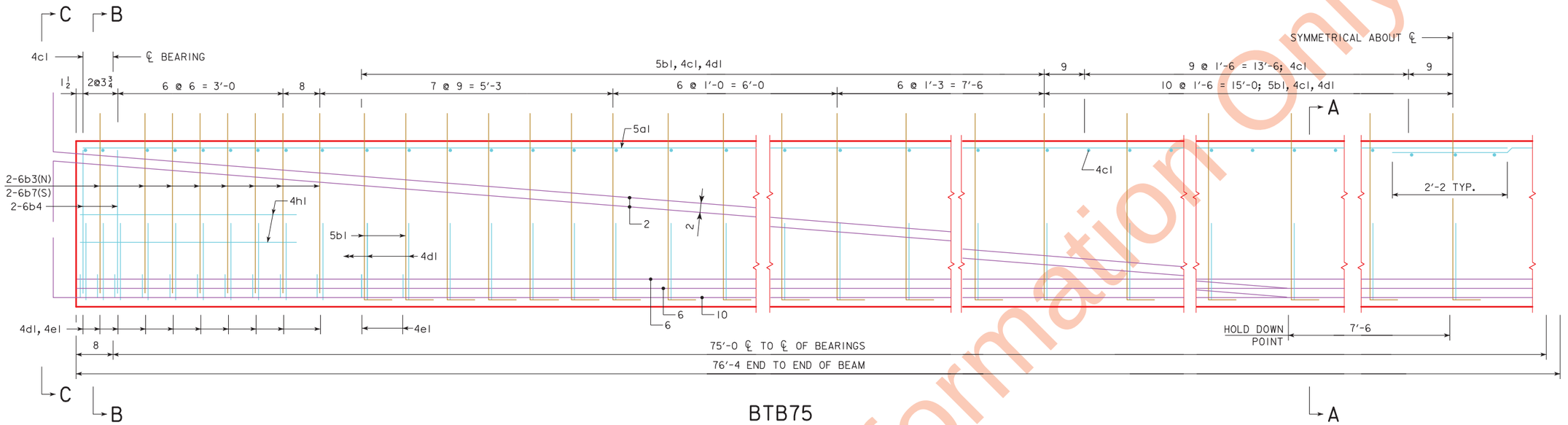
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 34 OF 44 — FILE NO. 30864 — DESIGN NO. 518

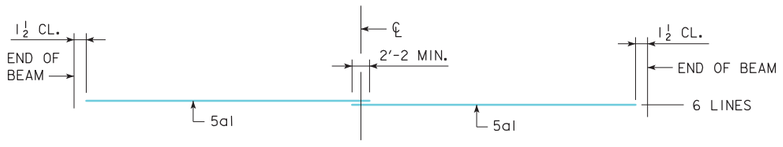
REVISED 08-09 - ADDED STRANDS TO SECTIONS A-A, B-B, & C-C.
ENGLISHBEAMS.DGN - 4763 - THIS SHEET ISSUED 02-08.

12/24/2019 4:13:24 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520518s034 11x17_pdf.pltcfg



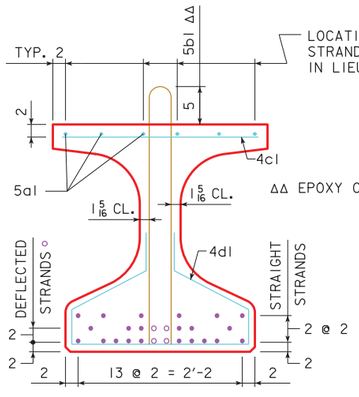
BTB75

(N) APPLICABLE TO NORTH END OF BEAM ONLY
(S) APPLICABLE TO SOUTH END OF BEAM ONLY

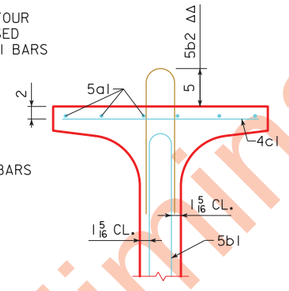


TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

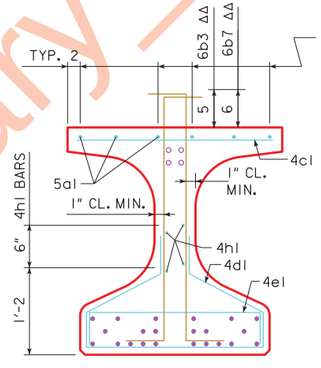


SECTION A-A



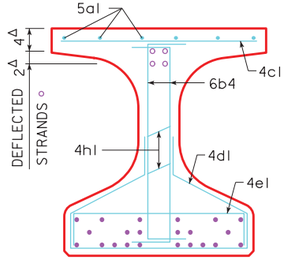
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 30.

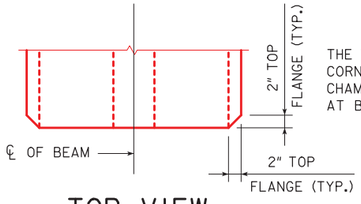


SECTION B-B

ΔDIMENSIONS AT END OF BEAM



SECTION C-C

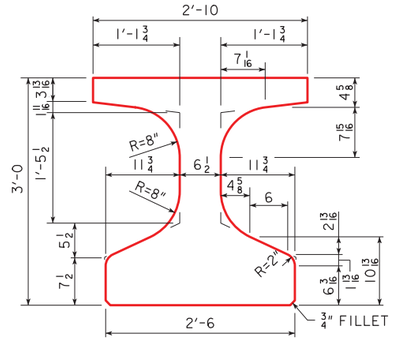


TOP VIEW

THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB75 BEAM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

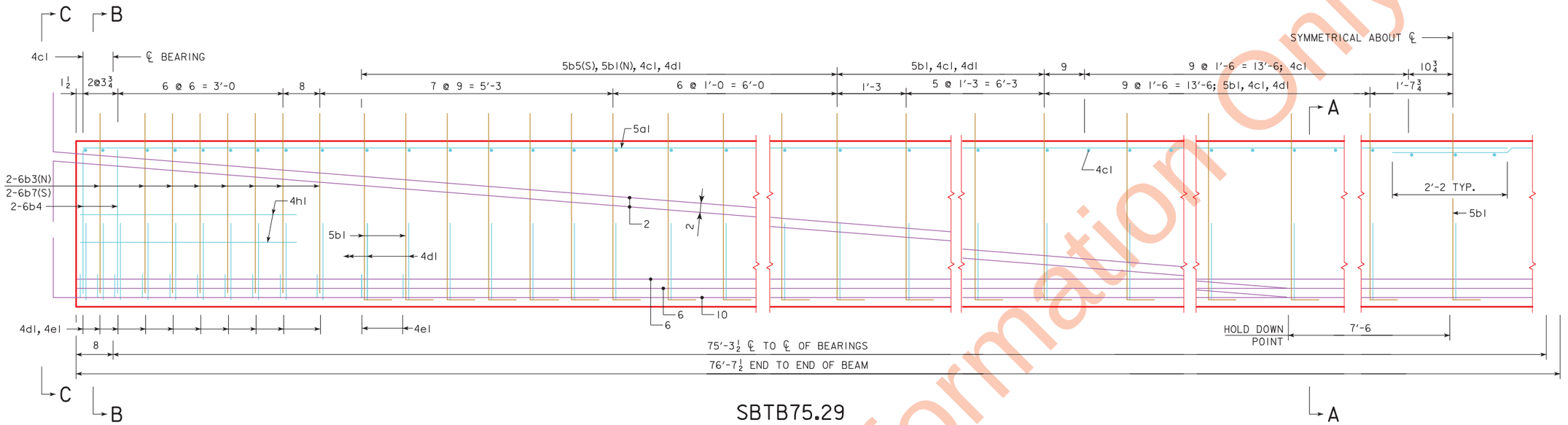
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 35 OF 44 FILE NO. 30864 DESIGN NO. 518

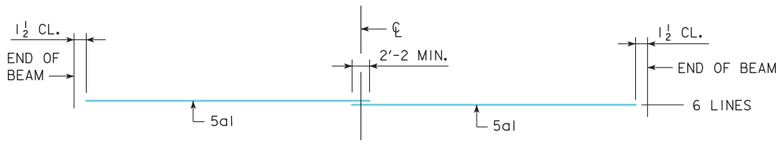
ENGLISHBEAMS.DGN - 4760 - THIS SHEET ISSUED 02-08.

DESIGN TEAM PARSONS	JB/RL/SC	BULB TEE "B" BEAM - 75'-0 SPAN	STANDARD SHEET 4760 MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 36



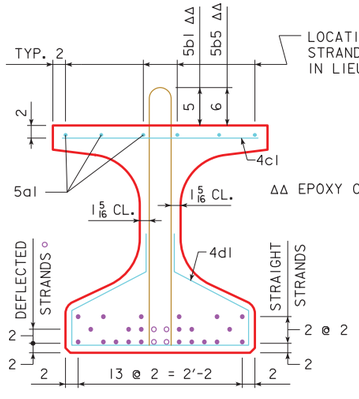
SBTB75.29

(N) APPLICABLE TO NORTH END OF BEAM ONLY
(S) APPLICABLE TO SOUTH END OF BEAM ONLY

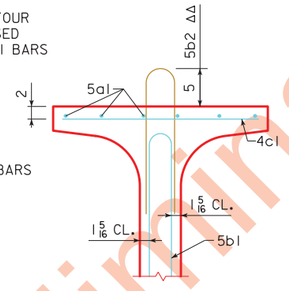


TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

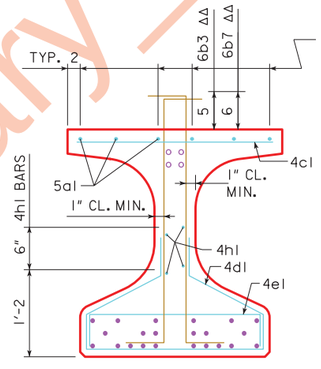


SECTION A-A



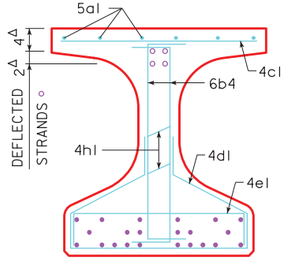
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 30.

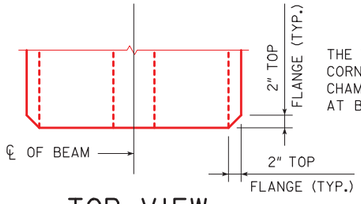


SECTION B-B

ΔDIMENSIONS AT END OF BEAM



SECTION C-C

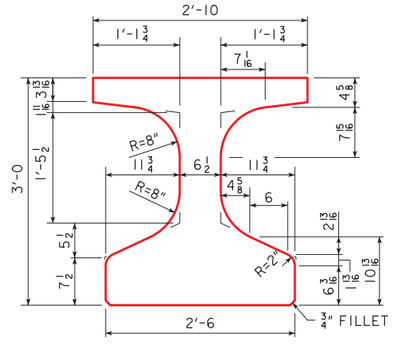


TOP VIEW

THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

SBTB75.29 BEAM DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

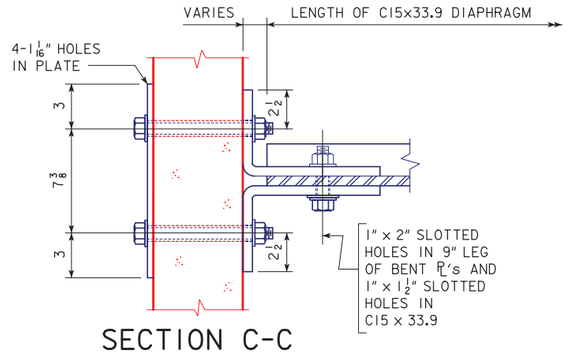
DESIGN SHEET NO. 36 OF 44 FILE NO. 30864 DESIGN NO. 518

ENGLISHBEAMS.DGN - 4760 - THIS SHEET ISSUED 02-08.

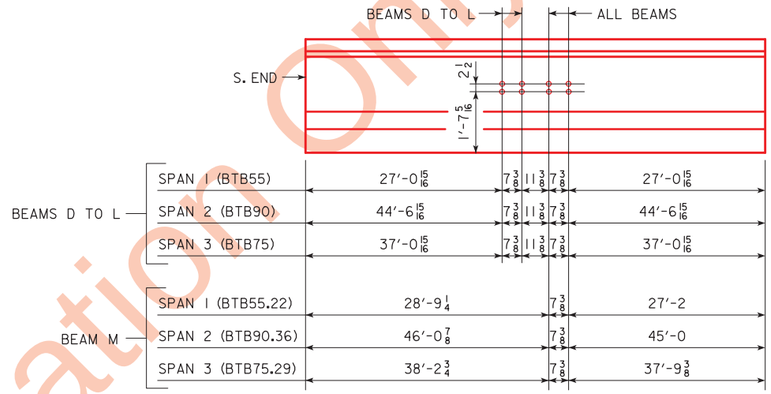
DESIGN TEAM PARSONS	JB/RL/SC	BULB TEE "B" BEAM - 75'-0 SPAN	STANDARD SHEET 4760 MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 37

BULB TEE "B" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

ONE BEAM CONNECTION (DETAIL "F" AND/OR DETAIL "G")		NO. OF BEAM CONNECTIONS	WEIGHT
4 - $\frac{7}{8}$"Φ x 9$\frac{1}{4}$ H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.		51	490
ONE DETAIL "G"	4 - BENT PL 9 x 6 x $\frac{1}{2}$ x 0'-11 = 93.6 LBS.		
ONE DETAIL "F"	1 - BACKING PL 5 x $\frac{3}{8}$ x 1'-1$\frac{3}{8}$ = 7.1 LBS.	51	362
	2 - BENT PL 9 x 6 x $\frac{1}{2}$ x 0'-11 = 46.8 LBS.	51	2387
ONE DIAPHRAGM			
		NUMBER OF DIAPHRAGMS	
6 - $\frac{7}{8}$"Φ x 3" H.S.BOLTS WITH NUTS & WASHERS = 7.8 LBS.		27	211
	LENGTH OF MEMBER		
1 - C15 x 33.9 = 33.9 LBS./FT.	7'-4$\frac{3}{4}$	24	6017
1 - C15 x 33.9 = 33.9 LBS./FT.	7'-5$\frac{3}{4}$	1	254
1 - C15 x 33.9 = 33.9 LBS./FT.	5'-11$\frac{7}{8}$	1	203
1 - C15 x 33.9 = 33.9 LBS./FT.	4'-3$\frac{5}{8}$	1	146
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			10070



SECTION C-C



NOTE: BEAM M WILL ONLY HAVE HOLES FOR ONE "F" DETAIL AT EACH INTERMEDIATE DIAPHRAGM DETAIL.

INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATIONS

STRUCTURAL STEEL	
WEIGHT	10070 LBS.

NOTE: STRUCTURAL STEEL WEIGHT IS INCLUDED ON THE SUMMARY QUANTITIES SHEET.

NOTES:

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

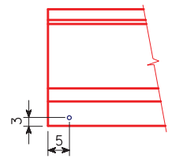
SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.

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

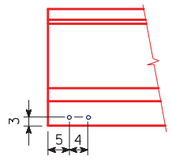
THE 1$\frac{1}{2}$"Φ HOLES FOR THE $\frac{7}{8}$"Φ H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

THE $\frac{7}{8}$"Φ 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 WITH THE FOLLOWING EXCEPTION: BOLTS IN DIAPHRAGMS LOCATED UNDER CLOSURE POUR SHALL BE TIGHTENED AFTER DECK ON BOTH SIDES OF CLOSURE POUR HAVE BEEN PLACED.



INTEGRAL ABUT.



FIXED PIER

BEAM COIL TIE LOCATIONS

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

INTERMEDIATE DIAPH. DETAILS I

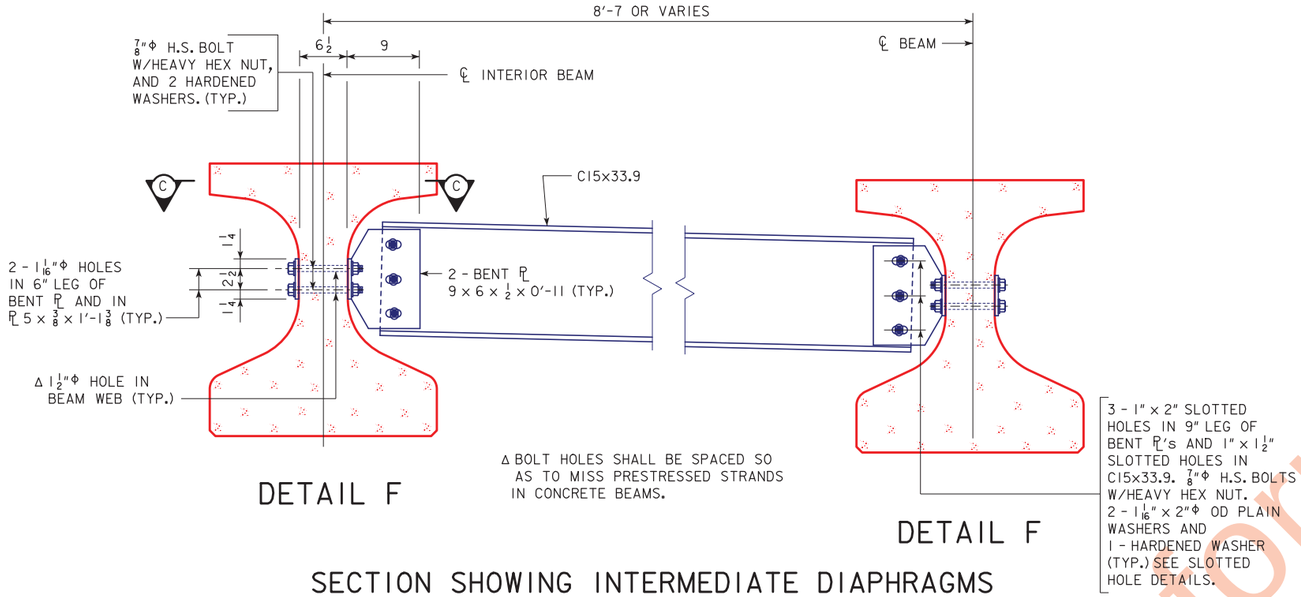
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

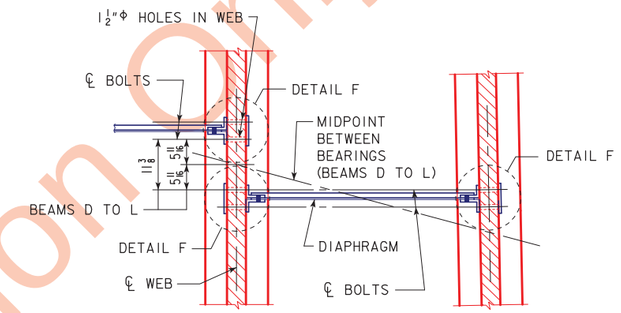
DESIGN SHEET NO. 37 OF 44 FILE NO. 30864 DESIGN NO. 518

ENGLISHBEAMS.DGN - 1036-I-BTB - THIS SHEET ISSUED 06-14. SHEET 1 OF 2.

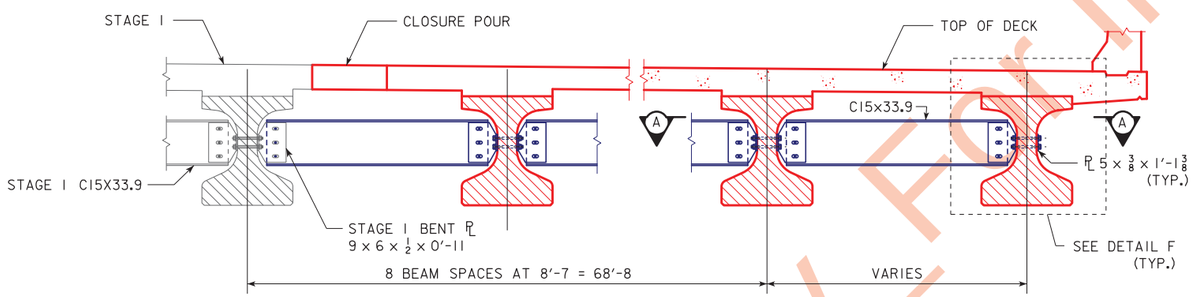


Δ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

SECTION SHOWING INTERMEDIATE DIAPHRAGMS

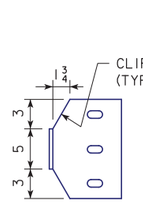


PART SECTION A-A

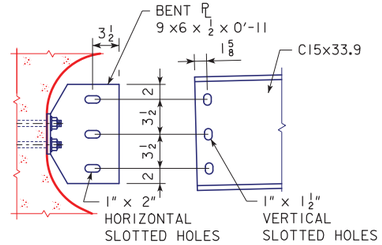


SECTION SHOWING INTERMEDIATE DIAPHRAGMS AT SPANS 1 TO 3

(LOOKING NORTH)



BENT PL DETAIL



SLOTTED HOLE DETAILS

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

INTERMEDIATE DIAPH. DETAILS 2

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

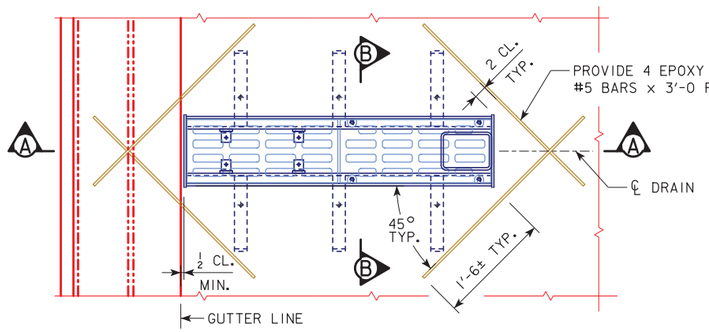
DESIGN SHEET NO. 38 OF 44 — FILE NO. 30864 — DESIGN NO. 518

DESIGN TEAM PARSONS KRP/EJ/SC	STEEL INTERM. DIAPHS. FOR "BTB" BEAM BRIDGES - SHT. 2 OF 2	STANDARD SHEET 1036-2-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 39

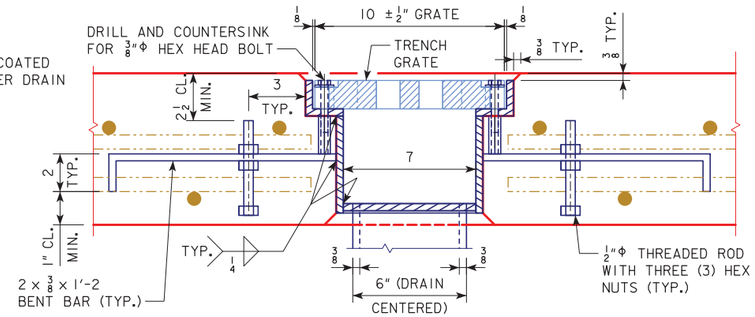
ENGLISHBEAMS.DGN - 1036-2-BTB - THIS SHEET ISSUED 06-14. SHEET 2 OF 2.

12/24/2019 4:13:37 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520518s038 11x17_pdf.pltcfg

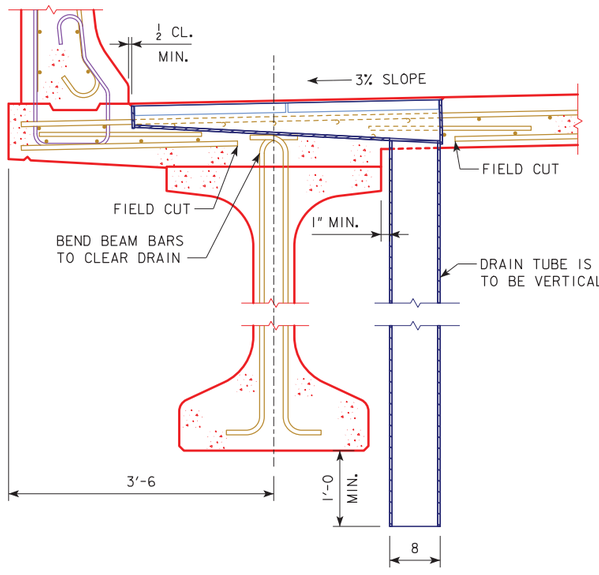
REVISED 07-13 - THE STAINLESS STEEL $\frac{3}{8}$" CAP SCREWS AND HEX HEAD BOLT WERE CHANGED TO MECHANICALLY GALANIZED.
REVISED 10-2016 - ADDED 4" FILLET WELD CALLOUT TO DRAIN TUBE IN "PART SECTION A-A" STEEL BEAM DETAIL.
REVISED 06-2017 - SHEET IS REDRAWN TO ACCOMODATE THE USE OF A 6" x 8" x $\frac{3}{8}$" STRUCTURAL DRAIN TUBE MAY BE SUBSTITUTED WITH A 8" x 8" x $\frac{3}{8}$" STRUCTURAL TUBE. (WAS 8" DIA. x $\frac{3}{8}$" DRAIN TUBE. (WAS 8" ENGLISHMISCELLANEOUSBRIDGES.DGN 1054 - THIS SHEET REDRAWN 11-00.



PART PLAN AT DRAIN



PART SECTION B-B - SHOWING DTL. B OPTION
(DETAIL IS SHOWN USING 10" WIDE GRATE)



PART SECTION A-A

DRAIN NOTES

THE DRAINS SHALL BE $\frac{3}{8}$ INCH THICK STEEL. THE DRAIN ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION. THE BID ITEM "DECK DRAIN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FABRICATING AND INSTALLING THE DECK DRAINS AS PER PLAN.

THE DRAIN TRENCH GRATES SHALL BE FERROUS CASTINGS. METAL USED IN THE MANUFACTURE OF CASTINGS SHALL CONFORM TO ASTM A48-83 CLASS 35B OR BETTER GRAY IRON CASTINGS IN ACCORDANCE WITH CURRENT IOWA D.O.T. STANDARD SPECIFICATIONS. FINISH OF CASTINGS SHALL BE SMOOTH AND FREE OF DEFECTS. TRENCH GRATES SHALL BE CAPABLE OF CARRYING AASHTO HL-93 LOADING. GALVANIZING OF THE TRENCH GRATES IS NOT REQUIRED.

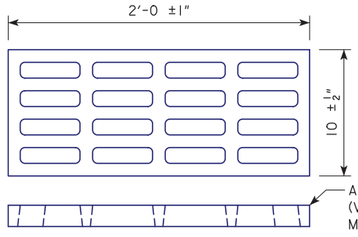
DRAINS SHALL BE CENTERED OVER THE NEAREST BOTTOM TRANSVERSE SLAB REINFORCING BAR FROM THE LOCATION DESIGNATED ON THE SLAB REINFORCING LAYOUT. THE BOTTOM TRANSVERSE SLAB REINFORCING BAR SHALL BE CUT OFF TO PROVIDE 1 INCH CLEARANCE FROM THE DRAIN. THE TOP TRANSVERSE SLAB REINFORCING BARS ON EACH SIDE OF THE DRAIN, SHALL BE SPACED AS NECESSARY TO PROVIDE 1 INCH CLEARANCE FROM THE DRAIN. LONGITUDINAL SLAB REINFORCING BARS THAT CONFLICT WITH THE DRAIN SHALL BE CUT OFF TO PROVIDE 2 INCH CLEARANCE FROM THE DRAIN. ALL CUT ENDS OF BARS SHALL BE COATED WITH EPOXY PATCHING MATERIAL SUPPLIED BY THE MANUFACTURER OF THE EPOXY COATING. LONGITUDINAL SLAB REINFORCING BARS SHALL BE SHIFTED AS NECESSARY TO ACCOMMODATE ANCHOR BARS.

MATERIALS

PLATES, BARS, THREADED RODS AND ANGLES SHALL MEET THE REQUIREMENTS ASTM A709 GRADE 36. THE TUBE STEEL SHALL MEET THE REQUIREMENTS ASTM A500 GRADE B.

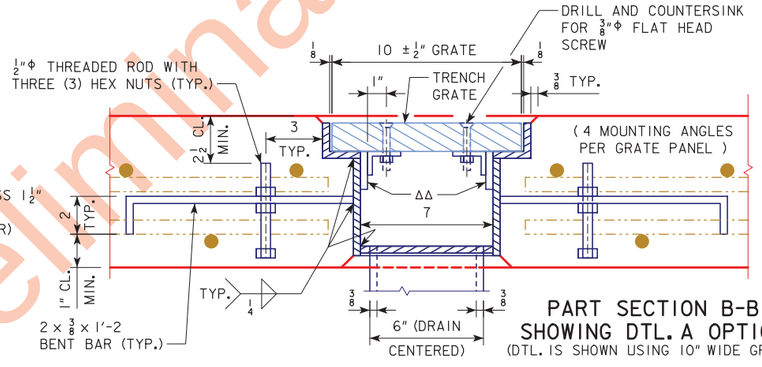
$\frac{3}{8}$"Φ MECHANICALLY GALVANIZED STEEL FLAT HEAD SCREW SHALL MEET THE REQUIREMENTS OF ASTM B695-04 (2009) AND ASTM F835-12.

$\frac{3}{8}$"Φ MECHANICALLY GALVANIZED STEEL HEX HEAD BOLT AND HEX NUT SHALL MEET THE REQUIREMENTS OF ASTM B695-04 (2009) AND ASTM A307-12 GRADE A.

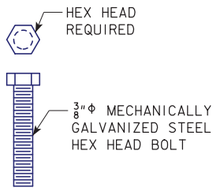


DRAIN TRENCH GRATE DETAILS
(2 GRATES REQUIRED PER DRAIN)

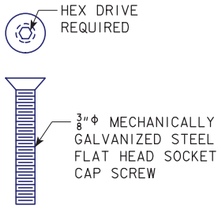
NOTE: PATTERN AND DIRECTION OF GRATE OPENINGS SHALL BE SIMILAR TO THE PATTERN SHOWN.



PART SECTION B-B
SHOWING DTL. A OPTION
(DTL. IS SHOWN USING 10" WIDE GRATE)



HEX HEAD BOLT DETAIL
(USED FOR DETAIL B)

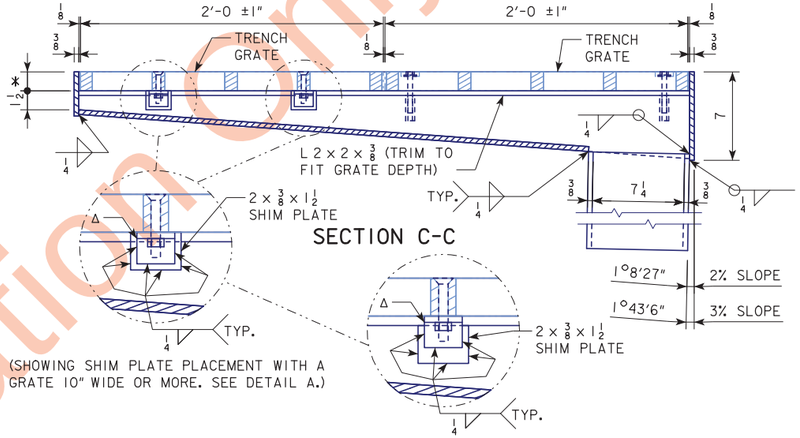


FLAT HEAD SCREW DETAIL
(USED FOR DETAIL A)

ΔΔ = ADJUST SHIM PLATE ACCORDING TO WIDTH OF GRATE.

* = DEPTH BASED ON TRENCH GRATE MANUFACTURER.

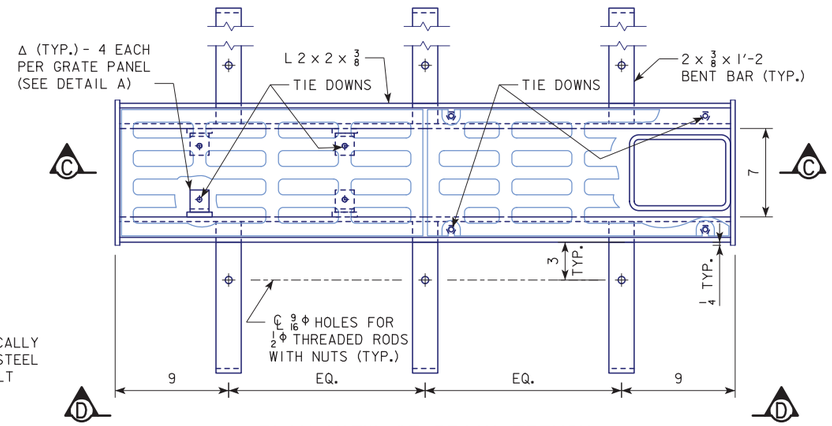
Δ = L 1¾ x 1¼ x ¼ x 0'-1½ LONG (TYP. - SEE DETAIL A).



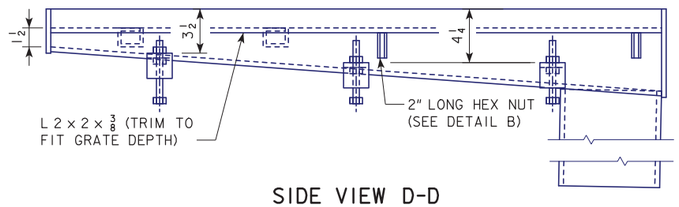
SECTION C-C

(SHOWING SHIM PLATE PLACEMENT WITH A GRATE 10" WIDE OR MORE. SEE DETAIL A.)

(SHOWING SHIM PLATE PLACEMENT WITH A GRATE LESS THAN 10" WIDE. SEE DETAIL A.)



PLAN VIEW OF DRAIN TRENCH
(GRATE TIE DOWNS SHOW BOTH DETAIL A AND DETAIL B)



SIDE VIEW D-D

NOTE: 5 DRAINS REQUIRED.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

AESTHETIC DECK DRAIN

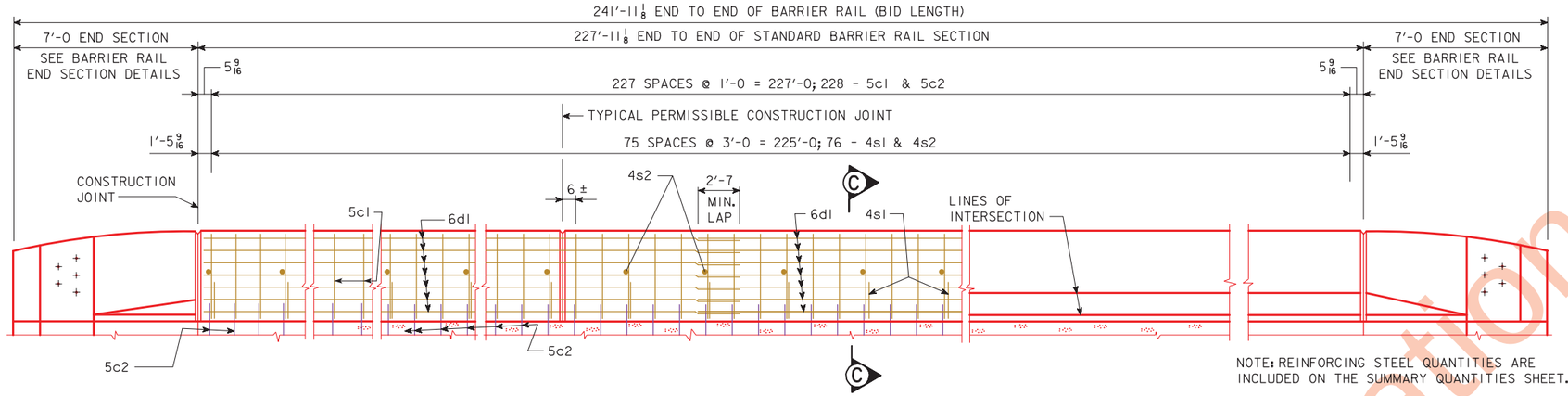
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

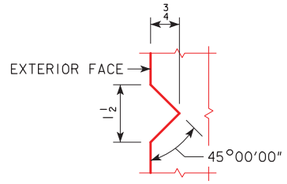
DESIGN SHEET NO. 39 OF 44 — FILE NO. 30864 — DESIGN NO. 518

DESIGN TEAM PARSONS EJ/PK/SC	AESTHETIC DECK DRAIN DETAILS	STANDARD SHEET 1054	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 40

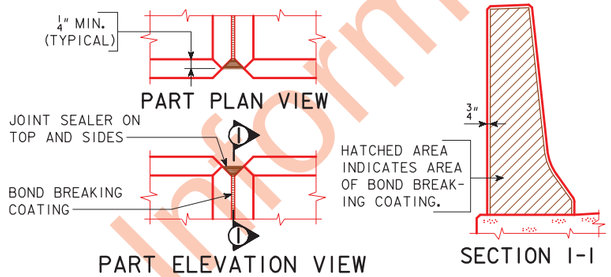


NOTE: REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

ELEVATION OF BARRIER RAIL



RUSTICATION DETAIL



BARRIER RAIL JOINT DETAILS

BARRIER AESTHETIC NOTES:

THIS WORK CONSISTS OF USING INTEGRALLY COLORED CONCRETE FOR CONCRETE BARRIERS SHOWN IN THIS PLAN. AS PART OF THE WORK A CONCRETE BARRIER MOCKUP MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO THE BEGINNING OF ANY PRODUCTION CONCRETE BARRIER WORK THAT INCLUDES INTEGRALLY COLORED CONCRETE. SEE THE "SPECIAL PROVISIONS FOR AESTHETIC TREATMENT OF CONCRETE BARRIER" FOR MORE REQUIREMENTS REGARDING THE USE OF RUSTICATION AND INTEGRALLY COLORED CONCRETE, AND FOR BARRIER MOCKUP REQUIREMENTS.

ALL COSTS FOR PROVIDING INTEGRAL COLOR AND RUSTICATION FOR CONCRETE BARRIERS, AND ALL COSTS FOR CONSTRUCTING BARRIER MOCKUP SHALL BE INCLUDED IN THE BID ITEM "CONCRETE BARRIER RAILING, AESTHETIC".

BARRIER RAIL NOTES:

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

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

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

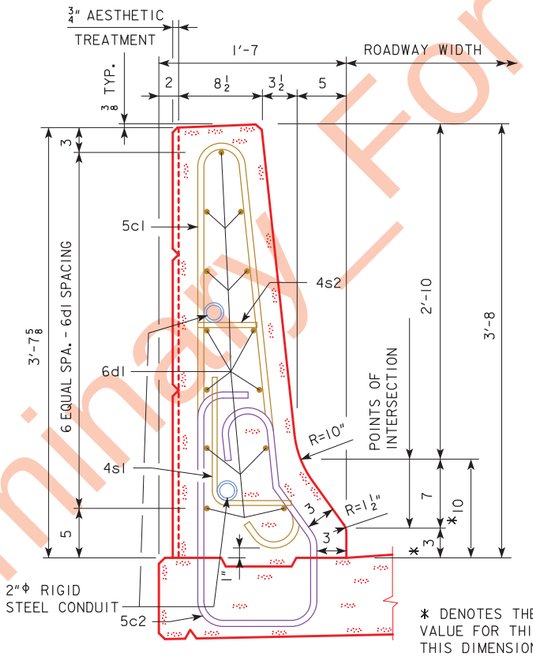
ALL BARRIER RAIL REINFORCING STEEL IS TO BE EITHER EPOXY COATED OR STAINLESS STEEL AS SHOWN. THE STAINLESS STEEL REINFORCING STEEL SHALL BE DEFORMED BAR GRADE 60 MEETING THE REQUIREMENTS OF MATERIALS I.M. 452.

THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR 3'-8 CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

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

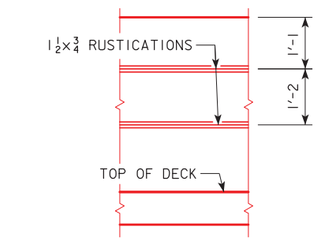
TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE, EXCEPT AT THE SPECIAL SECTIONS.

CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 3.46 SQUARE FEET.

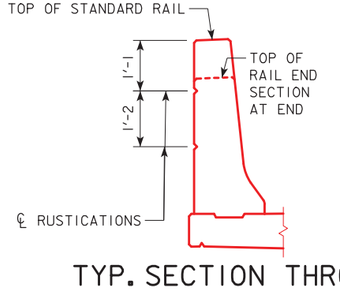


* DENOTES THE MAXIMUM VALUE FOR THIS DIMENSION. THIS DIMENSION MAY VARY DUE TO CONSTRUCTION INACCURACIES.

PART SECTION C-C



TYP. ELEVATION OF BARRIER RAIL



TYP. SECTION THROUGH BARRIER RAIL

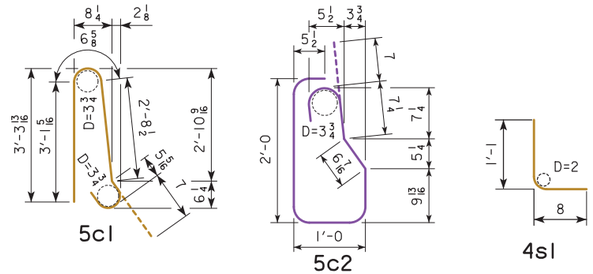
EPOXY COATED REINF. STEEL - ONE RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c1	RAIL, VERTICAL		228	7'-5	1764
	6d1	RAIL, LONGITUDINAL		91	34'-10	4761
	4s1	RAIL, CONDUIT		76	1'-9	89
	4s2	RAIL, CONDUIT		76	0'-6	26
					EPOXY STEEL TOTAL (LBS.)	6640

STAINLESS STEEL REINF. STEEL - ONE RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c2	RAIL, VERTICAL		228	6'-0	1427
					STAINLESS STEEL TOTAL (LBS.)	1427

BENT BAR DETAILS



NOTE:
ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER.

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	227'-11⅛ @ 0.1281 CU. YD. PER FT.	29.2
	TOTAL (CU. YD.)	29.2

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING, AESTHETIC	L.F.	241.9

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

EAST BARRIER RAIL DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

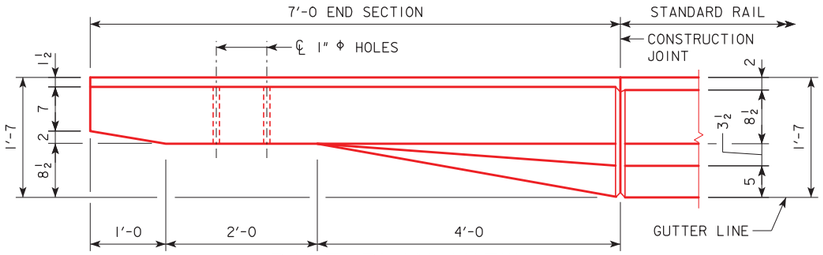
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

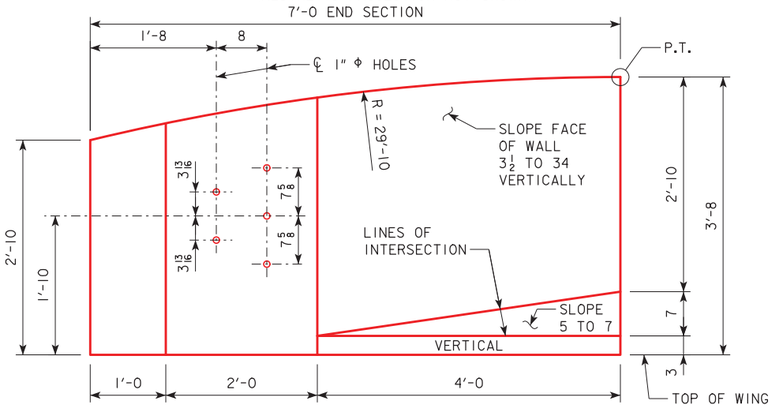
DESIGN SHEET NO. 40 OF 44 — FILE NO. 30864 — DESIGN NO. 518

ENGLISHDECKRAILBRIDGES.DGN I020SD - THIS SHEET ISSUED 04-14 - ADDED STAINLESS STEEL REINFORCING BAR LIST AND CHANGED 5c2 BARS TO STAINLESS STEEL.

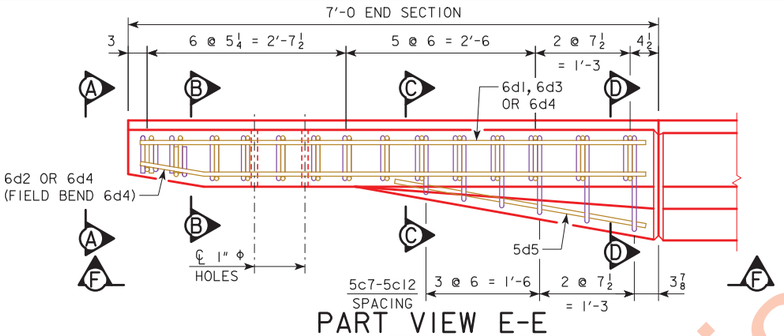
ENGLISHDECKRAILBRIDGES.DGN 10I7S - THIS SHEET ISSUED 04-14 - ADDED STAINLESS STEEL REINFORCING BAR LIST AND CHANGED 6c3, 6c4 & 5c5-10 BARS TO STAINLESS STEEL.



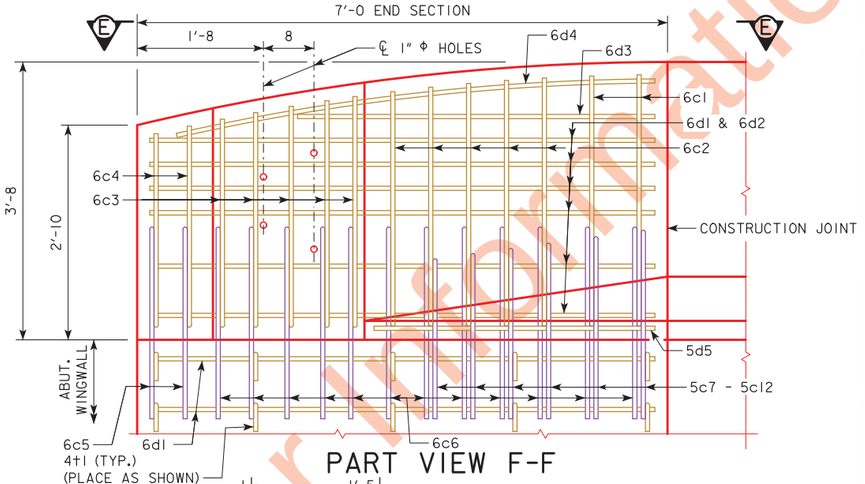
PART PLAN VIEW
(AESTHETIC PROJECTION NOT SHOWN)



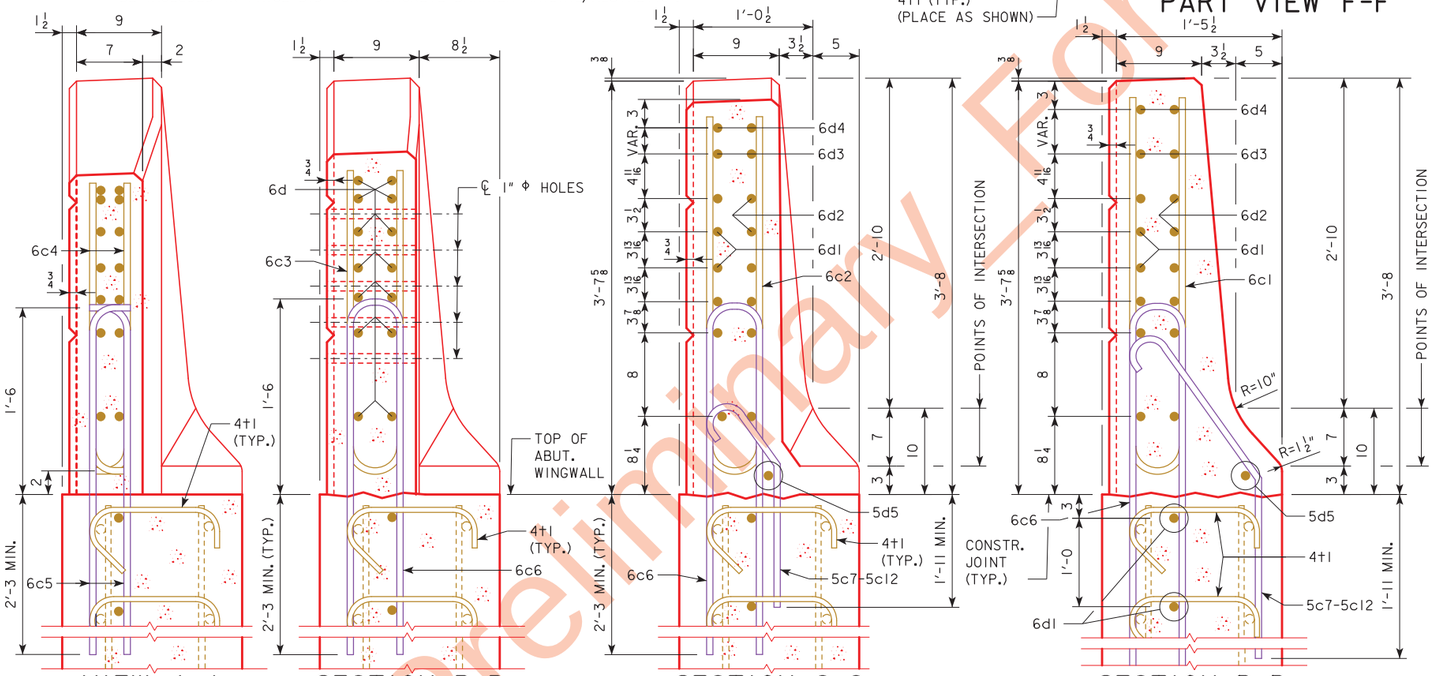
PART ELEVATION VIEW
PROVIDE 5 HOLES FORMED WITH 1" Φ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR "CONCRETE BARRIER RAILING, AESTHETIC".



PART VIEW E-E
(AESTHETIC PROJECTION NOT SHOWN)



PART VIEW F-F



VIEW A-A | SECTION B-B | SECTION C-C | SECTION D-D

NOTE:
4†1 PLACEMENT- 5 BARS EACH LEVEL OF 6d1 IN WINGWALL FOOTING.

NOTE:
CONSTRUCTION JOINT BETWEEN TOP OF WINGWALL AND BARRIER RAIL IS ROUGHENED CONCRETE.

NOTE:
THE 10" RADIUS AND 1½" RADIUS ARE TYPICAL AND SHALL BE USED WHEN CONSTRUCTING THE CORNERS FOR VIEW A-A, SECTION B-B, SECTION C-C AND SECTION D-D.

NOTE:
THE 6c5, 6c6, 5c7-12, 2 - 6d1 AND 4†1 BARS ARE TO BE PLACED WITH THE ABUTMENT WINGWALL.

NOTE:
DASHED LINES BELOW THE TOP OF WINGWALL ARE THE ABUTMENT WINGWALL REINFORCING STEEL. SEE ABUTMENT DETAILS SHEET FOR PLACEMENT.

EPOXY COATED REINF. STEEL - ONE END SECT.

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	RAIL, VERTICAL	⊓	2	6'-11	21
6c2	RAIL, VERTICAL	⊓	5	VARIES	49
6c3	RAIL, VERTICAL	⊓	5	VARIES	45
6c4	RAIL, VERTICAL	⌐	4	VARIES	18
6d1	RAIL, HORIZONTAL	—	8	6'-8	80
6d2	RAIL, HORIZONTAL	⌒	6	6'-9	61
6d3	RAIL, HORIZONTAL	—	2	4'-5	13
6d4	RAIL, HORIZONTAL	⌒	2	6'-6	20
5d5	RAIL, HORIZONTAL	—	1	3'-9	4
4†1	RAIL, ABUTMENT WINGWALL TIE BARS	⊐	10	2'-0¼	13
			EPOXY REINF. TOTAL WEIGHT (LBS.)		324

STAINLESS STEEL REINF. STEEL - ONE END SECT.

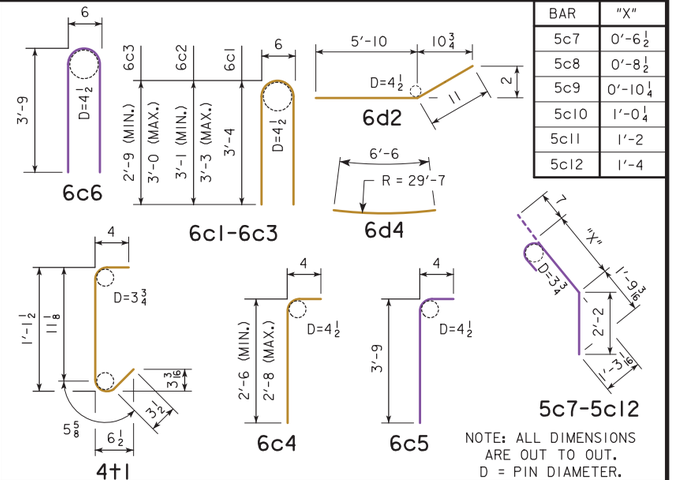
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c5	RAIL, VERTICAL	⌐	4	4'-1	25
6c6	RAIL, VERTICAL	⊓	12	8'-0	144
5c7-12	RAIL, VERTICAL	⌝	6	VARIES	23
			STAINLESS STEEL TOTAL WEIGHT (LBS.)		192

NOTE: REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY OF ITEMIZED QUANTITIES SHEET.

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.78 CU. YD.
BARRIER RAIL ONE END AESTHETIC TREATMENT	0.05 CU. YD.

BENT BAR DETAILS



BAR	"X"
5c7	0'-6½
5c8	0'-8½
5c9	0'-10¼
5c10	1'-0¼
5c11	1'-2
5c12	1'-4

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

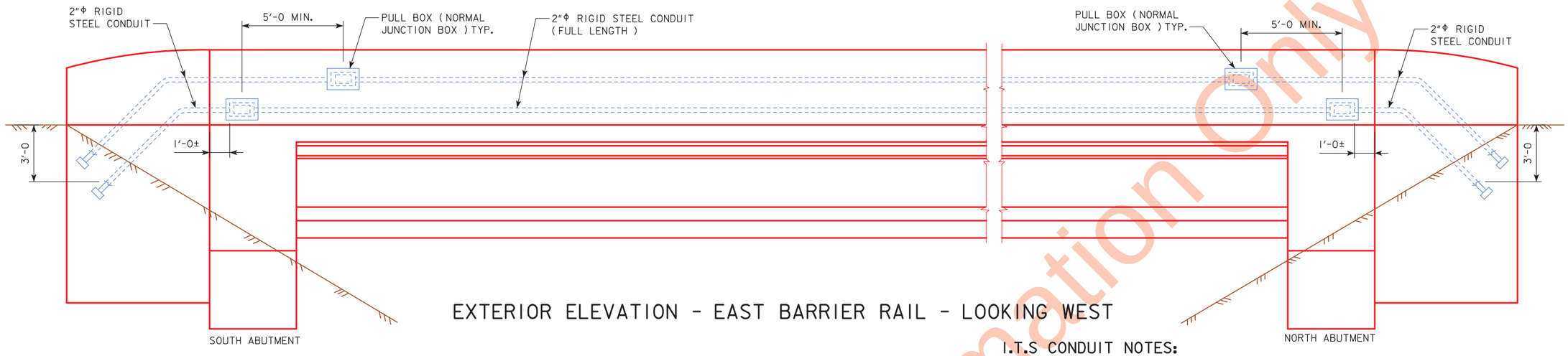
E. BARRIER END SECTION DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

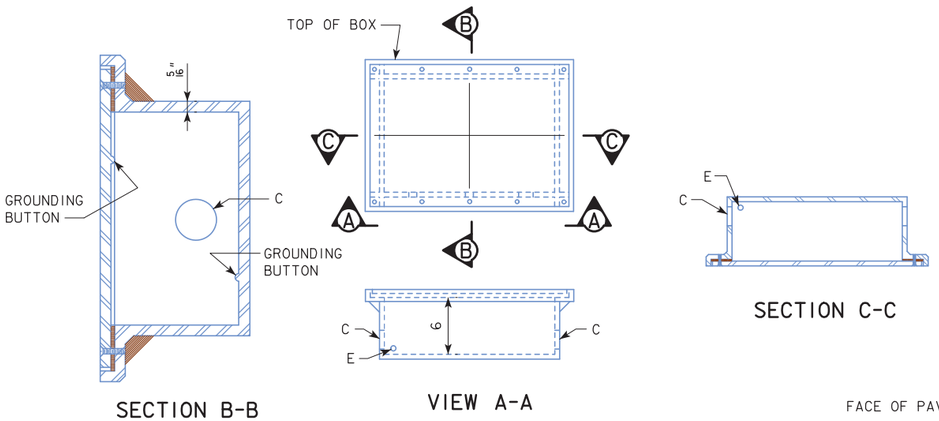
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 41 OF 44 — FILE NO. 30864 — DESIGN NO. 518

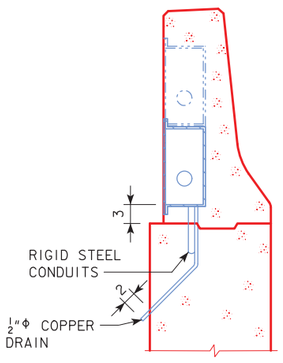


EXTERIOR ELEVATION - EAST BARRIER RAIL - LOOKING WEST

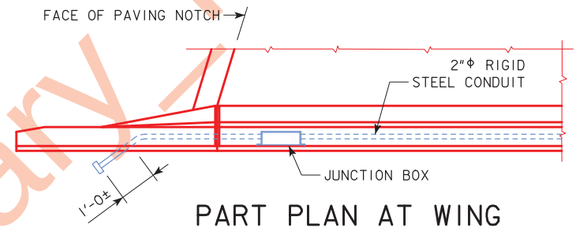


LI-104 JUNCTION BOX

WATERTIGHT, CAST IRON - FLUSH MOUNT



SECTION THRU JUNCTION BOX



PART PLAN AT WING

LIGHTING NOTES:

SEE LI-104 STANDARD ROAD PLAN FOR ADDITIONAL INFORMATION ON JUNCTION BOXES.

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

CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH ARTICLE 2523.03, N, OF THE STANDARD SPECIFICATIONS.

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 BOX MORE THAN ¼". 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. TYPICAL DETAILS ARE SHOWN ON THIS SHEET.

THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE BID ITEM "CONCRETE BARRIER RAIL, AESTHETIC.

I.T.S CONDUIT NOTES:

I.T.S. CONDUIT SHALL BE LIMITED TO SIX 45° ELBOW BENDS FOR A CABLE PULL FROM HANDHOLE TO HANDHOLE.

RIGID STEEL CONDUIT FOR I.T.S. APPLICATIONS SHALL BE INSTALLED AND PREPARED TO FACILITATE INSTALLATION OF FIBER OPTIC CABLE.

THE MINIMUM INSIDE BEND RADIUS FOR RIGID STEEL CONDUIT USED FOR I.T.S. APPLICATIONS SHALL BE 18".

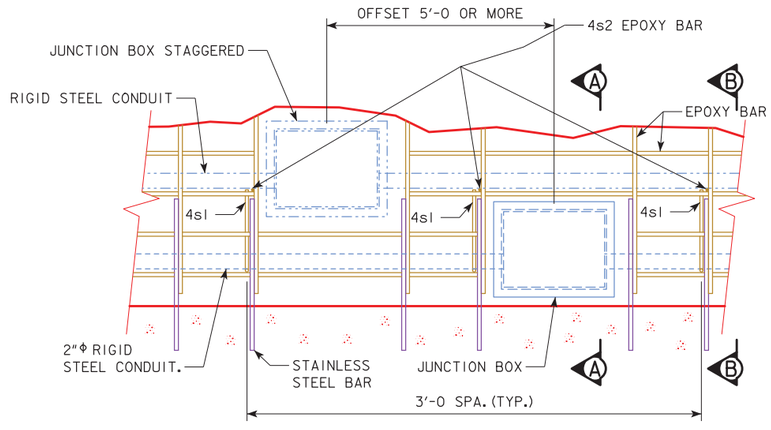
RIGID STEEL CONDUIT FOR I.T.S. APPLICATIONS SHALL BE CUT AND THREADED TO ELIMINATE EXPOSED THREADS AFTER COMPLETING THE CONNECTIONS; ALL COUPLINGS SHALL BE TIGHTENED UNTIL THE CONDUIT ENDS MEET TO ALLOW A CONTINUOUS INNER SURFACE THROUGHOUT THE ENTIRE LENGTH OF THE CONDUIT RUN. NIPPLES SHOULD BE USED TO ELIMINATE CUTTING AND THREADING SHORT LENGTHS OF CONDUIT.

ALL BURRS AND ROUGHENED SURFACES SHALL BE REMOVED FROM CONDUITS AND FITTINGS. ALL CONDUIT RUNS SHALL BE REAMED, CLEANED AND SWABBED FOR INSTALLATION OF FIBER OPTIC CABLE.

ONLY GALVANIZED FITTINGS SHALL BE USED WITH RIGID STEEL CONDUIT. DAMAGED GALVANIZED SURFACES OF RIGID STEEL CONDUIT OR FITTINGS SHALL BE PAINTED WITH AN ACCEPTABLE ZINC-RICH PAINT.

I.T.S. CONDUIT SHALL INCLUDE A POLYPROPYLENE PULL ROPE BETWEEN HANDHOLES WITH A MINIMUM 600 POUND TENSILE STRENGTH.

I.T.S. RIGID STEEL CONDUIT, PULL ROPES AND FITTINGS, INCLUDING LABOR AND ANY ADDITIONAL WORK FOR INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.



CONDUIT SUPPORT - RAIL ELEV. DETAIL

TWO JUNCTION BOX DETAIL - ADJUST REINFORCING TO CLEAR JUNCTION BOX.
JUNCTION BOXES ARE TO BE PLACED NO FURTHER THAN 300'-0 APART.

BOSSED FOR	HOLE	FOR CONDUIT SIZE
5 THREADS	C	2"Φ RIGID STEEL
NONE	E	½"Φ COPPER PIPE

NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR ⅜"Φ x 0'-0¾ BOLTS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

LIGHTING DETAILS

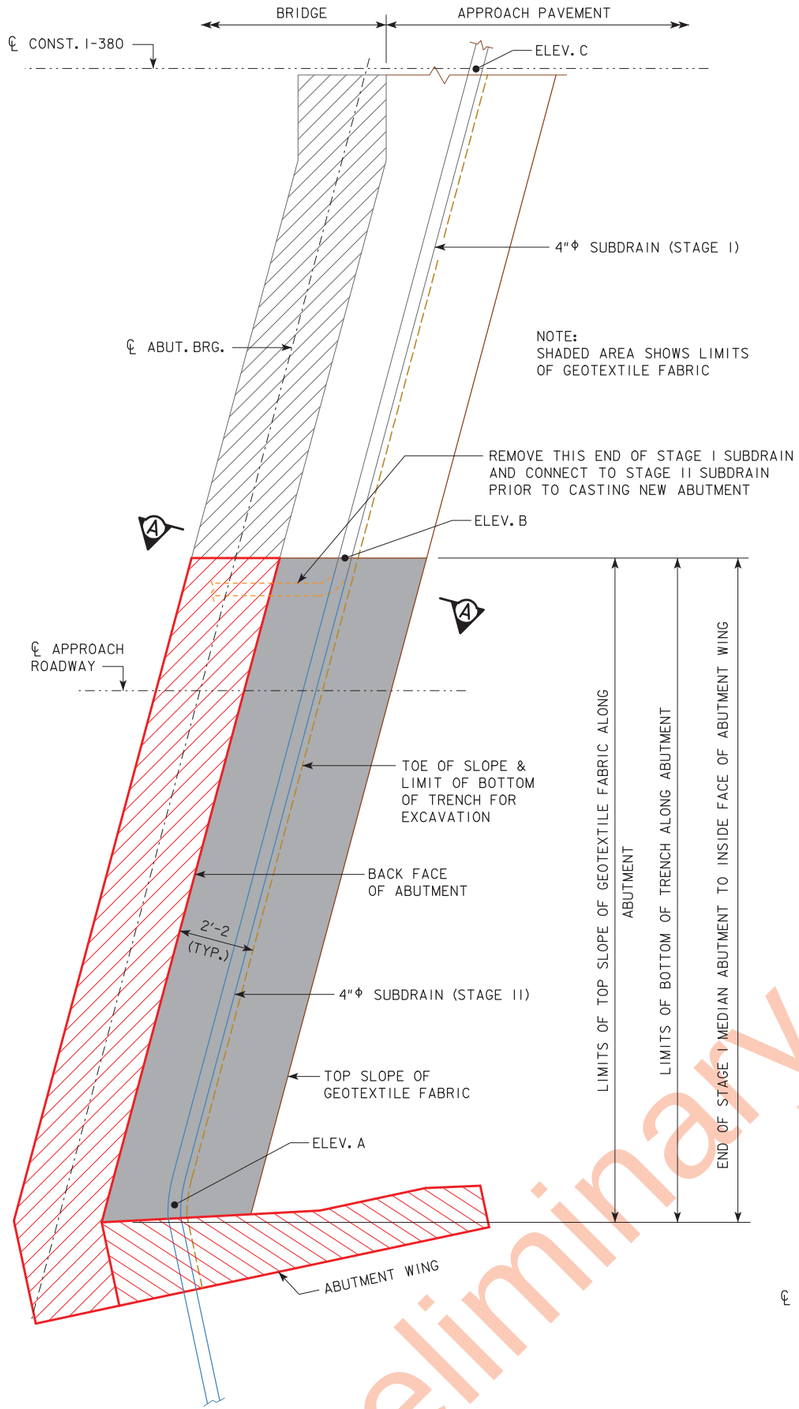
STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 42 OF 44 — FILE NO. 30864 — DESIGN NO. 518

REVISION 05-11 - ADDED THE WORD 'MINIMUM' TO THE 3½ INCH DIMENSION FOR THE LOCATION OF THE 2 INCH CONDUIT IN THE BARRIER RAIL.
REVISED 09-2016 - ADDED CONDUIT SUPPORT RAIL DETAIL TO KEEP CONDUIT ISOLATED FROM THE STAINLESS STEEL REINFORCING.
ENGLISHDECKRAILBRIDGES.DGN 1030AS2 - THIS SHEET ISSUED 09-03.



ABUTMENT PLAN WITHOUT WING EXTENSIONS

(NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR)

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 WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY I TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY I 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 BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

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

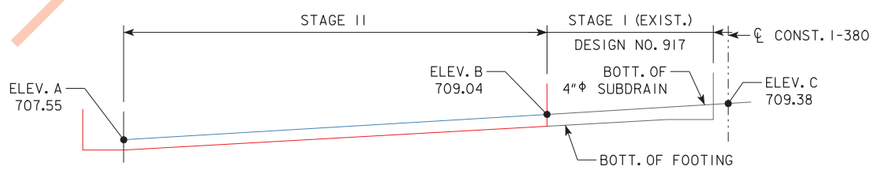
THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY 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 3 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.

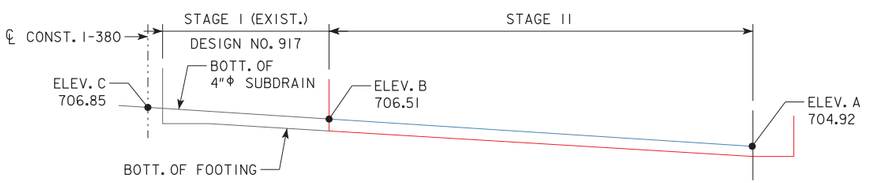
WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR STRUCTURAL CONCRETE.



REAR ELEVATION AT N. ABUT.

(SHOWING PLACEMENT OF SUBDRAIN)



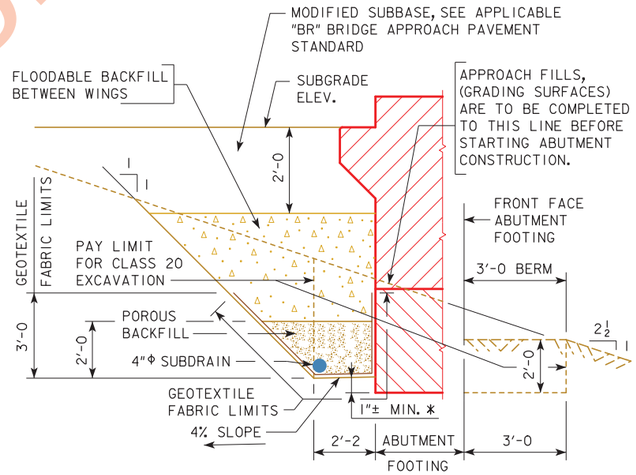
REAR ELEVATION AT S. ABUT.

(SHOWING PLACEMENT OF SUBDRAIN)

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END NEAR S.B. STAGE I CONSTRUCTION JOINT (DESIGN 1017), AND OUTLET AT END OF THE ABUTMENT NEAR EAST ABUTMENT WING.

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, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.



SECTION A-A

BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

NOTE:
SEE SUBDRAIN DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

ABUTMENT BACKFILL DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 43 OF 44 — FILE NO. 30864 — DESIGN NO. 518

REVISED 09-14 - THE TECHNICAL DATA INFORMATION TABLE WAS REMOVED AND IS LOCATED IN THE STANDARD SPECIFICATIONS. CHANGED SURFACE FLOODING TIME TO 5 MINUTE INCREMENTS.
REVISED 09-2016 - CHANGED THE BRIDGE APPROACH PAVEMENT STANDARD TO "BR" (WAS "RK").
ENGLISH\FORESLOPEPROTECTIONBRIDGES.DGN - 1007D - THIS SHEET ISSUED 08-07.

12/24/2019 4:13:54 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520518s043 11x17_pdf.pltcfg

BENCH MARK NO. 570 STA. 1198+34.50 65.02 RT. FD.DOT BUTTON SE. WING BR. ELEV. 714.922

SUBDRAIN OUTLET ELEVATIONS	
LOCATION	ELEVATION
SOUTH ABUTMENT	704.13
NORTH ABUTMENT	707.20

SUBDRAIN NOTES :

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

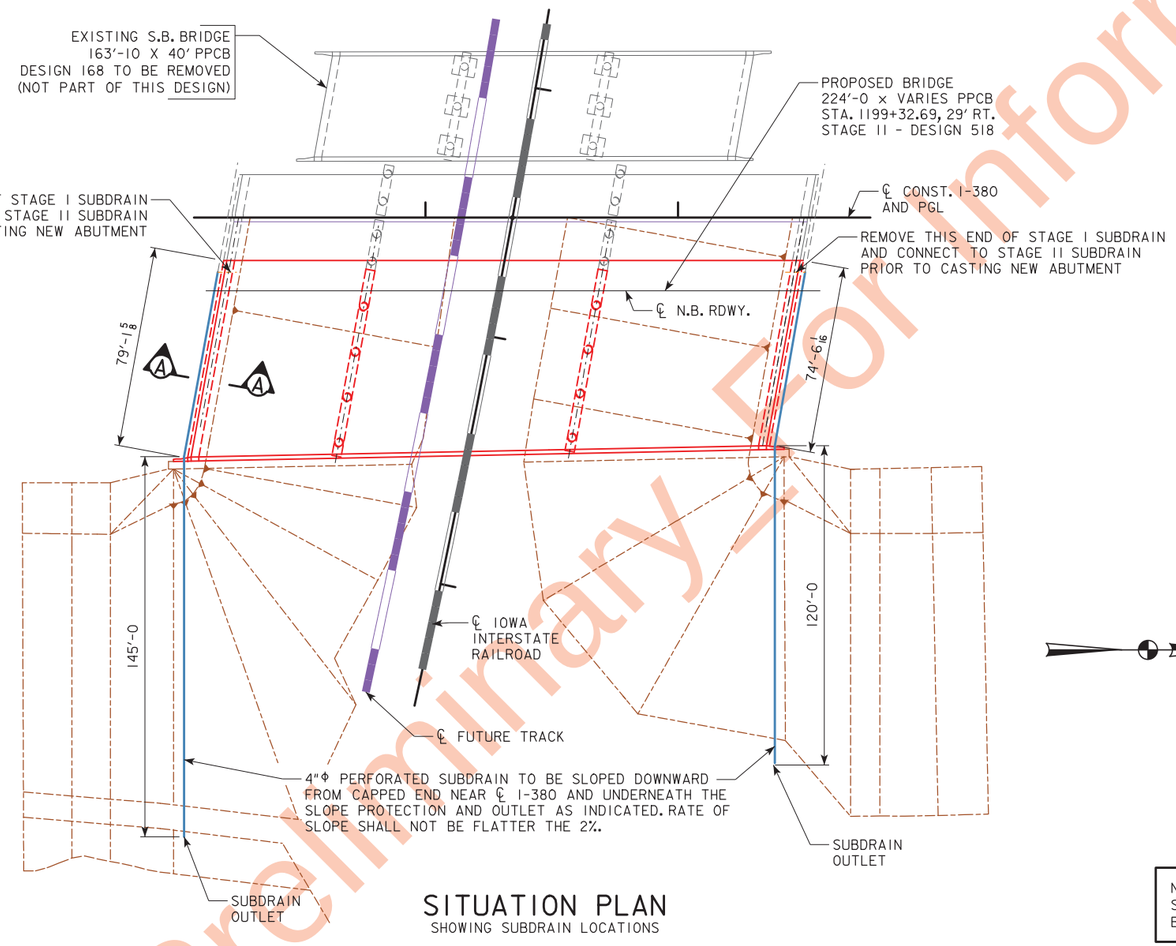
THE SUBDRAINS SHALL BE 4" IN DIAMETER AND SHALL BE IN ACCORDANCE WITH ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0 LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET.

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

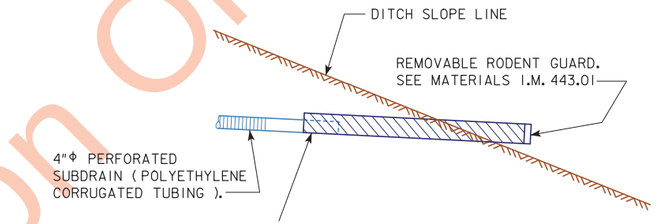
THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

THE UPHILL END OF THE PERFORATED SUBDRAIN AT THE TOE OF SLOPE PROTECTION SHALL BE CAPPED AS APPROVED BY THE ENGINEER.

THE POROUS BACKFILL AND SUBDRAIN ARE TO BE CARRIED AROUND PIER COLUMNS IF THE COLUMN PLACEMENT INTERFERES WITH ALIGNMENT OF SUBDRAIN AS SHOWN ON THIS SHEET.



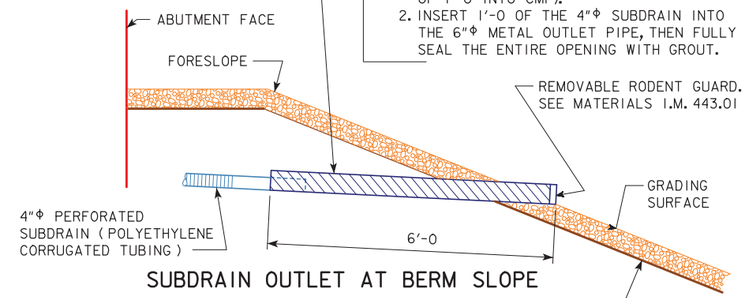
SITUATION PLAN
SHOWING SUBDRAIN LOCATIONS



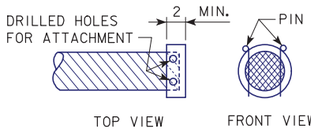
SUBDRAIN OUTLET AT DITCH SLOPE

6"Φ CORRUGATED METAL PIPE OUTLET, OR 4"Φ CORRUGATED DOUBLE-WALLED PE OR PVC PIPE OUTLET WITH AN APPROPRIATE COUPLER. IF METAL PIPE IS USED, THE PIPES SHOULD BE COUPLED IN ONE OF THE TWO FOLLOWING WAYS.

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



SUBDRAIN OUTLET AT BERM SLOPE



REMOVABLE RODENT GUARD DETAILS

OUTLET DETAILS

NOTE:
SECTION A-A IS SHOWN ON ABUTMENT BACKFILL DETAILS SHEET.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SUBDRAIN DETAILS

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 44 OF 44 FILE NO. 30864 DESIGN NO. 518

REVISED 07-11 - THE BERM SLOPE IS IDENTIFIED AS THE GRADING SURFACE.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1007A - THIS SHEET ISSUED 06-02.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.0	
2	2402-2720000	EXCAVATION, CLASS 20	CY	154	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	198.3	
4	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	541.5	
5	2404-7775000	REINFORCING STEEL	LB	83873	
6	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	160480	
7	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	3385	
8	2407-0562855	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB55	EACH	8	
9	2407-0562875	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB75	EACH	8	
10	2407-0562890	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB90	EACH	8	
11	2408-7800000	STRUCTURAL STEEL	LB	9206	
12	2414-6424119	CONCRETE BARRIER RAILING, AESTHETIC	LF	695.2	
13	2433-0001042	CONCRETE DRILLED SHAFT, 42 IN. DIAMETER	LF	780	
14	2501-0201274	PILES, STEEL, HP 12 X 74	LF	1900	
15	2501-6335010	PREBORED HOLES	LF	250	
16	2507-2638620	MACADAM STONE SLOPE PROTECTION	SY	3978	
17	2507-2638660	BRIDGE WING ARMORING - MACADAM STONE	SY	17.7	
18	2526-8285000	CONSTRUCTION SURVEY	LS	1.0	
19	2533-4980005	MOBILIZATION	LS	1.0	
20	2595-0005135	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR IOWA INTERSTATE RAILROAD LTD.	LS	1.0	

ITEM NO. ESTIMATE REFERENCE INFORMATION

1 INCLUDES THE REMOVAL OF THE EXISTING 163'-10 X 40'-0 SOUTHBOUND BRIDGE. INCLUDES REMOVAL OF TYPE "A" SHORING PLACED IN STAGE I (DESIGN NO. 1017). INCLUDES REMOVAL OF PREVIOUSLY INSTALLED SLOTTED DRAIN PIPE IN MEDIAN PLACED IN STAGE I.

3 INCLUDES CONCRETE FOR THE ABUTMENT FOOTINGS AND WINGS, AND PIERS. INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), FLOODABLE BACKFILL, POROUS BACKFILL, GEOTEXTILE FABRIC, AND WATER FLOODING AT ABUTMENTS. INCLUDES FURNISHING AND PLACING 3 INCH DIAMETER PVC PLASTIC PIPE AND EXPANDING FOAM IN THE ABUTMENT WINGS. INCLUDES ROUGHENING EXISTING STAGE I CONCRETE AT ABUTMENTS PRIOR TO CASTING STAGE II CONCRETE. INCLUDES ALL RESILIENT JOINT FILLER REQUIRED.

4 INCLUDES THE CONCRETE FOR THE SLAB, ABUTMENT DIAPHRAGMS, AND PIER DIAPHRAGMS. REFER TO THE DEVELOPMENTAL SPECIFICATIONS FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.

5,6 SEE MECHANICAL BAR SPLICE SYSTEM NOTES AND STOCKPILE NOTES ON THIS SHEET.

8,9,10 INCLUDES PIER AND ABUTMENT BEARING MATERIAL. NONSTANDARD STIRRUP LENGTHS ARE USED FOR THESE BEAMS. INCLUDES CONTRACTOR FILLING OUT BEAM NUMBERS BY LOCATION AND BEAM SEAT ELEVATIONS IN "PPC BEAM DATA SPREADSHEET" AND FORWARDING ELECTRONIC SPREADSHEET TO THE ENGINEER.

11 INCLUDES INTERMEDIATE DIAPHRAGMS.

12 CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS. INCLUDES 510 FT. OF 2" DIAMETER RIGID STEEL CONDUIT. INCLUDES LABOR AND MATERIALS REQUIRED FOR CONSTRUCTING THE AESTHETIC TREATMENT AS DETAILED ON DESIGN SHEETS 34 AND 37 AND IN THE SPECIAL PROVISIONS FOR "AESTHETIC TREATMENT OF CONCRETE BARRIER".

13 SUBMITTAL OF A DRILLED SHAFT INSTALLATION PLAN SHALL BE REQUIRED. LENGTH MEASURED FROM BOTTOM OF DRILLED SHAFT TO CONSTRUCTION JOINT. INCLUDES ALL COSTS OF MATERIALS AND LABOR INCLUDING CONCRETE, REINFORCING STEEL, EXCAVATION AND EXCAVATION INCIDENTALS INCLUDING CASING AND C.S.L. TESTING OF THE SHAFT.

14 INCLUDES FURNISHING AND INSTALLING STEEL PILE POINTS AT ABUTMENTS.

16 INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, MACADAM STONE, 4"x6" TREATED TIMBERS, ½" DIAMETER STEEL PINS (OR REBARS), POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE OF ABUTMENT FOOTING AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING FOR NORTHBOUND AND SOUTHBOUND BRIDGES.

17 INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, MACADAM STONE, 4"x6" TREATED TIMBERS, ½" DIAMETER STEEL PINS (OR REBARS), AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING FOR WING ARMORING FOR NORTHBOUND AND SOUTHBOUND BRIDGES.

MECHANICAL BAR SPLICE SYSTEM NOTES:

MECHANICAL BAR SPLICE SYSTEMS (SYSTEMS) CONSIST OF ALL COMPONENTS AND PREPARATION TO COUPLE/SPLICE REINFORCING BARS ACROSS STAGED CONSTRUCTION JOINTS. THE CONTRACTOR SHALL ADOPT THE SYSTEMS USED BY THE PRIOR STAGE CONTRACTOR. MATING PARTS (IF ANY) FOR SYSTEMS USED IN THE PRIOR STAGE HAVE BEEN STOCKPILED FOR THE CONTRACTOR TO RETRIEVE. SEE STOCKPILE NOTES. IF NECESSARY, THE CONTRACTOR SHALL ADJUST (LENGTHENING, SHORTENING, BENDING, THREADING) REINFORCING BARS, TO THE APPROVAL OF THE ENGINEER, TO ACCOMMODATE THE SELECTED SYSTEM. SYSTEMS SHALL BE EPOXY COATED WHEN BARS BEING SPLICED ARE EPOXY COATED. IF SPLICER BARS ARE USED, THEY SHALL BE LONG ENOUGH TO PROVIDE THE LAPS GIVEN IN THE TABLE BELOW.

BAR SIZE, DESIGNATION	UNCOATED BAR LAP LENGTH	EPOXY COATED BAR LAP LENGTH
#4 (13)	2'-5	2'-11
#5 (16)	3'-0	3'-8
#6 (19)	3'-7	4'-5
#7 (22)	4'-6	5'-6
#8 (25)	5'-11	7'-2
#9 (29)	7'-6	9'-1
#10 (32)	9'-6	11'-6

ALL COST FOR MECHANICAL BAR SPLICE SYSTEMS INCLUDING ADJUSTING REINFORCING BARS IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL" OR, "REINFORCING STEEL EPOXY COATED" AS APPROPRIATE AND NO SEPARATE PAYMENT WILL BE MADE.

STOCKPILE NOTES:

THE BRIDGE CONTRACTOR FOR PRIOR CONSTRUCTION STAGE MAY HAVE USED MECHANICAL BAR SPLICE SYSTEMS THAT HAVE MATING PARTS (MATERIAL) TO BE USED IN THIS CONSTRUCTION STAGE. IF THIS IS THE CASE, THE BRIDGE CONTRACTOR SHALL TAKE POSSESSION OF THIS MATERIAL AT THE IOWA DOT CORALVILLE MAINTENANCE GARAGE AT 2600 CORAL RIDGE AVE, CORALVILLE, IA 52241. CONTACT TIMOTHY ZEIMET, PHONE NUMBER (319) 626-2386, 48 HOURS PRIOR TO RETRIEVAL. THE BRIDGE CONTRACTOR SHALL PRESERVE LABELING THAT IDENTIFIES THE BRIDGE AND LOCATION IN THE CONSTRUCTION THE MATERIAL IS TO BE USED. ALL COSTS TO RETRIEVE THESE MATERIALS IS INCLUDED IN THE BID ITEM "REINFORCING STEEL" AND "REINFORCING STEEL, EPOXY COATED" AS APPROPRIATE.

INDEX OF SHEETS

ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN HISTORY AT THIS SITE
(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
168	ORIGINAL DESIGN
678	BRIDGE DECK OVERLAY
591	RETROFIT BARRIER RAILS
1017	STAGE I S.B. BRIDGE
519	STAGE II S.B. BRIDGE

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

ESTIMATED QUANTITIES

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 43 FILE NO. 30864 DESIGN NO. 519

SUMMARY OF CONCRETE QUANTITIES

LOCATION	STRUCTURAL CONCRETE	HPC STRUCTURAL CONCRETE
SOUTH ABUT. FTG.	31.5	———
NORTH ABUT. FTG.	31.2	———
BRIDGE DECK + ABUT. & PIER DIAPHAGMS	———	541.5
ABUTMENT WINGS	3.8	———
PIER #1	65.5	———
PIER #2	66.3	———
TOTAL (CU. YDS.)	198.3	541.5

SUMMARY OF REINFORCING STEEL

LOCATION	NON-COATED REINFORCING STEEL	STAINLESS STEEL REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
BRIDGE DECK + ABUT. FTG. **	206	———	140091
ABUTMENT WINGS	———	———	2 AT 198
WEST BARRIER RAIL	———	1421	6621
WEST BARRIER RAIL END SECTION	———	2 AT 192	2 AT 324
MEDIAN BARRIER RAIL (N.B. + S.B.)	———	2 AT 790	2 AT 6362
PIER #1	41709	———	———
PIER #2	41958	———	———
** INCLUDES ABUTMENT AND PIER DIAPHRAGMS			
TOTAL (LBS.)	83873	3385	160480

SUMMARY OF EXCAVATION

LOCATION	CLASS 20 EXCAVATION	CLASS ___ EXCAVATION
SOUTH ABUTMENT	77	———
NORTH ABUTMENT	77	———
TOTAL (CU. YDS.)	154	———

SUMMARY OF FOUNDATIONS

LOCATION	SUBSTRUCTURE TYPE	FOUNDATION TYPE	NUMBER	LENGTH (LIN. FT.)	TOTAL (LIN. FT.)
SOUTH ABUTMENT	INTEGRAL ABUTMENT	HP12x74	10	95	950
NORTH ABUTMENT	INTEGRAL ABUTMENT	HP12x74	10	95	950
PIER #1	FRAME PIER	42 INCH DRILLED SHAFT	4	97.5	390
PIER #2	FRAME PIER	42 INCH DRILLED SHAFT	4	97.5	390

SUMMARY OF STRUCTURAL STEEL

LOCATION	TOTAL (LBS.)
INTERMEDIATE DIAPHRAGMS	9206
TOTAL (LBS.)	9206

SUMMARY OF BEARINGS

LOCATION	BEARING TYPE	NUMBER	ASSOCIATED BID ITEM
SOUTH ABUTMENT	3 x 3 BAR	8	INCIDENTAL ITEM
NORTH ABUTMENT	3 x 3 BAR	8	INCIDENTAL ITEM
PIER #1	PLAIN NEOPRENE 1"	16	INCIDENTAL ITEM
PIER #2	PLAIN NEOPRENE 1"	16	INCIDENTAL ITEM

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SUMMARY QUANTITIES SHEET

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 43 FILE NO. 30864 DESIGN NO. 519

GENERAL NOTES:

THIS DESIGN INVOLVES THE CONSTRUCTION OF A 224'-0 X 70'-0 PRESTRESSED CONCRETE BEAM BRIDGE FOR THE SOUTHBOUND I-380 OVER IOWA INTERSTATE RAILROAD. THIS CONTRACT REPRESENTS STAGE II CONSTRUCTION FOR THE REPLACEMENT OF THE EXISTING 163'-10 X 40'-0 PPCB BRIDGE FOR THE SOUTHBOUND LANES, DESIGN NO. 168 WITH A YEAR OF CONSTRUCTION OF 1969. ELECTRONIC PLANS OF THE EXISTING STRUCTURE AND THE STAGE I DESIGN ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" INCLUDE REMOVAL OF EXISTING SUPERSTRUCTURE, ABUTMENTS, PIERS, TYPE "A" SHORING PLACED IN STAGE I (DESIGN NO. 1017) AND PREVIOUSLY INSTALLED SLOTTED DRAIN PIPE IN MEDIAN (DESIGN NO. 917).

REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS.

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

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. HOLES SHALL BE BORED TO 10 FEET (S. ABUT.) AND 15 FEET (N. ABUT.) BELOW THE BOTTOM OF ABUTMENT FOOTING AT THE CORRESPONDING PILE LOCATION. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE GREATER OF PILE CONTRACT LENGTH OR THE SPECIFIED DESIGN BEARING RESISTANCE UNLESS PILES REACH REFUSAL.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 IS $\frac{5}{8}$ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

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.

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03,03,A,2 OF THE STANDARD SPECIFICATIONS. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

CAST IN-ONE-PIECE STEEL PILE POINTS ARE REQUIRED FOR THE ABUTMENT PILES IN ACCORDANCE WITH ARTICLE 4167.02 OF THE CURRENT STANDARD SPECIFICATIONS AND MATERIALS IM 468.

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 VERTICAL.

THE BRIDGE CONTRACTOR SHALL WORK IN SUCH A MANNER THAT EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE ABOVE THE RAILROAD TRACK AREA SHALL BE COORDINATED WITH THE RAILROAD.

TYPE "A" SHORING PLACED IN STAGE I SHALL BE REMOVED PRIOR TO BEGINNING CONSTRUCTION OF THE STAGE II ABUTMENTS. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS APPLIES. ALL REMOVED SHORING MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

GENERAL NOTES CONTINUED:

STAINLESS STEEL REBAR SHALL BE SHIPPED, HANDLED AND PLACED SUCH THAT CARBON STEEL DOES NOT COME IN CONTACT WITH THE STAINLESS STEEL REBAR. PADDING SHALL BE USED TO SEPARATE CARBON STEEL BUNDLING BANDS OR LIFTING DEVICES FROM THE STAINLESS STEEL REBAR. WIRE ROPE SHALL NOT BE USED IN LIFTING OR HANDLING THE STAINLESS STEEL REINFORCING. COVER STAINLESS STEEL REBAR WITH TARPS DURING OUTSIDE STORAGE. USE WOODEN SPACERS TO SEPARATE BUNDLES OF STAINLESS STEEL REBAR FROM OTHER TYPES OF REBAR. USE WOODEN SUPPORTS TO STORE STAINLESS STEEL REBAR OFF THE GROUND OR SHOP FLOOR.

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

PROJECT	TYPE OF WORK
IM-080-6(355)239--13-52	BRIDGE NEW - STEEL GIRDER
IM-080-6(243)239--13-52	GRADING
IM-080-6(399)239--13-52	TRAFFIC SIGNS
IM-080-6(400)239--13-52	LIGHTING
IMN-080-6(425)239--0E-52	STREAM MITIGATION
IM-080-6(392)239--13-52	BRIDGE WIDENING
ITS-080-6(465)239--25-52	DYNAMIC MESSAGE SIGNS
NHS-080-6(336)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(339)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(354)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(357)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(359)239--11-52	BRIDGE NEW - PPCB
NHS-080-6(361)239--11-52	BRIDGE WIDENING
NHS-080-6(379)239--11-52	BRIDGE WIDENING
NHS-080-6(329)239--11-52	BRIDGE NEW - STEEL GIRDER
NHS-080-6(332)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(342)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(345)239--11-52	BRIDGE REPL. - PPCB
NHS-080-6(371)239--11-52	PCC PAV'T - GR. & REPLACE
NHS-080-6(401)239--11-52	TRAFFIC SIGNS
NHS-080-6(402)239--11-52	LIGHTING

HEAVY CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED ON THE NEW BRIDGE OR ADJACENT EXISTING BRIDGES DURING CONSTRUCTION UNLESS PRIOR WRITTEN APPROVAL OF THE ENGINEER IS OBTAINED. APPROVAL SHALL BE OBTAINED BY SUBMITTING A WRITTEN REQUEST TO THE ENGINEER. THIS REQUEST SHALL INCLUDE THE FOLLOWING:

1. A DETAILED PLAN ADEQUATELY DESCRIBING THE EQUIPMENT AND HOW IT IS PROPOSED TO BE USED. THIS PLAN SHALL CONTAIN, AS A MINIMUM, THE FOLLOWING INFORMATION:
   - A. THE CONFIGURATION AND WEIGHT OF THE EQUIPMENT PROPOSED TO BE PLACED ON THE BRIDGE.
   - B. THE PROPOSED LOCATION(S) OF THE EQUIPMENT ON THE BRIDGE DURING ALL LIFTING OPERATIONS.
   - C. THE WEIGHT OF ALL PROPOSED LIFTS TO BE MADE BY THE EQUIPMENT.
   - D. THE LOAD TO ALL WHEELS/AXLES/OUTRIGGERS/CRAWLERS RESULTING FROM THE PROPOSED LIFTING OPERATIONS, DURING ALL CRITICAL PHASES OF THE LIFTING OPERATIONS.
2. THE NECESSARY CALCULATIONS TO VERIFY THAT NO COMPONENT OF THE BRIDGE WILL BE OVERSTRESSED DURING THE PROPOSED USE OF THE EQUIPMENT ON THE BRIDGE. THE CALCULATIONS SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED TO PRACTICE ENGINEERING IN THE STATE OF IOWA.

BRIDGE DECK DIMENSIONS TABLE

	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	227.0
2	MINIMUM DECK WIDTH	L.F.	71.6
3	MAXIMUM DECK WIDTH	L.F.	71.6
4	DECK AREA	S.F.	16254

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
2, 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

SPECIFICATIONS:

DESIGN: AASHTO LRFD 7TH ED, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDING DEVELOPMENTAL SPECIFICATIONS FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES", "CONSTRUCTION PROGRESS SCHEDULE" AND SPECIAL PROVISIONS FOR "AESTHETIC TREATMENT OF CONCRETE BARRIER", "E-BUILDER" AND "WORK ON RAILROAD RIGHT-OF-WAY (IOWA INTERSTATE RAILROAD)" SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH ED, SERIES OF 2014, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60 FOR EPOXY COATED AND NON-COATED AND GRADE 60 OR 75 FOR STAINLESS.

CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c = 4.0 KSI, EXCEPT PRESTRESSED BEAM CONCRETE AS NOTED.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET 28.

BRIDGE DECK CONCRETE f'c = 4.0 KSI

STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

SHOP DRAWINGS SHALL BE SUBMITTED WITH THE FOLLOWING NAMING CONVENTION:
(Paren)_County_DesignNumber_SubmittalDescription.pdf
Example: (344)_Johnson_Design519_DeckDrains.pdf

1	INTERMEDIATE STEEL DIAPHRAGMS

POLLUTION PREVENTION PLAN INCLUDED IN THE TIED ROAD PLANS, PROJECT NO. NHS-080-6(373)239--11-52.

TRAFFIC CONTROL PLAN

THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLANS INCLUDED IN THE TIED ROAD PLANS, PROJECT NO. NHS-080-6(373)239--11-52.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

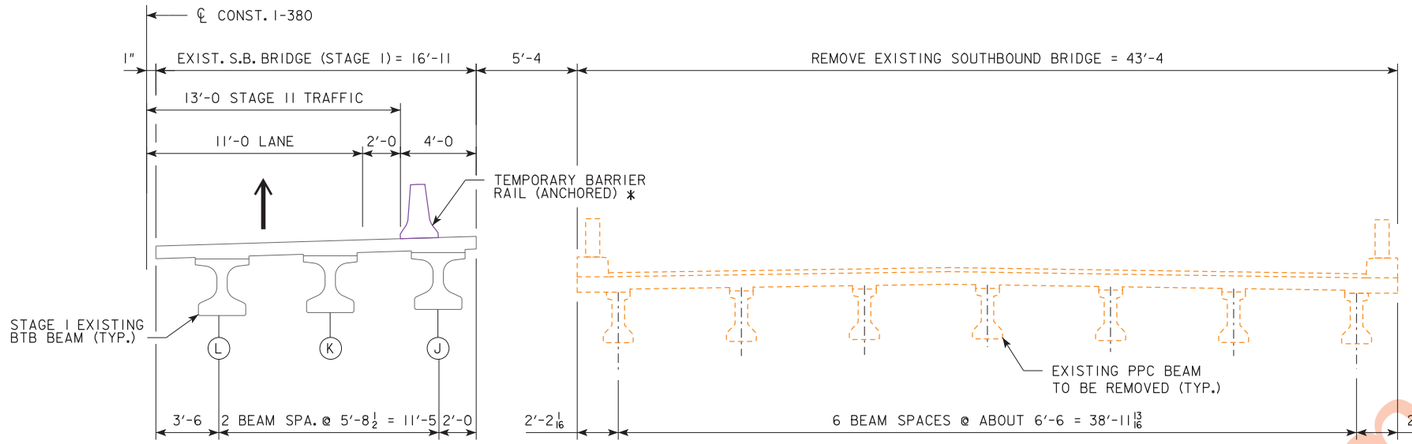
GENERAL NOTES

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

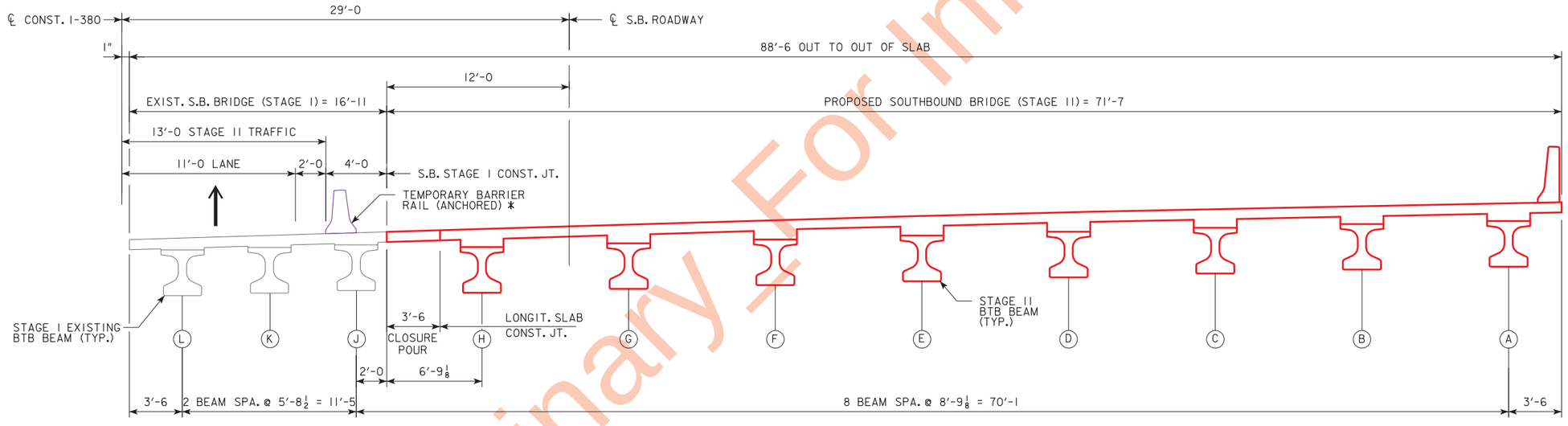
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 43 FILE NO. 30864 DESIGN NO. 519



CROSS SECTION - STAGE II SOUTHBOUND REMOVAL & TRAFFIC

(LOOKING SOUTH)



CROSS SECTION - STAGE II SOUTHBOUND CONSTRUCTION & TRAFFIC

(LOOKING SOUTH)

* SEE STANDARD ROAD PLAN BA-401. REFER TO NHS-080-6(373)239--11-52 FOR TRAFFIC CONTROL PLAN.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

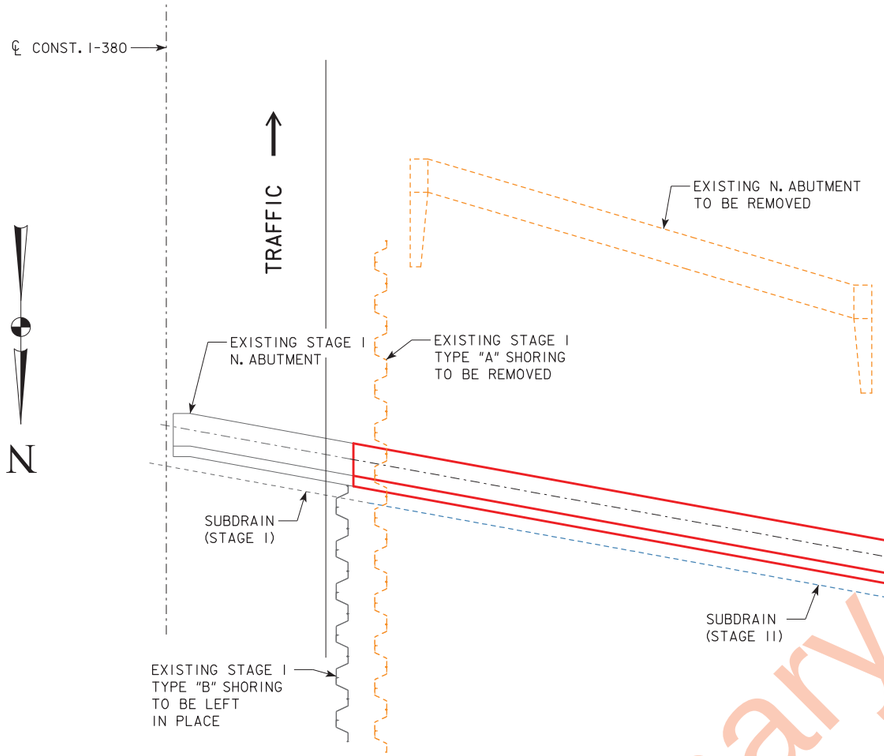
STAGING TYPICAL SECTION

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

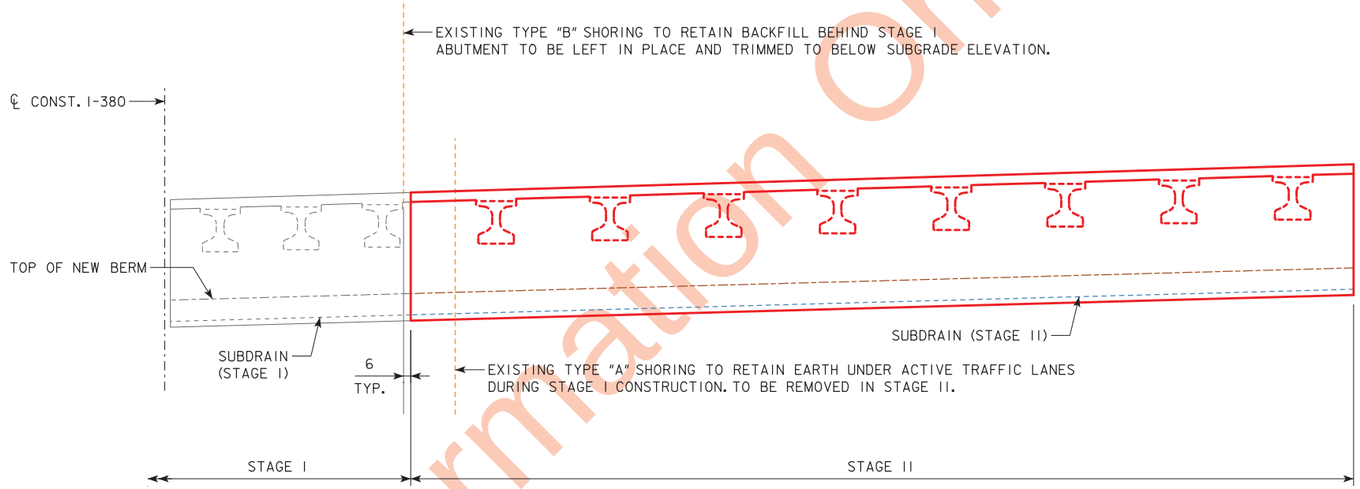
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 43 FILE NO. 30864 DESIGN NO. 519



EXISTING SHORING
(NORTH ABUT. SHOWN, SOUTH ABUT. SIMILAR)



ELEVATION VIEW
(LOOKING SOUTH)

NOTES:

EXISTING STAGE I TYPE "A" SHORING SHALL BE REMOVED PRIOR TO CONSTRUCTING THE STAGE II ABUTMENT.

EXISTING STAGE I TYPE "B" SHORING IS TO BE LEFT IN PLACE BELOW THE SUBGRADE ELEVATION. THE SHORING IS TO BE CUT OFF AT THE TOP OF THE SUBGRADE ELEVATION AFTER BACKFILLING AND PLACEMENT OF SUBGRADE IS COMPLETE FOR STAGE II.

FOR SUBDRAIN DETAILS, SEE DESIGN SHEET 42.

FOR ABUTMENT BACKFILL DETAILS, SEE DESIGN SHEET 41.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

EXISTING SHORING

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 43 — FILE NO. 30864 — DESIGN NO. 519

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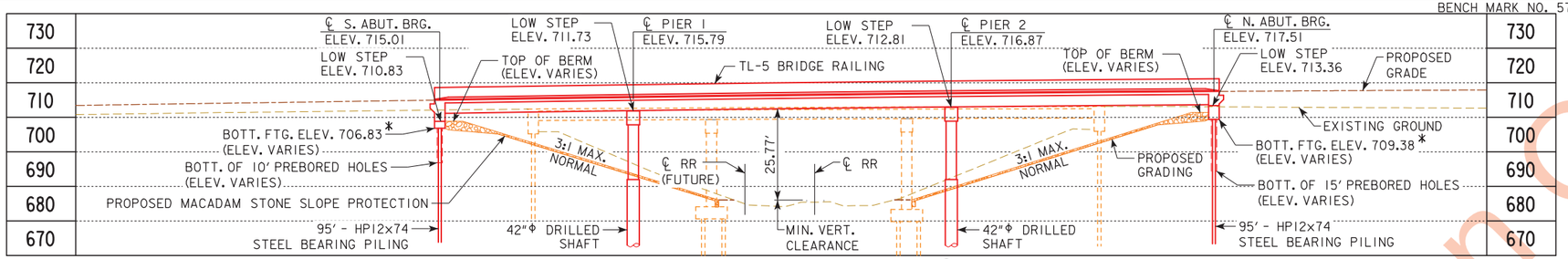
BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783



LONGITUDINAL SECTION ALONG ℄ S.B. ROADWAY

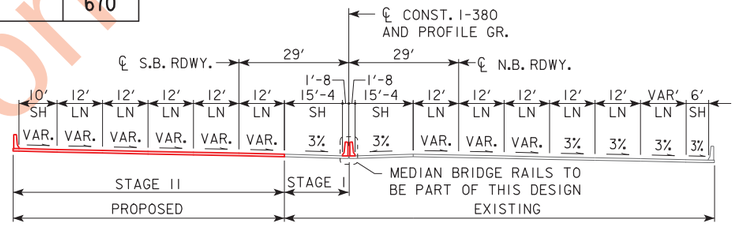
NOTE: TO ACCOUNT FOR CROSS SLOPE, THE TOP OF BRIDGE DECK AT CENTERLINE S.B. ROADWAY NORTH OF STA. 1198+49.86 IS +0.72' ABOVE PROFILE GRADE. FROM STA. 1198+19.86 TO STA. 1198+49.86, THIS DISTANCE VARIES FROM +0.78' TO +0.72' ABOVE THE PROFILE GRADE.

* LOW ELEVATION

+2.4997% -1.1734%

VPI STA. = 1200+60.00
VPI ELEV. = 721.00
VC = 910'

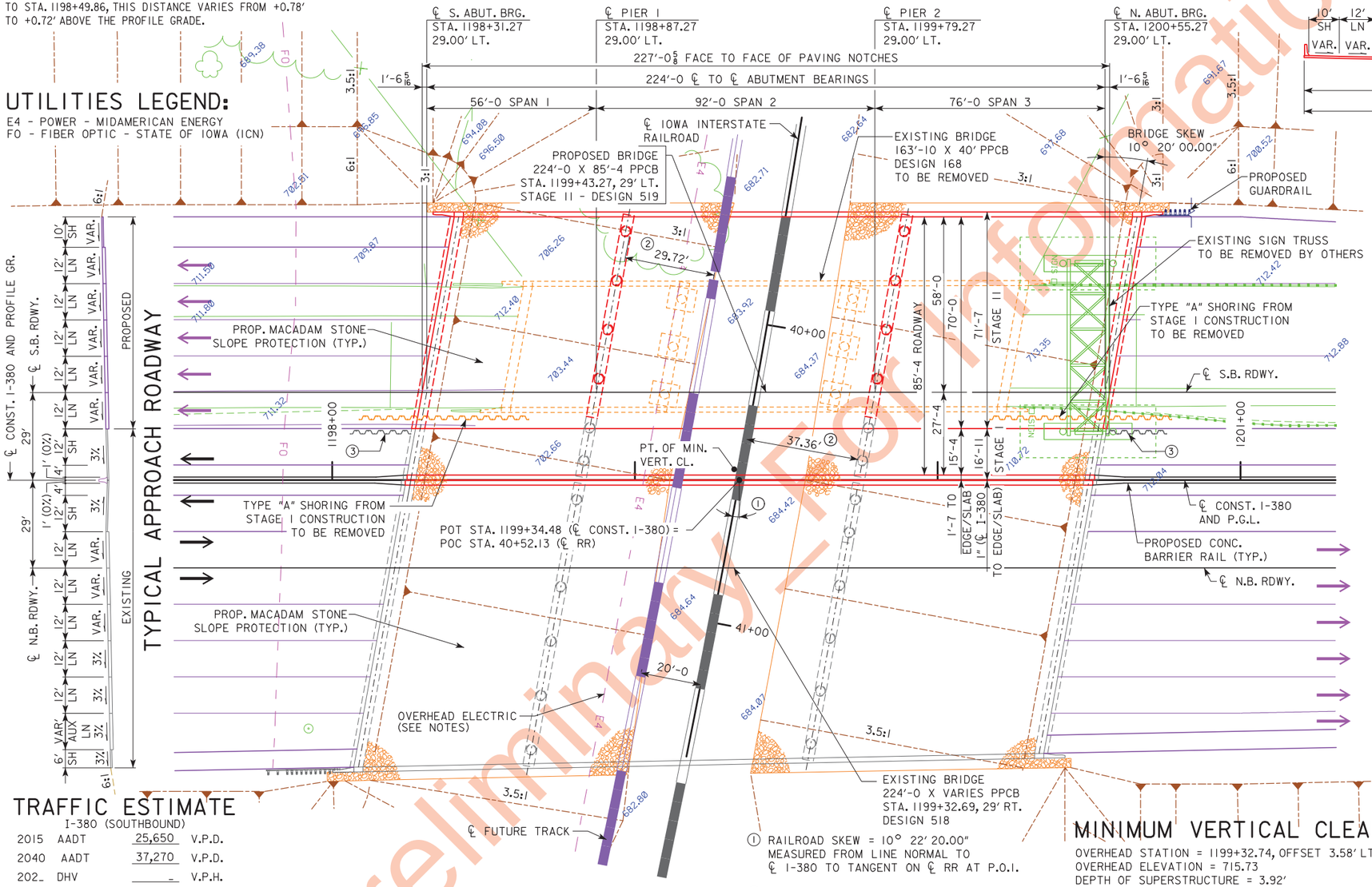
PROPOSED PROFILE GRADE I-380



TYPICAL BRIDGE SECTION

UTILITIES LEGEND:

E4 - POWER - MIDAMERICAN ENERGY
FO - FIBER OPTIC - STATE OF IOWA (ICN)



① RAILROAD SKEW = 10° 22' 20.00" MEASURED FROM LINE NORMAL TO ℄ I-380 TO TANGENT ON ℄ RR AT P.O.I.

② MIN. CLEAR TO FACE OF 3'-0 DIA. COLUMN

③ TYPE "B" SHORING, SEE DESIGN SHEET 5.

SITUATION PLAN

TRAFFIC ESTIMATE

I-380 (SOUTHBOUND)

2015 AADT	25,650	V.P.D.
2040 AADT	37,270	V.P.D.
202_ DHV	_	V.P.H.
TRUCKS	17	%
TOTAL DESIGN ESALs	_	

NOTES:
TL-5 MEDIAN BRIDGE RAIL ON BOTH BRIDGES TO BE CONSTRUCTED WITH THIS DESIGN.

MACADAM STONE SLOPE PROTECTION FOR BOTH BRIDGES TO BE INSTALLED WITH THIS DESIGN.

SUPERELEVATION TRANSITION OCCURS ON THE BRIDGE SOUTH OF STA. 1198+49.86. SEE DESIGN SHEET 24 FOR SUPERELEVATION TRANSITION.

SEE DESIGN SHEET 8 FOR TOP OF RAIL ELEVATIONS AND RAILROAD GENERAL NOTES.

EXISTING MIDAMERICAN ENERGY OVERHEAD ELECTRIC TO BE RELOCATED. SEE UTILITY GENERAL NOTES SHEET U.NN (MIDAME-2).

CURVE DATA

I-380
PI STA. 1191+13.06
Δ = 22° 38' 40.61" (RT)
T = 655.54'
L = 1293.98'
E = 64.98'
R = 3274.04'
e = 5.2%
l = 312'
x = 150'
PC STA. 1184+57.52
PT STA. 1197+51.50

CURVE DATA

RAILROAD
PI STA. 46+75.67
Δ = 30° 52' 29.31" (RT)
T = 1582.21'
L = 3087.48'
E = 214.45'
R = 5729.58'
SC STA. 30+93.46
CS STA. 61+80.94

LOCATION

S.B. I-380 OVER IOWA INTERSTATE RR
T-80N R-7W
SECTION 27
CLEAR CREEK TOWNSHIP
JOHNSON COUNTY
FHWA NO. 600401
FRA NO. 608011W
LATITUDE 41.703659°
LONGITUDE -91.642218°

MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 1199+32.74, OFFSET 3.58' LT.
OVERHEAD ELEVATION = 715.73
DEPTH OF SUPERSTRUCTURE = 3.92'
UNDERPASS STATION = 40+48.92, OFFSET 2.35' RT.
UNDERPASS ELEVATION = 686.04
MINIMUM VERTICAL CLEARANCE = 25.77'

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SITUATION PLAN

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 43 FILE NO. 30864 DESIGN NO. 519

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BENCH MARK NO. 571 STA. 1200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783

BERM SLOPE LOCATION TABLE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	1199+32.80	91.58' LT	682.83	1199+71.07	91.58' LT	683.56
A2	1199+11.55	0.00'	684.59	1199+56.30	0.00'	684.13
B1	1198+47.25	91.58' LT	710.66	1200+62.10	91.58' LT	712.99
B2	1198+30.55	0.00'	708.59	1200+45.40	0.00'	711.22
W1	1198+33.32	91.58' LT	716.20	1200+74.37	91.58' LT	718.64

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

WAITING FOR INFORMATION FROM ROADWAY DESIGNERS.

STEVE MAIFIELD:
THE GRADING ON THIS SHEET WILL BE UPDATED ONCE WE RECEIVE INFORMATION FROM ROADWAY DESIGNERS.

PROPOSED 60"Φ RCP CULVERT BY OTHERS

EXISTING 60"Φ RCP CULVERT TO BE REMOVED BY OTHERS

℄ FUTURE TRACK

℄ IOWA INTERSTATE RAILROAD

℄ S. ABUT. BRG.
STA. 1198+31.27
29.00' LT.

℄ N. ABUT. BRG.
STA. 1200+55.27
29.00' LT.

PROPOSED BRIDGE
224'-0 X 85'-4 PPCB
STA. 1199+43.27, 29' LT.
STAGE II - DESIGN 519

EXISTING BRIDGE
163'-10 X 40' PPCB
DESIGN 168
TO BE REMOVED

PROPOSED GUARDRAIL

PROP. MACADAM STONE SLOPE PROTECTION (TYP.)

℄ S.B. RDWY.

℄ CONST. I-380 AND PGL

PROPOSED CONC. BARRIER RAIL (TYP.)

℄ N.B. RDWY.

POT STA. 1199+34.48 (℄ CONST. I-380) =
POC STA. 40+52.13 (℄ RR)

PROP. MACADAM STONE SLOPE PROTECTION (TYP.)

EXISTING BRIDGE
224'-0 X VARIES PPCB
STA. 1199+32.69, 29' RT.
DESIGN 518

EXISTING GRADING FROM N.B. BRIDGE CONSTRUCTION

38+00 40+00 41+00 1198+00 1201+00

3.5:1 3:1 6:1 20'-0

N

NOTE:

GRADING ON THIS SHEET IS FOR INFORMATION ONLY.
REFER TO PROJECT IM-080-6(243)239--13-52 FOR GRADING.

SITE PLAN

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SITUATION PLAN - SITE

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 7 OF 43 FILE NO. 30864 DESIGN NO. 519

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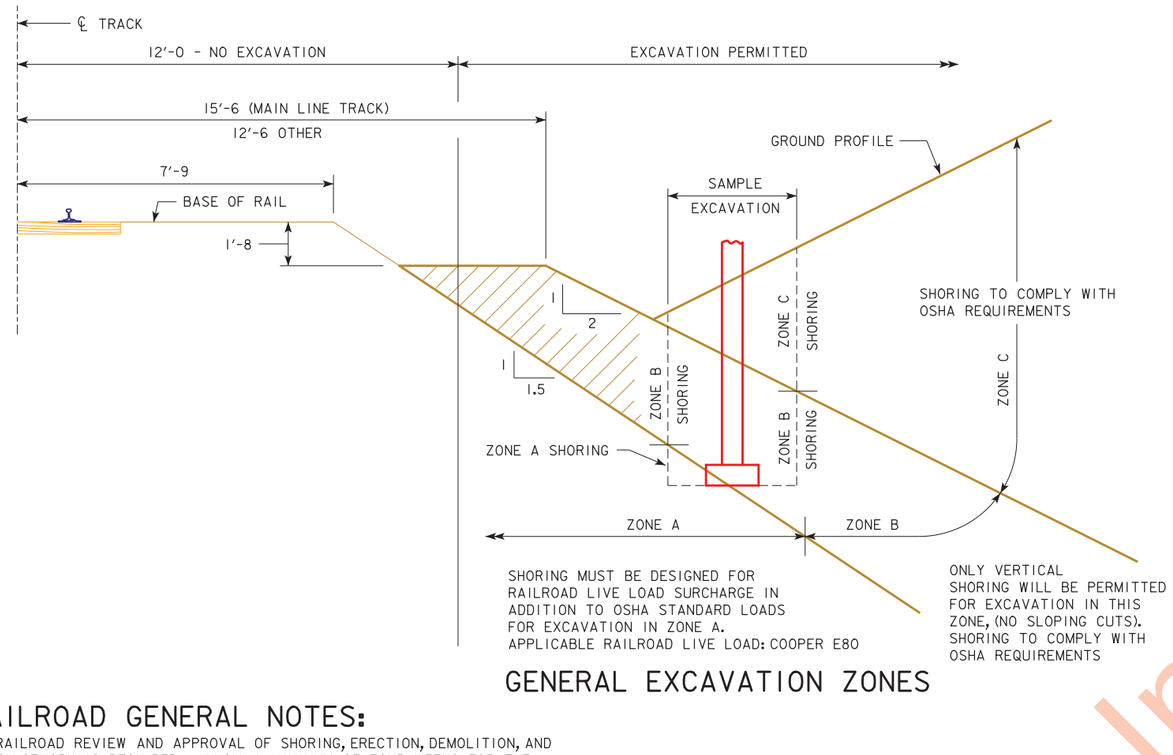
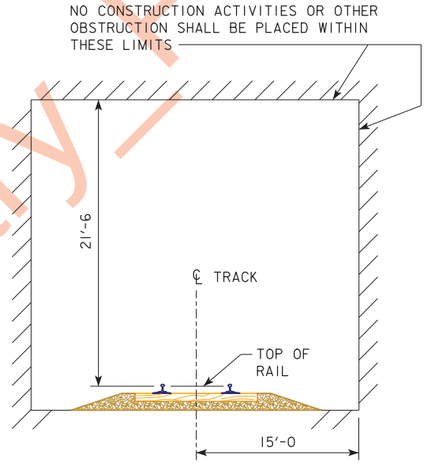


GENERAL EXCAVATION ZONES

RAILROAD GENERAL NOTES:

1. RAILROAD REVIEW AND APPROVAL OF SHORING, ERECTION, DEMOLITION, AND FALSEWORK IS REQUIRED. ALLOW A MINIMUM OF FOUR WEEKS FOR THE REVIEW AND APPROVAL OF EACH SUBMITTAL.
2. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.
3. THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD.
5. ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
6. ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.
7. ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
8. ALL CONSTRUCTION PHASING THAT MAY IMPACT THE RAILROAD OPERATIONS SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
9. FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.
10. ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.
11. FOR RAILROAD COORDINATION PLEASE REFER TO THE RAILROAD COORDINATION REQUIREMENTS AS PART OF SPECIAL PROVISIONS.



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE
(NORMAL TO RAILROAD)

TOP OF RAIL ELEVATIONS
(STATIONS INCREASE WITH MILEPOST INCREASE)

IAIS RR STATION	STATION	CENTER/ TRACK	LEFT RAIL	RIGHT RAIL
12872+88.63	30+52.00	684.53	-----	-----
12872+63.92	30+76.71	684.52	-----	-----
12872+40.89	30+99.74	684.51	-----	-----
12872+12.57	31+28.06	684.51	-----	-----
12871+85.97	31+54.66	684.50	-----	-----
12871+59.72	31+80.91	684.53	-----	-----
12871+26.39	32+14.24	684.50	-----	-----
12870+98.00	32+42.63	684.54	-----	-----
12870+57.45	32+83.18	684.60	-----	-----
12870+32.88	33+07.75	684.60	-----	-----
12870+02.49	33+38.14	684.65	-----	-----
12869+67.64	33+72.99	684.68	-----	-----
12869+40.90	33+99.73	684.73	-----	-----
12869+15.64	34+24.99	684.73	-----	-----
12869+15.43	34+25.20	684.73	-----	-----
12868+98.61	34+42.02	684.75	-----	-----
12868+70.52	34+70.11	684.74	-----	-----
12868+42.12	34+98.51	684.80	-----	-----
12868+17.42	35+23.21	684.81	-----	-----
12867+93.23	35+47.40	684.83	-----	-----
12867+69.52	35+71.11	684.85	-----	-----
12867+43.43	35+97.20	684.88	-----	-----
12867+18.59	36+22.04	684.91	-----	-----
12866+91.95	36+48.68	684.97	-----	-----
12866+67.56	36+73.07	684.94	-----	-----
12866+42.76	36+97.87	685.03	-----	-----
12866+16.28	37+24.35	685.03	-----	-----
12865+91.58	37+49.05	685.06	-----	-----
12865+66.66	37+73.97	685.09	-----	-----
12865+38.31	38+02.32	685.15	-----	-----
12865+12.15	38+28.48	685.16	-----	-----
12864+83.77	38+56.86	685.17	-----	-----
12864+58.79	38+81.84	685.27	685.94	685.84
12864+30.29	39+10.34	685.28	685.95	685.86
12864+07.66	39+32.97	685.32	685.99	685.91
12863+81.00	39+59.63	685.38	686.04	685.95
12863+54.29	39+86.34	685.45	686.09	686.02
12863+29.99	40+10.64	685.47	686.13	686.05
12863+05.46	40+35.17	685.42	686.08	686.02
12862+78.40	40+62.23	685.46	686.11	686.06

TOP OF RAIL ELEVATIONS
(STATIONS INCREASE WITH MILEPOST INCREASE)

IAIS RR STATION	STATION	CENTER/ TRACK	LEFT RAIL	RIGHT RAIL
12862+51.91	40+88.72	685.51	686.14	686.09
12862+25.45	41+15.18	685.44	686.09	686.03
12862+00.86	41+39.77	685.43	686.09	686.02
12861+74.38	41+66.25	685.39	686.05	685.99
12861+47.84	41+92.79	685.39	686.06	685.96
12861+21.48	42+19.15	685.45	686.12	686.03
12860+98.43	42+42.20	685.50	-----	-----
12860+72.15	42+68.48	685.52	-----	-----
12860+45.41	42+95.22	685.60	-----	-----
12860+20.71	43+19.92	685.63	-----	-----
12859+92.99	43+47.64	685.71	-----	-----
12859+64.81	43+75.82	685.78	-----	-----
12859+41.60	43+99.03	685.79	-----	-----
12859+18.73	44+21.90	685.79	-----	-----
12858+94.69	44+45.94	685.87	-----	-----
12858+94.25	44+46.38	685.89	-----	-----
12858+69.42	44+71.21	685.96	-----	-----
12858+43.20	44+97.43	686.02	-----	-----
12858+16.81	45+23.82	686.09	-----	-----
12857+89.90	45+50.73	686.14	-----	-----
12857+61.95	45+78.68	686.26	-----	-----
12857+35.12	46+05.51	686.32	-----	-----
12857+02.83	46+37.80	686.38	-----	-----
12857+02.06	46+38.57	686.37	-----	-----
12856+86.29	46+54.34	686.42	-----	-----
12856+55.37	46+85.26	686.51	-----	-----
12856+24.29	47+16.34	686.53	-----	-----
12856+02.88	47+37.75	686.60	-----	-----
12855+80.26	47+60.37	686.69	-----	-----
12855+51.91	47+88.72	686.84	-----	-----
12855+23.51	48+17.12	686.96	-----	-----
12854+94.40	48+46.23	687.08	-----	-----
12854+62.85	48+77.78	687.20	-----	-----
12854+36.44	49+04.19	687.33	-----	-----
12854+08.09	49+32.54	687.44	-----	-----
12853+80.38	49+60.25	687.50	-----	-----
12853+55.05	49+85.58	687.61	-----	-----
12853+24.57	50+16.06	687.72	-----	-----
12852+94.44	50+46.19	687.77	-----	-----

GENERAL SHORING NOTES:

1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO TRACK.
2. PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE RAILROAD DETAILED PLANS INDICATING THE NATURE AND EXTENT OF THE TRACK PROTECTION SHORING PROPOSED. THE CONTRACTOR SHALL INSTALL THE TEMPORARY SHORING SYSTEM PER THE APPROVED PLANS. DESIGN OF THE TEMPORARY SHORING SYSTEM TO COMPLY WITH GUIDELINES FOR TEMPORARY SHORING.
3. FOR EXCAVATIONS WHICH ENCROACH INTO ZONE A OR B, SHORING PLANS SHALL BE ACCOMPANIED BY DESIGN CALCULATIONS. PLANS AND CALCULATIONS MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IOWA.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

RAILROAD GENERAL NOTES

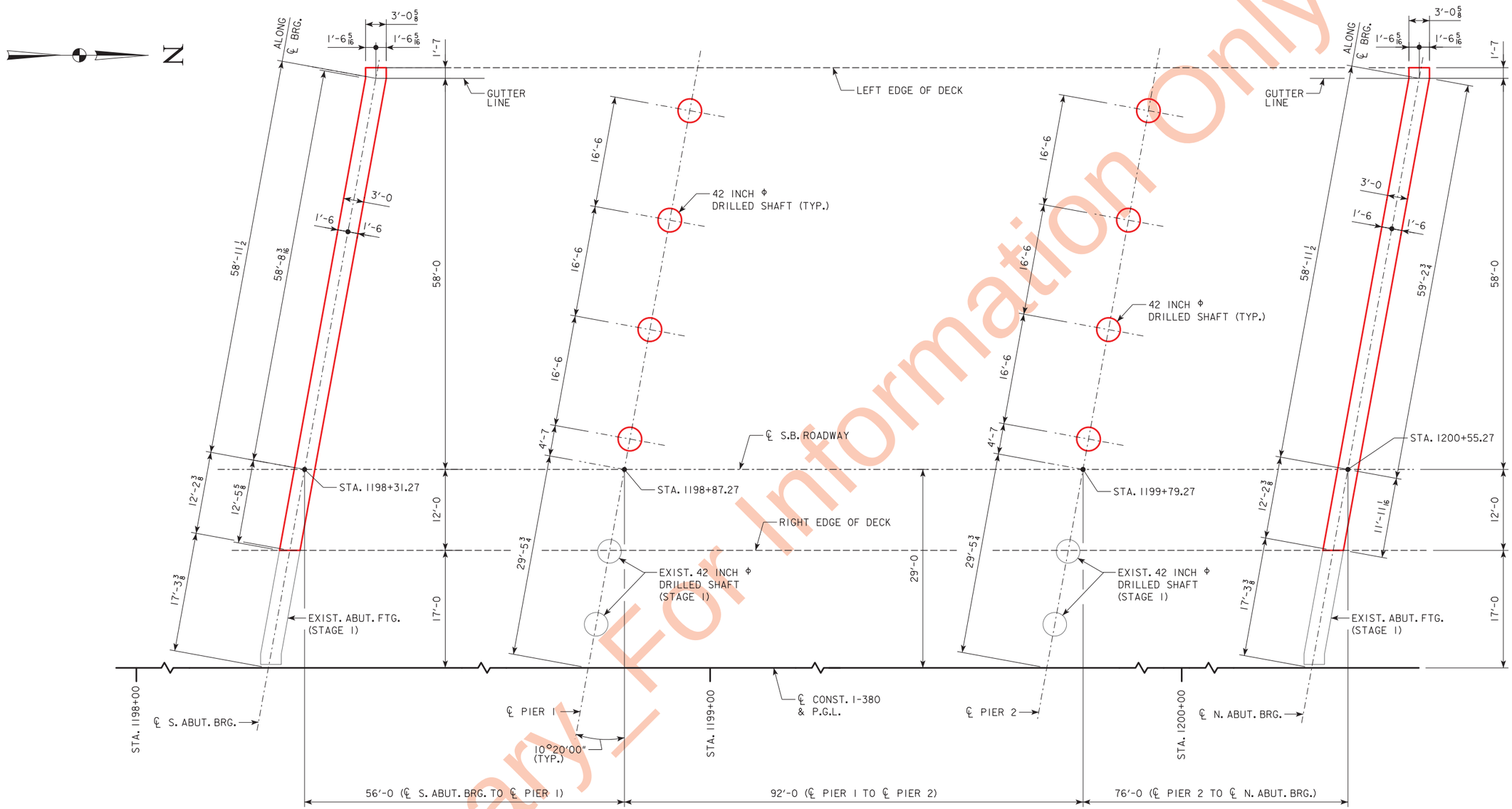
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 8 OF 43 FILE NO. 30864 DESIGN NO. 519

REVISED 09-13 - RAILROAD CHANGED THE MINIMUM VERTICAL CONSTRUCTION CLEARANCE TO 21'-6. DISTANCE FROM MAINLINE TRACK TO EDGE OF EMBANKMENT CHANGED TO 15'-6.
REVISED 06-2017 - ADDED NOTE OUTSIDE OF SHEET BORDER TO EXPLAIN THE USE OF THIS STANDARD SHEET WITH ARCHIVED METHODS MEMO MM201.
ENGLISH\MISCELLANEOUSBRIDGES.DGN - 1067 - THIS SHEET ISSUED 12-08.



SUBSTRUCTURE LAYOUT

BRIDGE COORDINATES

LOCATION	℄ S. ABUT. BRG.	℄ PIER 1	℄ PIER 2	℄ N. ABUT. BRG.
LEFT EDGE OF DECK	E=2147631.469 N=626028.289	E=2147630.367 N=626084.278	E=2147628.556 N=626176.260	E=2147627.060 N=626252.245
℄ S.B. ROADWAY	E=2147691.254 N=626018.600	E=2147690.152 N=626074.589	E=2147688.341 N=626166.571	E=2147686.845 N=626242.556
RIGHT EDGE OF DECK	E=2147703.295 N=626016.648	E=2147702.193 N=626072.638	E=2147700.382 N=626164.620	E=2147698.886 N=626240.605

NOTE: AN ELECTRONIC FILE CONTAINING THE BRIDGE COORDINATE DATA IS AVAILABLE AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY THESE COORDINATES WITH THE PROJECT HORIZONTAL CONTROL INFORMATION PROVIDED IN THE ROAD PLANS.

DESIGN FOR 10°20′ SKEW L.A.

224′-0 x 85′-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56′-0, 76′-0 END SPANS — 92′-0 CENTER SPAN

SUBSTRUCTURE LAYOUT

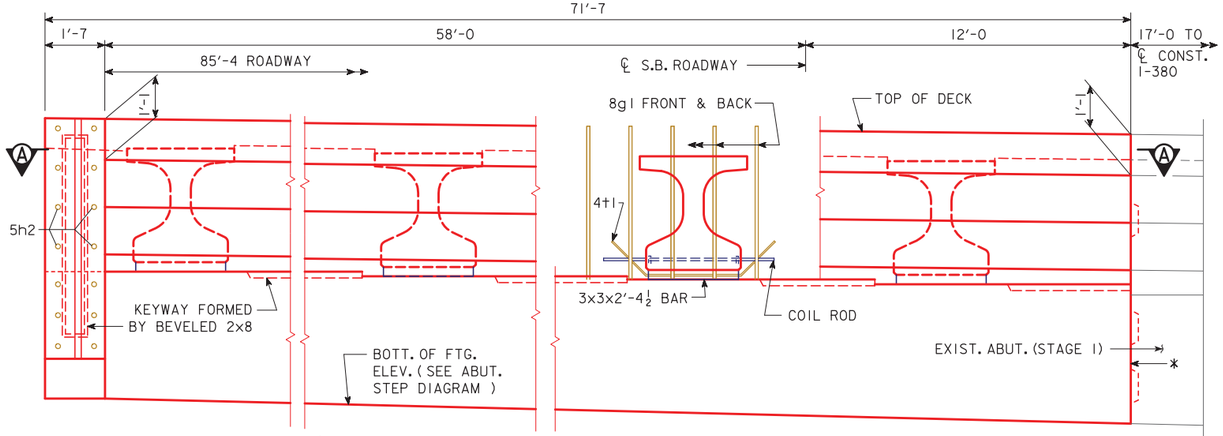
STA. 1199+43.27, 29′ LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

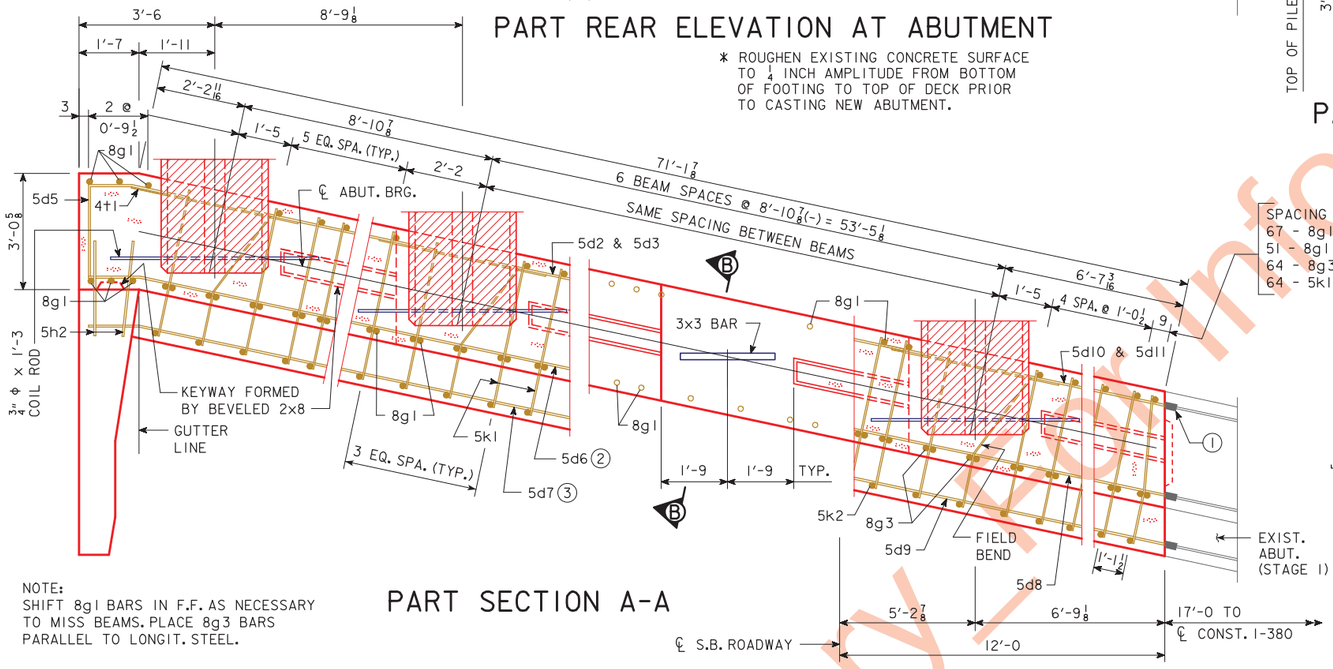
DESIGN SHEET NO. 9 OF 43 FILE NO. 30864 DESIGN NO. 519

CORRECTION 04-14 - ADDED CONCRETE QUANTITY TABLE & REFERRAL NOTE TO SUMMARY QUANTITY SHEET. REMOVED DESIGN BEARING NOTE FOR ABUT. PILING FROM ABUTMENT NOTES.
ENGLISHBTINTEGRALBRIDGES.DGN - 2080-BTB - THIS SHEET ISSUED 02-08.



PART REAR ELEVATION AT ABUTMENT

* ROUGHEN EXISTING CONCRETE SURFACE TO ¼ INCH AMPLITUDE FROM BOTTOM OF FOOTING TO TOP OF DECK PRIOR TO CASTING NEW ABUTMENT.

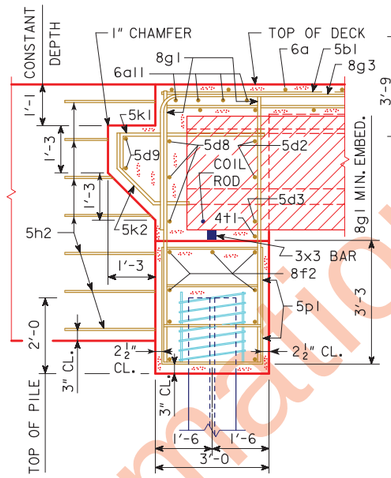


PART SECTION A-A

NOTE:
SHIFT 8g1 BARS IN F.F. AS NECESSARY TO MISS BEAMS. PLACE 8g3 BARS PARALLEL TO LONGIT. STEEL.

① STAGE I MECHANICAL SPLICE (TYP.)
② LAP WITH 5d8 - MIN. LAP = 2'-2
③ LAP WITH 5d9 - MIN. LAP = 2'-2

NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE.

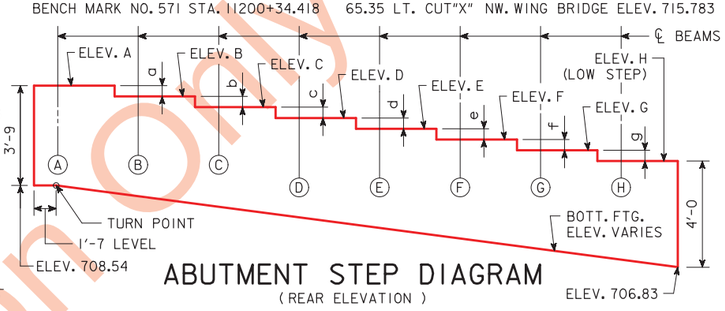


PART SECTION B-B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - L⅞ x ⅞ x ⅛ SPACERS PUNCHED TO HOLD SPIRAL.

SPACING FOR :
67 - 8g1 BACK FACE
51 - 8g1 FRONT FACE
64 - 8g3 BACK FACE
64 - 5k1 & 5k2 BACK FACE

BENCH MARK NO. 571 STA. 1200+34.418 65.35 LT. CUT"X" NW. WING BRIDGE ELEV. 715.783



ABUTMENT STEP DIAGRAM

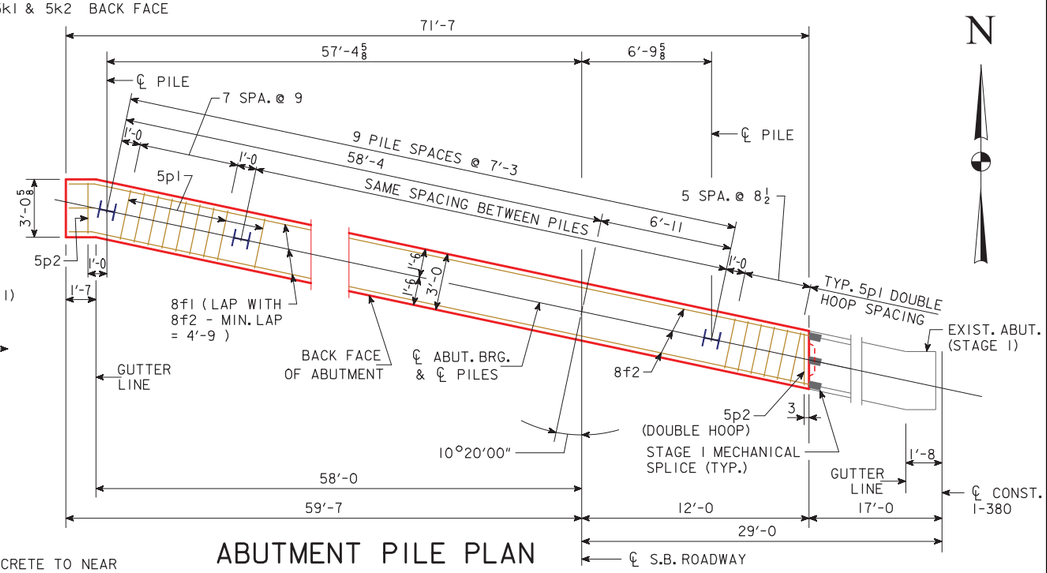
(REAR ELEVATION)

TABLE OF ABUTMENT STEPS

STEP	SOUTH ABUT.
a	2 1/4
b	2 7/16
c	2 1/2
d	2 1/2
e	2 9/16
f	2 5/8
g	2 11/16

TABLE OF ABUTMENT ELEVATIONS

POINT	SOUTH ABUT.
ELEV. A	712.29
ELEV. B	712.11
ELEV. C	711.91
ELEV. D	711.70
ELEV. E	711.49
ELEV. F	711.27
ELEV. G	711.05
ELEV. H	710.83



ABUTMENT PILE PLAN

NOTES:

THE CONTRACT LENGTH OF 95 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A MIXED SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 221 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.70 FOR ROCK END BEARING. TO ACCOUNT FOR SOIL CONSOLIDATION UNDER THE NEW FILL, THE FACTORED AXIAL LOAD INCLUDES A FACTORED DOWNDRAG LOAD OF 81 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH ABUTMENT PILES IS 205 TONS AT END OF DRIVE. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

10 - HP 12 X 74 STEEL BEARING PILING REQUIRED AT SOUTH ABUTMENT.

ABUTMENT NOTES:

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

IF 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 AT NO EXTRA COST TO THE STATE.

STEEL PILE POINTS ARE REQUIRED FOR THE STEEL H-PILES AT THE ABUTMENTS.

REINFORCING BAR ENDS DENOTED WITH "MECHANICAL SPLICE" SHALL BE COUPLED/SPLICED TO MATING BARS IN PRIOR STAGE CONSTRUCTION WITH A MECHANICAL BAR SPLICE SYSTEM (REFER TO "MECHANICAL BAR SPLICE SYSTEM NOTES" ON DESIGN SHEET 1). A TOTAL OF 18-8f2, 6-5d8 AND 4-5d9 ARE TO BE COUPLED/SPLICED. (BOTH ABUTMENTS ACCOUNTED FOR)

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SOUTH ABUTMENT DETAILS

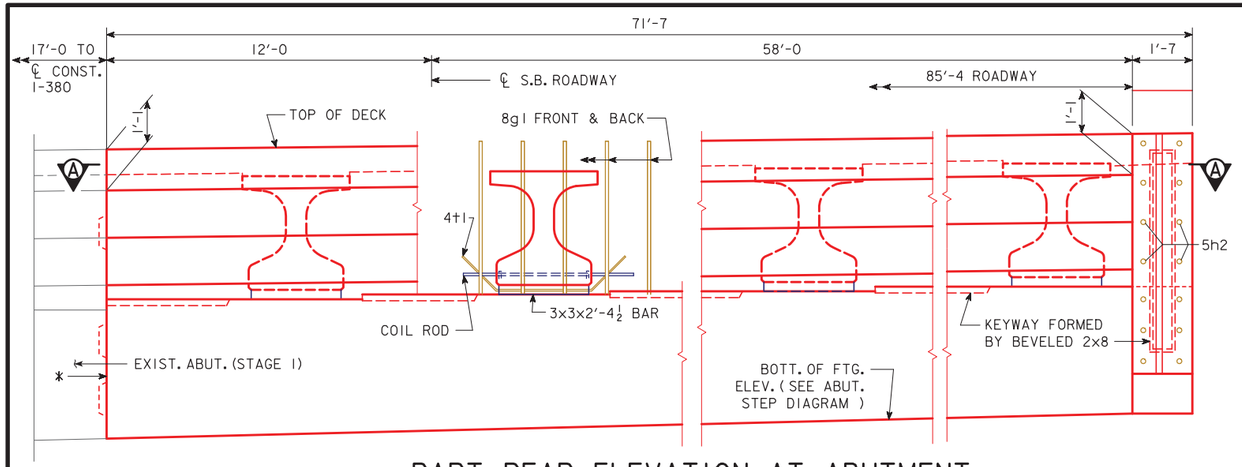
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

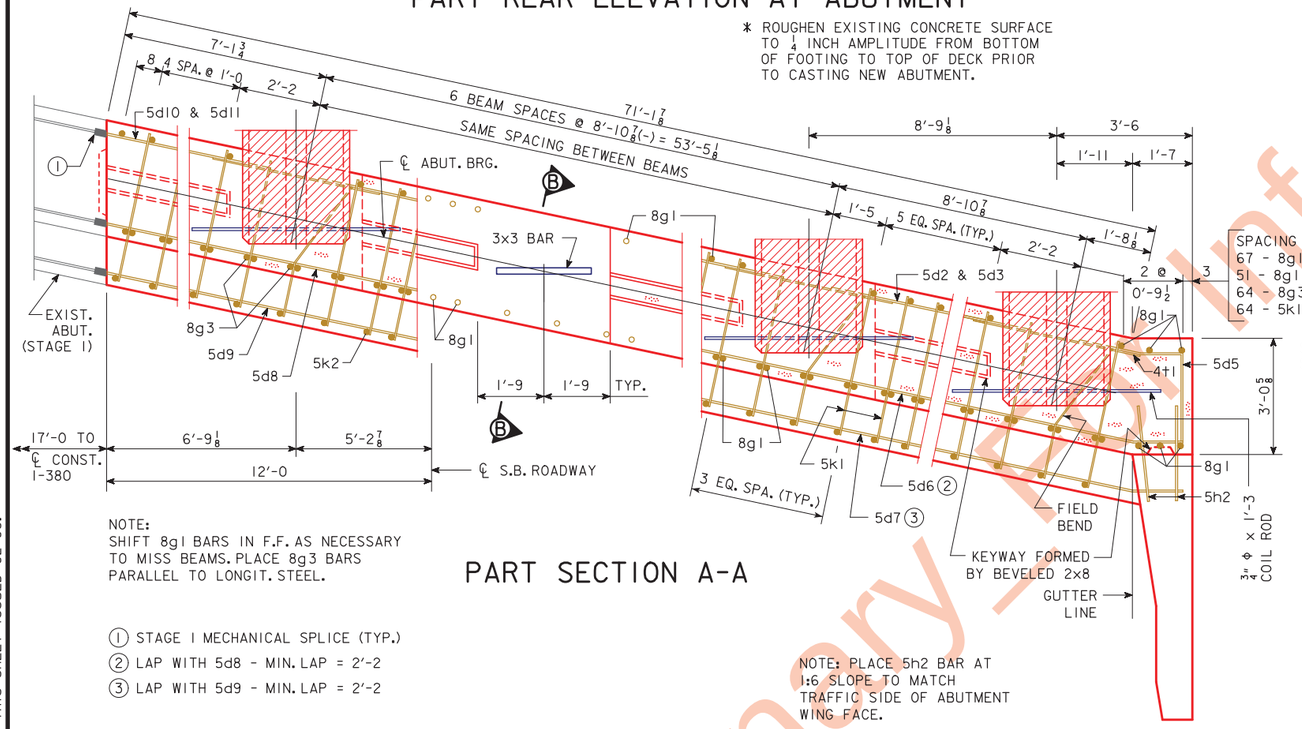
DESIGN SHEET NO. 10 OF 43 FILE NO. 30864 DESIGN NO. 519

DESIGN TEAM PARSONS	KRP/EJ/SC	"BTB" BEAMS INTEGRAL ABUT. DETAILS - (L.A.) 7°31'-15° SKEW	STANDARD SHEET 2080-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 55



PART REAR ELEVATION AT ABUTMENT

* ROUGHEN EXISTING CONCRETE SURFACE TO ¼ INCH AMPLITUDE FROM BOTTOM OF FOOTING TO TOP OF DECK PRIOR TO CASTING NEW ABUTMENT.

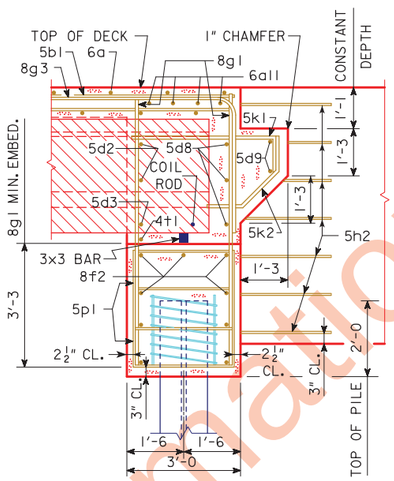


NOTE:
SHIFT 8g1 BARS IN F.F. AS NECESSARY TO MISS BEAMS. PLACE 8g3 BARS PARALLEL TO LONGIT. STEEL.

PART SECTION A-A

① STAGE I MECHANICAL SPLICE (TYP.)
② LAP WITH 5d8 - MIN. LAP = 2'-2
③ LAP WITH 5d9 - MIN. LAP = 2'-2

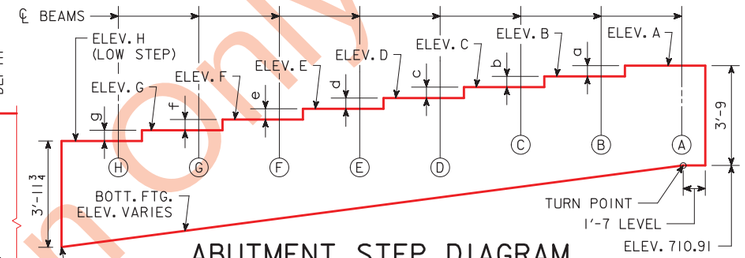
NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE.



PART SECTION B-B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - L⅞ x ⅞ x ⅛ SPACERS PUNCHED TO HOLD SPIRAL.

BENCH MARK NO. 571 STA. 1200+34.418 65.35 LT. CUT"X" NW. WING BRIDGE ELEV. 715.783



ABUTMENT STEP DIAGRAM

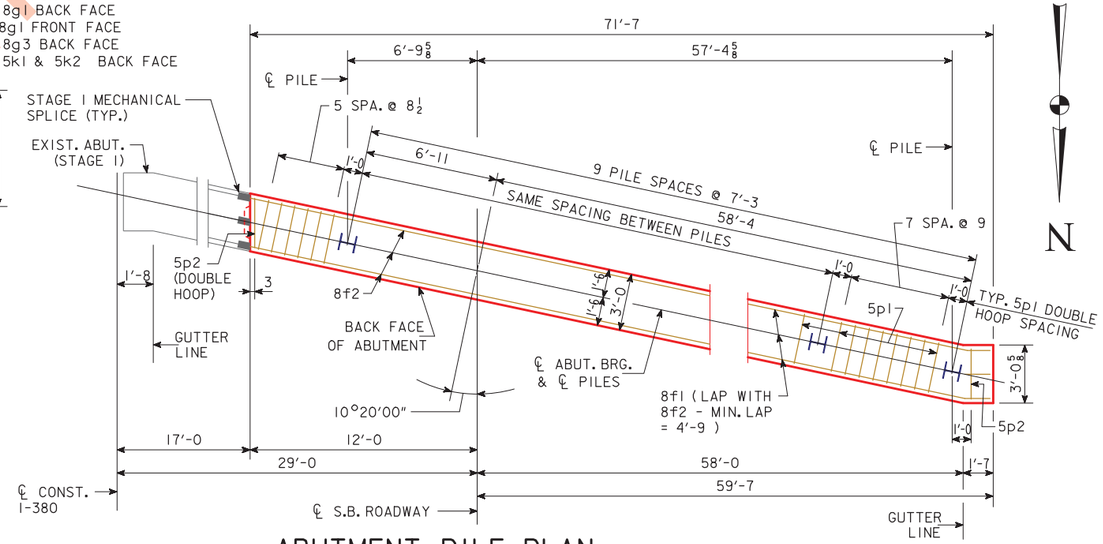
(REAR ELEVATION)

TABLE OF ABUTMENT STEPS

STEP	NORTH ABUT.
a	2¼
b	2¼
c	2¼
d	2¼
e	2¼
f	2¼
g	2¼

TABLE OF ABUTMENT ELEVATIONS

POINT	NORTH ABUT.
ELEV. A	714.66
ELEV. B	714.47
ELEV. C	714.29
ELEV. D	714.10
ELEV. E	713.92
ELEV. F	713.73
ELEV. G	713.54
ELEV. H	713.36



ABUTMENT PILE PLAN

ABUTMENT CONCRETE QUANTITY

LOCATION	QUANTITY
SOUTH ABUTMENT FOOTING	31.5
NORTH ABUTMENT FOOTING	31.2
TOTAL (CU. YDS.)	62.7

NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.

NOTES:

THE CONTRACT LENGTH OF 95 FEET FOR THE NORTH ABUTMENT PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 252 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING. TO ACCOUNT FOR SOIL CONSOLIDATION UNDER THE NEW FILL, THE FACTORED AXIAL LOAD INCLUDES A FACTORED DOWNDRAG LOAD OF 90 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH ABUTMENT PILES IS 230 TONS AT END OF DRIVE. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

10 - HP 12 X 74 STEEL BEARING PILING REQUIRED AT NORTH ABUTMENT.

SPACING FOR :
67 - 8g1 BACK FACE
51 - 8g1 FRONT FACE
64 - 8g3 BACK FACE
64 - 5k1 & 5k2 BACK FACE

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

NORTH ABUTMENT DETAILS

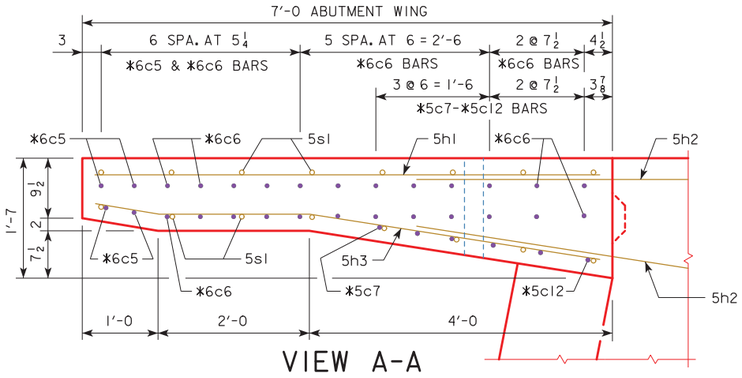
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

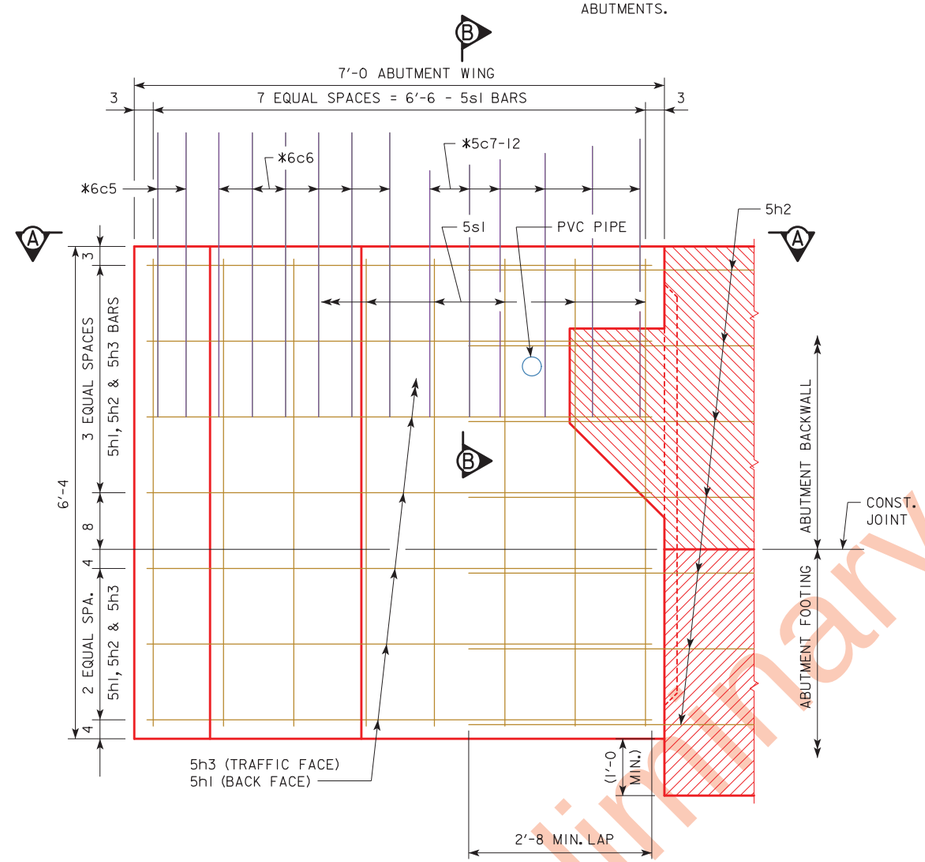
DESIGN SHEET NO. 11 OF 43 FILE NO. 30864 DESIGN NO. 519

DESIGN TEAM PARSONS	KRP/EJ/SC	"BTB" BEAMS INTEGRAL ABUT. DETAILS - (L.A.) 7°31'-15° SKEW	STANDARD SHEET 2080-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 56

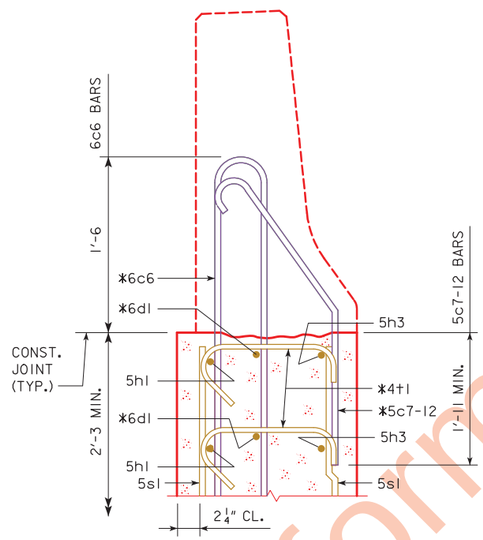


VIEW A-A

NOTE:
PLUG 3"Φ PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.



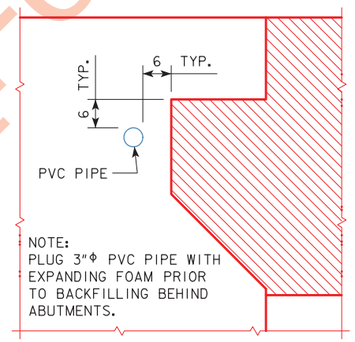
ABUTMENT WING - ELEVATION VIEW



SECTION B-B

* BARRIER RAIL END SECTION BARS TO BE PLACED WITH ABUTMENT WING.

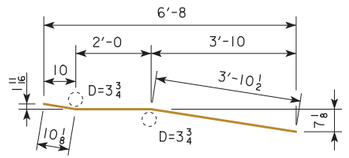
SEE BARRIER RAIL END SECTION SHEET IN THESE PLANS FOR DETAILS OF REINFORCING BARS 6c5, 6c6, 5c7-12, 6d1 & 4t1.



PVC PIPE LOCATION

REINFORCING BAR LIST - ONE ABUT. WING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5h1	HORIZONTAL BACK FACE		7	6'-8	49
5h3	HORIZONTAL TRAFFIC FACE		7	6'-9	49
5s1	VERTICAL BOTH FACES		16	6'-0	100
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				198



5h3

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

BENT BAR DETAILS

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
ONE ABUTMENT WING	1.9
TOTAL (CU. YDS.)	1.9

NOTE:

CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

ABUTMENT WING DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 12 OF 43 — FILE NO. 30864 — DESIGN NO. 519

CORRECTION 04-14 - ADDED REFERRAL NOTE TO SUMMARY QUANTITIES SHEET.
ENGLISHMISCELLANEOUSBRIDGES.DGN - 2111 - THIS SHEET ISSUED 02-08.

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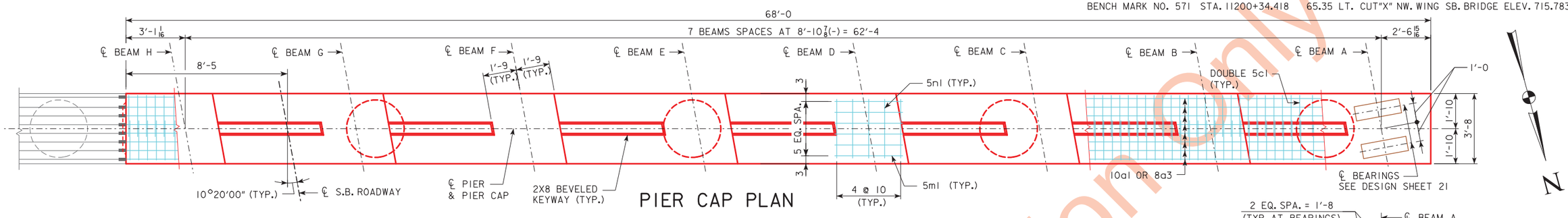
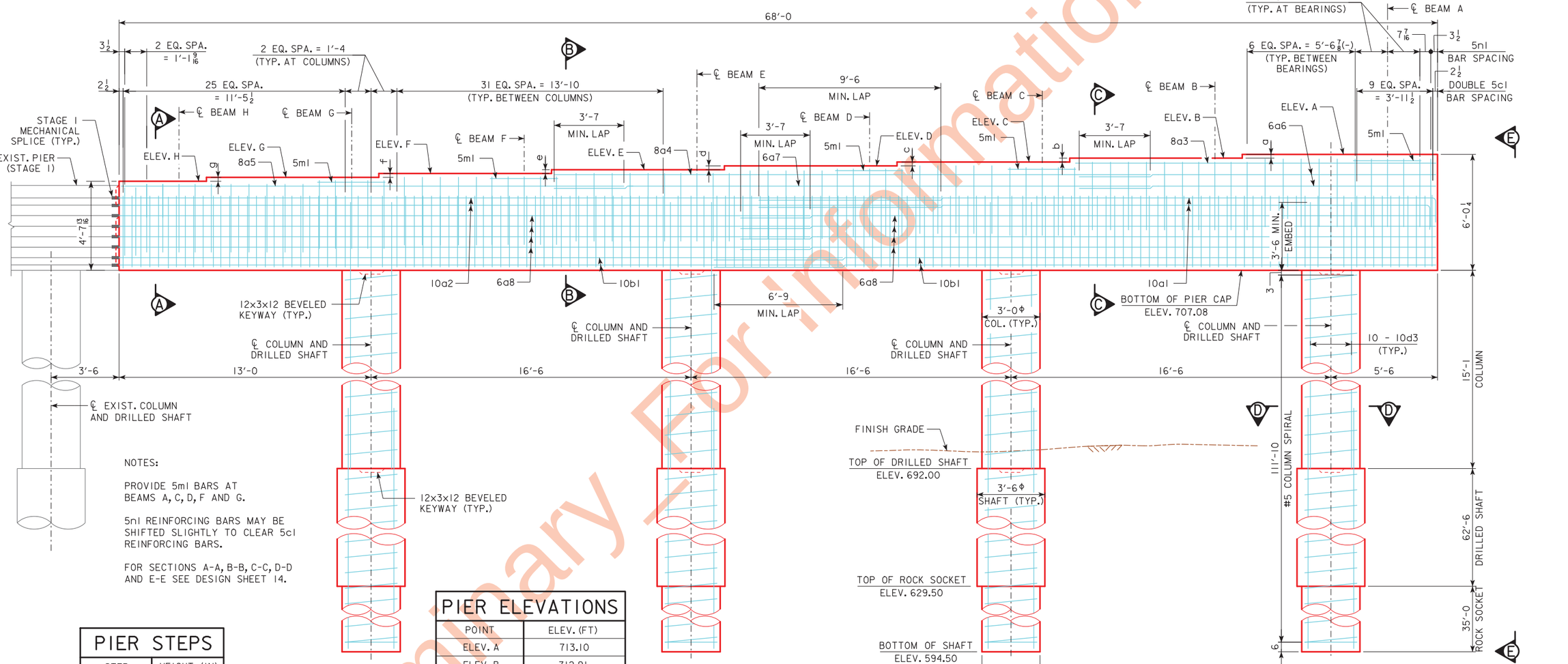
BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783



PIER CAP PLAN



NOTES:

PROVIDE 5ml BARS AT BEAMS A, C, D, F AND G.

5nl REINFORCING BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 5cl REINFORCING BARS.

FOR SECTIONS A-A, B-B, C-C, D-D AND E-E SEE DESIGN SHEET 14.

PIER ELEVATION

PIER STEPS

STEP	HEIGHT (IN)
a	2 3/8
b	2 3/8
c	2 3/8
d	2 3/8
e	2 3/8
f	2 3/8
g	2 3/8

PIER ELEVATIONS

POINT	ELEV. (FT)
ELEV. A	713.10
ELEV. B	712.91
ELEV. C	712.71
ELEV. D	712.52
ELEV. E	712.32
ELEV. F	712.12
ELEV. G	711.93
* ELEV. H	* 711.73

* LOW STEP

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER I DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 13 OF 43 FILE NO. 30864 DESIGN NO. 519

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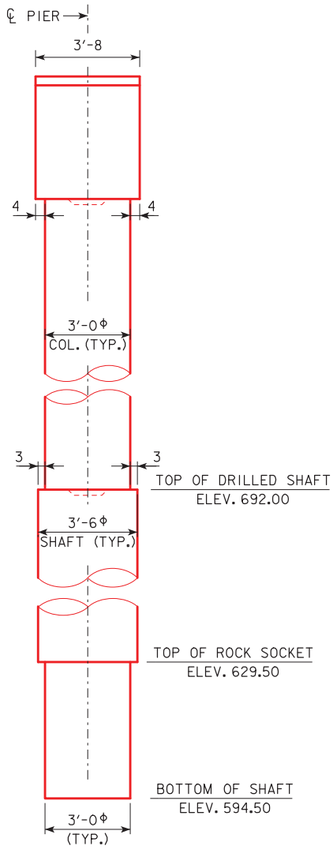
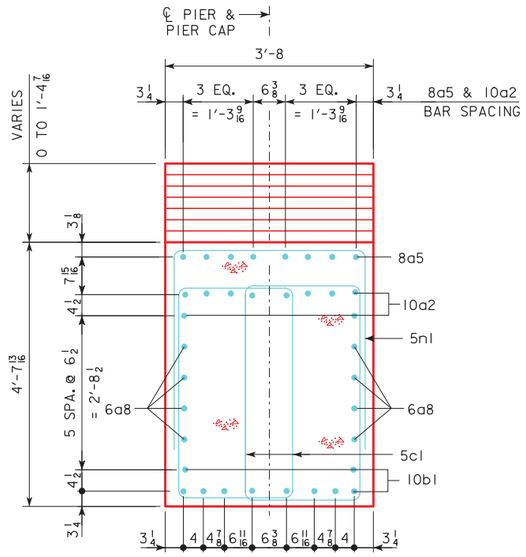
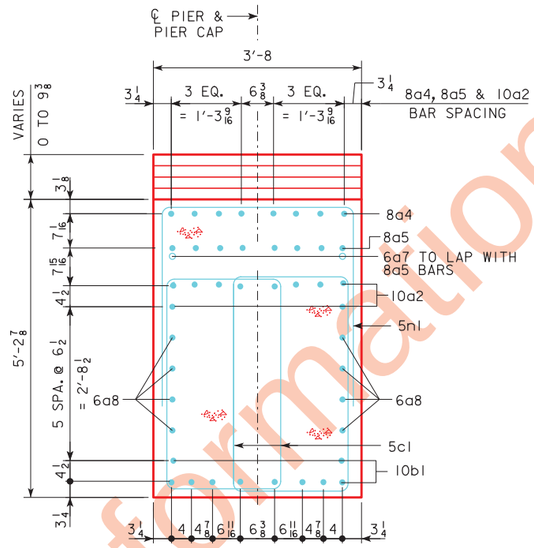


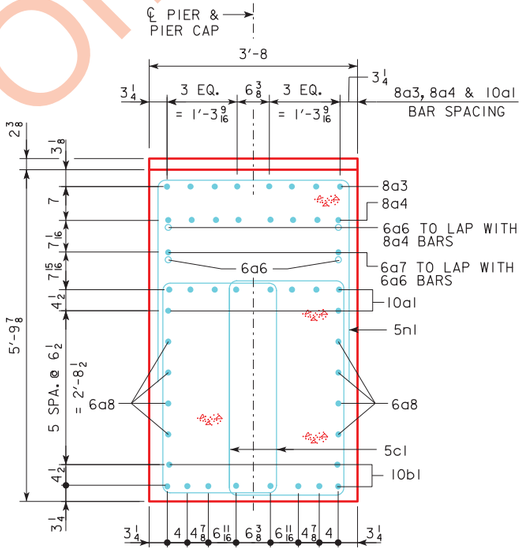
VIEW E-E



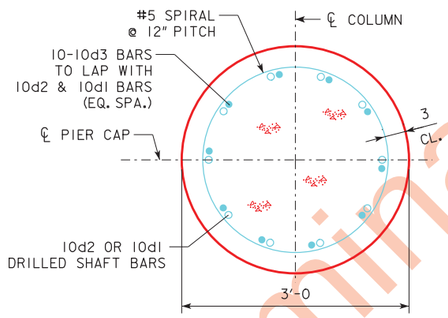
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 1 REINFORCING DETAILS

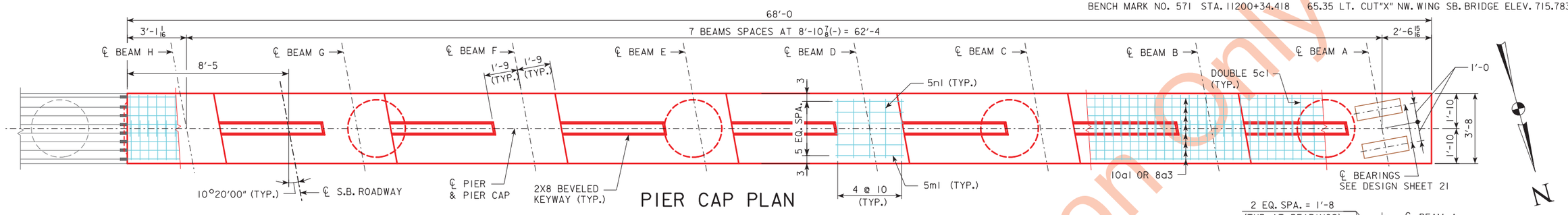
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

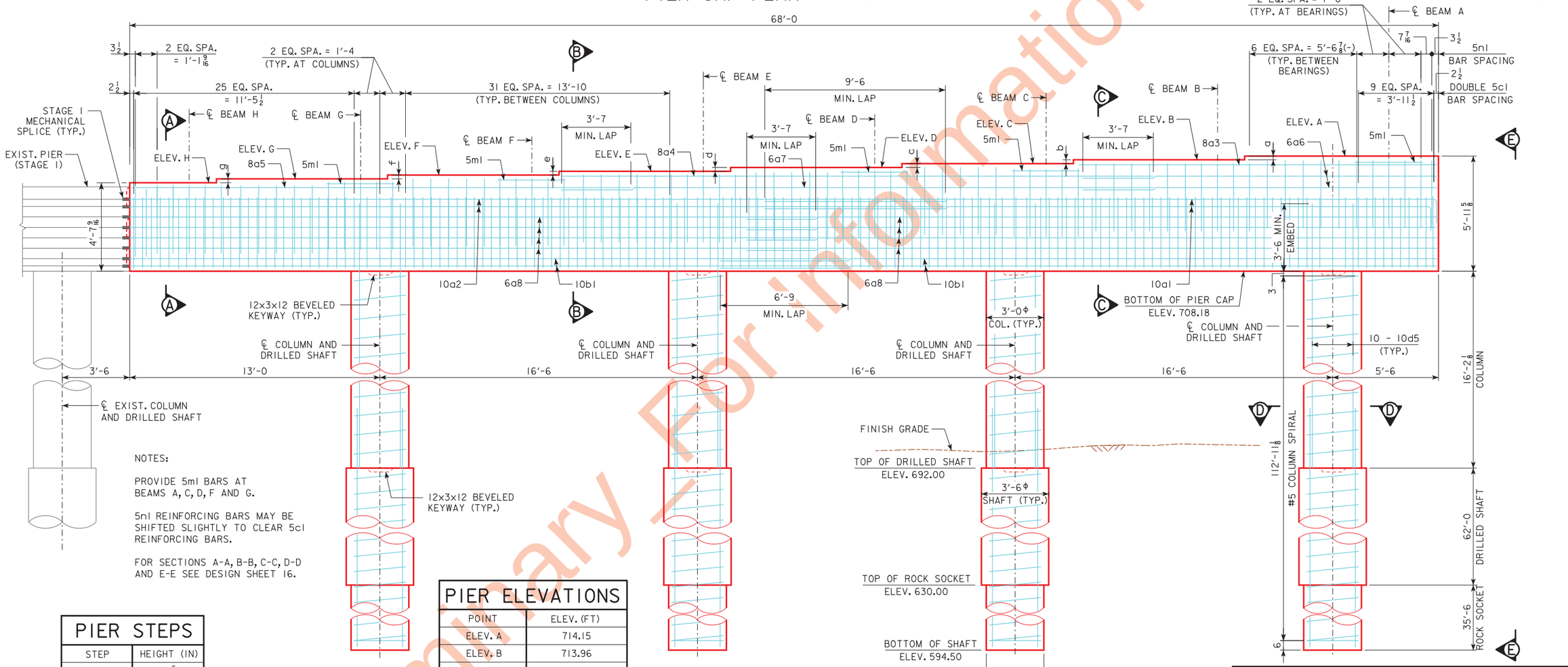
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 14 OF 43 FILE NO. 30864 DESIGN NO. 519

BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783



PIER CAP PLAN



NOTES:

PROVIDE 5ml BARS AT BEAMS A, C, D, F AND G.

5nl REINFORCING BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 5cl REINFORCING BARS.

FOR SECTIONS A-A, B-B, C-C, D-D AND E-E SEE DESIGN SHEET 16.

PIER STEPS

STEP	HEIGHT (IN)
a	2 5/16
b	2 5/16
c	2 5/16
d	2 5/16
e	2 5/16
f	2 5/16
g	2 5/16

PIER ELEVATIONS

POINT	ELEV. (FT)
ELEV. A	714.15
ELEV. B	713.96
ELEV. C	713.77
ELEV. D	713.58
ELEV. E	713.39
ELEV. F	713.19
ELEV. G	713.00
ELEV. H	* 712.81

* LOW STEP

PIER ELEVATION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 2 DETAILS

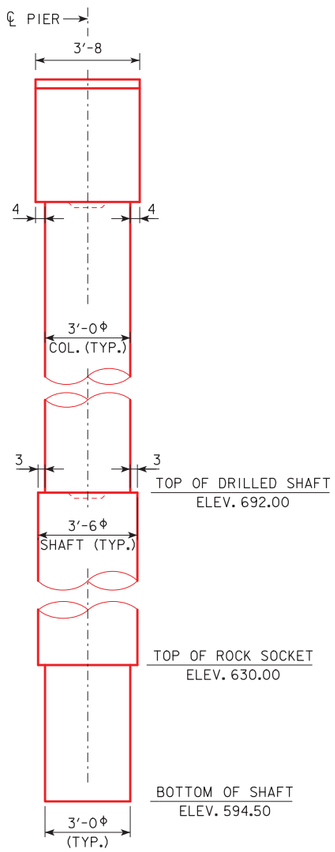
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

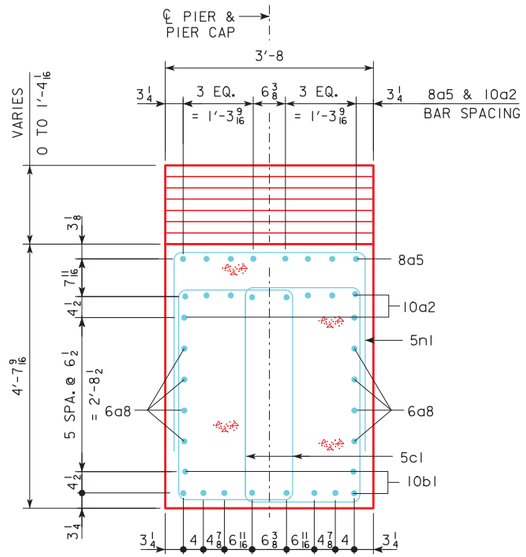
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 15 OF 43 FILE NO. 30864 DESIGN NO. 519

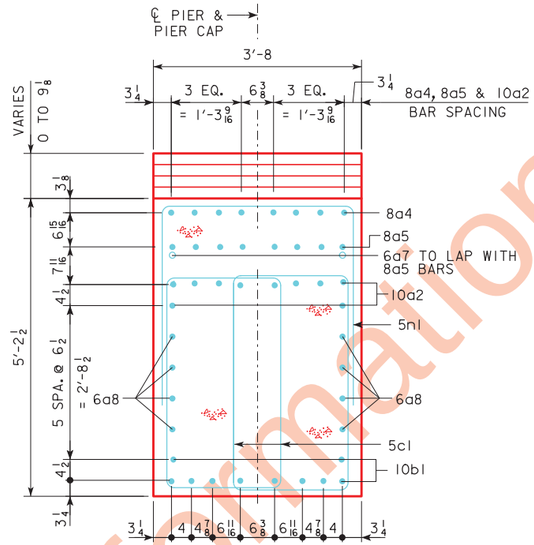
BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783



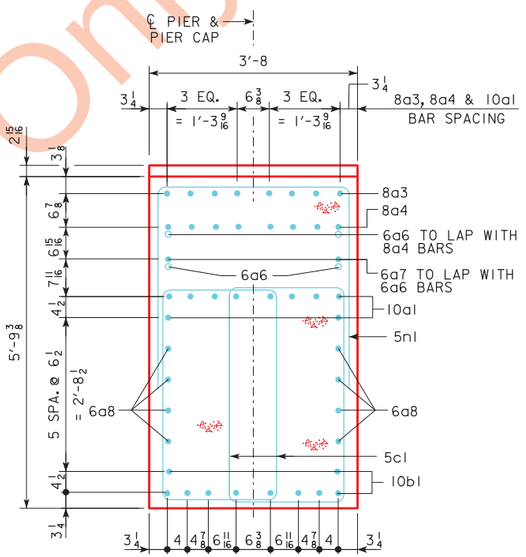
VIEW E-E



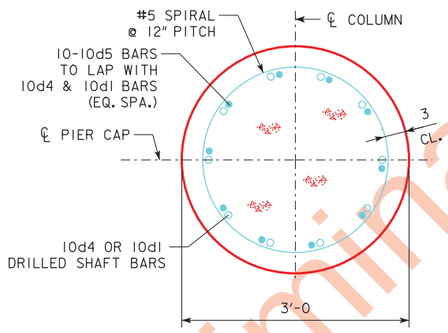
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

PIER 2 REINFORCING DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 16 OF 43 FILE NO. 30864 DESIGN NO. 519

REINFORCING BAR LIST - PIER 1

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP, LONGIT., TOP		10	36'-10	1585
10a2	CAP, LONGIT., TOP		10	43'-0	1850
8a3	CAP, LONGIT., TOP		8	VARIES	390
8a4	CAP, LONGIT., TOP		8	30'-6	651
8a5	CAP, LONGIT., TOP		8	27'-0	577
6a6	CAP, LONGT., SIDES		4	19'-0	114
6a7	CAP, LONGT., SIDES		2	29'-6	89
6a8	CAP, LONGT., SIDES		16	36'-0	865
10b1	CAP, LONGIT., BOTTOM		20	37'-6	3227
5c1	CAP, HOOP		288	13'-6	4055
10d1	DRILLED SHAFT, VERTICAL		40	60'-0	10327
10d2	DRILLED SHAFT, VERTICAL		40	51'-0	8778
10d3	COLUMN, VERTICAL		40	18'-7	3199
5m1	CAP, LONGIT., STEP (BEAMS A, C, D, F & G)		30	3'-8	115
5n1	CAP, TRANSV., STEP		78	10'-4	841
#5	COLUMN & DRILLED SHAFT, SPIRAL		4	909'-3	3793
	COLUMN & DRILLED SHAFT, SPIRAL SPACERS L7/8x7/8x1/8 (0.7 LB/FT)		16	111'-10	1253
		REINFORCING STEEL - TOTAL (LBS.)			41709

REINFORCING BAR LIST - PIER 2

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP, LONGIT., TOP		10	36'-10	1585
10a2	CAP, LONGIT., TOP		10	43'-0	1850
8a3	CAP, LONGIT., TOP		8	VARIES	390
8a4	CAP, LONGIT., TOP		8	30'-6	651
8a5	CAP, LONGIT., TOP		8	27'-0	577
6a6	CAP, LONGT., SIDES		4	19'-0	114
6a7	CAP, LONGT., SIDES		2	29'-6	89
6a8	CAP, LONGT., SIDES		16	36'-0	865
10b1	CAP, LONGIT., BOTTOM		20	37'-6	3227
5c1	CAP, HOOP		288	13'-6	4055
10d1	DRILLED SHAFT, VERTICAL		40	60'-0	10327
10d4	DRILLED SHAFT, VERTICAL		40	51'-0	8778
10d5	COLUMN, VERTICAL		40	19'-9	3399
5m1	CAP, LONGIT., STEP (BEAMS A, C, D, F & G)		30	3'-8	115
5n1	CAP, TRANSV., STEP		78	10'-4	841
#5	COLUMN & DRILLED SHAFT, SPIRAL		4	917'-11	3830
	COLUMN & DRILLED SHAFT, SPIRAL SPACERS L7/8x7/8x1/8 (0.7 LB/FT)		16	112'-11	1265
		REINFORCING STEEL - TOTAL (LBS.)			41958

PIER NOTES:

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A $\frac{3}{4}$" DRESSED AND BEVELED STRIP.

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

ALL REINFORCING IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS POURED.

FORMS FOR PIER CAP 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 STRENGTH IS AT LEAST 2.50 KSI.

CONCRETE STRENGTH SHALL BE VERIFIED BY FLEXURAL STRENGTH ACCORDING TO MATERIALS I.M. 316 WITH A MINIMUM FLEXURAL STRENGTH OF 0.343 KSI 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 ATTAIN A MINIMUM CONCRETE STRENGTH OF 4.00 KSI BEFORE BEING SUBJECTED TO EXTERIOR LOADS. PIER CAP CONCRETE SHALL BE SUBJECTED TO EXTERIOR LOADS IN ACCORDANCE WITH ARTICLE 2403.03, N, OF THE STANDARD SPECIFICATIONS.

REINFORCING BAR ENDS DENOTED WITH "MECHANICAL SPLICE" SHALL BE COUPLED/SPLICED TO MATING BARS IN PRIOR STAGE CONSTRUCTION WITH A MECHANICAL BAR SPLICE SYSTEM (REFER TO "MECHANICAL BAR SPLICE SYSTEM NOTES" ON DESIGN SHEET 1). A TOTAL OF 20-10a2, 20-10b1 AND 16-6a8 ARE TO BE COUPLED/SPLICED. (BOTH PIERS ACCOUNTED FOR)

CONCRETE PLACEMENT QUANTITIES

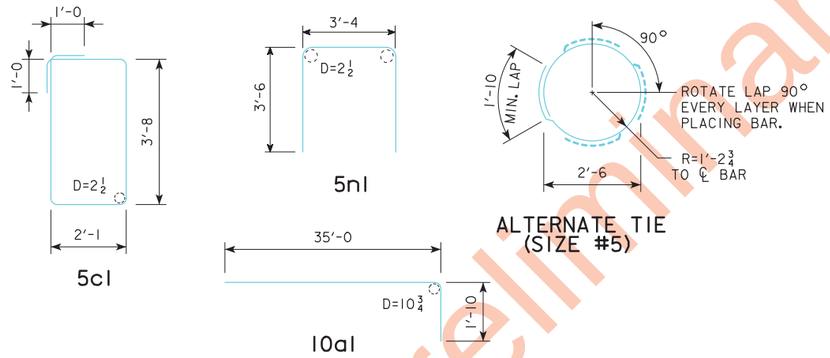
LOCATION	PIER 1	PIER 2
CAP	49.7	49.4
COLUMN	15.8	16.9
TOTAL (C.Y.)	65.5	66.3

NOTE:
CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

8a3

NO.	MIN. LENGTH	MAX. LENGTH
16	17'-11½	18'-6½

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIA.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

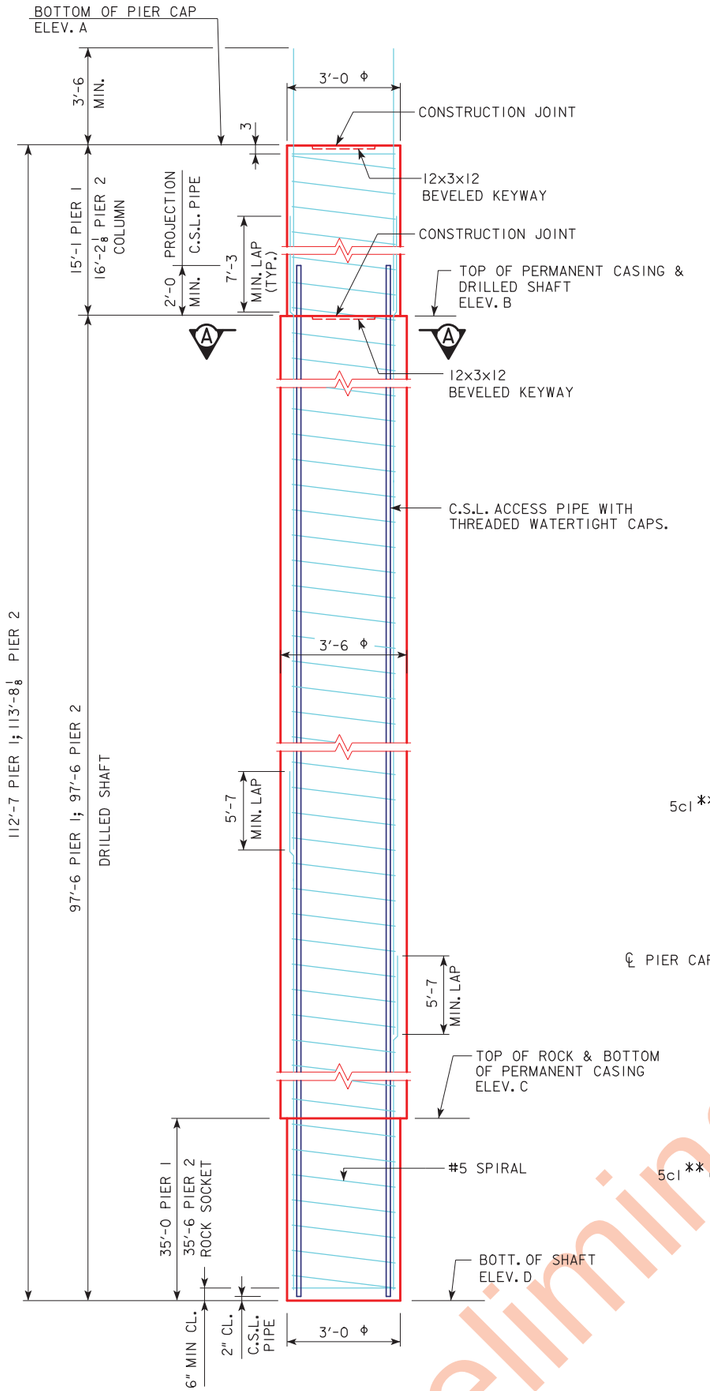
PIER 1 & 2 REINFORCING DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

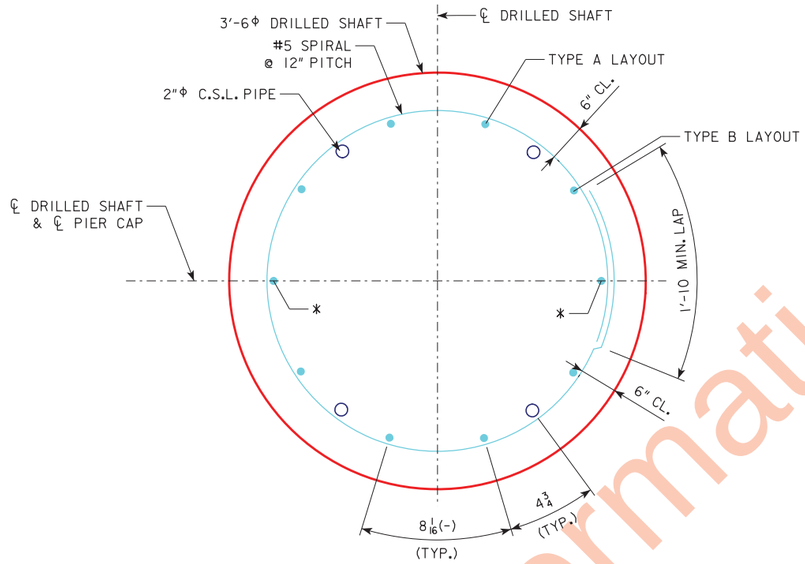
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

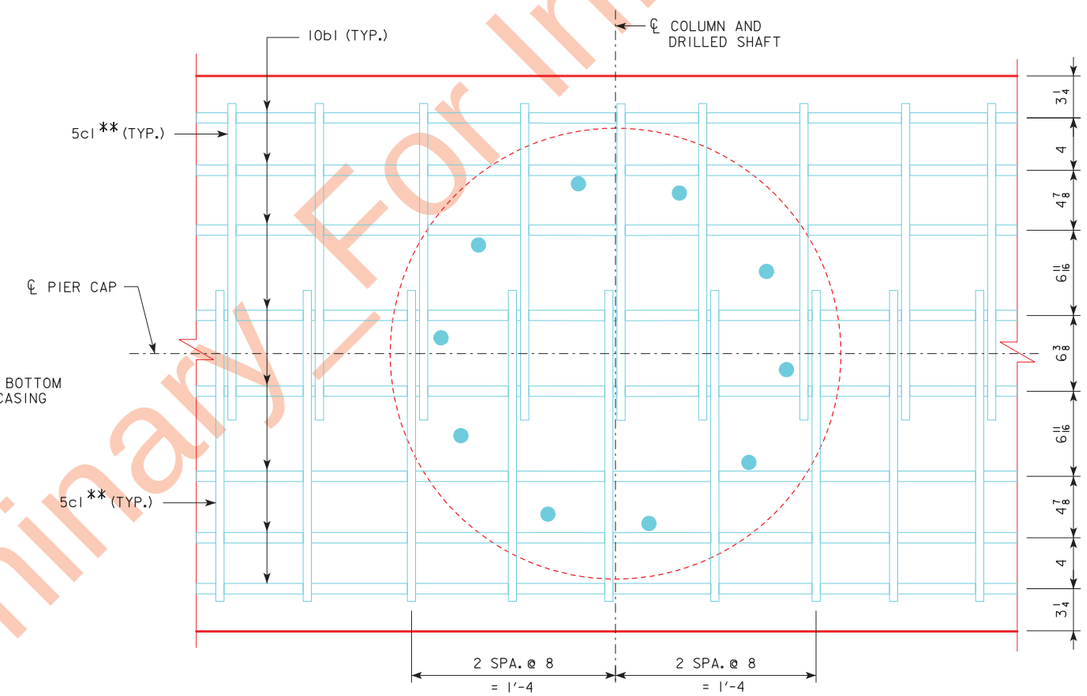
DESIGN SHEET NO. 17 OF 43 FILE NO. 30864 DESIGN NO. 519



DRILLED SHAFT REINFORCING DETAILS

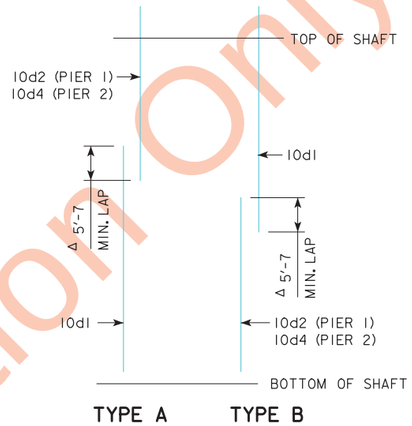


SECTION A-A



PART PLAN SHOWING TIGHT CLEARANCE BETWEEN COLUMN AND CAP REINFORCING

PIER ELEVATIONS		
LOCATION	PIER 1	PIER 2
ELEV. A	707.08	708.18
ELEV. B	692.00	692.00
ELEV. C	629.50	630.00
ELEV. D	594.50	594.50



LONGITUDINAL BAR LAYOUT

Δ 10' MIN. STAGGER OF LAPS

NOTES:

SPIRAL REINFORCING IS TO BE NO. 5 BAR WITH 2'-6 O.D., 12" PITCH WITH 4 EQUALLY SPACED L $\frac{7}{8} \times \frac{7}{8} \times \frac{1}{8}$ SPACERS PUNCHED TO HOLD SPIRALS. SPIRALS ARE TO HAVE $1\frac{1}{2}$ EXTRA TURNS AT TOP AND BOTTOM COLUMNS OR DRILLED SHAFT.

THE SPIRAL REINFORCING MAY BE SPLICED BY LAPPING 1'-10. THE LENGTH OF THE SPIRAL SHOWN DOES NOT INCLUDE THE LAPPED LENGTH OF THE SPLICES. THE COST OF THE LAPS AT SPLICES IS TO BE INCLUDED IN THE PRICE BID FOR OTHER REINFORCEMENT.

COLUMN AND DRILLED SHAFT TIES SPACED AT 12" CENTERS MAY BE SUBSTITUTED FOR THE SPIRAL REINFORCEMENT. PAYMENT WILL BE BASED ON THE WEIGHT OF SPIRAL REINFORCEMENT. NO ADJUSTMENTS IN REINFORCING STEEL PAY WEIGHT WILL BE ALLOWED. SEE BENT BAR DETAILS FOR ALTERNATE TIE ON DESIGN SHEET 17.

PERMANENT STEEL CASING SHALL BE ACCORDING TO ASTM A 252, GRADE 2, PRODUCED BY ELECTRIC SEAM, BUTT, OR SPIRAL WELDING. THE MINIMUM WALL THICKNESS SHALL BE AS REQUIRED TO RESIST THE ANTICIPATED INSTALLATION AND DEWATERING STRESSES, AS DETERMINED BY THE CONTRACTOR, BUT SHALL BE A MINIMUM OF $\frac{1}{4}$ IN. CASING EXTENDS INTO RAILROAD SHORING ZONE A AND MUST BE DESIGNED FOR RAILROAD LIVE LOAD SURCHARGE. SEE "RAILROAD GENERAL NOTES" ON DESIGN SHEET 8.

* ALIGN THESE BARS WITH ℄ PIER CAP AT TOP OF DRILLED SHAFT TO AVOID INTERFERENCE OF COLUMN BARS WITH CAP REINFORCEMENT.

** FOR 5c SPACING IN REMAINDER OF CAP, SEE DESIGN SHEET 13 FOR PIER 1 AND DESIGN SHEET 15 FOR PIER 2.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

DRILLED SHAFT DETAILS

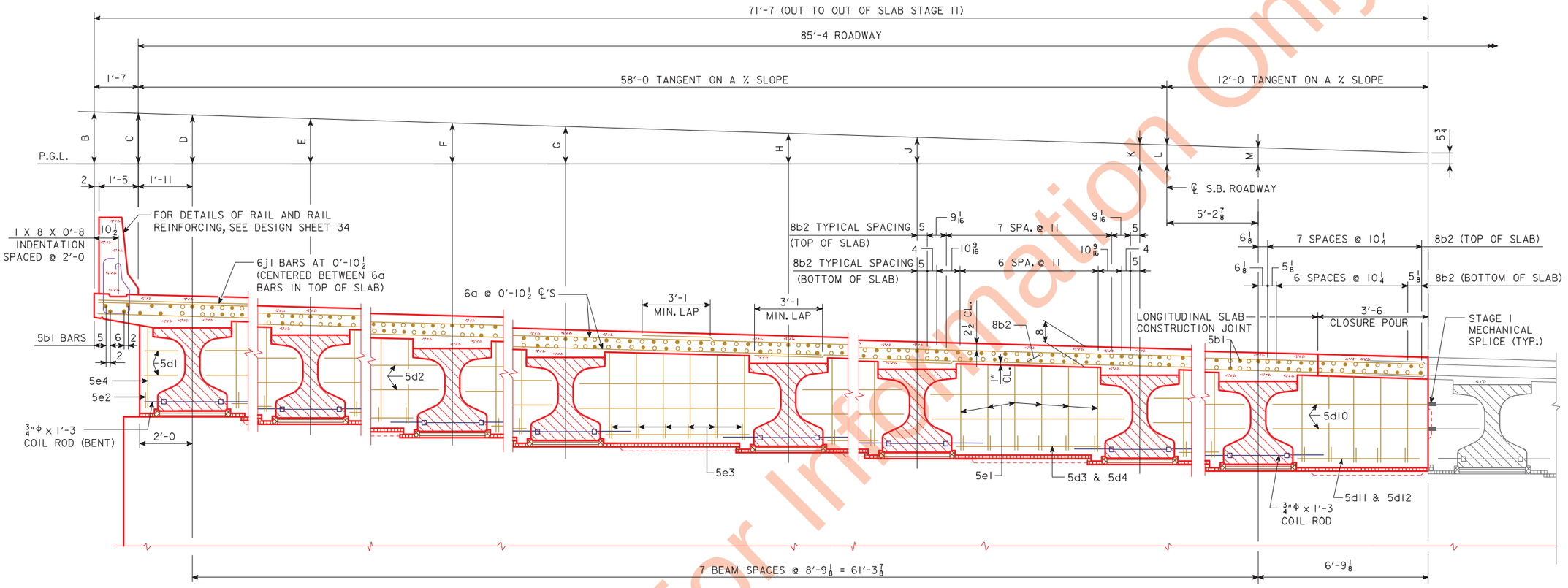
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 18 OF 43 FILE NO. 30864 DESIGN NO. 519

CORRECTION 04-14 - ADDED REFERRAL NOTE TO SUMMARY QUANTITIES SHEET FOR THE DRAIN WEIGHT. NOTE ABOUT CHOICE OF EPOXY OR STAINLESS STEEL DECK TO BARRIER RAIL BARS.
ENGLISHBTINTEGRALBRIDGES.DGN - 4384-BTB-6 - THIS SHEET ISSUED 02-08.



SECTION NEAR PIER

(SEE DESIGN SHEET 20 FOR VALUES A THRU M)

SUPERSTRUCTURE NOTES:

THE BRIDGE DECK AS SHOWN INCLUDES ½" INTEGRAL WEARING SURFACE.

THE PIER AND ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITHICALLY WITH THE BRIDGE DECK.

COST OF ALL RESILIENT EXPANSION JOINT FILLER MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".

ALL BEAMS ARE TO BE SET VERTICAL.

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

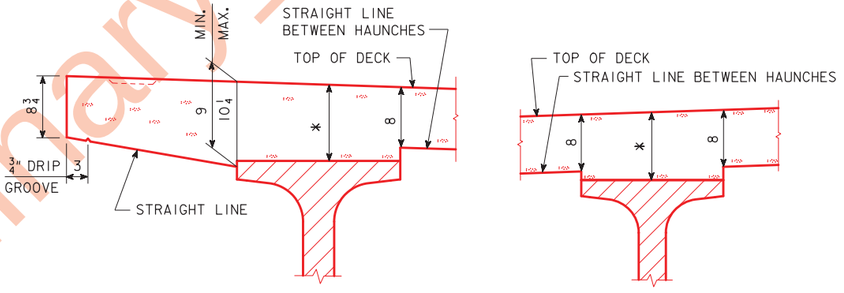
CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

ALL DECK AND DIAPHRAGM REINFORCING IS TO BE WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2½" CLEAR BELOW TOP OF DECK. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF DECK. 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 BAR HIGH CHAIRS OR DECK BOLSTERS SPACED 4'-0 APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND DECK BOLSTERS.

FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET 32 & 33.

REINFORCING BAR ENDS DENOTED WITH "MECHANICAL SPLICE" SHALL BE COUPLED/SPLICED TO MATING BARS IN PRIOR STAGE CONSTRUCTION WITH A MECHANICAL BAR SPLICE SYSTEM (REFER TO "MECHANICAL BAR SPLICE SYSTEM NOTES" ON DESIGN SHEET 1). A TOTAL OF 12-5d10 BARS ARE TO BE COUPLED/SPLICED. (BOTH PIER DIAPHRAGMS ACCOUNTED FOR)



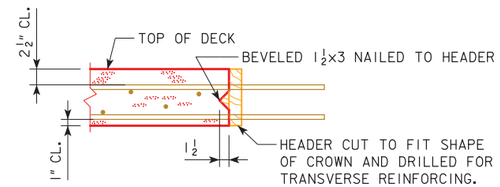
EXTERIOR BEAMS

INTERIOR BEAMS

TYPICAL DECK AND HAUNCH DETAIL

* FOR DECK THICKNESS OVER BEAMS SEE HAUNCH AND CAMBER DETAILS ON DESIGN SHEET 26.

DECK AREA = 47.98 SQ. FT.
DECK AREA DOES NOT INCLUDE THE HAUNCH.



LONGITUDINAL SLAB CONSTRUCTION JOINT

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BRIDGE DECK CROSS SECTION

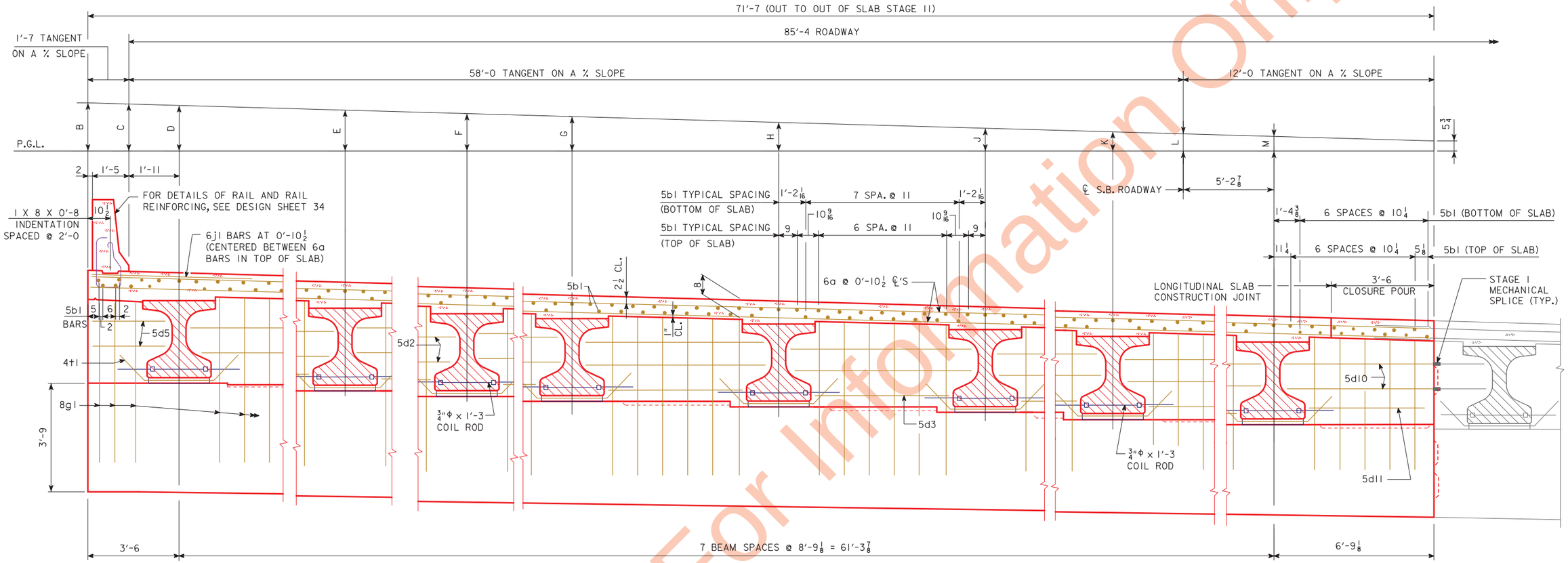
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

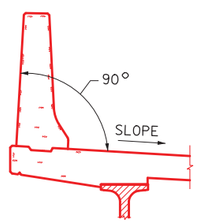
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 19 OF 43 — FILE NO. 30864 — DESIGN NO. 519

DESIGN TEAM PARSONS	EJ/JB/SC	44' RDWY. PPCB (BTB BEAMS - INTEGRAL ABUT.) CROSS SECTION (SPANS 30' - 100')	STANDARD SHEET 4384-BTB-6 MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 64

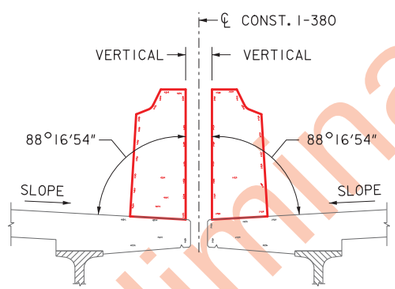


SECTION NEAR ABUTMENT



WEST BARRIER RAIL ORIENTATION DETAIL

(SHOWING "DECK SLOPES AWAY FROM THE BARRIER RAIL")



MEDIAN BARRIER RAIL ORIENTATION DETAIL

(SHOWING "DECK SLOPES TOWARDS THE BARRIER RAIL")

SUPERELEVATION TRANSITION												
STATION	A	B	C	D	E	F	G	H	J	K	L	M
1197+89.86	3.0%	2'-7 1/2	2'-6 15/16	2'-6 1/4	2'-3 1/8	1'-11 15/16	1'-8 13/16	1'-5 5/8	1'-2 1/2	11 5/16	10 1/16	8 3/16
1198+19.86	2.5%	2'-3 1/4	2'-2 3/4	2'-2 3/16	1'-11 9/16	1'-8 15/16	1'-6 5/16	1'-3 1/16	1'-1/16	10 3/8	9 3/8	7 3/4
1198+49.86	2.0%	1'-10 15/16	1'-10 3/4	1'-10 1/16	1'-8	1'-5 7/8	1'-3 13/16	1'-1 11/16	11 9/16	9 1/2	8 5/8	7 3/8

NOTE: NEGATIVE VALUE INDICATES VALUE IS BELOW P.G.L. LINE.

SUPERSTRUCTURE NOTES:

FOR SUPERSTRUCTURE NOTES SEE DESIGN SHEET 19.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BRIDGE DECK CROSS SECTION

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 20 OF 43 FILE NO. 30864 DESIGN NO. 519

CORRECTION 04-14 - ADDED REFERRAL NOTE TO SUMMARY QUANTITIES SHEET FOR THE DRAIN WEIGHT. NOTE ABOUT CHOICE OF EPOXY OR STAINLESS STEEL DECK TO BARRIER RAIL BARS.
ENGLISHBTINTEGRALBRIDGES.DGN - 4384-BTB-6 - THIS SHEET ISSUED 02-08.

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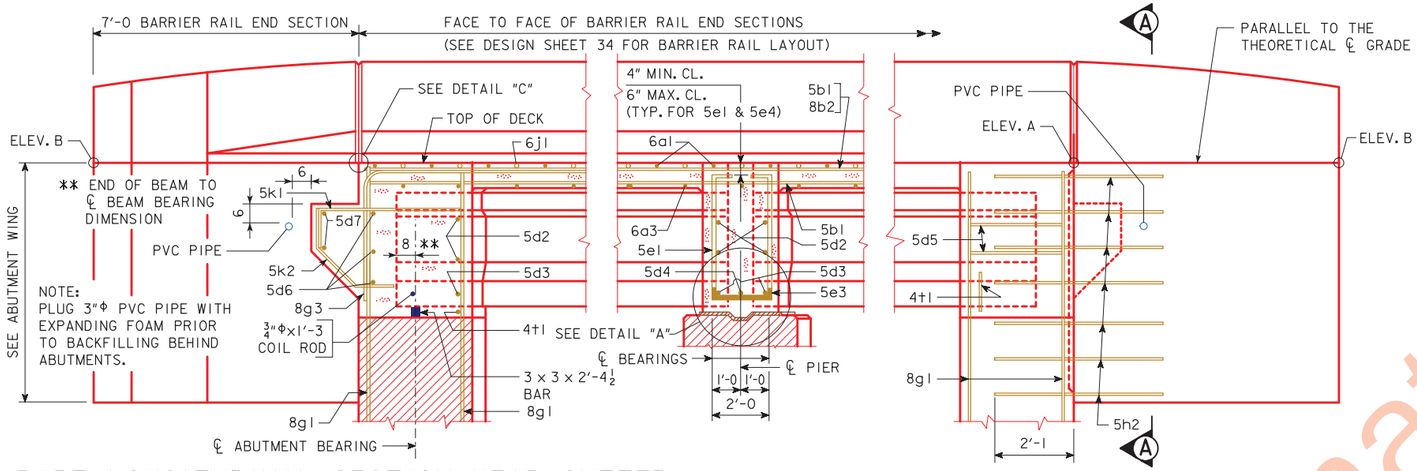
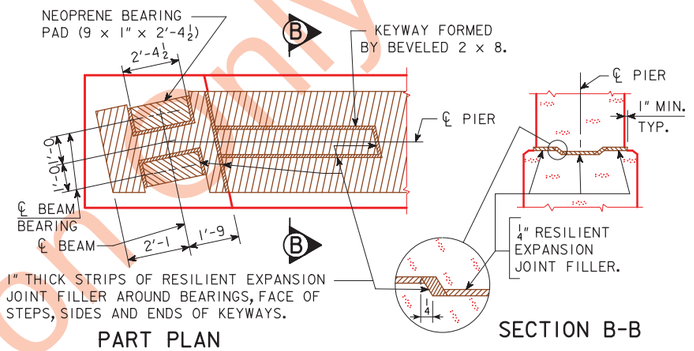


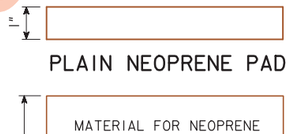
PART LONGITUDINAL SECTION NEAR GUTTER

(FOR DETAILS OF INTERMEDIATE DIAPHRAGM SEE DESIGN SHEETS 32 & 33)

PART END VIEW AT ABUTMENT



TOP OF PIER DETAILS

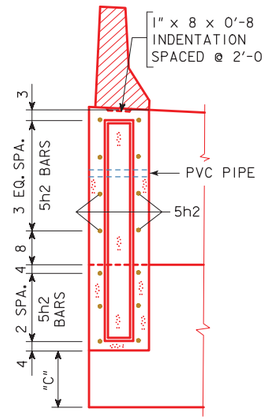


PLAIN NEOPRENE PAD

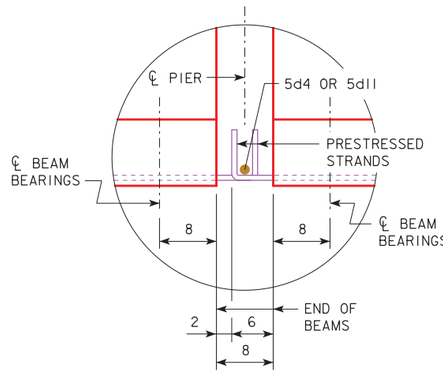
MATERIAL FOR NEOPRENE PADS TO BE OF 70 DUROMETER NEOPRENE.

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

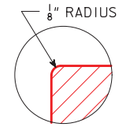
FIXED PIER BEARING PAD



SECTION A-A



DETAIL "A"

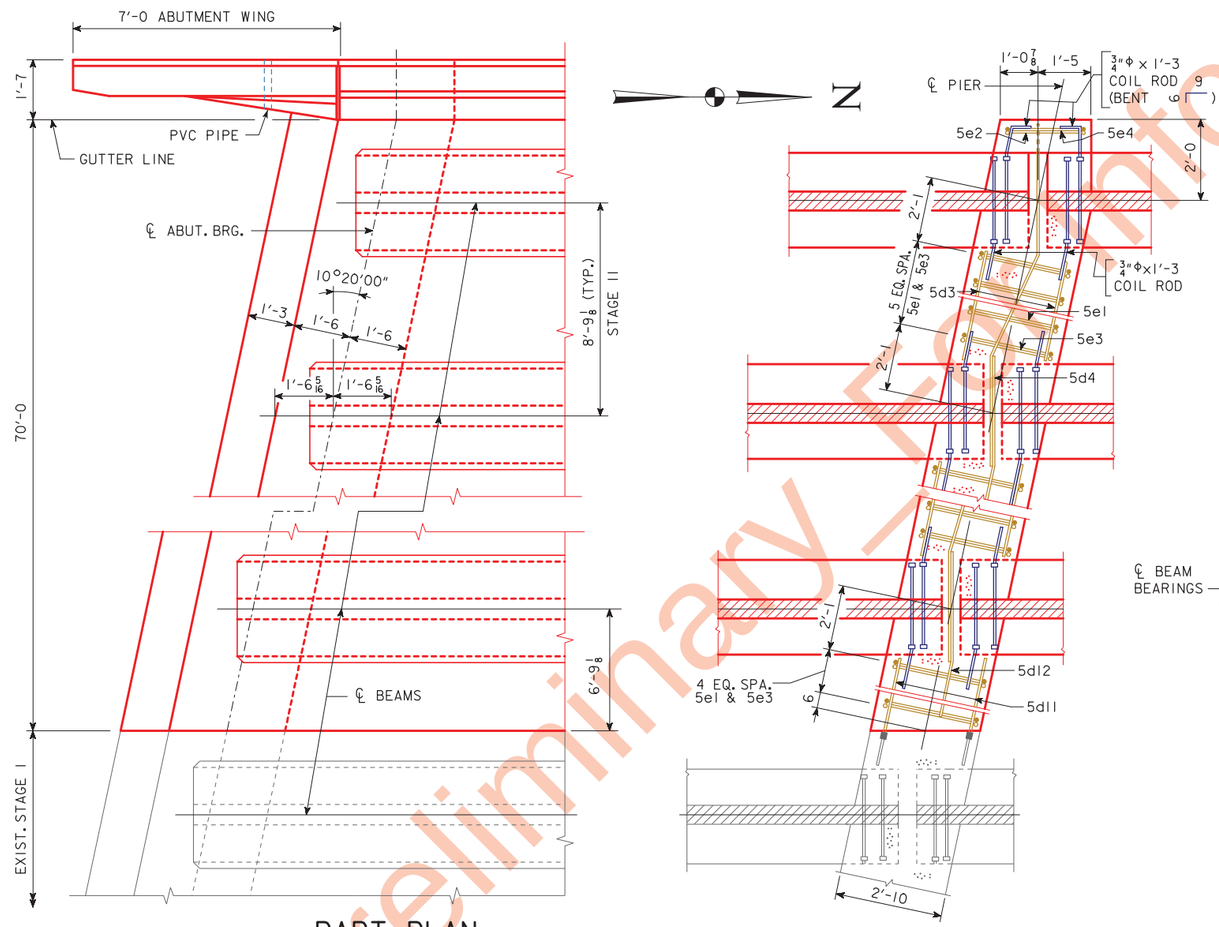


DETAIL "C"

TABLE OF WING ELEVATIONS

LOCATION	DIM "C"	ELEV. A*	ELEV. B*
S.W. CORNER	1'-6 1/16	716.38	716.35
N.W. CORNER	1'-6 1/16	718.75	718.79

* AT GUTTER LINE



PART PLAN

(S. ABUT. SHOW, N. ABUT. SIMILAR.)

PART SECTION AT PIER

(SEE CROSS SECTION THRU DECK FOR NUMBER OF DIAPHRAGM HOOP BARS BETWEEN BEAMS)

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

ABUT. & PIER DIAPHRAGM DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 21 OF 43 — FILE NO. 30864 — DESIGN NO. 519

ENGLISHBTINTEGRALBRIDGES.DGN - 4502-BTB - THIS SHEET ISSUED 02-08.

DESIGN TEAM PARSONS JB/KRP/SC	"BTB" BEAMS - PART PLAN & LONGIT. SECTION - (L.A.) 7°31' - 15° SKEW	STANDARD SHEET 4502-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 66

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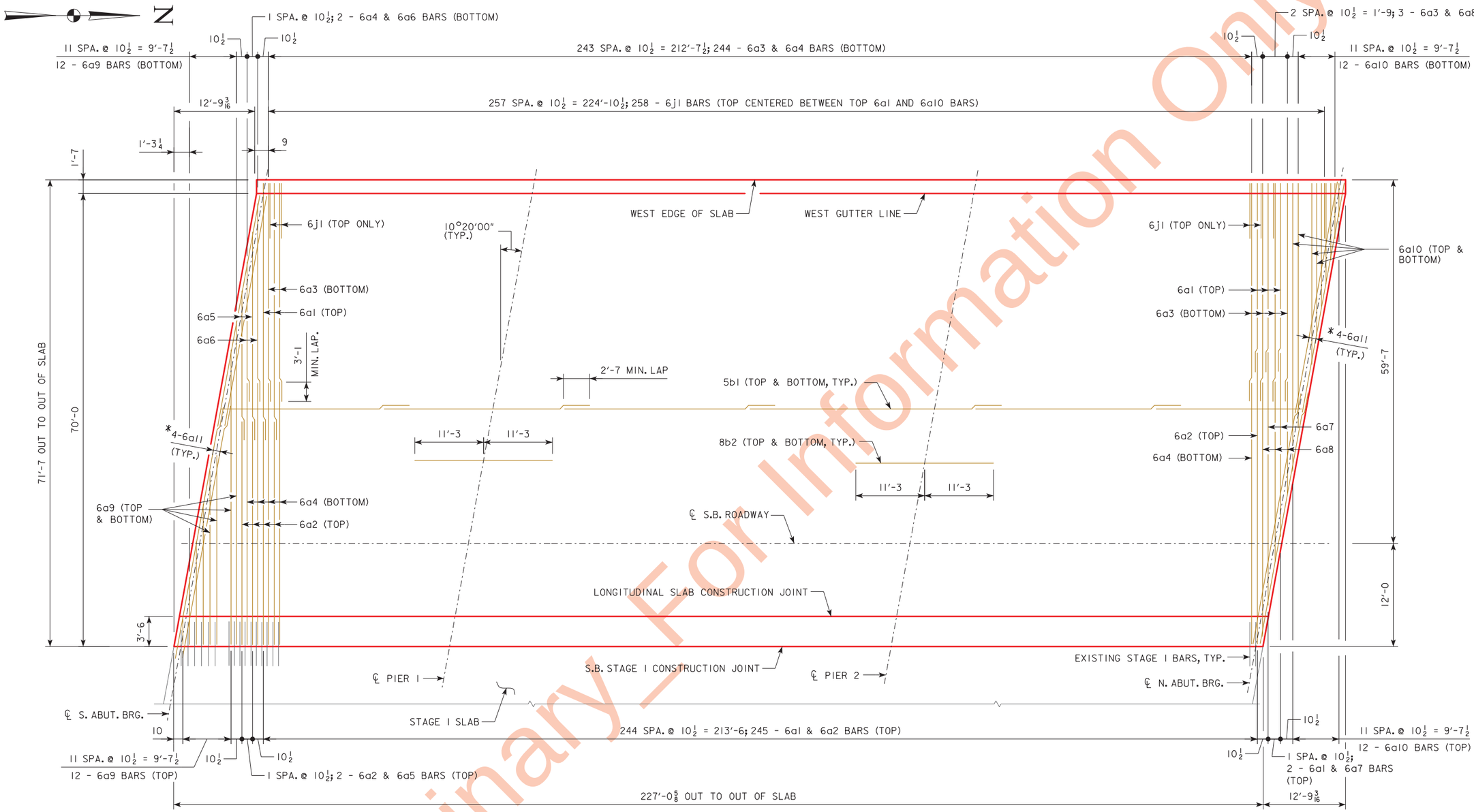

SLAB REINFORCING LAYOUT

* SEE PART SECTION B-B ON DESIGN SHEETS 10 AND 11 FOR LOCATION.

NOTES:

FOR LONGITUDINAL BAR SPACING AND TRANSVERSE BAR LAP SPLICE LOCATIONS, SEE DESIGN SHEETS 19 AND 20.

FOR CONCRETE PLACEMENT DIAGRAM, SEE DESIGN SHEET 23.

LAP 6a2, 6a4 & 6a9 BARS WITH EXISTING STAGE 1 BARS.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

SLAB REINFORCING LAYOUT

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 22 OF 43 FILE NO. 30864 DESIGN NO. 519

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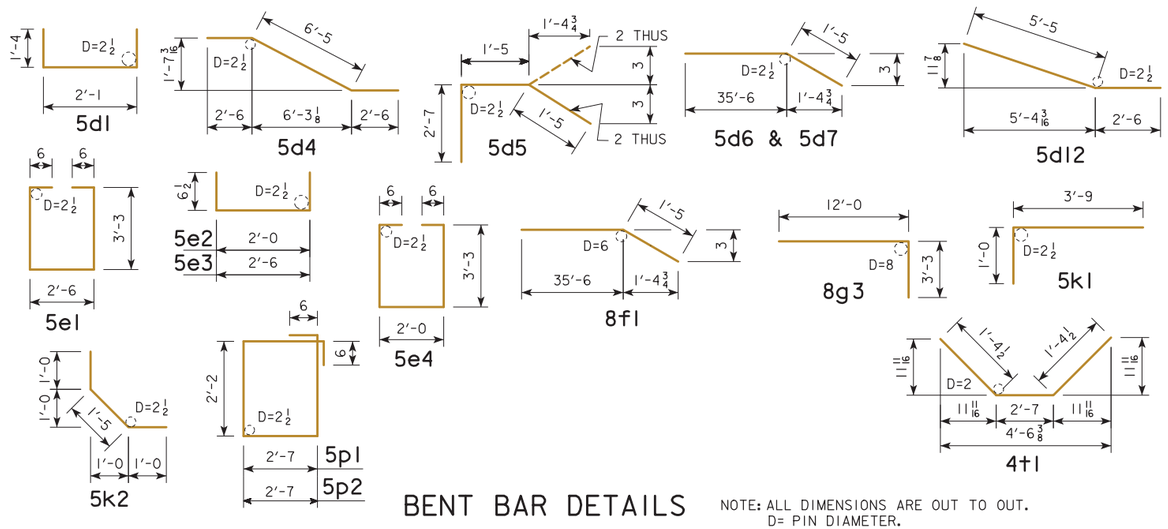


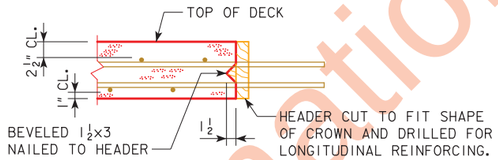
BENT BAR DETAILS

NOTE: ALL DIMENSIONS ARE OUT TO OUT.
D= PIN DIAMETER.

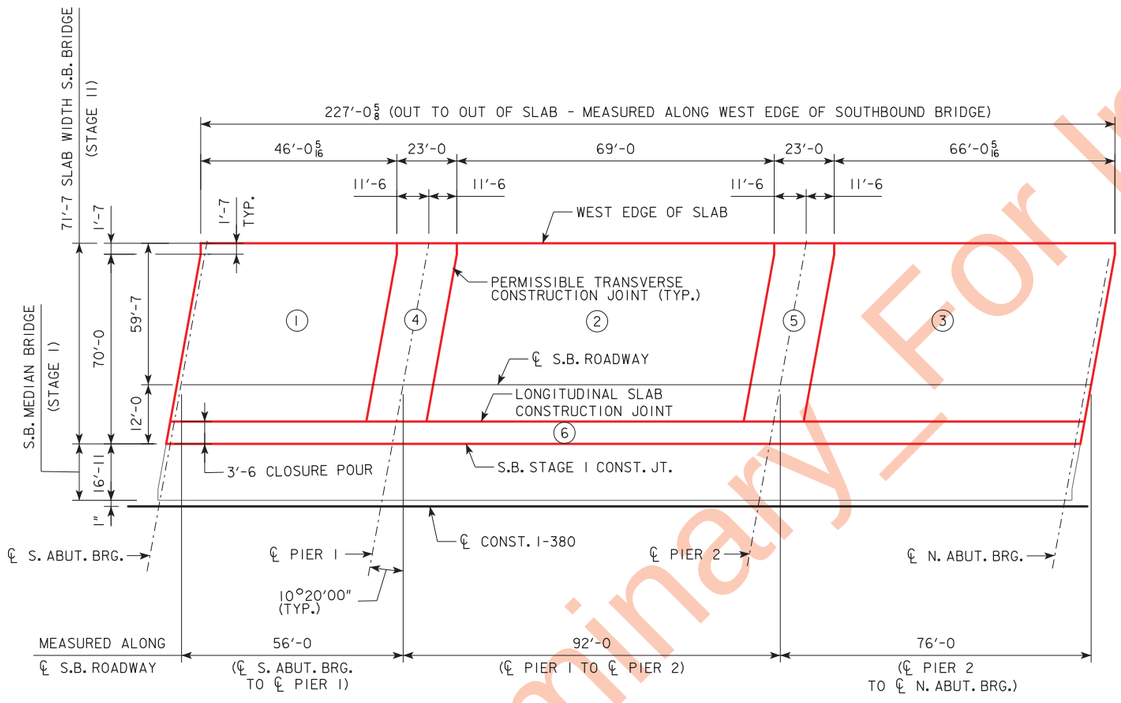
HIGH PERFORMANCE CONCRETE PLACEMENT QUANTITIES

LOCATION	QUANTITY
SECTION 1, DECK & S. ABUT. DIAPH.	114.3
SECTION 2, DECK	125.6
SECTION 3, DECK & N. ABUT. DIAPH.	150.8
SECTION 4, DECK & PIER 1 DIAPH.	65.6
SECTION 5, DECK & PIER 2 DIAPH.	65.6
SECTION 6, CLOSURE POUR	19.6
TOTAL (CU. YDS.)	541.5

NOTE: CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.



PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT



CONCRETE PLACEMENT DIAGRAM

NOTE:

CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. (AN APPROVED ALTERNATE PROCEDURE IS TO PLACE THE CONCRETE DECK IN THREE POURS BEGINNING AT ONE END OF THE BRIDGE. POUR 1 SHALL CONSIST OF SECTIONS 1, 4 AND 2. POUR 2 SHALL CONSIST OF SECTIONS 5 AND 3. POUR 3 SHALL CONSIST OF SECTION 6. THERE SHALL BE A TWO DAY WAITING PERIOD BETWEEN SUBSEQUENT POURS.) ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS. THE BRIDGE ENGINEER SHALL REVIEW ANY ALTERNATE PROCEDURES. THE COST OF ANY ADDITIONAL ANALYSIS AND PLAN MODIFICATIONS SHALL BE PAID FOR BY CONTRACTOR. THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.

REINFORCING BAR LIST

EPOXY COATED REINFORCING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	DECK TRANSV. TOP		247	35'-7	13201
6a2	DECK TRANSV. TOP		247	39'-0	14469
6a3	DECK TRANSV. BOTT.		247	40'-0	14840
6a4	DECK TRANSV. BOTT.		246	34'-8	12809
6a5	DECK TRANSV. TOP (SOUTH END)		2	VARIES	83
6a6	DECK TRANSV. BOTT. (SOUTH END)		2	VARIES	104
6a7	DECK TRANSV. TOP (NORTH END)		2	VARIES	96
6a8	DECK TRANSV. BOTT. (NORTH END)		3	VARIES	131
6a9	DECK TRANSV. TOP & BOTT (SOUTH END)		24	VARIES	1125
6a10	DECK TRANSV. TOP & BOTT (NORTH END)		24	VARIES	1122
6a11	DECK TRANSV. ENDS		16	37'-2	893
5b1	SLAB LONGIT. TOP & BOTT.		894	40'-0	37298
8b2	SLAB LONGIT. TOP & BOTT.		330	22'-6	19825
5d1	PIER DIAPH. ENDS		4	4'-9	20
5d2	PIER & ABUT. DIAPH. LONGIT.		84	8'-0	701
5d3	PIER & ABUT. DIAPH. LONGIT.		42	6'-0	263
5d4	PIER DIAPH. LONGIT.		14	11'-5	167
5d5	ABUT. DIAPH. ENDS		4	5'-5	23
5d6	ABUT. DIAPH. LONGIT. B.F.		6	36'-11	231
5d7	PAVING NOTCH LONGIT.		4	36'-11	154
5d8	ABUT. DIAPH. LONGIT. B.F.		6	37'-7	235
5d9	PAVING NOTCH LONGIT.		4	37'-7	157
5d10	PIER & ABUT. DIAPH. LONGIT.		12	5'-3	66
5d11	PIER & ABUT. DIAPH. LONGIT.		6	7'-11	50
5d12	PIER DIAPH. LONGIT.		2	7'-11	17
5e1	PIER DIAPH. HOOPS		94	10'-0	980
5e2	PIER DIAPH. TIES ENDS		2	3'-1	6
5e3	PIER DIAPH. TIES		94	3'-7	351
5e4	PIER DIAPH. HOOPS ENDS		2	9'-6	20
8f1	ABUT. FOOTING LONGIT. BOTH F.		18	36'-11	1774
8f2	ABUT. FOOTING LONGIT. BOTH F.		18	40'-3	1934
8g1	ABUT. VERT. BOTH F.		236	7'-2	4516
8g3	ABUT. DIAPH. VERT. B.F.		128	15'-3	5212
5h2	ABUT. TO WING ANCHOR		28	4'-11	144
6j1	TOP OF DECK TRANSV. (AT E. EDGE)		258	6'-3	2422
5k1	PAVING NOTCH		128	4'-9	634
5k2	PAVING NOTCH		128	3'-5	456
5p1	ABUT. HOOPS		312	10'-6	3417
5p2	ABUT. HOOPS AT ENDS		8	10'-6	88
4t1	UNDER BEAM AT ABUTMENTS		16	5'-4	57
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				140091

NON-COATED

REINFORCING BAR LIST

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
#2	PILE SPIRAL		20	38'-6	129
	SPIRAL SPACERS, L 7/8 x 7/8 x 1/8 x 0.70		60	1'-10	77
	REINFORCING STEEL - TOTAL (LBS.)				206

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

DECK, ABUT. & DIAPH. QUANTITIES

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 23 OF 43 — FILE NO. 30864 — DESIGN NO. 519

REVISED 07-2015 - CHANGED CONCRETE PLACEMENT NOTE TO ACCOUNT FOR THE POSSIBLE ADDITION OF A RETARDING ADMIXTURE TO THE CONCRETE.
ENGLISHBTINTEGRALBRIDGES.DGN - 4516-BTB - THIS SHEET ISSUED 02-08.

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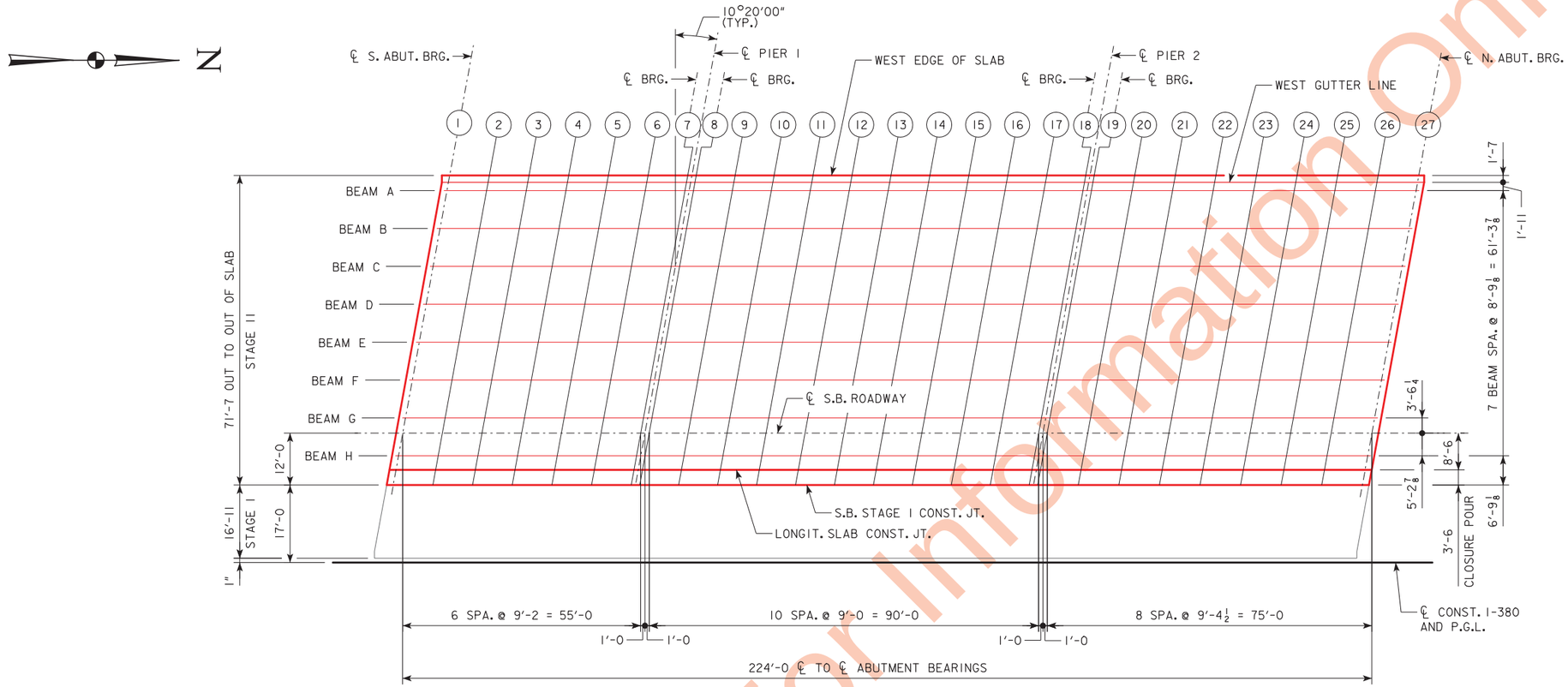
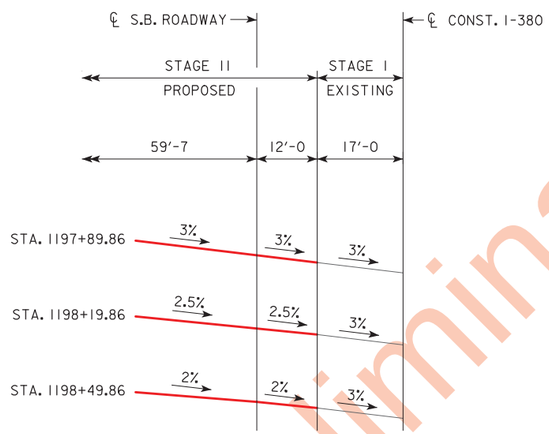


TOP OF SLAB AND HAUNCH ELEVATION LOCATIONS



SUPERELEVATION TRANSITION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

TOP OF SLAB ELEVATIONS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 24 OF 43 FILE NO. 30864 DESIGN NO. 519

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BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783

TABLE OF TOP OF SLAB ELEVATIONS

LOCATION	℄ S. ABUT. BEARING	SPAN 1					℄ PIER 1 BEARINGS		SPAN 2									℄ PIER 2 BEARINGS		SPAN 3						℄ N. ABUT. BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26	LINE 27
WEST EDGE OF SLAB	716.42	716.47	716.61	716.74	716.87	717.00	717.12	717.14	717.26	717.37	717.48	717.59	717.69	717.79	717.89	717.98	718.08	718.16	718.18	718.27	718.35	718.43	718.51	718.58	718.65	718.71	718.77
WEST GUTTER LINE	716.39	716.43	716.57	716.70	716.83	716.96	717.08	717.11	717.23	717.34	717.45	717.56	717.66	717.76	717.86	717.95	718.04	718.13	718.15	718.23	718.32	718.40	718.47	718.54	718.61	718.68	718.74
℄ BEAM A	716.35	716.39	716.53	716.66	716.79	716.92	717.04	717.07	717.18	717.30	717.41	717.51	717.62	717.72	717.81	717.91	718.00	718.09	718.11	718.19	718.27	718.35	718.43	718.50	718.57	718.64	718.70
℄ BEAM B	716.15	716.20	716.33	716.46	716.59	716.72	716.84	716.87	716.99	717.10	717.21	717.32	717.42	717.52	717.62	717.72	717.81	717.90	717.91	718.00	718.09	718.17	718.24	718.32	718.39	718.45	718.51
℄ BEAM C	715.95	716.01	716.13	716.26	716.40	716.52	716.65	716.67	716.79	716.91	717.02	717.13	717.23	717.33	717.43	717.52	717.62	717.71	717.72	717.81	717.90	717.98	718.05	718.13	718.20	718.27	718.33
℄ BEAM D	715.74	715.82	715.93	716.07	716.20	716.33	716.45	716.48	716.60	716.71	716.82	716.93	717.04	717.14	717.24	717.33	717.43	717.51	717.53	717.62	717.71	717.79	717.87	717.94	718.01	718.08	718.14
℄ BEAM E	715.53	715.62	715.73	715.87	716.00	716.13	716.25	716.28	716.40	716.52	716.63	716.74	716.84	716.95	717.05	717.14	717.23	717.32	717.34	717.43	717.52	717.60	717.68	717.75	717.82	717.89	717.96
℄ BEAM F	715.32	715.42	715.53	715.67	715.80	715.93	716.06	716.08	716.20	716.32	716.43	716.54	716.65	716.75	716.85	716.95	717.04	717.13	717.15	717.24	717.33	717.41	717.49	717.57	717.64	717.71	717.77
℄ BEAM G	715.10	715.22	715.33	715.47	715.60	715.73	715.86	715.89	716.01	716.12	716.24	716.35	716.46	716.56	716.66	716.76	716.85	716.94	716.96	717.05	717.14	717.22	717.30	717.38	717.45	717.52	717.58
℄ S.B. ROADWAY	715.01	715.13	715.25	715.39	715.52	715.65	715.78	715.81	715.93	716.05	716.16	716.27	716.38	716.48	716.58	716.68	716.77	716.87	716.88	716.98	717.06	717.15	717.23	717.30	717.37	717.44	717.51
℄ BEAM H	714.87	715.00	715.14	715.27	715.41	715.54	715.66	715.69	715.81	715.93	716.04	716.15	716.26	716.37	716.47	716.56	716.66	716.75	716.77	716.86	716.95	717.03	717.11	717.19	717.26	717.33	717.40
LONGIT. SLAB CONST. JT.	714.79	714.93	715.06	715.20	715.33	715.46	715.59	715.62	715.74	715.86	715.97	716.08	716.19	716.29	716.40	716.49	716.59	716.68	716.70	716.79	716.88	716.96	717.04	717.12	717.19	717.26	717.33
S.B. STAGE I CONST. JT.	714.69	714.84	714.98	715.12	715.25	715.38	715.51	715.54	715.66	715.78	715.89	716.00	716.11	716.22	716.32	716.42	716.51	716.60	716.62	716.71	716.80	716.89	716.97	717.04	717.12	717.19	717.25

DESIGN FOR 10°20′ SKEW L.A.

224′-0 x 85′-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56′-0, 76′-0 END SPANS 92′-0 CENTER SPAN

TOP OF SLAB ELEVATIONS

STA. 1199+43.27, 29′ LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

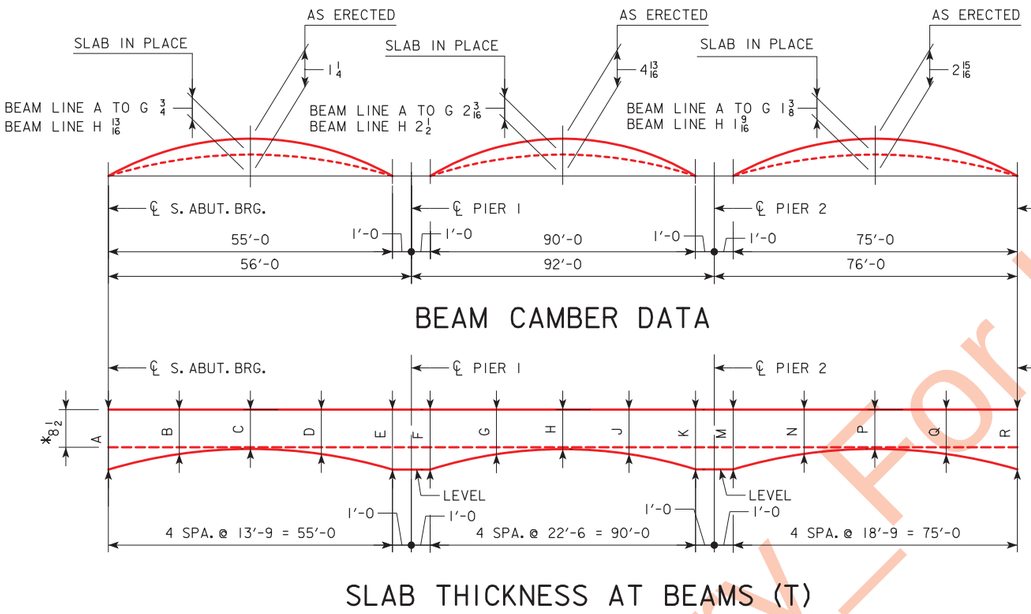
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 25 OF 43 FILE NO. 30864 DESIGN NO. 519

BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING BRIDGE ELEV. 715.783

TABLE OF BEAM LINE SLAB HAUNCH ELEVATIONS

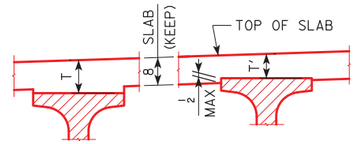
BEAM LINE	℄ S. ABUT. BEARING	SPAN 1					℄ PIER 1 BEARINGS		SPAN 2									℄ PIER 2 BEARINGS		SPAN 3						℄ N. ABUT. BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 25	LINE 26	LINE 27
A	715.68	715.75	715.90	716.04	716.16	716.27	716.37	716.40	716.58	716.76	716.92	717.05	717.17	717.26	717.33	717.37	717.40	717.42	717.44	717.57	717.70	717.81	717.89	717.95	718.00	718.02	718.03
B	715.48	715.55	715.70	715.84	715.96	716.07	716.18	716.20	716.39	716.56	716.72	716.86	716.98	717.07	717.13	717.18	717.21	717.23	717.25	717.38	717.51	717.62	717.70	717.77	717.81	717.83	717.85
C	715.28	715.37	715.50	715.64	715.77	715.88	715.98	716.01	716.19	716.37	716.53	716.67	716.78	716.87	716.94	716.99	717.02	717.04	717.06	717.20	717.32	717.43	717.52	717.58	717.62	717.65	717.66
D	715.08	715.18	715.30	715.44	715.57	715.68	715.78	715.81	716.00	716.17	716.33	716.47	716.59	716.68	716.75	716.80	716.83	716.85	716.87	717.01	717.13	717.24	717.33	717.39	717.44	717.46	717.48
E	714.87	714.98	715.10	715.24	715.37	715.48	715.59	715.61	715.80	715.98	716.14	716.28	716.39	716.49	716.56	716.60	716.64	716.66	716.68	716.82	716.94	717.05	717.14	717.20	717.25	717.28	717.29
F	714.65	714.78	714.90	715.04	715.17	715.29	715.39	715.42	715.61	715.78	715.94	716.08	716.20	716.29	716.36	716.41	716.44	716.47	716.49	716.62	716.75	716.86	716.95	717.02	717.06	717.09	717.10
G	714.43	714.57	714.70	714.85	714.97	715.09	715.19	715.22	715.41	715.59	715.75	715.89	716.01	716.10	716.17	716.22	716.25	716.28	716.29	716.43	716.56	716.67	716.76	716.83	716.87	716.90	716.92
H	714.20	714.36	714.50	714.64	714.77	714.89	715.00	715.02	715.20	715.37	715.53	715.67	715.79	715.88	715.96	716.01	716.05	716.08	716.10	716.24	716.36	716.47	716.56	716.63	716.68	716.71	716.73



SLAB THICKNESS AT BEAMS (T)

TABLE OF SLAB THICKNESS AT BEAMS

BEAM LINE	℄ S. ABUT. BEARING	SPAN 1			℄ PIER 1 BEARINGS		SPAN 2			℄ PIER 2 BEARINGS		SPAN 3			℄ N. ABUT. BEARING
	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R
A	9 5/8	8 1/2	8 3/4	9 5/16	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
B	9 1/2	8 5/16	8 11/16	9 5/16	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
C	9 1/2	8 3/8	8 11/16	9 5/16	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
D	9 1/2	8 3/8	8 3/4	9 5/16	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
E	9 1/2	8 9/16	8 13/16	9 5/16	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
F	9 1/2	8 3/4	8 7/8	9 3/8	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
G	9 1/2	8 15/16	9	9 7/16	10 3/16	10 9/16	9 1/8	8 11/16	8 15/16	10 1/4	10 1/2	9 3/8	8 15/16	8 7/8	9 1/2
H	9 1/2	9 1/16	9 1/16	9 1/2	10 3/16	10 9/16	8 7/8	8 3/8	8 11/16	10 1/4	10 1/2	9 1/4	8 3/4	8 3/4	9 1/2



SLAB THICKNESS DETAILS

NOTE: THE SLAB THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER AND DEFLECTIONS. THESE VALUES ARE USED BY THE DESIGNER TO SET BEAM ELEVATIONS AND ESTIMATE CONCRETE QUANTITIES. REFER TO THE HAUNCH DATA DETAILS SHEET FOR ADDITIONAL INFORMATION TO AID THE CONTRACTOR IN SETTING THE FIELD HAUNCHES REQUIRED FOR CONSTRUCTION.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SLAB HAUNCH DATA DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 26 OF 43 FILE NO. 30864 DESIGN NO. 519

REVISED 06-2017 - REMOVED CENTER 6b BAR FROM UNDER "#4 BAR IN BEAM" IN "SECTION THRU SLAB HAUNCH" DETAIL. (WAS THREE 6b BARS NOW TWO).
ENGLISH\MISCELLANEOUSBRIDGES.DGN - 1065 - THIS SHEET ISSUED 02-08.

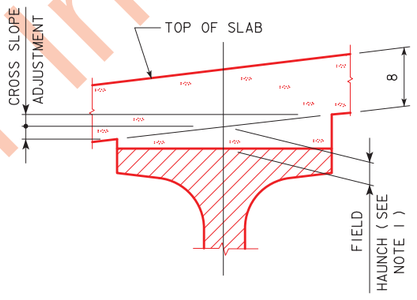
REVISED 06-12 - THE ALLOWABLE FIELD HAUNCH MAX.& MIN. WAS CHANGED TO INCHES & DECIMALS OF FEET. NOTE & NOTE 1 WERE CHANGED. THE SLAB HAUNCH LOCATIONS EXAMPLE WAS REPLACED WITH A NOTE.
ENGLISH\MISCELLANEOUSBRIDGES.DGN - 1066 - THIS SHEET ISSUED 02-08.

MISCELLANEOUS DATA TABLE

	BEAM LINE		℄ S. ABUT. BEARING	SPAN 1					℄ PIER 1 BEARINGS		SPAN 2									℄ PIER 2 BEARINGS		SPAN 3	
			LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21
ANTICIPATED DEFLECTION DUE TO SLAB (IN.)	A - G		0	$\frac{1}{4}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{4}$	0	0	$\frac{13}{16}$	$1\frac{9}{16}$	$2\frac{1}{8}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{9}{16}$	$\frac{13}{16}$	0	0	$\frac{5}{8}$	$1\frac{1}{16}$
	H		0	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{1}{4}$	0	0	$\frac{11}{16}$	$1\frac{3}{8}$	$1\frac{7}{8}$	$2\frac{3}{16}$	$2\frac{5}{16}$	$2\frac{3}{16}$	$1\frac{7}{8}$	$1\frac{3}{8}$	$\frac{11}{16}$	0	0	$\frac{1}{2}$	$\frac{15}{16}$
CROSS SLOPE ADJUSTMENTS (IN.)	A, B		$\frac{3}{8}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$
	C - H		$\frac{3}{8}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$
ALLOWABLE FIELD HAUNCH (IN. & FT.)	MAX.	ALL	$2\frac{1}{2}$ (0.208)						$3\frac{1}{2}$ (0.292)		$2\frac{1}{2}$ (0.208)									$3\frac{1}{2}$ (0.292)		$2\frac{1}{2}$ (0.208)	
	MIN.	A, B	$-\frac{1}{8}$ (0.010)	$-\frac{3}{16}$ (0.016)					$\frac{1}{2}$ (0.042)		$-\frac{3}{16}$ (0.016)									$\frac{1}{2}$ (0.042)		$-\frac{3}{16}$ (0.016)	
		C - H	$-\frac{1}{8}$ (0.010)	$-\frac{3}{16}$ (0.016)					$\frac{1}{2}$ (0.042)		$-\frac{3}{16}$ (0.016)									$\frac{1}{2}$ (0.042)		$-\frac{3}{16}$ (0.016)	

MISCELLANEOUS DATA TABLE

	BEAM LINE		SPAN 3					℄ N. ABUT. BEARING
			LINE 22	LINE 23	LINE 24	LINE 25	LINE 26	LINE 27
ANTICIPATED DEFLECTION DUE TO SLAB (IN.)	A - G		$1\frac{7}{16}$	$1\frac{1}{2}$	$1\frac{7}{16}$	$1\frac{1}{16}$	$\frac{5}{8}$	0
	H		$1\frac{1}{4}$	$1\frac{5}{16}$	$1\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{2}$	0
CROSS SLOPE ADJUSTMENTS (IN.)	A, B		$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$
	C - H		$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$
ALLOWABLE FIELD HAUNCH (IN. & FT.)	MAX.	ALL	$2\frac{1}{2}$ (0.208)					
	MIN.	A, B	$-\frac{3}{16}$ (0.016)					
		C - H	$-\frac{3}{16}$ (0.016)					



HAUNCH DETAIL

NOTE:
BRIDGE SEAT ELEVATIONS ARE SET BASED ON THEORETICAL CAMBER AND BEAM DEFLECTIONS. THESE BRIDGE SEATS WILL PROVIDE A THEORETICAL BEAM HAUNCH WITHIN DESIGN PARAMETERS. FIELD HAUNCHES ARE DETERMINED USING SURVEYED TOP OF BEAM ELEVATIONS AND "BEAM LINE HAUNCH ELEVATION" DATA. ALLOWABLE MAXIMUM AND MINIMUM "FIELD HAUNCH" VALUES ARE GIVEN IN INCHES AND DECIMALS OF FEET IN THE "MISCELLANEOUS DATA" TABLE. "CROSS SLOPE ADJUSTMENT" VALUES WILL AID THE CONTRACTOR IN DETERMINING ACTUAL FORMED HAUNCH DIMENSIONS AT THE EDGES OF THE TOP FLANGE.

NOTE 1:
TO CALCULATE FIELD HAUNCH REQUIRED AT EACH LOCATION, SURVEY THE BEAM TOPS CONSISTENT WITH THE SPACINGS SHOWN ON THE "TOP OF SLAB ELEVATIONS LAYOUT". SUBTRACT THE SURVEYED BEAM SHOT FROM THE "BEAM LINE HAUNCH ELEVATION". THIS VALUE WILL BE THE HAUNCH NEEDED (SEE "FIELD HAUNCH" IN HAUNCH DETAIL). THE "BEAM LINE HAUNCH ELEVATION" INCLUDES ADJUSTMENTS FOR SLAB THICKNESSES AND ANTICIPATED DEFLECTIONS. NO ADDITIONAL CALCULATIONS ARE REQUIRED. IF THE FIELD HAUNCH EXCEEDS THE MAXIMUMS AND MINIMUMS SHOWN IN INCHES AND DECIMALS OF FEET IN THE MISCELLANEOUS DATA TABLE, ADJUSTMENTS TO THE GRADE OR ADDITIONAL HAUNCH REINFORCEMENT WILL BE REQUIRED.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

MISCELLANEOUS DATA DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 27 OF 43 FILE NO. 30864 DESIGN NO. 519

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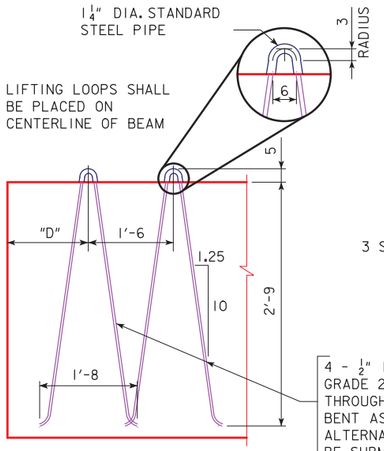
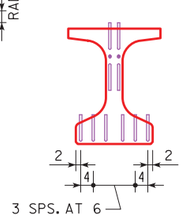


TYPICAL AT EACH END OF BEAM

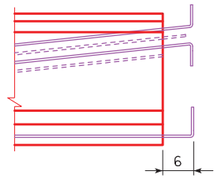
4 - ½" NOMINAL DIA. GRADE 270 STRANDS THREADED THROUGH EACH PIPE SLEEVE BENT AS SHOWN AFTER THREADING. ALTERNATE LIFTING DEVICES MAY BE SUBMITTED FOR APPROVAL (SEE LIFTING LOOP TABLE).

LIFTING LOOP DETAIL



3 SPS. AT 6

THE TOP AND BOTTOM FOR 2 ROWS OR THE TOP AND 3rd ROWS OF DEFLECTED STRANDS ARE TO BE CUT WITH 1'-6 PROJECTIONS WHICH ARE TO BE SHOP BENT AS SHOWN. THE SECOND ROW IS TO BE CUT WITH A 5" PROJECTION AND THE REMAINING TOP DEFLECTED STRANDS IN ROWS 4 AND BELOW ARE TO BE CUT FLUSH WITH BEAM FACE. 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.



TYPICAL AT BOTH BEAM ENDS

STRAND PROJECTION AT BEAM ENDS WHEN EMBEDDED IN CONCRETE END DIAPHRAGMS

BTB BEAM DATA

BTB BEAM	SPAN LENGTH ℄-℄ BEARING	OVERALL BEAM LENGTH (L)	CONCRETE STRENGTH f'ci (ksi)	CONCRETE STRENGTH f'c (ksi)	STRAND SIZE DIA. (in)	NO. OF STRAND STRAIGHT	NO. OF STRAND DEFLECTED	TOTAL INITIAL PRESTRESS ③ kips	HOLD DOWN FORCE-kips	CAMBER (in) AT RELEASE	CAMBER (in) AFTER LOSSES	DEFLECTION (in) Δ D IMMEDIATE ① (ELASTIC) Δi STEEL DIAPHRAGM	DEFLECTION (in) Δ D TIME ② (PLASTIC) ΔT STEEL DIAPHRAGM	PERMISSIBLE MAXIMUM SPACING HL-93 LOADING STEEL DIAPHRAGM	WEIGHT (TONS)	CONCRETE (CU YD.)	REINFORCING STEEL (WEIGHT-LBS)
BTB55	55'-0	56'-4	4.50	5.00	0.60	16	—	681	——	0.71	1.27	0.46	0.11	9'-3	18.5	9.2	1381
BTB75	75'-0	76'-4	5.50	6.50	0.60	22	4	1106	13.0	1.65	2.92	1.36	0.34	9'-3	25.1	12.4	1763
BTB90	90'-0	91'-4	7.50	8.50	0.60	30	8	1616	18.6	2.71	4.81	2.46	0.62	9'-3	30.0	14.8	2102

① DEFLECTIONS AT MID-SPAN DUE TO WEIGHT OF SLAB AND DIAPHRAGM. THE DEFLECTIONS SHOWN ARE FOR A SLAB (8 in) AND HAUNCH (1.5 in) WEIGHT OF:
0.98 kips/ft FOR 9'-3 BEAM SPACING
AND ONE STEEL DIAPHRAGM (0.500 kips) AT ℄ OF SPAN.
FOR DIFFERENT SLAB AND DIAPHRAGM WEIGHTS, DEFLECTIONS WILL BE DIRECTLY PROPORTIONAL.

② DEFLECTIONS DUE TO THE COMBINED EFFECT OF CREEP DUE TO WEIGHT OF SLAB AND SHRINKAGE OF SLAB.
TOTAL BEAM DEFLECTIONS AT ℄ OF SPAN, Δ_D , DUE TO WEIGHT OF SLAB AND DIAPHRAGMS FOR DETAILING PURPOSE:
(A) $\Delta_D = \Delta_I + \Delta_T$ FOR SIMPLE SPAN.
(B) $\Delta_D = \Delta_I + \frac{3}{4}\Delta_T$ FOR END SPANS OF CONTINUOUS BRIDGE.
(C) $\Delta_D = \Delta_I + \frac{1}{2}\Delta_T$ FOR INTERIOR SPANS OF CONTINUOUS BRIDGE.

③ TOTAL INITIAL PRESTRESS IS BASED ON 72.6% f's, f's. = 270 ksi. AND As = 0.217 in².

CALCULATED DESIGN CAMBERS HAVE BEEN REDUCED FROM THEIR THEORETICAL VALUES BY 15% TO AID CONSTRUCTABILITY.

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 in²) 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 IM570.

BEARINGS SHALL BE AS DETAILED ON OTHER DESIGN SHEETS.

BEAMS TO BE USED IN BRIDGES MADE CONTINUOUS BY THE POURED IN PLACE FLOOR, ARE TO BE AT LEAST 28 DAYS OLD BEFORE THE FLOOR 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".

HOLES MUST BE CAST IN THE WEB TO ACCOMMODATE THE STEEL DIAPHRAGM ATTACHMENTS AS DETAILED ON THE STEEL DIAPHRAGM DETAIL SHEET.

MINIMUM CONCRETE f'c (AT 28 DAYS) AND MINIMUM f'ci AT RELEASE ARE LOCATED IN THE BTB 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.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE TO BE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2007.
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: A.A.S.H.T.O. LRFD, SERIES OF 2007, WITH MINOR MODIFICATIONS.

ALTERNATE BAR NOTES:

ALTERNATE BARS SHOWN IN BENT BAR DETAILS MAY BE USED IN LIEU OF REINFORCING BARS SHOWN IN BAR LIST. NO ADDITIONAL PAYMENT SHALL BE MADE FOR USE OF ALTERNATE BARS.

NOTE: FOR MODIFIED STIRRUP EXTENSIONS, SEE "BENT BAR DETAILS" AND BEAM DETAIL SHEETS FOR DIMENSIONS AND LOCATIONS.

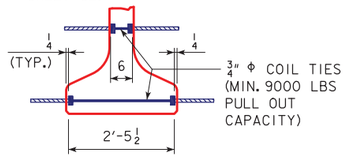
LIFTING LOOP AND OVERHANG TABLE

BEAMS	LIFTING LOOPS EACH END	# OF STRANDS PER LOOP	D	BEAM OVERHANG (FT)
BTB55, BTB75	1	4	2'-0	**
BTB90	2	4	2'-6	9

** IN ACCORDANCE WITH ARTICLE 2407.03, K OF THE STANDARD SPECIFICATIONS.

LIFTING LOOPS SHALL CARRY LOADS EQUALLY.

NUMBER AND EXACT LOCATION OF COIL TIES TO BE AS DETAILED ON DESIGN SHEET 32.



COIL TIE DETAIL

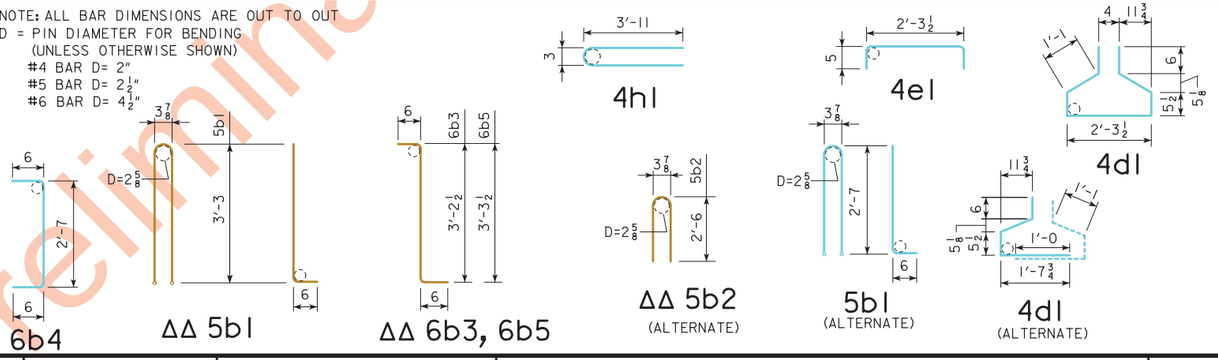
ΔΔ 5b1, 6b3, AND 6b5 BARS TO BE EPOXY COATED
* 6b3, 6b4, and 6b5 BARS TO BE USED IN PAIRS

REINFORCING BAR LIST

	BEAM		BTB55		BTB75		BTB90	
	BAR	SHAPE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
	5a1		12	29'-2	12	39'-2	12	27'-9
	5a2		——	——	——	——	6	40'-0
ΔΔ	5b1		39	7'-8	57	7'-8	69	7'-8
ΔΔ *	6b3		18	4'-3	16	4'-3	0	4'-3
*	6b4		4	3'-7	8	3'-7	16	3'-7
ΔΔ *	6b5		18	4'-4	16	4'-4	32	4'-4
	4c1		71	2'-7	95	2'-7	109	2'-7
	4d1		59	6'-5	77	6'-5	91	6'-5
	4e1		24	3'-2	24	3'-2	26	3'-2
	4h1		4	8'-0	4	8'-0	4	8'-0

BENT BAR DETAILS

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT
D = PIN DIAMETER FOR BENDING (UNLESS OTHERWISE SHOWN)
#4 BAR D= 2"
#5 BAR D= 2½"
#6 BAR D= 4½"



DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB BEAM DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 28 OF 43 FILE NO. 30864 DESIGN NO. 519

CORRECTION 12-13 - COIL TIE DETAIL WAS CHANGED TO REFLECT THE DISTANCE BETWEEN COIL TIE ANCHORS EMBEDDED ¼ INCH.
ENGLISHBEAMS.DGN - 4750 - THIS SHEET ISSUED 02-08.

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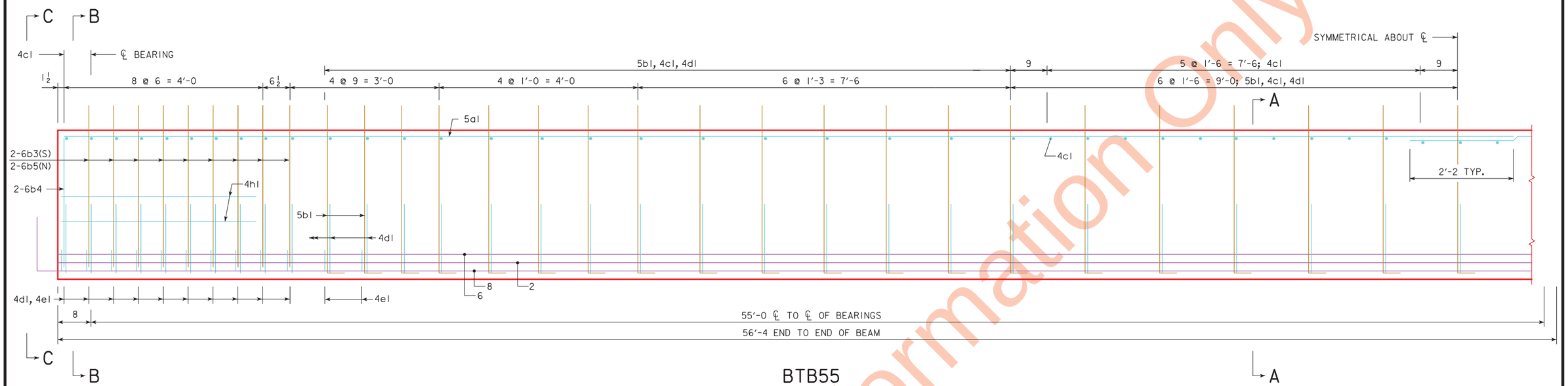
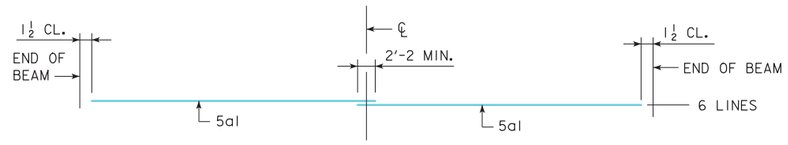


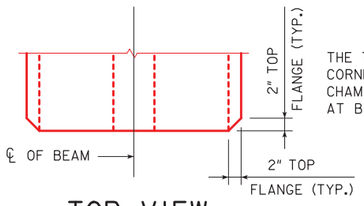
BTB55

(N) APPLICABLE TO NORTH END OF BEAM ONLY
(S) APPLICABLE TO SOUTH END OF BEAM ONLY



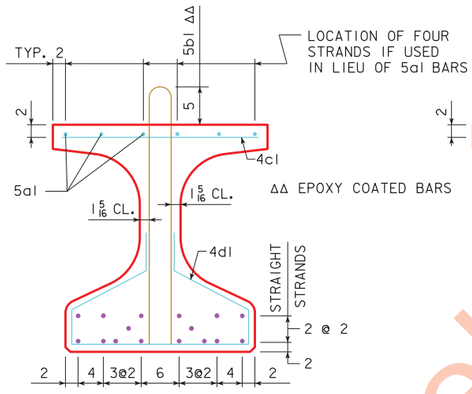
TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

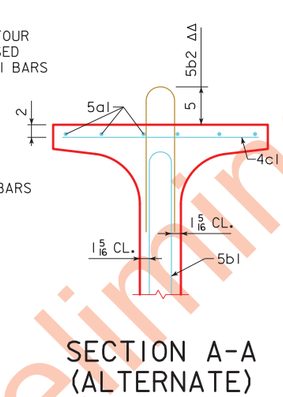


THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

TOP VIEW

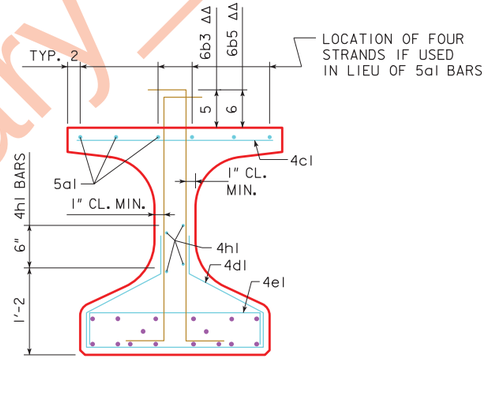


SECTION A-A

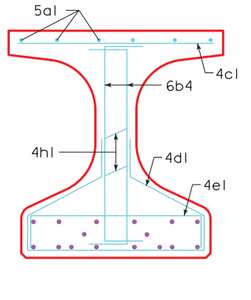


SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 28.



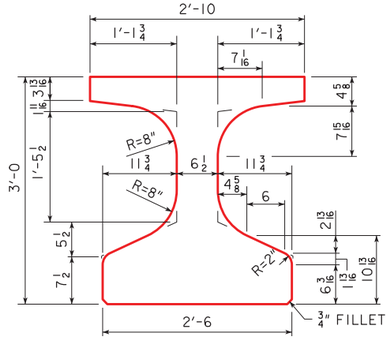
SECTION B-B



SECTION C-C

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB55 BEAM DETAILS

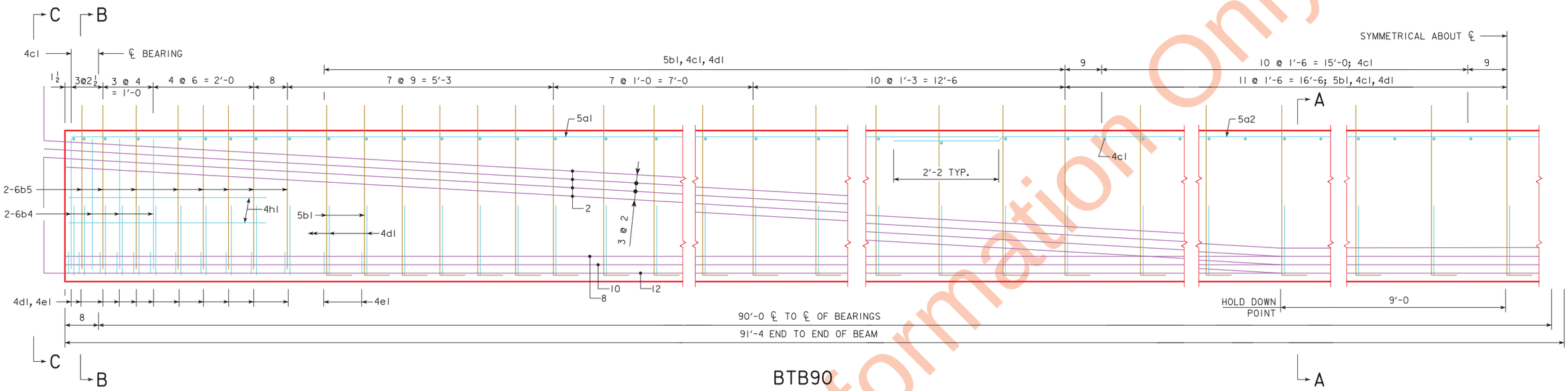
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

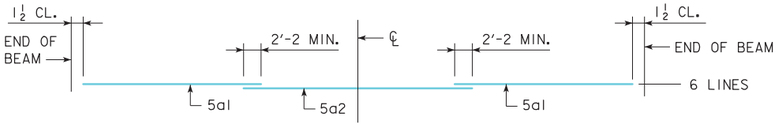
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 29 OF 43 — FILE NO. 30864 — DESIGN NO. 519

ENGLISHBEAMS.DGN - 4756 - THIS SHEET ISSUED 02-08.

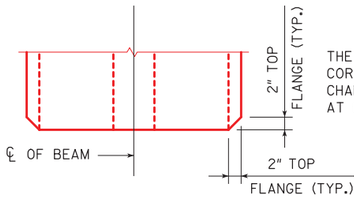


BTB90



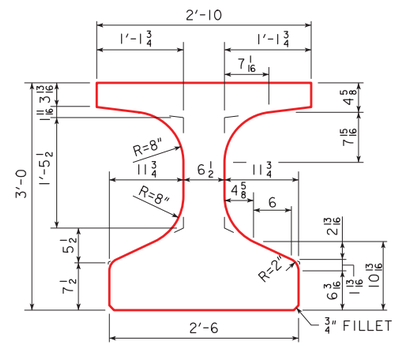
TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

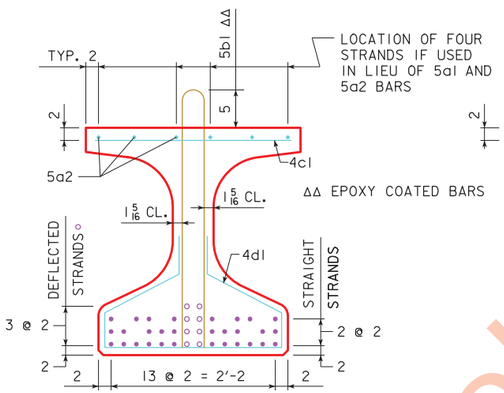


TOP VIEW

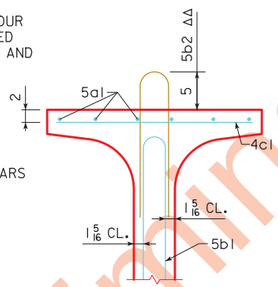
THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.



BTB BEAM CROSS SECTION

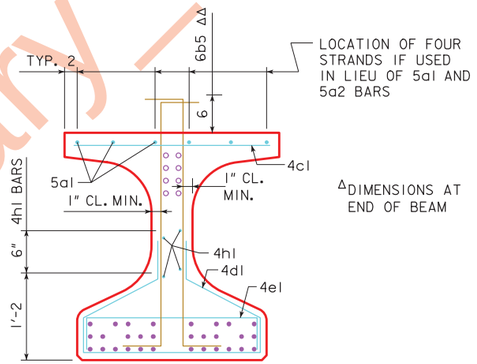


SECTION A-A



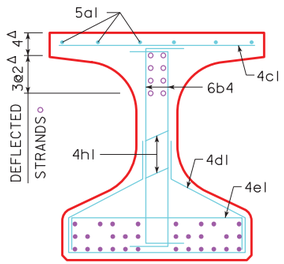
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 28.



SECTION B-B

ΔDIMENSIONS AT END OF BEAM



SECTION C-C

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB90 BEAM DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

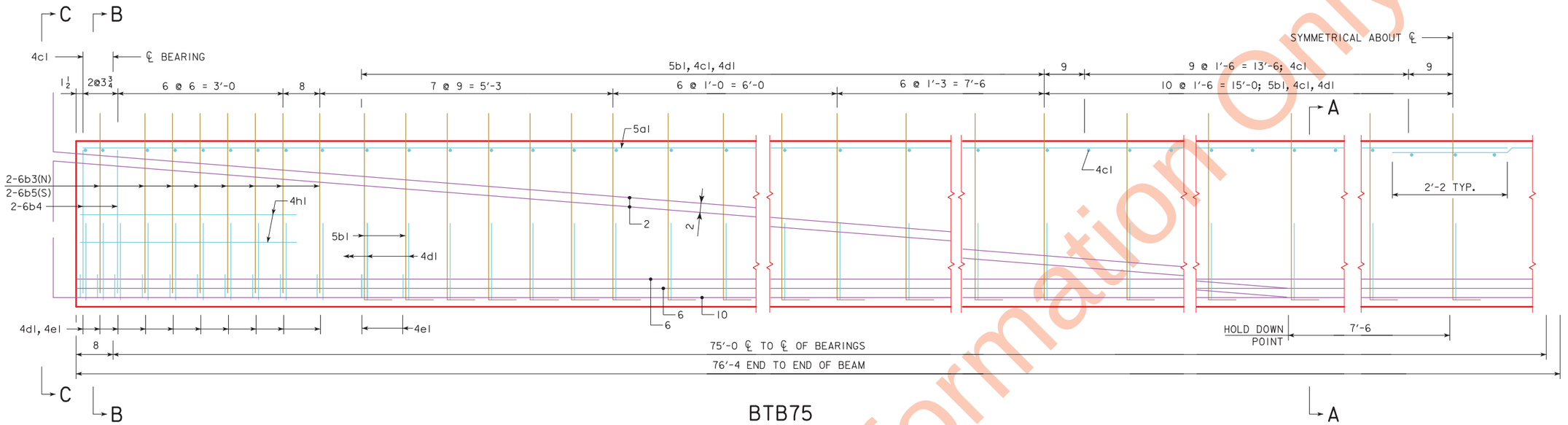
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 30 OF 43 FILE NO. 30864 DESIGN NO. 519

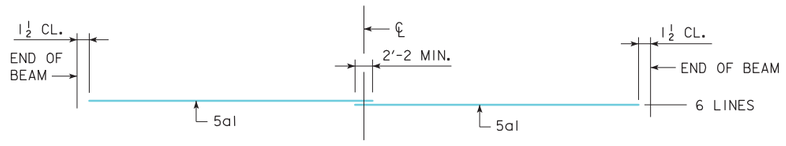
REVISED 08-09 - ADDED STRANDS TO SECTIONS A-A, B-B, & C-C.
ENGLISHBEAMS.DGN - 4763 - THIS SHEET ISSUED 02-08.

12/24/2019 4:15:33 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520519s030 11x17_pdf.pltcfg



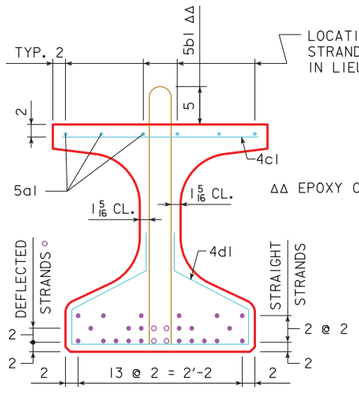
BTB75

(N) APPLICABLE TO NORTH END OF BEAM ONLY
(S) APPLICABLE TO SOUTH END OF BEAM ONLY

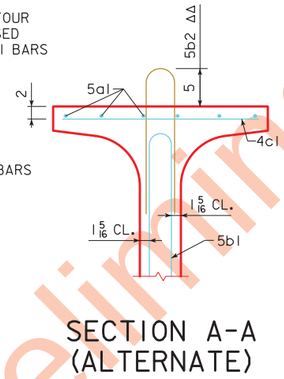


TOP FLANGE LONGITUDINAL BAR LAYOUT

NOTE STIRRUP EXTENSION

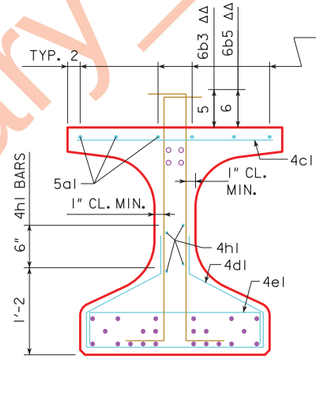


SECTION A-A



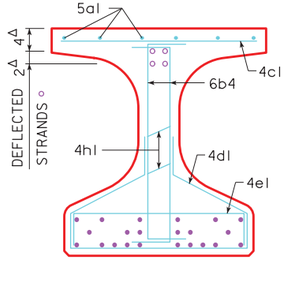
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON DESIGN SHEET 28.

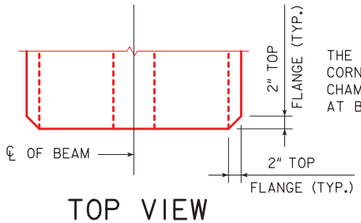


SECTION B-B

Δ DIMENSIONS AT END OF BEAM



SECTION C-C

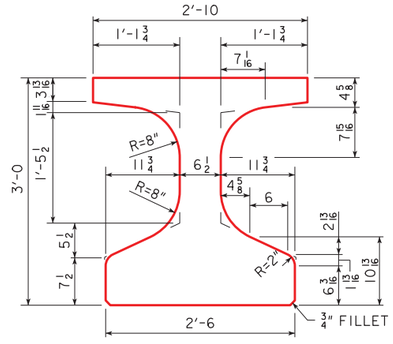


TOP VIEW

THE TOP FLANGE BEAM CORNERS ARE TO BE CHAMFERED 2" AS SHOWN AT BOTH ENDS OF THE BEAM.

AREA = 631.7 in²
$\bar{y}_b$ = 17.14 in.
I = 99,980 in⁴

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BTB75 BEAM DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

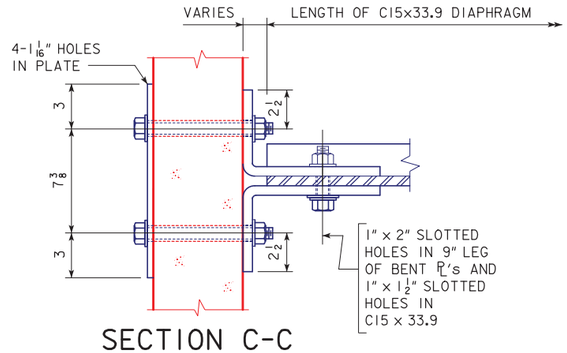
DESIGN SHEET NO. 31 OF 43 FILE NO. 30864 DESIGN NO. 519

ENGLISHBEAMS.DGN - 4760 - THIS SHEET ISSUED 02-08.

DESIGN TEAM PARSONS	JB/RL/SC	BULB TEE "B" BEAM - 75'-0 SPAN	STANDARD SHEET 4760 MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 76

BULB TEE "B" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

ONE BEAM CONNECTION (DETAIL "F" AND/OR DETAIL "G")		NO. OF BEAM CONNECTIONS	WEIGHT
4 - $\frac{7}{8}$"Φ x 9$\frac{1}{4}$ H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.		45	432
ONE DETAIL "G"	4 - BENT PL 9 x 6 x $\frac{1}{2}$ x 0'-11 = 93.6 LBS.		
ONE DETAIL "F"	1 - BACKING PL 5 x $\frac{3}{8}$ x 1'-1$\frac{3}{8}$ = 7.1 LBS.	45	320
	2 - BENT PL 9 x 6 x $\frac{1}{2}$ x 0'-11 = 46.8 LBS.	45	2106
ONE DIAPHRAGM			
		NUMBER OF DIAPHRAGMS	
6 - $\frac{7}{8}$"Φ x 3" H.S.BOLTS WITH NUTS & WASHERS = 7.8 LBS.		24	187
	LENGTH OF MEMBER		
1 - C15 x 33.9 = 33.9 LBS./FT.	7'-6$\frac{7}{8}$	24	6161
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			9206



SECTION C-C

STRUCTURAL STEEL	
WEIGHT	9206 LBS.

NOTE: STRUCTURAL STEEL WEIGHT IS INCLUDED ON THE SUMMARY QUANTITIES SHEET.

NOTES:

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

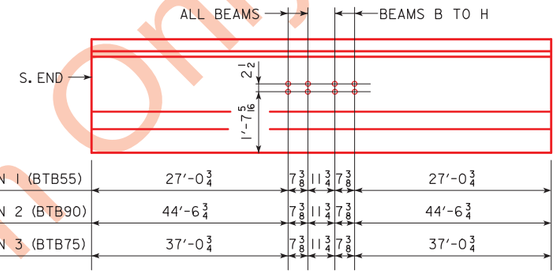
SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.

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

THE 1$\frac{1}{2}$"Φ HOLES FOR THE $\frac{7}{8}$"Φ H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

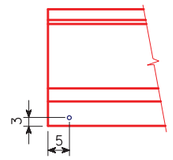
THE $\frac{7}{8}$"Φ H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.

ALL BOLTS ARE TO BE TIGHTENED PRIOR TO PLACING BRIDGE FLOOR CONCRETE WITH THE FOLLOWING EXCEPTION: BOLTS IN DIAPHRAGMS LOCATED UNDER CLOSURE POUR SHALL BE TIGHTENED AFTER DECK ON BOTH SIDES OF CLOSURE POUR HAVE BEEN PLACED.

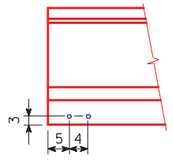


NOTE: BEAM A WILL ONLY HAVE HOLES FOR ONE "F" DETAIL AT EACH INTERMEDIATE DIAPHRAGM DETAIL.

INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATIONS



INTEGRAL ABUT.



FIXED PIER

BEAM COIL TIE LOCATIONS

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

INTERMEDIATE DIAPH. DETAILS I

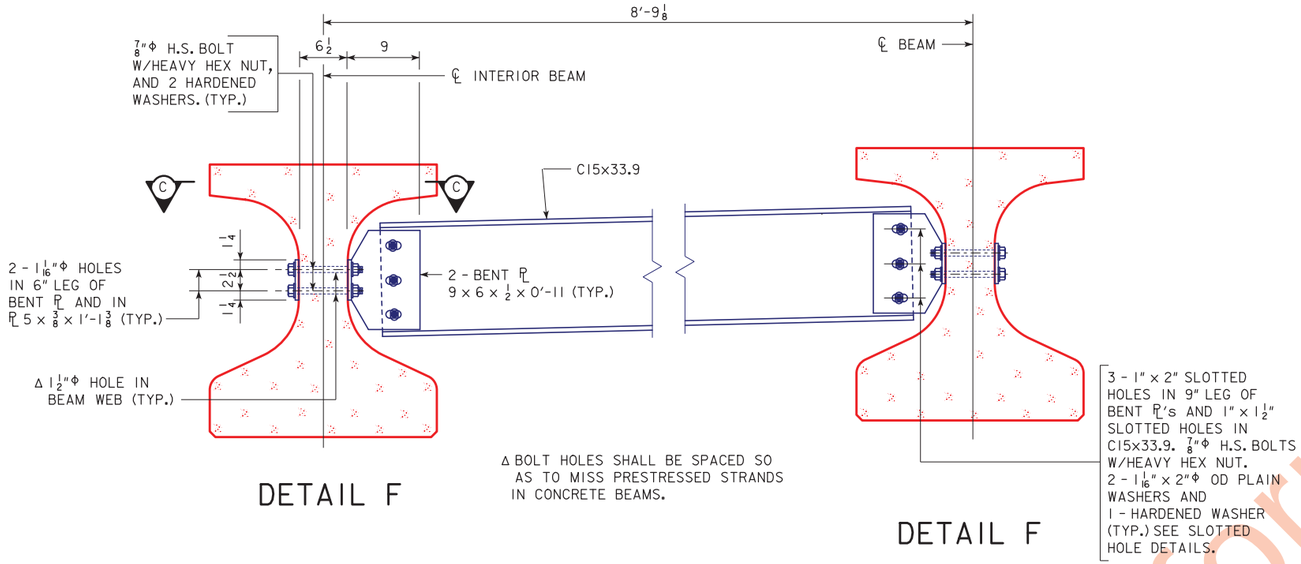
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

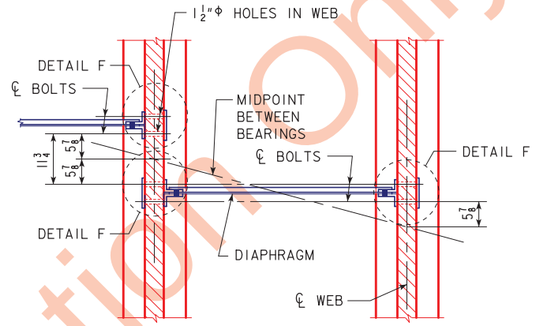
DESIGN SHEET NO. 32 OF 43 FILE NO. 30864 DESIGN NO. 519

ENGLISHBEAMS.DGN - 1036-I-BTB - THIS SHEET ISSUED 06-14. SHEET 1 OF 2.

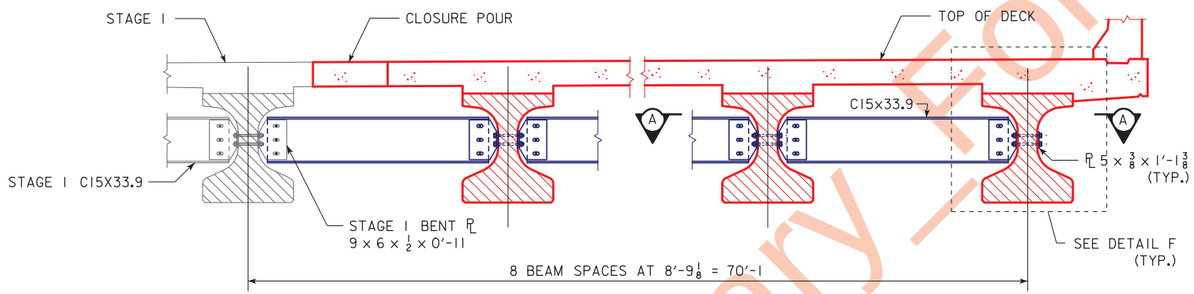


Δ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

SECTION SHOWING INTERMEDIATE DIAPHRAGMS

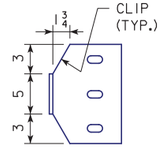


PART SECTION A-A

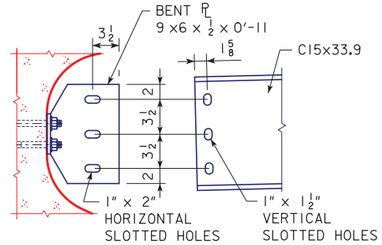


SECTION SHOWING INTERMEDIATE DIAPHRAGMS AT SPANS 1 TO 3

(LOOKING SOUTH)



BENT PL DETAIL



SLOTTED HOLE DETAILS

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

INTERMEDIATE DIAPH. DETAILS 2

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 33 OF 43 FILE NO. 30864 DESIGN NO. 519

ENGLISHBEAMS.DGN - 1036-2-BTB - THIS SHEET ISSUED 06-14. SHEET 2 OF 2.

DESIGN TEAM PARSONS KRP/EJ/SC	STEEL INTERM. DIAPHS. FOR "BTB" BEAM BRIDGES - SHT. 2 OF 2	STANDARD SHEET 1036-2-BTB MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 78

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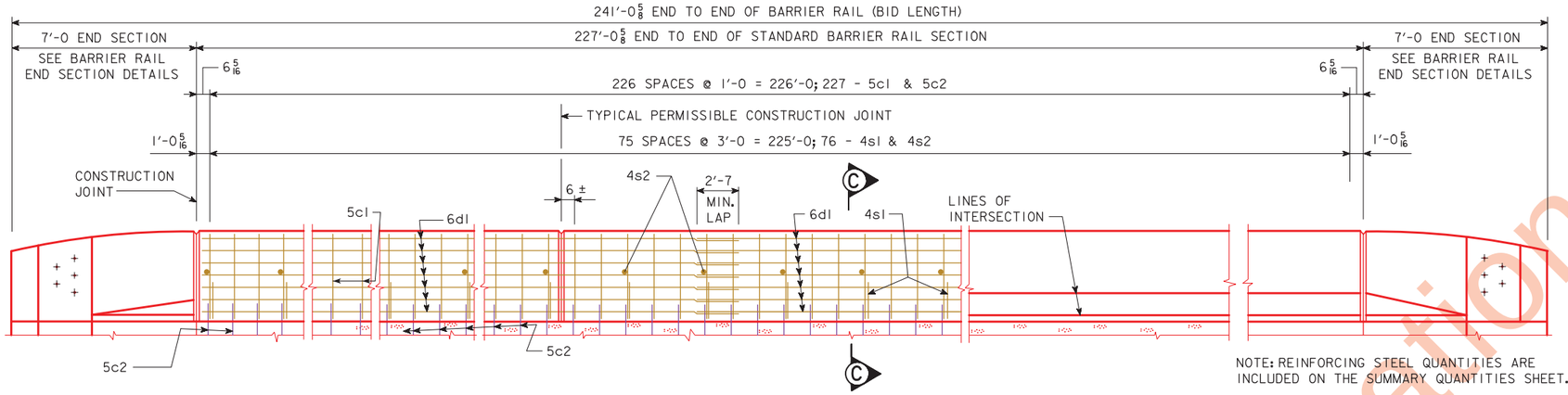
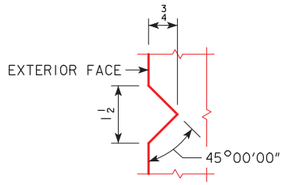
ENGLISHDECKRAILBRIDGES.DGN 1020SD - THIS SHEET ISSUED 04-14 - ADDED STAINLESS STEEL REINFORCING BAR LIST AND CHANGED 5c2 BARS TO STAINLESS STEEL.

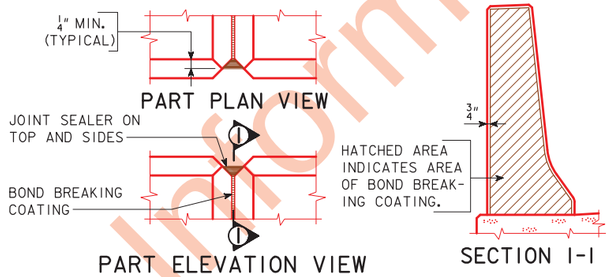


NOTE: REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

ELEVATION OF BARRIER RAIL



RUSTICATION DETAIL



BARRIER RAIL JOINT DETAILS

BARRIER AESTHETIC NOTES:

THIS WORK CONSISTS OF USING INTEGRALLY COLORED CONCRETE FOR CONCRETE BARRIERS SHOWN IN THIS PLAN. AS PART OF THE WORK A CONCRETE BARRIER MOCKUP MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO THE BEGINNING OF ANY PRODUCTION CONCRETE BARRIER WORK THAT INCLUDES INTEGRALLY COLORED CONCRETE. SEE THE "SPECIAL PROVISIONS FOR AESTHETIC TREATMENT OF CONCRETE BARRIER" FOR MORE REQUIREMENTS REGARDING THE USE OF RUSTICATION AND INTEGRALLY COLORED CONCRETE, AND FOR BARRIER MOCKUP REQUIREMENTS.

ALL COSTS FOR PROVIDING INTEGRAL COLOR AND RUSTICATION FOR CONCRETE BARRIERS, AND ALL COSTS FOR CONSTRUCTING BARRIER MOCKUP SHALL BE INCLUDED IN THE BID ITEM "CONCRETE BARRIER RAILING, AESTHETIC".

BARRIER RAIL NOTES:

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

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

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

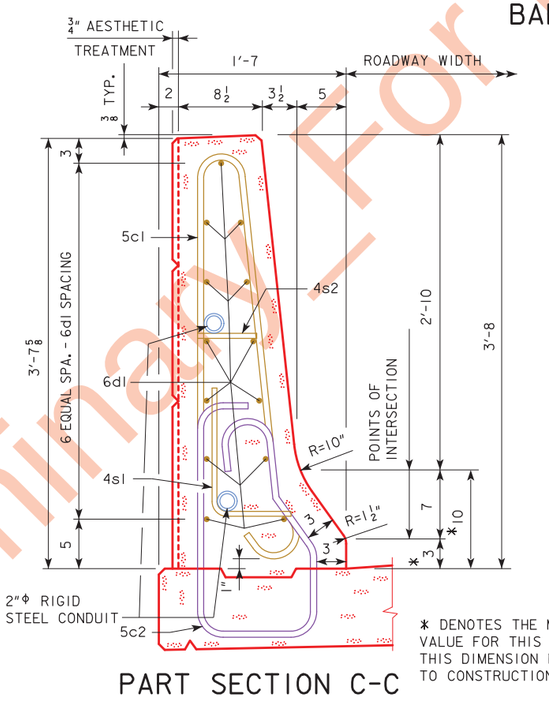
ALL BARRIER RAIL REINFORCING STEEL IS TO BE EITHER EPOXY COATED OR STAINLESS STEEL AS SHOWN. THE STAINLESS STEEL REINFORCING STEEL SHALL BE DEFORMED BAR GRADE 60 MEETING THE REQUIREMENTS OF MATERIALS I.M. 452.

THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR 3'-8 CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

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

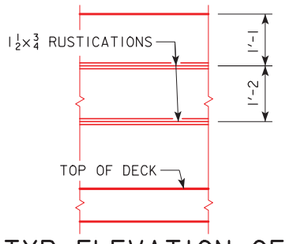
TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE, EXCEPT AT THE SPECIAL SECTIONS.

CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 3.46 SQUARE FEET.

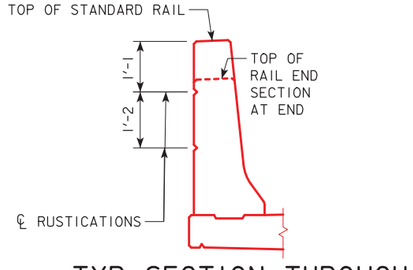


* DENOTES THE MAXIMUM VALUE FOR THIS DIMENSION. THIS DIMENSION MAY VARY DUE TO CONSTRUCTION INACCURACIES.

PART SECTION C-C



TYP. ELEVATION OF BARRIER RAIL



TYP. SECTION THROUGH BARRIER RAIL

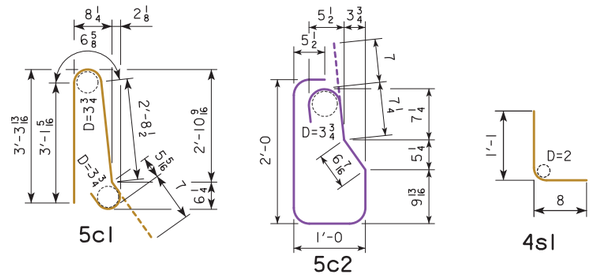
EPOXY COATED REINF. STEEL - ONE RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c1	RAIL, VERTICAL		227	7'-5	1756
	6d1	RAIL, LONGITUDINAL		91	34'-9	4750
	4s1	RAIL, CONDUIT		76	1'-9	89
	4s2	RAIL, CONDUIT		76	0'-6	26
					EPOXY STEEL TOTAL (LBS.)	6621

STAINLESS STEEL REINF. STEEL - ONE RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c2	RAIL, VERTICAL		227	6'-0	1421
					STAINLESS STEEL TOTAL (LBS.)	1421

BENT BAR DETAILS



NOTE:
ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER.

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	227'-0 5/8 @ 0.1281 CU. YD. PER FT.	29.1
	TOTAL (CU. YD.)	29.1

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING, AESTHETIC	L.F.	241.1

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

WEST BARRIER RAIL DETAILS

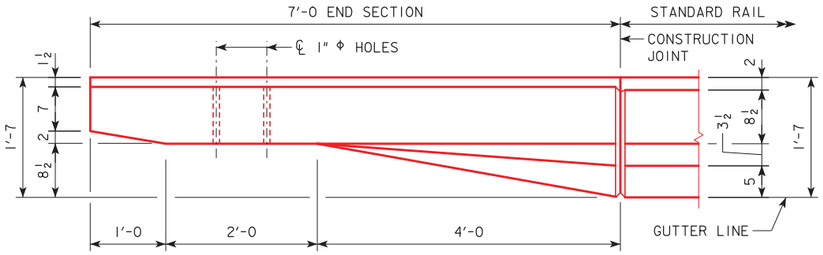
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

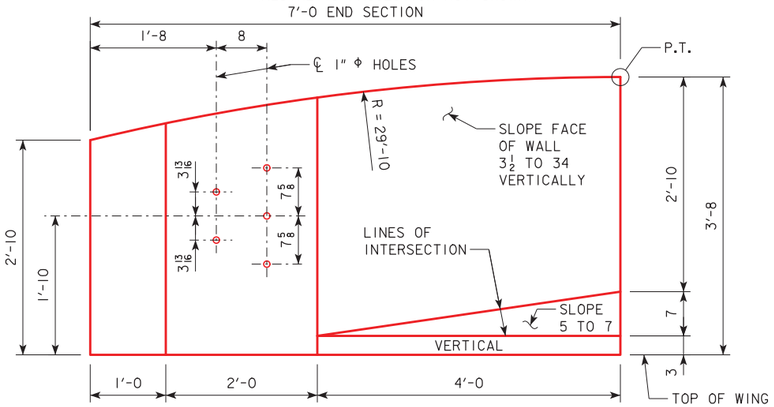
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 34 OF 43 — FILE NO. 30864 — DESIGN NO. 519

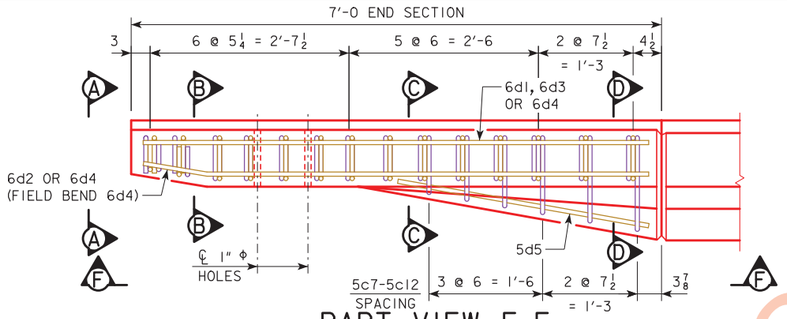
DESIGN TEAM PARSONS MN/EJ/SC	3'-8 BARRIER RAIL -- INTEGRAL ABUTMENTS	STANDARD SHEET 1020SD MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 79



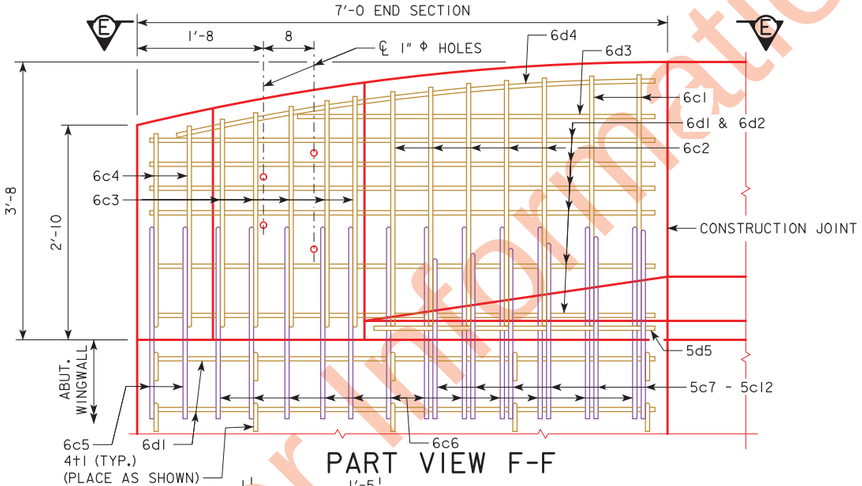
PART PLAN VIEW
(AESTHETIC PROJECTION NOT SHOWN)



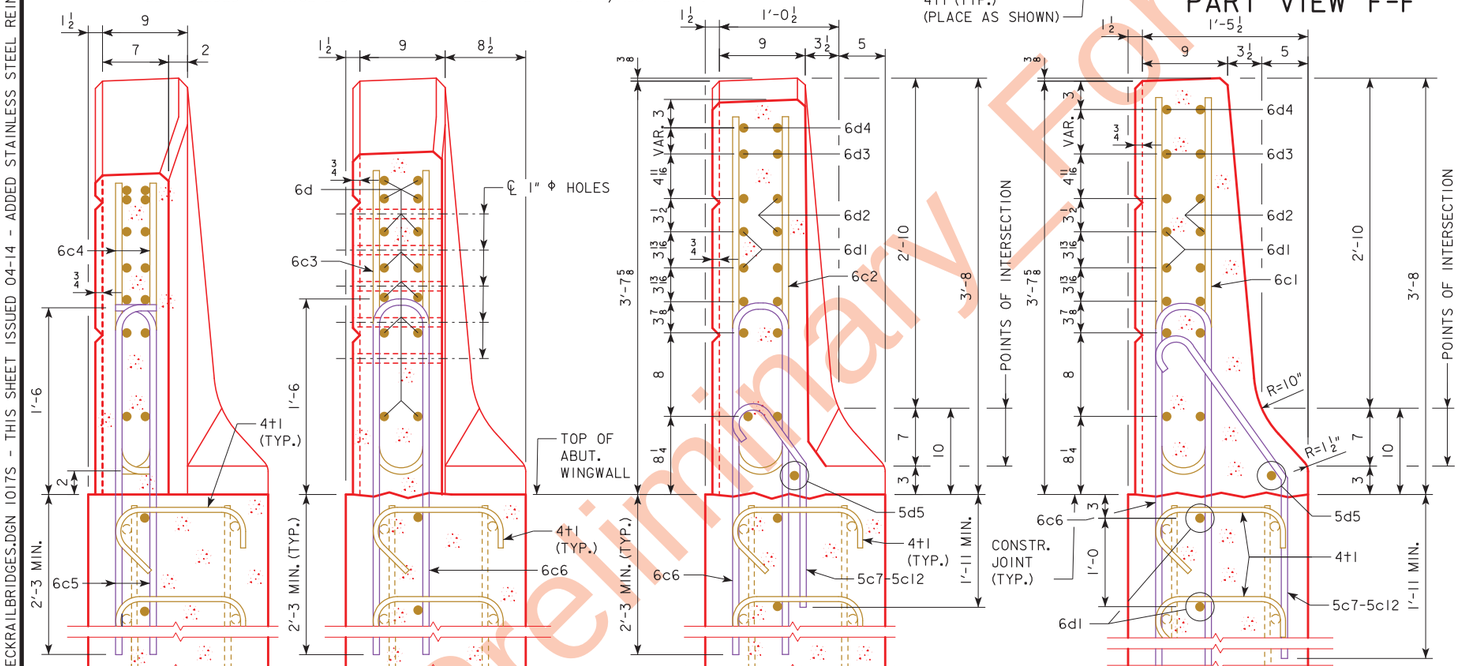
PART ELEVATION VIEW
PROVIDE 5 HOLES FORMED WITH 1" Φ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR "CONCRETE BARRIER RAILING, AESTHETIC".



PART VIEW E-E
(AESTHETIC PROJECTION NOT SHOWN)



PART VIEW F-F



NOTE:
4†1 PLACEMENT- 5 BARS EACH LEVEL OF 6d1 IN WINGWALL FOOTING.

NOTE:
CONSTRUCTION JOINT BETWEEN TOP OF WINGWALL AND BARRIER RAIL IS ROUGHENED CONCRETE.

NOTE:
THE 10" RADIUS AND 1½" RADIUS ARE TYPICAL AND SHALL BE USED WHEN CONSTRUCTING THE CORNERS FOR VIEW A-A, SECTION B-B, SECTION C-C AND SECTION D-D.

NOTE:
THE 6c5, 6c6, 5c7-12, 2 - 6d1 AND 4†1 BARS ARE TO BE PLACED WITH THE ABUTMENT WINGWALL.

NOTE:
DASHED LINES BELOW THE TOP OF WINGWALL ARE THE ABUTMENT WINGWALL REINFORCING STEEL. SEE ABUTMENT DETAILS SHEET FOR PLACEMENT.

EPOXY COATED REINF. STEEL - ONE END SECT.

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	RAIL, VERTICAL	⊓	2	6'-11	21
6c2	RAIL, VERTICAL	⊓	5	VARIES	49
6c3	RAIL, VERTICAL	⊓	5	VARIES	45
6c4	RAIL, VERTICAL	⌐	4	VARIES	18
6d1	RAIL, HORIZONTAL	—	8	6'-8	80
6d2	RAIL, HORIZONTAL	⌒	6	6'-9	61
6d3	RAIL, HORIZONTAL	—	2	4'-5	13
6d4	RAIL, HORIZONTAL	⌒	2	6'-6	20
5d5	RAIL, HORIZONTAL	—	1	3'-9	4
4†1	RAIL, ABUTMENT WINGWALL TIE BARS	⊐	10	2'-0¼	13
				EPOXY REINF. TOTAL WEIGHT (LBS.)	324

STAINLESS STEEL REINF. STEEL - ONE END SECT.

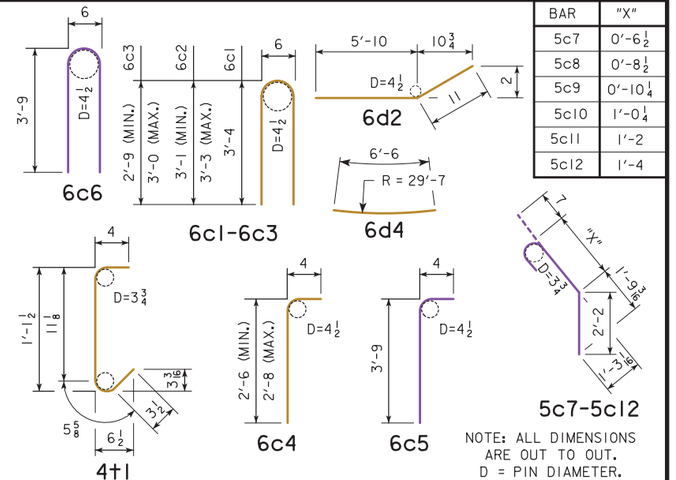
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c5	RAIL, VERTICAL	⌐	4	4'-1	25
6c6	RAIL, VERTICAL	⊓	12	8'-0	144
5c7-12	RAIL, VERTICAL	⌐	6	VARIES	23
				STAINLESS STEEL TOTAL WEIGHT (LBS.)	192

NOTE: REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY OF ITEMIZED QUANTITIES SHEET.

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.78 CU. YD.
BARRIER RAIL ONE END AESTHETIC TREATMENT	0.05 CU. YD.

BENT BAR DETAILS



BAR	"X"
5c7	0'-6½
5c8	0'-8½
5c9	0'-10¼
5c10	1'-0¼
5c11	1'-2
5c12	1'-4

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

W. BARRIER END SECTION DETAILS

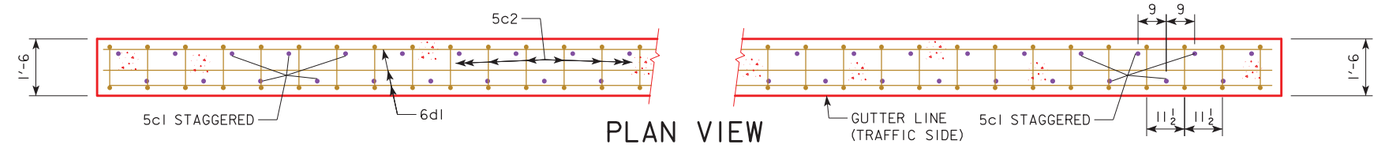
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

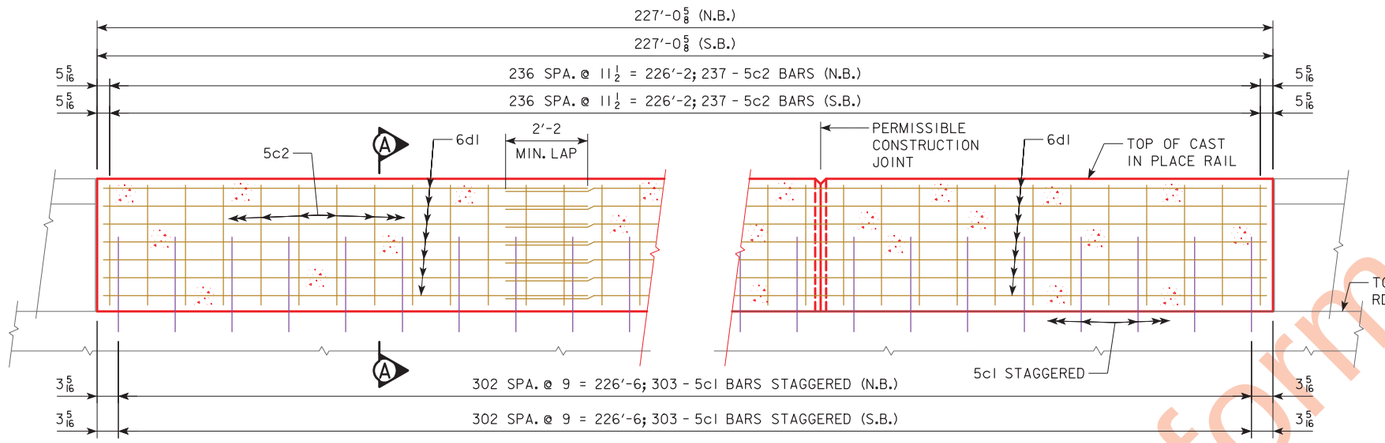
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 35 OF 43 — FILE NO. 30864 — DESIGN NO. 519

ENGLISHDECKRAILBRIDGES.DGN 10I7S - THIS SHEET ISSUED 04-14 - ADDED STAINLESS STEEL REINFORCING BAR LIST AND CHANGED 6c3, 6c4 & 5c5-10 BARS TO STAINLESS STEEL.

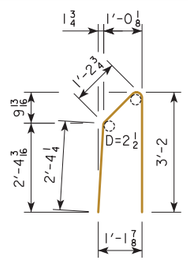


PLAN VIEW



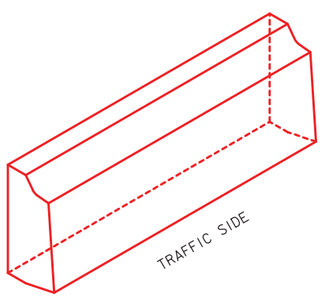
SECTION B-B 42" HALF SECTION BARRIER RAIL

BENT BAR DETAILS

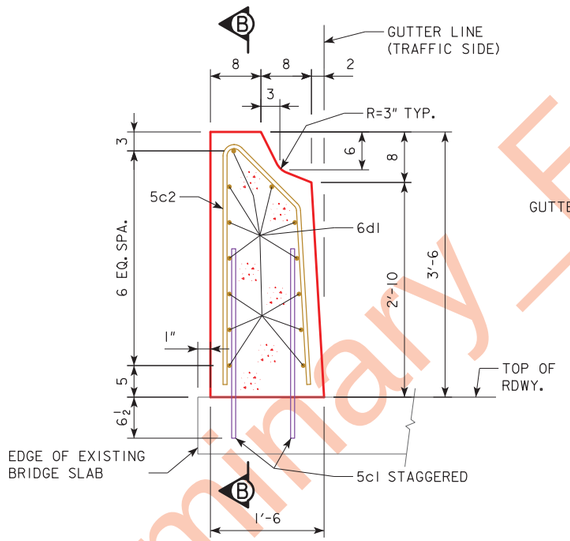


5c2

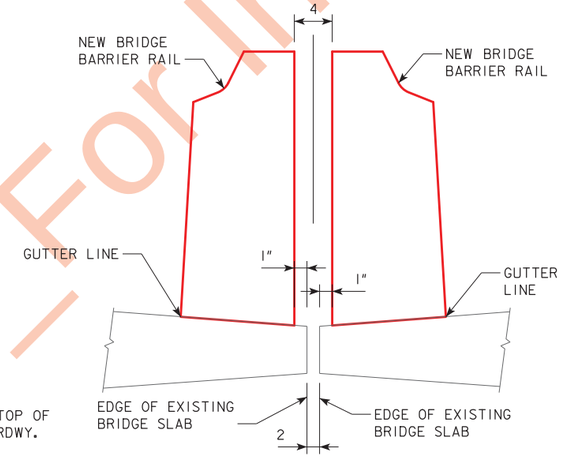
NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER



VIEW OF HALF SECTION BARRIER RAIL



SECTION A-A
HALF SECTION BARRIER
RAIL REINFORCING



VIEW ALONG RAILS
OF BOTH BRIDGES

DOWEL SETTING NOTE:

THE 5c1 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. THE HOLES ARE TO BE 6½" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE FOLLOWING SYSTEMS SHALL BE USED:

EPOXY GROUT SYSTEM IN ACCORDANCE WITH STANDARD SPECIFICATIONS ARTICLE 2301 AND CURRENT SUPPLEMENTAL SPECIFICATIONS.

EPOXY COATED REINF. STEEL - BARRIER RAIL (N.B.)

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5c2	RAIL, VERTICAL		237	6'-9	1669
6d1	RAIL, LONGITUDINAL		91	34'-4	4693
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS)				6362

EPOXY COATED REINF. STEEL - BARRIER RAIL (S.B.)

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5c2	RAIL, VERTICAL		237	6'-9	1669
6d1	RAIL, LONGITUDINAL		91	34'-4	4693
	REINFORCING STEEL EPOXY COATED - TOTAL (LBS)				6362

STAINLESS STEEL REINF. STEEL - BARRIER RAIL (N.B.)

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5c1	DOWEL BAR		303	2'-6	790
	STAINLESS STEEL - TOTAL (LBS)				790

STAINLESS STEEL REINF. STEEL - BARRIER RAIL (S.B.)

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5c1	DOWEL BAR		303	2'-6	790
	STAINLESS STEEL - TOTAL (LBS)				790

CONCRETE PLACEMENT QTY. - RAIL (N.B.)

LOCATION	TOTAL
BRIDGE BARRIER RAIL (227'-0⅝) - NB	38.3
TOTAL (CU. YDS.)	38.3

CONCRETE PLACEMENT QTY. - RAIL (S.B.)

LOCATION	TOTAL
BRIDGE BARRIER RAIL (227'-0⅝) - SB	38.3
TOTAL (CU. YDS.)	38.3

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING, AESTHETIC	L.F.	454.1

NOTES:
CONSTRUCTION JOINTS SHALL BE PLACED AS NEEDED. WHERE ABUTTING SECTIONS ARE PLACED AS SEPARATE POURS, A BUTT JOINT MAY BE USED.
LONGITUDINAL REINFORCEMENT SHALL BE EXTENDED INTO THE ABUTTING SECTION A MINIMUM OF 2'-6 SPANNING THE BUTT JOINT.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

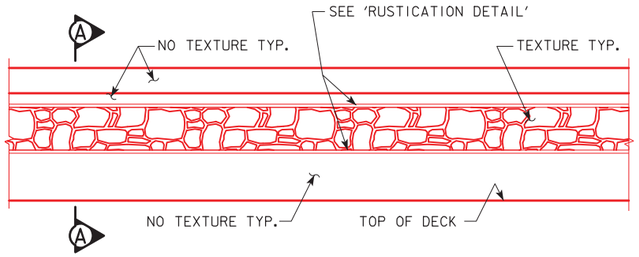
MEDIAN BARRIER RAIL DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 36 OF 43 FILE NO. 30864 DESIGN NO. 519

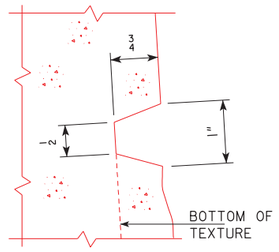


MEDIAN BARRIER TRAFFIC FACE ELEVATION

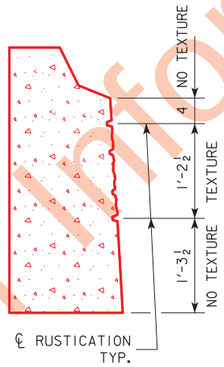
MEDIAN BARRIER AESTHETIC NOTES

THIS WORK CONSISTS OF USING INTEGRALLY COLORED CONCRETE FOR MEDIAN CONCRETE BARRIERS AND INCORPORATING TEXTURED CONCRETE FINISHES ON ALL DESIGNATED SURFACES OF THE CONCRETE BARRIERS OF THE BRIDGES AND ROADWAYS SHOWN IN THIS PLAN. AS PART OF THE WORK, A CONCRETE BARRIER MOCKUP MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO THE BEGINNING OF ANY PRODUCTION CONCRETE BARRIER WORK THAT INCLUDES TEXTURE AND INTEGRALLY COLORED CONCRETE. SEE THE "SPECIAL PROVISIONS FOR AESTHETIC TREATMENT OF CONCRETE BARRIER" FOR MORE REQUIREMENTS REGARDING THE USE OF TEXTURE, RUSTICATION, AND INTEGRALLY COLORED CONCRETE, AND FOR BARRIER MOCKUP REQUIREMENTS.

ALL COSTS FOR PROVIDING INTEGRAL COLOR FOR CONCRETE BARRIERS, AND ALL COSTS FOR CONSTRUCTING TEXTURE AND RUSTICATION FOR CONCRETE BARRIERS, AND ALL COSTS FOR CONSTRUCTING MOCKUP PANEL(S) SHALL BE INCLUDED IN THE BID ITEM "CONCRETE BARRIER RAILING, AESTHETIC".



RUSTICATION DETAIL



SECTION A-A

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

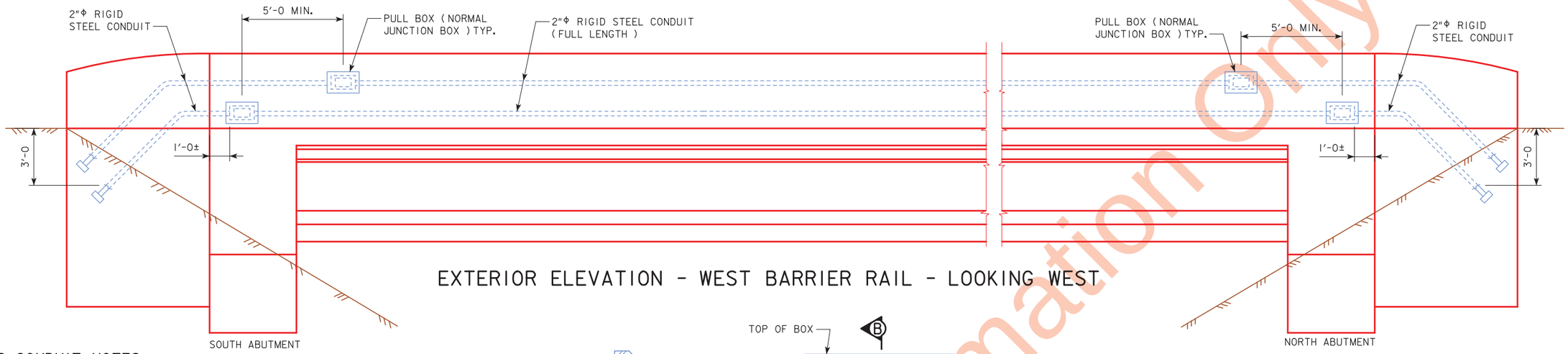
MEDIAN BARRIER RAIL DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 37 OF 43 FILE NO. 30864 DESIGN NO. 519



EXTERIOR ELEVATION - WEST BARRIER RAIL - LOOKING WEST

I.T.S CONDUIT NOTES:

I.T.S. CONDUIT SHALL BE LIMITED TO SIX 45° ELBOW BENDS FOR A CABLE PULL FROM HANDHOLE TO HANDHOLE.

RIGID STEEL CONDUIT FOR I.T.S. APPLICATIONS SHALL BE INSTALLED AND PREPARED TO FACILITATE INSTALLATION OF FIBER OPTIC CABLE.

THE MINIMUM INSIDE BEND RADIUS FOR RIGID STEEL CONDUIT USED FOR I.T.S. APPLICATIONS SHALL BE 18".

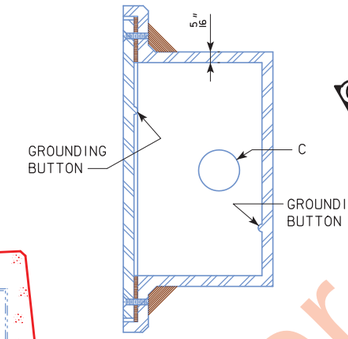
RIGID STEEL CONDUIT FOR I.T.S. APPLICATIONS SHALL BE CUT AND THREADED TO ELIMINATE EXPOSED THREADS AFTER COMPLETING THE CONNECTIONS; ALL COUPLINGS SHALL BE TIGHTENED UNTIL THE CONDUIT ENDS MEET TO ALLOW A CONTINUOUS INNER SURFACE THROUGHOUT THE ENTIRE LENGTH OF THE CONDUIT RUN. NIPPLES SHOULD BE USED TO ELIMINATE CUTTING AND THREADING SHORT LENGTHS OF CONDUIT.

ALL BURRS AND ROUGHENED SURFACES SHALL BE REMOVED FROM CONDUITS AND FITTINGS. ALL CONDUIT RUNS SHALL BE REAMED, CLEANED AND SWABBED FOR INSTALLATION OF FIBER OPTIC CABLE.

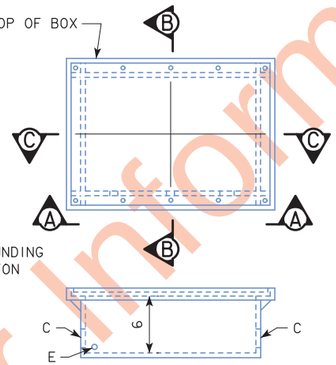
ONLY GALVANIZED FITTINGS SHALL BE USED WITH RIGID STEEL CONDUIT. DAMAGED GALVANIZED SURFACES OF RIGID STEEL CONDUIT OR FITTINGS SHALL BE PAINTED WITH AN ACCEPTABLE ZINC-RICH PAINT.

I.T.S. CONDUIT SHALL INCLUDE A POLYPROPYLENE PULL ROPE BETWEEN HANDHOLES WITH A MINIMUM 600 POUND TENSILE STRENGTH.

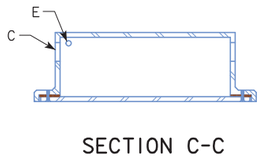
I.T.S. RIGID STEEL CONDUIT, PULL ROPES AND FITTINGS, INCLUDING LABOR AND ANY ADDITIONAL WORK FOR INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.



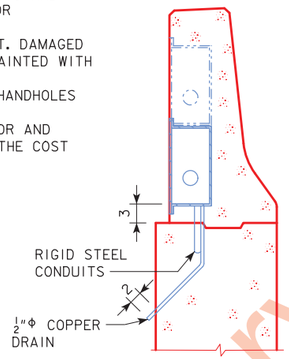
SECTION B-B



VIEW A-A



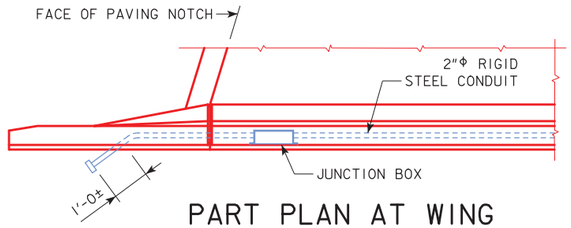
SECTION C-C



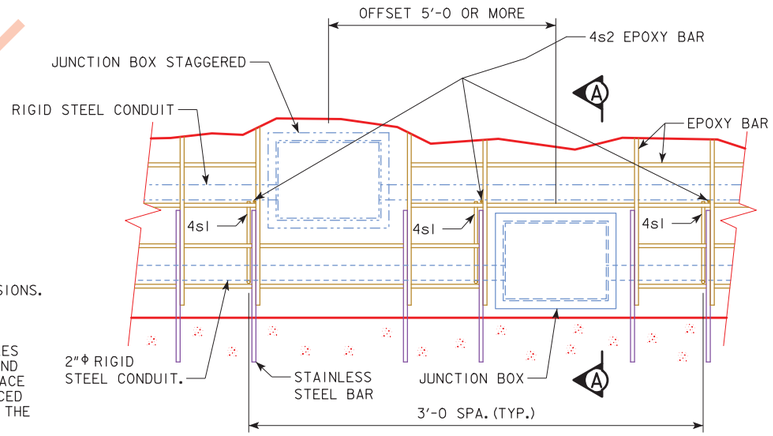
SECTION A-A THRU JUNCTION BOX

LI-104 JUNCTION BOX

WATERTIGHT, CAST IRON - FLUSH MOUNT



PART PLAN AT WING



CONDUIT SUPPORT - RAIL ELEV. DETAIL

TWO JUNCTION BOX DETAIL - ADJUST REINFORCING TO CLEAR JUNCTION BOX. JUNCTION BOXES ARE TO BE PLACED NO FURTHER THAN 300'-0 APART.

BOSSED FOR	HOLE	FOR CONDUIT SIZE
5 THREADS	C	2"Φ RIGID STEEL
NONE	E	1/2"Φ COPPER PIPE

NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR 3/8"Φ x 0'-0 3/4 BOLTS.

LIGHTING NOTES:

SEE LI-104 STANDARD ROAD PLAN FOR ADDITIONAL INFORMATION ON JUNCTION BOXES.

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

CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH ARTICLE 2523.03, N, OF THE STANDARD SPECIFICATIONS.

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 BOX MORE THAN 1/4". 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. TYPICAL DETAILS ARE SHOWN ON THIS SHEET.

THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE BID ITEM "CONCRETE BARRIER RAIL, AESTHETIC.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

LIGHTING DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

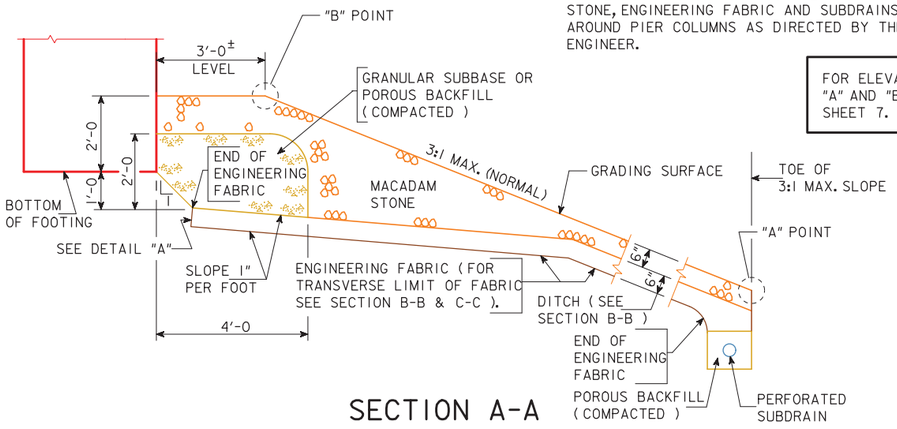
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 38 OF 43 — FILE NO. 30864 — DESIGN NO. 519

REVISION 05-11 - ADDED THE WORD 'MINIMUM' TO THE 3½ INCH DIMENSION FOR THE LOCATION OF THE 2 INCH CONDUIT IN THE BARRIER RAIL.
REVISED 09-2016 - ADDED CONDUIT SUPPORT RAIL DETAIL TO KEEP CONDUIT ISOLATED FROM THE STAINLESS STEEL REINFORCING.
ENGLISHDECKRAILBRIDGES.DGN 1030AS2 - THIS SHEET ISSUED 09-03.

NOTE :
THE CONTRACTOR IS TO SHAPE THE MACADAM STONE, ENGINEERING FABRIC AND SUBDRAINS AROUND PIER COLUMNS AS DIRECTED BY THE ENGINEER.

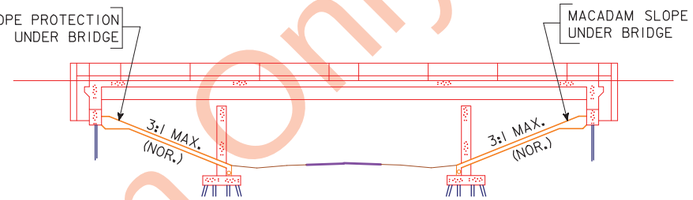
FOR ELEVATION AND LOCATION OF "A" AND "B" POINTS SEE DESIGN SHEET 7.



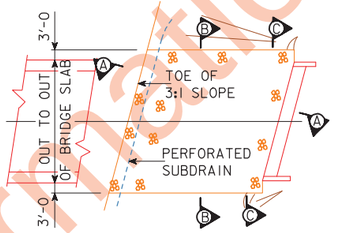
SECTION A-A

ENGINEERING FABRIC ENDS ARE TO BE BURIED 6" TO PREVENT UNDERMINING

DETAIL "A"



LONGITUDINAL SECTION ALONG ℄ ROADWAY

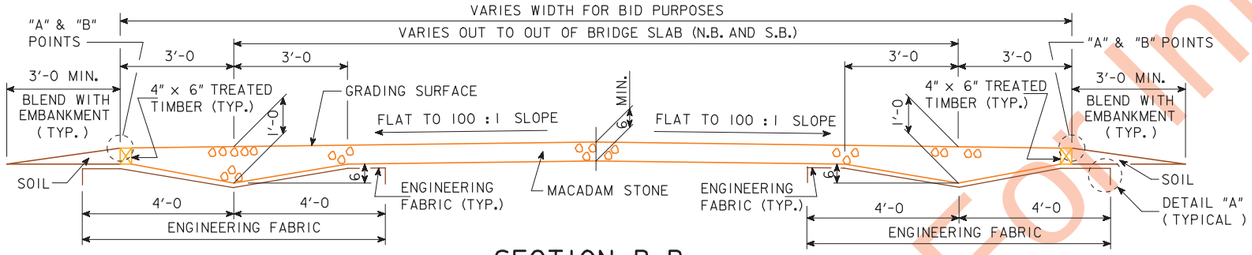


SLOPE PROTECTION LAYOUT

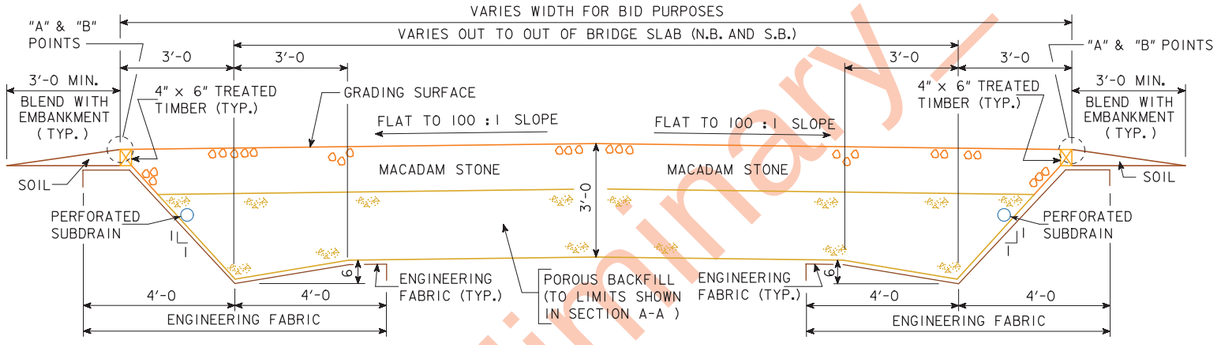
ESTIMATED QUANTITIES

DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	SOUTH ABUT.	1921.4 SQ. YDS.
MACADAM STONE SLOPE PROTECTION	NORTH ABUT.	2056.6 SQ. YDS.
	TOTAL	3978.0 SQ. YDS.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
EXCAVATING, SHAPING AND COMPACTING
ENGINEERING FABRIC
MACADAM STONE
4" x 6" TREATED TIMBER EDGING
POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE ABUTMENT FOOTING



SECTION B-B



SECTION C-C

GENERAL NOTES:

THIS PLAN SHEET SHOWS DETAILS FOR PLACING A "MACADAM STONE SLOPE PROTECTION" UNDER OVERHEAD STRUCTURES.

THE BRIDGE BERM FORESLOPE SHALL BE COMPACTED AND SHAPED AS SHOWN ON THIS SHEET, SHAPING WILL INCLUDE EXCAVATION, FROM THE GRADING SURFACE SHOWN, THE SITUATION PLAN, AND AS DIRECTED BY THE ENGINEER. THE BERM FORESLOPE SHALL BE FIRM WHEN THE ENGINEERING FABRIC AND MACADAM STONE ARE PLACED.

THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY. THE MACADAM STONE SHALL BE IN ACCORDANCE WITH SECTION 4122, OF THE STANDARD SPECIFICATIONS, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

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

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.

PAYMENT FOR "MACADAM STONE SLOPE PROTECTION" WILL BE MADE ON A SQUARE YARD BASIS FOR SLOPE PROTECTION CONSTRUCTED. THE UNIT PRICE BID PER SQUARE YARD SHALL INCLUDE ALL COSTS FOR MATERIAL AND LABOR REQUIRED TO CONSTRUCT THE SLOPE PROTECTION SHOWN ON THESE PLANS.

THE BERM FORESLOPE SHAPING AND COMPACTING AND THE DISPOSAL OF EXCESS SOIL FROM SHAPING OR TRENCHING SHALL BE CONSIDERED INCIDENTAL TO PLACING THE SLOPE PROTECTION.

WHERE EROSION CONTROL WORK HAS BEEN COMPLETED THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLANT MATERIALS DESTROYED ADJACENT TO THE SLOPE PROTECTION AREA. THE CONTRACTOR SHALL REPLANT, RESEED AND REMULCH ALL DISTURBED AREAS, DESIGNATED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 2601, OF THE STANDARD SPECIFICATIONS, AT THE CONTRACTOR'S EXPENSE.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS AS DETAILED ON THE SUBDRAIN DETAILS SHEET.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

MACADAM STONE SLOPE PROTECTION

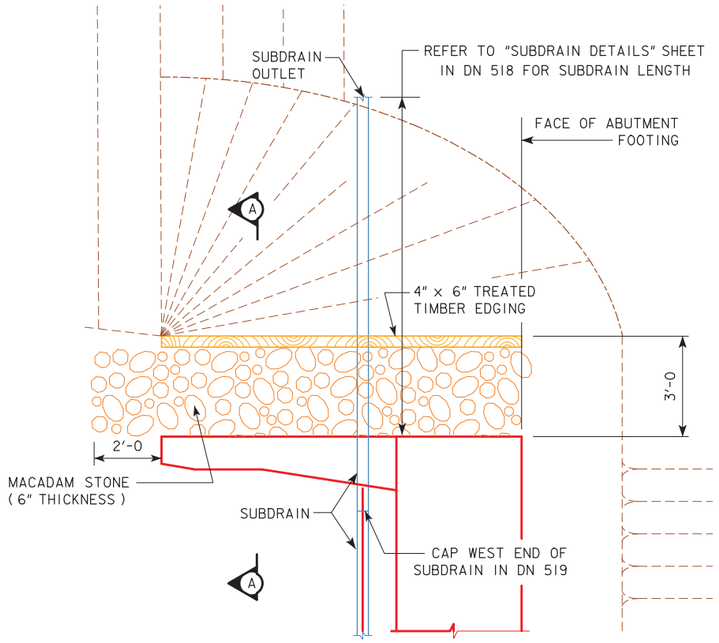
STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

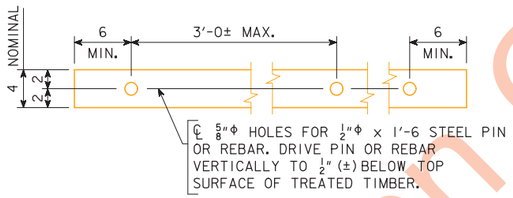
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 39 OF 43 FILE NO. 30864 DESIGN NO. 519

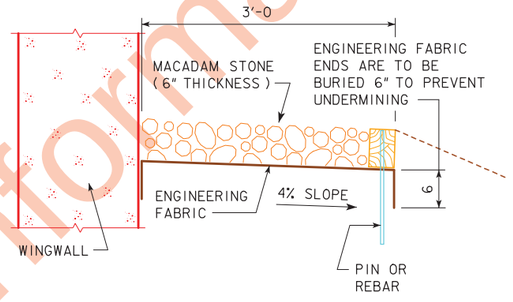
REVISED 10-12 - LOCATED THE "A" AND "B" POINTS IN SECTION A-A AND CURB & ALTERNATE CURB DETAILS.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1006D - THIS SHEET ISSUED 9-16-92



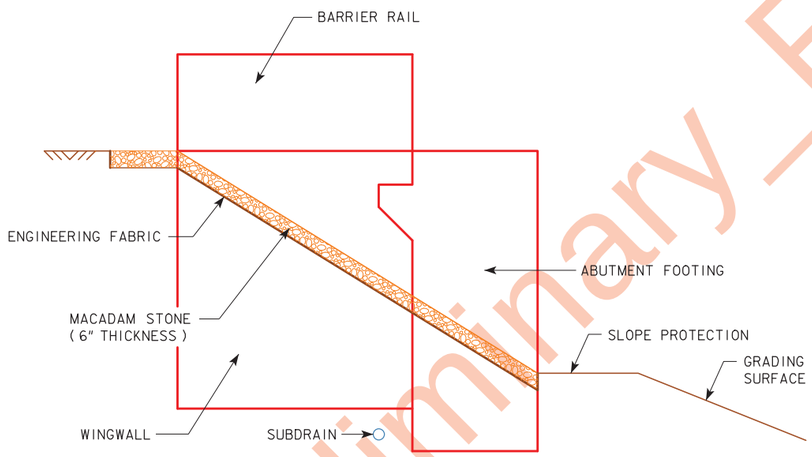
TOP VIEW OF WING ARMORING



4" x 6" TREATED TIMBER EDGING DETAILS



SECTION A-A



PROFILE VIEW OF WING ARMORING
(SHOWN FOR INTEGRAL ABUTMENT)

GENERAL NOTES:

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

THE MACADAM STONE SHALL BE IN ACCORDANCE WITH SECTION 4122, OF THE STANDARD SPECIFICATIONS, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.

THE MACADAM STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM 6" 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, MACADAM STONE, TREATED TIMBER EDGING, EXCAVATION, SHAPING, AND COMPACTION TO DIMENSIONS SHOWN IN THESE PLANS. BID ITEM SHALL BE "BRIDGE WING ARMORING - MACADAM STONE.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

BRIDGE WING ARMORING

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 40 OF 43 FILE NO. 30864 DESIGN NO. 519

REVISED 06-14 - ADDED 2 FEET OF LENGTH OF MACADAM STONE IN FRONT OF THE BRIDGE WING.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1005 - THIS SHEET ISSUED 06-02.

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 WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "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 BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

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

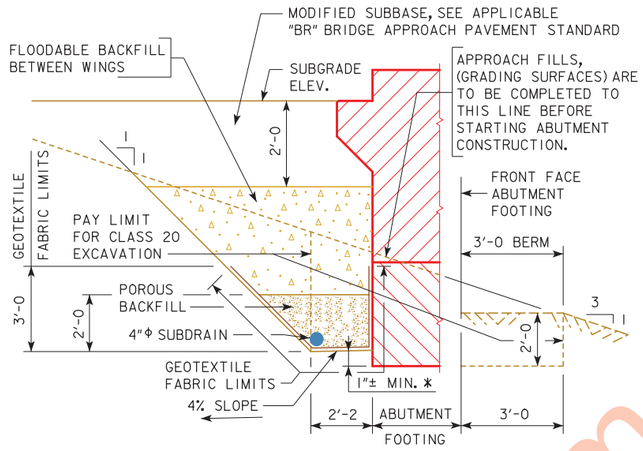
THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY 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 3 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, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR STRUCTURAL CONCRETE.



SECTION A-A

BACKFILL DETAILS

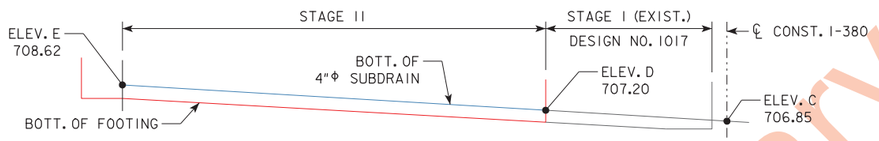
NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

NOTE:

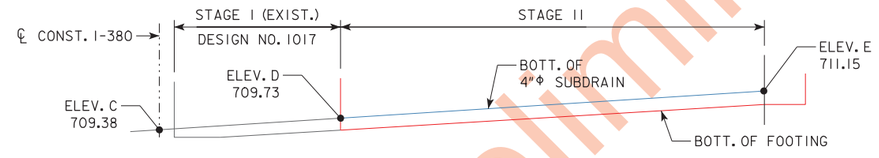
SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END NEAR WEST ABUTMENT WING AND OUTLET AT END OF ABUTMENT NEAR EAST ABUTMENT WING (DESIGN 518).

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, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.



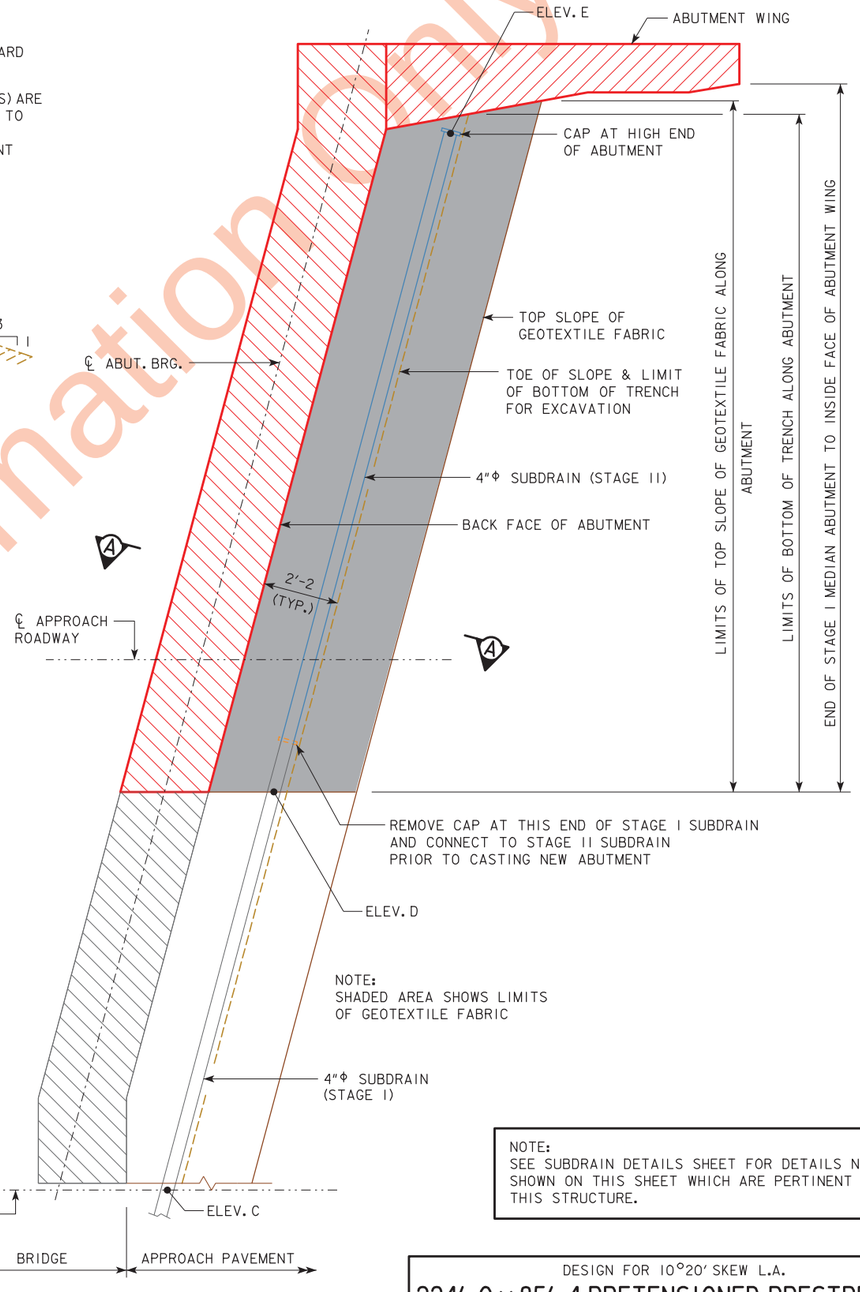
REAR ELEVATION AT S. ABUT.

(SHOWING PLACEMENT OF SUBDRAIN)



REAR ELEVATION AT N. ABUT.

(SHOWING PLACEMENT OF SUBDRAIN)



ABUTMENT PLAN WITHOUT WING EXTENSIONS

(NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR)

NOTE:
SEE SUBDRAIN DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS — 92'-0 CENTER SPAN

ABUTMENT BACKFILL DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 — APRIL, 2020

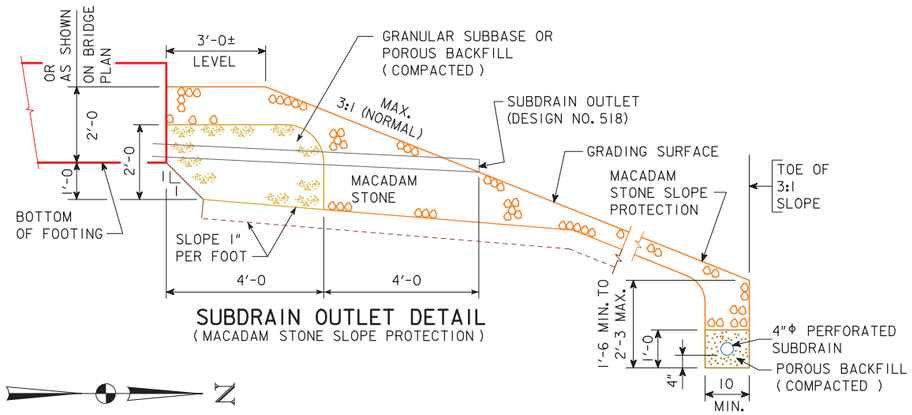
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 41 OF 43 — FILE NO. 30864 — DESIGN NO. 519

REVISED 09-14 - THE TECHNICAL DATA INFORMATION TABLE WAS REMOVED AND IS LOCATED IN THE STANDARD SPECIFICATIONS. CHANGED SURFACE FLOODING TIME TO 5 MINUTE INCREMENTS.
REVISED 09-2016 - CHANGED THE BRIDGE APPROACH PAVEMENT STANDARD TO "BR" (WAS "RK").
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN - 1007D - THIS SHEET ISSUED 08-07.

BENCH MARK NO. 571 STA. 11200+34.418 65.35 LT. CUT"X" NW. WING SB. BRIDGE ELEV. 715.783

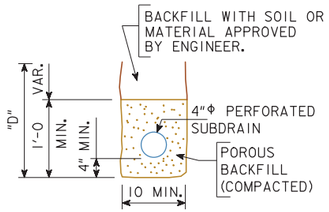


SUBDRAIN OUTLET DETAIL
(MACADAM STONE SLOPE PROTECTION)

SECTION B-B

ENGINEERING FABRIC ENDS ARE TO BE BURIED 6" TO PREVENT UNDERMINING.

ENGINEERING FABRIC DETAIL

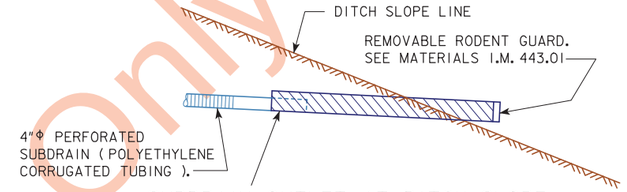


SECTION C-C
(TYPICAL)

"D" = DEPTH REQUIRED TO PROVIDE PROPER FLOW LINE FOR SUBDRAIN.

SUBDRAIN OUTLET ELEVATIONS

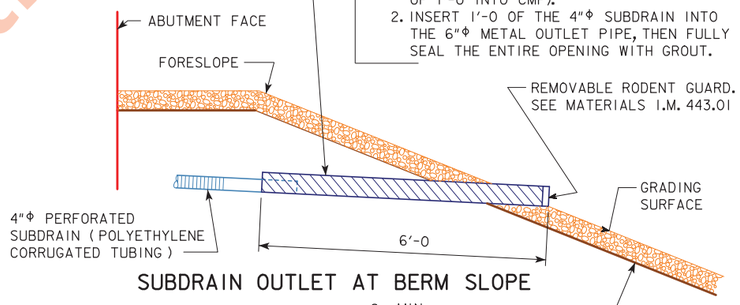
LOCATION	ELEVATION
TOE OF SOUTH BERM	676.47
TOE OF NORTH BERM	678.71



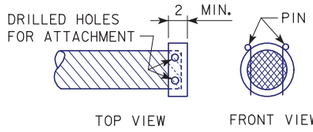
SUBDRAIN OUTLET AT DITCH SLOPE

6"Φ CORRUGATED METAL PIPE OUTLET, OR 4"Φ CORRUGATED DOUBLE-WALLED PE OR PVC PIPE OUTLET WITH AN APPROPRIATE COUPLER. IF METAL PIPE IS USED, THE PIPES SHOULD BE COUPLED IN ONE OF THE TWO FOLLOWING WAYS.

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



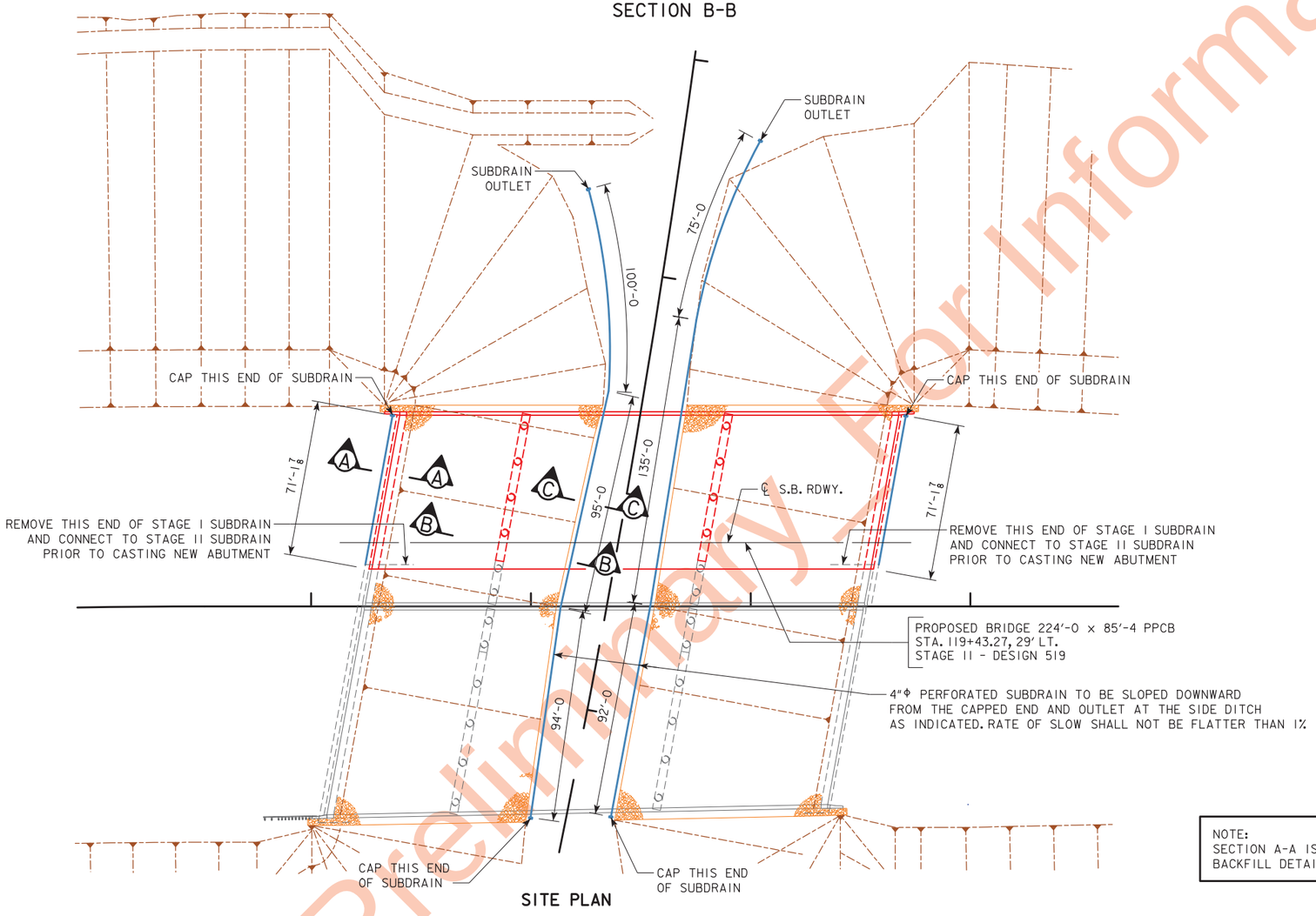
SUBDRAIN OUTLET AT BERM SLOPE



REMOVABLE RODENT GUARD DETAILS

OUTLET DETAILS

(FOR INFORMATION ONLY. INCLUDED IN DESIGN NO. 518)



SITE PLAN

NOTE:
SECTION A-A IS SHOWN ON ABUTMENT BACKFILL DETAILS SHEET.

SUBDRAIN NOTES:

THIS PLAN SHEET SHOWS DETAILS FOR PLACING ALL 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 6'-0 LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET.

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

THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

THE UPHILL END OF THE PERFORATED SUBDRAIN AT THE TOE OF SLOPE PROTECTION SHALL BE CAPPED AS APPROVED BY THE ENGINEER.

THE POROUS BACKFILL AND SUBDRAIN ARE TO BE CARRIED AROUND PIER COLUMNS IF THE COLUMN PLACEMENT INTERFERES WITH ALIGNMENT OF SUBDRAIN AS SHOWN ON THIS SHEET.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SUBDRAIN DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

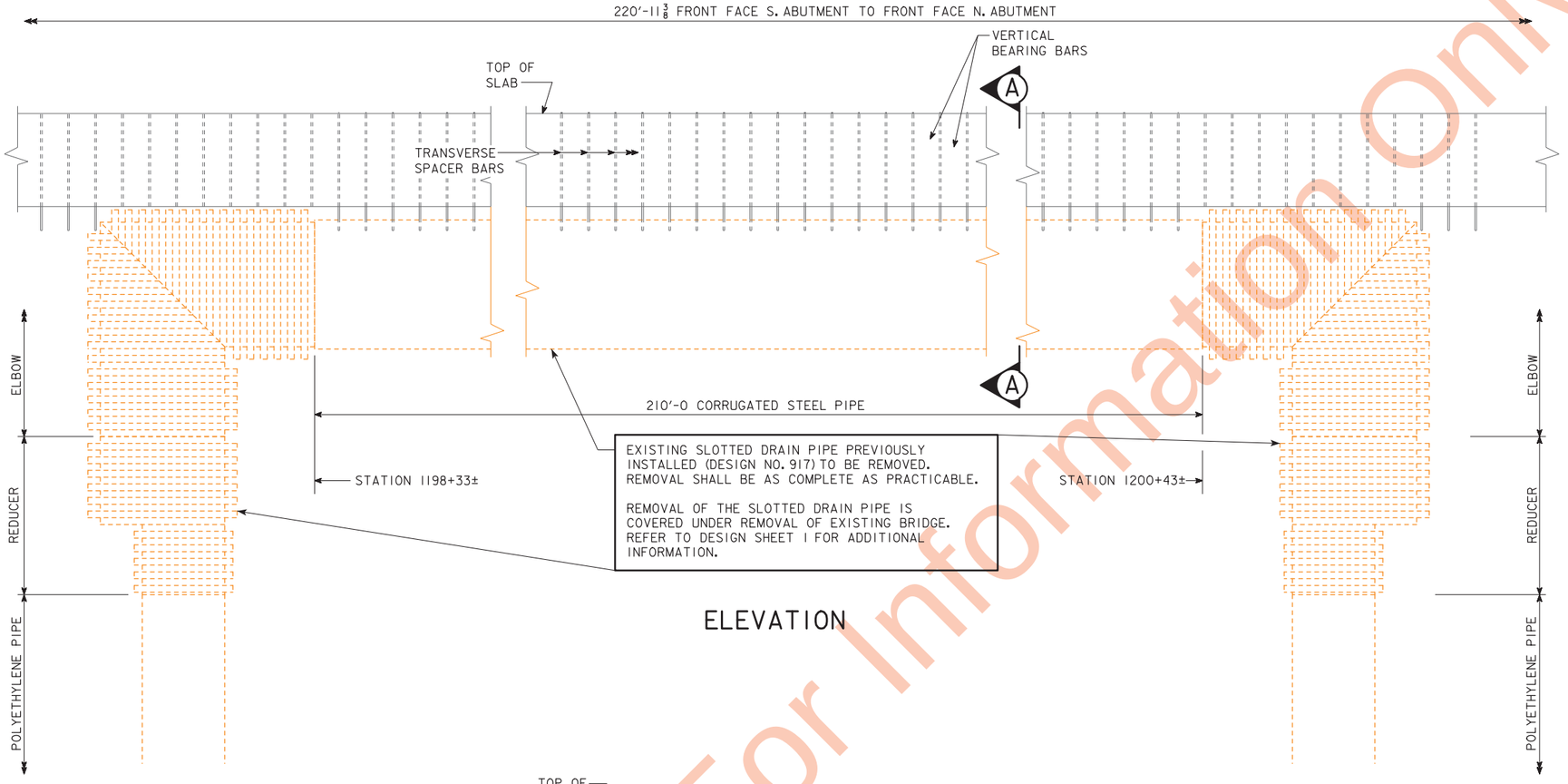
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

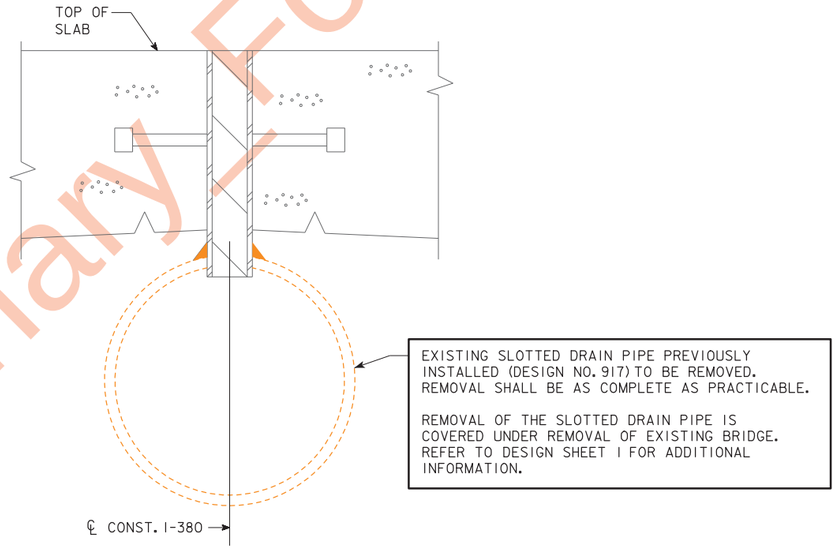
DESIGN SHEET NO. 42 OF 43 FILE NO. 30864 DESIGN NO. 519

REVISED 07-11 - THE BERM SLOPE IS IDENTIFIED AS THE GRADING SURFACE.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1007A - THIS SHEET ISSUED 06-02.

DESIGN TEAM PARSONS JB/PK/SC	SUBDRAIN DETAILS FOR 3 OR MORE SPAN BRIDGES (MACADAM STONE SLOPE PROTECTION)	STANDARD SHEET 1007A MODIFIED	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER 87



ELEVATION



SECTION A-A

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SLOTTED DRAIN REMOVAL DETAILS

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 43 OF 43 FILE NO. 30864 DESIGN NO. 519

12/24/2019 4:16:16 PM untitled pw:\\VANVA01PWINT01.parsons.com:Iowa State\Documents\IA I-380 Bridge Replacements\03 - Sheet\I-380 Over IAIS RR\BRG_52080343.dgn 520519s043 11x17_pdf.pltcfg

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
Justin D. Humke
23230
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

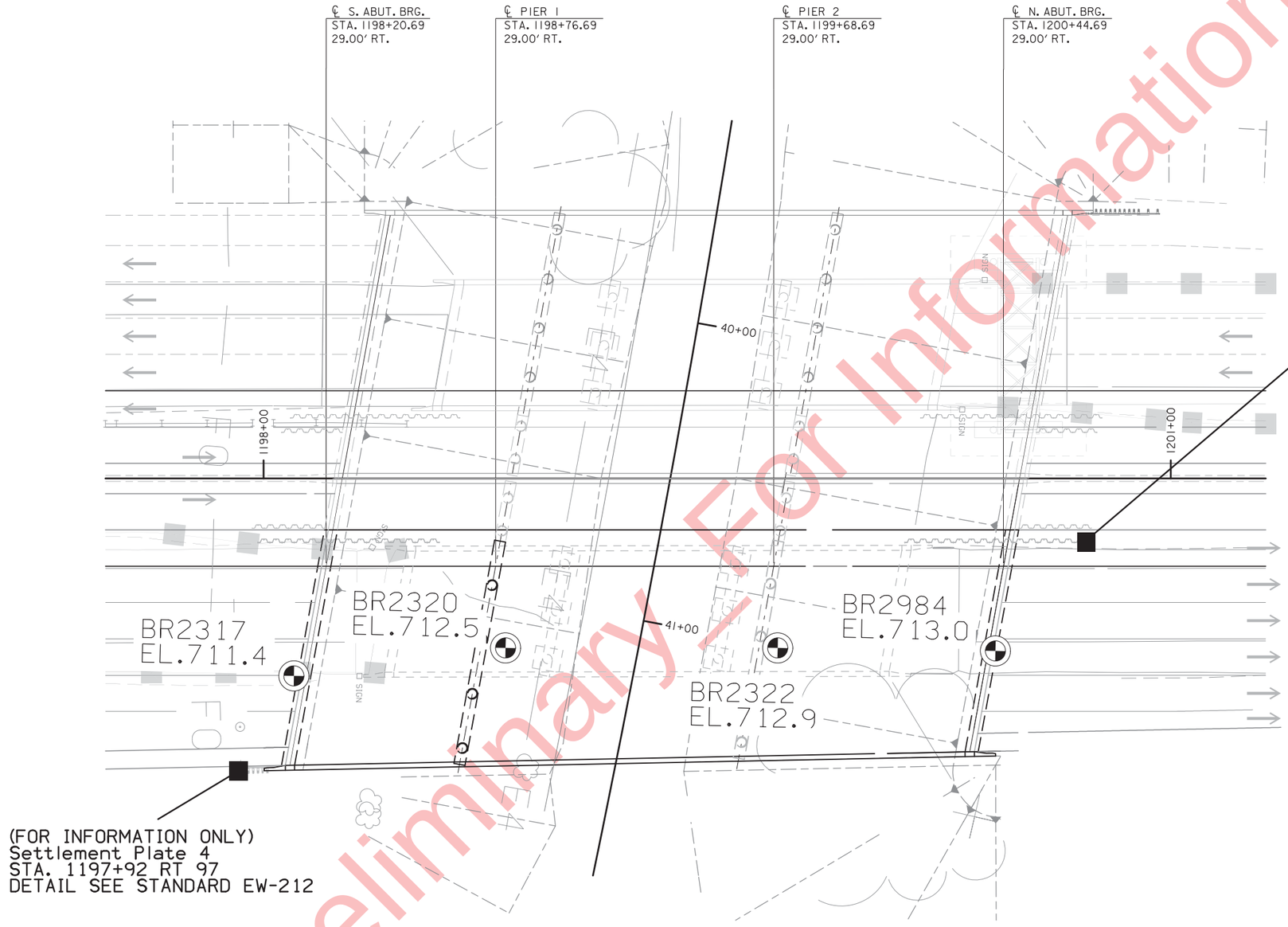
Signature X Justin D. Humke Date

Printed or Typed Name

My license renewal date is December 31, 2019

Pages or sheets covered by this seal: SPS.1 thru SPS.4

PRELIMINARY NOT FOR CONSTRUCTION



(FOR INFORMATION ONLY)
Settlement Plate 4
STA. 1197+92 RT 97
DETAIL SEE STANDARD EW-212

(FOR INFORMATION ONLY)
Settlement Plate 4
STA. 1200+72 RT 21
DETAIL SEE STANDARD EW-212

SETTLEMENT PLATES

SEE STANDARD ROAD PLAN EW-212 AND SECTION 2106 OF THE STANDARD SPECIFICATION FOR SETTLEMENT PLATE DETAILS.

LOCATION

N.B. I-380 OVER IOWA INTERSTATE RR
T-80N R-7W
SECTION 27
CLEAR CREEK TOWNSHIP
JOHNSON COUNTY
FHWA NO. 600391
FRA NO. 608011W
LATITUDE 41.703630°
LONGITUDE -91.642006°

N

0 ENGLISH 40
SCALE IN FEET

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

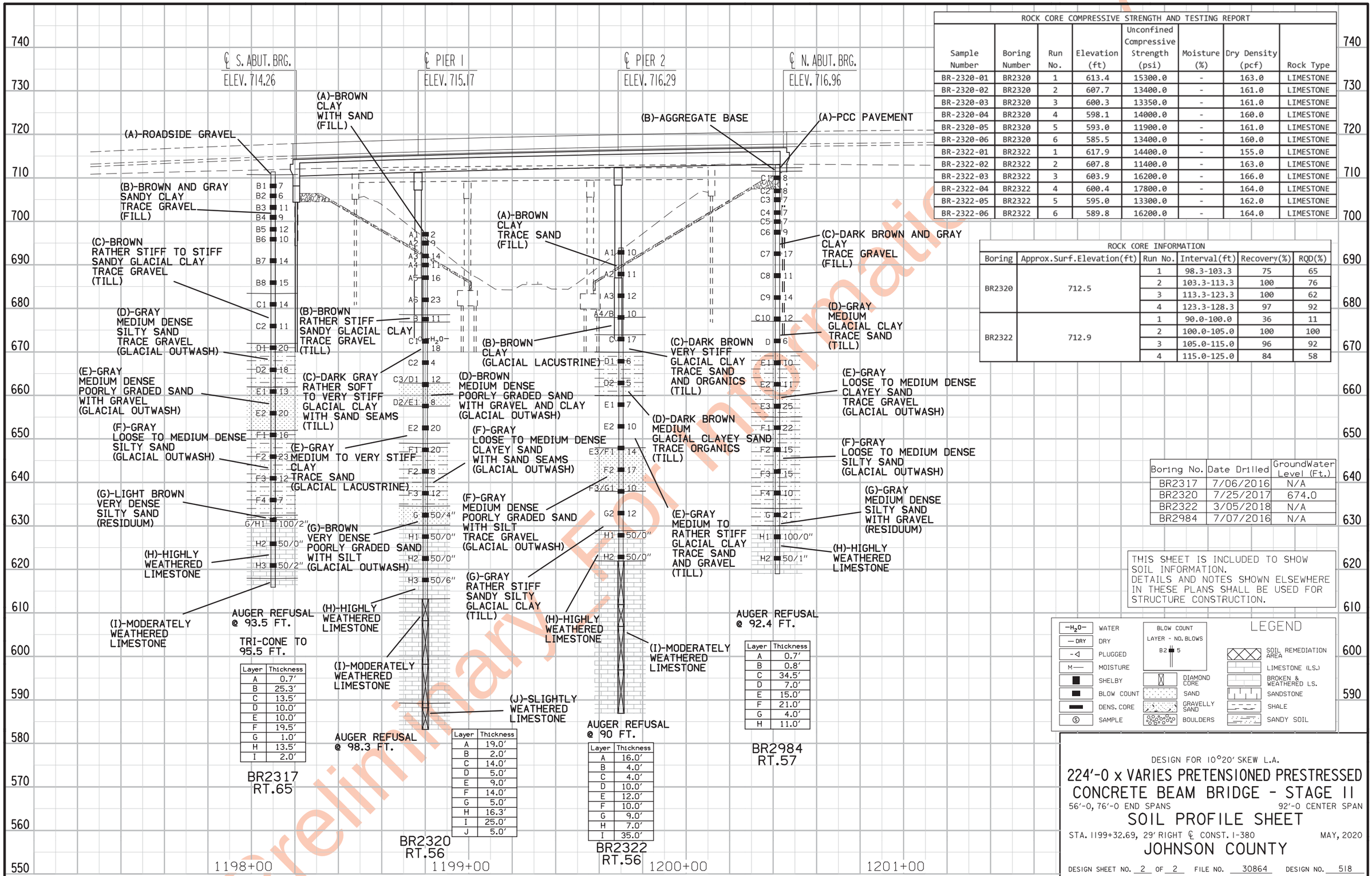
SOIL PROFILE SHEET

STA. 1199+32.69, 29' RIGHT ℄ CONST. I-380 MAY, 2020

JOHNSON COUNTY

DESIGN SHEET NO. 1 OF 2 FILE NO. 30864 DESIGN NO. 518

FILE NO. 30864	ENGLISH	DESIGN TEAM Braun Intertec	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER SPS.1



Layer	Thickness
A	0.7′
B	25.3′
C	13.5′
D	10.0′
E	10.0′
F	19.5′
G	1.0′
H	13.5′
I	2.0′

Layer	Thickness
A	19.0′
B	2.0′
C	14.0′
D	5.0′
E	9.0′
F	14.0′
G	5.0′
H	16.3′
I	25.0′
J	5.0′

Layer	Thickness
A	16.0′
B	4.0′
C	4.0′
D	10.0′
E	12.0′
F	10.0′
G	9.0′
H	7.0′
I	35.0′

Layer	Thickness
A	0.7′
B	0.8′
C	34.5′
D	7.0′
E	15.0′
F	21.0′
G	4.0′
H	11.0′

ROCK CORE COMPRESSIVE STRENGTH AND TESTING REPORT

Sample Number	Boring Number	Run No.	Elevation (ft)	Unconfined Compressive Strength (psi)	Moisture (%)	Dry Density (pcf)	Rock Type
BR-2320-01	BR2320	1	613.4	15300.0	-	163.0	LIMESTONE
BR-2320-02	BR2320	2	607.7	13400.0	-	161.0	LIMESTONE
BR-2320-03	BR2320	3	600.3	13350.0	-	161.0	LIMESTONE
BR-2320-04	BR2320	4	598.1	14000.0	-	160.0	LIMESTONE
BR-2320-05	BR2320	5	593.0	11900.0	-	161.0	LIMESTONE
BR-2320-06	BR2320	6	585.5	13400.0	-	160.0	LIMESTONE
BR-2322-01	BR2322	1	617.9	14400.0	-	155.0	LIMESTONE
BR-2322-02	BR2322	2	607.8	11400.0	-	163.0	LIMESTONE
BR-2322-03	BR2322	3	603.9	16200.0	-	166.0	LIMESTONE
BR-2322-04	BR2322	4	600.4	17800.0	-	164.0	LIMESTONE
BR-2322-05	BR2322	5	595.0	13300.0	-	162.0	LIMESTONE
BR-2322-06	BR2322	6	589.8	16200.0	-	164.0	LIMESTONE

ROCK CORE INFORMATION

Boring	Approx.Surf.Elevation(ft)	Run No.	Interval(ft)	Recovery(%)	RQD(%)
BR2320	712.5	1	98.3-103.3	75	65
		2	103.3-113.3	100	76
		3	113.3-123.3	100	62
		4	123.3-128.3	97	92
BR2322	712.9	1	90.0-100.0	36	11
		2	100.0-105.0	100	100
		3	105.0-115.0	96	92
		4	115.0-125.0	84	58

Boring No.	Date Drilled	GroundWater Level (Ft.)
BR2317	7/06/2016	N/A
BR2320	7/25/2017	674.0
BR2322	3/05/2018	N/A
BR2984	7/07/2016	N/A

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

LEGEND

WATER, DRY, PLUGGED, MOISTURE, SHELBY, BLOW COUNT, DENS. CORE, SAMPLE
BLOW COUNT: LAYER - NO. BLOWS (e.g. B2 5)
DIAMOND CORE, SAND, GRAVELLY SAND, BOULDERS
SOIL REMEDIATION AREA, LIMESTONE (LS.), BROKEN & WEATHERED LS., SANDSTONE, SHALE, SANDY SOIL

DESIGN FOR 10°20′ SKEW L.A.

224′-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56′-0, 76′-0 END SPANS — 92′-0 CENTER SPAN

SOIL PROFILE SHEET

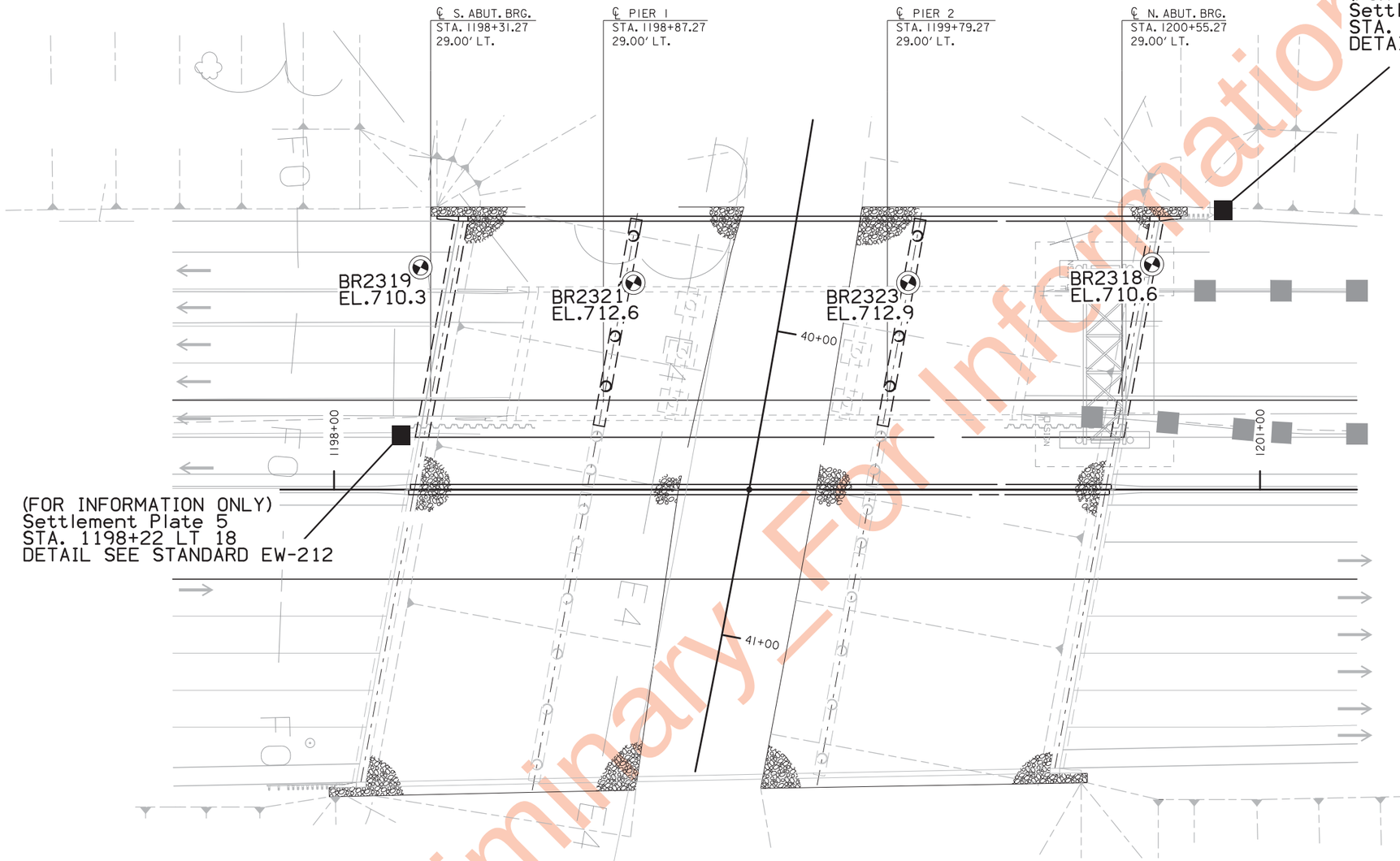
STA. 1199+32.69, 29′ RIGHT ℄ CONST. I-380 — MAY, 2020

JOHNSON COUNTY

DESIGN SHEET NO. 2 OF 2 FILE NO. 30864 DESIGN NO. 518

FILE NO. 30864	ENGLISH	DESIGN TEAM Braun Intertec	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER SPS.2

8:12:15 AM 9/23/2019 BryanMcNellis pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\Soils\SPS\Files from Parsons\52080235_518_519.sht



SETTLEMENT PLATES

SEE STANDARD ROAD PLAN EW-212 AND SECTION 2106 OF THE STANDARD SPECIFICATION FOR SETTLEMENT PLATE DETAILS.

LOCATION

S.B. I-380 OVER IOWA INTERSTATE RR
T-80N R-7W
SECTION 27
CLEAR CREEK TOWNSHIP
JOHNSON COUNTY
FHWA NO. 600401
FRA NO. 608011W
LATITUDE 41.703659°
LONGITUDE -91.642218°

N

0 ENGLISH 40
SCALE IN FEET

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

DESIGN FOR 10°20' SKEW L.A.

224'-0 x 85'-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56'-0, 76'-0 END SPANS 92'-0 CENTER SPAN

SOIL PROFILE SHEET

STA. 1199+43.27, 29' LEFT ℄ CONST. I-380 MAY, 2020

JOHNSON COUNTY

DESIGN SHEET NO. 1 OF 2 FILE NO. 30864 DESIGN NO. 519

FILE NO. 30864	ENGLISH	DESIGN TEAM Braun Intertec	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER SPS.3

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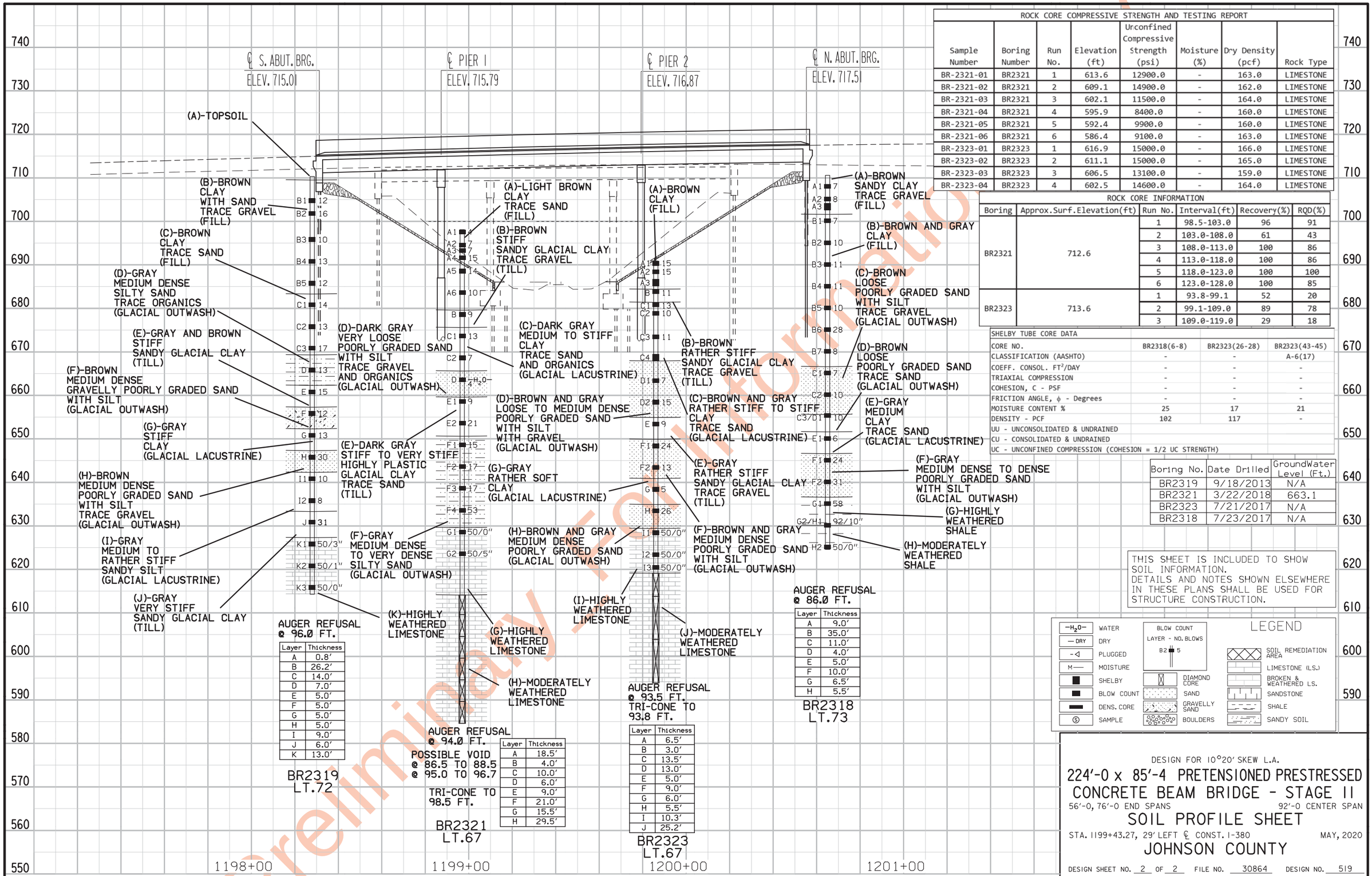

ROCK CORE COMPRESSIVE STRENGTH AND TESTING REPORT

Sample Number	Boring Number	Run No.	Elevation (ft)	Unconfined Compressive Strength (psi)	Moisture (%)	Dry Density (pcf)	Rock Type
BR-2321-01	BR2321	1	613.6	12900.0	-	163.0	LIMESTONE
BR-2321-02	BR2321	2	609.1	14900.0	-	162.0	LIMESTONE
BR-2321-03	BR2321	3	602.1	11500.0	-	164.0	LIMESTONE
BR-2321-04	BR2321	4	595.9	8400.0	-	160.0	LIMESTONE
BR-2321-05	BR2321	5	592.4	9900.0	-	160.0	LIMESTONE
BR-2321-06	BR2321	6	586.4	9100.0	-	163.0	LIMESTONE
BR-2323-01	BR2323	1	616.9	15000.0	-	166.0	LIMESTONE
BR-2323-02	BR2323	2	611.1	15000.0	-	165.0	LIMESTONE
BR-2323-03	BR2323	3	606.5	13100.0	-	159.0	LIMESTONE
BR-2323-04	BR2323	4	602.5	14600.0	-	164.0	LIMESTONE

ROCK CORE INFORMATION

Boring	Approx.Surf.Elevation(ft)	Run No.	Interval(ft)	Recovery(%)	RQD(%)
BR2321	712.6	1	98.5-103.0	96	91
		2	103.0-108.0	61	43
		3	108.0-113.0	100	86
		4	113.0-118.0	100	86
		5	118.0-123.0	100	100
		6	123.0-128.0	100	85
BR2323	713.6	1	93.8-99.1	52	20
		2	99.1-109.0	89	78
		3	109.0-119.0	29	18

SHELBY TUBE CORE DATA

CORE NO.	BR2318(6-8)	BR2323(26-28)	BR2323(43-45)
CLASSIFICATION (AASHTO)	-	-	A-6(17)
COEFF. CONSOL. FT²/DAY	-	-	-
TRIAXIAL COMPRESSION	-	-	-
COHESION, C - PSF	-	-	-
FRICTION ANGLE, ϕ - Degrees	-	-	-
MOISTURE CONTENT %	25	17	21
DENSITY - PCF	102	117	-
UU - UNCONSOLIDATED & UNDRAINED			
CU - CONSOLIDATED & UNDRAINED			
UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)			

Boring No.	Date Drilled	GroundWater Level (Ft.)
BR2319	9/18/2013	N/A
BR2321	3/22/2018	663.1
BR2323	7/21/2017	N/A
BR2318	7/23/2017	N/A

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LEGEND

WATER, DRY, PLUGGED, MOISTURE, SHELBY, BLOW COUNT, DENS. CORE, SAMPLE
BLOW COUNT LAYER - NO. BLOWS (B2 5)
DIAMOND CORE, SAND, GRAVELLY SAND, BOULDERS
SOIL REMEDIATION AREA, LIMESTONE (L.S.), BROKEN & WEATHERED LS., SANDSTONE, SHALE, SANDY SOIL

DESIGN FOR 10°20′ SKEW L.A.

224′-0 x 85′-4 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE - STAGE II

56′-0, 76′-0 END SPANS — 92′-0 CENTER SPAN

SOIL PROFILE SHEET

STA. 1199+43.27, 29′ LEFT ℄ CONST. I-380 — MAY, 2020

JOHNSON COUNTY

DESIGN SHEET NO. 2 OF 2 FILE NO. 30864 DESIGN NO. 519

FILE NO. 30864	ENGLISH	DESIGN TEAM Braun Intertec	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER SPS.4

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INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
B Sheets	**Typical Cross Sections and Details**
B.1	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.2	Standard Road Plans
C.2	General Notes
C.3	Tabulations
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	"I-380"
G Sheets	**Survey Sheets**
G.1 - 21	Reference Ties and Bench Marks
G.22	Horizontal Control Tab. & Super for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan
L Sheets	**Geometric, Staking and Jointing Sheets**
L.1	Geometric & Staking "I-380"
	* Color Plan Sheets

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Know what's below. Call before you dig.

ROADWAY DESIGN

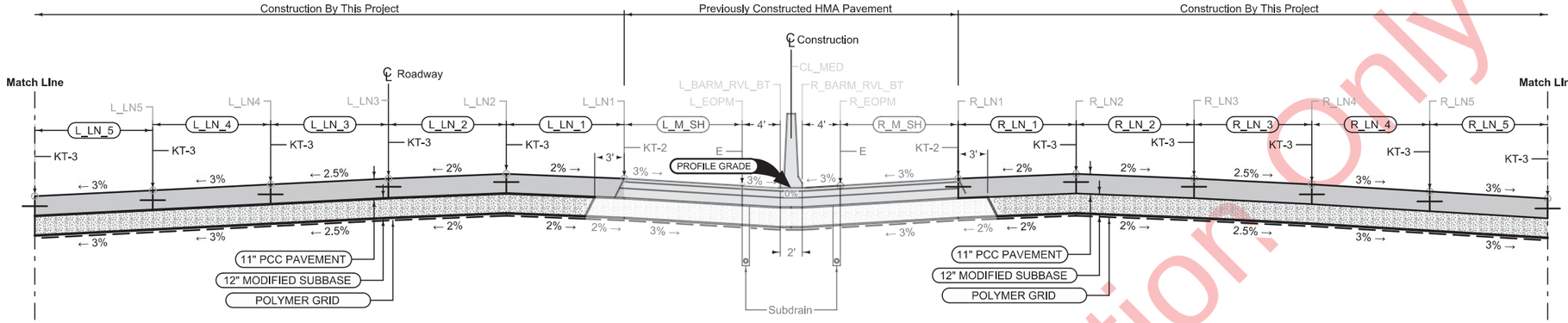
LICENSED PROFESSIONAL ENGINEER
Jason M. Holst
16923
IOWA

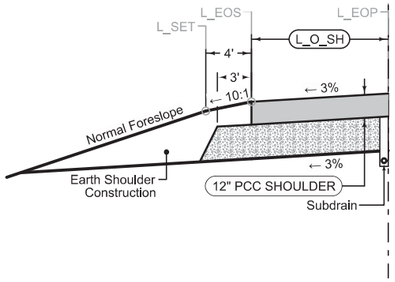
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

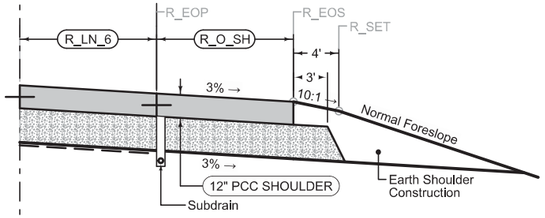
Signature _____ Date _____
Jason M. Holst
Printed or Typed Name
License renewal date is December 31, 20XX

Pages or sheets covered by this seal: A.1, B.1, C.1-C.3, D.1-D.3, G.1-G.22, J.1, L.1

PRELIMINARY
NOT FOR CONSTRUCTION







Mainline Jointing:
Transverse joints: CD at 17' spacing

6DP_Closed_													
BEGIN STATION	END STATION	L_LN_5 Feet	L_LN_4 Feet	L_LN_3 Feet	L_LN_2 Feet	L_LN_1 Feet	L_M_SH Feet	R_M_SH Feet	R_LN_1 Feet	R_LN_2 Feet	R_LN_3 Feet	R_LN_4 Feet	R_LN_5 Feet
1121+67.62	1123+00.00	--	--	12	12	12	12	12	12	12	--	--	--
1123+00.00	1127+75.00	--	0 - 9.5	12	12	12	12	12	12	12	12	--	--
1127+75.00	1129+00.00	--	9.5 - 12	12	12	12	12	12	12	12	12	--	--
1129+00.00	1135+75.40	--	12	12	12	12	12	12	12	12	12	--	--
1135+75.40	1139+00.00	--	12	12	12	12	12	12	12	12	12	--	--
1139+00.00	1143+18.64	--	--	12	12	12	12	12	12	12	12	--	--
1143+18.64	1180+40.38	--	--	12	12	12	12	12	12	12	12	--	--
1180+40.38	1182+58.75	--	--	12	12	12	12	12	12	12	12	--	--
1182+58.75	1189+67.92	--	--	12	12	12	12	12	12	12	12	12	12
1189+67.92	1198+00.00	--	--	12	12	12	12	12	12	12	12	12	12
1198+00.00	1201+00.00	12	12	12	12	12	12	12	12	12	12	12	12
1201+00.00	1204+00.00	12 - 0	12	12	12	12	12	12	12	12	12	12	12
1204+00.00	1210+00.00	--	12	12	12	12	12	12	12	12	12	12	12
1210+00.00	1213+00.00	--	12 - 0	12	12	12	12	12	12	12	12	12	12
1213+00.00	1217+89.95	--	--	12	12	12	12	12	12	12	12	12	12

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	L_O_SH Feet
1089+20.00	1123+00.00	12
1123+00.00	1139+00.00	6
Ramp Taper		
1143+18.64	1189+67.92	12
Ramp Taper		
1192+46.51	1201+00.00	10
1201+00.00	1204+00.00	10 - 6
1204+00.00	1210+00.00	6
1210+00.00	1213+00.00	6 - 12
1213+00.00	1260+00.00	12

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

6D_Closed_P_FullPCC_ 04-19-11			
BEGIN STATION	END STATION	R_LN_6 Feet	R_O_SH Feet
1089+20.00	1127+75.00		12
Ramp Taper			
1135+75.40	1180+40.38		12
Ramp Taper			
1186+06.00	1198+00.00	12	6
1198+00.00	1204+00.00	12 - 0	6
1204+00.00	1217+90.00		6

INTERSTATE 380
(FOR INFORMATION ONLY)

8:10:37 AM 8/20/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_B01.dgn

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2122-5190501	PAVED SHOULDER, PORTLAND CEMENT CONCRETE (PAVED SHOULDER PAN EL FOR	SY	33.5	
		BRIDGE END DRAIN)			
2	2301-0690203	BRIDGE APPROACH, BR-203	SY	2,187.0	
3	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE	SY	5,758.8	
4	2503-0500402	BRIDGE END DRAIN, DR-402	EACH	1	
5	2518-6910000	SAFETY CLOSURE	EACH	4	
6	2602-0000020	SILT FENCE	LF	250.0	
7	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	250.0	
8	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	125.0	
9	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200.0	
10	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200.0	
11	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	400.0	

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2122-5190501	**PAVED SHOULDER, PORTLAND CEMENT CONCRETE (PAVED SHOULDER PAN EL FOR BRIDGE END DRAIN)**
		Refer to Tab. 104-8A for details.
-	-	-
2	2301-0690203	**BRIDGE APPROACH, BR-203**
		Refer to Tab. 112-6 on C sheets for location and details.
-	-	-
3	2412-0000100	**LONGITUDINAL GROOVING IN CONCRETE**
		Refer to Tab. 100-28 on C sheets for location and details.
-	-	-
4	2503-0500402	**BRIDGE END DRAIN, DR-402**
		Refer to Tab. 104-8A for details.
-	-	-
5	2518-6910000	**SAFETY CLOSURE**
		Refer to Tab. 108-13A on C sheets for location and details.
-	-	-
6	2602-0000020	**SILT FENCE**
		Item is for placement of "Silt Fence" to address erosion to be encountered during construction.
		Verify the specific locations with the Engineer prior to beginning placement.
-	-	-
7	2602-0000071	**REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS**
		Item is included for silt fence and silt fence for ditch check removal required for
		staging reasons, removal to allow for replacement (replacement to be paid separately),
		or for areas that have achieved 70% permanent growth.
-	-	-
8	2602-0000101	**MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK**
		This item is included for clean-out and repair of the silt fence and silt fence for ditch
		checks during the project.
-	-	-
9	2602-0000312	**PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.**
10	2602-0000320	**PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.**
11	2602-0000350	**REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE**
		Item is included for temporary perimeter sediment control, inlet protection, and water
		velocity reduction on slopes or ditches at locations to be determined during construction.
		Verify specific locations with the Engineer prior to beginning placement.
		Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
-	-	-

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BR-203	10-17-17	Double Reinforced 12" Approach
BR-211	10-17-17	Bridge Approach (Abutting PCC or Composite Pavement)
BR-213	04-21-15	Bridge Approach (Abutting Pavement)
DR-303	10-17-17	Subdrains (Longitudinal)
DR-402	10-15-19	Rock Flume for Bridge End Drain
EC-201	10-15-19	Silt Fence
EC-502	04-21-15	Seeding in Rural Areas
LI-104	10-21-14	Junction box (cast Iron)
PV-101	04-16-19	Joints

232-3A
04-16-19

EROSION CONTROL (RURAL SEEDING)

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.

232-11
04-16-19

EROSION CONTROL (STABILIZING CROP SEEDING)

If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are incidental to mobilization and will not be paid for separately.

262-5
10-18-05

UTILITIES (POINT 25 PROJECT)

This is a POINT 25 project and is subject to the provisions of IAC 761-115.25.

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Individual Permit No. 2017-1049. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

COORDINATION REQUIREMENTS WITH MIDAMERICAN ENERGY

Transmission Line
This project is in close proximity to an existing 161,000 Volt (161 kV) overhead electric transmission line owned by MidAmerican Energy Company. The energized transmission line runs northwesterly to southeasterly paralleling the Iowa Interstate rail line.

Transmission Line Clearances
The Contractor shall not work within the minimum distance specified by the Occupational Safety and Health Administration or any conductor while the line is energized. If a transmission line is de-energized, the Contractor shall not work within 2 feet of any conductor.

The Contractor shall configure its crane/equipment setup to avoid impacting the transmission line, or operation thereof, except that short, intermittent transmission line outages may be possible as provided below.

Transmission Line Outages
The MidAmerican Energy Company system control coordinator requires a minimum of 15 calendar days in advance of any request for an outage of this transmission line. Depending on electric system circumstances, line outages may not be available. Additional advanced notice may increase the likelihood for outage approval. The Contractor is required to plan and schedule possible outages with MidAmerican Energy Company. Without early coordination with MidAmerican Energy Company, the transmission line outage request cannot be granted.

The Contractor shall coordinate all needed line outages with MidAmerican Energy Company as a means to maintain the project construction schedule. MidAmerican Energy Company reserves the right to cancel any outages and re-energize the transmission line due to unforeseen conditions or storms that threaten the reliability of the transmission system, and will give as much advanced notice as possible to the Contractor. To coordinate all potential transmission line outages, the contractor shall call Shane Gross at phone number (563) 320-1925 at MidAmerican Energy Company to request and coordinate transmission line outages.

De-energizing the transmission line between the time period of May 15 through September 15 may be restricted due to electric system circumstances.

100-28
10-19-10

LONGITUDINAL GROOVING

Location	Total SY	Remarks
1199+32.69	572.3	South Approach Design No. 518 NB Bridge
1199+32.69	1895.0	Design No. 518 NB Bridge
1199+32.69	552.7	North Approach Design No. 518 NB Bridge
1199+43.27	502.6	South Approach Design No. 519 SB Bridge
1199+43.27	1754.0	Design No. 519 SB Bridge
1199+43.27	482.2	North Approach Design No. 519 SB Bridge
Total=	5758.8	

108-13A
08-01-08

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
1197+40.00		1	Northbound side
1197+50.00		1	Southbound side
1201+20.00		1	Northbound side
1201+40.00		1	Southbound side

112-6
04-18-17

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain								
Bridge Station	End	Skew Ahead Degrees LEFT	Skew Ahead Degrees RIGHT	(T) Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet		* Porous Backfill	* Class 'A' Crushed Stone Backfill	* Modified Subbase	* Polymer Grid	* Special Backfill	Remarks
													STA	Side						
				Inches	FT	SY	SY	SY				LF			CY	CY	TON	SY	TON	
1199+32.69	South	10.3		12.0	72.5	238.7	160.0	193.1	BR-203	Movable	BR-211	92.0	1197+52.16	RT	2.6	0.3	561.900	601.8		Design No. 518 South Approach Pavement of NB Bridge
1199+32.69	North	10.3		12.0	74.4	219.9	147.7	202.8	BR-203	Movable	BR-211	86.0	1201+06.20	RT	2.4	0.3	533.100	592.4		Design No. 518 North Approach Pavement of NB Bridge
1199+43.27	South	10.3		12.0	73.3	200.0	133.3	192.4	BR-203	Movable	BR-211	84.0	1197+69.76	RT	2.4	0.3	531.600	547.0		Design No. 519 South Approach Pavement of SB Bridge
1199+43.27	North	10.3		12.0	72.3	197.7	133.3	168.1	BR-203	Movable	BR-211	83.0	1201+22.37	RT	2.3	0.3	477.400	516.7		Design No. 519 North Approach Pavement of SB Bridge
				Totals=		856.3	574.3	756.4							9.7	1.2	2104.000	2257.9		

104-8A
10-17-17

SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN

Refer to Standard Road Plan DR-401 and DR-402

Location			Bid Items		PCC Paved Shoulder			Scour Protection (DR-401)			Rock Flume (DR-402)			Remarks
Bridge Station	Bridge Corner	Distance DI-1 or DI-2	PCC Paved Shoulder	Bridge End Drain	Panels Required	Polymer Grid	Modified Subbase	Special Ditch Control, Wood Excelsior Mat EC-101	Turf Reinforced Mat (TRM), Type 2 EC-104	Transition Mat EC-105	Macadam Stone Base	Engineering Fabric	Erosion Stone	
		FT	SY	TYPE	A B C or D	SY	TONS	SQ	SQ	SF	TONS	SY	TONS	
1199+32.69	SE	41.7	33.5	DR-402	B & C	42.4	40.600				1.500	180.6	125.600	Design No. 518 NB Bridge

SURVEY SYMBOLS

- TDC Tree Deciduous
- D Centerline Draw or Stream (Down)
- EG Edge of Gravel Road
- Linn County REC
- BNK Stream Bank
- EP Edge of Paved Roads (ML or SR)
- EW Edge of Water
- ENU Edge Unpaved Entrance & Parking
- TEV Evergeen Tree
- HDG Hedge Row
- SNP Unpaved Shoulder
- WM Wind Mill
- SI Sign
- TV Satelite TV Dish
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- LUM Luminaire
- LP Tank
- GP Guard Post (Less Than 4 Posts)
- SCR Section Corner
- DU Centerline Draw or Stream (Up)
- OUT Tile Outlet
- FW Wire Fence
- ROW Right of Way Rail
- DIK Centerline of Dike or Dam
- RIP Rip-Rap
- GDL Guard Rail Steel
- PRISER Power Riser Pole
- INB Storm Sewer Beehive Intake
- LC Lot Corner
- ITC Midwest (Formerly Alliant Energy)
- SWP Swamp or Marsh
- ENT Centerline BL of Entrance
- FHD Fire Hydrants
- RET Retaining Walls
- STP Stump
- WV Water Valve
- FCL Chain Link and Security Fence
- WEL Well
- TPA Telephone Pole Co. 1
- FWD Wood Fence
- RR Centerline of Railroad Tracks
- MidAmerican Energy
- BM Bench Mark
- C Centerline BL of Road (ML or SR)
- BIN Grain Bin
- SI Sign
- TFR Tree Fruit
- SHR Shrub
- MM Mile Marker Post
- GP Guard Post (Less Than 4 Posts)
- FLG Flag Poles
- EB Electrical Box
- TPD Telephone Pedestal
- WHD Water Hydrant
- SL Speed Limit Sign
- SNK Sink Hole
- CIS Cistern
- SEP Septic Tank
- Central Iowa Power Coop (CIPCO)
- TP Telephone Pole
- TVP TVP TV Pedestal Symbol
- WV Water Valve
- WH Water Hydrant
- GUY Guy Wire
- TPED Telephone Pedestal
- EB Electrical Box
- UB Utility Box
- LUM Luminaire
- INT Storm Sewer Intake
- HT Highline Tower
- INTBH Intake (Beehive)
- INTBH Storm Sewer Intake (Beehive)
- MH Electrical Manhole
- MH Storm Sewer Manhole
- MH Sanitary Sewer Manhole
- MH Fiber Optic Manhole
- MH Manhole
- Abandoned Utility

UTILITY LEGEND

E1	Linn County REC Josh Pfannebecker 319-377-1587 Ext. 607 jpfannebecker@linncountyrec.com	Electrical Service / Buried Electrical Lines
E2	ITC Midwest Chad Levi 319-297-6765 clevi@itctransco.com	Overhead Electrical Transmission
E3	Iowa DOT Timothy Zelmet 319-626-2386 Timothy.Zelmet@iowadot.us	Buried Electrical Lines
E4	MidAmerican Energy Nate Johnson 563-333-8648 NLJohnson@midamerican.com	Overhead Electrical Transmission
E5	Central Iowa Power Coop (CIPCO) Dan Ketchum 319-734-4313 Dan.ketchum@cipco.net	Overhead Electrical Transmission
E5	Unclaimed	Buried Electrical Lines
G	MidAmerican Joe Retek 319-341-4457 jjretek@midamerican.com	Buried Gas - Intermediate Pressure
GHP	MidAmerican Steven DellaBetta 319-298-5163 amdellabetta@midamerican.com	Buried Gas - Hi-Pressure Gas
G2HP	Magellan Bill Saehler 319-330-0959 Bill.Saehler@magellanlp.com	Underground HI-Pressure Gas
FO	Iowa Communications Network (ICN) Timothy Flickinger 515-725-4699 timothy.flickinger@iowa.gov	Fiber Optic
FO2	South Slope COOP Randy Cline (Primary) 319-626-2211 randy@southslope.com	Fiber Optic
FO3	Century Link (Formerly Qwest) Bob Wegener (Primary) 815-382-3605 bwegener@terratechllc.net	Fiber Optic
FO4	Transmission Windstream/PAETEC Dave Harris 515-297-8391 Dharris@pearce-services.com	Fiber Optic
FO5	Local Windstream Brian Otto 402-436-5200 brian.otto@windstream.com	Fiber Optic
FO6	Aureon Formerly INS Jeff Klocko 515-830-0445 jeff.klocko@aureon.com	Fiber Optic
FO7	University of Iowa Chris Hatland (Primary) 319-335-1357 chris-hatland@uiowa.edu	Fiber Optic
FO8	Unite Private Network/IM ON Dan Hogan (Primary UPN) 515-326-4237 dan.hogan@upnfiber.com Randy Schoon (Primary IMON) 319-261-4640 randys@imon.net	Fiber Optic
FO9	City of Coralville Ryan Foley 319-248-1720 rfoley@coralville.org	Fiber Optic
FO10	Mediacom Darwin Driscoll (Primary) 845-204-5742 ddriscoll@mediacomcc.com	Fiber Optic
FO11	Unclaimed	Fiber Optic
SAN.2	City of Coralville Ryan Foley 319-248-1720 rfoley@coralville.org	Sanitary Sewer
ST S	Iowa DOT Timothy Zelmet 319-626-2386 Timothy.Zelmet@iowadot.us	Storm Sewer
T1	Windstream Brian Otto 402-436-5200 brian.otto@windstream.com	Telephone
T2	South Slope COOP Mark Ditch 319-626-2211 mark@southslope.com	Telephone
TV	Mediacom Darwin Driscoll (Primary) 845-204-5742 ddriscoll@mediacomcc.com	Buried Television Cable
W2	City of Coralville Dan Holderness 319-248-1720 dholderness@coralville.com	Water
W4	City of Tiffin Benjamin A. Carhoff, P.E. 319-545-7215 bcarhoff@hart-frederick.com	Water

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

- Reference Point / Station — Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

Curve Data
Δ = 22° 38′ 40.61″ (RT)
T = 655.54
L = 1,293.98
R = 3,274.04
E = 64.98
e = 5.2%
L = 312′
x = 150′
m = 94′

STA. 1197+59.76
BEGIN SB CONSTRUCTION

STA. 1201+32.37
END SB CONSTRUCTION

STA. 1197+42.16
BEGIN NB CONSTRUCTION

STA. 1201+16.20
END NB CONSTRUCTION

PT Sta 1197+50

1195

1200

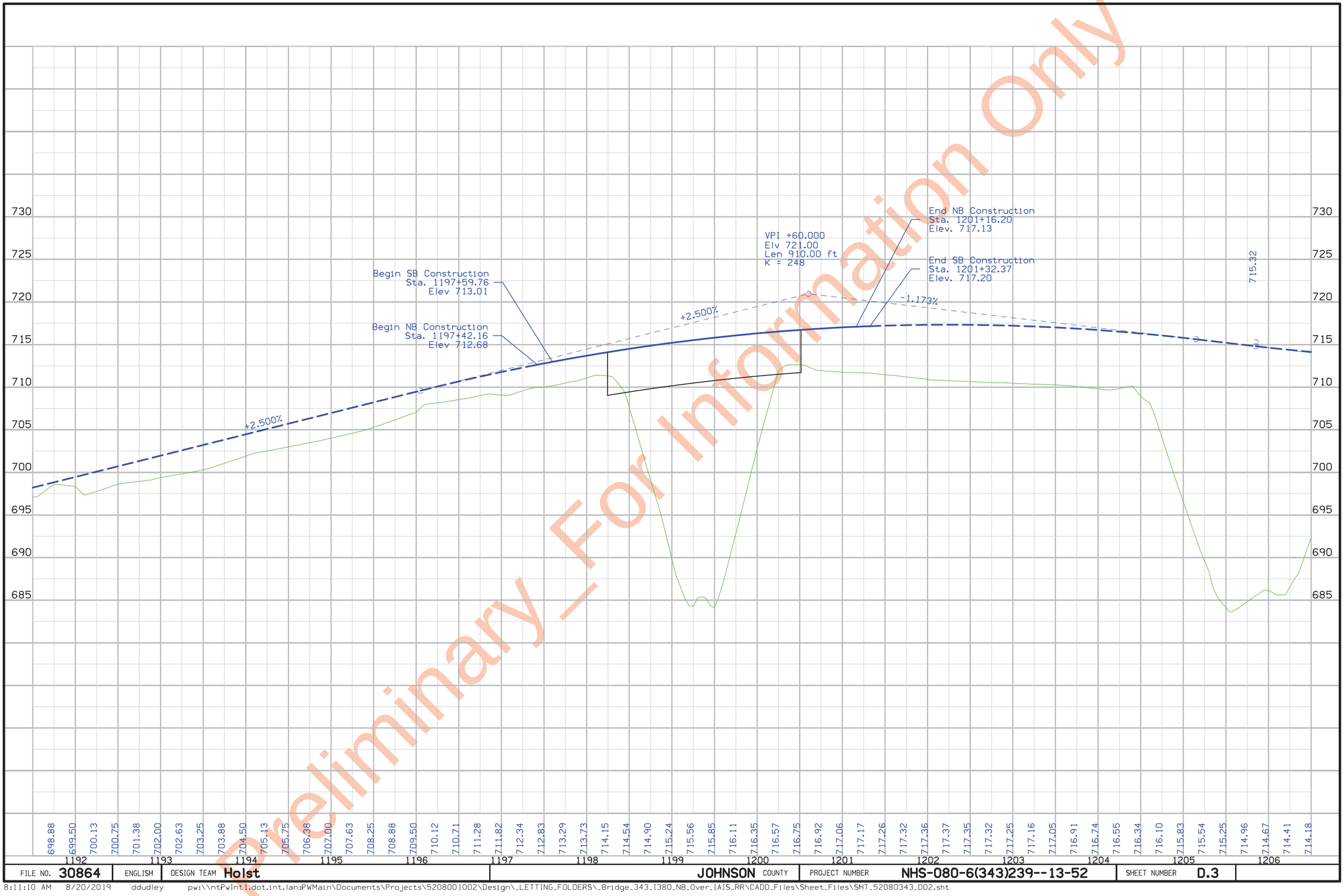
1205

I-380

0 FEET 50

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER D.2

8:11:08 AM 8/20/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_D02.sht



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER D.3

8:11:10 AM 8/20/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_D02.sht

Survey Information

Johnson County
IMN-080-6(235)2390E-52
I-80/I-380/US-218 Interchange near
Iowa City
PIN 02-52-080-010
Sap-0411.4
Sap-0411.5

2003 Vertical Control Information

This survey is relative to NAVD88 vertical datum. Three wire bench level loops were run throughout this project. All bench loops originated and closed on one project benchmark #566 a 3rd order USGS mark called 26FDR 1964 682. Note the vertical datum difference between NGVD 88 and NAVD 29 is 0.10 feet in this area. The 29 datum is 0.10 higher than 88. Benchmark elevations were validated in the 2013/2014 survey. A few updates were needed.

Vertical equations to the project datum Bench Marks and other benches along this survey are as follows:

BM # 566	This survey	EL=682.046
= BM # 566	Johnson County 2000 survey	EL=682.046
= USGS BM	#26 26FDR 1964 682	EL=682.046
BM #625	This survey	El=685.519
=BM #14	1986 AB plan F-518-4(26)--20-52	
EL=685.56		
=BM # 1	Paving plan I-IG-380-6(19)243--04-52	
EL=685.56		
BM #517	This survey	El=737.314
=BM # 3	Paving plan I-IG-380-6(19)243--04-52	
EL=737.37		
BM #520	This survey	El=699.144
=BM # 19	Paving plan I-IG-380-6(19)243--04-52	
EL=699.26		
BM #536	This survey	El=691.494
=BM # 22	Paving plan I-IG-380-6(19)243--04-52	
EL=691.61		
BM #636	This survey	EL=691.493
=BM #521	2000 Carlson survey IMN-80-6(21)240--0O-52 (88 Datum)	
EL=691.493		
=BM # 22	Paving plan I-IG-380-6(19)243--04-52 (29 Datum)	
EL=691.61		
=BM #22	1986 AB Plan F-518-4(12)--20-52 (29 Datum)	
EL=691.61		
BM #608	This survey	EL=804.915
=BM # 37	1986 AB Plan F-518-4(12)--20-52 (29 Datum)	
EL=804.85		
BM #582	This survey	EL=758.068
=BM # 39	1986 AB Plan F-518-4(12)--20-52 (29 Datum)	
EL=758.03		
BM #502	This survey	EL=738.113
=BM #502	2000 Carlson survey IMN-80-6(21)240--0O-52 (88 Datum)	
EL=738.113		
=BM # 51A	I-80-6(12)238 Grading Plan (29 Datum)	
EL=738.36		
BM #512	This survey	EL=789.582
=BM #512	2000 Carlson survey IMN-80-6(21)240--0O-52 (88 Datum)	
EL=789.582		
=BM # 60A	I-80-6(12)238 Grading Plan (29 Datum)	
EL=789.74		
=BM # 500	IM-80-6(171)240--13-52 Plan (29 Datum)	
EL=789.96		
BM #633	This survey	EL=684.221
=BM # 21A	F-289(6) 1970 AB PLAN (Datum unknown)	
EL=703.62		
BM #634	This survey	EL=682.904
=BM # 21B	F-289(6) 1970 AB PLAN (Datum unknown)	
EL=702.26		

General Information

Measurement units for this survey are US survey feet. This survey is for proposed reconstruction of the systems interchange. This field survey including mobile lidar pavement survey is supplemented with aerial survey to create the entire dtm. As of Jan. 2015 the entire surface model tin is located at
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\Photo\52080243.tin
The 2013/2014 survey was made to update previous surveys to current mapping standards and to check previous survey control, drainage structures, existing pavement and utilities.
Survey file locations in ProjectWise as of Jan 2015
Year 2000 2006 I-80 SAP 321 files (SDMS Data collection)
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001098\Photo\SURVEY\
Year 2003 I-380 SAP 411.0 to SAP 411.3 files (SDMS Data collection)
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\PrelimSurvey\0411\OLD\102913\2003 SDMS Survey\
Year 2013/2014 SAP 411.4 files (Current standards)
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\PrelimSurvey\04114\
Year 2013 SAP 411.5 files (Mobile lidar)
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\PrelimSurvey\04115\

Date(s) of Survey(s)

I-80
SAP 321 Aug. 2000
SAP 321.1 Aug. 2001 Additional Survey
SAP 321.2 April 2006 Additional Survey-Dubuque St.
SAP 411.4 2013-2014 Update survey to current standards and building floor elev. survey
SAP 411.5 Fall 2013 Mobile Lidar pavement survey (R.E.Y.)

I-380/US-218
SAP 411,411.1,411.2,411.3- April 2003
SAP 411.4 2013-2014 Update survey to current standards and building floor elev. survey
SAP 411.5 Fall 2013 Mobile Lidar pavement survey (R.E.Y.)

2003 Horizontal Control

The GPS Network along this project was collected by IDOT Preliminary Survey Crews. Information about that network can be found in the 0411gpspoints.doc file included with this survey in NAD83(1996) Modified State Plane Project Coordinates.
As of Jan. 2015 see control report at:
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\PrelimSurvey\0411\OLD\102913\2003 SDMS Survey\0411gpspoints.doc

Twelve section corners were found and included in this survey. None of the section corners coded as SCR in this survey have been certified by District 6 office. This survey was measured in English Units.

This survey intersects a 2000 Preliminary Survey along I-80. The 2000 survey data used Sap 0321. A revised GPS network was observed in 2002 for this project that includes all 2000 network control with approximately fourteen additional points added along the I-380 corridor north and south of I-80. The project control for this project is identical to the 2000 network control survey. Station equations to all as-built PI points are in the Horizontal datum information included below. Project control was validated in 2013/2014 survey.

Alignment Information

The mainline alignment of the I 80 survey is a retrace of GRADING PLANS NO. 80-6(12)238.

2000 survey stationing relates to the Grading Plans as follows:
PI-676+17.64-THIS-SURVEY=
PI 676+17.60 ORLINS FEB
1995 SURVEY PROJ. NUMBER IM-80-6(171)240--13-52 =
PI 670+17.6 GRADING PLANS PROJ NO 80-6(12)238
FOUND IRON PIN
The mainline alignment of the I 380 survey is a retrace of the as-built plans # F -518-4(12) 20-52 1986 AB plans (centerline of median).

2003 Survey stationing relates to as built plan stationing as follows:
BOP POT Sta 11082+95.29 this survey =
POT Sta 1684+00.22 F-518-4(12)--20-52 As-Built Plans

CP Point 11097+51.08, 0.14 feet right this survey =
=PC Sta 1698+56.76 F-518-4(12)--20-52 As-Built Plans Back
=PC Sta 1698+60.00 F-518-4(12)--20-52 As-Built Plans Ahead

PI Sta 11109+54.89 this survey =
PI Sta 1710+60.76 F-518-4(12)--20-52 As-Built Plans

PI Sta 11127+45.33 this survey =
=POT Sta.1127+45.33 IMN-80-6(211)2400E-52 2000 Preliminary Survey
=POT Sta 1728+54.9 F-518-4(12)--20-52 As-Built Plans Back
=POT Sta 1127+44.85 F-518-4(12)--20-52 As-Built Plans Ahead

POT Sta 11163+54.20 This Survey I-380 Stationing (Not Set in Field)
=POT Sta. 644+59.06 This Survey I-80 Stationing
=POT Sta. 644+59.06 IMN-80-6(211)2400E-52 2000 Preliminary Survey I-80 Stationing
=POT Sta. 644+50.24 IM-80-6(167)24013-52 Feb 1996 Grading Plan I-80 Stationing
=POT Sta. 638+56.24 F-518-4(12)--20-52 As-Built Plans I-80 Stationing
=POT Sta. 638+56.24 I-IG-380-6(19)243-04-52 As-Built Plans I-80 Stationing
=POT Sta 1163+53.95 F-518-4(12)--20-52 As-Built Plans I-380 Stationing
=POT Sta 1163+53.95 I-IG-380-6(19)243-04-52 As-Built Plans I-380 Stationing

POT Sta 11183+81.20 This survey
= TS Sta 1183+81.20 F-518-4(12)--20-52 As-Built Plans
= TS Sta 1183+81.20 I-IG-380-6(19)243-04-52 As-Built Plans
= TS Sta 1183+81.20 IMN-80-6(211)2400E-52 2000 Preliminary Survey

PI Sta 11191+13.01 this survey =
PI Sta 1191+12.08 I-IG-380-6(19)243-04-52 As-Built Plans

PI Sta 11271+13.95 this survey =
PI Sta 1271+13.52 I-IG-380-6(19)243-04-52 As-Built Plans

PI Sta 11324+10.95 this survey =
PI Sta 1324+11.21 I-IG-380-6(19)243-04-52 As-Built Plans

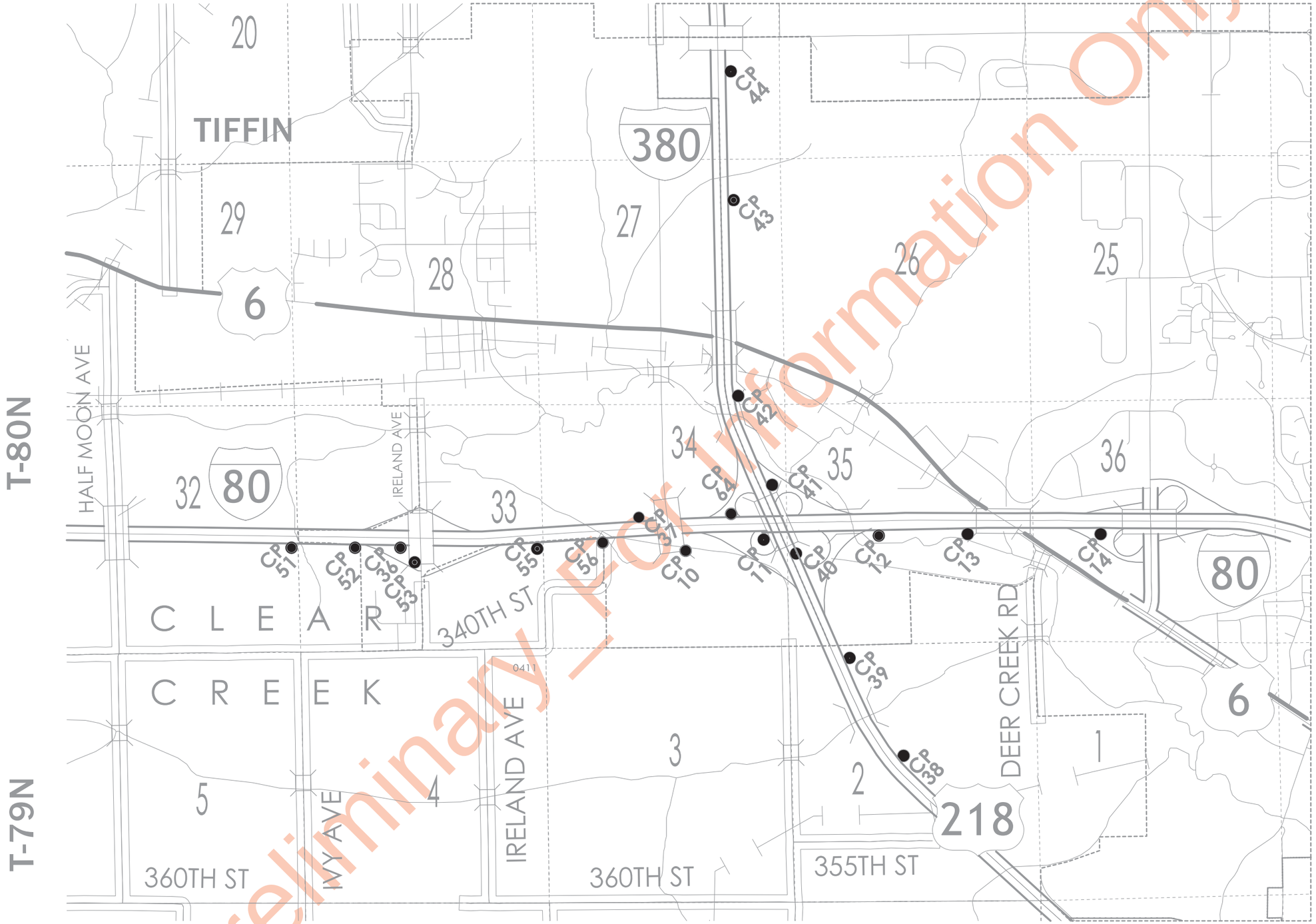
POT Sta 11404+97.20 this survey =
PC Sta 1404+96.91 I-IG-380-6(19)243-04-52 As-Built Plans

Utility Information

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 *Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data*.

The 2013/2014 utility survey information is too extensive to be reported in this index. For complete utility survey information as of Jan. 2015 see:
pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\PrelimSurvey\04114\ 04114 Dewey\UtilityInfo\

GPS BASE STATION CONTROL POINT VICINITY MAP - SEE REF. SHEETS FOR MORE INFO.



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.3

8:11:45 AM 8/20/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_G01.sht

I - 80 Benchmarks

BENCHMARKS					ELEVATION
No. 500	Sta.	524+24.82	275.01 Rt.	CUT-X-NW-CORNER-CONC-SLAB OF THE EAST MOST HISTORICAL MONUMENT----------	725.532
No. 501	Sta.	541+26.76	95.72 Rt.	FD\IHC-BM-ON-INLET-HDWL 6.0 X 6.0 RCB----------	716.211
No. 502	Sta.	557+55.03	100.54 Lt.	FD\IHC-BM-ON-INLET-HDWL 4.0 X 4.0 RCB = BM 51A ELEV = 738.36 GRADING PLANS PROJECT NO. I-80-6(12)238----------	738.113
No. 503	Sta.	567+54.01	112.27 Rt.	FD\IHC-BM-SE-WING-BRIDGE = BM 51C ELEV = 768.83 GRADING PLANS PROJECT NO. I-80-6(12)238----------	768.519
No. 504	Sta.	568+71.96	664.93 Rt.	FD\IHC-BM-ON-INLET-HDWL 6.0 X 4.0 RCB = BM 51B ELEV = 760.19 GRADING PLANS PROJECT NO. I-80-6(12)238----------	759.878
No. 505	Sta.	572+43.12	232.39 Lt.	FD\IHC-BM-ON-INLET-HDWL 5.0 X 5.0 RCB = BM 56B ELEV = 736.39 GRADING PLANS PROJECT NO. I-80-6(12)238----------	736.150
No. 506	Sta.	576+04.56	174.78 Lt.	FD\IHC-BM-ON-OUTLET-HDWL 42" CIR RCB W\ FLUME = BM 56A ELEV = 736.54 GRADING PLANS PROJECT NO. I-80-6(12)238----------	736.266
No. 507	Sta.	582+71.85	157.29 Rt.	SET\RR-SPK-N-SIDE-FE-POST------	741.725
No. 508	Sta.	593+92.17	141.09 Lt.	SET\RR-SPK-S-SIDE-P-POLE-------	741.525
No. 509	Sta.	607+05.87	79.46 Rt.	FD\IHC-BM-ON-INLET-HDWL 5.0 X 5.0 RCB = BM 58A ELEV = 738.31 GRADING PLANS PROJECT NO. I-80-6(12)238----------	738.221
No. 510	Sta.	615+76.60	326.96 Rt.	FD\RR-SPK-E-SIDE-P-POLE--------	759.073
No. 511	Sta.	620+62.57	65.33 Rt.	FD\X-SOUTH-CONC-BASE-OF OVERHEAD SIGN= BM # 501 PROJECT NUMBER IM-80-6(171)240--13-52 ELEVATION=768.539----------	768.176
No. 512	Sta.	621+03.40	106.71 Lt.	FD\IHC-BM-NW-WING-BRIDGE = BM 60A ELEV = 789.74 GRADING PLANS PROJECT NO.I-80-6(12)238=BM # 500 PROJECT NUMBER IM-80-6(171)240--13-52 ELEVATION=789.96----------	789.582
No. 514	Sta.	628+04.84	138.29 Rt.	FD-X-NORTH-SIDE-CONC-BASE LIGHT POLE = BM # 502 PROJECT NUMBER IM-80-6(171)240--13-52 ELEVATION=759.83----------	759.429
No. 513	Sta.	630+59.60	585.67 Rt.	SET\RR-SPK-N-SIDE-P-POLE-------	799.211
No. 521	Sta.	635+58.50	2288.24 Lt.	FD\IHC-BM-SW-WING-N-BOUND I-380 BRIDGE OVER CLEAR CREEK = BM 22 ELEV. = 691.61 PAVING PLANS PROJECT NO. I-IG-380-6(19)243--04-52-------	691.493
No. 520	Sta.	638+65.25	1150.14 Lt.	FD\X-E-BOLT-LIGHT-POLE BASE = BM 19 ELEV = 699.26 PAVING PLANS PROJECT NO. I-IG-380-6(19)243--04-52 NO.----------	699.144
No. 519	Sta.	643+13.57	149.65 Lt.	FD\IHC-BM-NW-WING-S-BOUND I-380 BRIDGE OVER I-80---------	737.910
No. 515	Sta.	643+29.80	85.69 Rt.	CUT-X-S-SIDE-OF-THE-SOUTH CONC BASE OVERHEAD SIGN--------	717.715
No. 518	Sta.	646+13.45	174.79 Rt.	FD\IHC-BM-SE-WING-N-BOUND I-380 BRIDGE OVER I-80---------	746.360
No. 517	Sta.	650+98.04	1260.64 Rt.	FD\X-NW-BOLT-L-LIGHT-POLE = BM 3 ELEV. = 737.37 PAVING PLANS PROJECT NO. I-IG-380-6(19)243--04-52-------	737.313
No. 516	Sta.	654+99.08	2289.74 Rt.	CUT-X-CL-S-EDGE-EAST-CONC BASE OVERHEAD SIGN----------	741.143
No. 522	Sta.	659+46.08	96.58 Lt.	FD\IHC-BM-SW-WING-RAMP BRG FROM I-80 W.BOUND TO I-380 N.BOUND----------	683.510
No. 523	Sta.	661+62.64	113.94 Rt.	FD\X-CONC-WHEELGUARD-SE END OF RAMP BRIDGE FROM I-380 N.BOUND TO I-80 EAST BOUND----------	678.333
No. 524	Sta.	678+73.49	137.92 Rt.	SET\RR-SPK-N-SIDE-WOOD FENCE POST----------	668.615
No. 525	Sta.	691+40.06	60.42 Rt.	FD\IHC-BM-SW-WING-I-80 E.BOUND BR. OVER HWY 6---------	713.964

I - 80 Benchmarks

BENCHMARKS					ELEVATION
No. 526	Sta.	693+80.06	69.22 Lt.	FD\IHC-BM-ON-INLET-HDWL 8.0 X 8.0 RCB = BM 115B ELEV. = 678.77 PCC PAVING PROJECT PLANS NO. I-IG-80-6(5)245----------	678.693
No. 527	Sta.	697+44.64	61.02 Rt.	FD\IHC-BM-SE-WING-I-80 E.BOUND BRIDGE OVER HWY 6------	716.522
No. 528	Sta.	710+29.21	67.34 Rt.	CUT-X-S-SIDE-CONC-BASE LIGHT POLE IN BETWEEN RAMP & I-80 E.BOUND----------	732.764
No. 530	Sta.	724+64.11	15.45 Lt.	FD\IHC-BM-SW-WING-I-80 W.BOUND BRG OVER HWY 965 = 119A ELEV. = 734.10 PCC PAVING PROJECT PLANS NO.I-IG-80-6(5)245----------	733.923
No. 529	Sta.	725+22.02	792.31 Rt.	CUT-X-N.SIDE-CONC-BASE TRAFFIC SIGNAL SW QUAD HWY 965 & WEST ENTRANCE INTO MALL----------	714.224
No. 531	Sta.	727+10.65	340.80 Lt.	CUT-X-ON-INLET-HDWL 6.0 X 6.0 RCB----------	705.436
No. 532	Sta.	730+69.65	374.01 Lt.	FD\IHC-BM-ON-INLET-HDWL 6.0 X 4.0 RCB = BM 180-3 ELEV. = 719.61 PCC PAVEMENT-GRADE/NEW PROJECT PLANS NO. STPN-965-0(4)--25-52----------	719.458
No. 533	Sta.	741+85.18	66.23 Lt.	CUT-X-S-SIDE-CONC-BASE LIGHT IN BETWEEN W.BOUND I-80 @ RAMP----------	756.604

I - 380 Benchmarks

BENCHMARKS					ELEVATION
No. 624	Sta.	11111+94.255	79.87 Lt.	2-10OD NAILS IN WD.SI.POS------	714.060
No. 625	Sta.	11118+31.923	151.22 Lt.	IHC BM INLET HDWL.TRIPLE 10 X 12 RCB BM#625 ELEV.= 685.519(E) THIS SURVEY =BM# 1 ELEV.= 685.56(E) F-518-4(12)--20-52 1986 AB PLAN----------	685.519
No. 626	Sta.	11128+02.043	110.86 Rt.	CUT"X"NW.SIDE W.CONC.SIGN BASE----------	730.221
No. 516	Sta.	11138+40.798	85.63 Rt.	CUT-X-CL-S-EDGE-EAST-CONC BASE OVERHEAD SIGN----------	741.143
No. 517	Sta.	11149+45.044	108.49 Rt.	FD\X-NW-BOLT-L-LIGHT-POLE = BM 3 ELEV. = 737.37 PAVING PLANS PROJECT NO. I-IG-380-6(19)243--04-52-------	737.314
No. 518	Sta.	11161+33.669	75.84 Rt.	FD\IHC-BM-SE-WING-N-BOUND I-380 BRIDGE OVER I-80---------	746.360
No. 515	Sta.	11163+24.440	152.20 Lt.	CUT-X-S-SIDE-OF-THE-SOUTH CONC BASE OVERHEAD SIGN------	717.715
No. 519	Sta.	11165+48.102	77.23 Lt.	FD\IHC-BM-NW-WING-S-BOUND I-380 BRIDGE OVER I-80---------	737.910
No. 520	Sta.	11176+43.987	109.01 Lt.	FD\X-E-BOLT-LIGHT-POLE BASE = BM 19 ELEV = 699.26 PAVING PLANS PROJECT NO. I-IG-380-6(19)243--04-52 NO.----------	699.144
No. 567	Sta.	11187+84.421	65.27 Rt.	FD\IHC BM SE WING N.BOUND I-380 BRIDGE OVER CLEAR CREEK----------	690.972
No. 636	Sta.	11188+16.120	22.87 Rt.	FD\IHC-BM-SW-WING-N-BOUND I-380 BRIDGE OVER CLEAR CREEK = BM 22 ELEV. = 691.61 PAVING PLANS PROJECT NO. I-IG-380-6(19)243--04-52-------	691.494
No. 521	Sta.	11188+16.200	22.77 Rt.	FD.IHC SW.WING NB.BRIDGE I-380 OVER CLEAR CREEK BM#521 ELEV.= 691.493(E) THIS SURVEY =BM#521 ELEV.= 691.493(E) IMN-80-6(21)240--00-52 2000 W.CARLSON SURVEY =BM#22 ELEV.= 691.61(E) F-518-4(12)--20-52 1986 AB PLAN----------	691.493
No. 568	Sta.	11188+39.041	64.91 Lt.	FD\IHC BM SW WING S.BOUND I-380 BRIDGE OVER CLEAR CREEK----------	695.024
No. 569	Sta.	11189+63.986	64.82 Rt.	FD.DOT BUTTON NE.WING BR.------	694.617
No. 570	Sta.	11198+34.501	65.02 Rt.	FD.DOT BUTTON SE.WING BR.------	714.922

I - 380 Benchmarks

BENCHMARKS					ELEVATION
No. 632	Sta.	11199+30.780	142.78 Lt.	CUT"X"N.SIDE 48"CONC.P.PO -LE BASE S.RR.TRACKS JUST W. 380 OVERPASS----------	680.741
No. 572	Sta.	11200+25.396	23.34 Lt.	CUT"X"NE.WING SB.BRIDGE--------	716.012
No. 571	Sta.	11200+34.418	65.35 Lt.	CUT"X"NW.WING SB.BRIDGE--------	715.783
No. 573	Sta.	11204+64.485	22.95 Lt.	CUT"X" SE.WING SB.BR.HWY6------	713.595
No. 574	Sta.	11204+75.377	65.13 Lt.	FD.DOT BUTTON SW.WING BR.------	713.436
No. 575	Sta.	11206+88.793	64.63 Rt.	FD.DOT BUTTON NE.WING BR.------	712.079
No. 627	Sta.	11206+90.470	216.20 Lt.	SET RR.SPK.S.SIDE P.POLE N.SIDE HWY 6,JUST W.OF 380 OVERPASS----------	685.435
No. 576	Sta.	11218+97.892	85.21 Rt.	CUT"X"INLET 24" RCP E.SID------	732.351
No. 577	Sta.	11235+00.075	16.06 Lt.	CUT"X"E.SIDE OVERHEAD SGN------	752.765
No. 578	Sta.	11248+47.438	194.26 Rt.	SET 60D NAIL WD.FENCE POS------	745.111
No. 579	Sta.	11261+23.666	152.27 Rt.	SET 60D NAIL WD.FENCE POS------	783.326
No. 608	Sta.	11270+93.677	134.86 Rt.	FD.IHC SE.COR.WHLGD.BRIDG BM#608 ELEV.= 804.915(E) THIS SURVEY =BM#37 ELEV.= 804.85(E) F-518-4(12)--20-52 1986 AB PLAN----------	804.915
No. 607	Sta.	11271+31.826	130.49 Lt.	CUT"X"NW.COR.WHLGD.BRIDGE------	804.763
No. 580	Sta.	11272+23.924	148.34 Rt.	SET RR.SPK.W.SIDE FE.POST------	779.049
No. 581	Sta.	11287+68.335	98.68 Rt.	CUT"X"INLET 42"RCP S.10F2------	764.010
No. 582	Sta.	11303+75.126	105.25 Rt.	FD.IHC INLET HDWL.TWIN8X8 BM#582 ELEV.= 758.068(E) THIS SURVEY =BM#39 ELEV.= 758.03(E) F-518-4(12)--20-52 1986 AB PLAN----------	758.068
No. 583	Sta.	11319+99.239	100.54 Rt.	CUT"X"NW.W.CONC.SIGN BASE------	767.172
No. 606	Sta.	11324+44.101	150.98 Lt.	SET RR.SPK.SE.SIDE P.POLE------	780.252
No. 584	Sta.	11332+00.705	107.52 Rt.	CUT"X"E.SIDEW.CONC.SGN.BA------	775.672
No. 585	Sta.	11343+50.252	109.94 Rt.	CUT"X"NE.SIDEW.CONC.SGN.B------	788.481
No. 586	Sta.	11356+00.495	116.53 Rt.	CUT"X"W.SIDEW.CONC.SGN.BA------	795.758
No. 587	Sta.	11375+75.327	149.09 Rt.	SET RR.SPK.W.SIDE P.POLE-------	798.873
No. 592	Sta.	11377+19.336	135.71 Lt.	CUT"X"SW.WING CO.RD.F28 B------	816.985
No. 593	Sta.	11377+53.473	133.56 Rt.	FD.DOT BUTTON NE.WING BR.------	817.034
No. 588	Sta.	11389+34.201	160.47 Rt.	SET RR.SPK.W.SIDE FE.POST------	789.830
No. 589	Sta.	11403+67.224	180.83 Rt.	SET RR.SPK.NW.SIDE P.POLE------	762.153

SW Kansas Ave. South of I 80 Benchmarks

No. 622	Sta.	20572+00.606	33.65 Rt.	SET RR.SPK.SW.SIDE P.POLE------	764.688
No. 621	Sta.	20578+73.257	31.20 Rt.	SET RR.SPK..W.SIDE P.POLE------	763.973
No. 620	Sta.	20591+97.150	53.93 Rt.	SET RR.SPK.SW.SIDE FE.PST------	740.677
No. 619	Sta.	20602+54.671	63.25 Lt.	SET RR.SPK.N.SIDE P.POLE-------	786.486
No. 513	Sta.	20608+06.706	35.16 Lt.	SET\RR-SPK-N-SIDE-P-POLE-------	799.211
No. 510	Sta.	20622+90.521	33.39 Lt.	FD\RR-SPK-E-SIDE-P-POLE--------	759.074

Jasper Ave. Benchmarks

No. 511	Sta.	30620+64.760	67.37 Lt.	FD\X-SOUTH-CONC-BASE-OF OVERHEAD SIGN= BM # 501 PROJECT NUMBER IM-80-6(171)240--13-52 ELEVATION=768.539----------	768.176
No. 512	Sta.	30622+33.605	14.88 Lt.	FD\IHC-BM-NW-WING-BRIDGE = BM 60A ELEV = 789.74 GRADING PLANS PROJECT NO.I-80-6(12)238=BM # 500 PROJECT NUMBER IM-80-6(171)240--13-52 ELEVATION=789.96----------	789.582
No. 617	Sta.	30634+79.709	15.80 Rt.	SET RR.SPK.W.SIDE TEL.POL ON JASPER AVE.----------	778.994
No. 616	Sta.	30639+48.147	43.04 Rt.	SET RR.SPK.W.SIDE P.POLE ON JASPER AVE.----------	758.301
No. 615	Sta.	30653+45.242	17.13 Rt.	FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A------	686.896
No. 614	Sta.	30655+23.641	16.15 Lt.	CUT"X"NW.COR.HNDRL.BRG.OV ER CLEAR CREEK ON JASPER AVE. JUST S.RR.TRACKS----------	687.721
No. 633	Sta.	30664+43.666	29.41 Rt.	FD.IHC INLET HDWL 4X2 RCB BM# 633 ELEV.= 684.221(E) THIS SURVEY =BM#21A ELEV.=703.62 F-289(6) 197O AB PLAN----------	684.221
No. 596	Sta.	30677+73.777	27.86 Lt.	SET RR.SPK.E.SIDE P.POLE-------	717.410
No. 597	Sta.	30686+97.621	16.19 Rt.	FD.BOLT INLET HDWL.8X6RCB------	709.220
No. 598	Sta.	30698+38.006	33.23 Lt.	SET RR.SPK.W.SIDE P.POLE-------	733.159
No. 599	Sta.	30711+77.883	32.92 Lt.	SET RR.SPK.W.SIDE P.POLE-------	780.071
No. 600	Sta.	30719+26.238	33.12 Lt.	SET RR.SPK.W.SIDE P.POLE-------	808.144
No. 601	Sta.	30728+10.453	42.91 Rt.	SET RR.SPK.SW.SIDE P.POLE------	797.156
No. 602	Sta.	30740+44.218	32.72 Rt.	SET RR.SPK.W.SIDE GATEPOS------	760.080
No. 603	Sta.	30753+47.152	26.22 Rt.	SET RR.SPK.W.SIDE P.POLE-------	757.608
No. 604	Sta.	30766+58.868	30.99 Rt.	SET RR.SPK.W.SIDE P.POLE-------	768.523

US 6 Benchmarks

BENCHMARKS					ELEVATION
No. 633	Sta.	51192+29.509	33.19 Lt.	FD.IHC INLET HDWL 4X2 RCB BM# 633 ELEV.= 684.221(E) THIS SURVEY =BM#21A ELEV.=703.62 F-289(6) 197O AB PLAN----------	684.221
No. 634	Sta.	51200+72.371	24.25 Lt.	FD.IHC INLET HDWL 4X2 RCB BM# 634 ELEV.= 682.904(E) THIS SURVEY =BM#21B ELEV.=702.26 F-289(6) 197O AB PLAN----------	682.904
No. 627	Sta.	51203+52.358	60.83 Lt.	SET RR.SPK.S.SIDE P.POLE N.SIDE HWY 6,JUST W.OF 380 OVERPASS----------	685.435
No. 574	Sta.	51205+48.360	121.48 Rt.	FD.DOT BUTTON SW.WING BR.------	713.436
No. 573	Sta.	51205+96.470	120.17 Rt.	CUT"X" SE.WING SB.BR.HWY6------	713.595
No. 575	Sta.	51206+11.957	120.14 Lt.	FD.DOT BUTTON NE.WING BR.------	712.079
No. 628	Sta.	51220+41.072	38.97 Rt.	FD.DOT BUTTON OUTLET HDWL 12.0 X 6.0 RCB,S.SIDE RD.------	692.107

Forever Green Rd. Benchmarks

No. 601	Sta.	61258+19.677	73.21 Lt.	SET RR.SPK.SW.SIDE P.POLE------	797.156
No. 607	Sta.	61269+81.203	16.29 Lt.	CUT"X"NW.COR.WHLGD.BRIDGE------	804.763
No. 608	Sta.	61272+47.430	15.13 Rt.	FD.IHC SE.COR.WHLGD.BRIDG BM#608 ELEV.= 804.915(E) THIS SURVEY =BM#37 ELEV.= 804.85(E) F-518-4(12)--20-52 1986 AB PLAN----------	804.915
No. 580	Sta.	61272+57.419	115.97 Lt.	SET RR.SPK.W.SIDE FE.POST------	779.049

Kansas Ave. N. of Forever Green Rd. Benchmarks

No. 609	Sta.	71285+24.573	36.52 Lt.	SET RR.SPK.W.SIDE P.POLE-------	782.709
No. 610	Sta.	71300+33.158	43.78 Rt.	SET RR.SPK.E.SIDE P.POLE-------	777.704
No. 611	Sta.	71313+91.962	33.55 Lt.	SET RR.SPK.W.SIDE P.POLE-------	794.997
No. 612	Sta.	71324+43.867	33.77 Lt.	SET RR.SPK.E.SIDE P.POLE-------	777.635

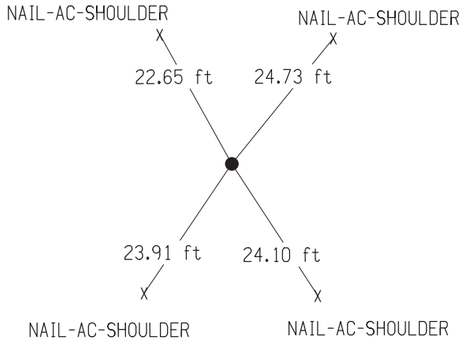
270th. Ave. Benchmarks

No. 605	Sta.	81312+32.522	26.41 Lt.	SET RR.SPK.S.SIDE P.POLE-------	778.045
No. 606	Sta.	81322+59.298	30.49 Lt.	SET RR.SPK.SE.SIDE P.POLE------	780.252
No. 613	Sta.	81339+01.184	31.48 Lt.	SET RR.SPK.S.SIDE P.POLE-------	764.142

Co. Rd. F 28 Benchmarks

No. 590	Sta.	91359+26.297	34.25 Rt.	ARROWHEAD ON SW.SIDE FHD------	788.696
No. 591	Sta.	91365+45.283	23.04 Rt.	ARROWHEAD ON NE.SIDE FHD------	792.288
No. 592	Sta.	91376+00.766	16.91 Rt.	CUT"X"SW.WING CO.RD.F28 B------	816.985
No. 593	Sta.	91378+70.104	16.70 Lt.	FD.DOT BUTTON NE.WING BR.------	817.034
No. 587	Sta.	91378+85.282	161.48 Rt.	SET RR.SPK.W.SIDE P.POLE------	798.873
No. 594	Sta.	91393+35.495	28.53 Rt.	ARROWHEAD ON W.SIDE FHD-------	788.677
No. 595	Sta.	91400+06.045	28.37 Rt.	ARROWHEAD ON W.SIDE FHD.------	785.191

POT 488+00.88
POINT # 50
FD-IRON-PIN---16"DEEP
XC=2133198.794, YC=622563.994



CP STA. 524+92.56, 112.25' RT
CP NO. G035, FD FENO MONUMENT
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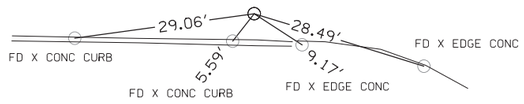

CP STA.540+77.82, 70.37' RT
CP NO. 51, FD 1/2" IRON PIN
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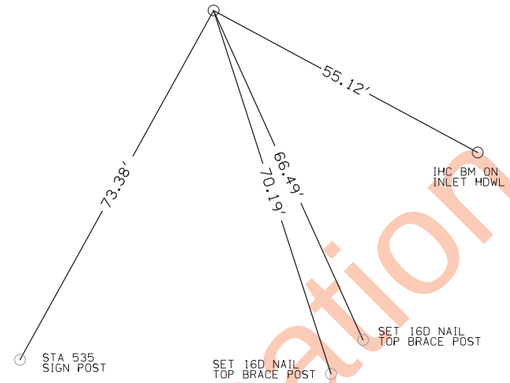
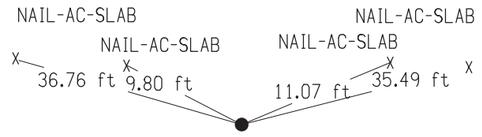
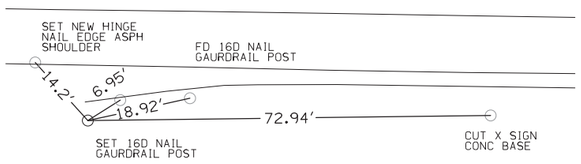


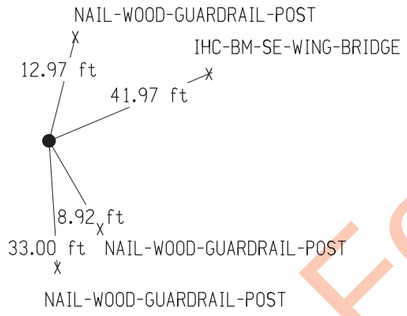
CP 550+08.12, 65.86 RT.
POINT # 52
SET-IRON-PIN---6"DEEP
XC=2139404.330, YC=622404.257



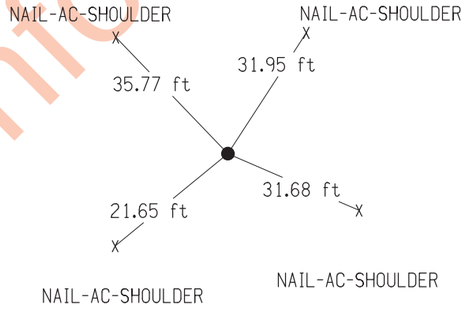
CP STA.565+60.58, 68.86' RT
CP NO. G036, FD 5/8" RE-ROD
N=622377.780, E=2140956.560



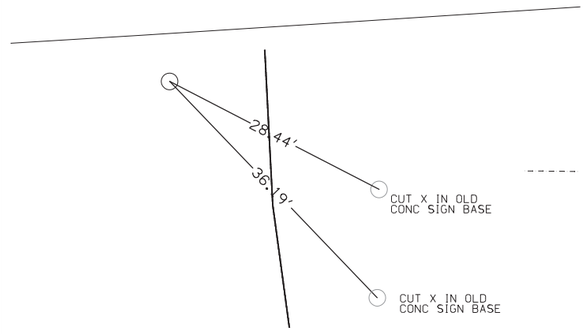
CP 567+15.66, 129.38 RT.
POINT # 53
SET-IRON-PIN---8"DEEP
XC=2141110.705, YC=622314.914



PI 579+28.07
POINT # 54
FOUND IRON-PIN--10"DEEP
XC=2142324.940, YC=622425.944



CP STA. 592+79.39, 65.13' RT
CP NO. 55, FD 1/2" IRON PIN
N=622445.384, E=2143678.017



CP STA.606+64.52, 63.57' RT
CP NO. 56, FD 1/2" IRON PIN
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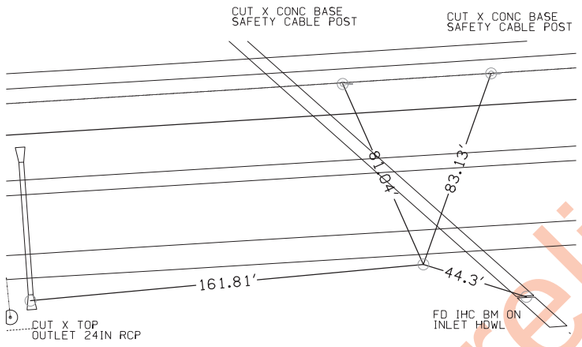

CP STA.620+05.22, 101.08' LT
CP NO. G037, FD 5/8" RE-ROD
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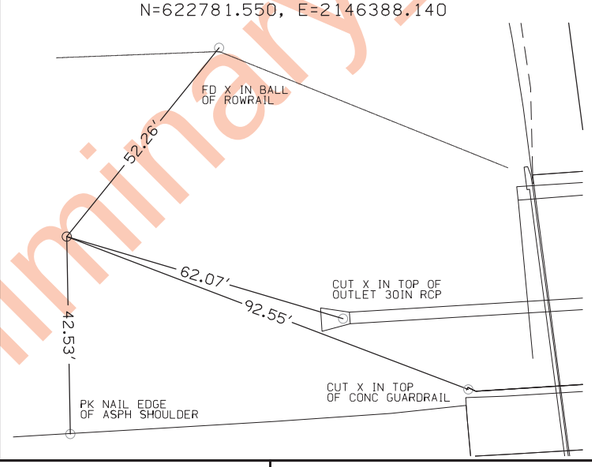
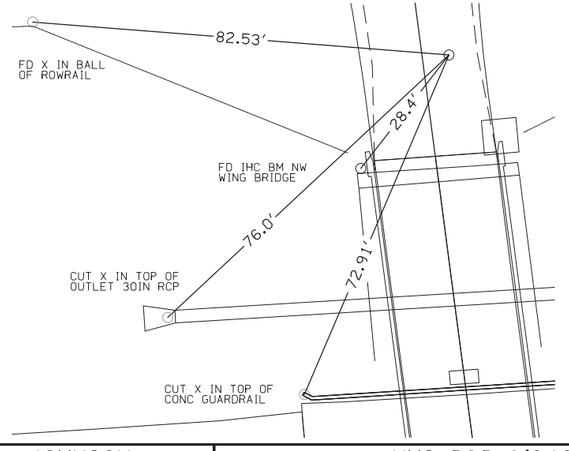
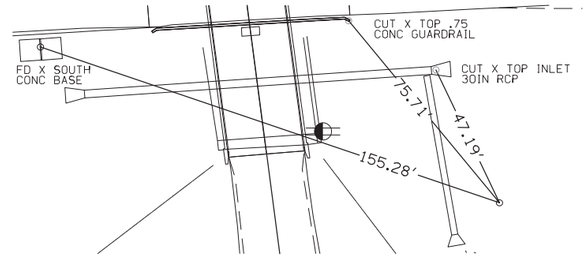


CP STA.621+22.20, 128.00' LT
CP NO. 57, FD 1/2" IRON PIN
N=622815.726, E=2146503.210



CP STA.622+06.63, 124.20' RT
CP NO. G010, FD FENO MONUMENT
N=622569.130, E=2146602.820



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.5

8:11:47 AM 8/20/2019 ddudley pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_G01.sht

CP STA.622+69.02, 422.05', RT
CP NO. 58, FD 1/2" IRON PIN
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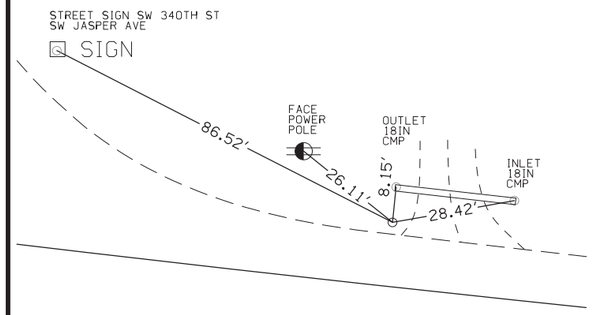
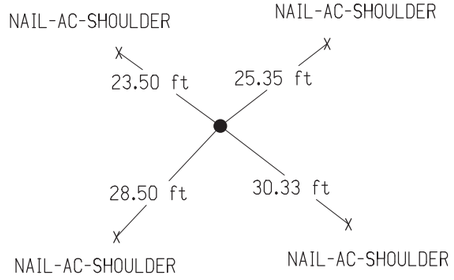
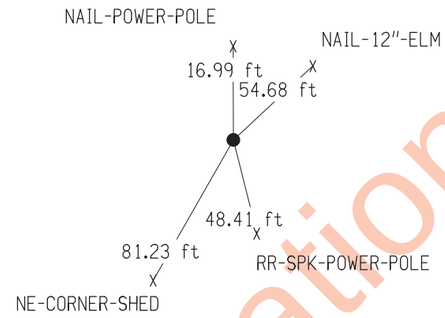


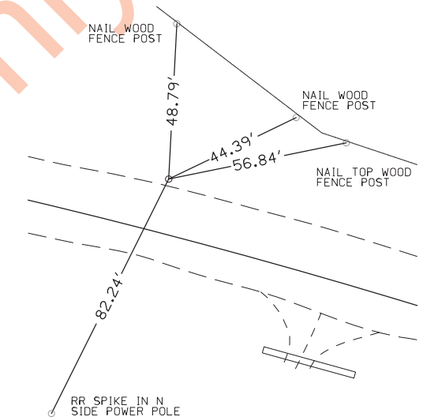
PI 625+84.74
POINT # 49
FD-IRON-PIN---5"DEEP
XC=2146972.845, YC=622716.871



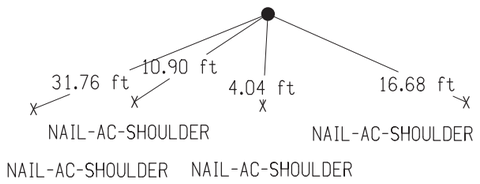
CP 630+48.78, 538.33 RT
POINT # 59
SET-IRON-PIN---6"DEEP
XC=2147449.066, YC=622189.177



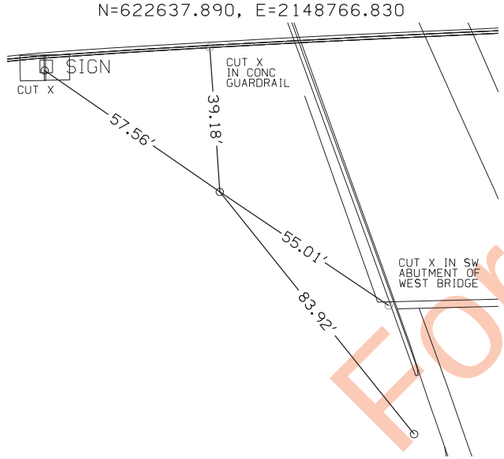
CP STA.636+29.98, 628.91' RT
CP NO. 60, FD 1/2" IRON PIN
N=622111.768, E=2148032.168



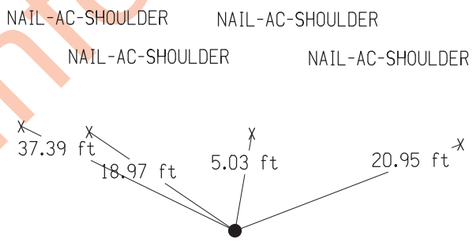
CP 636+43.43, 62.48 LT.
POINT # 64
SET-IRON-PIN---6"DEEP
XC=2148029.975, YC=622803.284



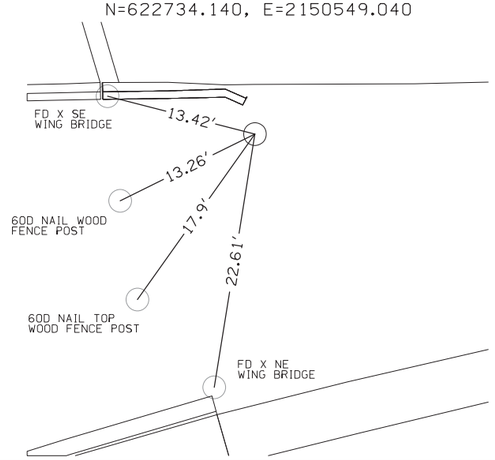
CP STA.643+76.36, 119.54' RT
CP NO. G011, FD FENO MONUMENT
N=622637.890, E=2148766.830



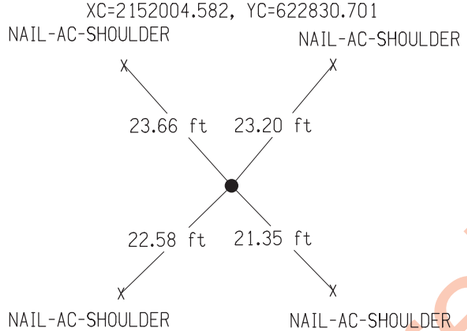
CP 653+78.73, 64.05 RT.
POINT # 67
SET-IRON-PIN---5"DEEP
XC=2149767.696, YC=622716.034



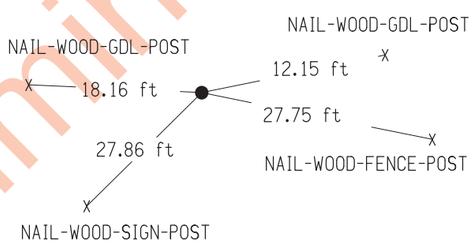
CP STA.661+60.29, 63.62' RT
CP NO. G012, 5/8" RE-ROD
N=622734.140, E=2150549.040



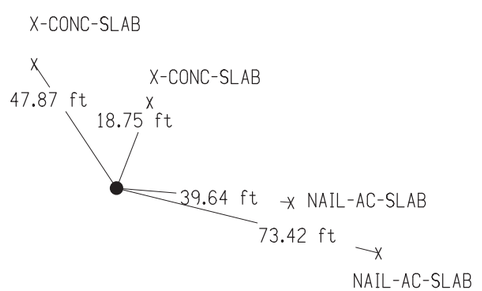
PI 676+17.64
POINT # 47
FD-IRON-PIN---5"DEEP
XC=2152004.582, YC=622830.701



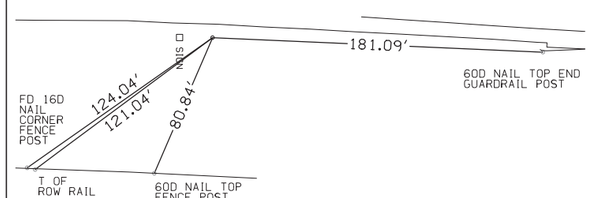
GPS 691+03.90, 63.64 RT.
POINT # G013
FD-REBAR---5"DEEP
XC=2153490.580, YC=622760.510



CP 696+27.39, 182.54 RT.
POINT # 68
SET-IRON-PIN---4"DEEP
XC=2154013.542, YC=622639.299



CP STA.702+45.98, 67.96' RT
CP NO. 69, FD FENO MONUMENT
N=622751.154, E=2154632.637

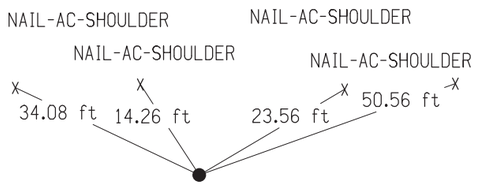


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.6

8:11:49 AM 8/20/2019 ddudley pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_G01.sht

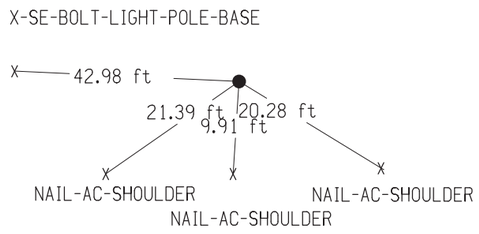
GPS 714+90.54, 70.59 RT.

POINT # G014
FD-REBAR---7"DEEP
XC=2155877.170, YC=622743.040



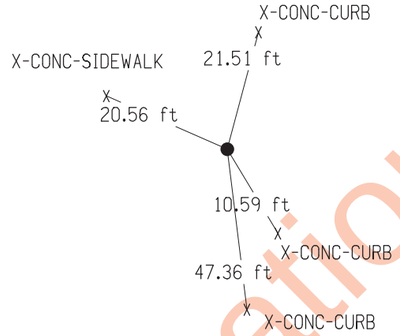
CP 723+72.19, 74.01 LT.

POINT # 70
SET-IRON-PIN---4"DEEP
XC=2156759.449, YC=622883.747



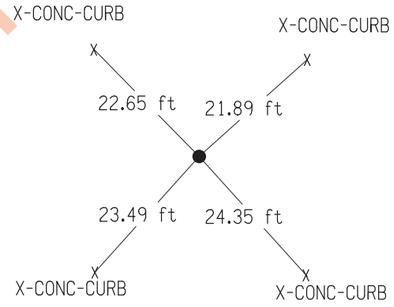
CP 725+28.79, 849.21 RT

POINT # 71
SET-IRON-PIN---4"DEEP
XC=2156911.976, YC=621959.843



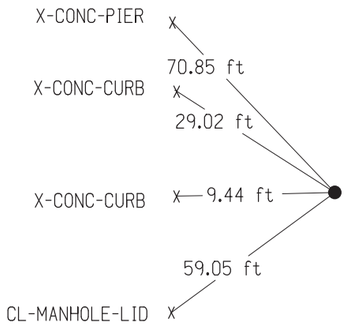
CP 725+70.68, 892.11 LT

POINT # 73
SET-IRON-PIN---4"DEEP
XC=2156961.548, YC=623700.957



CP 726+50.69, 130.32 RT.

POINT # 72
SET-IRON-PIN---4"DEEP
XC=2157037.044, YC=622678.188

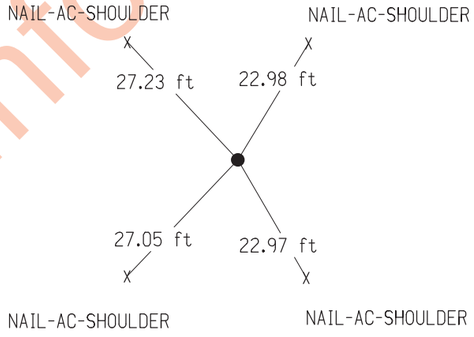


CP 733+40.52, 62.80 RT.

POINT # 74
SET-IRON-PIN---6"DEEP
XC=2157727.165, YC=622742.670

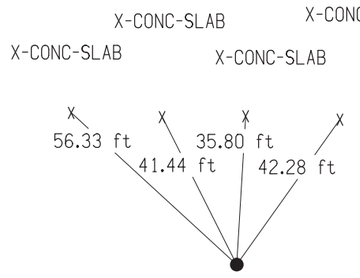
CP 740+38.90, 0.76 RT

POINT # 1
FD-REBAR---1"DEEP
XC=2158425.814, YC=622801.630



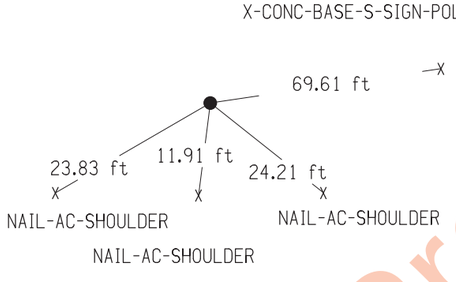
GPS 744+32.20, 104.94 RT.

POINT # G015
FD-REBAR---8"DEEP
XC=2158811.110, YC=622682.600



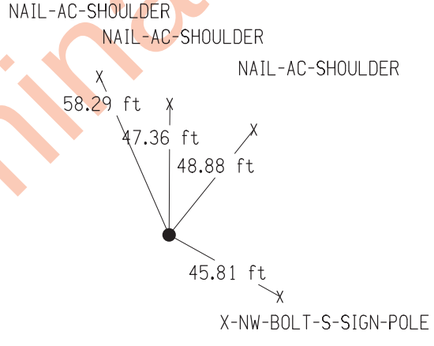
PI 749+37.94

POINT # 46
FD/CONC MONU---4"DEEP
XC=2159324.850, YC=622798.423



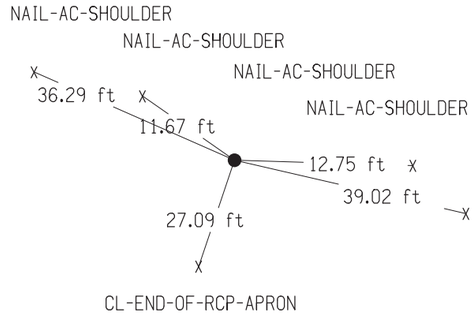
CP 755+99.57, 104.09 RT.

POINT # 75
SET-IRON-PIN---4"DEEP
XC=2159937.950, YC=622484.594



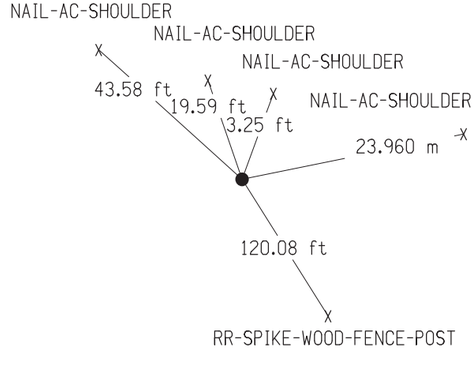
GPS 764+95.39, 62.39 RT

POINT # G016
FD-REBAR---8"DEEP
XC=2160799.980, YC=622251.780



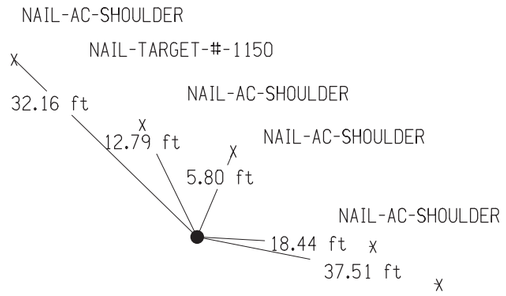
CP 775+01.71, 62.29 RT

POINT # 76
SET-IRON-PIN---5"DEEP
XC=2161756.755, YC=621939.895

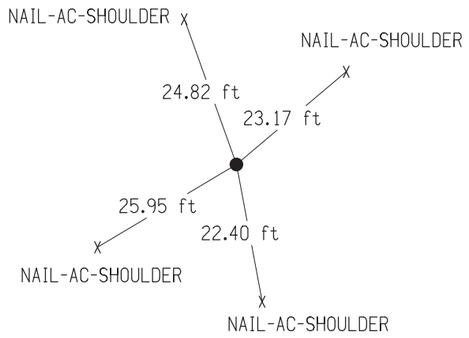


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.7

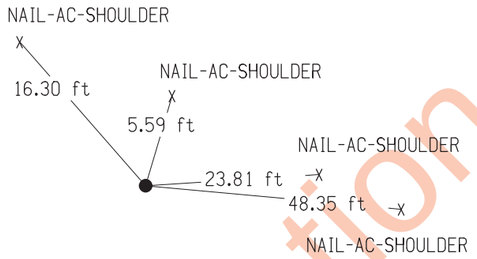
GPS 783+42.19, 63.51 RT
POINT # G017
FD-REBAR---8"DEEP
XC=2162555.440, YC=621678.170



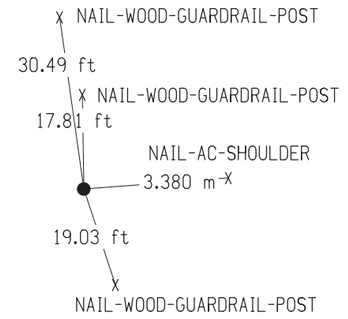
CP 784+42.93, 0.20 RT
POINT # 3
FD-REBAR---14"DEEP
XC=2162670.850, YC=621707.128



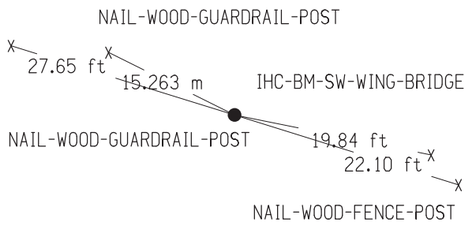
CP 791+34.67, 61.62 RT
POINT # 77
SET-IRON-PIN---4"DEEP
XC=2163309.464, YC=621434.275



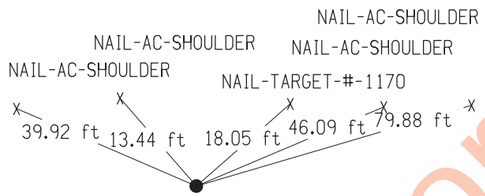
CP 800+78.11, 125.02 LT
POINT # 78
SET-IRON-PIN---4"DEEP
XC=2164264.285, YC=621319.237



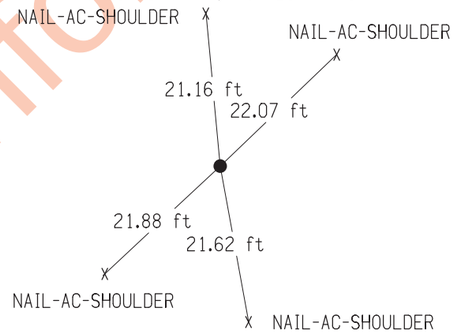
GPS 804+02.83, 62.15 RT
POINT # G018
FD-REBAR---9"DEEP
XC=2164514.980, YC=621040.620



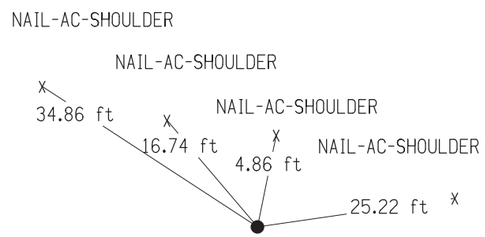
CP 813+57.46, 62.01 RT
POINT # 79
SET-IRON-PIN---3"DEEP
XC=2165422.619, YC=620744.800



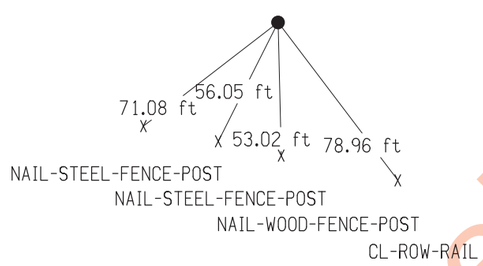
POST 820+22.36
POINT # 4
FD-REBAR---10"DEEP
XC=2166073.977, YC=620597.619



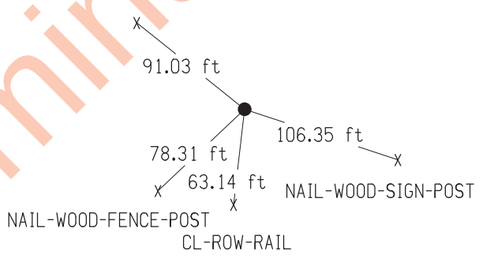
GPS 823+04.29, 63.52 RT
POINT # G019
FD-REBAR---6"DEEP
XC=2166324.940, YC=620452.790



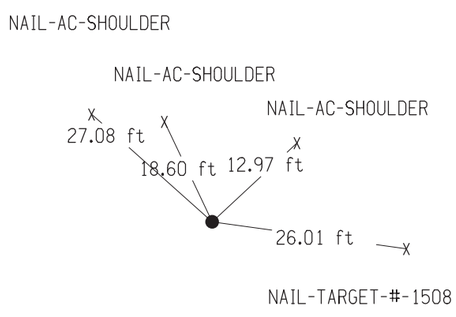
PI 839+10.31
POINT # 9
SET-IRON-PIN---4"DEEP
XC=2167868.913, YC=620012.313



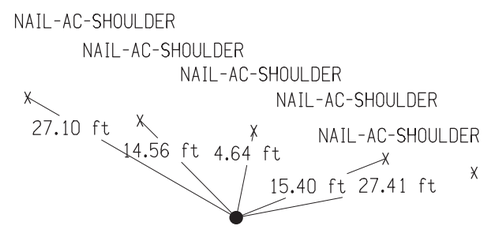
POST 839+47.97, 146.41 RT
POINT # 45
FD-IRON-PIN---2"DEEP
XC=2167924.978, YC=620013.005



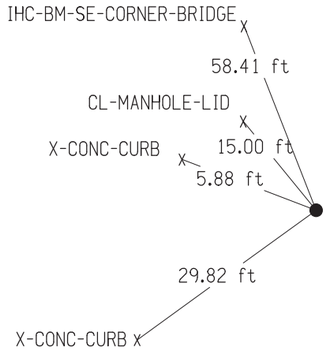
CP 839+53.58, 120.32 RT
POINT # 80
SET-IRON-PIN---4"DEEP
XC=2167934.390, YC=620037.983



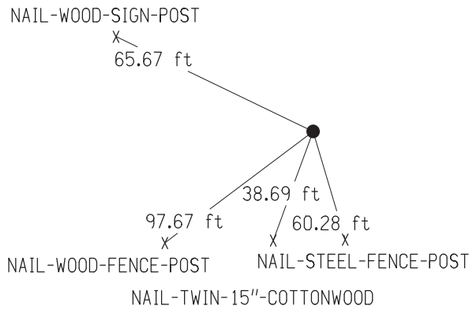
GPS 841+51.48, 63.59 RT
POINT # G020
FD-REBAR---7"DEEP
XC=2168139.770, YC=620066.830



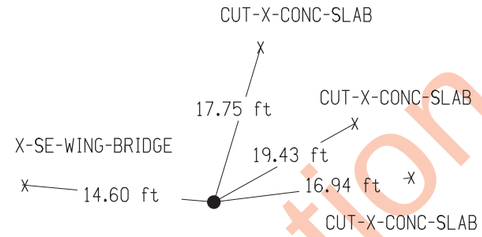
CP 850+37.65, 162.30 RT
POINT # 81
SET-IRON-PIN---4"DEEP
XC=2169021.930, YC=619887.959



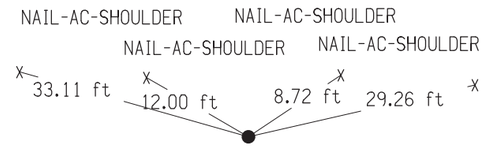
CP 860+12.24, 119.66 RT
POINT # 82
SET-IRON-PIN---6"DEEP
XC=2170006.079, YC=619919.014



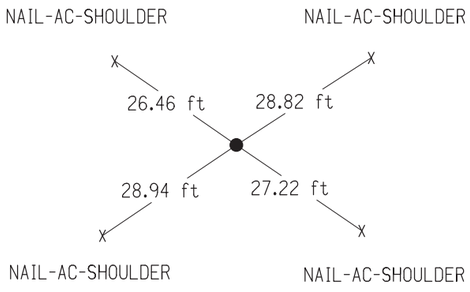
GPS 872+79.25, 69.39 RT
POINT # G021
FD-REBAR-8"DEEP
XC=2171272.370, YC=619984.900



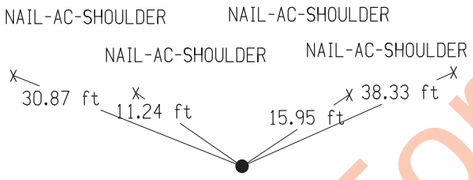
CP 884+13.63, 63.09 RT
POINT # 83
SET-IRON-PIN---7"DEEP
XC=2172406.582, YC=620005.198



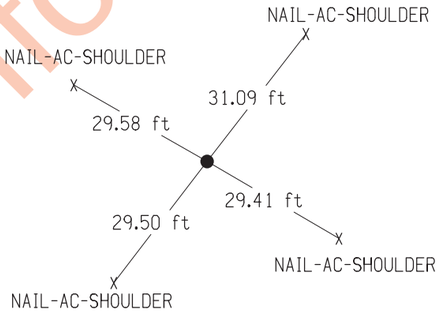
POST 889+89.37
POINT # 44
FD-REBAR---6"DEEP
XC=2172981.506, YC=620075.383



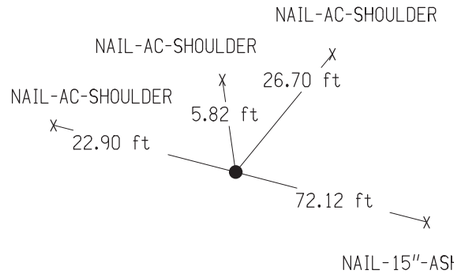
PI 895+41.62
POINT # 111
SET-HINGE-NAIL
XC=2173533.713, YC=620082.195



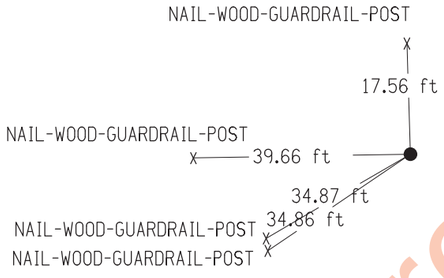
POT 900+92.24
POINT # 43
FD-IRON-PIN---4"DEEP
XC=2174076.154, YC=620194.995



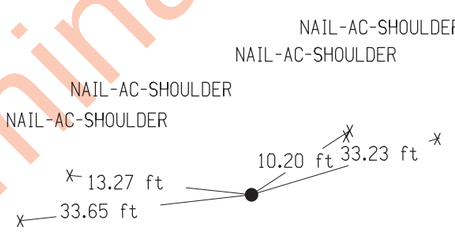
GPS 910+12.51, 63.26RT
POINT # G022
FD-REBAR-6"-DEEP
XC=2174990.030, YC=620320.420



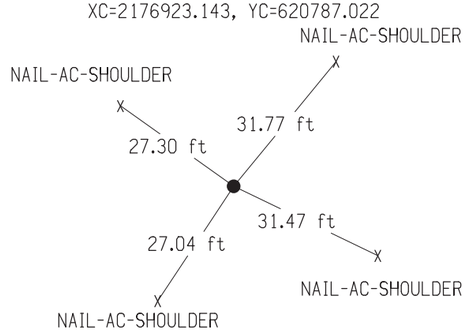
CP 917+95.14, 127.06 LT
POINT # 84
SET-IRON-PIN---4"DEEP
XC=2175717.520, YC=620666.093



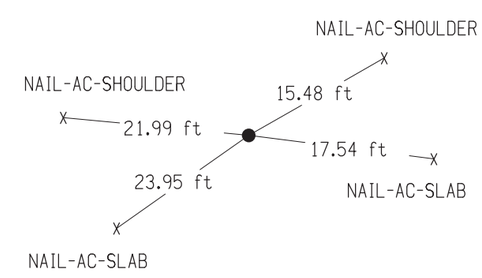
CP 925+15.16, 61.69 RT
POINT # 85
SET-IRON-PIN---4"DEEP
XC=2176460.891, YC=620627.886



PC 930+00.13
POINT # 103
SET-IRON-PIN---8"DEEP
XC=2176923.143, YC=620787.022



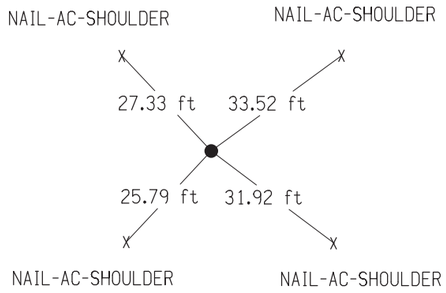
GPS 932+86.52, 63.74 RT
POINT # G023
FD-REBAR-6"-DEEP
XC=2177214.720, YC=620775.320



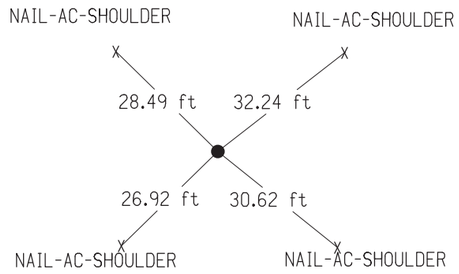
FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.9

8:11:53 AM 8/20/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_G01.sht

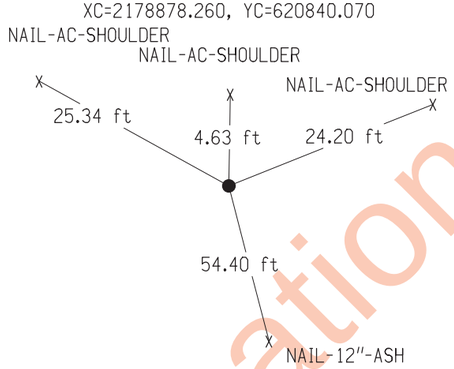
PT 942+21.91
POINT # 105
SET-IRON-PIN---6"DEEP
XC=2178136.704, YC=620906.832



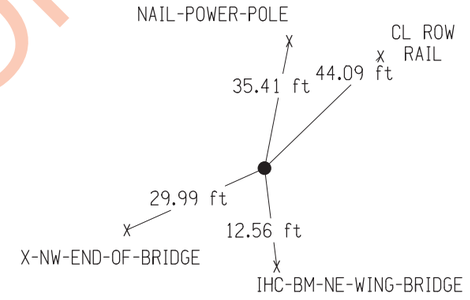
POT 942+23.53
POINT # 42
FD-REBAR-3"-DEEP
XC=2178138.331, YC=620906.818



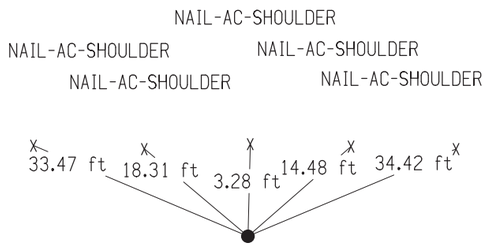
GPS 949+63.99, 60.67 RT
POINT # G024
FD-REBAR-8"-DEEP
XC=2178878.260, YC=620840.070



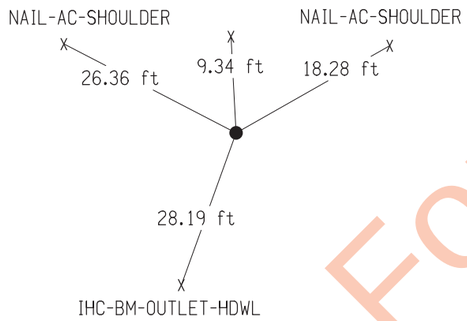
CP 960+42.86, 122.56 LT
POINT # 86
SET-IRON-PIN---6"DEEP
XC=2179958.600, YC=621014.436



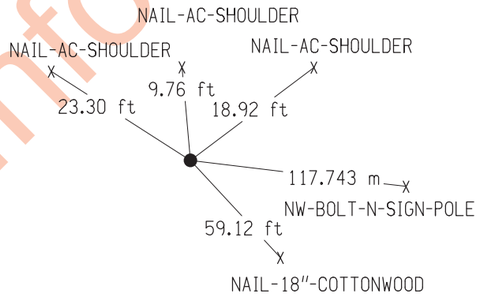
CP 966+18.31, 60.60 RT
POINT # 87
SET-IRON-PIN---5"DEEP
XC=2180532.527, YC=620826.554



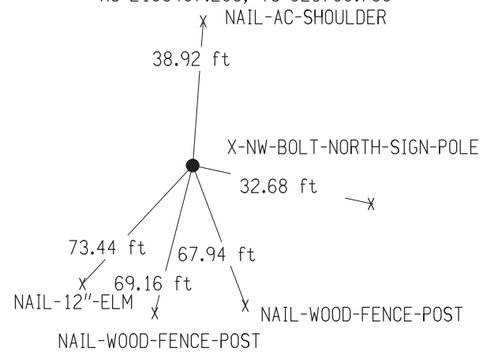
CP 977+54.38, 66.74 RT
POINT # 88
SET-IRON-PIN---5"DEEP
XC=2181668.512, YC=620811.082



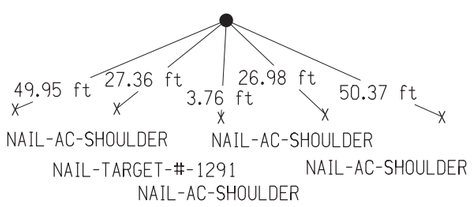
GPS 986+64.53, 67.25 RT
POINT # G025
FD-REBAR-6"-DEEP
XC=2182578.630, YC=620803.100



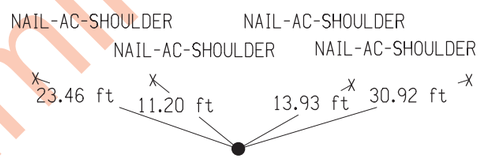
CP 995+73.44, 97.14 RT
POINT # 89
SET-IRON-PIN---6"DEEP
XC=2183487.263, YC=620765.738



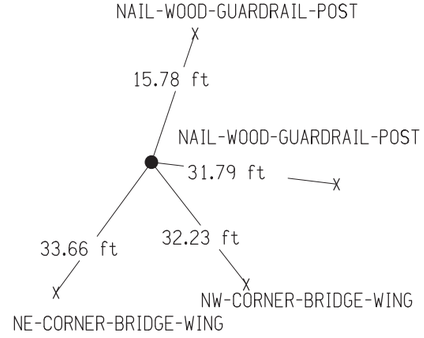
CP 1011+08.02, 62.78 LT
POINT # 90
SET-IRON-PIN---6"DEEP
XC=2185023.099, YC=620913.049



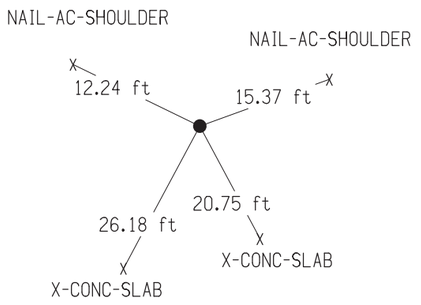
GPS 1018+29.48, 64.44 RT
POINT # G026
FD-REBAR---8"DEEP
XC=2185743.490, YC=620779.910



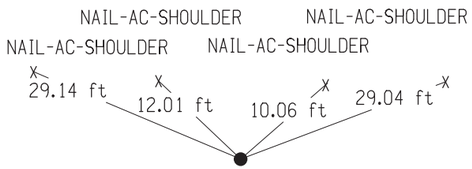
CP 1029+52.64, 134.67 LT
POINT # 91
SET-IRON-PIN---5"DEEP
XC=2186868.254, YC=620969.789



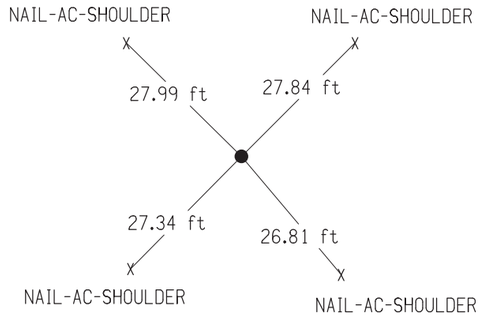
CP 1039+73.96, 62.62 RT
POINT # 92
SET-IRON-PIN---5"DEEP
XC=2187887.913, YC=620764.114



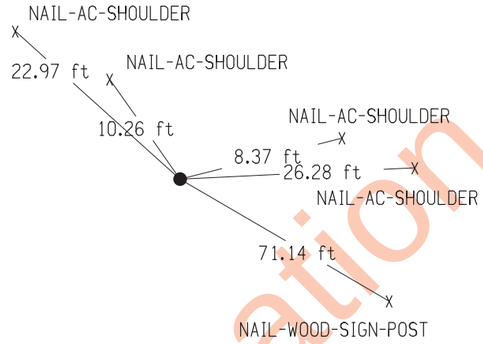
GPS 1049+99.14, 64.43 RT
POINT # G027
FD-REBAR---8"DEEP
XC=2188913.050, YC=620753.890



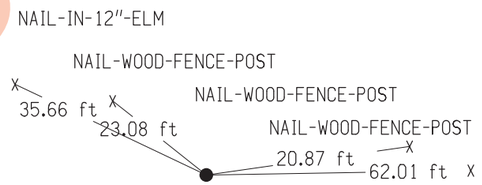
POST 1054+10.67
POINT # 93
FD-REBAR---6"DEEP
XC=2189325.090, YC=620814.936



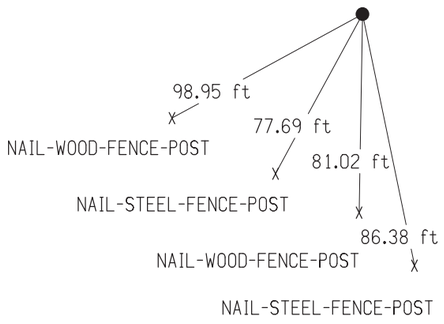
GPS 1065+84.20, 61.90 RT
POINT # G028
FD-REBAR---8"DEEP
XC=2190476.310, YC=620625.020



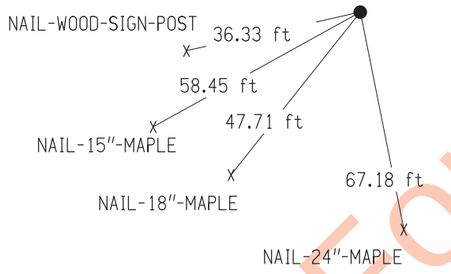
PI 1066+45.52
POINT # 100
SET-IRON-PIN---5"DEEP
XC=2190559.895, YC=620804.794



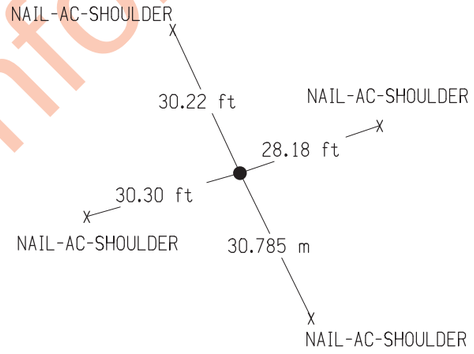
CP 1071+34.39, 61.20 RT
POINT # 94
SET-IRON-PIN---6"DEEP
XC=2191002.120, YC=620485.238



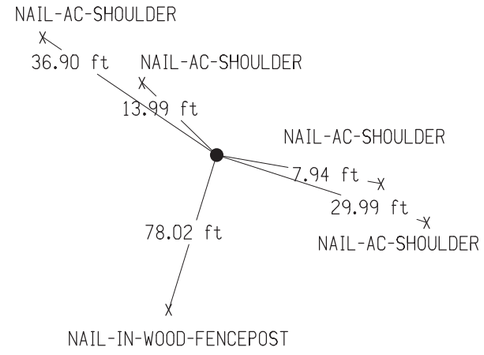
GPS 1076+49.17, 61.80 RT
POINT # G029
FD-REBAR---8"DEEP
XC=2191479.420, YC=620308.180



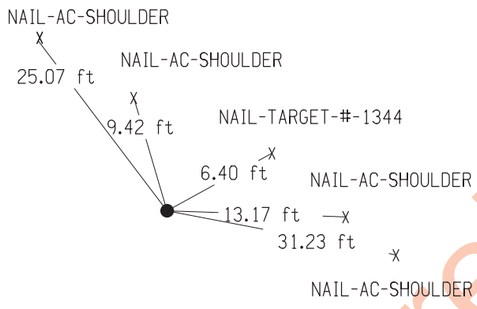
POT 1078+44.97
POINT # 41
FD-REBAR---2"DEEP
XC=2191682.508, YC=620285.996



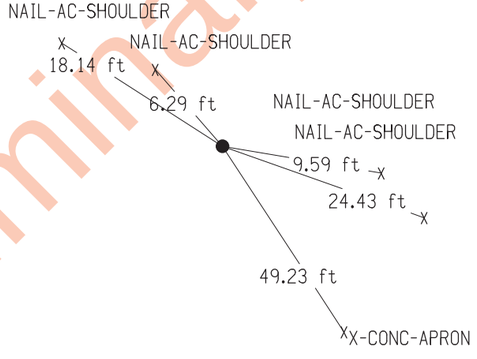
CP 1088+94.23, 61.10 RT
POINT # 95
SET-IRON-PIN---4"DEEP
XC=2192609.348, YC=619790.364



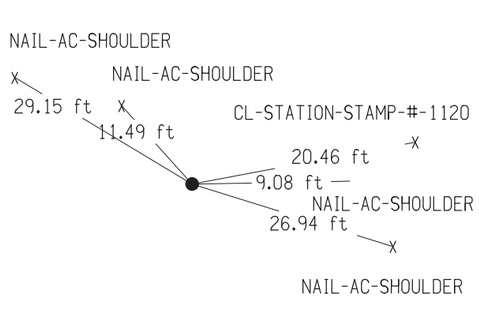
GPS 1100+29.11, 63.50 RT
POINT # G030
FD-REBAR---8"DEEP
XC=2193638.530, YC=619312.100



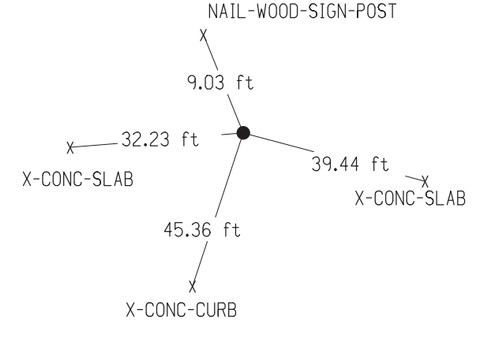
CP 1110+21.59, 60.28 RT
POINT # 96
SET-IRON-PIN---5"DEEP
XC=2194540.809, YC=618898.673



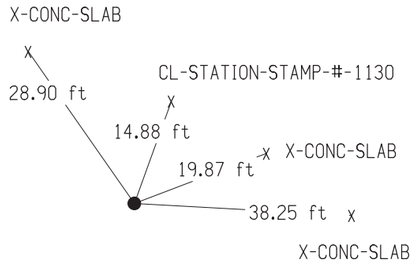
CP 1121+55.38, 61.23 RT
POINT # 97
SET-IRON-PIN---6"DEEP
XC=2195569.617, YC=618422.175



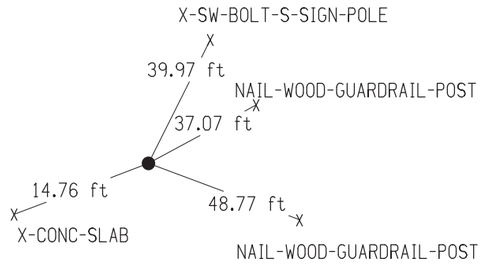
POT 1127+45.33
POINT # 61
FD-REBAR---17"DEEP
XC=2150301.567, YC=619456.592



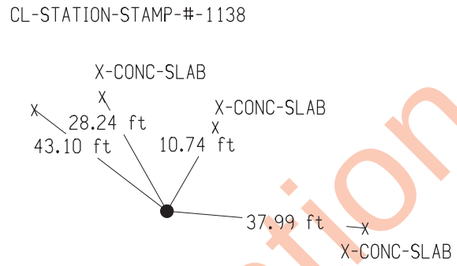
GPS 1131+73.12, 64.73 RT
POINT # G031
FD-REBAR---9"DEEP
XC=2196492.000, YC=617992.060



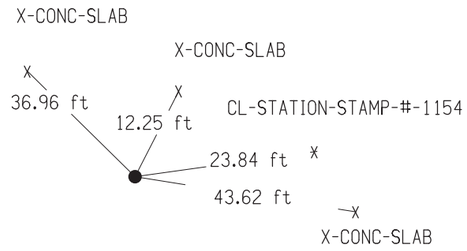
CP 1138+11.57, 16.44 LT
POINT # 62
SET-IRON-PIN---6"DEEP
XC=2149856.717, YC=620425.741



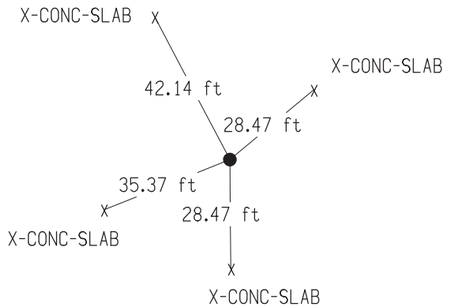
CP 1140+14.50, 61.20 RT
POINT # 98
SET-IRON-PIN---6"DEEP
XC=2197257.252, YC=617642.293



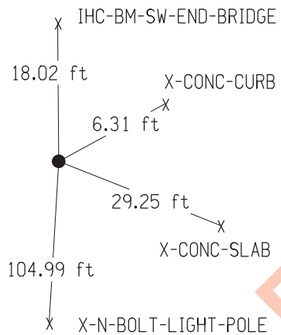
GPS 1155+51.73, 62.61 RT
POINT # G032
FD-REBAR---6"DEEP
XC=2198652.080, YC=616996.140



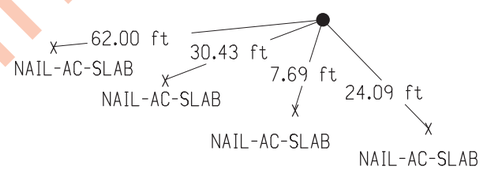
POT 1155+97.06
POINT # 39
FD-IRON-PIN---4"DEEP
XC=2198719.495, YC=617033.962



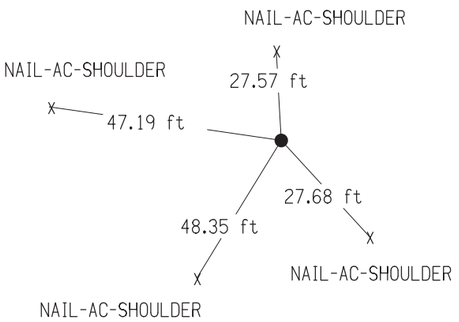
CP 1161+94.29, 100.45 LT
POINT # 63
SET-IRON-PIN---5"DEEP
XC=2148819.348, YC=622572.435



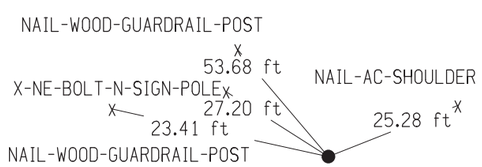
CP 1167+66.68, 471.49 RT
POINT # 66
SET-IRON-PIN---5"DEEP
XC=2149112.026, YC=623326.805



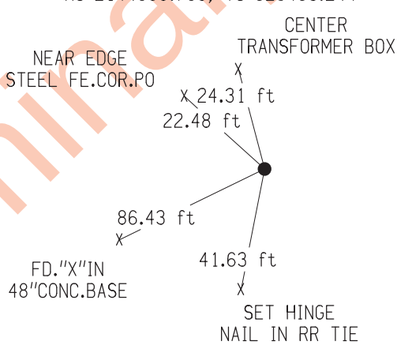
CP 1180+19.46, 15.10 RT
POINT # 65
SET-IRON-PIN---6"DEEP
XC=2148189.359, YC=624289.321



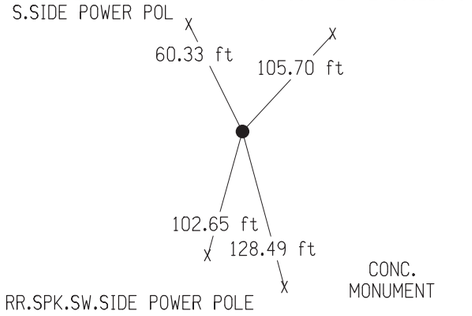
TS 1183+81.20
POINT # 48
FD-ROW-RAIL---12"DEEP
XC=2148029.718, YC=624614.281



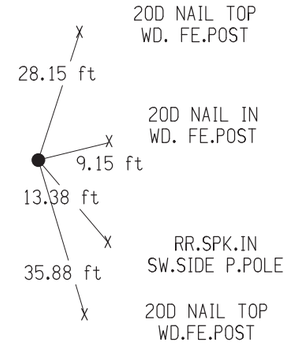
CP STA
CP,SET IRON PIN 0.4' DEEP
CP NO. 368
XC=2149688.768, YC=625463.294



CP STA
CP,SET IRON PIN 0.5' DEEP
CP NO. 367
XC=2149842.545, YC=625965.820

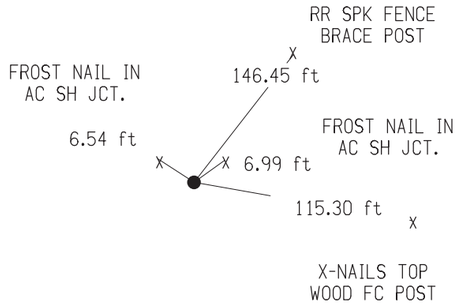


CP STA
CP,SET IRON PIN 0.6' DEEP
CP NO. 359
XC=2149158.353, YC=619695.551



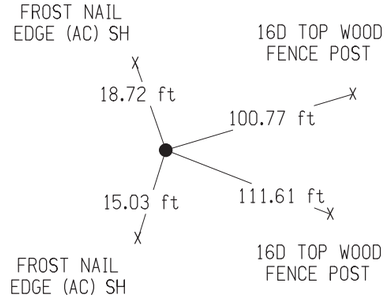
CP STA1138819.46 69.52 RT

CP POINT 328
SET IRON PIN
XC=2147370.319, YC=645001.916



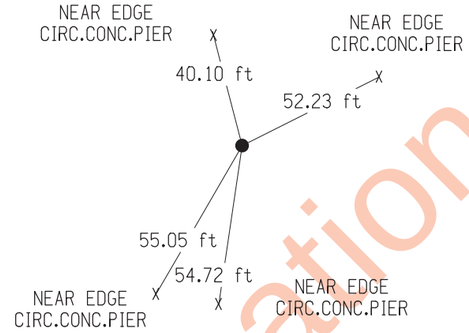
GPS STA

GPS POINT G051
FD RE-BAR
XC=2147352.230, YC=646825.440



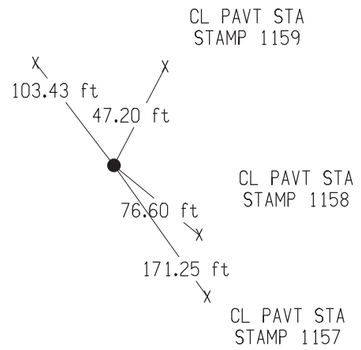
PI STA

PI,FD.HINGE NAIL
PI NO. 203
XC=2147685.529, YC=626785.566



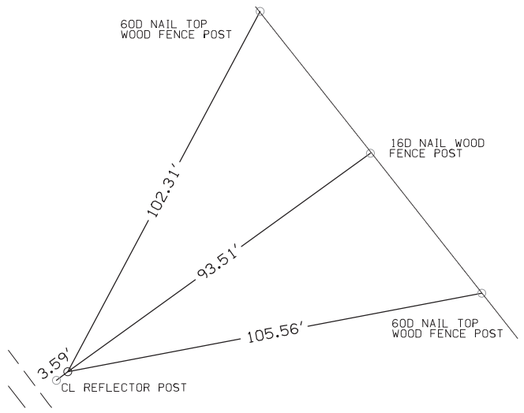
GPS STA1158+67.81 18.37RT

GPS POINT G040
FD REBAR 6" DEEP
XC=2149059.690, YC=622321.550



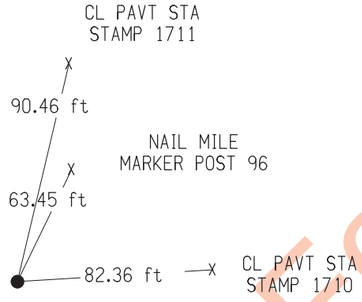
CP STA.11107+07.24, 75.97' RT

CP NO. G038, FD 5/8" RE-ROD
N=617721.960, E=2151337.400



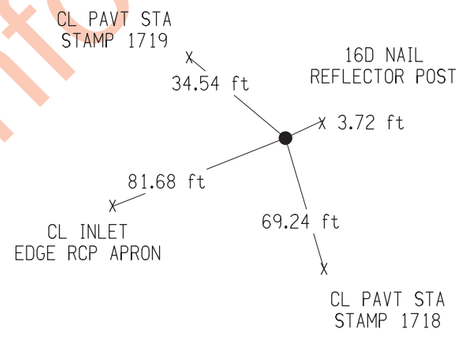
PI STA11109+54.89 125.04L

PI POINT 117
FOUND REBAR (OLD P.I.)
XC=2151037.868, YC=617786.796



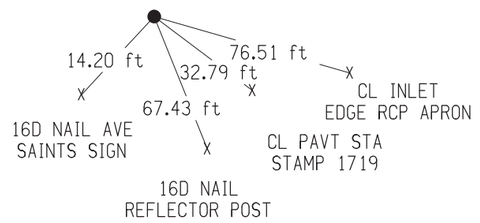
CP STA11117+61.69 67.32RT

CP POINT 362
SET IRON PIN
XC=2150768.562, YC=618592.409



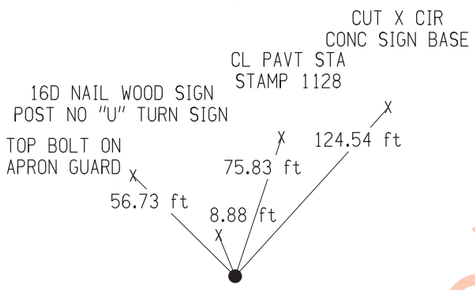
CP STA11118+23.46 68.31LT

CP POINT 361
SET IRON PIN
XC=2150619.686, YC=618585.593



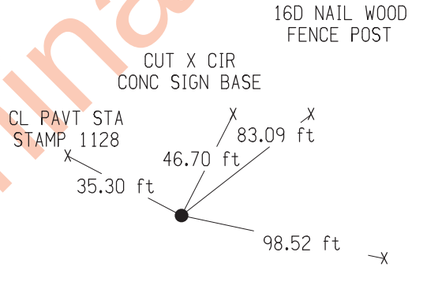
PI STA 11127+45.33

PI POINT 61
FOUND REBAR
XC=2150301.567, YC=619456.592



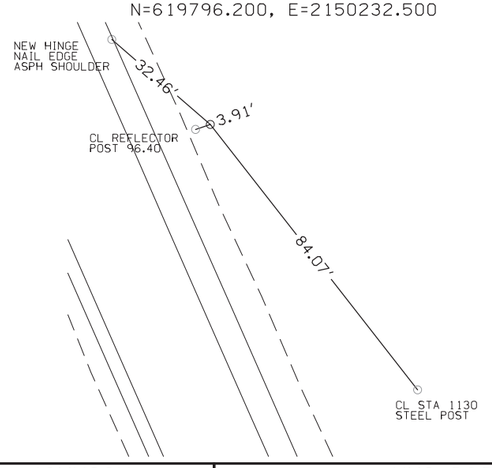
CP STA11127+71.82 75.24RT

CP POINT 363
SET IRON PIN
XC=2150359.742, YC=619511.171



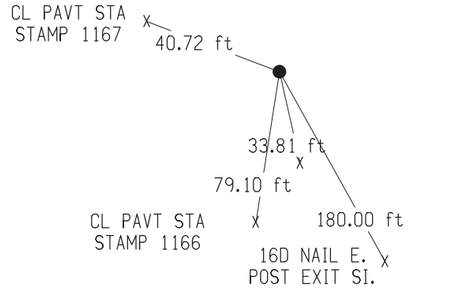
CP STA.11130+83.96, 73.48' RT

CP NO. G039, FD 5/8" RE-ROD
N=619796.200, E=2150232.500



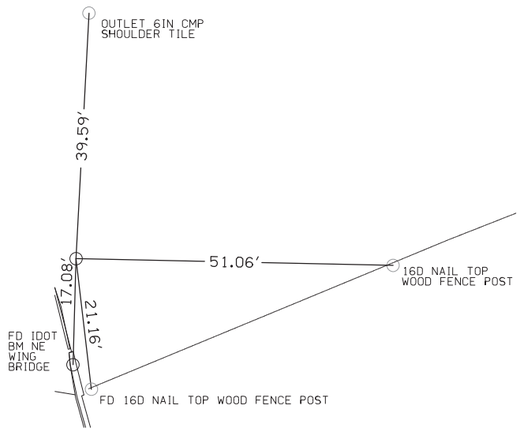
GPS STA11166+73.04 83.17R

GPS POINT G041
FOUND REBAR 4" DEEP
XC=2148794.400, YC=623084.580

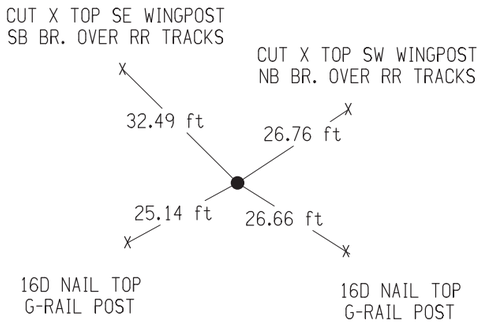


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.13

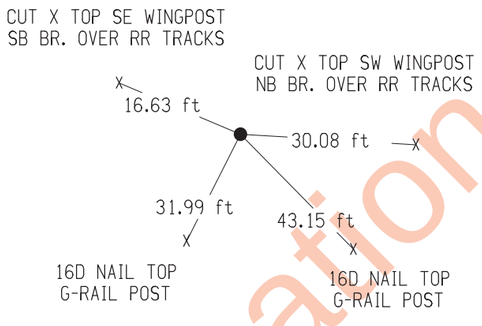
CP STA.11189+80.71, 69.65′ RT
CP NO. G042, FD 5/8″ RE-ROD
N=625195.400, E=2147894.800



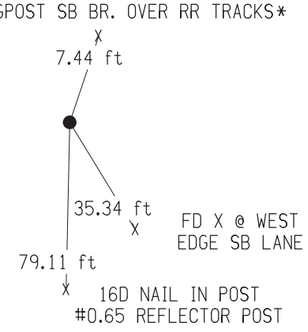
POST STA 11198+25.80
POST POINT 119
42″ DEEP (OLD ST)
XC=2147720.353, YC=626013.868



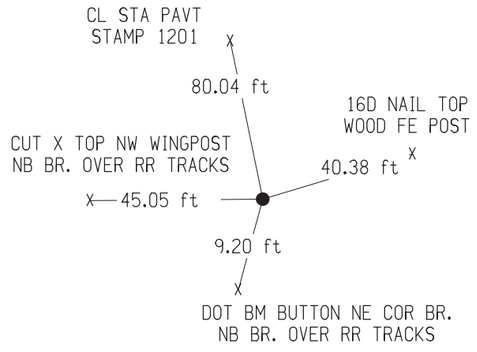
CP STA11198+42.48 7.38LT.
CP POINT 310
SET IRON PIN
XC=2147712.647, YC=626030.407



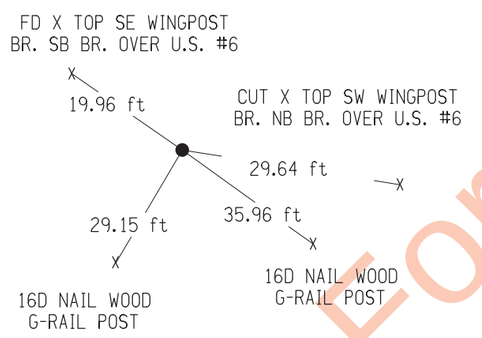
CP STA11198+50.88 67.60LT
CP POINT 311
SET IRON PIN
XC=2147652.273, YC=626037.618
DOT BM BUTTON SW
WINGPOST SB BR. OVER RR TRACKS*



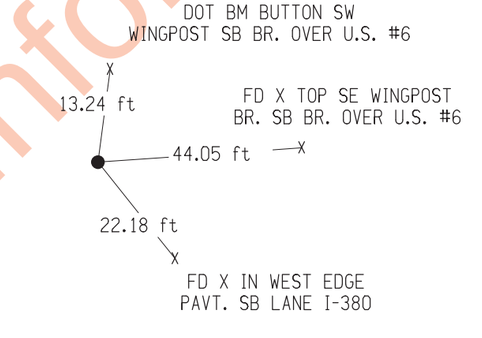
CP STA11200+20.55 67.59RT
CP POINT 312
SET IRON PIN
XC=2147784.094, YC=626209.915



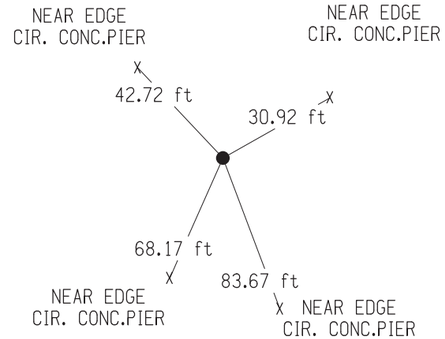
CP STA11204+52.93 6.70LT.
CP POINT 313
SET IRON PIN
XC=2147701.314, YC=626640.752



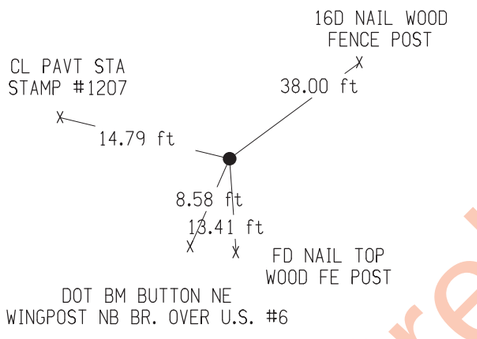
CP STA11204+62.26 66.96LT
CP POINT 314
SET IRON PIN
XC=2147640.880, YC=626648.888
DOT BM BUTTON SW
WINGPOST SB BR. OVER U.S. #6



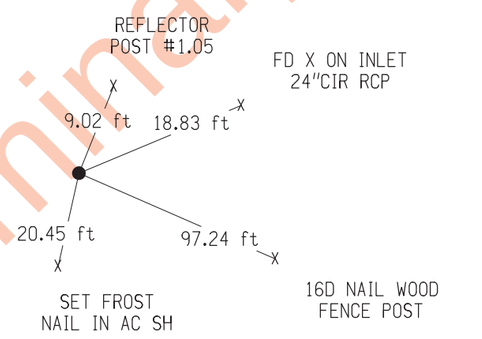
CP STA 11206+05.7,0.355RT
CP,SET IRON PIN 0.4′DEEP
CP NO. 365
XC=2147705.357, YC=626793.642



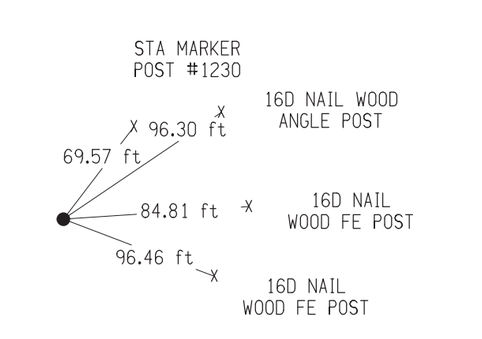
CP STA11206+96.97 67.11RT
CP POINT 315
SET IRON PIN
XC=2147770.306, YC=626886.194



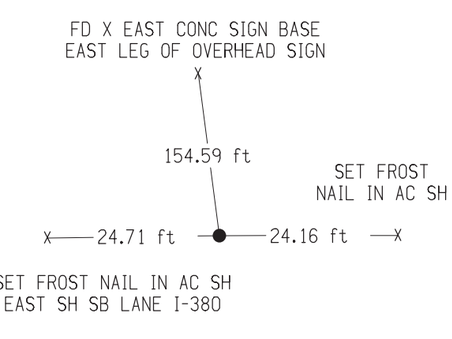
CP STA11218+91.13 67.56RT
CP POINT 316
SET IRON PIN
XC=2147747.250, YC=628080.126



GPS STA11229+46.68 69.07R
GPS POINT G043
FD REBAR
XC=2147727.980, YC=629135.510

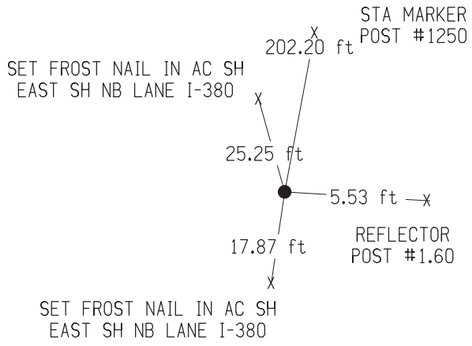


CP STA11233+46.29
CP POINT 120
FOUND REBAR
XC=2147650.826, YC=629533.678



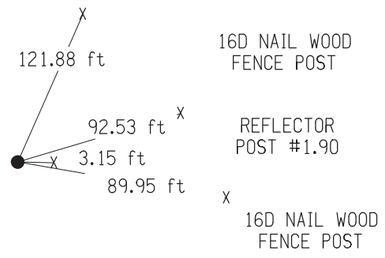
CP STA11248+00.08 66.09RT

CP POINT 319
SET IRON PIN
XC=2147688.519, YC=630988.491



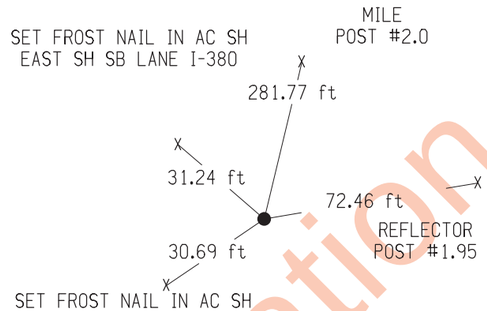
GPS STA11263+84.92 68.10R

GPS POINT G044
FD REBAR
XC=2147659.340, YC=632573.060



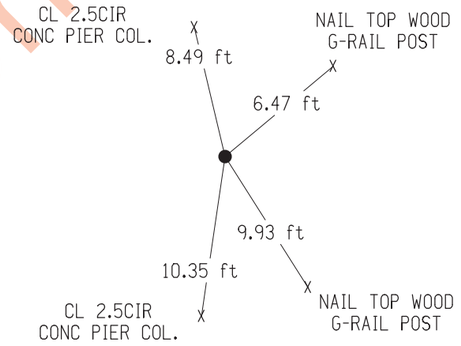
POT STA 11266+42.81

POT POINT 126
FD REBAR
XC=2147586.174, YC=632829.561



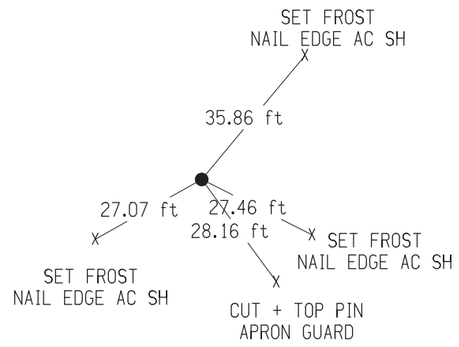
CP STA11271+13.17 3.91RT.

CP POINT 320
SET IRON PIN
XC=2147578.713, YC=633299.901



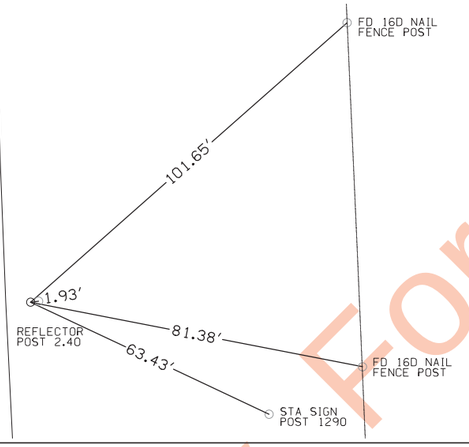
POT STA 11274+97.73

POT POINT 131
FD REBAR
XC=2147560.834, YC=633684.089



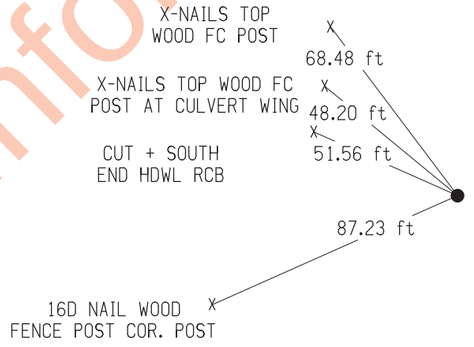
CP STA. 11290+26.94, 70.00' RT

CP NO. G045, FD 5/8" RE-ROD
N=635214.890, E=2147566.840



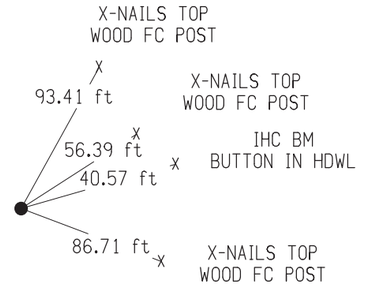
CP STA11302+79.45 66.70LT

CP POINT 321
SET IRON PIN
XC=2147377.746, YC=636460.574



CP STA11303+63.40 66.41RT

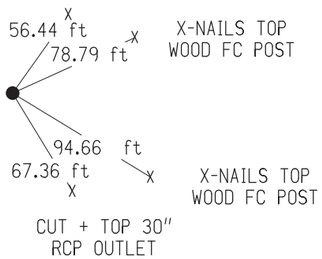
CP POINT 322
SET IRON PIN
XC=2147507.233, YC=636550.025



CP STA11319+54.64 65.97RT

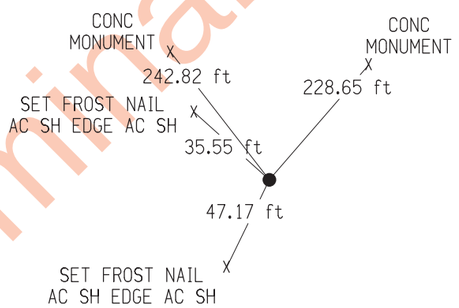
CP POINT 323
SET IRON PIN
XC=2147440.180, YC=638139.847

+ CUT WEST LEG SIGN
BASE CONC SIGN BASE



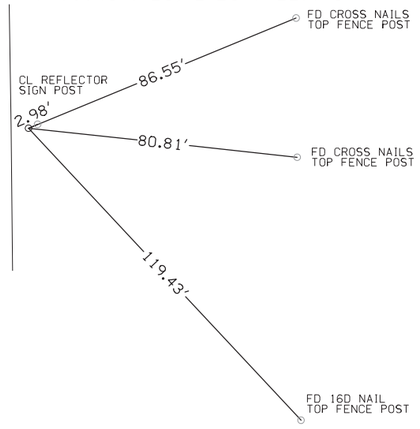
PI STA 11324+10.95

PI POINT 133
FD REBAR
XC=2147355.166, YC=638593.002



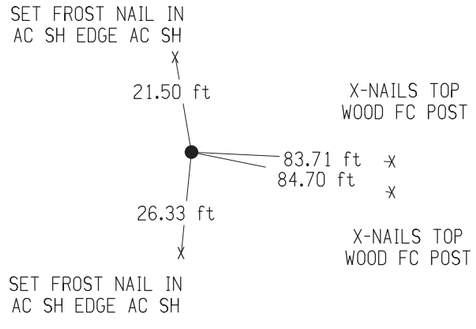
CP STA. 11327+21.80, 69.80' RT

CP NO. G046, FD 5/8" RE-ROD
N=638904.720, E=2147422.440



CP STA11335+13.07 66.44RT

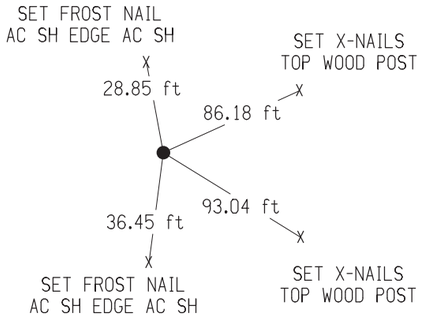
CP POINT 324
SET IRON PIN
XC=2147412.252, YC=639695.711



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.15

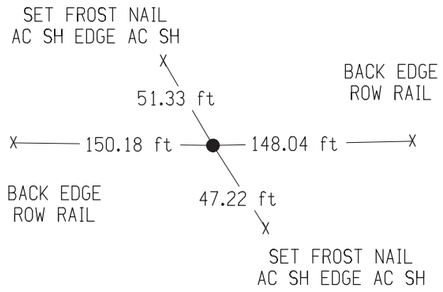
CP STA11348+34.75 67.93RT

CP POINT 325
SET IRON PIN
XC=2147402.529, YC=641017.354



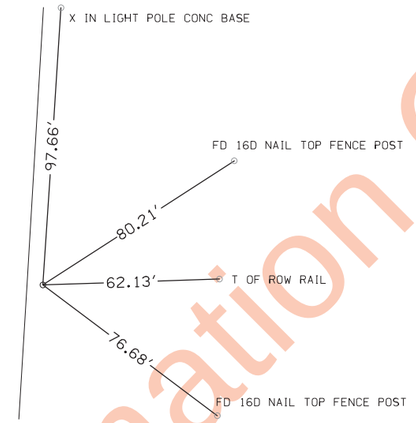
CP STA11350+68.00

CP POINT 134
FD REBAR/HIGH PIN OF 2 FD
XC=2147332.596, YC=641250.020



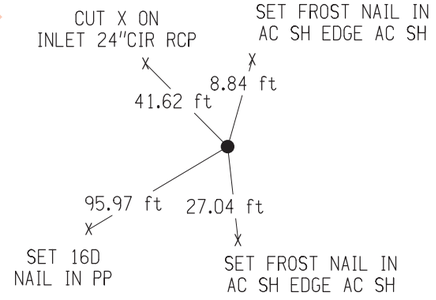
CP STA. 11359+98.30, 79.57' RT

CP NO. G047, FD 5/8" RE-ROD
N=642180.970, E=2147404.300



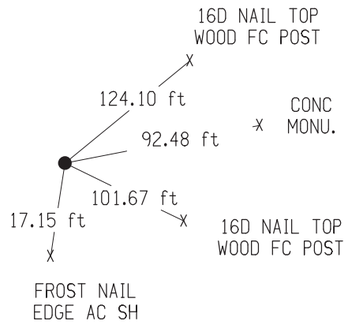
CP STA11376+37.76 66.54LT

CP POINT 326
SET IRON PIN
XC=2147244.286, YC=643819.129



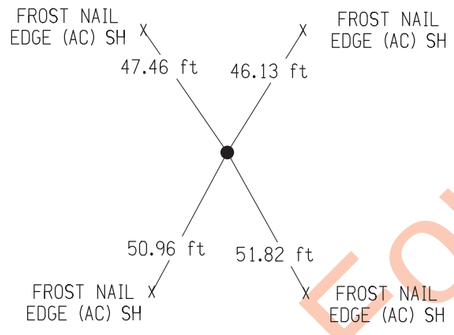
CP STA11401+12.35 66.02RT

CP POINT 329
SET IRON PIN
XC=2147355.848, YC=646294.755



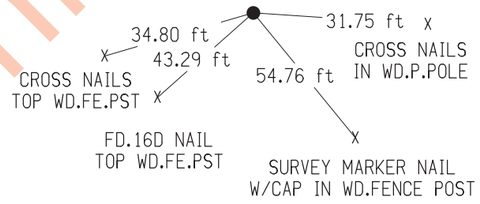
CP STA 11404+97.20

CP POINT 136
H0411001.ALI
XC=2147286.571, YC=646679.028



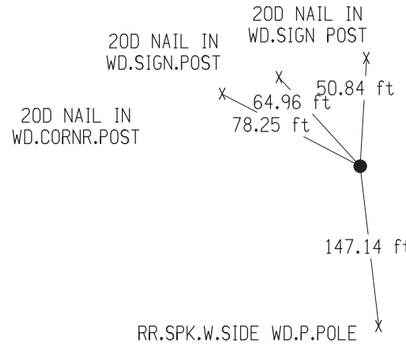
PI STA.20576+03.82

PI,FD.IRON PIN 1.1' DEEP
PI NO. 161,SCR NO. 161
XC=2149125.621, YC=620087.690



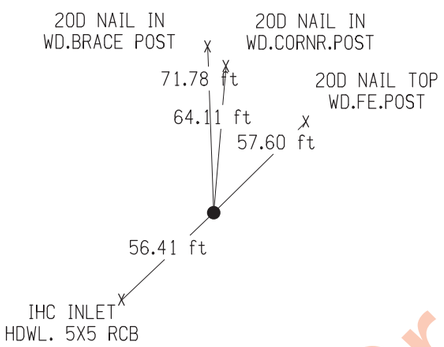
CP STA.20580+19.75,17.9RT

CP,SET IRON PIN 0.6' DEEP
CP NO. 358
XC=2149132.853, YC=620503.941



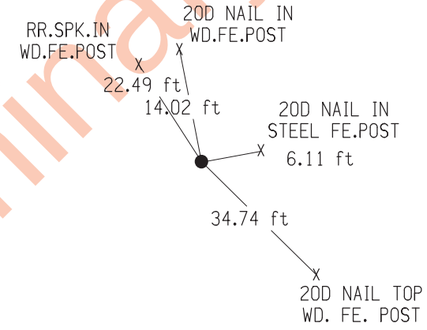
PI STA. 20589+66.53

PI,SET IRON PIN 0.5' DEEP
PI NO. 164
XC=2149090.582, YC=621449.945



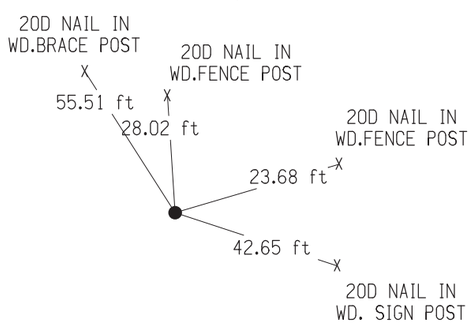
CP STA.20591+76.66,49.5RT

CP,SET IRON PIN 0.7' DEEP
CP NO. 357
XC=2149003.559, YC=621660.301



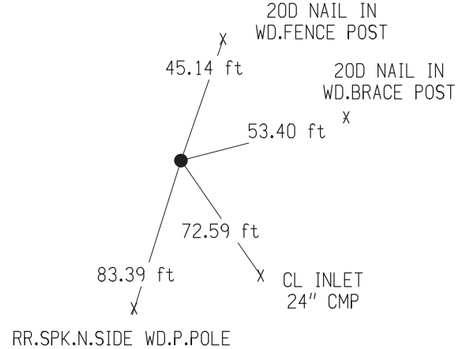
PI STA.20593+49.34

PI,SET IRON PIN 0.5' DEEP
PI NO. 165
XC=2148865.863, YC=621772.416



PI STA.20602+51.57

PI,SET IRON PIN 0.4' DEEP
PI NO. 169
XC=2148020.426, YC=622117.836



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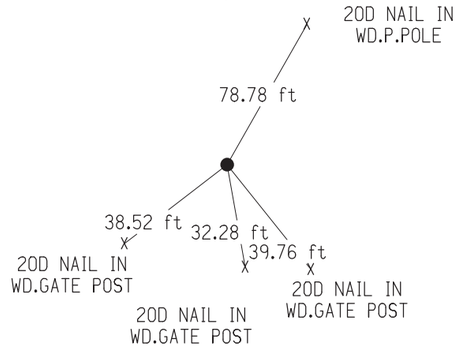
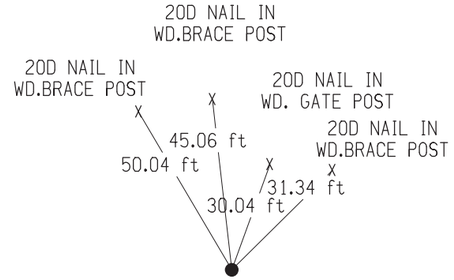
PI STA.20618+52.05

PI,SET IRON PIN 0.4' DEEP
PI NO. 175
XC=2146425.222, YC=622287.830



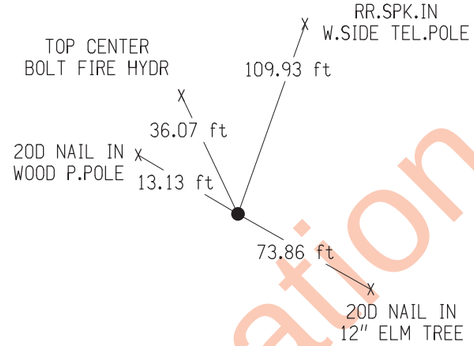
CP STA.20627+75.09

CP,SET IRON PIN 0.4' DEEP
CP NO. 178
XC=2145514.771, YC=622440.773



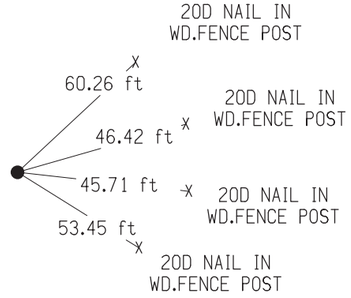
CP STA.30633+76.9,23.11LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 356
XC=2146372.147, YC=623932.054



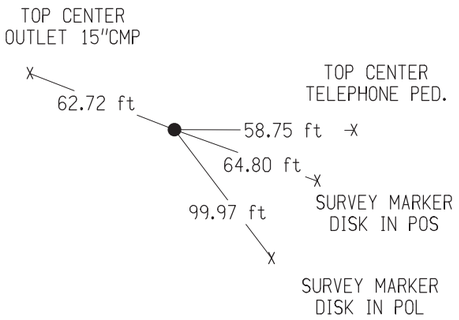
CP STA 30640+58.79,14.8RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 355
XC=2146392.195, YC=624614.693



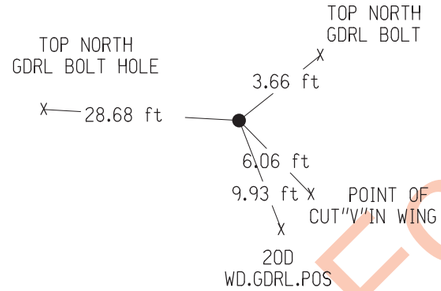
PI STA 30648+00.546

SCR,FD.5/8"REBAR .6'DEEP
PI NO. 185
XC=2146357.977, YC=625355.806



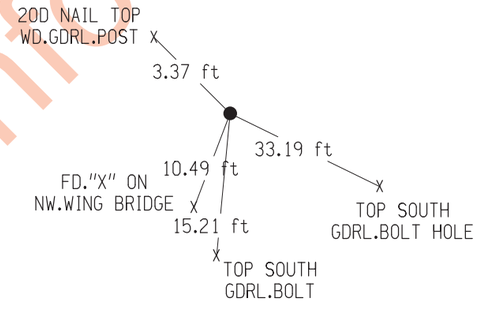
CP STA 30653+49.6,12.87RT

CP,SET IRON PIN 0.6' DEEP
CP NO 354
XC=2146361.885, YC=625905.030



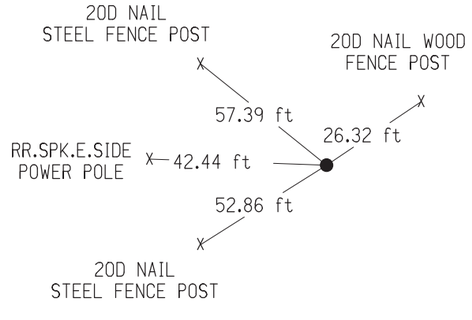
CP STA 30655+33.8,13.84RT

CP,SET IRON PIN 0.6' DEEP
CP NO. 353
XC=2146332.170, YC=626088.784



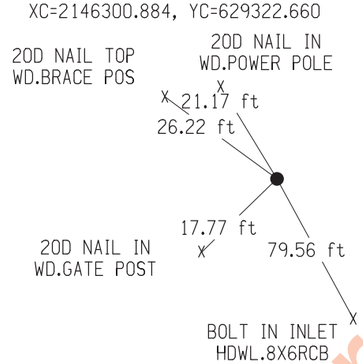
CP STA 30677+72.2,14.55RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 336
XC=2146350.445, YC=628327.347



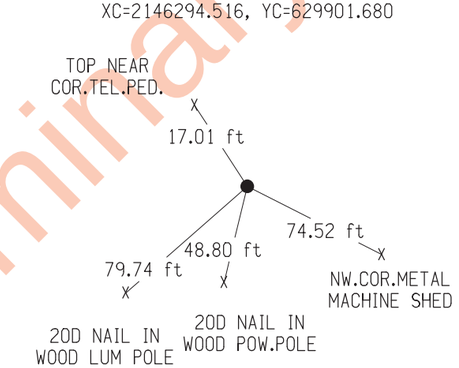
CP STA 30687+67.9,20.99LT

CP,FD.BOLT IN YELLOW CAP
CP NO. 337
XC=2146300.884, YC=629322.660



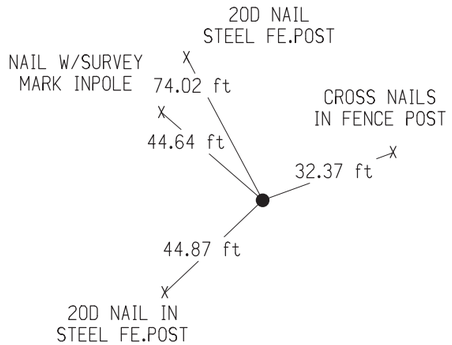
CP STA 30693+47.0,19.18LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 338
XC=2146294.516, YC=629901.680



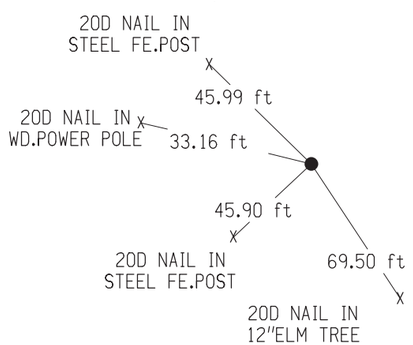
SCR,PI,STA 30700+86.417

SCR,PI,FD.CONC.MONU.1DEEP
SCR NO.211, PI NO. 222
XC=2146303.247, YC=630641.318



CP STA 30709+17.69,13.9RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 339
XC=2146303.463, YC=631472.702



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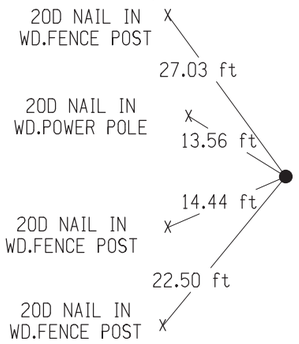
8:12:03 AM 8/20/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_G01.sht

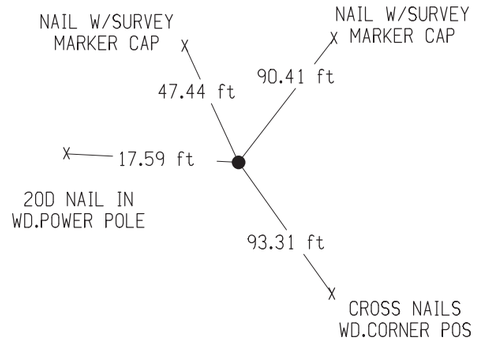
CP STA 30721+82.12,13.5LT

CP,SET IRON PIN 1.0' DEEP
CP NO. 340
XC=2146249.399, YC=632736.009



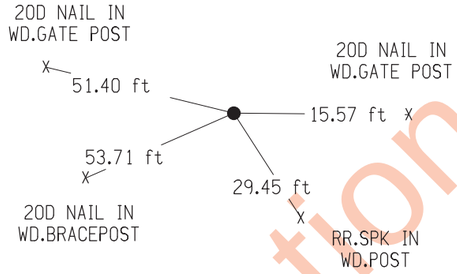
CP STA 30727+39.61,13.0LT

CP,SET IRON PIN 0.8' DEEP
CP NO. 341
XC=2146227.007, YC=633293.419



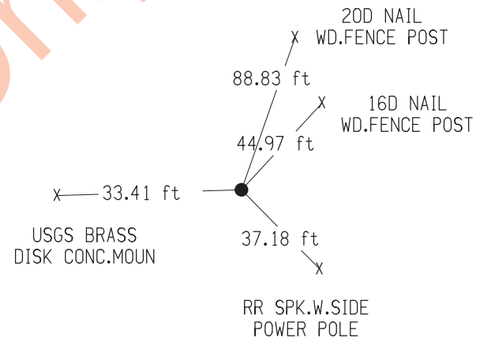
CP STA 30740+69.31,17.3RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 342
XC=2146240.250, YC=634623.400



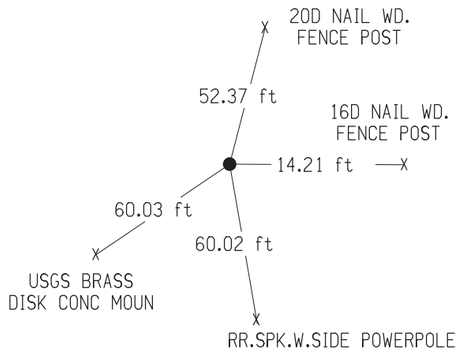
SCR STA 30753+73.552

PI,FD.5/8" REBAR
SCR,PI, NO.218
XC=2146206.162, YC=635927.312



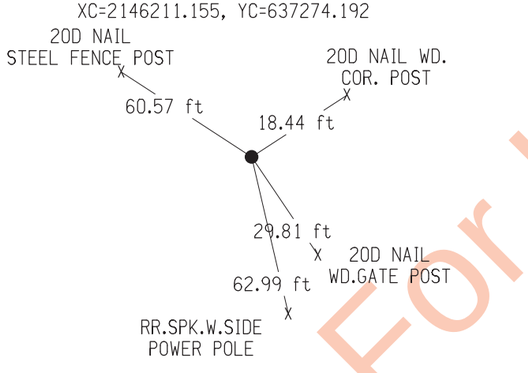
CP STA 30754+06.49,16.6RT

CP SET IRON PIN 0.6' DEEP
CP NO. 343
XC=2146222.458, YC=635960.400



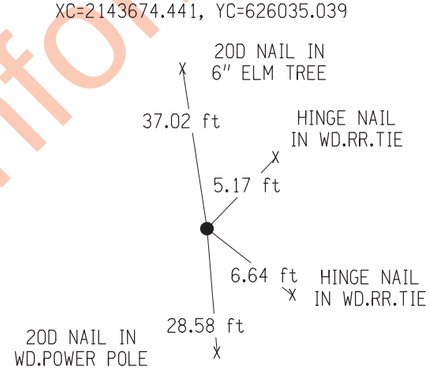
CP STA 30767+20.33,17.2RT

CP,SET IRON PIN 0.6' DEEP
CP NO. 344
XC=2146211.155, YC=637274.192



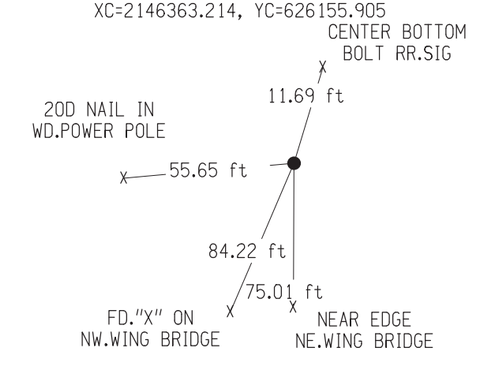
CP STA 41158+82.185

CP,SET HINGE NAIL CL RR.
CP NO. 187
XC=2143674.441, YC=626035.039



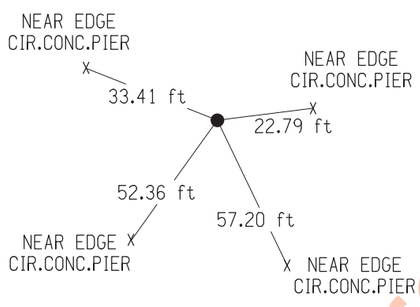
CP STA 41185+73.6,27.66RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 371
XC=2146363.214, YC=626155.905



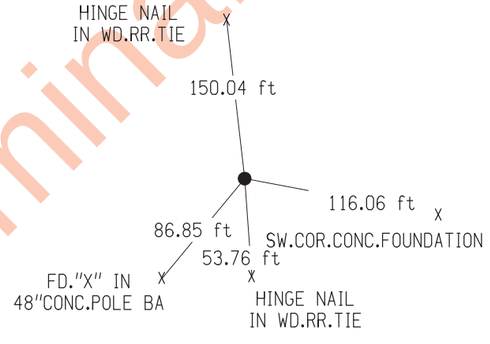
CP STA 41199+34.8,19.15LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 370
XC=2147721.817, YC=626141.182



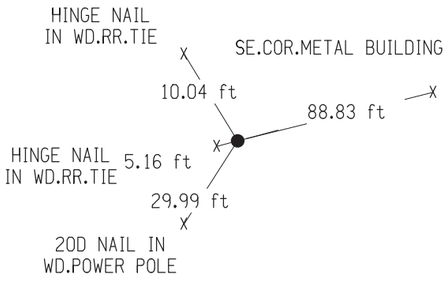
CP STA 41210+54.0,55.25LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 369
XC=2148818.137, YC=625887.760



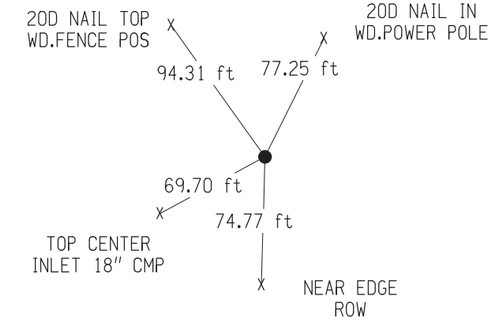
CP STA 41238+20.068

CP,SET HINGE NAIL CL RR.
CP NO. 195
XC=2151181.050, YC=624444.083



POT STA 51184+89.902

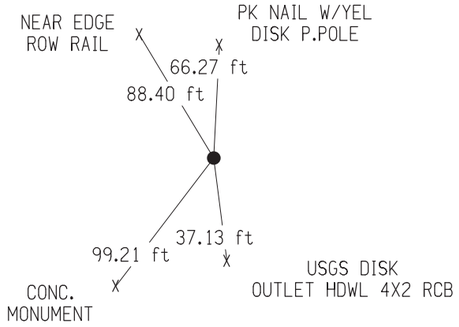
POT,SET HINGE NAIL
POT NO. 200
XC=2145627.561, YC=626994.742



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.18

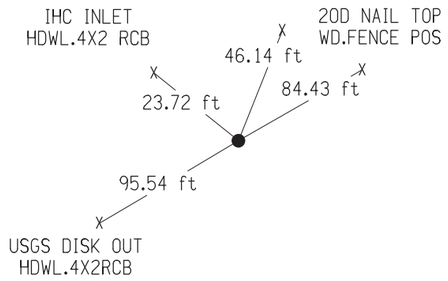
PI STA 51191+66.729

PI,FD.HINGE NAIL
PI NO. 201
XC=2146304.091, YC=626974.693



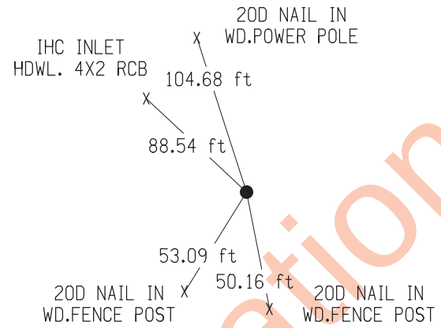
CP STA 51192+50.8,23.57LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 335
XC=2146390.750, YC=626986.615



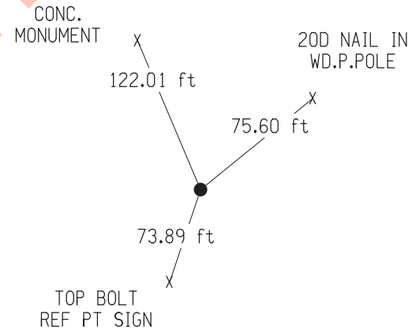
CP STA 51201+44.79,26.7RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 364
XC=2147269.652, YC=626815.535



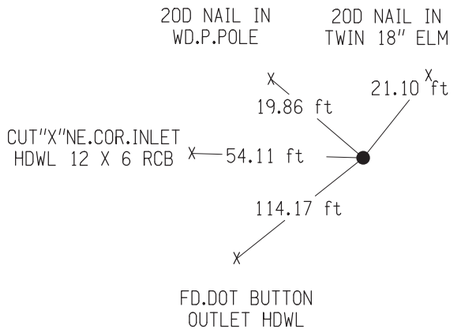
PI STA 51218+08.004

PI,FD. HINGE NAIL
PI NO. 206
XC=2148848.994, YC=626332.676



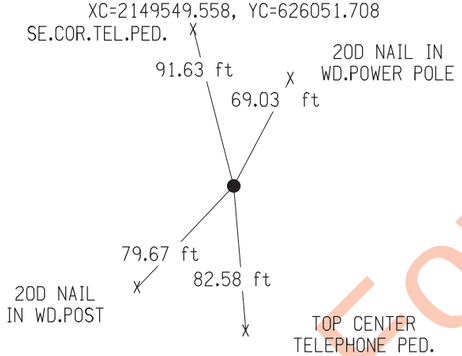
CP STA 51220+97.47,60.3LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 366
XC=2149140.092, YC=626280.871



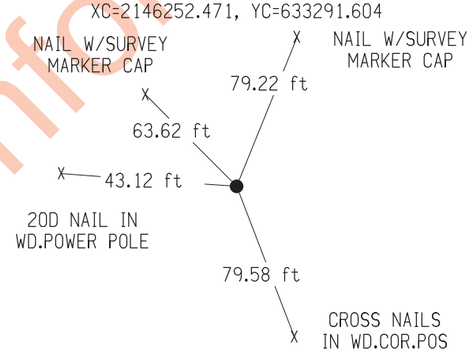
POT STA

POT,SET HINGE NAIL
POT NO. 207
XC=2149549.558, YC=626051.708



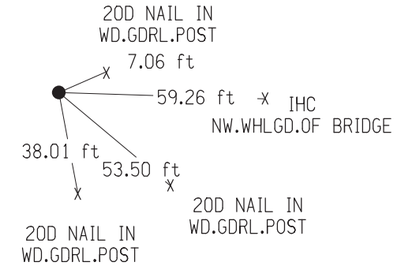
SCR STA 61257+89.762

SCR,FD.1/2"REBAR .7' DEEP
SCR NO. 215
XC=2146252.471, YC=633291.604



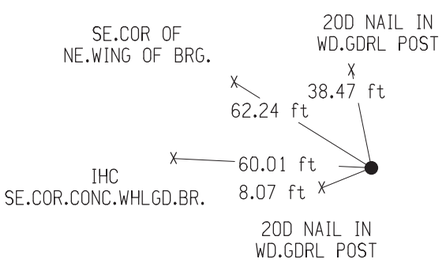
CP STA 61269+21.57,17.6LT

CP,SET IRON PIN 0.6' DEEP
CP NO. 346
XC=2147384.169, YC=633315.360



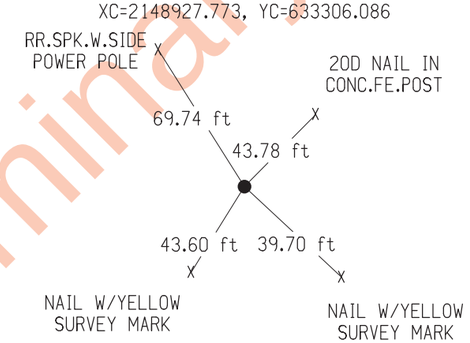
CP STA 61273+07.39,17.6RT

CP,SET IRON 0.7' DEEP
CP NO. 347
XC=2147770.169, YC=633282.244



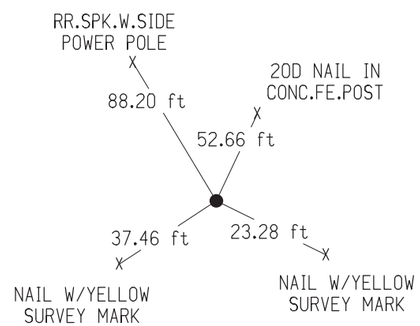
PI,SCR,STA 61284+65.103

SCR,FD.CONC.MONU.0.1'DEEP
SCR,PI, NO. 233
XC=2148927.773, YC=633306.086



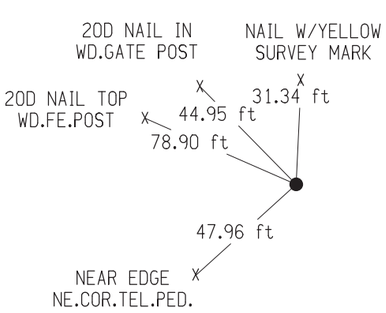
CP STA 61284+73.18,16.6RT

CP,SET IRON PIN 0.7' DEEP
CP NO. 348
XC=2148936.108, YC=633289.571



SCR,PI,STA 61311+27.232

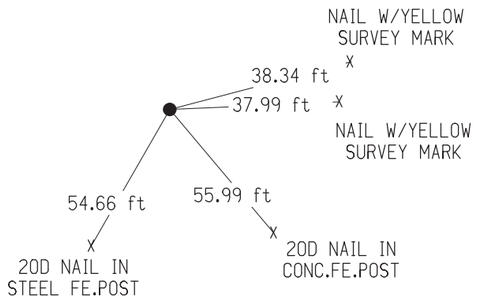
SCR,FD.5/8"REBAR 0.6'DEEP
SCR,PI, NO. 234
XC=2151589.583, YC=633347.296



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.19

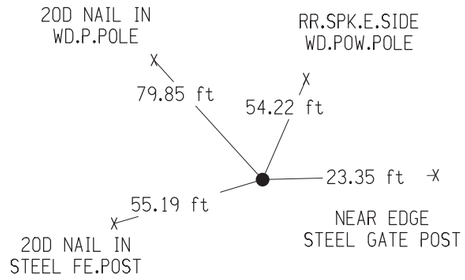
CP STA 71297+91.37,3.97LT

SCR FD.I.P.W/CAP STAMPED
#8165
XC=2148909.133, YC=634632.231



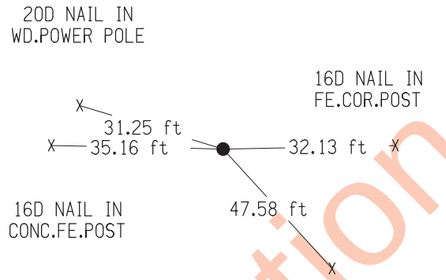
CP STA 71299+83.64,21.7RT

CP,SET IRON PIN 0.8' DEEP
CP NO. 349
XC=2148932.657, YC=634824.774



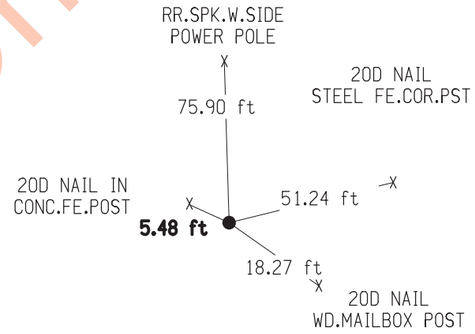
PI,SCR STA 71311+17.641

PI,SCR,FD.BRASS CAP CON.
MONU.
XC=2148890.691, YC=635958.341



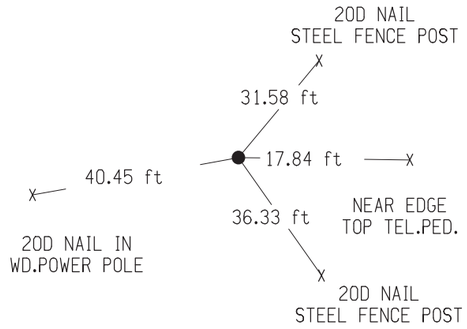
CP STA 71313+16.08,32.3LT

CP,SET IRON PIN 1.0'DEEP
CP NO. 350
XC=2148855.659, YC=636156.322



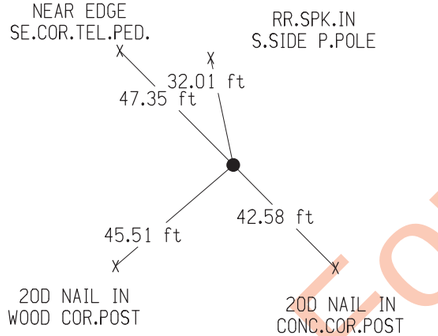
CP STA 71322+40.24,6.60RT

CP,SET IRON PIN 0.8'DEEP
CP NO. 351
XC=2148882.089, YC=637080.925



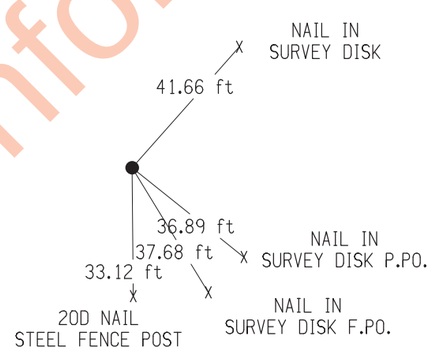
SCR,PI STA 71337+73.367

SCR,PI FD.1/2"REBAR.3DEEP
SCR,PI NO. 238
XC=2148854.737, YC=638613.824



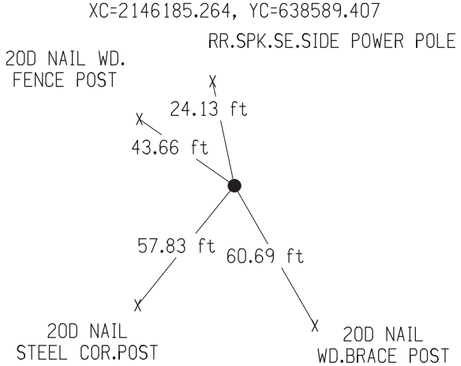
SCR,PI STA 81285+54.765

SCR,PI FD.BRASS DISK.9'DE
SCR,PI NO. 221
XC=2143502.302, YC=638571.775



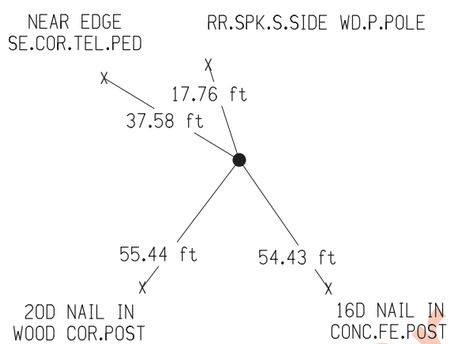
CP STA 81312+37.78,2.85LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 345
XC=2146185.264, YC=638589.407



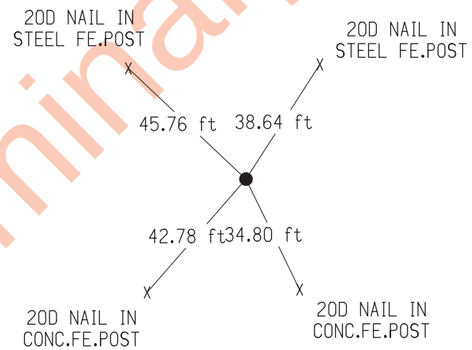
CP STA 81339+06.59,14.5LT

CP,SET IRON PIN 0.8' DEEP
CP NO. 352
XC=2148853.726, YC=638628.315



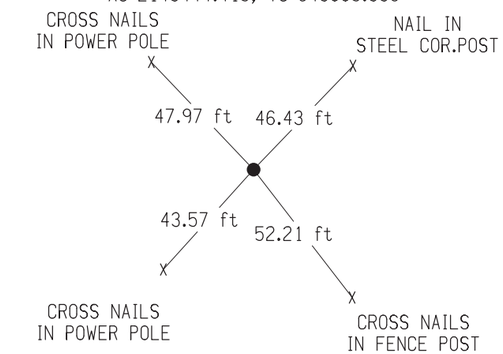
CP STA 81349+77.496

CP,SET IRON PIN 0.5' DEEP
CP NO. 239
XC=2149924.573, YC=638637.272



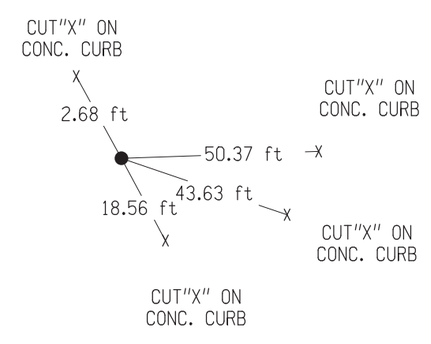
SCR STA. 91338+70.774

SCR,FOUND PIPE 0.8' DEEP
SCR NO.222
XC=2143444.415, YC=643885.336



GPS STA 91358+40.4,30.0RT

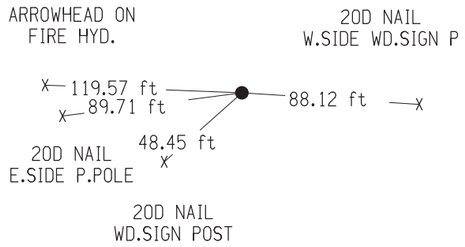
GPS,FD.REBAR 0.4' DEEP
GPS POINT G048
XC=2145414.040, YC=643875.420



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--13-52	SHEET NUMBER G.20

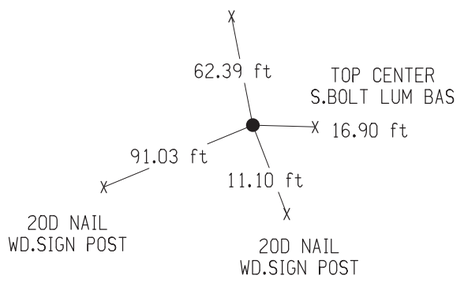
CP STA 91366+64.64,27.4RT

CP SET IRON PIN 0.5'DEEP
CP NO.330
XC=2146238.248, YC=643880.691



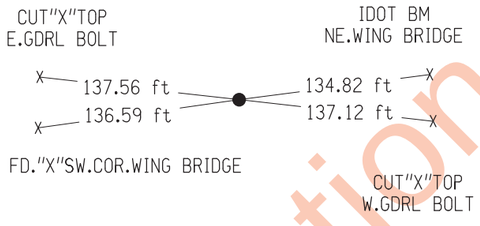
CP STA 91372+20.93,25.3RT

CP,SET IRON PIN 0.5 DEEP
CP NO.331
XC=2146794.698, YC=643887.714



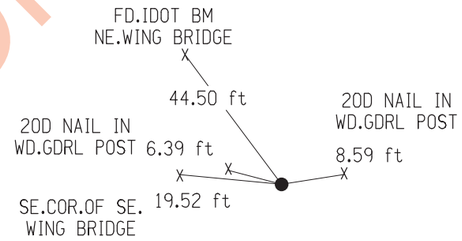
CP STA 91377+36.352,.25RT

CP,FD."X"
CP NO. 135
XC=2147309.832, YC=643918.189



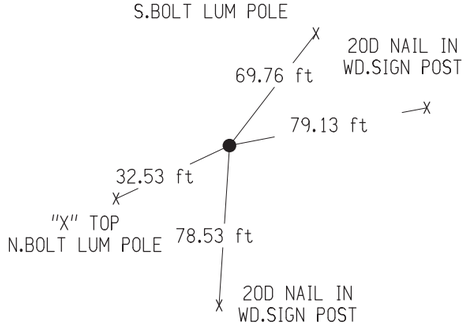
CP STA 91378+96.34,19.3RT

CP,SET IRON PIN 0.7' DEEP
CP NO. 332
XC=2147470.011, YC=643900.838



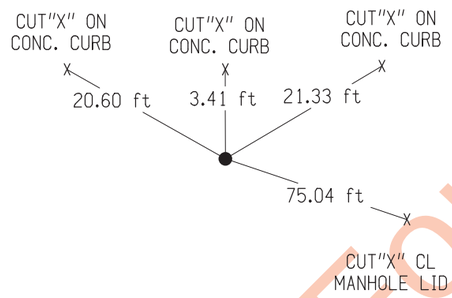
CP STA 91382+66.99,42.1LT

CP,SET IRON PIN 0.6'DEEP
CP NO. 333
XC=2147840.000, YC=643966.070
"X" TOP
S.BOLT LUM POLE



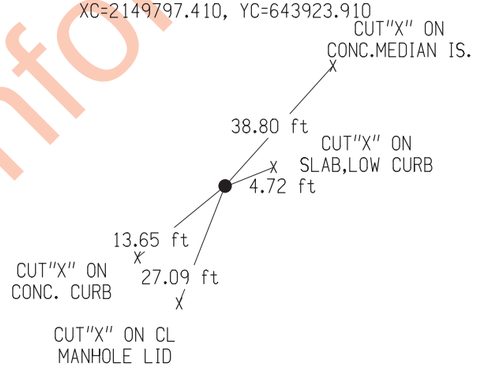
CP STA 91390+81.48,29.9RT

CP,SET IRON PIN 0.4' DEEP
CP NO. 334
XC=2148655.339, YC=643905.841



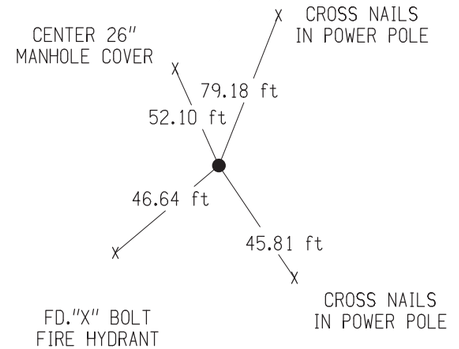
GPS STA 91402+23.8,28.0RT

GPS,FD.REBAR 0.3' DEEP
GPS POINT G050
XC=2149797.410, YC=643923.910



SCR STA 91445+18.268

SCR,FD.PK NAIL IN CONC.
SCR NO. 245
XC=2154091.106, YC=644011.067



ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
ML380																			
50000		1076+00.00	615521.14	2153512.16															
50001								1097+52.00	616974.45	2151925.03	1109+56.70	617788.01	2151036.54	1121+26.80	618890.49	2150550.92			
50002								1184+57.52	624684.08	2147998.98	1191+13.06	625284.00	2147734.72	1197+51.50	625939.42	2147721.82			
50003								1267+32.71	632919.28	2147584.41	1271+14.12	633300.61	2147576.90	1274+95.49	633681.68	2147560.94			
50004								1320+28.47	638210.69	2147371.18	1324+11.12	638593.00	2147355.17	1327+93.70	638975.64	2147351.92			
50030		1404+97.37	646679.03	2147286.57															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E	
ML380																
50001											23^44'52.8097" (RT)	1,204.6964	2,374.8003	5,729.5780	125.2796	
50002											22^38'40.6116" (RT)	655.5444	1,293.9780	3,274.0445	64.9832	
50003											1^16'16.6270" (LT)	381.4012	762.7712	34,377.4680	2.1157	
50004											1^54"47.0621" (RT)	382.6501	765.2291	22,918.3120	3.1942	

108-25
10-21-14

511 TRAVEL RESTRICTIONS

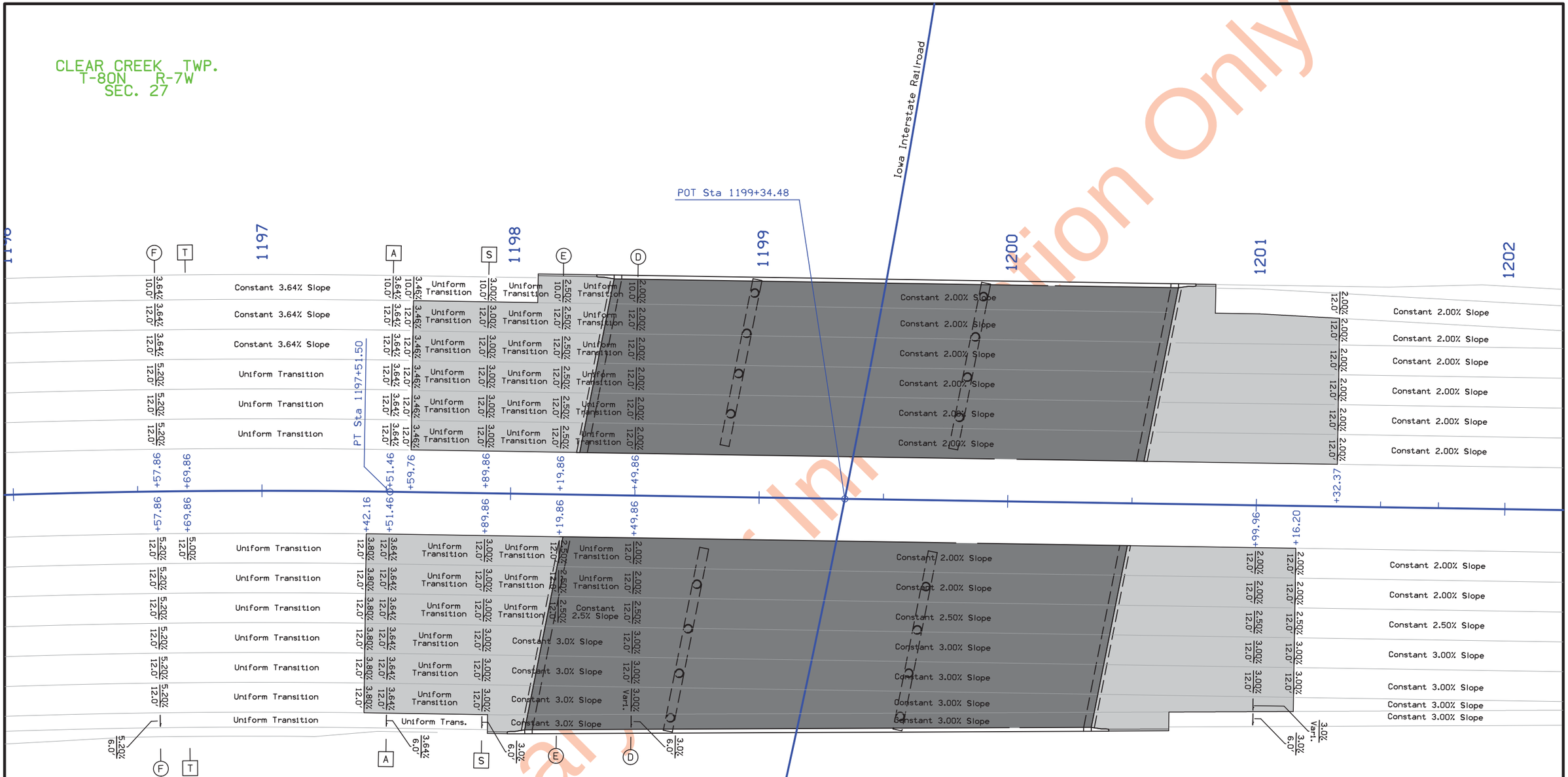
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Restrictions Expected.									

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Refer to IM-080-6(372)239--11-52 for Traffic Control Plan

CLEAR CREEK TWP.
T-80N R-7W
SEC. 27



Curve Data
Δ = 22° 38′ 40.61″ (RT)
T = 655.54
L = 1,293.98
R = 3,274.04
E = 64.98
e = 5.2%
L = 312′
x = 150′
m = 94′

Notes:
1. Points (D) (E) (F) are superelevation transition points.
2. Points [A] [S] [T] are shoulder crown break points.

Staking Details
I-380
Curve at Sta. 1191+13.06

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(343)239--11-52	SHEET NUMBER L.1

11:25:38 AM 9/4/2019 ddudley pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_343_I380_NB_Over_IAIS_RR\CADD_Files\Sheet_Files\SHT_52080343_L01.sht