BRIDGE REPLACEMENT - STEEL GIRDER LETTING DATE 7-15-2020

NHS-080-6(356)239--11-52

JOHNSON COUNTY - DESIGN 220

LEGEND

- INTERSTATE ROUTE
- FREEWAY OR EXPRESSWAY ROUTE
- U.S. NUMBERED ROUTE
- BUSINESS ROUTE
- STATE NUMBERED ROUTE
- UNSIGNED ROUTE
- COUNTY NUMBERED ROUTE
- SECONDARY ROAD OR ADJOINING CITY STREET
- CITY STREET
- PARK, INSTITUTION, OR FEDERAL ROAD
- RAILROAD
- CORPORATION LINE
- SECTION LINE
- CUL-DE-SAC
- SECTION, TOWNSHIP & RANGE NUMBERS — 34, T-80N, R-7W

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

JOHNSON COUNTY

BRIDGE REPLACEMENT - STEEL GIRDER

JASPER AVE. OVER I-80

0.5 MI. W OF JCT. I-380

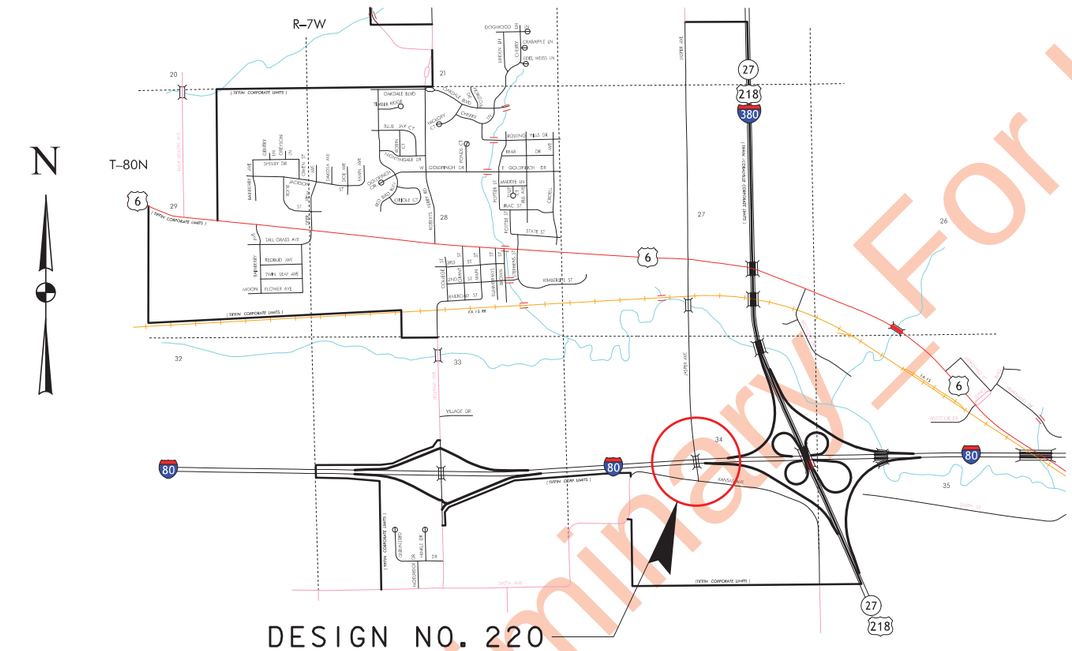
THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

REVISIONS

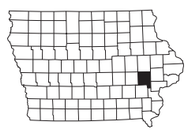
TOTAL SHEETS
96
PROJECT NUMBER
NHS-080-6(356)239--11-52
R.O.W. PROJECT NUMBER
IMN-380-6(331)2--0E-52
PROJECT IDENTIFICATION NUMBER
02-52-080-010

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET - DESIGN 220
2-52	DESIGN 220
SPS.1-SPS.2	SOIL PROFILE SHEET
C.1	ESTIMATE SHEET FOR ROADWAY
A.1-U.8	ROADWAY SHEETS



LOCATION MAP



IOWA ONE CALL

1-800-292-8989 | 811

www.iowaonecall.com

REVISIONS TO THIS DESIGN PLAN AND/OR PROJECT SPECIFICATIONS SHOULD BE SUBMITTED BY _____

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER _____

DESIGN DATA URBAN
INTERSTATE 80

2020	AADT	46,600	V.P.D.
2040	AADT	76,400	V.P.D.
20__	DHV	__	V.P.H.
TRUCKS		30	%
Total Design ESALs		--	

DESIGN DATA URBAN
JASPER AVE.

2017	AADT	970	V.P.D.
2040	AADT	2,279	V.P.D.
20__	DHV	__	V.P.H.
TRUCKS		0	%
Total Design ESALs		--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	LILI YANG	STRUCTURAL DESIGN
A.1	JASON HOLST	ROADWAY DESIGN
SPS.1	JUSTIN D. HUMKE	GEOTECHNICAL DESIGN
BRIDGE STANDARDS	JAMES S. NELSON	STRUCTURAL DESIGN

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER — Lili Yang 22751 — 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 _____ 4-6-2020 Date

Printed or Typed Name: Lili Yang

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: SHEETS 1 THRU 52 OF 96

PROJECT DIRECTORY NAME: 5208001002

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2301-0685550	BRIDGE APPROACH PAVEMENT, AS PER PLAN	SY	430.4	
2	2402-2720000	EXCAVATION, CLASS 20	CY	455	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	280.3	
4	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	518.8	
5	2403-7303000	STRUCTURAL CONCRETE COATING	SY	177.0	
6	2404-7775000	REINFORCING STEEL	LB	6,523	
7	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	192,729	
8	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	6,951	
9	2408-7800000	STRUCTURAL STEEL	LB	722,094	
10	2414-6424119	CONCRETE BARRIER RAILING, AESTHETIC	LF	800.0	
11	2414-6445100	STRUCTURAL STEEL PEDESTRIAN HAND RAILING	LF	378.0	
12	2499-2300001	DECK DRAINS	LS	1.00	
13	2501-0201057	PILES, STEEL, HP 10 X 57	LF	3,450	
14	2501-0201473	PILES, STEEL, HP 14 X 73	LF	2,185	
15	2507-2638620	MACADAM STONE SLOPE PROTECTION	SY	520.0	
16	2507-2638660	BRIDGE WING ARMORING - MACADAM STONE	SY	36.0	
17	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
18	2533-4980005	MOBILIZATION	LS	1.00	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2301-0685550	**BRIDGE APPROACH PAVEMENT, AS PER PLAN** INCLUDES EXCAVATION, MATERIAL, LABOR AND EQUIPMENT ASSOCIATED WITH CONSTRUCTION OF THE DOUBLE REINFORCED BRIDGE APPROACH PAVEMENT IN THESE PLANS. REFER TO ROADWAY PLAN FOR NON-REINFORCED BRDIGE APPROACH PAVEMENT DETAILS.
2	2402-2720000	**EXCAVATION, CLASS 20** INCLUDES EXCAVATION FOR BRIDGE ABUTMENTS, ABUTMENT WINGS AND PIER. QUANTITY FOR EXCAVATION IS BASED ON THE ASSUMPTION THAT SITE GRADING AND SHAPING HAS BEEN COMPLETED TO THE PROPOSED GROUND LINE PRIOR TO THE START OF CONSTRUCTION OF ABUTMENTS AND PIER.
3	2403-0100010	**STRUCTURAL CONCRETE (BRIDGE)** INCLUDES CAST-IN-PLACE CONCRETE FOR ABUTMENT FOOTINGS AND PIER. INCLUDES ALL RESILIENT JOINT FILLER REQUIRED. INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), FLOODABLE BACKFILL, POROUS BACKFILL, GEOTEXTILE FABRIC, WATER FLOODING, AND SUBDRAIN OUTLET AT ABUTMENTS AND TOE OF BERM. INCLUDES FURNISHING AND PLACING 3 INCH DIAMETER PVC PLASTIC PIPE AND EXPANDING FOAM IN THE ABUTMENT WINGS. INCLUDES ALL COSTS ASSOCIATED WITH CONCRETE TEXTURE AND RUSTICATION AT THE PIER AND ABUTMENTS. INCLUDES ALL COSTS ASSOCIATED WITH TEXTURED COCNRETE MOCK-UP PANEL.
4	2403-7000210	**HIGH PERFORMANCE STRUCTURAL CONCRETE** INCLUDES THE CONCRETE FOR THE SLAB, ABUTMENT END DIAPHRAGMS, WINGWALLS AND MASKWALLS. REFER TO THE DEVELOPMENTAL SPECIFICATION FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.
5	2403-7303000	**STRUCTURAL CONCRETE COATING** INCLUDES 121.0 SY AT THE PIER AND 56.0 SY AT THE ABUTMENTS. REFER TO DEVELOPMENTAL SPECIFICATIONS FOR CONCRETE SURFACE PREPARATION AND TESTING PRIOR TO COATING APPLICAIOTN AND FOR STRUCTURAL CONCRETE COATING.
6	2404-7775000	**REINFORCING STEEL** - -
7	2404-7775005	**REINFORCING STEEL, EPOXY COATED** - -
8	2404-7775009	**REINFORCING STEEL, STAINLESS STEEL** - -
9	2408-7800000	**STRUCTURAL STEEL** INCLUDES $\frac{1}{8}$ INCH NEOPRENE SHEETS AT PIER BEARINGS. INCLUDES LAMINATED NEOPRENE BEARING PADS.
10	2414-6424119	**CONCRETE BARRIER RAILING, AESTHETIC** CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICAL 2513.03,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). PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS. INCLUDES METERIAL AND LABOR ASSOCIATED WITH PROVIDNG AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES, FITTINGS, AND POLYPROPYLENE PULL ROPE. INCLUDES 1680 FT. OF 2" DIAMETER RIGID STEEL CONDUIT. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. INCLUDES PROVIDING INTEGRAL COLOR AND RUSTICATIONS FOR CONCRETE BARRIERS AND LABOR AND MATERIALS FOR CONSTRUCTING THE CONCRETE BARRIER MOCKUP.
11	2414-6445100	**STRUCTURAL STEEL PEDESTRIAN HAND RAILING** - -
12	2499-2300001	**DECK DRAINS** INCLUDES 12 DECK DRAINS. REFER TO THESE PLAN FOR LOCATION, MATERIALS AND THE 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.
13	2501-0201057	**PILES, STEEL, HP 10 X 57** ABUTMENT PILES SHALL NOT BE DRIVEN FOR A MINIMUM OF 60 DAYS FOLLOWING COMPLETION OF APPROACH FILLS. THE TIME PERIOD BETWEEN COMPLETION OF FILLS AND DRIVING PILES MAY BE CHANGED AS ORDERED BY THE ENGINEER BASED UPON REVIEW OF SETTLEMENT PLATES.
14	2501-0201473	**PILES, STEEL, HP 14 X 73** - -
15	2507-2638620	**MACADAM STONE SLOPE PROTECTION** INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, MACADAM STONE, CONCRETE CURBS, POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE OF ABUTMENT FOOTING, AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING.
16	2507-2638660	**BRIDGE WING ARMORING - MACADAM STONE** INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, MACADAM STONE, CONCRETE CURBS, AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING FOR WING ARMORING.
17	2526-8285000	**CONSTRUCTION SURVEY** - -
18	2533-4980005	**MOBILIZATION** - -

DESIGN FOR 2°ICE SNOW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

ESTIMATED QUANTITIES

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 52 FILE NO. 30864 DESIGN NO. 220

SUMMARY OF CONCRETE QUANTITIES

LOCATION	STRUCTURAL CONCRETE	HPC STRUCTURAL CONCRETE
SOUTH ABUT. FTG.	49.9	———
NORTH ABUT. FTG.	49.9	———
BRIDGE DECK + ABUT. DIAPHRAGMS	———	474.4
SOUTH ABUTMENT WINGS + MASKWALL (2 AT 11.1 CY)	———	22.2
NORTH ABUTMENT WINGS + MASKWALL (2 AT 11.1 CY)	———	22.2
PIER NO. 1	180.5	———
TOTAL (CU. YDS.)	280.3	518.8

SUMMARY OF REINFORCING STEEL

LOCATION	NON-COATED REINFORCING STEEL	STAINLESS STEEL REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
BRIDGE DECK + ABUT. DIAPHRAGM + ABUT. FOOTINGS	———	712	146,280
SOUTH ABUTMENT WINGS + MASKWALLS (2 AT 1,320 LBS.)	———	———	2,640
NORTH ABUTMENT WINGS + MASKWALLS (2 AT 1,320 LBS.)	———	———	2,640
WEST BARRIER RAIL	———	2,115	9,872
WEST APPROACH BARRIER RAIL	———	296	718
WEST APPROACH BARRIER RAIL END SECTION	———	660	316
EAST BARRIER RAIL	———	2,115	9,872
EAST APPROACH BARRIER RAIL	———	953	2,302
PIER NO. 1	6,523	———	18,089
TOTAL (LBS.)	6,523	6,951	192,729

SUMMARY OF EXCAVATION

LOCATION	CLASS 20 EXCAVATION
SOUTH ABUTMENT	115
NORTH ABUTMENT	115
PIER NO. 1	225
TOTAL (CU. YDS.)	455

SUMMARY OF FOUNDATIONS

LOCATION	SUBSTRUCTURE TYPE	FOUNDATION TYPE	NUMBER	LENGTH (LIN. FT.)	TOTAL (LIN. FT.)
SOUTH ABUTMENT	SEMI - INTEGRAL ABUTMENT	HP10x57	15	115'-0	1,725
NORTH ABUTMENT	SEMI - INTEGRAL ABUTMENT	HP10x57	15	115'-0	1,725
PIER NO. 1	WALL PIER	HP14x73	23	95'-0	2,185

SUMMARY OF STRUCTURAL STEEL

	LOCATION			TOTAL (LBS.)
②	ABUTMENT DIAPHRAGMS		(8 AT 647 LBS.)	5,176
②	PIER DIAPHRAGMS		(4 AT 370 LBS.)	1,480
②	INTERMEDIATE CROSS FRAMES		(56 AT 366 LBS.)	20,496
	FIXED BEARINGS		(5 AT 784 LBS.)	3,920
	ABUTMENT BEARINGS		(10 AT 348 LBS.)	3,480
③	FIELD SPLICE		(10 AT 1,523 LBS.)	15,230
	WELDED GIRDERS	INTERIOR GIRDERS ①	3 AT 135,342	406,026
		EXTERIOR GIRDERS ①	2 AT 133,142	266,286
			TOTAL (LBS.)	722,094 (EST.)

① GIRDER WEIGHT INCLUDES SHEAR STUDS, BEARING STIFFENERS, INTERMEDIATE STIFFENERS, CROSS FRAME STIFFENERS, CONNECTION PLATES, WELDS, FLANGE DEFLECTORS AND BOLTS.

② DIAPHRAGMS INCLUDE ALL INTERMEDIATE, ABUTMENT AND PIER DIAPHRAGM MATERIAL, INCLUDING BOLTS AND WELDS.

③ FIELD SPLICES INCLUDE SPLICE PLATES, FILL PLATES AND BOLTS.

SUMMARY OF BEARINGS

LOCATION	BEARING TYPE	NUMBER	ASSOCIATED BID ITEM
SOUTH ABUTMENT	LAMINATED NEOPRENE/CURVED SOLE PLATE - ASSEMBLY	5	STRUCTURAL STEEL
NORTH ABUTMENT	LAMINATED NEOPRENE/CURVED SOLE PLATE - ASSEMBLY	5	STRUCTURAL STEEL
PIER NO. 1	MASONRY PLATE/CURVED SOLE PLATE - ASSEMBLY	5	STRUCTURAL STEEL

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

SUMMARY QUANTITIES SHEET

STATION 3062+55.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

12/20/2019 1:04:30 PM psodahl pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\BRFinal\BRG_52080356.dgn 520220S002 11x17_pdf.pltcfg

GENERAL NOTES:

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 211'-3 x 24' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE (DESIGN NO. 2261, BUILT IN 1962), WITH A NEW 335'-0 x 30'-0 WITH A 10'-0 SIDEWALK WELDED GIRDER BRIDGE ON JASPER AVE. OVER I-80 IN JASPER COUNTY. THE EXISTING BRIDGE IS TO HAVE BEEN REMOVED WITH JOHNSON DESIGN NO. 117 (PROJECT NO. NHS-080-6(329)239--11-52).

THE EXISTING STRUCTURE IS BEING REMOVED DURING A PREVIOUS DESIGN AND WILL NOT BE OPEN TO TRAFFIC UNTIL COMPLETION OF CONSTRUCTION.

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

CITY AND 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.

DURING CONSTRUCTION OF THIS PROJECT THE BRIDGE CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. SEE SHEET J.1 FOR THE LIST OF OTHER WORK IN THE AREA IN ROADWAY PLAN.

SUBSTRUCTURE CONCRETE SHALL BE PROTECTED FROM STAINING BY A WRAPPING OF POLYETHYLENE OR SIMILAR MATERIALS WHICH SHALL BE LEFT IN PLACE AND KEPT IN A SERVICEABLE CONDITION UNTIL AFTER THE DECK HAS BEEN PLACED. IF SUBSTRUCTURE CONCRETE IS STAINED, THE STAINS SHALL BE REMOVED BY METHODS APPROVED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH THE PROTECTION AND ANY REQUIRED CLEANING OF THE SUBSTRUCTURE CONCRETE SHALL BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL STEEL".

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03, 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).

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

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

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

THIS STRUCTURE SHALL BE BUILT WITH WEATHERING STEEL. ALL STRUCTURAL STEEL, EXCEPT AS NOTED, SHALL CONFORM TO ASTM A709 GRADE 50W. PAINTING REQUIREMENTS FOR THIS STRUCTURE SHALL BE IN ACCORDANCE WITH ARTICLE 2408.02, Q OF THE STANDARD SPECIFICATIONS.

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 IS TO INSTALL SUBDRAINS BEHIND ABUTMENTS AS DETAILED. THE SUBDRAINS SHALL BE 4" DIA. PERFORATED SUBDRAIN (POLYETHYLENE CORRUGATED TUBING). THE SUBDRAIN SHALL INCLUDE A METAL PIPE OUTLET SECTION WITH A REMOVABLE RODENT GUARD AS DETAILED IN THESE PLANS.

GUARD RAIL IS TO BE PLACED AS A PART OF PROJECT NHS-080-6(372)239--11-52.

LONGITUDINAL GROOVING OF THE BRIDGE DECK WILL BE REQUIRED IN ACCORDANCE WITH ARTICLE 2412.03, D OF THE STANDARD SPECIFICATIONS. LONGITUDINAL GROOVING IS A PART OF THIS CONTRACT. IT SHOULD BE DONE PRIOR TO OPENING THE BRIDGE TO TRAFFIC.

CLASS 20 EXCAVATION QUANTITIES ARE BASED ON THE ASSUMPTION THAT THE CLASS 10 ROADWAY WORK IS COMPLETED PRIOR TO STARTING CONSTRUCTION OF THE ABUTMENTS AND PIERS.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE SUFFICIENT TEMPORARY BRACING TO MINIMIZE LATERAL DEFLECTION AND ROTATION OF EXTERIOR STEEL BEAMS DURING DECK PLACEMENT. LATERAL DEFLECTION AND ROTATION OF EXTERIOR BEAMS MAY RESULT IN THIN DECKS AND AN UPWARDS SHIFT IN BAR MATS WHICH CAN DECREASE CONCRETE COVER. PARTIALLY OR FULLY INSTALLED PERMANENT BRACING AS SHOWN IN THESE DESIGN PLANS SHALL NOT BE ASSUMED SUFFICIENT TO MINIMIZE LATERAL DEFLECTION AND ROTATION OF EXTERIOR BEAMS DURING DECK PLACEMENT. TEMPORARY BRACING SHALL NOT BE WELDED TO THE STEEL BEAMS OR ITS ATTACHMENTS INCLUDING THE STUDS.

ABUTMENT PILES SHALL NOT BE DRIVEN FOR A MINIMUM OF 60 DAYS FOLLOWING COMPLETION OF APPROACH FILLS. THE TIME PERIOD BETWEEN COMPLETION OF FILLS AND DRIVING PILES MAY BE CHANGED AS ORDERED BY THE ENGINEER BASED UPON REVIEW OF SETTLEMENT PLATES.

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: (090)_BlackHawk_Design915_DeckDrains.pdf

1	STRUCTURAL STEEL
2	MASONRY PLATE/CURVED SOLE PLATE - ASSEMBLY
3	LAMINATED NEOPRENE/CURVED SOLE PLATE - ASSEMBLY
4	DECK DRAINS
5	STEEL PEDESTRIAN HAND RAILING

BRIDGE DECK DIMENSIONS TABLE

NO.	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	338.0
2	MINIMUM DECK WIDTH	L.F.	44.0
3	MAXIMUM DECK WIDTH	L.F.	44.0
4	DECK AREA	S.F.	14,872

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 SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT. THIS INCLUDES THE FOLLOWING DEVELOPMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS:

DEVELOPMENTAL SPECIFICATIONS:
"HIGH PERFORMANCE CONCRETE FOR STRUCTURES"
"PROGRESS SCHEDULING"
"CONCRETE SURFACE PREPARATION AND TESTING PRIOR TO COATING APPLICATION"
"STRUCTURAL CONCRETE COATING"

SPECIAL PROVISIONS:
"FOR AESTHETIC TREATMENT OF CONCRETE BARRIER".
"FOR E-BUILDER"

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 LRFD AASHTO SECTION 5, GRADE 60 FOR EPOXY COATED AN NON-COATED, AND GRADE 60 OR 75 FOR STAINLESS.

CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4.0 KSI,

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

CURVED SOLE PLATE SHALL BE ASTM A709 GRADE HPS 70W.

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NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

THE POLLUTION PREVENTION PLAN ARE INCLUDED ELSEWHERE IN THESE PLANS.

TRAFFIC CONTROL PLAN

THE ROADWAY WILL BE CLOSED TO THRU TRAFFIC. REFER TO TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 2°10'54"W (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

GENERAL NOTES

STATION 3062+55.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

GENERAL NOTES FOR TEXTURED CONCRETE FORM LINERS:

SEE INDIVIDUAL DESIGN SHEETS FOR SPECIFIC NOTES AND DETAILS DESCRIBING THE FEATURES WHICH INCORPORATE TEXTURED CONCRETE. WORK PERFORMED TO CREATE TEXTURED CONCRETE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR FORMWORK AND THE FOLLOWING:

FORM THE TEXTURED CONCRETE SURFACE USING A FORM LINER SYSTEM MADE OF HIGH-STRENGTH URETHANE ELASTOMER, PLASTIC OR FLEXIBLE FOAM MATERIALS CAPABLE OF WITHSTANDING ANTICIPATED CONCRETE POUR PRESSURES WITHOUT LEAKAGE OR CAUSING PHYSICAL DEFECTS. FORM LINERS SHALL EASILY ATTACH TO FORMS AND BE REMOVABLE WITHOUT CAUSING CONCRETE SURFACE DAMAGE. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR ATTACHING FORM LINERS TO THE CONCRETE FORMS. IF RECOMMENDED BY THE FORM LINER MANUFACTURER, USE STRUCTURAL BACKERS TO PREVENT DEFORMATION OF THE LINER DURING LOADING OF THE FORMS. THE LINERS SHALL BE DESIGNED TO FORM SURFACES CONFORMING TO THE DESIGN INTENT INCLUDING THE SHAPE, LINES AND DIMENSIONS SHOWN IN THE PLANS AND TO AVOID VISIBLE PATTERN REPEATS. MATCH PATTERN FEATURES AT FORM LINER JOINTS TO MINIMIZE PATTERN REPEATS AND MAKE THE FORMED CONCRETE SURFACE APPEAR UNIFORM AND CONTINUOUS WITHOUT VISIBLE SEAMS AND FORM MARKS. WHEN JOINTS ARE UNAVOIDABLE, MAKE JOINTS ALONG MAIN FEATURES OF THE PATTERN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT MIX FORM LINERS FROM DIFFERENT MANUFACTURERS WHEN FORMING ANY INDIVIDUAL TEXTURE ON THE PROJECT.

FORM LINER EDGES FOLLOWING CURVES ARE TO BE CUT CLEANLY AND PARALLEL TO THE CURVE. USE ADEQUATE BLOCKING, SEALING AND OTHER MEANS IN ORDER TO MAINTAIN THE APPROPRIATE DEPTH AND CHARACTER OF TEXTURE AT CUT EDGES OF LINERS AND TO PREVENT MORTAR LEAKAGE.

DURING LOADING OF FORMS WITH CONCRETE, TAKE EXTRA CARE TO ADEQUATELY VIBRATE CONCRETE IN ORDER TO MAINTAIN ALL INTENDED FEATURES OF THE FORM LINER IN THE FINAL SURFACE AND TO PREVENT VOIDS. FOLLOWING REMOVAL OF FORMS, FINISH MINOR DEFECTS TO BLEND WITH THE BALANCE OF THE SURFACE TEXTURE. THE COMPLETED SURFACE SHALL BE FREE OF BLEMISHES, SURFACE VOIDS AND CONSPICUOUS FORM MARKS TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL CORRECT ANY SURFACE DEFECTS AT NO ADDITIONAL COST TO THE PROJECT.

VERIFY THAT RELEASE AGENTS USED ARE COMPATIBLE WITH FORM LINER MATERIAL, AND ARE NON-STAINING. APPLY RELEASE AGENT IN ACCORDANCE WITH THE FORM LINER MANUFACTURER'S RECOMMENDATIONS.

IF USED, FORM TIES SHALL BE MADE OF NON-CORROSIVE MATERIALS WHEN THE PORTION PERMANENTLY EMBEDDED IN THE CONCRETE IS LESS THAN 1½ INCHES FROM THE FINISHED SURFACE. POSITION FORM TIES AND ACCESSORIES IN STONE PATTERN MORTAR JOINTS IF APPLICABLE AND AT HIGH POINTS OF FINISHED WALL.

STRIP FORMWORK USING TECHNIQUES IN ACCORDANCE WITH LINER MANUFACTURER'S RECOMMENDATIONS AFTER THE CONCRETE HAS ACHIEVED THE STRENGTHS AND CURE TIMES REQUIRED BY THE PLANS AND APPLICABLE SPECIFICATIONS. CLEAN AND REPAIR FORM LINER SURFACES PRIOR TO USE. DO NOT USE SPLIT, FRAYED, DELAMINATED OR OTHERWISE DAMAGED FORM LINERS.

ALL COSTS ASSOCIATED WITH CONCRETE TEXTURING AND FORM LINERS ARE TO BE INCLUDED IN THE BID ITEM, "STRUCTURAL CONCRETE (BRIDGE)".

GENERAL NOTES FOR CONCRETE RUSTICATION:

STRIPS AND PANELS USED AS INSERTS WITHIN CONCRETE FORMS TO CREATE THE RUSTICATION FEATURES MAY BE MADE OF WOOD, STEEL, NYLON, PLASTIC OR OTHER NONPOROUS MATERIAL CAPABLE OF WITHSTANDING ANTICIPATED CONCRETE POUR PRESSURES WITHOUT PHYSICAL DEFECTS. WOOD INSERTS, IF USED, SHALL BE FREE OF WARP, TWIST, CHECKS OR CRACKS, AND SHALL BE PRESOAKED PRIOR TO PLACEMENT OF CONCRETE IN THE FORMS.

RUSTICATION INSERTS SHALL EASILY ATTACH TO FORMS AND SHALL NOT ALLOW LEAKAGE OF CONCRETE BETWEEN THE FORM AND THE INSERT. WHEN STEEL FORMS ARE USED, RUSTICATION STRIPS MAY BE RIGIDLY ATTACHED TO THE INSIDE SURFACES OF THE FORMS. WHEN STEEL FORMS ARE NOT USED, RUSTICATION STRIPS AND OTHER INSERTS FOR SMALL RECESSES ON EXPOSED CONCRETE SURFACES SHALL BE FASTENED TO THE FORMS IN A MANNER THAT WILL PERMIT THEM TO REMAIN IN PLACE WHEN THE FORMS ARE REMOVED. LEAVE INSERTS IN PLACE UNTIL THEY CAN BE REMOVED WITHOUT DAMAGE TO THE SURROUNDING CONCRETE.

THE INSERTS SHALL BE DESIGNED TO FORM SURFACES AND FEATURES CONFORMING TO THE DESIGN INTENT INCLUDING THE SHAPE, LINES, DEPTHS AND DIMENSIONS SHOWN IN THE PLANS. CREATE INSERTS USING A MINIMUM NUMBER OF SPLICE JOINTS IN THEIR LENGTH. SPLICES, IF USED, SHALL BE TIGHTLY JOINED SO AS NOT TO ALLOW GAPS OR LEAKS, AND SHALL NOT CREATE ANY CHANGE IN ALIGNMENT OR SHAPE OF THE RUSTICATION FEATURE. DO NOT LOCATE FORM TIES WITHIN CONCRETE RUSTICATIONS.

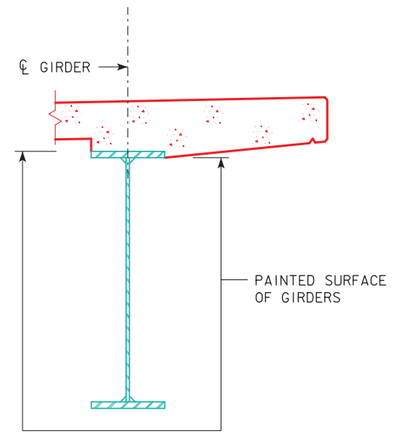
FOR RUSTICATION FEATURES FOLLOWING THE PERIMETER OF ROUNDED SURFACES, IT MAY BE NECESSARY TO USE MULTIPLE LAYERS OF INSERT MATERIAL IN ORDER TO ACHIEVE THE RADIUS CURVE. THIS IS ACCEPTABLE, PROVIDED THAT THE FINAL SHAPE, LINE, DEPTH, AND DIMENSION OF THE FEATURES ARE MAINTAINED IN THE FINAL RESULT.

DURING LOADING OF FORMS WITH CONCRETE, TAKE EXTRA CARE TO ENSURE PROPER CONSOLIDATION OF CONCRETE AROUND ALL RUSTICATION INSERTS TO PRESERVE THE SHAPE, LINE AND DEPTH OF ALL INTENDED FEATURES IN THE FINAL CONCRETE SURFACE. FOLLOWING REMOVAL OF FORMS, REPAIR ALL DEFECTS TO ACHIEVE THE RUSTICATION FEATURES AS SPECIFIED IN THE PLANS. PATCH VOIDS, HONEYCOMB AREAS, ETC., IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. IF SURFACES WILL NOT RECEIVE A COATING, ADD WHITE CEMENT TO THE PATCHING MORTAR TO LIGHTEN IT IN ORDER TO MATCH OR BE SLIGHTLY LIGHTER THAN SURROUNDING CONCRETE WHEN DRY. COMPLETED SURFACE SHALL BE FREE FROM BLEMISHES, SURFACE VOIDS AND CONSPICUOUS FORM MARKS TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL CORRECT ANY SURFACE DEFECTS TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT.

ALL COSTS ASSOCIATED WITH CONCRETE RUSTICATION ARE TO BE INCLUDED IN THE BID ITEM "STRUCTURAL CONCRETE (BRIDGE)".

STEEL PAINTING NOTES:

ALL STEEL SHALL HAVE A TOP COAT COLOR MATCHING FEDERAL COLOR STANDARD NUMBER 20045 PER SECTION 2408.02, Q, 2 OF THE STANDARD SPECIFICATIONS TYPICAL FOR PAINTED WEATHERING STEEL.



LIMITS OF PAINTING DETAIL

(EXTERIOR GIRDER PAINTING LIMITS SHOWN, INTERIOR SIMILAR)

PAINTING LIMIT NOTES:

PAINTING WITHIN THE LIMITS SHOWN SHALL INCLUDE THE GIRDER FLANGES AND WEBS AS SHOWN, CROSS FRAMES, FIELD SPLICES, STIFFENERS, CONNECTION PLATES, DRIP PLATES AND BOLTS.

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

GENERAL NOTES

STATION 3062[illegible] APRIL, 2020

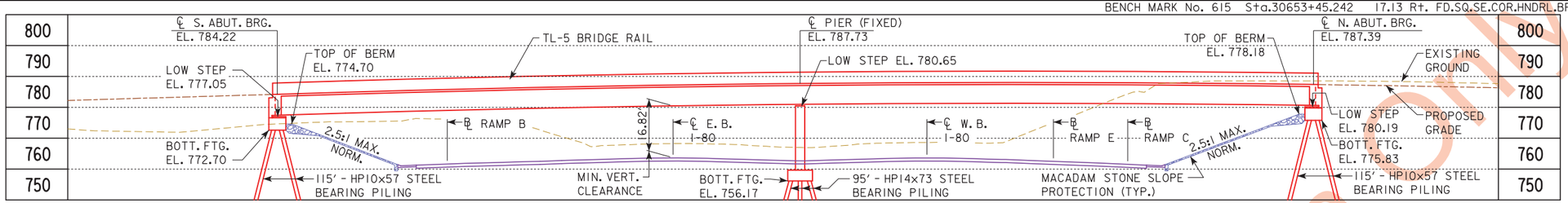
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3[illegible]52 FILE NO. 30864 DESIGN NO. 220

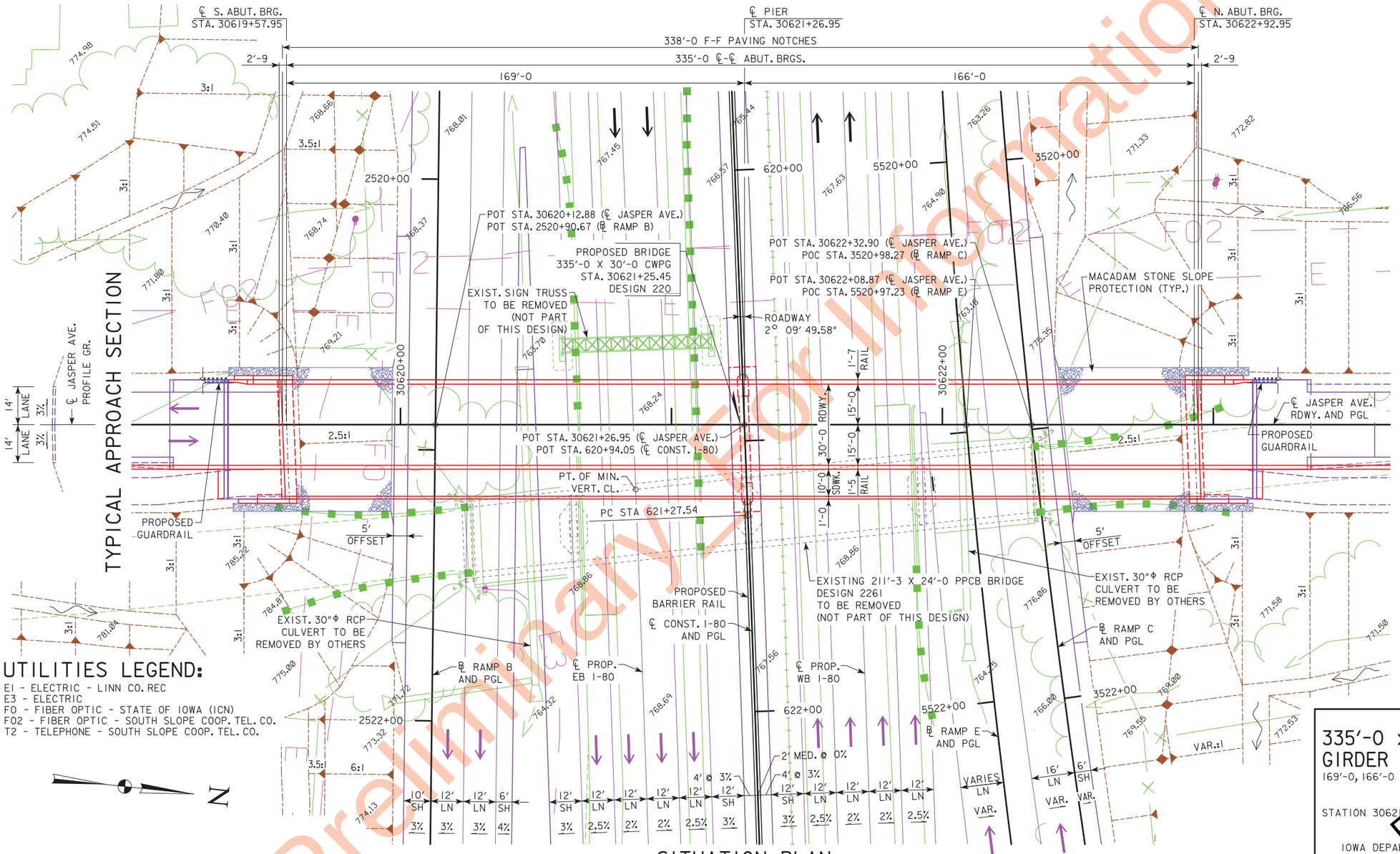
DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 4

BENCH MARK No. 615 Sta.30653+45.242 17.13 Rt. FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A------ 686.896



NOTE: TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.03' BELOW THE PROFILE GRADE TO ACCOUNT FOR PARABOLIC CROWN.

LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY



TYPICAL APPROACH SECTION

SITUATION PLAN

UTILITIES LEGEND:

E1 - ELECTRIC - LINN CO. REC
E3 - ELECTRIC
FO - FIBER OPTIC - STATE OF IOWA (ICN)
FO2 - FIBER OPTIC - SOUTH SLOPE COOP. TEL. CO.
T2 - TELEPHONE - SOUTH SLOPE COOP. TEL. CO.

2.9557% ○ -5.3000%

VPI STA = 30622+80.00 VC = 600'
VPI ELEV = 793.77

PROPOSED PROFILE GRADE JASPER AVE.

1.6150% ○ -2.9780%

VPI STA = 624+50.00 VC = 1900'
VPI ELEV = 772.65

PROPOSED PROFILE GRADE I-80

MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 30620+86.82, 23.92' RT.
OVERHEAD ELEVATION = 787.14
DEPTH OF SUPERSTRUCTURE = 6.63'
(INCLUDES 0.2I FOR FIELD SPLICE)
UNDERPASS STATION = 62I+I6.44, 4I.00' RT.
UNDERPASS ELEVATION = 763.69
MINIMUM VERTICAL CLEARANCE = I6.82'

LOCATION

JASPER AVE. OVER I-80
T-80N R-7W
SECTION 34
CLEAR CREEK TOWNSHIP
JOHNSON COUNTY
FHWA NO. 3198I
BRIDGE MAINT. NO. 5238.70080
LATITUDE 4I.694275°
LONGITUDE -9I.646902°

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

I69'-0, I66'-0 SPANS

SITUATION PLAN

STATION 3062I+25.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

DESIGN TEAM LLY / PES / HDR	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--II-52	SHEET NUMBER 6

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CURVE DATA

INTERSTATE 80
PI STA. 625+84.74
Δ = 2° 17′ 08.53″ (RT)
T = 457.20′
L = 914.28′
E = 4.56′
R = 22,918.31′
e = NC
I = 0′
x = 0′
PC STA. 621+27.54
PT STA. 630+41.82

CURVE DATA

RAMP C
PI STA. 3521+39.23
Δ = 6° 50′ 42.79″ (LT)
T = 239.23′
L = 477.89′
E = 7.15′
R = 4,000.00′
PC STA. 3519+00.00
PCC STA. 3523+77.89

CURVE DATA

RAMP E
PI STA. 5520+87.64
Δ = 5° 22′ 17.33″ (LT)
T = 187.64′
L = 375.00′
E = 4.40′
R = 4,000.00′
PC STA. 5519+00.00
PCC STA. 5522+75.00

BERM SLOPE LOCATION TABLE

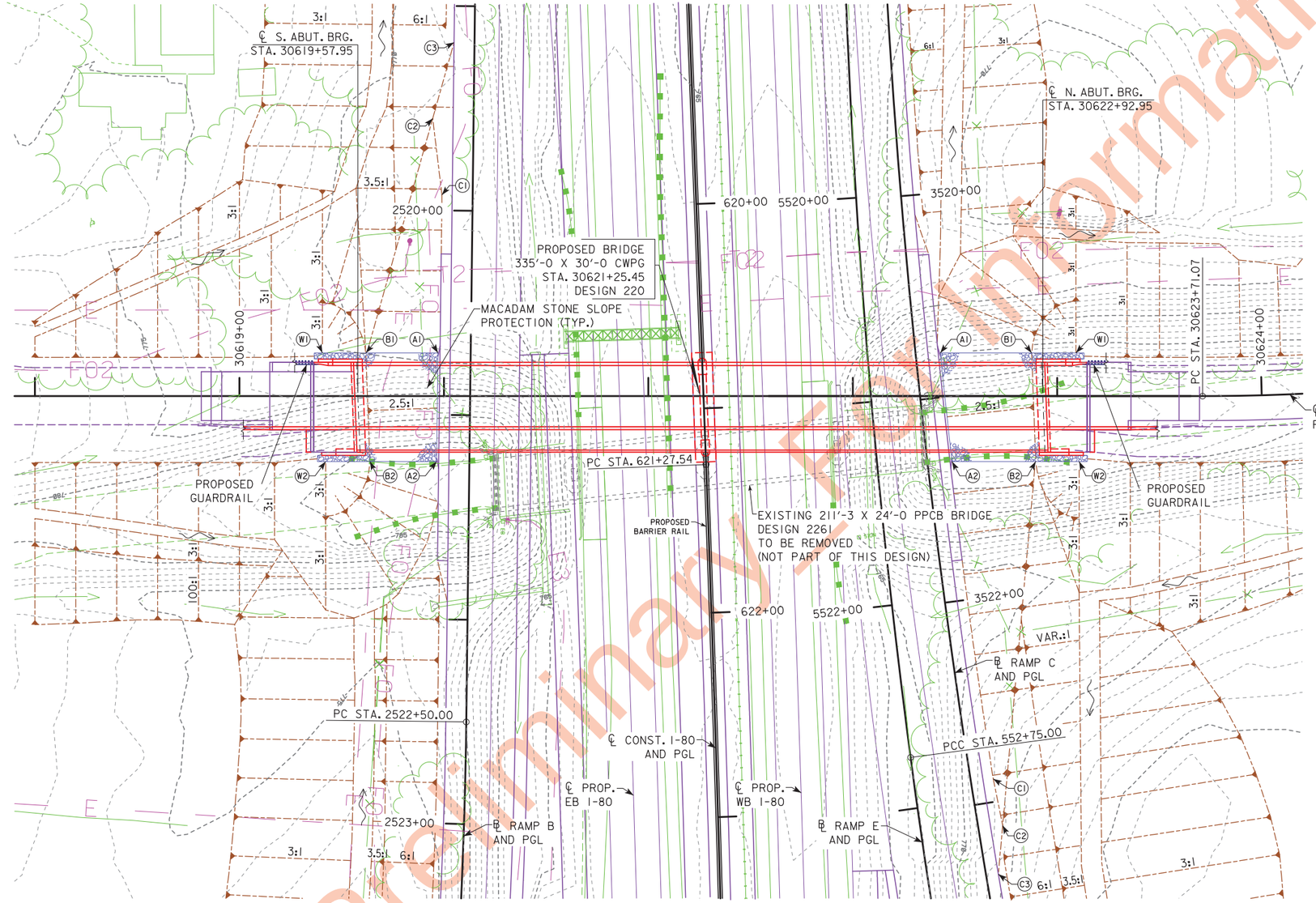
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	30619+98.14	21.17′ LT	761.18	30622+42.48	21.17′ LT	761.27
A2	30619+97.49	32.00′ RT	761.24	30622+47.55	32.00′ RT	761.26
B1	30619+61.90	21.17′ LT	774.70	30622+87.40	21.17′ LT	777.83
B2	30619+63.91	32.00′ RT	774.70	30622+89.40	32.00′ RT	777.83
W1	30619+38.63	21.17′ LT	783.23	30623+11.13	21.17′ LT	786.70
W2	30619+42.18	32.00′ RT	783.45	30623+12.68	32.00′ RT	786.84

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

RECOVERABLE BERM LOCATION TABLE

	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
C1	30619+99.10	99.95′ LT	761.03	30622+68.68	187.18′ RT	759.99
C2	30619+94.55	137.33′ LT	760.76	30622+73.31	209.90′ RT	759.72
C3	30620+05.10	174.52′ LT	760.91	30622+71.17	233.76′ RT	759.81
B1	30619+61.90	21.17′ LT	774.70	---	---	---
B2	---	---	---	30622+89.40	32.00′ RT	777.83

REFER TO EW-203 FOR TYPICAL LOCATIONS.



SITE PLAN

DESIGN FOR 2°10′ SKEW (R.A.)

335′-0 x 30′-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10′-0 SIDEWALK

169′-0, 166′-0 SPANS

SITUATION PLAN - SITE

STATION 3062[illegible]

APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 52 FILE NO. 30864 DESIGN NO. 220

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 7

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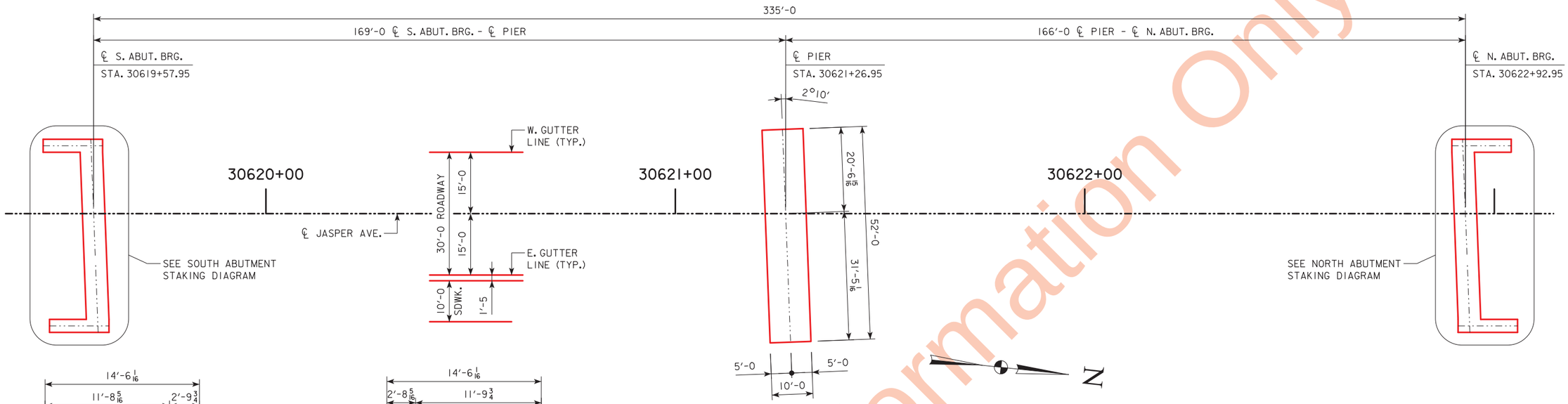
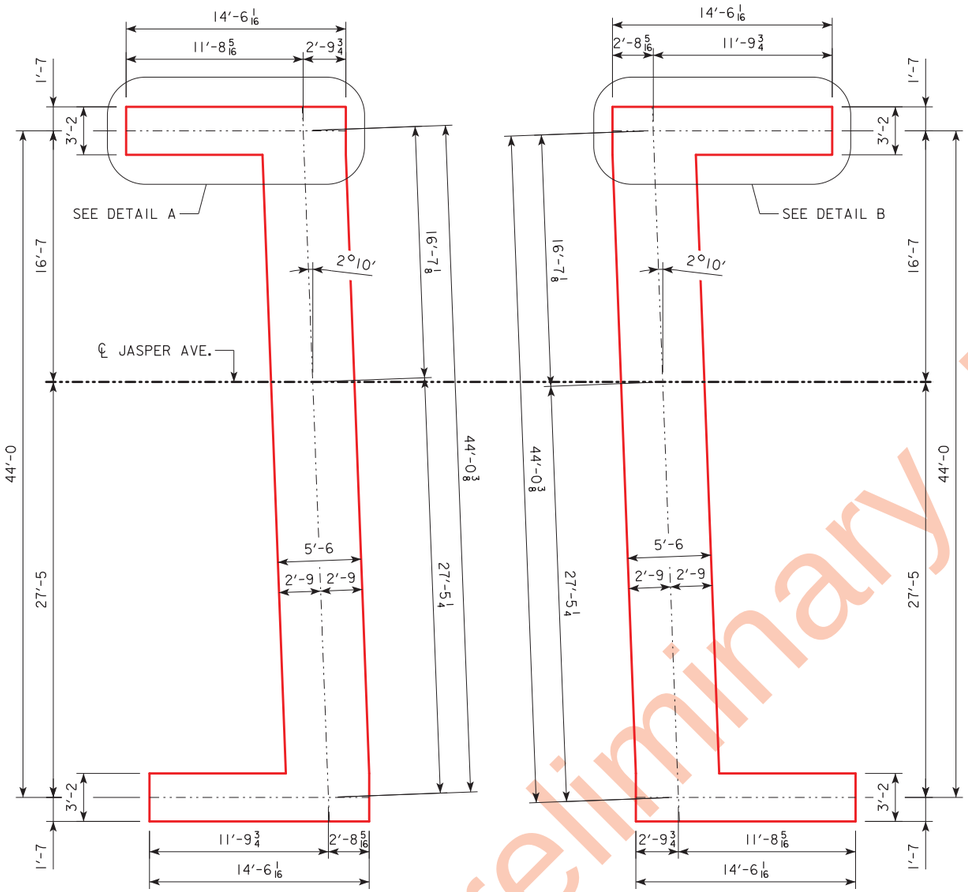
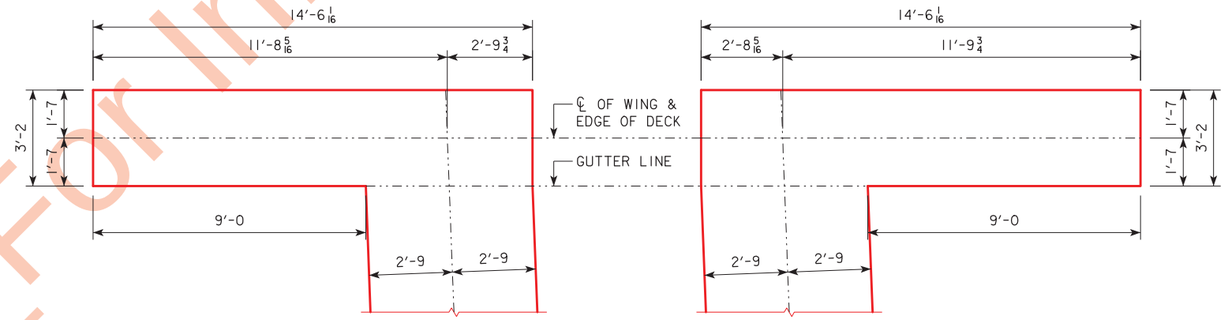
BENCH MARK NO.: 615 Sta.30653+45.242 17.13 Rt. FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A------ 686.896



STAKING DIAGRAM





BRIDGE COORDINATES

LOCATION	℄ S. ABUT. BRG.	℄ PIER 1	℄ N. ABUT. BRG.
WEST EDGE OF DECK	E=2146470.739 N=622516.232	E=2146466.557 N=622685.180	E=2146462.450 N=622851.129
℄ APPROACH ROADWAY	E=2146487.302 N=622517.269	E=2146483.120 N=622686.218	E=2146479.013 N=622852.167
EAST EDGE OF DECK	E=2146514.685 N=622518.985	E=2146510.503 N=622687.933	E=2146506.395 N=622853.882

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 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

STAKING DIAGRAM

STATION 30621+26.95 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 7 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

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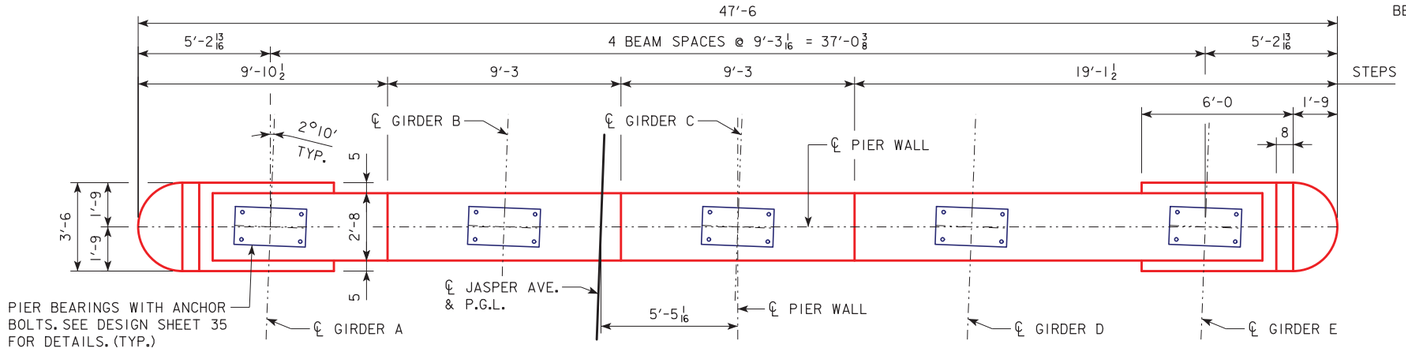
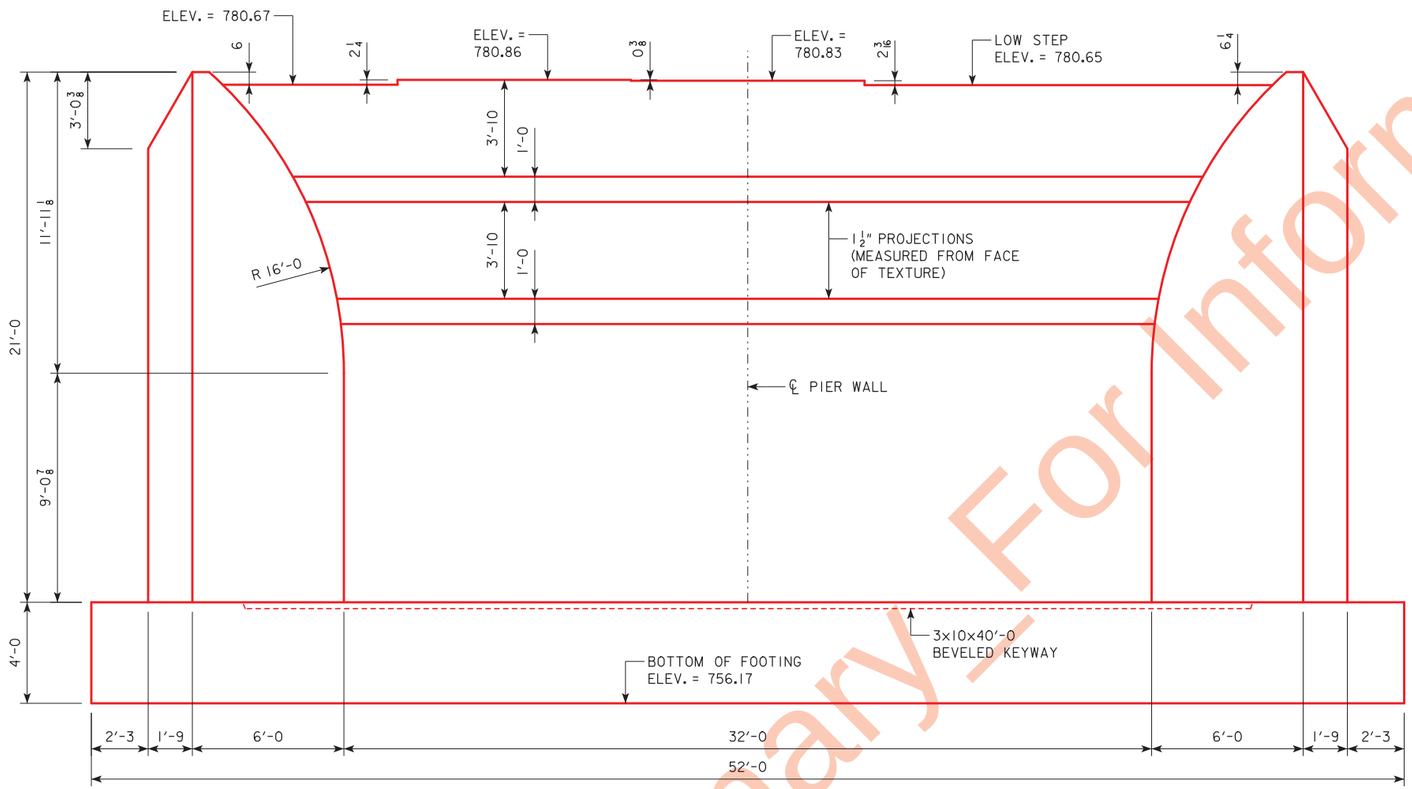
BENCH MARK NO.: 615 Sta.30653+45.242 17.13 Rt. FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A------ 686.896



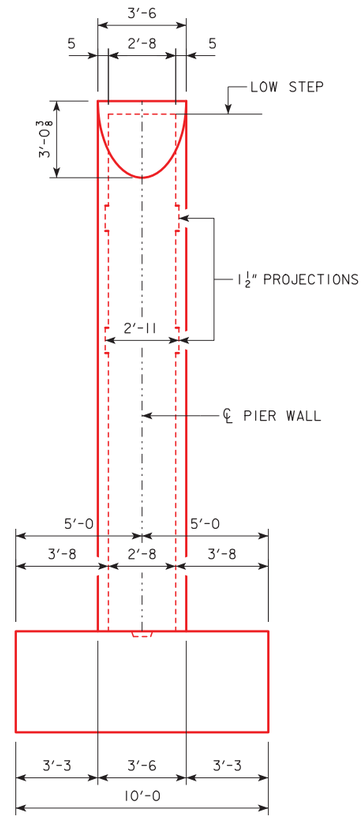
PIER WALL PLAN VIEW



PIER WALL ELEVATION

(LOOKING NORTH)

(PIER PILING AND PIER WALL AESTHETIC DETAILS NOT SHOWN FOR CLARITY)



END VIEW

NOTE:
FOR PIER WALL REINFORCING DETAILS SEE DESIGN SHEETS 9 - 11.

FOR PIER WALL AESTHETIC DETAILS SEE DESIGN SHEET 12 & 13.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PIER WALL DETAILS

STATION 3062[illegible] APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 7 0 52 FILE NO. 30864 DESIGN NO. 220

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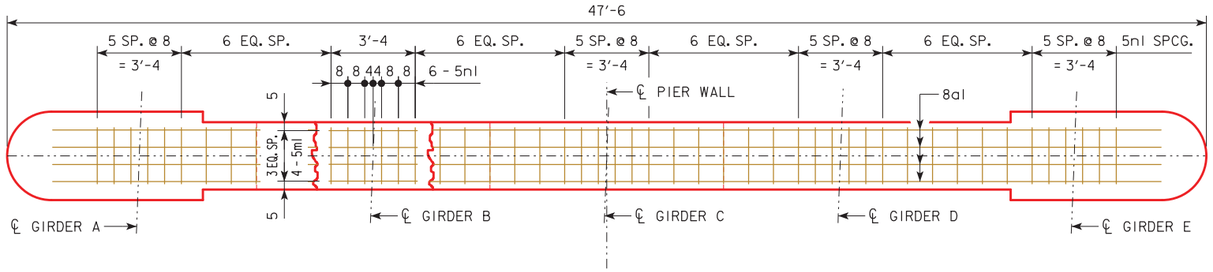
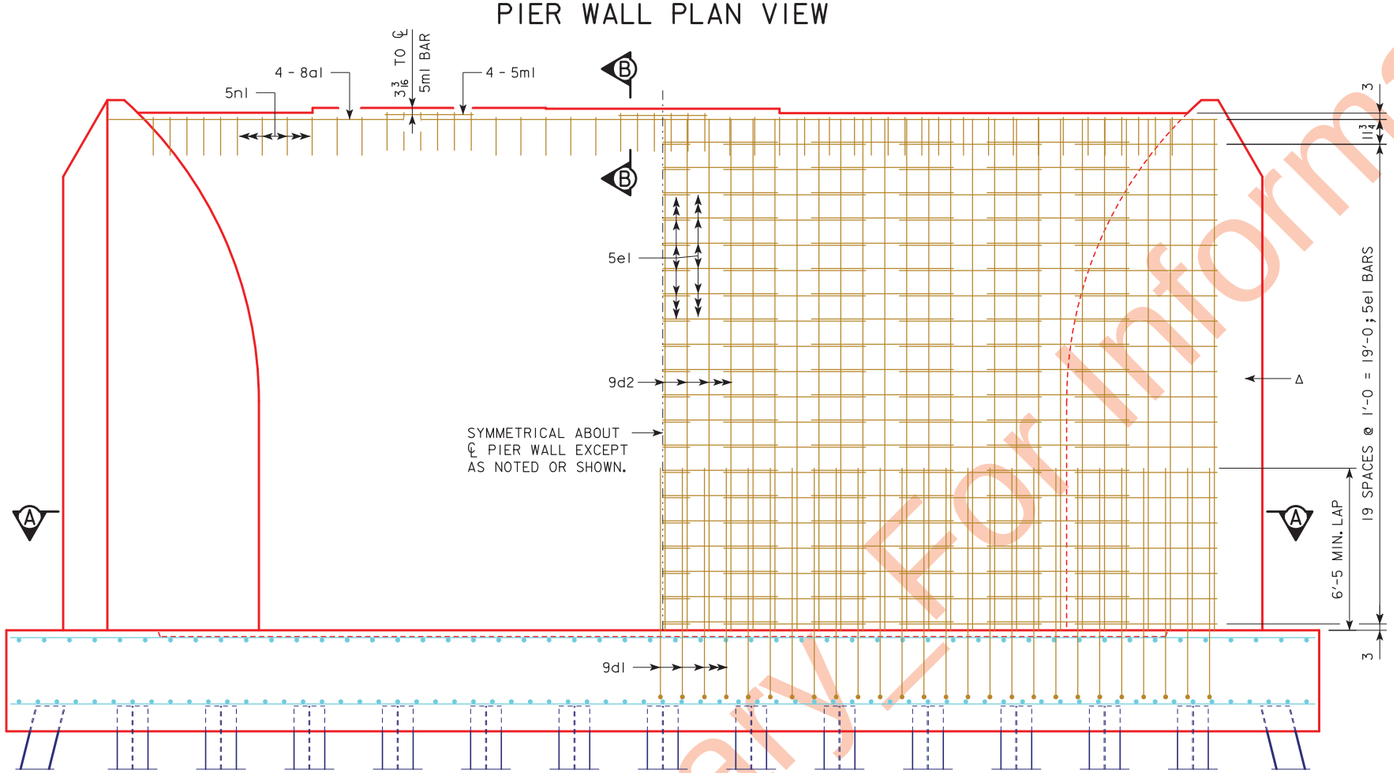
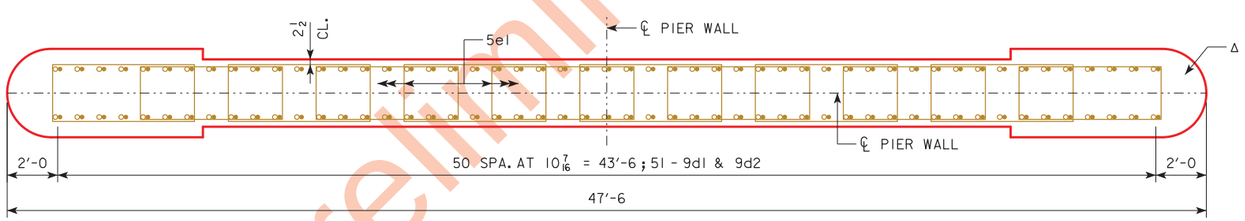


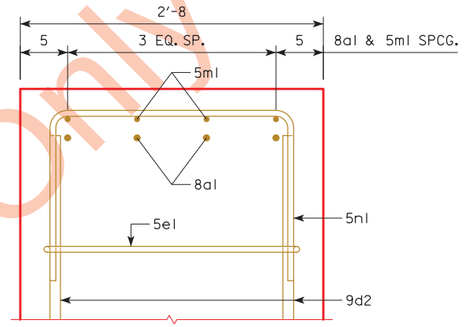
PIER WALL PLAN VIEW



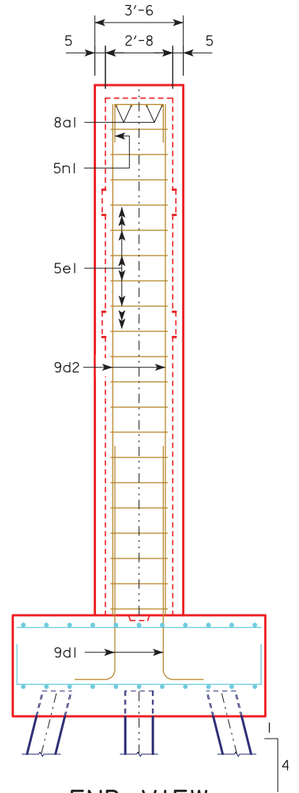
PIER WALL ELEVATION
(LOOKING NORTH)



SECTION A-A



SECTION B-B



END VIEW

Δ PIER WALL END REINFORCING NOT SHOWN FOR CLARITY. SEE DESIGN SHEET 11 FOR DETAILS.

DESIGN FOR 20° SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PIER WALL REINFORCING DETAILS

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 9 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

DESIGN TEAM LLY / PES / HDR	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 10

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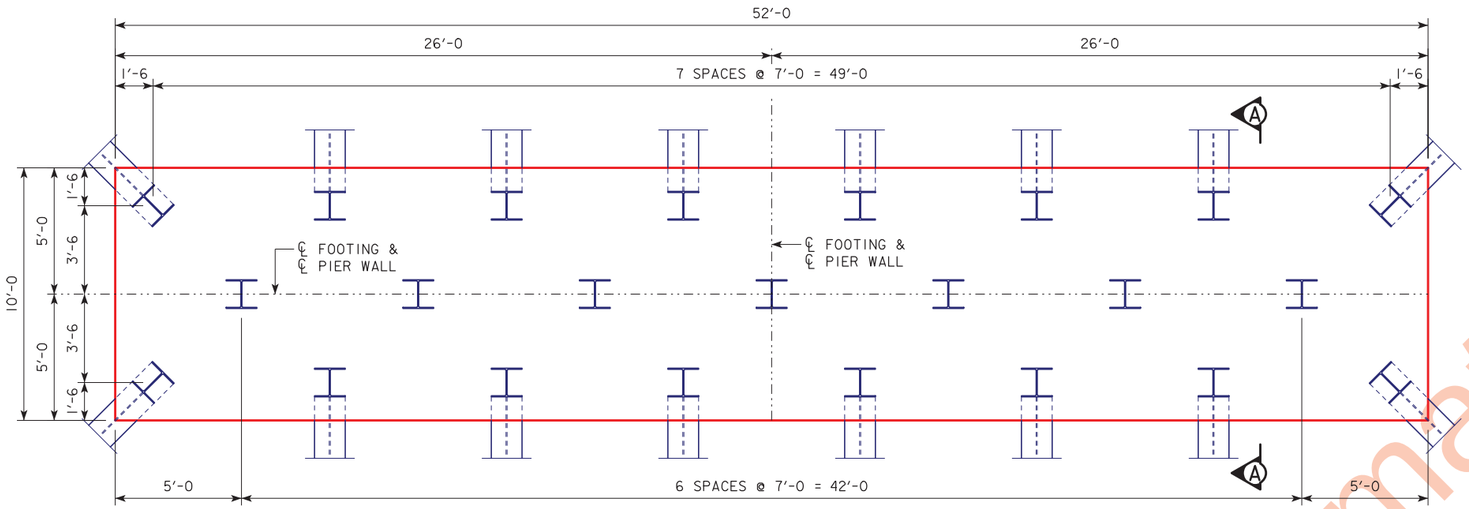
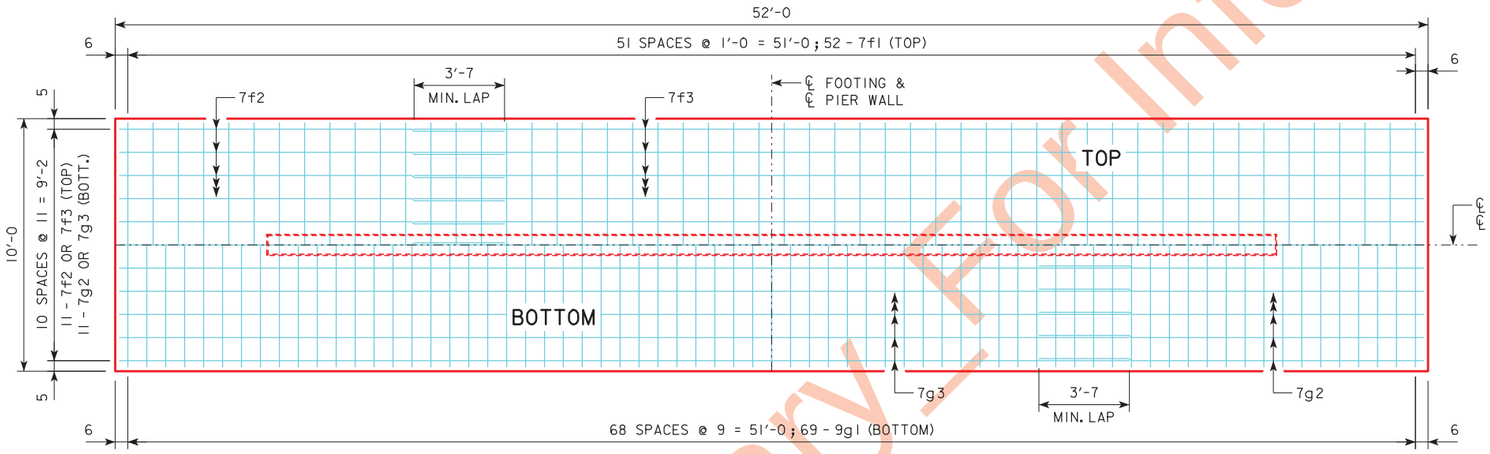


PIER WALL FOOTING PILING PLAN



PIER WALL FOOTING REINFORCING PLAN

PILE DESIGN NOTES:

THE CONTRACT LENGTH OF 95 FEET FOR THE PIER PILES IS BASED ON A MIXED SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 270 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

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

PILE DRIVING NOTES:

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER PILES IS 208 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.

PIER NOTES:

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

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

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

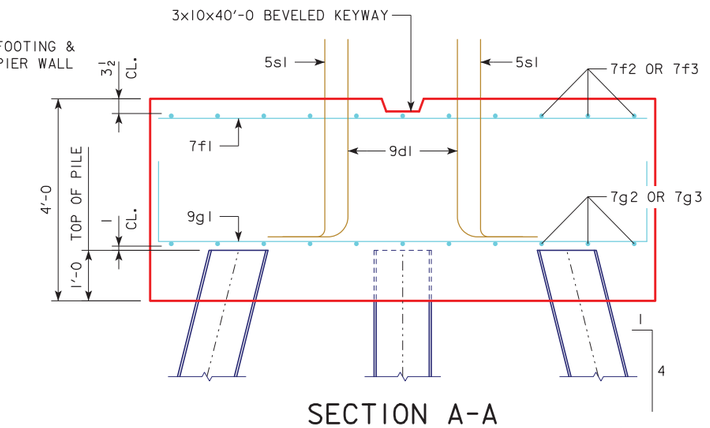
TOP OF FOOTING CONSTRUCTION JOINT IS TO BE FORMED WITH A 3 x 10 x 40'-0 DRESSED AND BEVELED STRIPS TO THE NOMINAL DIMENSION SHOWN ON THE PIER SHEETS.

PERMISSIBLE HORIZONTAL CONSTRUCTION JOINTS MAY BE USED TO PLACE CONCRETE FOR THE PIER WALL IN TWO STAGES. THE PERMISSIBLE CONSTRUCTION JOINTS, IF USED, SHALL BE PLACED MIDWAY BETWEEN THE e1 COLUMN HOOP BARS ANYWHERE IN THE COLUMN.

ALL BATTERED PILE SHALL BE TRIMMED TO A HORIZONTAL LINE TO AID IN THE PLACEMENT OF REINFORCING.

PILE FOOTING DIMENSIONS SHOWN ARE AT BOTTOM OF FOOTING. BATTER PILES 1:4 IN THE DIRECTION SHOWN ON THE PIER PILE FOOTING PLAN.

23 - HP 14x73 STEEL BEARING PILING REQUIRED AT PIER.



SECTION A-A

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PIER FOOTING DETAILS

STATION 3062[illegible] APRIL, 2020

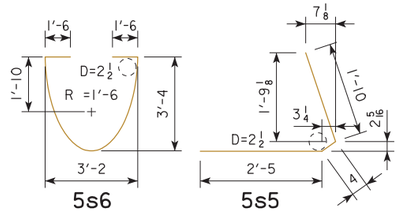
JOHNSON COUNTY

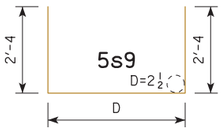
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

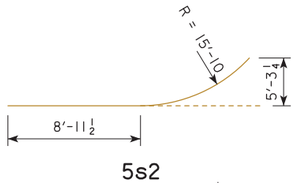
DESIGN SHEET NO. 10 OF 52 FILE NO. 30864 DESIGN NO. 220

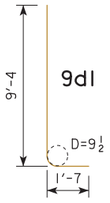
DESIGN TEAM LLY / PES / HDR	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 11

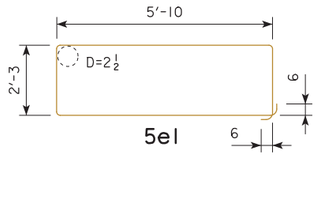
BENT BAR DETAILS



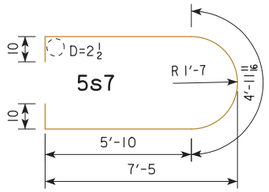


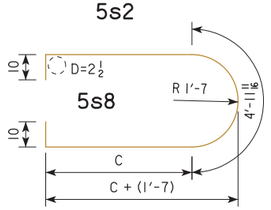


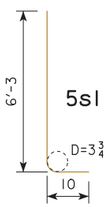


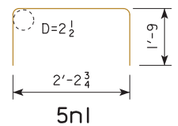


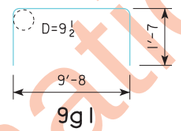
5s8		5s9	
C	LENGTH	D	LENGTH
5'-10	18'-4	4'-1	8'-9
5'-9½	18'-3	2'-10	7'-6
5'-8¼	18'-2	1'-4	6'-0
5'-6	17'-8		
5'-3¼	17'-2		
4'-11½	16'-7		
4'-7	15'-10		
4'-1½	14'-11		
3'-6¾	13'-10		



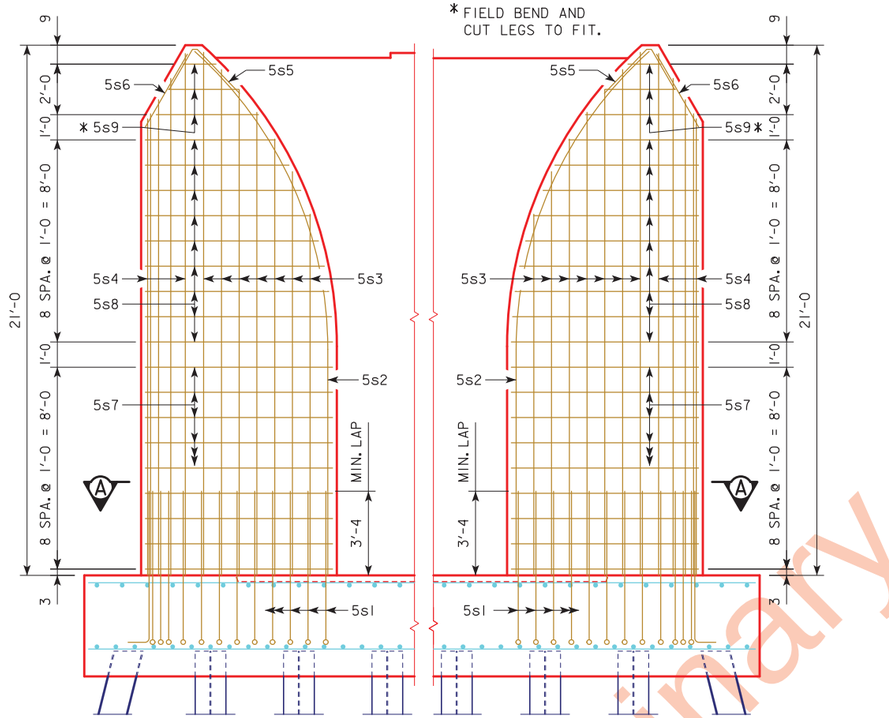




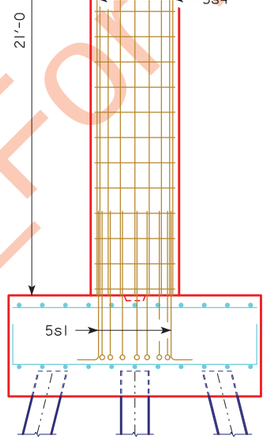




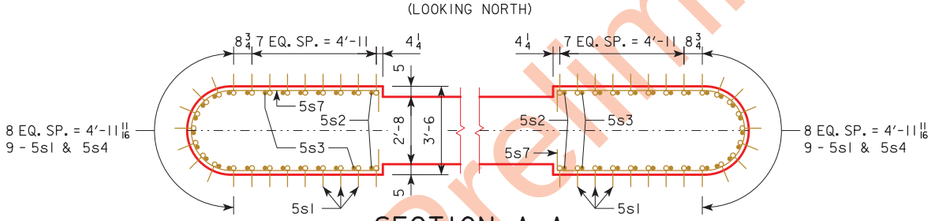
NOTE: D = PIN DIAMETER.
DIMENSIONS ARE OUT TO OUT.



PIER WALL ELEVATION
(LOOKING NORTH)



END ELEVATION



SECTION A-A

EPOXY REINFORCING BAR LIST- WALL PIER

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
8al	CAP, TOP, LONGIT.		4	44'-0	470
9dl	FOOTING TO WALL, DOWELS		102	10'-11	3,786
9d2	WALL, VERTICAL		102	20'-3	7,023
5el	WALL, HOOPS		240	17'-4	4,338
5ml	CAP, STEP. LONGIT.		8	3'-6	29
5nl	CAP, STEP, TRANSV.		50	5'-9	300
5sl	AESTHETIC, FOOTING DOWELS		50	7'-1	369
5s2	PIER, AESTHETIC, VERTICAL, CURVED		4	22'-3	93
5s3	PIER, AESTHETIC, VERTICAL		28	VARIES	525
5s4	PIER, AESTHETIC, VERTICAL		18	VARIES	364
5s5	PIER, AESTHETIC, UPPER TIES		4	4'-7	19
5s6	PIER, AESTHETIC, PEAK ROUND TIE		2	10'-8	22
5s7	PIER, AESTHETIC, HOOPS		18	18'-4	344
5s8	PIER, AESTHETIC, HOOPS		18	VARIES	314
5s9	PIER, AESTHETIC, ANCHORS		12	VARIES	93
	EPOXY COATED REINFORCING STEEL - TOTAL (LBS.)				18,089

REINFORCING BAR LIST - FOOTING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
7fl	FOOTING, TOP, TRANSV.		52	9'-8	1,028
7f2	FOOTING, TOP, LONGIT.		11	15'-3	343
7f3	FOOTING, TOP, LONGIT.		11	40'-0	899
9gl	FOOTING, BOTTOM, TRANSV.		69	12'-10	3,011
7g2	FOOTING, BOTTOM, LONGIT.		11	15'-3	343
7g3	FOOTING, BOTTOM, LONGIT.		11	40'-0	899
	REINFORCING STEEL - TOTAL (LBS.)				6,523

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
PIER (WALL)	103.5
FOOTING	77.0
TOTAL (CU. YDS.)	180.5

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

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 4'-0 SIDEWALK

169'-0, 166'-0 SPANS

PIER WALL DETAILS

STATION 3062+[illegible]45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 11 OF 52 FILE NO. 30864 DESIGN NO. 220

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PIER CONCRETE TEXTURE NOTES

THIS WORK CONSISTS OF APPLYING TEXTURED FINISHES ON ALL DESIGNATED CONCRETE SURFACES OF THE PIERS SHOWN IN THIS PLAN. SEE 'GENERAL NOTES FOR TEXTURED CONCRETE FORM LINERS' ON DESIGN SHEET 3 FOR MORE INFORMATION REGARDING THE USE OF FORM LINERS. THE TEXTURED CONCRETE MOCKUP PANEL MUST BE REVIEWED AND APPROVED BY THE ENGINEER BEFORE BEGINNING PRODUCTION CONCRETE WORK THAT INCLUDES TEXTURE.

THE FORM LINER USED TO PRODUCE TEXTURE 'A' AS SHOWN IN THE PLAN DETAILS SHALL PRODUCE A TEXTURED EFFECT OF ALTERNATING 10-INCH AND 4-INCH TALL COURSES OF CUT STONE IN RANDOM LENGTHS WITH SIMULATED MORTAR JOINTS. DEPTH OF TEXTURE SHALL BE 0.3125 INCH.

OBTAIN TEXTURE 'A' FORM LINER MATERIALS FROM ONE OF THE FOLLOWING MANUFACTURERS:

1. CUSTOM ROCK INTERNATIONAL (PATTERN NO. 12008)
2. FITZGERALD FORMLINERS (PATTERN NO. 17003)
3. SUBMIT ALL OTHER MANUFACTURERS AND PATTERNS INCLUDING A 1 FOOT BY 1 FOOT SAMPLE OF PROPOSED FORM LINER TO THE IOWA DEPARTMENT OF TRANSPORTATION, OFFICE OF BRIDGES AND STRUCTURES, AMES, IOWA. SAMPLE MAY BE EITHER ACTUAL FORM LINER MATERIALS OR FOAM CASTINGS. NO SAMPLES ARE REQUIRED TO BE SUBMITTED FOR MANUFACTURERS AND PATTERNS LISTED ABOVE.

THE FORM LINER USED TO PRODUCE TEXTURE 'B' AS SHOWN IN THE PLAN DETAILS SHALL PRODUCE A TEXTURED EFFECT OF A REALISTIC FRACTURED ROCK FACE WITH NO SIMULATED MASONRY JOINTS. DEPTH OF TEXTURE SHALL BE 1 INCH.

OBTAIN TEXTURE 'B' FORM LINER MATERIALS FROM ONE OF THE FOLLOWING MANUFACTURERS:

1. CUSTOM ROCK INTERNATIONAL (PATTERN NO. T325)
2. FITZGERALD FORMLINERS (PATTERN NO. 17030)
3. SUBMIT ALL OTHER MANUFACTURERS AND PATTERNS INCLUDING A 1 FOOT BY 1 FOOT SAMPLE OF PROPOSED FORM LINER TO THE IOWA DEPARTMENT OF TRANSPORTATION, OFFICE OF BRIDGES AND STRUCTURES, AMES, IOWA. SAMPLE MAY BE EITHER ACTUAL FORM LINER MATERIALS OR FOAM CASTINGS. NO SAMPLES ARE REQUIRED TO BE SUBMITTED FOR MANUFACTURERS AND PATTERNS LISTED ABOVE.

PRIOR TO BEGINNING ANY PRODUCTION CONCRETE WORK THAT INCLUDES TEXTURE, SUBMIT MANUFACTURER'S CUT SHEETS FOR FORM LINERS.

ALL COSTS ASSOCIATED WITH CONCRETE TEXTURES AND FORM LINERS AT THE PIER SHALL BE INCLUDED IN THE BID ITEM, "STRUCTURAL CONCRETE (BRIDGE)".

TEXTURED CONCRETE MOCKUP PANEL NOTES

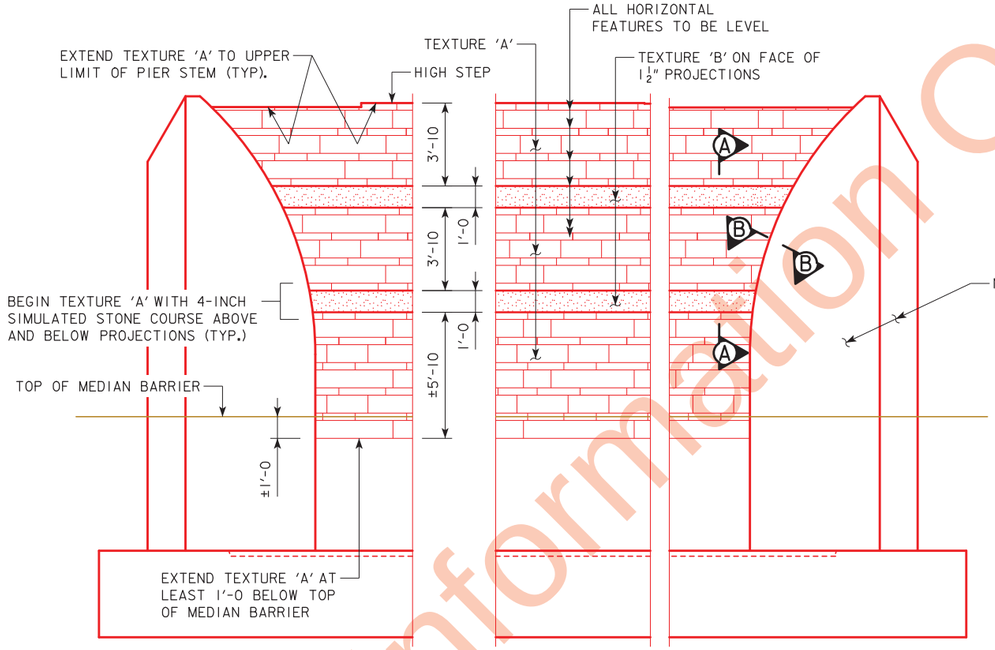
PRIOR TO BEGINNING ANY PRODUCTION CONCRETE WORK THAT INCLUDES TEXTURE, A TEXTURED CONCRETE MOCKUP PANEL MUST BE REVIEWED AND APPROVED BY THE ENGINEER.

CONSTRUCT A 4-FOOT HIGH, BY 6-INCH WIDE (MIN.), BY 4-FOOT LONG MOCKUP PANEL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THESE PLANS. SEE MOCKUP DETAILS ON THIS DESIGN SHEET.

CAST THE MOCKUP PANEL(S) ON SITE, USING THE SAME FORMING METHODS, PROCEDURES, FORM LINERS, AND CONCRETE MIXTURE(S) AS ARE PROPOSED FOR THE PRODUCTION WORK. TEXTURED FACES SHALL BE VERTICAL DURING THE CASTING PROCESS. A SINGLE MAT OF NO. 5 REINFORCING BARS IN TWO DIRECTIONS SHALL BE SET 2 INCHES CLEAR TO THE BOTTOM OF THE TEXTURED FACE. IF THE MOCKUP PANEL IS REJECTED, CONSTRUCT A NEW MOCKUP PANEL AS DIRECTED BY THE ENGINEER. BEGIN TEXTURED CONCRETE PRODUCTION WORK ONLY AFTER THE MOCKUP HAS BEEN APPROVED BY THE ENGINEER.

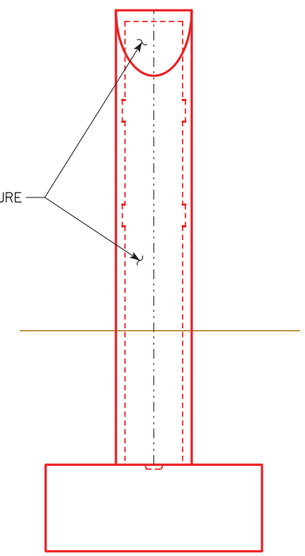
AFTER CURING THE MOCKUP PANEL FOR A MINIMUM OF 28 DAYS, DEMONSTRATE SURFACE PREPARATION AND MINERAL SILICATE PAINT APPLICATION ON THE MOCKUP. SEE DETAILS AND NOTES ELSEWHERE IN THESE PLANS FOR FURTHER INFORMATION. AFTER ALL PRODUCTION CONCRETE PAINTING WORK IS COMPLETE, THE MOCKUP PANEL(S) SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

ALL COSTS ASSOCIATED WITH THE TEXTURED CONCRETE MOCKUP PANEL(S) SHALL BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".

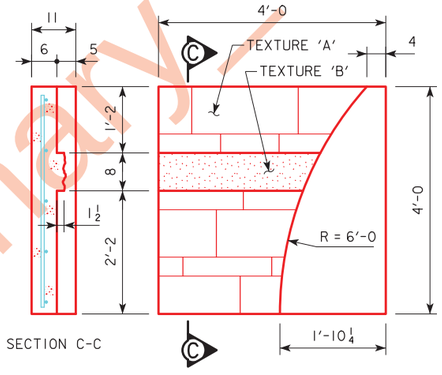


PIER SIDE ELEVATION

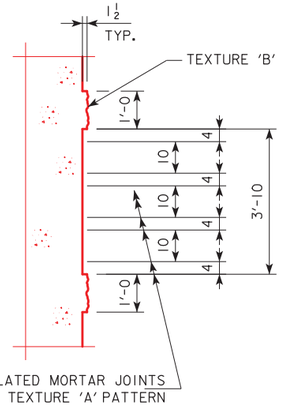
(LOOKING NORTH)



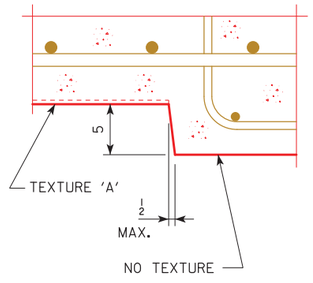
PIER END ELEVATION



MOCKUP PANEL DETAILS



PART SECTION A-A



PART SECTION B-B

NOTE: FOR PIER DIMENSIONS AND DETAILS SEE DESIGN SHEETS 8 - 11.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PIER AESTHETIC DETAILS

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 12 OF 52 FILE NO. 30864 DESIGN NO. 220

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CONCRETE PAINTING NOTES

THE TEXTURED SURFACES OF THE ABUTMENT WINGS AND MASK WALLS, THE TEXTURED SURFACES OF THE PIER STEM, AND THE FASCIA BEAM SURFACES AS NOTED AND SHOWN IN THE PLANS SHALL BE FINISHED WITH MINERAL SILICATE PAINT CHOSEN FROM THE FOLLOWING LISTED PRODUCTS:

1. KEIM MINERAL COATINGS OF AMERICA: CONCRETAL MINERAL COATING
2. EDISON COATINGS, INC.: EVERKOTE 300 MINERAL COATING
3. CATHEDRAL STONE PRODUCTS: MASONRE MINERAL COATING
4. BEECO MINERAL PAINTS: BEECKO-SOL OR RENOSIL COATING.
5. APPROVED EQUAL

PRIOR TO BEGINNING PRODUCTION PAINTING, DEMONSTRATE SURFACE PREPARATION METHODS AND PAINT APPLICATION ON THE TEXTURED CONCRETE MOCKUP PANEL LOCATED AT THE BRIDGE SITE. NO PRODUCTION CONCRETE PAINTING MAY BEGIN UNTIL FINAL APPROVAL OF PAINTING RESULTS ON THE MOCKUP. APPROVED MOCKUP SHALL REMAIN IN PLACE NEAR THE BRIDGE FOR COMPARISON TO PRODUCTION PAINTING UNTIL WORK IS COMPLETED.

PRIOR TO CONCRETE COATING APPLICATION, PREPARE SURFACES IN ACCORDANCE WITH THE "DEVELOPMENTAL SPECIFICATIONS FOR CONCRETE SURFACE PREPARATION AND TESTING PRIOR TO COATING APPLICATION". APPLY MINERAL SILICATE PAINT IN ACCORDANCE WITH THE "DEVELOPMENTAL SPECIFICATIONS FOR STRUCTURAL CONCRETE COATING".

THERE ARE TWO COLOR FINISH TYPES TO BE USED ON THE BRIDGE. "COLOR NO. 1" SHALL BE USED ONLY ON THE COURSED STONE TEXTURE 'A' SURFACES, AND "COLOR NO. 2" SHALL BE USED ON THE PROJECTED, FRACTURED FACE TEXTURE 'B' SURFACES AND ON THE FASCIA BEAMS. SEE DETAILS ON THIS DESIGN SHEET FOR SPECIFIC COLOR LOCATIONS AND LIMITS. "COLOR NO. 1" SHALL BE A FULL RANGE OF NATURAL LIMESTONE COLORS INCLUDING SUBTLE COLOR VARIATIONS, MINERAL OXIDATION AND STAINING. THE FINAL COLORATION OF THE CONCRETE SURFACE SHALL ACCURATELY SIMULATE THE APPEARANCE OF REAL STONE INCLUDING THE MULTIPLE COLOR SHADES THAT ARE APPARENT IN REAL CUT LIMESTONE. USE AT LEAST THREE COLOR SHADES TO SIMULATE THE APPEARANCE OF STONE. BEGIN WITH A BASE COLOR APPLICATION OF LIGHT OR MEDIUM BUFF. APPLY A SLIGHTLY LIGHTER OR DARKER BASE COLOR TO RANDOM STONES PRIOR TO ADDING THE COLOR VARIATIONS. "COLOR NO. 2" SHALL BE A SINGLE DARK GREY-BROWN COLOR TO MATCH FEDERAL STANDARD NO. 595C COLOR NUMBER 30099. SUBMIT PRODUCT SPECIFICATION SHEETS AND COLOR SAMPLES AS DESCRIBED IN THE DEVELOPMENTAL SPECIFICATIONS.

COATED SURFACE AREA TABULATION (SY):

COLOR NO. 1:
PIER 102.0
ABUTMENT WINGS AND MASK WALLS 42.7

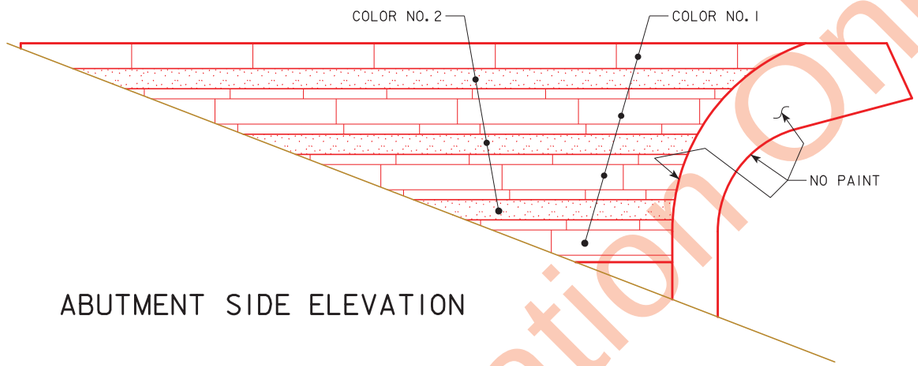
TOTAL COLOR NO. 1: 144.7 SY

COLOR NO. 2:
PIER 19.0
ABUTMENT WINGS AND MASK WALLS 13.3

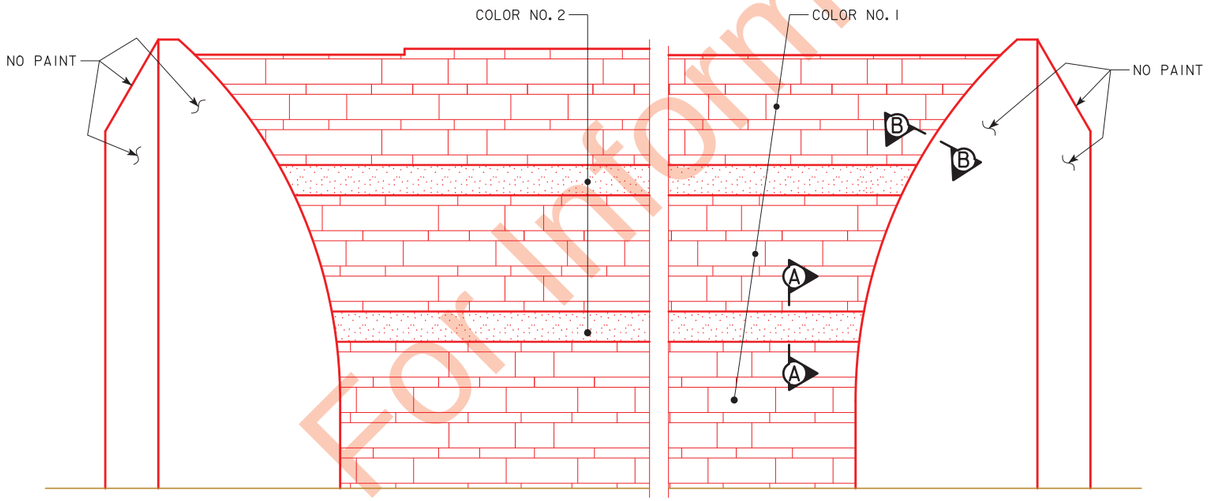
TOTAL COLOR NO. 2: 32.3 SY

WHEN ALL PRODUCTION CONCRETE PAINTING IS COMPLETE, THE CONCRETE MOCKUP PANEL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

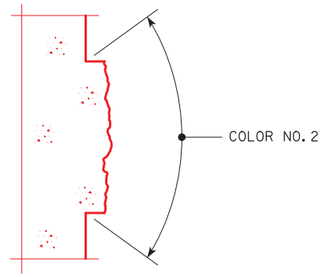
ALL COSTS ASSOCIATED WITH SURFACE PREPARATION AND APPLICATION OF MINERAL SILICATE PAINT SHALL BE INCLUDED IN THE BID ITEM, "STRUCTURAL CONCRETE COATING".



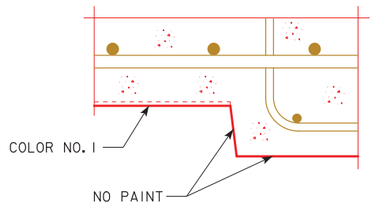
ABUTMENT SIDE ELEVATION



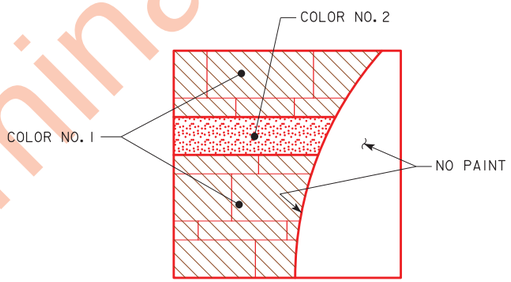
PIER SIDE ELEVATION



PART SECTION A-A



PART SECTION B-B



MOCKUP PANEL PAINTING DETAILS

(FOR MOCKUP PANEL DETAILS SEE DES. SHT. 12)

NOTE: FOR PIER DIMENSIONS AND DETAILS SEE DESIGN SHEETS 7 - 10.

CONCRETE PAINT QUANTITY

LOCATION	UNIT	QUANTITY
PIER	SY	121.0
ABUTMENTS (4 CORNERS)	SY	56.0
TOTAL	SY	177.0

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PIER AESTHETIC DETAILS

STATION 3062+55.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 13 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 14

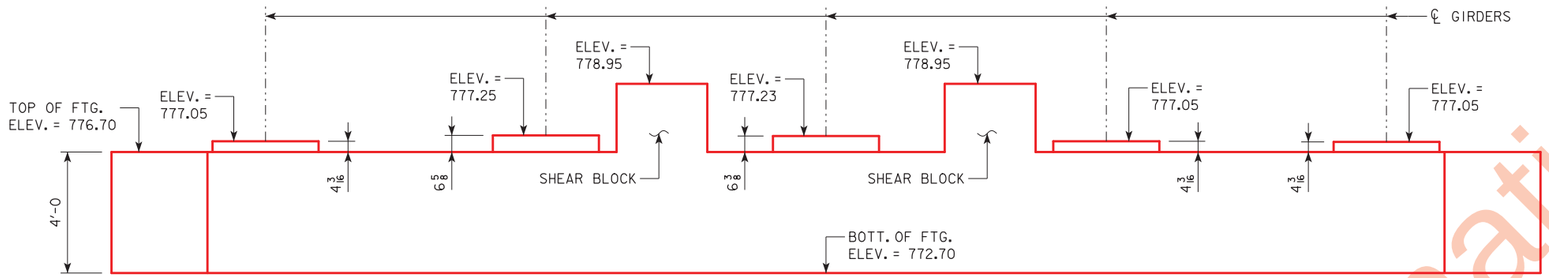
S. ABUTMENT PILE DESIGN NOTES:

THE CONTRACT LENGTH OF 115 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 185 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

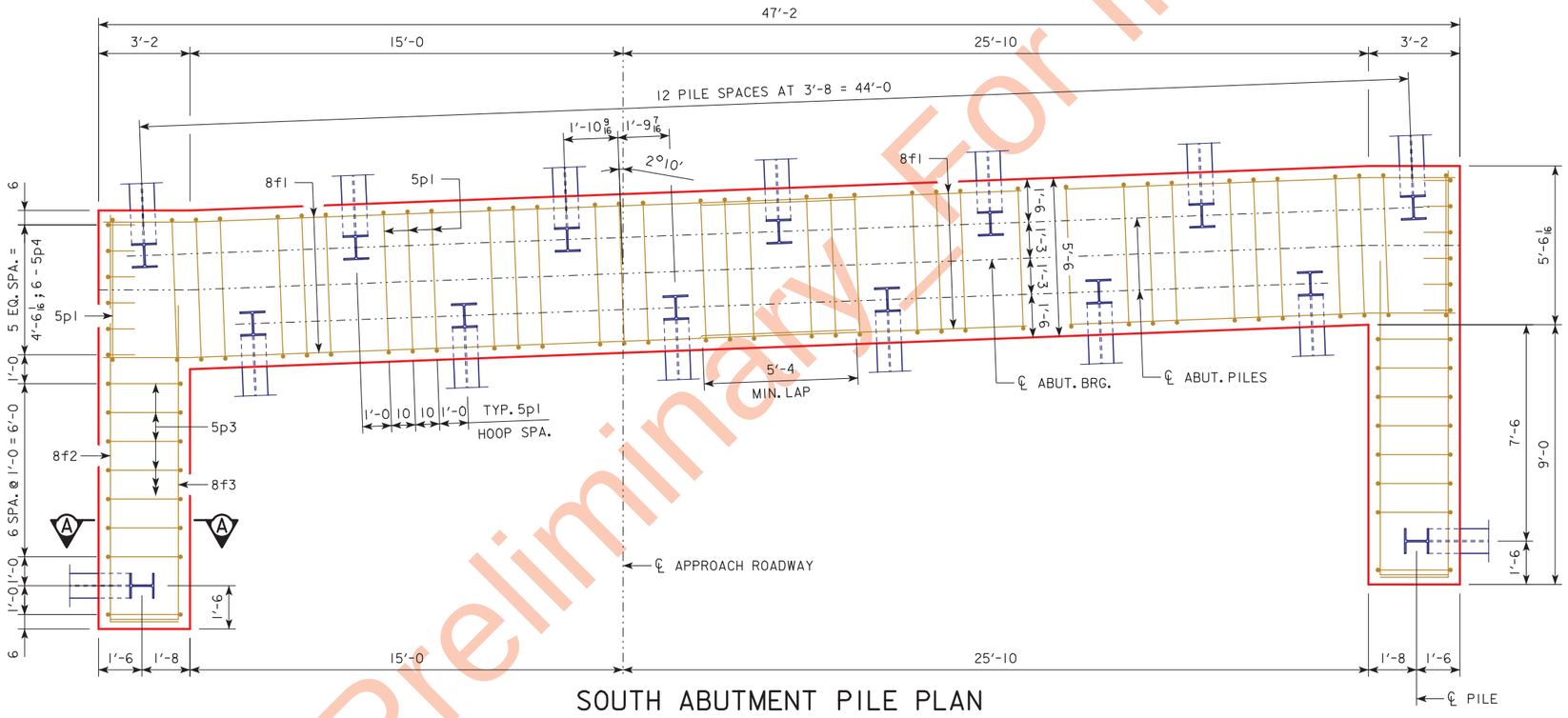
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.76. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

S. ABUTMENT PILE DRIVING NOTE:

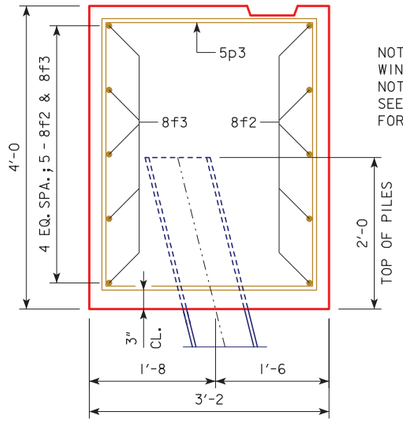
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH ABUTMENT PILES IS 122 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 142 TONS AT ONE-DAY OR LATER RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.



SOUTH ABUTMENT STEP DIAGRAM



SOUTH ABUTMENT PILE PLAN



SECTION A-A

NOTE:
WING & MASKWALL REINF. NOT SHOWN FOR CLARITY, SEE DESIGN SHEET 19 FOR DETAILS.

ABUTMENT CONCRETE QUANTITY

LOCATION	QUANTITY
S. ABUT. FOOTING, STEPS & SHEAR BLOCKS	49.9
TOTAL (CU. YDS.)	49.9

NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.
NOTE: 15 - HP 10 x 57 STEEL BEARING PILING REQUIRED AT SOUTH ABUTMENT.
DIMENSIONS SHOWN ON PILING LAYOUT ARE AT THE BOTTOM OF FOOTING.

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

S. ABUT. FOOTING DETAILS

STATION 30621+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 14 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

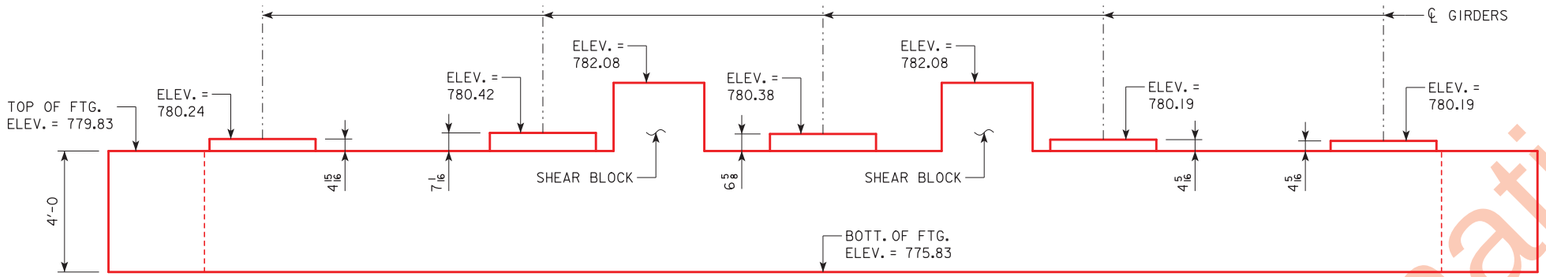
N. ABUTMENT PILE DESIGN NOTES:

THE CONTRACT LENGTH OF 115 FEET FOR THE NORTH ABUTMENT PILES IS BASED ON A MIXED SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 185 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

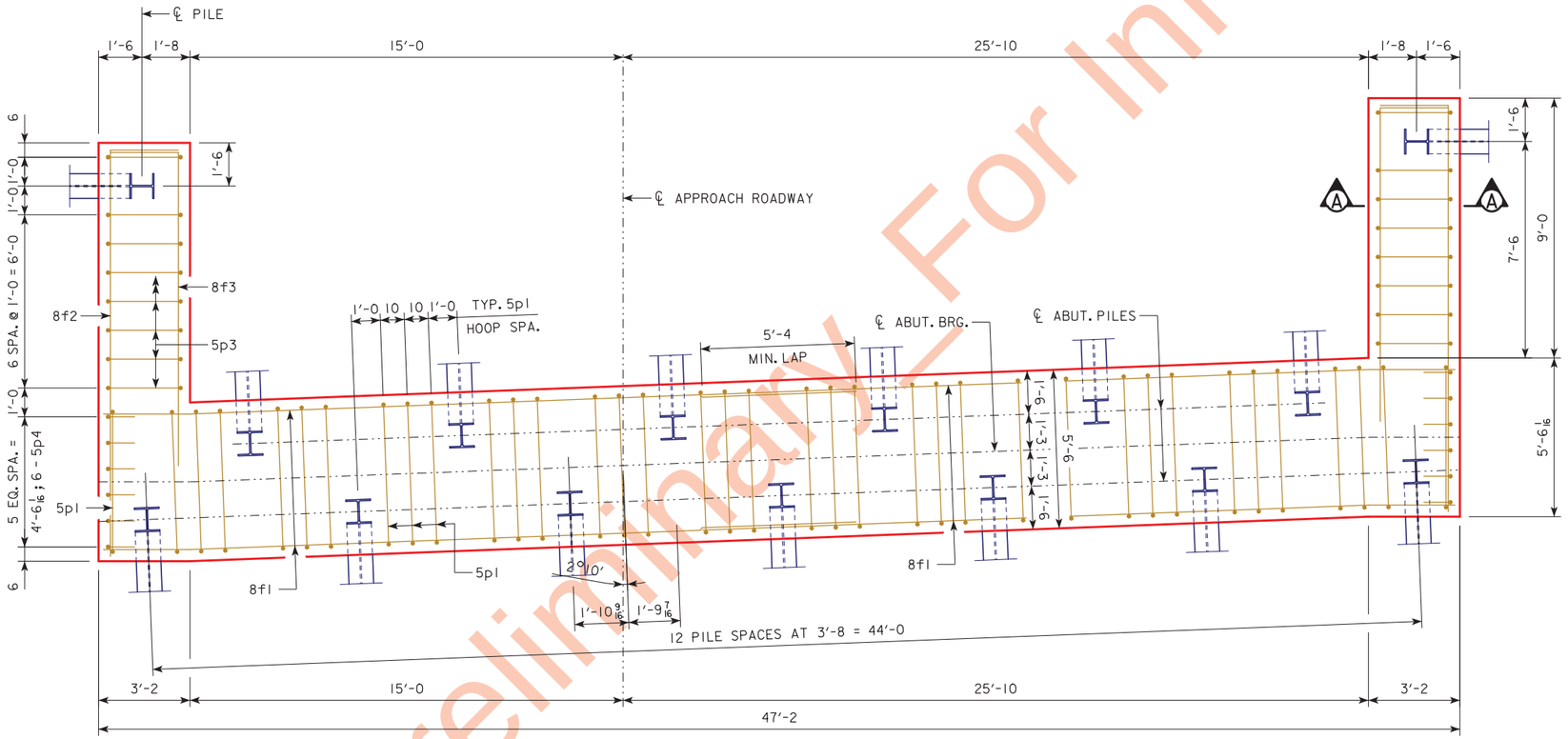
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

N. ABUTMENT PILE DRIVING NOTE:

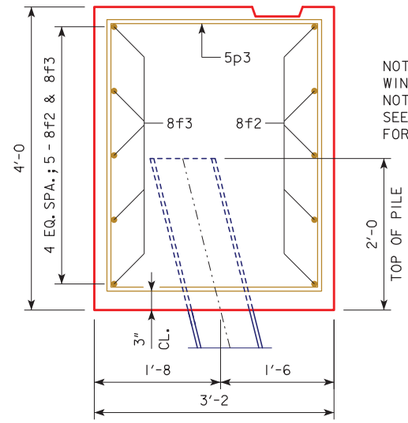
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH ABUTMENT PILES IS 142 TONS AT END OF DRIVE. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.



NORTH ABUTMENT STEP DIAGRAM



NORTH ABUTMENT PILE PLAN



SECTION A-A

NOTE:
WING & MASKWALL REINF. NOT SHOWN FOR CLARITY, SEE DESIGN SHEET 19 FOR DETAILS.

ABUTMENT CONCRETE QUANTITY	
LOCATION	QUANTITY
N. ABUT. FOOTING, STEPS & SHEAR BLOCKS	49.9
TOTAL (CU. YDS.)	49.9

NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.
NOTE: 15 - HP 10 x 57 STEEL BEARING PILING REQUIRED AT NORTH ABUTMENT.
DIMENSIONS SHOWN ON PILING LAYOUT ARE AT THE BOTTOM OF FOOTING.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

N. ABUT. FOOTING DETAILS

STATION 30621+55.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 15 OF 52 FILE NO. 30864 DESIGN NO. 220

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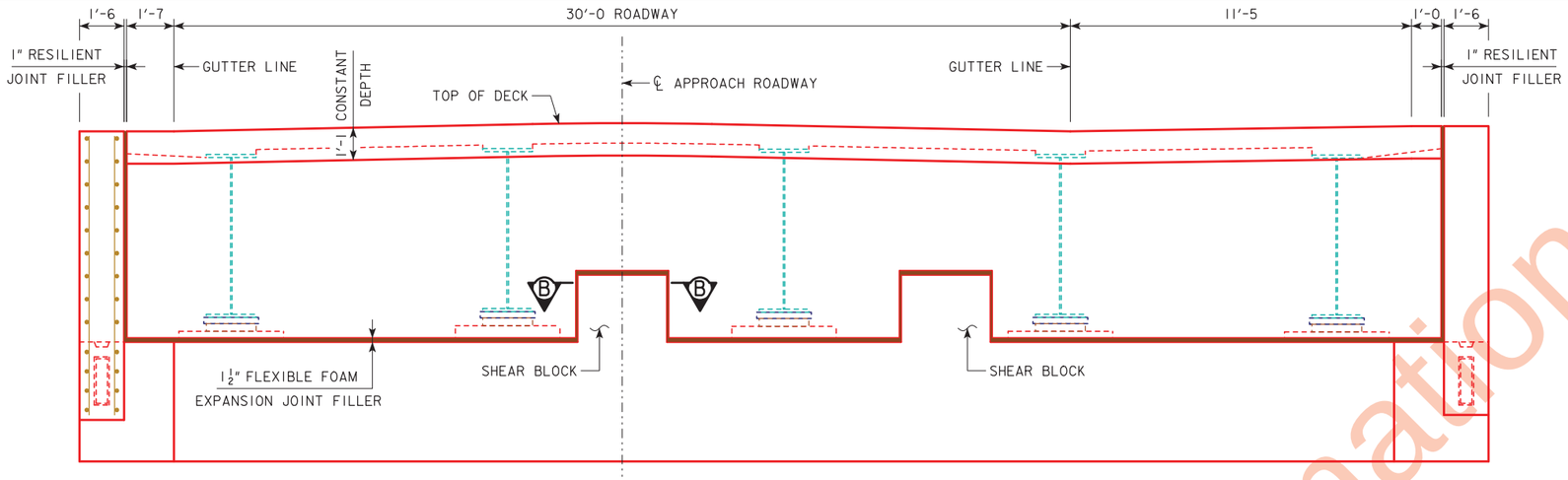
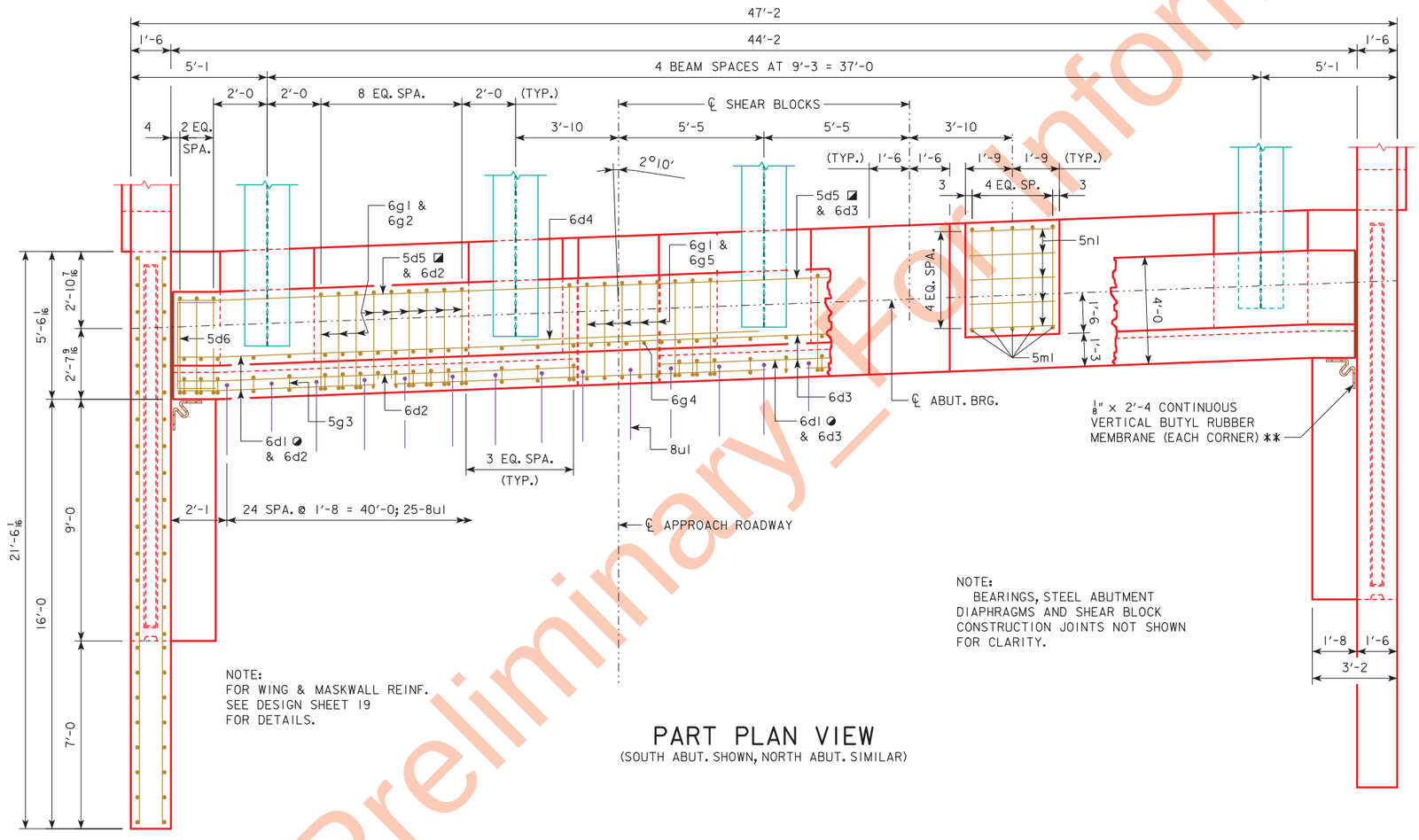


PART REAR ELEVATION

(BUTYL RUBBER MEMBRANES, STEEL ABUTMENT DIAPHRAGMS AND SHEAR BLOCK CONSTRUCTION JOINTS NOT SHOWN FOR CLARITY)



NOTE:
FOR WING & MASKWALL REINF. SEE DESIGN SHEET 19 FOR DETAILS.

NOTE:
BEARINGS, STEEL ABUTMENT DIAPHRAGMS AND SHEAR BLOCK CONSTRUCTION JOINTS NOT SHOWN FOR CLARITY.

PART PLAN VIEW

(SOUTH ABUT. SHOWN, NORTH ABUT. SIMILAR)

ABUTMENT NOTES:

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

CONSTRUCTION JOINT KEYWAYS ARE TO BE FORMED WITH BEVELED 2x6's UNLESS NOTED OTHERWISE.

PAVING NOTCH DOWELS SHALL BE STAINLESS STEEL DEFORMED BAR GRADE 60, MEETING THE REQUIREMENTS OF MATERIALS I.M. 452.

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

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

NOTES:

BARRIER RAILS NOT SHOWN IN DETAILS.

** VERTICAL BUTYL RUBBER MEMBRANES SHALL BE PLACED AFTER HORIZONTAL BUTYL RUBBER MEMBRANE. VERTICAL MEMBRANE SHALL EXTEND FROM BOTTOM OF APPROACH SLAB NOTCH TO 1½" JOINT. MEMBRANE SHALL BE CENTERED ABOUT VERTICAL JOINT AND FASTENED TO BOTH CONCRETE FACES WITH AN APPROVED WATERPROOF ADHESIVE. SEE ABUTMENT BACKFILL DETAILS SHEET FOR LOOP DETAIL.

FOR SECTION B-B, TYPICAL SECTION THROUGH ABUTMENT AND SECTION THROUGH ABUTMENT AT SHEAR BLOCK, SEE DESIGN SHEET 17.

◒ 3'-8 MIN. LAP AT ℄.
◪ 3'-1 MIN. LAP AT ℄.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 11'-0 SIDEWALK

169'-0, 166'-0 SPANS

ABUTMENT DETAILS

STATION 3062+55.75 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 16 OF 52 FILE NO. 30864 DESIGN NO. 220

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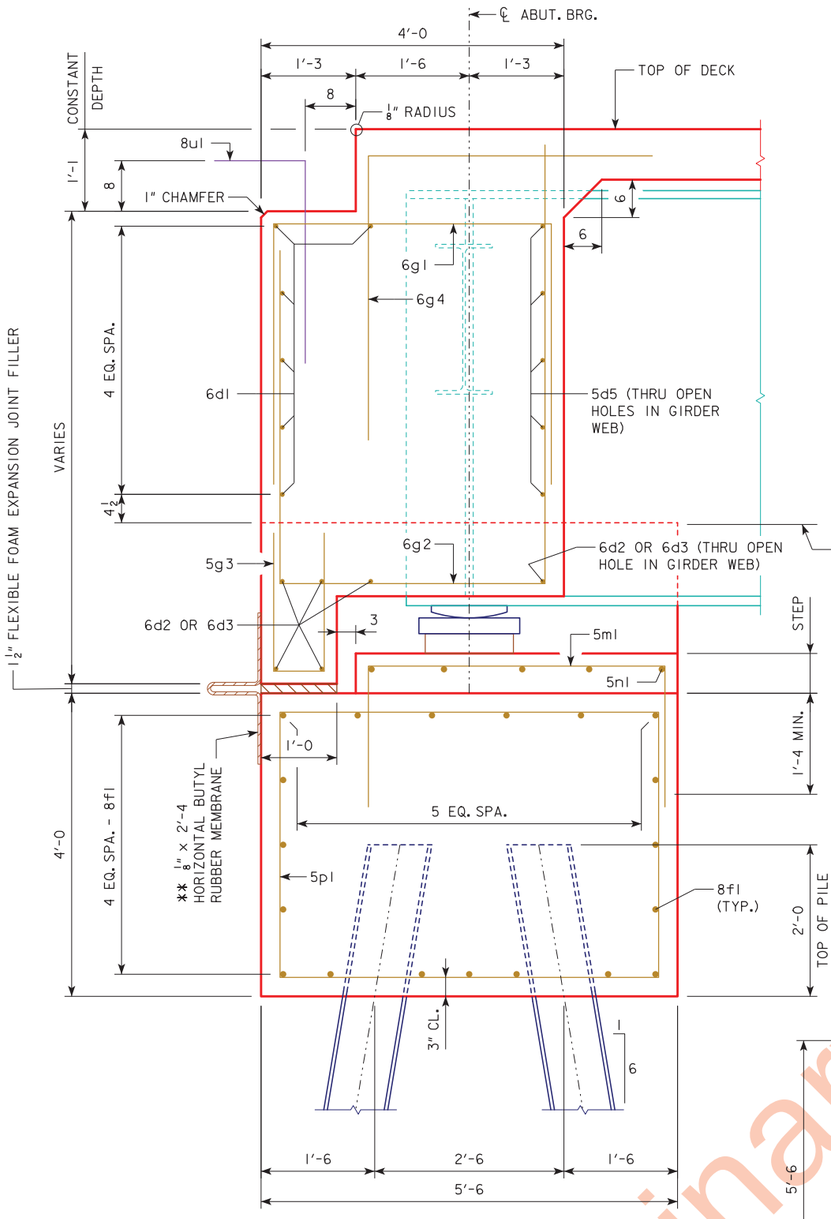
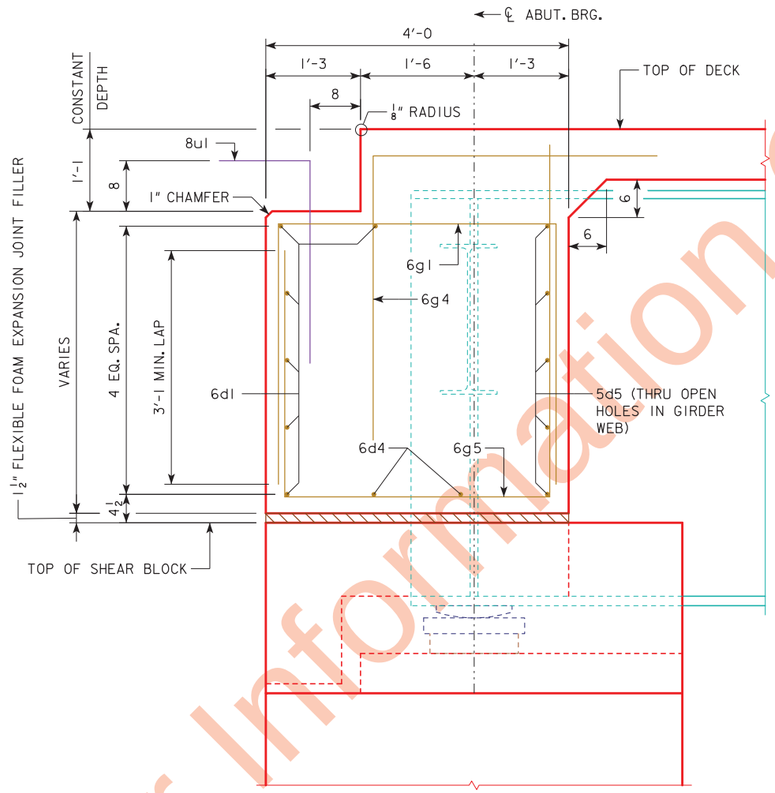


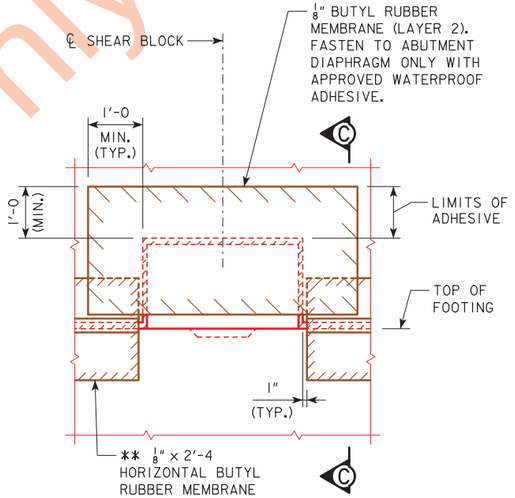
SECTION THROUGH ABUTMENT

(NORMAL TO ℄ ABUTMENT)
(GIRDER SHEAR STUDS NOT SHOWN FOR CLARITY)

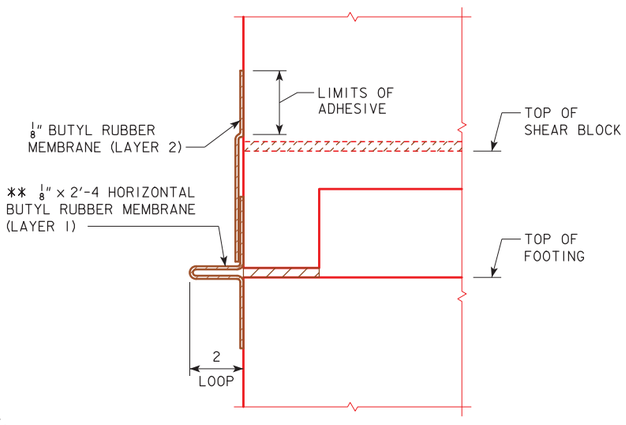


SECTION THROUGH ABUTMENT AT SHEAR BLOCK

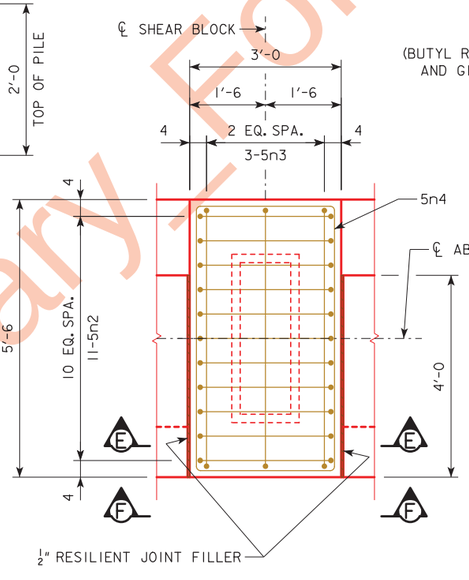
(NORMAL TO ℄ ABUTMENT)
(BUTYL RUBBER MEMBRANES, SHEAR BLOCK REINFORCEMENT AND GIRDER SHEAR STUDS NOT SHOWN FOR CLARITY)



VIEW F-F

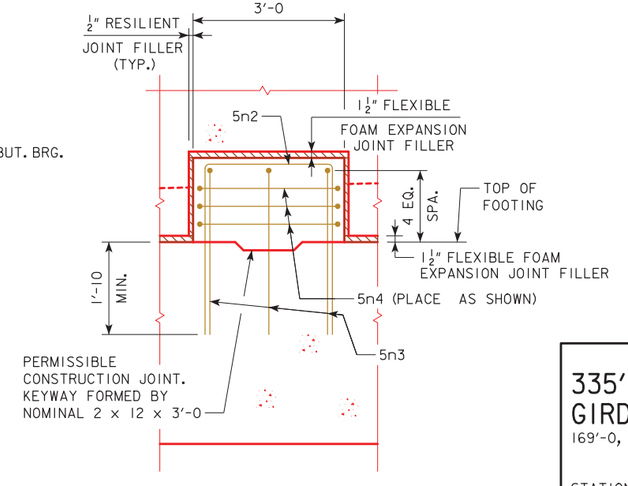


SECTION C-C



SECTION B-B

(ABUTMENT DIAPHRAGM REINFORCING AND BUTYL RUBBER MEMBRANES NOT SHOWN FOR CLARITY)



SECTION E-E

(ABUTMENT DIAPHRAGM REINFORCING NOT SHOWN FOR CLARITY)

NOTES:
FOR LOCATION OF SECTION B-B, SEE DESIGN SHEET 16.
FOR BEARING DETAILS SEE DESGIN SHEET 35.
** HORIZONTAL BUTYL RUBBER MEMBRANE SHALL BE CENTERED AND FASTENED TO THE CONCRETE ON BOTH SIDES OF THE JOINT WITH AN APPROVED WATERPROOF ADHESIVE.

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

ABUTMENT DETAILS

STATION 3062+55.45 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 17-52 FILE NO. 30864 DESIGN NO. 220

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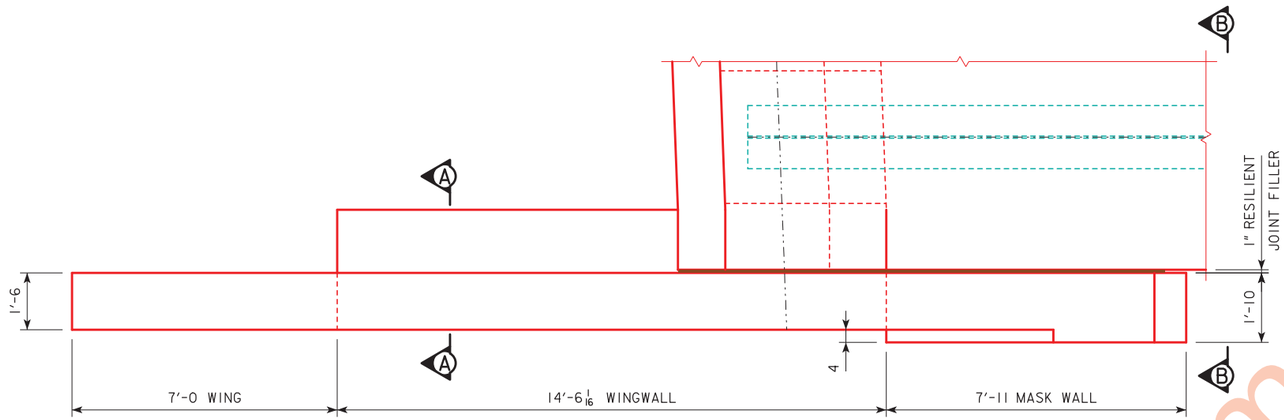
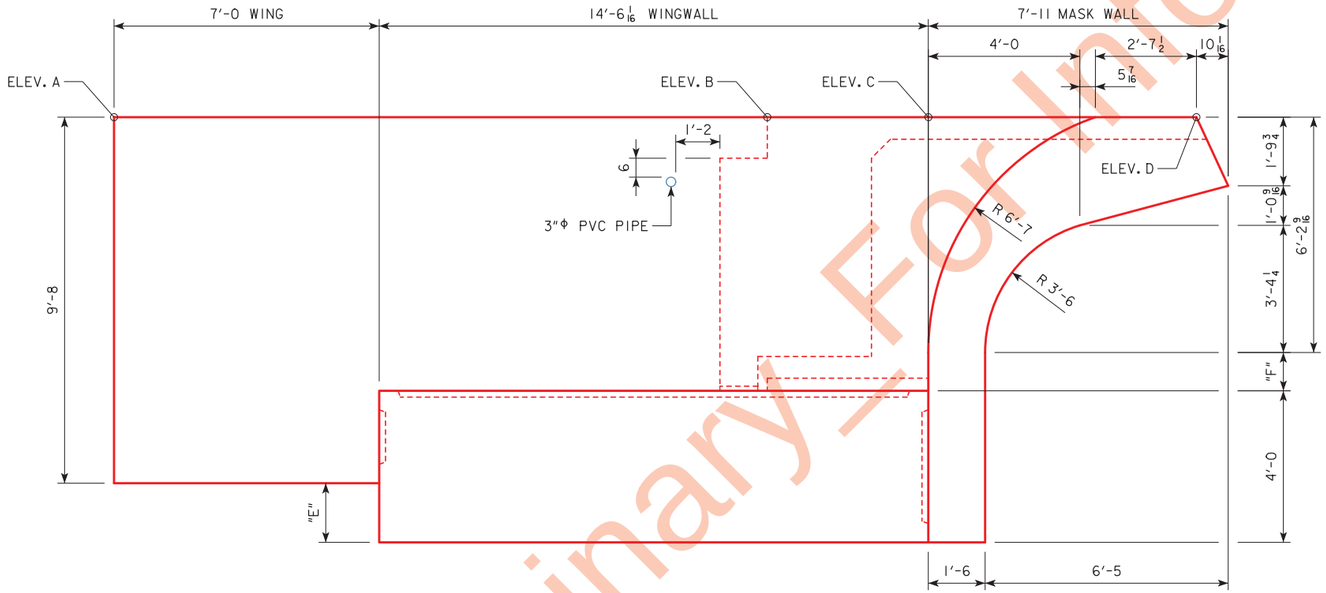
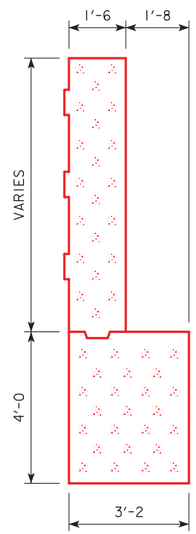
BENCH MARK NO.: 615 Sta.30653+45.242 17.13 Rt. FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A----- 686.896



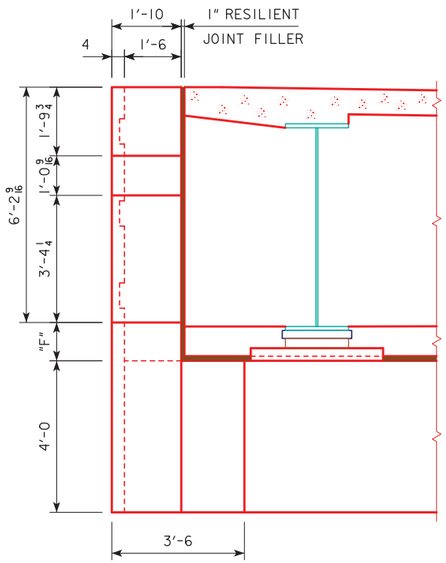
ABUTMENT WING PLAN



ABUTMENT WING ELEVATION
(GIRDER NOT SHOWN FOR CLARITY)



SECTION A-A



END VIEW B-B

TABLE OF WING ELEVATIONS

LOCATION	DIM. "E"	DIM. "F"	ELEV. A	ELEV. B	ELEV. C	ELEV. D
S.W.	1'-0 1/8	1'-3 3/4	783.38	783.89	784.02	784.22
S.E.	1'-2 3/4	1'-6 3/8	783.60	784.11	784.23	784.44
N.W.	1'-4 3/16	1'-2 1/2	786.85	787.10	787.16	787.25
N.E.	1'-5 7/8	1'-4 1/4	786.99	787.25	787.31	787.40

NOTE:
PILING AND REINFORCING NOT SHOWN FOR CLARITY.

FOR WING REINFORCING SEE DESIGN SHEET 19.

FOR AESTHETIC DETAILS SEE DESIGN SHEET 20.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 4'-0 SIDEWALK

169'-0, 166'-0 SPANS

ABUTMENT WING DETAILS

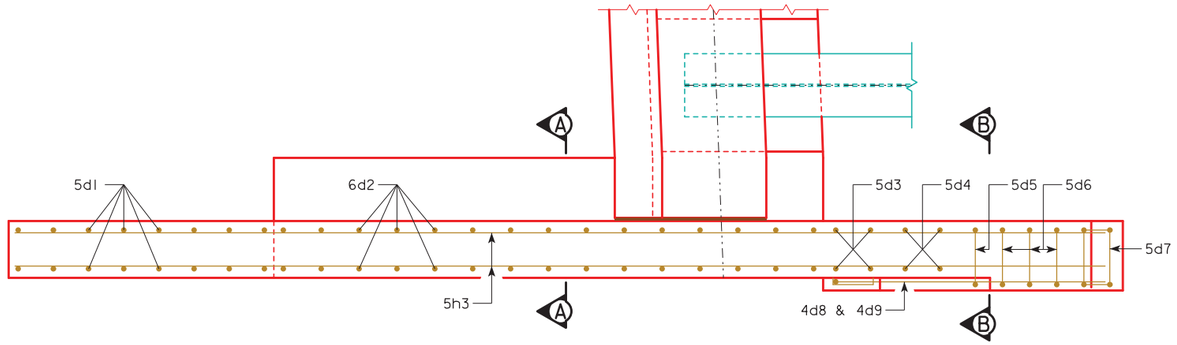
STATION 30621+55.25 APRIL, 2020

JOHNSON COUNTY

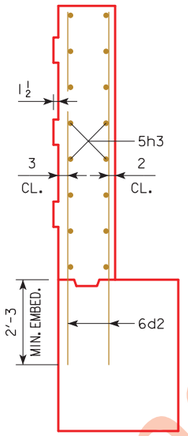
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 18 OF 52 FILE NO. 30864 DESIGN NO. 220

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 19



PART PLAN VIEW
(DECK NOT SHOWN FOR CLARITY)

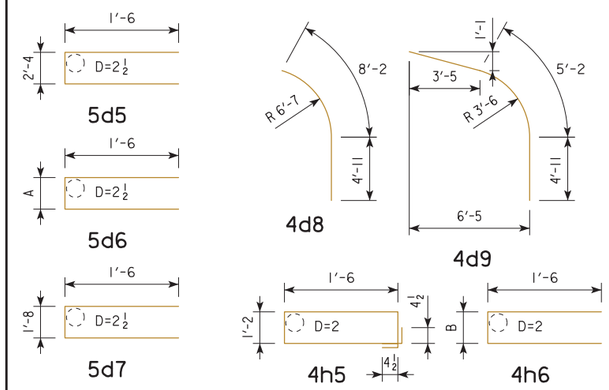


SECTION A-A

REINFORCING BAR LIST - ONE WING WALL

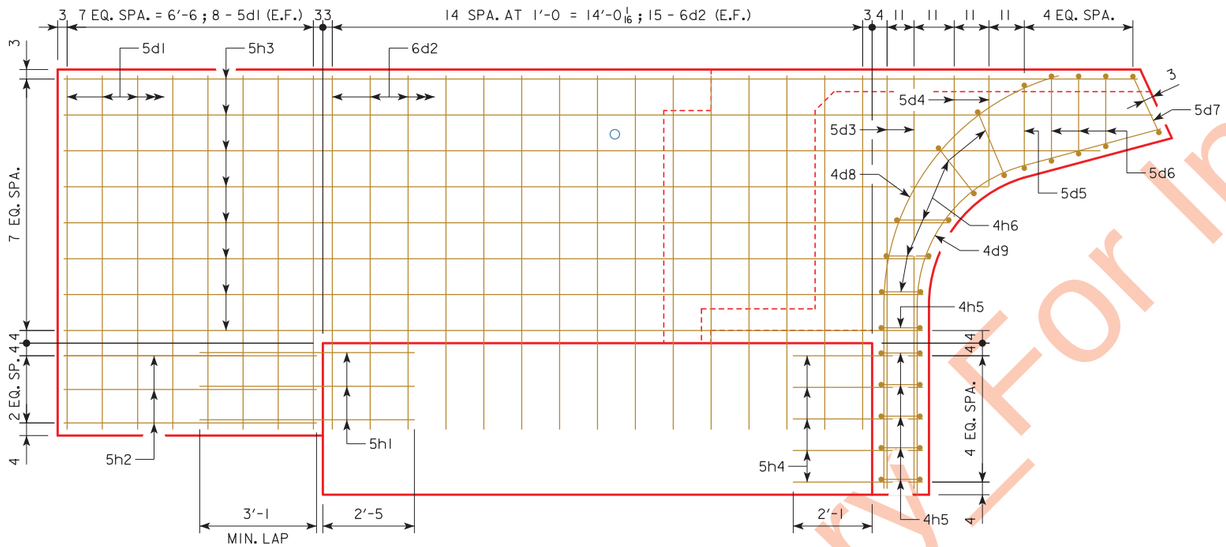
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5d1	WING WALL, VERTICAL, BOTH FACES		16	9'-4	156
6d2	ABUT. TO WING WALL, VERT., ANCHOR, B. FACES		30	9'-9	439
5d3	MASKWALL, VERTICAL, BOTH FACES		4	10'-10	45
5d4	MASKWALL, VERTICAL, BOTH FACES		4	VARIES	14
5d5	MASKWALL, VERTICAL, HOOP		2	5'-4	11
5d6	MASKWALL, VERTICAL, HOOPS		6	VARIES	32
5d7	MASKWALL, VERTICAL, HOOP		2	4'-8	10
4d8	MASKWALL, VERTICAL, CURVED		1	13'-1	9
4d9	MASKWALL, VERTICAL, CURVED		2	13'-9	18
5h1	ABUT. TO WING ANCHOR		6	5'-8	35
5h2	WING WALL, HORIZ., BOTH FACES		6	6'-8	42
5h3	WING WALL, HORIZONTAL, BOTH FACE		16	VARIES	418
5h4	ABUT. TO MASKWALL ANCHOR		10	3'-5	36
4h5	MASKWALL, HORIZONTAL, HOOPS		6	6'-1	24
4h6	MASKWALL, HORIZONTAL, BACK FACE		10	VARIES	31
	EPOXY COATED REINFORCING STEEL - TOTAL (LBS.)				1,320

BENT BARS

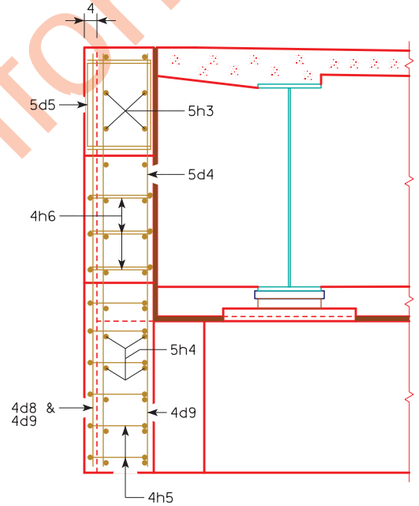


D=PIN DIAMETER. ALL DIMENSIONS ARE OUT TO OUT.

5h3	5d6 A	4h6 B	5d4
4 @ 22'-8	2 @ 2'-4	2 @ 1'-2	2 @ 3'-8
2 @ 22'-10	2 @ 2'-1 5/8	2 @ 1'-3 1/8	2 @ 2'-11
2 @ 23'-4	2 @ 1'-11 3/8	2 @ 1'-6 3/8	
2 @ 24'-5		2 @ 1'-7 3/4	
2 @ 27'-4		2 @ 1'-11 1/8	
2 @ 28'-9			
2 @ 28'-4			



ABUTMENT WING ELEVATION



SECTION B-B

NOTE:
PILING AND NOT SHOWN FOR CLARITY.

FOR WING DIMENSIONS SEE DESIGN SHEET 18.

FOR AESTHETIC DETAILS SEE DESIGN SHEET 20.

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

CONCRETE PLACEMENT SUMMARY

CONCRETE		TOTAL
SOUTH ABUTMENT WINGS & MASKWALLS	2 @ 11.1 CY.	22.2
NORTH ABUTMENT WINGS & MASKWALLS	2 @ 11.1 CY.	22.2
FOUR ABUTMENT WINGS TOTAL (CU. YDS.)		44.4

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

WING WALL DETAILS

STATION 3062+[illegible]45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 19 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY
Not For Construction

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ABUTMENT CONCRETE TEXTURE NOTES

THIS WORK CONSISTS OF APPLYING TEXTURED FINISHES ON ALL DESIGNATED CONCRETE SURFACES OF THE ABUTMENTS SHOWN IN THIS PLAN. SEE 'GENERAL NOTES FOR TEXTURED CONCRETE FORM LINERS' ON DESIGN SHEET 3 FOR MORE INFORMATION REGARDING THE USE OF FORM LINERS. THE TEXTURED CONCRETE MOCKUP PANEL MUST BE REVIEWED AND APPROVED BY THE ENGINEER BEFORE BEGINNING PRODUCTION CONCRETE WORK THAT INCLUDES TEXTURE.

THE FORM LINER USED TO PRODUCE TEXTURE 'A' AS SHOWN IN THE PLAN DETAILS SHALL PRODUCE A TEXTURED EFFECT OF ALTERNATING 10-INCH AND 4-INCH TALL COURSES OF CUT STONE IN RANDOM LENGTHS WITH SIMULATED MORTAR JOINTS. DEPTH OF TEXTURE SHALL BE 0.3125 INCH.

OBTAIN TEXTURE 'A' FORM LINER MATERIALS FROM ONE OF THE FOLLOWING MANUFACTURERS:

1. CUSTOM ROCK INTERNATIONAL (PATTERN NO. 12008)
2. FITZGERALD FORMLINERS (PATTERN NO. 17003)
3. SUBMIT ALL OTHER MANUFACTURERS AND PATTERNS INCLUDING A 1 FOOT BY 1 FOOT SAMPLE OF PROPOSED FORM LINER TO THE IOWA DEPARTMENT OF TRANSPORTATION, OFFICE OF BRIDGES AND STRUCTURES, AMES, IOWA. SAMPLE MAY BE EITHER ACTUAL FORM LINER MATERIALS OR FOAM CASTINGS. NO SAMPLES ARE REQUIRED TO BE SUBMITTED FOR MANUFACTURERS AND PATTERNS LISTED ABOVE.

THE FORM LINER USED TO PRODUCE TEXTURE 'B' AS SHOWN IN THE PLAN DETAILS SHALL PRODUCE A TEXTURED EFFECT OF A REALISTIC FRACTURED ROCK FACE WITH NO SIMULATED MASONRY JOINTS. DEPTH OF TEXTURE SHALL BE 1 INCH.

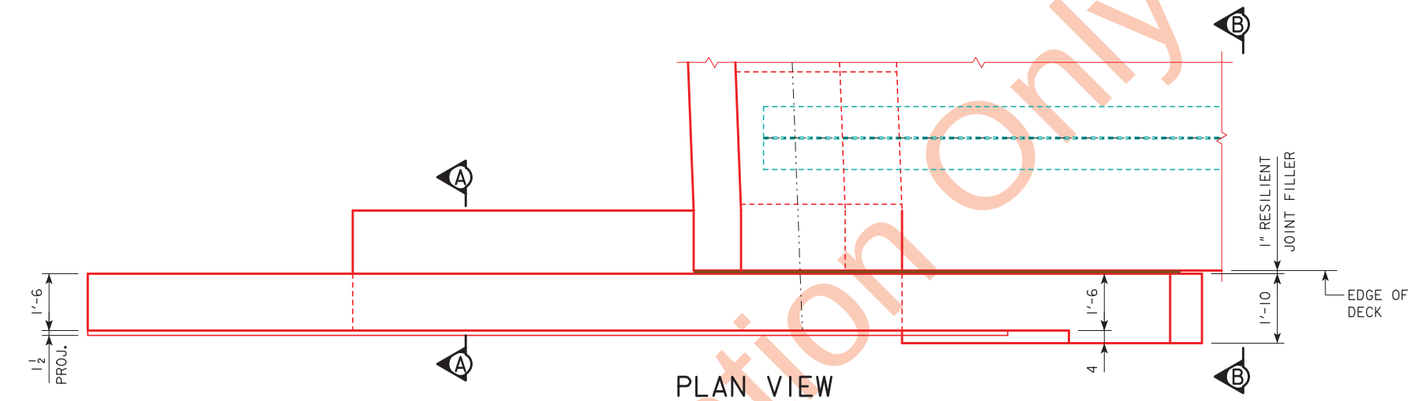
OBTAIN TEXTURE 'B' FORM LINER MATERIALS FROM ONE OF THE FOLLOWING MANUFACTURERS:

1. CUSTOM ROCK INTERNATIONAL (PATTERN NO. T325)
2. FITZGERALD FORMLINERS (PATTERN NO. 17030)
3. SUBMIT ALL OTHER MANUFACTURERS AND PATTERNS INCLUDING A 1 FOOT BY 1 FOOT SAMPLE OF PROPOSED FORM LINER TO THE IOWA DEPARTMENT OF TRANSPORTATION, OFFICE OF BRIDGES AND STRUCTURES, AMES, IOWA. SAMPLE MAY BE EITHER ACTUAL FORM LINER MATERIALS OR FOAM CASTINGS. NO SAMPLES ARE REQUIRED TO BE SUBMITTED FOR MANUFACTURERS AND PATTERNS LISTED ABOVE.

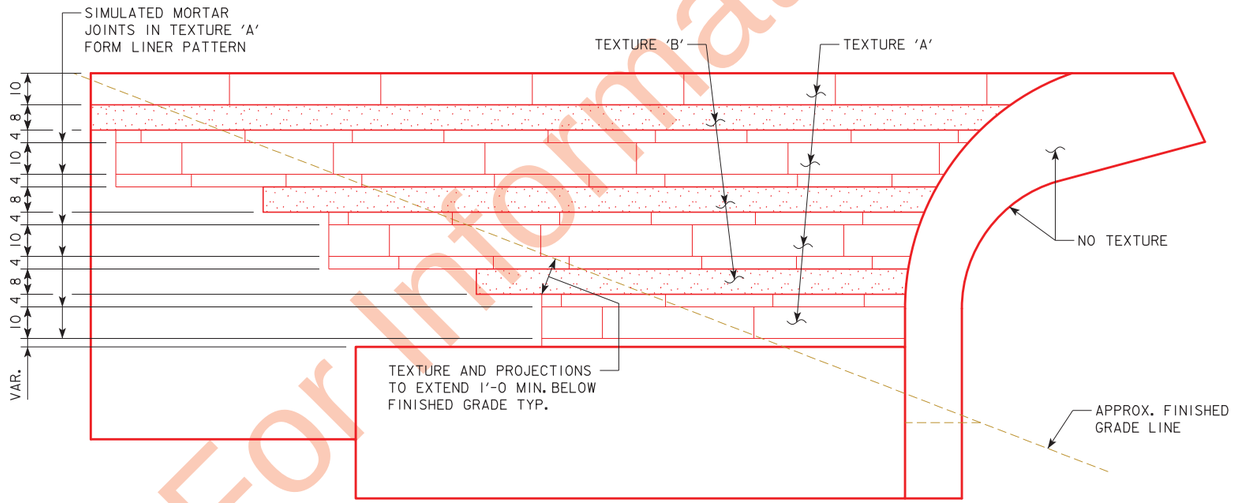
PRIOR TO BEGINNING ANY PRODUCTION CONCRETE WORK THAT INCLUDES TEXTURE, SUBMIT MANUFACTURER'S CUT SHEETS FOR FORM LINERS.

THE ABUTMENT SURFACES AS DESIGNATED IN THE PLANS SHALL ALSO RECEIVE CONCRETE RUSTICATION. SEE 'GENERAL NOTES FOR CONCRETE RUSTICATION' ON DESIGN SHEET 4 FOR MORE INFORMATION REGARDING APPROVED TECHNIQUES AND METHODS OF CONCRETE RUSTICATION.

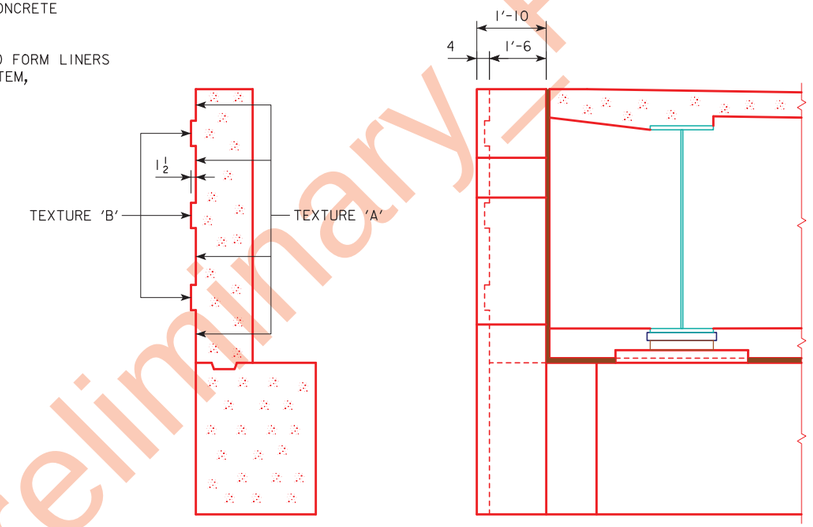
ALL COSTS ASSOCIATED WITH CONCRETE TEXTURES AND FORM LINERS AT THE ABUTMENTS SHALL BE INCLUDED IN THE BID ITEM, "STRUCTURAL CONCRETE (BRIDGE)".



PLAN VIEW



ABUTMENT ELEVATION



SECTION A-A VIEW B-B

NOTE:
SEE DESIGN SHEET 12 FOR MOCKUP PANEL DETAILS.

SEE DESIGN SHEET 13 FOR CONCRETE PAINTING DETAILS.

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

ABUTMENT AESTHETIC DETAILS

STATION 3062+56.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 20 OF 52 FILE NO. 30864 DESIGN NO. 220

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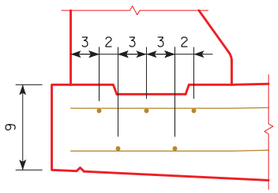
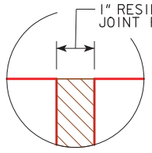


TYPICAL SPACING UNDER RAIL



DETAIL "A"

SUPERSTRUCTURE NOTES:

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

FORMS FOR THE BRIDGE DECK AND BARRIER RAIL ARE TO BE SUPPORTED BY THE GIRDERS.

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

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

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

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.

TRANSVERSE DECK REINFORCING MAY BE SPLICED WITH ONE LAP LOCATED AS FOLLOWS:

TOP BAR - LAP MIDWAY BETWEEN BEAMS (MIN. LAP = 3'-3).

BOTTOM BARS - LAP OVER BEAMS (MIN. LAP = 3'-3).

PAYMENT FOR REINFORCING BARS SHALL BE BASED ON NO SPLICES, AND NO ALLOWANCE SHALL BE MADE FOR THE ADDITIONAL LENGTH OF BAR REQUIRED FOR THE USE OF SPLICES.

ALL FIELD CONNECTIONS ARE TO BE BOLTED USING "HIGH STRENGTH BOLTS". UNLESS OTHERWISE NOTED, ALL OPEN HOLES ARE TO BE $\frac{15}{16}$"Φ AND ALL BOLTS ARE TO BE $\frac{7}{8}$"Φ.

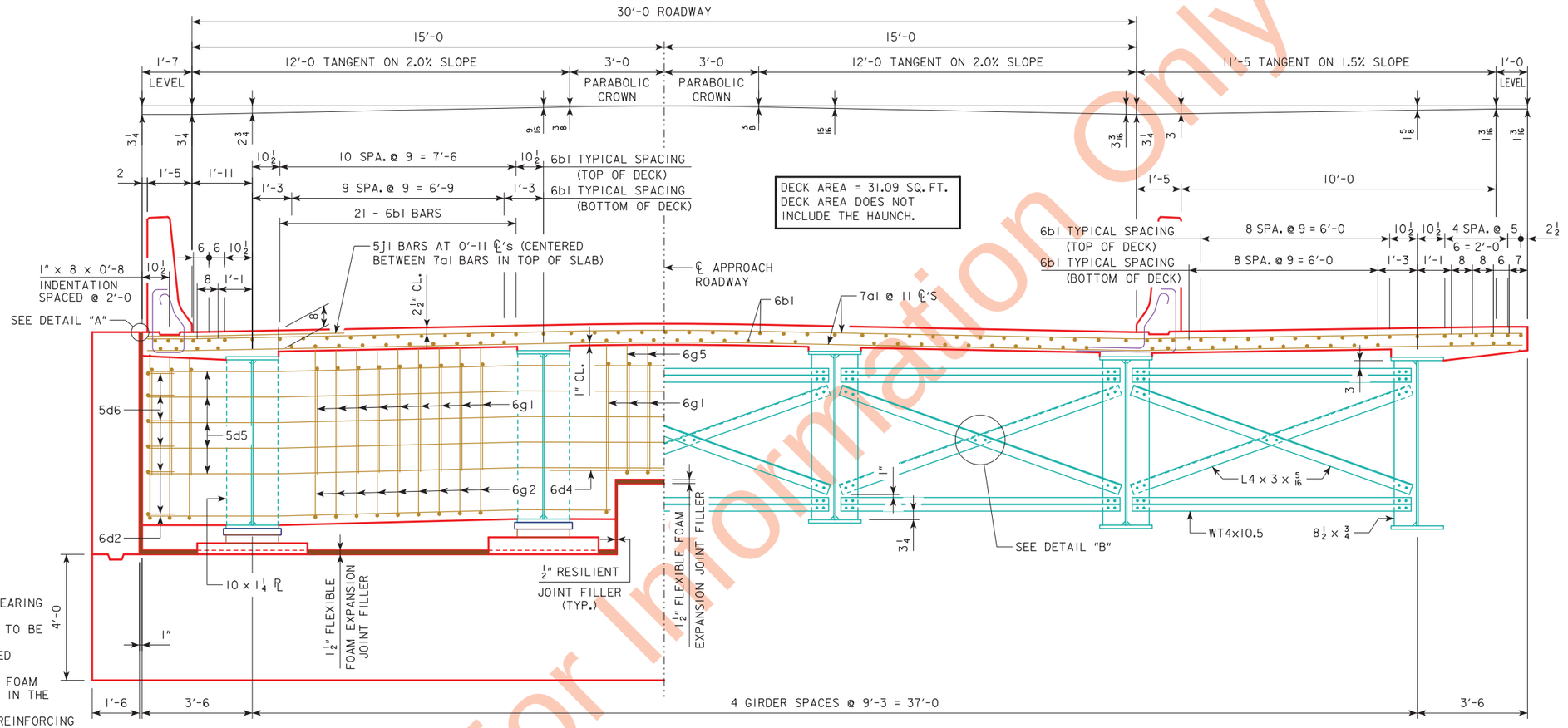
BOTTOM FLANGES ARE TO BE PERPENDICULAR TO WEBS AT THE REACTION POINTS.

FILL PL THICKNESSES SHOWN ON PLANS ARE BASED ON NOMINAL GIRDER DIMENSIONS. THESE THICKNESSES ARE TO BE VERIFIED OR ADJUSTED DURING FABRICATION TO SECURE A CLOSE FIT. EACH FILL PLATE SHALL FIT TO THE NEAREST $\frac{1}{16}$" IN THICKNESS AND SINGLE PLATES ARE REQUIRED AT EACH FILL LOCATION. GIRDERS ARE TO BE TRULY SQUARE AT SPLICE POINTS WITH FLANGES PERPENDICULAR TO WEBS.

THE DESIGN DRAWINGS INDICATE AWS PREQUALIFIED WELDED JOINTS. ALTERNATE JOINT DETAILS MAY BE SUBMITTED FOR APPROVAL.

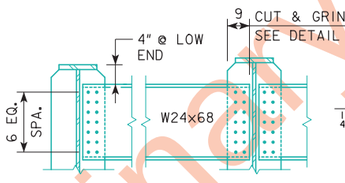
MAGNETIC PARTICLE INSPECTION OF WELDS, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, WILL BE REQUIRED.

SHOP WELDED FLANGE SPLICES SHALL BE A MINIMUM OF 6 INCHES FROM A STIFFENER, 6 INCHES FROM A WEB SPLICE, AND 4 INCHES FROM A SHEAR CONNECTOR. WEB SPLICES SHALL BE A MINIMUM OF 6 INCHES FROM A STIFFENER. SPLICES SHALL NOT INTERFERE WITH ANY OTHER BRIDGE COMPONENTS. ALL SHOP WELDED BUTT SPLICES SHALL BE SHOWN ON THE SHOP DRAWINGS AND SUBJECT TO APPROVAL BY THE ENGINEER.

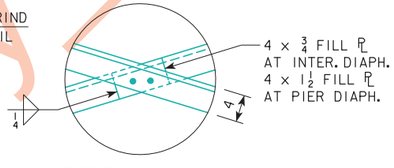


HALF SECTION NEAR ABUTMENT

(STEEL ABUTMENT DIAPHRAGMS NOT SHOWN FOR CLARITY.)



ABUT. DIAPHRAGM DETAIL



DETAIL "B"

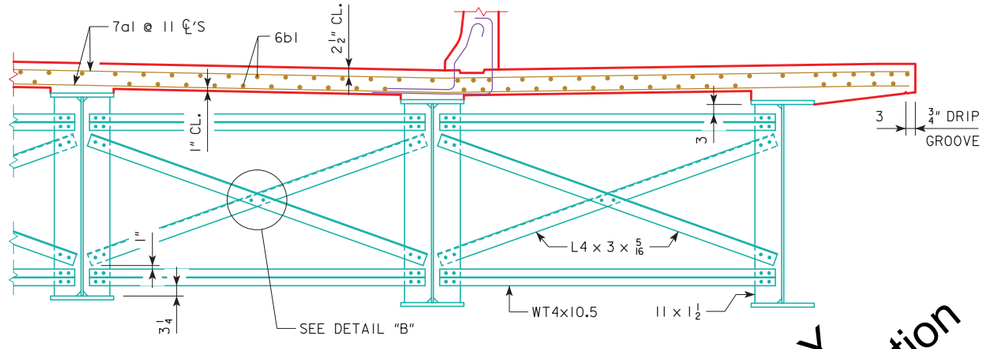
NOTES:

FOR ADDITIONAL STIFFENER AND WELDING DETAILS, SEE DESIGN SHEET 32.

SHEAR BLOCKS AT THE ABUTMENT ARE REQUIRED IN BAYS 2 AND 3.

TYPICAL CUT & GRIND DETAIL

HALF SECTION NEAR INTERMEDIATE DIAPHRAGM



HALF SECTION NEAR PIER

DESIGN FOR 2°ICY SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 1'-0 SIDEWALK

169'-0, 166'-0 SPANS

BRIDGE DECK CROSS SECTION

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 21 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 22

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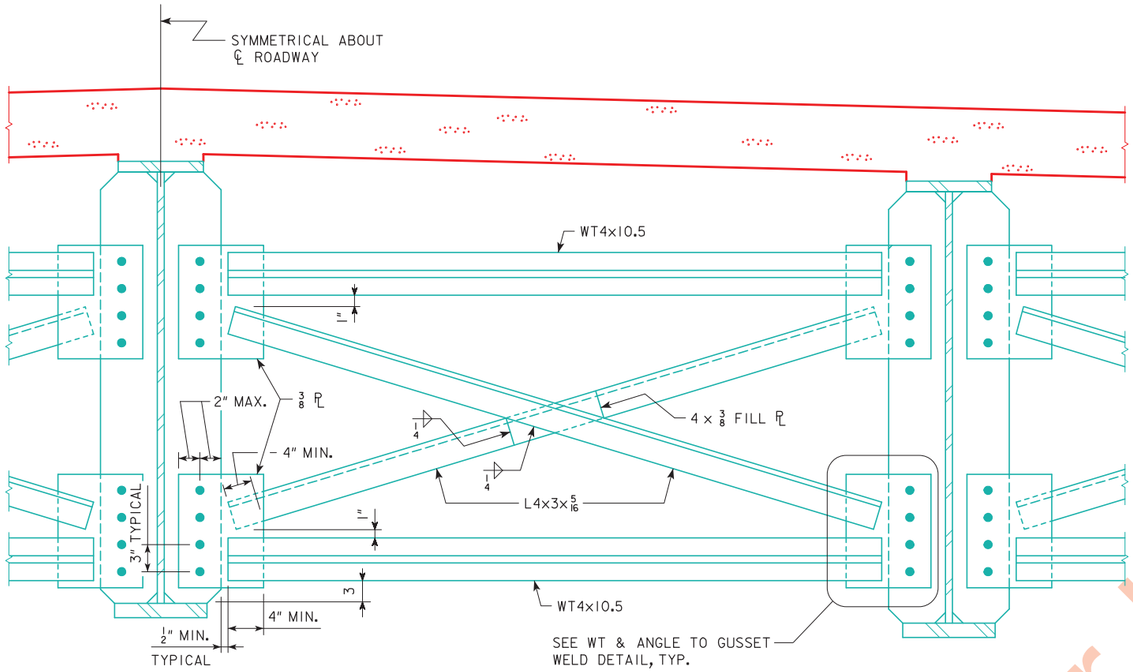


ALTERNATE INTERMEDIATE DIAPHRAGM PART SECTION THRU DECK

(SHOWING ONE DIAPHRAGM BETWEEN GIRDERS)

NOTE:
THIS CANNOT BE WELDED FROM ONE SIDE. CROSS FRAME MUST BE TURNED OVER TO ADD SECOND ANGLE.

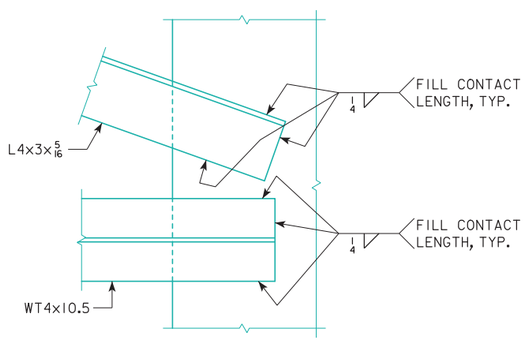
ALTERNATE INTERMEDIATE DIAPHRAGM NOTES:

ALL FIELD CONNECTIONS ARE TO BE BOLTED USING "HIGH TENSILE STRENGTH BOLTS". UNLESS OTHERWISE NOTED, ALL OPEN HOLES ARE TO BE $\frac{15}{16}$"Φ AND ALL BOLTS ARE TO BE $\frac{7}{8}$"Φ.

THE DESIGN DRAWINGS INDICATE AWS PREQUALIFIED WELDED JOINTS. ALTERNATE JOINT DETAILS MAY BE SUBMITTED FOR APPROVAL.

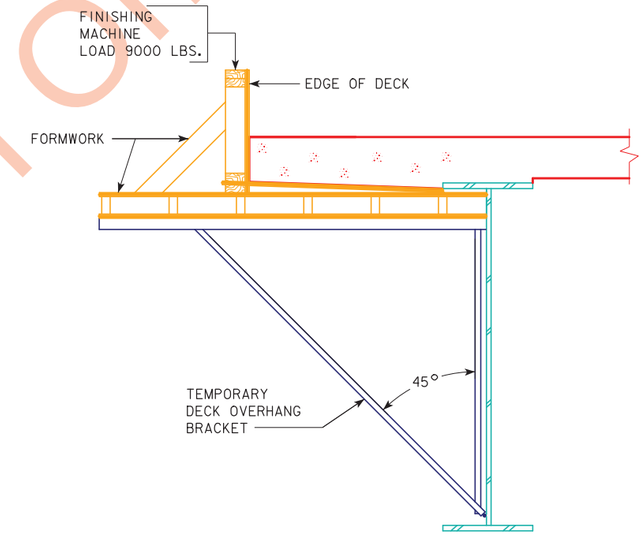
MAGNETIC PARTICLE INSPECTION OF WELDS SHALL BE IN ACCORDANCE WITH ARTICLE 2408.03, B, OF THE STANDARD SPECIFICATIONS.

STRUCTURAL STEEL QUANTITIES ARE BASED ON THE INTERMEDIATE DIAPHRAGM SHOWN ON TYPICAL CROSS SECTION ELSEWHERE IN THESE PLANS. NO ADJUSTMENT TO QUANTITIES WILL BE MADE IF THE CONTRACTOR USES THIS ALTERNATE INTERMEDIATE DIAPHRAGM DETAIL.



WT & ANGLE TO GUSSET WELD DETAIL

(TYP. ALL WT & ANGLE TO GUSSET CONNECTIONS)



TEMPORARY DECK OVERHANG BRACKET DETAIL

OVERHANG BRACKET NOTES:

A MAXIMUM FINISHING MACHINE LOAD AND THE ANGLE OF THE DIAGONAL MEMBER OF THE OVERHANG BRACKET SHOWN WERE ASSUMED BY THE DESIGNER. THESE ASSUMPTIONS, IN ADDITION TO OTHER CONSTRUCTION LOADINGS, WERE USED TO CHECK THE STRENGTH OF THE EXTERIOR GIRDER DURING CRITICAL STAGES OF CONSTRUCTION. IF THE FINISHING MACHINE LOAD OR ANGLE OF THE DIAGONAL MEMBER OF THE OVERHANG BRACKET DEVIATE SIGNIFICANTLY FROM VALUES SHOWN, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THIS INFORMATION ON PROPOSED CONSTRUCTION EQUIPMENT TO BE USED.

IF THE VERTICAL HEIGHT OF THE OVERHANG BRACKET IS ADJUSTABLE, THE BASE OF THE BRACKET IS TO BE LOCATED AS CLOSE AS POSSIBLE TO THE BOTTOM FLANGE OF THE GIRDER.

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 1'-0 SIDEWALK

169'-0, 166'-0 SPANS

ALT. DIAPH. & TEMP. OVERHANG BRACKET

STATION 3062+45.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 22 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

DESIGN TEAM LLY / PES / HDR	TEMP. OVERHANG BRACKET & ALT. INTERM. DIAPH. FOR WELDED GIRDER BRIDGES - LRFD DESIGN	STANDARD SHEET 4305A (MODIFIED)	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 23

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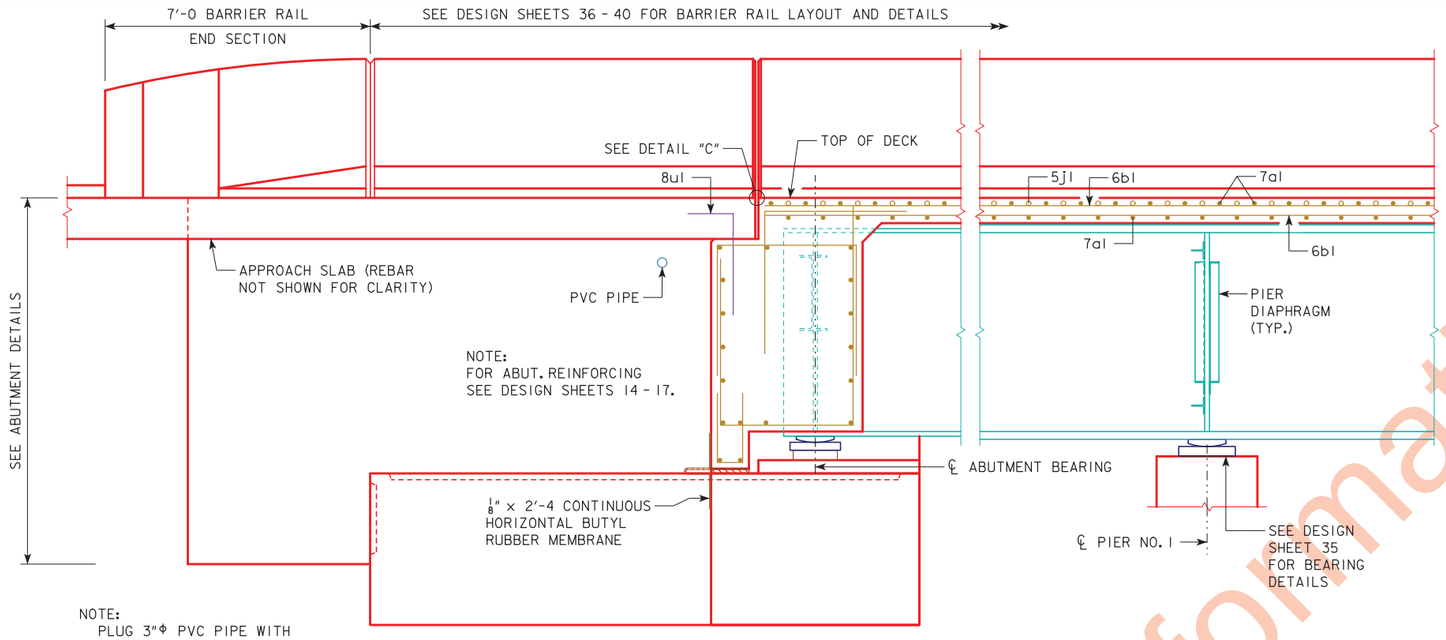
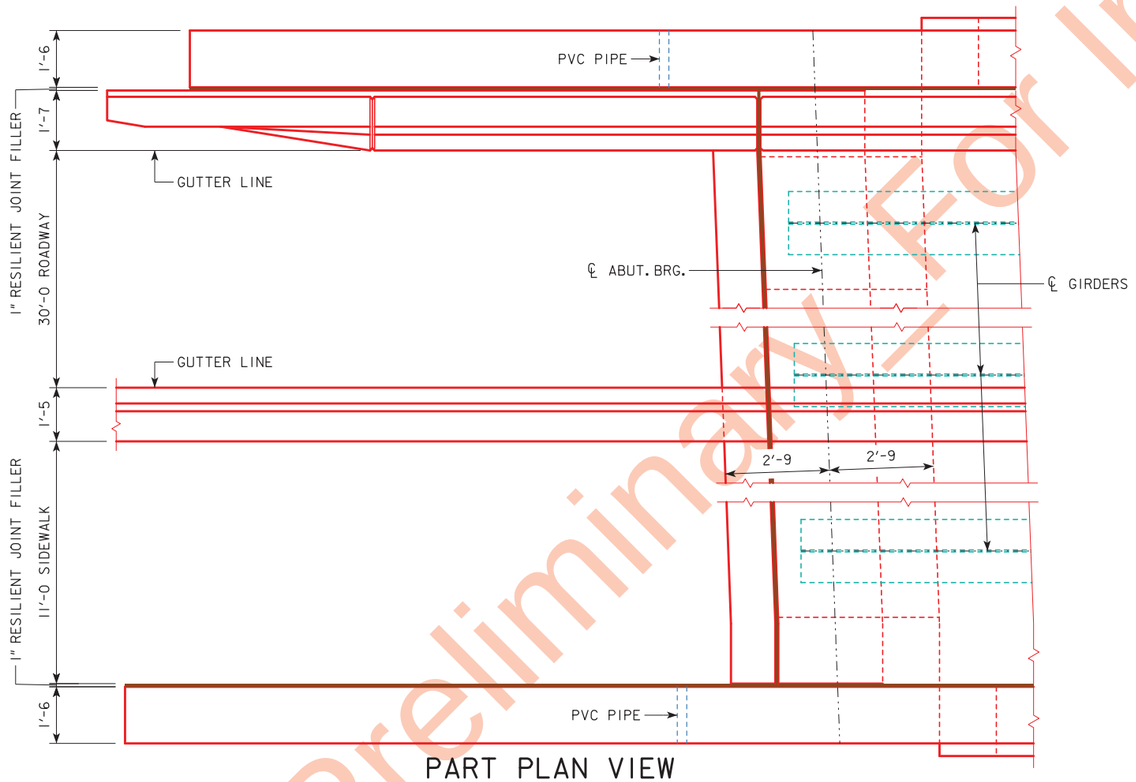
REVISED 08-12 - MAGNETIC PARTICLE INSPECTION OF WELDS NOTE WAS CHANGED.
REVISED 07-2018:FINISHING MACHINE LOAD IN TEMPORARY DECK OVERHANG BRACKET DETAIL CHANGED TO 9000 LBS. (WAS 6000 LBS.).
ENGLISHSTUBBRIDGES.DGN - 4305A THIS SHEET ISSUED 04-07.



PART LONGITUDINAL SECTION NEAR GUTTER

(VERTICAL BUTYL RUBBER MEMBRANES NOT SHOWN FOR CLARITY.)



PART PLAN VIEW

(BUTYL RUBBER MEMBRANES NOT SHOWN FOR CLARITY.)

DETAIL "C"

NOTE:
FOR ADDITIONAL DETAILS OF ABUTMENT DIAPHRAGM, SEE ABUTMENT DETAILS SHEETS.

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 11'-0 SIDEWALK

169'-0, 166'-0 SPANS

PART PLAN & LONGITUDINAL SECTION

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 23 - 52 FILE NO. 30864 DESIGN NO. 220

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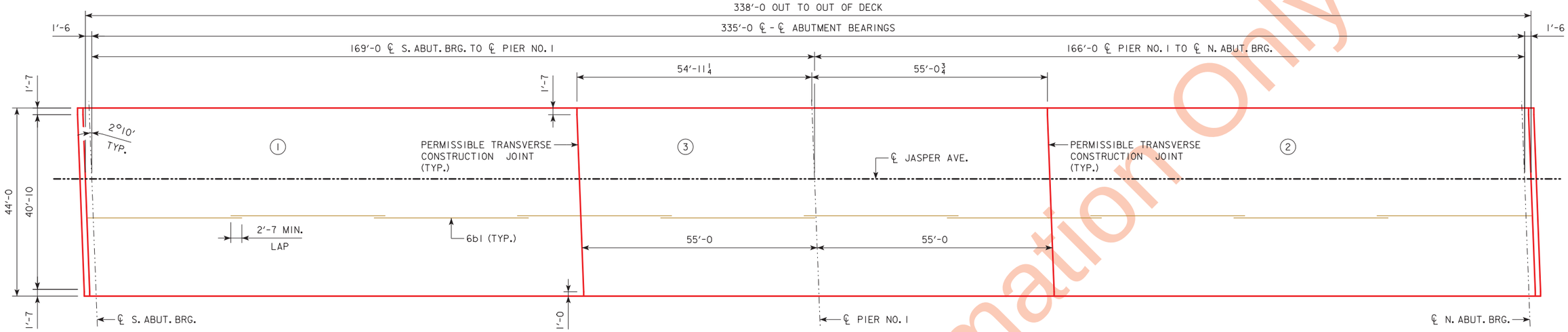
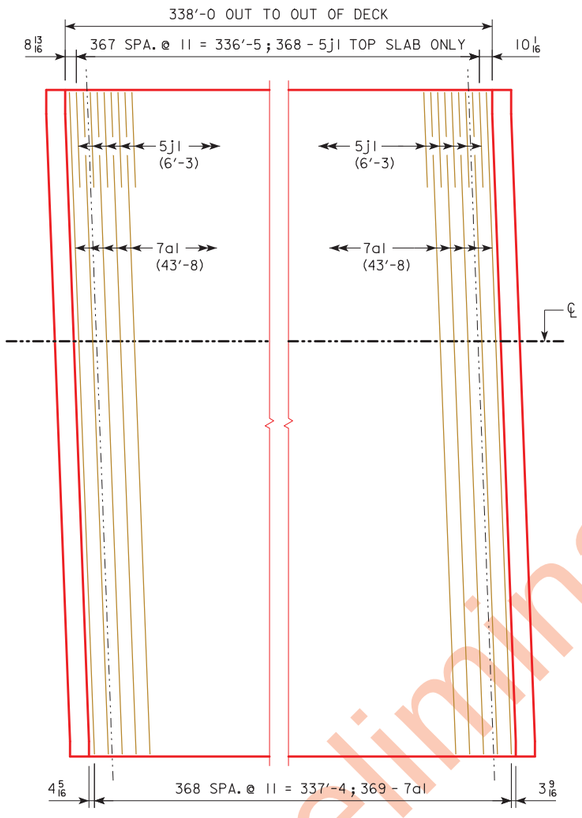
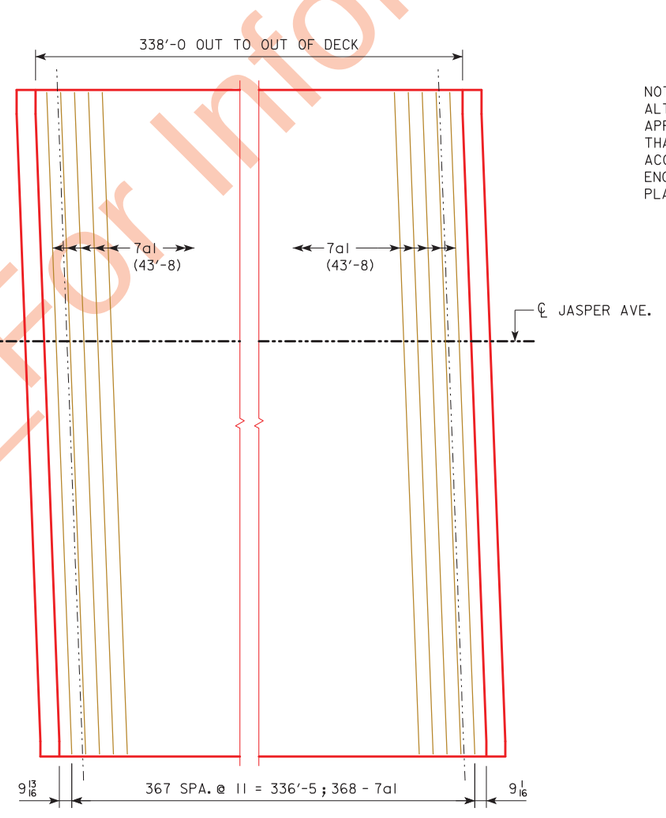


CONCRETE PLACEMENT DIAGRAM AND LONGITUDINAL REINFORCING LAYOUT

N



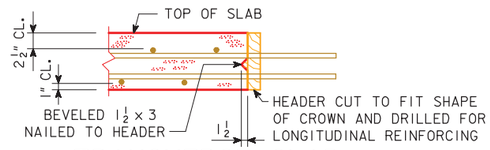
TOP TRANSVERSE REINFORCING LAYOUT



BOTTOM TRANSVERSE REINFORCING LAYOUT

CONCRETE PLACEMENT DIAGRAM

NOTE: CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. 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. FOR APPROVED ALTERNATE PROCEDURES THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.



TRANSVERSE SLAB CONSTRUCTION JOINT

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

SUPERSTRUCTURE DETAILS

STATION 3062[illegible] APRIL, 2020

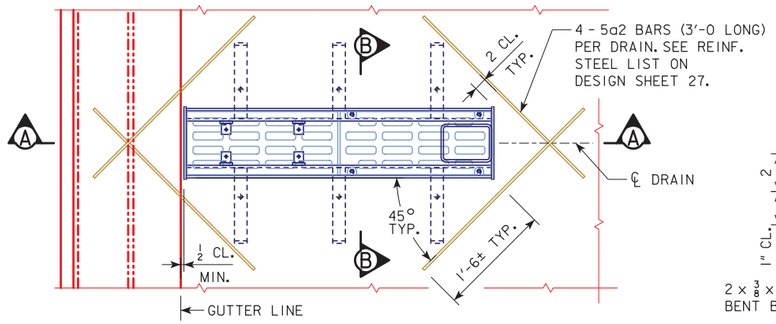
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

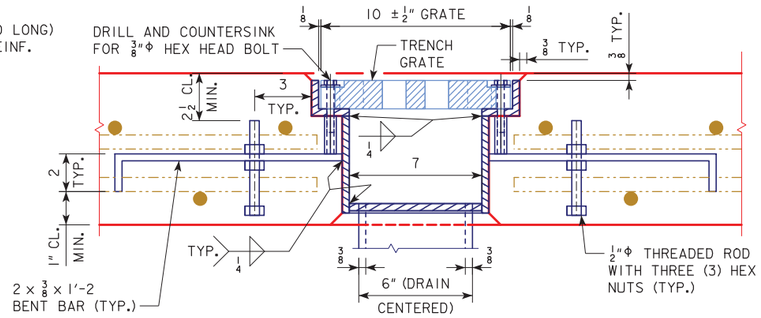
DESIGN SHEET NO. 24 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

DESIGN TEAM LLY / PES / HDR	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 25

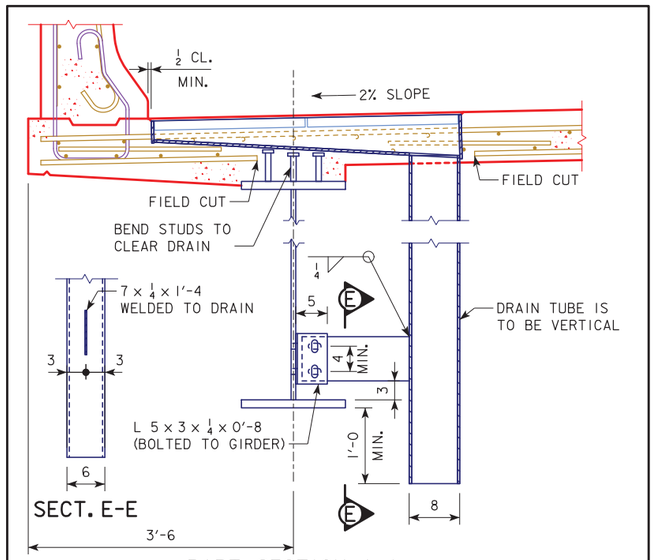


PART PLAN AT DRAIN



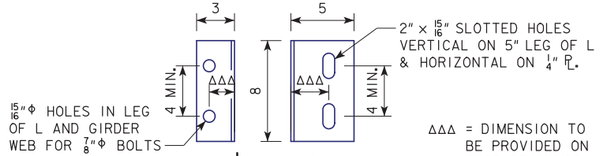
PART SECTION B-B - SHOWING DTL. B OPTION

(DETAIL IS SHOWN USING 10" WIDE GRATE)

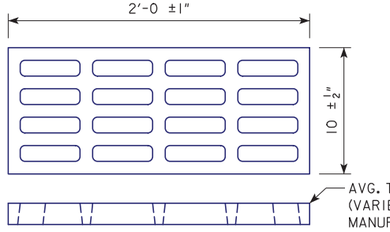


SECT. E-E

PART SECTION A-A



L 5 x 3 x ¼ x 0'-8 DETAIL



DRAIN TRENCH GRATE DETAILS

(2 GRATES REQUIRED PER DRAIN)

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

DRAIN NOTES

THE DRAINS SHALL BE ⅜ 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.

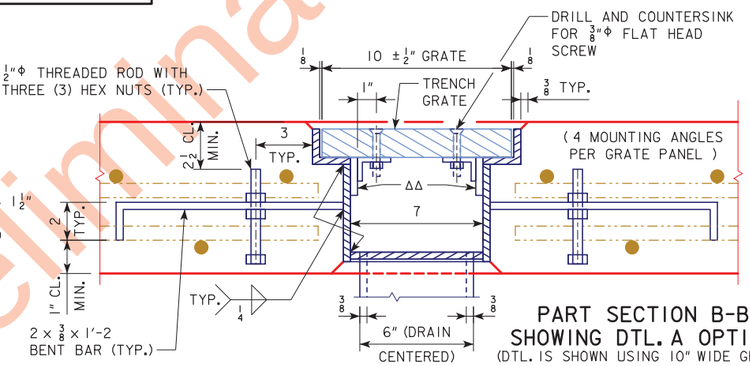
DRAINS SHALL BE CENTERED OVER THE NEAREST BOTTOM TRANSVERSE DECK REINFORCING BAR FROM THE LOCATION DESIGNATED ON THE SITUATION PLAN. THE BOTTOM TRANSVERSE DECK REINFORCING BAR SHALL BE CUT OFF TO PROVIDE 1 INCH CLEARANCE FROM THE DRAIN. THE TOP TRANSVERSE DECK REINFORCING BARS ON EACH SIDE OF THE DRAIN, SHALL BE SPACED AS NECESSARY TO PROVIDE 1 INCH CLEARANCE FROM THE DRAIN. LONGITUDINAL DECK 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 DECK 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.

⅜"Φ MECHANICALLY GALVANIZED STEEL FLAT HEAD SCREW SHALL MEET THE REQUIREMENTS OF ASTM B695-04 (2009) AND ASTM F835-12.

⅜"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.



PART SECTION B-B SHOWING DTL. A OPTION

(DTL. IS SHOWN USING 10" WIDE GRATE)

HEX HEAD REQUIRED

⅜"Φ MECHANICALLY GALVANIZED STEEL HEX HEAD BOLT

HEX HEAD BOLT DETAIL

(USED FOR DETAIL B)

HEX DRIVE REQUIRED

⅜"Φ MECHANICALLY GALVANIZED STEEL FLAT HEAD SOCKET CAP SCREW

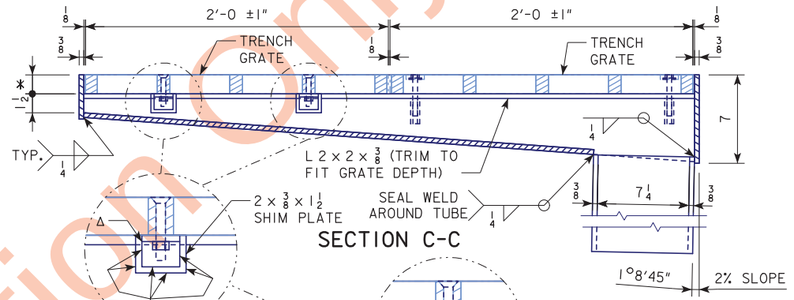
FLAT HEAD SCREW DETAIL

(USED FOR DETAIL A)

ΔΔ = ADJUST SHIM PLATE ACCORDING TO WIDTH OF GRATE.

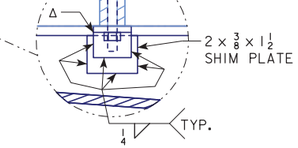
* = DEPTH BASED ON TRENCH GRATE MANUFACTURER.

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

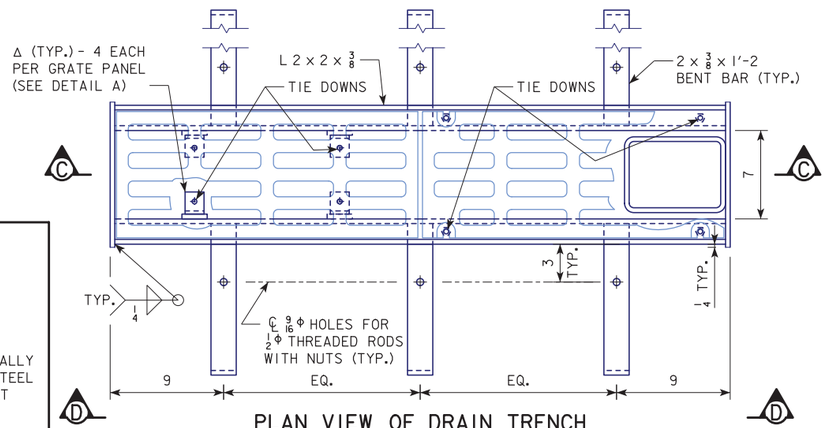


SECTION C-C

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

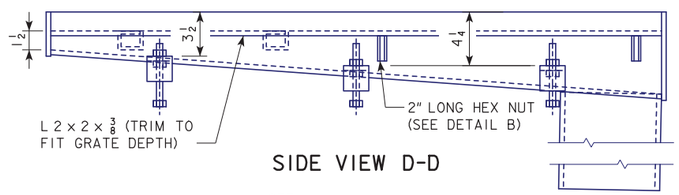


(SHOWING SHIM PLATE PLACEMENT WITH A GRATE LESS THAN 10" WIDE. SEE DETAIL A.)



PLAN VIEW OF DRAIN TRENCH

(GRATE TIE DOWNS SHOW BOTH DETAIL A AND DETAIL B)



SIDE VIEW D-D

NOTE:
FOR DECK DRAIN LOCATIONS, SEE DESIGN SHEET 27.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

AESTHETIC DECK DRAIN DETAILS

STATION 3062[illegible]6 APRIL, 2020

JOHNSON COUNTY

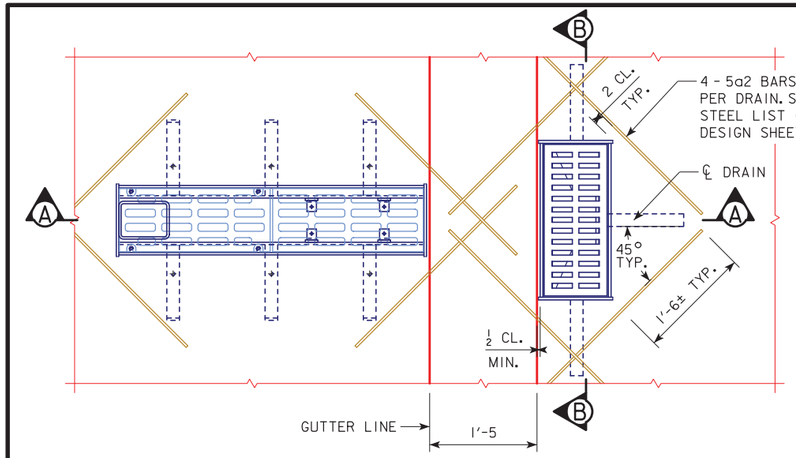
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 25 OF 52 FILE NO. 30864 DESIGN NO. 220

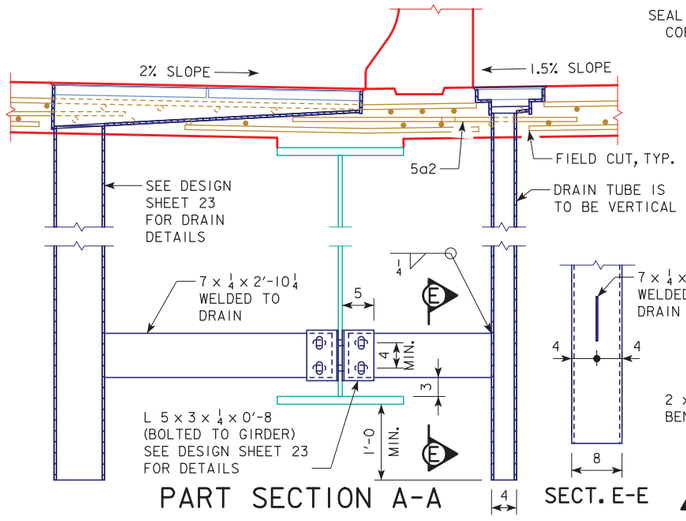
PRELIMINARY NOT For Construction

REVISED 06-2017 - SHEET IS REDRAWN TO ACCOMODATE THE USE OF A 6"x 8"x ⅜" DRAIN TUBE. (WAS 8" DIA. x ⅜" STRUCTURAL DRAIN TUBE MAY BE SUBSTITUTED WITH A 8" x 8" x ⅜" STRUCTURAL TUBE).
REVISED 04-2018 - ADDED ADDITIONAL WELD SYMBOL ARROWS TO DRAIN TRENCH DETAILS IN PART SECTIONS B-B.
REVISED 07-2019: UPDATED WELD SYMBOLS ON DRAIN TRENCH DETAILS IN PART "SECTION B-B & C-C" AND "PLAN VIEW OF DRAIN TRENCH" FOR CLARITY, ADDED "SEAL WELD AROUND TUBE" IN SECTION C-C.
ADDED "ΔΔΔ = DIMENSION TO BE PROVIDED ON SHOP DRAWINGS" TO DOWN SPOUT BRACKET ON STEEL GIRDER DETAIL. CHANGED ALL REFERENCES OF "SLAB" TO "DECK".
ENGLISH\MISCELLANEOUSBRIDGES.DGN 1054 - THIS SHEET REDRAWN 11-00.

DESIGN TEAM LLY / PES / HDR	AESTHETIC DECK DRAIN DETAILS	STANDARD SHEET 1054		JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 26

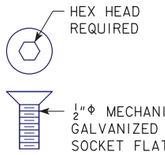


PART PLAN AT DRAIN AT TRAIL CURB

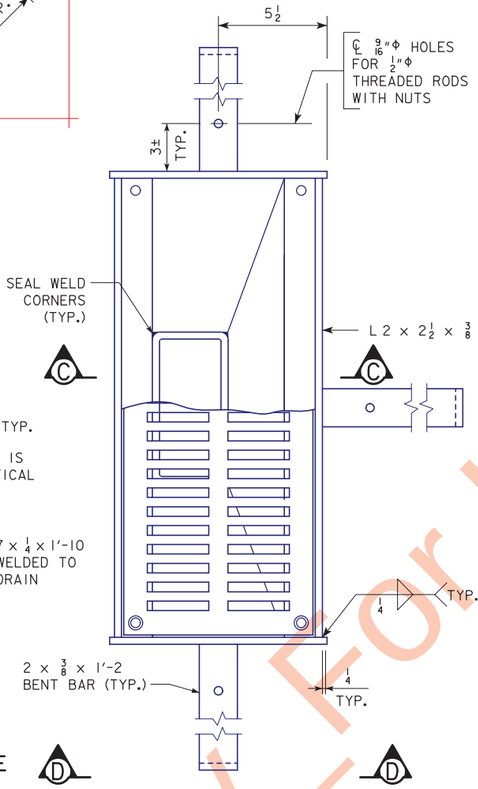


PART SECTION A-A

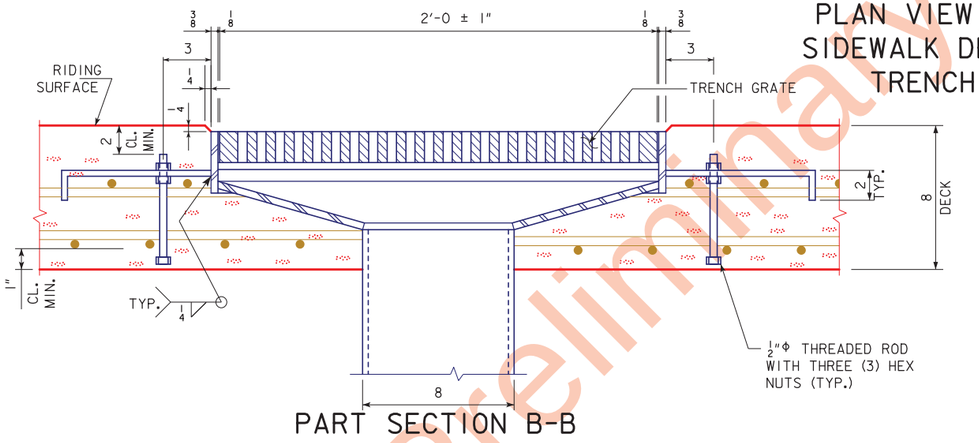
SECT. E-E



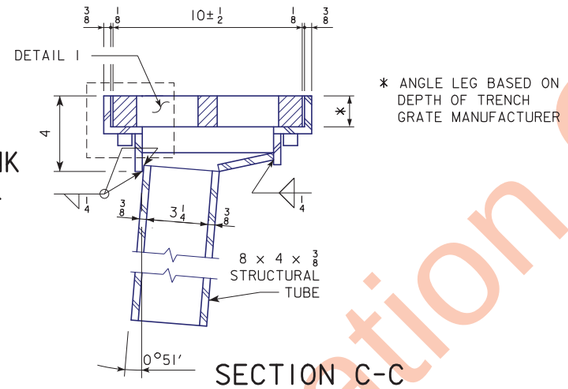
SOCKET FLAT COUNTERSUNK HEAD CAP SCREW DETAIL



PLAN VIEW OF SIDEWALK DRAIN TRENCH

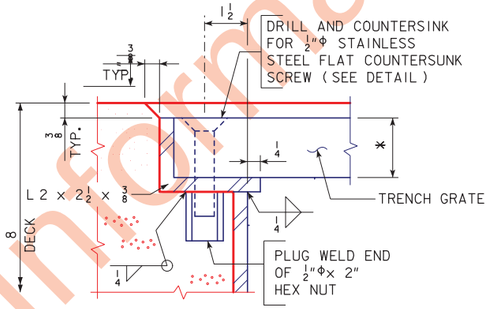


PART SECTION B-B



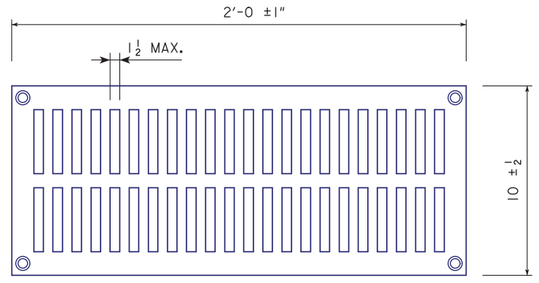
* ANGLE LEG BASED ON DEPTH OF TRENCH GRATE MANUFACTURER

SECTION C-C



DETAIL I

(4 PER GRATE PANEL)

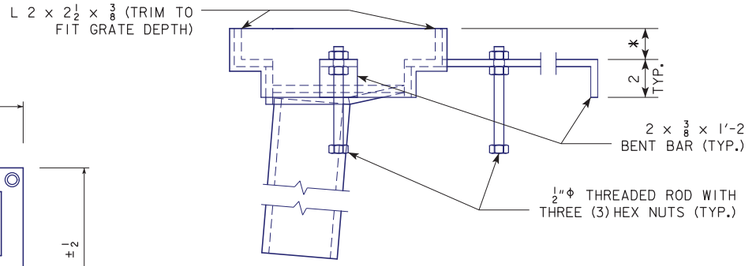


TRAIL DRAIN TRENCH GRATE PLAN

(1 GRATE REQUIRED PER DRAIN)

TRAIL DRAIN TRENCH GRATE ELEVATION

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



VIEW D-D

DRAIN NOTES

THE DRAINS SHALL BE ⅜ INCH THICK STEEL. THE DRAIN ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATING. 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 SITUATION PLAN. 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.

½"Φ MECHANICALLY GALVANIZED STEEL FLAT HEAD SCREW AND HEX NUT SHALL MEET THE REQUIREMENTS OF ASTM B695-04 (2009) AND ASTM F835-12.

NOTE:
FOR DECK DRAIN LOCATIONS, SEE DESIGN SHEET 27.

DESIGN FOR 20° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

TRAIL AESTHETIC DECK DRAIN DETAILS

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 26 OF 52 FILE NO. 30864 DESIGN NO. 220

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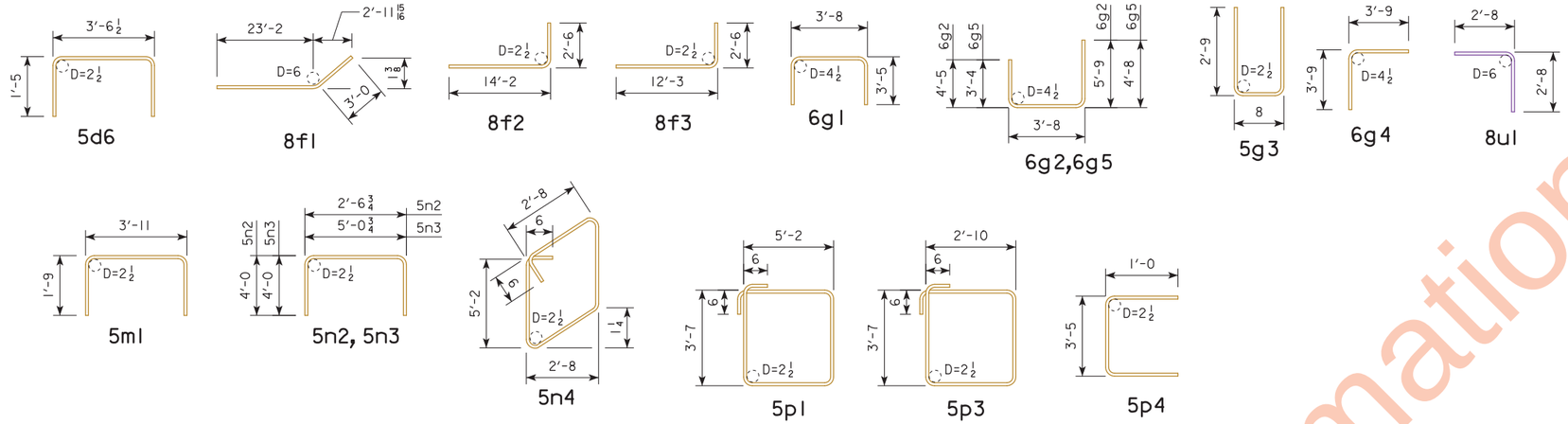
BENT BAR DETAILS



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

CONCRETE PLACEMENT QUANTITIES

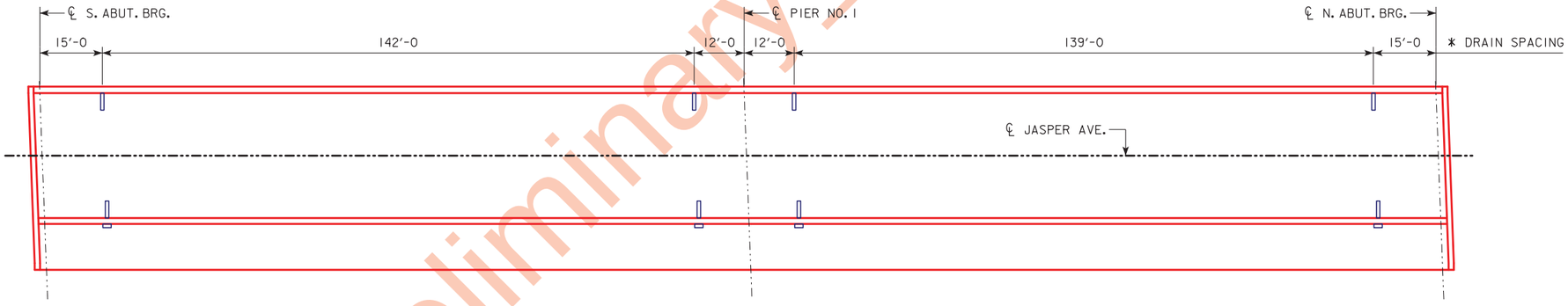
LOCATION	QUANTITY
SECTION 1, DECK & ABUT. DIAPH.	174.3
SECTION 2, DECK & ABUT. DIAPH.	170.8
SECTION 3, DECK	129.3
TOTAL (CU. YDS.)	474.4

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

REINFORCING BAR LIST

SUPERSTRUCTURE - ABUT. DIAPH. - ABUT. FOOTINGS

	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
EPOXY COATED REINFORCING	7a1	DECK TRANSV. TOP & BOTT.	—	737	43'-8	65,781
	5a2	DECK TRANSV. AT DRAINS	—	72	3'-0	225
	6b1	DECK LONGIT. TOP & BOTT.	—	1110	36'-2	60,298
	6d1	ABUT. DIAPH. LONGIT.	—	24	23'-7	850
	6d2	ABUT. DIAPH. LONGIT.	—	24	14'-8	529
	6d3	ABUT. DIAPH. LONGIT.	—	12	7'-5	134
	6d4	ABUT. DIAPH. LONGIT.	—	8	8'-10	106
	5d5	ABUT. DIAPH. LONGIT.	—	20	23'-4	487
	5d6	ABUT. DIAPH. LONGIT.	⌐	24	6'-5	161
	8f1	ABUT. FOOTING LONGIT.	⌒	76	26'-2	5,310
	8f2	ABUT. FOOTING EXTENSION	⌐	20	16'-8	890
	8f3	ABUT. FOOTING EXTENSION	⌐	20	14'-9	788
	6g1	ABUT. DIAPH.	⌐	84	10'-6	1,325
	6g2	ABUT. DIAPH.	⌐	64	13'-10	1,330
	5g3	ABUT. DIAPH.	⌐	104	6'-2	669
	6g4	ABUT. DIAPH.	⌐	104	7'-6	1,172
	6g5	ABUT. DIAPH.	⌐	20	11'-8	351
	5j1	TOP OF DECK TRANSV. (AT RAIL)	—	368	6'-3	2,399
	5m1	GIRDER STEP TRANSV.	⌐	50	7'-5	387
	5n1	GIRDER STEP LONGIT.	—	50	3'-2	165
	5n2	SHEAR BLOCK LONGIT.	⌐	44	10'-7	486
	5n3	SHEAR BLOCK TRANSV.	⌐	12	13'-1	164
	5n4	SHEAR BLOCK HOOP	▱	12	16'-8	209
	5p1	FOOTING HOOPS	□	76	18'-6	1,466
	5p3	FOOTING EXTENSION HOOPS	□	32	13'-10	462
	5p4	FOOTING ENDS	⌐	24	5'-5	136
		REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)				146,280
S.S. BARS	8u1	PAVING NOTCH DOWELS (STAINLESS STEEL)	⌐	50	5'-4	712
		STAINLESS STEEL - TOTAL (LBS.)				712



NOTE:
FOR DECK DRAIN DETAILS, SEE DESIGN SHEETS 25 & 26.

DECK DRAIN SPACING LAYOUT

N

* TYP. BOTH SIDES OF BRIDGE

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

SUPERSTRUCTURE DETAILS

STATION 3062L+52.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 27 OF 52 FILE NO. 30864 DESIGN NO. 220

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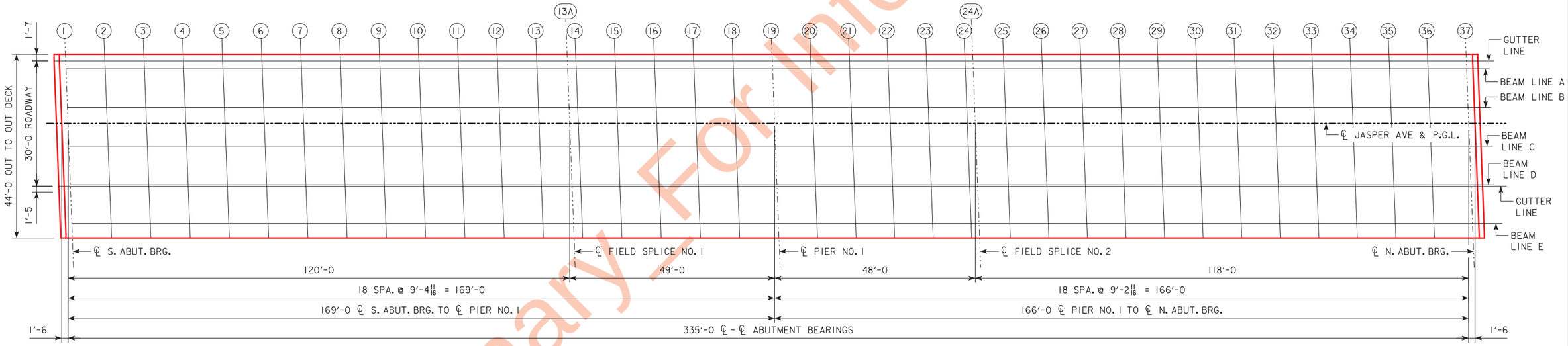
BENCH MARK NO.: 615 Sta.30653+45.242 17.13 Rt. FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A------ 686.896

TOP OF DECK ELEVATIONS

	℄ SOUTH ABUT. BRG.													℄ FIELD SPLICE NO. 1						℄ PIER NO. 1						℄ FIELD SPLICE NO. 2	
LOCATION	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 13A	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 24A	LINE 25
WEST GUTTER LINE	783.93	784.21	784.49	784.76	785.03	785.28	785.52	785.75	785.96	786.17	786.36	786.54	786.71	786.83	786.86	787.00	787.14	787.25	787.36	787.46	787.54	787.61	787.66	787.71	787.74	787.75	787.77
GIRDER LINE A	783.97	784.25	784.53	784.81	785.07	785.32	785.56	785.79	786.00	786.21	786.40	786.58	786.75	786.87	786.90	787.04	787.17	787.29	787.40	787.49	787.58	787.64	787.70	787.75	787.78	787.79	787.80
GIRDER LINE B	784.17	784.45	784.73	785.00	785.26	785.52	785.76	785.98	786.20	786.40	786.59	786.77	786.94	787.06	787.09	787.23	787.36	787.48	787.59	787.68	787.76	787.83	787.89	787.93	787.97	787.97	787.99
℄ JASPER AVE	784.22	784.50	784.78	785.05	785.31	785.57	785.81	786.03	786.25	786.45	786.64	786.82	786.99	787.11	787.14	787.28	787.41	787.53	787.64	787.73	787.81	787.88	787.94	787.98	788.01	788.02	788.04
GIRDER LINE C	784.15	784.43	784.70	784.98	785.24	785.49	785.73	785.96	786.17	786.38	786.57	786.75	786.91	787.03	787.07	787.21	787.34	787.46	787.56	787.65	787.73	787.80	787.86	787.90	787.94	787.94	787.96
GIRDER LINE D	783.97	784.25	784.53	784.80	785.07	785.32	785.56	785.78	786.00	786.20	786.39	786.57	786.73	786.85	786.89	787.03	787.16	787.27	787.38	787.47	787.55	787.62	787.68	787.72	787.75	787.76	787.77
EAST GUTTER LINE	783.97	784.25	784.52	784.80	785.06	785.31	785.55	785.78	785.99	786.19	786.38	786.56	786.73	786.85	786.88	787.02	787.15	787.27	787.37	787.47	787.55	787.61	787.67	787.71	787.75	787.75	787.77
GIRDER LINE E	784.11	784.39	784.67	784.94	785.20	785.45	785.69	785.92	786.13	786.33	786.52	786.70	786.87	786.99	787.02	787.16	787.29	787.41	787.51	787.60	787.68	787.75	787.81	787.85	787.88	787.89	787.90
EAST EDGE OF DECK	784.15	784.43	784.71	784.98	785.24	785.49	785.73	785.96	786.17	786.37	786.56	786.74	786.90	787.03	787.06	787.20	787.33	787.44	787.55	787.64	787.72	787.79	787.84	787.89	787.92	787.92	787.94

TOP OF DECK ELEVATIONS

												℄ NORTH ABUT. BRG.
LOCATION	LINE 26	LINE 27	LINE 28	LINE 29	LINE 30	LINE 31	LINE 32	LINE 33	LINE 34	LINE 35	LINE 36	LINE 37
WEST GUTTER LINE	787.78	787.78	787.76	787.74	787.70	787.65	787.60	787.52	787.44	787.35	787.24	787.12
GIRDER LINE A	787.81	787.81	787.80	787.78	787.74	787.69	787.63	787.56	787.48	787.38	787.28	787.16
GIRDER LINE B	788.00	788.00	787.99	787.96	787.92	787.88	787.82	787.74	787.66	787.57	787.46	787.34
℄ JASPER AVE	788.05	788.05	788.03	788.01	787.97	787.92	787.86	787.79	787.71	787.61	787.50	787.38
GIRDER LINE C	787.97	787.97	787.95	787.93	787.89	787.84	787.78	787.71	787.63	787.53	787.42	787.30
GIRDER LINE D	787.78	787.78	787.77	787.74	787.70	787.65	787.59	787.52	787.44	787.34	787.23	787.11
EAST GUTTER LINE	787.78	787.77	787.76	787.73	787.70	787.65	787.59	787.51	787.43	787.33	787.23	787.11
GIRDER LINE E	787.91	787.91	787.89	787.87	787.83	787.78	787.72	787.65	787.56	787.46	787.36	787.24
EAST EDGE OF DECK	787.95	787.95	787.93	787.90	787.87	787.82	787.76	787.68	787.60	787.50	787.39	787.27



TOP OF DECK & HAUNCH ELEVATION LOCATIONS

CROWN TEMPLATE

N

DESIGN FOR 2° ICX SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 1'-0 SIDEWALK

169'-0, 166'-0 SPANS

TOP OF DECK & HAUNCH ELEVATIONS

STATION 3062[illegible]45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 28 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 29

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BENCH MARK NO.: 615 Sta.30653+45.242 17.13 Rt. FD.SQ.SE.COR.HNDRL.BRIDGE OVER CLEAR CREEK,JASPER A------ 686.896

GIRDER LINE HAUNCH ELEVATIONS

	℄ SOUTH ABUT. BRG.													℄ FIELD SPLICE NO. 1						℄ PIER NO. 1						℄ FIELD SPLICE NO. 2	
LOCATION	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 13A	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 24A	LINE 25
GIRDER LINE A	783.31	783.64	783.96	784.28	784.58	784.86	785.11	785.35	785.56	785.76	785.93	786.08	786.22	786.32	786.34	786.45	786.56	786.65	786.74	786.83	786.91	786.99	787.07	787.14	787.20	787.21	787.25
GIRDER LINE B	783.50	783.83	784.16	784.47	784.77	785.05	785.31	785.55	785.76	785.95	786.12	786.28	786.41	786.51	786.53	786.64	786.75	786.84	786.93	787.02	787.10	787.18	787.26	787.33	787.39	787.40	787.44
GIRDER LINE C	783.48	783.81	784.14	784.45	784.75	785.03	785.29	785.52	785.73	785.93	786.10	786.25	786.39	786.48	786.51	786.62	786.72	786.81	786.90	786.99	787.07	787.15	787.23	787.30	787.36	787.37	787.41
GIRDER LINE D	783.31	783.64	783.96	784.28	784.58	784.85	785.11	785.35	785.56	785.75	785.92	786.07	786.21	786.30	786.33	786.44	786.54	786.63	786.72	786.81	786.89	786.97	787.05	787.11	787.17	787.18	787.23
GIRDER LINE E	783.45	783.77	784.10	784.41	784.71	784.99	785.24	785.48	785.69	785.88	786.05	786.20	786.34	786.43	786.46	786.57	786.67	786.76	786.85	786.94	787.02	787.10	787.17	787.24	787.30	787.31	787.35

GIRDER LINE HAUNCH ELEVATIONS

												℄ NORTH ABUT. BRG.
LOCATION	LINE 26	LINE 27	LINE 28	LINE 29	LINE 30	LINE 31	LINE 32	LINE 33	LINE 34	LINE 35	LINE 36	LINE 37
GIRDER LINE A	787.29	787.31	787.32	787.31	787.27	787.22	787.14	787.05	786.94	786.80	786.66	786.49
GIRDER LINE B	787.48	787.50	787.51	787.49	787.46	787.40	787.33	787.23	787.12	786.99	786.84	786.67
GIRDER LINE C	787.45	787.47	787.47	787.46	787.42	787.37	787.29	787.20	787.08	786.95	786.80	786.64
GIRDER LINE D	787.26	787.28	787.29	787.27	787.24	787.18	787.11	787.01	786.90	786.76	786.61	786.45
GIRDER LINE E	787.39	787.41	787.41	787.40	787.36	787.31	787.23	787.13	787.02	786.88	786.73	786.57

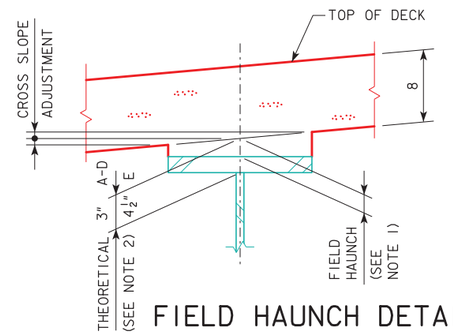
NOTE :
HAUNCH LOCATIONS ARE AT THE SAME LOCATIONS AS THE BEAM LINES AND ENCIRCLED NUMBERS SHOWN ON DESIGN SHEET 28.

MISCELLANEOUS DATA TABLE

	GIRDER LINE		℄ SOUTH ABUT. BRG.												℄ FIELD SPLICE NO. 1						℄ PIER NO. 1						℄ FIELD SPLICE NO. 2	
			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 13A	LINE 14	LINE 15	LINE 16	LINE 17	LINE 18	LINE 19	LINE 20	LINE 21	LINE 22	LINE 23	LINE 24	LINE 24A	LINE 25
EST. DEFLECTION DUE TO DECK & HAUNCH (IN)	ALL		0	$\frac{5}{8}$	$1\frac{3}{16}$	$1\frac{11}{16}$	$2\frac{1}{8}$	$2\frac{7}{16}$	$2\frac{11}{16}$	$2\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{5}{8}$	$2\frac{3}{8}$	$2\frac{1}{16}$	$1\frac{11}{16}$	$1\frac{3}{8}$	$1\frac{5}{16}$	$\frac{15}{16}$	$\frac{9}{16}$	$\frac{5}{16}$	$\frac{1}{16}$	0	$\frac{1}{16}$	$\frac{3}{16}$	$\frac{7}{16}$	$\frac{3}{4}$	$1\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{7}{16}$
CROSS SLOPE ADJUSTMENTS (IN)	A - D		$\pm\frac{1}{4}$																								
	E		$\pm\frac{3}{16}$																								
ALLOWABLE FIELD HAUNCH (IN & FT.)	MAX.	A - D	3 (0.250)												2 (0.167)												3 (0.250)
	MIN.	A - D	$-\frac{1}{4}$ (-0.021)												$-\frac{1}{4}$ (-0.021)												$-\frac{1}{4}$ (-0.021)
	MAX.	E	$3\frac{1}{2}$ (0.292)												2 (0.167)												$3\frac{1}{2}$ (0.292)
	MIN.	E	$\frac{1}{2}$ (0.042)												$-\frac{1}{4}$ (-0.021)												$\frac{1}{2}$ (0.042)

MISCELLANEOUS DATA TABLE

	GIRDER LINE		℄ SOUTH ABUT. BRG.											℄ NORTH ABUT. BRG.
			LINE 26	LINE 27	LINE 28	LINE 29	LINE 30	LINE 31	LINE 32	LINE 33	LINE 34	LINE 35	LINE 36	LINE 37
EST. DEFLECTION DUE TO DECK & HAUNCH (IN)	ALL		$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{7}{16}$	$2\frac{5}{16}$	$2\frac{3}{16}$	$1\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{1}{8}$	$\frac{9}{16}$	0
CROSS SLOPE ADJUSTMENTS (IN)	A - D		$\pm\frac{1}{4}$											
	E		$\pm\frac{3}{16}$											
ALLOWABLE FIELD HAUNCH (IN & FT.)	MAX.	A - D	3 (0.250)											
	MIN.	A - D	$-\frac{1}{4}$ (-0.021)											
	MAX.	E	$3\frac{1}{2}$ (0.292)											
	MIN.	E	$\frac{1}{2}$ (0.042)											



FIELD HAUNCH DETAIL

NOTES:
1. TO CALCULATE FIELD HAUNCH REQUIRED AT EACH LOCATION, SURVEY THE TOP OF GIRDER TOP FLANGES CONSISTENT WITH THE SPACING SHOWN ON THE "TOP OF DECK & HAUNCH ELEVATION" DETAIL. TOP OF GIRDER ELEVATIONS FOR HAUNCH CALCULATIONS SHALL BE SURVEYED PRIOR TO THE PLACEMENT OF FORMS. SUBTRACT THE SURVEYED GIRDER SHOT FROM THE CORRESPONDING ELEVATION IN THE "GIRDER LINE HAUNCH ELEVATION" TABLE. THIS VALUE WILL BE THE FIELD HAUNCH NEEDED (SEE "FIELD HAUNCH" IN FIELD HAUNCH DETAIL). THE "GIRDER LINE HAUNCH ELEVATION" INCLUDES ADJUSTMENTS FOR DECK THICKNESS AND ANTICIPATED DEFLECTIONS. NO ADDITIONAL CALCULATIONS ARE REQUIRED. IF THE FIELD HAUNCH EXCEEDS THE MAXIMUMS AND MINIMUMS SHOWN IN THE MISCELLANEOUS DATA TABLE, ADJUSTMENTS TO THE GRADE OR ADDITIONAL HAUNCH REINFORCEMENT WILL BE REQUIRED.

NOTES CONT.:
2. BRIDGE SEAT ELEVATIONS ARE SET BASED ON THEORETICAL CAMBER ORDINATES AND THE THEORETICAL HAUNCH VALUES INDICATED ON THIS SHEET (EQUIVALENT TO 3" AT BEAMLINE "A" - "D" AND $4\frac{1}{2}$" AT BEAMLINE "E" DIMENSION MEASURED FROM BOTTOM OF DECK TO TOP OF GIRDER WEB). THE CONTRACTOR MAY NEED TO ADJUST THE HAUNCH DIMENSION IN THE FIELD BY FOLLOWING THE ALLOWABLE FIELD HAUNCH HAUNCH PARAMETERS ON THIS SHEET. FIELD HAUNCHES ARE DETERMINED USING SURVEYED TOP OF GIRDER TOP FLANGE ELEVATIONS AND THE "GIRDER LINE HAUNCH ELEVATION" TABLE. ALLOWABLE MAXIMUM AND MINIMUM "FIELD HAUNCH" VALUES ARE GIVEN IN THE "MISCELLANEOUS DATA" TABLE ON THIS SHEET. "CROSS SLOPE ADJUSTMENT" VALUES WILL AID THE CONTRACTOR IN DETERMINING ACTUAL FORMED HAUNCH DIMENSIONS AT THE EDGES OF THE TOP FLANGE.

3. DOWNWARD DEFLECTIONS ARE POSITIVE.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 4'-0 SIDEWALK

169'-0, 166'-0 SPANS

HAUNCH DETAILS

STATION 3062+45.45 APRIL, 2020

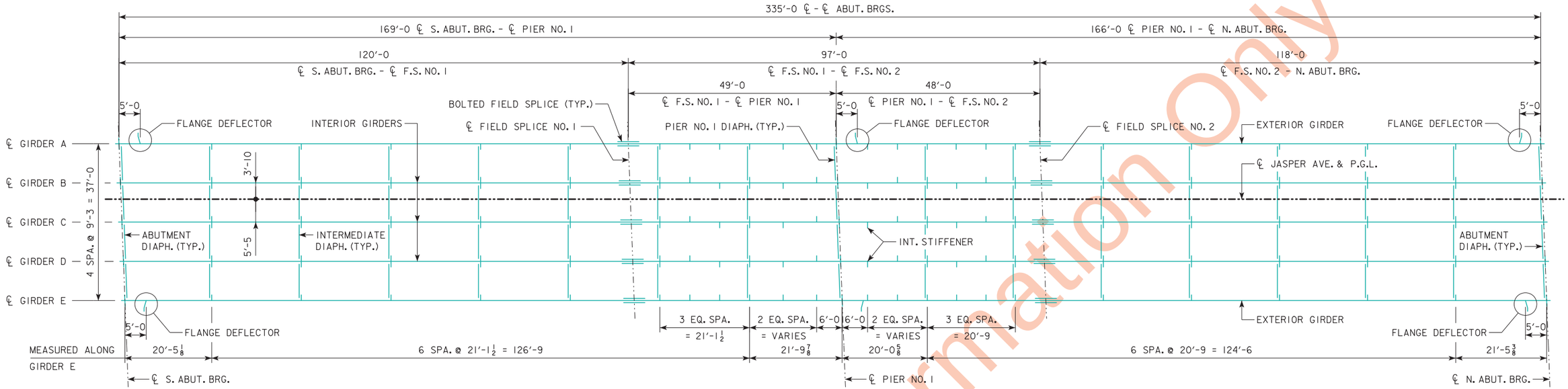
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 29 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY
No For Construction

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 30



FRAMING PLAN

N

NOTE: ALL DIMENSIONS SHOWN ARE MEASURED IN A HORIZONTAL PLANE UNLESS NOTED OTHERWISE.

NOTE:
GIRDER WEIGHT INCLUDES SHEAR STUDS, BEARING STIFFENERS, INTERMEDIATE STIFFENERS, CROSS FRAME STIFFENERS, WELDS & FLANGE DEFLECTORS.

EST. STRUCTURAL STEEL QTY. - EACH GIRDER SEGMENT

SEGMENT NO.	EXT. GIRDER	INT. GIRDER
1	42,940	43,703
2	47,944	48,618
3	42,258	43,021
TOTAL (LBS.)	133,142	135,342

WEATHERING STEEL NOTES:

ALL STRUCTURAL STEEL, EXCEPT AS NOTED, SHALL CONFORM TO ASTM A709 GRADE 50W. THE MINIMUM YIELD POINT FOR GRADE 50W STRUCTURAL STEEL IS 50 KSI FOR PLATES 4 INCHES AND UNDER IN THICKNESS, AND ALL STRUCTURAL SHAPES. THE GRADE 50W STEEL IS A WEATHERING STEEL AND IS TO REMAIN UNPAINTED, EXCEPT AS NOTED.

ALL STRUCTURAL STEEL PIECES COMPRISING THE ABUTMENT AND PIER BEARINGS SHALL COMPLY WITH THE REQUIREMENTS AS STATED IN THE NOTES ON DESIGN SHEET 21.

SHEAR STUDS ARE TO BE OF AN APPROVED TYPE LISTED IN MATERIALS I.M. 453.10, APPENDIX A.

THE FINISH ON DECK DRAINS, BEARINGS AND WEATHERING STEEL SHALL BE IN ACCORDANCE WITH THE PLAN NOTES AND SECTION 2408, OF THE STANDARD SPECIFICATIONS. ALL WEATHERING STEEL EMBEDDED INTO AN INTEGRAL ABUTMENT SHALL BE PAINTED TO A DISTANCE OF 1 FOOT FROM THE CONCRETE FACE AND SEALED BY CAULKING AT THE ABUTMENT CONCRETE AND STEEL INTERFACE. EXTERIOR SURFACES OF ALL GALVANIZED COMPONENTS WHICH ARE DESIGNATED IN THE CONTRACT DOCUMENTS TO BE PAINTED SHALL BE PREPARED ACCORDING TO ARTICLE 2509.03, OF THE STANDARD SPECIFICATIONS.

BOLTS FOR USE WITH WEATHERING STEEL SHALL BE A325 TYPE III WITH A563 GRADE DH3 NUTS AND F436 TYPE III WASHERS.

BOLTS USED TO SPLICE GIRDER SECTIONS ARE TO BE INSTALLED SUCH THAT NUTS ARE ON THE INSIDE FACE OF THE GIRDER WEBS FOR THE EXTERIOR GIRDERS, AND ON THE TOP OF BOTH TOP AND BOTTOM FLANGES OF ALL THE GIRDERS.

ALL FIELD CONNECTIONS ARE TO BE BOLTED USING "HIGH TENSILE STRENGTH BOLTS". UNLESS OTHERWISE NOTED, ALL OPEN HOLES ARE TO BE $\frac{15}{16}$"Φ AND ALL BOLTS ARE TO BE $\frac{7}{8}$"Φ.

THE STEEL SHALL BE KEPT FREE OF OIL, GREASE, DIRT, CRAYON OR CHALK MARKS, CONCRETE SPATTER AND ANY OTHER FOREIGN MATTER THAT MAY AFFECT THE NATURAL OXIDATION OF THE STEEL. ANY FOREIGN MATTER REMAINING ON THE STEEL AFTER COMPLETION OF BRIDGE CONSTRUCTION SHALL BE REMOVED BY THE BRIDGE CONTRACTOR AS DIRECTED BY THE ENGINEER. THE RESULTANT SURFACE SHALL BE FREE OF ALL VISIBLE RESIDUES. ALL COSTS ASSOCIATED WITH CLEANING STEEL SURFACES SHALL BE BORNE BY THE BRIDGE CONTRACTOR.

SEAL MATERIAL FOR CAULKING SHALL BE NEUTRAL CURE AND NON SAG SILICONE. THREE PRODUCTS MEETING THESE CRITERIA ARE DOW 888, CRAFCO ROAD SAVER SILICONE OR CSL342 JOINT SEALANT.

THE GIRDERS ARE TO BE FABRICATED FOR A STEEL DEAD LOAD FIT CONDITION.

BOTTOM FLANGES ARE TO BE PERPENDICULAR TO WEBS AT THE REACTION POINTS.

FILL PL THICKNESSES SHOWN ON PLANS ARE BASED ON NOMINAL GIRDER DIMENSIONS. THESE THICKNESSES ARE TO BE VERIFIED OR ADJUSTED DURING FABRICATION TO SECURE A CLOSE FIT. EACH FILL PLATE SHALL FIT TO THE NEAREST $\frac{1}{16}$" IN THICKNESS AND SINGLE PLATES ARE REQUIRED AT EACH FILL LOCATION. GIRDERS ARE TO BE TRULY SQUARE AT SPLICE POINTS WITH FLANGES PERPENDICULAR TO WEBS.

THE DESIGN DRAWINGS INDICATE AWS PREQUALIFIED WELDED JOINTS. ALTERNATE JOINT DETAILS MAY BE SUBMITTED FOR APPROVAL.

MAGNETIC PARTICLE INSPECTION OF WELDS, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, WILL BE REQUIRED.

SHOP WELDED FLANGE SPLICES SHALL BE A MINIMUM OF 6 INCHES FROM A STIFFENER, 6 INCHES FROM A WEB SPLICE, AND 4 INCHES FROM A SHEAR CONNECTOR. WEB SPLICES SHALL BE A MINIMUM OF 6 INCHES FROM A STIFFENER. SPLICES SHALL NOT INTERFERE WITH ANY OTHER BRIDGE COMPONENTS. ALL SHOP WELDED BUTT SPLICES SHALL BE SHOWN ON THE SHOP DRAWINGS AND SUBJECT TO APPROVAL BY THE ENGINEER.

NOTES:
SEE DESIGN SHEET 31 FOR GIRDER DETAILS.
SEE DESIGN SHEET 32 FOR GIRDER CAMBER, BLOCKING & DEFLECTION DETAILS.
SEE DESIGN SHEET 33 FOR FIELD SPLICE DETAILS.
SEE DESIGN SHEET 34 FOR STIFFENER, WELDING & MISC. STRUCTURAL STEEL DETAILS.

DESIGN FOR 2°ICY SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

STEEL FRAMING PLAN

STATION 3062[illegible]45 APRIL, 2020

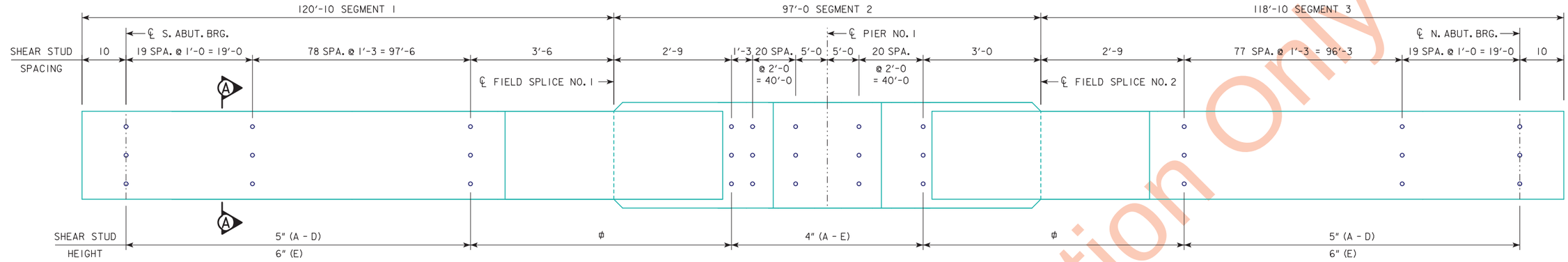
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 30 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

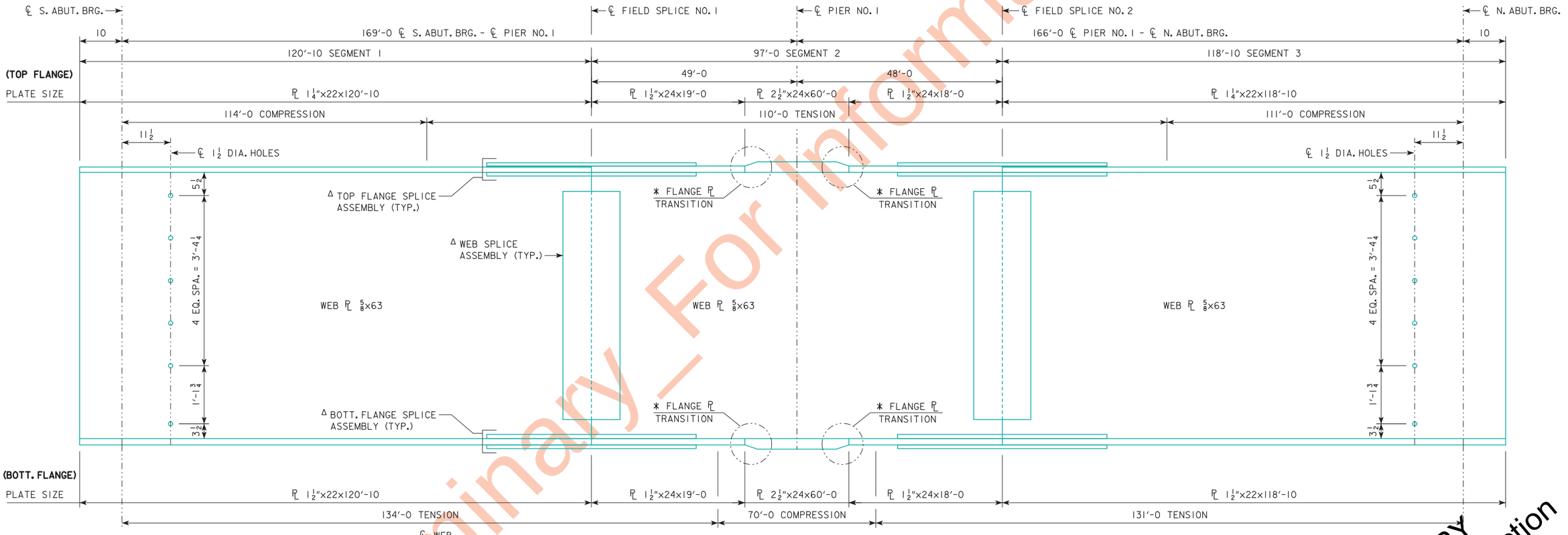
DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 31



SHEAR STUD SPACING TOP FLANGE PLAN VIEW

ALL GIRDER LINES (A-E)

ϕ NOTE: SEE DESIGN SHEET 33 FOR SHEAR STUD SPACING AT FIELD SPLICE.

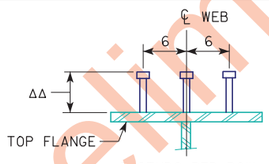


GIRDER ELEVATION

ALL GIRDER LINES (A-E)

(DIAPHRAGM, CROSS FRAME, AND INTERMEDIATE STIFFENERS NOT SHOWN. SEE STRUCTURAL STEEL PLAN)

NOTES:
SEE DESIGN SHEET 30 FOR STRUCTURAL STEEL LAYOUT, WEATHERING STEEL NOTES & MATERIAL SPECS.
SEE DESIGN SHEET 32 FOR GIRDER CAMBER, BLOCKING & DEFLECTION DETAILS.
SEE DESIGN SHEET 34 FOR STIFFENER, WELDING & MISC. STRUCTURAL STEEL DETAILS.



SECTION A-A TYPICAL SHEAR STUDS

ΔΔ NOTE: ALL SHEAR STUDS TO BE ⅞"ϕ HEIGHT VARIES, FOR DETAIL SEE "SHEAR STUD SPACING TOP FLANGE PLAN VIEW" THIS SHEET.

* NOTE: SHOP WELDED JOINTS TO BE RADIOGRAPHED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, ARTICLE 2408.03,B,6.7. FOR PLATE TRANSITION DETAILS, SEE DESIGN SHEET 33.

Δ SEE DESIGN SHEET 33 FOR FIELD SPLICE DETAILS.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

GIRDER ELEVATION

STATION 3062+[illegible] APRIL, 2020

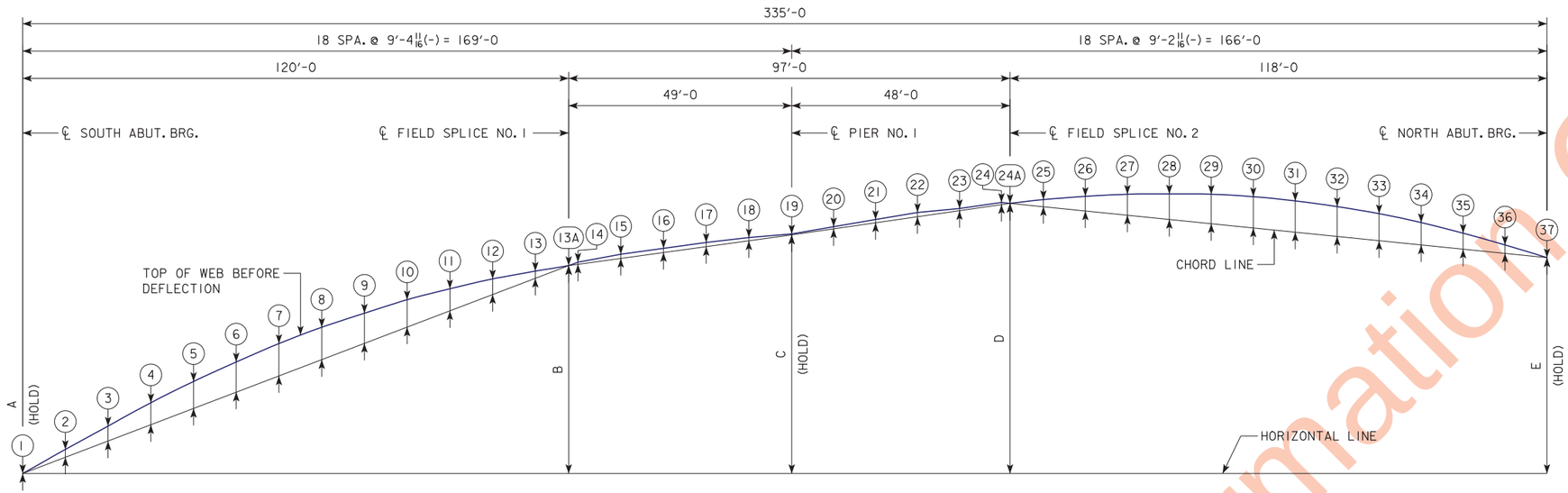
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

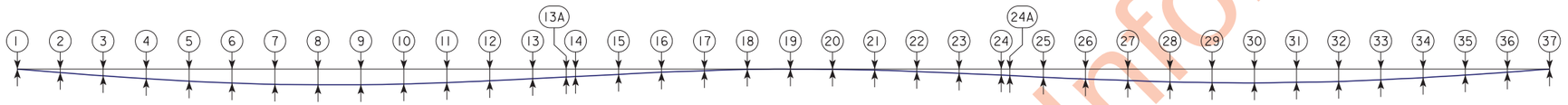
DESIGN SHEET NO. 31 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

DESIGN TEAM LLY / PES / HDR	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 32



CAMBER AND BLOCKING DIAGRAM



DEFLECTION DIAGRAM

NOTES:

CAMBER ORDINATES ARE MEASURED FROM A CHORD LINE BETWEEN FIELD SPLICES. UPWARD CAMBERS ARE POSITIVE AND DOWNWARD CAMBERS ARE NEGATIVE.

DOWNWARD DEFLECTIONS ARE POSITIVE AND UPWARD DEFELCTIONS ARE NEGATIVE. "DEFLECTION DUE TO CONCRETE ONLY" ONLY INCLUDES THE DECK AND CONCRETE HAUNCH. TOTAL DEAD LOAD DEFLECTION INCLUDES DECK, CONCRETE HAUNCH, AND STRUCTURAL STEEL. BARRIER RAIL AND FUTURE WEARING SURFACE ARE NOT INCLUDED.

BLOCKING DATA (FEET)

GIRDER LINE	℄ S. ABUT. BRG.	℄ BOLTED SPLICE	℄ PIER NO. 1	℄ BOLTED SPLICE	℄ N. ABUT. BRG.
	"A"	"B"	"C"	"D"	"E"
A	0	3'-0 13/16	3'-6 3/16	3'-11 1/2	3'-2 1/4
B - D	0	3'-0 9/16	3'-5 15/16	3'-11 1/8	3'-1 13/16
E	0	2'-8 15/16	3'-4 1/16	3'-11	3'-1 9/16

* BOLTED FIELD SPLICE PLATE THICKNESS NOT INCLUDED.
** TOP FLANGE PLATE THICKNESS AND BOLTED FIELD SPLICE PLATE THICKNESS ARE NOT INCLUDED.

		℄ SOUTH. ABUT. BRG.												
LOCATION		1	2	3	4	5	6	7	8	9	10	11	12	13
CAMBER ORDINATES (INCHES)		0	1 3/8	2 5/8	3 7/8	4 3/4	5 5/16	5 11/16	5 11/16	5 5/16	4 13/16	3 7/8	2 3/4	1 1/4
DEFLECTION DUE TO CONCRETE ONLY (INCHES)		0	5/8	1 3/16	1 11/16	2 1/8	2 7/16	2 11/16	2 3/4	2 3/4	2 5/8	2 3/8	2 1/16	1 11/16
TOTAL DEAD LOAD DEFLECTION (INCHES)		0	7/8	1 3/4	2 1/2	3 1/8	3 9/16	3 7/8	4	4	3 15/16	3 7/16	3	2 1/2
*	TOP FLANGE THICKNESS (INCHES)		1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
**	THICKNESS OF CONCRETE HAUNCH (INCHES) A - D		1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
	E		3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4

		℄ BOLTED SPLICE						℄ PIER NO. 1						℄ BOLTED SPLICE
LOCATION		13A	14	15	16	17	18	19	20	21	22	23	24	24A
CAMBER ORDINATES (INCHES)		0	1/8	1/4	1/4	1/4	3/16	1/16	1/8	3/16	1/4	1/8	1/8	0
DEFLECTION DUE TO CONCRETE ONLY (INCHES)		1 3/8	1 5/16	15/16	9/16	5/16	1/16	0	1/16	3/16	7/16	3/4	1 1/16	1 1/8
TOTAL DEAD LOAD DEFLECTION (INCHES)		2	1 7/8	1 5/8	13/16	7/16	1/8	0	1/16	5/16	5/8	1 1/16	1 9/16	1 5/8
*	TOP FLANGE THICKNESS (INCHES)	1 1/2	1 1/2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	1 1/2	1 1/2	1 1/2
**	THICKNESS OF CONCRETE HAUNCH (INCHES) A - D	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
	E	3	3	3	2	2	2	2	2	2	2	3	3	3

														℄ NORTH. ABUT. BRG.
LOCATION		25	26	27	28	29	30	31	32	33	34	35	36	37
CAMBER ORDINATES (INCHES)		1 1/4	2 9/16	3 11/16	4 1/2	5 5/16	5 1/2	5 1/2	5 1/4	4 3/4	3 15/16	2 13/16	1 1/2	0
DEFLECTION DUE TO CONCRETE ONLY (INCHES)		1 7/16	1 3/4	2	2 1/4	2 3/8	2 7/16	2 5/16	2 3/16	1 7/8	1 1/2	1 1/16	9/16	0
TOTAL DEAD LOAD DEFLECTION (INCHES)		2 1/16	2 9/16	2 15/16	3 5/16	3 1/2	3 1/2	3 7/16	3 3/8	2 3/4	2 3/16	1 9/16	13/16	0
*	TOP FLANGE THICKNESS (INCHES)	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
**	THICKNESS OF CONCRETE HAUNCH (INCHES) A - D	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
	E	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4

MOMENT TABLE (ft-kips) / REACTION TABLE (kips)

LOAD NAME	LOAD kips/ft. INT.	LOAD kips/ft. EXT.	MOMENT POSITIVE MOMENT SPAN 1 INT.	MOMENT POSITIVE MOMENT SPAN 1 EXT.	MOMENT NEGATIVE MOMENT PIER NO. 1 INT.	MOMENT NEGATIVE MOMENT PIER NO. 1 EXT.	MOMENT POSITIVE MOMENT SPAN 2 INT.	MOMENT POSITIVE MOMENT SPAN 2 EXT.	REACTION REACTION AT SOUTH ABUT. INT.	REACTION REACTION AT SOUTH ABUT. EXT.	REACTION REACTION AT PIER NO. 1 INT.	REACTION REACTION AT PIER NO. 1 EXT.	REACTION REACTION AT NORTH ABUT. INT.	REACTION REACTION AT NORTH ABUT. EXT.
DC1	ΔΔ0.95	ΔΔ0.94	2479.7	2458.8	5767.7	5719.1	2326.5	2306.9	83.1	82.4	301.2	298.8	80.4	79.8
ΔDC2	0.21	0.21	413.0	410.2	770.7	777.9	387.9	385.1	13.2	13.1	44.4	44.4	12.8	12.7
ΔDW	0.16	0.16	314.6	312.5	587.2	592.7	295.5	293.4	10.0	10.0	33.8	33.9	9.7	9.7
LIVE LOAD + IMPACT HL-93			3226.2	3873.4	3209.6	3730.9	3160.4	3777.0	124.0	111.1	252.63	226.60	123.2	110.3
LIVE LOAD DISTRIBUTION FACTOR (LANE FRACTION)			0.671	0.807	0.701	0.807	0.674	0.807	0.906	0.812	0.906	0.812	0.906	0.812

LOAD TABLE NOTES:
MOMENTS AND REACTIONS ARE UNFACTORED.
BARRIER RAILS ARE DESIGNATED AS DC2 AND OVERLAY (FWS) LOAD ARE DESIGNATED AS DW.
Δ DC2 AND DW LOADS ARE DISTRIBUTED EQUALLY TO ALL GIRDERS.
ΔΔ LOAD VALUES (kips/ft.) DOES NOT INCLUDE STRUCTURAL STEEL WEIGHTS FOR THE GIRDER, CROSS FRAMES, AND LATERAL BRACING. MOMENT AND REACTION VALUES DO INCLUDE ALL STRUCTURAL STEEL COMPONENTS (GIRDER, CROSS FRAMES, AND BRACING).

DESIGN FOR 2° (R.A.) SKEW

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 1'-0 SIDEWALK

169'-0, 166'-0 SPANS

CAMBER & BLOCKING DIAGRAM

STATION 3062+[illegible] APRIL, 2020

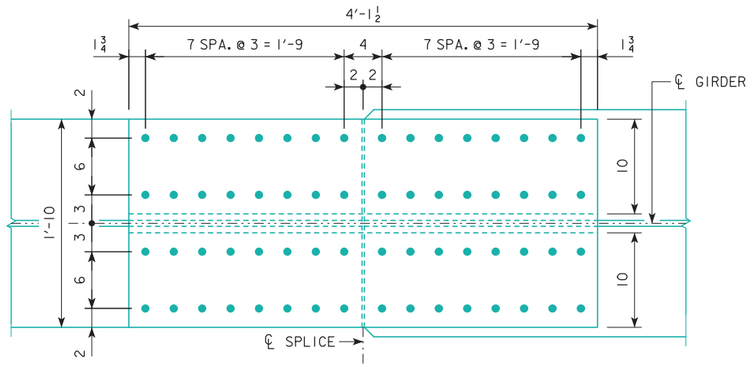
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

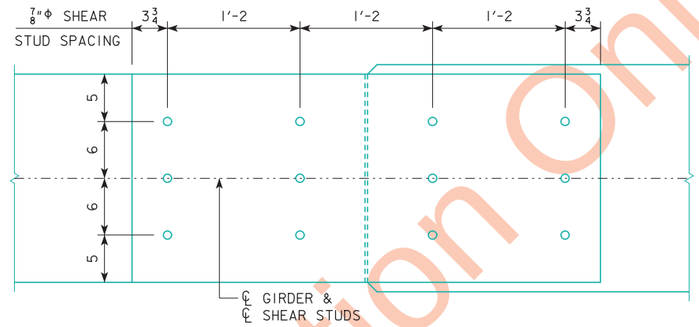
DESIGN SHEET NO. 32 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

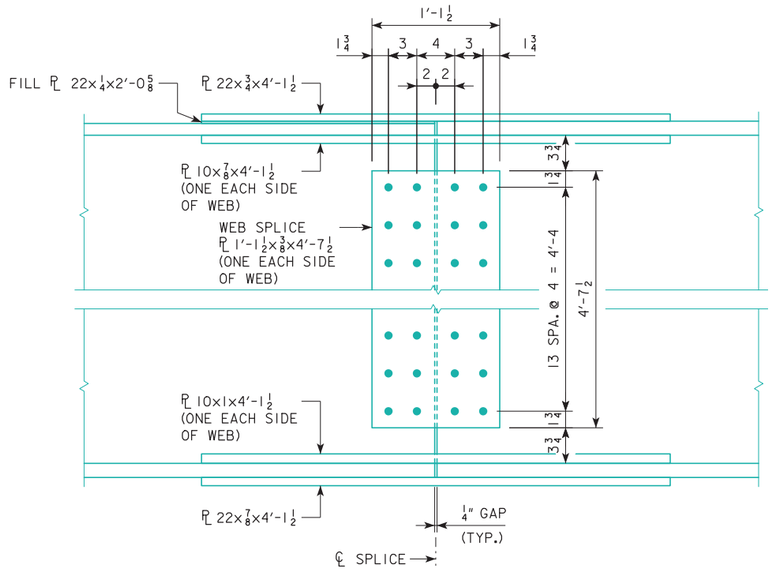
12/20/2019 1:05:45 PM psodahl pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\BRFinal\BRG_52080356.dgn 520220S032 11x17_pdf.pltcfg



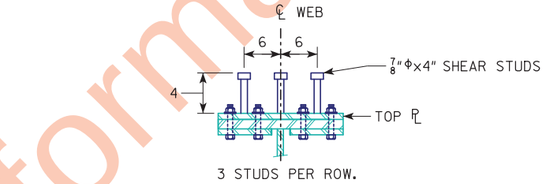
TOP FLANGE
(VIEW TOP OF TOP FLANGE LOOKING DOWN)



SHEAR STUD PLAN VIEW

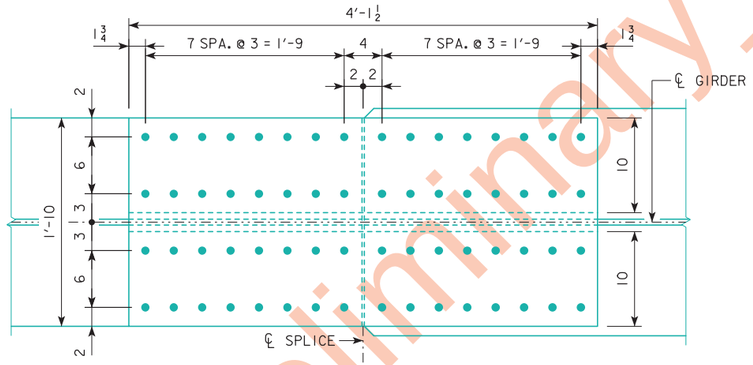


WEB SPLICE



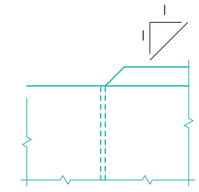
3 STUDS PER ROW.

TYPICAL SECTION AT FIELD SPLICE SHOWING SHEAR STUDS

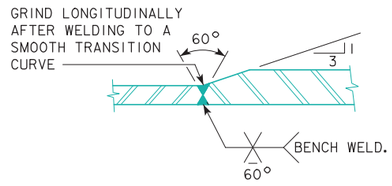


BOTTOM FLANGE
(VIEW BOTT. OF BOTT. FLANGE LOOKING UP)

FIELD SPLICE 1 & 2



TYPICAL FLANGE CHAMFER



FLANGE PLATE TRANSITION DETAIL

ALL FLANGE BUTT WELDED JOINTS SUBJECT TO TENSION OR REVERSAL OF STRESS ARE TO BE RADIOGRAPHED FULL WIDTH. ALL BUTT WELDED JOINTS SUBJECT TO COMPRESSION ONLY ARE TO BE RADIOGRAPHED FOR A MINIMUM OF 50 PERCENT OF THE WIDTH.

FOR TENSION AND COMPRESSION LIMITS (CONTROLLING FLANGE STRESSES SEE GIRDER ELEVATION DETAILS ON DESIGN SHEET 31.

EST. STRUCTURAL STEEL QTY.	
LOCATION	LBS.
ONE FIELD SPLICE	1,523

NOTE: WEIGHT IS PER ONE SPLICE

NOTE: STRUCTURAL STEEL WEIGHT INCLUDES WEIGHT OF SPLICE PLATES, FILL PLATES, BOLTS, NUTS AND WASHERS.

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

NOTE:
FOR FIELD SPLICE LOCATION,
SEE DESIGN SHEET 31.

DESIGN FOR 2°10 SNOW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

FIELD SPLICE DETAILS

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 33 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT FOR Construction

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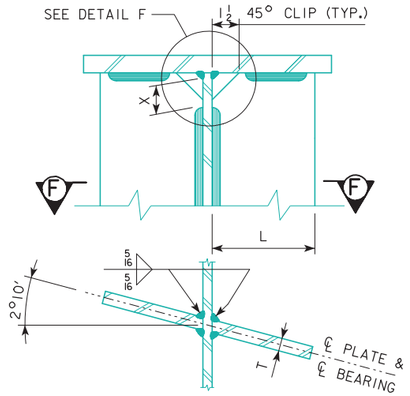
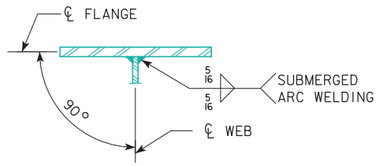
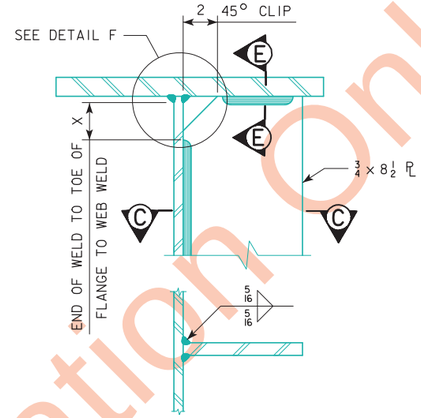
BEARING STIFFENER TABLE		
LOCATION	T (IN.)	L (IN.)
SOUTH ABUT.	1 1/4	10
PIER NO. 1	1 1/2	11
NORTH ABUT.	1 1/4	10



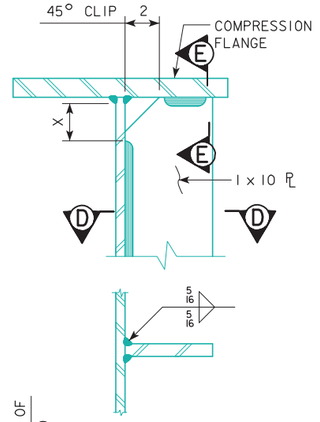
SECTION F-F



FLANGE TO WEB DETAILS



SECTION C-C



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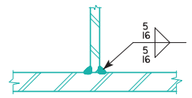
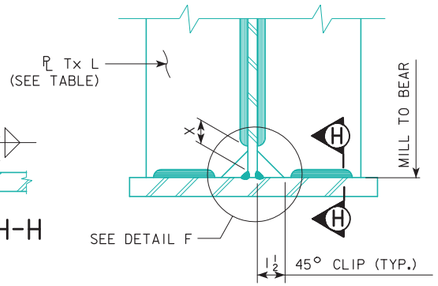
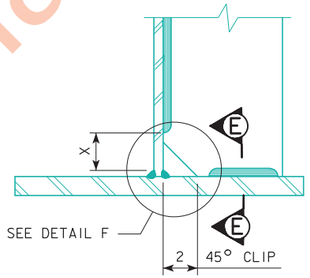


SECTION H-H



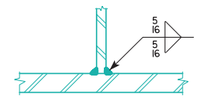
ALL ABUTMENT BEARING STIFFENERS
AND PIER BEARING STIFFENERS

(SEE DIAPHRAGM STIFFENER TABLE FOR SIZING)
(ALL BEARING STIFFENERS ON BOTH SIDES OF WEB)

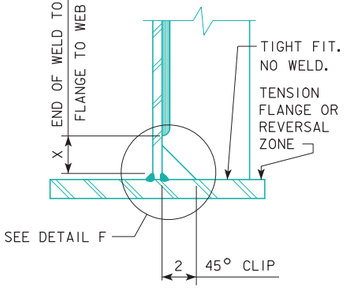


CROSS FRAME
STIFFENER DETAIL

(EXTERIOR GIRDER SHOWN)
(INTERIOR GIRDERS SIMILAR WITH STIFFENER ON BOTH SIDES)



SECTION E-E



INTERMEDIATE
STIFFENER DETAIL

(TYPICAL AT ALL GIRDERS)

NOTES:
FOR LOCATION OF DIAPHRAGM STIFFENERS, CROSS FRAME STIFFENERS, AND INTERMEDIATE STIFFENERS, SEE STRUCTURAL STEEL LAYOUT PLAN ON DESIGN SHEET 30.

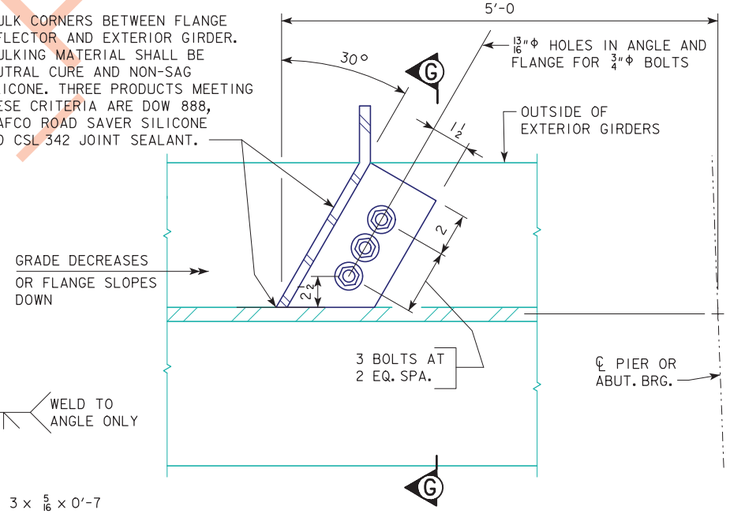
FOR EXTERIOR GIRDERS, CROSS FRAME STIFFENERS AND INTERMEDIATE STIFFENER PLATES ARE REQUIRED ON THE INSIDE FACE OF WEBS.

FLANGE DEFLECTORS ARE REQUIRED ON THE OUTSIDE OF THE EXTERIOR GIRDERS UPSLOPE OF THE PIER AND ABUTMENT LOCATIONS. SEE THE STRUCTURAL STEEL FRAMING PLAN FOR EXACT LOCATION.

FLANGE DEFLECTOR COMPONENTS ARE TO BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

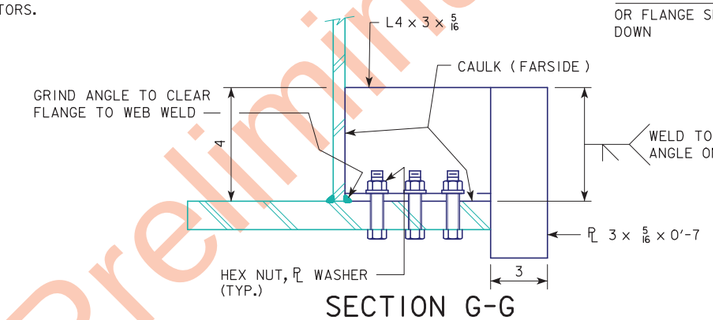
GRADE 50W "WEATHERING STEEL" MAY BE USED IN LIEU OF PAINTED GRADE 36 STEEL FOR FLANGE DEFLECTORS.

CAULK CORNERS BETWEEN FLANGE DEFLECTOR AND EXTERIOR GIRDER. CAULKING MATERIAL SHALL BE NEUTRAL CURE AND NON-SAG SILICONE. THREE PRODUCTS MEETING THESE CRITERIA ARE DOW 888, CRAFCO ROAD SAVER SILICONE AND CSL 342 JOINT SEALANT.

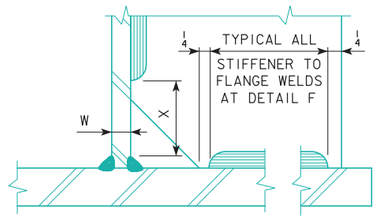


FLANGE DEFLECTOR DETAILS
(6 REQUIRED)

W - WEB THICKNESS	X = 5'W' WITH 2 1/4" MINIMUM
5/8	3 1/8



SECTION G-G



DETAIL F

NOTE:
THIS SHEET IS PRIMARILY FOR THE USE OF FABRICATOR'S WORKMEN AND IOWA DEPARTMENT OF TRANSPORTATION INSPECTORS IN INTERPRETING PLAN DETAILS. IT COVERS THE LOCATIONS OF WELD TERMINI THAT ARE NOT SPECIFIED BY TYPICAL WELD SYMBOLS.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

STIFFENER & WELDING DETAILS

STATION 3062[illegible] APRIL, 2020

JOHNSON COUNTY

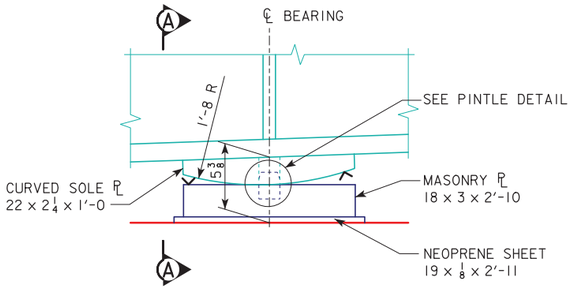
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 34 OF 52 FILE NO. 30864 DESIGN NO. 220

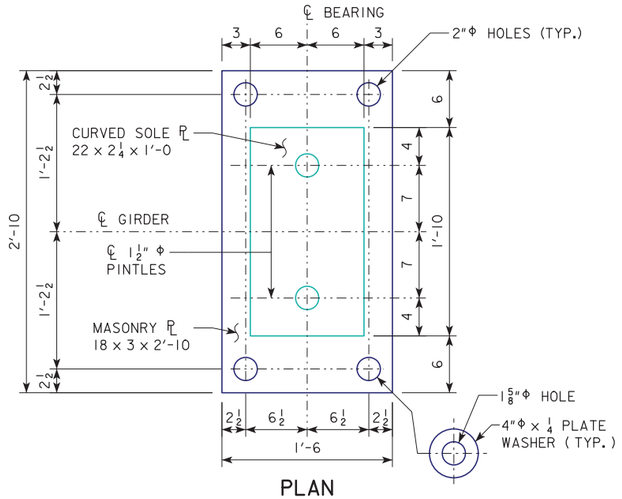
PRELIMINARY
NOT For Construction

REVISED 04-12 - ADDED A THIRD CAULKING COMPANY TO THE LISTING FOR THE FLANGE DEFLECTOR.
ENGLISHBEAMS.DGN 102IW - THIS SHEET ISSUED 03-11.

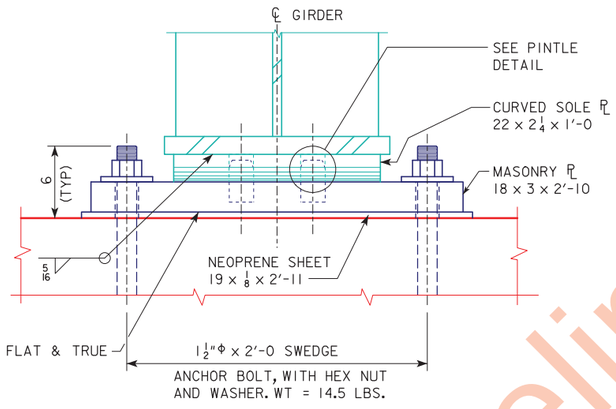
DESIGN TEAM LLY / PES / HDR	WEATHERING STEEL WELDING DETAILS	STANDARD SHEET 102IW (MODIFIED)	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 35



PARTIAL ELEVATION



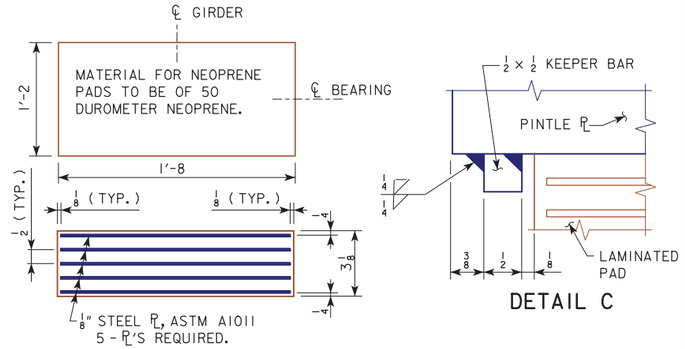
PLAN



SECTION A-A

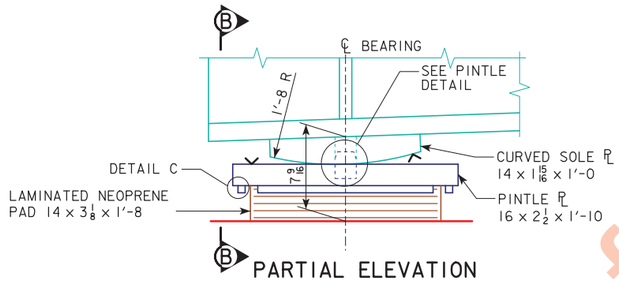
PIER BEARING (FIXED)

MASONRY PL / CURVED SOLE PL ASSEMBLY

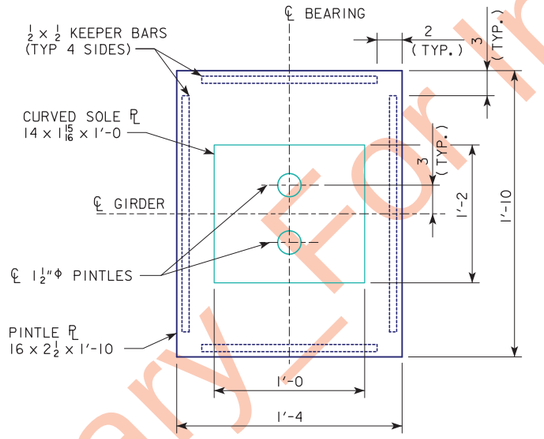


DETAIL C

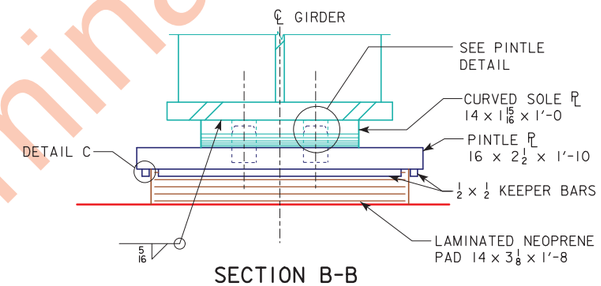
LAMINATED NEOPRENE PADS



PARTIAL ELEVATION



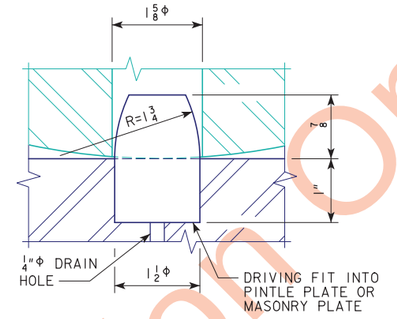
PLAN



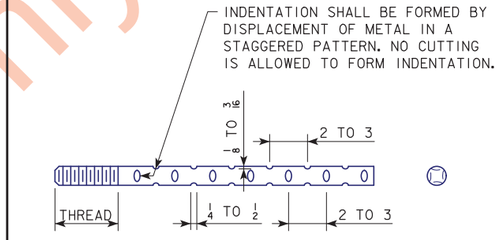
SECTION B-B

ABUTMENT BEARING (EXP.)

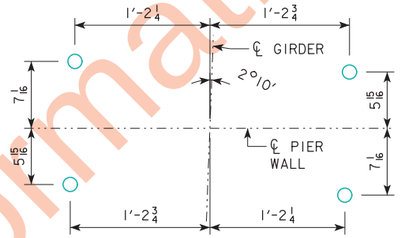
LAMINATED NEOPRENE / CURVED SOLE PL ASSEMBLY



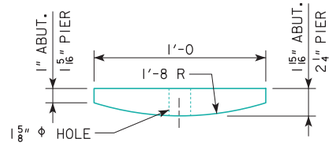
PINTLE DETAIL



ANCHOR BOLT SWEDGE DETAIL



ANCHOR BOLT SETTING DIAGRAM



SOLE PLATE ELEVATION

BEARING NOTES:

1. SURFACES MARKED "V" SHALL MEET ANSI 250 SURFACE FINISH.
2. MASONRY PLATES ARE TO BE SET ON A 1/8 INCH NEOPRENE SHEET.
3. PINTLE PLATES, SOLE PLATES, ANCHOR BOLTS, AND MASONRY PLATES, ARE A PART OF THE STRUCTURAL STEEL QUANTITY. UNIT PRICE BID FOR STRUCTURAL STEEL SHALL INCLUDE ALLOWANCE FOR COST OF THE 1/8" NEOPRENE SHEETS AND NEOPRENE BEARING PADS.
4. THE PINTLE PLATES, KEEPER BARS AND MASONRY PLATES SHALL BE GALVANIZED. ALL WELDING SHALL BE COMPLETED PRIOR TO GALVANIZING.
5. THE SURFACE OF THE PINTLE PLATE IN CONTACT WITH THE LAMINATED NEOPRENE PADS AND CURVED SOLE PLATE SHALL BE FREE OF PROJECTIONS DUE TO THE GALVANIZING.
6. CURVED SOLE PLATES SHALL COMPLY WITH ASTM A709 GRADE 50W AND SHALL BE PAINTED PER STANDARD SPECIFICATIONS. KEEPER BARS, PINTLE PLATES AND MASONRY PLATES, WHICH ARE TO BE GALVANIZED, SHALL COMPLY WITH ASTM A709 GRADE 50.
7. ANCHOR BOLTS, NUTS AND WASHERS SHALL MEET THE REQUIREMENTS OF I.M. 453.08.
8. THE 1/8 INCH NEOPRENE SHEETS ARE TO BE 50, 60, OR 70 DUROMETER HARDNESS AND SHALL BE 1 INCH GREATER IN LENGTH AND WIDTH THAN THE BOTTOM SURFACES OF THE MASONRY PLATES OR STEEL BEARINGS.

STRUCTURAL STEEL		
DATA FOR ONE BEARING		
BEAM SIZE	FIXED BRG.	EXP. BRG.
WEIGHT (LBS.)	784	348

WEIGHT INCLUDES SOLE PL, PINTLE PL, MASONRY PL, ANCHOR BOLTS, NUTS, WASHERS AND WELDS.

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

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

BEARING DETAILS

STATION 3062[illegible] APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 35 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

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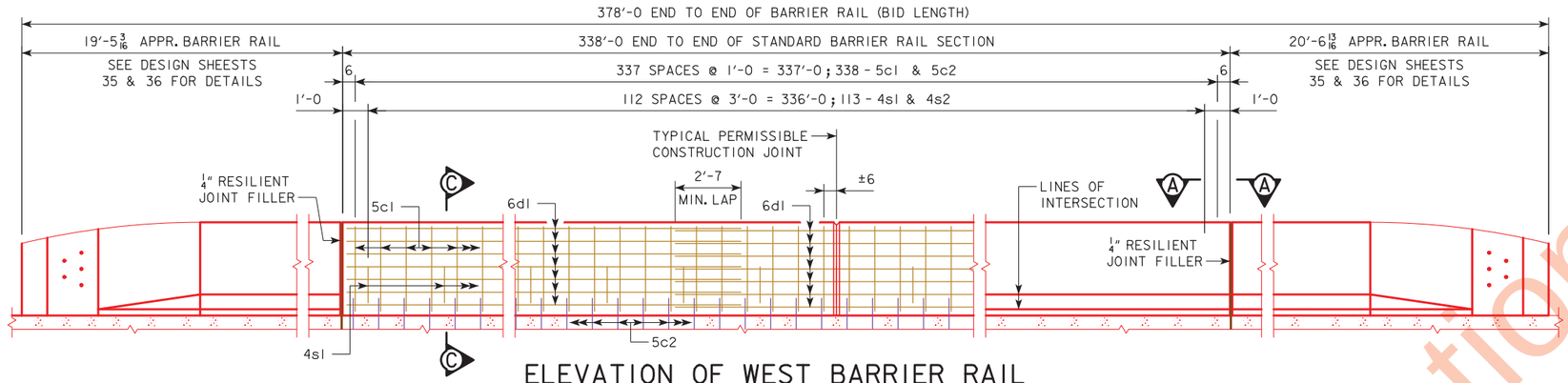
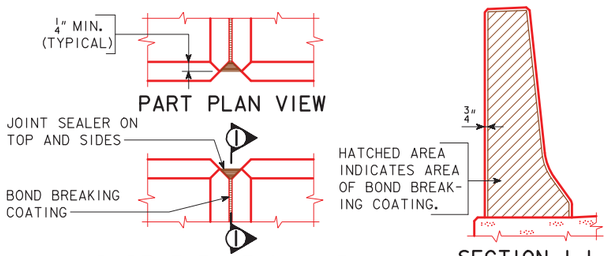


ELEVATION OF WEST BARRIER RAIL

(4s2 BARS NOT SHOWN)
(LOOKING WEST)

NOTE: CONDUITS, JUNCTION BOXES AND 4s BARS REQUIRED IN BOTH BARRIER RAIL, SEE DESIGN SHEETS 39 - 41 FOR DETAILS.

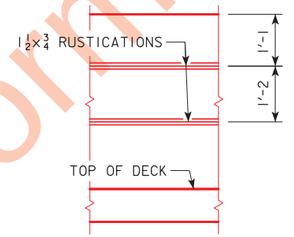


BARRIER RAIL JOINT DETAILS

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".



TYP. ELEVATION OF BARRIER RAIL

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.

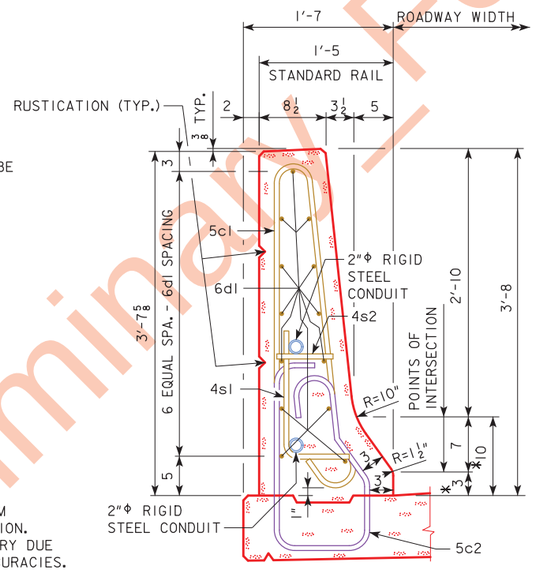
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR 3'-8 CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. IF CONDUIT IS REQUIRED IN THIS PLAN 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.

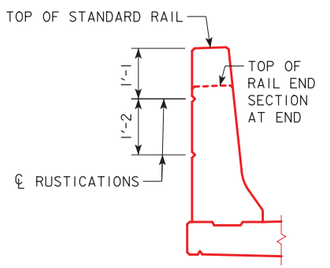
CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 3.46 SQUARE FEET EXCEPT THE 4'-0 SLOPED ENDS AT THE END SECTIONS.

GALVANIZED CONDUIT SHALL BE SECURELY TIED TO 4s1 AND 4s2 BARS AND SHALL NOT COME INTO CONTACT WITH STAINLESS STEEL REINFORCING.

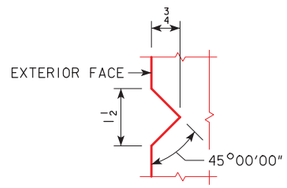


* DENOTES THE MAXIMUM VALUE FOR THIS DIMENSION. THIS DIMENSION MAY VARY DUE TO CONSTRUCTION INACCURACIES.

PART SECTION C-C



TYP. SECTION THROUGH BARRIER RAIL



RUSTICATION DETAIL

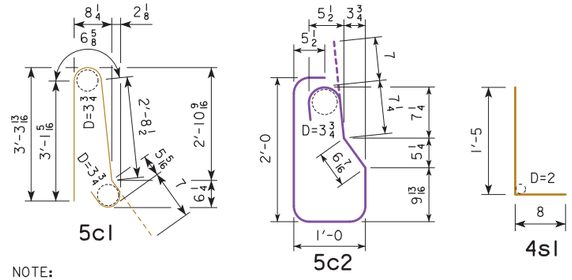
STAINLESS STEEL REINF. STEEL - WEST RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c2	RAIL, VERTICAL		338	6'-0	2,115
					STAINLESS STEEL TOTAL (LBS.)	2,115

EPOXY COATED REINF. STEEL - WEST RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c1	RAIL, VERTICAL		338	7'-5	2,615
	6d1	RAIL, LONGITUDINAL		130	36'-2	7,062
	4s1	RAIL, CONDUIT		113	2'-1	157
	4s2	RAIL, CONDUIT		113	0'-6	38
					EPOXY STEEL TOTAL (LBS.)	9,872

BENT BAR DETAILS



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

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

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	338'-0 @ 0.1281 CU. YD. PER FT.	43.3
	TOTAL (CU. YD.)	43.3

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING, AESTHETIC	L.F.	378.0

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

WEST BRIDGE BARRIER RAIL

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 36 OF 52 FILE NO. 30864 DESIGN NO. 220

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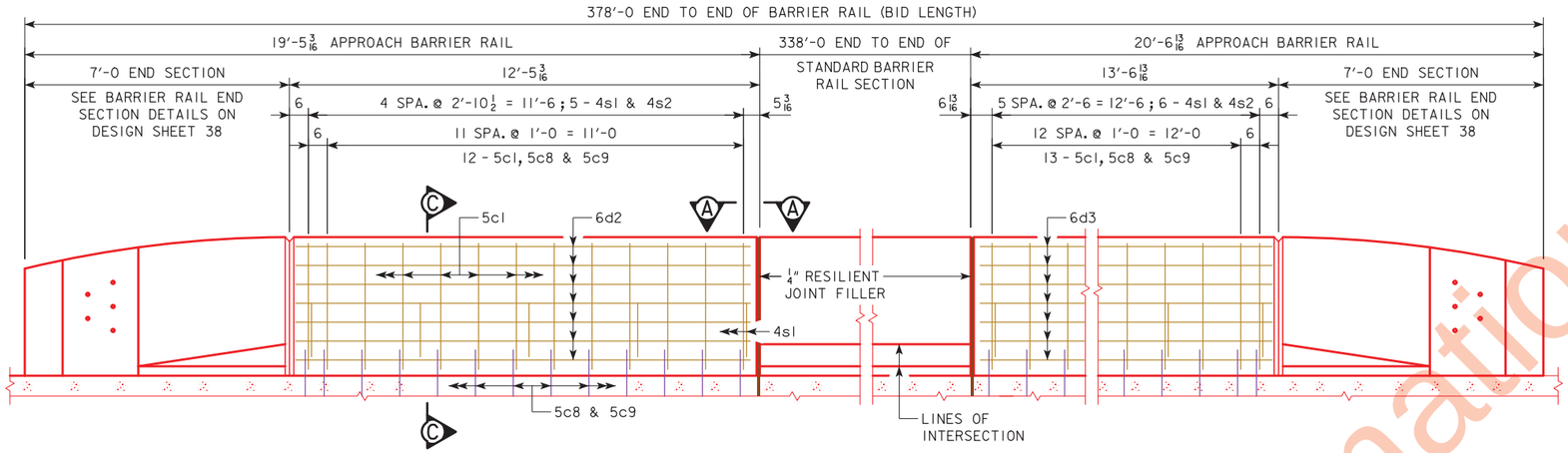
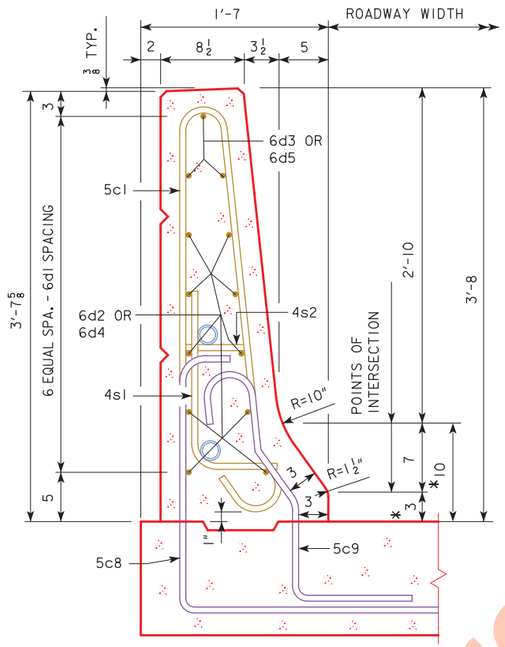


ELEVATION OF WEST BARRIER RAIL

(4s2 BARS NOT SHOWN)
(LOOKING WEST)

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



PART SECTION C-C

NOTE: CONDUITS, JUNCTION BOXES AND 4s BARS REQUIRED IN BOTH BARRIER RAIL, SEE DESIGN SHEETS 41 & 42 FOR DETAILS.

ESTIMATED QUANTITIES PROVIDED ON THIS SHEET ARE INCLUDED WITH THE TABULATED SUMMARY OF QUANTITIES ON DESIGN SHEET 2.

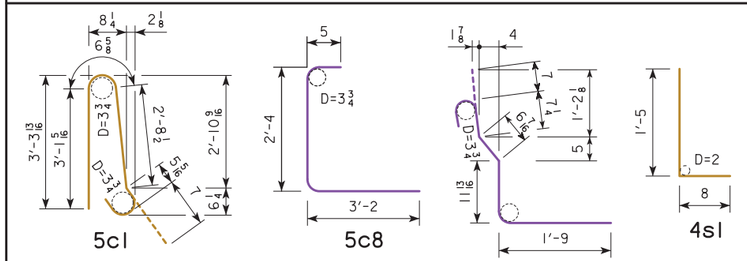
STAINLESS STEEL REINF. STEEL - ONE RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c8	RAIL, VERTICAL		27	5'-11	167
	5c9	RAIL, VERTICAL		27	4'-7	129
		STAINLESS STEEL TOTAL (LBS.)				296

EPOXY COATED REINF. STEEL - ONE RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c1	RAIL, VERTICAL		27	7'-5	209
	6d2	RAIL, LONGITUDINAL		13	12'-1	236
	6d3	RAIL, LONGITUDINAL		13	13'-0	254
	4s1	RAIL, CONDUIT		11	2'-1	15
	4s2	RAIL, CONDUIT		11	0'-6	4
		EPOXY STEEL TOTAL (LBS.)				718

BENT BAR DETAILS



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

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

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	26.0' @ 0.1281 CU. YD. PER FT.	3.3
	TOTAL (CU. YD.)	3.3

NOTE:
FOR BARRIER RAIL NOTES, SEE DESIGN SHEET 34.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

WEST APPROACH BARRIER RAIL

STATION 3062+[illegible]45

APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 37 OF 252 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

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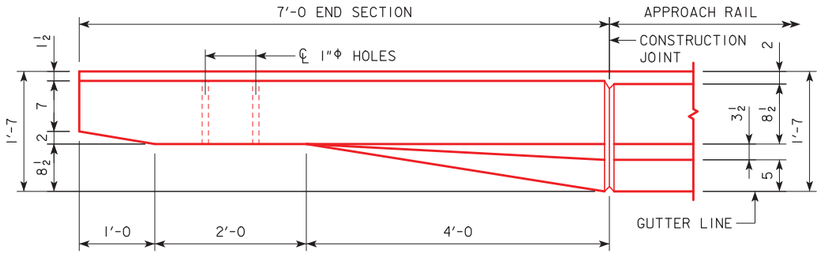
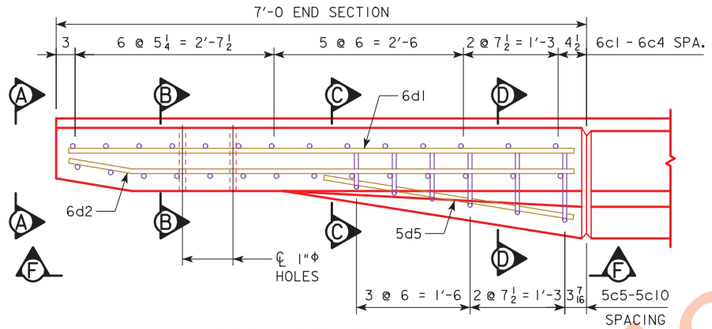
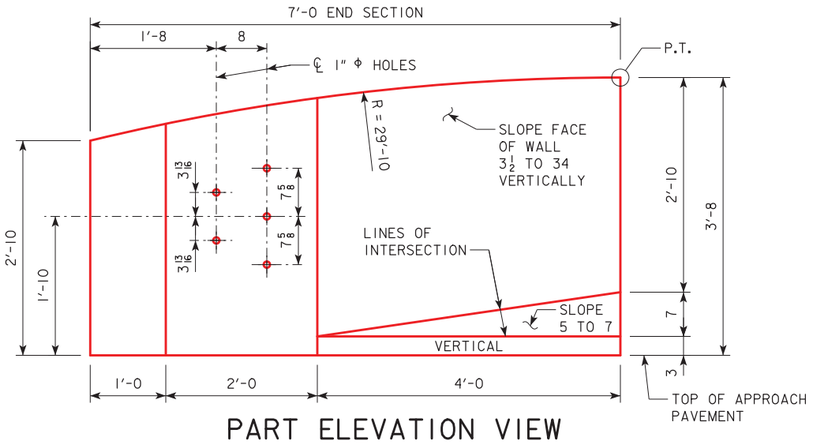
ENGLISHDECKRAILBRIDGES.DGN 1017S - THIS SHEET ISSUED 04-14 - ADDED STAINLESS STEEL REINFORCING BAR LIST AND CHANGED 6c3, 6c4 & 5c5-10 BARS TO STAINLESS STEEL.



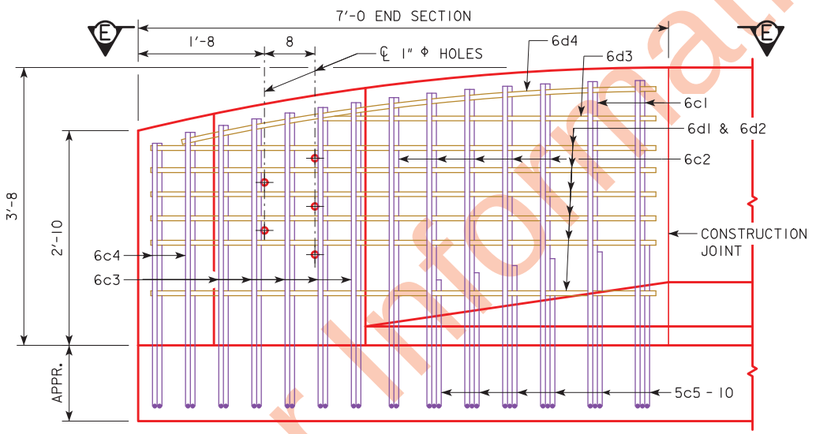
PART PLAN VIEW
(AESTHETIC PROJECTION NOT SHOWN)



PART VIEW E-E
(AESTHETIC PROJECTION NOT SHOWN)

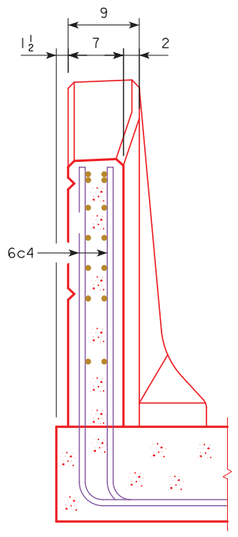


PART ELEVATION VIEW
PROVIDE 5 HOLES FORMED WITH 1" Φ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR "CONCRETE BARRIER RAILING, AESTHETIC".

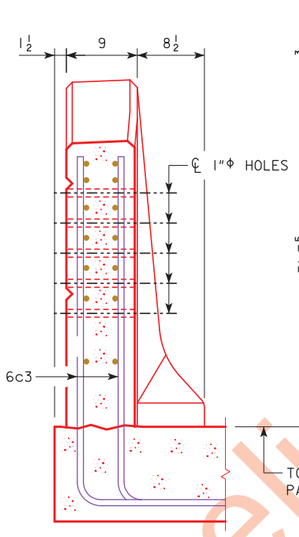


PART VIEW F-F

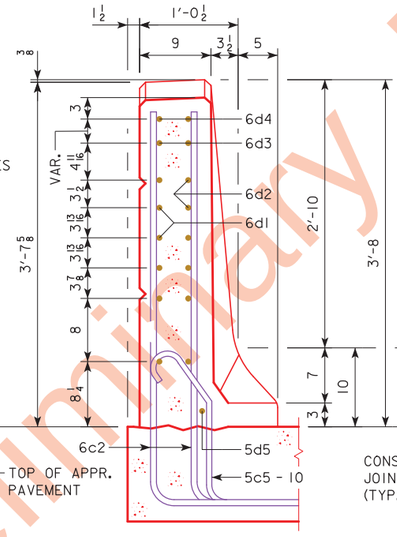
NOTE:
REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.



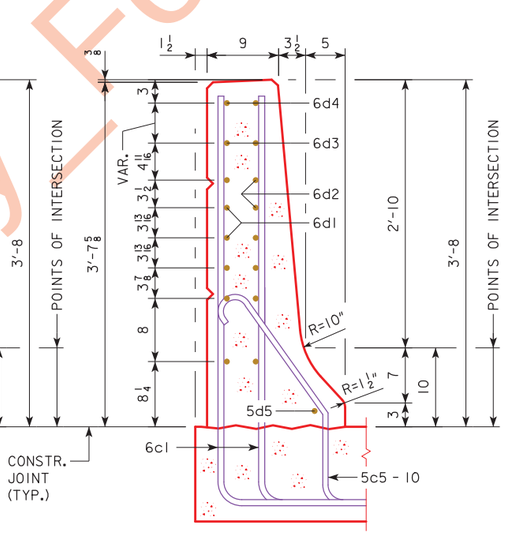
VIEW A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTE:
CONSTRUCTION JOINT BETWEEN TOP OF APPROACH 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:
6c1 AND 5c5-10 BARS ARE TO BE PLACED WITH THE APPROACH SLAB.

STAINLESS STEEL REINF. STEEL - ONE END SECT.

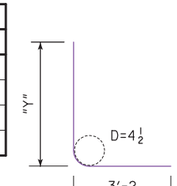
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	RAIL, VERTICAL	L	4	7'-6	45
6c2	RAIL, VERTICAL	L	10	VARIES	111
6c3	RAIL, VERTICAL	L	10	VARIES	106
6c4	RAIL, VERTICAL	L	4	VARIES	41
5c5-10	RAIL, VERTICAL		6	VARIES	27
			STAINLESS STEEL TOTAL WEIGHT (LBS.)		330

EPOXY COATED REINF. STEEL - ONE END SECT.

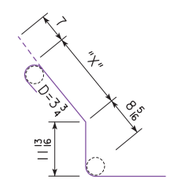
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6d1	RAIL, HORIZONTAL		6	6'-8	60
6d2	RAIL, HORIZONTAL		6	6'-9	61
6d3	RAIL, HORIZONTAL		2	4'-5	13
6d4	RAIL, HORIZONTAL		2	6'-6	20
5d5	RAIL, HORIZONTAL		1	3'-9	4
			STAINLESS STEEL TOTAL WEIGHT (LBS.)		158

BENT BAR DETAILS

BAR	"Y" MIN.	"Y" MAX.
6c1	---	4'-3½
6c2	4'-1¼	4'-3½
6c3	3'-8¾	4'-0½
6c4	3'-6	3'-7¾

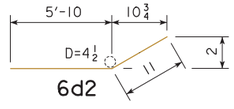


6c1 - 6c4

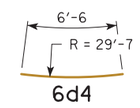


5c5-5c10

BAR	"X"
5c5	0'-6½
5c6	0'-8½
5c7	0'-10¼
5c8	1'-0¼
5c9	1'-2
5c10	1'-4



6d2



6d4

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

CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.78 CU. YD.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

WEST BARRIER RAIL END SECTION

STATION 3062[illegible]46 APRIL, 2020

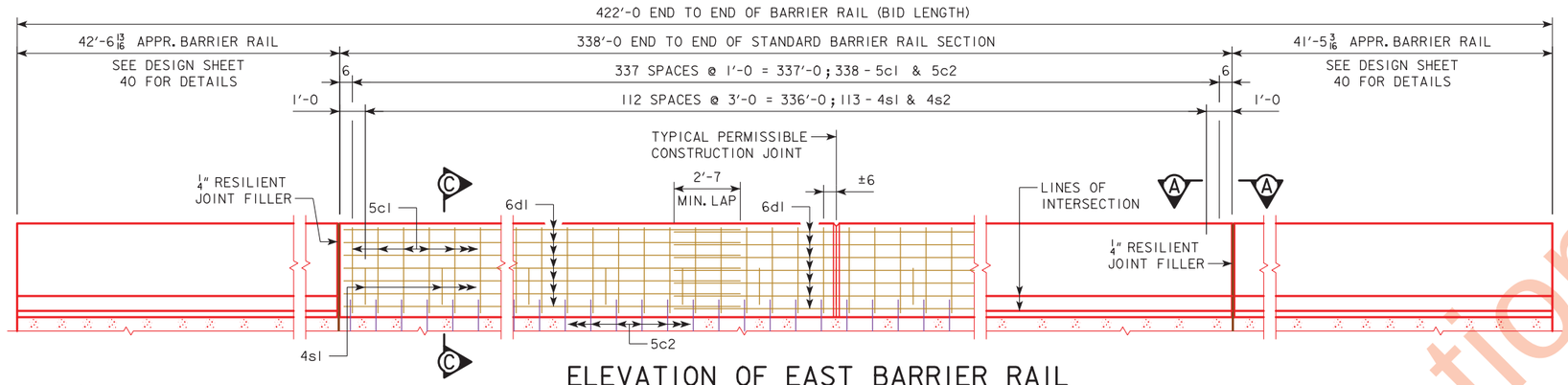
JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 38 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

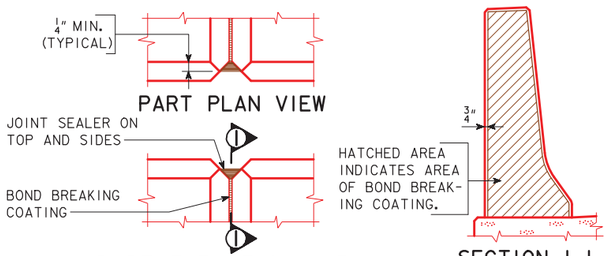
DESIGN TEAM LLY / PES / HDR	BARRIER RAIL END SECTION DETAILS WITH 7'-0 WING	STANDARD SHEET 1017S (MODIFIED)	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER 39



ELEVATION OF EAST BARRIER RAIL

(4s2 BARS NOT SHOWN)
(LOOKING WEST)

NOTE: CONDUITS, JUNCTION BOXES AND 4s BARS REQUIRED IN BOTH BARRIER RAIL, SEE DESIGN SHEETS 39 - 41 FOR DETAILS.

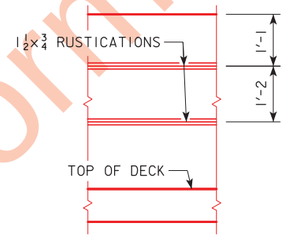


BARRIER RAIL JOINT DETAILS

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".



TYP. ELEVATION OF BARRIER RAIL

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.

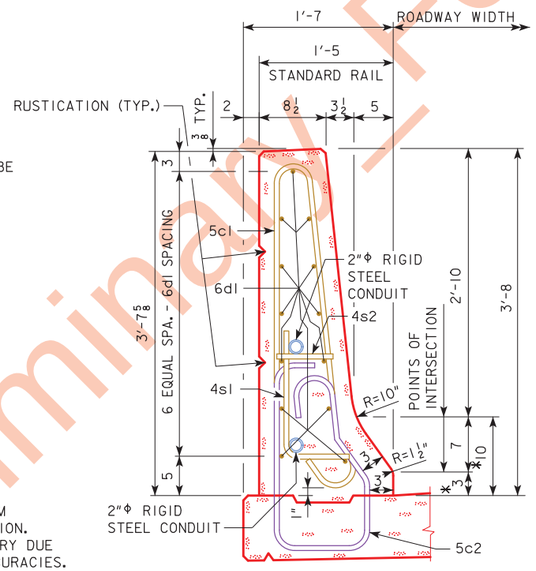
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR 3'-8 CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. IF CONDUIT IS REQUIRED IN THIS PLAN 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.

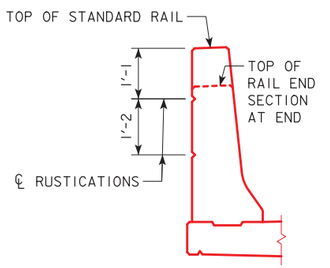
TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE, EXCEPT AT THE SPECIAL SECTIONS.

CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 3.46 SQUARE FEET EXCEPT THE 4'-0 SLOPED ENDS AT THE END SECTIONS.

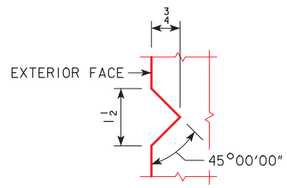
GALVANIZED CONDUIT SHALL BE SECURELY TIED TO 4s1 AND 4s2 BARS AND SHALL NOT COME INTO CONTACT WITH STAINLESS STEEL REINFORCING.



PART SECTION C-C



TYP. SECTION THROUGH BARRIER RAIL



RUSTICATION DETAIL

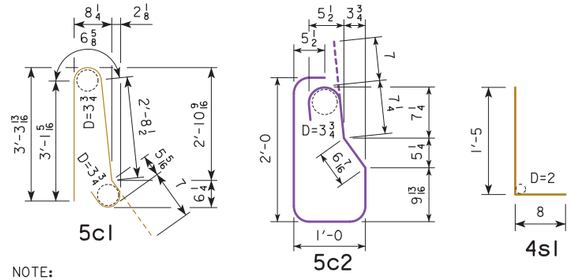
STAINLESS STEEL REINF. STEEL - EAST RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c2	RAIL, VERTICAL		338	6'-0	2,115
					STAINLESS STEEL TOTAL (LBS.)	2,115

EPOXY COATED REINF. STEEL - EAST RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c1	RAIL, VERTICAL		338	7'-5	2,615
	6d1	RAIL, LONGITUDINAL		130	36'-2	7,062
	4s1	RAIL, CONDUIT		113	2'-1	157
	4s2	RAIL, CONDUIT		113	0'-6	38
					EPOXY STEEL TOTAL (LBS.)	9,872

BENT BAR DETAILS



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

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

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	338'-0 @ 0.1281 CU. YD. PER FT.	43.3
	TOTAL (CU. YD.)	43.3

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING, AESTHETIC	L.F.	422.0

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

EAST BRIDGE BARRIER RAIL

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 39 OF 52 FILE NO. 30864 DESIGN NO. 220

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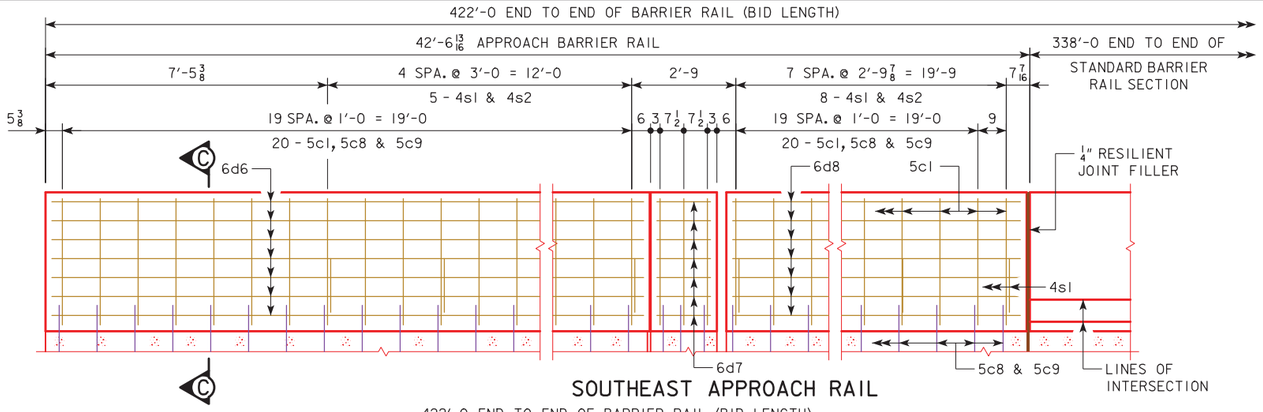
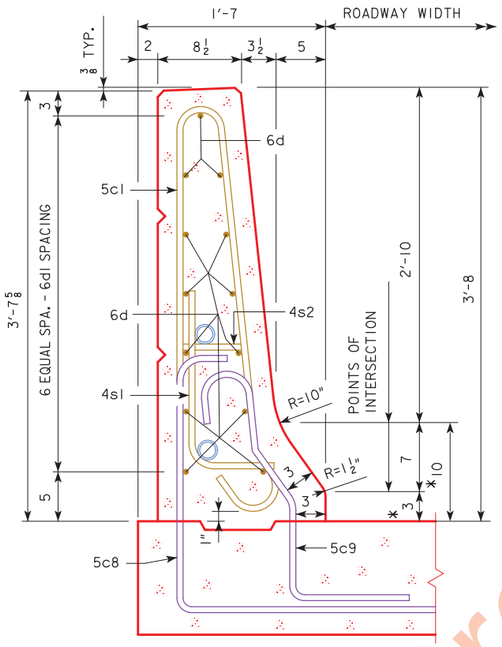




PART SECTION C-C

ELEVATION OF EAST BARRIER RAIL

(4s2 BARS NOT SHOWN)
(LOOKING WEST)

NOTE: CONDUITS, JUNCTION BOXES AND 4s BARS REQUIRED IN BOTH BARRIER RAIL, SEE DESIGN SHEETS 41 & 42 FOR DETAILS.

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

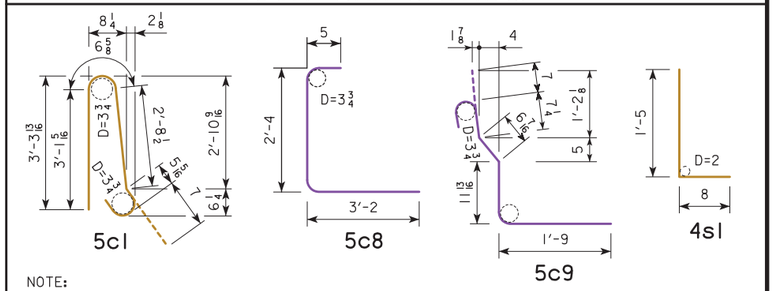
STAINLESS STEEL REINF. STEEL - EAST RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c8	RAIL, VERTICAL		87	5'-11	537
	5c9	RAIL, VERTICAL		87	4'-7	416
				STAINLESS STEEL TOTAL (LBS.)		953

EPOXY COATED REINF. STEEL - EAST RAIL

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTIONS	5c1	RAIL, VERTICAL		87	7'-5	673
	6d6	RAIL, LONGITUDINAL		13	19'-7	382
	6d7	RAIL, LONGITUDINAL		26	1'-5	55
	6d8	RAIL, LONGITUDINAL		13	20'-2	394
	6d9	RAIL, LONGITUDINAL		13	19'-8	384
	6d10	RAIL, LONGITUDINAL		13	18'-11	369
	4s1	RAIL, CONDUIT		26	2'-1	36
	4s2	RAIL, CONDUIT		26	0'-6	9
				EPOXY STEEL TOTAL (LBS.)		2,302

BENT BAR DETAILS



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

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

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	84.0' @ 0.1281 CU. YD. PER FT.	10.8
	TOTAL (CU. YD.)	10.8

NOTE:
FOR BARRIER RAIL NOTES, SEE DESIGN SHEET 36.

DESIGN FOR 2° (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

EAST APPROACH BARRIER RAIL

STATION 3062+[illegible]45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 40 OF 252 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

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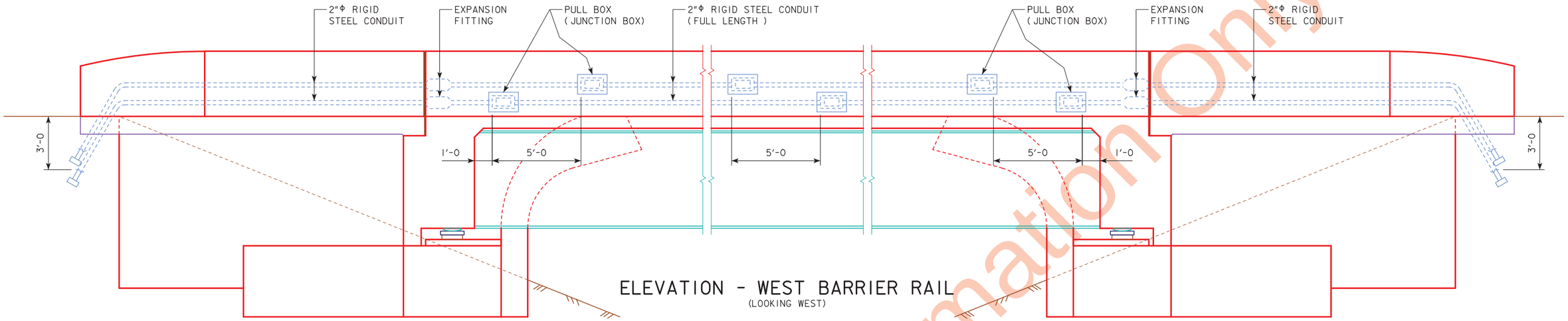
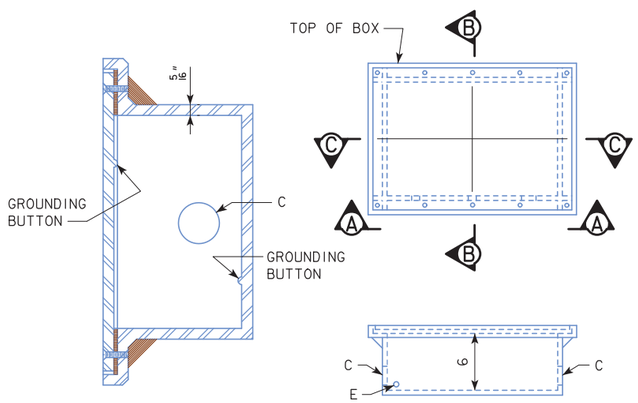


ELEVATION - WEST BARRIER RAIL
(LOOKING WEST)

SOUTH ABUTMENT



SECTION B-B

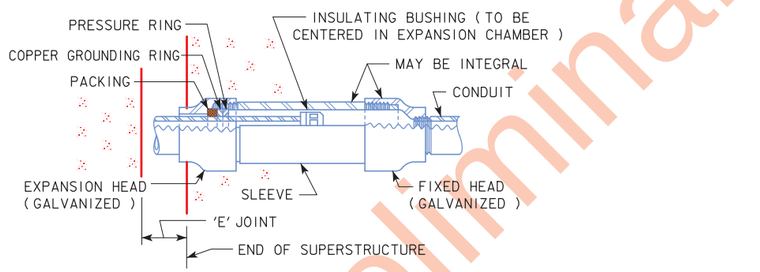
VIEW A-A

SECTION C-C

BOSSED FOR	HOLE	FOR CONDUIT SIZE
5 THREADS	C	2"Φ RIGID STEEL
NONE	E	$\frac{1}{2}$"Φ COPPER PIPE

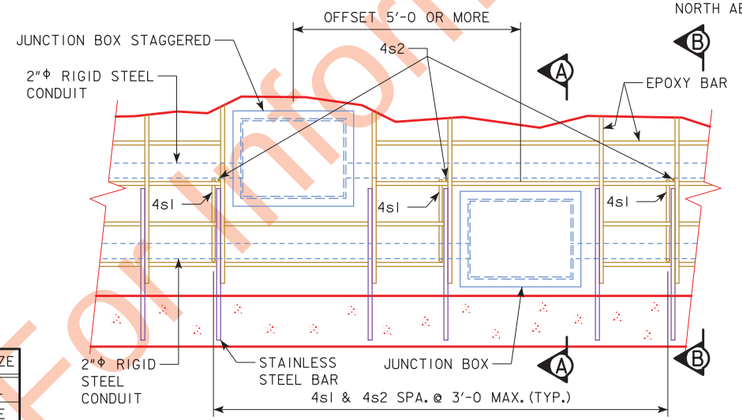
NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR $\frac{3}{8}$"Φ x 0'-0$\frac{3}{4}$ BOLTS.

LI-104 JUNCTION BOX
WATERTIGHT, CAST IRON - FLUSH MOUNT

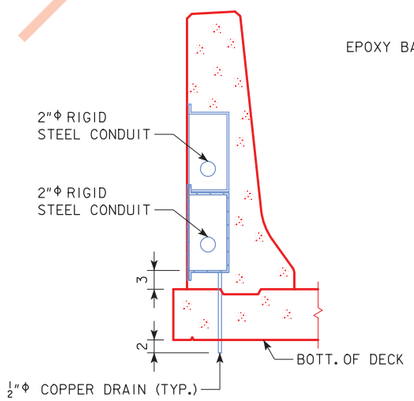


EXPANSION FITTING DETAIL
(4 REQUIRED)

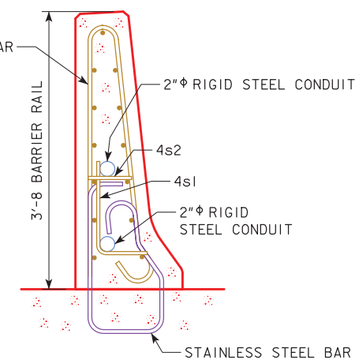
NORTH ABUTMENT



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.



SECTION A-A THRU JUNCTION BOX



SECTION B-B CONDUIT SUPPORT

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 $\frac{1}{4}$". 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 RAILING.

EXPANSION FITTING SHALL BE AS SPECIFIED OR AS APPROVED BY THE ENGINEER. TYPICAL DETAILS ARE SHOWN ON THIS SHEET.

ALL CONDUIT SHALL INCLUDE A POLYPROPYLENE PULL ROPE BETWEEN JUNCTION BOXES WITH A MINIMUM 600 Lb. TENSILE STRENGTH.

GALVANIZED CONDUITS AND JUNCTION BOXES SHALL NOT COME INTO CONTACT WITH THE STAINLESS STEEL REINFORCING.

DESIGN FOR 2°10' SKEW (R.A.)
335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK
169'-0, 166'-0 SPANS
WEST BARRIER LIGHTING DETAILS
STATION 3062+55.46 APRIL, 2020
JOHNSON COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 41 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

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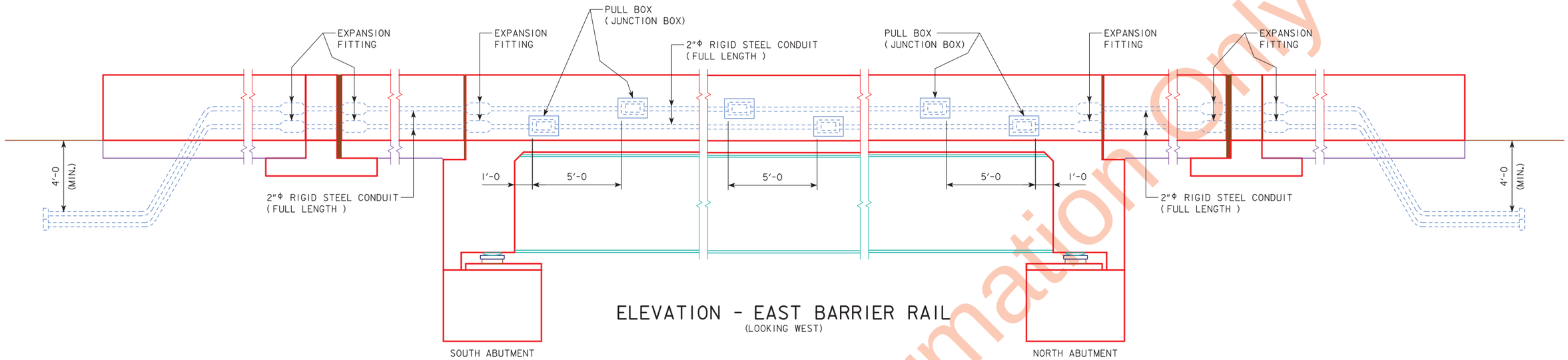
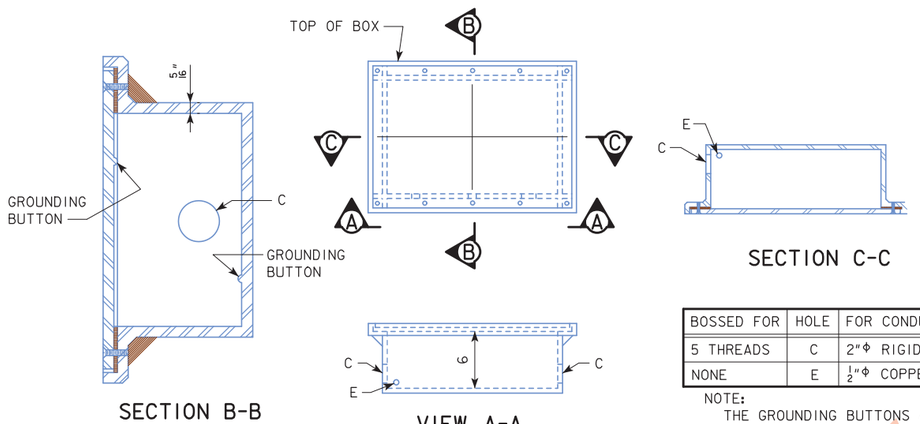


ELEVATION - EAST BARRIER RAIL
(LOOKING WEST)



SECTION B-B

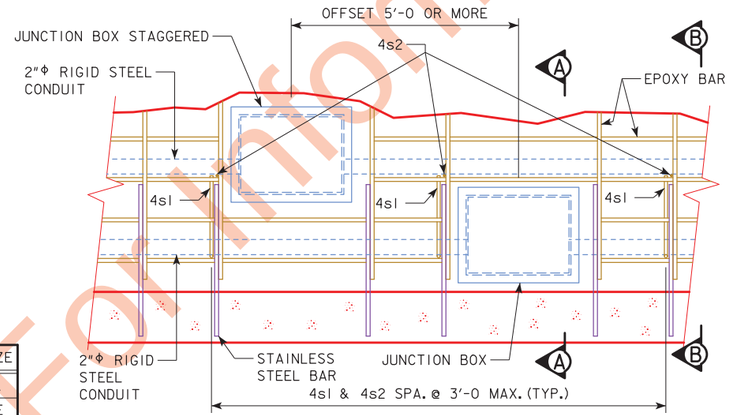
VIEW A-A

LI-104 JUNCTION BOX
WATERTIGHT, CAST IRON - FLUSH MOUNT

SECTION C-C

BOSSED FOR	HOLE	FOR CONDUIT SIZE
5 THREADS	C	2"Φ RIGID STEEL
NONE	E	$\frac{1}{2}$"Φ COPPER PIPE

NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR $\frac{3}{8}$"Φ x 0'-0$\frac{3}{4}$ BOLTS.



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.

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.

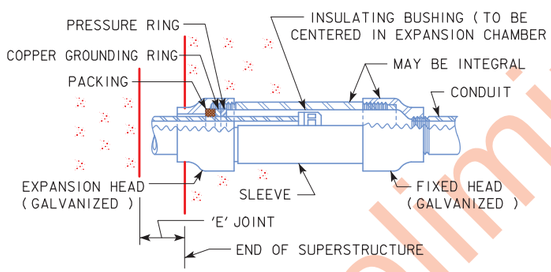
CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH ARTICLE 2523.03, N, OF THE STANDARD SPECIFICATIONS.

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 $\frac{1}{4}$". 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.

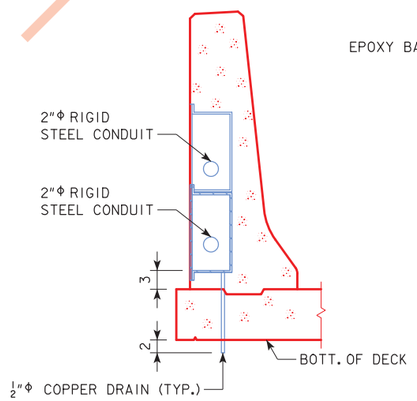
THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

EXPANSION FITTING SHALL BE AS SPECIFIED OR AS APPROVED BY THE ENGINEER. TYPICAL DETAILS ARE SHOWN ON THIS SHEET.

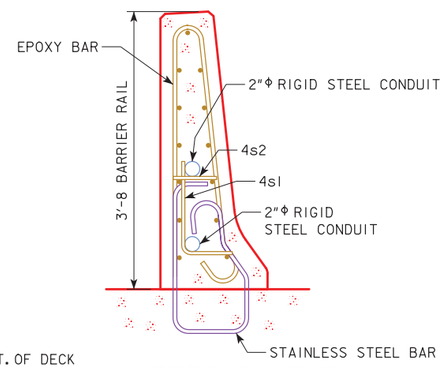
ALL CONDUIT SHALL INCLUDE A POLYPROPYLENE PULL ROPE BETWEEN JUNCTION BOXES WITH A MINIMUM 600 Lb. TENSILE STRENGTH.



EXPANSION FITTING DETAIL
(12 REQUIRED)



SECTION A-A
THRU JUNCTION BOX



SECTION B-B
CONDUIT SUPPORT

GALVANIZED CONDUITS AND JUNCTION BOXES SHALL NOT COME INTO CONTACT WITH THE STAINLESS STEEL REINFORCING.

DESIGN FOR 2°10' SKEW (R.A.)
335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK
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EAST BARRIER LIGHTING DETAILS
STATION 3062+55.45 APRIL, 2020
JOHNSON COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 42 OF 52 FILE NO. 30864 DESIGN NO. 220

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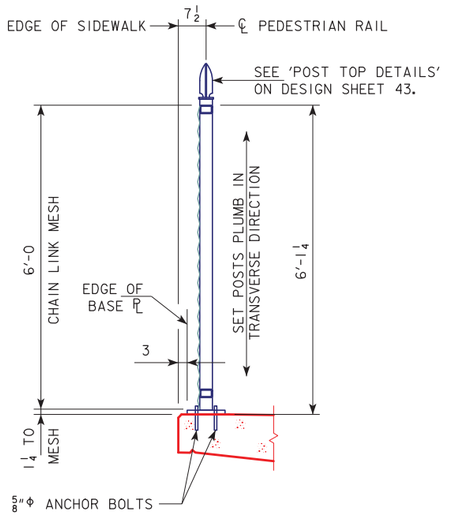
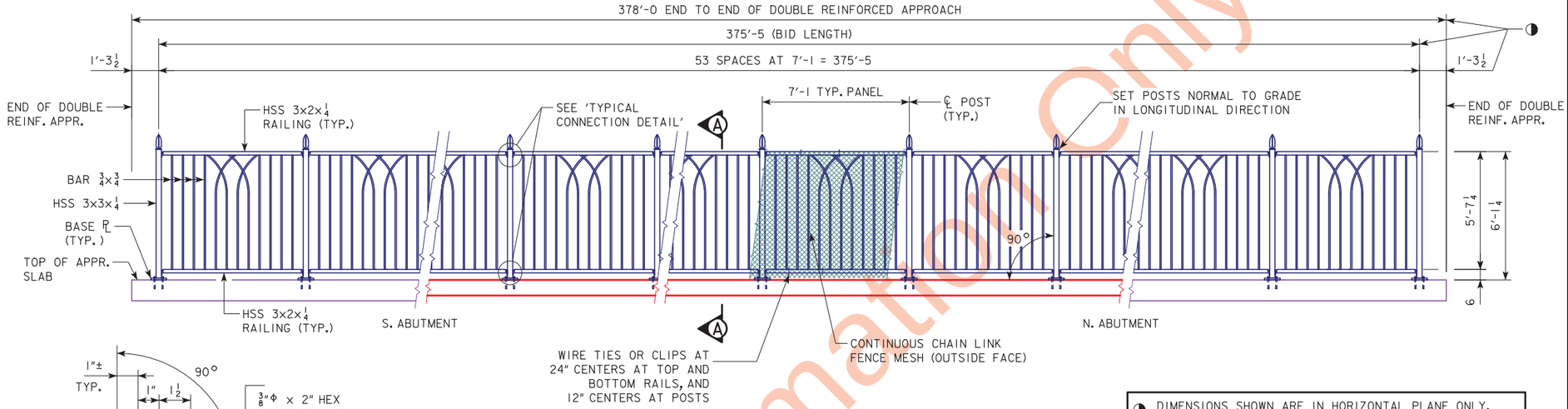


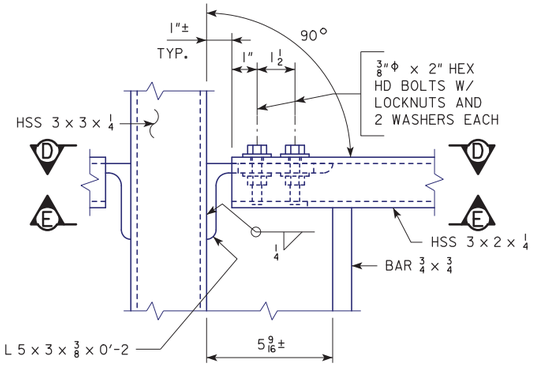
SECTION A-A



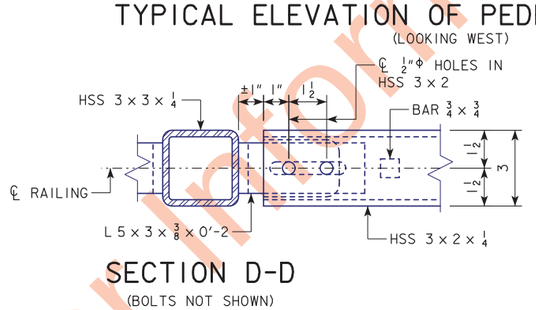
TYPICAL ELEVATION OF PEDESTRIAN RAILING

(LOOKING WEST)

◑ DIMENSIONS SHOWN ARE IN HORIZONTAL PLANE ONLY. FABRICATOR/CONTRACTOR SHALL ADJUST FOR SLOPE AND VERTICAL CURVE TO CONFORM TO VERTICAL ALIGNMENT OF THE BRIDGE.

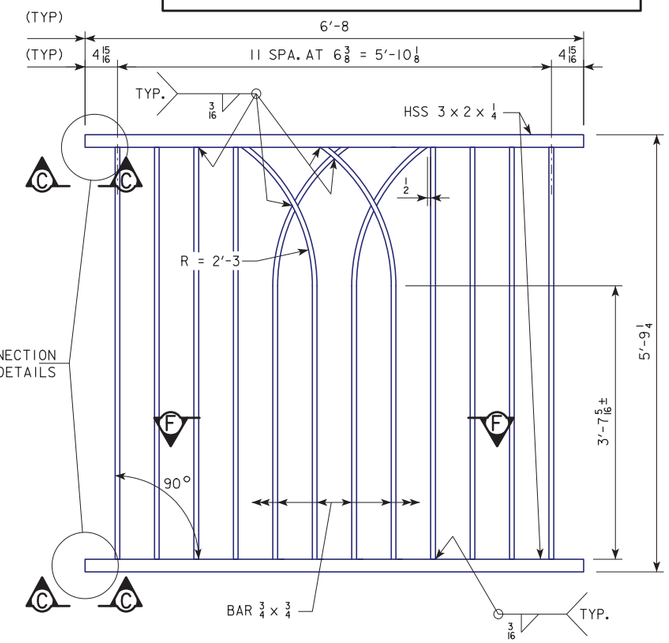


TYPICAL CONNECTION DETAIL



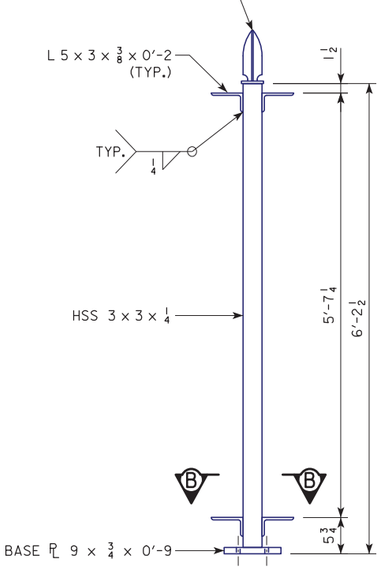
SECTION D-D

(BOLTS NOT SHOWN)

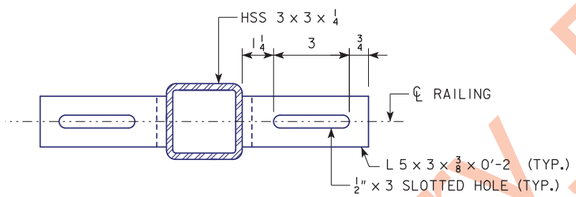


TYPICAL RAILING PANEL

SEE DESIGN SHEET 43 FOR ADDITIONAL DETAILS AND NOTES.

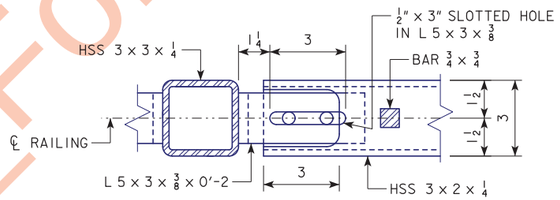


TYPICAL POST ELEVATION DETAIL



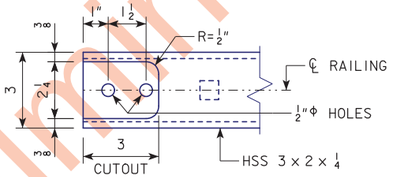
SECTION B-B

(THROUGH POST)

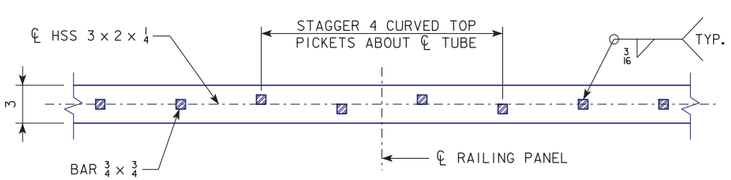


SECTION E-E

(BOLTS NOT SHOWN)



SECTION C-C



SECTION F-F

PRELIMINARY Not For Construction

DESIGN FOR 2° ICE SHEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PEDESTRIAN RAILING DETAILS

STATION 3062L+55.46 — APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 43 OF 52 — FILE NO. 30864 — DESIGN NO. 220

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 44

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PEDESTRIAN RAILING NOTES

STRUCTURAL STEEL MATERIAL FOR PLATES, BARS AND ANGLES SHALL COMPLY WITH ASTM A709, GRADE 50. THE TUBE STEEL SHALL COMPLY WITH ASTM A500, GRADE B. ANCHOR BOLTS SHALL BE FULLY THREADED AND COMPLY WITH ASTM F1554, GRADE 55. HEX NUTS SHALL COMPLY WITH ASTM A563-DH. WASHERS SHALL COMPLY WITH ASTM F436. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH MATERIALS I.M. 410.01. ALL OTHER BOLTS SHALL COMPLY WITH ASTM A307.

ROLL FORMING OF CURVED PICKET BARS IS REQUIRED.

CHAIN LINK FABRIC SHALL BE 2 INCH MESH, NO. 9 WIRES, 72 INCH HEIGHT, WITH KNUCKLED SELVAGES TOP AND BOTTOM. FITTINGS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. CHAIN LINK FABRIC, RAILS, AND FENCE ACCESSORIES ARE TO BE PVC COATED IN ACCORDANCE WITH ASTM F 668, CLASS 2B. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F 934. INSTALL CHAIN LINK FABRIC TO THE OUTSIDE OF THE RAILING AS SHOWN IN THE PLANS AND TIE TO FRAMING MEMBERS TO ELIMINATE ALL SAGGING AND SLACK IN THE MESH. DO NOT TIE MESH TO THE VERTICAL PICKETS.

GRIND SMOOTH ALL BURRS AND SHARP CORNERS OF STEEL RAILING COMPONENTS PRIOR TO GALVANIZING.

STEEL RAILING COMPONENTS SHALL BE ABRASIVE BLAST CLEANED TO A MINIMUM OF SSPC-SP6 "COMMERCIAL BLAST CLEANING" PRIOR TO HOT-DIP GALVANIZING. GALVANIZE COMPONENTS IN ACCORDANCE WITH SECTION 4100.07 OF THE STANDARD SPECIFICATIONS. DO NOT QUENCH OR APPLY CHROMATE CONVERSION COATINGS TO ANY GALVANIZED COMPONENTS THAT WILL RECEIVE POWDER COATING. FOLLOWING GALVANIZING, POWDER COAT COMPONENTS IN ACCORDANCE WITH MATERIALS I.M. 568.

ALL RAILING MEMBERS SHALL BE FLAT AND STRAIGHT AFTER FABRICATION AND GALVANIZING TO WITHIN $\frac{1}{8}$ INCH IN 10 FEET. STRAIGHTEN BY MECHANICAL MEANS WITHOUT DAMAGE TO THE ZINC COATING.

PREPARATION OF GALVANIZED SURFACES FOR PAINT SHALL BE IN ACCORDANCE WITH MATERIALS I.M. 568, APPENDIX F. COMPLETE "PAINT OVER GALVANIZED SURFACE TRAVEL LOG" IN APPENDIX E. ALL POWDER COATING EXCEPT FIELD TOUCH-UP SHALL BE PERFORMED IN AN APPROVED SHOP IN ACCORDANCE WITH MATERIALS I.M. 568.

SUBMIT PROPOSED PREPARATION METHODS AND PRODUCT DATA FOR ALL COATINGS PROPOSED FOR USE TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO POWDER COATING. POWDER COATING SHALL MATCH FEDERAL STANDARD NO. 595C COLOR NUMBER 27038 (BLACK). SUBMIT POWDER COATING COLOR SAMPLE TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS.

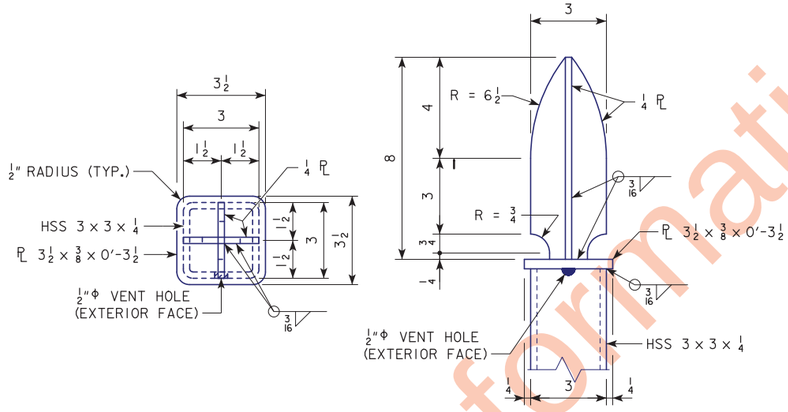
PROTECT ALL POWDER COATED RAILING SURFACES FROM DAMAGE DURING SHIPPING, HANDLING, AND INSTALLATION.

CONTRACTOR SHALL VERIFY DIMENSIONS OF CONCRETE ON BRIDGE PRIOR TO COMMENCING FINAL LAYOUT AND INSTALLATION OF RAILING. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN CONCRETE DIMENSIONS PRIOR TO RAILING INSTALLATION. SET ALL RAILING PANELS VERTICAL IN THE TRANSVERSE DIRECTION AND NORMAL TO GRADE ALONG THE BRIDGE. SHIM BASE PLATES AS NECESSARY.

THE ANCHOR BOLTS SHALL BE SET IN DRILLED HOLES 5 INCHES DEEP (MIN.). USE ADHESIVE BONDING MATERIAL SYSTEM IN ACCORDANCE WITH MATERIALS I.M. 491.11. MATERIALS USED SHALL ALSO BE IN ACCORDANCE WITH ADHESIVE MANUFACTURER'S REQUIREMENTS AND BE CAPABLE OF OBTAINING AN ULTIMATE LOAD PER BOLT OF 12 KIPS IN TENSION. SUBMIT EVIDENCE OF THE PROPOSED ADHESIVE ANCHORAGE SYSTEM'S ABILITY TO DEVELOP REQUIRED LOAD CAPACITY TO THE ENGINEER FOR APPROVAL PRIOR TO USE. ANCHOR BOLT INSTALLATION, INCLUDING HOLE SIZE, DRILLING, CLEAN-OUT, PLACEMENT, AND CURING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

DO NOT INSTALL SIGNAGE, LABELS, PLACARDS OR OTHER INSIGNIA ON THE FINISHED RAILING OR CHAIN LINK MESH.

FOLLOWING RAILING INSTALLATION, REPAIR ANY DAMAGE TO THE POWDER COATED FINISH IN ACCORDANCE WITH THE COATING MANUFACTURER'S RECOMMENDATIONS. SUBMIT THE POWDER COATING MANUFACTURER'S WRITTEN FIELD REPAIR AND RECOATING PROCEDURES TO THE ENGINEER PRIOR TO TOUCH-UP OPERATIONS. FOLLOWING FINAL INSTALLATION AND TOUCH-UP PAINTING, THE FINISHED SURFACES SHALL BE UNIFORM IN COLOR, SHEEN, TEXTURE AND HIDING ACROSS EACH CONTINUOUS SURFACE AREA WHEN VIEWED IN NATURAL DAYLIGHT AT NORMAL VIEWING ANGLES AND FROM DISTANCES NOT LESS THAN 39 INCHES FROM SURFACE. COMPONENTS DEEMED UNACCEPTABLE BY THE ENGINEER SHALL BE REMOVED AND RETURNED TO AN APPROVED POWDER COATING SHOP, AND SHALL BE COMPLETELY STRIPPED AND RECOATED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AT NO ADDITIONAL COST TO THE PROJECT.



POST TOP DETAILS

PEDESTRIAN RAILING NOTES (CONT'D)

SUBMIT SHOP DRAWINGS FOR ALL COMPONENTS OF THE RAILING.

INCLUDE ALL COSTS ASSOCIATED WITH THE RAILING, CHAIN LINK MESH, AND ANCHORAGES IN THE PRICE BID FOR "STRUCTURAL STEEL PEDESTRIAN HAND RAILING".

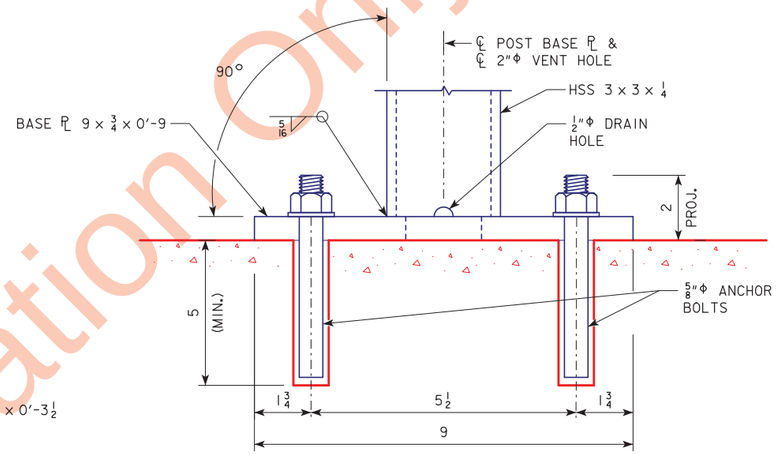
RAILING MOCKUP NOTES

CONSTRUCT A MOCKUP RAILING PANEL FOR REVIEW BY THE ENGINEER. FOR THE PURPOSES OF THE MOCKUP, ONE STANDARD RAILING PANEL AND TWO POSTS SHALL BE FABRICATED, GALVANIZED, AND POWDER COATED ACCORDING TO THE REQUIREMENTS IN THESE PLANS. ACTUAL RAILING PRODUCTION MAY NOT PROCEED UNTIL FINAL APPROVAL OF THE MOCKUP. IF THE MOCKUP IS REJECTED, CONSTRUCT ANOTHER MOCKUP AT THE DIRECTION OF THE ENGINEER. USE MATERIALS AND METHODS TO CREATE THE MOCKUP(S) THAT ARE IDENTICAL TO THOSE PROPOSED FOR THE ACTUAL RAILINGS FOR THE PROJECT. THE APPROVED MOCKUP SHALL REMAIN AT THE SITE FOR COMPARISON TO ACTUAL RAILINGS AS THEY ARE DELIVERED. PROTECT THE MOCKUP RAILING FROM WEATHER AND DAMAGE DURING STORAGE PERIOD. IF APPROVED FOR USE, INSTALL THE MOCKUP AS PART OF THE FINAL RAILING.

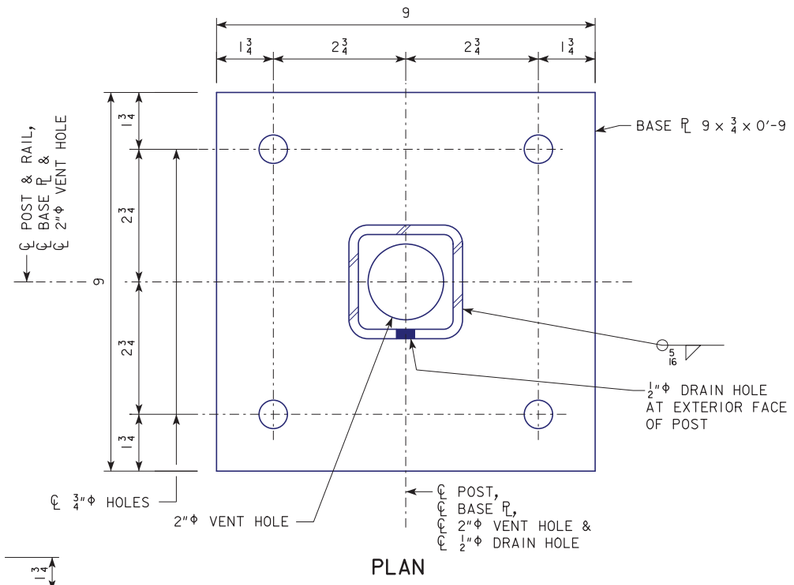
INCLUDE ALL COSTS ASSOCIATED WITH THE MOCKUP IN THE PRICE BID FOR "STRUCTURAL STEEL PEDESTRIAN HAND RAILING".

PEDESTRIAN RAIL QUANTITY

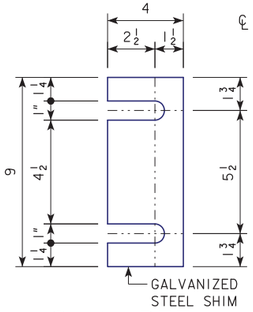
ITEM	UNIT	QUANTITY
STRUCTURAL STEEL PEDESTRIAN HAND RAILING	LIN. FT.	



ELEVATION
(SHIMS NOT SHOWN)



PLAN



SHIM DETAIL

NOTE: PROVIDE (2)-$\frac{1}{16}$" GALVANIZED STEEL SHIMS FOR EACH RAIL POST, TO BE USED AS REQUIRED.

BASE PLATE DETAILS

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

PEDESTRIAN RAILING DETAILS

STATION 3062+[illegible] APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 44 OF 52 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY NOT For Construction

DESIGN TEAM LLY / PES / HDR | JOHNSON COUNTY | PROJECT NUMBER NHS-080-6(356)239--11-52 | SHEET NUMBER 45

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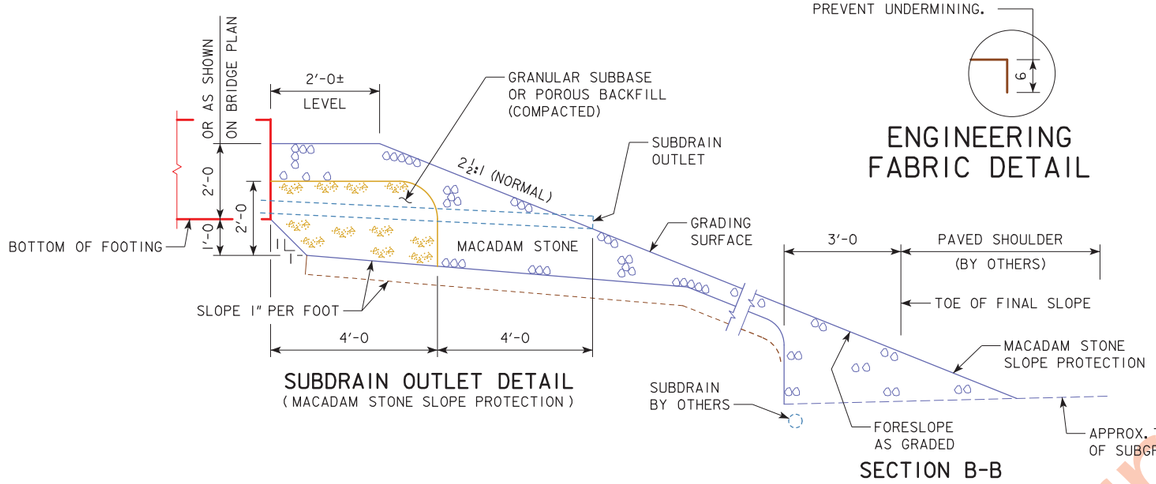
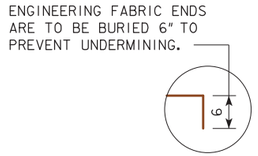


SUBDRAIN OUTLET DETAIL
(MACADAM STONE SLOPE PROTECTION)

SECTION B-B



ENGINEERING FABRIC DETAIL

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.

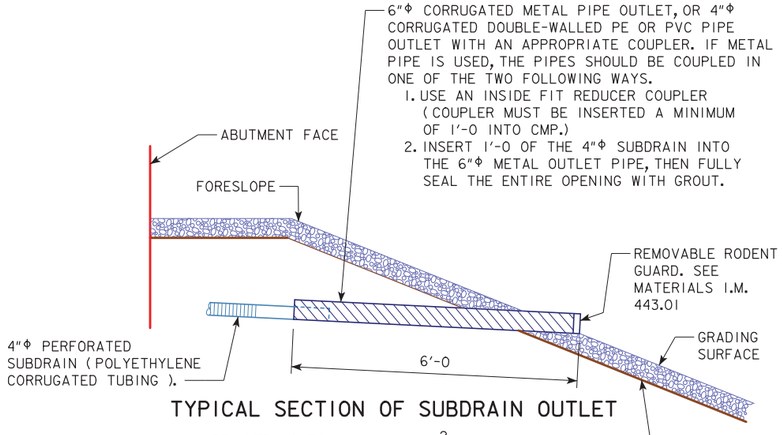
SUBDRAIN OUTLET ELEVATIONS

LOCATION	ELEVATION
SOUTH ABUTMENT	±772.03
NORTH ABUTMENT	±775.16

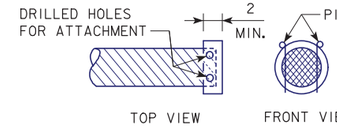
SITUATION PLAN
SHOWING SUBDRAIN LOCATIONS

N

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



TYPICAL SECTION OF SUBDRAIN OUTLET



REMOVABLE RODENT GUARD DETAILS

OUTLET DETAILS

DESIGN FOR 2°ICE SHEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

SUBDRAIN DETAILS

STATION 30621+52.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 45 - 52 FILE NO. 30864 DESIGN NO. 220

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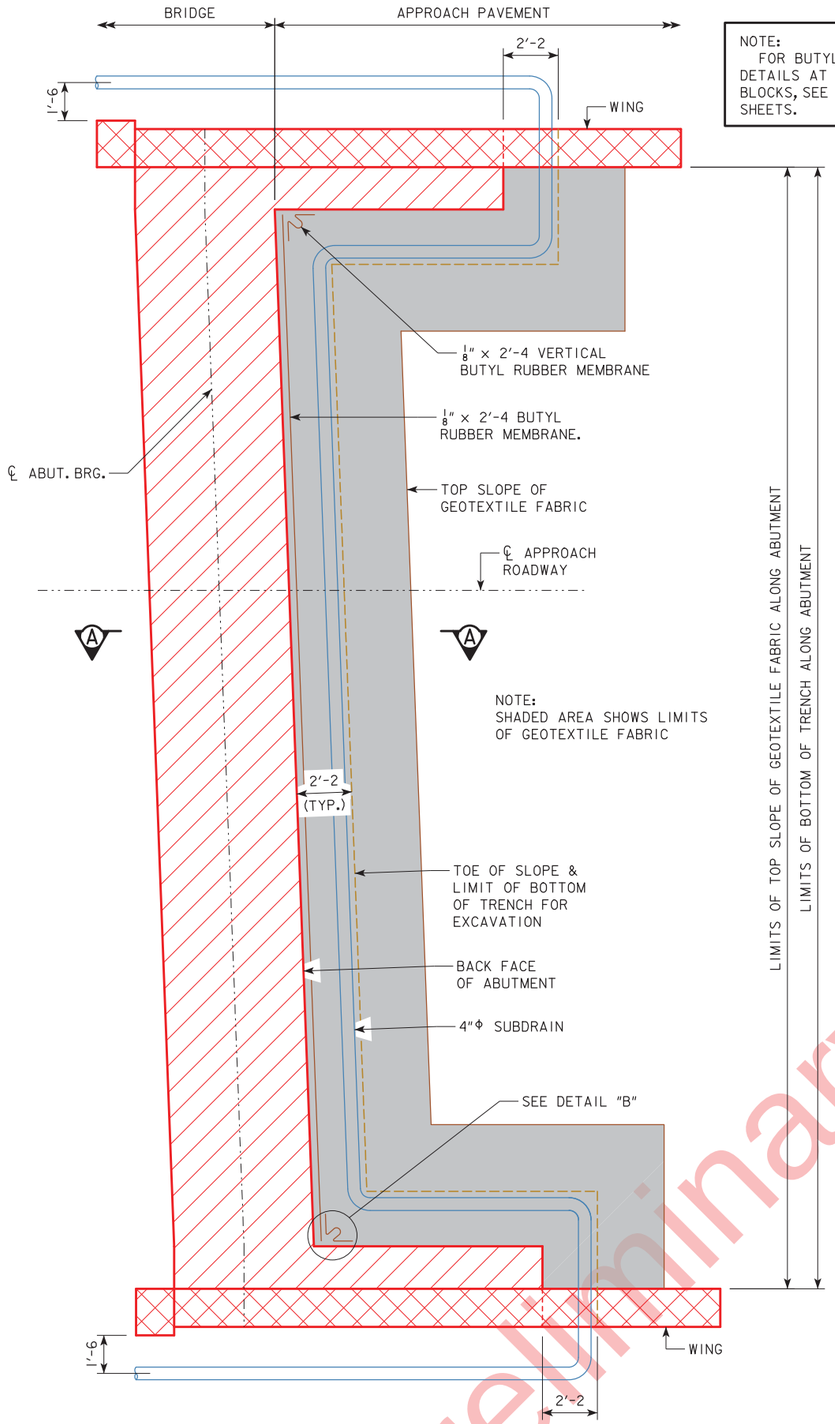


NOTE:
FOR BUTYL RUBBER MEMBRANE DETAILS AT ABUTMENT SHEAR BLOCKS, SEE ABUTMENT DETAILS SHEETS.

NOTE:
SHADED AREA SHOWS LIMITS OF GEOTEXTILE FABRIC

ABUTMENT PLAN WITH WING EXTENSIONS

ABUTMENT BACKFILL PROCESS:

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

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WINGS AND WINGWALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 3 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.

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

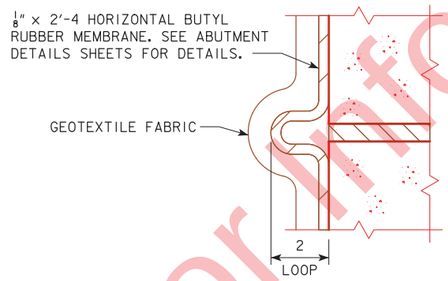
THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY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

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

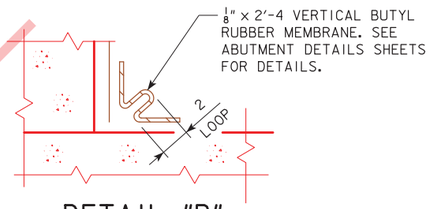
FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

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



DETAIL "A"



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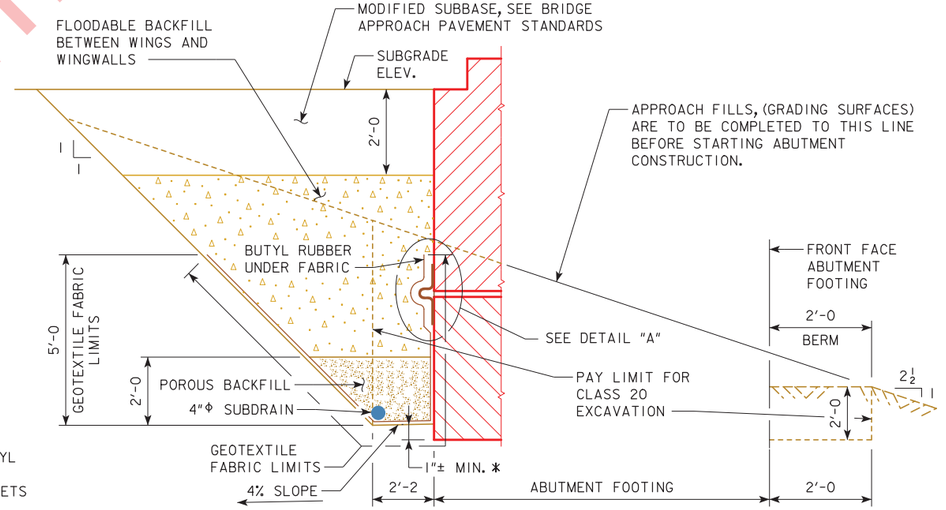

SECTION A-A

BACKFILL DETAILS

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

* 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.

NOTE:

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

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END WHEN OUTLETTING AT ONE END OF THE ABUTMENT.

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

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

ABUTMENT BACKFILL DETAILS

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 46 & 52 FILE NO. 30864 DESIGN NO. 220

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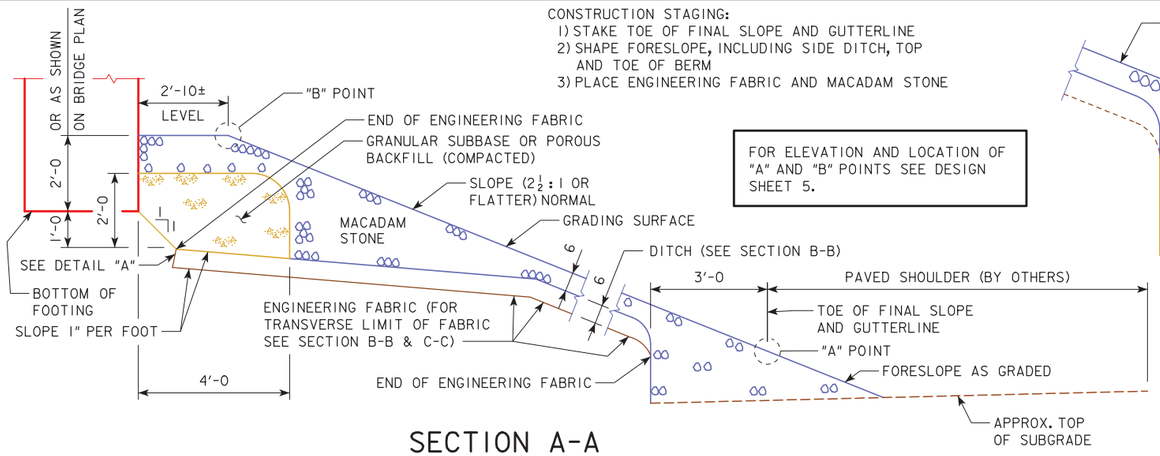
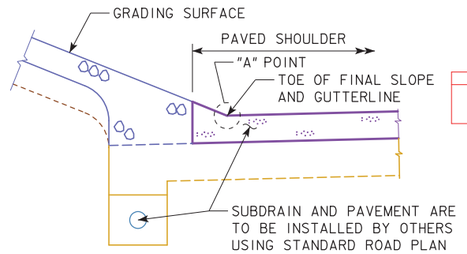
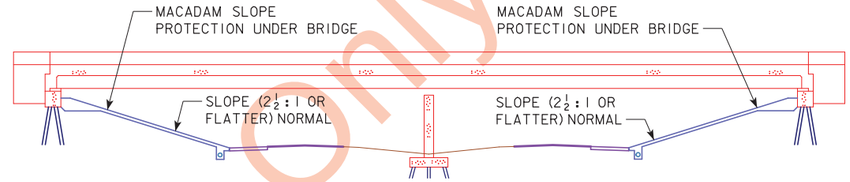


SECTION A-A

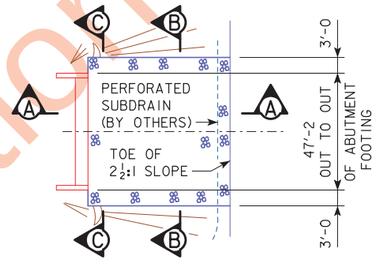


FINAL CONSTRUCTION SECTION A-A

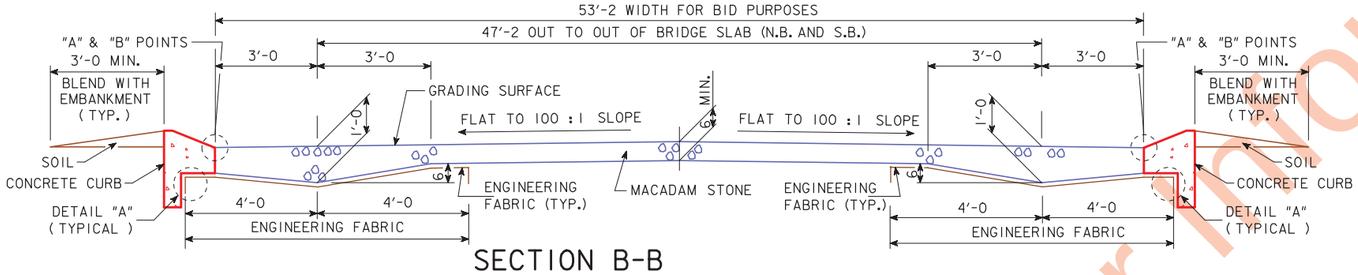


LONGITUDINAL SECTION ALONG ℄ ROADWAY

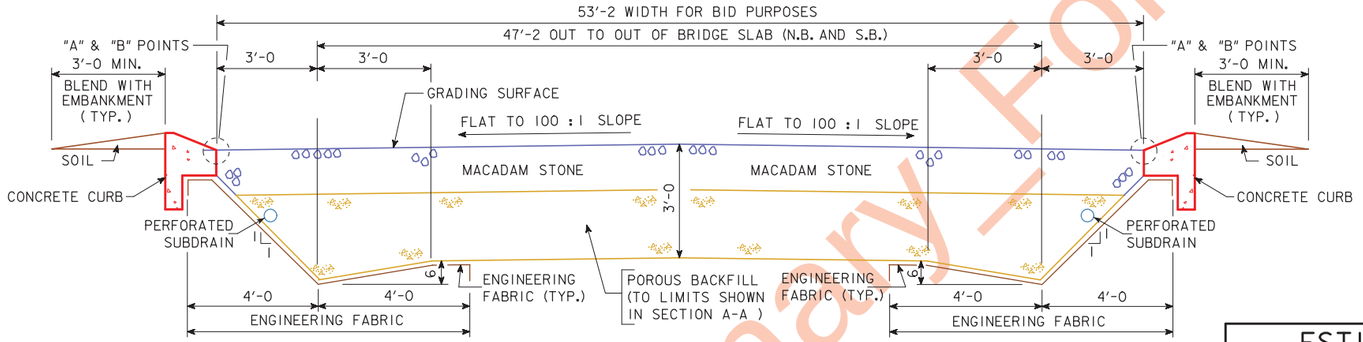
DETAIL "A"



SLOPE PROTECTION LAYOUT 0° SKEW



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.

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.

ESTIMATED QUANTITIES

DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	S. ABUT.	230 SQ. YDS.
MACADAM STONE SLOPE PROTECTION	N. ABUT.	290 SQ. YDS.
	TOTAL	520 SQ. YDS.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
- EXCAVATING, SHAPING AND COMPACTING
- ENGINEERING FABRIC
- MACADAM STONE
- POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE ABUTMENT FOOTING

DESIGN FOR 2°-10" SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

MACADAM STONE SLOPE PROTECTION

STATION 3062+55.46 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

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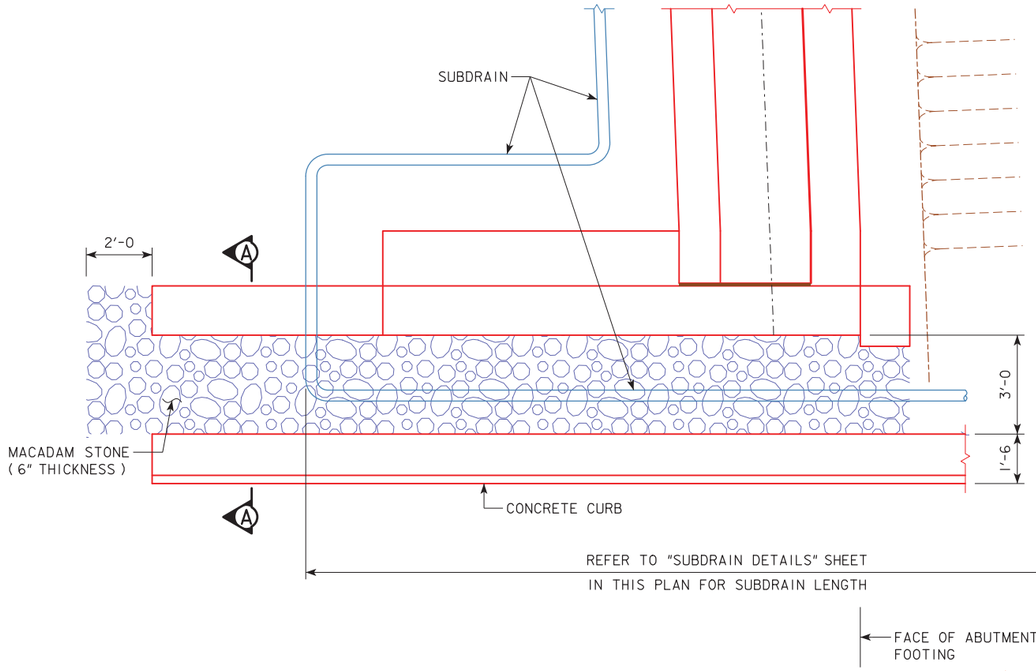
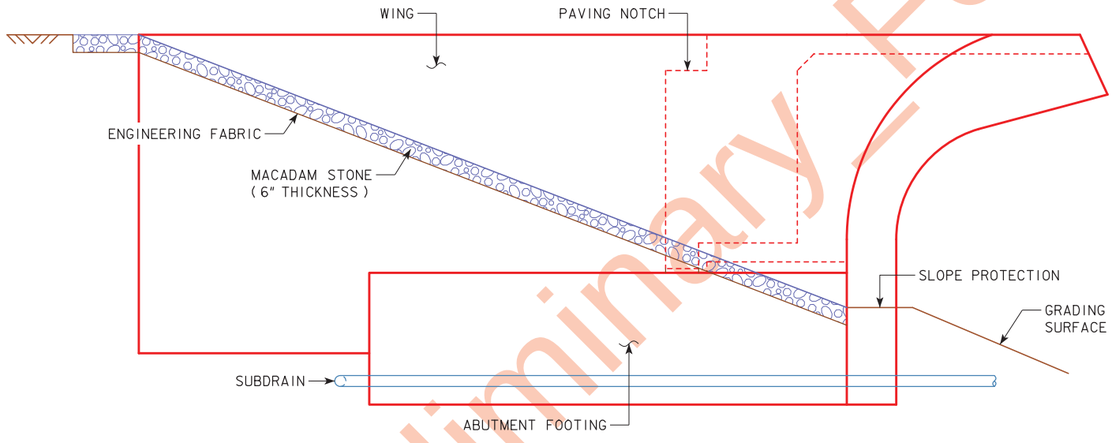
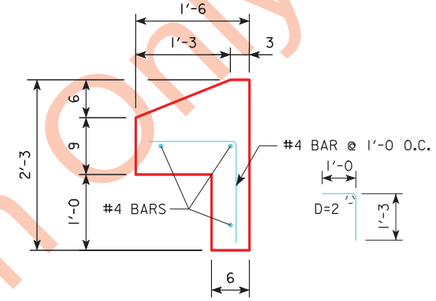


TOP VIEW OF WING ARMORING WITH WING EXTENSION

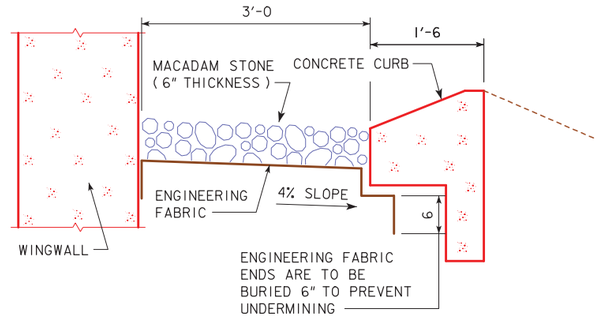


PROFILE VIEW OF WING ARMORING WITH WING EXTENSION

(SHOWN FOR INTEGRAL ABUTMENT WITH WING EXTENSIONS)



CONCRETE CURB DETAIL



SECTION A-A

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).

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, CONCRETE CURB, EXCAVATION, SHAPING, AND COMPACTION TO DIMENSIONS SHOWN IN THESE PLANS. BID ITEM SHALL BE "BRIDGE WING ARMORING - MACADAM STONE".

DESIGN FOR 2°ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

BRIDGE WING ARMORING

STATION 3062L+55.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

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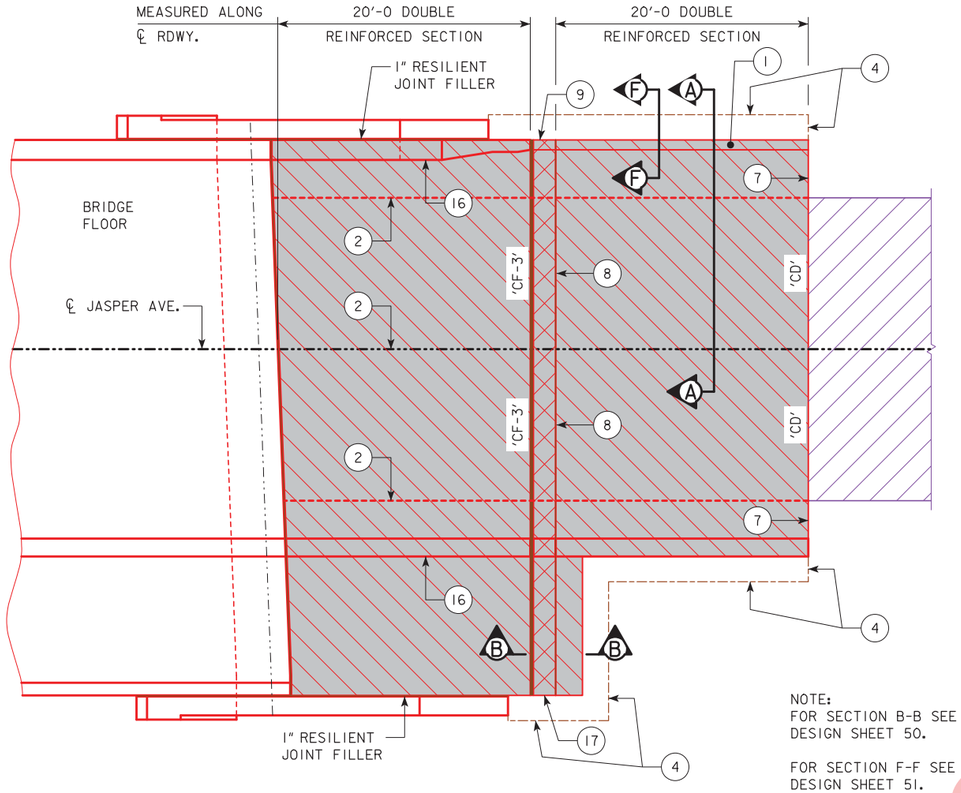


APPROACH SLAB PLAN VIEW

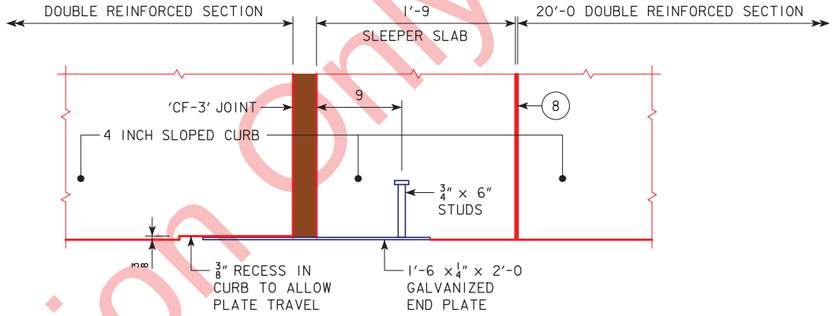
(NORTH APPROACH SLAB SHOWN, SOUTH APPROACH SLAB SIMILAR OPPOSITE HAND)

NOTE:
FOR SECTION B-B SEE DESIGN SHEET 50.

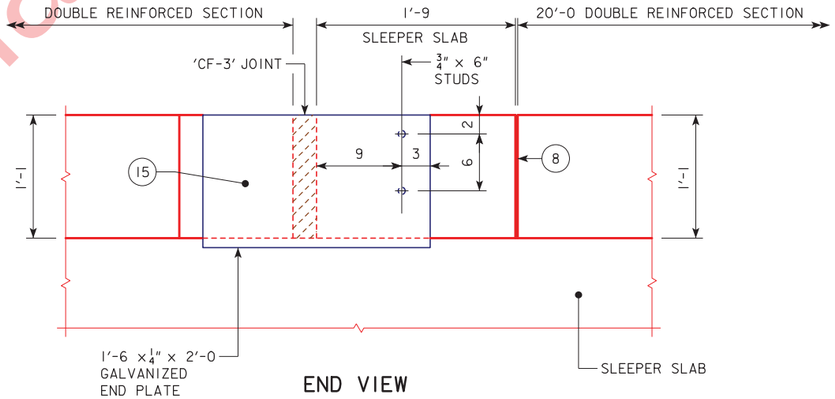
FOR SECTION F-F SEE DESIGN SHEET 51.

PAY LIMITS FOR CONTRACT ITEM INCLUDE THE FOLLOWING AREAS:

- DOUBLE REINFORCED SECTION
- SLEEPER BEAM SECTION
- REFER TO ROADWAY PLANS

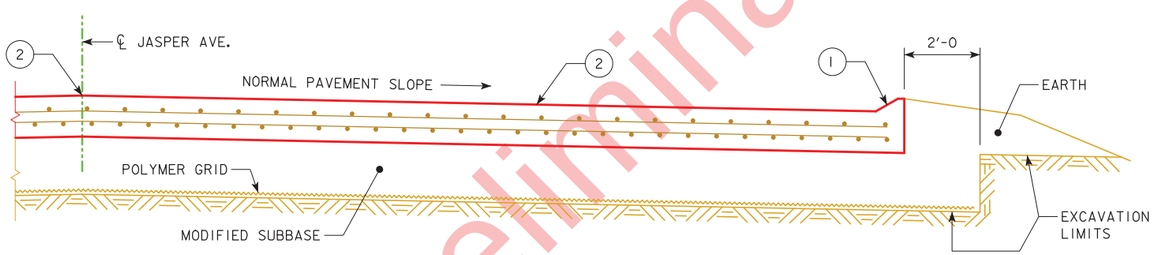


PARTIAL PLAN VIEW



END VIEW

DETAIL 'D'



SECTION A-A

FOR JOINT DETAILS, SEE PV-101.

ALL TRANVERSE BARS ARE #5.

USE EPOXY COATED BARS FOR ALL REINFORCEMENT.

BOTH THE 1'-9" TOP PART OF THE SLEEPER SLAB AND THE 6'-3" PORTION UNDER THE APPROACH PAVEMENT WILL BE INCLUDED IN THE DOUBLE REINFORCED SECTION QUANTITIES.

(1) BUILD 4 INCH SLOPED CURB TO END OF REINFORCED SECTIONS. FOR CURB DETAILS, SEE DETAIL 'G' ON DESIGN SHEET 51.

(2) LONGITUDINAL JOINT (PV-101):
SINGLE POUR - SAW CUT JOINT PER DETAIL B .
TWO POURS - USE 'KS-1' JOINT (SINGLE REINFORCED SECTION).
USE 'KS-2' JOINT (DOUBLE REINFORCED SECTION).

(4) POLYMER GRID AND EXCAVATION LIMITS OF MODIFIED SUBBASE 2 FEET OUTSIDE OF PAVEMENT EDGE.

(7) PLACE 'RD' JOINT WHERE PCC SHOULDER. PLACE 'B' JOINT OTHERWISE.

(8) 1/4" RESILLIENT JOINT FILLER AND SEAL TOP.

(9) SEE DETAIL 'C' ON DESIGN SHEET 51.

(16) FOR APPROACH SLAB BARRIER DETAILS SEE DESIGN SHEETS 37, 38 & 40.

(17) SEE DETAIL 'D' ON THIS SHEET.

APPROACH SLAB NOTES:

PAYMENT FOR "BRIDGE APPROACH PAVEMENT, AS PER PLAN" WILL BE MADE ON A SQUARE YARD BASIS FOR BRIDGE APPROACH PAVEMENT CONSTRUCTED. REFER TO ROADWAY PLAN FOR NON-REINFORCED APPROACH PAVEMENT DETAILS.

THE UNIT PRICE BID PER SQUARE YARD FOR BRIDGE APPROACH PAVEMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO CONSTRUCT THE APPROACH PAVEMENT IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

REINFORCING AND CONCRETE QUANTITIES ARE PROVIDED FOR INFORMATION ONLY.

1" RESILIENT JOINT FILLER REQUIRED BETWEEN THE APPROACH SLAB AND WING.

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10'-0 SIDEWALK

169'-0, 166'-0 SPANS

APPROACH PLAN

STATION 3062+[illegible]45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

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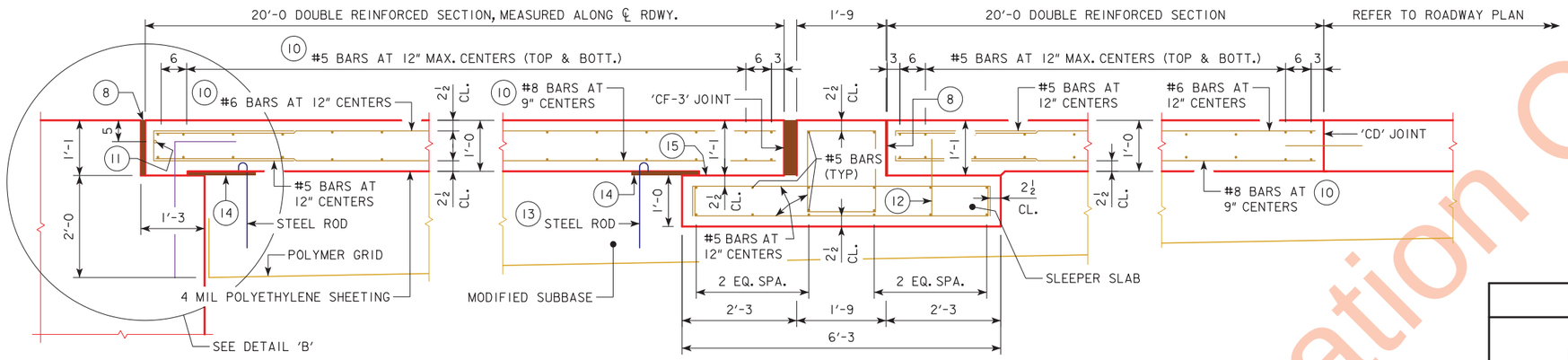
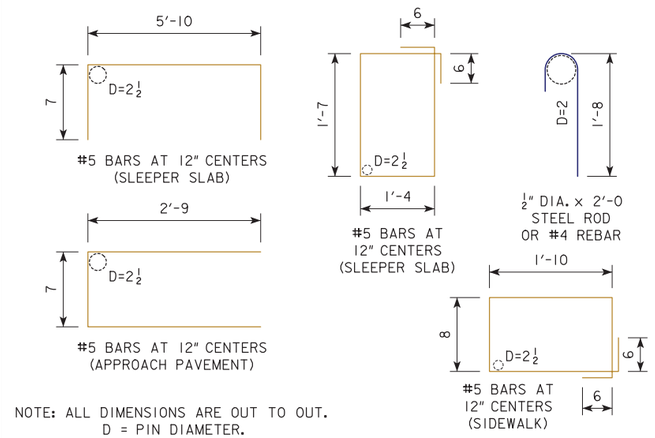
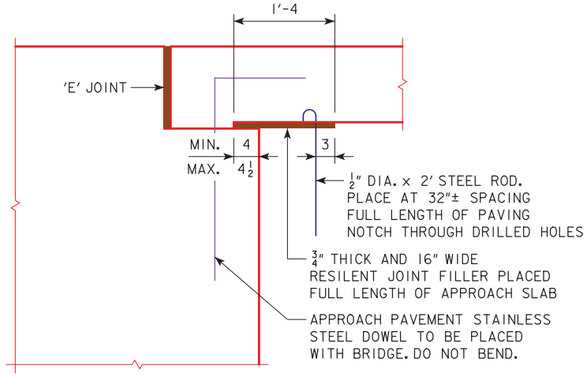


APPROACH SLAB SECTION

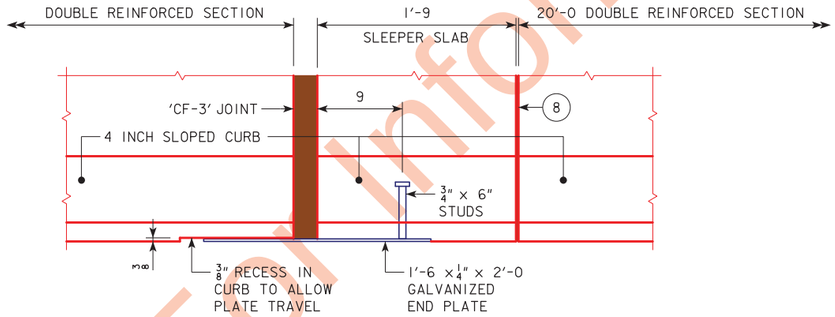
BENT BAR DETAILS



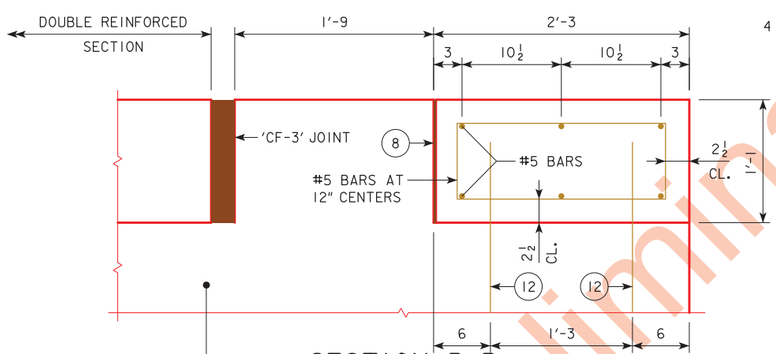
NOTE: ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER.



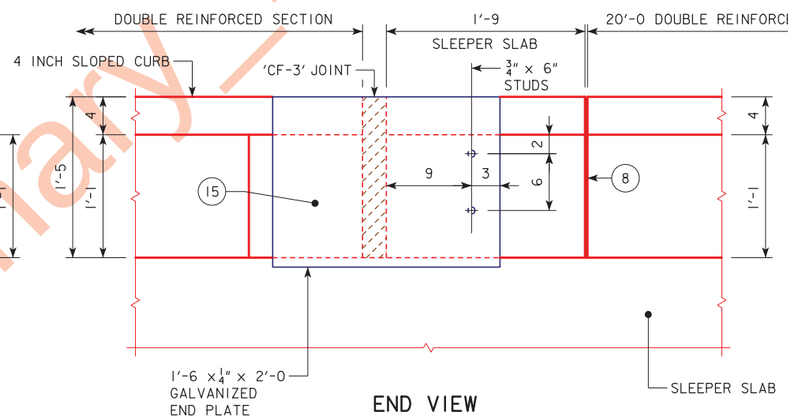
DETAIL 'B'



PARTIAL PLAN VIEW



SECTION B-B



END VIEW

DETAIL 'C'

NOTE:
FOR LOCATION OF VIEW B-B
SEE DESIGN SHEET 48.

(8) ¼" RESILLIENT JOINT FILLER AND SEALTOP.

(10) MINIMUM LAP LENGTH:
#5 BARS - 18"
#6 BARS - 27"
#8 BARS - 48"

(11) PLACE ADDITIONAL #5 BAR PARALLEL TO SKEWED FACE.

(12) #8 DOWELS 1'-6" LONG WITH 2½ INCH BOTTOM END CLEARANCE. SPACE AT 24 INCHES O.C.

(13) SPACE AT 32"± FOR FULL LENGTH OF SLEEPER SLAB.

(14) ¾" INCH THICK x 16 INCH WIDE RESILIENT JOINT FILLER FOR FULL LENGTH OF APPROACH SLAB.

(15) DEBOND PAVING NOTCH WITH 2 LAYERS OF 30# ASPHALTIC FELT PAPER FULL LENGTH.

DESIGN FOR 2° ICE SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 1'-0 SIDEWALK

169'-0, 166'-0 SPANS

APPROACH SLAB DETAILS

STATION 3062+45.45

APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

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BRIDGE APPROACH SECTION

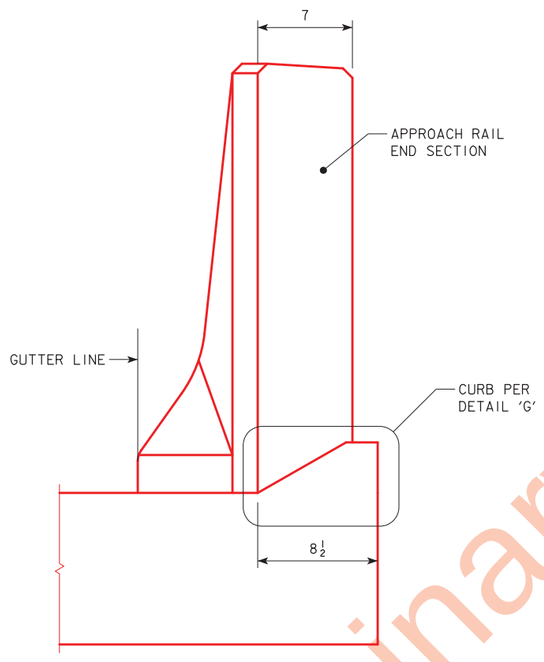
REFER TO THE BR SERIES.

112-6
04-18-17

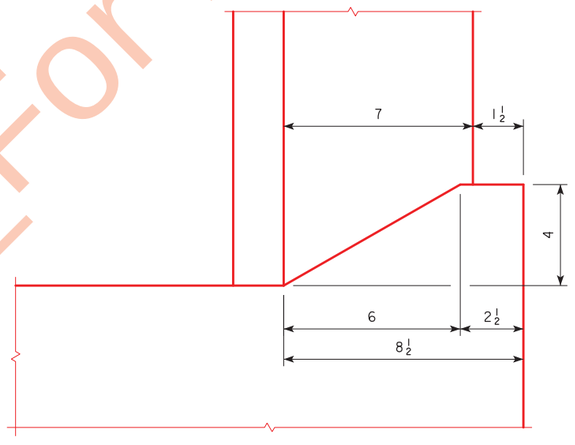
* NOT A BID ITEM

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
				INCHES	FT	SY	SY	SY				LF	STA	SIDE	CY	CY	TON	SY	TON	
30621+25.45	SOUTH	--	2°10′	12.0	42.0	**	--	215.2	---	Δ MOVABLE	PCC	---	---	---	---	---	191.0	185.0	---	Δ TIED APPROACH SLAB
30621+25.45	NORTH	--	2°10′	12.0	42.0	**	--	215.2	---	Δ MOVABLE	PCC	---	---	---	---	---	191.0	185.0	---	Δ TIED APPROACH SLAB

** REFER TO ROADWAY PLAN FOR NON-REINFORCED PAVEMENT AND APPROACH DRAIN DETAILS.



VIEW F-F



DETAIL 'G'

NOTE:
FOR LOCATION OF VIEW F-F
SEE DESIGN SHEET 49.

DESIGN FOR 2°10′ SKEW (R.A.)

335′-0 x 30′-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10′-0 SIDEWALK

169′-0, 166′-0 SPANS

APPROACH SLAB DETAILS

STATION 30621+55.45 APRIL, 2020

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 51 & 52 FILE NO. 30864 DESIGN NO. 220

12/20/2019 1:06:37 PM psodahl pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\BRFinal\BRG_52080356.dgn 520220S051 11x17_pdf.pltcfg

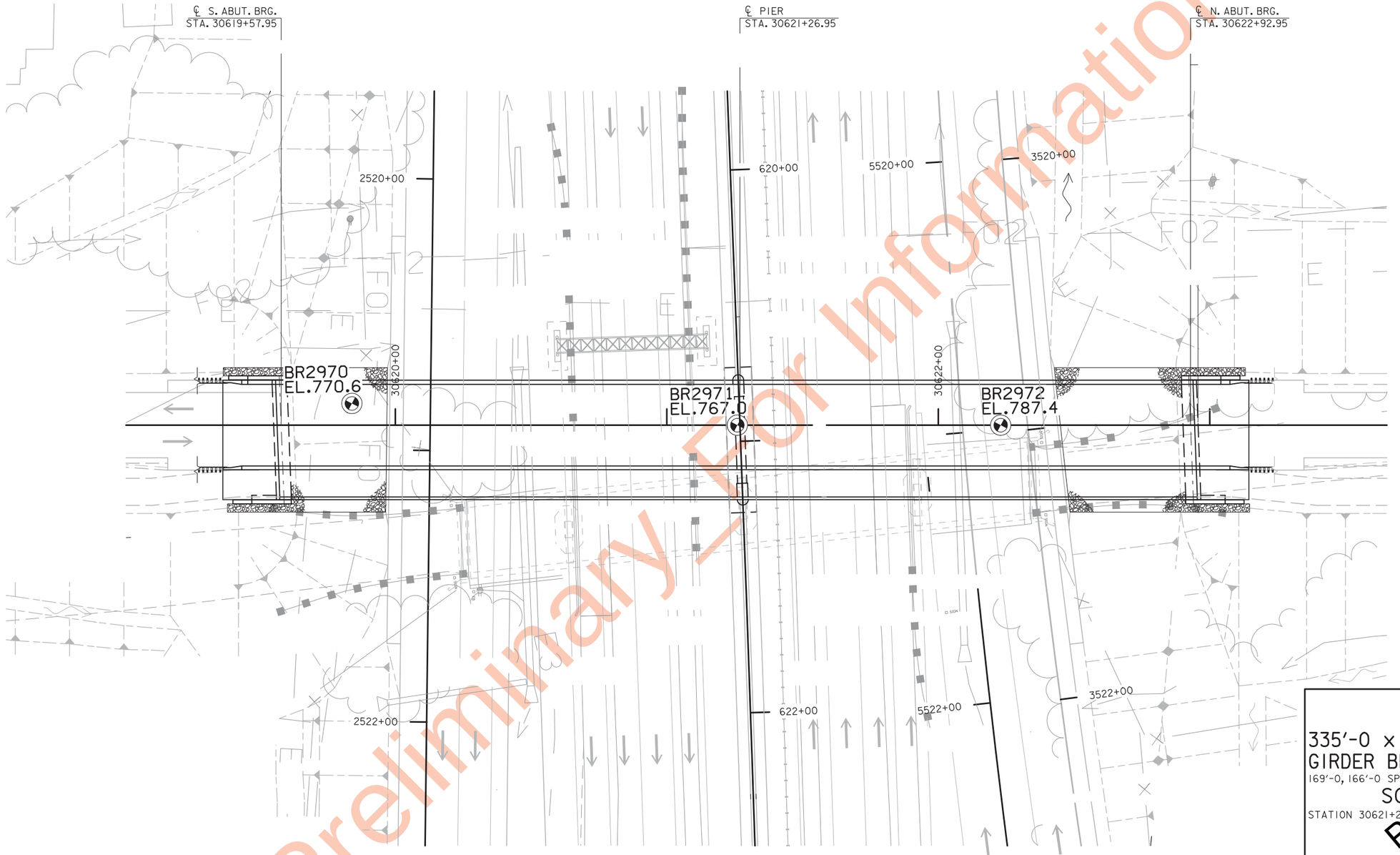
GEOTECHNICAL DESIGN

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.

12-14-2018
Signature Date
X Justin D. Humke
Printed or Typed Name

My license renewal date is December 31, 2019

Pages or sheets covered by this seal: SPS.1 thru SPS.2



THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

N

0 ENGLISH 40
SCALE IN FEET

LOCATION

JASPER AVE. OVER I-80
T-80N R-7W
SECTION 34
CLEAR CREEK TOWNSHIP
JOHNSON COUNTY
FHWA NO. 31981
BRIDGE MAINT. NO. 5238.70080
LATITUDE 41.694275°
LONGITUDE -91.646902°

DESIGN FOR 2°10' SKEW (R.A.)

335'-0 x 30'-0 CONTINUOUS WELDED GIRDER BRIDGE WITH I0'-0 SIDEWALK

169'-0, 166'-0 SPANS

SOIL PROFILE SHEET

STATION 30621+26.95

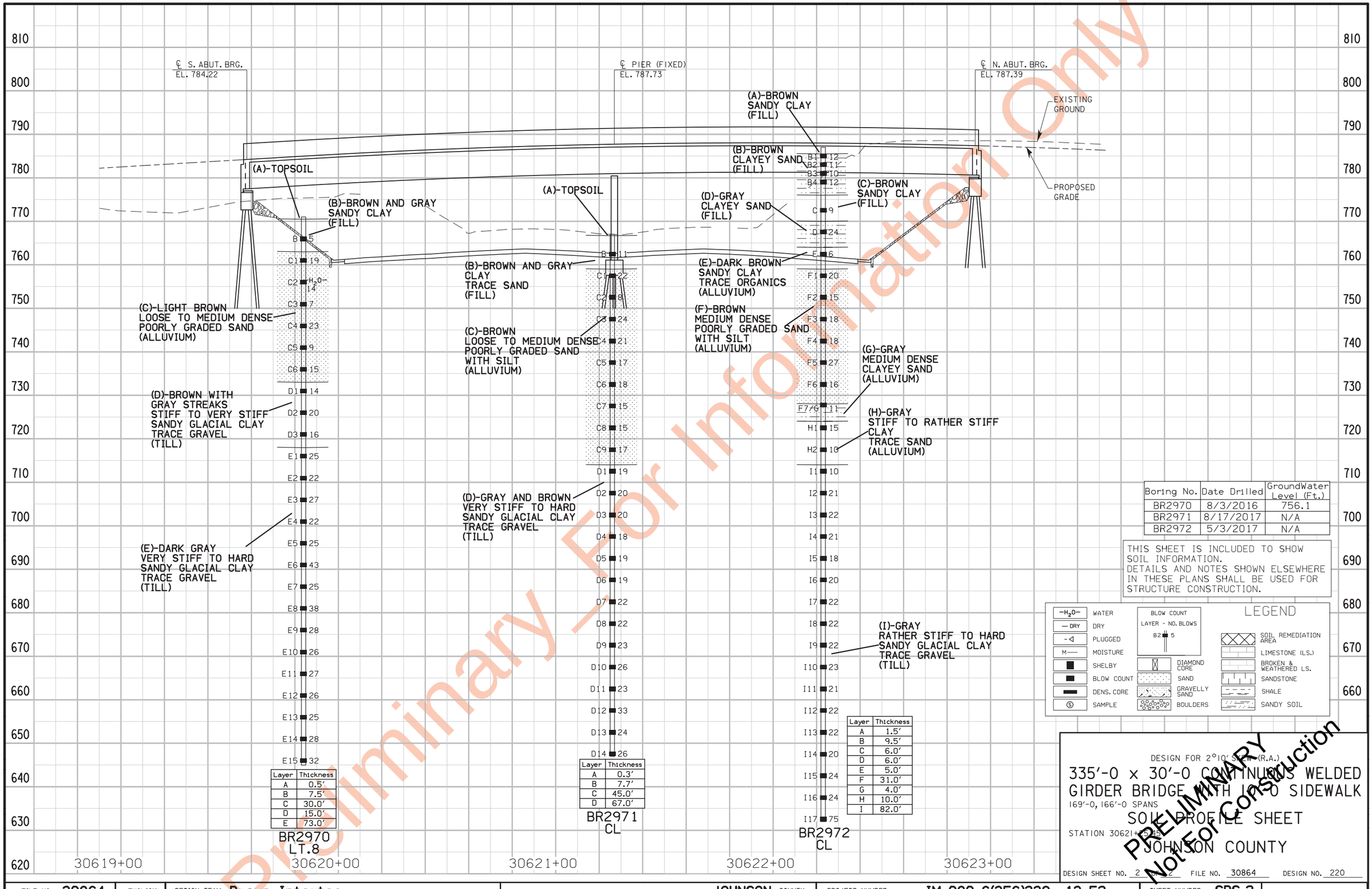
JOHNSON COUNTY

DESIGN SHEET NO. 1 OF 2 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

FILE NO. 30864	ENGLISH	DESIGN TEAM Braun Intertec	JOHNSON COUNTY	PROJECT NUMBER IM-080-6(356)239--13-52	SHEET NUMBER SPS.1

9:28:19 AM 12/11/2018 BryanMcNelis pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\Soils\SPS\52080235_220.sht



Layer	Thickness
A	0.5′
B	7.5′
C	30.0′
D	15.0′
E	73.0′

Layer	Thickness
A	0.3′
B	7.7′
C	45.0′
D	67.0′

Layer	Thickness
A	1.5′
B	9.5′
C	6.0′
D	6.0′
E	5.0′
F	31.0′
G	4.0′
H	10.0′
I	82.0′

Boring No.	Date Drilled	GroundWater Level (Ft.)
BR2970	8/3/2016	756.1
BR2971	8/17/2017	N/A
BR2972	5/3/2017	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

$-H_2O-$	WATER	BLOW COUNT LAYER - NO. BLOWS (B2 ■ 5)	SOIL REMEDIATION AREA
— DRY	DRY		LIMESTONE (LS.)
-◁	PLUGGED		BROKEN & WEATHERED LS.
M——	MOISTURE	DIAMOND CORE	SANDSTONE
■	SHELBY	SAND	SHALE
▬	BLOW COUNT	GRAVELLY SAND	SANDY SOIL
▬	DENS. CORE	BOULDERS	
Ⓢ	SAMPLE		

DESIGN FOR 2°10′ SKEW (R.A.)

335′-0 x 30′-0 CONTINUOUS WELDED GIRDER BRIDGE WITH 10′-0 SIDEWALK

169′-0, 166′-0 SPANS

SOIL PROFILE SHEET

STATION 30621+52.45

JOHNSON COUNTY

DESIGN SHEET NO. 2 OF 2 FILE NO. 30864 DESIGN NO. 220

PRELIMINARY Not For Construction

FILE NO. 30864	ENGLISH	DESIGN TEAM Braun Intertec	JOHNSON COUNTY	PROJECT NUMBER IM-080-6(356)239--13-52	SHEET NUMBER SPS.2

9:28:20 AM 12/11/2018 BryanMcNellis pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208001002\Soils\SPS\52080235_220.sht

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.2 - 4	Tabulations (beg. with tab. of incidentals if needed)
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	"I-80"
E Sheets	**Side Road Plan and Profile Sheets**
* E.1 - 2	"Jasper Ave."
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
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
U.1 - 3	Modified BR-205
U.4 - 6	Modified SW-539
* U.7 - 8	Bridge Approach Barrier Details

ROADWAY DESIGN

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

XX-XX-XXXX
Date

Printed or Typed Name

My license renewal date is December 31, 20XX

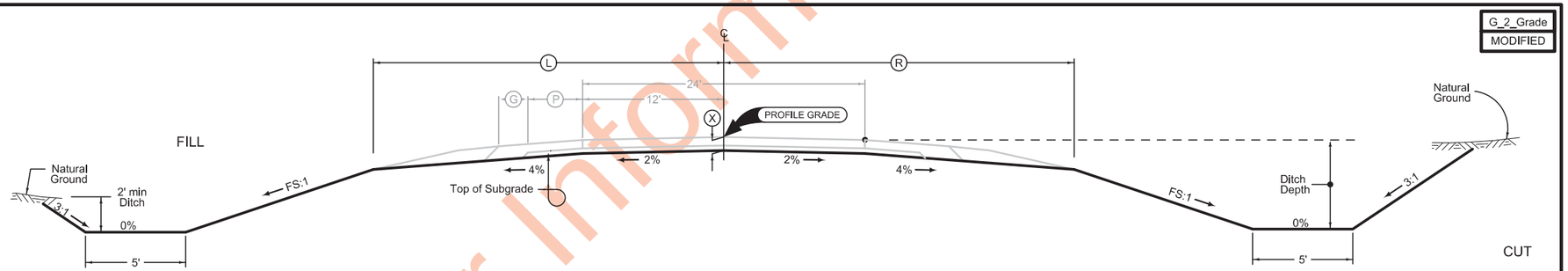
Pages or sheets covered by this seal:
X

PRELIMINARY
Not For Construction

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER A.1

1:16:43 PM 12/19/2019 wmcnama pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_A01.sht

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS
Jasper Ave	30623+66.22	30627+00.00	24.6	32.50	14.0	3:1

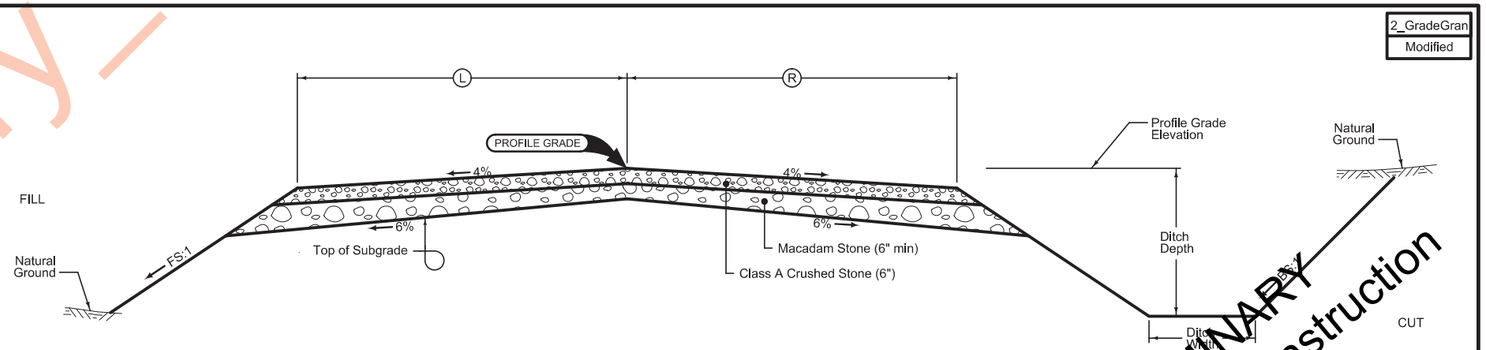


Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

2 LANE GRADING

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	FS	BS
Jasper Ave.	30617+37.80	30618+84.68	14	14	3:1	3:1



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

GRADING AND GRANULAR SURFACING

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER B.1

12:52:20 PM 12/19/2019 wmcnama pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_B01.sht

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 BRIDGE END DRAIN)	SY	20.6	
2	2122-5191005	REINFORCED PAVED SHOULDER FOR CONCRETE BARRIER	SY	7.2	
3	2301-0690205	BRIDGE APPROACH, BR-205	SY	160.0	
4	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE	SY	1,409.0	
5	2503-0500401	BRIDGE END DRAIN, DR-401	EACH	2	
6	2507-3250005	ENGINEERING FABRIC	SY	24.6	
7	2507-8029000	EROSION STONE	TON	13.2	
8	2513-0001030	CONCRETE BARRIER, BA-103	LF	6.0	
9	2513-0001050	CONCRETE BARRIER, BA-105	EACH	2	
10	2513-0001070	CONCRETE BARRIER RAIL, BA-107	EACH	2	
11	2518-6910000	SAFETY CLOSURE	EACH	2	
12	2599-9999005	('EACH' ITEM) BRIDGE END DRAIN, SW-539 MODIFIED	EACH	2	
13	2602-0000020	SILT FENCE	LF	250.0	
14	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	250.0	
15	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	125.0	
16	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200.0	
17	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200.0	
18	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 on C Sheets for location and details.
-	-	-
2	2122-5191005	**REINFORCED PAVED SHOULDER FOR CONCRETE BARRIER**
		Refer to Tab. 108-18B and 112-9 on C Sheets for location and details.
-	-	-
3	2301-0690205	**BRIDGE APPROACH, BR-205**
		Refer to Tab. 112-6 on C Sheets and Modified BR-205 on U Sheets for location and details.
-	-	-
4	2412-0000100	**LONGITUDINAL GROOVING IN CONCRETE**
		Refer to Tab. 100-28 on C Sheets for location and details.
-	-	-
5	2503-0500401	**BRIDGE END DRAIN, DR-401**
		Refer to Tab. 104-8A on C Sheets for location and details.
-	-	-
6	2507-3250005	**ENGINEERING FABRIC**
7	2507-8029000	**EROSION STONE**
		Refer to Tab. 100-23 on C Sheets for location and details.
-	-	-
8	2513-0001030	**CONCRETE BARRIER, BA-103**
9	2513-0001050	**CONCRETE BARRIER, BA-105**
10	2513-0001070	**CONCRETE BARRIER RAIL, BA-107**
		Refer to Tab. 108-18B on C Sheets and Barrier Details on U Sheets for location and details.
-	-	
11	2518-6910000	**SAFETY CLOSURE**
		REfer to Tab. 108-13A on C Sheets for location and details.
-	-	-
12	2599-9999005	**('EACH' ITEM) BRIDGE END DRAIN, SW-539 MODIFIED**
		Refer to Tab. 104-8B on C Sheets and Modified SW-539 on U Sheets for location and details.
		Section 2435 of the Standard Specifications shall apply.
-	-	-
13	2602-0000020	**SILT FENCE**
		Item is for placement of "Silt Fence" to address erosion encountered during construction.
		Verify the specific locations with the Engineer prior ot beginning placement.
-	-	-
14	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.
-	-	-
15	2602-0000101	**MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK**
		Item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.
-	-	-
16	2602-0000312	**PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.**
17	2602-0000320	**PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.**
18	2602-0000350	**REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE**
		Item is included for temporary sediment control, inlet protection, and water velocity reduction on slopes 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 with 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
BA-103	04-21-20	34" Concrete Barrier (Half Section)
BA-104	10-15-19	34" Concrete Barrier for use with Reinforced Paved Shoulder
BA-105	10-15-19	34" to 44" Concrete Barrier Transition Section
BA-106	10-21-14	Reinforced Paved Shoulder for Concrete Barrier
BA-107	10-15-19	Concrete Barrier End Section
DR-303	10-17-17	Subdrains (Longitudinal)
DR-306	10-16-18	Precast Concrete Headwall for Subdrain Outlets
DR-401	10-15-19	Scour Protection for Bridge End Drain
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection
EC-104	04-17-18	Turf Reinforced Mat (TRM)
EC-105	04-17-18	Transition Mat
EC-201	10-15-19	Silt Fence
EC-204	04-21-20	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
PV-101	04-21-20	Joints
SW-539	10-15-19	Intake for Bridge End Drain (with Letdown)
SW-546	04-17-18	Single Open-Throat Barrier Intake
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)

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.

108-13A
08-01-08

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
30618+75.00		x	Bridge Design No. 220
30623+50.00		x	
Total:		**2**	

100-28
10-19-10

LONGITUDINAL GROOVING

Location	Total	Remarks
	SY	
	199.0	South Approach
30621+25.45	1011.0	Bridge Design No. 220
	199.0	North Approach
Total:	**1409.0**	

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					* Modified Subbase	* Polymer Grid	* Special Backfill	Remarks
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				
				Inches	FT	SY	SY	SY				LF	STA	Side	CY	CY	TON	SY	TON	
30621+25.45	S		2^10'00"	12.0	30.0	80.0			MOD BR205	Fixed	Gravel	37.6	30618+94.68	LT	1.1	0.2	55.800	116.6		Bridge Design No. 220
30621+25.45	N		2^10'00"	12.0	30.0	80.0			MOD BR205	Fixed	BR-211	37.6	30623+56.22	LT	1.1	0.2	55.800	116.6		
					Total:	**160.0**														

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	
30621+25.45	NW	35.8	10.3	DR-401	A	14.8	9.324	5.2	5.6	32				
30621+25.45	SW	35.8	10.3	DR-401	B	14.8	9.324	4.8	5.2	32				
		Total:	**20.6**											

108-18B
10-16-12

CONCRETE BARRIER AT SIDE LOCATIONS

Refer to BA-102, BA-103, BA-104, BA-105, BA-106, BA-107, and BA-150.

(1) Lane(s) to which the installation is adjacent.
(2) Refer to the Shoulders tabulation (112-9) for quantities.
* Bid Item

Location					Side Barrier						Expansion Joints		
No.	(1) Direction of Traffic	Station to Station		Side	(L2) Offset	Barrier Type (BA-102, BA-103, or BA-104)	(L) Length of Barrier*	BA-105 Transition Section*	BA-107 End Section*	Reinforced Paved (2) Shoulder (Required?)	Remarks	Station	Side	Remarks
					FT		LF	No.	No.	Yes/No				
	NB	30623+49.22	30623+56.22	RT	3.0				1	YES				
	NB	30623+46.22	30623+49.22	RT	3.0	BA-103	3.0			NO	with paved insert from SW-546			
	NB	30623+36.22	30623+46.22	RT	3.0			1		NO	with paved insert from SW-546			
	NB	30619+04.68	30619+14.68	RT	3.0			1		NO	with paved insert from SW-546			
	NB	30619+01.68	30619+04.68	RT	3.0	BA-103	3.0			NO	with paved insert from SW-546			
	NB	30618+94.68	30619+01.68	RT	3.0				1	YES				
						Total	**6.0**							

112-9
10-15-13

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) Bid Item
(3) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(4) Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																Remarks
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(G) Width	(L) Length	Class 13 (3) Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	Reinforced Paved Shoulder	Special Backfill HMA Alternate		Special Backfill PCC Alternate		Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			
									TON	TON/STA				TON (2)	TON/STA	TON (2)	TON/STA		TON (2)	TON/STA	STA (2)	HMA CY (4)	PCC CY (4)	
					FT	FT	FT	CY (2)			TONS	SY (2)	SY (2)					CY (2)						
Jasper Ave.	NB	30618+94.68	30619+01.68	RT	4.6		7.0						3.6											
Jasper Ave.	NB	30623+49.22	30623+56.22	RT	4.6		7.0						3.6											
												Total:	**7.2**											

104-8B
04-16-19

BRIDGE END DRAINS (WITH LETDOWN)

(1) Refer to Standard Road Plan SW-539
(2) Not a Bid Item

Location			Shoulder		Polymer Grid (2)	Installation Information										Modified Subbase (2)	Remarks
						Elevation						Length					
Bridge Station	Bridge Corner	Distance DI-1 or DI-2 (1)	Panels Required A B C or D	PCC Sq.Yds.	Sq.Yds.	Form Grade	A	B	C	D	E	L1	L2	L3	L4	Tons	
30619+06.34	SE					782.4		778.9	778.7	771.2	770.9		6	24.8	13.0		SW-546, bottom of well at 778.4'
																	Refer to SW-539 for 18" HDPE Letdown details
30623+44.55	NE					786.2		782.7	782.5	767.7	767.3		5	50.5	11.0		SW-546, bottom of well at 782.2'
																	Refer to SW-539 for 18" HDPE Letdown details

100-23
04-17-18

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
						Type 1	Type 2	Type 3	Type 4	Type 5				
Road Identification	Begin Station	End Station	Side			Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection	Eng. Fabric	Class E Revetment	Erosion Stone	
			Lt./Rt.	FT	FT						SY	TON	TON	
Jasper Ave.	30619+06.34		RT	10	5				x		12.3		6.6	
Jasper Ave.	30623+44.55		RT	10	5				x		12.3		6.6	
										Total:	**24.6**		**13.2**	

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

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
E6	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)

PRELIMINARY Not For Construction

FILE NO.	ENGLISH	DESIGN TEAM		JOHNSON COUNTY	PROJECT NUMBER	SHEET NUMBER
30864		Holst \ McNamara			NHS-080-6(356)239--11-52	D.1

8:00:03 AM 12/13/2019 wmcnama pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_D01.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

595 600 605 610 615 620 625

INTERSTATE 80

Park Road (Closed)

Ramp C

Ramp E

Ramp B

Jasper Ave... (Closed)

Kansas Ave.

CONCENTRIC CURVE

Sta. 625+25.63
211.24'
P.P.
Beam Bridge

0 FEET 100

PRELIMINARY
Not For Construction

I-80

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER D.2

8:20:25 AM 12/19/2019 wmcnama pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_D02.dgn

790
780
770
760
750
740
730
720

VPI +00.000
Elv 737.93
Len 500.00 ft
K = 236

VPI +50.000
Elv 772.65
Len 1,900.00 ft
K = 414

-0.76% Rt. Ditch Grade
+30 Lt.
737.36
-1.48%
Lt. DG
+00 Lt.
732.60
+45 Rt.
734.40
+55 Lt.
728.82
-0.500%
+0.84% Rt.
Ditch Grade
+65 Rt.
734.41
+80 Rt.
736.22
+1.615%
-0.98% Rt. Ditch Grade
+85 Rt.
732.26
+95 Rt.
731.80
+25 Rt.
732.19
+15 Rt.
731.80
+00 Lt.
744.31
+1.38% Lt. Ditch Grade
+2.08% Rt. Ditch Grade
+09 Lt.
754.10
+1.78% Lt. Ditch Grade
+50 Rt.
755.59
+0.82% Rt.
Ditch Grade
+40 Lt.
760.00
+20 Rt.
756.98
+90 Lt.
752.54
-0.40%
Lt. DG
+28 Lt.
751.99
Ramp B
Gore
RampC/E
Gore
+1.615%

Lt Med Rt

No Ditch | Ditch Grade | No Ditch | Ditch Grade | Variable - V Ditch (Future)

Closed Median With Intakes (Future)

Ditch Grade | Variable - V Ditch (Future)

741.80 741.68 741.55 741.43 741.30 741.18 741.05 740.93 740.80 740.68 740.55 740.43 740.30 740.18 740.05 739.93 739.80 739.68 739.55 739.43 739.30 739.18 739.07 738.98 738.92 738.89 738.89 738.91 738.95 739.03 739.13 739.25 739.40 739.58 739.79 740.02 740.28 740.56 740.87 741.21 741.58 741.97 742.37 742.77 743.18 743.58 743.99 744.39 744.79 745.20 745.60 746.00 746.41 746.81 747.22 747.62 748.02 748.43 748.83 749.23 749.64 750.04 750.45 750.85 751.25 751.66 752.06 752.46 752.87 753.27 753.68 754.08 754.48 754.89 755.29 755.69 756.10 756.50 756.91 757.31 757.71 758.09 758.45 758.80 759.14 759.46 759.77 760.06 760.33 760.59 760.84 761.07 761.28 761.48 761.67 761.84 761.99 762.13 762.25 762.36 762.45 762.53 762.60 762.65 762.68 762.69 762.69 762.67 762.62 762.57 762.49 762.41 762.30 762.19 762.05 761.91 761.74 761.57 761.37

595 600 605 610 615 620 625

Lt Med Rt

PRELIMINARY
Not For Construction

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(371)239--11-52	SHEET NUMBER D.3

8:20:26 AM 12/19/2019 wmcnama pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_D02.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

INTERSTATE 80

STA. 30618+84.68
BEGIN CONSTRUCTION

STA. 30623+66.22
END CONSTRUCTION

POT Sta 30609+23.19
= POT Sta 1600+60.00

POT Sta 30617+23.62
= POT Sta 1712+15.94

POT Sta 30621+26.95
= POT Sta 620+94.05

PC Sta 30623+71.07

PI Sta 30624+77.23

PI Sta 30624+24.20

PI Sta 30629+56.25

PC Sta 30627+19.53

PT Sta 30631+92.54

30610

30615

30620

30625

30630

Curve Data
Δ = 6° 04′ 58.66″ (LT)
T = 53.13
L = 106.17
R = 1,000.00
E = 1.41
e = NC
L_c = 0′
L_x = 0′
m = 0′

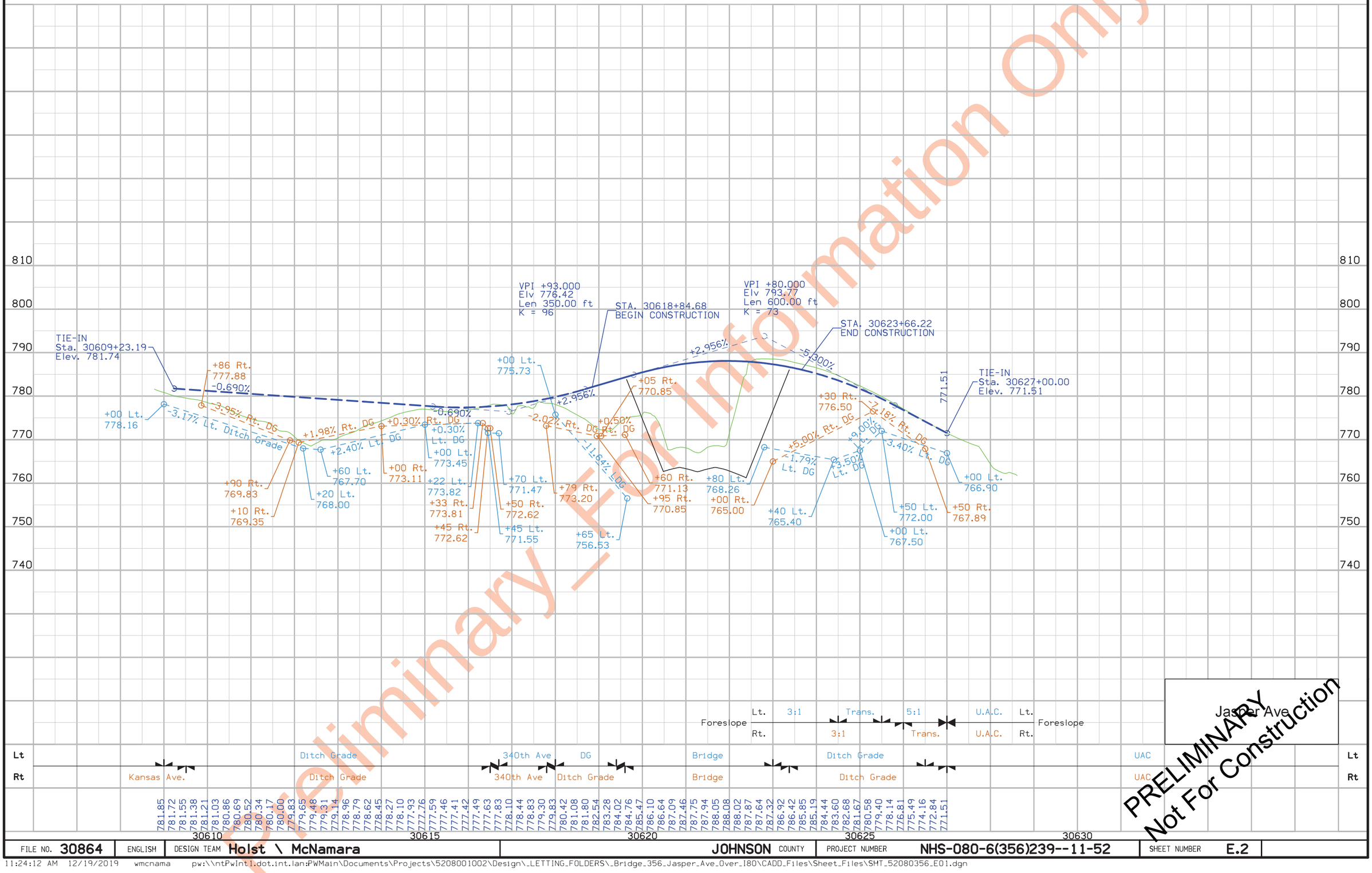
Curve Data
Δ = 5° 59′ 59.99″ (RT)
T = 236.72
L = 473.00
R = 4,516.86
E = 6.20
e = UAC
L_c = UAC
L_x = UAC
m = UAC

0 100 FEET

PRELIMINARY
Not For Construction

Jasper Ave

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER E.1



PRELIMINARY
Not For Construction

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER E.2

11:24:12 AM 12/19/2019 wmcnama pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_E01.dgn

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

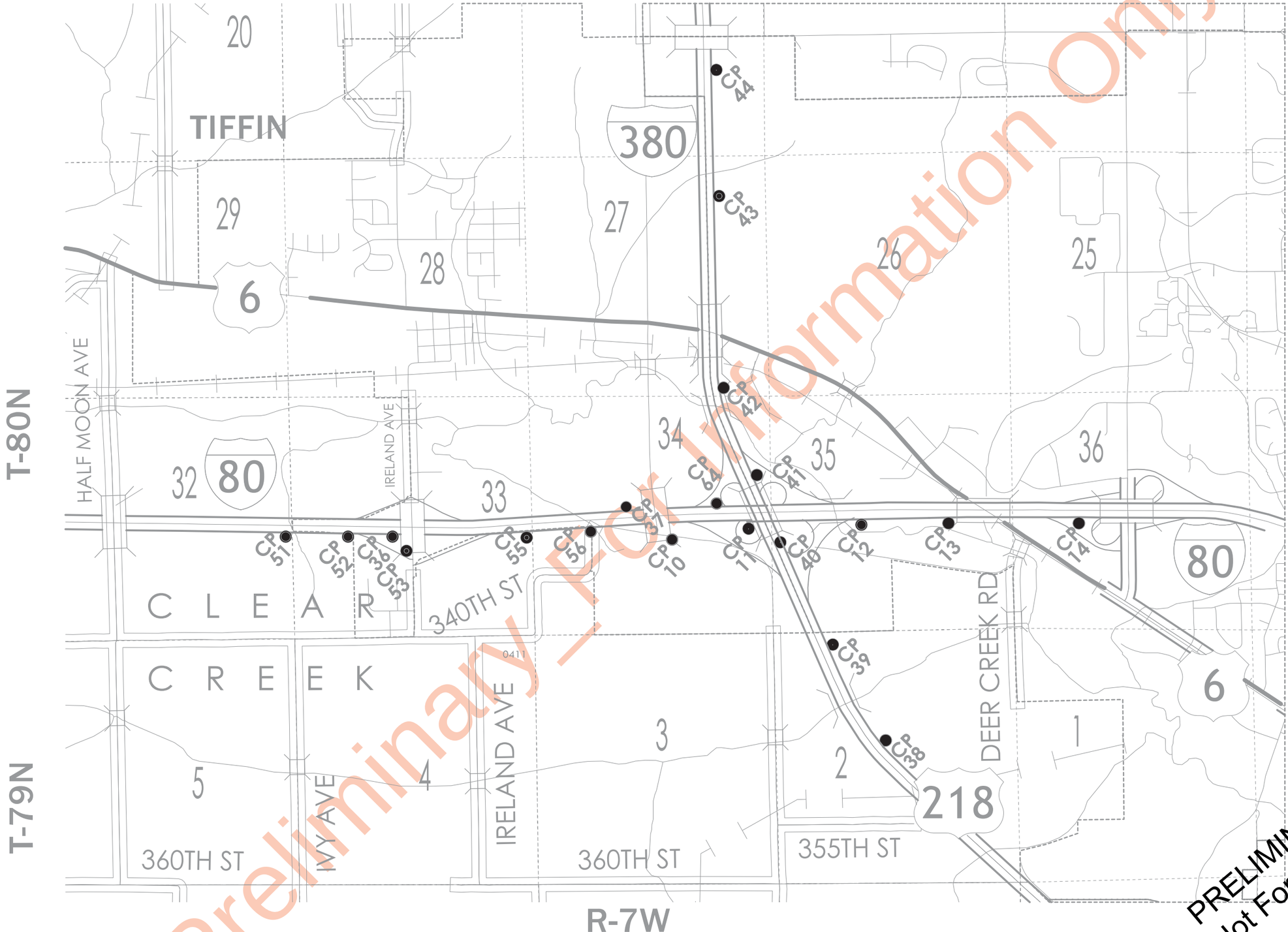
Utility Information

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\

PRELIMINARY
Not For Construction

GPS BASE STATION CONTROL POINT VICINITY MAP - SEE REF. SHEETS FOR MORE INFO.



PRELIMINARY
Not For Construction

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.3

8:18:06 AM 12/13/2019 wmcnama pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_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) 1970 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) 1970 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) 1970 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

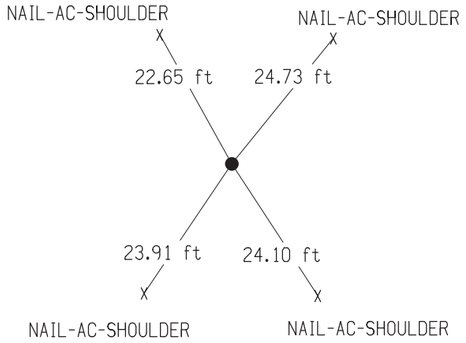
270th. Ave. Benchmarks

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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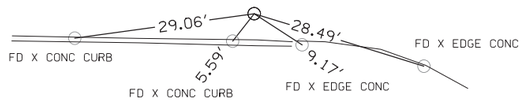

CP STA.540+77.82, 70.37' RT
CP NO. 51, FD 1/2" IRON PIN
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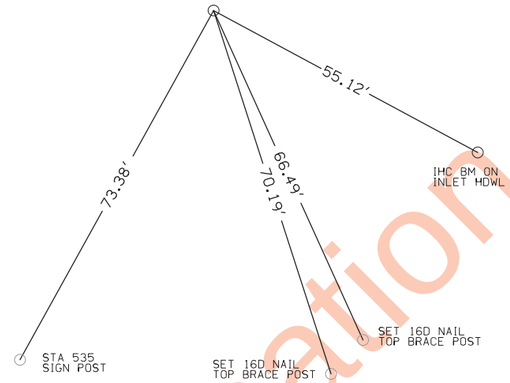

CP 550+08.12, 65.86 RT.
POINT # 52
SET-IRON-PIN---6"DEEP
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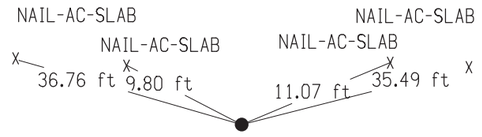

CP STA.565+60.58, 68.86' RT
CP NO. G036, FD 5/8" RE-ROD
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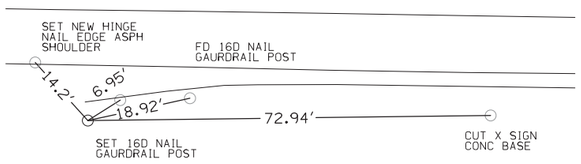

CP 567+15.66, 129.38 RT.
POINT # 53
SET-IRON-PIN---8"DEEP
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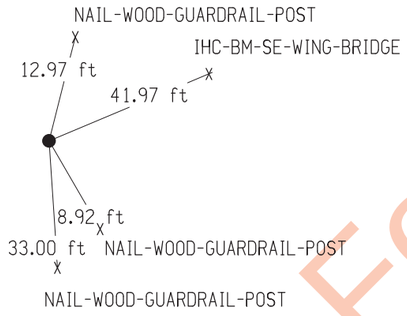

PI 579+28.07
POINT # 54
FOUND IRON-PIN--10"DEEP
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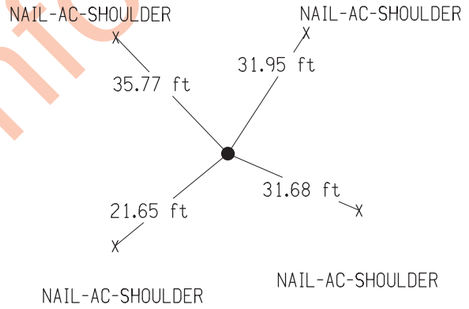

CP STA. 592+79.39, 65.13' RT
CP NO. 55, FD 1/2" IRON PIN
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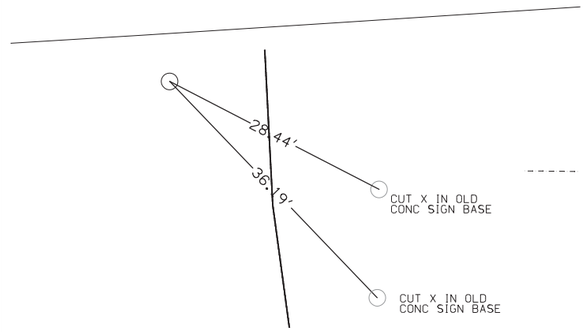
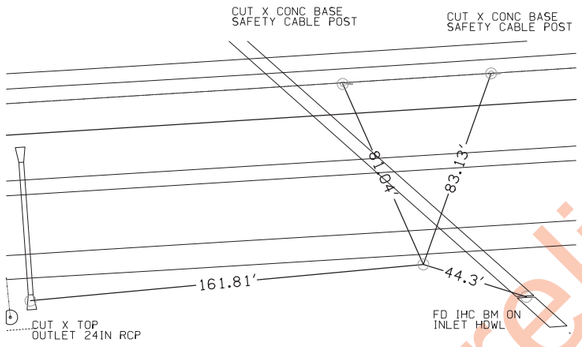
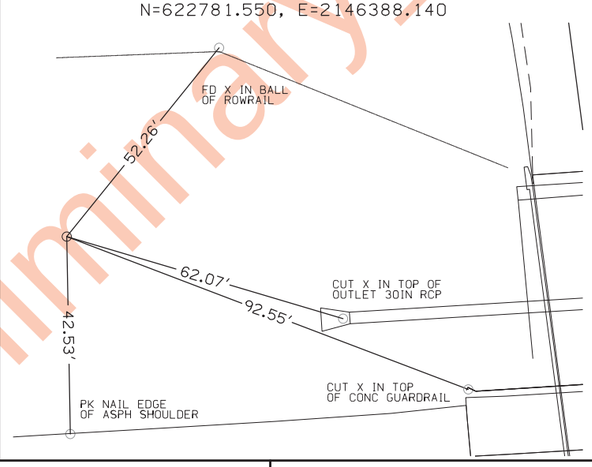


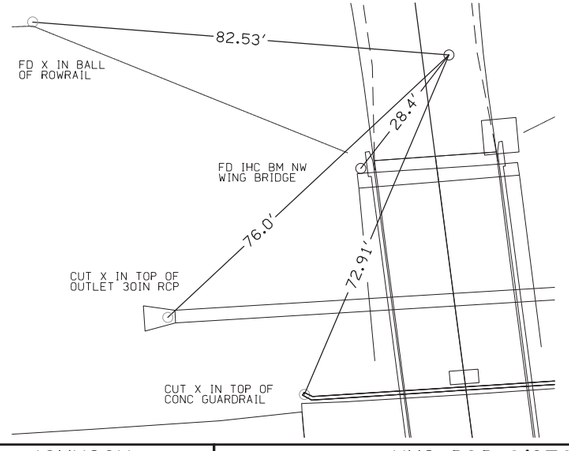
CP STA.606+64.52, 63.57' RT
CP NO. 56, FD 1/2" IRON PIN
N=622533.473, E=2145060.352



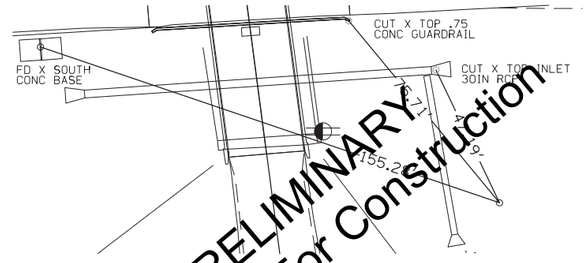
CP STA.620+05.22, 101.08' LT
CP NO. G037, FD 5/8" RE-ROD
N=622781.550, E=2146388.140



CP STA.621+22.20, 128.00' LT
CP NO. 57, FD 1/2" IRON PIN
N=622815.726, E=2146503.210

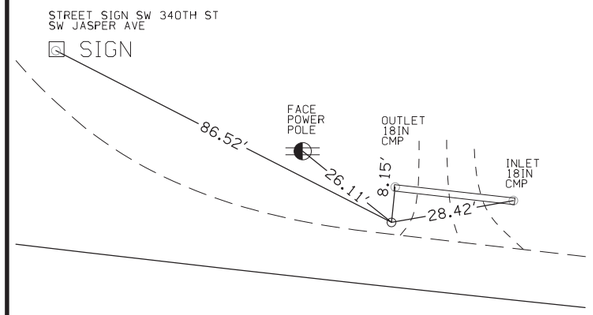


CP STA.622+06.63, 124.20' RT
CP NO. G010, FD FENO MONUMENT
N=622569.130, E=2146602.820

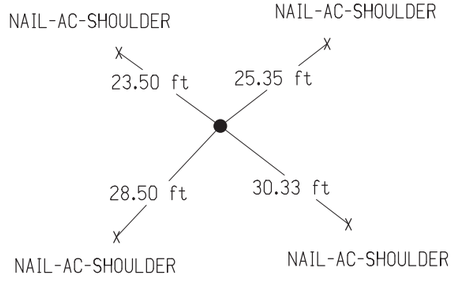


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.5

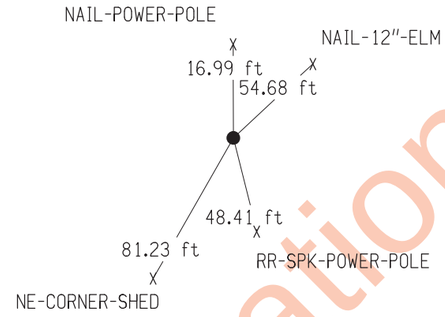
CP STA.622+69.02, 422.05', RT
CP NO. 58, FD 1/2" IRON PIN
N=622275.331, E=2146681.540



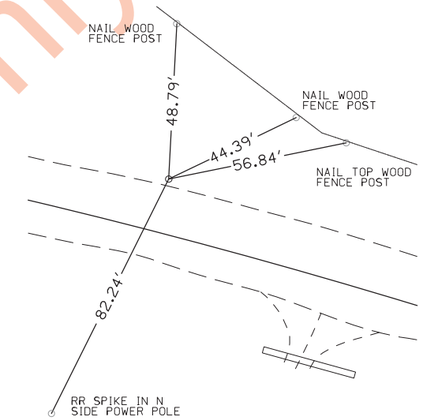
PI 625+84.74
POINT # 49
FD-IRON-PIN---5"DEEP
XC=2146972.845, YC=622716.871



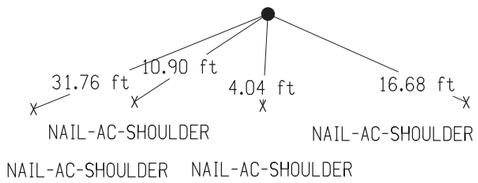
CP 630+48.78, 538.33 RT
POINT # 59
SET-IRON-PIN---6"DEEP
XC=2147449.066, YC=622189.177



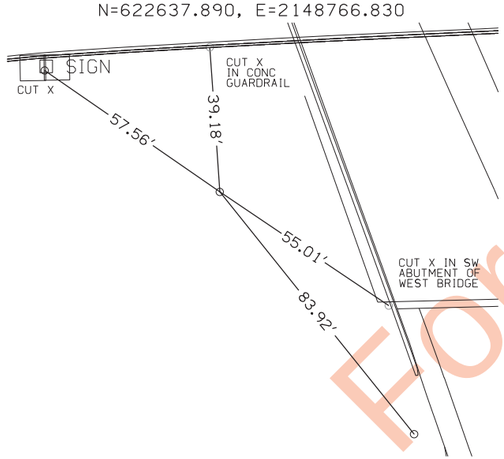
CP STA.636+29.98, 628.91' RT
CP NO. 60, FD 1/2" IRON PIN
N=622111.768, E=2148032.168



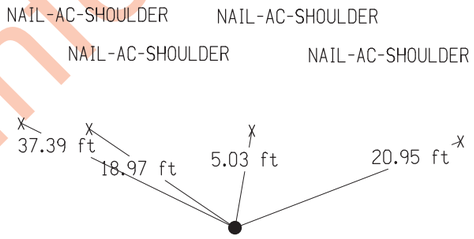
CP 636+43.43, 62.48 LT.
POINT # 64
SET-IRON-PIN---6"DEEP
XC=2148029.975, YC=622803.284



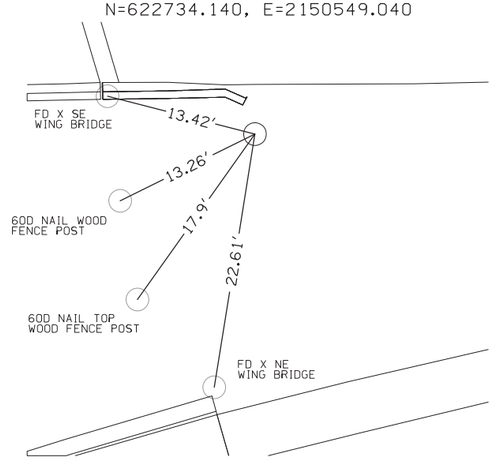
CP STA.643+76.36, 119.54' RT
CP NO. G011, FD FENO MONUMENT
N=622637.890, E=2148766.830



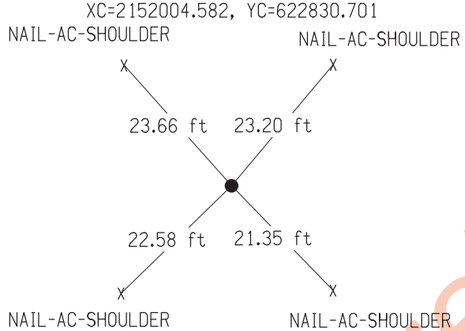
CP 653+78.73, 64.05 RT.
POINT # 67
SET-IRON-PIN---5"DEEP
XC=2149767.696, YC=622716.034



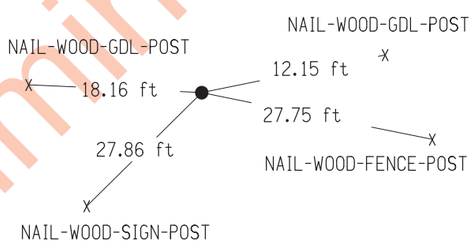
CP STA.661+60.29, 63.62' RT
CP NO. G012, 5/8" RE-ROD
N=622734.140, E=2150549.040



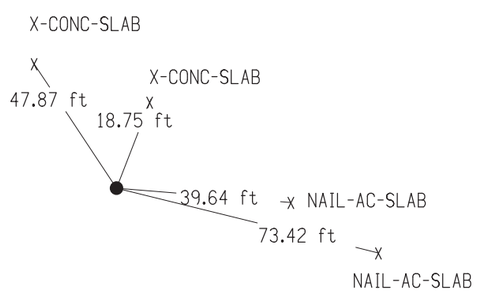
PI 676+17.64
POINT # 47
FD-IRON-PIN---5"DEEP
XC=2152004.582, YC=622830.701



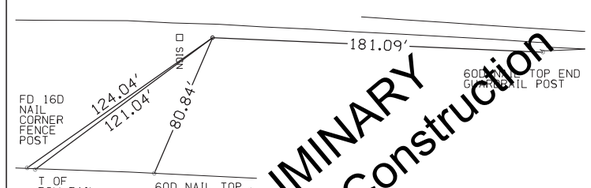
GPS 691+03.90, 63.64 RT.
POINT # G013
FD-REBAR---5"DEEP
XC=2153490.580, YC=622760.510



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

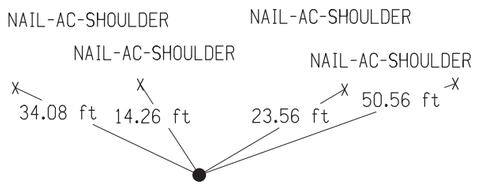


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.6

8:18:08 AM 12/13/2019 wmcnama pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_G01.sht

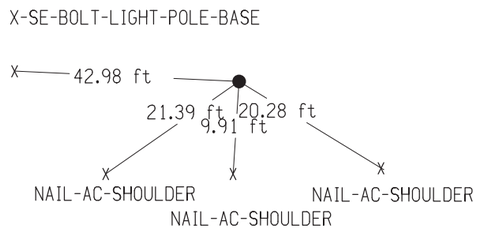
GPS 714+90.54, 70.59 RT.

POINT # G014
FD-REBAR---7"DEEP
XC=2155877.170, YC=622743.040



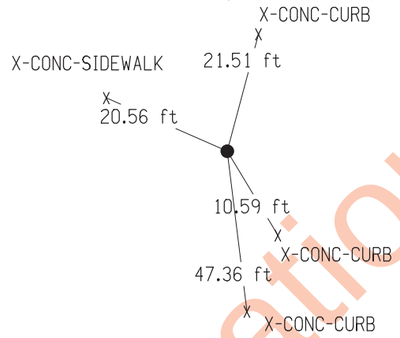
CP 723+72.19, 74.01 LT.

POINT # 70
SET-IRON-PIN---4"DEEP
XC=2156759.449, YC=622883.747



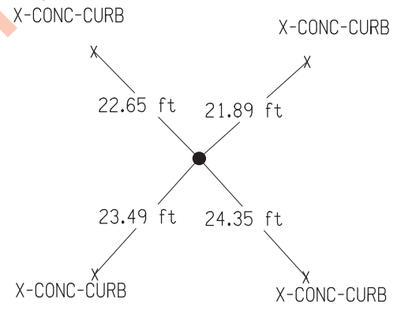
CP 725+28.79, 849.21 RT

POINT # 71
SET-IRON-PIN---4"DEEP
XC=2156911.976, YC=621959.843



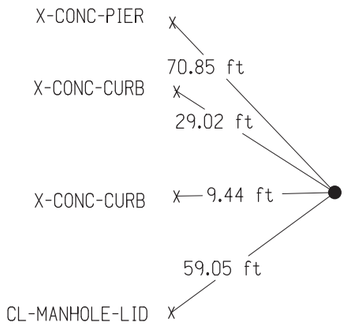
CP 725+70.68, 892.11 LT

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

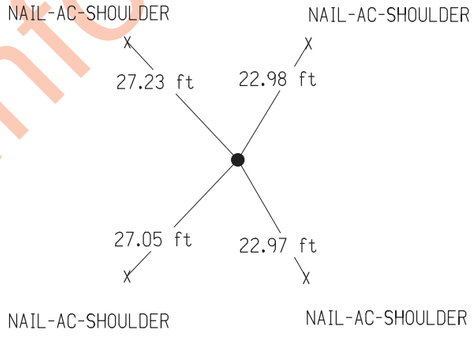


CP 733+40.52, 62.80 RT.

POINT # 74
SET-IRON-PIN---6"DEEP
XC=2157727.165, YC=622742.670

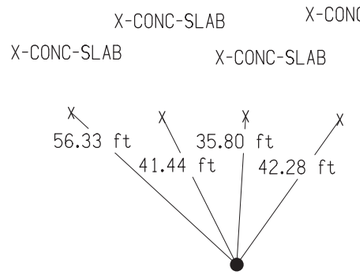
CP 740+38.90, 0.76 RT

POINT # 1
FD-REBAR---1"DEEP
XC=2158425.814, YC=622801.630



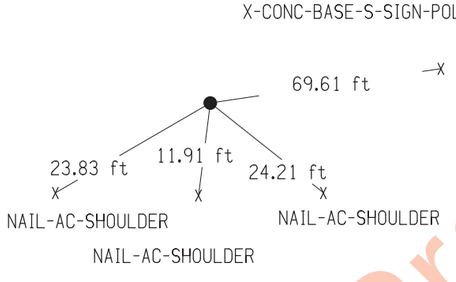
GPS 744+32.20, 104.94 RT.

POINT # G015
FD-REBAR---8"DEEP
XC=2158811.110, YC=622682.600



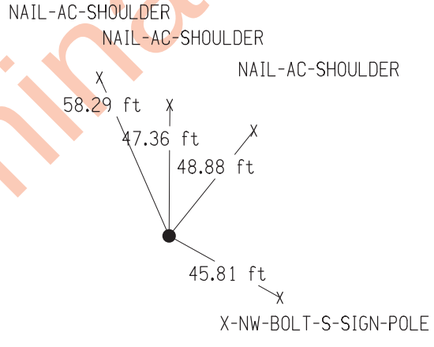
PI 749+37.94

POINT # 46
FD/CONC MONU---4"DEEP
XC=2159324.850, YC=622798.423



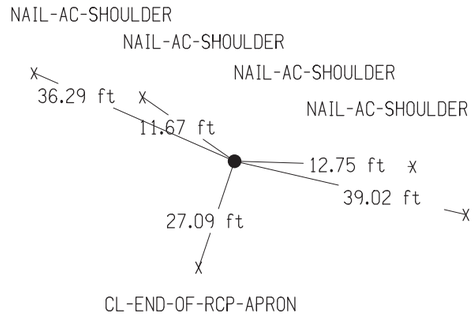
CP 755+99.57, 104.09 RT.

POINT # 75
SET-IRON-PIN---4"DEEP
XC=2159937.950, YC=622484.594



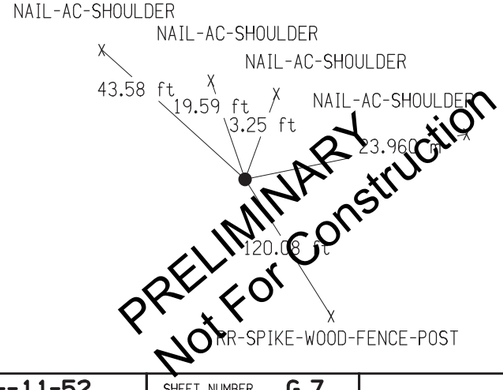
GPS 764+95.39, 62.39 RT

POINT # G016
FD-REBAR---8"DEEP
XC=2160799.980, YC=622251.780



CP 775+01.71, 62.29 RT

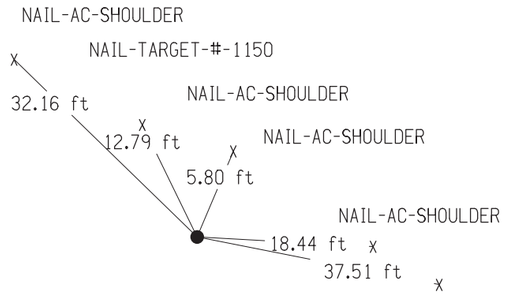
POINT # 76
SET-IRON-PIN---5"DEEP
XC=2161756.755, YC=621939.895



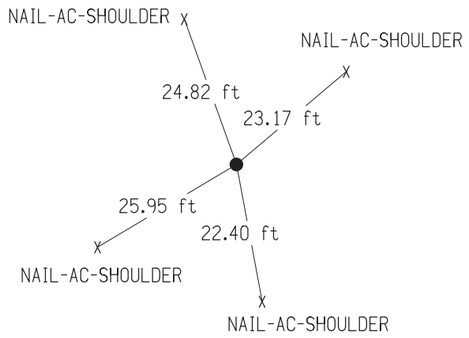
FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.7

8:18:08 AM 12/13/2019 wmcnama pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_G01.sht

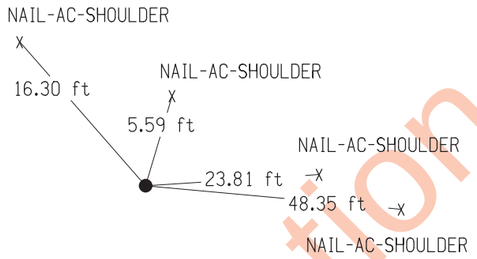
GPS 783+42.19, 63.51 RT
POINT # G017
FD-REBAR---8"DEEP
XC=2162555.440, YC=621678.170



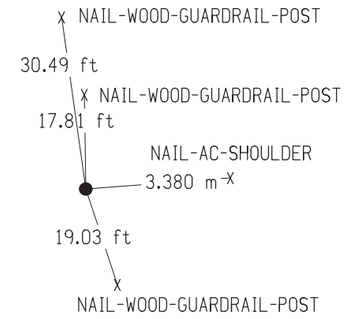
CP 784+42.93, 0.20 RT
POINT # 3
FD-REBAR---14"DEEP
XC=2162670.850, YC=621707.128



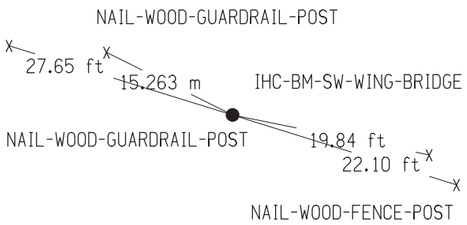
CP 791+34.67, 61.62 RT
POINT # 77
SET-IRON-PIN---4"DEEP
XC=2163309.464, YC=621434.275



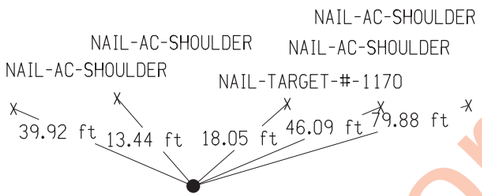
CP 800+78.11, 125.02 LT
POINT # 78
SET-IRON-PIN---4"DEEP
XC=2164264.285, YC=621319.237



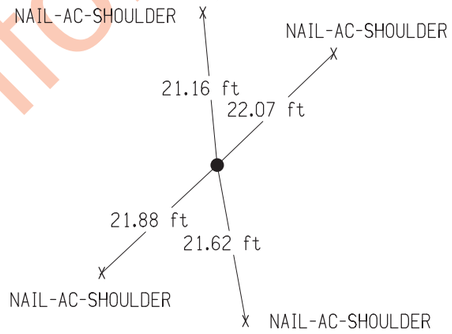
GPS 804+02.83, 62.15 RT
POINT # G018
FD-REBAR---9"DEEP
XC=2164514.980, YC=621040.620



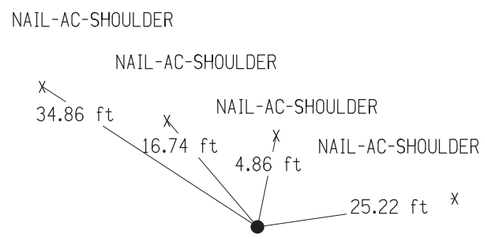
CP 813+57.46, 62.01 RT
POINT # 79
SET-IRON-PIN---3"DEEP
XC=2165422.619, YC=620744.800



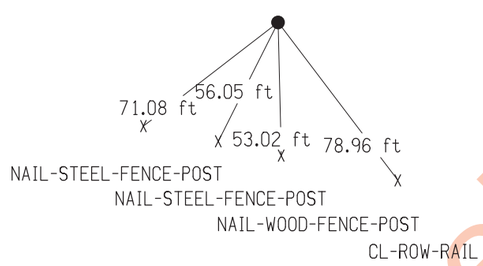
POST 820+22.36
POINT # 4
FD-REBAR---10"DEEP
XC=2166073.977, YC=620597.619



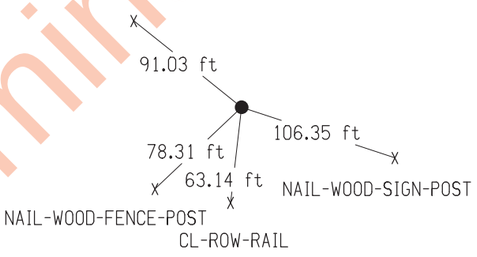
GPS 823+04.29, 63.52 RT
POINT # G019
FD-REBAR---6"DEEP
XC=2166324.940, YC=620452.790



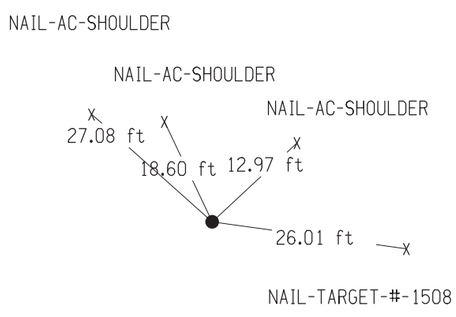
PI 839+10.31
POINT # 9
SET-IRON-PIN---4"DEEP
XC=2167868.913, YC=620012.313



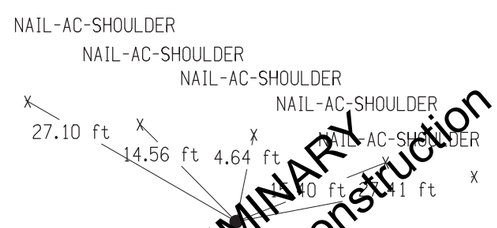
POST 839+47.97, 146.41 RT
POINT # 45
FD-IRON-PIN---2"DEEP
XC=2167924.978, YC=620013.005



CP 839+53.58, 120.32 RT
POINT # 80
SET-IRON-PIN---4"DEEP
XC=2167934.390, YC=620037.983

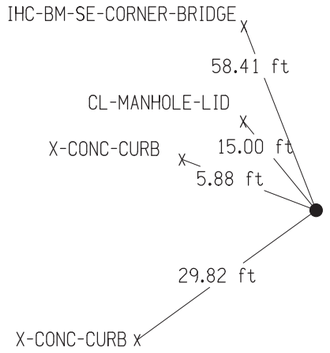


GPS 841+51.48, 63.59 RT
POINT # G020
FD-REBAR---7"DEEP
XC=2168139.770, YC=620066.830

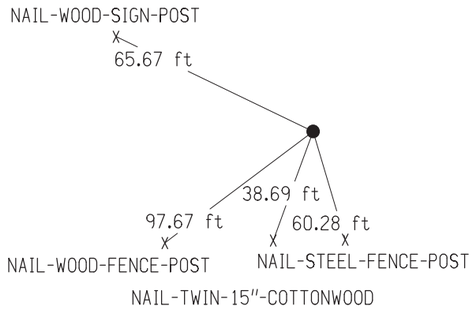


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.8

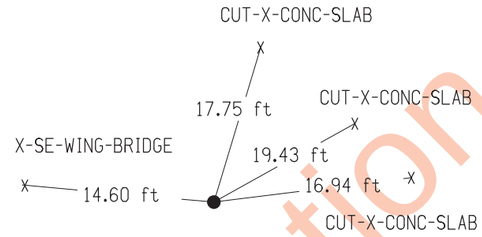
CP 850+37.65, 162.30 RT
POINT # 81
SET-IRON-PIN---4"DEEP
XC=2169021.930, YC=619887.959



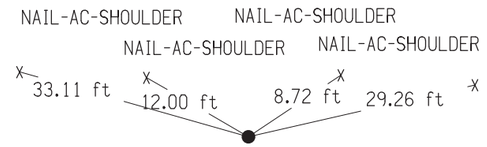
CP 860+12.24, 119.66 RT
POINT # 82
SET-IRON-PIN---6"DEEP
XC=2170006.079, YC=619919.014



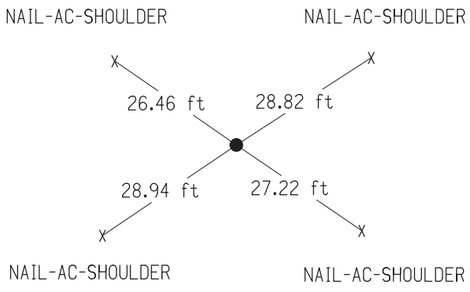
GPS 872+79.25, 69.39 RT
POINT # G021
FD-REBAR-8"DEEP
XC=2171272.370, YC=619984.900



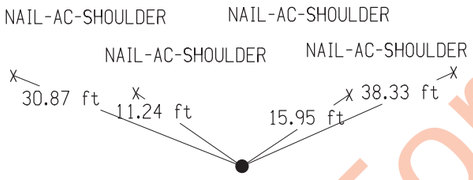
CP 884+13.63, 63.09 RT
POINT # 83
SET-IRON-PIN---7"DEEP
XC=2172406.582, YC=620005.198



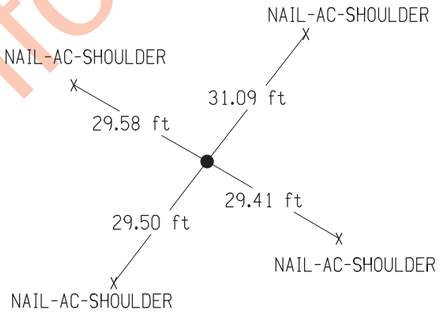
POST 889+89.37
POINT # 44
FD-REBAR---6"DEEP
XC=2172981.506, YC=620075.383



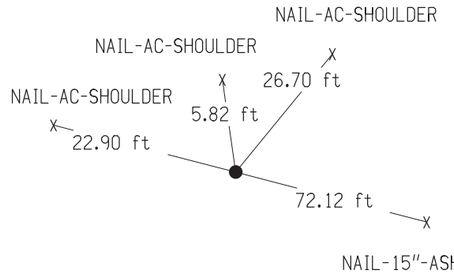
PI 895+41.62
POINT # 111
SET-HINGE-NAIL
XC=2173533.713, YC=620082.195



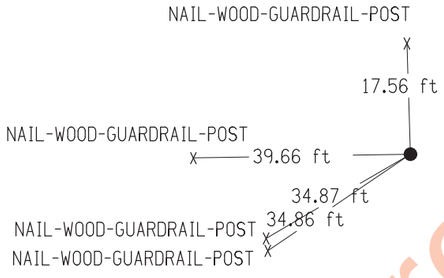
POT 900+92.24
POINT # 43
FD-IRON-PIN---4"DEEP
XC=2174076.154, YC=620194.995



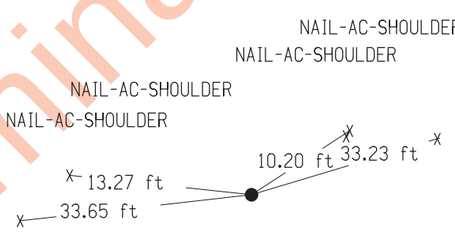
GPS 910+12.51, 63.26RT
POINT # G022
FD-REBAR-6"-DEEP
XC=2174990.030, YC=620320.420



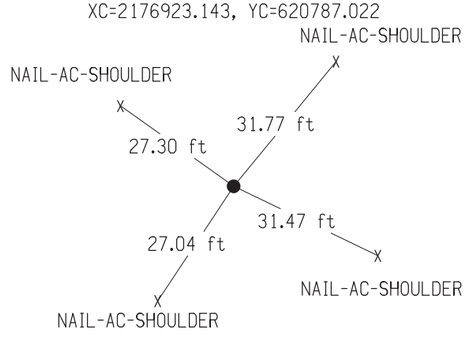
CP 917+95.14, 127.06 LT
POINT # 84
SET-IRON-PIN---4"DEEP
XC=2175717.520, YC=620666.093



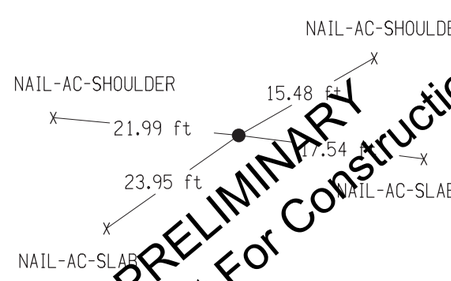
CP 925+15.16, 61.69 RT
POINT # 85
SET-IRON-PIN---4"DEEP
XC=2176460.891, YC=620627.886



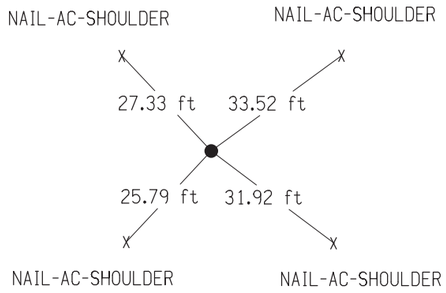
PC 930+00.13
POINT # 103
SET-IRON-PIN---8"DEEP
XC=2176923.143, YC=620787.022



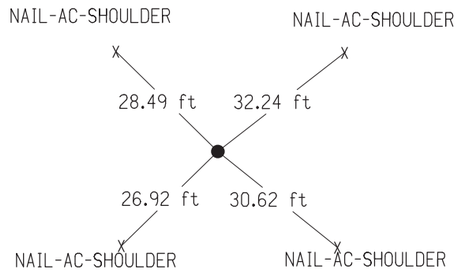
GPS 932+86.52, 63.74 RT
POINT # G023
FD-REBAR-6"-DEEP
XC=2177214.720, YC=620775.320



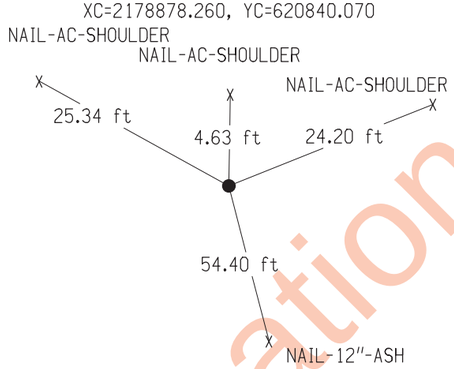
PT 942+21.91
POINT # 105
SET-IRON-PIN---6"DEEP
XC=2178136.704, YC=620906.832



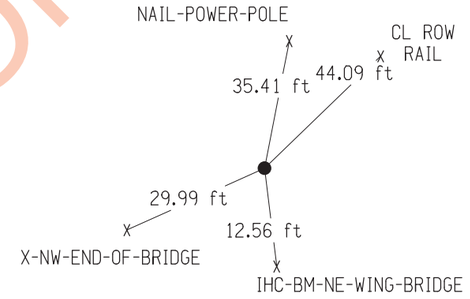
POT 942+23.53
POINT # 42
FD-REBAR-3"-DEEP
XC=2178138.331, YC=620906.818



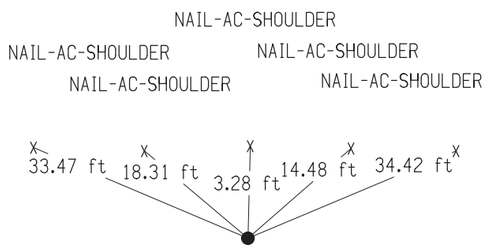
GPS 949+63.99, 60.67 RT
POINT # G024
FD-REBAR-8"-DEEP
XC=2178878.260, YC=620840.070



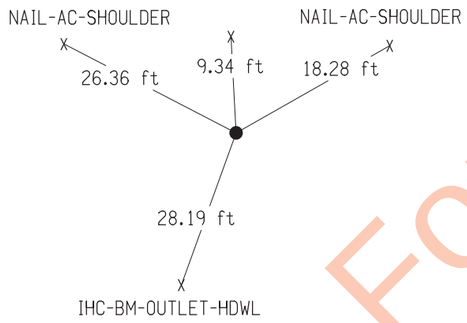
CP 960+42.86, 122.56 LT
POINT # 86
SET-IRON-PIN---6"DEEP
XC=2179958.600, YC=621014.436



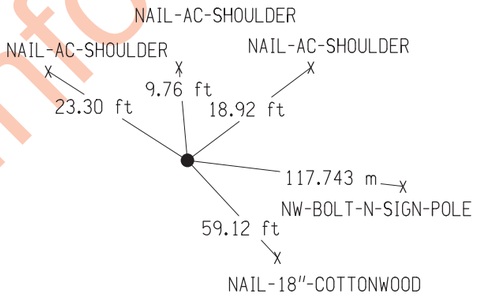
CP 966+18.31, 60.60 RT
POINT # 87
SET-IRON-PIN---5"DEEP
XC=2180532.527, YC=620826.554



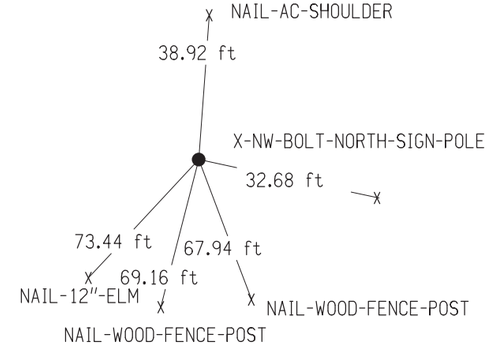
CP 977+54.38, 66.74 RT
POINT # 88
SET-IRON-PIN---5"DEEP
XC=2181668.512, YC=620811.082



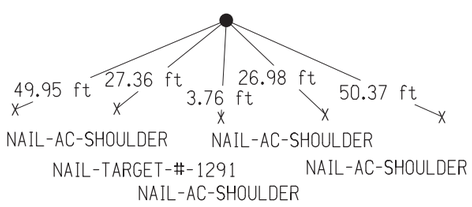
GPS 986+64.53, 67.25 RT
POINT # G025
FD-REBAR-6"-DEEP
XC=2182578.630, YC=620803.100



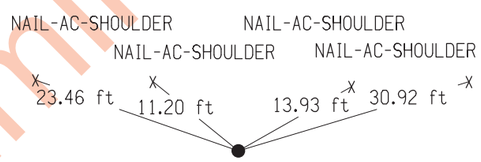
CP 995+73.44, 97.14 RT
POINT # 89
SET-IRON-PIN---6"DEEP
XC=2183487.263, YC=620765.738



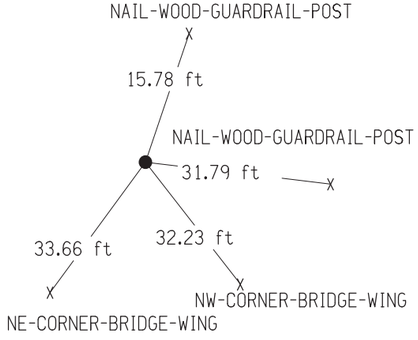
CP 1011+08.02, 62.78 LT
POINT # 90
SET-IRON-PIN---6"DEEP
XC=2185023.099, YC=620913.049



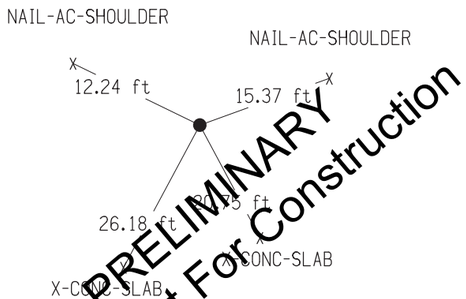
GPS 1018+29.48, 64.44 RT
POINT # G026
FD-REBAR---8"DEEP
XC=2185743.490, YC=620779.910



CP 1029+52.64, 134.67 LT
POINT # 91
SET-IRON-PIN---5"DEEP
XC=2186868.254, YC=620969.789

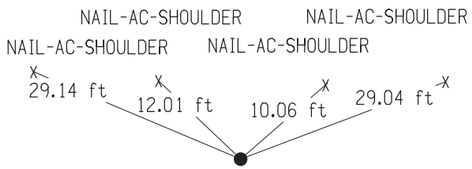


CP 1039+73.96, 62.62 RT
POINT # 92
SET-IRON-PIN---5"DEEP
XC=2187887.913, YC=620764.114



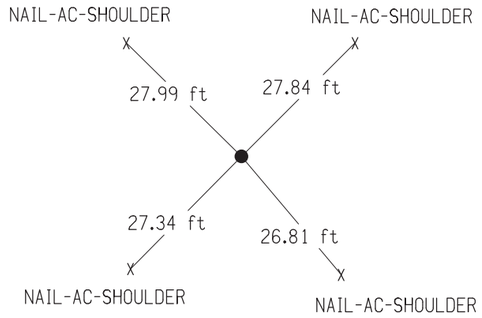
GPS 1049+99.14, 64.43 RT

POINT # G027
FD-REBAR---8"DEEP
XC=2188913.050, YC=620753.890



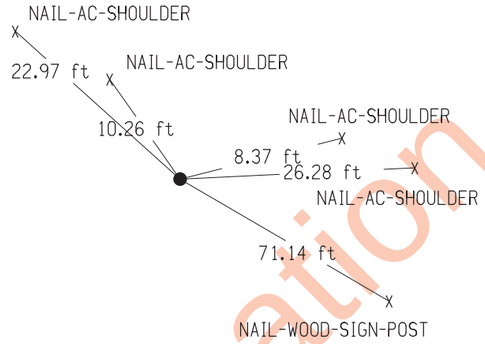
POST 1054+10.67

POINT # 93
FD-REBAR---6"DEEP
XC=2189325.090, YC=620814.936



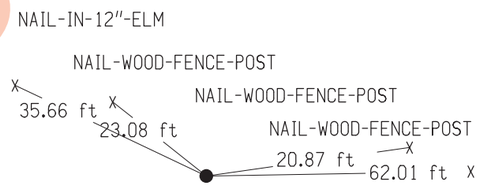
GPS 1065+84.20, 61.90 RT

POINT # G028
FD-REBAR---8"DEEP
XC=2190476.310, YC=620625.020



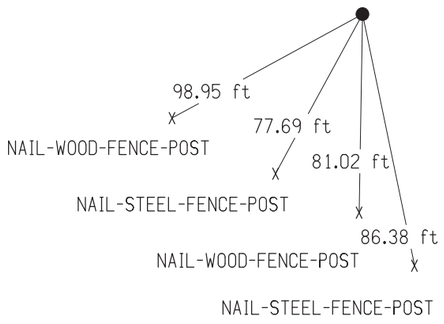
PI 1066+45.52

POINT # 100
SET-IRON-PIN---5"DEEP
XC=2190559.895, YC=620804.794



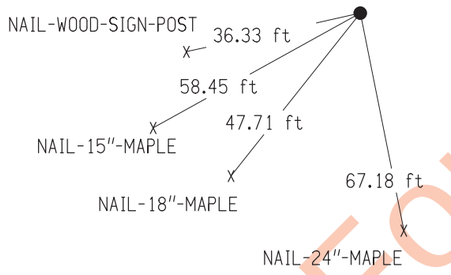
CP 1071+34.39, 61.20 RT

POINT # 94
SET-IRON-PIN---6"DEEP
XC=2191002.120, YC=620485.238



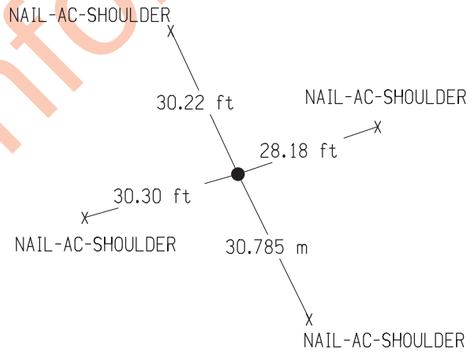
GPS 1076+49.17, 61.80 RT

POINT # G029
FD-REBAR---8"DEEP
XC=2191479.420, YC=620308.180



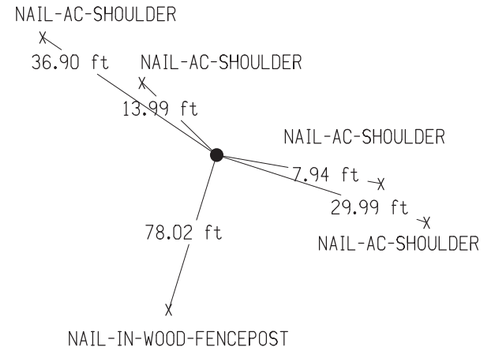
POT 1078+44.97

POINT # 41
FD-REBAR---2"DEEP
XC=2191682.508, YC=620285.996



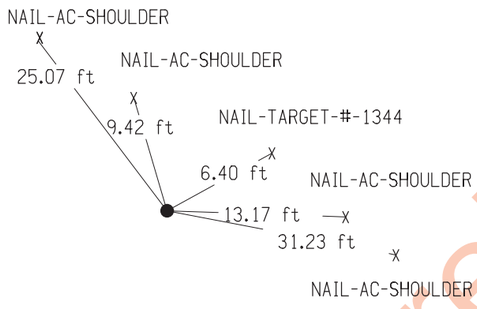
CP 1088+94.23, 61.10 RT

POINT # 95
SET-IRON-PIN---4"DEEP
XC=2192609.348, YC=619790.364



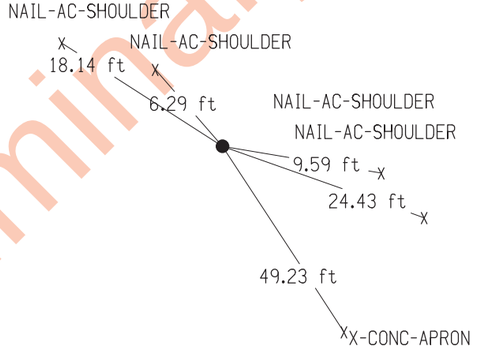
GPS 1100+29.11, 63.50 RT

POINT # G030
FD-REBAR---8"DEEP
XC=2193638.530, YC=619312.100



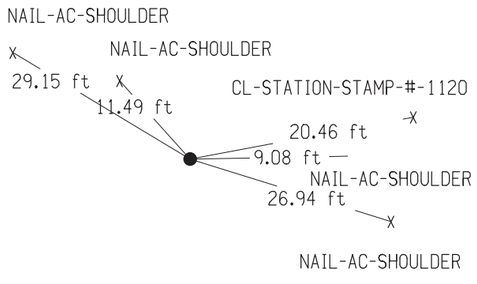
CP 1110+21.59, 60.28 RT

POINT # 96
SET-IRON-PIN---5"DEEP
XC=2194540.809, YC=618898.673



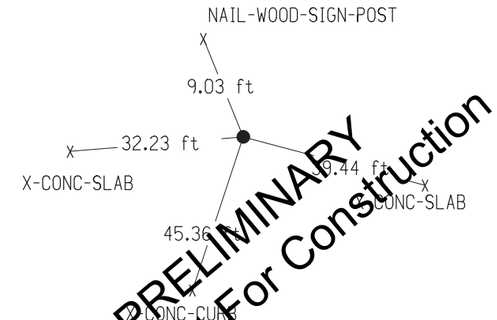
CP 1121+55.38, 61.23 RT

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



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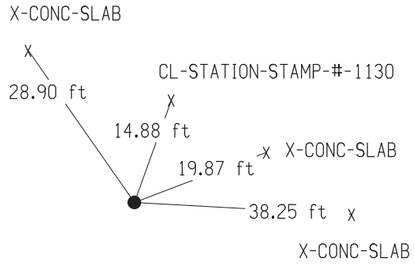
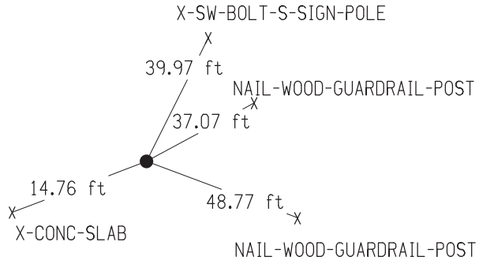
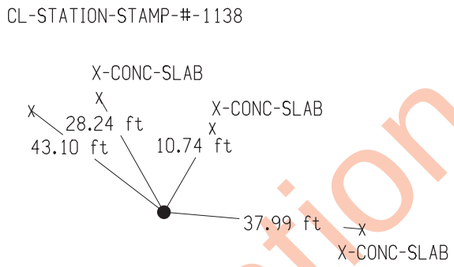
GPS 1131+73.12, 64.73 RT
POINT # G031
FD-REBAR---9"DEEP
XC=2196492.000, YC=617992.060



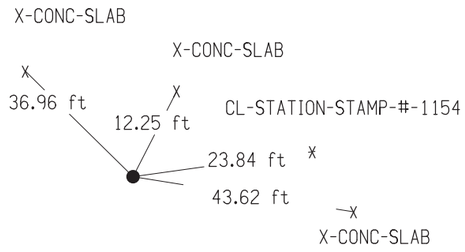
CP 1138+11.57, 16.44 LT
POINT # 62
SET-IRON-PIN---6"DEEP
XC=2149856.717, YC=620425.741



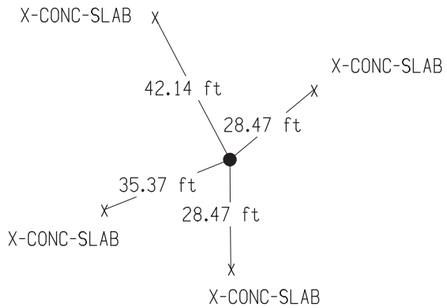
CP 1140+14.50, 61.20 RT
POINT # 98
SET-IRON-PIN---6"DEEP
XC=2197257.252, YC=617642.293



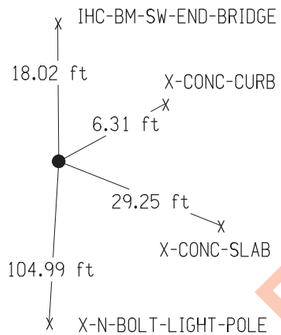
GPS 1155+51.73, 62.61 RT
POINT # G032
FD-REBAR---6"DEEP
XC=2198652.080, YC=616996.140



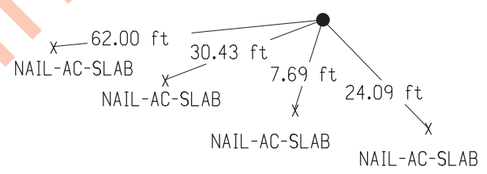
POT 1155+97.06
POINT # 39
FD-IRON-PIN---4"DEEP
XC=2198719.495, YC=617033.962



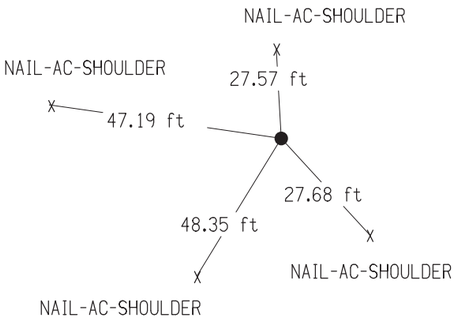
CP 1161+94.29, 100.45 LT
POINT # 63
SET-IRON-PIN---5"DEEP
XC=2148819.348, YC=622572.435



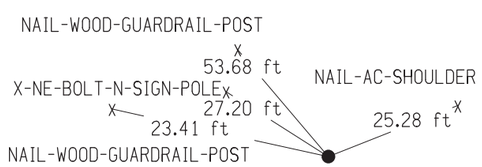
CP 1167+66.68, 471.49 RT
POINT # 66
SET-IRON-PIN---5"DEEP
XC=2149112.026, YC=623326.805



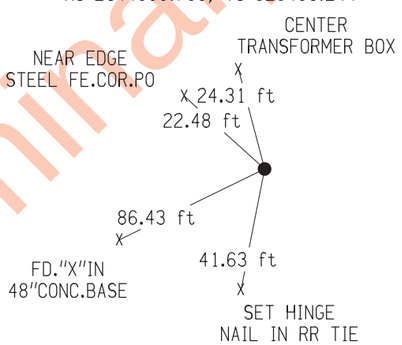
CP 1180+19.46, 15.10 RT
POINT # 65
SET-IRON-PIN---6"DEEP
XC=2148189.359, YC=624289.321



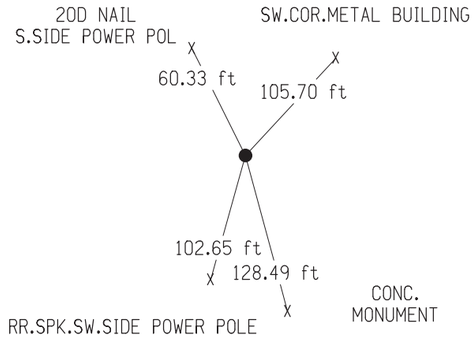
TS 1183+81.20
POINT # 48
FD-ROW-RAIL---12"DEEP
XC=2148029.718, YC=624614.281



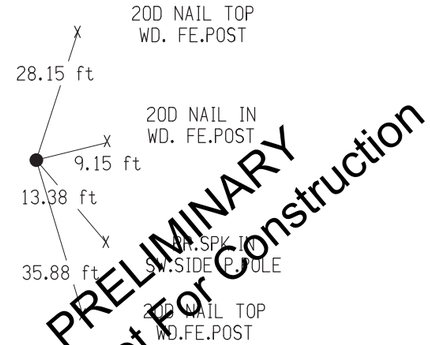
CP STA
CP,SET IRON PIN 0.4' DEEP
CP NO. 368
XC=2149688.768, YC=625463.294



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



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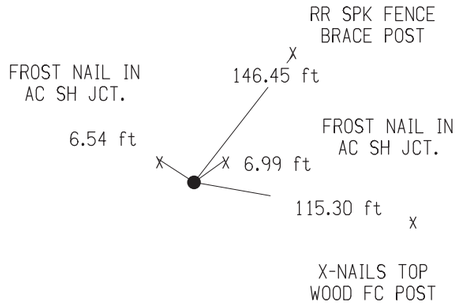
8:18:11 AM 12/13/2019 wmcnama pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_G01.sht

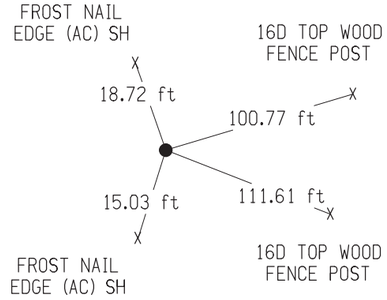
CP STA1138819.46 69.52 RT

CP POINT 328
SET IRON PIN
XC=2147370.319, YC=645001.916



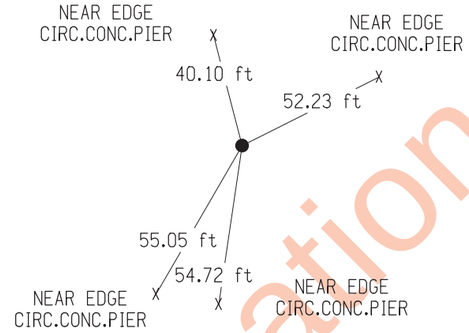
GPS STA

GPS POINT G051
FD RE-BAR
XC=2147352.230, YC=646825.440



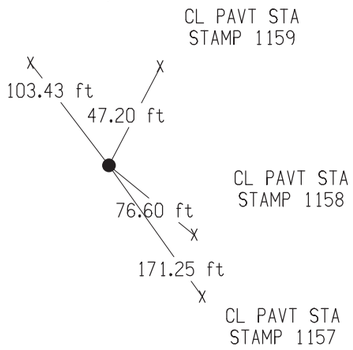
PI STA

PI,FD.HINGE NAIL
PI NO. 203
XC=2147685.529, YC=626785.566



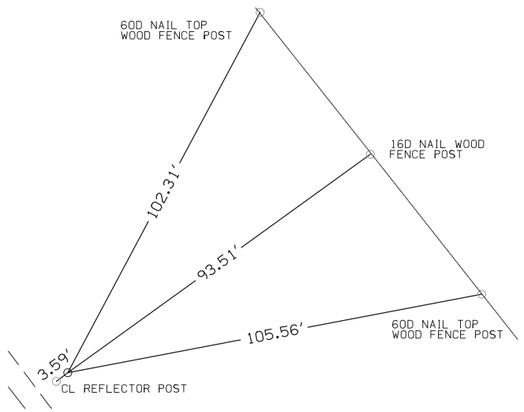
GPS STA1158+67.81 18.37RT

GPS POINT G040
FD REBAR 6" DEEP
XC=2149059.690, YC=622321.550



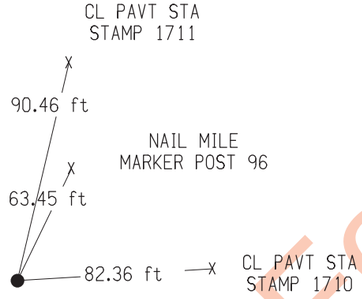
CP STA.11107+07.24, 75.97' RT

CP NO. G038, FD 5/8" RE-ROD
N=617721.960, E=2151337.400



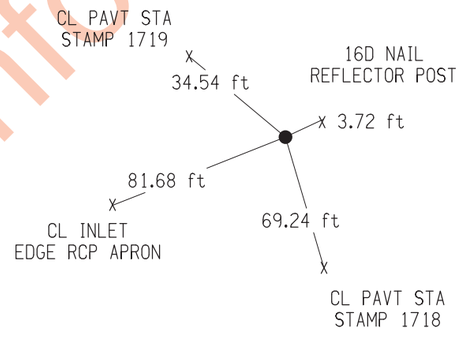
PI STA11109+54.89 125.04L

PI POINT 117
FOUND REBAR (OLD P.I.)
XC=2151037.868, YC=617786.796



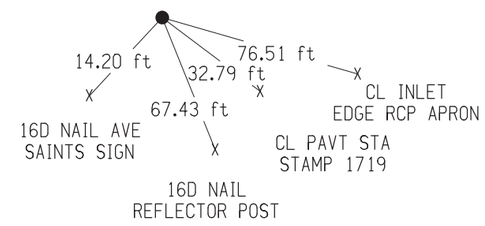
CP STA11117+61.69 67.32RT

CP POINT 362
SET IRON PIN
XC=2150768.562, YC=618592.409



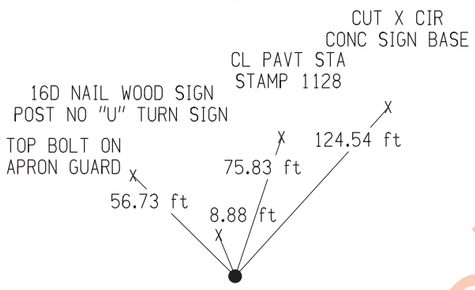
CP STA11118+23.46 68.31LT

CP POINT 361
SET IRON PIN
XC=2150619.686, YC=618585.593



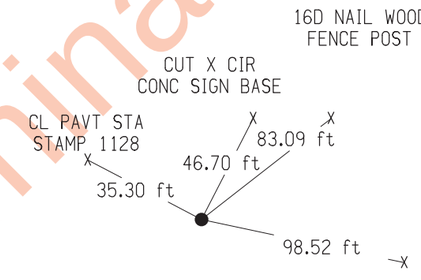
PI STA 11127+45.33

PI POINT 61
FOUND REBAR
XC=2150301.567, YC=619456.592



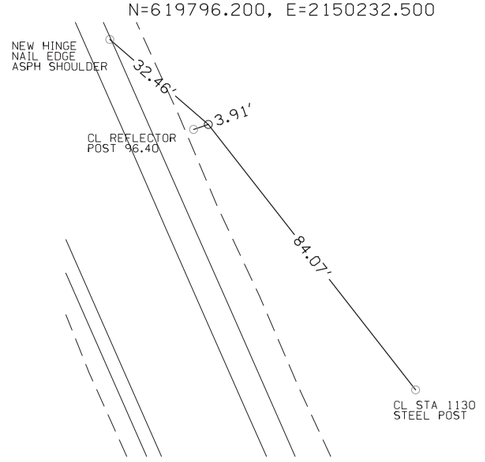
CP STA11127+71.82 75.24RT

CP POINT 363
SET IRON PIN
XC=2150359.742, YC=619511.171



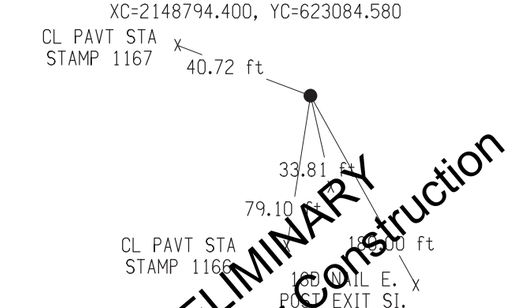
CP STA.11130+83.96, 73.48' RT

CP NO. G039, FD 5/8" RE-ROD
N=619796.200, E=2150232.500



GPS STA11166+73.04 83.17R

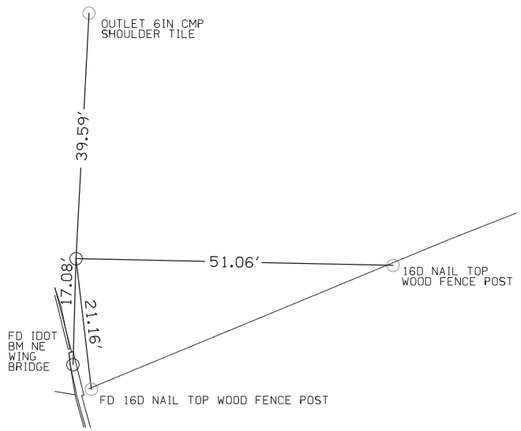
GPS POINT G041
FOUND REBAR 4" DEEP
XC=2148794.400, YC=623084.580



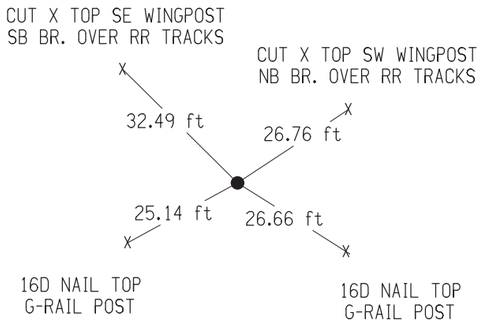
FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.13

8:18:11 AM 12/13/2019 wmcnama pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_G01.sht

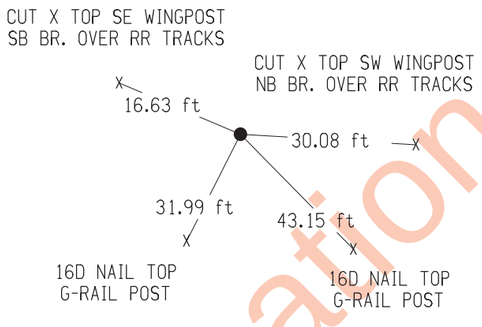
CP STA.11189+80.71, 69.65′ RT
CP NO. G042, FD 5/8″ RE-ROD
N=625195.400, E=2147894.800



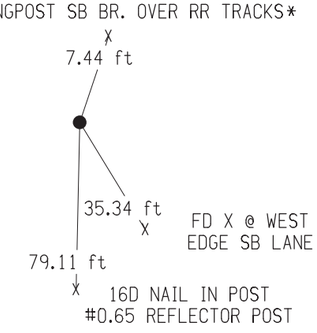
POST STA 11198+25.80
POST POINT 119
42″ DEEP (OLD ST)
XC=2147720.353, YC=626013.868



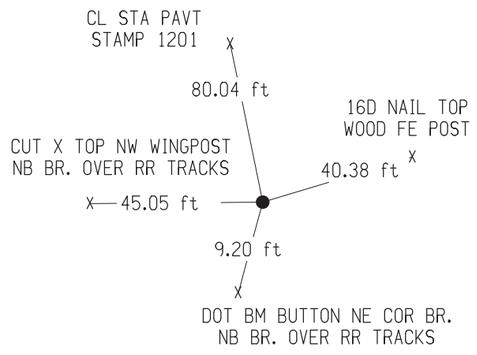
CP STA11198+42.48 7.38LT.
CP POINT 310
SET IRON PIN
XC=2147712.647, YC=626030.407



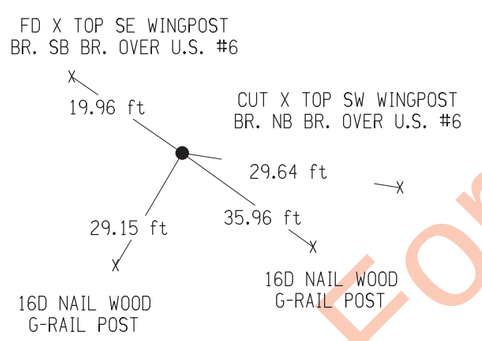
CP STA11198+50.88 67.60LT
CP POINT 311
SET IRON PIN
XC=2147652.273, YC=626037.618
DOT BM BUTTON SW
WINGPOST SB BR. OVER RR TRACKS*



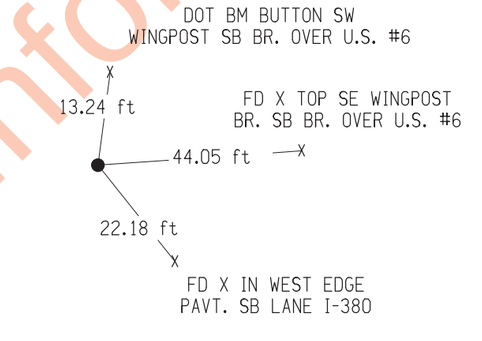
CP STA11200+20.55 67.59RT
CP POINT 312
SET IRON PIN
XC=2147784.094, YC=626209.915



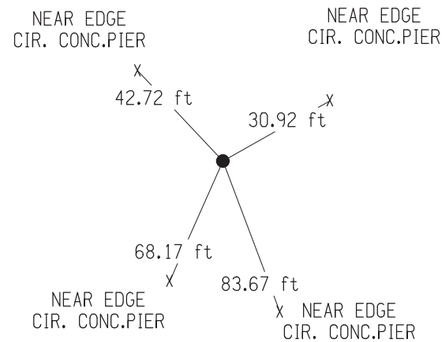
CP STA11204+52.93 6.70LT.
CP POINT 313
SET IRON PIN
XC=2147701.314, YC=626640.752



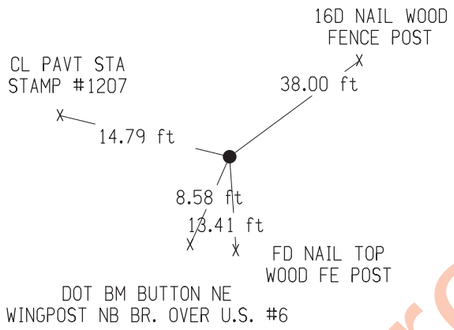
CP STA11204+62.26 66.96LT
CP POINT 314
SET IRON PIN
XC=2147640.880, YC=626648.888
DOT BM BUTTON SW
WINGPOST SB BR. OVER U.S. #6



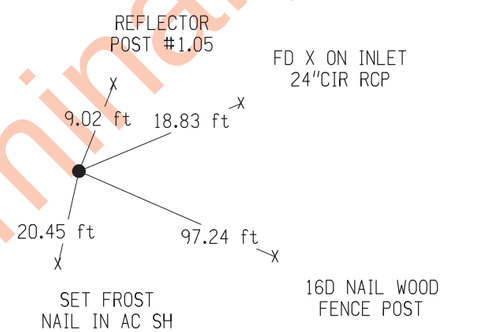
CP STA 11206+05.7,0.355RT
CP,SET IRON PIN 0.4′DEEP
CP NO. 365
XC=2147705.357, YC=626793.642



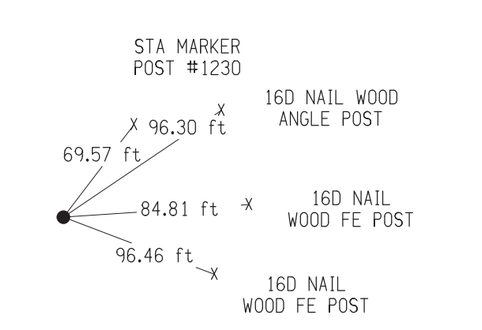
CP STA11206+96.97 67.11RT
CP POINT 315
SET IRON PIN
XC=2147770.306, YC=626886.194



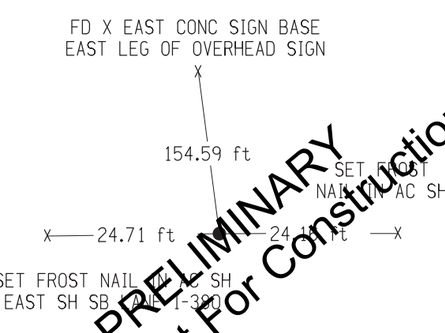
CP STA11218+91.13 67.56RT
CP POINT 316
SET IRON PIN
XC=2147747.250, YC=628080.126



GPS STA11229+46.68 69.07R
GPS POINT G043
FD REBAR
XC=2147727.980, YC=629135.510

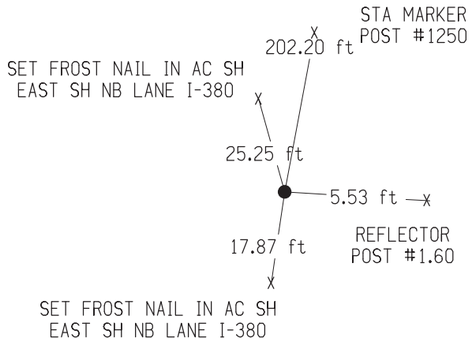


CP STA11233+46.29
CP POINT 120
FOUND REBAR
XC=2147650.826, YC=629533.678



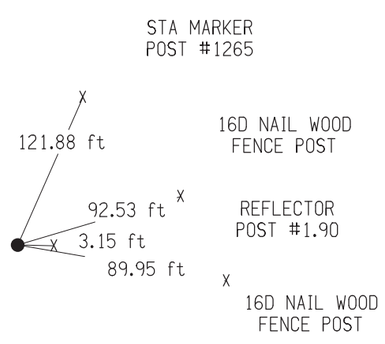
CP STA11248+00.08 66.09RT

CP POINT 319
SET IRON PIN
XC=2147688.519, YC=630988.491



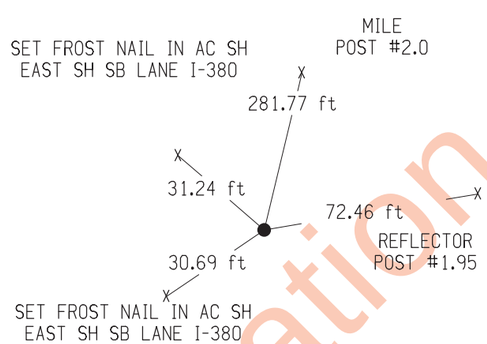
GPS STA11263+84.92 68.10R

GPS POINT G044
FD REBAR
XC=2147659.340, YC=632573.060



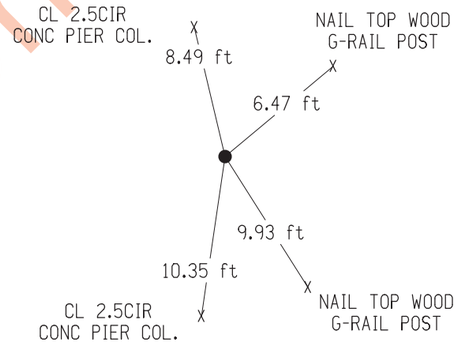
POT STA 11266+42.81

POT POINT 126
FD REBAR
XC=2147586.174, YC=632829.561



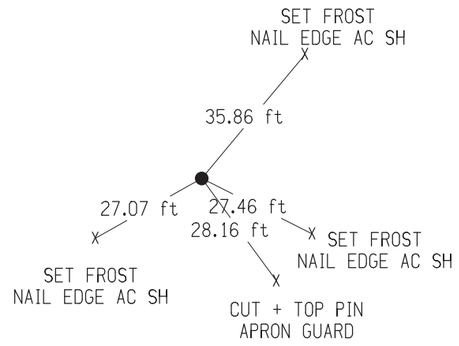
CP STA11271+13.17 3.91RT.

CP POINT 320
SET IRON PIN
XC=2147578.713, YC=633299.901



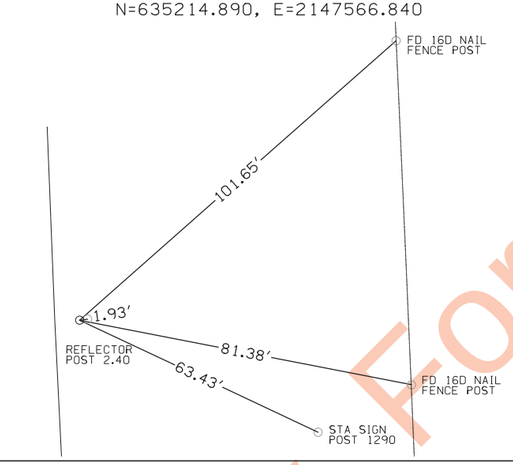
POT STA 11274+97.73

POT POINT 131
FD REBAR
XC=2147560.834, YC=633684.089



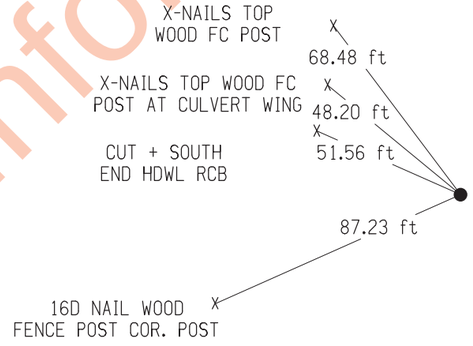
CP STA. 11290+26.94, 70.00' RT

CP NO. G045, FD 5/8" RE-ROD
N=635214.890, E=2147566.840



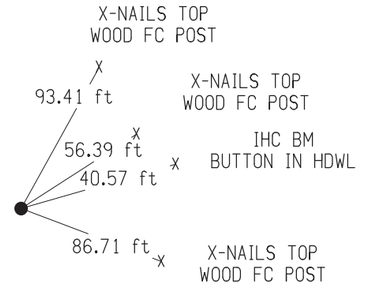
CP STA11302+79.45 66.70LT

CP POINT 321
SET IRON PIN
XC=2147377.746, YC=636460.574



CP STA11303+63.40 66.41RT

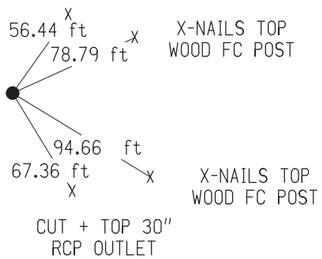
CP POINT 322
SET IRON PIN
XC=2147507.233, YC=636550.025



CP STA11319+54.64 65.97RT

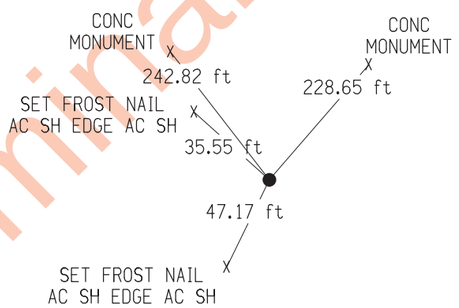
CP POINT 323
SET IRON PIN
XC=2147440.180, YC=638139.847

+ CUT WEST LEG SIGN
BASE CONC SIGN BASE



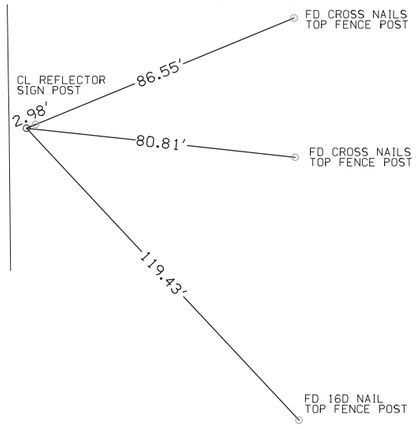
PI STA 11324+10.95

PI POINT 133
FD REBAR
XC=2147355.166, YC=638593.002



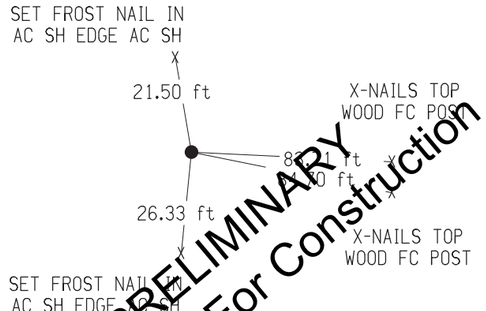
CP STA. 11327+21.80, 69.80' RT

CP NO. G046, FD 5/8" RE-ROD
N=638904.720, E=2147422.440



CP STA11335+13.07 66.44RT

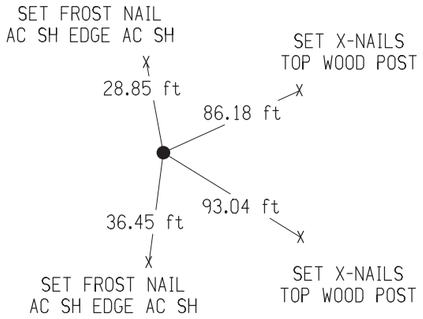
CP POINT 324
SET IRON PIN
XC=2147412.252, YC=639695.711



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.15

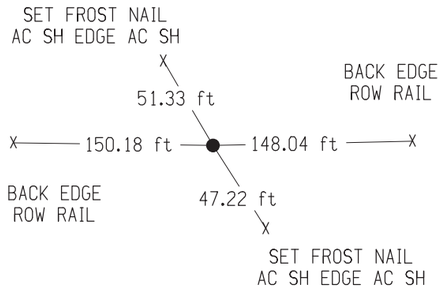
CP STA11348+34.75 67.93RT

CP POINT 325
SET IRON PIN
XC=2147402.529, YC=641017.354



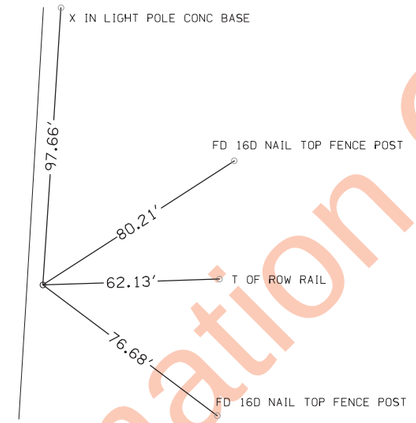
CP STA11350+68.00

CP POINT 134
FD REBAR/HIGH PIN OF 2 FD
XC=2147332.596, YC=641250.020



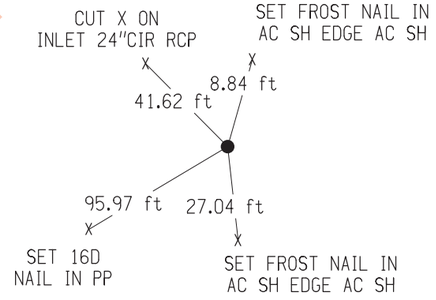
CP STA. 11359+98.30, 79.57' RT

CP NO. G047, FD 5/8" RE-ROD
N=642180.970, E=2147404.300



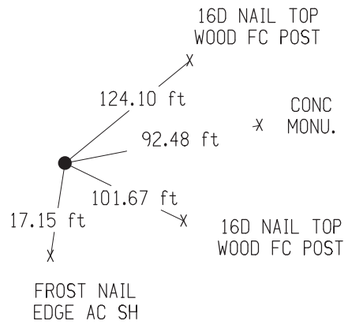
CP STA11376+37.76 66.54LT

CP POINT 326
SET IRON PIN
XC=2147244.286, YC=643819.129



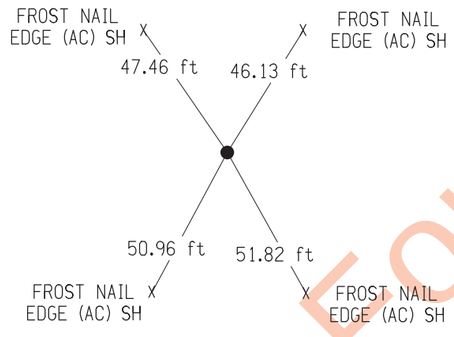
CP STA11401+12.35 66.02RT

CP POINT 329
SET IRON PIN
XC=2147355.848, YC=646294.755



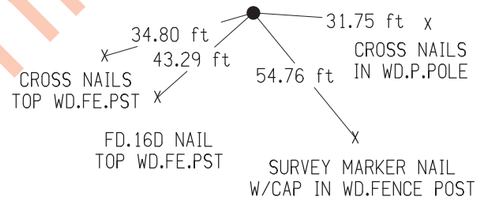
CP STA 11404+97.20

CP POINT 136
H0411001.ALI
XC=2147286.571, YC=646679.028



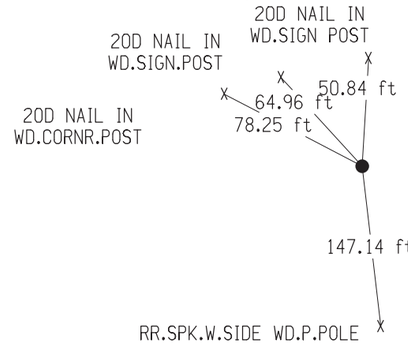
PI STA.20576+03.82

PI,FD.IRON PIN 1.1' DEEP
PI NO. 161,SCR NO. 161
XC=2149125.621, YC=620087.690



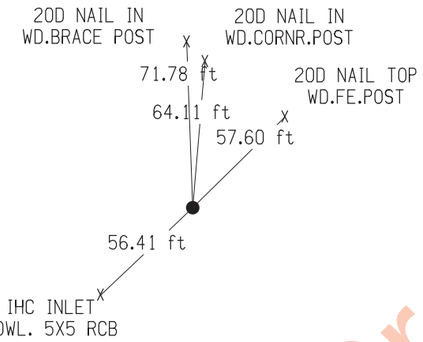
CP STA.20580+19.75,17.9RT

CP,SET IRON PIN 0.6' DEEP
CP NO. 358
XC=2149132.853, YC=620503.941



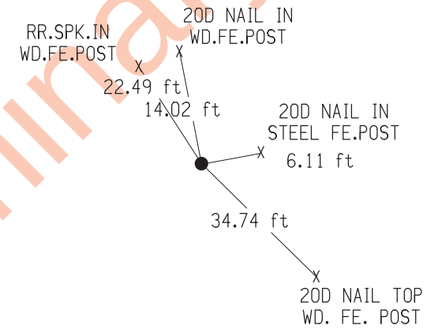
PI STA. 20589+66.53

PI,SET IRON PIN 0.5' DEEP
PI NO. 164
XC=2149090.582, YC=621449.945



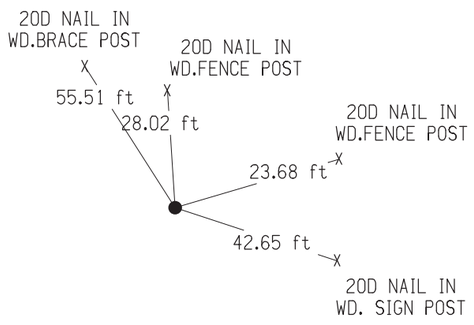
CP STA.20591+76.66,49.5RT

CP,SET IRON PIN 0.7' DEEP
CP NO. 357
XC=2149003.559, YC=621660.301



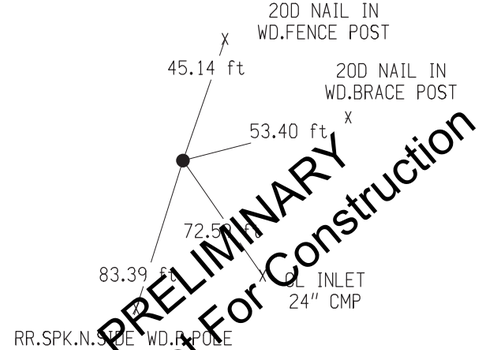
PI STA.20593+49.34

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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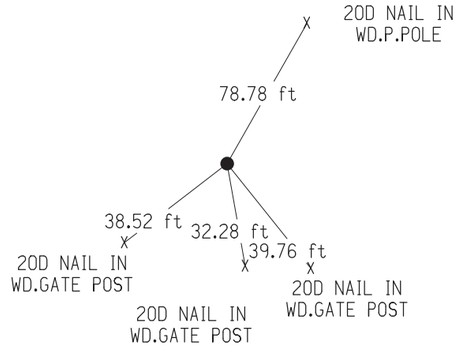
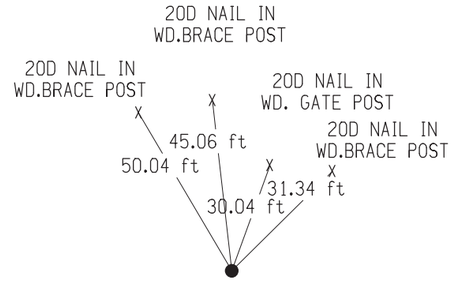
PI STA.20618+52.05

PI,SET IRON PIN 0.4' DEEP
PI NO. 175
XC=2146425.222, YC=622287.830



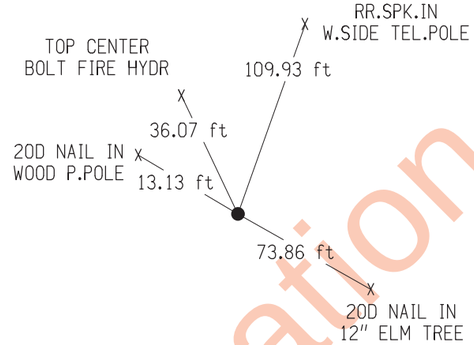
CP STA.20627+75.09

CP,SET IRON PIN 0.4' DEEP
CP NO. 178
XC=2145514.771, YC=622440.773



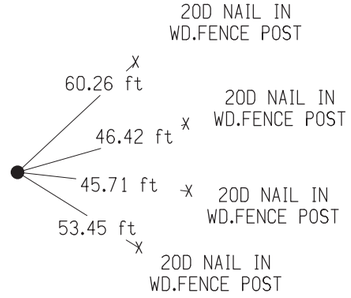
CP STA.30633+76.9,23.11LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 356
XC=2146372.147, YC=623932.054



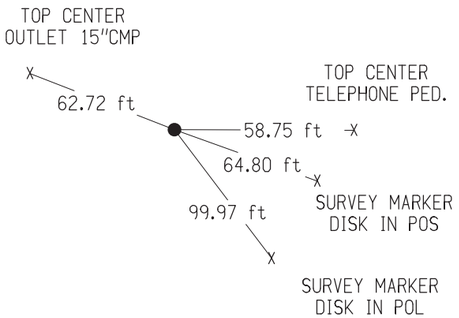
CP STA 30640+58.79,14.8RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 355
XC=2146392.195, YC=624614.693



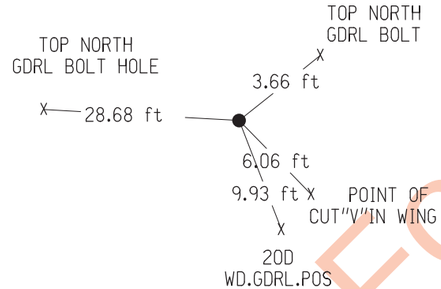
PI STA 30648+00.546

SCR,FD.5/8"REBAR .6'DEEP
PI NO. 185
XC=2146357.977, YC=625355.806



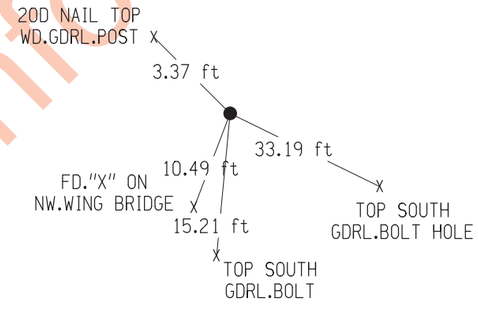
CP STA 30653+49.6,12.87RT

CP,SET IRON PIN 0.6' DEEP
CP NO 354
XC=2146361.885, YC=625905.030



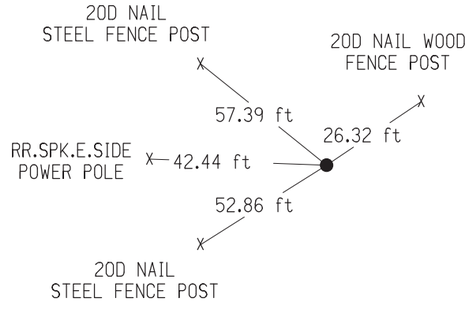
CP STA 30655+33.8,13.84RT

CP,SET IRON PIN 0.6' DEEP
CP NO. 353
XC=2146332.170, YC=626088.784



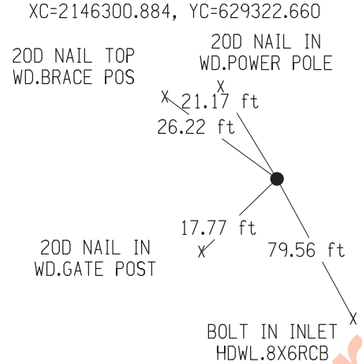
CP STA 30677+72.2,14.55RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 336
XC=2146350.445, YC=628327.347



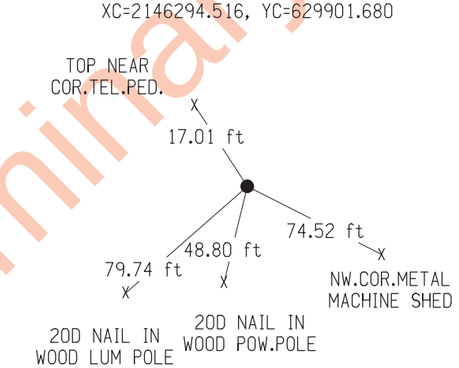
CP STA 30687+67.9,20.99LT

CP,FD.BOLT IN YELLOW CAP
CP NO. 337
XC=2146300.884, YC=629322.660



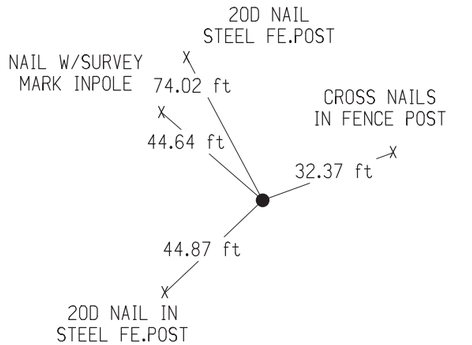
CP STA 30693+47.0,19.18LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 338
XC=2146294.516, YC=629901.680



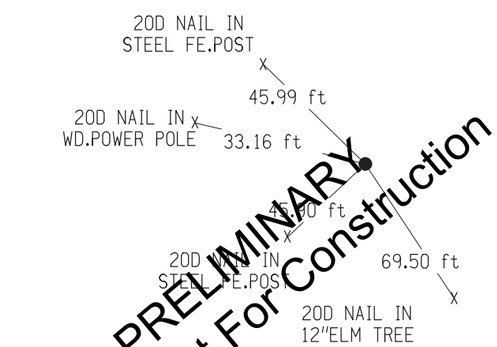
SCR,PI,STA 30700+86.417

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

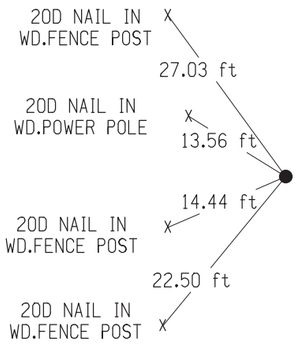


FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.17

8:18:13 AM 12/13/2019 wmcnama pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_Bridge_356_Jasper_Ave_Over_I80\CADD_Files\Sheet_Files\SHT_52080356_G01.sht

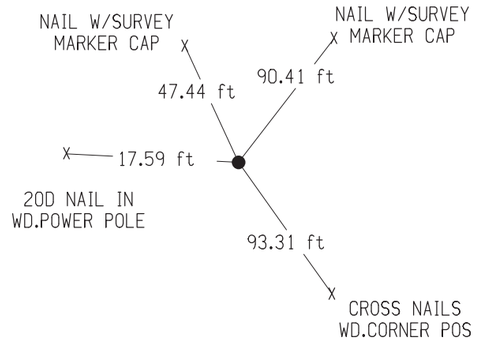
CP STA 30721+82.12,13.5LT

CP,SET IRON PIN 1.0' DEEP
CP NO. 340
XC=2146249.399, YC=632736.009



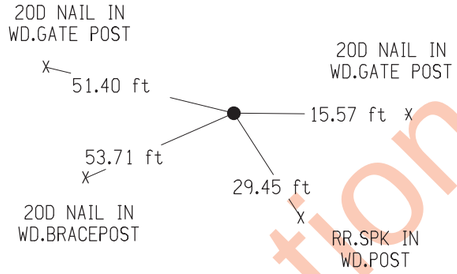
CP STA 30727+39.61,13.0LT

CP,SET IRON PIN 0.8' DEEP
CP NO. 341
XC=2146227.007, YC=633293.419



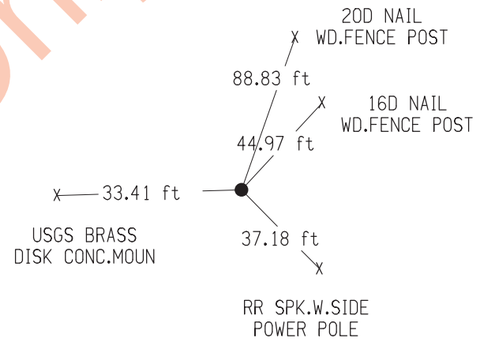
CP STA 30740+69.31,17.3RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 342
XC=2146240.250, YC=634623.400



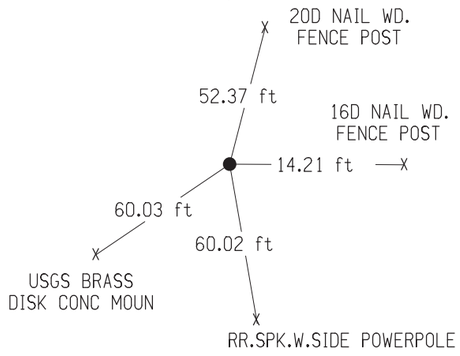
SCR STA 30753+73.552

PI,FD.5/8" REBAR
SCR,PI, NO.218
XC=2146206.162, YC=635927.312



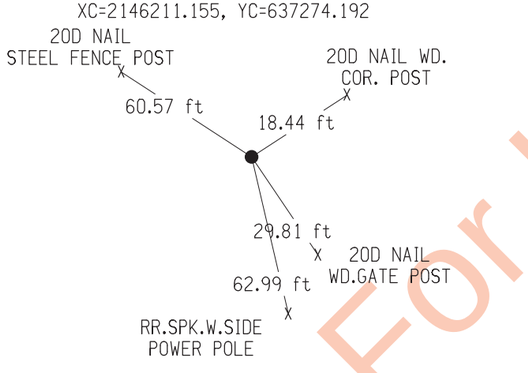
CP STA 30754+06.49,16.6RT

CP SET IRON PIN 0.6' DEEP
CP NO. 343
XC=2146222.458, YC=635960.400



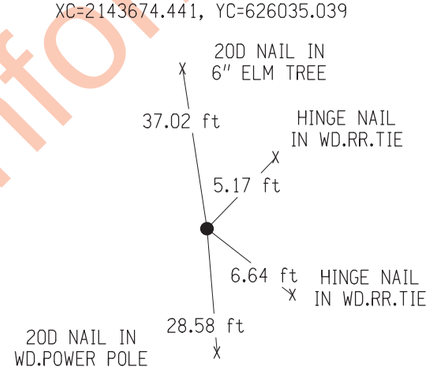
CP STA 30767+20.33,17.2RT

CP,SET IRON PIN 0.6' DEEP
CP NO. 344
XC=2146211.155, YC=637274.192



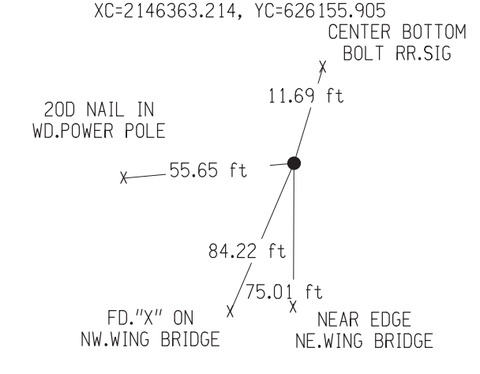
CP STA 41158+82.185

CP,SET HINGE NAIL CL RR.
CP NO. 187
XC=2143674.441, YC=626035.039



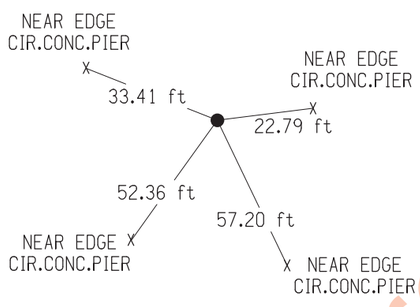
CP STA 41185+73.6,27.66RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 371
XC=2146363.214, YC=626155.905



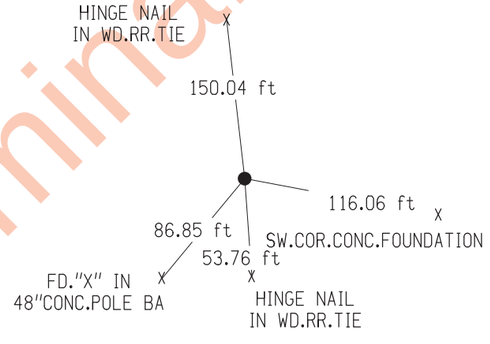
CP STA 41199+34.8,19.15LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 370
XC=2147721.817, YC=626141.182



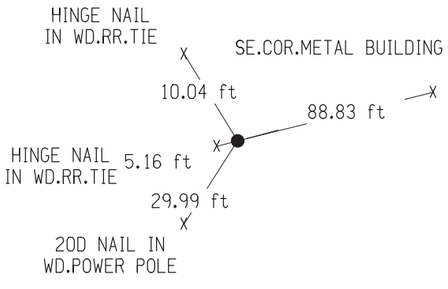
CP STA 41210+54.0,55.25LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 369
XC=2148818.137, YC=625887.760



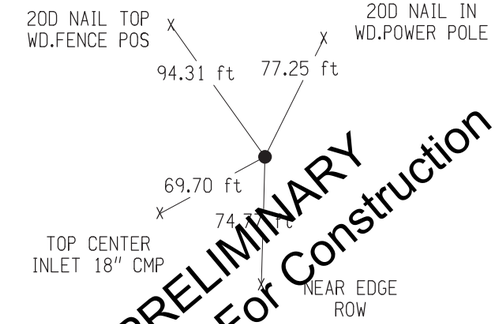
CP STA 41238+20.068

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

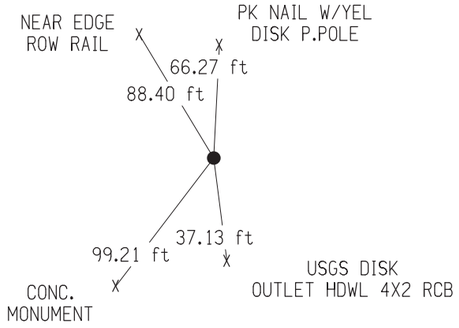


PRELIMINARY
Not For Construction

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.18

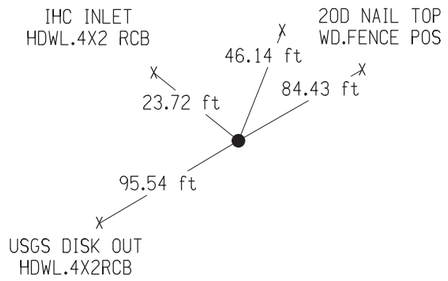
PI STA 51191+66.729

PI,FD.HINGE NAIL
PI NO. 201
XC=2146304.091, YC=626974.693



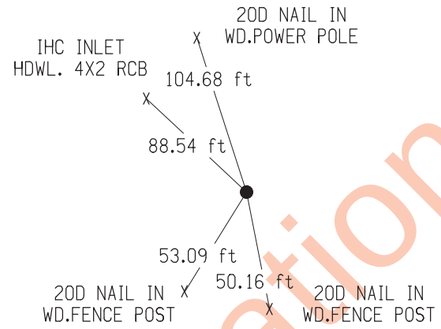
CP STA 51192+50.8,23.57LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 335
XC=2146390.750, YC=626986.615



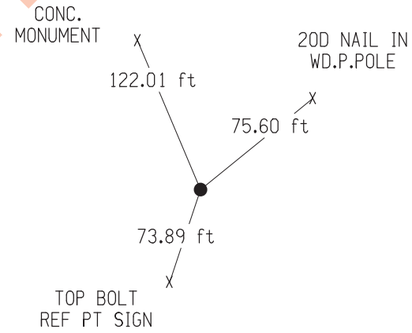
CP STA 51201+44.79,26.7RT

CP,SET IRON PIN 0.5' DEEP
CP NO. 364
XC=2147269.652, YC=626815.535



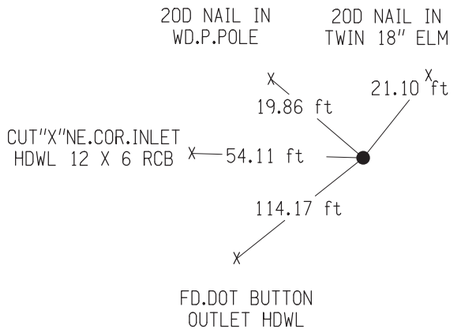
PI STA 51218+08.004

PI,FD. HINGE NAIL
PI NO. 206
XC=2148848.994, YC=626332.676



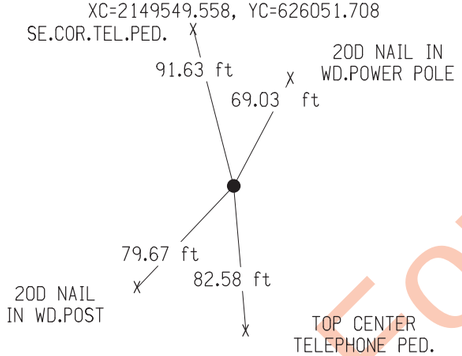
CP STA 51220+97.47,60.3LT

CP,SET IRON PIN 0.5' DEEP
CP NO. 366
XC=2149140.092, YC=626280.871



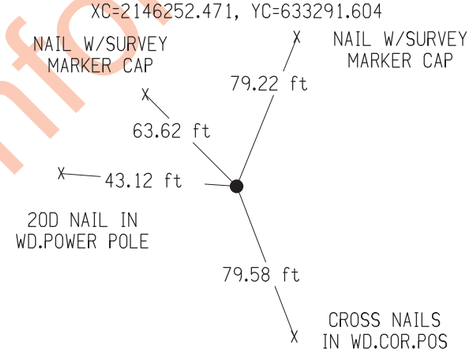
POT STA

POT,SET HINGE NAIL
POT NO. 207
XC=2149549.558, YC=626051.708



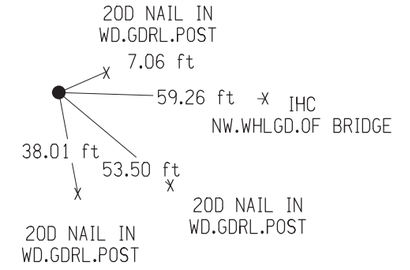
SCR STA 61257+89.762

SCR,FD.1/2"REBAR .7' DEEP
SCR NO. 215
XC=2146252.471, YC=633291.604



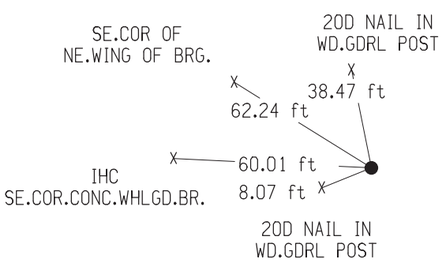
CP STA 61269+21.57,17.6LT

CP,SET IRON PIN 0.6' DEEP
CP NO. 346
XC=2147384.169, YC=633315.360



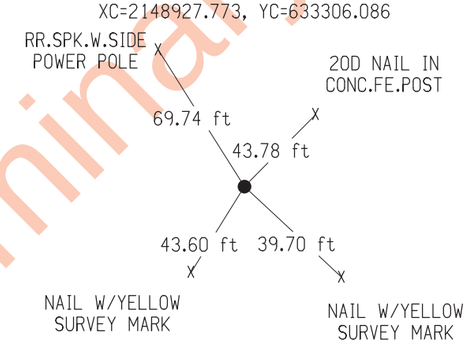
CP STA 61273+07.39,17.6RT

CP,SET IRON 0.7' DEEP
CP NO. 347
XC=2147770.169, YC=633282.244



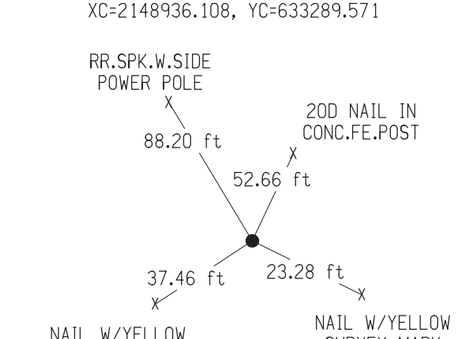
PI,SCR,STA 61284+65.103

SCR,FD.CONC.MONU.0.1'DEEP
SCR,PI, NO. 233
XC=2148927.773, YC=633306.086



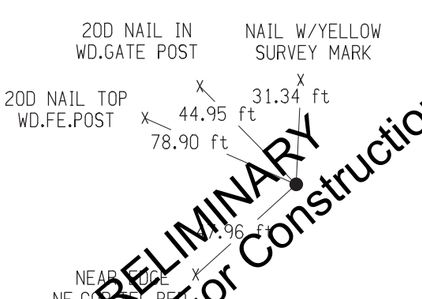
CP STA 61284+73.18,16.6RT

CP,SET IRON PIN 0.7' DEEP
CP NO. 348
XC=2148936.108, YC=633289.571



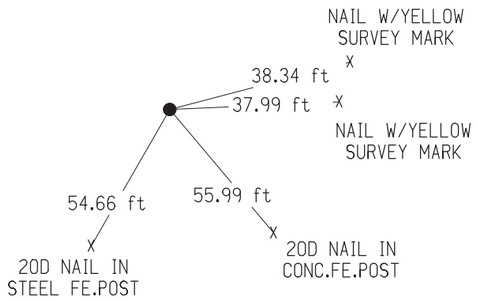
SCR,PI,STA 61311+27.232

SCR,FD.5/8"REBAR 0.6'DEEP
SCR,PI, NO. 234
XC=2151589.583, YC=633347.296



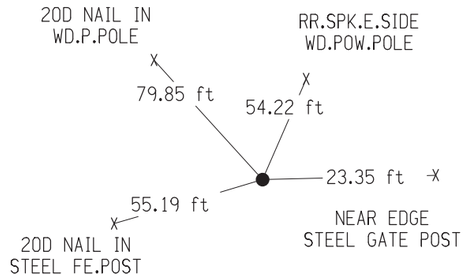
CP STA 71297+91.37,3.97LT

SCR FD.I.P.W/CAP STAMPED
#8165
XC=2148909.133, YC=634632.231



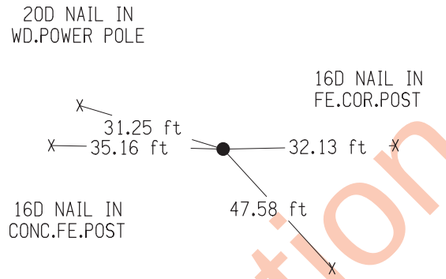
CP STA 71299+83.64,21.7RT

CP,SET IRON PIN 0.8' DEEP
CP NO. 349
XC=2148932.657, YC=634824.774



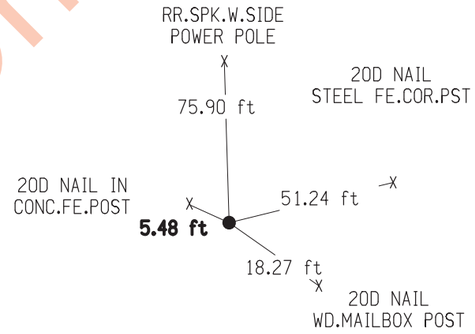
PI,SCR STA 71311+17.641

PI,SCR,FD.BRASS CAP CON.
MONU.
XC=2148890.691, YC=635958.341



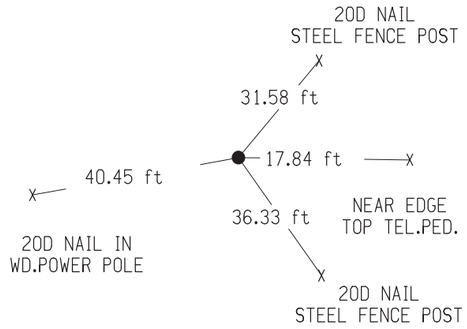
CP STA 71313+16.08,32.3LT

CP,SET IRON PIN 1.0'DEEP
CP NO. 350
XC=2148855.659, YC=636156.322



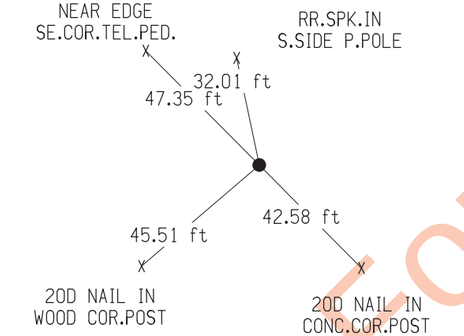
CP STA 71322+40.24,6.60RT

CP,SET IRON PIN 0.8'DEEP
CP NO. 351
XC=2148882.089, YC=637080.925



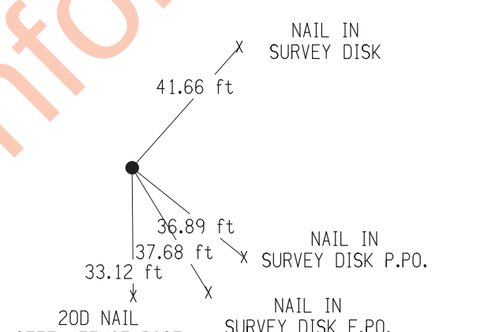
SCR,PI STA 71337+73.367

SCR,PI FD.1/2"REBAR.3DEEP
SCR,PI NO. 238
XC=2148854.737, YC=638613.824



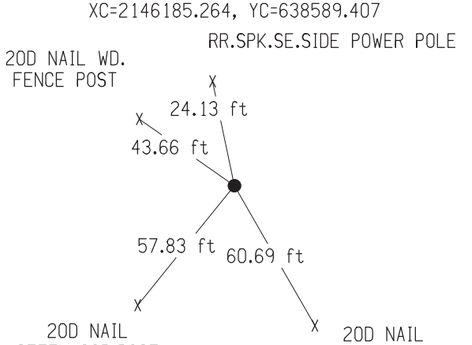
SCR,PI STA 81285+54.765

SCR,PI FD.BRASS DISK.9'DE
SCR,PI NO. 221
XC=2143502.302, YC=638571.775



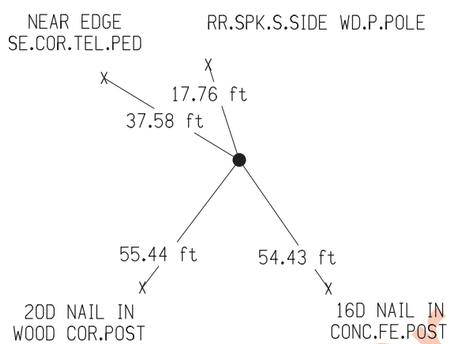
CP STA 81312+37.78,2.85LT

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
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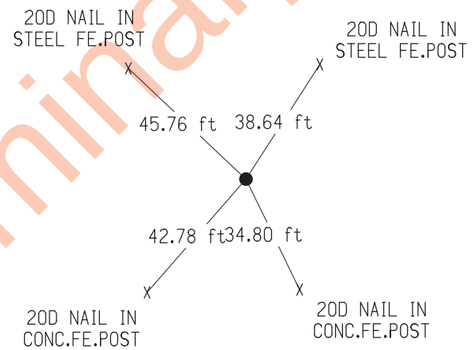

SCR STA. 91338+70.774

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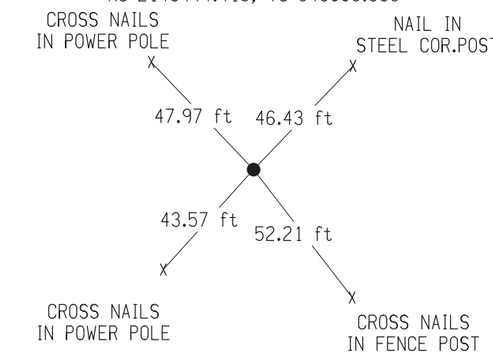
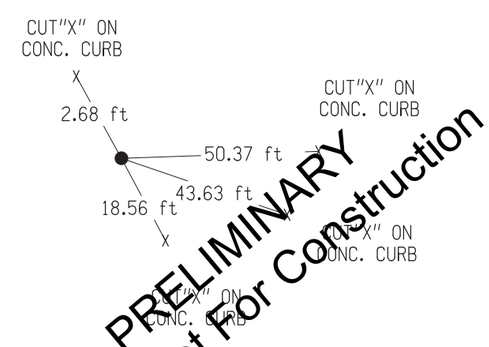
XC=2143444.415, YC=643885.336



GPS STA 91358+40.4,30.0RT

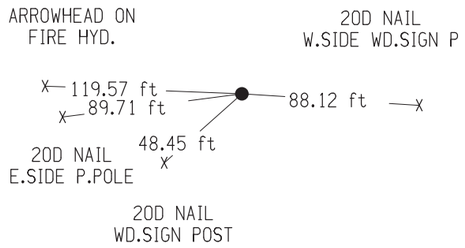
GPS,FD.REBAR 0.4' DEEP
GPS POINT G048
XC=2145414.040, YC=643875.420



FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER G.20

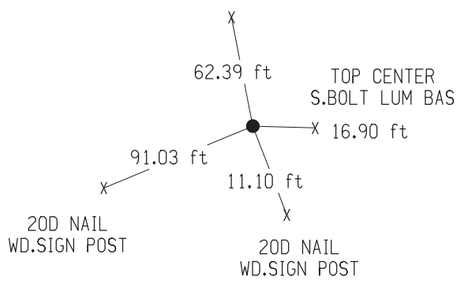
CP STA 91366+64.64,27.4RT

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
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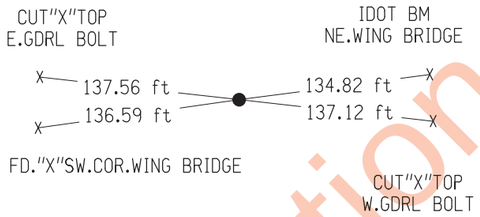

CP STA 91378+96.34,19.3RT

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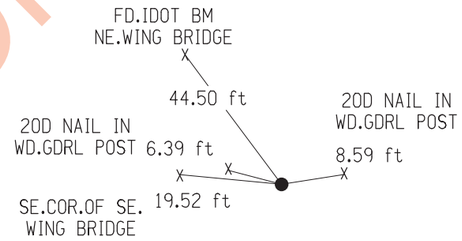

CP STA 91382+66.99,42.1LT

CP,SET IRON PIN 0.6'DEEP
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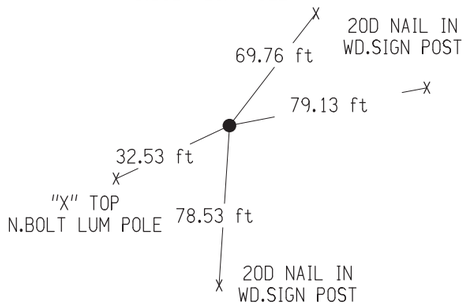
XC=2147840.000, YC=643966.070
"X" TOP
S.BOLT LUM POLE



CP STA 91390+81.48,29.9RT

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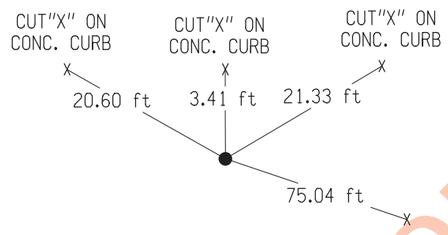

GPS STA 91402+23.8,28.0RT

GPS,FD.REBAR 0.3' DEEP
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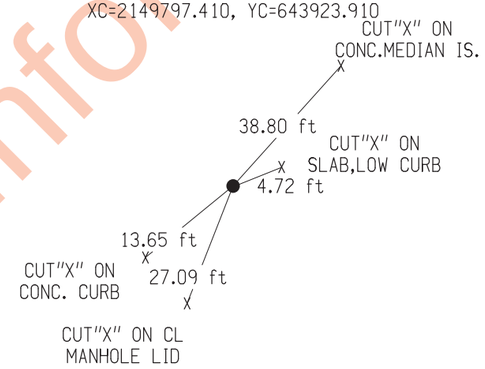

SCR STA 91445+18.268

SCR,FD.PK NAIL IN CONC.
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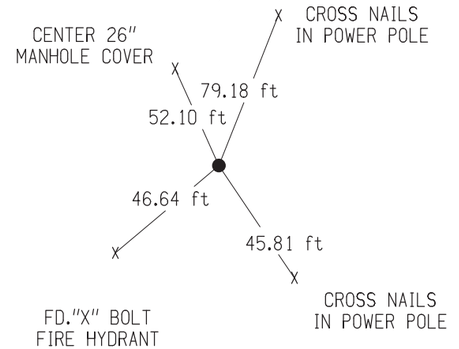


ALIGNMENT COORDINATES

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)
JASPER																			
30103		30608+78.35	621438.00	2146514.02															
30104		30617+23.62	622283.01	2146493.10															
30105								30623+71.07	622930.26	2146477.08	30624+24.20	622983.38	2146475.76	30624+77.23	623036.06	2146468.83			
30106								30627+19.53	623276.29	2146437.20	30629+56.25	623510.98	2146406.30	30631+92.54	623747.62	2146400.10			
ML080																			
ML0801		488+00.88	622563.99	2133198.79															
ML080_3								575+94.28	622430.99	2141991.19	579+28.07	622425.94	2142324.94	582+61.53	622446.80	2142658.08			
ML080_6								621+27.54	622688.31	2146516.54	625+84.74	622716.87	2146972.85	630+41.82	622727.21	2147429.93			
ML080_9								673+07.90	622823.70	2151694.93	676+17.64	622830.70	2152004.58	679+27.34	622829.34	2152314.32			
ML080_12								740+40.31	622802.38	2158427.23	749+37.94	622798.42	2159324.85	758+21.07	622520.14	2160178.25			
ML080_15								820+16.60	620599.40	2166068.53	839+10.29	620012.31	2167868.91	857+70.06	620035.67	2169762.46			
ML080_18								889+87.87	620075.36	2172980.02	895+41.60	620082.20	2173533.71	900+91.90	620194.93	2174075.85			
ML080_21								930+00.11	620787.02	2176923.14	936+13.32	620911.87	2177523.51	942+21.88	620906.83	2178136.70			
ML080_21								1054+10.24	620814.94	2189324.68	1066+45.49	620804.79	2190559.90	1078+43.53	620286.60	2191681.20			
ML08026		1155+97.03	617033.96	2198719.50															

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	
JASPER																
30105											6^04'58.66" (LT)	53.1338	106.1677	1000.0000	1.4106	
30106											5^59'59.99" (RT)	236.7185	473.0043	4516.8600	6.1987	
ML080																
ML080_3											4^26'53.8442" (LT)	333.7894	667.2435	8594.367	6.4794	
ML080_6											2^17'08.5313" (RT)	457.2013	914.2813	22918.312	4.5599	
ML080_9											1^32'54.9090" (RT)	309.7360	619.4343	22918.312	2.0929	
ML080_12											17^48'28.2471" (RT)	897.6299	1780.7621	5729.5780	69.8878	
ML080_15											18^46'02.1219" (LT)	1893.6870	3753.4512	11459.1560	155.4170	
ML080_18											11^02'25.3963" (LT)	553.7338	1104.0388	5729.5780	26.6955	
ML080_21											12^13'03.8853" (RT)	613.2127	1221.7746	5729.5780	32.7214	
ML080_24											24^19'57.7085" (RT)	1235.2566	2433.2697	5729.5780	131.6440	

108-25
10-21-14

511 TRAVEL RESTRICTIONS

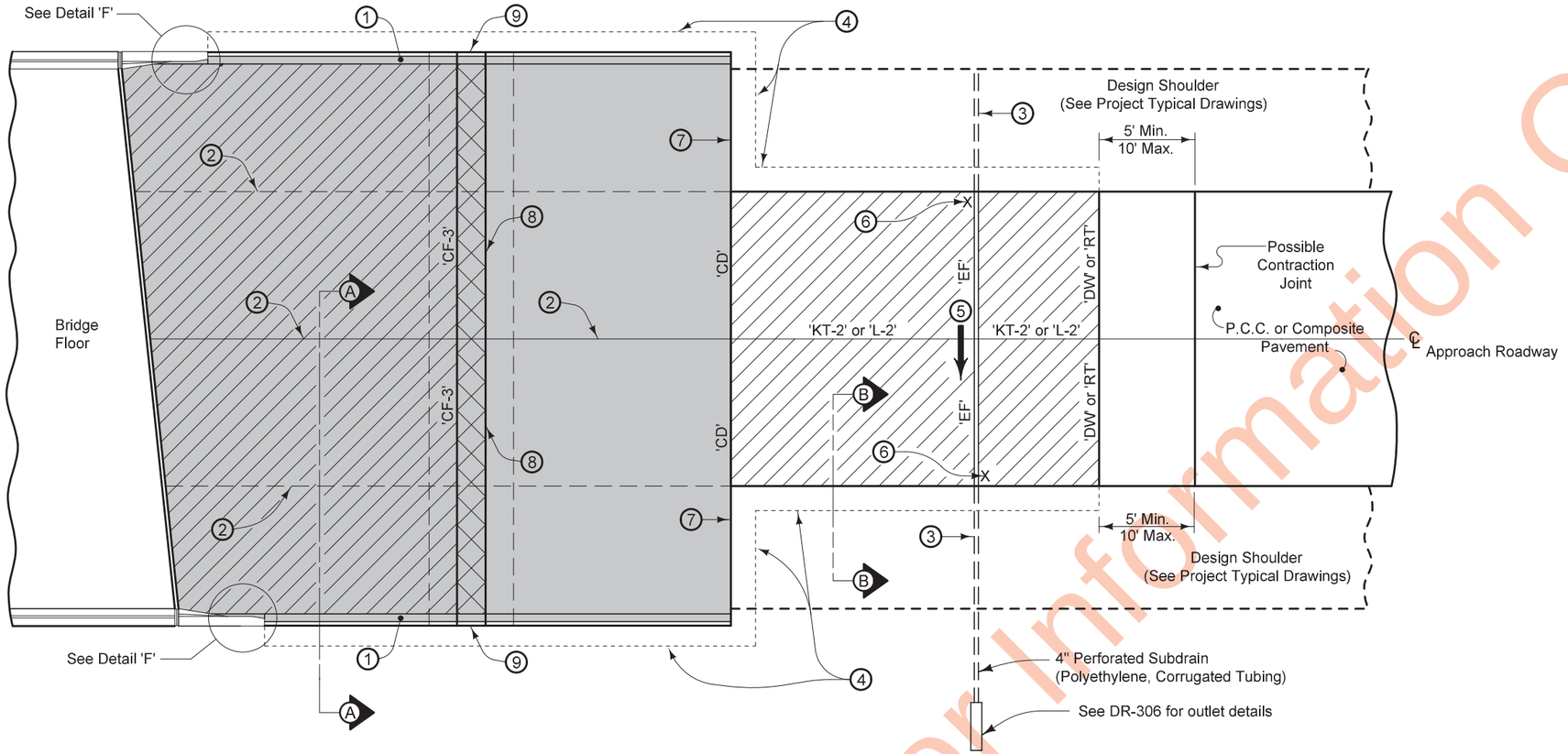
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			Refer to NHS-080-6(372)239--11-52 for Travel Restrictions.									

108-23A
08-01-08

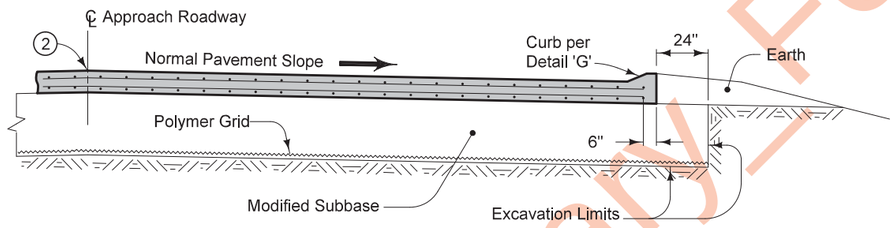
TRAFFIC CONTROL PLAN

Refer to NHS-080-6(372)239--11-52 for Traffic Control Plan

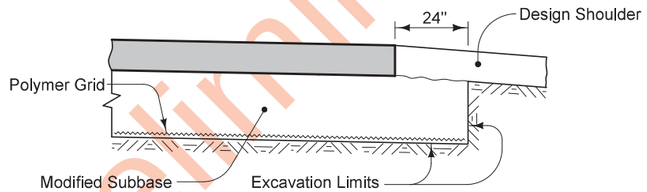
PRELIMINARY
Not For Construction



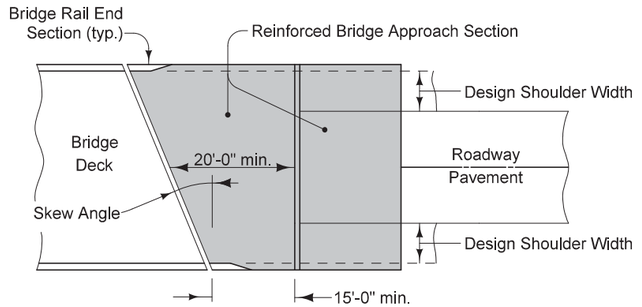
PLAN VIEW



SECTION A-A



SECTION B-B



APPROACH PAVEMENT LAYOUT AT A SKEW

Pay limits for contract item include the following areas:

- Double Reinforced Section
- Sleeper Beam Section
- Double Reinforced Section
- Non-Reinforced Section

For joint details, see PV-101.

For curb details, see Detail 'G'.

All transverse bars are #5.

Use epoxy coated bars for all reinforcement.

Quantities for both the 1'-9" top part of the sleeper slab and the 6'-3" portion under the approach pavement have been included in the double reinforced section quantities.

(1) Build 4 inch Sloped Curb to end of Reinforced Sections.

(2) Longitudinal Joint (PV-101):
Single Pour - Saw cut joint per Detail B .
Two Pours - Use 'KS-1' joint (Single Reinforced Section).
Use 'KS-2' joint (Double Reinforced Section).

(3) Extend 'CD' and 'EF' joints where PCC Shoulder.

(4) Polymer Grid and excavation limits of Modified Subbase 2 feet outside of pavement edge.

(5) Slope subdrain to drain.

(6) Place an "X" in the plastic concrete near the 'EF' joint at the outside edge of pavement.

(7) Place 'RD' Joint where PCC shoulder. Place 'B' joint otherwise.

(8) $\frac{1}{4}$ inch Preformed Joint Filler and seal top.

(9) See Detail 'C'.

Possible Contract Item:
Bridge Approach, BR-205

Possible Tabulation:
112-6

MODIFIED STANDARD ROAD PLAN

REVISION	
5	10-15-19

BR-205

SHEET 1 of 4

MODIFICATIONS: Second Reinforced Section Bridge

DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.1

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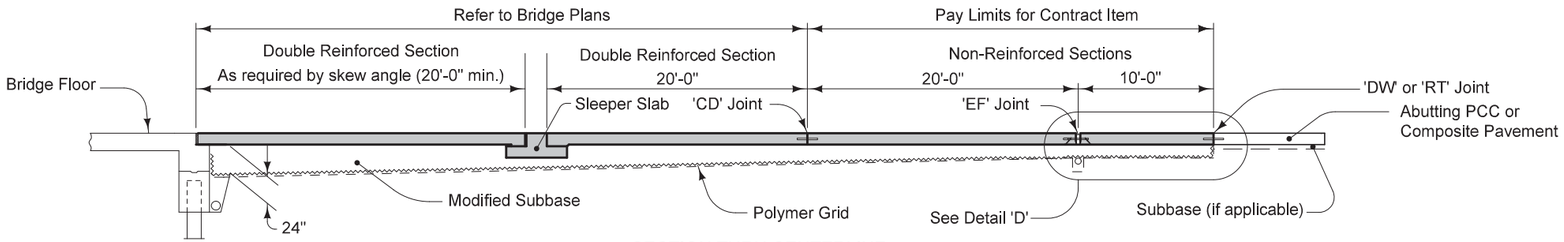
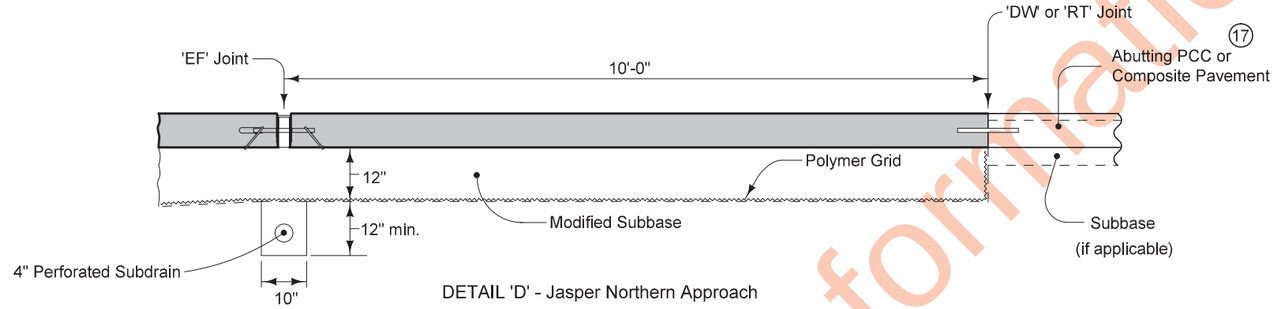
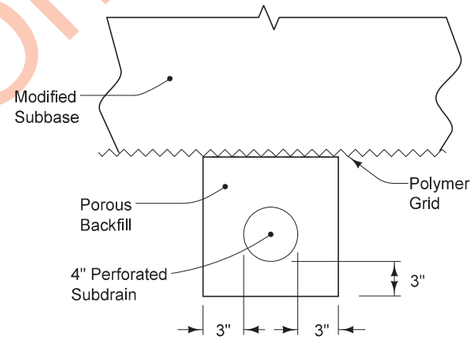


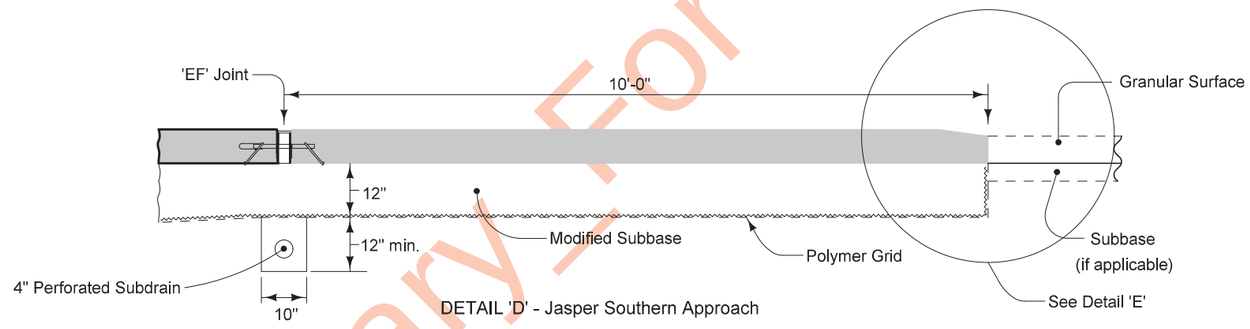
SECTION THRU CENTERLINE
(Abutting PCC or Composite Pavement)



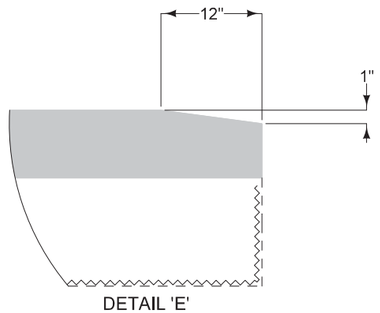
DETAIL 'D' - Jasper Northern Approach
(Doweled PCC Pavement)



4" SUBDRAIN LOCATION



DETAIL 'D' - Jasper Southern Approach
(Abutting Gravel Roadway)



DETAIL 'E'
(Pavement Bevel)

(17) If abutting pavement (PCC or HMA) is not in place, refer to BR-213.

MODIFIED
STANDARD ROAD PLAN

REVISION	
5	10-15-19

BR-205
SHEET 3 of 4

MODIFICATIONS: Second Reinforced Section on Bridge.

DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.2

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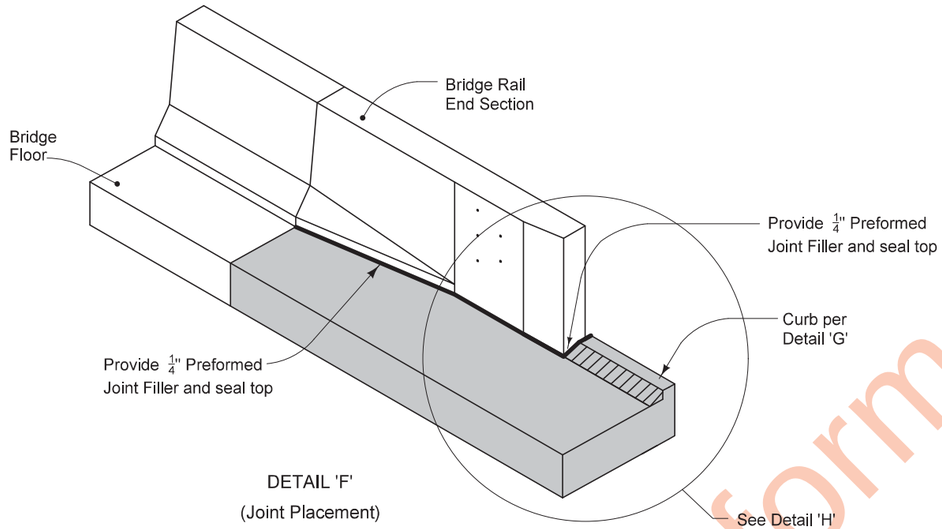
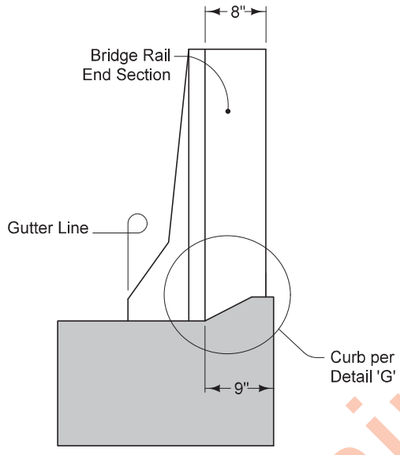


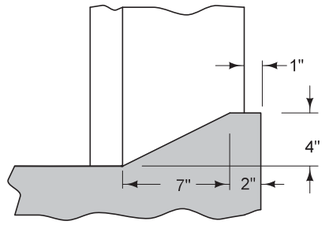
DETAIL 'F'

(Joint Placement)



DETAIL 'H'

(Back of Curb Placement)



DETAIL 'G'

MODIFIED

STANDARD ROAD PLAN

REVISION	
5	10-15-19

BR-205

SHEET 4 of 4

MODIFICATIONS: Second Reinforced Section of Bridge.

DOUBLE REINFORCED 12" APPROACH (SLAB BRIDGE)

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.3

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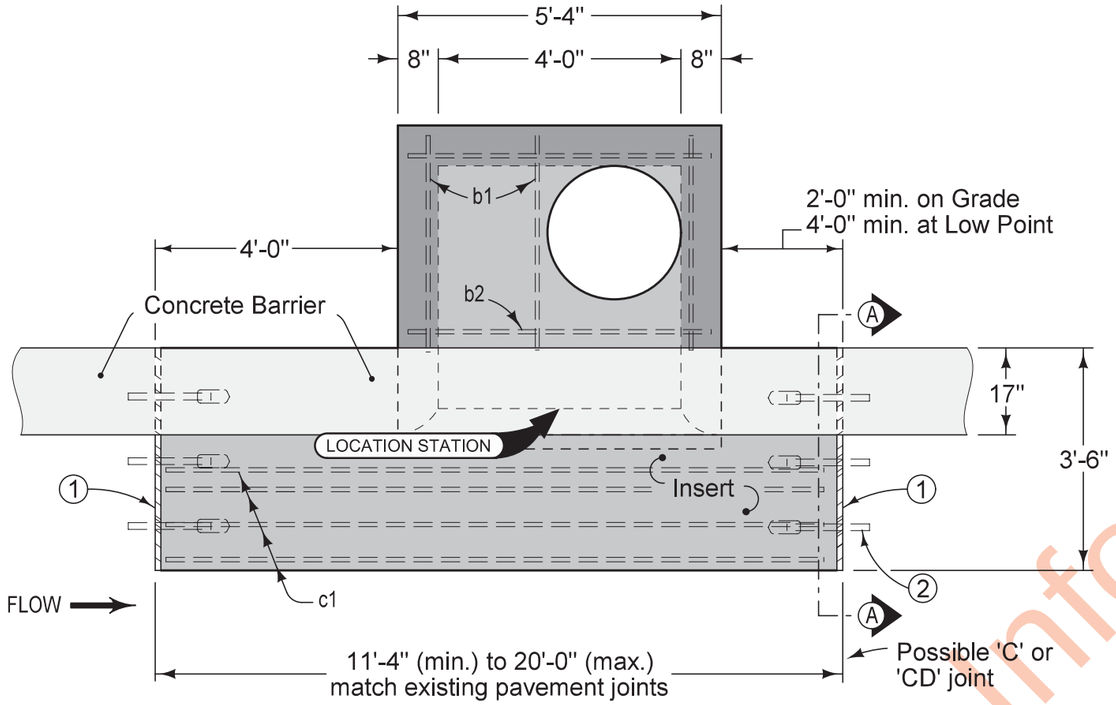
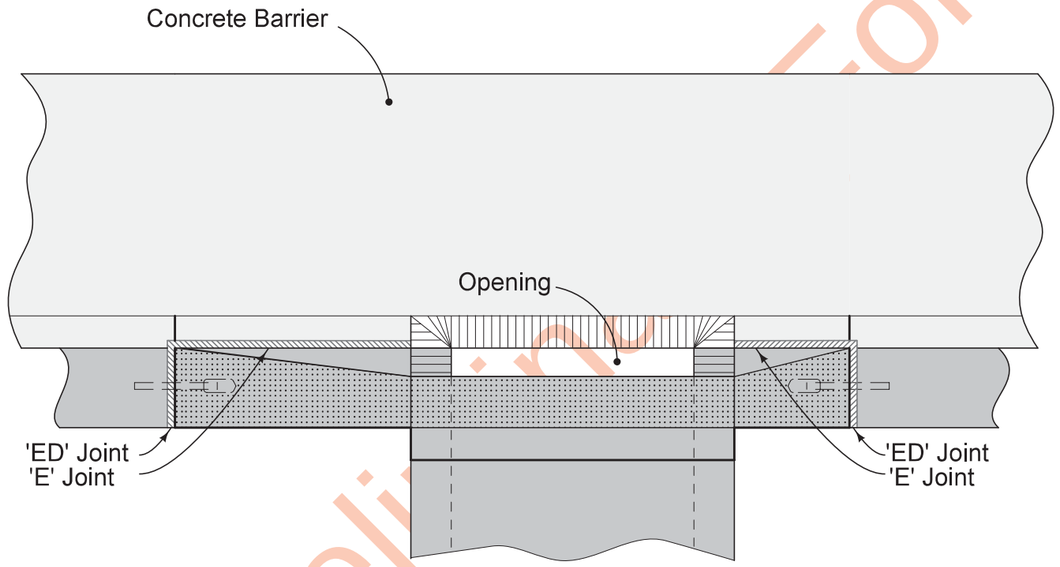


PLAN



ELEVATION

(1) 'ED' joint. Refer to PV-101 for details.

(2) (6) $1\frac{1}{4}$ inch smooth dowel bars in insert and 6 dowel bars in concrete barrier per installation.

Possible Contract Item:

Intake, SW-546

MODIFIED STANDARD ROAD PLAN

REVISION	
3	04-17-18

SW-546

SHEET 1 of 3

MODIFICATIONS: Modified SW-546 for inlet and well, with SW-539 for letdown.

SINGLE OPEN-THROAT BARRIER INTAKE

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.4

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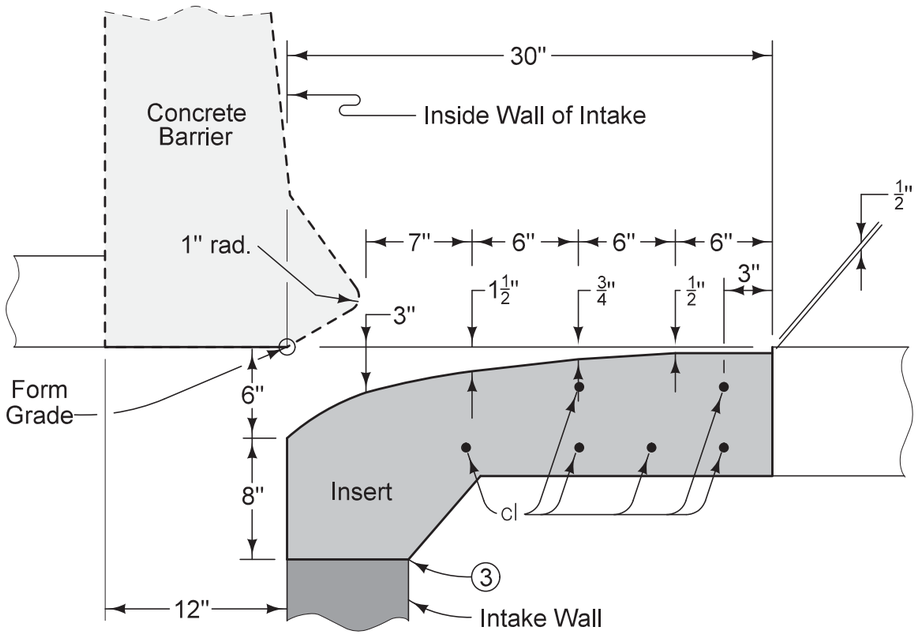

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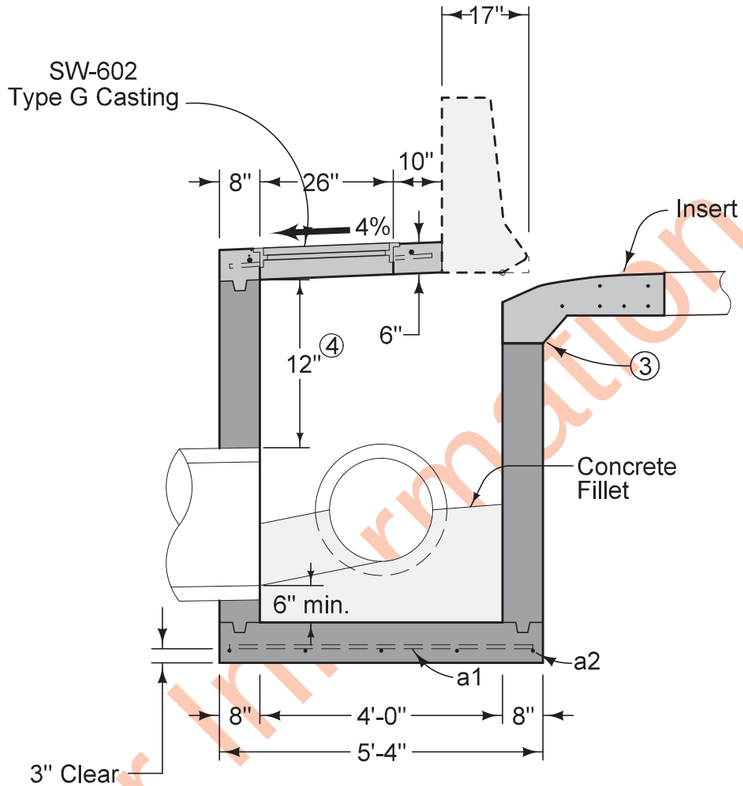


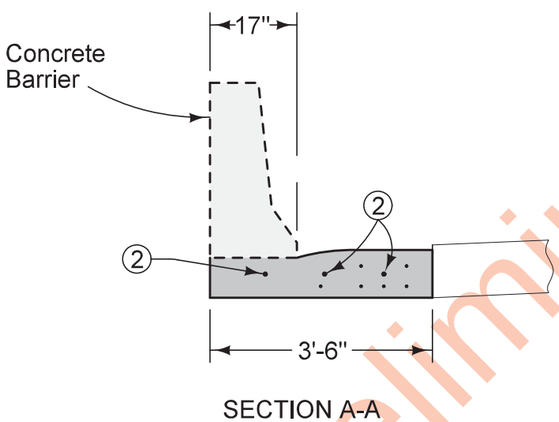
TYPICAL SECTION

② (6) $1\frac{1}{4}$ inch smooth dowel bars in insert and 6 dowel bars in concrete barrier per installation.

③ Trowel smooth and place subgrade paper to prevent bond.

④ 12 inch minimum wall height above all pipes.

MAXIMUM PIPE DIAMETERS	
Precast Structure	Cast-in-place Structure
30"	36"



SECTION A-A

REINFORCING BAR LIST					
MARK	LOCATION	NO.	LENGTH	WEIGHT	SPACING
a1	Base	5	5'-0"	16.7	15"
a2	Base	5	5'-0"	16.7	15"
b1	Top	3	3'-4"	6.7	See Detail
b2	Top	2	5'-0"	6.7	See Detail
c1	Insert	6	11'-1"	44.4	See Detail
c1	Insert	6	13'-1"	52.4	See Detail
			Total	91 lbs. or 99 lbs.	

MODIFIED

STANDARD ROAD PLAN

REVISION	
3	04-17-18

SW-546

SHEET 2 of 3

MODIFICATIONS: Modified SW-546 for inlet and well, with SW-599 for letdown

SINGLE OPEN-THROAT BARRIER INTAKE

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.5

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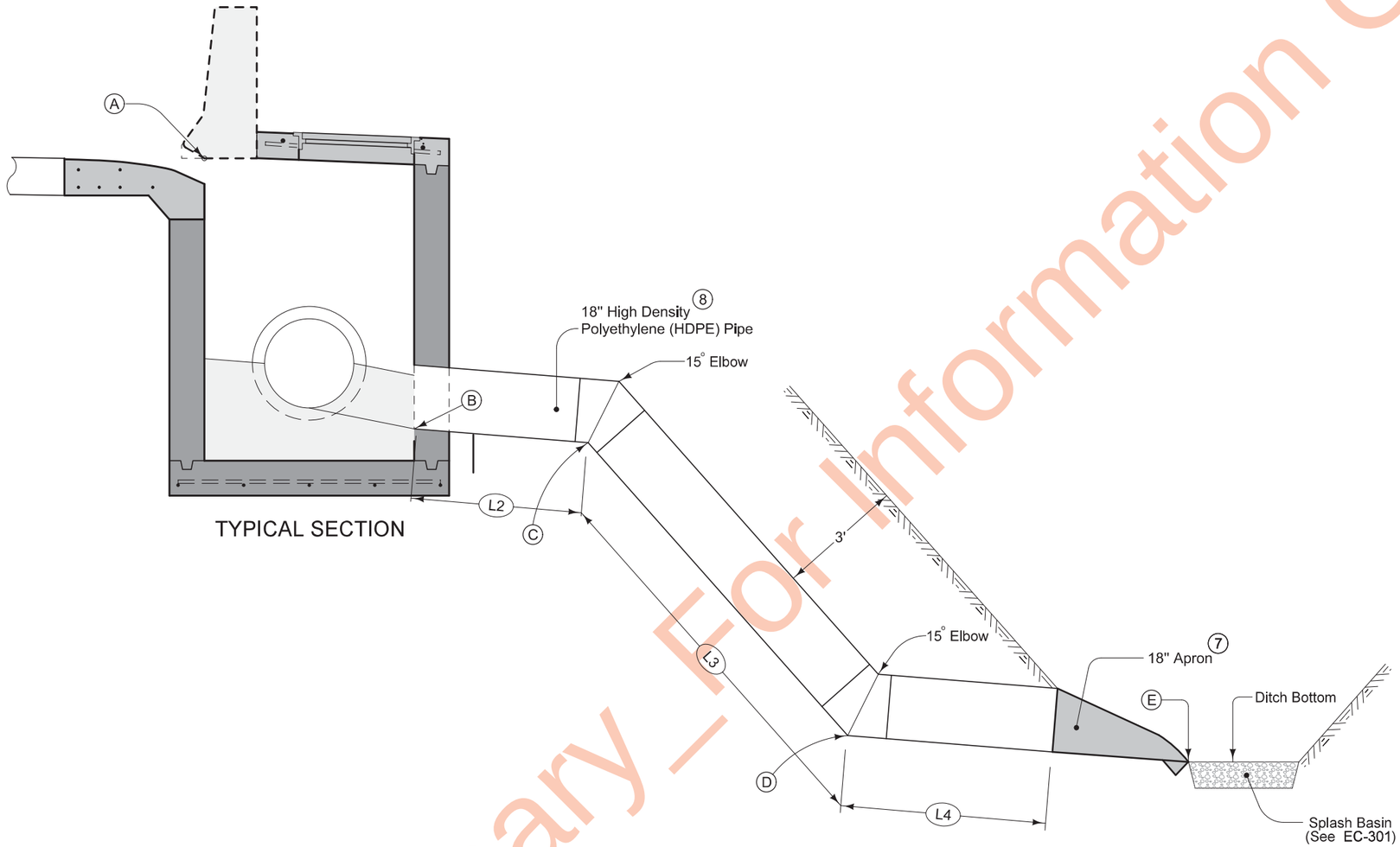

TYPICAL SECTION

Flow line (A) elevation is at Form Grade Elevation

Flow line (B) elevation is 3.50 feet below flow line (A).

Flow line (E) elevation is 0 - 0.5 feet above ditch grade.

Refer to project plans for actual flow line elevations of (A), (B), (C), (D), (E), and dimensions L2, L3, and L4.

(7) Refer to DR-203. Apron is incidental to Intake for Bridge End Drain and will not be paid for separately.

(8) Connect to basin according to Section 2435 of the Standard Specifications. High Density Polyethylene (HDPE) Pipe is incidental to Intake for Bridge End Drain and will not be paid for separately.

MODIFIED

STANDARD ROAD PLAN

REVISION	
1	10-15-19

SW-539

SHEET 3 of 3

MODIFICATIONS: Modified SW-546 for inlet and well, with SW-539 for letdown.

INTAKE FOR BRIDGE END DRAIN (WITH LETDOWN)

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.6

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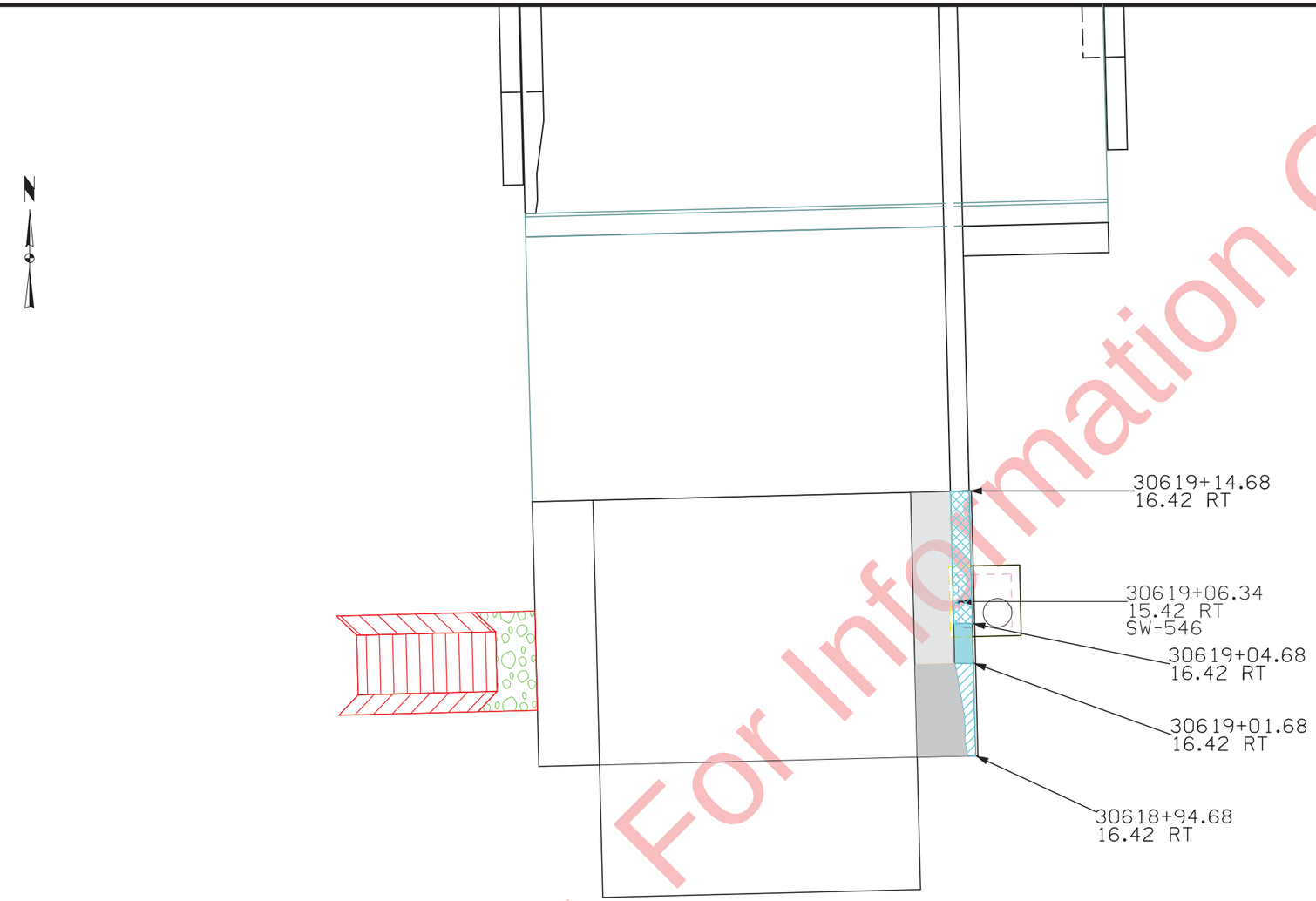
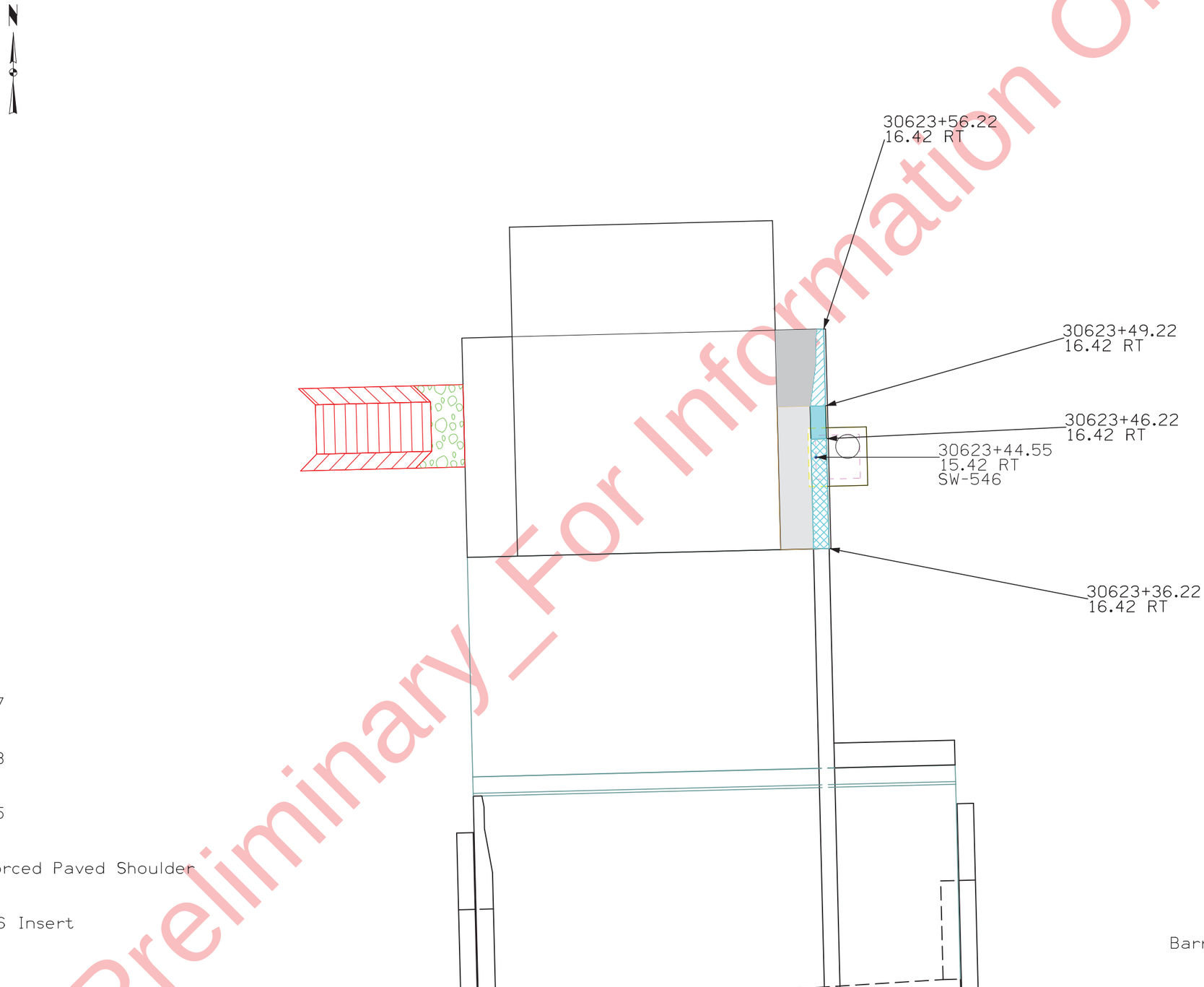


Barrier Legend:

- BA-107
- BA-103
- BA-105
- Reinforced Paved Shoulder
- SW-546 Insert

Barrier Details - South Approach
Jasper Ave. over I-80



Barrier Legend:

- BA-107
- BA-103
- BA-105
- Reinforced Paved Shoulder
- SW-546 Insert

Barrier Details - North Approach
Jasper Ave. over I-80

FILE NO. 30864	ENGLISH	DESIGN TEAM Holst \ McNamara	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(356)239--11-52	SHEET NUMBER U.8

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