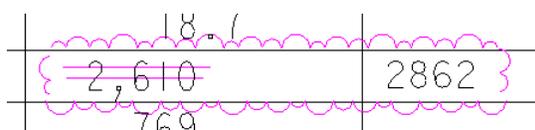


Creating Plan Revisions – O.B.S. Version

(Prior to 12-1-2015 the RA sheet was labeled 1A)

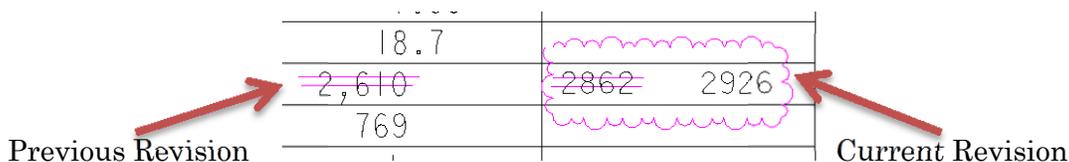
Plan revisions may be needed to document changes, including a different construction method, a plan alteration, or a plan correction. When creating revisions the incorrect text or details are **NEVER DELETED**. But rather crossed-through (strike-over) with 2 lines and then the **NEW INFORMATION IS ADDED** using the Bridge Office “brgRev.....” levels. The strike-over and new information is encircled with a cloud using the “brgRevAnnotation” level. Revision dates and a summarized Reason for the change are given on each detail sheet affected by the revision.



REVISED 7-30-2015;
REINFORCING STEEL QUANTITY CHANGED.

Place note in lower right corner of all revised and added sheets.

If a sheet is revised and later revised again, the clouds are to be removed from the first revision corrections leaving the “strike-over”. The second, or latest, revision changes are to be the only items that are both “strike-over and clouded”.



The addition of the REVISION design sheet, **RA**, is to be added to the plan set after the Title Sheet. On sheet **RA**, a more extensive explanation and description of the plan revision should be given. The model name for the Revision Sheet (**SHEET NUMBER RA**) is the same model name as the Title Sheet with an ‘**RA**’ added, CCDDDDS000RA (i.e. 420399S000**RA**), indicating the revision sheet. This sheet (**RA**) will follow the Title Sheet model. If more than the single **RA** Revision Sheet is needed the additional Revision Sheet/s should be named **RB**, **RC**, etc. for the Sheet Number. The Model names for additional Revision Sheets should be named CCDDDDS000**RB** for the second Revision Sheet and CCDDDDS000**RC** for the third Revision Sheet, etc.

Example of Model name for Plan Revision Sheet RA.

Models					
Type	2D/3D	Name	Description	Cell T	
	<input type="checkbox"/>	CCDDDDbdr	Border English Info		
	<input type="checkbox"/>	CCDDDDS000	Title English sheet		
	<input type="checkbox"/>	CCDDDDS000RA	Revision English Sheet		
	<input type="checkbox"/>	CCDDDDS001	Detail Sheet Seed		
	<input type="checkbox"/>	CCDDDDS002	Detail Sheet Seed		
	<input type="checkbox"/>	CCDDDDSSSS	Detail Sheet Seed		

Example of Plan Revision Sheet RA.

LISTING OF PROJECT REVISIONS					
DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
5-17-2015	RA	REVISION SHEET ADDED.	10-21-2015	82	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.
5-17-2015	2	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.	10-21-2015	84	THIS SHEET VOID.
5-17-2015	4	THIS SHEET VOID.	10-21-2015	84A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	4A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.	10-21-2015	86	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.
5-17-2015	6	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.	10-21-2015	94	THIS SHEET VOID.
5-17-2015	14	THIS SHEET VOID.	10-21-2015	94A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	14A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.	10-21-2015	102	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.
5-17-2015	22	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.	10-21-2015	104	THIS SHEET VOID.
5-17-2015	24	THIS SHEET VOID.	10-21-2015	104A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	24A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.	10-21-2015	106	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.
5-17-2015	36	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.	10-21-2015	114	THIS SHEET VOID.
5-17-2015	44	THIS SHEET VOID.	10-21-2015	114A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	44A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			
		<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 1ST REVISION </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; width: 150px;"> <p style="text-align: center;">STRUCTURAL DESIGN</p> <p style="font-size: 8px;">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.</p> <p style="text-align: right;">Signature: <u>John P. Sample</u> Date: <u>5-17-2015</u></p> <p style="font-size: 8px;">My license renewal date is December 31, _____</p> <p style="font-size: 8px;">Pages or sheets covered by this seal: <u>RA, 2, 4, 4A, 6, 14, 14A, 22, 24, 24A, 36, 44, 44A</u></p> </div>			
10-21-2015	2	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.			
10-21-2015	4	THIS SHEET VOID.			
10-21-2015	4A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			
10-21-2015	6	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.			
10-21-2015	14	THIS SHEET VOID.			
10-21-2015	14A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			
10-21-2015	14A	REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			
10-21-2015	14A	REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			
10-21-2015	52	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.			
10-21-2015	54	THIS SHEET VOID.			
10-21-2015	54A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			
10-21-2015	56	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE WISE WALL.			
					<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 2ND REVISION </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; width: 150px;"> <p style="text-align: center;">STRUCTURAL DESIGN</p> <p style="font-size: 8px;">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.</p> <p style="text-align: right;">Signature: <u>John P. Sample</u> Date: <u>10-21-2015</u></p> <p style="font-size: 8px;">My license renewal date is December 31, _____</p> <p style="font-size: 8px;">Pages or sheets covered by this seal: <u>RA, 2, 4, 4A, 6, 14, 14A, 22, 24, 24A, 36, 44, 44A, 102, 104, 104A, 106, 114, 114A</u></p> </div>
					<div style="border: 1px solid black; padding: 5px; display: inline-block;"> EXAMPLE OF MULTIPLE REVISIONS ON ONE REVISION SHEET. </div>
					<div style="border: 1px solid black; padding: 5px; display: inline-block; text-align: center;"> <p>? COUNTY</p> <p>DESIGN NO. 1010, 2010, 3010</p> <p>REVISION SHEET</p> <p style="font-size: 8px;">IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION</p> </div>
DESIGN TEAM		FILE NO. 7	7 COUNTY	PROJECT NUMBER 7	SHEET NUMBER RA

REVISED: OCTOBER 21, 2015

For each revision an Engineering Seal is to be added with the Revision Date on the signature line and a listing of the revised design sheets is to be listed in MicroStation Normal Text (brgTextNormal level). The Title Sheet, sheet number, does not have to be shown in the listing of revised sheets (unless a change is made to the title sheet). Sheet (RA) will need the Engineer's seal with the revision date and the listing of the revised sheets and any new added sheets. If a second revision occurs with a later revision date, another Engineer's seal is to be added to the revision sheet and completed with the new revision date and the listing of the revised sheets.

STRUCTURAL 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.

Date: 10-21-2015

Signature: John P. Sample Date: _____

Printed or Typed Name: John P. Sample

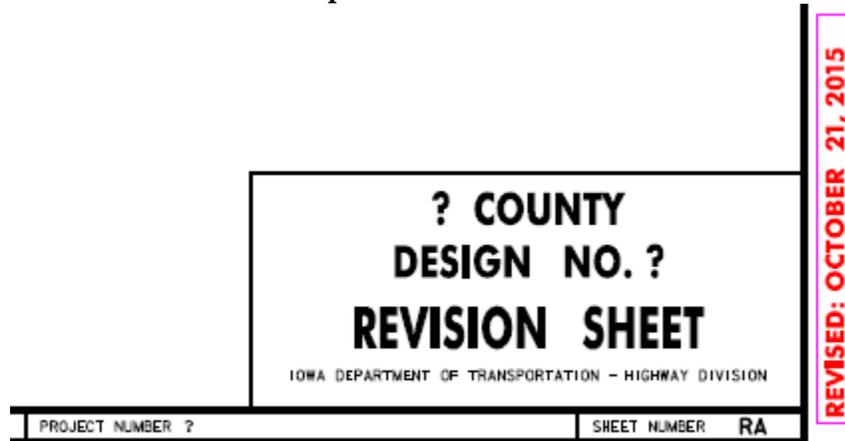
My license renewal date is December 31, _____

Pages or sheets covered by this seal: _____

The Revision Sheet (RA) title lists the design number being revised. If multiple designs are in this project and a second revision occurs involving other designs, these revised design numbers need to be added to the title block to indicate all the design numbers involved in the revisions. If a second revision occurs, the new revision DATE, SHEET NUMBERS and DESCRIPTION OF REVISIONS will indicate more than one revision has occurred and separate the previous revision from the current revision.

The cell named **REVISED**, which shows the revision date, needs to be attached in the lower right hand corner of each revised sheet including the revision sheet **RA** in the plan. If a second revision occurs with a different revision date, the date shown on the **REVISED** cell shown below is to be changed. The strike-over is not to be used on the **REVISED** cell. The cell named **REVISED** is not used on the Title Sheet.

Example of REVISED cell.



The revision levels used for V8i project files are provided through the level library filter called “Bridge Revisions”. The filter names and how they are created are listed in the table below.

Filter	Name
Bridge [BridgeLevels]	brg*
Bridge Final [BridgeLevels]	brg*-brgPre*-brgRev*-brgSite*-brgBlo*,brgPre*Exist*
Bridge Final Shortlist [BridgeLevels]	brgText*,brgDim*,brgTable*,brgConcrete*,brgRebarBlack,brgRebarEpoxy,brgStructuralSteel*
Bridge Prelim [BridgeLevels]	brgPre*,brgText*,brgDim*,brgTable*,brgGran*,brgFlow*,dsnSho*, dsnEdge*, dsnCellsDikes
Bridge PrelimFinal [BridgeLevels]	brg*-brgRev*-brgSite*-brgBlo*,dsnSho*,dsnEdge*,dsnCellsDikes
Bridge Revisions [BridgeLevels]	brgRev*
Bridge Site [BridgeLevels]	brgSite*
Construction [ConstructionLevels]	con*
Design [DesignLevels]	dsn*
District Survey [DistrSurvLevels]	dis*
EngOpTech [EngOpTechLevels]	eot*
Highway Division (1-63) [IDOTStyles]	Level*
Ole Hearing [OLEHearingLevels]	oleHear*
Photo [DesignLevels]	pho*
ROW Condemnation [ROWCondemnL...]	rowcond*
ROW Design [ROWDesignLevels]	rowdsn*
Soils [DesignLevels]	sol*
Survey [SurveyLevels]	sur*
Traffic Engineering [TrafEngLevels]	trf*
Traffic Techs [TrafficTechLevels]	tt*
Used Levels [DesignLevels]	
Wetlands [WetlandsLevels]	wet*

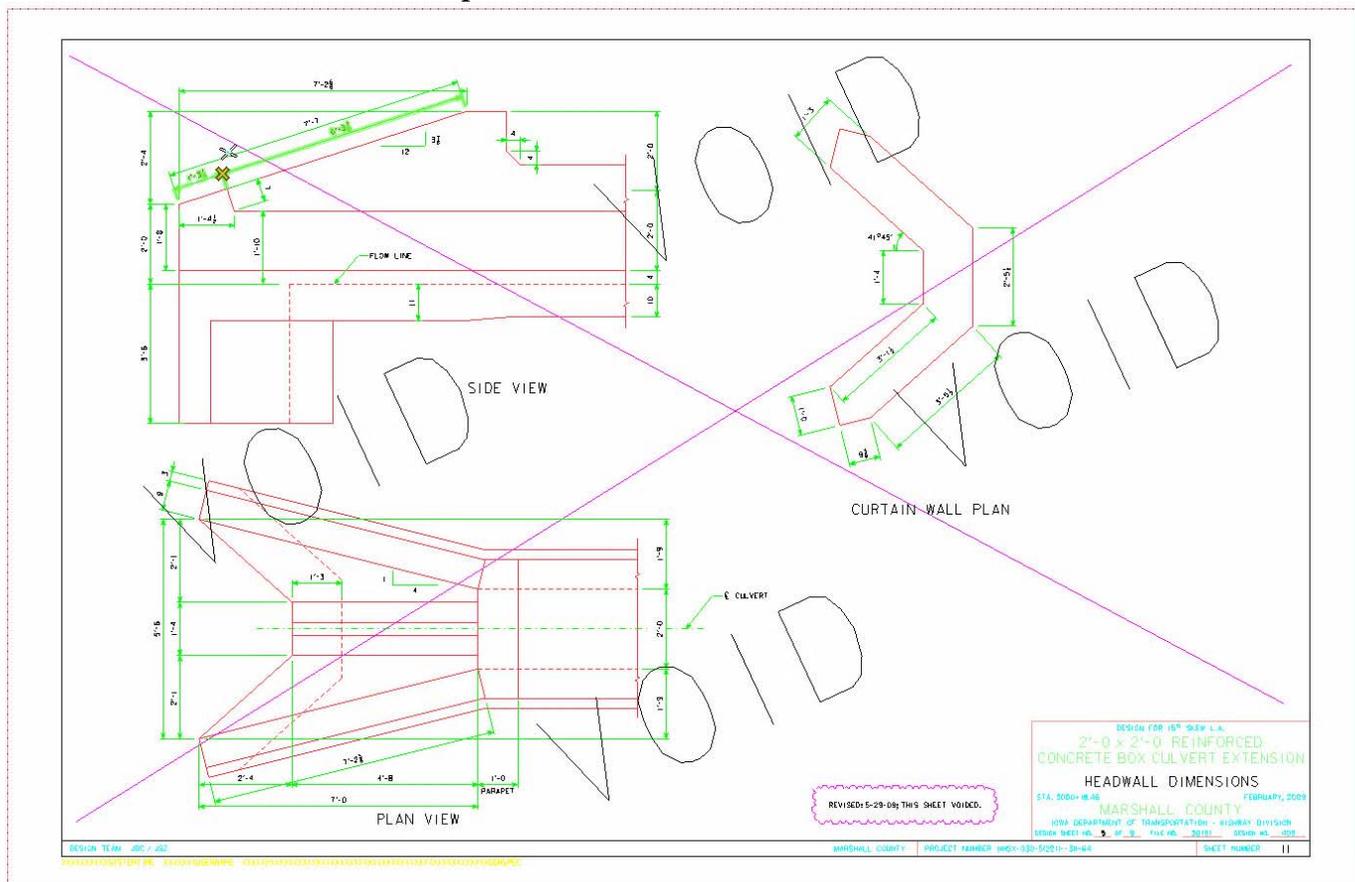
For revised sheets requiring a new additional sheet/s added to the plan, an 'A' is to be appended to the Design Sheet Number and to the plan Sheet Number. For revised sheets requiring a new detail sheet added to replace the original (voided) plan sheet, use the voided model name with an 'A' appended to the model name (i.e. 420399S005A). This new added sheet is to follow the voided sheet in the set of plans. If more than one (1) new additional plan sheet is needed, the other new additional sheet/s would follow the new 'A' sheet and would be named '420399S005A1', '420399S005A2', etc. This will locate any new added design sheets in the correct model order in MicroStation.

If several new sheets are added, but are scattered throughout the plan, use the voided model names for each new sheet and add an 'A' to each new Model sheet that may be added. The normal (non-revision) levels are to be used on all new additional, or replacement sheets, that are added as part of a plan revision. But the 'brgRevAnnotation' and 'brgRevTextNormal' levels are to be used for the clouded note on all sheets.

Example of clouded note.



Example of Void Plan Revision sheet.



The word "VOID" and the "X" are placed using the proper Bridge Office revision levels.

If a later revision occurs and the 'A' sheets that were done with the previous revision are voided, then the replacement sheet numbers for the Design Sheet Number and plan Sheet Numbers would be **A1a**, **A2a** (Model 420399S005**A1a**, 420399S005**A2a**) etc. Capitalizing and lower case letters are to be adhered to when renaming revision sheets.

The revision levels for the existing sheets that are to be revised are shown below through a view of Level Manager of the Bridge Revisions filter. The colors, style and weight of the levels are provided. Note the revision level '**brgRevAnnotation**' is to be used for strike-over and clouds, and '**brgRevTextNormal**' is to be used for the revision notes within the clouds on the revised sheets. All revision details are to use the revision levels for the appropriate material, dimension lines and text.

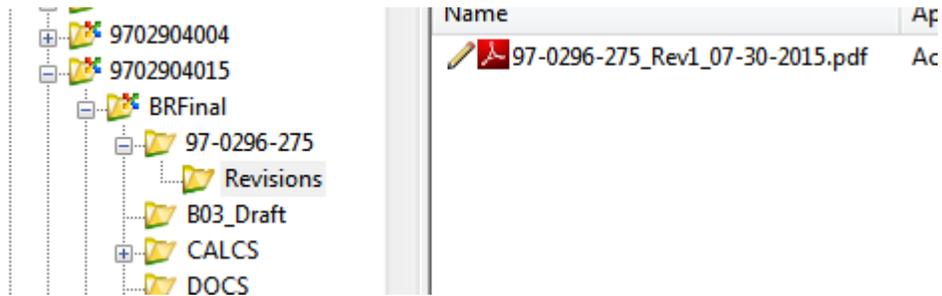
Plan Revisions Level Filter

Name	Description	Color	Style	Weight
brgRev*				
brgRevAluminum [Bridge]	Aluminum for Revisions	210	0	4
brgRevAnnotation [Bridge]	Clouds and Strikethrough for Revisions	5	0	5
brgRevBentoniteSlurry [Bridge]	Bentonite Slurry for Revisions	213	0	4
brgRevConcrete [Bridge]	Concrete for Revisions	3	0	8
brgRevConcreteRustication [Bridge]	Aesthetic Rustication for Concrete for Revisions	3	0	1
brgRevDimensionLines [Bridge]	Dimension Lines for Revisions	182	0	1
brgRevDirtRock [Bridge]	Dirt, Rock, Soil Backfill for Revisions	28	0	4
brgRevFlowableMortar [Bridge]	Flowable mortar, Grout for Revisions	213	0	4
brgRevGranularMaterial [Bridge]	All Granular Materials for Revisions	188	0	4
brgRevJointMaterial [Bridge]	Joint Material for Revisions	31	0	3
brgRevNeoprene [Bridge]	Bearings, Drain Curtains, Drain Troughs for Revisions	79	0	3
brgRevPostTensionedBars [Bridge]	Post Tensioned Bars for Revisions	200	0	3
brgRevPrestressedStrands [Bridge]	Prestressed Strands for Revisions	209	0	3
brgRevPVC [Bridge]	PVC for Revisions	73	0	3
brgRevRebarBlack [Bridge]	Black Reinforcing Steel for Revisions	4	0	3
brgRevRebarEpoxy [Bridge]	Epoxy Reinforcing Steel for Revisions	18	0	3
brgRevRemovals [Bridge]	Removals for Revisions	228	0	1
brgRevStainless [Bridge]	Stainless Reinforcing Steel, Stainless Structural Steel for Revisions	41	0	3
brgRevStructuralSteel [Bridge]	Structural Steel for Revisions	57	0	4
brgRevStructuralSteelWeathered [Bridge]	Weathered Structural Steel for Revisions	217	0	4
brgRevTemporaryStructures [Bridge]	Falsework, Shoring, Temporary Structures excluding Detour Bridges for Revisions	15	0	3
brgRevTextHeader [Bridge]	Header Text for Revisions	162	0	8
brgRevTextNormal [Bridge]	Normal Text for Revisions	7	0	3
brgRevTimbers [Bridge]	Timbers for Revisions	6	0	4
brgRevUtility [Bridge]	Conduit, Junction Box, Lights, Brackets for Revisions	65	0	3
brgRevWireMesh [Bridge]	Wire Mesh, Welded Wire for Revisions	71	0	3

Note: A set of only the revised sheets should be made into a multipage PDF file with the Engineer’s signature. Include the title sheet if there is one. Use the contract ID format, County-Route, federal control Section-Paren (**CC-RRRS-PPP_Rev_date MM-DD-YYYY**).pdf. Do not use the # sign to list the Revision number, use Rev1, Rev2, etc.

Example: IMX-35-3(167)129- -02-77 would be 77-0353-167_Rev1_05-12-2014.
(See the “Specifications for Electronic Plan Submittals to the Iowa Department of Transportation” document for explanation of the naming convention at:
http://www.iowadot.gov/contracts/electronic_plan_specs.pdf).

Store the revision PDF file in the contract ID sub-folder (CC-RRRS-PPP ex. 77-0353-167) in the Projects Directory.



BRIDGE REPLACEMENT - STEEL GIRDER
 POTTAWATTAMIE COUNTY
 DESIGN NO. 314/414

LETTING DATE
 APRIL 15, 2014

IM-NHS-029-3(111)48--03-78

LEGEND

INTERSTATE ROUTE	
FREEWAY OR EXPRESSWAY ROUTE	
U.S. NUMBERED ROUTE	
STATE NUMBERED ROUTE	
COUNTY NUMBERED ROUTE	
LOCAL ROAD OR CITY STREET	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL DE SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-8IN, R-30W



PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

POTTAWATTAMIE COUNTY

**BRIDGE REPLACEMENT - STEEL GIRDER
I-29 SOUTHBOUND OVER MOSQUITO CREEK
AND RELOCATED BNSF/CBEC R.R.
IN THE CITY OF COUNCIL BLUFFS**

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD BRIDGE PLANS

STANDARD	ISSUED	REVISED

EXAMPLE OF ORIGINAL PLAN

REVISIONS

TOTAL SHEETS
217

PROJECT NUMBER IM-NHS-029-3(111)48--03-78
R.O.W. PROJECT NUMBER
PROJECT IDENTIFICATION NUMBER 04-78-029-010-03

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET - DESIGN 314
2-138	DESIGN 314
139	ESTIMATE SHEET - DESIGN 414
139-176	DESIGN 414
SPS.1-SPS.8	SOIL PROFILE SHEET
C.1	ESTIMATE SHEET FOR ROADWAY
A.1 - U.6	ROADWAY SHEETS

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET C.1

DESIGN DATA URBAN

REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION



LOCATION MAP

PART OF CITY OF COUNCIL BLUFFS

PROJECT DIRECTORY NAME: 7802901004

DESIGN NO. 314/414

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS AND FALSEWORK DRAWINGS WILL BE CHECKED BY:

ELECTRONIC SUBMITTALS SHALL BE LIMITED TO IOMB ATTACHMENT FILE SIZE.

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1		STRUCTURAL DESIGN
1		STRUCTURAL DESIGN
5		HYDRAULIC DESIGN
SPS.1		GEOTECHNICAL DESIGN
A.1		ROADWAY DESIGN

STRUCTURAL 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 _____ Date 1/31/2014

Printed or Typed Name _____

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS 1 THRU 33 AND 139 THRU 147

STRUCTURAL 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 _____ Date 1/31/2014

Printed or Typed Name _____

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS 34 THRU 138 AND 148 THRU 176

ITEM NO. ESTIMATE REFERENCE INFORMATION

- 2 INCLUDES REMOVAL OF EXISTING NORTHBOUND I-29 BRIDGE. REMOVAL OF EXISTING SOUTHBOUND I-29 BRIDGE IS NOT A PART OF THIS CONTRACT.
- 3 INCLUDES 1.6 CY IN THE LIGHT POLE BASES AND 772.3 CY IN THE PIERS. INCLUDES ANCHOR BOLTS AND PLATES AT LIGHT POLE BASES. INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES FURNISHING AND PLACING CONCRETE SEALER ON ABUTMENT SEATS AND PIER I RAMP CAP AS NOTED IN THESE PLANS.
- 4 INCLUDES 376.9 CY IN THE ABUTMENTS, 106.6 CY IN PIER I (RAMP) AND 2,066.6 CY IN THE SUPERSTRUCTURE. REFER TO THE DEVELOPMENTAL SPECIFICATION FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.
- 5 INCLUDES 219,980 LBS. REINFORCING STEEL IN THE ABUTMENTS AND 595,011 LBS. IN THE PIERS.
- 6 INCLUDES 720,337 LBS. EPOXY COATED REINFORCING STEEL IN THE SUPERSTRUCTURE, 103,387 LBS. IN PIER I (RAMP), AND 48,386 LBS. EPOXY COATED REINFORCING STEEL IN THE ABUTMENTS AND 383 LBS. STAINLESS STEEL REINFORCING IN THE ABUTMENTS.
- 7 IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2408.02, Q, OF THE STANDARD SPECIFICATIONS, GIRDER H AT PIER I SHALL BE PAINTED AS THOUGH BELOW A JOINT AND CROSS FRAMES BETWEEN GIRDERS G AND J, ALONG PIER I (RAMP) & BEARINGS, SHALL BE PAINTED.
- 8 PAYMENT FOR REINFORCED NEOPRENE WILL BE MADE ON A SQUARE FOOT BASIS FOR NEOPRENE INCORPORATED INTO THE STRUCTURE.
- 9 INCLUDES 1720 LF OF 2 INCH DIAMETER AND 135 LF OF 1 INCH DIAMETER RIGID STEEL CONDUIT. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIP FORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.
- 10, 11 & 12 INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA. INCLUDES ALL CONTRACTOR COSTS ASSOCIATED WITH CONFIRMATION BORING SAMPLING AND TESTING ASSOCIATED WITH CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATIONS. REFER TO CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATION NOTES ON DESIGN SHEET 2.
- 13 INCLUDES DISC BEARINGS, SOLE PLATE, GUIDE BARS, SLIDER PLATE, MASONRY PLATE, 1/8" PREFORMED NEOPRENE PADS AND ANCHOR BOLTS.
- 14 INCLUDES 12 DECK DRAINS. REFER TO DESIGN SHEETS 132-134 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. INCLUDES COST OF FURNISHING AND PLACING SPLASH BASINS AND NORTH ABUTMENT MSE WALL BERM AND SLOPE PROTECTION (INCLUDING EXCAVATION, EROSION STONE OR CLASS E REVETMENT, AND ENGINEERING FABRIC). INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA.
- 15 ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.
- 16 & 17 ESTIMATED AT 1.6 TON/CY. INCLUDES ALL COSTS ASSOCIATED WITH EXCAVATION AND PLACEMENT OF CLAY BACKFILL AS SHOWN IN REVETMENT AND EROSION STONE DETAILS ON DESIGN SHEET 4.
- 19 INCLUDES MOBILIZATION FOR DESIGN 314 (MAINLINE) AND DESIGN 414 (RAMP D).
- 20 INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS TO CONSTRUCT THE CONCRETE DRILLED SHAFTS IN ACCORDANCE WITH ARTICLE 2433 OF THE STANDARD SPECIFICATIONS. INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA. INCLUDES ALL CONTRACTOR COSTS ASSOCIATED WITH CONFIRMATION BORING SAMPLING AND TESTING ASSOCIATED WITH CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATIONS. REFER TO CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATION NOTES ON DESIGN SHEET 2.
- 21 INCLUDES ALL NECESSARY EXPANSION DEVICE MATERIALS AND HARDWARE AS DETAILED ON DESIGN SHEETS 108-124 AND 127-129, EXCEPT REINFORCED NEOPRENE. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING JOINT DRAINAGE SYSTEM, INCLUDING PIPING, PIPE SUPPORTS AND CATCH BASIN BELOW FINGER JOINT TROUGHS AS DETAILED ON DESIGN SHEET 126 AND COLLECTION BOX AND DOWNSPOUTS CONNECTED TO MSE WALL AS DETAILED ON DESIGN SHEET 125. EXPANSION JOINT (FINGER PLATE TYPE) SHALL BE MEASURED AND PAID FOR AT THE LINEAR FOOT CONTRACT PRICE.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANTITY
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	2,607.300	
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.000	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	773.900	
4	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	2,550.100	
5	2404-7775000	REINFORCING STEEL	LB	814,991.000	
6	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	872,493.000	
7	2408-7800000	STRUCTURAL STEEL	LB	4,247,310.000	
8	2408-8500100	REINFORCED NEOPRENE	SF	3,225.000	
9	2414-6424038	CONCRETE BARRIER RAIL, 3'-8"	LF	2,108.800	
10	2433-0001060	CONCRETE DRILLED SHAFT, 60 IN. DIAMETER	LF	1,547.000	
11	2433-0001072	CONCRETE DRILLED SHAFT, 72 IN. DIAMETER	LF	1,374.000	
12	2433-0001078	CONCRETE DRILLED SHAFT, 78 IN. DIAMETER	LF	346.000	
13	2434-0000100	DISC BEARING ASSEMBLIES	EACH	53.000	
14	2499-2300001	DECK DRAINS	LS	1.000	
15	2507-3250005	ENGINEERING FABRIC	SY	6,899.000	
16	2507-6800061	REVTMENT, CLASS E	TON	4,150.000	
17	2507-8029000	EROSION STONE	TON	996.900	
18	2526-8285000	CONSTRUCTION SURVEY	LS	1.000	
19	2533-4980005	MOBILIZATION	LS	1.000	
20	2599-9999009	CONCRETE DRILLED SHAFT, 66 IN. DIAMETER	LF	1,121.000	
21	2599-9999009	EXPANSION JOINT (FINGER PLATE TYPE)	LF	257.200	

INDEX OF BRIDGE SHEETS - DESIGN 314

SHEET DESCRIPTIONS	SHEET NUMBER
ESTIMATED QUANTITIES	2
GENERAL NOTES	3
SITUATION PLAN	4
BNSF GENERAL NOTES AND SHORING	6
SUBSTRUCTURE LAYOUT	7
ABUTMENT DETAILS	8
PIER DETAILS	19
FRAMING PLAN	34
GIRDER DETAILS	36
DEFLECTION DIAGRAMS	61
TRANSVERSE & LONGITUDINAL SECTIONS	78
WELDING DETAILS	87
BEARING DETAILS	88
ANCHOR BOLT LAYOUT	91
SLAB REINFORCING LAYOUT	92
LIGHTING LAYOUT	97
SUPERSTRUCTURE QUANTITIES	98
HAUNCH DETAILS	99
SLAB ELEVATION TABLE	105
JOINT DETAILS	109
LIGHTING DETAILS	131
DECK DRAIN DETAILS	133
BARRIER RAIL DETAILS	136

EXAMPLE OF ORIGINAL PLAN

NOTE: ROADWAY QUANTITIES SHOWN ON SHEET C.1.

DESIGN FOR 55° SKEW (R.A.)
1045'-0 X VARIABLE WIDTH CONTINUOUS WELDED GIRDER BRIDGE
 160'-0 & 225'-0 END SPANS 230'-0, 200'-0, & 230'-0 INTERIOR SPANS
ESTIMATED QUANTITIES
 STA. 6648+15.49, 44' RT. (C 1-29) FEBRUARY 2014
POTTAWATTAMIE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 137 FILE NO. 30169 DESIGN NO. 314

BRIDGE REPLACEMENT - STEEL GIRDER
 POTTAWATTAMIE COUNTY
 DESIGN NO. 314/414

LETTING DATE
 APRIL 15, 2014
 IM-NHS-029-3(111)48--03-78

LEGEND

INTERSTATE ROUTE	
FREEWAY OR EXPRESSWAY ROUTE	
U.S. NUMBERED ROUTE	
STATE NUMBERED ROUTE	
COUNTY NUMBERED ROUTE	
LOCAL ROAD OR CITY STREET	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL DE SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-8IN, R-30W



PLANS OF PROPOSED IMPROVEMENTS ON THE
INTERSTATE ROAD SYSTEM
 POTTAWATTAMIE COUNTY
 BRIDGE REPLACEMENT - STEEL GIRDER
**I-29 SOUTHBOUND OVER MOSQUITO CREEK
 AND RELOCATED BNSF/CBEC R.R.
 IN THE CITY OF COUNCIL BLUFFS**

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED

EXAMPLE OF 1ST PLAN REVISION

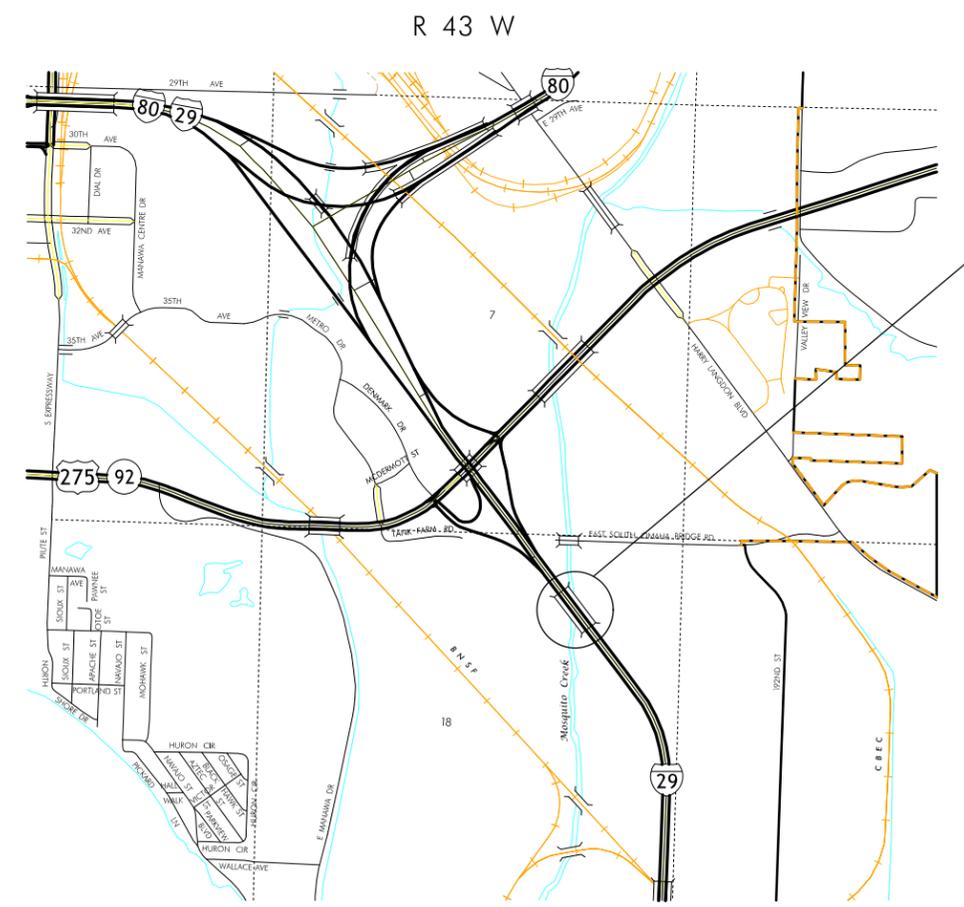
REVISIONS	
SEE REVISION SHEET RA	04-18-2014

TOTAL SHEETS	217
PROJECT NUMBER	
IM-NHS-029-3(111)48--03-78	
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	
04-78-029-010-03	

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
RA	REVISION SHEET
2	ESTIMATE SHEET - DESIGN 314
2-138	DESIGN 314
139	ESTIMATE SHEET - DESIGN 414
139-176	DESIGN 414
SPS.1-SPS.8	SOIL PROFILE SHEET
C.1	ESTIMATE SHEET FOR ROADWAY
A.1 - U.6	ROADWAY SHEETS

STANDARD ROAD PLANS
 STANDARD ROAD PLANS ARE LISTED ON SHEET C.1

DESIGN DATA URBAN
 REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION



DESIGN NO. 314/414

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS AND FALSEWORK DRAWINGS WILL BE CHECKED BY:

 ELECTRONIC SUBMITTALS SHALL BE LIMITED TO IOMB ATTACHMENT FILE SIZE.

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
1		STRUCTURAL DESIGN
1		STRUCTURAL DESIGN
5		HYDRAULIC DESIGN
SPS.1		GEOTECHNICAL DESIGN
A.1		ROADWAY DESIGN



LOCATION MAP
 PART OF CITY OF COUNCIL BLUFFS

PROJECT DIRECTORY NAME: 7802901004

STRUCTURAL 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 _____ Date <u>1/31/2014</u> Printed or Typed Name _____ My license renewal date is December 31, <u>2014</u> Pages or sheets covered by this seal: <u>SHEETS 1 THRU 33 AND 139 THRU 147</u>

STRUCTURAL 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 _____ Date <u>1/31/2014</u> Printed or Typed Name _____ My license renewal date is December 31, <u>2014</u> Pages or sheets covered by this seal: <u>SHEETS 34 THRU 138 AND 148 THRU 176</u>

LISTING OF PROJECT REVISIONS

DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
04-18-2014	1	REMOVED DESIGN 414 FROM INDEX OF SHEETS, REMOVED DESIGN 414 FROM LOCATION MAP AND LOWER LEFT CORNER, ADDED REVISION I AND DATE TO REVISIONS BOX, ADDED REVISION SHEET TO INDEX OF SHEETS. REASON: MOVED DESIGN 414 TO ANOTHER PROJECT WITH A DIFFERENT LETTING.	04-18-2014	133	SHEET VOIDED.
04-18-2014	RA	REVISION SHEET ADDED.	04-18-2014	133A	SHEET ADDED. REASON: PORTION OF BARRIER & SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.
04-18-2014	2	MODIFIED QUANTITIES AND ESTIMATE REFERENCE NOTES FOR ITEMS 4, 5, 8, 9 AND 21 AND REMOVED ESTIMATE REFERENCE NOTE 19. REASON: MOVED DESIGN 414 TO ANOTHER PROJECT WITH A DIFFERENT LETTING, MOVED PIER I FINGER JOINT AND PORTION OF DECK/BARRIERS TO DESIGN 414, AND ADDED CONSTRUCTION JOINT TO PIER 2.	04-18-2014	137	SHEET VOIDED.
04-18-2014	4	REVISED RAMP D AND JOINT NOTES. REASON: RAMP D AND EXPANSION JOINT MOVED TO A FUTURE PROJECT.	04-18-2014	137A	SHEET ADDED. REASON: BARRIER NEAR PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.
04-18-2014	7	REVISED SUBSTRUCTURE LAYOUT. REASON: DESIGN 414 MOVED TO A DIFFERENT PROJECT.	04-18-2014	138	REVISED CONCRETE PLACEMENT SUMMARY & BARRIER RAIL QUANTITIES. REASON: BARRIER NEAR PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.
04-18-2014	12	ADDED PERMISSIBLE CONSTRUCTION JOINT NOTE. REASON: PERMISSIBLE CONSTRUCTION JOINT ADDED FOR CONSTRUCTIBILITY DUE TO HEIGHT OF SHAFTS ABOVE EXISTING GROUND.	04-18-2014	139-176	SHEETS VOIDED. REASON: DESIGN 414 MOVED TO A DIFFERENT PROJECT.
04-18-2014	17	ADDED PERMISSIBLE CONSTRUCTION JOINT NOTE. REASON: PERMISSIBLE CONSTRUCTION JOINT ADDED FOR CONSTRUCTIBILITY DUE TO HEIGHT OF SHAFTS ABOVE EXISTING GROUND.			
04-18-2014	25	SHEET VOIDED.			
04-18-2014	25A	SHEET ADDED. REASON: ADDED STAGE CONSTRUCTION JOINT BETWEEN COLUMNS 5 AND 6, AND MODIFIED LONGITUDINAL CAP REINFORCING FOR LAP AT STAGE CONSTRUCTION JOINT.			
04-18-2014	27	MODIFIED AND ADDED REINFORCING BARS. REASON: ADDED STAGE CONSTRUCTION JOINT BETWEEN COLUMNS 5 AND 6, AND MODIFIED LONGITUDINAL CAP REINFORCING FOR LAP AT STAGE CONSTRUCTION JOINT.			
04-18-2014	80	REVISED TRANSVERSE SECTION. REASON: PART OF GORE BARRIER WILL BE POURED IN A FUTURE PROJECT.			
04-18-2014	84	REVISED PART LONGIT. SECTION NEAR WEST GUTTERLINE. REASON: FINGER JOINT AND PORTION OF BARRIER & SLAB WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	85	SHEET VOIDED.			
04-18-2014	85A	SHEET ADDED. REASON: FINGER JOINT AND PORTION OF BARRIER & SLAB WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	92	SHEET VOIDED.			
04-18-2014	92A	SHEET ADDED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	93	SHEET VOIDED.			
04-18-2014	93A	SHEET ADDED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	94	SHEET VOIDED.			
04-18-2014	94A	SHEET ADDED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	97	SHEET VOIDED.			
04-18-2014	97A	SHEET ADDED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	98	REVISED SUPERSTRUCTURE QUANTITIES. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	105	SHEET VOIDED.			
04-18-2014	105A	SHEET ADDED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	106	GIRDER K DETAIL REPLACED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	108	GORE OVERHANG DETAIL REPLACED. REASON: PORTION OF SLAB AT PIER I RAMP WILL BE PLACED IN A FUTURE PROJECT.			
04-18-2014	113	REVISED FINGER JOINT NOTES. REASON: FINGER JOINT WILL BE PLACED AS PART OF A FUTURE PROJECT.			
04-18-2014	115-119	SHEETS VOIDED.			
04-18-2014	127	REVISED PIER I RAMP DETAIL SIDE VIEW. REASON: RAMP D WILL BE PART OF A FUTURE PROJECT.			
04-18-2014	129	SHEET VOIDED.			
04-18-2014	131	REVISED EXTERIOR ELEVATION AT PIER I. REASON: PORTION OF BARRIER & SLAB WILL BE PLACED IN A FUTURE PROJECT.			

EXAMPLE OF 1ST PLAN REVISION

STRUCTURAL 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 _____ Date <u>4/18/2014</u>
	Printed or Typed Name _____
	My license renewal date is December 31, <u>2014</u>
Pages or sheets covered by this seal: <u>SHEETS 1, RA, 2, 4, 7, 12, 17, 25, 25A, 27, 139-147</u>	

STRUCTURAL 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 _____ Date <u>4/18/2014</u>
	Printed or Typed Name _____
	My license renewal date is December 31, <u>2014</u>
Pages or sheets covered by this seal: <u>SHEETS RA, 80, 84, 85, 85A, 92, 92A, 93, 93A, 94, 94A, 97, 97A, 98, 105, 105A, 106, 108, 113, 115-119, 127, 129, 131, 133, 133A, 137, 137A, 138, 148-176</u>	

POTTAWATTAMIE COUNTY
DESIGN NO. 314
REVISION SHEET
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

REVISED: APRIL 18, 2014

ITEM NO.	ESTIMATE REFERENCE INFORMATION
2	INCLUDES REMOVAL OF EXISTING NORTHBOUND I-29 BRIDGE. REMOVAL OF EXISTING SOUTHBOUND I-29 BRIDGE IS NOT A PART OF THIS CONTRACT.
3	INCLUDES 1.6 CY IN THE LIGHT POLE BASES AND 772.3 CY IN THE PIERS. INCLUDES ANCHOR BOLTS AND PLATES AT LIGHT POLE BASES. INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES FURNISHING AND PLACING CONCRETE SEALER ON ABUTMENT SEATS AND PIER I RAMP CAP AS NOTED IN THESE PLANS.
4	INCLUDES 376.9 CY IN THE ABUTMENTS, 106.6 CY IN PIER 1 (RAMP) AND 2,066.6 ^{2,057.2} CY IN THE SUPERSTRUCTURE. REFER TO THE DEVELOPMENTAL SPECIFICATION FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.
5	INCLUDES 219,980 LBS. REINFORCING STEEL IN THE ABUTMENTS AND 595,011 ^{595,030} LBS. IN THE PIERS.
6	INCLUDES 720,337 LBS. EPOXY COATED REINFORCING STEEL IN THE SUPERSTRUCTURE, 103,387 LBS. IN PIER 1 (RAMP), AND 48,386 LBS. EPOXY COATED REINFORCING STEEL IN THE ABUTMENTS AND 383 LBS. STAINLESS STEEL REINFORCING IN THE ABUTMENTS.
7	IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2408.02, Q, OF THE STANDARD SPECIFICATIONS, GIRDER H AT PIER 1 SHALL BE PAINTED AS THOUGH BELOW A JOINT AND CROSS FRAMES BETWEEN GIRDERS G AND J, ALONG PIER 1 (RAMP) & BEARINGS, SHALL BE PAINTED.
8	PAYMENT FOR REINFORCED NEOPRENE WILL BE MADE ON A SQUARE FOOT BASIS FOR NEOPRENE INCORPORATED INTO THE STRUCTURE.
9	INCLUDES 1720 LF OF 2 INCH DIAMETER AND 135 LF OF 1 INCH DIAMETER RIGID STEEL CONDUIT. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIP FORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.
10, 11 & 12	INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA. INCLUDES ALL CONTRACTOR COSTS ASSOCIATED WITH CONFIRMATION BORING SAMPLING AND TESTING ASSOCIATED WITH CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATIONS. REFER TO CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATION NOTES ON DESIGN SHEET 2.
13	INCLUDES DISC BEARINGS, SOLE PLATE, GUIDE BARS, SLIDER PLATE, MASONRY PLATE, 1/8" PREFORMED NEOPRENE PADS AND ANCHOR BOLTS.
14	INCLUDES 12 DECK DRAINS. REFER TO DESIGN SHEETS 132-134 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. INCLUDES COST OF FURNISHING AND PLACING SPLASH BASINS AND NORTH ABUTMENT MSE WALL BERM AND SLOPE PROTECTION (INCLUDING EXCAVATION, EROSION STONE OR CLASS E REVETMENT, AND ENGINEERING FABRIC). INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA.
15	ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.
16 & 17	ESTIMATED AT 1.6 TON/CY. INCLUDES ALL COSTS ASSOCIATED WITH EXCAVATION AND PLACEMENT OF CLAY BACKFILL AS SHOWN IN REVETMENT AND EROSION STONE DETAILS ON DESIGN SHEET 4.
19	INCLUDES MOBILIZATION FOR DESIGN 314 (MAINLINE) AND DESIGN 414 (RAMP D).
20	INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS TO CONSTRUCT THE CONCRETE DRILLED SHAFTS IN ACCORDANCE WITH ARTICLE 2433 OF THE STANDARD SPECIFICATIONS. INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA. INCLUDES ALL CONTRACTOR COSTS ASSOCIATED WITH CONFIRMATION BORING SAMPLING AND TESTING ASSOCIATED WITH CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATIONS. REFER TO CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATION NOTES ON DESIGN SHEET 2.
21	INCLUDES ALL NECESSARY EXPANSION DEVICE MATERIALS AND HARDWARE AS DETAILED ON DESIGN SHEETS 108-124 AND 127-129, EXCEPT REINFORCED NEOPRENE. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING JOINT DRAINAGE SYSTEM, INCLUDING PIPING, PIPE SUPPORTS AND CATCH BASIN BELOW FINGER JOINT TROUGHS AS DETAILED ON DESIGN SHEET 126 AND COLLECTION BOX AND DOWNSPOUTS CONNECTED TO MSE WALL AS DETAILED ON DESIGN SHEET 125. EXPANSION JOINT (FINGER PLATE TYPE) SHALL BE MEASURED AND PAID FOR AT THE LINEAR FOOT CONTRACT PRICE.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANTITY
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	2,607.300	
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.000	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	773.900	
4	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	2,550.100 ^{2,540.700}	
5	2404-7775000	REINFORCING STEEL	LB	814,991.000 ^{815,010.000}	
6	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	872,493.000	
7	2408-7800000	STRUCTURAL STEEL	LB	4,247,310.000	
8	2408-8500100	REINFORCED NEOPRENE	SF	3,225.000 ^{2,927.000}	
9	2414-6424038	CONCRETE BARRIER RAIL, 3'-8"	LF	2,108.800 ^{2,095.700}	
10	2433-0001060	CONCRETE DRILLED SHAFT, 60 IN. DIAMETER	LF	1,547.000	
11	2433-0001072	CONCRETE DRILLED SHAFT, 72 IN. DIAMETER	LF	1,374.000	
12	2433-0001078	CONCRETE DRILLED SHAFT, 78 IN. DIAMETER	LF	346.000	
13	2434-0000100	DISC BEARING ASSEMBLIES	EACH	53.000	
14	2499-2300001	DECK DRAINS	LS	1.000	
15	2507-3250005	ENGINEERING FABRIC	SY	6,899.000	
16	2507-6800061	REVTMENT, CLASS E	TON	4,150.000	
17	2507-8029000	EROSION STONE	TON	996.900	
18	2526-8285000	CONSTRUCTION SURVEY	LS	1.000	
19	2533-4980005	MOBILIZATION	LS	1.000	
20	2599-9999009	CONCRETE DRILLED SHAFT, 66 IN. DIAMETER	LF	1,121.000	
21	2599-9999009	EXPANSION JOINT (FINGER PLATE TYPE)	LF	257.200 ^{218.500}	

INDEX OF BRIDGE SHEETS - DESIGN 314

SHEET DESCRIPTIONS	SHEET NUMBER
ESTIMATED QUANTITIES	2
GENERAL NOTES	3
SITUATION PLAN	4
BNSF GENERAL NOTES AND SHORING	6
SUBSTRUCTURE LAYOUT	7
ABUTMENT DETAILS	8
PIER DETAILS	19
FRAMING PLAN	34
GIRDER DETAILS	36
DEFLECTION DIAGRAMS	61
TRANSVERSE & LONGITUDINAL SECTIONS	78
WELDING DETAILS	87
BEARING DETAILS	88
ANCHOR BOLT LAYOUT	91
SLAB REINFORCING LAYOUT	92
LIGHTING LAYOUT	97
SUPERSTRUCTURE QUANTITIES	98
HAUNCH DETAILS	99
SLAB ELEVATION TABLE	105
JOINT DETAILS	109
LIGHTING DETAILS	131
DECK DRAIN DETAILS	133
BARRIER RAIL DETAILS	136

EXAMPLE OF 1ST PLAN REVISION

NOTE:
ROADWAY QUANTITIES
SHOWN ON SHEET C.1.

REVISED 04-18-2014: MODIFIED QUANTITIES AND ESTIMATE REFERENCE NOTES FOR ITEMS 4, 5, 8, 9 AND 21 AND REMOVED ESTIMATE REFERENCE NOTE 19.
REASON: MOVED DESIGN 414 TO ANOTHER PROJECT WITH A DIFFERENT LETTING, MOVED PIER 1 FINGER JOINT AND PORTION OF DECK/BARRIERS TO DESIGN 414, AND ADDED CONSTRUCTION JOINT TO PIER 2.

DESIGN FOR 55° SKEW (R.A.)
**1045'-0 X VARIABLE WIDTH
CONTINUOUS WELDED GIRDER BRIDGE**
160'-0 & 225'-0 END SPANS 230'-0, 200'-0, & 230'-0 INTERIOR SPANS
ESTIMATED QUANTITIES
STA. 6648+15.49, 44' RT. (C 1-29) FEBRUARY 2014
POTTAWATTAMIE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 137 FILE NO. 30169 DESIGN NO. 314

BRIDGE REPLACEMENT - STEEL GIRDER
 POTTAWATTAMIE COUNTY - DESIGN NO. 314/414
 LETTING DATE
 APRIL 15, 2014
 IM-NHS-029-3(111)48--03-78

LEGEND

INTERSTATE ROUTE	
FREEWAY OR EXPRESSWAY ROUTE	
U.S. NUMBERED ROUTE	
STATE NUMBERED ROUTE	
COUNTY NUMBERED ROUTE	
LOCAL ROAD OR CITY STREET	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL DE SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-8IN, R-30W



PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

POTTAWATTAMIE COUNTY

BRIDGE REPLACEMENT - STEEL GIRDER

I-29 SOUTHBOUND OVER MOSQUITO CREEK

AND RELOCATED BNSF/CBEC R.R.

IN THE CITY OF COUNCIL BLUFFS

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED

EXAMPLE OF 2ND PLAN REVISION

REVISIONS	
SEE REVISION SHEET RA	04-18-2014
SEE REVISION SHEET RB	08-28-2014

TOTAL SHEETS	217
PROJECT NUMBER	IM-NHS-029-3(111)48--03-78
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	04-78-029-010-03

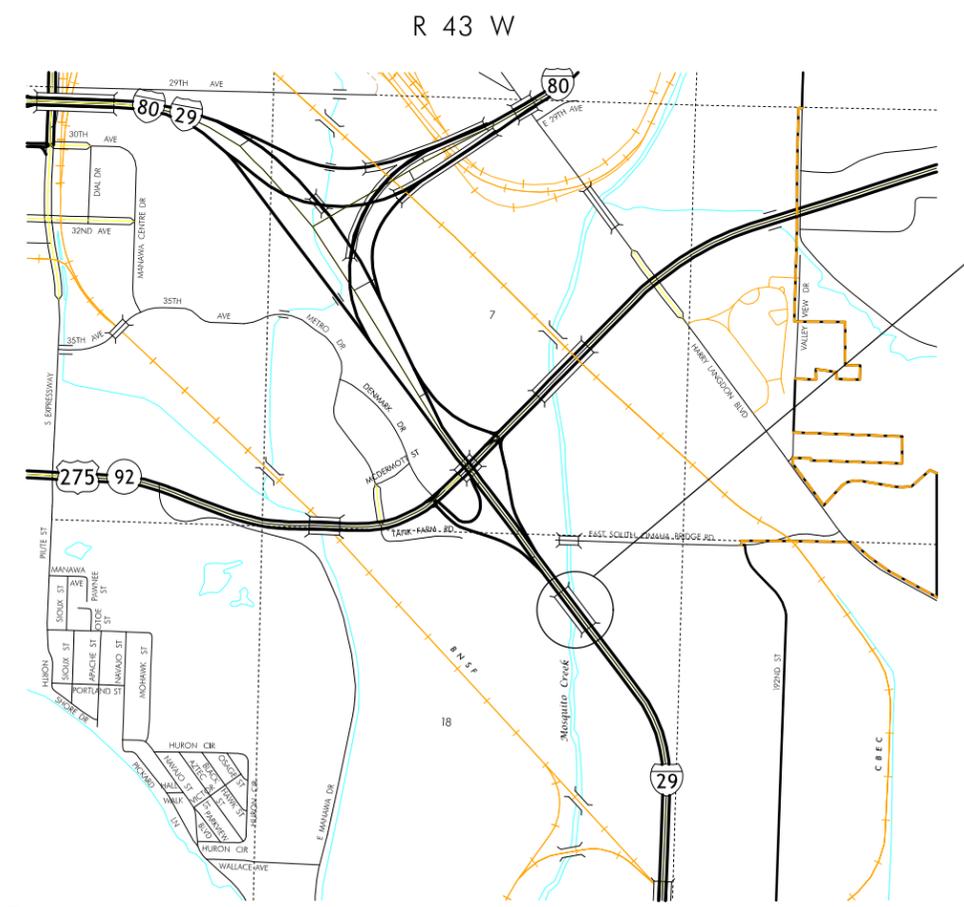
INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
RA-RB	REVISION SHEETS
2	ESTIMATE SHEET - DESIGN 314
2-138	DESIGN 314
139	ESTIMATE SHEET - DESIGN 414
139-176	DESIGN 414
SPS.1-SPS.8	SOIL PROFILE SHEET
C.1	ESTIMATE SHEET FOR ROADWAY
A.1 - U.6	ROADWAY SHEETS

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET C.1

DESIGN DATA URBAN

REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION



DESIGN NO. 314/414

ALL WORKING DRAWINGS INCLUDING SHOP DRAWINGS AND FALSEWORK DRAWINGS WILL BE CHECKED BY:

ELECTRONIC SUBMITTALS SHALL BE LIMITED TO IOMB ATTACHMENT FILE SIZE.

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
1		STRUCTURAL DESIGN
1		STRUCTURAL DESIGN
5		HYDRAULIC DESIGN
SPS.1		GEOTECHNICAL DESIGN
A.1		ROADWAY DESIGN

STRUCTURAL 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 _____ Date 1/31/2014

Printed or Typed Name _____

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS 1 THRU 33 AND 139 THRU 147

STRUCTURAL 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 _____ Date 1/31/2014

Printed or Typed Name _____

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS 34 THRU 138 AND 148 THRU 176



LOCATION MAP
PART OF CITY OF COUNCIL BLUFFS

PROJECT DIRECTORY NAME: 7802901004

LISTING OF PROJECT REVISIONS

DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
08-28-2014	1	ADDED REVISION 2 AND DATE TO REVISION BOX, ADDED REVISION SHEET TO INDEX OF SHEETS.	08-28-2014	29	SHEET VOIDED.
08-28-2014	RB	REVISION SHEET ADDED.	08-28-2014	29A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.
08-28-2014	2	MODIFIED REINFORCING STEEL QUANTITY AND ADDED GRADE 75 DYWIDAG THREADBAR QUANTITY. MODIFIED ESTIMATE REFERENCE NOTE 9. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR. ADDED PULL ROPES TO ALL RIGID STEEL CONDUIT IN BARRIER RAILS.	08-28-2014	30	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.
08-28-2014	4	MODIFIED LOW STEP AND TOP OF DRILLED SHAFT ELEVATIONS. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.	08-28-2014	31	MODIFIED STEP, CAP, AND DRILLED SHAFT ELEVATIONS AND DRILLED SHAFT LENGTH. MODIFIED DRILLED SHAFT REINFORCING. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES. REINFORCING MODIFIED FOR CONTRACTOR VALUE ENGINEERING PROPOSAL.
08-28-2014	5	SHEET VOIDED. REASON: REDRAWN TO CORRECT THE NUMBER OF COLUMNS SHOWN IN PIERS 3 AND 4.	08-28-2014	32	SHEET VOIDED.
08-28-2014	5A	SHEET ADDED TO SHOW CORRECT NUMBER OF COLUMNS IN PIERS 3 AND 4 AND MODIFY LOW STEP AND TOP OF DRILLED SHAFT ELEVATIONS. REASON: CORRECTED NUMBER OF COLUMNS SHOWN IN PIERS AND ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.	08-28-2014	32A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.
08-28-2014	8	MODIFIED PEDESTAL ELEVATIONS AND STEP HEIGHTS. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.	08-28-2014	33	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.
08-28-2014	12	SHEET VOIDED.	08-28-2014	88	DELETED DIMENSION AND TABLE. REASON: ACTUAL BEARING SIZE MODIFIED BY FABRICATOR.
08-28-2014	12A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.	08-28-2014	89	MODIFIED BEARING HEIGHT AND DELETED ANCHOR BOLT SPACING DIMENSIONS. REASON: ACTUAL BEARING HEIGHT AND ANCHOR BOLT LAYOUT MODIFIED BY FABRICATOR.
08-28-2014	13	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.	08-28-2014	91	SHEET VOIDED. REASON: ACTUAL ANCHOR BOLT LAYOUT MODIFIED BY FABRICATOR.
08-28-2014	14	MODIFIED PEDESTAL ELEVATIONS AND STEP HEIGHTS. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.	08-28-2014	131	SHEET VOIDED.
08-28-2014	17	SHEET VOIDED.	08-28-2014	131A	SHEET ADDED. REASON: MODIFIED CONDUIT AND JUNCTION BOX LAYOUT TO MINIMIZE BENDS IN CONDUIT. ADDED ITS CONDUIT NOTES.
08-28-2014	17A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.	08-28-2014	132	PULL ROPE INFORMATION ADDED TO NOTES. REASON: ADDED PULL ROPES TO ALL RIGID STEEL CONDUIT IN BARRIER RAILS.
08-28-2014	18	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.	08-28-2014	133A	MODIFIED WELDED STEEL SUPPORT FRAME DIMENSIONS. REASON: PIER STEP ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.
08-28-2014	19	MODIFIED STEP, CAP, AND DRILLED SHAFT ELEVATIONS AND DRILLED SHAFT LENGTH. MODIFIED DRILLED SHAFT REINFORCING. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES. REINFORCING MODIFIED FOR CONTRACTOR VALUE ENGINEERING PROPOSAL.			
08-28-2014	20	SHEET VOIDED.			
08-28-2014	20A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR. ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.			
08-28-2014	21	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.			
08-28-2014	22	MODIFIED STEP, CAP, AND DRILLED SHAFT ELEVATIONS AND DRILLED SHAFT LENGTH. MODIFIED DRILLED SHAFT REINFORCING. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES. REINFORCING MODIFIED FOR CONTRACTOR VALUE ENGINEERING PROPOSAL.			
08-28-2014	23	SHEET VOIDED.			
08-28-2014	23A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR. ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES.			
08-28-2014	24	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.			
08-28-2014	25A	MODIFIED STEP, CAP, AND DRILLED SHAFT ELEVATIONS. MODIFIED DRILLED SHAFT REINFORCING. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES. REINFORCING MODIFIED FOR CONTRACTOR VALUE ENGINEERING PROPOSAL.			
08-28-2014	26	SHEET VOIDED.			
08-28-2014	26A	SHEET ADDED. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.			
08-28-2014	27	DRILLED SHAFT LONGITUDINAL REINFORCEMENT CHANGED FROM GRADE 60 REBAR TO GRADE 75 DYWIDAG THREADBAR WITH MECHANICAL COUPLERS. REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR.			
08-28-2014	28	MODIFIED STEP, CAP, AND DRILLED SHAFT ELEVATIONS AND DRILLED SHAFT LENGTH. MODIFIED DRILLED SHAFT REINFORCING. REASON: ELEVATIONS ADJUSTED TO ACCOUNT FOR ACTUAL BEARING THICKNESSES. REINFORCING MODIFIED FOR CONTRACTOR VALUE ENGINEERING PROPOSAL.			

STRUCTURAL 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.

8/28/2014
Date

Signature _____

Printed or Typed Name _____

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS 1, RB, 2, 4, 5, 5A, 8, 12, 12A, 13, 14, 17, 17A, 18, 19, 20, 20A, 21, 22, 23, 23A, 24, 25A, 26, 26A, 27, 28, 29, 29A, 30, 31, 32, 32A, 33

STRUCTURAL 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.

8/28/2014
Date

Signature _____

Printed or Typed Name _____

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS RB, 88, 89, 91, 131, 131A, 132, 133A

EXAMPLE OF 2ND PLAN REVISION

**POTTAWATTAMIE COUNTY
DESIGN NO. 314
REVISION SHEET**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

REVISED: AUGUST 28, 2014

ITEM NO.	ESTIMATE REFERENCE INFORMATION
2	INCLUDES REMOVAL OF EXISTING NORTHBOUND I-29 BRIDGE. REMOVAL OF EXISTING SOUTHBOUND I-29 BRIDGE IS NOT A PART OF THIS CONTRACT.
3	INCLUDES 1.6 CY IN THE LIGHT POLE BASES AND 772.3 CY IN THE PIERS. INCLUDES ANCHOR BOLTS AND PLATES AT LIGHT POLE BASES. INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES FURNISHING AND PLACING CONCRETE SEALER ON ABUTMENT SEATS AND PIER I RAMP CAP AS NOTED IN THESE PLANS.
4	INCLUDES 376.9 CY IN THE ABUTMENTS, 106.6 CY IN PIER I (RAMP) AND ^{2,057.2} 2,066.6 CY IN THE SUPERSTRUCTURE. REFER TO THE DEVELOPMENTAL SPECIFICATION FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.
5	INCLUDES ^{35,241} 219,980 LBS. REINFORCING STEEL IN THE ABUTMENTS AND ^{270,344} 595,030 LBS. IN THE PIERS. INCLUDES ^{595,030} 502,549 LBS. OF GRADE 75 DYWIDAG THREADBAR IN THE DRILLED SHAFTS.
6	INCLUDES 720,337 LBS. EPOXY COATED REINFORCING STEEL IN THE SUPERSTRUCTURE, ^{35,862} 103,387 LBS. IN PIER I (RAMP), AND 48,386 LBS. EPOXY COATED REINFORCING STEEL IN THE ABUTMENTS AND 383 LBS. STAINLESS STEEL REINFORCING IN THE ABUTMENTS.
7	IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2408.02, Q, OF THE STANDARD SPECIFICATIONS, GIRDER H AT PIER I SHALL BE PAINTED AS THOUGH BELOW A JOINT AND CROSS FRAMES BETWEEN GIRDERS G AND J, ALONG PIER I (RAMP) & BEARINGS, SHALL BE PAINTED.
8	PAYMENT FOR REINFORCED NEOPRENE WILL BE MADE ON A SQUARE FOOT BASIS FOR NEOPRENE INCORPORATED INTO THE STRUCTURE.
9	INCLUDES 1720 LF OF 2 INCH DIAMETER AND 135 LF OF 1 INCH DIAMETER RIGID STEEL CONDUIT. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING ^{ALL} THE RIGID STEEL CONDUIT, JUNCTION BOXES, PULL ROPES AND FITTINGS. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIP FORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.
10, 11 & 12	INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA. INCLUDES ALL CONTRACTOR COSTS ASSOCIATED WITH CONFIRMATION BORING SAMPLING AND TESTING ASSOCIATED WITH CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATIONS. REFER TO CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATION NOTES ON DESIGN SHEET 2.
13	INCLUDES DISC BEARINGS, SOLE PLATE, GUIDE BARS, SLIDER PLATE, MASONRY PLATE, ¹ / ₈ " PREFORMED NEOPRENE PADS AND ANCHOR BOLTS.
14	INCLUDES 12 DECK DRAINS. REFER TO DESIGN SHEETS 132-134 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. INCLUDES COST OF FURNISHING AND PLACING SPLASH BASINS AND NORTH ABUTMENT MSE WALL BERM AND SLOPE PROTECTION (INCLUDING EXCAVATION, EROSION STONE OR CLASS E REVETMENT, AND ENGINEERING FABRIC). INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA.
15	ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.
16 & 17	ESTIMATED AT 1.6 TON/CY. INCLUDES ALL COSTS ASSOCIATED WITH EXCAVATION AND PLACEMENT OF CLAY BACKFILL AS SHOWN IN REVETMENT AND EROSION STONE DETAILS ON DESIGN SHEET 4.
19	INCLUDES MOBILIZATION FOR DESIGN 314 (MAINLINE) AND DESIGN 414 (RAMP D).
20	INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS TO CONSTRUCT THE CONCRETE DRILLED SHAFTS IN ACCORDANCE WITH ARTICLE 2433 OF THE STANDARD SPECIFICATIONS. INCLUDES ALL COSTS ASSOCIATED WITH SPECIAL PROVISIONS FOR EXCAVATION FOR STRUCTURES IN LEVEE CRITICAL AREA. INCLUDES ALL CONTRACTOR COSTS ASSOCIATED WITH CONFIRMATION BORING SAMPLING AND TESTING ASSOCIATED WITH CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATIONS. REFER TO CONFIRMATION BORINGS AT PRODUCTION SHAFT LOCATION NOTES ON DESIGN SHEET 2.
21	INCLUDES ALL NECESSARY EXPANSION DEVICE MATERIALS AND HARDWARE AS DETAILED ON DESIGN SHEETS 108-124 AND 127-129 , EXCEPT REINFORCED NEOPRENE. INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING JOINT DRAINAGE SYSTEM, INCLUDING PIPING, PIPE SUPPORTS AND CATCH BASIN BELOW FINGER JOINT TROUGHS AS DETAILED ON DESIGN SHEET 126 AND COLLECTION BOX AND DOWNSPOUTS CONNECTED TO MSE WALL AS DETAILED ON DESIGN SHEET 125. EXPANSION JOINT (FINGER PLATE TYPE) SHALL BE MEASURED AND PAID FOR AT THE LINEAR FOOT CONTRACT PRICE.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANTITY
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	2,607.300	
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.000	
3	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	773.900	
4	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	2,550.100	2,540.700
5	2404-7775000	REINFORCING STEEL	LB	814,991.000	815,010.000 808,134.000
6	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	872,493.000	804,968.000
7	2408-7800000	STRUCTURAL STEEL	LB	4,247,310.000	
8	2408-8500100	REINFORCED NEOPRENE	SF	3,225.000	2,927.000
9	2414-6424038	CONCRETE BARRIER RAIL, 3'-8"	LF	2,108.800	2,095.700
10	2433-0001060	CONCRETE DRILLED SHAFT, 60 IN. DIAMETER	LF	1,547.000	
11	2433-0001072	CONCRETE DRILLED SHAFT, 72 IN. DIAMETER	LF	1,374.000	
12	2433-0001078	CONCRETE DRILLED SHAFT, 78 IN. DIAMETER	LF	346.000	
13	2434-0000100	DISC BEARING ASSEMBLIES	EACH	53.000	
14	2499-2300001	DECK DRAINS	LS	1.000	
15	2507-3250005	ENGINEERING FABRIC	SY	6,899.000	
16	2507-6800061	REVETMENT, CLASS E	TON	4,150.000	
17	2507-8029000	EROSION STONE	TON	996.900	
18	2526-8285000	CONSTRUCTION SURVEY	LS	1.000	
19	2533-4980005	MOBILIZATION	LS	1.000	
20	2599-9999009	CONCRETE DRILLED SHAFT, 66 IN. DIAMETER	LF	1,121.000	
21	2599-9999009	EXPANSION JOINT (FINGER PLATE TYPE)	LF	257.200	218.500

INDEX OF BRIDGE SHEETS - DESIGN 314

SHEET DESCRIPTIONS	SHEET NUMBER
ESTIMATED QUANTITIES	2
GENERAL NOTES	3
SITUATION PLAN	4
BNSF GENERAL NOTES AND SHORING	6
SUBSTRUCTURE LAYOUT	7
ABUTMENT DETAILS	8
PIER DETAILS	19
FRAMING PLAN	34
GIRDER DETAILS	36
DEFLECTION DIAGRAMS	61
TRANSVERSE & LONGITUDINAL SECTIONS	78
WELDING DETAILS	87
BEARING DETAILS	88
ANCHOR BOLT LAYOUT	91
SLAB REINFORCING LAYOUT	92
LIGHTING LAYOUT	97
SUPERSTRUCTURE QUANTITIES	98
HAUNCH DETAILS	99
SLAB ELEVATION TABLE	105
JOINT DETAILS	109
LIGHTING DETAILS	131
DECK DRAIN DETAILS	133
BARRIER RAIL DETAILS	136

EXAMPLE OF 2ND PLAN REVISION

NOTE:
ROADWAY QUANTITIES SHOWN ON SHEET C.I.

REVISED 04-18-2014: MODIFIED QUANTITIES AND ESTIMATE REFERENCE NOTES FOR ITEMS 4, 5, 8, 9 AND 21 AND REMOVED ESTIMATE REFERENCE NOTE 19.
REASON: MOVED DESIGN 414 TO ANOTHER PROJECT WITH A DIFFERENT LETTING, MOVED PIER I FINGER JOINT AND PORTION OF DECK/BARRIERS TO DESIGN 414, AND ADDED CONSTRUCTION JOINT TO PIER 2.

REVISED 08-28-2014: MODIFIED REINFORCING STEEL QUANTITY AND ADDED GRADE 75 DYWIDAG THREADBAR QUANTITY.
MODIFIED ESTIMATE REFERENCE NOTE 9.
REASON: VALUE ENGINEERING PROPOSAL BY CONTRACTOR. ADDED PULL ROPES TO ALL RIGID STEEL CONDUIT IN BARRIER RAILS.

DESIGN FOR 55° SKEW (R.A.)
1045'-0 X VARIABLE WIDTH CONTINUOUS WELDED GIRDER BRIDGE
 160'-0 & 225'-0 END SPANS 230'-0, 200'-0, & 230'-0 INTERIOR SPANS
ESTIMATED QUANTITIES
 STA. 6648+15.49, 44' RT. (I-29) FEBRUARY 2014
POTTAWATTAMIE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 137 FILE NO. 30169 DESIGN NO. 314

LISTING OF PROJECT REVISIONS

DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
??-??-????	RA	REVISION SHEET ADDED.			
??-??-????	?	????? REASON: ???			

EXAMPLE OF REVISION SHEET TEMPLATE.
LOCATED IN THE brgseed.dgn FILE AS
brgrevision MODEL.

**? COUNTY
DESIGN NO. ?
REVISION SHEET**
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

REVISED: OCTOBER 21, 2015

LISTING OF PROJECT REVISIONS

DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
5-17-2015	RA	REVISION SHEET ADDED.	10-21-2015	82	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.
5-17-2015	2	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.	10-21-2015	84	THIS SHEET VOID.
5-17-2015	4	THIS SHEET VOID.	10-21-2015	84A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	4A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.	10-21-2015	86	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.
5-17-2015	6	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.	10-21-2015	94	THIS SHEET VOID.
5-17-2015	14	THIS SHEET VOID.	10-21-2015	94A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	14A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.	10-21-2015	102	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.
5-17-2015	22	MODIFIED ABUTMENT BACKFILL. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.	10-21-2015	104	THIS SHEET VOID.
5-17-2015	24	THIS SHEET VOID.	10-21-2015	104A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	24A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.	10-21-2015	106	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.
5-17-2015	36	MODIFIED BACKFILL TYPE AND NOTES. REASON: DO NOT WANT TO USE FLOODABLE BACKFILL NEXT TO THE MSE WALL.	10-21-2015	114	THIS SHEET VOID.
5-17-2015	44	THIS SHEET VOID.	10-21-2015	114A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.
5-17-2015	44A	THIS SHEET ADDED. REASON: REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN. REVISED LOCATION OF EXISTING SANITARY SEWER LINE. ADDED PROPOSED WATER MAIN.			

1ST REVISION.

STRUCTURAL 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: <u>John P. Sample</u> Date: <u>5-17-2015</u> Printed or Typed Name: _____ My license renewal date is December 31, _____.
Pages or sheets covered by this seal: <u>RA, 2, 4, 4A, 6, 14, 14A, 22, 24, 24A, 36, 44, 44A</u>	

2ND REVISION.

STRUCTURAL 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: <u>John P. Sample</u> Date: <u>10-21-2015</u> Printed or Typed Name: _____ My license renewal date is December 31, _____.
Pages or sheets covered by this seal: <u>RA, 2, 4, 4A, 6, 14, 14A, 52, 54, 54A, 56, 82, 84, 84A, 86, 94, 94A, 102, 104, 104A, 106, 114, 114A</u>	

EXAMPLE OF MULTIPLE REVISIONS ON ONE REVISION SHEET.

**? COUNTY
DESIGN NO. 1010, 2010, 3010
REVISION SHEET**
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

REVISED: OCTOBER 21, 2015