BRIDGE AND APPROACHES - PPCB
BRFN-022-5(29)--39-82

LETTING DATE
3-18-14

SCOTT COUNTY

LEGEND

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

Iowa Department of Transportation
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM

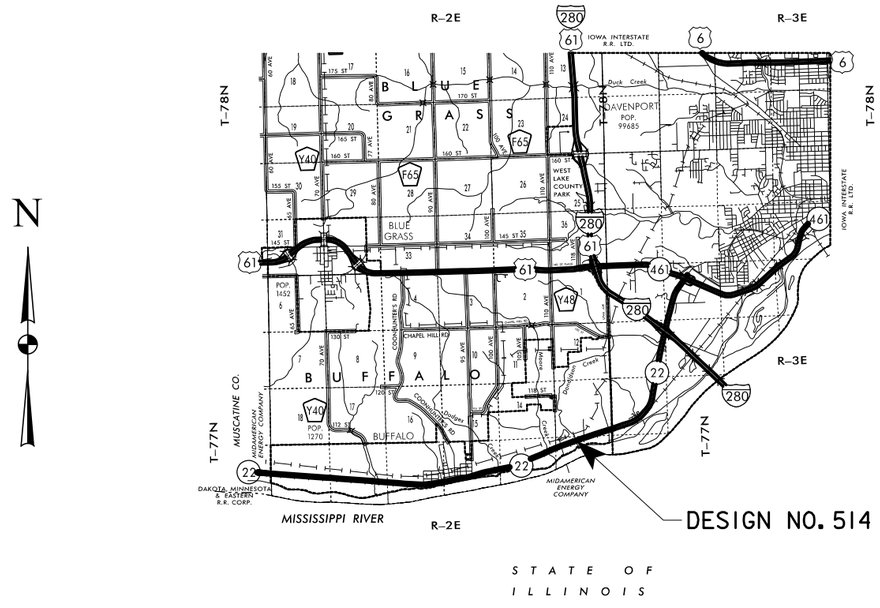
SCOTT COUNTY

BRIDGE AND APPROACHES - PPCB

IA 22 OVER DONALDSON CREEK

2.8 MILES W. OF I-280

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.



N

LOCATION MAP

REVISIONS

	TOTAL SHEETS
	152
PROJECT NUMBER	
BRFN-022-5(29)--39-82	
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	
I0-82-022-030	

INDEX OF SHEETS

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

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER C.6

DESIGN DATA RURAL

2013	AADT	4900	V.P.D.
2033	AADT	6100	V.P.D.
2033	DHV	630	V.P.H.
TRUCKS		21	%
Total Design ESALs			

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	WILLIAM D. TUCKER	STRUCTURAL DESIGN
1	PATRICIA G. SCHWARZ	HYDRAULIC DESIGN
SPS.1, CS.1	ROBERT L. STANLEY	GEOTECHNICAL DESIGN
A.1	JASON M. HOLST	ROADWAY DESIGN

HYDRAULIC DESIGN

LICENSED PROFESSIONAL ENGINEER — Patricia G. Schwarz 13170 — 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.

Patricia G. Schwarz — 11-26-2013
Signature — Date

Patricia G. Schwarz
Printed or Typed Name

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: SHEETS 4 THRU 7 OF 152

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER — William D. Tucker 11362 — 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.

William D. Tucker — 11-26-2013
Signature — Date

William D. Tucker
Printed or Typed Name

My license renewal date is December 31, 2015

Pages or sheets covered by this seal: SHEETS 1 THRU 30 OF 152

PROJECT DIRECTORY NAME: 8202203010

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	88.5	
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.00	
3	2402-2720000	EXCAVATION, CLASS 20	CY	197	
4	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	76.9	
5	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	CY	251.0	
6	2403-7000220	TRIAL BATCH HIGH PERFORMANCE STRUCTURAL CONCRETE	LS	1.00	
7	2404-7775000	REINFORCING STEEL	LB	246	
8	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	68,403	
9	2407-0562900	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB100	EACH	9	
10	2408-7800000	STRUCTURAL STEEL	LB	3,484	
11	2414-6424110	CONCRETE BARRIER RAILING	LF	244.0	
12	2501-0201057	PILES, STEEL, HP 10 X 57	LF	610	
13	2501-6335010	PREBORED HOLES	LF	165	
14	2507-0050005	EARTH SCREW ANCHOR	EACH	21	
15	2507-3250005	ENGINEERING FABRIC	SY	1,394.0	
16	2507-6800061	REVETMENT, CLASS E	TON	529.8	
17	2507-8029000	EROSION STONE	TON	10.2	
18	2507-8500060	FABRIC FORMED CONCRETE REVETMENT, ARTICULATING BLOCK MAT, 6 INCH	SY	941.3	
19	2507-8501100	CONCRETE GROUT FOR FABRIC FORMED CONCRETE REVETMENT	CY	169.4	
20	2533-4980005	MOBILIZATION	LS	1.00	
21	2599-9999018	HIGH FRICTION SURFACE TREATMENT	SY	1,526.0	
22	2601-2638650	BRIDGE WING ARMORING - EROSION STONE	SY	18.3	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2104-2710020	**EXCAVATION, CLASS 10, CHANNEL** INCLUDES EXCAVATION NECESSARY FOR PLACEMENT OF ALL REVETMENT.
2	2401-6745625	**REMOVAL OF EXISTING BRIDGE** - -
3	2402-2720000	**EXCAVATION, CLASS 20** - -
4	2403-0100010	**STRUCTURAL CONCRETE (BRIDGE)** INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), FLOODABLE BACKFILL, POROUS BACKFILL, GEOTEXTILE FABRIC, WATER FLOODING, AND SUBDRAIN OUTLET AND PIPE CLIP AT ABUTMENTS. INCLUDES FURNISHING AND PLACING 3 INCH DIAMETER PVC PLASTIC PIPE AND EXPANDING FOAM IN THE ABUTMENT WINGS. INCLUDES 2.2 CY OF CONCRETE TO BE PLACED IN BOTTOM OF PREBORED HOLES AT WEST ABUTMENT. QUANTITY IS BASED ON A 3 FOOT DEPTH OF CONCRETE IN 11-18 INCH DIAMETER HOLES.
5	2403-7000210	**HIGH PERFORMANCE STRUCTURAL CONCRETE** THIS BID ITEM INCLUDES THE CONCRETE FOR THE SLAB AND ABUTMENT DIAPHRAGMS. REFER TO THE DEVELOPMENTAL SPECIFICATION FOR "HIGH PERFORMANCE CONCRETE FOR STRUCTURES" FOR ADDITIONAL INFORMATION.
6	2403-7000220	**TRIAL BATCH HIGH PERFORMANCE STRUCTURAL CONCRETE** - -
7	2404-7775000	**REINFORCING STEEL** - -
8	2404-7775005	**REINFORCING STEEL, EPOXY COATED** INCLUDES MECHANICAL SPLICERS IN THE ABUTMENT FOOTING.
9	2407-0562900	**BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB100** COARSE AGGREGATES FOR PRESTRESSED CONCRETE BRIDGE UNITS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 4115 CLASS III DURABILITY. GRADATION OF THE COARSE AGGREGATE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 2407.02, A, OF THE STANDARD SPECIFICATIONS. INCLUDES ABUTMENT BEARING MATERIAL.
10	2408-7800000	**STRUCTURAL STEEL** INCLUDES 6 DRAINS AT 92 LB EACH.

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
11	2414-6424110	**CONCRETE BARRIER RAILING** INCLUDES MATERIAL AND LABOR ASSOCIATED WITH PROVIDING AND INSTALLING THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS. INCLUDES 130 LF OF 2" DIAMETER RIGID STEEL CONDUIT. IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.
12	2501-0201057	**PILES, STEEL, HP 10 X 57** - -
13	2501-6335010	**PREBORED HOLES** ONLY REQUIRED AT WEST ABUTMENT. HOLES MUST BE BREBORED THROUGH ROCK TO ELEVATION 547.63. PREBORING WILL REQUIRE DRILLING THROUGH SOIL, BROKEN AND WEATHERED LIMESTONE, AND MEDIUM HARD TO HARD LIMESTONE.
14	2507-0050005	**EARTH SCREW ANCHOR** EARTH SCREW ANCHORS SHALL BE FURNISHED AND PLACED IN CONFORMANCE WITH THE PLAN. MEASUREMENT WILL BE PER EACH. FOR CONSTRUCTION OF EARTH SCREW ANCHORS THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH FOR THE QUANTITY OF ANCHORS FURNISHED AND PLACED. EARTH SCREW ANCHORS SHALL BE STEEL HELICAL SCREW ANCHORS, 48" OVERALL LENGTH, $\frac{5}{8}$" ROD DIA., 6" HELIX DIAMETER. ANCHORS SHALL BE PAINTED OR GALVANIZED. ANCHORS SHALL BE INSTALLED SO THAT THE EYE IS EMBEDDED IN THE CENTER OF THE FINISHED ABM BLOCK. THE EYE SHALL CONNECT TO AT LEAST ONE OF THE REINFORCING CABLES BY EITHER 1) HOOKING AROUND A CABLE OR 2) USE OF A SHORT LOOP OF CABLE, SPLICED PER THE SPECIFICATIONS. INSTALLATION OF THE ANCHOR MAY BE MADE BY SLITTING OF THE FABRIC AND SEALING OF THE SLIT WITH TAPE.
15	2507-3250005	**ENGINEERING FABRIC** ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01,B,3, OF THE STANDARD SPECIFICATIONS.
16	2507-6800061	**REVETMENT, CLASS E** ESTIMATED AT 1.6 TON/CY.
17	2507-8029000	**EROSION STONE** ESTIMATED AT 1.6 TON/CY.
18	2507-8500060	**FABRIC FORMED CONCRETE REVETMENT, ARTICULATING BLOCK MAT, 6 INCH** FABRIC FORMED REVETMENT ARTICULATING MAT DIMENSIONS SHOWN ON THE DRAWINGS REFLECT THE FINISHED DIMENSION ALONG GRADE FOLLOWING FILLING WITH CONCRETE GROUT. THE MAT QUANTITY IS BASED ON THE FINISHED MAT DIMENSIONS. THE FABRIC FORMED REVETMENT QUANTITY INCLUDES THE FORM AREA IN ANCHOR, TERMINAL OR TOE TRENCHES SHOWN ON THE DRAWINGS AND ALL FORM LAYERS IN OVERLAPS SHOWN ON THE DRAWINGS. LABOR, EQUIPMENT AND MATERIALS REQUIRED TO ANCHOR FABRIC FORMS DURING PLACEMENT AND CURING OF GROUT SHALL BE CONSIDERED INCIDENTAL TO THIS WORK. ARTICULATING MAT DIMENSIONS SHOWN ON THE DRAWINGS ARE IN INCREMENTS OF THE SPECIFIED FINISHED BLOCK DIMENSIONS, 20 INCH IN THE MILL WIDTH (MW) DIRECTION X 20 INCH PERPENDICULAR TO THE MILL WIDTH DIRECTION. ANY CABLE PROTRUDING FROM MAT THAT FORMS A CLOSED LOOP SHALL BE CUT FOLLOWING PLACEMENT AND INITIAL SET OF GROUT TO PREVENT SNAGGING OF FLOOD DEBRIS BY THE CABLE LOOP. THE RESULTANT CABLE ENDS PROTRUDING FROM THE MAT SHALL NOT EXCEED 18 INCH IN LENGTH. GROUT SHALL NOT BE DISCHARGED ON THE TOP OF THE MAT THAT WILL FILL THE SEAM 'VALLEY' BETWEEN BLOCKS. A WEAKENED PLANE ALONG THE SEAM LINES IS REQUIRED TO FACILITATE CRACKING AND ARTICULATION. COMPENSATION FOR EXCAVATION WILL BE MADE UNDER THE EXCAVATION, CLASS 10 CHANNEL BID ITEM.
19	2507-8501100	**CONCRETE GROUT FOR FABRIC FORMED CONCRETE REVETMENT** - -
20	2533-4980005	**MOBILIZATION** - -
21	2599-9999018	**HIGH FRICTION SURFACE TREATMENT** CONCRETE SHALL HAVE A MINIMUM AGE OF 28 DAYS BEFORE BEGINNING SURFACE PREPARATION. THE ENTIRE BRIDGE DECK WILL RECIEVE TREATMENT, BUT ONLY THE 48 FOOT WIDTH OF TRAFFIC LANES ON APPROACHES WILL RECIEVE TREATMENT. INCLUDES 779 SY FOR THE BRIDGE AND 747 SY FOR THE APPROACHES. INCLUDES 70 FEET OF APPROACH LENGTH AT EACH END OF BRIDGE.
22	2601-2638650	**BRIDGE WING ARMORING - EROSION STONE** INCLUDES FURNISHING AND PLACING ENGINEERING FABRIC, EROSION STONE, AND ALL REQUIRED EXCAVATING, SHAPING AND COMPACTING FOR WING ARMORING.

NOTE:
ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

QUANTITIES

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 29 FILE NO. 30687 DESIGN NO. 514

GENERAL NOTES:

THIS DESIGN IS FOR REPLACEMENT OF THE EXISTING 30' x 83'-5 CONCRETE ARCH BRIDGE, DESIGN NO. 4124 & 370 SCOTT COUNTY, WITH A 100'-0 x 68' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE. PLANS OF THE EXISTING BRIDGE WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" SHALL INCLUDE REMOVAL OF THE EXISTING 30' x 83'-5 CONCRETE ARCH BRIDGE. STAGE I CONSTRUCTION OF NEW BRIDGE WILL BE COMPLETED BEFORE STARTING REMOVAL OF EXISTING ARCH BRIDGE. PORTIONS OF THE SOUTH FLARED WINGWALLS AND ARCH FOOTINGS SHALL REMAIN IN PLACE. PORTIONS OF THE 2 ABANDONED WATER LINES IN THE STREAM BED SHALL BE REMOVED AS NECESSARY TO COMPLETE CONSTRUCTION.

REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. PARTIAL REMOVALS OF CONCRETE SHALL BE INITIATED WITH A $\frac{3}{4}$ INCH SAW CUT.

ANY DAMAGE TO ANY STEEL OR CONCRETE NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE STATE.

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

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

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

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

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

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

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 CONTRACTOR SHALL PROVIDE TEMPORARY SHORING (SHEET PILE OR OTHER) TO PREVENT THE EARTH UNDER THE TRAFFIC LANE, FROM SLOUGHING IN DURING CONSTRUCTION. ALL COST OF SHORING, WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO DIRECT PAYMENT WILL BE MADE. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR, SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED. THE CONTRACTOR SHALL SUBMIT SHORING PLANS FOR REVIEW. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS, STILL APPLIES.

FLOOD PLAIN DEVELOPMENT PERMIT NUMBER FP 2012-109 SHALL APPLY TO WORK ON THIS PROJECT.

THE CONTRACTOR SHALL NOTE THE STANDARD ABUTMENT DETAILS FOR THE EAST ABUTMENT HAVE BEEN MODIFIED TO OFFSET THE ABUTMENT FOOTING FROM THE WINGWALL TO AID IN TYING THE REINFORCING STEEL BETWEEN THE FOOTING TO WINGWALL AND THE FOOTING TO BACKWALL.

CONCRETE FORMS ARE REQUIRED TO REMAIN IN PLACE 5 DAYS OR LONGER IN ACCORDANCE WITH ARTICLE 2403.03, M, 2, OF THE STANDARD SPECIFICATIONS, EXCEPT THE MINIMUM CONCRETE FLEXURAL STRENGTH REQUIRED BEFORE REMOVAL OF FORMS SHALL BE 575 PSI.

THE BRIDGE CONTRACTOR IS TO CLEAR AND/OR SHAPE THE CHANNEL WITHIN THE LIMITS AS SHOWN ON THE "SITUATION PLAN" AND "LONGITUDINAL SECTION ALONG CENTERLINE APPROACH ROADWAY".

THIS PROJECT USES THE LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHODOLOGY FOR DETERMINING PILE CONTRACT LENGTH AND NOMINAL AXIAL BEARING RESISTANCE. NOMINAL AXIAL BEARING RESISTANCES WILL BE LARGER THAN BEARING VALUES IN THE PAST, BUT CONSTRUCTION CONTROL BLOW COUNTS WILL BE APPROXIMATELY THE SAME. A WEAP ANALYSIS AND BEARING GRAPH WILL BE PREPARED BY THE OFFICE OF CONSTRUCTION THAT GIVES THE RELATIONSHIP BETWEEN REQUIRED NOMINAL AXIAL BEARING RESISTANCE AND BLOW COUNT.

FOR THE CONTRACTOR'S BIDDING PURPOSES, PARTICULARLY FOR THE SIZING OF THE PILE DRIVING HAMMER, THE APPROXIMATE PREVIOUS DESIGN METHODOLOGY BEARING VALUES AT END OF DRIVE (EOD) ARE GIVEN BELOW. THESE VALUES SHALL NOT BE USED FOR CONSTRUCTION CONTROL AND ARE GIVEN ONLY FOR COMPARATIVE PURPOSES.

THE PREVIOUS DESIGN BEARING FOR THE WEST ABUTMENT PILES WOULD HAVE BEEN ABOUT 63 TONS.
THE PREVIOUS DESIGN BEARING FOR THE EAST ABUTMENT PILES WOULD HAVE BEEN ABOUT 62 TONS.

THE NEW CONCRETE FOR THE BRIDGE DECK AND APPROACHES WILL NOT REQUIRE LONGITUDINAL GROOVING. THE FINAL FINISH SHALL BE A BROOM FINISH IN ACCORDANCE WITH ARTICLE 2301.03,H,2 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK DIMENSIONS TABLE

NO.	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	103.0
2	MINIMUM DECK WIDTH	L.F.	71.2
3	MAXIMUM DECK WIDTH	L.F.	71.2
4	DECK AREA	S.F.	7334

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.

MECHANICAL SPLICE NOTES:

THE 8a1 and 8a2 BARS IN THE ABUTMENT FOOTING SHALL BE SPLICED AT THE LOCATIONS SHOWN USING MECHANICAL SPLICE ASSEMBLIES. MECHANICAL SPLICE ASSEMBLIES CONSIST OF MECHANICAL SPLICERS AND REINFORCING SPLICE BARS AS REQUIRED TO FACILITATE THE USE OF THE MECHANICAL SPLICER. THE MECHANICAL SPLICE ASSEMBLY USED SHALL MEET THE REQUIREMENTS OF MATERIALS IM 451 APPENDIX E. REINFORCING SPLICE BARS SHALL BE A MINIMUM OF 1 INCH DIA. FOR THE 8a1 AND 8a2 BARS. ALL MECHANICAL SPLICE ASSEMBLIES TO BE USED IN SPLICING THE 8a1 AND 8a2 BARS IN THE ABUTMENT FOOTINGS SHALL BE EPOXY COATED.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL EPOXY COATED" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL EPOXY COATED". A TOTAL OF 18 EPOXY COATED SPLICE ASSEMBLIES WILL BE REQUIRED.

SPECIFICATIONS:

DESIGN: AASHTO LRFD 6th Ed, SERIES OF 2012.

CONSTRUCTION: 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 INCLUDING SPECIAL PROVISIONS FOR:
-WORK ON RR ROW (D, M, & E i.e. CP)
-HIGH FRICTION SURFACE TREATMENT
AND DEVELOPMENTAL SPECIFICATIONS FOR:
-FABRIC FORMED CONCRETE STRUCTURE REVETMENT
-HIGH PERFORMANCE CONCRETE FOR STRUCTURES
-FLOATING SILT CURTAIN
-COMPACTION WITH MOISTURE CONTROL

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6th Ed, SERIES OF 2012.
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4.0 KSI, EXCEPT PRESTRESSED BEAM AND BRIDGE DECK CONCRETE AS NOTED.
PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEETS 21.
BRIDGE DECK = f'c = 5.0 KSI.
STRUCTURAL STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 6. ASTM A709 GRADE 36, (AASHTO M270 GRADE 36).

DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
4124	ORIGINAL ARCH BRIDGE
370	ARCH BRIDGE EXTENSION
514	REPLACEMENT PPCB BRIDGE

TRAFFIC CONTROL PLAN

NOTE: THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN ON THE ROAD PLAN IN THESE PLANS.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

GENERAL NOTES

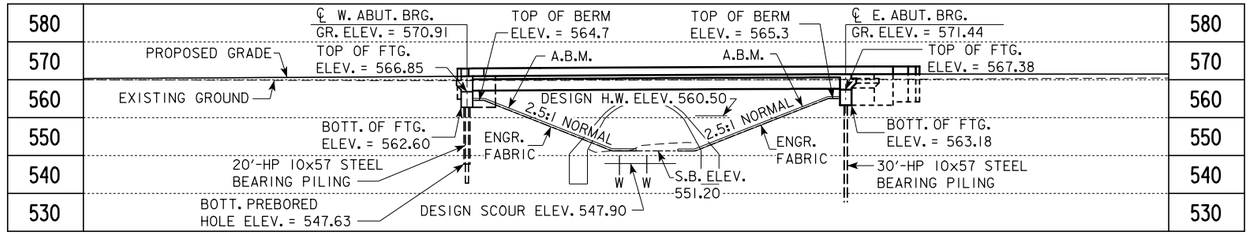
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 29 FILE NO. 30687 DESIGN NO. 514

BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498.



LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY

+0.300% +0.700% -0.500%

VPI STA = 292+25.00
VPI ELEV = 570.29
VC = 190.00'

VPI STA = 294+50.00
VPI ELEV = 571.87
VC = 225.00'

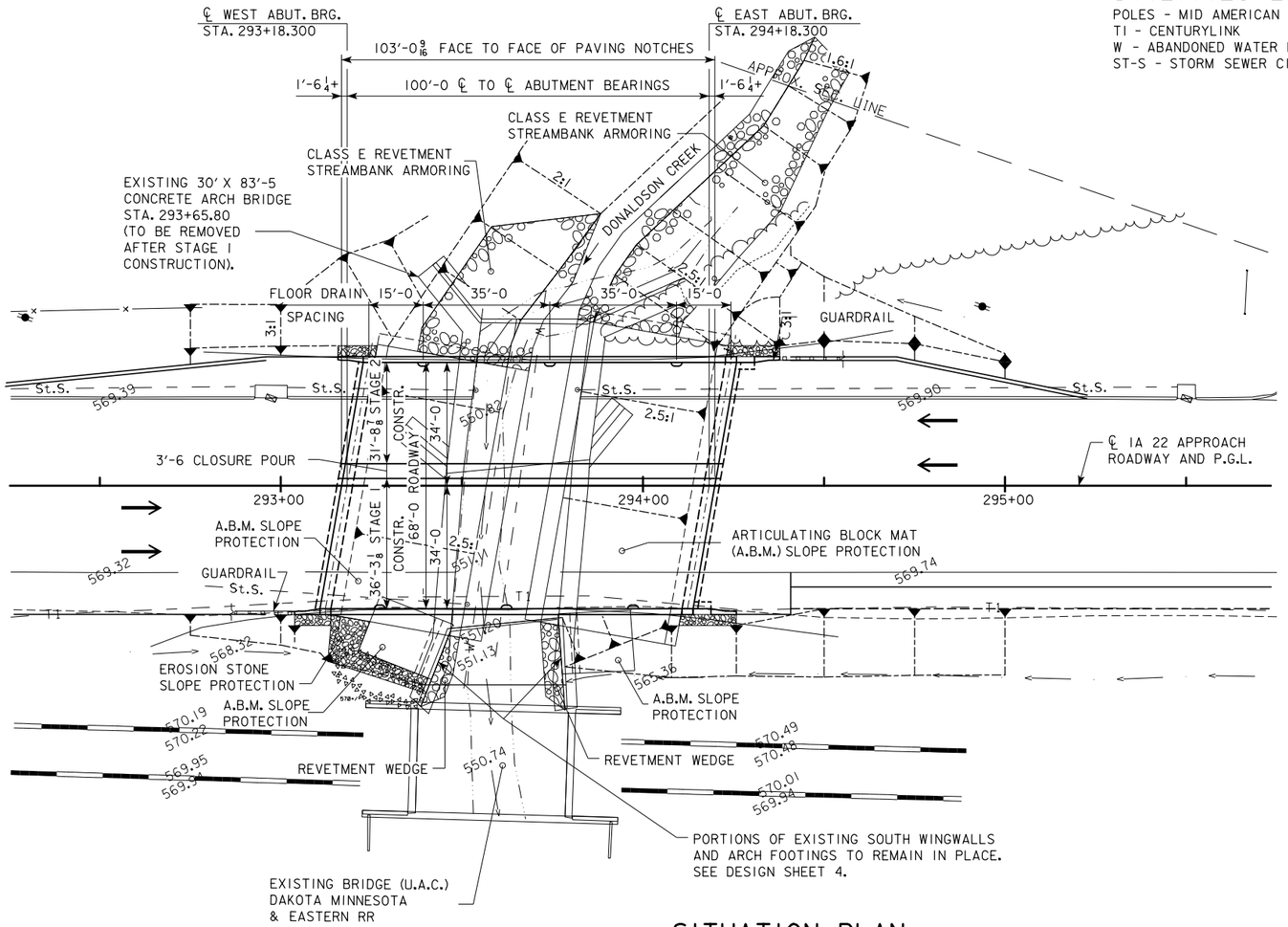
PROPOSED PROFILE GRADE IA 22

NOTES:

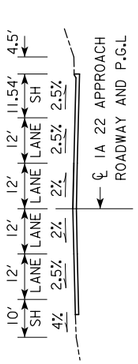
TOP OF BRIDGE DECK CROWN 0.03' BELOW PROFILE GRADE.

UTILITIES LEGEND:

POLES - MID AMERICAN ENERGY
TI - CENTURYLINK
W - ABANDONED WATER LINE LINWOOD MINING
ST-S - STORM SEWER CITY OF BUFFALO



SITUATION PLAN



TYPICAL APPROACH SECTION

HYDRAULIC DATA

DRAINAGE AREA = 3.3 SQ. MI.
STREAM SLOPE = 47.6 FT./MI.

Q2 = 390 CFS
STAGE = 555.7
CHANNEL VELOCITY = 4.2 FPS

Q_{50} = 1920 CFS
STAGE = 560.5
BACKWATER = 0.0 FT.
AVG. BRIDGE VELOCITY = 5.2 FPS

Q_{100} = 2320 CFS
STAGE = 561.3
BACKWATER = 0.0 FT.
AVG. BRIDGE VELOCITY = 5.5 FPS
CALCULATED DESIGN SCOUR = 547.9*

Q_{500} = 3110 CFS
STAGE = 562.9
AVG. BRIDGE VELOCITY = 5.8 FPS
CALCULATED CHECK SCOUR = 547.9*

ROADWAY OVERTOP 570.0
STA. 291+30

EXTREME HW STAGE = NOT AVAILABLE
AVG. LOW WATER STAGE = 551.4

* ACTUAL SCOUR WILL BE DEPENDENT UPON SOILS REVIEW OF THE ELEVATION TO COMPETENT ROCK.

TRAFFIC ESTIMATE

2013 AADT	4900	V.P.D.
2033 AADT	6100	V.P.D.
2033 DHV	630	V.P.H.
TRUCKS	21	%
TOTAL DESIGN ESALs	-	

LOCATION

IA 22 OVER DONALDSON CREEK
T-77N R-2E
SECTION 24
BUFFALO TOWNSHIP
SCOTT COUNTY
FHWA NO. 047181
EXISTING BRIDGE MAINT. NO. 8292.8S022
LATITUDE 41.464382°
LONGITUDE -90.681313°

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SITUATION PLAN

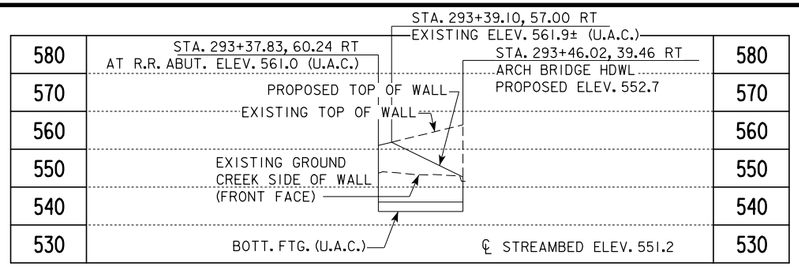
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

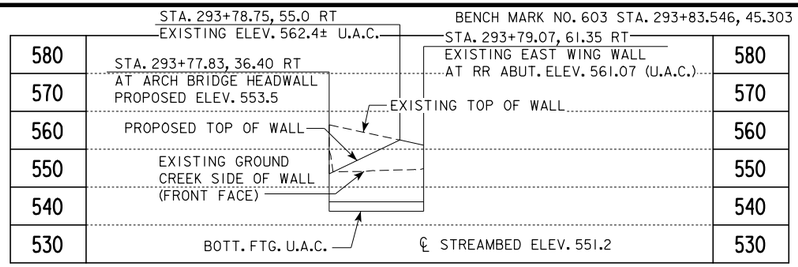
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT | SCOTT COUNTY | PROJECT NUMBER BRFN-022-5(29)--39-82 | SHEET NUMBER 4

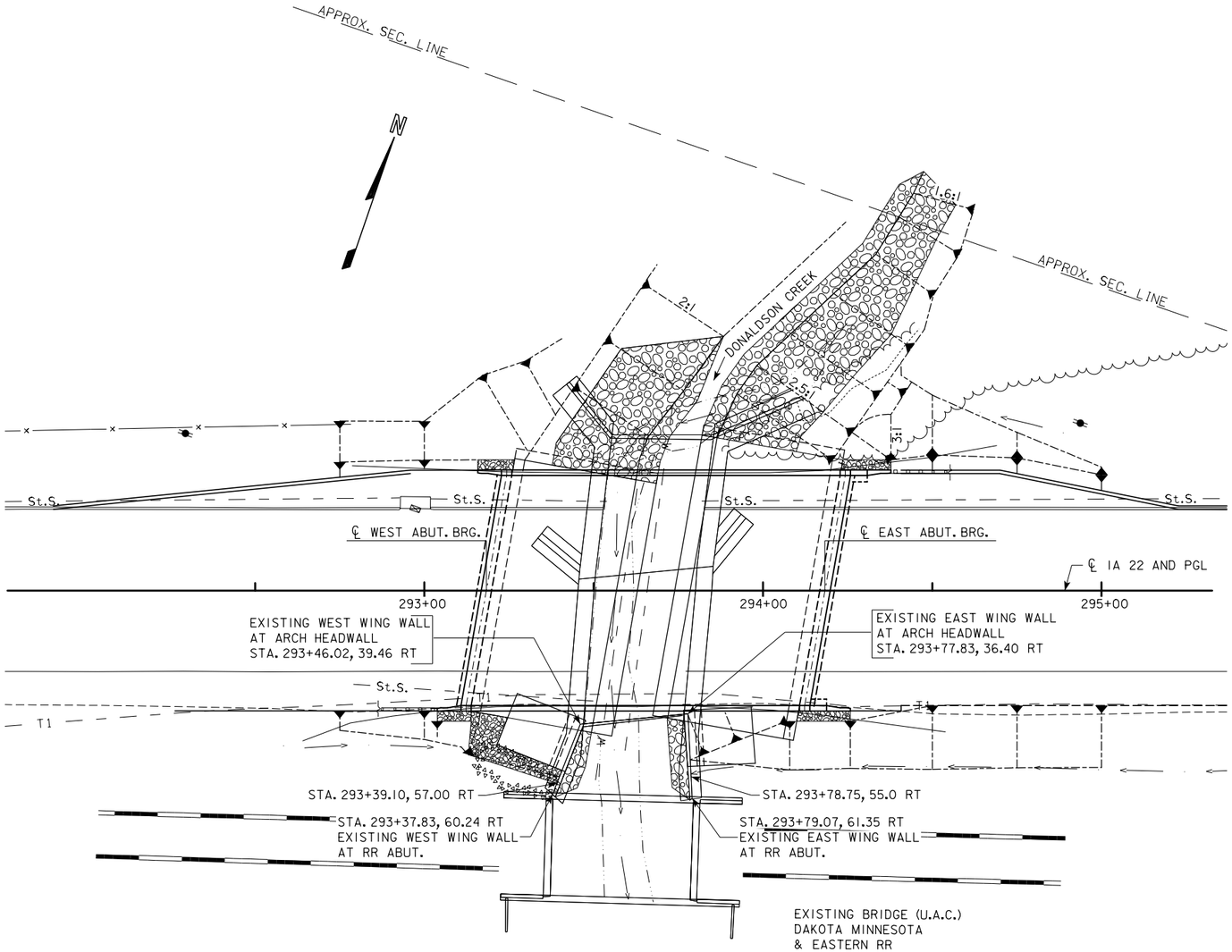


SECTION ALONG EXISTING WEST WING WALL



BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498

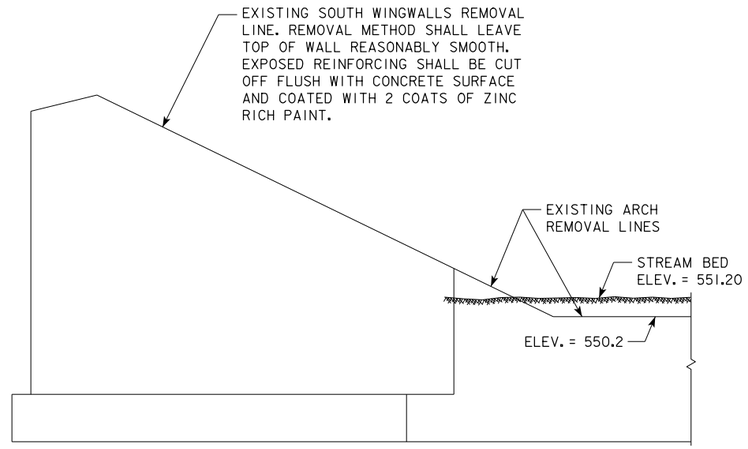
SECTION ALONG EXISTING EAST WING WALL



SITUATION PLAN

NOTES:

THE DOWNSTREAM WING WALLS WILL REMAIN IN PLACE, WITH PROPOSED MODIFICATION TO THE TOP OF WALL PROFILES AS SHOWN IN THE SECTIONS.



EXISTING ARCH REMOVAL LIMITS

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SITUATION PLAN

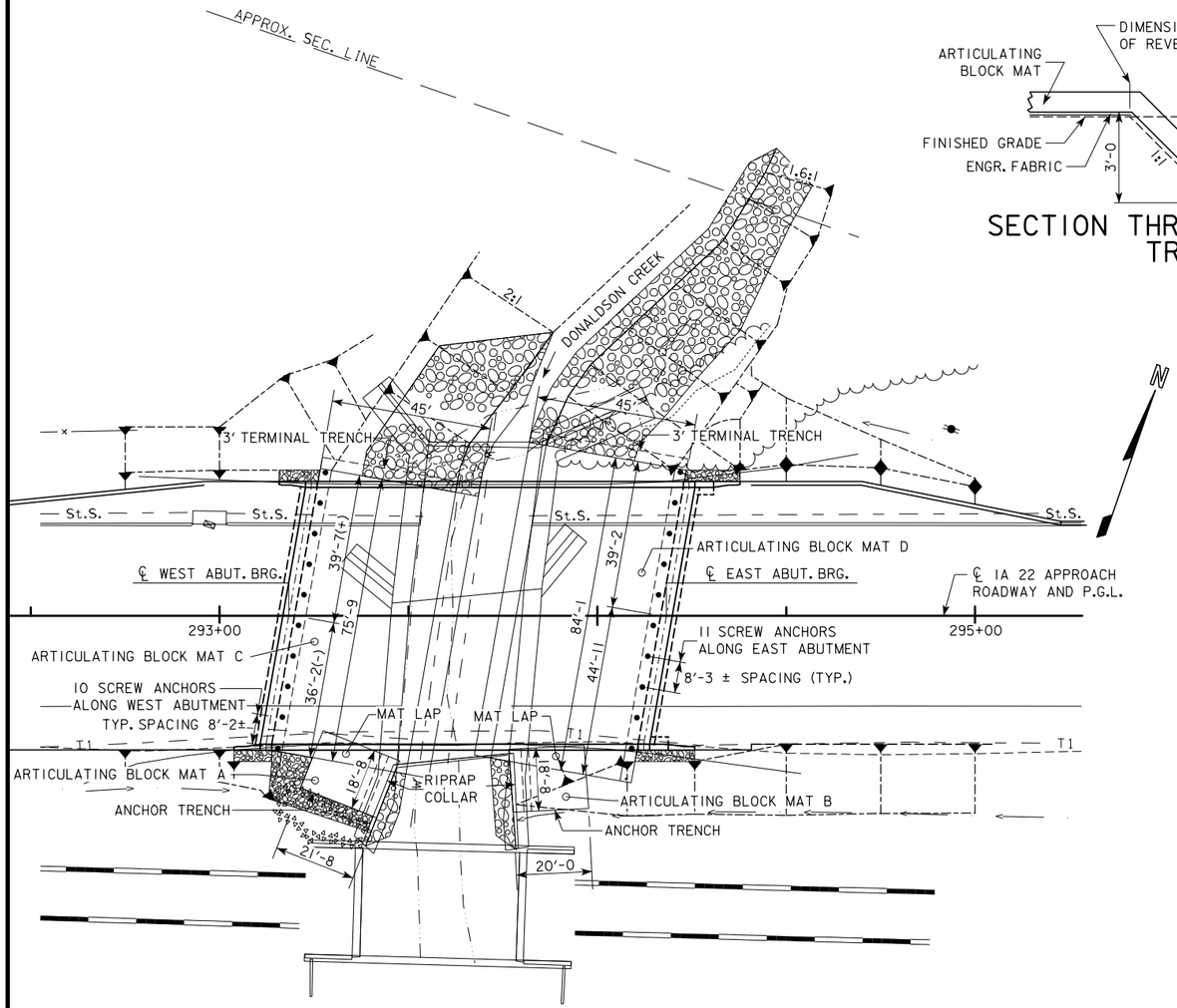
STATION: 293+68.30 DECEMBER, 2012

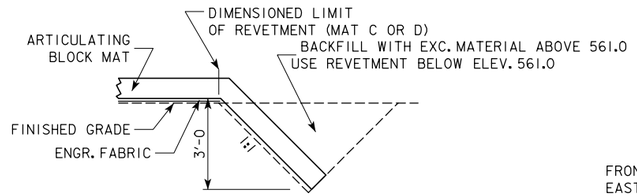
SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

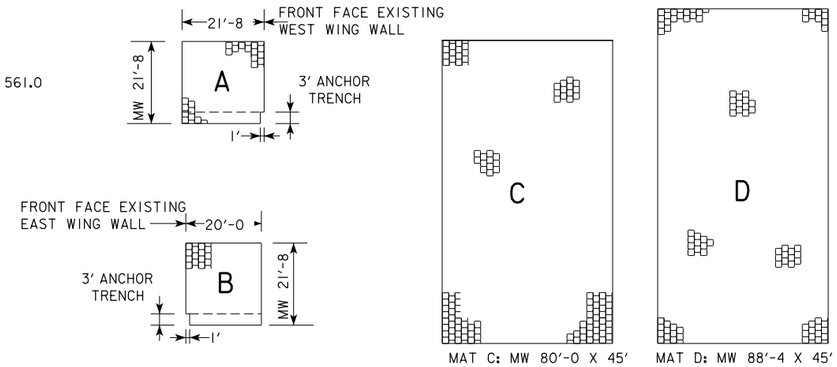
DESIGN SHEET NO. 4 OF 29 FILE NO. 30687 DESIGN NO. 514

BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498

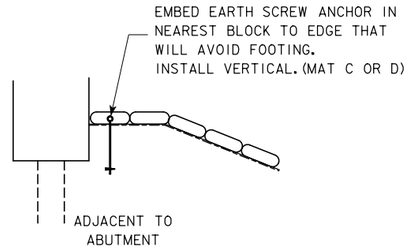




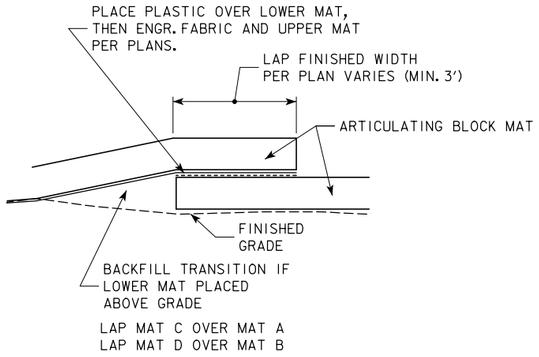
SECTION THROUGH TERMINAL TRENCH



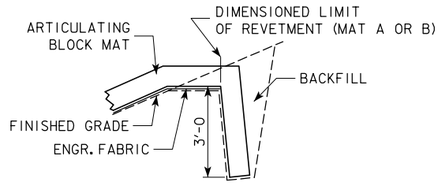
MAT SIZE DETAILS



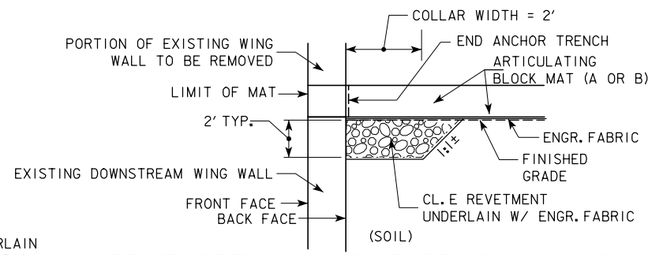
EARTH SCREW ANCHOR DETAIL



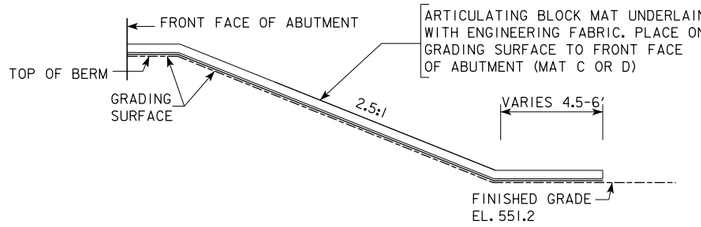
MAT LAP DETAIL



SECTION THROUGH ANCHOR TRENCH



EDGE DETAIL AND RIPRAP COLLAR



SECTION THRU NON-EMBEDDED REVETMENT BERM

NOTES:

1. ARTICULATING BLOCK MAT (A.B.M.) DIMENSIONS ARE ALONG GRADE.

2. A.B.M. SHALL BE UNDERLAIN WITH ENGINEERING FABRIC TO THE DIMENSIONED LIMITS.

3. POSITION THE EDGE OF MATS A AND B FLUSH WITH THE FRONT FACE OF EXISTING WING WALLS. MATS A AND B REQUIRE A 1' X 3' NOTCH OUT DUE TO THE ANCHOR TRENCH TERMINATING AT THE BACK FACE OF THE WING WALL.

4. POSITION THE EDGE OF MATS C AND D FLUSH ALONG THE FRONT FACE OF ABUTMENTS. MATS C AND D OVERLAP MATS A AND B.

5. SCREW ANCHORS SHALL BE INSTALLED ALONG THE FRONT FACE OF EACH ABUTMENT AT THE NUMBER AND SPACING SHOWN. SEE DETAIL.

SITUATION PLAN

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SITUATION PLAN

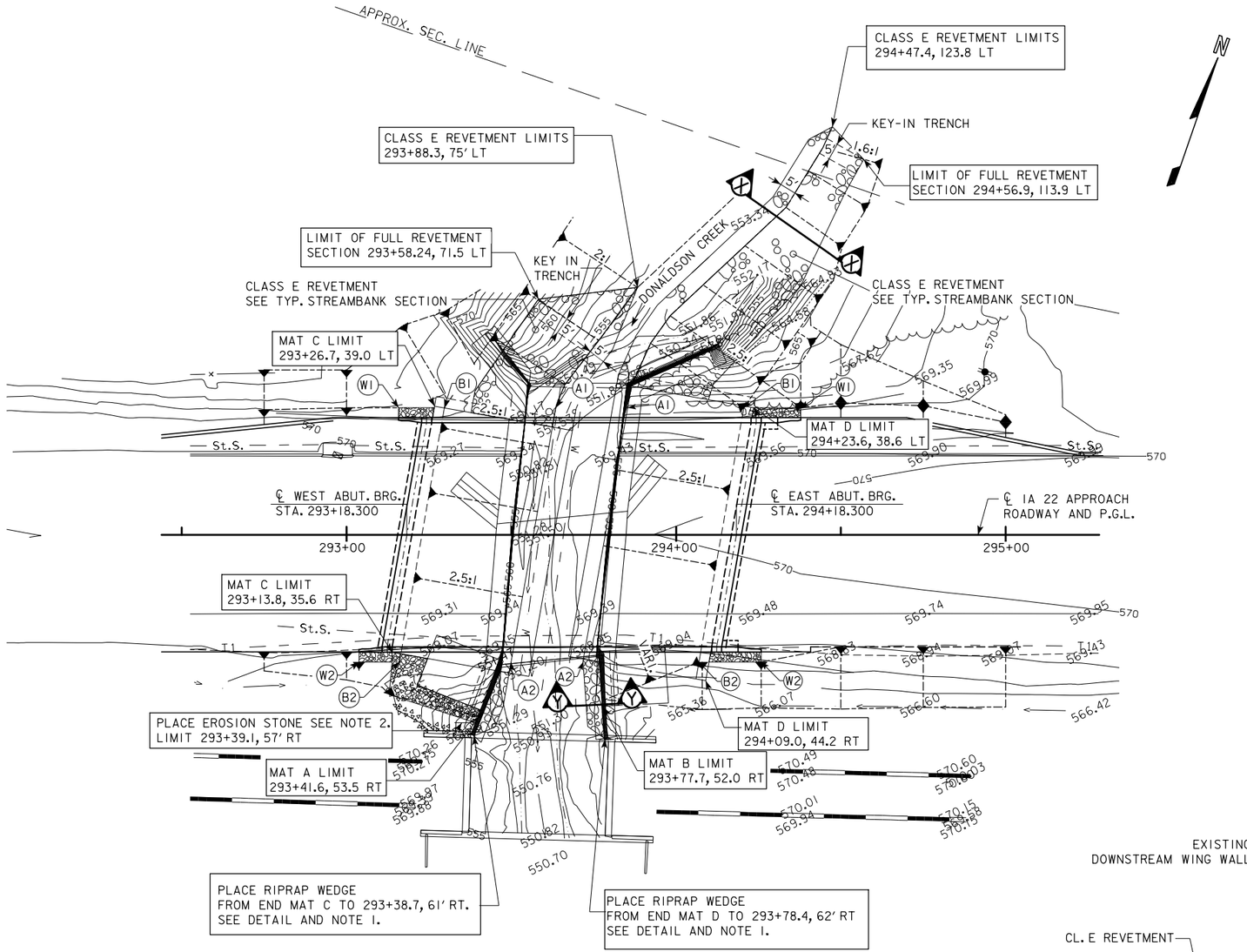
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 29 FILE NO. 30687 DESIGN NO. 514

BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498



SITE PLAN

NOTES:

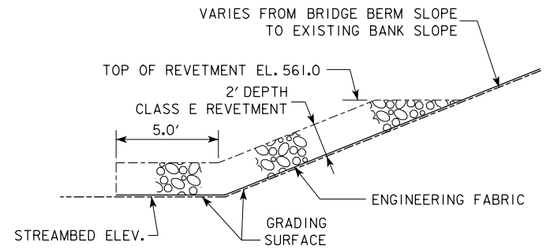
1. FOR RIPRAP WEDGE, CORE OUT 3' DEPTH OF SOIL ON CREEK SIDE (FRONT FACE) OF EXISTING WING WALLS. PLACE 3' DEPTH CLASS E REVETMENT UNDERLAIN WITH ENGINEERING FABRIC. MATCH TOP OF REVETMENT TO ADJACENT BANK SLOPES.

2. CORE OUT 9 INCH DEPTH OF SOIL AT SOUTHWEST CORNER DITCH AREA AS SHOWN. PLACE 9 INCH DEPTH OF EROSION STONE UNDERLAIN WITH ENGINEERING FABRIC. MATCH TOP OF EROSION STONE TO ADJACENT GRADES AND TOP OF MAT.

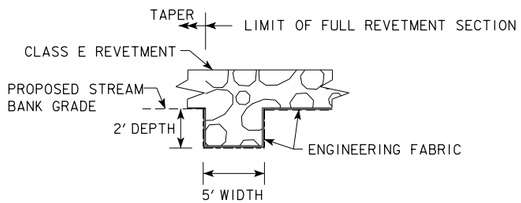
BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	293+63.94	38.58 LT	551.20	293+84.74	38.58 LT	551.20
A2	293+50.34	38.58 RT	551.20	293+71.14	38.58 RT	551.20
B1	293+29.67	38.58 LT	564.70	294+20.53	38.58 LT	565.30
B2	293+16.07	38.58 RT	564.70	294+06.93	38.58 RT	565.30
W1	293+15.77	38.58 LT	570.14	294+37.80	38.58 LT	570.73
W2	293+03.78	38.58 RT	570.05	294+25.80	38.58 RT	570.70

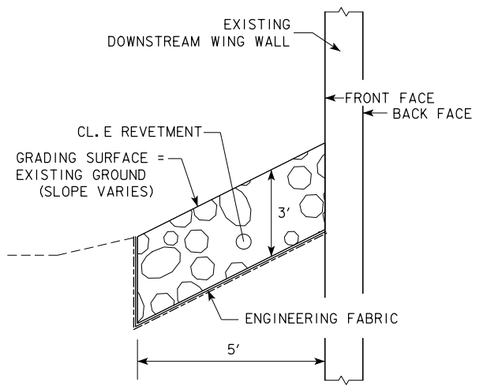
BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



TYPICAL STREAMBANK SECTION X-X



SECTION THROUGH KEY-IN TRENCH



TYPICAL RIPRAP WEDGE SECTION Y-Y

ESTIMATED ARMORING QUANTITIES

LOCATION	REVETMENT CL. E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)	6 IN. A.B.M. (SY)	EROSION STONE (T)	CONC. GROUT (CY)	SCREW ANCH. (EA.)
BANK LINING - WEST STREAMBANK	172.0	158.9	9.1	0	0	0	0
BANK LINING - EAST STREAMBANK	305.7	284.6	6.2	0	0	0	0
BERM LINING - WEST ABUTMENT	0	378.8	15.0	400.0	0	72.0	10
BERM LINING - EAST ABUTMENT	0	420.5	15.0	441.7	0	79.5	11
BANK LINING AND COLLAR - WEST WING	23.6	88.1	23.3	51.8	10.2	9.3	0
BANK LINING AND COLLAR - EAST WING	28.5	63.1	19.9	47.8	0	8.6	0
TOTALS	529.8	1394.0	88.5	941.3	10.2	169.4	21

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

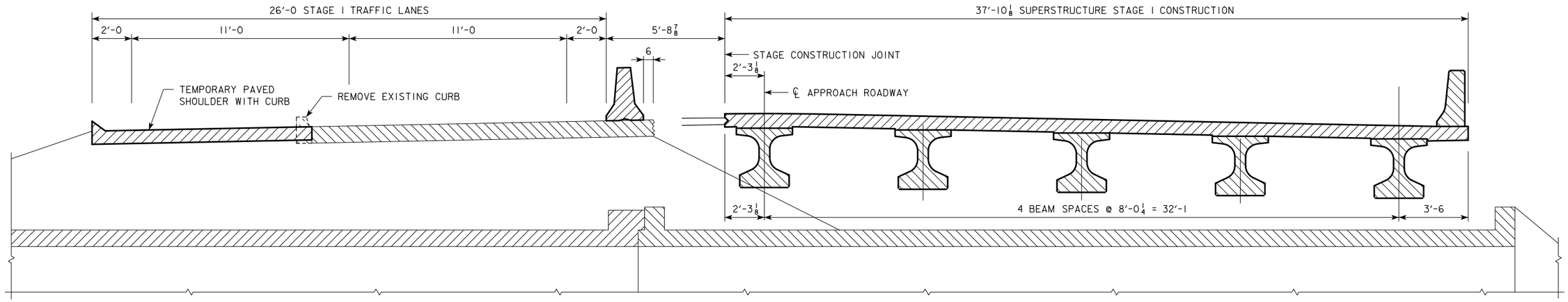
SITUATION PLAN

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

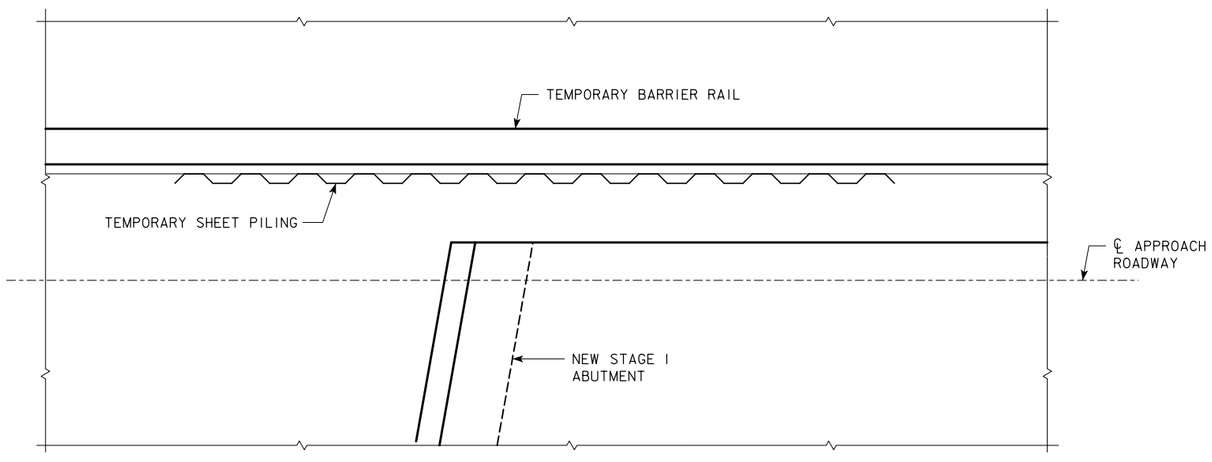
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 29 FILE NO. 30687 DESIGN NO. 514



STAGE I ELEVATION

(LOOKING EAST)



PART PLAN VIEW

(WEST ABUTMENT ORIENTATION SHOWN,
EAST ABUTMENT DETAILS ARE SIMILAR.)

STAGE I NOTES (ROADWAY PLAN STAGES I AND II):

1. REMOVE EXISTING CURB AND PLACE TEMPORARY SHOULDER PAVEMENT IN W.B. LANES. SEE ROAD SHEETS FOR DETAILS AND TRAFFIC CONTROL.
2. PLACE TBR AND OTHER TRAFFIC CONTROL MEASURES ON THE EXISTING WB LANES AND SHIFT ALL TRAFFIC TO THE WB LANES IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN NOTE ON THE ROAD SHEETS.
3. REMOVE THE EXISTING EB LANES AND APPROACH PAVEMENT.
4. PLACE SHEET PILING NEAR AND PARALLEL TO THE SLAB BREAKLINE NEAR THE PROPOSED ABUTMENT TO SUPPORT STAGE I TRAFFIC LANES.
5. CONSTRUCT STAGE I OF NEW ABUTMENTS.
6. CONSTRUCT STAGE I OF THE SUPERSTRUCTURE.
7. PLACE SHORING BETWEEN THE STAGE I ABUTMENT AND SHEET PILING DURING BACK FILLING TO CONTAIN SOIL.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

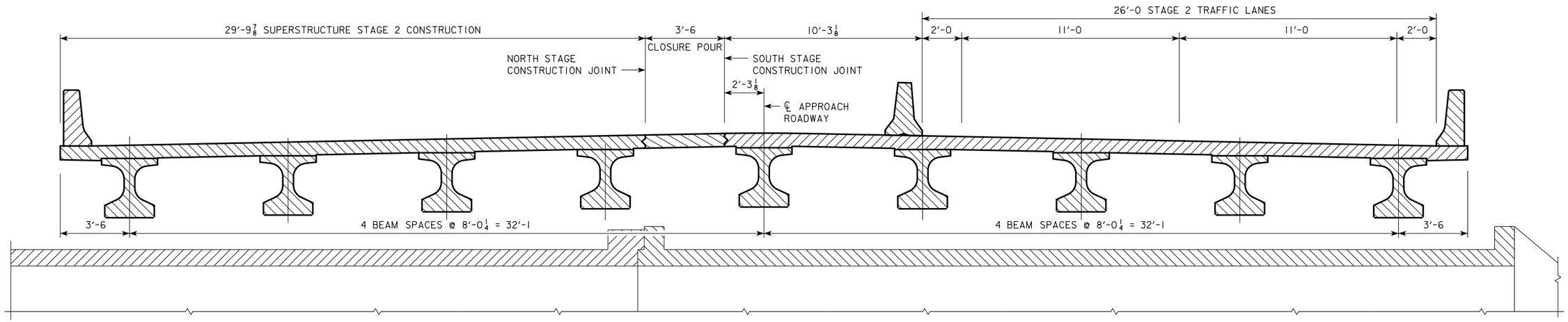
STAGE I DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

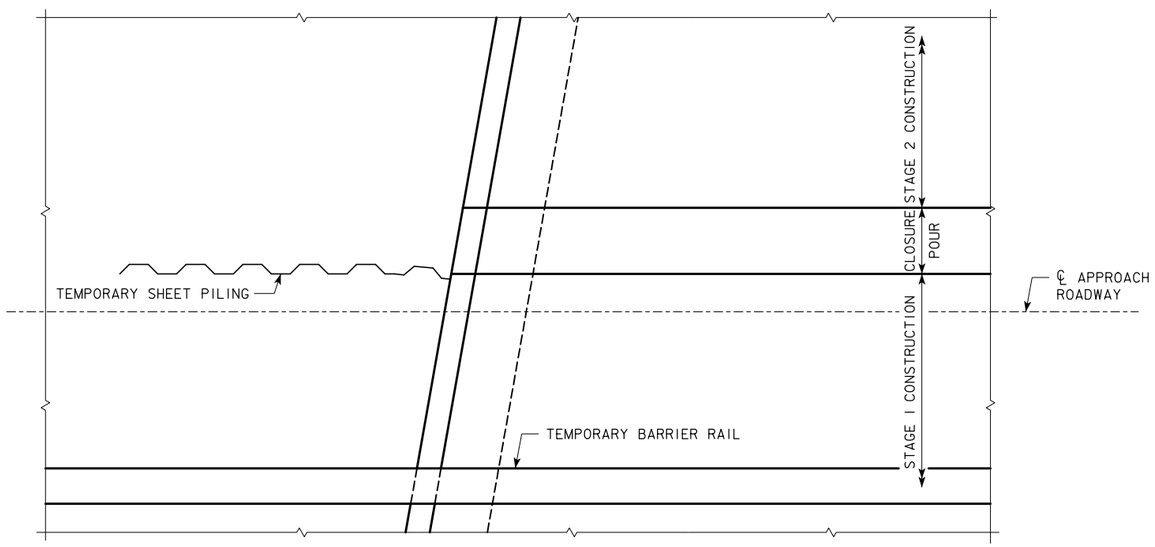
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 7 OF 29 FILE NO. 30687 DESIGN NO. 514



STAGE 2 ELEVATION

(LOOKING EAST)



PART PLAN VIEW

(WEST ABUTMENT ORIENTATION SHOWN,
EAST ABUTMENT DETAILS ARE SIMILAR.)

STAGE 2 NOTES (ROADWAY PLAN STAGE III):

1. PLACE TBR AND OTHER TRAFFIC CONTROL MEASURES ON NEW E.B. LANES AND SHIFT ALL TRAFFIC TO THE E.B. LANES IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN NOTE ON THE ROAD SHEETS.

2. REMOVE EXISTING W.B. LANES, APPROACH PAVEMENT, AND EXISTING ARCH STRUCTURE. PORTIONS OF EXISTING SOUTH WINGWALLS AND ARCH FOOTINGS SHALL REMAIN IN PLACE AS DETAILED.

3. PLACE SHEET PILING NEAR AND PARALLEL TO THE STAGE I CONSTRUCTION JOINT OF THE NEW ABUTMENT TO SUPPORT STAGE 2 TRAFFIC LANES.

4. CONSTRUCT STAGE 2 OF THE SUPERSTRUCTURE. PLACE CLOSURE POUR.

5. REMOVE SHEET PILING AFTER BACKFILLING ABUTMENTS.

6. SHIFT W.B. TRAFFIC TO THE NEW W.B. TRAFFIC LANES AND REMOVE THE TBR.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

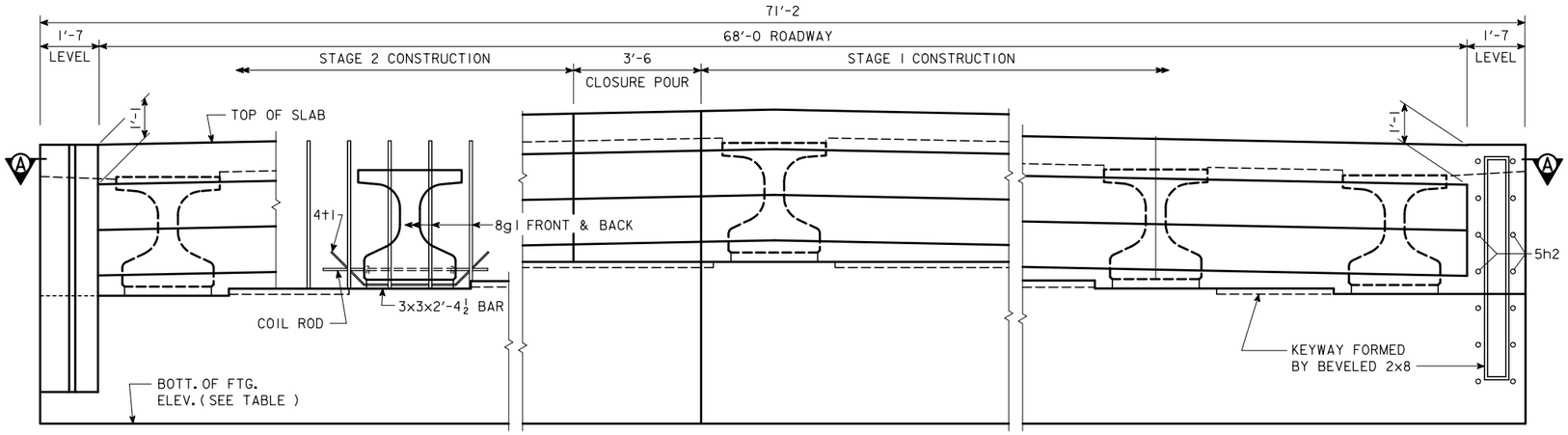
STAGE 2 DETAILS

STATION: 293+68.30 DECEMBER, 2012

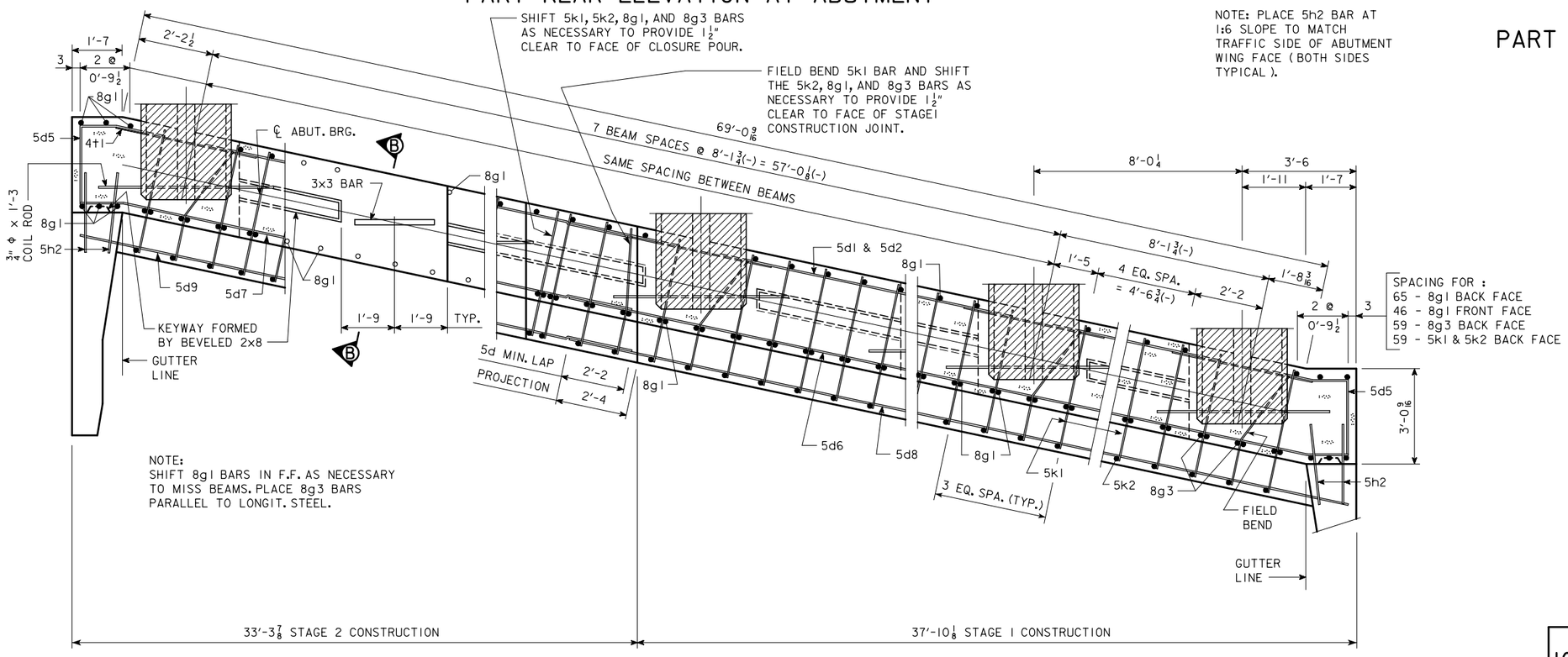
SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 8 OF 29 FILE NO. 30687 DESIGN NO. 514

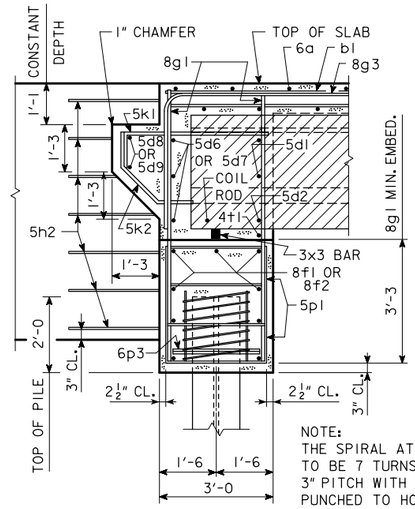


PART REAR ELEVATION AT ABUTMENT



PART SECTION A-A

NOTE: PLACE 5h2 BAR AT 1:6 SLOPE TO MATCH TRAFFIC SIDE OF ABUTMENT WING FACE (BOTH SIDES TYPICAL).



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

PART SECTION B-B

WEST ABUTMENT PILING NOTES:
THE CONTRACTOR SHALL PLACE HP 10X57 PILES IN 15 FOOT DEEP PREBORED HOLES. MINIMUM ALLOWABLE PREBORED HOLE DIAMETER IS 18 INCHES. HOLES MUST BE PREBORED THROUGH ROCK TO ELEVATION 547.66. PREBORING WILL REQUIRE DRILLING THROUGH SOIL, BROKEN AND WEATHERED LIMESTONE, AND MEDIUM HARD TO HARD LIMESTONE. REFER TO SOIL PROFILE SHEETS. THE PREBORED HOLES ARE TO BE MAINTAINED OPEN DURING DRIVING OF THE PILES TO THE EXTENT THAT CASING MAY BE REQUIRED FOR COLLAPSING SOILS. DRIVE PILES TO PRACTICAL REFUSAL WITH AN APPROVED HAMMER TO ASSURE UNIFORM CONTACT WITH SOUND ROCK THAT IS SUITABLE FOR END BEARING. BOTTOM OF HOLES SHALL BE FILLED WITH 3 FEET OF CONCRETE BEFORE OR AFTER PILES ARE DRIVEN TO PRACTICAL REFUSAL TO LOCK PILES IN PLACE. RETARDER MAY BE REQUIRED TO KEEP THE CONCRETE PLASTIC IF IT IS PLACED BEFORE THE PILES ARE DRIVEN TO PRACTICAL REFUSAL. THE REMAINING 12 FOOT DEPTH OF PREBORED HOLES SHALL BE FILLED WITH LOOSE DRY SAND. A REASONABLE EFFORT SHALL BE EXPENDED TO CLEAN BOTTOM OF HOLE BEFORE INSERTING PILE OR PLACING CONCRETE. PREBORING THROUGH ROCK LAYERS MAY BE ACCOMPLISHED BY ROCK CORING TECHNIQUES, AUGERING, OR OTHER PROCEDURES APPROVED BY THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE MADE FOR DIFFICULTIES ASSOCIATED WITH PREBORING TO THE SPECIFIED ELEVATION. TOTAL FACTORED AXIAL LOAD PER PILE (PU) IS 183 KIPS USING A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.7 FOR ROCK END BEARING. THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR WEST ABUTMENT PILES IS 131 TONS AT END OF DRIVE. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

ABUTMENT NOTES:

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

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

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

WEST ABUTMENT DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

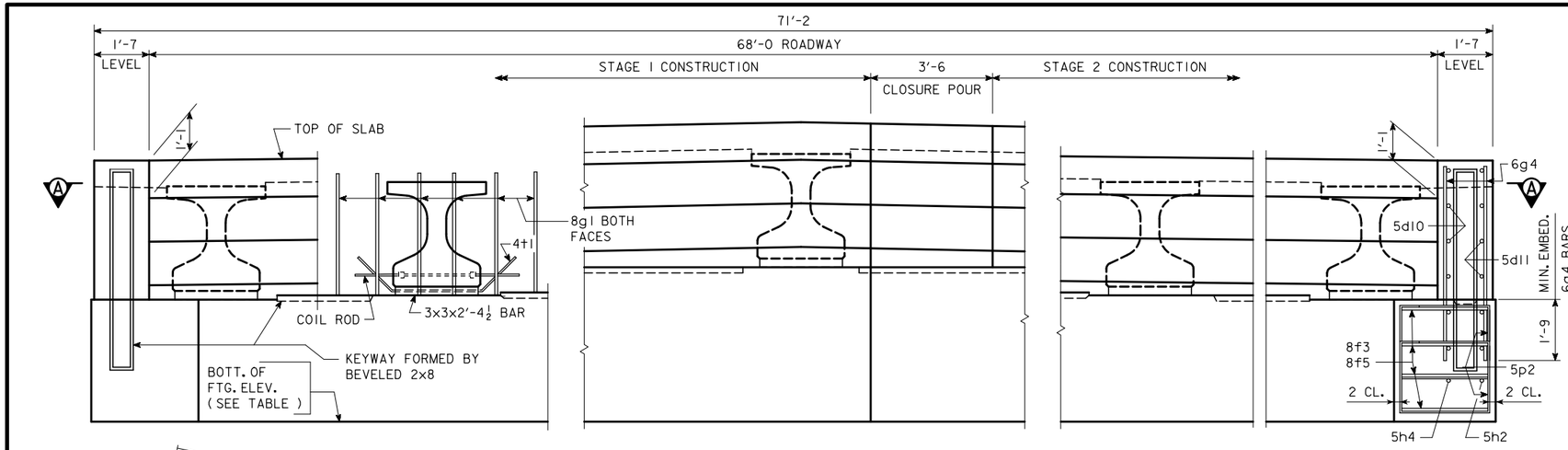
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 9 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT	"BTB" BEAMS INTEGRAL ABUT. DETAILS - (L.A.) 7°31'-15° SKEW	STANDARD SHEET 2080-BTB	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 10

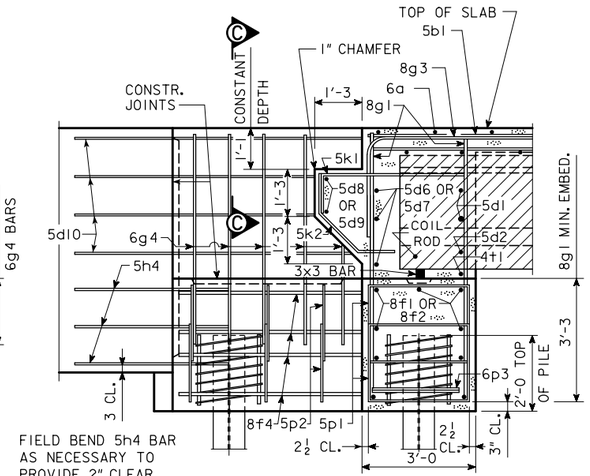
REVISION 07-08 - NUMBER OF SPIRAL SPACES CHANGED TO 3.
ENGLISHBTINTEGRALBRIDGES.DGN - 2080-BTB - THIS SHEET ISSUED 02-08.

11/26/2013 1:54:55 PM dwrigh2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\BRFinal\82022029.brg 820514S009 11x17_pdf.pltcfg



PART REAR ELEVATION AT ABUTMENT

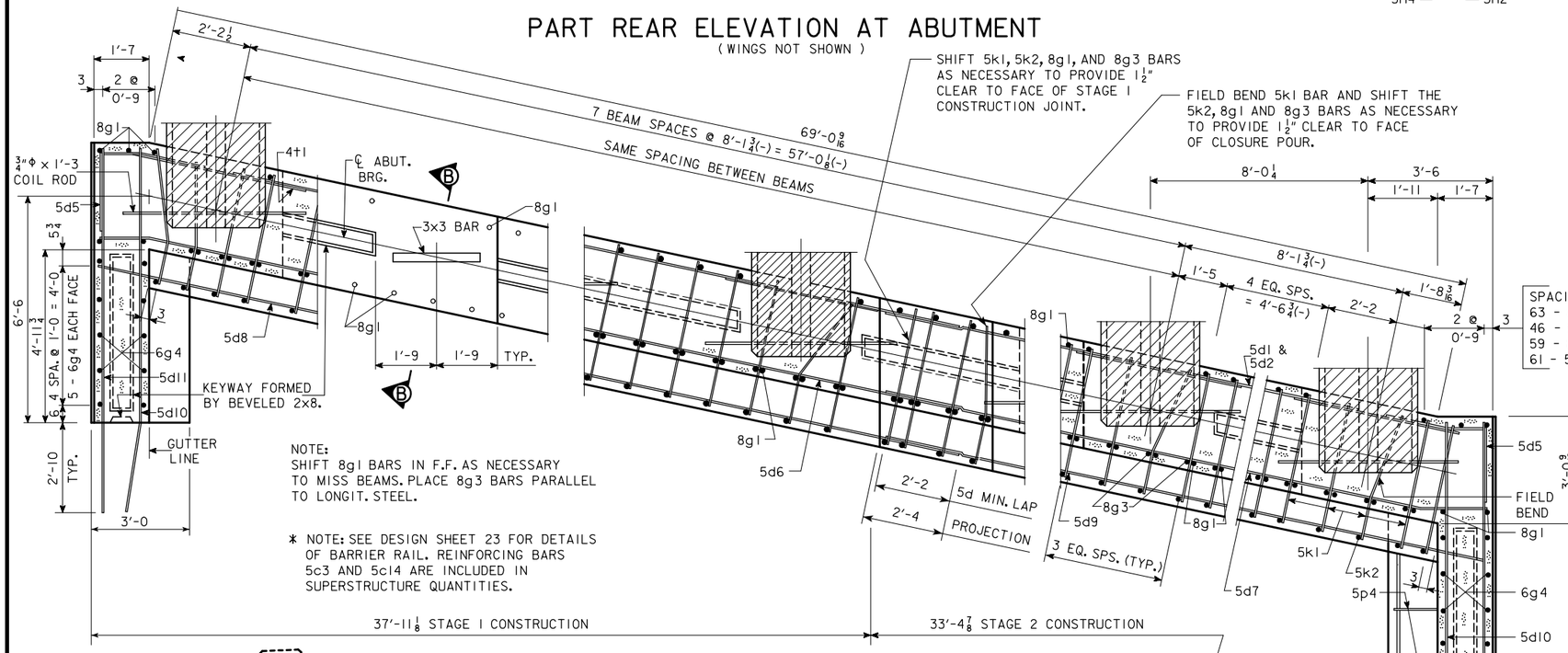
(WINGS NOT SHOWN)



FIELD BEND 5h4 BAR AS NECESSARY TO PROVIDE 2" CLEAR AND AVOID PILE IN ABUTMENT WING.

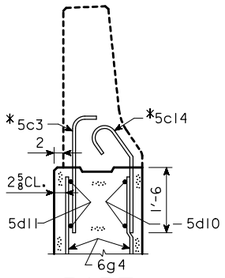
PART SECTION B-B

NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 - $L\frac{7}{8} \times \frac{7}{8} \times \frac{1}{8}$ SPACERS PUNCHED TO HOLD SPIRAL.



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

* NOTE: SEE DESIGN SHEET 23 FOR DETAILS OF BARRIER RAIL. REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES.



PART SECTION C-C

PART SECTION A - A

ABUTMENT NOTES:

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

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

PILE NOTES:

THE CONTRACT LENGTH OF 30 FEET FOR THE EAST ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 181 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.7 FOR ROCK.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.7 FOR ROCK END BEARING.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR EAST ABUTMENT PILES IS 131 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.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

EAST ABUTMENT DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

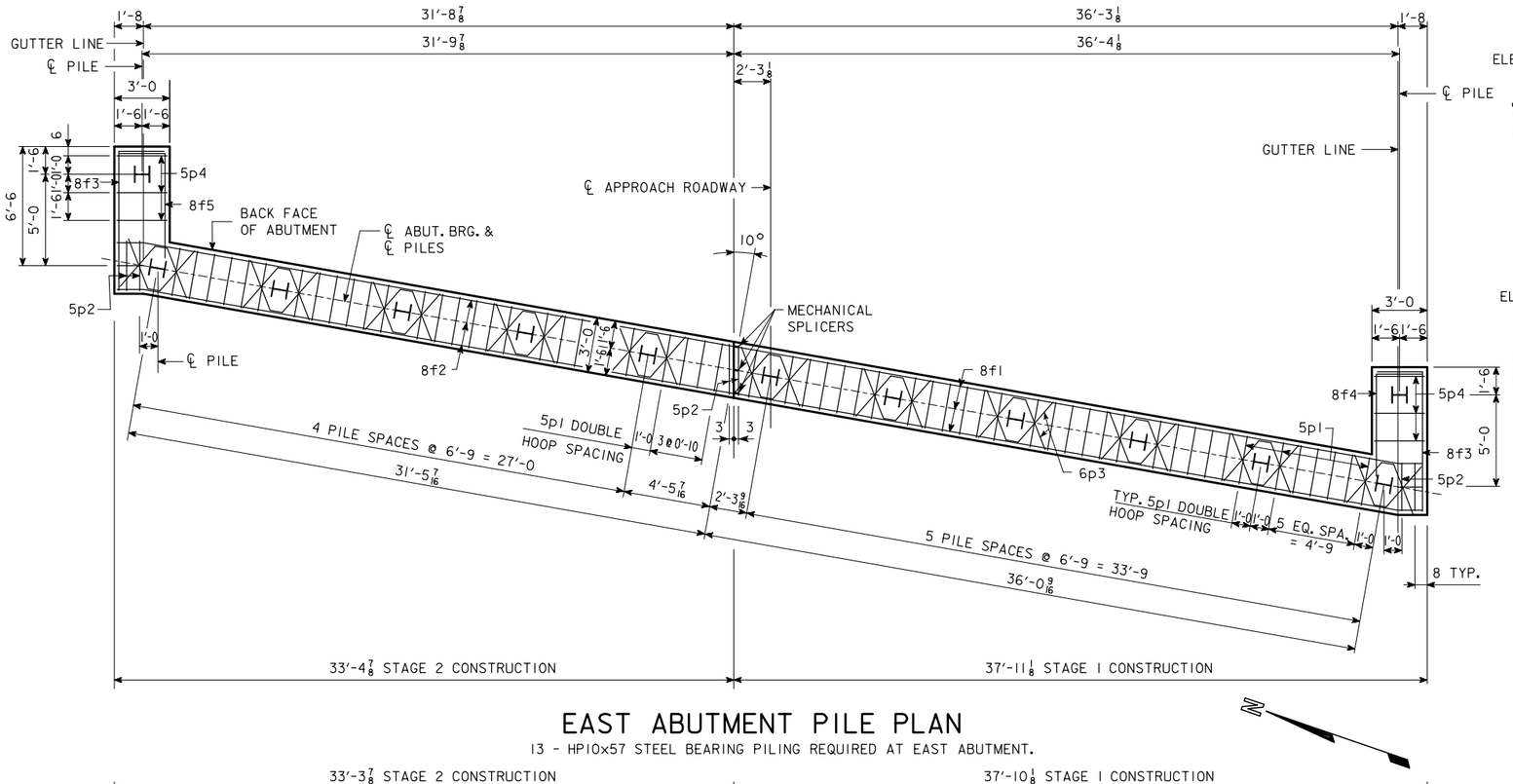
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 10 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT | SCOTT COUNTY | PROJECT NUMBER BRFN-022-5(29)--39-82 | SHEET NUMBER 11

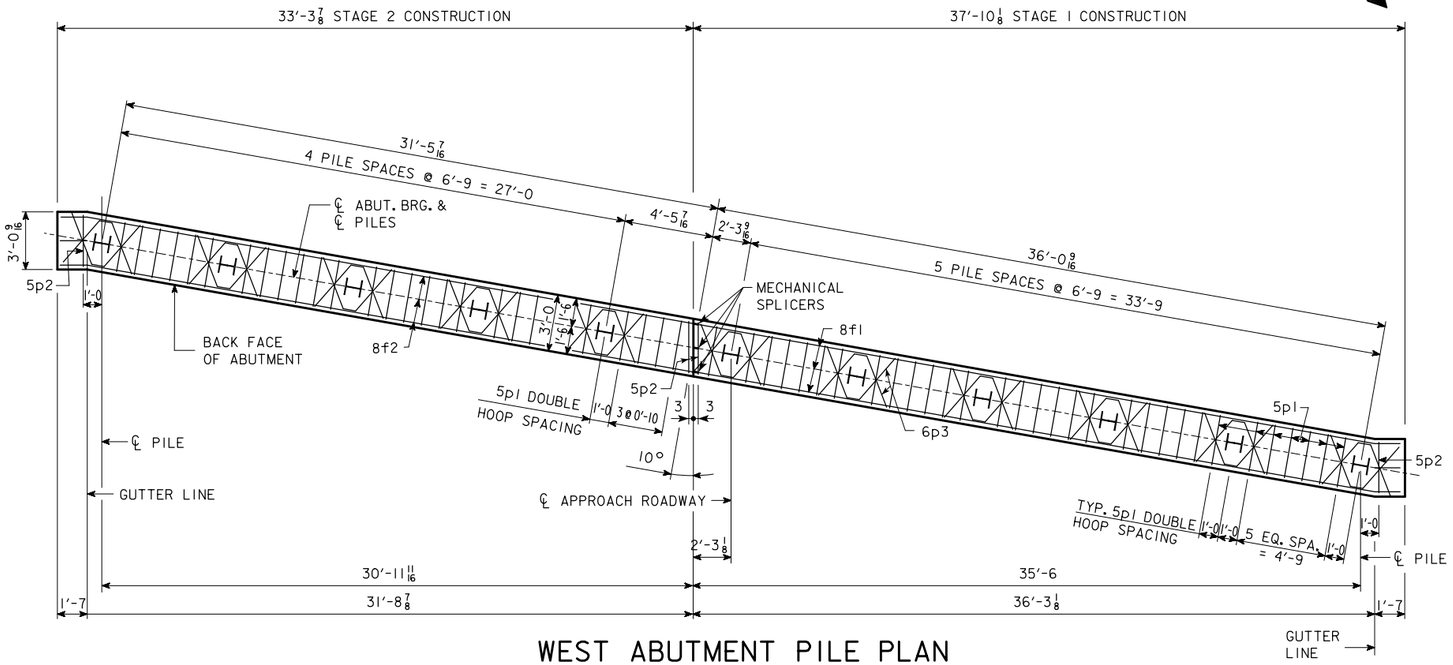
11/26/2013 1:54:57 PM dwrigh2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\BRFinal\82022029.brg 820514S010 11x17_pdf.pltcfg

BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498.



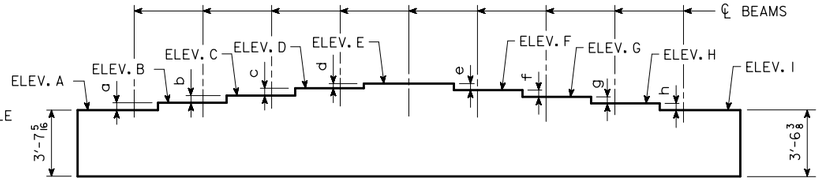
EAST ABUTMENT PILE PLAN

13 - HP10x57 STEEL BEARING PILING REQUIRED AT EAST ABUTMENT.



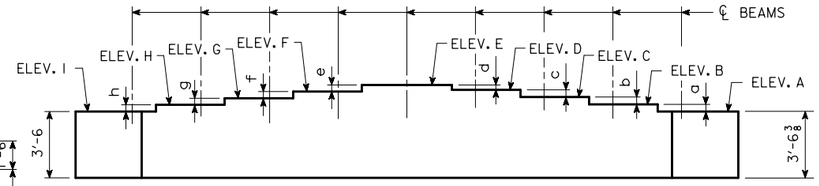
WEST ABUTMENT PILE PLAN

11 - HP10x57 STEEL BEARING PILING REQUIRED AT WEST ABUTMENT.



WEST ABUTMENT STEP DIAGRAM

(REAR ELEVATION)



EAST ABUTMENT STEP DIAGRAM

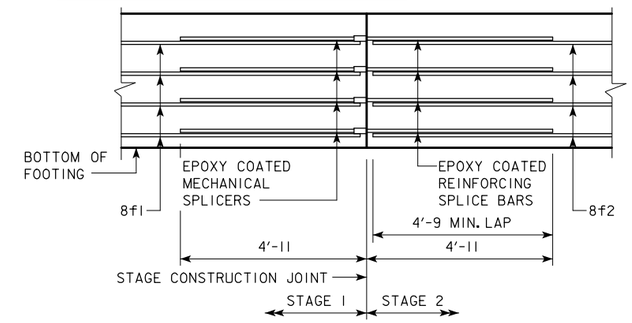
(REAR ELEVATION)

TABLE OF ABUTMENT ELEVATIONS

POINT	WEST ABUT.	EAST ABUT.
ELEV. A	566.21	566.71
ELEV. B	566.40	566.91
ELEV. C	566.59	567.11
ELEV. D	566.76	567.29
ELEV. E	566.85	567.38
ELEV. F	566.74	567.28
ELEV. G	566.55	567.09
ELEV. H	566.34	566.89
ELEV. I	566.13	566.68
BOTT. FTG. ELEV.	562.60	563.18

TABLE OF ABUTMENT STEPS

STEP	WEST ABUT.	EAST ABUT.
a	2 1/4	2 3/8
b	2 1/4	2 3/8
c	2 1/16	2 3/16
d	1 1/16	1 1/16
e	1 5/16	1 3/16
f	2 1/4	2 1/4
g	2 1/2	2 3/8
h	2 1/2	2 1/2



PART ELEVATION AT STAGE CONSTRUCTION JOINT

(SEE DESIGN SHEET 2 FOR MECHANICAL SPLICE NOTES)

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

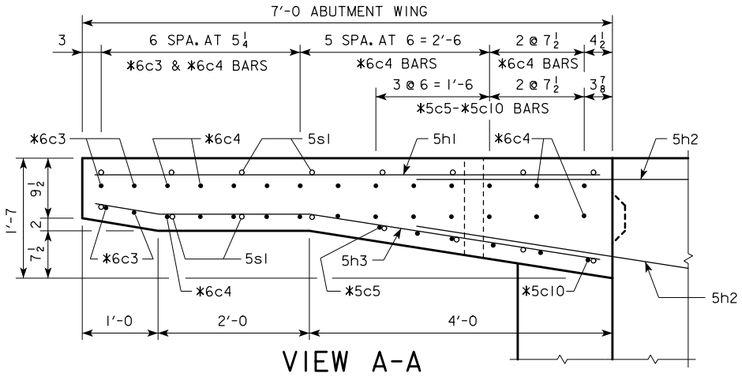
ABUTMENT DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

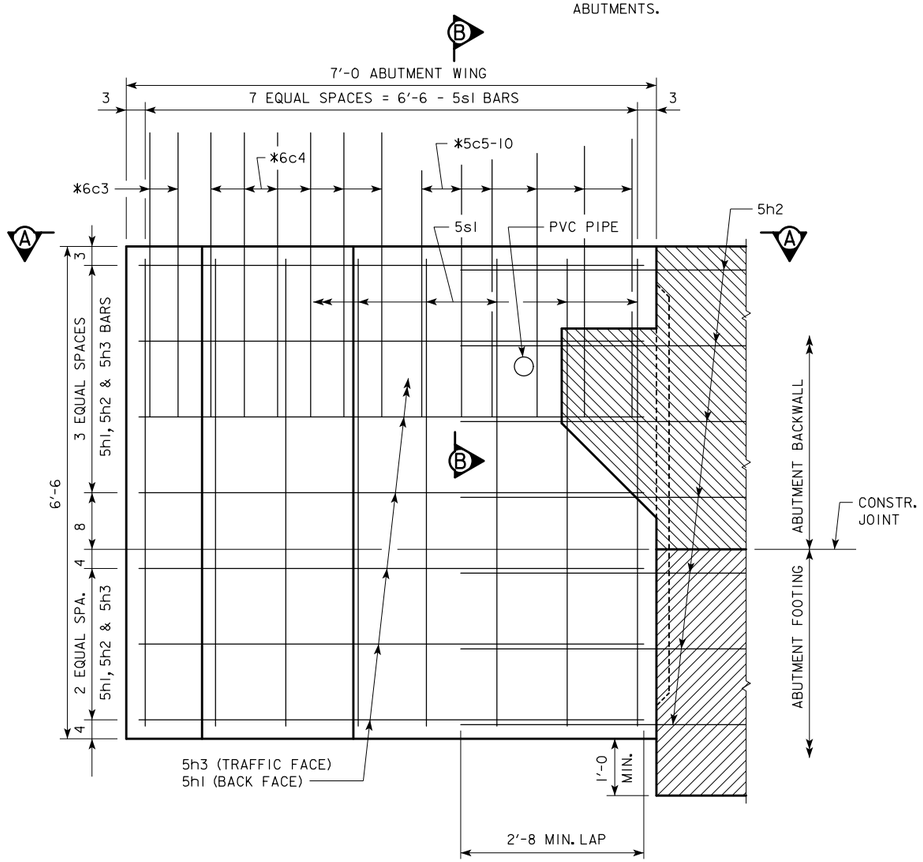
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 11 OF 29 FILE NO. 30687 DESIGN NO. 514

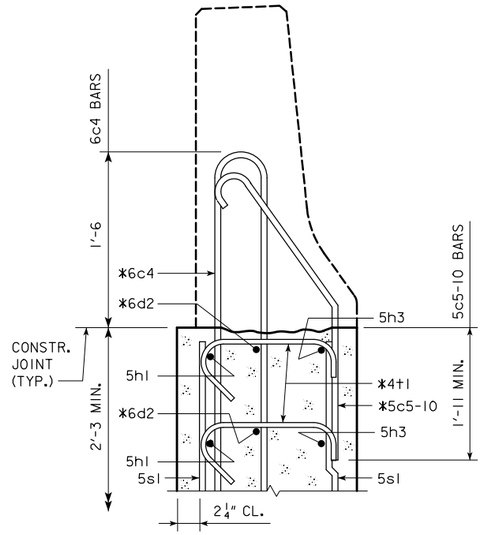


VIEW A-A

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



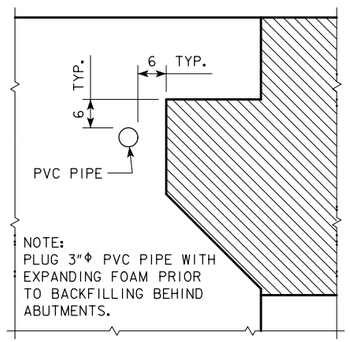
ABUTMENT WING - ELEVATION VIEW



SECTION B-B

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

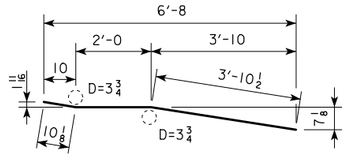
SEE END SECTION DETAILS IN THESE PLANS FOR DETAILS OF BARRIER RAIL END SECTION. REINFORCING BARS 6c3, 6c4, 5c5-10, 6d2 & 4t1 ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.



PVC PIPE LOCATION

REINFORCING BAR LIST - ONE W. ABUT. WING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5h1	HORIZONTAL BACK FACE	——	7	6'-8	49
5h3	HORIZONTAL TRAFFIC FACE	——	7	6'-9	49
5s1	VERTICAL BOTH FACES	——	16	6'-2	103
			TOTAL (LBS.)		201



5h3

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

BENT BAR DETAILS

CONCRETE PLACEMENT SUMMARY

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

NOTE:

REINFORCING STEEL QUANTITY AND CONCRETE QUANTITY ARE TO BE ADDED TO THE SUPERSTRUCTURE QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

WEST ABUTMENT WING DETAILS

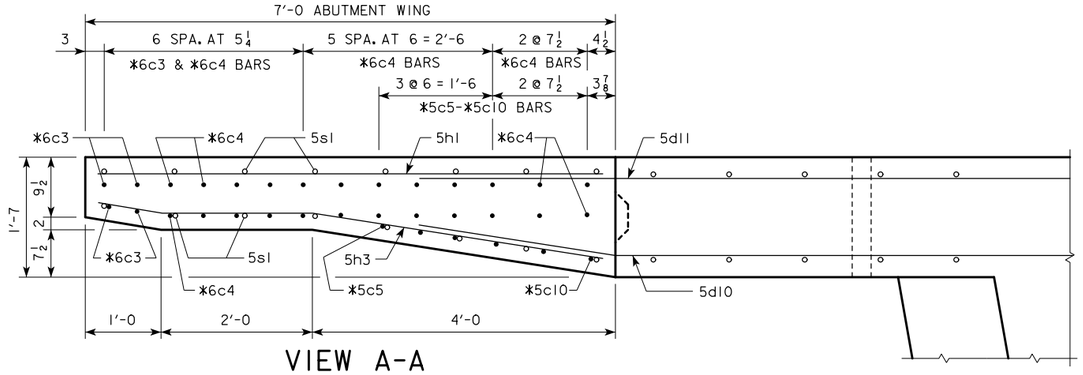
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

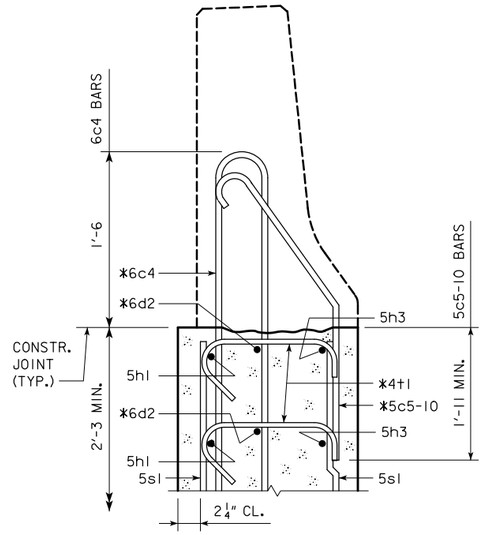
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 12 OF 29 FILE NO. 30687 DESIGN NO. 514

ENGLISH\MISCELLANEOUSBRIDGES.DGN - 2111 - THIS SHEET ISSUED 02-08.



VIEW A-A



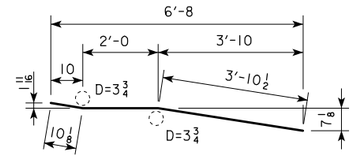
SECTION B-B

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

SEE END SECTION DETAILS IN THESE PLANS FOR DETAILS OF BARRIER RAIL END SECTION. REINFORCING BARS 6c3, 6c4, 5c5-10, 6d2 & 4t1 ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.

REINFORCING BAR LIST - ONE E. ABUT. WING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5h1	HORIZONTAL BACK FACE	——	7	6'-8	49
5h3	HORIZONTAL TRAFFIC FACE	——	7	6'-9	49
5s1	VERTICAL BOTH FACES	——	16	6'-2	103
			TOTAL (LBS.)		201



5h3

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

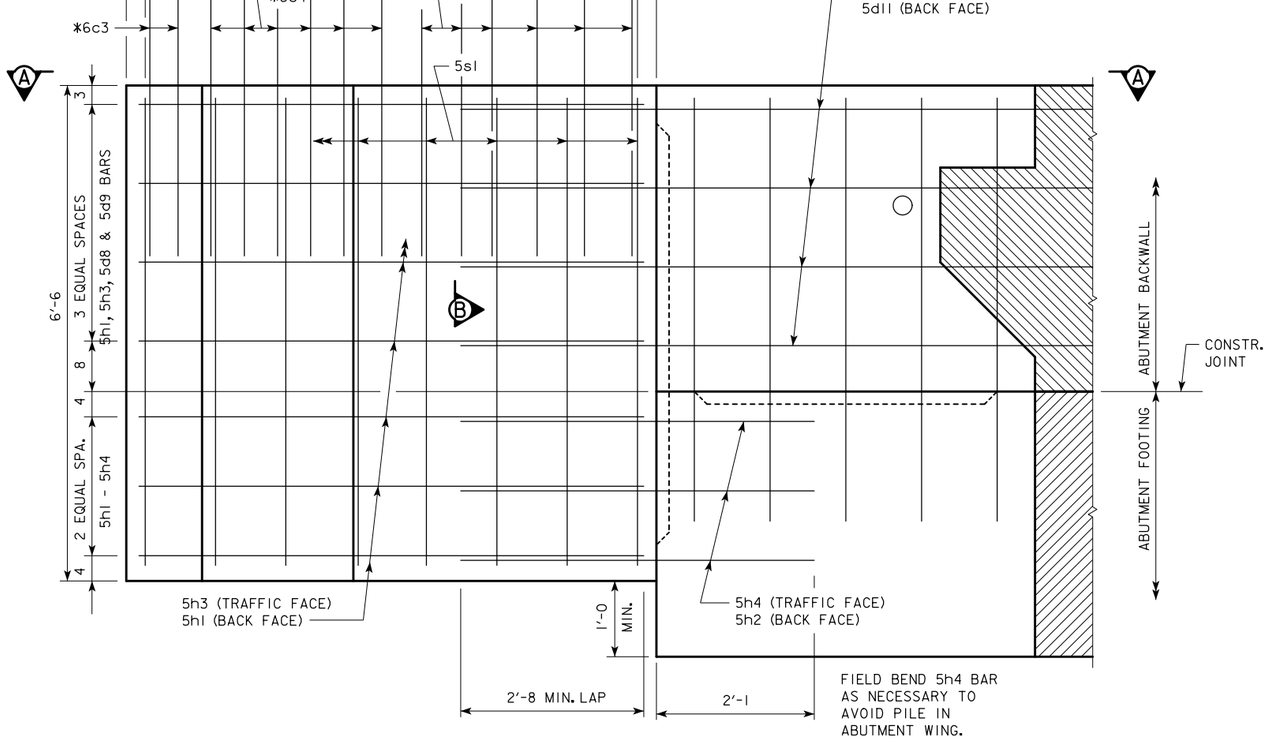
BENT BAR DETAILS

CONCRETE PLACEMENT SUMMARY

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

NOTE:

REINFORCING STEEL QUANTITY AND CONCRETE QUANTITY ARE TO BE ADDED TO THE SUPERSTRUCTURE QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.



ABUTMENT WING - ELEVATION VIEW

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

EAST ABUTMENT WING DETAILS

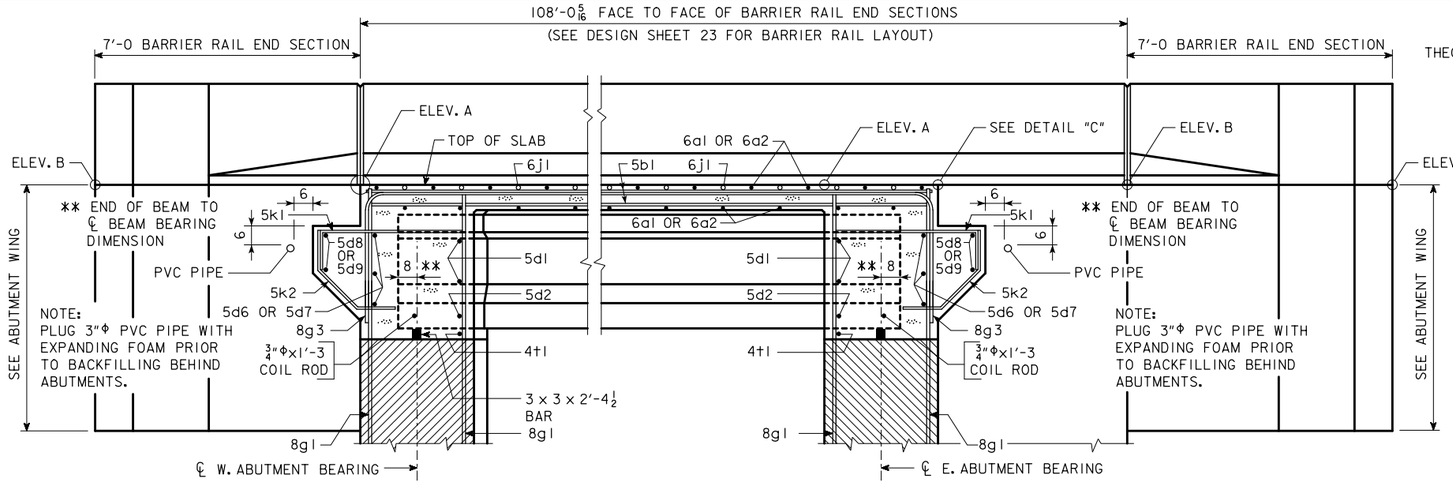
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

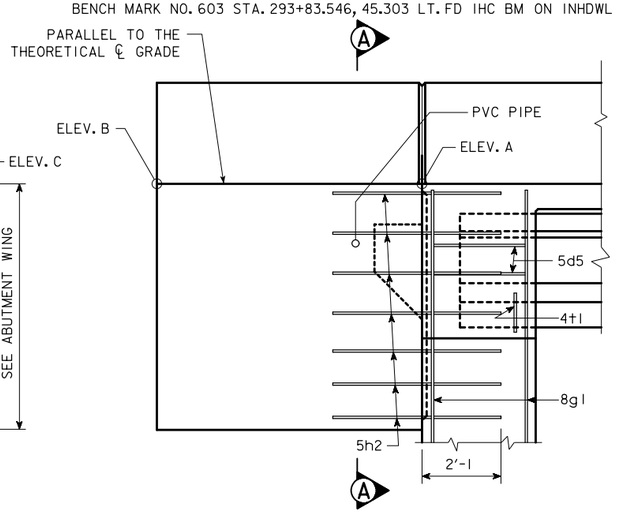
DESIGN SHEET NO. 13 OF 29 FILE NO. 30687 DESIGN NO. 514

BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498.

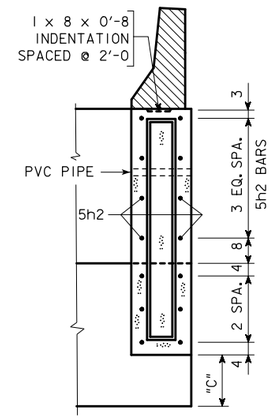


PART LONGITUDINAL SECTION NEAR GUTTER

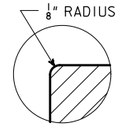
(FOR DETAILS OF INTERMEDIATE DIAPHRAGM SEE DESIGN SHEET 20)



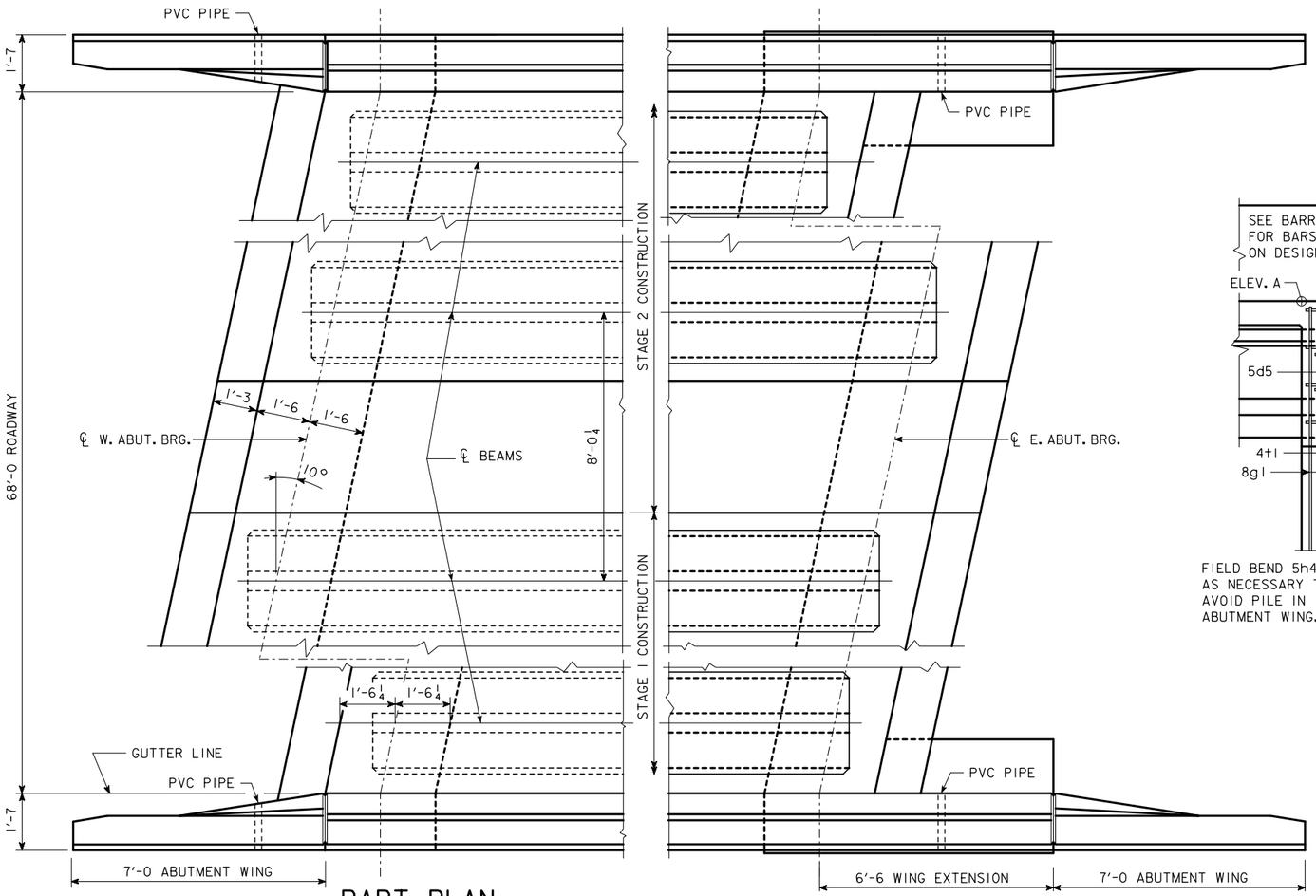
PART END VIEW AT W. ABUTMENT



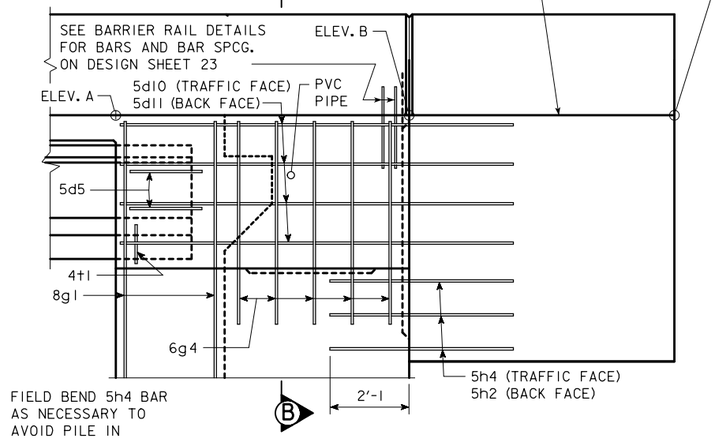
SECTION A-A



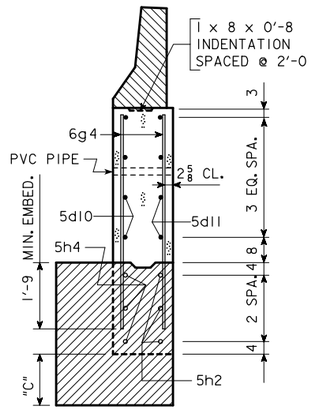
DETAIL "C"



PART PLAN



PART END VIEW AT E. ABUTMENT



SECTION B-B

TABLE OF WINGWALL ELEVATIONS

LOCATION	DIM "C"	ELEV. A	ELEV. B	ELEV. C
S.W. CORNER	1'-0	570.10	570.05	———
N.W. CORNER	1'-0 15/16	570.18	570.14	———
S.E. CORNER	1'-0 1/8	570.66	570.69	570.70
N.E. CORNER	1'-0 3/8	570.70	570.71	570.73

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

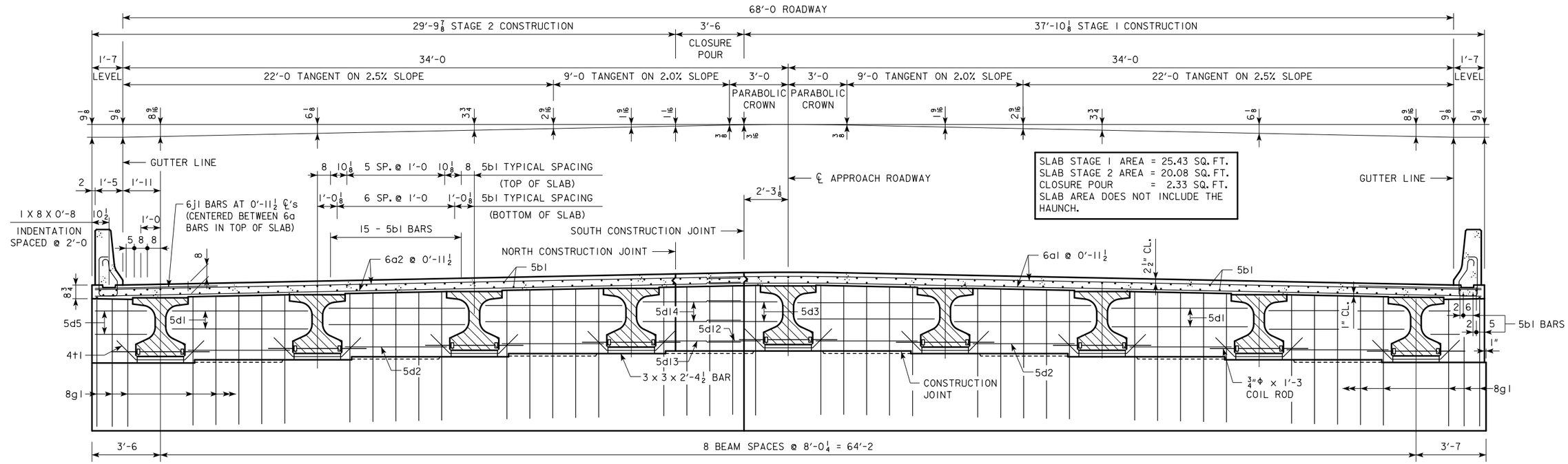
SUPERSTRUCTURE DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

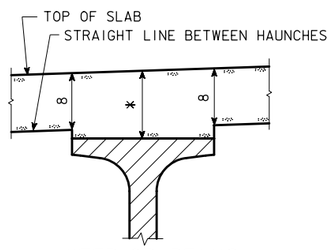
DESIGN SHEET NO. 14 OF 29 FILE NO. 30687 DESIGN NO. 514



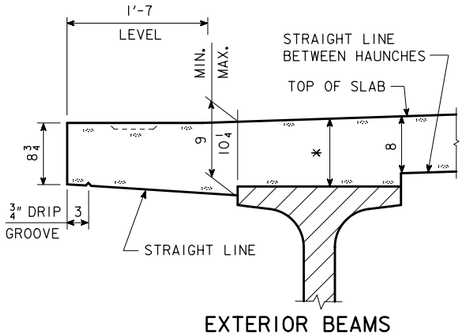
HALF SECTION NEAR WEST ABUTMENT

HALF SECTION NEAR EAST ABUTMENT

(LOOKING EAST)



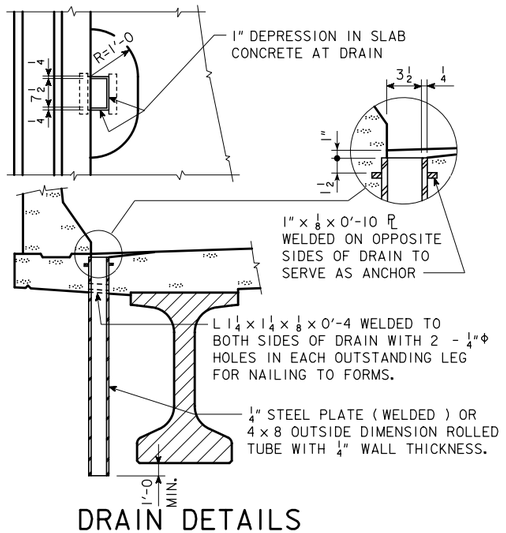
INTERIOR BEAMS



EXTERIOR BEAMS

TYPICAL SLAB AND HAUNCH DETAIL

* FOR SLAB THICKNESS OVER BEAMS SEE HAUNCH AND CAMBER DETAILS ON DESIGN SHEET 19.



DRAIN DETAILS

NOTE :
DRAINS ARE TO BE GALVANIZED. 6 DRAINS REQUIRED. SEE "SITUATION PLAN" FOR LOCATION. WEIGHT OF DRAINS IS INCLUDED IN THE QUANTITY FOR "STRUCTURAL STEEL". WEIGHT IS BASED ON ROLLED TUBE.

DATA FOR ONE DRAIN	
BEAM SIZE	BTB
DRAIN WEIGHT (LBS.)	92
DRAIN LENGTH (FT.)	4'-8 3/4

NOTE: FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET 20.

SUPERSTRUCTURE NOTES:

THE FLOOR SLAB AS SHOWN INCLUDES 1/2" INTEGRAL WEARING SURFACE.

THE ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITHICALLY WITH THE FLOOR SLAB.

ALL BEAMS ARE TO BE SET VERTICAL.

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

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

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

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

COST OF BEARING MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

LONGITUDINAL REINFORCING NEAR CLOSURE POUR CONSTRUCTION JOINT MAY BE SHIFTED SLIGHTLY TO PROVIDE 2" CLEARANCE.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SUPERSTRUCTURE DETAILS

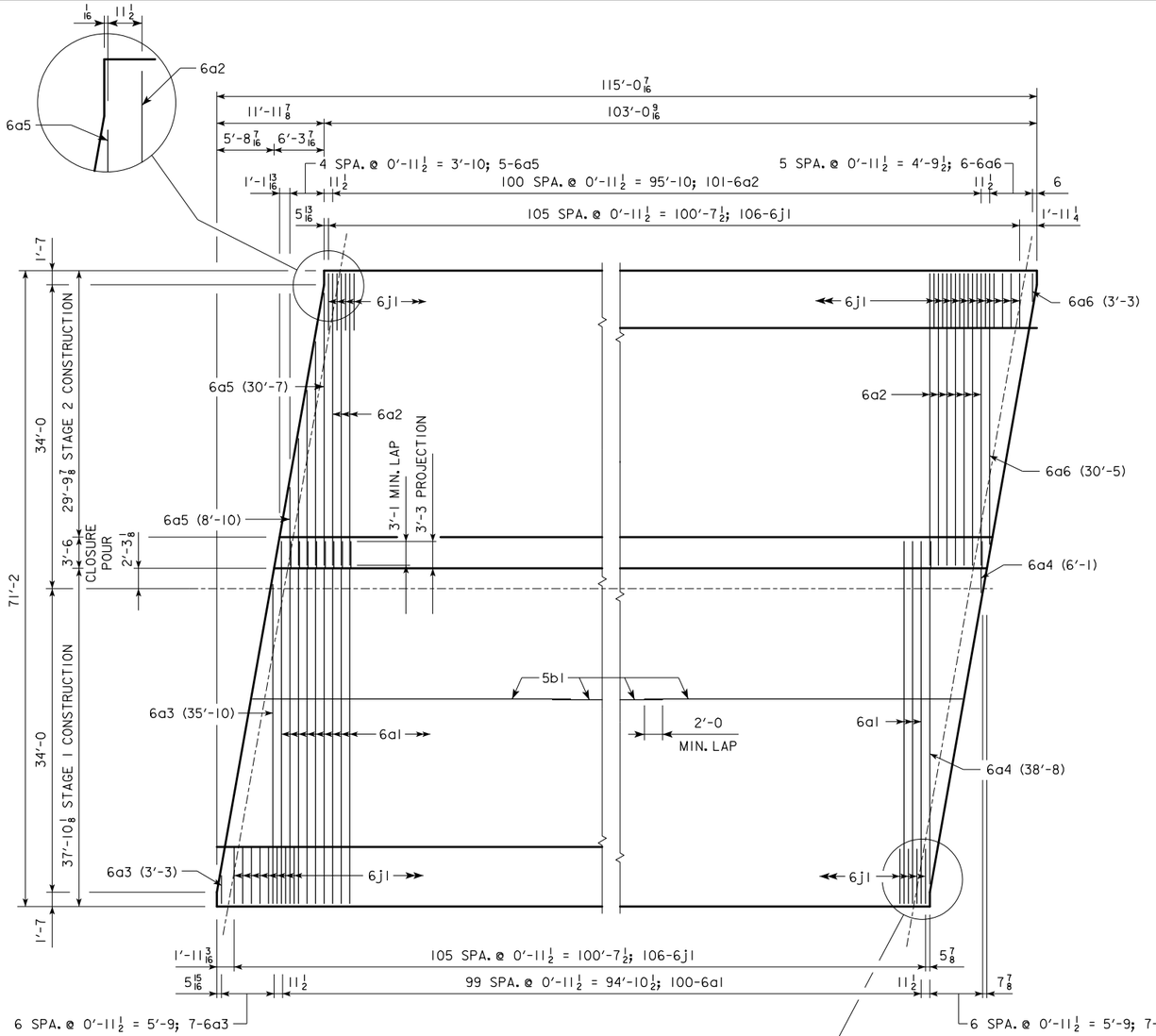
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

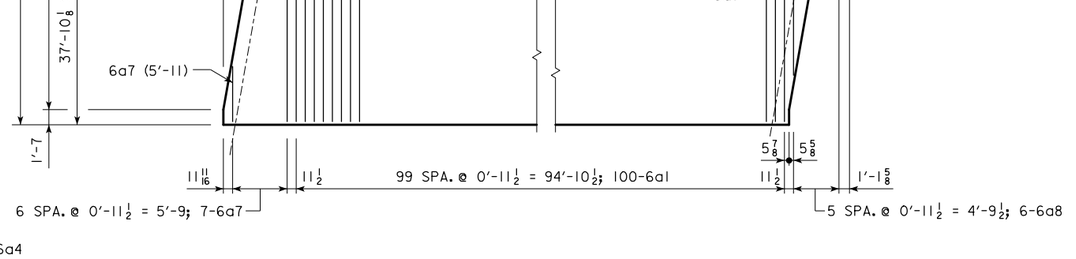
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 15 OF 29 FILE NO. 30687 DESIGN NO. 514

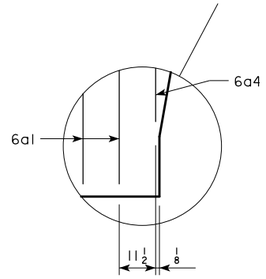
DESIGN TEAM DAW/WDT	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 16



TOP OF SLAB TRANSVERSE AND LONGITUDINAL REINFORCING LAYOUT



BOTTOM OF SLAB TRANSVERSE AND LONGITUDINAL REINFORCING LAYOUT



DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SUPERSTRUCTURE DETAILS

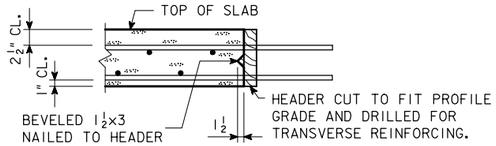
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

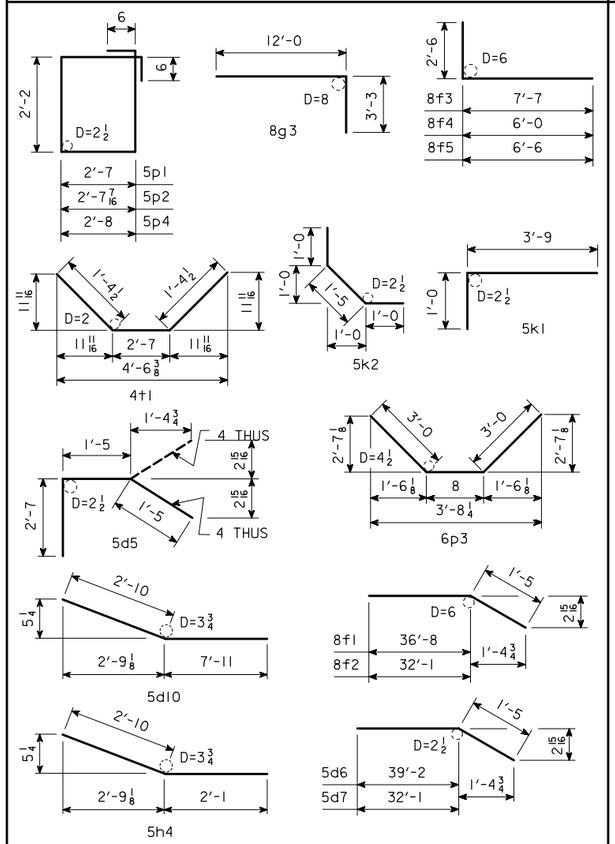
DESIGN SHEET NO. 16 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 17



LONGITUDINAL SLAB STAGE CONSTRUCTION JOINT

BENT BAR DETAILS



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

CONC. PLACEMENT QUANTITIES ONE SUPER. & TWO ABUTS.

LOCATION	STAGE 1	STAGE 2	QUANTITY
HIGH PERFORMANCE STRUCTURAL CONCRETE			
SLAB & ABUT. DIAPHS.	133.4	105.4	238.8
CLOSURE POUR & ABUT. DIAPHS.			12.2
HIGH PERFORMANCE STRUCTURAL CONCRETE - TOTAL (CU. YDS.)			251.0
STRUCTURAL CONCRETE (BRIDGE)			
WEST ABUTMENT FOOTINGS	16.9	14.9	31.8
EAST ABUTMENT FOOTINGS	18.7	16.6	35.3
ABUTMENT WINGS 4 AT 1.9			7.6
PREBORED HOLES W. ABUT. ONLY			2.2
STRUCTURAL CONCRETE (BRIDGE) - TOTAL (CU. YDS.)			76.9

ESTIMATED QUANTITIES ONE SUPER. & TWO ABUTS.

ITEM		UNIT	QUANTITY
HIGH PERFORMANCE STRUCTURAL CONCRETE		CU. YD.	251.0
STRUCTURAL CONCRETE (BRIDGE)		CU. YD.	76.9
STRUCTURAL STEEL		LBS.	3484
REINFORCING STEEL EPOXY COATED		LBS.	68,403
REINFORCING STEEL		LBS.	246
PRETENSIONED PRESTRESSED CONCRETE BEAMS	BTB 100	EACH	9
CLASS 20 EXCAVATION		CU. YD.	197
PILES HP 10x57	11 @ 20' W.A.; 13 @ 30' E.A.	L.F.	610
PREBORED HOLES	11 @ 15' W.A. ONLY	L.F.	165

REINF.BAR LIST-ONE SUPER.&TWO ABUTS.

EPOXY COATED REINFORCING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	SLAB TRANSV. TOP & BOTT., STAGE 1	——	200	41'-0	12316
6a2	SLAB TRANSV. TOP & BOTT., STAGE 2	——	203	33'-0	10062
6a3	SLAB TRANSV. TOP W. END, STAGE 1	——	7	VARIES	205
6a4	SLAB TRANSV. TOP E. END, STAGE 1	——	7	VARIES	235
6a5	SLAB TRANSV. TOP W. END, STAGE 2	——	5	VARIES	148
6a6	SLAB TRANSV. TOP E. END, STAGE 2	——	6	VARIES	152
6a7	SLAB TRANSV. BOTT. W. END, STAGE 1	——	7	VARIES	234
6a8	SLAB TRANSV. BOTT. E. END, STAGE 1	——	6	VARIES	201
6a9	SLAB TRANSV. BOTT. W. END, STAGE 2	——	5	VARIES	128
6a10	SLAB TRANSV. BOTT. E. END, STAGE 2	——	5	VARIES	127
5b1	SLAB LONGIT. TOP & BOTT.	——	435	35'-9	16220
5d1	ABUT. DIAPH. LONGIT.	——	28	7'-3	212
5d2	ABUT. DIAPH. BOTT., LONGIT.	——	14	5'-4	78
5d3	ABUT. DIAPH. LONGIT., STAGE 1	——	4	4'-3	18
5d4	ABUT. DIAPH. LONGIT., STAGE 2	——	4	5'-3	22
5d5	ABUT. DIAPH. ENDS	⌐	8	5'-5	45
5d6	ABUT. DIAPH. LONGIT. B.F., STAGE 1	⌐	6	40'-7	254
5d7	ABUT. DIAPH. LONGIT. B.F., STAGE 2	⌐	6	33'-6	210
5d8	PAVING NOTCH LONGIT., STAGE 1	——	4	40'-8	170
5d9	PAVING NOTCH LONGIT., STAGE 2	——	4	33'-7	140
5d10	E. ABUT. DIAPH. WING EXT. LONGIT.	⌐	8	10'-9	90
5d11	E. ABUT. DIAPH. WING EXT. LONGIT.	——	8	10'-8	89
5d12	ABUT. DIAPH., BOTT., LONGIT., STAGE 1	——	2	3'-3	7
5d13	ABUT. DIAPH., BOTT., LONGIT., STAGE 2	——	2	4'-3	9
8f1	ABUT. FOOTING LONGIT. BOTH F., STAGE 1	⌐	18	38'-1	1830
8f2	ABUT. FOOTING LONGIT. BOTH F., STAGE 2	⌐	18	33'-6	1610
8f3	E. ABUT. FOOTING. EXT.	L	8	10'-1	215
8f4	E. ABUT. FOOTING. EXT., STAGE 1	L	4	8'-6	91
8f5	E. ABUT. FOOTING. EXT., STAGE 2	L	4	9'-0	96
8g1	ABUT. VERT. BOTH F.	——	220	7'-0	4112
8g3	ABUT. DIAPH. VERT. B.F.	⌐	118	15'-3	4805
6g4	E. ABUT. DIAPH. WING EXT. VERT.	——	20	5'-8	170
5h2	ABUT. TO WING ANCHOR	——	34	4'-11	174
5h4	E. ABUT. TO WING ANCHOR	——	6	4'-11	31
6j1	TOP OF SLAB TRANSV. (AT RAIL)	——	212	6'-3	1990
5k1	PAVING NOTCH	⌐	120	4'-9	595
5k2	PAVING NOTCH	◟	120	3'-5	428
5p1	ABUT. HOOPS	□	236	10'-6	2585
5p2	ABUT. HOOPS AT ENDS & STAGE CONSTR. JT.	□	20	10'-7	221
6p3	ABUT. BOTT. AT PILES	◡	44	6'-8	441
5p4	E. ABUT. EXTENSION HOOPS	□	12	10'-8	134
4t1	UNDER BEAMS AT ABUTMENTS	◡	18	5'-4	64
BARRIER RAIL - SEE DESIGN SHT. NO. 23					6635
ABUTMENT WING - SEE DESIGN SHT. NO. 12 & 13					804
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					68403

NON-COATED

BAR		SHAPE	NO.	LENGTH	WEIGHT
#2	PILE SPIRAL	⌀	24	38'-6	154
	SPIRAL SPACERS, L 7/8 x 7/8 x 1/8 x 0.70	——	72	1'-10	92
REINFORCING STEEL - TOTAL (LBS.)					246

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SUPERSTRUCTURE DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 17 OF 29 FILE NO. 30687 DESIGN NO. 514

CORRECTION 02-10 - 4t1 BAR LENGTH CHANGED.
ENGLISHBTINTEGRALBRIDGES.DGN - 4516-BTB - THIS SHEET ISSUED 02-08.

DESIGN TEAM DAW/WDT	INTERGAL ABUT. "BTB" BEAMS - BAR LIST & SUPER. DETAILS - 7°31' - 15° SKEW	STANDARD SHEET 4516-BTB	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 18

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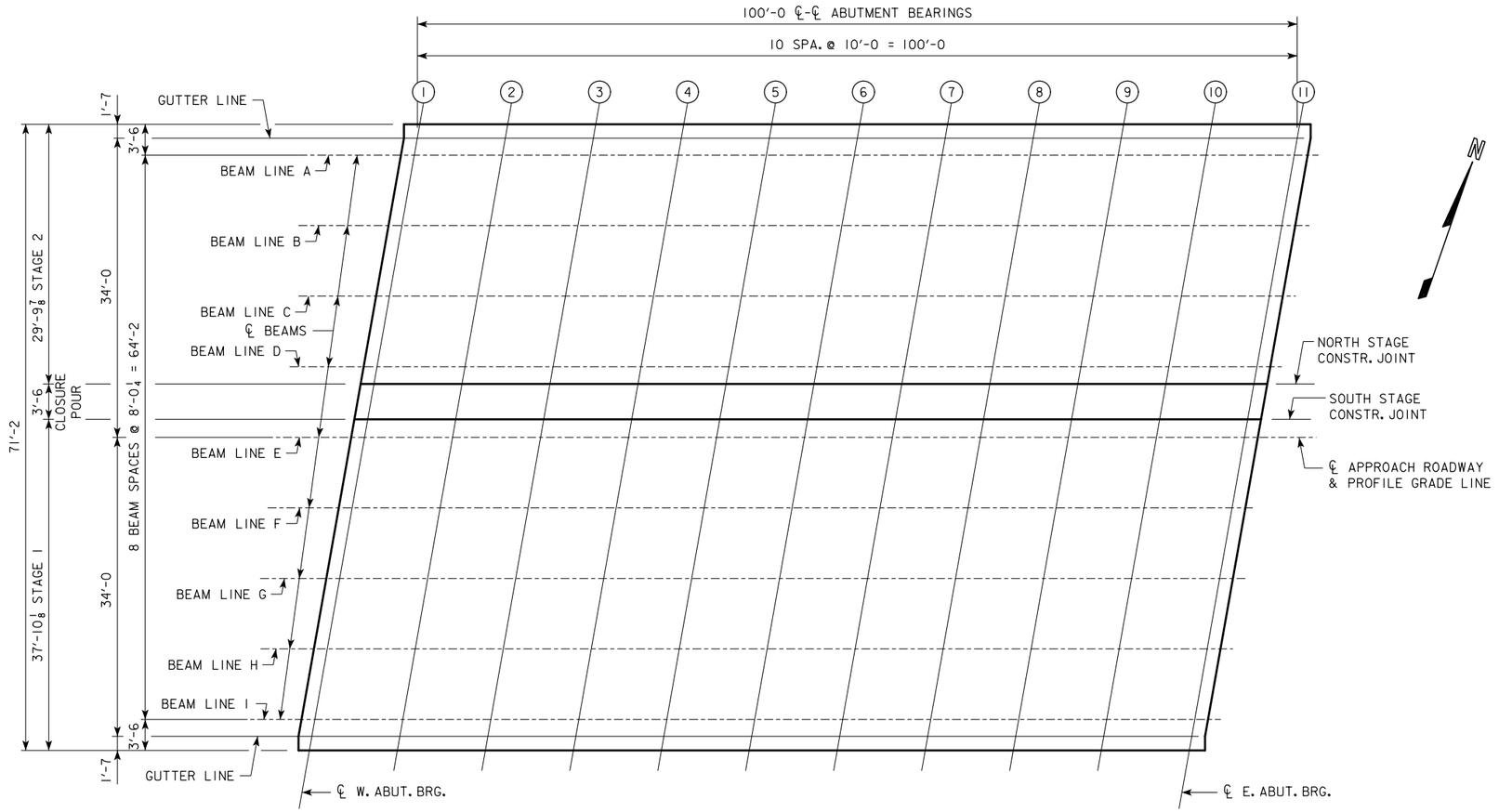
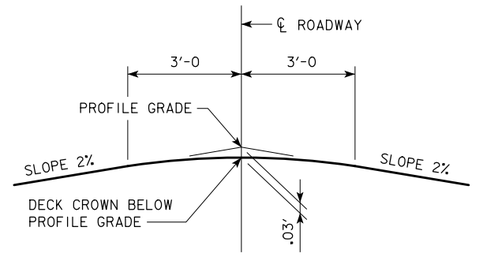
BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498.

TOP OF SLAB ELEVATIONS

LOCATION	℄ W. ABUT. BRG.										℄ E. ABUT. BRG.
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11
GUTTER LINE	570.20	570.27	570.34	570.40	570.46	570.51	570.56	570.60	570.64	570.67	570.70
BEAM LINE A	570.24	570.31	570.38	570.45	570.51	570.56	570.61	570.65	570.69	570.72	570.74
BEAM LINE B	570.43	570.50	570.58	570.64	570.70	570.76	570.80	570.85	570.88	570.92	570.94
BEAM LINE C	570.62	570.69	570.76	570.83	570.89	570.94	570.99	571.04	571.08	571.11	571.14
BEAM LINE D	570.79	570.86	570.94	571.00	571.06	571.12	571.17	571.22	571.25	571.29	571.32
STAGE CONSTRUCTION JOINT	570.83	570.90	570.98	571.04	571.10	571.16	571.21	571.25	571.29	571.33	571.36
STAGE CONSTRUCTION JOINT	570.90	570.97	571.04	571.11	571.17	571.23	571.28	571.32	571.37	571.40	571.43
℄ APPROACH ROADWAY & BEAM LINE E	570.91	570.98	571.06	571.12	571.19	571.24	571.29	571.34	571.38	571.41	571.44
BEAM LINE F	570.77	570.84	570.91	570.99	571.05	571.11	571.16	571.20	571.24	571.28	571.31
BEAM LINE G	570.58	570.65	570.72	570.79	570.86	570.91	570.97	571.01	571.06	571.09	571.12
BEAM LINE H	570.37	570.44	570.51	570.59	570.65	570.71	570.76	570.81	570.85	570.89	570.92
BEAM LINE I	570.16	570.23	570.30	570.37	570.44	570.50	570.55	570.60	570.64	570.68	570.71
GUTTER LINE	570.11	570.18	570.25	570.33	570.39	570.45	570.50	570.55	570.60	570.63	570.67



TOP OF SLAB ELEVATION LOCATIONS



CROWN TEMPLATE

TOP OF BRIDGE DECK CROWN .03' BELOW PROFILE GRADE.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

TOP OF SLAB ELEVATIONS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 18 OF 29 FILE NO. 30687 DESIGN NO. 514

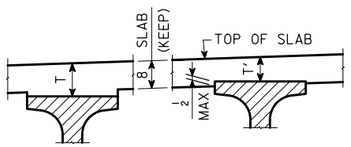
BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498.

TABLE OF BEAM LINE HAUNCH ELEVATIONS

LOCATION	C.L. W. ABUT. BRG.										C.L. E. ABUT. BRG.
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11
BEAM LINE A	569.57	569.76	569.93	570.06	570.16	570.23	570.26	570.27	570.24	570.17	570.08
BEAM LINE B	569.77	569.96	570.13	570.26	570.36	570.43	570.46	570.46	570.43	570.37	570.28
BEAM LINE C	569.95	570.14	570.31	570.45	570.55	570.62	570.65	570.66	570.63	570.57	570.47
BEAM LINE D	570.13	570.32	570.49	570.62	570.72	570.79	570.83	570.83	570.80	570.74	570.65
BEAM LINE E	570.25	570.44	570.61	570.74	570.84	570.91	570.95	570.96	570.93	570.87	570.78
BEAM LINE F	570.11	570.30	570.46	570.60	570.71	570.78	570.81	570.82	570.79	570.73	570.64
BEAM LINE G	569.91	570.11	570.27	570.41	570.51	570.59	570.62	570.63	570.61	570.55	570.46
BEAM LINE H	569.71	569.90	570.06	570.20	570.31	570.38	570.42	570.43	570.40	570.35	570.26
BEAM LINE I	569.49	569.68	569.85	569.99	570.10	570.17	570.21	570.22	570.19	570.14	570.05

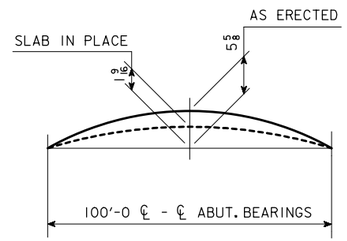
MISCELLANEOUS DATA TABLE

	BEAM LINE		C.L. W. ABUT. BRG.										C.L. E. ABUT. BRG.
			LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11
ANTICIPATED DEFLECTION DUE TO SLAB (in.)	ALL		0	$1\frac{7}{16}$	$2\frac{5}{8}$	$3\frac{7}{16}$	$3\frac{7}{8}$	$4\frac{1}{16}$	$3\frac{7}{8}$	$3\frac{7}{16}$	$2\frac{5}{8}$	$1\frac{7}{16}$	0
CROSS SLOPE ADJUSTMENTS IN.	A, B, C, G, H, I		$\frac{7}{16}$										
	D,F		$\frac{5}{16}$										
	E		$\frac{1}{16}$										
ALLOWABLE FIELD HAUNCH IN. & (FT.)	MAX.	ALL	$2\frac{1}{2}$ (0.21)										
	MIN.	A, B, C, G, H, I	$-\frac{1}{16}$ (-0.01)										
		D, F	$-\frac{3}{16}$ (-0.02)										
		E	$-\frac{7}{16}$ (-0.04)										

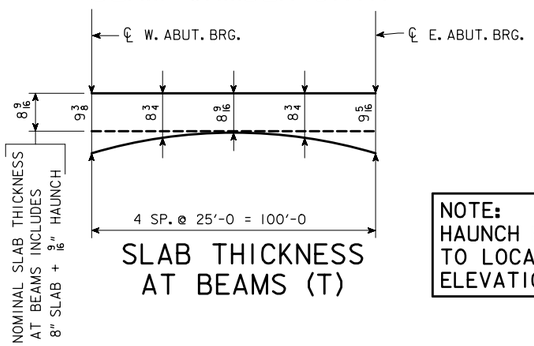


SLAB THICKNESS DETAILS

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

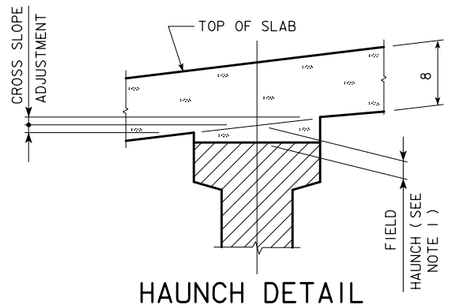


BEAM CAMBER DATA



SLAB THICKNESS AT BEAMS (T)

NOTE:
HAUNCH ELEVATIONS IN TABLE CORRESPOND TO LOCATIONS AS SHOWN ON "TOP OF SLAB ELEVATION LAYOUT" ON DESIGN SHEET 16.



HAUNCH DETAIL

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

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

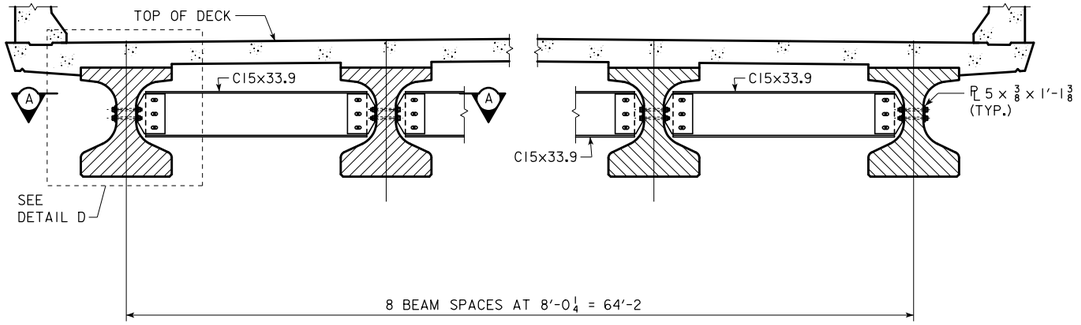
SUPERSTRUCTURE DETAILS

STATION: 293+68.30 DECEMBER, 2012

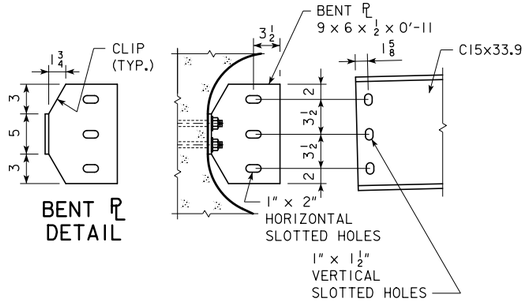
SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

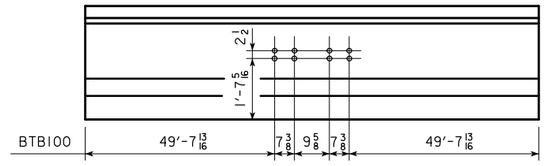
DESIGN SHEET NO. 19 OF 29 FILE NO. 30687 DESIGN NO. 514



SECTION SHOWING INTERMEDIATE DIAPHRAGM

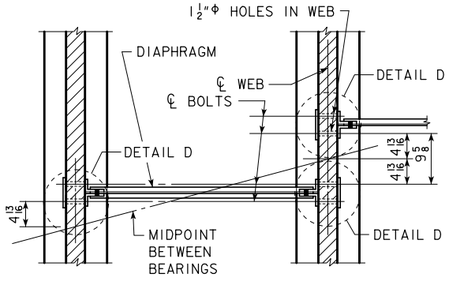


SLOTTED HOLE DETAILS



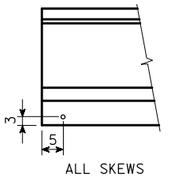
(7°31' TO 30° SKEW)

INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATIONS



PART SECTION A-A

FOR BRIDGES SKEWED GREATER THAN 7°30'

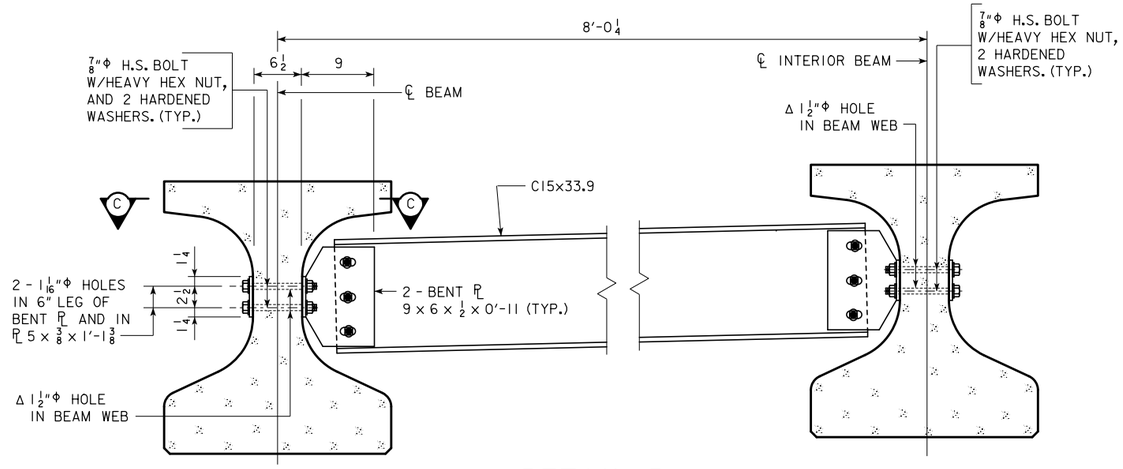


INTEGRAL ABUT.

BEAM COIL TIE LOCATIONS

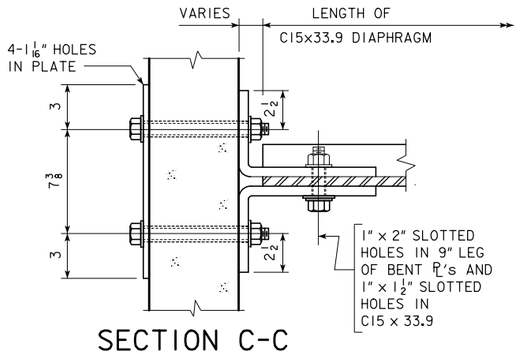
BULB TEE "B" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

ONE BEAM CONNECTION (DETAIL "D")		NO. OF BEAM CONNECTIONS	WEIGHT
4 - 7/8"Φ x 9 1/4 H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.		16	154
ONE DETAIL "D"	1 - BACKING PL 5 x 3/8 x 1'-1 3/8 = 7.1 LBS.	16	114
	2 - BENT PL 9 x 6 x 1/2 x 0'-11 = 46.8 LBS.	16	749
ONE DIAPHRAGM			
		NUMBER OF DIAPHRAGMS	
6 - 7/8"Φ x 3" H.S.BOLTS WITH NUTS & WASHERS = 7.8 LBS.		8	62
	LENGTH OF MEMBER		
1 - C15 x 33.9 = 33.9 LBS./FT.	6'-10	8	1853
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			2932



DETAIL D

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



SECTION C-C

NOTES:

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

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

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

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

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

ALL BOLTS ARE TO BE TIGHTENED PRIOR TO PLACING BRIDGE FLOOR CONCRETE WITH THE FOLLOWING EXCEPTION: BOLTS IN DIAPHRAGMS LOCATED UNDER LONGITUDINAL BRIDGE FLOOR CONSTRUCTION JOINTS SHALL NOT BE TIGHTENED UNTIL STAGE TWO OF THE BRIDGE FLOOR HAS BEEN PLACED.

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTERMEDIATE DIAPHRAGM DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 20 OF 29 FILE NO. 30687 DESIGN NO. 514

REVISION 04-13 - CORRECTED THE 'D' DIMENSIONS LOCATING THE HOLES IN THE BEAM WEB IN PART SECTION A-A.
ENGLISHBEAMS.DGN - 1036-BTBW - THIS SHEET ISSUED 02-08.

DESIGN TEAM DAW/WDT	STEEL INTERM. DIAPHS. FOR "BTB" BEAM BRIDGES OVER WATERWAYS	MODIFIED STANDARD SHEET 1036-BTBW	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 21

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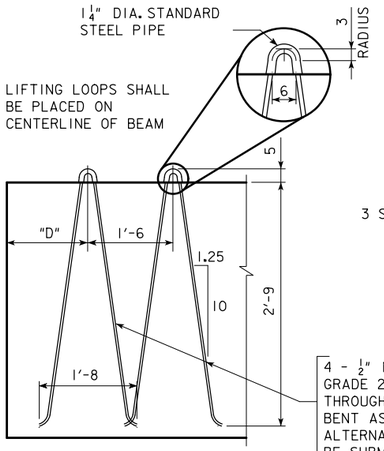
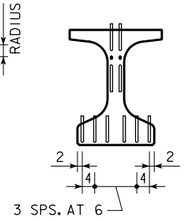
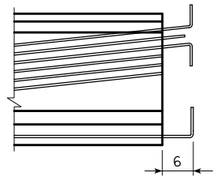


4 - ½" NOMINAL DIA. GRADE 270 STRANDS THREADED THROUGH EACH PIPE SLEEVE BENT AS SHOWN AFTER THREADING. ALTERNATE LIFTING DEVICES MAY BE SUBMITTED FOR APPROVAL (SEE LIFTING LOOP TABLE).

LIFTING LOOP DETAIL



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



TYPICAL AT BOTH BEAM ENDS

STRAND PROJECTION AT BEAM ENDS WHEN EMBEDDED IN CONCRETE END DIAPHRAGMS

BTB BEAM DATA

	BTB BEAM	SPAN LENGTH c/c BEARING	OVERALL BEAM LENGTH (L)	CONCRETE STRENGTH f'ci (ksi)	CONCRETE STRENGTH f'c (ksi)	STRAND SIZE DIA. (in)	NO. OF STRAND STRAIGHT	NO. OF STRAND DEFLECTED	TOTAL INITIAL PRESTRESS ③ kips	HOLD DOWN FORCE-kips	CAMBER (in) AT RELEASE	CAMBER (in) AFTER LOSSES	DEFLECTION (in) Δ_D IMMEDIATE ① (ELASTIC) Δ_I STEEL DIAPHRAGM	DEFLECTION (in) Δ_D TIME ② (PLASTIC) Δ_T STEEL DIAPHRAGM	PERMISSIBLE MAXIMUM SPACING HL-93 LOADING STEEL DIAPHRAGM	WEIGHT (TONS)	CONCRETE (CU YD.)	REINFORCING STEEL (WEIGHT-LBS)
④	BTB100	100'-0	101'-4	8.0	9.0	0.60	32	12	1871	20.9	3.19	5.63	3.44	0.86	8'-6	33.3	16.5	2300

① DEFLECTIONS AT MID-SPAN DUE TO WEIGHT OF SLAB AND DIAPHRAGM. THE DEFLECTIONS SHOWN ARE FOR A SLAB (8 in) AND HAUNCH (1.5 in) WEIGHT OF:
0.93 kips/ft FOR 8'-6 BEAM SPACING
0.80 kips/ft FOR 7'-4 BEAM SPACING
AND ONE STEEL DIAPHRAGM (0.500 kips) AT ℄ OF SPAN.
FOR DIFFERENT SLAB AND DIAPHRAGM WEIGHTS, DEFLECTIONS WILL BE DIRECTLY PROPORTIONAL.
② DEFLECTIONS DUE TO THE COMBINED EFFECT OF CREEP DUE TO WEIGHT OF SLAB AND SHRINKAGE OF SLAB.
TOTAL BEAM DEFLECTIONS AT ℄ OF SPAN, Δ_D , DUE TO WEIGHT OF SLAB AND DIAPHRAGMS FOR DETAILING PURPOSE:
(A) $\Delta_D = \Delta_I + \Delta_T$ FOR SIMPLE SPAN.
(B) $\Delta_D = \Delta_I + \frac{3}{4}\Delta_T$ FOR END SPANS OF CONTINUOUS BRIDGE.
(C) $\Delta_D = \Delta_I + \frac{1}{2}\Delta_T$ FOR INTERIOR SPANS OF CONTINUOUS BRIDGE.
③ TOTAL INITIAL PRESTRESS IS BASED ON 72.6% f's, f's. = 270 ksi. AND As = 0.217 in².
④ REQUIRES 4000 psi COMPRESSIVE STRENGTH FOR CAST-IN-PLACE SLAB CONCRETE.

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

BEAM NOTES:

THESE BEAMS ARE DESIGNED FOR AASHTO LIVE LOADS AS INDICATED IN ABOVE TABLE WITH AN ALLOWANCE OF 20 LBS PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

ALL PPC BEAMS SHALL USE HIGH PERFORMANCE CONCRETE (HPC) IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

HOLD DOWN POINTS FOR DEFLECTED STRANDS MAY BE MOVED TOWARD ENDS OF BEAM A DISTANCE OF 0.05 L MAXIMUM AT PRODUCER'S OPTION.

ALL PRESTRESSING STRANDS EXCEPT LIFTING LOOP STRANDS SHALL BE 0.60 in. NOMINAL DIAMETER (NOMINAL STEEL AREA = 0.217 in²) AND CONFORM TO ASTM A416 GRADE 270 LOW RELAXATION STRANDS. MINIMUM STRAND BREAKING STRENGTH SHALL BE 58.6 kips.

TOPS OF BEAMS ARE TO BE STRUCK OFF LEVEL AND FINISHED AS PER MATERIALS IM570.

BEARINGS SHALL BE AS DETAILED ON OTHER DESIGN SHEETS.

BEAMS TO BE USED IN BRIDGES MADE CONTINUOUS BY THE POURED IN PLACE FLOOR, ARE TO BE AT LEAST 28 DAYS OLD BEFORE THE FLOOR IS PLACED UNLESS A SHORTER CURING TIME IS APPROVED BY THE BRIDGE ENGINEER.

THE PORTIONS OF THE PRESTRESSED BEAMS THAT ARE TO BE EMBEDDED IN THE ABUTMENT AND PIER DIAPHRAGMS SHALL BE ROUGHENED FOR A DISTANCE OF 10" FROM THE BEAM END BY SANDBLASTING OR OTHER APPROVED METHODS TO PROVIDE SUITABLE BOND BETWEEN THE BEAM AND THE DIAPHRAGM IN ACCORDANCE WITH ARTICLE 2403.03, I, OF THE STANDARD SPECIFICATIONS.

ALL BEAMS ARE TO BE INCREASED IN LENGTH TO COMPENSATE FOR ELASTIC SHORTENING, CREEP AND SHRINKAGE.

FOR TRANSPORTING, THE ALLOWABLE OVERHANG IS SHOWN IN THE LIFTING LOOP AND OVERHANG TABLE.

THE CONTRACTOR SHALL ASSURE THE LATERAL STABILITY OF THE BEAMS DURING HANDLING, TRANSPORTING AND ERECTION BY PROVIDING TEMPORARY BRACING AS NEEDED.

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

IF SOLE PLATE IS REQUIRED FOR BEARING, SOLE PLATE IS TO BE SET IN FORMS WHEN BEAM IS CAST AND FORMED OUT BELOW TO EXCLUDE CONCRETE AS DETAILED ON THE BEARING SHEET.

IF STUB ABUTMENTS ARE USED, ALL STRANDS AT THE ENDS OF BEAMS AT STUB ABUTMENTS SHALL BE CUT OFF REASONABLY FLUSH WITH THE CONCRETE.

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

FOUR 0.60 IN. DIAMETER STRANDS STRESSED TO NOT MORE THAN 5000 lbs EACH MAY BE USED IN LIEU OF BARS 5a1 AND 5a2 IN THE TOP FLANGE.

WHEN EXPANSION JOINTS ARE USED, CONCRETE SEALER SHALL BE APPLIED TO THE PRESTRESSED BEAM END SECTIONS. THE SEALING SHALL BE IN ACCORDANCE WITH MATERIALS I.M. 570 (FABRICATOR APPLICATION) AND I.M. 491.12 (CONTRACTOR APPLICATION).

LIFTING LOOP AND OVERHANG TABLE

BEAMS	LIFTING LOOPS EACH END	# OF STRANDS PER LOOP	D	BEAM OVERHANG (FT)
BTB100	2	4	6'-3	12

** IN ACCORDANCE WITH STANDARD SPECIFICATION 2407.13.
LIFTING LOOPS SHALL CARRY LOADS EQUALLY.

DESIGN STRESSES:

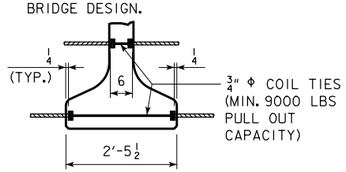
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE TO BE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2007.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH SECTION 5.
PRESTRESSING STEEL IN ACCORDANCE WITH SECTION 5, GRADE 270.

SPECIFICATIONS:

CONSTRUCTION: STANDARD SPECIFICATIONS OF THE IOWA DEPARTMENT OF TRANSPORTATION, CURRENT SERIES, WITH CURRENT APPLICABLE SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

DESIGN: AASHTO LRFD, SERIES OF 2007, WITH MINOR MODIFICATIONS.

NUMBER AND EXACT LOCATION OF COIL TIES TO BE AS DETAILED ON SPECIFIC BRIDGE DESIGN.



COIL TIE DETAIL

ALTERNATE BAR NOTES:

ALTERNATE BARS SHOWN IN BENT BAR DETAILS MAY BE USED IN LIEU OF REINFORCING BARS SHOWN IN BAR LIST. NO ADDITIONAL PAYMENT SHALL BE MADE FOR USE OF ALTERNATE BARS.

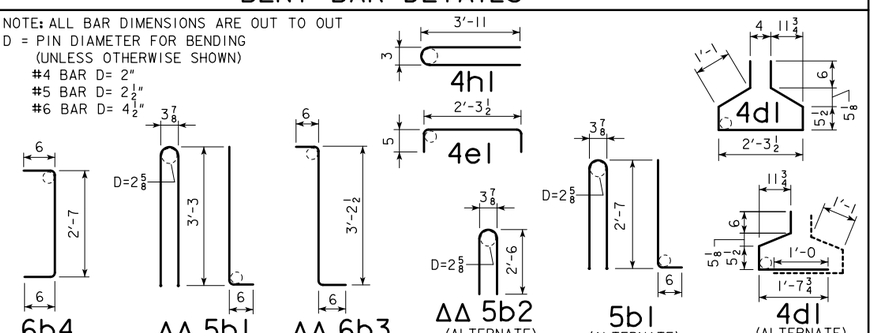
ΔΔ 5b1 AND 6b3 BARS TO BE EPOXY COATED
* 6b3 AND 6b4 BARS TO BE USED IN PAIRS

REINFORCING BAR LIST

	BEAM BAR	SHAPE	BTB100 NO.	LENGTH			BEAM BAR
	5a1		12	32'-9			5a1
	5a2		6	40'-0			5a2
ΔΔ	5b1		79	7'-8			5b1
ΔΔ *	6b3		32	4'-3			6b3
*	6b4		16	3'-7			6b4
	4c1		121	2'-7			4c1
	4d1		101	6'-5			4d1
	4e1		26	3'-2			4e1
	4h1		4	8'-0			4h1

BENT BAR DETAILS

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



DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

BTB100 BEAM DETAILS

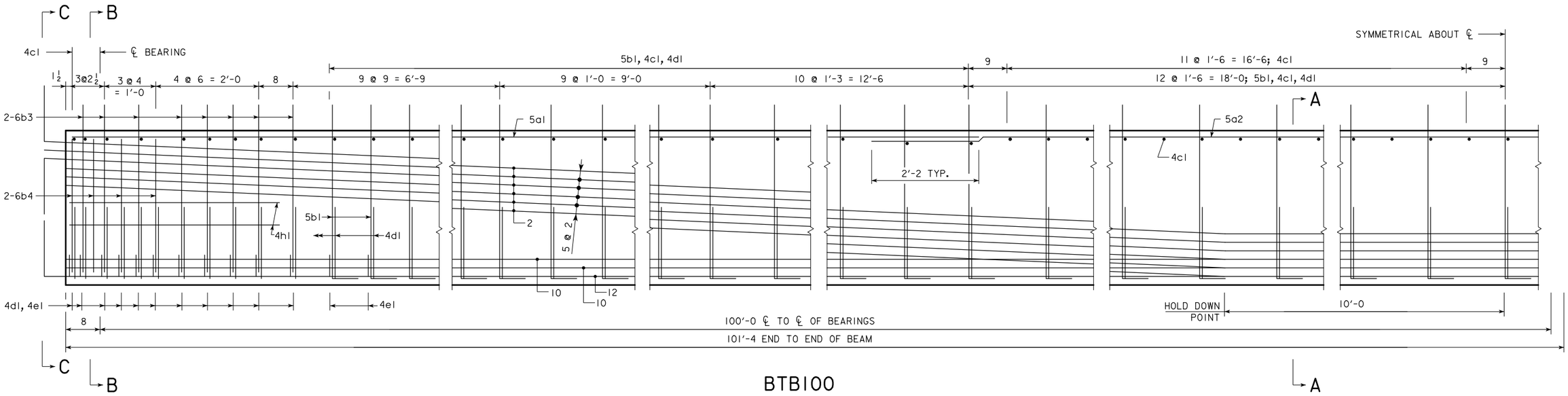
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

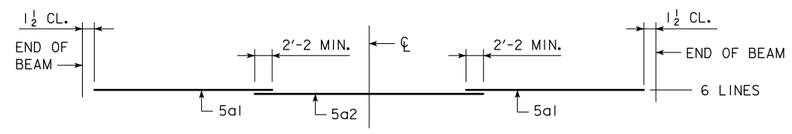
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 21 OF 29 FILE NO. 30687 DESIGN NO. 514

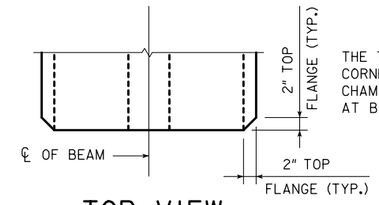
REVISION 08-12 - I.M. REFERENCE NOTE FOR SEALING BEAM ENDS DISTINGUISHES BETWEEN THE FABRICATOR AND CONTRACTOR. DECK PANEL OPTION NOTE WAS DELETED.
ENGLISHBEAMS.DGN - 4765 - THIS SHEET ISSUED 02-08.



BTB100

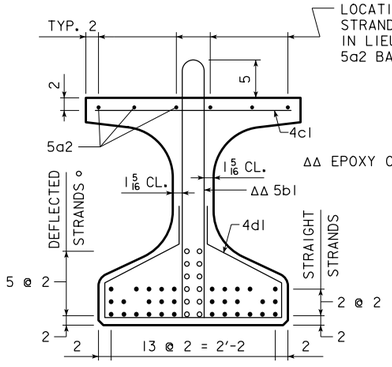


TOP FLANGE LONGITUDINAL BAR LAYOUT

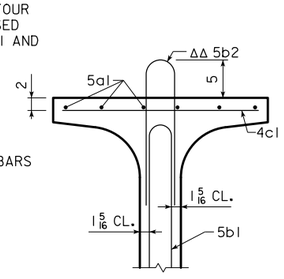


TOP VIEW

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

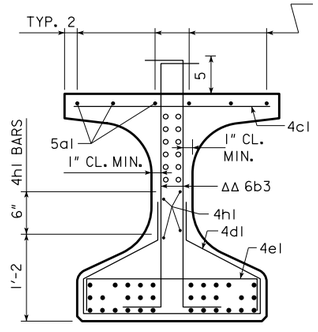


SECTION A-A



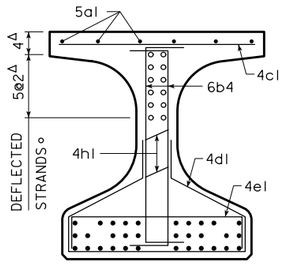
SECTION A-A (ALTERNATE)

SEE ALTERNATE BAR NOTE ON STANDARD SHEET **4766.**



SECTION B-B

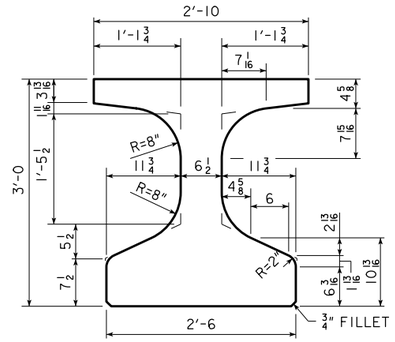
ΔDIMENSIONS AT END OF BEAM



SECTION C-C

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

BEAM SECTION PROPERTIES



BTB BEAM CROSS SECTION

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

BTB100 BEAM DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 22 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT	BULB TEE "B" BEAM - 100'-0 SPAN	STANDARD SHEET 4766	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 23

ENGLISHBEAMS.DGN - 4766 - THIS SHEET ISSUED 02-08.

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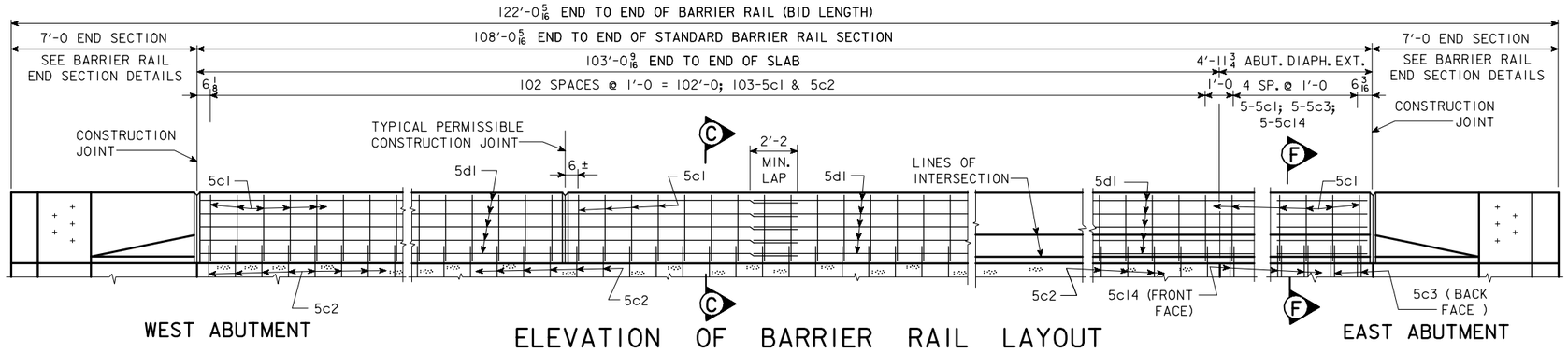
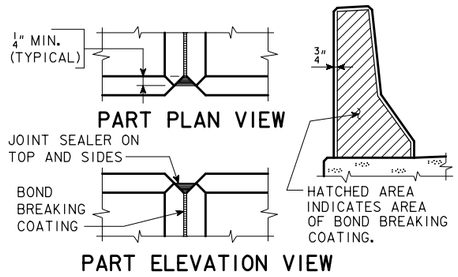


ELEVATION OF BARRIER RAIL LAYOUT



PART PLAN VIEW

PART ELEVATION VIEW

BARRIER RAIL JOINT DETAILS

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 EPOXY COATED.

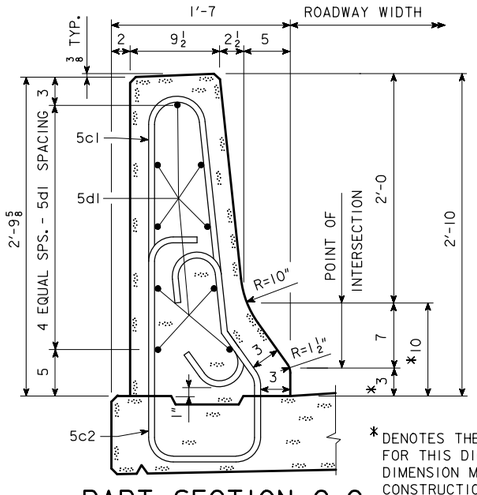
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING 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.

ALL BARRIER RAIL REINFORCING STEEL IS TO BE INCLUDED WITH THE SUPERSTRUCTURE REINFORCING STEEL.

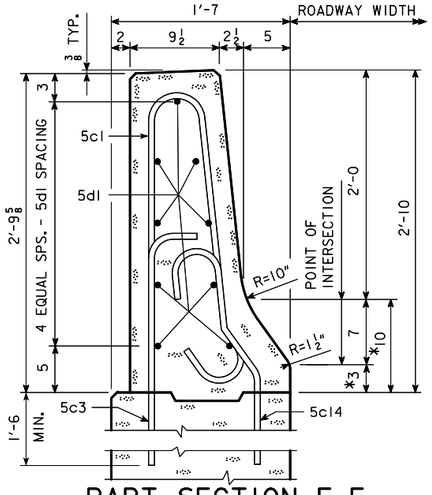
THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE.

CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 2.84 SQUARE FEET.



PART SECTION C-C



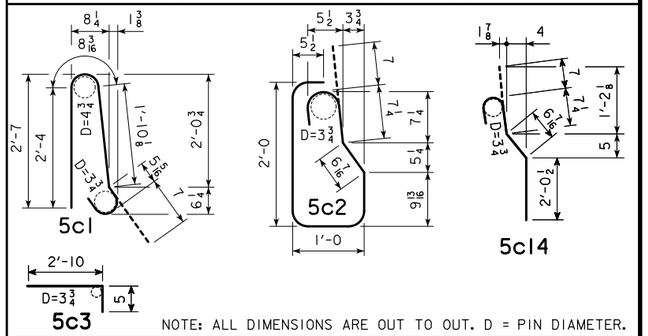
PART SECTION F-F

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

EPOXY REINF. STEEL-TWO BARRIER RAILS

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
STANDARD SECTION	5c1	VERTICAL		216	5'-11	1333
	5c2	VERTICAL		206	6'-0	1289
	5c3	VERTICAL		10	3'-3	34
	5c14	VERTICAL		10	3'-10	40
	5d1	LONGITUDINAL	——	54	37'-5	2107
	BARRIER RAIL END SECTION		4 AT 458 LBS.			1832
(INCLUDE WITH SUPERSTRUCTURE REINFORCING)			TOTAL (LBS.)			6635

BENT BAR DETAILS



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

CONCRETE PLACEMENT SUMMARY

SECTION		TOTAL
STANDARD SECTION	216.0 @ 0.1052 CU.YD. PER FT.	22.7
BARRIER RAIL END SECTION	4 @ 0.65 CU.YD.	2.6
	TOTAL (CU. YD.)	25.3

CONCRETE BARRIER RAIL QUANTITIES

ITEM	UNIT	QUANTITY
CONCRETE BARRIER RAILING	L.F.	244.0

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

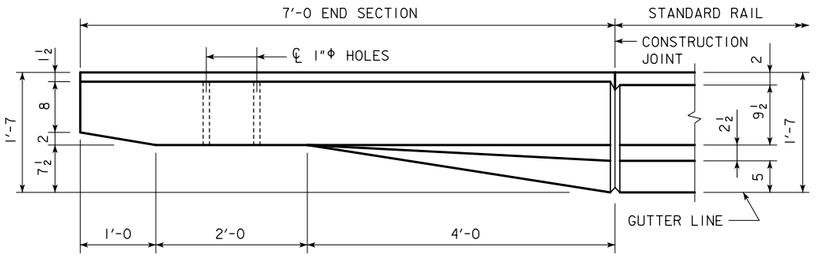
CONCRETE BARRIER RAIL DETAILS

STATION: 293+68.30 DECEMBER, 2012

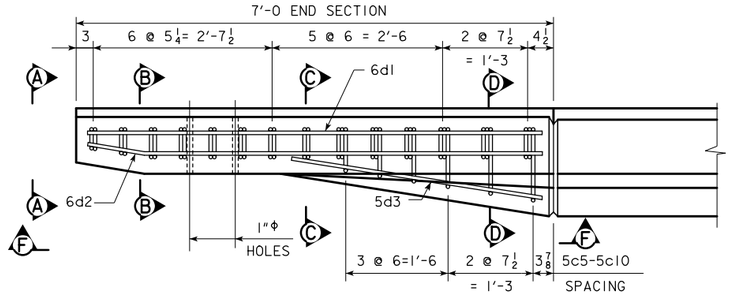
SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

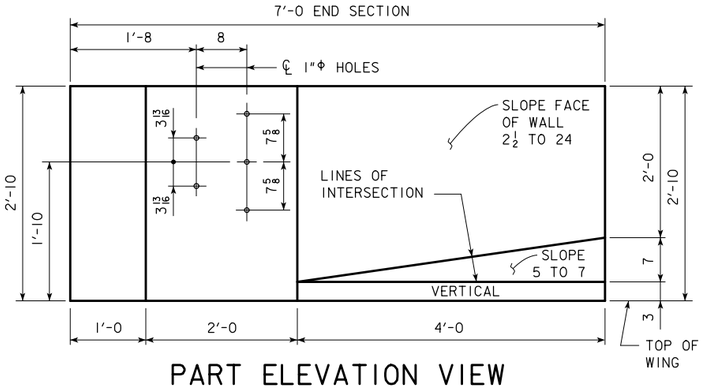
DESIGN SHEET NO. 23 OF 29 FILE NO. 30687 DESIGN NO. 514



PART PLAN VIEW

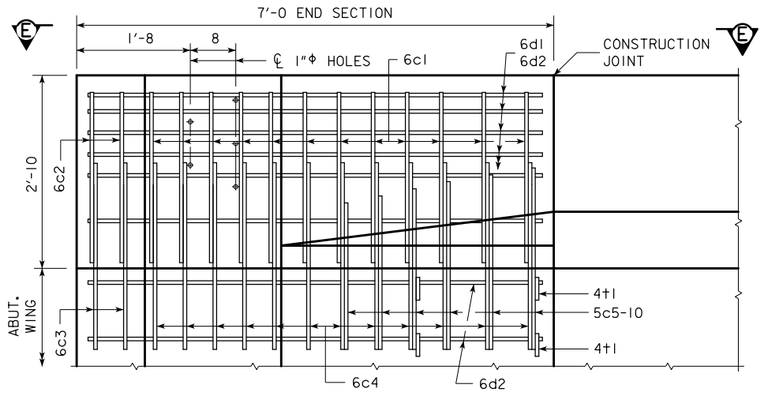


PART VIEW E-E

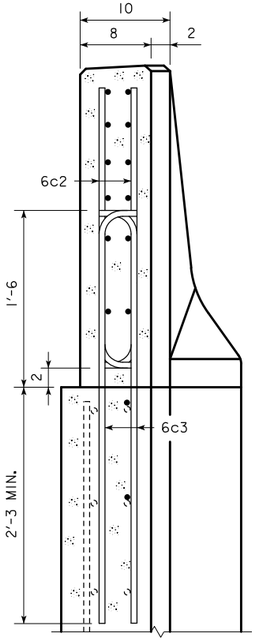


PART ELEVATION VIEW

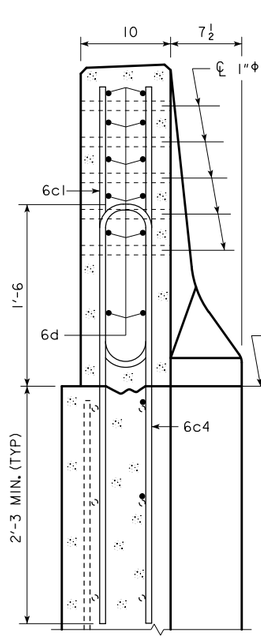
PROVIDE 5 HOLES FORMED WITH 1"Φ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE BID FOR CONCRETE BARRIER RAILING.



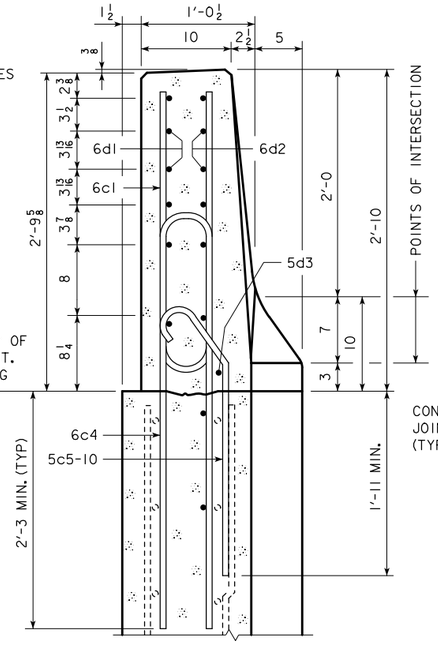
PART VIEW F-F



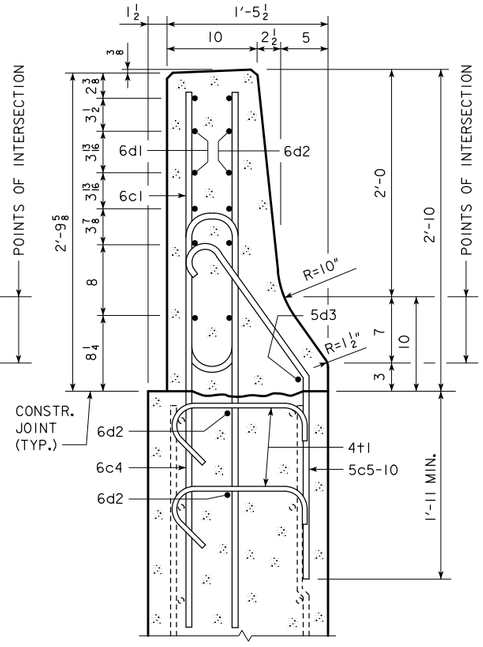
VIEW A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTE:
4†1 PLACEMENT- 2 BARS EACH LEVEL OF 6d2 IN WING FOOTING.

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

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

NOTE:
THE 6c4, 6c3, 5c5-10, 2 - 6d2 AND 4†1 BARS ARE TO BE PLACED WITH THE ABUTMENT WING. THE DETAILS FOR PLACEMENT ARE SHOWN ON THE WING ABUTMENT SHEET.

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

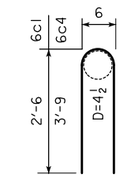
EPOXY REINFORCING STEEL - ONE END SECTION

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6c1	VERTICAL	⊓	12	5'-6	99
6c2	VERTICAL	⌐	4	2'-10	17
6c3	VERTICAL	⌐	4	4'-1	25
6c4	VERTICAL	⊓	12	8'-0	144
5c5-10	VERTICAL	⌐	6	VARIES	23
6d1	HORIZONTAL	—	6	6'-8	60
6d2	HORIZONTAL	—	8	6'-9	81
5d3	HORIZONTAL	—	1	3'-9	4
4†1	ABUTMENT WING TIE BARS	⌐	4	VARIES	5
(INCLUDE WITH BARRIER RAIL REINFORCING)		TOTAL WEIGHT (LBS.)			458

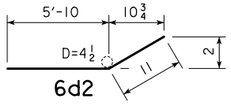
CONCRETE PLACEMENT SUMMARY

SECTION	TOTAL
BARRIER RAIL ONE END SECTION	0.65 CU. YD.

BENT BAR DETAILS

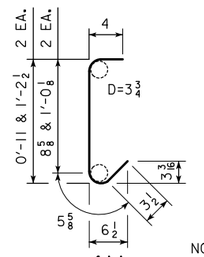


6c1 & 6c4

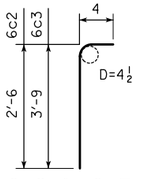


6d2

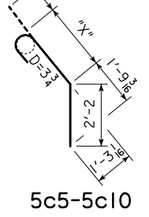
BAR	"X"
5c5	0'-6½
5c6	0'-8½
5c7	0'-10¼
5c8	1'-0¼
5c9	1'-2
5c10	1'-4



4†1



6c2 & 6c3



5c5-5c10

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

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

BARRIER RAIL END SECTION DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 24 OF 29 FILE NO. 30687 DESIGN NO. 514

REVISION 02-08 - REINFORCING STEEL PATTERN & SIZE CHANGED AND WEIGHT ADJUSTED. CONCRETE THICKNESS WAS INCREASED ½" AND QUANTITY ADJUSTED.
ENGLISHDECKRAILBRIDGES.DGN 1017 - THIS SHEET ISSUED 09-01

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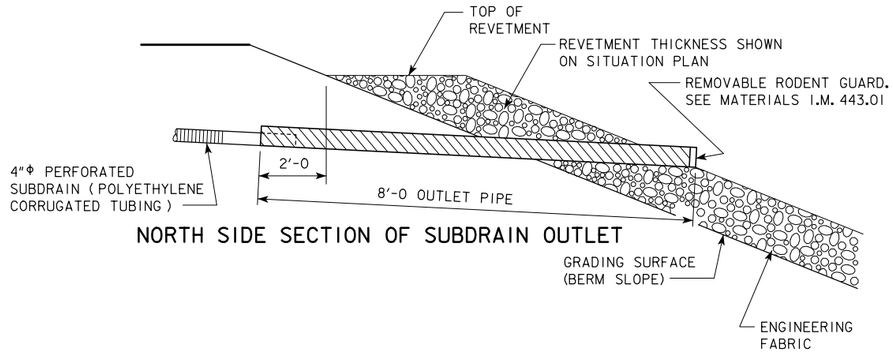
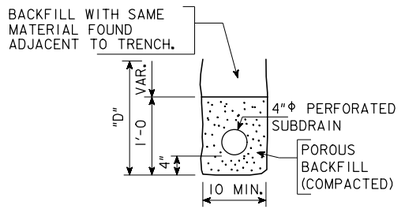
BENCH MARK NO. 603 STA. 293+83.546, 45.303 LT. FD IHC BM ON INHDWL OF ARCH BRG, ELEV. 566.498.



NORTH SIDE SECTION OF SUBDRAIN OUTLET



SECTION AWAY FROM ABUTMENT (TYPICAL)

"D" = DEPTH REQUIRED TO PROVIDE PROPER FLOW LINE FOR SUBDRAIN.

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.

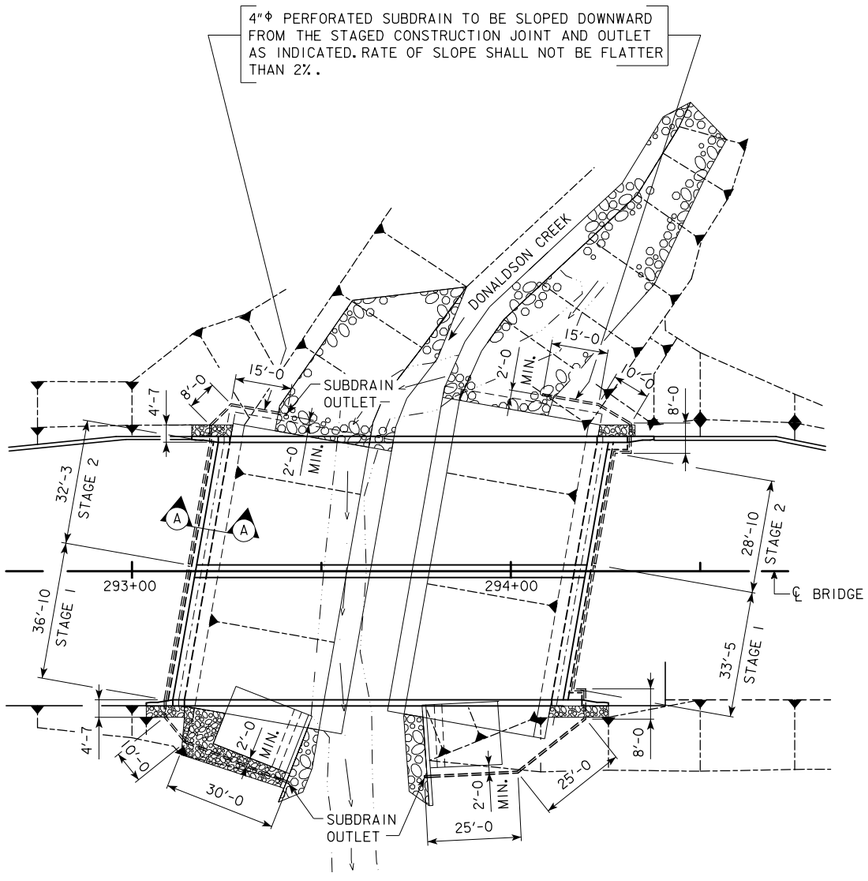
THE SUBDRAIN OUTLET SHALL CONSIST OF A LENGTH OF CMP PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET. THE LENGTH OF THE OUTLET PIPE ON THE NORTH SIDE SHALL BE DETERMINED BY THE REVETMENT AND IT'S PLACEMENT LOCATION. THE CONTRACTOR IS TO INSURE THE OUTLET PIPE IS ADEQUATELY STRONG ENOUGH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

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

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

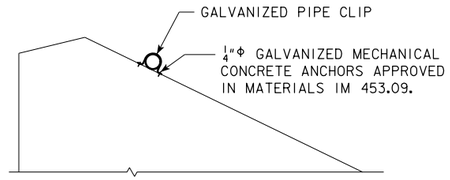
THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

SUBDRAIN OUTLET ELEVATIONS	
LOCATION	ELEVATION
WEST ABUTMENT (NORTH SIDE)	562.5
WEST ABUTMENT (SOUTH SIDE)	561.0
EAST ABUTMENT (NORTH SIDE)	563.0
EAST ABUTMENT (SOUTH SIDE)	562.0

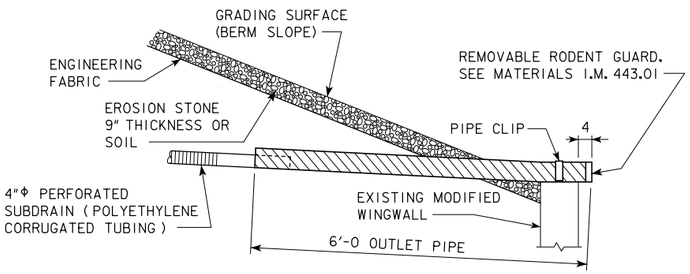


SITUATION PLAN

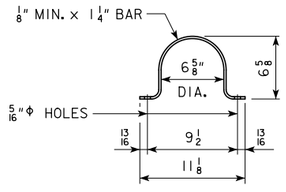
SHOWING SUBDRAIN LOCATIONS



SUBDRAIN OUTLET CONNECTION TO TOP OF EXISTING MODIFIED WINGWALLS.

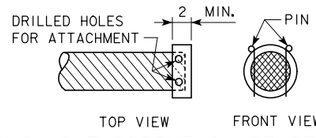


SOUTH SIDE SECTION OF SUBDRAIN OUTLET



PIPE CLIP DETAIL

ANY COMMERCIALLY AVAILABLE GALVANIZED CARBON STEEL PIPE CLIP FOR 6" DIAMETER PIPES OF SIMILAR DESIGN MAY BE USED.



REMOVABLE RODENT GUARD DETAILS

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

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SUBDRAIN DETAILS

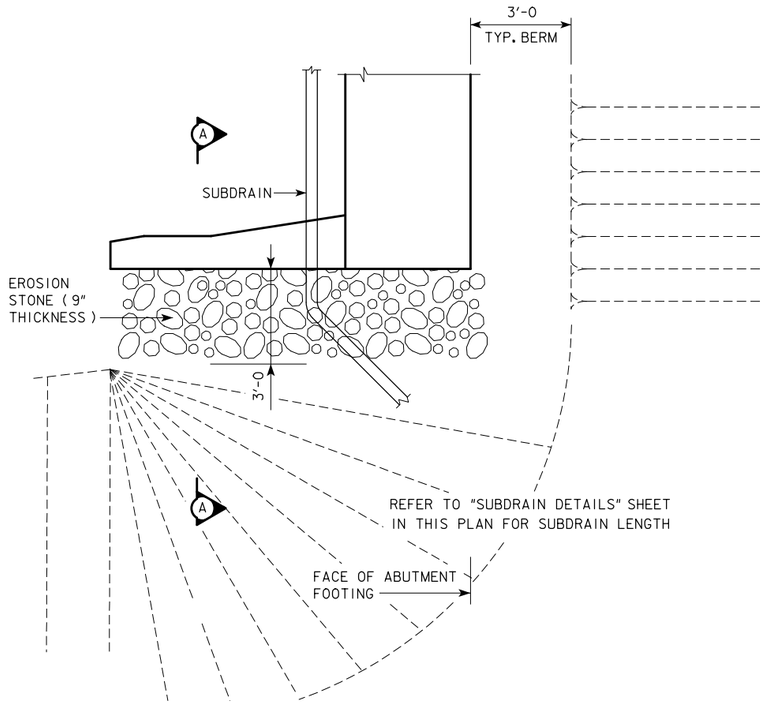
STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

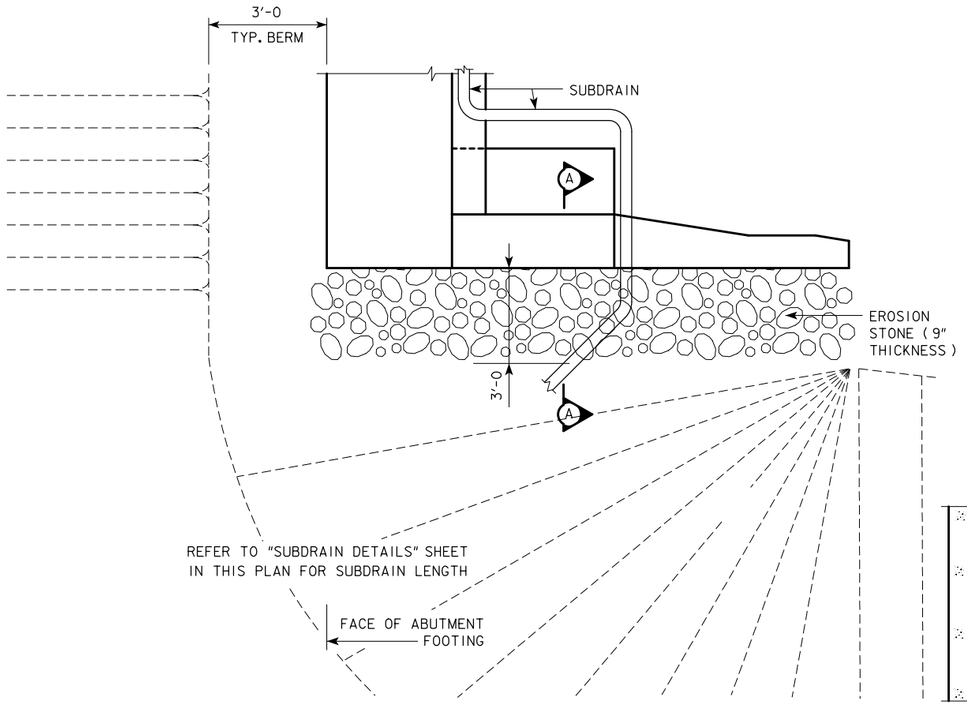
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 25 OF 29 FILE NO. 30687 DESIGN NO. 514

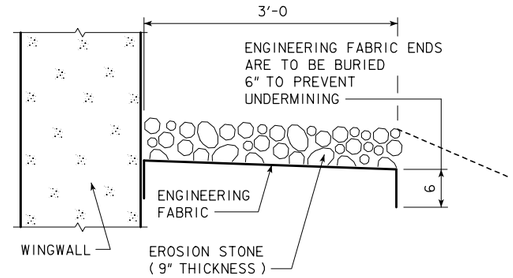
REVISED 02-12 - THE 3'-0 TOP OF THE BERM SLOPE PROTECTION WAS CHANGED TO EROSION STONE FOR ALL SLOPE PROTECTION CONDITIONS.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1007C - THIS SHEET ISSUED 06-02 FOR WATER CROSSINGS.



TOP VIEW OF WING ARMORING AT WEST ABUTMENT

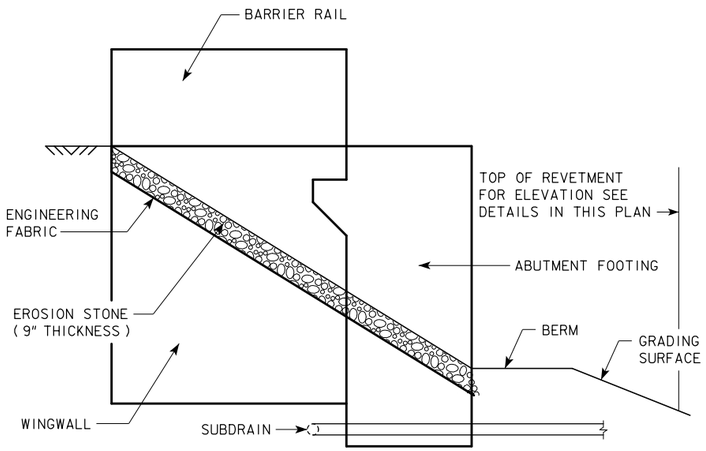


TOP VIEW OF WING ARMORING AT EAST ABUTMENT

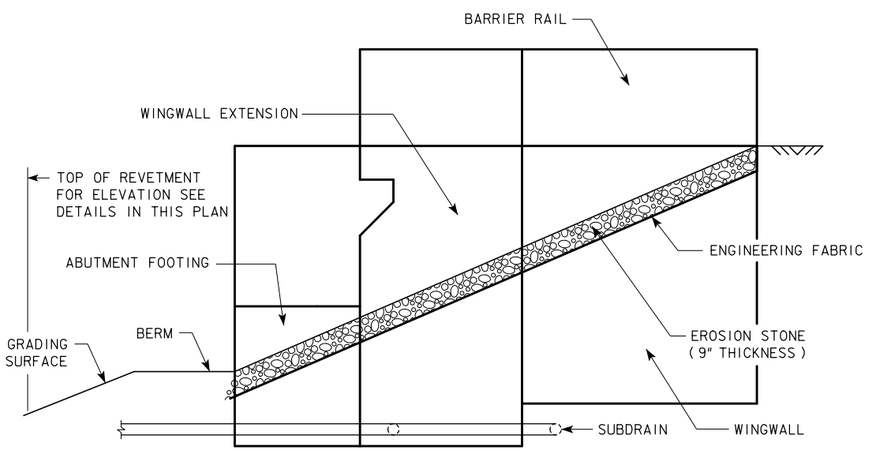


SECTION A-A

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



PROFILE VIEW OF WING ARMORING
(SHOWN FOR WEST ABUTMENT)



PROFILE VIEW OF WING ARMORING
(SHOWN FOR EAST ABUTMENT)

GENERAL NOTES:

EROSION STONE SHALL BE PLACED ALONG THE SIDES OF THE WINGS 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 EROSION STONE AT THESE LOCATIONS SHALL BE UNDERLAYED WITH ENGINEERING FABRIC IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

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

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

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

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

BRIDGE WING ARMORING

STATION: 293+68.30 DECEMBER, 2012

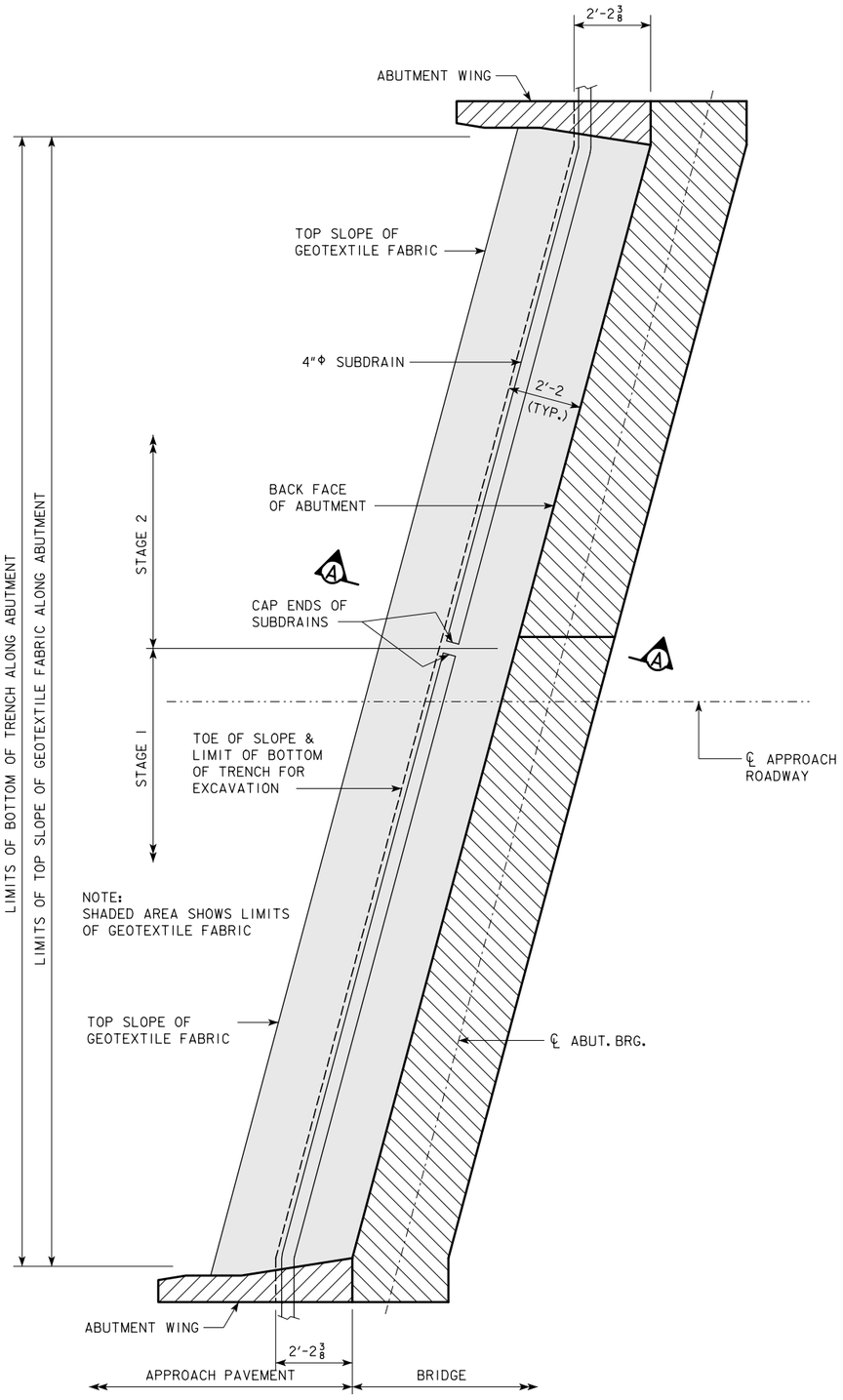
SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 26 OF 29 FILE NO. 30687 DESIGN NO. 514

REVISED 07-11 - THE LABELING OF THE BERM SLOPE IS IDENTIFIED AS 'GRADING SURFACE'. MACADAM STONE WAS CHANGED TO EROSION STONE.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1005A - THIS SHEET ISSUED 06-02.

DESIGN TEAM DAW/WDT	BRIDGE WING ARMORING - WATER CROSSING	MODIFIED STANDARD SHEET 1005A	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 27



WEST ABUTMENT PLAN WITHOUT WING EXTENSIONS

TECHNICAL DATA INFORMATION - GEOTEXTILE FABRIC				
MECHANICAL PROPERTIES	TEST METHOD	UNIT	MINIMUM AVERAGE ROLL VALUE	
			MD	CD
TENSILE STRENGTH (AT 5% STRAIN)	ASTM D 4595	kN/m (LBS/FT)	19.8 (1356)	19.8 (1356)
APPARENT OPENING SIZE (AOS)	ASTM D 4751	mm (U.S. SIEVE)	0.43 MAX (#40)	
FLOW RATE	ASTM D 4491	$L/MIN/m^2$ ($GAL/MIN/FT^2$)	733 (18)	
UV RESISTANCE (AT 500 HOURS)	ASTM D 4355	% STRENGTH RETAINED	70	

ABUTMENT BACKFILL PROCESS:

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

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

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

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

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

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 3 MINUTES WITHIN EACH INCREMENT.

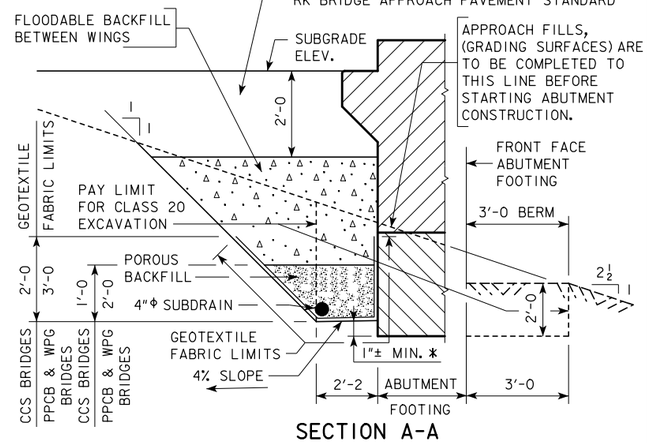
FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

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

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

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM STAGED CONSTRUCTION JOINT WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.



SECTION A-A

BACKFILL DETAILS

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

* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

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

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

WEST ABUTMENT BACKFILL DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 27 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT	ABUTMENT BACKFILL DETAILS (NON WING EXTENSION ABUTMENTS)	MODIFIED STANDARD SHEET 1007D	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 28

REVISED 04-12 - EXCAVATION LIMIT ON THE FRONT FACE OF THE ABUTMENT WAS CHANGED TO A 3'-0 LIMIT. THE APPROACH FILL WAS IDENTIFIED AS THE GRADING SURFACE.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN - 1007D - THIS SHEET ISSUED 08-07.

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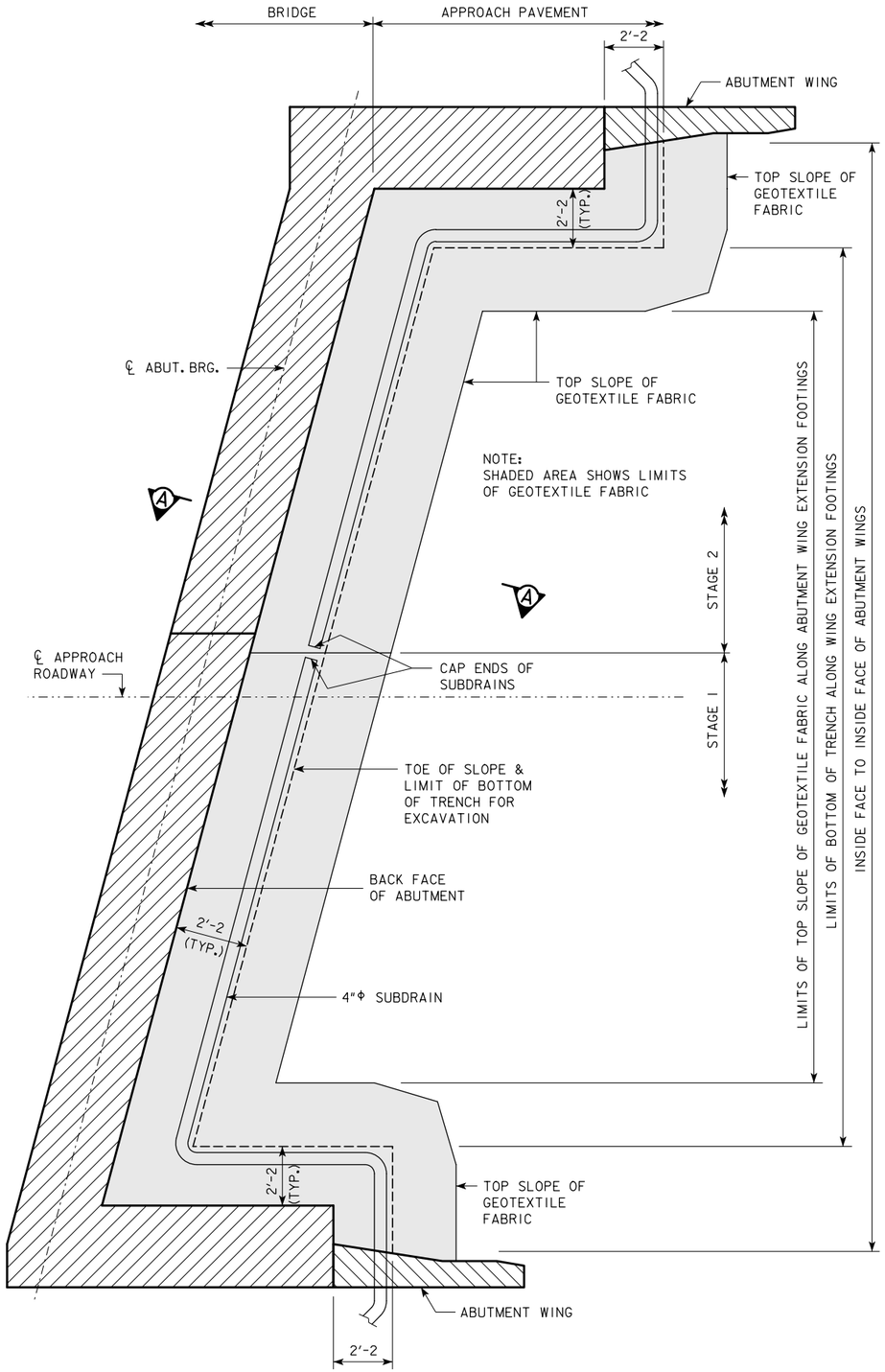
REVISED 04-12 - EXCAVATION LIMIT ON THE FRONT FACE OF THE ABUTMENT WAS CHANGED TO A 3'-0 LIMIT. THE APPROACH FILL WAS IDENTIFIED AS THE GRADING SURFACE.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN - 1007E - THIS SHEET ISSUED 08-07.



EAST ABUTMENT PLAN WITH WING EXTENSIONS

TECHNICAL DATA INFORMATION - GEOTEXTILE FABRIC				
MECHANICAL PROPERTIES	TEST METHOD	UNIT	MINIMUM AVERAGE ROLL VALUE	
			MD	CD
TENSILE STRENGTH (AT 5% STRAIN)	ASTM D 4595	kN/m (LBS/FT)	19.8 (1356)	19.8 (1356)
APPARENT OPENING SIZE (AOS)	ASTM D 4751	mm (U.S. SIEVE)	0.43 MAX (#40)	
FLOW RATE	ASTM D 4491	L/MIN/m^2 (GAL/MIN/FT^2)	733 (18)	
UV RESISTANCE (AT 500 HOURS)	ASTM D 4355	% STRENGTH RETAINED	70	

ABUTMENT BACKFILL PROCESS:

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

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

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

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

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

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 3 MINUTES WITHIN EACH INCREMENT.

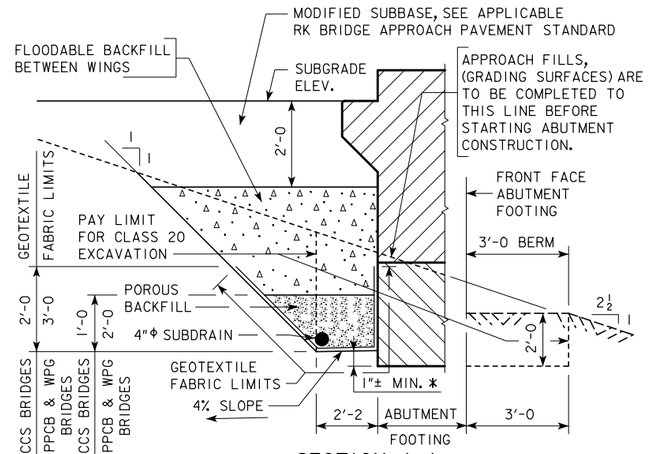
FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

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

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

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM STAGED CONSTRUCTION JOINT WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.



SECTION A-A

BACKFILL DETAILS

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

* DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

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

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

EAST ABUTMENT BACKFILL DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 28 OF 29 FILE NO. 30687 DESIGN NO. 514

DESIGN TEAM DAW/WDT	ABUTMENT BACKFILL DETAILS (WING EXTENSION ABUTMENTS)	MODIFIED STANDARD SHEET 1007D	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER 29

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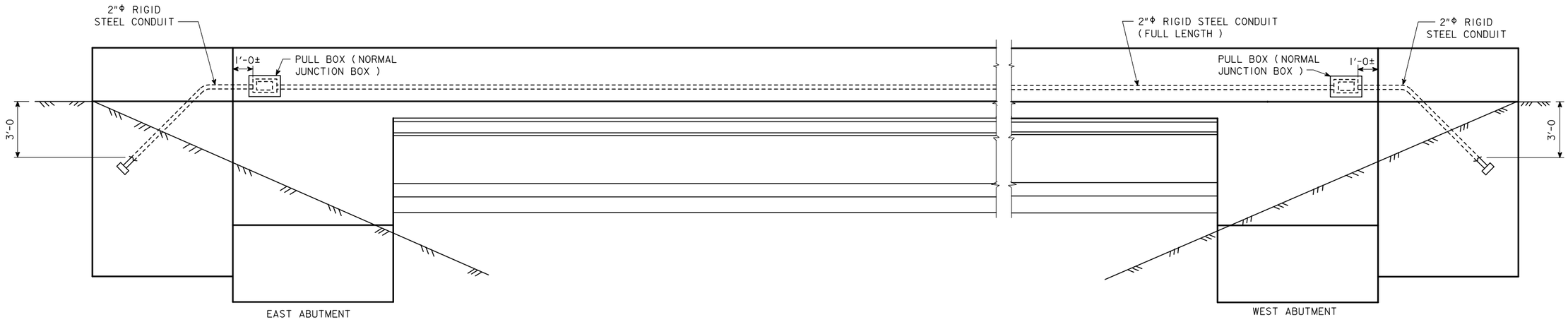
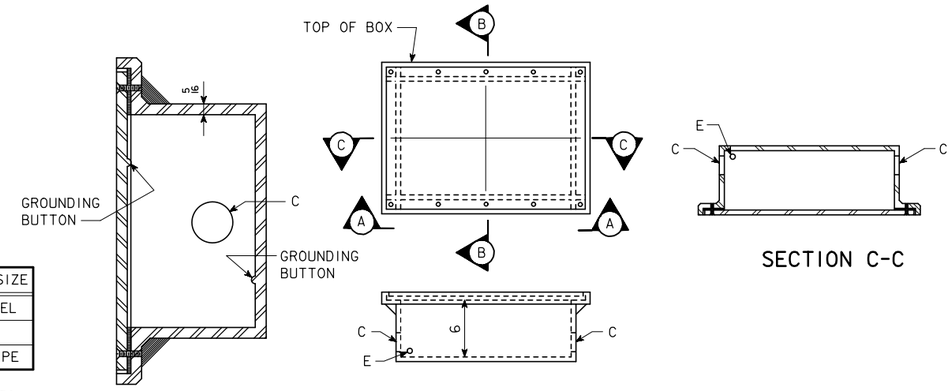


EXTERIOR ELEVATION - NORTH BARRIER RAIL - LOOKING SOUTH



SECTION B-B

VIEW A-A

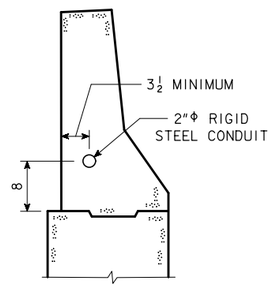
SECTION C-C

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

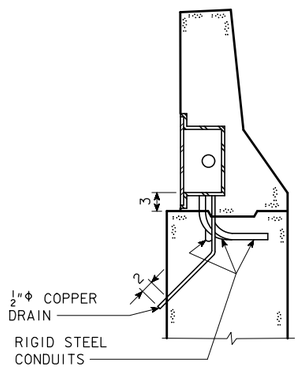
NOTE:
THE GROUNDING BUTTONS ARE TO BE BLIND DRILLED AND TAPPED FOR $\frac{3}{8}$"Φ x 0'-0$\frac{3}{4}$ BOLTS.

RM-37, TYPE I JUNCTION BOX

WATERTIGHT , CAST IRON - FLUSH MOUNT



SECTION THRU
BARRIER RAIL



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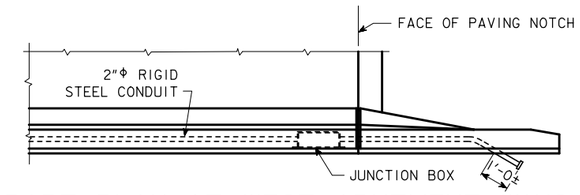
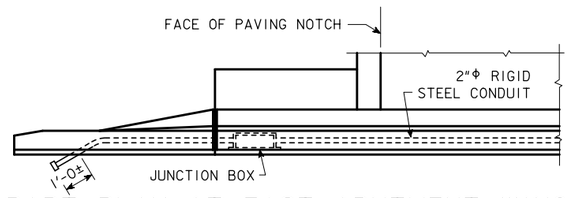
JUNCTION BOX



PART PLAN AT WEST ABUTMENT WING



PART PLAN AT EAST ABUTMENT WING

DESIGN FOR 10° SKEW (L.A.)

100'-0 x 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

LIGHTING DETAILS

STATION: 293+68.30 DECEMBER, 2012

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 29 OF 29 FILE NO. 30687 DESIGN NO. 514

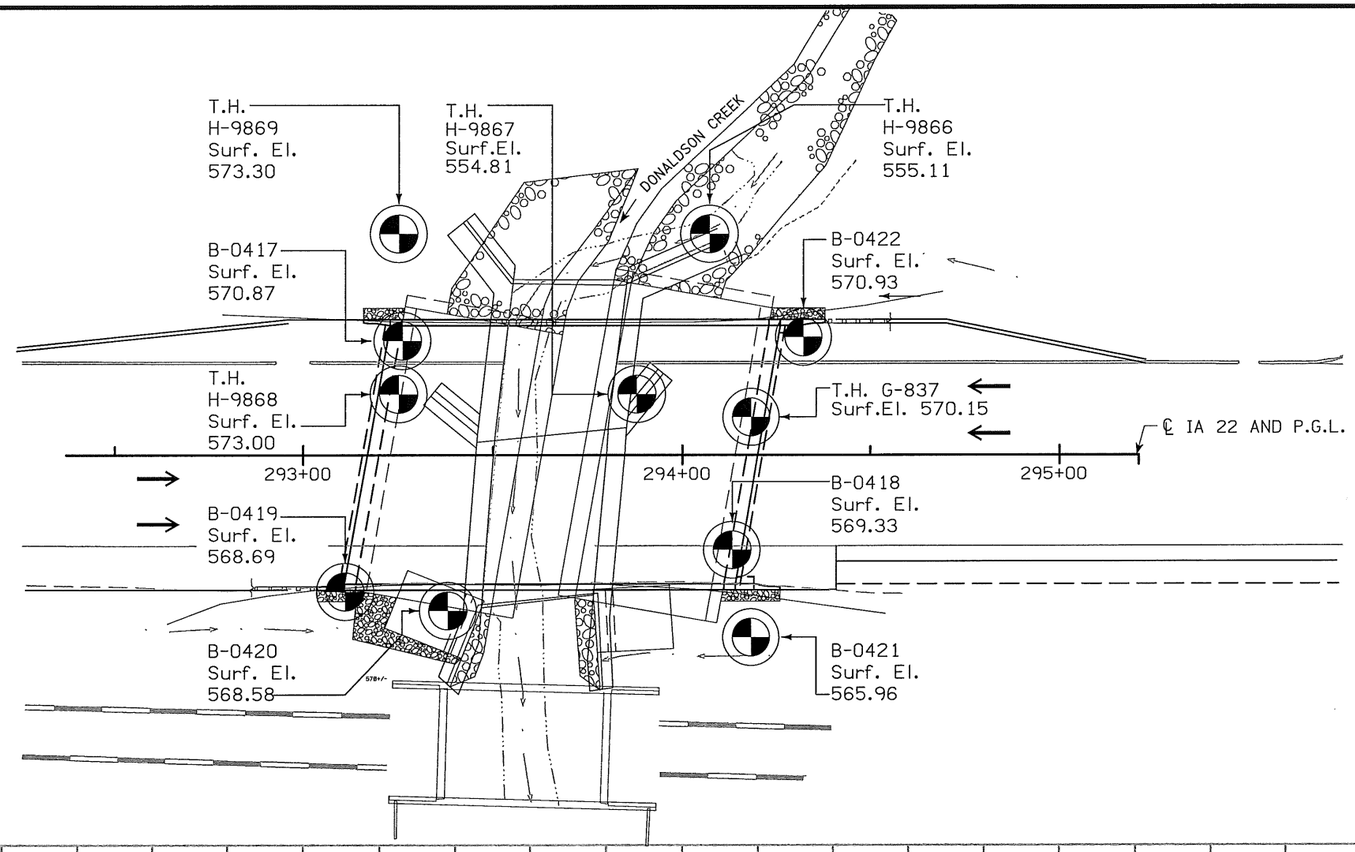
REVISION 05-11 - ADDED THE WORD 'MINIMUM' TO THE 3½ INCH DIMENSION FOR THE LOCATION OF THE 2 INCH CONDUIT IN THE BARRIER RAIL.
ENGLISHDECKRAILBRIDGES.DGN 1030AS2 - THIS SHEET ISSUED 09-03.

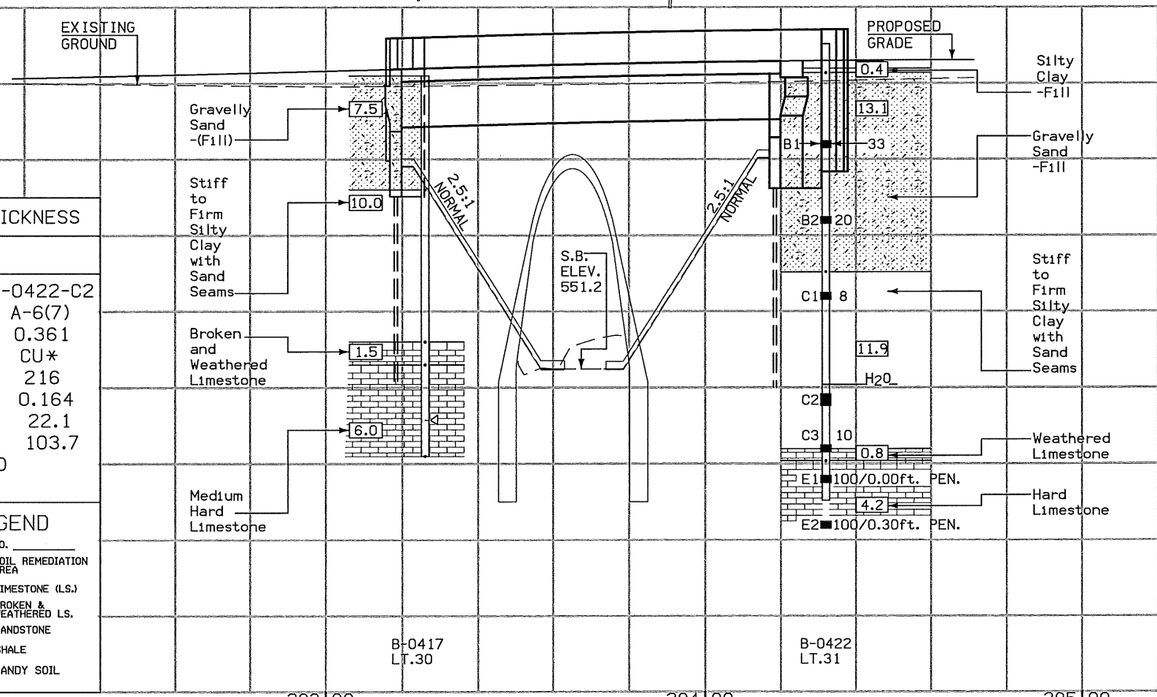
11/26/2013 1:55:17 PM dwrigh2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\BRFinal\82022029.brg 820514S029 11x17_pdf.pltcfg

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

LOCATION

IA 22 OVER DONALDSON CREEK
T-77N R-2E
SECTION 24
BUFFALO TOWNSHIP
SCOTT COUNTY
BRIDGE MAINT. NO. 8292.8S022
LATITUDE 41.464382°
LONGITUDE -90.681313°





Note: 10.0 INDICATES LAYER THICKNESS

SHELBY TUBE CORE DATA

CORE NO.	B-0422-C2
CLASSIFICATION [AASHTO]	A-6(7)
COEFF. CONSOL. SQ. FT /DAY	0.361
TRIAXIAL COMPRESSION	CU*
COHESION - PSF	216
FRICTION COEFF.	0.164
MOISTURE CONTENT %	22.1
DRY DENSITY - PCF	103.7

UU-UNCONSOLIDATED & UNDRAINED
CU-CONSOLIDATED & UNDRAINED

LEGEND

$-H_2O-$	WATER	DIAMOND CORE	SOIL REMEDIATION AREA
—DRY	DRY	SAND	LIMESTONE (LS.)
-◁	PLUGGED	GRAVELLY SAND	BROKEN & WEATHERED LS.
M—	MOISTURE	BOULDERS	SANDSTONE
■	SHELBY		SHALE
■	BLOW COUNT		SANDY SOIL
▬	DENS. CORE		
Ⓢ	SAMPLE		

BLOW COUNT LAYER - NO. BLOWS (B2 — 5)

SOILS BOOK NO. _____

Boring No.	Date Drilled	GroundWater Level (Ft.)
B-0417	08/21/2012	22.6 PLUGGED
B-0418	08/21/2012	19.4 H20
B-0419	08/21/2012	
B-0420	08/21/2012	18.4 H20
B-0421	08/21/2012	20.0 H20
B-0422	08/21/2012	20.8
T.H. H-9866	04/14/1970	0.6
T.H. H-9867	04/14/1970	0.8
T.H. H-9868	04/14/1970	8.0
T.H. H-9869	04/14/1970	
T.H. G-837	10/28/1970	

N

0 ENGLISH 40
SCALE IN FEET

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER — Robert L. Stanley — 08468 — 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.

Robert Stanley 2-13-13
Signature Date
Robert L. Stanley
Printed or Typed Name

My license renewal date is December 31, 2014.

Pages or sheets covered by this seal: SPS.1, SPS.2, SPS.3, and SPS.4

DESIGN FOR 10° SKEW (L.A.)

100'-0 X 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

100'-0 SPAN (BTB BEAMS)

SOIL PROFILE SHEET

STATION 293+68.30 IA 22

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 4 FILE NO. 30687 DESIGN NO. 514

ENGLISH	IOWA DOT	DESIGN TEAM STANLEY/MEGIVERN/GORJACKOVSKI	SCOTT	COUNTY	PROJECT NUMBER BRFN-22-5(29)--39-82	SHEET NUMBER SPS.1

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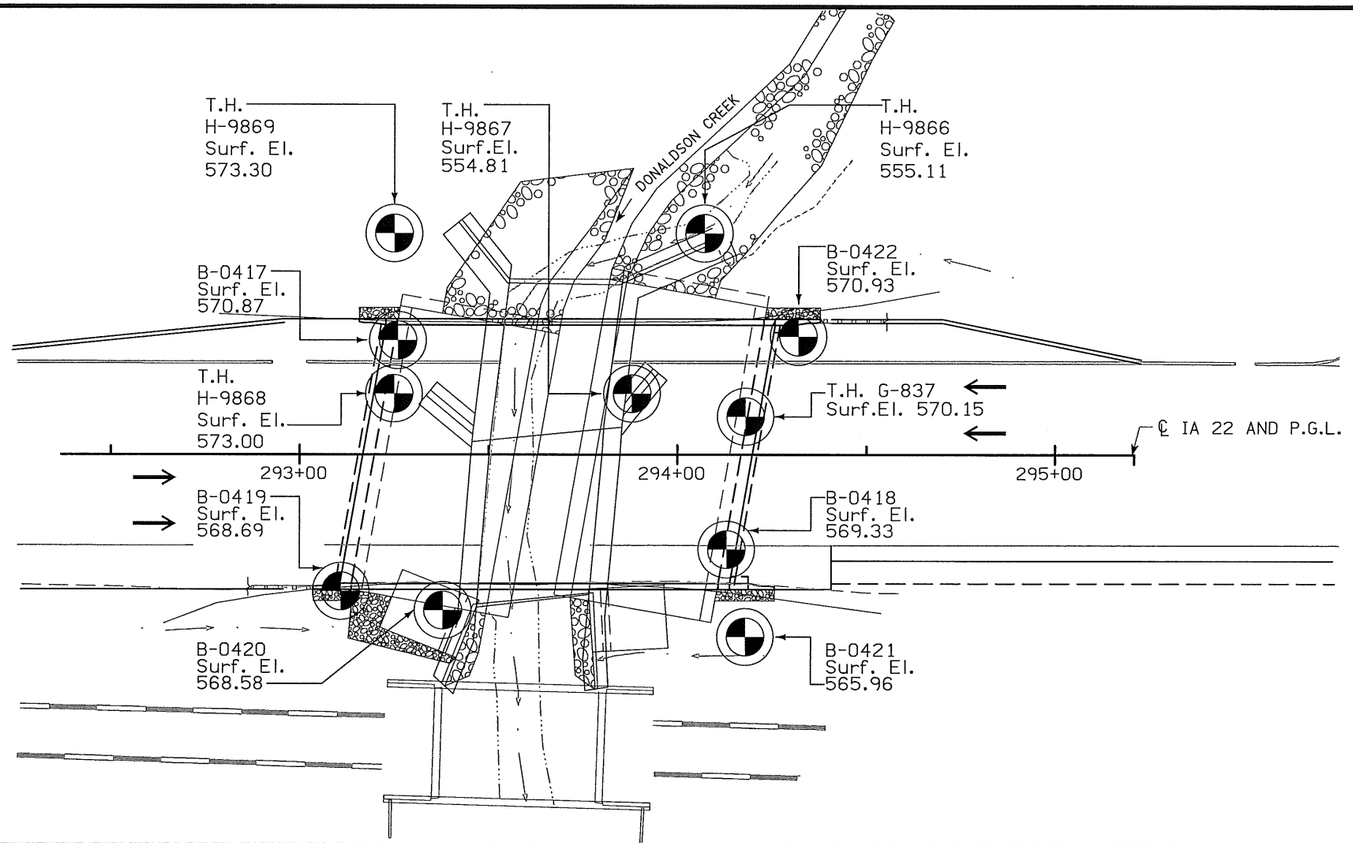
THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

LOCATION

IA 22 OVER DONALDSON CREEK
T-77N R-2E
SECTION 24
BUFFALO TOWNSHIP
SCOTT COUNTY
BRIDGE MAINT. NO. 8292.8S022
LATITUDE 41.464382°
LONGITUDE -90.681313°



0 ENGLISH 40
SCALE IN FEET

DESIGN FOR 10° SKEW (L.A.)

100'-0 X 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

100'-0 SPAN (BTB BEAMS)

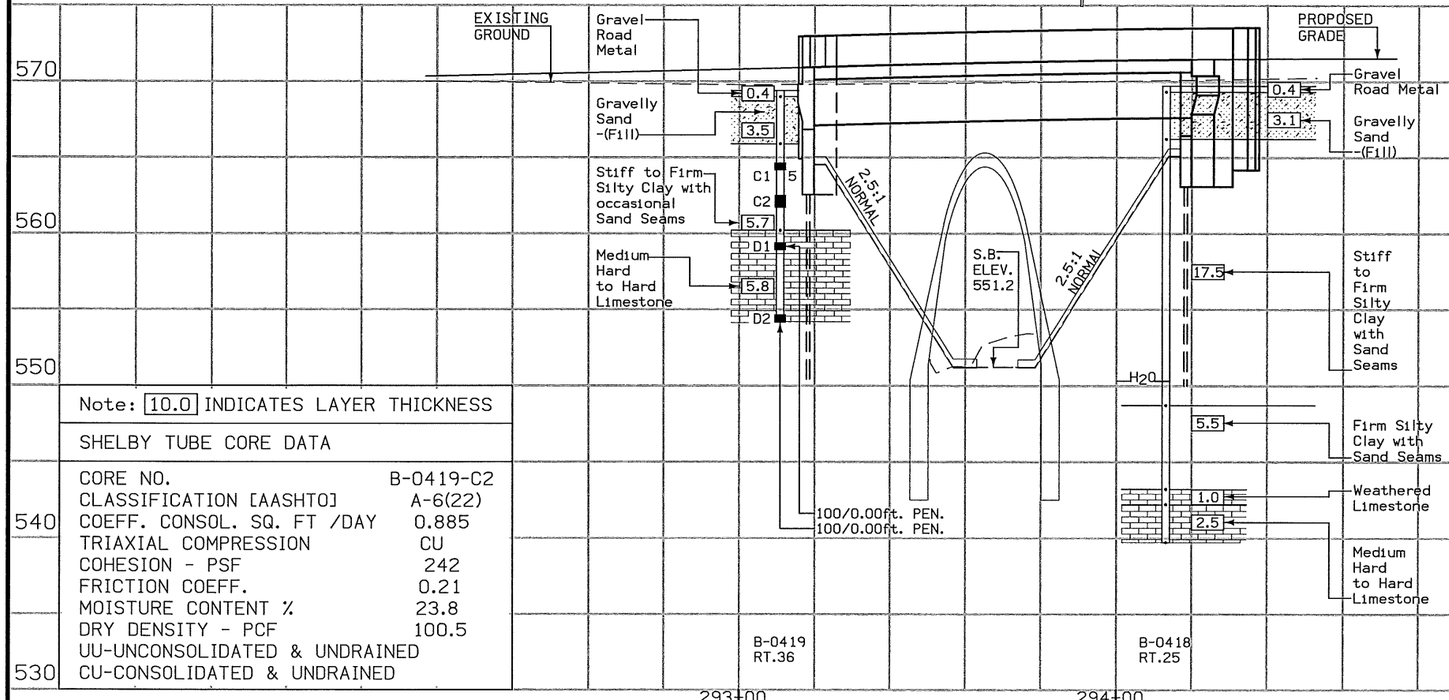
SOIL PROFILE SHEET

STATION 293+68.30 IA 22

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 4 FILE NO. 30687 DESIGN NO. 514



Note: [10.0] INDICATES LAYER THICKNESS

SHELBY TUBE CORE DATA

CORE NO.	B-0419-C2
CLASSIFICATION [AASHTO]	A-6(22)
COEFF. CONSOL. SQ. FT /DAY	0.885
TRIAXIAL COMPRESSION	CU
COHESION - PSF	242
FRICTION COEFF.	0.21
MOISTURE CONTENT %	23.8
DRY DENSITY - PCF	100.5
UU-UNCONSOLIDATED & UNDRAINED	
CU-CONSOLIDATED & UNDRAINED	

Boring No.	Date Drilled	GroundWater Level (Ft.)
B-0417	08/21/2012	22.6 PLUGGED
B-0418	08/21/2012	19.4 H20
B-0419	08/21/2012	
B-0420	08/21/2012	18.4 H20
B-0421	08/21/2012	20.0 H20
B-0422	08/21/2012	20.8
T.H. H-9866	04/14/1970	0.6
T.H. H-9867	04/14/1970	0.8
T.H. H-9868	04/14/1970	8.0
T.H. H-9869	04/14/1970	
T.H. G-837	10/28/1970	

LEGEND

SOILS BOOK NO. _____

WATER, DRY, PLUGGED, MOISTURE, SHELBY, BLOW COUNT, DENS. CORE, SAMPLE
BLOW COUNT LAYER - NO. BLOWS B2 5
DIAMOND CORE, SAND, GRAVELLY SAND, BOULDERS
SOIL REMEDIATION AREA, LIMESTONE (LS.), BROKEN & WEATHERED LS., SANDSTONE, SHALE, SANDY SOIL

ENGLISH	IOWA DOT	DESIGN TEAM STANLEY/MEGIVERN/GORJACKOVSKI	SCOTT	COUNTY	PROJECT NUMBER BRFN-22-5(29)--39-82	SHEET NUMBER SPS.2

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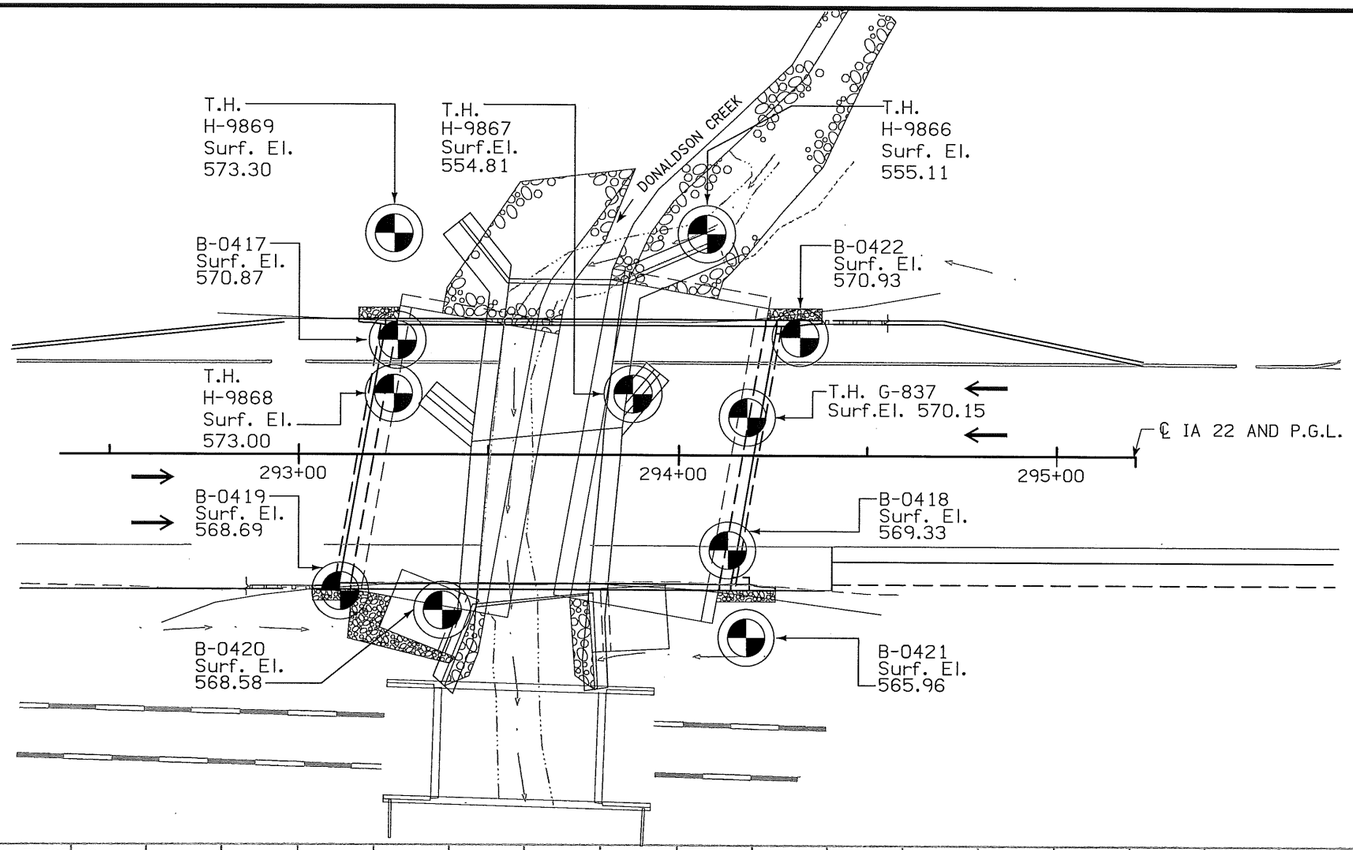
THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

LOCATION

IA 22 OVER DONALDSON CREEK
T-77N R-2E
SECTION 24
BUFFALO TOWNSHIP
SCOTT COUNTY
BRIDGE MAINT. NO. 8292.8S022
LATITUDE 41.464382°
LONGITUDE -90.681313°



0 ENGLISH 40
SCALE IN FEET

DESIGN FOR 10° SKEW (L.A.)

100'-0 X 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

100'-0 SPAN (BTB BEAMS)

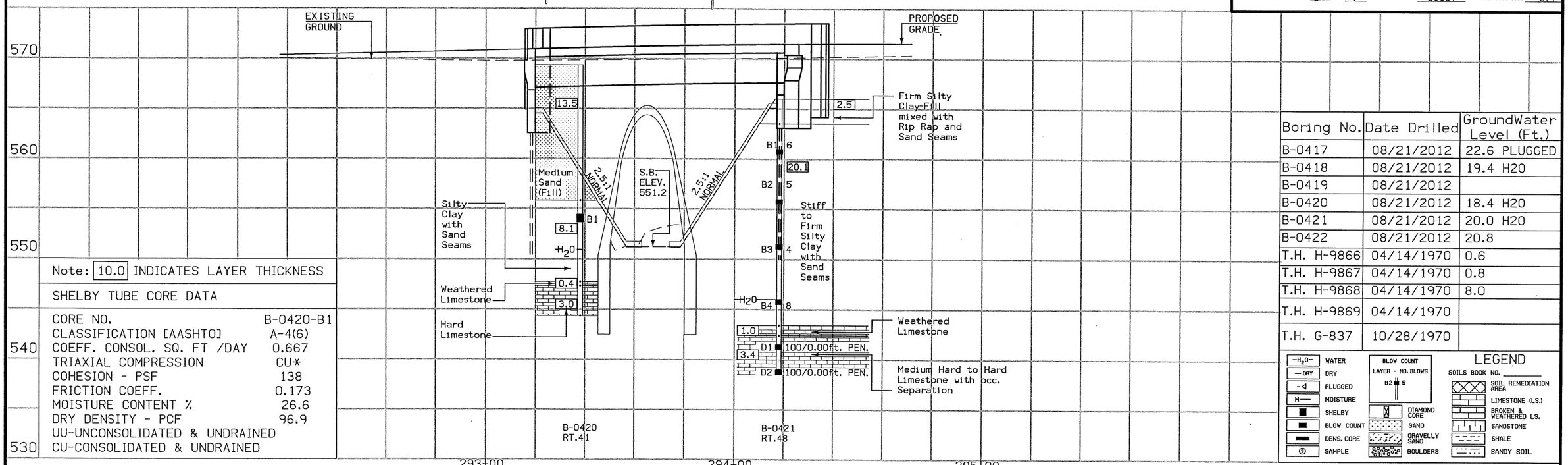
SOIL PROFILE SHEET

STATION 293+68.30 IA 22

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 4 FILE NO. 30687 DESIGN NO. 514



Note: 10.0 INDICATES LAYER THICKNESS

SHELBY TUBE CORE DATA

CORE NO.	B-0420-B1
CLASSIFICATION [AASHTO]	A-4(6)
COEFF. CONSOL. SQ. FT /DAY	0.667
TRIAXIAL COMPRESSION	CU*
COHESION - PSF	138
FRICTION COEFF.	0.173
MOISTURE CONTENT %	26.6
DRY DENSITY - PCF	96.9
UU-UNCONSOLIDATED & UNDRAINED	
CU-CONSOLIDATED & UNDRAINED	

Boring No.	Date Drilled	GroundWater Level (Ft.)
B-0417	08/21/2012	22.6 PLUGGED
B-0418	08/21/2012	19.4 H20
B-0419	08/21/2012	
B-0420	08/21/2012	18.4 H20
B-0421	08/21/2012	20.0 H20
B-0422	08/21/2012	20.8
T.H. H-9866	04/14/1970	0.6
T.H. H-9867	04/14/1970	0.8
T.H. H-9868	04/14/1970	8.0
T.H. H-9869	04/14/1970	
T.H. G-837	10/28/1970	

LEGEND

SOILS BOOK NO. _____

-H2O-	WATER	BLOW COUNT LAYER - NO. BLOWS B2 5	SOIL REMEDIATION AREA
— DRY	DRY		LIMESTONE (LS.)
-◁	PLUGGED	DIAMOND CORE	BROKEN & WEATHERED LS.
M—	MOISTURE	SAND	SANDSTONE
■	SHELBY	GRAVELLY SAND	SHALE
■	BLOW COUNT	BOULDERS	SANDY SOIL
▬	DENS. CORE		
S	SAMPLE		

ENGLISH	IOWA DOT	DESIGN TEAM STANLEY/MEGIVERN/GORJACKOVSKI	SCOTT	COUNTY	PROJECT NUMBER BRFN-22-5(29)--39-82	SHEET NUMBER SPS.3

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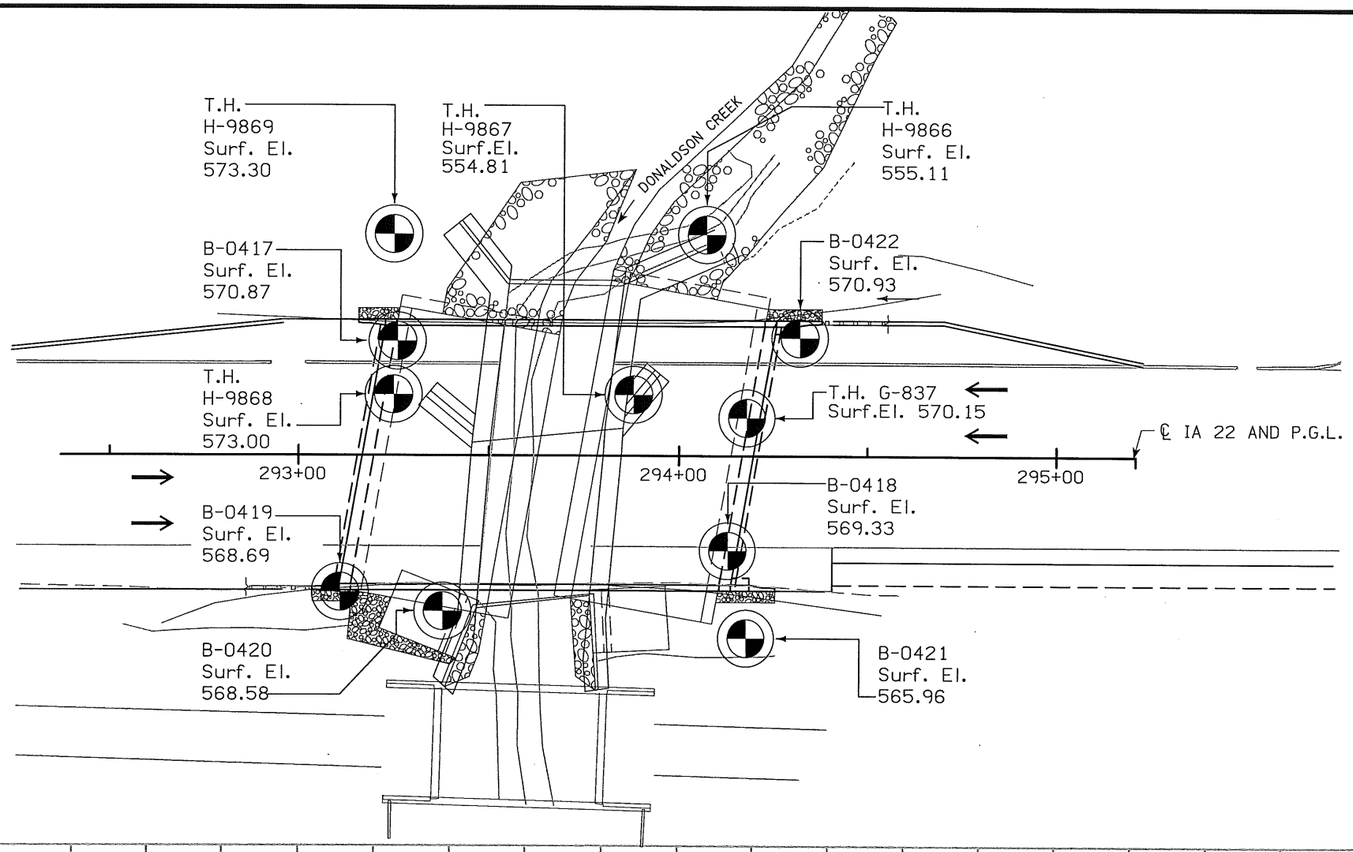
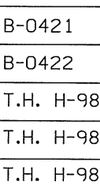
THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

LOCATION

IA 22 OVER DONALDSON CREEK
T-77N R-2E
SECTION 24
BUFFALO TOWNSHIP
SCOTT COUNTY
BRIDGE MAINT. NO. 8292.8S022
LATITUDE 41.464382°
LONGITUDE -90.681313°





0 ENGLISH 40
SCALE IN FEET

DESIGN FOR 10° SKEW (L.A.)

100'-0 X 68'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

100'-0 SPAN (BTB BEAMS)

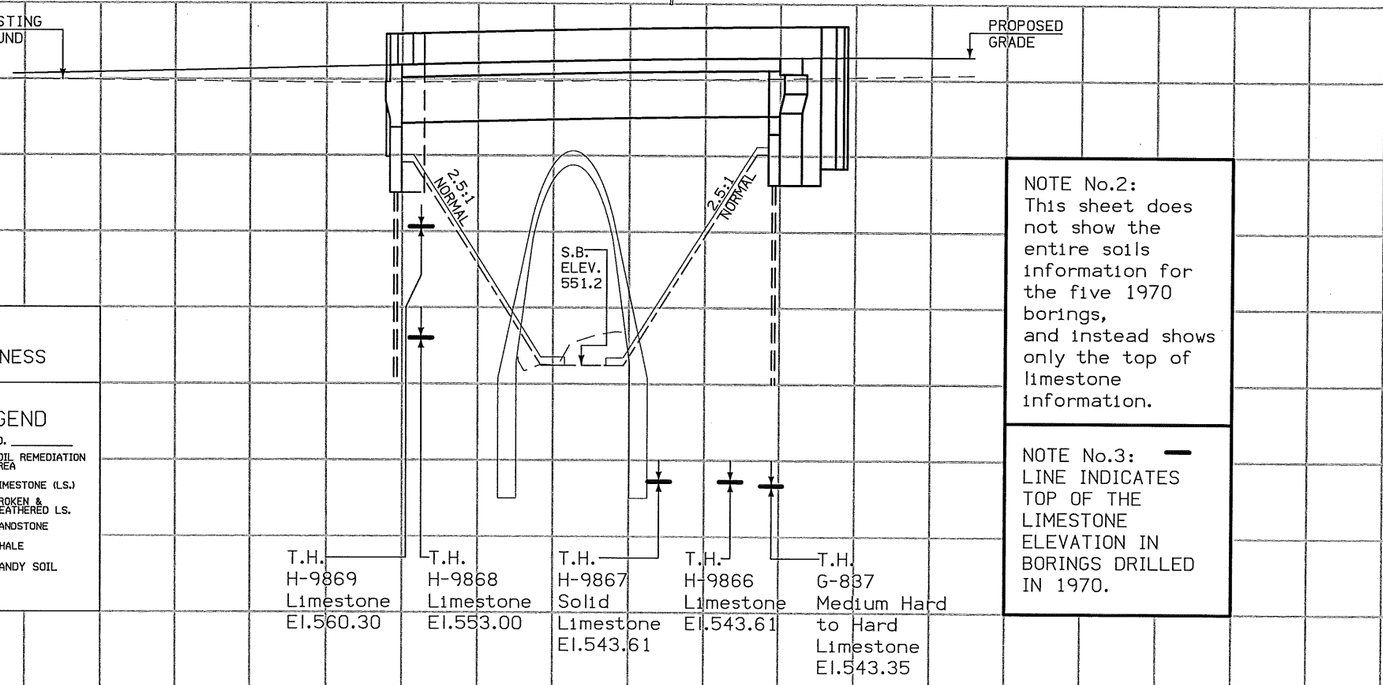
SOIL PROFILE SHEET

STATION 293+68.30 IA 22

SCOTT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 4 FILE NO. 30687 DESIGN NO. 514



Note No.1:
10.0 INDICATES LAYER THICKNESS

LEGEND

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

NOTE No.2:
This sheet does not show the entire soils information for the five 1970 borings, and instead shows only the top of limestone information.

NOTE No.3: — LINE INDICATES TOP OF THE LIMESTONE ELEVATION IN BORINGS DRILLED IN 1970.

Boring No.	Date Drilled	GroundWater Level (Ft.)
B-0417	08/21/2012	22.6 PLUGGED
B-0418	08/21/2012	19.4 H20
B-0419	08/21/2012	
B-0420	08/21/2012	18.4 H20
B-0421	08/21/2012	20.0 H20
B-0422	08/21/2012	20.8
T.H. H-9866	04/14/1970	0.6
T.H. H-9867	04/14/1970	0.8
T.H. H-9868	04/14/1970	8.0
T.H. H-9869	04/14/1970	
T.H. G-837	10/28/1970	

ENGLISH	IOWA DOT	DESIGN TEAM STANLEY/MEGIVERN/GORJACKOVSKI	SCOTT COUNTY	PROJECT NUMBER BRFN-22-5(29)--39-82	SHEET NUMBER SPS.4

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INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
B Sheets	**Typical Cross Sections and Details**
B.1 - 8	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Project Description
C.1 - 2	Estimated Roadway Quantities
C.3 - 5	Estiamte Reference Information
C.6	Standard Road Plans
C.6	Index of Tabulations
C.6	General Notes
C.7 - 13	Tabulations (beg. with tab. of incidentals if needed)
CS Sheets	**Mainline Plan and Profile Sheets**
CS.1	Soils Design Tabulations
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	IA 22
F Sheets	**Detour or Temporary Pavement Sheets**
* F.1 - 3	Detour Plan and Profile Sheets - Westbound side
* F.4	Detour Plan and Profile Sheets - Eastbound side
G Sheets	**Survey Sheets**
G.1	Survey Information
G.2	Reference Ties and Bench Marks
G.3	Horizontal Control Tab. & Curve Data
H Sheets	**Right-of-Way Sheets**
* H.1 - 2	IA 22
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan
* J.1	Staging Notes Stage
* J.1	Tabulation of Special Events & Coordinated Operations
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3 - 10	Staging and Traffic Control Sheets
M Sheets	**Storm Sewer Sheets**
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.3 - 13	Storm Sewer Plan and Profile Sheets IA 22
T Sheets	**Earthwork Quantity Sheets**
T.1 - 2	Earthwork Quantity Sheets
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
U.1	Beam Guardrail End Anchorage Detail
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 18	IA 22 Cross Sections - Stage 1
W.19 - 36	IA 22 Cross Sections - Stage 2
W.37 - 53	IA 22 Cross Sections - Stage 3
W.54 - 57	IA 22 Cross Sections - Stage 4

* Color Plan Sheets

DESIGN DATA RURAL

2013 AADT	4900	V.P.D.
2033 AADT	6100	V.P.D.
2033 DHV	630	V.P.H.
TRUCKS	21	%
Total Design ESALs	--	

Design No. 514
File No. 30687

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
Jason M. Holst
16923
IOWA

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

Jason M Holst — 12-03-2013
Signature — Date
Jason M. Holst
Printed or Typed Name

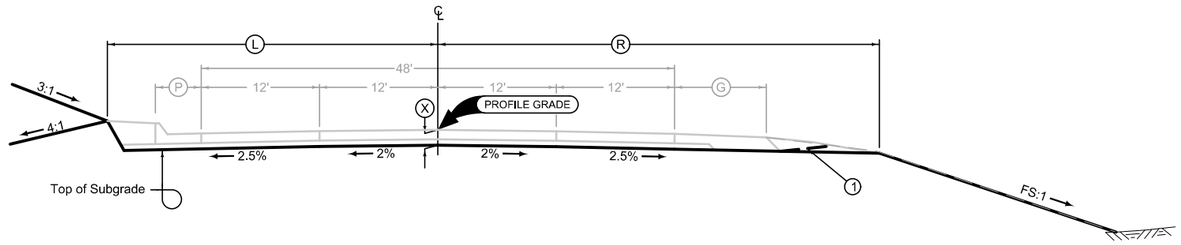
My license renewal date is December 31, 2013

Pages or sheets covered by this seal: A.1, B.1-B.8, C.1-C.13, D.1-D.3, F.1-F.4, G.1-G.3, H.1-H.2, J.1-J.10, M.1-M.13, T.1-T.2, W.1-W.57

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER A.1

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS
IA 22	291+01.00	291+54.00	29.5	35.7	22	4
IA 22	291+54.00	291+64.71	29.5	35.7-39.4	22	4
IA 22	291+64.71	291+90.38	29.5	39.4-40.6	22	4
IA 22	291+90.38	292+26.33	29.5-33.1	40.6	22	4
IA 22	292+26.33	292+95.78	33.1-40.0	40.6-44	22	4
IA 22	292+95.78	293+15.77	40.0	44	22	4
IA 22	294+25.80	294+70.00	40.0	44.2	22	4
IA 22	294+70.00	295+22.70	40.0-29.5	44.2	22	4
IA 22	295+22.70	298+15.00	29.5	44.2	22	4

2_Grade
Modified



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.

4 LANE GRADING

(1) In areas where proposed shoulder elevation closely matches existing shoulder elevation, grade only as required to place proposed shoulder. Refer to cross sections for more information.

Curbed Shoulder

(1) Shoulder Jointing:
Longitudinal joint is optional when distance from back of curb to nearest joint is less than 15':

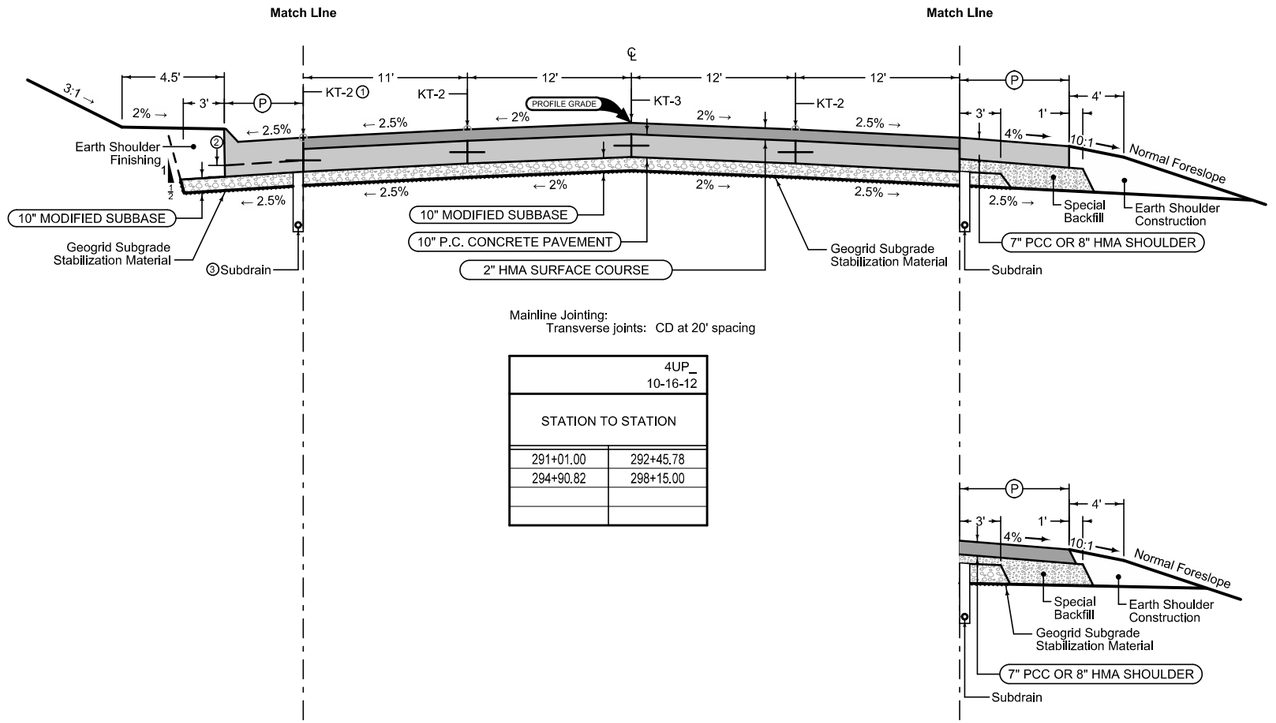
Single pour: L-2
Staged : KT-2
Transverse: C at 20' spacing

Stage 3 (Final) — 2_Curb_ Modified

STATION TO STATION		(P) Feet	Curb Type See PV-102
291+06.00	291+90.38	2	6" Sloped
291+90.38	292+95.78	2.0-11.54	6" Sloped
292+95.78	293+15.77	11.54	See RK-20
294+37.80	294+40.82	11.54	See RK-20
294+40.82	294+70.00	11.54	4" Sloped
294+70.00	295+22.70	11.54-2.0	4" Sloped
295+22.70	295+53.20	2	4" Sloped
295+53.20	296+48.20	2	1.5" Drop
296+48.20	298+15.00	2	6" Sloped

(2) An additional 2" of Curb and Gutter will be paved to tie into the mainline pavement.

(3) Refer to the Standard Road Plan RF-19C, Type 12 installation for details.



Mainline Jointing:
Transverse joints: CD at 20' spacing

4UP_
10-16-12

STATION TO STATION	
291+01.00	292+45.78
294+90.82	298+15.00

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-3
Transverse joints: C at 20' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

4_P_ALT_
10-19-10

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
EB	291+06.59	291+30.00	0-10
EB	291+30.00	291+54.00	10
EB	294+40.82	298+15.00	10

Paved Shoulder at Guardrail

Shoulder Jointing:
Longitudinal joint: B

** See 7156 for shoulder width and additional breaks.

4_P_Guard_
04-16-13

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
EB	291+54.00	292+55.78	**

Design No. 514
File No. 30687

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

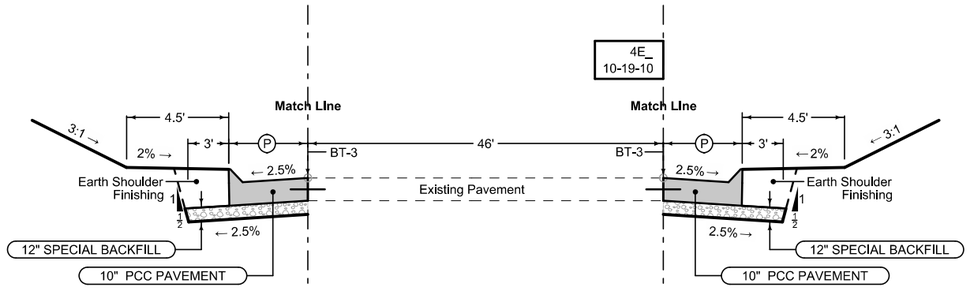
IA 22

Curbed Shoulder

Shoulder Jointing:
Transverse: C matches existing joint spacing

Stage 3 (Final)			2_Curb_ Modified
STATION TO STATION		(P) Feet	Curb Type See PV-102
287+60.00	287+65.00	1.5-2	(1)
287+65.00	290+47.00	2	6" Sloped
298+15.00	300+36.50	2	6" Sloped
300+36.50	300+41.50	2-1.5	(1)

(1) 5' Curb Transition from 6" Sloped to 6" Standard



Curbed Shoulder

Shoulder Jointing:
Transverse: C matches existing joint spacing

Stage 4 (Final)			2_Curb_ Modified
STATION TO STATION		(P) Feet	Curb Type See PV-102
287+57.00	287+75.00	1.5-2	(3)
287+75.00	290+25.40	2	6" Sloped
290+25.40	290+52.00	(2)	6" Sloped

(2) Refer to Typical SW_RETURN on Sheet B.8.

(3) 5' Curb Transition from 6" Sloped to 6" Standard

See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

IA 22 - Existing Pavement
Proposed Curb & Granular Shoulder

Design No. 514
File No. 30687

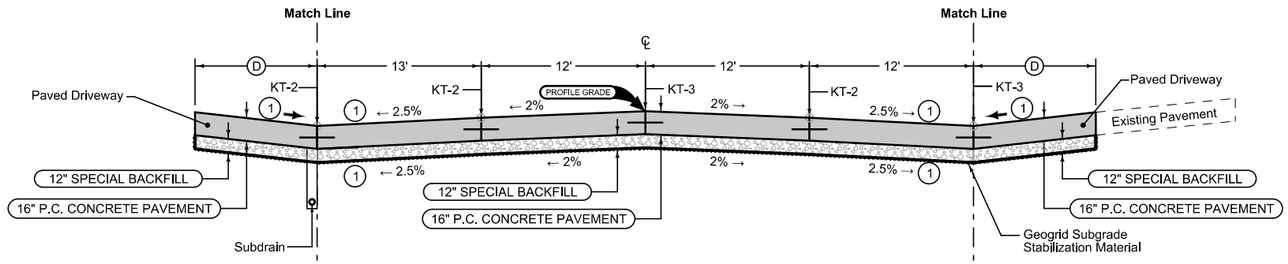
Mine Entrance at Crossing

Shoulder Jointing:
Refer to the Typical on Sheet B.6 for details.

Mine Entrance		
STATION TO STATION		(D) Feet
290+52.00	291+01.00	10

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.



Mainline Jointing:
Transverse joints: CD at 20' spacing

4UP_ 10-16-12	
STATION TO STATION	
290+52.00	291+01.00

Mine Entrance at Crossing

Shoulder Jointing:
Refer to the Typical on Sheet B.6 for details.

Mine Entrance		
STATION TO STATION		(D) Feet
290+52.00	291+01.00	10

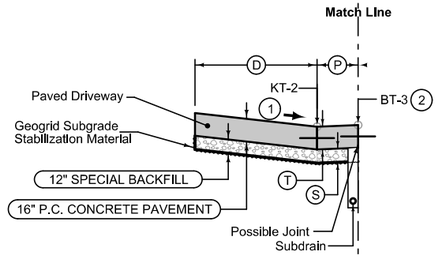
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

Mine Entrance Tie-Ins

Shoulder Jointing:
Refer to the Typical on Sheet B.6 for details.

Mine Entrance Ties					
STATION TO STATION		(P) Feet	(D) Feet	(T) Inches	(S) Inches
(2) 290+47.00	290+52.00	2	0-10	10	(3) 12
291+01.00	291+06.00	2	10-0	10	(4) 12



1. Slope varies in order to match existing mainline pavement. Refer to Cross Sections for slopes.
2. Only use BT-3 Joint to tie into existing mainline pavement.
3. Use 12" Special Backfill for subbase adjacent to existing mainline pavement. See Curbed Shoulder typical on Sheet B.2.
4. Use 10" Modified Subbase adjacent to 10" mainline pavement. See Curbed Shoulder typical on Sheet B.1

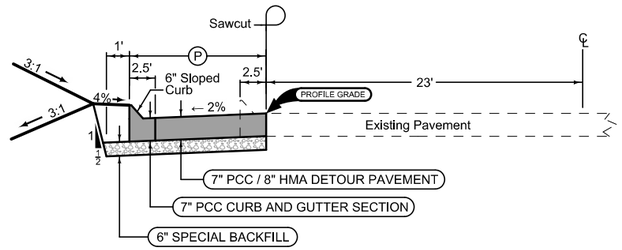
See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

IA 22
Linwood Mine Crossing

Design No. 514
File No. 30687

Detour-1



** 1.5" Sloped Curb at driveway.

Stage 1 (Temporary)		
STATION TO STATION		P Feet
287+60.00	289+50.00	1.5-11
289+50.00	290+49.00	11
291+04.00	295+65.00	11
** 295+65.00	296+37.00	11
296+37.00	298+50.00	11
298+50.00	300+41.50	11-1.5

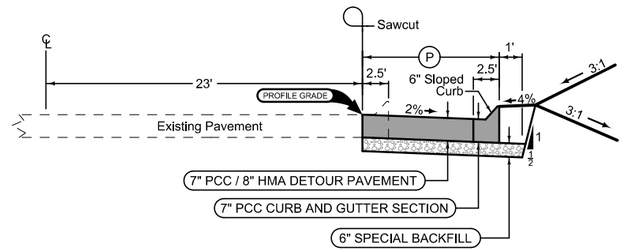
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

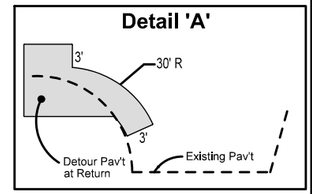
See plan & profile sheets and cross sections for additional details of ditches and backslopes.

DETOUR PAVING - STAGE 1

Detour-4

(1) Tie into existing return of south mine entrance.
Refer to Detail 'A' and J Sheets for more information.





STATION TO STATION		P Feet
287+70.00	289+50.00	2-11
289+50.00	290+38.23	11
290+38.23	290+45.11	(1)

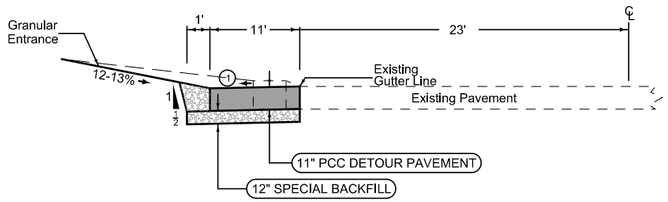
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

DETOUR PAVING - STAGE 2

Detour-2

(1) Refer to Cross Sections for slopes.



Stage 1 (Temporary)	
STATION TO STATION	
290+49.00	291+04.00

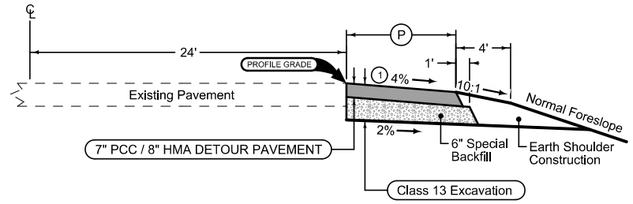
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

DETOUR PAVING - STAGE 1

SHOULDER

(1) Slope Varies. Tie into existing entrance pavement.



PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-3
Transverse joints: C at 20' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

Stage 2 (Final)		
STATION TO STATION		P Feet
298+15.00	300+47.71	10

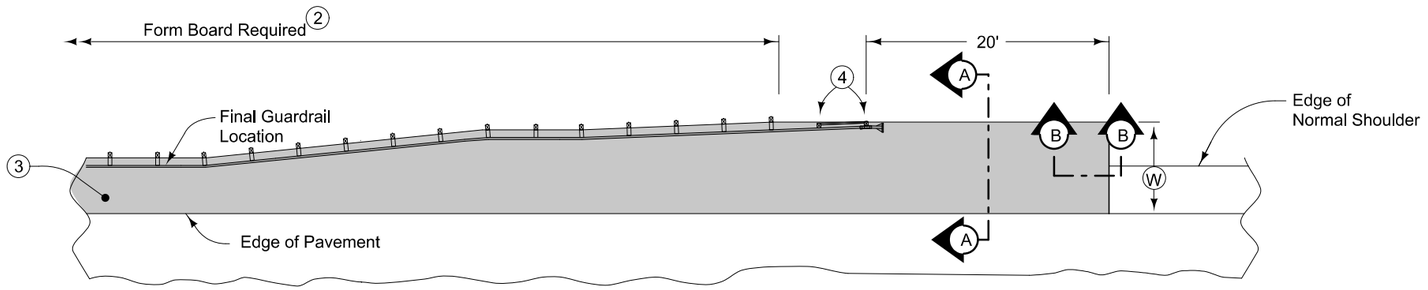
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

Paved Shoulder Alternates - Stage 2

Design No. 514
File No. 30687

7156
MODIFIED

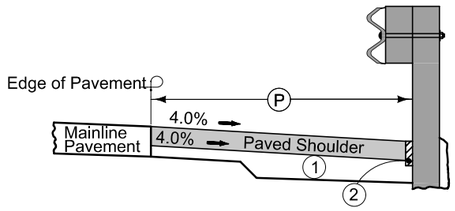


8" HMA Paved Shoulder at guardrail. 7" PCC may be substituted with the following jointing layout:

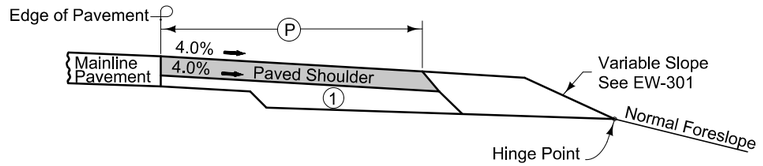
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse joints in shoulder at mid-panel of the mainline pavement. Place longitudinal joint at W/2 from edge of mainline pavement when W is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal & reinstallation of guardrail will be allowed with no additional payment.

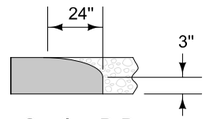
Refer to Shoulder tabulation (112-9) for quantities.



Typical Section with Form Board



Section A-A



Section B-B
Roll down at granular shoulder or earth.

1 6" Special Backfill.

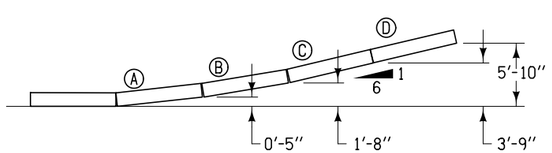
2 When guardrail posts are installed prior to construction of paved shoulder, nail 1" x 6" untreated form boards along the face of guardrail posts for the length shown. This board is to prevent shoulder material from contacting the sides of the posts and altering the function of the guardrail. Form board not required for final 2 posts.

3 Continue paved shoulder to existing paved shoulder or 20' beyond the end of guardrail.

4 Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement.

PAVED SHOULDER AT GUARDRAIL

TBR-FLARE



MAXIMUM BARRIER OFFSETS
FOR FLARE SECTIONS

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER B.5

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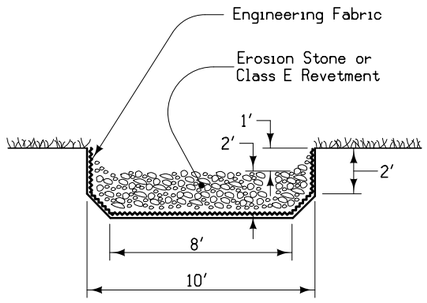
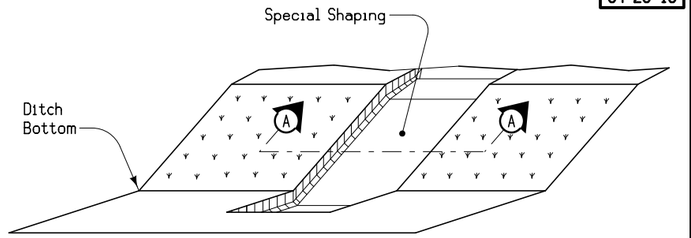
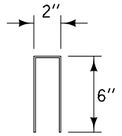
4403
04-20-10



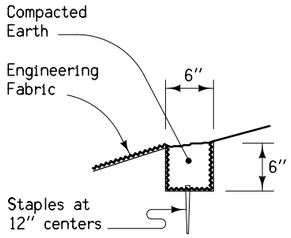
Section A-A



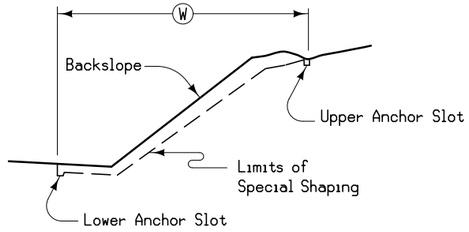
Isometric View



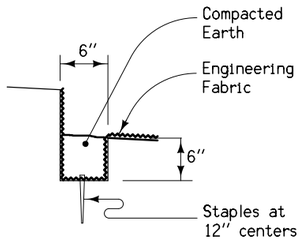
Staple
(No. 11 wire)



Upper Anchor Slot



Typical Section

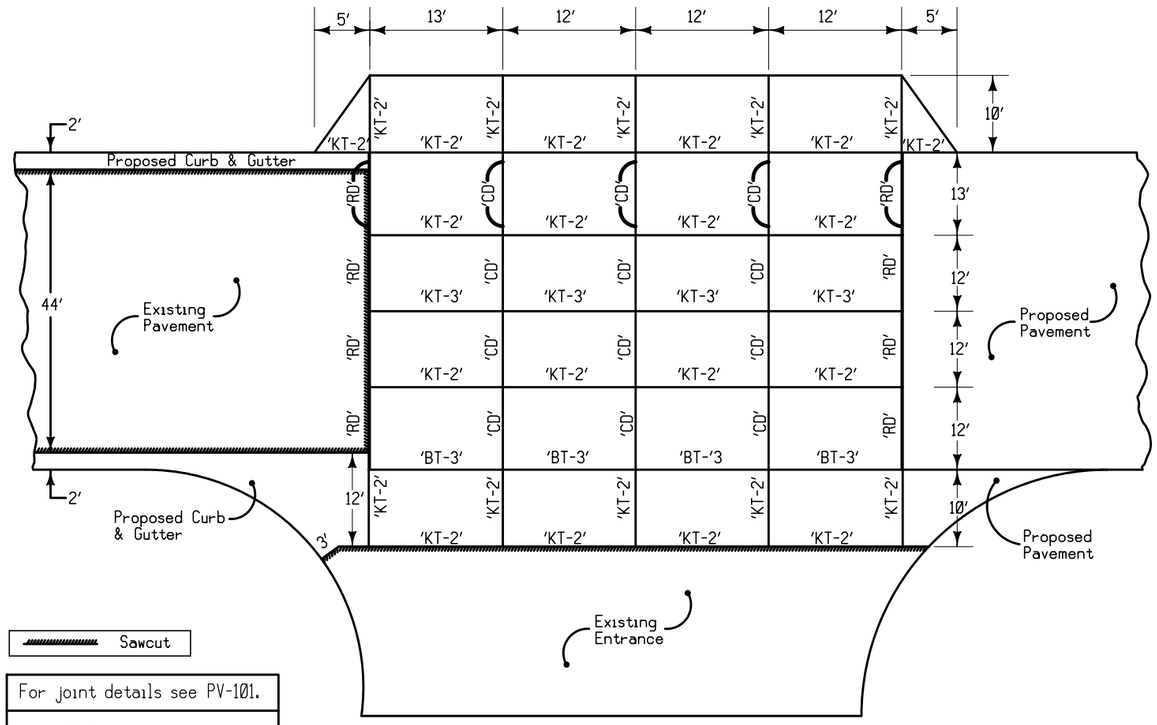


Lower Anchor Slot

ROCK FLUME

Refer to Tabulation 100-23 for additional information.

CROSSING
JOINTING



Sawcut

For joint details see PV-101.

'CD' Dowel Dimesions:
Pavement Thickness, T, is 16"
Dowel Height, DH, is 8"
Dowel Diameter is 1-1/2"

JOINTING DIAGRAM & DOWEL DETAILS FOR PCC PAVEMENT AT MINE CROSSING (Sta. 290+76.50)

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER B.6

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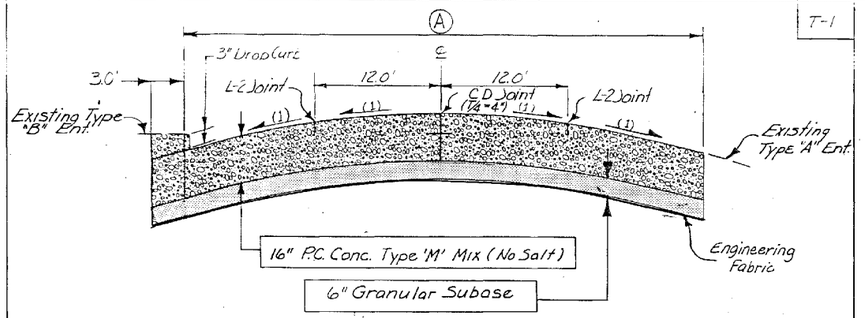
T-1

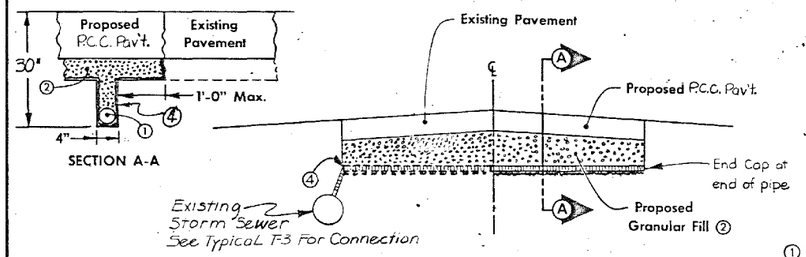


RD. IDENT	STATION	TO STATION	Ⓐ	REMARKS
Ia. 22	262+08±	262+50±	48.5'	
Ia. 22	290+49.3±	291+03.6±	48.5'	

TYPICAL SECTION
FOR FULL DEPTH P.C. CONC. PATCHING

(1) Contractor shall match existing profile for each lane.

T-2

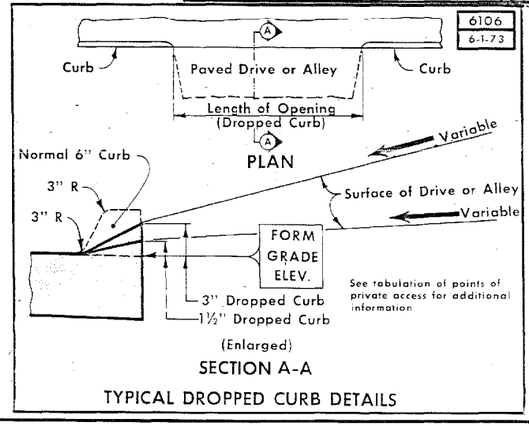


① Proposed 3" Slotted Corrugated Polyethelene Pipe

④ Placement of engineering fabric shall extend 1 foot beyond the edge of pavement around outlet installation.

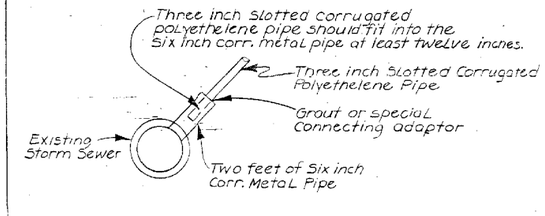
TRANSVERSE SUBDRAIN OUTLET

6106
6-1-73



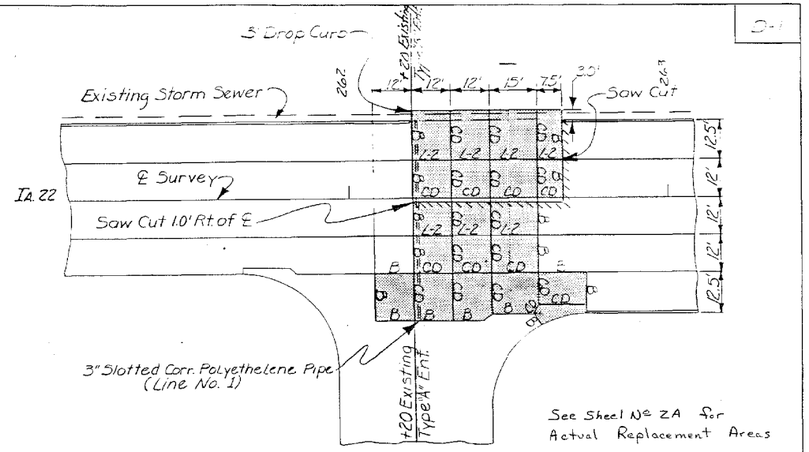
TYPICAL DROPPED CURB DETAILS

T-3



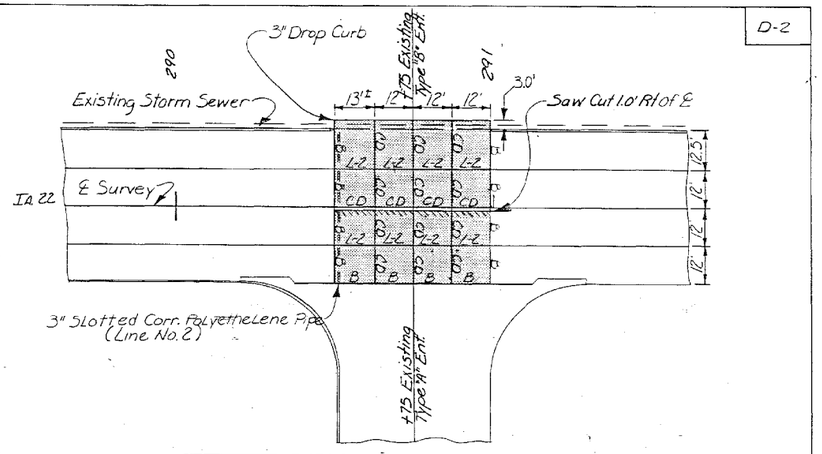
TYPICAL SECTION FOR SUBDRAIN OUTLET

D-1



~~PROPOSED~~ INTERSECTION JOINTING DETAIL
AT STA 262+20 (Site No. 1)

D-2



~~PROPOSED~~ INTERSECTION JOINTING DETAIL
STA 290+75 (Site No. 2)

Scott COUNTY

FN-22-5(15)--21-82

2 | 6

For Information Only

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER B.7

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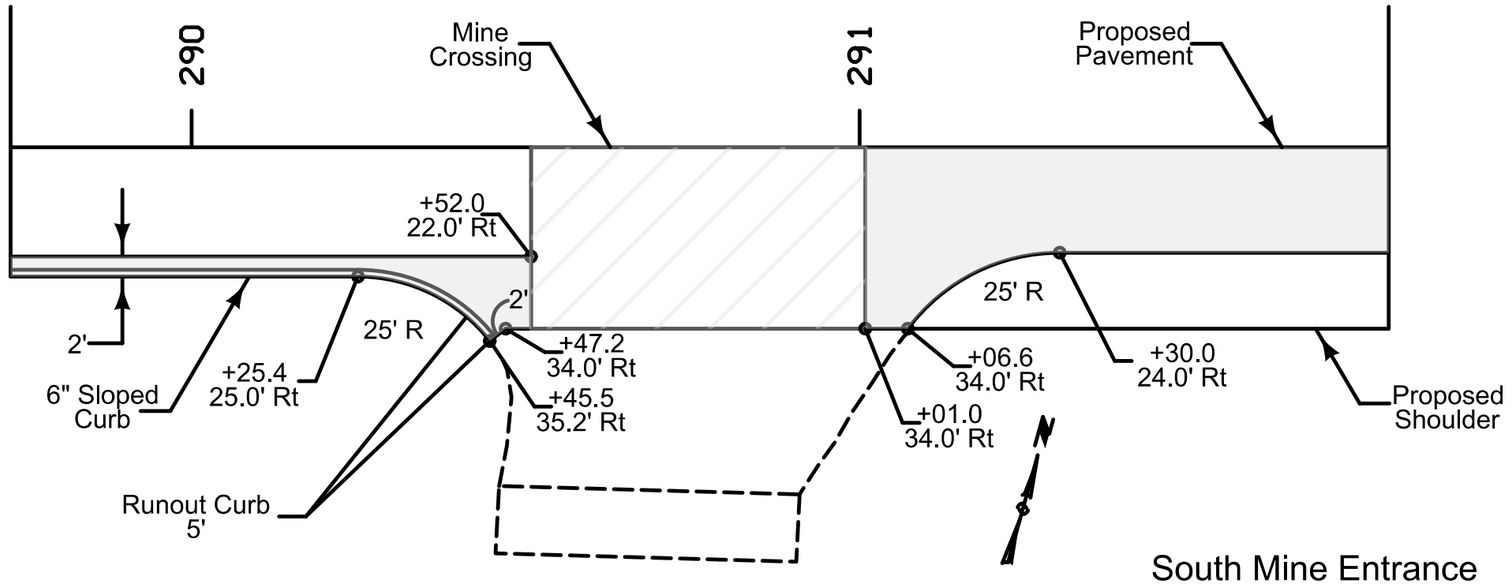
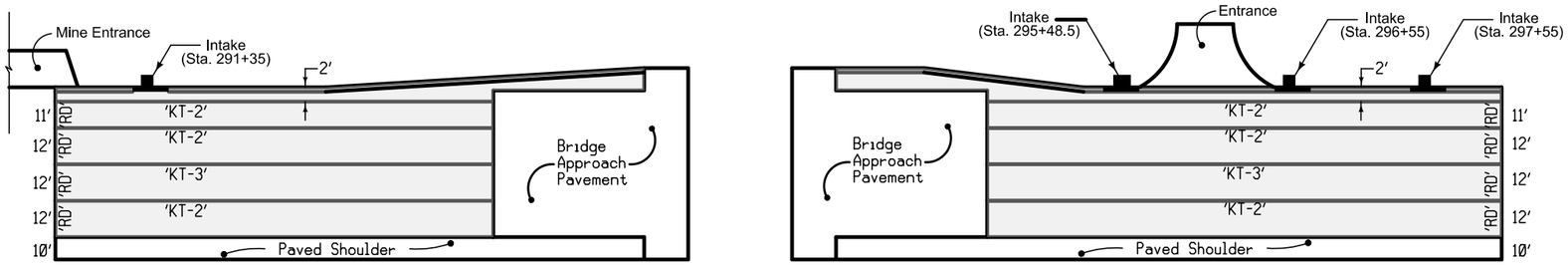
RETURNS

*Use layout as guidance. UAC existing jointing.



South Mine Entrance
Returns Detail

MAINLINE
JOINTING



For joint details see PV-101.

Transverse Joints: Place CD joints at 20' spacing. Adjust spacing at intakes and end of paving. A minimum spacing of 12' should be used.

Mainline Jointing
Details

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER B.8

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100-1D
10-18-05

PROJECT DESCRIPTION

This project involves the replacement of the IA 22 Bridge over Donaldson Creek 2.8 miles west of I-280. The existing structure will be replaced with a 100' X 68' pretensioned prestressed concrete beam bridge. New bridge approaches will be constructed. The roadway beyond the ends of the bridge approaches will be reconstructed in order to meet the new profile grade. Additional work to replace the Linwood Mine crossing at Sta. 290+77 are included with this project.

All roadway items will be included in Division 1. Items included in the construction of the Linwood Mine crossing will be a part of Division 2.

Traffic will be maintained by staged construction with at least one lane open in each direction on mainline. Access to the north and south entrances to Linwood Mine will be maintained at all times.

100-1C
04-17-12

ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Quantities										
				Estimated						As Built				
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.2					0.2					
2	2102-0425070	SPECIAL BACKFILL	TON	899.5	240.2				1,139.7					
3	2102-2625000	EMBANKMENT-IN-PLACE	CY	598.0					598.0					
4	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	3,219.0					3,219.0					
5	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	20.0					20.0					
6	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	154.8					154.8					
7	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	295.0					295.0					
8	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	560.0					560.0					
9	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	2,994.1	381.2				3,375.3					
10	2115-0100000	MODIFIED SUBBASE	CY	831.7					831.7					
11	2122-5190501	PAVED SHOULDER, PORTLAND CEMENT CONCRETE (PAVED SHOULDER PANEL FOR BRIDGE END DRAIN)	SY	51.3					51.3					
12	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	8.00					8.00					
13	2123-7450020	SHOULDER FINISHING, EARTH	STA	26.90					26.90					
14	2213-6745500	REMOVAL OF CURB	STA	14.40					14.40					
15	2301-0690200	BRIDGE APPROACH, RK-20	SY	860.0					860.0					
16	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN.	SY	2,691.2					2,691.2					
17	2301-1033110	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 11 IN.	SY	67.2					67.2					
18	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES	LS	1.00					1.00					
19	2303-0053503	HOT MIX ASPHALT MIXTURE (10,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	270.0					270.0					
20	2303-0246428	ASPHALT BINDER, PG 64-28	TON	16.2					16.2					
21	2304-0100000	DETOUR PAVEMENT	SY	1,665.2					1,665.2					
22	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	19.7					19.7					
23	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	3					3					
24	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.	EACH	1					1					
25	2435-0250800	INTAKE, SW-508	EACH	5					5					
26	2435-0250900	INTAKE, SW-509	EACH	1					1					
27	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	1,189.9					1,189.9					
28	2502-8220193	SUBDRAIN OUTLET (RF-19C)	EACH	11					11					
29	2502-8220196	SUBDRAIN OUTLET, RF-19E	EACH	5					5					
30	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.	LF	103.5					103.5					
31	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.	LF	564.5					564.5					
32	2503-0114424	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 3000D (CLASS IV), 24 IN.	LF	183.4					183.4					
33	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	489					489					
34	2503-0200341	STORM SEWER ABANDONMENT, FILL AND PLUG, LESS THAN OR EQUAL TO 36 IN. DIA.	LF	223					223					
35	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	381.3					381.3					
36	2505-4008300	STEEL BEAM GUARDRAIL	LF	87.5					87.5					
37	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION	EACH	2					2					
38	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	2					2					
39	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL	EACH	2					2					
40	2507-3250005	ENGINEERING FABRIC	SY	108.9					108.9					
41	2507-8029000	EROSION STONE	TON	84.0					84.0					
42	2510-6745850	REMOVAL OF PAVEMENT	SY	5,394.6	321.2				5,715.8					
43	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	EACH	5					5					

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ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Quantities										
				Estimated						As Built				
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
44	2512-1725206	CURB AND GUTTER, P.C. CONCRETE, 2.0 FT.	LF	800.5					800.5					
45	2515-2475008	DRIVEWAY, P.C. CONCRETE, 8 IN.	SY	160.7					160.7					
46	2515-6745600	REMOVAL OF PAVED DRIVEWAY	SY	138.6					138.6					
47	2518-6910000	SAFETY CLOSURE	EACH	8					8					
48	2520-3350015	FIELD OFFICE	EACH	1					1					
49	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	188.36					188.36					
50	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	141.88					141.88					
51	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	1,275.0					1,275.0					
52	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	2					2					
53	2528-8445110	TRAFFIC CONTROL	LS	1.00					1.00					
54	2528-8445113	FLAGGERS	EACH						See Proposal					
55	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	4,240.0					4,240.0					
56	2551-0000110	TEMP CRASH CUSHION	EACH	3					3					
57	2552-0000140	ROCK EXCAVATION	CY	49.3					49.3					
58	2595-0000012	INSURANCE WHEN WORKING IN RAILROAD RIGHT-OF-WAY, MODIFIED, FOR DAKOTA MINNESOTA & EASTERN RAILROAD DOING BUSINESS AS CANADIAN PACIFIC	LS	1.00					1.00					
59	2595-0000013	LIABILITY INSURANCE, MODIFIED, FOR DAKOTA MINNESOTA & EASTERN RAILROAD DOING BUSINESS AS CANADIAN PACIFIC	LS	1.00					1.00					
60	2599-9999005	('EACH' ITEM) CLEANING OF ALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES	EACH	20					20					
61	2599-9999005	('EACH' ITEM) REMOVAL OF SILT BASINS	EACH	1					1					
62	2599-9999005	('EACH' ITEM) STEEL BEAM GUARDRAIL SPECIAL END ANCHOR	EACH	1					1					
63	2599-9999007	('HOURS' ITEM) TEMPORARY TRAFFIC SIGNAL OPERATOR	HOUR	1200					1200					
64	2599-9999018	('SQUARE YARDS' ITEM) STANDARD SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 16 IN.	SY		381.2				381.2					
65	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2	SQ	4.0					4.0					
66	2601-2700010	OUTLET OR CHANNEL SCOUR PROTECTION	SF	32					32					
67	2602-0000020	SILT FENCE	LF	1,350.0					1,350.0					
68	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	352.5					352.5					
69	2602-0000050	SILT BASINS	EACH	1					1					
70	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	657.5					657.5					
71	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	131.5					131.5					
72	2602-0000212	FLOATING SILT CURTAIN (HANGING)	LF	400.0					400.0					
73	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200.0					200.0					
74	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200.0					200.0					
75	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	400.0					400.0					
76	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1					1					
77	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1					1					
		ALT 'AA' OPTION 1: HMA PAVED SHOULDER												
78	2102-0425070	SPECIAL BACKFILL	TON	442.2										
79	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.	SY	854.8										
		ALT 'AA' OPTION 2: PCC PAVED SHOULDER												
80	2102-0425070	SPECIAL BACKFILL	TON	486.9										
81	2122-5190007	PAVED SHOULDER, P.C. CONCRETE, 7 IN.	SY	854.8										

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ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	**CLEARING AND GRUBBING**
		Includes clearing and grubbing required for the bridge replacement.
-	-	-
2	2102-0425070	**SPECIAL BACKFILL**
		Refer to the Typicals on Sheets B.1-B.5 and Tabs. 100-24 and Curb & Gutter for locations and details.
		Also, refer to the Linwood Mine Crossing typical on Sheet B.3 and Tab. 102-3.
		Quantity includes 621.1 tons of material for detour pavement.
		Quantity also includes 278.4 tons of material for final curb subbase.
		Quantity also includes 240.2 tons of material for the Linwood Mine Crossing.
-	-	-
3	2102-2625000	**EMBANKMENT-IN-PLACE**
		Refer to 'T' sheets.
		Quantity includes 560 cu. yds. of Class 10 Suitable Contractor borrow material for roadway. Also
		includes 38 cu. yds. of borrow material for steel beam guardrail installations. Refer to
		Tab. 107-23 for locations and details. Shrink is not included for this item.
		Special attention should be given to Section 2107.03.C of the current Standard Specifications on
		this project.
		Overhaul will not be measured or paid for, but shall be considered incidental to
		roadway excavation on this project.
-	-	-
4	2102-2710090	**EXCAVATION, CLASS 10, WASTE**
		Refer to the 'T' Sheets for locations and details. All class 10 excavation material
		to become property of the Contractor.
		All excavated material shall not be used as fill on for the project.
-	-	-
5	2102-2712015	**EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS**
		Refer to Tab. 103-7 for additional information.
		Dispose of excess material according to Article 1106.07 of the current
		specifications.
-	-	-
6	2102-2713090	**EXCAVATION, CLASS 13, WASTE**
		Refer to Typical SHOULDER on Sheet B.4 and Tab. 112-9 for locations and details.
-	-	-
7	2105-8425005	**TOPSOIL, FURNISH AND SPREAD**
		Refer to Tab. 103-4.
		The Contractor shall provide all the required topsoil and
		follow provisions in Section 2105 of the current specifications.
		Method of Mesurement:
		The quantity of topsoil furnished and spread will be measured in
		cubic yards and will be computed on the depth of topsoil specified
		in the contract document over the area involved. Sufficient field
		measurements will be taken to assure reasonable conformity with the
		required final thickness of topsoil in place.
		Basis of Payment:
		The Contractor will be paid the contract unit price for topsoil,
		furnish and spread per cubic yard of topsoil placed, measured as
		provided above.
		Overhaul will not be paid for on this item. Shrink is not included
		for this item.
-	-	-
8	2107-0875100	**COMPACTION WITH MOISTURE CONTROL**
		Refer to Tab. 103-6 and the 'T' sheets for locations and details.
		Cubic yards shown on the contract documents as determined by the template fill volume.
		Shrinkage will not be included in the moisture control quantity.
-	-	-
9	2113-0001100	**SUBGRADE STABILIZATION MATERIAL, POLYMER GRID**
		Refer to the Typicals on Sheet B.1 for locations and details. Material to be placed
		below all 10" Modified Subbase.
		Refer to the Typical for the Linwood Mine Crossing on Sheet B.3 for locations and details. Material
		is to be placed beneath the 12" Special Backfill subbase under the 16" PCC pavement.
-	-	-
10	2115-0100000	**MODIFIED SUBBASE**
		Refer to Typicals on Sheets B.1 and B.3 and Tab. 100-24 for locations and details.
-	-	-
11	2122-5190501	**PAVED SHOULDER, PORTLAND CEMENT CONCRETE (PAVED SHOULDER PANEL FOR BRIDGE END DRAIN)**
		Refer to Tab. 104-8A for locations and details.
-	-	-
12	2123-7450000	**SHOULDER CONSTRUCTION, EARTH**
		Refer to Typicals on the B Sheets and Tab. 112-9 for locations and details. At least 4" of topsoil
		shall be placed on permanent shoulders.

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ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	-
13	2123-7450020	SHOULDER FINISHING, EARTH
		Refer to the Typicals on the B Sheets, Tab. 100-24, and Tab. Curb & Gutter for locations and details.
		Stage 1 includes 11.5 STAs of construction.
		Stage 2 includes 2.8 STAs of construction.
		Stage 3 includes 9.8 STAs of construction.
		Stage 4 includes 2.8 STAs of construction.
		Material for the earth shoulder finishing is included in the template quantity.
-	-	-
14	2213-6745500	REMOVAL OF CURB
		Refer to Tab. 110-4 for locations and details.
-	-	-
15	2301-0690200	BRIDGE APPROACH, RK-20
		Refer to Tab. 112-6 for locations and details.
-	-	-
16	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN.
		Refer to Tab. 100-24 for locations and details.
-	-	-
17	2301-1033110	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 11 IN.
		Refer to Tab. 100-24 for location and details.
-	-	-
18	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES
		- -
-	-	-
19	2303-0053503	HOT MIX ASPHALT MIXTURE (10,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3
20	2303-0246428	ASPHALT BINDER, PG 64-28
		Refer to Typical on Sheet B.1 and Tab. 100-25 for locations and details.
-	-	-
21	2304-0100000	DETOUR PAVEMENT
		Refer to the Detour Typicals on the B Sheets and Tab. 100-24 for locations and details.
-	-	-
22	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE
		Refer to Tab. 102-3 for locations and details.
-	-	-
23	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
24	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.
25	2435-0250800	INTAKE, SW-508
26	2435-0250900	INTAKE, SW-509
		Refer to Tab. 104-5B and the 'M' sheets for locations and details.
-	-	-
27	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.
28	2502-8220193	SUBDRAIN OUTLET (RF-19C)
29	2502-8220196	SUBDRAIN OUTLET, RF-19E
		Refer to Tab. 104-9 for locations and details.
-	-	-
30	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.
31	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.
		Refer to Tab. 104-5B and the 'M' sheets for locations and details.
-	-	-
32	2503-0114424	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 3000D (CLASS IV), 24 IN.
		Refer to Tab. 104-5B and the 'M' sheets for locations and details.
		Connected pipe joints will be used for this pipe. Placement of pipe will need to be coordinated with the construction of the west abutment piling.
-	-	-
33	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.
34	2503-0200341	STORM SEWER ABANDONMENT, FILL AND PLUG, LESS THAN OR EQUAL TO 36 IN. DIA.
		Refer to Tab. 110-14 and the 'M' Sheets for locations and details.
-	-	-
35	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL
		Refer to Tab. 110-7A for locations and details.
		Remove guardrail adjacent to EB lanes in Stage 2. Remove guardrail adjacent to WB lanes in Stage 3.
-	-	-
36	2505-4008300	STEEL BEAM GUARDRAIL
37	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION
38	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED
39	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL
		Refer to Tab. 108-8A for locations and details.
-	-	-
40	2507-3250005	ENGINEERING FABRIC
41	2507-8029000	EROSION STONE
		Refer to Tab. 100-23 for locations and details.
-	-	-
42	2510-6745850	REMOVAL OF PAVEMENT
		Refer to Tabs. 110-1 and 102-5 and the As-Built Typicals on Sheet B.7 for locations and details.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	-
43	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES
		Refer to Tab. 110-15 and the 'M' Sheets for locations and details.
		Item includes two 4 sq. yd. steel plates to cover the intakes during Stages 1-2.
		Refer to Tab. 100-26 for locations and details.
-	-	-
44	2512-1725206	CURB AND GUTTER, P.C. CONCRETE, 2.0 FT.
		Refer to the Typicals on the B Sheets and Tab. Curb & Gutter for locations and details.
-	-	-
45	2515-2475008	DRIVEWAY, P.C. CONCRETE, 8 IN.
		Refer to Tab. 102-3 for locations and details.
-	-	-
46	2515-6745600	REMOVAL OF PAVED DRIVEWAY
		Refer to Tab. 110-8 for location an details. Requires 35.2 linear foot of full depth saw cut.
-	-	-
47	2518-6910000	SAFETY CLOSURE
		Refer to Tab. 108-13A for locations and details.
-	-	-
48	2520-3350015	FIELD OFFICE
		- -
-	-	-
49	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
50	2527-9263180	PAVEMENT MARKINGS REMOVED
		Refer to Tab. 108-22 for locations and details.
-	-	-
51	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE
		Refer to the J Sheets and Tab. 108-33 for locations and details. Also see Typical TBR_FLARE
		on Sheet B.5.
-	-	-
52	2528-8400256	TEMPORARY TRAFFIC SIGNALS
		Refer to Tab. 108-28 for locations and details. Maintain a minimum clearance of 16.5'
		from the top of pavement to the bottom of each signal.
-	-	-
53	2528-8445110	TRAFFIC CONTROL
		Cleaning of temporary traffic control signs and devices will be paid separately.
-	-	-
54	2528-8445113	FLAGGERS
		- -
-	-	-
55	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM
		Refer to Tab. 108-35 for locations and details.
-	-	-
56	2551-0000110	TEMP CRASH CUSHION
		Refer to the J Sheets and Tab. 108-30 for locations and details.
-	-	-
57	2552-0000140	ROCK EXCAVATION
		Quantity includes rock excavation for storm sewer pipe construction. Refer to 'M' Sheets for
		locations and details.
-	-	-
58	2595-0000012	INSURANCE WHEN WORKING IN RAILROAD RIGHT-OF-WAY, MODIFIED, FOR DAKOTA MINNESOTA & EASTERN RAILROAD DOING BUSINES
-	-	-
59	2595-0000013	LIABILITY INSURANCE, MODIFIED, FOR DAKOTA MINNESOTA & EASTERN RAILROAD DOING BUSINESS AS CANADIAN PACIFIC
-	-	-
60	2599-9999005	('EACH' ITEM) CLEANING OF ALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES
		Item is for cleaning all temporary traffic control signs and devices. Cleaning shall be
		per Article 2528.03, L, 6, of the Standard Specifications or as directed by the Engineer.
		Method of Measurement:
		Each cleaning of all temporary traffic control signs and devices will be counted.
		Basis of Payment:
		Payment is full compensation for furnishing all materials, labor, and equipment needed
		to clean all temporary traffic control signs and devices.

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ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	-
61	2599-9999005	('EACH' ITEM) REMOVAL OF SILT BASINS
		Fill the silt basin with Class 10 material and a minimum of 4 inches of topsoil.
		Furnish, place, and compact Class 10 material according to Section 2107 of the
		current Standard Specifications for Type A compaction. Furnish, place, and compact
		topsoil according to Section 2105 of the Standard Specifications. Smooth the surface
		of the topsoil and leave in a finished condition so that it will drain properly.
		This will be incidental to the bid item.
		Method of Measurement:
		The number of silt basins removed will be counted by the Engineer.
		Basis of Payment:
		The Contractor will be paid for the number of silt basins removed.
		Payment is full compensation for providing, preparing, transporting, and placing the
		Class 10 material and topsoil. The Contractor may strip and stockpile the topsoil
		and Class 10 material from constructing the silt basin for later use in removing the
		silt basin. Overhaul will not be paid for this item.
-	-	-
62	2599-9999005	('EACH' ITEM) STEEL BEAM GUARDRAIL SPECIAL END ANCHOR
		Refer to Sheet U.1 for details.
		A portion of the existing WB guardrail will be removed to construct the proposed
		temporary intake at Sta. 293+00.45. This item will be installed to the next section
		of existing guardrail that remains. The anchor will need to match the existing
		height of the guardrail.
		Method of Measurement: The Engineer will count the quantity of each type of beam
		guardrail end anchors and terminal devices constructed. Installations continued
		across a bridge will not be counted as end anchors.
		Basis of Payment: The Contractor will be paid the contract unit price for each type
		of beam guardrail end anchor or terminal device.
-	-	-
63	2599-9999007	('HOURS' ITEM) TEMPORARY TRAFFIC SIGNAL OPERATOR
		Item is for controlling the temporary traffic signals at the Linwood Mining entrance
		(Sta. 290+77). Article 2528.03, H, 4, of the Standard Specifications shall apply.
		Method of Measurement:
		By count for duration, in hours, needed to control the temporary traffic signals during
		mining operations or as directed by the Engineer.
		Basis of Payment:
		Payment is full compensation for trained traffic signal operators.
-	-	-
64	2599-9999018	('SQUARE YARDS' ITEM) STANDARD SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 16 IN.
		Refer to Tab. 100-24 for locations and details.
		Refer to Section 2301 of the current Standard Specifications for details and information, including
		Method of Measurement and Basis of Payment.
-	-	-
65	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2
		Refer to Tab. 104-8A for locations and details.
-	-	-
66	2601-2700010	OUTLET OR CHANNEL SCOUR PROTECTION
		Refer to Tab. 104-8A for locations and details.
		Method of Measurement will be in square feet of actual area covered. Basis of Payment
		will include all material, equipment, and labor needed to install the Scourstop as
		defined by Standard Road Plan RF-39.
-	-	-
67	2602-0000020	SILT FENCE
		Refer to Tab. 100-17.
		The tabulation includes estimated locations for placement of "Silt Fence" to address
		erosion to be encountered during construction. Verify the specific locations with
		the Engineer prior to beginning placement. Bid item includes 25% additional quantity
		for field adjustments and replacements.
-	-	-
68	2602-0000030	SILT FENCE FOR DITCH CHECKS
		Refer to Tab 100-18.
		The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks"
		to address erosion to be encountered during construction. Verify the specific locations
		with the Engineer prior to beginning placement. Bid item includes 50% additional quantity
		for field adjustments and replacements.
-	-	-
69	2602-0000050	SILT BASINS
		Refer to Tab. 100-14.
		The tabulation includes estimated locations for placement of "Silt Basins" to address
		erosion to be encountered during construction. Verify the specific locations with the
		Engineer prior to beginning placement. Bid item includes 100% additional quantity for
		field adjustment and maintenance.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
-	-	-
70	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS
		This 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.
-	-	-
71	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK
		This item is included for clean-out and repair of the silt fence and silt fence for ditch
		checks during the project.
-	-	-
72	2602-0000212	FLOATING SILT CURTAIN (HANGING)
		Refer to Tab. 100-10 for locations and details.
-	-	-
73	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.
74	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.
		Refer to Standard Road Plan EC-204.
		Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on
		slopes or ditches at locations to be determined during construction. Verify specific locations with the
		Engineer prior to beginning placement.
-	-	-
75	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE
		Included for removal of perimeter and sediment control devices. All material shall become the property of
		the Contractor.
		Method of Measurement: Perimeter and Sediment Control Devices which have been properly removed will be
		measured in linear feet to the nearest foot.
		Basis of Payment: Payments for the length of Perimeter and Slope Sediment Control Devices which have been
		properly removed, the Contractor will be paid the contract unit price per foot.
-	-	-
76	2602-0010010	MOBILIZATIONS, EROSION CONTROL
		- -
-	-	-
77	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL
		- -
-	-	-
		ALT 'AA' OPTION 1: HMA PAVED SHOULDER
78	2102-0425070	SPECIAL BACKFILL
79	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.
		Refer to B Sheets and Tab. 112-9 for locations and details.
-	-	-
		ALT 'AA' OPTION 2: PCC PAVED SHOULDER
80	2102-0425070	SPECIAL BACKFILL
81	2122-5190007	PAVED SHOULDER, P.C. CONCRETE, 7 IN.
		Refer to B Sheets and Tab. 112-9 for locations and details.
-	-	-

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111-25
10-18-11

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110-7A	REMOVAL OF STEEL BEAM GUARDRAIL	C.10
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110-14	SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL	C.8
110-15	REMOVAL OF INTAKES AND UTILITY ACCESSES	C.7
Curb-Gutter	CURB & GUTTER	C.13
112-6	BRIDGE APPROACH SECTION	C.10
112-9	SHOULDERS	C.12

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BA-200	10-18-11	Steel Beam Guardrail Components
BA-201	10-19-10	Steel Beam Guardrail Barrier Transition Section
BA-202	10-18-11	Steel Beam Guardrail Bolted End Anchor
BA-205	10-18-11	Steel Beam Guardrail End Terminal
BA-250	10-18-11	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post
BA-401	04-16-13	Temporary Barrier Rail (Precast Concrete)
EC-101	04-20-10	Wood Excelsior Mat for Ditch Protection
EC-201	04-20-10	Silt Fence
EC-202	04-17-12	Floating Silt Curtain
EC-204	10-16-12	Perimeter and Slope Sediment Control Devices
EW-202	04-17-12	Bridge Berm Grading without Recoverable Slope (Non-Barnroof Section)
EW-301	04-19-11	Guardrail Grading
EW-401	10-15-13	Temporary Stream Crossing, Causeway, or Equipment Pad
EW-403	10-15-13	Temporary Erosion Control Measures
MI-210	10-15-13	PCC Driveways and Alleys
PM-110	04-16-13	Line Types
PV-101	10-15-13	Joints
PV-102	04-16-13	PCC Curb Details
RF-2	10-18-11	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
RF-3	10-15-13	Concrete Aprons
RF-14	04-16-13	Connected Pipe Joints
RF-40	10-15-13	Rock Flume for Bridge End Drain
RK-20	04-16-13	Double Reinforced 12" Approach
RK-21	10-16-12	Bridge Approach (abutting PCC or Composite Pavement)
RM-37	10-21-08	Junction Box (Cast Iron)
SI-173	04-20-10	Object Markers
SI-211	10-19-10	Object Marker and Delineator Placement with Guardrail
SW-211	10-16-12	Special Pipe Connections for Storm Sewer
SW-401	04-21-09	Circular Storm Sewer Manhole
SW-508	10-20-09	Single Open-Throat Intake, Large Box
SW-509	10-18-11	Double Open-Throat Curb Intake, Small Box
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-213	04-17-12	Lane Closure with Flaggers
TC-402	10-15-13	Shoulder Closure (Multi-Lane)
TC-419	10-15-13	Lane Closure on Undivided Highway
TC-423	10-16-12	Closure of Two Adjacent Lanes on Undivided Highway

SN-1

STEEL PLATE

A 1" thick steel plate shall be placed over the wells of the existing intakes at Sta. 290+56 and Sta. 292+97 for protection before placing detour pavement during Stage 1. These plates shall be removed during later stages when the adjacent pavement is placed. The placement and removal of the steel plate is incidental to the Removal of Intakes and Utility Accesses bid item. Refer to Tab. 100-26 for additional information.

262-6
10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

281-1
10-15-13

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers MWP #14, Permit No. 2013-1410. A copy of this permit is available from the Iowa DOT website (http://envpermits.iowadot.gov/CMEPortalENV/Home.aspx). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

232-3C
Modified

EROSION CONTROL
(NATIVE GRASS SEEDING)

Following the completion of work in a disturbed area, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEEDING MIXTURE:

Big bluestem (Andropogon geradii)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)

Big bluestem, Indiangrass, Canada wildrye and Little bluestem shall be debearded or equal to facilitate the application of seed.

Use mulch meeting the requirements of Sections 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed and furnishing and applying seed and mulch is incidental to mobilization and will not be paid for separately.

232-10
Modified

EMERALD ASH BORER

Dispose of all wood material generated as a result of clearing and/or grubbing according to the Iowa Department of Agriculture and Land Stewardship's Emerald Ash Borer (EAB) Quarantine Order. For more information refer to http://www.iowatreepests.com/eab_regulations.html.

232-11
Modified

EROSION CONTROL
(STABILIZING CROP SEEDING)

Following the completion of work in a disturbed area, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Use seed mix and fertilizer meeting the requirements of Section 2601.03,C,1 of the Standard Specifications.

Use mulch meeting the requirements of Sections 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed and furnishing and applying seed, fertilizer, and mulch is incidental to mobilization and will not be paid for separately.

232-3A
Modified

EROSION CONTROL
(RURAL SEEDING)

Following the completion of work in a disturbed area, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Use seed mix and fertilizer meeting the requirements of Section 2601.03,C,3 of the Standard Specifications.

Use mulch meeting the requirements of Sections 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed and furnishing and applying seed, fertilizer, and mulch is incidental to mobilization and will not be paid for separately.

Design No. 514
File No. 30687

102-5
10-16-12

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Milepost	End Milepost				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
1	82	22	1	92.02	93.65	2010		STPN-022-6(27)--2J-82	HMA	2					SCR	0.5					
						1974		FN-22-5(2)--21-82	PCC	9							LINWOOD	C.Lst	I		

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
IA 22 - Existing Pavement						
291+01.00	298+15.00	Both	PCC/HMA	3662.2	86.6	
287+60.00	300+41.50	Lt	PCC		1286.5	Curb Removal; See Tab. 110-4
287+57.00	290+45.11	Rt	PCC		289.3	Curb Removal; See Tab. 110-4
IA 22 - Detour Pavement						
287+60.00	290+49.00	Lt	PCC	252.9		Remove in Stage 3
290+49.00	291+04.00	Lt	PCC	67.2		Remove in Stage 3; 11" Pavement
291+04.00	300+41.50	Lt	PCC	1168.6		Remove in Stage 3
287+70.00	290+45.11	Rt	PCC	243.6		Remove in Stage 4
		Div. 1 Totals		5394.6	1662.4	
290+52.00	291+01.00	Both	PCC	321.2	93.0	Linwood Mine Crossing (Division 2)
		Div. 2 Totals		321.2	93.0	

100-26
10-15-13

INCIDENTAL ITEMS

Special or unique items where method of measurement / basis of payment is not indicated in the specifications or other contract documents.

No.	Incidental Item	Unit	Quantity	Incidental To		Remarks
				Item Code	Item	
1	Steel Plate		1	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	(1)
2	Steel Plate		1	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	(1)
	(1) Cover well with a Grade 36 steel plate to facilitate stage construction. See Note SN-1 on Sheet C.5 and Tab. 104-5B on Sheet M.1 for additional information. The intakes are located at Sta. 290+56 and Sta. 292+97.					

110-4
08-01-08

CURB REMOVAL

Begin Station	End Station	Side	Length STA	Remarks
IA 22				
Stage 1				
287+60.00	290+36.50	Lt	2.8	
291+17.00	295+82.00	Lt	4.7	
296+21.00	300+41.50	Lt	4.2	
Stage 2				
287+70.00	290+43.85	Rt	2.7	
	Total		14.4	

110-8
08-01-08

REMOVAL OF CONCRETE DRIVES

Location Station	Side	Area SY	Remarks
296+00.70	Lt	138.6	35.2' of sawcut required
Total		138.6	

100-27
10-20-09

PAVEMENT SMOOTHNESS + PCC TEXTURE

Road Identification	Begin Station	End Station	Proposed Posted Speed			Remarks
			35 or less	40 - 45	over 45	
IA 22	290+52.00	292+45.78			X	
	294+90.82	298+15.00			X	

110-15
04-16-13

REMOVAL OF INTAKES AND UTILITY ACCESSES

No.	Location/Description	Type	Remarks
1	Sta. 290+56 Lt	Intakes	Remove in Stage 3
2	Sta. 292+97 Lt	Intakes	Remove Top in Stage 1 and Well in Stage 3
3	Sta. 293+00.45 Lt	Intakes	Remove in Stage 3
4	Sta. 295+50 Lt	Intakes	Remove in Stage 1
5	Sta. 298+80 Lt	Intakes	Remove in Stage 1

102-3
10-15-13

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

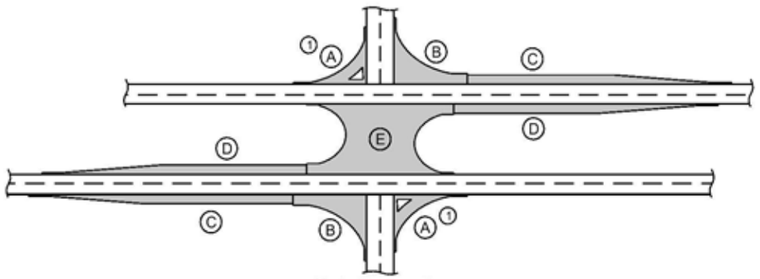
Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
(1) Refer to MI-210
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

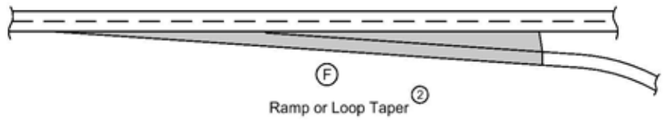
Location		Type	Length of Opening (1)			(1) (2)	(1) (2)	(2)	Pipe Culvert (3)					Aprons	Driveway Surface Area		Driveway Surfacing Material	Remarks
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1¼" Dropped Curb	3" Dropped Curb	W	PR	SR	H	Size	Pipe Length	Lt.	Rt.		HMA	PCC		
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF	No.	SY	SY	TON	
Stage 1																		
290+77.00	Lt	B				49.0										*67.2		*Bid as 11" PCC Pav't (Temp.)
296+00.70	Lt	B	2	72.0		35.0										124.8		Bid as Detour Pavement
Stage 3																		
290+77.00	Lt	B				49.0										*60	19.688	*Bid as 16" PCC Pavement
296+00.70	Lt	B	1	79.6		35.0	30.0									160.7		Bid as Driveway Pavement
290+77.00	Rt	B				49.0										*54.4		*Bid as 16" PCC Pavement

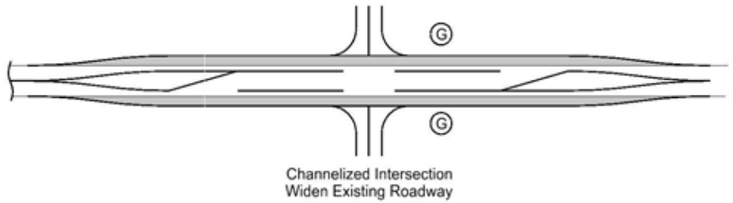
Design No. 514
File No. 30687

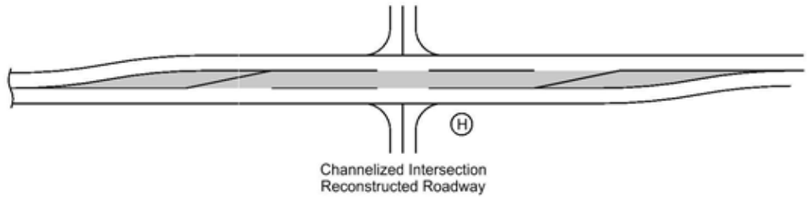
ENGLISH	IOWA DOT	DESIGN TEAM Jia/Holst/Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER C.7

HMA PAVEMENT









1 Does not include island area or curb. Refer to tabulation 112-4 for quantities.

2 Refer to PV-410, PV-411, PV-412, and PV-414.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 0, a base course unit weight (lbs/cf) of 0, and a special backfill unit weight (lbs/cf) of 140.

Location				Mainline			Area								Bid Items											Remarks
															Hot Mix Asphalt Pavement						Binder						
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A 1	B	C	D	E	F	G	H	Surface		Intermediate		Base		Surface	Intermediate	Base	Special Backfill	Modified Subbase	Granular Subbase	Pavement Scarification	
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	SY	
IA 22	Both	291+01.00	292+45.78	47.0	144.8	756.1									83.4	756.1					5.001							
	Both	294+90.82	298+15.00	47.0	324.2	1692.9									186.6	1692.9					11.199							
														Totals	270.0	2449.0					16.200							

110-14
04-16-13

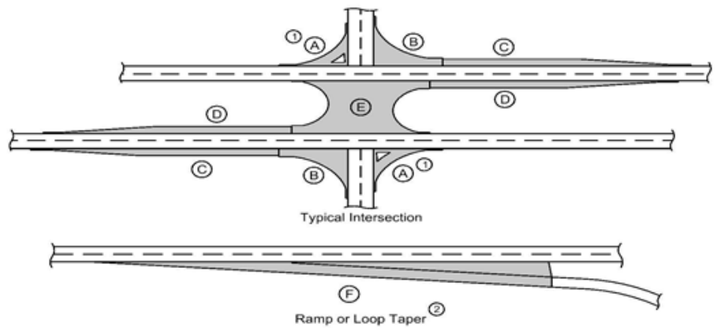
SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

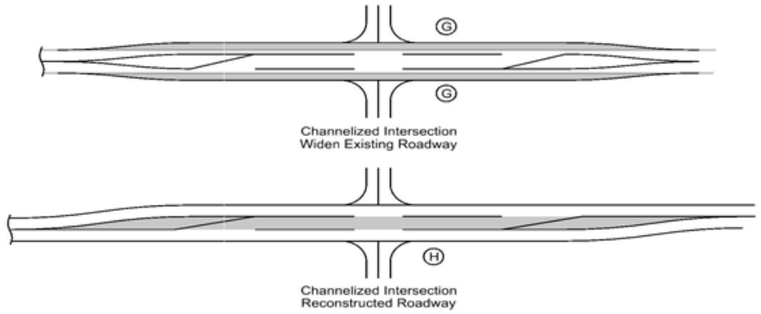
* Not a bid item

Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			≤ 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
IA 22						
Sta. 290+57.83 to 291+50.00; Lt	Storm Sewer	Removal	92			Stage 3
Sta. 291+50.00 to 292+92.68; Lt	Storm Sewer	Abandonment, Plug and Fill	143		175.0	
Sta. 293+01.83 to 294+45.00; Lt	Storm Sewer	Removal	143			
Sta. 294+45.00 to 295+25.00; Lt	Storm Sewer	Abandonment, Plug and Fill	80		98.1	
Sta. 295+25.00 to 295+47.62; Lt	Storm Sewer	Removal	23			
Sta. 291+33.00 to 293+51.45; Rt	Storm Sewer	Removal	219			
Sta. 293+00.43 Lt; Temporary Pipe T-1 (Stages 1-2)	Storm Sewer	Removal	8			
Sta. 298+82.40 to 298+86.40; Lt	Storm Sewer	Removal	4			Cap remaining 1.5' of existing pipe for Stages 1-2.
		Totals				
		Removal	489			
		Abandonment, Plug and Fill	223		273.1	

Design No. 514
File No. 30687

PCC PAVEMENT





1. Does not include island area or curb. Refer to tabulation 112-4 for quantities.
2. Refer to PV-410, PV-411, PV-412, and PV-414.
3. Quantity includes Pavement Header.

Location				Mainline			Area 3								Total Area By Pavement Thickness		Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A 2	B	C	D	E	F	G	H	SY					
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	10 IN	8 IN	TONS	CY	SY	
IA 22 - Final Pavement	WB/EB	291+01.00	291+90.38	49.0	89.4	486.6									486.6			148.6		
	WB/EB	291+90.38	292+45.78	Var	55.4	318.7									318.7			98.8		
	WB	292+45.78	292+95.78	Var	50.0	50.2									50.2			18.6		Pavement adjacent to approach pav't
	WB	294+40.82	294+70.00	11.5	29.2	37.4									37.4			13.1		Pavement adjacent to approach pav't
	WB	294+70.00	294+90.82	Var	20.8	21.9									21.9			8.0		Pavement adjacent to approach pav't
	WB/EB	294+90.82	295+22.70	Var	31.9	184.9									184.9			57.3		
	WB/EB	295+22.70	298+15.00	49.0	292.3	1591.4									1591.4			487.4		
Linwood Mine Crossing	WB/EB	290+52.00	291+01.00	49.0	49.0	266.8									*266.8		*168.1			*16" PCC Pav't; 12" Subbase
Linwood Mine North Entrance		290+47.00	291+06.00	Var	59.0	60.0									*60		*37.8			*16" PCC Paved Entr.' 12" Subbase
Linwood Mine South Entrance		290+52.00	291+01.00	10.0	49.0	54.4									*54.4		*34.3			*16" PCC Paved Entr.' 12" Subbase
														Total Final Pavement	2691.2			831.7		
														16" PCC Pavement (Div. 2)	381.2		240.2			
IA 22 - Detour Pavement																				
Stage 1	WB	287+60.00	289+50.00	Var	190.0	131.9										131.9	48.2			
	WB	289+50.00	290+49.00	11.0	99.0	121.0										121.0	41.6			
	WB	290+49.00	291+04.00	11.0	55.0	67.2										*67.2	*46.2			*11" PCC Pav't; 12" Subbase
	WB	291+04.00	298+50.00	11.0	746.0	911.8										911.8	313.3			
	WB	289+50.00	300+41.50	Var	1091.5	132.0										132.0	48.6			
		295+65.00	296+37.00	Var	72.0	124.8										124.8	36.8			Driveway Detour Pavement
Stage 2	EB	287+70.00	289+50.00	Var	180.0	130.0										130.0	47.3			
	EB	289+50.00	290+38.23	11.0	88.2	107.8										107.8	37.1			
	EB	290+38.23	290+45.11	Var	6.9	5.7										5.7	2.1			Tie into existing return pavement
														8" Detour Pavement		1665.2	574.9			
														11" PCC Pavement		67.2	46.2			
														Total Special Backfill			621.1			

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107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

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

Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	(1) Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10 CY	Embankment In Place CY	
1		293+03.78	Rt	10:1	77.5	5.0	149.8	7.5					48.5		28.0	
2		294+37.80	Lt	UAC	27.5	5.0	64.8	8.8	114.5	10.8	134.5	10.8	(1)		10.0	Place guardrail on existing foreslope
																(1) Tie-in with proposed entrance at Sta. 296+00

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Location				
No.	(1) Direction of Traffic	Station to Station	Side	Removal of Guardrail (2) LF
1		293+70.00	295+57.50	Rt	187.5
2		293+70.00	295+57.50	Lt	187.5
3		End Anchor	293+15.00	Lt	6.3
			Total		381.3

108-8A
10-19-10

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE END POST

Refer to BA-200, BA-201, BA-202, BA-205, BA-250, SI-172, SI-173 and SI-211.

(1) See Standards for list of materials.

Location Station			Layout Lengths				Delineators and Object Markers					Bid Items (1)						Remarks
			VT1	VF	VT2	ET	Type	Delineator Type 1	Object Marker Type 2	Object Marker Type 3		End Anchor Bolted	Barrier Transition Section	Steel Beam Guardrail	End Terminal Standard	End Terminal Flared for Cable Connection	End Terminal Adapter	
						Terminal		White		OM-3L	OM-3R							
No.	Station	Offset	LF	LF	LF	LF		No.	No.	No.	No.	Type	No.	LF	No.	No.	No.	
1	293+03.78	34.8' Rt	78.125			50.0	2				1	A	1	50.0	1			
2	294+37.80	34.8' Lt	28.125	37.50		50.0	2				1	A	1	37.5	1			
									Totals		2	2	2	87.5	2			

104-8A
04-20-10

(1) Not a Bid Item

SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN

Refer to Standard Road Plan RF-39 or RF-40

Location			Shoulder				Rock Flume RF-40			Scour Protection RF-39		Remarks
Bridge Station	Bridge Corner	Distance DI-1 or DI-2	Panels Required	PCC	Polymer Grid (1)	Modified Subbase (1)	Macadam Stone Base (1)	Engineering Fabric (1)	Erosion Stone (1)	Outlet or Channel Scour Protection	Turf Reinforced Mat (TRM)	
			A B C or D	Sq.Yds.	Sq.Yds.	Tons	Material Tons	Sq.Yds.	Tons	Sq. Feet	Squares	
293+68.30	SW	45.0	C, B	51.3	60.2	37.900				32.0	4.0	

112-6
04-16-13

BRIDGE APPROACH SECTION

Refer to the RK-Series.

* Not a bid item

Location				Approach Pavement					Fixed or Movable Abutment	Subdrain						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		* Perforated Subdrain 4"	* Subdrain Outlet		* Porous Backfill	Class 'A'* Crushed Stone Backfill	* Modified Subbase	* Polymer Grid	
												Side					
				Inches	FT	SY	SY	SY	F or M	LF	STA		CY	CY	TON	SY	
293+68.30	W	10		12.0	70.0	53.3	106.7	270.8	M	100.0	292+55.51	Rt	17.0				
293+68.30	E	10		12.0	70.0	53.3	106.7	269.1	M	100.0	294+81.09	Rt	17.0				

Design No. 514
File No. 30687

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00

Location								Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4									
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
Stage 2																						
IA-22	283+07.48	313+00.00	WB	Removal Of Paint		X					29.93											
	285+30.00	291+05.00	BOTH	Removal Of Paint		X			5.75													
	298+15.00	313+00.00	BOTH	Removal Of Paint		X			14.85													
	283+07.48	291+05.00	EB	Removal of Paint		X					7.98											
	298+15.00	304+90.00	EB	Removal of Paint		X					6.75											
	287+90.00	300+10.00	WB	Waterborne/Solvent Paint			X					12.20										Temporary Markings
	302+90.00	313+00.00	WB	Waterborne/Solvent Paint	X								10.10									Temporary Markings
	305+30.00	313+00.00	EB	Waterborne/Solvent Paint	X								7.70									Temporary Markings
	283+07.48	304+90.00	EB	Waterborne/Solvent Paint			X					21.83										Temporary Markings
Stage 3																						
IA-22	302+90.00	313+00.00	WB	Removal of Paint	X								10.10									
	313+00.00	314+00.00	WB	Removal of Paint		X					1.00											
	283+07.48	285+30.00	BOTH	Removal of Paint		X			2.23													
	305+30.00	313+00.00	EB	Removal of Paint	X								7.70									
	283+07.48	304+90.00	EB	Removal of Paint			X					21.83										
	285+50.00	313+95.00	WB	Waterborne/Solvent Paint			X					28.45										Temporary Markings
	283+07.48	285+30.00	WB	Waterborne/Solvent Paint		X					2.23											Temporary Markings
	283+07.48	285+30.00	WB	Waterborne/Solvent Paint	X								2.23									Temporary Markings
	283+07.48	287+70.00	EB	Waterborne/Solvent Paint	X								4.63									Temporary Markings
	287+90.00	300+35.00	EB	Waterborne/Solvent Paint			X					12.45										Temporary Markings
	300+35.00	304+90.00	EB	Waterborne/Solvent Paint			X					4.55										Permanent Markings
Stage 4																						
IA-22	285+50.00	313+95.00	WB	Removal of Paint			X					28.45										
	283+07.48	285+30.00	WB	Removal of Paint	X								2.23									
	283+07.48	287+70.00	EB	Removal of Paint	X								4.63									
	290+46.11	300+35.00	EB	Removal of Paint			X					9.89										
	285+30.00	313+95.00	WB	Waterborne/Solvent Paint		X					28.65											Permanent Markings
	283+07.48	314+00.00	BOTH	Waterborne/Solvent Paint		X			30.93													Permanent Markings
	283+07.48	305+55.00	EB	Waterborne/Solvent Paint		X					22.48											Permanent Markings
	291+30.00	300+35.00	EB	Waterborne/Solvent Paint			X					9.05										Permanent Markings
				Factored Total: Waterborne/Solvent Paint				-	61.85	-	13.34	88.53	24.65	-	-	-	-	-	-	-	-	-	
				Factored Total: Removal of Paint				-	45.65	-	11.41	60.16	24.65	-	-	-	-	-	-	-	-	-	
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							188.36											
				Bid Quantity: Pavement Markings Removed							141.88											

CRASH CUSHIONS

* Bid Item
(1) Lane(s) to which the installation is adjacent.
(2) Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500

No.	(1) Direction of Traffic	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details (2)					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V Length	W Length	X Length	Y Length	Z Length	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use		
				FT						FT	FT	FT	FT	FT	CY	CY	EACH	EACH		
		Stage 2																		
1	EB	291+60.00	Rt	1.88	X						24.25	5.25	3.25	12.00						
		Stage 3																		
2	WB	295+25.00	Rt	1.88	X						24.25	5.25	3.25	12.00						
3	WB	298+50.00	Rt	1.88	X						24.25	5.25	3.25	12.00						

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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 147, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Road Identification	Location: Direction Of Traffic (1)	Location: Station to Station		Location: Side	(P) Width	(G) Width	(L) Length	Quantities: Class 13 Excavation (3)	Quantities: Hot Mix Asphalt		Quantities: Binder	Quantities: Paved Shoulder	Quantities: Reinforced Paved Shoulder	Quantities: Special Backfill: HMA Alternate		Quantities: Special Backfill: PCC Alternate		Quantities: Modified Subbase	Quantities: Granular Shoulder		Quantities: Earth Shoulder Construction Alternates			Remarks
																						HMA	PCC	
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA	STA (2)	CY (4)	CY (4)	
Iowa 22																								
Stage 2	EB	291+06.59	291+30.00		0 to 10		23.4					13.0		5.1	21.8	6.0	25.5				0.2	0.1	0.1	
	EB	291+30.00	291+54.00		10.0		24.0					26.7		15.0	62.5	16.4	68.2				0.2	0.0	0.0	
	EB	291+54.00	291+74.00		13.6		20.0					30.2		17.4	87.0	18.9	94.4				0.2	0.9	0.9	See Typical 7156
	EB	291+74.00	292+26.33		13.6-11.5		52.3					73.0		35.3	67.5	38.5	73.5				0.5	1.6	1.6	See Typical 7156
	EB	292+26.33	292+55.78		11.5		29.4					37.6		17.7	60.1	19.3	65.6				0.3	2.9	2.9	See Typical 7156
	EB	292+55.78	292+95.78		11.5		40.0					a)						a)			0.4			a) See Tab. 104-8A
	EB	294+40.82	298+15.00		10.0		374.2					415.8		233.9	62.5	255.1	68.2				3.7	121.4	121.4	
	EB	298+15.00	300+47.71		10.0		232.7	154.8				258.6		117.8	50.6	132.8	57.1				2.3	24.1	24.1	
						Paved Shoulder Totals		154.8				854.8		442.2		486.9					8.0	151.0	151.0	

TEMPORARY BARRIER RAIL

Refer to BA-400 and BA-401

* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

No.	Station to Station		Length	(Select One) Steel	(Select One) Concrete	Anchored*	Remarks
			LF	BA-400	BA-401	(Y/N)	
	Stage 2						
1	291+50.00	298+25.00	675.0		X	No	*Refer to J Sheets and Typical TBR_FLARE on Sheet B.5 for details.
	Stage 3						
2	291+25.00	295+25.00	400.0		X	No	
3	296+50.00	298+50.00	200.0		X	No	
	Total		1275.0				

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type: Road Qty.	Closure Type: Hazard Qty.	Remarks
Stage 2			
290+00.00	1		
293+00.00		1	
298+65.00	1		
294+50.00		1	
Stage 3			
289+85.00	1		
293+00.00		1	
298+65.00	1		
294+50.00		1	
Total	4	4	Total of 8 Closures

TEMPORARY LANE SEPARATOR SYSTEM

See TC-61

Station to Station		Length	Remarks
		LF	
Stage 2			
285+30.00	290+20.00	490	
291+30.00	295+70.00	440	
296+30.00	300+40.00	410	
301+90.00	305+30.00	340	
Stage 3			
285+30.00	290+30.00	500	
291+20.00	295+60.00	440	
296+40.00	300+50.00	410	
301+90.00	314+00.00	1210	
Total		4240	

TEMPORARY TRAFFIC SIGNALS

No.	Location Station	Type: One Lane Traffic	Type: Haul Road	Type: Intersection	Remarks
1	290+82.00			X	Stage 2
2	290+90.00			X	Stage 3

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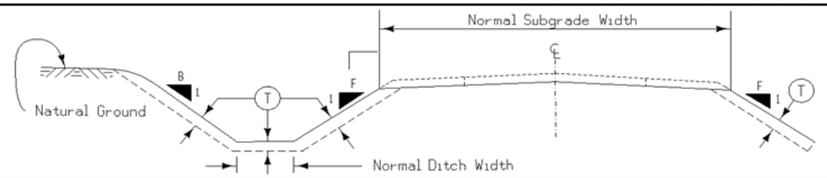
103-4
04-19-11

TABULATION OF SPREADING TOPSOIL



Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed hereon.

Placement Description								Topsoil Excavation Available From			
Area	Quantity	Location		Side	Slope	(T)	Remarks	Amount Reserved	Station to Station		Remarks
No.	CY	Station to Station		L. or R.	B. or F.	IN		CY			
1	49.0	291+06.59	298+58.00	R	F	6.0	Stage 2 - Final Construction				Provide by Contractor
2	193.0	288+54.00	304+65.00	L	F	6.0	Stage 3 - Final Construction				
3	28.0	287+57.00	290+43.85	R	F	6.0	Stage 4 - Final Construction				
4	25.0	298+58.00	299+60.00	R	F	6.0	Stage 4 - Final Construction				
Total	295.0										

100-23
10-19-10

* Design shown for mandatory locations is the minimum allowed.

ROCK DITCH CHECKS/DITCHES/FLUMES/SPLASH BASINS/SLOPE PROTECTION

Refer to Typicals 4401, 4402, 4403, 4404, and 4405

Location				Type						(L)	(W)	Material			Remarks
Road Identification	Station	Side	Mandatory* Location (yes or no)	Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection				Erosion Stone	Class E Revetment	Eng. Fabric	
		Lt./Rt.								FT	FT	TON	TON	SY	
Stages 1 & 2															
IA 22	294+80.00	Lt.	Yes			X					40.0	48.0		62.2	
	298+75.00	Lt.	Yes			X					30.0	36.0		46.7	
									Totals			84.0		108.9	

CURB & GUTTER

Refer to PV-102 and 6000s Detail Series.

(1) Bid Item

Station	Station	Offset	Curb and Gutter				Remarks
			Curb Type	Gutter Width	Length (1)	Special Backfill (1)	
					LF	TON	
287+60.00	287+65.00	Lt	Transition to Existing	2	5.0	2.1	
287+65.00	290+52.00	Lt	6" Sloped PCC	2	287.0	100.5	
298+15.00	300+36.50	Lt	6" Sloped PCC	2	221.5	77.5	
300+36.50	300+41.50	Lt	Transition to Existing	2	5.0	8.9	
287+70.00	287+75.00	Rt	Transition to Existing	2	5.0	1.8	
287+75.00	290+25.40	Rt	6" Sloped PCC	2	250.4	87.6	
290+25.40	290+52.00	Rt	Transition to Existing	2	26.6	18.7	See typical on Sheet B.8
			Total		800.5	278.4	

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
IA 22				
Stage 2				
291+20.00	292+10.00	Rt	110.0	
294+00.00	296+00.00	Rt	220.0	
296+00.00	297+30.00	Rt	150.0	
297+30.00	298+50.00	Rt	140.0	
299+25.00	299+75.00	Rt	70.0	
Stage 3				
294+25.00	294+75.00	Lt	70.0	
301+85.00	303+35.00	Lt	170.0	
303+35.00	304+65.00	Lt	150.0	
	Total		1080.0	
	Total + 25%		1350.0	

100-18
04-20-10

TABULATION OF SILT FENCES FOR DITCH CHECKS

Refer to EC-201

Location Station	Side	Length	Remarks
		LF	
IA 22			
Stage 2			
292+70.00	Rt	24.0	
293+15.00	Rt	15.0	Adjacent to Bridge Berm
293+80.00	Rt	15.0	Adjacent to Bridge Berm
295+30.00	Rt	21.0	
296+80.00	Rt	29.0	
298+58.00	Rt	29.0	
299+25.00	Rt	29.0	
Stage 3			
294+50.00	Lt	25.0	Adjacent to Bridge Berm
302+00.00	Lt	24.0	
303+50.00	Lt	24.0	
Total		235.0	
Total + 50%		352.5	

100-10
10-18-11

FLOATING SILT CURTAINS

Refer to EC-202

Station	Hanging	Containment	Clean-out (Containment)	Remarks
	LF	LF	LF	
293+68.30	400.0			

100-14
10-15-13

SILT BASINS

Refer to EW-403

Location Station	Side	Remarks
293+00.00	Rt	Exist. Ditch outletting to Donaldson Creek

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LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

(1) Refer to EW-203, EW-204, or EW-211.
*Not a bid item

Location						Longitudinal Subdrain (RF-19C)						Subdrain Outlet					
Line No.	Road or Lane	Station to Station		Side	Depth ⌀	Shoulder		Backslope		Bridge Berm (1)		RF-19C, RF-19E, or RF-19F			Porous* Backfill	Class "A"* Crushed Stone	Remarks
1	IA 22	290+57.83	291+35.00	LT	24.0	4.0	81.2					290+57.83	6.0	RF-19C	3.8	0.2	UAC INTAKE
												291+35.00	6.0	RF-19C			INTAKE #5
2	IA 22	291+35.00	292+46.00	LT	24.0	4.0	113.0					291+35.00	6.0	RF-19C	5.2	0.2	INTAKE #5
3	IA 22	294+92.00	295+48.50	LT	24.0	4.0	58.5					295+48.50	6.0	RF-19C	2.7	0.2	INTAKE #3
4	IA 22	295+48.50	296+55.07	LT	24.0	4.0	110.6					295+48.50	6.0	RF-19C	5.1		INTAKE #3
												296+55.07	6.0	RF-19C		0.2	INTAKE #2
5	IA 22	296+55.07	297+55.00	LT	24.0	4.0	103.9					296+55.07	6.0	RF-19C	4.8		INTAKE #2
												297+55.00	6.0	RF-19C		0.2	INTAKE #1
6	IA 22	297+55.00	298+79.77	LT	24.0	4.0	128.8					297+55.00	6.0	RF-19C	6.0		INTAKE #1
												298+79.77	6.0	RF-19C		0.2	INTAKE #8
7	IA 22	291+35.00	292+46.00	RT	24.0	4.0	113.0					291+35.00	6.0	RF-19C	5.2	0.2	INTAKE #9
8	IA 22	294+92.00	296+75.00	RT	24.0	4.0	223.0					294+92.00	6.0	RF-19E	10.3		
												296+75.00	6.0	RF-19E		0.2	
9	IA 22	296+75.00	298+73.00	RT	24.0	4.0	238.0					296+75.00	6.0	RF-19E	11.0		
												298+73.00	6.0	RF-19E		0.2	
10	IA 22	ADD OUTLET TO EXISTING SUBDRAIN		RT			20.0					298+73.00	6.0	RF-19E	0.0	0.2	NOTE #3
Totals							1189.9							16	54.1	2.0	

NOTE 1: LONGITUDINAL SUBDRAINS 1-7 ARE TYPE 12
NOTE 2: LONGITUDINAL SUBDRAINS 8-10 ARE TYPE 7 WITH PCC OR TYPE 8 WITH HMA (ACC)
NOTE 3: RECORDS INDICATE THAT LONGITUDINAL SUBDRAINS EXIST WITHIN THE PAVEMENT RECONSTRUCTION AREA. IF ANY LONGITUDINAL SUBDRAINS ARE ENCOUNTERED, THEY SHALL BE OBLITERATED WITHIN THE PAVEMENT RECONSTRUCTION AREA. NEW OUTLETS SHALL BE INSTALLED IN THE UNDISTURBED AREA OUTSIDE THE PAVEMENT AREA AT APPROXIMATE STATION RECONSTRUCTION LISTED AND AS APPROVED BY ENGINEER, TO MAINTAIN DRAINAGE OF ANY EXISTING SUBDRAINS IN THE UNAFFECTED AREAS. OBLITERATION IS INCIDENTAL TO THE INSTALLATION OF THE NEW OUTLETS.
NOTE 4: 11 SUBDRAIN OUTLET'S ARE TYPE RF-19C, AND 5 SUBDRAIN OUTLET'S ARE TYPE RF-19E

EMBANKMENT WITH MOISTURE CONTROL

Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below.

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.

SHRINKAGE DATA

Material	%	Remarks
Topsoil	40%	
Class 10	30%	
Boulder Estimate*		20 CY
*Excluding rock excavation		

SPECIAL ATTENTION-SLIVER FILL

Special attention should be given to Section 2107.03.C, Standard Specification Series of 2012, on this project.

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File No. 30687

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
Robert L. Stanley
08468
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.

Robert Stanley 11-27-13
Signature Date

Robert L. Stanley
Printed or Typed Name

My license renewal date is December 31, 2014

Pages or sheets covered by this seal: CS.1

SURVEY SYMBOLS

- FW Wire Fence
- PR Electic Riser Pole
- LUM Luminaire
- TA Tower Anchor
- RRS Railroad Signal
- PPA Power Pole Co. 1
- GDL Guard Rail Steel
- SI Sign
- OUT Tile Outlet
- BB Billboard
- SL Speed Limit Sign
- MM Mile Marker Post
- TPD Telephone Pedestal
- RRB Railroad Signal Box
- TIL Tile Line
- DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- EW Edge of Water
- BNK Stream Bank
- RIP Rip-Rap
- RR Centerline of Railroad Tracks
- TLA Underground Telephone Line Co. 1
- ELB Underground Electric Line Co. 2
- WLA Underground Water Line Co. 1
- GHA Underground High Pres Gas Co 1
- IN Storm Sewer Intake
- RET Retaining Walls
- TLNR Tree Line Right
- TLNL Tree Line Left
- STA Storm Sewer Line Co. 1

UTILITY LEGEND

- DME RailRoad

MidAmerican Energy (Gas)
Scott Bull
2811 5th Avenue
Rock Island, IL 61201
309-793-3763
sabull@midamerican.com

MidAmerican Energy (Electrical Transmission)
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steven.parker4@quest.com

City of Buffalo
Al Horst
329 Dodge Street
Buffalo, IA 52728
563-381-2226
bufpublicworks@mchsi.com

Linnwood Mining
Abandoned Water Line

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
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
- Clearing & Grubbing Area
- Pavement Removal

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- A/C Access Control

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PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER D.1

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BUFFALO TWP.
T-77N R-2E
SEC. 24

POT Sta 283+07.48

285

290

295

5' Transition to
6" Standard Curb

IA 22 (ML022)

BEGIN CONSTRUCTION
STA 287+60.00

5' Transition to
6" Standard Curb

BEGIN PAVING
STA 290+52.00

+77 Prop. Type "B" Ent.

+77 Prop. Type "B" Ent.

+01 Prop. Type "B" Ent.

St.S.

DAKOTA MINNESOTA EASTERN RR

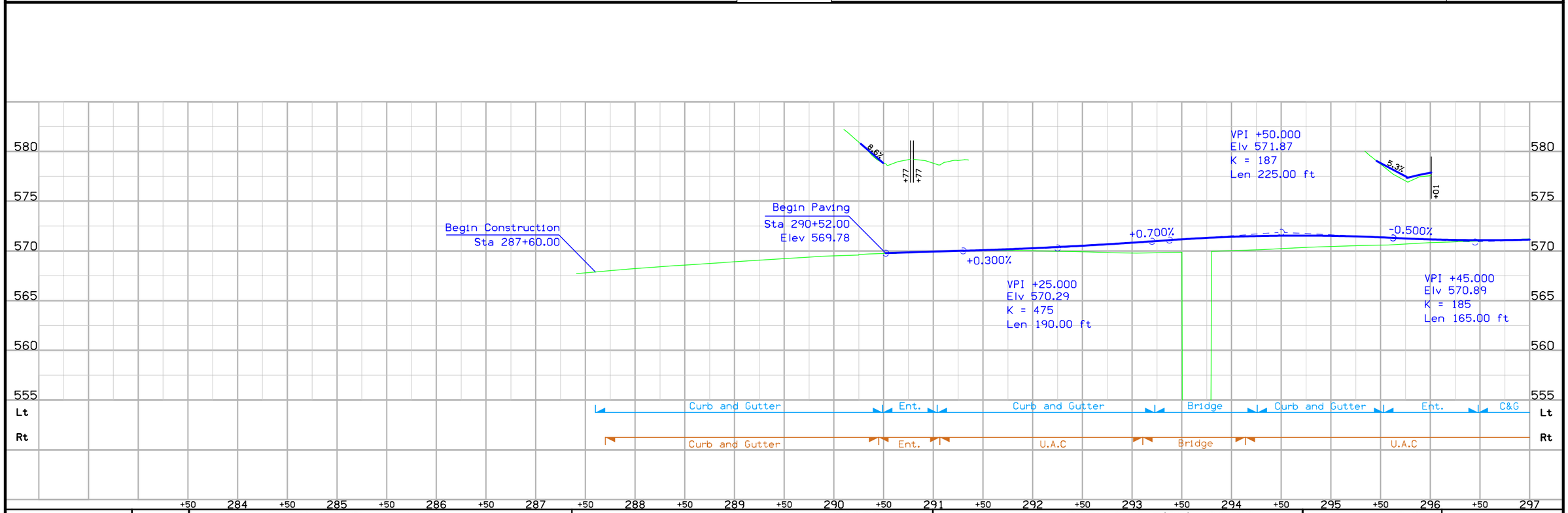
DONALDSON CREEK

Sta. 293+65.8
30'x83.5' Conc. Arch Bridge
D.A. = 2100 Ac. R - H

Iowa 22

0 FEET 50

Design No. 514
File No. 30687



C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER D.2

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BUFFALO TWP.
T-77N R-2E
SEC. 13

5' Transition to
6" Standard Curb

END PAVING
STA 298+15.00

END CONSTRUCTION
STA 300+47.71

18"x 49' Conc. Pipe
(U.A.C.) +71.83
74.4' LT

+82.26
74.5' LT

300

115TH AVE

PI Sta 302+81.04

305

310

IA 22 (ML022)

PC Sta 299+63.86

PT Sta 305+98.18

Two 4"x 20'
CPP Subdrains
(U.A.C.)

Sta. 298+90.2
6'x5'x85.1' R.C.P.
D.A. = 90 Ac. H
(U.A.C.)

+7 Comm. Ent.
(U.A.C.)

+35.16
41.2' RT

Curve Data
Δ = 1° 35' 08.84" (RT)
T = 317.18
L = 634.32
R = 22,918.31
E = 2.19

Iowa 22

BUFFALO TWP.
T-77N R-2E
SEC. 24

0 FEET 50

Design No. 514
File No. 30687

End Paving
Sta 298+15.00
Elev 571.56

End Construction
Sta 300+47.71

+0.391%

580
575
570
565
560
555

Lt Curb and Gutter
Rt U.A.C

571.21
571.31
571.40
571.50

297 +50 298 +50 299 +50 300 +50 301 +50 302 +50 303 +50 304 +50 305 +50 306 +50 307 +50 308 +50 309 +50 310 +50 311 +50 312

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER D.3

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BUFFALO TWP.
T-77N R-2E
SEC. 24

+60.0
24.5' Lt

+50.0
34' Lt

+49.0
34' Lt

+04.0
34' Lt

287 288 289 290 291 292 293

St.S.

IA 22 (ML022)

BEGIN WB
DETOUR PAVING
STA 287+60.00

T1 E2

DAKOTA MINNESOTA
EASTERN RR

WB DETOUR - STAGE I

0 FEET 20

Design No. 514
File No. 30687

12%
2%
+01

574 572 570 568 566 564 562 560

BEGIN WB
DETOUR PAVING
Sta 287+60.00

Curb and Gutter Ent. Curb and Gutter

Lt
Rt

287 +20 +40 +60 +80 288 +20 +40 +60 +80 289 +20 +40 +60 +80 290 +20 +40 +60 +80 291 +20 +40 +60 +80 292 +20 +40 +60 +80 293

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER F.1

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BUFFALO TWP.
T-77N R-2E
SEC. 24

Sta. 293+65.8
30'x83.5' Conc. Arch Bridge
D.A. = 2100 Ac. R - H

DONALDSON CREEK

Prop. Rock Flume
Sta. 294+80

+83.2
55' Lt

+65.0
34' Lt

+18.2
55' Lt

+37.0
34' Lt

BUFFALO TWP.
T-77N R-2E
SEC. 13

Prop. Rock Flume
Sta. 298+75

+50.0
34' Lt

293 294 295 296 297 298 299

St.S.

IA 22 (ML022)

T1

Sta. 298+90.2
6'x5'x85.1' R.C.P.
D.A. = 90 Ac. H

DAKOTA MINNESOTA
EASTERN RR

0 FEET 20

WB DETOUR - STAGE I (U.A.C.)

Design No. 514
File No. 30687

10'

2%

10+

576 574 572 570 568 566 564 562

Lt
Rt

Curb and Gutter
Ent.
Curb and Gutter

293 +20 +40 +60 +80 294 +20 +40 +60 +80 295 +20 +40 +60 +80 296 +20 +40 +60 +80 297 +20 +40 +60 +80 298 +20 +40 +60 +80 299

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER F.2

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BUFFALO TWP.
T-77N R-2E
SEC. 13

+41.5
24.5' Lt

END WB
DETOUR PAVING
STA 300+41.50

299 300 301 302 303 304 305

St.S. G-HP B.B. T1 T1 T1 T1 T1 G-HP E2 E2

0 FEET 20

WB DETOUR - STAGE I

Design No. 514
File No. 30687

END WB
DETOUR PAVING
Sta 300+41.50

Curb and Gutter

578 576 574 572 570 568 566 564

Lt Rt

299 +20 +40 +60 +80 300 +20 +40 +60 +80 301 +20 +40 +60 +80 302 +20 +40 +60 +80 303 +20 +40 +60 +80 304 +20 +40 +60 +80 305

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER F.3

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BUFFALO TWP.
T-77N R-2E
SEC. 24

BEGIN EB
DETOUR PAVING
STA 287+70.00

STOP EB
DETOUR PAVING
STA 290+45.11

287 288 289 290 291 292 293

St.S.

IA 22 (ML022)

T1

+70.0
24.5' Lt

+50.0
24.5' Lt

+44.10
34.0' Lt

+45.1
35.4' Lt

T2

DAKOTA MINNESOTA
EASTERN RR

EB DETOUR - STAGE II

0 FEET 20

Design No. 514
File No. 30687

574 572 570 568 566 564 562 560

BEGIN EB
DETOUR PAVING
Sta 287+70.00

STOP EB
DETOUR PAVING
Sta 290+45.11

Lt
Rt

Curb and Gutter

287 +20 +40 +60 +80 288 +20 +40 +60 +80 289 +20 +40 +60 +80 290 +20 +40 +60 +80 291 +20 +40 +60 +80 292 +20 +40 +60 +80 293

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER F.4

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Survey Information

Scott County
SAP 0699
BRFN-022-5(29)--39-82
IA22 Bridge over Donaldson Creek 2.8 miles west of the junction of I-280
PIN 10-82-022-020

General Information

This survey is in English Units.

Control Information -Opus & RTN observations were utilized as a basis for project control. 11 Control Points were held fixed in the RTK calibration.

2 held fixed Vertically; 601,605
9 held fixed Vertically and Horizontally; 49,50,51,52,53,54,600,603,606

Vertical Datum

This survey is relative to NAVD 88 vertical datum.

At the project location, CP49 was observed with both a IaRTN observation and in a four-hour static GPS observation. The vertical difference between the two observations was 0.15 feet. The OPUS elevation value of 567.578 was held fixed in a bench level loop. CP54 was observed with both a IaRTN observation and in a four-hour static GPS observation. The vertical difference between the two observations was also 0.27 feet. The Opus elevation value of 572.325 was held fixed in a bench level loop.

A bench level loop originated and terminated on CP49, elevation 567.578 on BM600 was computed by backing elevations west from CP49.

The adjusted elevations of all CP and BM points along the route were held fixed in the RTK vertical calibration. The total length of the loop was 1.5 mile with a missed closure of 0.0061 feet.

The estimated vertical difference between NAVD88 to NGVD29 at the project site is 0.19' were (29 higher is than 88).

Equations:

BM#603 this survey	Elev. =566.498
BM#133A	Elev. =567.25 1973 Situation Plan FN-22-5(2)--21-82
BM#603	Elev. =566.688 (Computed NGVD 29)
BM#605 this survey	Elev. =567.145
BM#133	Elev. =567.90 1973 AB Plan FN-22-5(2)--21-82 Sheet 55 of 419
BM#605	Elev. =567.335 (Computed NGVD 29)
BM#606 this survey	Elev. =568.934 (US Corps of Engineers BM 16-R-5...Fd 2" Pipe w/Cap)
BM# 16-R-5	Elev. =571.75 1987 Storm Sewer AB Plan FN-22-5(17)--21-82 Sheet G01 of 22
BM# 16-R-5	Elev. =571.75 1975 Grading/Pave AB Plan FN-22-5(2)--21-82 Sheet 56 of 419
BM# 16-R-5	Elev. =569.653 F-22-5(2)-20-82 H.C. Brockman Bench Levels Notes Page 15
BM#606	Elev. =569.22 (Computed NGVD 29)

Horizontal Datum

Project Coordinate Transformation

Iowa State Plane South Zone coordinates in US feet were transformed to project ground coordinates using a 1/combined scale factor broadcast about a held point. The held State Plane coordinate and project coordinate at CP16 are N= 542164.037 E=2395111.853

1 / GRID = 1.000063684

VERTICAL DATUM = NAVD 88 <> HORIZONTAL DATUM = NAD 83 (IARTN)

Local Project Plane Coordinate Conversion Equation:
a. Local Project Coord y = [(State Plane y - hold point y) 1/grid factor] + hold point y
b. Local Project Coord x = [(State Plane x - hold point x) 1/grid factor] + hold point x

ALL COORDINATES CONVERTED TO ENGLISH UNITS

POINT	STATE PLANE COORD(Y)	STATE PLANE COORD(X)	POINT SCALE FACTOR	LOCAL PROJECT PLANE COORD(Y)	LOCAL PROJECT PLANE COORD(X)	ESTIMATED GPS DERIVED ORTHOMETRIC HEIGHT
16	542164.037	2395111.853	0.999958200	542164.037	2395111.853	567.674
49	545271.503	2410839.412	0.999958760	545271.701	2410840.414	567.577
50	545654.368	2411620.108	0.999958830	545654.590	2411621.159	566.309
51	545888.072	2412475.012	0.999958860	545888.309	2412476.118	569.589
52	545993.312	2412803.102	0.999958900	545993.556	2412804.229	566.817
53	546068.372	2412791.123	0.999958900	546068.621	2412792.249	570.012
54	546360.898	2413901.196	0.999958980	546361.165	2413902.393	572.327
600	545016.905	2410205.754	0.999958760	545017.087	2410206.715	567.603
601	545512.137	2411392.554	0.999958760	545512.350	2411393.591	567.051
602	545810.193	2412237.255	0.999958830	545810.425	2412238.346	567.838
603	546089.722	2412813.537	0.999958900	546089.972	2412814.664	566.498
604	546129.851	2412916.034	0.999958900	546130.104	2412917.168	571.059
605	546173.140	2413319.925	0.999958980	546173.395	2413321.085	567.145
606	546175.157	2413555.122	0.999958980	546175.412	2413556.297	568.934

Alignment

The mainline alignment is a retrace of the existing alignment found on the FN-22-5(2)--21-82 AB Plan. Stationing was backed up & carried forward from a Mag nail found at PC Sta 299+64.35 without equation.

Alignment Equations

PC Sta 299+64.35 This Survey
=PC Sta 299+64.35 FN-22-5(2)--21-82 AB Plan

BENCHMARKS

						ELEVATION
No. 602 Sta.	287+47.228	28.098 Rt.	Y: 545810.425	X:2412238.346	Cut a square on SW Corner intake----------	567.838
No. 603 Sta.	293+83.546	45.303 Lt.	Y: 546089.972	X:2412814.664	Fd IHC BM on InHdwl of Arch Brg----------	566.498
No. 604 Sta.	294+93.554	49.308 Lt.	Y: 546130.104	X:2412917.168	Fd RR Spk S Side PP----------	571.059
No. 605 Sta.	298+89.086	43.306 Rt.	Y: 546173.395	X:2413321.085	Fd IHC BM on Outlet Hdwl----------	567.145
No. 606 Sta.	301+12.522	118.648 Rt.	Y: 546175.412	X:2413556.297	Fd US CORPS BM A STANDARD CAP on a 2" Pipe access thru a hinged cap on a 4" pipe=US Corps BM# 16-R-5 Pipe----------	568.934

MISCELLANEOUS LOCATIONS

No. 600 Sta.**********	Y: 545017.087	X:2410206.715	Fd "X" SE Wing of Br----------	567.603
No. 601 Sta.**********	Y: 545512.350	X:2411393.591	Cut a square on SE Corner intake----------	567.051

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER G.1

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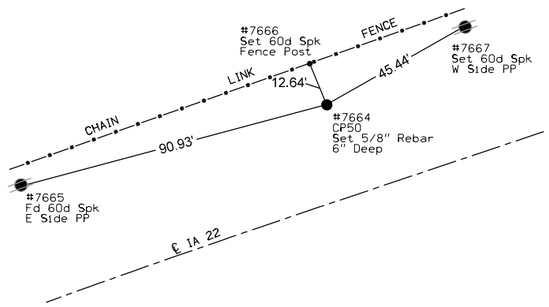
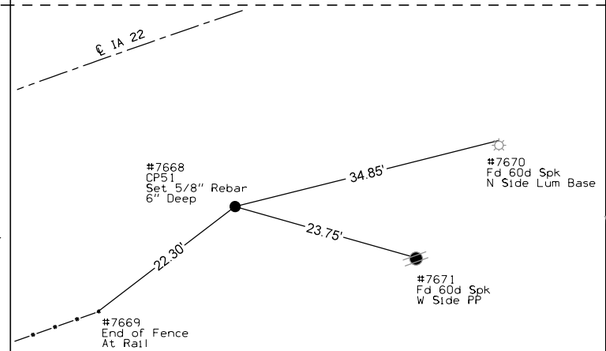
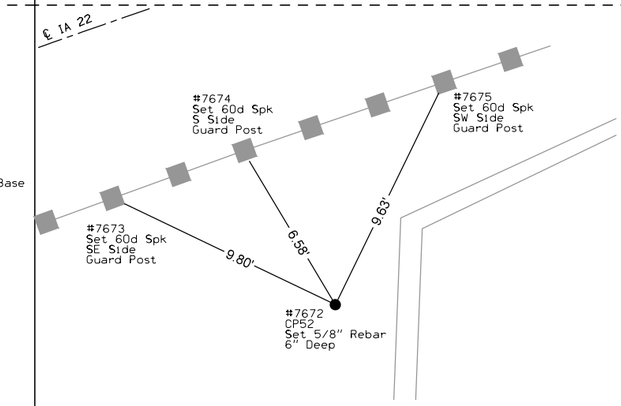
C.P. NO STATIONING
C.P. 50, Set 5/8" Rebar 6" Deep
N=545654.590 E=2411621.159



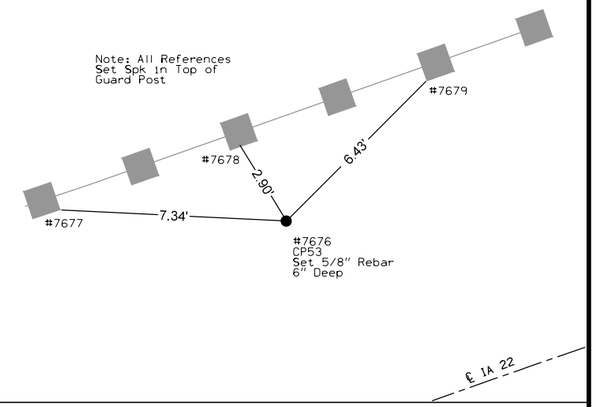
C.P. 289+97.38 RIGHT 33.16
C.P. 51, Set 5/8" Rebar 6" Deep
N=545888.309 E=2412476.118



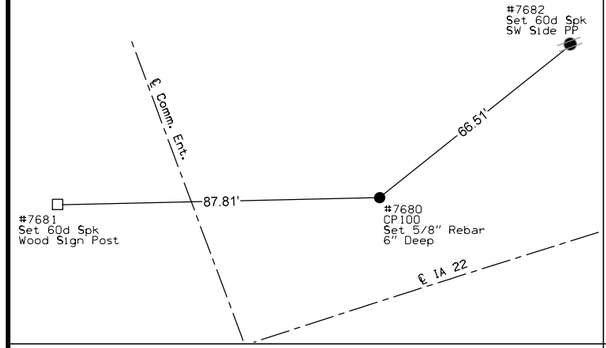
C.P. 293+41.84 RIGHT 42.25
C.P. 52, Set 5/8" Rebar 6" Deep
N=545993.556 E=2412804.229



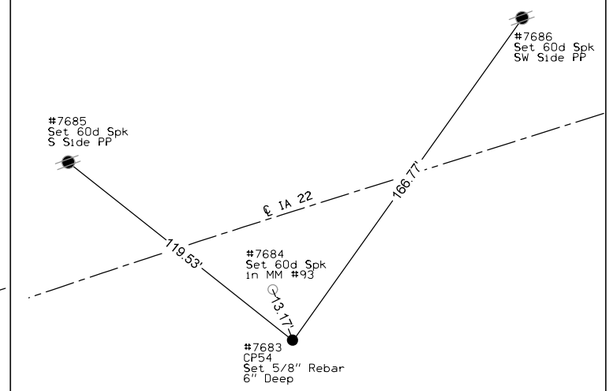
C.P. 293+55.34 LEFT 32.56
C.P. 53, Set 5/8" Rebar 6" Deep
N=546068.621 E=2412792.249



C.P. 296+50.59 LEFT 30.21
C.P. 100, Set 5/8" Rebar 6" Deep
N=546163.972 E=2413071.688



C.P. 305+01.05 RIGHT 51.89
C.P. 54, Set 5/8" Rebar 6" Deep
N=546361.165 E=2413902.393



Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER G.2

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ALIGNMENT COORDINATES

101-16
10-20-09

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)
3	ML022	283+07.48	545,691.63	2,411,814.02															
C1	ML022							299+63.86	546,238.98	2,413,377.35	302+81.04	546,343.79	2,413,676.71	305+98.18	546,440.27	2,413,978.86			
5	ML022	326+93.81	547,077.77	2,415,975.17															

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

Name	Location	Δ_{scs}	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ_c	T	L	R	E	
C1	ML022										1° 35′ 08.84″ RT	317.18′	634.32′	22,918.31′	2.19′	

Design No. 514
File No. 30687

(I)

LINWOOD STONE PRODUCTS CO, INC.
& LINWOOD MINING & MINERALS CORP.

APPROX. SEC. LINE

Two 96" X 70' Cast Iron Pipes (U.A.C.)

+86 Quarry Ent.

PERMANENT EASEMENT FOR EROSION CONTROL MEASURES

290+40 ℄60

291+10 ℄60

291+85 ℄50'±℄

293+20 ℄75'(Exist.Corner)

294+35 ℄140'

294+80 ℄135'

BUFFALO TWP.
T-77N R-2E
SEC. 24

TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE

+77 Prop. Type "B" Ent.

+01 Prop. Type "B" Ent.

POT Sta 283+07.48

285

290

295

St.S.

IA 22 (ML022)

BEGIN CONSTRUCTION
STA 287+57.00

27+55 ℄40'

TEMPORARY EASEMENT TO SHAPE

BEGIN PAVING
STA 291+30.00

+80 Prop. Type "B" Ent.

291+25 ℄36'±℄

291+39±℄ ℄40'

0 50 FEET

291+70 ℄50'

292+90 ℄50'

293+20 ℄59'

293+20 ℄63'

TEMPORARY EASEMENT TO SHAPE

DONALDSON CREEK

Sta. 293+65.8
30'x3.5' Conc. Arch Bridge
U.A. F 2.00 Ac. R - H
(REMOVE)

Sta 293+65.09
Build 100'-0 x 68'-0
Concrete Beam Bridge

294+00 ℄65'

294+00 ℄59'

294+90 ℄55'

DAKOTA MINNESOTA EASTERN RR

(2R)

DAKOTA, MINNESOTA & EASTERN R.R.

(I)

LINWOOD STONE PRODUCTS CO, INC.
& LINWOOD MINING & MINERALS CORP.

FLINT HILLS RESOURCES
PINE BEND, LLC

+86 Comm. Ent.

For Mainline Details
Refer to Sheet No. D.2

For Detour Details
Refer to Sheets No. F.1, F2 & F4

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: GETTINGS/DUMDEI/GOGERTY
ROW #: STPN-22-5(32)--2J-82
Plan Date: 1/15/13
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

C	ENGLISH	IOWA DOT	DESIGN TEAM Schoenrock\Dudley	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER H.1

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(1)

LINWOOD STONE PRODUCTS CO, INC.
& LINWOOD MINING & MINERALS CORP.

APPROX. SEC. LINE

BUFFALO TWP.
T-77N R-2E
SEC. 13

APPROX. SEC. LINE

115TH AVE

18"x 49' Conc. Pipe
(U.A.C.) +71.83
74.4' LT

300

+82.26
74.5' LT

St S

305

310

PI Sta 302+81.04

IA 22 (ML022)

APPROX. SEC. LINE

PT Sta 305+98.18

(2R) Two 4"x 20'
CPP Subdrains
(U.A.C.)

PC Sta 298+62.86

DAKOTA, MINNESOTA
& EASTERN R.R.

Sta 298+90.2
Rem. 85.1' R.C.P.
D.A. = 90 Ac. H
(U.A.C.)

299+35
℄65'

300+40
℄35'±PropR/W

+35.16
41.2' RT

299+90
℄35'±PropR/W

TEMPORARY EASEMENT
TO SHAPE

299+35
℄50'

Curve Data
Δ = 1° 35' 08.84" (RT)
T = 317.18
L = 634.32
R = 22,918.31
E = 2.19

+7 Comm. Cable
(U.A.C.)

BUFFALO TWP.
T-77N R-2E
SEC. 24

0 FEET 50

TA

FLINT HILLS RESOURCES
PINE BEND, LLC

TEXPAR ENERGY, LLC

For Mainline Details
Refer to Sheet No. D.3

For Detour Details
Refer to Sheets No. F2, F3 & F5

Right of Way Design Information

**THIS SHEET INCLUDED
FOR INFORMATION ONLY**

ROW Team: GETTINGS/DUMDEI/GOGERTY
ROW #: STPN-22-5(32)--2J-82
Plan Date: 1/15/13
Color Legend:

- **Property Lines**
- **Temporary Easement**
- **Permanent Acquisition**

C	ENGLISH	IOWA DOT	DESIGN TEAM Schoenrock\Dudley	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER H.2

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic will be maintained on IA 22 by staged construction with at least one lane open in each direction at all times.

Maintain accesss to Linwood Mine entrances (Sta. 290+76.50) at all times. The mine crossing traffic will be controlled by temporary traffic signals.

Refer to Staging Notes for Traffic Control Plan details.

108-26A
08-01-08

STAGING NOTES

2014 Construction Season
Stage I
Traffic Control:
1. Maintain traffic on IA 22 with two 12' EB lanes and one 12' WB lane.
2. Maintain access to entrances at all times.

Construction:
1. Construct detour pavement adjacent to the WB lanes of IA 22.
2. Construct entrances at Sta. 290+76.50 and Sta. 296+00.70.
3. Construct intake and temporary storm sewer pipe at Sta. 293+00.45.
4. Construct curb dropoffs and drainage flumes at Sta. 204+80 and Sta. 298+75.

Stage II
Traffic Control:
1. Two-lane, two-way traffic will be maintained with 11' lanes on the existing north lane and the adjacent detour pavement on IA 22.
2. Maintain access to entrances at all times.
3. Maintain mine traffic during construction of the crossing on mainline IA 22 at all times.

Construction:
1. Construct the proposed EB lanes and shoulder on IA 22.
2. Construct the Linwood Mine Crossing on EB lanes of IA 22.
3. Construct the EB steel beam guardrail.
4. Construct detour pavement on the EB shoulder, south of the proposed bridge.
5. Remove existing storm sewer.

Stage III
Traffic Control:
1. Two-lane, two-way traffic will be maintained with 11' lanes on the detour pavement and the newly constructed EB lanes and shoulder on IA 22.
2. Maintain access to entrances at all times.
3. Maintain mine traffic during construction of the crossing on mainline IA 22 at all times.

Construction:
1. Remove detour pavement adjacent to the WB lanes.
2. Construct the WB lanes on IA 22.
3. Construct the Linwood Mine Crossing on WB lanes of IA 22.
4. Construct the curb and gutter adjacent to the WB lanes (Sta. 287+60.0 to Sta. 290+52.0).
5. Construct the curb and gutter adjacent to the WB lanes (Sta. 298+15.0 to Sta. 300+41.5).
6. Construct WB steel beam guardrail.
7. Reconstruct the entrances at Sta. 290+76.50 and Sta. 296+00.70.
8. Remove existing storm sewer.
9. Construct proposed intakes and storm sewer pipes on north end of IA 22.

Stage IV
Traffic Control:
1. Maintain traffic on IA 22 with two 12' WB lanes and one 12' EB lane.
2. Maintain access to entrances at all times.

Construction:
1. Remove detour pavement along the EB lanes.
2. Construct curb and gutter along the EB lanes, south of the proposed bridge (Sta. 287+70.0 TO Sta. 290+52.0)

102-15
08-01-08

TABULATION OF SPECIAL EVENTS

Event	Location	Date
Buffalo Days	Buffalo, IA	July 4-6

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
BRFN-22-5(28)--39-82	BRIDGE REPLACEMENT - OTHER

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM Jia/Holst/Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER J.1

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

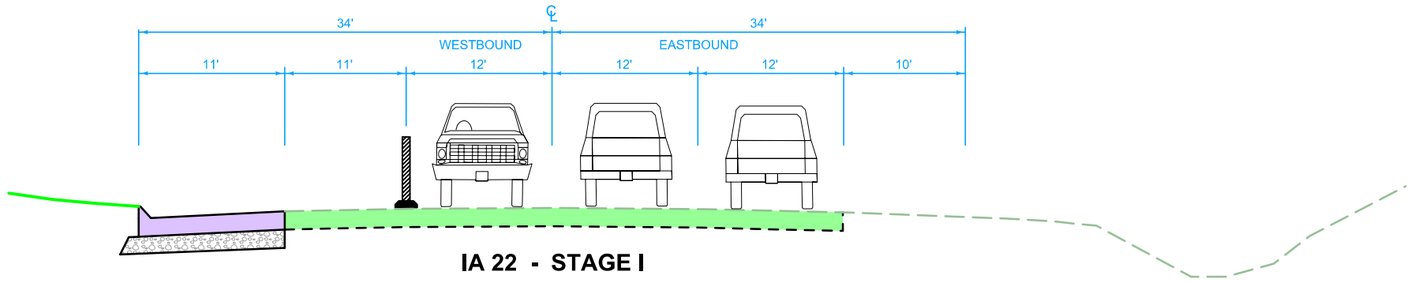
●	Channelizing Device	▬	Crash Cushion
×	Drum	○→	Traffic Signal
▫	Temporary Lane Separator		Flagger
◆	Tubular Marker	○-○●	Temporary Floodlighting
♦	Channelizer Marker	⊢	Traffic Sign
△	Concrete Barrier Marker	⊢	Type III Barricade
ς	Delineator	☀	Type A Warning Light
	Temporary Barrier Rail	←	Direction of Traffic
	Pavement Removal		Safety Closure

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

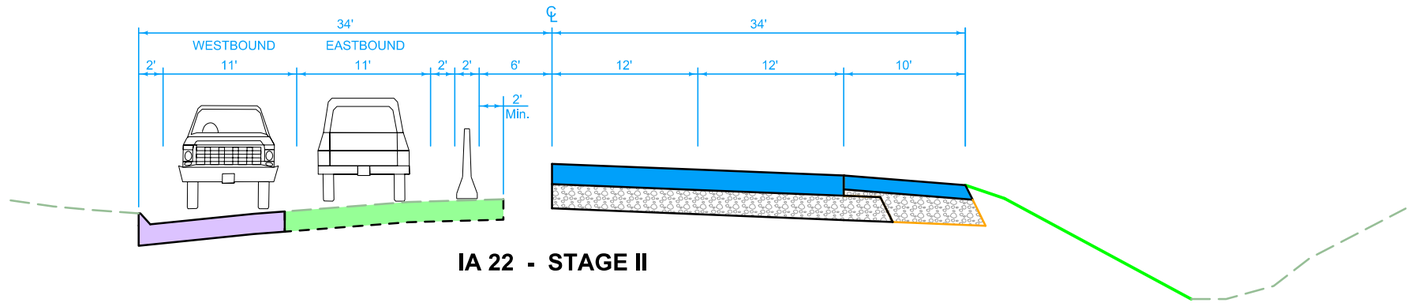
Design No. 514
File No. 30687

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

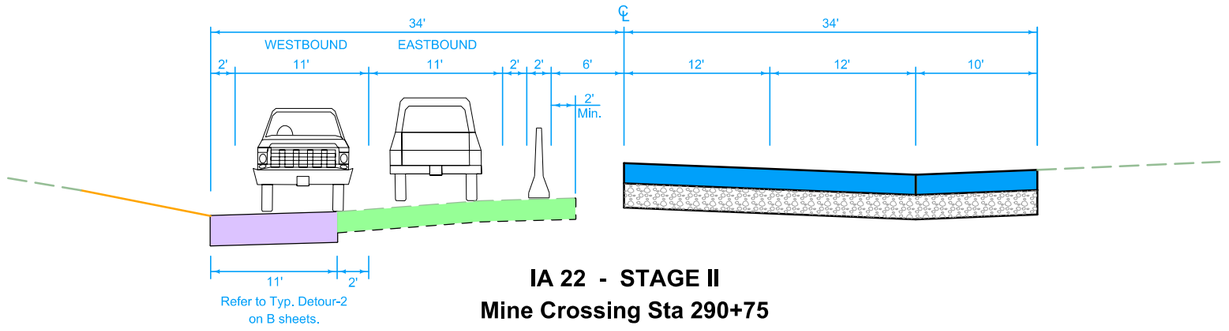
(COVERS SHEET SERIES J)



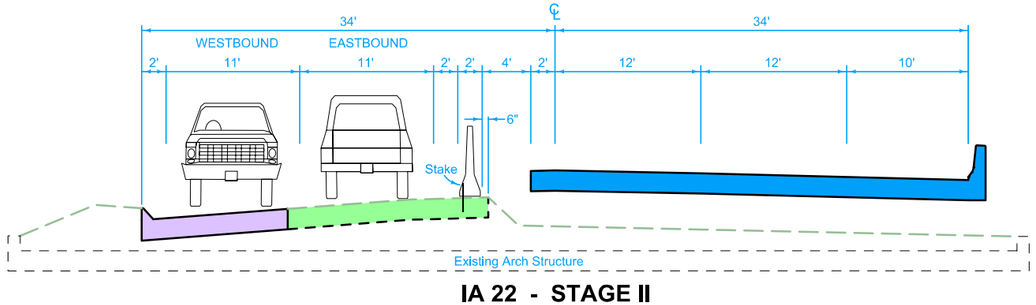
IA 22 - STAGE I



IA 22 - STAGE II



IA 22 - STAGE II
Mine Crossing Sta 290+75



IA 22 - STAGE II
Bridge Sta 293+68

Design No. 514
File No. 30687

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER J.3

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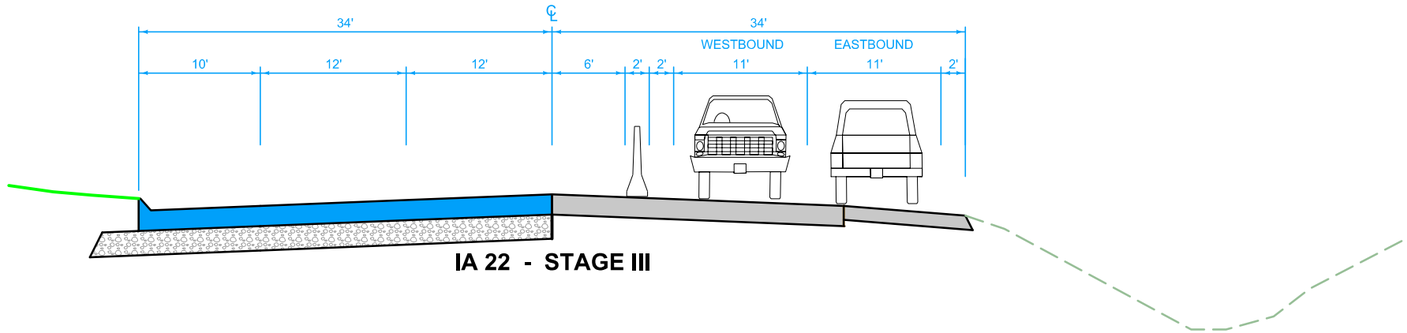
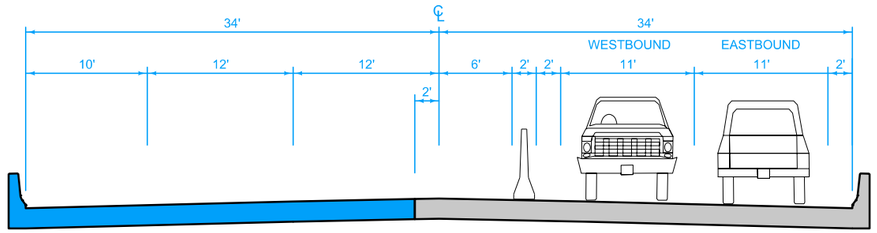
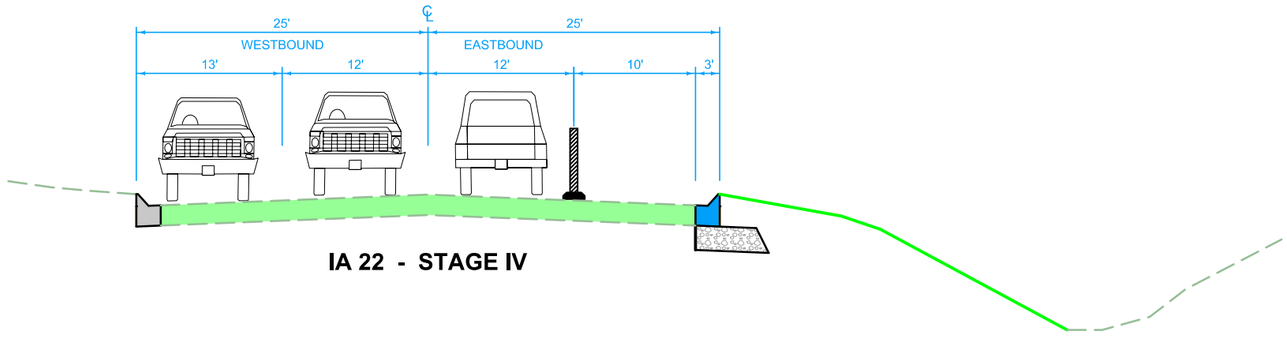


IA 22 - STAGE III



IA 22 - STAGE III
Bridge Sta 293+68



IA 22 - STAGE IV

Design No. 514
File No. 30687

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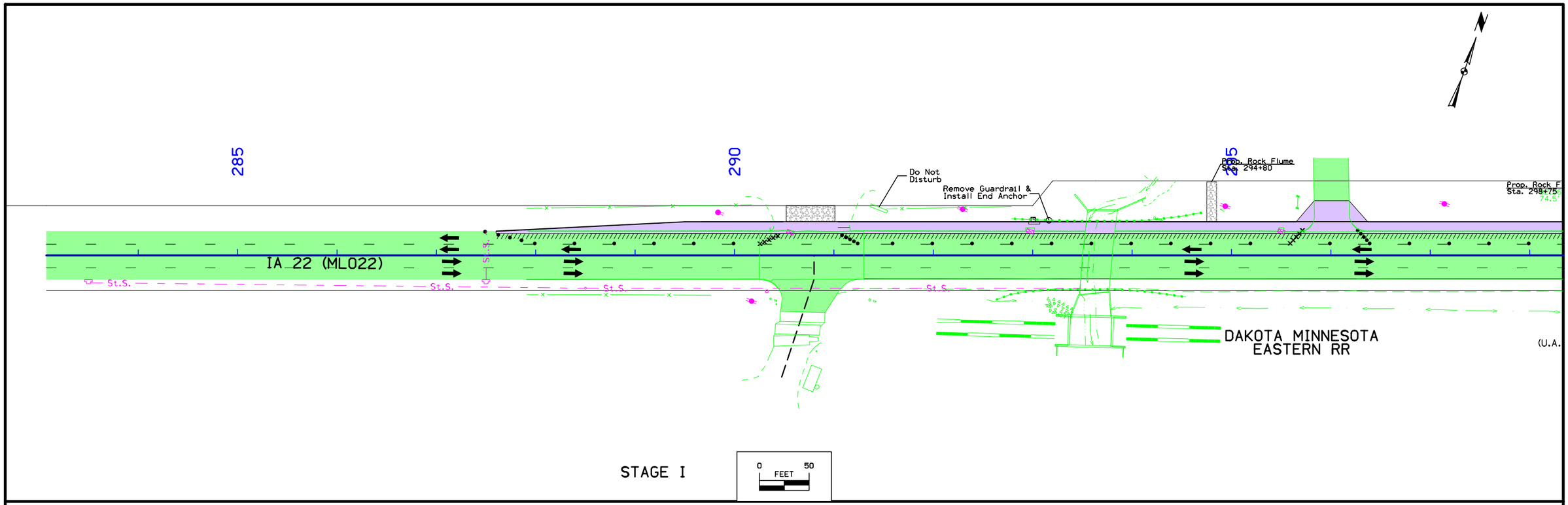
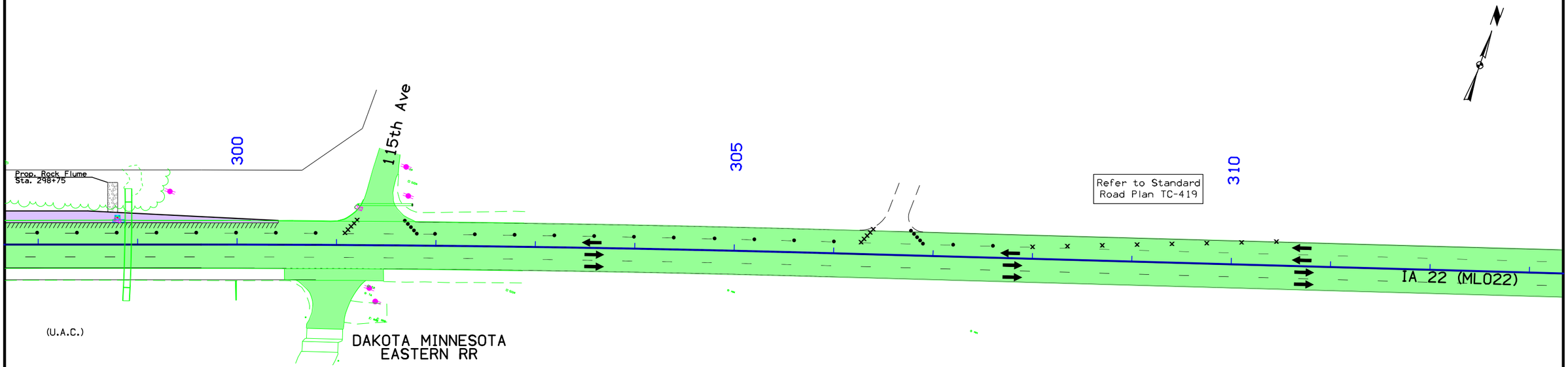


STAGE I

0 FEET 50



STAGE I

0 FEET 50

Design No. 514
File No. 30687

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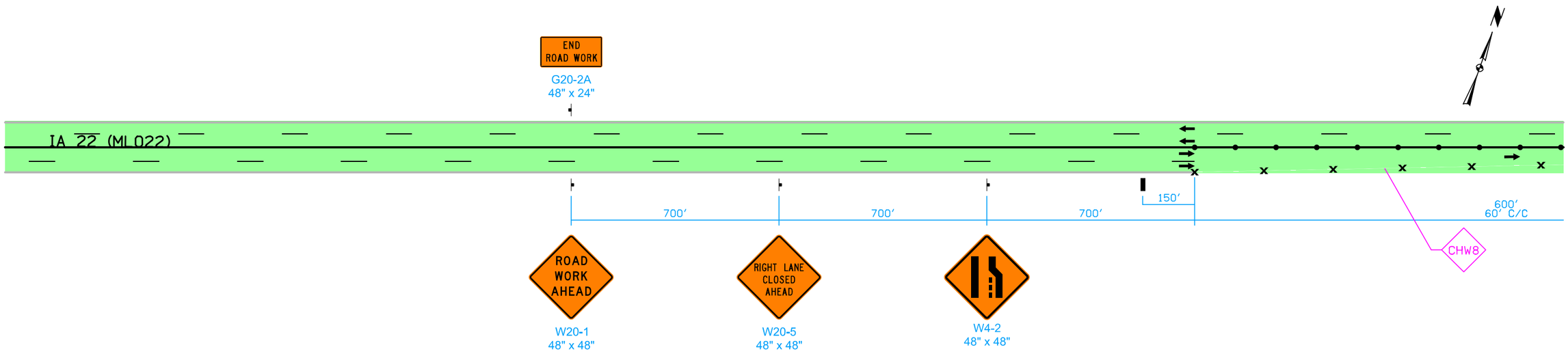

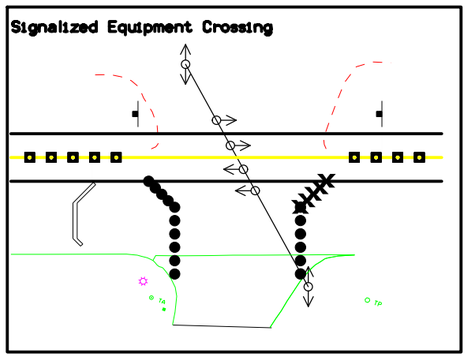

SIGNAL NOTES:
No detection area required.

Set signal timing as follows: For traffic from all directions, set the yellow indication at approximately 5 seconds and the all-red clearance interval at approximately 2 seconds. Set the minimum green interval on the main road at 20 seconds. Set the green interval for haul road traffic at 12 seconds but may be extended up to a maximum of 30 seconds.

Locate the Stop bars 70 feet in advance of each lane's nearest signal head.

Required only if haul road is used during nighttime hours.

When the equipment crossing is not in use, place Type III Barricades as shown, and cover SIGNAL AHEAD and STOP HERE ON RED signs.

Temporary Lane Separator System
Traffic Signal
Traffic Sign
Drum①
42" Channelizer①
Arrow Board
Direction of Traffic

① Spacing equals 40' C/C except where noted

STAGE II
(Sheet 1 of 2)

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER J.6

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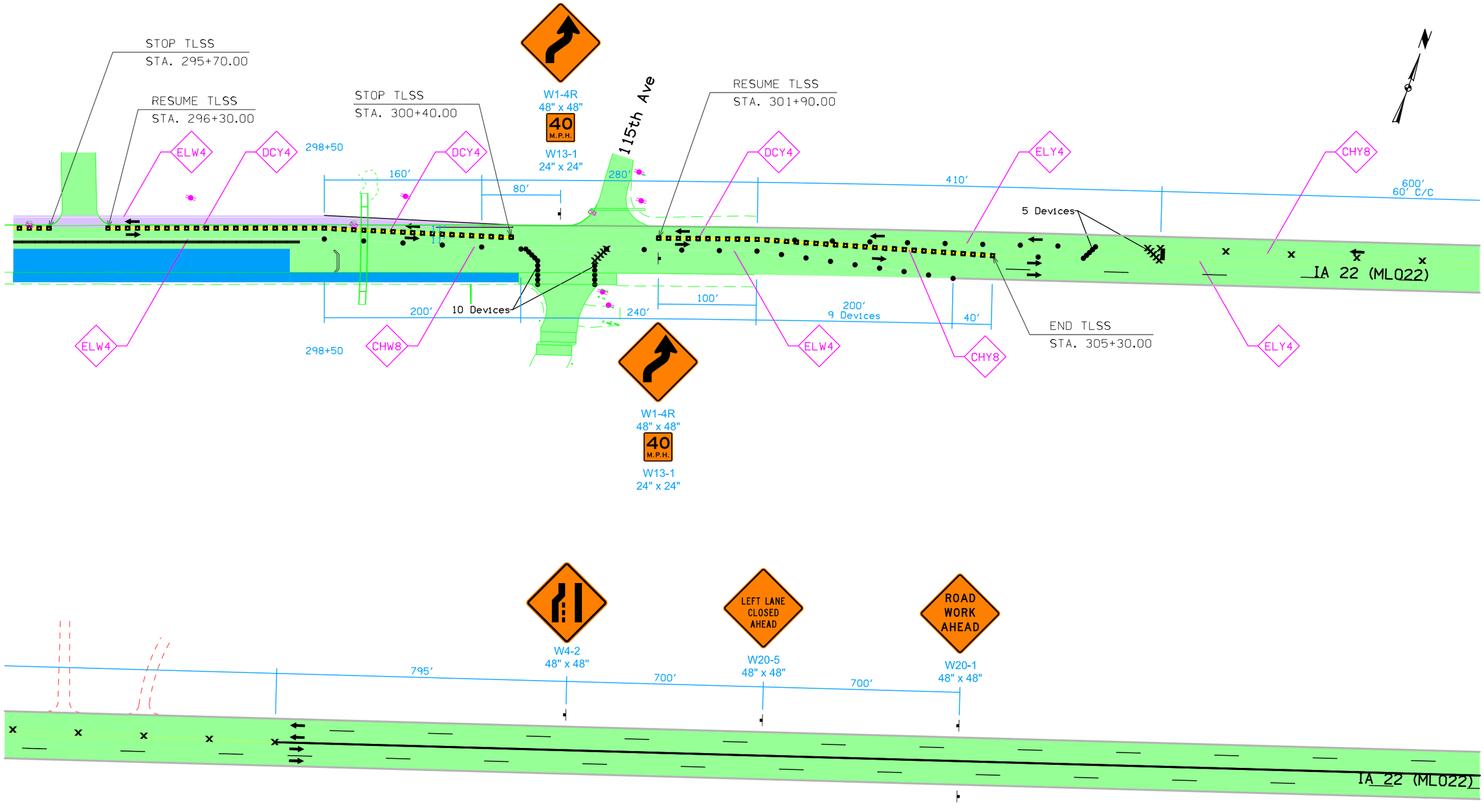

Temporary Lane Separator System
Traffic Sign
Drum①
42" Channelizer①
Arrow Board
Direction of Traffic

① Spacing equals 40′ C/C except where noted

STAGE II
(Sheet 2 of 2)

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER J.7

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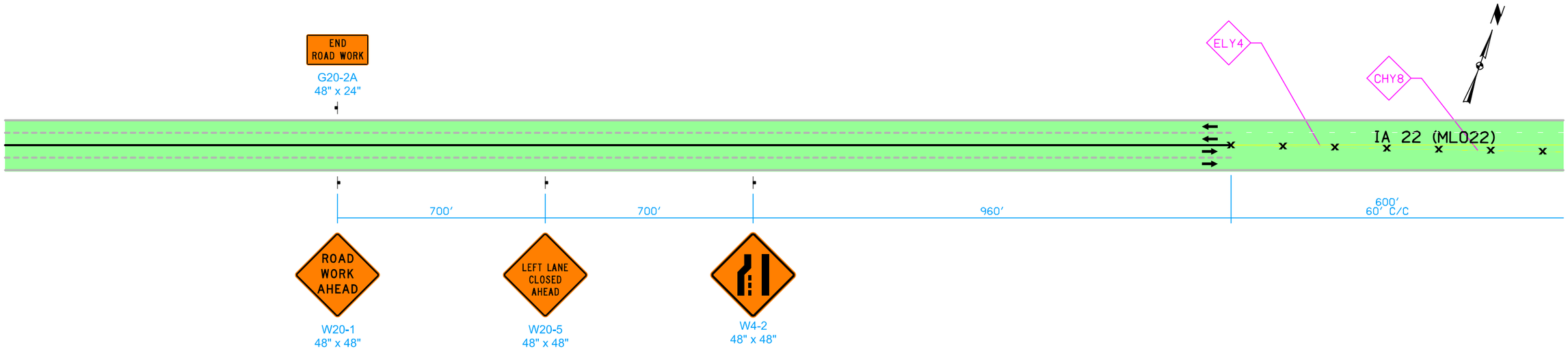

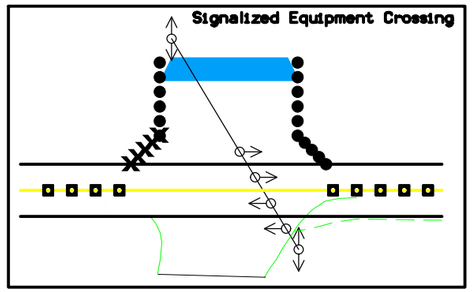

SIGNAL NOTES:
No detection area required.

Set signal timing as follows: For traffic from all directions, set the yellow indication at approximately 5 seconds and the all-red clearance interval at approximately 2 seconds. Set the minimum green interval on the main road at 20 seconds. Set the green interval for haul road traffic at 12 seconds but may be extended up to a maximum of 30 seconds.

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Required only if haul road is used during nighttime hours.

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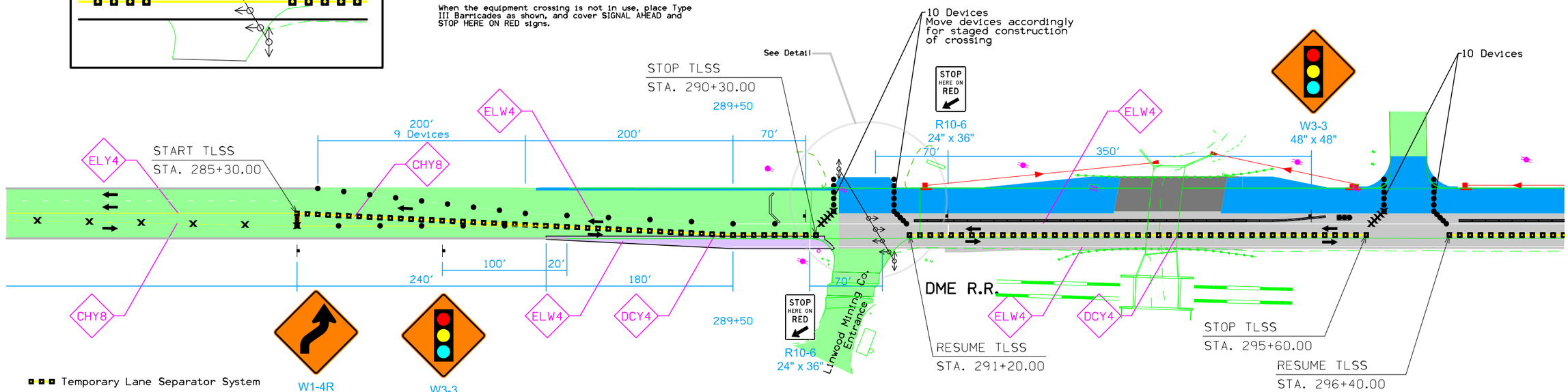

Temporary Lane Separator System
Traffic Signal
Traffic Sign
Drum①
42″ Channelizer①
Arrow Board
Direction of Traffic

① Spacing equals 40′ C/C except where noted

STAGE III
(Sheet 1 of 2)

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER J.8

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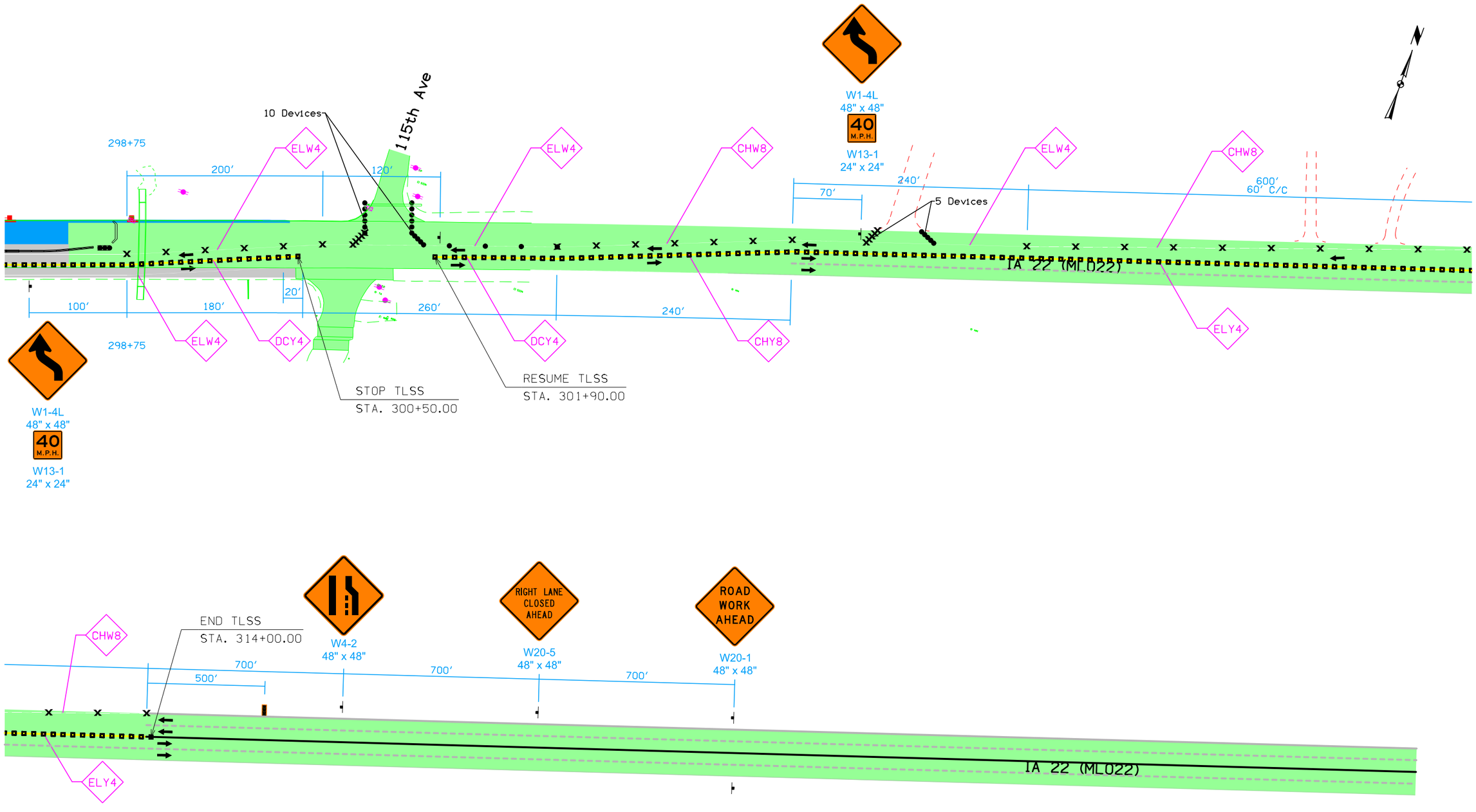

STAGE III
(Sheet 2 of 2)

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER J.9

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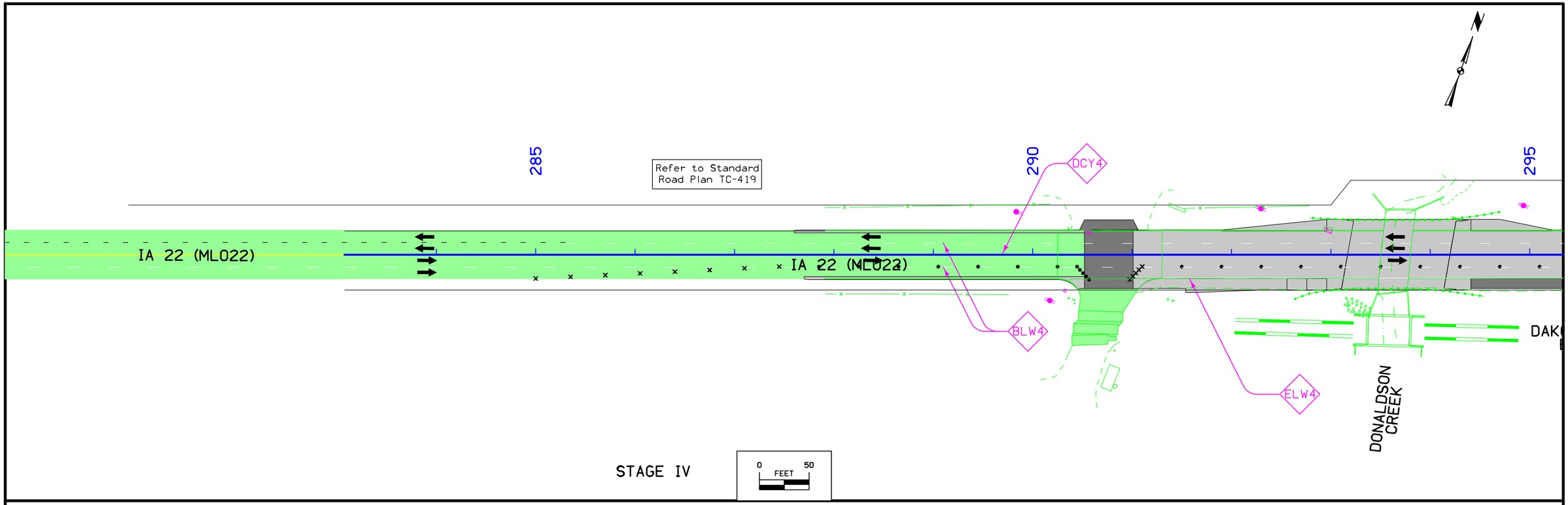
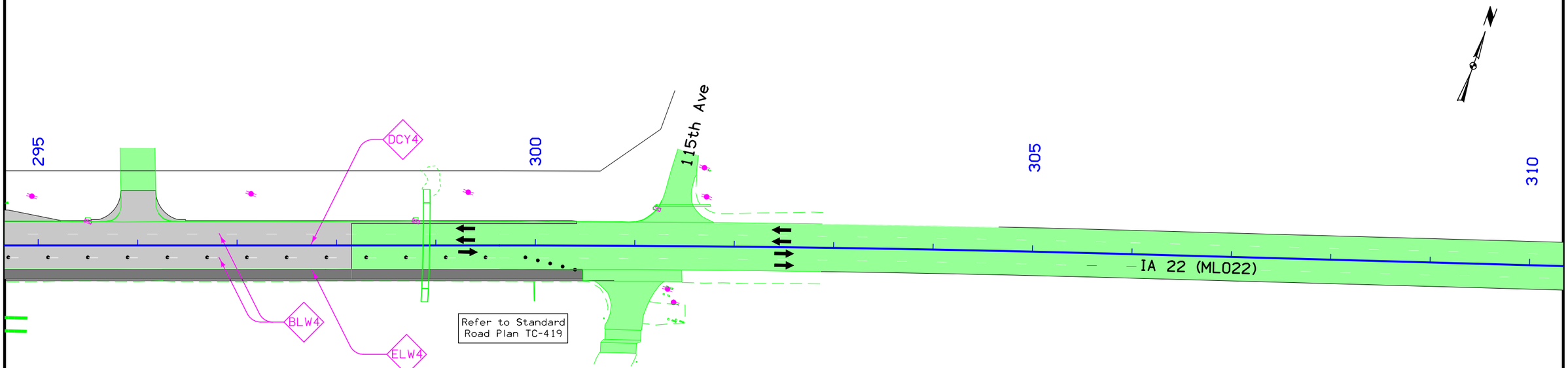


STAGE IV

0 FEET 50



STAGE IV

0 FEET 50

Design No. 514
File No. 30687

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STORM SEWER

* Bid Item
** For SW-545

INTAKES AND UTILITY ACCESSES

No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Extension Length** FT	Notes
1	297+55.00; 25.00' LT	SW-508	570.76	565.25		
2	296+55.07; 25.00' LT	SW-508	570.51	563.04		
3	295+48.50; 25.00' LT	SW-509	570.81	560.69		
3	295+48.50; 25.00' LT	SW-509	570.81	560.69		
4	294+10.00; 58.15' LT	24" RF-3				
5A	290+53.55; 24.84' LT	RF-2,'C-1'				
5	291+35.00; 25.00' LT	SW-508	569.46	560.25		
6	293+00.45; 34.00' LT	SW-508	568.98	560.13		(3)
7	293+60.00; 49.70' LT	24" RF-3				
8	298+79.77; 25.00' LT	SW-508	571.09	564.31		
9	291+35.00; 33.00' RT	SW-401 48"	569.13	559.83		(1)
10	293+23.47; 29.62' RT	24" RF-3				(2)
E1	298+86.40; 27.00' RT	SW-211				

Totals:	
SW-508	5
SW-509	1
48" SW-401	1
24" RF-3 Aprons	3
SW-211	1

(1) Retrofit the cut existing pipe to Manhole Intake #9 with SRP RF-2, Type 'C-2' adaptor.
(2) Coordinate storm sewer construction with the construction of the abutment piles.
(3) Temporary intake to be used in Stages 1-2. Remove during Stage 3.
(4) Use RF-14 connected pipe joints.
(5) Adjust the Inlet Elevation to provide a minimum of a 0.3' drop from the existing pipe flow line that outlets into Manhole #9.

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 6 ft length is added to Design Length to account for estimated length to center of structures.

Line Number	Intake/ Utility Access No. From	To	Class 'D'	Pipe Diameter IN	Bid* Length FT	Design Length FT	Slope %	Flow Lines Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
P-1	1	2	2000	24	101.9	95.9	2	565.76	563.84			
P-2	2	3	2000	24	106.6	100.6	2	563.54	561.53			
P-3	3	4	2000	24	135	132	3.1	561.23	557.18			
P-3	3	4	2000	24	135	132	3.1	561.23	557.18			
P-5A	5A	5	2000	15	82.5	79.5	1.5	562.67	561.48			Use RF-2, Type 'C-1' pipe connection
P-5	5	7	2000	24	221	218	3	560.75	554.19			(1) (4); Stage 3 Construction
T-1	6	Exist	2000	15	14	8	1.5	560.63	560.51			(1); Stage 1 Construction
P-8	8	Exist	2000	15	7	4	0.4	564.81	564.8			(1) (4)
Exist	Exist	9	Exist	Exist			Exist	Exist	Exist			(1)
P-9	9	10	3000	24	183.4	180.4	0.6	560.33	559.21			(2) (4) (5)

Totals:		
15"	2000D	103.5
24"	2000D	564.5
24"	3000D	183.4

SURVEY SYMBOLS

- FW Wire Fence
- PR Electic Riser Pole
- LUM Luminaire
- TA Tower Anchor
- RRS Railroad Signal
- PPA Power Pole Co. 1
- GDL Guard Rail Steel
- SI Sign
- OUT Tile Outlet
- BB Billboard
- SL Speed Limit Sign
- MM Mile Marker Post
- TPD Telephone Pedestal
- RRB Railroad Signal Box
- TIL Tile Line
- DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- EW Edge of Water
- BNK Stream Bank
- RIP Rip-Rap
- RR Centerline of Railroad Tracks
- TLA Underground Telephone Line Co. 1
- ELB Underground Electric Line Co. 2
- WLA Underground Water Line Co. 1
- GHA Underground High Pres Gas Co 1
- IN Storm Sewer Intake
- RET Retaining Walls
- TLNR Tree Line Right
- TLNL Tree Line Left
- STA Storm Sewer Line Co. 1

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Topographic Features, Utilities, and Labels
Black	(17)	Proposed Storm Sewer Details, Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	Design Color No.	
Gray, Light	(48)	Proposed Pavement Shading

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Ground Line Profile and Existing Utilities Information
Black	(17)	Proposed Pipes and Intakes

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Plug and Abandon Existing Pipe or Structure
- Removal of Existing Pipe or Structure
- Previously Constructed Pipe or Structure
- Direction of Pipe Flow

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Existing Ground
- Proposed Ground
- Previously Constructed Pipe or Structure
- Proposed Pipe or Structure

- Reference Point
- Survey Line
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- A/C Access Control

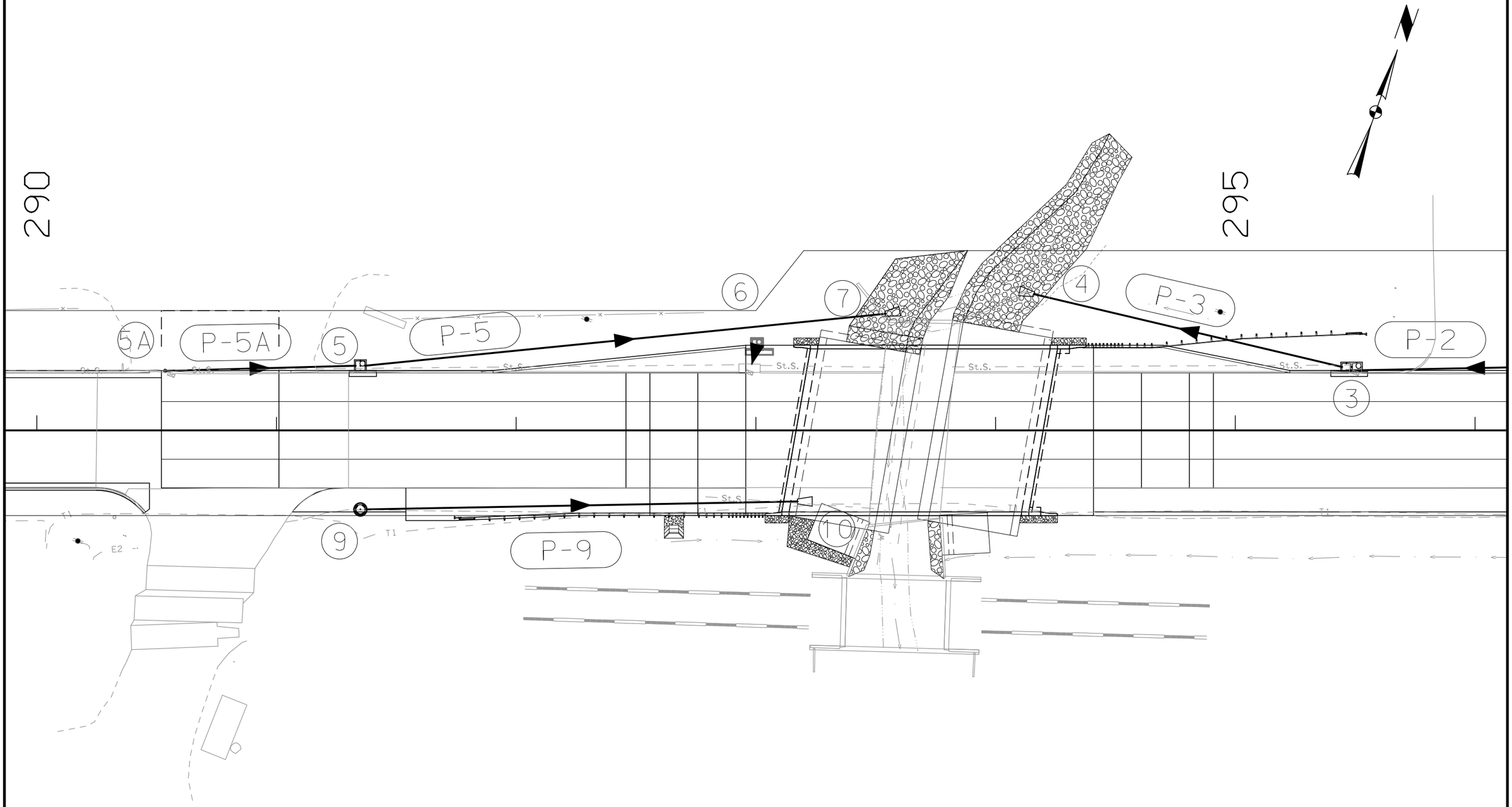
Design No. 514
File No. 30687

STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES M)

290

295



Design No. 514
File No. 30687

0 FEET 20

Storm Sewer Design

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER M.3

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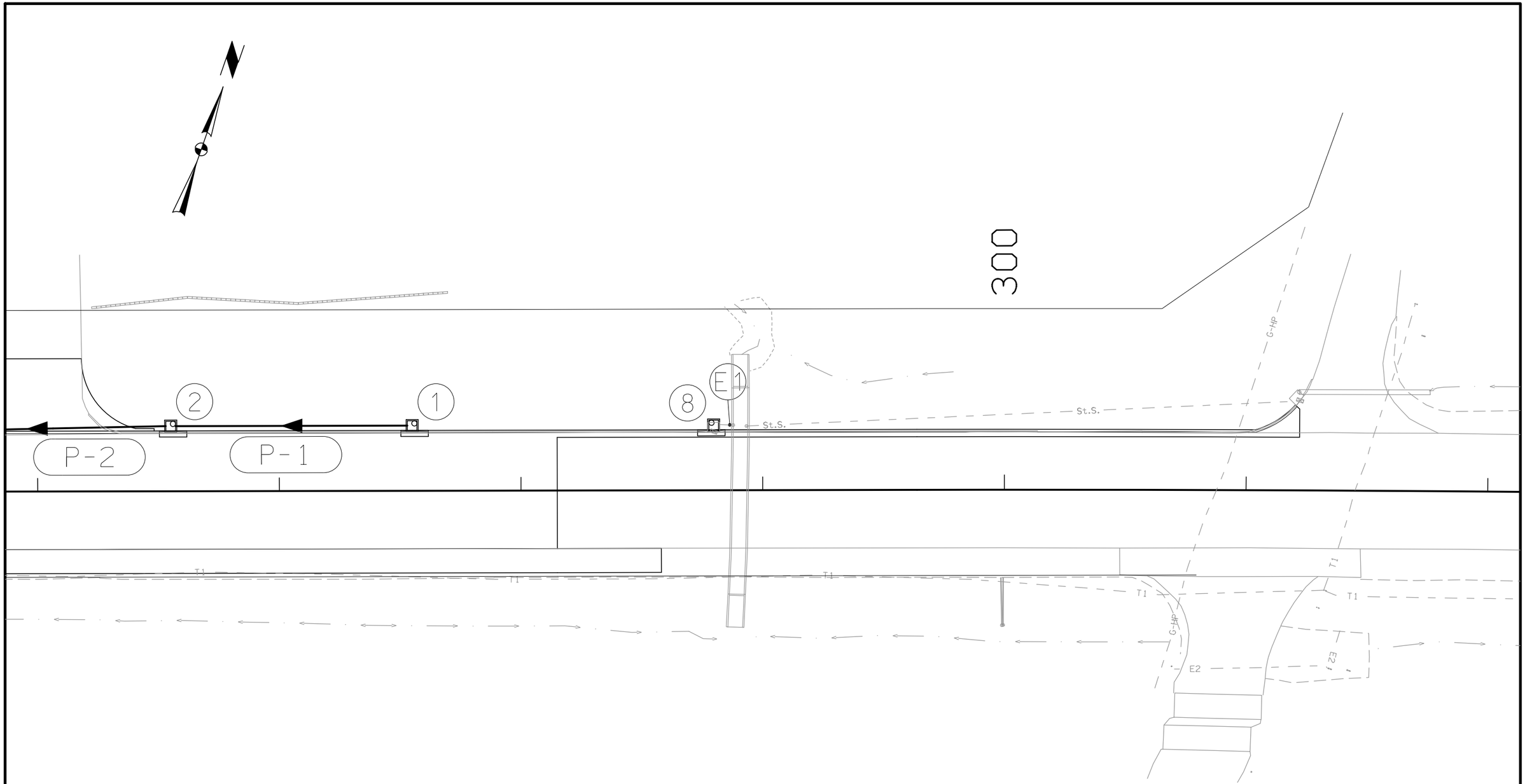

Design No. 514
File No. 30687

0 FEET 20

Storm Sewer Design

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER M.4

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Remove St.S Pipe

Plug & Abandon St.S Pipe

290

295

Remove Intake

Remove Intake

Remove Intake

St.S.

T1

E2

Design No. 514
File No. 30687

0 FEET 20

Storm Sewer Removals

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER M.5

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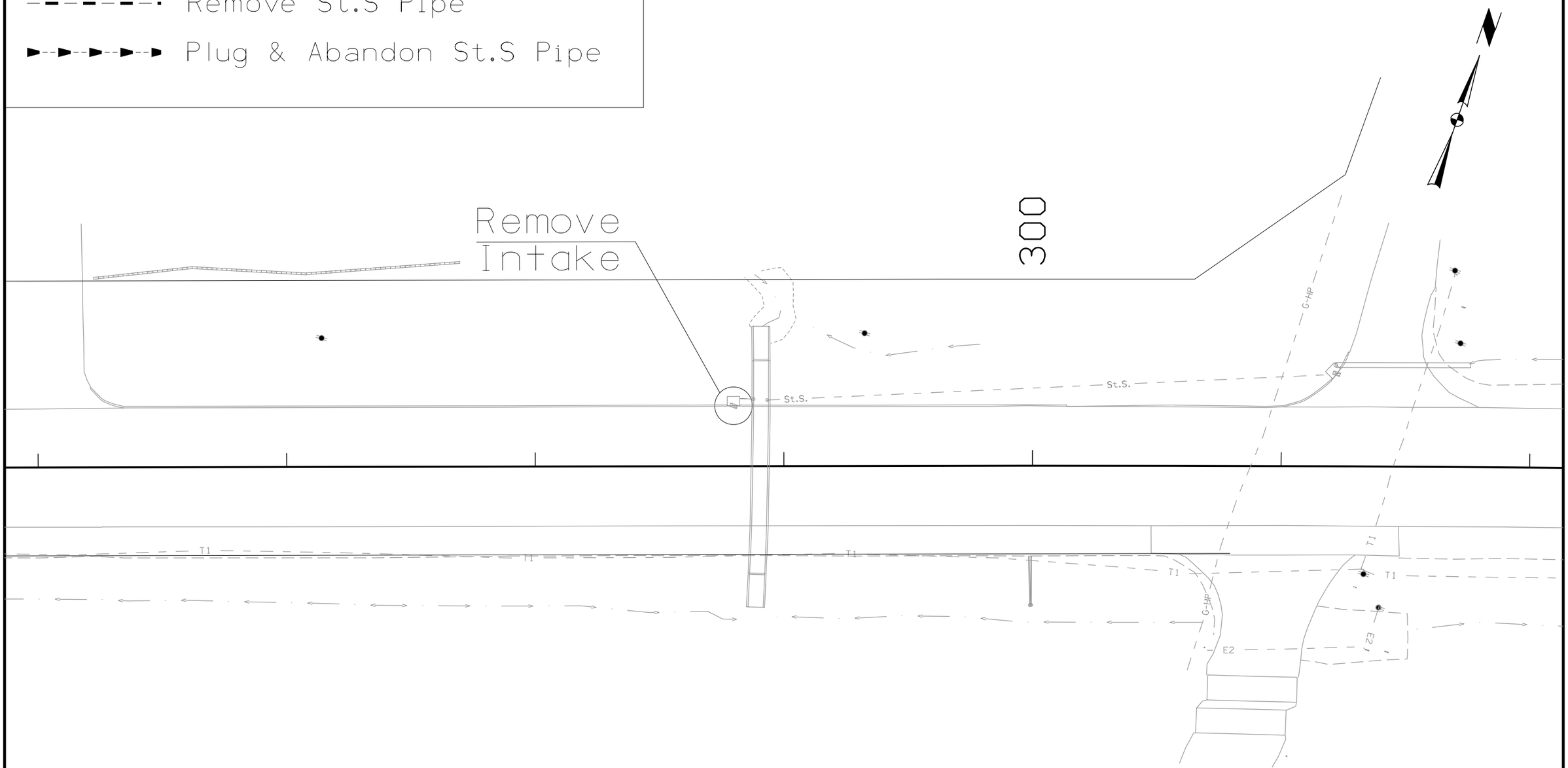
Remove St.S Pipe

Plug & Abandon St.S Pipe



Design No. 514
File No. 30687

0 FEET 20

Storm Sewer Removals

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER M.6

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Intake 1
SW-508
297+55.00; 25.00' Lt.
FG: 570.76
BW: 565.26

Intake 2
SW-509
296+55.07; 25.00' Lt.
FG: 570.51
BW: 563.04

Intake 3
SW-508
295+48.50; 25.00' Lt.
FG: 570.81
BW: 560.69

573
572
571
570
569
568
567
566
565
564
563
562
561
560
559
558

FL 565.76

FL 563.84

FL 563.54

FL 561.53

FL 561.23

P-1
24" 2000D
95.9 ft.
2.0%

P-2
24" 2000D
100.6 ft.
2.0%

P-3
24" 2000D
132.0 ft.
3.1%

Design No. 514
File No. 30687

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.

STORM SEWER PROFILE DETAILS

PIPES: P-1, P-2, and P-3

SCALE: NOT TO SCALE

571
570
569
568
567
566
565
564
563
562
561
560
559
558
557
556

Outlet 4
24″ RF-3
294+10.00; 58.15′ Lt.

P-3
24″ 2000D
132.0 ft.
3.1%

FL 557.18

Design No. 514
File No. 30687

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.

STORM SEWER PROFILE DETAILS

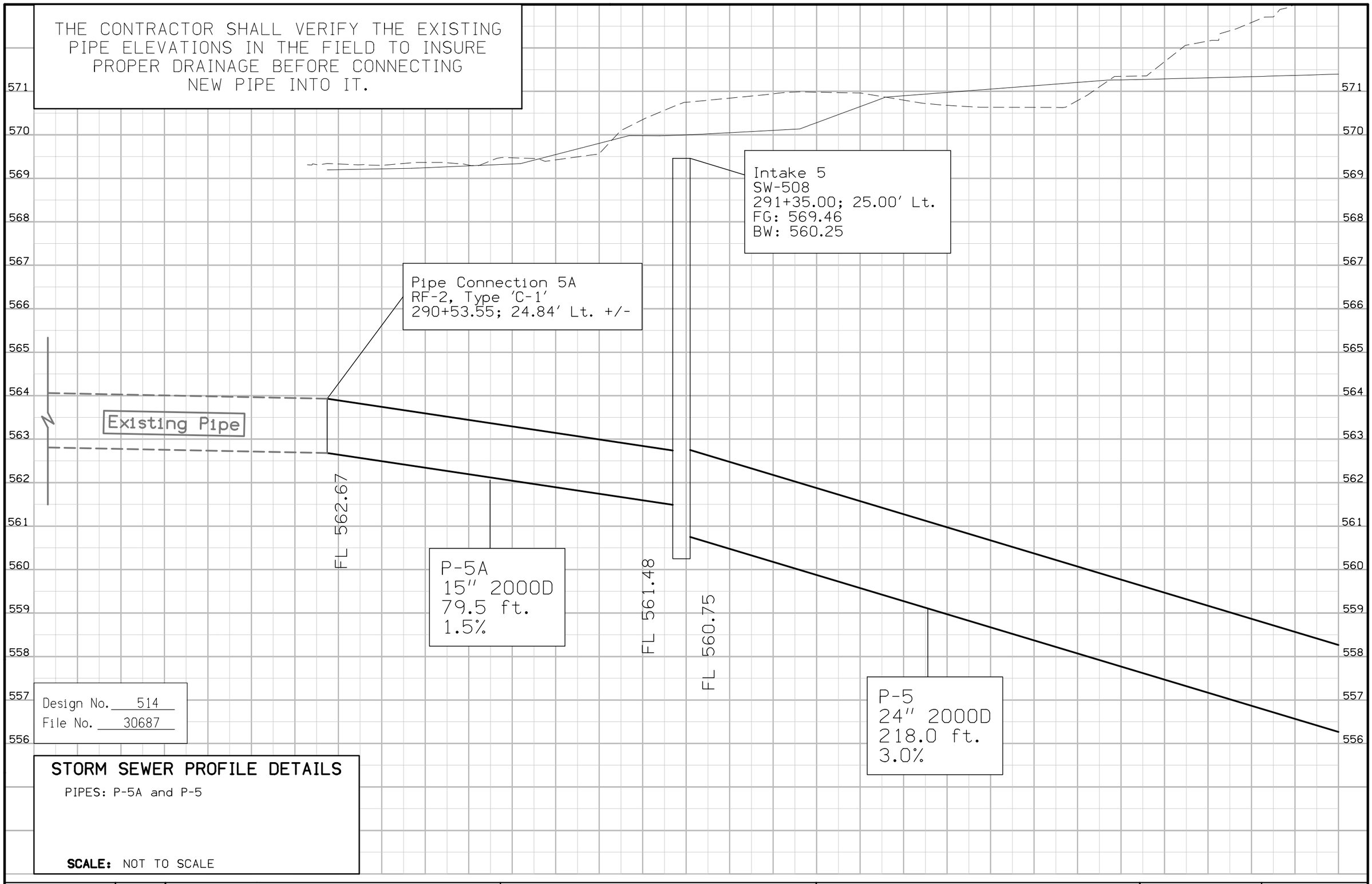
PIPES: P-3

SCALE: NOT TO SCALE

ENGLISH	IOWA DOT	DESIGN TEAM **J1a\Holst\Skogerboe**	**SCOTT** COUNTY	PROJECT NUMBER **BRFN-022-5(29)--39-82**	SHEET NUMBER **M.8**

4:00:58 PM 11/5/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029M03.sht

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.



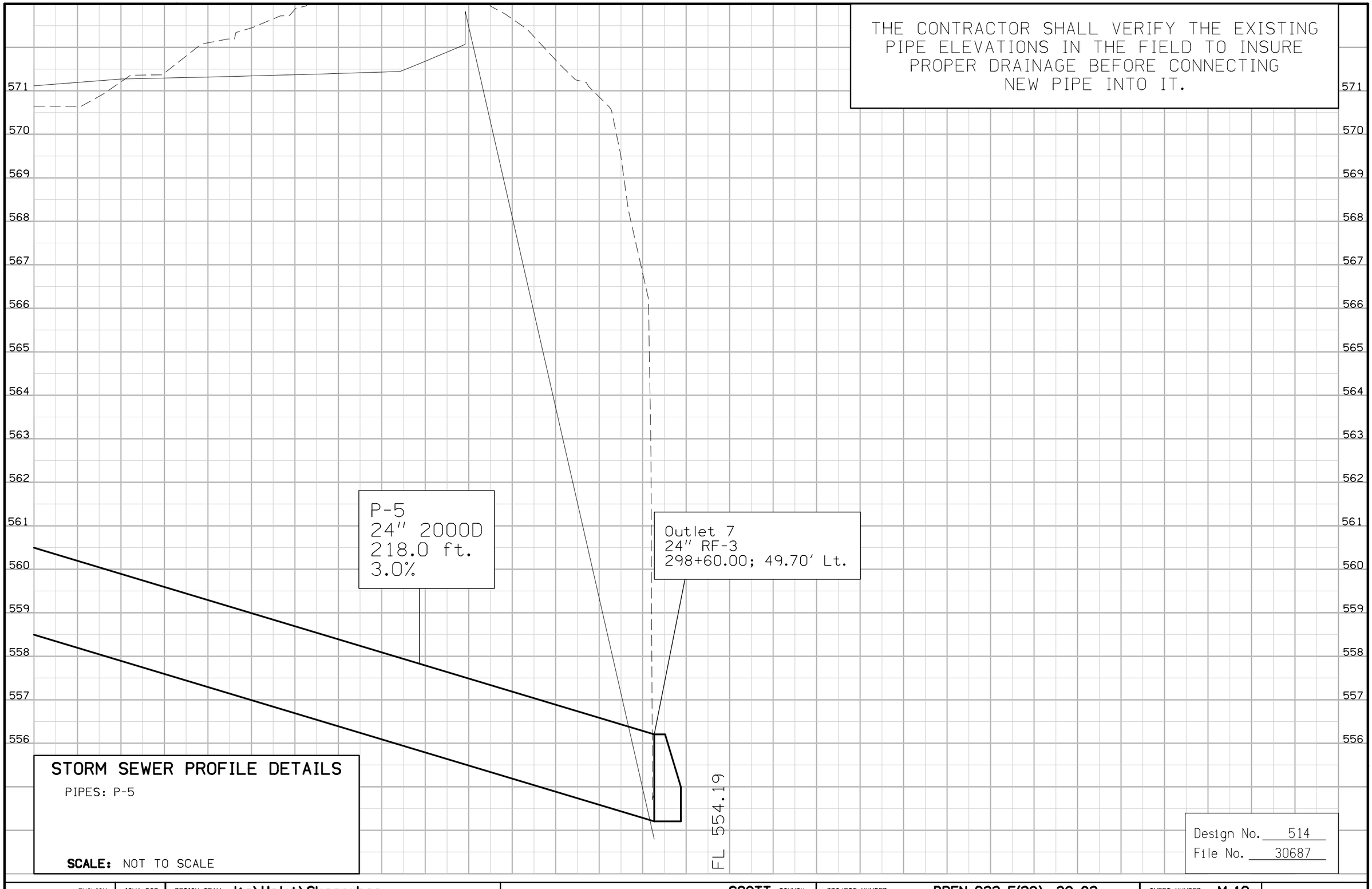
Design No. 514
File No. 30687

STORM SEWER PROFILE DETAILS

PIPES: P-5A and P-5

SCALE: NOT TO SCALE

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.



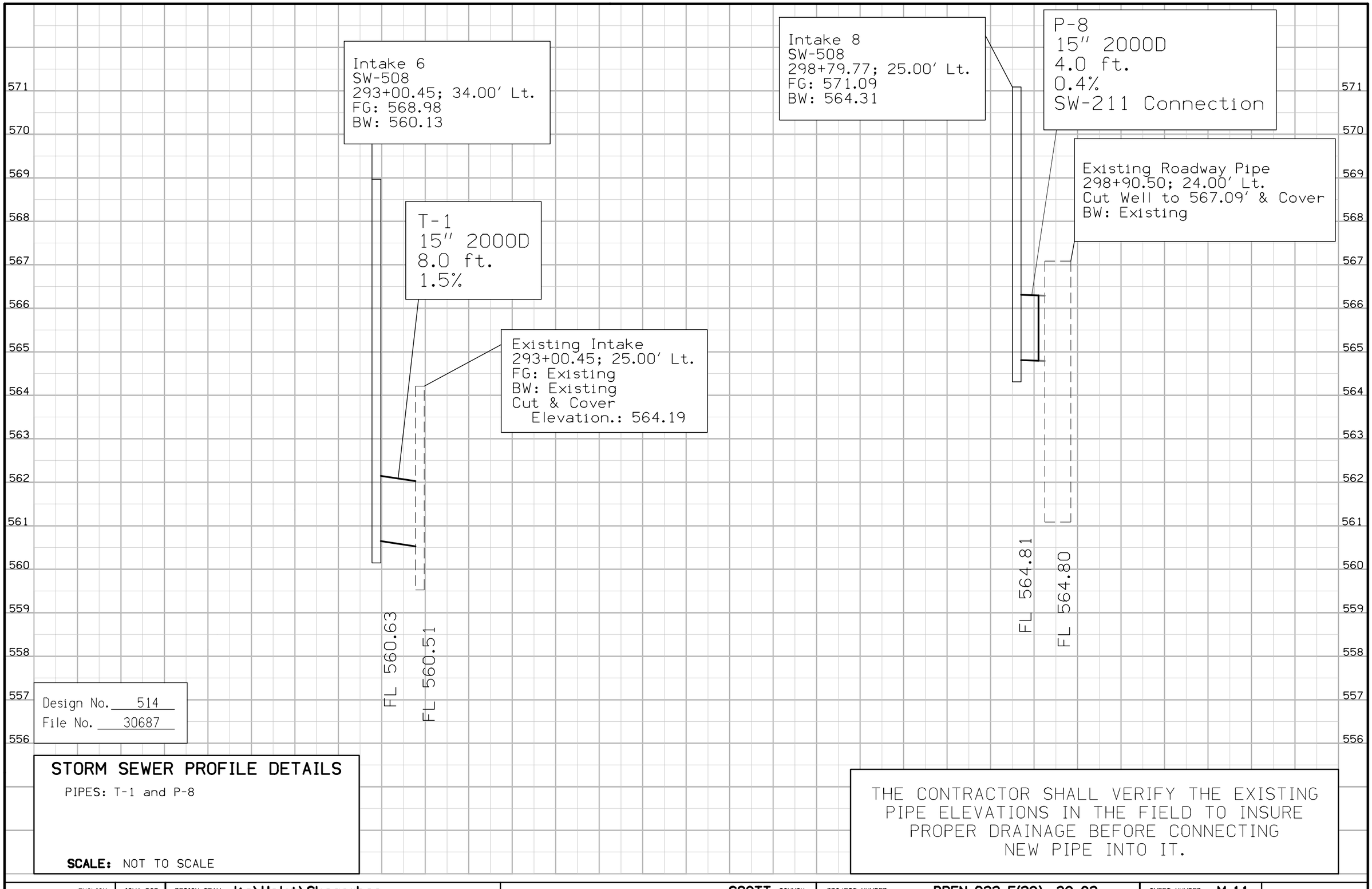
STORM SEWER PROFILE DETAILS

PIPES: P-5

SCALE: NOT TO SCALE

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER M.10



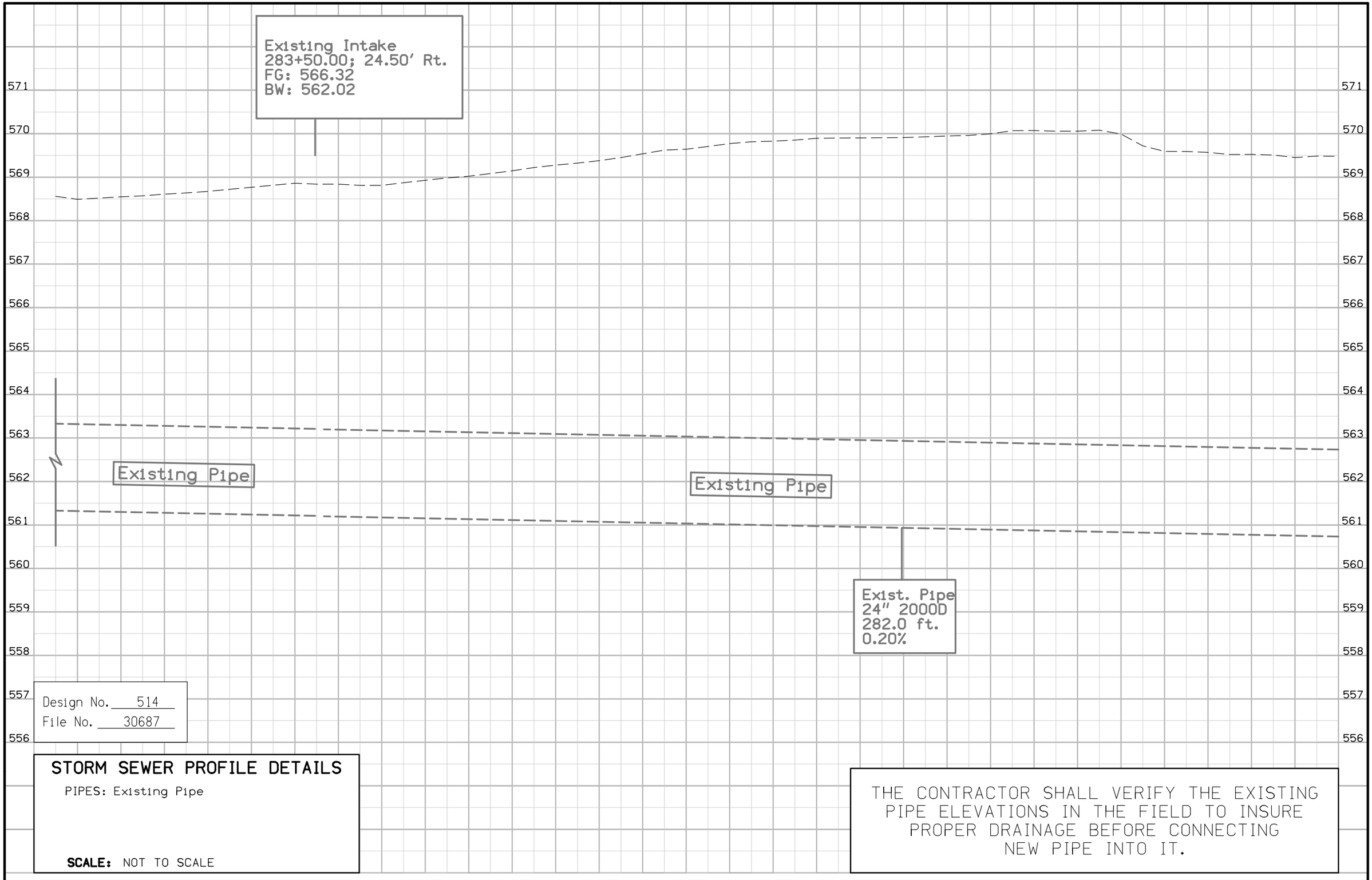
Design No. 514
File No. 30687

STORM SEWER PROFILE DETAILS

PIPES: T-1 and P-8

SCALE: NOT TO SCALE

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.



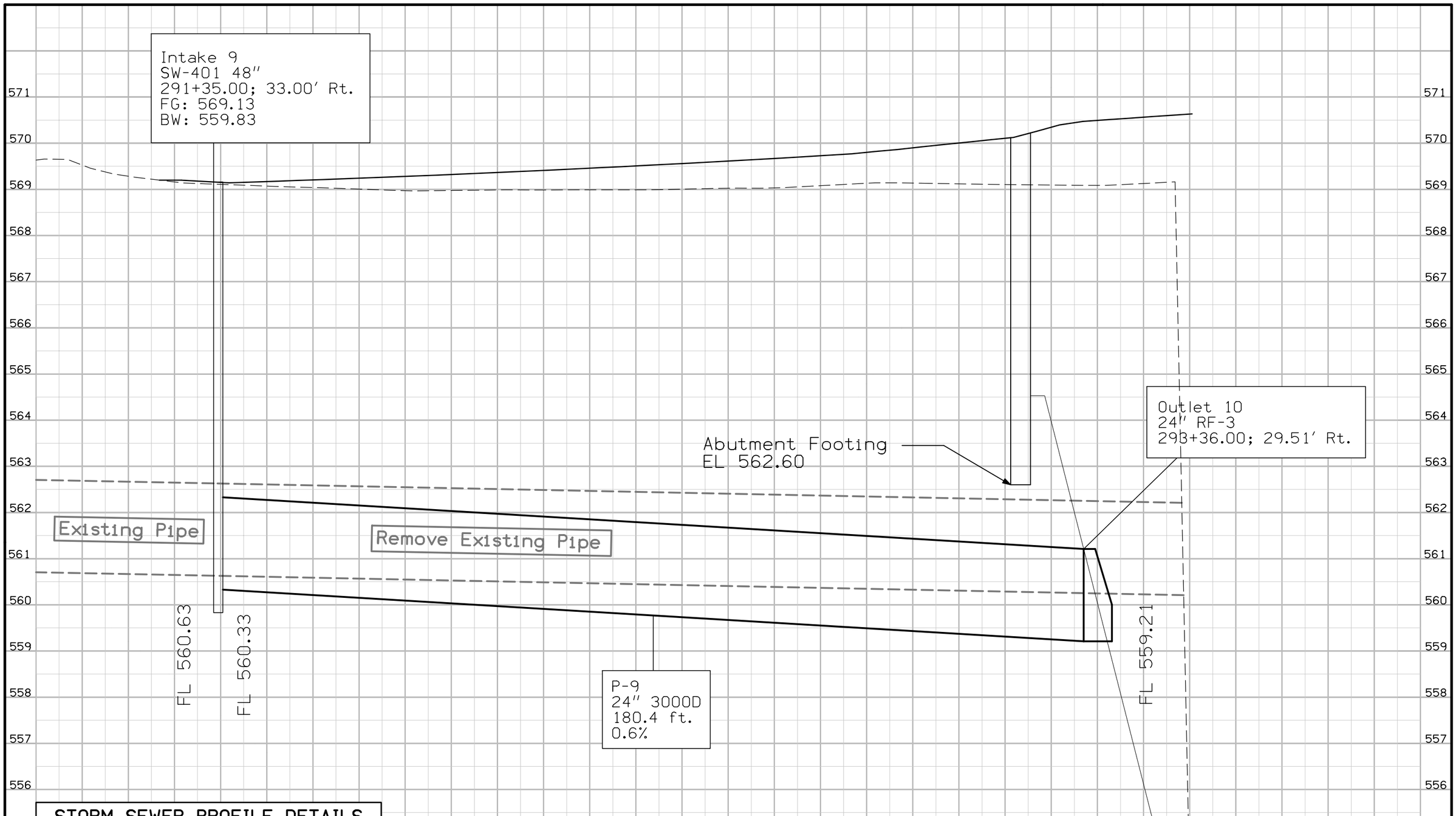
Design No. 514
File No. 30687

STORM SEWER PROFILE DETAILS

PIPES: Existing Pipe

SCALE: NOT TO SCALE

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.



STORM SEWER PROFILE DETAILS

PIPES: Existnig Pipe and P-9

SCALE: NOT TO SCALE

Design No. 514
File No. 30687

THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE ELEVATIONS IN THE FIELD TO INSURE PROPER DRAINAGE BEFORE CONNECTING NEW PIPE INTO IT.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Refer to Standard Plan EW-101 and RL-1B.

STATION	TOTAL CUT	CLASS 10 UNSUIT CUT	ADJUSTED CLASS 10 TOTAL	TOTAL FILL	CLASS 10 SUITABLE + 0% SHRINK	TOTAL FILL WITH SHRINK		APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT				
Stage 1													
288+75.00	5	5	5	1	1	1		0	0				
289+00.00	12	12	12	2	2	2		0	0				
289+25.00	18	18	18	2	2	2		0	0				
289+50.00	24	24	24	2	2	2		0	0				
289+75.00	28	28	28	2	2	2		0	0				
290+00.00	30	30	30	2	2	2		0	0				
290+25.00	29	29	29	2	2	2		0	0				
290+50.00	25	25	25	1	1	1		0	0				
290+75.00	21	21	21					0	0				
291+00.00	19	19	19					0	0				
291+25.00	19	19	19	1	1	1		0	0				
291+50.00	23	23	23	2	2	2		0	0				
291+75.00	27	27	27	2	2	2		0	0				
292+00.00	26	26	26	2	2	2		0	0				
292+25.00	28	28	28	2	2	2		0	0				
292+50.00	34	34	34	2	2	2		0	0				
292+75.00	39	39	39	2	2	2		0	0				
293+00.00	40	40	40	2	2	2		0	0				
293+25.00	37	37	37	2	2	2		0	0				
293+50.00	31	31	31	2	2	2		0	0				
294+00.00	54	54	54	4	4	4		0	0				
294+25.00	26	26	26	1	1	1		0	0				
294+50.00	25	25	25	1	1	1		0	0				
294+75.00	24	24	24	2	2	2		0	0				
295+00.00	23	23	23	2	2	2		0	0				
295+25.00	23	23	23	2	2	2		0	0				
295+50.00	25	25	25	2	2	2		0	0				
295+75.00	33	33	33	1	1	1		0	0				
296+00.00	24	24	24					0	0				
296+25.00	21	21	21					0	0				
296+50.00	30	30	30	1	1	1		0	0				
296+75.00	28	28	28	2	2	2		0	0				
297+00.00	27	27	27	2	2	2		0	0				
297+25.00	27	27	27	2	2	2		0	0				
297+50.00	26	26	26	2	2	2		0	0				
297+75.00	26	26	26	2	2	2		0	0				
298+00.00	25	25	25	2	2	2		0	0				
298+25.00	23	23	23	2	2	2		0	0				
298+50.00	23	23	23	2	2	2		0	0				
298+75.00	22	22	22	2	2	2		0	0				
299+00.00	23	23	23	2	2	2		0	0				
299+25.00	23	23	23	2	2	2		0	0				
299+50.00	23	23	23	2	2	2		0	0				
299+75.00	23	23	23	2	2	2		0	0				
300+00.00	21	21	21	2	2	2		0	0				
300+25.00	22	22	22	2	2	2		0	0				
300+50.00	26	26	26	2	2	2		0	0				
300+75.00	27	27	27	2	2	2		0	0				
301+00.00	26	26	26	2	2	2		0	0				
301+75.00	53	53	53	3	3	3		0	0				
302+00.00	14	14	14					0	0				
302+25.00	17	17	17					0	0				
302+50.00	16	16	16					0	0				
302+75.00	16	16	16					0	0				
Stage 1 Quantities	1380	1380	1380	88	88	88		0	0				
Stage 2													
288+00.00								0	0				
288+25.00	13	13	13	2	2	2		0	0				
288+50.00	18	18	18	2	2	2		0	0				
288+75.00	20	20	20	2	2	2		0	0				
289+00.00	21	21	21	2	2	2		0	0				
289+25.00	23	23	23	2	2	2		0	0				
289+50.00	24	24	24	2	2	2		0	0				
289+75.00	25	25	25	2	2	2		0	0				
290+00.00	25	25	25	2	2	2		0	0				
290+25.00	24	24	24	2	2	2		0	0				
290+50.00	12	12	12	1	1	1		0	0				
291+00.00								0	0				
291+25.00	7	7	7					0	0				
291+50.00	26	26	26					0	0				
291+75.00	40	40	40					0	0				
292+00.00	39	39	39					0	0				
292+25.00	34	34	34					0	0				
292+50.00	28	28	28					0	0				
292+75.00	23	23	23					0	0				
293+00.00	18	18	18					0	0				
294+25.00	41	41	41	33	33	33		0	0				
294+50.00	3	3	3	10	10	10		0	0				
294+75.00	4	4	4	5	5	5		0	0				
295+00.00	5	5	5	2	2	2		0	0				
295+25.00	10	10	10	1	1	1		0	0				
295+50.00	17	17	17	1	1	1		0	0				
295+75.00	26	26	26	1	1	1		0	0				
296+00.00	34	34	34	4	4	4		0	0				
296+25.00	38	38	38	4	4	4		0	0				
296+50.00	38	38	38					0	0				
296+75.00	47	47	47					0	0				
297+00.00	56	56	56					0	0				
297+25.00	58	58	58					0	0				
297+50.00	58	58	58					0	0				
297+75.00	50	50	50					0	0				
298+00.00	43	43	43					0	0				
298+25.00	30	30	30					0	0				
298+50.00	17	17	17					0	0				
298+75.00	17	17	17					0	0				
299+00.00	18	18	18					0	0				
299+25.00	19	19	19					0	0				
299+50.00	12	12	12					0	0				
Stage 2 Quantities	1061	1061	1061	80	80	80		0	0				
Stage 3													
288+75.00								0	0				
289+00.00	10	10	10	5	5	5		0	0				
289+25.00	8	8	8	5	5	5		0	0				
289+50.00	7	7	7	6	6	6		0	0				
289+75.00	7	7	7	8	8	8		0	0				
290+00.00	7	7	7	8	8	8		0	0				
290+25.00	8	8	8	7	7	7		0	0				
290+50.00	7	7	7	3	3	3		0	0				
290+75.00	6	6	6					0	0				
291+00.00	7	7	7					0	0				
291+25.00	7	7	7	3	3	3		0	0				
291+50.00	19	19	19	6	6	6		0	0				
291+75.00	29	29	29	7	7	7		0	0				
292+00.00	26	26	26	8	8	8		0	0				
292+25.00	23	23	23	9	9	9		0	0				
292+50.00	20	20	20	7	7	7		0	0				
292+75.00	19	19	19	5	5	5		0	0				
293+00.00													

Design No. 514
File No. 30687

ENGLISH	IOWA DOT	Design Team Jia/Holst/Skogerboe	SCOTT COUNTY	Project Number BRFN-022-5(29)--39-82	Sheet Number T.1

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

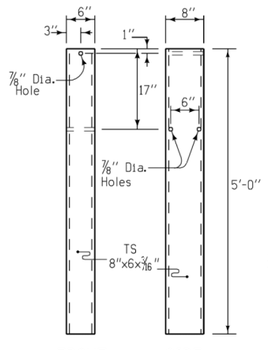
Refer to Standard Plan EW-101 and RL-1B.

STATION	TOTAL CUT	CLASS 10 UNSUIT CUT	ADJUSTED CLASS 10 TOTAL	TOTAL FILL	CLASS 10 SUITABLE + 0% SHRINK	TOTAL FILL WITH SHRINK		APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT				
293+00.00	19	19	19	5	5	5		0	0				
293+25.00	9	9	9	3	3	3		0	0				
293+50.00								0	0				
294+00.00								0	0				
294+50.00	7	7	7	14	14	14		0	0				
294+75.00	7	7	7	10	10	10		0	0				
295+00.00	4	4	4	6	6	6		0	0				
295+25.00	3	3	3	7	7	7		0	0				
295+50.00	6	6	6	10	10	10		0	0				
295+75.00	11	11	11	9	9	9		0	0				
296+00.00	16	16	16	8	8	8		0	0				
296+25.00	21	21	21	6	6	6		0	0				
296+50.00	25	25	25	6	6	6		0	0				
296+75.00	28	28	28	7	7	7		0	0				
297+00.00	30	30	30	7	7	7		0	0				
297+25.00	31	31	31	6	6	6		0	0				
297+50.00	30	30	30	6	6	6		0	0				
297+75.00	30	30	30	6	6	6		0	0				
298+00.00	30	30	30	6	6	6		0	0				
298+25.00	19	19	19	6	6	6		0	0				
298+50.00	7	7	7	6	6	6		0	0				
298+75.00	7	7	7	6	6	6		0	0				
299+00.00	7	7	7	6	6	6		0	0				
299+25.00	7	7	7	6	6	6		0	0				
299+50.00	7	7	7	6	6	6		0	0				
299+75.00	7	7	7	6	6	6		0	0				
300+00.00	7	7	7	6	6	6		0	0				
300+25.00	7	7	7	7	7	7		0	0				
300+50.00	7	7	7	7	7	7		0	0				
300+75.00	7	7	7	8	8	8		0	0				
301+00.00	7	7	7	7	7	7		0	0				
302+00.00	46	46	46	14	14	14		0	0				
302+25.00	16	16	16					0	0				
302+50.00	16	16	16					0	0				
302+75.00	17	17	17					0	0				
Stage 3 Quantities	708	708	708	300	300	300		0	0				
Stage 4													
288+00.00								0	0				
288+25.00	7	7	7	5	5	5		0	0				
288+50.00	7	7	7	6	6	6		0	0				
288+75.00	7	7	7	6	6	6		0	0				
289+00.00	7	7	7	7	7	7		0	0				
289+25.00	7	7	7	7	7	7		0	0				
289+50.00	7	7	7	7	7	7		0	0				
289+75.00	7	7	7	7	7	7		0	0				
290+00.00	7	7	7	7	7	7		0	0				
290+25.00	7	7	7	7	7	7		0	0				
298+75.00	4	4	4	4	4	4		0	0				
299+00.00	1	1	1	7	7	7		0	0				
299+25.00	2	2	2	22	22	22		0	0				
299+50.00								0	0				
Stage 4 Quantities	70	70	70	92	92	92		0	0				
Total Quantities	3219	3219	3219	560	560	560		0	0				

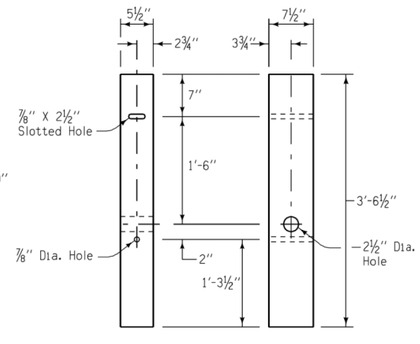
STATION	TOTAL CUT	CLASS 10 UNSUIT CUT	ADJUSTED CLASS 10 TOTAL	TOTAL FILL	CLASS 10 SUITABLE + 0% SHRINK	TOTAL FILL WITH SHRINK		APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT				

Design No. 514
File No. 30687

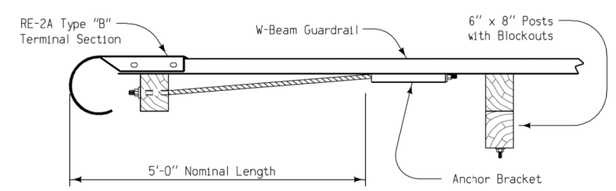
ENGLISH	IOWA DOT	Design Team Jia/Holst/Skogerboe	SCOTT COUNTY	Project Number BRFN-022-5(29)--39-82	Sheet Number T.2



FRONT SIDE
STEEL ANCHOR TUBE



FRONT SIDE
WOOD TERMINAL POST



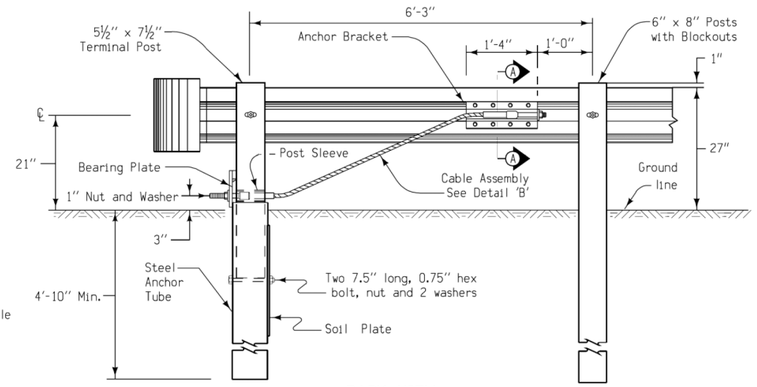
PLAN VIEW

GENERAL NOTES

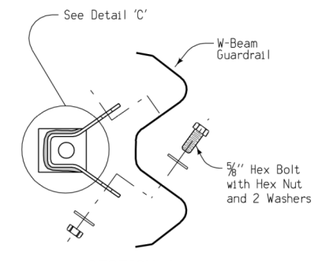
All hardware shall conform to the specifications set forth in "A Guide to Standardized Barrier Hardware", published by AASHTO.

The price bid for "Guardrail, End Anchorage, Beam, RE-33A", shall be considered full compensation for furnishing the materials detailed on this sheet and the construction of the end anchorage. W-Beam guardrail and 6" x 8" post with blockout are not included with this bid item.

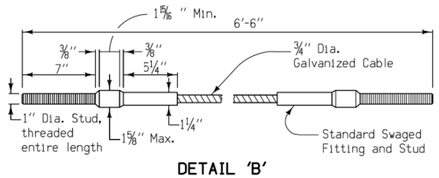
(1) Two 7.5" long, ¾" hex bolt, nut and washers under head and nut.
(2) One 10" long, ¾" hex bolt, nut and washers under head and nut.



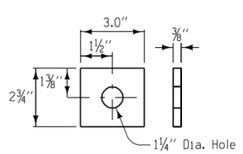
BACK VIEW



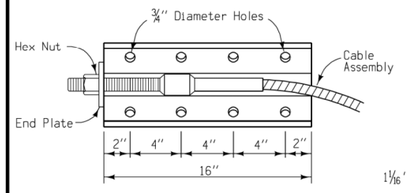
SECTION A-A



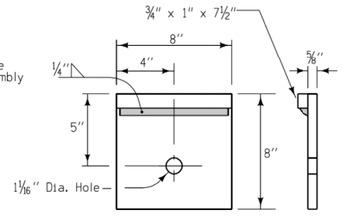
DETAIL 'B'
CABLE ASSEMBLY



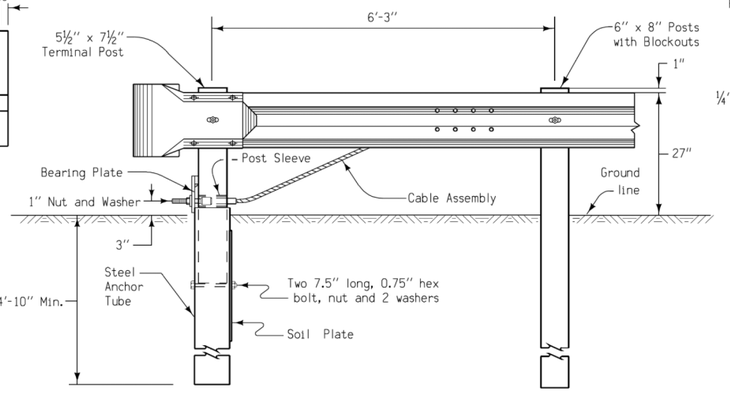
END PLATE



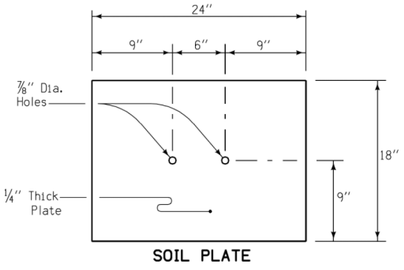
ANCHOR BRACKET ASSEMBLY VIEW



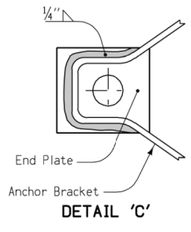
BEARING PLATE



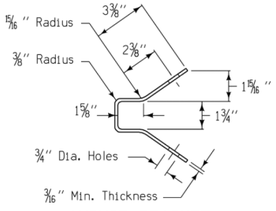
FRONT VIEW



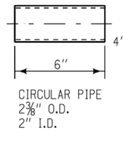
SOIL PLATE



DETAIL 'C'



ANCHOR BRACKET
FABRICATION DETAILS



POST SLEEVE

Iowa Department of Transportation
Highway Division

STANDARD ROAD PLAN **RE-33A**

REVISION: Remove bottom strut at ground line.	REVISION NO.
	4
William G. Stein	REVISION DATE
APPROVED BY DESIGN METHODS ENGINEER	10-21-03

BEAM GUARDRAIL
END ANCHORAGE
(W BEAM)

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- Additional Topsoil Removal
- Subgrade Treatment
- Granular Shoulder
- Pavement
- Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS — Topsoil (Class 10)
- TS A — Topsoil (Type A Disposal)
- TS B — Topsoil (Type B Disposal)
- TS C — Topsoil (Type C Disposal)
- CL 10 — Class 10 Materials
- SEL LO — Select Loams And Clay-Loams
- SEL SA — Select Sand
- UNS A — Unsuitable Type A Disposal
- UNS B — Unsuitable Type B Disposal
- UNS C — Unsuitable Type C Disposal
- SHALE — Shale
- WASTE — Waste
- B&W LS — Broken and Weathered Rock
- ROCK — Solid Rock
- BLDRS — Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

Existing ROW — Existing Right-of-Way Limit

Proposed ROW — Proposed Right-of-Way Limit

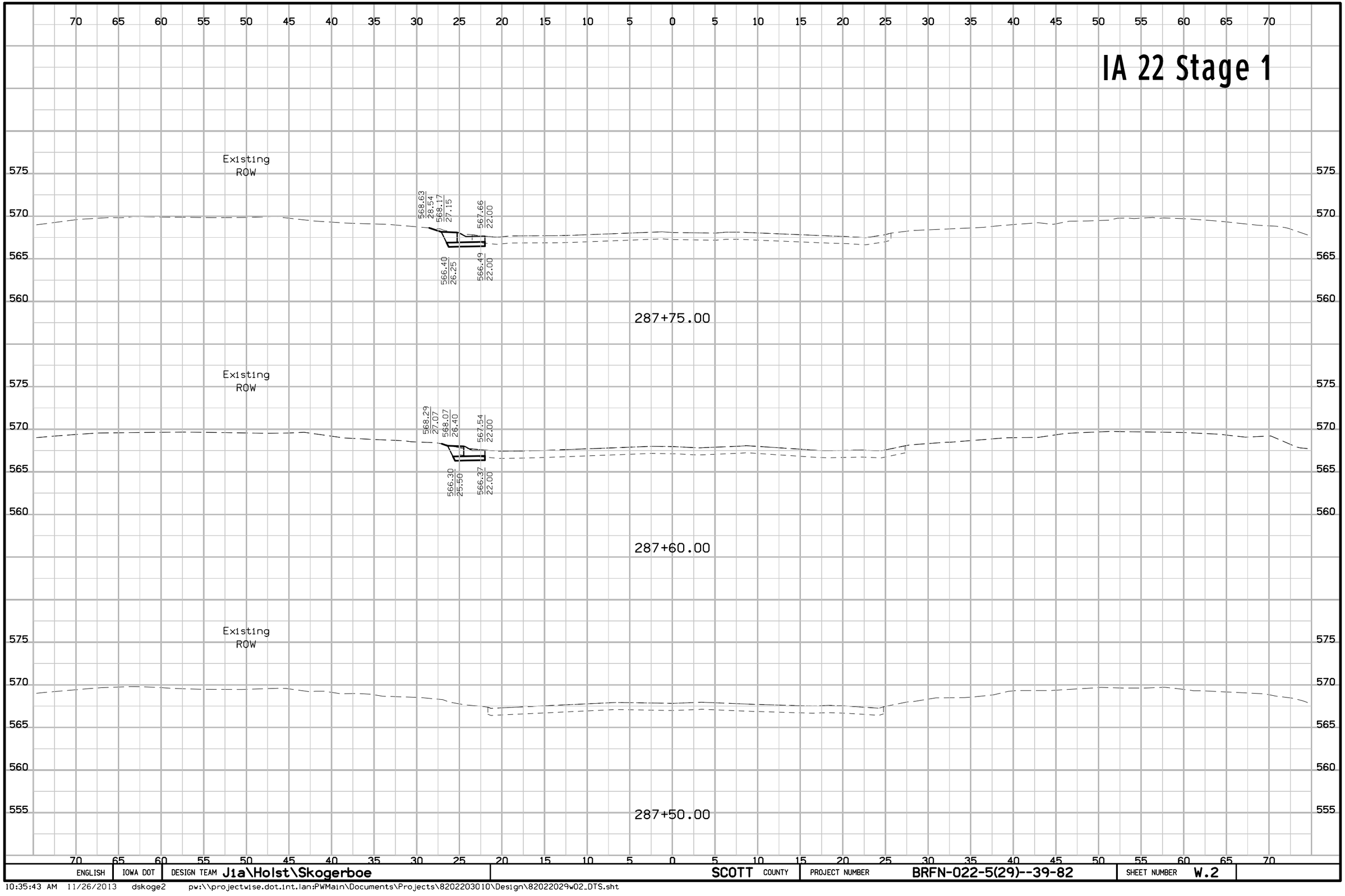
Temporary ROW — Temporary Right-of-Way Limit

Design No. 514
File No. 30687

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

IA 22 Stage 1



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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565

Existing ROW

569.96 / 36.07

568.66 / 32.15

568.25 / 22.00

566.89 / 31.25

567.08 / 22.00

288+75.00

Existing ROW

575 570 565

Existing ROW

569.66 / 34.35

568.51 / 30.90

568.08 / 22.00

566.75 / 30.00

566.91 / 22.00

288+50.00

Existing ROW

575 570 565

Existing ROW

569.19 / 32.07

568.38 / 29.65

567.92 / 22.00

566.62 / 28.75

566.75 / 22.00

288+25.00

Existing ROW

575 570 565

Existing ROW

569.16 / 31.09

568.27 / 28.40

567.78 / 22.00

566.50 / 27.50

566.61 / 22.00

288+00.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.3

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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565

Existing ROW

571.22 / 41.71

569.28 / 35.90

567.52 / 35.00

568.95 / 22.00

567.78 / 22.00

289+75.00

Existing ROW

570.89 / 41.29

569.10 / 35.90

567.35 / 34.89

568.76 / 22.00

567.59 / 22.00

289+50.00

Existing ROW

570.37 / 39.40

568.94 / 34.65

567.18 / 33.75

568.58 / 22.00

567.42 / 22.00

289+25.00

Existing ROW

570.27 / 37.83

568.80 / 33.40

567.04 / 32.50

568.41 / 22.00

567.25 / 22.00

289+00.00

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.4

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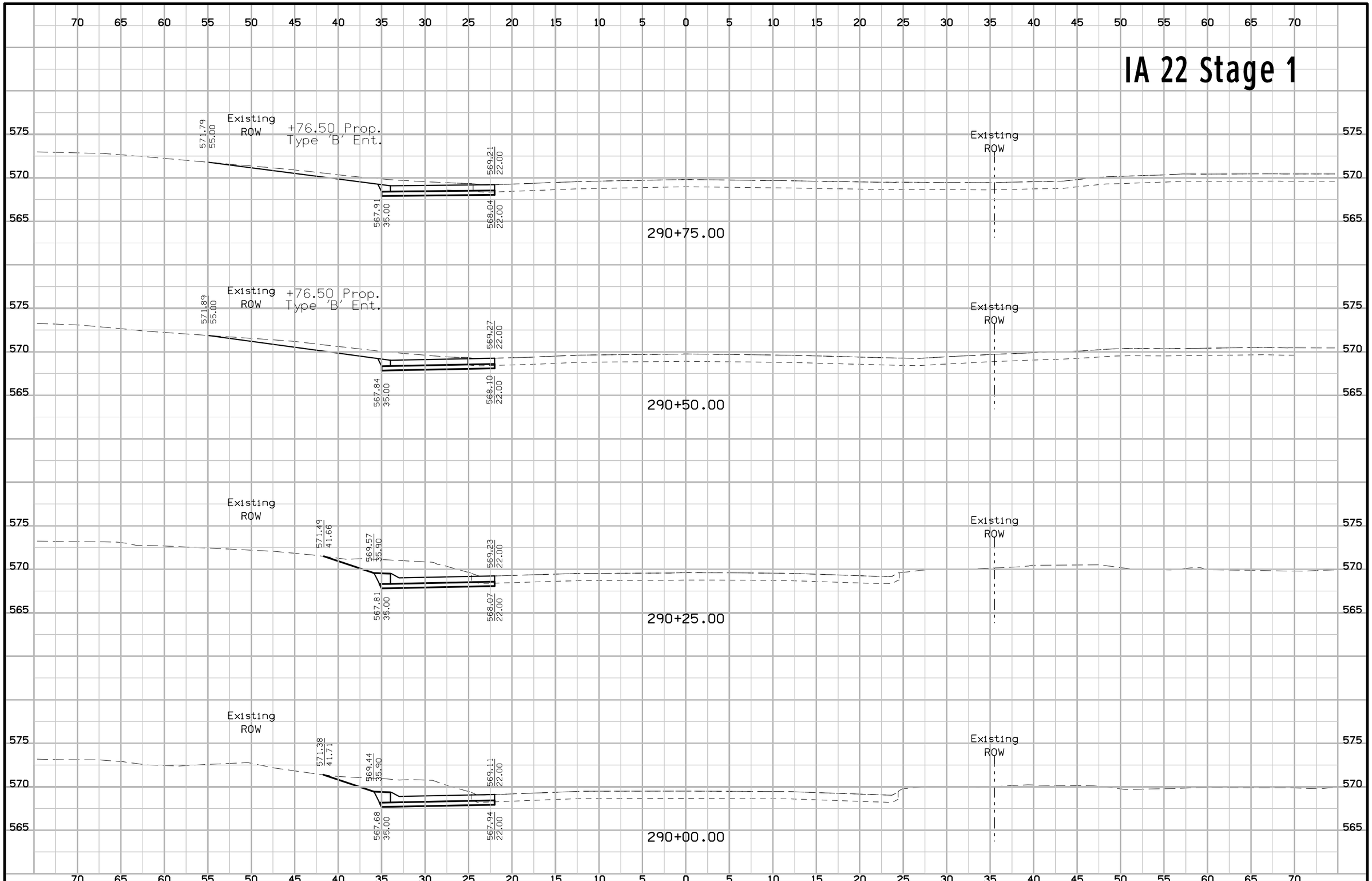
IA 22 Stage 1



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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565

Existing ROW

572.04 / 41.88

570.05 / 35.90

569.71 / 22.00

568.28 / 35.00

568.54 / 22.00

Existing ROW

Proposed ROW

291+75.00

Existing ROW

571.74 / 41.08

570.02 / 35.90

569.68 / 22.00

568.25 / 35.00

568.51 / 22.00

Existing ROW

Proposed ROW

291+50.00

Existing ROW

571.11 / 39.36

569.95 / 35.90

569.62 / 22.00

568.19 / 35.00

568.45 / 22.00

Existing ROW

Proposed ROW

291+25.00

Existing ROW

571.85 / 55.00

+76.50 Prop. Type 'B' Ent.

569.40 / 22.00

567.97 / 35.00

568.23 / 22.00

Existing ROW

291+00.00

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.6

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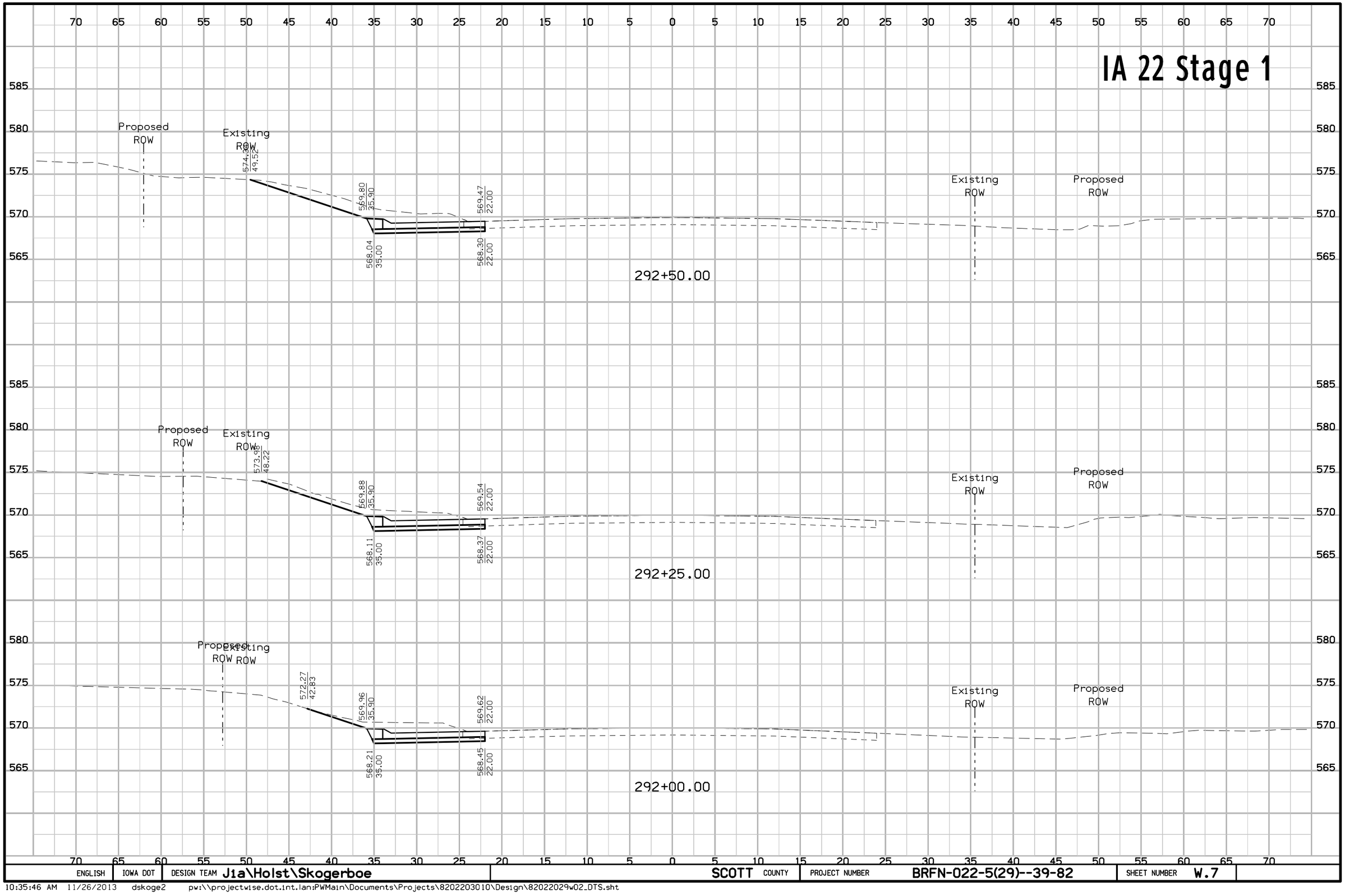
IA 22 Stage 1



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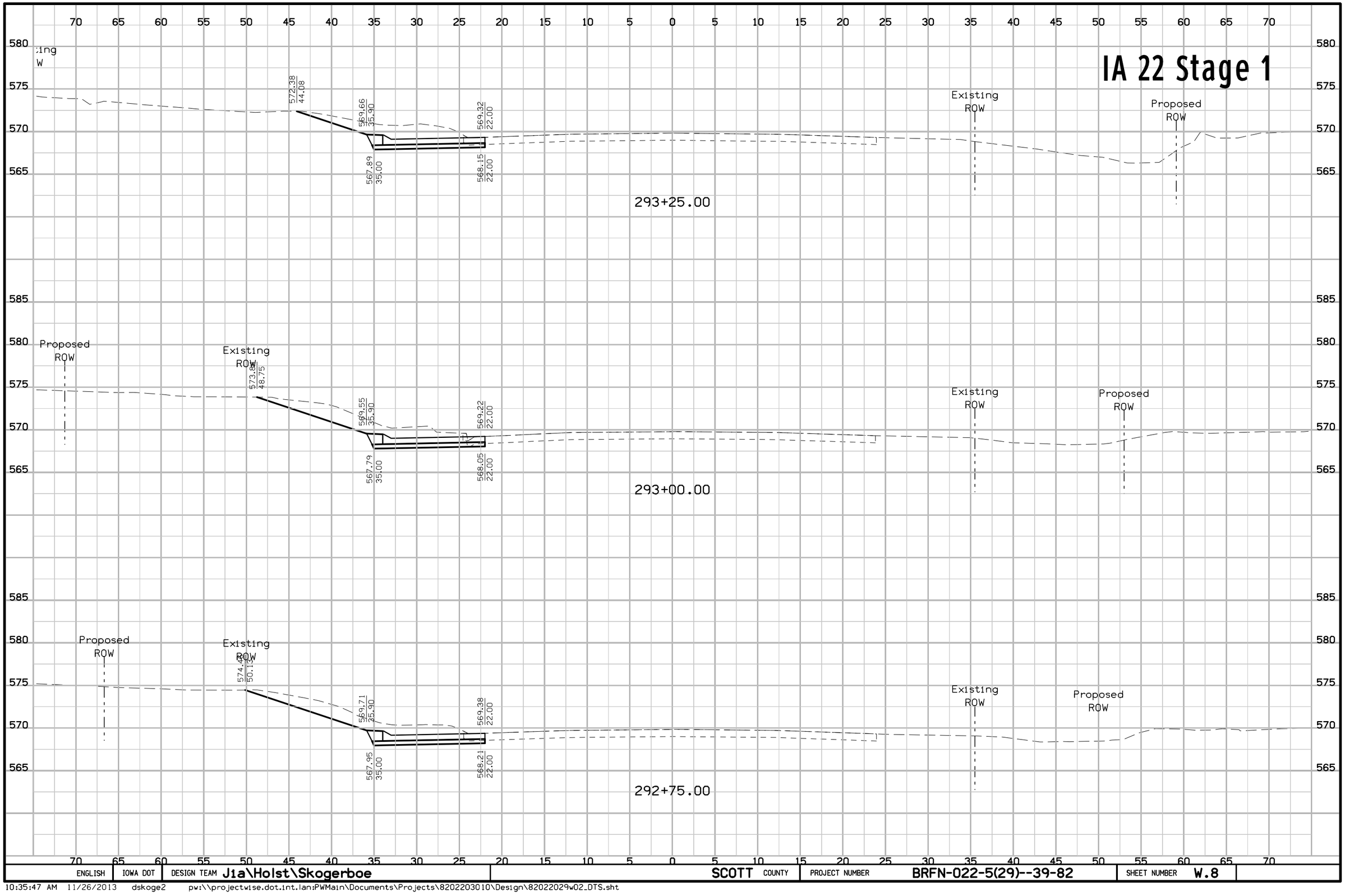
IA 22 Stage 1



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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565 560 555 550

569.81
35.90

568.05
35.00

569.48
22.00

568.31
22.00

:ing
W

Existing
ROW

Proposed
ROW

293+75.00

:ing
W

570.35
37.74

569.71
35.90

567.97
35.00

569.40
22.00

568.23
22.00

Existing
ROW

Proposed
ROW

293+50.00

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.9

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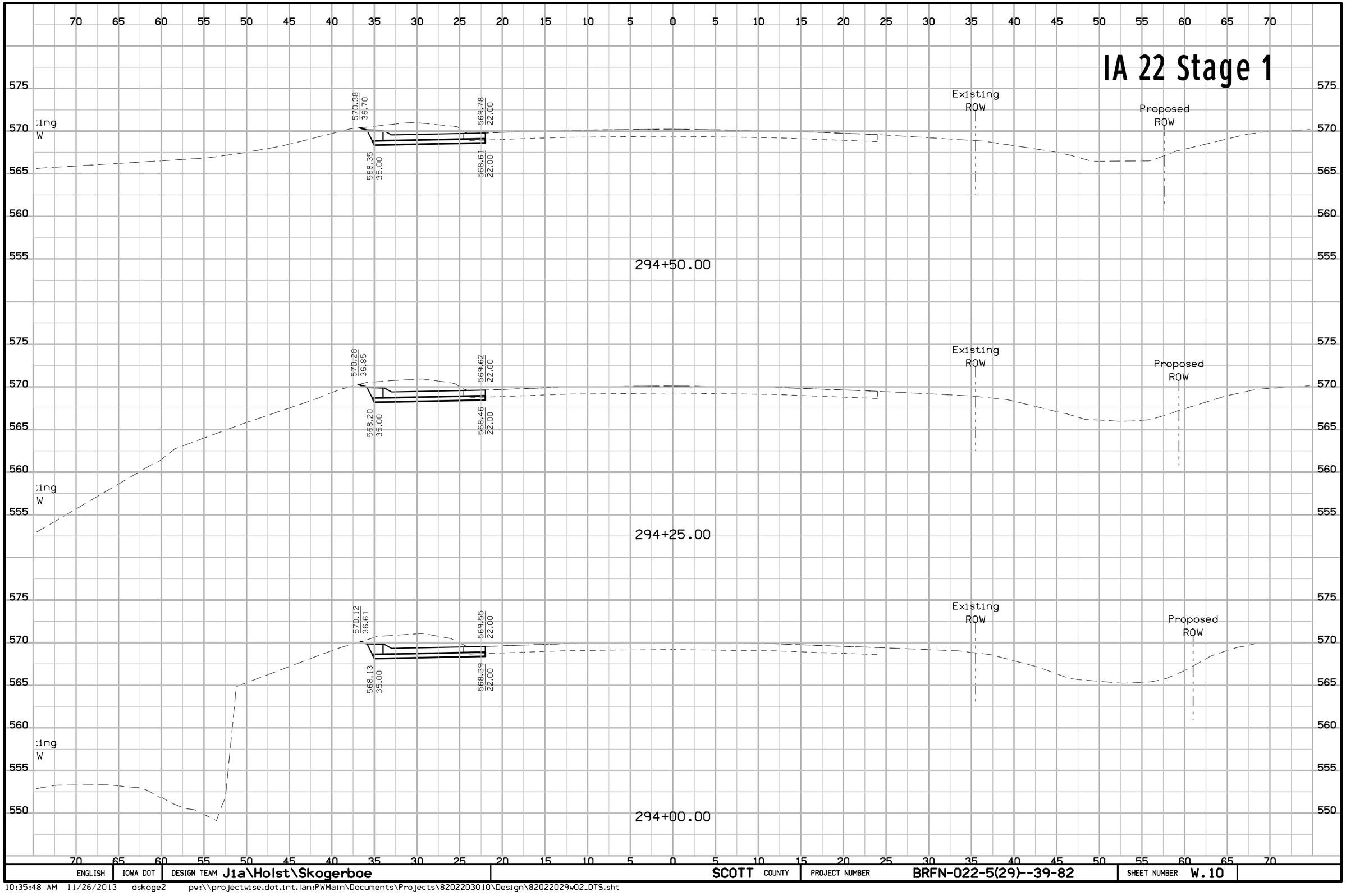
IA 22 Stage 1



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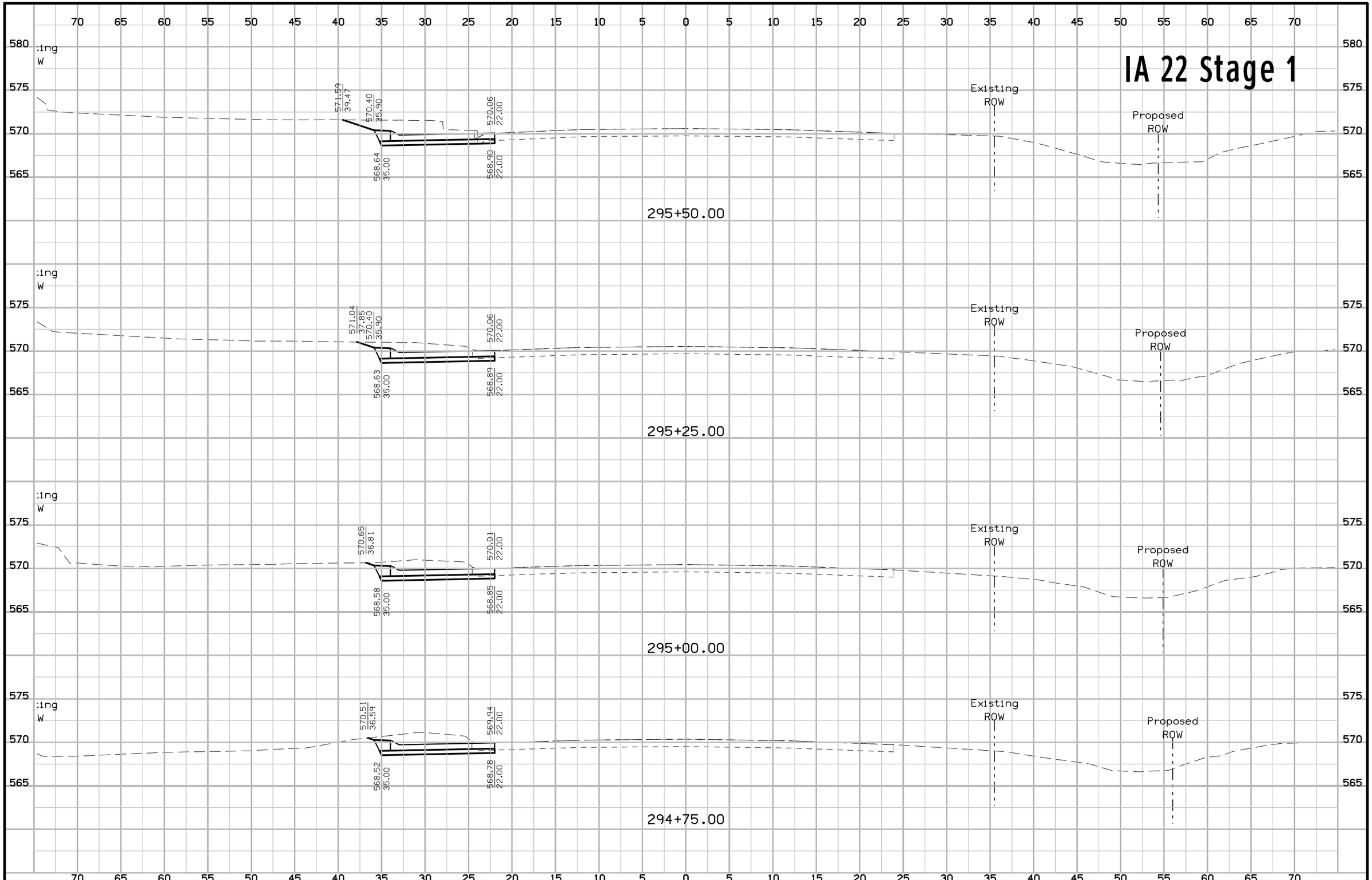
IA 22 Stage 1



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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

:ing
W

+00.70 Prop.
Type 'B' Ent.

572.19
49.10

568.95
35.00

570.38
22.00

569.21
22.00

Existing
ROW

Proposed
ROW

296+25.00

:ing
W

+00.70 Prop.
Type 'B' Ent.

572.31
55.00

568.84
35.00

570.34
35.90

569.10
22.00

570.26
22.00

Existing
ROW

Proposed
ROW

296+00.00

:ing
W

+00.70 Prop.
Type 'B' Ent.

571.85
47.30
571.21
45.39

568.76
35.00

570.19
22.00

569.02
22.00

Existing
ROW

Proposed
ROW

295+75.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.12

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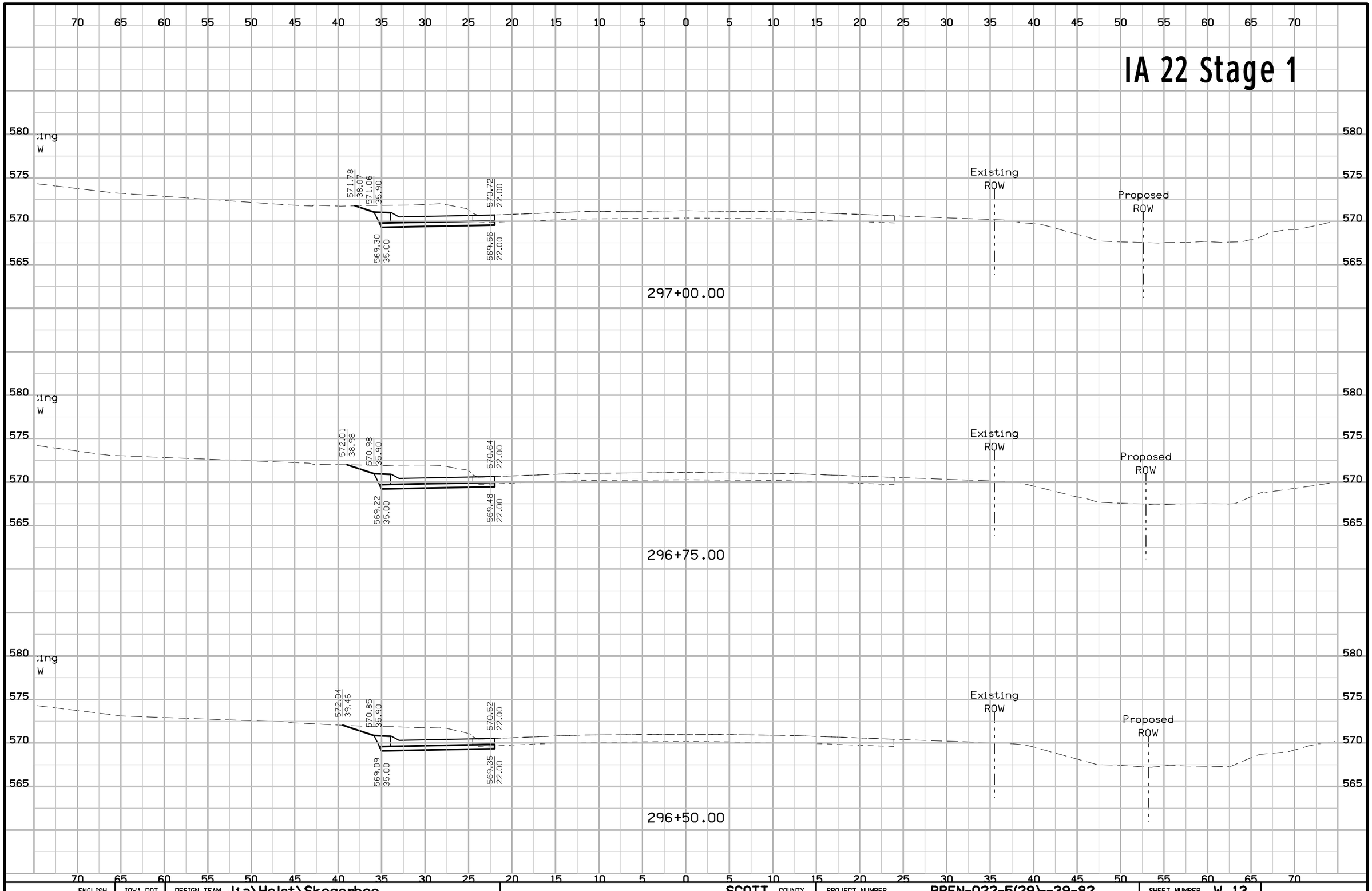
IA 22 Stage 1



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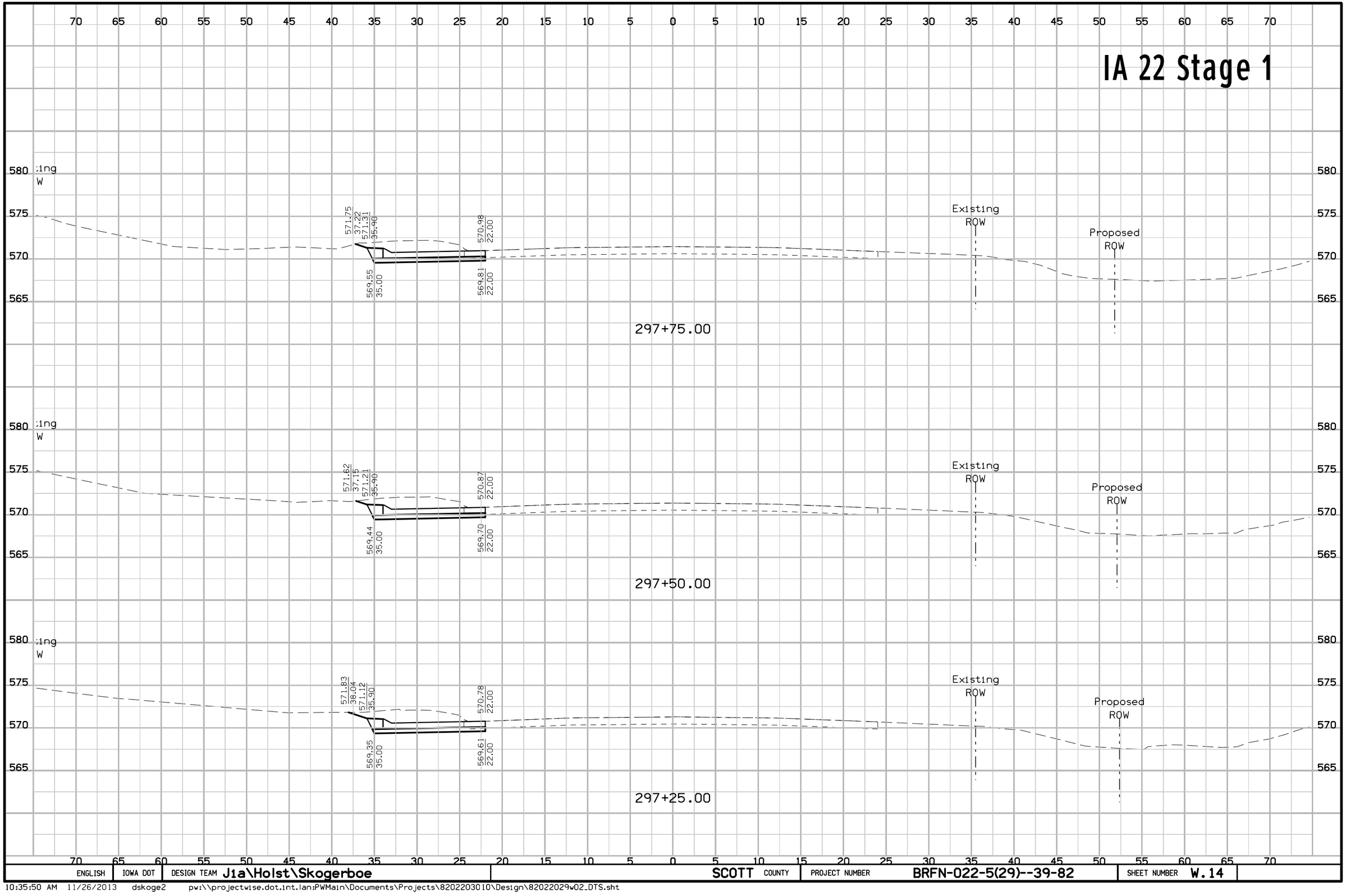
IA 22 Stage 1



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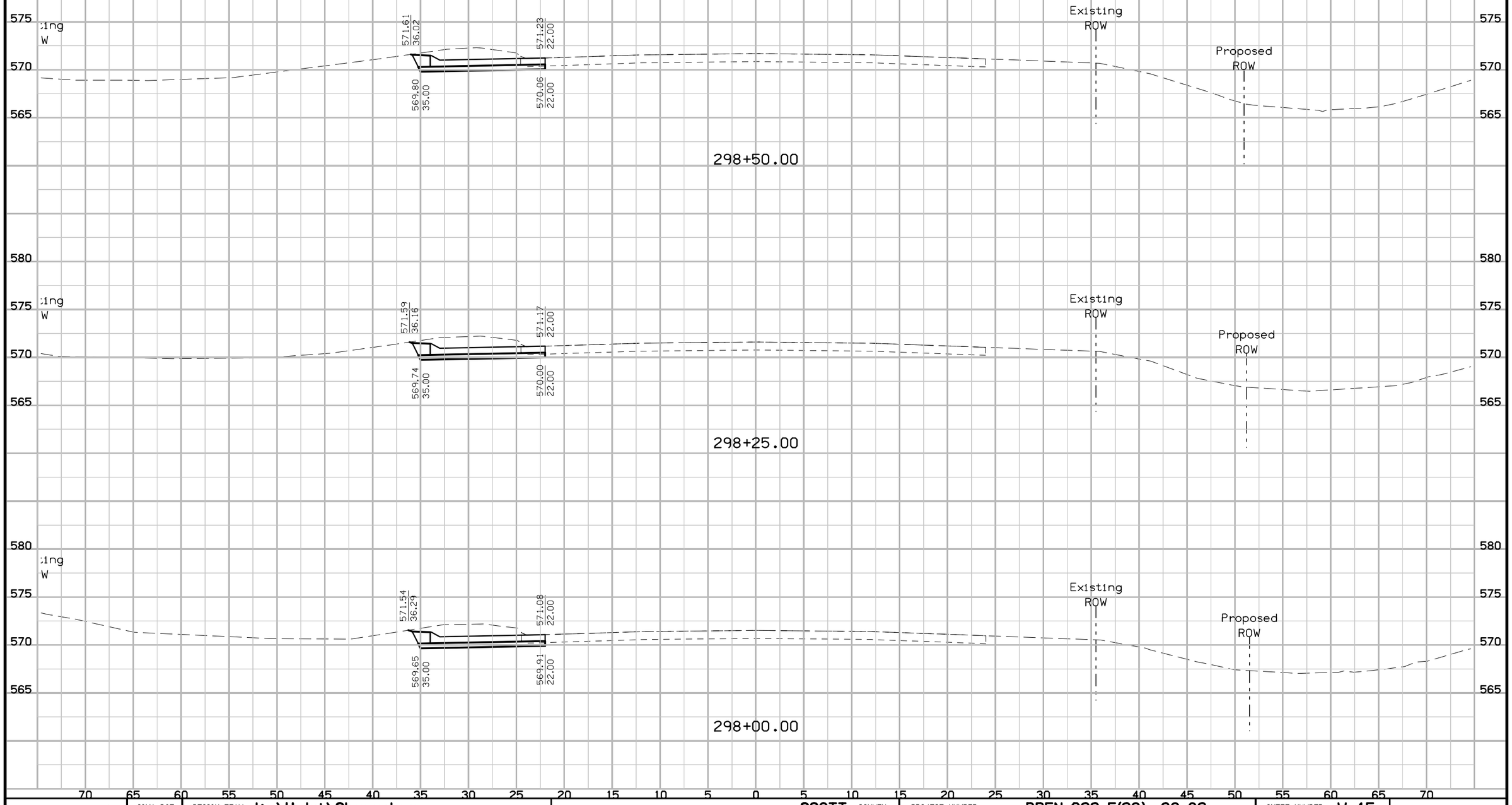
IA 22 Stage 1



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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570
565
560

:ing
W

572.16
33.13
571.85
32.18

570.08
31.28

571.44
22.00

570.27
22.00

Existing
ROW

Proposed
ROW

299+25.00

572.06
34.52
571.69
33.42

569.93
32.52

571.31
22.00

570.14
22.00

299+00.00

571.73
35.27

569.77
33.76

571.17
22.00

570.00
22.00

298+75.00

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.16

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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570

572.76
28.25
571.91
22.00
570.65
26.32
570.74
22.00

300+25.00

575
570

572.32
28.56
571.80
22.00
570.52
27.56
570.64
22.00

300+00.00

580
575
570
565

:ing
W

572.69
31.29
572.16
29.70
571.70
22.00
570.40
28.80
570.53
22.00

Existing
ROW
Proposed
ROW

299+75.00

580
575
570
565

:ing
W

572.48
32.34
572.01
30.94
571.58
22.00
570.25
30.04
570.41
22.00

Existing
ROW
Proposed
ROW

299+50.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.17

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IA 22 Stage 1

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570

300+50.00

575
570

573.07
28.14
572.49
26.40
571.96
22.00
570.73
25.50
570.80
22.00

300+41.50

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.18

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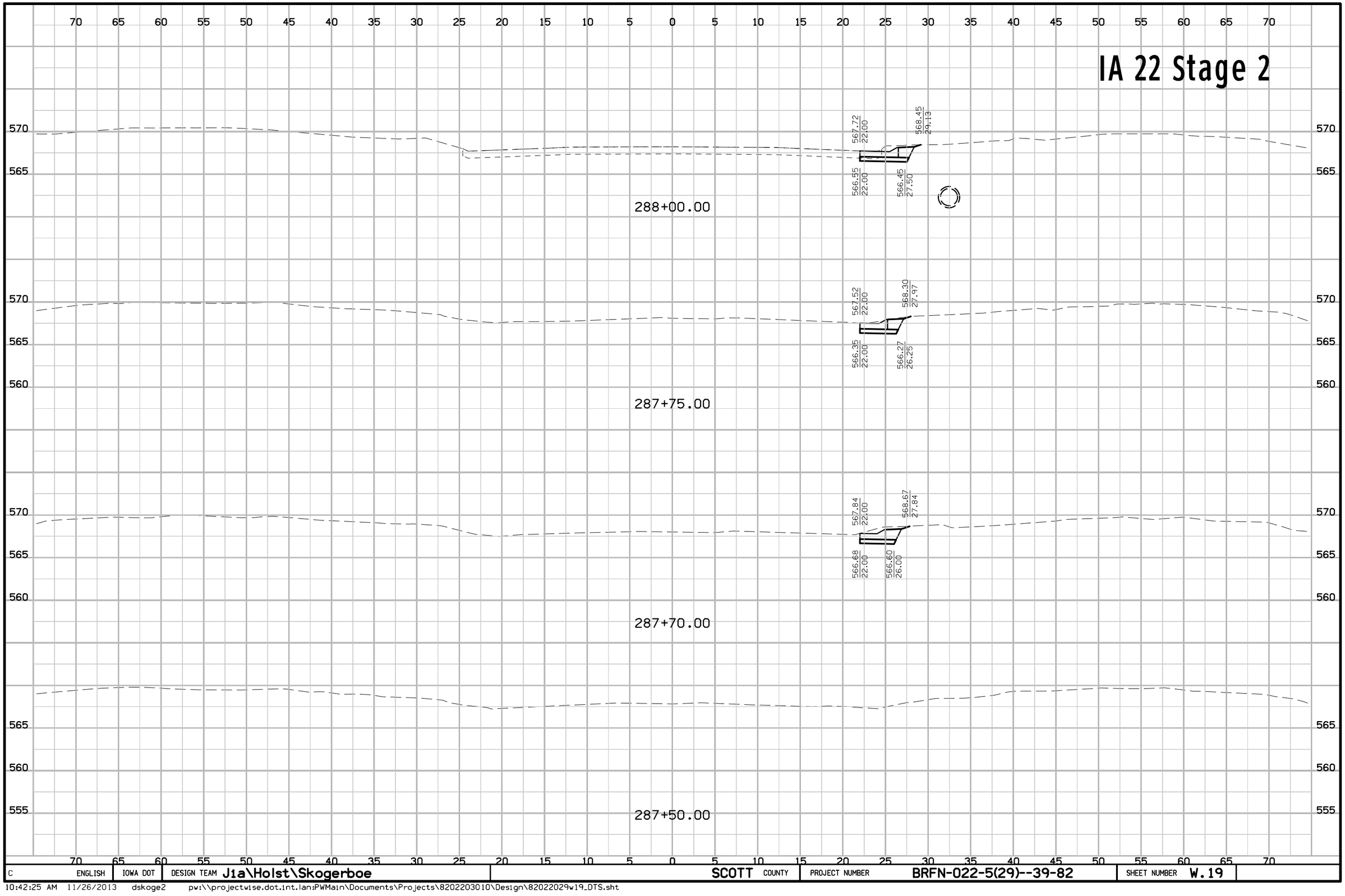
IA 22 Stage 2



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IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565

Existing ROW

568.47 22.00

567.31 22.00

569.26 34.60

Existing ROW

567.10 32.50

289+00.00

Existing ROW

568.31 22.00

567.15 22.00

568.92 32.73

Existing ROW

566.96 31.25

288+75.00

Existing ROW

588.14 22.00

566.97 22.00

568.83 31.67

Existing ROW

566.81 30.00

288+50.00

567.94 22.00

566.78 22.00

568.72 30.60

566.64 28.75

288+25.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe		SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.20

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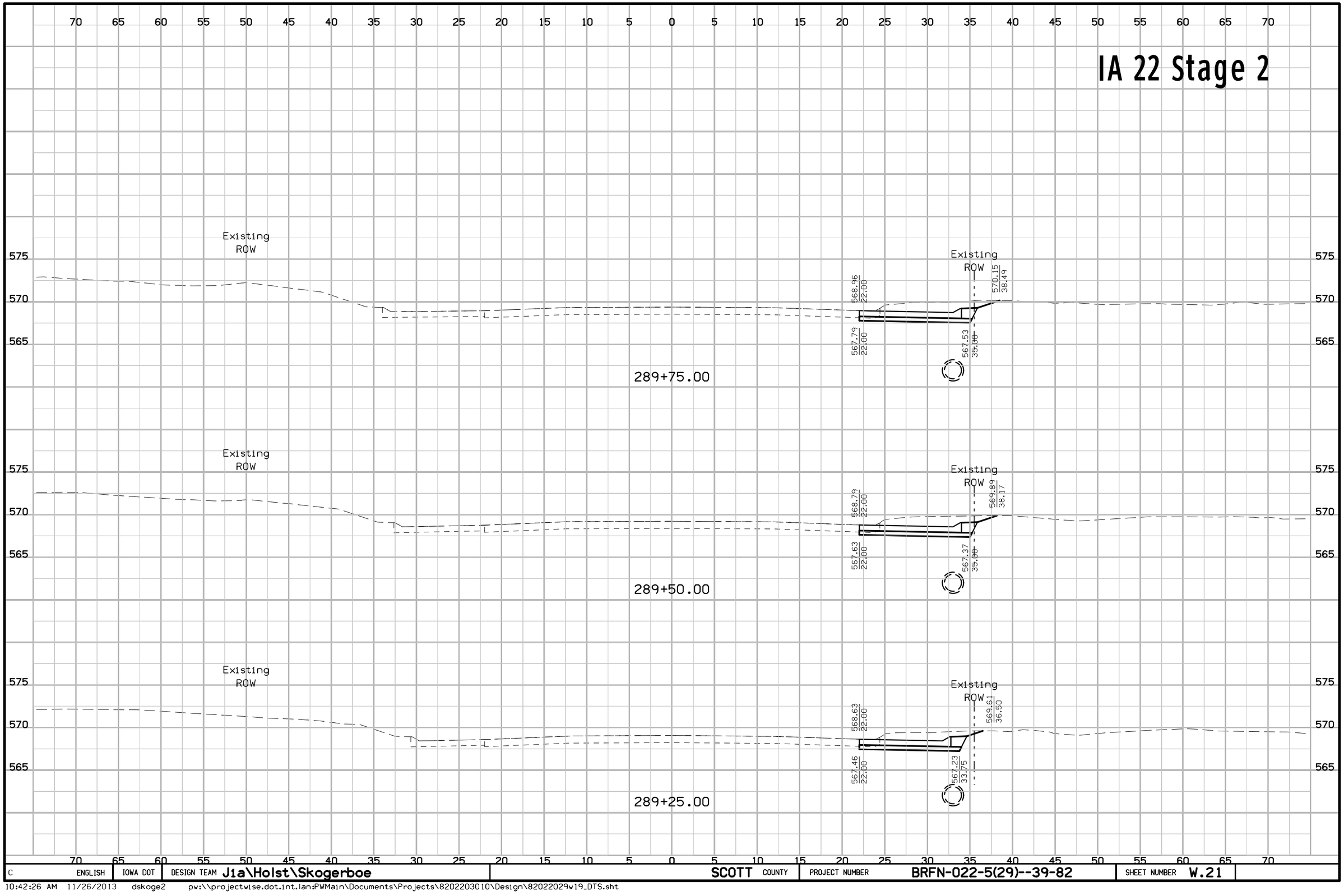
IA 22 Stage 2



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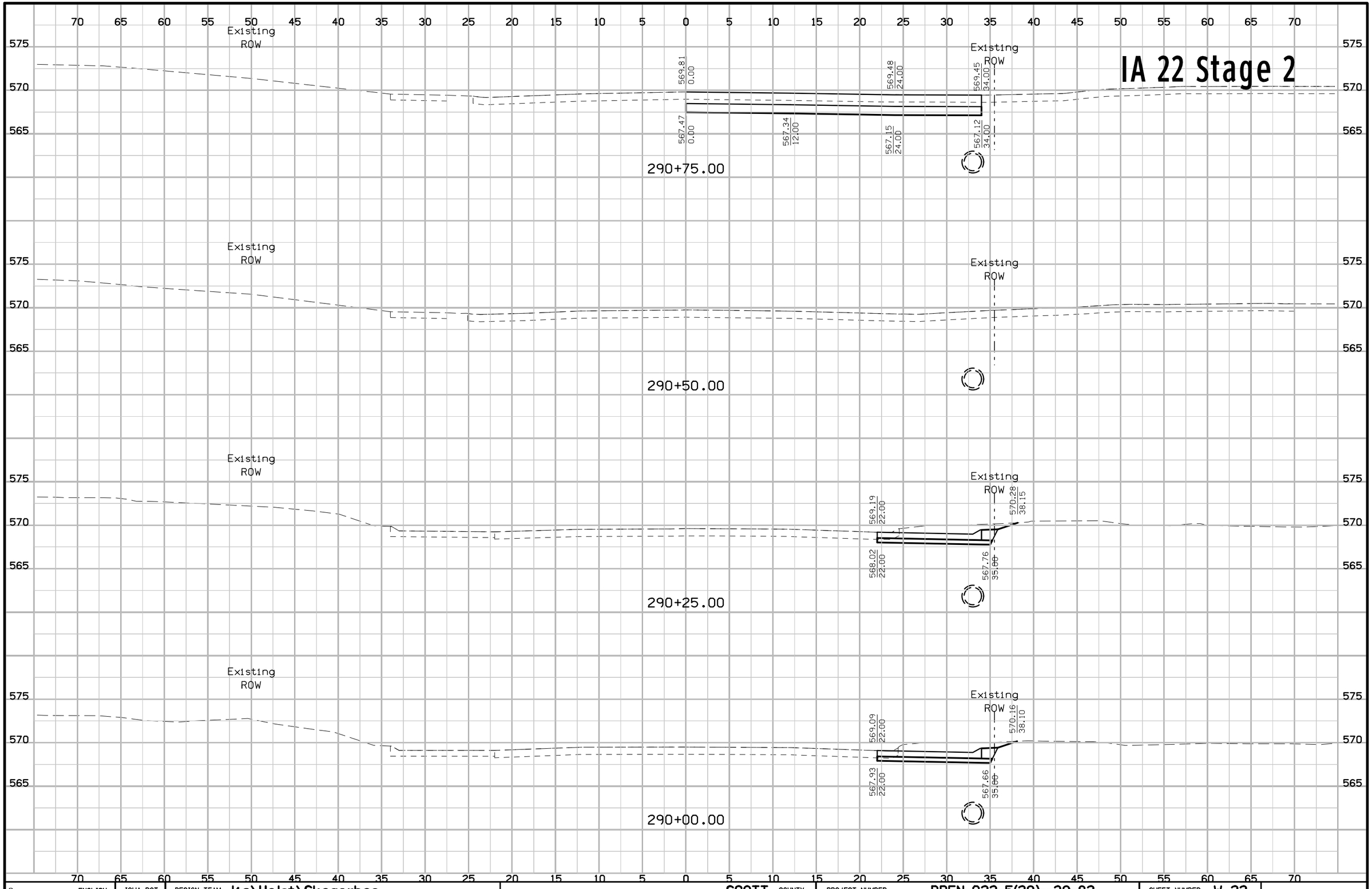
IA 22 Stage 2



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IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570
565

Existing ROW

570.07 0.00
568.24 0.00
588.00 12.00
569.53 24.00
567.70 24.00
569.67 34.00
Existing ROW
Proposed ROW

291+50.00

575
570
565

Existing ROW

570.00 0.00
568.16 0.00
567.92 12.00
569.41 24.05
567.62 24.00
569.19 33.95
Existing ROW

291+25.00

575
570
565

Existing ROW

569.93 0.00
567.59 0.00
567.36 12.00
569.39 24.00
567.06 24.00
569.67 34.00
567.34 34.00
Existing ROW

291+00.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.23

10:42:28 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

585
580
575
570
565

Proposed ROW
Existing ROW

570.39 0.00
568.56 0.00
588.32 12.00
569.85 24.00
568.02 24.00
Existing ROW
568.72 40.65
Proposed ROW

292+25.00

580
575
570
565

Proposed ROW
Existing ROW

570.27 0.00
568.44 0.00
588.20 12.00
569.73 24.00
567.90 24.00
Existing ROW
568.80 40.69
Proposed ROW

292+00.00

575
570
565

Existing ROW

570.17 0.00
568.33 0.00
568.09 12.00
569.63 24.00
567.79 24.00
Existing ROW
568.90 39.45
Proposed ROW

291+75.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.24	

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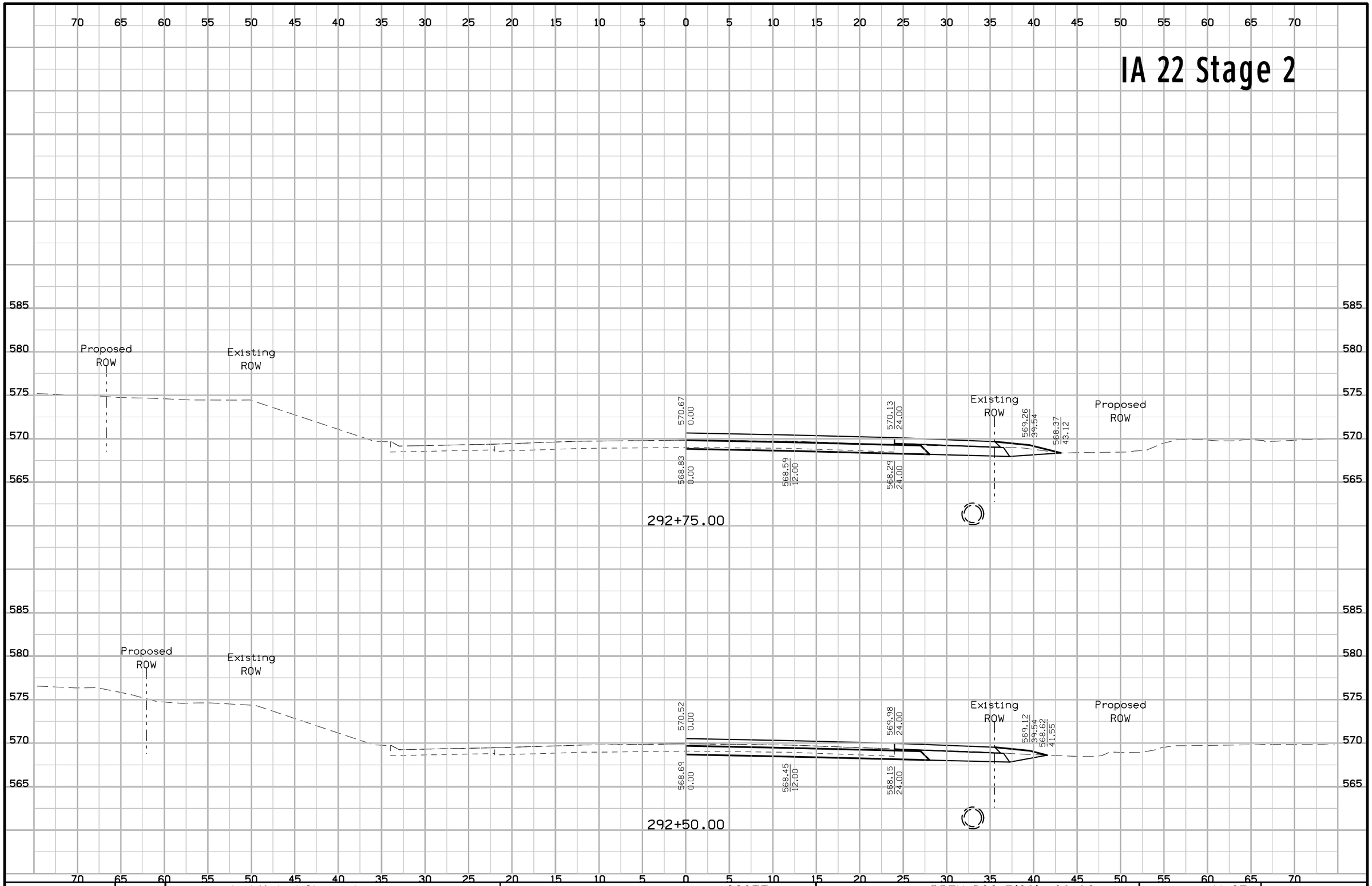
IA 22 Stage 2



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IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

ing
W

570.95
2.00
570.99
0.00

Existing
ROW

Proposed
ROW

293+25.00

585 580 575 570 565

Proposed
ROW

Existing
ROW

570.82
0.00

568.99
0.00

568.75
12.00

570.28
24.00

568.45
24.00

Existing
ROW

569.54
39.54

568.33
44.40

Proposed
ROW

293+00.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.26

10:42:30 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565 560 555 550

571.27
2.00
571.31
0.00

:ing
W

Existing
ROW

Proposed
ROW

293+75.00

:ing
W

571.13
2.00
571.17
0.00

Existing
ROW

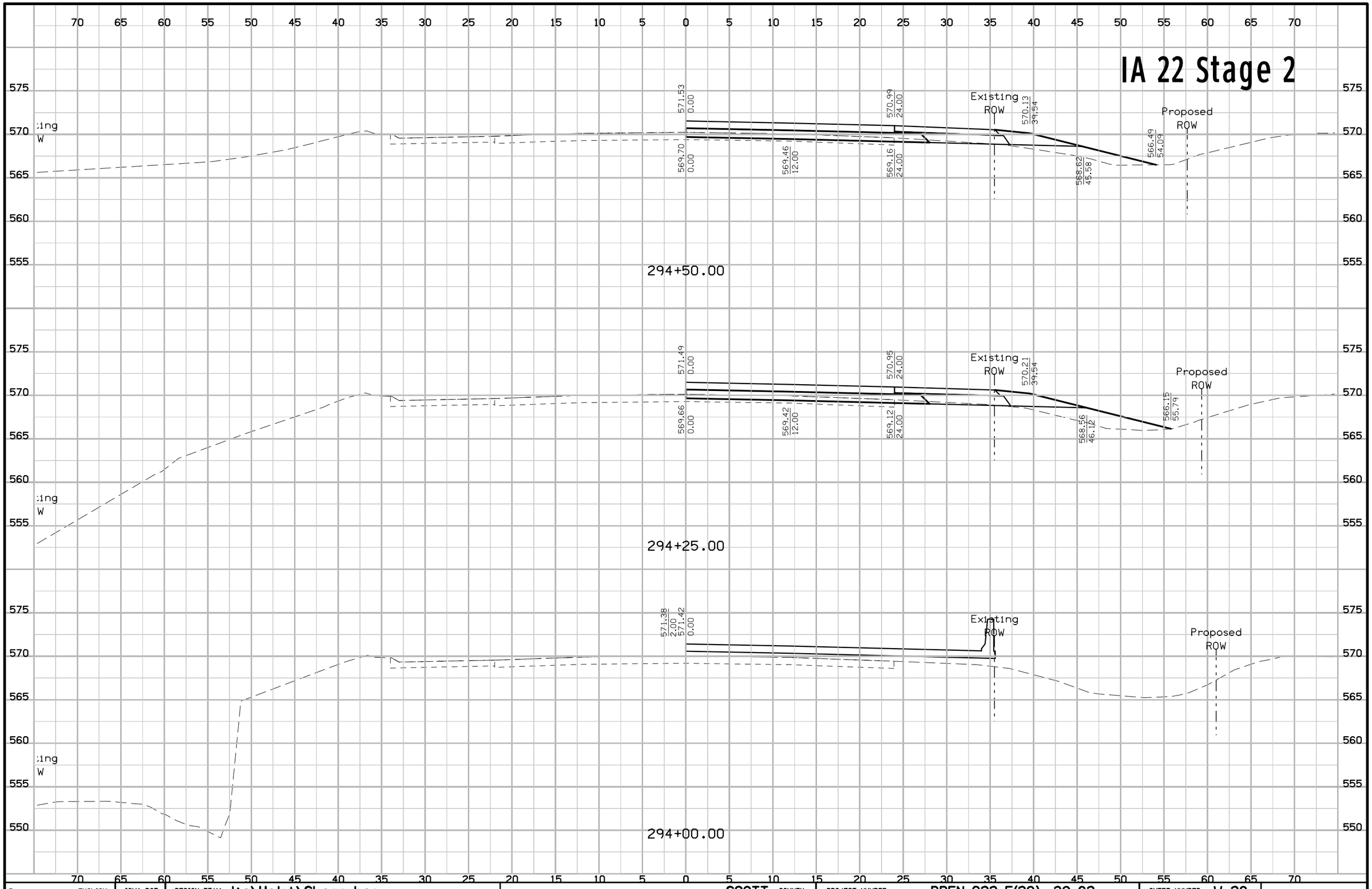
Proposed
ROW

293+50.00

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.27

10:42:30 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2



C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.28

10:42:31 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570
565

:ing
W

571.46
0.00
569.62
0.00
569.38
12.00
570.92
24.00
569.08
24.00
Existing
ROW
570.06
39.54
568.55
45.58
Proposed
ROW
566.54
53.61

295+25.00

:ing
W

571.52
0.00
569.68
0.00
569.44
12.00
570.98
24.00
569.14
24.00
Existing
ROW
570.14
39.54
568.60
45.58
Proposed
ROW
566.61
53.56

295+00.00

:ing
W

571.54
0.00
569.71
0.00
569.47
12.00
571.00
24.00
569.17
24.00
Existing
ROW
570.14
39.54
568.63
45.58
Proposed
ROW
566.68
53.37

294+75.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.29	

10:42:31 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

:ing
W

57.1 0.00
569.32 0.00
569.08 12.00
570.62 24.00
568.78 24.00
Existing ROW
569.76 39.54
568.28 44.15
Proposed ROW
566.93 50.85

296+00.00

:ing
W

57.25 0.00
569.42 0.00
569.18 12.00
570.71 24.00
568.88 24.00
Existing ROW
569.91 39.54
568.34 45.58
Proposed ROW
566.55 52.73

295+75.00

:ing
W

571.37 0.00
569.53 0.00
569.29 12.00
570.83 24.00
568.99 24.00
Existing ROW
569.96 39.54
568.45 45.58
Proposed ROW
566.56 53.17

295+50.00

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.30

10:42:32 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

:ing
W

Existing ROW

Proposed ROW

571.09 0.00
569.25 0.00
569.01 12.00
570.55 24.00
568.71 24.00
569.69 39.54
568.31 45.04

296+75.00

571.08 0.00
569.24 0.00
569.00 12.00
570.54 24.00
568.70 24.00
569.68 39.54
567.50 48.22
568.16 45.58

296+50.00

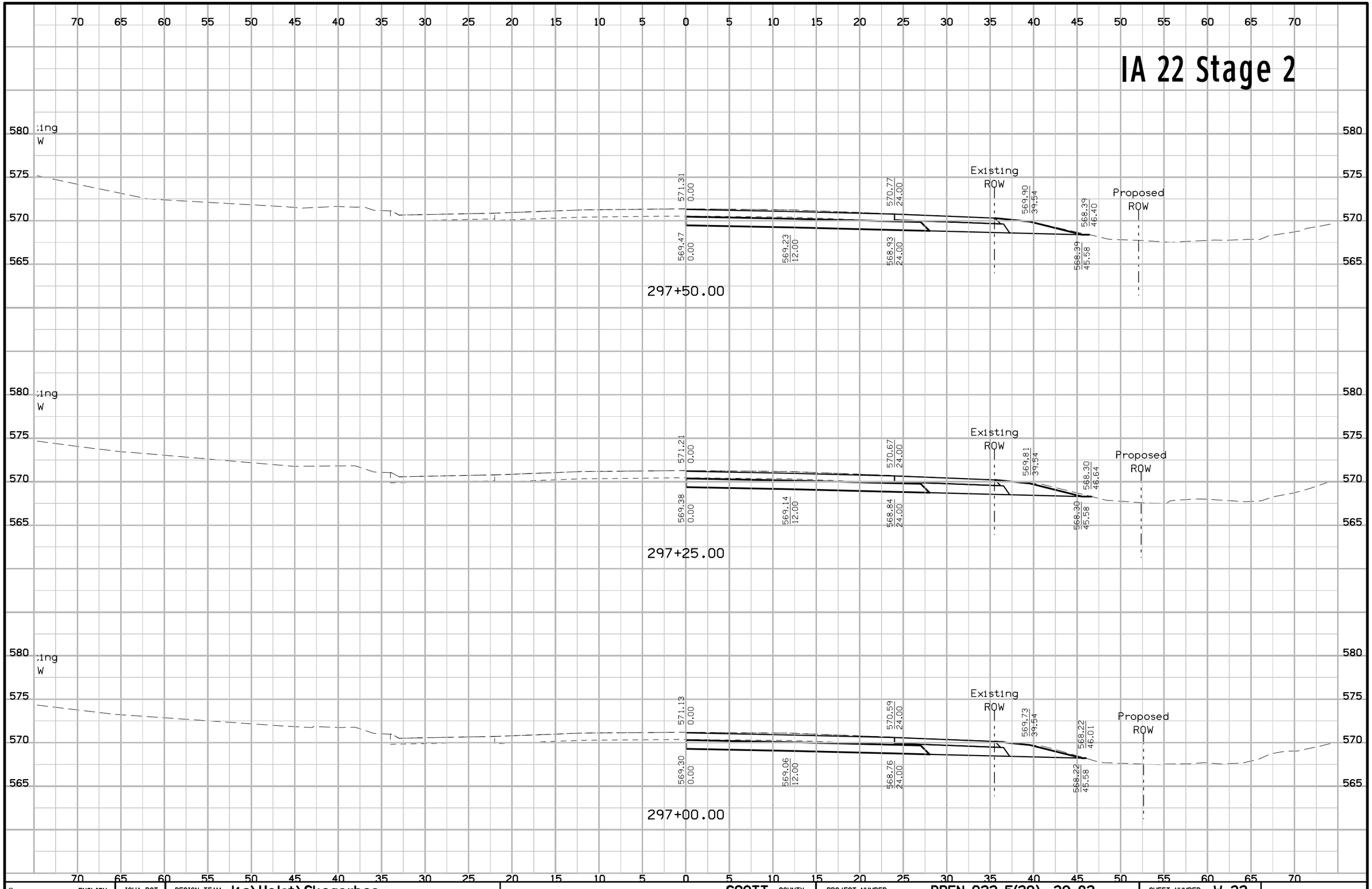
571.10 0.00
569.27 0.00
569.03 12.00
570.56 24.00
568.73 24.00
569.70 39.54
569.21 49.50
568.19 45.58

296+25.00

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.31

10:42:33 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

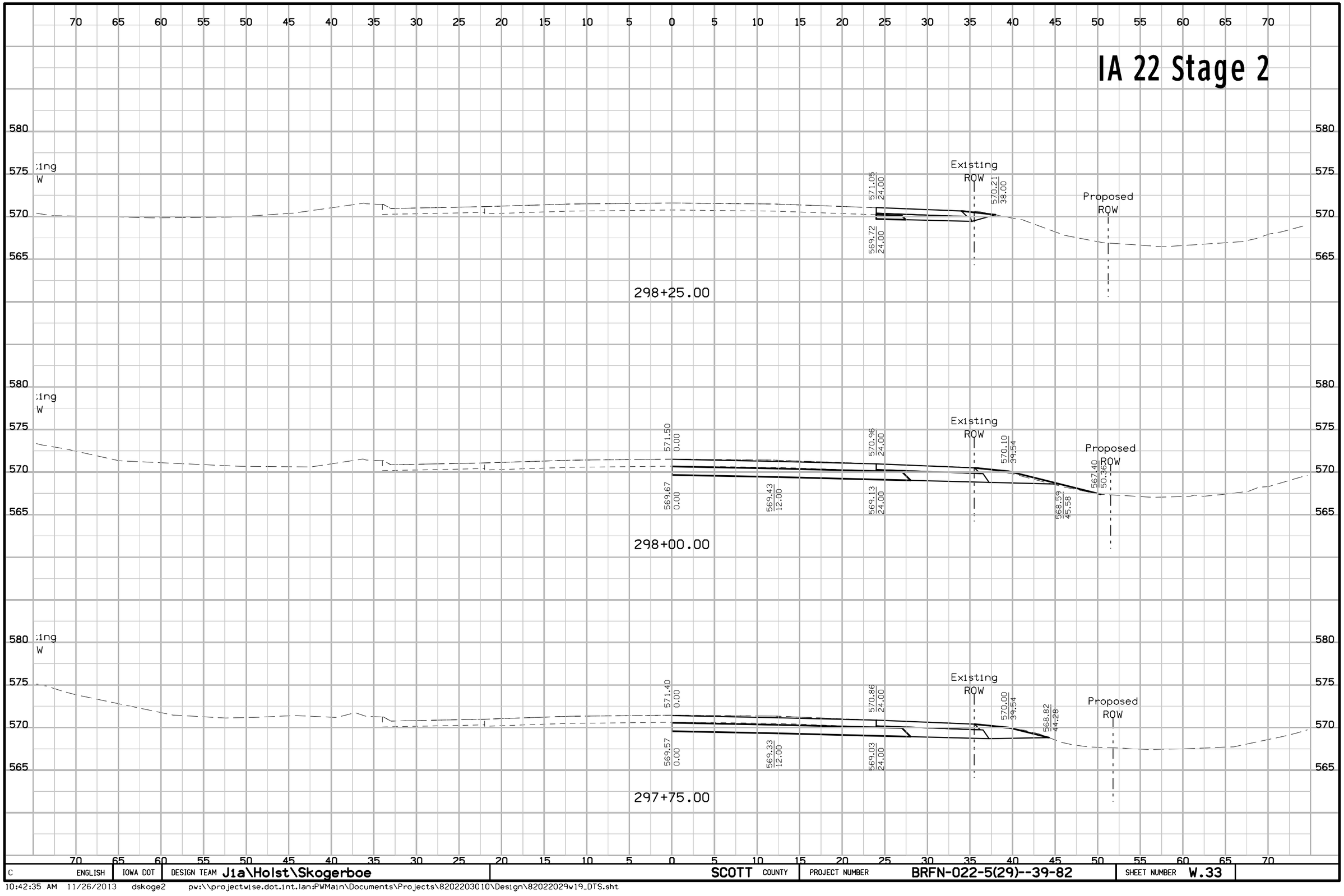
IA 22 Stage 2



C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.32

10:42:34 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2



C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.33

10:42:35 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565 560

:ing
W

571.23
24.00

569.90
24.00

Existing
ROW

570.81
34.03

Proposed
ROW

299+00.00

575 570 565 560

:ing
W

571.19
24.00

569.85
24.00

Existing
ROW

570.72
34.42

Proposed
ROW

298+75.00

575 570 565

:ing
W

571.13
24.00

569.80
24.00

Existing
ROW

570.25
38.00

Proposed
ROW

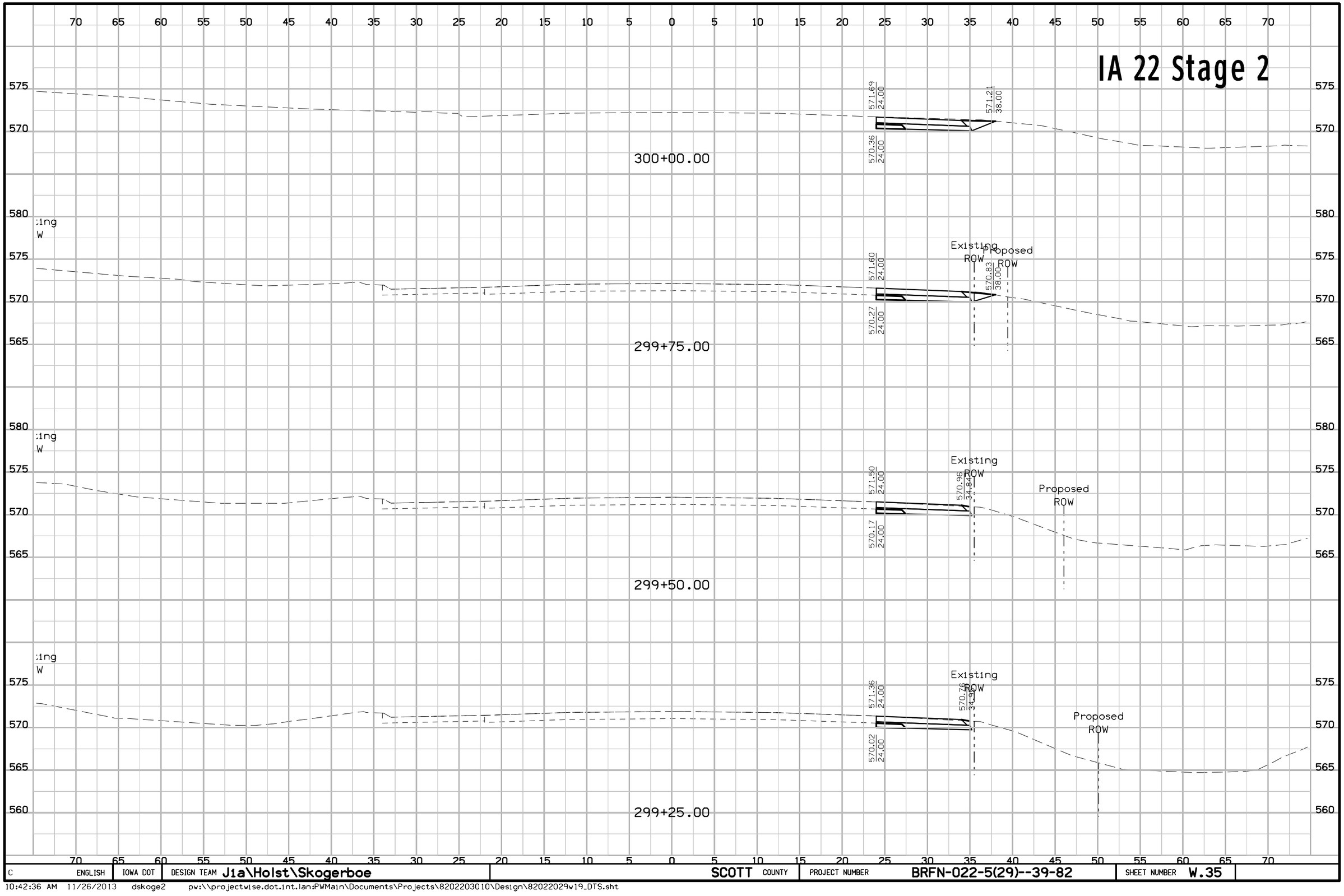
298+50.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.34

10:42:35 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2



C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.35

10:42:36 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 2

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570

300+50.00

575
570

571.89
24.00
570.56
24.00
571.68
38.00

300+47.71

575
570

571.80
24.00
570.46
24.00
571.58
38.00

300+25.00

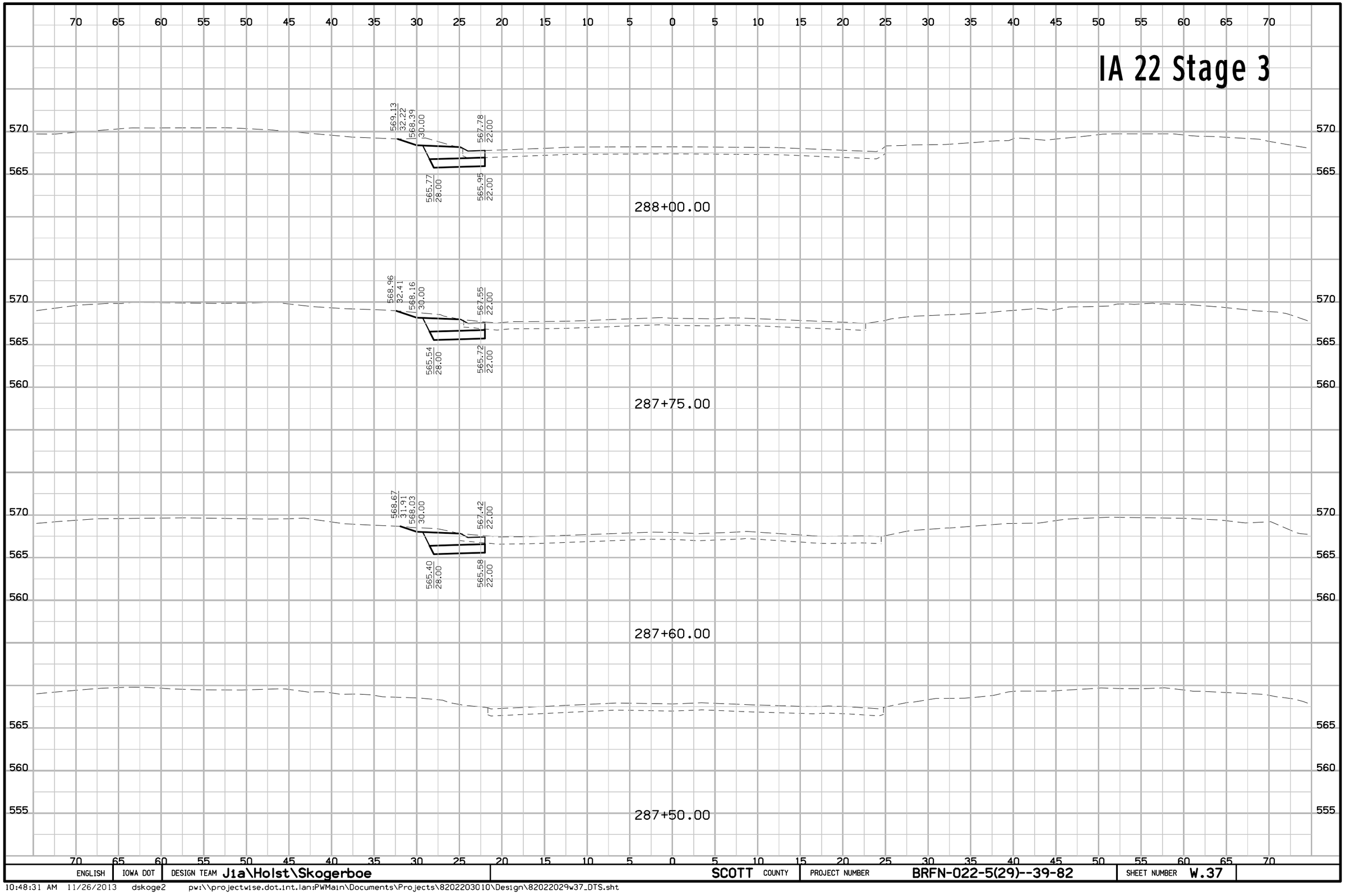
575
570

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

C	ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.36

10:42:37 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w19_DTS.sht

IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.37

10:48:31 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565

Existing ROW

570.20 / 34.59
569.02 / 30.00
568.41 / 22.00
566.40 / 28.00
566.58 / 22.00

289+00.00

Existing ROW

575 570 565

Existing ROW

569.88 / 33.07
568.86 / 30.00
568.25 / 22.00
566.23 / 28.00
566.41 / 22.00

288+75.00

Existing ROW

575 570 565

Existing ROW

569.60 / 32.73
568.69 / 30.00
568.08 / 22.00
566.06 / 28.00
566.24 / 22.00

288+50.00

Existing ROW

570 565

569.19 / 31.98
568.53 / 30.00
567.92 / 22.00
565.90 / 28.00
566.08 / 22.00

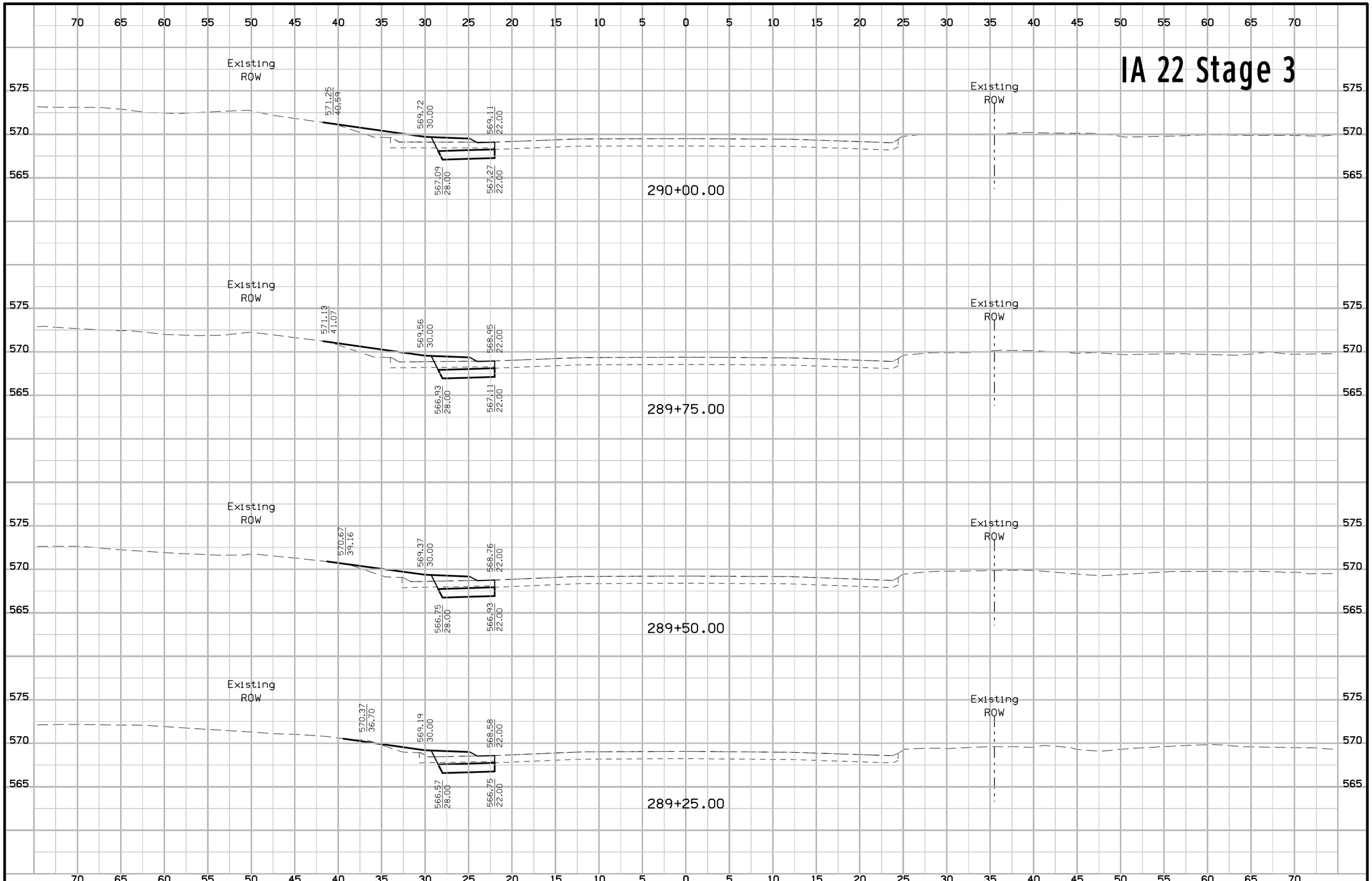
288+25.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.38

10:48:32 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

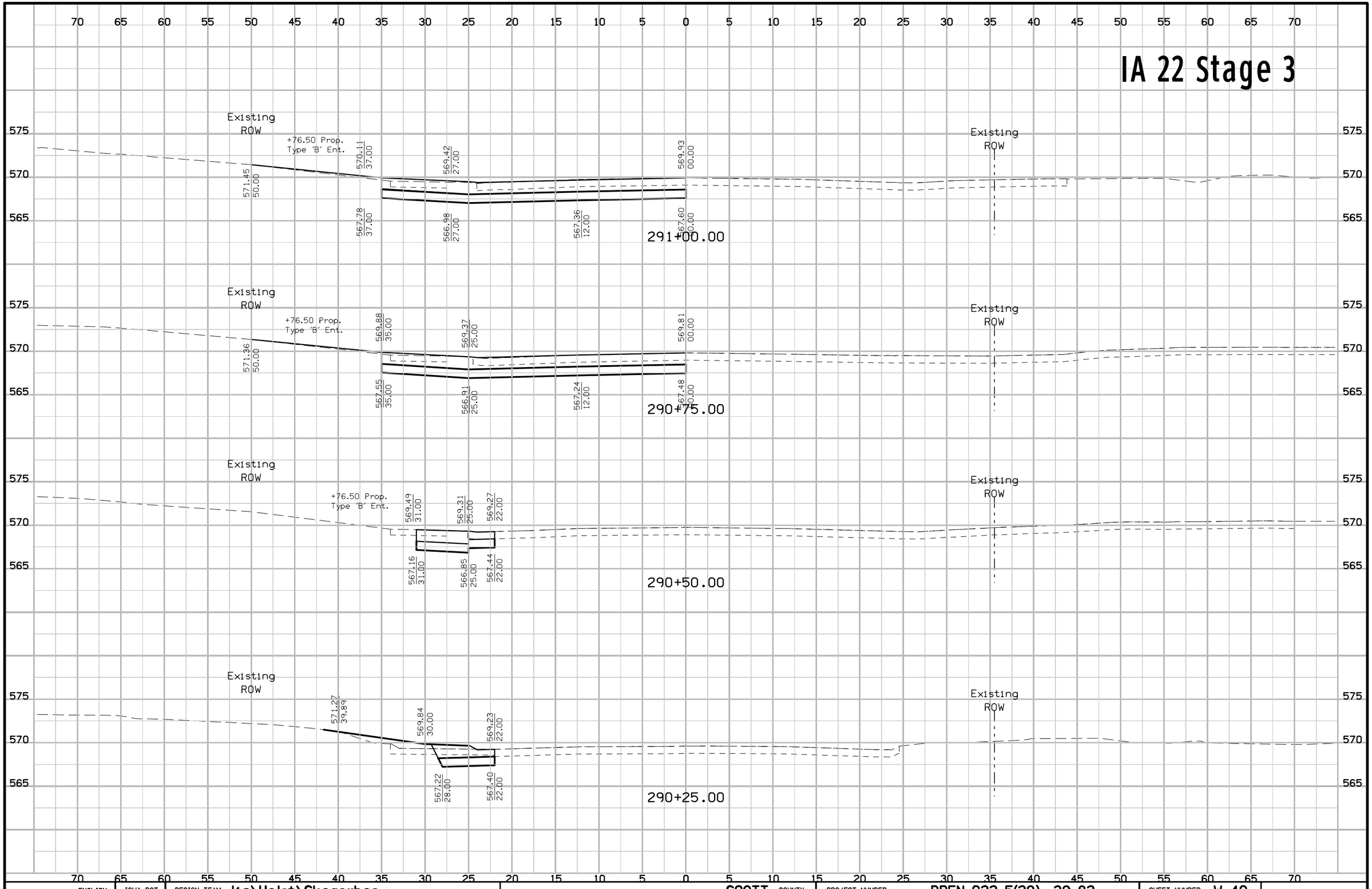
IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.39

10:48:33 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.40

10:48:33 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570
565

Existing ROW

571.93
41.14

570.19
29.50

569.63
24.00

570.17
00.00

567.69
28.00

567.79
24.00

568.09
12.00

568.33
00.00

291+75.00

Existing ROW

Proposed ROW

Existing ROW

571.56
39.74

570.09
29.50

569.53
24.00

570.07
0.00

567.60
28.00

567.70
24.00

568.00
12.00

568.24
0.00

291+50.00

Existing ROW

Existing ROW

Proposed ROW

570.99
37.86

570.15
30.00

569.46
24.00

570.00
00.00

567.52
28.00

567.62
24.00

567.92
12.00

568.16
00.00

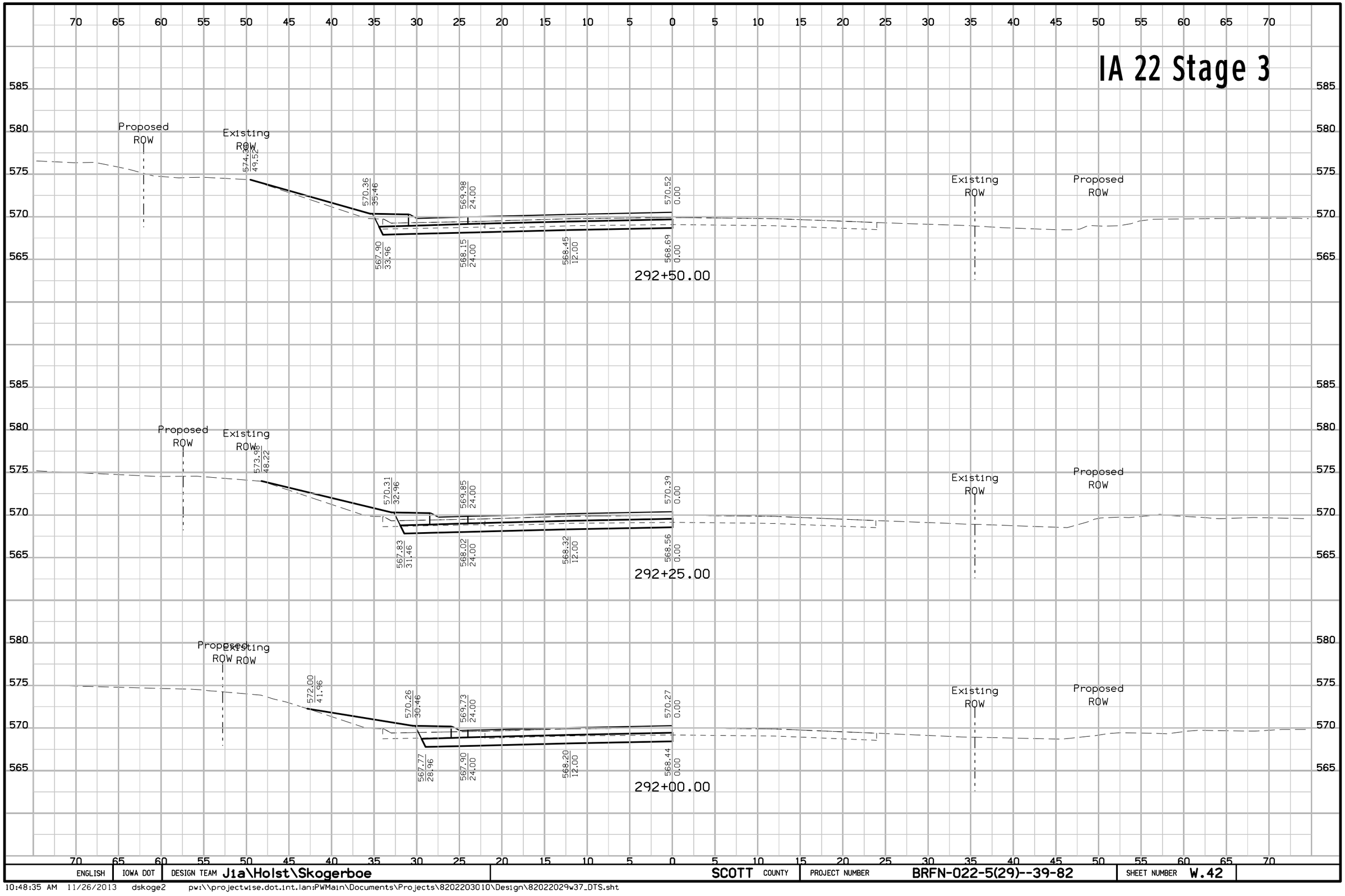
291+25.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.41

10:48:34 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

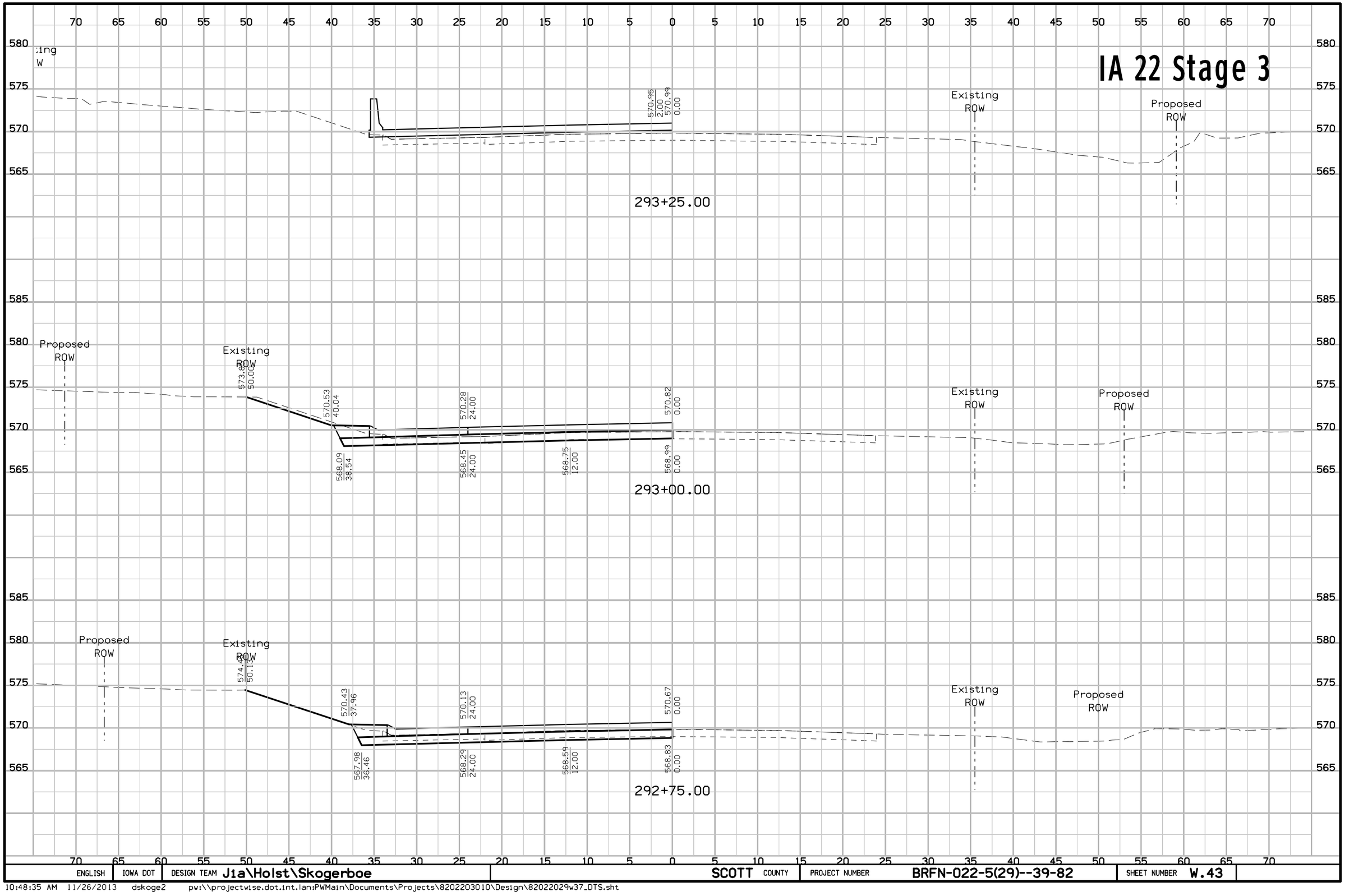
IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.42

10:48:35 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3



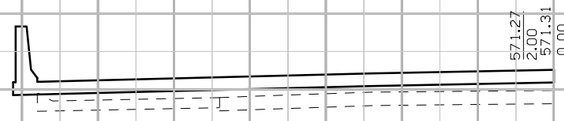
ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.43

10:48:35 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565 560 555 550



:ing
W

Existing
ROW

Proposed
ROW

293+75.00

:ing
W

Existing
ROW

Proposed
ROW

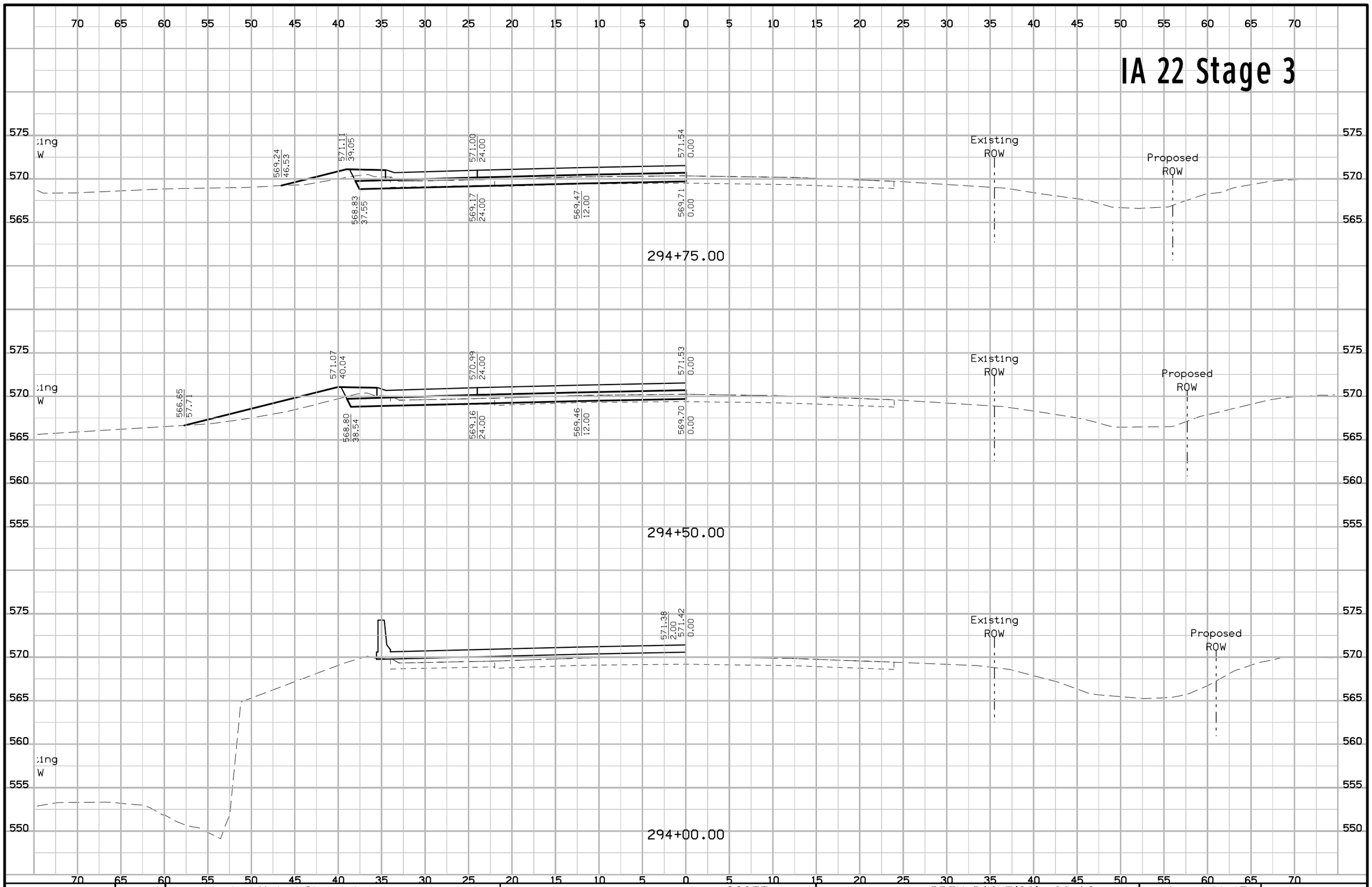
293+50.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.44

10:48:36 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.45

10:48:37 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

:ing
W

571.59
39.47

571.22
29.50

568.89
28.00

569.29
12.00

571.37
0.00

569.53
0.00

Existing
ROW

Proposed
ROW

295+50.00

:ing
W

571.04
37.85

571.32
29.50

568.98
28.00

569.38
12.00

571.46
0.00

569.62
0.00

Existing
ROW

Proposed
ROW

295+25.00

:ing
W

570.65
36.81

571.23
34.12

568.93
32.62

570.98
24.00

569.14
24.00

569.44
12.00

571.52
0.00

569.68
0.00

Existing
ROW

Proposed
ROW

295+00.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.46

10:48:37 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

:ing
W

572.16
49.02

+00.70 Prop.
Type 'B' Ent.

570.56
24.00

571.10
0.00

568.63
28.00

568.73
24.00

569.03
12.00

569.27
0.00

Existing
ROW

Proposed
ROW

296+25.00

:ing
W

572.31
55.00

+00.70 Prop.
Type 'B' Ent.

570.62
24.00

571.16
0.00

568.68
28.00

568.78
24.00

569.08
12.00

569.32
0.00

Existing
ROW

Proposed
ROW

296+00.00

:ing
W

571.85
47.30

+00.70 Prop.
Type 'B' Ent.

570.71
24.00

571.25
0.00

568.78
28.00

568.88
24.00

569.18
12.00

569.42
0.00

Existing
ROW

Proposed
ROW

295+75.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.47

10:48:38 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

580 575 570 565

ing
W

571.78
38.07

571.16
29.50

568.66
28.00

569.06
12.00

571.13
0.00

569.30
0.00

Existing
ROW

Proposed
ROW

297+00.00

572.01
38.98

571.11
29.50

568.61
28.00

569.01
12.00

571.09
0.00

569.25
0.00

296+75.00

572.04
39.46

571.10
29.50

568.60
28.00

569.00
12.00

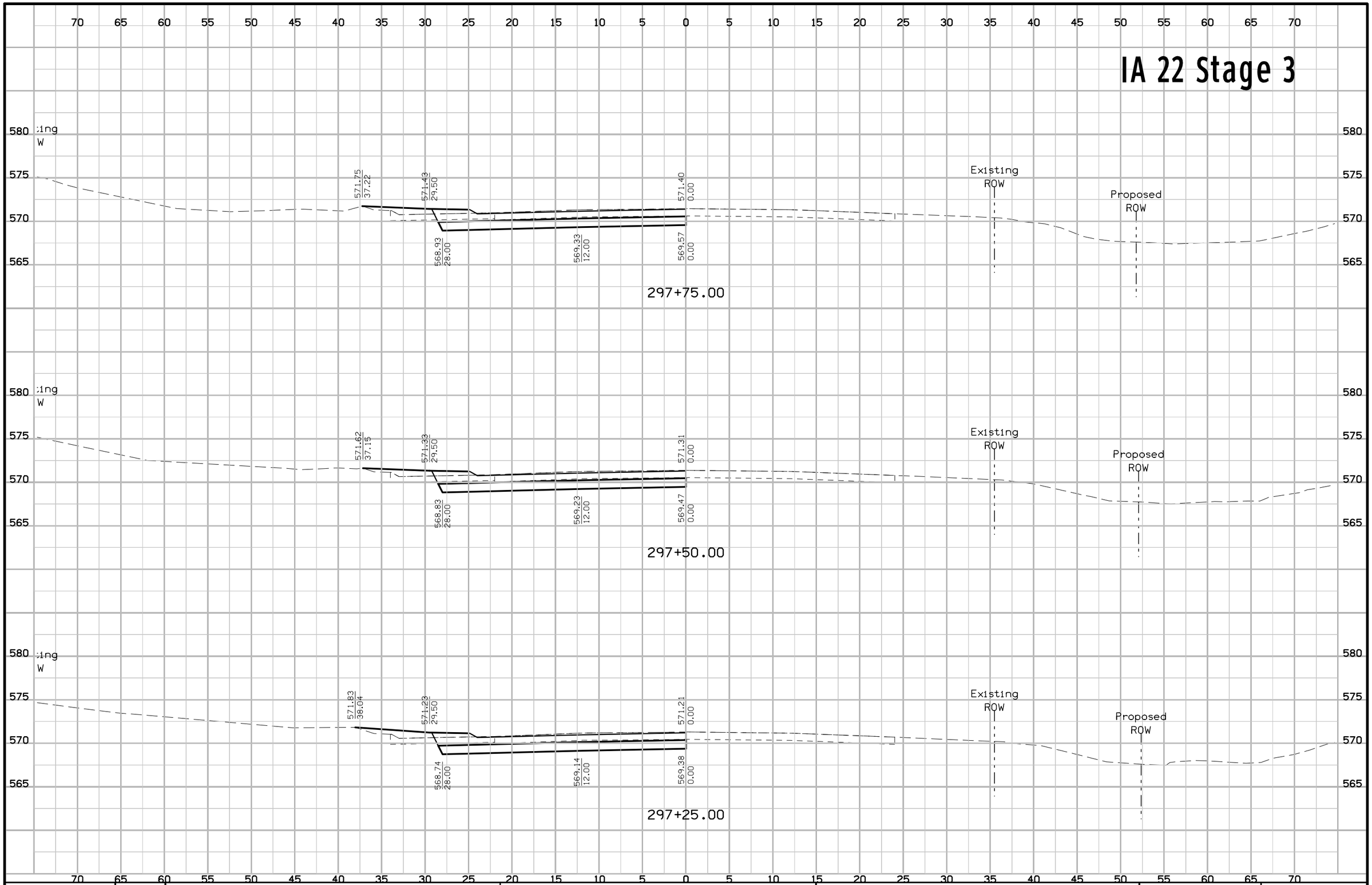
571.08
0.00

569.24
0.00

296+50.00

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.48

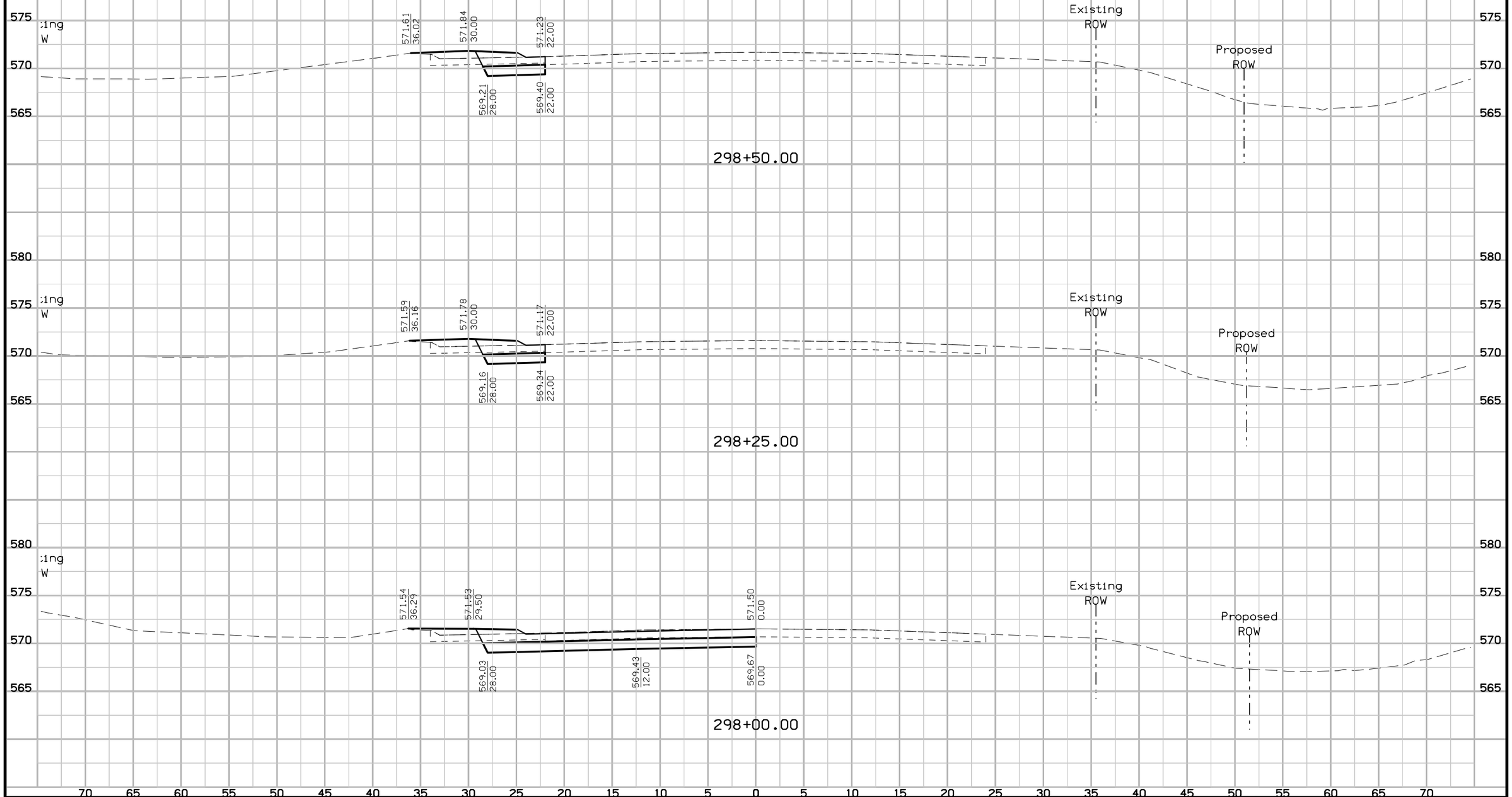
IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER	BRFN-022-5(29)--39-82	SHEET NUMBER W.49

10:48:39 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

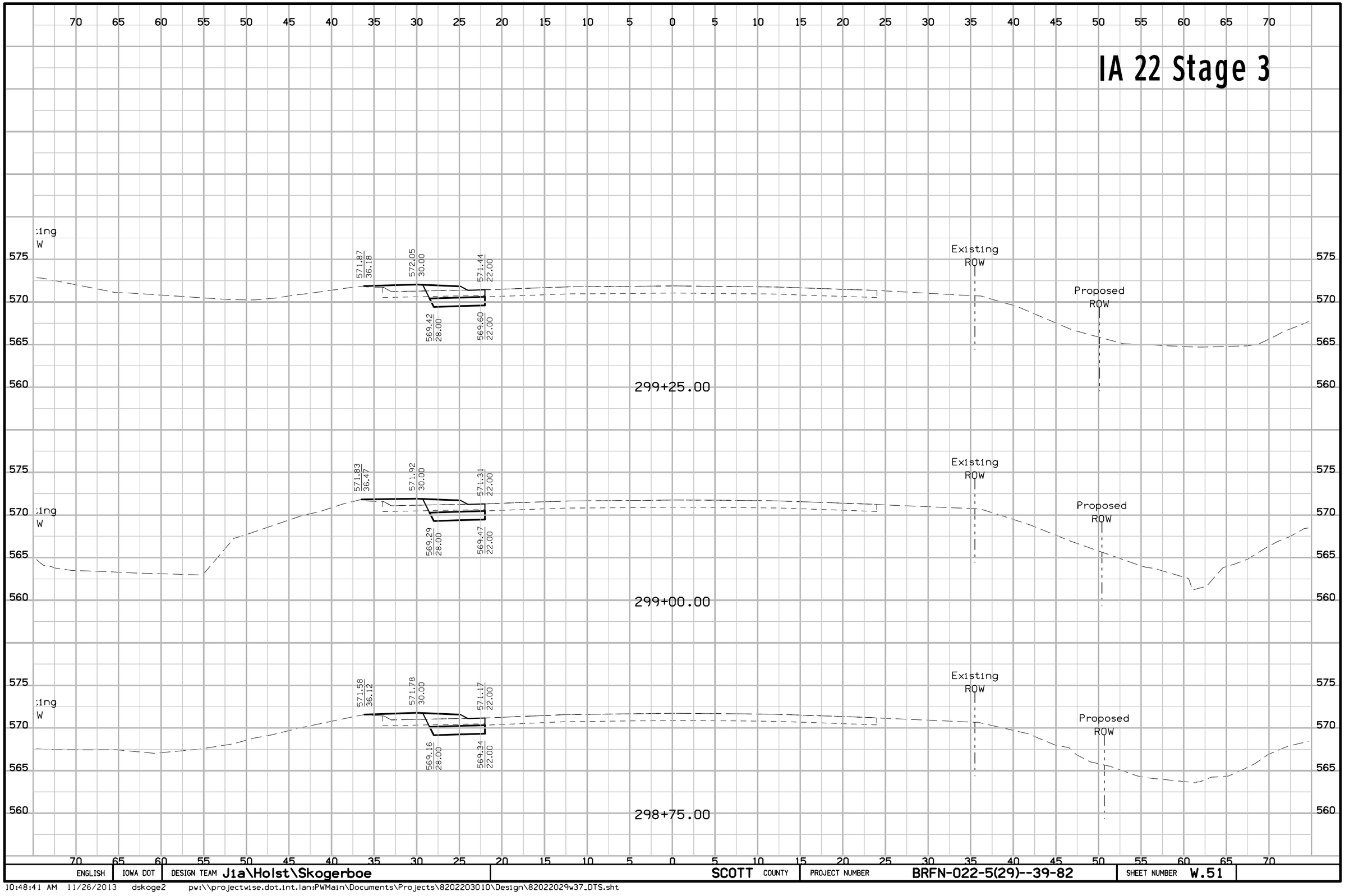
IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.50

10:48:40 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.51

10:48:41 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w37_DTS.sht

IA 22 Stage 3

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570

572.82
37.62

572.52
30.00

571.91
22.00

569.89
28.00

570.07
22.00

300+25.00

575
570

572.47
36.90

572.41
30.00

571.80
22.00

569.79
28.00

569.97
22.00

300+00.00

580
575
570
565

:ing
W

572.32
36.74

572.31
30.00

571.70
22.00

569.69
28.00

569.87
22.00

Existing
ROW

Proposed
ROW

299+75.00

580
575
570
565

:ing
W

572.16
36.63

572.19
30.00

571.58
22.00

569.57
28.00

569.75
22.00

Existing
ROW

Proposed
ROW

299+50.00

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.52

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

IA 22 Stage 3

575

570

300+50.00

575

570

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.53

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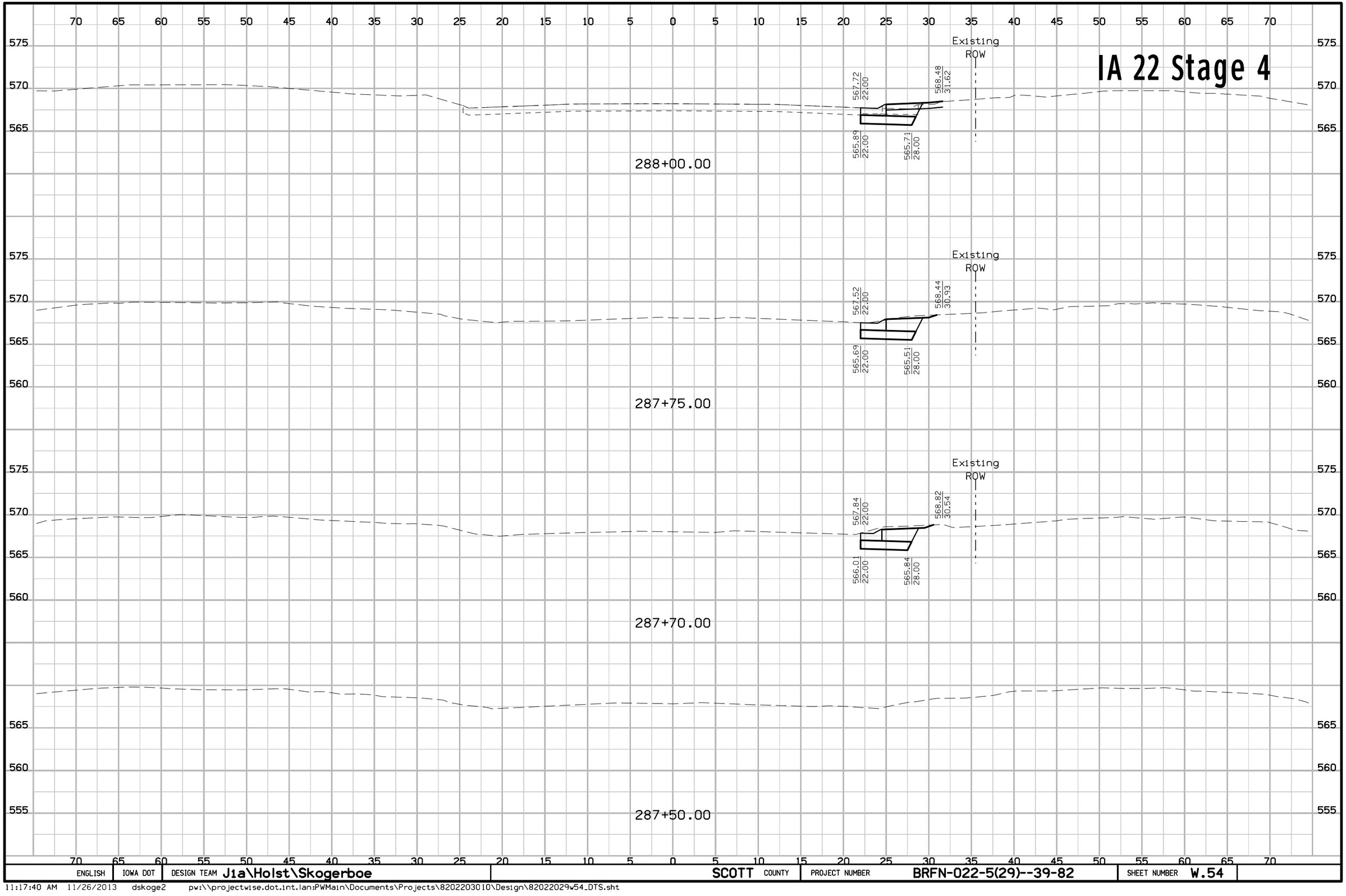
IA 22 Stage 4



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.54

11:17:40 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w54_DTS.sht

IA 22 Stage 4

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575 570 565

Existing ROW

568.47 22.00 | 569.08 30.00 | Existing ROW 569.32 37.43

566.64 22.00 | 566.46 28.00

289+00.00

Existing ROW

568.31 22.00 | 568.92 30.00 | Existing ROW 568.87 36.93

566.48 22.00 | 566.30 28.00

288+75.00

Existing ROW

588.14 22.00 | 568.75 30.00 | Existing ROW 568.27 35.87

566.30 22.00 | 566.12 28.00

288+50.00

Existing ROW

567.94 22.00 | 568.55 30.00 | Existing ROW 568.72 33.97

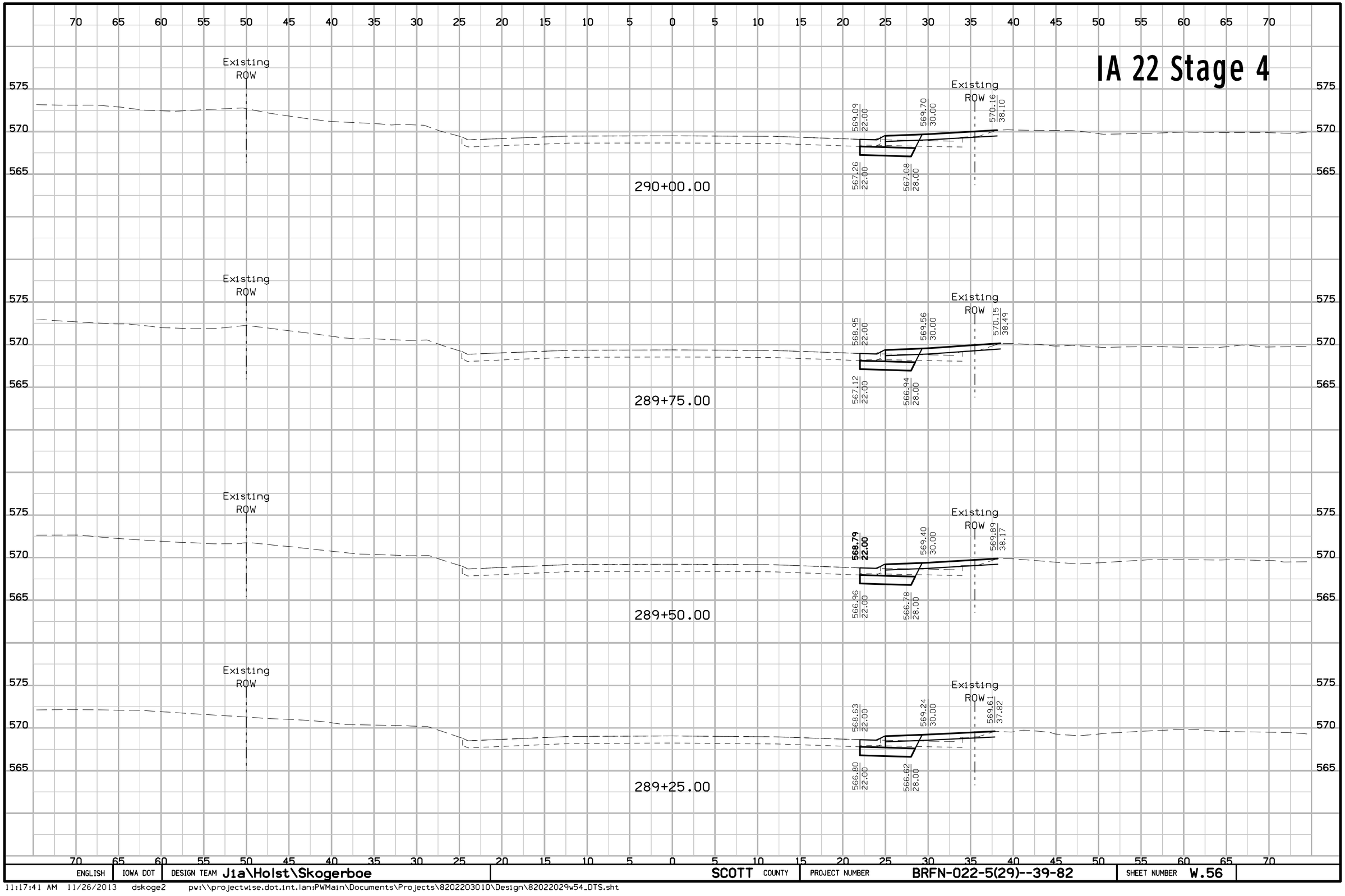
566.11 22.00 | 565.93 28.00

288+25.00

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.55

11:17:40 AM 11/26/2013 dskoge2 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\8202203010\Design\82022029w54_DTS.sht

IA 22 Stage 4



ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.56

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IA 22 Stage 4

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

575
570
565

Existing ROW

290+50.00

569.34 / 22.00
569.28 / 24.00
567.51 / 22.00
567.45 / 24.00

Existing ROW

569.64 / 34.00
567.81 / 34.00

Existing ROW

290+25.00

569.19 / 22.00
567.36 / 22.00
569.80 / 30.00
567.18 / 28.00

Existing ROW

570.28 / 38.15

ENGLISH	IOWA DOT	DESIGN TEAM J1a\Holst\Skogerboe	SCOTT COUNTY	PROJECT NUMBER BRFN-022-5(29)--39-82	SHEET NUMBER W.57

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