LETTING DATE 1-18-2017

POLK/STORY Co. HMA RESURFACING WITH MILLING IMN-035-4(190)98--0E-77

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

POLK/STORY COUNTY

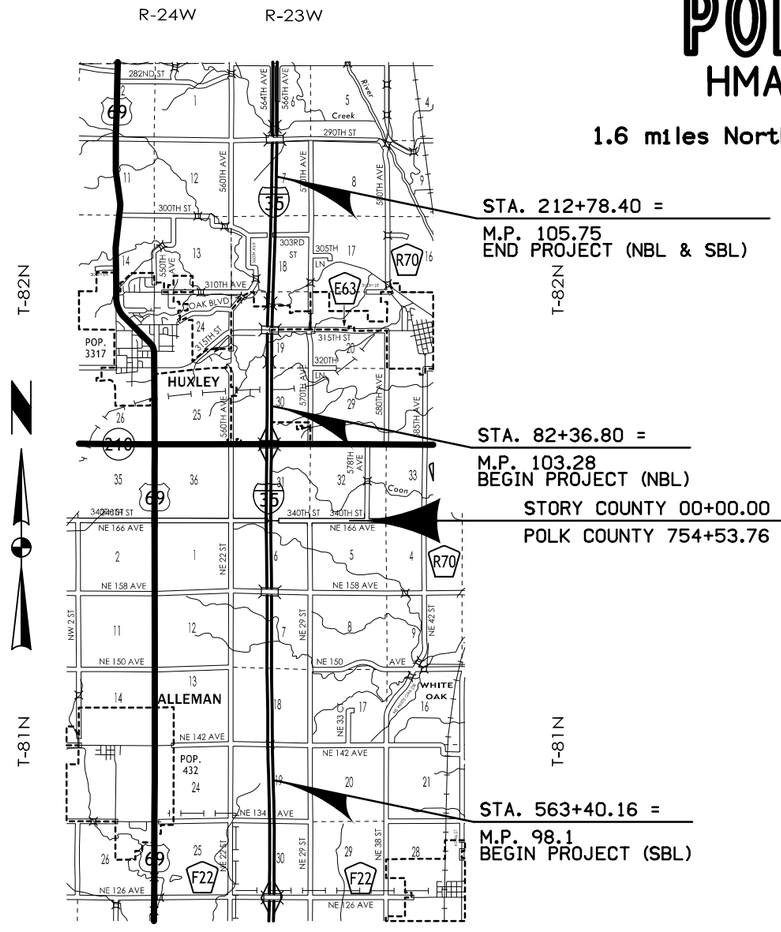
HMA RESURFACING WITH MILLING

1.6 miles North of Co. Rd. F22 to 3.5 miles North of IA 210 (NB/SB)

SCALES: As Noted

REVISIONS

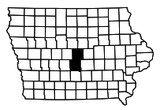
TOTAL 38
PROJECT IDENTIFICATION NUMBER
13-77-035-020
PROJECT NUMBER
IMN-035-4(190)98--0E-77
R.O.W. PROJECT NUMBER
IMN-035-7(190)98--0E-77



Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

INDEX OF SHEETS



LOCATION MAP SCALE
0 1 2 3
Miles

BOP TO IA 210 DESIGN DATA RURAL		
2017 AADT	48922	V.P.D.
2037 AADT	77370	V.P.D.
2037 DHV	7992	V.P.H.
TRUCKS	20	%
Total Design ESALs	1M Ramps/30M I-35	

IA 210 TO EOP DESIGN DATA RURAL		
2017 AADT	44910	V.P.D.
2037 AADT	71093	V.P.D.
2037 DHV	7344	V.P.H.
TRUCKS	20	%
Total Design ESALs	1M Ramps/30M I-35	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Paul W. Flattery	Primary Signature Block
V.1	James S. Nelson	Structural Design Block

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER — Paul W. Flattery 15282 — IOWA

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

Signature — Date: 08-12-2016

Paul W. Flattery
Printed or Typed Name

My license renewal date is December 31, 2017

Pages or sheets covered by this seal: A.1,B.1-B.4,C.1-C.14,D.1-D.14,J.1,K.1-K.2

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER A.1

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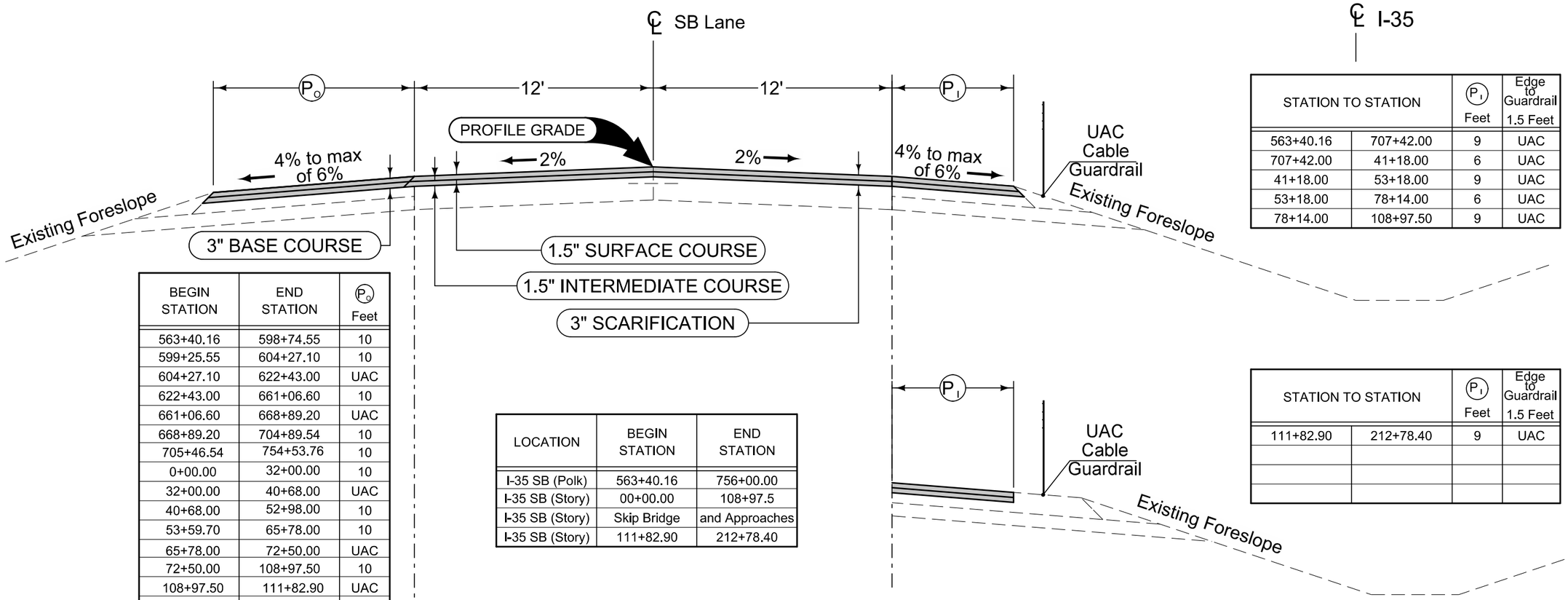
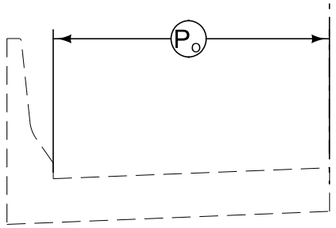


BEGIN STATION	END STATION	P_o Feet
563+40.16	598+74.55	10
599+25.55	604+27.10	10
604+27.10	622+43.00	UAC
622+43.00	661+06.60	10
661+06.60	668+89.20	UAC
668+89.20	704+89.54	10
705+46.54	754+53.76	10
0+00.00	32+00.00	10
32+00.00	40+68.00	UAC
40+68.00	52+98.00	10
53+59.70	65+78.00	10
65+78.00	72+50.00	UAC
72+50.00	108+97.50	10
108+97.50	111+82.90	UAC
111+82.90	132+51.80	10
132+99.80	185+17.50	10
185+17.50	196+23.50	UAC
196+23.50	210+63.50	10
210+63.50	212+78.40	UAC

LOCATION	BEGIN STATION	END STATION
I-35 SB (Polk)	563+40.16	756+00.00
I-35 SB (Story)	00+00.00	108+97.5
I-35 SB (Story)	Skip Bridge	and Approaches
I-35 SB (Story)	111+82.90	212+78.40

STATION TO STATION		P_I Feet	Edge to Guardrail 1.5 Feet
563+40.16	707+42.00	9	UAC
707+42.00	41+18.00	6	UAC
41+18.00	53+18.00	9	UAC
53+18.00	78+14.00	6	UAC
78+14.00	108+97.50	9	UAC

STATION TO STATION		P_I Feet	Edge to Guardrail 1.5 Feet
111+82.90	212+78.40	9	UAC

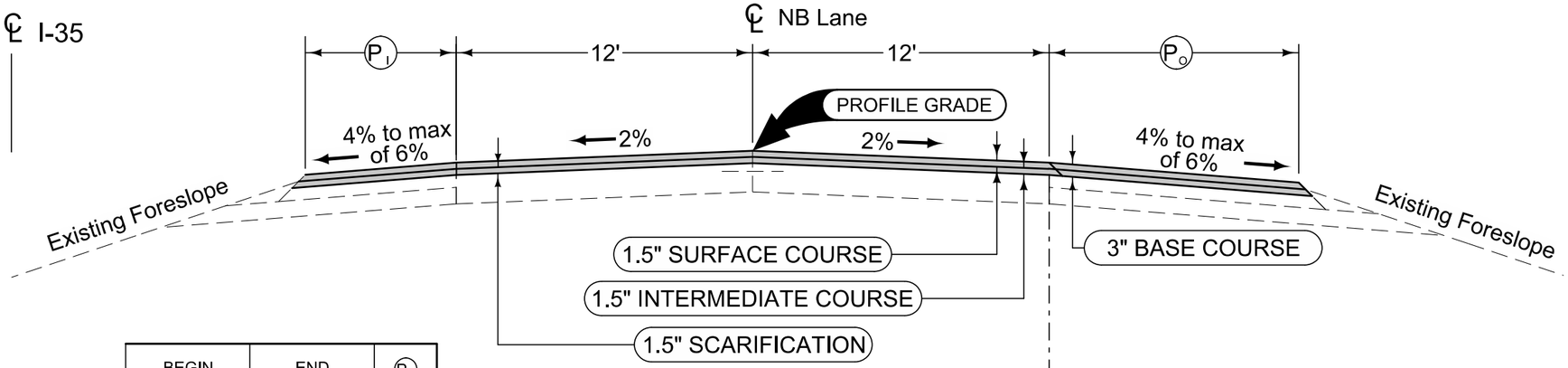


STATION TO STATION		P_o Feet
598+74.55	599+25.55	10
704+89.54	705+46.54	10
52+98.00	53+59.70	10
132+51.80	132+99.80	10

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

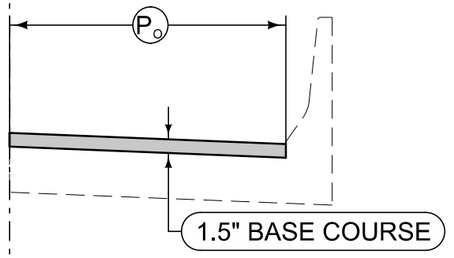
I-35 SB LANES



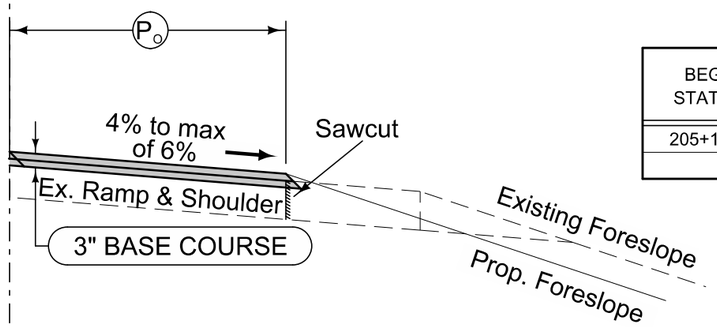
BEGIN STATION	END STATION	P_1 Feet
82+36.80	108+95.40	6
111+80.70	212+78.40	6

LOCATION	BEGIN STATION	END STATION
I-35 NB (Story)	82+36.80	108+95.40
I-35 NB (Story)	Skip Bridge	and Approaches
I-35 NB (Story)	111+80.70	212+78.40

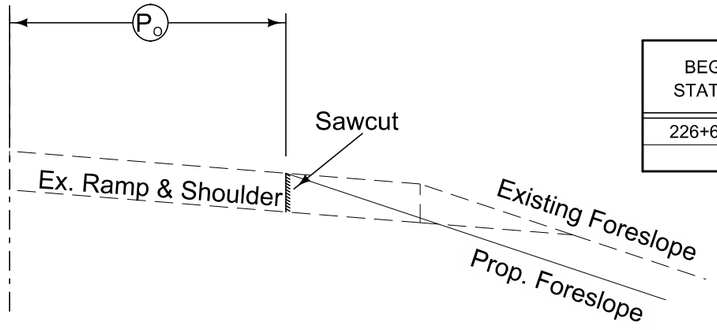
BEGIN STATION	END STATION	P_O Feet
82+36.80	108+95.40	10
111+80.70	132+29.40	10
132+78.40	205+18.27	10
211+94.66	212+78.40	10



BEGIN STATION	END STATION	P_O Feet
132+29.40	132+78.40	10



BEGIN STATION	END STATION	P_O Feet
205+18.27	211+94.66	10

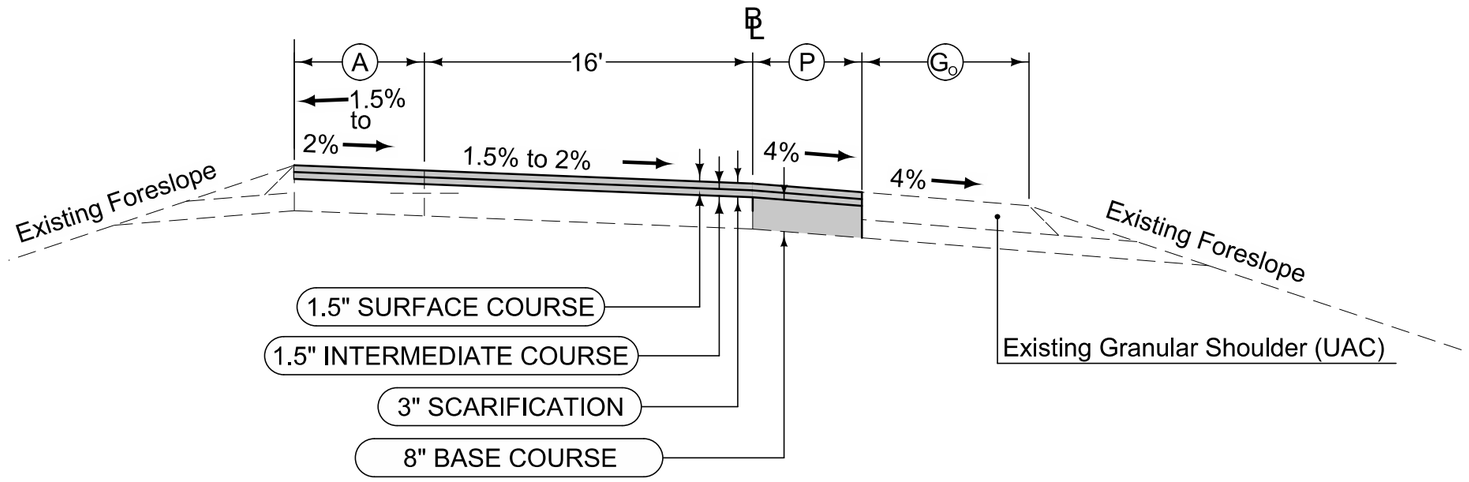


BEGIN STATION	END STATION	P_O Feet
226+60.00	238+90.00	10

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

I-35 NB LANES



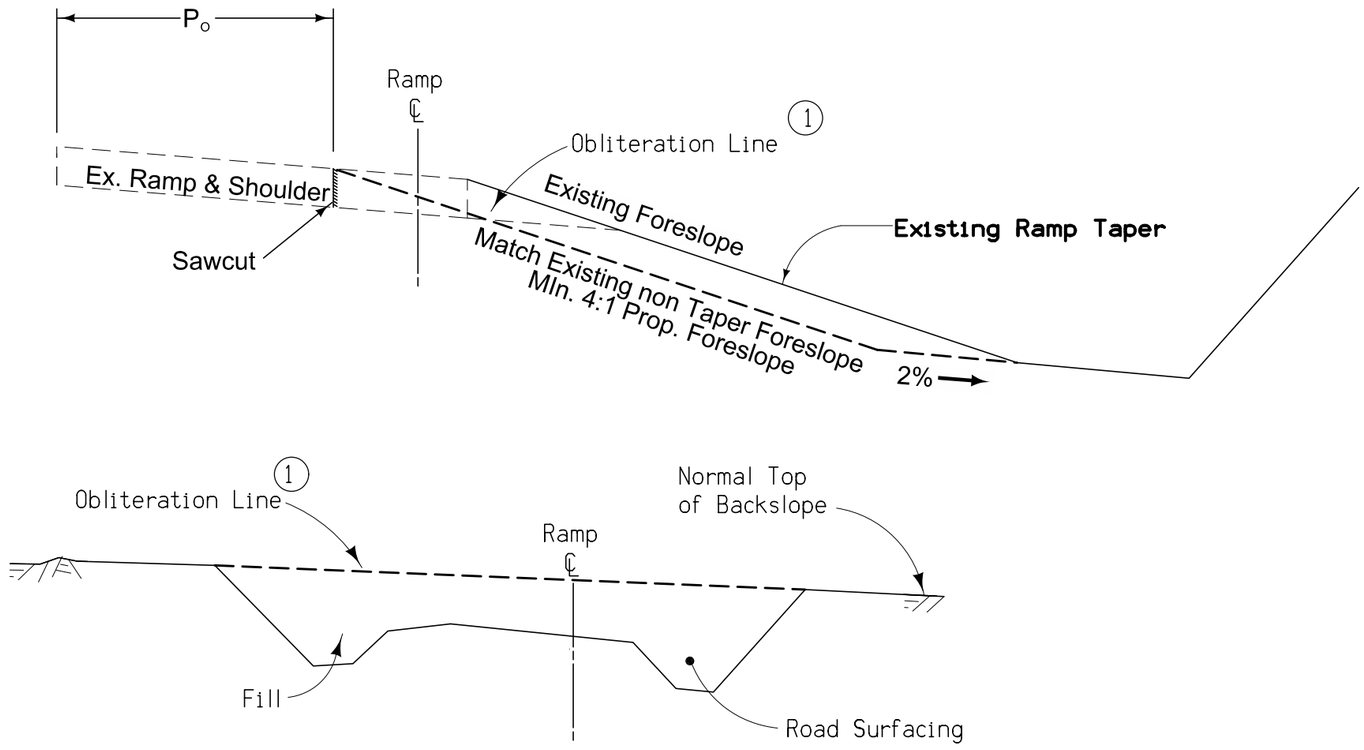
Typical Viewed in Direction of Traffic

LOCATION	BEGIN STATION	END STATION	Ⓐ Feet	Ⓟ Feet	$Ⓖ_O$ Feet
RAMP B	240+88.00	253+34.97	4	6	4
RAMP C	340+30.00	352+50.87	4	6	4
RAMP D	453+64.41	465+92.00	4	6	4
RAMP E	553+06.31	565+90.00	4	6	4

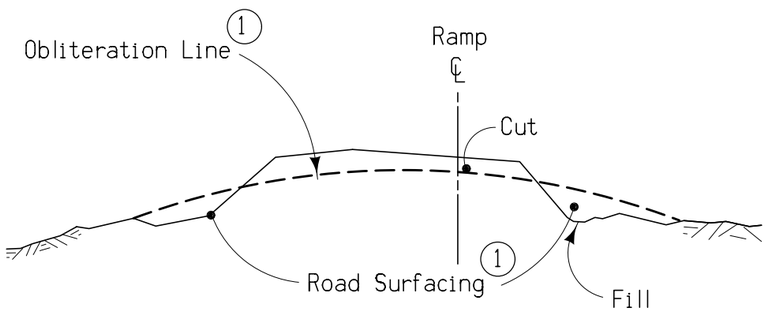
See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

IA 210 RAMPS



Ramp Cut Section



Ramp Fill Section

(1) The upper 8" to be Topoil Material

Note:
The work of obliterating or reshaping old roadbeds shall be done at the direction of the Engineer.

TYPICAL DETAILS FOR OBLITERATION
NBL WEIGHT STATION
RAMP AND RAMP TAPER ROADBED

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER B.4

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100-1D
10-18-05

PROJECT DESCRIPTION

This project involves the milling and HMA resurfacing of I-35 NB & SB and IA 210 interchanges in Polk and Story Counties

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	5,000.0	
2	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	5,353.9	
3	2121-7425010	GRANULAR SHOULDERS, TYPE A	TON	232.4	
4	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	484.20	
5	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	57.3	
6	2212-5070322	PATCHES, PARTIAL-DEPTH REPAIR, HOT MIX ASPHALT	SY	123.6	
7	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	57	
8	2214-5145150	PAVEMENT SCARIFICATION	SY	298,478.4	
9	2303-1031500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX	TON	10,491.50	
10	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	5,222.03	
11	2303-1033504	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4	TON	5,222.03	
12	2303-1052500	HOT MIX ASPHALT VERY HIGH TRAFFIC, INTERMEDIATE COURSE 1/2 IN. MIX	TON	16,143.00	
13	2303-1053504	HOT MIX ASPHALT VERY HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4	TON	16,143.00	
14	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	629.50	
15	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	626.60	
16	2303-1258285	ASPHALT BINDER, PG 58-28V, VERY HIGH TRAFFIC	TON	1,937.12	
17	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1.00	
18	2401-6745356	REMOVAL OF CONCRETE FOOTINGS OF LIGHT POLES	EACH	12	
19	2401-6745765	REMOVAL OF LIGHT POLES	EACH	12	
20	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
21	2505-4008300	STEEL BEAM GUARDRAIL	LF	1,575.0	
22	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	10	
23	2505-4020580	GUARDRAIL, SPECIAL ANCHOR SECTION	EACH	1	
24	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	10	
25	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	9	
26	2505-4021721	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206	EACH	1	
27	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	680.0	
28	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	5	
29	2507-2638620	MACADAM STONE SLOPE PROTECTION	SY	423.0	
30	2510-6745850	REMOVAL OF PAVEMENT	SY	13,831.9	
31	2519-3000000	FLOOD PLAIN FENCE	LF	110.0	
32	2519-3280000	FENCE, FIELD	LF	1,105.0	
33	2519-3300400	FIELD FENCE BRACE PANELS	EACH	10	
34	2520-3350015	FIELD OFFICE	EACH	1	
35	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	2,762.31	
36	2528-8445110	TRAFFIC CONTROL	LS	1.00	
37	2529-2242304	CD JOINT ASSEMBLY	EACH	4	
38	2533-4980005	MOBILIZATION	LS	1.00	
39	2536-6745045	REMOVAL OF ASBESTOS	LS	1.00	
40	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	1,071.6	
41	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	1,160.9	
42	2601-2634100	MULCHING	ACRE	3.0	
43	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	1.0	
44	2601-2636060	SALT TOLERANT SEEDING	ACRE	3.0	
45	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	3.0	
46	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
47	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2102-2710090	**EXCAVATION, CLASS 10, WASTE**
		For Obliteration of NBL Weigh Station Ramps and Tapers.
		Shape to Drain, refer B sheets for Obliteration details.
		Waste material will be allowed to fill removed NBL Weigh Station Parking Pavement Area
		to within 8" existing pavement removed.
-	-	-
2	2105-8425015	**TOPSOIL, STRIP, SALVAGE AND SPREAD**
		Place 8" on all Removed NBL Weigh Station pavement areas and obliterated Ramp and Ramp Tapers.
-	-	-
3	2121-7425010	**GRANULAR SHOULDERS, TYPE A**
		For I-35/IA 210 Ramps, Refer to B sheets and Tab. 112-9M in the C Sheets for locations and details.
-	-	-
4	2123-7450000	**SHOULDER CONSTRUCTION, EARTH**
		Refer to B sheets and Tab. 112-9M in the C Sheets for locations and details.
-	-	-
5	2212-5070310	**PATCHES, FULL-DEPTH REPAIR**
		Refer to Tab. 102-6C in the C Sheets for locations and details.
-	-	-
6	2212-5070322	**PATCHES, PARTIAL-DEPTH REPAIR, HOT MIX ASPHALT**
		Refer to Tab. 102-11 in the C Sheets for locations and details.
-	-	-
7	2212-5070330	**PATCHES BY COUNT (REPAIR)**
		Refer to Tab. 102-6C and 102-11 in the C Sheets for locations and details.
-	-	-
8	2214-5145150	**PAVEMENT SCARIFICATION**
		Refer to Tab. 100-25M in the C Sheets for locations and details.
-	-	-
9	2303-1031500	**HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX**
		For I-35 Outside Shoulder needs and I-35/IA 210 Ramp's shoulder widening.
		Refer to the B sheets and Tab. 112-9M in the C Sheets
		.
		5% is added for irregularities.
-	-	-
10	2303-1032500	**HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX**
11	2303-1033504	**HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4**
		For I-35/IA 210 Ramps and shoulders. See B sheets and Tab. 100-25M Standard Traffic Mix locations on C sheets.
		Bid quantity is 5% greater than Tab quantity for irregularities.
-	-	-
12	2303-1052500	**HOT MIX ASPHALT VERY HIGH TRAFFIC, INTERMEDIATE COURSE 1/2 IN. MIX**
13	2303-1053504	**HOT MIX ASPHALT VERY HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4**
		For I-35 Lanes and Median Shoulder. See Tab. 100-25M Very High Mix locations.
		Bid quantity is 5% greater than Tab quantity for irregularities.
-	-	-
14	2303-1258283	**ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC**
		Refer to Tab. 112-9M on C sheets and B sheets.
		5% is added from Tab. totals for irregularities.
-	-	-
15	2303-1258284	**ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC**
		Refer to Tab. 100-25M on C sheets and B Sheet.
		5% is added from Tab. totals for irregularities.
-	-	-
16	2303-1258285	**ASPHALT BINDER, PG 58-28V, VERY HIGH TRAFFIC**
		Refer to Tab. 100-25M on C sheets and B Sheet.
		5% is added from Tab. totals for irregularities.
-	-	-
17	2303-6911000	**HOT MIX ASPHALT PAVEMENT SAMPLES**
		- -
-	-	-
18	2401-6745356	**REMOVAL OF CONCRETE FOOTINGS OF LIGHT POLES**
		Refer to Tab. 110-16 on C sheets. Waste as per Spec. 1106.07.
		Method of Measurement: The Engineer will count each concrete light pole footings removed.
		Basis of Payment: For each concrete light pole footings removed the contractor will be paid the contract unit pr
-	-	-
19	2401-6745765	**REMOVAL OF LIGHT POLES**
		Refer to Tab. 110-16 on C sheets. Waste as per Spec. 1106.07.
		Method of Measurement: The Engineer will count each concrete light pole removed.
		Basis of Payment: For each concrete light pole removed the contractor will be paid the contract unit price.
-	-	-

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
20	2401-6750001	**REMOVALS, AS PER PLAN**
		Refer to V sheets for more details.
		Includes all work for removal and off-site disposal of Concrete Slope Protection (approximately 430 s.y.)
		and the concrete walls between the columns of existing piers 1 & 3.
		Removal of scheduled items shall be in accordance with section 2401, of the standard specifications.
		Any damage to material not to be removed shall be the responsibility of the contractor and repaired at
		no extra cost to the state.
-	-	-
21	2505-4008300	**STEEL BEAM GUARDRAIL**
22	2505-4008410	**STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201**
		Refer to Tab. 108-8A in the C Sheets for locations and details.
-	-	-
23	2505-4020580	**GUARDRAIL, SPECIAL ANCHOR SECTION**
		This contract item covers the permanent attachment of high tension cable guardrail to steel beam guardrail
		at the locations shown in the contract documents. Provide a connection meeting the high tension cable
		guardrail manufacturer's specifications.
		This item includes the following: Any additional lengths of cable required, attachment hardware, special
		steel beam guardrail sections, modifications to any existing steel beam guardrail sections, and any
		additional labor, equipment, or materials necessary to provide for a complete connection assembly.
		The Engineer will count the number of Guardrail, Special Anchor Sections.
		Payment will be contract unit price for each Guardrail, Special Anchor Section properly installed.
-	-	-
24	2505-4021010	**STEEL BEAM GUARDRAIL END ANCHOR, BOLTED**
25	2505-4021720	**STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205**
26	2505-4021721	**STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-206**
		Refer to Tab. 108-8A in the C Sheets for locations and details.
-	-	-
27	2505-6000111	**HIGH TENSION CABLE GUARDRAIL**
28	2505-6000121	**HIGH TENSION CABLE GUARDRAIL, END ANCHOR**
		Refer to Tab. 108-9A in the C Sheets for locations and details.
-	-	-
29	2507-2638620	**MACADAM STONE SLOPE PROTECTION**
		See V sheets for more details.
		Includes furnishing and placing Engineering Fabric, Macadam Stone, 4" x 6" Treated Timbers,
		1/2" diameter Steel Pins (or Rebars), Porous Backfill or Granular Subbase Backfill at front
		face of abutment footing, and all required excavating, shaping and compacting.
-	-	-
30	2510-6745850	**REMOVAL OF PAVEMENT**
		Refer to Tab. 110-1 and 110-5 in the C Sheets for locations and details.
-	-	-
31	2519-3000000	**FLOOD PLAIN FENCE**
32	2519-3280000	**FENCE, FIELD**
33	2519-3300400	**FIELD FENCE BRACE PANELS**
		Refer to Tab. 100-7 on C sheet for locations and details.
-	-	-
34	2520-3350015	**FIELD OFFICE**
		- -
-	-	-
35	2527-9263109	**PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED**
		Refer to Tab. 108-22 in the C Sheets for locations and details.
-	-	-
36	2528-8445110	**TRAFFIC CONTROL**
		- -
-	-	-
37	2529-2242304	**CD JOINT ASSEMBLY**
		Refer to Tab. 102-6C in the C Sheets for locations and details.
-	-	-
38	2533-4980005	**MOBILIZATION**
		- -
-	-	-
39	2536-6745045	**REMOVAL OF ASBESTOS**
		Approximately 190 Sq. Ft. Refer to notes on sheet V.1.
-	-	-
40	2548-0000100	**MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE**
		Refer to Tab. 112-10 in the C Sheets for locations and details.
-	-	-
41	2548-0000110	**ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)**
		Refer to Tab. 112-10 in the C Sheets for locations and details.
-	-	-

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
42	2601-2634100	**MULCHING**
		Mulching per Article 2601.03, E, 2. Anchor mulch into the soil using mulch anchoring equipment with a
		minimum of two passes.
		Included for areas requiring reshaping and seedbed preparation. Mulch shall be Certified Noxious Weed Seed
		Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement
		Associations.
		Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.
-	-	-
43	2601-2634105	**MULCHING, BONDED FIBER MATRIX**
		A Bonded Fiber Matrix shall be applied as the mulch for all areas designated by the Engineer.
		The seed and fertilizer for the area to be covered shall be applied before the Bonded Fiber
		Matrix Hydraulic Mulch application.
		Application rate shall be a minimum of 3000 lbs per acre.
-	-	-
44	2601-2636060	**SALT TOLERANT SEEDING**
		All areas shall be seeded and fertilized per Article 2601.03.
		All seed and fertilizer for shall be applied with ground driven equipment. No broadcast seeding will be
		allowed.
		Full seedbed preparation will be required.
-	-	-
45	2601-2642100	**STABILIZING CROP - SEEDING AND FERTILIZING**
		Included for disturbed areas as directed by the Engineer.
		All rural disturbed areas shall be seeded and fertilizer per Article 2601.03, C, 1.
-	-	-
46	2602-0010010	**MOBILIZATIONS, EROSION CONTROL**
		- -
-	-	-
47	2602-0010020	**MOBILIZATIONS, EMERGENCY EROSION CONTROL**
		- -
-	-	-

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STANDARD ROAD PLANS

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

Number	Date	Title
BA-200	10-18-16	Steel Beam Guardrail Components
BA-201	10-18-16	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-205	04-19-16	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-206	10-18-16	Steel Beam Guardrail Flared End Terminal For Cable Connection (MASH TL-3)
BA-250	10-18-16	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-351	04-20-10	High Tension Cable Guardrail
BA-401	04-16-13	Temporary Barrier Rail (Precast Concrete)
BA-500	04-19-16	Temporary Crash Cushions Sand Barrel
MI-101	10-20-15	Fencing Layout
MI-103	10-20-15	Deer Fence and Field Fence Construction
MI-104	10-20-15	Fence Construction at Channel Crossings, Flood Plains, and Minor Ground Depressions
PM-110	04-16-13	Line Types
PM-111	04-21-15	Symbols and Legends
PM-560	04-19-11	Divided Multi-Lane Roadway with no Turn Lanes
PR-102	04-21-15	Full Depth PCC Patch without Dowels
PR-103	10-21-14	Full Depth PCC Patch with Dowels
PR-140	04-21-15	Subbase Patches
PR-201	10-21-14	Runouts for Resurfacing
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	04-19-16	Milled Shoulder Rumble Strips
PV-203	10-15-13	HMA Base Widening
SI-172	04-19-16	Delineators
SI-173	04-19-16	Object Markers
SI-211	10-18-16	Object Marker and Delineator Placement with Guardrail
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-231	10-15-13	Slow Moving Vehicle Operating in the Traffic Lane
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-234	10-21-14	Strip Sealing Operations
TC-417	04-16-13	Ramp Closure
TC-418	10-15-13	Lane Closure on Divided Highway
TC-421	10-21-14	Lane Closure with TBR

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES
- A. Designer:
  1. Prepares Base PPP included in the project plan.
  2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
  3. Signature authority on the Base PPP and NOI.
- B. Contractor/Subcontractor:
  1. Affected contractors/subcontractors are co-permittees with the IDOT and will sign a certification statement adhering to the requirements of the NPDES permit and this PPP plan. Affected contractors/subcontractors are anyone responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Submit an Erosion Control Implementation Plan (ECIP) according to Specifications Section 2602 and any additional plan notes.
  3. Install and maintain appropriate controls.
  4. Supervise and implement good housekeeping practices.
  5. Conduct joint required inspections of the site with inspection staff.
  6. Comply with training and certification requirements of Specifications Section 2602.
  7. Signature authority on Co-Permittee Certification Statements and storm water inspection reports.
- C. RCE/Inspector:
  1. Update PPP whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the discharge of pollutants from the project.
  2. Maintain an up-to-date record that identifies contractors and subcontractors as co-permittees.
  3. Make these plans available to the DNR upon their request.
  4. Conduct joint required inspections of the site with the contractor/subcontractor.
  5. Complete an inspection report after each inspection.
  6. Signature authority on storm water inspection reports and Notice of Discontinuation (NOD).

II. PROJECT SITE DESCRIPTION
- A. This Pollution Prevention Plan (PPP) is for the construction of a HMA resurfacing, with removal of Weigh Station.
- B. This PPP covers approximately 254 acres with an estimated 3.2 acres being disturbed. The portion of the PPP covered by this contract has 3.0 acres disturbed.
- C. The PPP is located in an area of Clarion - Nicollet - Webster soil association. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.20.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
  1. Drainage patterns – Plan and Profile sheets and Situation plans.
  2. Proposed Slopes – Cross Sections.
  3. Areas of Soil Disturbance – construction limits shown on Plan and Profile sheets.
  4. Location of Structural Controls – Tabulations on C sheets.
  5. Locations of Non-structural Controls – Tabulations on C sheets.
  6. Locations of Stabilization Practices – generally within construction limits shown on Plan and Profile sheets.
  7. Surface Waters (including wetlands) – Project Location Map and Plan and Profile sheets.
  8. Locations where storm water is discharged – Plan and Profile sheets.
- E. The base site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.
- F. Runoff from this work will flow into 2 unnamed draws of the Skunk River.

III. CONTROLS
- A. The contractor's ECIP specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.
  1. EROSION AND SEDIMENT CONTROLS
     a. Stabilization Practices
        1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
        2) Stabilization practices shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.
        3) Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days.
        4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation.

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POLLUTION PREVENTION PLAN

        5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
        6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.
     b. Structural Practices
        1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
        2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B sheets of the plans or are referenced in the Standard Road Plans Tabulation.
     c. Storm Water Management
        1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on the C sheets of the plan, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
  2. OTHER CONTROLS
     a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
        1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
        2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
        3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
        4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
        5) Spill Prevention and Control - Implement procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
        6) Concrete Residuals and Washout Wastes - Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
        7) Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
        8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onside fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water.
        9) Litter Management - Ensure employees properly dispose of litter.
        10) Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
     3. APPROVED STATE OR LOCAL PLANS
        During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES
The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS
- A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
  1. Date of the inspection.
  2. Summary of the scope of the inspection.
  3. Name and qualifications of the personnel making the inspection.
  5. Review erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
  6. Major observations related to the implementation of the PPP.
  7. Identify corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection.

VI. NON-STORM WATER DISCHARGES
This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION
Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS
- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and fieldbook entries made by the inspector.

POLLUTION PREVENTION PLAN

C. IDR - Inspector's Daily Report – this contains the inspector's daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Paul Flattery

Signature

Paul W. Flattery

Print Name

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08-01-08

TABULATION OF PARTIAL DEPTH REGULAR HMA FINISH PATCHES

Location			Dimension Of Patch			Estimated Quantities		Remarks
No.	Station or Milepost	Lane	Length x Width			SY	TON	
			FT					
4	103.30 NB	R	1.0	x	60.0	6.7		
		R	3.0	x	20.0	6.7		
		R	10.0	x	3.0	3.4		
		R	3.0	x	20.0	6.7		
9	103.85 NB	R	2.0	x	12.0	2.7		
		L	2.0	x	12.0	2.7		
		R	2.0	x	12.0	2.7		
		R	2.0	x	12.0	2.7		
		L	2.0	x	12.0	2.7		
		R	3.0	x	12.0	4.0		
		L	3.0	x	12.0	4.0		
		R	3.0	x	12.0	4.0		
		L	3.0	x	12.0	4.0		
3	104.00 NB	L	3.0	x	12.0	4.0		
		R	3.0	x	12.0	4.0		
		L	3.0	x	12.0	4.0		
6	104.60 NB	L	4.0	x	4.0	1.8		
		L	4.0	x	4.0	1.8		
		R	3.0	x	12.0	4.0		
		L	3.0	x	12.0	4.0		
		L	6.0	x	2.0	1.4		
		L	4.0	x	2.0	0.9		
4	105.15 NB	L	8.0	x	2.0	1.8		
		R	4.0	x	2.0	0.9		
		L	4.0	x	2.0	0.9		
		L	2.0	x	2.0	0.5		
1	105.45 NB	L	2.0	x	2.0	0.5		
4	105.70 SB	R	3.0	x	12.0	4.0		
		L	2.0	x	12.0	2.7		
		R	2.0	x	12.0	2.7		
		R	2.0	x	12.0	2.7		
1	103.85 SB	R	2.0	x	12.0	2.7		
3	103.80 SB	R	2.0	x	12.0	2.7		
		R	2.0	x	12.0	2.7		
		R	2.0	x	12.0	2.7		
4	103.77 SB	R	2.0	x	12.0	2.7		
		L	2.0	x	12.0	2.7		
		R	2.0	x	2.0	0.5		
		R	2.0	x	2.0	0.5		
2	103.75 SB	R	2.0	x	2.0	0.5		
		L	2.0	x	2.0	0.5		
1	103.45 SB	L	2.0	x	2.0	0.5		
5	100.60 SB	R,C	3.0	x	3.0	1.0		
		R	1.0	x	3.0	0.4		
		R	2.0	x	2.0	0.5		
		R	2.0	x	2.0	0.5		
		R,C	1.0	x	3.0	0.4		
1	98.10 SB	R,C	2.0	x	2.0	0.5		
5	Exit 102 SB	Ramp	2.0	x	8.0	1.8		IA 210
		Ramp	2.0	x	8.0	1.8		IA 210
		Ramp	2.0	x	2.0	0.5		IA 210
		Ramp	2.0	x	6.0	1.4		IA 210
		Ramp	2.0	x	2.0	0.5		IA 210
53	**Total**					**123.6**		

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FULL-DEPTH PATCHES

Refer to Standard Roads Plans PR-101, PR-102, PR-103, PR-104 and PR-140.

Location			Dimension			PCC Patches											
Count	Station or Milepost	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
						PR-103	PR-102	PR-104			PR-140	PR-101	PR-101 or PR-140			PR-101		
		L, R, or B	FT	FT	IN	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
1	104.62 NB	L	25.0	12.0	18.0	33.3								1				
2	103.9 SB	B	6.0	12.0	18.0	16.0								2				(1)
1	103.9 SB	L	6.0	12.0	18.0	8.0								1				(2)
4	**Totals:**					**57.3**								**4**				

(1) End of North Approach
(2) End of South Approach

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10-21-14

NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

(1) Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

Location Station	Type of Notch or Runout	S	I	DI	L	M	Pavement Scarification (1)	Remarks
		IN	IN	IN	FT	IN	SY	
I-35 SB								
108+97.50	Type 'N4'	1.5	1.5		150.0	3.0		70' from end of Bridge
111+82.90	Type 'N4'	1.5	1.5		150.0	3.0		70' from end of Bridge
I-35 NB								
108+95.40	Type 'N5'	1.5	1.5		150.0	1.5		70' from end of Bridge
111+80.70	Type 'N5'	1.5	1.5		150.0	1.5		70' from end of Bridge

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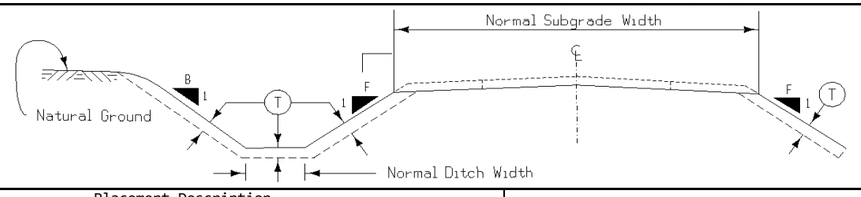
TABULATION OF SPREADING TOPSOIL



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 No.	Quantity CY	Location Station to Station		Side L. or R.	Slope B. or F.	T IN	Remarks	Amount Reserved CY	Station to Station	Remarks
1	3824.2	Weigh Scale	Ramps & Taper			12.0	T Depth for removed Pavement areas otherwise 8" min. in other disturbed areas.			Contractor Furnish
	1529.7	40% Shrink								
	5353.9	**Bid Total**								

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	77	35		95.71	98.7	1965		I-35-4(11)93	PCC	10	GSB	4					CHRISTENSEN	GRAVEL	1		
	77	35		95.71	98.7	1989		IR-35-4(59)92	AAC	4							FERGUSON	C. LST.			
	77	35		95.71	98.7	2008	W	IM-35-4(131)92--13-77	HMA	2	HMA	2									
	77	35		95.71	98.7	2008		IM-35-4(131)92--13-77	HMA	2	HMA	2			MIL	2					WIDENING VARIES
2	77	35		98.7	101.72	1965		I-35-4(11)93	PCC	10	GSB	4									
	77	35		98.7	101.72	1997		IM-35-4(83)98--13-77	AAC	2	AAC	6					AMES MINE	C. LST.	1		
3	85	35		101.72	102.56	1965		I-35-4(11)93	PCC	10	GSB	4					CHRISTENSEN	GRAVEL	1		
	85	35		101.72	102.56	1988		IR-35-3(49)87	AAC	4							AMES MINE	C. LST.			
	85	35		101.72	102.56	2008	W	IM-35-4(131)92--13-77	HMA	2	HMA	2					AMES MINE	C. LST.			
	85	35		101.72	102.56	2008		IM-35-4(131)92--13-77	HMA	2	HMA	2					AMES MINE	C. LST.			
4	85	35		102.56	103.22	1965		I-IG-35-4(12)103	PCC	10	GSB	4					FERGUSON	C. LST.	1		
	85	35		102.56	103.22	1997		IM-35-4(83)98--13-77	AAC	2	AAC	6					AMES MINE	C. LST.			
	85	35		102.56	103.22	2008	W	IM-35-4(131)92--13-77	HMA	2	HMA	2			MIL	2	AMES MINE	C. LST.			
	85	35		102.56	103.22	2008		IM-35-4(131)92--13-77	HMA	2	HMA	2			MIL	2	AMES MINE	C. LST.			
5	85	35		103.22	105.79	1965		I-IG-35-4(12)103	PCC	10	GSB	4					FERGUSON	C. LST.	1		I-35 & Weigh Station Ramps
	85	35		103.22	105.79	1997		IM-35-4(83)98--13-77	AAC	2	AAC	6					AMES MINE	C. LST.			
6	85	35		103.22	105.79	1965		I-IG-35-4(12)103	PCC	10	GSB	4					FERGUSON	C. LST.	1		Weigh Station & Parking

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
Former	Weigh Station	NB	Conc	13667.2	1280.0	Ramps and Parking Area
Conc. Bldg.	Slab Floor	NB	Conc	71.2		40'x16' 6" Slab
Conc. Bldg.	Slab Floor	NB	Conc	21.4		16'x12' 6"Conc Slab
Antenna	Base	NB	Conc	7.2		8'x8' 6" Conc Slab
			Totals:	**13767.0**		

REMOVAL OF LIGHT POLES AND CONCRETE FOOTINGS

Location				Removal of Light Pole	Removal of Concrete Footing for Light Pole	Remarks
No.	Station	Offset Left	Offset Right			
10	220+00.00		X	10	10	All Light Poles in Former Weigh Station
2	220+00.00		X	2	2	All Non Light poles in Former Weigh Station
	Total			**12**	**12**	

SIDEWALK REMOVAL

* Not a bid item

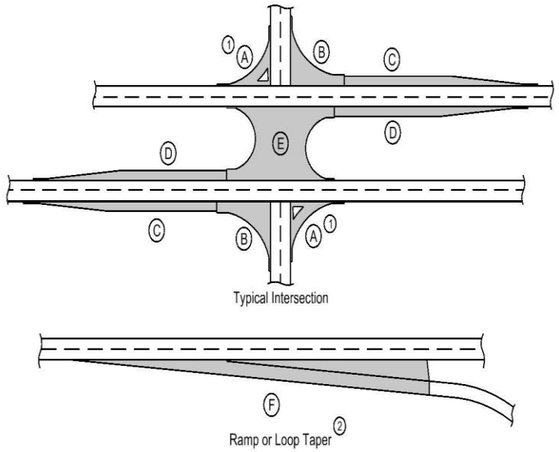
Begin Station	End Station	Area SY	Saw Cut* LF	Remarks
Former Weigh	Station	57.8		8'x65' 4" Sidewalk
Former Weigh	Station	7.1		8'x65' 4" Sidewalk
	Total	**64.9**		

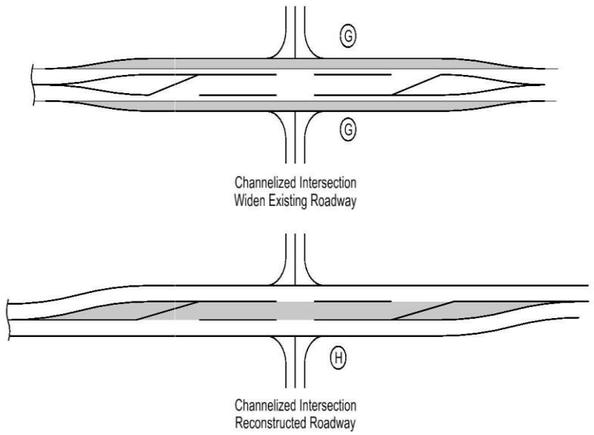
SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type Road Qty.	Closure Type Hazard Qty.	Remarks
82+36.80	1		I-35 NB
563+40.16	1		I-35 SB
240+88.00	1		Ramp B (NB)
354+52.60	1		Ramp C (SB)
453+64.41	1		Ramp D (NB)
572+50.00	1		Ramp E (SB)
Total:	**6**		

HMA PAVEMENT





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

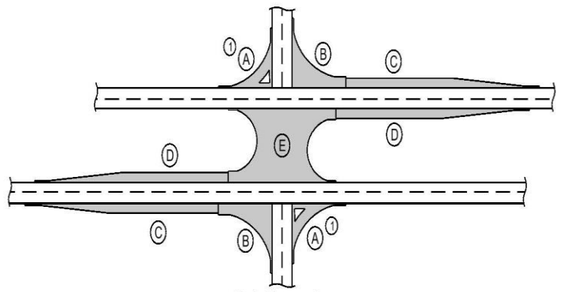
(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145

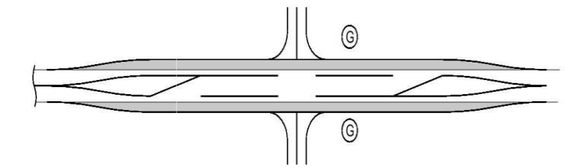
Location				Mainline			Area (3)			Bid Items													
										Hot Mix Asphalt Pavement				Binder		Hot Mix Asphalt Pavement				Binder			
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	F (2)	G	H	Surface Very High 1/2" Mix		Intermediate Very High 1/2" Mix		Surface PG 58-28V	Intermediate PG 58-28V	Surface Standard 1/2" Mix		Intermediate Standard 1/2" Mix		Surface PG 58-28H	Intermediate PG 58-28H	Pavement Scarification	Remarks
				FT	FT	SY	SY	SY	SY	Tons	SY	TONS	SY	TONS	TONS	TONS	SY	TONS	SY	TONS	TONS	SY	
I-35	SB	563+40.16	598+74.55	12.0	3534.4	4712.5				389.666	4712.5	389.666	4712.5	23.380	23.380							8639.6	(1)
I-35	SB	598+74.55	599+25.55	12.0	51.0	68.0				5.623	68.0	5.623	68.0	0.337	0.337							68.0	(2)
I-35	SB	599+25.55	604+27.10	12.0	501.5	668.7				55.296	668.7	55.296	668.7	3.318	3.318							1226.0	(1)
I-35	SB	604+27.10	622+43.00	12.0	1815.9	2421.2				200.203	2421.2	200.203	2421.2	12.012	12.012							2421.2	(2)
I-35	SB	622+43.00	661+06.60	12.0	3863.6	5151.5				425.962	5151.5	425.962	5151.5	25.558	25.558							9444.4	(1)
I-35	SB	661+06.60	668+89.20	12.0	782.6	1043.5				86.282	1043.5	86.282	1043.5	5.177	5.177							1043.5	(2)
I-35	SB	668+89.20	704+89.54	12.0	3600.3	4800.5				396.937	4800.5	396.937	4800.5	23.816	23.816							8800.8	(1)
I-35	SB	704+89.54	705+46.54	12.0	57.0	76.0				6.284	76.0	6.284	76.0	0.377	0.377							76.0	(2)
I-35	SB	705+46.54	754+53.76	12.0	4907.2	6543.0				541.021	6543.0	541.021	6543.0	32.461	32.461							11995.4	(1)
		Equation																					
I-35	SB	+00.00	32+00.00	12.0	3200.0	4266.7				352.800	4266.7	352.800	4266.7	21.168	21.168							7822.2	(1)
I-35	SB	32+00.00	40+68.00	12.0	868.0	1157.3				95.697	1157.3	95.697	1157.3	5.742	5.742							1157.3	(2)
I-35	SB	40+68.00	52+98.00	12.0	1230.0	1640.0				135.608	1640.0	135.608	1640.0	8.136	8.136							3006.7	(1)
I-35	SB	52+98.00	53+59.70	12.0	61.7	82.3				6.802	82.3	6.802	82.3	0.408	0.408							82.3	(2)
I-35	SB	53+59.70	65+78.00	12.0	1218.3	1624.4				134.318	1624.4	134.318	1624.4	8.059	8.059							2978.1	(1)
I-35	SB	65+78.00	72+50.00	12.0	672.0	896.0				74.088	896.0	74.088	896.0	4.445	4.445							896.0	(2)
I-35	SB	72+50.00	108+97.50	12.0	3647.5	4863.3				402.137	4863.3	402.137	4863.3	24.128	24.128							8916.1	(1)
		Skip Bridge	& Approaches																				
I-35	SB	111+82.90	132+51.80	12.0	2068.9	2758.5				228.096	2758.5	228.096	2758.5	13.686	13.686							5057.3	(1)
I-35	SB	132+51.80	132+99.80	12.0	48.0	64.0				5.292	64.0	5.292	64.0	0.318	0.318							64.0	(2)
I-35	SB	132+99.80	185+17.50	12.0	5217.7	6956.9				575.251	6956.9	575.251	6956.9	34.515	34.515							12754.4	(1)
I-35	SB	185+17.50	196+23.50	12.0	1106.0	1474.7				121.937	1474.7	121.937	1474.7	7.316	7.316							1474.7	(2)
I-35	SB	196+23.50	210+63.50	12.0	1440.0	1920.0				158.760	1920.0	158.760	1920.0	9.526	9.526							3520.0	(1)
I-35	SB	210+63.50	212+78.40	12.0	214.9	286.5				23.693	286.5	23.693	286.5	1.422	1.422							286.5	(2)
I-35	SB	563+40.16	604+26.50	21.0	4086.3	9534.8				788.408	9534.8	788.408	9534.8	47.304	47.304							9534.8	(3)
I-35	SB	604+26.50	622+43.00	21.0	1816.5	4238.5				350.471	4238.5	350.471	4238.5	21.028	21.028							4238.5	(3)
I-35	SB	622+43.00	661+07.00	21.0	3864.0	9016.0				745.511	9016.0	745.511	9016.0	44.731	44.731							9016.0	(3)
I-35	SB	661+07.00	668+89.75	21.0	782.8	1826.4				151.022	1826.4	151.022	1826.4	9.061	9.061							1826.4	(3)
I-35	SB	668+89.75	707+42.40	21.0	3852.6	8989.5				743.321	8989.5	743.321	8989.5	44.599	44.599							8989.5	(3)
I-35	SB	707+42.40	754+53.76	18.0	4711.4	9422.7				779.141	9422.7	779.141	9422.7	46.748	46.748							9422.7	(3)
		Equation																					
I-35	SB	+00.00	28+38.00	18.0	2838.0	5676.0				469.334	5676.0	469.334	5676.0	28.160	28.160							5676.0	(3)
I-35	SB	28+38.00	40+68.00	18.0	1230.0	2460.0				203.411	2460.0	203.411	2460.0	12.205	12.205							2460.0	(3)
I-35	SB	40+68.00	41+18.40	18.0	50.4	100.8				8.335	100.8	8.335	100.8	0.500	0.500							100.8	(3)
I-35	SB	41+18.40	53+18.14	21.0	1199.7	2799.4				231.475	2799.4	231.475	2799.4	13.888	13.888							2799.4	(3)
I-35	SB	53+18.14	65+78.00	18.0	1259.9	2519.7				208.349	2519.7	208.349	2519.7	12.501	12.501							2519.7	(3)
I-35	SB	65+78.00	71+78.00	18.0	600.0	1200.0				99.225	1200.0	99.225	1200.0	5.954	5.954							1200.0	(3)
I-35	SB	71+78.00	78+14.40	18.0	636.4	1272.8				105.245	1272.8	105.245	1272.8	6.315	6.315							1272.8	(3)
I-35	SB	78+14.40	109+27.75	21.0	3113.4	7264.5				600.682	7264.5	600.682	7264.5	36.041	36.041							7264.5	(3)
		Skip Bridge	& Approaches																				
I-35	SB	111+90.25	185+17.50	21.0	7327.3	17096.9				1413.701	17096.9	1413.701	17096.9	84.822	84.822							17096.9	(3)

HMA PAVEMENT

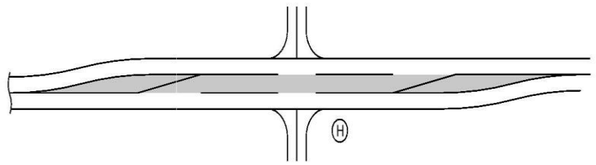


Typical Intersection

Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

(1) Does not include raised 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.

Calculations assume a surface course unit weight (lbs/cf) of 147 , an intermediate course unit weight (lbs/cf) of 147 , a base course unit weight (lbs/cf) of 145

Location				Mainline			Area (3)			Bid Items													
										Hot Mix Asphalt Pavement				Binder		Hot Mix Asphalt Pavement				Binder			
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	F (2)	G	H	Surface Very High 1/2" Mix		Intermediate Very High 1/2" Mix		Surface PG 58-28V	Intermediate PG 58-28V	Surface Standard 1/2" Mix		Intermediate Standard 1/2" Mix		Surface PG 58-28H	Intermediate PG 58-28H	Pavement Scarification	Remarks
				FT	FT	SY	SY	SY	SY	Tons	SY	TONS	SY	TONS	TONS	TONS	SY	TONS	SY	TONS	TONS	SY	
I-35	SB	185+17.50	196+23.50	21.0	1106.0	2580.7				213.389	2580.7	213.389	2580.7	12.803	12.803							2580.7	(3)
I-35	SB	196+23.50	210+63.50	21.0	1440.0	3360.0				277.830	3360.0	277.830	3360.0	16.670	16.670							3360.0	(3)
I-35	SB	210+63.50	212+78.40	21.0	214.9	501.4				41.462	501.4	41.462	501.4	2.488	2.488							501.4	(3)
I-35	NB	82+36.80	109+27.75	12.0	2691.0	3587.9				296.677	3587.9	296.677	3587.9	17.801	17.801							6577.9	(1)
		Skip Bridge	& Approaches																				
I-35	NB	111+90.25	132+29.40	12.0	2039.2	2718.9				224.816	2718.9	224.816	2718.9	13.489	13.489							4984.6	(1)
I-35	NB	132+29.40	132+78.40	12.0	49.0	65.3				5.402	65.3	5.402	65.3	0.324	0.324							65.3	(2)
I-35	NB	132+78.40	212+78.40	12.0	8000.0	10666.7				882.000	10666.7	882.000	10666.7	52.920	52.920							19555.6	(1)
I-35	NB	82+36.80	109+27.75	18.0	2691.0	5381.9				445.016	5381.9	445.016	5381.9	26.701	26.701							5381.9	(2)
		Skip Bridge	& Approaches																				
I-35	NB	111+90.25	212+78.40	18.0	10088.2	20176.3				1668.328	20176.3	1668.328	20176.3	100.100	100.100							20176.3	(2)
I-35 (Ramp)	B	234+00.00	240+88.00		688.0	0.0	13250.0									1095.609	13250.0	1095.609	13250.0	65.737	65.737	13250.0	(4)
I-35 (Ramp)	C	332+00.00	340+30.00		830.0	0.0	9264.0									766.017	9264.0	766.017	9264.0	45.961	45.961	9264.0	(4)
I-35 (Ramp)	D	465+92.00	474+50.00		858.0	0.0	10888.0									900.302	10888.0	900.302	10888.0	54.018	54.018	10888.0	(4)
I-35 (Ramp)	E	565+90.00	572+50.00		660.0	0.0	12360.0									1022.018	12360.0	1022.018	12360.0	61.321	61.321	12360.0	(4)
I-35 (Ramp)	B	240+88.00	253+34.97	26.0	1247.0	3602.4										297.870	3602.4	297.870	3602.4	17.872	17.872	3602.4	(4)
I-35 (Ramp)	C	340+30.00	352+50.87	26.0	1220.9	3527.0										291.635	3527.0	291.635	3527.0	17.498	17.498	3527.0	(4)
I-35 (Ramp)	D	453+64.41	465+92.00	26.0	1227.6	3546.4										293.241	3546.4	293.241	3546.4	17.594	17.594	3546.4	(4)
I-35 (Ramp)	E	553+06.31	565+90.00	26.0	1283.7	3708.4										306.641	3708.4	306.641	3708.4	18.398	18.398	3708.4	(4)
Tab Total										15374.304	185932.6	15374.304	185932.6	922.458	922.458	4973.333	60146.1	4973.333	60146.1	298.400	298.400	298478.4	
5% for Irregularities										768.700	9296.6	768.700	9296.6	46.100	46.100	248.700	3007.3	248.700	3007.3	14.900	14.900		
Bid Totals										**16143.004**	195229.2	**16143.004**	195229.2	**968.558**	**968.558**	**5222.033**	63153.4	**5222.033**	63153.4	**313.300**	**313.300**	**298478.4**	

(1) Pavement Scarification includes 12' Outside Lane and 10' Outside Shoulder. For 10' Outside Shoulder HMA, See Tab. 112-9.
(2) HMA & Pavement Scarification includes 12' Outside Lane Only
(3) HMA & Pavement Scarification includes 12' Inside Lane and Inside Shoulder.
(4) HMA & Pavement Scarification includes Ramp and Both Shoulders.

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

Location					Quantities												
Road Identification	Direction Of Traffic (1)	Station to Station		Side	P Width	G Width	L Length	Class 13 Excavation (3)	Hot Mix Asphalt Standard Traffic Base Course 1/2"		Binder 58-28S	Paved Shoulder	Base Widening	Reinforced Paved Shoulder	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
					FT	FT	FT	CY (2)	TON (2)	TON/STA	TONS (2)	SY	SY	SY	TON (2)	TON/STA	STA (2)	HMA CY (4)	PCC CY (4)	
		SBL																		
I-35	SB	563+40.16	598+74.55	Out	10.0	0.0	3534.4		640.6	18.1	38.4	3927.1					35.3			(1)
		UAC																		
I-35	SB	599+25.55	604+27.10	Out	10.0	0.0	501.5		90.9	18.1	5.5	557.3					5.0			(1)
		UAC																		
I-35	SB	622+43.00	661+06.60	Out	10.0	0.0	3863.6		700.3	18.1	42.0	4292.9					38.6			(1)
		UAC																		
I-35	SB	668+89.20	704+89.54	Out	10.0	0.0	3600.3		652.6	18.1	39.2	4000.4					36.0			(1)
		UAC																		
I-35	SB	705+46.64	754+53.76	Out	10.0	0.0	4907.1		889.4	18.1	53.4	5452.4					49.1			(1)
		Polk to Story																		
I-35	SB	+00.00	32+00.00	Out	10.0	0.0	3200.0		580.0	18.1	34.8	3555.6					32.0			(1)
		IA 210 Ramp C																		
I-35	SB	40+68.00	52+98.00	Out	10.0	0.0	1230.0		222.9	18.1	13.4	1366.7					12.3			(1)
		UAC																		
I-35	SB	53+59.70	65+78.00	Out	10.0	0.0	1218.3		220.8	18.1	13.2	1353.7					12.2			(1)
		IA 210 Ramp A																		
I-35	SB	72+50.00	108+97.50	Out	10.0	0.0	3647.5		661.1	18.1	39.7	4052.8					36.5			(1)
		UAC																		
I-35	SB	111+82.90	132+51.80	Out	10.0	0.0	2068.9		375.0	18.1	22.5	2298.8					20.7			(1)
		UAC																		
I-35	SB	132+99.80	185+17.50	Out	10.0	0.0	5217.7		945.7	18.1	56.7	5797.5					52.2			(1)
		UAC																		
I-35	SB	196+23.50	210+63.50	Out	10.0	0.0	1440.0		261.0	18.1	15.7	1600.0					14.4			(1)
		NBL																		
I-35	NB	82+36.80	108+95.40	Out	10.0	0.0	2658.6		481.9	18.1	28.9	2954.0					26.6	19.7		(2)
		UAC																		
I-35	NB	111+80.70	132+29.40	Out	10.0	0.0	2048.7		371.3	18.1	22.3	2276.4					20.5	15.2		(2)
I-35	NB	132+29.40	132+78.40	Out	10.0	0.0	49.0		4.4	9.1	0.3	54.5					0.5	0.4		(2)
I-35	NB	132+78.40	205+18.27	Out	10.0	0.0	7239.9		1312.2	18.1	78.7	8044.3					72.4	53.6		(2)
I-35	NB	205+18.27	211+94.66	Out	10.0	0.0	676.4		122.6	18.1	7.4	751.6					6.8	5.0		(2)
I-35	NB	211+94.66	212+78.40	Out	10.0	0.0	83.7		15.2	18.1	0.9	93.1					0.8	0.6		(2)
		UAC																		
I-35	NB	226+60.00	238+90.00	Out	UAC	0.0	1230.0										12.3	9.1		(2)
IA 210 Ramps																				
Widening Unit		Ramp																		
Ramp B	NB	240+88.00	253+34.97	Out	6.0	4.0	1247.0	254.1	361.6	29.0	21.7		831.4		58.2	4.7				
Ramp C	SB	340+30.00	352+50.87	Out	6.0	4.0	1220.9	248.7	354.1	29.0	21.2		814.0		57.0	4.7				
Ramp D	NB	453+64.41	465+92.00	Out	6.0	4.0	1227.6	250.1	356.0	29.0	21.4		818.4		57.3	4.7				
Ramp E	SB	553+06.31	565+90.00	Out	6.0	4.0	1283.7	261.5	372.3	29.0	22.3		855.8		59.9	4.7				
		Tab Total						1014.4	9991.9	433.2	599.5	52429.1	3319.6		232.4		484.2	103.6		
		5% for Irregularities							499.6	21.7	30.0									
		Bid Totals						**1015.0**	**10491.5**	**454.9**	**629.5**	**52429.1**	**3319.6**		**232.4**		**484.2**	103.6		

(1) For reshaping of Existing Foreslope.
(2) For reshaping of 4:1 to Existing Foreslope

108-8A
04-19-16

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-250, LS-625, LS-626, LS-630, SI-172, SI-173 and SI-211.

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

Location					Layout Lengths BA-250 or LS-630				Long-Span System		Delineators and Object Markers					Bid Items							Remarks
No.	Direction of Traffic (1)	Side O = Outside M = Median	Station	Offset	VT1	VF	VT2	ET	BA-211		SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor		Barrier Transition Section	Steel Beam Guardrail	End Terminal		Post Adapter	
												Type 1	Type 2	Type 3						Standard	Count		
												White	OM2-2	OM3-L	OM3-R	BA-202		BA-201	BA-200			BA-210	
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	EACH	EACH	EACH	EACH	TYPE	EACH	EACH	LF		EACH	EACH	
			Polk Co.																				
1	SB	O	599+21.20		203.125			50.0							1	A	1	1	162.5	BA-205	1		
1	SB	O	705+43.20		203.125			50.0							1	A	1	1	162.5	BA-205	1		
1	SB	O	53+58.00		203.125			50.0							1	A	1	1	162.5	BA-205	1		
1	SB	O	111+19.00		53.125	25.00	87.50	50.0							1	A	1	1	125.0	BA-205	1		
1	SB	M	111+17.80		53.125	37.50	75.00	50.0						1		A	1	1	125.0	BA-206	1		
1	SB	O	132+97.80		303.125			50.0							1	A	1	1	262.5	BA-205	1		
1	NB	O	52+81.80		203.125			50.0							1	A	1	1	162.5	BA-205	1		
1	NB	M	109+59.20		53.125	25.00	112.50	50.0						1		A	1	1	150.0	BA-205	1		
1	NB	O	109+60.40		53.125	25.00	75.00	50.0							1	A	1	1	112.5	BA-205	1		
1	NB	O	132+28.40		190.625			50.0							1	A	1	1	150.0	BA-205	1		
			Totals:											**2**	**8**	**A**	**10**	**10**	**1575.0**	**BA-205**	**9**		
																				BA-206	**1**		

108-9A
04-20-10

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

HIGH TENSION CABLE GUARDRAIL

Refer to BA-351.

Location					Dimensions			Bid Items		Remarks
No.	Direction of Traffic (1)	Station	Side	Offset D_θ	Approach C_A	Obstacle C_O	Trailing C_T	Protection Length (C_A+C_θ+C_T)	End Anchor	
				FT	FT	FT	FT	FT	No.	
1	SB	112+58.20	Med	0.0	0.0	0.0	0.0	0.0	1	for BA-206 End Anchor UAC Existing Cable
1	SB	153+77.00	Out	12.0	290.0	50.0	0.0	340.0	2	9' from Cable to Back of Parapet
1	NB	148+43.00	Out	12.0	290.0	50.0	0.0	340.0	2	10' from Cable to Back of Parapet
		Totals:						**680.0**	**1**	**Special End Anchor - for Existing Cable**
									4	**End Anchor**

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location			Length			Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
Road Identification	Station to Station		PCC	HMA	Type (Centerline, Rt or Lt Shoulder	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
			STA	STA		GAL	FT	FT	FT	
I-35 SB	563+40.16	756+00.00		192.60	Left Shoulder	208.6		9.0	0.0	
I-35 SB	+00.00	212+78.40		212.78	Left Shoulder	230.5		6.0	0.0	
I-35 SB	563+40.16	707+42.90		144.03	Right Shoulder	156.0		9.0	0.0	
I-35 SB	707+42.90	756+00.00		48.57	Right Shoulder	52.6		6.0	0.0	
I-35 SB	+00.00	41+18.00		41.18	Right Shoulder	44.6		6.0	0.0	
I-35 SB	41+18.00	53+18.00		12.00	Right Shoulder	13.0		9.0	0.0	
I-35 SB	53+18.00	78+14.00		24.96	Right Shoulder	27.0		6.0	0.0	
I-35 SB	78+14.00	212+78.40		134.64	Right Shoulder	145.9		9.0	0.0	
I-35 NB	82+36.80	212+78.40		130.42	Left Shoulder	141.3		6.0	0.0	
I-35 NB	82+36.80	212+78.40		130.42	Right Shoulder	141.3		10.0	0.0	
		Totals:		**1071.60**		**1160.9**				

FENCING

* Bid Item

Refer to MI-101, MI-102, MI-103, MI-104, 510-3, and 510-5

Location					Chain Link				Deer				Field				Channel Crossing		Remarks
From		To		Side	Fence		Gate				Gate				Gate				
Station	Offset	Station	Offset		Length*	Type	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Length*	Type	
					LF		EACH		LF	EACH	EACH		LF	EACH	EACH		LF		
212+85.00	137.0	222+40.00	137.0	RT									955.0	6					
222+40.00	137.0	223+50.00	137.0	RT										2			110.0	FLOOD PLAIN	
223+50.00	137.0	225+00.00	137.0	RT									150.0	2					
Total													**1105.0**	**10**			**110.0**	**FLOOD PLAIN**	

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.

ELY4: Edge Line Left (Yellow) @ 1.00 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00 CHW8: Channelizing Line (White) @ 2.00 DLW4: Dotted Line (White) @ 0.33
RLY4: Ramp Edge Line Left (Yellow) @ 1.00 RLW4: Ramp Edge Line Right (White) @ 1.00

Location								Length by Line Type (Unfactored)													Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			ELY4	BLW4	ELW4	CHW8	DLW4	RLY4	RLW4							
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
I-35 SBL	ediate Course																				
I-35 SBL	563+40.16	604+27.10	SB	Waterborne/Solvent Paint	X	X	X	40.87	40.87	40.87											
I-35 SBL	604+27.10	611+98.70	SB	Waterborne/Solvent Paint	X	X		7.72	7.72												
I-35 SBL	611+98.70	622+43.00	SB	Waterborne/Solvent Paint	X	X	X	10.44	10.44		10.44										
I-35 SBL	622+43.00	661+06.60	SB	Waterborne/Solvent Paint	X	X	X	38.64	38.64	38.64											
I-35 SBL	661+06.60	666+48.00	SB	Waterborne/Solvent Paint	X	X	X	5.41	5.41		5.41										
I-35 SBL	666+48.00	668+89.20	SB	Waterborne/Solvent Paint		X	X	2.41	2.41			2.41									
I-35 SBL	668+89.20	754+53.76	SB	Waterborne/Solvent Paint	X	X	X	85.65	85.65	85.65											
	n at Co. Line																				
I-35 SBL	+00.00	32+00.00	SB	Waterborne/Solvent Paint	X	X	X	32.00	32.00	32.00											
I-35 SBL	32+00.00	39+50.00	SB	Waterborne/Solvent Paint	X	X		7.50	7.50												
I-35 SBL	39+50.00	41+00.00	SB	Waterborne/Solvent Paint	X	X	X	1.50	1.50		1.50										
I-35 SBL	41+00.00	64+00.00	SB	Waterborne/Solvent Paint	X	X	X	23.00	23.00	23.00											
I-35 SBL	64+00.00	68+90.00	SB	Waterborne/Solvent Paint	X	X	X	4.90	4.90		4.90										
I-35 SBL	68+90.00	72+50.00	SB	Waterborne/Solvent Paint	X	X		3.60	3.60												
I-35 SBL	72+50.00	212+78.40	SB	Waterborne/Solvent Paint	X	X	X	140.28	140.28	140.28											
I-35 SBL	urface Course																				
I-35 SBL	563+40.16	604+27.10	SB	Waterborne/Solvent Paint	X	X	X	40.87	40.87	40.87											
I-35 SBL	604+27.10	611+98.70	SB	Waterborne/Solvent Paint	X	X		7.72	7.72												
I-35 SBL	611+98.70	622+43.00	SB	Waterborne/Solvent Paint	X	X	X	10.44	10.44		10.44										
I-35 SBL	622+43.00	661+06.60	SB	Waterborne/Solvent Paint	X	X	X	38.64	38.64	38.64											
I-35 SBL	661+06.60	666+48.00	SB	Waterborne/Solvent Paint	X	X	X	5.41	5.41		5.41										
I-35 SBL	666+48.00	668+89.20	SB	Waterborne/Solvent Paint		X	X	2.41	2.41			2.41									
I-35 SBL	668+89.20	754+53.76	SB	Waterborne/Solvent Paint	X	X	X	85.65	85.65	85.65											
	n at Co. Line																				
I-35 SBL	+00.00	32+00.00	SB	Waterborne/Solvent Paint	X	X	X	32.00	32.00	32.00											
I-35 SBL	32+00.00	39+50.00	SB	Waterborne/Solvent Paint	X	X		7.50	7.50												
I-35 SBL	39+50.00	41+00.00	SB	Waterborne/Solvent Paint	X	X	X	1.50	1.50		1.50										
I-35 SBL	41+00.00	64+00.00	SB	Waterborne/Solvent Paint	X	X	X	23.00	23.00	23.00											
I-35 SBL	64+00.00	68+90.00	SB	Waterborne/Solvent Paint	X	X	X	4.90	4.90		4.90										
I-35 SBL	68+90.00	72+50.00	SB	Waterborne/Solvent Paint	X	X		3.60	3.60												
I-35 SBL	72+50.00	212+78.40	SB	Waterborne/Solvent Paint	X	X	X	140.28	140.28	140.28											
I-35 SBL	212+78.40	238+90.00	SB	Waterborne/Solvent Paint			X			26.12											
I-35 NBL	ediate Course																				
I-35 NBL	82+36.80	212+78.40	NB	Waterborne/Solvent Paint	X	X	X	130.42	130.42	130.42											
I-35 NBL	urface Course																				
I-35 NBL	82+36.80	212+78.40	NB	Waterborne/Solvent Paint	X	X	X	130.42	130.42	130.42											
IA 210 Ramp	ediate Course																				
Ramp C	332+00.00	339+50.42	SB	Waterborne/Solvent Paint			X							7.50							
Ramp C	339+50.42	340+50.00	SB	Waterborne/Solvent Paint	X		X				1.00			1.00							
Ramp C	340+50.00	354+93.36	SB	Waterborne/Solvent Paint	X		X						14.43	14.43							
Ramp E	551+85.40	565+50.00	SB	Waterborne/Solvent Paint	X		X						13.65	13.65							
Ramp E	565+50.00	568+90.00	SB	Waterborne/Solvent Paint	X		X				3.40			3.40							
Ramp E	568+90.00	572+50.00	SB	Waterborne/Solvent Paint			X							3.60							
Ramp B	234+00.00	237+60.00	NB	Waterborne/Solvent Paint			X							3.60							
Ramp B	237+60.00	241+00.00	NB	Waterborne/Solvent Paint	X		X				3.40			3.40							
Ramp B	241+00.00	255+78.49	NB	Waterborne/Solvent Paint	X		X						14.78	14.78							
Ramp D	451+03.50	467+00.00	NB	Waterborne/Solvent Paint	X		X						15.97	15.97							
Ramp D	467+00.00	466+99.58	NB	Waterborne/Solvent Paint	X		X				0.00			0.00							
Ramp D	466+99.58	474+50.00	NB	Waterborne/Solvent Paint			X							7.50							
IA 210 Ramp	urface Course																				
Ramp C	332+00.00	339+50.42	SB	Waterborne/Solvent Paint			X							7.50							
Ramp C	339+50.42	340+50.00	SB	Waterborne/Solvent Paint	X		X				1.00			1.00							
Ramp C	340+50.00	354+93.36	SB	Waterborne/Solvent Paint	X		X						14.43	14.43							
Ramp E	551+85.40	565+50.00	SB	Waterborne/Solvent Paint	X		X						13.65	13.65							
Ramp E	565+50.00	568+90.00	SB	Waterborne/Solvent Paint	X		X				3.40			3.40							
Ramp E	568+90.00	572+50.00	SB	Waterborne/Solvent Paint			X							3.60							
Ramp B	234+00.00	237+60.00	NB	Waterborne/Solvent Paint			X							3.60							
Ramp B	237+60.00	241+00.00	NB	Waterborne/Solvent Paint	X		X				3.40			3.40							
Ramp B	241+00.00	255+78.49	NB	Waterborne/Solvent Paint	X		X						14.78	14.78							

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
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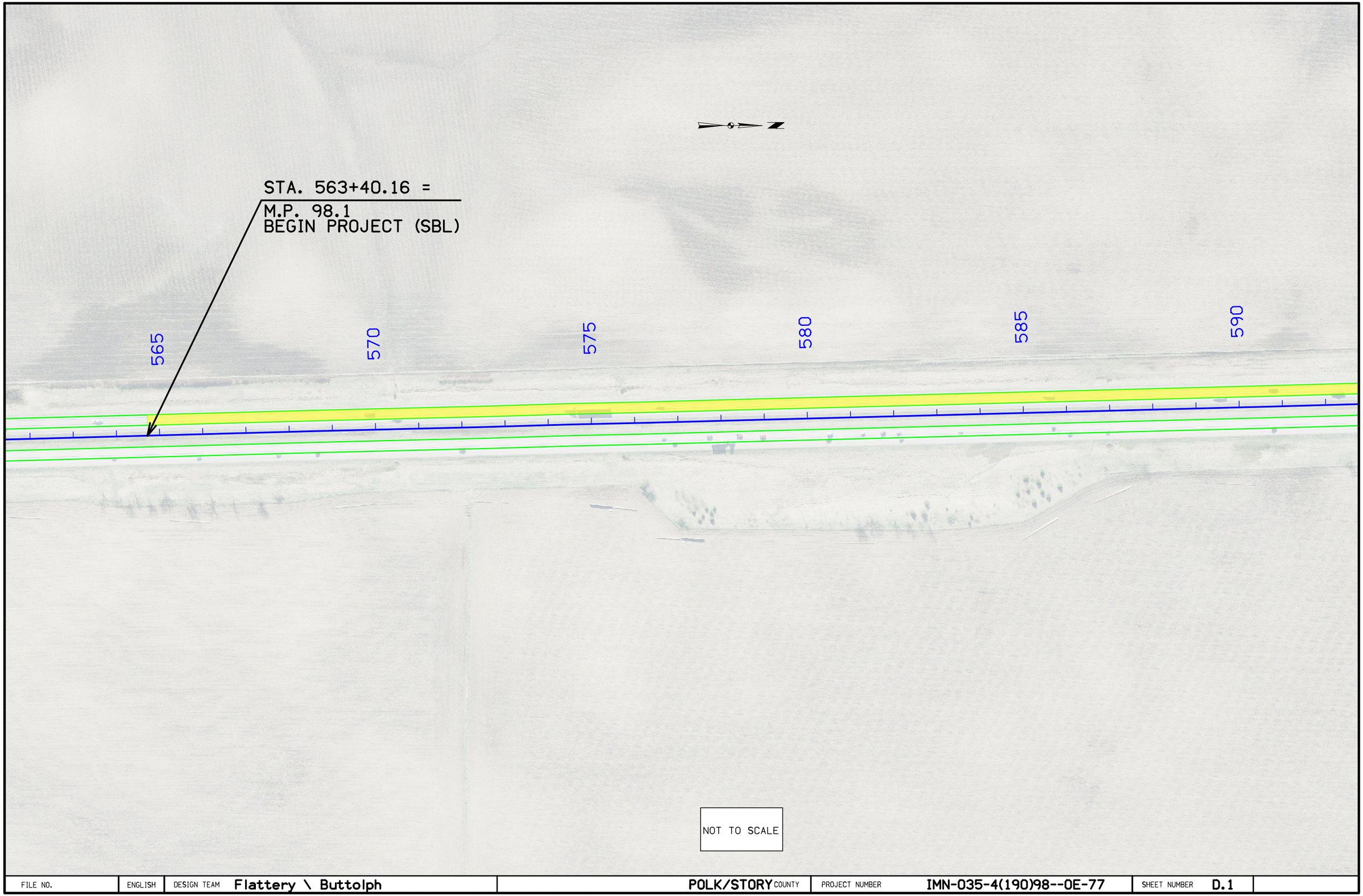
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

ELY4: Edge Line Left (Yellow) @ 1.00
BLW4: Broken Lane Line (White) @ 0.25
ELW4: Edge Line Right (White) @ 1.00
CHW8: Channelizing Line (White) @ 2.00
DLW4: Dotted Line (White) @ 0.33
RLY4: Ramp Edge Line Left (Yellow) @ 1.00
RLW4: Ramp Edge Line Right (White) @ 1.00

Location								Length by Line Type (Unfactored)												Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			ELY4	BLW4	ELW4	CHW8	DLW4	RLY4	RLW4						
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
Ramp D	451+03.50	465+50.00	NB	Waterborne/Solvent Paint	X		X						14.47	14.47							
Ramp D	465+50.00	467+00.00	NB	Waterborne/Solvent Paint	X		X				1.50			1.50							
Ramp D	467+00.00	474+50.00	NB	Waterborne/Solvent Paint			X							7.50							
				Factored Total: Waterborne/Solvent Paint				**1068.67**	**267.17**	**1007.82**	**123.22**	**1.61**	**116.16**	**177.67**	-	-	-	-	-	-	-	-
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							**2762.31**										



NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.1

11:06:20 AM 9/22/2016 jbuttol pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703502013\Design\77035190_D01.sht

99

STA. 598+86.00

Maintenance Number 7798.70035
FHWA 41870
215'-5" X 28'
Design Number 1362
Min Vertical Under Clearance 16'3" NB & 16'0" SB

595 600 605 610 615 620

NE 142nd St.

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.2

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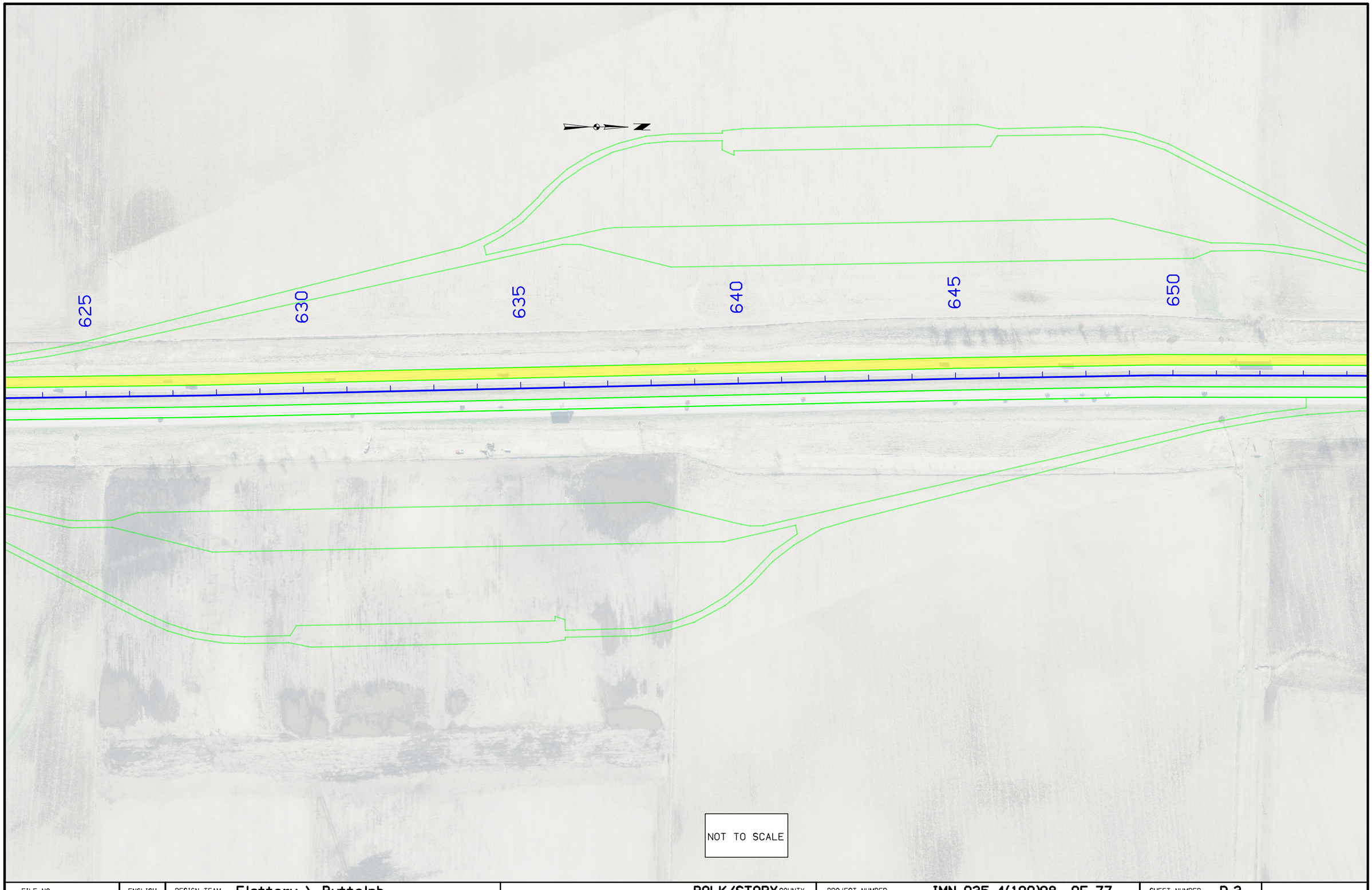

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100

655 660 665 670 675 680 685

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.4

11:07:01 AM 9/22/2016 jbuttol pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703502013\Design\77035190_D01.sht

STA. 705+13.83

Maintenance Number 7700.80035
FHWA 41890
215'-5" X 28'
Design Number 1462
Min Vertical Under Clearance 16'5" NB &
16'2" SB

685 690 695 700 705 710 715

NE 158th St.

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.5

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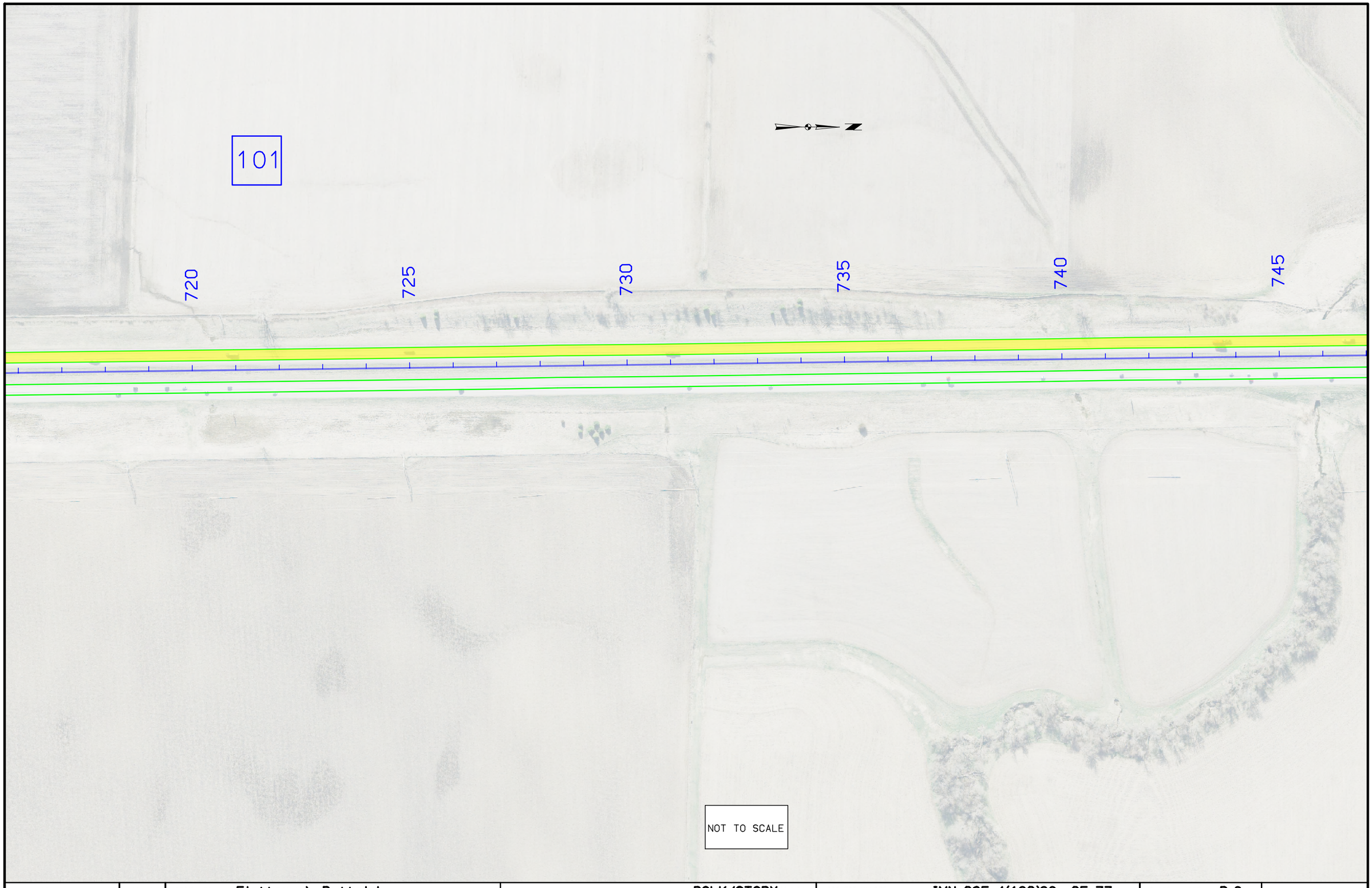

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11:07:27 AM 9/22/2016 jbuttol pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703502013\Design\77035190_D01.sht

EQUATION: STA. 754+53.76 BK (POLK CO)
= STA. 00+00.00 AH (STORY CO)

102

750

0

5

10

15

20

POLK COUNTY

STORY COUNTY

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.7

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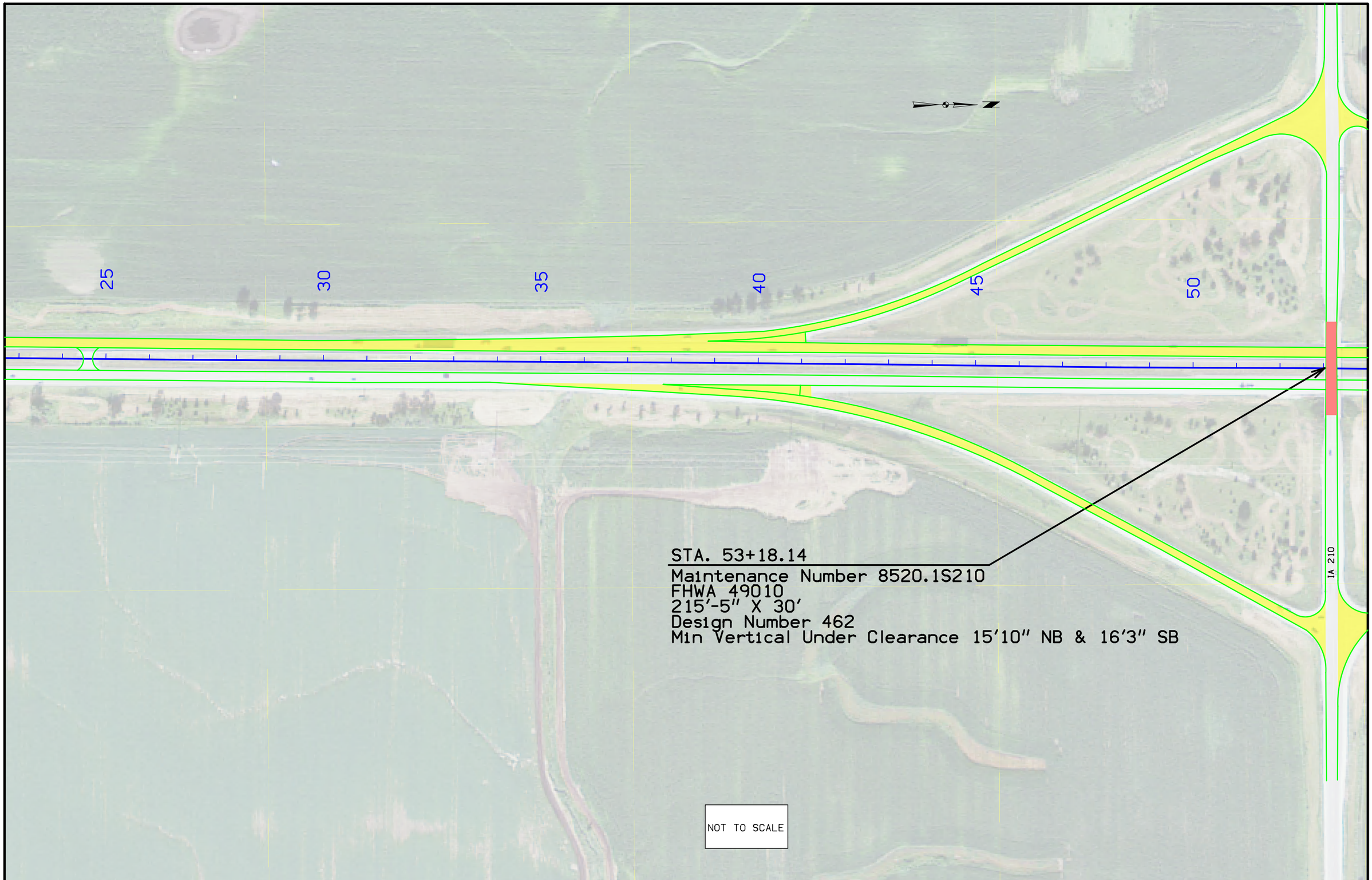

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11:07:46 AM 9/22/2016 jbuttol pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7703502013\Design\77035190_D01.sht

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.9

SB Outside STA. 111+58.50 to 113+76.00
SB Inside STA. 111+58.50 to 113+14.00
NB Outside STA. 107+73.75 to 110+08.25
NB Inside STA. 107+30.50 to 110+08.25

Replace 5' of existing bridge approaches
Update guardrail to current standards.

85 90 95 100 105 110 115

STA. 110+59.00

Maintenance Number 8503.8L035 & 8503.8R035
FHWA 49120 & 49130
142'-6" X 40'
Design Number 662

Heart of Iowa Bike Trail

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.10

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104

120

125

130

135

140

145

SB STA. 133+22.00 to 135+48.00
NB STA. 131+26.00 to 132+40.00
Remove & replace paved slope protection with macadam. Update NB & SB outside pier protection.

STA. 132+63.40
Maintenance Number 8504.20035
FHWA 49140
219'-7" X 28'
Design Number 862
Min Vertical Under Clearance 16'3" NB & 16'6" SB

Co. Rd. E63

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.11

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FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.12

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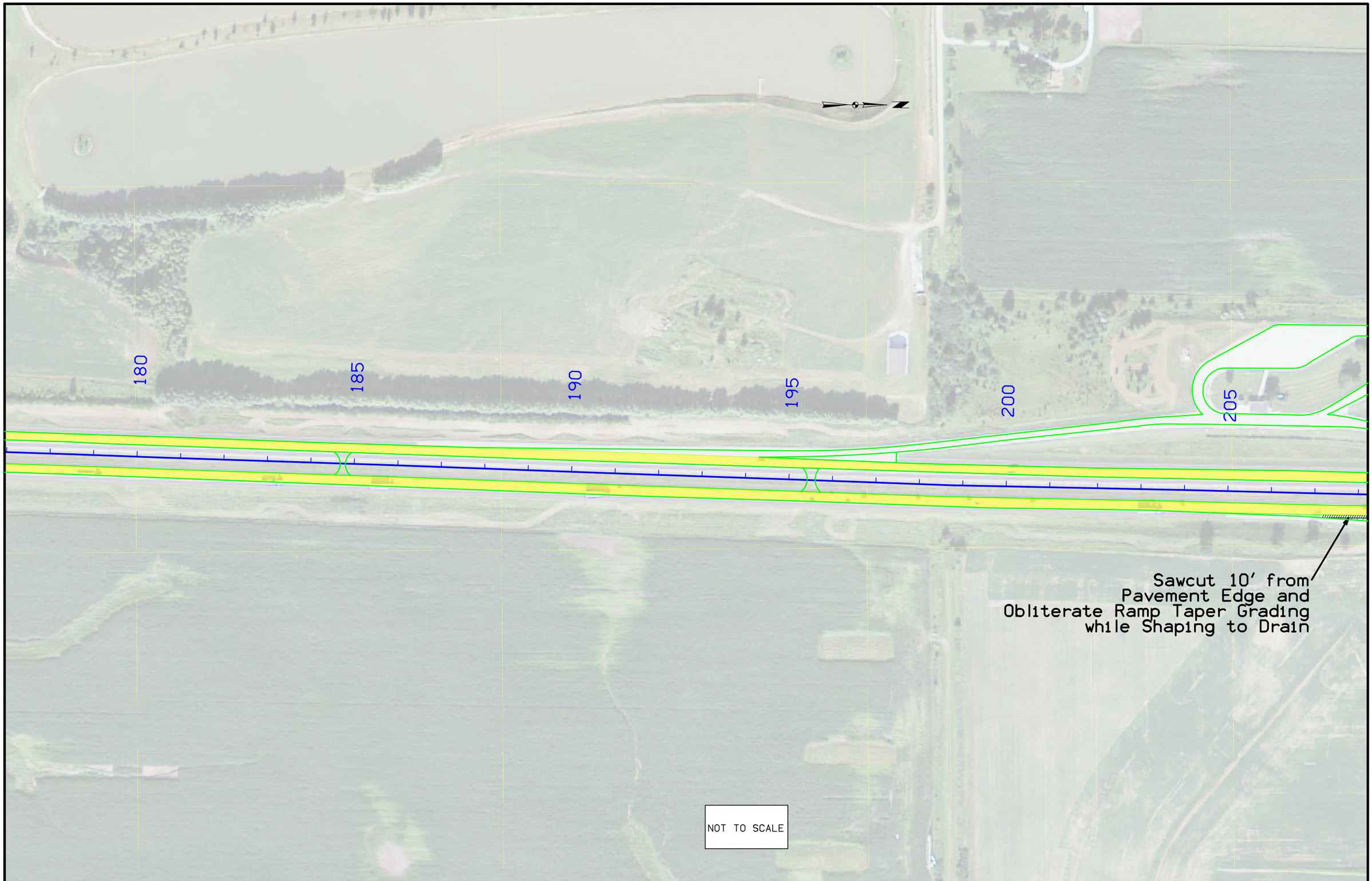

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106

STA. 212+78.40 =
M.P. 105.75
END PROJECT (NBL & SBL)

210
215
220
225
230
235

Sawcut 10' from
Pavement Edge
and Obiterating
Ramp Taper Grading
while Shaping to Drain

Remove Former Weigh
Station Pavement

Sawcut 12' from
Pavement Edge and
Obliterate Ramp Taper Grading
while Shaping to Drain

NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER D.14

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Through traffic shall be maintained on I-35 and IA 210 Ramps at all times.

2. Traffic control on this project shall be in accordance with the Standard Road Plans in Tabulation 105-4.

3. Work will only be allowed from 8:00 PM to 6:00 AM beginning Sunday at 8:00 PM and ending on Friday at 6:00 AM.
   No lane closures will be allowed between Friday at 6:00 AM to Sunday 8:00 PM.

4. No traffic control devices shall be placed before 8:00 PM Sunday through Thursday.
   All traffic control devices shall be removed before 6:00 AM each working day.
   Maximum lane closure length shall be four (4) miles.
   All ramps shall remain open during construction.

5. Work is prohibited and all lanes shall be returned to normal during the following special event days and nights.
   A. All Iowa State University Home Football games in Ames IA.
   B. August 10, 2017 to August 20, 2017 Iowa State Fair in Des Moines IA.

NOTE: The Contractor shall be responsible for contactiong officials at all special events to confirm dates and plan on not working.

6. Daytime work with no lane closure shall be allowed for the removal of the NBL weigh scale ramps and pavement.

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
IM-035-4(182)112--13-85	PCC Pavement - Grade and New
IM-035-4(183)112--13-85	Bridge New-Steel Girder
IM-035-4(184)112--13-85	Traffic Signs
IM-035-4(185)112--13-85	Lighting
IM-035-4(226)112--13-85	RCB Culvert Replacement - Twin Box
IM-NHS-035-4(207)109--03-85	Structures - Miscellaneous
IM-NHS-035-4(208)109--03-85	Unknown Pavement - Grade and Replace
IMX-035-4(188)110--02-85	Bridge Replacement-PPCB
BRFN-210-3(36)--39-85	Bridge Deck Overlay
IMN-035-4(179)87--0E-77	PCC Patching

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Travel Restrictions Expected.									

T-82 N R-23 W
SEC. 31

T-82 N R-23 W
SEC. 30

I
35-4(11)93 24

N

Stop Fence @ 55'

Begin of Taper
Sta. 550+65.26
=12' Lt. Sta. 1045+00.0

1045

Stop Fence @ 60'

P.T. Sta. 354+93.86
=12' Rt. Sta. 1045+50.00

Δ = 64°24'19.6"
D = 38°12'
T = 94.47'
L = 168.60'
E = 27.27'
R = 150.00'

P.C. Sta. 353+24.76

6' Paved Shoulder

P.C. Sta. 551+85.41
=18' Lt. Sta. 1046+20.00

Δ = 60°03'29.8"
D = 76°24'
T = 43.35'
L = 78.61'
E = 11.63'
R = 75.00'

P.T. Sta. 552+64.02

P.T. Sta. 553+06.31

Ramp "E"

P.C. Sta. 551+83.72
=P.O.T. Sta. 1047+73.52

P.C. Sta. 560+22.64

560

Ramp "C"

340+30.00

Δ = 24°13'7.4"
D = 5°00'
T = 245.88'
L = 484.37'
E = 26.08'
R = 1146.00'

P.T. Sta. 344+34.79

345

350

P.C. Sta. 352+50.87

P.T. Sta. 354+52.60
=12' Rt. Sta. 1048+25.42

Δ = 115°35'40.4"
D = 57°18'
T = 158.78'
L = 201.74'
E = 87.65'
R = 100.00

1050

Δ = 117°04'45.5"
D = 95°30'
T = 98.06'
L = 122.60'
E = 54.96'
R = 60.00'

Begin of Taper
Sta. 332+00.00
=9' Lt. Sta. 32+00.00

P.C. Sta. 339+50.42
=74' Lt. Sta. 39+50.00

335 750' Taper 1:30 Ratio 340

30 35 40 45 50 55 60

24'
50'
24'

89°28'

Begin of Taper
Sta. 234+00.00
=49' Rt. Sta. 34+00.00

235 550' Taper 1:20 Ratio 240

P.C. Sta. 239+50.69
=76.5' Rt. Sta. 39+50.00

Reloc. P.O.T. Sta. 53+18.14
= P.O.T. Sta. 1052+68.6

24'

Δ = 118°26'53.7"
D = 95°30'
T = 100.75'
L = 124.03'
E = 57.26'
R = 60.00'

1055

Δ = 115°17'44.0"
D = 76°24'
T = 118.40
L = 150.91'
E = 65.15'
R = 75.00'

240+88.00

Δ = 25°03'9.0"
D = 3°30'
T = 363.73'
L = 715.79'
E = 39.92'
R = 1637.14'

245

Ramp "B"

P.T. Sta. 246+66.47

250

6' Paved Shoulder

Δ = 58°41'21.7"
D = 76°24'
T = 42.17'
L = 76.82'
E = 11.04'
R = 75.00'

P.T. Sta. 254+59.00
=P.O.T. Sta. 1057+75.29

P.C. Sta. 253+34.97

P.C. Sta. 253+81.53

P.T. Sta. 254+58.34
=18' Rt. Sta. 1059+50.0

Stop Fence @ 55'

End of Taper
Sta. 255+78.49
=12' Rt. Sta. 1060+50.00

P.C. Sta. 451+94.99
=12' Lt. Sta. 1057+53.12

P.T. Sta. 453+45.9

455

P.T. Sta. 453+64.41

Ramp "D"

460

Δ = 64°42'16.0"
D = 24°48'
T = 146.36'
L = 260.91'
E = 42.45'
R = 231.05

1060 Stop Fence @ 75'

P.C. Sta. 451+03.50
=12' Lt. Sta. 1060+40.00

GEOMETRICS OF ~~PROPOSED~~ INTERCHANGE(S) OF INTERSTATE ROUTE 35 WITH SLATER CONNECTION IOWA 210

RELOC. P.O.T. STA. 53+18.14

STORY CO. I-35-4(11)93

SCALE: 1" = 100'

FILE NO.	ENGLISH	DESIGN TEAM	POLK/STORY COUNTY	PROJECT NUMBER	SHEET NUMBER
		Flattery \ Buttolph		IMN-035-4(190)98--0E-77	K.1

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DIST. NO.	STATE	PROJ. NO.	YEAR	NO.	SHEET
5	IOWA	35-4(11)93		24B	37

REF. FED. DIST.	STATE	PROJ. NO.	YEAR	NO.	SHEET
5	IOWA	35-4(11)93		24B	63

UNION TWP
T-82 N R-23 W
SEC. 31

UNION TWP
T-82 N R-23 W
SEC. 30

Begin of Taper
Sta. 550 + 65.26
=12' Lt Sta. 1045+00.0

Step Fence Sta. 1045+50

P.T. Sta. 354+93.36
=12' Rt. Sta. 1045+50.00

Δ = 64°24'19.6"
D = 38°12'
T = 94.47'
L = 168.60'
E = 27.27'
R = 150.00'

P.C. Sta. 353+74.76

P.C. Sta. 352+50.87

P.T. Sta. 354+52.60
=12' Rt. Sta. 1048+25.42

Δ = 115°35'40.4"
D = 57°18'
T = 158.78'
L = 201.74'
E = 87.65'
R = 100.00'

Ramp "C"

4+34.79

P.C. Sta. 551+85.41
=18' Lt Sta. 1046+20.00

Step Fence Sta. 1045+50

Δ = 60°03'29.8"
D = 76°24'
T = 43.35'
L = 78.64'
E = 11.63'
R = 75.00'

P.T. Sta. 552+64.02

P.T. Sta. 553+06.31

P.C. Sta. 551+83.72
=P.O.T. Sta. 1047+73.53

Δ = 117°04'45.3"
D = 95° 30'
T = 98.06'
L = 122.60'
E = 54.96'
R = 60.00'

Ramp "E"

P.C. Sta. 560+22.64

Δ = 23°41'09.9"
D = 3° 30'
T = 343.26'
L = 676.67'
E = 35.60'
R = 1637.14'

6' Paved Shoulder

565+90.00

P.T. Sta. 566+99.31
=76.5' Lt. Sta. 67+00.00

550' Taper 1:20 Ratio

End of Taper
Sta. 572+50.00
=49' Lt. Sta. 72+50.00

80°28'

24'
50'
24'

Reloc. P.O.T. Sta. 53+18.14
= P.O.T. Sta. 1052+28.6

24'

1055

Δ = 118°26'53.7"
D = 95° 30'
T = 100.75'
L = 124.03'
E = 57.26'
R = 60.00'

P.T. Sta. 246+66.47

P.T. Sta. 254+59.00
=P.O.T. Sta. 1057+75.29

P.C. Sta. 253+34.97

P.C. Sta. 253+81.53

Δ = 58°41'21.7"
D = 76° 24'
T = 42.17'
L = 76.82'
E = 11.04'
R = 75.00'

P.T. Sta. 254+58.34
=18' Rt Sta. 1059+30.0

Step Fence Sta. 1059+50

End of Taper
Sta. 255+78.49

Δ = 115°17'44.0"
D = 76° 24'
T = 118.40'
L = 150.91'
E = 65.15'
R = 75.00'

P.C. Sta. 451+24.99
=12' Lt. Sta. 1057+53.12

P.T. Sta. 453+45.9

P.T. Sta. 453+64.41

Δ = 64°42'16.0"
D = 24°48'
T = 146.36'
L = 260.91'
E = 42.45'
R = 231.05'

Step Fence Sta. 1060+00

P.C. Sta. 451+03.50
=12' Lt. Sta. 1060+40.00

Ramp "D"

P.C. Sta. 462+21.19

Δ = 23°55'11.1"
D = 5°00'
T = 242.75'
L = 478.39'
E = 25.43'
R = 1146.00'

465+92.00

6' Paved Shoulder

P.T. Sta. 466+99.58
=74' Rt. Sta. 67+00.00

750' Taper 1:30 Ratio

End of Taper
Sta. 474+50.00
=49' Rt. Sta. 74+50.00

GEOMETRICS OF ~~PROPOSED~~ INTERCHANGE (28-02 OF INTERSTATE ROUTE 35 WITH SLATER CONNECTION IOWA 210

RELOC. P.O.T. STA. 53+18.14

FILE NO.	ENGLISH	DESIGN TEAM	Flattery \ Buttolph	POLK/STORY COUNTY	PROJECT NUMBER	IMN-035-4(190)98--0E-77	SHEET NUMBER	K.2

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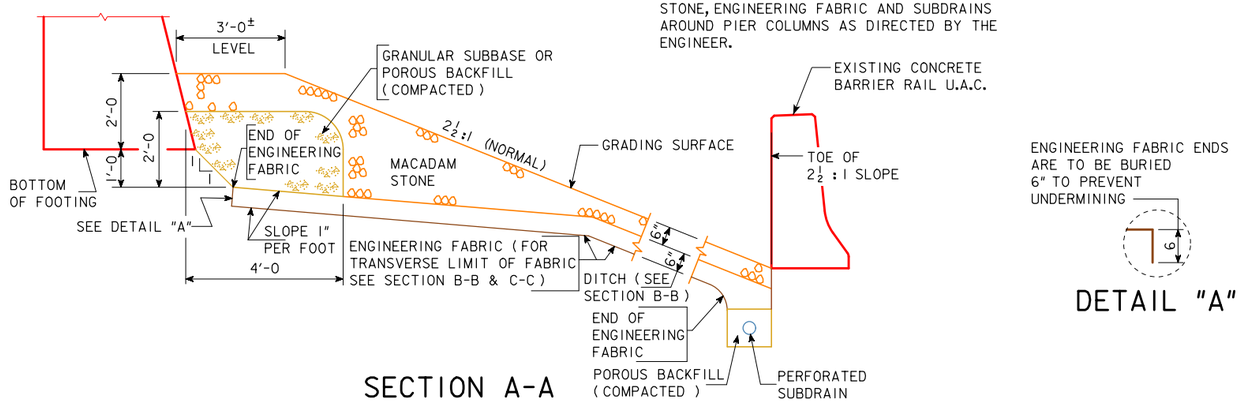
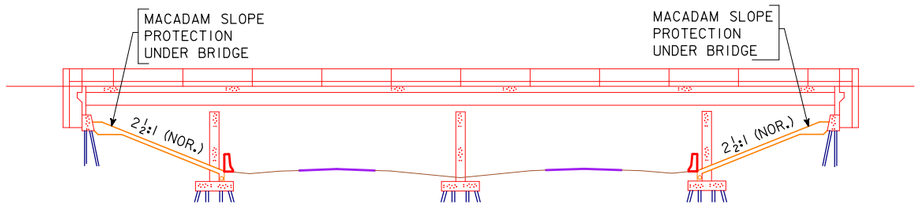
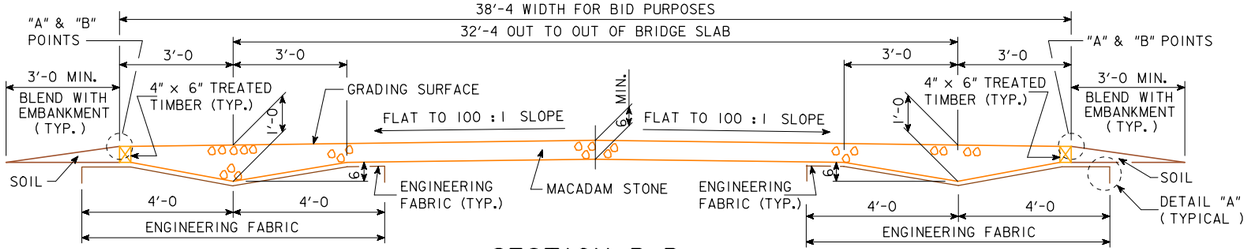


SECTION A-A

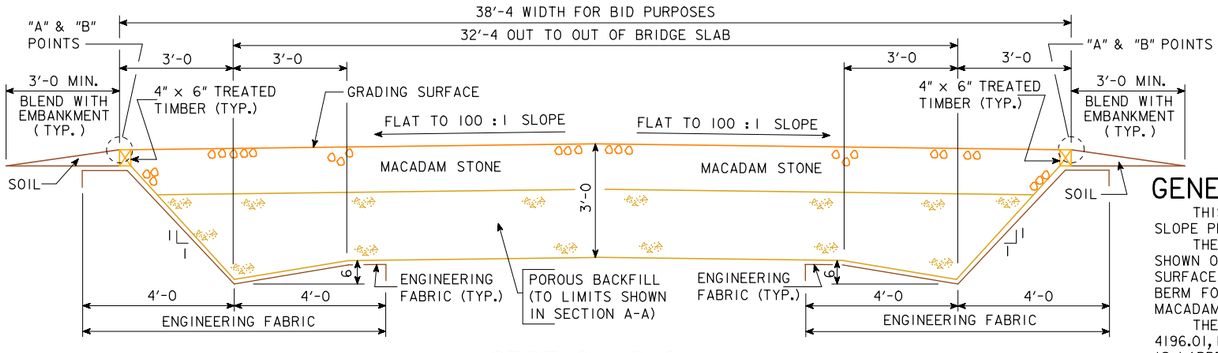
DETAIL "A"



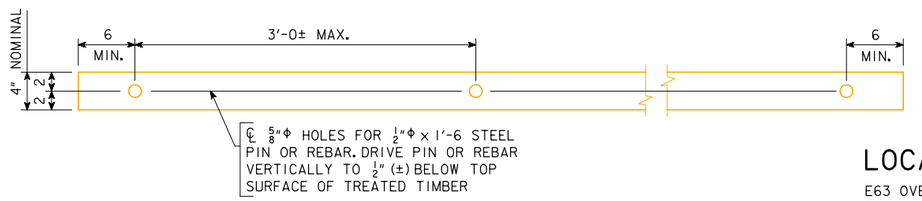
LONGITUDINAL SECTION ALONG ℄ ROADWAY



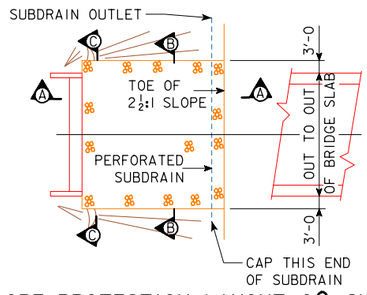
SECTION B-B



SECTION C-C



4 x 6 TREATED TIMBER EDGING DETAILS



SLOPE PROTECTION LAYOUT 0° SKEW

LABORATORY ANALYSIS HAS IDENTIFIED ASBESTOS AT THIS SITE. ASBESTOS SHALL BE REMOVED PRIOR TO DEMOLITION OPERATIONS. REMOVAL, TRANSPORT, AND DISPOSAL SHALL BE IN ACCORDANCE WITH SECTION 2536, OF THE STANDARD SPECIFICATIONS.

REQUIRED DNR INFORMATION INCLUDES:

YEAR CONSTRUCTED	- 1964
ASBESTOS LOCATION	- TAR SEALANT IN JOINTS AND CRACKS OF CONCRETE SLOPE PROTECTION.
FHWA NUMBER	- INFORMATION PROVIDED ELSEWHERE IN PLAN
ROAD/ROUTE (CITY)	- INFORMATION PROVIDED ELSEWHERE IN PLAN
COUNTY	- INFORMATION PROVIDED ELSEWHERE IN PLAN
DIRECTION TO BRIDGE	- INFORMATION PROVIDED ELSEWHERE IN PLAN
BRIDGE SIZE	- INFORMATION PROVIDED ELSEWHERE IN PLAN
NUMBER OF DECKS	- 1 (TYP.)
ASBESTOS INSPECTOR/AMOUNTS	- INFORMATION PROVIDED BY ENGINEER

ESTIMATED QUANTITIES

DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	EAST ABUT.	201 SQ. YDS.
MACADAM STONE SLOPE PROTECTION	WEST ABUT.	222 SQ. YDS.
	TOTAL	423 SQ. YDS.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
EXCAVATING, SHAPING AND COMPACTING
ENGINEERING FABRIC
MACADAM STONE
4" x 6" TREATED TIMBER EDGING
½"Φ STEEL PINS (OR REBARS)
POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE ABUTMENT FOOTING
SUBDRAIN

GENERAL NOTES:

THIS PLAN SHEET SHOWS DETAILS FOR PLACING A "MACADAM STONE SLOPE PROTECTION" UNDER OVERHEAD STRUCTURES.

THE BRIDGE BERM FORESLOPE SHALL BE COMPACTED AND SHAPED AS SHOWN ON THIS SHEET, SHAPING WILL INCLUDE EXCAVATION, FROM THE GRADING SURFACE SHOWN, THE SITUATION PLAN, AND AS DIRECTED BY THE ENGINEER. THE BERM FORESLOPE SHALL BE FIRM WHEN THE ENGINEERING FABRIC AND MACADAM STONE ARE PLACED.

THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.

THE MACADAM STONE SHALL BE IN ACCORDANCE WITH SECTION 4122, OF THE STANDARD SPECIFICATIONS, COARSE MATERIAL (NO CHOKE STONE IS ALLOWED).

WOOD PRESERVATIVE TREATMENT FOR THE TIMBER EDGING SHALL MEET THE REQUIREMENTS FOR GUARDRAIL POSTS, SAWED FOUR SIDES, IN ACCORDANCE WITH SECTION 4161, OF THE STANDARD SPECIFICATIONS.

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

PAYMENT FOR "MACADAM STONE SLOPE PROTECTION" WILL BE MADE ON A SQUARE YARD BASIS FOR SLOPE PROTECTION CONSTRUCTED. THE UNIT PRICE BID PER SQUARE YARD SHALL INCLUDE ALL COSTS FOR MATERIAL AND LABOR REQUIRED TO CONSTRUCT THE SLOPE PROTECTION SHOWN ON THESE PLANS.

THE BERM FORESLOPE SHAPING AND COMPACTING AND THE DISPOSAL OF EXCESS SOIL FROM SHAPING OR TRENCHING SHALL BE CONSIDERED INCIDENTAL TO PLACING THE SLOPE PROTECTION.

WHERE EROSION CONTROL WORK HAS BEEN COMPLETED THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLANT MATERIALS DESTROYED ADJACENT TO THE SLOPE PROTECTION AREA. THE CONTRACTOR SHALL REPLANT, RESEED AND REMULCH ALL DISTURBED AREAS, DESIGNATED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 2601, OF THE STANDARD SPECIFICATIONS, AT THE CONTRACTOR'S EXPENSE.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS AS DETAILED.

LOCATION

E63 OVER I-35
T-82N R-23W
SECTION 19
UNION TOWNSHIP
STORY COUNTY
FHWA NO. 049140
BRIDGE MAINT. NO. 8504.20035
LATITUDE 41.899596°
LONGITUDE -93.571082°

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER
James S. Nelson
16032
IOWA

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

Signature — Date: 9-12-2016

James S. Nelson
Printed or Typed Name

My license renewal date is December 31, 2017

Pages or sheets covered by this seal: V.1 AND V.2

DESIGN FOR 0° SKEW

219'-7x28' PRECAST PRESTRESSED CONCRETE BEAM BRIDGE

43'-1½ & 38'-11½ END SPANS — 2 - 68'-9 INTERIOR SPAN

MACADAM STONE SLOPE PROTECTION

STA. 2129+00 LOCAL ROAD/ I32+63.4 I-35 — SEPTEMBER, 2016

STORY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. - DESIGN NO. -

REVISED 10-12 - LOCATED THE "A" AND "B" POINTS IN SECTION A-A.
ENGLISHFORESLOPEPROTECTIONBRIDGES.DGN 1006C - THIS SHEET ISSUED 9-16-92

DESIGN TEAM JSN/SWM	MACADAM STONE SLOPE PROTECTION (STUB ABUTMENT)	STANDARD SHEET 1006C	STORY COUNTY	PROJECT NUMBER BRFN-035-4(190)98--0E-77	SHEET NUMBER V.1

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SUBDRAIN NOTES :

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

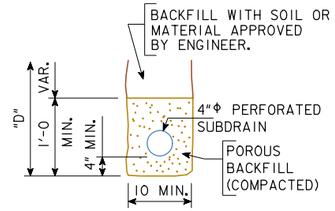
THE SUBDRAINS SHALL BE 4" IN DIAMETER AND SHALL BE IN ACCORDANCE WITH ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0 LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET.

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

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

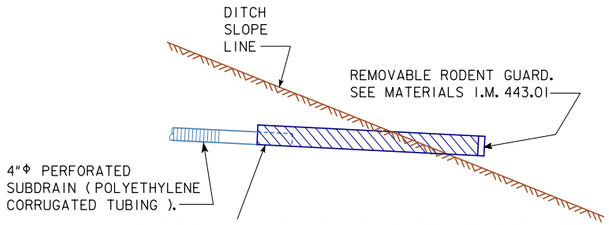
THE POROUS BACKFILL AND SUBDRAIN ARE TO BE CARRIED AROUND PIER COLUMNS IF THE COLUMN PLACEMENT INTERFERES WITH ALIGNMENT OF SUBDRAIN AS SHOWN ON THIS SHEET.

4"Φ PERFORATED SUBDRAIN TO BE SLOPED DOWNWARD FROM THE CAPPED END AND OUTLET INTO THE SIDE DITCH AS INDICATED. RATE OF SLOPE SHALL NOT BE FLATTER THAN 1%.



SECTION C-C
(TYPICAL)

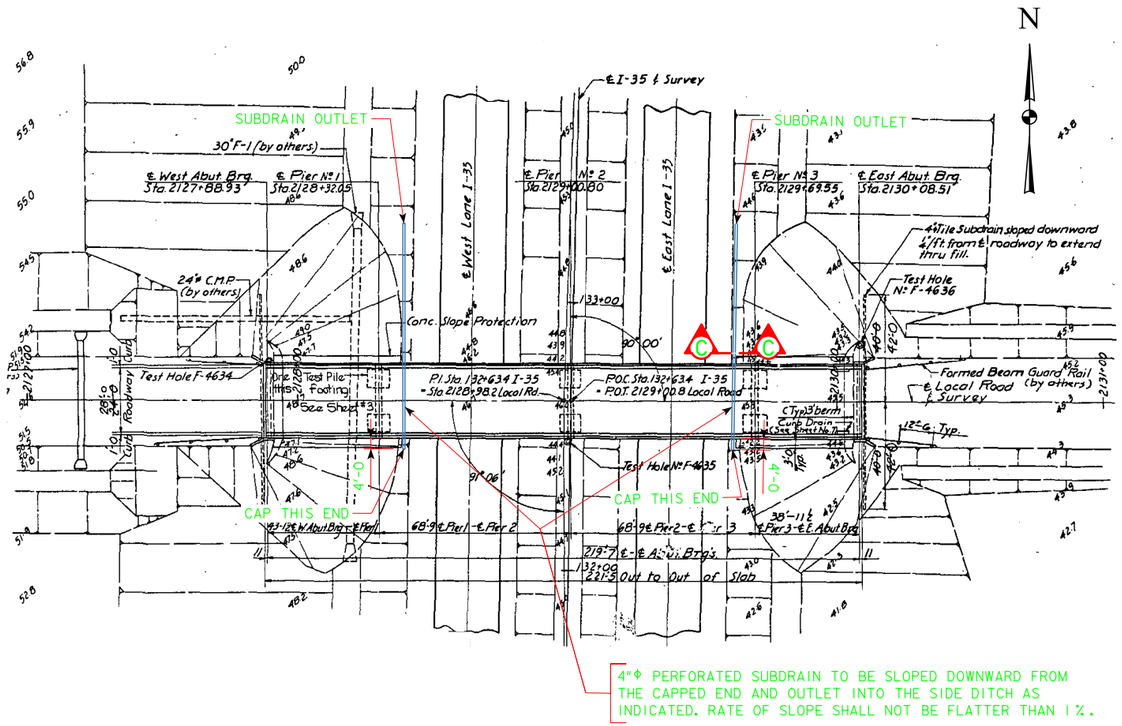
"D" = DEPTH REQUIRED TO PROVIDE PROPER FLOW LINE FOR SUBDRAIN.



SUBDRAIN OUTLET AT DITCH SLOPE

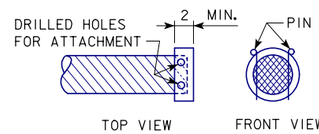
6"Φ CORRUGATED METAL PIPE OUTLET, OR 4"Φ CORRUGATED DOUBLE-WALLED PE OR PVC PIPE OUTLET WITH AN APPROPRIATE COUPLER. IF METAL PIPE IS USED, THE PIPES SHOULD BE COUPLED IN ONE OF THE TWO FOLLOWING WAYS.

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



4"Φ PERFORATED SUBDRAIN TO BE SLOPED DOWNWARD FROM THE CAPPED END AND OUTLET INTO THE SIDE DITCH AS INDICATED. RATE OF SLOPE SHALL NOT BE FLATTER THAN 1%.

SITUATION PLAN
SHOWING SUBDRAIN LOCATIONS



REMOVABLE RODENT GUARD DETAILS
OUTLET DETAILS

DESIGN FOR 0° SKEW

219'-7x28' PRECAST PRESTRESSED CONCRETE BEAM BRIDGE

43'-1½ & 38'-11½ END SPANS — 2 - 68'-9 INTERIOR SPAN

STA. 2129+00 LOCAL ROAD/ 132+63.4 I-35 — SEPTEMBER, 2016

STORY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. - DESIGN NO. -

DESIGN TEAM JSN/SWM	STORY COUNTY	PROJECT NUMBER IMN-035-4(190)98--0E-77	SHEET NUMBER V.2

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