HMA RESURFACING WITH COLD IN-PLACE RECYCLING
NHSX-034-4(45)--3H-88

UNION/CLARKE Co.

LETTING DATE
June 19, 2012

Iowa Department of Transportation

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

UNION/CLARKE COUNTY

HMA RESURFACING WITH COLD IN-PLACE RECYCLING

From County Road P-64 in Thayer East to I-35

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.

REVISIONS

	TOTAL 17
PROJECT IDENTIFICATION NUMBER	
09-88-034-020	
PROJECT NUMBER	
NHSX-034-4(45)--3H-88	
R.O.W. PROJECT NUMBER	

INDEX OF SHEETS

MILEAGE SUMMARY 105-1 09-27-94

Div.	Location	Lin. Ft.	Miles
1	RURAL: Union County 863+75.00 to 960+05.71 Omit Bridge at 880+39	9630.71 -168.00	
	Total Length of Union County	9462.71	1.792
	RURAL: Clarke County 960+05.71 to 994+36.12 Equation: 994+36.12 (Back) = 51+78.28 (Ahead) 51+78.28 to 624+83.29	3430.41 57305.01	
	Total Length of Clarke County	60735.42	11.503
	Total Length of Project	70198.13	13.295

Form 520003 11-12

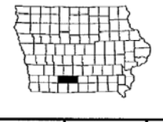
I hereby certify that this project was constructed in accordance with the contract documents, the "as-built" plans were prepared under my supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Project Engineer — Date: 2-17-15

My license renewal date is December 31, 2016

Year: 2012 — Contractor: Henningson — Project Inspector: C. Griswold

For Project Location Map
Refer to Sheet A.2



DESIGN DATA RURAL

2012 AADT	3380	V.P.D.
2032 AADT	4170	V.P.D.
2032 DHV	448	V.P.H.
TRUCKS	17	%
Total Design ESALs	2,100,000	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Mark A. Van Dyke	Primary Signature Block

LICENSED PROFESSIONAL ENGINEER — Mark A. Van Dyke — 17960 — 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: Mark A. Van Dyke — Date: 3/20/12

Printed or Typed Name: Mark A. Van Dyke

My license renewal date is December 31, 2013

Pages or sheets covered by this seal: A.1-A.2, B.1-B.4, C.1-C.8, U.1-U.3

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER A.1

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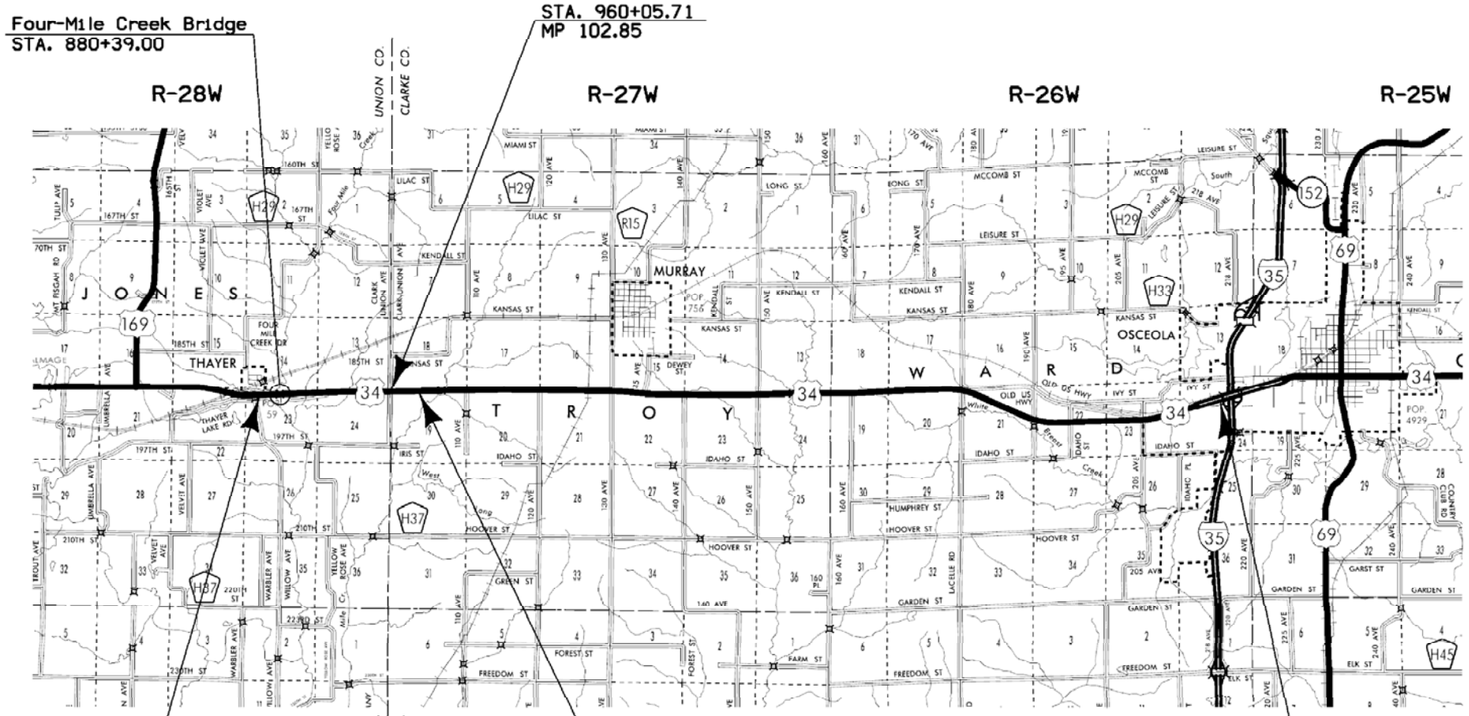

LOCATION MAP SCALE
0 1 2 3
Miles

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER A.2

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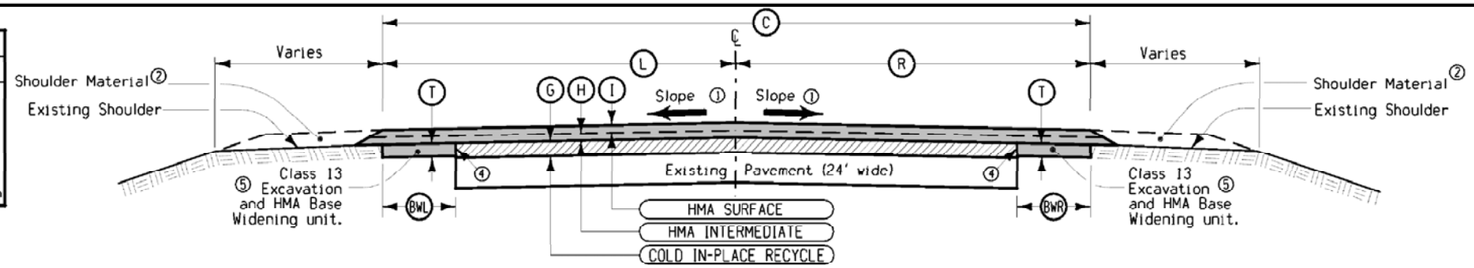
DESIGN RATES	
ITEM	RATE
Surface Course	150 lbs/cu ft
Intermediate Course	145 lbs/cu ft
HMA Base Widening	145 lbs/cu ft
Asphalt Binder	6% Content
Tack Coat *	0.05 gal/sq yd
Foamed Asphalt	0.0011 tons/sq yd/in

* Not a bid item



2617
MODIFIED

Notes:
1. Finished slope shall match existing pavement except that the maximum allowable slope is 3.0 %, minimum allowable slope is 2.0 %. Section may be modified as directed by the engineer through areas of special shaping.
2. Shoulder material as specified elsewhere in these plans; refer to typical 7135 for "Type 'B' Granular Surfaced Shoulders".
3. Quantity estimated for 2 courses plus vertical faces of paved shoulder units.
4. Provide a vertical edge. Incidental to Class 13 Excavation.
5. HMA Base Widening is to be completed after Cold In-Place Recycling has been done. Base Widening quantities are not included with Resurfacing quantities. Class 13 Excavation includes removal of existing widening units on the project.
6. Per Station.

Equation: 994+36.12 Back = 51+78.28 Ahead

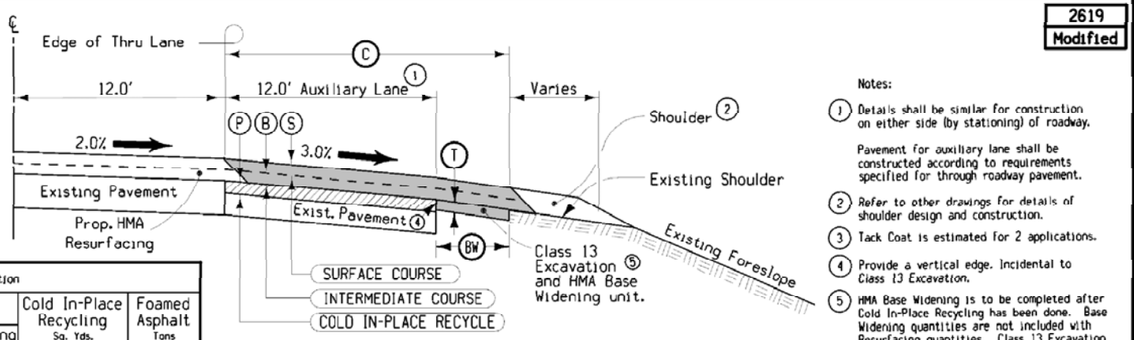
LOCATION		C	L	R	G	H	I	T	BWL	BWR	CL 13 Excav.	Estimated Quantities					Cold In-Place Recycling	
ROAD IDENTIFICATION	STATION TO STATION	Feet	Feet	Feet	Inches	Inches	Inches	Inches	Feet	Feet	Cu. Yds.	TACK COAT Gallons ③	ASPHALT BINDER Tons	HOT MIX ASPHALT (Tons) ⑥ SURFACE	INTERMEDIATE	BASE WIDENING	ASPHALT PAVEMENT Sq. Yds. ⑥	FOAMED ASPHALT Tons ⑥
US 34	863+75.00 to 597+75.00	32.0	16.0	16.0	4.0	2.0	1.5	3.0	4.0	4.0	7.4	36.30	5.03	30.12	39.17	14.50	266.67	1.17
US 34 EBL	597+75.00 to 605+46.59	16-36	0-20	16.0	4.0	2.0	1.5	3.0	0.0	4.0	3.7	29.63	3.82	24.49	31.92	7.25	244.44	1.08
US 34 EBL	605+46.59 to 606+66.59	38-32	22-16	16.0	4.0	2.0	1.5	3.0	4.0	4.0	7.4	39.63	5.41	32.93	42.79	14.50	300.00	1.32
US 34 EBL	606+66.59 to 624+83.29	32.0	16.0	16.0	4.0	2.0	1.5	3.0	4.0	4.0	7.4	36.30	5.03	30.12	39.17	14.50	266.67	1.17
US 34 WBL	13597+75.00 to 13605+46.81	16-22	16.0	0-6	4.0	2.0	1.5	3.0	4.0	0.0	3.7	21.85	2.92	17.93	23.46	7.25	166.67	0.73
US 34 WBL	13605+46.81 to 13609+46.81	24-32	16.0	8-16	4.0	2.0	1.5	3.0	4.0	4.0	7.4	31.85	4.51	26.37	34.34	14.50	222.22	0.98
US 34 WBL	13609+46.81 to 13621+50.00	32.0	16.0	16.0	4.0	2.0	1.5	3.0	4.0	4.0	7.4	36.30	5.03	30.12	39.17	14.50	266.67	1.17

TYPICAL CROSS SECTION HMA RESURFACING WITH COLD IN-PLACE RECYCLING AND BASE WIDENING

DESIGN RATES	
ITEM	RATE
Surface Course	150 lbs/cu ft
Intermediate Course	145 lbs/cu ft
HMA Base Widening	145 lbs/cu ft
Asphalt Binder	6% Content
Tack Coat *	0.05 gal/sq yd
Foamed Asphalt	0.0011 tons/sq yd/in

* Not a bid item

Equation: 994+36.12 Back = 51+78.28 Ahead



2619
Modified

Notes:
1. Details shall be similar for construction on either side (by stationing) of roadway.
   Pavement for auxiliary lane shall be constructed according to requirements specified for through roadway pavement.
2. Refer to other drawings for details of shoulder design and construction.
3. Tack Coat is estimated for 2 applications.
4. Provide a vertical edge. Incidental to Class 13 Excavation.
5. HMA Base Widening is to be completed after Cold In-Place Recycling has been done. Base Widening quantities are not included with Resurfacing quantities. Class 13 Excavation includes removal of existing widening units on the project.

Location				Dimensions						Design Quantities Per Station								
Road Identification	Auxiliary Lane Type	Station To Station	Side	C	BW	T	P	B	S	CL 13 Excav.	Tack Coat ③	Asphalt Binder	Hot Mix Asphalt (Tons)			Cold In-Place Recycling	Foamed Asphalt
				Feet	Feet	Inches	Inches	Inches	Inches	Cu. Yds.	Gallons	Tons	Surface	Intermediate	Base Widening	Sq. Yds.	Tons
US 34	Climbing	965+80	981+20	LT	16.0	4.0	3.0	4.0	2.0	1.5	3.7	19.08	2.28	15.00	19.33	3.7	133.33	0.59
US 34	Climbing	72+30	91+70	RT	16.0	4.0	3.0	4.0	2.0	1.5	3.7	19.08	2.28	15.00	19.33	3.7	133.33	0.59
US 34	Climbing	174+30	201+60	LT	16.0	4.0	3.0	4.0	2.0	1.5	3.7	19.08	2.28	15.00	19.33	3.7	133.33	0.59
US 34	Turn Lane	175+15	177+45	RT	12.0	0.0	0.0	4.0	2.0	1.5	0.0	13.50	1.55	11.25	14.50	0.0	133.33	0.59
US 34	Climbing	325+80	346+70	RT	16.0	4.0	3.0	4.0	2.0	1.5	3.7	19.08	2.28	15.00	19.33	3.7	133.33	0.59
US 34 EBL	Turn Lane	611+67	618+74	RT	12.0	0.0	0.0	0.0	2.0	1.5	0.0	13.50	1.55	11.25	14.50	0.0	133.33	0.59
US 34 WBL	Turn Lane	13619+80	13621+50	LT	12.0	0.0	0.0	4.0	2.0	1.5	0.0	13.50	1.55	11.25	14.50	0.0	0.00	0.00

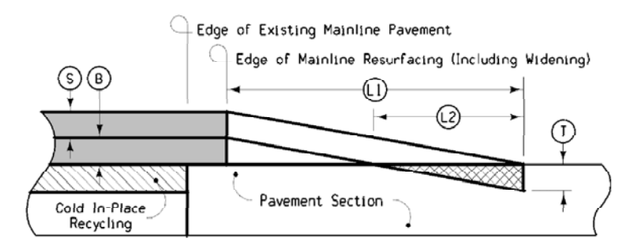
TYPICAL HALF SECTION HMA RESURFACING EXISTING AUXILIARY LANE

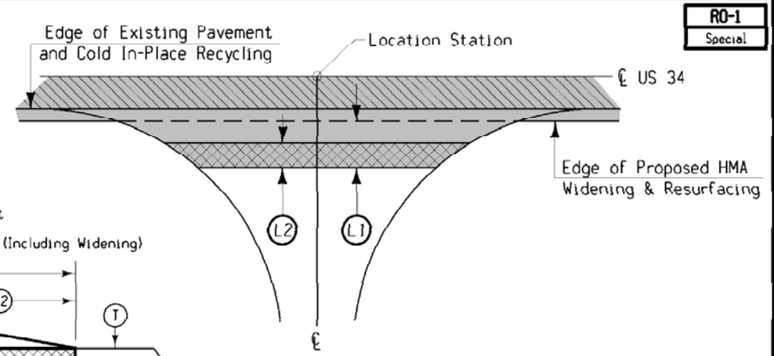
DESIGN RATES	
ITEM	RATE
Surface Course	150 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

Notes:
① Length of run-out to be determined in the field by the Engineer.

L1 HMA Runout
L2 Pavement Scarification (Milling)
S Surface Coarse
B Intermediate Coarse
T Milling Depth

LOCATION			L1	L2	S	B	T	ESTIMATED DESIGN QUANTITIES Per Location: Pavement Scarification Sq. Yds.	HMA Surface Course Tons	HMA Intermediate Course Tons
Road Identification	Station	Side	Feet	Feet	Inches	Inches	Inches			
US 34/County R15	177+86	LT	10.0	5.0	1.5	2.0	1.5	45	8	2
US 34/County R15	177+86	RT	10.0	5.0	1.5	2.0	1.5	35	7	2
US 34/County R16	220+60	LT	12.0	6.0	1.5	2.0	1.5	100	20	5
US 34/County R25	430+80	LT	10.0	5.0	1.5	2.0	1.5	45	7	2
US 34/County R25	430+80	RT	10.0	5.0	1.5	2.0	1.5	45	7	2
US 34/205th Ave	566+09	LT	10.0	5.0	1.5	2.0	1.5	45	7	2
US 34/W College Drive	576+15	RT	10.0	5.0	1.5	2.0	1.5	65	10	3
US 34/E College Drive	592+00	RT	10.0	5.0	1.5	2.0	1.5	85	10	3
US 34/SW Boulevard	619+00	RT	12.0	6.0	1.5	2.0	1.5	100	20	5
							Totals:	565	96	26





RO-1
Special

TYPICAL SECTION HMA RUNOUT AT PAVED SIDE ROAD OR ENTRANCE

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER B.1	X

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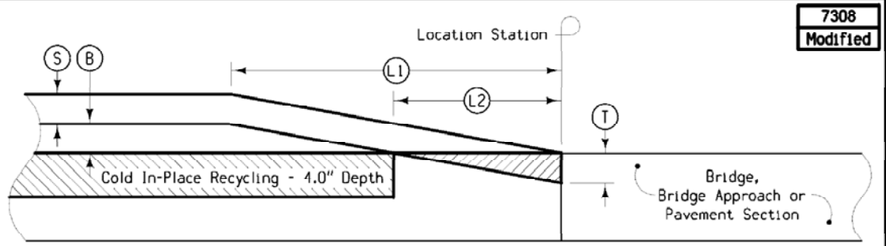
7308 Modified

Posted Speed Limit (mph)	Runout Ratio (ft per inch)
45 or More	50
20 to 45	25
Under 20	10 *

* Based on turning maneuvers at side roads and intersections.

** Includes milling of the existing 6.0' shoulder strengthening adjacent to mainline resurfacing, see Typical 7156.

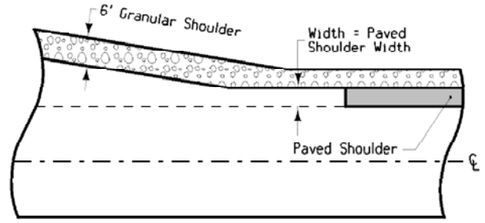


(S) Surface Course
(B) Intermediate Course
(T) Milling

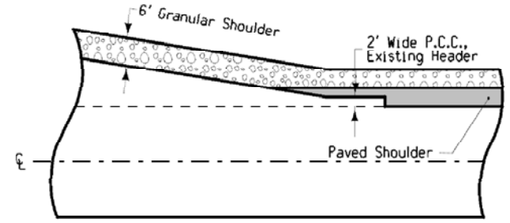
Location Station	(L1) Feet	(L2) Feet	(S) Inches	(B) Inches	(T) Inches	Remarks
863+75.00	175	75	1.5	2.0	1.5	B.O.P.
878+83.25	175	75	1.5	2.0	1.5	Bridge Approach **
881+94.75	175	75	1.5	2.0	1.5	Bridge Approach **
624+83.29	175	75	1.5	2.0	1.5	EBL E.O.P.
13621+50.00	175	75	1.5	2.0	1.5	WBL E.O.P.

SURFACE NOTCH - INTERMEDIATE RUNOUT FOR DOUBLE COURSE RESURFACING WITH COLD IN-PLACE RECYCLING

7154A 10-20-09



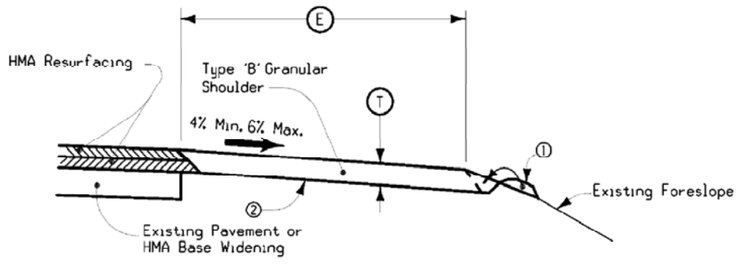
With Newly Constructed Turn Lanes



At UAC Turn Lanes

PAVED SHOULDER DETAIL AT TURN LANES

7135 Modified



Equation: 994+36.12 Back = 51+78.28 Ahead

LOCATION				TONS ③	(T)	(E)
ROAD IDENTIFICATION	STATION TO STATION		SIDE		Inches	Feet
US 34	863+75.00	605+46.59	Both	15.3	3.5	6.0
US 34 EBL	605+46.59	624+83.29	Out	15.3	3.5	6.0
US 34 EBL	605+46.59	624+83.29	Med	5.1	3.5	2.0
US 34 WBL	13605+46.59	13621+50.00	Out	15.3	3.5	6.0
US 34 WBL	13605+46.59	13621+50.00	Med	5.1	3.5	2.0
US 34 - Climbing Lane	965+80	981+20	LT	15.3	3.5	6.0
US 34 - Climbing Lane	72+30	91+70	RT	15.3	3.5	6.0
US 34 - Climbing Lane	174+30	201+60	LT	15.3	3.5	6.0
US 34 - Turn Lane	175+15	177+45	RT	10.2	3.5	4.0
US 34 - Climbing Lane	325+80	346+70	RT	15.3	3.5	6.0
US 34 - Turn Lane	611+67	618+74	RT	5.1	3.5	2.0
US 34 - Turn Lane	13619+80	13621+50	LT	5.1	3.5	2.0

Notes:

Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.

① Place and compact shoulder material to the dashed line; then blade and shape the windrow material at the break point against the newly placed granular material. Roll the bladed windrow material beyond the granular shoulder with a loaded truck tire or as directed by the Engineer.

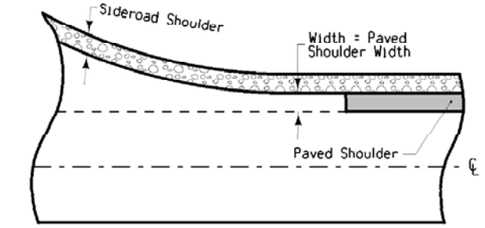
② Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing. Shaping shall be paid for in accordance with Section 2121 of the Standard Specifications.

③ Tons per side per station. Estimated quantity includes a 25% increase.

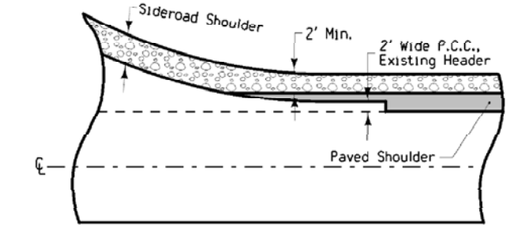
TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

ADJACENT TO HOT MIX ASPHALT RESURFACING

7154B 10-20-09



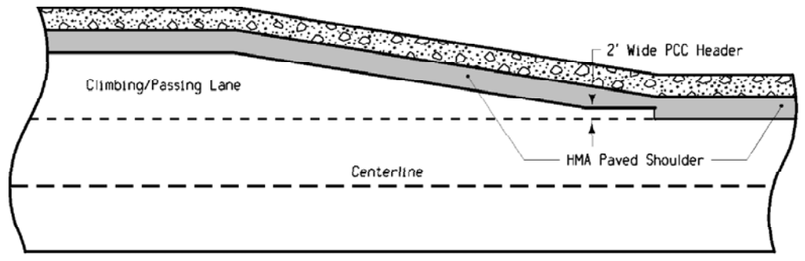
With Newly Constructed Returns



At UAC Returns

PAVED SHOULDER DETAIL AT RETURNS

7155 10-21-03



PAVED SHOULDER DETAIL AT CLIMBING/PASSING LANES

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER B.2	X

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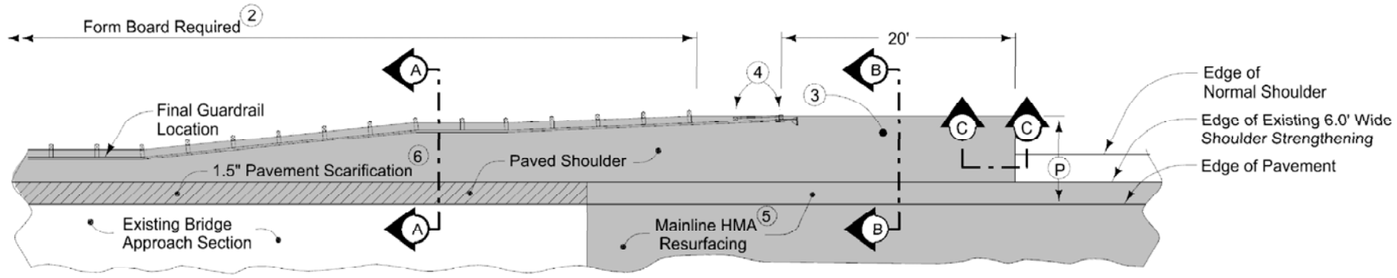
7156
Modified

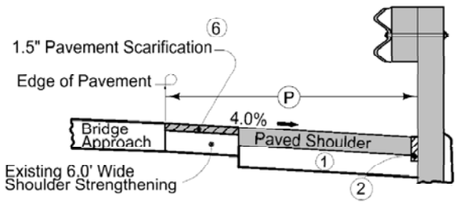


6" HMA Paved Shoulder at guardrail. 7" PCC may be substituted with the following jointing layout:

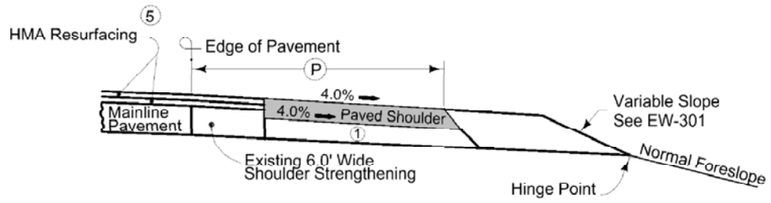
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse joints in shoulder at mid-panel of the mainline pavement. Place longitudinal joint at W/2 from edge of mainline pavement when W is greater than 10' wide. Terminate longitudinal joint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

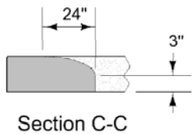
Refer to Shoulder tabulation (112-9) for quantities.



Section A-A
Section Adjacent to the Bridge Approach



Section B-B
Section Outside of Bridge Approach



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

1 6" subgrade treatment.

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.

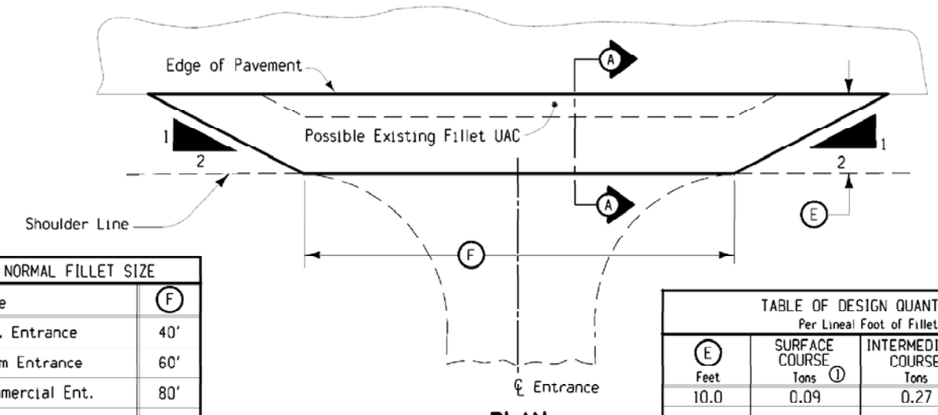
4 Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement.

5 Resurfacing quantities included with mainline quantities. Match pavement scarification of the existing shoulder strengthening with mainline; see Typical 7308.

6 Mill existing shoulder strengthening 1.5" prior to placement of paved shoulder.

PAVED SHOULDER AT GUARDRAIL

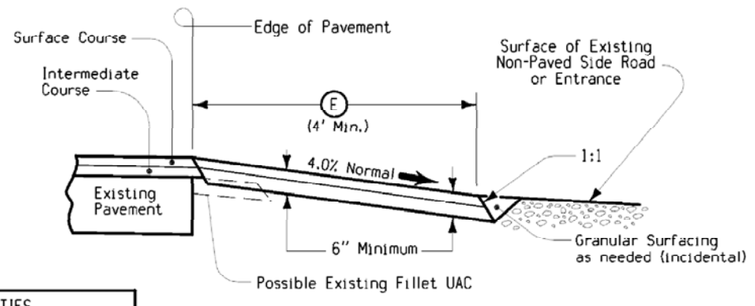
7139
Modified



PLAN

NORMAL FILLET SIZE	
Type	(F)
Res. Entrance	40'
Farm Entrance	60'
Commercial Ent.	80'
Non-Paved Road	100'

TABLE OF DESIGN QUANTITIES Per Lineal Foot of Fillet			
(E) Feet	SURFACE COURSE Tons (1)	INTERMEDIATE COURSE Tons (1)	TACK COAT Gal. (2)
10.0	0.09	0.27	0.11



SECTION A-A

Note:

Full thickness fillets of hot mix asphalt shall be constructed as non-paved entrances to farm dwellings and other residences where practical, and at commercial entrances.

Fillet sizes as listed in the table are recommended and shall be used for design and estimating purposes. The Engineer shall establish the size of each individual fillet to accommodate conditions at the site.

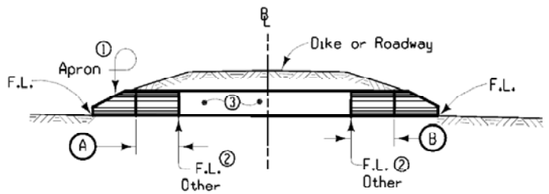
Special shaping of existing surface prior to and after placement of fillet may be required by the Engineer and shall be considered incidental to other work on the project.

(1) Estimated at 145 lbs./cu. ft.

(2) Estimated for 2 applications at 0.05 gal./sq. yd. The tack coat for entrance fillets may be eliminated when so directed by the Engineer.

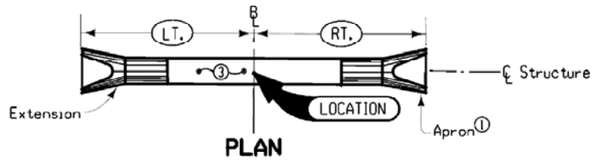
FILLET FOR NON-PAVED SIDE ROADS AND ENTRANCES (HMA Resurfacing Project)

1301
10-03-00



SECTION

A+B =Length



PLAN

Notes:

℄ shall be ℄ of roadway, dike, survey, or other; as detailed on plans.

Extension shall be on line of existing structure to Lt., Rt. or both as specified. Adaptors may be required, see Standard Road Plan RF-2.

Refer to tabular listing and other plans for additional information.

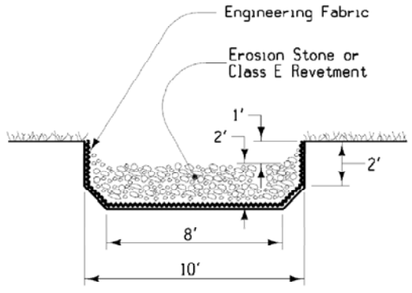
① See Standard Road Plan RF-3 for concrete, RF-5 for metal.

② Optional type "D" section only when specified in tabulation.

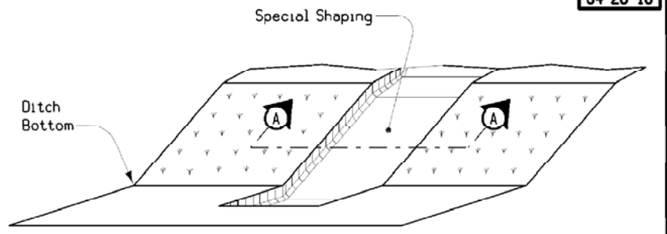
③ Existing structure.

PIPE EXTENSION

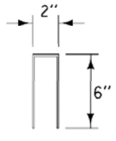
4403
04-20-10



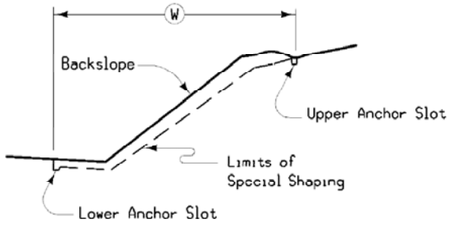
Section A-A



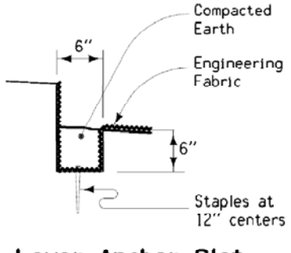
Isometric View



Staple
(No. 11 wire)



Typical Section



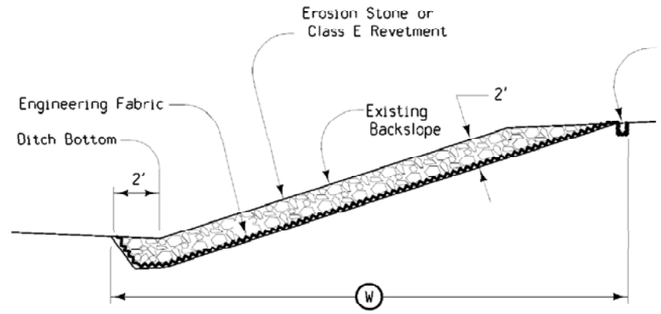
Upper Anchor Slot

Lower Anchor Slot

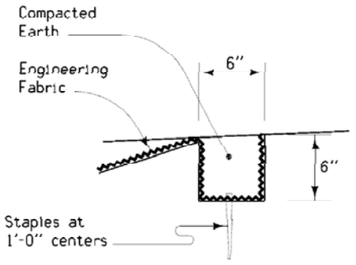
ROCK FLUME

Refer to Tabulation 100-23 for additional information.

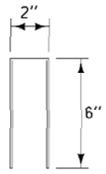
4405
04-20-10



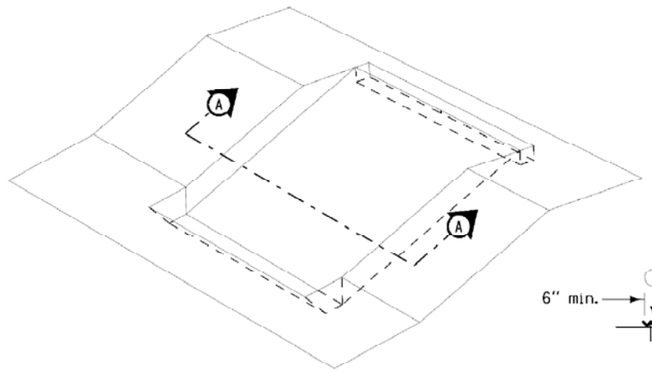
Typical Section



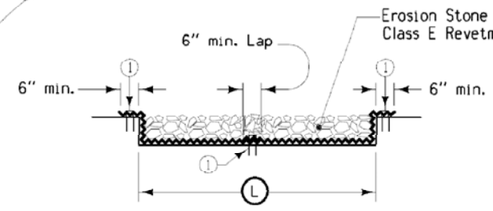
Anchor Slot



Staple
(No. 11 wire)



Isometric View



Section A-A

① Staples at 12" centers

Refer to Tabulation 100-23 for additional information.

ROCK SLOPE PROTECTION

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER B.4	X

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100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101 0850001	CLEARING AND GRUBBING	ACRE	2	2
2	2101-0850002	CLEARING AND GRUBBING	UNIT	550	550
3	2102-0425070	SPECIAL BACKFILL	TON	95.5	173.06
4	2102-2625000	EMBANKMENT-IN-PLACE	CY	465	485
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	21600	37034.17
6	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	449.6	449.6
7	2125-2225050	RESHAPING DITCHES	STA	15	15
8	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	13.3	13.3
9	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	454	420.28
10	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	44	44
11	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	5125	5125
12	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE	TON	9900	10470.11
13	2214-5145150	PAVEMENT SCARIFICATION	SY	1913	1913
14	2214-7450050	BLADING AND SHAPING SHOULDER MATERIAL	STA	1433	1433
15	2303-0042500	HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), INTERMEDIATE COURSE, 1/2 IN. MIX	TON	31400	31699.44
16	2303-0043503	HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	24100	24511.51
17	2303-0245828	ASPHALT BINDER, PG 58-28	TON	3925	3852.39
18	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1	1
19	2318-1001100	COLD IN-PLACE RECYCLED ASPHALT PAVEMENT	SY	206150	202937.333
20	2318-1001220	ASPHALT STABILIZING AGENT (FOAMED ASPHALT)	TON	905	857.9
21	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	519	519
22	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	4	4
23	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	2	2
24	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	20	21
25	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN.	EACH	9	9
26	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	410	438
27	2416-1541136	REMOVE AND REINSTALL RIGID PIPE CULVERT GREATER THAN 36 IN.	LF	148	148
28	2417-0225018	APRONS, METAL, 18 IN. DIA.	EACH	4	4
29	2417-0225024	APRONS, METAL, 24 IN. DIA.	EACH	2	2
30	2417-1040018	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 18 IN. DIA.	LF	62	62
31	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LF	24	24
32	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	228	228
33	2505-4008130	REMOVAL OF CABLE GUARDRAIL	LF	3901	3901
34	2505-4008300	STEEL BEAM GUARDRAIL	LF	75	75
35	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION	EACH	4	4
36	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4	4
37	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL	EACH	4	4
38	2507-3250005	ENGINEERING FABRIC	SY	255	255
39	2507-6800061	REVETMENT, CLASS E	TON	125	125
40	2519-3300600	FENCE, SAFETY	LF	750	750
41	2520-3350015	FIELD OFFICE	EACH	1	1
42	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	5663.01	5663.01
43	2528-8445110	TRAFFIC CONTROL	LS	1	1
44	2528-8445113	FLAGGERS	EACH	See Proposal	375
45	2528-8445115	PILOT CARS	EACH	See Proposal	125
46	2529-2242304	CD JOINT ASSEMBLY	EACH	1	1
47	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	53.3	53.3
48	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	4	4
49	2529-8174010	SUBBASE (PATCHES)	SY	53.3	53.3
50	2529-8201000	JOINT ASSEMBLY, EF	EACH	4	4
51	2533-4980005	MOBILIZATION	LS	1	1
52	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	1439.5	1439.5
53	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	1559.5	1559.5
54	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	676.6	676.6
55	2601-2634100	MULCHING	ACRE	70	70
56	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	35	35
57	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	35	35
58	2602-0000020	SILT FENCE	LF	900	900
59	2602 0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	450	450

100-1D
10-18-05

PROJECT DESCRIPTION

This rehabilitation project includes full depth patching, cold in-place recycling, base widening for four-foot wide paved shoulders, HMA resurfacing, granular shoulders, milled shoulder and centerline rumble strips, updating guardrail, foreslope flattening at points of access, and small culvert repairs on US 34 in Union/Clarke County from Union County P-64 in Thayer East to I-35.

Note that there is a Restricted Area within the project limits that will need to be avoided during project activities. Safety Fence shall be installed along the borders prior to commencing construction activities and shall be removed once all construction activities are completed. See Sheet U.1 for additional information.

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
EC-201	04-20-10	Silt Fence
EW-301	04-19-11	Guardrail Grading
PM-110	04-19-11	Line Types
PM-120	04-19-11	Stop Lines and Islands
PM-420	04-19-11	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PM-520	04-19-11	Two-Lane Roadway with no Turn Lanes (Two-Way Stop Condition)
PM-521	04-19-11	Two-Lane Roadway with Right Turn Lanes
PM-561	04-19-11	Divided Multi-Lane Roadway with Right Turn Lanes
PM-562	04-19-11	Divided Multi-Lane Roadway with Left Turn Lanes
PM-760	04-19-11	Divided Multi-Lane Roadway Median
PV-12	04-17-12	Milled Shoulder Rumble Strips
PV-13	04-19-11	Milled Centerline Rumble Strips
PV-101	04-17-12	Joints
RF-3	10-18-11	Concrete Aprons
RF-5	10-03-00	Metal Pipe Aprons and Beveled Ends
RF-14	10-18-11	Connected Pipe Joints
RF-30A	10-19-10	Culvert (Bedding and Backfill)
RF-30B	10-19-10	Pipe Culvert (Cover and Camber)
RF-30C	04-30-02	Pipe Culvert (Installation Details)
RF-31	03-28-95	Depth of Cover Tables for Concrete Pipe
RF-32	10-19-10	Depth of Cover Tables for Corrugated Pipe
RG-2	10-19-04	Details for Hot Mix Asphalt Resurfacing (Double Course)
RG-8	10-17-06	Hot Mix Asphalt Base Widening
RL-8	10-20-09	Rural Entrance
RR-1	04-17-12	Full Depth Patch with 'EF' joint in PCC
RR-4	04-19-11	Full Depth PCC Patch with Dowels
SI-173	04-20-10	Object Markers
SI-211	10-19-10	Object Marker and Delineator Placement with Guardrail
TC-1	10-18-11	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-17-12	Shoulder Closure (One Lane)
TC-212	04-17-12	Spot Location Lane Closure with Flaggers
TC-213	04-17-12	Lane Closure with Flaggers
TC-214	04-17-12	Lane Closure with Flaggers for use with Pilot Car
TC-231	10-16-07	Slow Moving Vehicle Operating in the Traffic Lane
TC-232	04-17-12	Shoulder Rumble Strip Operations
TC-233	10-18-11	Pavement Marking Operations Two-Lane
TC-282	04-19-11	Uneven Lanes
TC-402	04-17-12	Shoulder Closure (Multi-Lane)
TC-418	03-01-12	Lane Closure on Divided Highway (INTERIM)
TC-431	04-17-12	Slow Moving Vehicle Operating in the Traffic Lane
TC-432	04-17-12	Shoulder Rumble Strip Operations
TC-433	10-18-11	Pavement Marking Operations
TC-482	04-19-11	Uneven Lanes

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Through traffic will be maintained on the project at all times.

2. Traffic control on this project shall be found in accordance with the TC series of Standard Road Plans found in Tab. 105-4 on Sheet C.1 and/or appropriate Detail Sheets included in the plans. For additional complementary information, refer to Part VI of the Manual on Uniform Traffic Control Devices and the current Standard Specifications.

3. The contractor shall coordinate traffic control with other projects in the area.

108-26A
08-01-08

STAGING NOTES

The following items shall be constructed in the sequence listed below unless approved by the Engineer:

1.) Install Safety Fence around borders of the Restricted Area as shown on Sheet U.1.
2.) Complete the Full Depth Repair Patching on the project.
3.) Cold In-Place Recycle the existing pavement and allow for cure.
4.) Construct the four-foot wide Base Widening.
5.) Place the HMA intermediate and surface lifts.
6.) Remove the Safety Fence from the Restricted Area at the completion of the project.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING
		Quantity includes 0.5 acres at each of the following locations: 898+50 to 900+75 RT, 899+00 to 900+00 LT, 924+00 to 932+50 RT, and 926+00 to 934+00 LT.
-	-	-
2	2101-0850002	CLEARING AND GRUBBING
		Item is for the removal of trees near pipe culvert locations throughout the project as determined by the Engineer. Refer to CG-1 for locations and details.
-	-	-
3	2102-0425070	SPECIAL BACKFILL
		Item is for subgrade treatment below the paved shoulders at the guardrail for the bridge at Station 880+39. Refer to Typical 7156 on Sheet B.3 and Tabulation 112-9 for details.
-	-	-
4	2102-2625000	EMBANKMENT-IN-PLACE
		Item includes 150 CY for guardrail installations, refer to Tab. 107-23. Item includes 100 CY for entrance foreslope flattening, refer to Tab. 104-13. Item includes 215 CY for small culvert repairs, refer to Tab. 3R-CULV. The use of Class 13 Excavation material will be allowed if approved by the Engineer.
-	-	-
5	2121-7425020	GRANULAR SHOULDERS, TYPE B
		Refer to Typical 7135 on Sheet B.2 for locations and details. Quantity increase by 25% for irregularities.
-	-	-
6	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.
		Item is for the paved shoulders at the guardrail for the bridge at Station 880+39. Refer to Typical 7156 on Sheet B.3 and Tabulation 112-9 for details.
-	-	-
7	2125-2225050	RESHAPING DITCHES
		Item is for the cleaning and shaping of ditches at the inlet and outlet of roadway pipe culvert locations on the project. It is estimated at 0.25 Stations per location per side. The Engineer will determine the actual length of Reshaping Ditches needed at each location. Refer to Tab. 3R-CULV for locations and details.
8	2212-0475095	CLEANING AND PREPARATION OF BASE

-	-	-
9	2212-5070310	PATCHES, FULL-DEPTH REPAIR
10	2212-5070330	PATCHES BY COUNT (REPAIR)
		Refer to Tab 102-6C for locations and details. Full-depth repair patch quantity increased by 15% for irregularities.
-	-	-
11	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING
		Refer to Typicals 2617 and 2619 on Sheet B.1 and Typical 7156 on Sheet B.3. Includes 50 CY for the paved shoulder at guardrail, refer to Tab. 112-9 for details. Material may be used for the Embankment In-Place item if approved by the Engineer. Excess material not used on the project becomes the property of the Contractor.
-	-	-
12	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE
		Refer to Typicals 2617 and 2619 on Sheet B.1 for details. Quantity increased by 5% for irregularities.
-	-	-
13	2214-5145150	PAVEMENT SCARIFICATION
		Refer to Typical RO-1 on Sheet B.1 and Typical 7308 on Sheet B.2 for locations and details. Quantity includes 148 SY for milling 1.5" from the existing shoulder strengthening adjacent to the bridge approach for the bridge at 880+39 prior to placing the paved shoulder at the guardrail per Typical 7156 on Sheet B.3.
-	-	-
14	2214-7450050	BLADING AND SHAPING SHOULDER MATERIAL
		Item is for the removal of the existing windrow along the edge of the existing shoulder. Refer to Typical 7135 on Sheet B.2 for additional details and locations.
-	-	-
15	2303-0042500	HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), INTERMEDIATE COURSE, 1/2 IN. MIX
16	2303-0043503	HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3
17	2303-0245828	ASPHALT BINDER, PG 58-28
		Refer to Typicals 2617, 2619, and RO-1 on Sheet B.1 and Typical 7139 on Sheet B.3 for locations and details. Quantities increased by 5% for irregularities.
-	-	-
18	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES

-	-	-
19	2318-1001100	COLD IN-PLACE RECYCLED ASPHALT PAVEMENT
20	2318-1001220	ASPHALT STABILIZING AGENT (FOAMED ASPHALT)
		Refer to Typicals 2617, 2619, and RO-1 on Sheet B.1 and Typical 7308 on Sheet B.2 for locations and details.
-	-	-
21	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT
22	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
23	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.
24	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.
25	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN.
26	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.
27	2416-1541136	REMOVE AND REINSTALL RIGID PIPE CULVERT GREATER THAN 36 IN.
		Refer to Tab. 3R-CULV for locations and details.
-	-	-
28	2417-0225018	APRONS, METAL, 18 IN. DIA.
29	2417-0225024	APRONS, METAL, 24 IN. DIA.
30	2417-1040018	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 18 IN. DIA.
31	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.
		Item is for pipe extensions due to foreslope flattening at entrances. Refer to Tab. 104-13 for locations and details.
-	-	-
32	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		Refer to Tab. 110-7A for locations. Material to become property of the contractor.
-	-	-
33	2505-4008130	REMOVAL OF CABLE GUARDRAIL
		Refer to Tab. 110-7B for locations. Material to become property of the contractor.
-	-	-
34	2505-4008300	STEEL BEAM GUARDRAIL
35	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION
36	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED
37	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL
		Refer to Tab. 108-8A for locations and details.
-	-	-
38	2507-3250005	ENGINEERING FABRIC
39	2507-6800061	REVETMENT, CLASS E
		Refer to Tab. 100-23 for locations and details.
-	-	-
40	2519-3300600	FENCE, SAFETY
		Item if for placing fence along the borders on the Restricted Area within the project limits. For location of the fence, see Sheet U.1. The fence shall be installed prior to starting any other construction activities. Use orange mesh safety fence meeting the requirements of Article 4188.03. Measurement will be linear feet constructed, of the height and type specified, measured along the bottom of the fabric. Payment will be the contract unit price per linear foot. Payment is full compensation for furnishing all material, the construction of the safety fence, maintenance of the fence during the project duration, and the removal and clean up after the project is completed. The safety fence shall remain the property of the contractor and removed from the project.
-	-	-
41	2520-3350015	FIELD OFFICE

-	-	-
42	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
		Refer to Tab. 108-22 for details. See Sheet U.2 for marking details of the two-lane to four-lane transition.
-	-	-
43	2528-8445110	TRAFFIC CONTROL
44	2528-8445113	FLAGGERS
45	2528-8445115	PILOT CARS
		Refer to Tab. 105-4 for Standard Road Plans.
-	-	-
46	2529-2242304	CD JOINT ASSEMBLY
47	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA
48	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT
49	2529-8174010	SUBBASE (PATCHES)
50	2529-8201000	JOINT ASSEMBLY, EF
		Refer to Tab. 102-6C for locations and details.
-	-	-
51	2533-4980005	MOBILIZATION

-	-	-
52	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE
53	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)
54	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE
		Refer to Tab. 112-10 for locations and details.
-	-	-
55	2601-2634100	MULCHING
56	2601-2636043	SEEDING AND FERTILIZING (RURAL)
57	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING
		Items are for areas disturbed on the project including but not limited to the grading for guardrail, blading and shaping along the shoulder, and reshaping ditches.
-	-	-
58	2602-0000020	SILT FENCE
59	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK
		Refer to Tab. 100-17 for locations. Maintenance of Silt Fence item is estimated at 50% of the installation quantity.

INDEX OF TABULATIONS

110-12A
04-19-11

POLLUTION PREVENTION PLAN

This Base Pollution Prevention Plan (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. 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 a detailed schedule according to Article 2602 of the Specifications 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. 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 list 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 rehabilitaion project that includes cold in-place recycling, HMA resurfacing, HMA widening, guardrail updates at one bridge, and small culvert repairs. The project begins at Union County road P-64 in Thayer and ends near I-35 in Clarke County.
- B. This PPP covers approximately 425 acres with an estimated 35 acres being disturbed. The portion of the PPP covered by this contract has 35 acres disturbed.
- C. The PPP is located in an area of 1 soil association (Adair-Grundy-Haig).
  The estimated average SCS runoff curve number for this PPP after completion will be 75.
- 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) - 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 of completed erosion control work.
- F. Runoff from this work will flow into various unnamed ditches and water ways to Four-Mile Creek, Seven-Mile Creek, and Long Creek to the Grand River and from White Breast Creek to the Des Moines River.

III. CONTROLS
- A. The contractor's work plan and sequence of operations 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. Section 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used 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 is preserved where attainable and disturbed portions of the site will be stabilized.
        2) Stabilization measures 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. Other stabilizing methods shall be used outside the seeding time period.
        4) Stabilization measures to be used for this project are located in the Estimated Project Quantities (100-1A) and Estimate Reference Information (100-4A) located on the C sheets of the plan. Additional items may be found in the Inspector's Daily Reports (IDR) or Contract Modifications.
     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.
        2) Structural items to be used for this project are located in the Estimated Project Quantities (100-1A) 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 plan 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. 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.
        7) Vehicle and Equipment Cleaning - Employ washing practices that prevent contamination of surface and ground water from wash water.
        8) Vehicle and Equipment Fueling and Maintenance - 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.
        9) Litter Management - Ensure employees properly dispose of litter.
  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 and after each rain event that is ½" or greater. 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.
  4. Rainfall amount.
  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 and complete all actions 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.*

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 and fieldbook entries made by the inspector.
- C. IDR - Inspector's Daily Report - this contains the inspector's daily diary and 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.
- E. Signature Authority - Representative from Designer, Contractor/Subcontractor, or RCE/Inspector authorized to sign various storm water documents.

232-8
10-18-11

EROSION CONTROL (DISTURBED AREAS)

Ensure the top 6 inches of the disturbed areas are free of rock and debris and are suitable for the establishment of vegetation, subject to the Engineer's approval.

232-10
10-28-97

EROSION CONTROL (EQUIPMENT FOR MAINTENANCE)

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins, or silt dikes.

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
877+75.0	879+75.0	RT	250.0	
878+00.0	879+50.0	LT	200.0	
881+00.0	883+00.0	LT	250.0	
881+25.0	882+75.0	RT	200.0	
	Total:		900.0	

102-5
Modified

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	88	US 34	1	101	102.85	1991		F-34-4(25)--20-88	ACC	4							EARLY CHAPEL	C. LST.			
						1972		RF-34-5(10)--35-20	PCC	8.5							WEST DES MOINES	GRAVEL	2		
2	20	US 34	1	102.85	114	1991		F-34-4(25)--20-88	ACC	4							EARLY CHAPEL	C. LST.			
						1972		RF-34-5(6)--35-20	PCC	8.5							WEST DES MOINES	GRAVEL	2		
3	20	US 34	1	114	115.17	2000		NHSN-34-5(17)--2R-20	ACC	1.5	ACC	2					DURHAM	C. LST.			
						1991		F-34-4(25)--20-88	ACC	3											
						1971		NA	PCC	8.5											

102-6C
Modified

FULL-DEPTH PATCHES

Refer to Standard Roads Plans RR-1, RR-2, RR-4, RR-18, and RR-26

Location			Dimension			PCC Patches			HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
Count	Station or Milepost	Lane	Length	Width	Patch Thickness	With Dowels RR-4	Without Dowels RR-2	C R C RR-18			Subbase Patches RR-26	Subbase Patch w/ 'EF' Joint RR-1	Patch Subdrain RR-1 or RR-26	'CD' Joints	'CT' Joints	'EF' Joints RR-1	Anchor Lugs Removal	
		L, R, or B	FT	FT	IN	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
FULL-DEPTH REPAIR PATCHES																		
2	877+43.0	B	6.0	12.0	12.5	16.0												
2	878+01.0	B	6.0	12.0	12.5	16.0												
2	878+49.0	B	6.0	12.0	12.5	16.0												
2	878+67.0	B	6.0	12.0	12.5	16.0												
2	881+97.0	B	10.0	12.0	12.5	26.7												
2	882+27.0	B	6.0	12.0	12.5	16.0												
2	882+62.0	B	6.0	12.0	12.5	16.0												
2	883+83.0	B	6.0	12.0	12.5	16.0												
2	924+33.0	B	6.0	12.0	12.5	16.0												
2	932+23.0	B	6.0	12.0	12.5	16.0												
1	952+88.0	R	6.0	12.0	12.5	8.0												
2	958+10.0	B	6.0	12.0	12.5	16.0												
1	958+94.0	R	6.0	12.0	12.5	8.0												
2	166+75.0	B	6.0	12.0	12.5	16.0												
1	166+94.0	R	6.0	12.0	12.5	8.0												
2	167+35.0	B	6.0	12.0	12.5	16.0												
1	167+54.0	R	6.0	12.0	12.5	8.0												
1	168+14.0	R	24.0	12.0	12.5	32.0								1				
2	168+54.0	B	6.0	12.0	12.5	16.0												
1	169+55.0	R	6.0	12.0	12.5	8.0												
2	170+56.0	B	6.0	12.0	12.5	16.0												
1	186+14.0	R	6.0	12.0	12.5	8.0												
2	440+98.0	B	6.0	12.0	12.5	16.0												
1	441+18.0	L	6.0	12.0	12.5	8.0												
1	441+60.0	L	6.0	12.0	12.5	8.0												
1	441+80.0	L	6.0	12.0	12.5	8.0												
1	442+33.0	L	12.0	12.0	12.5	16.0												
1	442+59.0	L	6.0	12.0	12.5	8.0												
44		Totals for Full Depth Repair Patches				394.7								1				
FULL-DEPTH FINISH PATCHES																		
2	878+96.0	B	10.0	12.0	12.0	26.7						26.7				2		'EF' Joint in Bridge Approach Section
2	881+89.0	B	10.0	12.0	12.0	26.7						26.7				2		'EF' Joint in Bridge Approach Section
4		Totals for Full Depth Finish Patches				53.3						53.3				4		

DRAINAGE STRUCTURE REPAIR WORK

* Not a bid item
① UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

No.	Location	Size	Kind Of Pipe ①	Length New Const.		Connected Pipe Joint* (RF-14)	New Apron		Flow Line Elevations		Remove and Reinstall Pipe Culvert				Remove and Reinstall Apron				Class 20 Excavation		Embankment In-Place		Reshaping Ditch		Remarks
											Linear Feet				Each										
				Lin. Ft.			Each				Left Side		Right Side		Left Side		Right Side		CY		CY		STA		
		IN		Lt.	Rt.	Type	Lt.	Rt.	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	
1	902+25.0	30	RCP																					0.25	
2	912+00.0	30	RCP			3		1		UAC			26							16		7			Remove and dispose existing apron.
3	916+65.0	30	RCP																					0.25	
4	940+00.0	30	RCP																			16			Remove and dispose 24' of existing half pipe. Place embankment material prior to Class E Revetment Flume.
5	954+50.0	4'x5'	RCB																		24				
6	969+00.0	24	RCP			3			UAC	UAC			16		1		1			14				0.25	
7	974+00.0	30	RCP			3			UAC						1						3			0.25	
8	54+67.0	(3)12'x10'	RCB																				0.25	0.25	
9	68+35.0	42	RCP			3			UAC			16				1			16						
10	74+00.0	36	RCP																					0.25	
11	95+90.0	4'x4'	RCB																					0.25	
12	112+20.0	36	RCP			3				UAC			12				1					4	0.25		
13	116+65.0	36	RCP			3				UAC			12				1					7		0.25	
14	131+10.0	3'x3'	RCB																				0.25	0.25	
15	136+90.0	36	RCP			3	1		UAC	UAC	32		16				1		32	14					Remove and dispose existing apron.
16	148+34.0	30	RCP			3		1	UAC	UAC	32		16		1				24	12					Remove and dispose existing apron.
17	153+50.0	30	RCP			3			UAC		32				1				24		7			0.25	
18	158+30.0	36	RCP			3	1		UAC		24								22						Remove and dispose existing apron.
19	178+55.0	24	RCP			3			UAC		8				1				7		4			0.25	
20	197+50.0	30	RCP																				0.25		
21	209+15.0	5'x5'	RCB																					0.25	
22	229+72.0	10'x8'	RCB																				0.25	0.25	See Tab 100-23 for Class E Revetment
23	232+85.0	6'x5'	RCB																				0.25	0.25	
24	252+75.0	12'x12'	RCB																				0.25	0.25	
25	262+80.0	48	RCP			3			UAC			8				1			8		21				
26	292+80.0	4'x4'	RCB																				0.25	0.25	
27	308+44.0	(2)12'x10'	RCB																				0.25	0.25	
28	314+90.0	30	RCP			3	1		UAC	UAC	32		8				1		33	7					Remove and dispose existing apron.
29	322+55.0	30	RCP			3			UAC		16				1				13		14				
30	331+75.0	30	RCP			3	1		UAC		24								25		10		0.25		Remove and dispose existing apron.
31	354+94.0	30	RCP																				0.25	0.25	
32	367+37.0	5'x4'	RCB																				0.25	0.25	
33	381+89.0	30	RCP			3				UAC			24				1			12		4		0.25	
34	405+68.0	36	RCP																					0.25	
35	410+92.0	36	RCP																				0.25	0.25	
36	430+84.0	5'x5'	RCB																			21	0.25		Place embankment material in wash-out on foreslope
37	435+40.0	24	RCP																				0.25	0.25	
38	449+80.0	24	RCP			3				UAC			8				1			7			0.25	0.25	
39	452+40.0	48	RCP			3			UAC			12				1			22					0.25	
40	455+80.0	24	RCP			3			UAC		12				1				15		7			0.25	
41	464+55.0	5'x5'	RCB																				0.25	0.25	
42	475+30.0	36	RCP			3			UAC	UAC			24		1		1			25		14		0.25	
43	481+00.0	24	RCP			3			UAC		12				1				10		7		0.25	0.25	
44	484+77.0	4'x5'	RCB																				0.25	0.25	
45	490+24.0	24	RCP																				0.25		
46	496+29.0	4'x4'	RCB																				0.25		
47	500+14.0	24	RCP																		17			0.25	Remove 8' of existing pipe and replace with Class E Revetment Flume
48	514+50.0	36	RCP																					0.25	
49	522+63.0	42	RCP			3			UAC	UAC		16		48		1		1	16	67					
50	536+21.0	30	RCP			3				UAC			12				1			9				0.25	
51	542+80.0	42	RCP			3			UAC	UAC		18		12		1		1	21	15					
52	547+30.0	24	RCP			3			UAC		12				1				10		7			0.25	
53	551+73.0	42	RCP			3			UAC			18				1		1	23		21			0.25	
54	581+55.0	24	RCP																				0.25		
55	618+00.0	18	RCP			3			UAC						1									0.25	

Embankment In-Place =	215	CY
Reshaping Ditches =	15	STA
Class 20 Excavation =	519	CY
30" Concrete Apron =	4	EACH
36" Concrete Apron =	2	EACH
Remove and Reinstall Concrete Pipe Aprons Less Than or Equal to 36" =	20	LF
Remove and Reinstall Concrete Pipe Aprons Greater Than 36" =	9	LF
Remove and Reinstall Rigid Pipe Culvert Less Than or Equal to 36" =	410	LF
Remove and Reinstall Rigid Pipe Culvert Greater Than 36" =	148	LF

104-13
Modified

FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (POINTS OF ACCESS PIPES)

Refer to Standard Road Plan RL-8 and Typical 1301

* Not a bid item

Existing Information		New Information		Length of New Const.	Flow Line Elevations		Dimensions				Removal and Reinstallation of Culvert Aprons and Pipes						New Apron	Connect Pipe Joint RF-14*		Connect Type 'C' RF-2*		Embank.-In-Place	Remarks
							Total (LF)		Extensions (LF)		Aprons		Culvert Sections										
													Left Side		Right Side								
Location	Size and Type of Culvert	Size	Type of Culvert	Length of New Const.	Flow Line Elevations		Dimensions				Removal and Reinstallation of Culvert Aprons and Pipes						New Apron	Connect Pipe Joint RF-14*		Connect Type 'C' RF-2*		Embank.-In-Place	Remarks
		IN		LF	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	NO.*	FT	NO.*	FT	NO.	TYPE	NO.	TYPE	NO.	CY	
79+21 LT	18" CMP Entrance Pipe	18	CMP	50	UAC	UAC	---	---	20	30	---	---	---	---	---	---	2	---	---	---	---	50.0	Match Existing Ditch Flowlines
330+44 RT	24" CMP Entrance Pipe	24	CMP	24	UAC	UAC	---	---	14	10	---	---	---	---	---	---	2	---	---	---	---	30.0	Match Existing Ditch Flowlines
417+34 RT	18" CMP Entrance Pipe	18	CMP	12	UAC	UAC	---	---	6	6	---	---	---	---	---	---	2	---	---	---	---	20.0	Match Existing Ditch Flowlines
		18" CMP Total =		62										18" Apron Total =			4					100.0	
		24" CMP Total =		24										24" Apron Total =			2						

* Design shown for mandatory locations is the minimum allowed.

100-23
10-19-10

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

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

Location				Type						Material				
Road Identification	Station	Side	Mandatory* Location (yes or no)	Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection		(L)	(W)	Erosion Stone	Class E Revetment	Eng. Fabric	Remarks
		Lt./Rt.								FT	FT	TON	TON	SY	
US 34	940+00.0	Rt.	No			X				30.0	14.0		25.0	46.7	At end of pipe
US 34	229+72.0	Lt.	No					X		100.0	15.0		75.0	166.7	Place along bank
US 34	500+14.0	Lt.	No			X				25.0	15.0		25.0	41.6	At end of letdown
											Totals:		125.0	255.0	

CG-1
Special

TABULATION OF CLEARING AND GRUBBING

Station	Side	Size	Unit	Count	Total
912+00.0	RT	3"-6"	1.6	2	3.2
916+65.0	RT	3"-6"	1.6	5	8.0
916+65.0	RT	18"-24"	22.0	1	22.0
940+00.0	RT	3"-6"	1.6	1	1.6
954+50.0	LT	6"-9"	3.9	6	23.4
954+50.0	LT	9"-12"	6.7	9	60.3
974+00.0	RT	9"-12"	6.7	8	53.6
54+67.0	LT	6"-9"	3.9	8	31.2
68+35.0	RT	6"-9"	3.9	3	11.7
68+35.0	RT	9"-12"	6.7	3	20.1
74+00.0	RT	6"-9"	3.9	1	3.9
74+00.0	RT	9"-12"	6.7	5	33.5
95+81.0	LT	3"-6"	1.6	16	25.6
112+20.0	LT	3"-6"	1.6	1	1.6
131+10.0	RT	9"-12"	6.7	5	33.5
136+96.0	LT	6"-9"	3.9	5	19.5
153+82.0	LT	3"-6"	1.6	12	19.2
209+35.0	RT	6"-9"	3.9	6	23.4
229+72.0	LT	9"-12"	6.7	3	20.1
262+80.0	RT	3"-6"	1.6	1	1.6
367+10.0	RT	9"-12"	6.7	5	33.5
367+10.0	RT	12"-15"	9.4	1	9.4
410+92.0	RT	12"-15"	9.4	1	9.4
430+84.0	RT	3"-6"	1.6	4	6.4
484+90.0	LT	3"-6"	1.6	34	54.4
496+29.0	RT	3"-6"	1.6	12	19.2
				Total =	549.3

112-10
04-19-11

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location			Length		Type (Centerline, Rt or Lt Shoulder	Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
			PCC	HMA		Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
Road Identification	Station to Station									
			STA	STA		GAL	FT	FT	FT	
US 34	863+75	994+36		130.60	Right Shoulder	141.5		4.0	6.0	
US 34	51+78	597+75		546.00	Right Shoulder	591.5		4.0	6.0	
US 34 EBL	597+75	624+83		27.10	Right Shoulder	29.4		4.0	6.0	EBL Outside Shoulder
US 34 EBL	605+47	624+83		19.40	Left Shoulder	21.0		4.0	2.0	EBL Median Shoulder
US 34	863+75	994+36		130.60	Left Shoulder	141.5		4.0	6.0	
US 34	51+78	597+75		546.00	Left Shoulder	591.5		4.0	6.0	
US 34 WBL	13597+75	13621+50		23.80	Right Shoulder	25.8		4.0	6.0	WBL Outside Shoulder
US 34 WBL	13605+47	13621+50		16.00	Left Shoulder	17.3		4.0	2.0	WBL Inside Shoulder
US 34	863+75	994+36		130.60	Centerline	0.0				
US 34	51+78	597+75		546.00	Centerline					
	Shoulder Totals =			1439.50		1559.5				
	Centerline Totals =			676.60		0.0				

110-7B
10-19-10

REMOVAL OF CABLE GUARDRAIL

* Not a bid item
(1) Lane(s) to which the installation is adjacent

Location					Type	Cable	Post * Footings, Concrete	End Terminal*	Remarks
No.	(1) Direction of Traffic	Station to Station		Side	(High/Low Tension)	Remove	Remove	Remove	
						LF	Yes/No	No.	
	EB	895+55.0	902+00.0	RT	Low	645.0	Yes	2	RE-29C
	WB	896+45.0	902+90.0	LT	Low	645.0	Yes	2	RE-29C
	EB	924+10.0	932+45.0	RT	Low	835.0	Yes	2	RE-29C
	WB	926+08.0	933+88.0	LT	Low	780.0	Yes	2	RE-29C
	EB	951+52.0	956+54.0	RT	Low	502.0	Yes	2	RE-29C
	WB	952+56.0	957+50.0	LT	Low	494.0	Yes	2	RE-29C
					Total:	3901.0			

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					Removal of Guardrail (2)
No.	(1) Direction of Traffic	Station to Station		Side	
					LF
	EB	879+05	879+62	RT	57.0
	EB	881+34	881+01	RT	57.0
	WB	878+85	879+42	LT	57.0
	WB	881+14	881+71	LT	57.0
				Total:	228.0

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	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(G) Width	(L) Length	Class 13 (3) Excavation Widening	HMA Base Widening (3)		Hot Mix Asphalt		Paved Shoulder	Reinforced Paved Shoulder	Special Backfill		Modified Subbase	Granular Shoulder		Earth Shoulder Construction		Remarks
					FT	FT	FT	CY (2)	TON (2)	TON/STA	TON	TON/STA	SY (2)	SY (2)	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA	STA (2)	CY (4)	
US 34	EB	878+25.0	878+58.0	RT	13.8		33.0	5.0			9.331	28.275	28.6		9.00	27.300						(1)
US 34	EB	878+58.0	878+95.0	RT	13.8-12.3		37.0	5.0			10.114	27.334	37.1		9.00	24.675						(1)
US 34	EB	878+95.0	879+20.0	RT	12.3		25.0	3.0			7.069	28.275	34.2		6.00	22.050						(1)
US 34	EB	879+20.0	879+33.0	RT	12.3-11.0		13.0	1.0			3.369	25.919	16.8		3.00	19.775						(1)
US 34	EB	879+33.0	879+47.0	RT	11.0		14.0	1.0			3.299	23.563	17.1		2.00	17.500						(1)
																						(1)
US 34	WB	878+38.0	878+70.0	LT	12.5		32.0	4.0			7.540	23.563	23.1		7.28	22.750						(1)
US 34	WB	878+70.0	879+07.0	LT	12.5-11.0		37.0	4.0			9.028	24.400	39.8		7.45	20.125						(1)
US 34	WB	879+07.0	879+30.0	LT	11.0		23.0	2.0			5.419	23.563	28.1		4.03	17.500						(1)
																						(1)
US 34	WB	881+31.0	881+45.0	LT	11.0		14.0	1.0			3.299	23.563	17.1		2.00	17.500						(1)
US 34	WB	881+45.0	881+58.0	LT	11.0-12.3		13.0	1.0			3.369	25.919	16.8		3.00	19.775						(1)
US 34	WB	881+58.0	881+83.0	LT	12.3		25.0	3.0			7.069	28.275	34.2		6.00	22.050						(1)
US 34	WB	881+83.0	882+20.0	LT	12.3-13.8		37.0	5.0			10.114	27.334	37.1		9.00	24.675						(1)
US 34	WB	882+20.0	882+53.0	LT	13.8		33.0	5.0			9.331	28.275	28.6		9.00	27.300						(1)
																						(1)
US 34	EB	881+48.0	881+71.0	RT	11.0		23.0	2.0			4.169	18.125	28.1		4.03	17.500						(1)
US 34	EB	881+71.0	882+08.0	RT	11.0 12.5		37.0	4.0			9.028	24.400	39.8		7.45	20.125						(1)
US 34	EB	882+08.0	882+40.0	RT	12.5		32.0	4.0			7.540	23.563	23.1		7.28	22.750						(1)
						Totals:		50.0					449.6		95.50							

(1) Paved Shoulder quantity includes the quantity over the existing 6.0' wide shoulder strengthening. See Typical 7156 for additional information.

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	Adapter	
						Terminal		White		OM-3L OM-3R	BA-202	BA-201	BA-200	BA-205	BA-206	BA-210	
No.	Station	Offset	LF	LF	LF	LF		No.	No.	No. No.	Type	No.	LF	No.	No.	No.	
1	879+33.0	22.0 LT	28.125	--	--	50.0	3	--	--	1 --	B	1	0.0	1	--	--	
2	879+58.0	22.0 RT	65.625	--	--	50.0	3	--	--	-- 1	B	1	37.5	1	--	--	
3	881+20.0	22.0 LT	65.625	--	--	50.0	3	--	--	-- 1	B	1	37.5	1	--	--	
4	881+45.0	22.0 RT	28.125	--	--	50.0	3	--	--	1 --	B	1	0.0	1	--	--	
								Totals:		2 2	4	4	75.0	4			

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	Embankment In Place	
														CY	CY	
1	WB	879+33.0	LT	3:1	25.5	5.0	--	--	--	--	75.5	7.0	47.0	--	25.0	
2	EB	879+58.0	RT	3:1	25.5	5.0	38.0	6.3	63.0	6.3	113.0	8.3	51.0	--	50.0	
3	WB	881+20.0	LT	3:1	25.5	5.0	38.0	6.3	63.0	6.3	113.0	8.3	51.0	--	50.0	
4	EB	881+45.0	RT	3:1	25.5	5.0	--	--	--	--	75.5	7.0	47.0	--	25.0	
														Total:	150.0	

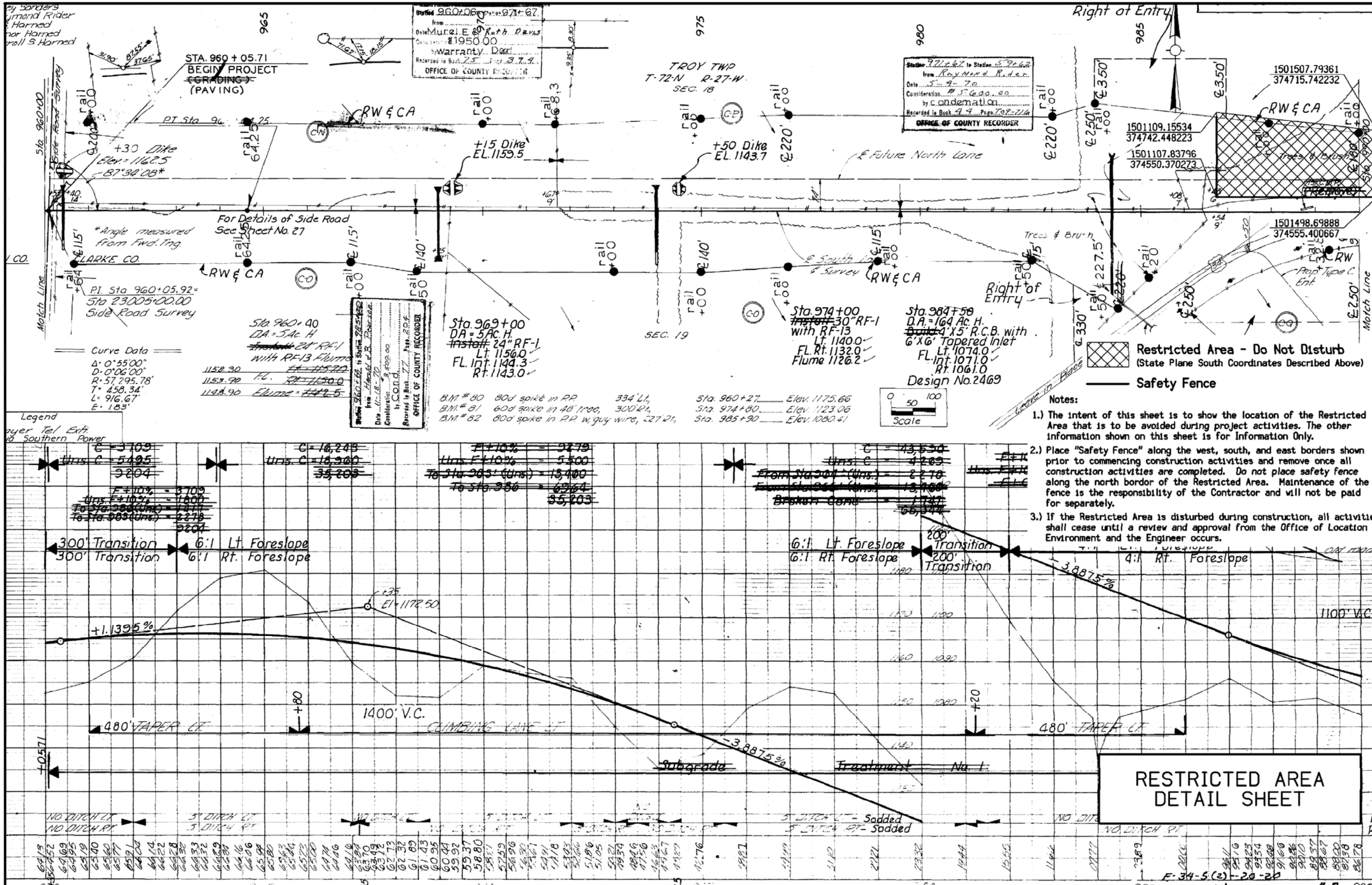
PAVEMENT MARKING LINE TYPES

See PM Series

*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.

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 | SLW4: Solid Lane Line (White) @ 1.00 | CHY8: Channelizing Line (Yellow) @ 2.00 | SLW2: Stop Line (White) @ 6.00

Location								Length by Line Type (Unfactored)												Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side L	Side C	Side R	BCY4* STA	DCY4 STA	NPY4** STA	BLW4 STA	ELW4 STA	ELY4 STA	SLW4 STA	CHY8 STA	SLW2 STA						
Temporary																						
US 34	863+75.0	994+36.1	BOTH	Waterborne/Solvent Paint	X	X	X	200.08	22.04	39.08	16.36	522.44										
US 34	51+78.3	597+75.0	BOTH	Waterborne/Solvent Paint	X	X	X	800.44	75.50	217.98	100.84	2183.86		5.28								
US 34 EBL	597+75.0	624+83.3	EB	Waterborne/Solvent Paint	X	X	X				38.74	54.17	54.17	10.00								
US 34 WBL	13597+75.0	13621+50.0	WB	Waterborne/Solvent Paint	X	X	X				24.00	47.50	47.50	4.00								
				Factored Total: Waterborne/Solvent Paint				250.13	195.08	321.33	44.99	2807.97	101.67	19.28	-	-	-	-	-	-	-	-	
				Temporary Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							3740.44											
Permanent																						
US 34	863+75.0	994+36.1	BOTH	Waterborne/Solvent Paint	X	X	X	100.04	11.04	19.54	8.18	261.22										
US 34	51+78.3	597+75.0	BOTH	Waterborne/Solvent Paint	X	X	X	400.22	37.75	108.99	50.42	1091.93		2.64		2.75						
US 34 EBL	597+75.0	624+83.3	EB	Waterborne/Solvent Paint	X	X	X				19.37	27.08	19.37	5.00	13.97	0.64						
US 34 WBL	13597+75.0	13621+50.0	WB	Waterborne/Solvent Paint	X	X	X				12.00	23.75	12.00	2.00	11.75							
				Factored Total: Waterborne/Solvent Paint				125.07	97.58	160.66	22.49	1403.98	31.37	9.64	51.44	20.34	-	-	-	-	-	-	
				Permanent Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							1922.57											
				Total Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							5663.01											



Right of Entry
STA. 960 + 05.71
BEGIN PROJECT
(GRADING)
(PAVING)
TROY TWP
T-72-N R-27-W
SEC. 18
SEC. 19
CLARKE CO.
RW & CA
+30 Dike
Elev. = 1162.5
87°34'08"*
+15 Dike
EL. 1159.5
+50 Dike
EL. 1143.7
For Details of Side Road
See Sheet No. 27
*Angle measured from Fwd. Tng.
P.I. Sta. 960+05.92 =
Sta. 23005+00.00
Side Road Survey
Match Line
Curve Data
Δ: 0°55'00"
D: 0°06'00"
R: 57,295.78'
T: 458.34'
L: 916.67'
E: 1.83'
Sta. 960+40
DA = 5Ac. H
Install 24" RF-1
with RF-13 Flume
Sta. 969+00
DA = 5Ac. H.
Install 24" RF-1
Lt. 1156.0
FL. Int. 1144.3
Rt. 1143.0
Sta. 974+00
Install 30" RF-1
with RF-13
Lt. 1140.0
FL. Rt. 1132.0
Flume 1126.2
Sta. 984+50
D.A. = 164 Ac. H.
Build 4'X5' R.C.B. with
6'X6' Tapered Inlet
FL. Lt. 1074.0
Int. 1071.0
Rt. 1061.0
Design No. 2469
B.M. #80 60d spike in P.P. 334' Lt.
B.M. #81 60d spike in 48" tree, 300' Rt.
B.M. #82 60d spike in P.P. w/guy wire, 227' Rt.
Sta. 960+27 Elev. 1175.66
Sta. 974+80 Elev. 1123.06
Sta. 985+90 Elev. 1080.41
Scale
℄ Future North Lane
℄ South Lane
℄ Survey
Trees & Brush
Prop. Type C Ent.
OFFICE OF COUNTY RECORDER
Warranty Deed
condemnation
1501507.79361
374715.742232
1501109.15534
374742.448223
1501107.83796
374550.370273
1501498.69888
374555.400667
Restricted Area - Do Not Disturb
(State Plane South Coordinates Described Above)
Safety Fence
Legend
300' Transition
6:1 Lt. Foreslope
6:1 Rt. Foreslope
200' Transition
4:1 Rt. Foreslope
+1.1395%
El = 1172.50
-3.8875%
1400' V.C.
1100' V.C.
480' TAPER LT.
CLIMBING LANE LT.
Subgrade Treatment No. 1
NO DITCH LT.
NO DITCH RT.
5' DITCH LT. - Sodded
5' DITCH RT. - Sodded
F-34-5(2)--20-20

Notes:

1.) The intent of this sheet is to show the location of the Restricted Area that is to be avoided during project activities. The other information shown on this sheet is for Information Only.

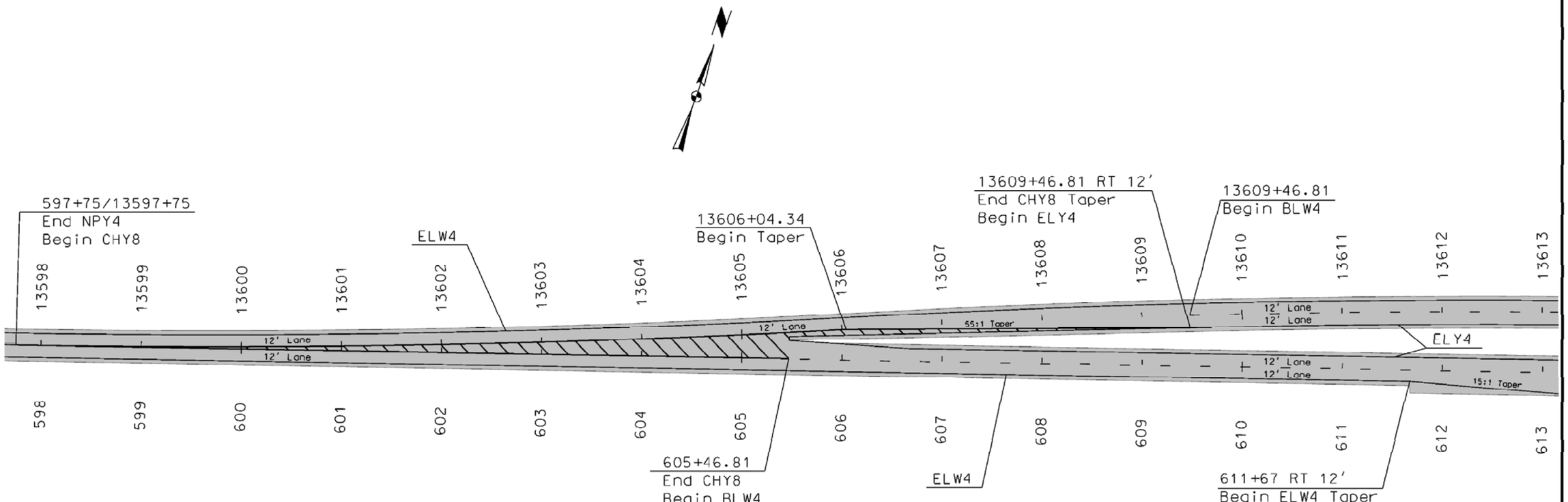
2.) Place "Safety Fence" along the west, south, and east borders shown prior to commencing construction activities and remove once all construction activities are completed. Do not place safety fence along the north border of the Restricted Area. Maintenance of the fence is the responsibility of the Contractor and will not be paid for separately.

3.) If the Restricted Area is disturbed during construction, all activities shall cease until a review and approval from the Office of Location Environment and the Engineer occurs.

RESTRICTED AREA DETAIL SHEET

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER U.1	X

10:21:23 AM 3/27/2012 mvandyk W:\Projects\8803402009\DistrictDesign\88034404 5U01.sht

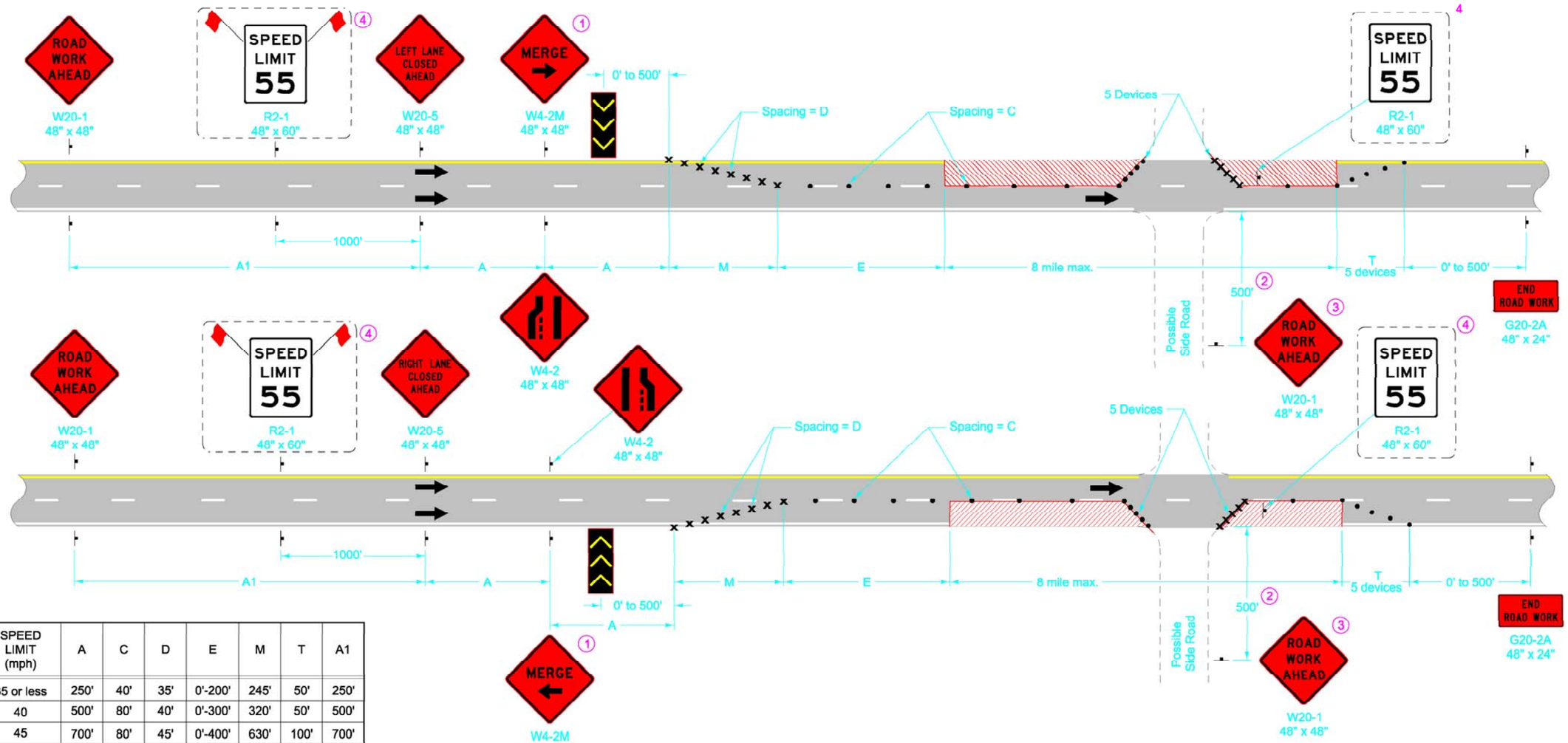


0 50 FEET

PAVEMENT MARKING DETAILS
TWO-LANE TO FOUR-LANE
TRANSITION AREA

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER U.2	X

10:21:36 AM 3/27/2012 mvandyk W:\Projects\8803402009\DistrictDesign\880344045U01.sht



SPEED LIMIT (mph)	A	C	D	E	M	T	A1
35 or less	250'	40'	35'	0'-200'	245'	50'	250'
40	500'	80'	40'	0'-300'	320'	50'	500'
45	700'	80'	45'	0'-400'	630'	100'	700'
50	700'	80'	45'	400'	630'	100'	700'
55 - 60	1000'	100'	55'	600'	770'	100'	2000'
65 - 70	1000'	100'	65'	700'	910'	100'	2000'

LEGEND

- Direction Of Traffic
- Traffic Sign
- Drum
- 42" Channelizer
- Arrow Board
- Work Area

When the Average Daily Traffic (ADT) exceeds 20,000 vehicles per day or when a traffic queue extends beyond the advanced signing, place RIGHT/LEFT LANE CLOSED 4 MILES and RIGHT/LEFT LANE CLOSED 2 MILES signs (W20-5) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively, as appropriate.

Where there is a lane line drop-off or rise, do not allow traffic to cross over the drop-off or rise, except for ramp locations where a BUMP (W8-1) sign is placed.

Drop-offs greater than a nominal 4 inches are not allowed during non-working hours.

(1) Refer to SI-881 for sign details.

(2) Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.

(3) Place a ROAD WORK AHEAD sign on the opposite side of the intersection in a similar location.

(4) For roadways with a posted speed limit of 60 mph or greater before road work:

Place SPEED LIMIT 55 signs prior to the lane closure as shown.

When the length of closure is greater than 1 mile, install SPEED LIMIT 55 signs in the closed lane at 1-mile intervals.

Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.

Possible Contract Item:
Traffic Control

INTERIM
STANDARD ROAD PLAN

REVISION	
7	03-01-12

TC-418

SHEET 1 of 1

REVISIONS Changed Arrow Display Panel to Arrow Board and updated to MUTCD. Removed W3-5 sign.

Deanna Maifeld
APPROVED BY DESIGN METHODS ENGINEER

LANE CLOSURE ON DIVIDED HIGHWAY

ENGLISH	IOWA DOT	DESIGN TEAM VAN DYKE	UNION/CLARKE COUNTY	PROJECT NUMBER NHSX-034-4(45)--3H-88	SHEET NUMBER U.3	X

10:18:22 AM 3/27/2012 mvandyk W:\Projects\8803402009\DistrictDesign\880344045U01.sht