A d d e n d u m

Iowa Department of Transportation
Office of Contracts

Date of Letting: February 16, 2016
Date of Addendum: February 12, 2016

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
161	62-0927-048	HMA RESURFACING WITH MILLING	MAHASKA	NHSX-092-7(47)--3H-62 NHSX-092-7(48)--3H-62	16FEB161.A01

Make the following changes to the PROPOSAL SCHEDULE OF PRICES:

ADD Proposal Line No. 1105 2505-4020580 GUARDRAIL, SPECIAL ANCHOR SECTION:
New: 2.000 EACH

Change Proposal Line No. 0690 2102-2625000 EMBANKMENT-IN-PLACE:
From: 38,561.000 CY
To: 45,387.000 CY

Change Proposal Line No. 0700 2102-2713090 EXCAVATION, CLASS 13, WASTE:
From: 4,865.000 CY
To: 5,259.200 CY

Change Proposal Line No. 0740 2122-5500060 PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN:
From: 5,581.300 SY
To: 7,934.100 SY

Change Proposal Line No. 1090 2505-4008300 STEEL BEAM GUARDRAIL:
From: 1,700.000 LF
To: 2,318.800 LF

Change Proposal Line No. 1120 2505-4021700 STEEL BEAM GUARDRAIL END TERMINAL:
From: 9.000 EACH
To: 21.000 EACH

Change Proposal Line No. 1130 2505-4021701 STEEL BEAM GUARDRAIL FLARED END TERMINAL:
From: 7.000 EACH
To: 3.000 EACH

Change Proposal Line No. 1140 2505-6000111 HIGH TENSION CABLE GUARDRAIL:
From: 14,865.300 LF
To: 12,965.300 LF

Change Proposal Line No. 1150 2505-6000121 HIGH TENSION CABLE GUARDRAIL, END ANCHOR:

From: 45.000 EACH

To: 38.000 EACH

If the above changes are not made, they will be made as shown here.

Make the following changes to the PLAN:

Replace Sheets C.1 through C.5, C.9, C.12 and C.14 with the attached Sheets C.1 through C.5, C.9, C.12 and C.14.

100-1D
10-18-05

PROJECT DESCRIPTION

This project begins just east of the Oskaloosa City Limits and extends east to just east of the Mahaska/Keokuk County Line. The project involves clearing and grubbing, clearing with follow-up "cut stump" herbicide application, scarification of existing HMA spot overlays, roadway culvert rehab, shoulder aggregate, HMA resurfacing, PCC Reconstruction, 4' HMA paved shoulders, longitudinal subdrain installations, class 10 excavation, embankment-in-place, class 13 excavation, topsoiling, guardrail installation, full and partial depth patching (repair and finish), milled shoulder rumble strips, centerline milled rumble strips, erosion control measures, seeding and fertilizing.

Division 1: State of Iowa

Division 2: Mahaska County, Agreement No. 2016-C-040 for paving gravel side road intersections, See B.5-B.7.

111-25
10-18-11

INDEX OF TABULATIONS

100-1C
04-17-12

ESTIMATED PROJECT QUANTITIES (UP TO A 5 DIVISION PROJECT)

Division 1: STATE OF IOWA
Division 2: MAHASKA COUNTY, AGREEMENT NO. 2016-C-040

Item No.	Item Code	Item	Unit	Quantities											
				Estimated						As Built					
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
1	2101-0850001	CLEARING AND GRUBBING	ACRE	7.5					7.5					
2	2101-0850002	CLEARING AND GRUBBING	UNIT	130.9					130.9					
3	2102-0425070	SPECIAL BACKFILL	TON	940.2					940.2					
4	2102-2625000	EMBANKMENT-IN-PLACE	CY	45387					45387					
5	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	5166	93.2				5259.2					
6	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	895					895					
7	2111-8174100	GRANULAR SUBBASE	SY	20091.6					20091.6					
8	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	13394					13394					
9	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	7934.1					7934.1					
10	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.	SY	194	420				614					
11	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	986.6					986.6					
12	2128-0000200	CONTRACTOR STOCKPILED SHOULDER MATERIAL	TON	3300					3300					
13	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	5					5					
14	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	4105.1					4105.1					
15	2212-5070322	PATCHES, PARTIAL-DEPTH REPAIR, HOT MIX ASPHALT	SY	592.2					592.2					
16	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	88					88					
17	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	4547.3					4547.3					
18	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE	TON	9042.8					9042.8					
19	2214-5145150	PAVEMENT SCARIFICATION	SY	72520					72520					

ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Division 1: STATE OF IOWA
Division 2: MAHASKA COUNTY, AGREEMENT NO. 2016-C-040

Item No.	Item Code	Item	Unit	Quantities										
				Estimated						As Built				
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5
20	2301-1033095	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 9.5 IN.	SY	15218.7					15218.7					
21	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	TON	3780.3					3780.3					
22	2303-0042500	HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), INTERMEDIATE COURSE, 1/2 IN. MIX	TON	20363.3					20363.3					
23	2303-0043504	HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), SURFACE CRSE., 1/2 IN. MIX, FRICTION L-4	TON	17669.7					17669.7					
24	2303-0246422	ASPHALT BINDER, PG 64-22	TON	3051.3					3051.3					
25	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1					1					
26	2401-6750001	REMOVALS, AS PER PLAN	LS	1					1					
27	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	561					561					
28	2414-7200010	SAFETY GRATE, TYPE 1, CULVERT	EACH	3					3					
29	2414-7200020	SAFETY GRATE, TYPE 2, CULVERT	EACH	1					1					
30	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	16					16					
31	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	2					2					
32	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.	EACH	2					2					
33	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EACH	1					1					
34	2416-0100054	APRONS, CONCRETE, 54 IN. DIA.	EACH	1					1					
35	2416-1160018	CULVERT, CONCRETE ENTRANCE PIPE, 18 IN. DIA.	LF	128					128					
36	2416-1160024	CULVERT, CONCRETE ENTRANCE PIPE, 24 IN. DIA.	LF	32					32					
37	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	8					8					
38	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	352					352					
39	2417-0225024	APRONS, METAL, 24 IN. DIA.	EACH	1					1					
40	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LF	10					10					
41	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	13276					13276					
42	2502-8221304	SUBDRAIN OUTLET, DR-304	EACH	92					92					
43	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	1250					1250					
44	2505-4008300	STEEL BEAM GUARDRAIL	LF	2318.8					2318.8					
45	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION	EACH	8					8					
46	2505-4020580	GUARDRAIL, SPECIAL ANCHOR SECTION	EACH	2					2					
47	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	8					8					
48	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL	EACH	21					21					
49	2505-4021701	STEEL BEAM GUARDRAIL FLARED END TERMINAL	EACH	3					3					
50	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	12965.3					12965.3					
51	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	38					38					
52	2505-6000131	HIGH TENSION CABLE GUARDRAIL, SPARE PARTS KIT	EACH	1					1					
53	2506-4984000	FLOWABLE MORTAR	CY	37.5					37.5					
54	2510-6745850	REMOVAL OF PAVEMENT	SY	15818.7					15818.7					
55	2518-6910000	SAFETY CLOSURE	EACH	5					5					
56	2526-8285000	CONSTRUCTION SURVEY	LS	1					1					
57	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	5676	4.8				5680.8					
58	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	6					6					
59	2528-8445110	TRAFFIC CONTROL	LS	1					1					
60	2528-8445113	FLAGGERS	EACH	See Proposal	See Proposal				See Proposal					
61	2528-8445115	PILOT CARS	EACH	See Proposal					See Proposal					
62	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	See Proposal					See Proposal					
63	2529-2242304	CD JOINT ASSEMBLY	EACH	132					132					
64	2529-2242320	CT JOINT	EACH	60					60					
65	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	733.5					733.5					
66	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	46					46					
67	2529-8174020	SUBBASE PATCH WITH EF JOINT	SY	106.7					106.7					
68	2529-8174050	PATCH SUBDRAIN	EACH	6					6					
69	2529-8201000	JOINT ASSEMBLY, EF	EACH	6					6					
70	2530-0400061	HOT MIX ASPHALT (PARTIAL DEPTH PATCH MATERIAL)	TON	128.8					128.8					
71	2533-4980005	MOBILIZATION	LS	1					1					
72	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	1182.1					1182.1					
73	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	1280.6					1280.6					
74	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	531.3					531.3					
75	2548-0000320	MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE	STA	57.2					57.2					
76	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS	1					1					
77	2590-0000020	PROJECT MANAGEMENT	LS	1					1					
78	2601-2634100	MULCHING	ACRE	9.2					9.2					
79	2601-2636015	NATIVE GRASS SEEDING	ACRE	2.5					2.5					
80	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	2.1					2.1					
81	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	4.4					4.4					
82	2601-3000201	HERBICIDE APPLICATION, CUT STUMP	EACH	105					105					
83	2602-0000020	SILT FENCE	LF	17225					17225					
84	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	17225					17225					
85	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	8612					8612					
86	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1					1					
87	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1					1					

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	**CLEARING AND GRUBBING**
2	2101-0850002	**CLEARING AND GRUBBING**
		Refer to Tab. 110-17 for locations and information and Standard Note 232-10 for additional information
-	-	-
3	2102-0425070	**SPECIAL BACKFILL**
		Refer to Typicals "RECNST-A" and "RECNST-B" on Sheet B.2 and Detail 7156 on Sheet B.4 for locations and
		information. Existing HMA and PCC from Pavement removal may be used on the project as special backfill.
		Bid quantity is 5% greater than the design quantity to accommodate irregularities.
-	-	-
4	2102-2625000	**EMBANKMENT-IN-PLACE**
		Provide borrow material according to Section 2102 of the Standard Specifications. Includes 44810 CY for
		earth work grading at guardrail installations, Tab. 107-23; 16 CY for drainage structure repair work,
		Tab 3R-CULV - Special; 252 CY for cable guardrail installations; 259 CY for Access Repair Work, Tab 102-3,
		and 50 CY for culvert headwall removal, Tab. 110-2, Detail 4315 on Sheet B.9, and Sheet U.1.
		The use of Excavation, Class 13, Waste material will be allowed if approved by the Engineer.
-	-	-
5	2102-2713090	**EXCAVATION, CLASS 13, WASTE**
		Division 1 includes 4553.1 cu. yds. for modified subbase in reconstruction and 612.9 cu. yds. for shoulder
		paving. See Typical "RECNST-A" and "RECNST-B" on Sheet B.2 and Tab. 112-9 for locations and dimensions.
		Division 2 includes 93.2 cu. yds. for side road fillet extensions.
		See Detail "SIDE ROADS" on Sheet B.5 for locations and dimensions.
		Material may be used as Embankment-In-Place if approved by the Engineer.
		Excess material not used on the project becomes the property of the Contractor.
-	-	-
6	2105-8425005	**TOPSOIL, FURNISH AND SPREAD**
		Refer to Tab. 107-23 for locations and information.
-	-	-
7	2111-8174100	**GRANULAR SUBBASE**
		Includes 3355.1 cu. yds. for mainline.
		Refer to Typicals "RECNST-A" and "RECNST-B" on Sheet B.2.
-	-	-
8	2121-7425020	**GRANULAR SHOULDERS, TYPE B**
		See Typicals 7135-A and 7135-B on Sheet B.3, Sheet B.6, Sheet B-7, and Tab. 112-9 for locations and information.
		The bid quantity is 10% greater than the total of the design quantities shown in the Typicals to compensate for
		irregularities and variations in actual shoulder cross-slopes.
-	-	-
9	2122-5500060	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.**
		Refer to Tab. 112-9; Typicals "RECNST-A" on Sheet B.2 and "HMA WIDEN" on Sheet B.3; and Detail 7156 on Sheet
		B.4 for locations and dimensions.
		The paved shoulder HMA mixture shall be (1,000,000 ESAL) Base Course 1/2" mix using PG 64-22 asphalt binder.
-	-	-
10	2122-5500080	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.**
		Refer to Detail "SIDE ROADS" on Sheet B.5 for locations and dimensions.
		The paved shoulder HMA mixture shall be (1,000,000 ESAL) Base Course 1/2" mix using PG 64-22 asphalt binder.
-	-	-
11	2123-7450000	**SHOULDER CONSTRUCTION, EARTH**
		Refer to Typicals 7156 and 7135-A and Tab 112-9 for locations and information.
		See also Typical 7135-A (Modified) for placement of Class 13, widening excavated material to shape 'shelf'
		along outside edge of Type 'B' Granular Shoulders.
-	-	-
12	2128-0000200	**CONTRACTOR STOCKPILED SHOULDER MATERIAL**
		See Tab 110-13 for locations and information and Developmenal Specifications.
-	-	-
13	2212-0475095	**CLEANING AND PREPARATION OF BASE**
		Refer to Tab. 102-16 and Typicals 2602 and 2618 on Sheet B.1, "REMOVALS" on Sheet B.2, and
		Detail "TAPERS" on Sheet B.8.
		This bid item is for cleanup of areas of pavement scarification in various locations throughout the project and
		includes: 4.70 miles of two lane roadway; 0.30 miles of 10-foot-wide entrance filled notches. (5.00 miles total)
-	-	-
14	2212-5070310	**PATCHES, FULL-DEPTH REPAIR**
		Refer to Tab. 102-6C for locations and information.
		Bid quantity is 20% greater than design quantity to accommodate irregularities.
-	-	-
15	2212-5070322	**PATCHES, PARTIAL-DEPTH REPAIR, HOT MIX ASPHALT**
		Refer to Tab. 102-12 for locations and information.
		Bid quantity is 5% greater than design quantity to accommodate irregularities.
-	-	-
16	2212-5070330	**PATCHES BY COUNT (REPAIR)**
		Refer to Tab. 102-6C for locations and information.
		Bid quantity is 20% greater than design quantity to accommodate irregularities.
-	-	-
17	2213-2713300	**EXCAVATION, CLASS 13, FOR WIDENING**
		Refer to Mod. Typicals 2602 and 2618 on Sheet B.1, "RECNST-A" and "RECNST-B" on Sheet B.2, "HMA WIDEN" on
		Sheet B.3; and Details "INTRSCTN-A" on Sheet B.6, "INTRSCTN-B" on Sheet B.7, and "TAPERS" on Sheet B.8.
		This quantity includes 47 cu. yds. for the removal of existing HMA maintenance edge rut material at the
		following locations: STA 212+11 to STA 215+11, Right, 18 in. wide; STA 283+70 to STA 291+75, Right, 19 in.
		wide; STA 358+88 to STA 367+11, Right, 20 in. wide; STA 417+50 to STA 423+60, Left, 20 in. wide; and STA 560+97
		to STA 565+03, Left, 21 in. wide.
-	-	-
18	2213-8200000	**BASE WIDENING, HOT MIX ASPHALT MIXTURE**
		Refer Typicals 2602 and 2618 on Sheet B.1 and "RECNST-B" on Sheet B.2; and Details "INTRSCTN-A" on Sheet B.6,
		"INTRSCTN-B" on Sheet B.7, and "TAPERS" on Sheet B.8.
		Bid quantity is 5% greater than design quantities shown on the Typicals and Details to accommodate
		irregularities.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
19	2214-5145150	**PAVEMENT SCARIFICATION**
		Refer to Tab. 102-16 and Typicals 2602 and 2618 on Sheet B.1, "REMOVALS" on Sheet B.2, and Detail "TAPERS" on
		Sheet B.8.
		Scarification includes full-depth removal of HMA maintenance overlay, 1"-depth milling as specified in Typical
		2618 on Sheet B.1, and HMA and PCC scarification for notches as shown on Standard Road Plan PR-202.
-	-	-
20	2301-1033095	**STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 9.5 IN.**
		Refer to Typicals "RECNST-A" and "RECNST-B" on Sheet B.2.
-	-	-
21	2303-0001000	**HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE**
		A. Refer to Typicals 2602 and 2618 on Sheet B.1 for locations and dimensions.
		B. Contractor shall use HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), INTERMEDIATE COURSE, 1/2 IN. MIX with ASPHALT
		BINDER, PG 64-22.
		C. Bid quantity is 5% greater than design quantity to accommodate irregularities.
-	-	-
22	2303-0042500	**HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), INTERMEDIATE COURSE, 1/2 IN. MIX**
		A. Refer to Typicals 2602 and 2618 on Sheet B.1 and "RECNST-B" on Sheet B.2; and Details "INTRSCTN-A" on Sheet
		B.6, "INTRSCTN-B" on Sheet B.7, and "TAPERS" on Sheet B.8.
		B. Bid quantity is 5% greater than design quantity to accommodate irregularities.
-	-	-
23	2303-0043504	**HOT MIX ASPHALT MIXTURE (3,000,000 ESAL), SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4**
		A. Refer to Typicals 2602 and 2618 on Sheet B.1 and "RECNST-B" on Sheet B.2; and Details "INTRSCTN-A" on Sheet
		B.6, "INTRSCTN-B" on Sheet B.7, and "TAPERS" on Sheet B.8.
		B. Bid quantity is 5% greater than design quantity to accommodate irregularities.
-	-	-
24	2303-0246422	**ASPHALT BINDER, PG 64-22**
		Refer to Typicals 2602 and 2618 on Sheet B.1 and "RECNST-B" on Sheet B.2; and Details "INTRSCTN-A" on Sheet
		B.6, "INTRSCTN-B" on Sheet B.7, and 'TAPERS" on Sheet B.8.
		Binder content is estimated at a rate of 6.0%, or 120 pounds per ton of Hot Mix Asphalt Mixtures used.
-	-	-
25	2303-6911000	**HOT MIX ASPHALT PAVEMENT SAMPLES**
		As per Standard Specifications and Road Plans.
-	-	-
26	2401-6750001	**REMOVALS, AS PER PLAN**
		For Stock Pass at Station 473+50, See Tab. 110-2, 110-9, and Sheet U.1 for additional information.
-	-	-
27	2402-2720100	**EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT**
		Refer to Tab. 3R-CULV for locations and information.
-	-	-
28	2414-7200010	**SAFETY GRATE, TYPE 1, CULVERT**
29	2414-7200020	**SAFETY GRATE, TYPE 2, CULVERT**
		Refer to Tab. 108-24 for locations and information.
-	-	-
30	2416-0100018	**APRONS, CONCRETE, 18 IN. DIA.**
31	2416-0100024	**APRONS, CONCRETE, 24 IN. DIA.**
32	2416-0100042	**APRONS, CONCRETE, 42 IN. DIA.**
33	2416-0100048	**APRONS, CONCRETE, 48 IN. DIA.**
34	2416-0100054	**APRONS, CONCRETE, 54 IN. DIA.**
35	2416-1160018	**CULVERT, CONCRETE ENTRANCE PIPE, 18 IN. DIA.**
36	2416-1160024	**CULVERT, CONCRETE ENTRANCE PIPE, 24 IN. DIA.**
37	2416-1180024	**CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.**
38	2416-1541036	**REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.**
39	2417-0225024	**APRONS, METAL, 24 IN. DIA.**
40	2417-1040024	**CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.**
		Refer to Tab. 102-3 and 3R-CULV for locations and information.
-	-	-
41	2502-8212034	**SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.**
42	2502-8221304	**SUBDRAIN OUTLET, DR-304**
		See Tab. 104-9 for locations and information.
-	-	-
43	2505-4008120	**REMOVAL OF STEEL BEAM GUARDRAIL**
		See Tab. 110-7A for locations and information.
		Material to be stockpiled at Oskaloosa Maintenance Garage. See Tab. 110-13.
-	-	-
44	2505-4008300	**STEEL BEAM GUARDRAIL**
45	2505-4008400	**STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION**
		See Tab. 108-8A and Tab. 108-8B for locations and information.
-	-	-
46	2505-4020580	**GUARDRAIL, SPECIAL ANCHOR SECTION**
		Refer to "Remarks" within Tab. 108-9A for locations.
		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 guardrail
		manufacturer's specifications.
		This item includes the following: 50 feet of high tension cable guardrail, 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. For each Guardrail, Special Anchor
		Section properly installed, the Contractor will be paid the contract unit price.
-	-	-
47	2505-4021010	**STEEL BEAM GUARDRAIL END ANCHOR, BOLTED**
48	2505-4021700	**STEEL BEAM GUARDRAIL END TERMINAL**
49	2505-4021701	**STEEL BEAM GUARDRAIL FLARED END TERMINAL**
		See Tab. 108-8A and Tab. 108-8B for locations and information.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
50	2505-6000111	HIGH TENSION CABLE GUARDRAIL
51	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR
52	2505-6000131	HIGH TENSION CABLE GUARDRAIL, SPARE PARTS KIT
		See Tab. 108-9A for locations and information.
-	-	-
53	2506-4984000	FLOWABLE MORTAR
		Includes 37.5 cu. yds. for fill and abandon culvert. Refer to Tab. 110-9 and Typical 4315 on B.9.
		Silt inside existing culverts need not be removed prior to placing flowable mortar.
		Includes 50 cu. yds. for backfill over culvert. Refer to Typical 4315.
-	-	-
54	2510-6745850	REMOVAL OF PAVEMENT
		A. Refer to Tabs. 110-1 and 102-5.
		B. HMA material shall be milled off existing roadway pavement and stockpiled as per Tab. 110-13,
		and will be paid for under the Pavement Scarification bid item.
-	-	-
55	2518-6910000	SAFETY CLOSURE
		Refer to Tab. 108-13A.
-	-	-
56	2526-8285000	CONSTRUCTION SURVEY
		A. The preservation and referencing of existing Control Points, as indicated by article 2526.03, A, 10, HMA
		Overlays, will not be required. The resetting of Control Points after the work is complete, as part of this
		article, also will not be required. The District Land Surveyor will reset any land corner monuments or their
		associated permanent reference markers, as a result of their discovery during the progress of the project work.
		All other survey necessary for construction of the project, as provided by "Section 2526 Construction Survey"
		will be required.
		B. This bid item also includes establishing the centerline alignment and profile for the reconstruction portion
		as shown on Typical "RECONSTR-A SPECIAL" and "RECONSTR-B SPECIAL" including adjusting the cross slope for
		super-elevations as needed, and establishing horizontal and vertical control as needed.
		See Sheets D.1-D.3 and U.2 for additional information.
-	-	-
58	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
58	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED
		Refer to Tab. 108-22 and 108-29 for locations and information.
		See also Tab 108-26A for Staging notes.
-	-	-
59	2528-8445110	TRAFFIC CONTROL
		See Tab. 108-23A and Tab. 108-26A on Sheet J.1 for information.
-	-	-
60	2528-8445113	FLAGGERS
61	2528-8445115	PILOT CARS
62	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)
		As per Standard Specifications and Road Plans.
-	-	-
63	2529-2242304	CD JOINT ASSEMBLY
64	2529-2242320	CT JOINT
		Refer to Tab. 102-6C for locations and information.
		Bid quantity is 5% greater than design quantity to accommodate irregularities.
-	-	-
65	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA
66	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT
67	2529-8174020	SUBBASE PATCH WITH EF JOINT
68	2529-8174050	PATCH SUBDRAIN
69	2529-8201000	JOINT ASSEMBLY, EF
		Refer to Tab. 102-6C for locations and information.
-	-	-
70	2530-0400061	HOT MIX ASPHALT (PARTIAL DEPTH PATCH MATERIAL)
		Refer to Tab. 102-12 for locations and information.
		Bid quantity is 5% greater than design quantity to accommodate irregularities.
-	-	-
71	2533-4980005	MOBILIZATION
		As per Standard Specifications and Road Plans.
-	-	-
72	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE
73	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)
74	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE
75	2548-0000320	MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE
		See Tab. 112-10 for locations and information.
-	-	-
76	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS
		Refer to Tab. 110-13.
-	-	-
77	2590-0000020	PROJECT MANAGEMENT
		See Developmental Specification.
-	-	-
78	2601-2634100	MULCHING
		Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil
		using mulch anchoring equipment with a minimum of two passes.
		Item is included for areas requiring reshaping and seedbed preparation. Use mulch that is 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.
-	-	-
79	2601-2636015	NATIVE GRASS SEEDING
		The disturbed areas greater than 8 feet away from the adjacent to the shoulder mainline shall be seeded and
		fertilizer per Article 2601.03, B.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
80	2601-2636043	SEEDING AND FERTILIZING (RURAL)
		Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article
		2601.03, C, 3, of the Standard Specifications. Use ground driven equipment.
-	-	-
81	2601-2642120	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,2.
-	-	-
82	2601-3000201	HERBICIDE APPLICATION, CUT STUMP
		This work shall be coordinated with Item 1, Clearing and Grubbing. See also Standard Note 231-2 and
		Tabulation 110-17 for additional information and quantities.
		Furnish and apply herbicide to cut stumps of cleared trees. The work includes locating stumps, furnishing
		and applying herbicide and related activities with no extra compensation allowed.
		Treatment #1
		(May be used year round and whenstumps will not be treated with herbicide immediatley after cutting. For use
		only when a 6-inch stump can be tollerated for at least six weeks.)
		Within 30 days of the stump cut, apply triclopyr herbicide. Stumps shall be initially cut to a height of not
		less than 6 inches and flagged to relocate for herbicide treatment. After treating with herbicide, stumps
		shall be left without further cutting for not less than 6 weeks to allow time for the herbicide to translocate,
		then cut to ground line prior to the tillage item with no additional compensation allowed.
		The herbicide shall be an oil-soluble formulation of triclopyr labeled for use on non-irrigation ditchbanks
		and seasonally dry wetlands. The herbicide shall be mixed with an oil carrier to a concentration of 1.0
		lb./gal acid equivalent of triclopyr (for example, for 4 lb. ae/gal products, mix 32 oz. product/gal. solution,
		for a 25 % solution.) The oil carrier shall be penetrating oil labeled for basal or cut stump treatment: diesel
		fuel and kerosene-based products will not be accepted. The mixture shall contain a dye so that treated
		areas are visible to inspection at least 7 days after application. "Ready-to-Use" formulations of 0.75
		lb./gal triclopyr acid equivalent will also be accepted.
		The herbicide shall be mixed and applied according to label directions for cut-stump treatments. The
		herbicide shall be applied to the root collar area, sides of the stump, and to the outer portion of the cut
		surface, wetting the cambium (the tissue just inside of the bark layer). The herbicide shall not be applied
		at times when the trunk is wet. It is a violation of federal law to apply this herbicide to areas with standing
		or flowing water. If soil is saturated or there is water touching tree trunks or their root collars, see
		Treatment #2. Caution: This herbicide is volatile and may cause off-target damage if used when temperatures
		exceed 85 degrees F. during the three days following application.
		Preapproved products:
		Triclopyr herbicide in an oil-soluble formulation:
		Garlon 4 Ultra
		NuFarmTahoe 4E
		Triclopyr 4EC
		Pathfinder II
		Custom blended pre-mixes must be approved by the Engineer
		Oil carrier:
		Lance Blue (blue basal oil)
		Diluent Blue
		Bark Oil Blue LT
		Proprietary oil contained in Pathfinder II
		Dye:
		Hi-Light Blue
		Dye contained in Lance Blue, Diluent Blue, or Bark Oil Blue, or Pathfinder II
		Treatment #2
		(For use in areas with saturated soil or standing water, or when the stump needs to be cut to ground line. Only
		for use on stumps that will be treated with herbicide immediately after cutting, and when stumps and roots are
		not frozen).
		Daily notify Engineer of intention to use this treatment not less than two-hours prior to cutting.
		Within 10 minutes of the stump cut, apply triclopyr herbicide. Stumps may be cut to ground line prior to
		herbicide application. No additional cutting or grinding of the stump shall be allowed for 6 weeks after
		herbicide treatment to allow time for the herbicide to translocate.
		The herbicide shall be a water-based triethylamine salt formulation of triclopyr, labeled for use in and
		around standing water. The herbicide shall be mixed and applied according to label directions for cut-
		stump treatments. It shall be applied at 3 lbs./gal. acid equivalent of triclopyr (e.g for 3 lbs.ae/gal
		products, apply undiluted.) A dye shall be added so that treated areas are visible to inspection at least 7
		days after application. The herbicide shall be applied to the cambium.
-	-	-
83	2602-0000020	SILT FENCE
		Refer to Tab 100-17 for locations and information.
		The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered
		during construction. Verify the specific locations with the Engineer prior to beginning placement.
-	-	-
84	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS
		Refer to Tab 100-17 for locations and information.
		This item is included for silt fence and silt fence for ditch check removal required for staging reasons,
		removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70%
		permanent growth.
-	-	-
85	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK
		Refer to Tab 100-17 for locations and information.
		Maintenance of silt fence is estimated at 50% of the installation quantity.
-	-	-
86	2602-0010010	MOBILIZATIONS, EROSION CONTROL
87	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL
		As per Standard Specifications and Road Plans.

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	10-20-15	Steel Beam Guardrail Barrier Transition Section
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-205	10-18-11	Steel Beam Guardrail End Terminal
BA-206	10-18-11	Steel Beam Guardrail Flared End Terminal for Cable Connection
BA-210	10-16-12	Guardrail Post Adaptor Unit
BA-211	10-21-14	Steel Beam Guardrail Long - Span System for Post Conflicts
BA-250	10-21-14	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post
BA-351	04-20-10	High Tension Cable Guardrail
DR-104	04-21-15	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	10-20-15	Connected Pipe Joints
DR-201	04-21-15	Concrete Aprons
DR-213	04-21-15	Pipe Apron Guard
DR-303	10-20-15	Subdrains (Longitudinal)
DR-304	04-21-15	Outlets for Longitudinal, Transverse and Backslope Subdrains
DR-503	04-21-15	Safety Grates for Box Culverts
DR-621	04-21-15	Pipe Extension
EC-201	04-21-15	Silt Fence
EW-301	10-20-15	Guardrail Grading
EW-403	10-20-15	Temporary Erosion Control Measures
EW-501	10-20-15	Rural Entrance
EW-502	10-20-15	Safety Ramp
PM-110	04-16-13	Line Types
PM-111	04-21-15	Symbols and Legends
PM-120	10-21-14	Stop Lines and Islands
PM-210	10-18-11	Separation in Two-Lane Roadway
PM-221	04-17-12	Climbing Lane
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
PR-101	04-21-15	Full Depth Patch with 'EF' Joint in PCC
PR-103	10-21-14	Full Depth PCC Patch with Dowels
PR-201	10-21-14	Runouts for Resurfacing
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	10-20-15	Milled Shoulder Rumble Strips
PV-13	10-20-15	Milled Centerline Rumble Strips
PV-101	04-21-15	Joints
PV-202	04-16-13	Hot Mix Asphalt Resurfacing
PV-203	10-15-13	HMA Base Widening
PV-301	04-19-11	Superelevation Details Two Lane Roadway
SI-173	04-20-10	Object Markers
SI-211	10-19-10	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-203	10-16-12	Aerial Seeding Operations
TC-212	04-16-13	Spot Location Lane Closure with Flaggers
TC-213	04-17-12	Lane Closure with Flaggers
TC-214	MODIFIED	Lane Closure with Flaggers and Rumble Strips for use with Pilot Car (See Sheet J.4)
TC-215	10-21-14	Lane Closure with Signals (Up to Three Days)
TC-231	10-15-13	Slow Moving Vehicle Operating in the Traffic Lane
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-233	10-21-14	Pavement Marking Operations Two-Lane
TC-252	04-21-15	Routes Closed to Traffic
TC-282	04-19-11	Uneven Lanes

262-6
10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

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

Mid American Energy
2411 North Market Street
PO Box 1008
Oskaloosa, IA 52577
John Bixler - 641-673-4221 work, 641-680-7217 cell
Gas

Mid American Energy
10510 Douglas Avenue
Urbandale, IA 50322
Michael Younts 515-252-6565 work, 515-979-8294 cell
Electric

Iowa Communications Network
400 East 14th Street
Des Moines, IA
Larry Klawitter 515-725-4741 Work, 515-229-4652 cell
Fiber Optic

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10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

Mahaska Communication Group
112 1st Ave. West
Oskaloosa, IA 52577
Brad Boender 641-676-1000 Work, 641-295-7166 cell
Telephone

CenturyLink/QWEST
2103 E. University Ave., 1st Floor
Des Moines, IA 50317
Steve Parker 515-265-0968 Work, 507-358-1978 Cell
Telephone

Mahaska Rural Water
101 North J Street
Po Box 208
Oskaloosa, IA 52577
Randy Pleima 641-673-8851 Work, 641-660-0332 Cell

Iowa DOT Mahaska County Maintenance
1970 Iowa 92 West
Oskaloosa, IA
Brad Steinhart 641-673-7697

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	
270+75.00	313+95.50	LT	PCC	5760.7		
270+75.00	313+95.50	RT	PCC	5760.7		
319+13.50	333+00.00	LT	PCC	1848.7		
319+13.50	333+00.00	RT	PCC	1848.7		
290+92.00	299+92.00	LT	HMA	300.0	900.0	Saw cut offset 3.0' from edge of PCC and remove 3.0'-W
290+92.00	299+92.00	RT	HMA	300.0	900.0	Saw cut offset 3.0' from edge of PCC and remove 3.0'-W
			TOTALS	15818.7	1800.0	

102-16
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 (1) Scarification	Remarks
		IN	IN	IN	FT	IN	SY	
119+50.00	Type 'N5'	1.5	2.0		150.0	1.5		
52+73.00	Type 'N3'	1.5	2.0		10.0	1.5	77.8	PCC Road, Start 34.0' Rt (A)
62+47.00	Type 'N3'	1.5	2.0		10.0	1.5	11.1	PCC Driveway, Start 22.0' Lt (A)
64+25.00	Type 'R6'	1.5	3.5		75.0	1.0		
64+40.00	Type 'N3'	1.5	3.5		10.0	1.5	33.3	PCC Driveway, Start 22.0' Rt (A)
87+00.00	Type 'R6'	1.5	3.5		50.0	1.0		
89+91.00	Type 'N3'	1.5	2.5		10.0	1.5	16.7	PCC Driveway, Start 22.0' Lt (A)
104+50.00	Type 'R6'	1.5	3.5		50.0	1.0		
164+00.00	Type 'R6'	1.5	3.5		75.0	1.0		
212+00.00	Type 'N3'	1.5	2.0		10.0	1.5	66.7	PCC Road, Start 22.0' Rt (A)
264+00.00	Type 'N3'	1.5	2.0		10.0	1.5	66.7	PCC Road, Start 22.0' Rt (A)
270+75.00	Type 'N3'	1.5	2.0		175.0	1.5	233.3	Reconstruction Ahead
333+00.00	Type 'N3'	1.5	2.0		275.0	1.5	366.7	Reconstruction Back
376+00.00	Type 'R6'	1.5	2.0		25.0	1.0		
384+35.00	Type 'N3'	1.5	1.5		10.0	1.5	66.7	PCC Road, Start 22.0' Lt (A)
434+69.00	Type 'N3'	1.5	1.5		10.0	1.5	94.4	PCC Road, Start 22.0' Lt (A)
434+69.00	Type 'N3'	1.5	1.5		10.0	1.5	33.3	PCC Road, Start 22.0' Rt (A)
504+24.00	Type 'N3'	1.5	1.5		10.0	1.5	166.7	PCC Road, Start 22.0' Rt (A)
514+50.00	Type 'R6'	1.5	2.0		25.0	1.0		
569+00.00	Type 'R6'	1.5	2.0		25.0	1.0		
585+00.00	Type 'R6'	1.5	2.0		25.0	1.0		
597+00.00	Type 'R6'	1.5	2.0		25.0	1.0		
602+39.50	Type 'R5'	1.5	1.5		150.0	1.5		Bridge Approach
604+04.50	Type 'N2'	1.5			75.0	1.5		Bridge Approach
607+89.50	Type 'N2'	1.5			75.0	1.5		Bridge Approach
609+54.50	Type 'R5'	1.5	1.5		150.0	1.5		Bridge Approach
1+50.00	Type 'N3'	1.5	1.5		150.0	1.5	200.0	
TOTALS:					1675.0		1433.3	
(A)	"L" directed back toward centerline							

108-24
04-21-15

SAFETY GRATE TREATMENT

Refer to DR-503.

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

No.	Location (1) Direction of Traffic	Location Station	Location Side	Type	Culvert Skew Angle Ahead Degrees Left	Culvert Skew Angle Ahead Degrees Right	Dimensions A	B	C	D	E	F	G	H	J	Midspan Support Required Case	Wingwall Flare Angle Degrees Ahead	Wingwall Flare Angle Degrees Back	Remarks
1	EB	346+28.70	RT	2			48	48	96	96	84	84	12	8	24				4'x3' Box Culv
2	EB	363+31.10	RT	1			48	48	132	132	108	108	12	8	20				4'x4' Box Culv
3	EB	530+75.20	RT	1			48	44	100	100	92	92	8	8	42				4'x5' Box Culv
4	WB	530+75.20	LT	1			48	48	100	100	92	92	8	8	42				4'x5' Box Culv

231-2
10-16-12

HERBICIDE

For all herbicide applications, the following provisions shall apply.

1. Follow all laws, rules and regulations related to the handling of pesticides, including but not limited to:
   a. Follow all herbicide label directions, restrictions, and precautions.
   b. The company responsible for the herbicide applicator must be licensed with Iowa Department of Agriculture and Land Stewardship (IDALS) as a commercial pesticide applicator company.
   c. The person applying the herbicide must be certified through IDALS as a pesticide applicator in Category 6, Right-of-Way. For herbicide applications that require an aquatic certification, the applicator must also be certified as a pesticide applicator in Category 5, Aquatics.
   d. Use herbicide and adjuvant products labeled for the application site:
      i. For applications on the primary highway right-of-way, use only products labeled for use on highway rights-of-way or roadsides.
      ii. For applications to or over water, use only products labeled for corresponding use in aquatic sites, unless intermittent pockets of standing water, such as tire ruts, and the product is labeled for such use.
      iii. For applications to areas in the water conveyance portion of the ditch that do not contain water at the time of application, use only products labeled for non-irrigation ditch banks or aquatic sites.
   e. Do not apply any herbicide to or over standing or flowing water unless required coverage is obtained under a National Pollutant Discharge and Elimination System (NPDES) Pesticide Discharge Permit through Iowa DNR. If standing or flowing water is encountered in areas when they need to be sprayed, notify Iowa DOT (Roadside Development) to determine if submittal of a Notice of Intent (NOI) is required.

2. Schedule work according to weather conditions and take measures to avoid off-target damage, such as runoff, leaching, drift and volatilization.
   a. Do not spray herbicide 24 hours prior to forecast precipitation that is expected to cause significant runoff conditions.
   b. For areas with saturated soil, such as ditch bottoms, do not spray herbicide 24 hours prior to forecast precipitation, unless using products labeled for aquatic sites.
   c. For conventional applications, avoid applications when wind speed exceeds 10 mph. For invert applications, avoid applications when wind speed exceeds 15 mph.
   d. For conventional foliar applications, use a drift retardant and maintain drift control throughout the application period by adding more to the tank as it breaks down from agitation.
   e. Avoid spraying volatile products when temperatures are forecast to exceed 85° F within 3 days.
   f. Check the IDALS Sensitive Crops Directory and do not spray adjacent to a listed operation when wind is blowing towards it.

3. Respond to allegations of any off-target damage attributed to handling and spraying of herbicide.

4. Provide the following documents to the Engineer for approval not less than 2 weeks prior to the application.
   a. A copy of the herbicide and adjuvant labels, including any applicable supplemental labels.
   b. A copy of the herbicide and adjuvant Material Safety Data Sheets (MSDS.)

5. Have copies of the herbicide and adjuvant labels and MSDSs on-hand and at locations of storage, transport, and application.

6. Schedule work to maximize efficiency of the herbicide application in relation to weather conditions and plant growth stage. Follow any label recommendations given as "for best results."
   a. For weed applications:
      i. To determine if weeds are "actively growing," use as a guideline that there needs to have been at least 1 hour of temperature above 65° F and 1 hour of sun in the day prior to, of, or forecast before a rain the day after the application.
      ii. For spring applications to thistles, apply after basal leaves of Canada thistles are fully extended, and after rosettes of musk thistle are at least 8 inches diameter, but before flower stage.
      iii. For fall applications to thistles, apply prior to the second hard freeze of 28° F, unless otherwise listed in the label directions.
   b. For tree and brush applications:

231-2
10-16-12

HERBICIDE

      i. For foliar applications and cut stump/surface applications with water-soluble products, apply after leaves are fully opened in the spring and prior to leaf discoloration in the fall.
      ii. For cut stump applications with oil soluble products, do not apply during periods of heavy sap flow. Use as a guideline that heavy sap flow occurs in late winter to early spring when nighttime temperatures below 32° F are followed by daytime temperatures above 32° F with sunny conditions.
      iii. For cut stump and basal bark applications, add sufficient dye so that treated areas are visible to inspection 7 days after application.

7. Notify the Engineer prior to calibrating, mixing and applying herbicides, including incidental items.

8. Provide copies of daily spray logs to the RCE at the end of each week of spraying (form provided by Iowa DOT).

9. If Contractor does not complete spray item on schedule, the Engineer may adjust the schedule.

232-10
10-21-14

EMERALD ASH BORER

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

107-24
10-15-13

GRADING FOR HIGH TENSION CABLE GUARDRAIL INSTALLATIONS

Refer to Standard Road Plan EW-302

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

Location				Dimensions			Protection Length	Earthwork:	
No.	Direction of (1) Traffic	Station	Side	C_A	C_O	C_T	(C_A+C_O+C_T)	_____	Remarks
				FT	FT	FT	FT	CY	
1	EB	2136+90.00	RT	135.0	522.9	120.0	777.9	14.8	
2	WB	44+10.00	LT	210.0	522.9	135.0	867.9	16.2	
3	EB	93+25.00	RT	170.0	10.0	70.0	250.0	6.5	
4	WB	97+60.00	LT	210.0	225.0	210.0	645.0	12.7	
5	EB	175+90.00	RT	210.0	350.0	160.0	720.0	13.8	
6	WB	183+10.00	LT	160.0	350.0	153.0	663.0	13.0	
7	WB	216+10.00	LT	210.0	560.0	0.0	770.0	14.7	
8	EB	379+87.00	RT	210.0	603.0	132.0	945.0	17.4	
9	WB	383+25.00	LT		90.0	210.0	300.0	7.3	
10	EB	452+90.00	RT	10.0	525.0	210.0	745.0	14.2	
11	WB	460+35.00	LT	210.0	525.0	10.0	745.0	14.2	
12	EB	467+40.00	RT	210.0	375.0		585.0	11.7	
13	WB	473+10.00	LT		360.0	210.0	570.0	11.5	
14	EB	571+25.00	RT	75.0	875.0	210.0	1160.0	20.8	
15	WB	574+95.00	LT		295.0	210.0	505.0	10.5	
16	WB	581+50.00	LT	75.0	500.0		575.0	11.6	
17	EB	599+50.00	RT		414.5		414.5	5.8	part is filled by guardrail fill
18	WB	603+44.53	LT		294.5	100.0	394.5	6.3	part is filled by guardrail fill
19	EB	610+75.00	RT		550.0	210.0	760.0	14.5	
20	WB	618+35.00	LT	210.0	550.0		760.0	14.5	
						TOTALS	13152.8	252.0	

107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

(1) Lane(s) to which the installation is adjacent. Refer to EW-301

Location					Dimensions (Feet)									Earthwork		
No.	(1) Direction of Traffic	Station	Side	Foreslope at Guardrail	X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	Remarks
														CY	CY	
1	EB	223+45.50	RT	2.5:1	231.3	0.0			287.5	5.6	337.5	7.6	48.4		1200.0	Approach - Includes 55 CY Topsoil
2	EB	223+45.50	RT	2.5:1	87.5	0.0			112.5	2.5	162.5	4.5	36.8		1510.0	Trailing - Includes 105 CY Topsoil
3	WB	223+54.50	LT	2.5:1	62.5	0.0			118.8	5.6	168.8	7.6	48.4		1660.0	Approach - Includes 110 CY Topsoil
4	WB	223+54.50	LT	2.5:1	262.5	0.0			287.5	2.5	337.5	4.5	36.8		1000.0	Trailing - Includes 55 CY Topsoil
5	WB	252+56.63	LT	3:1	43.8	5.0	100.0	10.6	125.0	10.6	175.0	12.6	67.1		3200.0	Trailing - Includes 75 CY Topsoil
6	WB	252+56.63	LT	3:1	12.5	5.0	68.8	10.6	106.3	10.6	156.3	12.6	67.1		2950.0	Approach - Includes 70 CY Topsoil
7	EB	252+13.38	RT	3:1	12.5	5.0	68.8	10.6	106.3	10.6	156.3	12.6	67.1		2950.0	Approach - Includes 70 CY Topsoil
8	EB	252+13.38	RT	3:1	43.8	5.0	100.0	10.6	125.0	10.6	175.0	12.6	67.1		3200.0	Trailing - Includes 75 CY Topsoil
9	WB	314+37.93	LT	3:1	53.1	6.8	90.6	5.5	115.6	10.5	153.1	12.5	66.6		1160.0	Trailing - Includes 25 CY Topsoil
10	EB	314+37.93	RT	3:1	53.1	7.3	90.6	6.0	115.6	11.0	178.1	13.0	68.5		1020.0	Approach - Includes 75 CY Topsoil
11	WB	318+91.07	LT	3:1	53.1	1.8					90.6	5.8	41.5		750.0	Approach - Includes 75 CY Topsoil
12	EB	318+91.07	RT	3:1	53.1	7.3	90.6	6.0	115.6	11.0	153.1	13.0	68.5		1020.0	Trailing - Includes 25 CY Topsoil
13	WB	432+07.34	RT	3:1	12.5	1.0					62.5	3.0	31.2		330.0	Approach - Includes 20 CY Topsoil
14	WB	432+07.34	RT	3:1	25.0	1.0			50.0	3.5	100.0	5.5	40.5		390.0	Trailing - Includes 20 CY Topsoil
15	EB	432+43.66	LT	3:1	12.5	1.0			37.5	3.5	87.5	5.5	40.5		370.0	Approach - Includes 20 CY Topsoil
16	EB	432+43.66	LT	3:1	25.0	1.0			50.0	3.5	100.0	5.5	40.5		400.0	Trailing - Includes 20 CY Topsoil
17	WB	544+35.81	LT	3:1	68.8	5.0	93.8	7.5	106.3	7.5	156.3	9.5	55.5		2300.0	Trailing - Includes 70 CY Topsoil
18	WB	544+35.81	LT	3:1	12.5	5.0	68.8	10.6	81.3	10.6	131.3	12.6	67.1		2150.0	Approach - Includes 30 CY Topsoil
19	EB	542+91.35	RT	3:1	12.5	5.0			68.8	10.6	118.8	12.6	67.1		2150.0	Approach - Includes 25 CY Topsoil
20	EB	542+91.35	RT	3:1	68.8	5.0			93.8	7.5	143.8	9.5	55.5		2300.0	Trailing - Includes 30 CY Topsoil
21	WB	603+97.65	LT	3:1	53.1	0.0	115.6	4.1	140.6	4.1	178.1	8.1	50.1		3450.0	Trailing - Includes 50 CY Topsoil
22	EB	604+17.65	RT	3:1	53.1	0.0	128.1	5.3	153.1	5.3	190.6	9.3	54.7		3700.0	Approach - Includes 75 CY Topsoil
23	WB	607+88.15	LT	3:1	53.1	0.0			128.1	5.3	165.6	8.9	53.3		3300.0	Approach - Includes 75 CY Topsoil
24	EB	608+08.15	RT	3:1	53.1	0.0			78.1	0.3	128.1	2.3	28.6		2350.0	Trailing - Includes 50 CY Topsoil
													TOTALS		44810.0	Total - 1300 CY Topsoil

108-8A
Modified

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Refer to BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-250, SI-172, SI-173 and SI-211.

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

No.	Location: (1) Direction of Traffic	Location: (1) Side O = Outside M = Median	Location: Station	Location: Offset	Layout Lengths BA-250: VT1 (40.625' min.)	Layout Lengths BA-250: VF	Layout Lengths BA-250: VT2	Layout Lengths BA-250: ET (37.5' or 50.0')	Long-Span System BA-211: STATION	Long-Span System BA-211: TYPE	Delineators and Object Markers: SI-211	Delineator SI-172: Type 1	Object Marker SI-173: Type 2	Object Marker SI-173: Type 3	Object Marker SI-173: Type 3	Bid Items: Bolted End Anchor	Bid Items: Barrier Transition Section	Bid Items: Steel Beam Guardrail	Bid Items: End Terminal: Standard	Bid Items: End Terminal: Flared	Bid Items: Post Adapter	Remarks
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	White EACH	OM2-2 EACH	OM3-L EACH	OM3-R EACH	TYPE	EACH	BA-200 LF	BA-205 EACH	BA-206 EACH	BA-210 EACH	
1	WB		314+37.93	20.8 LT	53.125	37.50	25.00	50.0			3			1		C	1	1	75.0	1			S. Skunk River Bridge - Sec. 7-T75N-R14W West Bound Trailing
2	EB		314+37.93	20.8 RT	53.125	37.50	25.00	50.0			3				1	C	1	1	75.0	1			S. Skunk River Bridge - Sec. 7-T75N-R14W East Bound Aproach
3	WB		318+91.07	20.8 LT	53.125			37.5			3				1	C	1	1	12.5		1		S. Skunk River Bridge - Sec. 7-T75N-R14W West Bound Approach
4	EB		318+91.07	20.8 RT	53.125	37.50	25.00	50.0			3			1		C	1	1	75.0	1			S. Skunk River Bridge - Sec. 7-T75N-R14W East Bound Trailing
5	WB		603+97.65	15.8 LT	53.125	62.50	25.00	37.5			2		3	1		B	1	1	100.0		1		N. Skunk River Bridge - Sec. 36-T76N-R14W West Bound Trailing*
6	EB		604+17.65	15.8 RT	53.125	75.00	25.00	37.5			2		7		1	B	1	1	112.5		1		N. Skunk River Bridge - Sec. 36-T76N-R14W East Bound Approach*
7	WB		607+88.15	15.8 LT	53.125	75.00		50.0			2		7		1	B	1	1	87.5	1			N. Skunk River Bridge - Sec. 36-T76N-R14W West Bound Approach
8	EB		608+08.15	15.8 RT	53.125	25.00		50.0			2		3	1		B	1	1	37.5	1			N. Skunk River Bridge - Sec. 36-T76N-R14W East Bound Trailing
											TOTALS		20	4	4		8	8	575.0	5	3		* Assembly includes Guardrail, Special End Anchor

108-8B
10-21-14

STEEL BEAM GUARDRAIL FOR SIDE OBSTACLE (TWO-WAY PROTECTION)

Refer to BA-200, BA-205, BA-206, BA-210, BA-211, BA-251, SI-172, SI-173, and SI-211.

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

No.	Location: (1) Direction of Traffic	Location: (1) Side O= Outside M= Median	Location: Station	Location: Offset	O_L	D_O	Layout Lengths BA-251: Approach Side (A): ET 37.5' or 50.0'	Approach Side (A): $VT2_A$	Approach Side (A): VF_A	Approach Side (A): $VT1_A$	Trailing Side (T): $VT1_T$	Trailing Side (T): VF_T	Trailing Side (T): $VT2_T$	Trailing Side (T): ET 37.5' or 50.0'	Long-Span System BA-211: STATION	Long-Span System BA-211: TYPE	Delineators and Object Markers: SI-211	Delineator SI-172: Type 1	Object Marker SI-173: Type 2	Object Marker SI-173: Type 3	Object Marker SI-173: Type 3	Bid Items: Steel Beam Guardrail	Bid Items: End Terminal: Standard	Bid Items: End Terminal: Flared	Bid Items: Post Adapter	Remarks
				FT	FT	FT	LF	LF	LF	LF	LF	LF	LF	LF	STATION	TYPE	TYPE	White EACH	OM2-2 EACH	OM3-L EACH	OM3-R EACH	BA-200 LF	BA-205 EACH	BA-206 EACH	BA-210 EACH	
1	WB		223+54.50	24' LT	5.0	12.0	50.0		56.25	62.50	262.50	25.00		50.0	223+54.50	1	2			2	2	400.0	2			5x7 Cattle Crossing
2	EB		223+45.50	24' RT	5.0	12.0	50.0		56.25	231.25	87.50	25.00		50.0	223+45.50	1	2			2	2	393.8	2			5x7 Cattle Crossing
3	WB		252+56.63	24' LT	43.3	12.0	50.0	37.50	56.25	12.50	43.75	56.25	25.00	50.0			3			2	2	225.0	2			Twin 12x12 Box Culvert
4	EB		252+13.38	24' RT	43.3	12.0	50.0	37.50	56.25	12.50	43.75	25.00	25.00	50.0			3			2	2	225.0	2			Twin 12x12 Box Culvert
5	WB		432+43.66	24' RT	4.0	13.0	50.0		25.00	12.50		25.00		50.0	432+43.66	1				2	2	56.3	2			4x5.5 Cattle Crossing
6	EB		432+07.34	24' RT	4.0	13.0	50.0		12.50	12.50		25.00		50.0	432+07.34	1				2	2	43.8	2			4x5.5 Cattle Crossing
7	WB		544+35.81	24' LT	37.5	12.0	50.0	12.50	56.25	12.50	68.75	25.00	12.50	50.0			3			2	2	212.5	2			10x8 Box Culvert
8	EB		542+91.35	24' RT	37.5	12.0	50.0		56.25	12.50	68.75	25.00		50.0			3			2	2	187.5	2			10x8 Box Culvert
																	TOTALS			16	16	1743.8	16			

108-9A
04-20-10

HIGH TENSION CABLE GUARDRAIL

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

Refer to BA-351.

No.	Location: Direction of Traffic (1)	Location: Station	Location: Side	Location: Offset D_θ	Dimensions: Approach C_A	Dimensions: Obstacle C_O	Dimensions: Trailing C_T	Bid Items: Protection Length (C_A+C_θ+C_T)	Bid Items: End Anchor	Remarks
				FT	FT	FT	FT	FT	No.	
1	EB	2136+90.00	RT	11.0	135.0	522.9	120.0	777.9	2	2.5:1 Slope EQ. 2139+00/37+52.1
2	WB	44+10.00	LT	11.0	210.0	522.9	135.0	867.9	2	2.5:1 Slope EQ. 2139+00/37+52.1
3	EB	93+25.00	RT	11.0	170.0	10.0	70.0	250.0	2	5'x5' Box Culv
4	WB	97+60.00	LT	11.0	210.0	225.0	210.0	645.0	2	2.5:1 Slope
5	EB	175+90.00	RT	11.0	210.0	350.0	160.0	720.0	2	2.5:1 Slope
6	WB	183+10.00	LT	11.0	160.0	350.0	153.0	663.0	2	2.5:1 Slope
7	WB	216+10.00	LT	11.0	210.0	560.0	0.0	770.0	2	2.5:1 Slope
8	EB	379+87.00	RT	11.0	210.0	603.0	132.0	945.0	2	2.0:1 Slope & 10'x8' Box Culv
9	WB	383+25.00	LT	11.0	0.0	90.0	210.0	300.0	2	10'x8' Box Culv
10	EB	452+90.00	RT	11.0	10.0	525.0	210.0	745.0	2	2.5:1 Slope
11	WB	460+35.00	LT	11.0	210.0	525.0	10.0	745.0	2	2.5:1 Slope
12	EB	467+40.00	RT	11.0	210.0	375.0		585.0	2	2.5:1 Slope
13	WB	473+10.00	LT	11.0		360.0	210.0	570.0	2	2.5:1 Slope
14	EB	571+25.00	RT	11.0	75.0	875.0	210.0	1160.0	2	2.5:1 Slope
15	WB	574+95.00	LT	11.0	0.0	295.0	210.0	505.0	2	2.5:1 Slope
16	WB	581+50.00	LT	11.0	75.0	500.0		575.0	2	2.5:1 Slope
17	EB	599+50.00	RT	11.0		314.5		314.5	2	2.5:1 Slope N. Skunk Bridge Guardrail*
18	WB	599+50.00	LT	11.0		207.0	100.0	307.0	2	2.5:1 Slope N. Skunk Bridge Guardrail*
19	EB	610+75.00	RT	11.0		550.0	210.0	760.0	2	2.5:1 Slope
20	WB	618+35.00	LT	11.0	210.0	550.0		760.0	2	2.5:1 Slope
										* Assembly includes one Standard End Anchor and one Special End Anchor.
							TOTALS	12965.3	40**	** Includes 2 Special End Anchors

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
Removal of Steel Beam Guardrail	1250	LF	Mahaska County Shop 1970 Iowa 92 West Oskaloosa, Iowa	Brad Steinhart 641-673-7697	See Tab. 110-7A See Bid Item #77
Contractor Stockpiled Shoulder Material	1700	Tons	Iowa DOT Stockpile Site NE Quadrant of Hwy 92 and Resolve Avenue	Brad Steinhart 641-673-7697	See Bid Item #12 72,520 SY Scar. (3671 Tons) Stockpile 3300 Tons Contractor to Dispose or
Contractor Stockpiled Shoulder Material	1600	Tons	Sigourney Shop 23301 Hwy 149 Sigourney, Iowa	Brad Steinhart 641-673-7697	Recycle = 371 Tons

SHOULDERS

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

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

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		Binder	Paved Shoulder	Reinforced Paved Shoulder	Special Backfill				Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
														HMA Alternate		PCC Alternate								
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA	STA (2)	HMA CY (4)	PCC CY (4)	
IA HWY 92	EB	116+92.85	119+50.00	RT	4.0		257.2	(A)	37.8	14.7	2.3	114.3									2.6			
IA HWY 92	WB	116+92.85	119+50.00	RT	4.0		257.2	(A)	37.8	14.7	2.3	114.3									2.6			
IA HWY 92	EB	219+88.32	220+08.32	RT	19.1		20.0	7.1	14.0	70.2	0.8	42.4									0.2			
IA HWY 92	EB	220+08.32	221+14.25	RT	19.1 to 11.5		105.9	30.0	59.6	56.2	3.6	180.1									1.1			
IA HWY 92	EB	221+14.25	224+33.00	RT	11.5		318.8	67.9	134.7	42.3	8.1	407.3									3.2			
IA HWY 92	EB	224+33.00	225+07.84	RT	11.5 to 16		74.8	19.1	37.8	50.5	2.3	114.3									0.7			
IA HWY 92	EB	225+07.84	225+27.84	RT	16.0		20.0	5.9	11.8	58.8	0.7	35.6									0.2			
IA HWY 92	WB	219+97.17	220+17.17	RT	16.0		20.0	5.9	11.8	58.8	0.7	35.6									0.2			
IA HWY 92	WB	220+17.17	220+92.00	RT	16 to 11.5		74.8	19.1	37.8	50.5	2.3	114.3									0.7			
IA HWY 92	WB	220+92.00	224+17.00	RT	11.5		325.0	69.2	137.4	42.3	8.2	415.3									3.3			
IA HWY 92	WB	224+17.00	225+22.93	RT	11.5 to 19.1		105.9	30.0	59.6	56.2	3.6	180.1									1.1			
IA HWY 92	WB	225+22.93	225+42.93	RT	19.1		20.0	7.1	14.0	70.2	0.8	42.4									0.2			
IA HWY 92	EB	270+75.00	290+92.00	RT	4.0	6.0	2017.0	(B)	296.5	14.7	17.8	896.4							70.6	3.5	20.2			
IA HWY 92	WB	270+75.00	290+92.00	RT	4.0	6.0	2017.0	(B)	296.5	14.7	17.8	896.4							70.6	3.5	20.2			
IA HWY 92	EB	299+92.00	312+52.31	RT	4.0	6.0	1260.3	(B)	185.3	14.7	11.1	560.1							44.1	3.5	12.6			
IA HWY 92	WB	299+92.00	312+52.31	RT	4.0	6.0	1260.3	(B)	185.3	14.7	11.1	560.1							44.1	3.5	12.6			
IA HWY 92	EB	320+76.70	333+00.00	RT	4.0	6.0	1223.3	(B)	179.8	14.7	10.8	543.7							42.8	3.5	12.2			
IA HWY 92	WB	320+01.70	333+00.00	RT	4.0	6.0	1298.3	(B)	190.9	14.7	11.5	577.0							45.4	3.5	13.0			
IA HWY 92	EB	312+52.31	312+72.31	RT	13.5		20.0	5.7	11.4	57.0	0.7	30.0									0.2			Bridge Approach
IA HWY 92	EB	312+72.31	313+22.31	RT	13.5 to 11.5		50.0	12.5	0.0	49.6	0.0	69.4									0.5			Bridge Approach
IA HWY 92	EB	313+02.31	313+47.31	RT	11.5		45.0	9.6	19.0	42.3	1.1	57.5									0.5			Bridge Approach
IA HWY 92	EB	313+47.31	313+84.81	RT	11.5 to 7.8		37.5	6.7	13.3	35.4	0.8	40.2									0.4			Bridge Approach
IA HWY 92	EB	313+84.81	314+37.93	RT	7.8		53.1	7.6	15.1	28.5	0.9	46.0									0.5			Bridge Approach
IA HWY 92	WB	312+52.31	312+72.31	RT	13.5		20.0	5.7	11.4	57.0	0.7	30.0									0.2			Bridge Approach
IA HWY 92	WB	312+72.31	313+22.31	RT	13.5 to 11.5		50.0	12.5	24.8	49.6	1.5	69.4									0.5			Bridge Approach
IA HWY 92	WB	313+02.31	313+47.31	RT	11.5		45.0	9.6	19.0	42.3	1.1	57.5									0.5			Bridge Approach
IA HWY 92	WB	313+47.31	313+84.81	RT	11.5 to 7.8		37.5	6.7	13.3	35.4	0.8	40.2									0.4			Bridge Approach
IA HWY 92	WB	313+84.81	314+37.93	RT	7.8		53.1	7.6	15.1	28.5	0.9	46.0									0.5			Bridge Approach
IA HWY 92	WB	318+91.07	319+44.20	RT	7.8		53.1	7.6	15.1	28.5	0.9	46.0									0.5			Bridge Approach
IA HWY 92	WB	319+44.20	319+81.70	RT	7.8 to 11.5		37.5	6.8	13.4	35.8	0.8	40.2									0.4			Bridge Approach
IA HWY 92	WB	319+81.70	320+01.70	RT	11.5		20.0	4.4	8.6	43.2	0.5	25.6									0.2			Bridge Approach
IA HWY 92	EB	318+91.07	319+44.20	RT	7.8		53.1	7.6	15.1	28.5	0.9	46.0									0.5			Bridge Approach
IA HWY 92	EB	319+44.20	319+81.70	RT	7.8 to 11.5		37.5	7.8	15.5	41.3	0.9	40.2									0.4			Bridge Approach
IA HWY 92	EB	319+81.70	320+06.70	RT	11.5		25.0	6.8	13.6	54.2	0.8	31.9									0.3			Bridge Approach
IA HWY 92	EB	320+06.70	320+56.70	RT	11.5 to 13.5		50.0	11.6	23.0	45.9	1.4	69.4									0.5			
IA HWY 92	EB	320+56.70	320+76.70	RT	13.5		20.0	5.0	9.9	49.6	0.6	30.0									0.2			
IA HWY 92	EB	431+24.92	431+44.92	RT	15.0		20.0	5.6	11.0	55.1	0.7	33.3									0.2			
IA HWY 92	EB	431+44.92	431+89.88	RT	15 to 13		45.0	11.7	23.1	51.5	1.4	69.9									0.4			
IA HWY 92	EB	431+89.88	432+27.38	RT	13.0		37.5	9.0	17.9	47.8	1.1	54.2									0.4			
IA HWY 92	EB	432+27.38	433+02.21	RT	13 to 17.5		74.8	21.1	41.9	56.0	2.5	126.8									0.7			
IA HWY 92	EB	433+02.21	433+22.21	RT	17.5		20.0	6.5	12.9	64.3	0.8	38.9									0.2			
IA HWY 92	WB	431+23.83	431+43.83	RT	17.5		20.0	6.5	12.9	64.3	0.8	38.9									0.2			
IA HWY 92	WB	431+43.83	432+18.66	RT	17.5 to 13		74.8	21.1	41.9	56.0	2.5	126.8									0.7			
IA HWY 92	WB	432+18.66	432+56.16	RT	13.0		37.5	9.0	17.9	47.8	1.1	54.2									0.4			
IA HWY 92	WB	432+56.16	433+30.99	RT	13 to 17.5		74.8	21.1	41.9	56.0	2.5	126.8									0.7			
IA HWY 92	WB	433+30.99	433+50.99	RT	17.5		20.0	6.5	12.9	64.3	0.8	38.9									0.2			
IA HWY 92	WB	602+18.84	602+38.84	RT	12.0		20.0	3.1	6.1	30.5	0.4	26.7									0.2			Bridge Approach
IA HWY 92	WB	602+38.84	602+57.02	RT	10.3 to 12		18.2	2.8	5.5	30.5	0.3	22.5									0.2			Bridge Approach
IA HWY 92	WB	602+57.02	602+82.02	RT	10.3		25.0	3.4	6.7	26.8	0.4	28.6									0.3			Bridge Approach
IA HWY 92	WB	602+82.02	603+44.52	RT	3.8 to 10.3		62.5	5.8	11.6	18.6	0.7	49.0									0.6			Bridge Approach
IA HWY 92	WB	603+44.52	603+97.65	RT	3.8		53.1	3.7	7.4	14.0	0.4	22.4									0.5			Bridge Approach
IA HWY 92	EB	602+38.00	602+58.00	RT	12.0		20.0	4.9	9.8	48.9	0.6	26.7									0.2			Bridge Approach
IA HWY 92	EB	602+58.00	602+64.52	RT	11.3 to 12		6.5	1.6	3.2	48.9	0.2	8.4									0.1			Bridge Approach
IA HWY 92	EB	602+64.52	602+89.52	RT	11.3		25.0	5.7	11.3	45.2	0.7	31.4									0.3			Bridge Approach
IA HWY 92	EB	602+89.52	603+64.52	RT	3.8 to 11.3		75.0	10.5	20.8	27.7	1.2	62.9									0.8			Bridge Approach
IA HWY 92	EB	603+64.52	604+17.65	RT	3.8		53.1	3.7	7.4	14.0	0.4	22.4									0.5			Bridge Approach
IA HWY 92	WB	607+88.15	608+41.28	RT	3.8		53.1	3.7	7.4	14.0	0.4	22.4									0.5			Bridge Approach
IA HWY 92	WB	608+41.28	609+16.28	RT	3.8 to 11.3		75.0	10.5	20.8	27.7	1.2	62.9									0.8			Bridge Approach
IA HWY 92	WB	609+16.28	609+66.28	RT	11.3 to 13.3		50.0	11.4	22.6	45.2	1.4	68.3									0.5			Bridge Approach
IA HWY 92	WB	609+66.28	609+86.28	RT	13.3		20.0	4.9	9.8	48.9	0.6	29.6									0.2			Bridge Approach
IA HWY 92	EB	608+08.15	608+61.28	RT	3.8		53.1	3.7	7.4	14.0	0.4	22.4									0.5			Bridge Approach
IA HWY 92	EB	608+61.28	608+86.28	RT	3.8 to 6.3		25.0	2.3	4.6	18.6	0.3	14.0									0.3			Bridge Approach
IA HWY 92	EB	608+86.28	609+36.28	RT	6.3 to 8.3		50.0	6.8	13.4	26.8	0.8	40.6									0.5			Bridge Approach
IA HWY 92	EB	609+36.28	609+56.28	RT	8.3		20.0	3.1	6.1	30.5	0.4	18.4									0.2			Bridge Approach
(A) Refer to Typ. "HMA WIDEN" on Sheet B.3.																								
(B) Refer to Typ. "RECNST-A" on Sheet B.2.					TOTALS, 6" HMA PAVED SHOULDER			612.9				7934.1							317.7		125.1			

FILE NO. | ENGLISH | DESIGN TEAM FRENCH-RENEKER-ASSOCIATES, INC. | MAHASKA COUNTY | PROJECT NUMBER NHSX-092-7(48)--3H-62 | SHEET NUMBER C.14

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