

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
C Sheets	Quantities and General Information
C.1	Estimated Project Quantities and Reference Notes
C.2	Project Description
C.3	Existing Pavement
C.4	Partial Depth Regular HMA Finish Patches
C.5	Standards
C.6	Pavement Marking Line Types
C.7	Rumble Strips
C.8	Fog Seal
C.9	General Notes
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.2	511 Travel Information
J.3	Coordinated Operations



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
LUCAS COUNTY
LONGITUDINAL JOINT REPAIR
On IA 14
Chariton to Knoxville - Various Locations

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL	
	14
PROJECT IDENTIFICATION NUMBER	
26-59-014-020	
PROJECT NUMBER	
MP-014-5(706)19--76-59	
R.O.W. PROJECT NUMBER	
-	
-	
-	

CHARITON TO G62 DESIGN DATA RURAL			
2024	AADT	3000	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		13	%
Total			
Design ESALs		--	

G62 TO KNOXVILLE DESIGN DATA RURAL			
2024	AADT	5300	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		14	%
Total			
Design ESALs		--	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Jared A. Roberts	Primary Signature Block	C.1

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
		8-3-2026
	Signature _____ Date _____	
	Jared A. Roberts Printed or Typed Name	
My license renewal date is December 31, 2026		
Pages or sheets covered by this seal: ALL SHEETS		
X _____		
X _____		

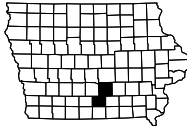
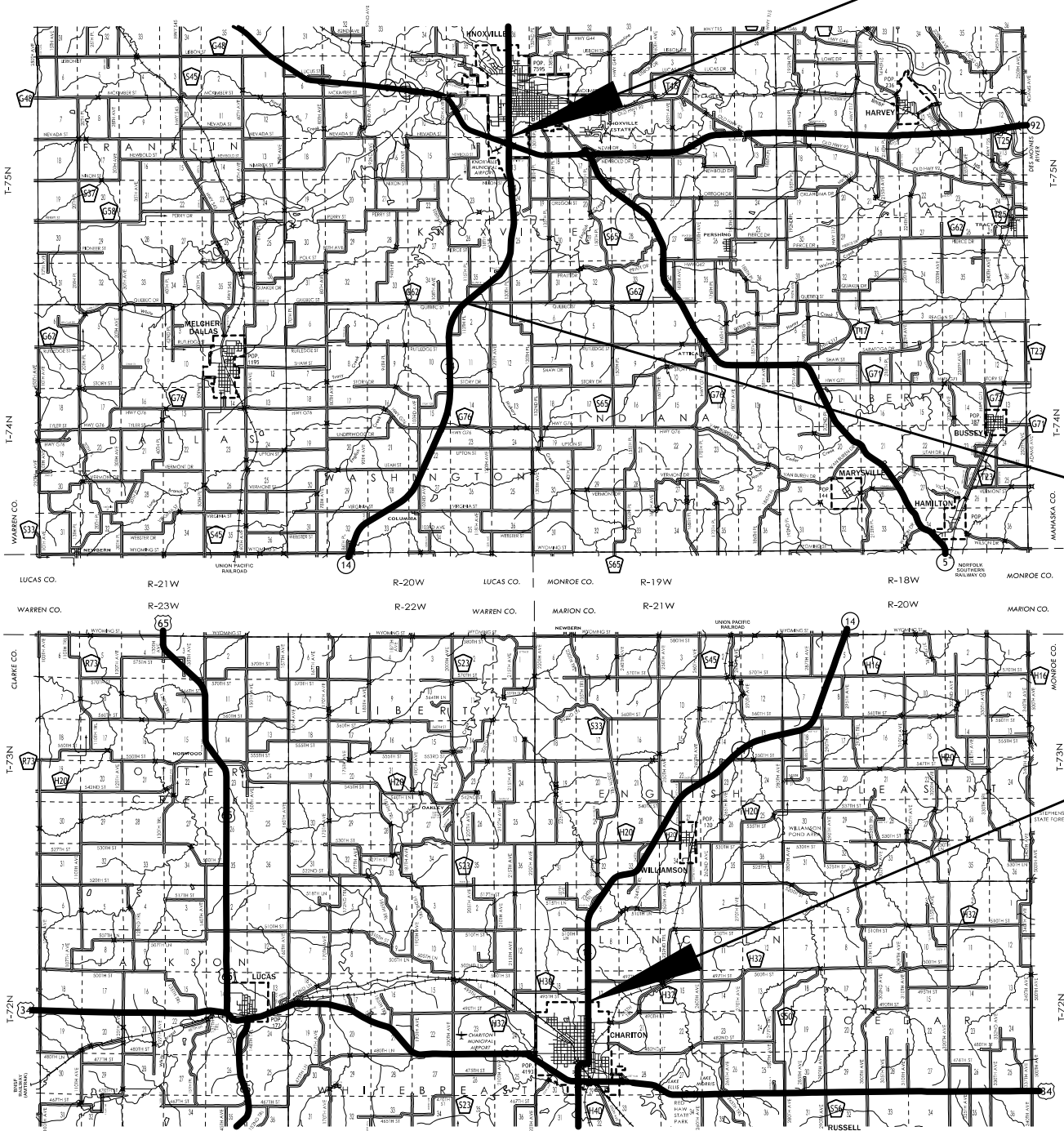
MARION COUNTY

LUCAS COUNTY

END CONSTRUCTION
End Joint Repair
MP 42.7
STA 1294+80

EQUATION
Sta 1080+08.8 BK
= Sta 907+23.0 AH

BEGIN CONSTRUCTION
Begin Joint Repair
MP 19.4
STA 75+45



ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
1	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	223.23	Refer to Tab 108_22.
2	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan on Sheet J.1.
3	2528-8445113	FLAGGERS	EACH	0	See Proposal.
4	2528-8445115	PILOT CARS	EACH	0	
5	2530-0400061	HOT MIX ASPHALT (PARTIAL DEPTH PATCH MATERIAL)	TON	1,101.33	Refer to Tab 102_11. 5% Added for irregularities.
6	2530-5070221	REGULAR PARTIAL DEPTH HOT MIX ASPHALT FINISH PATCHES, BY AREA	SY	6,751.5	
7	2533-4980005	MOBILIZATION	LS	1	--
8	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	289.35	Refer to tab 112-10. For at grade railroad crossings do not place the centerline rumble strips for a distance of 60' on each side of the railroad crossing.
9	2548-0000317	PENETRATING ENGINEERED EMULSION FOR FOG SEAL (CENTERLINE RUMBLE STRIPS)	SY	6,430	Refer to Tab 112-11. Refer to Special Provisions for Penetrating Engineered Emulsion Fog Seal for more information.

100_01D
8/15/22

PROJECT DESCRIPTION

This project is for partial depth HMA longitudinal joint repair of IA 14 in Lucas and Marion Counties.
This project begins at the NCL of Chariton (MP 19.4) and ends at the SCL of Knoxville (MP 42.7).
It includes longitudinal joint repairs, the installation of centerline rumble strips and permanent pavement markings with penetrating engineered emulsion for fog seal.

102_05
9/29/23

EXISTING PAVEMENT																					
Line No.	County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
1.0	Lucas	IA-14	2-Lane	19.4	23.9	2024	S	MP-014-5(704)19--76-59	SS												
2.0	Lucas	IA-14	2-Lane	19.4	23.9	2012		STP-014-2(33)--2C-59	HMA	2.0					SCR	1.0					
3.0	Lucas	IA-14	2-Lane	19.4	23.9	2012	W	STP-014-2(33)--2C-59	HMA	2.0	HMA	8.0									
4.0	Lucas	IA-14	2-Lane	19.4	23.9	1985		FR-14-2(15)--2G-59	BAC	1.5	TBB	1.5					LEMLEY	C.LST.			
5.0	Lucas	IA-14	2-Lane	19.4	23.9	1940		FA-63E(3)	PC8	8.0							EDDYVILLE	GRAVEL	2		
6.0																					
7.0	Lucas	IA-14	2-Lane	23.9	31.16	2024	S	MP-014-5(704)19--76-59	SS												
8.0	Lucas	IA-14	2-Lane	23.9	31.16	2006		STPN-14-2(29)--2J-59	HMA	2.0	HMA	2.5					DURHAM MINE	C.LST.			
9.0	Lucas	IA-14	2-Lane	23.9	31.16	2006	W	STPN-14-2(29)--2J-59	HMA	2.0	HMA	2.5	HMA	10.0							
10.0	Lucas	IA-14	2-Lane	23.9	31.16	1955		F-63(11)	PCC	8.0							DES MOINES	GRAVEL	2		
11.0																					
12.0	Marion	IA-14	2-Lane	31.16	35.06	2024	S	MP-014-5(704)19--76-59	SS												
13.0	Marion	IA-14	2-Lane	31.16	35.06	2006	W	STPN-14-2(29)--2J-59	HMA	2.0	HMA	2.5	HMA	10.0			DURHAM MINE	C.LST.			
14.0	Marion	IA-14	2-Lane	31.16	35.06	2006		STPN-14-2(29)--2J-59	HMA	2.0	HMA	2.5					DURHAM MINE	C.LST.			
15.0	Marion	IA-14	2-Lane	31.16	35.06	1955		F-75(5)	PCC	8.0							WEST DES MOINES	GRAVEL	2		
16.0																					
17.0	Marion	IA-14	2-Lane	35.06	42.7	2024	S	MP-014-5(704)19--76-59	SS												
18.0	Marion	IA-14	2-Lane	35.06	42.7	2012		STP-014-3(41)--2C-63	HMA	2.0					SCR	1.0					
19.0	Marion	IA-14	2-Lane	35.06	42.7	2012	W	STP-014-3(41)--2C-63	HMA	2.0	HMA	4.0									
20.0	Marion	IA-14	2-Lane	35.06	42.7	1985		FR-14-3(23)--2G-63	BAC	1.5	TBB	1.5					DURHAM	C.LST.			
21.0	Marion	IA-14	2-Lane	35.06	42.7	1947		F-75(4) & FA-7(3)	PC8	8.0							WEST DES MOINES	GRAVEL	2		

PARTIAL DEPTH REGULAR HMA FINISH PATCHES								
Line No.	Station	Reference Location Sign	Lane	Patch Length (FT)	Patch Width (FT)	Estimated Area (SY)	Estimated Quantities (TONS)	Remarks
1.0	319+25.00		Centerline	4075.0	2.0	906.0	148.000	End Station: 360+00
2.0	657+00.00		Centerline	120.0	2.0	27.0	4.000	End Station:658+20
3.0	658+20.00		Centerline	1060.0	2.0	236.0	38.000	End Station:668+80
4.0	788+40.00		Centerline	820.0	2.0	182.0	30.000	End Station:796+60
5.0	796+60.00		Centerline	1640.0	2.0	364.0	59.000	End Station:813+00
6.0	813+00.00		Centerline	2550.0	2.0	567.0	92.000	End Station:838+50
7.0	838+50.00		Centerline	1680.0	2.0	373.0	61.000	End Station:855+30
8.0	855+30.00		Centerline	4090.0	2.0	909.0	148.000	End Station:896+20
9.0	945+90.00		Centerline	460.0	2.0	102.0	17.000	End Station:950+50
10.0	950+50.00		Centerline	900.0	2.0	200.0	33.000	End Station:959+50
11.0	959+50.00		Centerline	825.0	2.0	183.0	30.000	End Station:967+75
12.0	967+75.00		Centerline	1055.0	2.0	234.0	38.000	End Station:978+30
13.0	978+30.00		Centerline	870.0	2.0	193.0	32.000	End Station:987+00
14.0	987+00.00		Centerline	600.0	2.0	133.0	22.000	End Station:993+00
15.0	993+00.00		Centerline	750.0	2.0	167.0	27.000	End Station:1000+50
16.0	1000+50.00		Centerline	2050.0	2.0	456.0	74.000	End Station:1021+00
17.0								EQUATION: Sta 1080+08.8 BK = Sta 907+23.0 AH
18.0	947+60.00		Centerline	4420.0	2.0	982.0	160.000	End Station:991+80
19.0	991+80.00		Centerline	970.0	2.0	216.0	35.000	End Station:1001+50
Total:						6430	1048	

Note 1: Assumed depth is 3" for this centerline joint repair.

Note 2: Bid Quantity Partial Depth HMA Material with 5% Irregularities: 1,101.33 TONS

Note 3: Bid Quantity Partial Depth HMA, by Area with 5% Irregularities: 6,751.50 SY

105_04
10/20/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
PM-110	10-15-24	Line Types
PM-420	10-20-26	Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition)
PM-520	10-20-26	Two-Lane Roadway with no Turn Lanes (Two-Way Stop Condition)
PM-521	10-20-26	Two-Lane Roadway with Right Turn Lanes
PM-522	10-20-26	Two-Lane Roadway with Left Turn Lanes
PM-620	10-15-24	Two-Lane Roadway with no Turn Lanes (Four-Way Stop Condition)
PV-13	10-20-26	Milled Centerline Rumble Strips
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-213	04-18-23	Lane Closure with Flaggers
TC-214	04-18-23	Lane Closure with Flaggers for use with Pilot Car
TC-231	04-18-23	Slow Moving Vehicle Operating in the Traffic Lane
TC-233	10-17-17	Pavement Marking Operations Two-Lane

PAVEMENT MARKING LINE TYPES

108_22
11/25/25

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17	BCY6: Broken Centerline (Yellow) @ 0.25	BLC6: Broken Line Contrast (White/Black) @ 0.50	BLW4: Broken Lane Line (White) @ 0.17	BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00	CHW8: Channelizing Line (White) @ 1.33	CHW10: Channelizing Line (White) @ 1.67	CHY8: Channelizing Line (Yellow) @ 1.33	CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00	DCY4: Double Centerline (Yellow) @ 1.34	DCY6: Double Centerline (Yellow) @ 2.00	DDY4: Double Dotted Line (Yellow) @ 0.44	DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22	DLW6: Dotted Line (White) @ 0.33	DLY4: Dotted Line (Yellow) @ 0.22	DLY6: Dotted Line (Yellow) @ 0.33	ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00	ELY4: Edge Line Left (Yellow) @ 0.67	ELY6: Edge Line Left (Yellow) @ 1.00	LDW8: Lane Drop (White) @ 0.33	LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00	NPY4: No Passing Zone Line (Yellow) @ 0.84	NPY6: No Passing Zone Line (Yellow) @ 1.25	RLW4: Ramp Edge Line Right (White) @ 0.67	RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67	RLY6: Ramp Edge Line Left (Yellow) @ 1.00	SLW2: Stop Line (White) @ 4.00	SLW4: Solid Lane Line (White) @ 0.67	SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16	SPW6: Sloped Curb 6" (White) @ 2.28	SPY4: Sloped Curb 4" (Yellow) @ 2.16	SPY6: Sloped Curb 6" (Yellow) @ 2.28	STW6: Standard Curb 6" (Yellow) @ 2.03
STY6: Standard Curb 6" (Yellow) @ 2.03	YLW2: Yield Line (White) @ 1.15			

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	BCY6 Factored (STA)	DCY6 Factored (STA)	NPY6** Factored (STA)	Remarks
1.0	IA 14	319+25.00	360+00.00	40.75	2-Lane	Waterborne/Solvent Paint		X		No		10.19			
2.0	IA 14	657+00.00	658+20.00	1.20	2-Lane	Waterborne/Solvent Paint		X		No				1.50	
3.0	IA 14	658+20.00	668+80.00	10.60	2-Lane	Waterborne/Solvent Paint		X		No		2.65			
4.0	IA 14	788+40.00	796+60.00	8.20	2-Lane	Waterborne/Solvent Paint		X		No		2.05			
5.0	IA 14	796+60.00	813+00.00	16.40	2-Lane	Waterborne/Solvent Paint		X		No				20.50	
6.0	IA 14	813+00.00	838+50.00	25.50	2-Lane	Waterborne/Solvent Paint		X		No		6.38			
7.0	IA 14	838+50.00	855+30.00	16.80	2-Lane	Waterborne/Solvent Paint		X		No				21.00	
8.0	IA 14	855+30.00	896+20.00	40.90	2-Lane	Waterborne/Solvent Paint		X		No		10.22			
9.0	IA 14	945+90.00	950+50.00	4.60	2-Lane	Waterborne/Solvent Paint		X		No				5.75	
10.0	IA 14	950+50.00	959+50.00	9.00	2-Lane	Waterborne/Solvent Paint		X		No			18.00		
11.0	IA 14	959+50.00	967+75.00	8.25	2-Lane	Waterborne/Solvent Paint		X		No				10.31	
12.0	IA 14	967+75.00	978+30.00	10.55	2-Lane	Waterborne/Solvent Paint		X		No		2.64			
13.0	IA 14	978+30.00	987+00.00	8.70	2-Lane	Waterborne/Solvent Paint		X		No				10.88	
14.0	IA 14	987+00.00	993+00.00	6.00	2-Lane	Waterborne/Solvent Paint		X		No			12.00		
15.0	IA 14	993+00.00	1000+50.00	7.50	2-Lane	Waterborne/Solvent Paint		X		No				9.38	
16.0	IA 14	1000+50.00	1021+00.00	20.50	2-Lane	Waterborne/Solvent Paint		X		No		5.13			
17.0															EQUATION: STA 1080+08.8 BK = STA 907+23.0 AH
18.0	IA 14	947+60.00	991+80.00	44.20	2-Lane	Waterborne/Solvent Paint		X		No				55.25	
19.0	IA 14	991+80.00	1001+50.00	9.70	2-Lane	Waterborne/Solvent Paint		X		No			19.40		

Total:				289.35								39.26	49.4	134.57	
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1. Painting Marking Bid Quantity: 223.23 STA

RUMBLE STRIPS

112_10
10/20/26

* Calculated at 18" width for Shoulder.
** For use with penetrating Engineered Fog Seal. Calculated at 2" wider than rumble strips.

Line No.	Road Identification	Station From	Station To	Surface Type	Rumble Strip Lane	Rumble Strip Type	Fog Seal Type	PCC Length (STA)	HMA Length (STA)	Remarks
1.0	IA 14	319+25.00	360+00.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		40.75	
2.0	IA 14	657+00.00	658+20.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		1.20	
3.0	IA 14	658+20.00	668+80.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		10.60	
4.0	IA 14	788+40.00	796+60.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		8.20	
5.0	IA 14	796+60.00	813+00.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		16.40	
6.0	IA 14	813+00.00	838+50.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		25.50	
7.0	IA 14	838+50.00	855+30.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		16.80	
8.0	IA 14	855+30.00	896+20.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		40.90	
9.0	IA 14	945+90.00	950+50.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		4.60	
10.0	IA 14	950+50.00	959+50.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		9.00	
11.0	IA 14	959+50.00	967+75.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		8.25	
12.0	IA 14	967+75.00	978+30.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		10.55	
13.0	IA 14	978+30.00	987+00.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		8.70	
14.0	IA 14	987+00.00	993+00.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		6.00	
15.0	IA 14	993+00.00	1000+50.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		7.50	
16.0	IA 14	1000+50.00	1021+00.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		20.50	
17.0	IA 14									EQUATION: Sta 1080+08.8 BK = Sta 907+23.0 AH
18.0	IA 14	947+60.00	991+80.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		44.20	
19.0	IA 14	991+80.00	1001+50.00	HMA	Centerline	Milled Centerline Rumble Strips	Asphalt Emulsion		9.70	

Total:									289.35	
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HMA Length Bid Quantity: 289.35 STA

FOG SEAL								112_11 4/21/26
Line No.	Station From	Station To	Side	Station Length (Miles)	Station Length (FT)	Width (FT)	Area (SY)	Remarks
1.0	319+25.00	360+00.00	Centerline	0.77	4075.00	2.0	905.6	
2.0	657+00.00	658+20.00	Centerline	0.02	120.00	2.0	26.7	
3.0	658+20.00	668+80.00	Centerline	0.20	1060.00	2.0	235.6	
4.0	788+40.00	796+60.00	Centerline	0.16	820.00	2.0	182.2	
5.0	796+60.00	813+00.00	Centerline	0.31	1640.00	2.0	364.4	
6.0	813+00.00	838+50.00	Centerline	0.48	2550.00	2.0	566.7	
7.0	838+50.00	855+30.00	Centerline	0.32	1680.00	2.0	373.3	
8.0	855+30.00	896+20.00	Centerline	0.77	4090.00	2.0	908.9	
9.0	945+90.00	950+50.00	Centerline	0.09	460.00	2.0	102.2	
10.0	950+50.00	959+50.00	Centerline	0.17	900.00	2.0	200.0	
11.0	959+50.00	967+75.00	Centerline	0.16	825.00	2.0	183.3	
12.0	967+75.00	978+30.00	Centerline	0.20	1055.00	2.0	234.4	
13.0	978+30.00	987+00.00	Centerline	0.16	870.00	2.0	193.3	
14.0	987+00.00	993+00.00	Centerline	0.11	600.00	2.0	133.3	
15.0	993+00.00	1000+50.00	Centerline	0.14	750.00	2.0	166.7	
16.0	1000+50.00	1021+00.00	Centerline	0.39	2050.00	2.0	455.6	
17.0								EQUATION: Sta 1080+08.8 BK = Sta 907+23.0 AH
18.0	947+60.00	991+80.00	Centerline	0.84	4420.00	2.0	982.2	
19.0	991+80.00	1001+50.00	Centerline	0.18	970.00	2.0	215.6	
Total:							6430	

Fog Seal Bid Quantity: 6,430 SY

262_06
9/28/22

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.

108_23A
8/15/22

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. 105-04 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.

111_01 10/14/22 COORDINATED OPERATIONS Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.	
Project	Type of Work
MP-014-5(705)19--76-59	PCC Patching