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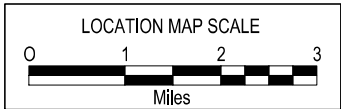
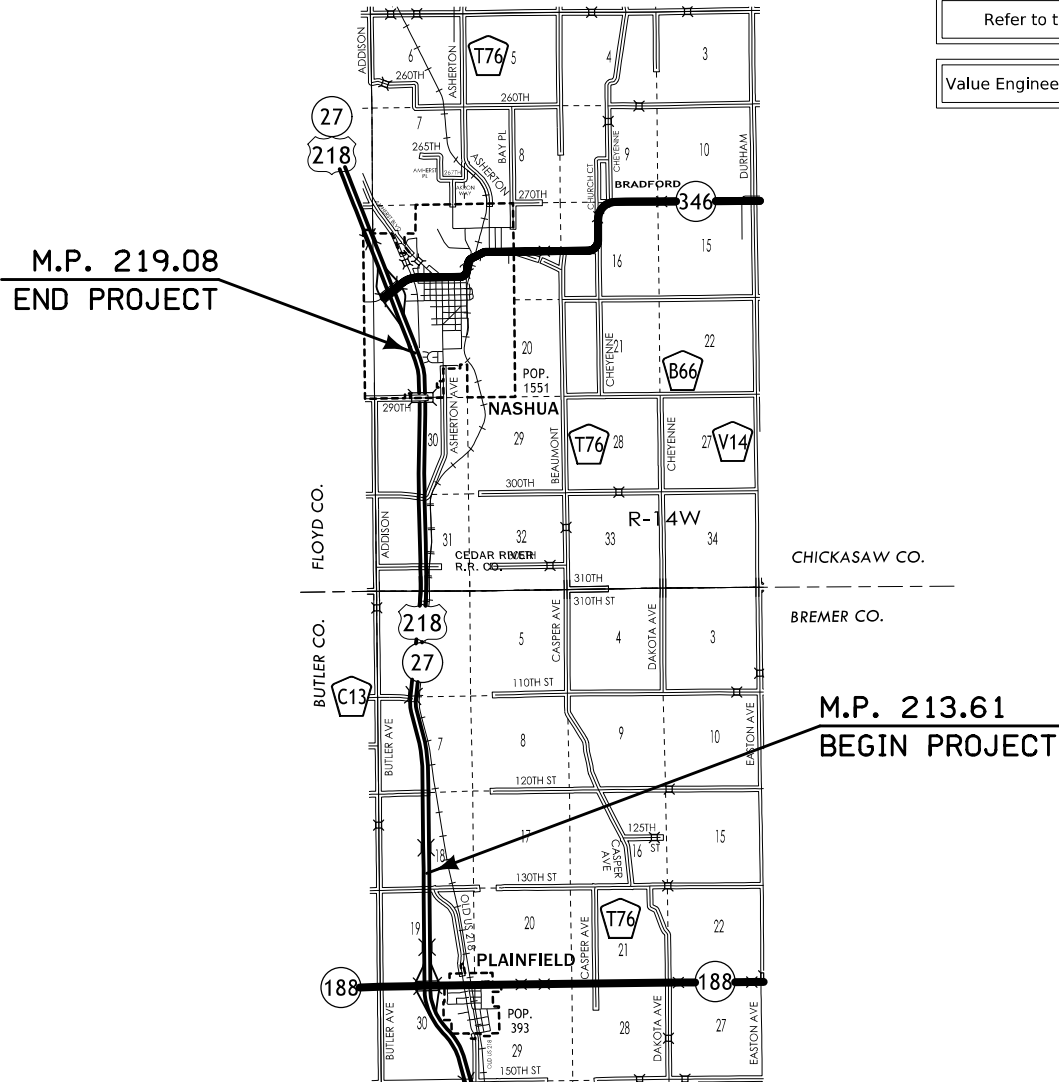


PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
BREMER COUNTY
PCC PATCHING
0.15 mi N of 130th St to S of IA 346 (NB/SB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



BOTH DIRECTIONS			
Co Rd C13 to SCL Nashua			
DESIGN DATA RURAL			
2024	AADT	11200	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		16.44	%
Total Design ESALs		--	

MILEAGE SUMMARY		
		105-1 09-27-94
Div.	Location	Miles
	M.P. 213.61 to M.P. 219.08	5.47
		5.47

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: *D. Rolando* Date: 06/24/2026
DUSTEN D. ROLANDO
Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.1, C.1-C.9, J.1-J.3

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	10	Pavement marking quantity is based on the following assumptions: - For areas of patching where the length of the patch is greater than or equal to 20 LF. - 6 STA of ELW6 (Factored) - 2.9 STA of BLW6 (Factored) - 0.6 STA of ELY6 (Factored) An additional 0.5 STA is added for irregularities.
2	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Tabulation 108-23A for additional information.
3	2529-2242304	CD JOINT ASSEMBLY	EACH	38	Refer to Tabulation 102-06C for additional information. An additional 15% quantity is added for discretionary patches.
4	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	806.15	Refer to Tabulation 102-06C for additional information. An additional 15% area quantity is added to this item for placement as directed by the Engineer.
5	2529-5070111	PATCHES, FULL-DEPTH FINISH, BY AREA (50 FEET OR GREATER IN LENGTH)	SY	197.8	Refer to Tabulation 102-06C for additional information.
6	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	70	Refer to Tabulation 102-06C for additional information. An additional 25% each quantity is added to this item for placement as directed by the Engineer. Discretionary patched are assumed to be less than 50 LF in length.
7	2533-4980005	MOBILIZATION	LS	1	- -
8	2542-1006001	CRACK AND JOINT CLEANING AND FILLING (PCC PAVEMENT)	MILE	3.13	Quantity is based on the length of the cross-stitching.
9	2542-1007000	SEALER MATERIAL (PCC PAVEMENT)	LB	2,224.77	Quantity was calculated using the following assumptions: * 16,535 LF Length * 1/2 IN Width; 1 IN Depth = $1/2 * 1/2 * 1 * 12 = 3$ cu.in./LF * 1 gallon/233 cu.in. & 9.5 pounds/gallon $16535 * 3 * 1/233 * 9.5 = 2,022.52$ pounds - An additional 10% quantity is added for irregularities.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
10	2558-0000200	CROSS-STITCHED TIE BAR	EACH	8,886	Refer to Tabulation 102-17 for additional information. An additional 5% quantity is added to this item for irregularities.

253_01
9/28/22

MEDIAN CROSSOVER

The Contractor is prohibited from using any established or other type median crossover on this project unless specifically designated for the Contractor's use by this plan.

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.

100_01D
8/15/22

PROJECT DESCRIPTION

This project includes PCC patching and PCC cross-stitching of US 218 NB and SB between Nashua and Plainfield.

105_04 4/21/26 STANDARDS The following Standards apply to construction work on this project.		
Number	Date	Title
PM-110	10-15-24	Line Types
PM-560	10-15-24	Divided Multi-Lane Roadway with no Turn Lanes
PM-561	10-15-24	Divided Multi-Lane Roadway with Right Turn Lanes
PM-562	10-15-24	Divided Multi-Lane Roadway with Left Turn Lanes
PR-103	10-21-25	Full Depth PCC Patch with Dowels
PR-109	10-15-24	Cross Stitching of PCC Pavement
PV-101	10-21-25	Joints
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-418	04-18-23	Lane Closure on Divided Highway

EXISTING PAVEMENT																					102_05 9/29/23
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	Bremer	US 218	SB	213.61	219.08	2002	Grade/Pave	NHSX-218-8(43)--3H-09	PCC	9.5			Granular	11.0			Lacosta	CLST	3i		A
2.0	Bremer	US 218	NB	213.61	219.08	2002	Grade/Pave	NHSN-218-8(67)--2R-09	PCC	9.5			Granular	10.0			Lacosta	CLST	3i		

(A) - The SB lanes were constructed in 2 segments within project limits. No cross stitching shall be performed from M.P. 216.73 to M.P. 219.19 in the SB lanes only.

Line No.	Count	Station	Reference Location Sign	Direction of Travel	Side	Length (FT)	Width (FT)	Patch Thickness (IN)	Patch Repair or Finish	PCC Patch Type	PCC Patch Quantity (SY)	HMA Patches (SY)	Composite HMA (TON)	Subbase Patches (PR-140) (SY)	Subbase Patch with 'EF' Joint (PR-101) (SY)	Patch Subdrain PR-101 or PR-140 (No.)	'CD' Joints (No.)	'CT' Joints (No.)	'EF' Joints PR-101 (No.)	Anchor Lugs Removal (No.)	Remarks
1.0	1		212.86	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
2.0	1		212.90	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
3.0	1		212.91	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
4.0	1		213.11	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				Half Width @ CL
5.0	1		213.17	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
6.0	1		213.18	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
7.0	1		213.40	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				Half Width @ CL
8.0	1		213.58	NB	Right	20.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	31.1						1				Full Panel
9.0	1		213.69	NB	Right	60.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	40.0						3				Half Width @ CL
10.0	1		213.76	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				
11.0	1		214	NB	Right	10.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	15.6										
12.0	1		214.02	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
13.0	1		214.11	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				Half Width @ CL
14.0	1		214.19	NB	Right	20.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	31.1						1				Full Panel
15.0	1		214.28	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
16.0	1		214.49	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				Half Width @ CL
17.0	1		214.55	NB	Right	60.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	40.0						3				Half Width @ CL
18.0	1		214.81	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
19.0	1		214.85	NB	Right	20.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	31.1						1				Full Panel
20.0	1		215.06	NB	Right	6.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	9.3										
21.0	1		215.09	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										
22.0	1		215.11	NB	Right	20.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	31.1						1				Full Panel
23.0	1		215.13	NB	Right	30.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	46.7						1				Full Panel
24.0	1		215.15	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				Half Width @ CL
25.0	1		215.19	NB	Right	6.0	14.0	9.5	Finish	PCC With Dowels (PR-103)	9.3										
26.0	1		215.52	NB	Right	20.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	13.3						1				
27.0	1		215.61	NB	Right	6.0	6.0	9.5	Finish	PCC With Dowels (PR-103)	4.0										

FULL-DEPTH PATCHES																					102_06C 4/21/26
Line No.	Count	Station	Reference Location Sign	Direction of Travel	Side	Length (FT)	Width (FT)	Patch Thickness (IN)	Patch Repair or Finish	PCC Patch Type	PCC Patch Quantity (SY)	HMA Patches (SY)	Composite HMA (TON)	Subbase Patches (PR-140) (SY)	Subbase Patch with 'EF' Joint (PR-101) (SY)	Patch Subdrain PR-101 or PR-140 (No.)	'CD' Joints (No.)	'CT' Joints (No.)	'EF' Joints PR-101 (No.)	Anchor Lugs Removal (No.)	Remarks
Total:		56									898.8						33				
FILE NO.		ENGLISH	DESIGN TEAM Rolando \ Johnson							BREMER COUNTY			PROJECT NUMBER MP-218-2(707)214--76-09				SHEET NUMBER C.8				

CROSS STITCHING					
Refer to PR-109					
1.0	US 218	NB	43.00	9.5	23
2.0	US 218	NB	58.00	9.5	30
3.0	US 218	NB	39.00	9.5	21
4.0	US 218	NB	30.00	9.5	16
5.0	US 218	NB	100.00	9.5	51
6.0	US 218	NB	40.00	9.5	21
7.0	US 218	NB	10.00	9.5	6
8.0	US 218	NB	143.00	9.5	73
9.0	US 218	NB	31.00	9.5	17
10.0	US 218	NB	82.00	9.5	42
11.0	US 218	NB	71.00	9.5	37
12.0	US 218	NB	80.00	9.5	41
13.0	US 218	NB	401.00	9.5	202
14.0	US 218	NB	154.00	9.5	78
15.0	US 218	NB	132.00	9.5	67
16.0	US 218	NB	73.00	9.5	38
17.0	US 218	NB	77.00	9.5	40
18.0	US 218	NB	76.00	9.5	39
19.0	US 218	NB	120.00	9.5	61
20.0	US 218	NB	52.00	9.5	27
21.0	US 218	NB	218.00	9.5	110
22.0	US 218	NB	537.00	9.5	270
23.0	US 218	NB	27.00	9.5	15
24.0	US 218	NB	188.00	9.5	95
25.0	US 218	NB	66.00	9.5	34
26.0	US 218	NB	155.00	9.5	79
27.0	US 218	NB	187.00	9.5	95
28.0	US 218	NB	45.00	9.5	24
29.0	US 218	NB	364.00	9.5	183
30.0	US 218	NB	264.00	9.5	133
31.0	US 218	NB	86.00	9.5	44
32.0	US 218	NB	71.00	9.5	37
33.0	US 218	NB	252.00	9.5	127
34.0	US 218	NB	396.00	9.5	199
35.0	US 218	NB	70.00	9.5	36
36.0	US 218	NB	590.00	9.5	296
37.0	US 218	NB	262.00	9.5	132
38.0	US 218	NB	215.00	9.5	109
39.0	US 218	NB	81.00	9.5	42
40.0	US 218	NB	102.00	9.5	52
41.0	US 218	NB	326.00	9.5	164
42.0	US 218	NB	55.00	9.5	29
43.0	US 218	NB	38.00	9.5	20
44.0	US 218	NB	121.00	9.5	62
45.0	US 218	NB	249.00	9.5	126
46.0	US 218	NB	143.00	9.5	73
47.0	US 218	NB	119.00	9.5	61
48.0	US 218	NB	61.00	9.5	32
49.0	US 218	NB	167.00	9.5	85
50.0	US 218	NB	117.00	9.5	60
51.0	US 218	NB	35.00	9.5	19
52.0	US 218	NB	33.00	9.5	18
53.0	US 218	NB	173.00	9.5	88
54.0	US 218	NB	261.00	9.5	132
55.0	US 218	NB	217.00	9.5	110

CROSS STITCHING					
Refer to PR-109					
56.0	US 218	NB	70.00	9.5	36
57.0	US 218	NB	39.00	9.5	21
58.0	US 218	NB	74.00	9.5	38
59.0	US 218	NB	227.00	9.5	115
60.0	US 218	NB	103.00	9.5	53
61.0	US 218	NB	156.00	9.5	79
62.0	US 218	NB	146.00	9.5	74
63.0	US 218	NB	111.00	9.5	57
64.0	US 218	NB	66.00	9.5	34
65.0	US 218	NB	150.00	9.5	76
66.0	US 218	NB	67.00	9.5	35
67.0	US 218	NB	172.00	9.5	87
68.0	US 218	NB	28.00	9.5	15
69.0	US 218	NB	100.00	9.5	51
70.0	US 218	NB	148.00	9.5	75
71.0	US 218	NB	135.00	9.5	69
72.0	US 218	NB	81.00	9.5	42
73.0	US 218	NB	30.00	9.5	16
74.0	US 218	NB	29.00	9.5	16
75.0	US 218	NB	45.00	9.5	24
76.0	US 218	NB	225.00	9.5	114
77.0	US 218	NB	73.00	9.5	38
78.0	US 218	NB	82.00	9.5	42
79.0	US 218	NB	159.00	9.5	81
80.0	US 218	NB	201.00	9.5	102
81.0	US 218	NB	67.00	9.5	35
82.0	US 218	NB	76.00	9.5	39
83.0	US 218	NB	34.00	9.5	18
84.0	US 218	NB	46.00	9.5	24
85.0	US 218	NB	107.00	9.5	55
86.0	US 218	NB	118.00	9.5	60
87.0	US 218	NB	55.00	9.5	29
88.0	US 218	NB	40.00	9.5	21
89.0	US 218	NB	150.00	9.5	76
90.0	US 218	NB	94.00	9.5	48
91.0	US 218	NB	949.00	9.5	476
92.0					
93.0	US 218	SB	32.00	9.5	17
94.0	US 218	SB	43.00	9.5	23
95.0	US 218	SB	20.00	9.5	11
96.0	US 218	SB	12.00	9.5	7
97.0	US 218	SB	41.00	9.5	22
98.0	US 218	SB	15.00	9.5	9
99.0	US 218	SB	32.00	9.5	17
100.0	US 218	SB	52.00	9.5	27
101.0	US 218	SB	73.00	9.5	38
102.0	US 218	SB	23.00	9.5	13
103.0	US 218	SB	14.00	9.5	8
104.0	US 218	SB	93.00	9.5	48
105.0	US 218	SB	40.00	9.5	21
106.0	US 218	SB	35.00	9.5	19
107.0	US 218	SB	37.00	9.5	20
108.0	US 218	SB	18.00	9.5	10
109.0	US 218	SB	46.00	9.5	24
110.0	US 218	SB	78.00	9.5	40

CROSS STITCHING					
Refer to PR-109					
Line No.	Roadway Identification	Side	Length (FT)	Existing Pavement Thickness (T) (IN)	Cross-Stitched Tie Bar (EA)
111.0	US 218	SB	45.00	9.5	24
112.0	US 218	SB	62.00	9.5	32
113.0	US 218	SB	110.00	9.5	56
114.0	US 218	SB	22.00	9.5	12
115.0	US 218	SB	48.00	9.5	25
116.0	US 218	SB	45.00	9.5	24
117.0	US 218	SB	163.00	9.5	83
118.0	US 218	SB	29.00	9.5	16
119.0	US 218	SB	21.00	9.5	12
120.0	US 218	SB	53.00	9.5	28
121.0	US 218	SB	31.00	9.5	17
122.0	US 218	SB	14.00	9.5	8
123.0	US 218	SB	32.00	9.5	17
124.0	US 218	SB	21.00	9.5	12
125.0	US 218	SB	24.00	9.5	13
126.0	US 218	SB	382.00	9.5	192
127.0	US 218	SB	89.00	9.5	46
128.0	US 218	SB	85.00	9.5	44
129.0	US 218	SB	176.00	9.5	89
130.0	US 218	SB	59.00	9.5	31
131.0	US 218	SB	104.00	9.5	53
132.0	US 218	SB	68.00	9.5	35
133.0	US 218	SB	40.00	9.5	21
134.0	US 218	SB	135.00	9.5	69
135.0	US 218	SB	38.00	9.5	20
136.0	US 218	SB	44.00	9.5	23
137.0	US 218	SB	41.00	9.5	22
138.0	US 218	SB	42.00	9.5	22
139.0	US 218	SB	29.00	9.5	16
140.0	US 218	SB	88.00	9.5	45
141.0	US 218	SB	22.00	9.5	12
142.0	US 218	SB	86.00	9.5	44
143.0	US 218	SB	19.00	9.5	11
144.0	US 218	SB	107.00	9.5	55
145.0	US 218	SB	24.00	9.5	13
146.0	US 218	SB	39.00	9.5	21
147.0	US 218	SB	22.00	9.5	12
148.0	US 218	SB	29.00	9.5	16
149.0	US 218	SB	18.00	9.5	10
150.0	US 218	SB	48.00	9.5	25
151.0	US 218	SB	98.00	9.5	50
152.0	US 218	SB	49.00	9.5	26
153.0	US 218	SB	129.00	9.5	66
154.0	US 218	SB	19.00	9.5	11
155.0	US 218	SB	113.00	9.5	58
156.0	US 218	SB	118.00	9.5	60
157.0	US 218	SB	163.00	9.5	83
158.0	US 218	SB	32.00	9.5	17
Total:			16535	8463	

All locations are located in the outside (driving) lanes unless otherwise noted.
Beginning mileposts provided for location reference. Length continues in the respective direction of travel.
A 9.5" depth is used for thickness of existing pavement (240 mm).

108_23A
8/15/22

TRAFFIC CONTROL PLAN

Through traffic shall be maintained at all times.

511 TRAVEL RESTRICTIONS										108_25 3/28/24
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Remarks
1.0	US 218	NB	Bremer					None		No travel restrictions anticipated
2.0	US 218	NB	Chickasaw					None		No travel restrictions anticipated
3.0	US 218	SB	Bremer					None		No travel restrictions anticipated
4.0	US 218	SB	Chickasaw					None		No travel restrictions anticipated

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
	To be discussed at PreCon