IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS FOR LAKE MANAWA STATE PARK CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE

POTTAWATTAMIE COUNTY, IOWA

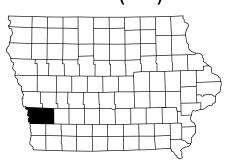
PROJECT # 23-04-78-01 IDOT PROJECT # SP-627-0(13)—7C-78



	I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED UNDER MY SUPERVISION AND THAT ENGINEERING DECISIONS WITH REGARD TO THE DESIGN WERE MADE BY ME UNDER THE LAWS OF THE STATE OF IOWA.
	SIGNATURE DATE
	MANDI L. ALDRICH PETERS
	PRINTED OR TYPED NAME
- 1	MV HOENCE DENEWAL DATE IS DECEMBED 21 20 25

SIGNATURE	DATE
MANDI L. ALDRICH PETERS PRINTED OR TYPED NAME	
MY LICENCE RENEWAL DATE IS DECEMBER 31, 20 25 PAGES COVERED BY THIS SEAL: ALL	

DIRECTORY							
PROJECT	MANAGER	CONSTRUCTION INSPECTOR					
COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES	COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES				
ADDRESS	6200 PARK AVE.	ADDRESS					
CITY,STATE,ZIP	DES MOINES, IA, 50321	CITY,STATE,ZIP					
CONTACT	MANDI L. ALDRICH PETERS	CONTACT	JASON KRUSE				
TELEPHONE	515-205-1698	TELEPHONE	(515) 250-3707				
FAX		FAX					
EMAIL	Mandi.Aldrich-Peters@dnr.iowa.gov	EMAIL	Jason.Kruse@dnr.iowa.gov				



PROJECT DESCRIPTION

This project consists of a crack and seat overlay on South Shore Drive at Manawa State Park and pavement maintenance on roads near the beach parking lot. Work to include double reinforced PCC pavement over two existing culverts, crack and seat. HMA overlay 2.13 miles of existing PCC, paint markings and granular fille on both sides of the new pavement surface of South Shore Drive. Patch, clean and seal cracks, and fog seal 0.36 miles of existing HMA roads near the beach parking lot.

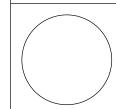


AUTHORIZATION TO BID

AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY DATE

ENGINEERING BUREAU CHIE

	SHEET INDEX
A.01	COVER SHEET
A.02	LOCATION MAP
B.01	TYPICAL CROSS SECTIONS AND DETAILS
B.02	TYPICAL CROSS SECTIONS AND DETAILS
B.03	TYPICAL CROSS SECTIONS AND DETAILS
B.04	TYPICAL CROSS SECTIONS AND DETAILS
B.05	TYPICAL CROSS SECTIONS AND DETAILS
B.06	TYPICAL CROSS SECTIONS AND DETAILS
B.07	TYPICAL CROSS SECTIONS AND DETAILS
B.08	TYPICAL CROSS SECTIONS AND DETAILS
C.01	QUANTITIES AND GENERAL INFORMATION
C.02	QUANTITIES AND GENERAL INFORMATION
C.03	QUANTITIES AND GENERAL INFORMATION
C.04	QUANTITIES AND GENERAL INFORMATION
D.01 D.02	SITE PLAN
D.02	SITE PLAN
D.03	SITE PLAN
D.04	SITE PLAN
D.05	SITE PLAN
D.07	SITE PLAN
D.08	SITE PLAN
J.01	STAGING PLAN
J.02	TRAFFIC CONTROL
J.03	TRAFFIC CONTROL



IOWA DEPARTMENT OI NATURAL RESOURCES

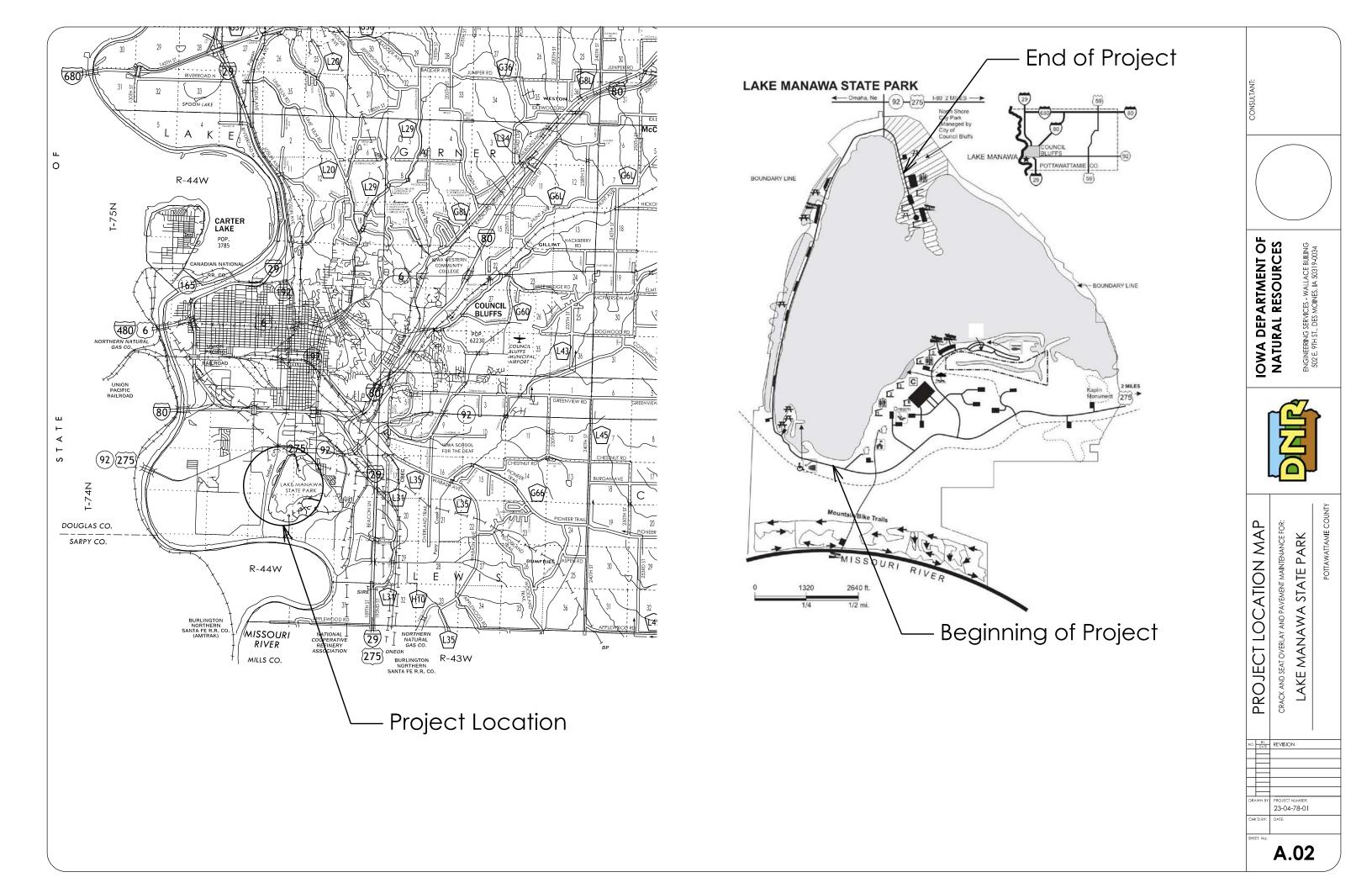
ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034

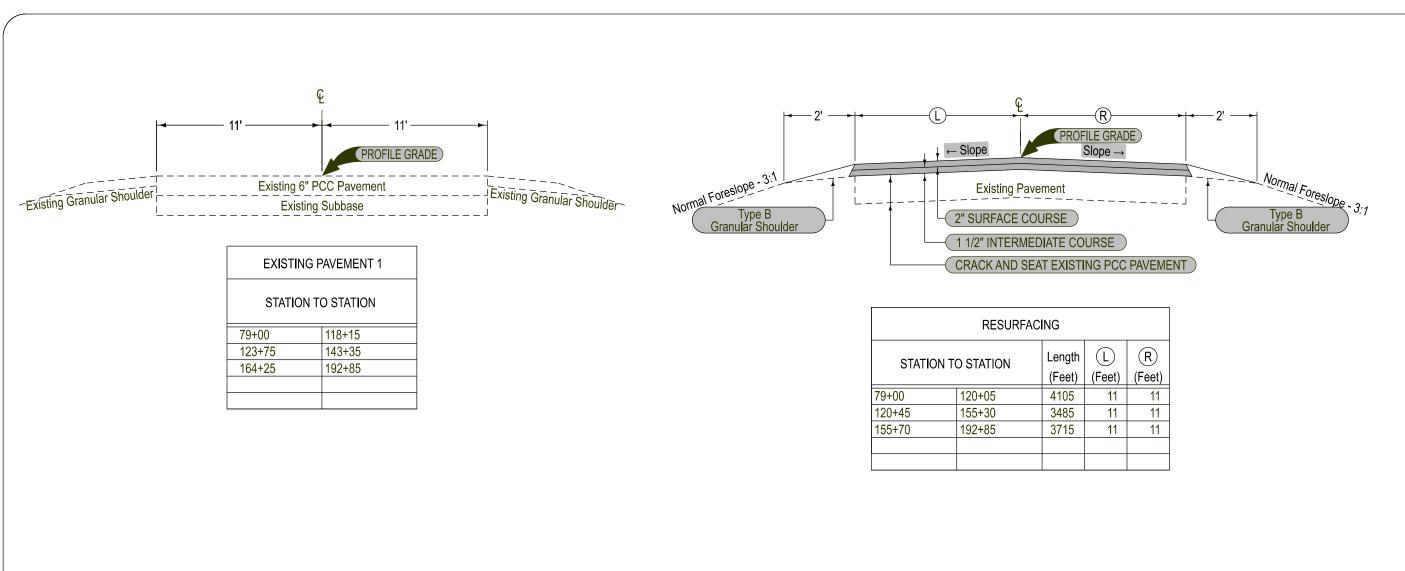


STATE PARK **COVER SHEET** LAKE MANAWA

O. BY REVISION

A.01





IOWA DEPARTMENT OF NATURAL RESOURCES

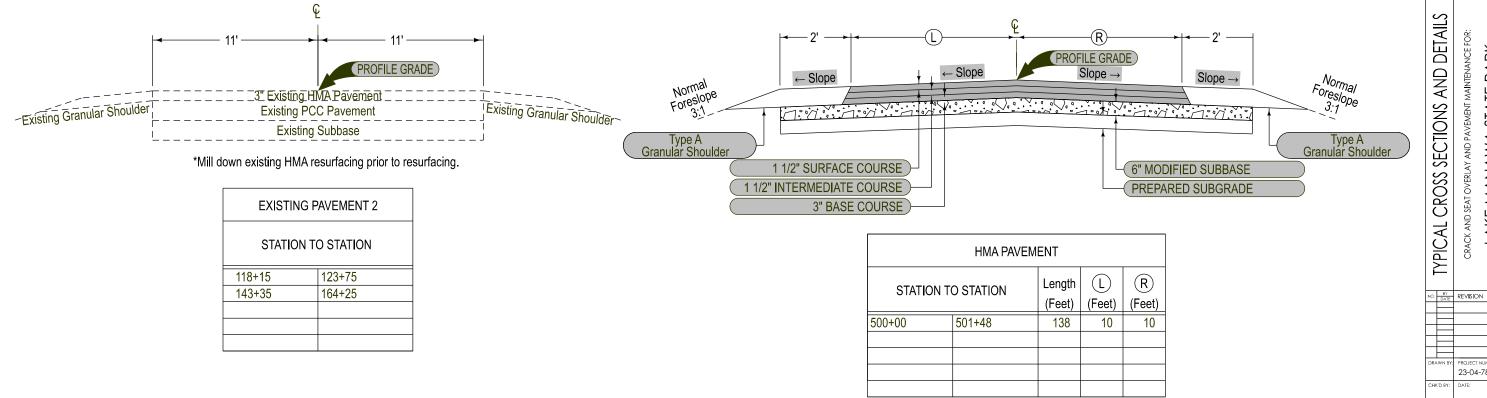
ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034

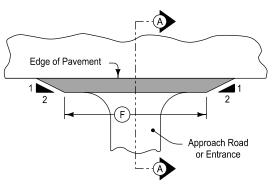
POTTAWATTAMIE COUNTY

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

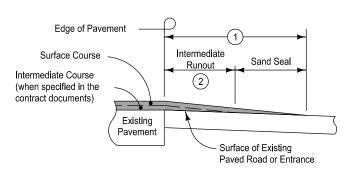
LAKE MANAWA STATE PARK

23-04-78-01





TYPICAL PLAN FOR FILLET AT ENTRANCE OR INTERSECTING ROAD



SECTION A-A (WEDGE SHAPED FILLET)

NORMAL FILLET SIZES							
TYPE OF ACCESS	F Min ft.						
Residential Entrance	40						
Farm Entrance	60						
Commercial Entrance	80						
Non-Paved Road	100						
Paved Road	Variable*						

* See layout drawing for details of construction of special areas.

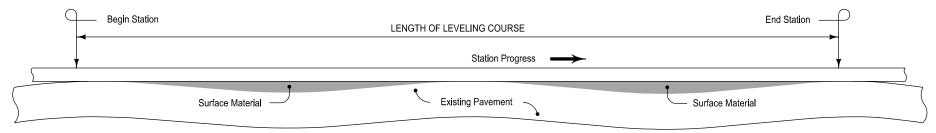
Unless specified otherwise, construct full runouts for HMA resurfacing at a rate of 50 feet for each 1 inch of resrufacing thickness.

Construct temporary runouts at a length of 10 feet for each 1 inch of resurfacing thickness. Place subgrade paper, burlap, or similar material over adjacent surfaces to facilitate removal of wedges.

Construct wedge shaped HMA fillets at all paved entrances and paved intersecting roads. Construct full thickness fillets at all non-paved entrances and non-paved side roads.

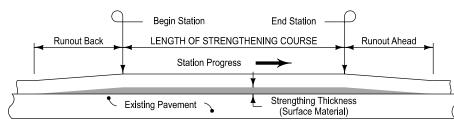
Fillet sizes as listed in the Normal Fillet Sizes table are recommended and are to be used for design and estimating purposes. The Engineer will establish the length and width of each individual fillet to accommodate conditions at the site.

- (1) Fillet width is 3.33 feet for each inch of overlay thickness.
- 2 The ratio of the Intermediate Course runout length to the total runout length is the same as the ratio of the Intermediate Course resurfacing thickness to the total resurfacing thickness.
- 3 Special shaping of existing surface prior to placement of fillet may be required by the Engineer and is incidental to other work on the project.
- (4) For existing fillets at non-paved roads and entrances, construct a wedge shaped fillet matching the thickness of the resurfacing.



LEVELING COURSE

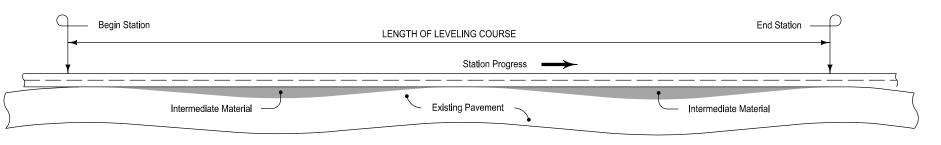
(See Tabulation for Location)



STRENGTHENING COURSE

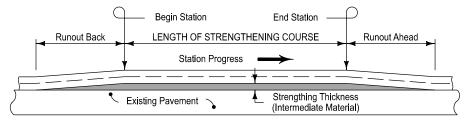
(See Tabulation for Location)

SINGLE COURSE RESURFACING



LEVELING COURSE

(See Tabulation for Location)

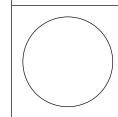


STRENGTHENING COURSE

(See Tabulation for Location)

DOUBLE COURSE RESURFACING

HOT MIX ASPHALT RESURFACING



IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034

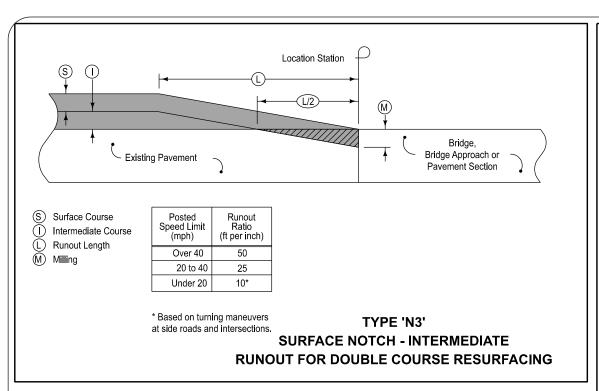


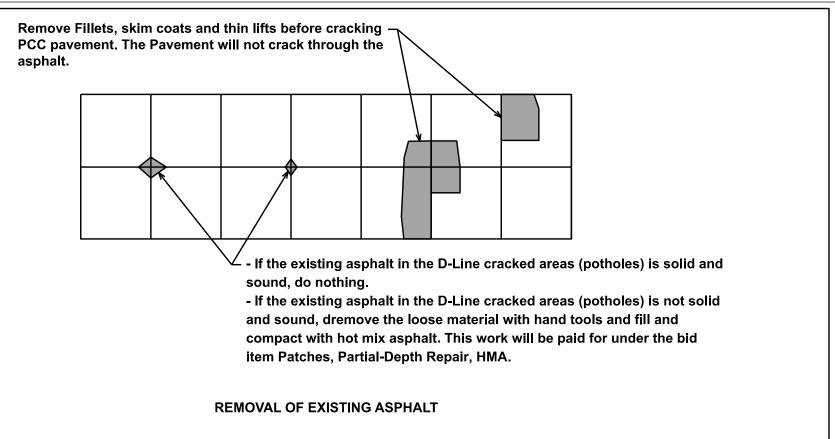
AVEMENT MAINTENANCE FOR:

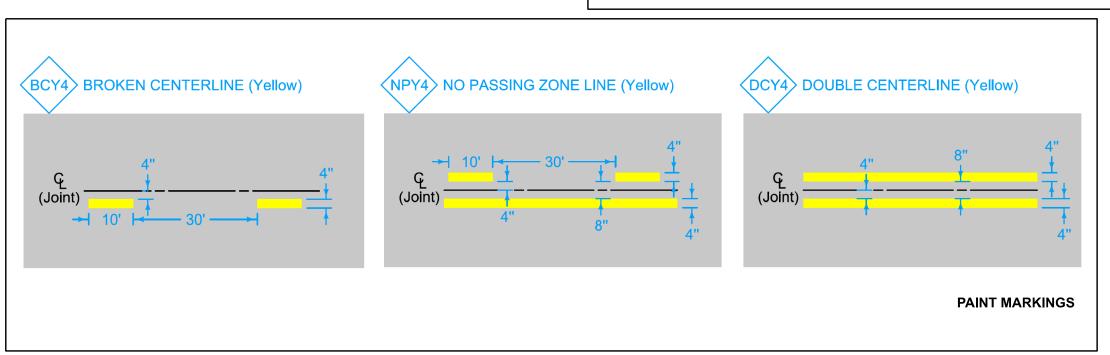
STATE PARK

TYPICAL CROSS SECTIONS AND DETAILS LAKE MANAWA

NO. BY REVISION 23-04-78-01









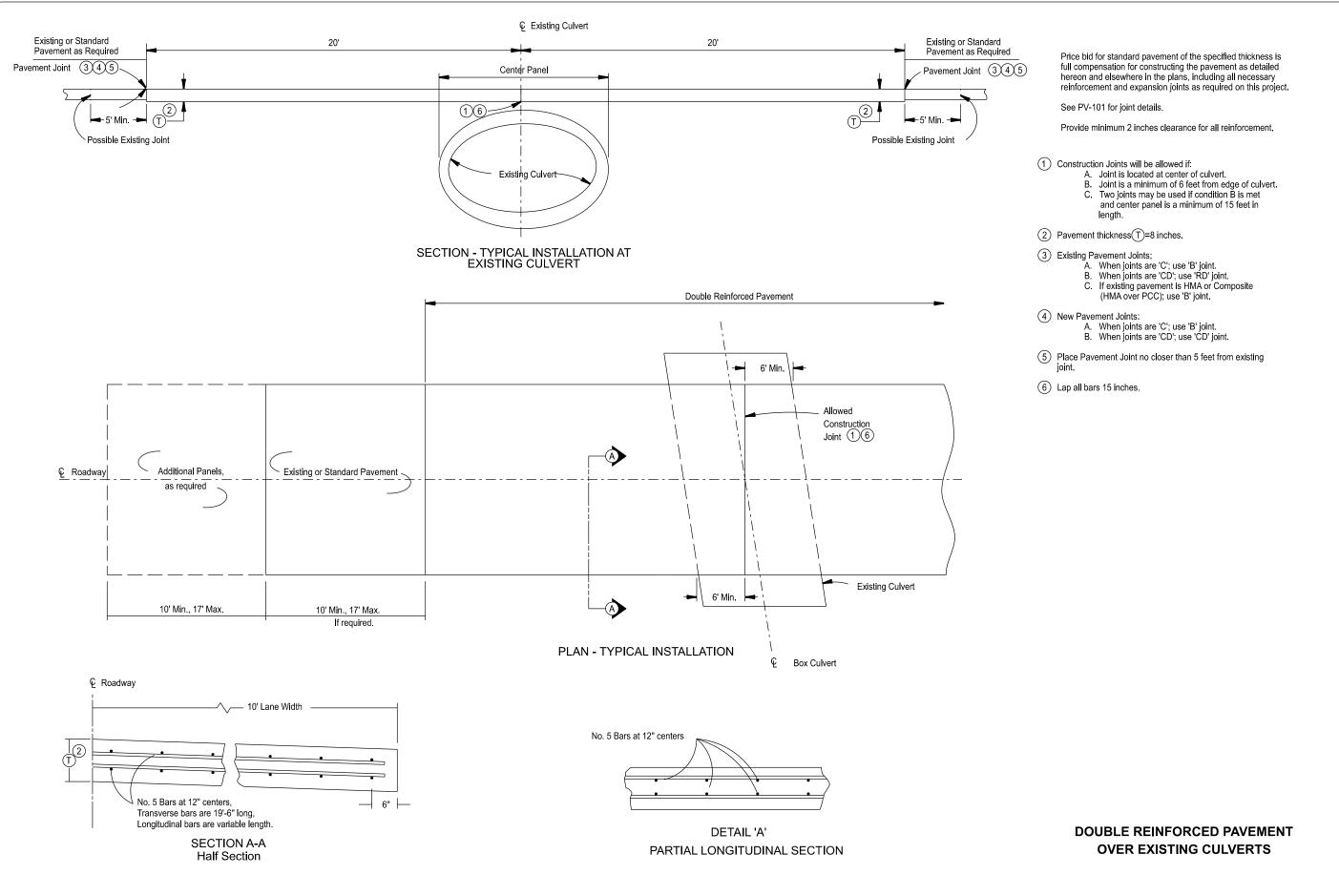
IOWA DEPARTMENT OF NATURAL RESOURCES

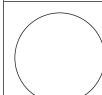
ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034

YPICAL CROSS SECTIONS AND DETAILS CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

_		
NO.	BY DATE	REVISION
DR/	WN BY:	
		23-04-78-01
CH	CD BY:	DATE:





ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034

IOWA DEPARTMENT OF NATURAL RESOURCES



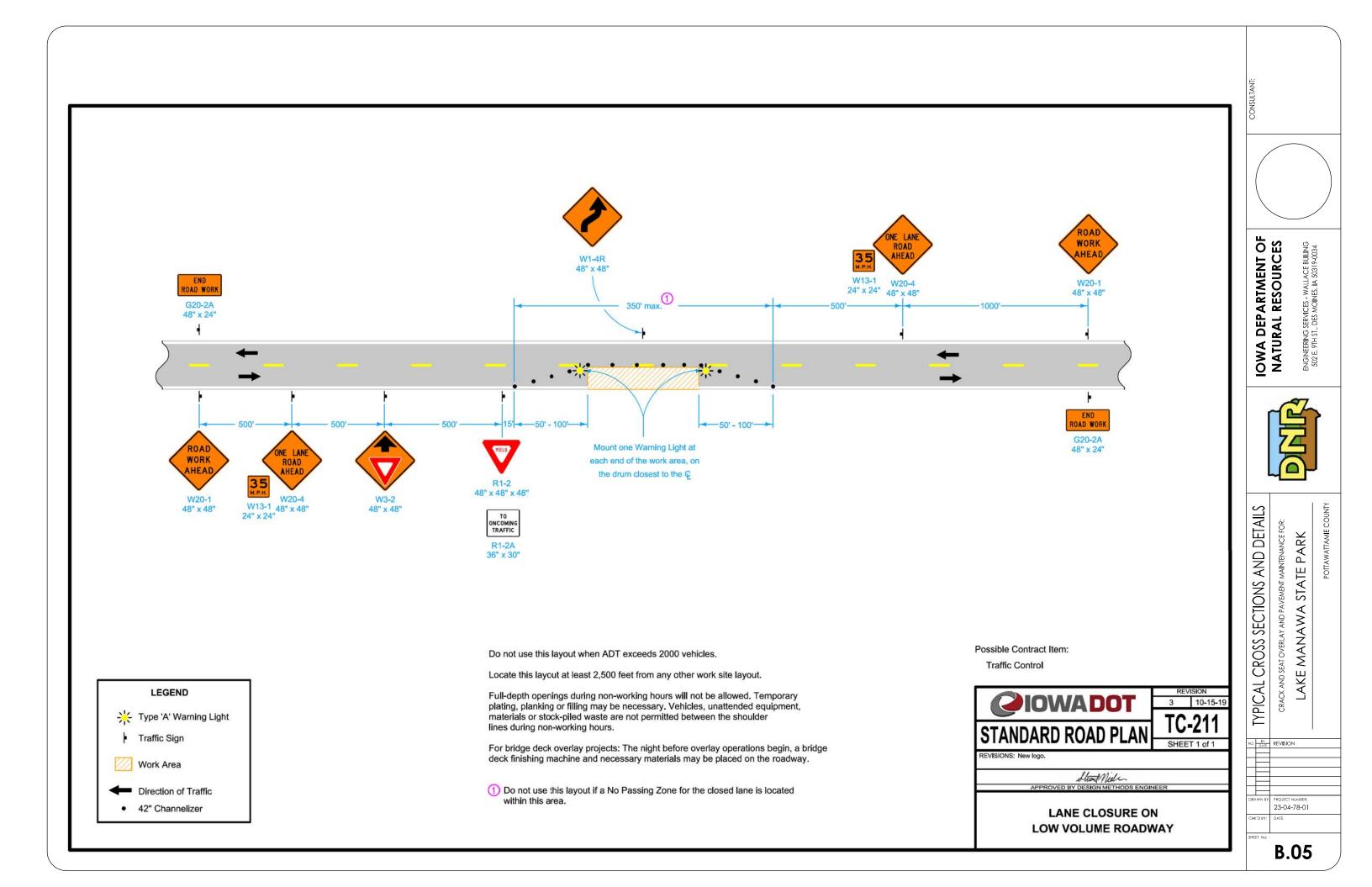
AVEMENT MAINTENANCE FOR:

POTTAWATTAMIE COUNTY

TYPICAL CROSS SECTIONS AND DETAILS RACK AND SEAT OVERLAY AND PAVE

LAKE MANAWA S

NO. BY REVISION 23-04-78-01





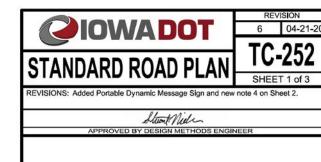
Typical Sign Placement



Sign Placement with Supplemental Sign

Possible Contract Items: Traffic Control Safety Closures Portable Dynamic Message Sign

Possible Tablulation: 108-13A



ROUTES CLOSED TO TRAFFIC

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034

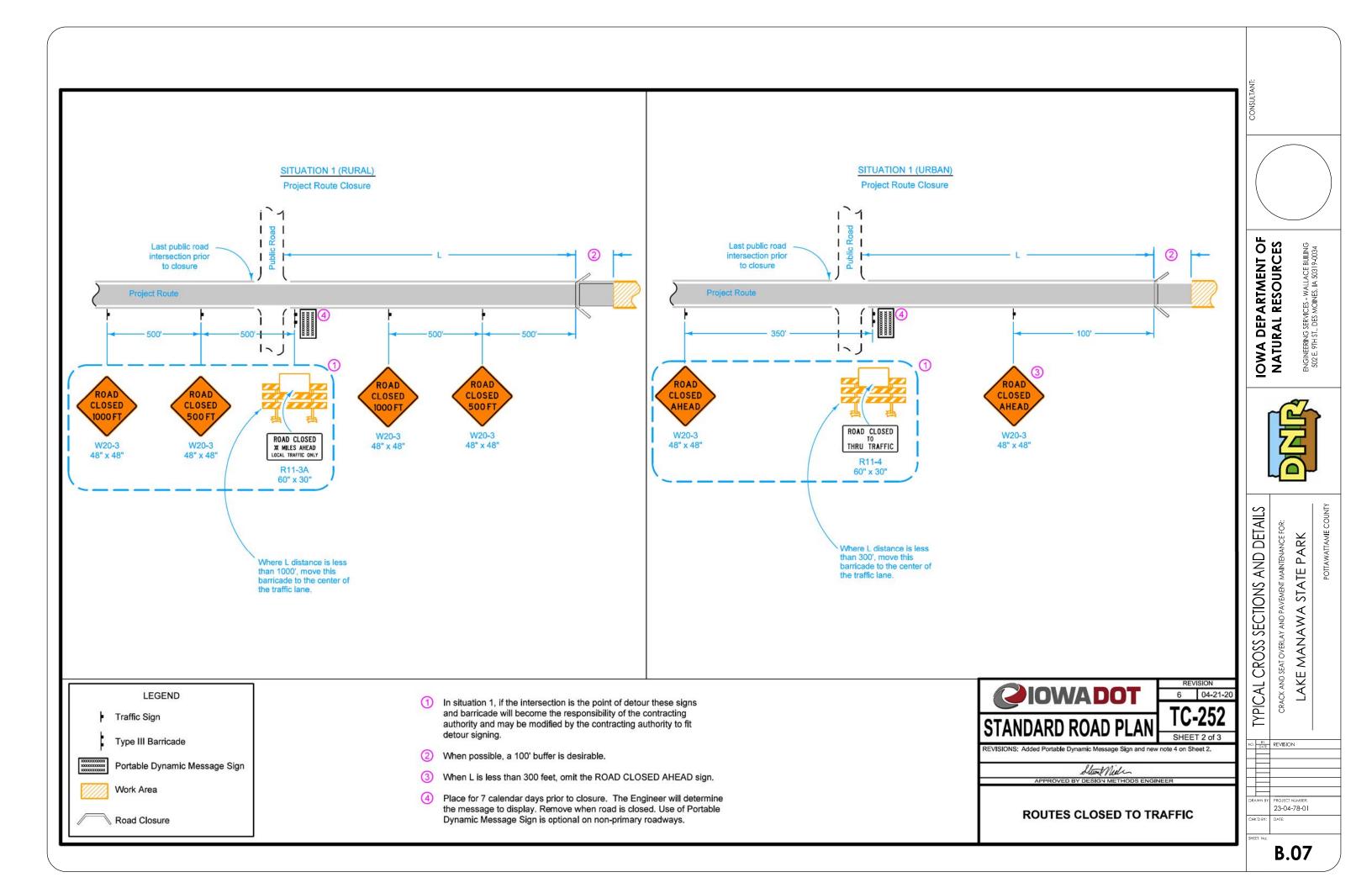


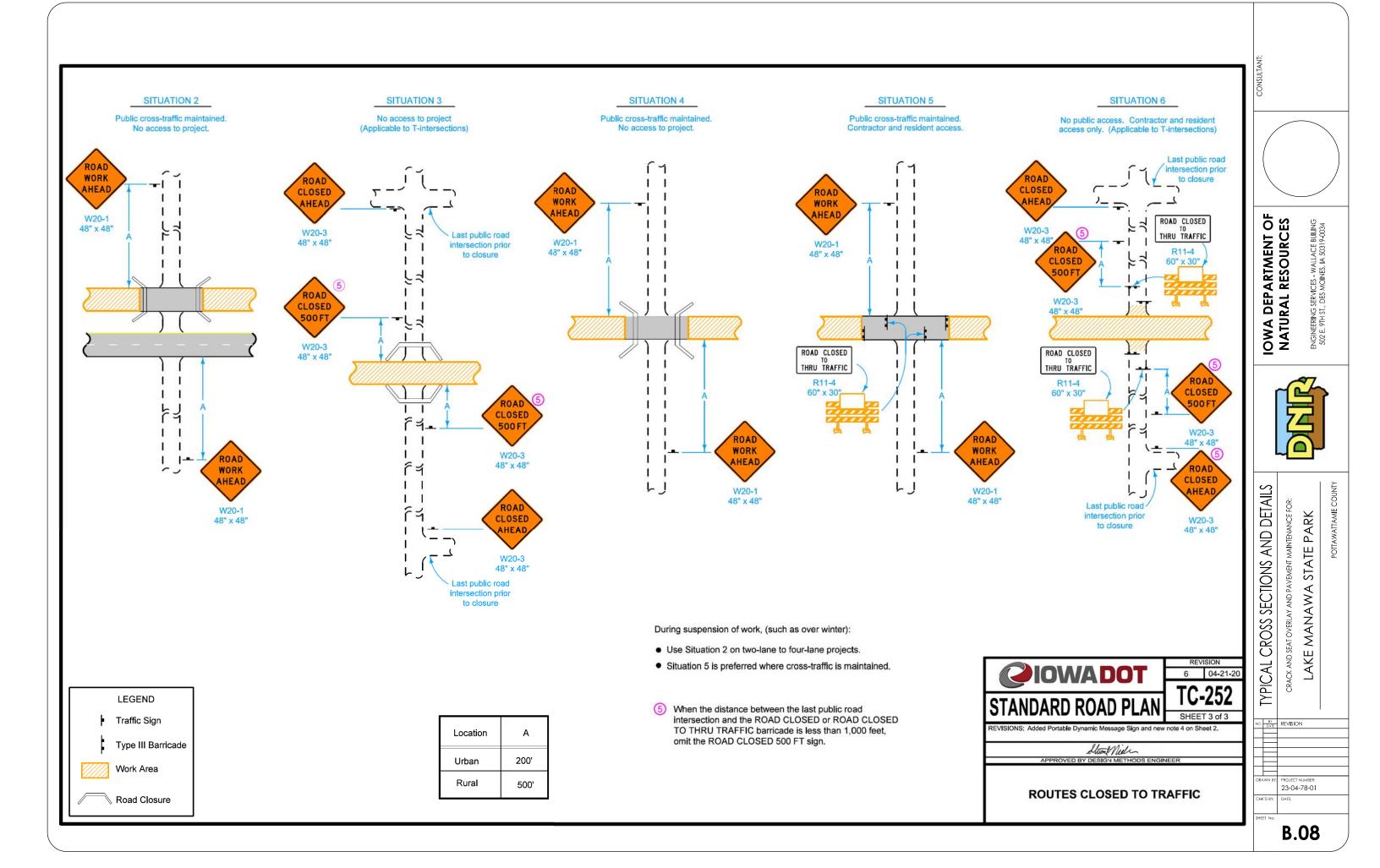
CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

TYPICAL CROSS SECTIONS AND DETAILS NO. BY REVISION

23-04-78-01





ESTIMATED PROJECT QUANTITIES ITEM NO. ITEM TOTAL UNIT Crack and Seat of PCC Pavement Asphalt Emulsion-Fog Seal (Pavement) Patches, Full-Depth Finish, 6-inch, By Area, HMA Patches, Full-Depth Finish, 6-inch, By Count, HMA Patches, Partial-Depth Repair, HMA HMA (Partial Depth Patch Material) Subbase (Patches) Removal of Pavement Double Reinforced Pavement, 8" Pavement Scarification 120.0 11.0 60.0 530.9 195.6 Double Reinforced Pavement, 8" Pavement Scarification Blading and Shaping Shoulder Material Hot Mix Asphalt High Traffic, Surface Course, 1/2 In. Mix, No Special Friction Requirement Hot Mix Asphalt High Traffic, Intermediate Course, 1/2" Hot Mix Asphalt High Traffic, Base Course, 3/4" Asphalt Binder, PG 58-28H, High Traffic Excavation, Class 13, Widen Base Widening, 6" HMA Modified Subbase Modified Subbase Cleaning and Filling Cracks (HMA Surfaces) Sealer Material (HMA Surfaces) Granular Shoulder, Type A Granular Shoulder, Type B Painted Pavement Marking, High-Build Waterborne Temporary Accesss Road Traffic Control <u>20</u> 465 143.6 Traffic Control Construction Survey Mobilization

NOTES

- 1. Construction shall not begin until after Labor Day.
- 2. Shelter 6, near the beach parking lot, must be accessible weekly from Friday through Sunday.
- 3. Access to residences on Westlake Village and Pelican Drive must be maintained at all times.
- 4. Notification (door hangers) shall be approved by the Engineer prior to distribution. The Contractor shall notify all property owners and residents a minimum of one week but not more than two weeks prior to commencing construction. Work will not begin unless notification has been provided in accordance with these contract documents. Door hangers shall include the following information:
 - * Contractor's name and emergency contact number.
 - * Description of Contractor's activities.
 - * Date of construction activities in the area.
 - * Estimated duration of construction activities in the area.

ESTIMATE REFERENCE INFORMATION ITEM NO. DESCRIPTION Crack and Seat of Pavement A. Sawcut of existing pavement is incidental to the bid item. B. Existing asphaltic and bituminous material such as fillets, skim coats or thin lifts shall be removed from the area to be cracked before cracking. This removal will be incidental and will not be paid for separately. C. It is the Contractor's responsibility to reduce energy and use caution when breaking concrete. 2 Asphalt Emulsion-Fog Seal (Pavement) A. Dilute with water - 2 parts water, 1 part emulsion. Apply at 0.15 gal/sy B. No work after September 15th. Patches, Full-Depth Finish, 6-inch, By Area, HMA Patches, Partial-Depth Repair, HMA 3 5

A. Minimum 48-hour notice to DNR Field Engineer.

6 HMA (Partial Depth Patch Material)

A. Assumed 2" depth.

B. A suitable waste site shall be obtained by the contractor. No payment for overhaul will be allowed.

8

10

21

A. Contractor shall install 6" Modified Subbase under all patches.

B. Preparation of subgrade shall be incidental.

Removal of Pavement

A. The contractor shall remove the existing pavement and base as indicated in the plan sheets.

B. All saw cuts shall be incidental.

C. Off site disposal is the responsibility of the contractor. No payment for overhaul will be allowed.

9 Double Reinforced Pavement, 8"

A. Sheet detail sheet B.04 for details.

B. Class M Mix shall be used.

Pavement Scarification

A. Item includes the cost of maintaining all temporary fillets needed for drop-offs greater than 1.5". Contractor may utilize scarified materials in first lift as shoulder material. Scarified surface shall be a constant 2% slope unless otherwise noted in the plans or directed by the Field Engineer.

11 Blading and Shaping Shoulder Material

A. This item is for the shaping of the granular shoulders to maintain positive drainage, in conjunction with the pavement scarification and resurfacing operations. The material may be stored in a windrow or neatly spread on the existing shoulders to allow positive drainage.

Hot Mix Asphalt High Traffic, Surface Course, 1/2 In. Mix, No Special Friction Requirement Hot Mix Asphalt High Traffic, Intermediate Course, 1/2"

12

Hot Mix Asphalt High Traffic, Base Course, 3/4"

A. Road Surface temperature shall be at or above those listed for the applicable course and thickness in 2303.03 C.

B. Item includes quantities to build tie-ins at parking lots and side roads.

C. Milled headers are required at the beginning and ending of project and all side roads.

15

Asphalt Binder, PG 58-28H, High Traffic A. Asphalt binder is estimated at 5.0%. For use with intermediate and surface courses.

Granular Shoulder, Type B

A. Granular shoulders shall extend 2' in a wedge past the pavement edge.

23

Painted Pavement Marking, High-Build Waterborne
A. See DOT Specification Table 2527.03-1 for the minimum atmospheric and surface temperatures for application of pavement markings.

B. Complete the placement of pavement markings before the road is open to traffic.

Temporary Accesss Road

A. Removal and reinstallation of the fence shall be incidental.

B. Removal of the access road and reseeding of the grass area shall be incidental.

C. All grading to construct and remove the access road shall be incidental.

25 Traffic Control

A. Includes all traffic control necessary for the project.

SERVICES - WALLACE BUILING , DES MOINES, IA 50319-0034

OWA DEPARTMENT OF NATURAL RESOURCES



PARK

OTTAWATTAMIE

STATE

GENERAL INFORMATION

AND

LAKE MANAWA

QUANTITIES NO. BY REVISION 23-04-78-01

GENERAL NOTES

Verify actual locations and elevations with DNR Engineer.

All work shall conform to and be performed in accordance with all applicable codes and ordinances.

The contractor shall visit the site and inspect the project area and thoroughly familiarize themselves with the actual job conditions prior to bidding and the start of work. Failure to visit the project site shall not relieve the contractor from performing the work in accordance to the plans, specification, special provisions and contract.

The contractor shall verify, at the site, all dimensions and conditions shown on the plans and shall notify the DNR Engineer of any discrepancies, omissions, and/or conflicts prior to proceeding with the work.

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the DNR Engineer.

The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of the DNR Engineer.

Unless otherwise directed by the Plans, Specifications, or the DNR Engineer, all trees with a trunk diameter of three inches or greater when measured at breast height, shall be felled between October 1st and March 31st. Brush and debris removal is not restricted by this note.

Where utilities and fixtures are shown as Existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the DNR Engineer of those utilities prior to the beginning of any construction. The contractor shall be afforded access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.

The contractor shall shape graded area to maintain surface drainage. All elevations are to finish grade.

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

CRACKING AND SEATING CONCRETE PAVEMENT NOTES

This work shall consist of cracking and seating existing PCC pavement, prior to resurfacing with HMA.

FQUIPMENT

A segmented tie breaker is required for this project and shall be approved by the Engineer.

Seating equipment shall be a roller meeting the following requirements: The roller shall be pneumatic tired roller consisting of four rubber tired wheels equally spaced across the full width and mounted in line on a rigid steel frame so that all wheels carry equal loads, regardless of surface irregularities.

The roller shall have a weight body suitable for ballasting to a gross load of 50 tons and ballast shall be such that gross roller mask can be readily determined and controlled to maintain a gross roller mass of 50 tons. The roller shall be towed with a rubber tired prime mover.

REMOVAL OF EXISTING ASPHALT

Existing asphaltic and bituminous material such as fillets, skim coats or thin lifts shall be removed from the area to be cracked before cracking. This removal will be incidental and will not be paid for separately.

PAVEMENT CRACKING

The existing PCC payment shall be cracked to produce full depth, generally transverse, hairline cracks at a minimum spacing designated in the contract documents. When not designated, the spacing shall be 12 in by 12 in.

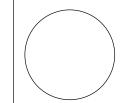
When the cracking operation begins, the Engineer will be on site. The Contractor shall crack the pavement using varying energy and strike patterns until a satisfactory cracking pattern is established.

The Contractor shall furnish and apply water to dampen the payment before cracking to enhance visual determination of the cracking pattern. The Contractor shall furnish and apply water for the entire project to verify that the specific cracking pattern is being maintained. Furnishing and applying this water will be incidental, and it will not be paid for separately.

Areas of cracked payment shall be seated when cleaned of loose or spalled material by sweeping in by blowing joints and cracks with compressed air. The cleaning shell will be repeated, as necessary, until the HMA resurfacing is placed.

PAVEMENT SEATING

The crack payment shall be rolled until seating of the cracked payment is assured to the satisfaction of the Engineer. The intent is to load the roller so that seating can be reasonably assured by one complete coverage by the roller and to accomplish seating with a minimum damage to aggregate interlocking at the cracks.



IOWA DEPARTMENT OF NATURAL RESOURCES ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034



ОПАWATTAMIE

PARK STATE

GENERAL INFORMATION

MANAWA LAKE

QUANTITIES AND NO. BY REVISION 23-04-78-01

CRACK AND SEAT PCC PAVEMENT	Γ			
LOCATION	LENGTH (FT)	WIDTH (FT)	AREA (SY)	MILES
Beginning of Project (79+00) - Double Reinforced Pavement Beginning (120+05)	4105	22	10034.5	0.78
Double Reinforced Pavement Ending (120+45) - Double Reinforced Pavement Beginning (155+30)	3445	22	8421.2	0.65
Double Reinforced Pavement Ending (155+70) - End of Project (192+85)	3715	22	9081.2	0.70
	11265		27536.9	2.13

DOUBLE REINFORCED PAVEMENT										
LOCATION	LENGTH (FT)	WIDTH (FT)	AREA (SY)	6" MOD. SUBBASE (CY)						
120+25	40	22	97.8	19.3						
155+50	40	22	97.8	19.3						
			195.6	38.6						

RESURFACING								
LOCATION	LENGTH (FT)	WIDTH (FT)	AREA (SY)	MILES	1" INTERLAYER (TON)	1 1/2" INTERMEDIATE (TON)	1 1/2" SURFACE (TON)	
Beginning of Project (79+00) - Double Reinforced Pavement Beginning (120+05)	4105	22	10034.5	0.78		830	1107	
Double Reinforced Pavement Ending (120+45) - Double Reinforced Pavement Beginning (155+30)	3445	22	8421.2	0.65		697	929	
Double Reinforced Pavement Ending (155+70) - End of Project (192+85)		22	9081.2	0.70		751	1002	
Widenign at 181+00 LT/RT	135	Varies	29.7	0.03		3	4	
	11400		27566.6	2.16		2281	3042	

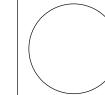
	PAVEMENT SCARIFICATION								
LOCATION	LENGTH (FT)	WIDTH (FT)	AREA (SY)	NOTES					
79+00	25	22	61.2	Beginning of Project					
120+05	25	22	61.2	Before double reinforced pavement					
120+45			61.2	After double reinforced pavement					
155+30			Before double reinforced pavement						
155+70	25	22	61.2	After double reinforced pavement					
192+85	26	22	63.2	End of Project					
118+15 - 123+75	560	22	1,368.9	Existing HMA Overlay					
143+35 - 164+25 2,090 22		22	5,108.9	Existing HMA Overlay					
			6,785.8						

TYPE A SHOULDER							
LOCATION		LENGTH (FT)	WIDTH (FT)	TON	MATERIAL		
Scout Island (500+10 - 501+48)		138.0	2	9.7	Class A		
S 11th St (181+00 RT Radius)		79.8	2	5.6	Class A		
S 11th St (181+00 LT Radius)		55.4	2	3.9	Class A		
		273.2		19.2			

TYPE B SHOULDER							
LOCATION LENGTH (FT) WIDTH (FT) TON MATERIA							
Beginning of Project (79+00) - End of Project (192+85)	11385	2	464.9	Class A			
	11385		464.9				

AREAS FO	OR PAVEMENT OR B	ASE WIDENING	}			
LOCATION	LENGTH (FT)	WIDTH (FT)	THICKNESS (IN)	HMA BASE WIDENING (SY)	CL 13 EXCAV, WIDENING (CY)	6" MOD. SUBBASE (CY)
S 11th St (181+00 RT Radius)	79.80	Varies	6.0	17.6	11.8	5.9
S 11th St (181+00 LT Radius)	55.40	Varies	6.0	12.1	7.9	4.0
	135.2			29.7	19.7	9.9

		HMA PAVIN	G					
LOCATION	LENGTH (FT)	WIDTH (FT)	THICKNESS (IN)	AREA (SY)	3" BASE (TON)	1 1/2" INTERMEDIATE (TON)	1 1/2" SURFACE (TON)	6" MOD. SUBBASE (CY)
Scout Island (500+10 - 500+70)	60.0	20	6.0	162.0	27	14	14	80.0
	60.0			162.0	27	14	14	80.0



IOWA DEPARTMENT OF NATURAL RESOURCES ENGINEERING SERVICES - WALLACE BULING 502 E. 9TH ST., DES MOINES, IA 50319-0034

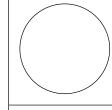
CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:
LAKE MANAWA STATE PARK

QUANTITIES AND GENERAL INFORMATION

NO. BY REVISION 23-04-78-01

							HMA PAVEME	NT PRESERVATIO	ON							
LOCATION	LENGTH (FT)	WIDTH (FT)	AREA (SY)	TJ REPAIRS (COUNT)	TJ REPAIRS ASPHALT (TON)	MILES	FULL-DEPTH FINISH PATCH COUNT	FULL-DEPTH FINISH PATCH (SY)	FULL-DEPTH REPAIR PATCH COUNT	FULL-DEPTH REPAIR PATCH (SY)	PARTIAL- DEPTH PATCH (SY)	HMA (PARTIAL-DEPTH PATCH MATERIAL) (TON)	FOG SEAL (GALS)	SUBBASE (PATCHES) (CY)	NOTES	
1100+00	388.0	18	776.0	2	1.4	0.07	2	120.0					116.4	60.0		
1200+00	388.0	18	776.0	4	2.7	0.07					4	11	116.4			
1300+00	260.0	18	520.0	1	0.7	0.05					2	3	78.0			
1400+00	885.0	24	2360.0	6	4.0	0.17					5	7	354.0			
													_			
	1921.0		4432.0	13	8.8	0.36	2	120.0			11	21	664.8	60.0		

		PAVEMENT MARI	KINGS	
STATION	STATION	BCY4: Broken Centerline (Yellow) @ 0.25	DCY4: Double Centerline (Yellow) @ 2.00	NPY4: No Passing Line Zone (Yellow) @ 1.25
79+00	79+75	0.75		
79+75	81+75			2.00
81+75	101+65		19.90	
101+65	108+50			6.85
108+50	115+00	6.50		
115+00	126+60		11.60	
126+60	130+25			3.65
130+25	140+50	10.25		
140+50	151+50		11.00	
151+50	158+25			6.75
158+25	166+50	8.25		
166+50	167+75			1.25
167+75	181+00		13.25	
Unfactored Length		25.75	55.75	20.50
Factored Length		6.44	111.50	25.63



IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BULING 502 E. 9TH ST., DES MOINES, IA 50319-0034



POTTAWATTAMIE COUNTY

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:
LAKE MANAWA STATE PARK

QUANTITIES AND GENERAL INFORMATION

NO. BY REVISION : PROJECT NUMBER: 23-04-78-01

