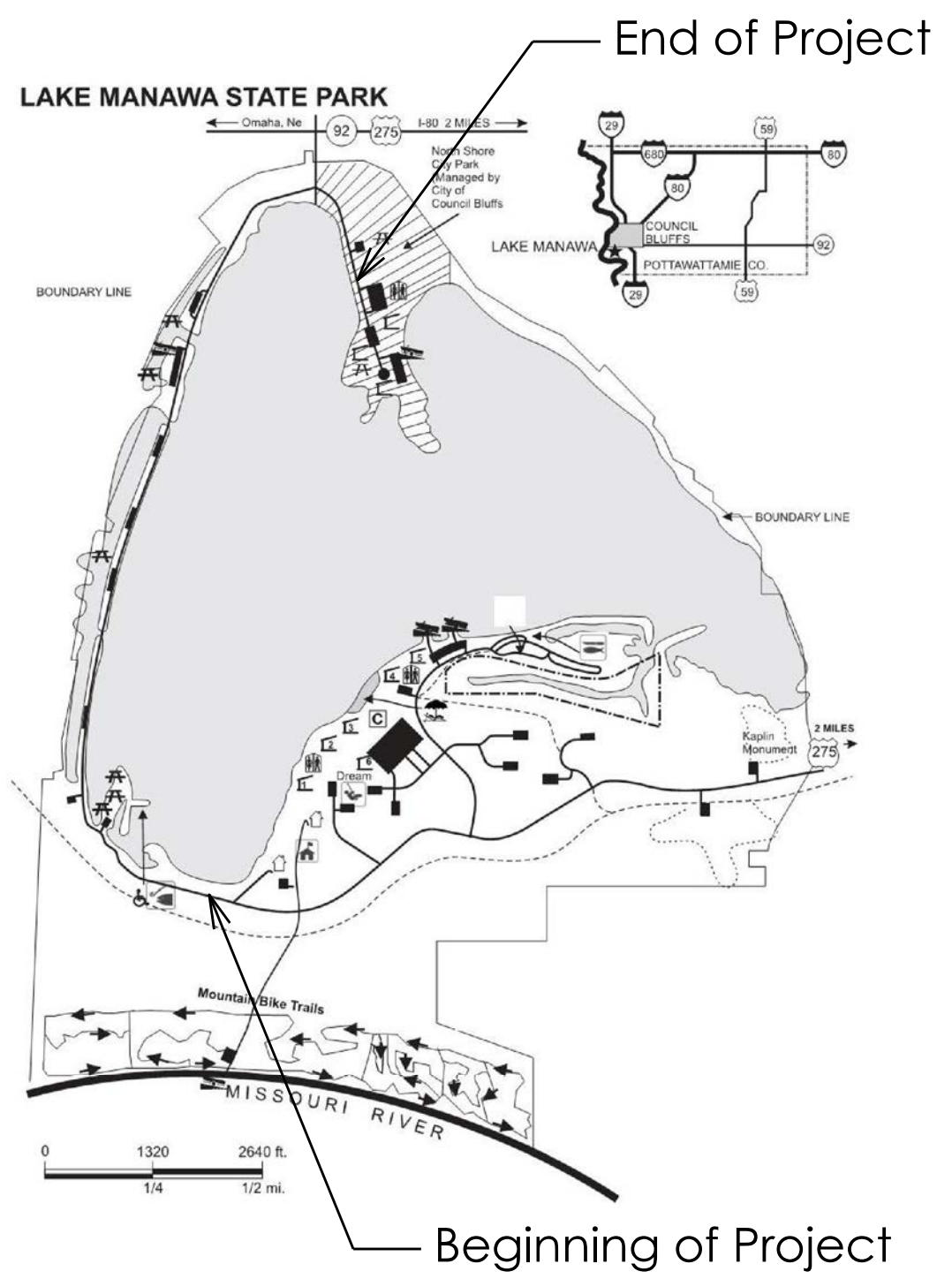


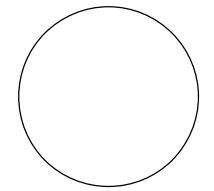
Project Location



Beginning of Project

End of Project

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



PROJECT LOCATION MAP

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

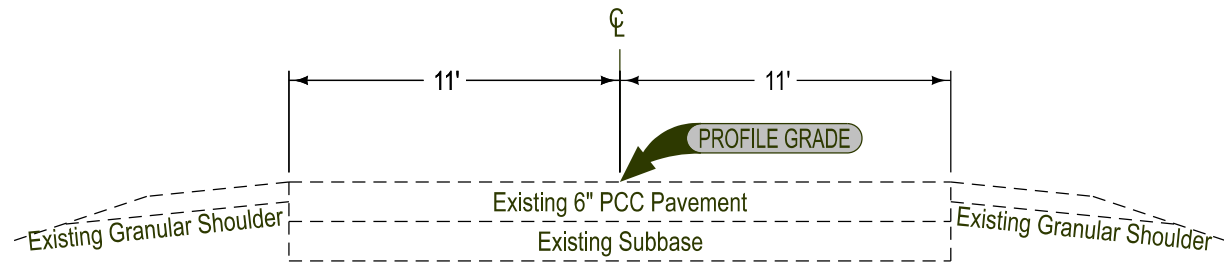
NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
23-04-78-01

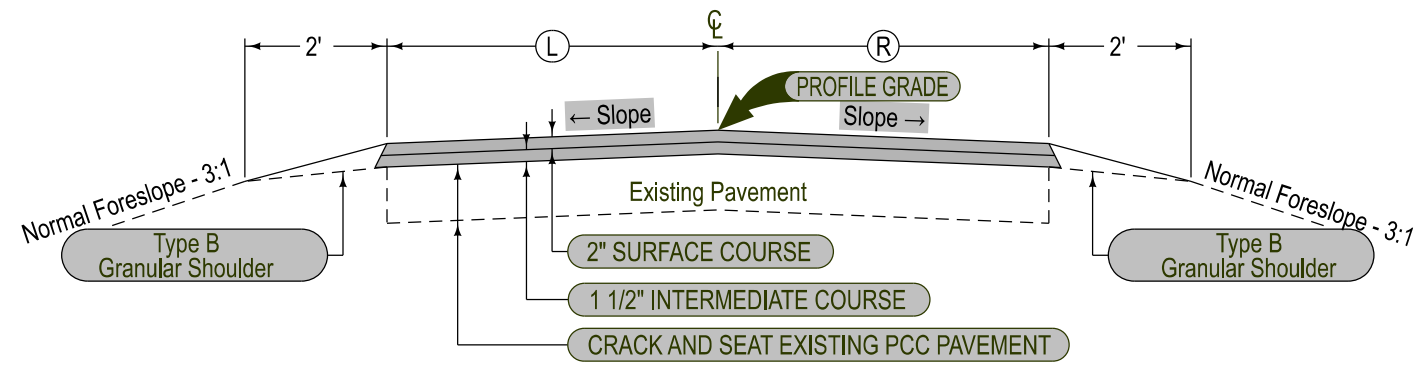
CHK'D BY: DATE:

SHEET No:

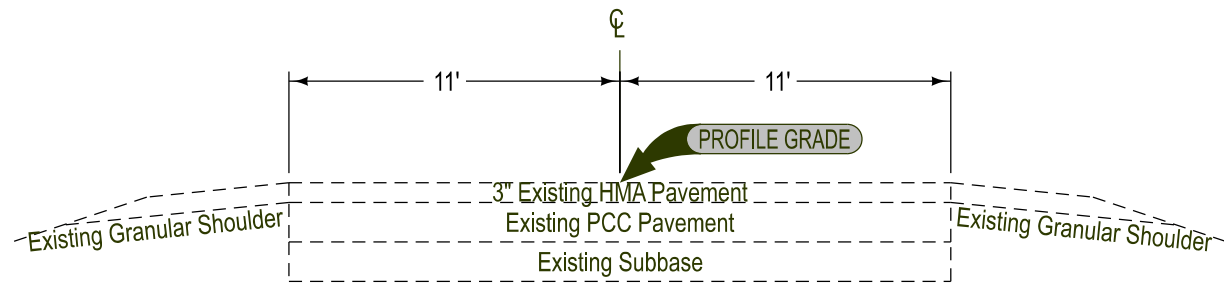
A.02



EXISTING PAVEMENT 1	
STATION TO STATION	
79+00	118+15
123+75	143+35
164+25	192+85

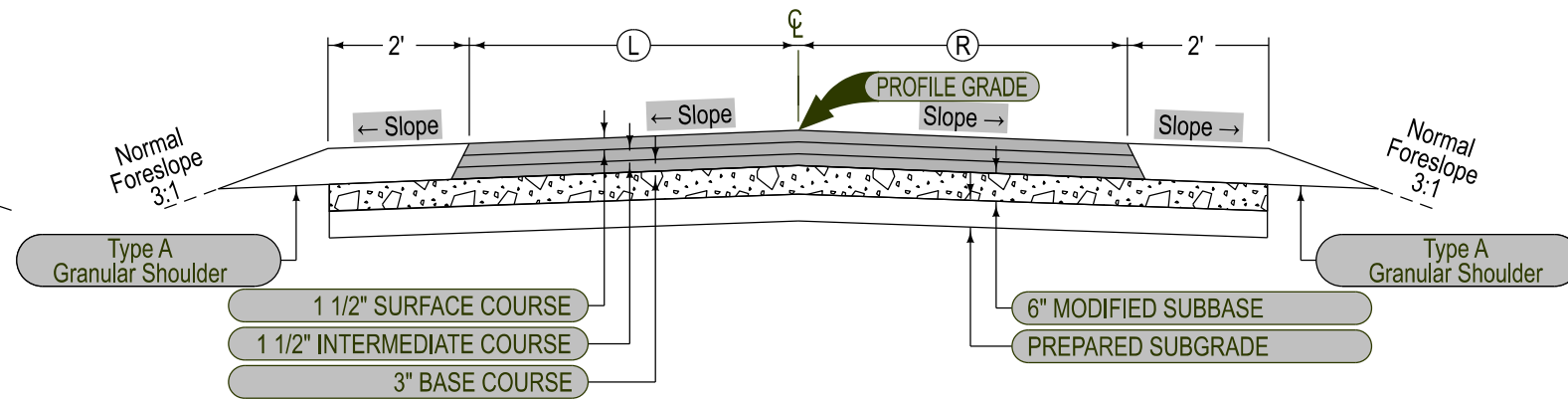


RESURFACING				
STATION TO STATION		Length (Feet)	(L) (Feet)	(R) (Feet)
79+00	120+05	4105	11	11
120+45	155+30	3485	11	11
155+70	192+85	3715	11	11



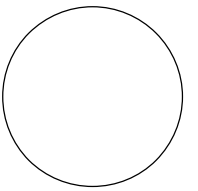
*Mill down existing HMA resurfacing prior to resurfacing.

EXISTING PAVEMENT 2	
STATION TO STATION	
118+15	123+75
143+35	164+25



HMA PAVEMENT				
STATION TO STATION		Length (Feet)	(L) (Feet)	(R) (Feet)
500+00	501+48	138	10	10

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



TYPICAL CROSS SECTIONS AND DETAILS

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

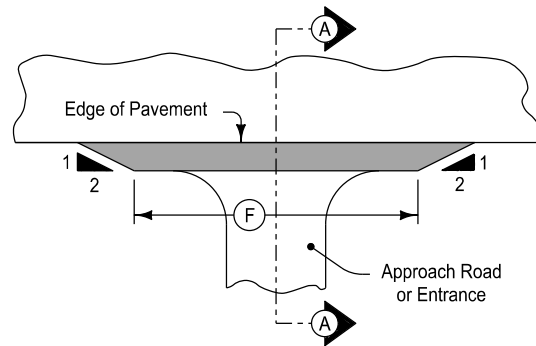
NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
23-04-78-01

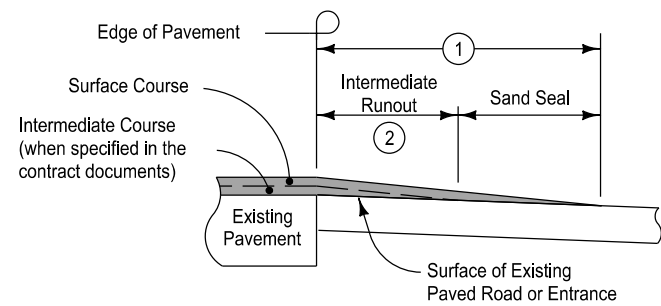
CHK'D BY: DATE:

SHEET No:

B.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.

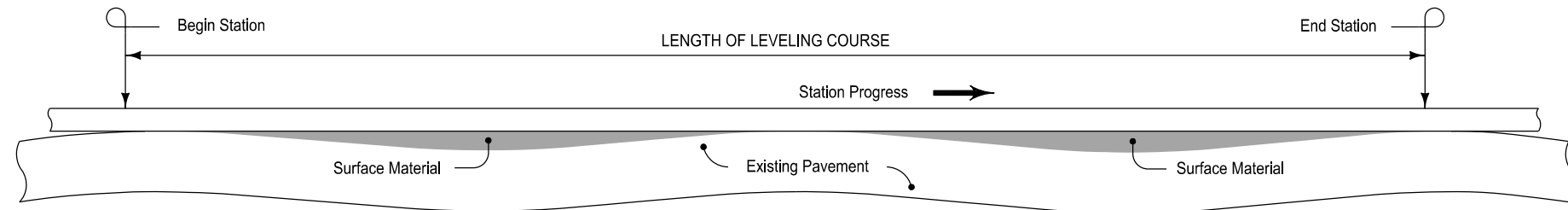
Unless specified otherwise, construct full runouts for HMA resurfacing at a rate of 50 feet for each 1 inch of resurfacing thickness.

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.

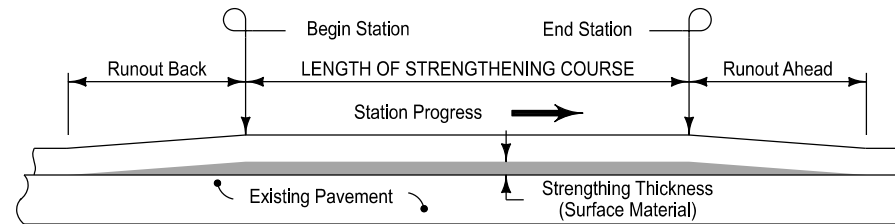
Construct wedge shaped HMA fillets at all paved entrances and paved intersecting roads. Construct full thickness fillets at all non-paved entrances and non-paved side roads.

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.

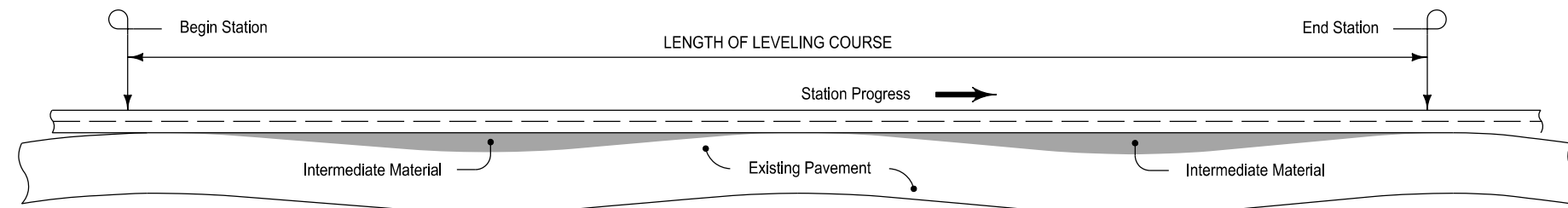


LEVELING COURSE
(See Tabulation for Location)

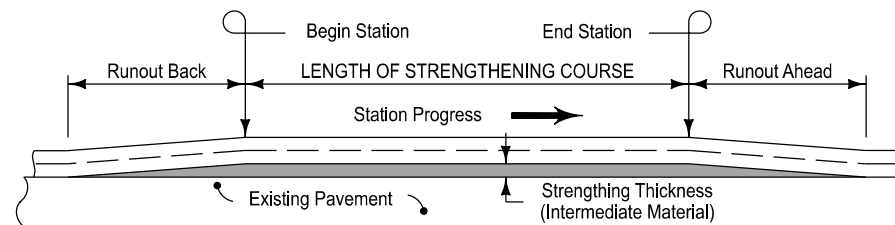


STRENGTHENING COURSE
(See Tabulation for Location)

SINGLE COURSE RESURFACING



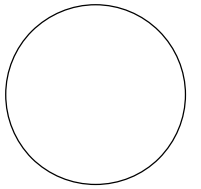
LEVELING COURSE
(See Tabulation for Location)



STRENGTHENING COURSE
(See Tabulation for Location)

DOUBLE COURSE RESURFACING

CONSULTANT:



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



TYPICAL CROSS SECTIONS AND DETAILS

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

NO. BY DATE REVISION

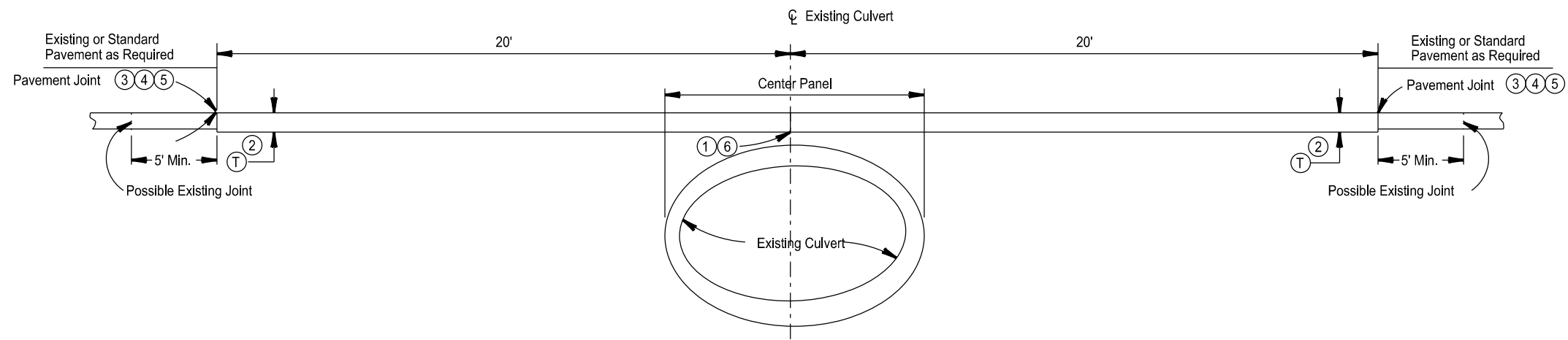
DRAWN BY: PROJECT NUMBER:
23-04-78-01

CHK'D BY: DATE:

SHEET NO.:

B.02

**HOT MIX ASPHALT
RESURFACING**



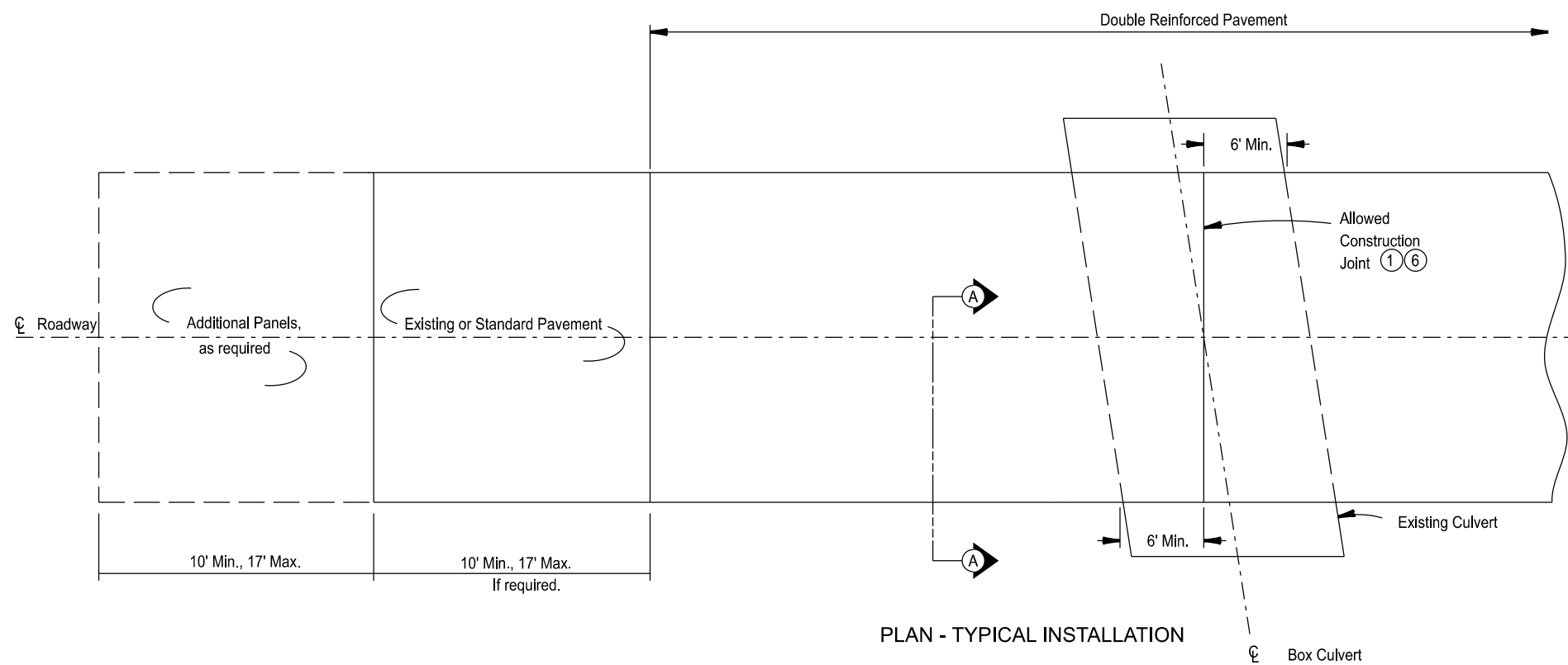
SECTION - TYPICAL INSTALLATION AT EXISTING CULVERT

Price bid for standard pavement of the specified thickness is full compensation for constructing the pavement as detailed hereon and elsewhere in the plans, including all necessary reinforcement and expansion joints as required on this project.

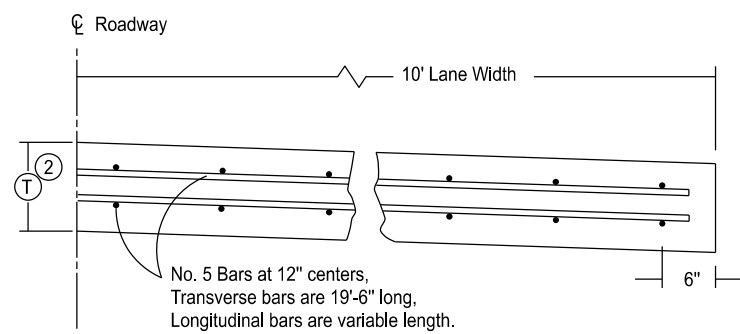
See PV-101 for joint details.

Provide minimum 2 inches clearance for all reinforcement.

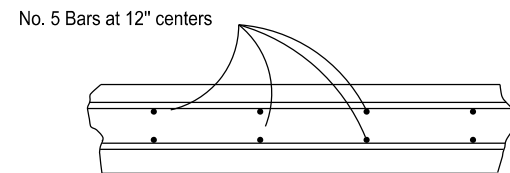
- ① Construction Joints will be allowed if:
 - A. Joint is located at center of culvert.
 - B. Joint is a minimum of 6 feet from edge of culvert.
 - C. Two joints may be used if condition B is met and center panel is a minimum of 15 feet in length.
- ② Pavement thickness (T) = 8 inches.
- ③ Existing Pavement Joints:
 - A. When joints are 'C'; use 'B' joint.
 - B. When joints are 'CD'; use 'RD' joint.
 - C. If existing pavement is HMA or Composite (HMA over PCC); use 'B' joint.
- ④ New Pavement Joints:
 - A. When joints are 'C'; use 'B' joint.
 - B. When joints are 'CD'; use 'CD' joint.
- ⑤ Place Pavement Joint no closer than 5 feet from existing joint.
- ⑥ Lap all bars 15 inches.



PLAN - TYPICAL INSTALLATION



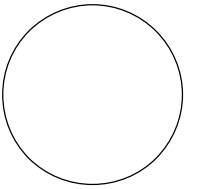
SECTION A-A
Half Section



DETAIL 'A'
PARTIAL LONGITUDINAL SECTION

**DOUBLE REINFORCED PAVEMENT
OVER EXISTING CULVERTS**

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

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



TYPICAL CROSS SECTIONS AND DETAILS

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

NO. BY REVISION

DATE

DRAWN BY: PROJECT NUMBER:

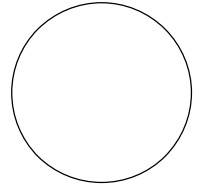
23-04-78-01

CHK'D BY: DATE:

SHEET NO.:

B.04

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502 E. 9TH ST., DES MOINES, IA 50319-0034



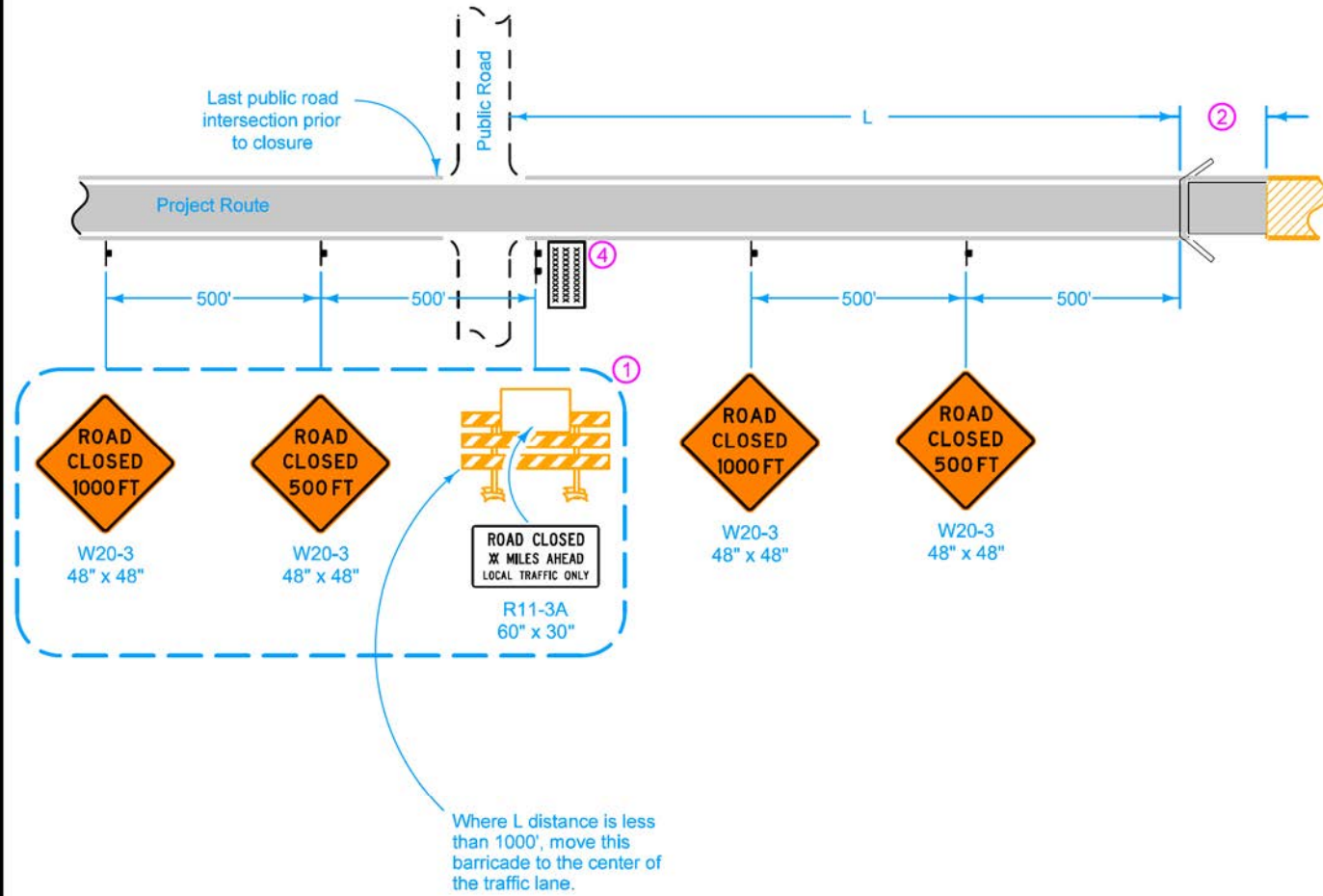
TYPICAL CROSS SECTIONS AND DETAILS

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

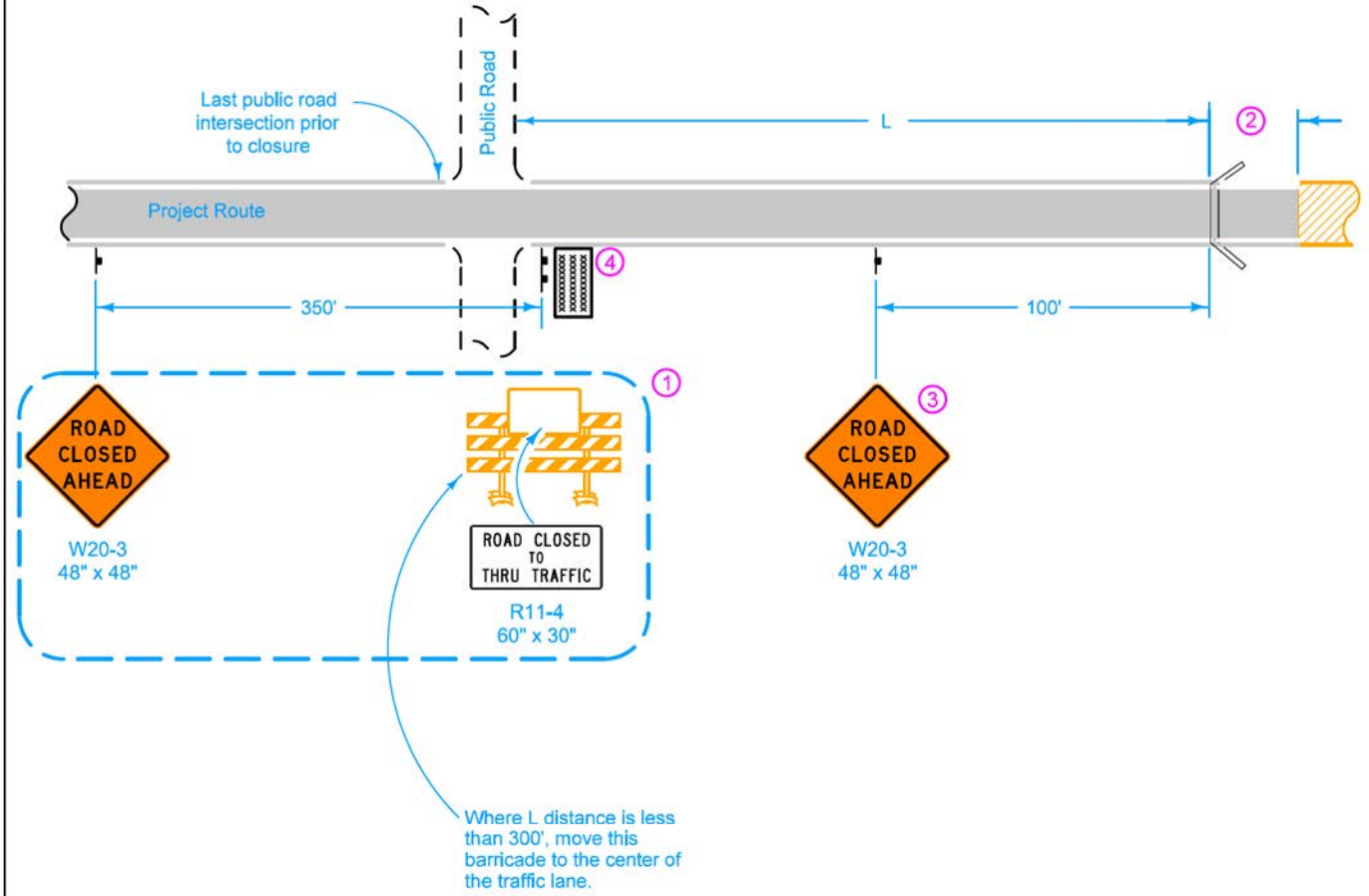
LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

SITUATION 1 (RURAL)
Project Route Closure



SITUATION 1 (URBAN)
Project Route Closure



LEGEND

- Traffic Sign
- Type III Barricade
- Portable Dynamic Message Sign
- Work Area
- Road Closure

- ① In situation 1, if the intersection is the point of detour these signs and barricade will become the responsibility of the contracting authority and may be modified by the contracting authority to fit detour signing.
- ② When possible, a 100' buffer is desirable.
- ③ When L is less than 300 feet, omit the ROAD CLOSED AHEAD sign.
- ④ Place for 7 calendar days prior to closure. The Engineer will determine the message to display. Remove when road is closed. Use of Portable Dynamic Message Sign is optional on non-primary roadways.

IOWA DOT

STANDARD ROAD PLAN

REVISIONS: Added Portable Dynamic Message Sign and new note 4 on Sheet 2.

APPROVED BY DESIGN METHODS ENGINEER

TC-252

SHEET 2 of 3

ROUTES CLOSED TO TRAFFIC

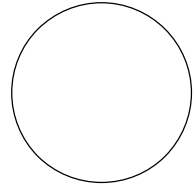
NO.	BY	REVISION
6		04-21-20

DRAWN BY: PROJECT NUMBER: 23-04-78-01

CHK'D BY: DATE:

SHEET NO: **B.07**

CONSULTANT:



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



TYPICAL CROSS SECTIONS AND DETAILS

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

NO.	BY	REVISION

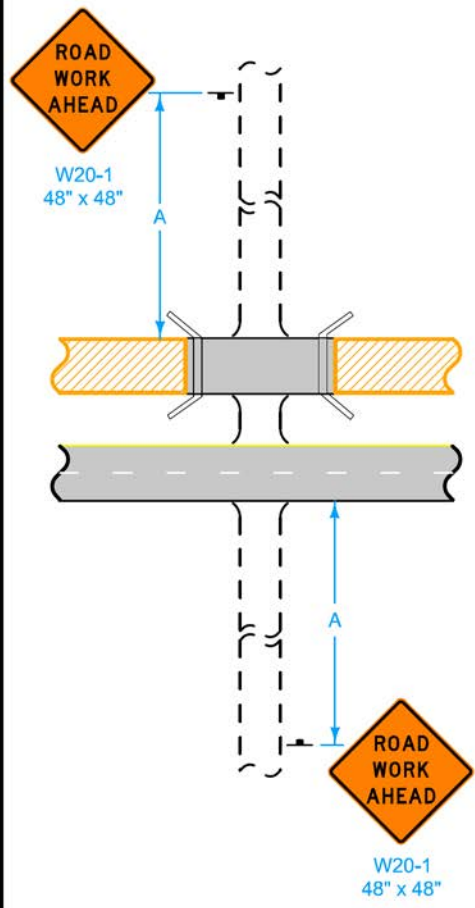
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23-04-78-01

CHK'D BY: DATE:

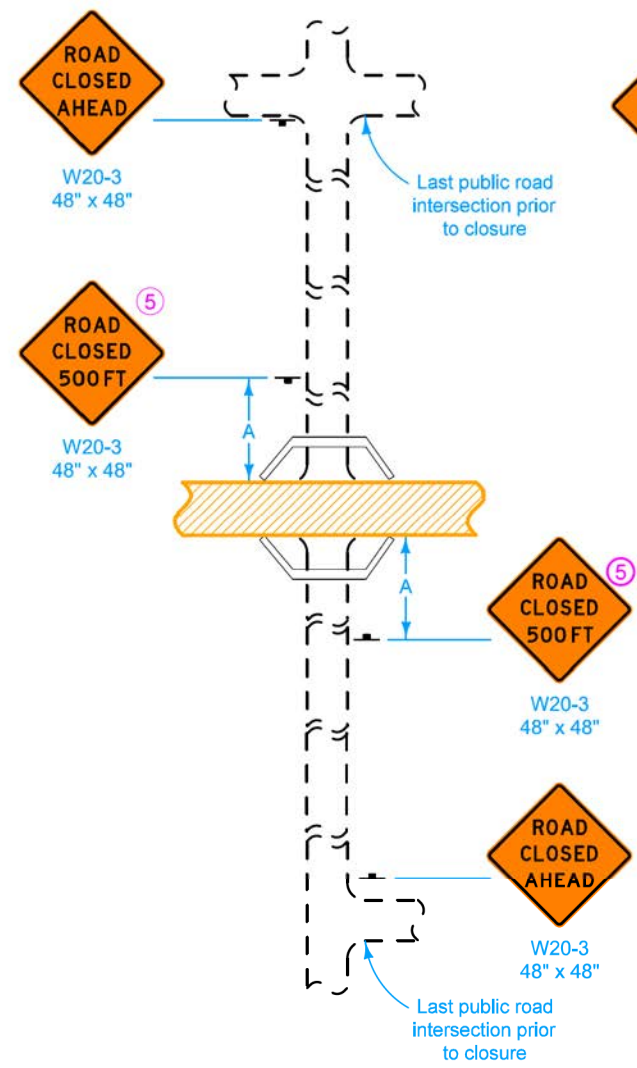
SHEET NO:

B.08

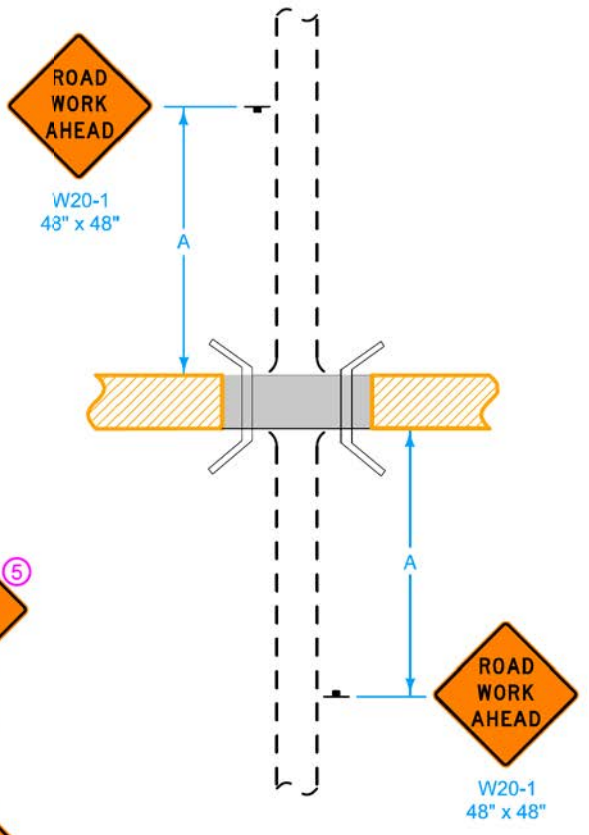
SITUATION 2
Public cross-traffic maintained.
No access to project.



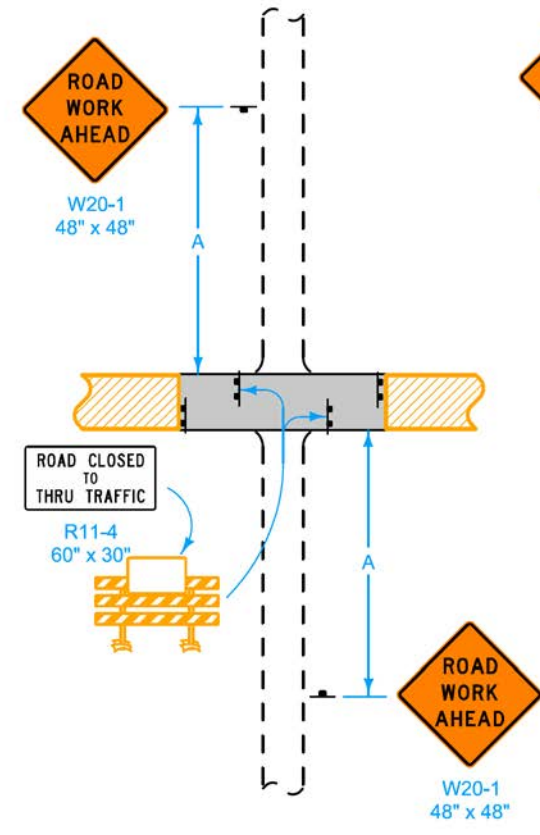
SITUATION 3
No access to project
(Applicable to T-intersections)



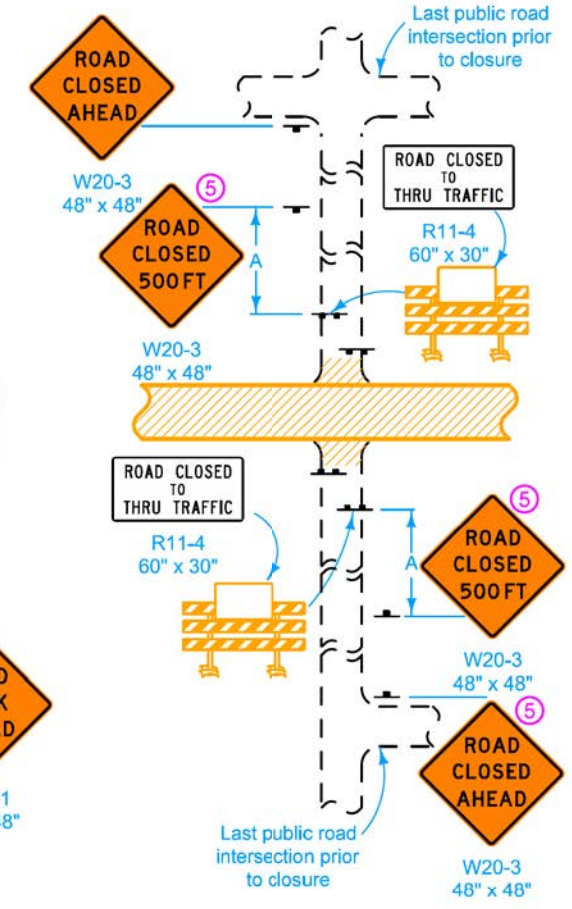
SITUATION 4
Public cross-traffic maintained.
No access to project.



SITUATION 5
Public cross-traffic maintained.
Contractor and resident access.



SITUATION 6
No public access. Contractor and resident access only.
(Applicable to T-intersections)



LEGEND

- Traffic Sign
- Type III Barricade
- Work Area
- Road Closure

Location	A
Urban	200'
Rural	500'

- During suspension of work, (such as over winter):
- Use Situation 2 on two-lane to four-lane projects.
 - Situation 5 is preferred where cross-traffic is maintained.

⑤ When the distance between the last public road intersection and the ROAD CLOSED or ROAD CLOSED TO THRU TRAFFIC barricade is less than 1,000 feet, omit the ROAD CLOSED 500 FT sign.

IOWA DOT

STANDARD ROAD PLAN

REVISIONS: Added Portable Dynamic Message Sign and new note 4 on Sheet 2.

APPROVED BY DESIGN METHODS ENGINEER

TC-252

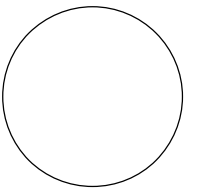
SHEET 3 of 3

ROUTES CLOSED TO TRAFFIC

HMA PAVEMENT PRESERVATION															
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 MARKINGS				
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

CONSULTANT:



**IOWA DEPARTMENT OF
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ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



QUANTITIES AND GENERAL INFORMATION

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

POTTAWATTAMIE COUNTY

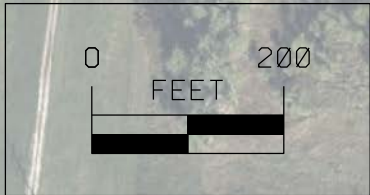
NO. BY DATE REVISION

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23-04-78-01

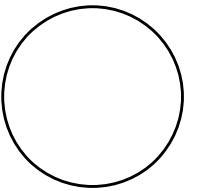
CHK'D BY: DATE:

SHEET No:

C.04



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



SITE PLAN

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

NO.	BY	REVISION

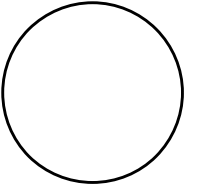
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SHEET NO:
D.02



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



SITE PLAN

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

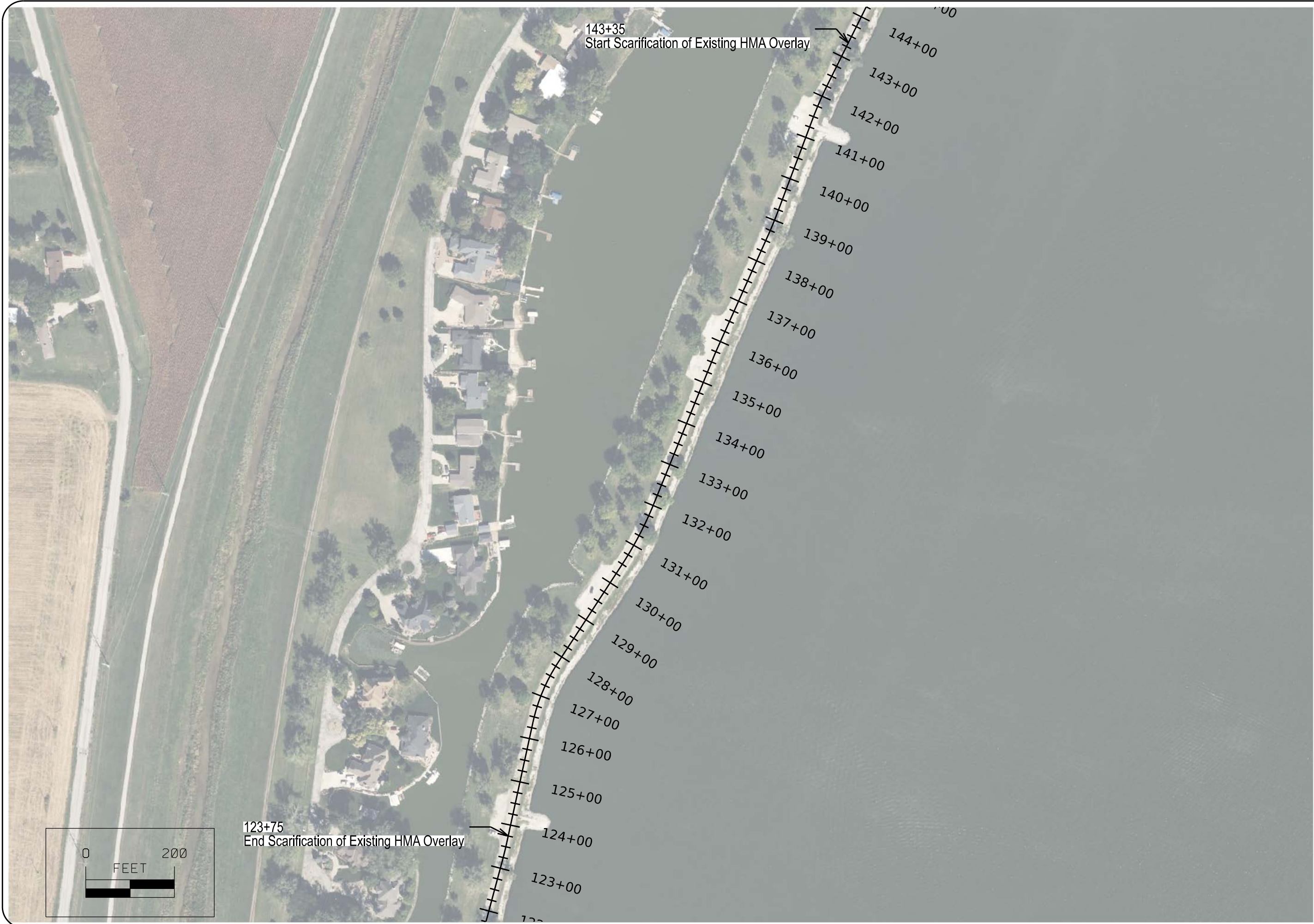
NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
23-04-78-01

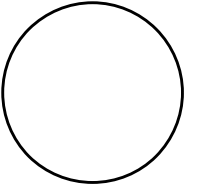
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D.03



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



SITE PLAN

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

POTTAWATTAMIE COUNTY

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
23-04-78-01

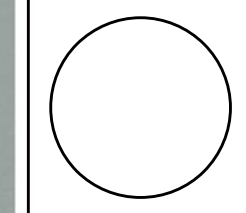
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D.04



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



SITE PLAN

CRACK AND SEAT OVERLAY AND PAVEMENT MAINTENANCE FOR:

LAKE MANAWA STATE PARK

POTTAWATTAMIE COUNTY

NO.	BY	REVISION

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23-04-78-01

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SHEET NO:

D.05

181+00 LT
 20' Radius HMA Base Widening (Resurface Over Top)
 6" Modified Subbase Extending 2' Beyond The HMA Base Widening
 2' Shoulder, Type A

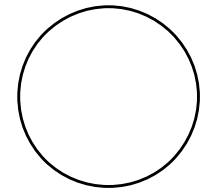
181+00 RT
 50' Radius HMA Base Widening (Resurface Over Top)
 6" Modified Subbase Extending 2' Beyond The HMA Base Widening
 2' Shoulder, Type A

164+25
 End Scarification of Existing HMA Overlay

End of Project at Existing HMA 192+85
 Type 'N3' Header



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 502 E. 9TH ST., DES MOINES, IA 50319-0034



SITE PLAN

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

POTTAWATTAMIE COUNTY

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SHEET NO:

D.06

