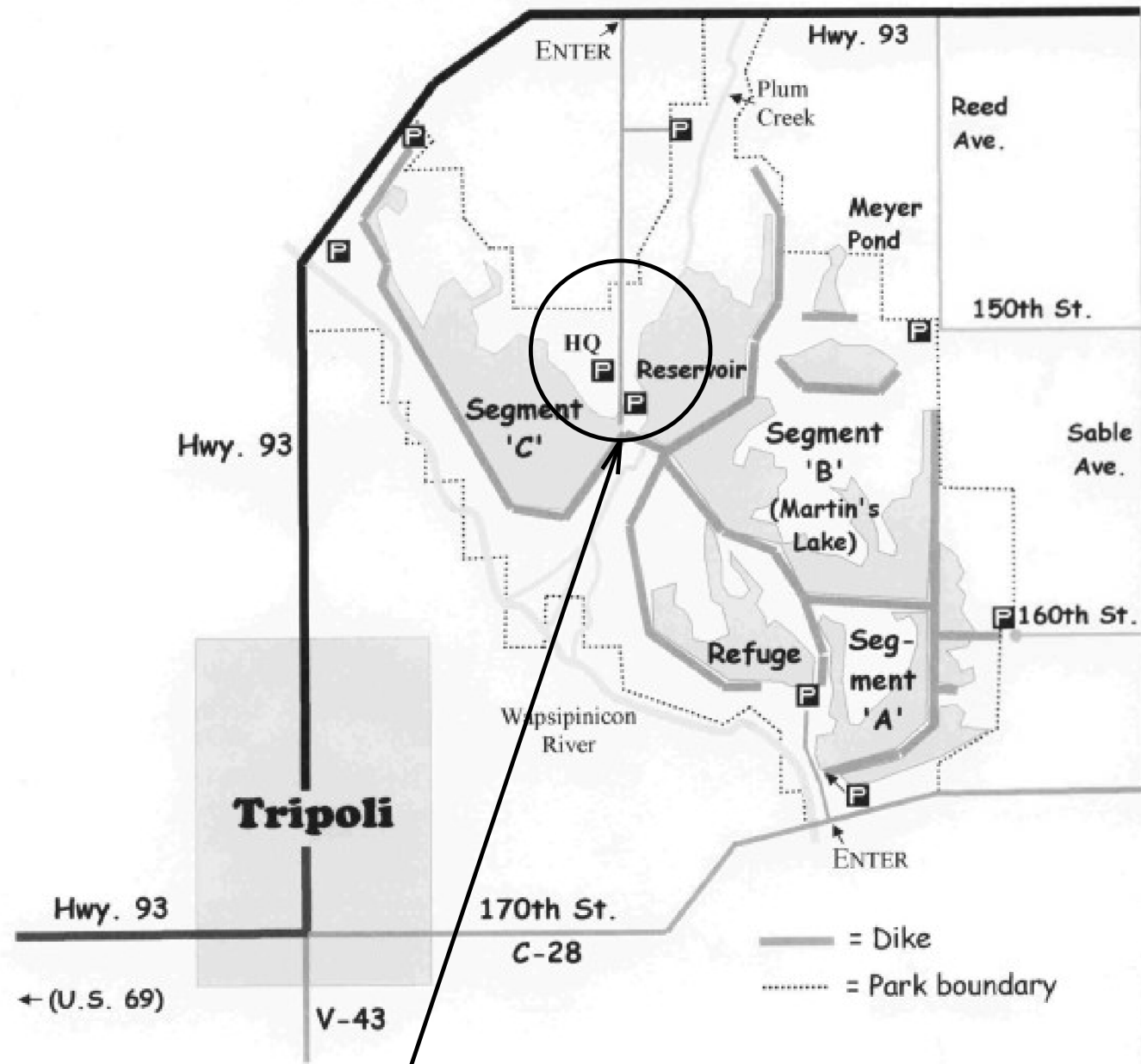


PROJECT LOCATION

## Sweet Marsh, Bremer County



CONSULTANT:

**IOWA DEPARTMENT OF  
NATURAL RESOURCES**

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



**PROJECT LOCATION MAP**

PCC PAVEMENT MAINTENANCE FOR:  
**SWEET MARSH WILDLIFE MANAGEMENT AREA**

BREMER COUNTY

| NO. | BY | REVISION |
|-----|----|----------|
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |

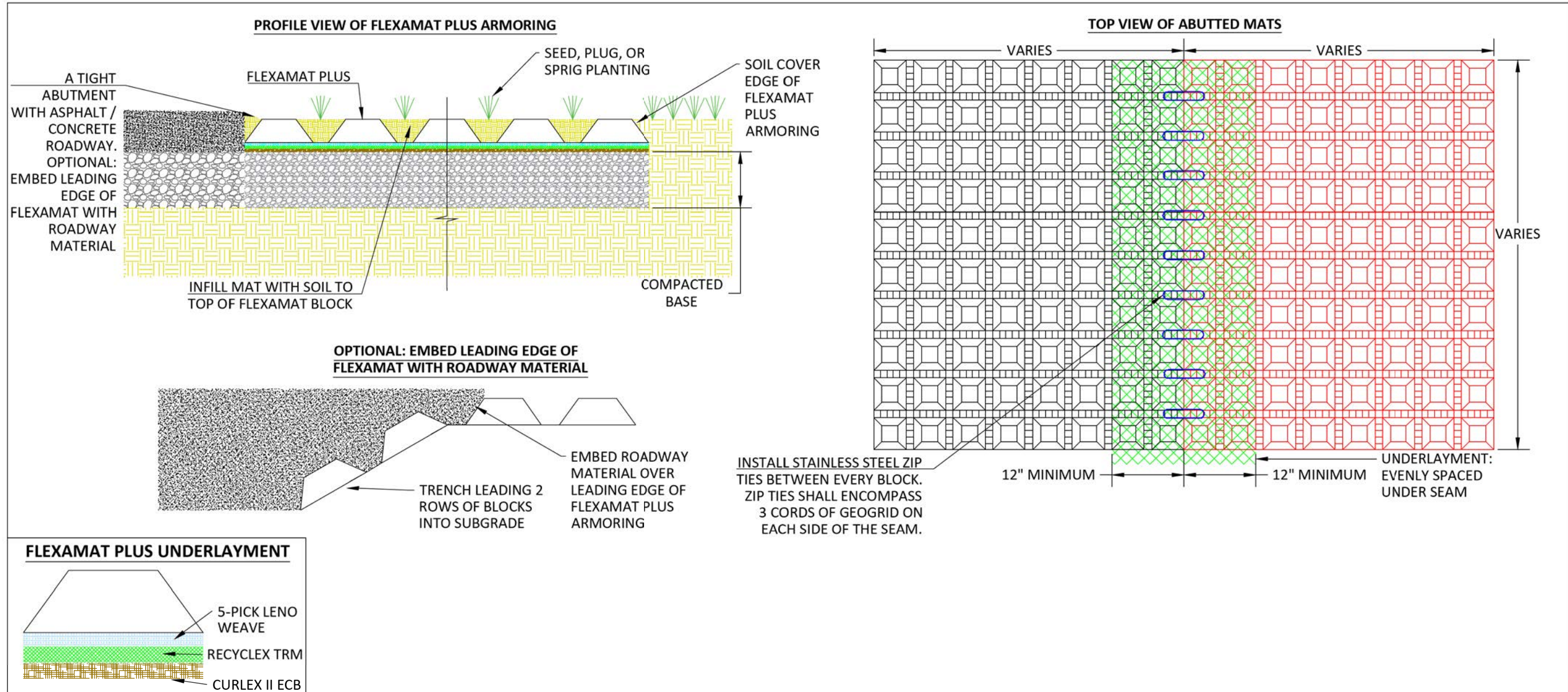
DRAWN BY: PROJECT NUMBER:  
21-03-09-01

CHK'D BY: DATE:  
X

SHEET No.:

**A.02**





# FLEXAMAT PLUS - ACCESS ROAD ARMORING

## SUBGRADE THICKNESS OF CRUSHED STONE

| SITE SOIL TYPE                               | LIGHT LOAD VEHICLES:<br>CARS/PICKUP TRUCKS | HEAVY LOAD VEHICLES: LARGE TRUCKS, RV'S, DELIVERY VEHICLES |
|--|--|--|
| GRAVEL AND SAND, COURSE WELL DRAINED SOILS   | BASE: 3.5-7.5" OF CRUSHED STONE            | BASE: 7.5" OF CRUSHED STONE                                |
| SILTY SOILS, FINE GRAIN SOILS, POOR DRAINAGE | BASE: 7.5" OF CRUSHED STONE                | BASE: 9.5" OF CRUSHED STONE                                |
| CLAY SOILS FINE TO VERY FINE                 | BASE: 6-9.5" OF CRUSHED STONE              | BASE: 10" OF CRUSHED STONE                                 |

\*ROLLS AVAILABLE IN MULTIPLE WIDTHS: 4', 5.5', 8', 10', 12', AND 16'. FOR ARMORING WIDER THAN 16', A 15.5' ROLL WITH A 6" PLUS EXTENSION AND A 12" GEOGRID EXTENSION FOR ABUTMENTS SHALL BE USED.

## MOTZ ENTERPRISES, INC.

Flexamat

(513)772-6689

Info@Flexamat.com

Flexamat.com



REV - 1

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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



GENERAL DETAILS

PCC PAVEMENT MAINTENANCE FOR:  
SWEET MARSH WILDLIFE MANAGEMENT AREA

BREMER COUNTY

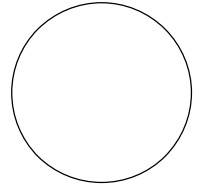
| NO. | BY | DATE | REVISION |
|-----|----|------|----------|
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |
|     |    |      |          |

SHEET NO:

B.01



CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



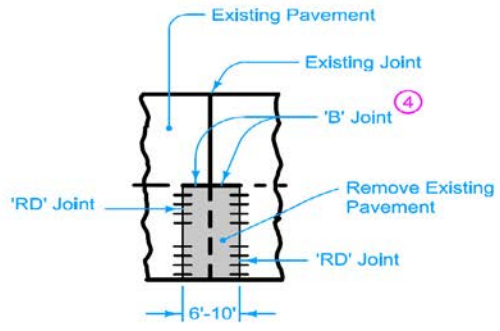
GENERAL DETAILS

PCC PAVEMENT MAINTENANCE FOR:  
SWEET MARSH WILDLIFE MANAGEMENT AREA

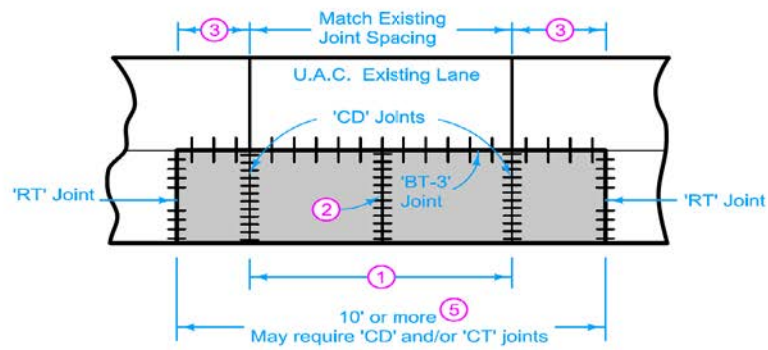
BREMER COUNTY

|     |    |          |
|-----|----|----------|
| NO. | BY | REVISION |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |

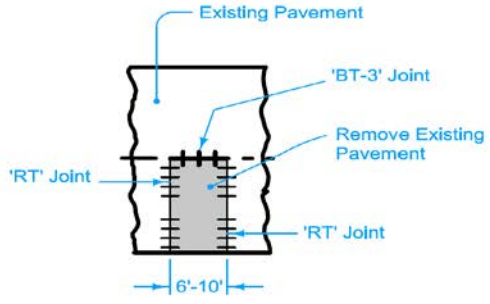
SHEET NO: **B.02**



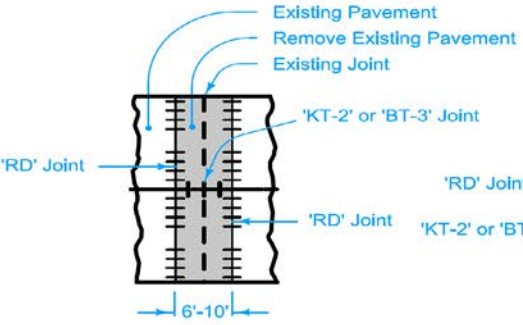
ONE LANE WIDTH PATCH



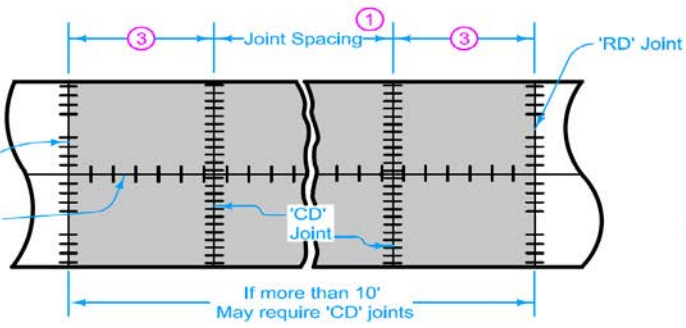
ONE LANE WIDTH PATCH



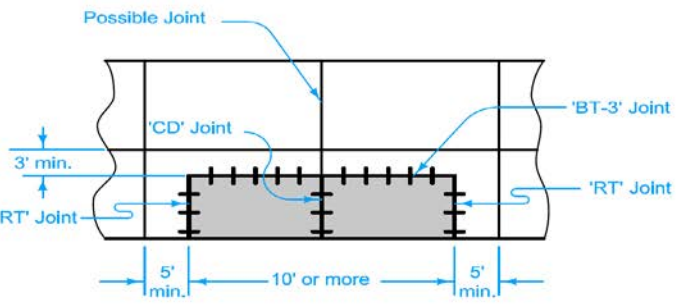
ONE LANE PATCH (NO OPPOSING JOINT)



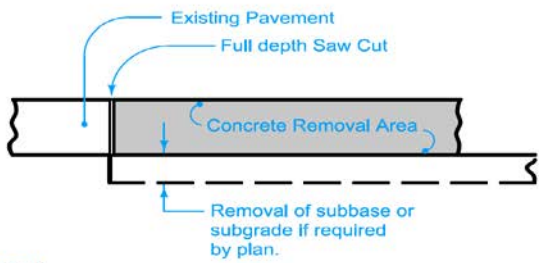
FULL ROADWAY WIDTH PATCH



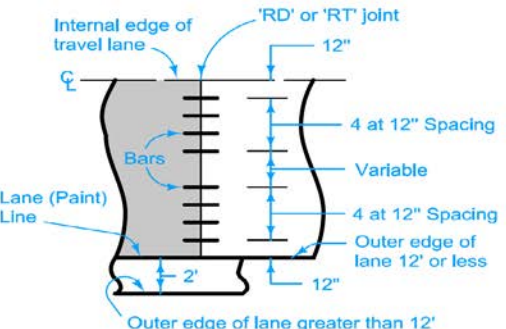
FULL ROADWAY WIDTH PATCH



PARTIAL LANE WIDTH PATCH

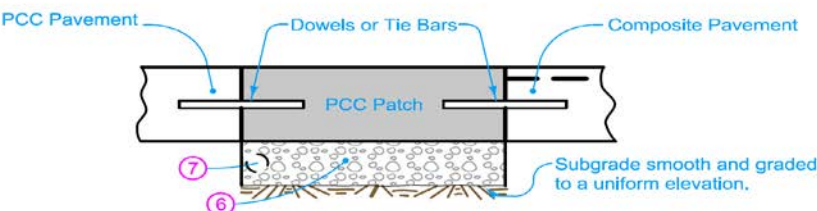


PAVEMENT REMOVAL DETAILS



DETAIL FOR 'RT' OR 'RD' JOINT BAR SPACING

TYPICAL HALF PLAN  
For interior lanes, place first bar 12" from edge of lane (slab).



LONGITUDINAL SECTION THRU PATCH

| BAR SIZE TABLE                  |              |           |               |
|---------------------------------|--------------|-----------|---------------|
| Existing PCC Pavement Thickness | Less than 8" | 8" to 10" | More than 10" |
| DOWEL SIZE                      | 3/4"         | 1 1/4"    | 1 1/2"        |
| TIE BAR SIZE                    | #6           | #10       | #11           |

See PV-101 for joint and bar placement details.

Construct rectangular patches even when existing pavement joints are skewed.

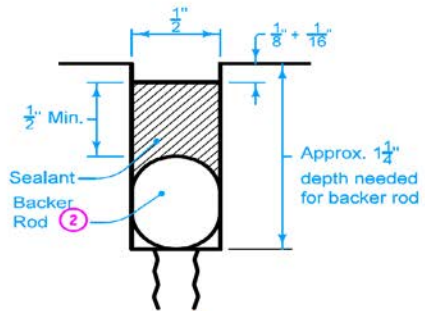
- Joint spacing 10 feet minimum, 17 feet maximum, 15 feet optimum.
- If there is no existing joint or crack in the adjacent pavement, place a 'CD' joint. If there is an existing joint or crack in the adjacent pavement, place a 'CD' joint at the same transverse location. Saw but do not seal 'CT' joints.
- New 'CD' joint must be a minimum 5 feet from the patch end.
- Do not saw or seal the joint. Place 1/2 inch preformed joint material between patch and concrete in adjacent lane.
- If one lane patch exceeds 50 feet, both lanes should be considered for patching.
- Possible Subbase Patch, see PR-140.
- If longitudinal subdrain (shoulder) is not to be placed or if it is not present on side of roadway to be patched, then place drain per PR-140.

- Possible Contract Items:  
 CD Joint Assembly  
 CT Joint  
 Patches by Count (Repair)  
 Patches, Full-Depth Finish, by Area  
 Patches, Full-Depth Finish, by Count  
 Patches, Full Depth Finish, by Area (50 feet in length or greater)  
 Patches, Full-Depth Repair

Possible Tabulation:  
102-6C

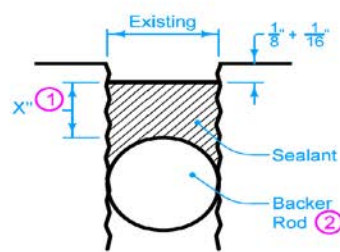
|   |               |
|---|---------------|
| <b>IOWA DOT</b>                               | REVISION      |
|   | 2   04-21-20  |
| <b>STANDARD ROAD PLAN</b>                     | <b>PR-103</b> |
| SHEET 1 of 1                                  |               |
| REVISIONS: Removed INTERIM from the standard. |               |
| APPROVED BY DESIGN METHODS ENGINEER           |               |
| <b>FULL DEPTH PCC PATCH WITH DOWELS</b>       |               |



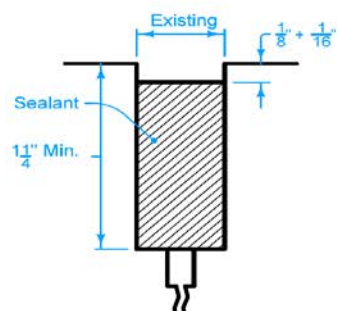


Note: Center  $\frac{1}{2}$ " saw cut over the crack

**CLASS I CRACK**  
Random Crack Less Than  $\frac{1}{2}$ " In Width

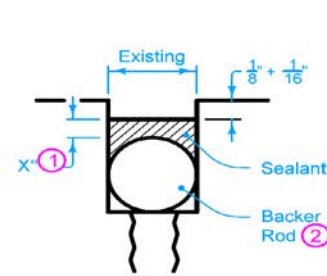


**CLASS II CRACK**  
Random Crack  $\frac{1}{2}$ " To  $1\frac{1}{2}$ "

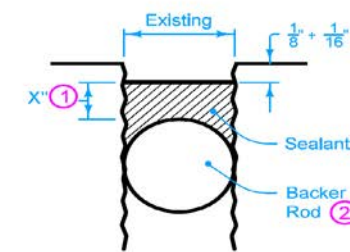


Note: Center saw cut over existing joint

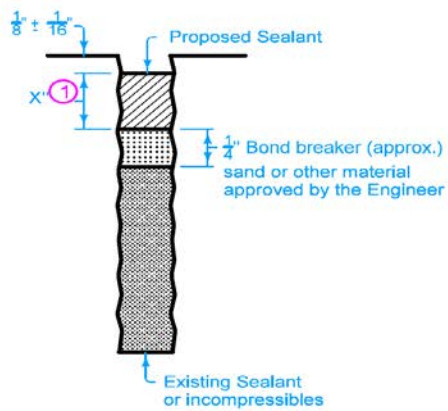
**CLASS III JOINT**  
Existing Joint  $\frac{1}{2}$ " Wide Or Less



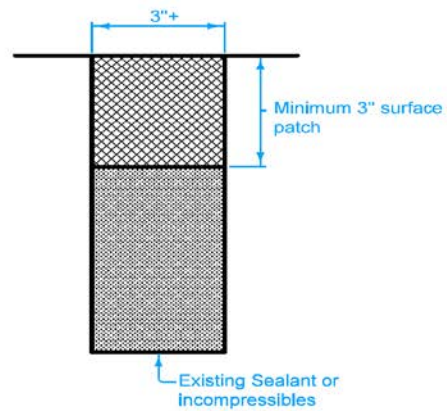
**CLASS IV JOINT**  
Existing Width  $>\frac{1}{2}$ " To  $1\frac{1}{2}$ "



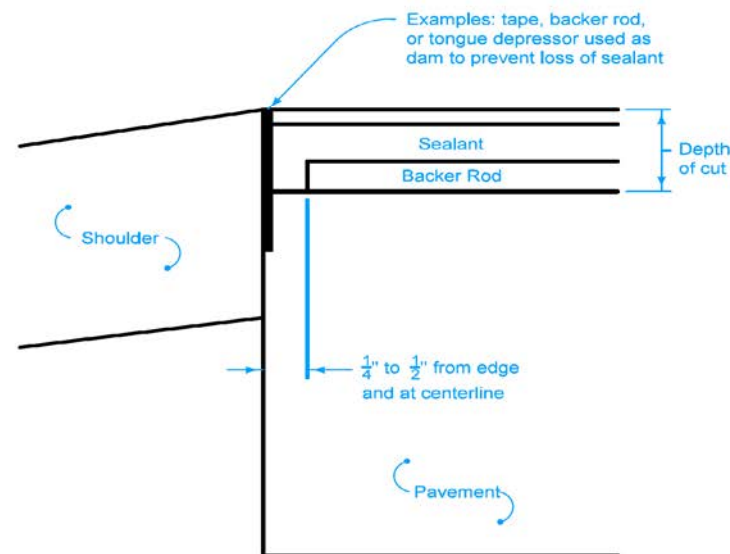
**CLASS V CRACK OR JOINT**  
Existing Width  $1\frac{1}{2}$ " To 3"



**ALTERNATE BOND BREAKER FOR**  
CLASS II CRACK  
CLASS IV JOINT  
CLASS V CRACK OR JOINT

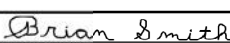


**GREATER THAN 3" OPENING**



**BACKER ROD PLACEMENT DETAIL**

- ① X" =  $\frac{1}{2}$ " Minimum when width is 1" or less  
2:1 (Width:Depth) when width is greater than 1"
- ② Minimum diameter of one nominal size larger than the existing crack or joint

|  |               |
|--|---------------|
| <b>IOWA DOT</b>  | REVISION      |
|  | New 10-21-14  |
| <b>STANDARD ROAD PLAN</b>  |               |
| REVISIONS: New. Replaces RR-21.  | <b>PR-110</b> |
|  | SHEET 1 of 1  |
| <br>APPROVED BY DESIGN METHODS ENGINEER |               |
| <b>PCC CRACK AND JOINT CLEANING AND FILLING</b>  |               |

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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



GENERAL DETAILS

PCC PAVEMENT MAINTENANCE FOR:  
**SWEET MARSH WILDLIFE MANAGEMENT AREA**  
BREMER COUNTY

| NO.        | BY              | REVISION    |
|------------|-----------------|-------------|
|            |                 |             |
|            |                 |             |
|            |                 |             |
|            |                 |             |
|            |                 |             |
|            |                 |             |
| DRAWN BY:  | PROJECT NUMBER: | 21-03-09-01 |
| CHK'D BY:  | DATE:           | X           |
| SHEET NO.: |                 |             |

**B.03**



**ESTIMATED PROJECT QUANTITIES**

| ITEM NO. | ITEM   | UNIT | TOTAL |
|----------|--|------|-------|
| 1        | Patches, Full-Depth Finish, by Area                                | SY   | 234   |
| 2        | Patches, Full-Depth Finish, by Area (Greater than 50 ft in length) | SY   | 104   |
| 3        | Patches, Full-Depth Finish, by Count, 6-inch PCC                   | EACH | 12    |
| 4        | Subbase (Patches)  | SY   | 338   |
| 5        | Granular Subbase   | SY   | 153   |
| 6        | Clean + Fill Crack (Pav't Maint)                                   | MILE | 0.10  |
| 7        | Sealer Material (PCC Pav't)  | LB   | 650   |
| 8        | Paved Shoulder, PCC, 6", Place Only                                | SY   | 190   |
| 9        | Flexamat, Furnish and Install                                      | SF   | 5,320 |
| 10       | Removal of Existing Revetment                                      | LS   | 1     |
| 11       | Removal of Existing Rock   | LS   | 1     |
| 12       | Traffic Control  | LS   | 1     |
| 13       | Mobilization   | LS   | 1     |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |
|          |  |      |       |

**ESTIMATE REFERENCE INFORMATION**

| ITEM NO. | DESCRIPTION  |
|----------|--|
| 1        | Patches, Full-Depth Finish, by Area  |
| 2        | Patches, Full-Depth Finish, by Area (Greater than 50 ft in length)<br>A. Class C Mix.<br>B. All joints are incidental.<br>C. Saw cuts are incidental.<br>D. Minimum 48-hour notice to DNR Field Engineer before pouring. |
| 8        | Paved Shoulder, PCC, 6"<br>A. Class C Mix.<br>B. All joints are incidental.<br>C. Minimum 48-hour notice to DNR Field Engineer before pouring.   |
| 9        | Flexamat, Furnish and Install<br>A. Mat shall be Flexamat Plus FR or approved equal.<br>B. Embed leading edge under PCC shoulder.  |
| 10       | Removal of Existing Revetment  |
| 11       | Removal of Existing Rock<br>A. Material shall be stockpiled in the NW corner of the near by parking lot.   |

**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.

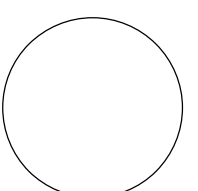
The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of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

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.

CONSULTANT:



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

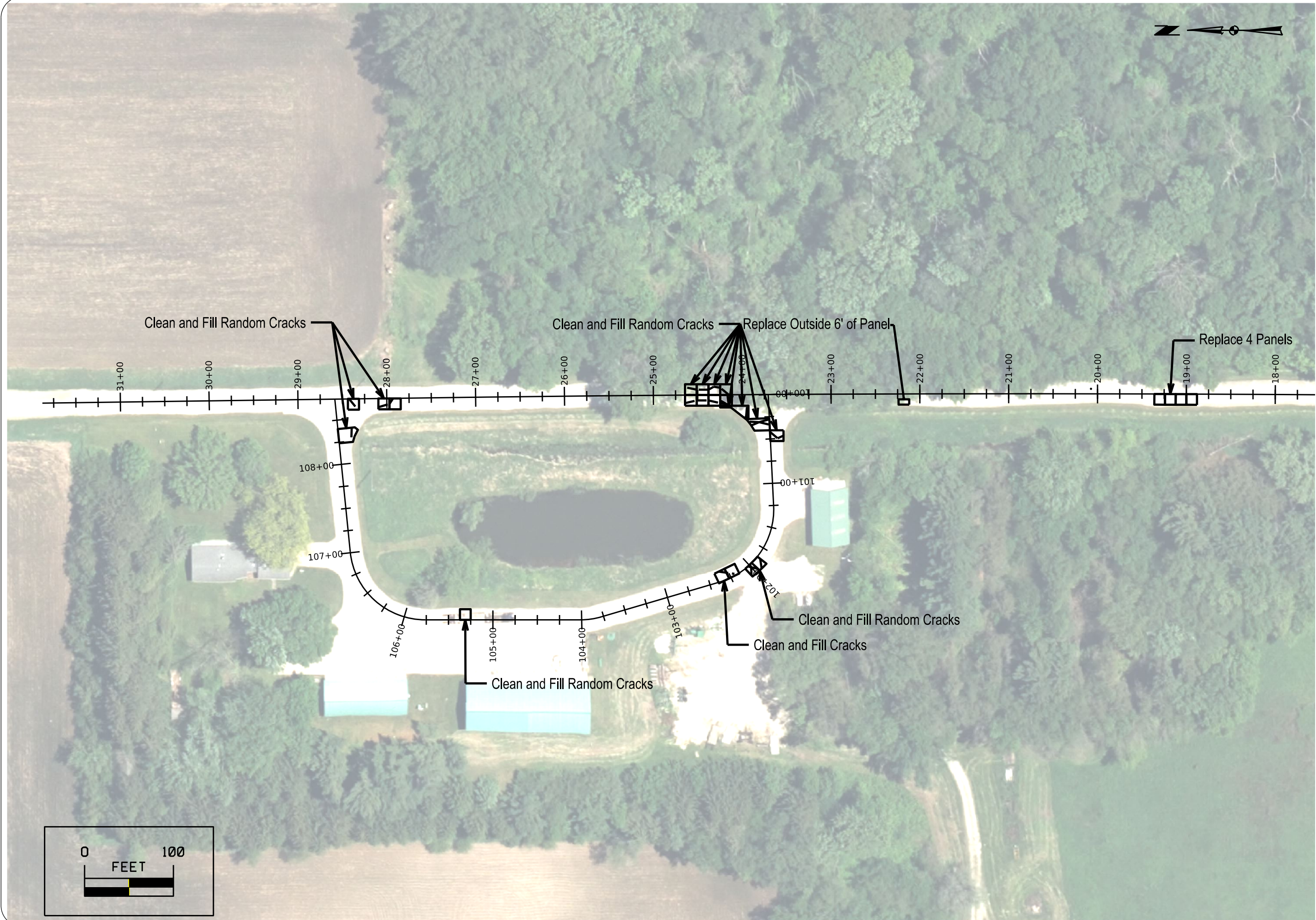


**QUANTITIES AND GENERAL INFORMATION**

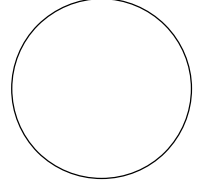
PCC PAVEMENT MAINTENANCE FOR:  
**SWEET MARSH WILDLIFE MANAGEMENT AREA**  
BREMER COUNTY

|           |                                |          |
|-----------|--------------------------------|----------|
| NO.       | BY                             | REVISION |
|           |                                |          |
|           |                                |          |
|           |                                |          |
|           |                                |          |
|           |                                |          |
|           |                                |          |
|           |                                |          |
|           |                                |          |
|           |                                |          |
| DRAWN BY: | PROJECT NUMBER:<br>21-03-09-01 |          |
| CHK'D BY: | DATE:<br>X                     |          |





CONSULTANT:



**IOWA DEPARTMENT OF NATURAL RESOURCES**

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



**SITE PLAN**

PCC PAVEMENT MAINTENANCE FOR:

**SWEET MARSH WILDLIFE MANAGEMENT AREA**

BREMER COUNTY

| NO. | BY | REVISION |
|-----|----|----------|
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |

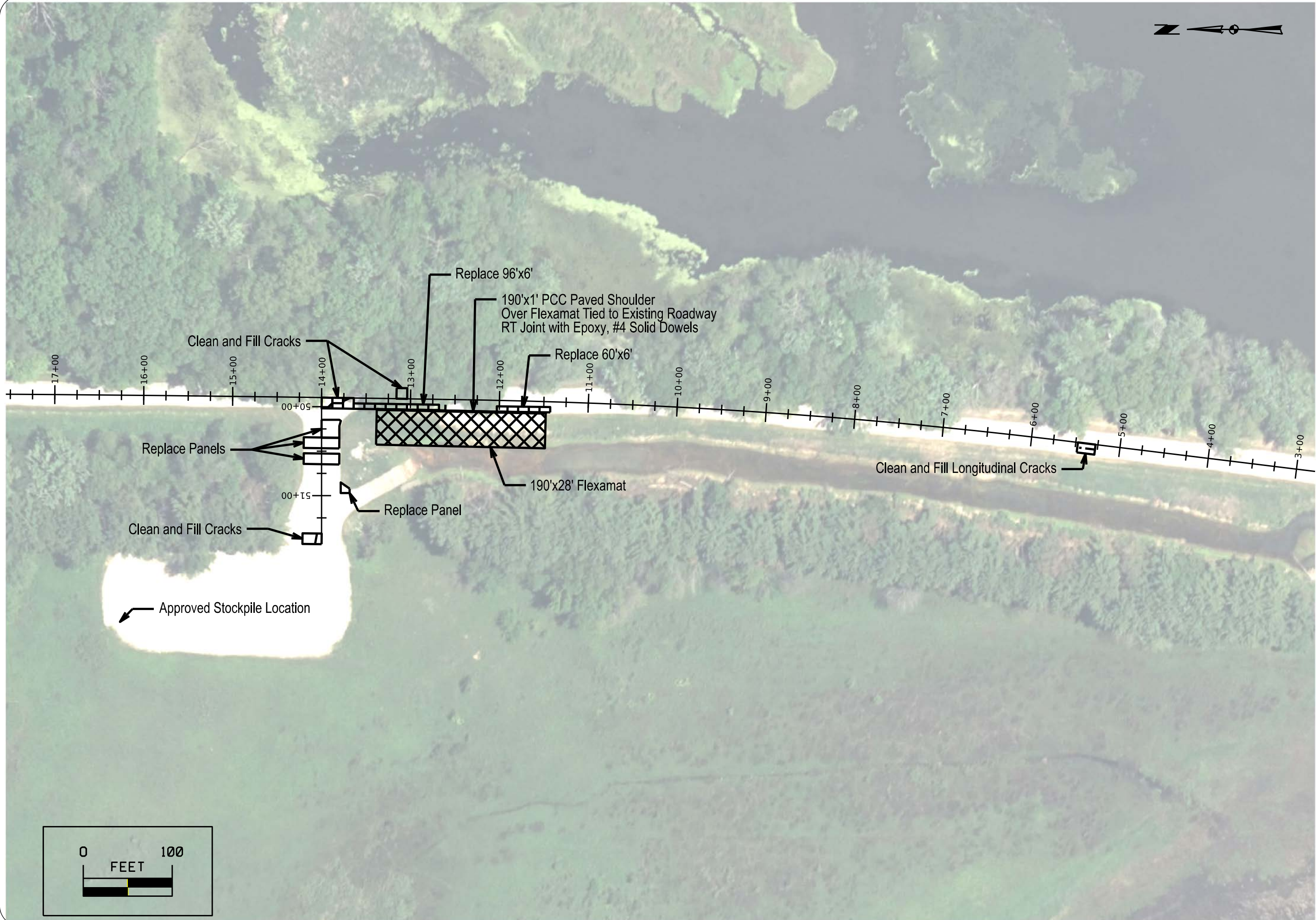
DRAWN BY: PROJECT NUMBER:  
DATE: 21-03-09-01

CHK'D BY: DATE:  
X

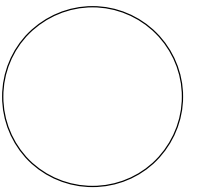
SHEET NO:

**D.01**





CONSULTANT:



**IOWA DEPARTMENT OF NATURAL RESOURCES**

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



**SITE PLAN**

PCC PAVEMENT MAINTENANCE FOR:  
**SWEET MARSH WILDLIFE MANAGEMENT AREA**

BREMER COUNTY

| NO. | BY | REVISION |
|-----|----|----------|
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |
|     |    |          |

DRAWN BY: PROJECT NUMBER:  
21-03-09-01

CHK'D BY: DATE:  
X

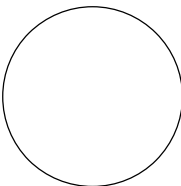
SHEET NO:

**D.02**





CONSULTANT:



IOWA DEPARTMENT OF  
NATURAL RESOURCES

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



### SITE PLAN

PCC PAVEMENT MAINTENANCE FOR:

SWEET MARSH WILDLIFE MANAGEMENT AREA

BREMER COUNTY

NO. BY DATE REVISION

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

DRAWN BY: PROJECT NUMBER:  
21-03-09-01

CHK'D BY: DATE:  
X

SHEET NO.:

# D.03

