SPECIFICATIONS

FOR

THE CITY OF FORT PIERRE

2017 CONCRETE PAVING PROJECT

I hereby certify that these plans, specifications, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

Richard A. Hahn, PE

5/1/17

5821
Registration No.

CITY OF FORT PIERRE

FORT PIERRE, SOUTH DAKOTA

April 2017
The City of Fort Pierre

2017 CONCRETE PAVING PROJECT

Project No. 2017-CP01

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NOTICE OF CALL FOR BIDS

The City of Fort Pierre in Fort Pierre, South Dakota, will receive FIRM sealed bids at the City of Fort Pierre, 08 E 2ND Ave., Fort Pierre, South Dakota, 57532, until 3:00 PM CDT, Thursday, May 11, for the “2017 CONCRETE PAVING PROJECTS” for the City of Fort Pierre.

Plans and Specifications are on file at Fort Pierre City Hall, 08 E 2nd Ave., Fort Pierre South Dakota 57532, and a hard copy may be obtained for a refundable cost of $50.00 less postage and handling. Plans may also be obtained in PDF form by email by sending an Email to R.Hahn@fortpierre.com or by downloading from the city website. For Contractors who are resident in South Dakota who intend, in good faith, to bid upon the project one copy of Plans and Specifications shall be furnished, without charge, in accordance with South Dakota Codified Law 5-18B-1.

The City of Fort Pierre reserves the right to accept or reject any or all BIDS, to waive any informality in the BID received and to accept the BID that is to the advantage of, and in the best interest of the City of Fort Pierre.

Each bid must contain a certified check, a Cashier’s check or Draft, for five percent (5%) of the amount of the bid; such check to be certified or issued by either a State or National Bank and payable to the City of Fort Pierre or in lieu there of a Bid Bond for Ten percent (10%) of the amount of this bid, such bond to be issued by a Surety authorized to do business in the State of South Dakota and payable to the City of Fort Pierre as a guarantee that such bidder will enter into a contract with said the City of Fort Pierre, therefor in accordance with the terms of such letting and bid in case such bidder is awarded the contract. The Certified Check or other guarantee, or bid bond of the successful bidder, will be returned to him forthwith upon the execution of the contract and surety hereafter provided for. The Contractor shall also provide proof of liability insurance and workman’s compensation insurance.

Bids shall be marked "2017 CONCRETE PAVING PROJECTS" and sealed. The City of Fort Pierre requests one (1) Original Bid and one (1) copy. Bids may be mailed to the City of Fort Pierre, P.O. Box 700, Fort Pierre, South Dakota, 57532 or hand delivered to the Office of the Finance Officer, 08 East 2nd Ave., Fort Pierre, South Dakota 57532.

By order of the City of Fort Pierre City Council, dated this 6th day of March, 2017.

______________________________
Roxanne Heezen, City Finance Officer

Advertisement published _____________ and _____________, 2017.
INFORMATION FOR BIDDERS

BIDS will be received by the City of Fort Pierre City Council (hereinafter called the "OWNER"), at the Office of the City of Fort Pierre Finance Officer until 3:00 PM CDT, Thursday May 11, 2017 and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to the City of Fort Pierre Finance Office at 08 E. 2nd Avenue, Fort Pierre, South Dakota 57532. Each sealed envelope containing a BID must be plainly marked on the outside as BID for "2017 CONCRETE PAVING PROJECTS" and the envelope should bear on the outside the name of the BIDDER, his address, his license number if applicable and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER at P.O. Box 700, Fort Pierre, South Dakota, 57532-0800.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. One original BID form and one (1) copy are required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified will not be considered. No BIDDER may withdraw a BID within 30 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER will not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER will provide to BIDDERS prior to BIDDING, all information that is pertinent to, and delineates and describes, the land owned and the rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person will not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID bond payable to the OWNER for ten (10%) percent of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved, after which it will be returned. A certified check for five (5%) percent of the total amount of the BID may be used in lieu of a BID BOND.
A performance BOND and a payment BOND, each in the amount of one hundred (100%) percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS and payment BONDS or performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within fifteen (15) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD will be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal will become the property of the OWNER.

The OWNER within thirty (30) days of receipt of acceptable payment BOND and performance BOND, and Agreement signed by the party to whom the Agreement was awarded will sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal will be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED will be issued within thirty (30) days of the execution of the AGREEMENT by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the thirty (30) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER will furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the AGREEMENT and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted. Award will be made to the lowest RESPONSIBLE BIDDER. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT will apply to the contract throughout. Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing will in no way relieve any BIDDER from any obligation in respect to his BID.

| The Engineer/Owner is: | Richard A. Hahn, PE  
| Director of Public Works |  
| Whose address is: | City of Fort Pierre  
| PO Box700/08 e 2nd Ave | Fort Pierre, SD 57532  
| Contacted Information: | Phone (605) 223-7690  
| Fax (605) 223-7693 | Email: R.Hahn@FortPierre.com |
**BID**

Proposal of ________________________________ (hereinafter called "BIDDER"), organized and existing under the laws of the State of ________________________________, doing business as ________________________________*. To the City of Fort Pierre City Council (hereinafter called "OWNER").

* Insert "a Corporation", "a Partnership", or "an Individual", as applicable.

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of the "2017 CONCRETE PAVING PROJECTS" in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies and in the case of a joint Bid, each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT by AUGUST 15, 2017. BIDDER further agrees to pay as liquidated damages the sum of $500.00 for each consecutive calendar day thereafter. BIDDER acknowledges receipt of the following addendums:

_____________________________________________________________________

_____________________________________________________________________

**NOTE:** BIDS will include sales tax and all other applicable taxes and fees.

BIDDER agrees to perform all the work described in the SPECIFICATIONS for the following unit prices:
### PROJECT 1 – CASEY TIBBS ST.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>EXTENDED PRICE</th>
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<td>LS</td>
<td></td>
<td></td>
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<tr>
<td>TRAFFIC CONTROL</td>
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<tr>
<td>TRANSVERSE JOINT DOWEL BAR-3/4&quot;</td>
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<tr>
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**CONTRACT TOTAL:**  

### PROJECT 2 – WANDEL AVE.

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<th>UNIT</th>
<th>UNIT PRICE</th>
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</table>

**CONTRACT TOTAL:**
Bidder is aware quantities may be adjusted to accommodate changes in scope of work.

The Bidder is aware that Owner has the right to select any combination of projects or may elect to reject all bids.

Respectfully submitted by: ____________________________________________

Signature: ___________________________                      Address: ___________________________

Title: ________________________________                      City, State, Zip: _______________________

License Number (If Applicable)                      Date: ____________________________

(SEAL * If BID is by a Corporation)

__________________________________________

ATTEST
STANDARD CONTRACT DOCUMENTS

Standard contract documents are in a separate package labeled “Standard Contract Documents and are available upon request or may be viewed and downloaded from the City website.

STANDARD AGREEMENT

The Agreement used for City of Fort Pierre projects will be the STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR ON THE BASIS OF A STIPULATED PRICE prepared by the Engineer’s Joint Contract Committee (Form 1910-08A1 – 1996 Edition) as modified for this project. Copies are available upon request and are available for download from the Fort Pierre City Website.

STANDARD GENERAL CONDITIONS

The standard General Conditions for this project is the STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT prepared by the Engineer’s Joint Contract Committee (Form 1910-08 – 1996 Edition) as modified as indicated below. Copies are available upon request and are available for download from the Fort Pierre City Website.

Amendments to the Standard General Conditions are as follows:

Arbitration will not be utilized to settle disagreements. In lieu of arbitration, both parties are to negotiate a final settlement to any disagreements resulting from performance of the Contract. If no settlement can be reached after fully exhausting all efforts, the matter will be resolved by the District Court with jurisdiction over this matter.

OTHER CONTRACT DOCUMENTS

Other contract documents such as Notice of Award, Bid Bond form, Performance Bond form, Notice to Proceed and Construction Change Order are in the package “Standard Contract Documents”.

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SPECIAL CONDITIONS

SC-1 EXAMINATION OF SITE: Before bidding the work, each contractor will inform themselves fully as to all site conditions and local regulations.

SC-2 WORK INCLUDED IN THE CONSTRUCTION CONTRACT: The work to be included in this contract includes all labor and materials that are necessary for and reasonably incidental to the completion of all the new construction, as shown and specified in the plans and specifications.

SC-3 STORAGE OF MATERIALS: The Contractor may not store materials on the site due to the residential location of the project. The Contractor may store materials in the City of Fort Pierre yard or at another designated location. The Contractor is responsible for all of the materials stored until all work on the project is completed and the finished project is in the full possession of the Owner.

SC-4 SAFETY EQUIPMENT: Precautions will be exercised at all times for the protection of all persons and property. All Federal Safety Standards and City Regulations will be abided by and enforced by the National Health and Safety Act. All safety precautions will be exercised and carried out in such a manner so as to not make the Owner and Engineer negligent at all times.

SC-5 SAMPLES REQUIRED: Any and all samples will be furnished by the Contractor to the Engineer/Owner as requested.

SC-6 PAYMENT FOR MATERIALS: The Contractor will be paid the measured Quantity for materials unless prior written approval is received from the City or it's agent. The Measured Quantities are based on lengths, widths, and depths or rates indicated on the "Estimate of Quantities". Changes in project parameters (length, width, depth/rate) approved in the field shall be relayed to the Contractor in written form. Agreed upon changes to the project parameters will then determine the payment quantity, not the Contractors scale tickets or other quantity documentation.

SC-7 CONTRACTOR COORDINATION: Contractor shall be aware that there may be other projects proceeding in the same area as this project. Coordination between projects may be necessary to facilitate project completion.

SC-8 UNIT PRICES AVAILABLE FOR ADDITIONAL PROJECTS: The Contractor shall be aware that other projects may become ready for paving during the project time and may utilize the unit prices of this project upon written request and agreed upon by Contractor.
CONTRACTOR’S RESPONSIBILITIES

- The Contractor shall ensure that the foreman on the project site and each subcontractor shall have a set of plans on site during any construction activities. The Engineer/Owner will have the authority to stop construction activities if the Contractor does not have plans and reasonable supervision on site during any construction activities.

- It shall be the Contractor's responsibility to coordinate work with other Contractors working nearby.

- The Contractor shall complete projects no later than August 15, 2017.

- All work is completed in residential neighborhoods, therefore all work sites shall be maintained, including: trash picked up at the end of each day, no blocking of driveways, and no working between the hours of 7:00 PM and 7:00 AM, Monday thru Friday. Work on Saturday is permitted from 8:00 AM to 5:00 PM. No work is permitted on Sunday.

- The Contractor shall provide all necessary signing and flaggers to direct traffic through construction zones. The Contractor shall close only the project street to through traffic.

- Contractor is to remove the overfilled base coarse material to the lines and grades provided by Owner. The excess base material shall be hauled and stockpiled at the City shop or other designate location.

- Concrete splattered on roadway appurtenances or adjacent private landowner possessions shall be satisfactorily cleaned off by the Contractor.

- It shall be the Contractor's responsibility to notify the City at least 10 days in advance of when they plan to begin work. The contractor shall also provide a door to door notice of construction to all residents affected a minimum of 3 days prior.

OWNER’S RESPONSIBILITIES

- The Owner shall request any samples and provide sample containers when required.

- The Owner or its Agent shall complete all inspection during construction.

- The Owner shall have all existing asphalt or chip sealed pavement removed and base prepared and overfilled prior to the contractor beginning work.
SPECIFICATIONS

The work on this project will consist of removal of approximately 6" of overfilled granular base material, stockpile the excess material at the City shop and the construction of 6" Concrete Pavement on the 600 Block of Casey Tibbs Street. This project will also include all incidentals, equipment, labor and fuel to complete the above items. All work will follow the Standard Specifications for Roads and Bridges, 2015 edition of South Dakota Department of Transportation and any supplemental specifications thereto adopted. The Specifications will be modified as follows:

SURFACE PREPARATION

This work shall consist of removal of approximately 6" overfilled granular material (salvage and stockpile), fine grade the remaining base to the lines and grades provided and compact the granular base surface and final surface preparation prior to any Paving Operations. The Surface Preparation is covered in Section 210 of the SDDOT Standard Specifications for Roads and Bridges, 2015 Edition. The contractor shall broom the prepared base of loose material. Dampen the base material prior placing concrete pavement.

TRAFFIC CONTROL

1. The Contractor shall provide Traffic Control Devices to completely close the project road. Additional traffic control required to coordinate public traffic and construction traffic.

2. Removing, relocating, covering, salvaging and resetting of the traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the Owner.

3. Storage of vehicles and equipment shall be at locations designated by the Owner and shall not block access to residential properties outside of the work zone. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the adjacent properties, surfacing, prepared base, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the Owner, and to the satisfaction of the Engineer.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damaged to existing facilities.
Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-07A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utilities.

GRANULAR BASE, SALVAGE AND STOCKPILE

The bid item Granular Base, Salvage and stockpile shall consist of the removal of the overfilled granular base material, stockpile material at the City Shop and fine grade the remaining base to the lines and grades directed by the owner. Survey stakes will be provided by others. The contractor shall compact the granular base prior to placement the PCCP paving utilizing a pneumatic or steel faced roller to the satisfaction of the owner.

CONCRETE PAVEMENT – 6”

The bid item Concrete Pavement – 6” Reinforced shall consist of furnishing and placing reinforcing, furnishing, placing, and finishing Portland Cement Concrete Pavement to the lines and grades specified. Concrete pavement shall contain the aggregates, cement and water in the proportions indicated in the approved mixed design. The concrete pavement shall be placed to a minimum depth of 6 inches.

Contractor shall provide a mix design utilizing materials conforming to section 380.2 and 380.3 of the South Dakota Standard Specifications for Roads and Bridges, 2015.

Unit price for Concrete Pavement is per Square Yard (SY) for 6 inch thick concrete pavement.

TRANSVERSE JOINT DOWEL BAR

Transverse joint Dowel bars shall be placed in accordance with Standard Plate 380.1 for a 12 bar assembly for a 6 inch thick concrete pavement and 3/4” Dowel Bars. Dowel bars shall be placed at a spacing not to exceed 12 feet center to center. Sawed joints shall aligned and centered with dowels.

Transverse Dowel Bars shall be installed at construction joint of existing concrete pavement in accordance with Standard Plate 380.08.

Unit Price for Transverse Dowel Bar shall include furnish and install dowels and supporting baskets.

LONGITUDINAL JOINT TIE BARS.

Longitudinal Tie bars (#5 deformed) at centerline shall be placed in accordance with Standard Plate 380.10.

Longitudinal Tie Bars at existing curb and gutter shall be installed in accordance with Standard Plate 380.11.
Unit price for longitudinal tie bars shall include furnishing and installing steel bars in accordance with the standard plates at the curb line and centerline. The tie bars are to be centered in new slab depth.

**JOINT SAW AND SEAL**

The Joints shall be sawn in accordance with standard detail as soon as the concrete has hardened sufficiently to prevent spalling of joint when sawed, but no later than 24 hours from time of placement of concrete pavement. Joints are to be cleaned and sealed in accordance with standard detail within 48 hours of being sawed and prior to traffic any traffic permitted on pavement. The cost of joint sawing and sealing shall be incidental to concrete pavement.
PROJECT 1 PLAN VIEW

CASEY TIBBS STREET PROJECT

ESTIMATE OF QUANTITIES

PAVING (ASPHALT OR CONCRETE) .................. 1157.6 SY
CURB AND GUTTER (INCLUDES P6 & B66) .......... 245.9 LF
DRIVEWAY APRON (INCLUDING TAPER) .......... 32.6 SY
GENERAL NOTES:

Longitudinal joint tie bars shall be placed a minimum of 15 inches from the transverse contraction joint.

Centerline of individual dowel bars shall be parallel to top of subgrade ±1/8 inch in 18 inches and to all other dowel bars in the assembly ±1/16 inch in 18 inches.

Centerline of individual dowel bars shall be parallel to the centerline of the roadway ±1/2 inch in 18 inches.

The transverse contraction joints shall be sawed perpendicular to the centerline of the roadway and the dowel bars shall be centered on the sawed joint ±1 inch.

Supporting devices as shown on this sheet, or equivalent as approved by the Engineer, shall be used to maintain proper horizontal and vertical alignment of the dowel bars.

August 30, 2013

Published Date: 1st Qtr. 2017

PCC PAVEMENT Dowel BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS

12 Bar Assembly on Granular Base Material

Sheet 1 of 1
GENERAL NOTES:

If an early entrance sawcut does not develop the full transverse crack, then the saw cut to control cracking shall be a minimum of \( \frac{1}{4} \) the thickness of the pavement.

All hot poured elastic joint sealer material spilled on the surface of the concrete pavement shall be removed as soon as the material has cooled. The extent of removal of material shall be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material shall be borne by the Contractor.
GENERAL NOTES:

No. 4 epoxy coated deformed tie bars shall be spaced 12 inches center to center and shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

The minimum distance between a transverse construction joint with tie bars and an adjacent transverse contraction joint shall be 5 feet.

When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

A transverse construction joint may be placed in lieu of the transverse contraction joint when shown in the plans.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.
DETAIL A
TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS

Sawed Joint filled with Hot-Poured Elastic Joint Sealer

\[ \frac{3}{8} \]

Epoxy Coated Deformed Tie Bar

In Place PCC Pavement

\[ \frac{1}{2} \]

New PCC Pavement

Drilled Hole

Full Depth Saw Cut

\[ T = \text{In Place PCC Pavement and New PCC Pavement Thickness} \]

GENERAL NOTES:
The term "In Place PCC Pavement" in the above drawing indicates that the In place PCC pavement was placed on a previous project.

See sheet 2 of 2 of this standard plate to determine if Detail A shall be used.

The tie bars shall be embedded a minimum depth of 9 inches into the In place PCC pavement and anchored with an epoxy resin adhesive.

No.9 epoxy coated deformed tie bars shall be used in 10 inch thickness and less PCC Pavement and No.11 epoxy coated deformed tie bars shall be used in 10.5 inch thickness and greater PCC Pavement. The tie bar spacing shall be 18 inches center to center and shall be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

DETAIL B
TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS

Transverse joint shall be the same type used on new PCC pavement. See standard plates 380.05 or 380.06.

In Place PCC Pavement

\[ \frac{1}{2} \]

New PCC Pavement

Drilled Hole

Full Depth Saw Cut

Epoxy Coated Plain Round Dowel Bar

Form Oiled or Greased End

\[ T = \text{In Place PCC Pavement and New PCC Pavement Thickness} \]

GENERAL NOTES:
The term "In Place PCC Pavement" in the above drawing indicates that the In place PCC pavement was placed on a previous project or current project.

See sheet 2 of 2 of this standard plate to determine if Detail B shall be used.

The plain round dowel bars shall be embedded a minimum depth of 9 inches into the In place PCC pavement and anchored with an epoxy resin adhesive.

The epoxy coated plain round dowel bar size, number, and spacing shall be the same as detailed on the corresponding dowel bar assembly standard plate (380.01, 380.02, 380.03, or 380.04). The epoxy coated plain round dowel bars shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.
**Page 2 of 2**

**PCC Pavement Transverse Construction Joints with Tie Bars or Dowel Bars**

Published Date: 1st Qtr. 2017

**SDDOT**

**Plate Number**

380.08

Sheet 2 of 2

---

**PLAN VIEW**

(For typical transverse joint spacing of 20' on the current project)

- Longer than 4' and shorter than 15'
- Use Detail A
- New P.C.C. Pavement
- New Transverse Joint

- 15' to 20'
- Use Detail B
- New P.C.C. Pavement
- New Transverse Joint

---

**PLAN VIEW**

(For typical transverse joint spacing of 15' or 20' on the current project)

- Longer than 4' and shorter than 10'
- Remove In Place P.C.C.P. to Existing Transverse Joint

- 4' and shorter
- 15' or 20' (Typ.)

- In Place P.C.C. Pavement
- New P.C.C. Pavement
- New Transverse Joint
- Existing Transverse Joint

- PLAN VIEW
  (For typical transverse joint spacing of 15' or 20' on the current project)

---

**PLAN VIEW**

(For typical transverse joint spacing of 15' on the current project)

- Longer than 4' and shorter than 10'
- Use Detail A
- New P.C.C. Pavement
- New Transverse Joint

- Existing Transverse Joint

- In Place P.C.C. Pavement
- New P.C.C. Pavement
- New Transverse Joint

- PLAN VIEW
  (For typical transverse joint spacing of 15' on the current project)

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September 6, 2013
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<th>PCCP Thickness</th>
<th>Transverse Contraction Joint Spacing (X)</th>
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<tr>
<td>8&quot; to 9.5&quot;</td>
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</tr>
<tr>
<td>10&quot; and Thicker</td>
<td>20'</td>
</tr>
</tbody>
</table>

6" THICK | 12 FEET
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)

Sawed Joint filled with Hot-Poured Elastic Joint Sealer

\[ \frac{T}{2} \]

In place PCC Pavement placed on previous project or current project

\[ \frac{T}{2} \]

Drilled Hole

\[ \frac{T}{2} \]

T = Pavement Thickness

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INserted or FORMed IN BARS)

Sawed Joint filled with Hot-Poured Elastic Joint Sealer

\[ \frac{T}{2} \]

In place PCC Pavement placed on the current project

\[ \frac{T}{2} \]

No.5 Epoxy Coated Deformed Tie Bar

GENERAL NOTES (For the details above):
The epoxy coated deformed tie bars shall be spaced in accordance with the following tables:

<table>
<thead>
<tr>
<th>Tie Bar Spacing 48&quot; Maximum</th>
<th>Tie Bar Spacing 30&quot; Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse Contraction Joint Spacing</td>
<td>Number of Tie Bars</td>
</tr>
<tr>
<td>6.5' to 10'</td>
<td>2</td>
</tr>
<tr>
<td>10.5' to 14'</td>
<td>3</td>
</tr>
<tr>
<td>14.5' to 18'</td>
<td>4</td>
</tr>
<tr>
<td>18.5' to 22'</td>
<td>5</td>
</tr>
<tr>
<td>15' to 17'</td>
<td>6</td>
</tr>
<tr>
<td>20' to 22'</td>
<td>8</td>
</tr>
</tbody>
</table>

The tie bars shall be placed a minimum of 15 inches from transverse contraction joints.

The required number of tie bars as shown in the table shall be uniformly spaced within each panel. The uniformly spaced tie bars shall be spaced a maximum of 48 inches center to center for a female keyway and shall be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing shall apply to tie bars within each panel.

The keyway illustrated in the above details depict a female keyway.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

August 31, 2013

Published Date: 1st Qtr. 2017

PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS

PLATE NUMBER 380.10

Sheet 1 of 2
SAWED LONGITUDINAL JOINT WITH TIE BARS
(POURED MONOLITHICALLY)

Sawed Joint filled with Hot Poured Elastic Joint Sealer

\[ \frac{1}{4}\text{"} \quad \frac{3}{16}\text{"} \]

New PCC Pavement

\[ \frac{1}{2}\text{"} \quad \frac{1}{2}\text{"} \]

New PCC Pavement

Line of Fracture

No. 5 Epoxy Coated Deformed Tie Bars

\[ T = \text{Pavement Thickness} \]

GENERAL NOTES (For the detail above):
The epoxy coated deformed tie bars shall be spaced in accordance with the following table:

<table>
<thead>
<tr>
<th>Tie Bar Spacing</th>
<th>48&quot; Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse Contraction Joint Spacing</td>
<td>Number of Tie Bars</td>
</tr>
<tr>
<td>6.5' to 10'</td>
<td>2</td>
</tr>
<tr>
<td>10.5' to 14'</td>
<td>3</td>
</tr>
<tr>
<td>14.5' to 18'</td>
<td>4</td>
</tr>
<tr>
<td>18.5' to 22'</td>
<td>5</td>
</tr>
</tbody>
</table>

The tie bars shall be placed a minimum of 15 inches from the transverse contraction joints.
The required number of tie bars as shown in the table shall be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing shall apply to tie bars within each panel.
The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

August 31, 2013

Published Date: 1st Qtr. 2017

SDDOT

PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS

PLATE NUMBER
380.10

Sheet 2 of 2
LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(Individually Formed)

Concrete Gutter or Concrete Curb and Gutter

Sawed Joint filled with Hot-Poured Elastic Joint Sealer

In Place Gutter or Curb and Gutter

New PCC Pavement

Metal Recess Strip

No. 5 Epoxy Coated Deformed Tie Bar

T = Pavement Thickness

GENERAL NOTES:

No. 5 epoxy coated deformed tie bars shall be spaced 48 inches center to center. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1/2 inches deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY

Concrete Gutter or Concrete Curb and Gutter

PCC Pavement

T = Pavement Thickness

New PCC Pavement

GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement if the mainline lane width is less than or equal to 12 feet. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter shall be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter shall be constructed at the same slope as the mainline concrete pavement.

June 26, 2013

PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER

Published Date: 1st Qtr. 2017

SDDOT

PLATE NUMBER

380.11

Sheet 1 of 1
City of Ft. Pierre

POSTED SPEED LIMIT TO WORK (MPH/ KPH)

<table>
<thead>
<tr>
<th>Post Speed</th>
<th>Speed Warning Signs (Feet)</th>
<th>Taper Length (Feet)</th>
<th>Spacing of Channelizing Devices (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 30</td>
<td>200</td>
<td>180</td>
<td>25</td>
</tr>
<tr>
<td>35 - 40</td>
<td>350</td>
<td>320</td>
<td>25</td>
</tr>
<tr>
<td>45 - 60</td>
<td>500</td>
<td>600</td>
<td>50</td>
</tr>
<tr>
<td>60 - 65</td>
<td>750</td>
<td>660</td>
<td>50</td>
</tr>
</tbody>
</table>

- Channelizing Devices
  - Drums or Type III Barricades shall be used.
The signing shown is applicable during that period when construction operations are in progress in the vicinity of the crossroad. Need for such signing at specific crossroad locations shall be determined at the site by the Highway Authority.

**Need and safe speed to be determined at the site by the Highway Authority.

* Need for flagger to be determined at the site by the Highway Authority. When flagger is used, the W20-7 sign shall be installed.

☑ Need for BUMP sign to be determined at the site.
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall be used where there are distracting situations such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment travelling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

April 15, 2015

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

Published Date: 1st Qtr. 2017

SDDOT

PLATE NUMBER 634.01
Sheet 1 Of 1