

NOTE:  
This detail is an example for dowel assemblies for S.C.D.O.T.. Other similar assemblies may be used upon approval from the Construction Engineer.

\*1/4" Smooth Dowel Bar. Pre-coated with bond breaking material. 18" Long - Spaced 12" O.C.  
Assembly to be Securely Anchored to Base Course as Approved by Engineer.

DETAIL OF CONSTRUCTION AND CONTRACTION JOINT DOWEL ASSEMBLY FOR NEW PAVEMENT AND PATCHED

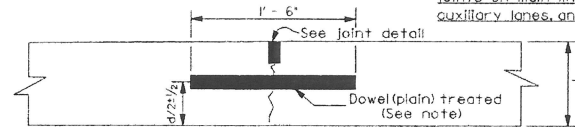


CONCRETE PAVEMENT DETAILS		 South Carolina Department of Transportation <b>STANDARD DRAWING</b> SPEC. DRAWING 50I-2 DETAIL OF CONSTRUCTION AND CONTRACTION JOINT DOWEL ASSEMBLY
 APPROVED BY 1 APRIL 2008 DATE		

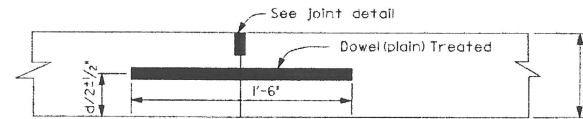
REVISIONS		
DATE	REV. BY	DESCRIPTION

USE this joint on all transverse contraction joints on main line, auxiliary lanes, and tapers.

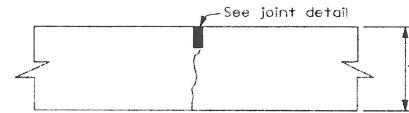
PIN NO. 37175							
FED. RD. DIST. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	FLORENCE / DILLON	172L037175A		I-95	30	



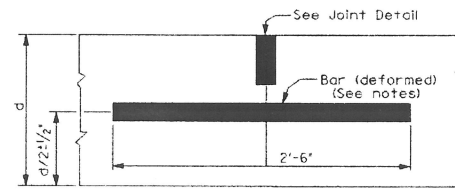
SECTION A'-A'  
TRANSVERSE CONTRACTION JOINT



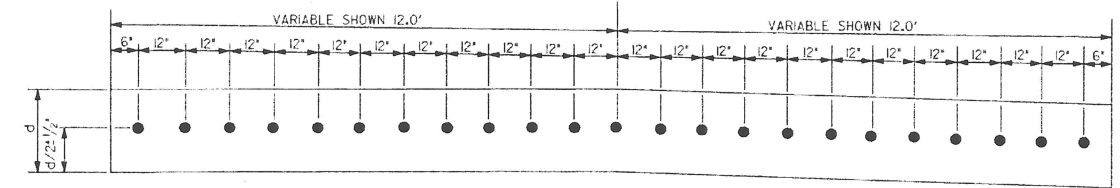
SECTION D-D  
TRANSVERSE CONTRACTION JOINT



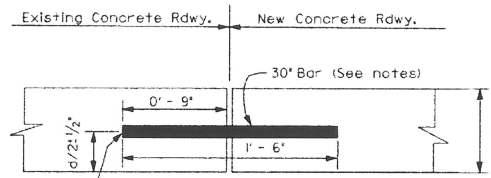
SECTION C-C  
TRANSVERSE CONTRACTION JOINT



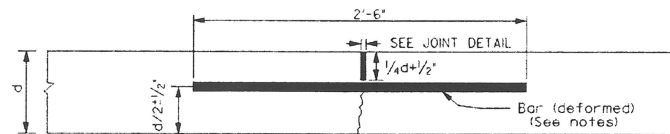
SECTION F-F  
LONGITUDINAL CONTRACTION JOINT



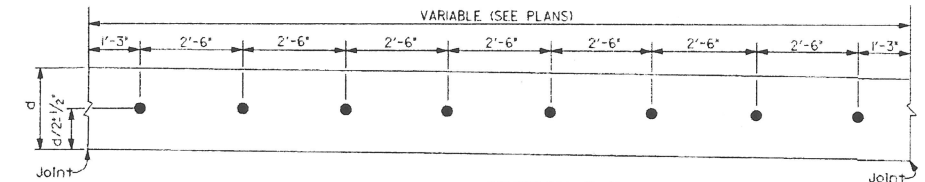
SECTION G-G  
FOR TRANSVERSE CONTRACTION OR CONSTRUCTION JOINTS



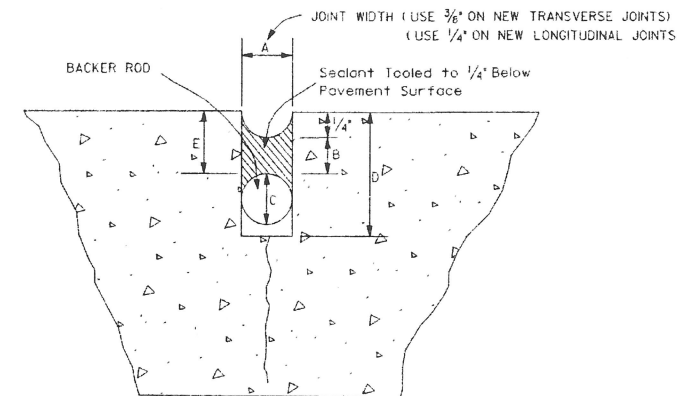
SECTION H-H  
LONGITUDINAL CONTRACTION JOINT  
GROUTED REBAR INTO EXISTING  
PAVEMENT



SECTION A-A (Sawed Joint)  
LONGITUDINAL CONTRACTION JOINT



SECTION B-B  
FOR LONGITUDINAL CONTRACTION & CONSTRUCTION JOINTS



DETAIL OF TRANSVERSE CONSTRUCTION AND CONTRACTION JOINTS &  
LONGITUDINAL CONTRACTION JOINT (NEW PAVEMENT AND PATCHES)

ESTIMATING REQUIREMENTS				
A	B	C	D	E
JOINT WIDTH INCHES	SEALANT BEAD THICKNESS INCHES	BACKER ROD DIAMETER INCHES	MINIMUM JOINT DEPTH INCHES	BACKER ROD PLACEMENT DEPTH INCHES
1/4	1/4	3/8	1	1/2
3/8	1/4	1/2	1 1/4	1/2
1/2	1/4	5/8	1 1/4	1/2
5/8	5/16	3/4	1 1/2	9/16
3/4	5/8	7/8	1 3/4	7/8
7/8	7/16	1	1 3/4	1 1/16
1	1/2	1 1/8	2	3/4

REVISIONS		
DATE	REV. BY	DESCRIPTION



CONCRETE PAVEMENT DETAILS

*Mitchell D. Metts*  
APPROVED BY

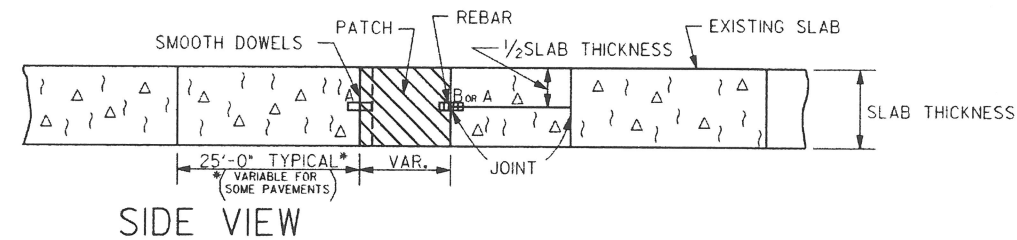
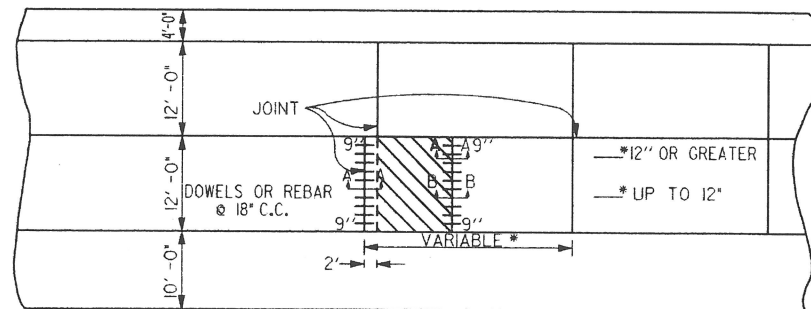
1 APRIL 2003  
DATE

**SCDOT**  
South Carolina Department of Transportation  
**STANDARD DRAWING**  
SPEC. DRAWING 501-6

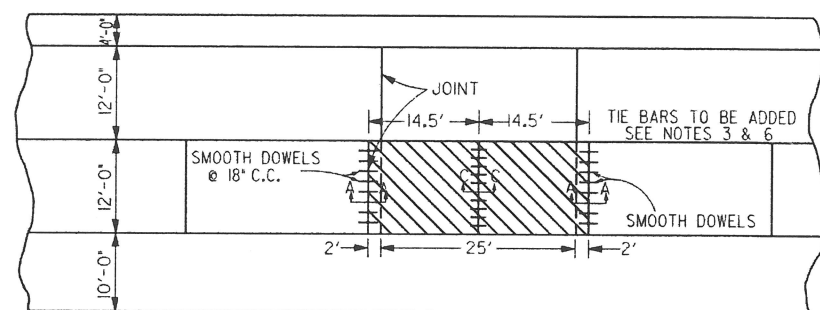
PORTLAND CEMENT  
CONCRETE PAVEMENT  
DETAIL OF JOINTS

PIN NO. 3775							
FED. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	DILLON	172L037175A		1-95	3E	

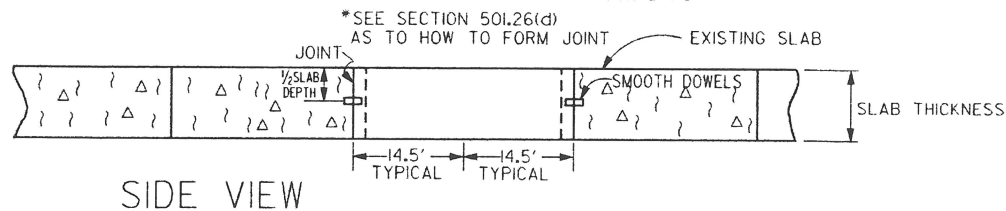
**PART LENGTH PATCH DETAIL  
PLAN VIEW**



**FULL LENGTH PATCH DETAIL  
PLAN VIEW**



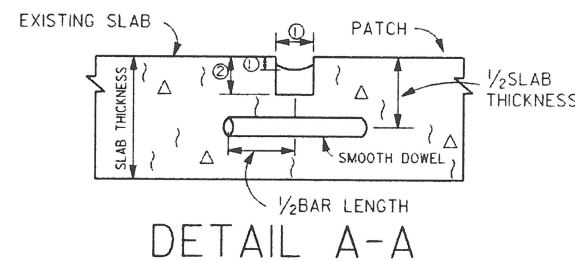
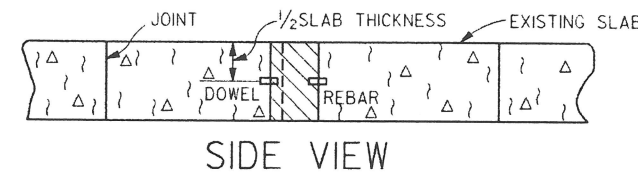
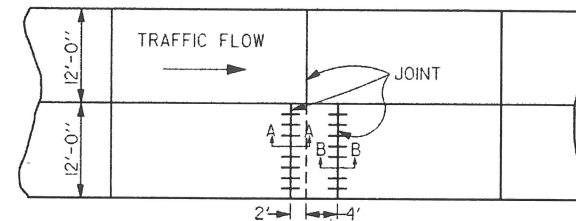
**DETAIL C-C - DOWEL BASKET  
SMOOTH BARS**



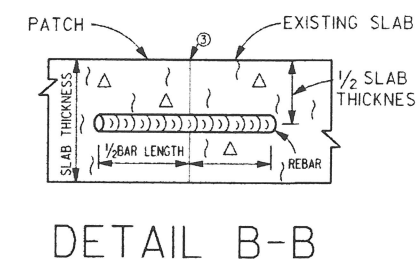
\* ORIGINAL SAW CUT SHALL BE MINIMUM 1/4 SLAB THICKNESS  
JOINT WIDTH MAY BE 1/4"

**JOINT REPLACEMENT DETAIL**

**PLAN VIEW**



**DETAIL A-A**



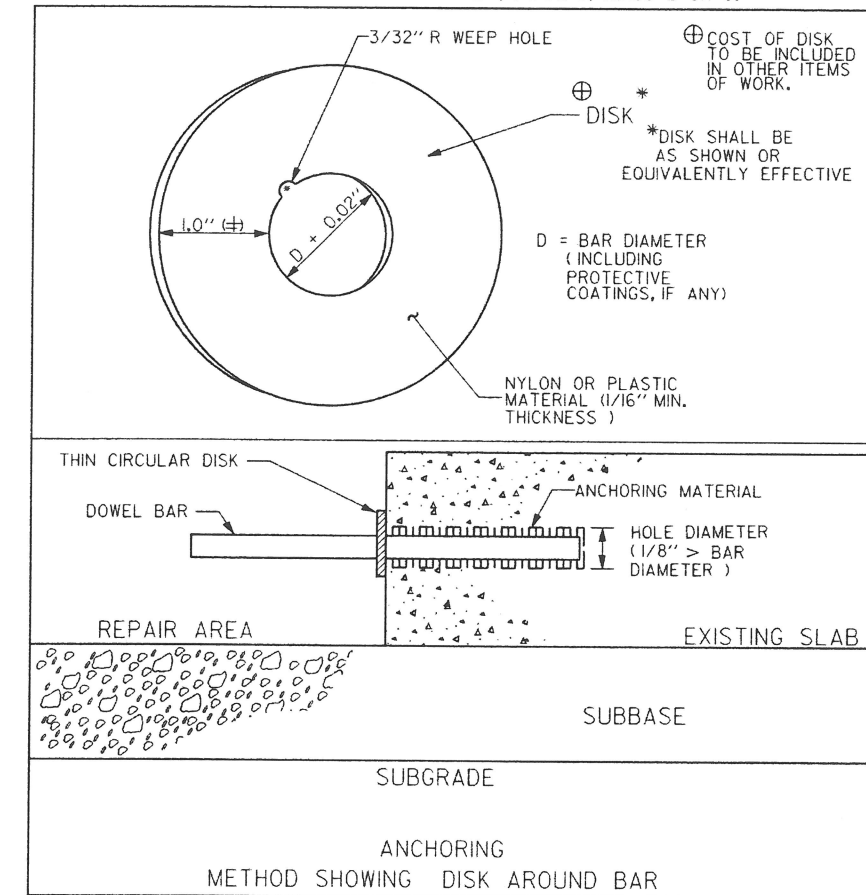
**DETAIL B-B**

**NOTES FOR DETAILS A-A, B-B, AND LONGITUDINAL PATCH JOINTS.**

1. JOINTS MATERIAL SHALL BE SPECIFIED IN THE SPECIAL PROVISIONS, JOINTS TO BE SEALED SHALL HAVE A CONFIGURATION (WIDTH AND DEPTH) IN ACCORDANCE WITH THE JOINT MATERIAL MANUFACTURER'S RECOMMENDATIONS. THE JOINT SHALL BE MADE BY SAWING TO CREATE CLEAN VERTICAL FACES.
2. FOR TRAVERSE NON WORKING JOINTS, AS SHOWN IN DETAIL B-B, THE VERTICAL FACE SHALL BE PAINTED WITH A MOISTURE INSENSITIVE EPOXY SPECIFIED FOR USE FOR BONDING OLD CONCRETE TO NEW CONCRETE. AFTER CONCRETE PLACEMENT, NO SAWING, OR SEALING SHALL BE DONE. THE EPOXY SHALL BE A MOISTURE INSENSITIVE HIGH MODULUS TYPE CERTIFIED BY THE MANUFACTURER TO CONFORM TO ASTM C 881 TYPE II, GRADE 2, CLASS B OR C.
3. THE LONGITUDINAL JOINTS AT SLAB REPLACEMENTS SHALL NOT HAVE EPOXY APPLIED SAWING AND SEALING SHALL BE ACCOMPLISHED AT THE TIME THE CENTERLINE LONGITUDINAL JOINT IS SAWED AND SEALED.
4. ALL REINFORCING STEEL SHALL BE GRADE 60 MINIMUM. SMOOTH DOWEL BARS SHALL BE GRADE 40 MINIMUM.

**GENERAL NOTES**

1. PLANS AND/OR SPECIAL PROVISIONS MAY SPECIFY DEPTHS GREATER THAN EXISTING FULL DEPTH SLAB PATCHES. REFER TO SPECIAL PROVISIONS FOR MORE DETAILS.
2. FOR PART LENGTH FULL DEPTH SLAB REPLACEMENT A MINIMUM 6 FT. LENGTH SHALL BE ACCOMPLISHED. THE MINIMUM 4 FT. LENGTH SHALL BE MEASURED FROM AN EXISTING TRAVERSE JOINT, PARALLEL TO THE DIRECTION OF TRAFFIC.
3. EXISTING TIE BARS AT THE LONGITUDINAL CENTER JOINT OF THE SLABS, SHALL BE RETAINED OR REPLACED AS DEEMED NECESSARY BY THE ENGINEER (OR AS SPECIFIED IN THE CONTRACT) IN CONSTRUCTING NEW SLABS OR PARTS OF SLAB. THE TIE BARS SHALL BE #4 REBAR @ 30 INCH SPACINGS. THE REPLACING OF THE BARS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH TIE BAR SYSTEM DETAIL.
4. DOWEL BARS SHALL BE 1-1/4 IN. DIAMETER SMOOTH STEEL BARS IN 18 INCH LENGTHS IF SLAB THICKNESS IS UNDER 12 INCHES. DOWEL BARS SHALL BE 1-1/2 IN. DIAMETER SMOOTH STEEL BARS IN 18 INCH LENGTHS IF SLAB THICKNESS IS 12 INCHES OR GREATER.
5. TIE BARS AT THE LONGITUDINAL JOINT SHALL BE ADJUSTED SO AS NOT TO INTERFERE WITH THE TRAVERSE JOINT STEEL PLACEMENT. NO TIE BAR SHALL BE PLACED IN THE 2 FT. SECTIONS BETWEEN THE OFFSET TRAVERSE JOINT OR WITHIN 1 FT.-3 IN. OF AN EXISTING TRAVERSE JOINT.
6. SHOULDER SIDE FORMS (IF NECESSARY) SHALL EXTEND BEYOND THE TRAVERSE JOINT EDGES. THE SIDE FORMS SHALL BE RIGID, SMOOTH AND BRACED ADEQUATELY TO MAINTAIN A STRAIGHT LONGITUDINAL JOINT AFTER CONCRETE PLACEMENT IN THE PATCH AREA. MINIMUM DEPTH OF SIDE FORMS SHALL BE DEPTH OF PATCH.
7. IN AREAS WHERE PATCHING WILL BE DONE IN SUCCEEDING SLABS, THE USE OF APPROVED DOWEL BASKETS WILL BE ALLOWED.
8. BEFORE PLACING CONCRETE IN THE AREA BEING PATCHED THE DOWELS AND/OR TIE BARS SHALL BE MAINTAINED IN A HORIZONTAL POSITION BY MEANS OF CHAIRS OR BLOCKS SUFFICIENTLY LONG TO ALLOW THE GROUT TO SET. THE CHAIRS AND BLOCKS SHALL BE REMOVED PRIOR TO CONCRETE PLACEMENT. GROUT SHALL EITHER BE AN APPROVED NON-SHRINK GROUT OR AN EPOXY CERTIFIED BY THE MANUFACTURER TO CONFORM TO ASTM C 881 TYPE I, GRADE 3, CLASS B OR C.



REVISIONS		
DATE	REV. BY	DESCRIPTION



**CONCRETE PAVEMENT DETAILS**

APPROVED BY  
*Mitchell D. Nett*

1 APRIL 2008  
DATE



**SPECIAL DRAWING**

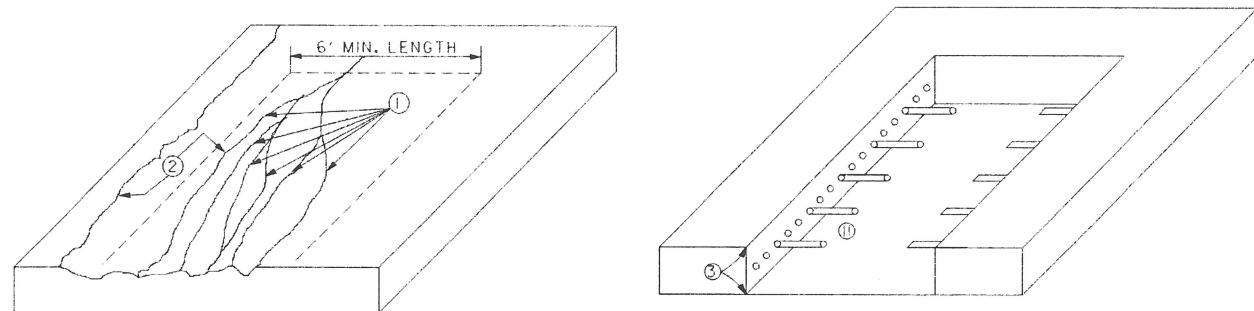
SPEC. DRAWING 50I-9

JOINT DETAIL OF  
CONCRETE PAVEMENT FOR  
FULL DEPTH PATCHING

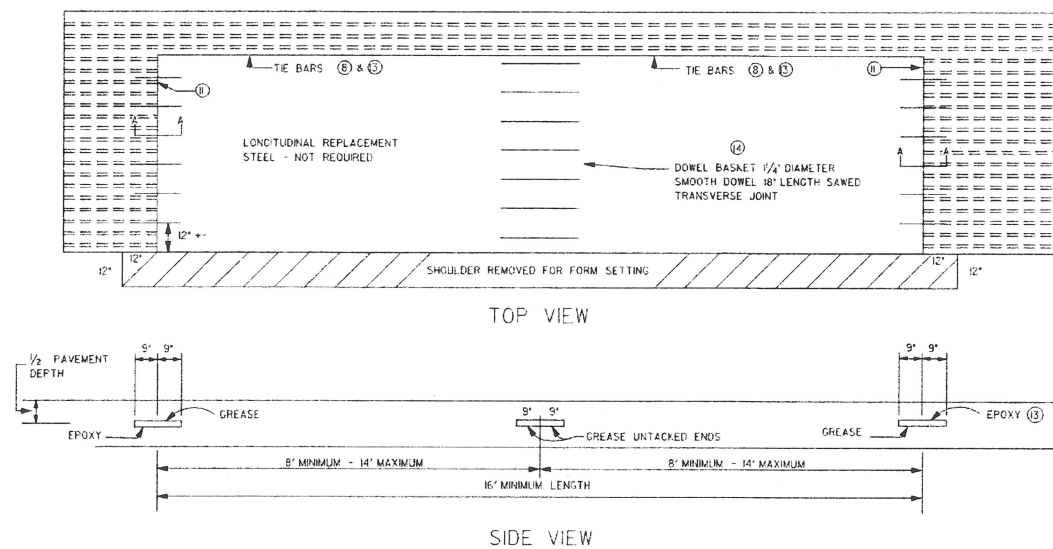
EFFECTIVE LETTING DATE XXXXXXXX

FULL DEPTH PATCH FOR CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (CRCP)

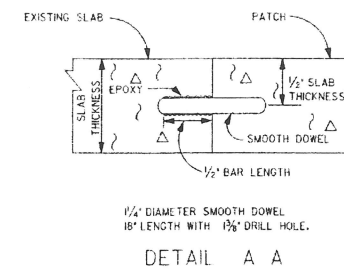
FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROAD/ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	JASPER	27.038656	IM27(005)	I-95	4	27



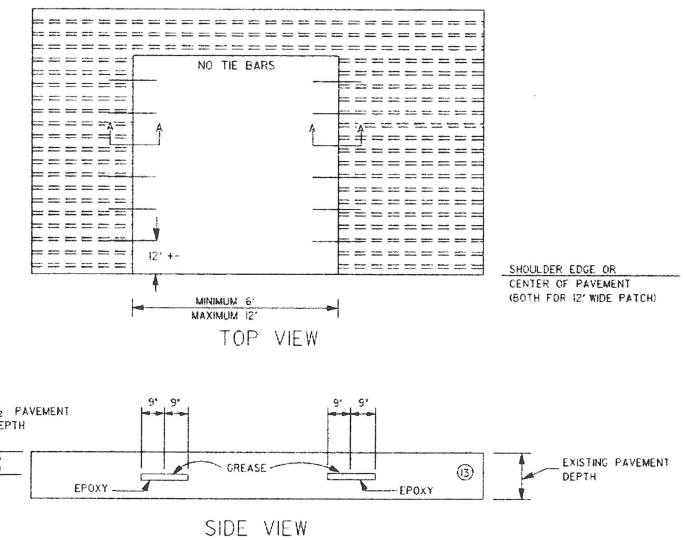
- IDENTIFY BAD AREAS FOR REMOVAL. FULL DEPTH PATCHES MUST BE EITHER ONE-HALF THE LANE WIDTH (6 FT.) OR THE FULL LANE WIDTH (12 FT.). PATCH LENGTHS SHALL BE BETWEEN 6 FT. AND 12 FT. OR GREATER THAN 16 FT. (SEE DETAILS)
- MARK AREAS FOR CONCRETE PAVEMENT REMOVAL (SPRAY PAINT OR OTHER). BOUNDARIES ARE TO BE GENERALLY PERPENDICULAR TO THE LONGITUDINAL JOINT. ESTABLISH BOUNDARIES IN GOOD CONCRETE AT LEAST 18 INCHES AWAY FROM THE NEAREST CRACK IN GOOD CONCRETE.
- SAW CUT FULL DEPTH THROUGH THE CONCRETE AND STEEL (MAY REQUIRE MORE THAN ONE SAW PASS) ALONG THE MARKED BOUNDARIES. FOR 6 FT. WIDE PATCHES, MAKE THE LONGITUDINAL SAW CUT HALFWAY BETWEEN THE EXISTING LONGITUDINAL STEEL (#5 BARS ON 6-INCH SPACING).
- SHOULDER SIDE FORMS SHALL EXTEND BEYOND THE TRANSVERSE JOINTS. THE SIDE FORMS SHALL BE RIGID, SMOOTH AND BRACED ADEQUATELY TO MAINTAIN A STRAIGHT LONGITUDINAL JOINT AFTER CONCRETE PLACEMENT IN THE PATCH AREA. MINIMUM DEPTH OF SIDE FORMS SHALL BE THE DEPTH OF THE PATCH.
- LONGITUDINAL REPLACEMENT STEEL IN THE PATCH WILL NOT BE REQUIRED.
- TIE BARS ARE TO BE ROUND DEFORMED STEEL (GRADE 60) #5 BARS, 20 INCHES IN LENGTH.
- TIE BARS WILL BE USED ALONG THE LONGITUDINAL FACE(S) OF THE PATCH WHEN THE LENGTH OF THE PATCH IS 16 FT. OR GREATER. TIE BARS WILL NOT BE USED WHEN THE PATCH LENGTH IS LESS THAN 16 FT. TIE BARS WILL NOT BE USED TO TIE A CONCRETE PATCH TO AN EXISTING SHOULDER.
- TIE BARS IN THE LONGITUDINAL FACE OF THE PATCH SHALL BE AT 30-INCH SPACING. TIE BAR SPACING SHALL BE ADJUSTED SO AS NOT TO BE EMBEDDED INTO EXISTING CONCRETE AT AN EXISTING CRACK OR WITHIN 15 INCHES OF A TRANSVERSE JOINT.
- THE CONTRACTOR SHALL SUBMIT AN EPOXY SYSTEM FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK. PORTION OF THE BAR NOT EMBEDDED INTO CONCRETE SHALL BE CLEAN AND CAPABLE OF PROVIDING A GOOD BOND WITH THE CONCRETE IN THE PATCH.
- DOWEL BARS ARE TO BE SMOOTH ROUND STEEL (GRADE 60) 1-1/4 INCH DIAMETER BARS 18 INCHES IN LENGTH.
- DOWEL BARS WILL BE USED IN THE TRANSVERSE FACES OF THE PATCH AND ARE TO BE LOCATED AT MID-DEPTH AT THE SLAB AND PLACED AT APPROXIMATE 12-INCH SPACING, STARTING AND ENDING APPROXIMATELY ONE FOOT FROM THE EDGE OF THE PATCH. DOWEL BAR SPACING SHALL BE ADJUSTED TO BE HALFWAY BETWEEN EXISTING LONGITUDINAL STEEL IN ADJACENT SLAB.
- DRILLED HOLES FOR THE DOWEL BARS ARE TO BE 9 INCHES DEEP AND 1-3/8 INCH IN DIAMETER.
- THE SAME EPOXY USED FOR THE TIE BARS SHALL BE USED TO BOND THE DOWEL BARS INTO THE EXISTING PAVEMENT WITHOUT TESTING FOR STRENGTH. PORTION OF DOWEL BAR NOT EMBEDDED IN EXISTING CONCRETE SHALL BE COATED WITH A BOND BREAKER.
- DOWEL BASKET ASSEMBLIES ARE REQUIRED FOR PATCHES 16 FT. IN LENGTH OR LONGER. THE DOWEL BASKETS SHALL BE CAPABLE OF SUPPORTING THE DOWELS. ALL TRANSVERSE JOINTS WHERE DOWEL BARS ARE USED WILL BE SAWED AND SEALED.
- EPOXY WILL NOT BE REQUIRED ON ANY OF THE EXISTING PATCH VERTICAL FACES.
- THE BID ITEM SHALL BE:  
FULL DEPTH CONCRETE PAVEMENT PATCHING.....S. Y.



PATCH LENGTHS 16 FT. OR GREATER



PATCH LENGTHS 6 FT. TO 12 FT.



REVISIONS			
DATE	REV. BY	DESCRIPTION	
07-03-01	CIFS	ADDED APPROVAL BOX	
08-07-01	W.J.Z.	TITLE REVISED	

Andrew M. Johnson
   
 16 JUNE 2009

CONCRETE PAVEMENT DETAILS		 South Carolina Department of Transportation <b>STANDARD DRAWING</b> SPEC. DRAWING 501-7
APPROVED BY	DATE	
FULL DEPTH PATCHING FOR CONTINUOUSLY REINFORCED CONCRETE PAVEMENT		