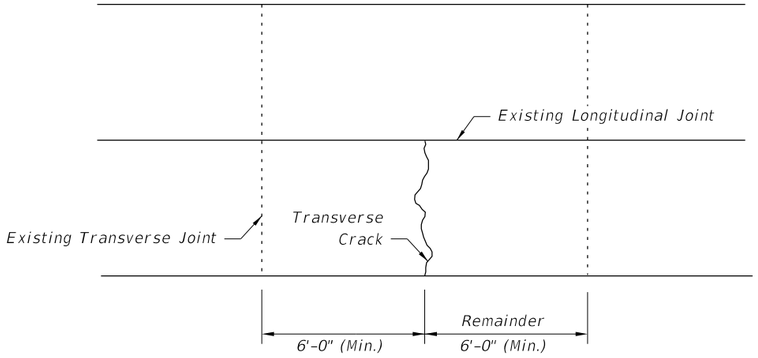


FIGURE 10.2 - REPAIR METHOD: NONE OR CLEAN AND SEAL

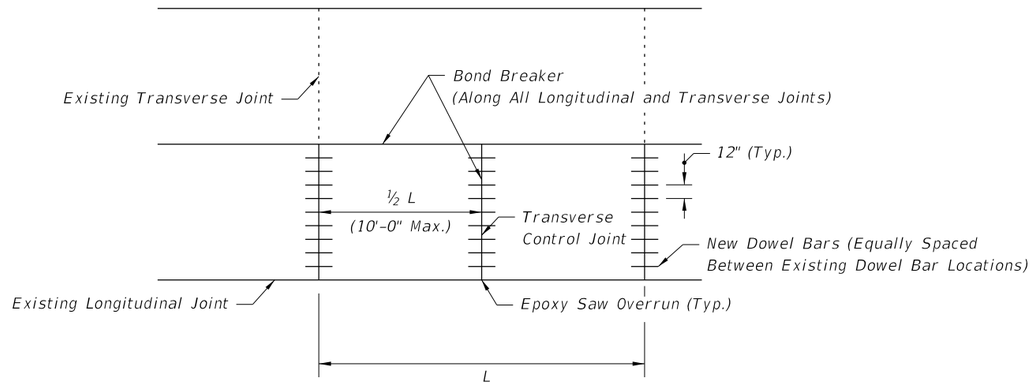


FIGURE 10.3 - FULL SLAB FULL DEPTH REPLACEMENT

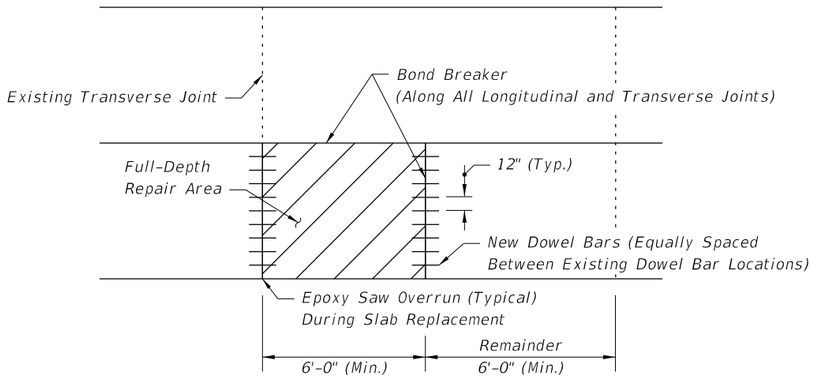


FIGURE 10.4 - PARTIAL SLAB FULL DEPTH REPLACEMENT

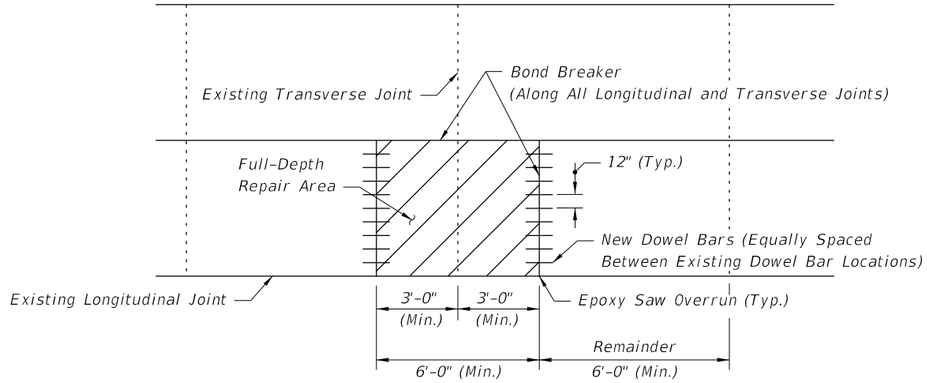


FIGURE 10.5 - FULL-DEPTH REPAIR ON BOTH SIDES OF THE JOINT

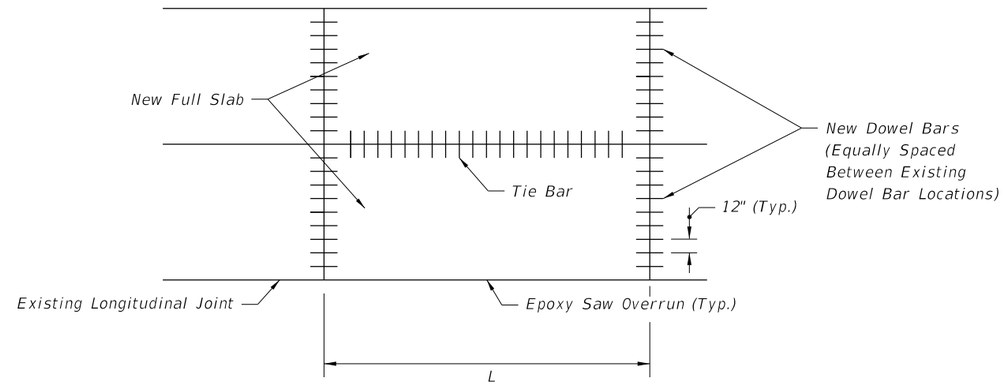


FIGURE 10.6 - MULTIPLE SLAB FULL DEPTH REPLACEMENT

## GENERAL NOTES

1. For Repair and Replacement Criteria see Sheet 2.
2. Full depth repairs consist of removing and replacing at least a portion of the existing slab to the bottom of the concrete.
3. Repair boundaries shall be sawed full-depth with diamond saw blades. On hot days, it may not be possible to make this cut without first making a wide, pressure relief cut within the repair boundaries. A carbide-tipped wheel saw may be used for this purpose, but the wheel saw must not intrude on the adjacent lane, unless the lane is slated for repair. The wheel saw cuts produce a ragged edge that promotes excessive spalling along joints. Hence, if wheel saw cuts are made, diamond saw cuts must be made 18 in. outside the wheel saw cuts. To prevent damage to the base, the wheel saw must not be allowed to penetrate more than 0.5 in. into the base.
4. No additional base or subgrade material shall be added and all loose base or subgrade material shall be removed prior to placement of the new concrete slab. The concrete slab shall be placed to the full depth of the material removed. No additional compensation will be allowed for additional concrete required to bring proposed concrete slab up to finished grade.
5. Removal of the damaged concrete pavement shall be by lifting. Any good concrete pavement which is damaged during removal of damaged areas shall be removed and replaced by the contractor at his expense.
6. If the roadway contract includes grinding, then the slab replacement shall be performed first.
7. During slab replacement operations, fill any saw cut over runs into adjacent slabs with epoxy.
8. Install tie bars at longitudinal joints when two full adjacent or multiple replaced slabs.

## SLAB REPAIR AND REPLACEMENT CRITERIA

| DISTRESS PATTERN | SEVERITY/DESCRIPTION | | REPAIR METHOD | REFERENCE |
|---|---|---|---|---|
| **CRACKING** | | | | |
| Longitudinal | Light | <⅛", no faulting, spalling <½" wide | None | Figure 10.2 |
| | Moderate | ⅛" <width <½", spalling <3" wide | Clean and Seal | Figure 10.2 |
| | Severe | width >½", spalling >3" faulting >½" | Replace | Figure 10.3 |
| Transverse | Light | <⅛", no faulting, spalling <½" wide | None | Figure 10.2 |
| | Moderate | ⅛" <width <½", spalling <3" wide | Clean and Seal | |
| | Severe | width >½", spalling >3" faulting >½" | Replace | Figure 10.3, 10.4 and 10.5 |
| Corner Breaks | A corner of the slab is separated by a crack that intersects the adjacent longitudinal and transverse joint, describing an approximate 45° angle with the direction of traffic. | | Full Depth | Figure 10.4 and 10.5 |
| Intersecting Random Cracks (Shattered Slab) | Cracking patterns that divide the slab into three or more segments. | | Full Depth | Figure 10.3 and 10.4 |
| **JOINT DEFICIENCIES** | | | | |
| Spall Nonwheel Path | Light | spall width <1½", < ⅓ slab depth, <12" in length | None | Figure 10.4 and 10.5 |
| | Moderate | 1½" <spall width <3", < ⅓ slab depth, <12" in length | None | Figure 10.4 and 10.5 |
| | Severe | spall width >3" or length >12" | Full Depth | Figure 10.4 and 10.5 |
| Spall Wheel Path | Light | spall width <1½", <than ⅓ slab depth, <12" in length | None | Figure 10.4 and 10.5 |
| | Moderate | 1½" <spall width <3", < ⅓ slab depth, <12" in length | Full Depth | Figure 10.4 and 10.5 |
| | Severe | spall width >3" or length >12" | Full Depth | Figure 10.4 and 10.5 |
| **SURFACE DETERIORATION** | | | | |
| Pop Outs Nonwheel Path | Small pieces of surface pavement broken loose, normally ranging from 1 to 4 in. diameter and ½ to 2 in. in depth. | | | |
| | Light | Not deemed to be a traffic hazard | Keep under observation | |
| | Severe | Flying debris deemed a traffic hazard | Full Depth | Figure 10.4 |
| Pop Outs Wheel Path | Small pieces of surface pavement broken loose, normally >3" diameter and 2" in depth. | | | |
| | Light | Deemed to be a traffic hazard | Full Depth | Figure 10.4 |
| | Severe | Flying debris deemed a traffic hazard | Full Depth | Figure 10.4 |
| **MISCELLANEOUS DISTRESS** | | | | |
| Faulting | Elevation differences across joints or cracks. | | | |
| | Light | Faulting <4/32" | None | |
| | Moderate | 4 <Faulting <16/32" | Grind | |
| | Severe | Faulting >16/32" | Grind | |
| Lane To Shoulder Drop-Off | Light | 0 <drop-off <1" | None | N/A |
| | Moderate | 1" <drop-off <3" | Build Up | |
| | Severe | drop-off >3 " | Build Up | |
| Water Bleeding Or Pumping | Seeping or ejection of water through joints or cracks. | | Install appropriate drainage, edge drain, permeable subbase, reseal joints, etc. | N/A |
| Blowups | Upward movement at transverse joints or cracks often accompanied by shattering of the concrete. | | Full Depth | Figure 10.3 and 10.4 |

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