City of Milwaukee

Department of Public Works
Infrastructure Services Division

Mariano A. Schifalacqua
Commissioner of Public Works

James P. Purko
Director of Operations

Jeffrey S. Polenske
City Engineer

September 27, 2002

To: All Underground and Paving Contractors,
Utility Companies and City Departments

Subject: Pavement Restoration for Utility Cuts and Trenches

The City of Milwaukee Department of Public Works has developed the attached policy for restoring roadways within the City's limits. This policy should be used as a supplement to the City of Milwaukee Department of Public Works, Bureau of Engineers, Street Construction Specifications, dated January 1, 1982, and any addenda to those specifications.

This new policy explains and shows the various types of restoration now being required by the Commissioner of Public Works based on pavement type, age and location of the Utility cut.

Very Truly Yours,

Jeffrey S. Polenske, P.E.
City Engineer

Mariano A. Schifalacqua, P.E.
Commissioner of Public Works

Attachments

CC: Permits Desk (DNS)
Permits Desk (DPW)
Ralph Sorenson
Construction Supervisors

841 N. Broadway, Room 701, Milwaukee, Wisconsin 53202
Phone (414) 286-2400, Fax (414) 286-5994, TDD (414) 286-2025

Concrete Streets

(Longitudinal Trench)

0 to 15 Years

- Full panel replacement if trench is fully within panel.
- Full panel replacement plus if trench is on joint line. Use paint to redefine lane if necessary.
- Residential: Replace one half of street
- One foot long #6 tie rods on two foot centers both sides of trench, mortared or epoxied in place.
- All trenches require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be 3" slump, number 1 and 2 concrete aggregates without cement.
- Where sawing is required, it shall be full depth.
- All joints, bonded, sawed, or hand formed shall be sealed.

16 to 6 Yr. Project Plan

- Replace one half of lane if trench is in one half or the other.
- Full panel replacement if trench is in center of lane.
- Residential:
  - Centerline to quarter point.
  - Flange line to quarter point.
  - One quarter of roadway if trench is at quarter point.
- One foot long #6 tie rods on two foot centers both sides of trench, mortared or expoxied in place.
- All trenches require slurry backfill or flooding. A fee for inspection will be required if the trench is flooded. Slurry shall be 3" slump, number 1 and 2 concrete aggregates without cement.
- Where sawing is required it shall be full depth.
- All joints, bonded, sawed, or hand formed shall be sealed.

6 Yr. Project Plan

- Replace trench width
- One foot long #6 tie rods on two foot centers both sides of trench, mortared or epoxied in place.
- All trenches require slurry backfill or flooding. A fee for inspection will be required if the trench is flooded. Slurry shall be 3" slump, number 1 and 2 concrete aggregates without cement.
- Where sawing is required it shall be full depth.
- All joints, bonded, sawed, or hand formed shall be sealed.

General Note: Lane markings shall be restored in-kind.

Concrete Streets

(Roadway Cut completely within one panel)

0 to 3 years

- Full panel replacement (paint lines if necessary).
- Residential: Replace one half of street width (flange line to centerline). Replace entire panel length (transverse joint to transverse joint) (paint lines if necessary).
- 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector may be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- All saw cuts must be full depth.
- No restoration without inspectors' approval.

4 to 15 years

- Replace full lane width. Replace to transverse joint if less than 50% of the original panel length remains (paint lines if necessary).
- Residential: Replace one half of street width (flange line to centerline). Replace to transverse joint if less than 50% of the original panel length remains (paint lines if necessary).
- Roadway cuts shall not be less than 4 feet in length or width.
- 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- All saw cuts must be full depth.
- No restoration without inspectors' approval.

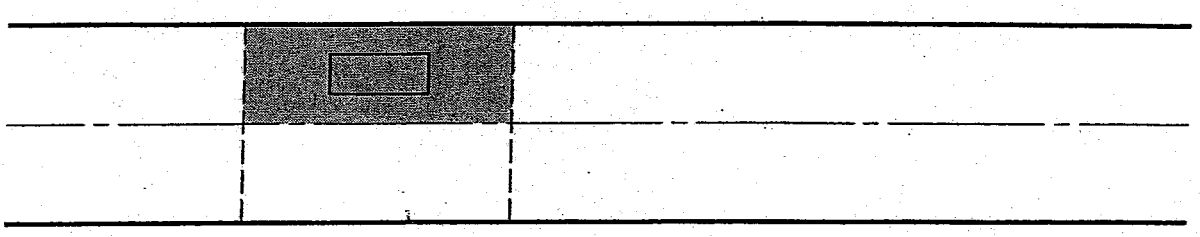
16 years to 6 Year Paving Plan

- Replace one half of lane if roadway cut is in one half or the other. Replace to transverse joint if less than 50% of the original panel length remains.
- Full lane replacement if the roadway cut is in center of lane. Replace to transverse joint if less than 50% of the original panel length remains (paint lines if necessary).
- Residential:
  - Replace centerline to quarter point. Replace to transverse joint if less than 50% of the original panel length remains.
  - Replace flange line to quarter point. Replace to transverse joint if less than 50% of the original panel length remains.
  - Replace half of roadway if cut is at the quarter point. Replace to transverse joint if less than 50% of the original panel length remains.

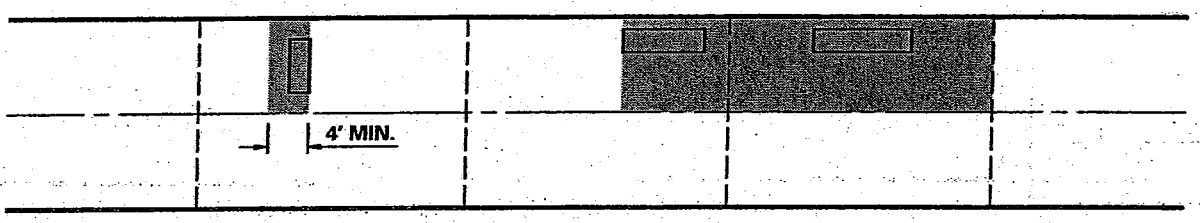
CONCRETE STREET

ROADWAY CUT – ONE PANEL

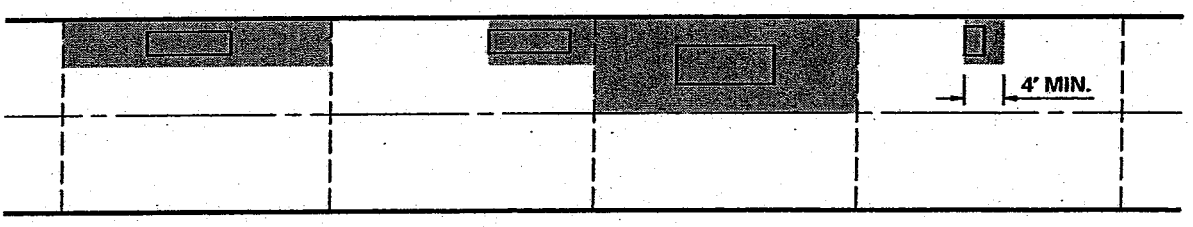
0 TO 3 YEARS



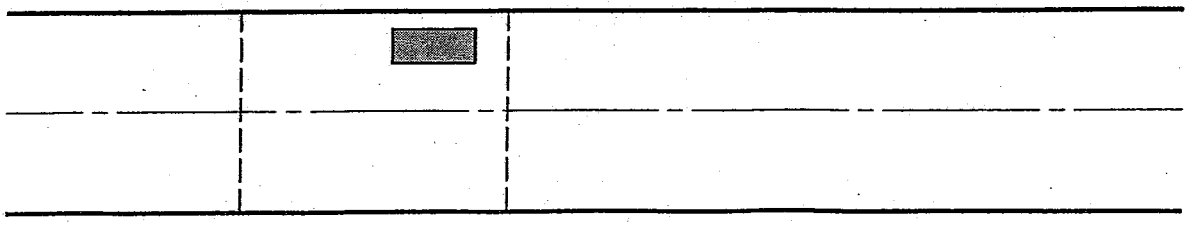
4 TO 15 YEARS



16 YEARS TO 6 YEAR PAVING PLAN



6 YEAR PAVING PLAN



- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- All saw cuts must be full depth.
- No restoration without inspectors' approval.

6 Year Paving Plan

- Replace roadway cut length & width. Replace to joint if less than 2 feet of panel remains.
- Roadway cuts shall not be less than 4 feet in length or width.
- 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- No restoration without inspectors' approval.

Concrete Streets

(Roadway Cut within two adjacent panels)

0 to 3 years

- Replace two full panels (paint lines if necessary).
- Residential: Replace two panels within one half of the street width (paint lines if necessary).
- 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- All saw cuts must be full depth.
- No restoration without inspectors' approval.

4 to 15 years

- Replace lane width (longitudinal joint to longitudinal joint). Replace to transverse joint if less than 50% of the original panel length remains (paint lines if necessary).
- Residential: Replace one half of the street (flange line to centerline). Replace to transverse joint if less than 50% of the original panel length remains (paint lines if necessary).
- Roadway cuts shall not be less than 4 feet in length or width.
- 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- All saw cuts must be full depth.
- No restoration without inspectors' approval.

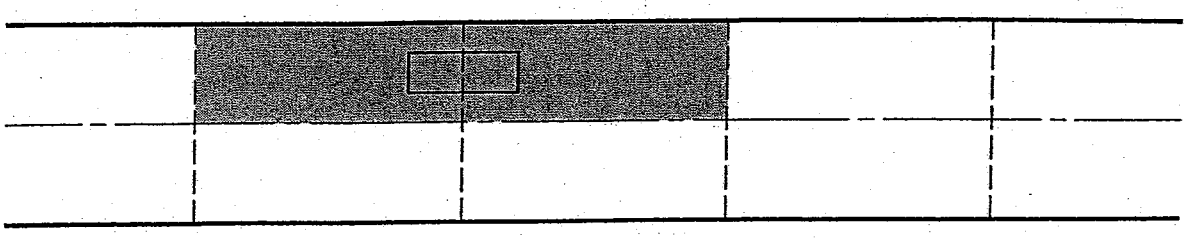
16 years to 6 Year Paving Plan

- Replace one half of lane if roadway cut is in one half or the other. Replace to transverse joint if less than 50% of the original panel length remains.
- Full lane replacement if cut is in center of lane. Replace to transverse joint if less than 50% of the original panel length remains (paint lines if necessary).
- Residential:
  - Replace centerline to quarter point. Replace to transverse joint if less than 50% of the original panel length remains.
  - Replace flange line to quarter point. Replace to transverse joint if less than 50% of the original panel length remains.
  - Replace half of roadway if cut is at the quarter point. Replace to transverse joint if less than 50% of the original panel length remains.

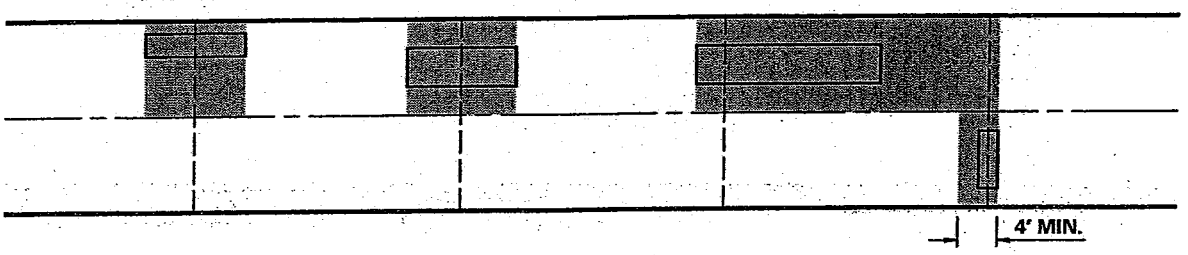
CONCRETE STREET

ROADWAY CUT – TWO PANELS

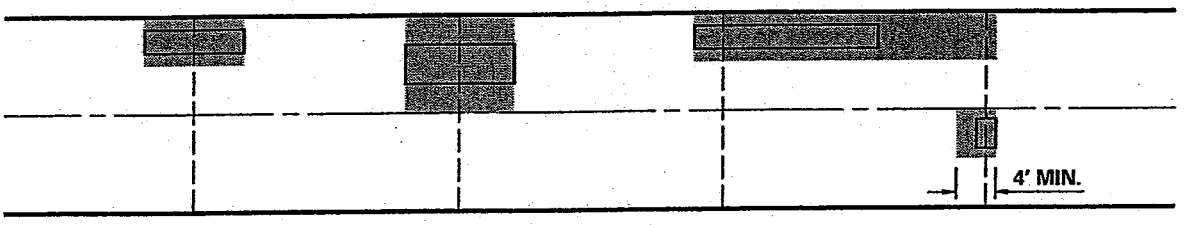
0 TO 3 YEARS



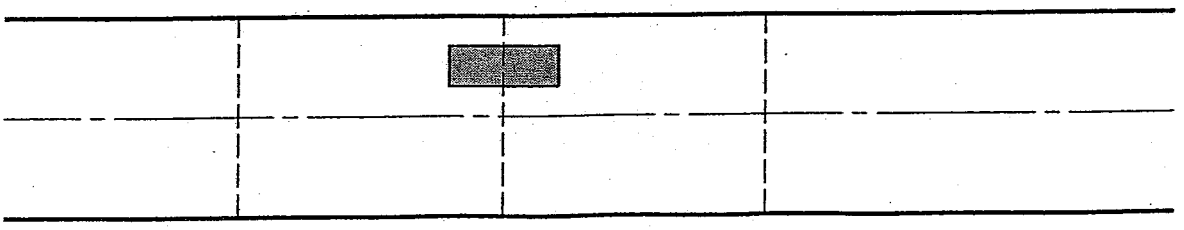
4 TO 15 YEARS



16 YEARS TO 6 YEAR PAVING PLAN



6 YEAR PAVING PLAN



- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- All saw cuts must be full depth.
- No restoration without inspectors' approval.

6 Year Paving Plan

- Replace roadway cut length & width. Replace to joint if less than 2 feet of panel length remains.
- Roadway cuts shall not be less than 4 feet in length or width.
- 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- No restoration without inspectors' approval.

Asphalt Streets

0 to 10 years

- Divided lane: Replace the base of the roadway cut in kind; replace the asphalt binder and top full lane width.
- Single wide roadway: Replace the base of the roadway cut in kind; replace the asphalt binder and top full lane width.
- Residential: Replace the base of the roadway cut in kind; replace the asphalt binder and top one half of roadway width.
- Minimal longitudinal length - 4 feet.
- If roadway has concrete base place 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.
- Roadway cuts - all saw cuts must be full depth. Asphalt replacement - all saw cuts must be depth of asphalt.
- Restore permanent pavement markings (if necessary).
- No restoration without inspectors' approval.

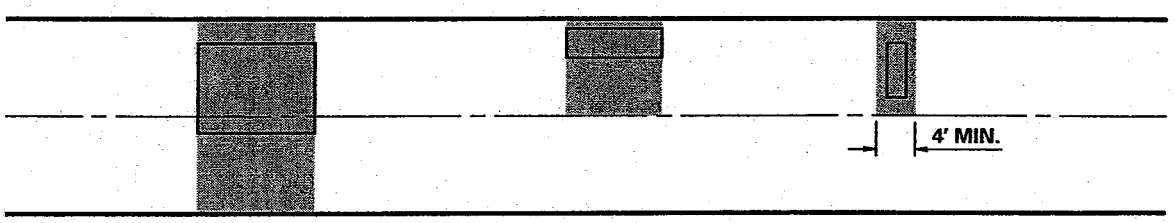
11 years to 6 Year Paving Plan

- Divided lane:
  - Replace the base of the roadway cut in kind; replace the asphalt binder & top one half of lane width if cut is in one half or the other.
  - Replace the base of the roadway cut in kind; replace the asphalt binder & top complete lane width if less than 50% of the original lane width remains on either side of the cut.
- Single wide roadway:
  - Replace the base of the roadway cut in kind; replace the asphalt binder and top one half of lane width.
  - Replace the base of the roadway cut in kind; replace the asphalt binder and top complete lane width if less than 50% of the original lane width remains.
- Residential:
  - Replace the base of the roadway cut in kind; replace the asphalt binder and top one quarter of roadway width.
  - Replace the base of the roadway cut in kind; replace the asphalt binder and top half of roadway width if less than 50% of the original lane width remains.
- Minimal transverse width and longitudinal length of 4 feet.
- If roadway has concrete base place 1' long tie rods (#6) @ 2' centers – all sides of cut.
- All cuts require slurry backfill or flooding. A fee for inspector will be required if the trench is flooded. Slurry shall be min. 3" slump, number 1 and 2 concrete aggregates without cement.

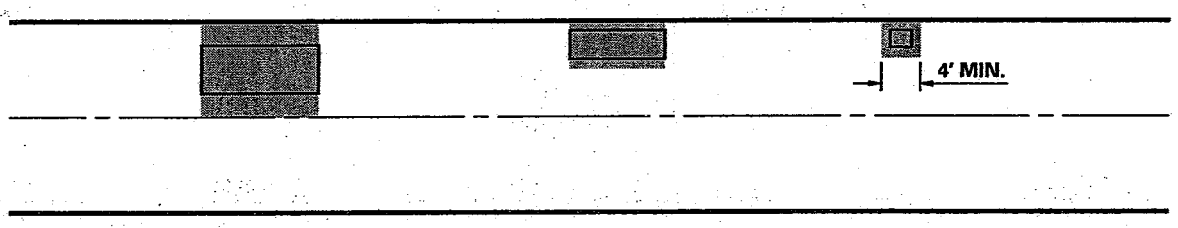
ASPHALT STREET

ROADWAY CUT – ONE LANE

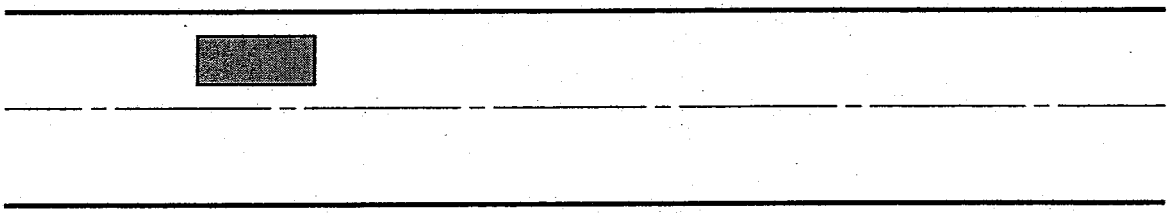
0 TO 10 YEARS



11 YEARS TO 6 YEAR PAVING PLAN

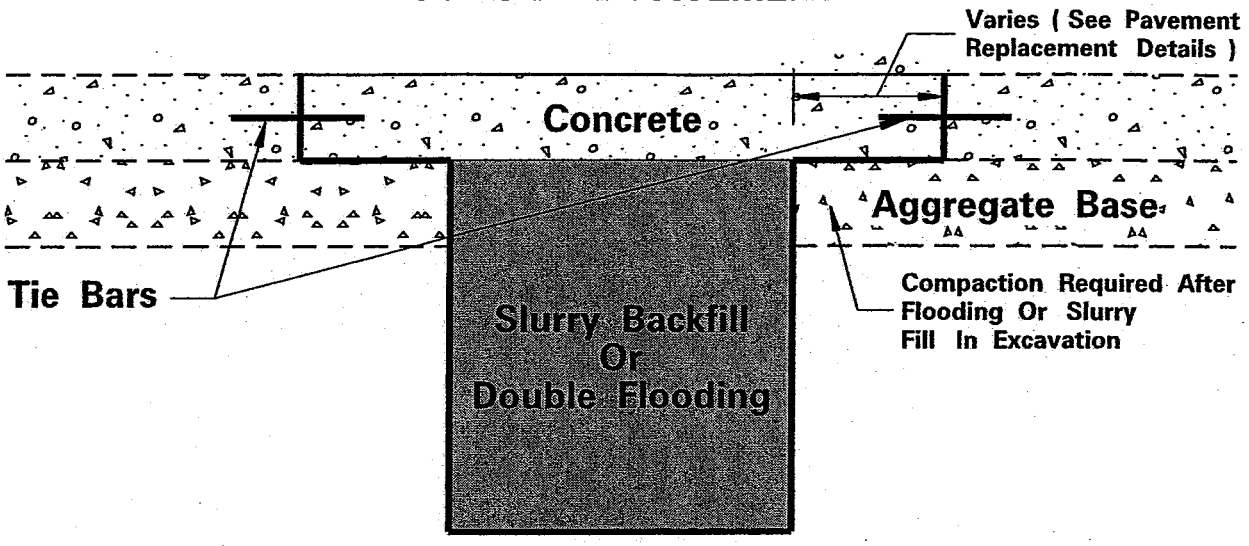


6 YEAR PAVING PLAN

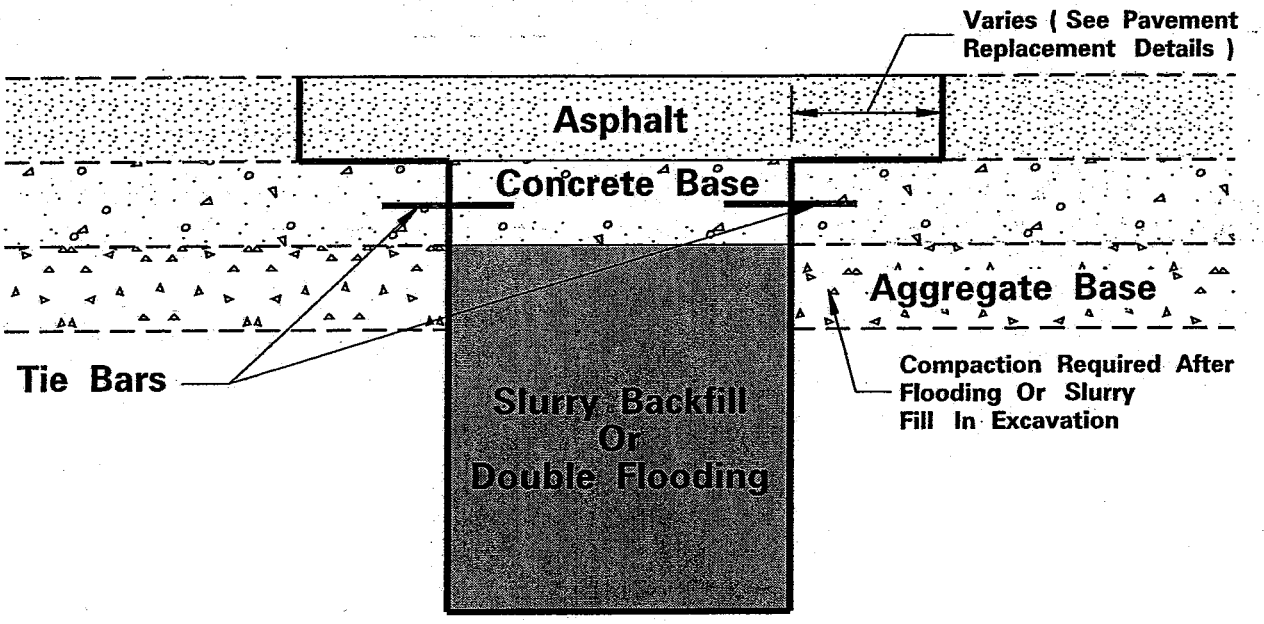


ROADWAY CUT PAVEMENT REPLACEMENT – SECTION VIEWS

CONCRETE PAVEMENT



ASPHALT PAVEMENT OVER CONCRETE BASE



ASPHALT PAVEMENT