

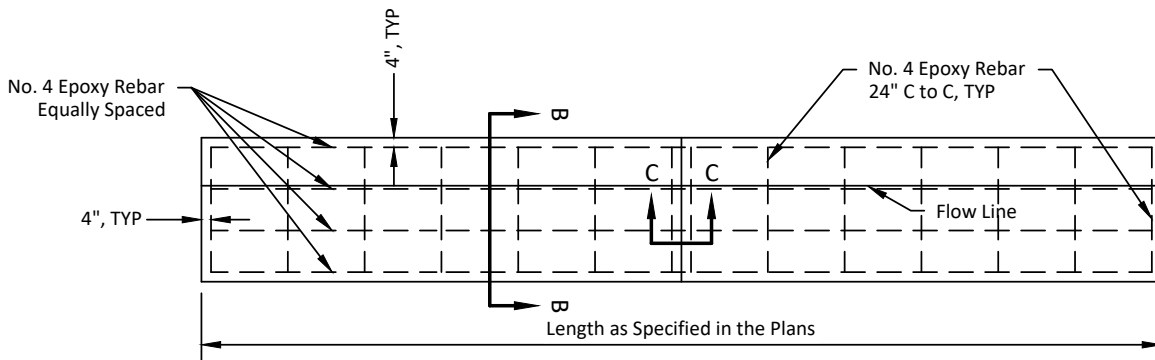
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

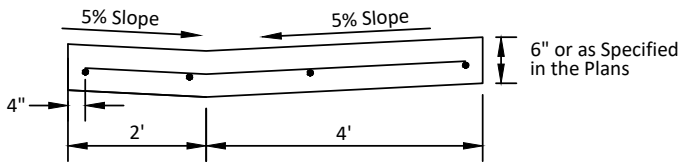
PCC FILLET SECTION WITH TYPE B CURB AND GUTTER AND DRAIN PAN

DATE: 8-19-22

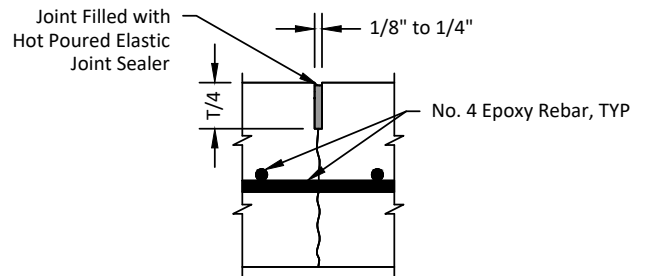
Sec. - Sht. 60-1a



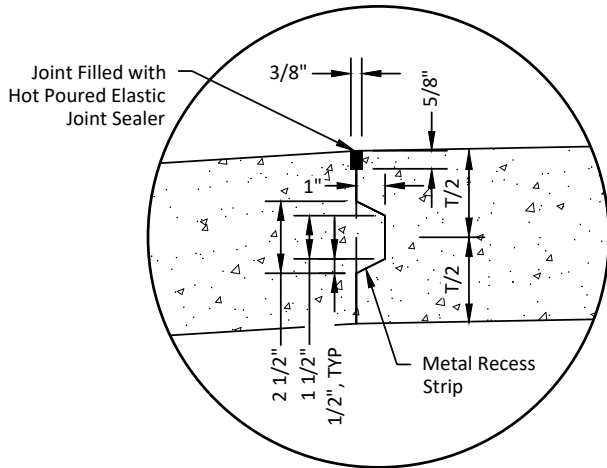
PLAN VIEW



SECTION B-B



SECTION C-C



DETAIL A

Notes:

1. The flow line may be included with PCC pavement when adjacent surfacing is PCC pavement.
2. The contraction joints will be spaced a maximum 12'. When the length of the valley gutter is 12' to 24' there will be a joint at the midpoint of the length. The joint to control cracking will be a minimum of 1/4 the thickness of the pavement.
3. All hot poured elastic joint sealer material spilled on the surface of the concrete pavement will be removed as soon as the material has cooled. The extent of removal of material will be as per the Public Works Director. All costs for removal of the spilled joint sealer material will be borne by the Contractor.

N.T.S.

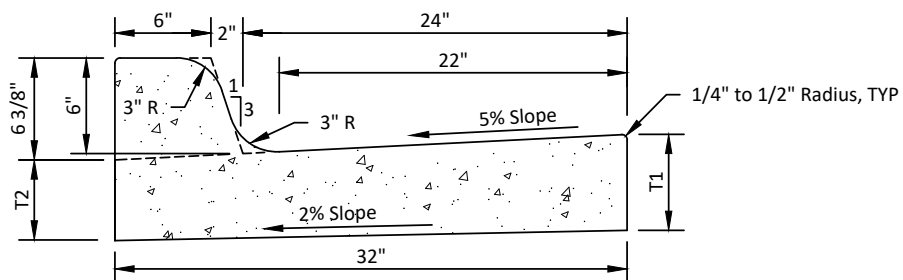
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

PCC FILLET SECTION WITH TYPE B  
CURB AND GUTTER AND DRAIN PAN

DATE: 8-19-22

Sec. - Sht.  
60-1b



TRANSVERSE SECTION

| TYPE B CONCRETE CURB AND GUTTER |                |                |                            |                            |
|---------------------------------|----------------|----------------|----------------------------|----------------------------|
| Type                            | T1<br>(Inches) | T2<br>(Inches) | Cu. Yd.<br>Per Lin.<br>Ft. | Lin. Ft.<br>Per<br>Cu. Yd. |
| B66                             | 6              | 5 1/16         | 0.057                      | 17.7                       |
| B67                             | 7              | 6 1/16         | 0.065                      | 15.4                       |
| B68                             | 8              | 7 1/16         | 0.073                      | 13.7                       |
| B68.5                           | 8.5            | 7 9/16         | 0.077                      | 13.0                       |
| B69                             | 9              | 8 1/16         | 0.081                      | 12.3                       |
| B69.5                           | 9.5            | 8 9/16         | 0.085                      | 11.7                       |
| B610                            | 10             | 9 1/16         | 0.090                      | 11.2                       |
| B610.5                          | 10.5           | 9 9/16         | 0.094                      | 10.7                       |
| B611                            | 11             | 10 1/16        | 0.098                      | 10.2                       |
| B611.5                          | 11.5           | 10 9/16        | 0.102                      | 9.8                        |
| B612                            | 12             | 11 1/16        | 0.106                      | 9.4                        |

**Notes:**

1. T<sup>1</sup> is equal to pavement thickness, in no case shall T<sup>1</sup> be less than 6".
2. All design elevations are top of curb elevations unless otherwise indicated on the plans.
3. A 1/2-inch preformed expansion joint filler will be placed transversely in the curb and gutter as per Detail 60-7a.
4. Transverse contraction joints shall be placed in the curb and gutter at 10' maximum intervals. Curb joints adjacent to PCC pavement shall match PCC pavement joints and shall be sawed and sealed the same as the mainline PCC pavement joints.
5. No. 5 smooth epoxy coated bars and installed as per Detail 60-7b.
6. Road subgrade cross slope shall continue to a point one foot behind the curb and gutter section. Minimum depth of granular material placed under curb and gutter shall be 4".

N.T.S.

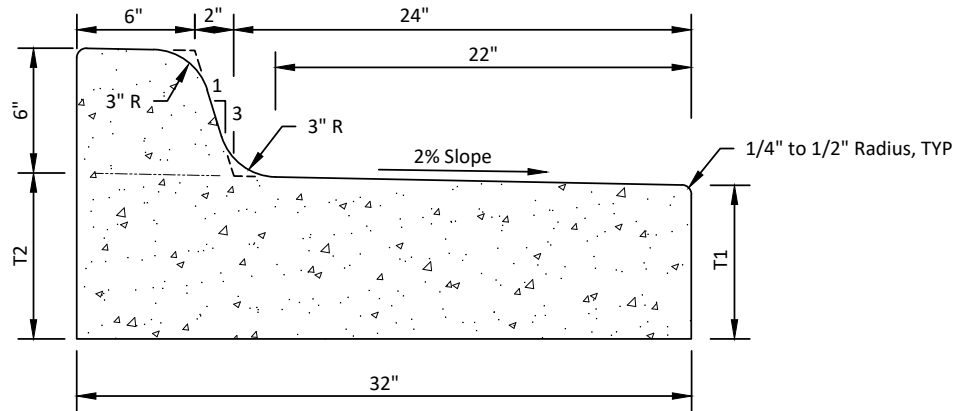
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

TYPE B CONCRETE CURB AND GUTTER

DATE: 8-19-22

Sec. - Sht.  
60-2a



| TYPE BL CONCRETE CURB AND GUTTER |                            |                                |                            |                            |
|----------------------------------|----------------------------|--------------------------------|----------------------------|----------------------------|
| Type                             | T <sub>1</sub><br>(Inches) | T <sub>2</sub><br>(Inches)     | Cu. Yd.<br>Per<br>Lin. Ft. | Lin. Ft.<br>Per<br>Cu. Yd. |
| BL66                             | 6                          | 6 <sup>5</sup> / <sub>8</sub>  | 0.063                      | 15.9                       |
| BL67                             | 7                          | 7 <sup>7</sup> / <sub>8</sub>  | 0.071                      | 14.1                       |
| BL68                             | 8                          | 8 <sup>5</sup> / <sub>8</sub>  | 0.080                      | 12.5                       |
| BL68.5                           | 8.5                        | 9 <sup>1</sup> / <sub>8</sub>  | 0.084                      | 11.9                       |
| BL69                             | 9                          | 9 <sup>7</sup> / <sub>8</sub>  | 0.088                      | 11.4                       |
| BL69.5                           | 9.5                        | 10 <sup>3</sup> / <sub>8</sub> | 0.092                      | 10.9                       |
| BL610                            | 10                         | 10 <sup>5</sup> / <sub>8</sub> | 0.096                      | 10.4                       |
| BL610.5                          | 10.5                       | 11 <sup>1</sup> / <sub>8</sub> | 0.100                      | 10.0                       |
| BL611                            | 11                         | 11 <sup>5</sup> / <sub>8</sub> | 0.104                      | 9.6                        |
| BL611.5                          | 11.5                       | 12 <sup>3</sup> / <sub>8</sub> | 0.108                      | 9.3                        |
| BL612                            | 12                         | 12 <sup>5</sup> / <sub>8</sub> | 0.112                      | 8.9                        |

**Notes:**

1. T<sub>1</sub> is equal to pavement thickness, in no case shall T<sub>1</sub> be less than 6".
2. All design elevations are top of curb elevations unless otherwise indicated on the plans.
3. A 1/2-inch preformed expansion joint filler will be placed transversely in the curb and gutter as per Detail 60-7a.
4. Transverse contraction joints shall be placed in the curb and gutter at 10' maximum intervals. Curb joints adjacent to PCC pavement shall match PCC pavement joints and shall be sawed and sealed the same as the mainline PCC pavement joints.
5. Dowels when required shall be No. 5 smooth epoxy coated bars and installed as per Detail 60-7b.
6. Road subgrade cross slope shall continue to a point one foot behind the curb and gutter section. Minimum depth of granular material placed under curb and gutter shall be 4".

N.T.S.

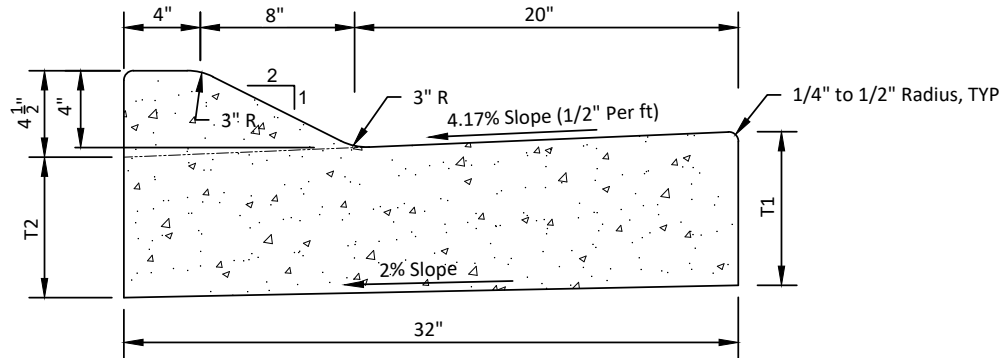
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

**TYPE BL CONCRETE CURB AND GUTTER**

DATE: 8-19-22

Sec. - Sht.  
60-2b



| TYPE D CONCRETE CURB AND GUTTER |                            |                                  |                            |                            |
|---------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------|
| Type                            | T <sub>1</sub><br>(Inches) | T <sub>2</sub><br>(Inches)       | Cu. Yd.<br>Per<br>Lin. Ft. | Lin. Ft.<br>Per<br>Cu. Yd. |
| D46                             | 6                          | 5 <sup>5</sup> / <sub>16</sub>   | 0.056                      | 18.0                       |
| D47                             | 7                          | 6 <sup>5</sup> / <sub>16</sub>   | 0.064                      | 15.7                       |
| D48                             | 8                          | 7 <sup>5</sup> / <sub>16</sub>   | 0.072                      | 13.9                       |
| D48.5                           | 8.5                        | 7 <sup>13</sup> / <sub>16</sub>  | 0.076                      | 13.1                       |
| D49                             | 9                          | 8 <sup>5</sup> / <sub>16</sub>   | 0.080                      | 12.5                       |
| D49.5                           | 9.5                        | 8 <sup>13</sup> / <sub>16</sub>  | 0.084                      | 11.9                       |
| D410                            | 10                         | 9 <sup>5</sup> / <sub>16</sub>   | 0.088                      | 11.3                       |
| D410.5                          | 10.5                       | 9 <sup>13</sup> / <sub>16</sub>  | 0.093                      | 10.8                       |
| D411                            | 11                         | 10 <sup>5</sup> / <sub>16</sub>  | 0.097                      | 10.3                       |
| D411.5                          | 11.5                       | 10 <sup>13</sup> / <sub>16</sub> | 0.101                      | 9.9                        |
| D412                            | 12                         | 11 <sup>5</sup> / <sub>16</sub>  | 0.105                      | 9.5                        |

**Notes:**

1. T<sub>1</sub> is equal to pavement thickness, in no case shall T<sub>1</sub> be less than 6".
2. All design elevations are top of curb elevations unless otherwise indicated on the plans.
3. A 1/2-inch preformed expansion joint filler will be placed transversely in the curb and gutter as per Detail 60-7a.
4. Transverse contraction joints shall be placed in the curb and gutter at 10' maximum intervals. Curb joints adjacent to PCC pavement shall match PCC pavement joints and shall be sawed and sealed the same as the mainline PCC pavement joints.
5. Dowels when required shall be No. 5 smooth epoxy coated bars and installed as per Detail 60-7b.
6. Road subgrade cross slope shall continue to a point one foot behind the curb and gutter section. Minimum depth of granular material placed under curb and gutter shall be 4".

N.T.S.

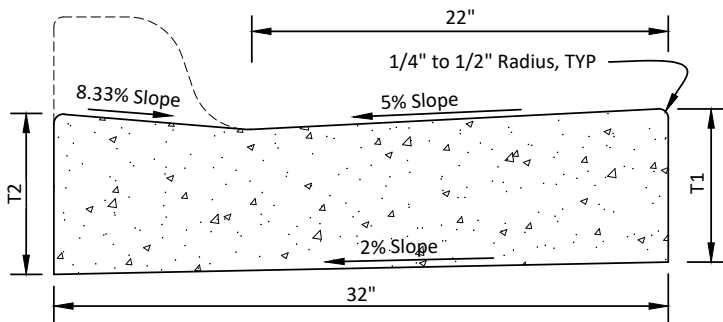
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

**TYPE D CONCRETE CURB AND GUTTER**

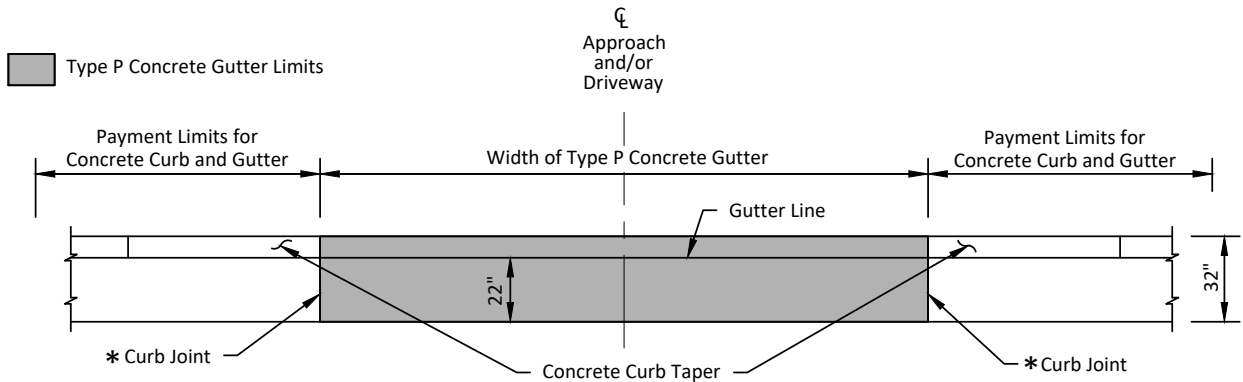
DATE: 8-19-22

Sec. - Sht.  
60-2c



TRANSVERSE SECTION

| TYPE P CONCRETE GUTTER |                            |                                |                            |                            |
|------------------------|----------------------------|--------------------------------|----------------------------|----------------------------|
| Type                   | T <sub>1</sub><br>(Inches) | T <sub>2</sub><br>(Inches)     | Cu. Yd.<br>Per<br>Lin. Ft. | Lin. Ft.<br>Per<br>Cu. Yd. |
| P6                     | 6                          | 6 <sup>3</sup> / <sub>8</sub>  | 0.047                      | 21.2                       |
| P7                     | 7                          | 7 <sup>3</sup> / <sub>8</sub>  | 0.055                      | 18.1                       |
| P8                     | 8                          | 8 <sup>3</sup> / <sub>8</sub>  | 0.064                      | 15.7                       |
| P8.5                   | 8.5                        | 8 <sup>7</sup> / <sub>8</sub>  | 0.068                      | 14.8                       |
| P9                     | 9                          | 9 <sup>3</sup> / <sub>8</sub>  | 0.072                      | 13.9                       |
| P9.5                   | 9.5                        | 9 <sup>7</sup> / <sub>8</sub>  | 0.076                      | 13.2                       |
| P10                    | 10                         | 10 <sup>3</sup> / <sub>8</sub> | 0.080                      | 12.5                       |
| P10.5                  | 10.5                       | 10 <sup>7</sup> / <sub>8</sub> | 0.084                      | 11.9                       |
| P11                    | 11                         | 11 <sup>3</sup> / <sub>8</sub> | 0.088                      | 11.3                       |
| P11.5                  | 11.5                       | 11 <sup>7</sup> / <sub>8</sub> | 0.092                      | 10.8                       |
| P12                    | 12                         | 12 <sup>3</sup> / <sub>8</sub> | 0.096                      | 10.4                       |



PLAN VIEW

**\* Curb Joints**

1. **Adjacent to AC Pavement**  
Joints shall be placed at both sides of the Type P concrete gutter. If Type P concrete gutter is greater than 10' additional joints shall be placed in the Type P concrete gutter as shown on the plans or as directed by the Engineer. Type P concrete gutter installed against previously placed concrete curb and gutter shall have expansion joint filler placed as per Detail 60-7a. If Type P concrete gutter is placed at the same time as the adjacent curb and gutter joints shall be contraction joints.
2. **Adjacent to PCC Pavement**  
Curb joints adjacent to PCC pavement shall match PCC pavement joints and shall be sawed and sealed the same as the mainline PCC pavement joints.

**Notes:**

1. T<sub>1</sub> is equal to pavement thickness, in no case shall T<sub>1</sub> be less than 6".
2. All design elevations are top of curb elevations unless otherwise indicated on the plans.
3. A 1/2-inch preformed expansion joint filler will be placed transversely in the curb and gutter as per Detail 60-7a.
4. Transverse contraction joints shall be placed in the curb and gutter at 10' maximum intervals. Curb joints adjacent to PCC pavement shall match PCC pavement joints and shall be sawed and sealed the same as the mainline PCC pavement joints.
5. Dowels when required shall be No. 5 smooth epoxy coated bars and installed as per Detail 60-7b.
6. Road subgrade cross slope shall continue to a point one foot behind the curb and gutter section. Minimum depth of granular material placed under curb and gutter shall be 4".

N.T.S.

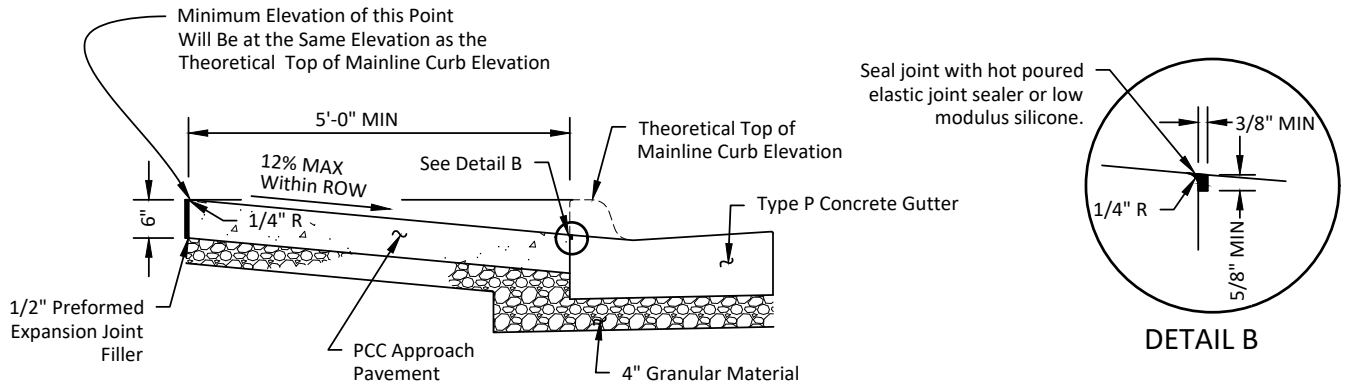
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

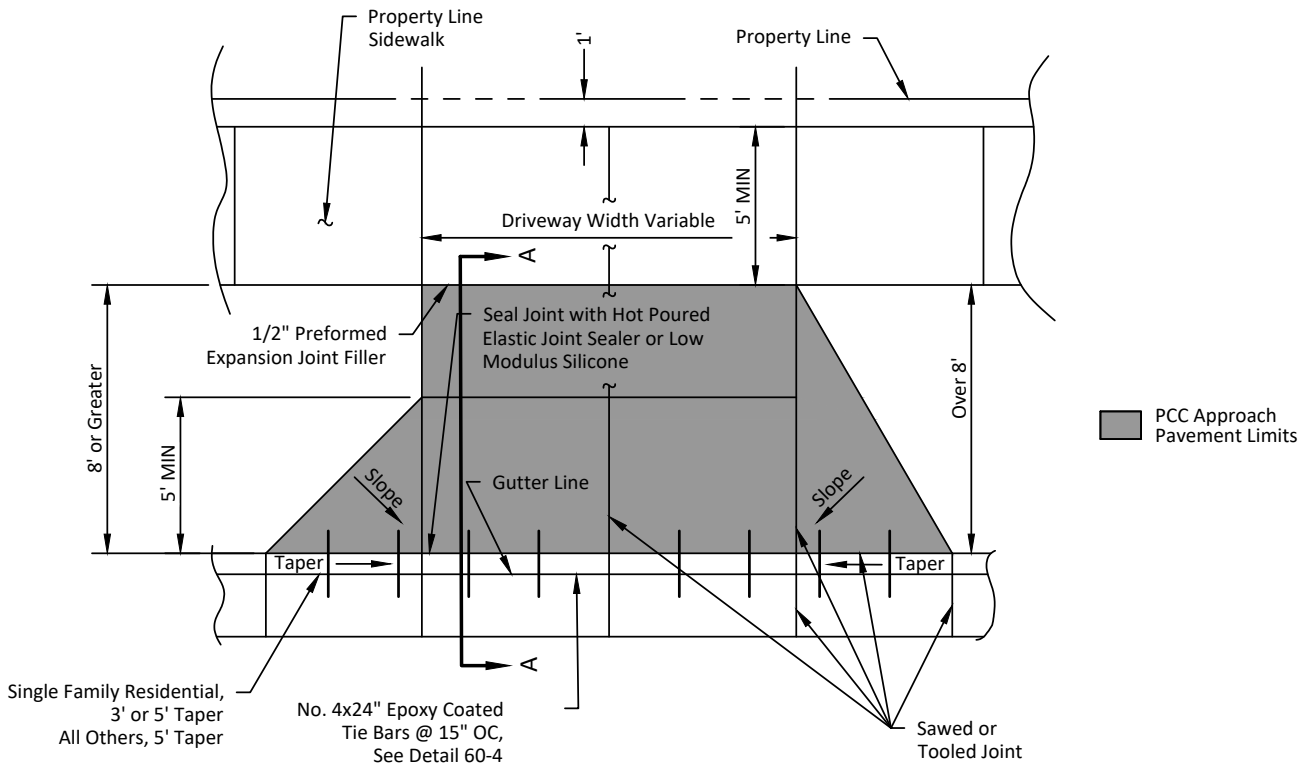
TYPE P CONCRETE CURB AND GUTTER

DATE: 8-19-22

Sec. - Sht.  
60-2d



SECTION A-A

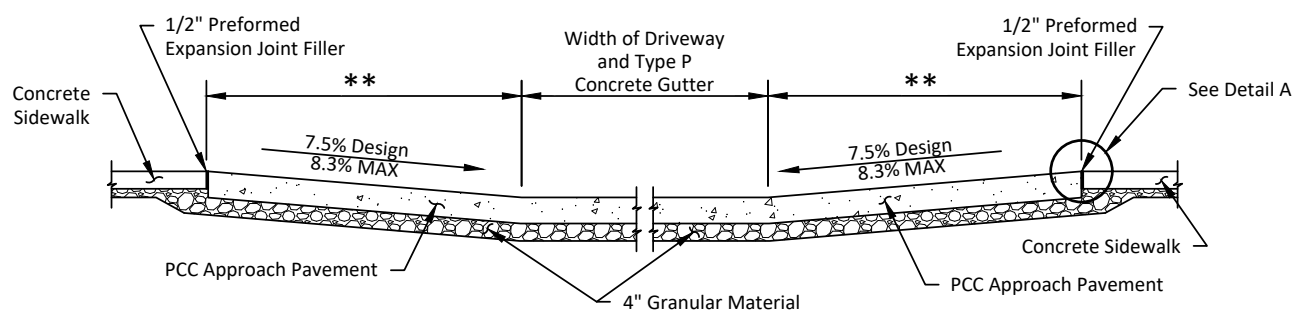
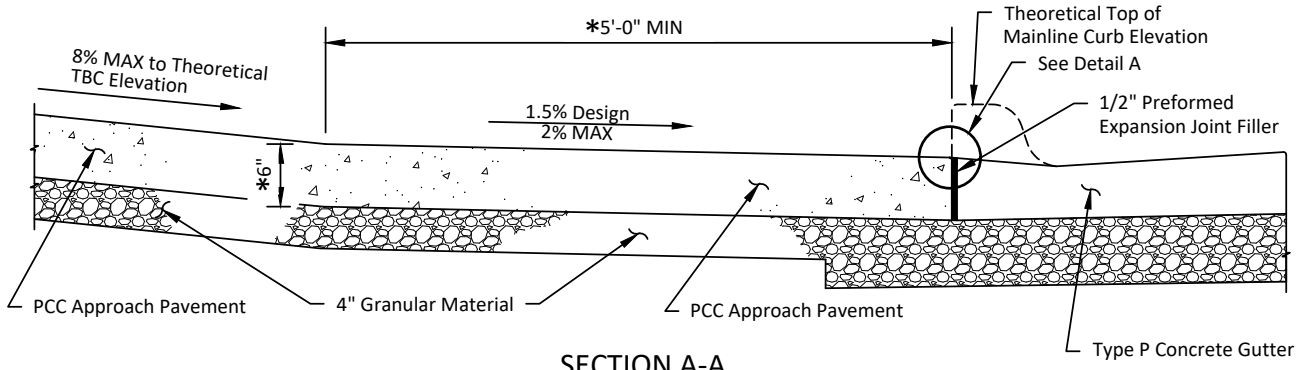
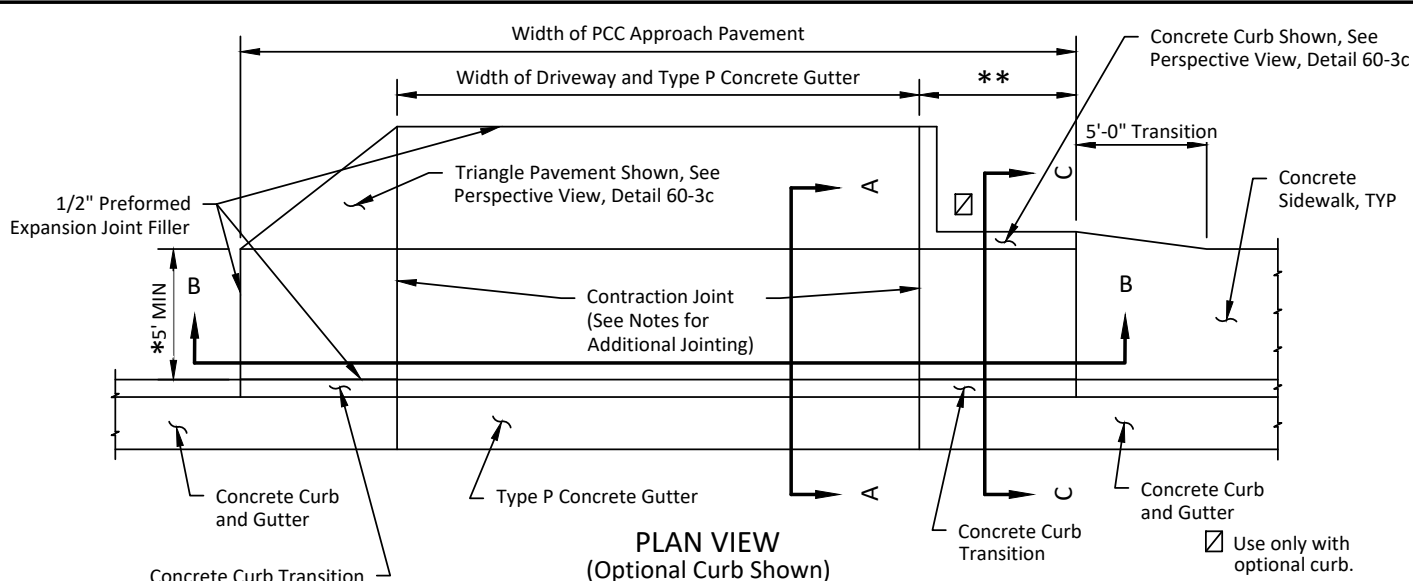


PLAN VIEW

**Notes:**

1. Driveway widths shall be per Rapid City Infrastructure Design Criteria Manual.
2. Contraction joints in the PCC approach pavement shall be a minimum of 1/4 the thickness of the approach pavement. Additional contraction joints not shown in the Plan View will be spaced as follows:
  - a. Joints shall be equally spaced across the driveway. Driveways up to 36' in width shall have a maximum joint spacing of 12'.
  - b. Driveways greater than 36' in width and up to 40' in width shall have 4 equally spaced joints.
3. All costs for furnishing and placing the PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, excavation, and materials including the earthen backfill will be incidental to the contract unit price per square yard for the corresponding PCC Approach Pavement contract item.
4. The sidewalk width through the full width of the driveway opening shall be 5' wide minimum.

N.T.S.

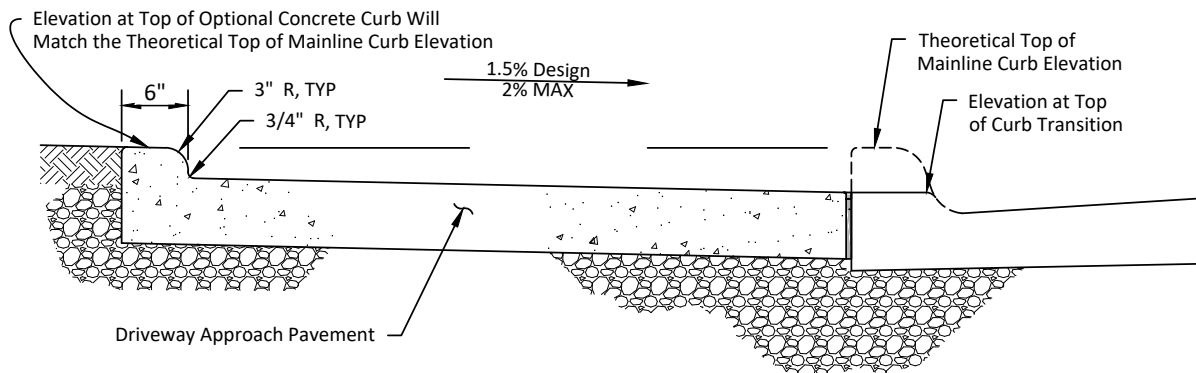


- \* Sidewalks to be constructed adjacent to the curb shall be a minimum of 5' in width for lane, place and local roads and a minimum of 6' for all other roads. The cross slope of the sidewalk is designed at 1.5% and will not be steeper than 2% unless specified otherwise in the plans.
- \*\* The slope of the driveway approach pavement in these areas will match the slope of the concrete curb transition and the length will not be longer than 15'. The slope is designed at 7.5% and will not be steeper than 8.3% unless specified otherwise in the plans.

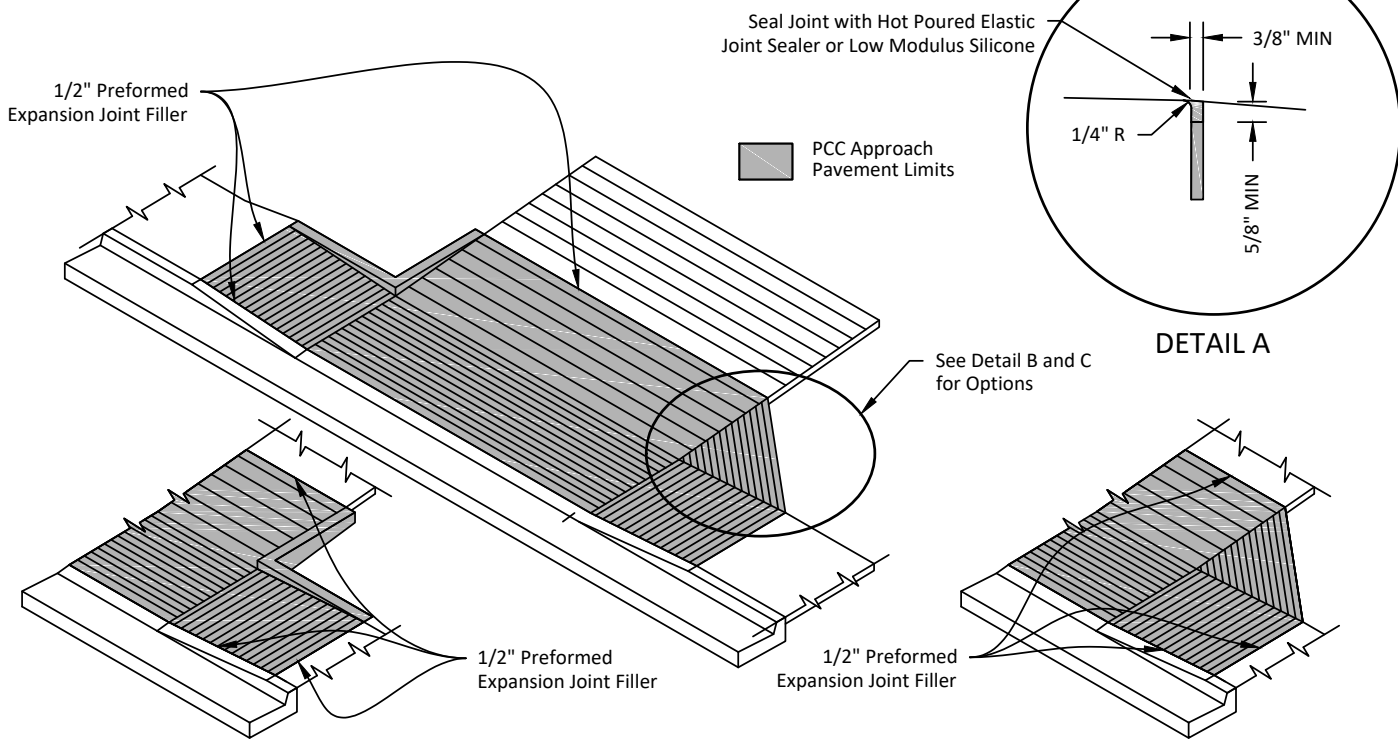
N.T.S.

|   |   |
|---|---|
| CITY OF RAPID CITY  | PUBLIC WORKS DEPARTMENT                   |
| <h2 style="margin: 0;">RESIDENTIAL DRIVEWAY APPROACH<br/>(CURBSIDE SIDEWALK)</h2> | DATE: 8-19-22<br><br>Sec. - Sht.<br>60-3b |





SECTION C-C  
(Optional Curb Shown)



DETAIL B  
(Optional Curb Shown)

PERSPECTIVE VIEW  
(Optional Curb Shown)

DETAIL C  
(Optional Triangle Pavement Shown)

**Notes:**

1. Driveway widths shall be per Rapid City Infrastructure Design Criteria Manual.
2. Detail C shall be used unless otherwise shown in the plans and specifications or as directed by the Engineer.
3. Contraction joints in the driveway approach pavement shall be a minimum of 1/4 the thickness of the approach pavement. Additional contraction joints not shown in the Plan View will be spaced as follows:
  - a. Joints shall be equally spaced across the driveway. Driveways up to 36' in width shall have a maximum joint spacing of 12'.
  - b. Driveways greater than 36' in width and up to 40' in width shall have 4 equally spaced joints.

N.T.S.

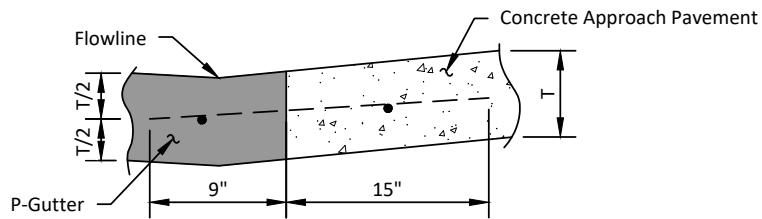
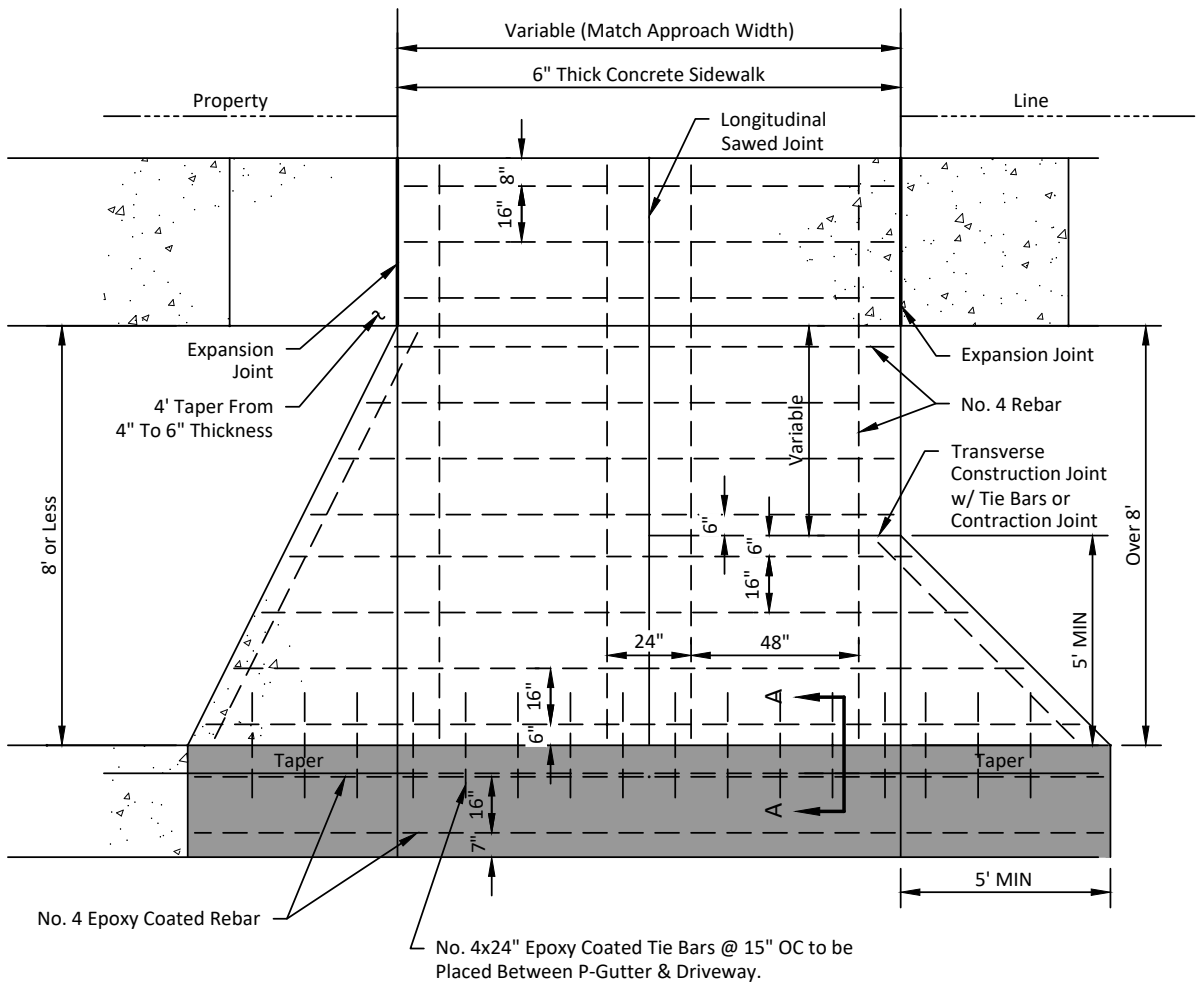
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

RESIDENTIAL DRIVEWAY APPROACH  
(CURBSIDE SIDEWALK)

DATE: 8-19-22

Sec. - Sht.  
60-3c



SECTION A-A

**Notes:**

1. Minimum depth of granular material placed under reinforced driveway approach shall be 4".
2. When removing existing curb & gutter for new approach construction, an expansion joint shall be constructed. (See detail 60-7b)
3. Reinforced driveway and sidewalk shall be placed at all alley entrances and at driveways into property which is multi-family, commercial, light industrial and heavy industrial.
4. No. 4 rebar shall be placed as per detail and tied together. 2" clearance shall be maintained between bottom of concrete and rebar.

N.T.S.

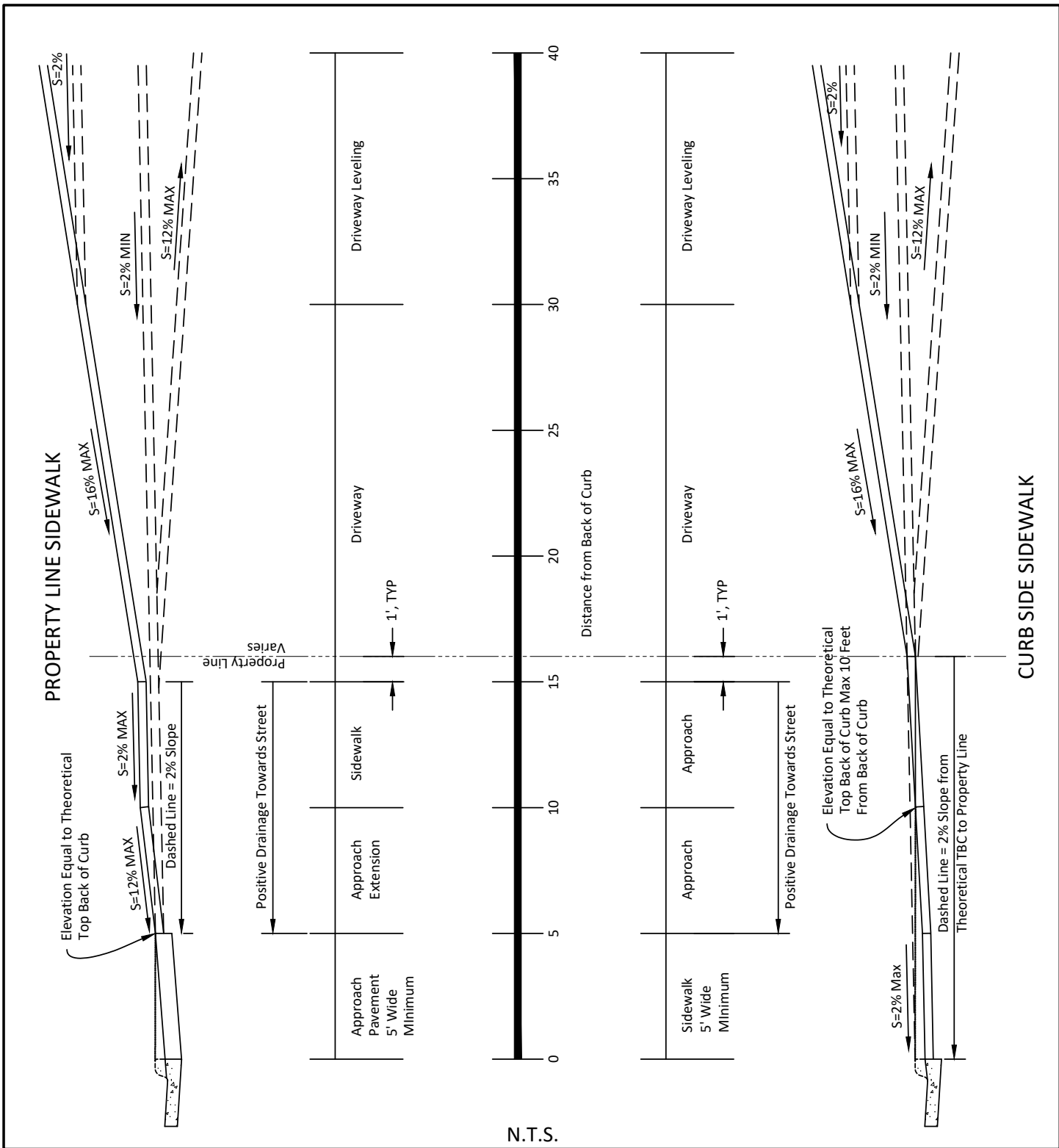
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

# 6" REINFORCED DRIVEWAY APPROACH AND SIDEWALK

DATE: 8-19-22

Sec. - Sht.  
60-4



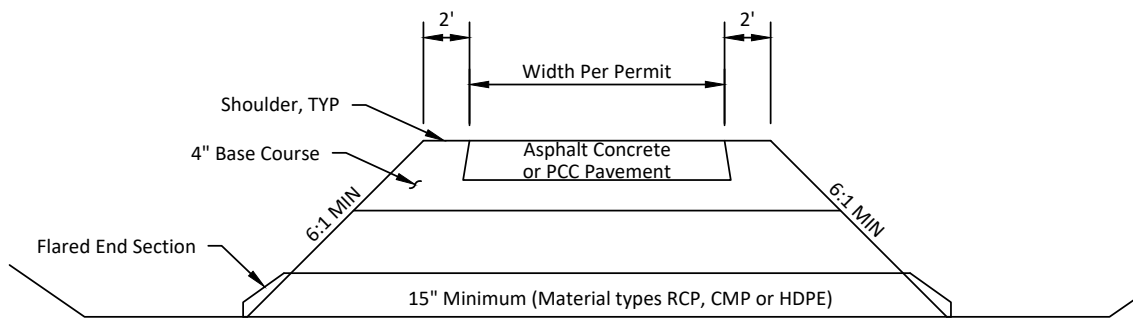
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

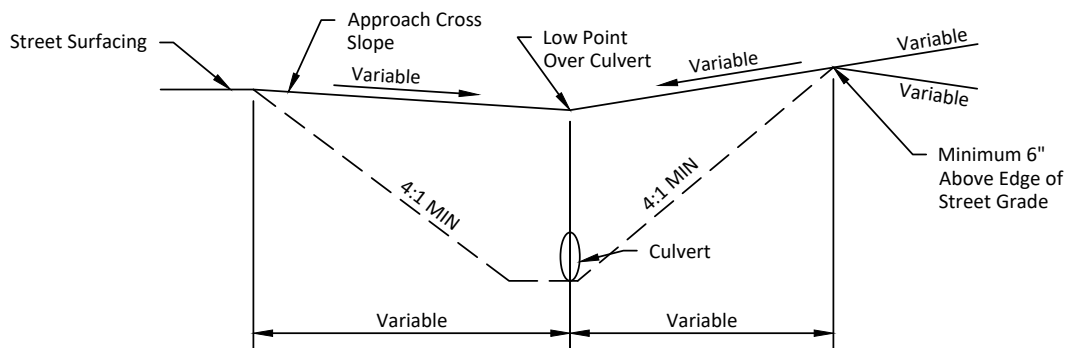
**DRIVEWAY PROFILE GRADE**

DATE: 8-19-22

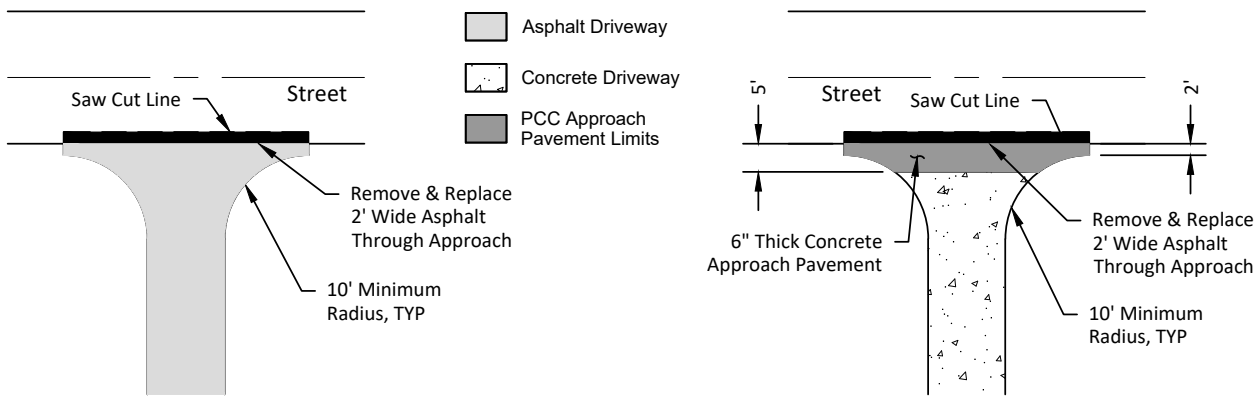
Sec. - Sht.  
60-5



RURAL APPROACH TYPICAL SECTION



RURAL APPROACH PROFILE



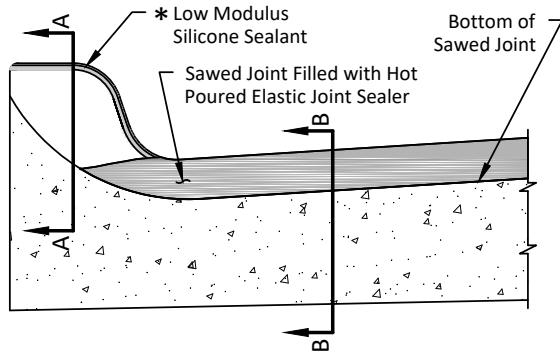
ASPHALT APPROACH PLAN

CONCRETE APPROACH PLAN

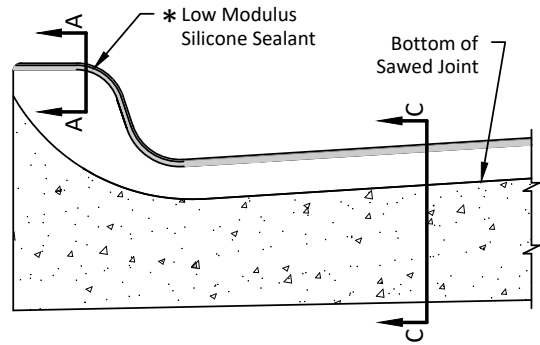
**Notes:**

1. Maximum grade of the approach in the right-of-way shall not exceed 12%.
2. Culverts shall be sized by property owner to assure proper drainage, minimum culvert size shall be 15".
3. Construct approach so as not to direct drainage onto the roadway.
4. Construct approach perpendicular to the street or road.
5. The hard surface improvements on driveways must at the street or curb line, and either extend to the garage or parking slab or a minimum of 50'.

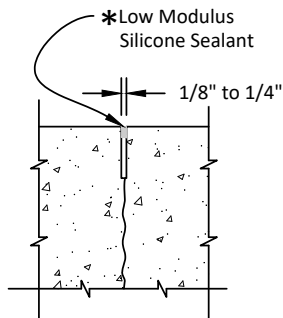
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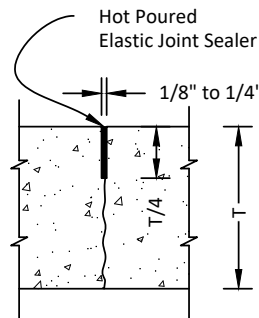
**SECTIONAL VIEW**  
Curb and Gutter Placed Monolithic with  
Adjacent Mainline PCC Pavement



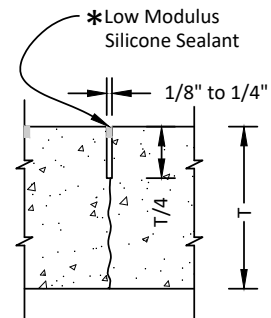
**SECTIONAL VIEW**  
Curb and Gutter not Placed with  
Adjacent Mainline PCC Pavement



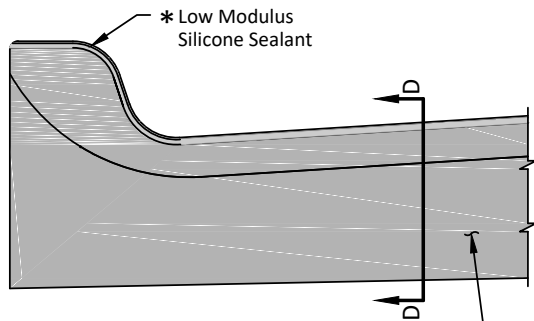
**SECTION A-A**



**SECTION B-B**

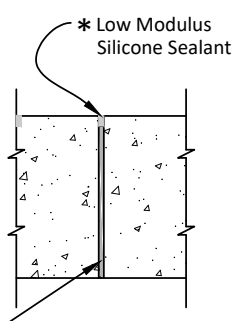


**SECTION C-C**



**SECTIONAL VIEW**  
Curb and Gutter at 1/2" Preformed  
Expansion Joint Filler Location

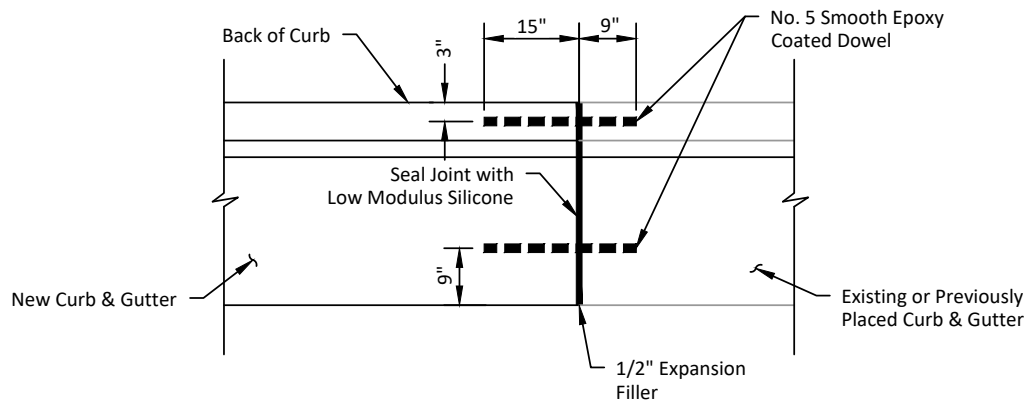
1/2" Preformed Expansion  
Joint Filler



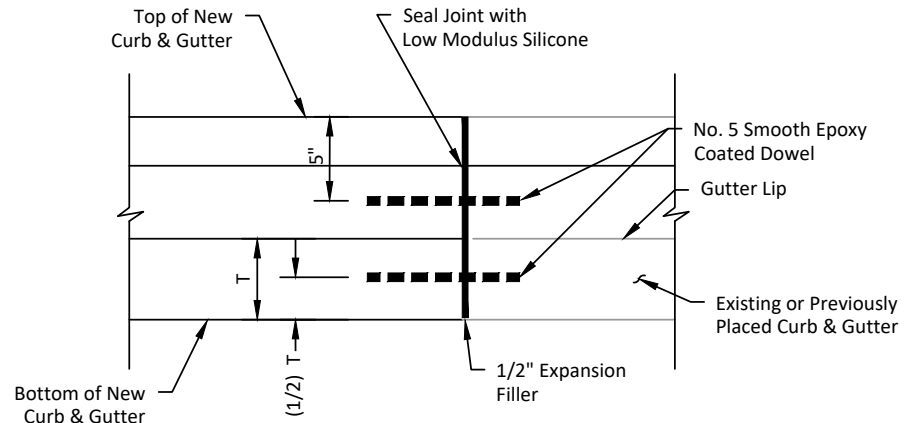
**SECTION D-D**

\* The silicone sealant will be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Public Works Director.

N.T.S.



PLAN



PROFILE

**Notes:**

1. For illustrative reason, only the Type B curb and gutter is shown.
2. A 1/2-inch preformed expansion joint filler will be placed transversely in the curb and gutter at the following locations:
  - a. At both ends of intersection radii curb and gutter, and transition points where curb and gutter is not parallel to the project centerline.
  - b. At each junction between new curb and gutter and existing curb and gutter. Existing curb and gutter includes curb and gutter previously placed on the same project.
3. Transverse contraction joints shall be placed in the curb and gutter at 10' maximum intervals. Curb joints adjacent to PCC pavement shall match PCC pavement joints and shall be sawed and sealed the same as the mainline PCC pavement joints. Curb joints adjacent to curbside sidewalk shall match the sidewalk joints.
4. When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter will be 1 1/2 inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint will be at least 1/4 the thickness of the concrete and the joint will be sealed in accordance with the details shown above.
5. Curb and gutter contraction joints adjacent to asphalt pavement shall not be sealed. Expansion joints in curb and gutter adjacent to asphalt pavement shall be sealed in accordance with the details shown above.

N.T.S.

|   |                         |                      |
|---|-------------------------|----------------------|
| CITY OF RAPID CITY                              | PUBLIC WORKS DEPARTMENT | DATE: 8-19-22        |
| <b>JOINTS IN CONCRETE<br/>CURB &amp; GUTTER</b> |                         | Sec. - Sht.<br>60-7b |