CHAPTER 17

APPENDIX A

STANDARD PLATES
APPENDIX A
STANDARD PLATES

**DRAWINGS**

<table>
<thead>
<tr>
<th>Description</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb, Gutter and Walk-Construction Joints</td>
<td>1</td>
</tr>
<tr>
<td>Standard Sidewalk and Bike Path Configurations</td>
<td>2,3&amp;4</td>
</tr>
<tr>
<td>Sawed Joint Detail</td>
<td>5</td>
</tr>
<tr>
<td>Curb, Gutter and walk (Vertical Curb) Detail</td>
<td>6</td>
</tr>
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<td>7</td>
</tr>
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<tr>
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<td>10,11&amp;12</td>
</tr>
<tr>
<td>Mid-Block Ramp for physically Handicapped</td>
<td>13</td>
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<tr>
<td>Pedestrian Walkway-Ramp and Step Details</td>
<td>14</td>
</tr>
<tr>
<td>Sidewalk and Curb Chase</td>
<td>15,16&amp;17</td>
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<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
</tr>
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<tbody>
<tr>
<td>Local Type I &amp; II</td>
<td>18</td>
</tr>
<tr>
<td>Local Type III</td>
<td>19</td>
</tr>
<tr>
<td>Local Type IV</td>
<td>20</td>
</tr>
<tr>
<td>Minor Collector</td>
<td>21</td>
</tr>
<tr>
<td>Major Collector</td>
<td>22</td>
</tr>
<tr>
<td>Minor Arterial</td>
<td>23</td>
</tr>
<tr>
<td>4 Lane Major Arterial</td>
<td>24</td>
</tr>
<tr>
<td>6 Lane Major Arterial</td>
<td>25</td>
</tr>
<tr>
<td>Median Planter</td>
<td>26,27&amp;28</td>
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<tr>
<td>Rural Local Road Type V</td>
<td>29</td>
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<tr>
<td>Rural Local Road Type VI</td>
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<tr>
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<td>31</td>
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<tr>
<td>Rural Major Collector</td>
<td>32</td>
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**Roadside Ditch Sections**

<table>
<thead>
<tr>
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<td>33</td>
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**Emergency Overflow Channel (in Drainage Tracts)**

<table>
<thead>
<tr>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
</tr>
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REFERENCES

1. City of Aurora. Roadway Design Standard and Specifications


3. Adams County. Roadway Design and Construction Standards

4. Town of Castle Rock. Public Works Regulations

5. Douglas County Subdivision Resolution


12. Standard Construction Specifications and Drawings. Department of Public Works, Denver, CO

13. Public Works Design Standards and Specifications. City of Thornton, CO
STANDARD ATTACHED OR DETACHED WALK

5' SIDEWALK (MINIMUM)
2% SLOPE

T = 6" WITH MOUNTABLE CURB & GUTTER

IF USED FOR PEDESTRIAN/BICYCLE COMBINED SIDEWALK WIDTH SHALL BE 8'.

MOUNTABLE CURB AND GUTTER

CONTRACTION OR WEAKEN PLANE JOINT

EXPANSION JOINT (SEE DRWG NO. 5)

COMBINATION CURB, GUTTER AND SIDEWALK

4" MNTBL CURB, GUTTER & WALK SIDEWALK & CONSTRUCTION JOINTS

Town of Bennett
NOTE: ALL ROAD SIDEWALKS AND BIKE PATHS SHALL BE 6" THICK CONCRETE
TYPE F
minor street

TYPE G

TYPE H

TYPE I

TYPE J

NOTE: ALL ROAD SIDEWALKS AND BIKE PATHS SHALL BE 6" THICK CONCRETE
Town of Bennett

STANDARD SIDEWALK & BIKEPATH CONFIGURATIONS

TYPE K
install modified curb chase & inlet where required by drainage study
typical on both sides of street

TYPE L
install modified curb chase & inlet where required by drainage study
typical on one side of street

NOTE: ALL ROAD SIDEWALKS AND BIKE PATHS SHALL BE 6' THICK CONCRETE
SAWED JOINT

NOTE:
WASH & BLOW OUT WITH FORCED AIR UNTIL DRY BEFORE APPLYING SEALANT MATERIAL.

EXPANSION JOINT

NOTE:
1. JOINT SEALANT MATERIAL MUST MEET ASTM 3408.
2. NYLON ROPE OR OPEN CEL POLYURETHANE STRAND.

Town of Bennett
VERTICAL CURB & GUTTER

Please see Trench Drain Detail

CLASS G FILTER MATERIAL
(NO CONCRETE SAND)

4" PERFORATED PVC DRAIN PIPE
(SEE NOTE 1)

OR

EQUIVALENT OVAL PERFORATED PIPE
(EQUIV. OVAL PERF. PIPE MUST BE
ACCEPTED BY THE COUNTY ENGINEER
IN WRITING) (SEE NOTE 1)

4" SOD

TO MAINTAIN THE INTEGRITY OF THE
FILTER CLOTH, UP TO 6" (MAX.) OF
"SQUEEZEED" MAY BE USED TO
PREVENT POP-UP SPRINKLER-HEADS
FROM PENETRATING THE FILTER CLOTH.

MEDIAN CURB & GUTTER
(CATCH)

4 1/2"

1/2"

1 1/2"R

TYPICAL CURB & GUTTER
AT DRIVEWAY

1/2"

1 1/2"R

WIRE 14G FILTER CLOTH OR EQUIVALENT.
FILTER CLOTH MUST WRAP BOTH THE PIPE
AND THE ENTIRE TRENCH.

MESH SEE CURB CUT DETAIL

NOTES:

1. The 4" (or equivalent oval) drain pipe will be connected to a storm drainage system to
   create a positive drainage of runoff.

2. If a sidewalk is placed behind the curb but is not placed monolithically, a silicone base sealer
   must be applied between the sidewalk and the curb.

CURB, GUTTER & WALK
VERTICAL CURB

Town of Bennett

Issued: __________
Revised: __________
Drawing No. 6
CROSS-SECTION THROUGH CURB CUT

1/2" Expansion Joint (typ.)

1/2" R-

1 1/2" R

6" x 6" - 10 x 10 YMF
Continued Into Gutter

NOTES:
1. Back of curb cut extends to back of walk or back of bicycle path. If no walk is present, extend back of curb cut to 5' 0" behind flowline.
2. County Shall approve location of curb cut before construction.

Width of Curb Opening (W)

Note: Curb openings of 30' or more must be constructed as radius curb return.

WIDTH OF CURB OPENING (From Table 13.1)

<table>
<thead>
<tr>
<th></th>
<th>RESIDENTIAL</th>
<th>SERVICE</th>
<th>COMMERCIAL</th>
<th>STATION</th>
<th>INDUSTRIAL</th>
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<tbody>
<tr>
<td>FREeway</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>MAJOR ARTERIAL</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>MINOR ARTERIAL</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>MAJOR COLLECTOR</td>
<td>30-35</td>
<td>30-40</td>
<td>30-40</td>
<td>30-40</td>
<td>30-40</td>
</tr>
<tr>
<td>MINOR COLLECTOR</td>
<td>30-35</td>
<td>30-40</td>
<td>30-40</td>
<td>30-40</td>
<td>30-40</td>
</tr>
<tr>
<td>LOCAL</td>
<td>30-35</td>
<td>30-40</td>
<td>30-40</td>
<td>30-40</td>
<td>30-40</td>
</tr>
</tbody>
</table>

NOTE:
1. Curb openings of 30' or more must be constructed as a radius curb return.
2. If a radius curb return is used, the width of the allowed driveway is measured by NOT counting the two (2) 20' radil, or in other words, it is measured at the throat extended to flowline.

** FOR SINGLE FAMILY RESIDENTIAL ACCESS TO LOCAL STREETS:
LOCAL (SUBURBAN - with curb-gutter-sidewalk) = 16' to 30'
LOCAL (URBAN - without curb-gutter-sidewalk) = 20' to 30'
LOCAL (RURAL - Ag. zoned) = 20' to 30'

Curb, Gutter and Walk Curb Cuts

Town of Bennett

Issued:

Revised:

Drawing No. 7
EXPANSION JOINT

Vorles 2'

Expansion Joint
L for Flow Across Pan
Contraction Joint
3 Eq. 3/8" x 4" Pins
Contraction Joint
For Crossbars Longer Than 36'

Cutter Apron Shall Be 10"
Thick and Have Some Reinforcement as Crossbar

Crown Shall Be Transformed Out Of the Street, See Section 4.3 of these Specifications. No Crown Exists at the Crossbar

See Table
SECTION A-A

2" Minimum
Class 6
(If Required for Soil Condition)

<table>
<thead>
<tr>
<th>Width (W)</th>
<th>Depth (D)</th>
<th>Thickness (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'</td>
<td>1-1/2</td>
<td>8&quot;</td>
</tr>
<tr>
<td>8'</td>
<td>2&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>10'</td>
<td>2-1/2&quot;</td>
<td>10&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAN LENGTH</th>
<th>WIRE MESH CALLED FOR</th>
<th>REPLACE WITH REBAR HAVING END AREA OF</th>
</tr>
</thead>
<tbody>
<tr>
<td>24'</td>
<td>6x6 - 4.4</td>
<td>0.10 Sq. In. Per Ft. (#4 @ 12&quot; E.W.)</td>
</tr>
<tr>
<td>32'</td>
<td>6x6 - 2.2</td>
<td>0.13 Sq. In. Per Fl. (#4 @ 12&quot; E.W.)</td>
</tr>
<tr>
<td>38'</td>
<td>5x5 - 0.0</td>
<td>0.20 Sq. In. Per Fl. (#4 @ 18&quot; E.W.)</td>
</tr>
<tr>
<td>40'</td>
<td>Two 5x5 - 2.2</td>
<td>0.26 Sq. In. Per Fl. (#4 @ 9&quot; E.W.)</td>
</tr>
</tbody>
</table>

NOTE:
Square returns and pons shall use wire mesh as shown in the table above. When wire mesh is not available, steel reinforcing bar may be substituted.

CONTRACTION OR WEAKENED PLANE JOINT

1/8"

1/8"R

CONTRACTION OR WEAKENED PLANE JOINT

1/4" D if Templates Are Not Used

CROSSPANS TYPE I

Town of Bennett
1. In accordance with CRS43-2-107(2), ramps shall be provided at all corners of street intersections where there is existing or proposed sidewalk and curb. Ramps shall also be provided at walk locations in mid-block in the vicinities of hospitals, medical centers, athletic stadiums, and at "T" intersections directly opposite either curb return.

2. All work shall be done in accordance with the standard specifications of Town.

3. Sidewalks shall be ramped where a driveway curb is extended across the walk.

4. Details shown in this plan shall apply to all construction or reconstruction of streets, curbs or sidewalks.

5. Special designs are required when grades are over 4% or where the angle of the intersection is less than 75° or more than 105°.

6. In new construction, ramp and curb may be poured monolithically.

7. Ramp and wings shall be poured monolithically.

8. Minimum width of ramps shall be 4 feet and ramp slopes shall not be steeper than 12:1.

9. Maintain back of walk elevation at 2.0% above top of curb.

10. Concrete for sidewalk ramps shall be Class "A".

11. Normal gutter flow line and profile shall be maintained through the ramp area.

12. Ramp surface shall have a coarse broom finish perpendicular to the direction of ramp slope 89° OC.

13. A 1/2" expansion joint shall be required where the concrete ramp joins any rigid pavement or structure.

14. Drainage structures shall not be placed in line with ramps, location of the ramp shall take precedence over location of the drainage structure, except where existing drainage structures are being utilized in the new construction.

15. All pavement marking shall be in accordance with the latest edition of the MUTCD for streets and highways.

CURB RAMPS FOR PHYSICALLY HANDICAPPED

Town of Bennett

Issued: 
Revised: 
Drawing No. 10
CURB RAMPS FOR
PHYSICALLY HANDICAPPED

Town of Bennett
DETACHED WALK TO ATTACHED WALK
25' RADIUS OR GREATER

CURB RAMPS FOR PHYSICALLY HANDICAPPED

Town of Bennett
NOTE:
FOR LOCAL (36' FL/FL) STREETS ONLY.

SECTION A-A
FOR COMB. CURBWALK ONLY

MID-BLOCK RAMP FOR PHYSICALLY HANDICAPPED ON LOCAL STREETS

Town of Bennett
1. The use of this pedestrian walkway will normally not be allowed on public walkways. It is intended to show how steps and handicap ramps will be used in conjunction with each other.

2. The concrete walkway shall be the full width of the tract.

3. The longitudinal slope shall not be less than 1% for terrain exceeding 6%, but less than 18%. A combination of step and landing can be incorporated into the left side of the walkway (facing downhill) in such a manner as to match grade with existing terrain as closely as is possible. Grades in excess of 18% shall require a special design to be approved by the Town Engineer.

4. The construction plans for the development shall include complete details for the walkway.

5. The walkway shall not be used for drainage overflow.

6. Contraction or weakened plain joint at 10’ intervals and expansion joint per sidewalk construction.

---

**PEDESTRIAN WALKWAY**

**RAMP & STEP DETAILS**

**Town of Bennett**
10' transition from vertical to mountable curb

SEE SP13B

SECTION A-A

6" varies 6"

EXPANSION JOINT (TYP.)

6" MIN. 18" MAX. 12" MIN.

MULTIPLE CHASE

(2-18" OPENINGS IN ONE LOCATION, MAXIMUM)

SIDEWALK WIDTH TYP.

2% SLOPE

6" VERTICAL CURB & GUTTER

SECTION B-B

SIDEWALK CURB CHASE

Town of Bennett

Issued: 
Revised: 
Drawing No. 15
10' MOUNTABLE TO VERT.
CURB TRANSITION

4" R.O.W. OR TOE OF SLOPE

EXPANSION JOINT (TYP.)

3/8" F.T.

4" 4" CONC. SIDEWALK

FLOW

STATION PER PLANS

90° (SEE NOTE 2)

3/8"

5"

1/4"

2.1/2"

STRUCTURAL TEE WT 2.5 x 8

EXPANSION JOINT (YYP.)

SECTION A-A

6" VARIES 6"

18" MAX.

12" MIN.

ELECTRO-GALVANIZED NON-SLIP
RAISED PATTERN STEEL TREAD
PLATE, FOR THICKNESS, SEE
CHART BELOW

NOTES:

1. Maximum 2 - 18" openings
   in one location.

2. Angle may be > 90 in
   some cases.

MULTIPLE CHASE

<table>
<thead>
<tr>
<th>WIDTH OF OPENING</th>
<th>THREADPLATE THICKNESS</th>
</tr>
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<tbody>
<tr>
<td>6&quot;</td>
<td>3/8&quot;</td>
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<tr>
<td>6&quot; - 12&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>12&quot; - 18&quot;</td>
<td>5/8&quot;</td>
</tr>
</tbody>
</table>

SIDEWALK CURB CHASE
43 BAR 6" LONG WELDED TO STRUCT. TEE AT 18" O.C. EACH SIDE (1/2" ANCHOR BOLT MAY BE USED)

1/2" X 1" SCREW (SEE NOTE 1)

1/8" TO 1/4"

WELD

ELECTRO-GALVANIZED NON-SLIP RAISED PATTERN STEEL TREAD PLATE. (FOR THICKNESS SEE CHART BELOW)

STRUCT. TEE WT 2.5 X 8 (SEE BELOW)

DRILLED AND THREADED TO ACCEPT SCREW, 2" O.C.

NOTES:
1. STARHEAD SCREW BRASS OR ELECTRO-GALVANIZED FINISH (RECESSED HEAD)

WIDTH OF OPENING | TREAD PLATE THICKNESS
--- | ---
6" | 3/8"
5"-12" | 1/2"
12"-18" | 5/8"

SIDEWALK CURB CHASE

Town of Bennett

Issued:________
Revised:________
Drawing No. 17
4 FT. COMBINATION CURB, GUTTER AND WALK (SF)
VERTICAL CURB PERMISSIBLE.

5 FT. COMBINATION CURB, GUTTER AND WALK (MF)
VERTICAL CURB PERMISSIBLE.

R.O.W. 50 FT. MIN. (SF)
       60 FT. MIN. (MF)

36 FT. (SF)
  44 FT. (MF)

2.5' (SF)
  3.5' (MF)

P

SUBGRADE

ASPHALTIC CONCRETE

TOTAL PAVEMENT

AGGREGATE BASE

P

FLOWLINE
LOCAL
COMMERCIAL AND INDUSTRIAL

Town of Bennett

Issued:
Revised:
Drawing No.

20

R.O.W.  60 FT.  R.O.W.
40 FT.

ASPHALTIC CONCRETE

TOTAL PAVEMENT

SUBGRADE

AGGREGATE BASE

NP

VERTICAL CURB, GUTTER & 5 FT. ATTACHED WALK

NP

NP
4 LANE
MAJOR ARTERIAL

Town of Bennett
**NOTES:**

1. RESTRICTED PLANTING – LOW SHRUBS AND GROUND COVER
2. PLANTERS SHALL BE 50' LONG.
3. PLANTERS SHALL BE SPACED TO PROVIDE SAFE SIGHT DISTANCE.

**SIGHT WINDOW**

**MEDIAN COVER MATERIAL BETWEEN**

**UNRESTRICTED PLANTING**

**PLANTER**
Fabric covered 4" weep hole to connect to storm sewer system or through a culvert to the roadside ditch.

There is no setback requirement for median landscaping if the sloped paving details shown here are used.

Miradrain 5000 or equivalent or approved alternate method

Median Planter

Town of Bennett
NOTE: 6" CURB AND CUTTER MAY BE SUBSTITUTED FOR 4" GRAVEL SHOULDER.
DITCH TYPE I

Shoulder, width varies

Property line

Maximum depth for 5 year flood (Typ.)

10' Min.

Grassed slopes (Typ.)

Pavement

Allowable longitudinal slope from 0.5% to 3.0%

1/4

3

12"

1

DITCH TYPE II

Shoulder, width varies

Property line

Maximum depth for 5 year flood (Typ.)

10' Min.

Grassed slopes (Typ.)

Pavement

Allowable longitudinal slope from 0.5% to 1.5%

1/4

3

12"

3

6" layer of np-rcw with D_{50} = 3", and filter material.

4"

DITCH TYPE III

Shoulder, width varies

Property line

Maximum depth for 5 year flood (Typ.)

10' Min.

Grassed slopes (Typ.)

Pavement

Allowable longitudinal slope less than 0.5%

1/4

3.5

18"

3.5

Concrete trickle channel

6"
TYPICAL CROSS SECTION

NOTES:
1. FILTER FABRIC IS TARABOND #1112-12-4 OR EQUIVALENT.
2. LONGITUDINAL SLOPE SPECIFICATION, MIN. 2%, MAX. 25%

EMERGENCY OVERFLOW CHANNEL
(IN DRAINAGE TRACT)

Town of Bennett
TYPE I

Suitable for bicycle and general pedestrian use. Eight feet is the required minimum width for bikeways and six feet the required minimum for walkways. Wider sections may be required in heavily travelled areas.

Where soil is well drained and compactable, the stone base may be eliminated and this section replaced by a 3 1/2" full-depth asphalt section. Construction of this substitute section is subject to the approval of the Director.

TYPE II

Suitable for equestrian use, hiking and all-terrain (mountain) bicycle use in gently sloped topography. Susceptible to washout and sheet erosion on slopes greater than 5%.

Depth of stone base depends on soil type, stability and drainage.
TYPE III


Subgrade for all sidewalks shall be compacted to minimum 95% density at optimum moisture to full width of right-of-way or easement in accordance with AASHTO T99.

TYPE IV

Suitable for equestrian use, hiking and all-terrain (mountain) bicycle use in low density areas. Construction of this section is subject to the approval of the Director.

Alignment of this trail should be such that there is minimal ground disturbance during clearing.
TYPE V

Suitable for equestrian use and hiking.

Depth of stone base dependent on soil type, stability and drainage. Chip walks require edging as determined by the site inspector.
yellow center-line striping

SHOULDER IS FIRM WITH NO DROP OFF NO SUBSTANTIAL SLOPE FOR 2 FEET

2.0 1.0 2.0 2.0 2.0 2.0 1.0 0.5 2.0
(.6) (.3) (.6) (.6) (.3) (.15) (.6)

8.0

DIMENSION CODE
B = BICYCLE
M = MANEUVERING CLEARANCE
E = EDGE CLEARANCE (SHOULDER)

NOTE: DIMENSIONS WITHOUT BRACKETS ARE IN FEET: THOSE WITH BRACKETS ARE IN METERS.

TWO-WAY BIKE PATH IN
OFF-STREET LOCATION

Town of Bennett
NOTES:

- IF WOOD POSTS, COUNTERSINK NUT AND WASHER ON 3/8" Ø 6" EYE BOLTS
- MOUNT 3" RED REFLECTORS W. 1/2" CABLE CLAMPS. 2 EACH SIDE OF WIRE ROPE.
- FOLD DOWN POST WILL BE INSTALLED IN CENTER. PADLOCKS AND L BRACKETS WILL HOLD POST IN PLACE WHEN IN THE UP POSITION.
- 3/16" STEEL CAP SHALL BE PLATE WELDED ON TOP - SMOOTH ALL ROUGH EDGES AND FINISH W. 1 SHOP OR PRIME COAT AND 3 FIELD COATS USING AN ALKYD PAINT SYSTEM. FINISH COAT IS TO BE FLAT BLACK, ALL SURFACES OF ALL STEEL POSTS.
\[ \Delta = 90^\circ \pm 10^\circ \]
rural roads shall have a minimum pavement radius of 38'
This standard is a guide only and deviations may be acceptable where conditions dictate. Dimensions shown are desirable but do not govern. The intention is to show the relative position of all utilities. This does not preclude the use of utilities in easements in other locations (i.e. back lot lines).

- Utility Zone Easement if Required

Town of Bennett
NORMAL DEPTHS

Street Lights 30"
Gas 30"
Telephone 
Electric Power 
Storm Sewer 40" Min.
Storm sewer 60
CATV 24" Urban
(30" rural)
Water 54" Min.
Fiber Optic (with tracer wire 1' above the line) 48" min.
Other 30"

* Electric and Telephone lines per latest edition of National Electric Safety Code

UTILITY LOCATION
GENERAL

Town of Bennett
EXAMPLE OF A UTILITY RELOCATION 
TO A NORMAL POSITION AT AN INTERSECTION

1. Carry Utility around corner.
2. Stay on same side of street.
3. Return Utility to normal side of street at intersection.
RULES AND REGULATIONS FOR CURB OPENING AND DRIVEWAYS

RESIDENTIAL

COMMERCIAL

WIDTH OF CURB OPENINGS (W)

<table>
<thead>
<tr>
<th></th>
<th>RESIDENTIAL SF</th>
<th>COMMERCIAL SF</th>
<th>SERVICE STATION</th>
<th>INDUSTRIAL</th>
</tr>
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<tbody>
<tr>
<td>FREEMAN</td>
<td>K/A</td>
<td>K/A</td>
<td>K/A</td>
<td>K/A</td>
</tr>
<tr>
<td>MAJOR ARTERIAL</td>
<td>IF ALLOWED UNDER 15,1.1.2.a DESIGN AS COLLECTOR</td>
<td>K/A</td>
<td>K/A</td>
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<tr>
<td>MINOR ARTERIAL</td>
<td>IF ALLOWED UNDER 15,1.1.2.a DESIGN AS COLLECTOR</td>
<td>K/A</td>
<td>K/A</td>
<td></td>
</tr>
<tr>
<td>MAJOR COLLECTOR</td>
<td>30-35</td>
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</tr>
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<tr>
<td>LOCAL</td>
<td>22</td>
<td>40</td>
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</tr>
</tbody>
</table>

Note: Curb openings of 30' or more must be constructed as a radius curb return.

Edge Clearance (E)
- Residential: None (May not exceed the property line extended)
- Local: None (May not exceed the property line extended)
- Commercial and Service Stations: 25 feet minimum
- Local: 25 feet minimum

Notes:
- Joint access with adjoining property is encouraged. Joint access shall be the only justification for reducing the minimum edge clearance dimension.
- Corner clearance (C)
  - It is important to locate driveways away from major intersections. This constraint is as much for the ability to enter and leave the property as for the benefit of intersection safety and operations. Existing a driveway during peak-hour conditions at traffic signals is difficult where the queue of standing or slow-moving vehicles never allows a sufficient gap for entry from the driveway. Corner clearances are specified in Figure 48b and are measured from the curb line.
### CORNER CLEARANCES

#### MINIMUM CORNER CLEARANCES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ARTERIAL</th>
<th>COLLECTOR</th>
<th>LOCAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>115</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>B</td>
<td>85</td>
<td>85</td>
<td>50</td>
</tr>
<tr>
<td>C</td>
<td>115</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>D</td>
<td>115</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>E</td>
<td>210</td>
<td>115</td>
<td>50</td>
</tr>
<tr>
<td>F</td>
<td>210</td>
<td>115</td>
<td>50</td>
</tr>
<tr>
<td>G</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>H</td>
<td>210</td>
<td>115</td>
<td>50</td>
</tr>
</tbody>
</table>

**NOTE:**

This table does not apply to single family residential driveways. Single family residential driveways must access on the street of the lowest classification and at the side of the lot furthest away from the intersection.

---

Taken from the Urban System Transportation Manual, Figure 7.12

---

### CORNER CLEARANCES FOR DRIVEWAYS

**Town of Bennett**
REGULATORY SIGN PLACEMENT

LATERAL PLACEMENT

<table>
<thead>
<tr>
<th>KEY</th>
<th>LOCAL STREETS</th>
<th>COLLECTORS &amp; ATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MINIMUM</td>
<td>NORMAL</td>
</tr>
<tr>
<td>A</td>
<td>8'-0&quot;</td>
<td>12'-0&quot;</td>
</tr>
</tbody>
</table>

VERTICAL PLACEMENT (MINIMUM)

<table>
<thead>
<tr>
<th>KEY</th>
<th>URBAN</th>
<th>RURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WITH SIDEWALKS</td>
<td>W/OUT SIDEWALKS</td>
</tr>
<tr>
<td>D</td>
<td>7'-0&quot;</td>
<td>7'-0&quot;</td>
</tr>
<tr>
<td>E</td>
<td>7'-0&quot;</td>
<td>6'-0&quot;</td>
</tr>
</tbody>
</table>

REGULATORY SIGN PLACEMENT

Town of Bennett

Issued: 
Revised: 
Drawing No. 50
Street Sign Assembly

1/8" holes will be punched on all 30" and over plates for bolting ends together and all 9" plates.

3/8" holes will be punched center plate on all punched plates & 6" x 36" and over and all 9" plates.

Standard street sign assembly

Street sign assembly when street names change

Street sign assembly on utility pole
T-INTERSECTION

ASSEMBLY MUST BE PLACED AT THIS LOCATION

NOTE:
•SEE SPECIFICATION S-10 ON THIS SHEET FOR DISTANCE

LOCAL-COLLECTOR STREET INTERSECTION

ASSEMBLY CAN BE LOCATED AT EITHER LOCATION

LOCAL-LOCAL STREET INTERSECTION

ASSEMBLY CAN BE LOCATED AT ANY OF THESE LOCATIONS

STREET NAME ASSEMBLY LOCATIONS
NOTE:
TOP OF BOX SHALL BE DEPRESSED
1/4" TO 1/2" BELOW ADJACENT FINISHED STREET GRADE.

LETTERS SHALL BE NOT LESS THAN
5/8" HIGH & RAISED 1/8" ABOVE SURFACE.

ALL FILLETS & ROUNDS RADIUS = 1/8"

RANGE BOX

Town of Bennett
Square Steel Tube (Perforated)

Post Support. Posts can be driven into the ground. Do not place concrete around the post. A broken or damaged post is easier to remove if it is not driven or set into the ground more than three feet.

Breakaway Devices. Sleeve assemblies like the one shown in the lower drawing will increase the safety of a sign when it is hit and make it easier to repair. After the sign has been hit, the broken stub of the post can be removed from the base sleeve and a new sign post put back in place.

Maximum Post Size
Max. Sign Panel Post Size
30" x 30" 2.25" x 2.25"
2.25" x 0.105"

Sign Panels. Attach the sign panels lightly to the post and use oversized washers to keep the sign from breaking loose from the post when a vehicle hits it. Sign panels should be mounted a minimum of 7 feet above the pavement or ground.

There are many other products available commercially for sign supports. Use depends on local requirements and costs. This publication only shows four of the most common types of small sign supports.

SIGN POST

Town of Bennett

ISSUED: __________

REVISED: __________

DRAWING NO. 56
The following notes are applicable to all roadway sections identified on preceding pages (local, minor collector, major collector, minor arterial and major arterial), unless modifications are approved in writing by the Director of Public Works.

NOTES:

1. Gutters shall be at least 6" thick.

2. All combination curb, gutter and sidewalks to be 6" thick (min.). Sidewalks with vertical curb and gutter may be 4" thick.

3. Total pavement thickness to be determined by pavement design procedures of this Manual.

4. Placement, moisture and density control for subgrade, subbase and surfacing materials shall be in conformance with the requirements of Chapter of the Roadway Design and Construction Standards.

5. Non-landscaped median islands shall be covered with an acceptable impermeable surface.

6. Arterial right turn accel/decel lanes can be eliminated, with inclusion of appropriate tapers, if the distance between intersecting streets and/or curb cuts is 1/2 mile or greater.

7. Legend

- \( P \) = Parking Allowed

- \( NP \) = No Parking Allowed

- \( \uparrow \) = Laneage

---

Town of Bennett

NOTES

Issued:
Revised:
Drawing No.
# TABLE ONE - BAR LIST FOR CURB INLETS, TYPE R

<table>
<thead>
<tr>
<th>MARK (MA)</th>
<th>a.c. (Spacing)</th>
<th>ALL INLETS</th>
<th>INLETS H 2' 5&quot;</th>
<th>INLETS H 3' 5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>x = 6&quot;</td>
<td>10&quot;</td>
<td>15&quot;</td>
</tr>
<tr>
<td>401</td>
<td></td>
<td>11' 11&quot;</td>
<td>11' 11&quot;</td>
<td>11' 11&quot;</td>
</tr>
<tr>
<td>402</td>
<td></td>
<td>11' 11&quot;</td>
<td>11' 11&quot;</td>
<td>11' 11&quot;</td>
</tr>
<tr>
<td>403</td>
<td></td>
<td>11' 11&quot;</td>
<td>11' 11&quot;</td>
<td>11' 11&quot;</td>
</tr>
</tbody>
</table>

*Variable, refer to Table TWO.

1. Include List of Bar Details (See Channel Layout Details).
2. See Curb Note Assembly on Sheet 1 and Channel Layout Details on this Sheet.

# TABLE TWO - BARS AND QUANTITIES VARIABLE WITH H

<table>
<thead>
<tr>
<th>H</th>
<th>Length</th>
<th>L = 5'</th>
<th>L = 10'</th>
<th>L = 15'</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'-6&quot;</td>
<td>401</td>
<td>402</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>4'-0&quot;</td>
<td>401</td>
<td>402</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>4'-5&quot;</td>
<td>401</td>
<td>402</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>4'-10&quot;</td>
<td>401</td>
<td>402</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>4'-15&quot;</td>
<td>401</td>
<td>402</td>
<td>410</td>
<td></td>
</tr>
</tbody>
</table>

## TYPE II

![Type II Diagram](image1)

## TYPE III

![Type III Diagram](image2)

## TYPE IV

![Type IV Diagram](image3)

## TYPE V

![Type V Diagram](image4)

## TYPE VI

![Type VI Diagram](image5)

## TYPE VII

![Type VII Diagram](image6)

## TYPE VIII

![Type VIII Diagram](image7)

---

**Curb Inlet**

**Type R**

**Town of Bennett**

Issued:

Revised:

Drawing No. 60
GENERAL NOTES

All work shall be done in accordance with the Standard Specifications, instructions, and drawings for the project.

All covers shall be Class B or C.

Concrete rings shall be formed to exact sizes and shall be 6" thick.

Sewer pipes shall be as shown on the applicable Division "A" Standard.

Curb Face Assembly shall be galvanized after setting.

Exposed concrete covers shall be beveled at the sides. Curb and gutter corners shall be finished to match the existing curb and gutter beyond the installation limits.

All relining bars shall be topped with bar reinforcement and similar material. Reinforcing bars shall be determined and shall be of satisfactory quality and size.

Approximate weights:

Cover = 125 lbs.
Ring = 135 lbs.

Total = 260 lbs.

CHANNEL LAYOUT DETAILS

CURB INLET
TYPE R

Town of Bennett
NOTES:

1. ADEQUATE BARRICADES SHALL BE PLACED AND MAINTAINED UNTIL THE COLLAR ATTAINS A COMPRESSION STRENGTH OF 3000 PSI.

2. DURA CAL GROUT SHALL BE A MIXTURE OF 100 LBS. DURA CAL, 26 LBS. WATER (3.12 GAL.), AND 100 LBS. OF SAND CONFORMING TO ASTM C-35.

3. MANHOLES SHALL NOT BE LOCATED IN CROSSPANS OR GUTTERS.