



BUTTE-SILVER BOW,  
MONTANA



# Road Division Standard Drawings

# ROAD DIVISION STANDARD DRAWINGS

## Typical Drawings

TYPICAL PAVEMENT SECTION (DESIGN) .....	R-TD1
TYPICAL 2" OVERLAY .....	R-TD2
ASPHALTIC SURFACE PATCH .....	R-TD3

## URBAN –

MINOR ARTERIAL 2 LANE PLUS PARKING .....	R-U1
MINOR ARTERIAL 4 LANE NO PARKING .....	R-U2
MINOR ARTERIAL 4 PLUS MEDIAN .....	R-U3
COLLECTOR 2 LANE PLUS PARKING .....	R-U4
COLLECTOR 4 LANE NO PARKING .....	R-U5
LOCAL RESIDENTIAL .....	R-U6
LOCAL RESIDENTIAL-NEW CONSTRUCTION (REVISED 7/23/2012) .....	R-U6-A
BSB MAINTENANCE AREAS OF RESPONSIBILITY (REVISED 7/26/2012) .....	U-RMS

## Rural/Suburban –

ARTERIAL .....	R-RS1
COLLECTOR .....	R-RS2
LOCAL I .....	R-RS3
LOCAL II –SERVING OVER TWO LOTS .....	R-RS4
LOCAL II –SERVING OVER TWO LOTS (GRAVEL) .....	R-RSG1

## Alley ways

RESIDENTIAL .....	R-A1
BUSINESS .....	R-A2

## Curbs/Gutters/Sidewalks

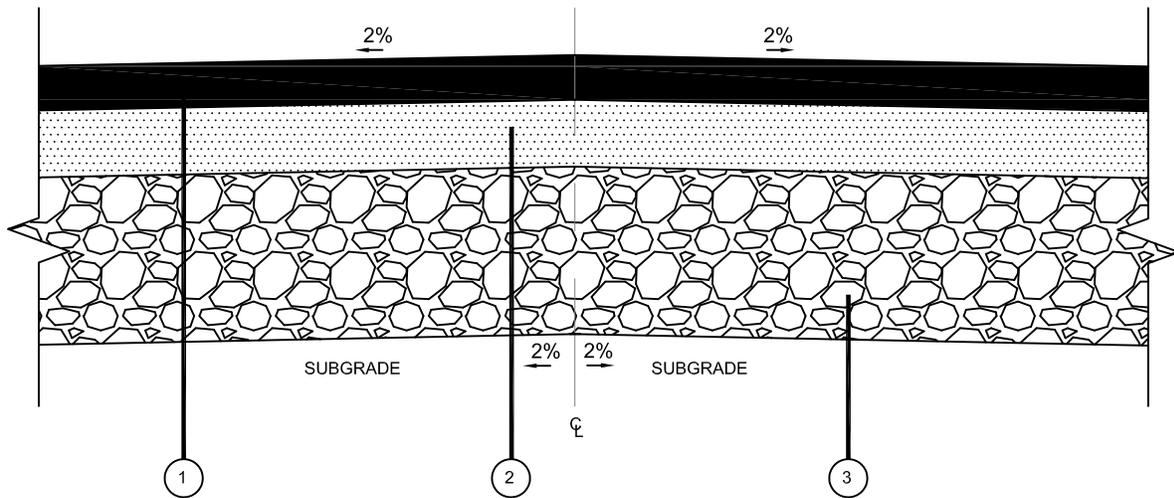
CURBS .....	R-CGS1
CONCRETE VALLEY GUTTER .....	R-CGS2
TYPE "A" CURB SIDEWALK .....	R-CGS3
CURB & GUTTER SIDEWALK .....	R-CGS4

## Curb Ramps

NEW CONSTRUCTION .....	R-CR1
ALTERATIONS .....	R-CR2
DETECTABLE WARNING DEVICES .....	R-CR3
PERPENDICULAR CURB RAMP .....	R-CRT1
PARALLEL CURB RAMP .....	R-CRT2
DIAGONAL CURB RAMP .....	R-CRT3

## OTHER

DRIVEWAYS .....	R-O1
PAINTED CURB CRITERIA .....	R-O2
TYPICAL SIGN POST INSTALLATIONS (REVISED 2012) .....	R-O3



**VIEW A**  
SCALE 6X

- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER LATEST EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL **WILL NOT** BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN. THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE-SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
3. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
4. ON STREET PARKING GOVERNED BY BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

**UTILITY NOTE:**

SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

**NOTE:**

- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
- PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.

Road  
Typical Pavement Sections (Design)

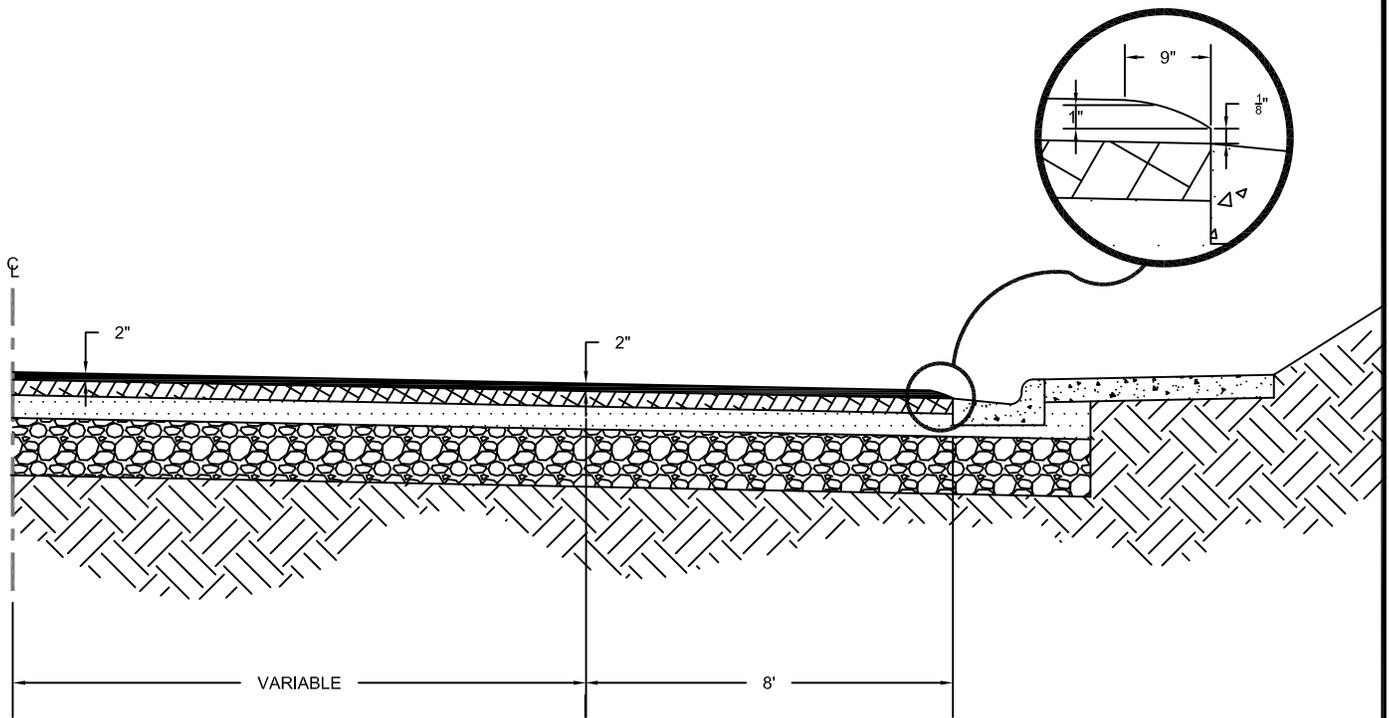
Revised: 7/11/2011



Standard Drawing

R-TD1

NOT TO SCALE



**NOTES:**

1. THE EXISTING SURFACE DEFECTS, SUCH AS CHUCKHOLES, DEPRESSIONS, AND HEAVES, SHALL BE REMOVED AND REPLACED AS SPECIFIED.
2. THE SURFACE OF THE EXISTING PAVEMENT SHALL BE COMPLETELY SWEEPED AND CLEANED, AS SPECIFIED.
3. TACK COAT SHALL BE SS GRADE AND APPLIED AT A RATE OF .20 TO .25 GALLONS PER SQUARE YARD.
4. ASPHALTIC CONCRETE SURFACE MATERIALS SHALL BE PLANT MIX CONFORMING TO AND INSTALLED AS PER SPECIFICATIONS.

**UTILITY NOTE:**

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**DRAWING NOTE:**

ALL DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS UNLESS SPECIFIED

Road  
Typical 2" Overlay

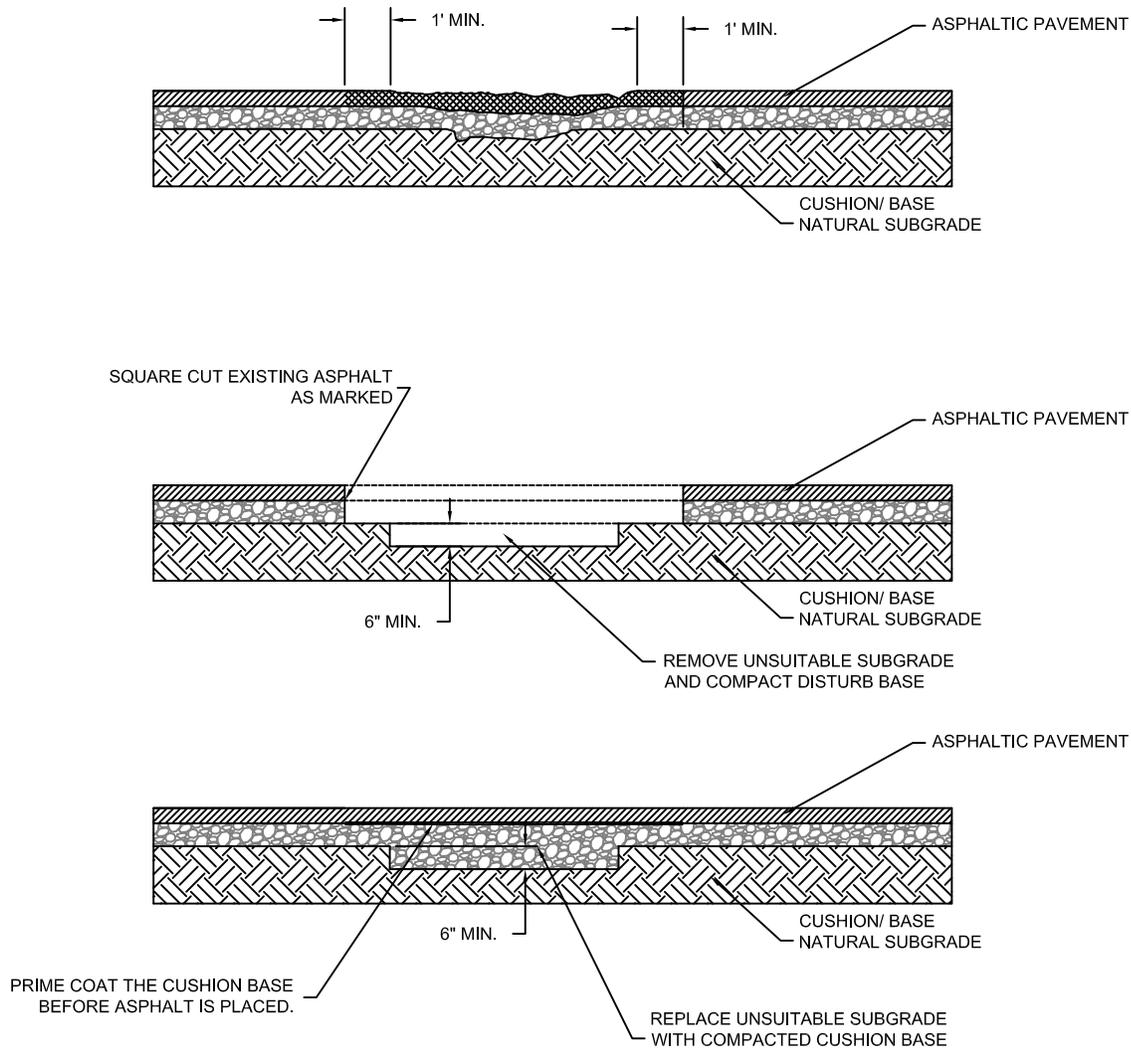
Revised: 2010



Standard Drawing

R-TD2

NOT TO SCALE



GENERAL NOTES:

1. BACKFILL PATCH TO MATCH EXISTING SURFACE.
2. 4" MIN. ASPHALT ON ALL PAVED STREETS. PLANT MIX PAVEMENT SHALL BE OF 2 LIFTS. WHERE EXISTING SURFACE IS NOT ASPHALT PAVEMENT, INSTALL SURFACING TO MATCH EXISTING CONDITIONS.
  - A. ASPHALT - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.
  - B. 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL WILL NOT BE ACCEPTED.
1. BENEATH PAVED AREAS, TRENCH BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (AS DETERMINED VIA ASTM D698) AT ±3% OF OPTIMUM MOISTURE CONTENT.

Road  
Asphaltic Surface Patch

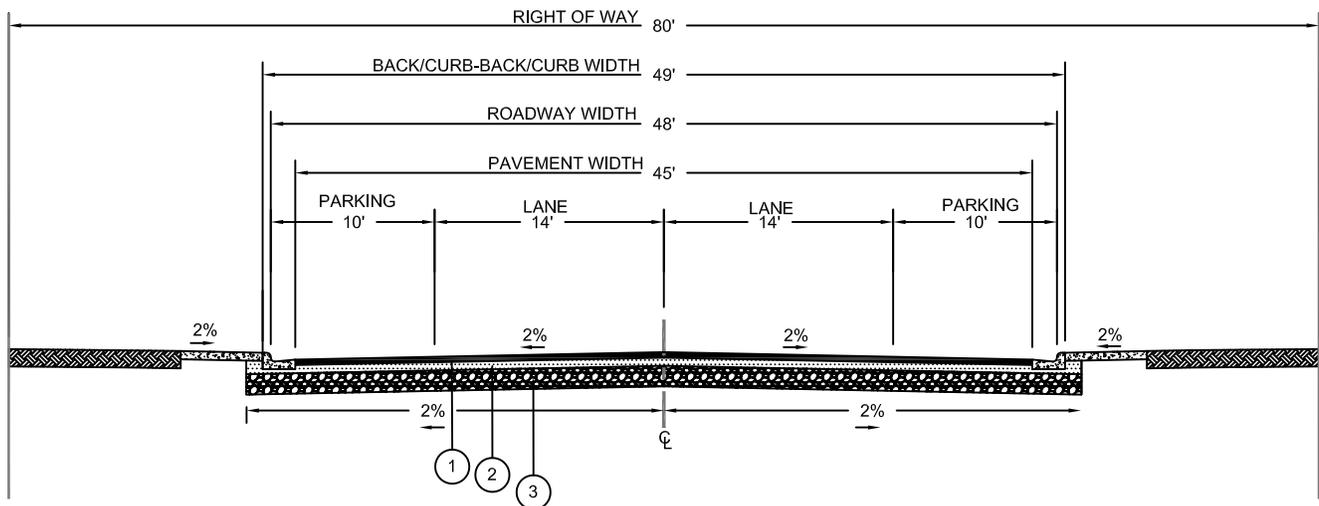
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Standard Drawing

R-TD3

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THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
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5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

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- SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Urban Minor Aterial - 2 Lane plus Parking

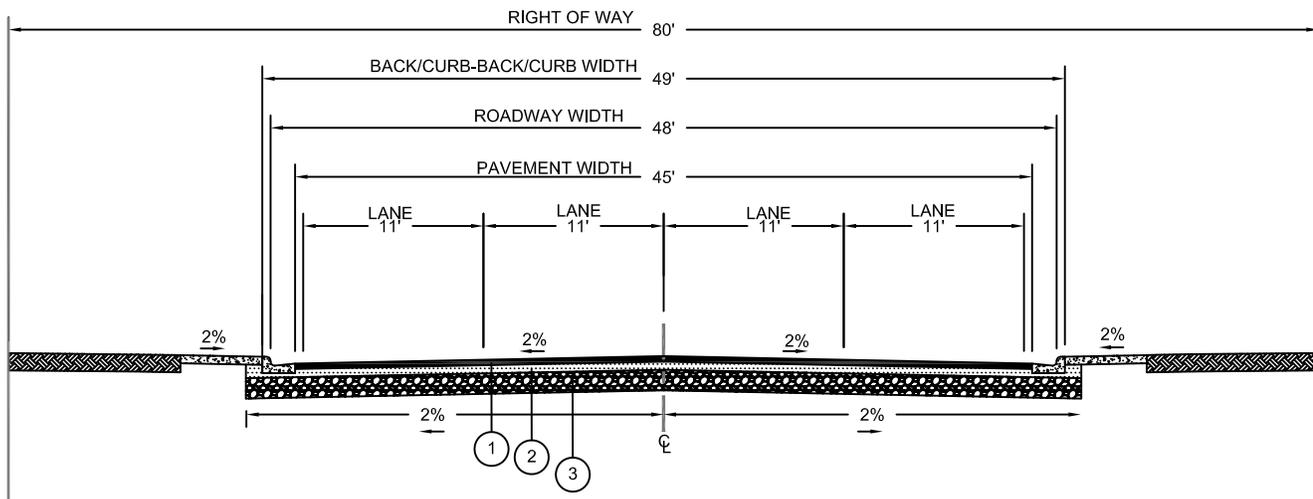
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Standard Drawing

R-U1

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Road  
Urban Minor Aterial - 4 Lane/ No Parking

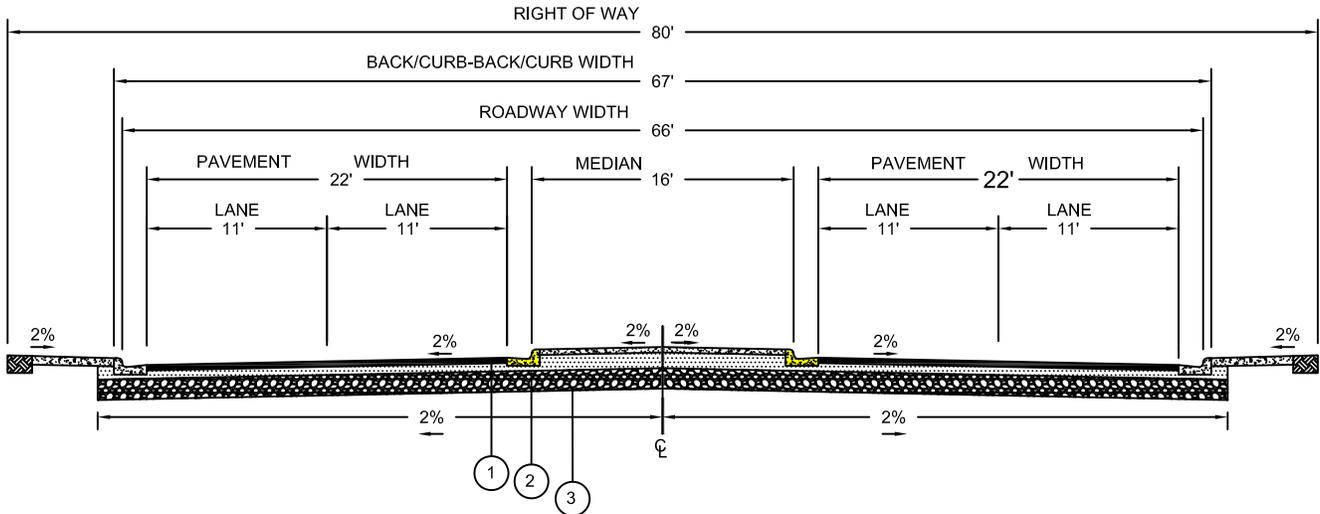
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R-U2

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Road  
Urban Minor Aterial - 4 Lane plus Median

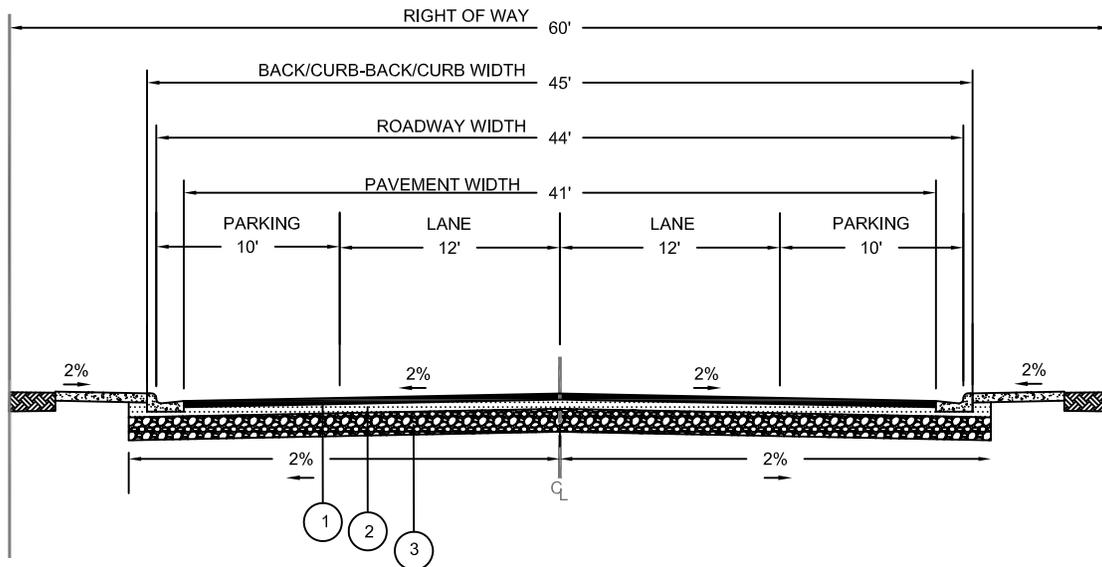
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Standard Drawing

R-U3

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Road  
Urban -Collector 2 Lane plus Parking

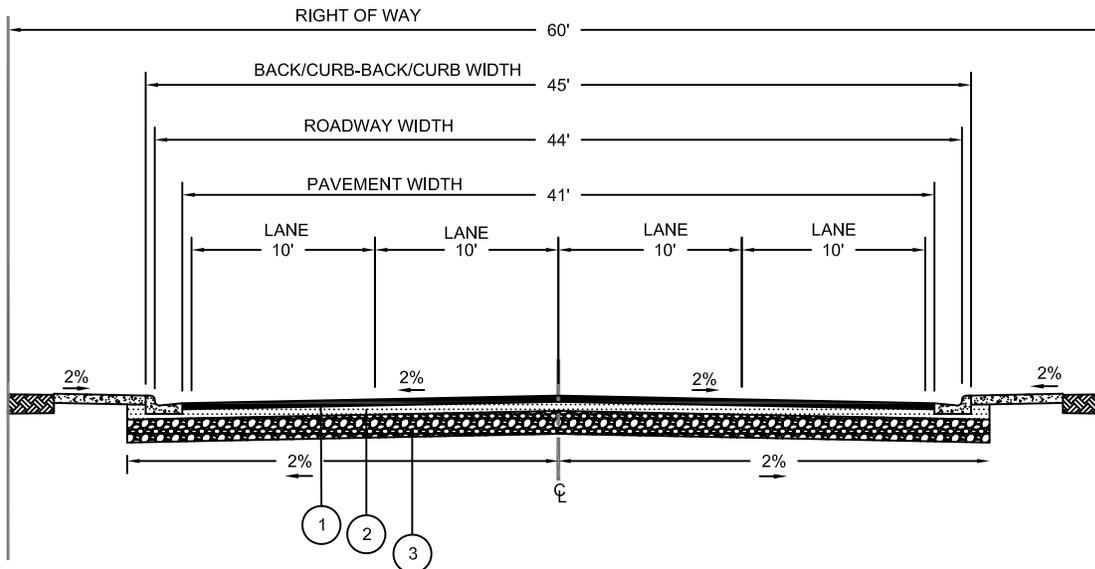
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Standard Drawing

R-U4

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Urban -Collector 4 Lane no parking

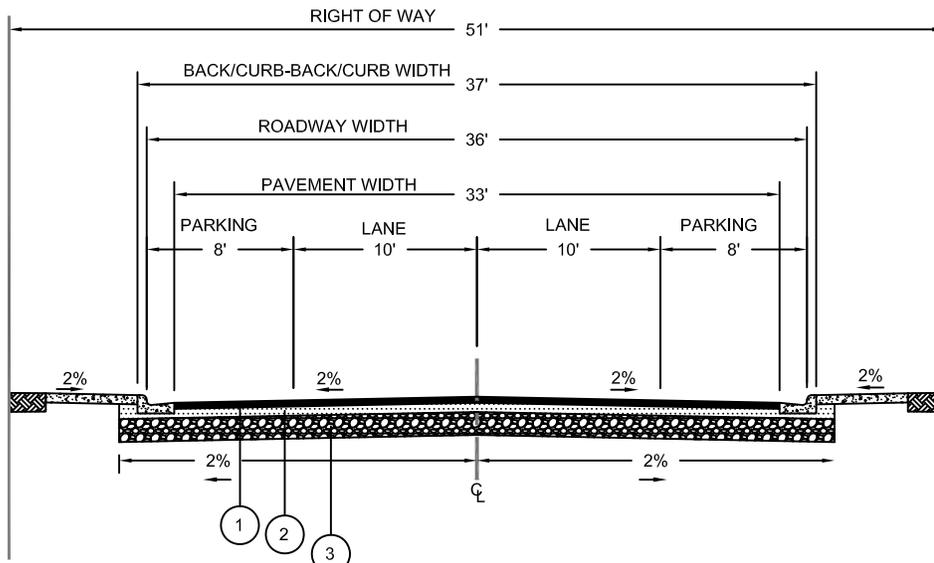
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R-U5

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3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
4. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

UTILITY NOTE:

SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

**NOTE:**

- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
- PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.
- SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Urban Local - Residential

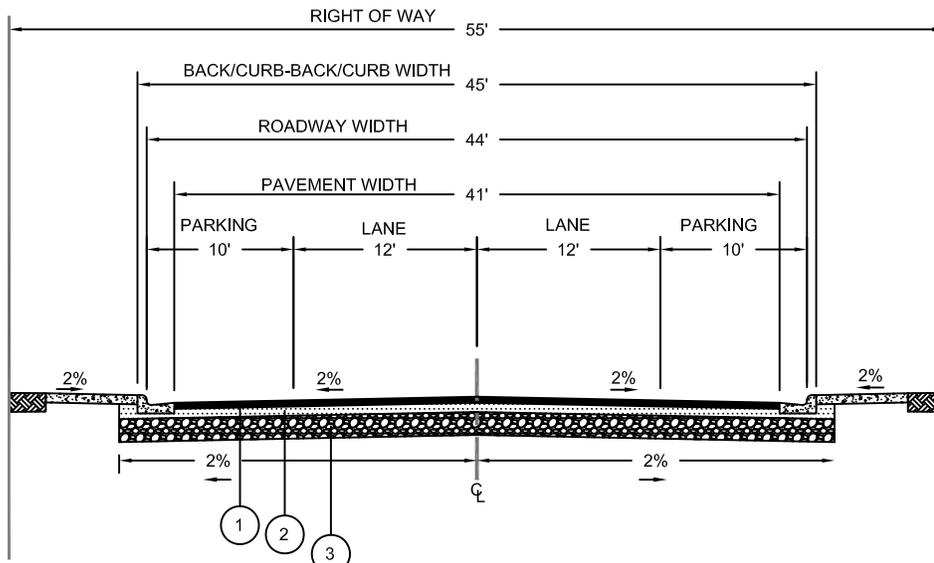
Revised: 7/11/2011



Standard Drawing

R-U6

NOT TO SCALE



- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER LATEST EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL **WILL NOT** BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN. THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE MAXIMUM GRADE SHALL BE 9% (FLAT & ROLLING) OR 11% (HILLY).
3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
4. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

UTILITY NOTE:

SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

**NOTE:**

- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
- PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.
- SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Urban Local - Residential (New Construction)

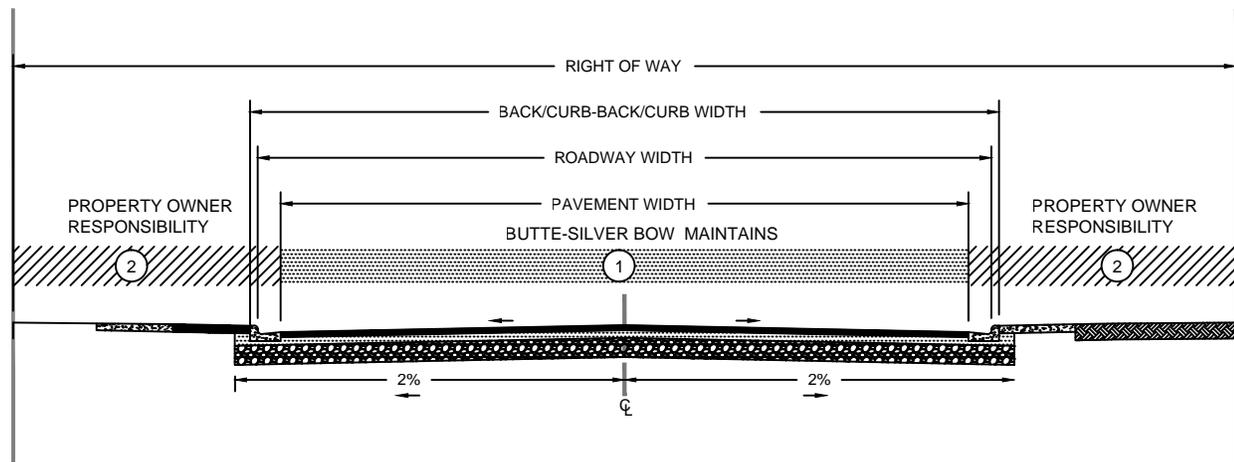
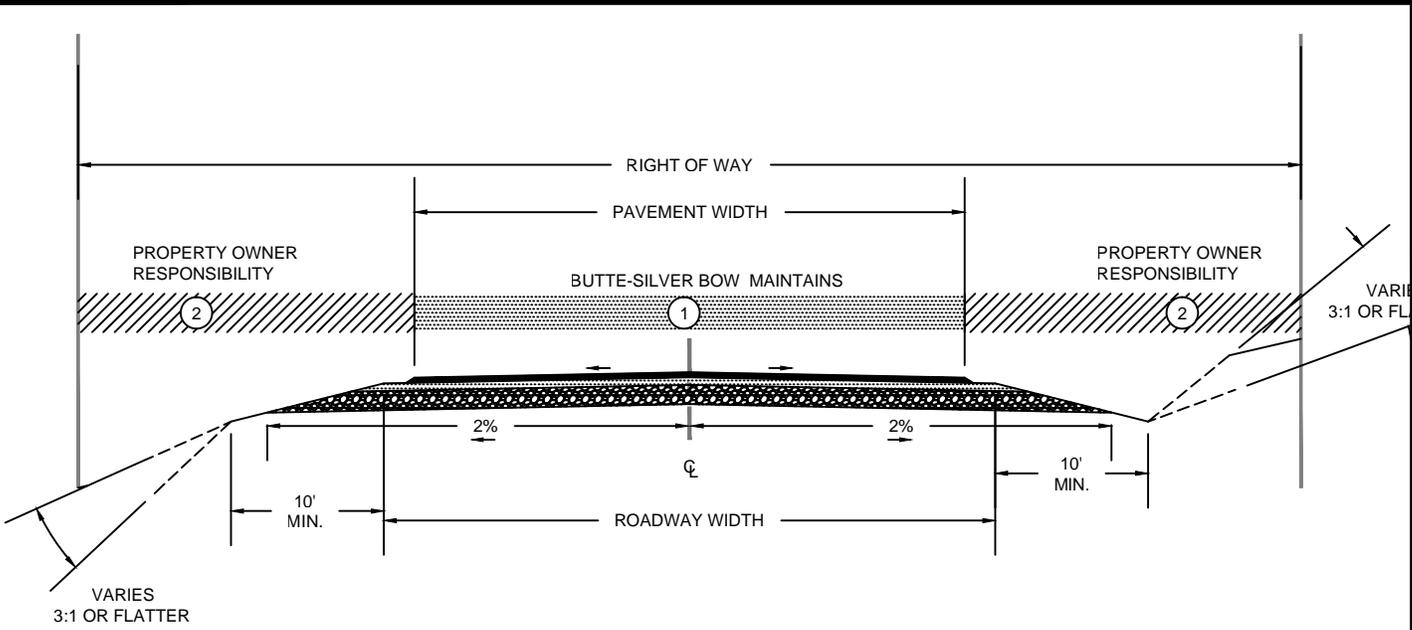
Revised: 7/23/2012



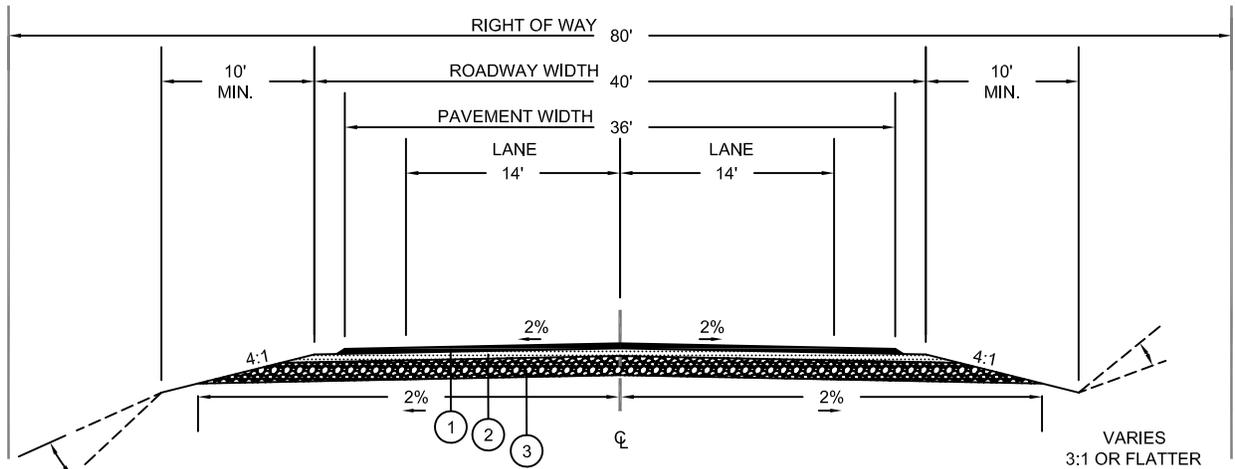
Standard Drawing

R-U6-A

NOT TO SCALE



- ①. BUTTE-SILVER BOW MAINTAINS THE ASPHALT, AS SHOWN.
- ②. RESPONSIBILITY OF PROPERTY OWNER.



VARIES  
3:1 OR FLATTER

- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER LATEST EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL **WILL NOT** BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN. THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
4. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

UTILITY NOTE:  
SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

DRAWING NOTE:  
SLOPE X:1 REPRESENTS HORIZONTAL: VERTICAL

**NOTE:**

- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
- PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.
- SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Rural/Suburban - Arterial

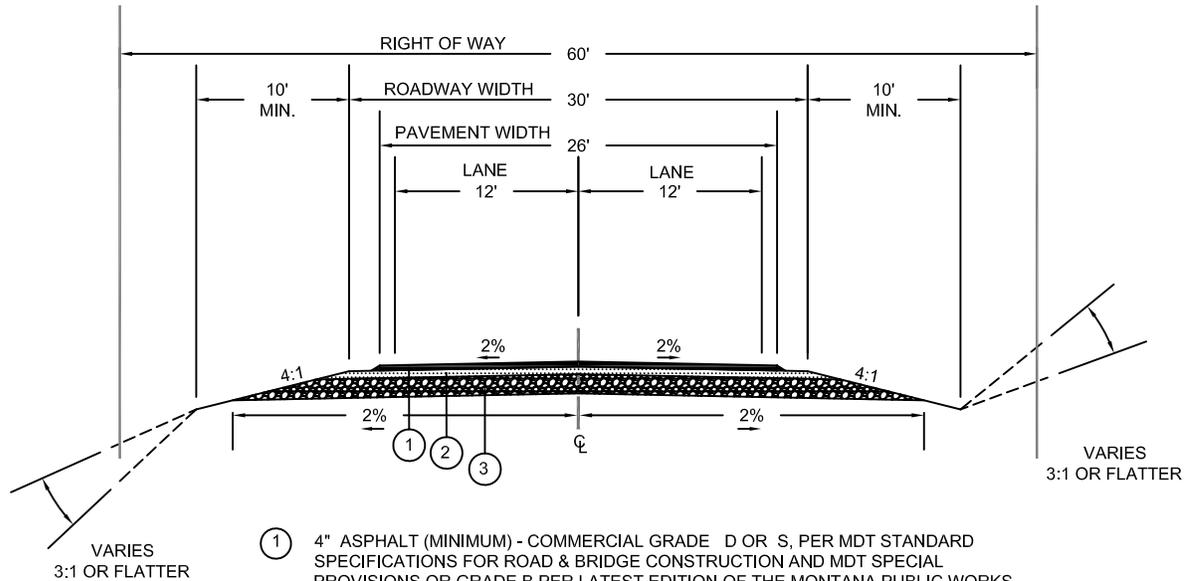
Revised: 7/11/2011



Standard Drawing

R-RS1

NOT TO SCALE



- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER LATEST EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL **WILL NOT** BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN.  
THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
4. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

UTILITY NOTE:  
SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

DRAWING NOTE:  
SLOPE X:1 REPRESENTS HORIZONTAL: VERTICAL

**NOTE:**

- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
- PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.
- SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Rural/Suburban - Collector

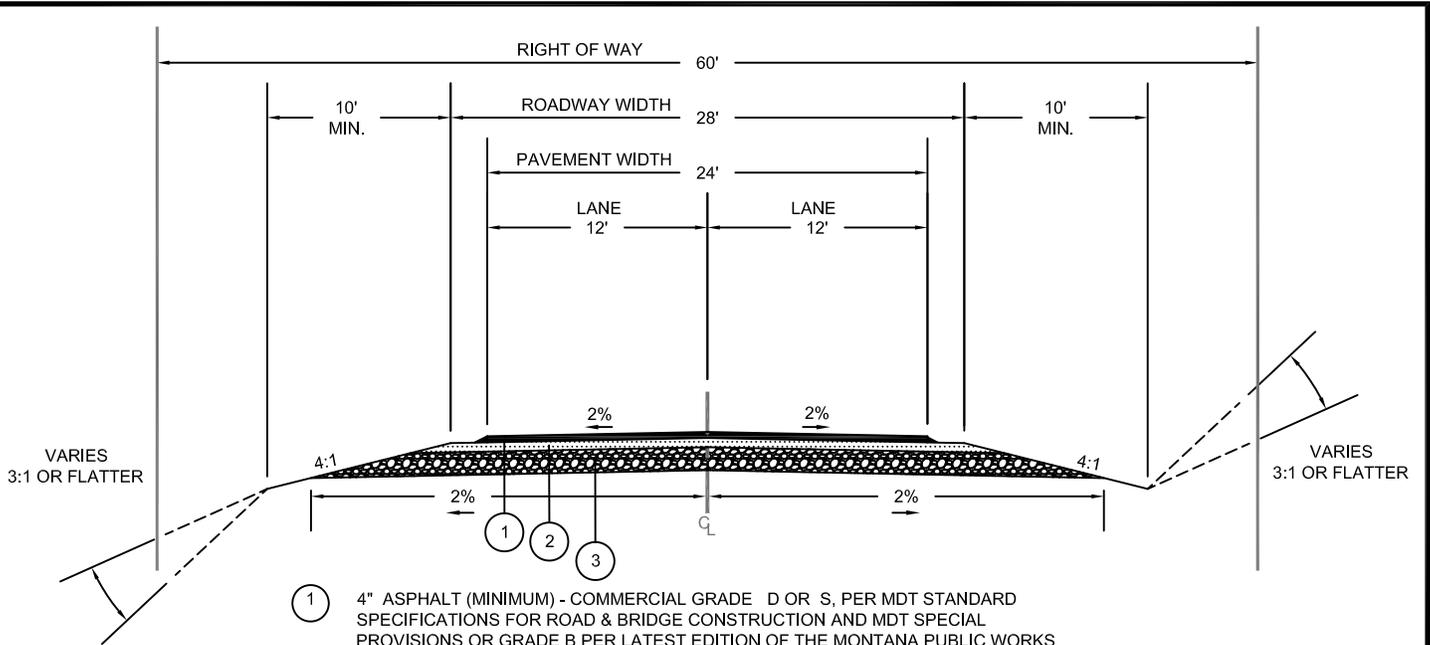
Revised: 7/11/2011



Standard Drawing

R-RS2

NOT TO SCALE



- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER LATEST EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL **WILL NOT** BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN. THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
4. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

UTILITY NOTE:  
SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

DRAWING NOTE:  
SLOPE X:1 REPRESENTS HORIZONTAL: VERTICAL

- NOTE:**
- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
  - PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.
  - SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Rural/Suburban - Local I

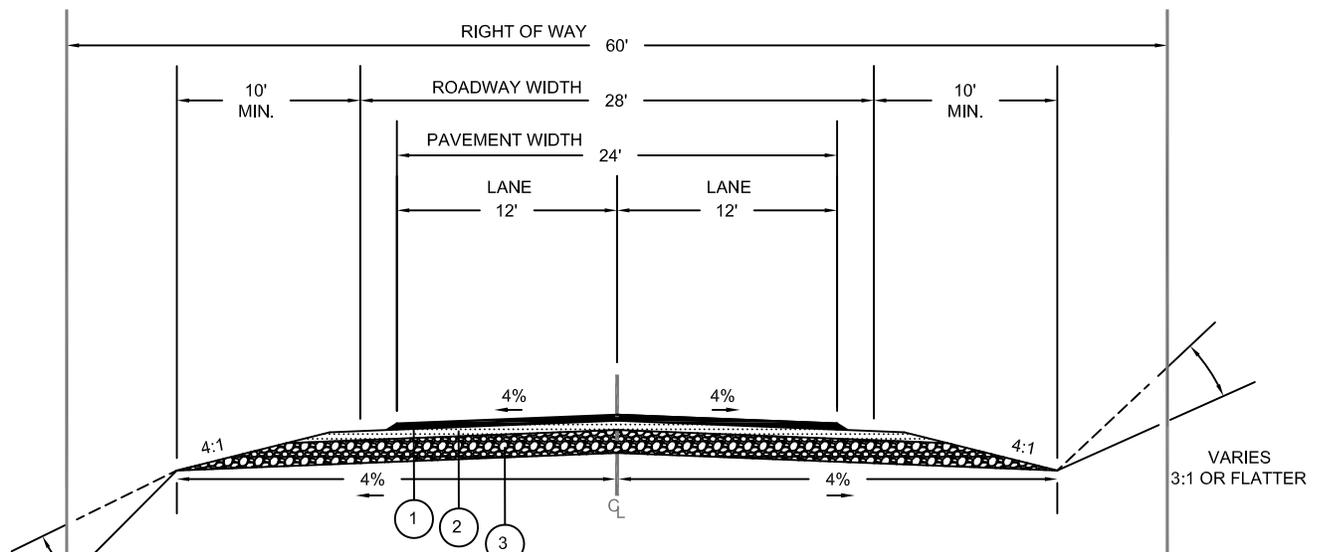
Revised: 7/11/2011



Standard Drawing

R-RS3

NOT TO SCALE



- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER LATEST EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL **WILL NOT** BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN.  
THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE-SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
3. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
4. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE-SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
5. PRIOR TO PAVING, A MANDATORY INSPECTION BY BUTTE-SILVER BOW PUBLIC WORKS DEPARTMENT IS REQUIRED WITH THE DEVELOPER OR A REPRESENTATIVE.
6. SEAL COAT (CHIP SEAL) SHALL BE PLACED WITHIN ONE (1) YEAR AFTER COMPLETION OF ROAD.

**UTILITY NOTE:**  
SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

**DRAWING NOTE:**  
SLOPE X:1 REPRESENTS HORIZONTAL: VERTICAL

- NOTE:**
- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
  - PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.
  - SEAL COAT (CHIP SEAL) SHALL BE PLACED PER MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SECTION 02504. - 3/8" SEAL COAT AGGREGATE WITH CRS-2P EMULSION.

Road  
Rural/Suburban - Local II (Asphalt) serving over two lots

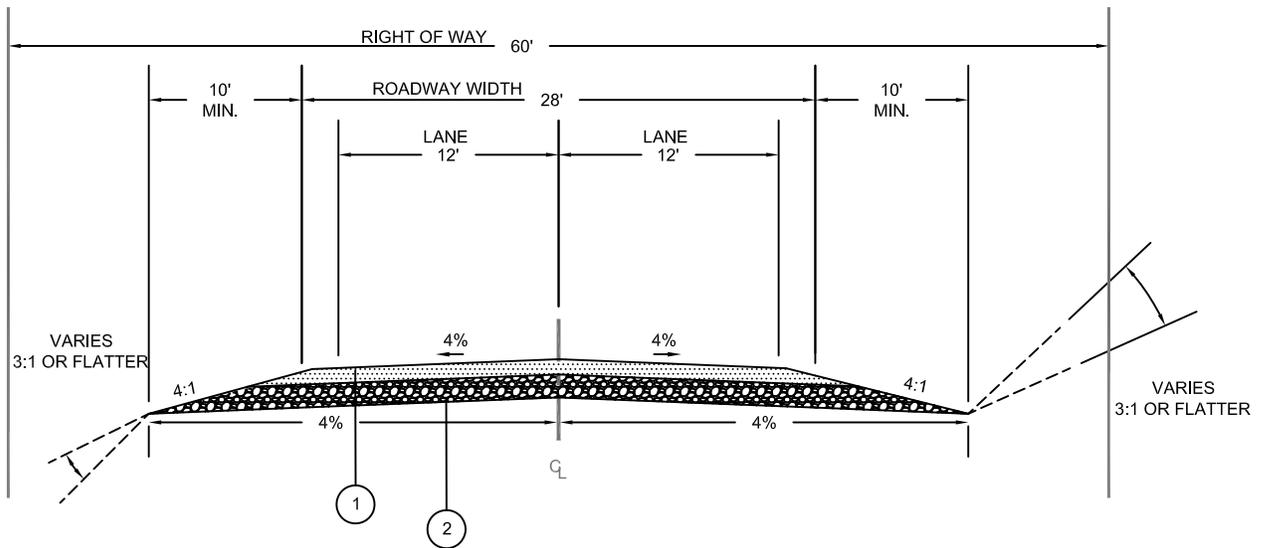
Revised: 7/11/2011



Standard Drawing

R-RS4

NOT TO SCALE



- ① 10" SURFACE GRAVEL - CRUSHED TOP SURFACING TYPE B, GRADE 3 PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION SECTION 701.02.7. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 98% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.
- ② 15" SELECT SUB-BASE PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THICKNESS OF SURFACE GRAVEL AND SELECTSUB-BASE SHALL BE AS SHOWN, UNLESS AN ALTERNATE DESIGN IS APPROVED. THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION. IF COMMERCIAL TRUCK(S) WILL BE UTILIZING ROADWAY, THE ENGINEER SHALL DESIGN APPROPRIATE THICKNESS OF THE BASE COURSE AND GRAVEL SURFACING SECTIONS.
2. THE WIDTH OF THE RIGHT OF WAY (ROW) MAY BE INCREASED DUE TO UTILITIES, OR OTHER REQUIREMENTS.
3. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
4. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER, INCLUDING SUBGRADE. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS. ALL TESTS SHALL BE COMPLETED ON 500 FOOT INTERVALS LOCATED ON PROPOSED CENTERLINE OF ROAD.
5. IF SUBGRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.

**UTILITY NOTE:**  
SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

**DRAWING NOTE:**  
SLOPE X:1 REPRESENTS HORIZONTAL: VERTICAL

- NOTE:**
- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
  - PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.

Road  
Rural/Suburban - Local II-A (Gravel) serving over two lots

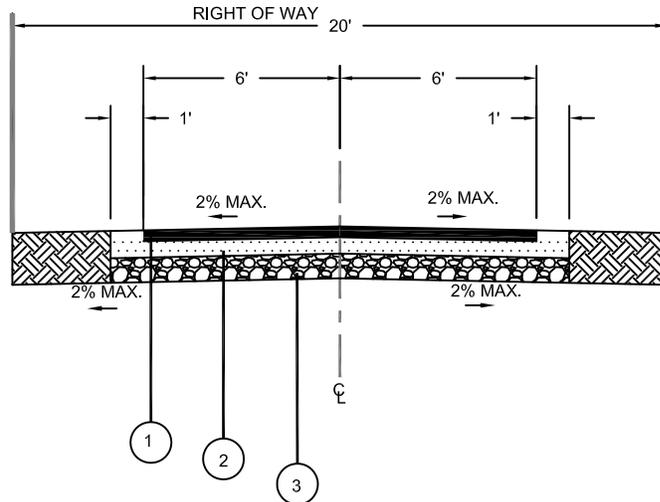
Revised: 2010



Standard Drawing

R-RSG1

NOT TO SCALE



- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL WILL NOT BE ACCEPTED.
- ③ 9" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN, UNLESS AN ALTERNATE DESIGN IS APPROVED. THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE-SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE WIDTH OF THE RIGHT OF WAY (ROW) MAY BE INCREASED DUE TO UTILITIES, OR OTHER REQUIREMENTS.
3. THE MAXIMUM GRADE SHALL BE 7% (FLAT & ROLLING) OR 9% (HILLY).
4. GRADATION TESTS WITH ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER.
5. IF SUBGRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE-SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.
6. **ENGINEER SHALL VERIFY STORM WATER RUN-OFF MANAGEMENT.**

UTILITY NOTE:

SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

DRAWING NOTE:

ALL DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS UNLESS SPECIFIED

Road  
Residential Alley

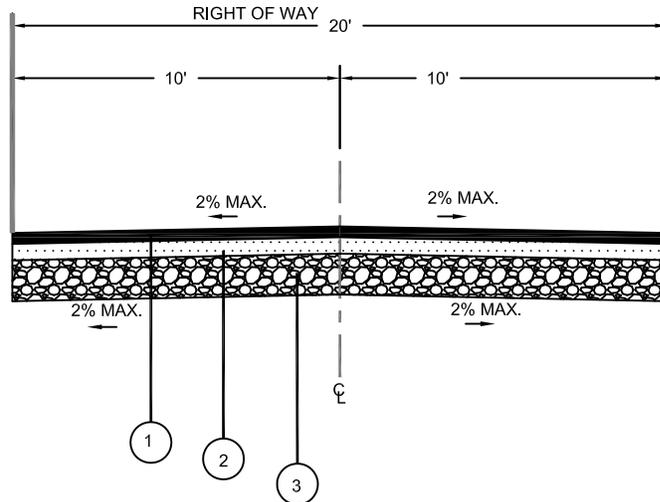
Revised: 2011



Standard Drawing

R-A1

NOT TO SCALE



- ① 4" ASPHALT (MINIMUM) - COMMERCIAL GRADE D OR S, PER MDT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND MDT SPECIAL PROVISIONS OR GRADE B PER MPWSS.
- ② 6" CRUSHED GRAVEL BASE (MINIMUM) - PER MPWSS SECTION 02235 WITH LESS THAN 8% PASSING #200 SIEVE. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99. RECYCLED MATERIAL WILL NOT BE ACCEPTED.
- ③ 15" SELECT SUB BASE (MINIMUM) - PER MPWSS SECTION 02234. DENSITY REQUIREMENTS SHALL BE COMPACTED TO 95% DENSITY (+/- 3% OPTIMUM MOISTURE CONTENT) PER AASHTO T-99.

1. THE MINIMUM THICKNESS OF ASPHALT, CRUSHED GRAVEL BASE, AND SELECT SUB-BASE SHALL BE AS SHOWN.  
THE FINAL STREET DESIGN SHALL BE APPROVED BY BUTTE- SILVER BOW PRIOR TO START OF CONSTRUCTION.
2. THE WIDTH OF THE RIGHT OF WAY (ROW) MAY BE INCREASED DUE TO UTILITIES, OR OTHER REQUIREMENTS.
3. THE MAXIMUM GRADE SHALL BE 9% (FLAT & ROLLING) OR 11% (HILLY).
4. GRADATION TESTS, IN-SITU MOISTURE CONTENT, AND ATTERBURG LIMITS SHALL BE PROVIDED TO BUTTE-SILVER BOW PUBLIC WORKS PRIOR TO CONSTRUCTION FOR EACH LAYER. ADDITIONALLY, PROCTOR TEST RESULTS FOR EACH LAYER SHALL BE SUBMITTED TO BUTTE - SILVER BOW DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. SUBMIT ALL DENSITY TEST RESULTS AND TEST LOCATIONS TO BUTTE-SILVER BOW DEPARTMENT OF PUBLIC WORKS.
5. IF SUB-GRADE OPTIMUM MOISTURE CONTENT IS LESS THAN IN-SITU MOISTURE CONTENT OR THE SHEAR STRENGTH OF SOIL DOES NOT APPEAR ADEQUATE TO SUPPORT CONSTRUCTION OF ROAD, A DIG-OUT WITH STABILIZATION GEOTEXTILE OR OTHER APPROVED ALTERNATE DESIGN MAY BE REQUIRED. THE PROJECT ENGINEER SHALL NOTIFY BUTTE- SILVER BOW PUBLIC WORKS DIRECTOR FOR APPROVAL OF DESIGN.

**6. ENGINEER SHALL VERIFY STORM WATER RUN-OFF MANAGEMENT.**

UTILITY NOTE:

SEE BUTTE-SILVER BOW SUBDIVISION REGULATIONS.

ALL UTILITIES SHALL BE INSTALLED TO EACH PROPERTY/LOT PRIOR TO PAVEMENT. (I.E. WATER/SEWER/GAS SERVICES)

NOTE:

- SPECIFICATIONS SHOWN ARE MINIMUM REQUIREMENTS.
- PAVEMENT AND CRUSHED GRAVEL BASE SHALL BE DETERMINED BY THE DESIGN ENGINEER BASED ON SITE SOIL CONDITIONS AND AT LEAST THE 20 YEAR PERFORMANCE PERIOD FROM TRAFFIC VOLUME.

Road  
Business District Alley

Revised: 2011

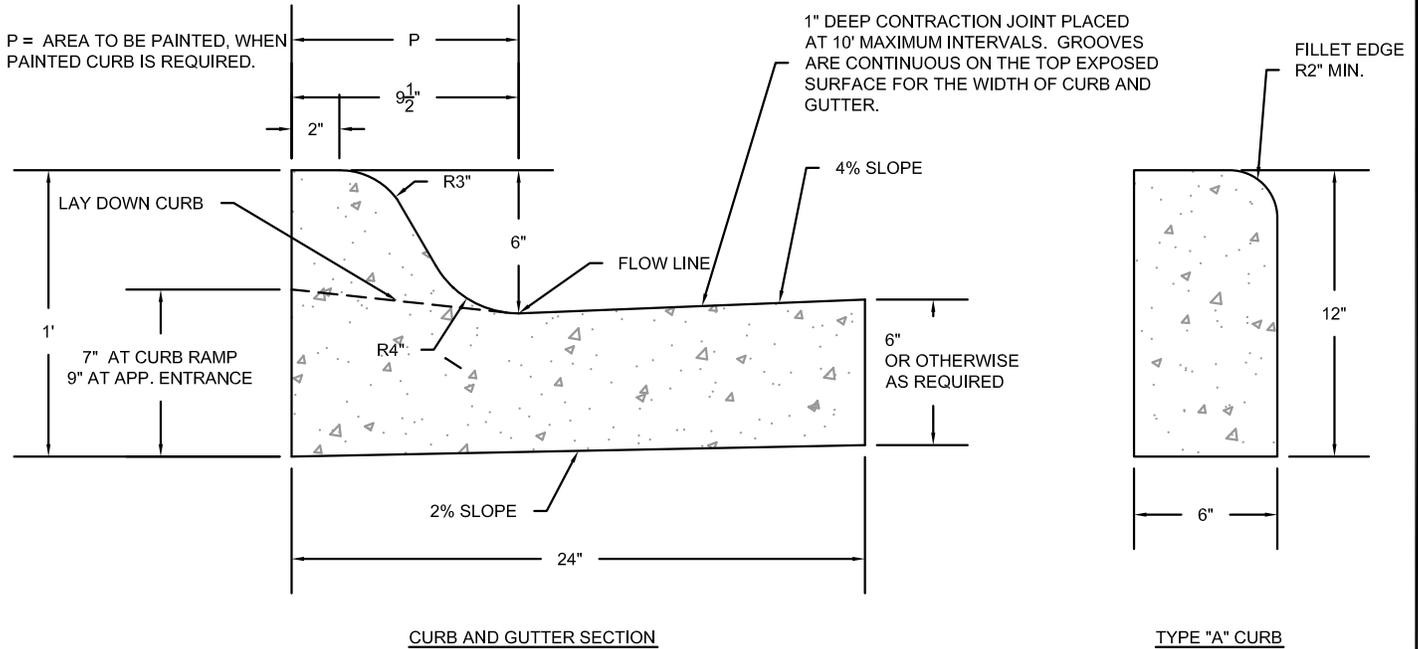


Standard Drawing

R-A2

NOT TO SCALE

**CONCRETE CURBS**



**CONSTRUCTION NOTES:**

1. SPACE CONTRACTION JOINTS IN CURB AND GUTTER AT 10 FOOT INTERVALS OR LESS EXCEPT AS SPECIFIED. EXTEND 1/2" MIN. WIDTH EXPANSION JOINTS COMPLETELY THROUGH CURB AND GUTTER EVERY 100 FEET (± 30 FEET), AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL, AND FILL WITH EXPANSION JOINT FILLER.
2. CONTRACTION JOINTS ARE 1/8" MIN. AND 3/8" MAX. IN WIDTH. FORM JOINTS BY SAWING OR SCORING TO A MINIMUM DEPTH OF 1". FORM SCORED JOINTS BY A TOOL WHICH WILL LEAVE ROUNDED CORNERS AND DESTROY AGGREGATE INTERLOCK TO MINIMUM DEPTH OF 1".
3. SEPARATE THE CURB AND GUTTER FROM ADJACENT SIDEWALK AT POINTS SHOWN ON MDOT STANDARD . DWG. NO. 608-05 WITH A BOND BREAKER MATERIAL EXCEPT AT APPROACH LAYDOWN CURB LOCATIONS, WHICH REQUIRE SEPARATION USING 1/2" MIN WIDTH PERFORMED EXPANSION JOINT MATERIAL AT ALL CURB RETURNS, BRIDGES, FROM INLETS, AND WHERE MEETING CURB AND GUTTER IN PLACE.
4. 4" OF COMPACTED CRUSHED GRAVEL BASE MATERIAL, 3/4" MINUS IS REQUIRED UNDER CURB AND GUTTER SECTION.

**EXPANSION JOINT FILLER MATERIAL:**

USE PREFORMED EXPANSION JOINT FILLER MEETING THE REQUIREMENTS IN MDOT STANDARD . SPECIFICATIONS.

**BOND BREAKER MATERIAL:**

USE A 15 OR 30 POUND ROOFING FELT MATERIAL, OR OTHER PRODUCT AS APPROVED BY THE ENGINEER. DO NOT USE EXPANSION JOINT MATERIAL.

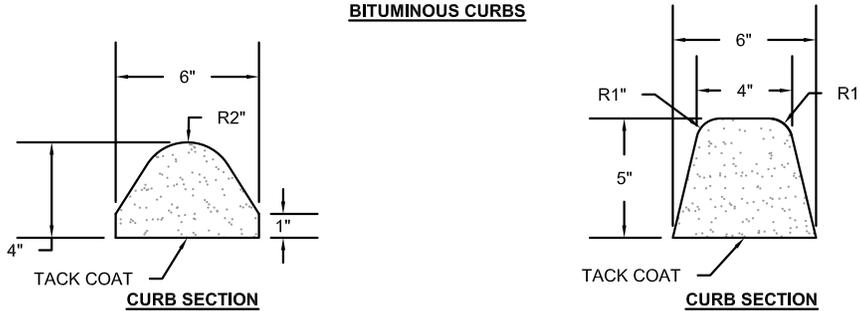
**RADII:**

MINIMUM CURB RETURN RADII IS 10 FEET.  
15 FOOT RADII ARE DESIRABLE FOR STREETS.

**CONCRETE:**

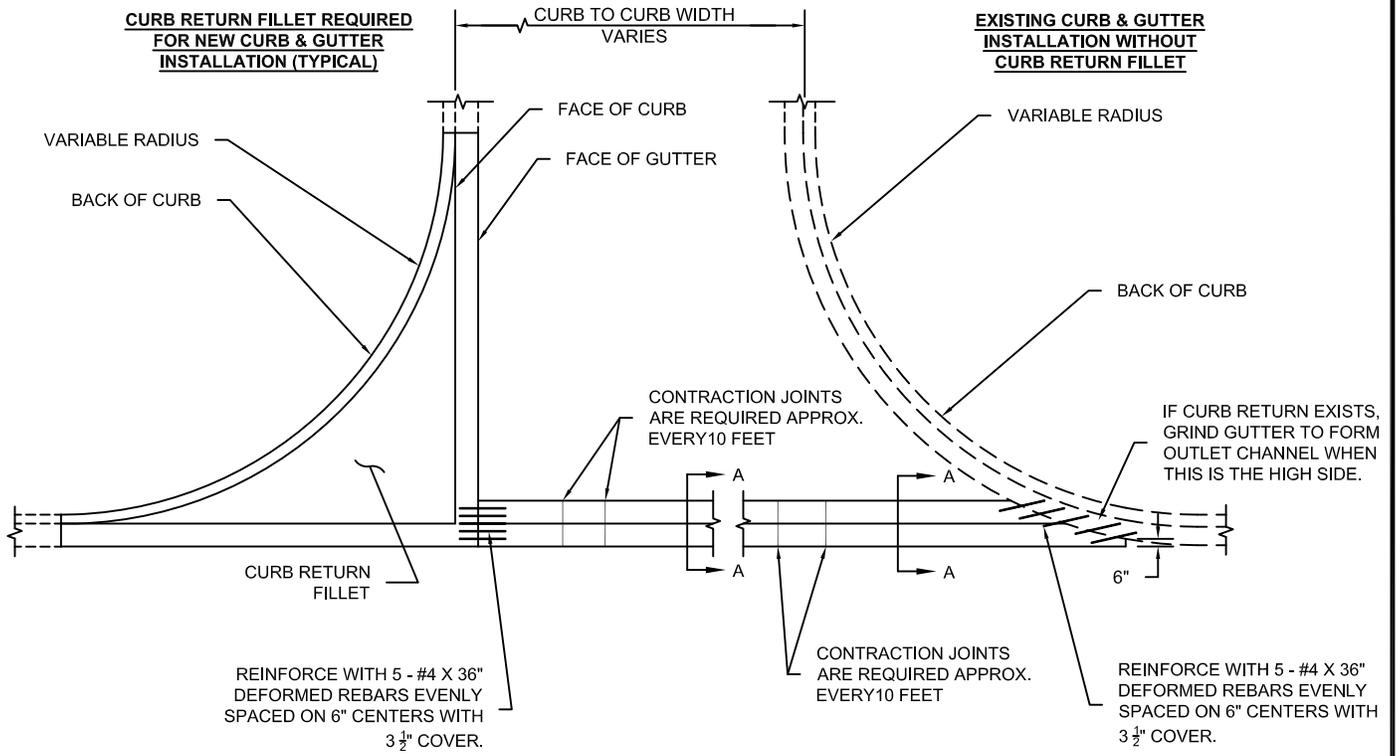
UNLESS OTHERWISE SPECIFIED, CONSTRUCT CONCRETE CURBS AND CONCRETE INTEGRAL CURB AND GUTTER WITH CLASS "D" CONCRETE OR APPROVED EQUAL.

**BITUMINOUS CURBS**

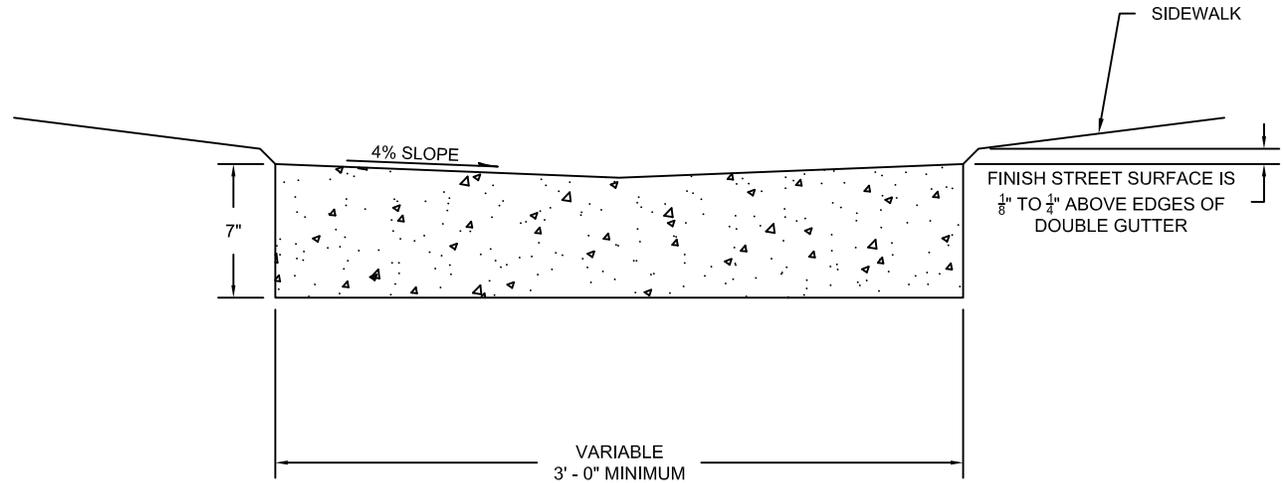


**NOTES:**

1. WHEN CURB IS USED IN CONJUNCTION WITH GUARDRAIL, USE THE 4" TYPE. OTHERWISE, THE CONTRACTOR MAY USE EITHER SECTION.
2. CONFORM ALL MATERIALS AND CONSTRUCTION TO THE STANDARD SPECIFICATIONS FOR BITUMINOUS CURB.
3. CONCRETE MAY BE SUBSTITUTED FOR THE BITUMINOUS MATERIAL.  
WHEN CONCRETE IS USED, CONSTRUCT CURB IN ACCORDANCE WITH STANDARD SPECIFICATION 609.



**PLAN**



**SECTION A - A**

**NOTES:**

1. INDIVIDUAL LOCATIONS MAY REQUIRE MORE DETAILS FOR ELEVATIONS AND DIMENSIONS.
2. INSTALL REINFORCEMENT AT ALL CONSTRUCTION JOINTS.
3. CONTRACTION JOINTS ARE  $\frac{1}{8}$ " MIN. AND  $\frac{3}{8}$ " MAX. IN WIDTH. FORM JOINTS BY SAWING OR SCORING TO A MINIMUM DEPTH OF 1". FORM SCORED JOINTS BY A TOOL WHICH WILL LEAVE ROUNDED CORNERS AND DESTROY AGGREGATE INTERLOCK TO MINIMUM DEPTH OF 1".

Road  
Concrete Valley Gutter

Revised: 2010



Standard Drawing

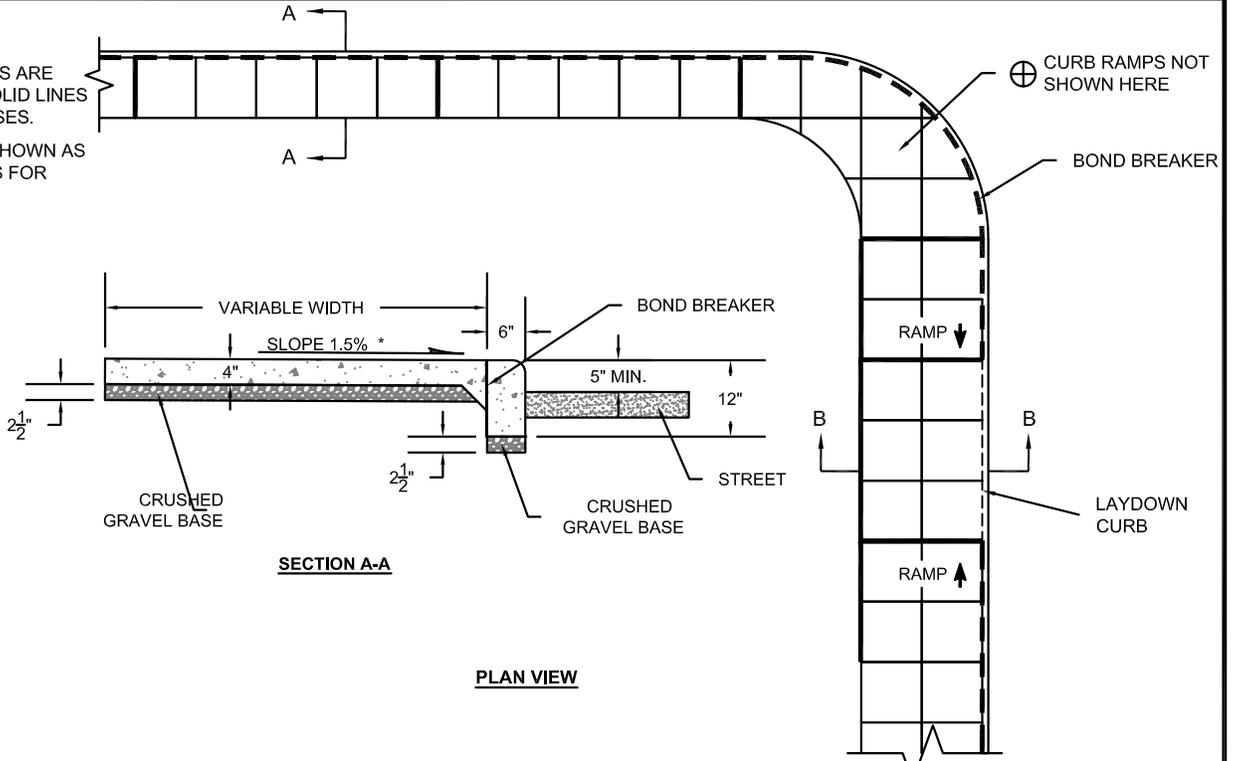
R-CGS2

NOT TO SCALE

**NOTES:**

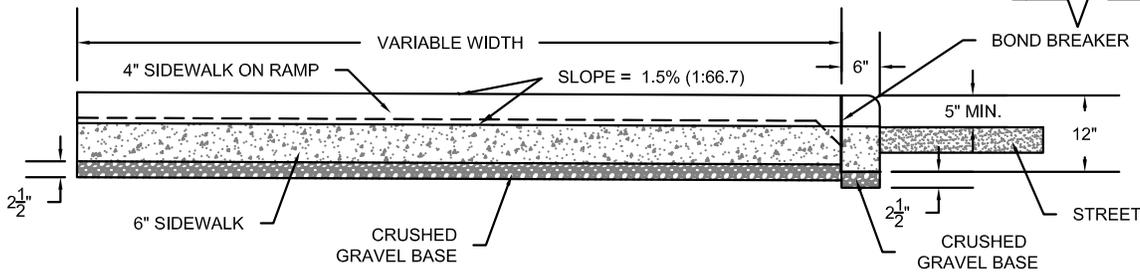
1/2" EXPANSION JOINTS ARE SHOWN AS DARK SOLID LINES FOR VISUAL PURPOSES.

BOND BREAKER IS SHOWN AS DARK DASHED LINES FOR VISUAL PURPOSES.

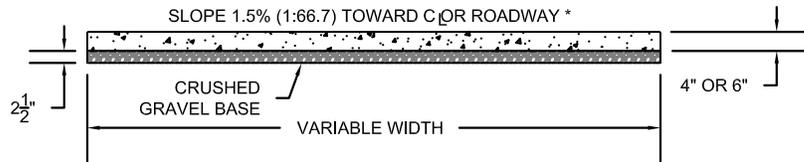


**SECTION A-A**

**PLAN VIEW**



**SECTION B - B**



**SECTION OF SIDEWALK**

- NOTES:**
1. INSTALL PREFORMED EXPANSION JOINT FILLER, STD. SPEC. 707.01.03, AT ALL EXPANSION JOINTS, FOR THE FULL THICKNESS OF THE SIDEWALK AND USE AT ALL JOINTS BETWEEN NEW CONCRETE SIDEWALK AND STRUCTURES IN PLACE.
  2. INSTALL A BOND BREAKER FOR THE FULL THICKNESS OF THE SIDEWALK AT LOCATIONS SPECIFIED ON THIS DETAIL. USE A 15 OR 30 POUND ROOFING FELT MATERIAL, OR OTHER PRODUCT AS APPROVED BY THE ENGINEER, FOR THE BOND BREAKER. DO NOT USE EXPANSION JOINT MATERIAL AS A BOND BREAKER.
  3. ALL JOINTS MUST BE STRAIGHT AND PERPENDICULAR TO THE CENTERLINE AND THE SURFACE OF THE SIDEWALK. WHERE PRACTICAL, ALIGN ALL JOINTS WITH LIKE JOINTS IN ADJOINING WORK. USE JOINTS TO OUTLINE ALL PANELS IN THE SIDEWALK, WHICH ARE TO BE, SO FAR AS POSSIBLE, SQUARE. THE LENGTHS OF THE PANELS ARE DETERMINED BY THE WIDTH OF THE SIDEWALK.
  4. WHERE RIGHT-OF-WAY PERMITS, NEW SIDEWALK LESS THAN 5 FEET IN WIDTH MUST HAVE A PASSING AREA AT A MAXIMUM SPACING OF 200 FEET. THE PASSING AREA IS A MINIMUM OF 5 FEET BY 5 FEET IN SIZE.
  5. CONTRACTION JOINTS MAY NOT BE MORE THAN 3/8" WIDE AND NOT LESS THAN 1" IN DEPTH AND MAY BE CUT BY A GROOVE FORMING TOOL.
  6. LOCATE EXPANSION JOINTS EVERY 100 FEET (± 30 FEET) AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL.
  7. USE A LONGITUDINAL CONTRACTION JOINT IN THE CENTERLINE OF ALL SIDEWALKS WIDER THAN 5 FEET.

\* THE MAXIMUM CROSS SLOPE OF THE SIDEWALK IS 2% (1 : 50).

\*\* THE DEPTH IS STANDARD IN NEW CONSTRUCTION. ALTERATIONS TO EXISTING FACILITIES MAY RESULT IN A LARGER DEPTH, WHICH WILL REQUIRE A GREATER RAMP LENGTH.

⊕ SEE CURB RAMPS SECTION FOR STANDARD DRAWINGS FOR GUIDELINES ON RAMP DESIGN WHEN RAMPS ARE REQUIRED FOR ADA ACCESIBILITY.

Road  
Concrete Sidewalk  
Type "A" Curb

Revised: 2010



Standard Drawing

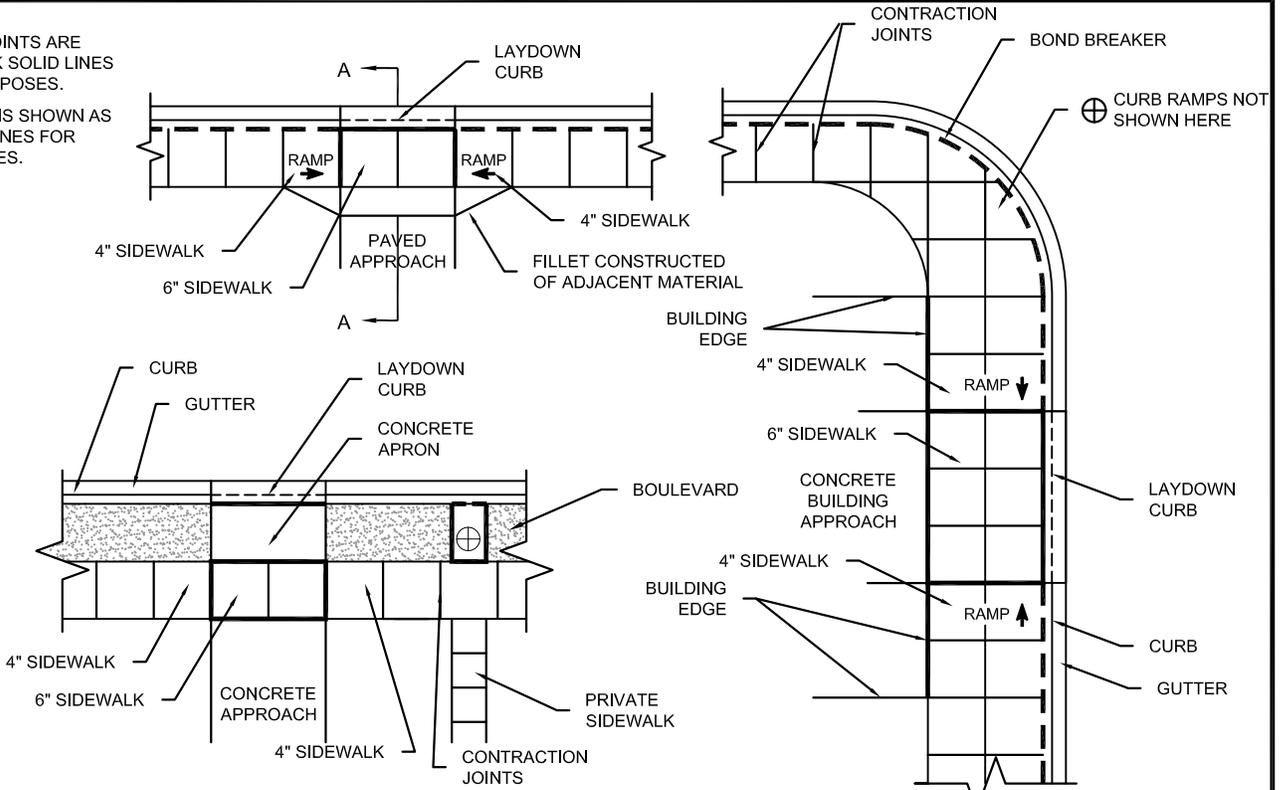
R-CGS3

NOT TO SCALE

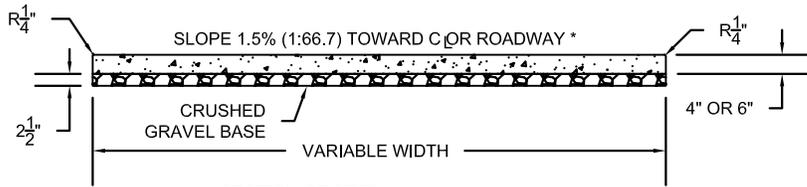
**NOTES:**

$\frac{1}{2}$ " EXPANSION JOINTS ARE SHOWN AS DARK SOLID LINES FOR VISUAL PURPOSES.

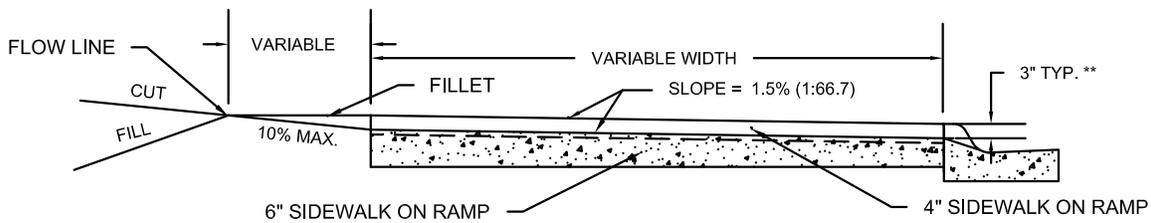
BOND BREAKER IS SHOWN AS DARK DASHED LINES FOR VISUAL PURPOSES.



**PLAN VIEW**



**SECTION OF SIDEWALK**



**SECTION A-A**

**NOTES:**

1. INSTALL PREFORMED EXPANSION JOINT FILLER, STD. SPEC. 707.01.03, AT ALL EXPANSION JOINTS, FOR THE FULL THICKNESS OF THE SIDEWALK AND USE AT ALL JOINTS BETWEEN NEW CONCRETE SIDEWALK AND STRUCTURES IN PLACE.
2. INSTALL A BOND BREAKER FOR THE FULL THICKNESS OF THE SIDEWALK AT LOCATIONS SPECIFIED ON THIS DETAIL. USE A 15 OR 30 POUND ROOFING FELT MATERIAL, OR OTHER PRODUCT AS APPROVED BY THE ENGINEER, FOR THE BOND BREAKER. DO NOT USE EXPANSION JOINT MATERIAL AS A BOND BREAKER.
3. ALL JOINTS MUST BE STRAIGHT AND PERPENDICULAR TO THE CENTERLINE AND THE SURFACE OF THE SIDEWALK. WHERE PRACTICAL, ALIGN ALL JOINTS WITH LIKE JOINTS IN ADJOINING WORK. USE JOINTS TO OUTLINE ALL PANELS IN THE SIDEWALK, WHICH ARE TO BE, SO FAR AS POSSIBLE, SQUARE. THE LENGTHS OF THE PANELS ARE DETERMINED BY THE WIDTH OF THE SIDEWALK.
4. WHERE RIGHT-OF-WAY PERMITS, NEW SIDEWALK LESS THAN 5 FEET IN WIDTH MUST HAVE A PASSING AREA AT A MAXIMUM SPACING OF 200 FEET. THE PASSING AREA IS A MINIMUM OF 5 FEET BY 5 FEET IN SIZE.
5. CONTRACTION JOINTS MAY NOT BE MORE THAN  $\frac{1}{8}$ " WIDE AND NOT LESS THAN 1" IN DEPTH AND MAY BE CUT BY A GROOVE FORMING TOOL.
6. LOCATE EXPANSION JOINTS EVERY 100 FEET ( $\pm$  30 FEET) AT INTERVALS EQUAL TO THE NEAREST MULTIPLE OF THE CONTRACTION JOINT INTERVAL.
7. USE A LONGITUDINAL CONTRACTION JOINT IN THE CENTERLINE OF ALL SIDEWALKS WIDER THAN 5 FEET.

\* THE MAXIMUM CROSS SLOPE OF THE SIDEWALK IS 2% (1 : 50).

\*\* THE DEPTH IS STANDARD IN NEW CONSTRUCTION. ALTERATIONS TO EXISTING FACILITIES MAY RESULT IN A LARGER DEPTH, WHICH WILL REQUIRE A GREATER RAMP LENGTH.

⊕ SEE CURB RAMPS SECTION FOR STANDARD DRAWINGS FOR GUIDELINES ON RAMP DESIGN WHEN RAMPS ARE REQUIRED FOR ADA ACCESSIBILITY.

Road  
Concrete Sidewalk  
Curb and Gutter

Revised: 2010

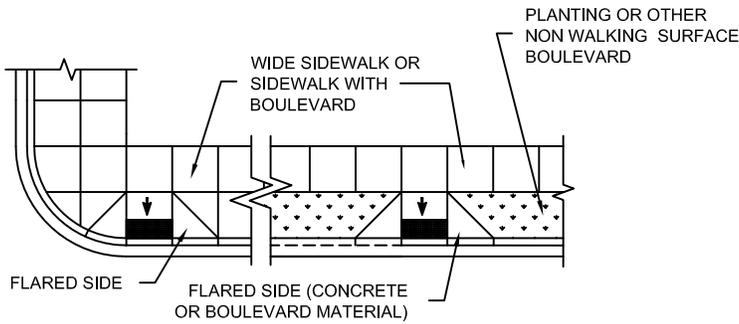


Standard Drawing

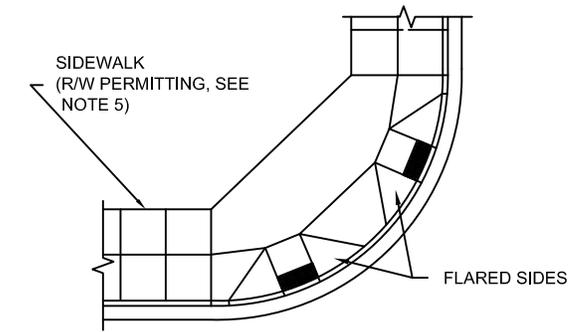
R-CGS4

NOT TO SCALE

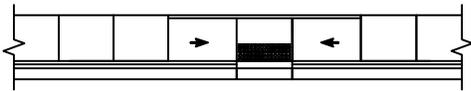
**CURB RAMP TYPES**



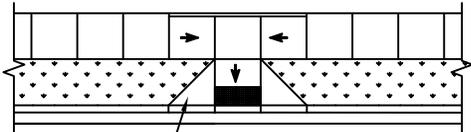
(A)  
PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



(D)  
DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



(B)  
PARALLEL PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



(C)  
COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.

**GENERAL NOTES:**

1. IN NEW CONSTRUCTION, USE PUBLIC SIDEWALK CURB RAMPS IN THE FOLLOWING ORDER OF PREFERENCE:
  - A. PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
  - B. PARALLEL PUBLIC SIDEWALK CURB RAMP
  - C. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP
  - D. DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP

SINGLE DIAGONAL OR DEPRESSED CORNER PUBLIC SIDEWALK CURB RAMPS SERVING TWO STREET CROSSING DIRECTIONS ARE NOT PERMITTED IN NEW CONSTRUCTION.

2. WHEN ALTERING EXISTING FACILITIES, MEET NEW CONSTRUCTION REQUIREMENTS FOR PUBLIC SIDEWALK CURB RAMPS TO THE MAXIMUM EXTENT FEASIBLE.

**CONSTRUCTION REQUIREMENTS:**

1. OBTAIN A SURFACE TEXTURE ON THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RAMP SLOPE.
2. TAKE CARE DURING CONSTRUCTION TO ASSURE UNIFORM RAMP GRADES, FREE OF SAGS AND SHARP GRADE CHANGES.
3. IF POSSIBLE, DO NOT PLACE DRAINAGE STRUCTURES IN CONFLICT WITH PUBLIC SIDEWALK CURB RAMPS. LOCATION OF CURB RAMPS TAKES PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURES EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED.
4. USE THE FLATTEST SLOPES POSSIBLE FOR ALL CURB RAMPS. MAXIMUM SLOPES ARE SHOWN FOR GUIDANCE AT DIFFICULT SITES.
5. FINAL FIELD LOCATION OF THE CURB RAMPS WILL BE DETERMINED BY THE ENGINEER.
6. IF R/W DOES NOT PERMIT LANDINGS FOR THESE RAMPS, USE ANOTHER RAMP DESIGN.
7. PEDESTRIAN ACCESS POINTS AT CROSSWALKS ARE TO BE WHOLLY CONTAINED WITHIN THE CROSSWALK LINES.
8. FOR ADDITIONAL INFORMATION CONSULT:
  - APPENDIX IV
  - AMERICANS WITH DISABILITIES ACT (ADA)
  - ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES
  - AUGUST, 1994 EDITION

Road  
New Construction Sidewalk Curb Ramps

Revised: 2010

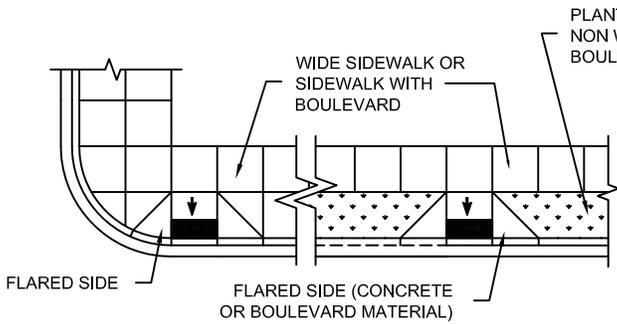


Standard Drawing

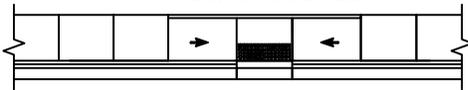
R-CR1

NOT TO SCALE

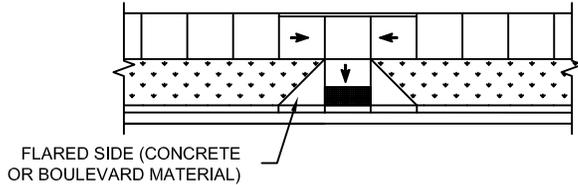
**CURB RAMP TYPES**



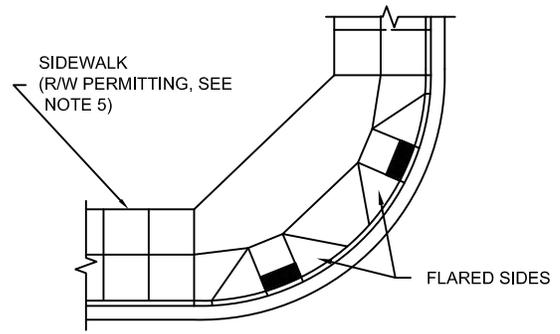
(A)  
PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



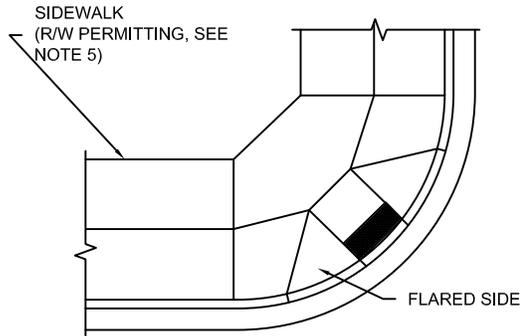
(B)  
PARALLEL PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



(C)  
COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



(D)  
DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



(E)  
SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.

**GENERAL NOTES:**

1. WHEN ALTERING EXISTING FACILITIES, USE PUBLIC SIDEWALK CURB RAMPS IN THE FOLLOWING ORDER OF PREFERENCE:
  - A. PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
  - B. PARALLEL PUBLIC SIDEWALK CURB RAMP
  - C. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP
  - D. DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP
  - E. SINGLE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP

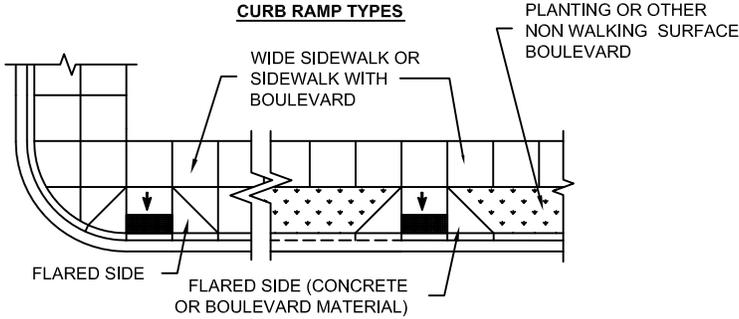
NOTE: USE DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMPS AS THE LAST OPTION AND CONSTRUCT TO COMPLY WITH ALL ADA SLOPE AND CONSTRUCTION CRITERIA TO THE GREATEST EXTENT POSSIBLE.

2. PLACE CURB RAMPS TO AVOID EXISTING DRAINAGE STRUCTURES AND OTHER OBSTRUCTIONS TO THE GREATEST EXTENT POSSIBLE.
3. USE THE FLATTEST SLOPES POSSIBLE FOR ALL CURB RAMPS. MAXIMUM SLOPES ARE SHOWN FOR GUIDANCE AT DIFFICULT SITES AND SHOULD BE AVOIDED IF POSSIBLE.
4. FINAL FIELD LOCATION OF THE CURB RAMPS WILL BE DETERMINED BY THE ENGINEER.
5. IF R/W DOES NOT PERMIT LANDINGS FOR THESE RAMPS, USE ANOTHER RAMP DESIGN.
6. PEDESTRIAN ACCESS POINTS AT CROSSWALKS ARE TO BE WHOLLY CONTAINED WITHIN THE CROSSWALK LINES.
7. FOR ADDITIONAL INFORMATION CONSULT:
  - APPENDIX IV
  - AMERICANS WITH DISABILITIES ACT (ADA)
  - ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES
  - AUGUST, 1994 EDITION

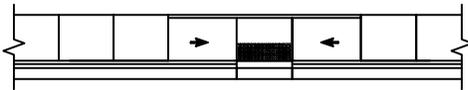
**CONSTRUCTION REQUIREMENTS:**

1. OBTAIN A SURFACE TEXTURE ON THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RAMP SLOPE.
2. TAKE CARE DURING CONSTRUCTION TO ASSURE UNIFORM RAMP GRADES, FREE OF SAGS AND SHARP GRADE CHANGES.

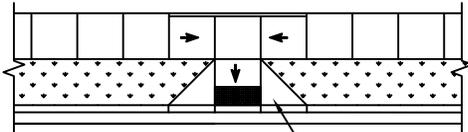
**CURB RAMP TYPES**



PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.

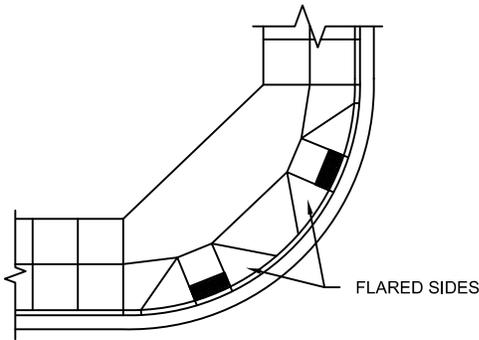


PARALLEL PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



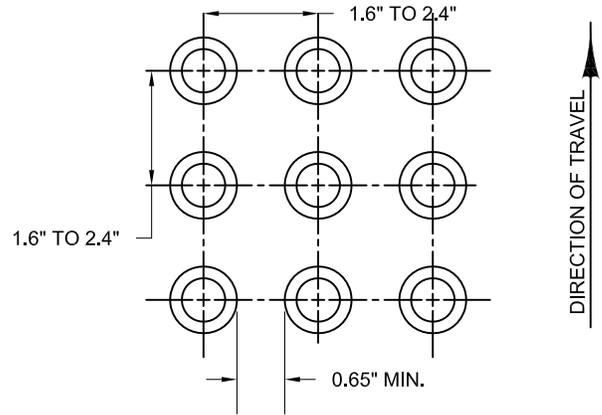
FLARED SIDE (CONCRETE  
OR BOULEVARD MATERIAL)

COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.



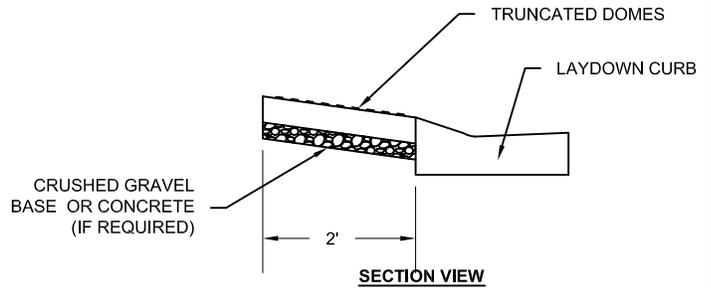
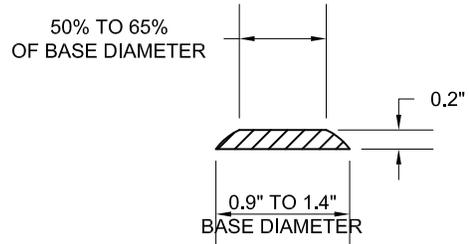
DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP  
SEE DETAILED DRAWING NUMBER 608-25 FOR  
ADDITIONAL DETAILS.

**TRUNCATED DOMES ALIGNMENT AND PATTERN**



SQUARE PATTERN  
PARALLEL ALIGNMENT

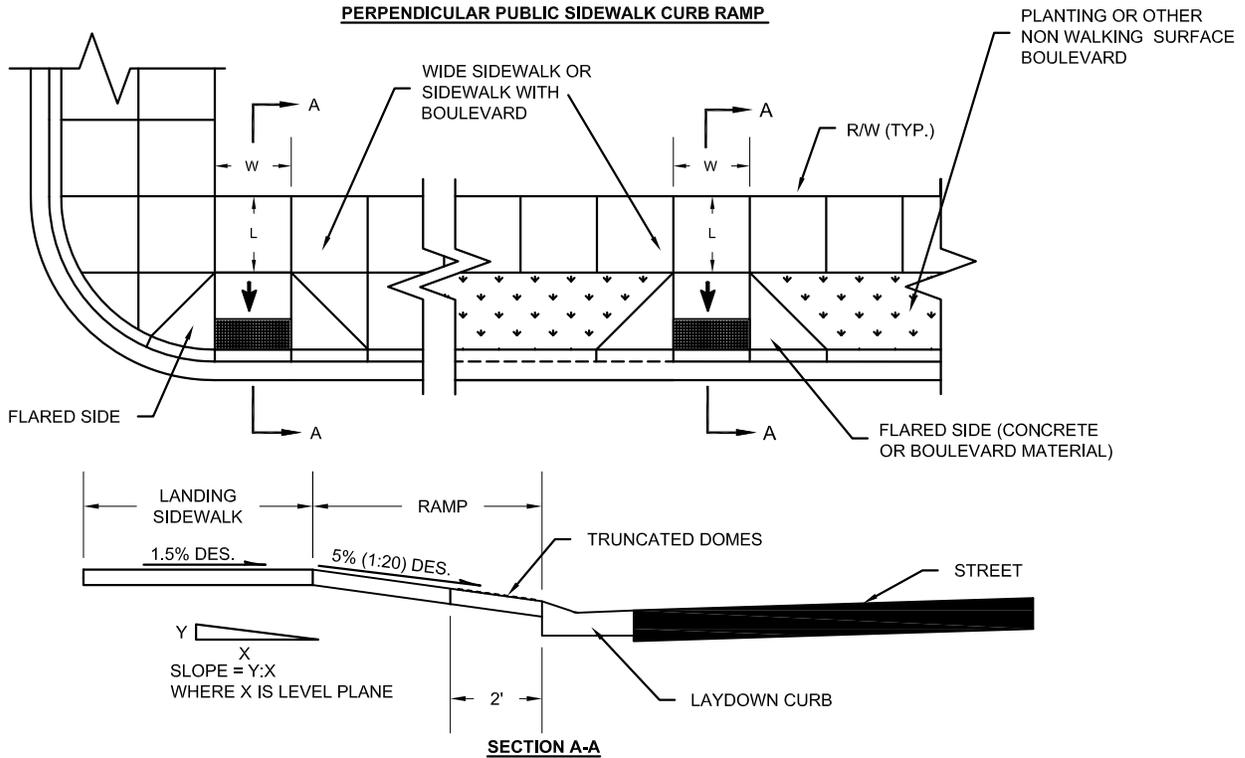
**DOMES PROFILE**



**CONSTRUCTION REQUIREMENTS:**

1. USE ONLY DETECTABLE WARNING DEVICES (ALSO KNOWN AS TRUNCATED DOMES) THAT ARE ON THE DEPARTMENT'S (MONTANA DOT) QUALIFIED PRODUCT LIST.
2. USE DETECTABLE WARNING DEVICES THAT ARE A BRICK RED COLOR.
3. INSTALL DETECTABLE WARNING DEVICES THAT EXTEND THE FULL WIDTH OF THE RAMP, 2 FEET IN DEPTH.
4. INSTALL THE DOME PANEL ADJACENT TO THE BACK OF CURB. IF THE PANEL IS OFFSET, LOCATE THE EDGE OF THE PANEL NO MORE THAN 6 INCHES FROM THE BACK OF CURB.
5. IF THE DETECTABLE WARNING DEVICE IS EMBEDDED IN CONCRETE, INSTALL SO THAT THE TOP PANEL IS FLUSH WITH THE ADJACENT CONCRETE AND THE DOMES WILL PROTRUDE ABOVE THE ADJACENT SURFACE.
6. ENSURE A UNIFORM GRADE ON THE DETECTABLE WARNING DEVICES FREE OF SAGS AND IRREGULAR SURFACES.

**PERPENDICULAR PUBLIC SIDEWALK CURB RAMP**



**NEW CONSTRUCTION REQUIREMENTS:**

1. THE DESIRABLE WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 4 FEET OR WIDER. THE MINIMUM WIDTH ("W") IS 3 FEET.
2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET. THE MINIMUM LENGTH ("L") IS 4 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
3. THE DESIRABLE SLOPE FOR THE CURB RAMP IS 5% (1 : 20) OR FLATTER. THE MAXIMUM SLOPE IS 8.3% (1 : 12).
4. THE DESIRABLE SLOPE FOR THE FLARE SIDE OF THE CURB RAMP IS 8.3% (1 : 12) OR FLATTER. THE MAXIMUM FLARED SIDE IS 10% (1:10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.

**REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:**

NOTE: WHEN EVER POSSIBLE, ALTER EXISTING FACILITIES TO COMPLY WITH NEW CONSTRUCTION REQUIREMENTS.

1. THE MINIMUM WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 3 FEET.
2. WHEN PUBLIC PEDESTRIAN RIGHT-OF-WAY WIDTH IS INSUFFICIENT TO ACCOMMODATE A TOP LANDING OR 4 FEET, PROVIDE A TOP LANDING OF 3 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.  
NOTE: IF EXISTING RIGHT-OF-WAY OR OTHER OBSTRUCTIONS REDUCE THE LANDING LENGTH TO LESS THAN 4 FEET, THE MAXIMUM FLARED SIDE SLOPE IS 8.3% (1 : 12).
3. THE MAXIMUM CURB RAMP SLOPE IS 10% (1 : 10), PROVIDED THE RISE (DIMENSION "Y" ABOVE) IS 6 INCHES OR LESS. AN 8.3% (1 : 12) OR FLATTER IS DESIRABLE.
4. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1 : 10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.
7. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE.

**GENERAL NOTES:**

1. WHERE THE PUBLIC PEDESTRIAN RIGHT-OF-WAY WILL NOT ACCOMMODATE A PERPENDICULAR PUBLIC SIDEWALK CURB RAMP AND LANDING MEETING THESE REQUIREMENTS, USE A COMBINED (PARALLEL/PERPENDICULAR) OR PARALLEL PUBLIC SIDEWALK CURB RAMP.
2. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMP ARE TO MEET THE CRITERIA FOR BOTH THE PARALLEL AND PERPENDICULAR PUBLIC SIDEWALK CURB RAMP. (SEE DETAILED DRAWING NUMBER R-CRT2 AND THIS DRAWING.)

Road  
Perpendicular Sidewalk Curb Ramp

Revised: 2010

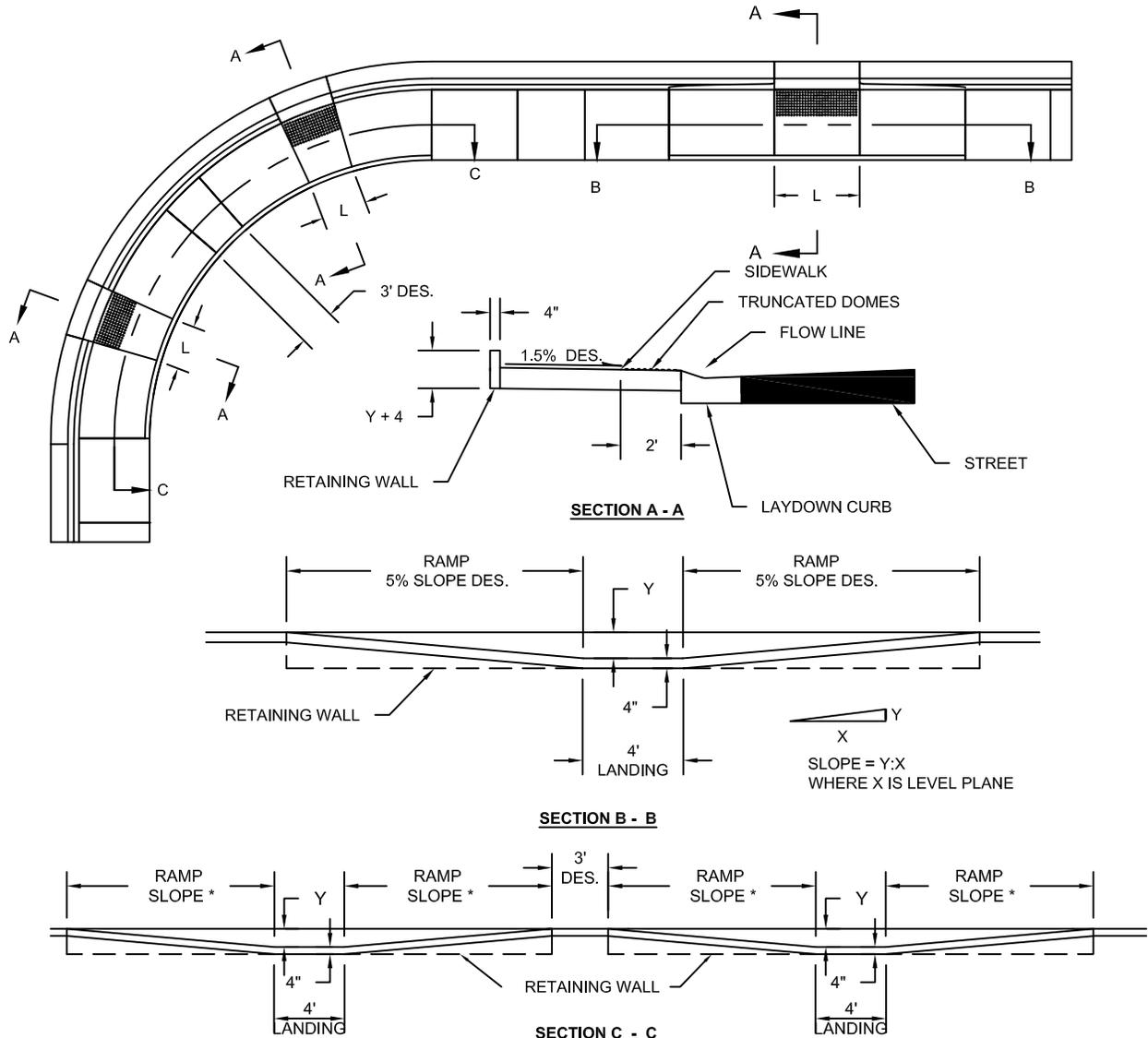


Standard Drawing

R-CRT1

NOT TO SCALE

**PARALLEL PUBLIC SIDEWALK CURB RAMP**



**NEW CONSTRUCTION REQUIREMENTS:**

1. THE MINIMUM LENGTH OF THE LANDING (DIMENSION "L" ABOVE) IS 5 FEET.
2. THE DESIRABLE SLOPE FOR THE CURB RAMP IS 5% (1 : 20) OR FLATTER. THE MAXIMUM SLOPE IS 8.3% (1 : 12).
3. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
4. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.

**REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:**

NOTE: WHEN EVER POSSIBLE, ALTER EXISTING FACILITIES TO COMPLY WITH NEW CONSTRUCTION REQUIREMENTS.

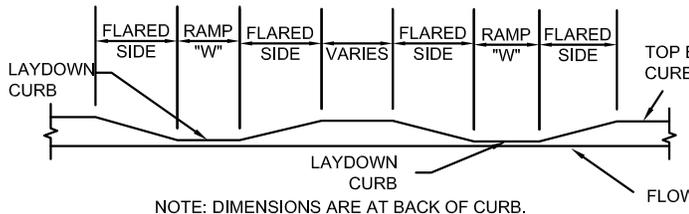
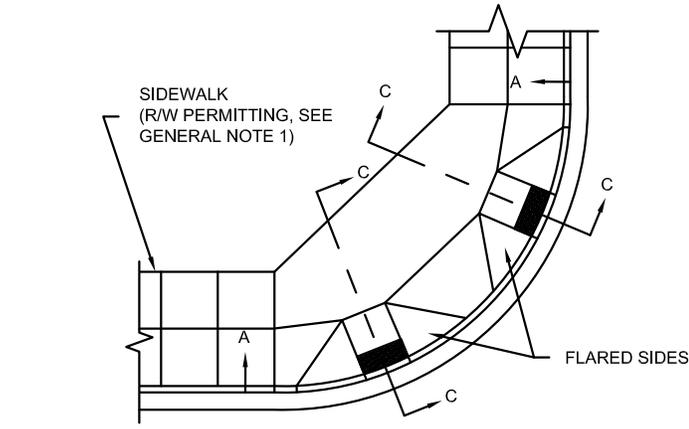
1. THE DESIRABLE LENGTH OF THE LANDING (DIMENSION "L" ABOVE) IS 5 FEET. THE MINIMUM LANDING LENGTH IS 4 FEET.
2. THE MAXIMUM CURB RAMP SLOPE IS 10% (1 : 10), PROVIDED THE RISE (DIMENSION "Y" ABOVE) IS 6 INCHES OR LESS. AN 8.3% (1 : 12) OR FLATTER IS DESIRABLE.
3. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
4. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.
5. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE.

**GENERAL NOTES:**

1. COMBINED (PARALLEL/PERPENDICULAR) PUBLIC SIDEWALK CURB RAMPS ARE TO MEET THE CRITERIA FOR BOTH THE PARALLEL AND PERPENDICULAR PUBLIC SIDEWALK CURB RAMPS. (SEE DETAILED DRAWING NUMBER R-CRT1 AND THIS DRAWING.)

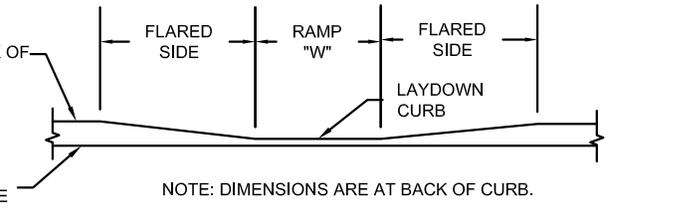
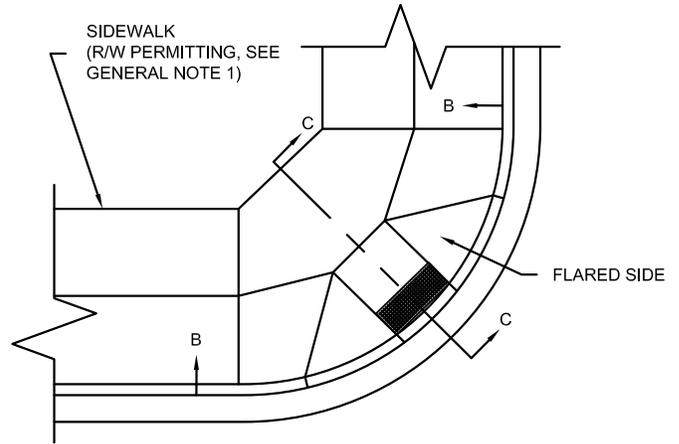
Road Parallel Sidewalk Curb Ramp	Revised: 2010		Standard Drawing  R-CRT2  NOT TO SCALE
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**DIAGONAL PERPENDICULAR  
PUBLIC SIDEWALK CURB RAMP**

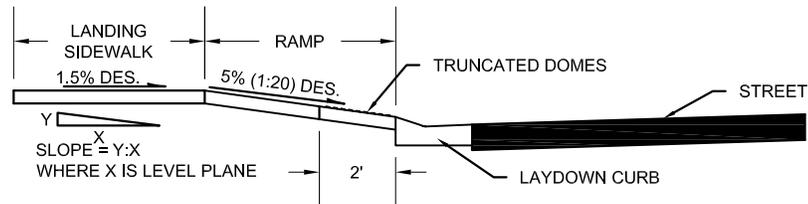


**SECTION A - A**

**SINGLE DIAGONAL PERPENDICULAR  
PUBLIC SIDEWALK CURB RAMP**



**SECTION B - B**



**SECTION C - C**

**NEW CONSTRUCTION REQUIREMENTS:**

1. THE DESIRABLE WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 4 FEET OR WIDER. THE MINIMUM WIDTH ("W") IS 3 FEET.
2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET. THE MINIMUM LENGTH ("L") IS 4 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
3. THE DESIRABLE SLOPE FOR THE CURB RAMP IS 5% (1 : 20) OR FLATTER. THE MAXIMUM SLOPE IS 8.3% (1 : 12).
4. THE DESIRABLE SLOPE FOR THE FLARE SIDE OF THE CURB RAMP IS 8.3% (1 : 12) OR FLATTER. THE MAXIMUM FLARED SIDE IS 10% (1:10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.

**REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:**

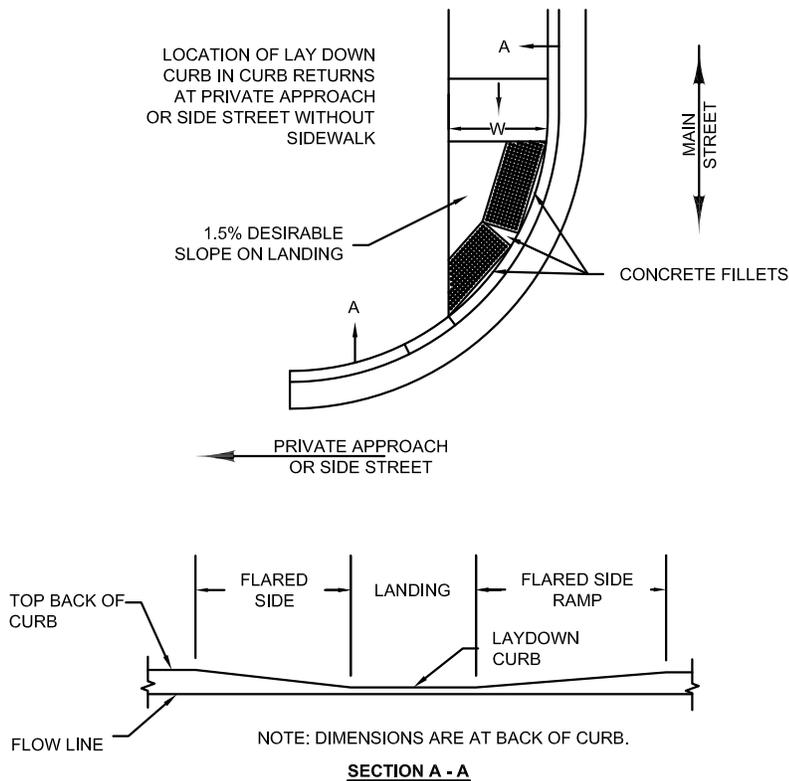
NOTE: WHEN EVER POSSIBLE, ALTER EXISTING FACILITIES TO COMPLY WITH NEW CONSTRUCTION REQUIREMENTS.

1. THE MINIMUM WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 3 FEET.
2. WHEN PUBLIC PEDESTRIAN RIGHT-OF-WAY WIDTH IS INSUFFICIENT TO ACCOMMODATE A TOP LANDING OR 4 FEET, PROVIDE A TOP LANDING OF 3 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.  
NOTE: IF EXISTING RIGHT-OF-WAY OR OTHER OBSTRUCTIONS REDUCE THE LANDING LENGTH TO LESS THAN 4 FEET, THE MAXIMUM FLARED SIDE SLOPE IS 8.3% (1 :12).
3. THE MAXIMUM CURB RAMP SLOPE IS 10% (1 : 10), PROVIDED THE RISE (DIMENSION "Y" ABOVE) IS 6 INCHES OR LESS. AN 8.3% (1 : 12) OR FLATTER IS DESIRABLE.
4. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1 : 10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.
7. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE.

**GENERAL NOTES:**

1. WHERE THE PUBLIC PEDESTRIAN RIGHT-OF-WAY WILL NOT ACCOMMODATE A DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP AND LANDING MEETING THESE REQUIREMENTS, USE ANOTHER RAMP DESIGN.
2. TRIM PRECAST TRUNCATED DOME PANELS TO FIT ON PRIVATE APPROACH SIDEWALK CURB RAMPS AS SHOWN.

**PRIVATE APPROACH  
PUBLIC SIDEWALK CURB RAMP**



**NEW CONSTRUCTION REQUIREMENTS:**

1. THE DESIRABLE WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 4 FEET OR WIDER. THE MINIMUM WIDTH ("W") IS 3 FEET.
2. THE DESIRABLE LENGTH OF THE LANDING AT THE TOP OF CURB RAMP (DIMENSION "L" ABOVE) IS 5 FEET. THE MINIMUM LENGTH ("L") IS 4 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.
3. THE DESIRABLE SLOPE FOR THE CURB RAMP IS 5% (1 : 20) OR FLATTER. THE MAXIMUM SLOPE IS 8.3% (1 : 12).
4. THE DESIRABLE SLOPE FOR THE FLARE SIDE OF THE CURB RAMP IS 8.3% (1 : 12) OR FLATTER. THE MAXIMUM FLARED SIDE IS 10% (1:10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.

**REQUIREMENTS FOR ALTERATIONS TO EXISTING FACILITIES:**

NOTE: WHEN EVER POSSIBLE, ALTER EXISTING FACILITIES TO COMPLY WITH NEW CONSTRUCTION REQUIREMENTS.

1. THE MINIMUM WIDTH OF THE CURB RAMP (DIMENSION "W" ABOVE) IS 3 FEET.
2. WHEN PUBLIC PEDESTRIAN RIGHT-OF-WAY WIDTH IS INSUFFICIENT TO ACCOMMODATE A TOP LANDING OR 4 FEET, PROVIDE A TOP LANDING OF 3 FEET. THE LANDING WIDTH IS EQUAL TO THE RAMP WIDTH.  
NOTE: IF EXISTING RIGHT-OF-WAY OR OTHER OBSTRUCTIONS REDUCE THE LANDING LENGTH TO LESS THAN 4 FEET, THE MAXIMUM FLARED SIDE SLOPE IS 8.3% (1 : 12).
3. THE MAXIMUM CURB RAMP SLOPE IS 10% (1 : 10), PROVIDED THE RISE (DIMENSION "Y" ABOVE) IS 6 INCHES OR LESS. AN 8.3% (1 : 12) OR FLATTER IS DESIRABLE.
4. THE MAXIMUM FLARED SIDE SLOPE IS 10% (1 : 10).
5. THE DESIRABLE CROSS SLOPE OF THE SIDEWALK RAMP, OR LANDING IS 1.5% (1 : 66.7). THE MAXIMUM CROSS SLOPE OF THE SIDEWALK, RAMP, OR LANDING IS 2% (1 : 50).
6. PROVIDE TRUNCATED DOMES ON THE BOTTOM 2 FEET OR EACH RAMP AS SHOWN ABOVE. SEE DETAIL DRAWING NUMBER R-CR3 FOR TRUNCATED DOME DETAILS.
7. WHERE EXISTING SITE DEVELOPMENT CONDITIONS PROHIBIT THE STRICT AND FULL COMPLIANCE OF ALL ADA CRITERIA, PROVIDE ACCESSIBILITY TO THE MAXIMUM EXTENT FEASIBLE.

**GENERAL NOTES:**

1. WHERE THE PUBLIC PEDESTRIAN RIGHT-OF-WAY WILL NOT ACCOMMODATE A DIAGONAL PERPENDICULAR PUBLIC SIDEWALK CURB RAMP AND LANDING MEETING THESE REQUIREMENTS, USE ANOTHER RAMP DESIGN.
2. TRIM PRECAST TRUNCATED DOME PANELS TO FIT ON PRIVATE APPROACH SIDEWALK CURB RAMPS AS SHOWN.

Road  
Diagonal-Perpendicular Sidewalk Curb Ramp (2 of 2)

Revised: 2010



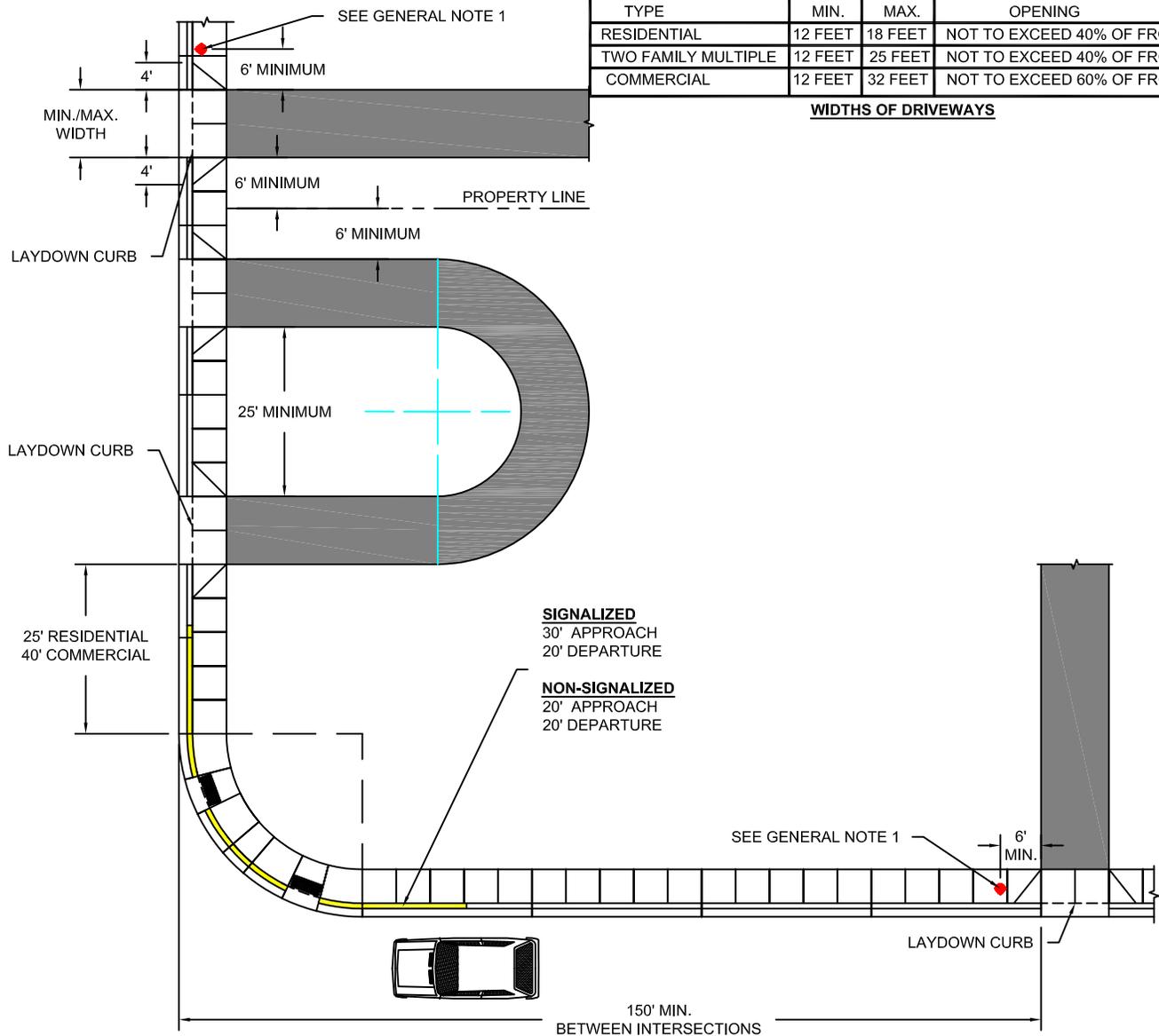
Standard Drawing

R-CRT3(2)

NOT TO SCALE

TYPE	MIN.	MAX.	OPENING
RESIDENTIAL	12 FEET	18 FEET	NOT TO EXCEED 40% OF FRONTAGE
TWO FAMILY MULTIPLE	12 FEET	25 FEET	NOT TO EXCEED 40% OF FRONTAGE
COMMERCIAL	12 FEET	32 FEET	NOT TO EXCEED 60% OF FRONTAGE

**WIDTHS OF DRIVEWAYS**



**GENERAL NOTES:**

1. ANY UTILITY FACILITIES, LIGHT STANDARDS, FIRE HYDRANTS, STREET SIGNS, SIGNALS OR OTHER PUBLIC IMPROVEMENTS OR INSTALLATIONS.
2. IF THE INTERSECTING HIGHWAY IS CURBED THE INSIDE POINT OF THE CURB LAYDOWN SHALL BE DESIRABLE DISTANCE OF 20 FEET FROM THE END POINT OF CURVATURE OF THE INTERSECTION HIGHWAY RADIUS, OR A DESIRABLE DISTANCE OF 10 FEET INSIDE THE ABUTTING PROPERTY FRONTAGE, WHICHEVER WILL PROVIDE THE GREATER DISTANCE.
3. AT SIGNALIZED INTERSECTIONS OR THOSE THAT HAVE POTENTIAL FOR SIGNALIZATION, THE NEAR SIDE CORNER CLEARANCE WILL BE A DESIRABLE DISTANCE OF 35 FEET (CURBED SECTION) AND 45 FEET (UN-CURBED SECTION) INSIDE THE ABUTTING PROPERTY FRONTAGE.

**WIDTHS OF DRIVEWAYS NOTES:**

1. COMMERCIAL PROPERTIES MAY HAVE MORE THAN ONE CURB CUT FOR THE SAME PROPERTY IF SEPARATED BY 25 FEET OR MORE OF FULL HEIGHT CURB.
2. ANY TWO RESIDENTIAL PROPERTIES OF 50 FEET WIDTH OR LESS MAY HAVE A JOINT DRIVEWAY OF 25 FEET MAXIMUM WIDTH.
3. ALL RESIDENTIAL PROPERTIES WILL HAVE ONLY ONE CURB CUT FOR EACH RESIDENCE OR PRINCIPLE BUILDING EXCEPT SEMI-CIRCLE LOOP DRIVEWAYS AS SHOWN.

Road  
Driveways

Revised: 2010



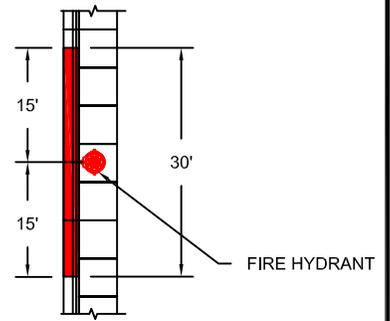
Standard Drawing

R-01

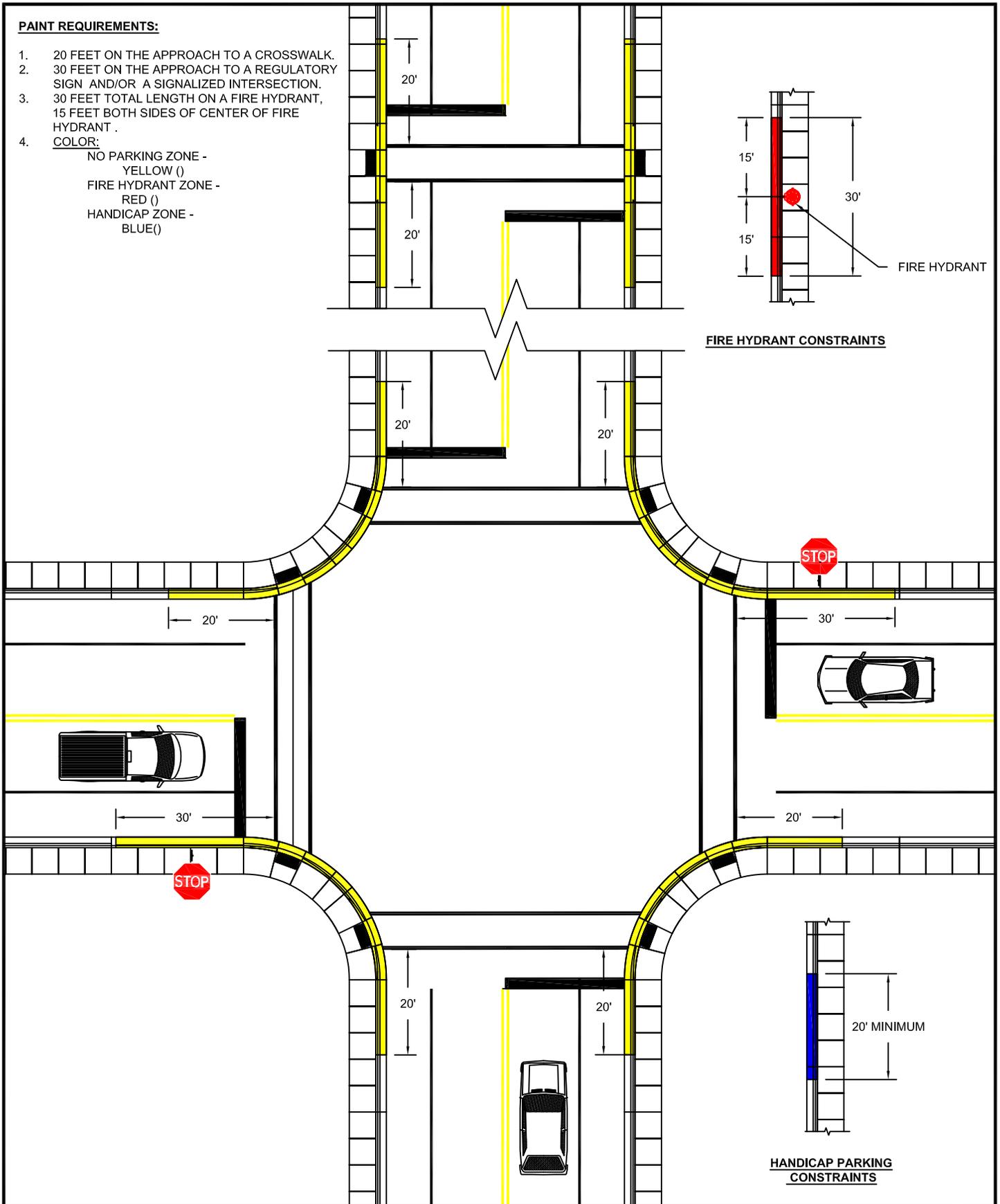
NOT TO SCALE

**PAIN T REQUIR EMENTS:**

1. 20 FEET ON THE APPROACH TO A CROSSWALK.
2. 30 FEET ON THE APPROACH TO A REGULATORY SIGN AND/OR A SIGNALIZED INTERSECTION.
3. 30 FEET TOTAL LENGTH ON A FIRE HYDRANT, 15 FEET BOTH SIDES OF CENTER OF FIRE HYDRANT .
4. COLOR:  
 NO PARKING ZONE - YELLOW ( )  
 FIRE HYDRANT ZONE - RED ( )  
 HANDICAP ZONE - BLUE ( )



**FIRE HYDRANT CONSTRAINTS**



**HANDICAP PARKING CONSTRAINTS**

Road  
 Painted Curb Criteria  
 No Parking Zone, Fire Hydrant Zone, and Handicap Zones

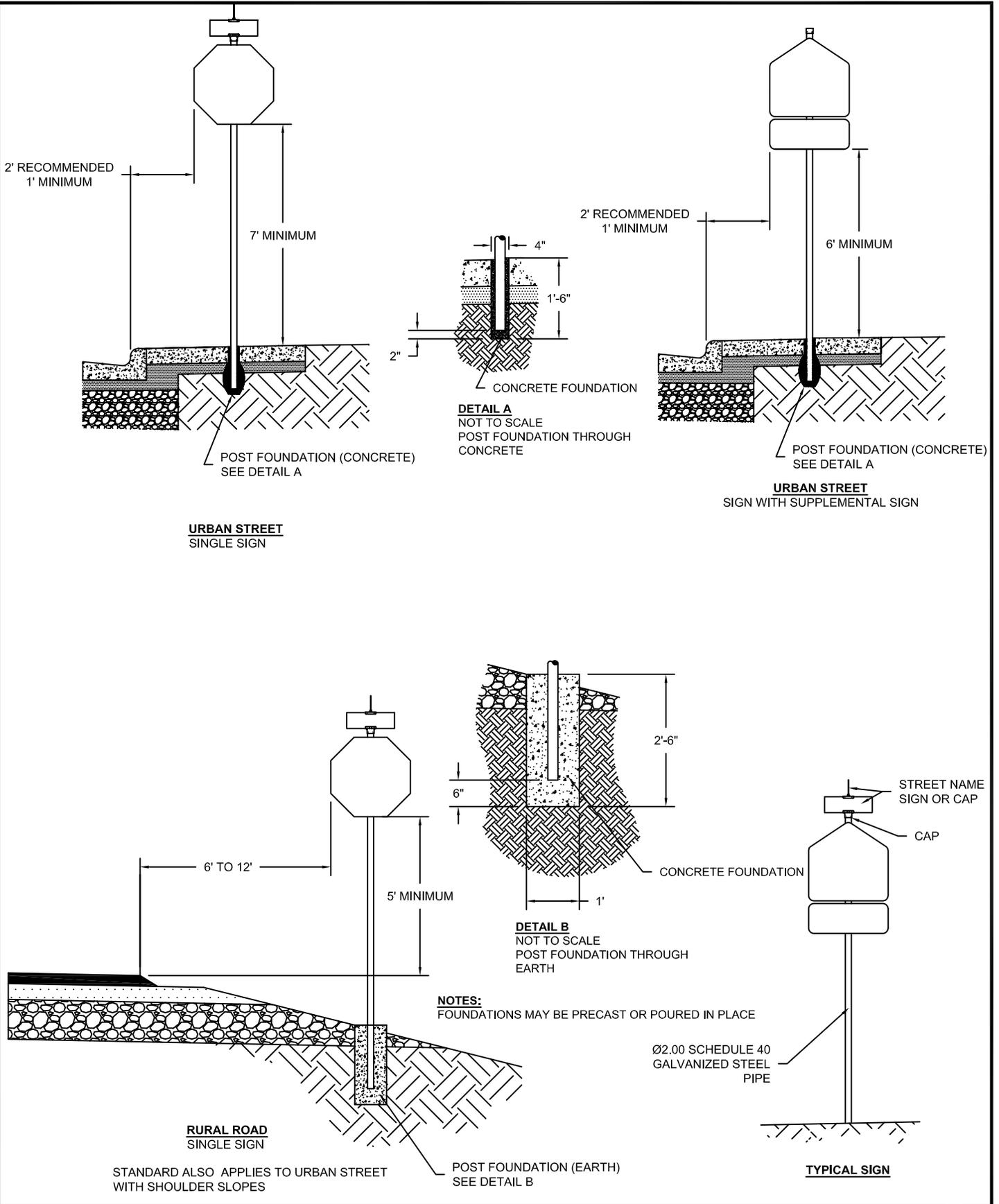
Revised: 2010



Standard Drawing

R-02

NOT TO SCALE



Road  
Typical Sign Post Installations  
(Vertical & Horizontal Clearances)

Revised: 2010



Standard Drawing

R-03

NOT TO SCALE