

NOTE: REFER TO THE UDO FOR ALL RELEVANT ELECTRIC VEHICLE CHARGING SPACE DESIGN STANDARDS.

TOWN OF APEX  
STANDARDS

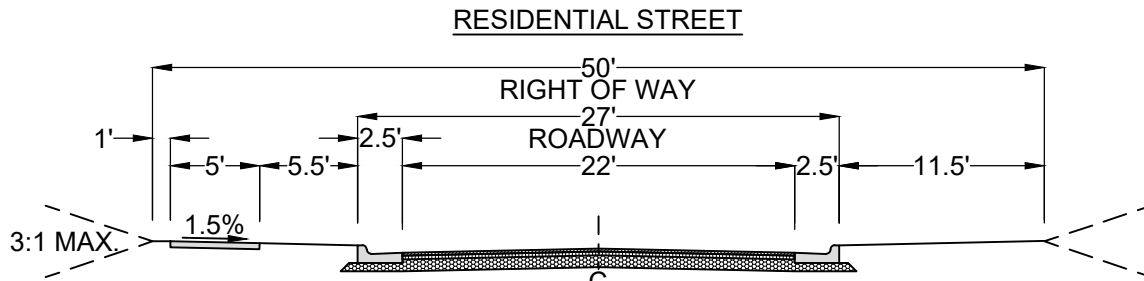
**EV CHARGING SPACE**

STD. NO.

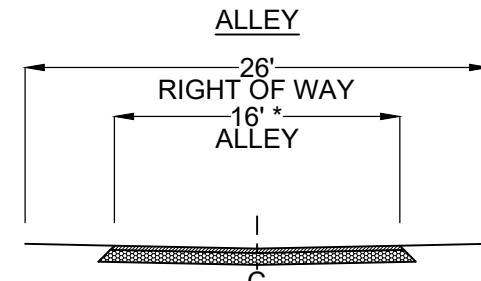
**200.07**

EFFECTIVE: APRIL 9, 2024

SHEET 1 OF 1



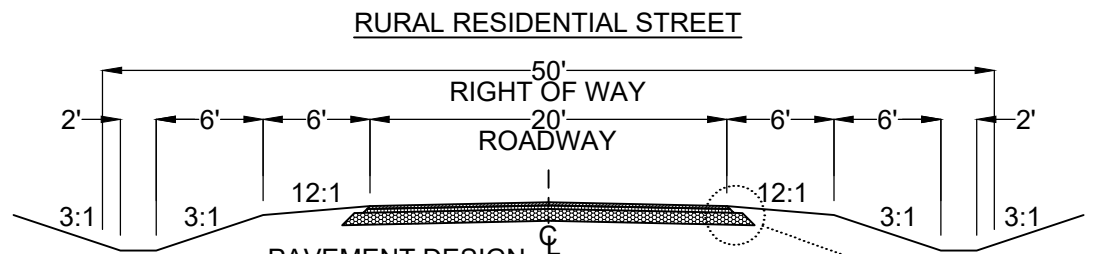
**PAVEMENT DESIGN:**  
 2" ASPHALT CONCRETE SURFACE COURSE  
 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE  
 8" AGGREGATE BASE COURSE



**PAVEMENT DESIGN:**  
 3" ASPHALT CONCRETE SURFACE COURSE  
 8" AGGREGATE BASE COURSE  
 \* ONE WAY ALLEY OPTIONAL WITH VALLEY GUTTER (16' B-B)

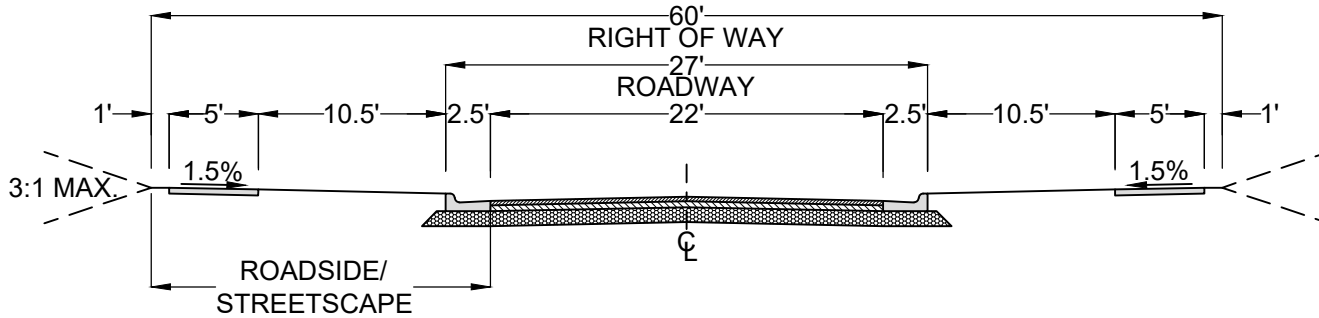
**NOTE:**

1. NORMAL CROWN (REVERSE CROWN FOR ALLEYS) OF 1/4 INCH PER FOOT SHALL BE USED UNLESS OTHERWISE DIRECTED BY TOWN ENGINEER.
2. WATER AND SEWER UTILITIES SHALL NOT BE SERVED FROM THE ALLEY RIGHT OF WAY.
3. RURAL RESIDENTIAL STREET MAY BE USED WHERE PERMITTED BY THE UDO.
4. GRASSED SWALES SHALL MEET THE APPLICABLE DESIGN REQUIREMENTS SET FORTH IN THE DWQ BMP MANUAL.
5. GRASSED SWALES MAY BE SUBJECT TO THE REQUIREMENTS SET FORTH IN UDO SECTION 6.1.12.
6. ROADSIDE / STREETSCAPE TREATMENTS ARE CONTEXT SENSITIVE. REFER TO ADVANCE APEX: THE 2045 TRANSPORTATION PLAN FOR APPROPRIATE CONTEXT, AND THE BICYCLE AND PEDESTRIAN SYSTEM PLAN MAP FOR APPROPRIATE FACILITY TYPE.

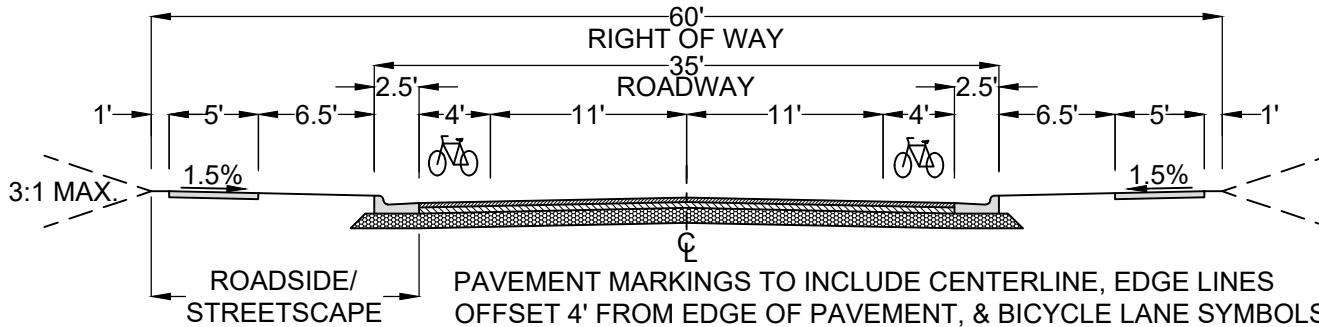


**PAVEMENT DESIGN:**  
 2" ASPHALT CONCRETE SURFACE COURSE  
 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE  
 8" AGGREGATE BASE COURSE

**MINOR COLLECTOR STREET**

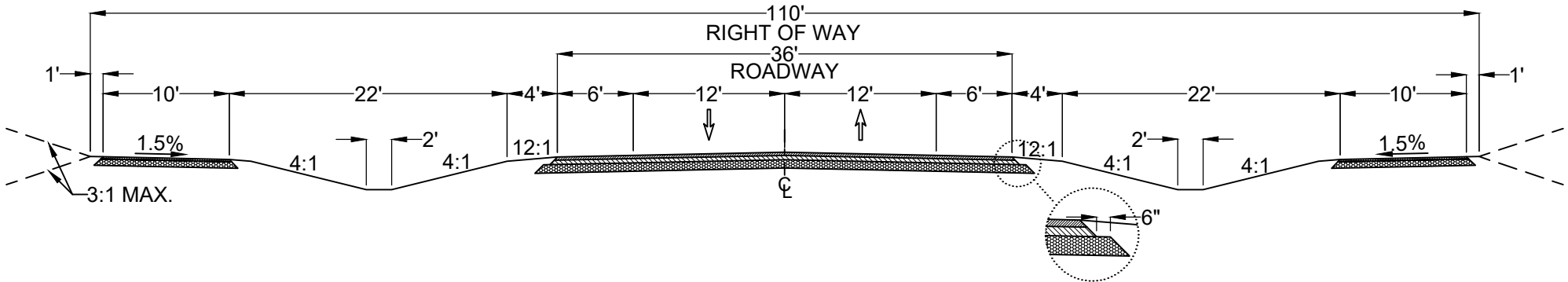


**MAJOR COLLECTOR STREET / 2-LANE URBAN THOROUGHFARE**



PAVEMENT MARKINGS TO INCLUDE CENTERLINE, EDGE LINES  
OFFSET 4' FROM EDGE OF PAVEMENT, & BICYCLE LANE SYMBOLS

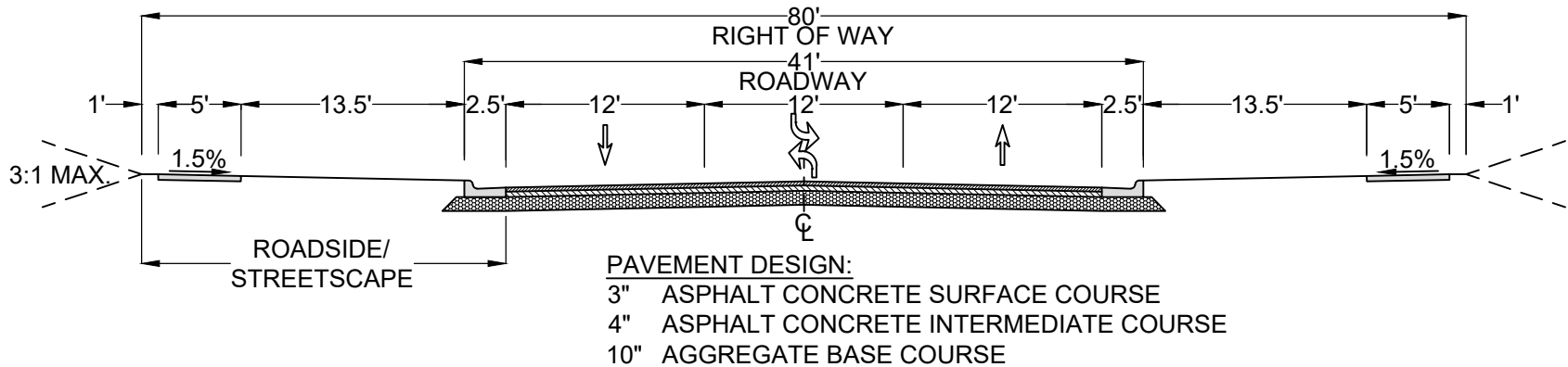
**2-LANE RURAL THOROUGHFARE**



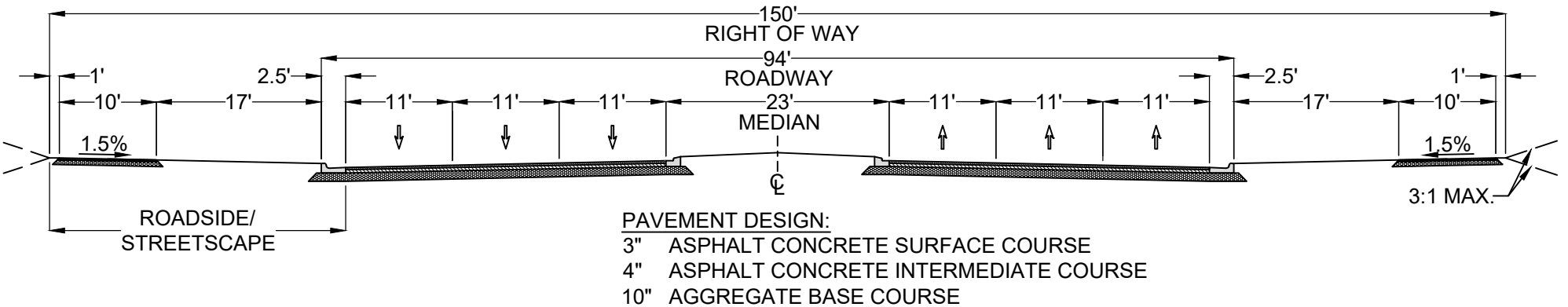
- NOTE:**
1. PAVEMENT DESIGN SHOWN IS THE MINIMUM FOR THE RESPECTIVE TYPICAL SECTION. CALCULATED PAVEMENT DESIGN MAY DIFFER.
  2. NORMAL CROWN OF 1/4 INCH PER FOOT SHALL BE USED UNLESS OTHERWISE DIRECTED BY TOWN ENGINEER.
  3. ROADSIDE / STREETSCAPE TREATMENTS ARE CONTEXT SENSITIVE. REFER TO ADVANCE APEX: THE 2045 TRANSPORTATION PLAN FOR APPROPRIATE CONTEXT, AND THE BICYCLE AND PEDESTRIAN SYSTEM PLAN MAP FOR APPROPRIATE FACILITY TYPE.

- PAVEMENT DESIGN:**
- 3" ASPHALT CONCRETE SURFACE COURSE
  - 4" ASPHALT CONCRETE INTERMEDIATE COURSE
  - 10" AGGREGATE BASE COURSE

**3-LANE THOROUGHFARE**

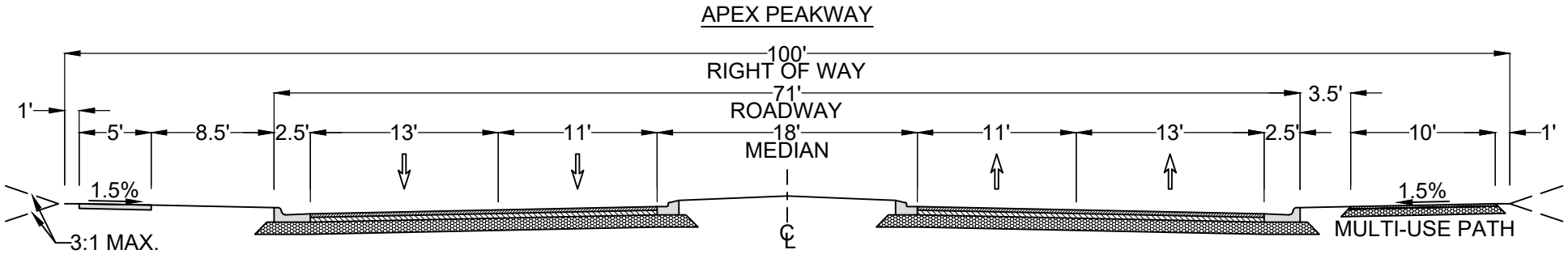


**6-LANE THOROUGHFARE**



**NOTE:**

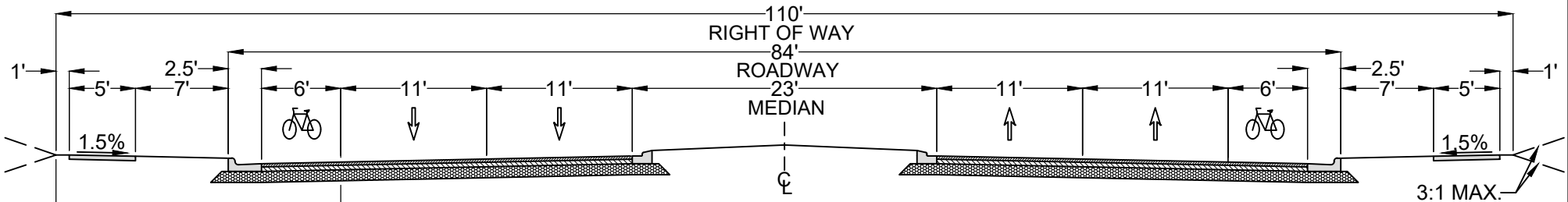
1. PAVEMENT DESIGN SHOWN IS THE MINIMUM FOR THE RESPECTIVE TYPICAL SECTION. CALCULATED PAVEMENT DESIGN MAY DIFFER.
2. NORMAL CROWN OF 1/4 INCH PER FOOT SHALL BE USED UNLESS OTHERWISE DIRECTED BY TOWN ENGINEER.
3. LANE WIDTHS SHALL BE MARKED PER THE DIMENSIONS SHOWN.
4. ROADSIDE / STREETSCAPE TREATMENTS ARE CONTEXT SENSITIVE. REFER TO ADVANCE APEX: THE 2045 TRANSPORTATION PLAN FOR APPROPRIATE CONTEXT, AND THE BICYCLE AND PEDESTRIAN SYSTEM PLAN MAP FOR APPROPRIATE FACILITY TYPE.



**PAVEMENT DESIGN:**  
 3" ASPHALT CONCRETE SURFACE COURSE  
 4" ASPHALT CONCRETE INTERMEDIATE COURSE  
 10" AGGREGATE BASE COURSE

**MULTI-USE PATH PAVEMENT DESIGN:**  
 2" ASPHALT CONCRETE SURFACE COURSE  
 6" AGGREGATE BASE COURSE

**4-LANE MEDIAN-DIVIDED THOROUGHFARE**



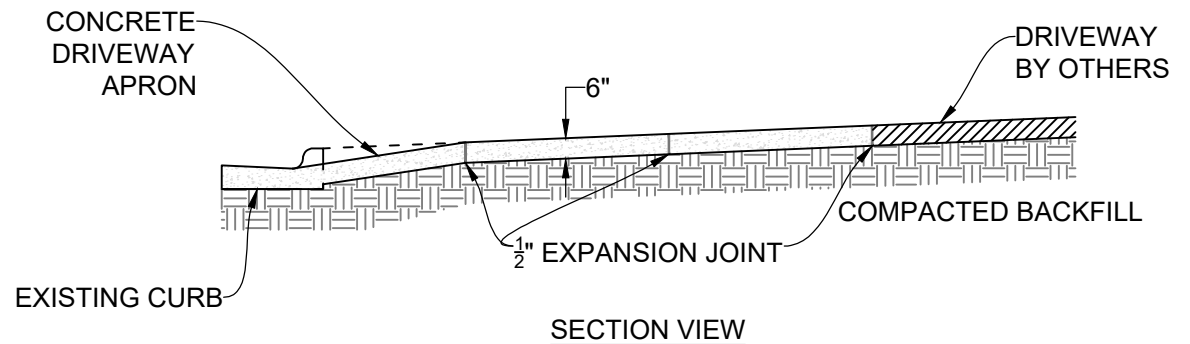
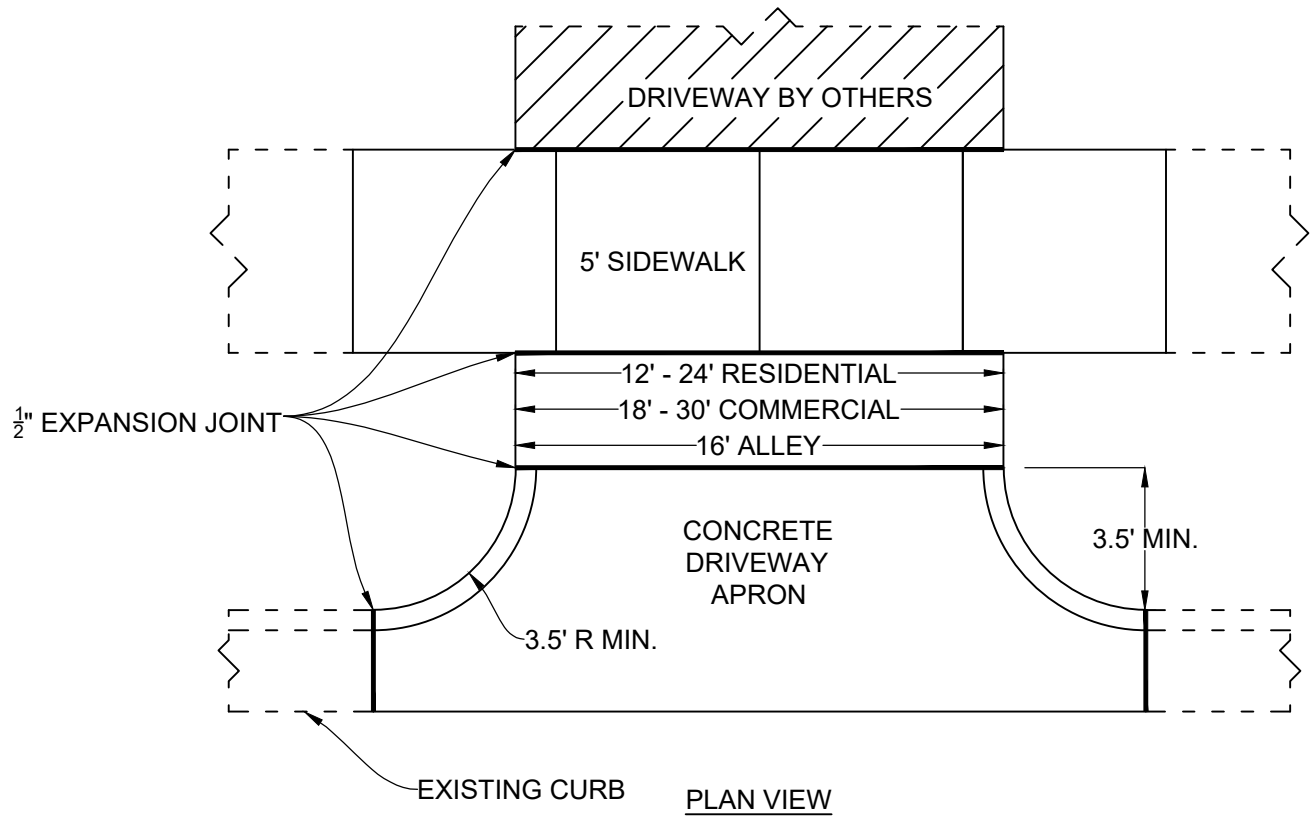
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**NOTE:**

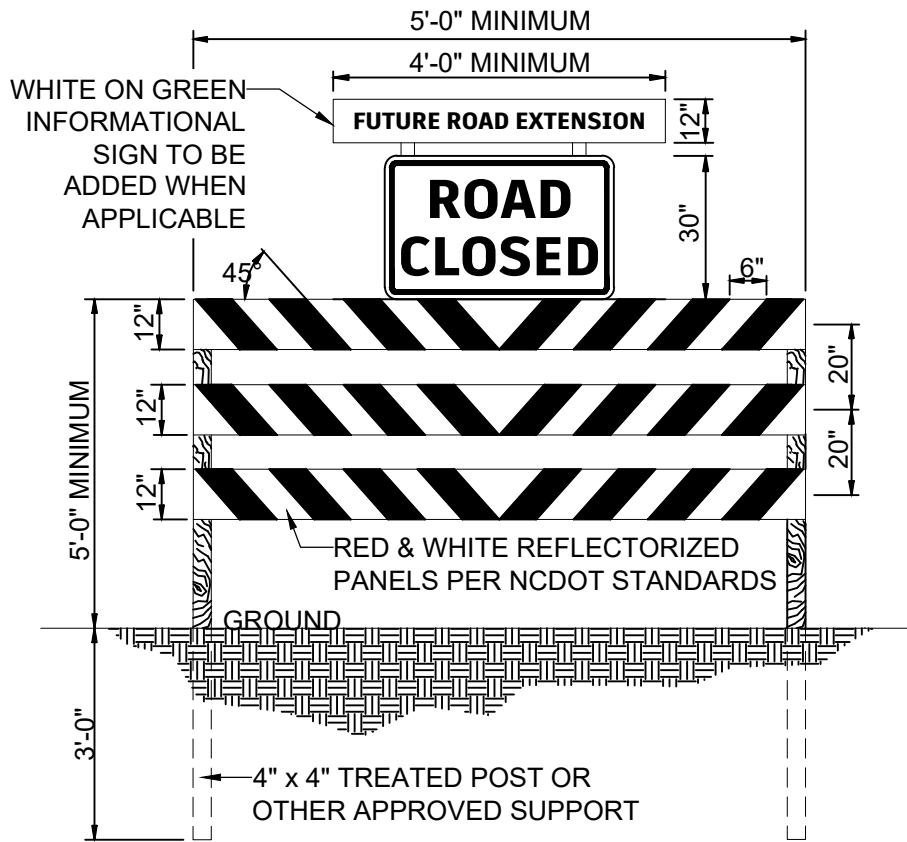
1. PAVEMENT DESIGN SHOWN IS THE MINIMUM FOR THE RESPECTIVE TYPICAL SECTION. CALCULATED PAVEMENT DESIGN MAY DIFFER.
2. NORMAL CROWN OF 1/4 INCH PER FOOT SHALL BE USED UNLESS OTHERWISE DIRECTED BY TOWN ENGINEER.
3. LANE WIDTHS SHALL BE MARKED PER THE DIMENSIONS SHOWN.
4. APEX PEAKWAY SHALL UTILIZE THE 4-LANE MEDIAN-DIVIDED THOROUGHFARE WITH MULTI-USE PATH TYPICAL.
5. ROADSIDE / STREETSCAPE TREATMENTS ARE CONTEXT SENSITIVE. REFER TO ADVANCE APEX: THE 2045 TRANSPORTATION PLAN FOR APPROPRIATE CONTEXT, AND THE BICYCLE AND PEDESTRIAN SYSTEM PLAN MAP FOR APPROPRIATE FACILITY TYPE.
6. A MINIMUM 4-FOOT WIDE BIKE LANE CAN BE USED IN TOWN CENTER AND TRANSIT-ORIENTED DEVELOPMENT CONTEXT AREAS IF ADJACENT TO A STANDARD CURB AND GUTTER SECTION AND WITHOUT A PARKING LANE.

**NOTES:**

1. RESIDENTIAL DRIVEWAYS TO BE 12' TO 24' WIDTH EXCEPT WHEN CONNECTING TO AN ALLEY WIDTH MAY BE INCREASED TO ALLOW AN ADDITIONAL 9' WIDE PARKING PAD IF DISTANCE FROM THE ALLEY TO THE STRUCTURE IS LESS THAN 18'.
2. COMMERCIAL & INDUSTRIAL DRIVEWAYS TO BE 18' TO 30' WIDTH.
3. ALLEY CONNECTIONS TO BE 16' WIDTH.
4. ALL CONCRETE SHALL BE 3000 PSI.
5. IF CURB CUT IS WITHIN 5' FROM A JOINT, THEN THE CUT SHALL BE MADE AT THAT JOINT.
6. ALL DRIVEWAYS SHALL BE INSTALLED WITH A SIDEWALK SECTION AND UTILITY STRIP AS SHOWN. SIDEWALK SECTIONS SHALL HAVE 1/4" PER FOOT FALL TOWARDS THE STREET.
7. LOCATE DRIVEWAYS A MINIMUM OF 3 FEET FROM SEWER SERVICE LINES.



**THOROUGHFARE & COLLECTOR**

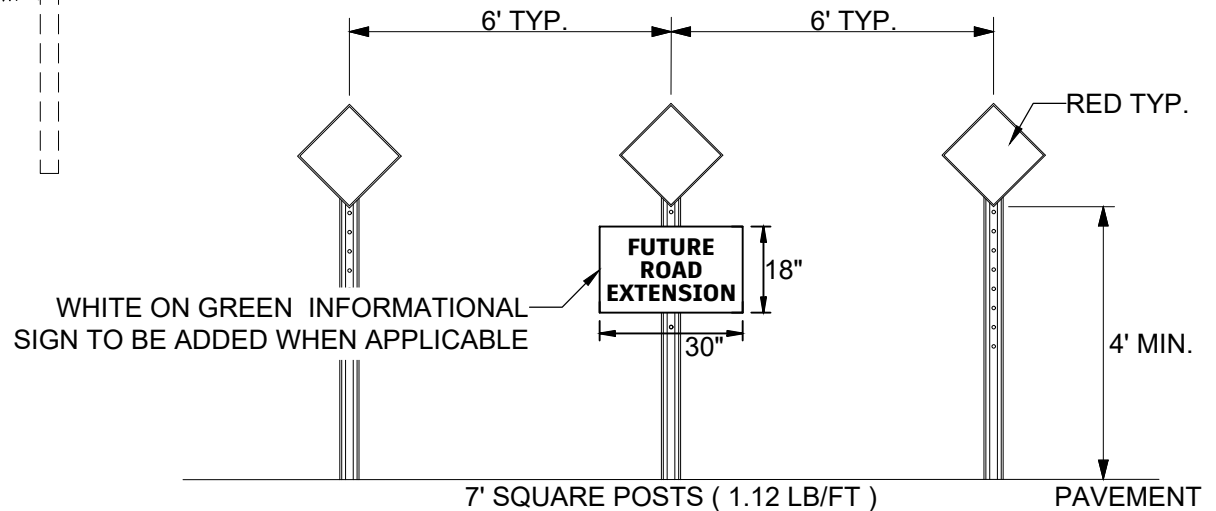


**NOTES:**

1. BARRICADE(S) TO BE ERECTED ACROSS ENTIRE ROADWAY INCLUDING CURB & GUTTER.
2. ADVANCE WARNING SIGN W14-1 (DEAD END) SHALL BE PLACED JUST AFTER LAST INTERSECTING STREET.
3. MARKINGS FOR BARRICADE RAILS SHALL BE REFLECTIVE AND ALTERNATE RED & WHITE STRIPS.
4. "ROAD CLOSED" SIGN SHALL MEET SPECIFICATIONS OF MUTCD R11-2 AND BE REQUIRED AT TOP OF EACH BARRICADE USED.
5. CALL 811 FOR UNDERGROUND UTILITY LOCATIONS PRIOR TO INSTALLATION.

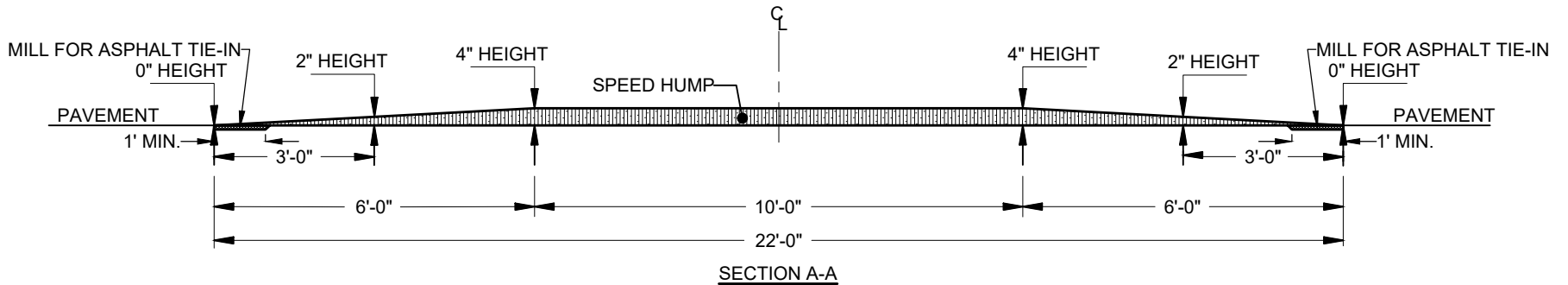
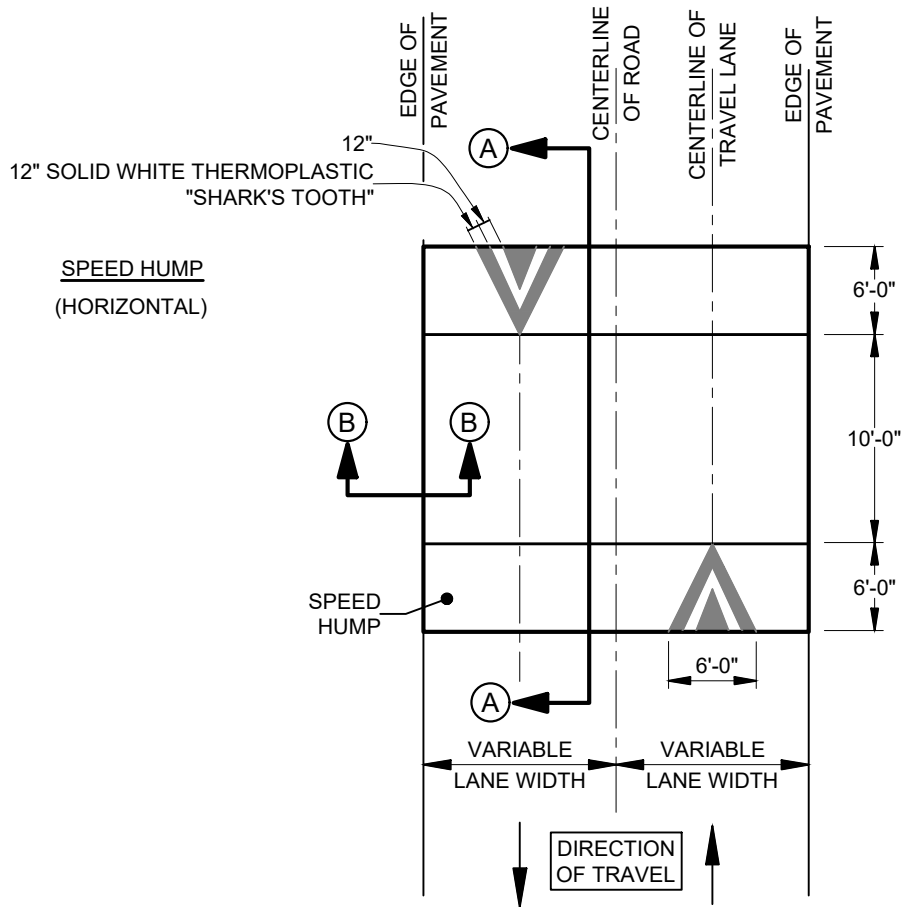
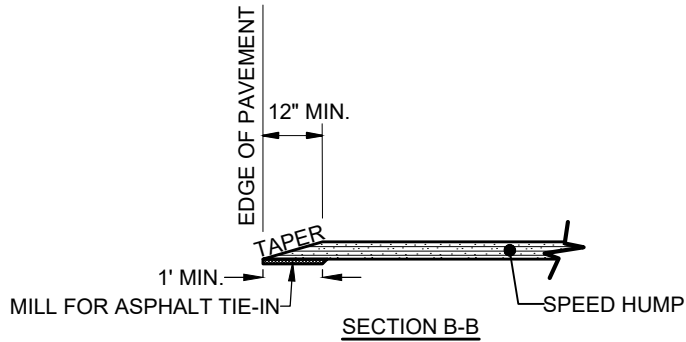
**LOCAL & MIXED USE**

3 MARKERS MINIMUM



**NOTES:**

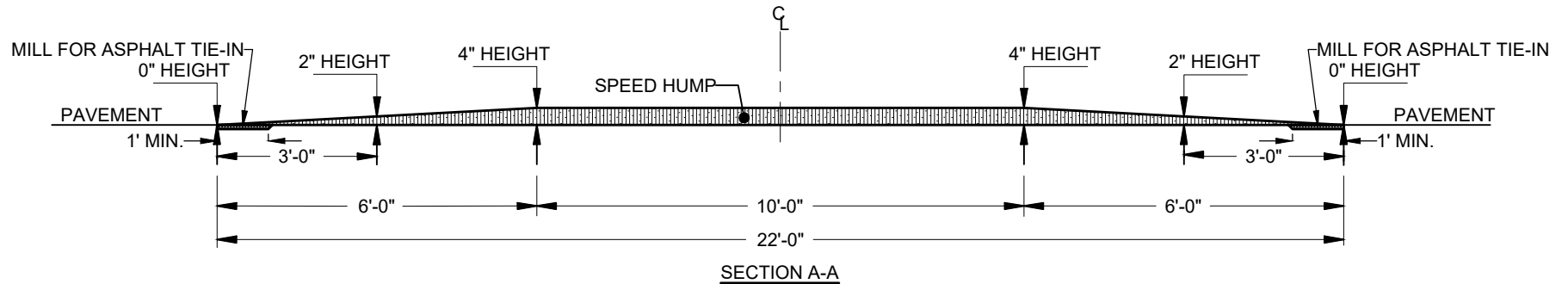
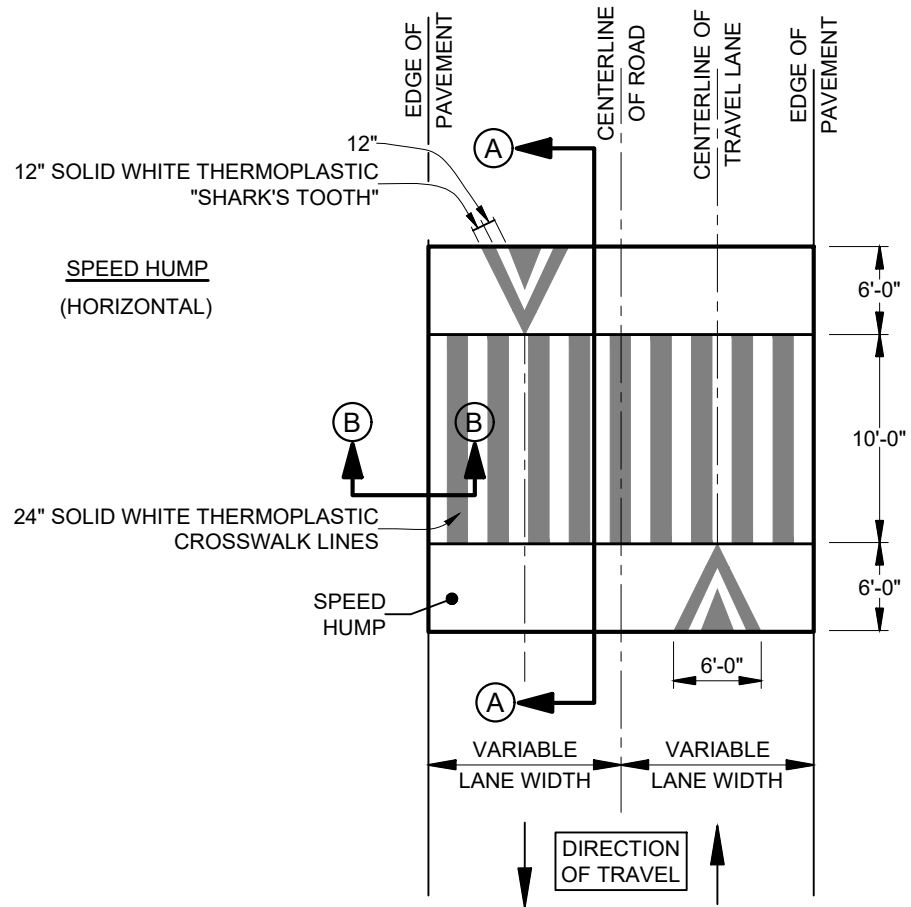
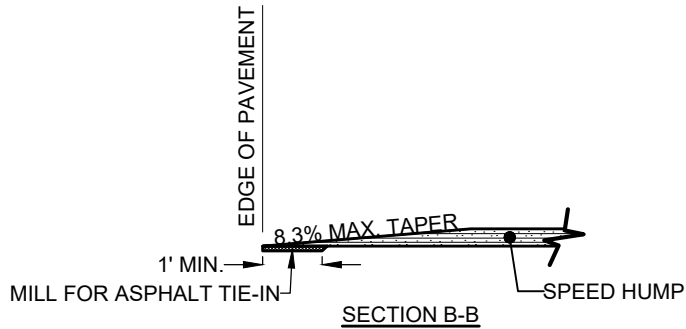
1. EXISTING ROADWAY SHALL BE CLEARED FREE OF ALL LOOSE DEBRIS; AREA TO BE SURFACED WITH SPEED HUMPS SHALL BE COATED WITH TACK PRIOR TO PAVING OPERATIONS.
2. SPEED HUMPS SHALL BE CONSTRUCTED WITH ASPHALT.
3. ROADSIDE, EACH DIRECTION:  
 W17 -1 "SPEED BUMP" YELLOW 30" x 30"  
 W13-1P "20 MPH" YELLOW 18" x 18"
4. ALL VERTICAL MEASUREMENTS SHALL BE WITHIN A MAXIMUM OF 0.5" TOLERANCE, OTHERWISE, THE TOWN MAY REQUIRE REMOVAL/ REPLACEMENT.





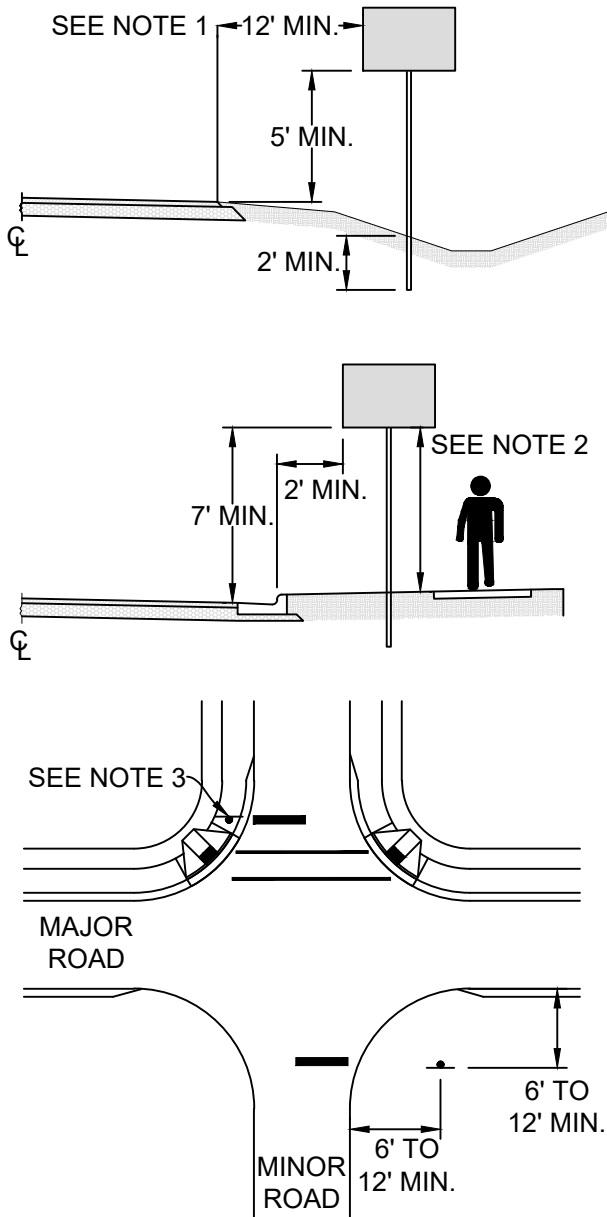
**NOTES:**

1. EXISTING ROADWAY SHALL BE CLEARED FREE OF ALL LOOSE DEBRIS; AREA TO BE SURFACED WITH SPEED HUMPS SHALL BE COATED WITH TACK PRIOR TO PAVING OPERATIONS.
2. SPEED HUMPS SHALL BE CONSTRUCTED WITH ASPHALT.
3. ROADSIDE, EACH DIRECTION:  
W17 -1 "SPEED BUMP" YELLOW 30" x 30"  
W13-1P "20 MPH" YELLOW 18" x 18"
4. W11-2 & W16-7P AT CROSSWALK ON EACH APPROACH (2X2)
5. ALL VERTICAL MEASUREMENTS SHALL BE WITHIN A MAXIMUM OF 0.5" TOLERANCE, OTHERWISE, THE TOWN MAY REQUIRE REMOVAL/ REPLACEMENT.

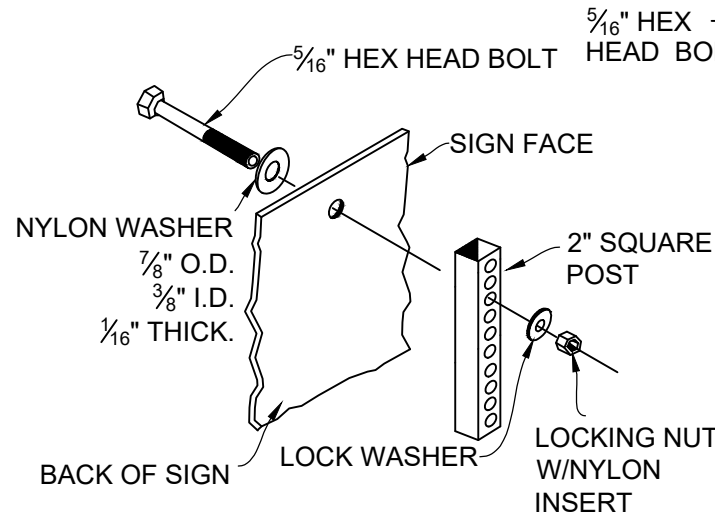




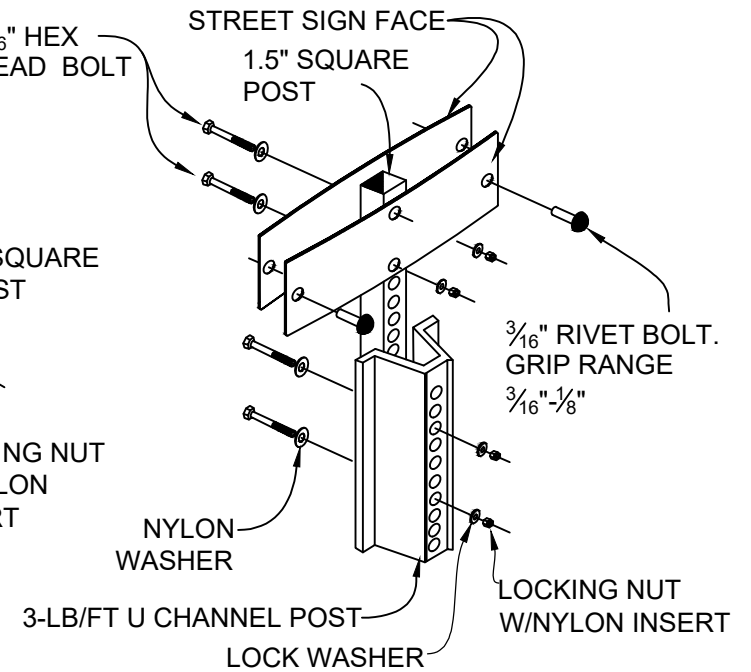
**SIGN PLACEMENT**



**SIGN MOUNTING DETAIL**



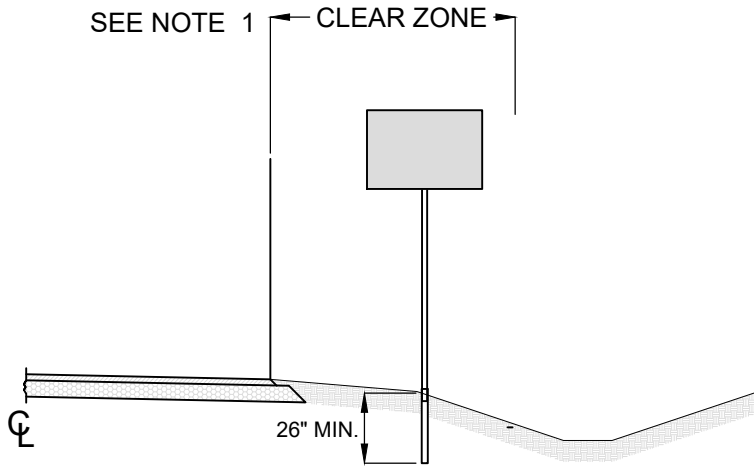
**RETROFIT ASSEMBLY DETAIL (TOWN USE ONLY)**



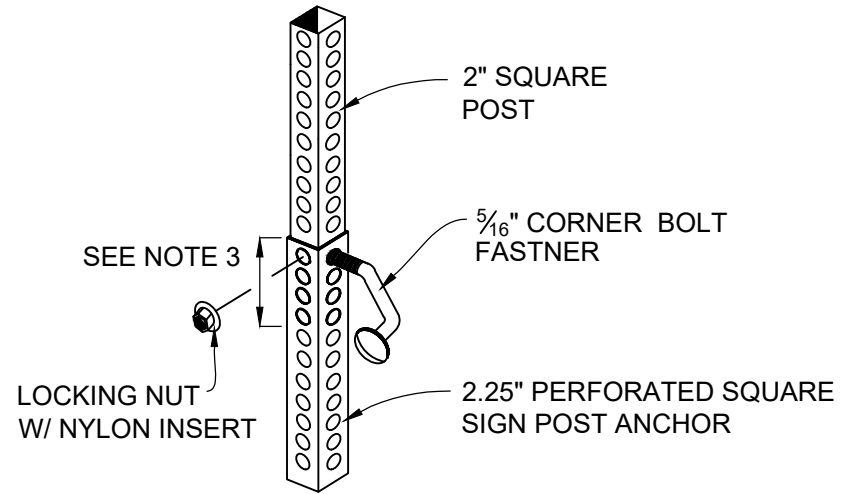
**NOTES:**

1. MINIMUM LATERAL OFFSET FROM EDGE OF TRAVELED WAY SHOULD BE 12 FEET.
2. ON CURB SECTIONS PROVIDE A MINIMUM VERTICAL CLEARANCE OF 7 FEET FROM EDGE OF TRAVELED WAY. WHERE SIDEWALKS ARE PRESENT PROVIDE A MINIMUM VERTICAL CLEARANCE OF 7 FEET FROM EDGE OF TRAVELED WAY OR TOP OF SIDEWALK, WHICHEVER IS HIGHER.
3. WHERE CROSSWALKS EXIST, SIGNS SHOULD BE PLACED WITHIN 4 FEET IN ADVANCE OF THE CROSSWALK. STREET NAME SIGNS MAY BE PLACED ABOVE A REGULATORY STOP OR YIELD SIGN WITH NO REQUIRED VERTICAL SEPARATION.
4. ALL NEW SIGNS SHALL BE POSTED ON 14 GAUGE, 2" PERFORATED SQUARE SIGN POSTS. ALL STREET NAME SIGNS RETROFITTED TO EXISTING U-CHANNEL SHALL BE POSTED ON 1.5" SQUARE SIGN POSTS. SIGN RETOROFITTING SHALL BE FOR TOWN USE ONLY.
5. ON ALL ROADWAYS EXCEPT STREETS WITH STANDARD CURB AND GUTTER AND SPEED LIMITS EQUAL TO OR LESS THAN 25 MPH, ALL SIGNS WITHIN CLEAR ZONE SHALL BE OF A BREAKAWAY DESIGN THAT COMPLIES WITH THE LATEST EDITION OF AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND NCHRP REPORT 350.
6. IN AREAS OF WEAK SOILS A BREAKAWAY ANCHOR UNIT SHALL BE USED AND BACKFILLED WITH CONCRETE, IF DETERMINED BY THE INSPECTOR.

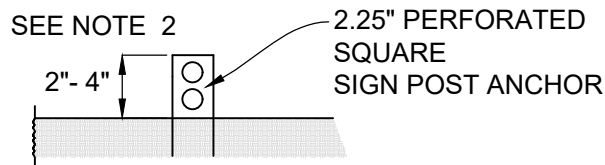
BREAKAWAY SIGN  
PLACEMENT



POST INSTALLATION

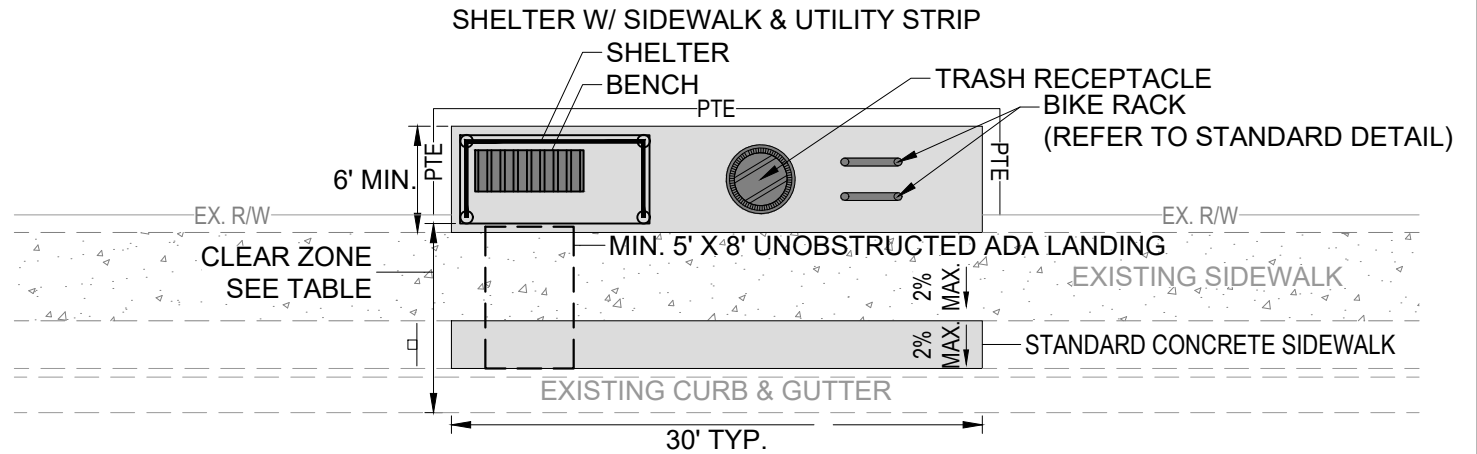


ANCHOR INSTALLATION

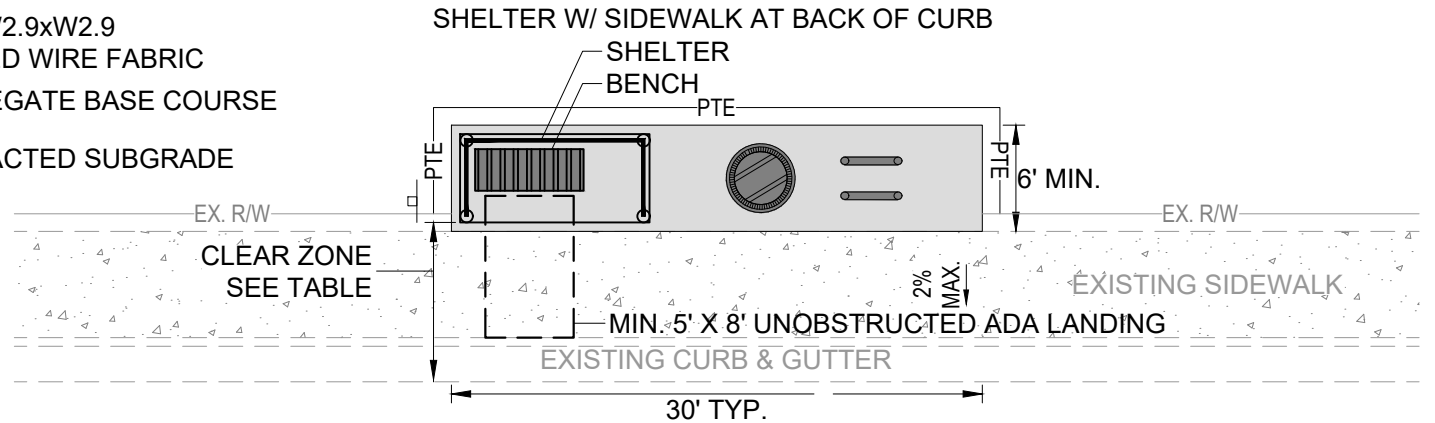
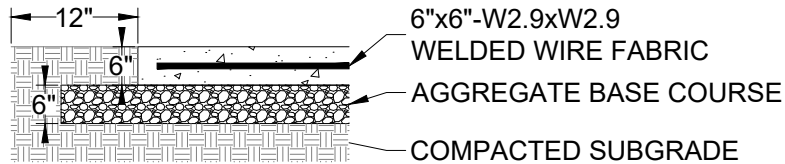


NOTES:

1. ON ALL ROADWAYS EXCEPT STREETS WITH STANDARD CURB AND GUTTER AND SPEED LIMITS EQUAL TO OR LESS THAN 25 MPH, ALL SIGNS WITHIN CLEAR ZONE SHALL BE OF A BREAKAWAY DESIGN THAT COMPLIES WITH THE LATEST EDITION OF AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND NCHRP REPORT 350.
2. DRIVE ANCHOR MINIMUM 26 INCHES INTO THE GROUND. LEAVE 2 INCHES MINIMUM TO 4 INCHES MAXIMUM TO PROTRUDE ABOVE SURFACE.
3. FIT POST INTO ANCHOR. FASTEN CORNER BOLT THROUGH THE FOURTH HOLE ON THE POST AND THE FIRST HOLE ON THE ANCHOR.
4. IN AREAS OF WEAK SOILS THE ANCHOR UNIT MAY BE BACKFILLED WITH CONCRETE, IF DETERMINED BY THE INSPECTOR.



AMENITY PAD TYPICAL SECTION



NOTES:

- BUS STOP LOCATIONS WITH NO CURB AND GUTTER REQUIRE PROPOSED SHELTERS TO BE LOCATED OUTSIDE THE CLEAR RECOVERY AREA AS DEFINED BY THE LATEST VERSION OF THE AASHTO ROADSIDE DESIGN GUIDE.
- ANY AMENITIES PROPOSED WILL REQUIRE REVIEW AND APPROVAL BY TOWN OF APEX. IF A CUSTOM SHELTER IS PROPOSED WITHIN NCDOT RIGHT-OF-WAY, THE SHELTER MUST BE ADDED TO NCDOT'S APPROVED PRODUCTS LIST PRIOR TO INSTALLATION.
- ANY REQUIRED STRUCTURAL CALCULATIONS FOR CUSTOM SHELTERS ARE TO BE PROVIDED TO TOWN OF APEX PRIOR TO APPROVAL.
- BUS SHELTERS SHALL BE LOCATED A MINIMUM OF 15 FEET FROM FIRE HYDRANTS AND UTILITY POLES.
- BUS SHELTERS AT NEAR SIDE STOPS ARE TO BE LOCATED ON SIDE OF PAD FARTHEST FROM THE INTERSECTION
- A MINIMUM 6 FEET WIDE PEDESTRIAN PATH IS TO BE RETAINED BETWEEN THE BACK OF CURB AND ANY AMENITIES WHERE SIDEWALK IS PLANNED. A MINIMUM 10 FEET WIDE PEDESTRIAN PATH IS TO BE RETAINED BETWEEN THE BACK OF CURB AND ANY AMENITIES WHERE SIDE PATH OR STREET-SIDE GREENWAY IS PLANNED.
- A PERMANENT TRANSIT EASEMENT (PTE) OR PUBLIC RIGHT-OF-WAY IS TO BE PROVIDED FOR THE AMENITY AREA IF LOCATED OUTSIDE OF EXISTING RIGHT-OF-WAY, AT A MINIMUM 1' OFFSET FROM THE AMENITY AREA.
- A FLAT CLEARED AREA 1 FOOT MINIMUM WIDTH SHALL BE ESTABLISHED AROUND THE LANDING PAD.

CLEAR ZONE MIN. DISTANCE TO SHELTER	
25 MPH	8'
35 MPH	10'
45 MPH	12'

TOWN OF APEX STANDARDS

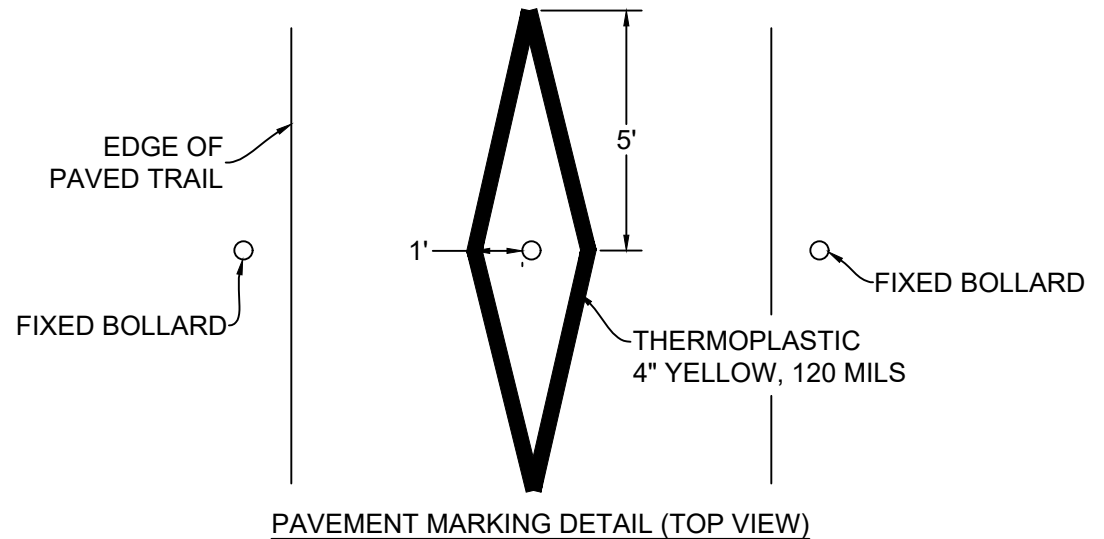
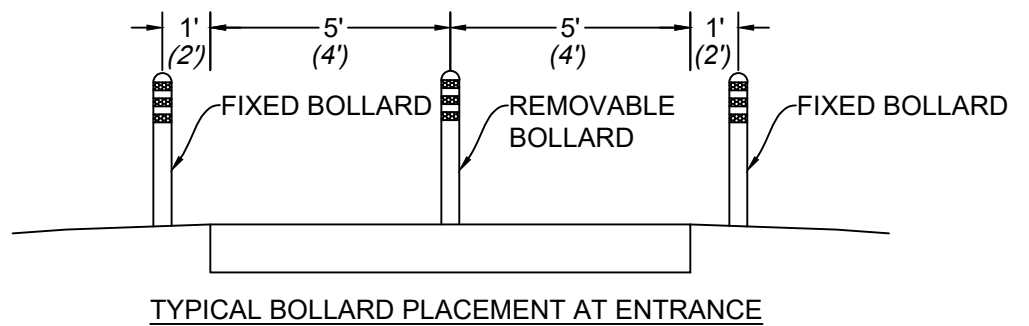
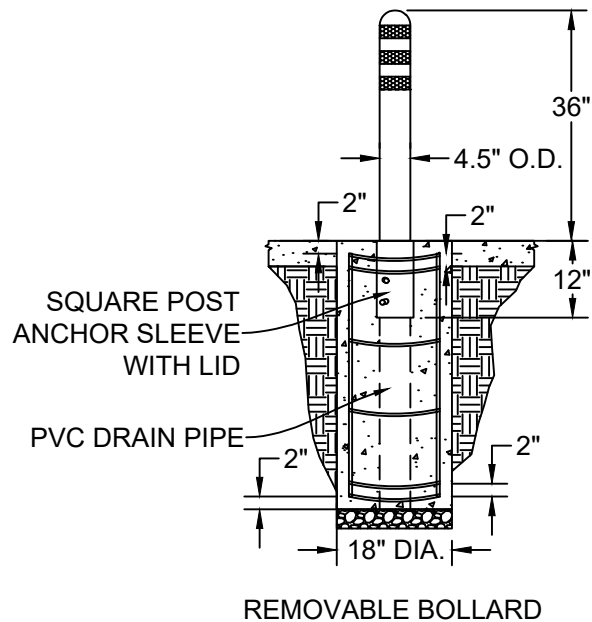
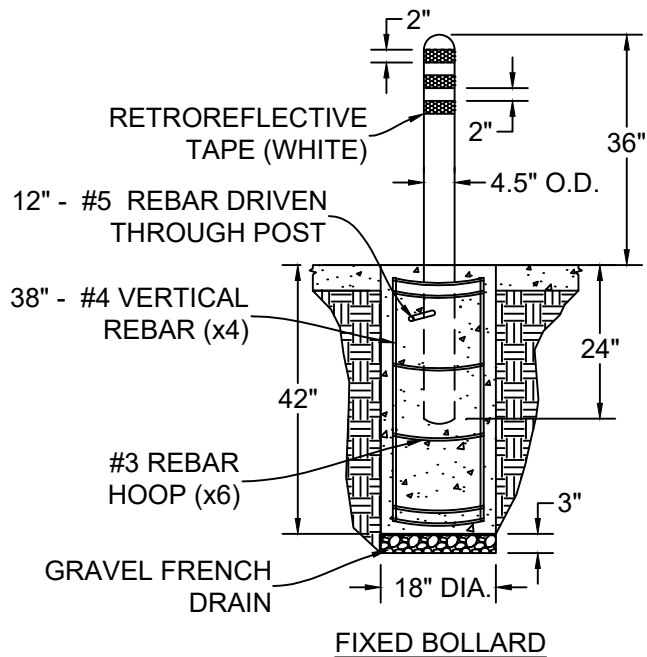
EFFECTIVE: APRIL 9, 2024

BUS STOP AMENITY PAD

STD. NO.

300.32

SHEET 2 OF 3



**NOTES:**

1. FIXED BOLLARDS SHALL BE TRAFFICGUARD MODEL RFP4560R; REMOVABLE BOLLARDS SHALL BE TRAFFICGUARD MODEL TL1004RL, OR APPROVED EQUAL. BOLLARDS SHALL BE FINISHED WITH POWDER COATED BLACK PAINT.
2. BOLLARDS AND SIGNS SHALL BE INSTALLED PER MANUFACTURER DETAILS AND SPECIFICATIONS.
3. CONCRETE FOUNDATIONS SHALL BE CONSTRUCTED TO WITHSTAND 6,000 LBS OF STATIC LOAD AT 27 INCHES ABOVE GRADE PER MANUFACTURER SPECIFICATIONS.
4. BOLLARDS SHALL BE INSTALLED OUTSIDE THE CLEAR ZONE WHEN ADJACENT TO ROADWAY. BOLLARDS SHALL BE INSTALLED MINIMUM 10 FEET FROM THE BACK OF CURB RAMP WHEN APPLICABLE.
5. PROVIDE A 2-FOOT SEPARATION BETWEEN TRAIL AND BOLLARDS WHEN TRAIL IS 8 FEET IN WIDTH.
6. FIXED BOLLARDS SHALL NOT BE REQUIRED WHEN MOTOR VEHICLE ACCESS IS BLOCKED BY PEDESTRIAN RAILING OR FENCING.