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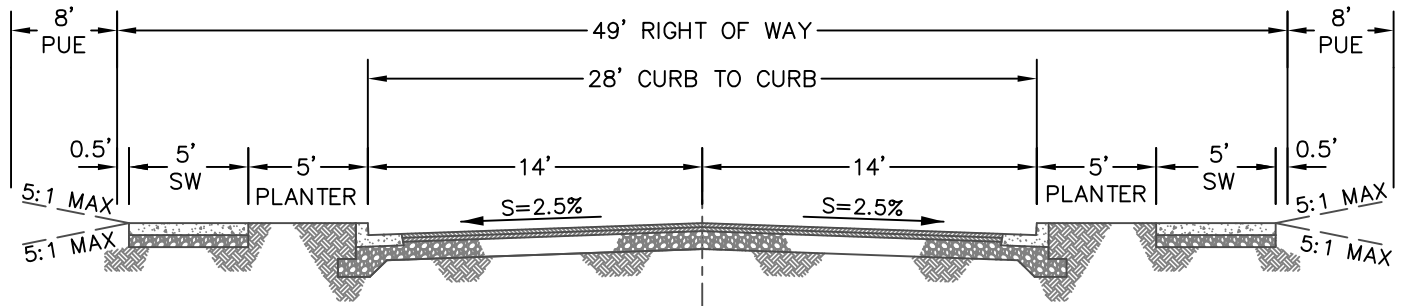
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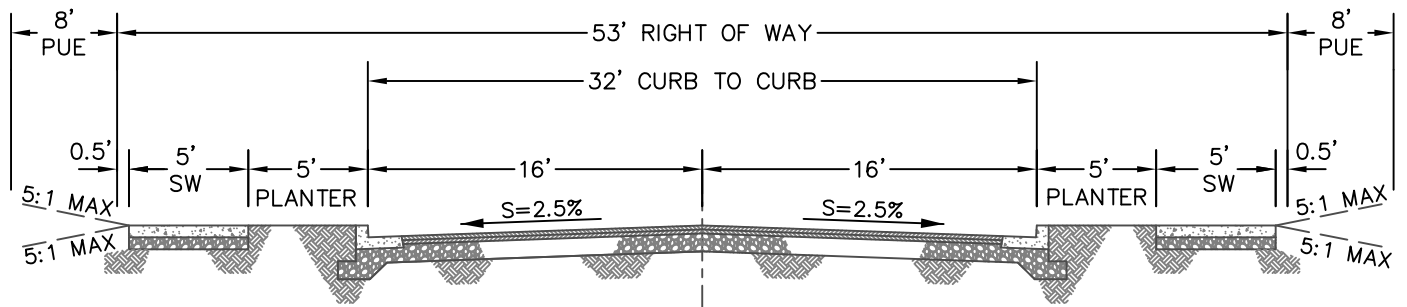
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LOCAL STREET SECTION
PARKING ONE SIDE
NTS



LOCAL STREET SECTION
PARKING BOTH SIDES
NTS

NOTES:

1. PLANTER STRIPS ARE REQUIRED.
2. PAVED WIDTH AND PLANTER STRIP ARE MEASURED TO FACE OF CURB.
3. STREET TREES AND STREET LIGHTS ARE REQUIRED AND SHALL BE LOCATED WITHIN THE PLANTER STRIP.
4. MAX SLOPE BEYOND PUE IS 2:1.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

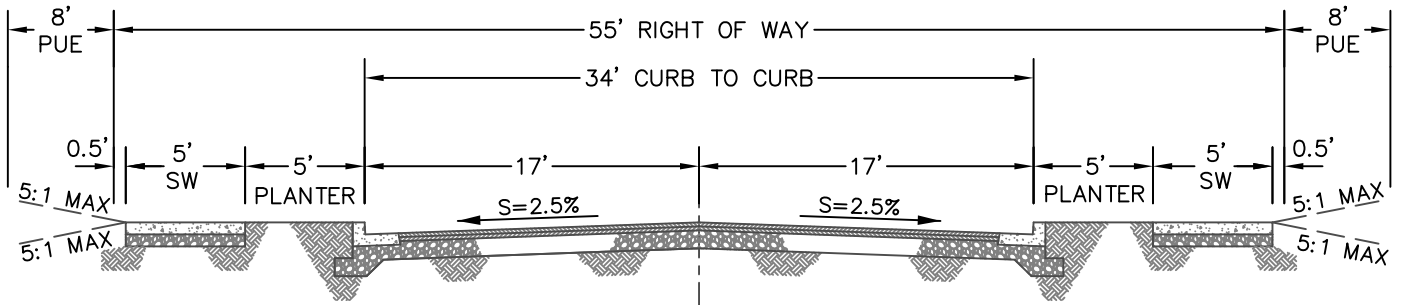
LOCAL STREET SECTIONS

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 100



NEIGHBORHOOD STREET SECTION
 PARKING BOTH SIDES
 NTS

NOTES:

1. PLANTER STRIPS ARE REQUIRED.
2. PAVED WIDTH AND PLANTER STRIP ARE MEASURED TO FACE OF CURB.
3. STREET TREES AND STREET LIGHTS ARE REQUIRED AND SHALL BE LOCATED WITHIN THE PLANTER STRIP.
4. MAX SLOPE BEYOND PUE IS 2:1.

**CITY OF
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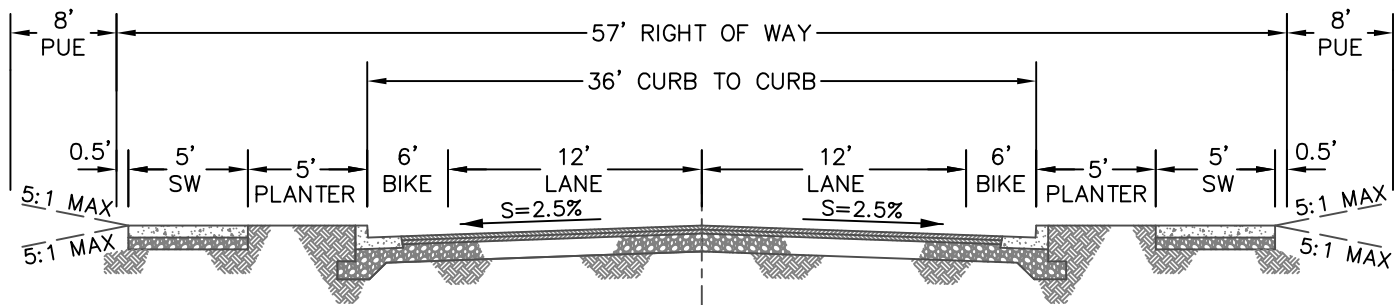
NEIGHBORHOOD STREET SECTIONS

PE: CE

BY: PB

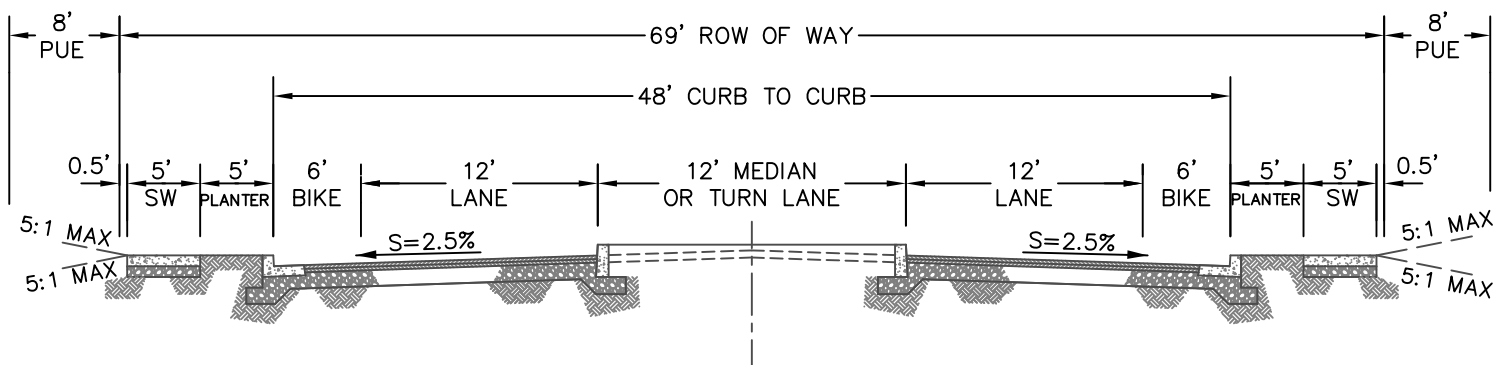
DATE: 6-15-15

DWG NO: 105



COLLECTOR 2-LANE
STREET SECTION
NTS

NOTE: NO PARKING
PERMITTED WITHIN THIS
ROADWAY SECTION.



COLLECTOR 3-LANE
STREET SECTION
NTS

NOTE: NO PARKING
PERMITTED WITHIN THIS
ROADWAY SECTION.

NOTES:

1. PLANTER STRIPS ARE REQUIRED.
2. PAVED WIDTH AND PLANTER STRIP ARE MEASURED TO FACE OF CURB.
3. STREET TREES AND STREET LIGHTS ARE REQUIRED AND SHALL BE LOCATED WITHIN THE PLANTER STRIP.
4. MAX SLOPE BEYOND PUE IS 2:1.
5. TWO LANE CROSS SECTION MAY ONLY BE CONSIDERED WHERE ENVIRONMENTAL CONSTRAINTS ARE PRESENT TO LIMIT THE IMPACTS OF THE ROADWAY AND WHERE A CENTER LEFT TURN LANE IS NOT REQUIRED. USE OF THE TWO LANE COLLECTOR CROSS SECTION REQUIRES CITY ENGINEER'S APPROVAL.
6. COLLECTOR CROSS SECTIONS WITH ON-STREET PARKING MAY BE CONSIDERED ON ROADWAYS LOCATED EAST OF SE 162ND AVENUE WHEN THE FRONTAGE PROPERTY IS ZONED RESIDENTIAL, MULTI-FAMILY RESIDENTIAL OR COMMERCIAL. ON-STREET PARKING IS NOT ALLOWED WITHIN 100 FEET OF AN INTERSECTIONS OR WHERE THE POSTED SPEED LIMIT IS OVER 30 MPH. ON STREET PARKING REQUIRES A MINIMUM 8 FT WIDE PARKING SPACE BETWEEN THE BIKE LANE AND CURB.

**CITY OF
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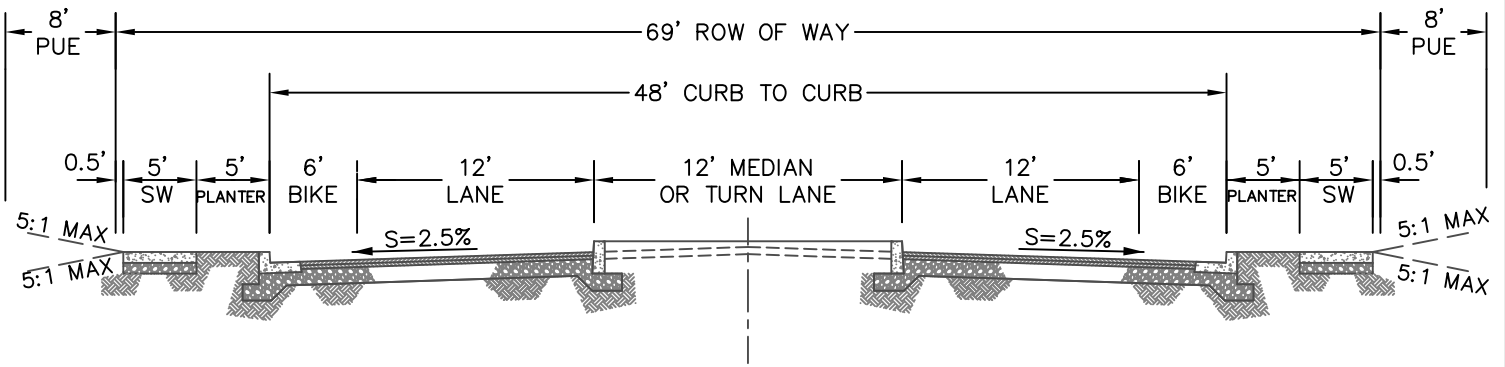
COLLECTOR STREET SECTIONS

PE: CE

BY: PB

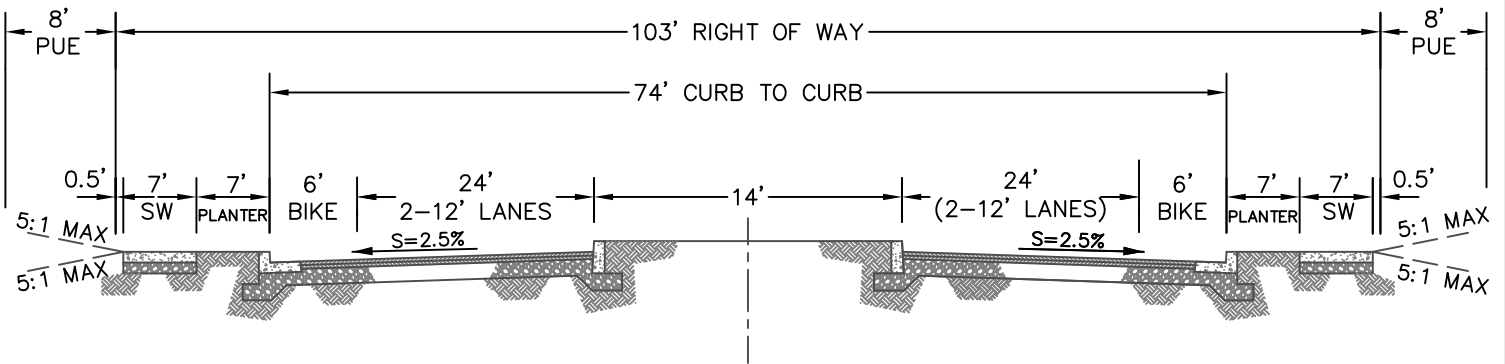
DATE: 6-15-15

DWG NO: 110



MINOR ARTERIAL 3-LANE
STREET SECTION
NTS

NOTE: NO PARKING
PERMITTED WITHIN THIS
ROADWAY SECTION.



MAJOR ARTERIAL 5-LANE
STREET SECTION
NTS

NOTE: NO PARKING
PERMITTED WITHIN THIS
ROADWAY SECTION.

NOTES:

1. PLANTER STRIPS ARE REQUIRED.
2. PAVED WIDTH AND PLANTER STRIP ARE MEASURED TO FACE OF CURB.
3. STREET TREES AND STREET LIGHTS ARE REQUIRED AND SHALL BE LOCATED WITHIN THE PLANTER STRIP.
4. MAX SLOPE BEYOND PUE IS 2:1.
5. ALONG COMMERCIAL ZONING FRONTAGE AND MAJOR TRANSIT STOPS, THE SIDEWALK AND PLANTER STRIP WIDTH MAY BE COMBINED TO PROVIDE SIDEWALKS AND STREET TREE WELLS.

**CITY OF
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ENGINEERING DIVISION

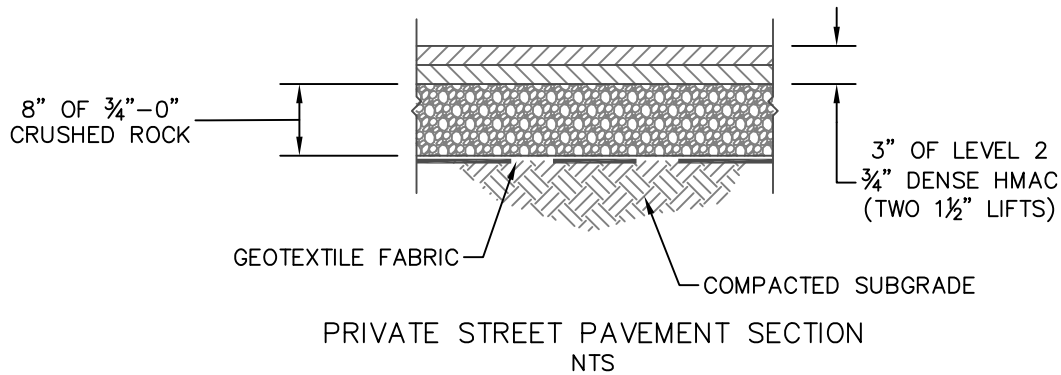
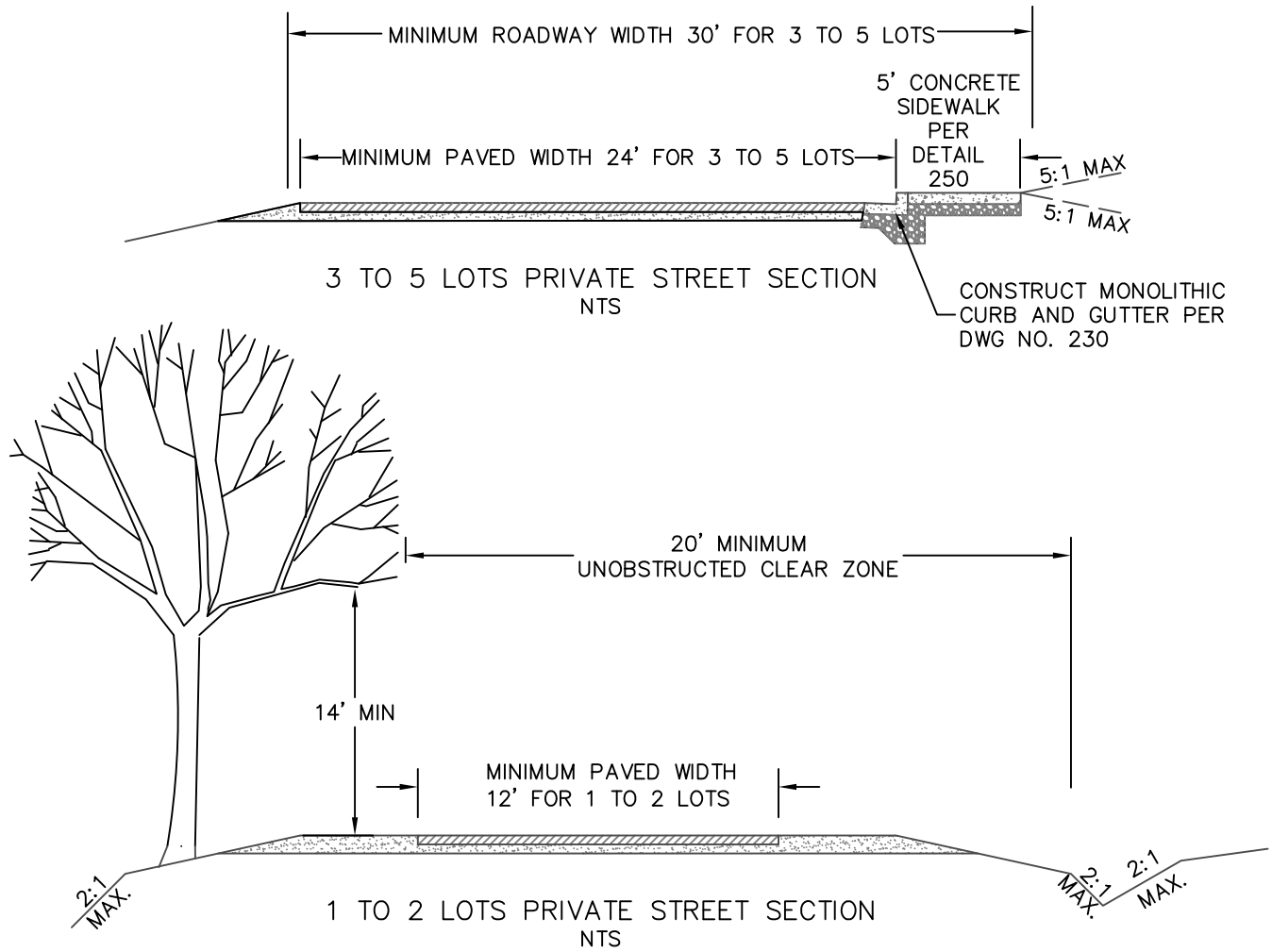
ARTERIAL STREET SECTIONS

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 115



NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO CURRENT CITY STANDARDS.
2. PRIVATE ACCESS ROADS SERVE A MAXIMUM OF 5 LOTS.
3. ALL PRIVATE ACCESS ROADS SHALL MEET ALL CURRENT CLACKAMAS COUNTY FIRE DISTRICT DEVELOPMENT CODES INCLUDING REQUIREMENTS FOR GRADES, LENGTH, WIDTH, SEPARATION, SIGNAGE, AND TURNING RADII.

**CITY OF
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ENGINEERING DIVISION

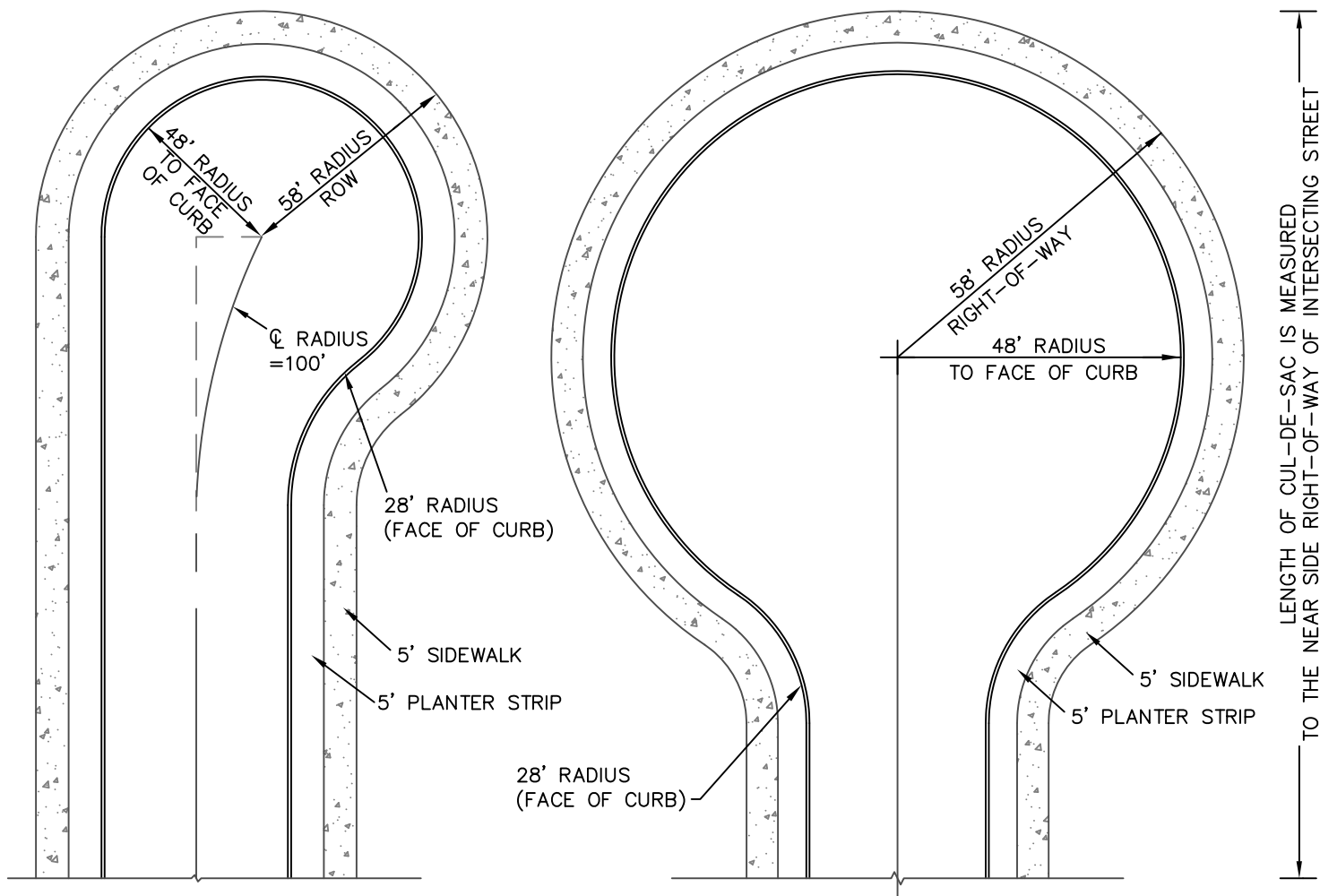
PRIVATE STREET SECTIONS

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 120



NOTES:

1. SEE LOCAL STREET SECTION DETAIL 100 FOR RIGHT-OF-WAY AND PAVED WIDTH STANDARDS.
2. A PLANTER STRIP IS REQUIRED AROUND ALL CUL-DE-SACS.
3. PAVED WIDTH AND PLANTER STRIP ARE MEASURED TO FACE OF CURB.
4. STREET TREES AND STREET LIGHTS ARE REQUIRED AND SHALL BE LOCATED WITHIN THE PLANTER STRIP.
5. LENGTH OF CUL-DE-SAC SHALL NOT EXCEED 800 FEET.

**CITY OF
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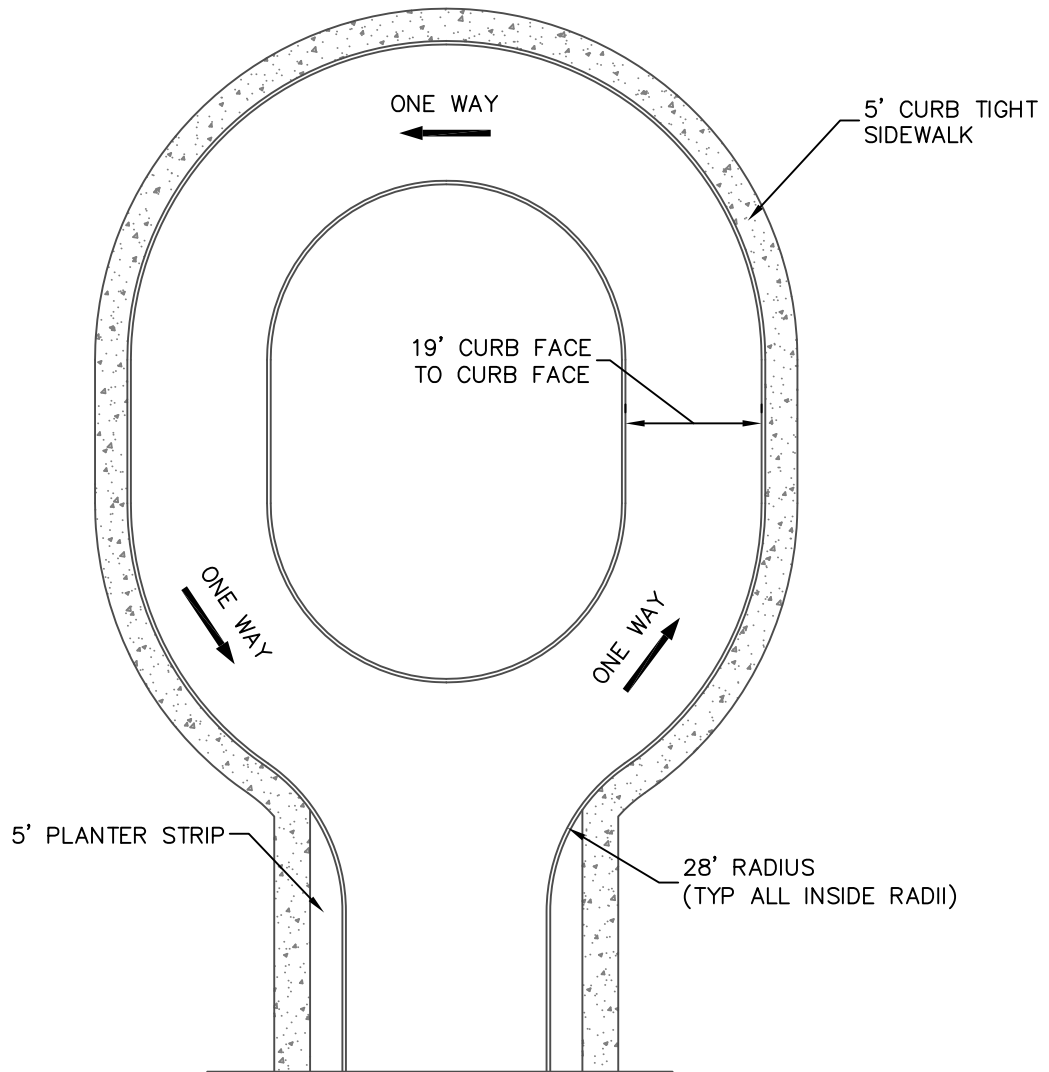
CUL-DE-SACS

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 140



NOTES:

1. SEE LOCAL STREET SECTION DETAIL 100 FOR RIGHT-OF-WAY AND PAVED WIDTH STANDARDS.
2. LOOP DIMENSIONS SHALL ADEQUATELY ACCOMMODATE EMERGENCY VEHICLES.
3. NO ON-STREET PARKING WITHIN LOOP.
4. THE INTERIOR OF THE LOOP SHALL BE LANDSCAPED AND BE A SEPARATE TRACT OWNED AND MAINTAINED BY HOMEOWNERS ASSOCIATION (HOA).
5. LENGTH FROM BEGINNING OF LOOP TURNAROUND TO INTERSECTION SHALL NOT EXCEED 800 FEET.

**CITY OF
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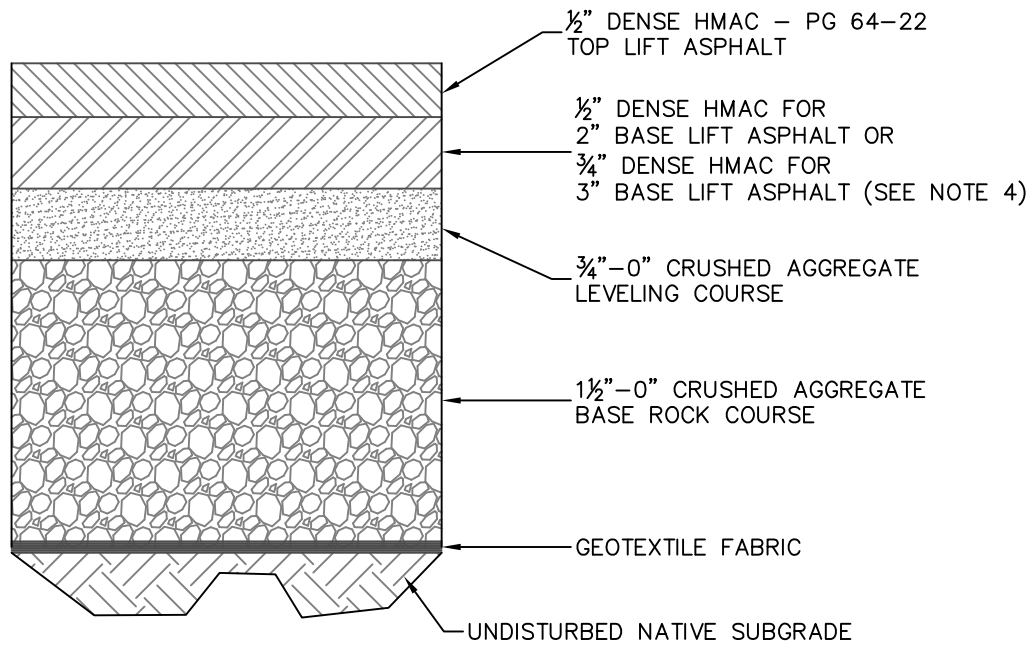
LOOP TURNAROUND

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 145



**PAVEMENT SECTION CHART
COMPONENT THICKNESS (INCHES)**

STREET FUNCTIONAL CLASSIFICATION	LEVEL HMAC	BINDER GRADE	TOP LIFT HMAC THICKNESS	BASE LIFT HMAC THICKNESS	LEVELING COURSE THICKNESS	BASE ROCK COURSE THICKNESS	GEOTEXTILE FABRIC REQUIRED
LOCAL	2	PG 64–22	2"	2"	2"	8"	YES
NEIGHBORHOOD	3	PG 64–22	2"	2"	2"	9"	YES
COLLECTOR	3	PG 64–22	2"	3"	3"	9"	YES
ARTERIAL	3	PG 64–22	2"	3"	4"	10"	YES

NOTES:

- MATERIALS AND PLACEMENT OF THE HOT MIXED ASPHALT CONCRETE (HMAC) SHALL CONFORM TO THE REQUIREMENTS DELINEATED IN SECTION 00744 OF THE ODOT/APWA, OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, EXCEPT AS MODIFIED BY THE CITY AND/OR APPROVED BY CITY ENGINEER.
- THE TOP LIFT OF HMAC SHALL BE PLACED PRIOR TO CITY FINAL ACCEPTANCE OF PUBLIC INFRASTRUCTURE IMPROVEMENTS.
- CRUSHED AGGREGATE USED FOR BASE ROCK AND LEVELING COURSE SHALL CONFORM TO THE REQUIREMENTS DELINEATED IN SECTION 02630 – BASE AGGREGATE, OF THE ODOT/APWA, OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- $\frac{1}{2}$ " DENSE HMAC MAY BE USED IN-LIEU-OF $\frac{3}{4}$ " DENSE HMAC FOR THE BASE LIFT OF ASPHALT.
- PAVEMENT DESIGN SHALL BE BASED ON SITE SPECIFIC CONDITIONS. THE ABOVE PAVEMENT SECTIONS REPRESENT THE MINIMUM THICKNESS AFTER COMPACTION

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

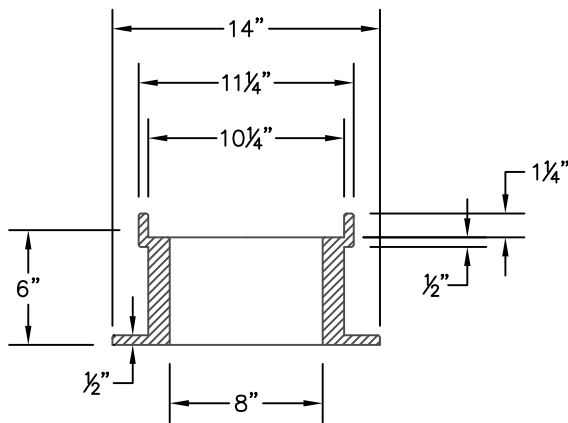
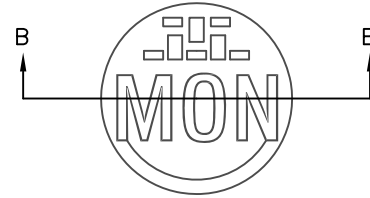
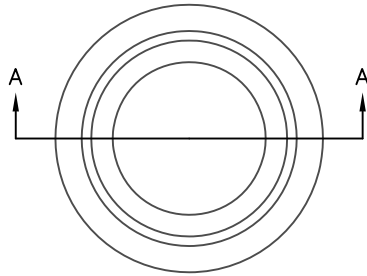
PAVEMENT SECTIONS

PE: CE

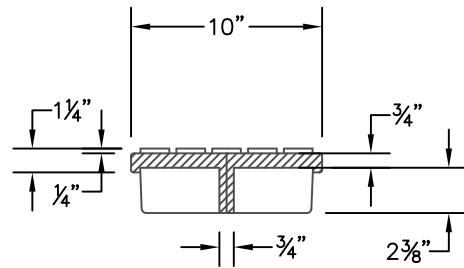
BY: PB

DATE: 6–15–15

DWG NO: 160



SECTION A -A
WEIGHT 52 LBS.



SECTION B -B
WEIGHT 25 LBS.

NOTES:

1. MONUMENT BOXES ARE REQUIRED FOR ALL PUBLIC LAND CORNER MONUMENTS THAT FALL WITHIN PAVED AREAS AS WELL AS FOR CENTERLINE MONUMENTS.
2. 8" BOXES ARE ACCEPTABLE FOR STREETS WITH SPEEDS LESS THAN 35 MPH.
3. 12" BOXES ARE REQUIRED FOR STREETS WITH SPEEDS GREATER THAN 35 MPH.

**CITY OF
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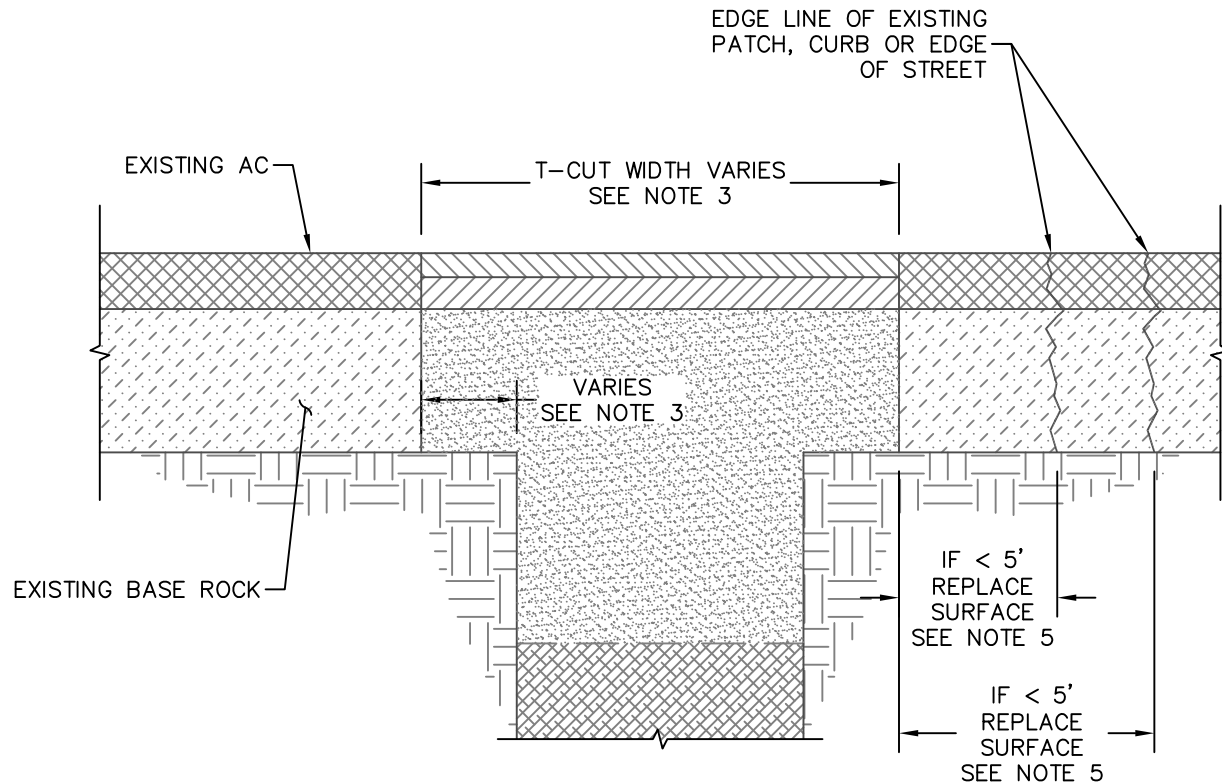
MONUMENT BOXES

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 170



CROSS-SECTION

NOTES:

1. THIS DRAWING APPLIES TO TRENCH CUTS AND OTHER KINDS OF STREET CUTS.
2. SEE DETAIL 160 FOR TYPICAL STREET PAVEMENT SECTION. SEE DWG NO. 205 AND 210 FOR TRENCH RESTORATION INFORMATION.
3. T-CUT WIDTH:
 LOCAL STREETS: T-CUT WIDTH 12" MIN EACH SIDE PLUS TRENCH WIDTH*
 COLLECTOR/NEIGHBORHOOD/ARTERIAL STREETS: T-CUT WIDTH 36" MIN EACH SIDE PLUS TRENCH WIDTH
 *IF TRENCH IS 12" WIDE OR LESS, A T-CUT MAY BE 6" MIN EACH SIDE PROVIDING THERE IS ENOUGH ROOM AVAILABLE FOR USE OF A PLATE COMPACTOR.
4. THERE IS A 5 YEAR MORATORIUM FOR STREET CUTS ON NEWLY PAVED STREETS.
5. IF NEW EDGE OF PAVEMENT IS LESS THAN 5 FT FROM ANOTHER PATCH, CURB OR EDGE OF STREET, REPLACE THE PAVEMENT IN BETWEEN. REMOVE AND REPLACE ANY PRE-EXISTING PATCHES THAT ARE LOCATED ENTIRELY WITHIN THE 5 FT.
6. NEW EDGE OF PAVEMENT (EDGE LINE) SHALL NOT LIE IN A WHEEL PATH. WIDTH OF T-CUT SHALL BE WIDENED WHERE NECESSARY TO MOVE THE EDGE LINE OUT OF THE WHEEL PATH SO THAT BOTH CONDITIONS BELOW ARE SATISFIED;
 (A) NEW EDGE OF PAVEMENT IS AT LEAST 12" FROM THE WHEEL PATH AND
 (B) NEW EDGE OF PAVEMENT COMPLIES WITH NOTES 3 AND 5.

**CITY OF
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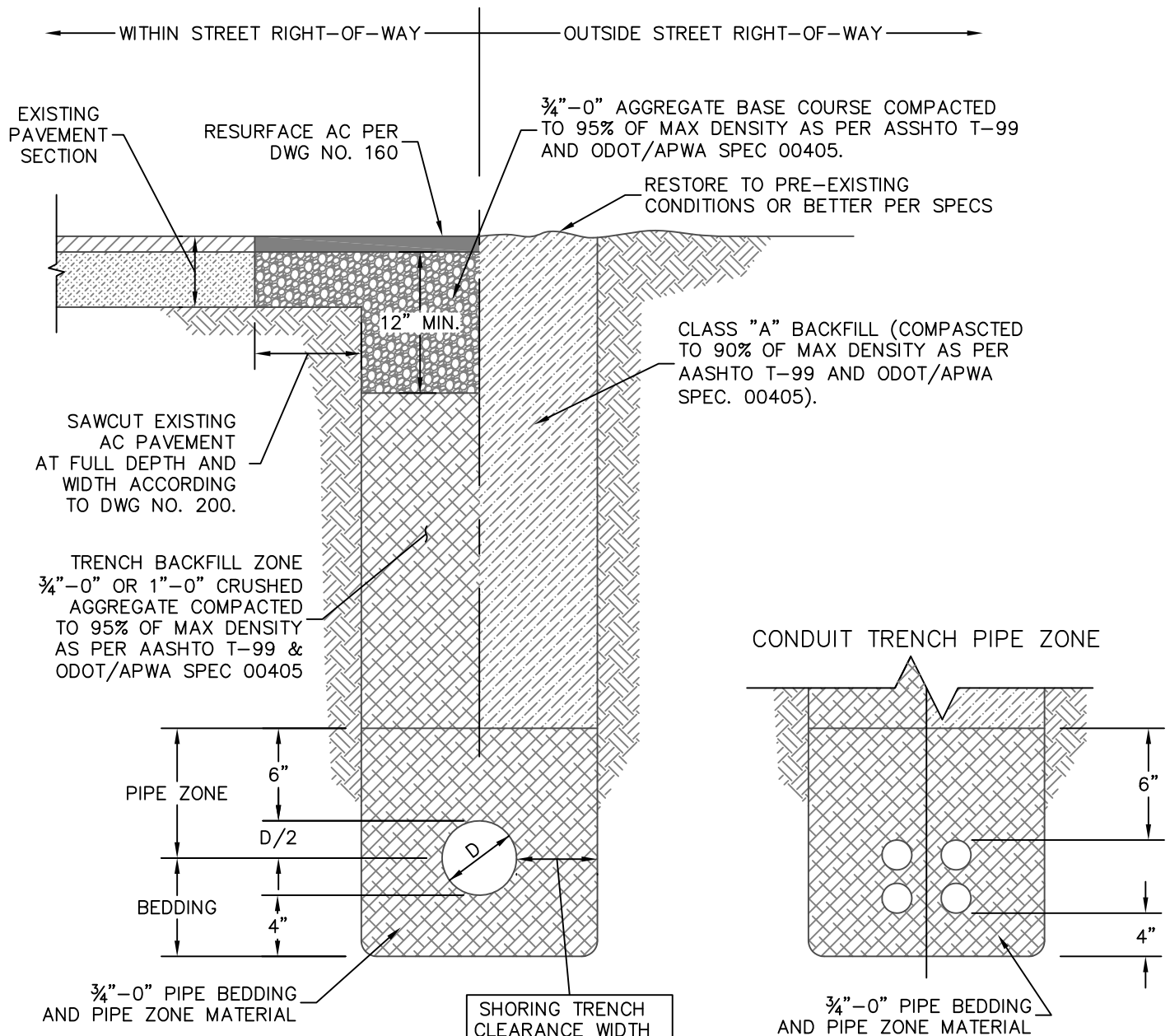
PAVEMENT T-CUT

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 200



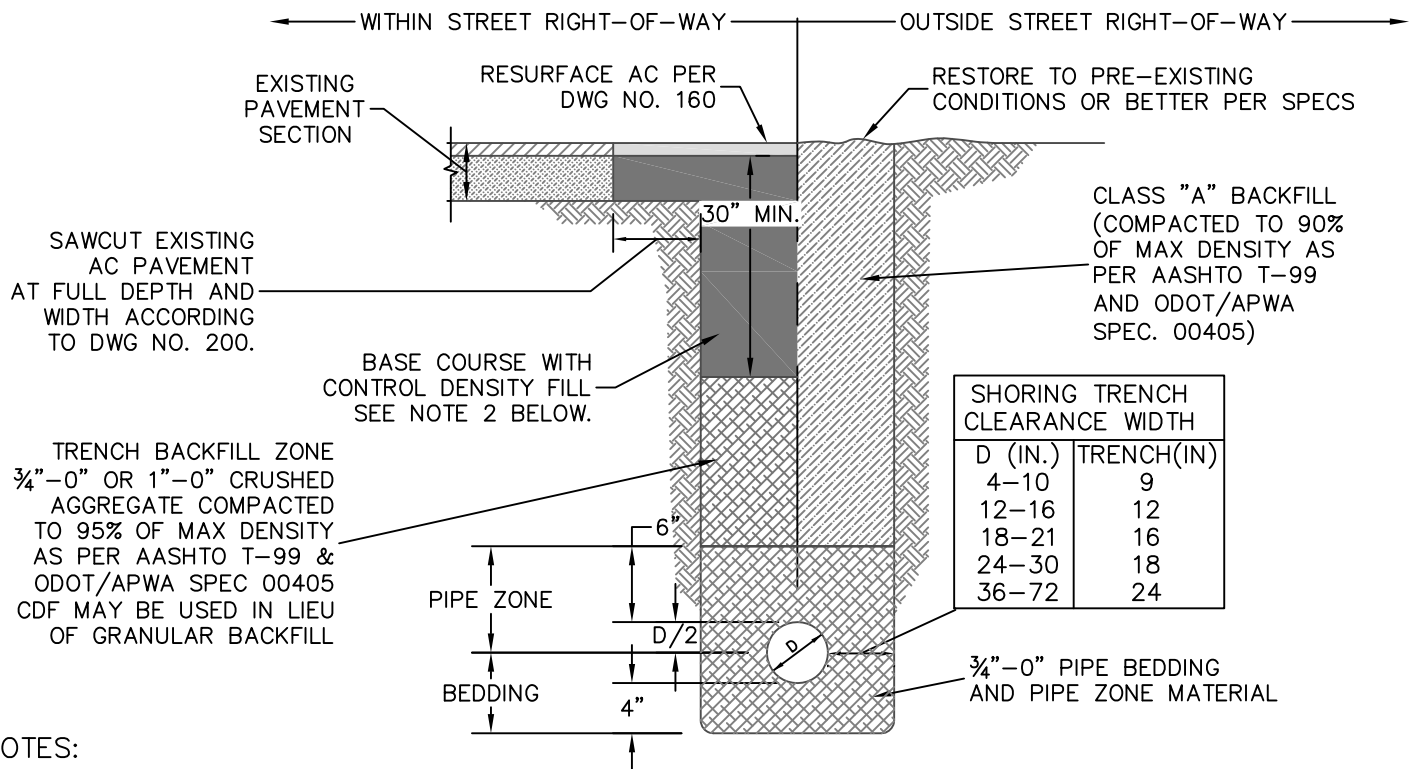
SHORING TRENCH CLEARANCE WIDTH	
D (IN.)	TRENCH(IN)
4-10	9
12-16	12
18-21	16
24-30	18
36-72	24

NOTES:

1. SAWCUT EDGES TO BE TACKED WITH EMULSIFIED ASPHALT.
2. ASPHALT JOINTS SHALL BE SAND SEALED WITH CRS-1 OR CRS-2 EMULSIFIED ASPHALT OR EQUIVALENT.
3. CONTROL DENSITY FILL SHALL BE USED ON COLLECTOR AND ARTERIAL STREETS. REFER TO CITY DETAIL 210.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION		TRENCH RESTORATION WITH GRANULAR BACKFILL			
PE: CE	BY: PB	DATE: 7-22-15	DWG NO: 205		



NOTES:

1. SAWCUT EDGES TO BE TACKED WITH EMULSIFIED ASPHALT
2. ASPHALT JOINTS SHALL BE SAND SEALED WITH CRS-1 OR CRS-2 EMULSIFIED ASPHALT OR EQUIVALENT.
3. CONTROL DENSITY FILL (CDF) CONSISTS OF A MIXTURE OF PORTLAND CEMENT, FLY ASH, AGGREGATES, WATER AND ADMIXTURES PROPORTIONED TO PROVIDE A NON-SEGREGATING, SELF-CONSOLIDATING, FREE-FLOWING MATERIAL WHICH WILL RESULT IN A HARDENED, DENSE, NON-SETTLING FILL PRODUCING UNCONFINED COMPRESSIVE 28 DAY STRENGTH FROM 50 PSI TO A MAXIMUM OF 150 PSI.
 - 3.1. CONTRACTOR WILL PROVIDE BATCH WEIGHTS SHOWING THE AMOUNTS OF ALL INGREDIENTS IN THE MIX, BATCH TIME, AND THE TOTAL AMOUNT OF THE BATCH.
 - 3.2. CDF SHALL BE PERFORMANCE BASED AND MEET THE FOLLOWING CRITERIA:
 - TYPE F FLY ASH: 200 LB MIN, TYPE I OR II CEMENT: 50 LB MIN
 - SETTLING SHALL BE LESS THAN 1/8" PER FT DEPTH
 - FINE AGGREGATE (LESS THAN 3/8") SHALL BE USED
 - CONCRETE UNIT WEIGHT SHALL BE 100 PCF MIN
 - 3.3. CDF SHALL NOT BE PLACED ON FROZEN GROUND. DURING PLACEMENT TEMPERATURE MUST BE AT LEAST 34 DEGREES F. AND RISING. CDF PLACING SHALL STOP WHEN TEMPERATURE IS 38 DEGREES F OR LESS AND FALLING.
 - 3.4. TRENCH SECTIONS TO BE FILLED WITH CDF SHALL BE CONTAINED AT EITHER END OF THE TRENCH SECTION BY BULKHEADS OR EARTH FILL.
 - 3.5. DURING CDF CURE TIME THE CONTRACTOR SHALL INSTALL STEEL SHEETS OR OTHER PROTECTIVE DEVICES TO ALLOW FOR THE PASSAGE AND SAFETY OF TRAFFIC AND SO NO LOAD IS TRANSFERRED TO THE CDF.
 - 3.6. CONTRACTOR SHALL ALLOW FOR A MINIMUM 48 HOUR CURE TIME FOR CDF PRIOR TO PLACING ASPHALT.
 - 3.7. 30 INCH DEPTH OF CDF MAY BE REDUCED IF CONFLICTING WITH PIPE ZONE BACKFILL.

**CITY OF
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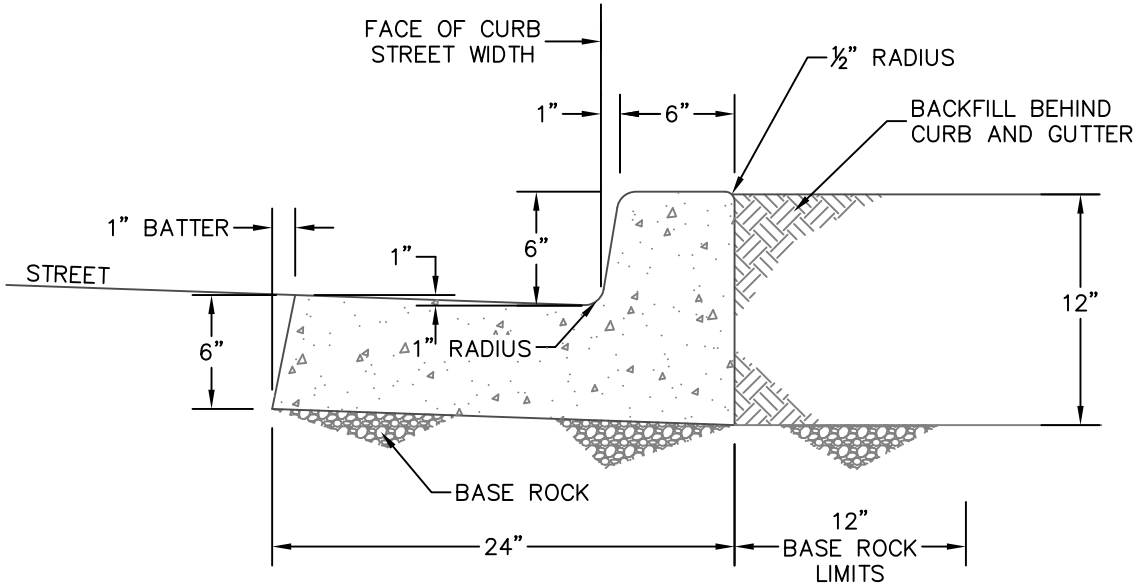
**TRENCH RESTORATION
WITH CDF**

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 210



NOTES:

1. CONCRETE SHALL BE COMMERCIAL MIX WITH A 28-DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
2. CONSTRUCT EXPANSION JOINTS AT 200' MAXIMUM SPACING, AND AT POINTS OF TANGENCY, AND AT ENDS OF EACH DRIVEWAY.
3. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER NOT LESS THAN ½" WIDE AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00759.
4. CONTRACTION JOINTS SHALL HAVE:
 - A. SPACING OF NOT MORE THAN 15 FEET.
 - B. DEPTH OF JOINT OF AT LEAST 1½".
5. BASE ROCK SHALL BE ¾"-0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T-99. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 4", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.
6. FOR CURB AND GUTTER REQUIREMENTS ON SHED AND SUPERELEVATED ROAD SECTIONS, REVERSE THE GUTTER PAN SLOPE SO THAT THERE IS A 1" DROP FROM FACE OF CURB TO THE EDGE OF THE GUTTER PAN.
7. AT CATCH BASIN INLETS TRANSITION GUTTER LINE TO MATCH CATCH BASIN OVER A 3' DISTANCE.
8. WEEP HOLES ARE NOT ALLOWED THROUGH THE CURB.

**CITY OF
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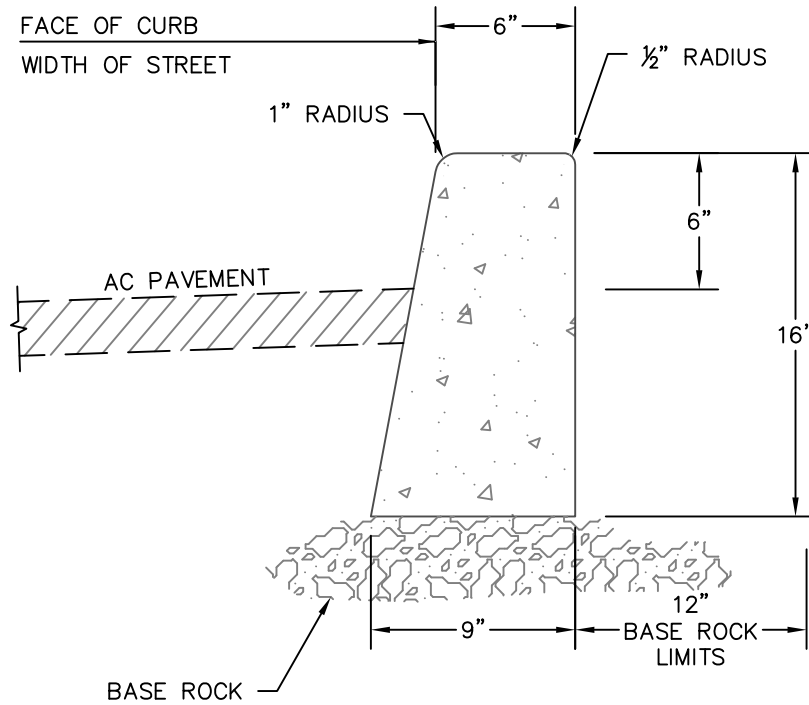
MONOLITHIC CURB AND GUTTER

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 230



NOTES:

1. VERTICAL CURB MAY BE USED AT MEDIANS AND MEDIAN PLANTING STRIPS, OR IN REPLACEMENT OF DAMAGED EXISTING VERTICAL CURBS.
2. CONCRETE SHALL BE COMMERCIAL MIX WITH A 28-DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
3. CONSTRUCT EXPANSION JOINTS AT 200' MAXIMUM SPACING, AND AT POINTS OF TANGENCY, AND AT ENDS OF EACH DRIVEWAY.
4. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER NOT LESS THAN 1/2" WIDE AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00759.
5. CONTRACTION JOINTS SHALL HAVE:
 - A. SPACING OF NOT MORE THAN 15 FEET.
 - B. DEPTH OF JOINT OF AT LEAST 1 1/2".
6. BASE ROCK SHALL BE 3/4"-0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T-99. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 4", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.
7. WEEP HOLES ARE NOT ALLOWED THROUGH THE CURB.

**CITY OF
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ENGINEERING DIVISION

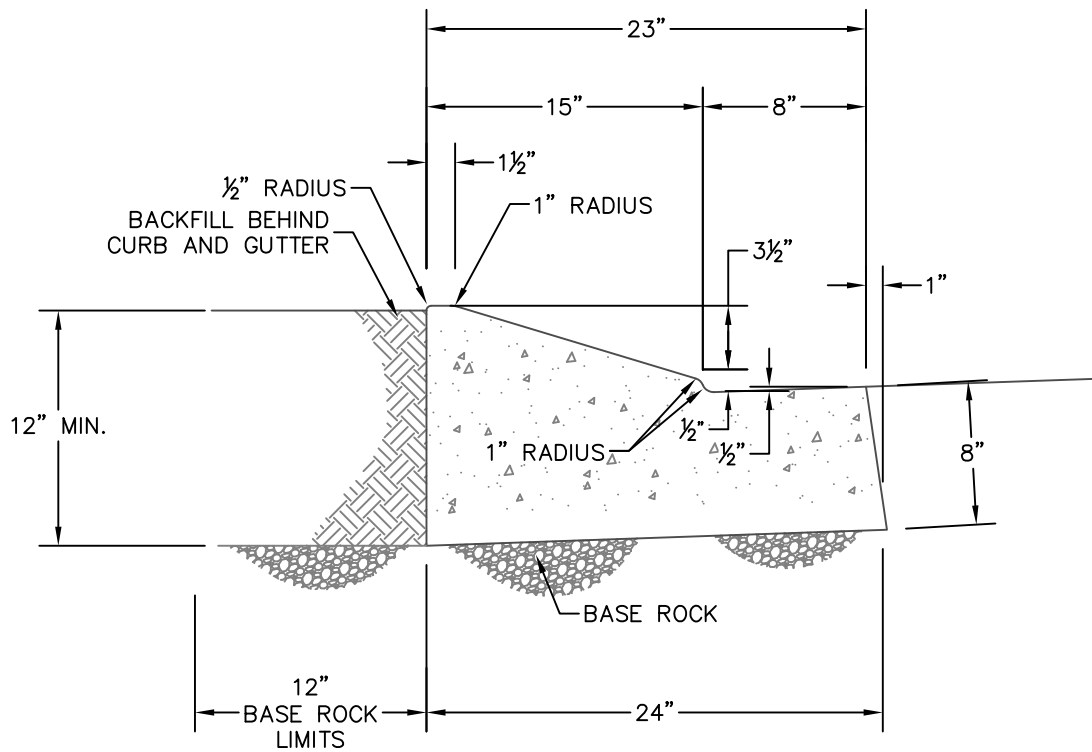
VERTICAL CURB

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 235



NOTES:

1. MOUNTABLE CURB MAY BE USED IN CUL-DE-SACS, OR IN REPLACEMENT OF DAMAGED EXISTING MOUNTABLE CURBS.
2. CONCRETE SHALL BE COMMERCIAL MIX WITH A 28-DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
3. CONSTRUCT EXPANSION JOINTS AT 200' MAXIMUM SPACING, AND AT POINTS OF TANGENCY, AND AT ENDS OF EACH DRIVEWAY.
4. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER NOT LESS THAN 1/2" WIDE AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00759.
5. CONTRACTION JOINTS SHALL HAVE:
 - A. SPACING OF NOT MORE THAN 15 FEET.
 - B. DEPTH OF JOINT OF AT LEAST 1 1/2".
6. BASE ROCK SHALL BE 3/4"-0", COMPACTED TO 95% OF MAXIMUM DENSITY PER AASHTO T-99. BASE ROCK SHALL BE TO SUBGRADE OF STREET STRUCTURES OR 4", WHICHEVER IS GREATER, AND SHALL EXTEND 12" BEHIND CURB.
7. AT CATCH BASIN INLETS TRANSITION GUTTER LINE TO MATCH CATCH BASIN OVER A 3' DISTANCE.
8. WEEP HOLES ARE NOT ALLOWED THROUGH THE CURB.

**CITY OF
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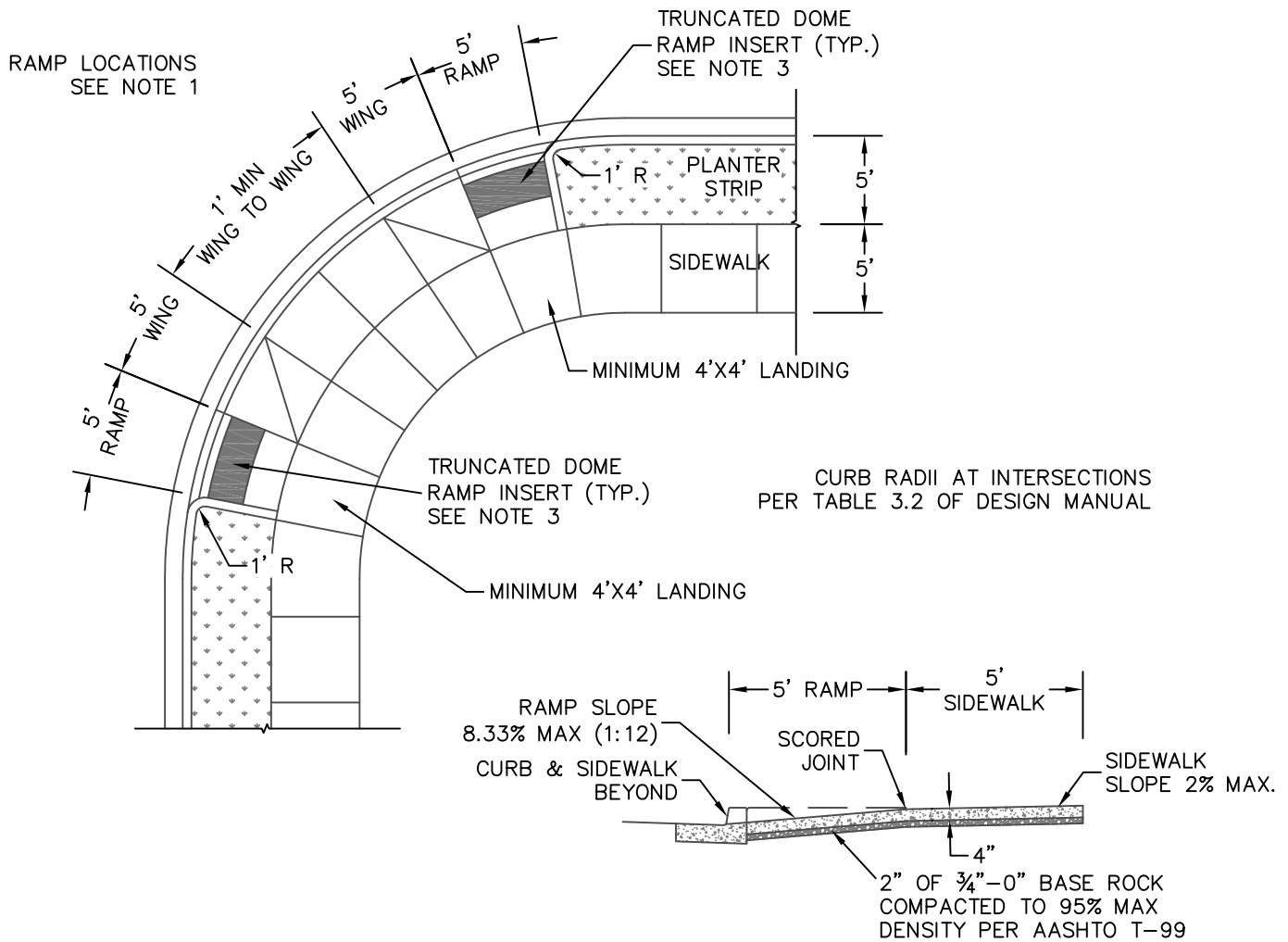
MOUNTABLE CURB AND GUTTER

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 240



CURB RAMP SECTION

NOTES:

1. PROJECT ENGINEER SHALL USE THIS DRAWING AS A GUIDE FOR DESIGNING RAMPS AND SHALL PREPARE A SITE SPECIFIC DRAWING FOR EACH RAMP.
2. SIDEWALK RAMP SHALL MEET CURRENT ADA STANDARDS. CONSTRUCT ALL RAMPS PERPENDICULAR TO THE CURB.
3. DETECTABLE WARNING SHALL BE TRUNCATED DOME TYPE, 24" LONG IN DIRECTION OF TRAVEL AND FULL WIDTH OF RAMP, WITH DOMES ALIGNED ON A SQUARE GRID WITH ITS GRIDLINES PARALLEL AND PERPENDICULAR TO THE CENTERLINE OF THE RAMP. COLOR OF DETECTABLE WARNING SURFACE SHALL BE YELLOW AND CONTRAST FROM ADJACENT SURFACE.
4. CURB INLET OR CATCH BASIN SHALL NOT BE ALLOWED IN FRONT OF RAMP.
5. CONCRETE SHALL BE A COMMERCIAL MIX WITH A 28 DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
6. SCORE CONCRETE AT GRADE CHANGES, SURFACE TEXTURE CHANGES AND AT ALL OTHER POINTS SHOWN.
7. CONCRETE SURFACE SHALL HAVE BROOM FINISH, AND EDGE ALL JOINTS.

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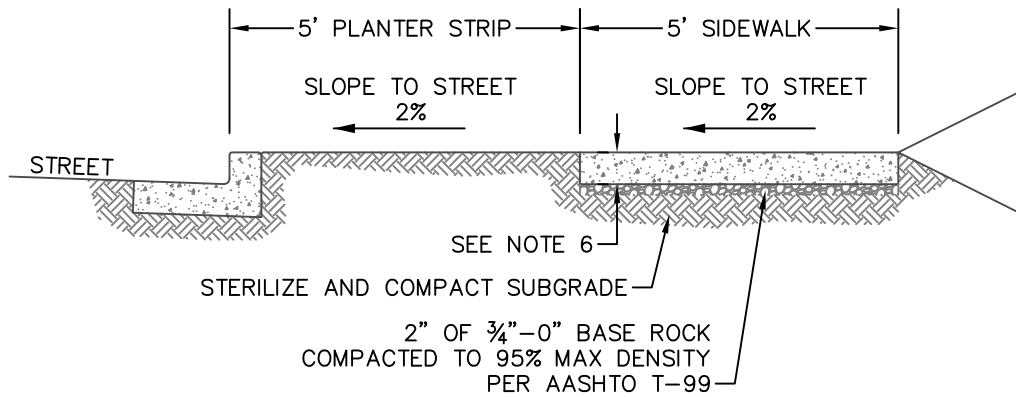
CURB RAMPS

PE: CE

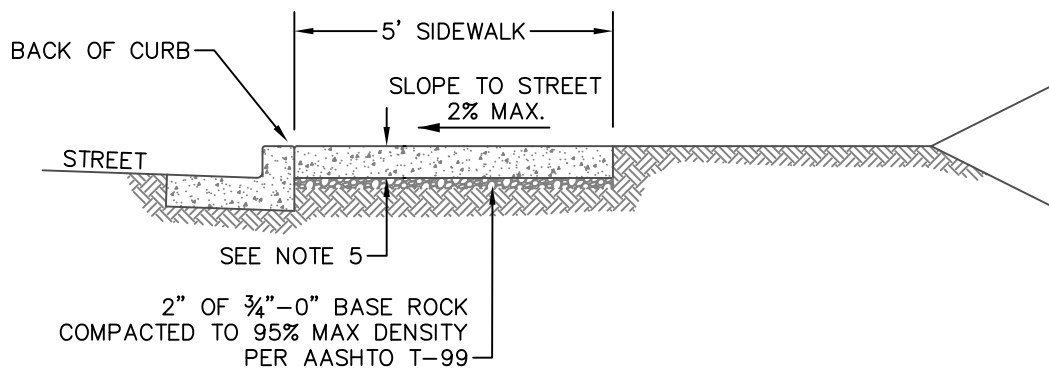
BY: PB

DATE: 6-15-15

DWG NO: 245



SIDEWALK WITH PLANTER STRIP



CURB-TIGHT SIDEWALK

NOTES:

1. CONCRETE SHALL BE A COMMERCIAL MIX WITH A 28 DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
2. SIDEWALK PANELS TO BE SQUARE (5' LONG x 5' WIDE TYP.).
4. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER NOT LESS THAN 1/2" WIDE AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00759.
5. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS.
6. SIDEWALKS SHALL HAVE A MINIMUM THICKNESS OF 6" IF MOUNTABLE CURB IS USED, OR IF SIDEWALK IS INTENDED AS A PORTION OF A DRIVEWAY. OTHERWISE SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 4".
7. CONCRETE SHALL HAVE A BROOM FINISH, ALL JOINTS SHALL BE EDGED.
8. WIDTH OF PLANTER STRIP IS MEASURED FROM FACE OF CURB. WIDTH OF A CURB-TIGHT SIDEWALK IS MEASURED FROM BACK OF CURB.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

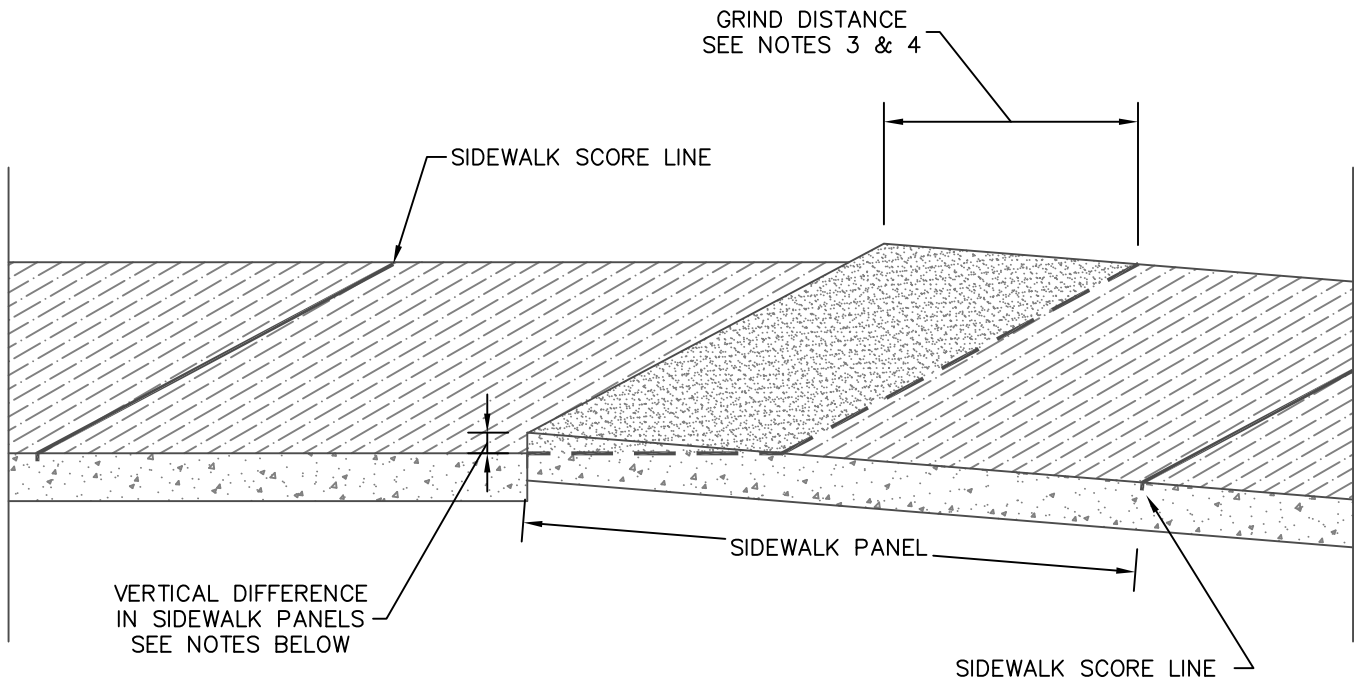
SIDEWALK

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 250



NOTES:

1. A SIDEWALK TRIP HAZARD EXISTS IF THERE IS A VERTICAL HEIGHT DIFFERENCE BETWEEN ADJACENT SIDEWALK PANEL SECTIONS.
2. IF THE SIDEWALK IS RAISED NOT MORE THAN ONE (1) INCH AND THE CONCRETE EDGES ARE SOLID, THE CONCRETE MAY BE GRIND TO REMOVE THE TRIP HAZARD.
3. FOR A TRIP HAZARD OF $\frac{1}{2}$ ", GRIND BACK A MINIMUM OF SIX (6) INCHES.
4. FOR A TRIP HAZARD OF BETWEEN $\frac{1}{2}$ " AND 1", GRIND BACK A MINIMUM OF TWELVE (12) INCHES.
5. FOR A TRIP HAZARD OF MORE THAN 1", REMOVE AND REPLACE ENTIRE PANEL IN ACCORDANCE WITH DWG NO. 250.

**CITY OF
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ENGINEERING DIVISION

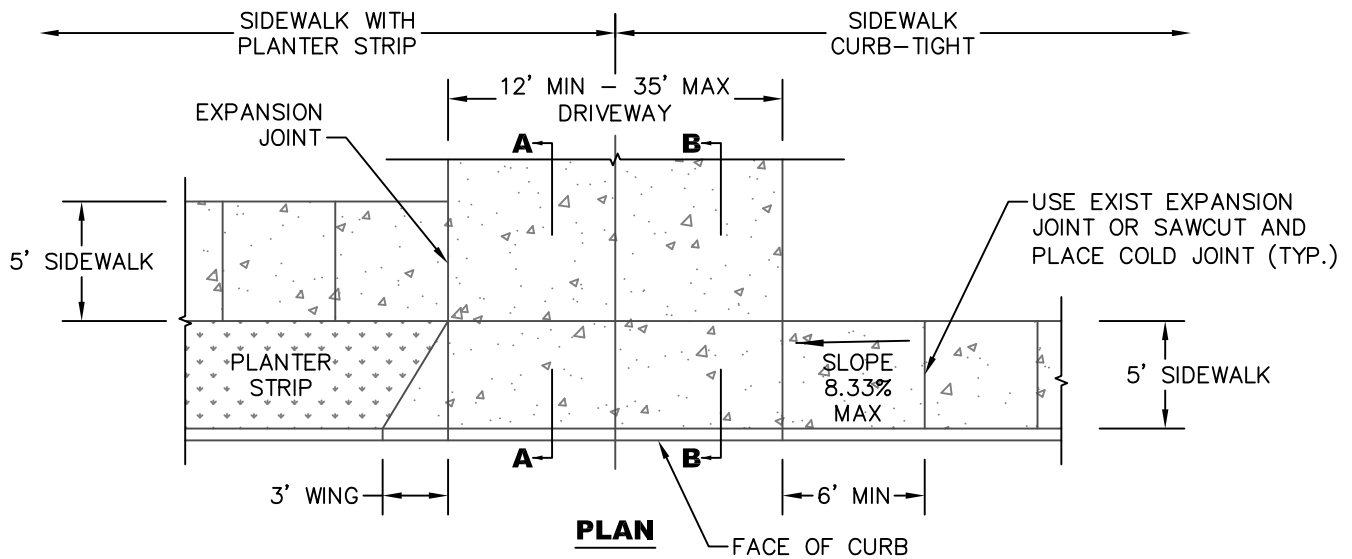
SIDEWALK TRIP HAZARD

PE: CE

BY: PB

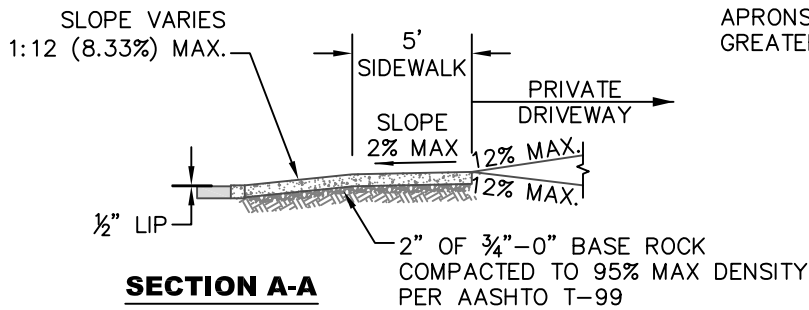
DATE: 7-22-15

DWG NO: 255

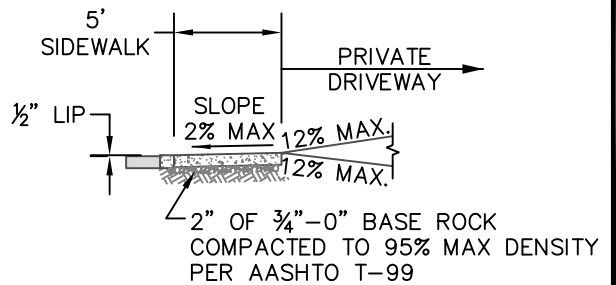


PLAN

NOTE: SECTION A-A MAY BE USED FOR CURB-TIGHT SIDEWALK DRIVEWAY APRONS IF SIDEWALK WIDTH IS 10' OR GREATER.



SECTION A-A



SECTION B-B

NOTES:

1. FOR DRIVEWAYS LESS THAN 24' WIDE MINIMUM CONCRETE THICKNESS IS 6". FOR DRIVEWAYS 24' WIDE OR GREATER MINIMUM CONCRETE THICKNESS IS 7".
2. CONCRETE SHALL BE COMMERCIAL MIX WITH A 28-DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
3. CURB JOINT SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS ALONG BACK OF CURB.
4. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER NOT LESS THAN 1/2" WIDE AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00759.
5. CONCRETE SHALL HAVE A BROOM FINISH AND EDGE ALL JOINTS.
6. IF DURING CURB REMOVAL THE GUTTER BECOMES SEPERATED FROM THE STREET SURFACE IN EXCESS OF 1/6", THEN THE GUTTER SHALL ALSO BE REMOVED AND REPLACED.
7. SLOPE OF THE DRIVEWAY MAY BE AWAY FROM THE CURB WHEN PRE-APPROVED BY THE CITY ENGINEER.
8. EDGE OF DRIVEWAY WINGS MUST BE A MINIMUM OF 10' FROM ANY FIRE HYDRANTS.

**CITY OF
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ENGINEERING DIVISION

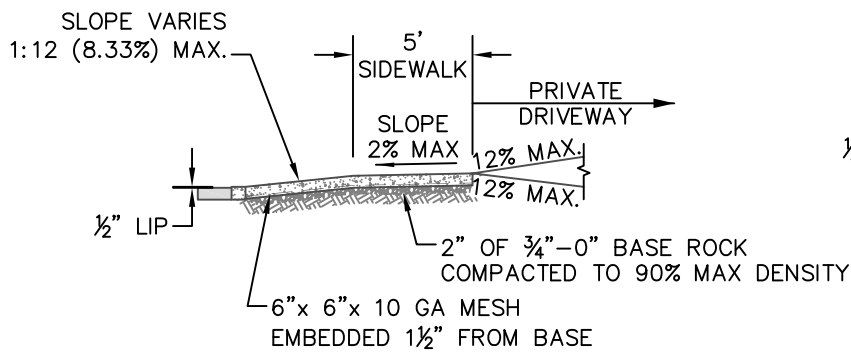
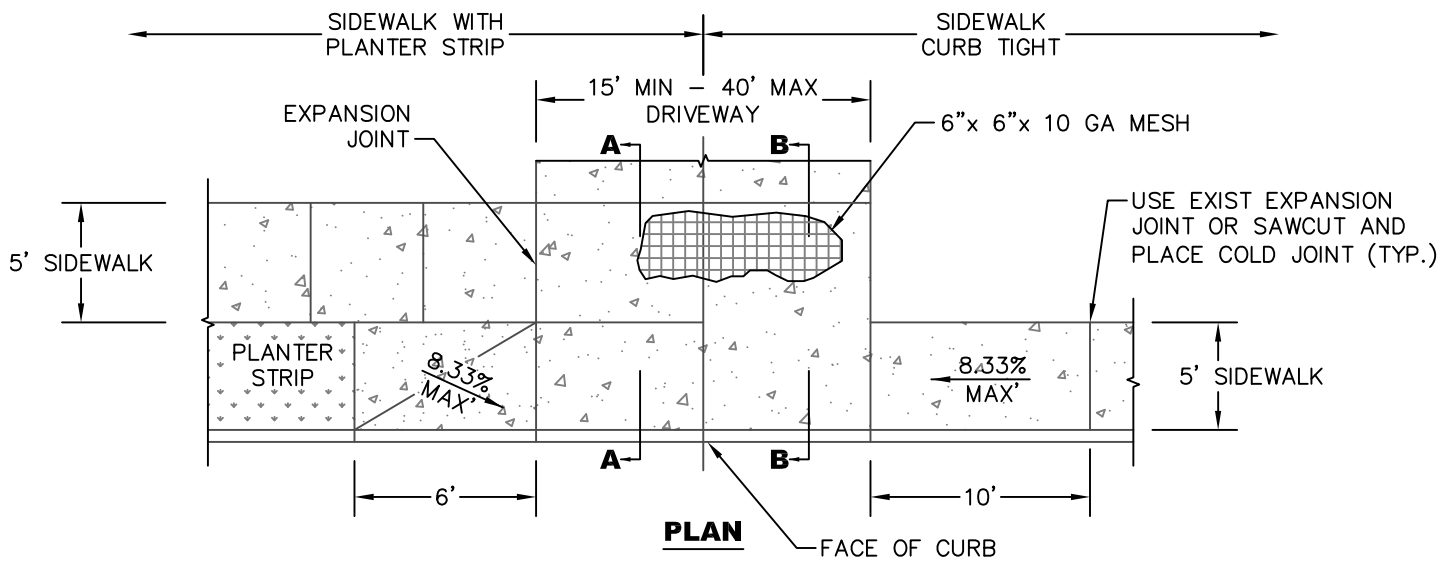
RESIDENTIAL DRIVEWAY

PE: CE

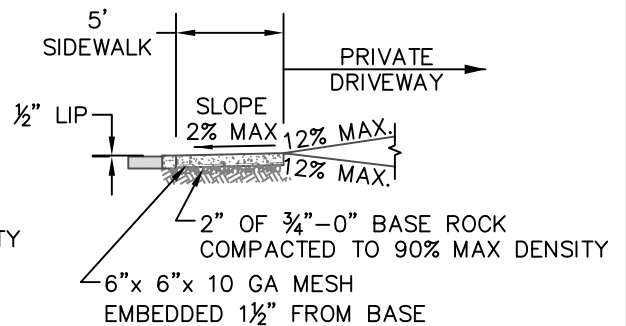
BY: PB

DATE: 6-15-15

DWG NO: 270



SECTION A-A



SECTION B-B

NOTES:

1. FOR DRIVEWAYS LESS THAN 24' WIDE MINIMUM CONCRETE THICKNESS IS 6".
FOR DRIVEWAYS 24' WIDE OR GREATER MINIMUM CONCRETE THICKNESS IS 7".
2. CONCRETE SHALL BE COMMERCIAL MIX WITH A 28-DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
3. CURB JOINT SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS ALONG BACK OF CURB.
4. EXPANSION JOINT MATERIAL SHALL BE PREFORMED FILLER NOT LESS THAN 1/2" WIDE AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00759.
5. CONCRETE SHALL HAVE A BROOM FINISH AND EDGE ALL JOINTS.
6. IF DURING CURB REMOVAL THE GUTTER BECOMES SEPERATED FROM THE STREET SURFACE IN EXCESS OF 1/16", THEN THE GUTTER SHALL ALSO BE REMOVED AND REPLACED.
7. SLOPE OF THE DRIVEWAY MAY BE AWAY FROM THE CURB WHEN PRE-APPROVED BY THE CITY ENGINEER.
8. EDGE OF DRIVEWAY WINGS MUST BE A MINIMUM OF 10' FROM ANY FIRE HYDRANTS.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

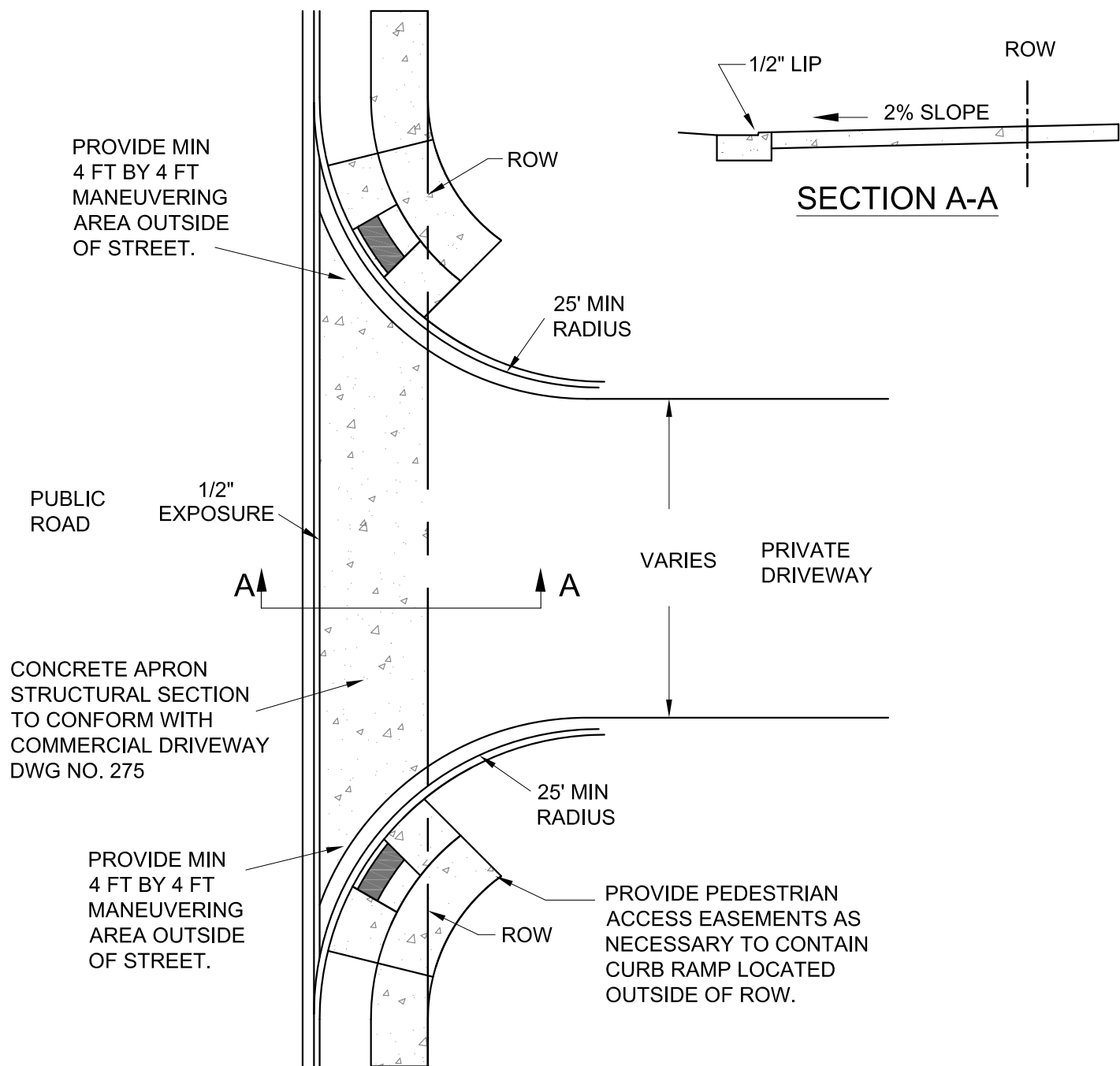
COMMERCIAL DRIVEWAY

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 275



NOTES:

1. SIDEWALK RAMP SHALL MEET CURRENT ADA STANDARDS. CONSTRUCT ALL RAMPS PERPENDICULAR TO THE CURB. SEE DWG NO. 245.
2. DETECTABLE WARNING SHALL BE TRUNCATED DOME TYPE, 24" LONG IN DIRECTION OF TRAVEL AND FULL WIDTH OF RAMP, WITH DOMES ALIGNED ON A SQUARE GRID WITH ITS GRIDLINES PARALLEL AND PERPENDICULAR TO THE CENTERLINE OF THE RAMP. COLOR OF DETECTABLE WARNING SURFACE SHALL BE YELLOW AND CONTRAST FROM ADJACENT SURFACE.
3. CURB INLET OR CATCH BASIN SHALL NOT BE ALLOWED IN FRONT OF RAMP.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

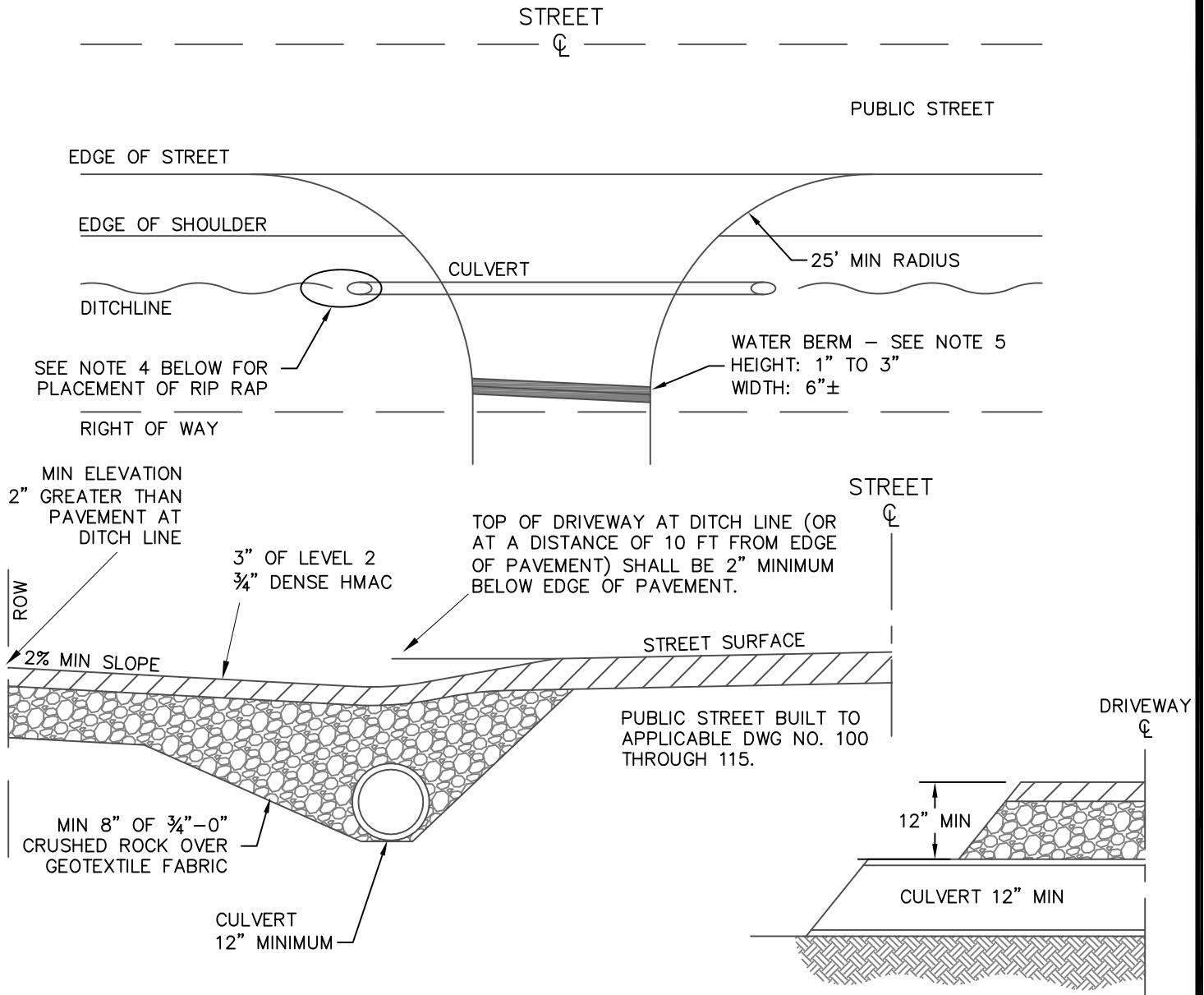
COMMERICAL DRIVEWAY WITH CURBS

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 280



NOTES:

1. LAY PIPE AT EXISTING GRADE OF DITCH.
2. PIPE SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS TO SUPPORT H-20 LOADING.
3. ACCEPTABLE PIPE MATERIAL - CONCRETE, PVC, HDPE, DUCTILE IRON.
4. PROVIDE 5'X5'X12" DEEP CLASS 10 RIP-RAP AT PIPE OUTLET WHEN THE PIPE SLOPE IS GREATER THAN 5%.
5. WATER BERM REQUIRED WHERE DRIVEWAY CONTINUES PAST ROW OF WAY LINE AT A SLOPE GREATER THAN 10%.
PURPOSE OF BERM TO TO KEEP WATER FLOW OFF OF PUBLIC ROAD.
WATER BERM REQUIRES A TACK COAT OF LIQUID ASPHALT TO BE APPLIED PRIOR TO PLACING THE BERM. CONSTRUCT IN A MANNER TO ENSURE CONTROL OF WATER FLOW INTO DITCH.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

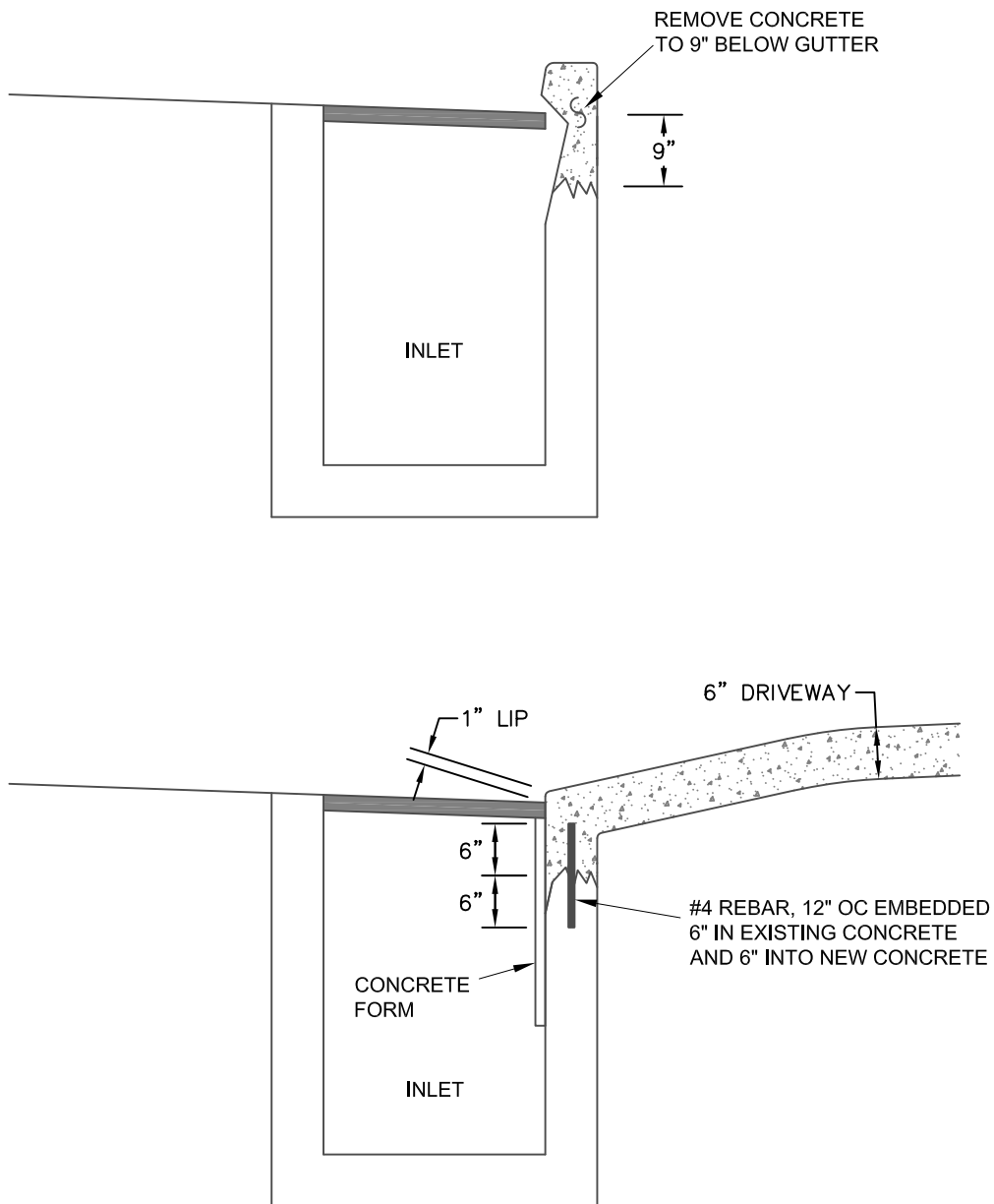
**RESIDENTIAL DRIVEWAY FOR NON
CURBED STREETS**

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 285



NOTE:

1. TO BE USED WHERE AN EXISTING CURBSIDE INLET IS LOCATED IN FRONT OF PROPOSED DRIVEWAY.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

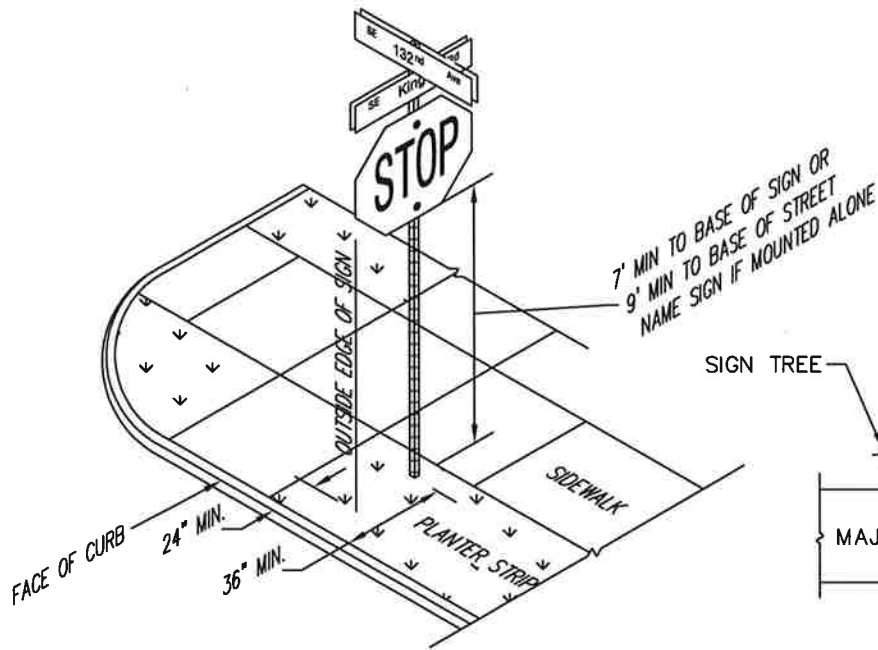
RETROFIT OF INLET AT DRIVEWAY

PE: CE

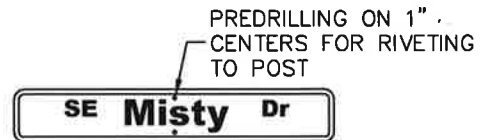
BY: PB

DATE: 6-15-15

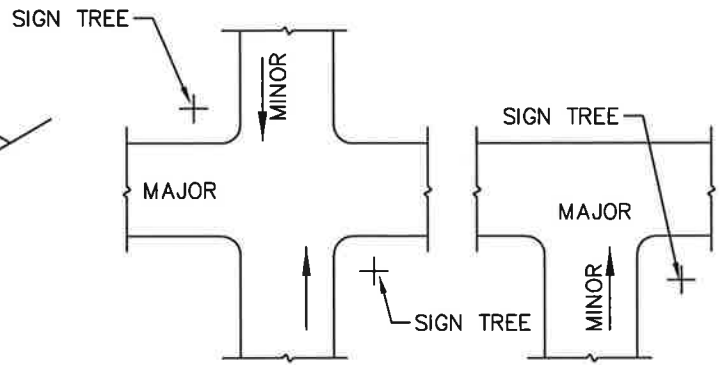
DWG NO: 290



PLANTER STRIP LOCATION



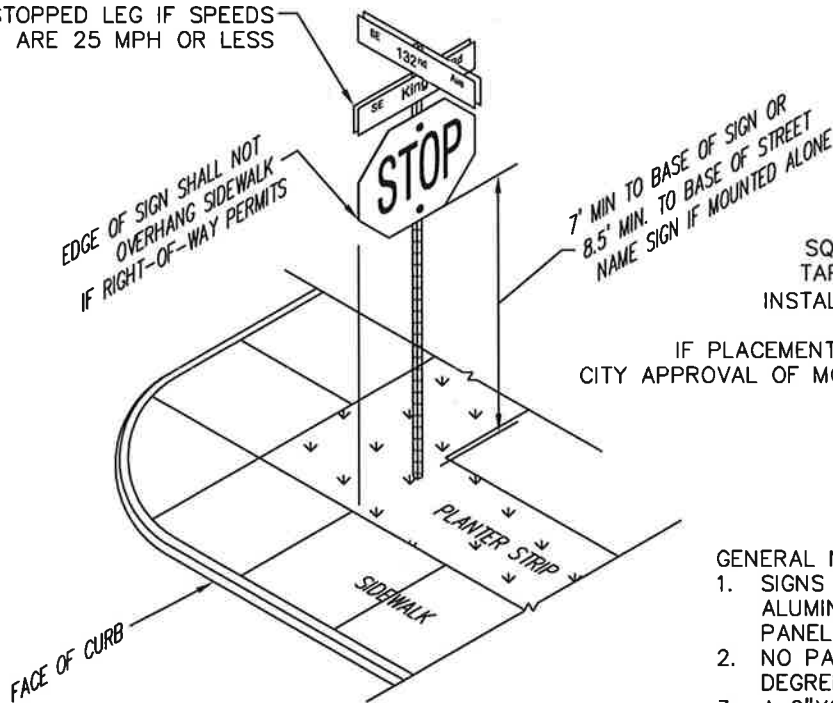
TYPICAL SIGN ATTACHMENT



CROSS INTERSECTION TEE INTERSECTION

TYPICAL STREET SIGN LOCATIONS

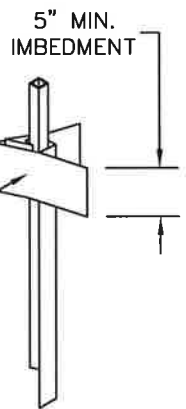
MAY USE 6" SIGN ON STOPPED LEG IF SPEEDS ARE 25 MPH OR LESS



CURB TIGHT LOCATION

7' MIN TO BASE OF SIGN OR 8.5' MIN. TO BASE OF STREET NAME SIGN IF MOUNTED ALONE

SQUARE SIGN SUPPORT ANCHOR TAPCO, V-LOC, MODEL 200-VS2 INSTALLED IN 3/4"-0" CRUSHED ROCK OUTSIDE OF CONCRETE AREA IF PLACEMENT IN CONCRETE IS NECESSARY CITY APPROVAL OF MOUNTING SYSTEM IS REQUIRED



SIGN POST ANCHOR

GENERAL NOTES:

1. SIGNS SHALL BE AFFIXED TO SIGN POSTS USING ALUMINUM DRIVE RIVETS THAT LAY FLUSH WITH SIGN PANEL AFTER INSTALLATION.
2. NO PARKING SIGNS SHALL BE INSTALLED AT A 45 DEGREE ANGLE TO THE DIRECTION OF TRAFFIC.
3. A 2"x2" GA GALVANIZED "UNISTRUT TELESAR" OR 12 GA PERFORATED POSTS OR APPROVED EQUIVALENT SHALL BE USED. SIGN COMBINATION AND MINIMUM SIGN MOUNTING HEIGHT SHALL DETERMINE POST LENGTH.
4. SEE ADDITIONAL SIGNAGE NOTES AND REQUIREMENTS ON DWG NO. 305.

**CITY OF
HAPPY VALLEY**

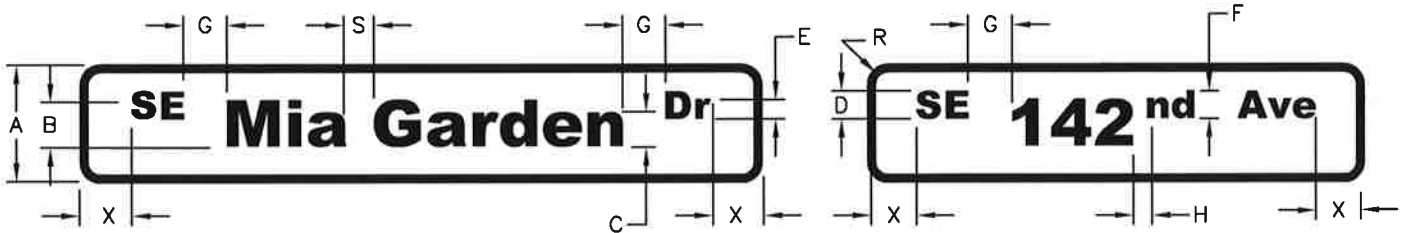
ENGINEERING DIVISION		STREET SIGNING	
PE: CE	BY: KA	DATE: 08-15-16	DWG NO: 300

LEGEND DIMENSIONING TABLE

POSTED SPEED (MPH)	PANEL HT.	PRIMARY LETTERING SIZE		SUPPLEMENTAL LETTERING SIZE		SUPER-SCRIPT HT. (rd,th,st)	SPACING BETWEEN CHAR-ACTERS		BORDER RADIUS
		UPPER	LOWER	UPPER	LOWER		G	H	
≤ 25	6	4	3	2 ½	2	2	1 ½	½	1 ½
≥ 30	8 or 9	6	4 ½	4	3	3	2 ½	¾	1 ½

TABLE NOTES:

- ALL UNITS IN INCHES UNLESS SHOWN OTHERWISE.
- S = SPACE BETWEEN WORDS = ⅝ B.
- X, Y = ½ OF REMAINING SPACE. SHOULD BE APPROXIMATELY EQUAL TO LETTER HT (B) AND NO LESS THAN ½ B.



GENERAL NOTES:

1. CONTRACTOR SHALL SUPPLY AND INSTALL ALL SIGNS, AND SHALL BE RESPONSIBLE FOR STAKING SIGN LOCATIONS AND OBTAINING UTILITY LOCATES FOR STAKED SIGN LOCATIONS. SIGNS SHALL BE LOCATED PER TYPICAL SIGN LOCATION AS SHOWN ON DWG. NO. 300 OR AS SHOWN ON PLANS.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THE FINAL STREET NAMES WITH THE CITY BEFORE ORDERING AND INSTALLING STREET NAME SIGNS.
3. SIGNING SHALL CONFORM TO THE MANUAL OF TRAFFIC CONTROL DEVICES (MUTCD, LATEST EDITION)

SIGN PANELS

4. ALL SIGNS SHALL BE ALUMINUM WITH 0.08 MIN THICKNESS.
5. SIGN PANELS SHALL BE AFFIXED TO SIGN POSTS USING ALUMINUM DRIVE RIVETS THAT LAY FLUSH WITH SIGN FACE AFTER INSTALLATION.
6. SIGNING IS TO BE RETROREFLECTIVE AND ASTM TYPE III OR TYPE I

LETTERING

7. LETTERING SHALL BE FHWA SERIES C AT 100% WIDTH UNLESS SPECIFIED OTHERWISE.
8. THE PREFIX SHALL BE ABBREVIATED UPPER-CASE LETTERS.
9. THE STREET NAME SHALL CONSIST OF LOWER-CASE LETTERS WITH AN INITIAL UPPER-CASE LETTER.
10. THE SUFFIX SHALL BE ABBREVIATED AND CONSIST OF AN INITIAL UPPER-CASE LETTER FOLLOWED BY LOWER-CASE LETTER(S).

STREET NAME SIGN SPECIFICATIONS

11. STREET NAME SIGN COLOR:

- CITY AND PUBLIC ROAD SIGNS SHALL BE GREEN WITH WHITE LETTERS.
- PRIVATE ROAD SIGNS SHALL BE WHITE WITH BLACK LETTERS.
- COMMON PREFIX AND SUFFIX ABBREVIATIONS

AVE = AVENUE	LN = LANE	RD = ROAD
BLVD = BOULEVARD	LP = LOOP	ST = STREET
CIR = CIRCLE	PKWY = PARKWAY	TER = TERRACE
CT = COURT	PL = PLACE	WAY = WAY
DR = DRIVE		

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

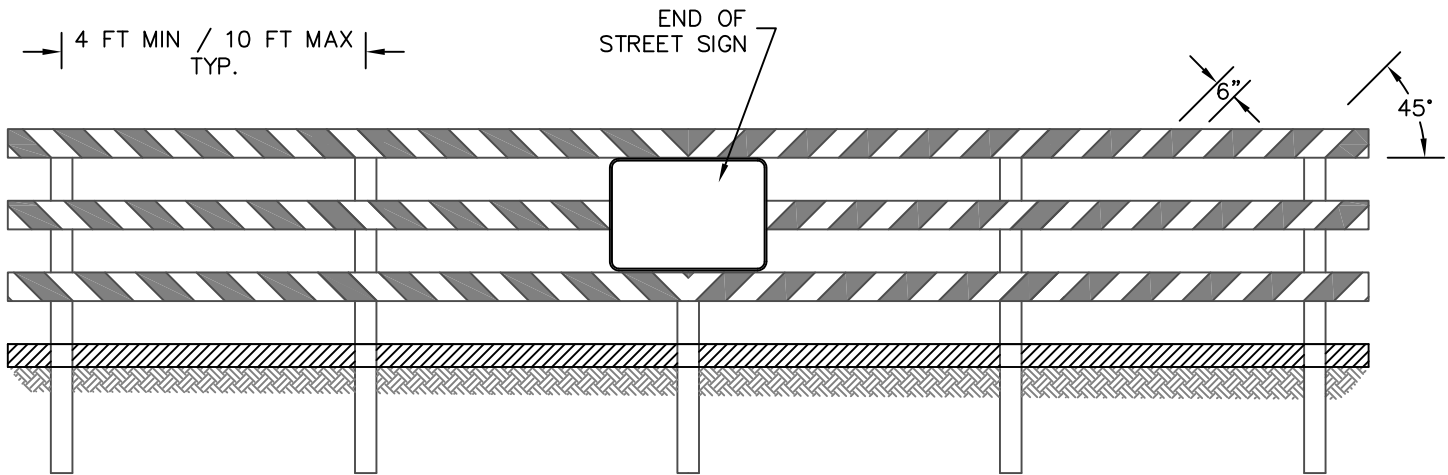
STREET SIGNING NOTES

PE: CE

BY: KA

DATE: 08-23-16

DWG NO: 305

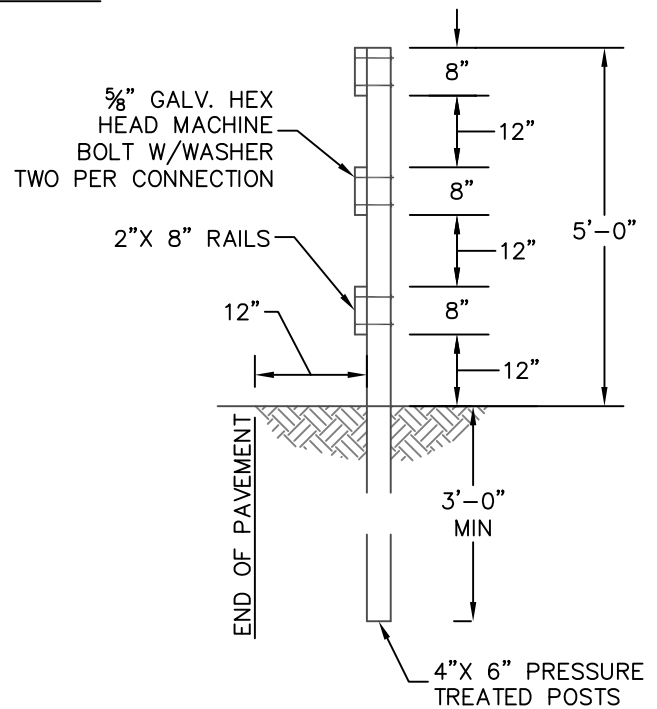


STREET BARRICADE



- INSTALL IN CENTER OF STREET BARRICADES.
- REFLECTIVE WHITE WITH BLACK 0.5" BORDER.
- 0.080 THICK ALUMINUM
- 3" CORNER RADIUS.
- ASTM TYPE III/IV

END OF STREET SIGN



CROSS SECTION

NOTES:

1. STREET BARRICADES SHALL BE USED TO WARN ROAD USERS OF THE END OF A STREET WHERE A DROP OFF HAZARD EXISTS (SLOPES GREATER THAN 3:1). IF THERE IS NO DROP OFF HAZARD USE DWG NO. 315.
2. RAILS ARE TO BE WHITE AND RED UNCAPSULATED LENS SHEETING, 0.08 THICK ALUMINUM.
3. SEE SECTION 6F.68 TYPE 1, 2 OR 3 BARRICADES FROM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD, LATEST EDITION).

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

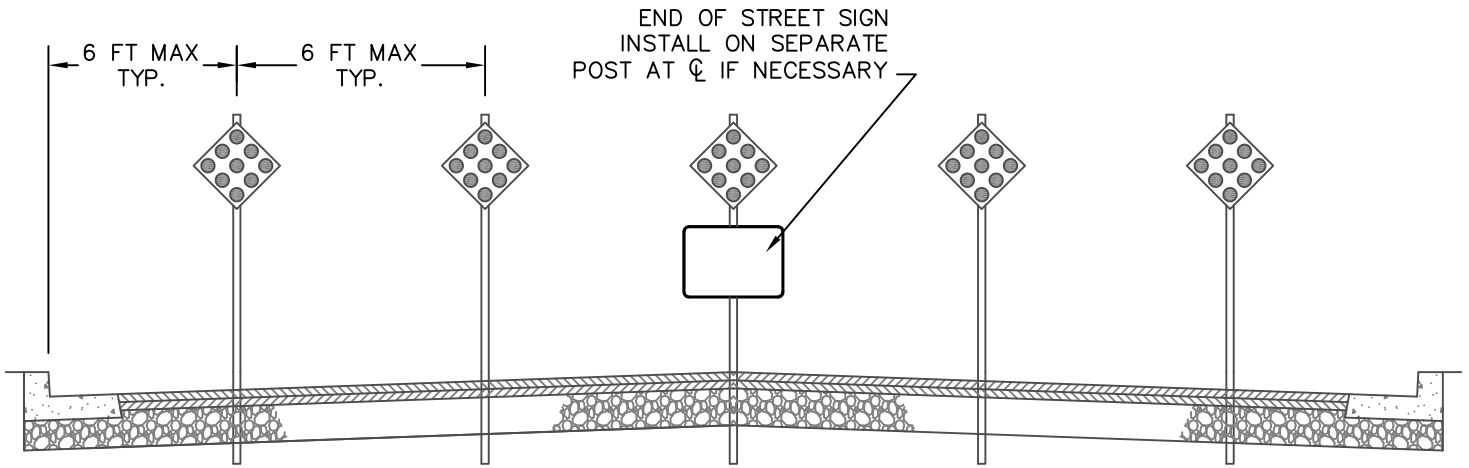
TYPE III STREET BARRICADE

PE: CE

BY: PB

DATE: 7-22-15

DWG NO: 310

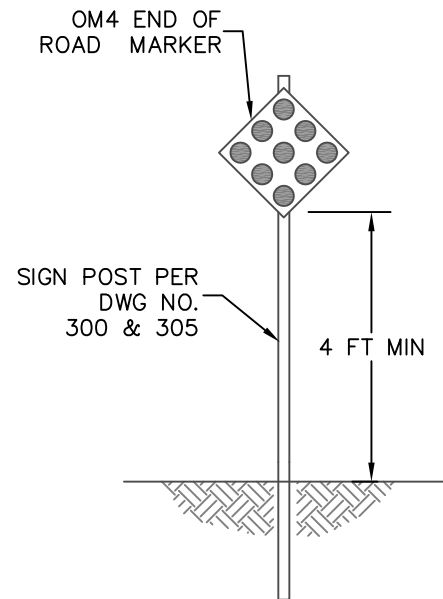


END OF STREET MARKER



- INSTALL IN CENTER OF STREET BARRICADES.
- REFLECTIVE WHITE WITH BLACK 0.5" BORDER.
- 0.080 THICK ALUMINUM
- 3" CORNER RADIUS.
- ASTM TYPE III/IV

END OF STREET SIGN



OM4 MARKER

NOTES:

1. END OF STREET MARKERS SHALL BE USED TO WARN ROAD USERS OF THE END OF A STREET WHERE NO DROP OFF HAZARD EXISTS (SLOPES GREATER THAN 3:1). IF THERE IS A DROP OFF HAZARD USE DWG NO. 310.
2. SEE SECTION 2C.66 OBJECT MARKERS FOR ENDS OF ROADWAYS FROM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD, LATEST EDITION).

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

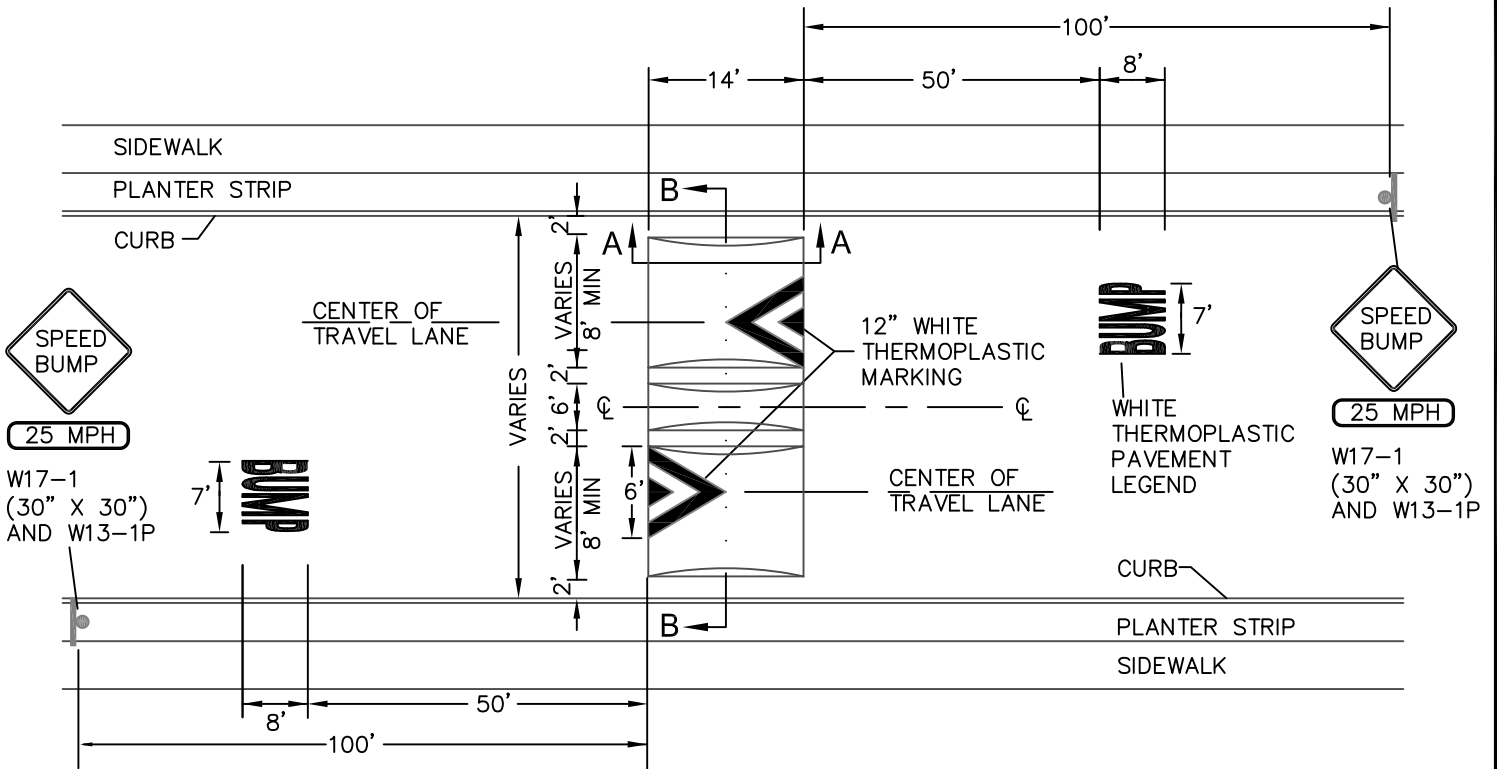
END OF STREET MARKERS

PE: CE

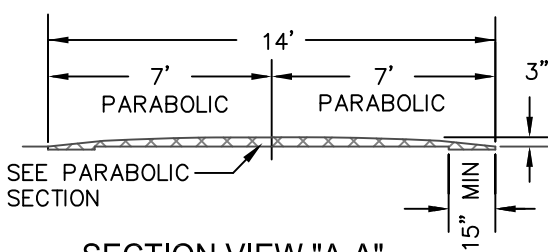
BY: PB

DATE: 7-22-15

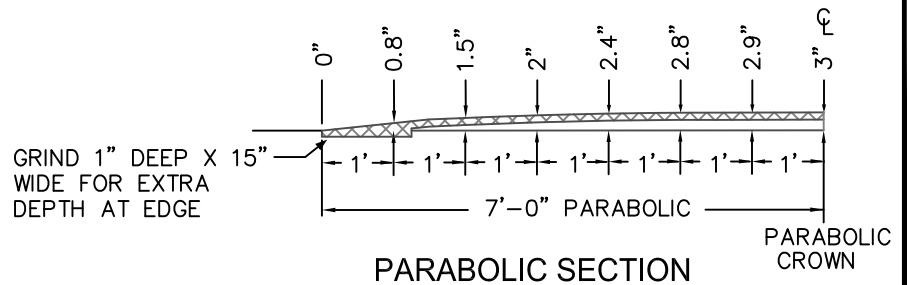
DWG NO: 315



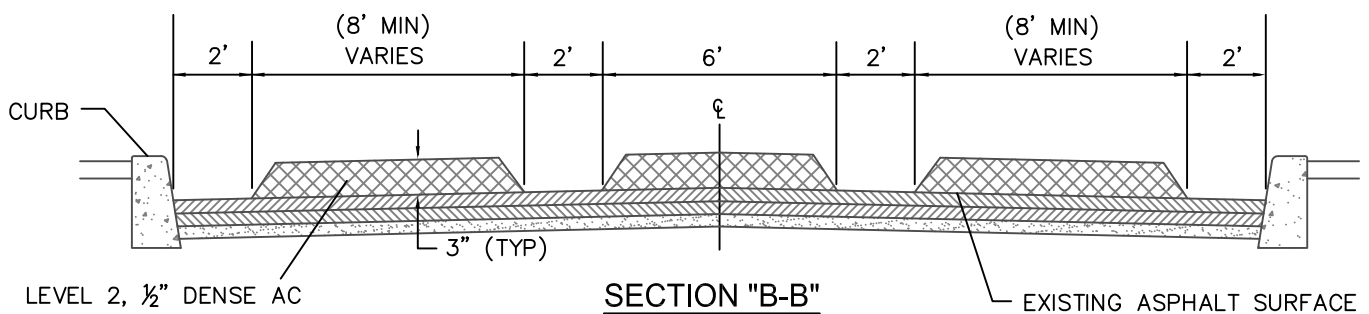
PLAN VIEW



SECTION VIEW "A-A"



PARABOLIC SECTION



SECTION "B-B"

NOTES:

1. GRIND FOR EXTRA DEPTH AT EDGES AS SHOWN.
2. APPLY TACK COAT OVER AIR-BLOWN CLEANED AND SWEEPED ASPHALT CONCRETE.
3. ASPHALT SHALL BE ROLLED FOR COMPACTION.
4. FINISH EDGES BY APPLYING TACK COAT AND SAND SWEEPING. TACK COAT SHALL CONFORM TO ODOT SECTION 00730.
5. SURFACES OUTSIDE APPROVED WORK AREAS TO BE KEPT CLEAN AND FREE OF BITUMEN AND ASPHALT.
6. IF A SERIES OF SPEED BUMPS EXISTS W13-1P MAY BE ELIMINATED ON ALL BUT THE FIRST SIGN.

**CITY OF
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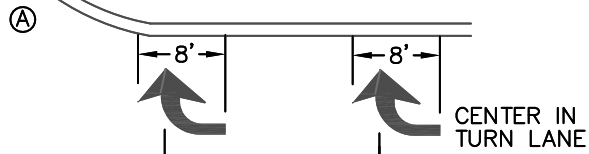
SPEED BUMP

PE: CE

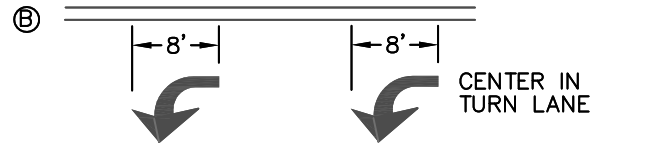
BY: PB

DATE: 6-15-15

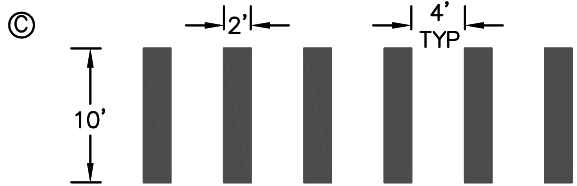
DWG NO: 320



RIGHT TURN LANE MARKINGS
SEE MUTCD FOR DETAILS. ARROWS SHALL BE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



LEFT TURN LANE MARKINGS
SEE MUTCD FOR DETAILS. ARROWS SHALL BE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



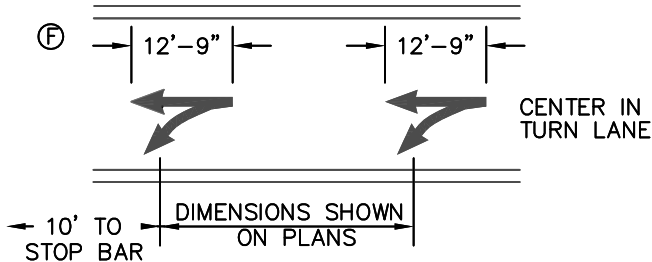
CROSSWALK

- 24" WIDE THERMOPLASTIC WHITE LINES SEPARATED BY 48" GAPS
- LOCATE CROSSWALKS SUCH THAT THE THROAT OF THE ADA RAMP IS ENTIRELY WITHIN THE CROSSWALK MARKINGS
- DESIGN OF LINES AND GAPS SHOULD AVOID THE WHEEL PATHS IF POSSIBLE

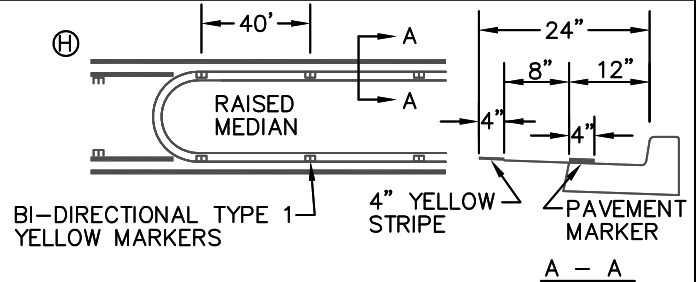


STOP BAR

- USE 12" WIDE WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL
- LOCATE STOP BARS 10' FROM BACK OF THE EXTENDED FOG LINE, EDGE OF PAVEMENT, OR CURB FACE. VERIFY SIGHT DISTANCE.

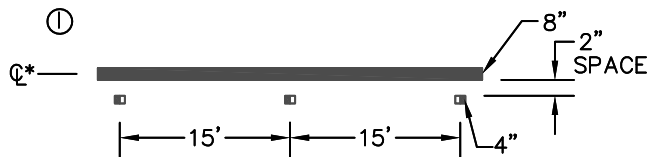


THRU AND TURN LANE MARKINGS
SEE MUTCD FOR DETAILS. TURN AND THRU ARROWS SHALL BE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



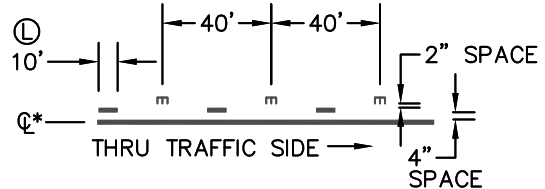
RAISED MEDIAN STRIPE

- 4" YELLOW THERMOPLASTIC PAVEMENT MARKER MATERIAL WITH TYPE 1 BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS



TURN LANE

- 8" WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL WITH MONO-DIRECTIONAL CRYSTAL TYPE 1 MARKERS (WHITE)



TWO WAY LEFT TURN STRIPE

- 4" YELLOW THERMOPLASTIC PAVEMENT MARKER MATERIAL WITH TYPE 1 BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS. OUTSIDE LINE IS SOLID INSIDE AT 10'/30' PATTERN.

* LANE MARKING DIMENSION LOCATION AT \mathcal{Q} OF STRIPING UNLESS NOTED OTHERWISE.

NOTE:
1. ALL THERMOPLASTIC PAVEMENT MARKING MATERIAL SHALL BE INSTALLED AS PER ODOT SECTION 00865.

**CITY OF
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ENGINEERING DIVISION

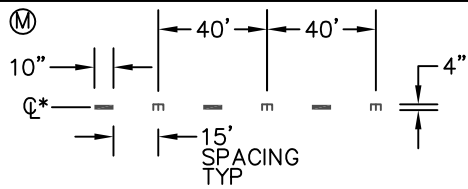
STRIPING DETAILS 1

PE: CE

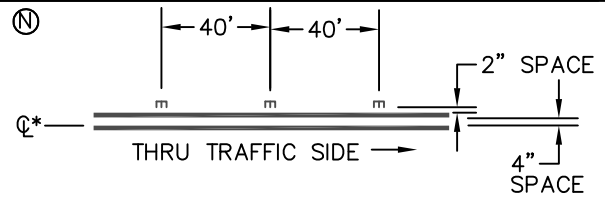
BY: PB

DATE: 6-15-15

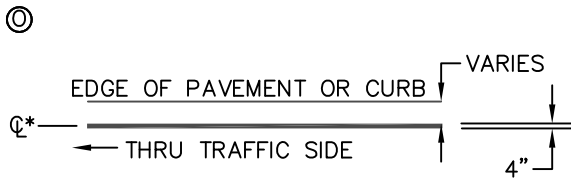
DWG NO: 330



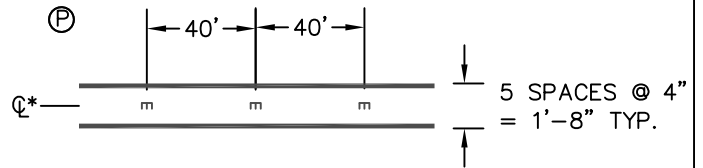
SKIP CENTER LINE
4" YELLOW THERMOPLASTIC PAVEMENT MARKER MATERIAL WITH TYPE 1 BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS



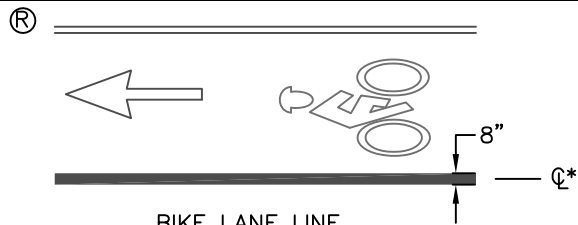
MEDIAN STRIPE
TWO 4" YELLOW THERMOPLASTIC PAVEMENT MARKER MATERIALS WITH BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS.



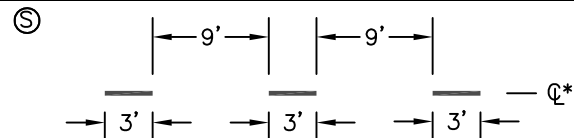
FOG LINE
4" WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



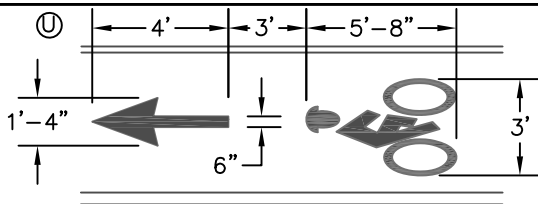
CENTER LINES
TWO 4" YELLOW THERMOPLASTIC PAVEMENT MARKER MATERIALS WITH TYPE 1 BI-DIRECTIONAL YELLOW RAISED PAVEMENT MARKERS.



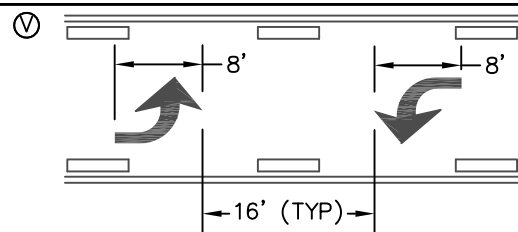
BIKE LANE LINE
8" WIDE WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



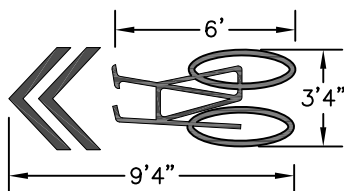
BIKE LANE SKIP LINE
8" WIDE WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



BICYCLE LANE MARKING
WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL.



TWO WAY LEFT TURN ARROW MARKINGS
WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL.

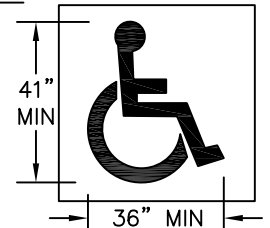


SHARED LANE MARKING
WHITE THERMOPLASTIC PAVEMENT MARKER MATERIAL.

ACCESSIBLE PARKING AREA STENCIL

PAVEMENT MARKING STENCIL:
WHITE, RETRO-REFLECTIVE PAINT
2.5" MINIMUM WIDTH

PAVEMENT MARKING
BACKGROUND:
BLUE, RETRO-REFLECTIVE PAINT



* LANE MARKING DIMENSION LOCATION AT $\text{C}\ell$ OF STRIPING UNLESS NOTED OTHERWISE.

NOTE:

1. ALL THERMOPLASTIC PAVEMENT MARKING MATERIAL SHALL BE INSTALLED AS PER ODOT SECTION 00865.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

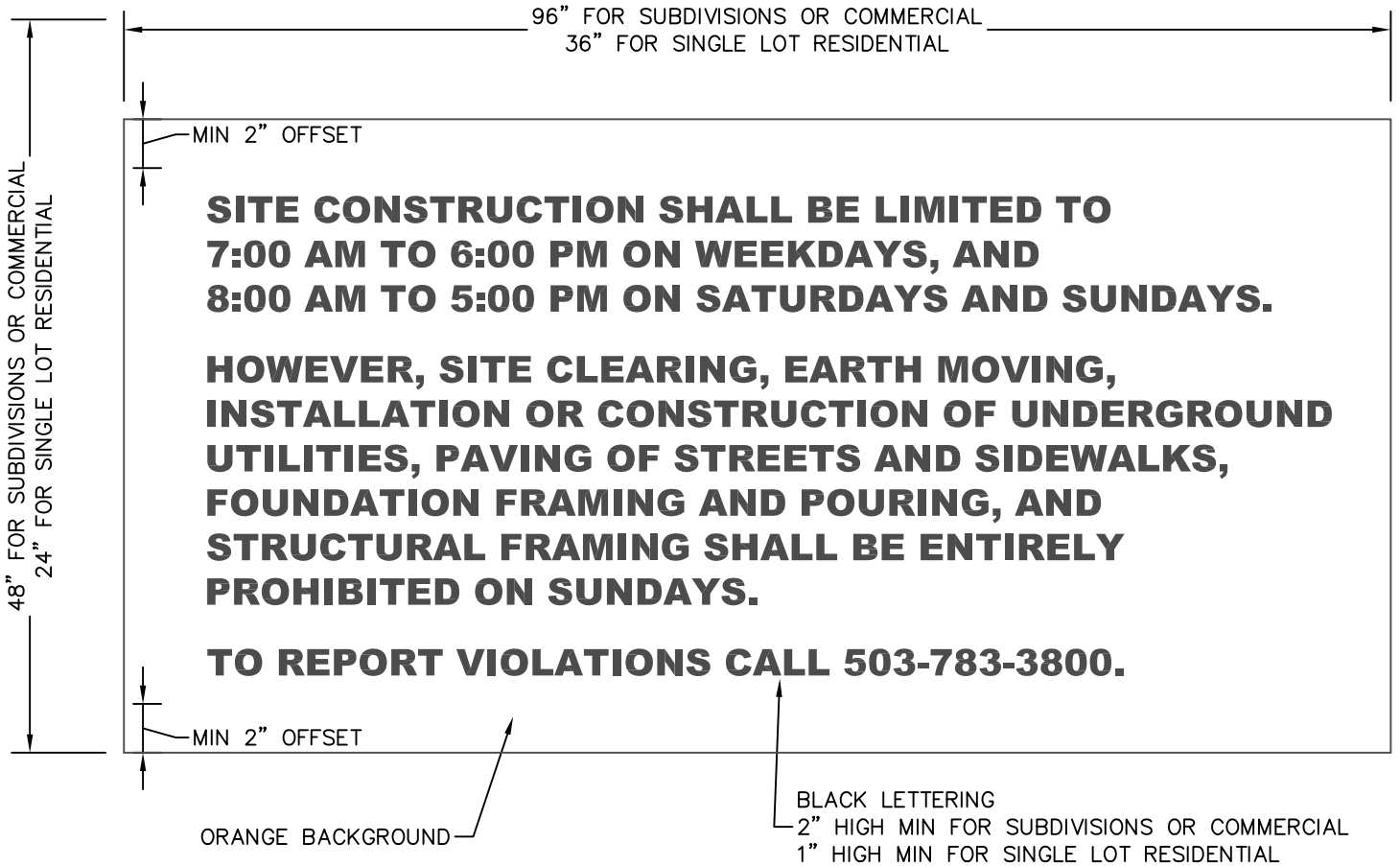
STRIPING DETAILS 2

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 335



NOTES:

1. THE CONSTRUCTION HOURS NOTICE SIGN SHALL BE POSTED CONSPICUOUSLY AT THE JOB SITE ENTRANCE PRIOR TO SITE CONSTRUCTION, AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. FAILURE TO COMPLY WITH THESE HOURS MAY RESULT IN FINES OR A STOP WORK ORDER.
3. THE CITY MANAGER OR THE DIRECTOR OF COMMUNITY SERVICES MAY ALLOW LONGER, OR REQUIRE SHORTER WORK HOURS DEPENDING ON SITE SPECIFIC CONDITIONS. HOLIDAYS WILL BE CONSIDERED AS SUNDAYS.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

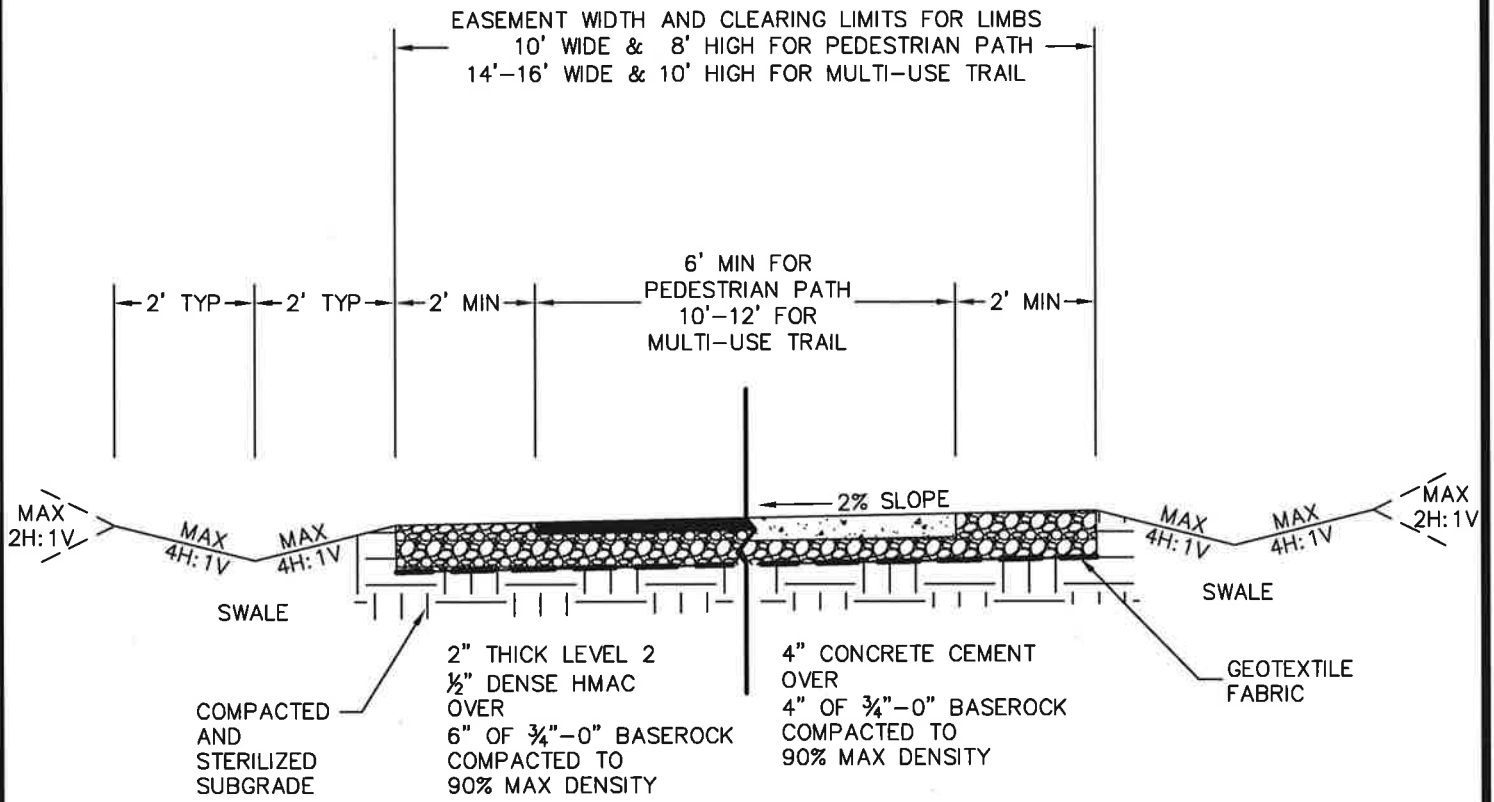
CONSTRUCTION HOURS NOTICE SIGN

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 350



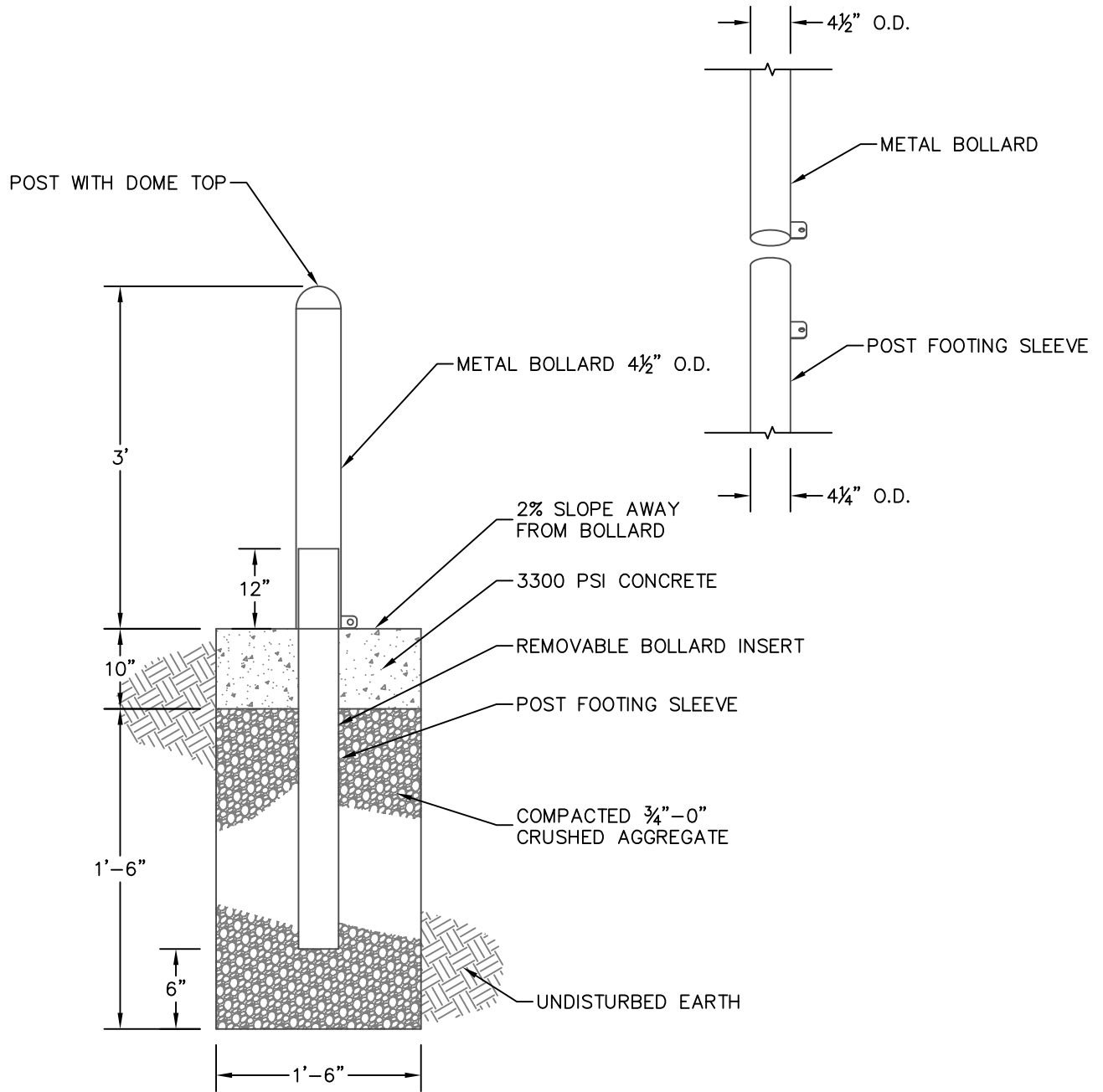
PEDESTRIAN PATH AND MULTI-USE TRAIL CROSS SECTIONS

NOTES:

1. REFER TO THE HAPPY VALLEY TRAIL DEVELOPMENT HANDBOOK FOR FURTHER TRAIL DEVELOPMENT GUIDELINES AND RECOMMENDATIONS.
2. MAX ALLOWABLE GRADE IS 20% FOR PEDESTRIAN PATHS AND 10% FOR MULTI-USE TRAILS.
3. PEDESTRIAN PATHS MAY ALTERNATIVELY USE A 8' WIDE CROSS SECTION CONSISTING OF EITHER:
 - 5" OF 3/4"-0" BASE ROCK OR
 - 6" OF 1" TO 1 1/4" HEMLOCK BARK OR
 - 6" OF FIBAR ENGINEERED WOOD FIBER OR APPROVED EQUAL
 THE MATERIAL SHALL BE PLACED OVER GEOTEXTILE FABRIC AND COMPACTED/STERILIZED SUBGRADE.
5. CONCRETE SHALL BE A COMMERCIAL MIX WITH A 28 DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM ODOT SECTION 00440.
6. FOR CONCRETE PATHWAY SEE CITY STANDARD DRAWING NO. 250 FOR ADDITIONAL SIDEWALK DETAILS.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION		PEDESTRIAN PATH AND MULTI-USE TRAIL CROSS SECTIONS	
PE: CE	BY: KA	DATE: 04-14-16	DWG NO: 400



NOTES:

1. DECORATIVE STANDARD BOLLARD MAY BE USED IF PRE-APPROVED BY CITY.
2. BOLLARD TO BE POWDER COATED BLACK OR DARK GREEN.

**CITY OF
HAPPY VALLEY**

ENGINEERING DIVISION

BOLLARDS

PE: CE

BY: PB

DATE: 6-15-15

DWG NO: 410