

**UNIFORM STANDARD
DETAILS**

for

**PUBLIC WORKS
CONSTRUCTION**

**SPONSORED and DISTRIBUTED
by the**



**1998
ARIZONA**

(Includes Revisions for 2011)

Note: Update packet does not include details approved in prior revisions.

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DETAIL NO.

100-1



STANDARD DETAIL
ENGLISH

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DETAIL NO.

100-2



STANDARD DETAIL
ENGLISH

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DETAIL NO.

100-2

1. THESE DETAILS HAVE BEEN PREPARED IN AN EFFORT TO STANDARDIZE THE CONSTRUCTION DETAILS USED BY VARIOUS CONTRACTING AGENCIES IN MARICOPA COUNTY. THEY ARE TO BE USED IN CONJUNCTION WITH THE CURRENT EDITION OF THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" SPONSORED AND DISTRIBUTED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS.

2. MANY NOTES WITHIN THESE DETAILS REFER TO VARIOUS SECTIONS OF THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION." WHERE THIS REFERENCE IS MADE, ONLY THE ABBREVIATION "SECT." IS USED. AN EXAMPLE OF THIS REFERENCE WOULD BE: "CLASS 'A' CONCRETE PER SECT. 725."

3. MANY NOTES WITHIN THESE DETAILS REFER TO OTHER DETAILS WITHIN THIS BOOK. WHERE THIS REFERENCE IS MADE, THE ABBREVIATION "DETAIL" IS USED. AN EXAMPLE OF THIS WOULD BE: "SEE DETAIL 391 FOR VALVE BOX INSTALLATION."

4. MANY DETAILS COVER MORE THAN ONE SHEET. THESE SHEETS HAVE BEEN GIVEN THE SAME NUMBER WITH A SUFFIX NUMBER, EXAMPLE: 391-1 AND 391-2.

5. AN EFFORT HAS BEEN MADE TO INCLUDE THE MOST COMMONLY USED CONSTRUCTION DETAILS IN THIS BOOK. ITEMS WHICH REQUIRE DESIGN CONSIDERATION BY THE DESIGNING ENGINEER HAVE NOT BEEN INCLUDED.

6. SOME OF THE DETAILS PRINTED HEREIN MAY BE USED BY SOME OF THE AGENCIES BUT NOT OTHERS. THE DESIGNING ENGINEER SHOULD THEREFORE CONTACT THE AGENCY WITHIN WHOSE JURISDICTION HE IS WORKING FOR DIRECTION AS TO WHICH DETAIL OR PORTIONS OF DETAILS SHOULD BE USED.

7. DETAIL DRAWINGS ARE NOT TO SCALE.

DETAIL NO.

101



STANDARD DETAIL
ENGLISH

GENERAL INFORMATION

REVISED

01-01-2011

DETAIL NO.

101

SEWER CLEANOUT



FIRE HYDRANT



WATER METER



UTILITY MANHOLE



IRRIGATION STANDPIPE



UTILITY VALVE



SEWER SERVICE CONNECTION



MONITORING WELL



REDUCER



WOOD UTILITY POLE



STEEL UTILITY POLE



CONCRETE UTILITY POLE



STREET LIGHT ON MAST ARM



POLE MOUNTED LIGHT



ELECTRIC, GAS METER



TRANSFORMER



DOWN GUY & ANCHOR



SURVEY MONUMENT



SURVEY MONUMENT IN HANDHOLE



MAIL BOX



SIGNAL POLE



SINGLE POST SIGN



DOUBLE POST SIGN



STREET NAME SIGN



VIDEO DETECTION CAMERA



PULL BOX



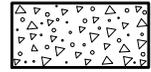
CELLULAR TOWER



BITUMINOUS (SECTION)



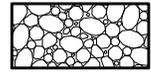
CONCRETE (SECTION)



AGGREGATE BASE COURSE (SECTION)



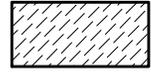
RIPRAP (PLAN & SECTION)



OBLITERATE PAVEMENT



TAPERED MILL



UNIFORM MILL

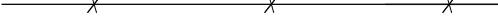


EARTH (SECTION)



NOTES:

1. PLAN SYMBOLS FOR EXISTING FEATURES ARE TO BE DASHED, GRAY SCALED, OR DRAWN USING THIN LINEWORK.
2. ADD LABELS TO PLAN SYMBOLS AS NEEDED FOR CLARITY.

SECTION LINE		CHAIN LINK FENCE	
R/W		BARBED WIRE FENCE	
EASEMENT		BLOCK WALL	
PROPERTY LINE (OPTION 1)		WOOD FENCE	
PROPERTY LINE (OPTION 2)		GAS LINE (12" & SMALLER)	 4" G (MATERIAL)
JURISDICTIONAL BOUNDARY (OPTION 1)		GAS LINE * (GREATER THAN 12")	 15" G (MATERIAL)
JURISDICTIONAL BOUNDARY (OPTION 2)		SEWER LINE (12" & SMALLER)	 8" S (MATERIAL)
ROADWAY CENTERLINE		SEWER LINE * (GREATER THAN 12")	 18" S (MATERIAL)
UNDERGROUND ELECTRIC BURIED CABLE	 E	NEW STORM DRAIN PIPE *	
UNDERGROUND ELECTRIC CONDUIT	 E (CONDUIT)	STORM DRAIN * (GREATER THAN 12")	 18" SD (MATERIAL)
UNDERGROUND ELECTRIC DUCT BANK	 E (DUCT BANK)	IRRIGATION LINE (12" & SMALLER)	 4" IRR (MATERIAL)
OVERHEAD ELECTRIC	 OHE	IRRIGATION LINE * (GREATER THAN 12")	 15" IRR (MATERIAL)
UNDERGROUND TELEPHONE LINE	 T	NEW IRRIGATION LINE *	
OVERHEAD TELEPHONE LINE	 OHT	WATER LINE (12" & SMALLER)	 4" W (MATERIAL)
FIBER OPTIC	 FO	WATER LINE * (GREATER THAN 12")	 36" W (MATERIAL)
CABLE TELEVISION	 TV		
OVERHEAD CABLE TELEVISION	 OHTV		
TELEPHONE DUCT BANK	 T (DUCT BANK)		

* SCALE TO ACTUAL WIDTH

DETAIL NO.

110-2



STANDARD DETAIL
ENGLISH

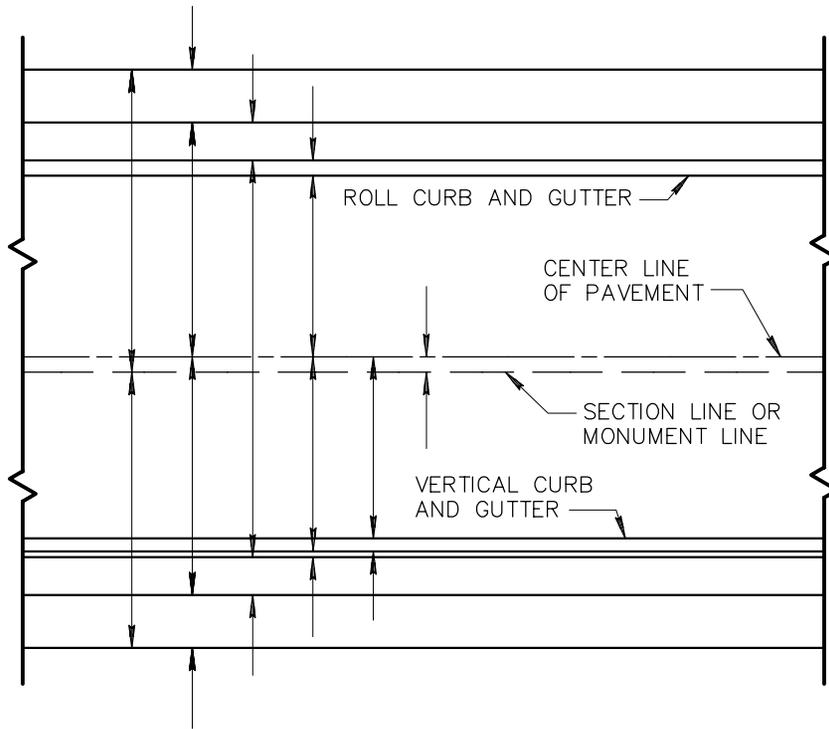
PLAN SYMBOLS

REVISED

01-01-2011

DETAIL NO.

110-2

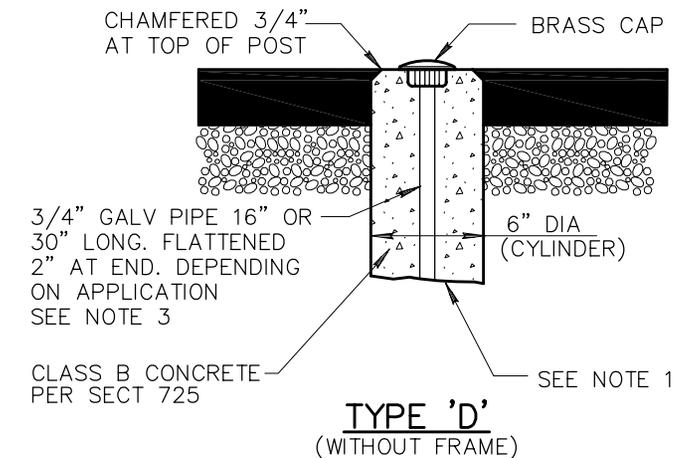
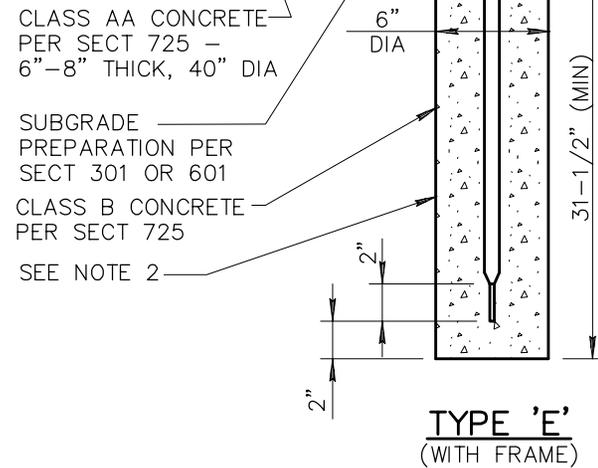
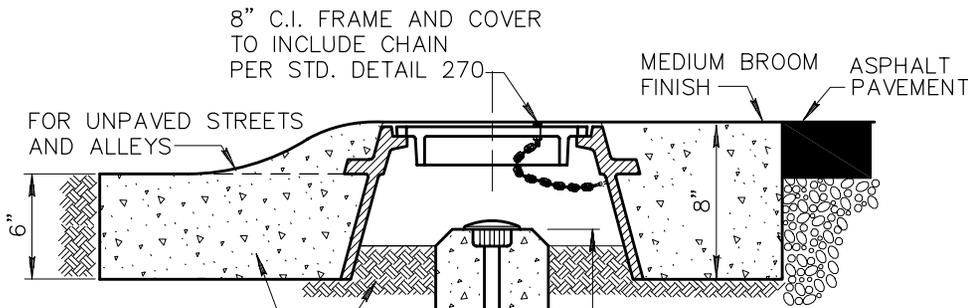


DIMENSION SHOULD BE GIVEN ONCE ON EACH SHEET AND SHOULD BE PLACED NEAR THE CENTER OF THE SHEET. IF ANY OF THE GIVEN CONDITIONS CHANGE, THEY SHOULD BE REDIMENSIONED AT THE POINT OF CHANGE.

GIVEN DIMENSIONS IN ORDER STARTING WITH THE LONGEST AND ENDING WITH THE SHORTEST, AS SHOWN IN THE SKETCH.

GIVE COMPLETE DIMENSIONS.

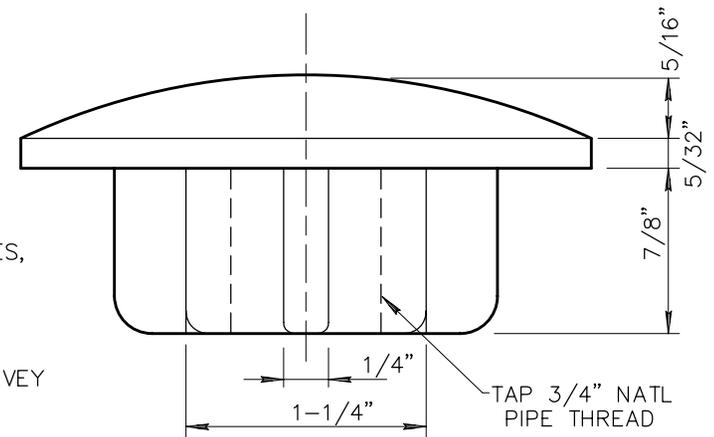
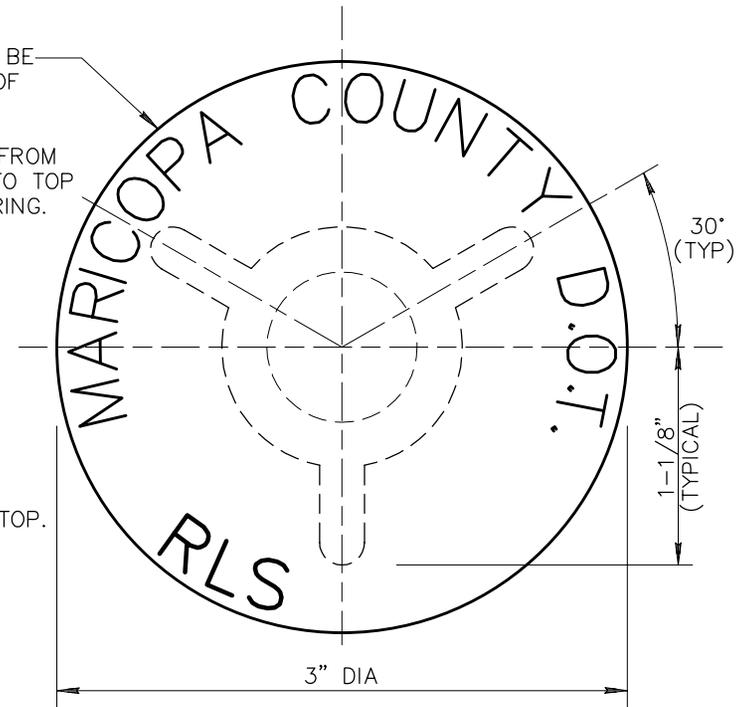
IF THE CENTERLINE OF PAVEMENT DOES NOT FALL ON THE SECTION LINE OR MONUMENT LINE OF THE STREET, DIMENSION AS ABOVE AND SHOW THE DIFFERENCE BETWEEN THE SECTION OR MONUMENT LINE AND THE CENTERLINE.



BRASS CAP TO BE CONSTRUCTED OF RED BRASS OR BRONZE.
 1/16" BORDER FROM EDGE OF CAP TO TOP OF 1/4" LETTERING.

NOTES:

1. TYPE "D" NORMALLY USED AT STREET INTERSECTIONS, AS SUBDIVISION MONUMENTS AND 1/16 CORNERS.
2. TYPE "E" NORMALLY USED ON SECTION CORNERS, 1/4 CORNERS AND AT THE CENTER OF SECTIONS (PER ARS 33-103). CONCRETE POST IS CHAMFERED 3/4" AT TOP.
3. SECTION CORNERS, 1/4 CORNERS AND CENTER OF SECTIONS SHALL BE 30" LONG, ALL OTHER MARKERS SHALL BE A MINIMUM OF 16" PER THE ARIZONA BOARD OF TECHNICAL REGISTRATION (BTR) UNLESS SUBSURFACE OBSTRUCTIONS LIMIT LENGTH.
4. IN ALL CASES, THE POINT SURVEYED SHALL BE IDENTIFIED BY A PUNCH MARK AND IN ADDITION THE CAP SHALL BE STAMPED WITH THE REGISTERED LAND SURVEYOR (RLS) REGISTRATION NUMBER AND YEAR.
5. WHEN APPLICABLE, STAMP THE APPROPRIATE PUBLIC LAND MARKINGS PER CURRENT MANUAL OF INSTRUCTIONS FOR THE SURVEY OF THE PUBLIC LANDS OF THE UNITED STATES, PREPARED BY THE BUREAU OF LAND MANAGEMENT.
6. IN ALL CASES WHEN MONUMENTS ARE SET A CORNER RECORD OR RESULTS OF SURVEY SHALL BE RECORDED. (PER BTR)



CAP DETAIL

DETAIL NO.

120-2



STANDARD DETAIL
 ENGLISH

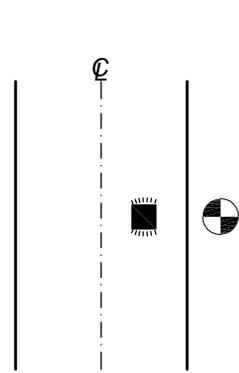
SURVEY MARKER
 (FOR UNINCORPORATED AREAS OF COUNTY)

REVISED

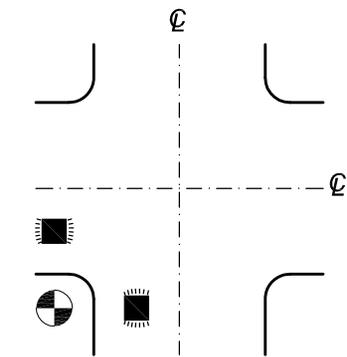
01-01-2007

DETAIL NO.

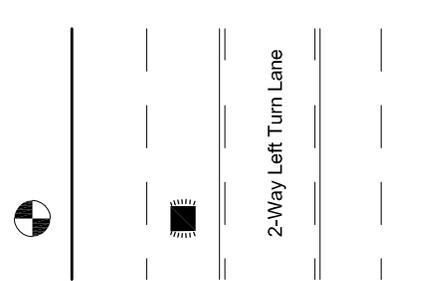
120-2



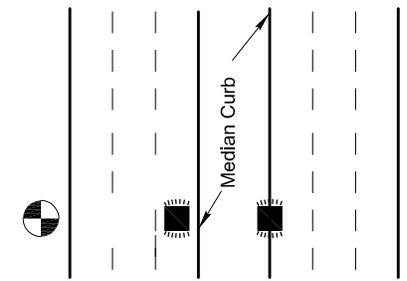
LOCAL STREET



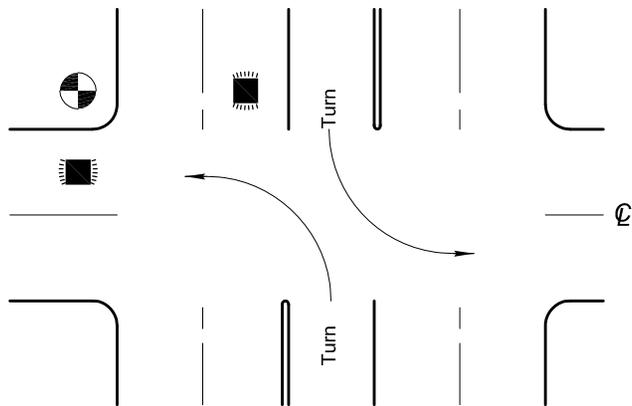
LOCAL CROSS STREET INTERSECTION



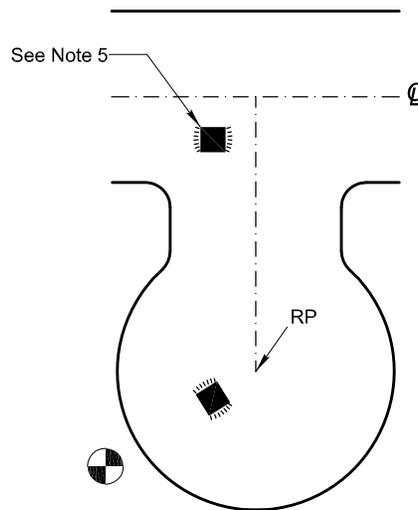
MULTI-LANE STREET W/ TWO WAY LEFT TURN LANE



MULTI-LANE STREET W/ RAISED MEDIAN



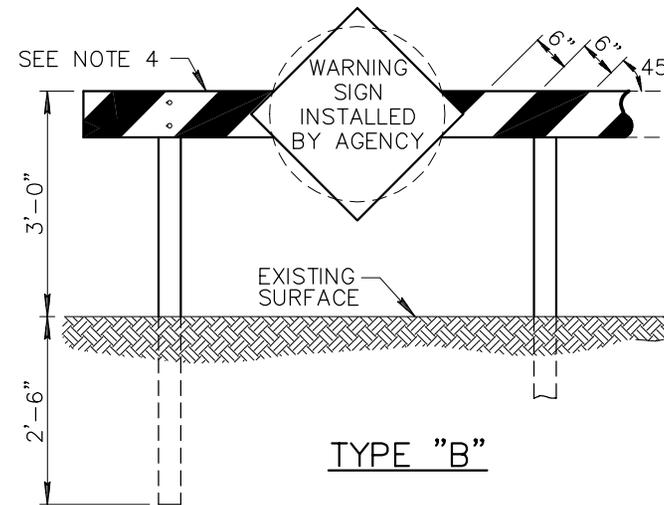
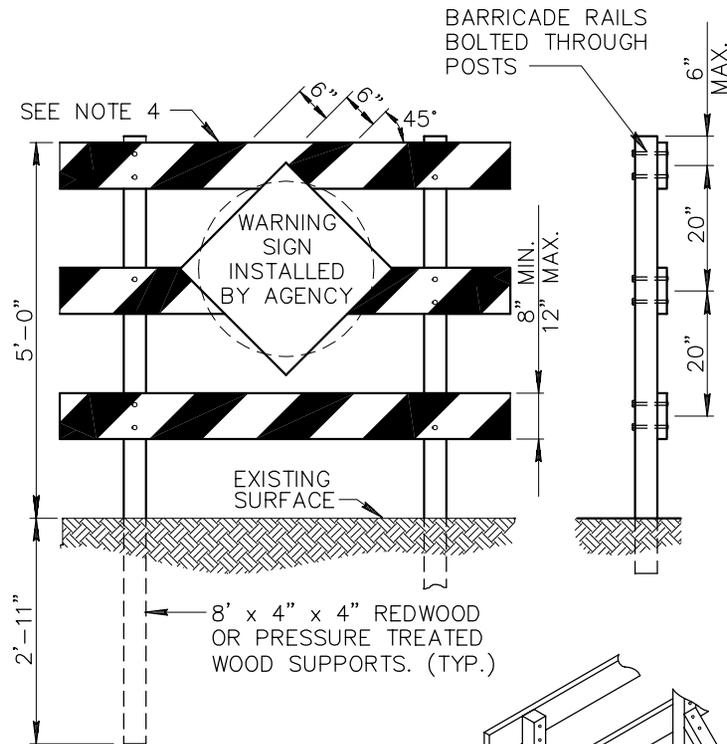
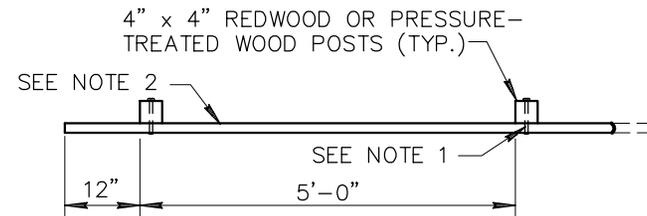
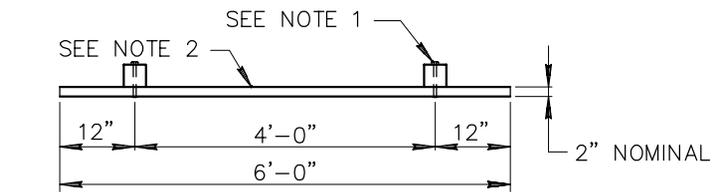
FOUR LANE STREET WITH TURN LANE AT INTERSECTION



CUL-DE-SAC

NOTES:

1. LOCATE PAVEMENT MARKER IN CENTER OF TRAVEL LANE AND ALIGN WITH HYDRANT.
2. FOR MULTIPLE LANE ROADS LOCATE PAVEMENT MARKER IN LEFT MOST THROUGH TRAFFIC LANE.
3. ADJUST MARKER LOCATION TO BE LOCATED OUTSIDE OF ANY DELINEATED CROSSWALK AREA.
4. FOR HYDRANT LOCATED ON FAR SIDE OF RAISED MEDIAN, LOCATE PAVEMENT MARKER ON TOP OF MEDIAN CURB ALIGNED WITH HYDRANT.
5. OMIT FOR CUL-DE-SAC GREATER THAN 250' IN LENGTH.
6. FIRE HYDRANT PAVEMENT MARKERS SHALL BE 2-WAY RETROREFLECTIVE BLUE: ADOT TYPE BB, 911A-BLUE BY FIRE LITE AMERACE CORPORATION, OR APPROVED EQUAL.

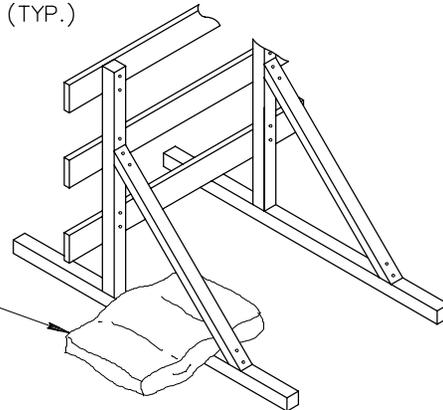


TYPE "A"

TYPE "B"

8' x 4" x 4" REDWOOD OR PRESSURE TREATED WOOD SUPPORTS. (TYP.)

SEE NOTE 3



NOTES:

1. FASTEN WITH 1/2" x 5" LAG SCREWS WITH 2 FLAT WASHERS OR (2) 5/8" BOLTS, WITH 4 FLAT WASHERS.
2. 2" x 8" DOUGLAS FIR PLANK (LENGTH TO BE DETERMINED ON PLANS.)
3. WHEN BARRICADE (TYPE "A") IS CONSTRUCTED ON BASES INSTEAD OF POSTS SET INTO THE GROUND, IT MAY BE DESIRABLE TO BALLAST THE BASES WITH SAND BAGS OR BY STAKING TO PROVIDE RESISTANCE TO OVERTURNING DURING PERIODS OF HIGH WINDS.
4. TWO COATS OF WHITE PAINT PER SECTION 790 SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE BARRICADE. AN ADDITIONAL TWO COATS OF ORANGE PAINT PER SECTION 790 SHALL BE APPLIED TO CREATE THE ALTERNATE ORANGE AND WHITE STRIPES FOR TEMPORARY BARRICADES AND TWO COATS OF RED PAINT PER SECTION 790 SHALL BE APPLIED TO CREATE ALTERNATE RED AND WHITE STRIPES FOR PERMANENT BARRICADES. HIGHWAY SAFETY SPHERES (BEADS) PER ADOT 708-2.02 SHALL BE APPLIED BY HAND TO ALL CROSS MEMBERS, FRONT AND BACK AND ON BOTH COLORS, IMMEDIATELY AFTER PAINTING. THE STRIPES SHALL SLOPE DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS.

DETAIL NO.

130



MARICOPA ASSOCIATION OF GOVERNMENTS

STANDARD DETAIL ENGLISH

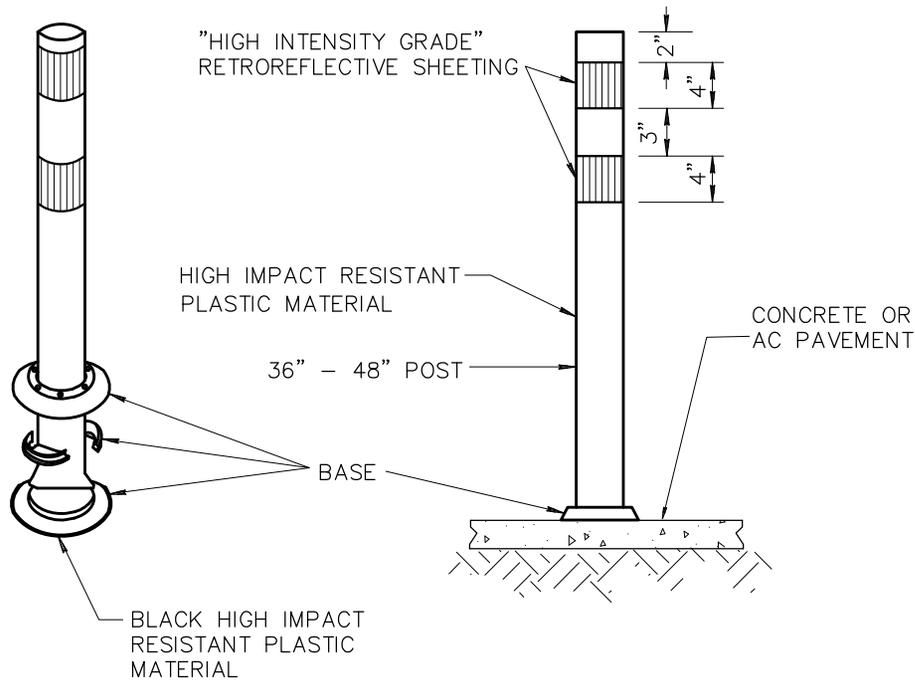
BARRICADES

REVISED

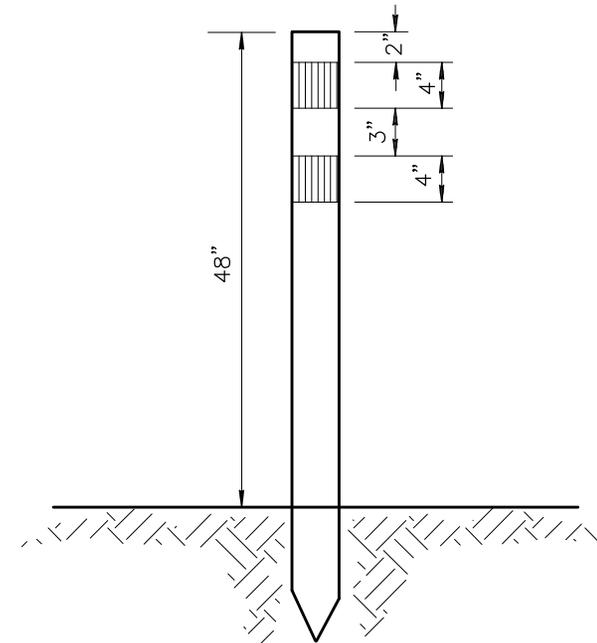
01-01-2003

DETAIL NO.

130



TYPE 1 SURFACE MOUNT



TYPE 2 GROUND MOUNT

NOTES

1. CONTRACTOR SHALL CLEAN ROADWAY SURFACE PRIOR TO PLACEMENT OF FLEXIBLE TUBULAR MARKER.
2. FLEXIBLE TUBULAR MARKERS SHALL BE CEMENTED TO THE PAVEMENT SURFACE WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH THE TUBULAR MARKER MANUFACTURER'S SPECIFICATIONS.
3. YELLOW TUBULAR MARKERS SHALL HAVE A YELLOW POST AND YELLOW "HIGH INTENSITY GRADE" RETROREFLECTIVE SHEETING. ORANGE TUBULAR MARKERS SHALL HAVE AN ORANGE POST AND WHITE HIGH INTENSITY RETROREFLECTIVE SHEETING.
4. POST SHALL BE FLEXIBLE, HIGH IMPACT RESISTANT PLASTIC MATERIAL.

DETAIL NO.

141



STANDARD DETAIL
ENGLISH

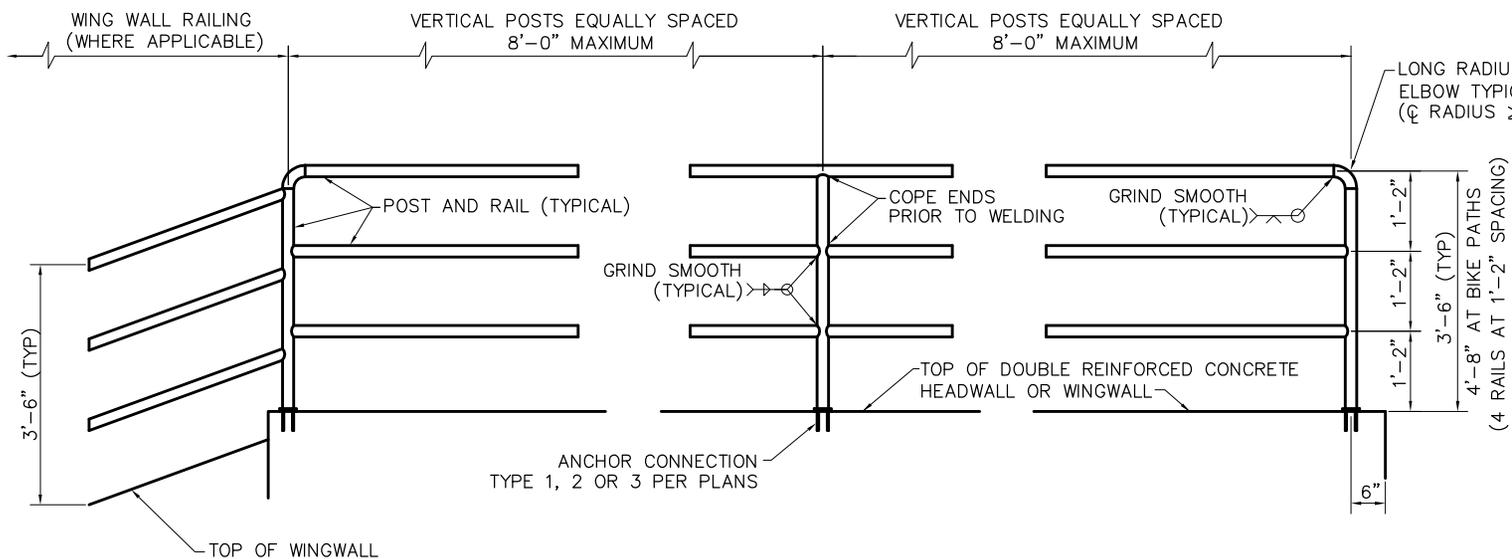
HAZARD MARKER

REVISED

01-01-2009

DETAIL NO.

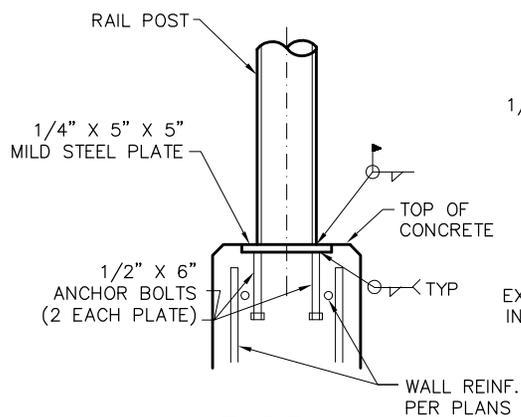
141



ELEVATION

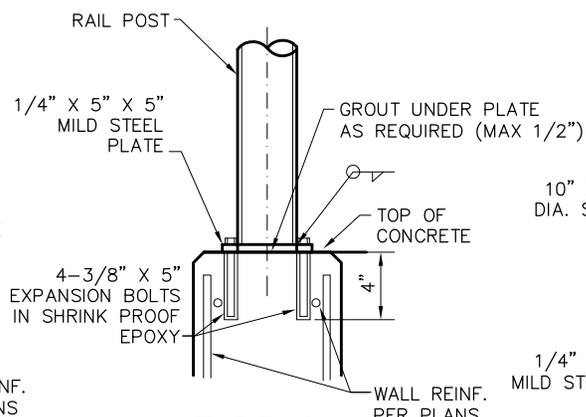
NOTES:

1. POSTS AND RAILS SHALL BE 1.5" SCHEDULE 40 HOT-DIPPED GALVANIZED STEEL PIPE ASTM A 53, GRADE B (2.72 #/LF, 1.9" O.D.). GALVANIZING SHALL BE IN ACCORDANCE WITH SECTION 771.
2. PAINT RAIL PER MAG SPECIFICATIONS SECTION 530 WHEN REQUIRED BY PLANS. SHOP PRIME WITH RUST INHIBITING PRIMER (FIELD REPAIR PRIMER AS NEEDED). COLOR PER PLANS.
3. VERTICAL POSTS TO BE EVENLY SPACED.
4. REMOVE ALL SHARP EDGES.
5. INSTALL SAFETY RAIL AS REQUIRED BY PLANS OR SPECIFICATIONS.
6. THE EMBEDMENT FOR ANCHOR TYPES 1, 2 AND 3 SHALL BE LOCATED INSIDE THE WALL REINFORCEMENT CAGE.
7. SAFETY RAIL IS NOT TO BE USED AS A PEDESTRIAN BRIDGE RAIL.



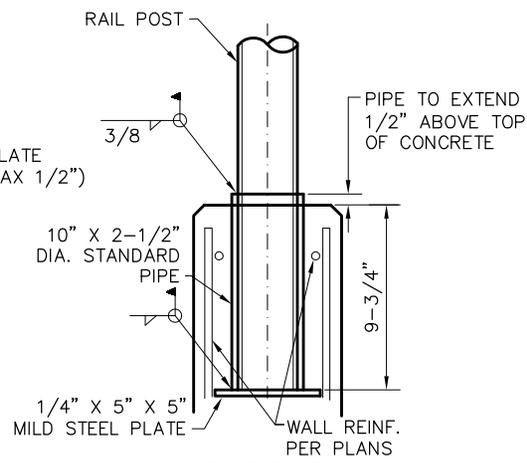
TYPE 1

ANCHOR PLATE DETAIL



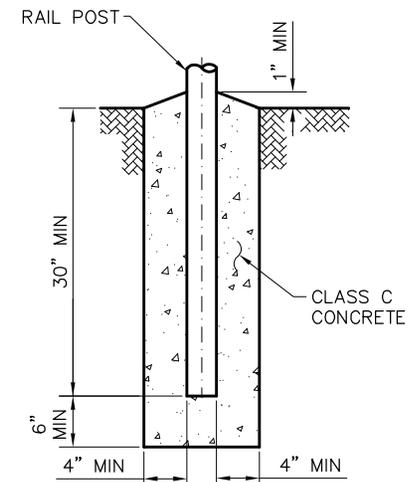
TYPE 2

EXPANSION BOLT DETAIL



TYPE 3

PIPE SLEEVE DETAIL



TYPE 4

GROUND INSTALLATION DETAIL

NOTE: SEE PLANS FOR ANCHORAGE DETAILS FOR ATTACHMENT TO SINGULARLY REINFORCED AND NON-REINFORCED WALLS.

DETAIL NO.

145



STANDARD DETAIL
ENGLISH

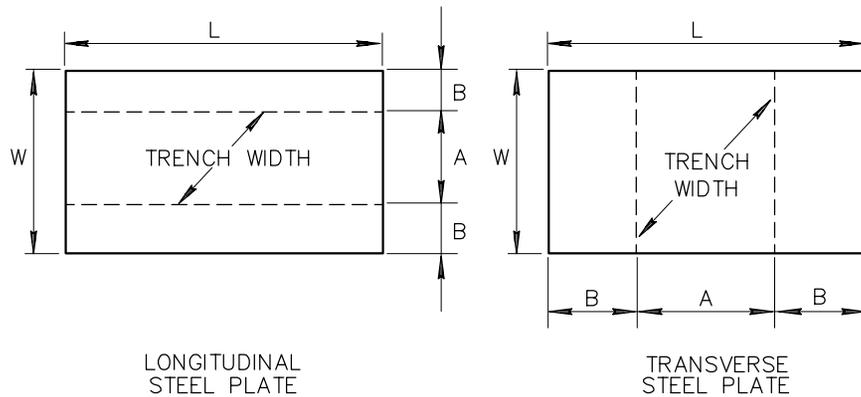
SAFETY RAIL

REVISED

01-01-2011

DETAIL NO.

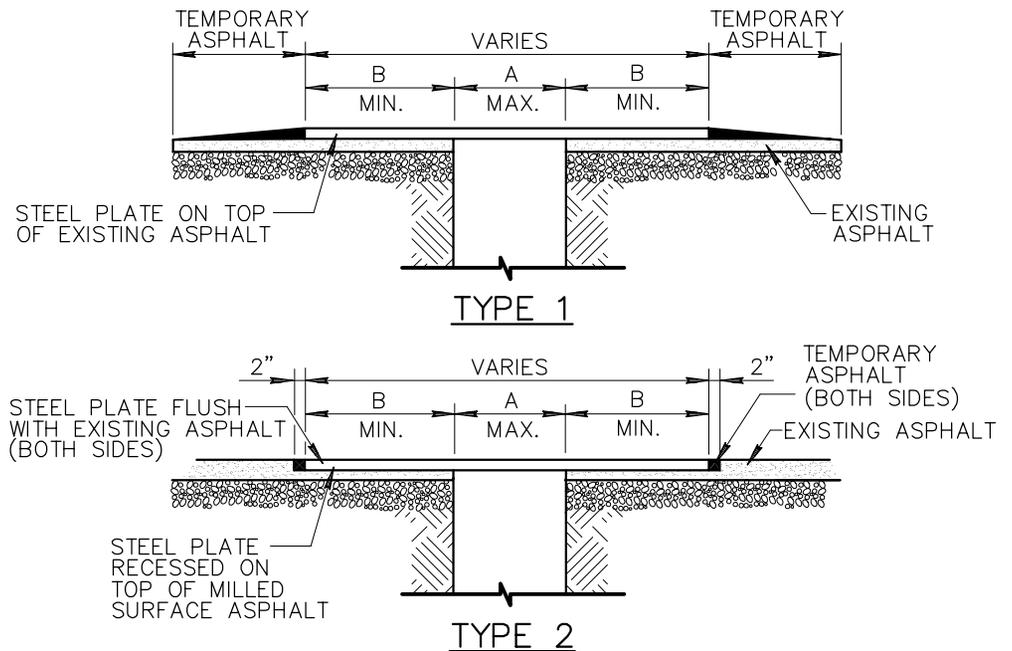
145



NOTES:

1. USE TYPE 1 PLATE INSTALLATION WHERE POSTED SPEED LIMIT IS LESS THAN 30 MPH. USE TYPE 2 PLATE INSTALLATION WHERE POSTED SPEED LIMIT IS 30 MPH OR GREATER.
2. FOR TYPE 2 PLATE INSTALLATION, THE STEEL PLATE SHALL BE RECESSED BY MILLING INTO THE EXISTING ASPHALT TO SET FLUSH WITH THE SURFACE OF THE EXISTING ASPHALT. FULL DEPTH CUTTING OF PAVEMENT SECTION OUTSIDE OF TRENCH IS NOT PERMITTED. MILLING DEPTH SHALL MATCH THICKNESS OF PLATE. THE GAP BETWEEN THE EDGE OF THE PLATE AND THE ADJACENT EXISTING ASPHALT PAVEMENT MUST BE FILLED WITH TEMPORARY ASPHALT.
3. TRENCH WIDTHS ARE BASED ON AN ANALYSIS PER THE 14TH EDITION OF STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES BY AASHTO. AN ASSUMED AXLE LOADING OF 12 TONS WITH A 30% IMPACT FACTOR WAS USED. THE AXLE LENGTH IS 6 FEET; THEREFORE THE NUMBER OF WHEELS CARRIED BY A PLATE DEPENDS ON THE ROADWAY WIDTH.
4. STEEL PLATE MUST BE ABLE TO WITHSTAND H-20 TRAFFIC LOADINGS WITHOUT ANY MOVEMENT.
5. PLATES SHALL BE FABRICATED FROM ASTM A36 STEEL (MIN).
6. PLATES SHALL BE SECURED FROM LATERAL MOVEMENT AND VERTICAL VIBRATION (ASSOCIATED NOISE) WHILE IN USE BY TEMPORARY ASPHALT (COLD MIX.)

PLATE SIZE						
LONGITUDINAL			TRANSVERSE			
(A)	(B)	THICKNESS	(W)	(L)	(A)	(B)
12"	18"	1"	4'	8'	58"	19"
12"	18"	1"	4'	10'	58"	31"
24"	18"	1"	5'	10'	70"	25"
36"	18"	1"	6'	10'	44"	38"
48"	18"	1"	7'	10'	52"	34"
60"	18"	1"	8'	10'	58"	31"
12"	18"	1-1/4"	4'	15'	88"	47"
24"	18"	1-1/4"	5'	12'	104"	20"
36"	18"	1-1/4"	6'	12'	66"	39"
36"	18"	1-1/4"	6'	16'	66"	63"
48"	18"	1-1/4"	7'	12'	76"	33"
48"	18"	1-1/4"	7'	16'	76"	58"
60"	18"	1-1/4"	8'	12'	86"	29"
60"	18"	1-1/4"	8'	15'	86"	47"
60"	18"	1-1/4"	8'	16'	86"	63"
60"	18"	1-1/4"	8'	20'	86"	77"
60"	18"	1-3/8"	8'	20'	102"	69"



DETAIL NO.

211



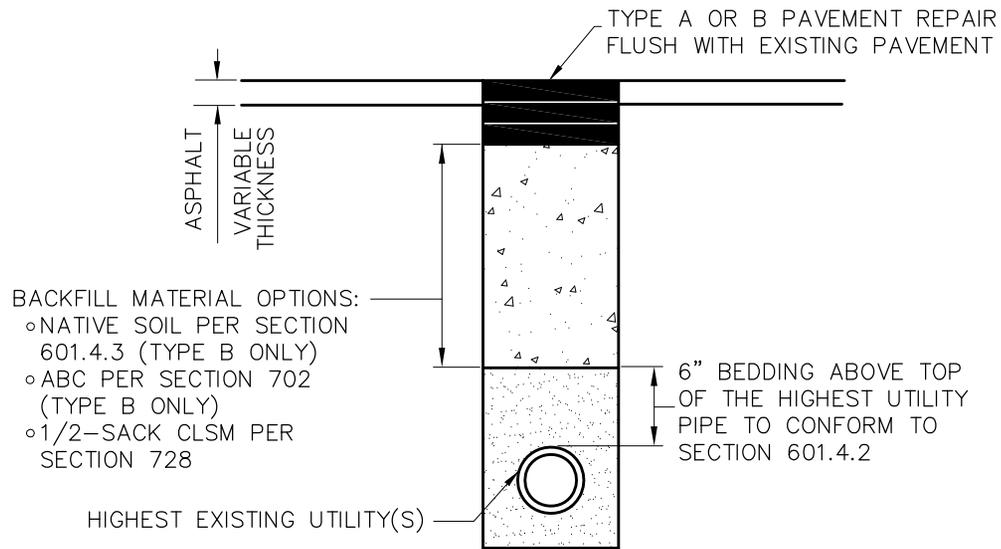
**STANDARD DETAIL
ENGLISH**

STANDARD TRENCH PLATING DETAIL

REVISED

DETAIL NO.

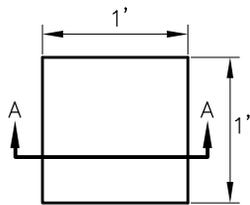
211



- BACKFILL MATERIAL OPTIONS:
- NATIVE SOIL PER SECTION 601.4.3 (TYPE B ONLY)
 - ABC PER SECTION 702 (TYPE B ONLY)
 - 1/2-SACK CLSM PER SECTION 728

SECTION VIEW

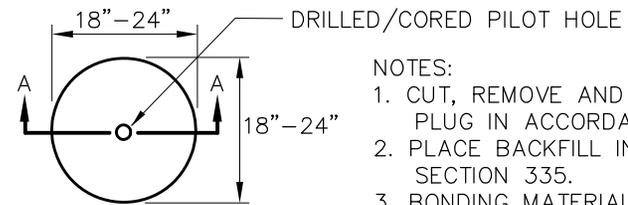
TYPE A PAVEMENT REPAIR



PLAN VIEW

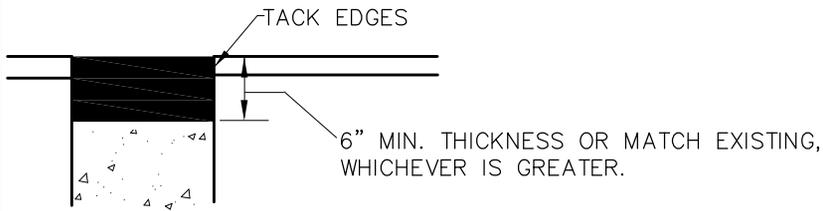
- NOTES:
1. DIMENSIONS ARE NOMINAL.
 2. EDGES SHALL BE CUT TO A NEAT VERTICAL FACE.
 3. PLACE CLSM BACKFILL IN ACCORDANCE WITH SECTION 604.
 4. PLACE AGENCY-APPROVED ASPHALT CONCRETE IN MAXIMUM 2" LIFTS.

TYPE B PAVEMENT REPAIR

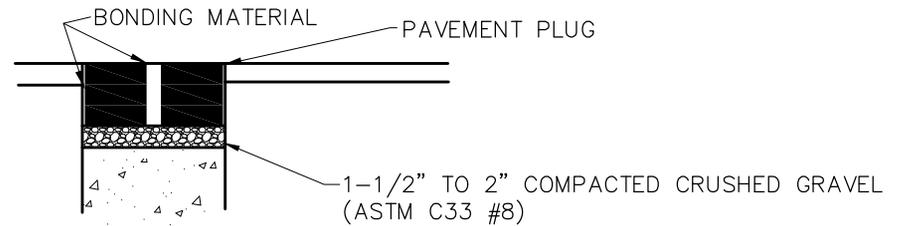


PLAN VIEW

- NOTES:
1. CUT, REMOVE AND REPLACE PAVEMENT PLUG IN ACCORDANCE WITH SECTION 335.
 2. PLACE BACKFILL IN ACCORDANCE WITH SECTION 335.
 3. BONDING MATERIAL SHALL BE AS SPECIFIED IN SECTION 708.



SECTION A-A



SECTION A-A

DETAIL NO.

212



STANDARD DETAIL
ENGLISH

UTILITY POTHOLE REPAIR

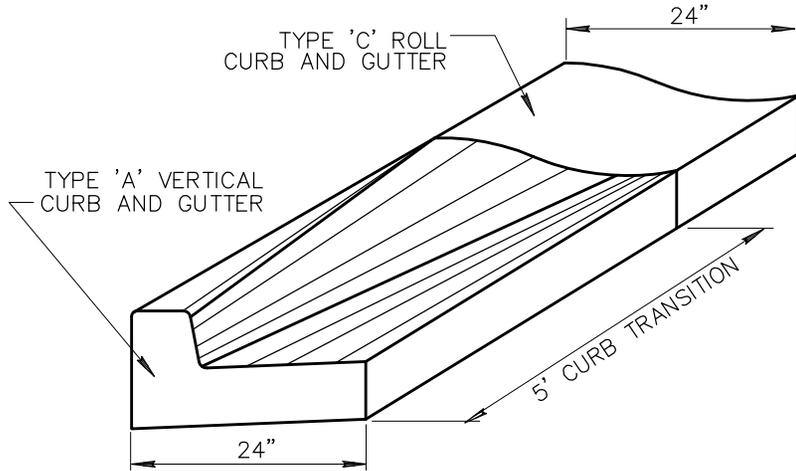
REVISED

01-01-2011

DETAIL NO.

212

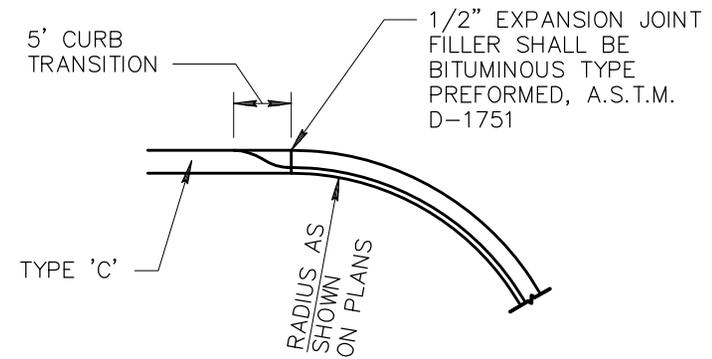
CURB TRANSITION TYPE 'A' TO TYPE 'C'



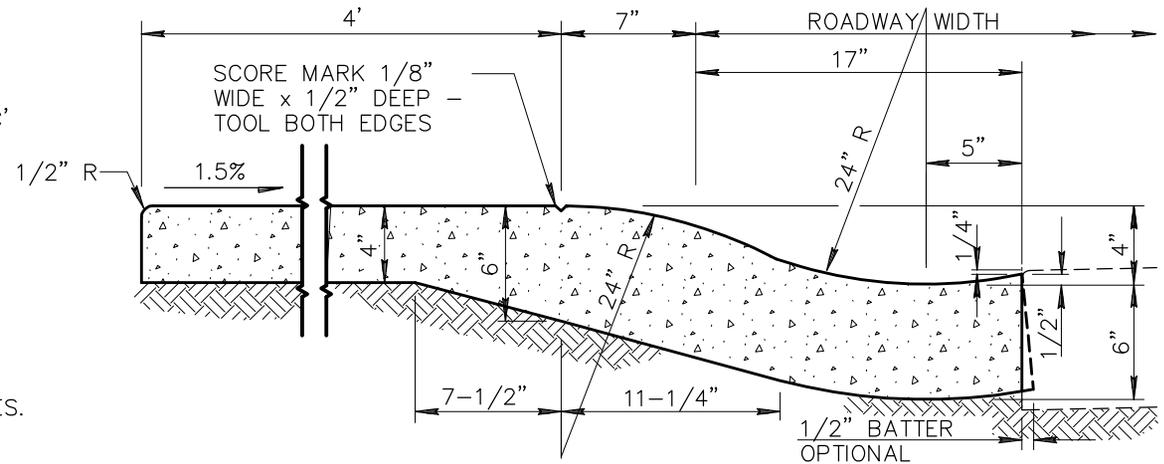
NOTES: (CURB AND GUTTER TRANSITIONS)

1. TRANSITIONS WILL BE PAID FOR AS THE PREDOMINANT TYPE OF CURB AND GUTTER BEING TRANSITIONED. WHEN TYPE 'A' CURB AND GUTTER ARE USED AT CURB RETURNS AND TYPE 'C' CURB AND GUTTER IS PREDOMINANTLY USED ELSEWHERE, THE TYPE 'A' TO TYPE 'C' TRANSITIONS SHALL BE MEASURED AND PAID FOR AS TYPE 'C' CURB AND GUTTER.
2. WHERE PROPOSED CONSTRUCTION IS TO BE CONNECTED TO EXISTING CURB AND GUTTER, THE TRANSITION SHALL BE INDICATED ON PLANS.
3. CLASS 'B' CONCRETE PER SECT. 725.
4. TRANSITION BETWEEN TYPICAL SECTIONS SHALL BE ACCOMPLISHED BY THE USE OF DIRECT STRAIGHT LINE TRANSITIONS OF THE FLOW LINE AND OTHER SURFACE FEATURES.

CURB AND GUTTER TRANSITION



INTEGRAL ROLL CURB, GUTTER AND SIDEWALK



NOTES: (INTEGRAL ROLL CURB, GUTTER AND SIDEWALK)

1. CONCRETE TO BE MONOLITHIC POUR. EXPOSED SURFACE FINISH AS PER SIDEWALK AND GUTTER DETAIL.
2. CONTRACTION JOINT SPACING 5' MAXIMUM.
3. EXPANSION JOINTS PER SECT. 340.
4. CLASS 'B' CONCRETE PER SECT. 725.

DETAIL NO.

221



MARICOPA
ASSOCIATION of
GOVERNMENTS

STANDARD DETAIL
ENGLISH

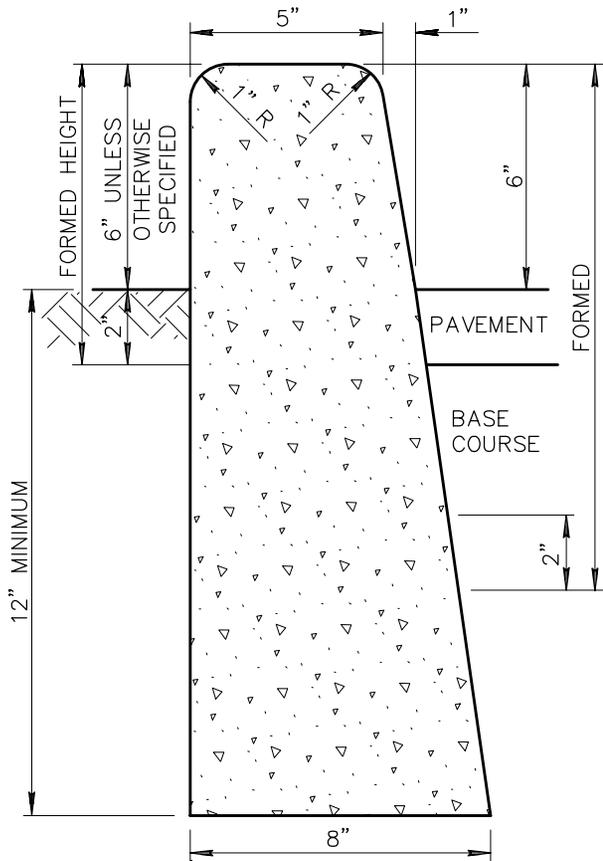
CURB AND GUTTER TRANSITION TYPE A TO TYPE C
INTEGRAL ROLL CURB, GUTTER AND SIDEWALK

REVISED

01-01-2011

DETAIL NO.

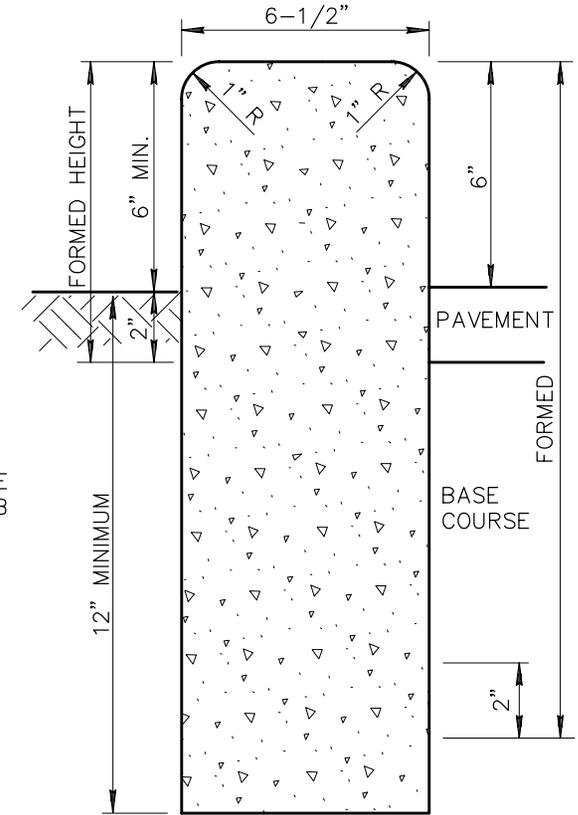
221



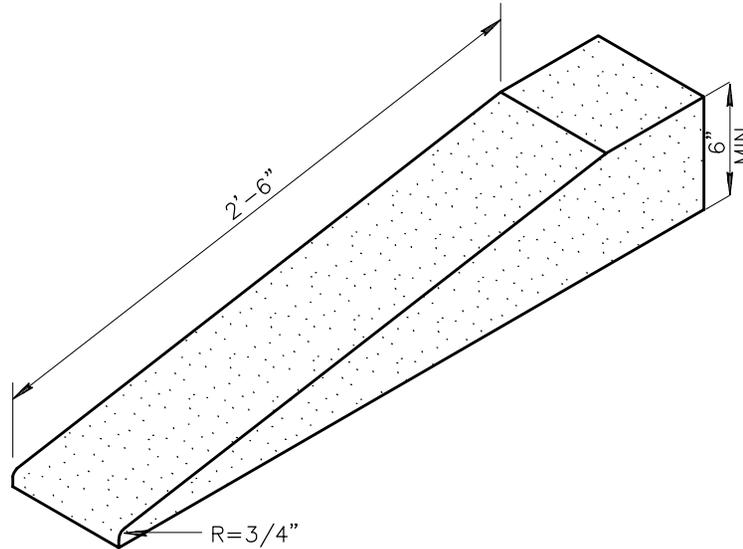
TYPE 'A'

NOTES:

1. ALL VERTICAL SURFACES TO BE FORMED.
2. VERTICAL SURFACES DOWN FROM 2" BELOW UNDISTURBED SOIL MAY BE PLACED AGAINST NEAT CUT IF APPROVED BY THE ENGINEER AND CONCRETE WILL NOT EXTEND MORE THAN 1" BEYOND THEORETICAL FACE.
3. ALL EXPOSED SURFACES TO BE STRIPPED GREEN AND TROWEL FINISHED.
4. CONCRETE CURBS CONFORM TO SECT. 340.
5. MAXIMUM SPACING OF CONTRACTION JOINTS IS 10'
6. CONCRETE TO BE CLASS 'B' PER SECT. 725.
7. WHEN PAVEMENT AND BASE COURSE EQUALS OR EXCEEDS 10" IN DEPTH, THE ENTIRE ROADWAY SIDE OF THE CURB SHALL BE FORMED. THE TOTAL CURB HEIGHT REMAINS 18" UNLESS NOTED OTHERWISE.



TYPE 'B'



TYPICAL CURB TERMINATION

DETAIL NO.

222



STANDARD DETAIL
ENGLISH

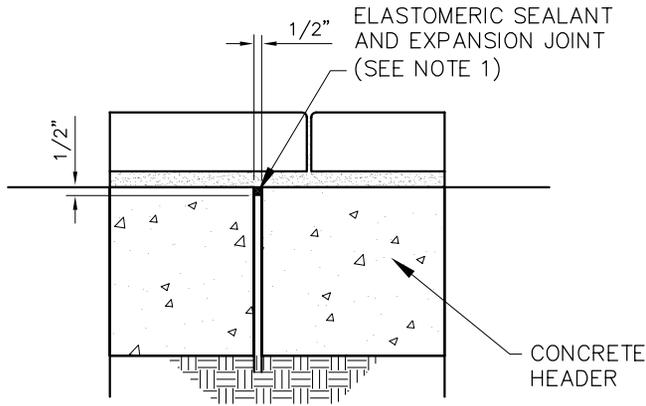
SINGLE CURB –
TYPES A, B AND TERMINATION

REVISED

01-01-2008

DETAIL NO.

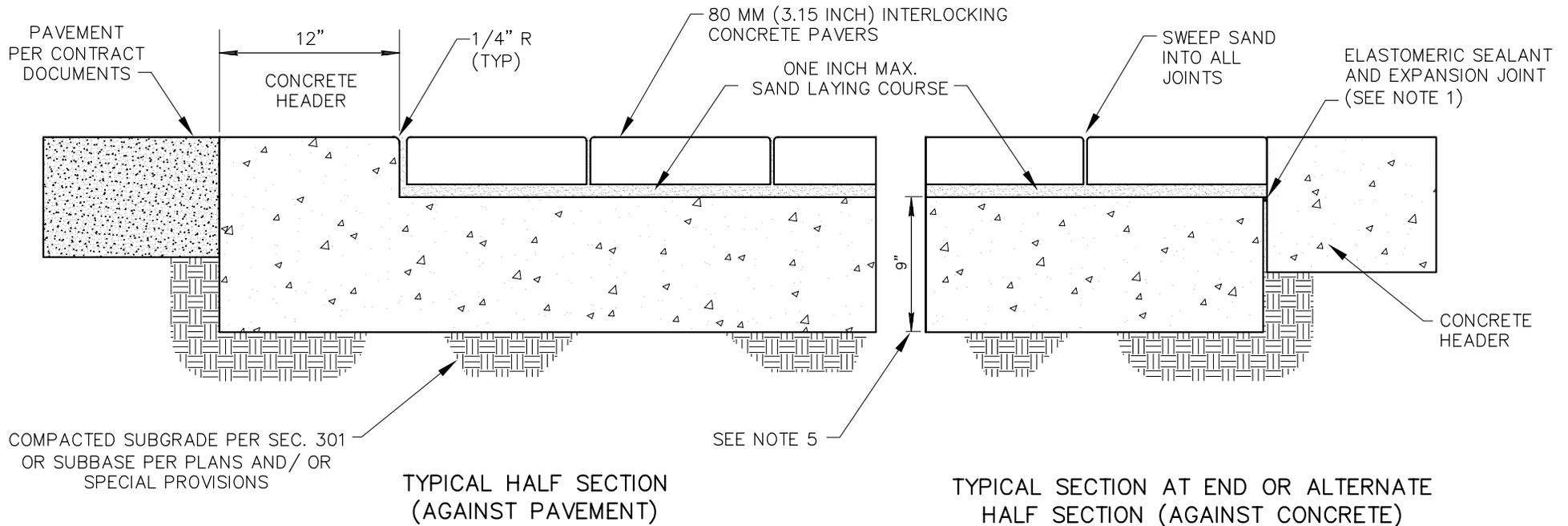
222



EXPANSION JOINT DETAIL

NOTES:

1. 1/2 INCH EXPANSION JOINT, ASTM D-1751 PER SEC. 729 AND ELASTOMERIC SEALANT PER SEC. 342
2. CONTRACTION JOINTS PER SEC. 342
3. MATERIALS AND CONSTRUCTION PER SEC. 342
4. PORTLAND CEMENT CONCRETE SHALL BE CLASS A
5. DESIGN PARAMETERS FOR THE THICKNESS IS BASED ON:
 ASSUMES MODULUS OF SUBGRADE REACTION (K) = 100 pci
 CONCRETE WORKING STRESS (f1) = 300 psi
 TERMINAL SERVICABILITY INDEX (p1) OF 2.5 OVER 20 YEARS
 AND 1 MILLION TOTAL EQUIVALENT 18-KIP SINGLE-AXLE
 LOAD APPLICATIONS



TYPICAL HALF SECTION (AGAINST PAVEMENT)

TYPICAL SECTION AT END OR ALTERNATE HALF SECTION (AGAINST CONCRETE)

DETAIL NO.

225



STANDARD DETAIL
ENGLISH

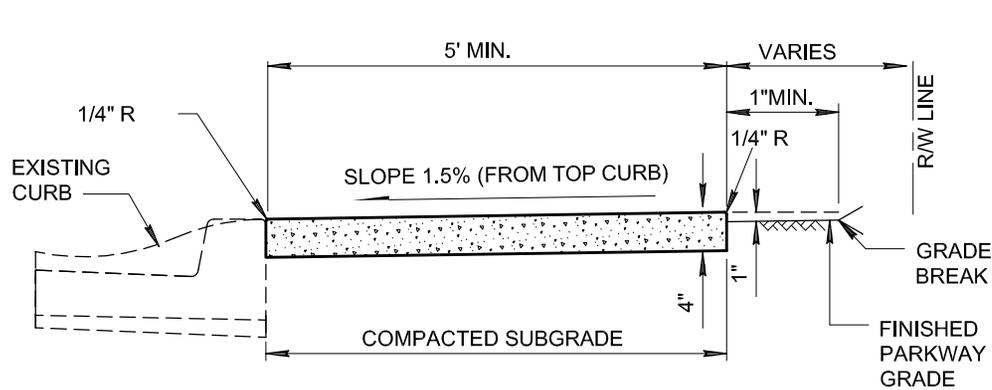
CONCRETE PAVERS

REVISED

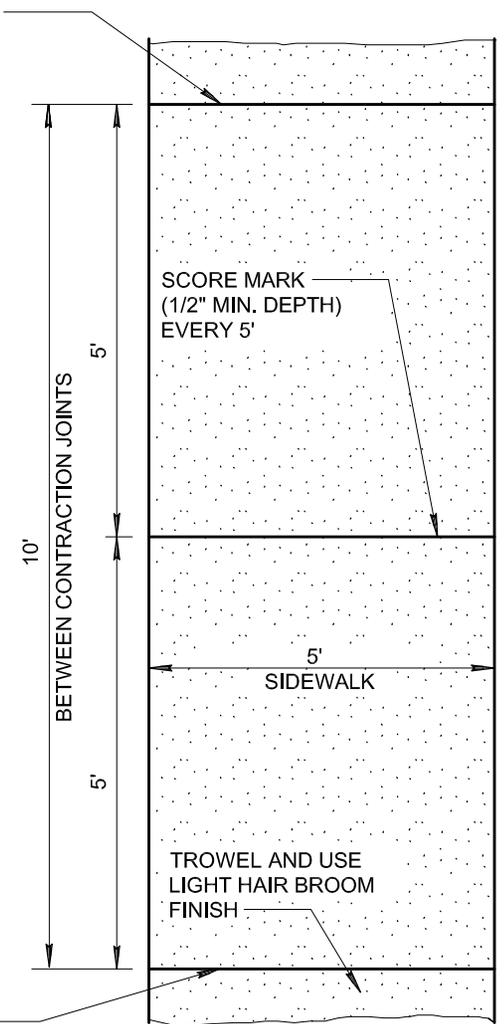
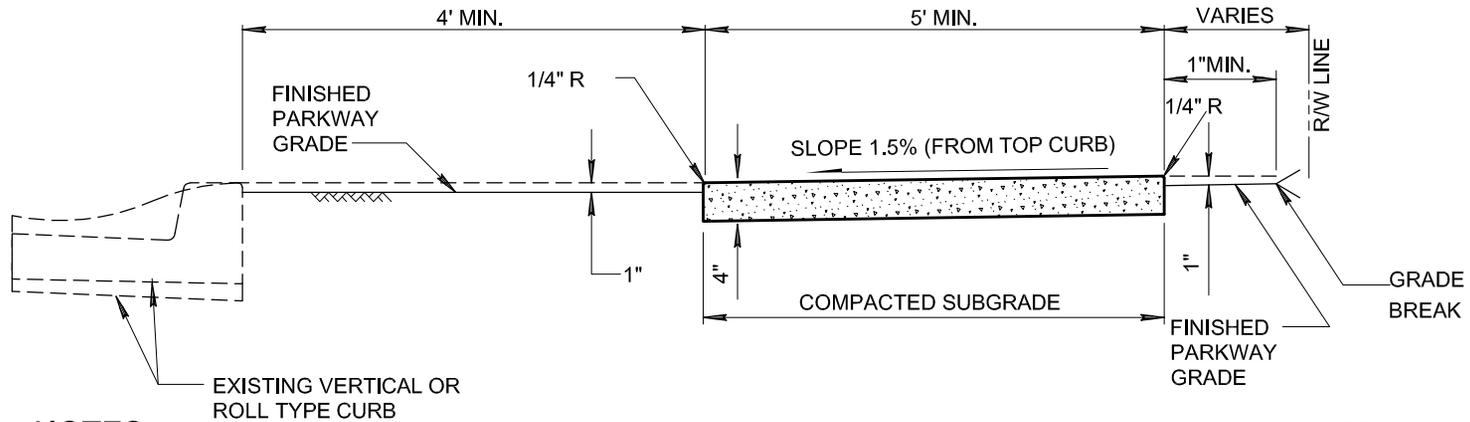
01-01-2005

DETAIL NO.

225



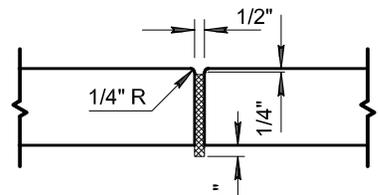
CURB AND GUTTER
CONTRACTION JOINT
SHALL MATCH
SIDEWALK JOINT



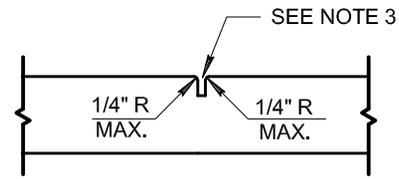
NOTES:

1. SIDEWALK CONSTRUCTION SHALL CONFORM TO SECTION 340.
2. EXPANSION JOINTS SHALL BE 1/2" BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER, A.S.T.M. D-1751.
3. LARGE AGGREGATE, IN CONTRACTION JOINT SHALL BE SEPARATED TO A DEPTH OF 1", FINISH DEPTH SHALL BE A MINIMUM OF 3/4".
4. EXPANSION JOINTS SHALL CONFORM TO SECTION 340, BE INSTALLED PRIOR TO CONCRETE PLACEMENT, AND AT A MAXIMUM SPACING OF 50'. THE EXPANSION JOINT MUST PROVIDE COMPLETE SEPERATION OF THE SIDEWALK FROM ADJOINING CONCRETE.
5. CONCRETE SHALL BE CLASS 'B' PER SECTION 725.
6. WHEN SIDEWALK AND ADJACENT CURB ARE INSTALLED MONOLITHICALLY, THE MID-POINT SCORE LINE SHALL EXTEND ACROSS THE CURB.

CURB AND GUTTER
CONTRACTION JOINT
SHALL MATCH
SIDEWALK JOINT



EXPANSION JOINT



CONTRACTION JOINT

DETAIL NO.
230

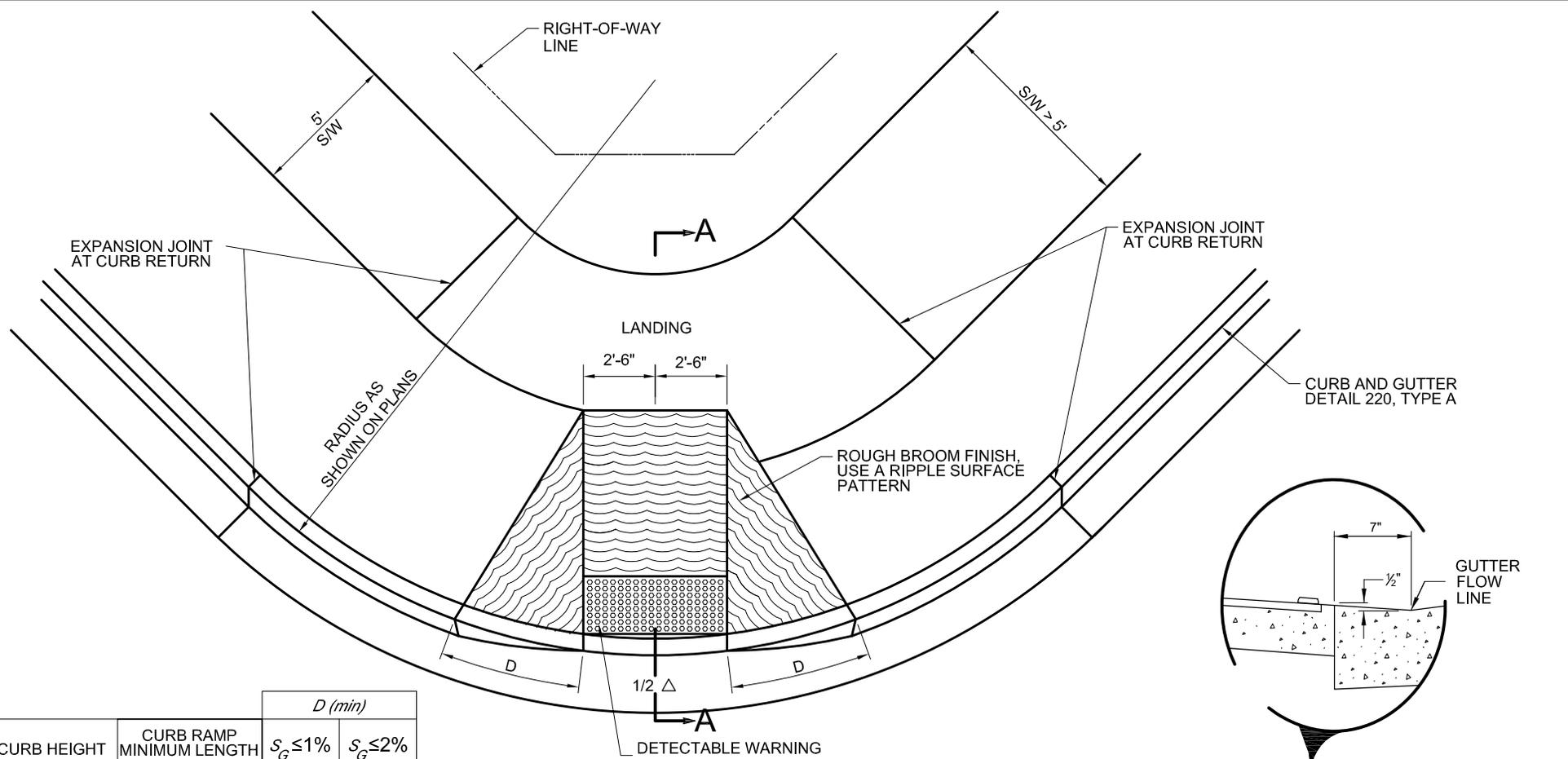


STANDARD DETAIL
ENGLISH

SIDEWALKS

REVISED
01-01-2011

DETAIL NO.
230

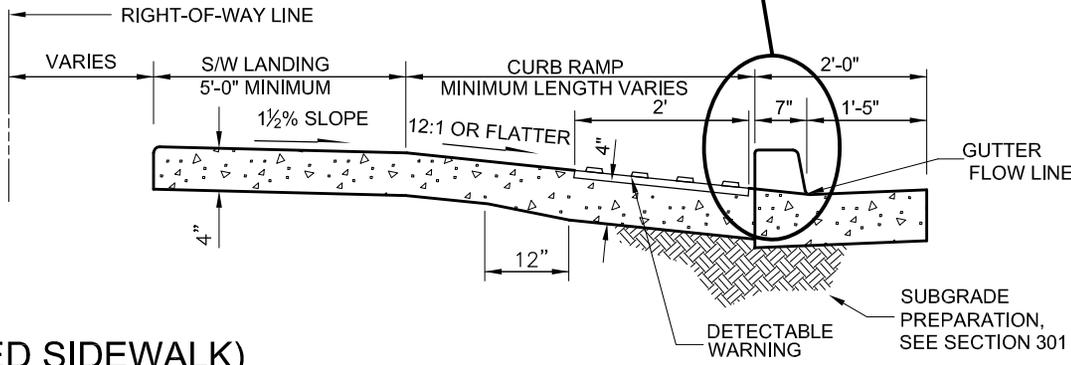
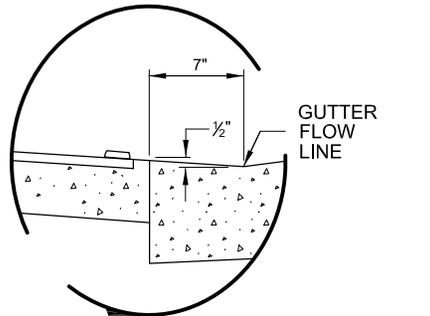


CURB HEIGHT	CURB RAMP MINIMUM LENGTH	<i>D (min)</i>	
		$S_G \leq 1\%$	$S_G \leq 2\%$
4"	5'	4.0'	4.5'
6"	7½'	6.0'	6.5'
7"	9'	6.5'	7.5'

S_G = MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS

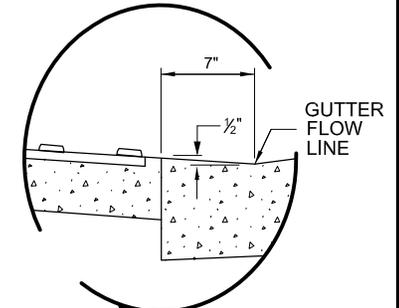
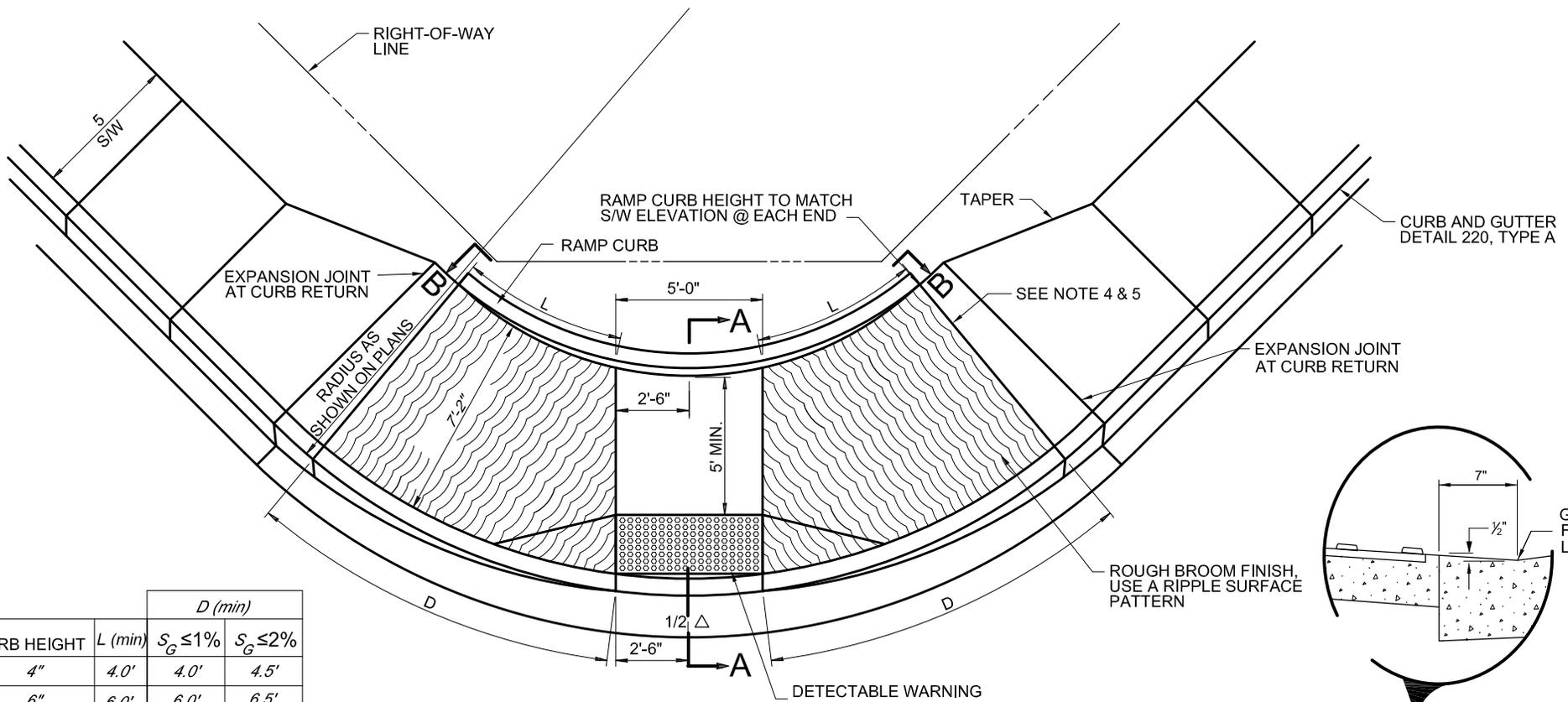
NOTES:

1. CLASS 'B' CONCRETE PER SECTION 725.
2. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
3. SIDEWALK SURFACE TO MATCH
1½% SLOPE FROM TOP OF CURB
4. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
5. DETAIL IS ADA COMPLIANT FOR $S_G \leq 2\%$.



TYPE 'A' (DETACHED SIDEWALK)

SECTION A-A

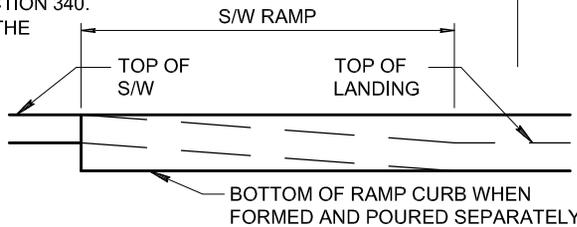


CURB HEIGHT	L (min)	D (min)	
		$S_G \leq 1\%$	$S_G \leq 2\%$
4"	4.0'	4.0'	4.5'
6"	6.0'	6.0'	6.5'
7"	7.0'	6.5'	7.5'

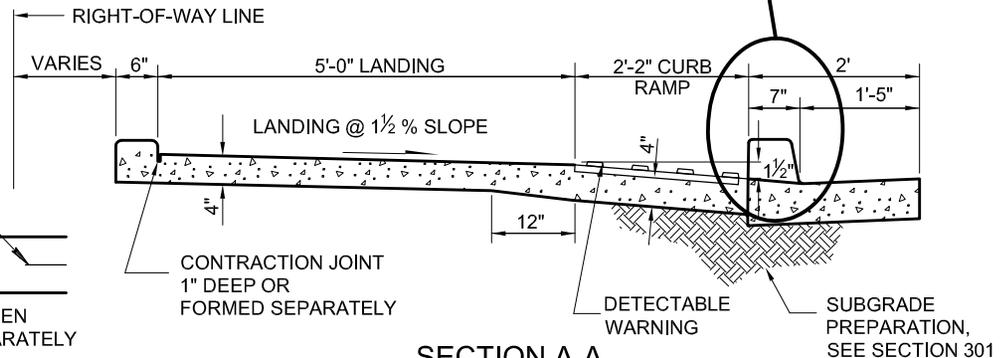
S_G = MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS

NOTES:

1. CLASS 'B' CONCRETE PER SECTION 725.
2. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
3. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
4. INCREASE 'L' OR 'D' AS NEEDED TO HAVE THE TOP OF RAMP FORM A RADIAL LINE.
5. WHEN TOP OF RAMP IS LESS THAN 4' FROM CURB RETURN, EXTEND RAMP TO THE CURB RETURN.
6. DETAIL IS ADA COMPLIANT FOR $S_G \leq 2\%$.



SECTION B-B



SECTION A-A

TYPE 'B'

DETAIL NO.
235-2



STANDARD DETAIL
ENGLISH

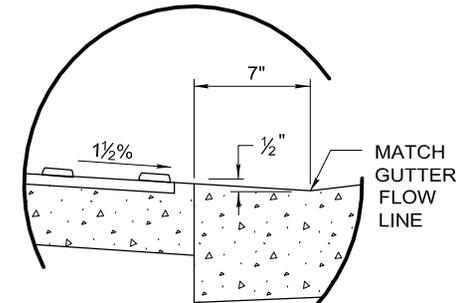
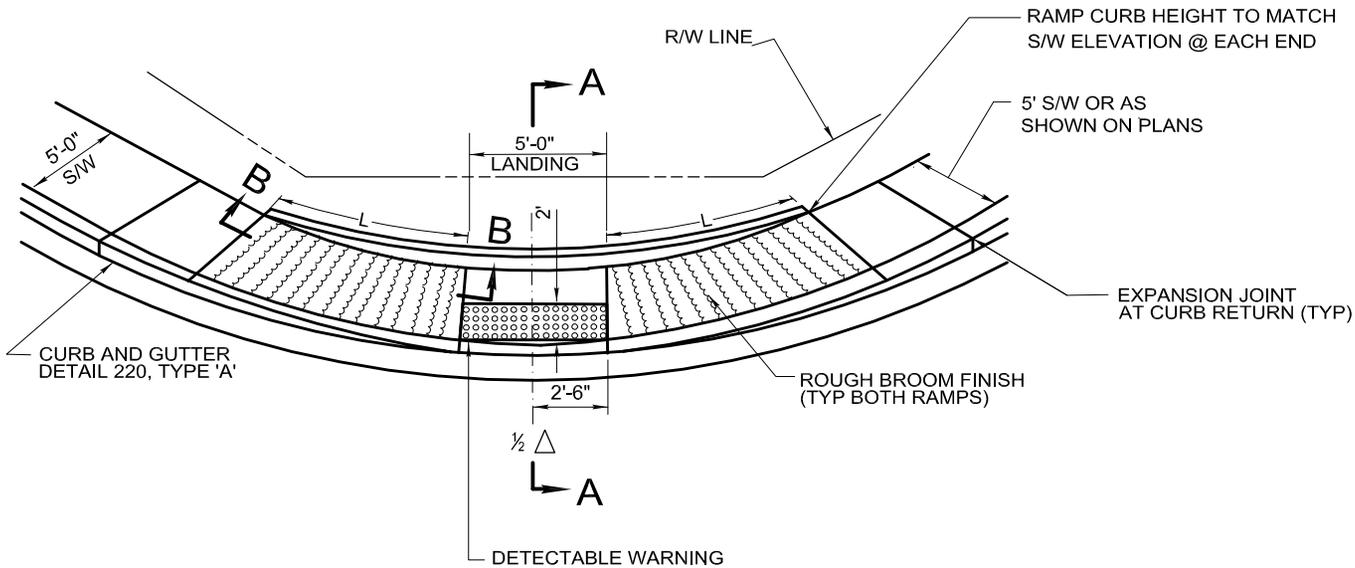
CURB RAMPS

REVISED
01-01-2011

DETAIL NO.
235-2

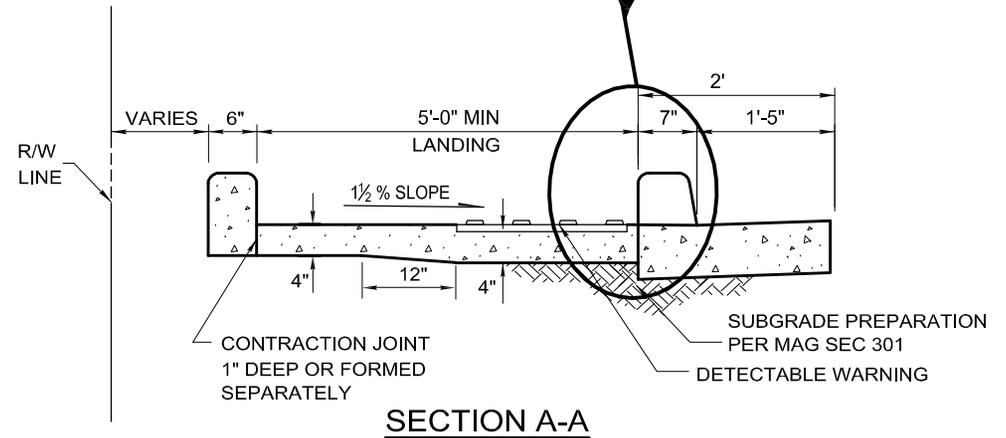
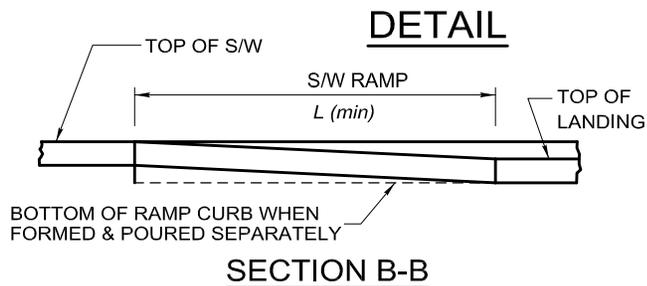
NOTES:

1. CLASS 'B' CONCRETE CONSTRUCTION PER SECTION 725.
2. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENT.
3. RAMP LONGITUDINAL SLOPE SHALL BE 12:1 OR FLATTER.
4. RAMP CROSS SLOPE SHALL BE 1½%.
5. DETAIL IS ADA COMPLIANT FOR CURB RADII ≥ 20' AND GUTTER SLOPE ≤ 2.0%.

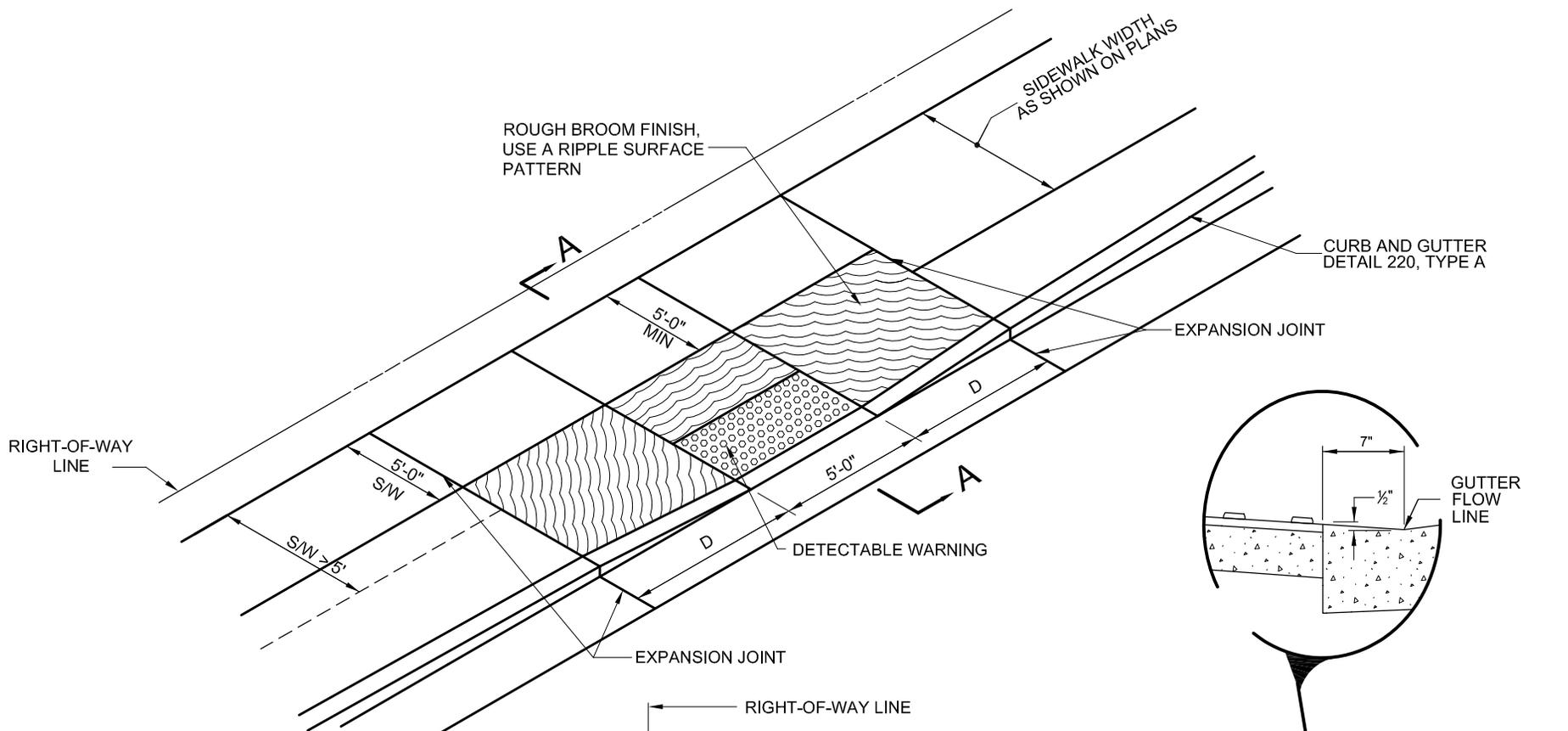


CURB HEIGHT	L (min)	
	$S_G \leq 1\%$	$S_G \leq 2\%$
4"	5.0'	6.0'
6"	7.0'	8.5'

S_G = MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS



TYPE 'C'

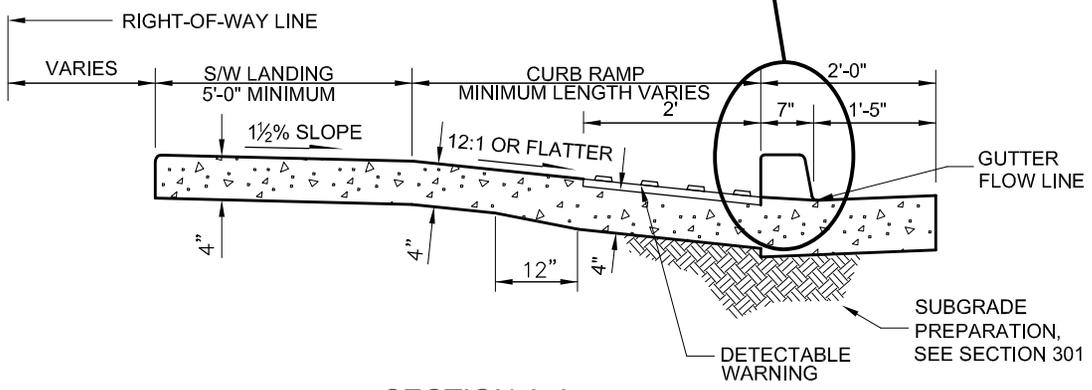


CURB HEIGHT	CURB RAMP MINIMUM LENGTH	D (min)	
		$S_G \leq 1\%$	$S_G \leq 2\%$
4"	5'	4.0'	4.5'
6"	7 1/2'	6.0'	6.5'
7"	9'	6.5'	7.5'

S_G = MAXIMUM GUTTER SLOPE WITHIN RAMP LIMITS

NOTES:

1. CLASS 'B' CONCRETE PER SECTION 725.
2. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
3. SIDEWALK SURFACE TO MATCH 1 1/2 % SLOPE FROM TOP OF CURB.
4. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
5. DETAIL IS ADA COMPLIANT FOR $S_G \leq 2\%$.



TYPE 'D' DETACHED SIDEWALK

DETAIL NO.
235-4

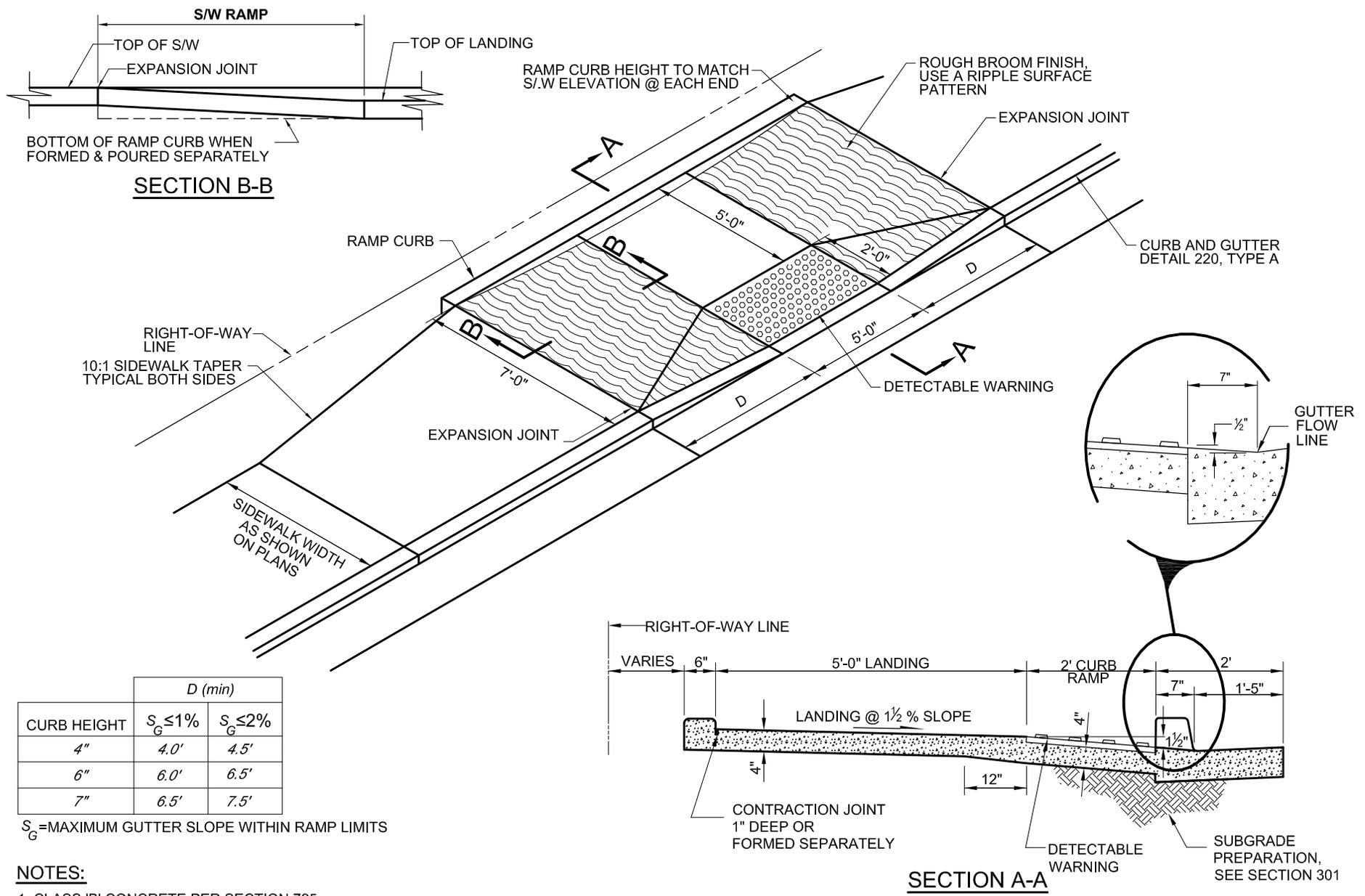


STANDARD DETAIL
ENGLISH

CURB RAMPS

REVISED
01-01-2011

DETAIL NO.
235-4

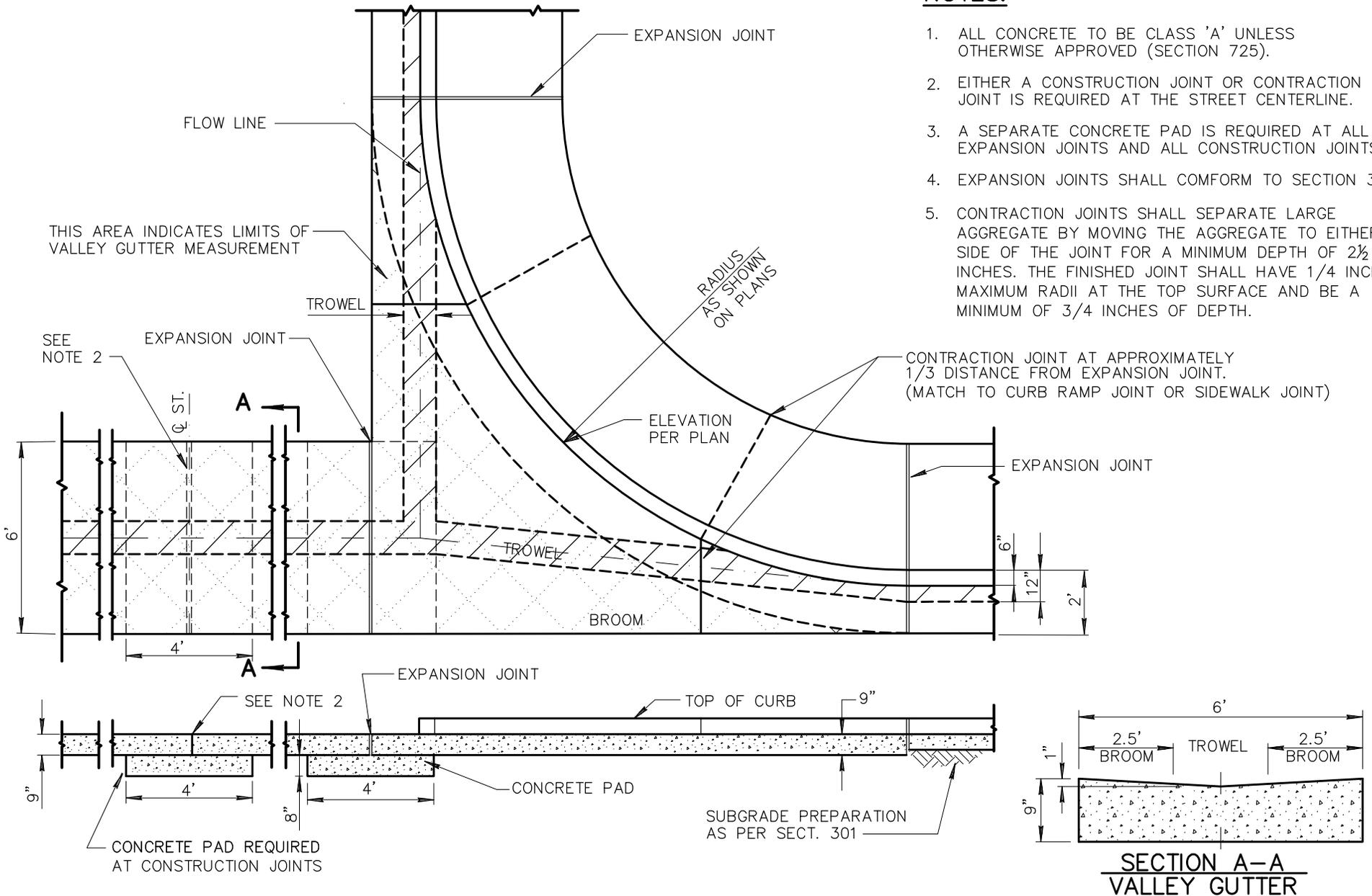


TYPE 'E'

- NOTES:**
1. CLASS 'B' CONCRETE PER SECTION 725.
 2. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
 3. DETECTABLE WARNING IS TO COMPLY WITH THE JURISDICTIONAL AGENCY'S REQUIREMENTS.
 4. DETAIL IS ADA COMPLIANT FOR $S_G \leq 2\%$.

NOTES:

1. ALL CONCRETE TO BE CLASS 'A' UNLESS OTHERWISE APPROVED (SECTION 725).
2. EITHER A CONSTRUCTION JOINT OR CONTRACTION JOINT IS REQUIRED AT THE STREET CENTERLINE.
3. A SEPARATE CONCRETE PAD IS REQUIRED AT ALL EXPANSION JOINTS AND ALL CONSTRUCTION JOINTS.
4. EXPANSION JOINTS SHALL COMFORM TO SECTION 340.
5. CONTRACTION JOINTS SHALL SEPARATE LARGE AGGREGATE BY MOVING THE AGGREGATE TO EITHER SIDE OF THE JOINT FOR A MINIMUM DEPTH OF 2½ INCHES. THE FINISHED JOINT SHALL HAVE 1/4 INCH MAXIMUM RADII AT THE TOP SURFACE AND BE A MINIMUM OF 3/4 INCHES OF DEPTH.



DETAIL NO.

240



STANDARD DETAIL
ENGLISH

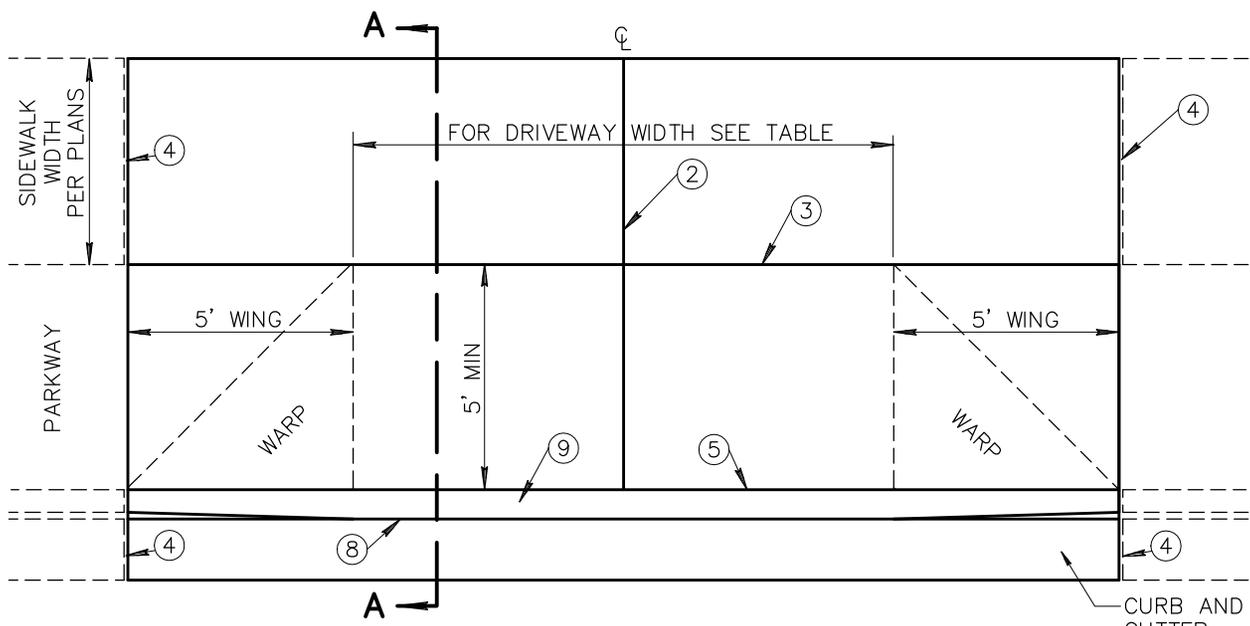
VALLEY GUTTER

REVISED

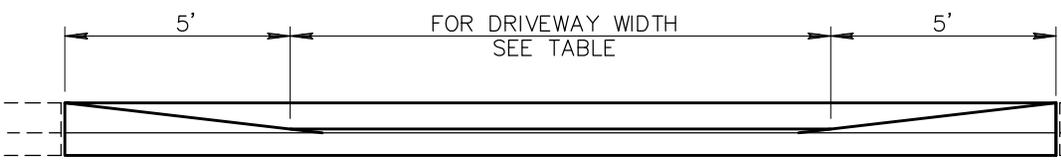
01-01-2010

DETAIL NO.

240

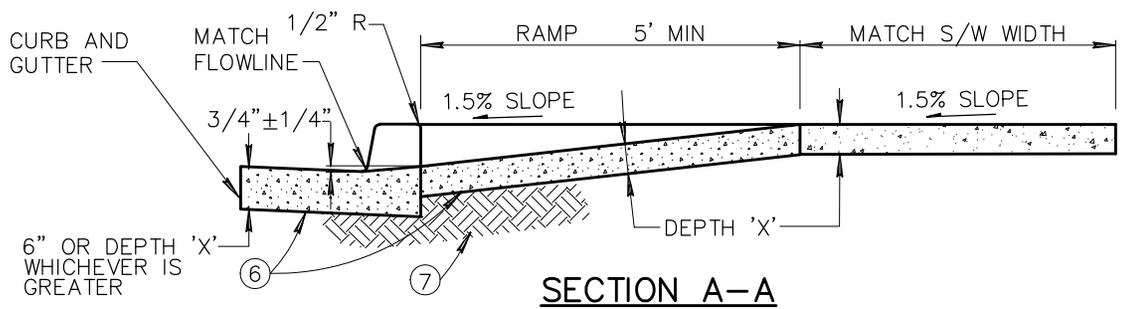


DRIVEWAY WITH DETACHED SIDEWALK



NOTES:

1. DEPRESSED CURB SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. CONTRACTION JOINT ON D/W CENTERLINE.
3. CONTRACTION JOINT.
4. 1/2-INCH EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
5. BACK OF CURB - CONSTRUCTION JOINT.
6. CONCRETE CLASS AS NOTED IN TABLE. CONCRETE PER SECTION 725.
7. SUBGRADE PREPARATION, SECT. 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB.
10. SECT. A-A AND ELEVATION: D/W SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.
11. ROUGH BROOM FINISH FULL WIDTH OF RAMP AND WINGS. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.



SECTION A-A

COMMERCIAL AND INDUSTRIAL				
DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
COMMERCIAL	* 16'	40'	A	9"
INDUSTRIAL	* 16'	40'	A	9"
* 24' MIN. FOR TWO WAY TRAFFIC				
RESIDENTIAL				
DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
MAJOR STREET	16'	30'	B	5"
COLLECTOR STREET	* 12'	30'	B	5"
LOCAL STREET	12'	30'	B	5"
* 16' DESIRABLE				

DETAIL NO.
250-1

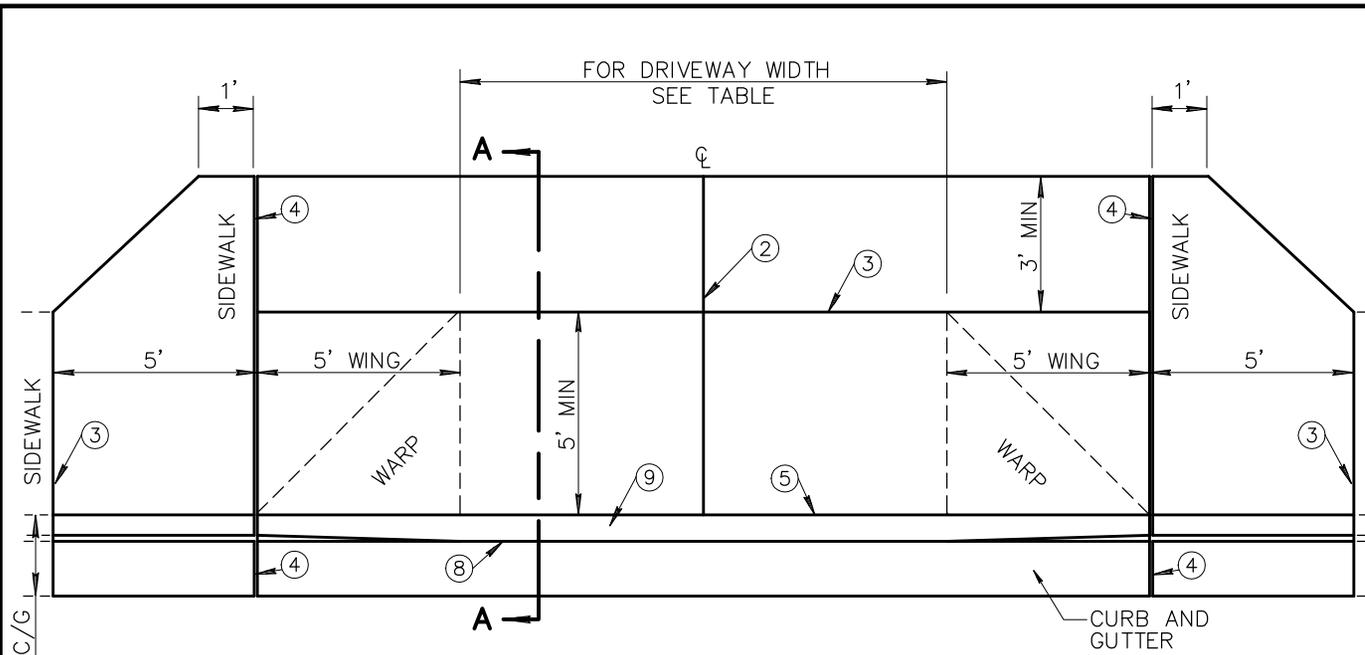


STANDARD DETAIL
ENGLISH

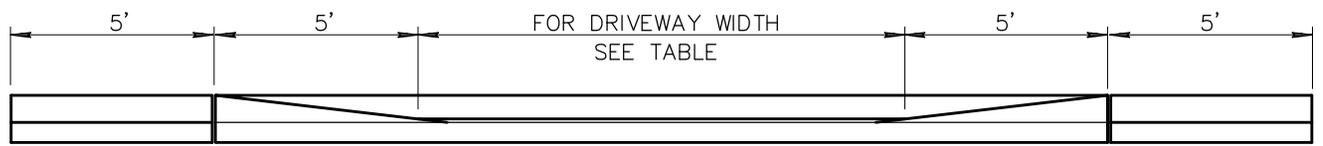
**DRIVEWAY ENTRANCES WITH
DETACHED SIDEWALK**

REVISED
01-01-2009

DETAIL NO.
250-1

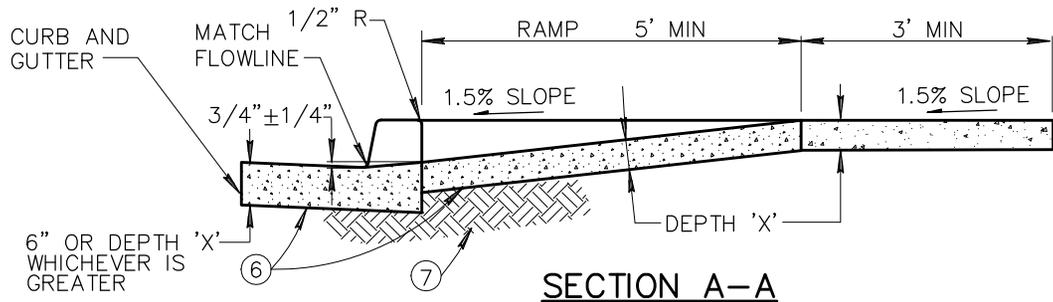


DRIVEWAY WITH SIDEWALK ATTACHED TO CURB



NOTES:

1. DEPRESSED CURB SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. CONTRACTION JOINT ON D/W CENTERLINE.
3. CONTRACTION JOINT.
4. 1/2-INCH EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
5. BACK OF CURB - CONSTRUCTION JOINT.
6. CONCRETE CLASS AS NOTED IN TABLE. CONCRETE PER SECTION 725.
7. SUBGRADE PREPARATION, SECT. 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB.
10. SECT. A-A AND ELEVATION: D/W SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.
11. ROUGH BROOM FINISH FULL WIDTH OF RAMP AND WINGS. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.



SECTION A-A

COMMERCIAL AND INDUSTRIAL				
DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
COMMERCIAL	* 16'	40'	A	9"
INDUSTRIAL	* 16'	40'	A	9"
* 24' MIN. FOR TWO WAY TRAFFIC				
RESIDENTIAL				
DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
MAJOR STREET	16'	30'	B	5"
COLLECTOR STREET	* 12'	30'	B	5"
LOCAL STREET	12'	30'	B	5"
* 16' DESIRABLE				

DETAIL NO.
250-2



STANDARD DETAIL
ENGLISH

**DRIVEWAY ENTRANCES WITH
SIDEWALK ATTACHED TO CURB**

REVISED
01-01-2009

DETAIL NO.
250-2