

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 6

PLANS
9-8-16

CONTRACT ID: DF00138

WBS ELEMENT NO.: 44916.3.4 & 44916.3.5

FEDERAL AID NO.: TAP-0620(037) & TAP-0620(038)

COUNTY: CUMBERLAND & HARNETT

TIP NO.: R-5786B

LENGTH OF PROJECT: VARIOUS

ROUTE NO.: VARIOUS

LOCATION: VARIOUS

TYPE OF WORK: CURB RAMP INSTALLATIONS

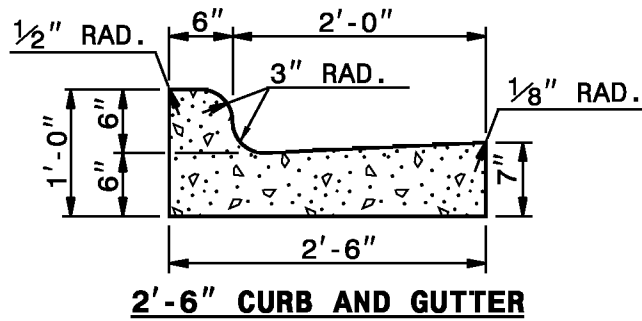
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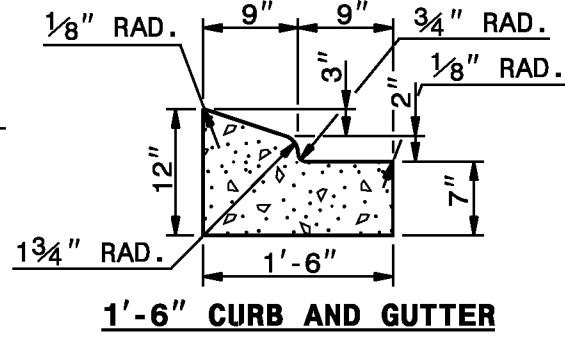
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SUMMARY OF QUANTITIES - CUMBERLAND & HARNETT CO.

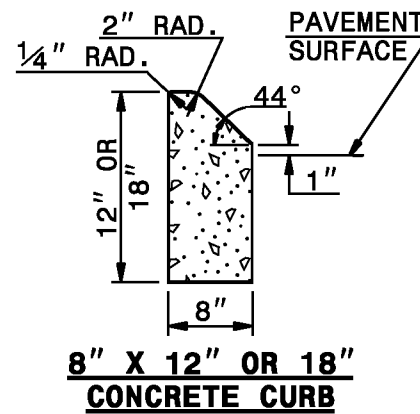
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PROJECT	COUNTY	MUNICIPALITY	MAJOR ROUTE	MINOR ROUTE	Mobilization	2'-6" Concrete Curb & Gutter	4" Concrete Sidewalk	Retrofit Existing Curb Ramp	Concrete Curb Ramp
NO					LS	LF	SY	EA	EA
44916.3.4	Cumberland	Fayetteville	Bonanza Dr	Glen Canyon	1	20	0	8	
44916.3.4	Cumberland	Fayetteville	Bonanza Dr	Longhorn		20	0	8	
44916.3.4	Cumberland	Fayetteville	Bragg Blvd	Sycamore Dairy		30	30		6
44916.3.4	Cumberland	Fayetteville	NC 210	Rowan Street		30	30	1	6
44916.3.4	Cumberland	Fayetteville	NC 210	Cumberland Street		20	20		4
44916.3.4	Cumberland	Fayetteville	SR 2311 (Gillespie St.)	Transportation Drive		10	10		2
44916.3.4	Cumberland	Fayetteville	SR 3950 / Ramsey St.	School Driveway (Reid Ross Classical)		10	10	0	2
44916.3.4	Cumberland	Fayetteville	Village Drive	Ireland Drive		5	5	1	1
44916.3.4	Cumberland	Fayetteville	Barecelona Drive	Cambridge D/W		10	35	0	2
44916.3.4	Cumberland	Fayetteville	US Hwy 401 (Ramsey St)	Rosehill Road		5	50		1
44916.3.4	Cumberland	Fayetteville	US Hwy 401 (Ramsey St)	North Gate Plaza 2		10			
44916.3.4	Cumberland	Fayetteville	US Hwy 401 (Ramsey St)	North Gate Plaza 3		10	10	2	2
TOTAL FOR TIP R-5786B / WBS NO. 44916.3.4					1	180	200	20	26
44916.3.5	Cumberland	Falcon	NC 82	Fayetteville Road		10	10		2
44916.3.5	Cumberland	Falcon	NC 82	Front Street		10	10		2
SUBTOTAL						20	20	0	4
44916.3.5	Harnett	Angier	NC 210	Broad St				6	
44916.3.5	Harnett	Angier	NC 210	Dunn St				4	
SUBTOTAL						0	0	10	0
44916.3.5	Harnett	Coats	NC 55	NC 27				4	
44916.3.5	Harnett	Coats	NC 55	E Main St				3	
SUBTOTAL						0	0	7	0
44916.3.5	Harnett	Erwin	NC 217	Denim Dr				4	
44916.3.5	Harnett	Erwin	NC 217	E H St				3	
SUBTOTAL						0	0	7	0
TOTAL FOR TIP R-5786B / WBS NO. 44916.3.5						20	20	24	4
GRAND TOTAL					1	200	220	44	30



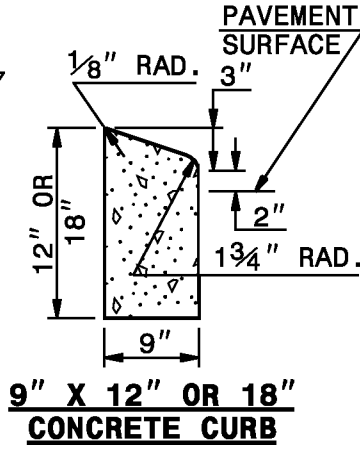
2'-6" CURB AND GUTTER



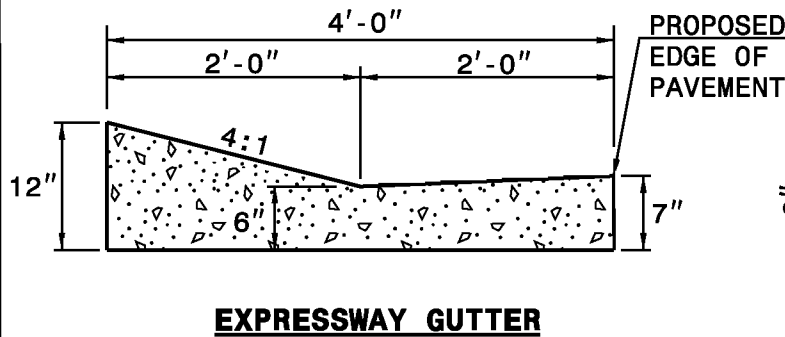
1'-6" CURB AND GUTTER



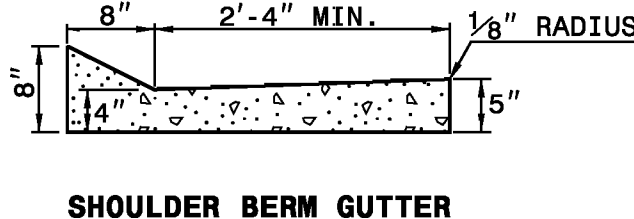
8" X 12" OR 18" CONCRETE CURB



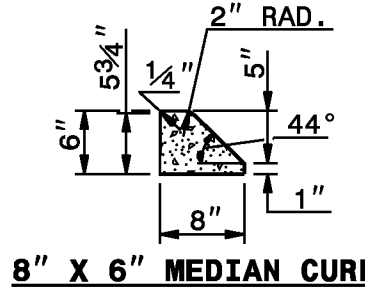
9" X 12" OR 18" CONCRETE CURB



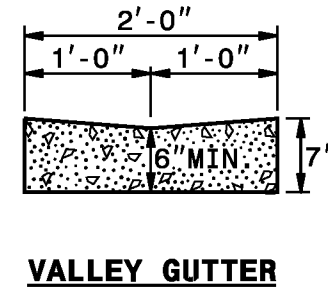
EXPRESSWAY GUTTER



SHOULDER BERM GUTTER



8" X 6" MEDIAN CURB

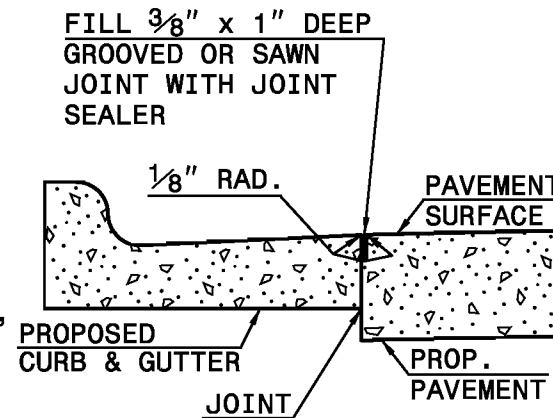


VALLEY GUTTER

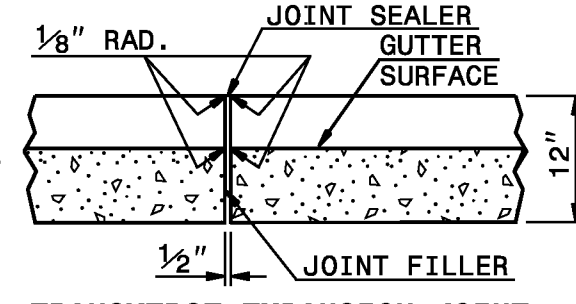
SECTION VIEW OF CURBS OR CURBS AND GUTTERS

GENERAL NOTES:

- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
- JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS.
- CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1 1/2" DEEP.
- FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
- SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.



LONGITUDINAL JOINT

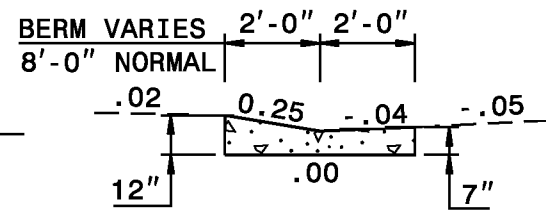
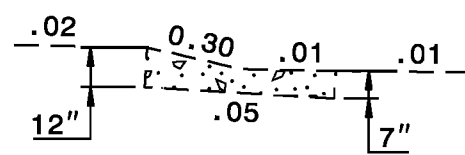
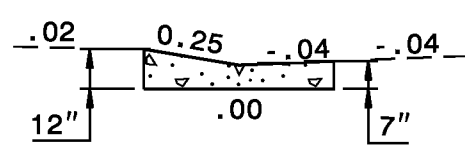
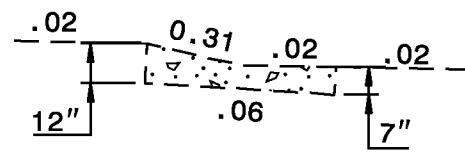
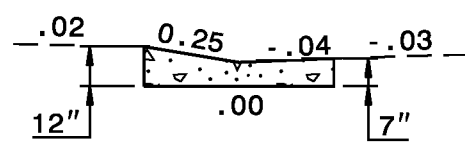
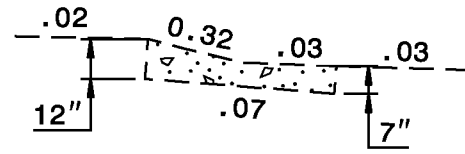
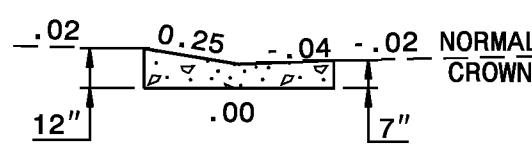
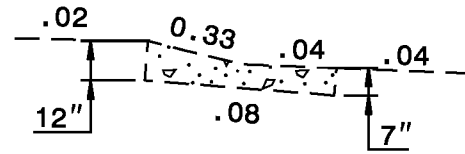
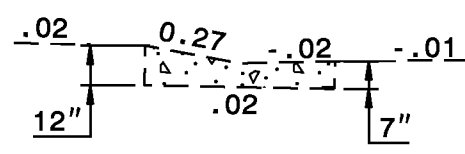
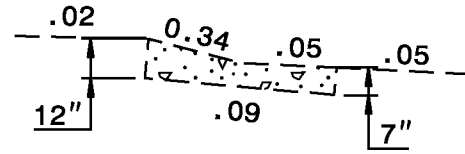
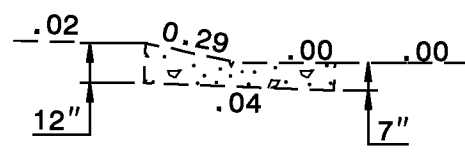
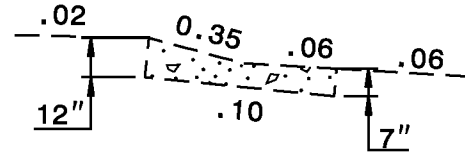


TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

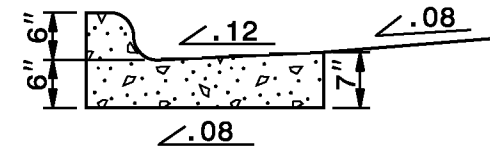
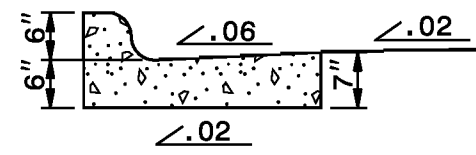
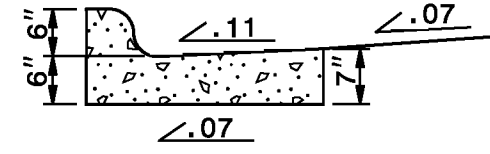
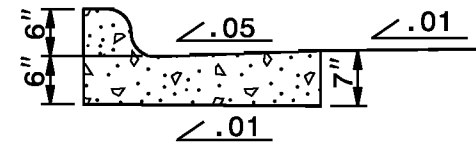
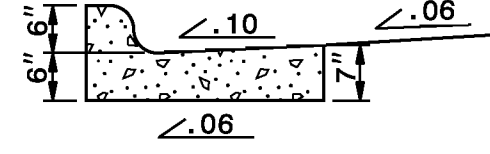
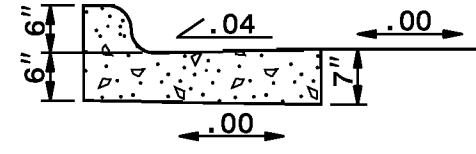
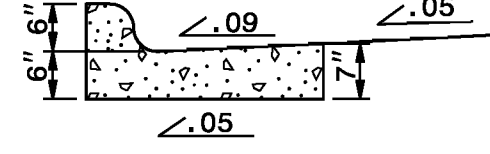
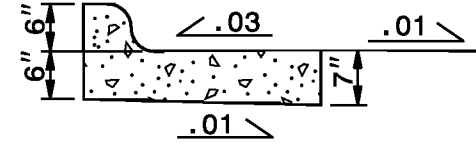
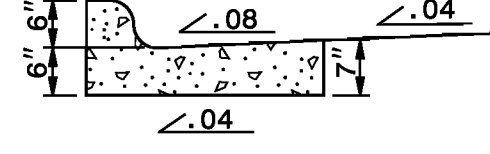
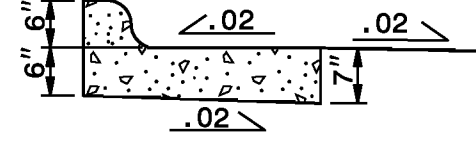
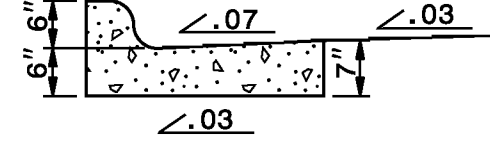
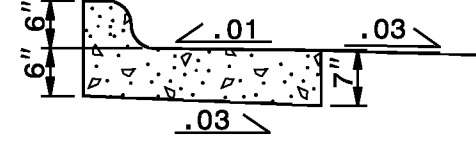
SECTION VIEW OF JOINTS

1-12

ENGLISH STANDARD DRAWING FOR
**CONCRETE CURB, GUTTER
AND CURB & GUTTER**



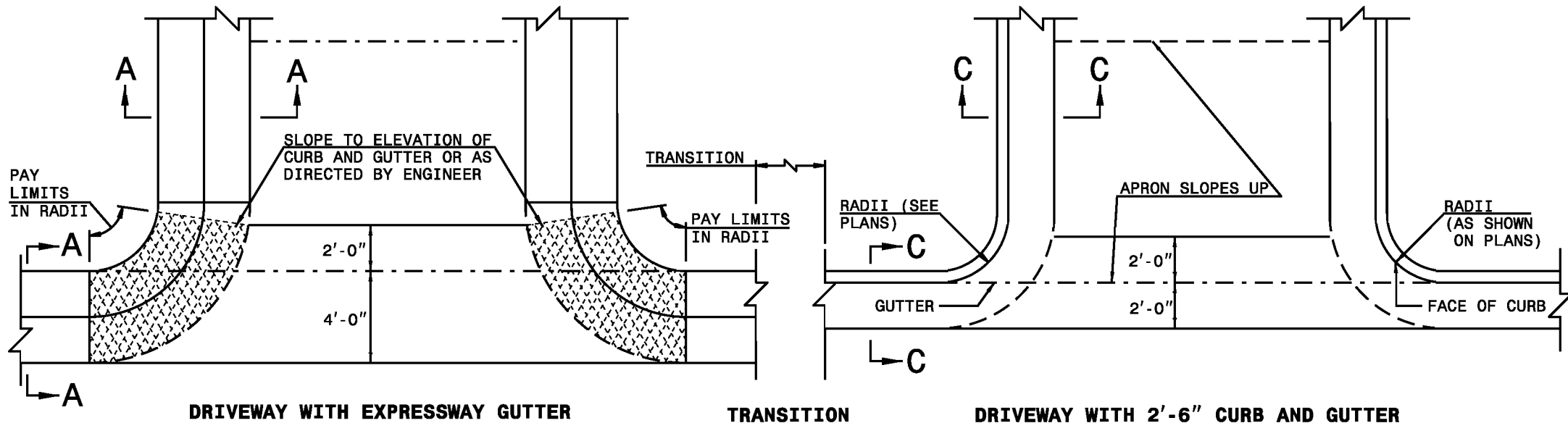
**SECTION VIEWS OF
EXPRESSWAY GUTTER IN SUPER ELEVATION**



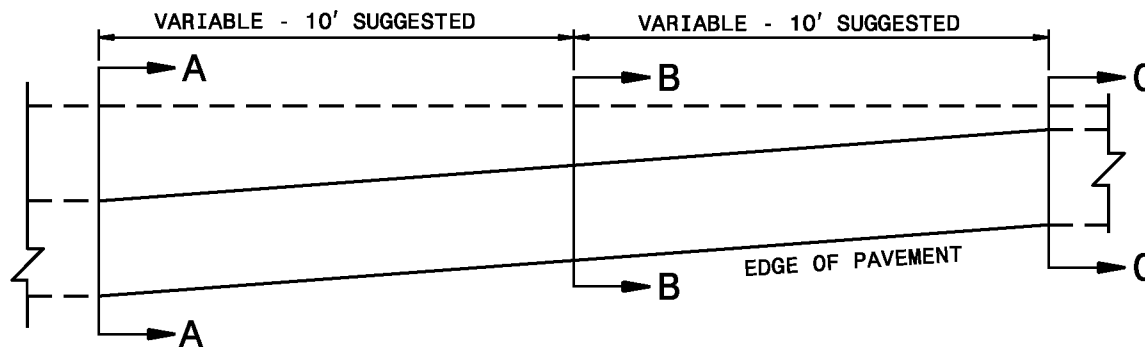
**SECTION VIEWS OF
2'-6" CURB AND GUTTER SUPERELEVATION RATES**

1-12

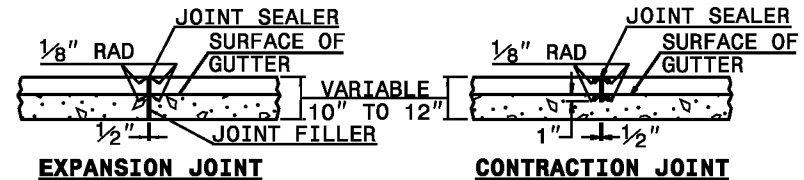
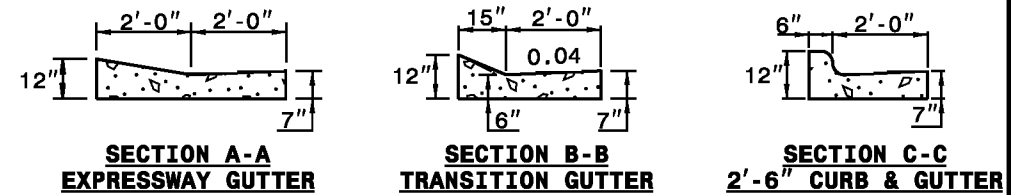
ENGLISH STANDARD DRAWING FOR
**CONCRETE CURB, GUTTER
AND CURB & GUTTER**



DRIVEWAY WITH EXPRESSWAY GUTTER TRANSITION DRIVEWAY WITH 2'-6" CURB AND GUTTER
PLAN VIEW OF TYPICAL CURB AND GUTTER OCCURENCES



PLAN VIEW OF TRANSITION
EXPRESSWAY GUTTER TO 2'-6" CURB AND GUTTER



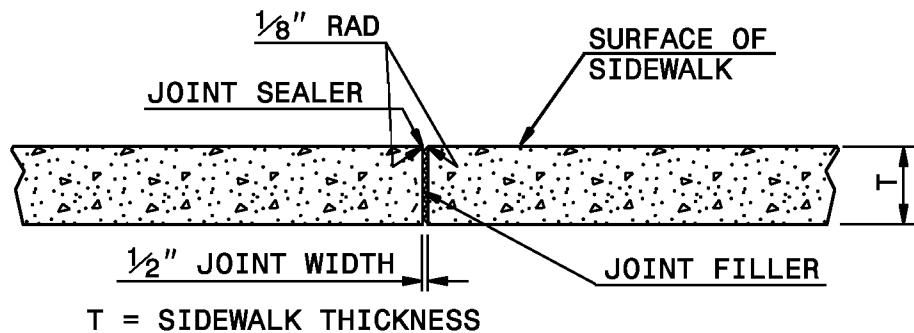
- NOTES:
 - IN THE TRANSITION FROM 4'-0" CONCRETE EXPRESSWAY GUTTER TO 2'-6" CONCRETE CURB AND GUTTER, PLACE 1/2" EXPANSION JOINTS AT 25' INTERVALS.
 - PLACE GROOVE JOINTS 1" DEEP AT 12'-6" INTERVALS BETWEEN EXPANSION JOINTS.
 - FILL AND SEAL THE TOP 1/2" OF THE EXPANSION JOINTS AND 1" OF CONTRACTION JOINTS WITH APPROVED JOINT SEALING COMPOUND.

NOTES:

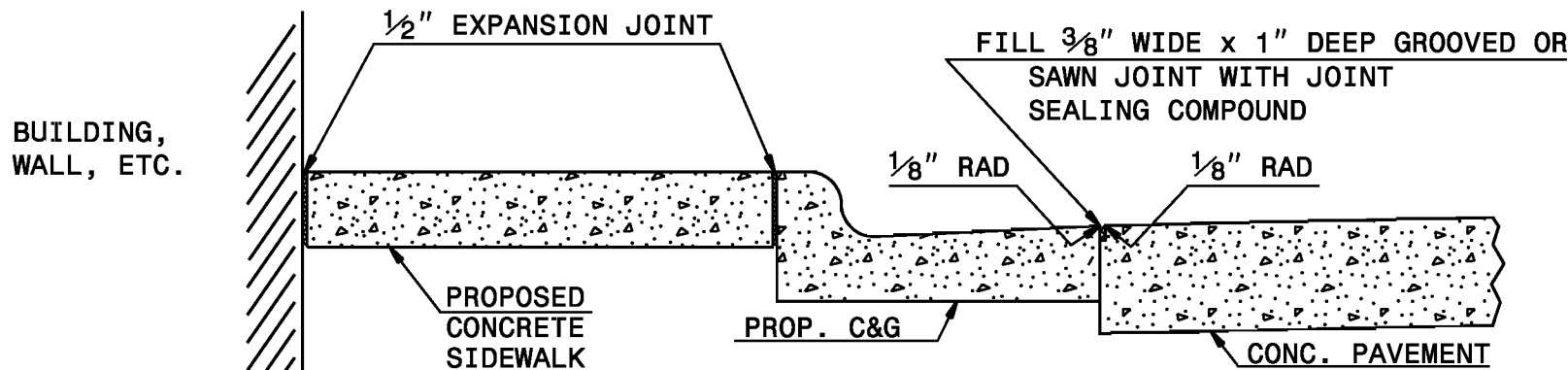
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

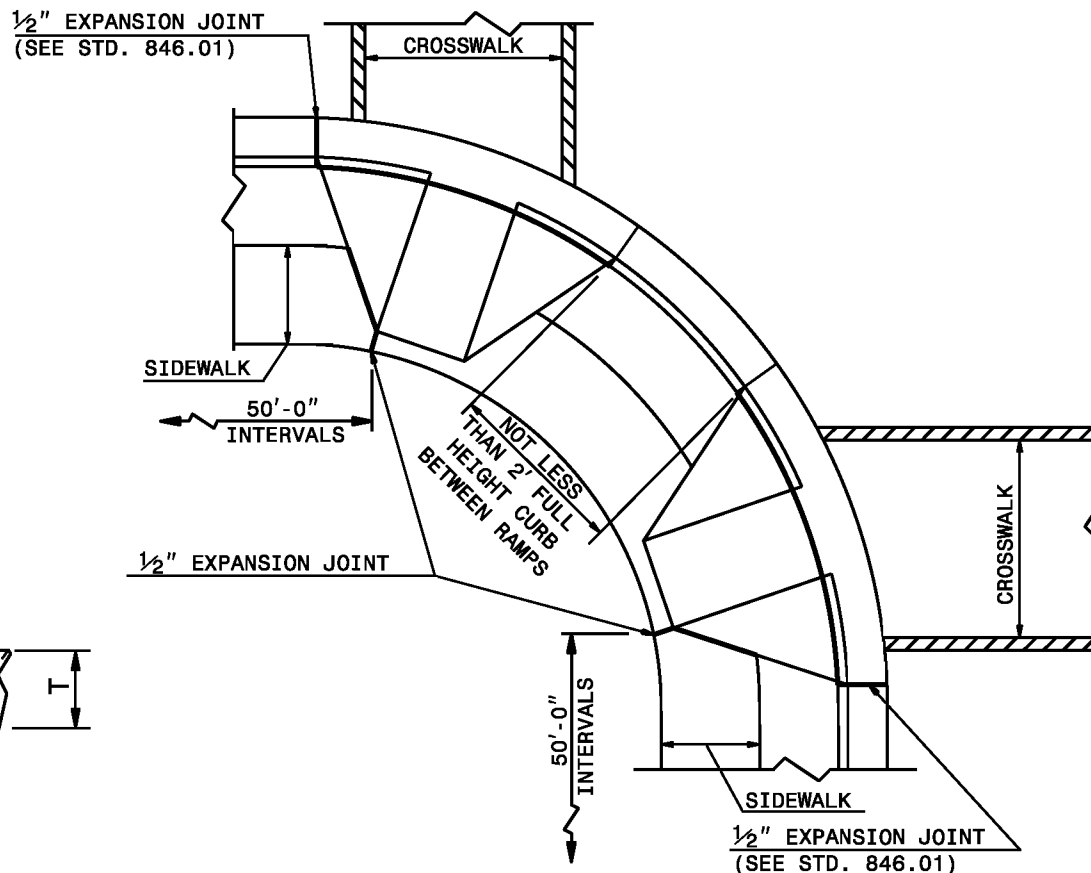
SEE STD. DWG. 848.05 FOR WHEELCHAIR RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



**TRANSVERSE EXPANSION JOINT
IN SIDEWALK**



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

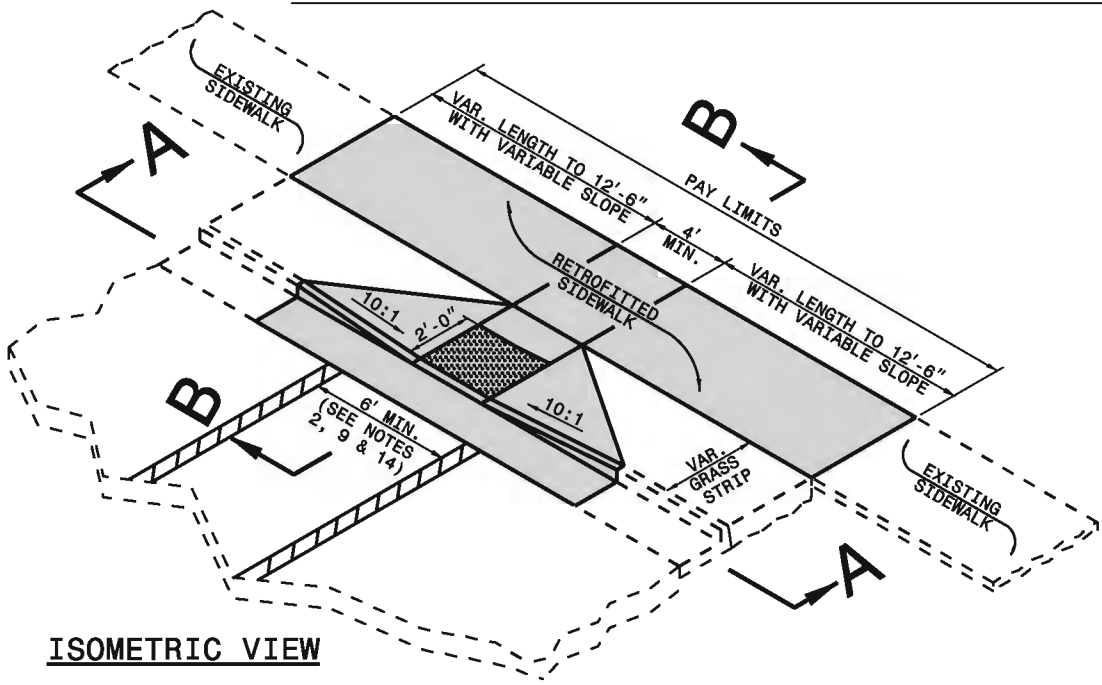


PLAN VIEW

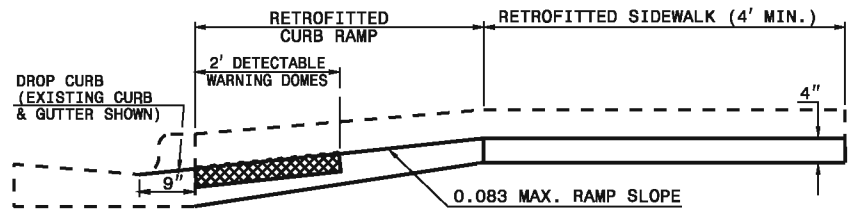
CURB RAMP AND EXISTING SIDEWALK WITH GRASS STRIP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

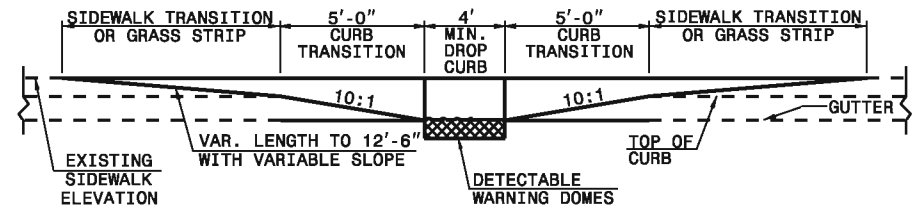
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.



ISOMETRIC VIEW

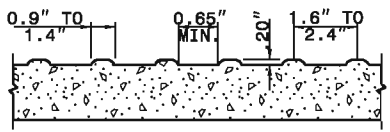
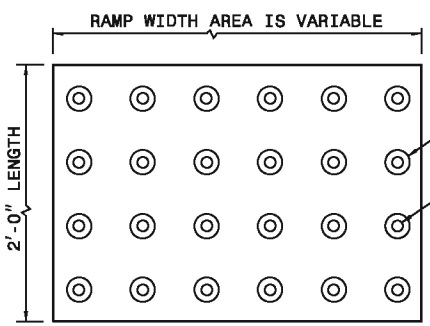


SECTION B-B

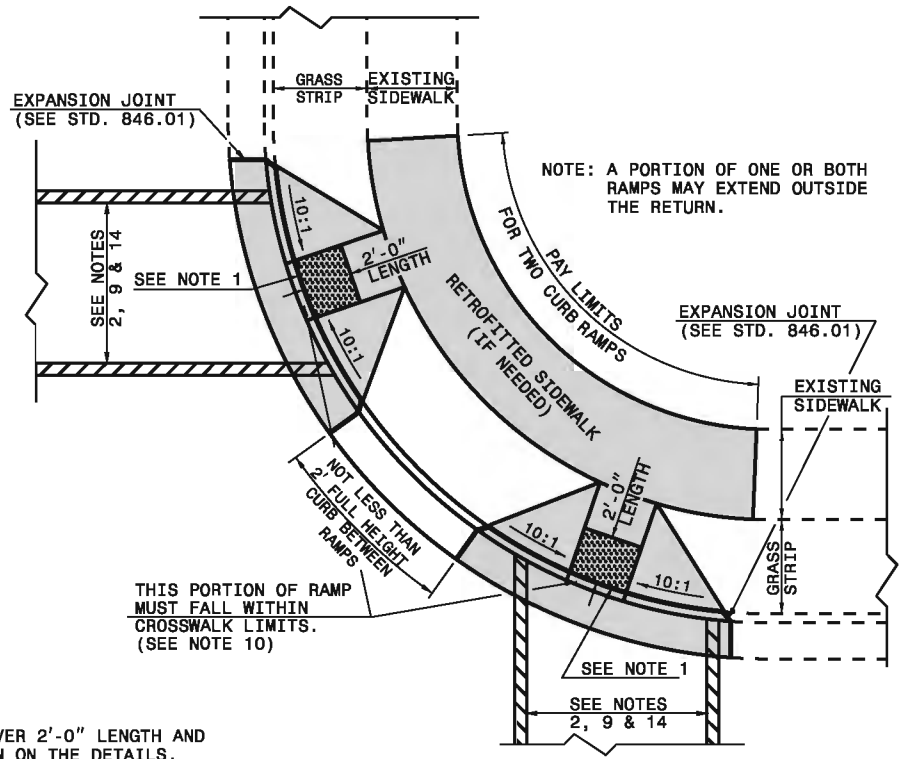


SECTION A-A

PAY LIMITS OF CURB RAMP



DETECTABLE WARNING DOMES



PLAN VIEW

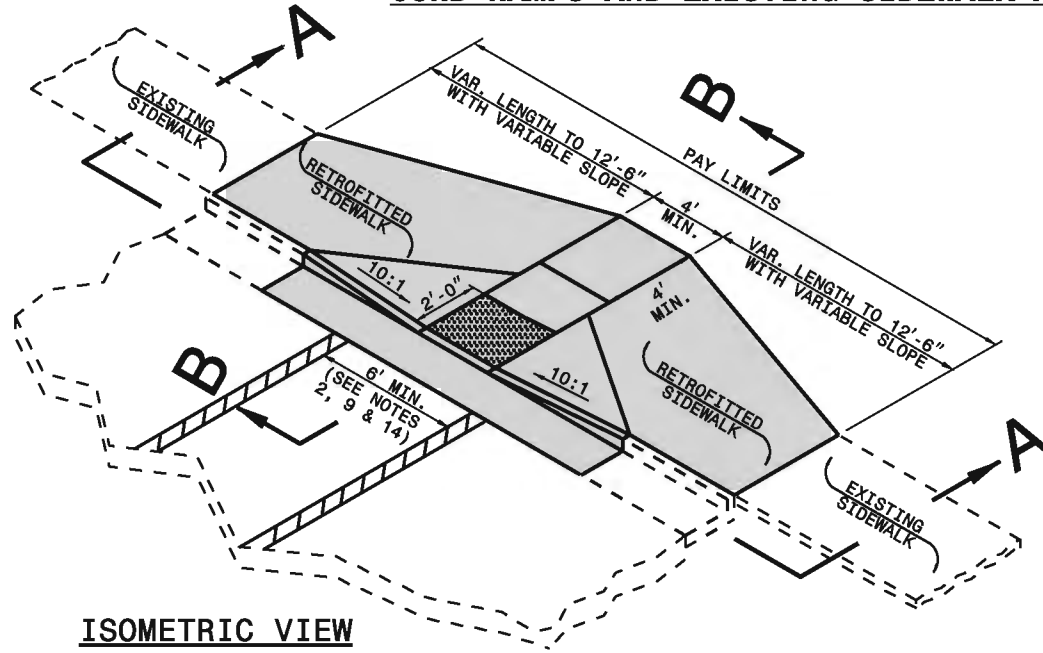
DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

- NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

ENGLISH STANDARD DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

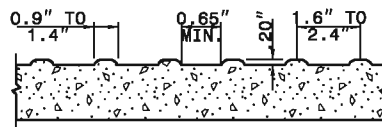
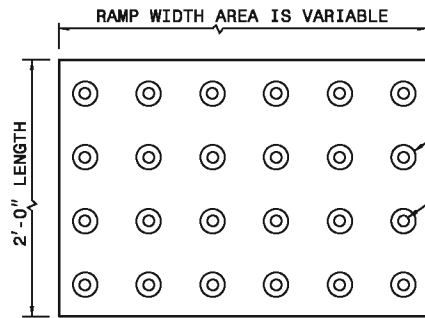
ENGLISH STANDARD DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

CURB RAMPS AND EXISTING SIDEWALK ADJACENT TO CURB



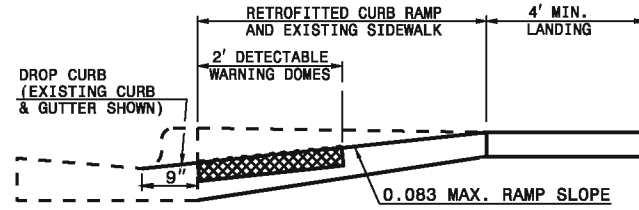
ISOMETRIC VIEW

PAY LIMITS OF CURB RAMP

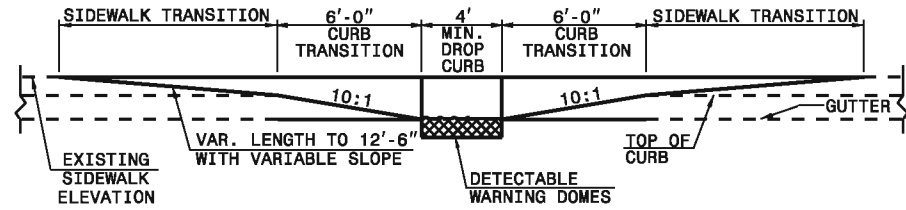


DETECTABLE WARNING DOMES

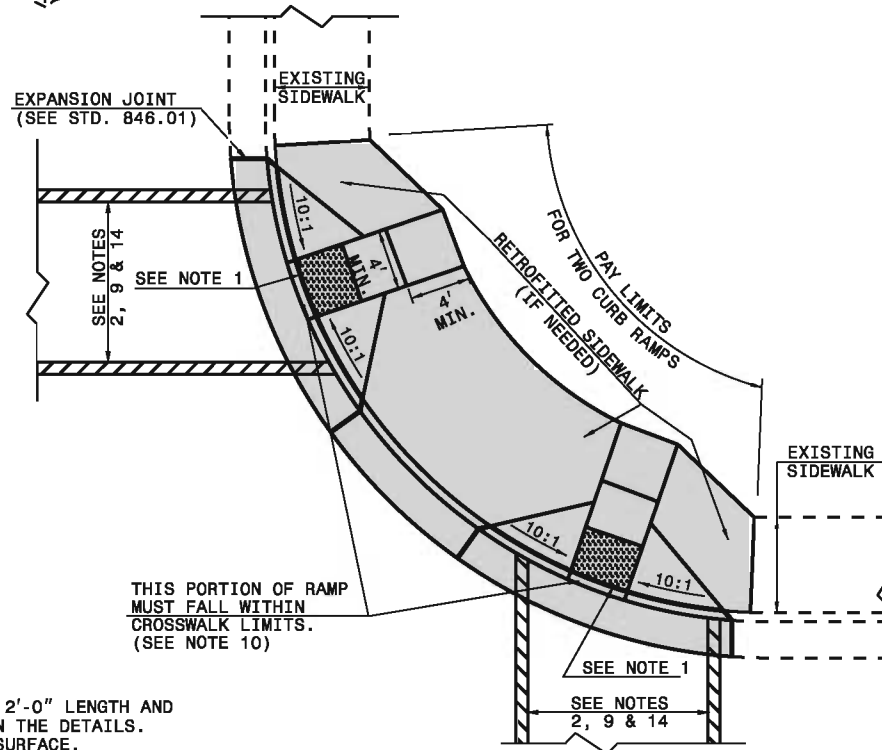
- NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



SECTION B-B



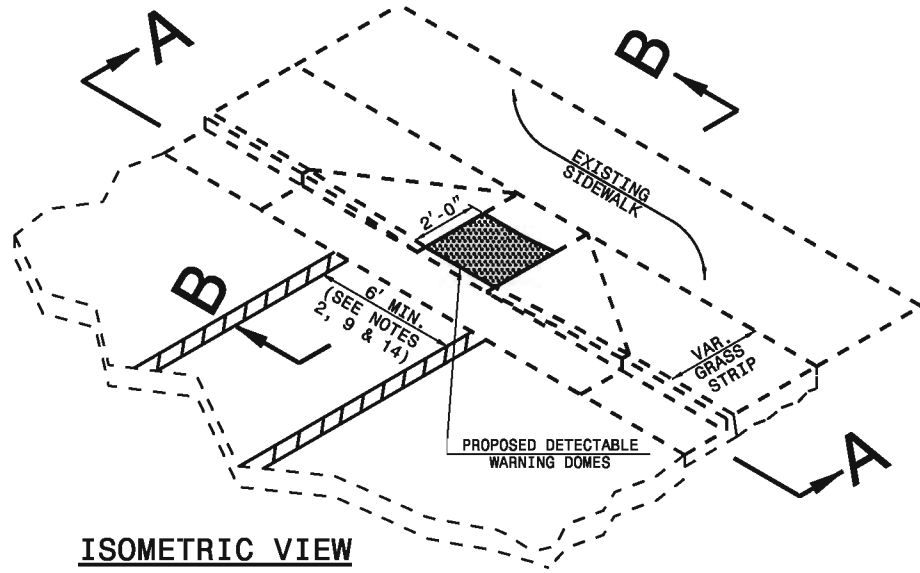
SECTION A-A



PLAN VIEW

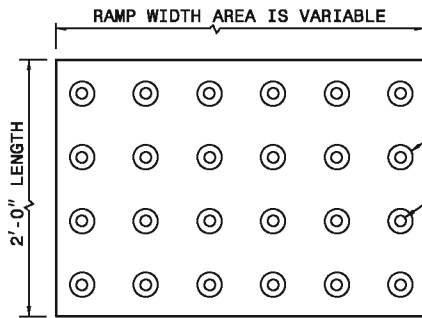
DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

RETROFITTING DETECTABLE WARNING DOMES ONTO EXISTING CURB RAMP



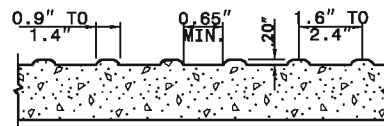
ISOMETRIC VIEW

PAY LIMITS OF RETROFIT CURB RAMP



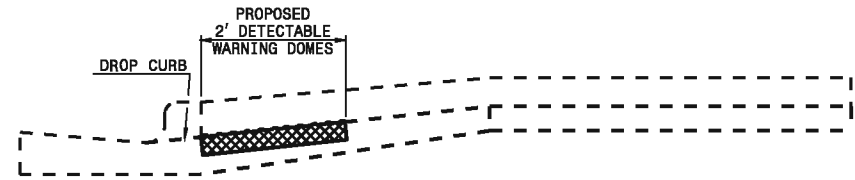
BASE DIAMETER
0.90" R TO 1.40" R

TOP DIAMETER OF NO LESS
THAN 50% TO NO MORE
THAN 65% OF THE BASE
DIAMETER

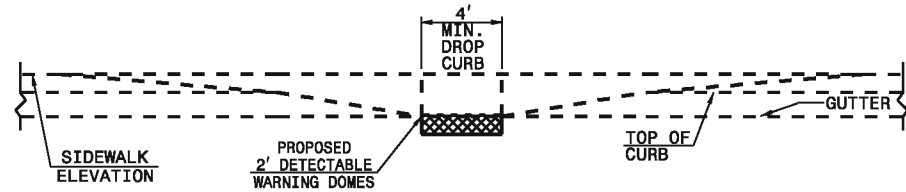


- NOTES:**
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

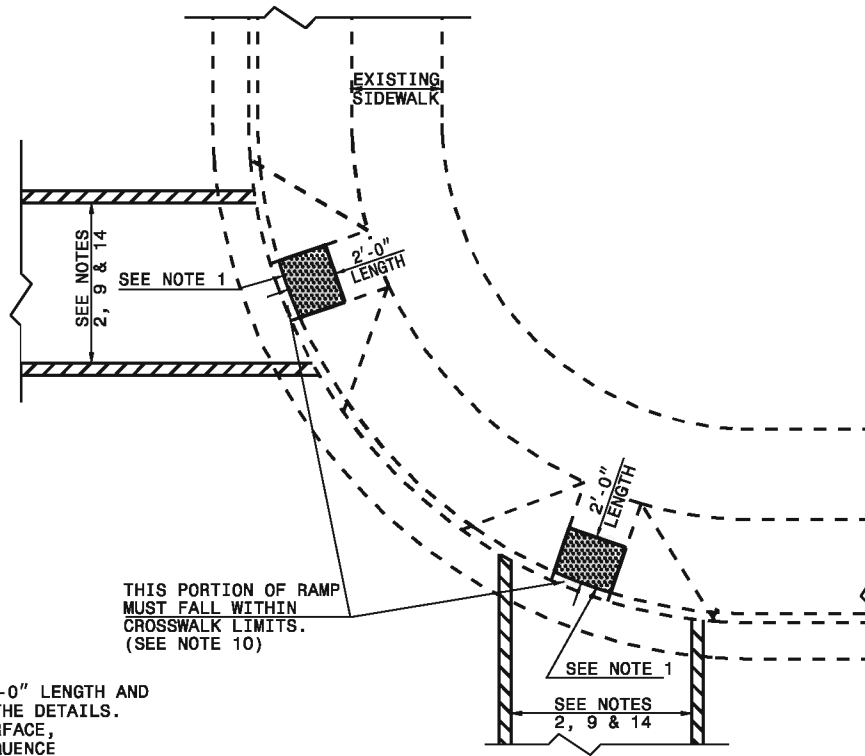
DETECTABLE WARNING DOMES



SECTION B-B



SECTION A-A

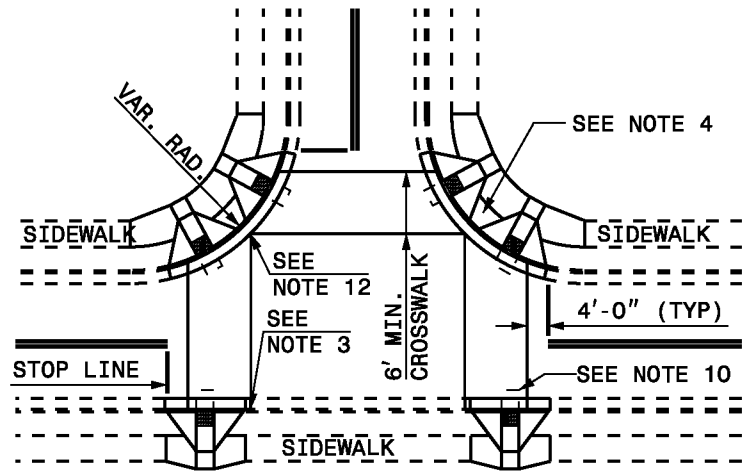


THIS PORTION OF RAMP
MUST FALL WITHIN
CROSSWALK LIMITS.
(SEE NOTE 10)

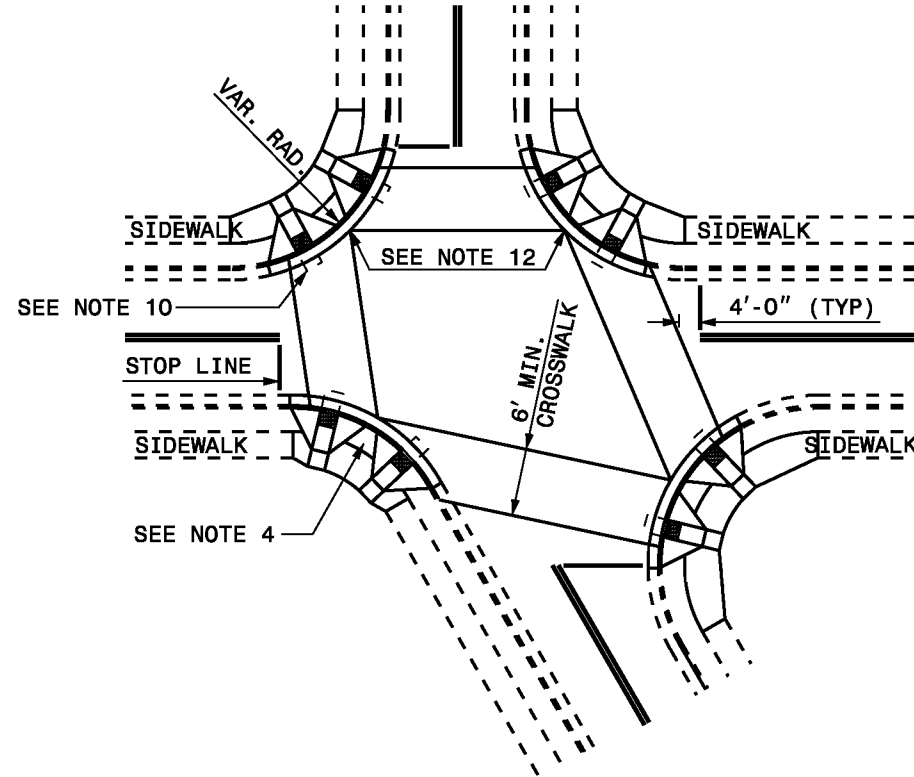
PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

CURB RAMPS AND EXISTING SIDEWALK

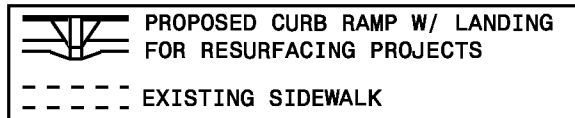


DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS,
 PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB
 RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

RESURFACING PROJECTS



ALLOWABLE LOCATIONS
 DUAL RAMP RADII.....ANY

CURB RAMP AND EXISTING SIDEWALK

NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGH THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'x5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

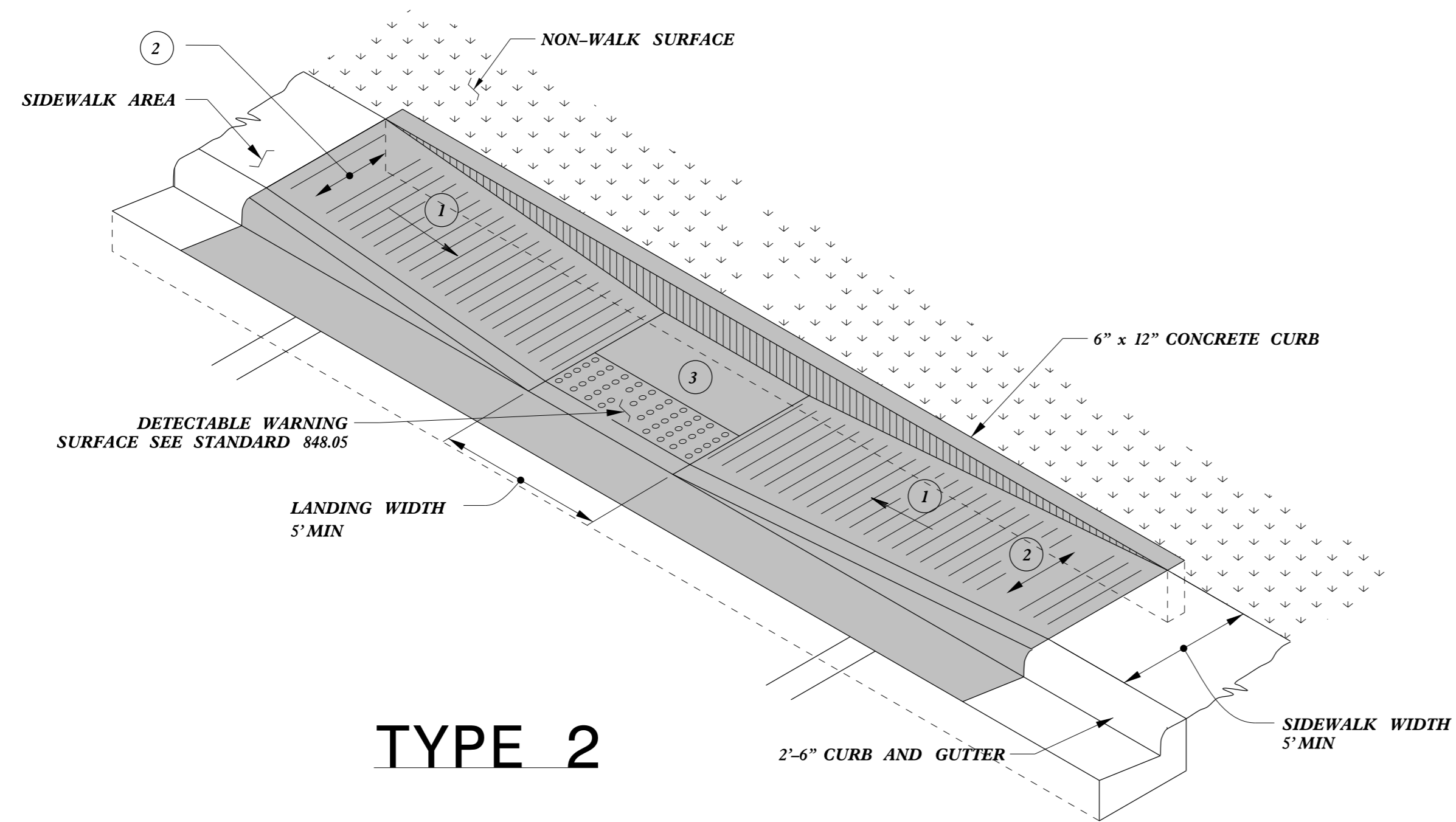
1-12

ENGLISH STANDARD DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

STATE OF
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1-12

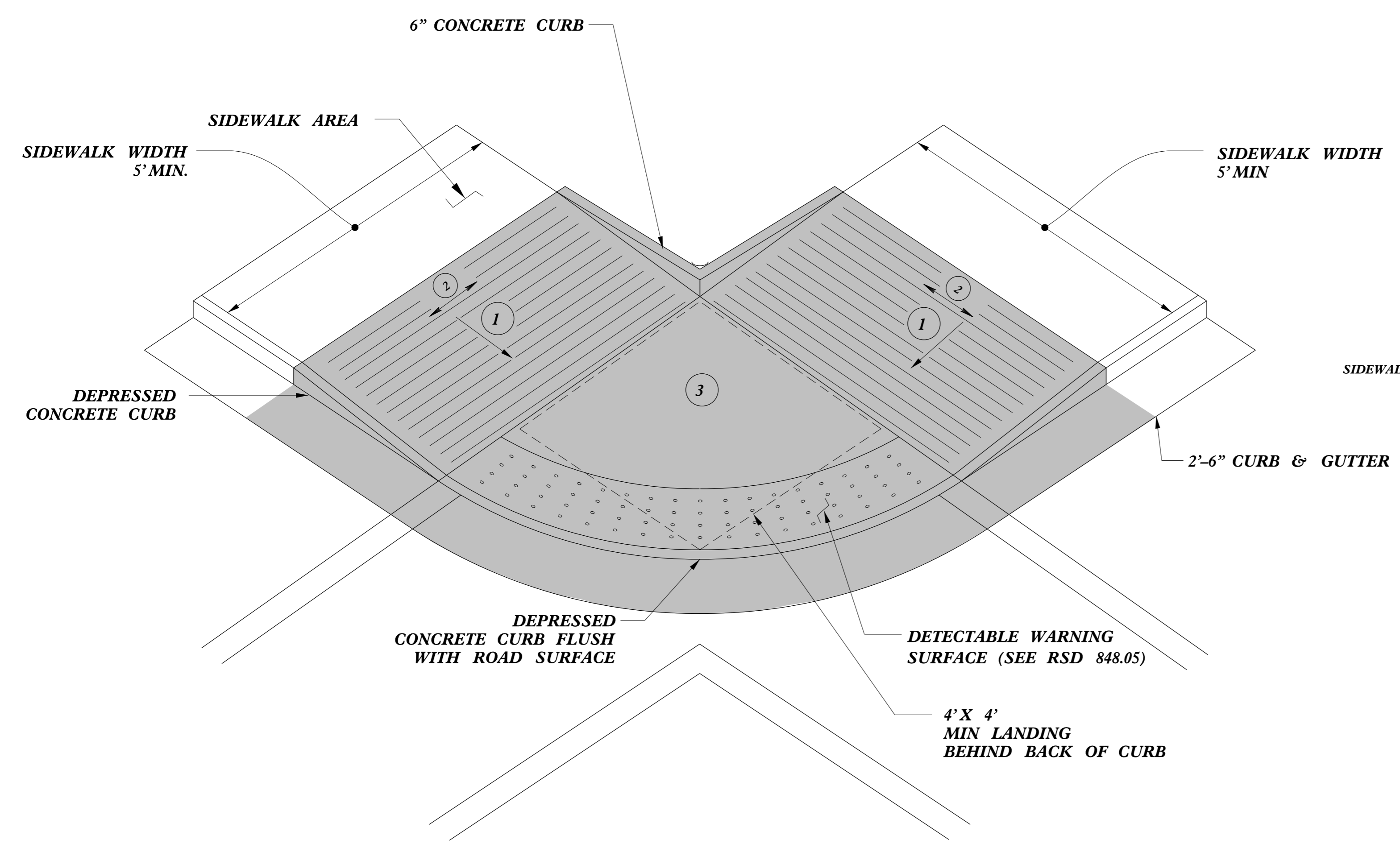
ENGLISH STANDARD DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER



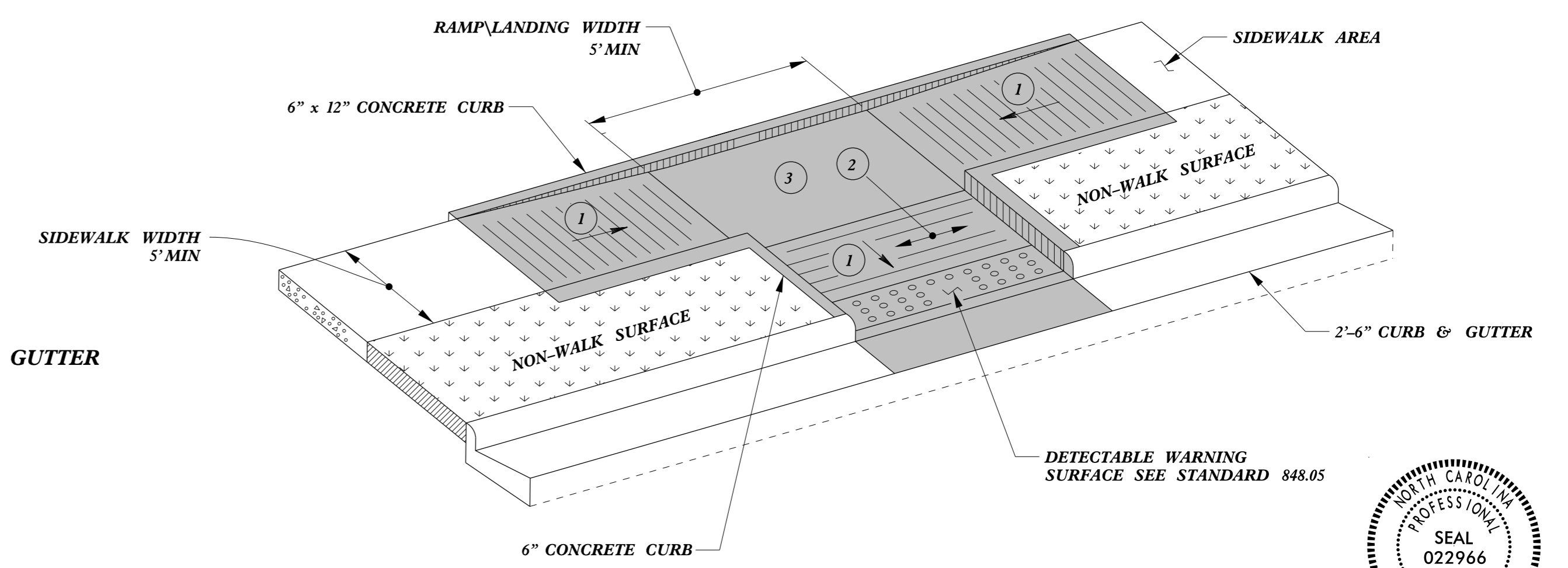
TYPE 2

PAY LIMITS FOR 1 CURB RAMP

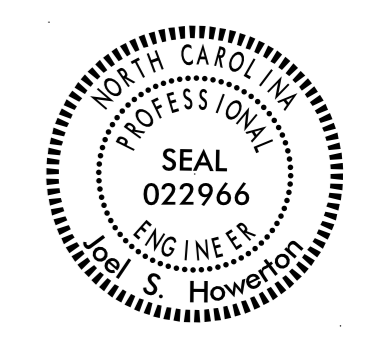
- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A



TYPE 3

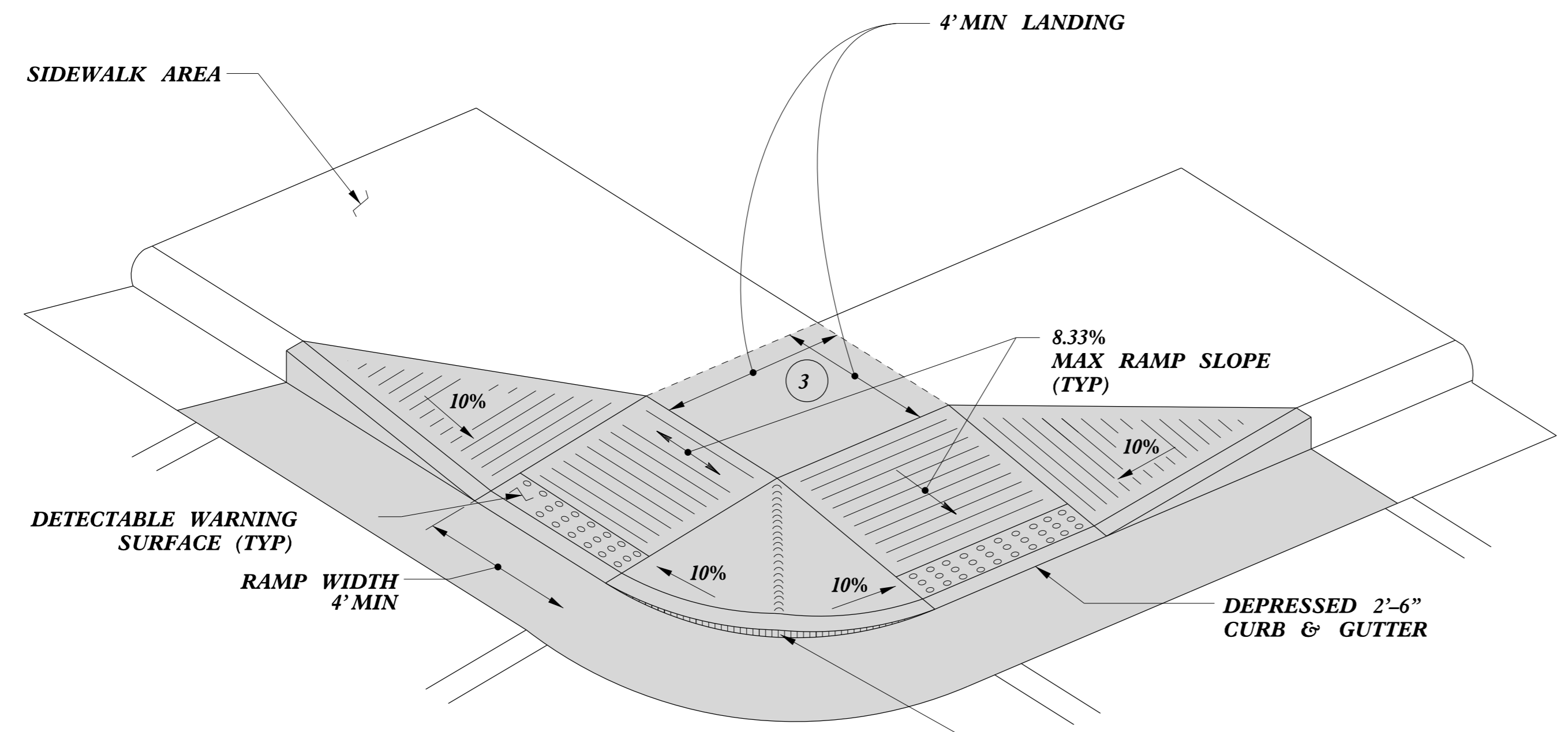


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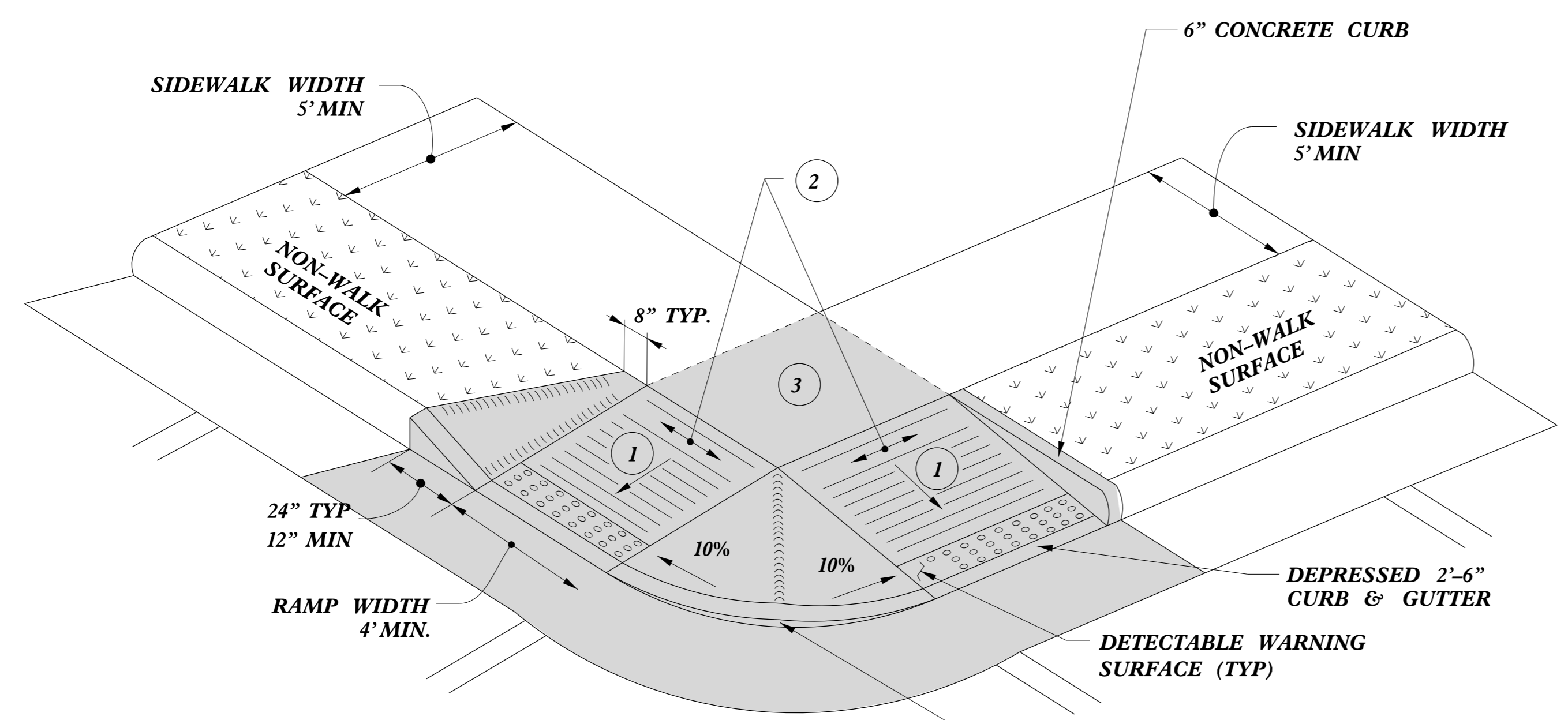
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

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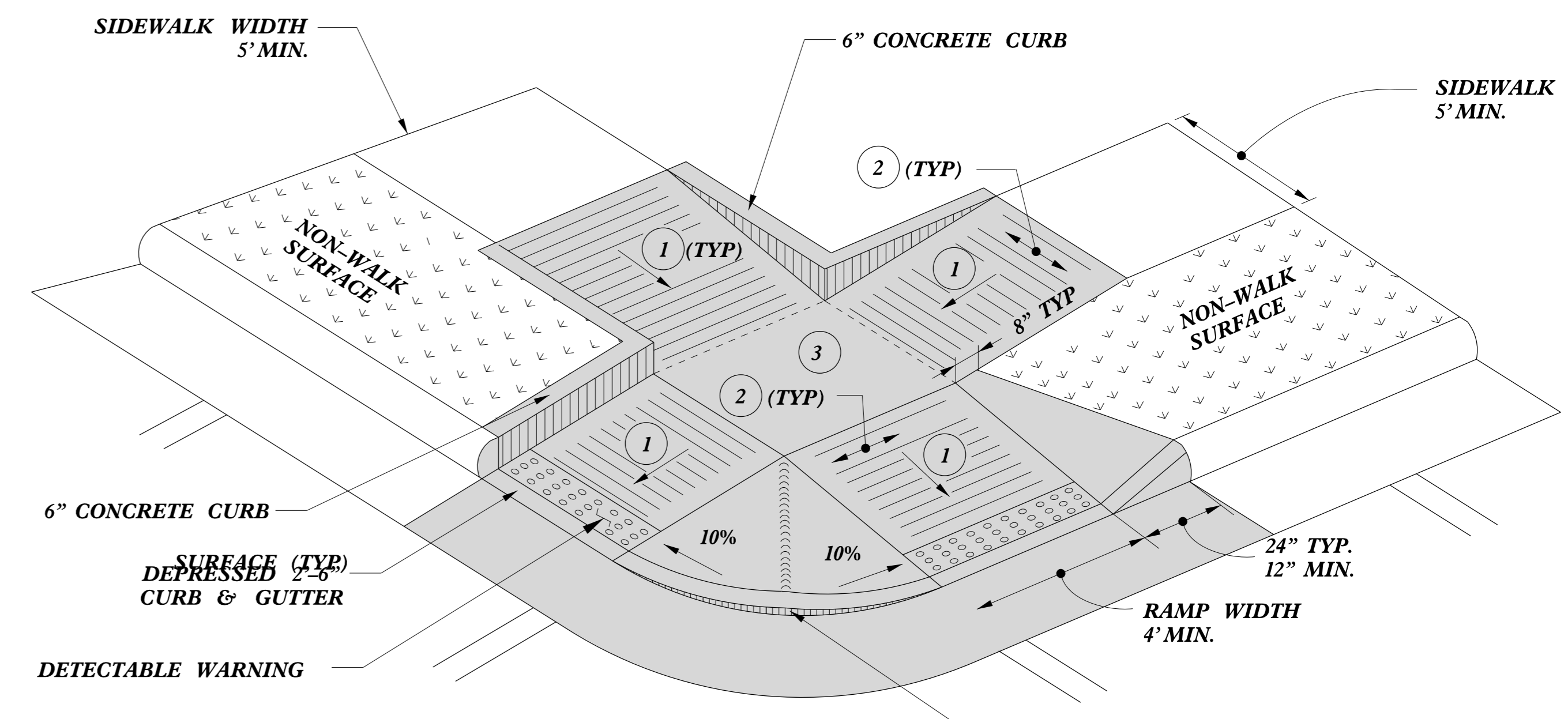


TYPE 4



TYPE 4A

PAY LIMITS FOR 2 CURB RAMPS



TYPE 5

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



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CURB RAMPS	
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