

CITY OF HAWTHORNE
CALIFORNIA



**Specifications for Construction of
Concrete Curbs, Gutters, Sidewalks
and Driveway Approaches Within the
Street Right-of-Way and Trenching**

Engineering Department

2024

SPECIFICATIONS FOR CONSTRUCTION OF CONCRETE CURBS, GUTTERS,
SIDEWALKS AND DRIVEWAY APPROACHES WITHIN THE STREET RIGHT-OF-WAY.

I. GENERAL

A. Permit

All work performed within the right-of-way shall be done under a permit issued by the Engineer Department.

B. Specifications

All work shall be done in accordance with the American Public Works Standards Plans and Specification for Public Works Construction, except as herein specified.

C. Inspection

All work shall be inspected by a Public Works Inspector. Form inspection is required on all work prior to the placement of concrete. This inspection will be made when the sub-base and base (if required) have been prepared and forms have been installed. **Concrete placed without inspection will not be accepted and shall be removed by parties placing said concrete.** Inspections requested before 9:00 A.M. will be made the same day; those requested after 9:00 A.M. will be made the following day. No inspections will be made on Saturdays, Sundays or holidays.

II. MATERIALS

A. Concrete

Concrete shall be Class "B" 5 1/2 sack concrete. If mixed by hand the proportions by volume shall be 1 part Portland Cement, 2 1/2 parts concrete sand and 3 1/2 parts rock. The maximum slump shall be 3".

B. Base Material

Base material shall either be sand or rock base at the option of the contractor. Rock base shall be commercially refined, untreated rock base consisting of broken stone and crushed gravel with 3/4" maximum aggregate. Decomposed granite shall not be used in the base. Sand base shall be a washed commercial fill sand, or concrete sand.

III. CONSTRUCTION DETAILS

A. Removals

Where the work consists of reconstruction of existing facilities, the entire section shall be removed to the first scoring line at or beyond the limit work. If this line is not a cold joint or expansion joint, it shall be sawed to a minimum depth of 2 inches (2") before removal.

Existing four inch (4") sidewalk at drive approaches must be removed prior to construction of the new approach, except in "R1" zones where in the opinion of the Engineer the existing sidewalk is in satisfactory condition.

B. Sub-Grade and Base

The sub-grade and base shall be constructed true to grade and cross-section. It shall be moistened and thoroughly compacted before the concrete is placed. All soft and spongy material shall be removed and replaced with suitable material.

Curb/Sidewalk Specifications -(Continue)

C. Sidewalks

Sidewalk shall be constructed in accordance with City of Hawthorne Standard Drawing No. A88A, and as herein specified.

Sidewalks shall be a minimum of four inches (4") Portland Cement concrete, except at driveways. Sidewalk shall be constructed on four inches (4") of base material unless the existing soil is approved by the Engineer as having an adequate sand content.

Sidewalk at driveway approaches shall be constructed six inches (6") thick. When constructed in a "C" or "M" zone, these sidewalks shall be on four inches (4") of base material.

D. Driveway Approaches

Driveway approaches shall be constructed in accordance with City of Hawthorne Standard Drawing No. A87A, and as herein specified.

Driveway approaches shall be constructed of six inch (6") thick Portland Cement Concrete. Driveways shall be constructed on four inch (4") of base material unless the existing soil is approved by the City Engineer as having adequate sand content. When constructed in a "C" or "M" zone, approaches shall be constructed on four inches (4") of base material regardless of existing soil.

The width of any driveway approach, not including slopes, shall not exceed ten feet (10') in an "R1" zone, seventeen feet (17') in an "R1" zone where an attached garage exists in the front, thirty feet (30') in an "R2", "R3", "C" or "M" zone; and in any event shall not exceed 50% of the street frontage of any lot. Upon proper showing, a variance to these standards may be granted by the City Engineer. The minimum intervening distance between the top of side slopes of adjacent driveway approaches serving the same lot or parcel shall be eighteen feet (18'); and the corresponding distance in the case of adjacent driveways serving two adjoining lots or parcels shall be three feet (3'), unless otherwise specifically permitted.

E. Forms

Forms shall be true and shall have a smooth, straight upper edge. The width of forms shall be equal to the full dimension of the surface they are forming. All forms shall be thoroughly cleaned and coated with form oil to prevent concrete from adhering to them.

Timber forms shall be surfaced on the side placed next to the concrete. For straight work, forms shall not be less than one and five-eighths inches (1-5/8") thick after being surfaced.

Forms for curb returns and other curves may be of lesser thickness, providing they are adequately supported.

Forms shall be carefully set to alignment, grade and dimension, and shall be stacked and braced to ensure rigidity.

F. Weakened Plane Joints

Weakened plane joints shall be constructed at intervals of from twelve to sixteen feet (12'-16'), to correspond with score lines. These joints shall be formed by a scoring tool and shall be one-eighth inch (1/8") wide and three-fourths inch (3/4") deep in sidewalks and one inch (1") deep in top of curbs and gutters. The edge of joints shall be finished with a one-quarter inch (1/4") edging tool.

Curb/Sidewalk Specifications - (Continue)

G. Placing and Finishing

Concrete shall be placed in the forms without segregation and struck off and compacted until a layer of mortar has been brought to the surface. The surface shall then be finished to grade and cross-section and smoothed with a float. The final finish shall be applied with a soft broom. Brooming on driveways shall be transverse to the line of traffic.

The form on the front of curbs shall not be removed in less than two (2) hours, nor more than six (6) hours, after the concrete has been placed. In no event shall the form be removed while the concrete is sufficiently plastic to slump upon removal of the form. Holes or pockets appearing in the surface, after removing forms, shall be filled with mortar composed of one part Portland Cement to two parts of sifted sand. When necessary to achieve the proper finish, the curb face shall be painted with a grout of the same composition. The face of the curb shall then be smoothed and finished with a steel trowel and given a final fine brush finish with brush strokes parallel to the line of curb. The surface sidewalks shall be marked to match other work in the area with a scoring tool which will leave the edges rounded. Curbs shall be scored to conform to score marks on adjacent sidewalk. In no event shall score marks be more than six feet (6') apart.

Special finishes and markings must be approved by the Engineer prior to commencement of the work.

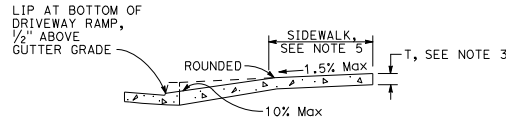
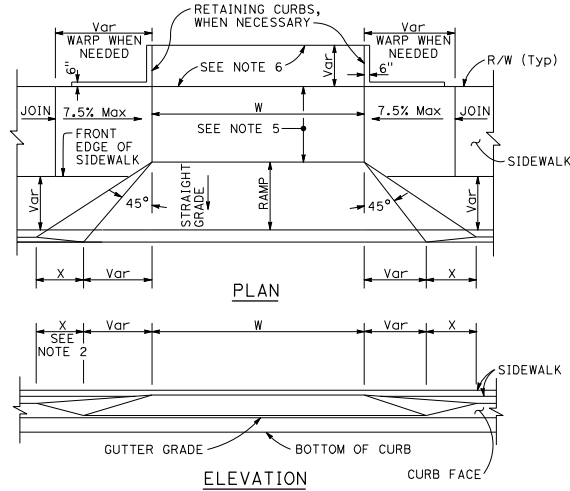
H. Protection and Curing

Exposed surfaces shall be sprayed uniformly with a pigmented curing compound at the rate of approximately one gallon per 150 square feet of area.

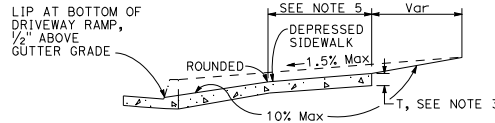
The contractor shall maintain suitable barriers to protect the concrete from traffic and any part of the work damaged by traffic or other causes shall be repaired or replaced by the contractor in a manner satisfactory to the City Engineer.

I. Final Clean-Up

The areas adjacent to the work shall be cleared of debris, filled as necessary with soil suitable for planting, and raked smooth and neat.



CASE A
Typical driveway, sidewalk not depressed



CASE B
Driveway with depressed sidewalk

SECTIONS

TABLE A

| CURB TYPE | DIMENSIONS | | | |
|-----------|------------|------|-----------|--------|
| | "H1" | "H2" | "W1" | "W2" |
| A1-6 | 1'-2" | 6" | 7 1/2" | 1 1/2" |
| A1-8 | 1'-4" | 8" | 8" | 2" |
| A2-6 | 1'-0" | 6" | 2'-7 1/2" | 1 1/2" |
| A2-8 | 1'-2" | 8" | 2'-8" | 2" |
| A3-6 | 6" | 5" | 7 1/4" | 1 1/4" |
| A3-8 | 8" | 7" | 7 3/4" | 1 3/4" |
| B1-4 | 1'-0" | 4" | 7 1/2" | 2 1/2" |
| B1-6 | 1'-2" | 6" | 9" | 4" |
| B2-4 | 10" | 4" | 2'-7 1/2" | 2 1/2" |
| B2-6 | 1'-0" | 6" | 2'-9" | 4" |
| B3-4 | 4" | 3" | 7" | 2" |
| B3-6 | 6" | 5" | 8 1/2" | 3 1/2" |
| D-4 | 10" | 4" | 1'-6" | 1'-1" |
| D-6 | 1'-0" | 6" | 2'-2" | 1'-9" |

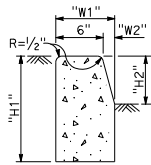
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|------|--------|-------|--------------------------|--------------------|
| D16+ | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET TOTAL SHEETS |
| | | | | |

REGISTERED CIVIL ENGINEER
 May 1, 2023
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OF AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

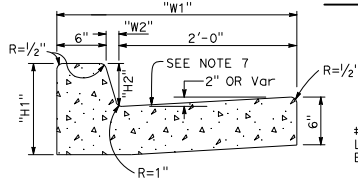
CURB QUANTITIES

| TYPE | CUBIC YARDS PER LINEAR FOOT |
|------|-----------------------------|
| A1-6 | 0.02585 |
| A1-8 | 0.03084 |
| A2-6 | 0.05903 |
| A2-8 | 0.06379 |
| A3-6 | 0.01036 |
| A3-8 | 0.01435 |
| B1-4 | 0.02185 |
| B1-6 | 0.02930 |
| B2-4 | 0.05515 |
| B2-6 | 0.06171 |
| B3-4 | 0.00641 |
| B3-6 | 0.01074 |
| B4 | 0.05709 |
| D-4 | 0.04083 |
| D-6 | 0.06804 |
| E | 0.06661 |

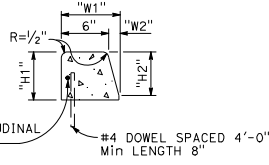
DRIVEWAYS



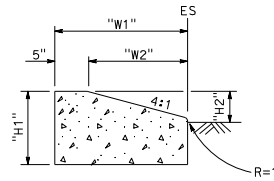
TYPE A1 CURBS
See Table A



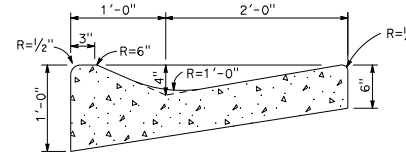
TYPE A2 CURBS
See Table A



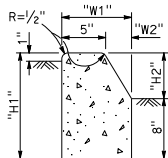
TYPE A3 CURBS
Superimposed on existing pavement
See Table A



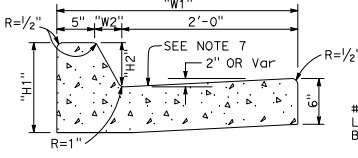
TYPE D CURBS
See Table A



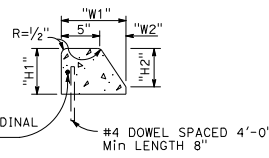
TYPE E CURB



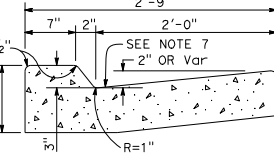
TYPE B1 CURBS
See Table A



TYPE B2 CURBS
See Table A



TYPE B3 CURBS
Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB
On Bridges

NOTES:

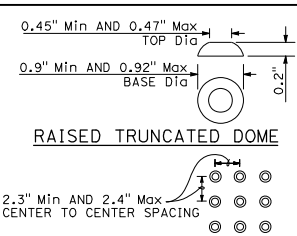
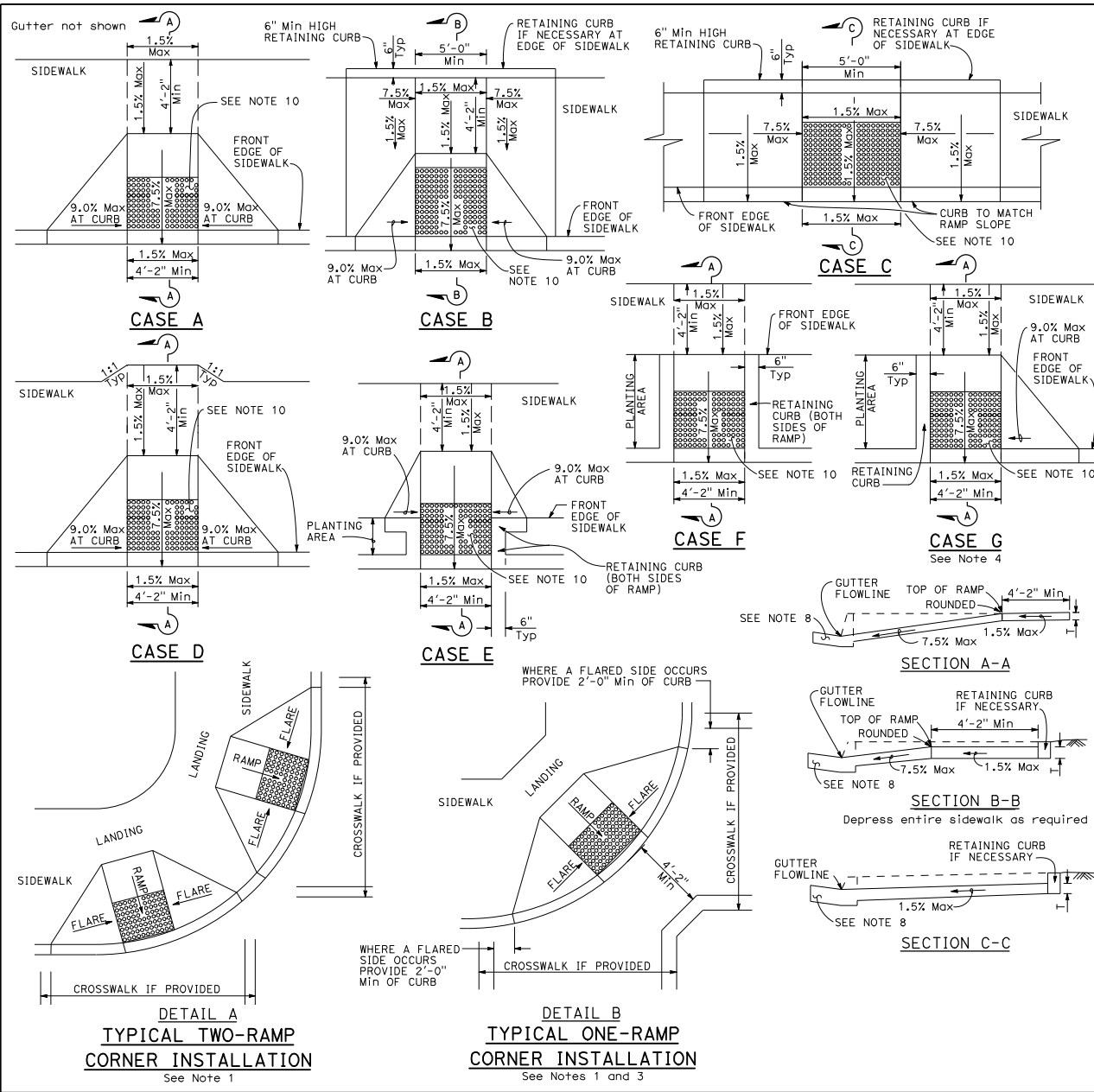
- Case A driveway section typically applies.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-2".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

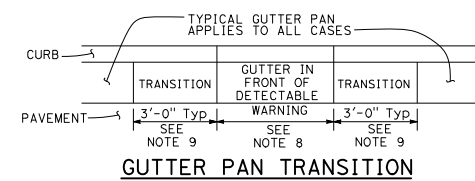
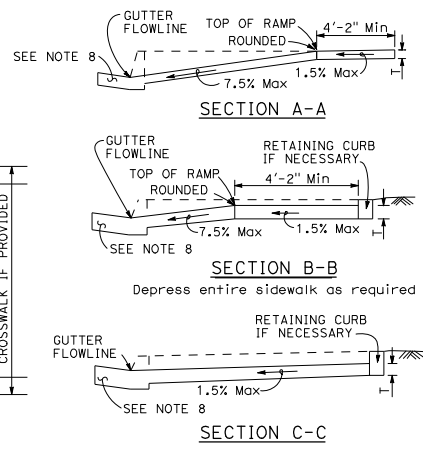
NO SCALE

A87A



RAISED TRUNCATED DOME PATTERN (IN-LINE) DETECTABLE WARNING SURFACE
See Note 10

- NOTES:**
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate. For specific site condition configuration, including the conform to existing sidewalk, see Project Plans.
 - If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B or C or may be widened as in Case D.
 - When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
 - As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
 - The ramp portion of the curb ramp is a typical rectangle, unless modified in the Project Plans.
 - Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
 - The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
 - Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1v:20H (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
 - Transition gutter pan slope from 1" of depth for each 2'-0" of width to match typical gutter pan slope per Standard Plan A87A.
 - The detectable warning surface will be a rectangle as shown at back of curb, unless modified in the Project Plans. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable warning surfaces shall extend the full width of the ramp except a maximum gap of 1 inch is allowed on each side of the ramp. Detectable warning surfaces shall conform to the requirements in the Standard Specifications.
 - Sidewalk and ramp thickness "T", shall be 3/2" minimum.
 - Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
 - Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.



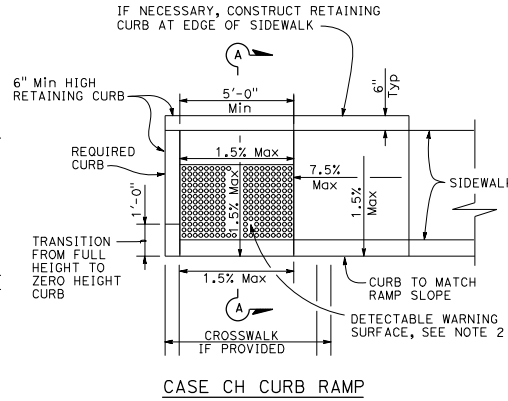
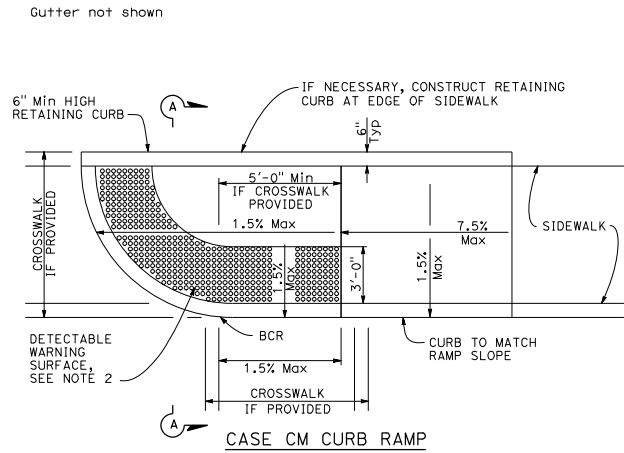
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| | | | | | |

REGISTERED CIVIL ENGINEER
Rebecca Lynn Mowry
No. C54415
PLANS APPROVAL DATE
May 1, 2023

REGISTERED PROFESSIONAL ENGINEER
Rebecca Lynn Mowry
No. C54415
EXP. 12-31-23
CIVIL
STATE OF CALIFORNIA

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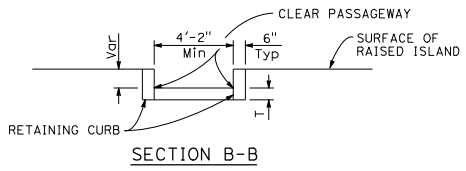
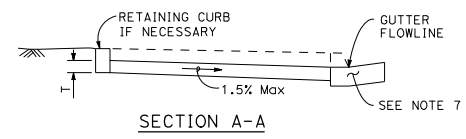
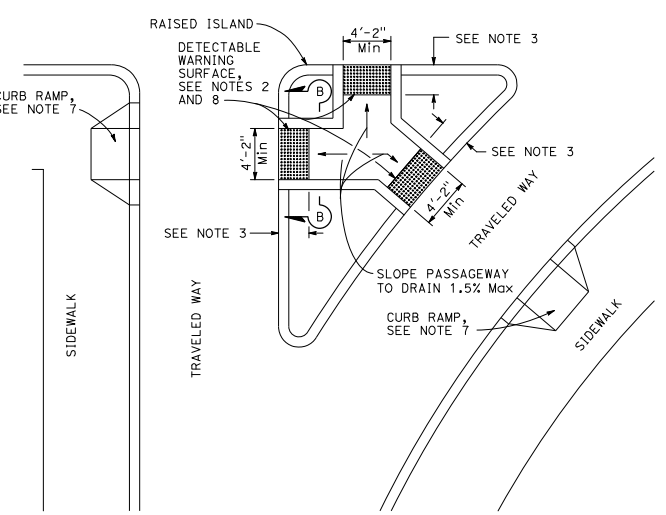
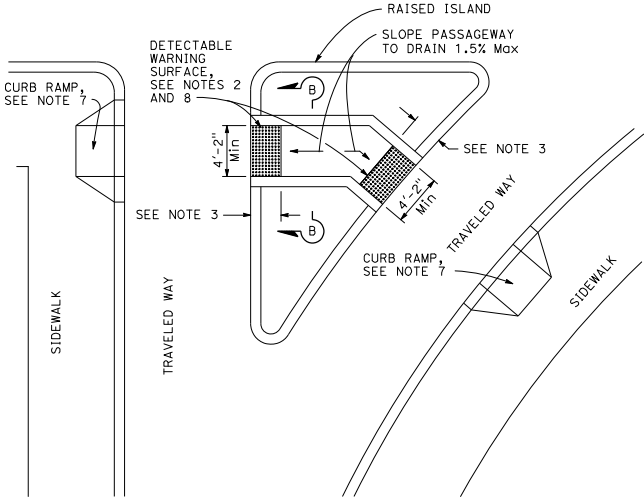
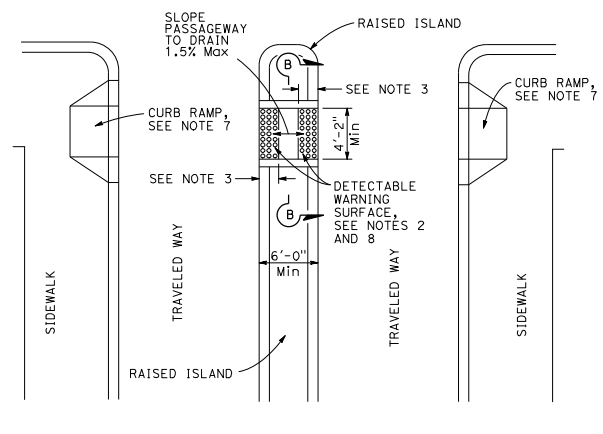
NOTES:

1. Sidewalk, ramp and passageway thickness "T", shall be 3/2" minimum.
2. For details of detectable warning surfaces, see Standard Plan A88A.
3. Where an island passageway length is greater than or equal to 6'-0", but less than 8'-0", each detectable warning surface shall extend the full width and 2'-0" depth of the passageway length. Where an island passageway length is greater than or equal to 8'-0", each detectable warning surface shall extend the full width and 3'-0" depth of the passageway length. Detectable warning surfaces shall extend the full width of the island passageway except a maximum gap of 1 inch is allowed on each side of the passageway.
4. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
5. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
6. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.
7. For additional curb ramp details, see Standard Plan A88A.
8. The detectable warning surface will be a rectangle as shown at the face of curb, unless modified in the Project Plans.

| D16+ | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
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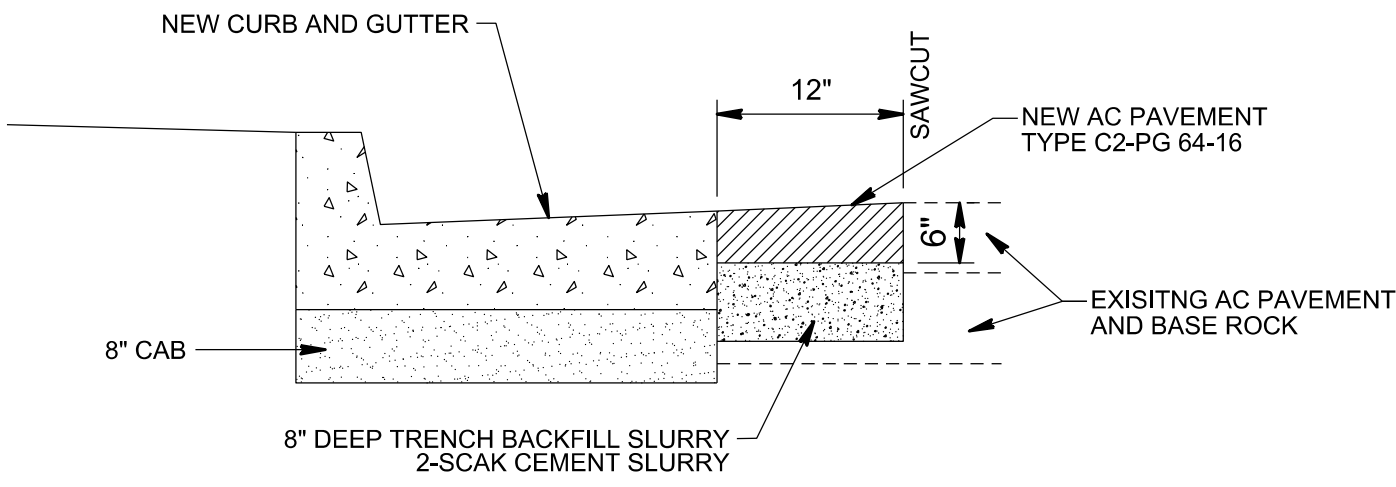
Rebecca Lynn Mowry
 REGISTERED CIVIL ENGINEER
 No. C54415
 Exp. 12-31-23
 CIVIL
 STATE OF CALIFORNIA

May 1, 2023
 PLANS APPROVAL DATE
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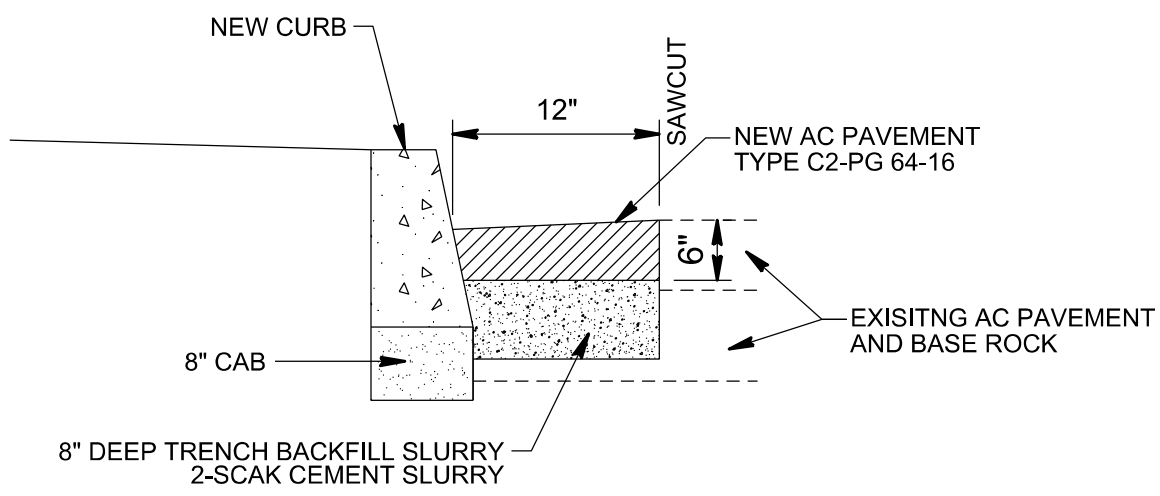


STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CURB RAMP AND ISLAND PASSAGEWAY DETAILS
 NO SCALE

A88B

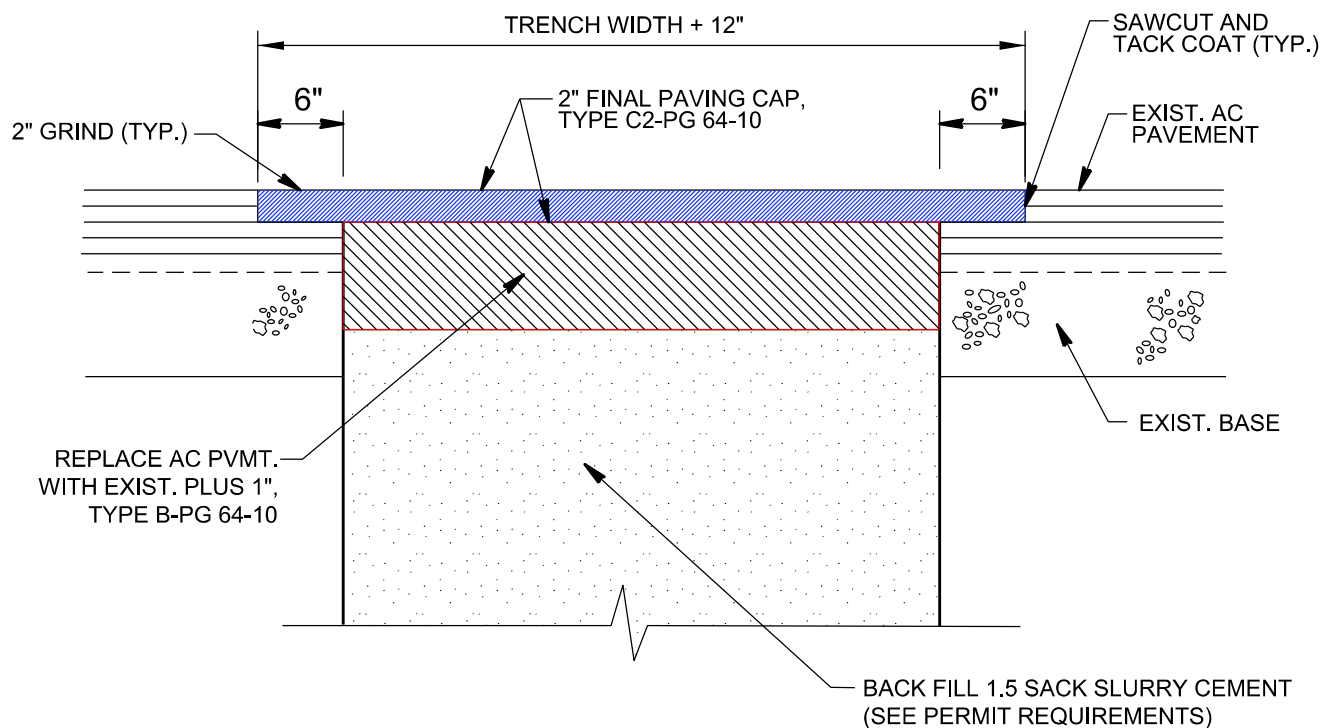


WITH NEW CURB AND GUTTER
NO SCALE



WITH NEW CURB
NO SCALE

| | | |
|-------------|--|--------------|
| DATE ISSUED | TYPICAL SECTION SLOT PATCH DETAIL (WITH STREET OVERLAY) | |
| | | SHEET 1 OF 1 |



TRENCH REPAVING DETAIL

N.T.S.

NOTES:

1. ALL PAVEMENT REMOVALS SHALL BE MADE ON STRAIGHT LINE SAW CUTS A MINIMUM OF 1- 1/2 INCHES DEEP. IF CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, EXPANSION JOINT OR EDGE THE EXISTING PAVEMENT SHALL BE REMOVED TO CUT LINES, EXPANSION JOINT OR EDGE OR AS DIRECTED BY THE ENGINEER.

IN ADDITION THE EXISTING PAVING IS TO BE MECHANICALLY GROUND DOWN A MINIMUM OF 1-1/2" BY AN ADDITIONAL 6" WIDTH. THE PERMANENT PAVING SHALL BE EXTENDED AS AN OVERLAY INTO THIS AREA. ALL EXISTING PAVEMENT EDGES ARE TO BE TACK COATED BEFORE AS APPLICATION OF PERMANENT PAVEMENT. IF THERE IS LESS THAN TWO (2) INCHES OF PAVEMENT AFTER GRINDING, THEN THE GROUND AREA SHALL BE REMOVED BY SAW CUTTING AND PERMANENT PAVEMENT PLACED.

2. DURING EXCAVATION AND SUBGRADE PREPARATION, THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THE PROTECTION OF ALL IMPROVEMENTS WHETHER PUBLIC OR PRIVATE, INCLUDING UTILITIES AND THEIR SERVICES, FROM ANY DAMAGE THAT COULD OCCUR DUE TO CONTRACTOR'S OPERATION

3. BACKFILL AND IDENTIFICATION SHALL BE DONE IN CONFORMANCE WITH SUBSECTION 306-1.3 OF THE STANDARD SPECIFICATIONS. EXCEPT AS FOLLOWS:

- a) TRENCH BACKFILL SHALL BE DENSIFIED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION.
- b) WHEN PAVEMENT IS TO BE PLACED DIRECTLY ON SUBGRADE MATERIAL THE TOP 6" OF SUB GRADE MATERIAL SHALL BE COMPACTED TO A RELATIVE COMPACTION OF 95 PERCENT.

4. A SAND SLURRY BACKFILL WITH 2 SACK OF CEMENT PER CUBIC YARD MAY BE REQUIRED BY THE AGENCY.

5. TEMPORARY PAVEMENT REPLACEMENT SHALL BE PLACED AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. IT SHALL BE PLACED LEVEL WITH THE EXISTING PAVEMENT ON COMPACTED TRENCH BACKFILL AND SHALL BE A MINIMUM OF 2 INCHES THICK.

6. PERMANENT PAVEMENT RESURFACING SHALL BE DONE WITHIN TWO (2) WEEKS AFTER BACK FILLING OF TRENCHES HAS BEEN COMPACTED. ONLY AFTER SETTLEMENT HAS TAKEN PLACE AND THE FILL SURFACE HAS SUFFICIENTLY DRIED. ALL CUTS SHALL BE CLEAN AND STRAIGHT.

7. CONTACT SURFACES OF EXISTING PAVEMENT, MANHOLES, FRAMES AND SHAFTS AND CONCRETE SURFACES SHALL BE GIVEN A TACK COAT BEFORE PERMANENT ASPHALT TRENCH RESURFACING IS PLACED.

8. ASPHALT CONCRETE PAVEMENT SHALL BE B-PG 64-16 for BASE COURSE AND C2-PG 64-16 FOR SURFACE CAP.

CITY OF HAWTHORNE - DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

| | | |
|-------------|--|--------------|
| DATE ISSUED | TYPICAL SECTION ASPHALT CONCRETE PAVEMENT REPLACEMENT | A-718 R |
| APRIL 2010 | | SHEET 1 OF 1 |