

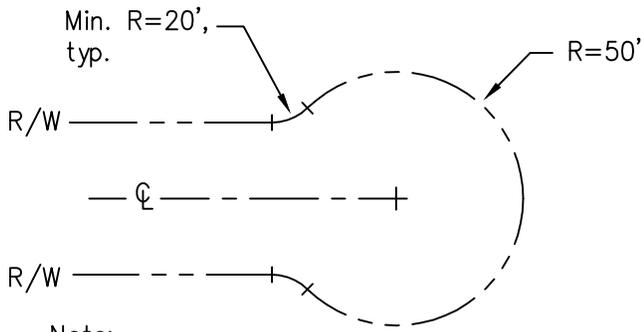
CITY OF LIVERMORE

STANDARD DETAILS

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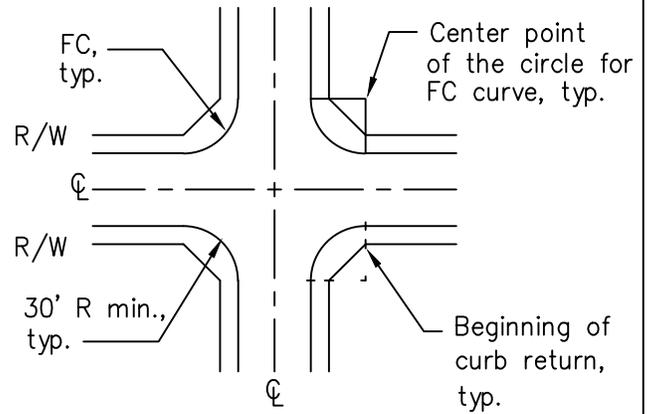
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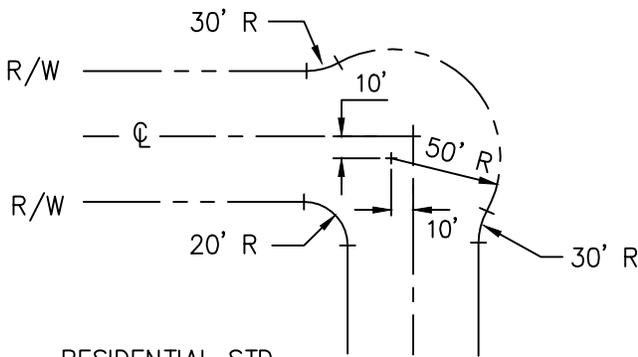
Note:

Cul-de-sac radius point may be offset from centerline.

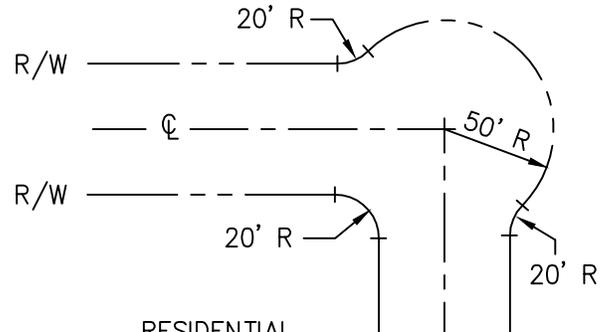
CUL-DE-SAC



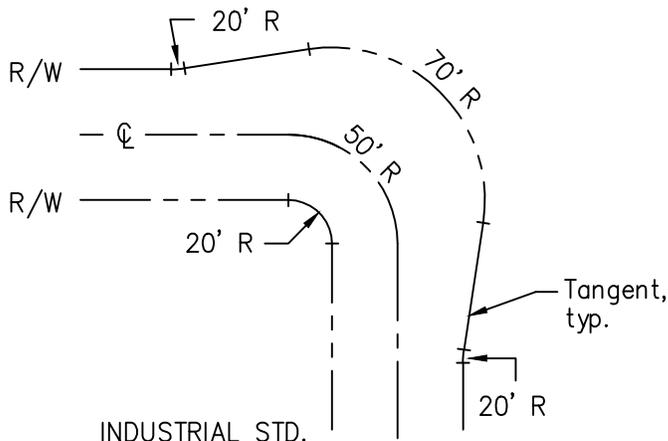
CURB RETURN



RESIDENTIAL STD.



RESIDENTIAL Alternate



INDUSTRIAL STD.

ELBOWS

Notes:

1. Radii shown are minimums.
2. See ST-2A thru ST-2D for standard street widths.

User note:

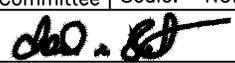
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

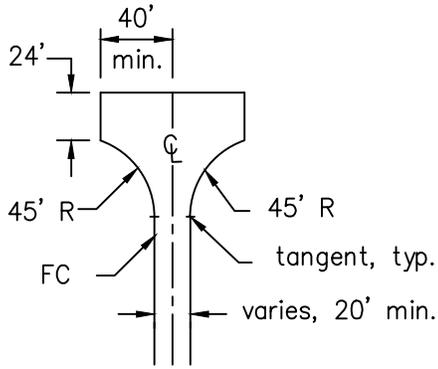
ST01A.DWG

Date	By	Rev.

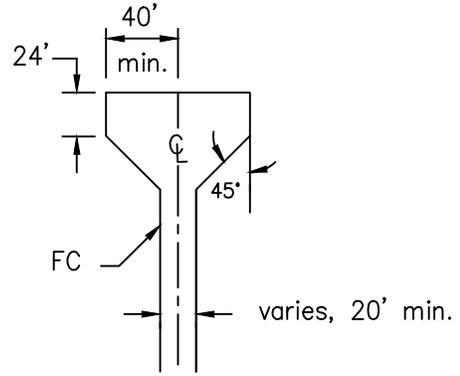
CUL-DE-SAC,
CURB RETURN,
AND ELBOWS

CITY OF LIVERMORE
STANDARD DETAIL

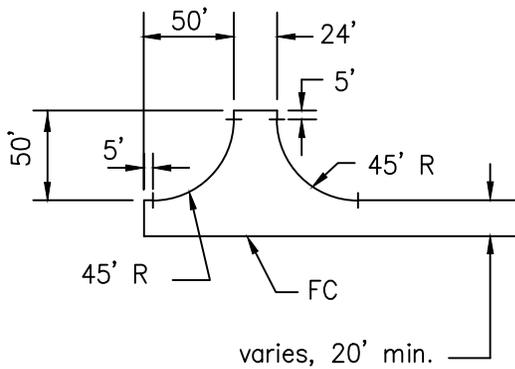
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Ckd: Spec. Committee	Scale: NONE	
 City Engineer		



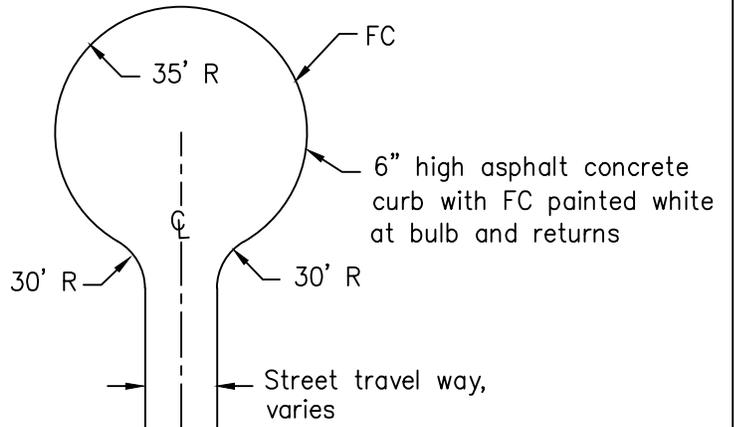
"T" HAMMERHEAD



"T" HAMMERHEAD
(CHAMFER ALTERNATIVE)



DOG LEG HAMMERHEAD



Cul-de-sac radius point may be offset from center

TEMPORARY TURNAROUND

Notes:

1. Radii shown are minimums.
2. See ST-2A thru ST-2D for standard street widths.
3. These hammerheads are not standard design practice to be used in lieu of cul-de-sac. Hammerheads are only used on case by case basis as approved by the City.

User note:

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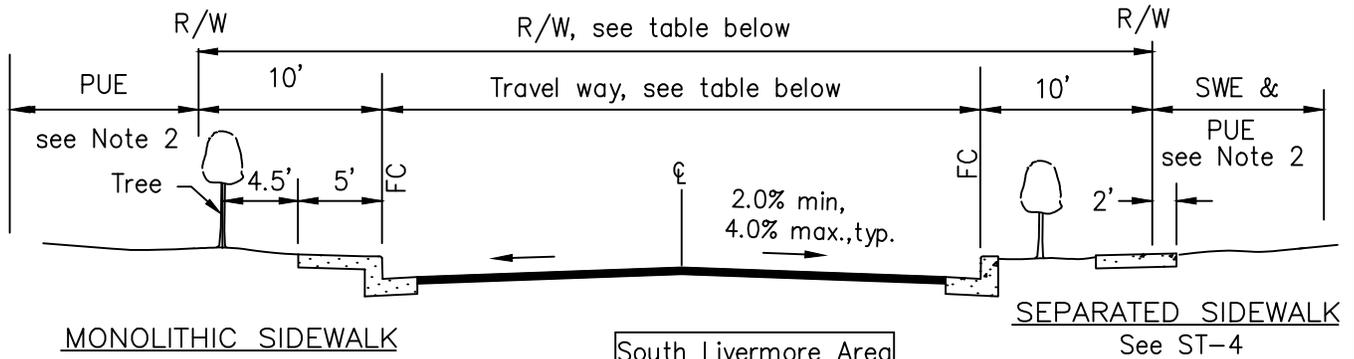
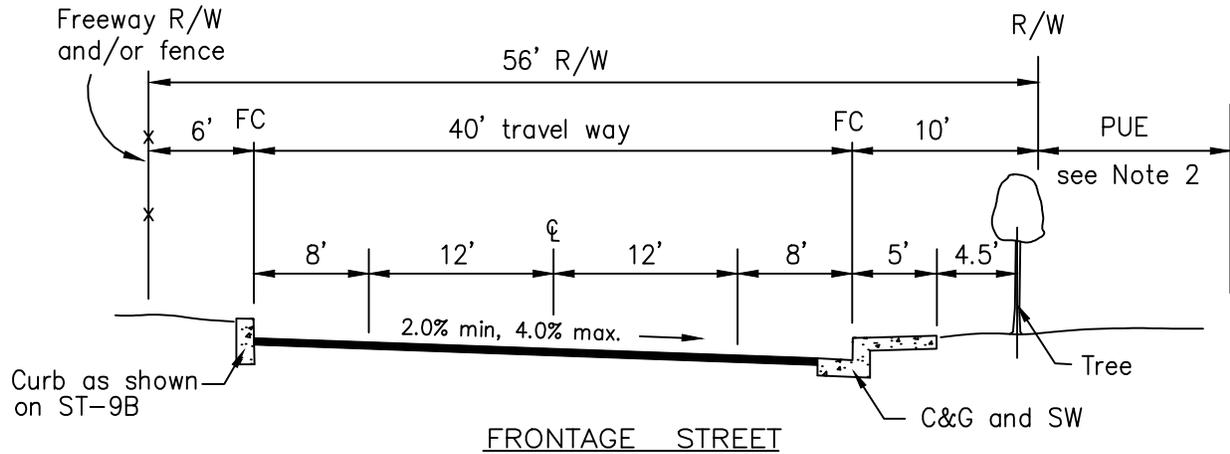
ST01B.DWG

Date	By	Rev.

HAMMERHEADS
AND
TEMPORARY TURNAROUND

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-1B



South Livermore Area
Transition Area Only

Street type	*Travel way	* R/W	**Travel way	** R/W	Guideline Criteria
Local street	40'	60'	32'	52'	Planned to serve more than 50 units, each direction
Local street, with parking on one side	32'	52'	25'	45'	No homes fronting on one side of the street
Local street, with no parking	26'	27'	-	-	Planned to serve less than 20 units ***
Minor Local street, Cul-De-Sac, and Loops	36'	56'	32'	52'	Planned to serve 20 to 50 units, each direction
Short Cul-De-Sac	32'	52'	32'	52'	Planned to serve less than 20 units

* The approved tentative map will determine actual street widths.
This table is intended to be a guideline only.

** R/W and Travel way dimensions is reduced for developments in the specific plan area.

*** Street to have monolithic sidewalk on both sides of street within 6' wide sidewalk/public utility easements adjacent to right-of-way

LOCAL STREET AND CUL-DE-SAC

See ST-2E for notes

User note:

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CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY Date: May-13 NO.
Ckd: Spec. Committee Scale: NONE
[Signature]
City Engineer

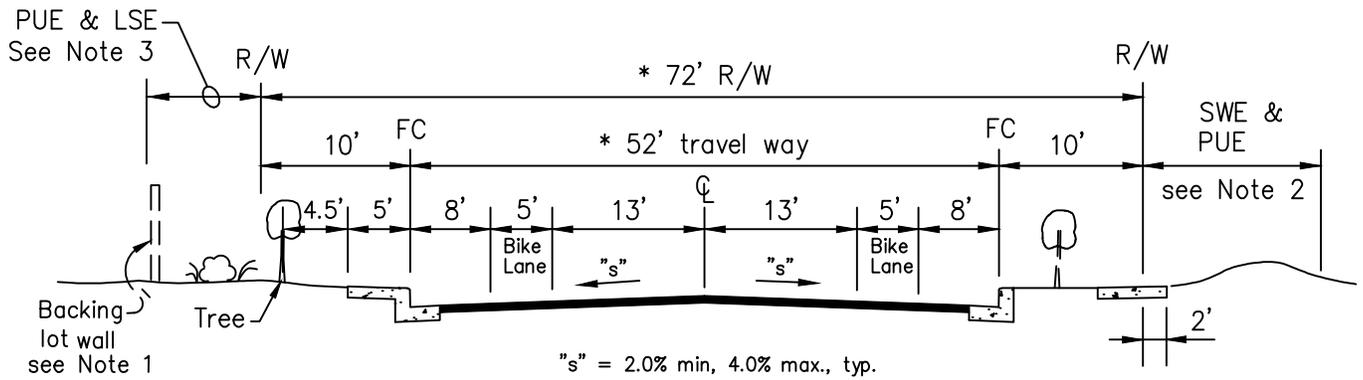
ST-2A

STREET WIDTHS

(FRONTAGE, LOCAL & CUL-DE-SAC)

ST02A.DWG

Date	By	Rev.



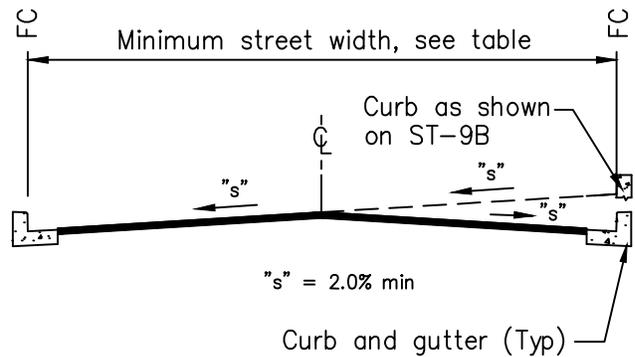
MONOLITHIC SIDEWALK
See ST-3

COLLECTOR STREET
(RESIDENTIAL)

SEPARATED SIDEWALK
See ST-4

* For collector streets with parking on one side of the street, street width may be reduce to 66' R/W and 46' travel way.

Minimum street width	
Private street with parallel parking on both sides	36'
Private street with parallel parking on one side	33'
Private street (No parking on either side)	24'
Private alley (No parking on either side)	20'



PRIVATE RESIDENTIAL STREET AND
PRIVATE RESIDENTIAL TOWNHOUSE/CONDOMINIUM STREET

See ST-2E for notes

User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST02B.DWG

Date	By	Rev.

STREET WIDTHS
(COLLECTOR AND PRIVATE STREETS)

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-2B

ST02C-R1.DWG

Date	By	Rev.

STREET WIDTHS (MAJOR STREETS)

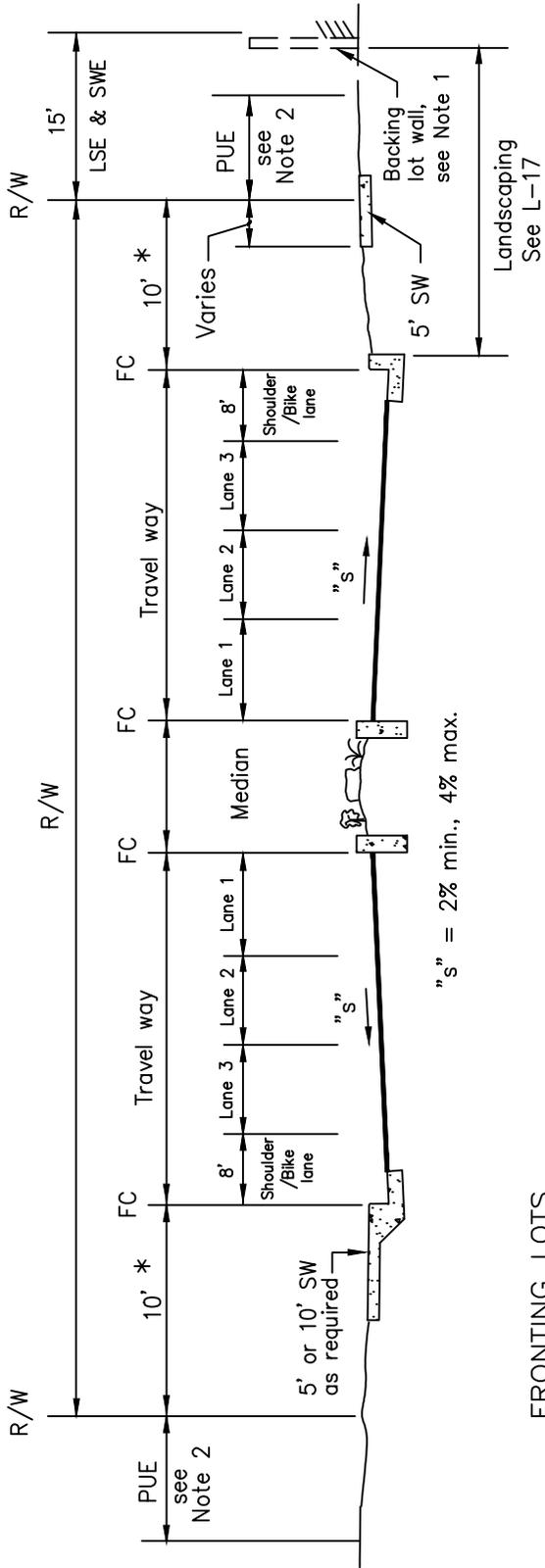
CITY OF LIVERMORE STANDARD DETAIL

Dwn: KY Date: May-13
 Ckd: Spec. Committee Scale: NONE

[Signature]
 City Engineer

NO.

ST-2C



FRONTING LOTS
MONOLITHIC SIDEWALK
 (INDUSTRIAL OR COMMERCIAL ONLY)

BACKING LOTS
SEPARATED, MONOLITHIC OR
MEANDERING SIDEWALK AS REQUIRED

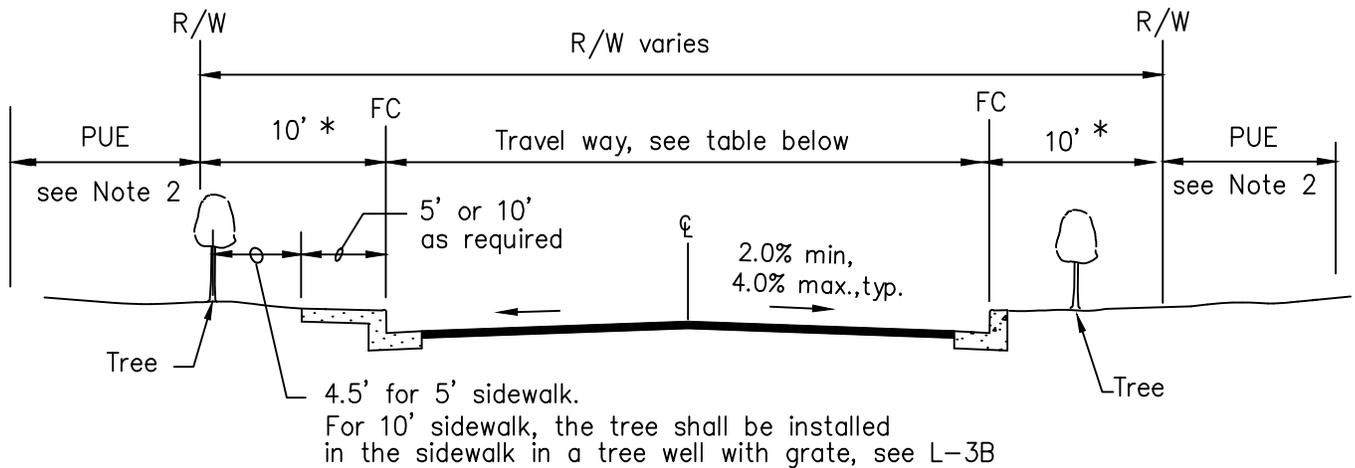
MAJOR STREET

Total Travel Lanes	* * R/W	Travel way					Median	
		Shoulder/Bike Lane width	Lane 1 width	Lane 2 width	Lane 3 width	Total	Single Left Turn	Dual Left Turn
4	104'	8'	14'	12'	-	34'	16'	-
4	116'	8'	14'	12'	-	34'	-	28'
6	128'	8'	14'	12'	12'	46'	16'	-
6	140'	8'	14'	12'	12'	46'	-	28'

User note:
 These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

* Dimension is one (1) foot on Business and Commercial Park (BCP) frontages
 ** Right of way (R/W) dimensions reduced in Business and Commercial Park (BCP) per Policy Proposal No. 160-98.

See ST-2E for notes.



MONOLITHIC SIDEWALK

(ONE SIDE ONLY)

See ST-3

Street type	Travel way	R/W	Remarks
Industrial/ Commercial	40' min.	60' min.	1. Two lane street, with no left turn lane.
	52' min.	72' min.	1. Two lane street. with left turn lane.

INDUSTRIAL/COMMERCIAL STREET

* Dimension is one (1) foot in Business and Commercial Park (BCP) per Policy Proposal No. 160-98.

User note:

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See ST-2E for notes

STREET WIDTHS
(INDUSTRIAL/COMMERCIAL)

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY Date: May-13 NO.
Ckd: Spec. Committee Scale: NONE

[Signature]
City Engineer

ST-2D

ST02D-R1.DWG

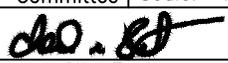
Date	By	Rev.

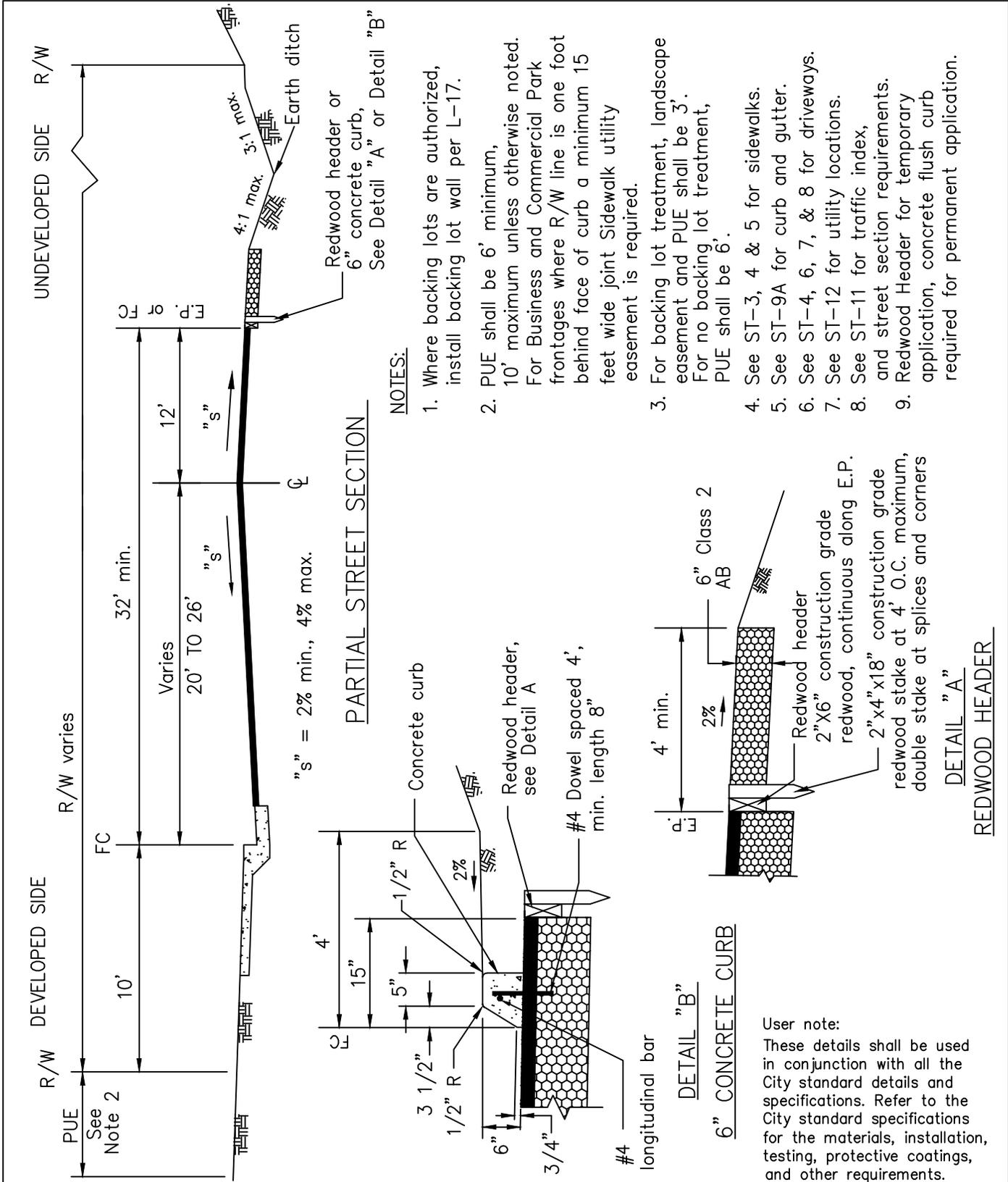
ST02E.DWG

Date	By	Rev.

STREET WIDTH
(PARTIAL STREET SECTION FOR TEMP
40' TO 52' TRAVEL WAY STREETS)

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-2E



NOTES:

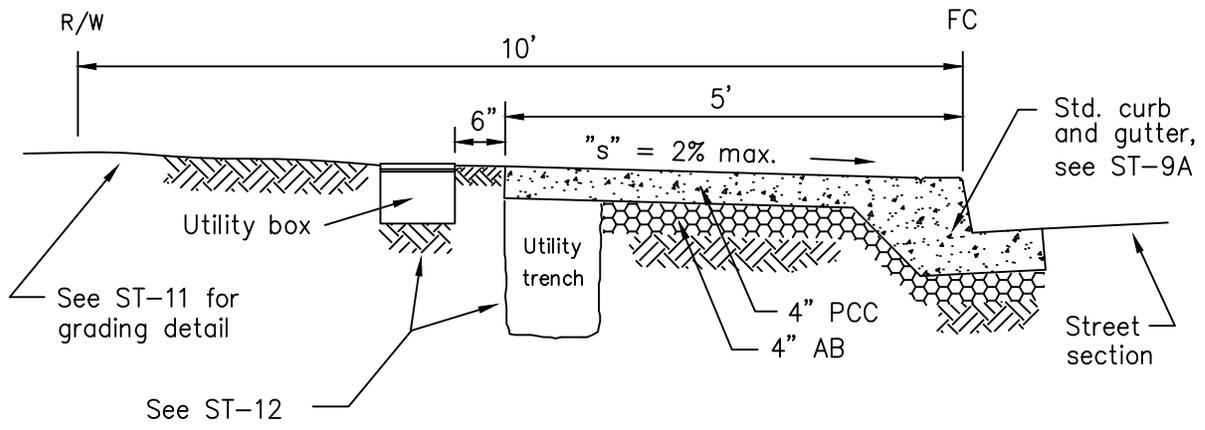
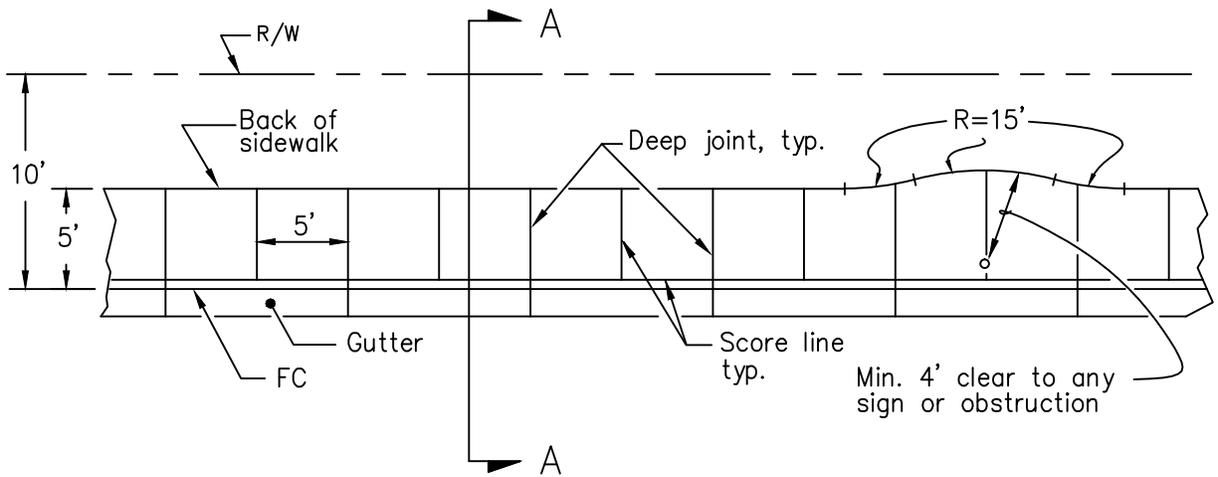
- Where backing lots are authorized, install backing lot wall per L-17.
- PUE shall be 6' minimum, 10' maximum unless otherwise noted. For Business and Commercial Park frontages where R/W line is one foot behind face of curb a minimum 15 feet wide joint Sidewalk utility easement is required.
- For backing lot treatment, landscape easement and PUE shall be 3'. For no backing lot treatment, PUE shall be 6'.
- See ST-3, 4 & 5 for sidewalks.
- See ST-9A for curb and gutter.
- See ST-4, 6, 7, & 8 for driveways.
- See ST-12 for utility locations.
- See ST-11 for traffic index, and street section requirements.
- Redwood Header for temporary application, concrete flush curb required for permanent application.

PARTIAL STREET SECTION

DETAIL "B" CONCRETE CURB

DETAIL "A" REDWOOD HEADER

User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.



SECTION A-A

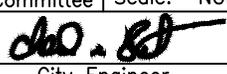
User note:
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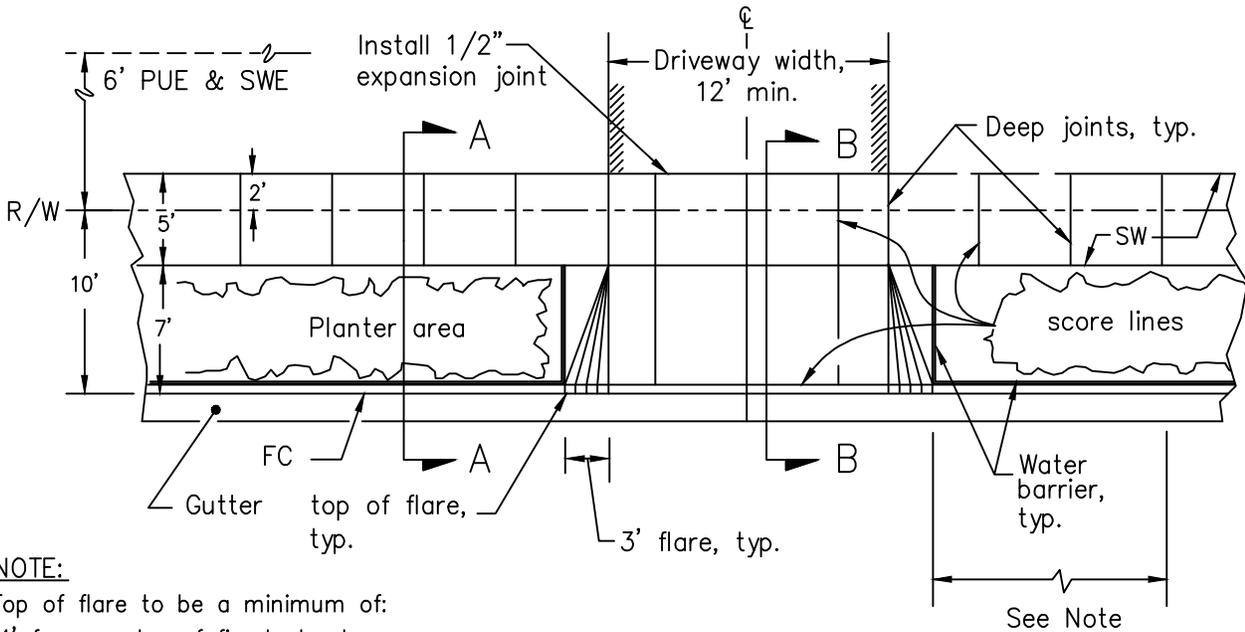
ST03.DWG

Date	By	Rev.

MONOLITHIC SIDEWALK
 (RESIDENTIAL/INDUSTRIAL)

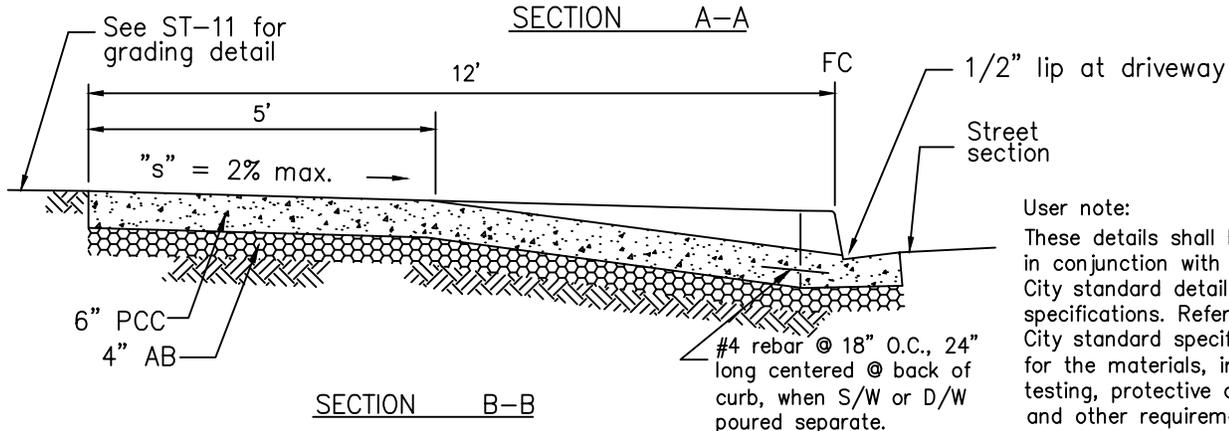
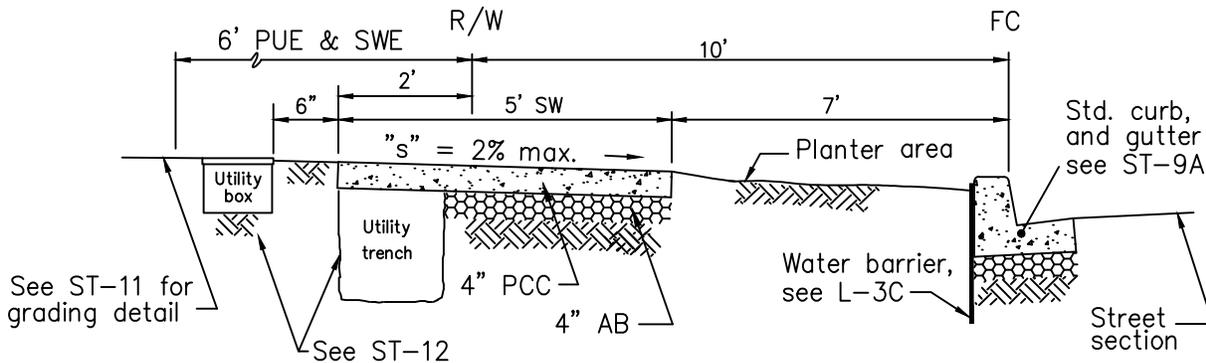
CITY OF LIVERMORE
 STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO. ST-3
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		



NOTE:

- Top of flare to be a minimum of:
- 4' from center of fire hydrant
- 4' from center of street light
- 4' from property line
- 10' from beginning of curb return
- 8' from center of street tree
- 4' from top of flare of other driveway

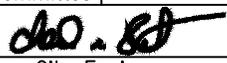


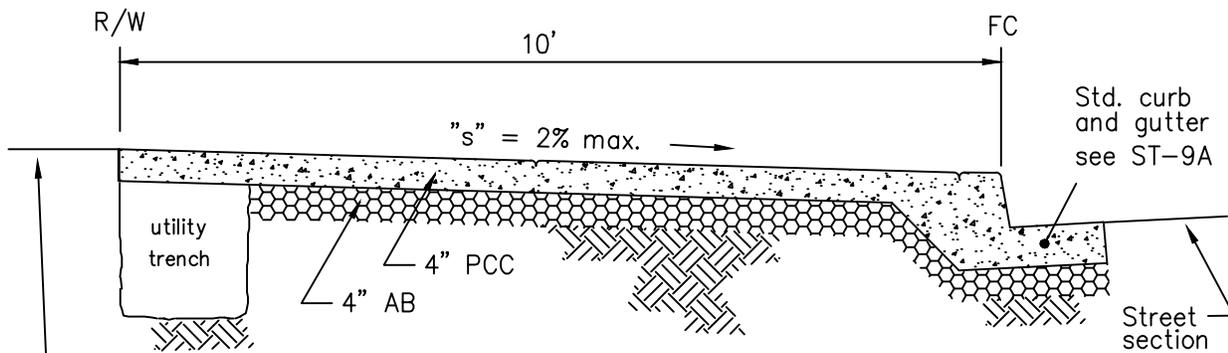
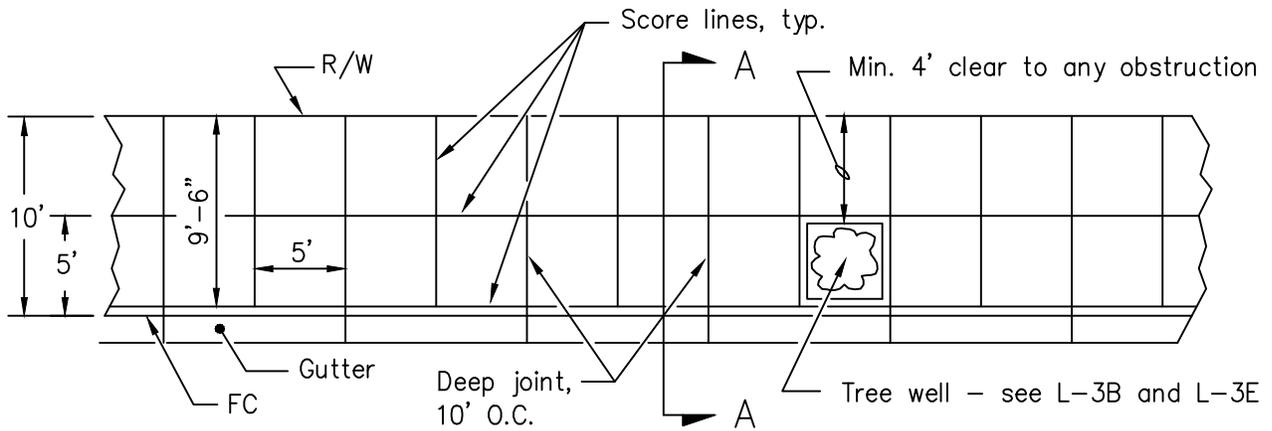
User note:
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ST04.DWG			
Date	By	Rev.	

SEPARATED SIDEWALK AND DRIVEWAY (RESIDENTIAL)

CITY OF LIVERMORE STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-4



Utility boxes to be placed in PUE behind sidewalk where applicable, see ST-12 for placement of utility trench and boxes.

SECTION A-A

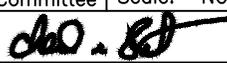
User note:
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ST05.DWG

Date	By	Rev.

SIDEWALK
 (COMMERCIAL/INDUSTRIAL)

CITY OF LIVERMORE
 STANDARD DETAIL

Dwn: KR/KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-5

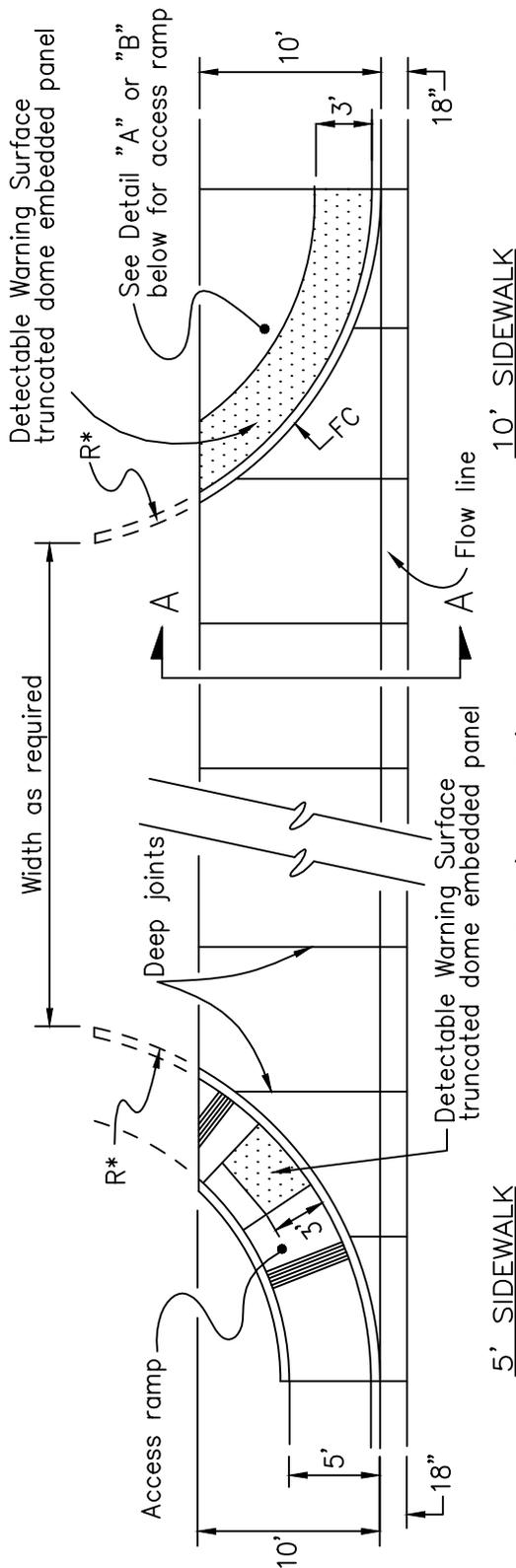
ST06.DWG

Date	By	Rev.

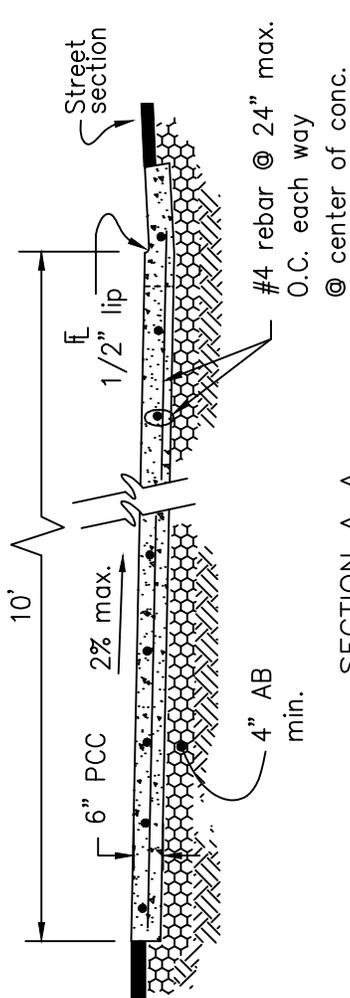
DRIVEWAY
(STREET-LEVEL)
(INDUSTRIAL/COMMERCIAL)

CITY OF LIVERMORE
STANDARD DETAIL

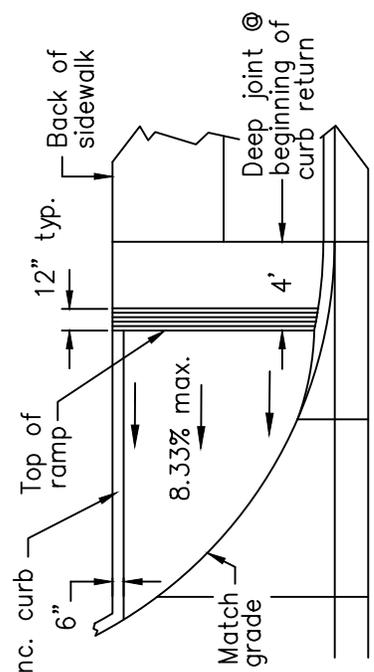
Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-6



* R=20' min., 30' max.



SECTION A-A

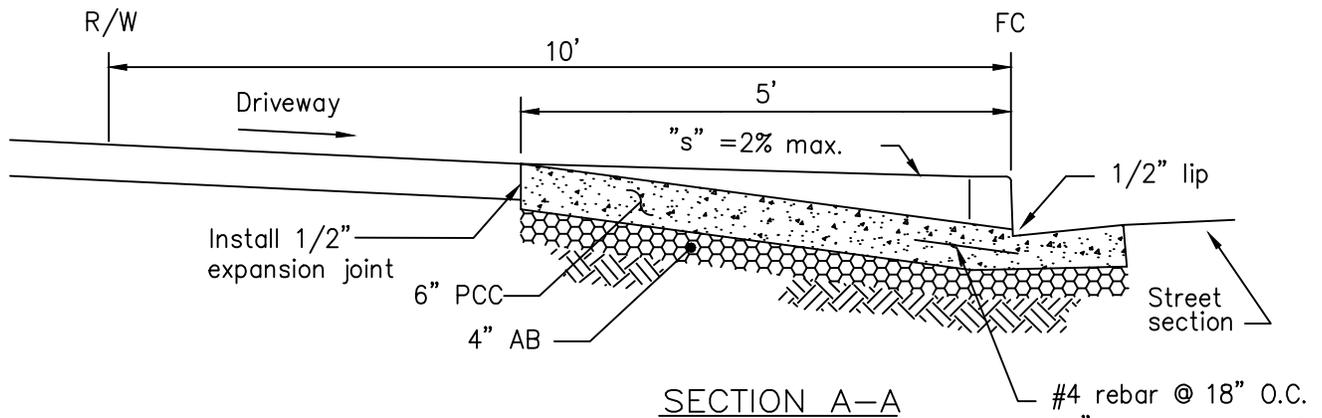
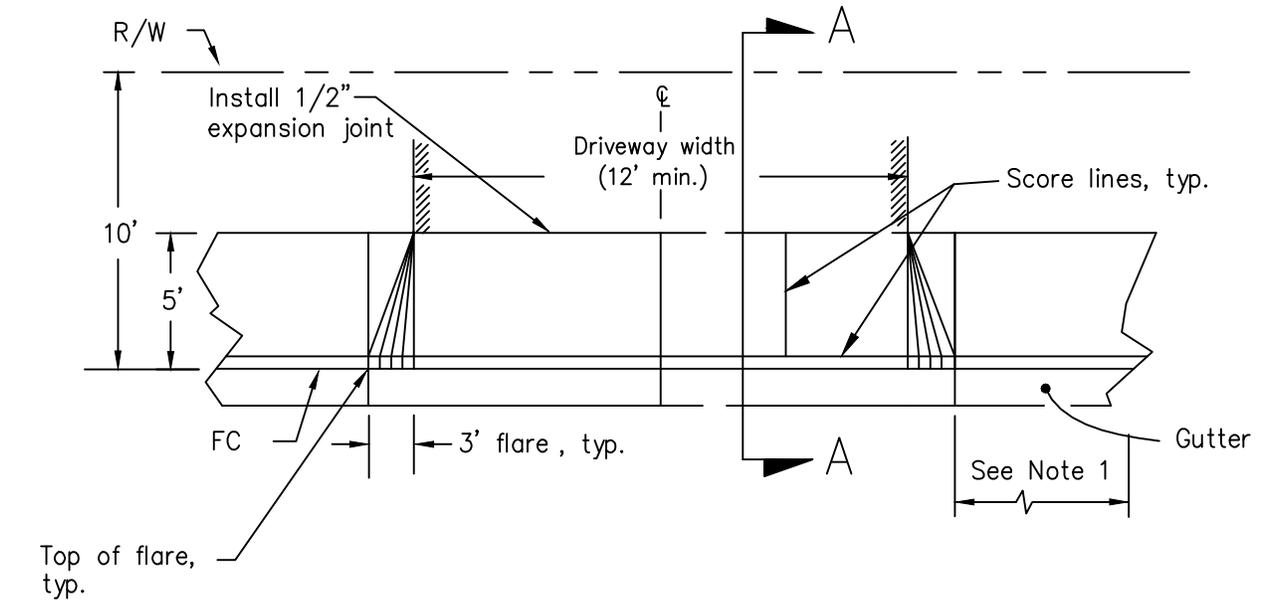


User note:
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DETAIL "A" - ACCESS RAMP

DETAIL "B" - ACCESS RAMP

- Notes:
1. See ST-3, ST-5 for sidewalk details
 2. See Caltrans Curb Ramp Detail A88A for additional details and requirements.



NOTES:

1. Top of flare to be a minimum of:
 - 4' from center of fire hydrant
 - 4' from center of street light
 - 4' from property line
 - 10' from beginning of curb return
 - 8' from center of street tree
 - 4' from top of flare of other driveway
2. See ST-3 for sidewalk.
3. The driveway shall be symmetric about the centerline.

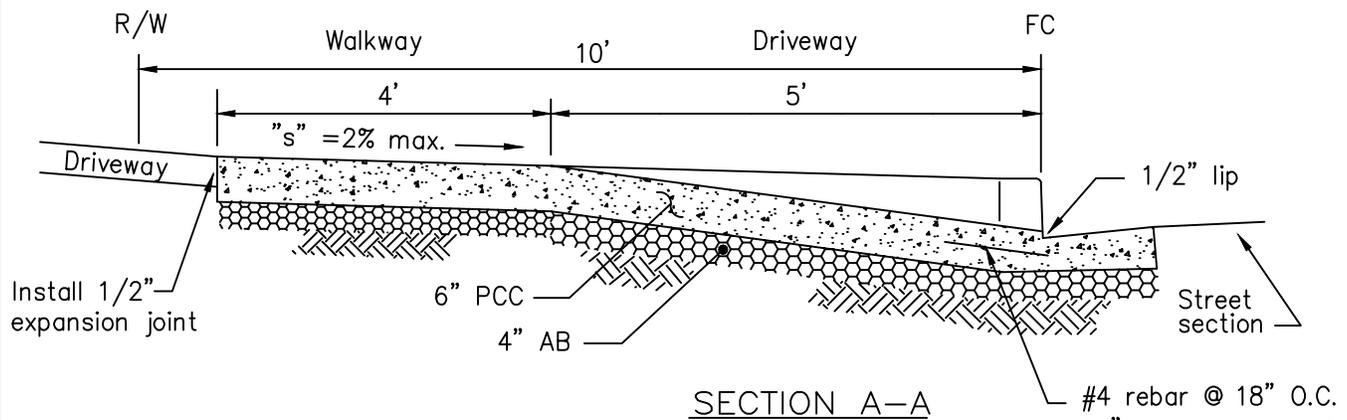
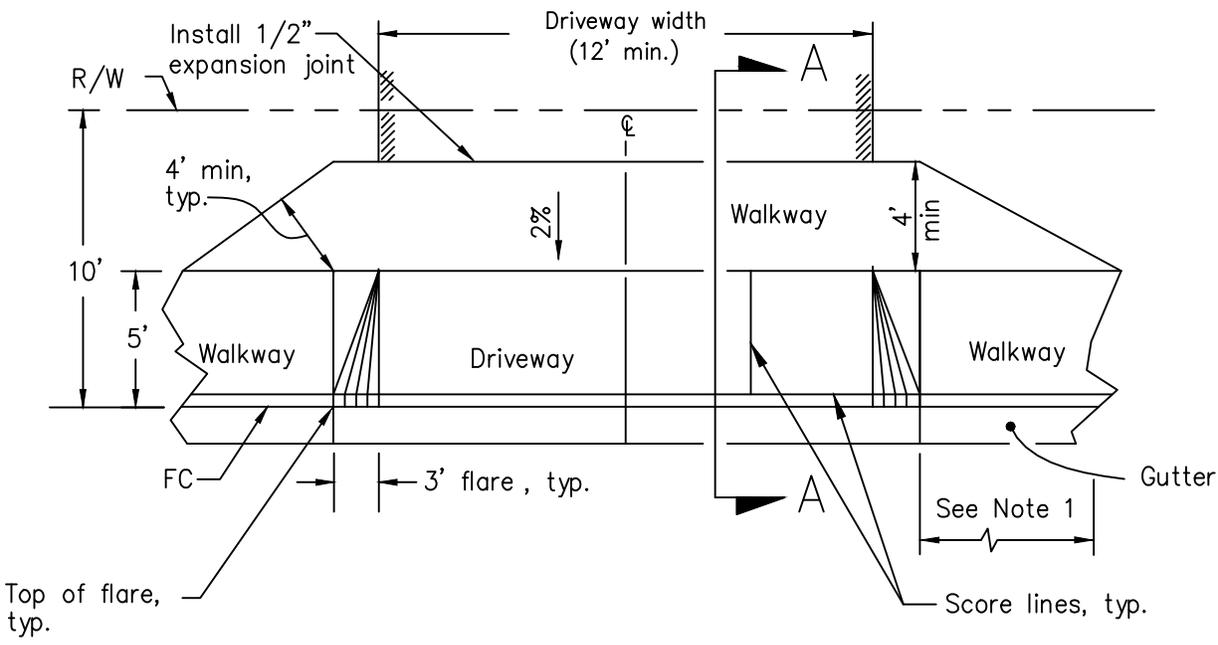
User note:
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ST07A.DWG

Date	By	Rev.

DRIVEWAY
 EXISTING DEVELOPMENT
 (RESIDENTIAL)

CITY OF LIVERMORE STANDARD DETAIL		
Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	ST-7A
 City Engineer		



NOTES:

1. Top of flare to be a minimum of:
 - 4' from center of fire hydrant
 - 4' from center of street light
 - 4' from property line
 - 10' from beginning of curb return
 - 8' from center of street tree
 - 4' from top of flare of other driveway
2. See ST-3 for sidewalk.
3. The driveway shall be symmetric about the centerline.

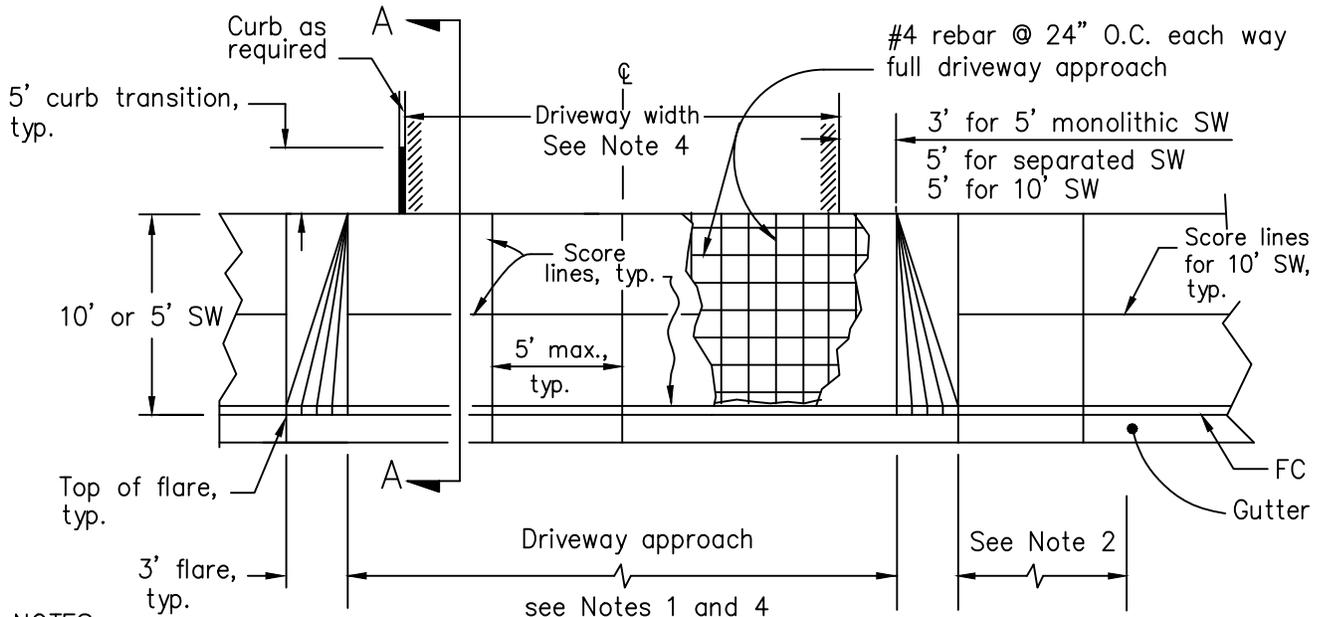
User note:
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ST07B.DWG

Date	By	Rev.

DRIVEWAY - NEW DEVELOPMENT
(RESIDENTIAL)

CITY OF LIVERMORE STANDARD DETAIL		
Dwn: FY	Date: May-13	NO.
Kcd: Spec. Committee	Scale: NONE	ST-7B
 City Engineer		

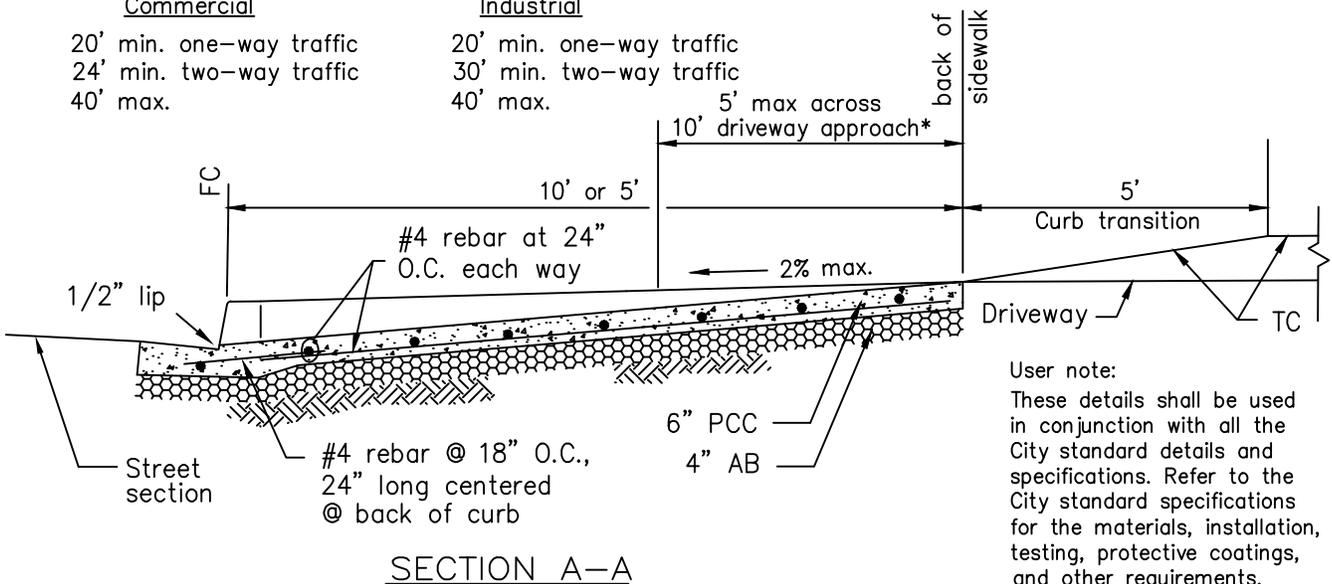


NOTES:

1. Driveway approach to be 10' min. wider than the driveway width for 10' monolithic SW or 5' separated SW and 6' min. wider than the driveway width for 5' SW.
2. Top of flare to be a minimum of:
 - 10' from center of fire hydrant
 - 4' from center of street light
 - 4' from property line
 - 10' from beginning of curb return
 - 8' from center of street tree
 - 4' from top of flare of other driveway
3. See ST-3 & ST-5 for sidewalk.
4. Driveway width:

<u>Commercial</u>	<u>Industrial</u>
20' min. one-way traffic	20' min. one-way traffic
24' min. two-way traffic	30' min. two-way traffic
40' max.	40' max.

*For 10' driveways provide a 5' max walkway at 2% slope across back of driveway approach. For 5' driveways, see detail ST-7B for walkway behind driveway approach.



User note:
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SECTION A-A

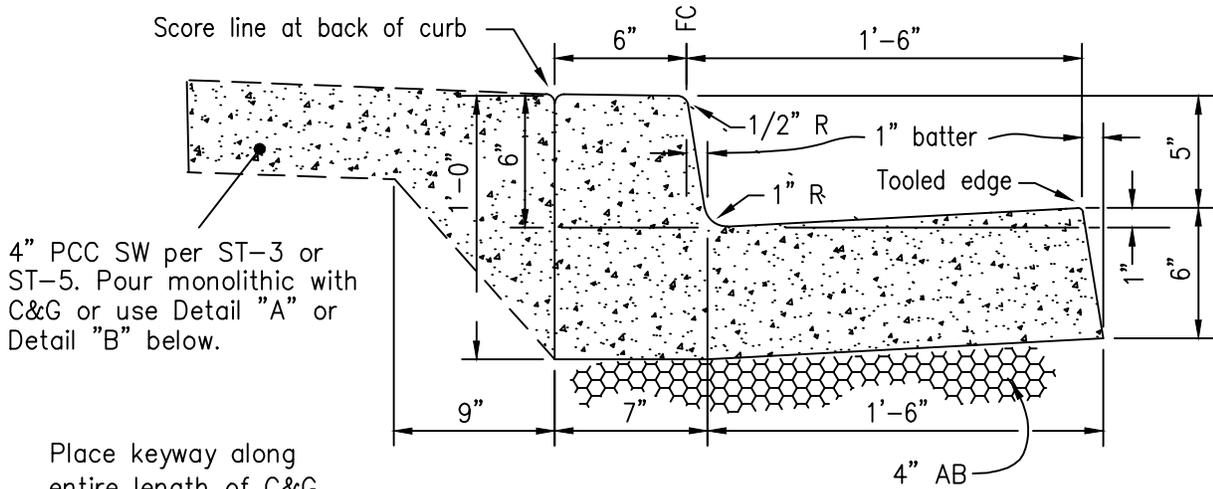
DRIVEWAY
 (COMMERCIAL/INDUSTRIAL)

CITY OF LIVERMORE
 STANDARD DETAIL

Dwn: FY	Date: May-13	NO. ST-8
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		

ST08.DWG

Date	By	Rev.	

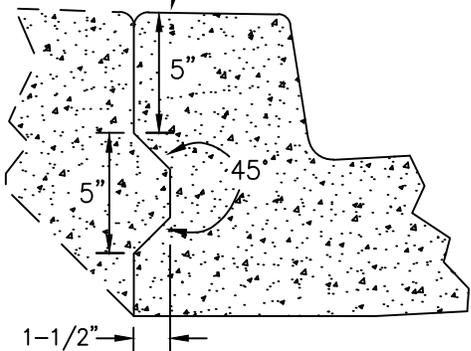


4" PCC SW per ST-3 or ST-5. Pour monolithic with C&G or use Detail "A" or Detail "B" below.

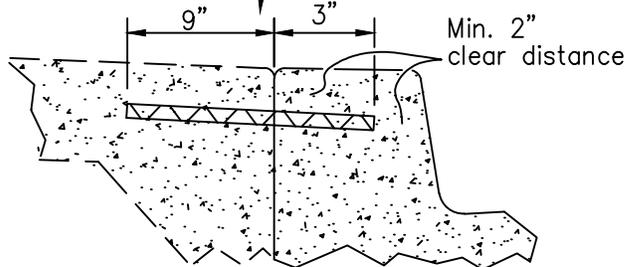
Place keyway along entire length of C&G as shown.

CURB & GUTTER

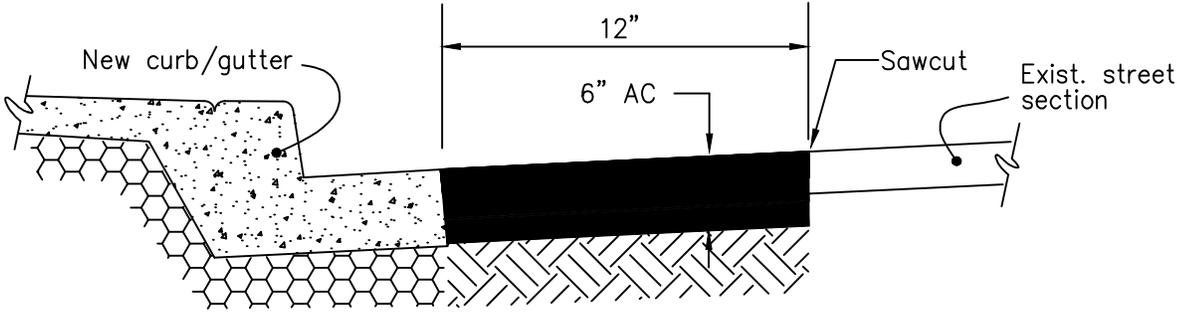
#4 rebar, 12" long. Install rebar into 3" deep hole drilled into existing curb at 3' O.C. for entire length as shown.



DETAIL "A"
KEYWAY



DETAIL "B"
DOWELS



NEW OR REPLACEMENT CURB & GUTTER
AT EXISTING STREET

User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

NOTE:

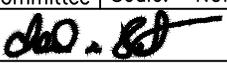
Curb, gutter, and sidewalk to be placed monolithically where possible. Where non-monolithic, place dowels and/or keyway as shown above.

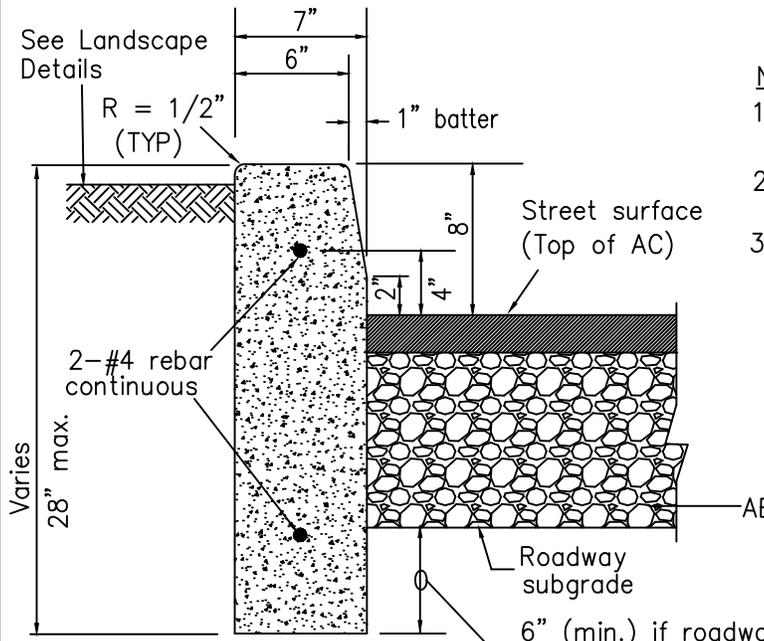
ST09A.DWG

Date	By	Rev.

CURB & GUTTER

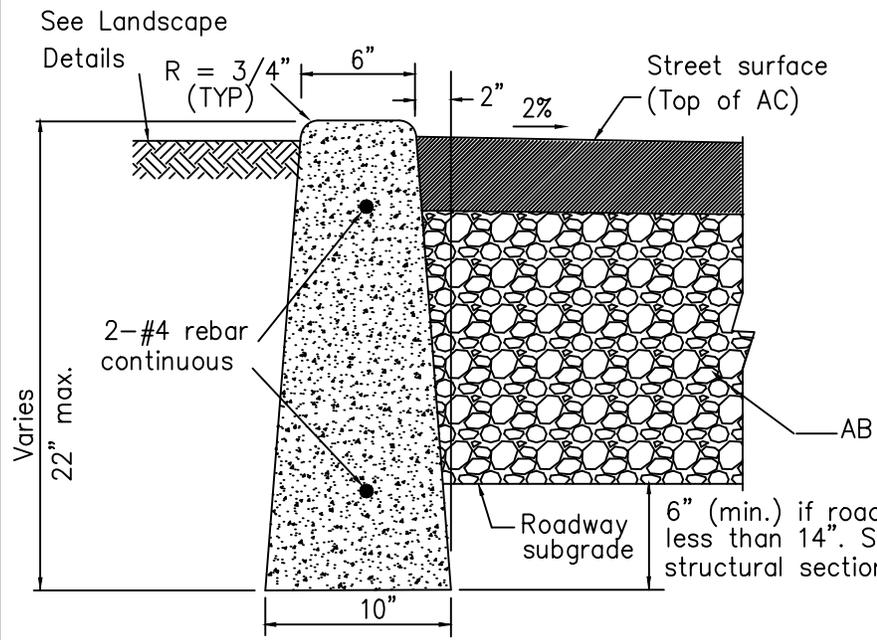
CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-9A



- NOTES:**
1. Place deep joints at 10' spacing along median curb.
 2. See L-2B and L-2C for water barrier installation.
 3. If roadway structural section is greater than 14", install water barrier extending from top of curb to 6" below roadway subgrade. See L-2B and L-2C.

MEDIAN CURB



FLUSH CURB

6" (min.) if roadway structural section is less than 14". See Note 3 for roadway structural sections greater than 14".

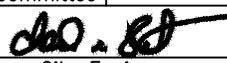
User note:
 These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

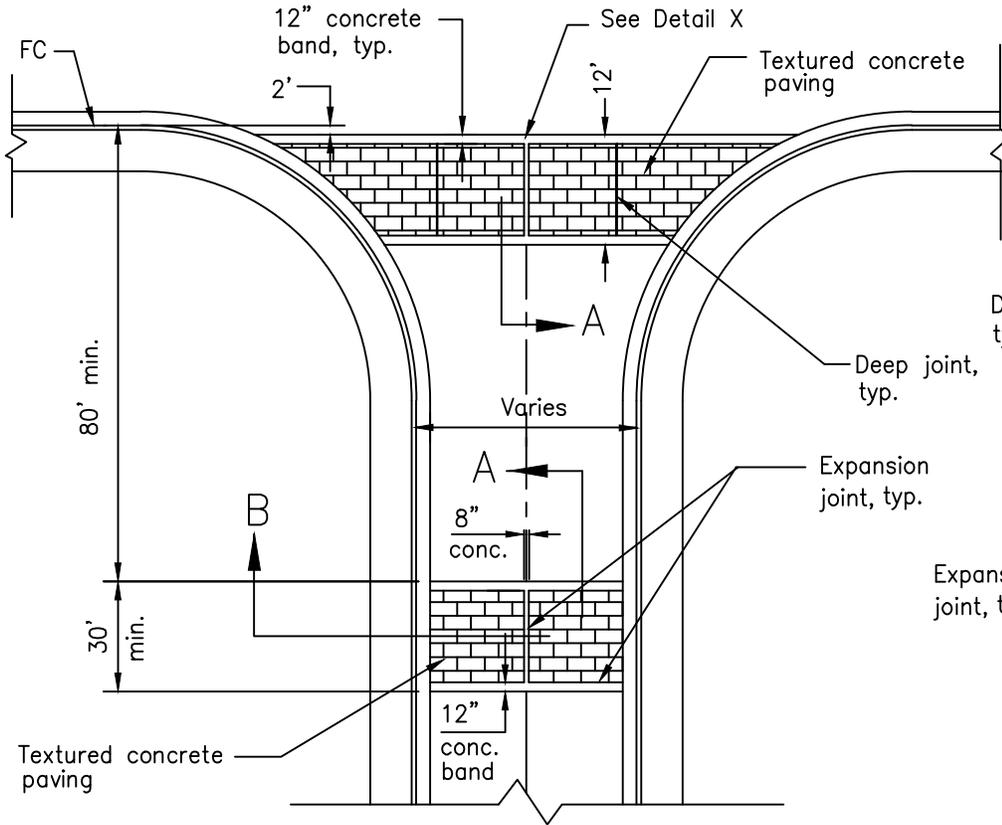
ST09B.DWG

Date	By	Rev.

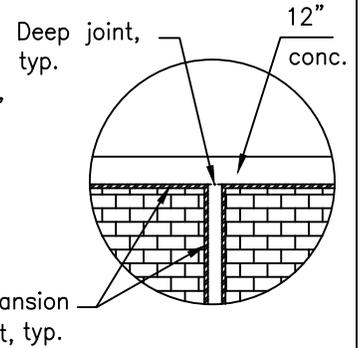
**MEDIAN CURB/FLUSH CURB
 (DEEP CURB)**

**CITY OF LIVERMORE
 STANDARD DETAIL**

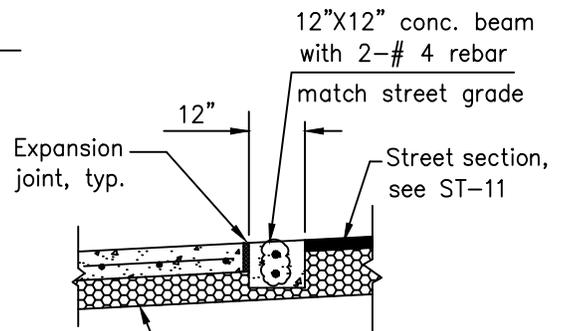
Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-9B



PLAN



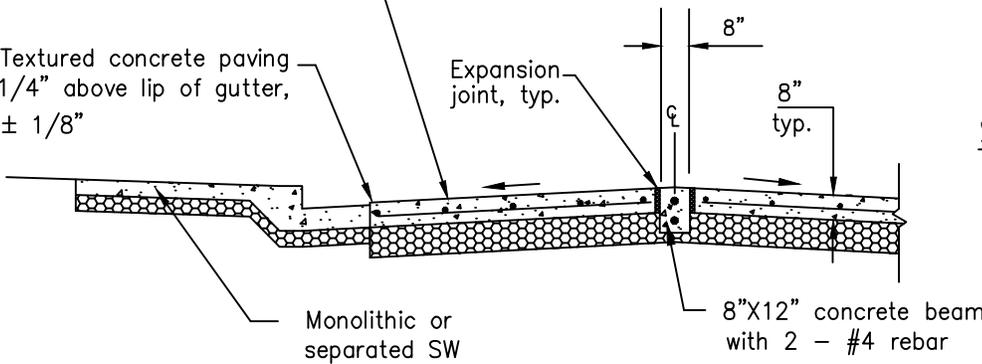
DETAIL X



SECTION "A"

Textured concrete paving
W/ #3 rebar @ 18" O.C.
each way, 3" clearance
from top of concrete,
see drawing for texture
and color

Textured concrete paving
1/4" above lip of gutter,
± 1/8"



SECTION "B"

User note:
These details shall be used
in conjunction with all the
City standard details and
specifications. Refer to the
City standard specifications
for the materials, installation,
testing, protective coatings,
and other requirements.

TEXTURED CONCRETE PAVING

CITY OF LIVERMORE STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	

[Signature]
City Engineer

ST-10

ST10.DWG

Date	By	Rev.

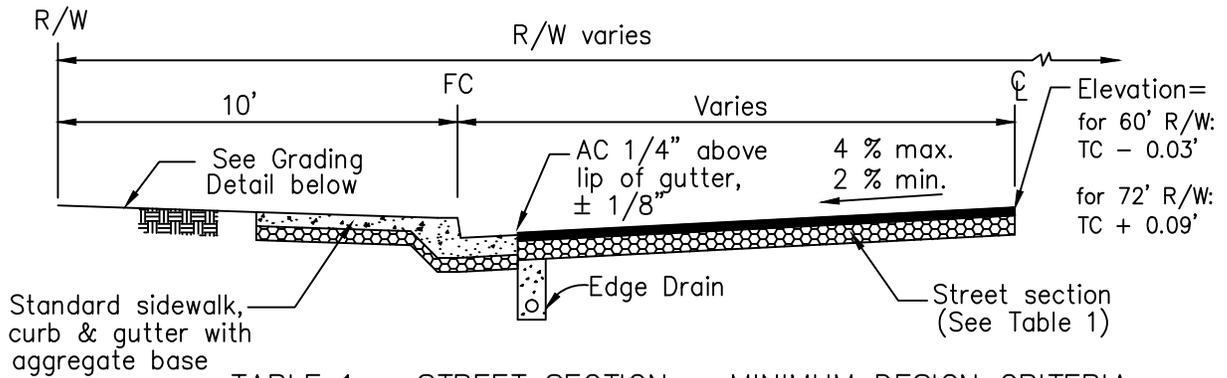


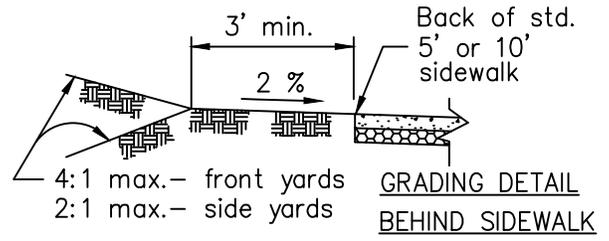
TABLE 1 - STREET SECTION - MINIMUM DESIGN CRITERIA

STREET TYPE	MIN. TRAFFIC INDEX	AC & BASE	
		MIN. AC	MIN. BASE
Private/townhouse/condo	NA	4.0"	6.0"-8.0" *
Cul-de-sac	NA	4.0"	6.0"-8.0" *
Local	NA	4.0"	6.0"-8.0" *
Collector (Residential) **	7.0	4.0"	8.0"
Major (Residential) **	9.0	5.5"	7.0"
Major (Industrial/Commercial)**	10.0	6.5"	7.0"
Frontage**	9.0	5.5"	7.0"
Industrial/Commercial**	9.0	5.5"	7.0"
Bus stops	in street area in turnout area	12" full depth AC 12" concrete. See ST-15	

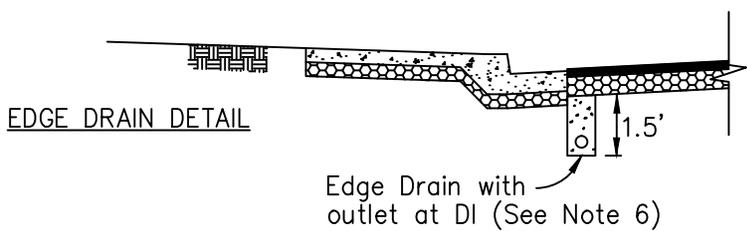
* See Table 2 - Base Thickness Requirement
 ** Street section design to be based on Caltrans flexible pavement design method
 Submit supporting data for traffic index calculation for City Engineer's approval

NOTES:

1. See ST-3, 4 & 5 for sidewalks.
2. See ST-9A for curb and gutter.
3. See ST-4, 6, 7, & 8 for driveways.
4. See ST-12 for utility locations.
5. See ST-2 for travel way and R/W widths.
6. Edge drain required at all park frontage, and at toe of slope or as required by the City Engineer.
 (Construct per Caltrans Standard Plan D102, Perforated Pipe Dia.=4")



Note: No retaining walls allowed within 3' of back of sidewalk.



User note:
 These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

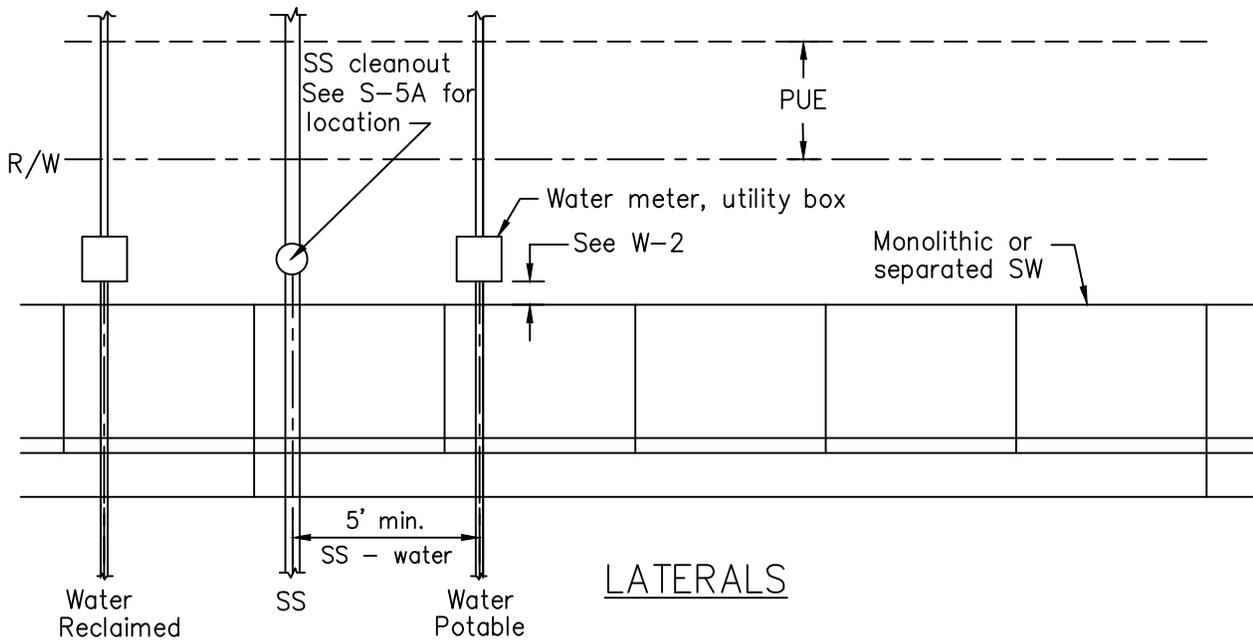
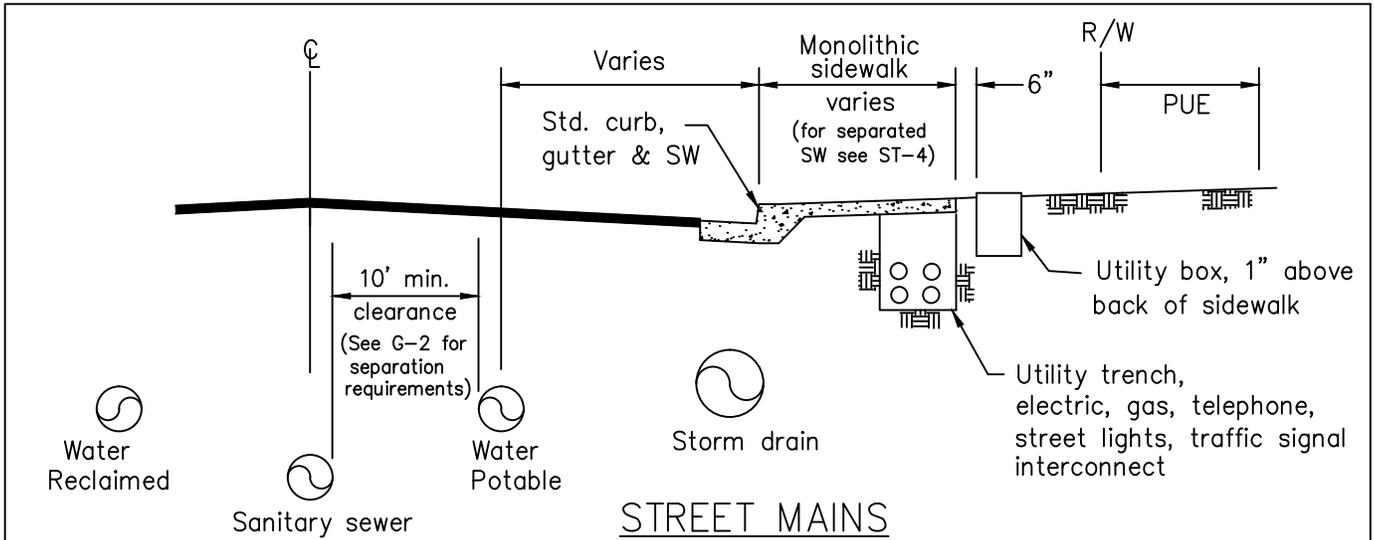
ST011.DWG

Date	By	Rev.

STREET SECTION

CITY OF LIVERMORE
 STANDARD DETAIL

Dwn: FY	Date: May-13	NO. ST-11
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		



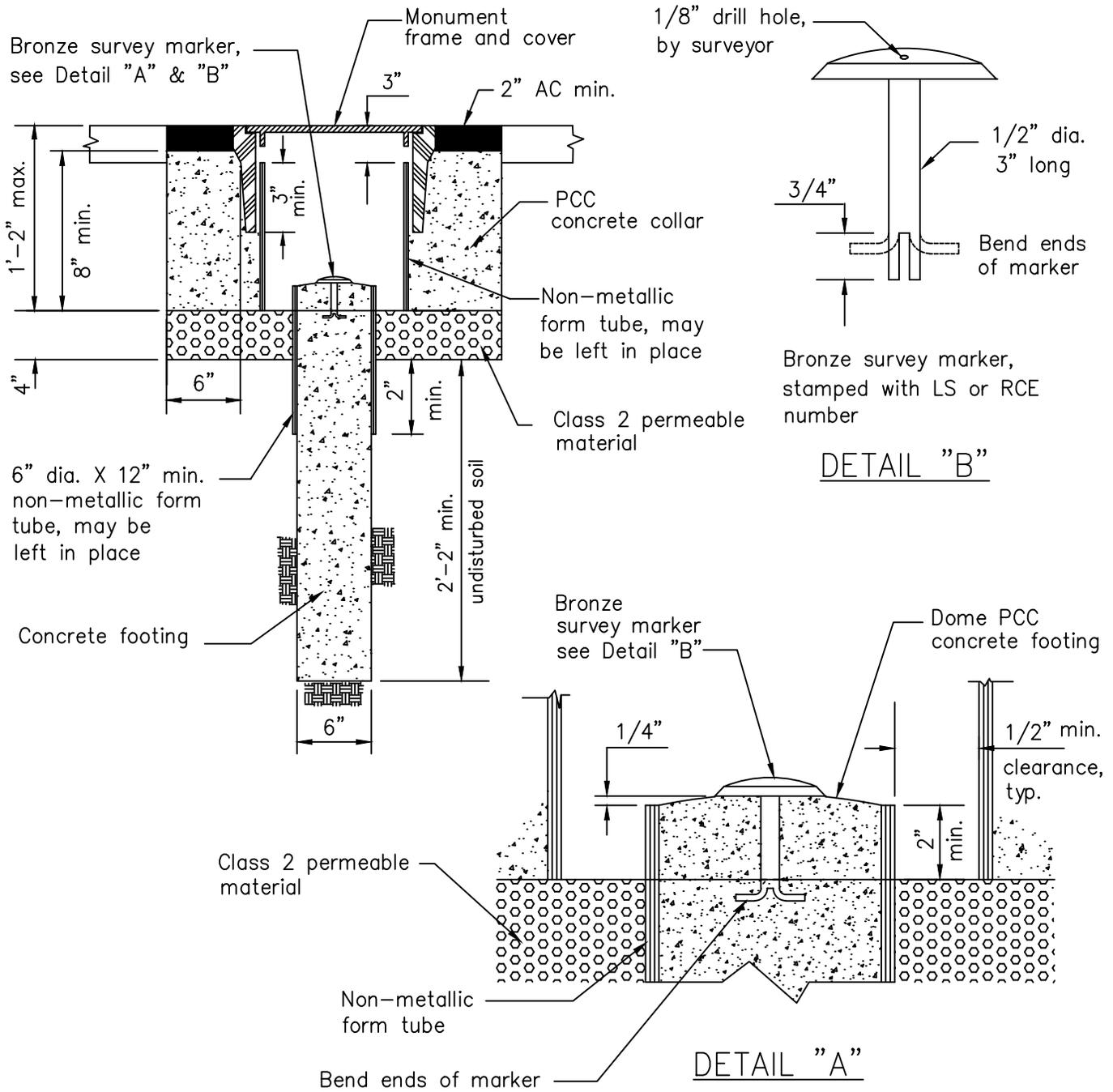
NOTES:

1. Water lines to be placed on the north or west side of the centerline.
2. See ST-3, 4, & 5 for sidewalks.
3. See ST-4, 6, 7, & 8 for driveways.
4. See ST-9A for curb and gutter.
5. Utility services shall be located a minimum of 2' away from any driveway. No utility services shall be placed beneath a driveway unless otherwise approved by the Engineer.
6. Utility boxes in driveway areas to have traffic lids.
7. A 10' distance must be maintained between reclaimed and portable water

User note:
 These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST12.DWG

UTILITY LOCATIONS			CITY OF LIVERMORE STANDARD DETAIL		
			Dwn: FY	Date: May-13	NO.
			Kcd: Spec. Committee	Scale: NONE	ST-12
			City Engineer		
Date	By	Rev.			



DETAIL "B"

DETAIL "A"

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST13.DWG

Date	By	Rev.

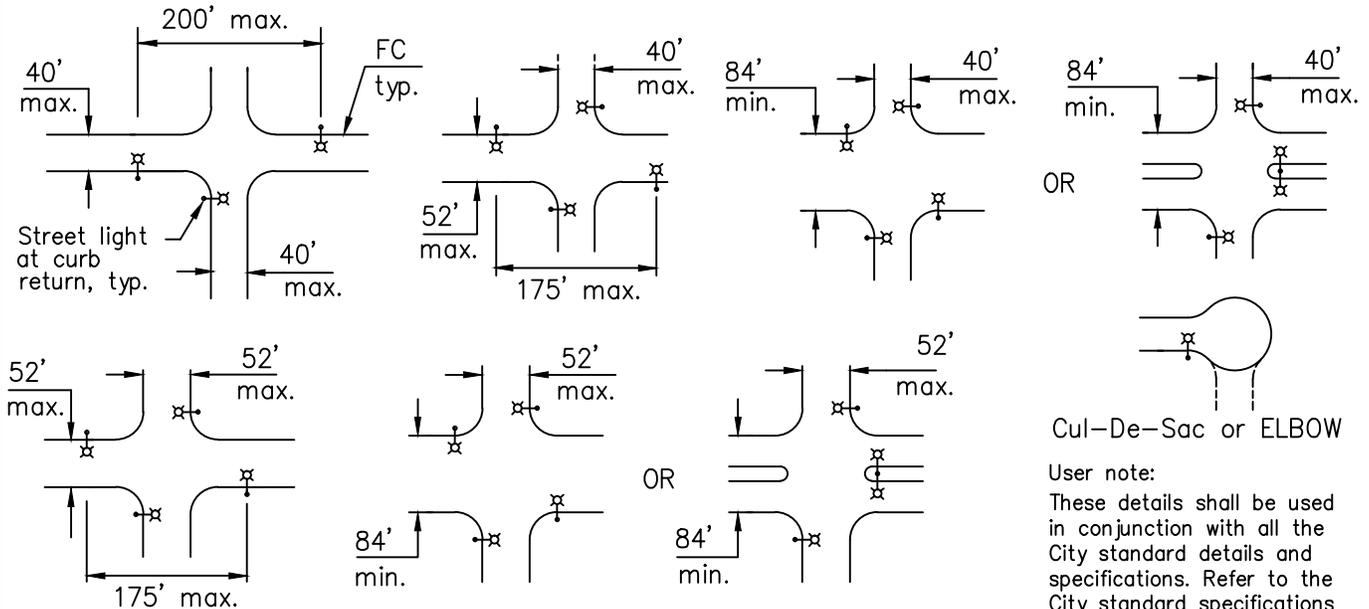
MONUMENT

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Spec. Committee	Scale: NONE	
 City Engineer		ST-13

MAXIMUM STREET WIDTH (FC TO FC)	MEDIAN WIDTH	STREET LIGHT			
		LOCATION	PATTERN	MAXIMUM SPACING	LED LUMINAIRE
40'	0	roadside	staggered	* 200'	LEOTEK Green Cobra GCI-20E-MV-NW-2-350 With house side shield or approved equal
52'	0	roadside	staggered	* 175'	
84'	16'	roadside	staggered	160' each side	LEOTEK Green Cobra GC1-30E-MV-NW-2-530 approved equal
		median	dual arm centered	200'	
96'	28'	roadside	staggered	160' each side	
		median	dual arm centered	180'	
108'	16'	roadside	staggered	200' each side	LEOTEK Green Cobra GC1-40E-MV-NW-2-700 approved equal
		median	dual arm centered	200'	
120'	28'	roadside	staggered	200' each side	
		median	dual arm centered	200'	

* NOTE: The maximum street light spacing may be increased by 40% on industrial streets up to 52' wide.



MINIMUM INTERSECTION AND CUL-DE-SAC LIGHTING REQUIREMENTS

User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

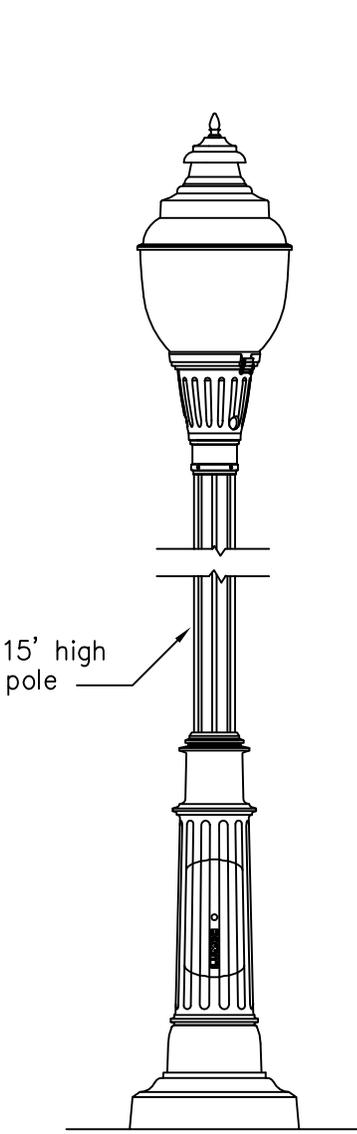
ST14B.DWG

Date	By	Rev.

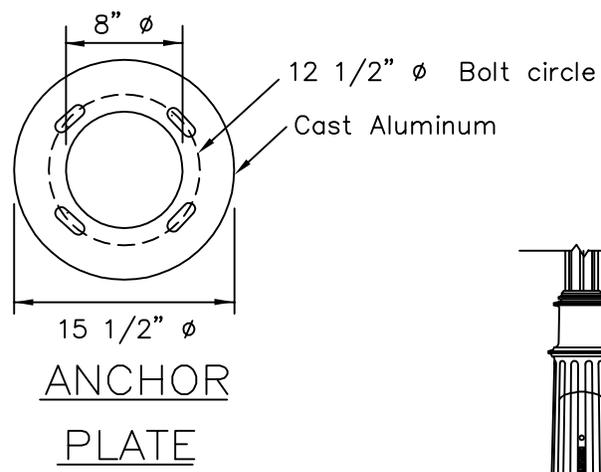
STANDARD STREET LIGHT LAYOUT

CITY OF LIVERMORE
STANDARD DETAIL

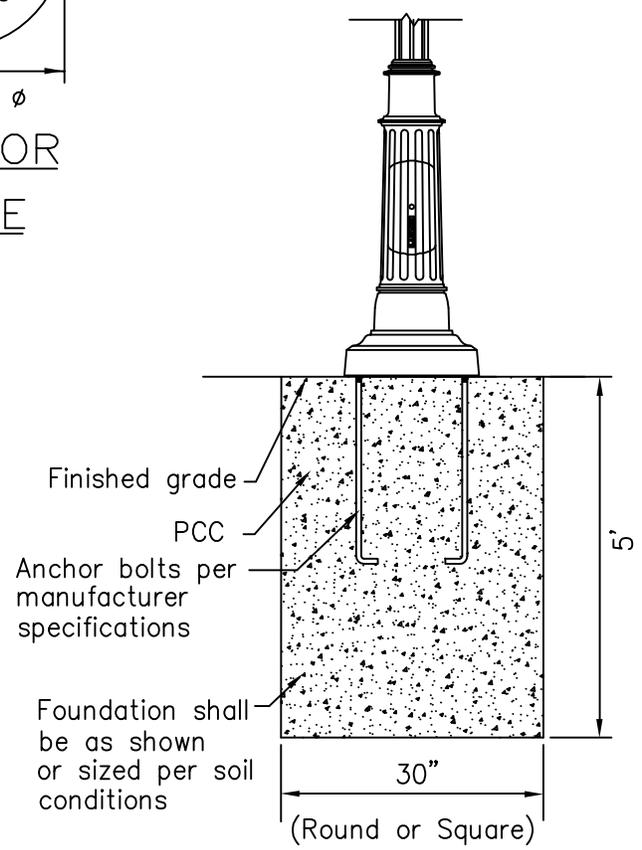
Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-14B



LUMEC LUMINAIRE
AND POLE



ANCHOR
PLATE



TYPICAL FOUNDATION

NOTE:

1. PULL BOX LOCATION PER ST-14A
2. THIS STREET LIGHT TO BE INSTALLED IN ALL AREAS OF THE CITY EXCEPT WHERE THE DOWNTOWN AND FIRST STREET LIGHT LOCATIONS ARE SPECIFIED ON DETAIL ST-14E

DECORATIVE STREET LIGHT LAYOUT

MAXIMUM STREET WIDTH FC TO FC	STREET LIGHT		LED LUMINAIRE	
	LOCATION	PATTERN	SIZE WATT	MAXIMUM SPACING
40'	roadside	staggered	65	160'

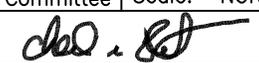
User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

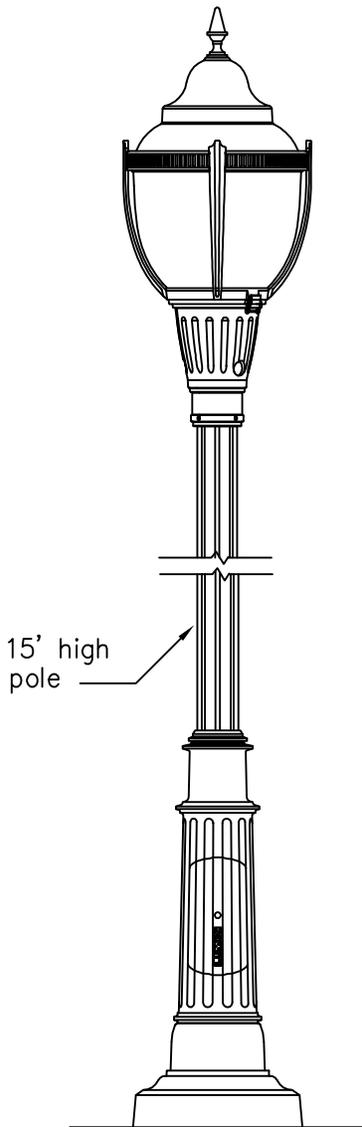
ST14C.DWG

Date	By	Rev.

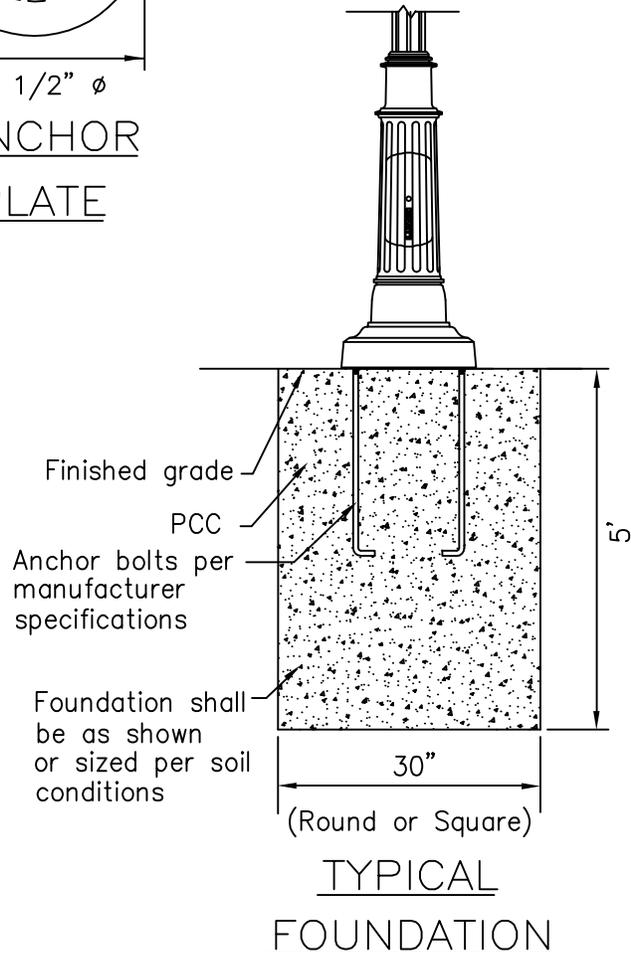
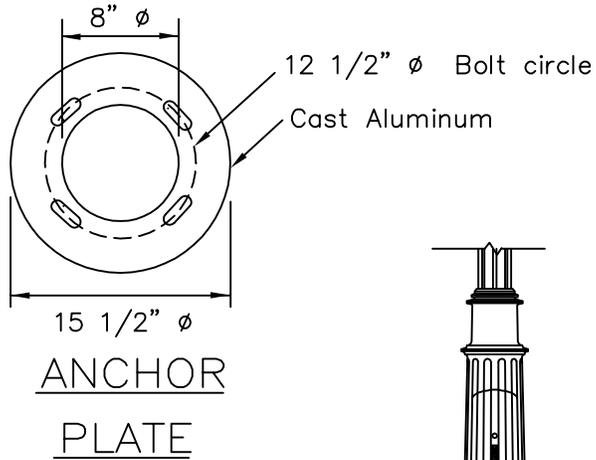
DECORATIVE
STREET LIGHT

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	ST-14C
 City Engineer		



LUMEC LUMINAIRE
AND POLE



NOTE:

1. PULL BOX LOCATION PER ST-14A

DECORATIVE STREET LIGHT LAYOUT

STREET LIGHT		LED LUMINAIRE	
LOCATION	PATTERN	SIZE WATT	MAXIMUM SPACING
roadside	staggered	90	100'

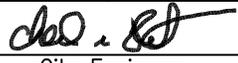
User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

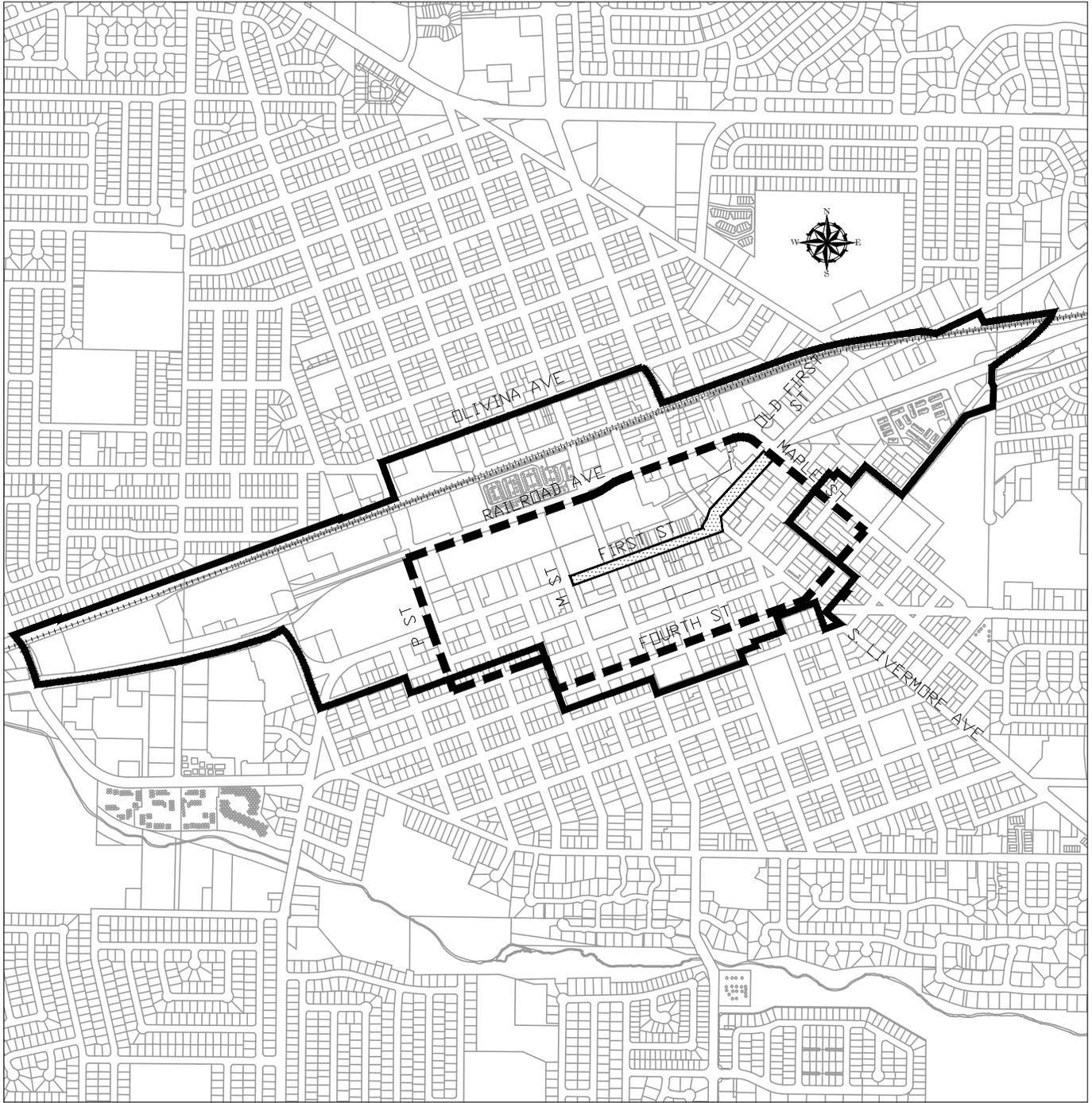
ST14C.DWG

DOWNTOWN DECORATIVE
STREET LIGHT

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY	Date: May-13	NO. ST-14D
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		

Date	By	Rev.



STREET LIGHT BOUNDARY

- First Street Decorative Street Light to be installed on First Street in the Downtown Core Area between Old First Street and M Street only. (See detail ST-14F)
- Downtown Decorative Street Light to be installed within this boundary except for the Downtown Core Area of First Street as indicated above. (See detail ST-14D)
- Downtown Specific Plan Area Boundary.

User note:

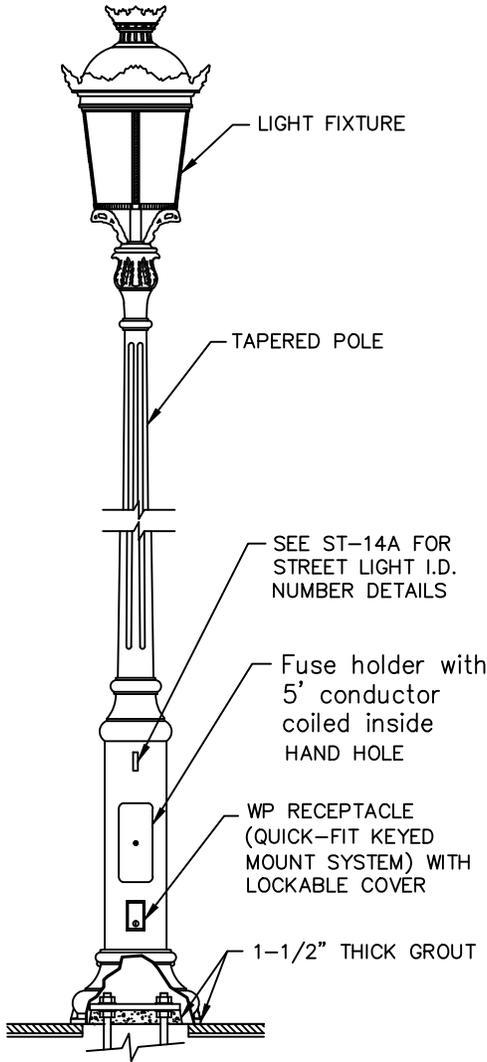
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

DOWNTOWN DECORATIVE
STREET LIGHT

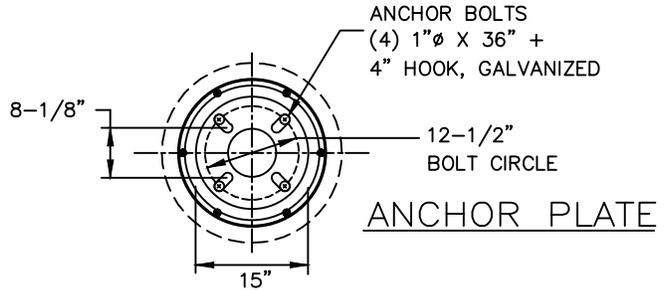
CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Kcd: Spec. Committee	Scale: NONE	
		ST-14E
City Engineer		

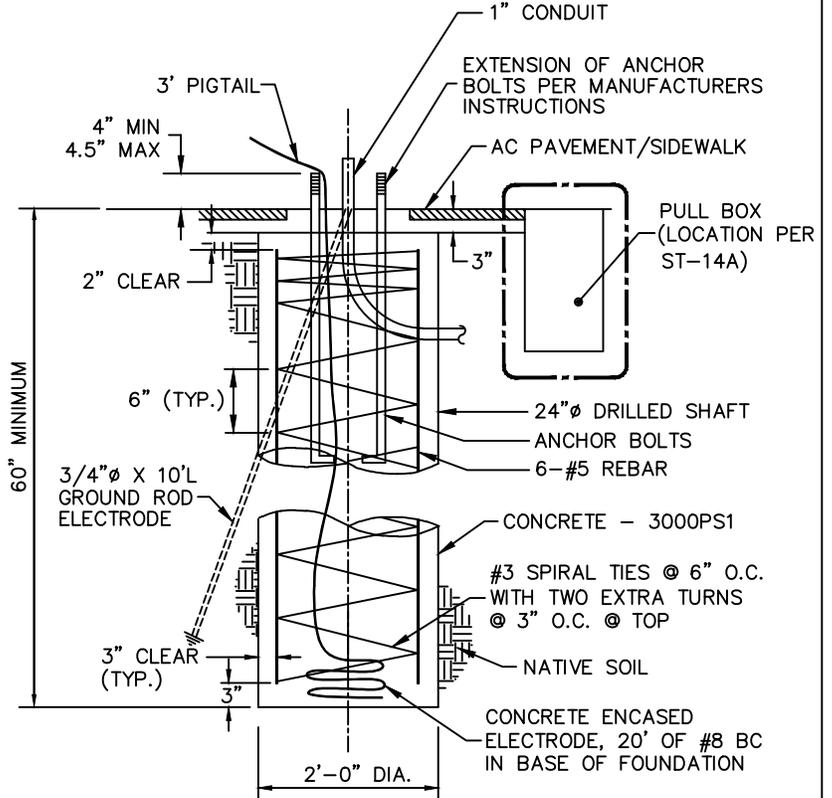
Date	By	Rev.



LUMEC LUMINAIRE
AND POLE



ANCHOR PLATE



TYPICAL
FOUNDATION

DECORATIVE STREET LIGHT LAYOUT

	LUMINAIRE TYPE	POLE HEIGHT	POLE SPACING
MAIN CORE	100w METAL HALIDE	9'	50'
THIS LIGHT TO BE USED ON FIRST STREET BETWEEN OLD FIRST ST. AND M STREET ONLY			
SEE ST-14E FOR STREET LIGHT USE BOUNDARIES			

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

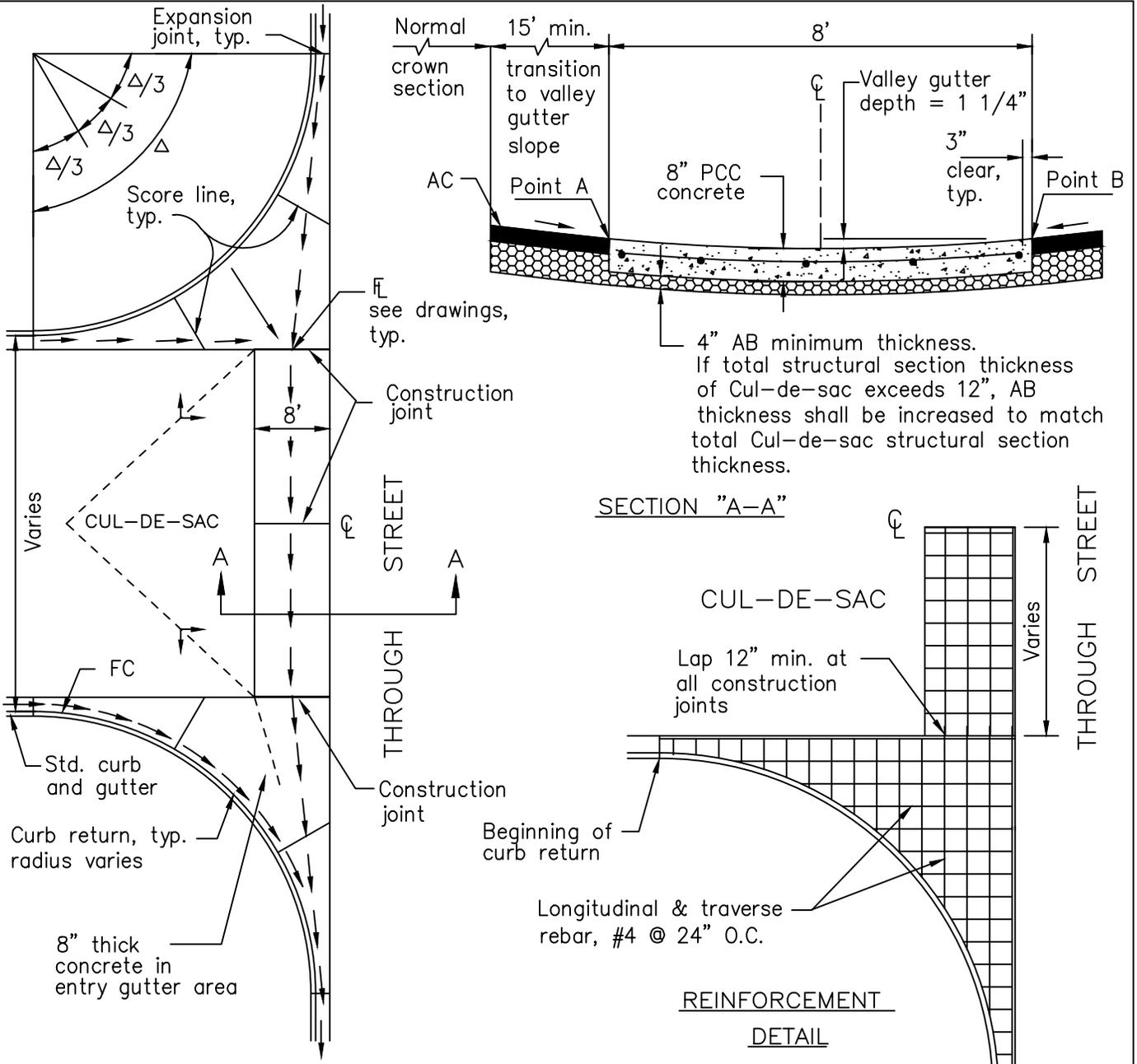
ST14D.DWG

Date	By	Rev.

FIRST STREET
DECORATIVE
STREET LIGHT

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: FY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-14F



NOTES:

1. See ST-9A for curb and gutter.
2. Points A & B shall be at the same elevation.
3. Pavement replacement for existing street shall be approved on a case by case basis by the Engineer.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

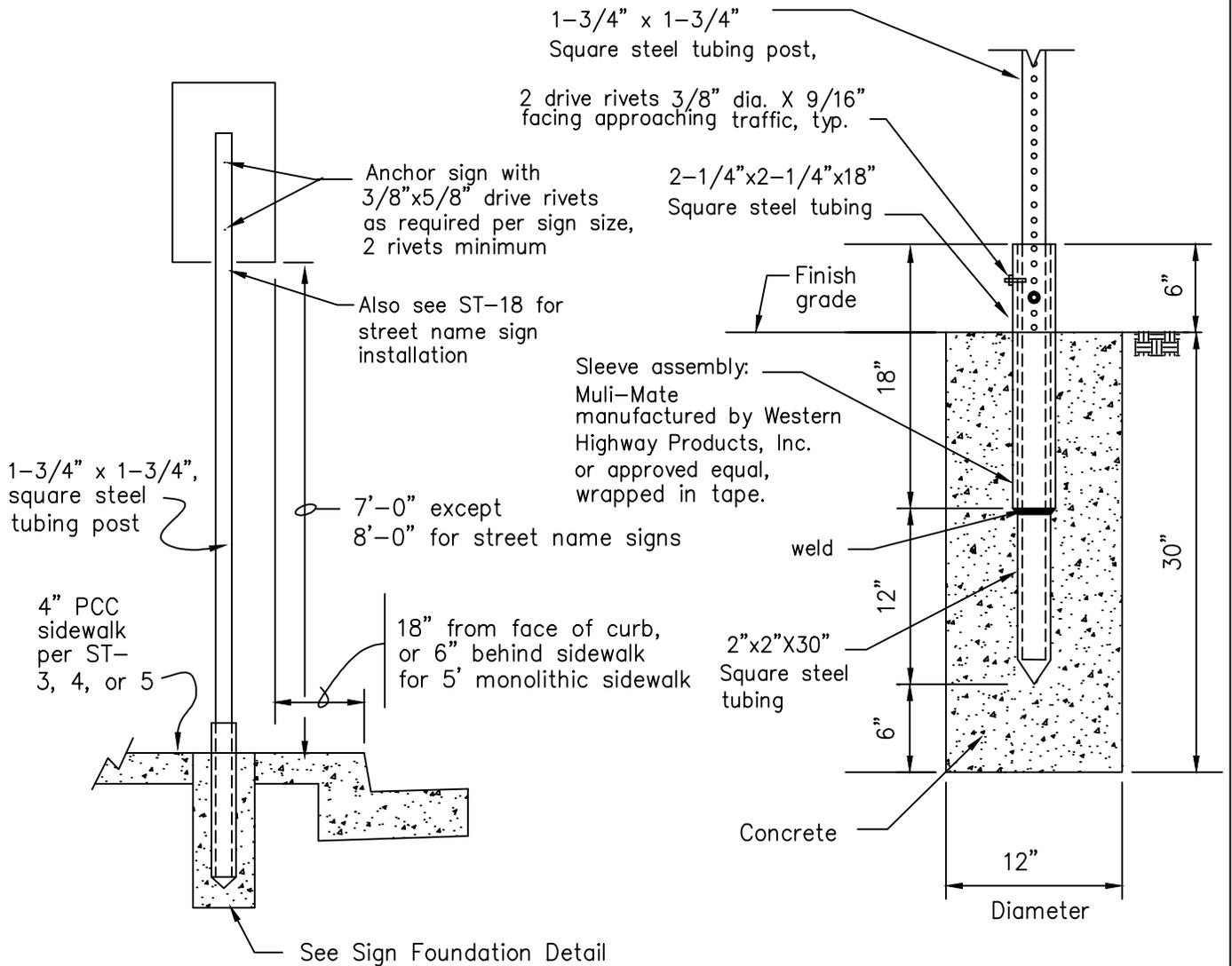
ST16.DWG

Date	By	Rev.

VALLEY GUTTER

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	ST-16
 City Engineer		



STEEL POST

SIGN FOUNDATION DETAIL

NOTES:

1. See ST-18 for street name sign requirements.
2. See ST-22 for median island sign requirements.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST17.DWG

Date	By	Rev.

ROADSIDE SIGN/POST
INSTALLATION

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	

dbw. [Signature]
City Engineer

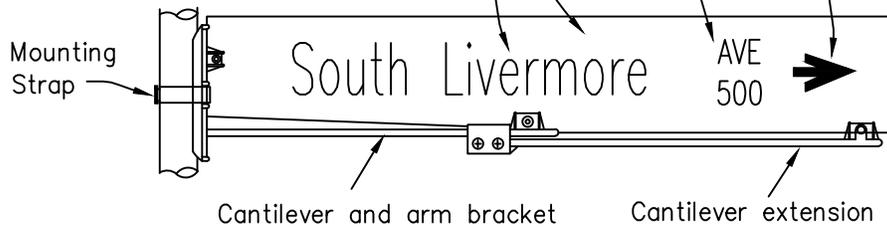
ST-17

.080 aluminum blank no holes
with 1/2" corner radius, see Note 7

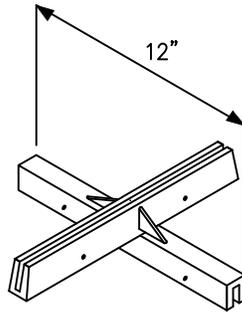
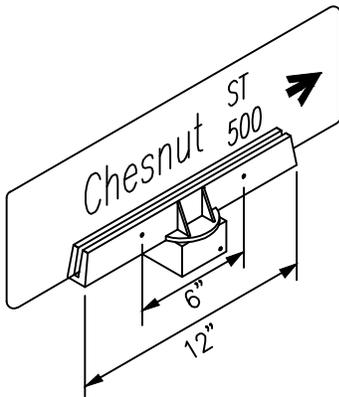
6" upper case (Legacy Sans Bold)
6" lower case (Highway Gothic Series C)

Block number
1-3/4" prefix and address number
(Highway gothic series C), see Note 5

2-1/4" high x 3" long, see Note 6



STREET NAME SIGN INSTALLATION ON A STREET LIGHT



90 DEGREE CROSSPIECE 12"

1-3/4" x 1-3/4" post
perforated tubing powder
green, see ST-17

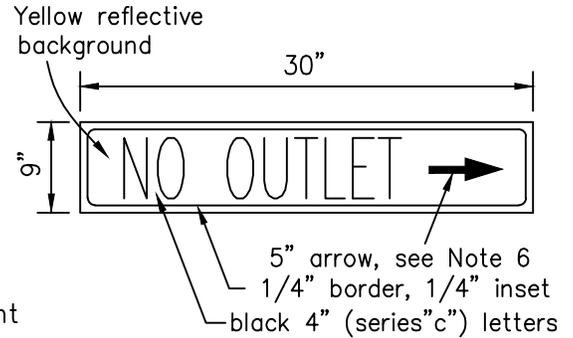


POST

NOTES:

1. Reflective sheeting material 3M DG3 4090 white.
Electro cut film 3M 1177c green reserve weed.
2. See ST-17 for pole installation.
3. Bottom of lowest sign on post to be 8'-0" min. above finish grade, and bottom of lowest sign on street light to be 10'-0" above finished grade.
4. Signs shall be installed 18" behind face of curb or 6" behind 5' monolithic sidewalk.
5. Block number to denote highest address number adjacent to intersection by hundreds (or by tens if applicable).
6. Arrow to point in direction of increase in address. Omit arrow if the street does not continue in the direction of increase.
7. The size of the street name sign blank depends on how many letters are in the name:

24" x 9"	1-5 letters
30" x 9"	6-8 letters
36" x 9"	9-12 letters
42" x 9"	13+ letters



W53 SPECIAL

W53 (Rt) SPECIAL SHOWN

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

STREET NAME SIGN
AND
W53 SPECIAL SIGN

CITY OF LIVERMORE
STANDARD DETAIL

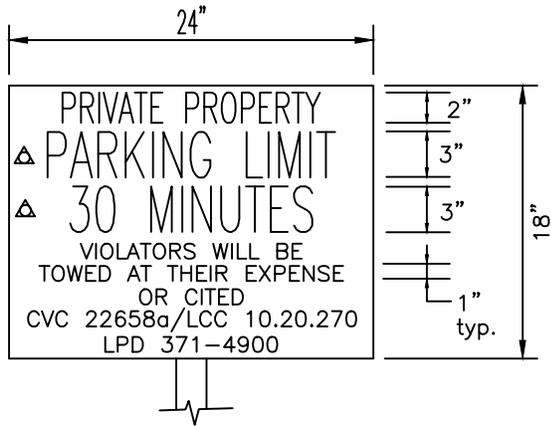
Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	

[Signature]
City Engineer

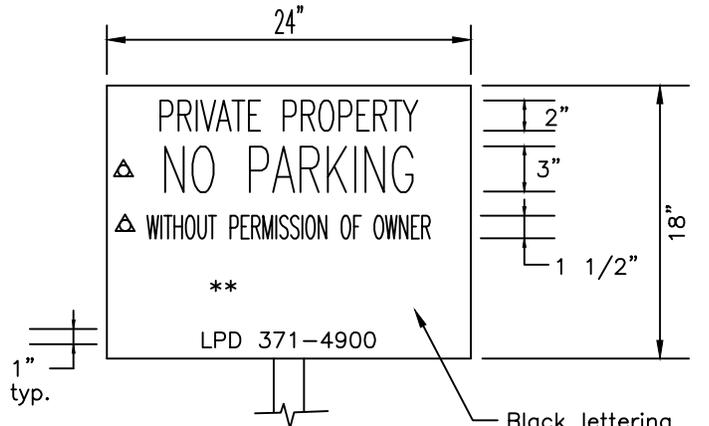
ST-18

ST18.DWG

Date	By	Rev.



SIGN A

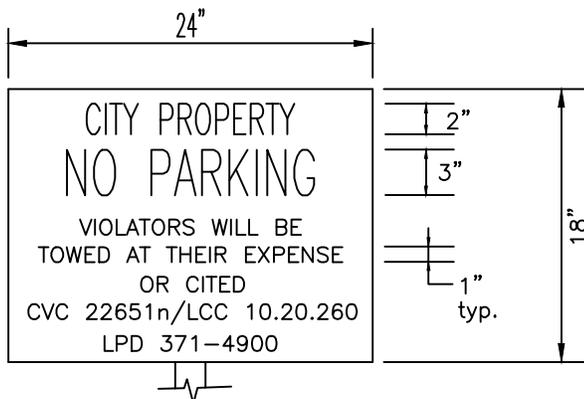


SIGN B

** Both codes may be used together (see above example) or individually:
 " VIOLATORS WILL BE TOWED AT THEIR EXPENSE CVC 22658a "
 " VIOLATORS WILL BE CITED LCC 10.20.270 "

Additional signs may be installed within the parking area with approval of the Planning Department.

△ Message may vary (TIME LIMIT, CUSTOMERS ONLY, etc.) with approval of the Police Department.



SIGN C

NOTES:

1. For enforcement of public traffic regulations and control see ST-20B.
2. Private Property signs to be purchased, installed and maintained at no cost to the City.
3. Private Property signs to be installed at each entrance to the subject private property outside of the public right-of-way.
4. City off-street signs on City property shall use square steel tubing poles per ST-17.
5. Optional wording : " VIOLATORS WILL BE CITED/TOWED AT THEIR EXPENSE "

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

Date	By	Rev.

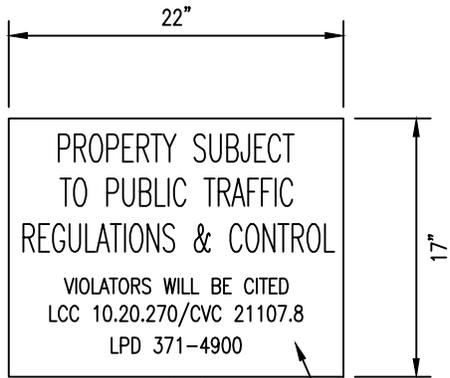
PRIVATE PROPERTY/
CITY OFF-STREET
SIGNS

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Kkd: Spec. Committee	Scale: NONE	

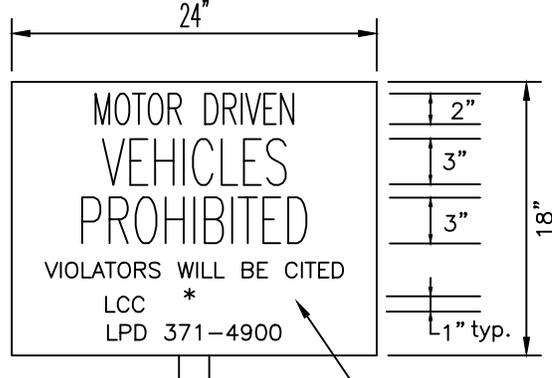
do. ST
City Engineer

ST-20A



SIGN D

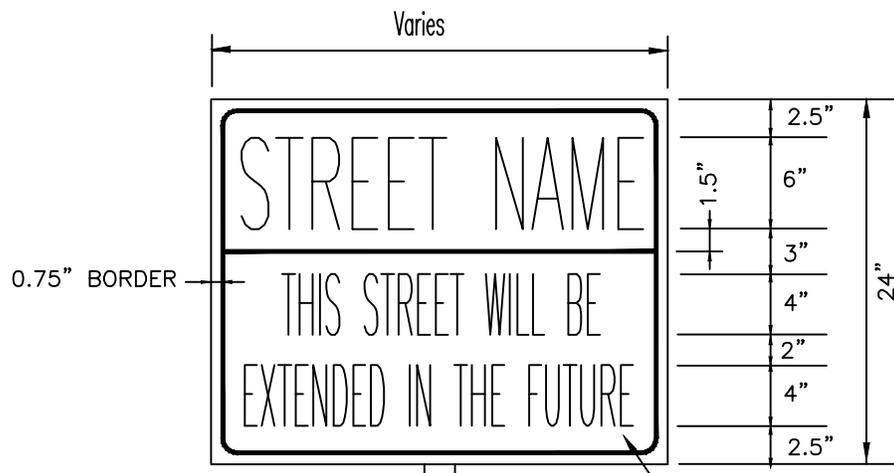
Black lettering on white background, also see Note 1



SIGN E

* 10.20.270 for private property
10.28.070 for public property

Black lettering on white background



SIGN F

* See Note 4

Black lettering on white background

NOTES:

1. The following apply to Sign D :
 - a. These signs must be posted for enforcement of public traffic regulations and control.
 - b. Signs may be posted alone or with Parking Limit signs, see ST-20A
2. Minimum letter size 1" .
3. See ST-20A for additional notes.
4. Sign F to be installed at end of stubbed streets which are to be extended in the future.

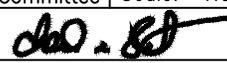
User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

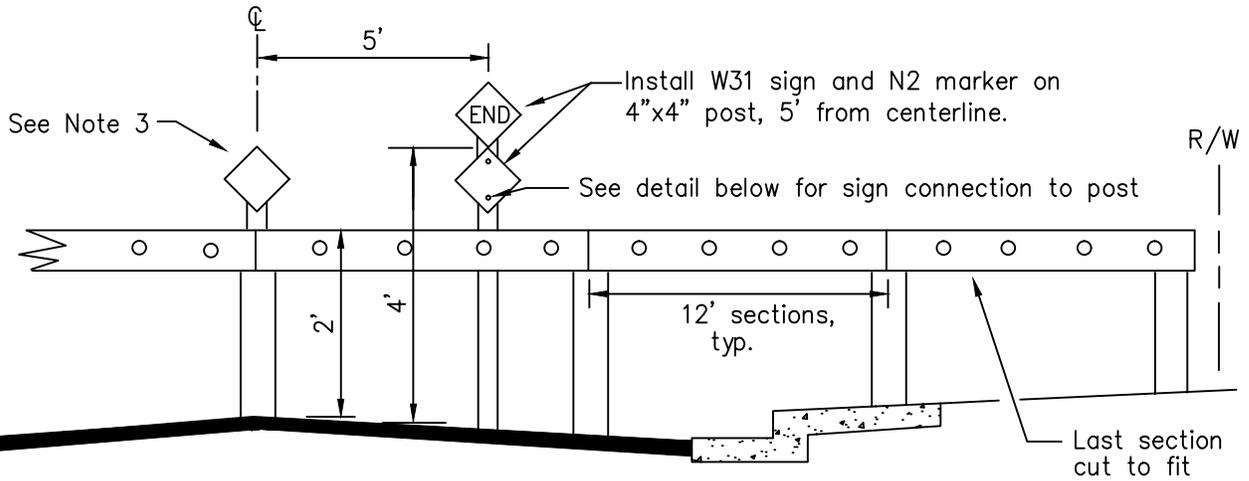
ST20B.DWG

Date	By	Rev.

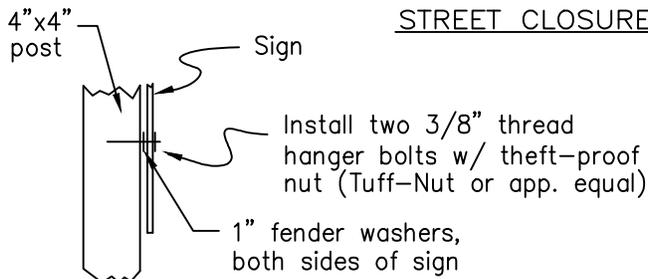
PRIVATE PROPERTY/
CITY OFF-STREET
SIGNS

CITY OF LIVERMORE
STANDARD DETAIL

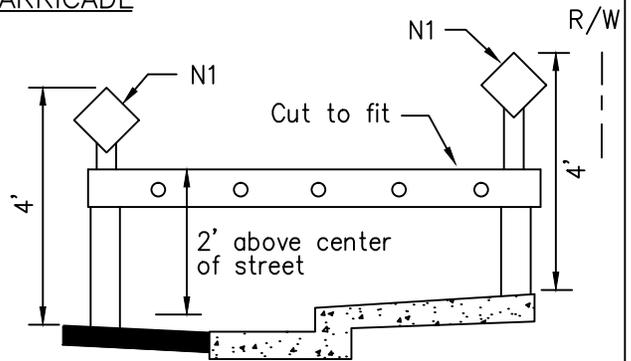
Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-20B



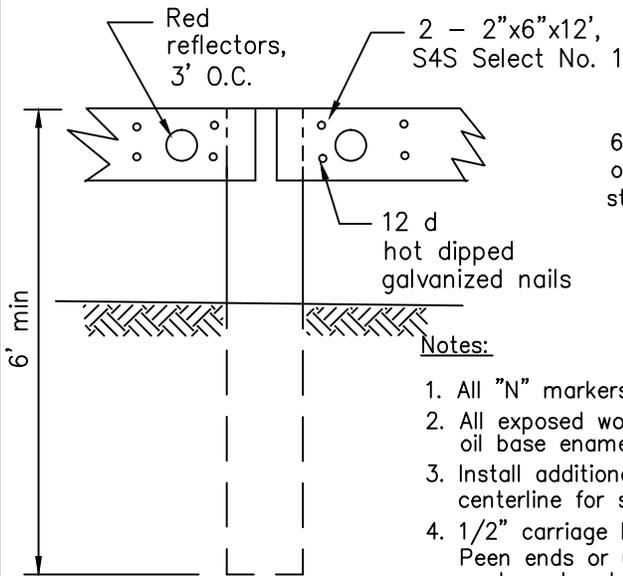
STREET CLOSURE BARRICADE



SIGN CONNECTION TO POST



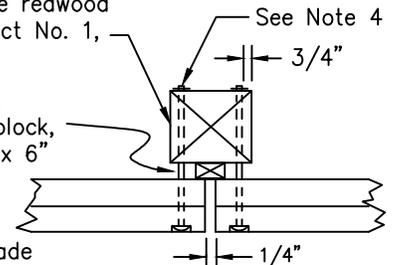
STREET SHOULDER BARRICADE



ELEVATION

6"x6" S4S construction grade redwood or pressure-treated DF, Select No. 1, stamped "ground contact"

Separate post from boards w/ spacer block, 1-5/8" x 2'-1/8" x 6"



PLAN

Notes:

1. All "N" markers shall be high-intensity grade
2. All exposed wood to have 2 coats of gloss oil base enamel exterior white paint.
3. Install additional N2 markers in line with centerline for streets more than 40' wide.
4. 1/2" carriage bolts, countersunk full depth; Peen ends or use theft-proof nuts; 1/4" washer at nut end.
5. Use Sign F per ST-20B for end of stubbed streets to be extended in the future.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST21.DWG			
Date	By	Rev.	

BARRICADES

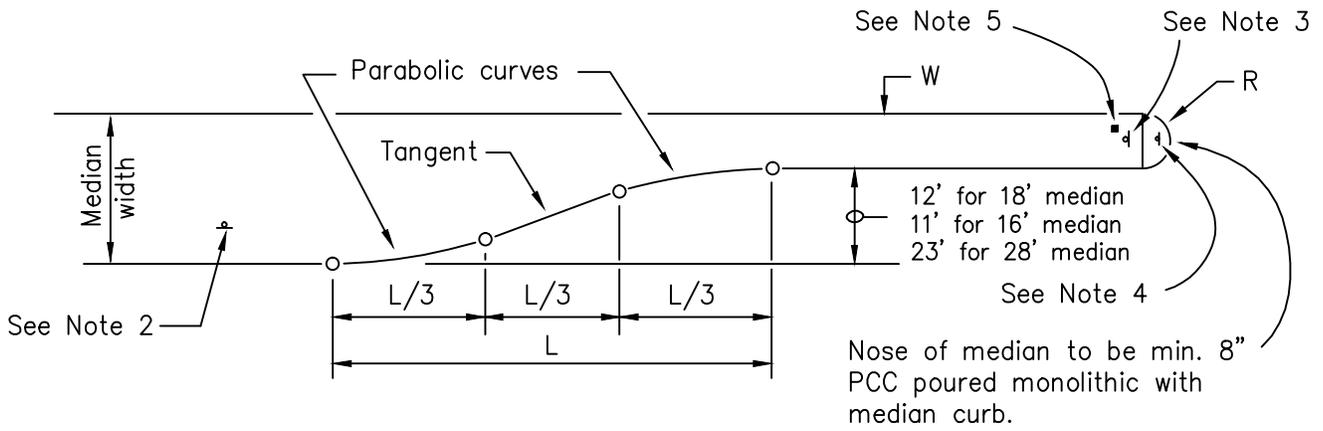
CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/KR Date: May-13 NO.

Ckd: Spec. Committee Scale: NONE

dao
City Engineer

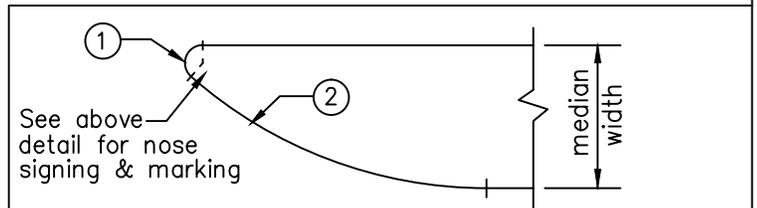
ST-21



Nose of median to be min. 8"
PCC poured monolithic with median curb.

L=length of taper			Offset distance for lane width of...		
60'	90'	120'			
dist. from beg. of taper			10'	11'	12'
5	7.5	10	.16	.17	.19
10	15.0	20	.62	.69	.75
15	22.5	30	1.41	1.55	1.69
20	30.0	40	2.50	2.75	3.00
30	45.0	60	5.00	5.50	6.00
40	60.0	80	7.50	8.25	9.00
45	67.5	90	8.59	9.45	10.31
50	75.0	100	9.38	10.31	11.25
55	82.5	110	9.84	10.83	11.81
60	90.0	120	10.00	11.00	12.00

median width	W	R
16'	5'	2.5'
18'	6'	3'
28'	5'	2.5'



MEDIAN WIDTH	CURVE # (1) DATA			CURVE # (2) DATA		
	R	DELTA	L	R	DELTA	L
16'	2'	138° 35' 25"	4.84'	50'	41° 24' 35"	36.14'
18'	2'	139° 43' 28"	4.87'	60'	40° 34' 02"	42.48'
28'	4'	134° 11' 04"	9.38'	70'	45° 48' 56"	55.79'

Notes

1. See Notes 3, 4, and 5
2. R= Radius; Delta= internal angle; L= Length of curve
3. In the presence of roadway features, such as curves, which would affect the layout of the median, see the drawing for layout data.

MEDIAN NOSE OPPOSITE A LEFT TURN LANE

NOTES:

1. See ST-2A thru ST-2C for street widths, ST-9B for median curb, and ST-19 for roadside sign/pole installation.
2. Install R10 (rt) opposite driveways as directed by the Engineer.
3. Install R7 ; bottom of sign 5' above median surface, 4' from nose of median, as directed by the Engineer.
4. Install Type K reflector, with 8" anchor, 18" from nose of median. Paint nose w/ reflective yellow paint, as directed by the Engineer.
5. All boxes installed in nose of median to be 5' from end of PCC concrete nose.

User note:

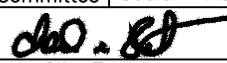
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

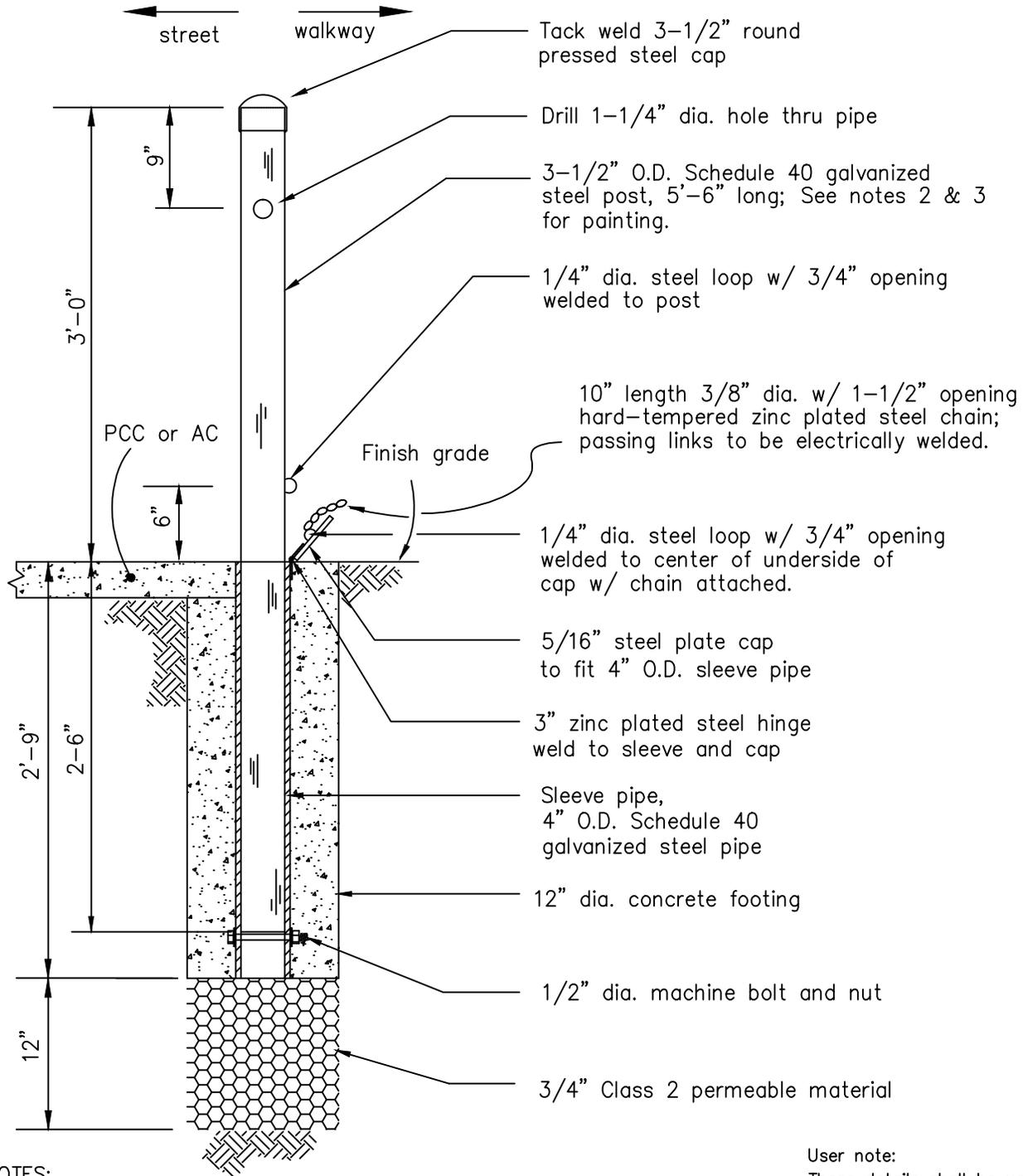
ST22.DWG

Date	By	Rev.

MEDIAN
CONSTRUCTION

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-22



- Tack weld 3-1/2" round pressed steel cap
- Drill 1-1/4" dia. hole thru pipe
- 3-1/2" O.D. Schedule 40 galvanized steel post, 5'-6" long; See notes 2 & 3 for painting.
- 1/4" dia. steel loop w/ 3/4" opening welded to post
- 10" length 3/8" dia. w/ 1-1/2" opening hard-tempered zinc plated steel chain; passing links to be electrically welded.
- 1/4" dia. steel loop w/ 3/4" opening welded to center of underside of cap w/ chain attached.
- 5/16" steel plate cap to fit 4" O.D. sleeve pipe
- 3" zinc plated steel hinge weld to sleeve and cap
- Sleeve pipe, 4" O.D. Schedule 40 galvanized steel pipe
- 12" dia. concrete footing
- 1/2" dia. machine bolt and nut
- 3/4" Class 2 permeable material

NOTES:

1. Locate all underground utilities prior to excavating post footing.
2. Prime all metal with one coat of galvanize-compatible primer and two coats of white industrial enamel.
3. Apply two 3" wide strips of reflectorized yellow tape. Provide a 3" gap between each strip.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

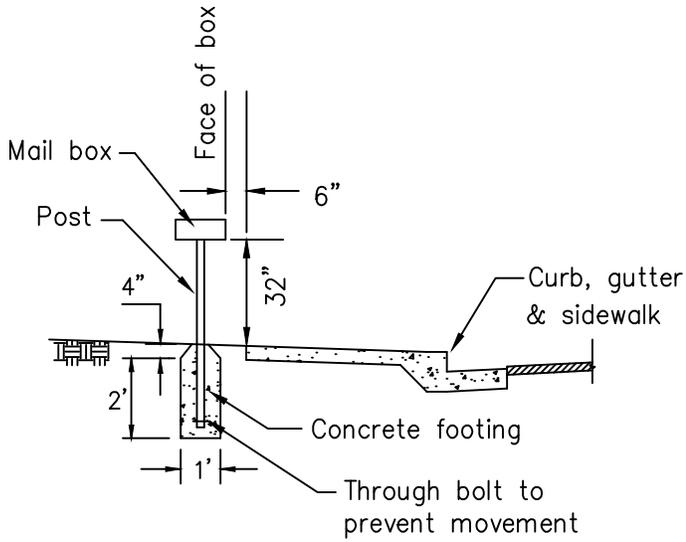
ST23.DWG

Date	By	Rev.

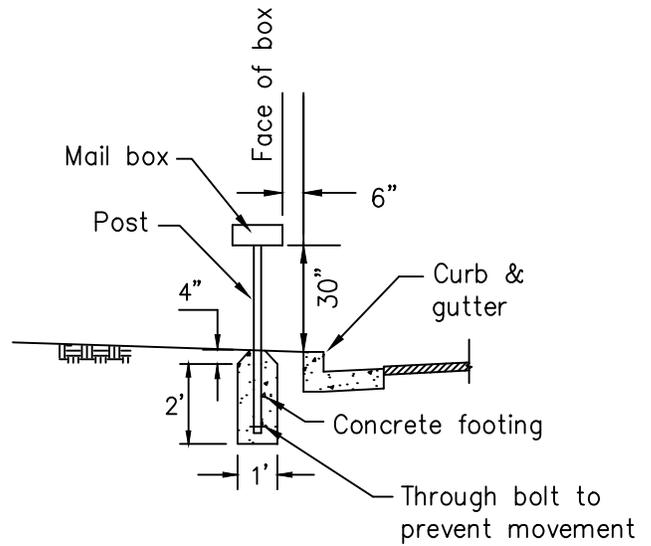
REMOVABLE BOLLARD

CITY OF LIVERMORE STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	ST-23
 City Engineer		



WITH MONOLITHIC SIDEWALK



ALL OTHER CASES

NOTES:

1. Residential boxes may be installed on 4"x4" construction Heart S4S Grade wood post set in concrete footing.
2. Residential installation shall be dual or cluster installation. Single box installation allowed only upon approval of Postmaster.
3. Install industrial boxes on 2" diameter steel pipe.
4. Industrial boxes to be installed on side of street without sidewalk, and may be single box installation.
5. Edge of box to be a minimum of :
 - 5' from poles
 - 3' from driveways
 - 10' from curb returns
 - 5' from fire hydrants in 5' SW
 - 10' from fire hydrants in 10' SW
6. Location of all boxes subject to approval of Postmaster.

User note:

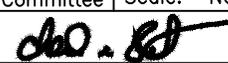
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

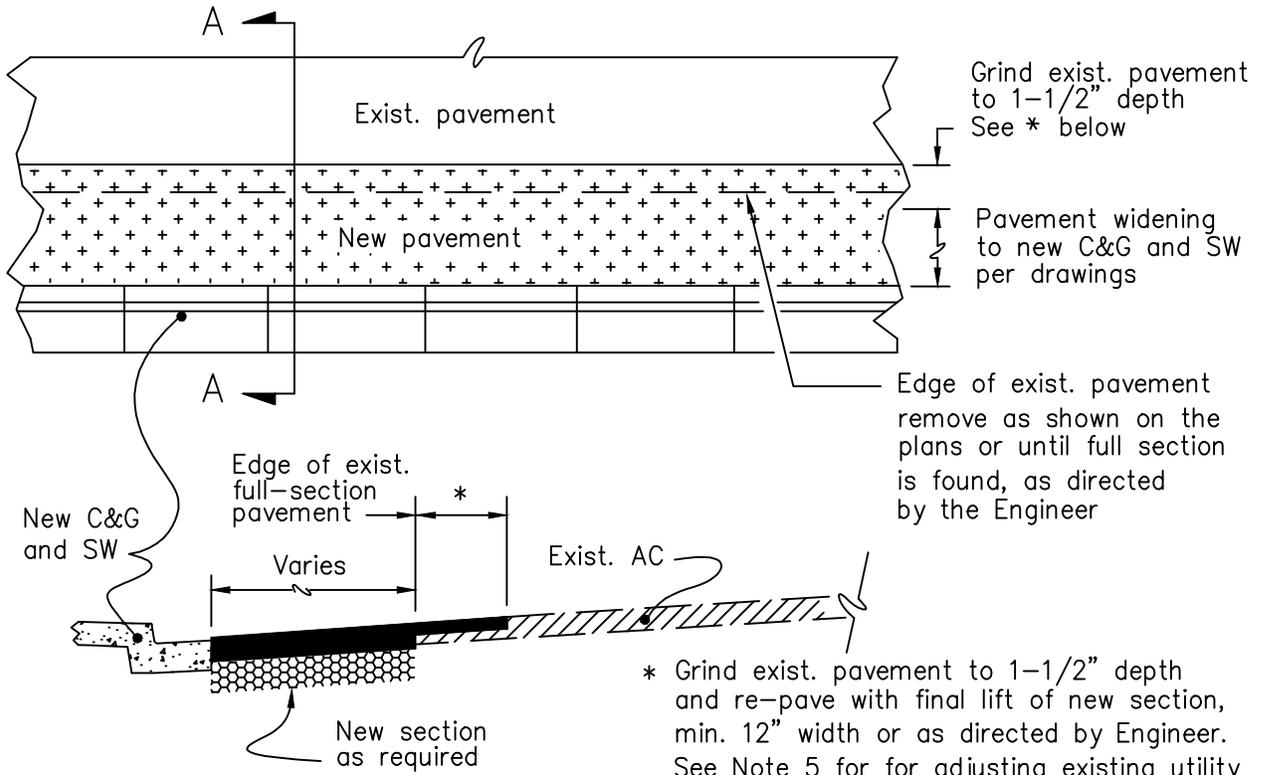
ST24.DWG

Date	By	Rev.

MAIL BOX INSTALLATION

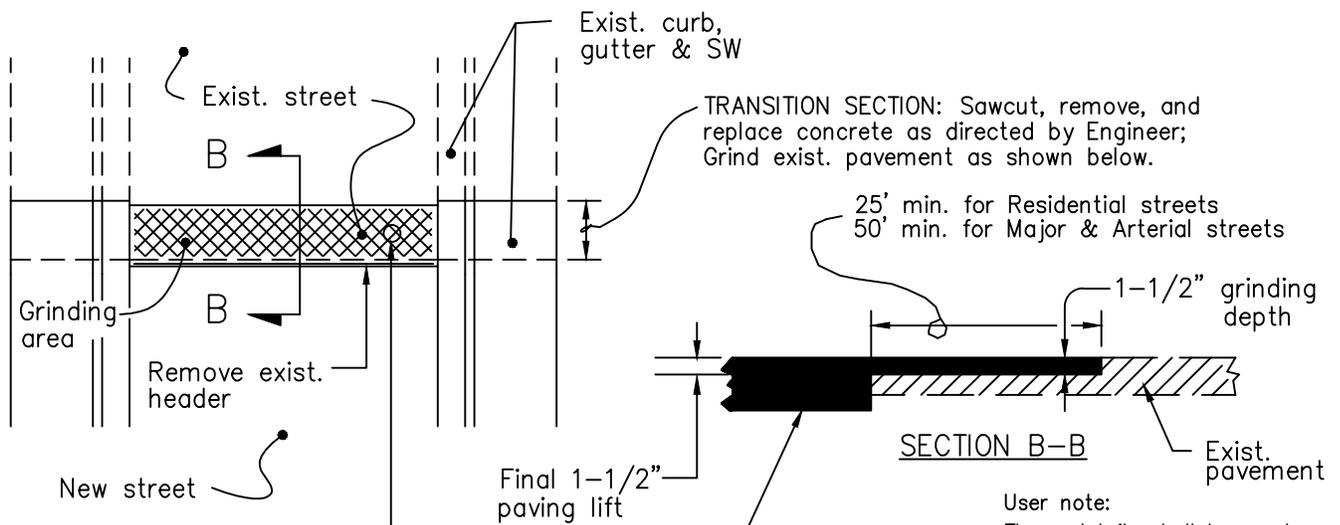
CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-24



SECTION A-A

PAVEMENT WIDENING



SECTION B-B

STREET EXTENSION

User note:
 These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

See Note 5 for for adjusting existing utility frames & covers in this area.

PAVEMENT WIDENING,
 CONNECTIONS

CITY OF LIVERMORE
 STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	

[Signature]
 City Engineer

ST-25A

ST25A.DWG

Date	By	Rev.

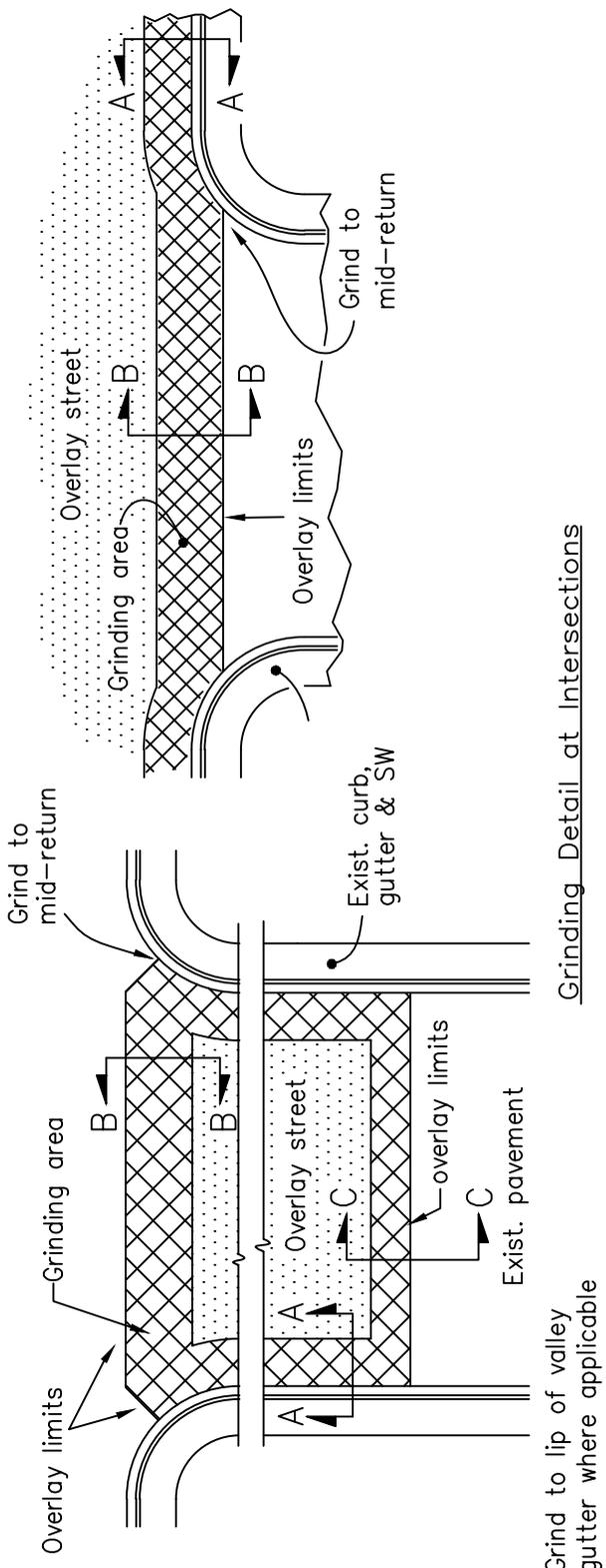
ST25B.DWG

Date	By	Rev.

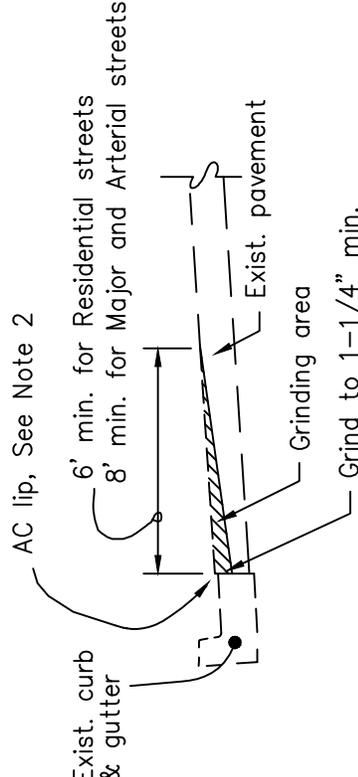
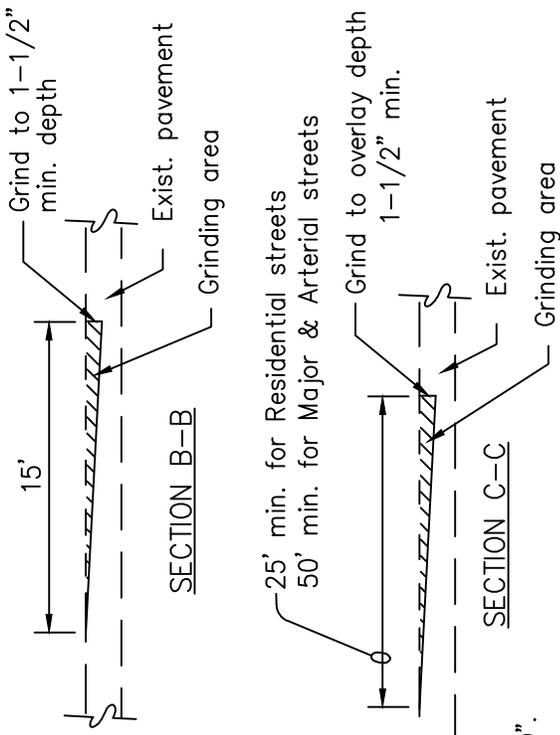
PAVEMENT OVERLAY

CITY OF LIVERMORE STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Spec. Committee	Scale: NONE	ST-25B
 City Engineer		

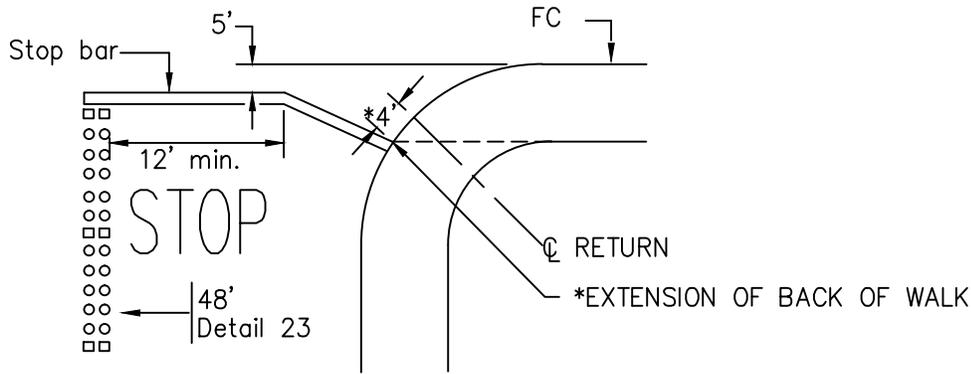


Grinding Detail at Intersections



User note:
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

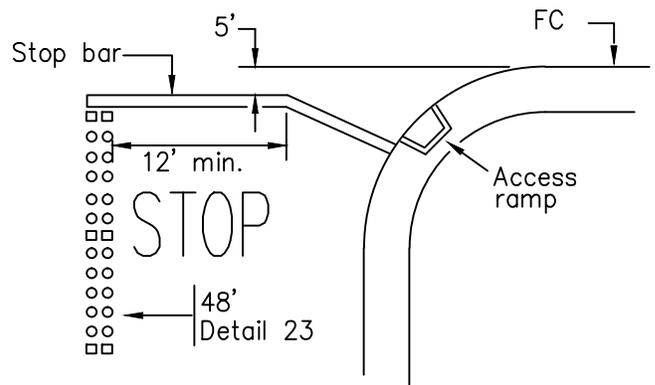
- Notes:
- Grinding shall taper from depth specified to 0".
 - Place AC at gutter to 1/4" above lip.
 - At curb with no gutter, grind to 2" depth at face of curb and pave to grades specified by Engineer in field.
 - Break overlay at grinding so that min. 1-1/4" thickness is achieved.
 - In conform and grinding areas, existing utility frames and covers shall be lowered and then raised to finished grade after paving.



STOP BAR AT INTERSECTION

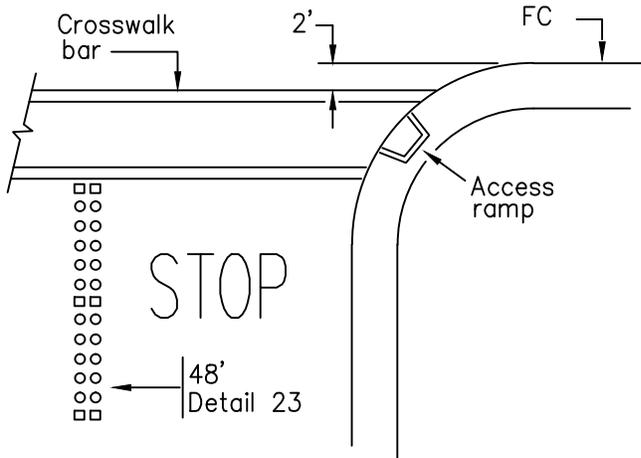
NO ACCESS RAMP

* STOP BAR SHALL ANGLE TO GUTTER EITHER AT 4' FROM C OF RETURN OR AT EXTENSION OF BACK OF WALK, WHICHEVER IS GREATER.



STOP BAR AT INTERSECTION

W/ ACCESS RAMP



CROSSWALK

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

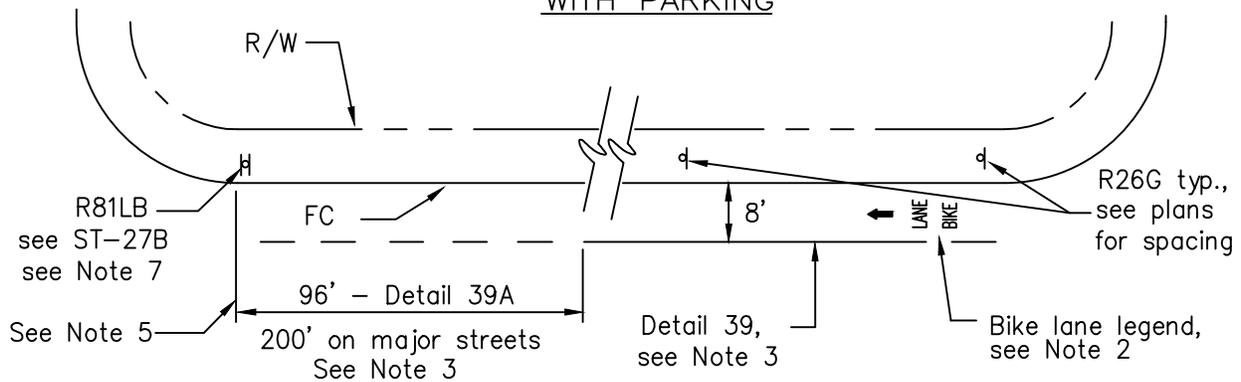
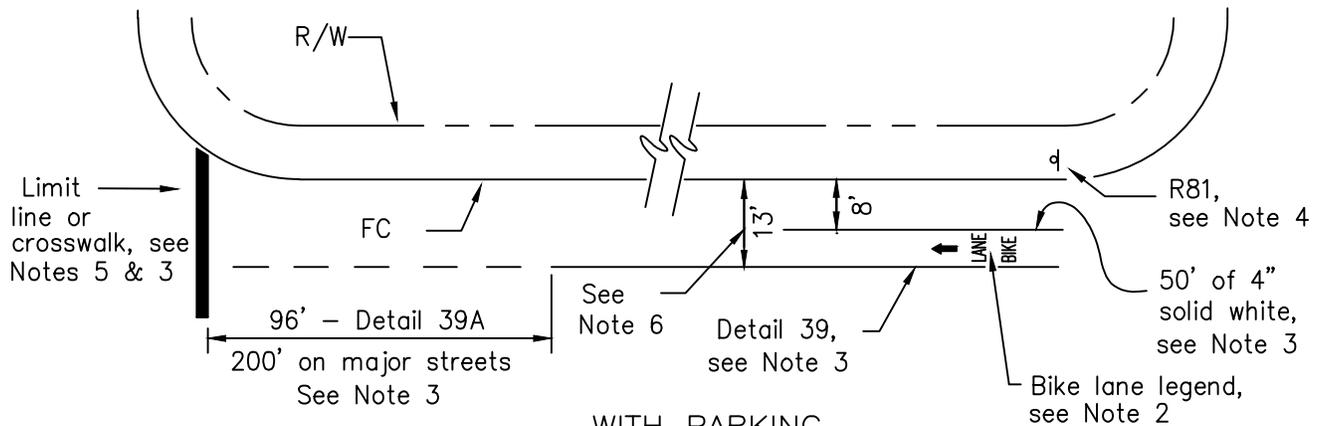
ST26.DWG

Date	By	Rev.

CROSSWALK/STOP BAR
INSTALLATION

CITY OF LIVERMORE
STANDARD DETAIL

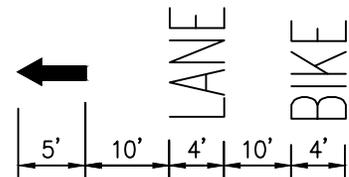
Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
<i>do. & S.</i>		ST-26
City Engineer		



WITHOUT PARKING

NOTES:

1. See Detail ST-17 for sign pole installation.
2. Bike Lane legend shall be per Caltrans Standard Plans A24A "Pavement Marking Arrows", and A24D "Pavement Marking Words". Bike lane legends shall be installed using a specialized crushed glass thermoplastic composition per the specifications.
3. All striping to be white thermoplastic.
4. Install 12"x8" R81 signs at the beginning of bike lane at all major street intersections and at 1/2 mile maximum spacing. Install legends at the beginning of the bike lane at all intersections and 1/2 mile maximum spacing.
5. At crosswalk or limit line, extend Detail 39A to line; otherwise terminate at curb return.
6. Parking plus Bike Lane width may be reduced to 12' in special cases, if approved by the Engineer.
7. On major streets, install R81LB back to back with the last R26G on each block.



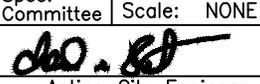
BIKE LEGEND DETAIL

Legend type	Legend area
←	7 SF
LANE	6 SF
BIKE	5 SF
total:	18 SF

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

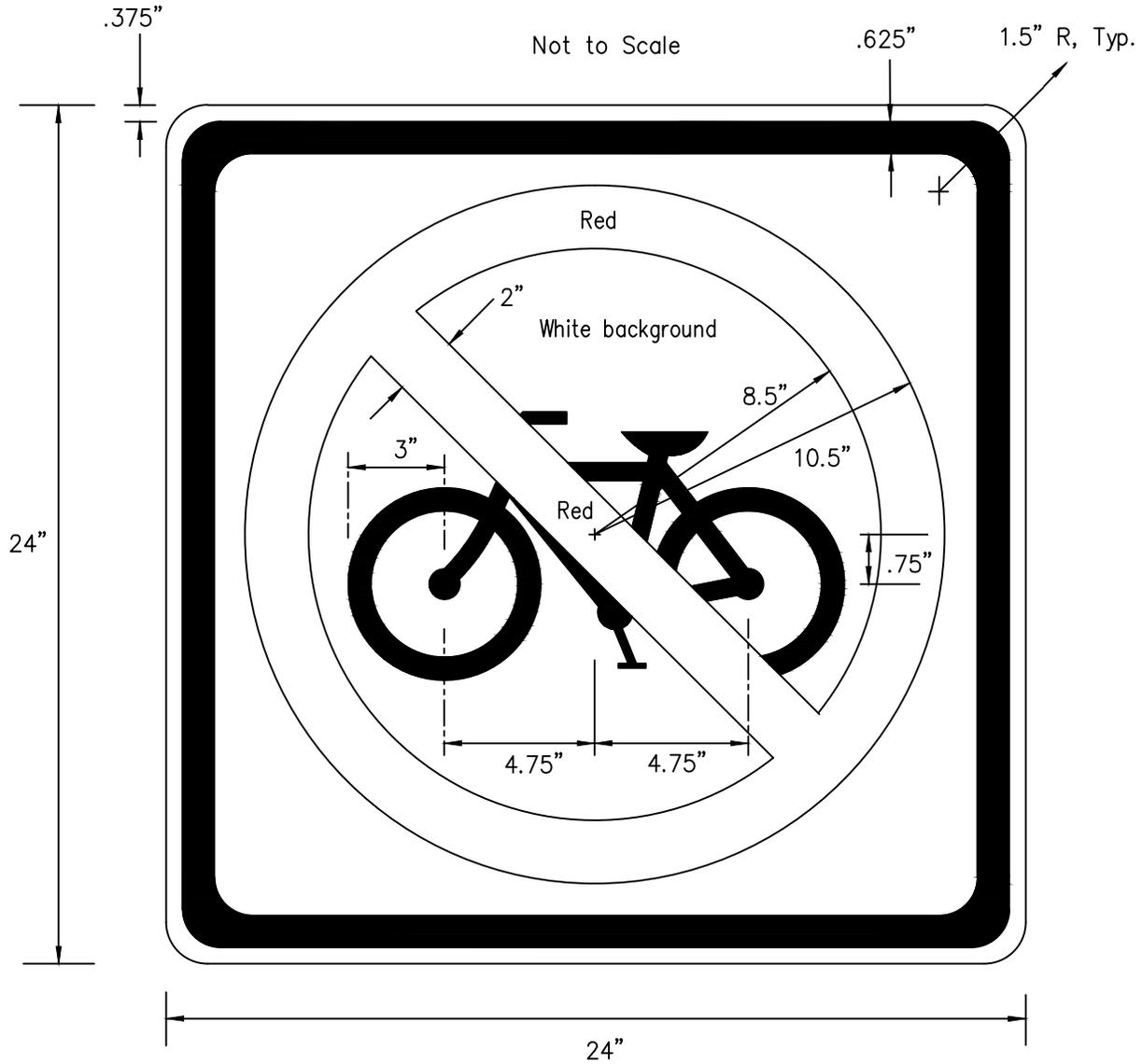
CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/KR/JV	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 Acting City Engineer		ST-27A

BIKE LANES

ST27A.DWG

Date	By	Rev.



R81LB

NOTE:

See ST-27A for notes.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

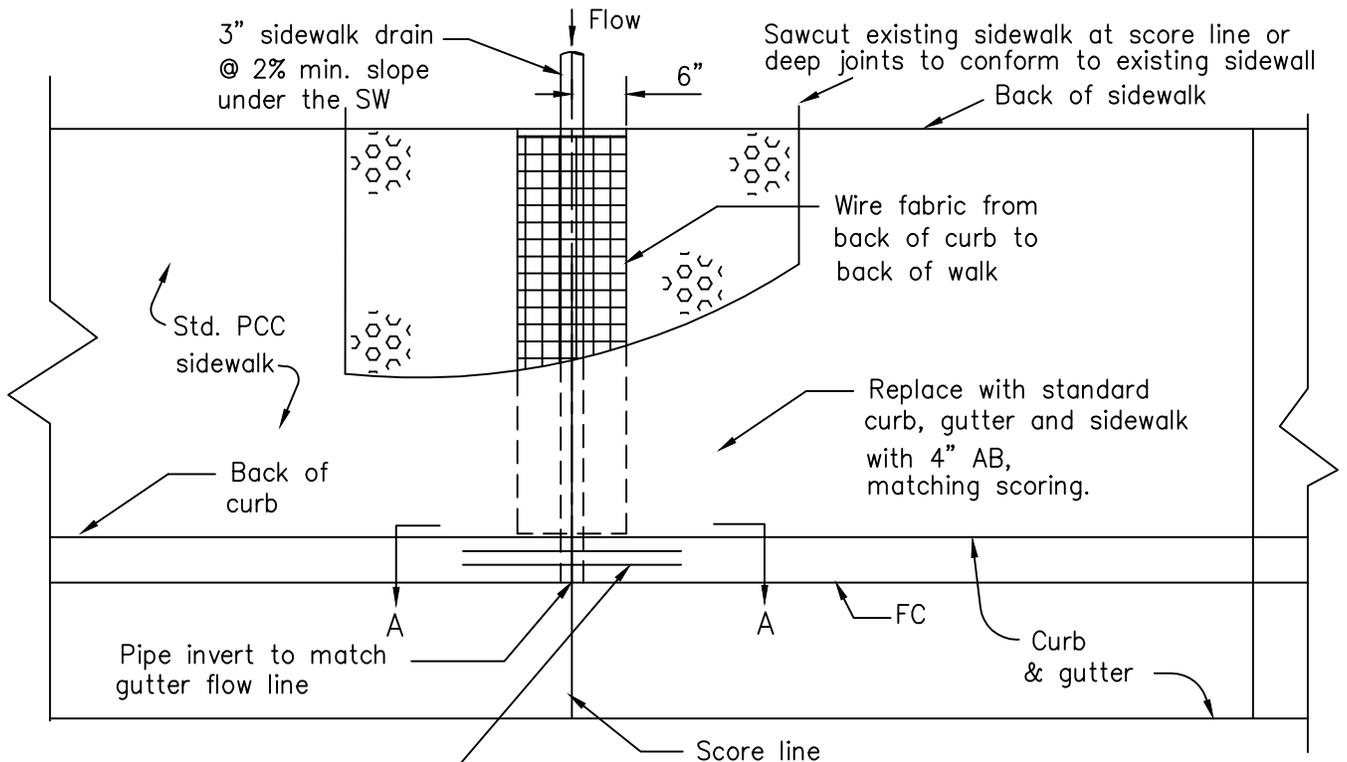
CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/JV	Date: May-13	NO.
Ckd: <i>do</i> Spec. Committee	Scale: NONE	
<i>do</i> Acting City Engineer		ST-27B

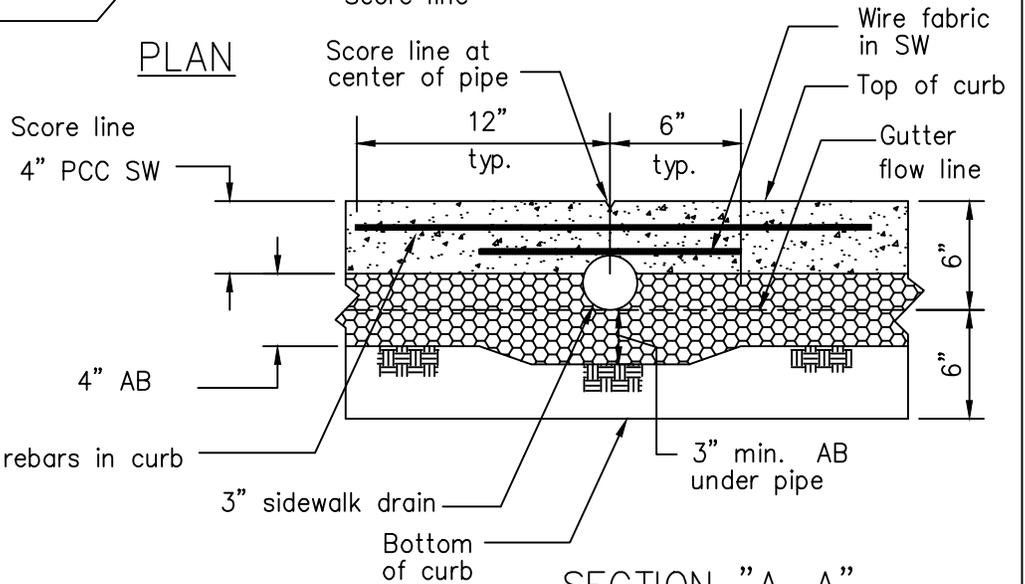
NO BIKE LANE SIGN

ST27B.DWG

Date	By	Rev.



PLAN



NOTES:

1. Standard curb, gutter and sidewalk:
 - a. See ST-3, 4, & 5 for sidewalks.
 - b. See ST-9A for curb and gutter.
2. Minimum 4" between pipes in multiple installations.
3. Sidewalk drain may not be installed within driveway approach (top of flare) .
4. Sidewalk drain to be perpendicular to face of curb.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	

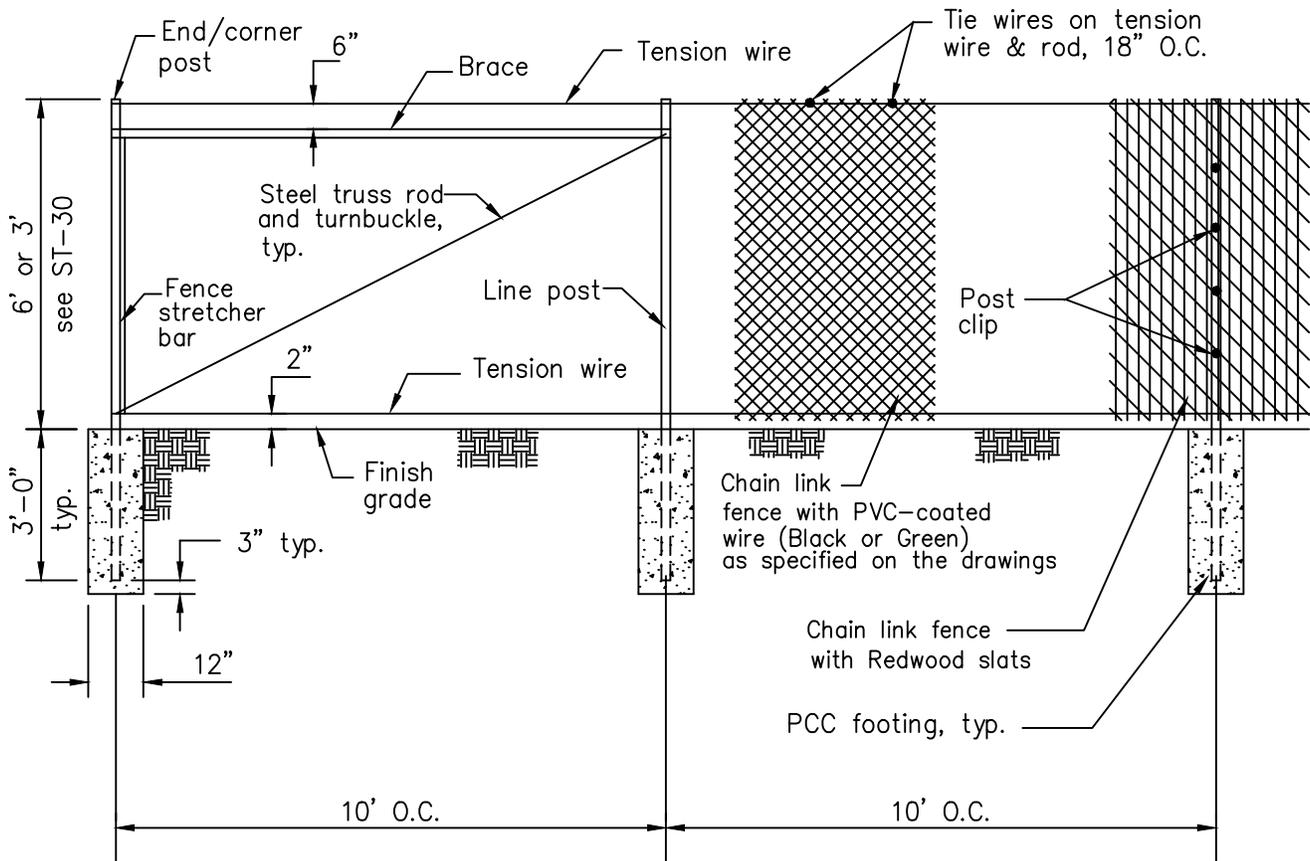
dbd
City Engineer

ST-28

SIDEWALK DRAIN

ST28.DWG

Date	By	Rev.



NOTE:

See ST-30 for Pedestrian Walkway fence height and setback requirements.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

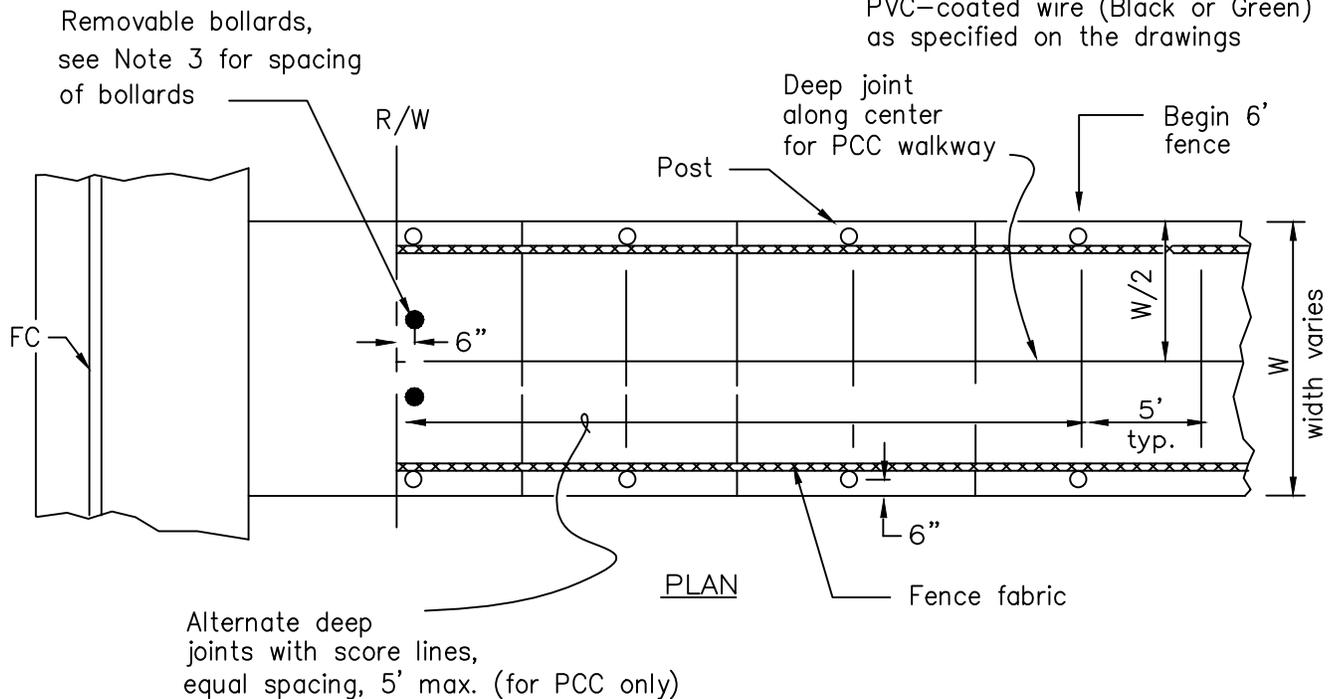
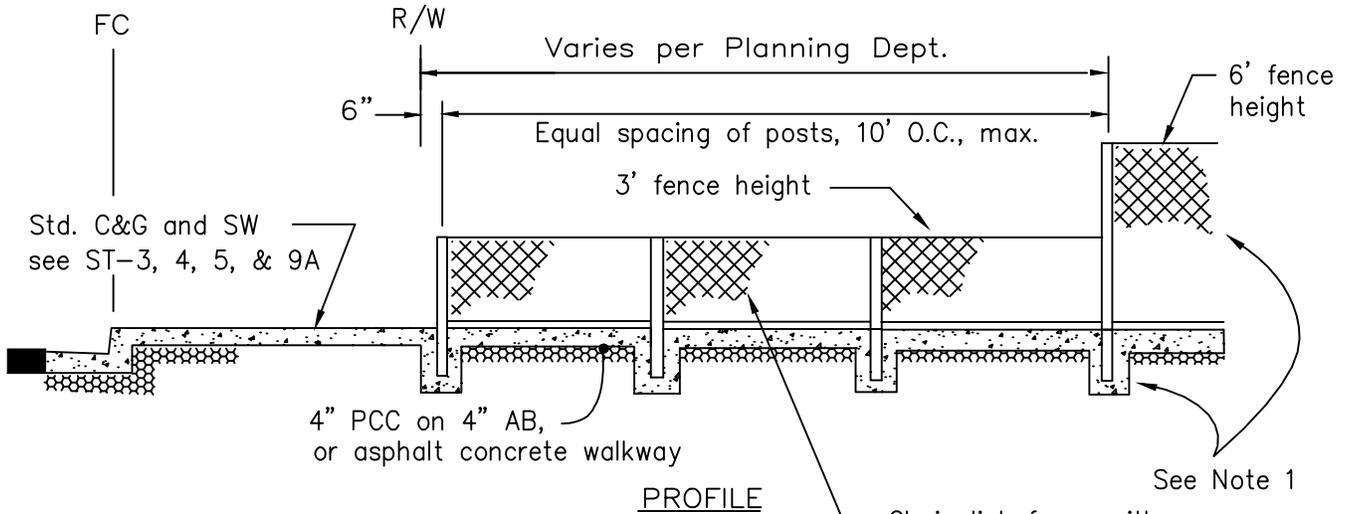
ST29.DWG

Date	By	Rev.

CHAIN LINK FENCE

CITY OF LIVERMORE STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-29



NOTES:

1. See ST-29 for chain link fence and concrete footing details.
2. See ST-23 for removable bollard details.
3. For walkways 10 feet or narrower, install one bollard at 5 feet from one edge of travel path. For walkways wider than 10 feet, install bollards (2 min.) with a 5 feet wide gap at the center of walkway.

User note:

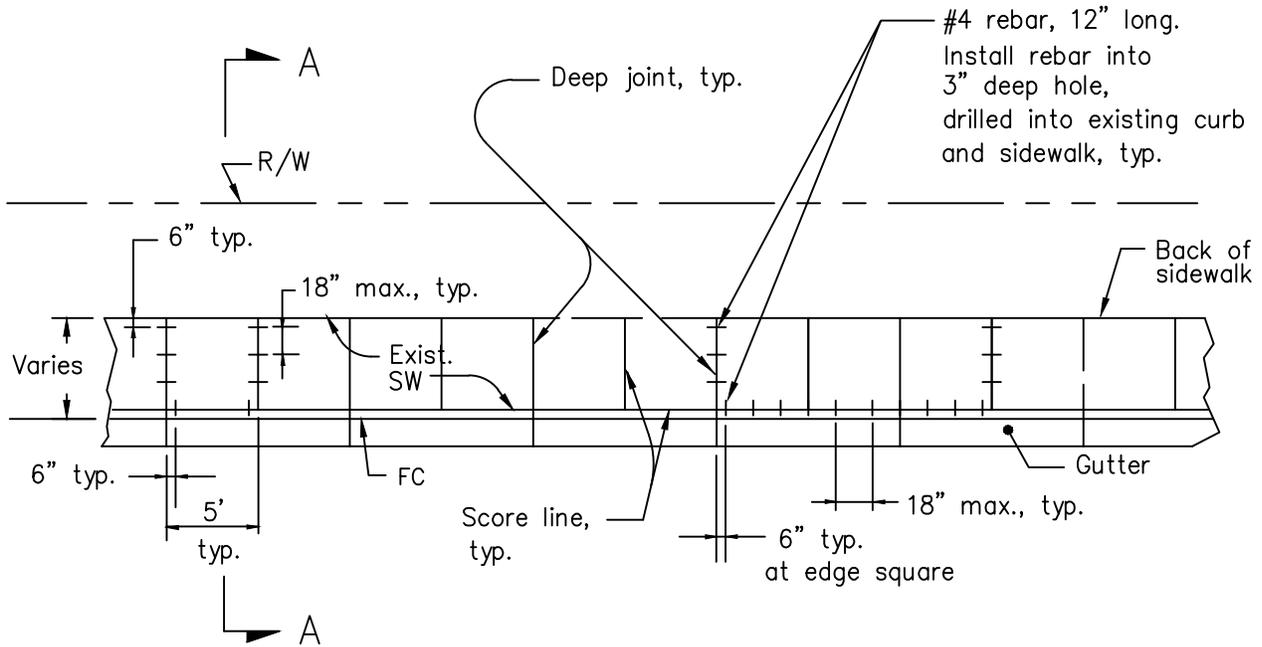
These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST30.DWG			
Date	By	Rev.	

PEDESTRIAN
WALKWAY

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY/KR	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-30

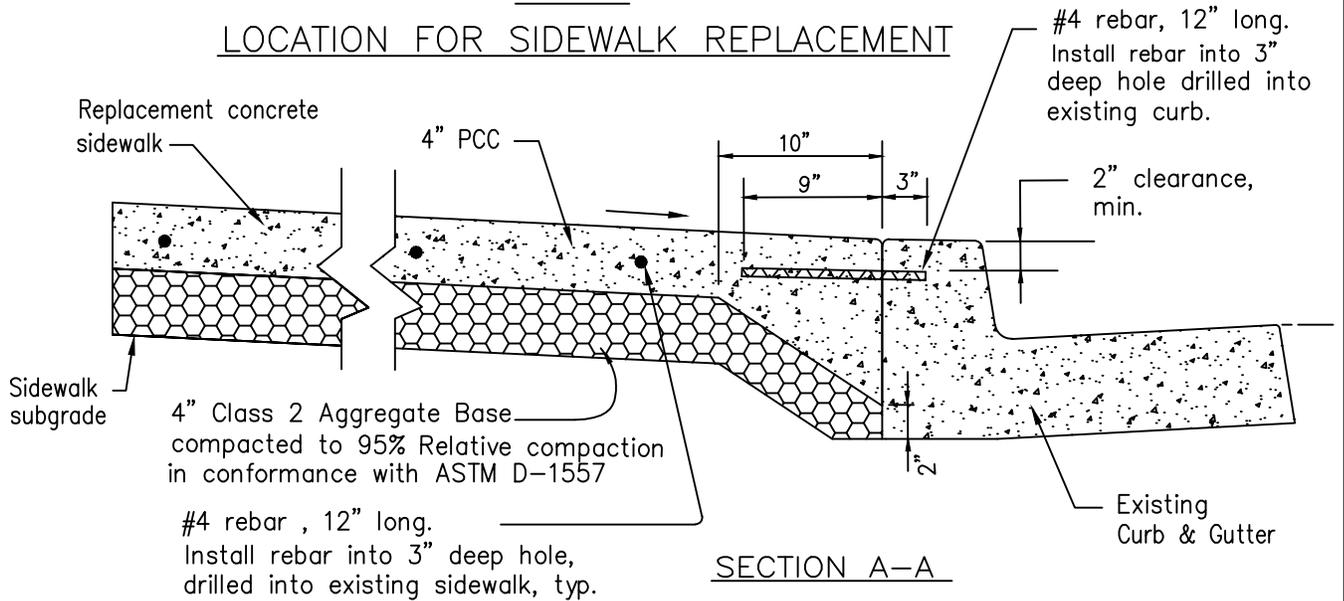


REPLACEMENT OF ONE SQUARE

REPLACEMENT OF TWO OR MORE SQUARES

PLAN

LOCATION FOR SIDEWALK REPLACEMENT



SECTION A-A

NOTES:

1. Match width and scoring pattern with adjacent existing sidewalk.
2. Moist undisturbed native subgrade may not need to be compacted as approved by the City.
3. All exposed corners shall have 1/2" radius.
4. Sawcut existing sidewalk at score line or deep joints to conform to existing sidewalk.
5. The concrete shall have a minimum 28 day compressive strength of 3000 psi. Lampblack shall be added at a rate of 3/4 pound/pint per cubic yard of concrete.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

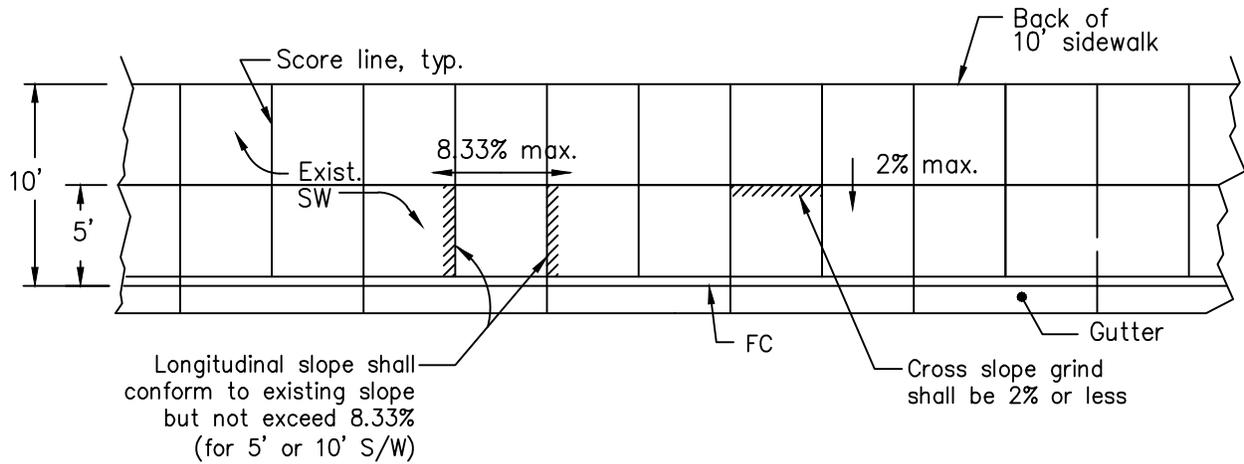
ST31.DWG

Date	By	Rev.

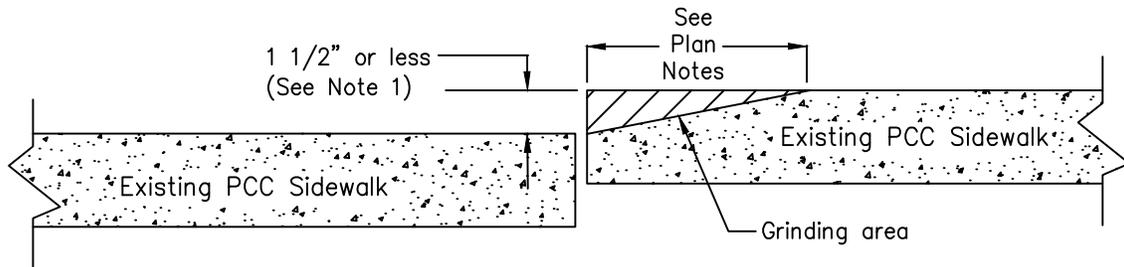
SIDEWALK REPAIR

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: KY	Date: May-13	NO.
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		ST-31



PLAN



TYPICAL SECTION

NOTE:

1. If separation is greater than 1 1/2" then sidewalk is to be removed and replaced per City Standard Detail ST-31.

User note:

These details shall be used in conjunction with all the City standard details and specifications. Refer to the City standard specifications for the materials, installation, testing, protective coatings, and other requirements.

ST31.DWG

Date	By	Rev.

SIDEWALK
GRINDING
REPAIR

CITY OF LIVERMORE
STANDARD DETAIL

Dwn: MJT	Date: May-13	NO. ST-32
Ckd: Spec. Committee	Scale: NONE	
 City Engineer		