



# **STANDARD DRAWINGS**

# STANDARD DRAWINGS INDEX

*\*Blank space in numbering system left intentionally for future additions*

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**DRAWING NO.**

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**WATER**

**DRAWING NO.**

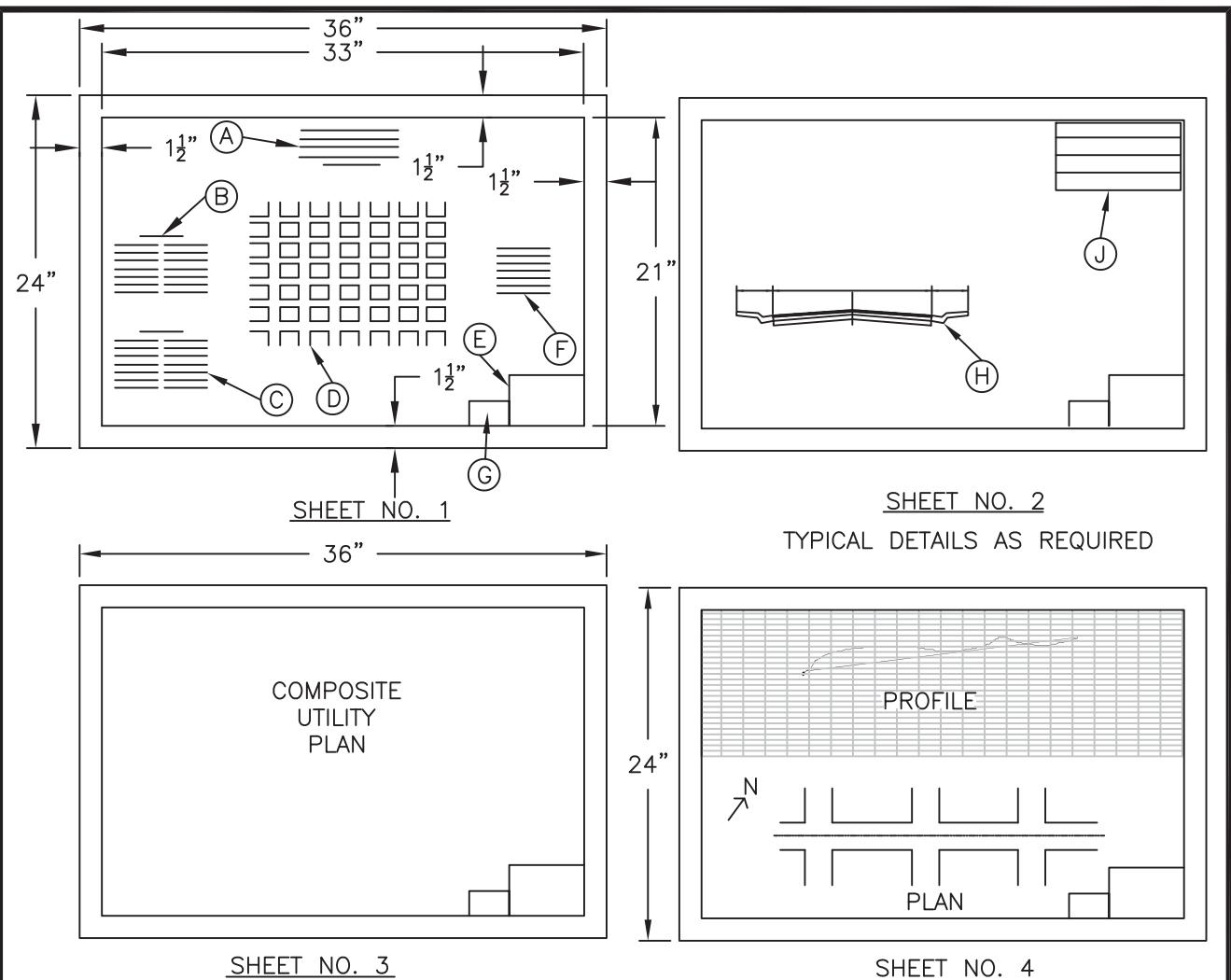
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**DRAWING NO.**

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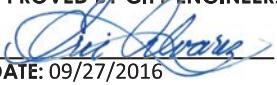
COMPOSITE UTILITY PLAN SHALL INCLUDE SANITARY SEWER, WATER, STORM DRAIN, AND MAINTENANCE HOLES. MAINTENANCE HOLE SHALL BE NUMBERED TO CORRESPOND WITH THE MAINTENANCE HOLE NUMBERS ON MASTER PLANS (PLAN VIEW OR PROFILE VIEW). SUBSEQUENT SHEETS AS NECESSARY, HORIZONTAL SCALE FOR PLAN & PROFILE TO BE 1"=20' TO 1"=60'. FOR INTERSECTIONS OTHER THAN 90°, DETAILS SHALL BE REQUIRED.

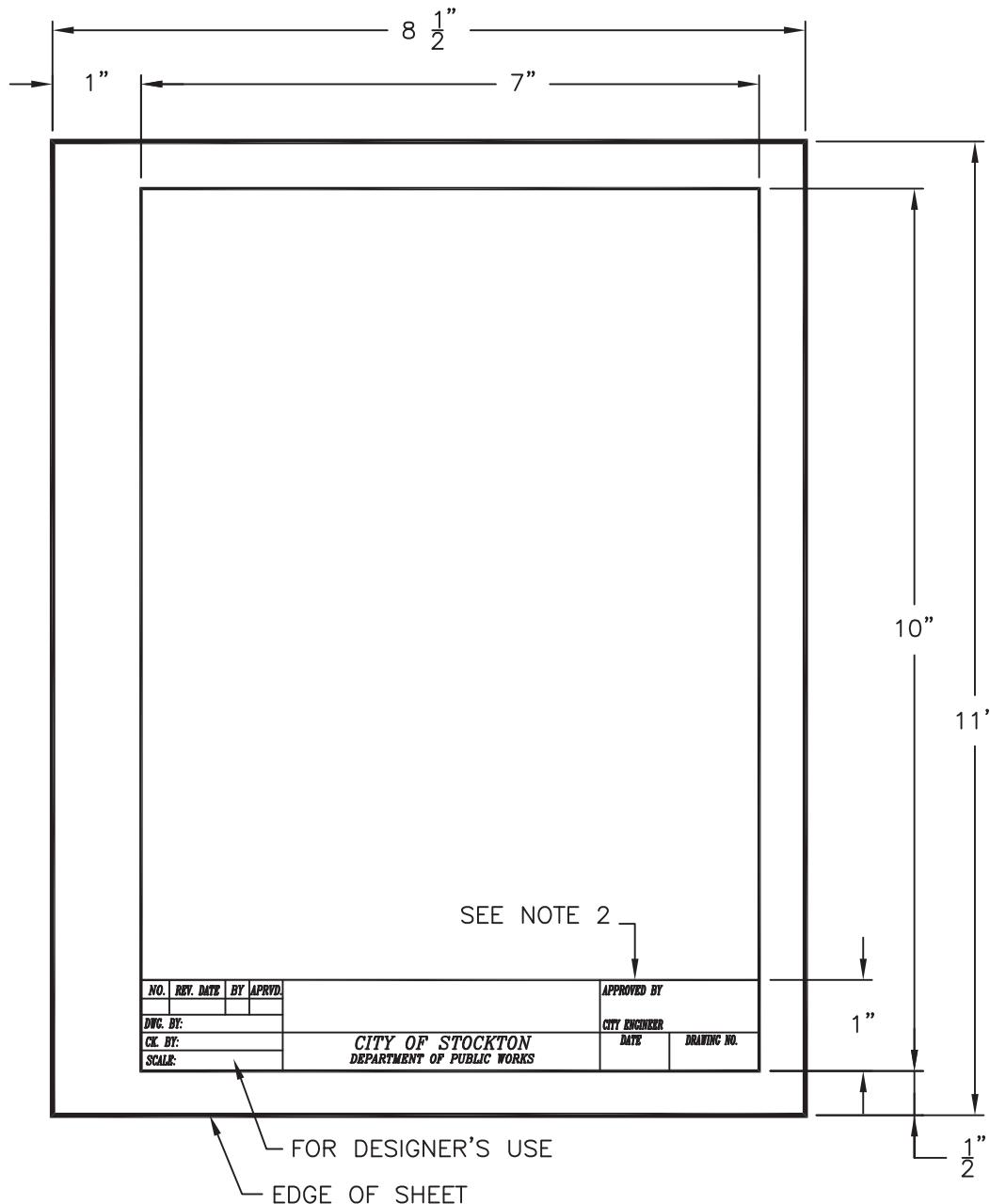
#### LEGEND

- A. PROJECT TITLE
- B. CONVENTIONAL SYMBOLS
- C. ABBREVIATIONS
- D. VICINITY MAP
- E. TITLE BLOCK
- F. INDEX OF SHEETS
- G. CONCURRENCE BY OTHER DEPARTMENTS
- H. TYPICAL CROSS SECTIONS
- J. PAVEMENT THICKNESS TABLE FOR ALL STREETS WITHIN PROJECT

#### NOTES:

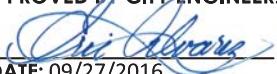
1. 8-1/2" x 11" DRAWINGS MAY BE USED FOR SKETCHES AND DETAILS ON SMALL PROJECTS WHEN APPROVED BY THE ENGINEER.
2. BORDER AND TITLE BLOCK TO BE CITY OF STOCKTON STANDARD FOR 8-1/2" x 11" SHEET AS PER STANDARD DRAWING NO. 1A.
3. FOR TITLE BLOCK DETAILS, SEE DRAWING NO. G-4.
4. SUBDIVISION PLANS SHALL INCLUDE A GRADING PLAN.
5. TRAFFIC DRAWINGS, IF REQUIRED, SHALL BE LOCATED AT THE END OF THE IMPROVEMENT PLAN.
6. NORTH SHALL BE ORIENTED TOWARD THE TOP OR RIGHT OF THE SHEET.

<b>TYPICAL LAYOUT FOR IMPROVEMENT PLANS</b>		REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016	
 <b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>G-1</b>	



## CITY OF STOCKTON STANDARD BORDER AND TITLE BLOCK FOR 8-1/2"x11" SHEET

REVISION NO.  
2

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

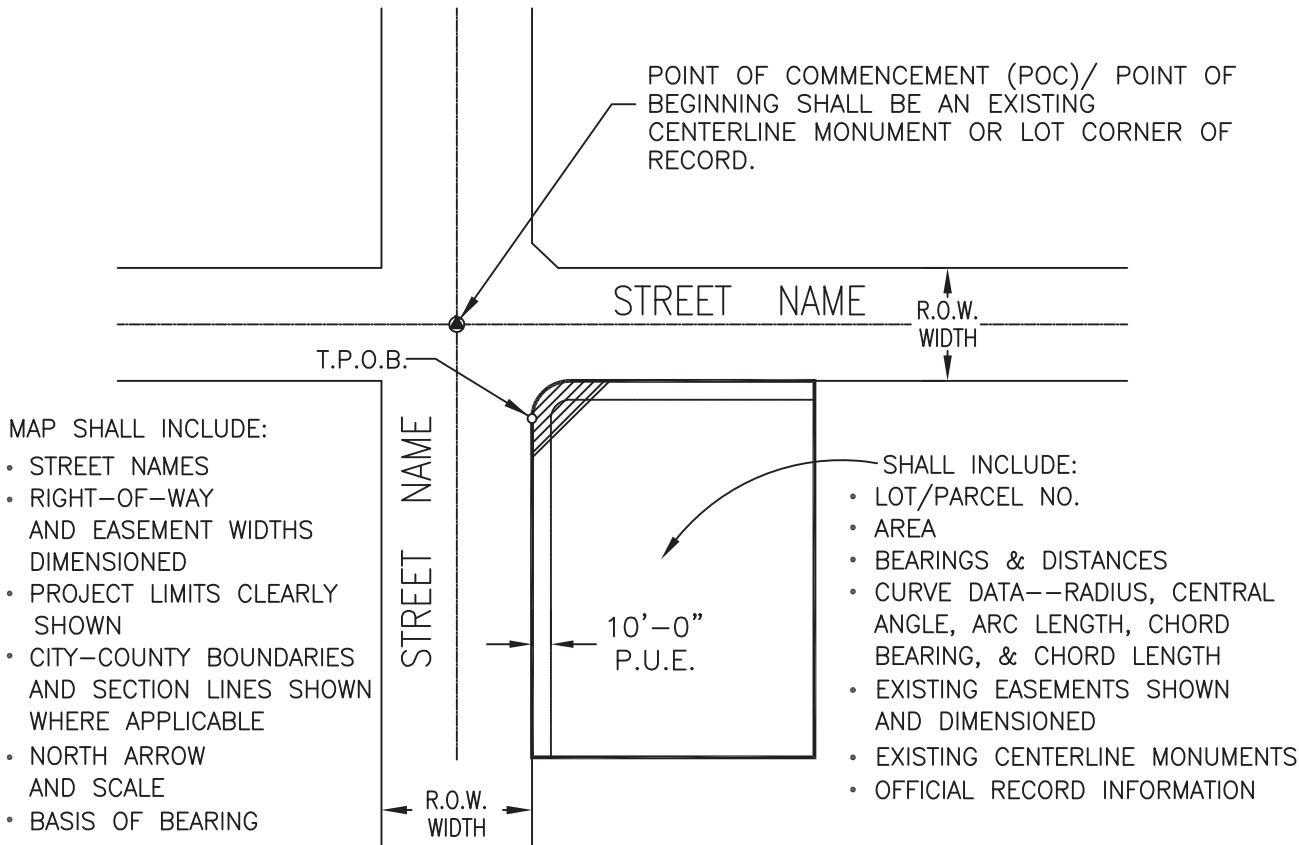
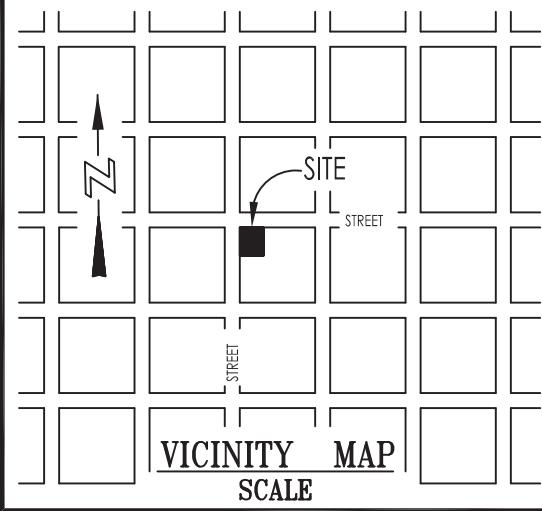


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**G-2**



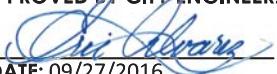
NOTES:

1. DRAFTING STANDARDS AND SYMBOLS SHALL CONFORM TO CITY OF STOCKTON STANDARDS.
2. CLOSURE CALCULATIONS, INCLUDING AREA AND PRECISION, SHALL BE SUBMITTED SEPARATELY.
3. LEGAL DESCRIPTIONS SUBMITTED WITH THE MAP SHALL BE STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR.

PREPARED BY:

(ENGINEERING FIRM)

**CITY OF STOCKTON STANDARD MAP ASSOCIATED WITH  
LEGAL DESCRIPTION FOR 8-1/2"x11" SHEET**

REVISION NO. 3	APPROVED BY CITY ENGINEER: 
DATE: 09/27/2016	



**CITY OF STOCKTON**  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**G-3**

NOTE:

TITLE SHEET SHALL BE STAMPED AND SIGNED BY A REGISTERED ENGINEER ADJACENT TO THE TITLE BLOCK.

ENGINEER'S TITLE BLOCK  
IN ALTERNATE LOCATION.

STANDARD TITLE BLOCK  
 $3\frac{1}{4}'' \times 5\frac{3}{4}''$

ALTERNATE LOCATION  
FOR ENGINEERS TITLE BOX

J. E. DOE & ASSOCIATES CONSULTING ENGINEERS	
1234 MAIN STREET	ANYPLACE, CALIF. R.C.E. NO _____
TRACT NO. 123 JOHN DOE PLAZA NO. 5	
EXETER STREET	
DEPARTMENT OF PUBLIC WORKS CITY OF STOCKTON, CALIFORNIA	
SCALE: DESIGNED BY: DRAWN BY: CHECKED BY: RECORD DWG.:	APPROVED BY: DATE: CITY ENGINEER STOCKTON, CALIF.
SHEET NO. OF SHTS PROJECT NO.	
FOR DESIGNER'S USE EDGE OF SHEET	

1½"

1½"

STANDARD TITLE BLOCK

ENGINEER'S TITLE BLOCK

Revision No.	Description	Date	By	Aprvd. By

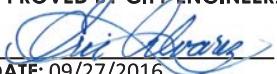
REVISION BLOCK

ALTERNATE LOCATION OF  
REVISION BLOCK IF NOT USED  
FOR ENGINEER'S TITLE BLOCK.

REVISION BLOCK  
LOCATION

CONCURRENCE  
BLOCK

REVISION BLOCK LOCATION

REVISION NO. 3 APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

**TITLE BLOCK**

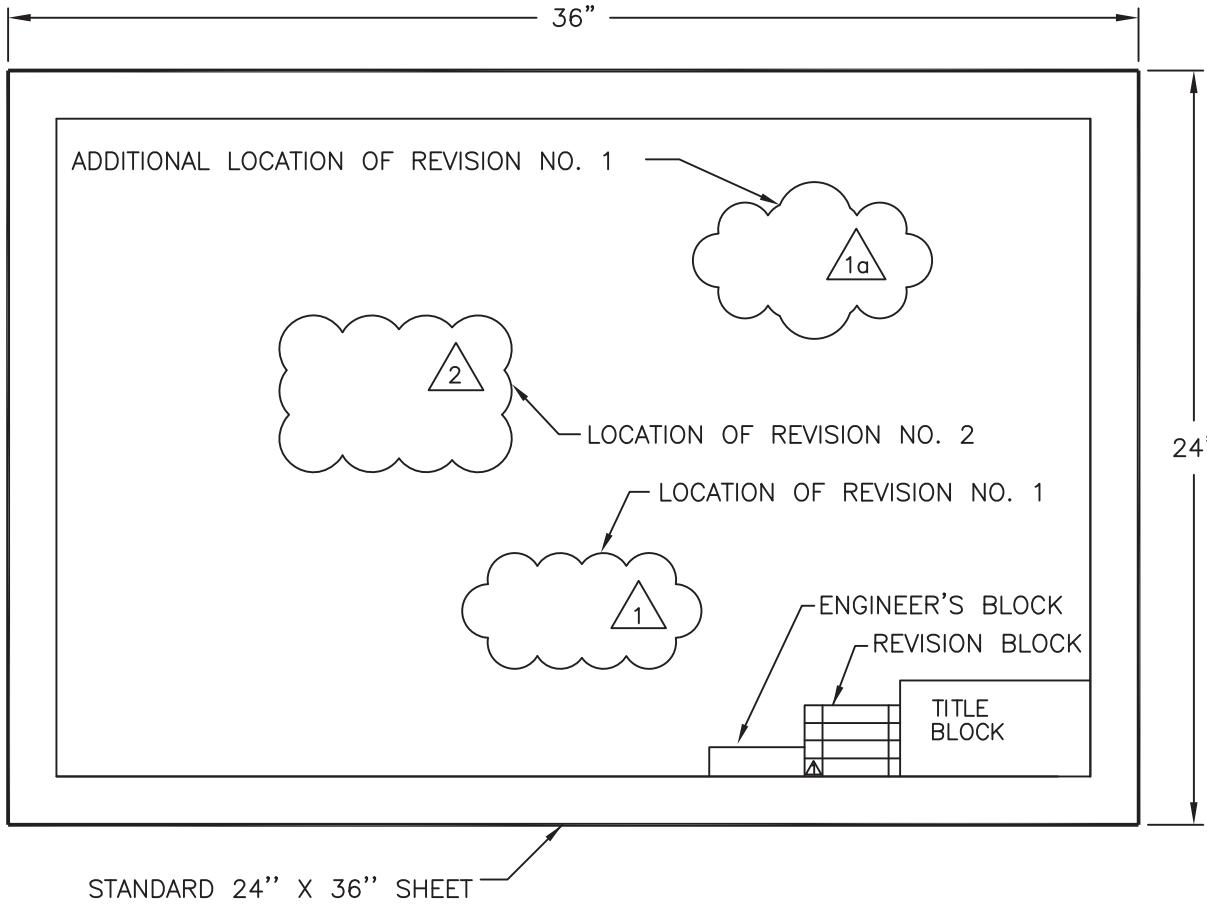


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

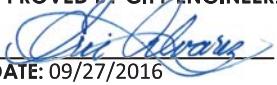
SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**G-4**



NOTES:

1. EACH DESIGN REVISION SHALL BE NUMBERED CONSECUTIVELY WITH THE NUMBER PLACED IN A TRIANGLE THUS:  $\triangle$  AND DESCRIBED IN THE REVISION BLOCK. (SEE DWG. NO. G-4) REVISIONS TO BEGIN AT BOTTOM OF REVISION BLOCK AND PROGRESS UPWARD.
2. FOR LOCATION OF THE RELATED REVISION, A "CLOUD", i.e. , SHALL BE PLACED AROUND THE ITEM(S) TO BE REVISED. A REVISION TRIANGLE (NOTE 1) SHALL BE PLACED WITHIN THE CLOUD TO IDENTIFY THE REVISION NUMBER, i.e. . (SEE EXAMPLES ABOVE)
3. WHEN A REVISION APPEARS AT MORE THAN ONE PLACE ON A SHEET, LETTERS SHALL BE USED IN ADDITION TO THE NUMBERS IN ORDER TO ACCURATELY DETERMINE THE SPECIFIC LOCATION OF EACH IDENTICAL CHANGE. (SEE EXAMPLE ABOVE).

DESIGN REVISION FORMAT	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
		DRAWING NO. <b>G-5</b>

## DRAFTING STANDARDS

ALL SUBDIVISION PLANS, CONSTRUCTION DRAWINGS, & PROPERTY PLATS SUBMITTED TO THE CITY ENGINEER FOR CONSIDERATION SHALL CONFORM TO AND BE PREPARED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

1. **ALL LETTERING**, OTHER THAN THAT HEREIN SPECIFIED OR SHOWN BELOW, SHALL BE A MINIMUM OF 0.100" IN HEIGHT AND USING 0.01" LINE WIDTH, OR EQUAL.

### 2. **SUBDIVISION PLANS**

#### **LINE WIDTH**

STREET CENTER LINES .....	— — — —	0.01" WIDTH
RADIAL BEARING LINES .....	— — — —	0.01" WIDTH
EASEMENT LINES .....	— — — —	0.01" WIDTH
LOT LINES .....	— — — —	0.02" WIDTH
RIGHT-OF-WAY LINES .....	— — — —	0.03" WIDTH
BLOCK OUTLINE .....	— — — —	0.03" WIDTH
SUBDIVISION OUTLINE .....	— — — —	0.04" WIDTH
MONUMENTS SET .....	O	
MONUMENTS SET IN MONUMENT BOX .....	◎	
MONUMENTS FOUND .....	●	
MONUMENTS FOUND IN MONUMENT BOX .....	●	
BENCH MARK ELEVATION .....	●	

STREET NAMES .....	NAME .....	LETTERS 0.175" HIGH AND 0.04" LINE WIDTH
LOT NUMBERS .....	36 .....	LETTERS 0.175" HIGH AND 0.02" LINE WIDTH
BEARINGS, DISTANCES, CURVE DATA, COORDINATES, ETC.	.....	LETTERS 0.100" HIGH AND 0.01" LINE WIDTH
ADJACENT SUBDIVISIONS .....	.....	LETTERS 0.175" HIGH AND SHADOW LETTERING AND 0.01" LINE WIDTH
ADJACENT LOT NUMBERS .....	.....	LETTERS 0.175" HIGH AND DOTTED LETTERING AND 0.01" LINE WIDTH

TITLE BLOCK AND OTHER RELATED LETTERING SHALL BE IN ACCORDANCE WITH STANDARD ACCEPTED ENGINEERING PRACTICE, BUT IN NO CASE SHALL THE LETTERING BE LESS THAN 0.100 INCH IN HEIGHT AND USING LINE WIDTH OF 0.01".

### 3. **IMPROVEMENT PLANS**

#### **DESCRIPTION**

#### **PROPOSED**

#### **EXISTING**

SANITARY SEWER .....	— 6" SS —	--- 6" SS ---
STORM SEWER (AKA STORM DRAIN) .....	— 8" SD —	--- 8" SD ---
GAS LINE .....	— 4" G —	--- 4" G ---
WATER LINE .....	— 8" W —	--- 8" W ---
TELEPHONE .....	— T —	--- T ---
CABLE TELEVISION .....	— TV —	--- TV ---
GAS VALVE .....	— G —	--- G ---
WATER VALVE .....	— W —	--- W ---
ELECTRICAL CONDUIT .....	— E —	--- E ---
FIBEROPTIC .....	— FO —	--- FO ---
MATCH LINE .....	STA. 5+00	
TRAFFIC SIGNAL .....	— TS —	--- TS ---

Page 1 of 4

## **DRAFTING STANDARDS**

REVISION  
NO.  
3

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016



**CITY OF STOCKTON**  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**G-6**

## LINE WIDTH

0.01"



0.02"



0.03"



0.04"



0.05"



0.06"



0.07"



0.08"



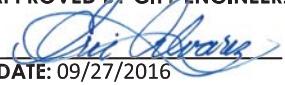
0.09"



0.10"



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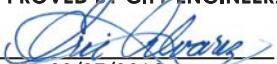
<b>DRAFTING STANDARDS</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE 1:1	SUPERSEDES DWG. DATED 11/25/03

**G-6**

<u>DESCRIPTION</u>	<u>TO BE CONSTRUCTED</u>	<u>EXISTING</u>
MAINTENANCE HOLE .....	● .....	○ .....
CATCHBASIN .....	.....	.....
GAS METER .....	[G] .....	[G] .....
WATER METER .....	[W] .....	[W] .....
CURB AND GUTTER .....	_____ .....	_____ .....
SIDEWALK .....	_____ .....	_____ .....
DRIVEWAY .....	_____ .....	_____ .....
CONFORM PAVEMENT .....	.....	.....
FIRE HYDRANT .....	△ .....	△ .....
SIGN .....	● .....	○ .....
SANITARY SEWER CLEANOUT .....	○* .....	○* .....
UTILITY POLE .....	○ .....	○ .....
GUARD RAIL .....	████████ .....	□□□□ .....
BARRICADE .....	████████ .....	□□□□ .....
FENCE .....	—X—X— .....	—X—X— .....
RAILROAD .....	==== .....	===== .....
WHEELCHAIR RAMP .....	□□□ .....	□□□ .....
SANITARY SEWER SERVICE .....	'TEE' CONNECTION .....	T .....
TRAFFIC SIGNAL .....	—→ .....	●—→ .....
ELECTRICAL TRANSFORMER .....	■ .....	□□ .....
POWER SOURCE .....	—PS— .....	--PS-- .....
BLOW-OFF .....	—█— .....	—□— .....

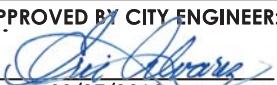
THE FOREGOING SYMBOLS SHALL BE USED IN CONNECTION WITH ALL IMPROVEMENTS AND CONTRACT PLANS.

ANY ABBREVIATIONS USED SHALL CONFORM TO THE STANDARD ABBREVIATIONS AS SET FORTH IN SECTION 1-1.02A OF THE CITY OF STOCKTON STANDARD SPECIFICATIONS.

DRAFTING STANDARDS	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>G-6</b>

<u>DESCRIPTION</u>	<u>TO BE CONSTRUCTED</u>	<u>EXISTING</u>
PULL BOX .....	<input type="checkbox"/>	<input type="checkbox"/>
PULL BOX WITH DETECTOR STUB IN CONDUIT.....	<input type="checkbox"/> →	<input type="checkbox"/> →
ELECTROLIER .....		
100 WATT HPS EQUIVALENT..... LED .....		HPS .....
150 WATT HPS EQUIVALENT..... LED .....		HPS .....
200 WATT HPS EQUIVALENT..... LED .....		HPS .....
COMBINATION TRAFFIC SIGNAL WITH BACKPLATE & LUMINAIRE .....		
VEHICLE SIGNAL WITH AND WITHOUT BACKPLATE .....		
COMBINATION TRAFFIC SIGNAL, GREEN ARROW WITH BACKPLATE .....		
MASTARM SIGNAL WITH STREET NAME SIGN .....		
PROGRAMMED VISIBILITY HEAD WITH BACKPLATE .....		
PEDESTRIAN SIGNAL FACE .....		
PEDESTRIAN PUSH BUTTON AND ASSOCIATED VEHICLE PHASE .....	PPB Ø6	PPB Ø6
INDUCTIVE DETECTOR LOOP .....		
TRAFFIC SIGNAL CONTROLLER CABINET WITH DOOR SWING AS SHOWN .....		
TYPE III OR III M SERVICE CABINET WITH DOOR SWING AS SHOWN .....		

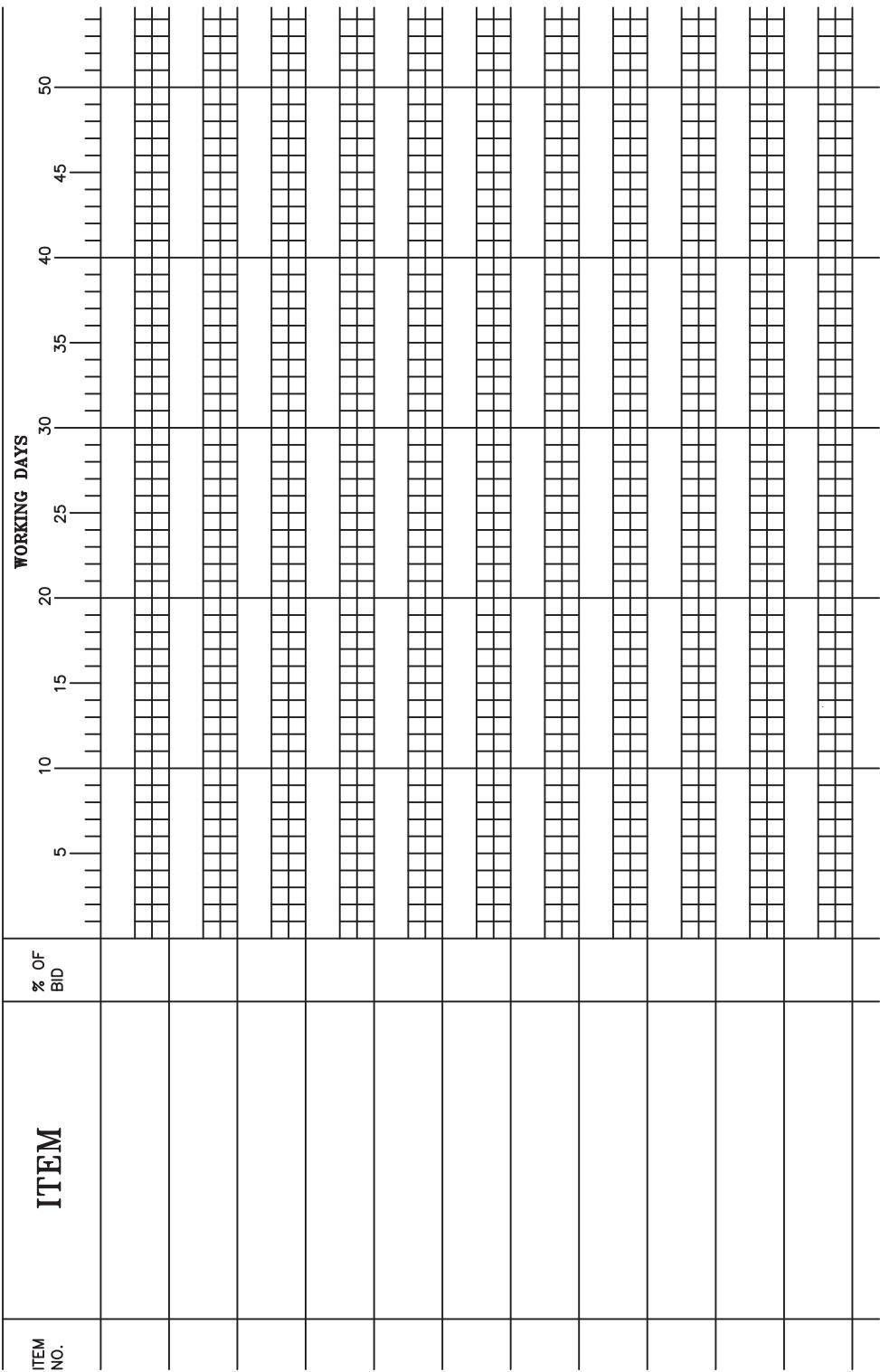
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DRAFTING STANDARDS	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>G-6</b>

## PROGRESS SCHEDULE - CITY OF STOCKTON - DEPT. OF PUBLIC WORKS

108

JOB	SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIAL PROVISIONS		DATE CONTRACTOR	ACTUAL PROGRESS	SCHEDULED PROGRESS	% COMPLETE	TIME ELAPSED	TIME LIMIT	WORKING DAYS
	BY:	ACCEPTED:							



## **TYPICAL PROGRESS SCHEDULE CHART**



# CITY OF STOCKTON

## DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.  
1

**APPROVED BY CITY ENGINEER:**  
Sir Alvaro  
**DATE:** 09/27/2016

DATE: 09/27/2016

SCALE  
NONE

**SUPERSEDES  
DWG. DATED  
01/09/02**

**DRAWING NO.**  
**G-7**

# SUBDIVISION DESIGN STANDARDS

## BLOCK:

### FACTORS GOVERNING DIMENSIONS:

BLOCK LENGTH AND WIDTH OR ACREAGE WITHIN BOUNDING ROADS SHALL BE SUCH AS TO ACCOMMODATE THE SIZE OF LOT REQUIRED IN THE AREA BY THE ZONING PLAN & TO PROVIDE FOR CONVENIENT ACCESS, CIRCULATION CONTROL AND SAFETY OF STREET TRAFFIC. BLOCK LENGTHS SHALL NOT EXCEED 1300'-0". PEDESTRIAN WALKWAYS MAY BE PERMITTED IN LOCATIONS DEEMED NECESSARY FOR PUBLIC HEALTH, CONVENIENCE, AND NECESSITY.

### \* LOTS:

### \* RESIDENTIAL

RESIDENTIAL LOTS SHALL HAVE A MINIMUM WIDTH OF 50'-0" AT THE REQUIRED BUILDING SETBACK LINE. ON CUL-DE-SAC AND CURVILINEAR STREETS THE MINIMUM WIDTH SHALL BE MEASURED ALONG THE ARC LENGTH AT THE BUILDING SETBACK LINE. LOTS SHALL HAVE A MINIMUM AREA CONFORMING TO THE STANDARDS SET FORTH IN THE ZONING PLAN. LOT DIMENSION SHALL BE SHOWN ON THE MAP FOR CURVILINEAR FRONTAGE. LOT FRONTAGES AND AREAS DEVIATING FROM THESE STANDARDS SHALL BE APPROVED BY THE PLANNING COMMISSION.

### \* CONFIGURATION:

ALL RESIDENTIAL LOTS SHALL ABUT BY THEIR FULL FRONTAGE ON A PUBLICLY DEDICATED STREET EASEMENT, OR PRIVATE ROADWAY AS APPROVED BY THE PLANNING COMMISSION. DOUBLE FRONTAGE LOTS OF LESS THAN 200'-0" IN DEPTH SHALL NOT BE PERMITTED EXCEPT WHERE ACCESS RIGHTS TO ONE FRONTAGE HAVE BEEN DEDICATED TO THE CITY.

### \* LOT LINES:

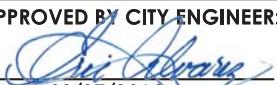
SIDE LOT LINES SHALL BE AT RIGHT ANGLES TO STRAIGHT STREET LINES OR RADIAL TO CURVED STREET LINES.

### \* UNINHABITABLE LOTS:

LOTS OR LAND SUBJECT TO FLOODING OR DEEMED BY THE COMMISSION TO BE UNINHABITABLE SHALL NOT BE PLATTED FOR RESIDENTIAL OCCUPANCY, NOR FOR SUCH OTHER USES AS MAY INCREASE DANGER TO HEALTH, LIFE, OR PROPERTY OR AGGRAVE THE FLOOD HAZARD UNLESS THE FLOOD HAZARD OR OTHER CONDITION MAKING THE LOTS UNINHABITABLE IS CORRECTED TO THE SATISFACTION OF THE CITY ENGINEER. ANY LAND WITHIN THE SUBDIVISION WHICH IS SUBJECT TO FLOODING OR OTHER UNINHABITABLE CONDITIONS SHALL BE SET ASIDE FOR SUCH USES AS SHALL NOT BE ENDANGERED BY PERIODIC OR OCCASIONAL INUNDATION OR SHALL NOT PRODUCE UNSATISFACTORY LIVING CONDITIONS.

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\* *DEVIATION FROM THESE SECTIONS  
REQUIRES PLANNING COMMISSION  
APPROVAL*

<b>SUBDIVISION DESIGN STANDARDS</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-1</b>

## SUBDIVISION DESIGN STANDARDS

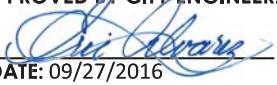
### LOT DRAINAGE:

EACH LOT SHALL BE DESIGNED, GRADED AND MAINTAINED TO PROVIDE PROPER DRAINAGE WITHOUT PONDING OR CAUSING SOIL EROSION. DRAINAGE FROM EACH LOT SHALL BE CONFINED WHOLLY TO THAT LOT UNTIL IT IS DISCHARGED UPON AN ABUTTING STREET. A WAIVER OF THESE PROVISIONS SHALL OCCUR ONLY WHEN OTHER ALTERNATE DRAINAGE FACILITIES AND RECORDED EASEMENTS ARE PROVIDED. THE RESPONSIBILITY FOR MAINTENANCE OF SUCH FACILITIES IS CLEARLY ESTABLISHED, AND SUCH ALTERNATE PLAN IS APPROVED IN WRITING BY THE CITY ENGINEER. TYPICAL LOT DRAINAGE DETAILS SHALL BE SHOWN ON THE GRADING PLAN AS PART OF THE IMPROVEMENT PLANS.

### EASEMENTS:

EASEMENTS SHALL BE PROVIDED WHERE NECESSARY AND OF SUCH WIDTH AS REQUIRED BY THE CITY ENGINEER. WHERE A SUBDIVISION IS ADJACENT TO, ABUTS, OR IS TRAVERSED BY A WATER COURSE, DRAINAGE WAY, CHANNEL, OR A STREAM, THERE SHALL BE PROVIDED A STORM WATER EASEMENT OR DRAINAGE RIGHT OF WAY CONFORMING SUBSTANTIALLY WITH THE LINES OF SUCH WATER COURSE, AND OF SUCH CONFIGURATION AS WILL BE ADEQUATE FOR THE PURPOSE OF MAINTAINING DRAINAGE. REASONABLE PUBLIC ACCESS SHALL BE PROVIDED BY EASEMENT FROM PUBLIC STREET TO A PORTION OF THE BANK OF A RIVER OR STREAM BORDERING OR LYING WITHIN THE PROPOSED SUBDIVISION.

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<b>SUBDIVISION DESIGN STANDARDS</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
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**R-1**

## GENERAL:

### PURPOSE AND INTENT

THE PURPOSE AND INTENT OF THESE DESIGN STANDARDS IS TO CLARIFY AND CONSOLIDATE PRESENT DESIGN CRITERIA IN THE CITY OF STOCKTON.

### SCOPE

THE DESIGN STANDARDS AS HEREINAFTER SPECIFIED SHALL BE USED AS THE BASIS OF DESIGN FOR ALL DEVELOPMENT WITHIN THE JURISDICTION OF THE CITY OF STOCKTON.

### DESIGN

THE DESIGN OF EACH DEVELOPMENT IS IN ITSELF A SPECIAL CASE AND THESE DESIGN STANDARDS SHALL BE CONSTRUED TO BE THE MINIMUM REQUIRED DESIGN ON ALL OR ANY SEPARATE PHASE OF THE CONSTRUCTION. UNDER CERTAIN CONDITIONS, ANY OR ALL PHASES MAY BE REQUIRED TO EXCEED THESE SPECIFICATIONS. IT IS ALSO RECOGNIZED THAT THERE MAY BE DEVELOPMENTS WHERE IT IS IMPOSSIBLE TO MEET THESE DESIGN STANDARDS. IT IS SUGGESTED THAT THESE CASES BE REVIEWED WITH THE CITY ENGINEER EARLY IN THE DESIGN PROCESS TO MINIMIZE REWORKING PLANS WHERE DEVIATION IS NOT PERMITTED.

### FINAL AUTHORITY

THE CITY ENGINEER SHALL BE THE FINAL AUTHORITY ON ALL QUESTIONS WHICH MAY ARISE AS TO THE INTERPRETATION OF THESE STANDARDS. THE CITY ENGINEER'S DECISION SHALL BE FINAL AND HE SHALL HAVE AUTHORITY TO ENFORCE AND MAKE EFFECTIVE SUCH DECISIONS, EXCEPT AS NOTED.

## HORIZONTAL ALIGNMENT:

### CONFORMITY

THE ARRANGEMENT, CHARACTER, EXTENT, WIDTH, GRADE AND LOCATION OF ALL STREETS SHALL CONFORM TO THE OFFICIAL MAP OR GENERAL PLAN AND SHALL BE CONSIDERED IN THEIR RELATION TO EXISTING AND PLANNED STREETS, TO TOPOGRAPHICAL CONDITIONS, TO PUBLIC CONVENIENCE AND SAFETY AND IN THEIR APPROPRIATE RELATION TO THE PROPOSED USES OF THE LAND TO BE SERVED BY SUCH STREETS. WHERE NOT SHOWN ON THE OFFICIAL MAP OR GENERAL PLAN, THE ARRANGEMENT AND OTHER DESIGN STANDARDS OF STREETS SHALL CONFORM TO THE PROVISIONS FOUND HEREIN.

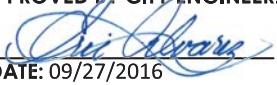
### RELATION TO ADJOINING STREET SYSTEM

THE ARRANGEMENT OF STREETS IN NEW SUBDIVISIONS SHALL MAKE PROVISION FOR THE CONTINUATION OF THE EXISTING STREETS IN ADJOINING AREAS.

### PROJECTION OF STREETS

WHERE ADJOINING AREAS ARE NOT SUBDIVIDED, THE ARRANGEMENT OF STREETS IN NEW SUBDIVISIONS SHALL MAKE PROVISION FOR THE PROPER PROJECTION OF STREETS TO THE SUBDIVISION BOUNDARY LINE, OR LOT LINE, AS SPECIFIED. ADEQUATE TEMPORARY TURN-A-ROUNDS, INCLUDING EASEMENTS IF NECESSARY, SHALL BE PROVIDED AS APPROVED BY THE CITY ENGINEER.

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<b>STREET DESIGN STANDARDS</b>	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
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### **JOGS PROHIBITED**

STREET JOGS WITH CENTERLINE OFFSETS OF LESS THAN 200'-0" SHALL BE PROHIBITED, UNLESS APPROVED BY THE CITY ENGINEER.

### **DEAD-END STREETS OR CUL-DE-SACS**

DEAD-END STREETS OR CUL-DE-SAC DESTINED TO BE SO PERMANENTLY SHALL NOT BE LONGER THAN 500'-0" AND SHALL BE PROVIDED AT THE CLOSED END WITH A TURN-AROUND HAVING A STREET PROPERTY LINE DIAMETER IN CONFORMITY WITH THE STANDARD SPECIFICATIONS.

### **MINOR STREETS**

MINOR STREETS SHALL BE SO LAID OUT THAT THEIR USE BY THROUGH TRAFFIC WILL BE DISCOURAGED.

### **STREET WIDTHS**

STREET RIGHT-OF-WAY WIDTHS SHALL BE ESTABLISHED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

### **INTERSECTIONS**

THE INTERSECTION OF MORE THAN TWO STREETS AT ONE POINT SHALL BE AVOIDED EXCEPT WHERE IT IS IMPRACTICABLE TO SECURE A REASONABLE STREET SYSTEM OTHERWISE. STREETS SHALL INTERSECT AT AN ANGLE AS NEAR TO A RIGHT ANGLE AS POSSIBLE, AND NO INTERSECTIONS OF STREETS AT ANGLES LESS THAN 75 DEGREES SHALL BE APPROVED. STREET INTERSECTIONS SHALL BE ROUNDED WITH A RADIUS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. STREET INTERSECTION RIGHT OF WAY SHALL BE ANGLED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

### **CURVATURE**

THE MINIMUM CENTERLINE RADIUS OF CURVATURE SHALL BE 750'-0" ON ARTERIALS AND 500'-0" ON COLLECTORS. MINIMUM CENTER LINE RADIUS ON OTHER STREETS SHALL BE 250'-0".

### **REVERSE CURVES**

A TANGENT AT LEAST 100'-0" LONG SHALL BE INTRODUCED BETWEEN REVERSE CURVES ON STREETS IF THE RADII OF SUCH CURVES ARE LESS THAN 1000'-0".

### **REVERSE STRIPS**

REVERSE STRIPS CONTROLLING ACCESS TO STREETS SHALL BE PROHIBITED EXCEPT UNDER CONDITIONS APPROVED BY THE PLANNING COMMISSION.

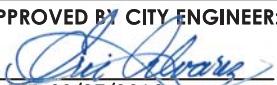
### **STREET GRADES**

ALL STREET GRADES SHALL CONFORM TO THE REQUIREMENTS OF THE CITY ENGINEER. ALL ELEVATIONS SHALL BE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929, C.O.S. LOCAL ADJUSTMENT.

### **HALF-STREET PROHIBITED**

HALF-STREETS SHALL PROHIBITED

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<b>STREET DESIGN STANDARDS</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
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## STREET NAMES AND NUMBERS

NAMES OF NEW STREETS SHALL NOT DUPLICATE EXISTING OR PLATTED STREET NAMES UNLESS A NEW STREET IS A CONTINUATION OF, OR IN ALIGNMENT WITH THE EXISTING OR PLATTED STREET. HOUSE NUMBERS SHALL BE ASSIGNED IN ACCORDANCE WITH THE HOUSE NUMBERING SYSTEM IN EFFECT IN THE CITY.

## ACCESS TO STREETS ACROSS DITCHES OR DRAINAGE CANALS

1. EXCEPT AS PROVIDED FOR IN CHAPTER 16 OF THE STOCKTON MUNICIPAL CODE, THE SUBDIVIDER SHALL PROVIDE RIGHT-OF-WAY AND MAKE PROVISIONS FOR IMPROVEMENTS FOR ALL STREETS AND STRUCTURES THAT CROSS DITCHES OR DRAINAGE CANALS LYING WITHIN HIS SUBDIVISION OR PORTION THEREOF.
2. SAID DITCHES AND CANALS SHALL BE CROSSED IN A MANNER APPROVED BY THE CITY ENGINEER.

## **\* PRIVATE STREETS**

PRIVATE STREETS SHALL NOT BE PLATTED OR MAPPED IN A SUBDIVISION EXCEPT WITHIN A P.U.R.D. OR CONDOMINIUM PROJECT OR AS APPROVED BY THE PLANNING COMMISSION.

## AVOIDANCE OF HARDSHIP TO ADJOINING PROPERTY OWNERS

THE STREET ARRANGEMENTS SHALL NOT BE SUCH AS TO CAUSE HARDSHIP TO OWNERS OF ADJOINING PROPERTY IN PLATTING THEIR OWN LAND AND PROVIDING CONVENIENT ACCESS TO IT.

## ALLEYS

ALLEYS SHALL NOT BE PERMITTED IN RESIDENTIAL AREAS. ALLEYS SHALL BE PROVIDED IN COMMERCIAL AND INDUSTRIAL DISTRICTS, EXCEPT THAT THE CITY PLANNING COMMISSION MAY WAIVE THIS REQUIREMENT WHERE OTHER DEFINITE AND ASSURED PROVISIONS ARE MADE FOR THE SERVICE ACCESS, SUCH AS OFF-STREET LOADING, UNLOADING, AND PARKING CONSISTENT WITH, AND ADEQUATE FOR, THE USES PROPOSED. THE MINIMUM RIGHT-OF-WAY WIDTH OF AN ALLEY SHALL BE 20'-0". DEAD-END ALLEYS SHALL NOT BE PERMITTED.

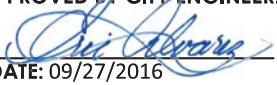
## VERTICAL ALIGNMENT

### TOP OF CURB GRADES

GRADES SHALL NOT BE LESS THAN 0.35 PERCENT AND NOT GREATER THAN 6 PERCENT. WHERE MATCHING EXISTING CONTROLS, THE MINIMUM GRADE MAY BE REDUCED WITH THE APPROVAL OF THE CITY ENGINEER. THE MINIMUM TOP OF CURB ELEVATION SHALL BE 1'-0" ABOVE THE DESIGN WATER SURFACE OF THE MASTER PLAN STORM DRAINAGE BASIN TO WHICH THE PROPOSED IMPROVEMENTS ARE TRIBUTARY. THIS MINIMUM ELEVATION MAY BE OBTAINED FROM THE CITY ENGINEER FOR EXISTING BASINS. A MINIMUM TOP OF CURB ELEVATION OF 1'-0" ABOVE THE HYDRAULIC GRADE LINE SHALL BE MAINTAINED. GRADES ON OPPOSITE SIDES OF THE STREET SHALL BE THE SAME WHEREVER PRACTICAL. THE ALGEBRAIC DIFFERENCE OF THE CENTERLINE GRADES OF THE PAVEMENT SURFACE THROUGH AN INTERSECTION SHALL NOT BE MORE THAN 2 PERCENT. FLOW LINES SHALL BE SHOWN ON ALL INTERSECTIONS. SPOT ELEVATIONS SHALL BE SHOWN WITHIN INTERSECTIONS AS NEEDED.

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*	DEVIATION FROM THESE SECTIONS REQUIRES PLANNING COMMISSION APPROVAL
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STREET DESIGN STANDARDS	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
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## **STRUCTURAL SECTION**

PRIVATE STREET STRUCTURAL SECTIONS SHALL BE CONSTRUCTED TO PUBLIC STREET STANDARDS AND SHALL BE BASED ON A MINIMUM TI=5 AND R=5. PRIVATE STREETS SHALL BE PROVIDED WITH CITY STANDARD CONCRETE CURBS AND GUTTERS AND A MINIMUM WIDTH OF 36'-0" FROM CURB TO CURB.

## **VERTICAL CURVES**

WHERE THE ALGEBRAIC DIFFERENCE IN SLOPE EXCEEDS 1 PERCENT, A VERTICAL CURVE SHALL BE USED. VERTICAL CURVE DESIGNS SHALL BE BASED ON CALTRANS STANDARDS.

## **CROSS-SLOPES**

ON EXISTING STREETS, CROSS-SLOPES OF WIDENED AREAS SHALL BE 3 PERCENT MAXIMUM UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

## **TRAFFIC SIGNS AND MARKINGS**

A TRAFFIC SIGNS AND MARKINGS PLAN AND INSTALLATION SHALL BE PROVIDED FOR ALL NEW ARTERIAL AND COLLECTOR STREETS AS DETERMINED BY THE CITY TRAFFIC ENGINEER. STRIPING FOR NEW STREETS JOINING AN EXISTING COLLECTOR OR ARTERIAL SHALL INCLUDE TRANSITION TO MATCH THE NEW AND EXISTING STRIPING. STRIPING MAY EXTEND BEYOND THE PROJECT LIMITS TO PROVIDE PROPER LANE TRANSITION AS REQUIRED BY THE CITY TRAFFIC ENGINEER. THE TRAFFIC CONTROL DEVICES AND PAVEMENT MARKERS TO BE SHOWN ON THIS PLAN SHALL BE INSTALLED PER APPROPRIATE SECTIONS OF THE LATEST EDITION OF THE CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

## **STREET MICROsurfacing**

THE PAVEMENT SECTION FOR ALL NEW STREETS SHALL INCLUDE EITHER TYPE II OR TYPE III MICROsurfacing LAYER AS PER SECTION 37-3 "SLURRY SEAL AND MICROsurfacing" OF CALTRANS SPECIFICATIONS. THIS LAYER SHALL BE INSTALLED WHEN EITHER: 1) 80% OF THE PROPERTIES FRONTING THE NEW STREET HAVE BEEN DEVELOPED AND OCCUPIED, OR 2) THE TOP LAYER OF THE ASPHALT CONCRETE ON THE NEW STREET HAS BEEN IN PLACE FOR TWO YEARS.

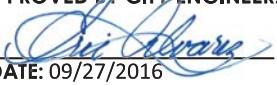
## **SIDEWALKS**

ALL NEW SIDEWALKS SHALL BE A MIN. OF 6" THICK PORTLAND CEMENT CONCRETE.

## **FOG SEAL**

FOG-SEAL TO BE APPLIED TO NEW AC WITHIN 24 HRS. PER SECTION 37-2 OF CALTRANS SPECIFICATIONS.

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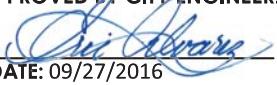
<b>STREET DESIGN STANDARDS</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 11/11/03
		DRAWING NO. <b>R-2</b>

## IMPROVEMENT PLAN STANDARDS

ALL IMPROVEMENT PLANS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS AND INCLUDE THE FOLLOWING DETAILED INFORMATION:

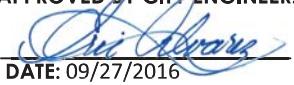
1. ALL STREETS AND CUL-DE-SAC SHALL SHOWN CENTER LINE STATIONING. STATIONING SHALL BE TIED OR REFERENCE TO EXISTING MONUMENTS OR OTHER PERMANENT REFERENCE POINTS. EQUATIONS SHALL BE SHOWN AT ALL CENTER LINE INTERSECTIONS.
2. CENTER LINE MONUMENTS IN ACCORDANCE WITH STANDARD DRAWING NO. M-1 SHALL BE SET AT THE BEGINNING AND END OF EACH CURVE, AT ALL INTERSECTIONS, AND AT THE ENDS OF ALL CUL-DE-SACS. STATE PLANE COORDINATES BASED ON CALIFORNIA COORDINATE SYSTEM OF 1983, ZONE 3, SHALL BE SHOWN FOR ALL NEW AND EXISTING CENTERLINE MONUMENTS.
3. STREET PLAN SHALL SHOW LOCATION OF UNDERGROUND SANITARY SEWER, STORM DRAIN, IRRIGATION SYSTEM, AND WATER LINES. LOCATION OF LINES SHALL BE REFERENCED TO STREET CENTER LINE. MAINTENANCE HOLES, CATCH BASINS, TEES, VALVES, AND ANY OTHER FITTINGS TOGETHER WITH ANY ANGLE POINTS IN THE LINES SHALL BE REFERENCED TO THE APPROPRIATE CENTER LINE STATION.
4. STREET PLAN SHALL SHOW SIZE AND LENGTH OF PIPES BETWEEN MAINTENANCE HOLES, CATCH BASINS, AND/OR VALVES. WHERE A SPECIFIC TYPE OF PIPE IS TO BE INSTALLED, SUCH TYPE SHALL ALSO BE INDICATED.
5. STREET PLAN SHALL ALSO SHOW TYPE OF CURB, GUTTER AND SIDEWALK TO BE INSTALLED AND TOP OF CURB ELEVATIONS AT THE BEGINNING AND END OF EACH CURB RETURN. EACH CATCH BASIN AND ANY GRADE BREAKS SHALL BE INDICATED. GRADE BREAKS SHALL BE STATIONED.
6. EXISTING UTILITY INSTALLATIONS SHALL BE SHOWN AS DETAILED ABOVE.
7. STREET PROFILE SHEETS SHALL SHOW THE SIZE, LENGTH, SLOPE, TYPE, STATION AND ELEVATION OF ALL EXISTING AND PROPOSED SANITARY SEWER, STORM DRAIN, IRRIGATION AND WATER PIPE LINES. INVERT ELEVATIONS AT THE ENDS OF EACH PIPE AND AT MAINTENANCE HOLES AND CATCH BASINS SHALL BE INDICATED. MAINTENANCE HOLE'S RIM ELEVATIONS SHALL BE SHOWN. THE STATION AND ELEVATION OF HORIZONTAL AND VERTICAL BENDS SHALL BE SHOWN. CATCH BASIN RUNS SHALL BE SHOWN ON ALL SHEETS.
8. STREET PROFILE SHALL SHOW THE EXISTING GROUND PROFILE AND THE DATE AT WHICH THE PROFILE WAS TAKEN. PROFILES OF THE EXISTING AND PROPOSED CURB AND GUTTERS SHALL BE SHOWN. PROFILES SHALL SHOW THE SLOPE TOGETHER WITH THE ELEVATION AND STATIONING AT EACH BREAK AND AT THE BEGINNING AND END OF EACH CURB RETURN.
9. IMPROVEMENT PLAN STANDARDS FOR STREET LIGHTING WORK SHALL CONFORM TO STANDARD PLANS NO. R-85 THROUGH R-92.
10. ALL ELEVATIONS SHALL BE BASED ON NORTH AMERICAN VERTICAL DATUM (NAVD 88) AND C.O.S. LOCAL ADJUSTMENT. THE PRIMARY BENCH MARK SHALL BE SHOWN AND DESCRIBED ON THE TITLE SHEET.
11. A MINIMUM OF ONE TEMPORARY BENCH MARK SHALL BE INDICATED ON EACH SHEET OF THE PLANS. EACH TEMPORARY BENCH MARK SHALL HAVE BEEN CONVENIENTLY LOCATED FOR USE IN CONSTRUCTING THE IMPROVEMENTS ON THAT PARTICULAR SHEET.
12. AT THE CONCLUSION OF CONSTRUCTION, AS-BUILT CONSTRUCTION DATA ON FACILITIES WHICH ARE TO BE EXTENDED IN THE FUTURE SHALL BE ADDED TO THE IMPROVEMENT PLANS.
13. HORIZONTAL AND VERTICAL SCALES SHALL BE SHOWN ON EACH OF THE IMPROVEMENT PLANS.

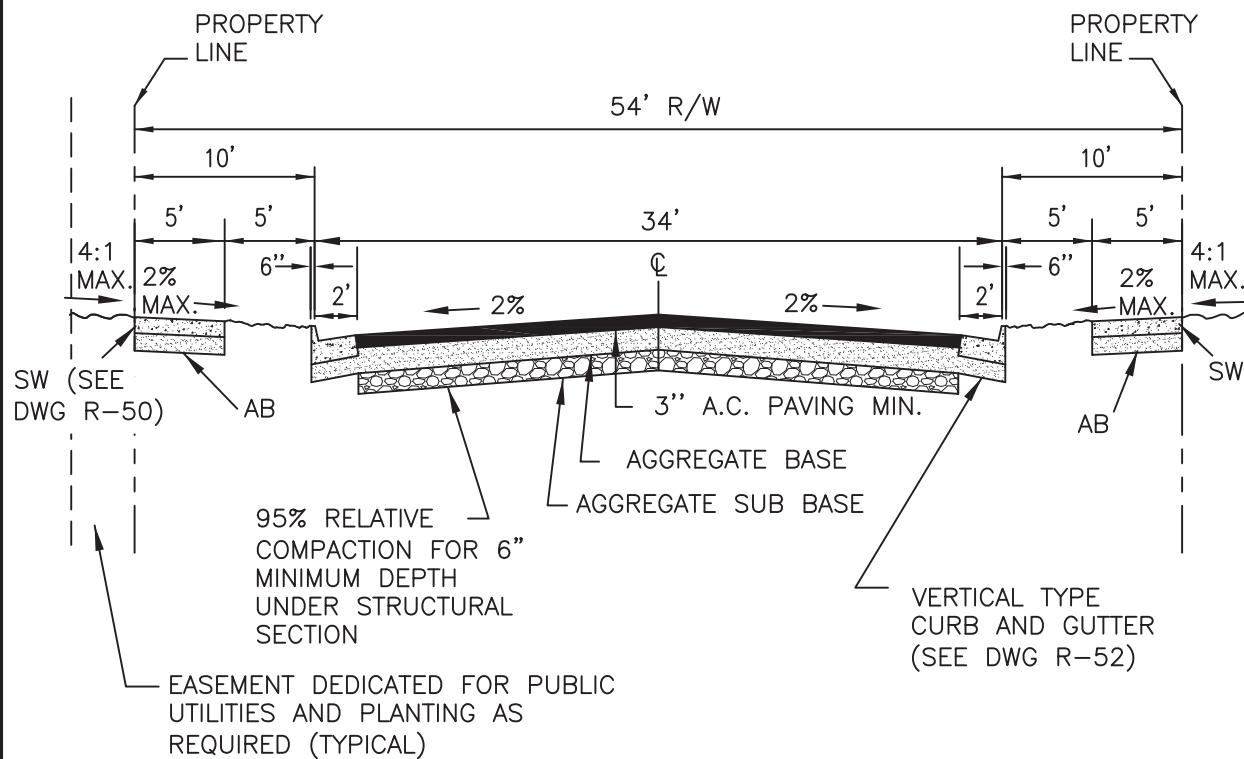
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IMPROVEMENT PLAN STANDARDS	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
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14. SLOPES IN THE INTERSECTIONS SHALL BE SHOWN IN BOTH PLAN AND PROFILE VIEW WITH SUFFICIENT DETAIL FOR THE CITY ENGINEER TO DETERMINE THE DRAINAGE CHARACTERISTICS OF THE INTERSECTION. EXISTING CONDITIONS SHALL BE SHOWN A MINIMUM OF 100'-0" OR AS DETERMINED BY THE CITY ENGINEER, BEYOND THE LIMITS OF CONSTRUCTION IN BOTH THE PLAN AND PROFILE VIEW. PAVEMENT PROFILES SHALL BE SHOWN IN THE PROFILE VIEW FOR INTERSECTIONS AND IN CUL-DE-SAC BULBS. EACH END OF CURB RETURN SHALL BE SHOWN WITH STATIONS AND ELEVATIONS IN THE PROFILE VIEW. WHERE THE CITY ENGINEER DEEMS IT APPROPRIATE, INTERSECTIONS SHALL BE DETAILED SEPARATELY.
15. PLAN FEATURES INCLUDING THE CENTERLINE, EDGE OF PAVEMENT, PROPOSED TOP OF CURB ELEVATIONS, AND EXISTING/PROPOSED CROSS SLOPES, SHALL BE SHOWN IN THE PLAN VIEW AT 50'-0" INTERVALS WHERE PROPOSED PROJECTS ABUT EXISTING STREETS.
16. ALL UNDERGROUND STRUCTURES SHALL BE STATIONED IN THE PROFILE VIEW. WHEN A NON-STANDARD STRUCTURE OR SITUATION IS PLANNED. DETAILS SHALL BE INCLUDED ON THE IMPROVEMENT PLANS AND SUPPORTING CALCULATIONS AND DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY ENGINEER.
17. LANDSCAPE PLANS SHALL BE INCORPORATED INTO IMPROVEMENT PLANS AND SUBMITTED ALONG WITH SUCH PLANS.
18. ALL STREET AND UTILITY PLANS SHALL SHOW EXISTING CITY STREET TREES AND ALL OAK TREES WITH A DIAMETER OF 6" OR GREATER AS MEASURED AT 2'-0" ABOVE EXISTING GRADE.

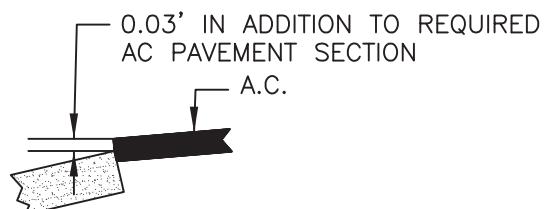
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NOTES:

1. AT A MINIMUM STREET STRUCTURAL SECTION SHALL BE DESIGNED TO CALTRANS STANDARDS.
2. STRUCTURAL SECTION DESIGN SHALL BE APPROVED BY THE CITY ENGINEER BASED UPON ENGINEERING ANALYSIS. THE ENGINEER SHALL SUBMIT CALCULATIONS.
3. LONGITUDINAL GUTTER SLOPE SHALL BE A MINIMUM OF 0.35%.
4. TILL THROUGH PARKWAY AREA PRIOR TO PLANTING.
5. INSTALL TWO 4" DIAMETER SCHEDULE 40 SLEEVES PER LOT (3 FOR CORNER LOT) WITH CAPS UNDER SIDEWALK ACROSS LOT FRONTAGE FOR FUTURE IRRIGATION.
6. REFER STANDARD DRAWING NO. R-14 FOR MINIMUM DESIGN TRAFFIC INDEX AND APPLICABLE AVERAGE DAILY TRAFFIC RANGE.
7. FIRE CODE REQUIRES AN UNOBSTRUCTED WIDTH OF 20 FT FOR FIRE ACCESS ON ALL PUBLIC AND PRIVATE STREETS. CURB TO CURB WIDTH SHOWN PROVIDES FOR THE FIRE CODE MINIMUM WIDTH AND TWO (2) SEVEN FOOT PARKING LANES. R/W AND ROADWAY WIDTH MAY BE REDUCED WITH THE ELIMINATION OF PARKING LANES, UPON APPROVAL OF THE CITY ENGINEER.
8. CONTRACTOR SHALL APPLY A FOG-SEAL TO NEW AC PAVEMENT WITHIN 24 HRS. PER SECTION 37-2 OF CALTRANS SPECIFICATIONS.



PAVING DETAIL  
AT LIP OF GUTTER

**LOCAL STREET  
LOW VOLUME RESIDENTIAL**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

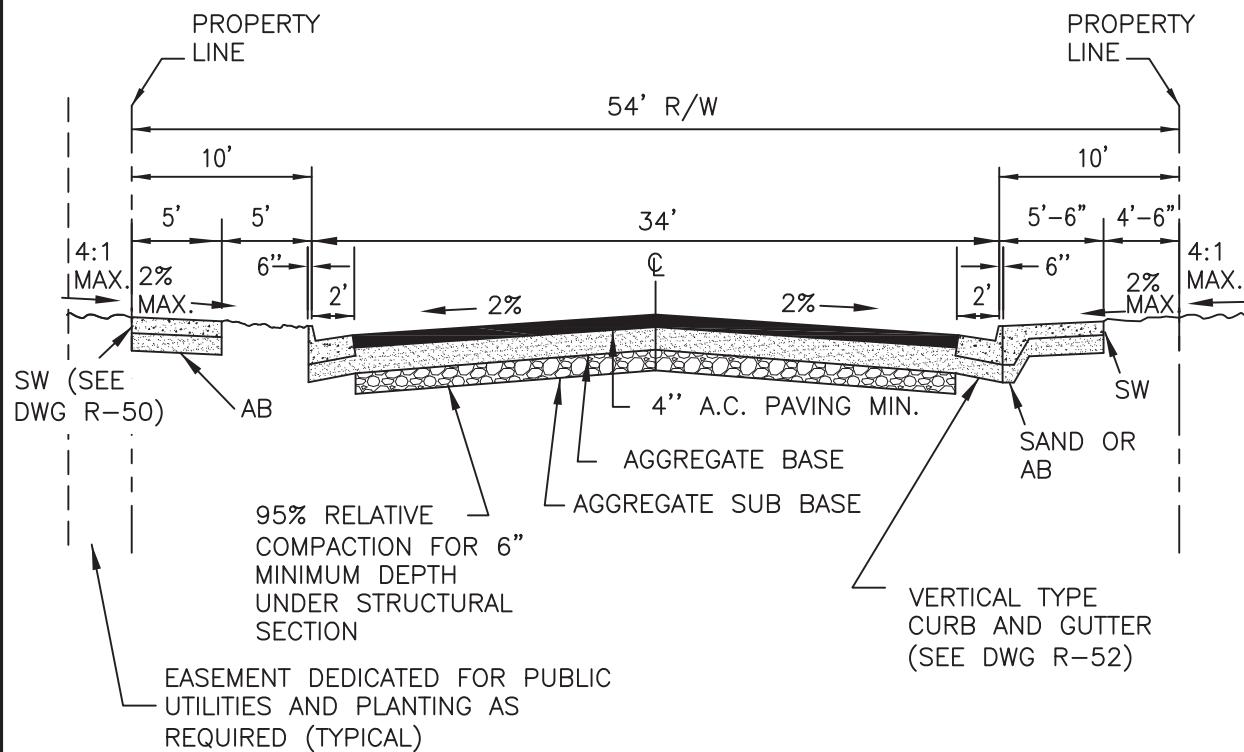
REVISION NO.  
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APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

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NONE

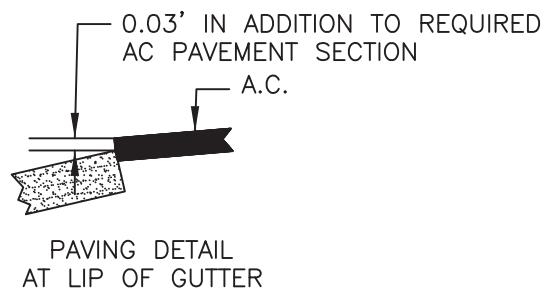
SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-4**



NOTES:

1. AT A MINIMUM STREET STRUCTURAL SECTION SHALL BE DESIGNED TO CALTRANS STANDARDS.
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5. INSTALL TWO 4" DIAMETER SCHEDULE 40 SLEEVES PER LOT (3 FOR CORNER LOT) WITH CAPS UNDER SIDEWALK ACROSS LOT FRONTAGE FOR FUTURE IRRIGATION.
6. REFER TO STANDARD DRAWING NO. R-14 FOR MINIMUM DESIGN TRAFFIC INDEX AND APPLICABLE AVERAGE DAILY TRAFFIC RANGE.
7. FIRE CODE REQUIRES AN UNOBSTRUCTED WIDTH OF 20 FT FOR FIRE ACCESS ON ALL PUBLIC AND PRIVATE STREETS. CURB TO CURB WIDTH SHOWN PROVIDES FOR THE FIRE CODE MINIMUM WIDTH AND TWO (2) SEVEN FOOT PARKING LANES. R/W AND ROADWAY WIDTH MAY BE REDUCED WITH THE ELIMINATION OF PARKING LANES, UPON APPROVAL OF THE CITY ENGINEER.
7. CONTRACTOR SHALL APPLY A FOG-SEAL TO NEW AC PAVEMENT WITHIN 24 HRS. PER SECTION 37-2 OF CALTRANS SPECIFICATIONS.



PAVING DETAIL  
AT LIP OF GUTTER

**LOCAL STREET COMMERCIAL**

REVISION NO.  
1

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

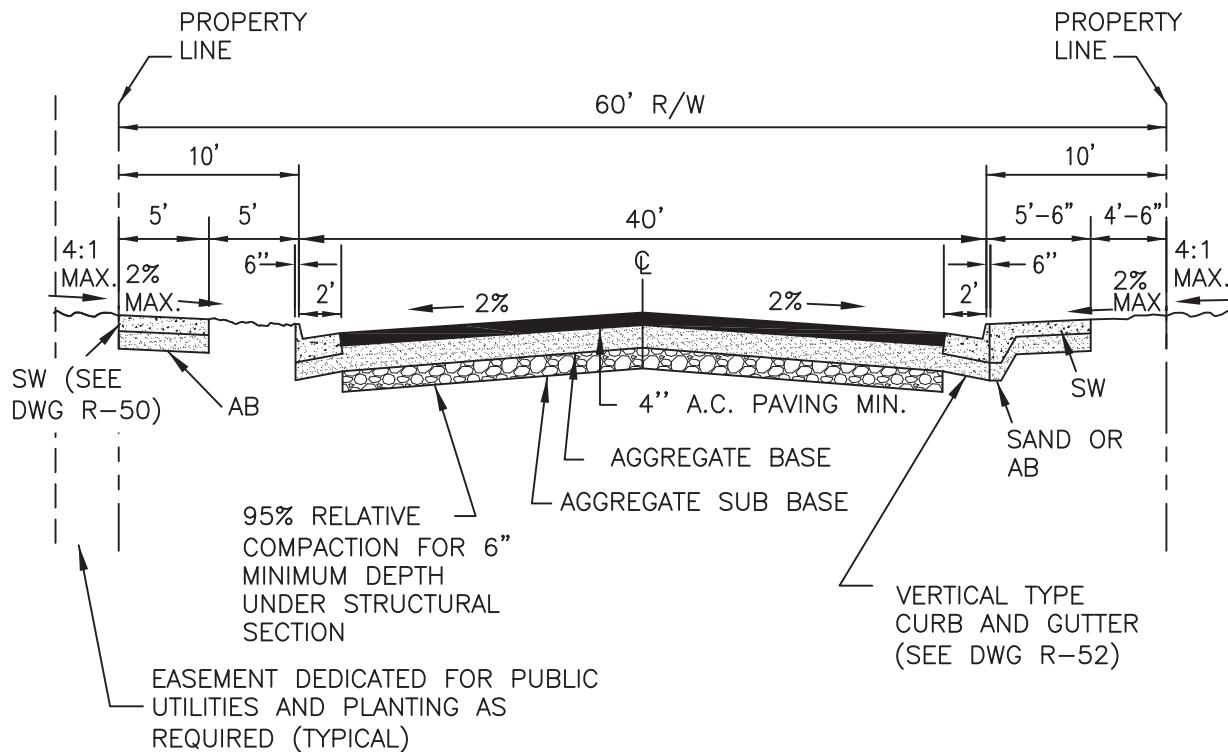


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

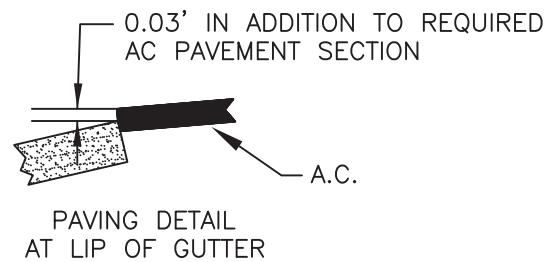
SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-5**



NOTES:

1. AT A MINIMUM STREET STRUCTURAL SECTION SHALL BE DESIGNED TO CALTRANS STANDARDS.
2. STRUCTURAL SECTION DESIGN SHALL BE APPROVED BY THE CITY ENGINEER BASED UPON ENGINEERING ANALYSIS. THE ENGINEER SHALL SUBMIT CALCULATIONS.
3. LONGITUDINAL GUTTER SLOPE SHALL BE A MINIMUM OF 0.35%.
4. TILL THROUGH PARKWAY AREA PRIOR TO PLANTING.
5. INSTALL TWO 4" DIAMETER SCHEDULE 40 SLEEVES PER LOT (3 FOR CORNER LOT) WITH CAPS UNDER SIDEWALK ACROSS LOT FRONTAGE FOR FUTURE IRRIGATION.
6. REFER TO STANDARD DRAWING NO. R-14 FOR MINIMUM DESIGN TRAFFIC INDEX AND APPLICABLE AVERAGE DAILY TRAFFIC RANGE.
7. CONTRACTOR SHALL APPLY A FOG-SEAL, TO NEW AC WITHIN 24 HRS. PER SECTION 37-2 OF CALTRANS SPECIFICATIONS.



**LOCAL STREET INDUSTRIAL**

REVISION NO.  
1

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

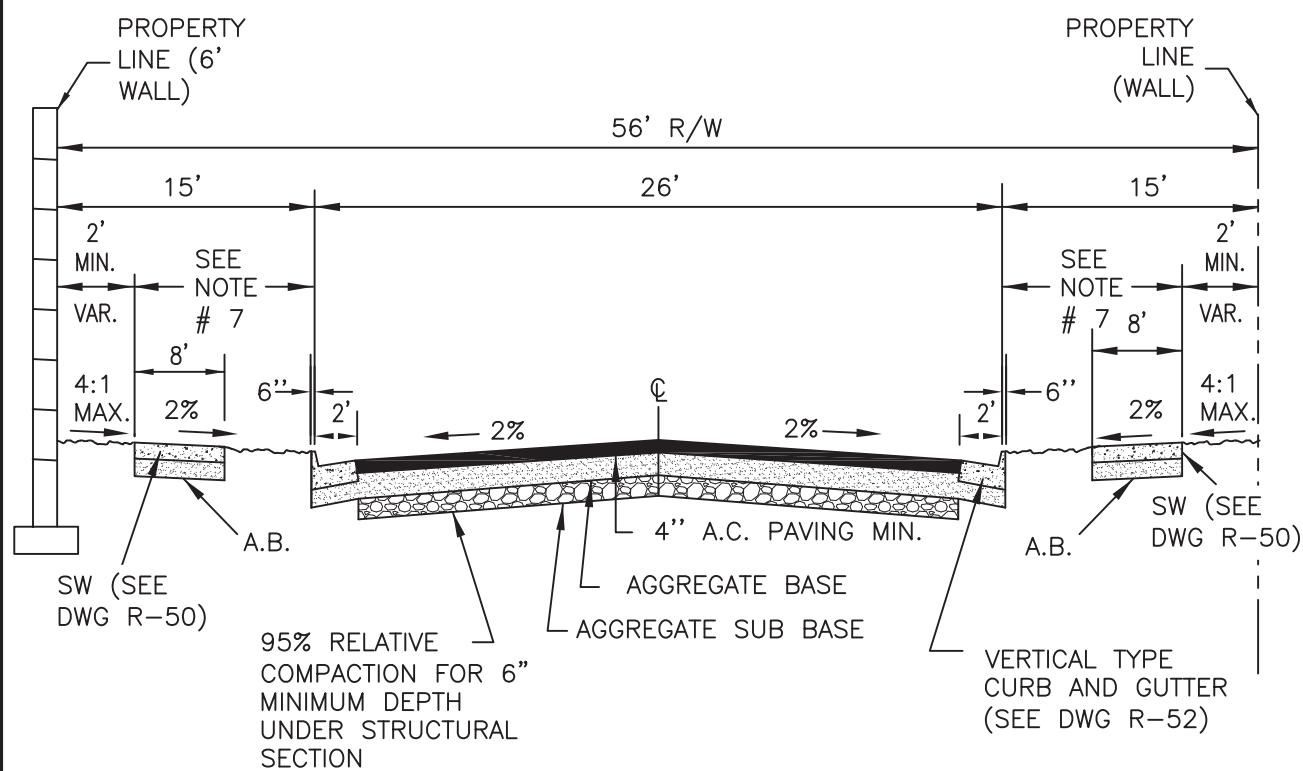


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

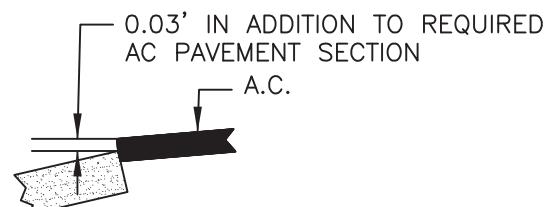
SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-6**



NOTES:

1. AT A MINIMUM STREET STRUCTURAL SECTION SHALL BE DESIGNED TO CALTRANS STANDARDS.
2. STRUCTURAL SECTION DESIGN SHALL BE APPROVED BY THE CITY ENGINEER BASED UPON ENGINEERING ANALYSIS. THE ENGINEER SHALL SUBMIT CALCULATIONS.
3. LONGITUDINAL GUTTER SLOPE SHALL BE A MINIMUM OF 0.35%.
4. TILL THROUGH PARKWAY AREA PRIOR TO PLANTING.
5. REFER TO STANDARD DRAWING NO. R-14 FOR MINIMUM DESIGN TRAFFIC INDEX AND APPLICABLE AVERAGE DAILY TRAFFIC RANGE.
6. ON-STREET PARKING IS PROHIBITED FOR THIS STREET TYPE.
7. MEANDERING SIDEWALK TO MAINTAIN 2'-0" MINIMUM FROM PROPERTY LINE.
8. CONTRACTOR SHALL APPLY A FOG-SEAL TO NEW AC PAVEMENT WITHIN 24 HRS. PER SECTION 37-2 OF CALTRANS SPECIFICATIONS.



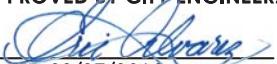
PAVING DETAIL  
AT LIP OF GUTTER

**COLLECTOR STREET  
BACK-UP RESIDENTIAL**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

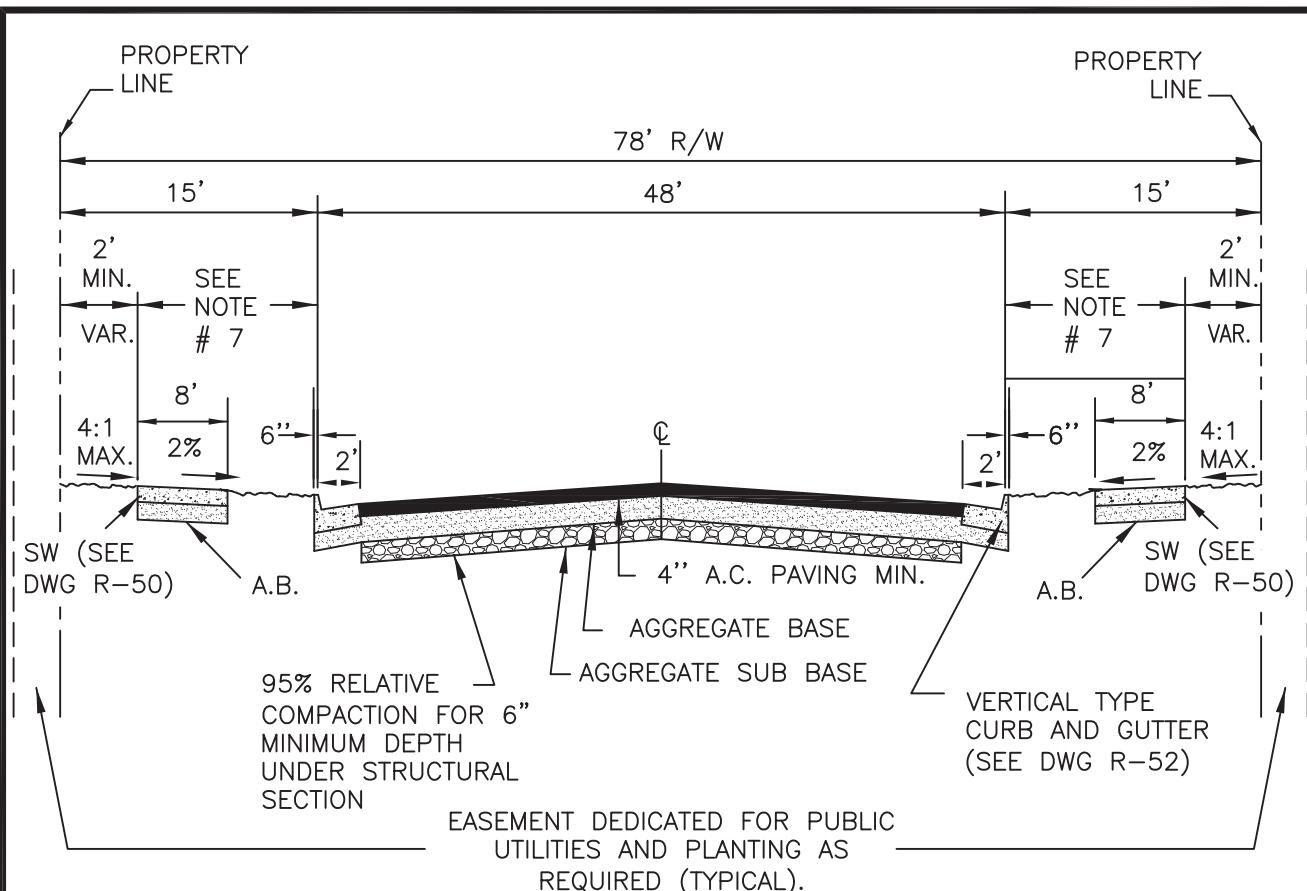
REVISION NO.  
1

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

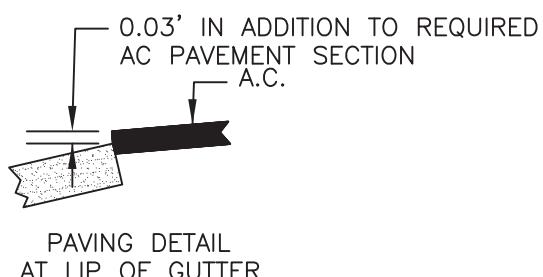
SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-7**



NOTES:

1. AT A MINIMUM STREET STRUCTURAL SECTION SHALL BE DESIGNED TO CALTRANS STANDARDS.
2. STRUCTURAL SECTION DESIGN SHALL BE APPROVED BY THE CITY ENGINEER BASED UPON ENGINEERING ANALYSIS. THE ENGINEER SHALL SUBMIT CALCULATIONS.
3. LONGITUDINAL GUTTER SLOPE SHALL BE A MINIMUM OF 0.35%.
4. TILL THROUGH PARKWAY AREA PRIOR TO PLANTING.
5. INSTALL TWO 4" DIAMETER SCHEDULE 40 SLEEVES PER LOT (3 FOR CORNER LOT) WITH CAPS UNDER SIDEWALK ACROSS LOT FRONTOAGE FOR FUTURE IRRIGATION.
6. REFER TO STANDARD DRAWING NO. R-14 FOR MINIMUM DESIGN TRAFFIC INDEX AND APPLICABLE AVERAGE DAILY TRAFFIC RANGE.
7. MEANDERING SIDEWALK MAINTAIN 2'-0" MINIMUM FROM PROPERTY LINE.
8. CONTRACTOR SHALL APPLY A FOG-SEAL, TO NEW AC WITHIN 24 HRS. PER SECTION 37-2 OF CALTRANS SPECIFICATIONS.



**COLLECTOR STREET  
NON-RESIDENTIAL**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

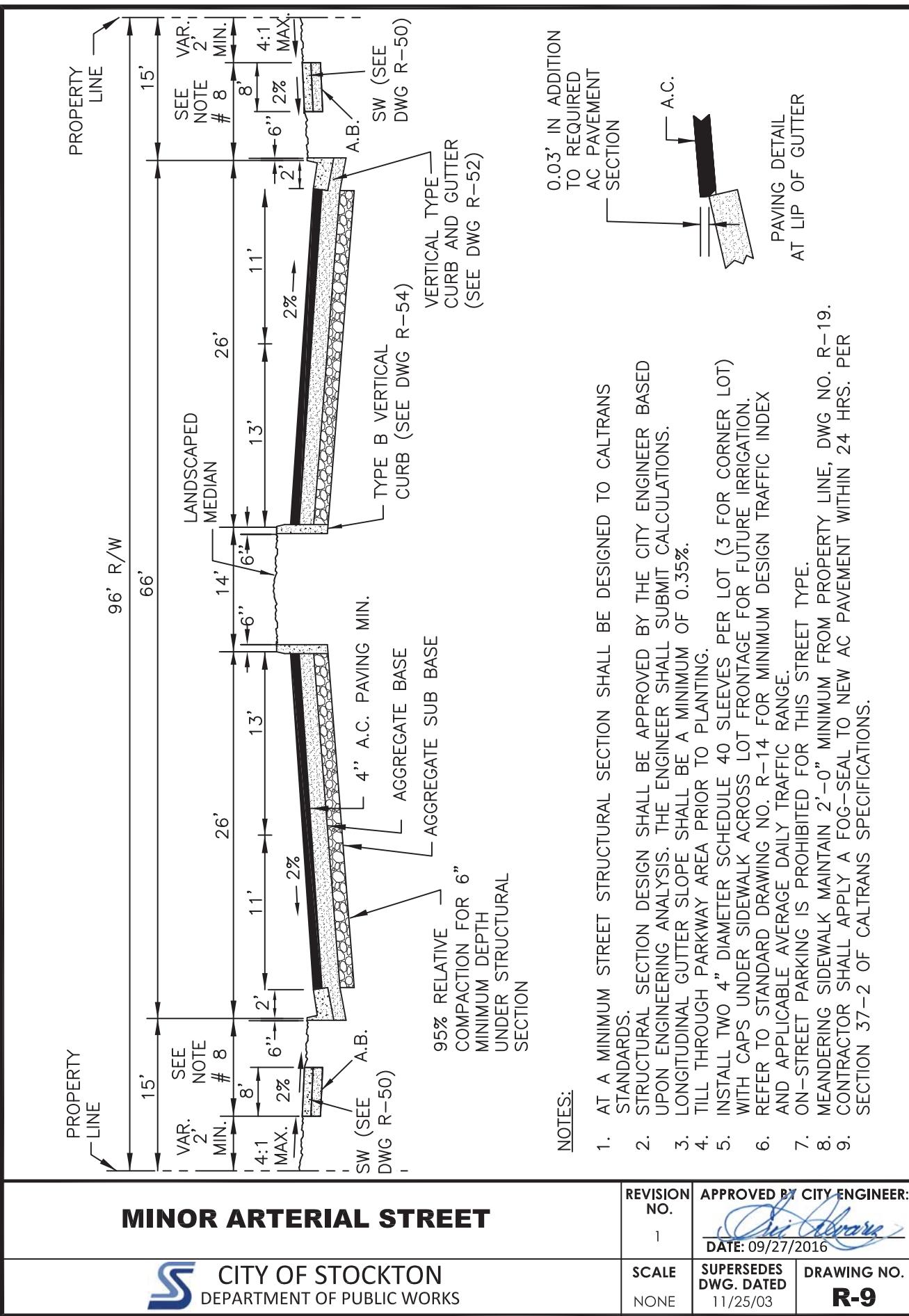
REVISION NO.  
1

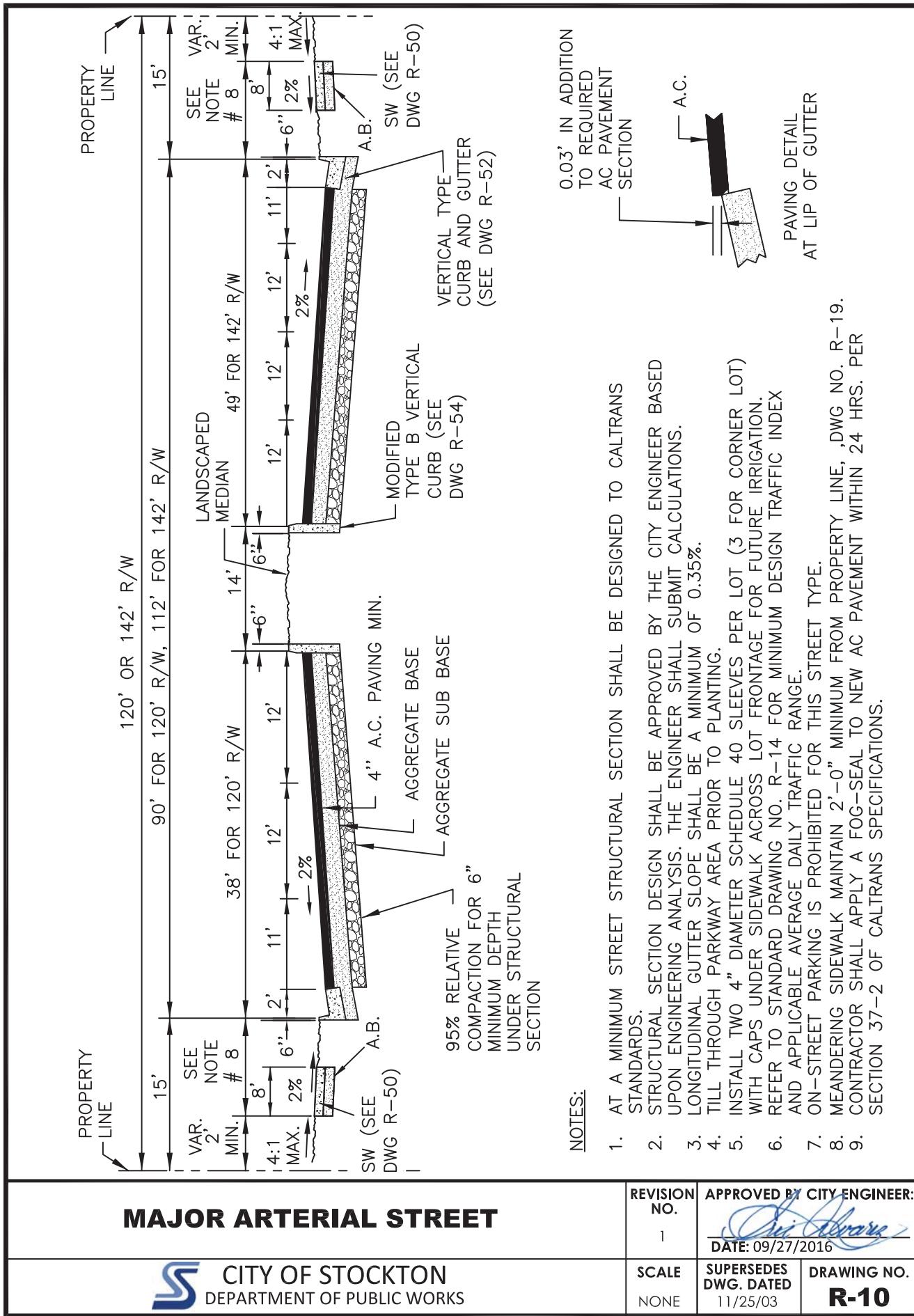
APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

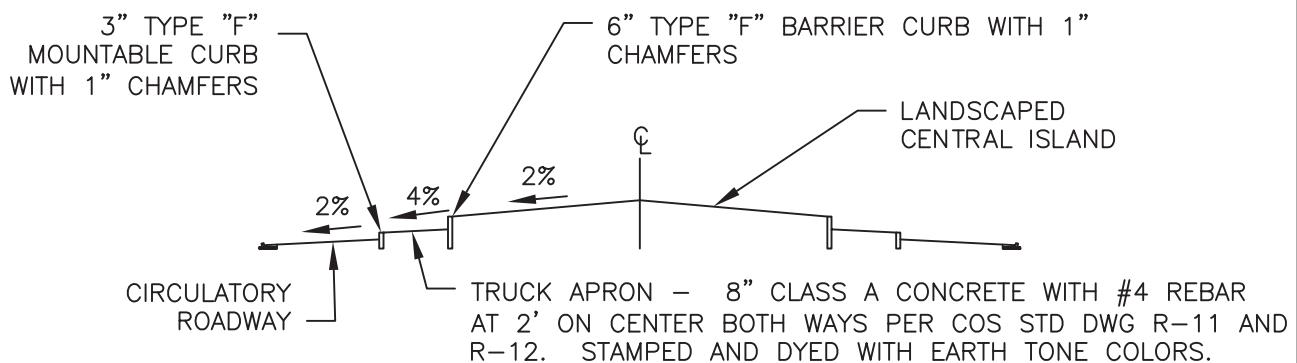
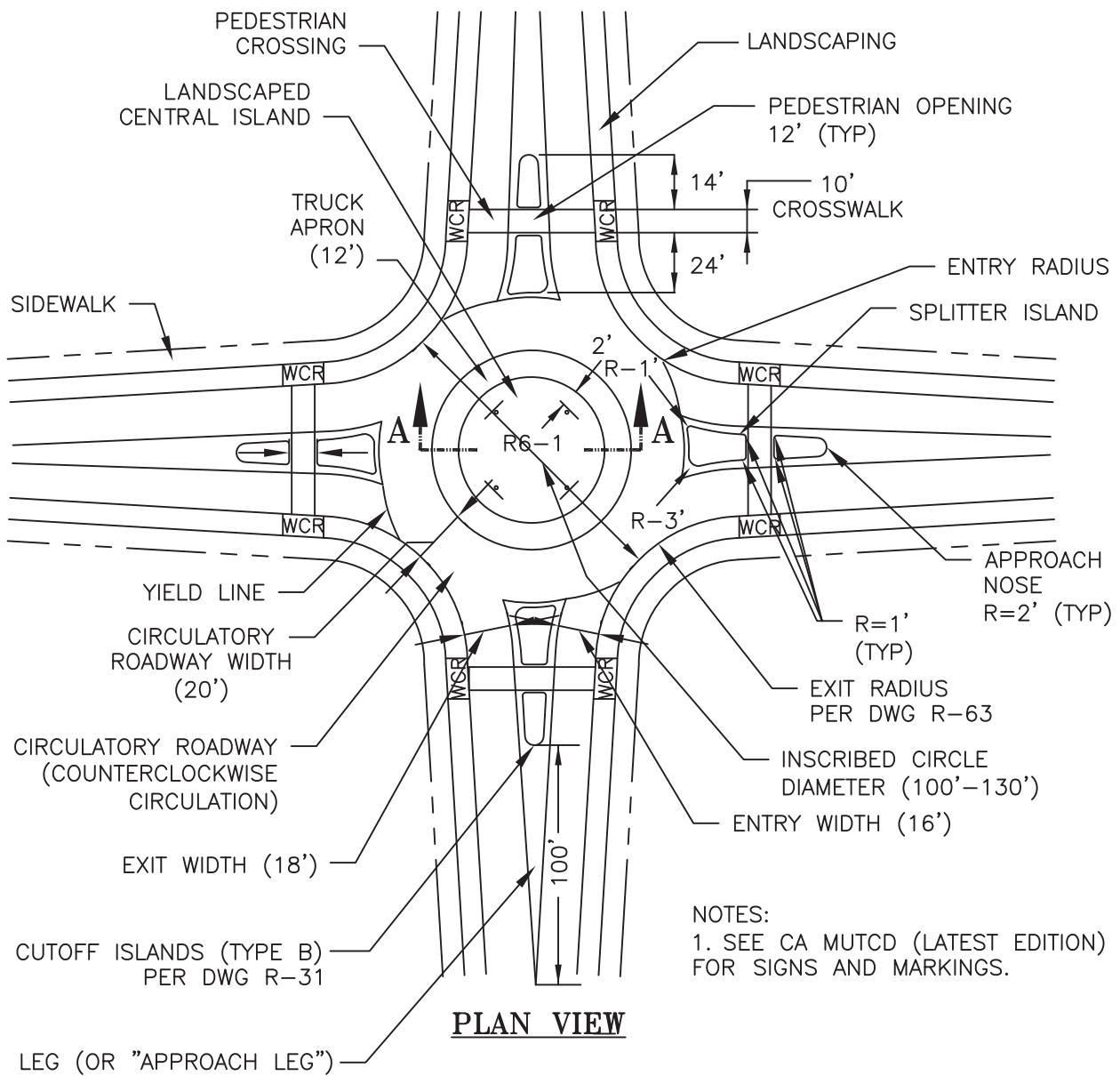
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-8**







**CROSS SECTION A-A**

**TYPICAL SINGLE ROUNDABOUT**

REVISION NO.  
1

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-11**

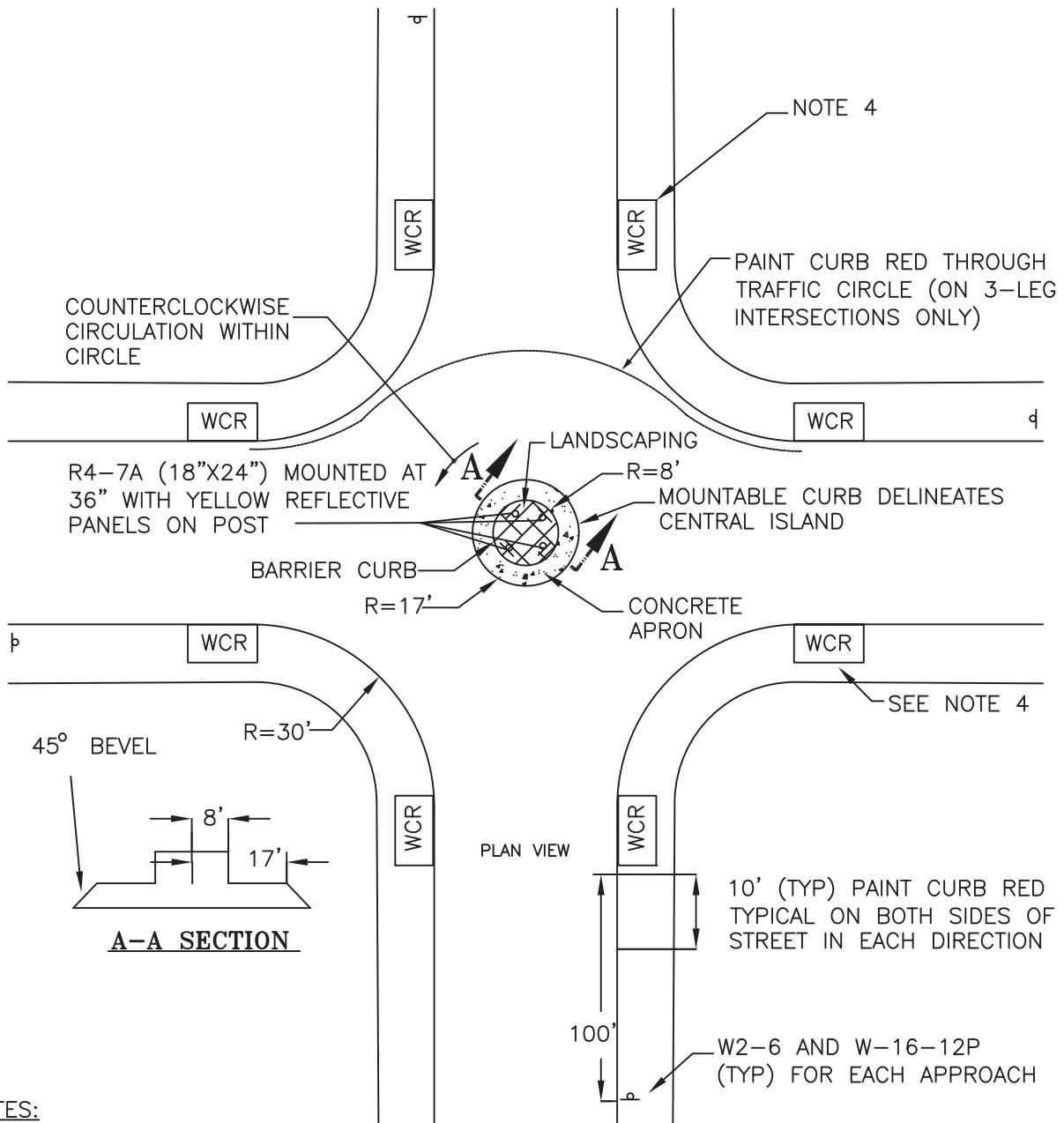
## DESIGN AND OPERATIONAL CHARACTERISTICS FOR TWO ROUNDABOUT CATEGORIES

DESIGN ELEMENT	URBAN SINGLE-LANE	URBAN DOUBLE-LANE
RECOMMENDED MAXIMUM ENTRY DESIGN SPEED (MILES/HOUR)	20	20
MAXIMUM NUMBER OF ENTERING LANES PER APPROACH	1	2
TYPICAL INSCRIBED CIRCLE DIAMETER (FEET) (1)	100–130	150–180
SPLITTER ISLAND TREATMENT	RAISED WITH CROSSWALK CUT	RAISED WITH CROSSWALK CUT
TYPICAL DAILY SERVICE VOLUMES ON 4-LEG ROUNDABOUT (VEHICLES/DAY)	20,000	VARIABLES (2)

NOTES:

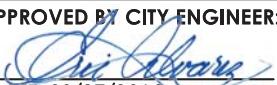
1. A ROUNDABOUT WILL BE REQUIRED WHERE TWO COLLECTOR STREETS INTERSECT AND THE ULTIMATE COMBINED ENTERING TRAFFIC VOLUMES EXCEED 2,000 VEHICLES DAILY. A TRAFFIC SIGNAL MAY BE REQUIRED IN LIEU OF A ROUNDABOUT AT THE DISCRETION OF THE PUBLIC WORKS DIRECTOR.
2. WHEN DESIGNING ROUNDABOUTS, REFER TO "ROUNDABOUT: AN INFORMATIONAL GUIDE," FHWA, LATEST EDITION.
3. DRAWING R-11 SHOWS TYPICAL DIMENSIONS TO ACCOMMODATE A WB-50 VEHICLE WITHIN A SINGLE LANE ROUNDABOUT.
4. ASSUME 90-DEGREE ENTRIES AND NO MORE THAN FOUR LEGS.
5. SIGNAGE SHALL CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
6. ROUNDABOUT DESIGN SHALL BE APPROVED BY THE CITY ENGINEER BASED ON ENGINEERING ANALYSIS.

<b>TYPICAL ROUNDABOUT TABLE</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>R-12</b>



NOTES:

- TRAFFIC CIRCLE SHALL BE USED FOR 34' WIDE STREETS ONLY. (NEW DEVELOPMENT)  
EXISTING RETROFITS SHALL BE DESIGNED ON A CASE BY CASE BASIS
- TRAFFIC CIRCLE SIGNAGE DESIGN SHALL BE APPROVED BY THE CITY ENGINEER BASED UPON ENGINEERING ANALYSIS.
- A TRAFFIC CIRCLE WILL BE REQUIRED WHERE TWO LOCAL STREETS INTERSECT AND THE ULTIMATE COMBINED ENTERING TRAFFIC EXCEEDS 1,000 VEHICLES DAILY OR THE UNIMPEDED DISTANCE ON ANY OF THE APPROACHES NOT SUBJECT TO STOP CONTROL EXCEEDS 600 FEET. THIS REQUIREMENT MAY BE WAIVED AT THE DISCRETION OF THE CITY ENGINEER.
- INSTALL WHEELCHAIR RAMPS PER DWG R-66.

TRAFFIC CIRCLE	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO. <b>R-13</b>	

ITEM	LOCAL STREET			COLLECTOR STREET		ARTERIAL STREET		
	LOW VOLUME RESIDENTIAL	MEDIUM VOLUME RESIDENTIAL	COMMERCIAL	INDUSTRIAL	BACK-UP RESIDENTIAL	NON RESIDENTIAL	MINOR ARTERIAL	MAJOR ARTERIAL
AVERAGE DAILY TRAFFIC (ADT)	0-750	750-1,500	< 5,000	< 5,000	1,500-5,000	< 13,000	< 25,000	> 25,000
NUMBER OF TRAVEL LANES	2	2	2	2	2	2	4	6-8
WIDTH, CURB-TO-CURB (FEET)	34	34	34	40	26	48	66	90-112
ON-STREET PARKING ALLOWED?	YES	YES	YES	YES	NO	YES	NO	NO
PARKING LANE WIDTH (FEET)	7	7	7	8	NONE	8	NONE	NONE
TRAVEL LANE WIDTH (FEET)	10	10	10	12	13	11	11-14	11-15
LEFT-TURN LANE WIDTH (FEET)	NONE	NONE	NONE	NONE	NONE	10	10-12	10-12
RAISED MEDIAN (14 FEET)?	NO	NO	NO	NO	NO	NO	YES	YES
BLOCK LENGTH (FEET)	600	800	800	800	1,000	1,000	1,300	1,300
MINIMUM SIDEWALK WIDTH (FEET)	4	4	4/4.5 (1)	4/4.5 (1)	8	8	8	8
SIDEWALK BICYCLE PATH REQUIRED?	NO	NO	NO	NO	YES	YES	YES (2)	YES (2)
LANDSCAPE STRIP REQUIRED?	YES	YES	OPTIONAL	OPTIONAL	YES	YES	YES	YES
LANDSCAPE STRIP WIDTH (FEET)	6	6	6	6	15 (3)	15 (3)	15 (3)	15 (3)
MINIMUM TRAFFIC INDEX (4)	5	5	6	7	6	5	7	7

NOTES:

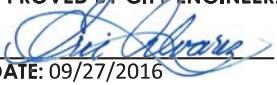
1. LOCAL STREET-COMMERCIAL AND LOCAL STREET INDUSTRIAL STREETS SHALL HAVE MINIMUM 5'-0" WIDE DETACHED SIDEWALKS.
2. BICYCLE LANES MAY BE REQUIRED ON ARTERIAL ROADWAYS IN LIEU OF SIDEWALK BICYCLE PATHS AT THE DISCRETION OF THE PUBLIC WORKS DIRECTOR.
3. LANDSCAPE STRIP WIDTHS FOR COLLECTOR AND ARTERIAL STREETS. INCLUDE PROVISION FOR SIDEWALK.
4. TRAFFIC INDEXES ARE MINIMUM. IF STREET IS A FEDERAL-AID URBAN STREET AND A DESIGNATED TRUCK ROUTE OR BUS ROUTE, TRAFFIC INDEX SHALL BE DETERMINED BY CITY ENGINEER.

## STREET REQUIREMENTS



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.  
1

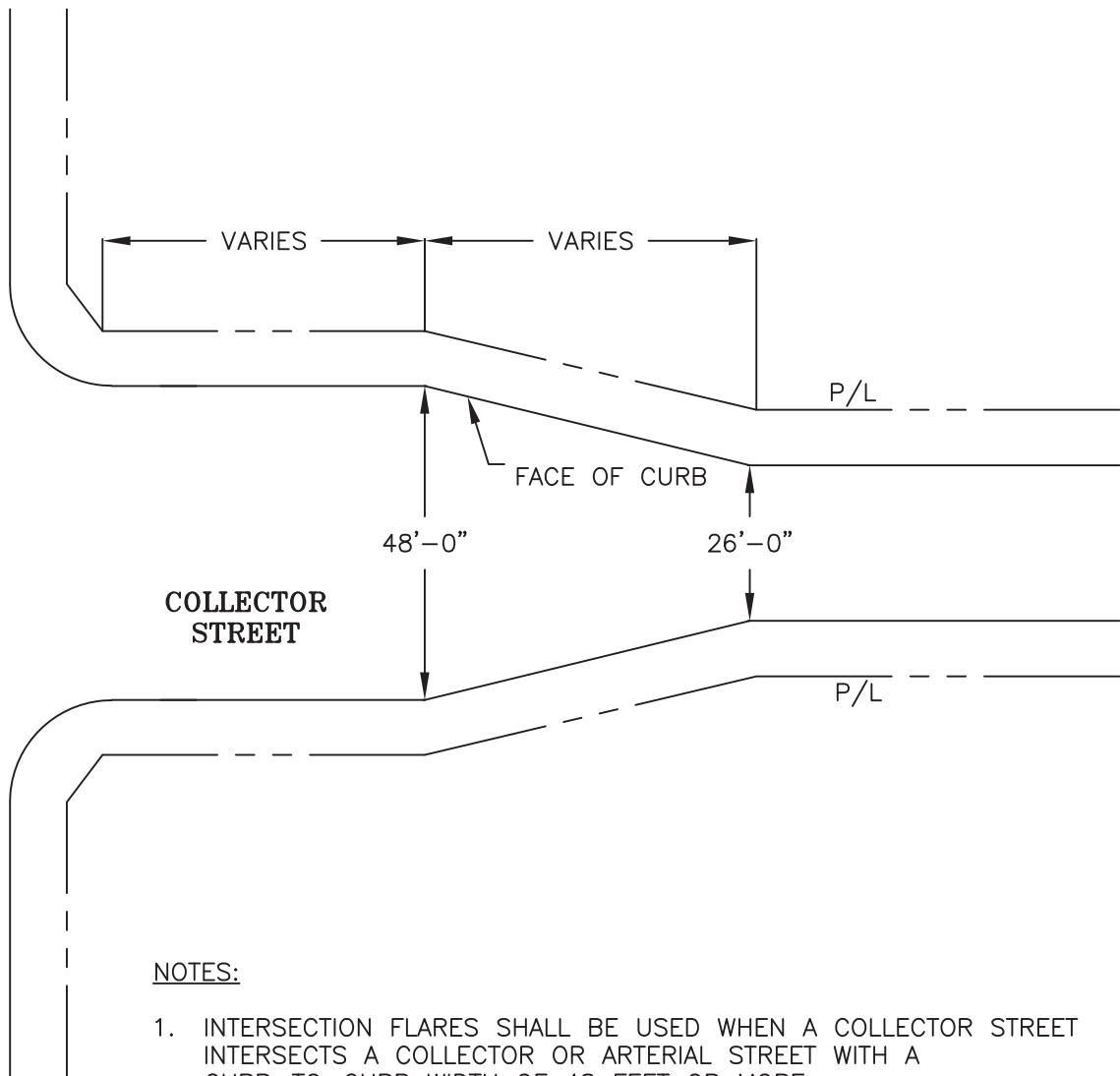
APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
ZONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-14**

COLLECTOR OR ARTERIAL STREET

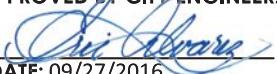


NOTES:

1. INTERSECTION FLARES SHALL BE USED WHEN A COLLECTOR STREET INTERSECTS A COLLECTOR OR ARTERIAL STREET WITH A CURB-TO-CURB WIDTH OF 48 FEET OR MORE.
2. INTERSECTION DESIGN SHALL BE APPROVED BY THE CITY ENGINEER.

**INTERSECTION DESIGN  
USE OF FLARES**

REVISION  
NO.  
1

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

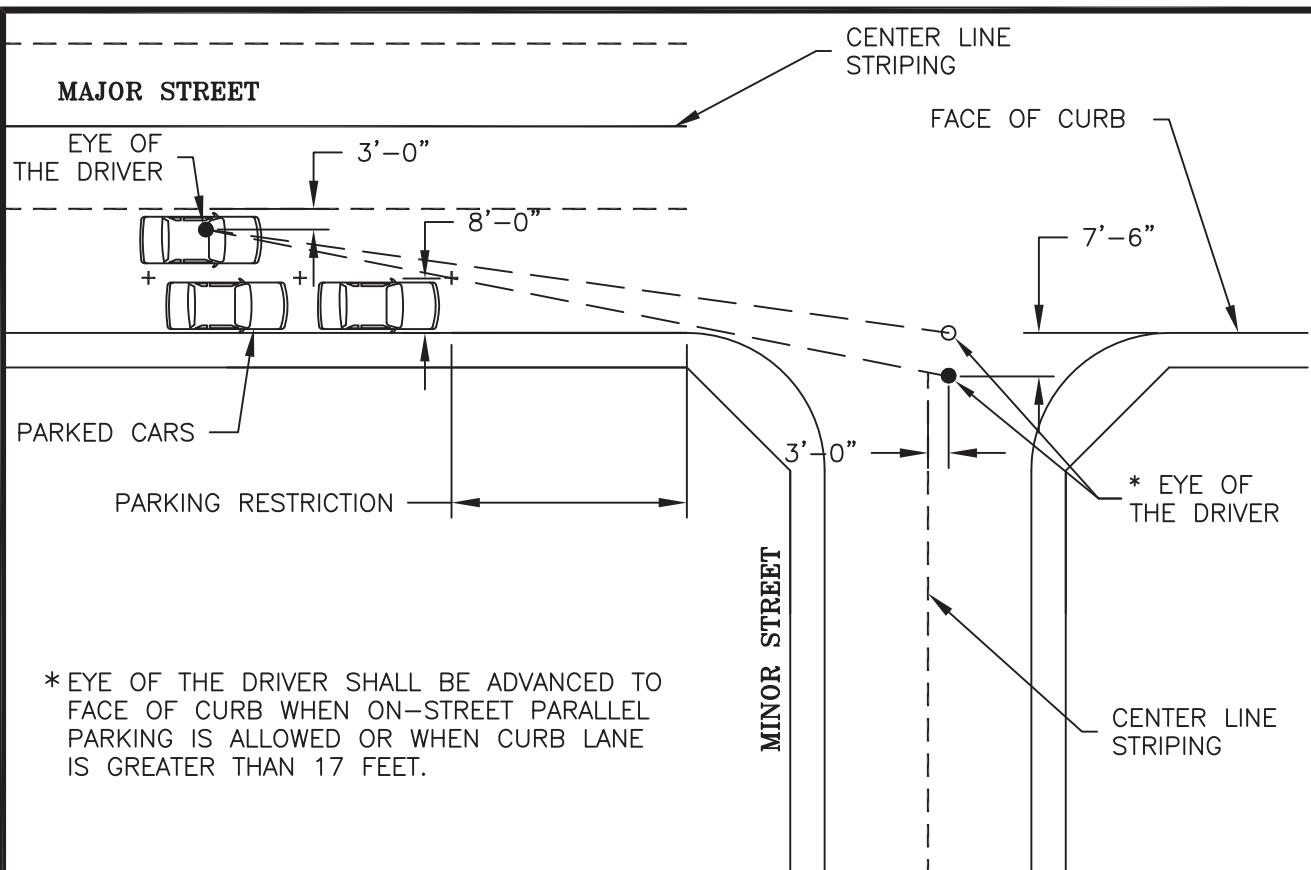


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

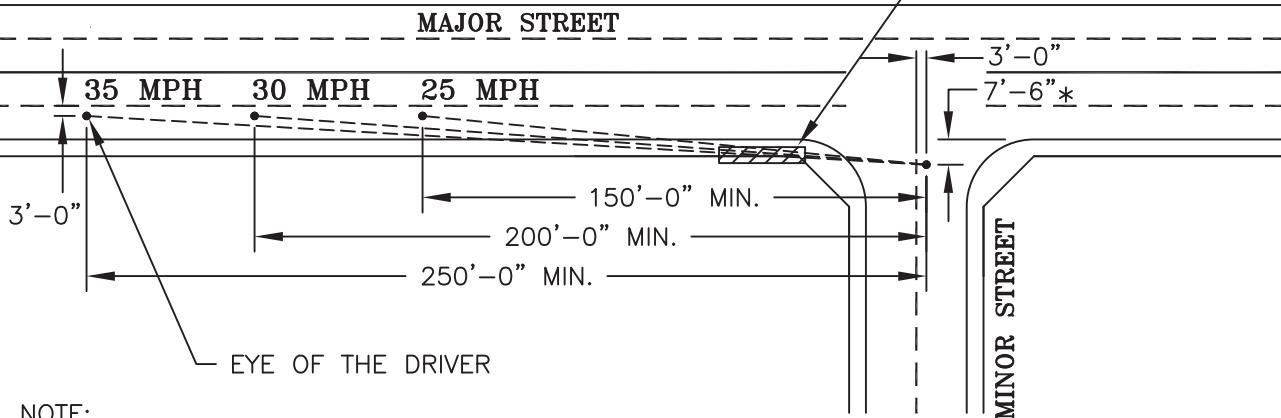
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-15**

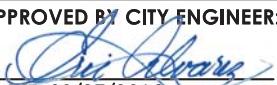


NO FIXED OBSTRUCTION GREATER THAN 3'-0" HIGH  
SHALL BE PLACED IN CONFLICT WITH THE LINE OF SIGHT AS DETERMINED BY THE CITY TRAFFIC ENGINEER.



1. FOR OTHER SPEEDS, REFER TO TABLE 1 ON DRAWING NO. R-16, PAGE 2.
2. REFER TO STOCKTON MUNICIPAL CODES FOR LANDSCAPING STANDARDS.

Page 1 of 2

<b>CORNER SIGHT DISTANCE</b>	REVISION NO.	APPROVED BY CITY ENGINEER:
	1	 DATE: 09/27/2016
<b>S</b> CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>R-16</b>	

## MINIMUM CORNER SIGHT DISTANCE FOR STOCKTON, CALIFORNIA

REFER TO CORNER SIGHT DISTANCE ON STANDARD DRAWING FOR SOUNDWALLS. THE MINIMUM VALUE SHALL BE THE STOPPING SIGHT DISTANCE GIVEN IN THE FOLLOWING TABLE. THIS TABLE IS FOR FLAT TERRAIN.

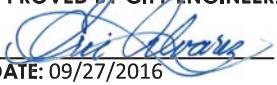
**TABLE 1:**

<u>DESIGN SPEED (MPH)</u>	<u>SIGHT STOPPING DISTANCE* (FEET)</u>
20 .....	125
25 .....	150
30 .....	200
35 .....	250
40 .....	300
45 .....	360
50 .....	430

THE STOPPING SIGHT DISTANCE GIVEN IN THE ABOVE TABLE IS MEASURED FROM A 3'-6" EYE HEIGHT ON THE MINOR ROAD TO A 4'-3" OBJECT HEIGHT ON THE MAJOR STREET. LOCATION OF THE DRIVER'S EYE IS 7'-6" BACK FROM THE FACE OF CURB (FRONT OF VEHICLE TO DRIVER) AND 3'-0" TO THE RIGHT OF THE NUMBER ONE LANE LINE. SEE DIAGRAM. LOCATION OF DRIVER'S EYE SHALL BE AT THE FACE OF CURB WHEN ON-STREET PARALLEL PARKING IS ALLOWED OR WHEN CURB LANE IS GREATER THAN 17 FEET.

\* A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AASHTO 1990 TABLE III-1 PAGE 120.

Page 2 of 2

<b>CORNER SIGHT DISTANCE</b>	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

## TRIP GENERATION FACTORS

THE FOLLOWING TRIP END FACTORS SHALL BE USED IN DETERMINING THE AVERAGE DAILY TRAFFIC INVOLVED IN STREET DESIGN.

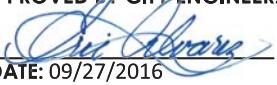
TRIP END: THE ORIGIN OR DESTINATION OF A TRIP. EACH TRIP HAS TWO ENDS. G.S.F.: GROSS SQUARE FEET OF FLOOR AREA.

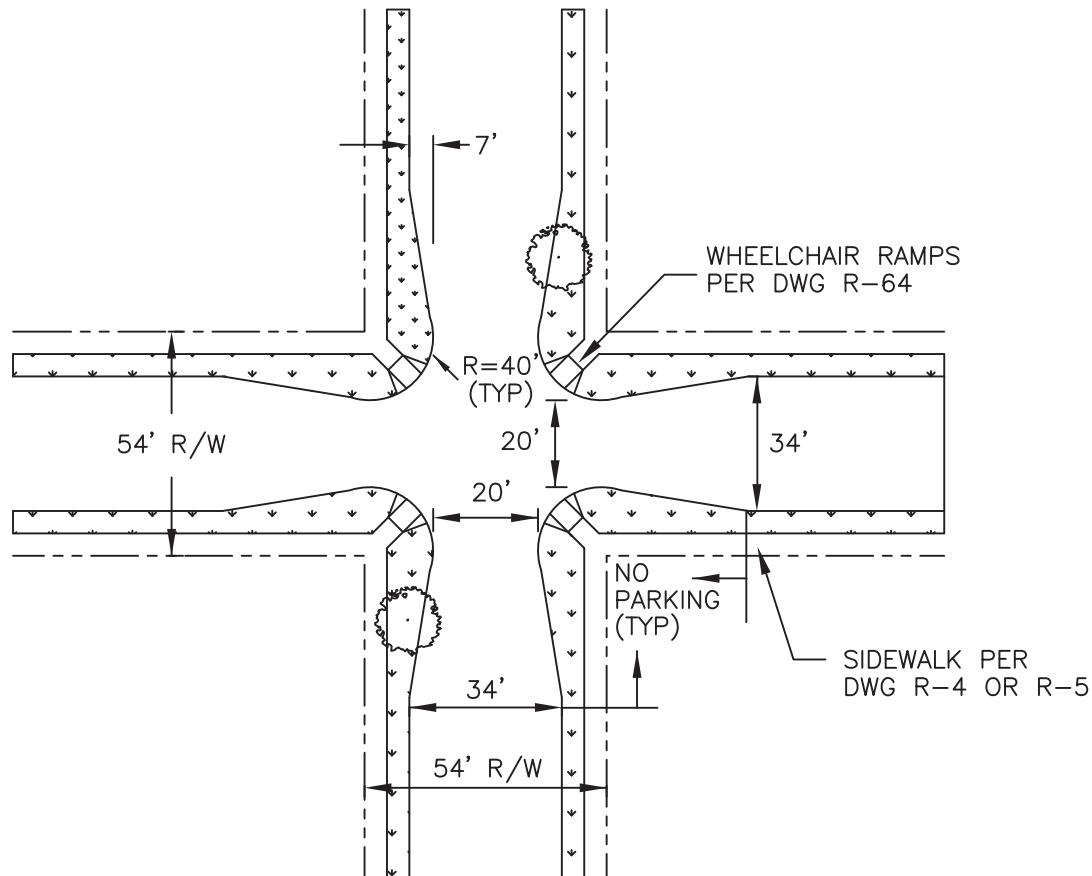
### AVERAGE WEEKDAY VEHICLE TRIP ENDS (TE)

SINGLE FAMILY .....	10 TE/DWELLING UNIT
APARTMENTS .....	6.1 TE/DWELLING UNIT
CONDOMINIUM/PURD .....	8.6 TE/DWELLING UNIT
MOBILE HOME .....	5.4 TE/DWELLING UNIT
RETIREMENT COMMUNITY .....	3.3 TE/DWELLING UNIT
HOTELS .....	11.0 TE/ROOM
MOTELS .....	9.6 TE/ROOM
CITY PARK .....	60 TE/ACRE OR 7.8 TE/PARKING SPACE
GENERAL OFFICE .....	17.7 TE/1000 G.S.F.
MEDICAL OFFICE .....	75 TE/1000 G.S.F.
FAST FOOD/DRIVE THRU .....	680 TE/1000 G.S.F.
FREE STANDING RETAIL .....	73.7 TE/1000 G.S.F.
SERVICE STATION .....	133 TE/PUMP OR 748 TE
SUPERMARKET .....	126 TE/1000 G.S.F.
CONVENIENCE MARKET w/GAS PUMPS .....	730 TE/1000 G.S.F.
CONVENIENCE MARKET .....	473 TE/1000 G.S.F.
INDUSTRIAL/INDUSTRIAL PARK .....	7.6 TE/1000 G.S.F.
INDUSTRIAL SERVICE .....	20.26 TE/1000 G.S.F.
DAY CARE/PRESCHOOL .....	79.0 TE/1000 G.S.F.
OFFICE PARK .....	20.7 TE/1000 G.S.F.
SHOPPING CENTER .....	SEE (ITE) TRIP GENERATION REPORT

FOR LAND USES AND/OR DEVELOPMENTS NOT SHOWN ABOVE, CONTACT THE CITY TRAFFIC ENGINEER.

SOURCE: "TRIP GENERATION" AN INFORMATIONAL REPORT, INSTITUTE OF TRANSPORTATION ENGINEERS (9TH EDITION) PERIODIC UPDATE, AND OTHER TRIP GENERATION PUBLICATIONS.

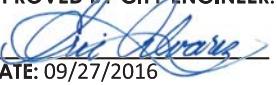
TRIP GENERATION FACTORS	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-17</b>



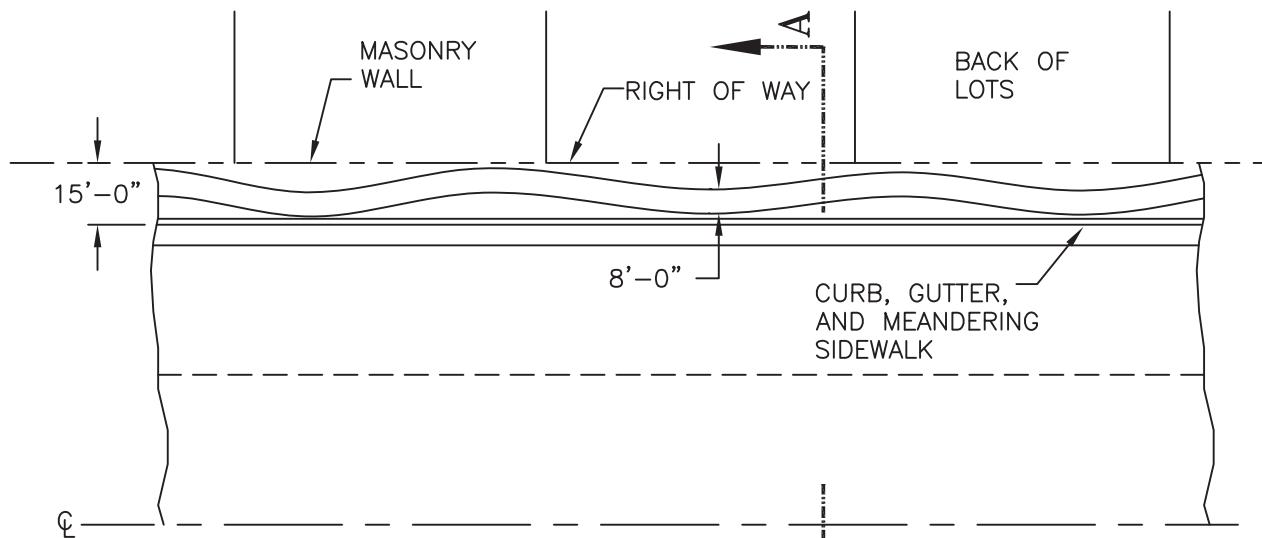
### INTERSECTION WITH CURB EXTENSIONS

#### NOTES:

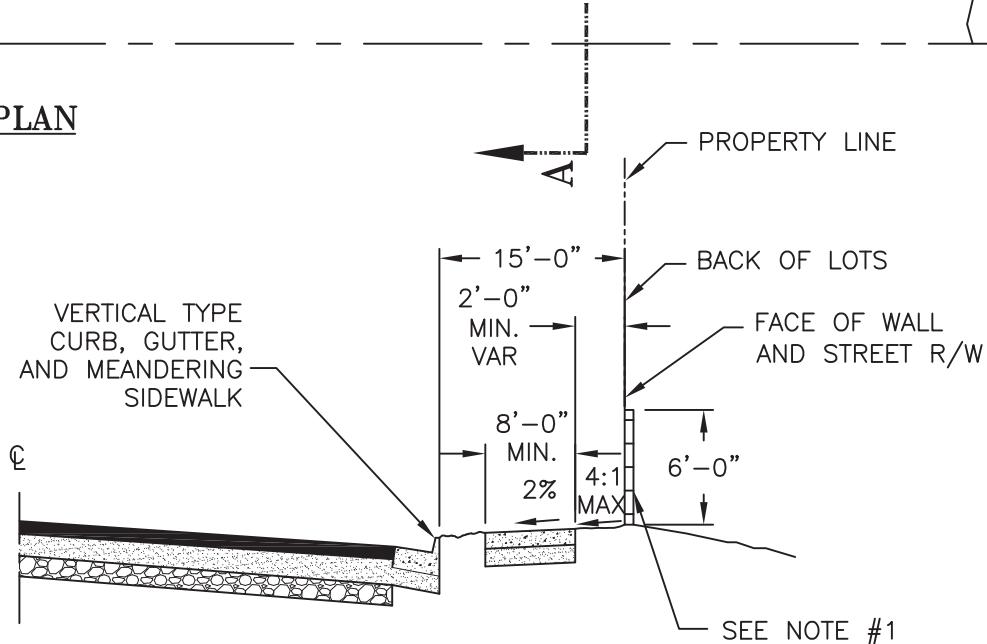
1. CURB EXTENSIONS (BULB-OUTS) MAY BE INSTALLED TO REDUCE PEDESTRIAN CROSSING DISTANCES AT INTERSECTIONS, SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
2. CURB EXTENSIONS SHALL NOT IMPEDE THE MOVEMENT OF EMERGENCY VEHICLES OR GARBAGE TRUCKS. AN ENGINEERING ANALYSIS OF VEHICLE TURNING MOVEMENTS SHALL BE PREPARED.
3. WHERE A LOCAL STREET INTERSECTS A COLLECTOR OR ARTERIAL STREET, THE DESIGN AND PLACEMENT OF CURB EXTENSIONS SHALL NOT RESULT IN SIGNIFICANT IMPACTS TO TRAFFIC CIRCULATION ON THE COLLECTOR OR ARTERIAL STREET, AS DETERMINED BY THE CITY ENGINEER.
4. CURB EXTENSIONS SHALL NOT REDUCE THE EFFECTIVE WIDTH OF A LOCAL STREET TO LESS THAN 20 FEET AT ANY POINT.
5. INTERSECTION DESIGN SHALL BE APPROVED BY THE CITY ENGINEER.
6. CURB EXTENSIONS SHALL BE ALLOWED ON STREETS WITH MEDIANS.
7. THERE SHALL BE NO DRIVEWAYS WITHIN THE EXTENSION AREA.

<b>LOCAL STREET RESIDENTIAL INTERSECTION CURB EXTENSIONS</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>R-18</b>

# SUBDIVISION



## PLAN



## SECTION A-A

### NOTE:

1. MASONRY WALL TO RESTRICT ACCESS TO LOTS ADJACENT TO STREET RIGHT-OF-WAY AND PUBLIC OPEN SPACE SHALL BE CONSTRUCTED BY DEVELOPER/OWNER IN ACCORDANCE WITH CITY REQUIREMENTS AND SUBJECT TO THE APPROVAL OF THE CITY ENGINEER. PLANS TO PROVIDE ELEVATION AT BOTTOM OF WALL AND BACK OF WALK.

<b>IMPROVEMENTS FOR BACKUP LOTS AND COMMERCIAL DEVELOPMENTS</b>	REVISION NO. 8	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



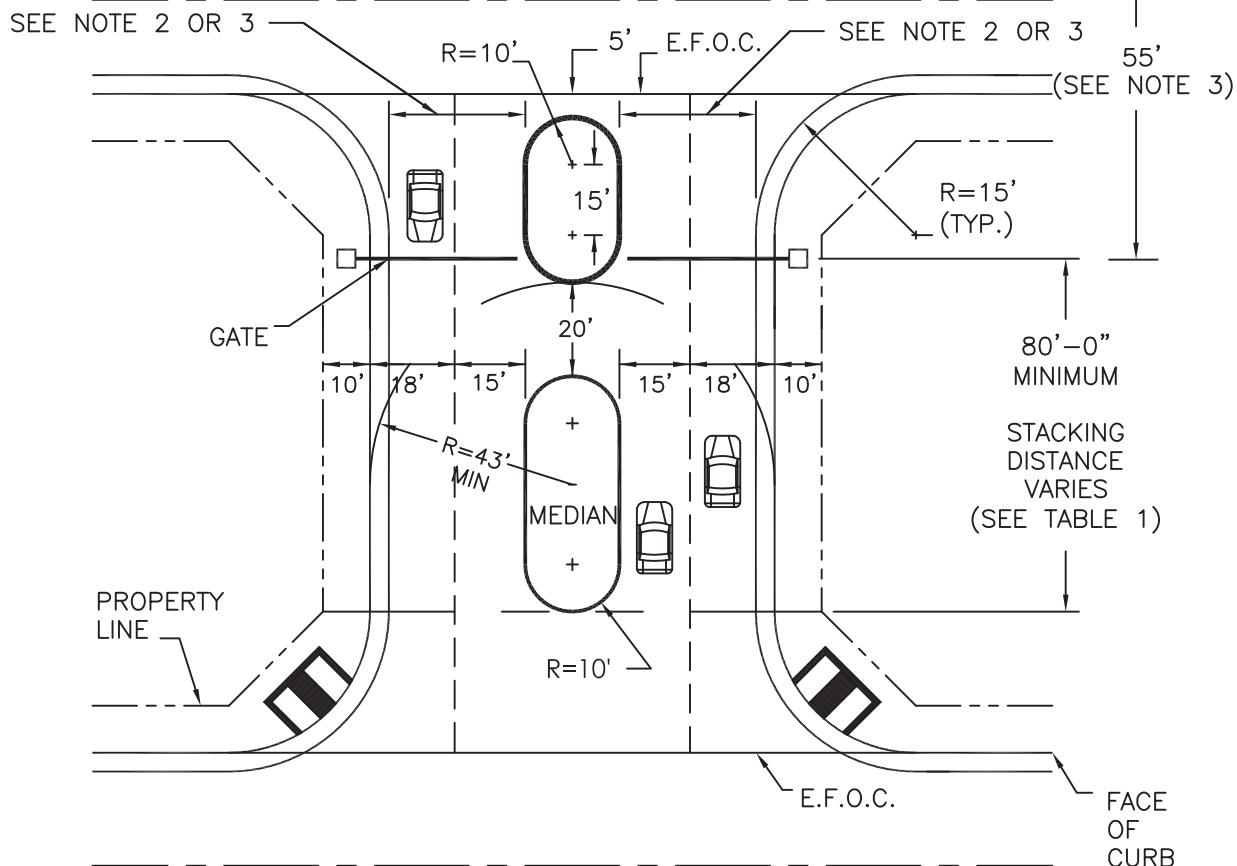
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-19**

## PRIVATE ROADWAY



## PUBLIC ROADWAY

TABLE 1

PROPERTY LINE

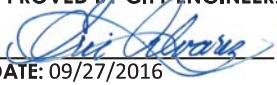
# RESIDENTIAL UNITS	MINIMUM STACKING DISTANCE (FT.)
UP TO 80	80
80 AND UP TO 100	100
100 AND UP TO 120	120
120 AND UP TO 140	140
140 AND ABOVE	150

NOTES:

1. E.F.O.C. = EXTENSION FACE OF CURB
2. GATE WIDTH MAY BE REDUCED TO 20'-0" WITH CITY ENGINEER APPROVAL.
3. GATE WIDTH MAY BE REDUCED TO 16'-0" PROVIDED THAT 55'-0" OF CLEARANCE IS MAINTAINED BETWEEN THE GATE AND THE OPPOSITE FACE OF CURB.

### GATED RESIDENTIAL ENTRANCE

REVISION NO.  
5

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

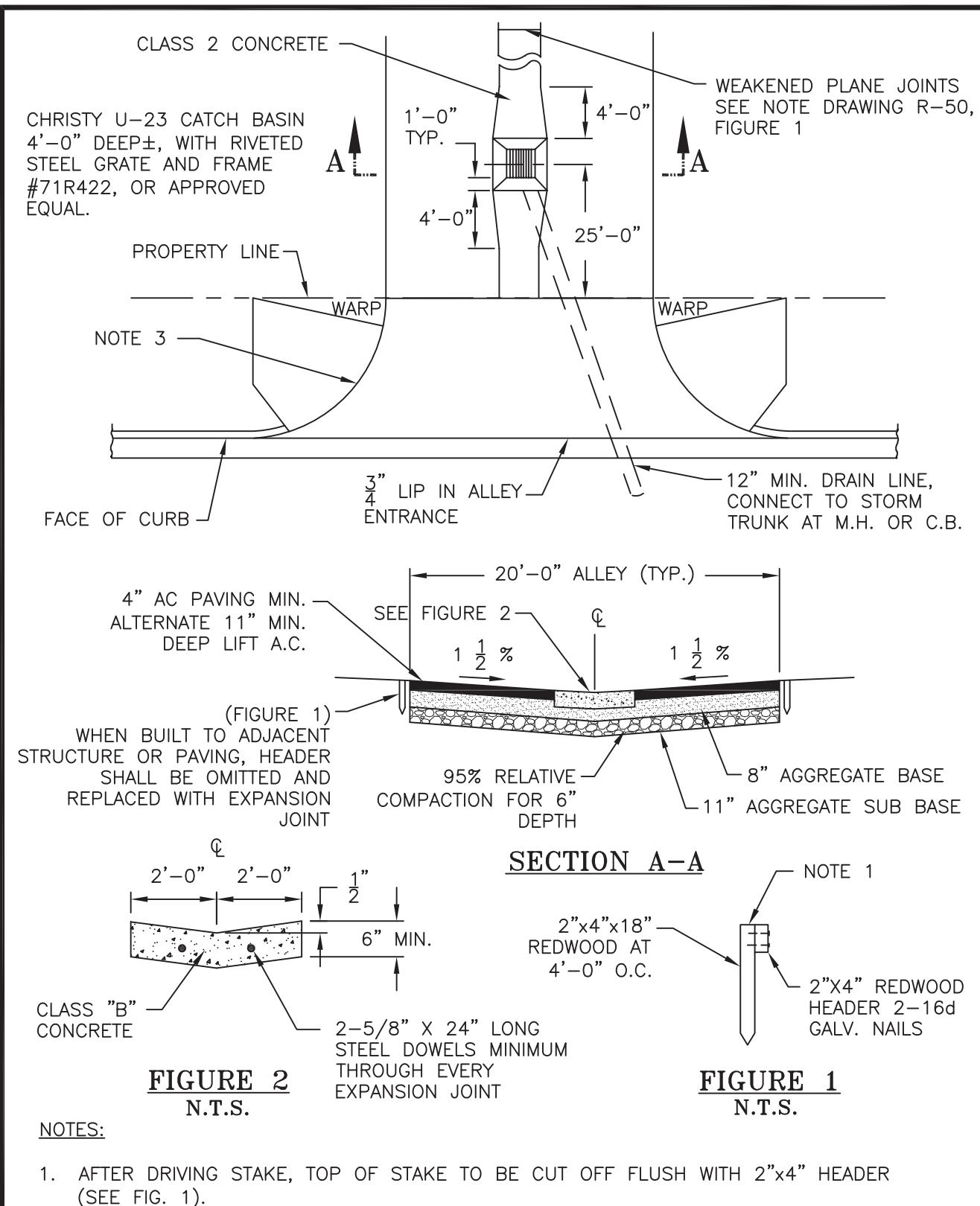


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-20**



<b>TYPICAL ALLEY CONSTRUCTION</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

	W=54'	W=60'
$\Delta_2$	9° 21' 57"	10° 14' 12"
R <sub>2</sub>	15'	15'
R <sub>3</sub>	R <sub>4</sub> + 10'	R <sub>4</sub> + 10'
X	58.65'	61.64'
R <sub>5</sub>	90'	90'

#### CURVE DATA

$\Delta_1$  = VARIABLE

$$\Delta_2 = \tan^{-1}\left(\frac{W+7}{50}\right) - \tan^{-1}\left(\frac{W}{X}\right) \text{ (FOR } W=54'\text{)}$$

$$= \tan^{-1}\left(\frac{W+10}{50}\right) - \tan^{-1}\left(\frac{W}{X}\right) \text{ (FOR } W=60'\text{)}$$

$$\Delta_3 = \Delta_1 + 2\Delta_2$$

$$R_4 = W$$

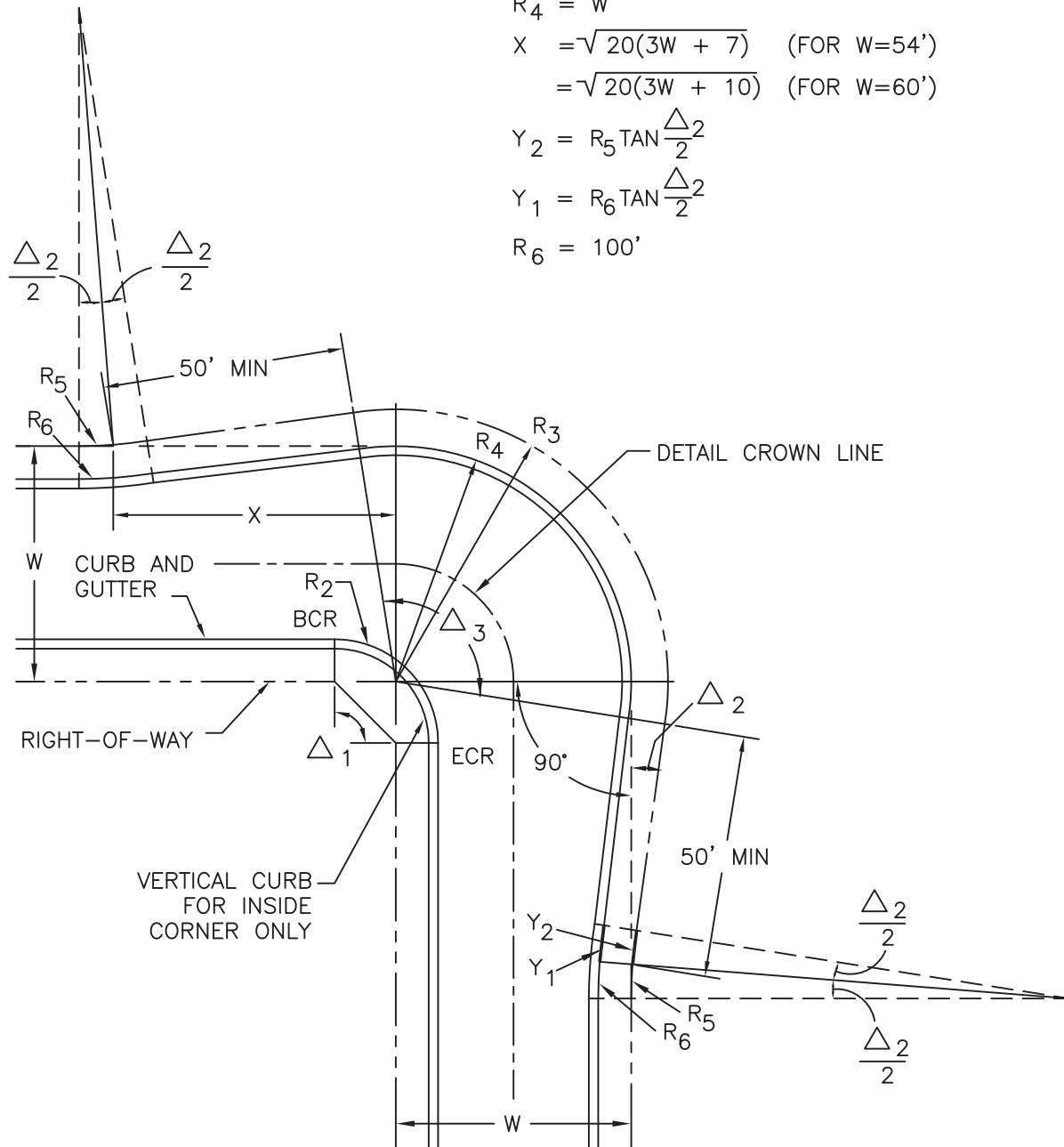
$$X = \sqrt{20(3W + 7)} \text{ (FOR } W=54'\text{)}$$

$$= \sqrt{20(3W + 10)} \text{ (FOR } W=60'\text{)}$$

$$Y_2 = R_5 \tan \frac{\Delta_2}{2}$$

$$Y_1 = R_6 \tan \frac{\Delta_2}{2}$$

$$R_6 = 100'$$



#### ALIGNMENT FOR 90° STREET INTERSECTION KNUCKLE

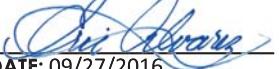


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.

3

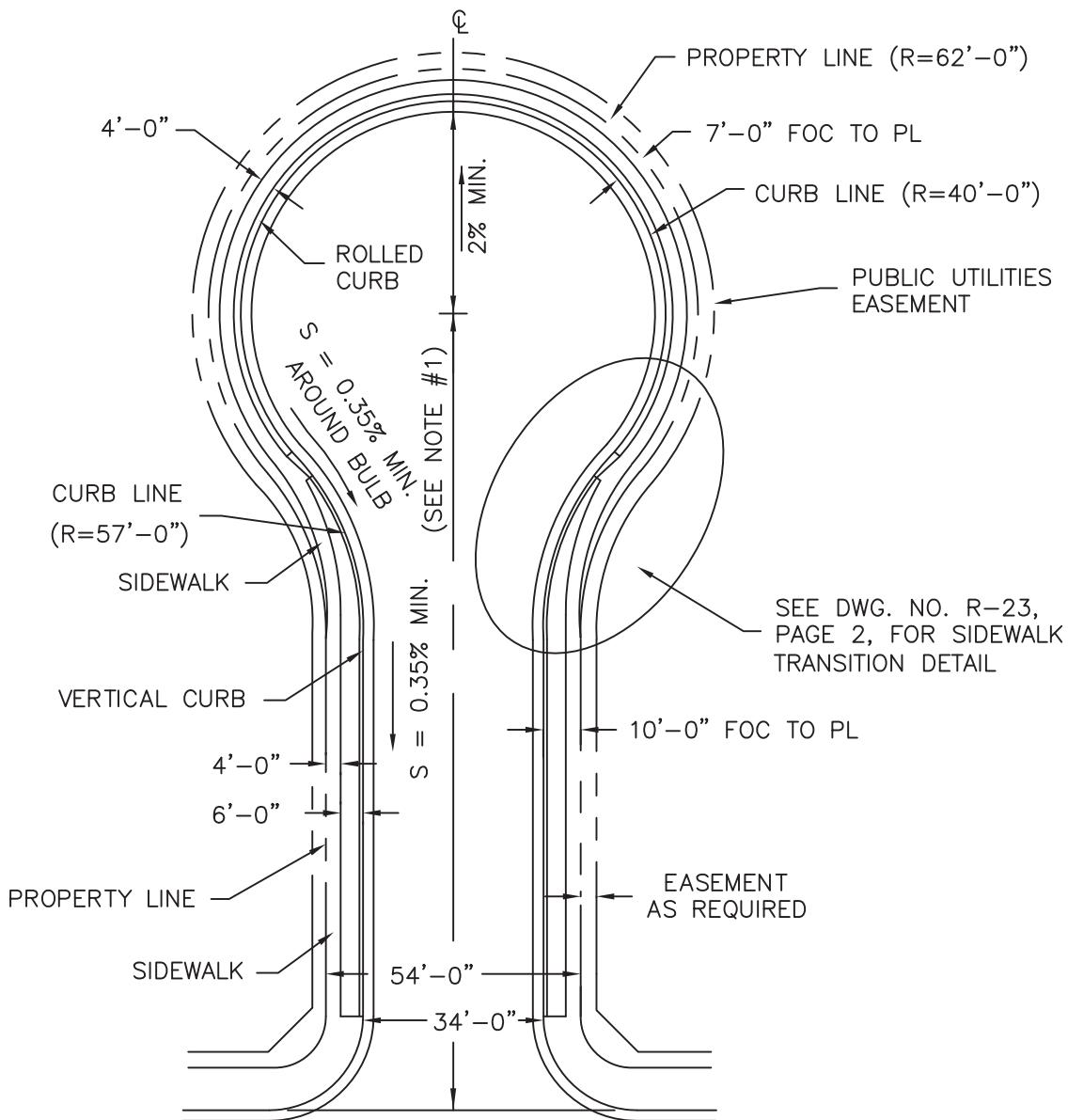
APPROVED BY CITY ENGINEER:

  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

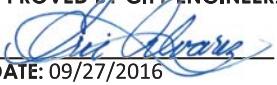
DRAWING NO.  
**R-22**

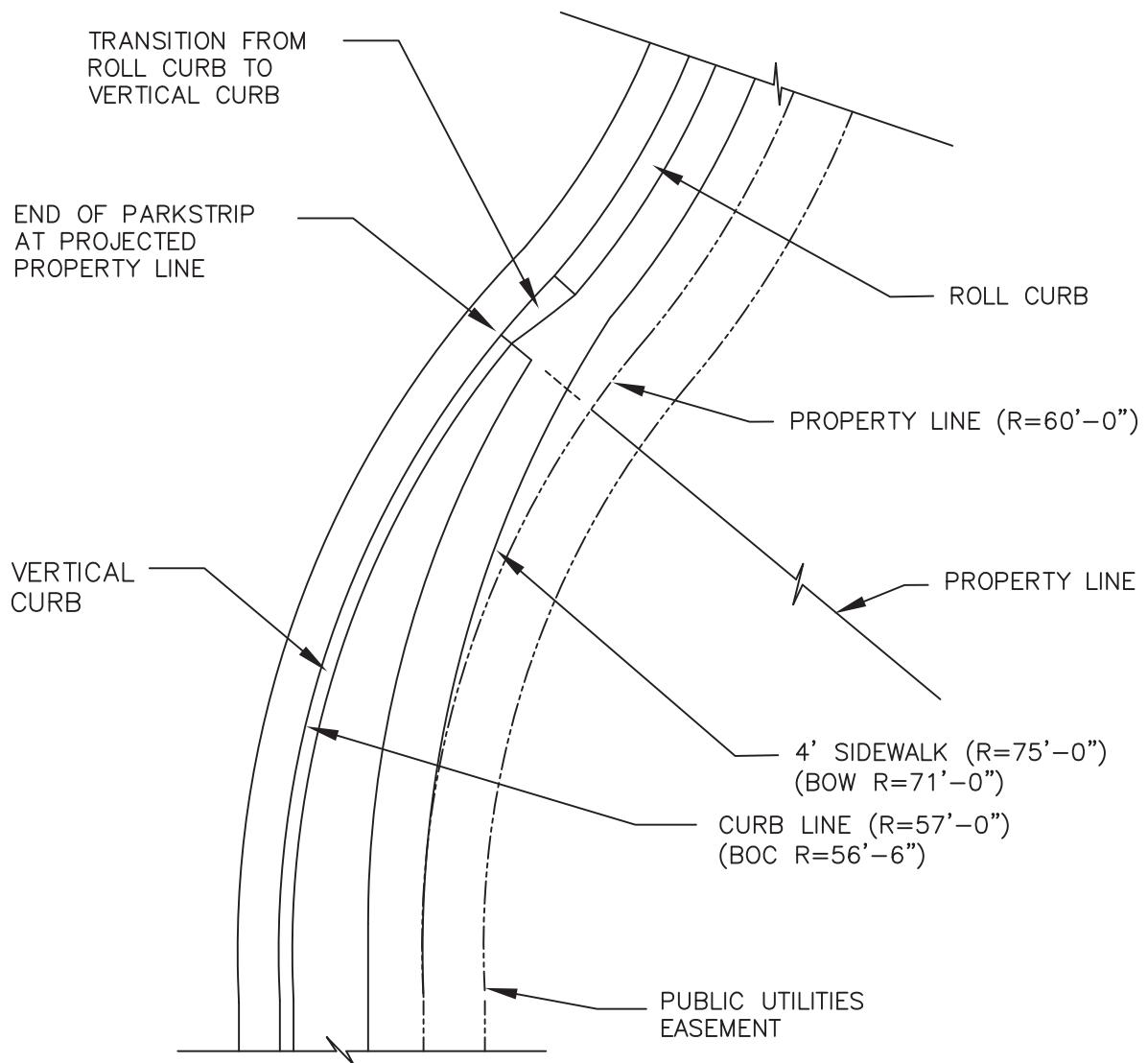


NOTES:

1. THE MAXIMUM LENGTH OF CUL-DE-SACS SHALL BE 500'-0" FROM FACE OF CURB TO THE CENTER OF BULB. ONLY IN INDUSTRIALLY ZONED AREAS MAY THE LENGTH BE INCREASED TO A MAXIMUM OF 1000'-0", PROVIDED THE FOLLOWING CRITERIA ARE MET:
  - A) STREET RIGHT-OF-WAY OF 60'-0" WITH 40'-0" BETWEEN CURBS.
  - B) TURN-AROUND CURB RADIUS OF 53'-0".
  - C) EMERGENCY ACCESS TO ANOTHER PUBLIC STREET MAY BE REQUIRED BY THE FIRE MARSHAL.
2. GUTTER SLOPE AROUND BULBS SHALL BE 0.35% MINIMUM.
3. BULBS MAY BE OFFSET TO EITHER SIDE.
4. A 10'-0" EASEMENT IS REQUIRED FOR PUBLIC UTILITIES AND STREET TREE PLANTING.
5. WATER MAINS MAY BE REQUIRED TO BE "LOOLED" BY THE CITY ENGINEER. SEE NOTE 2, DWG W-1.

Page 1 of 2

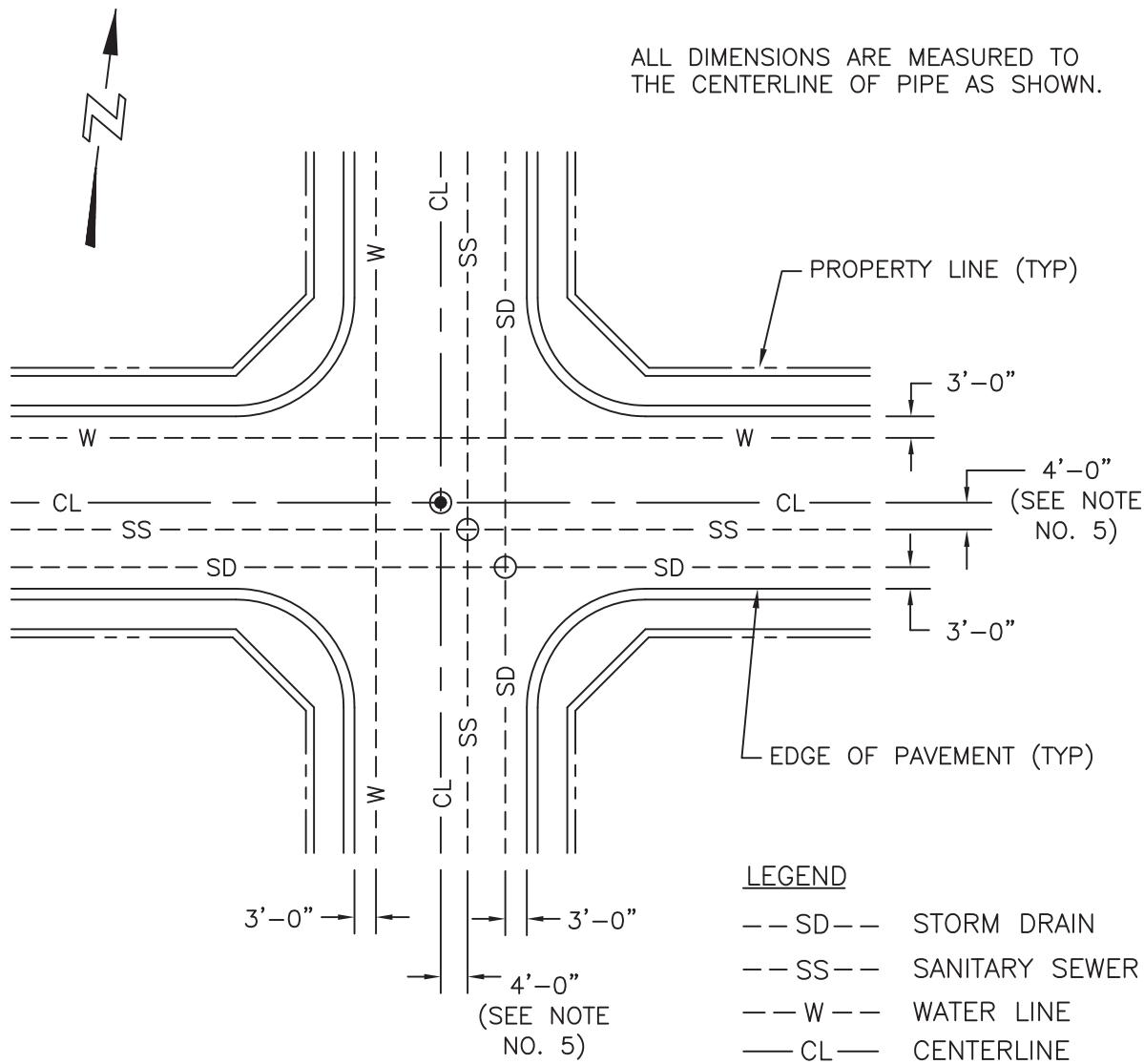
MINIMUM STANDARD CUL-DE-SAC	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
DRAWING NO. <b>R-23</b>		



### SIDEWALK TRANSITION DETAIL

Page 2 of 2

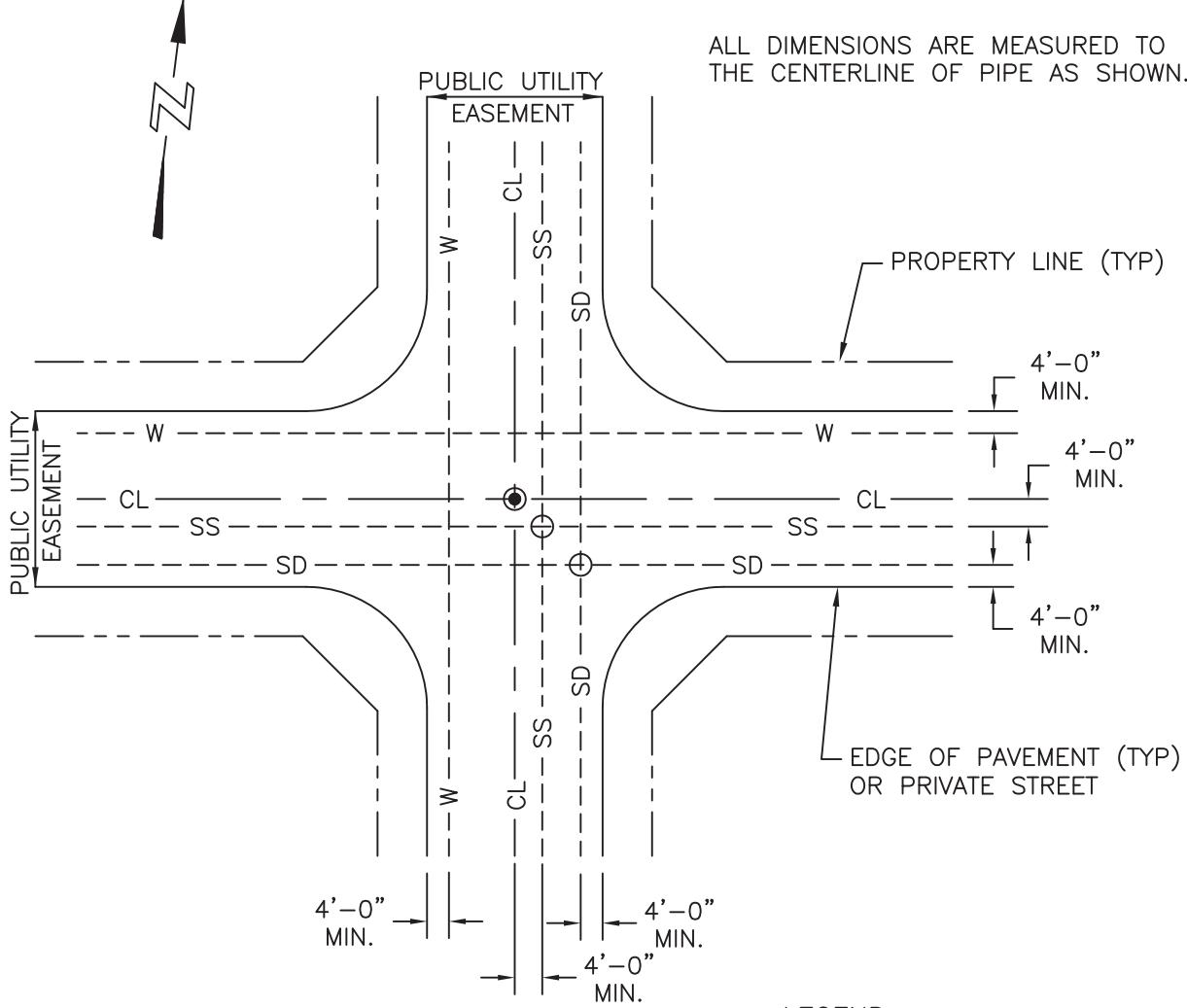
MINIMUM STANDARD CUL-DE-SAC	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED DRAWING NO. <b>R-23</b>



NOTES:

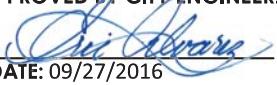
1. SEE DRAWING NO. R-26 FOR LOCATION OF ELECTRIC, TELEPHONE, GAS, TV CONDUIT AND STREET LIGHT CONDUIT.
2. SANITARY SEWER AND STORM DRAIN LINES SHALL BE LOWER THAN WATER MAINS. FOR PARALLEL AND PERPENDICULAR CONSTRUCTION, SEE DWG. NO. S-4.
3. IN COMMERCIAL OR INDUSTRIAL SUBDIVISIONS WHERE WATER SERVICE SIZES AND LOCATIONS ARE UNKNOWN AT THE TIME THE WATER MAIN IS INSTALLED, THE WATER MAIN MAY BE LOCATED IN THE P.U.E. 2 FEET FROM THE PROPERTY LINE WITH THE APPROVAL OF THE CITY ENGINEER. NO STREET CUTS SHALL BE PERMITTED FOR WATER SERVICES TO THE OPPOSITE SIDE OF THE STREET.
4. 10-FEET MINIMUM SEPARATION BETWEEN WATER LINE AND ANY SANITARY SEWER OR STORM DRAIN LINES AS MEASURED FROM THE OUTSIDE OF THE PIPES.
5. RELOCATE SEWER AS REQUIRED TO MAINTAIN REQUIRED SEPARATION ON LOCAL STREETS.

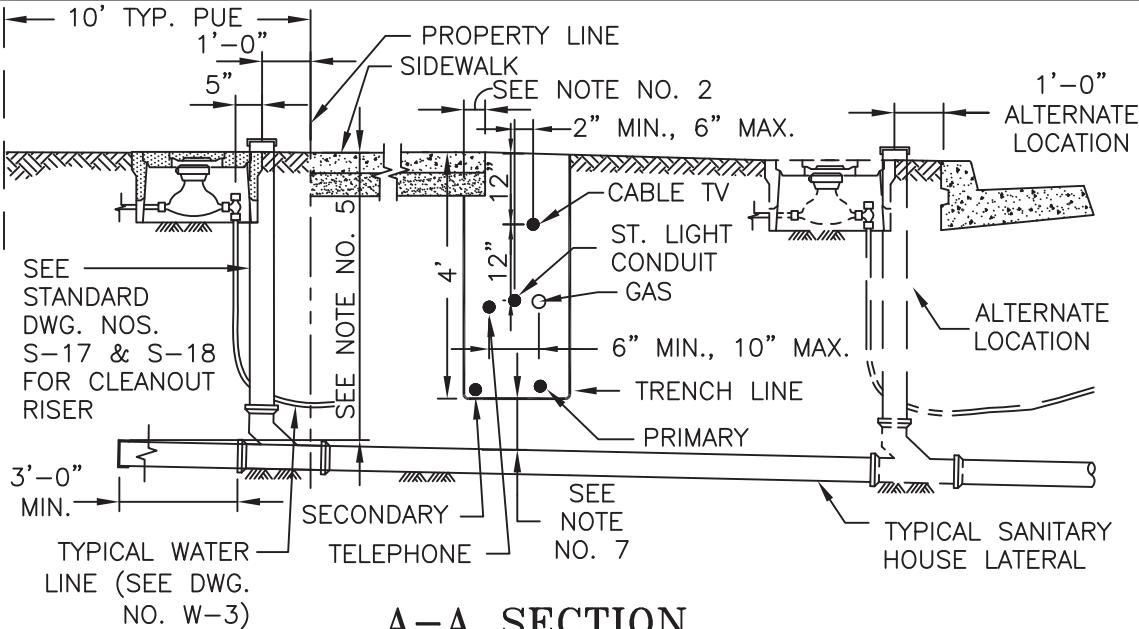
STREET LOCATION OF UNDERGROUND UTILITIES	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO.	R-24



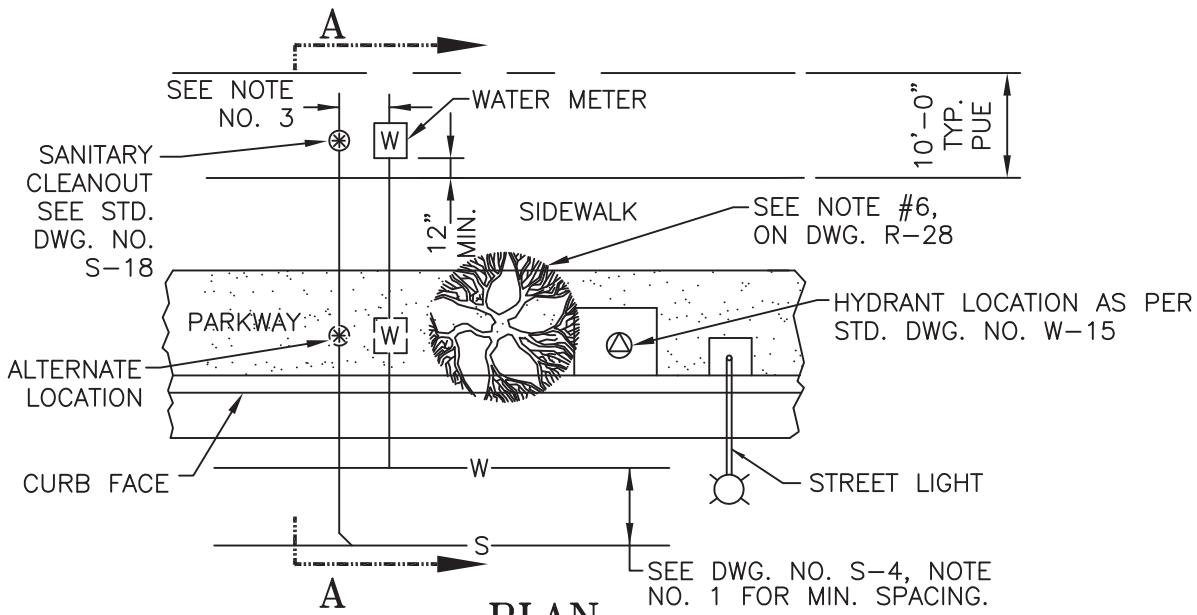
NOTE

1. ALL PRIVATE UTILITIES TO BE LOCATED OUTSIDE OF LIMITS SHOWN UNLESS APPROVED BY THE CITY ENGINEER.
2. 10-FEET MINIMUM SEPARATION BETWEEN WATER LINE AND ANY SEWER LINE AS MEASURED FROM THE OUTSIDE OF THE PIPES.

PUBLIC UTILITY LOCATIONS IN PRIVATE STREETS OR EASEMENTS	REVISION NO.	APPROVED BY CITY ENGINEER:
	4	 DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE	SUPERSEDES DWG. DATED
	NONE	01/09/02
		DRAWING NO.
		R-25



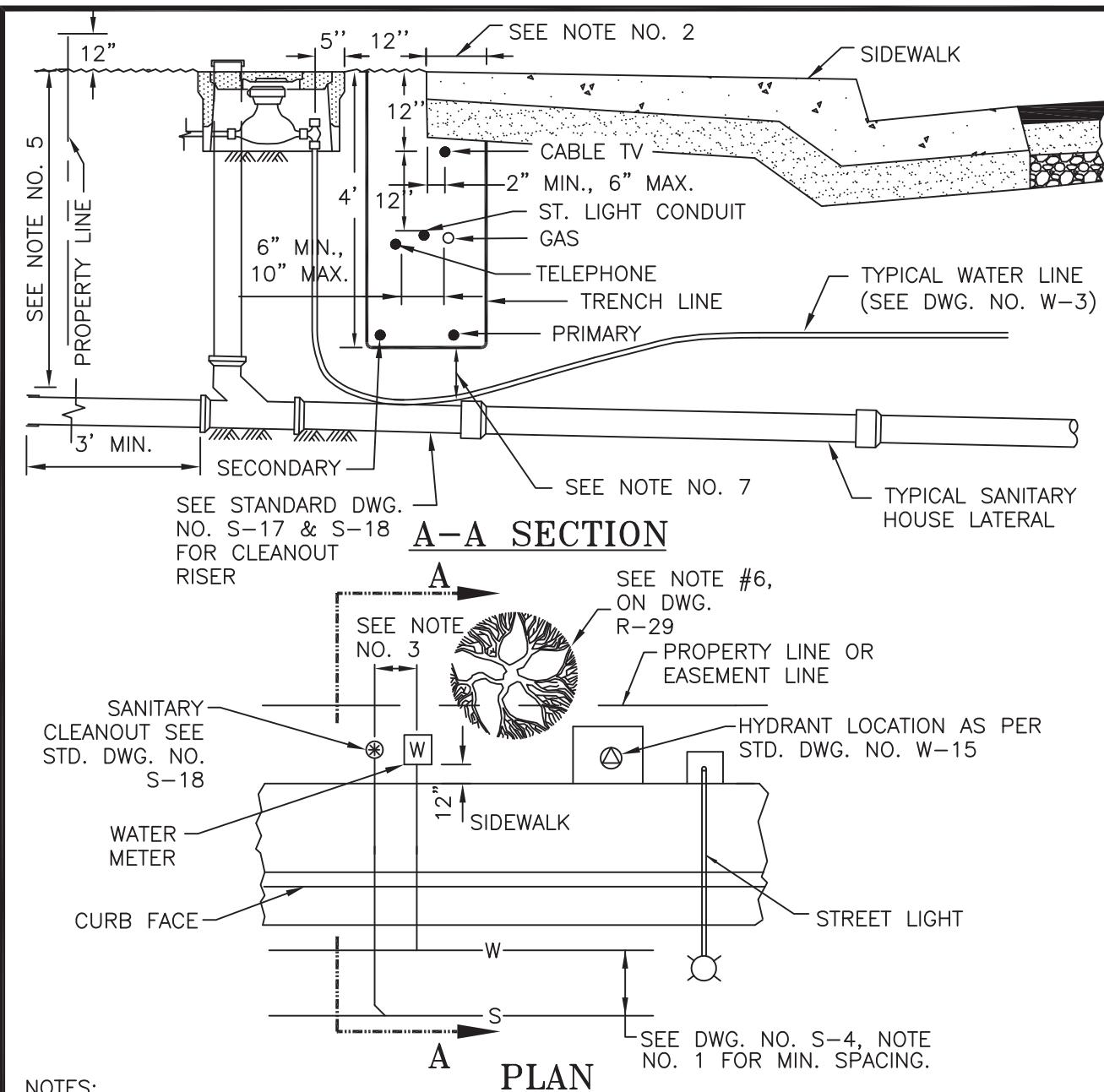
A-A SECTION



NOTES:

- DENOTES CABLE AND/OR CONDUIT.
- IF THE TRENCH LIES MORE THAN 9" UNDER THE SIDEWALK IT SHALL BE BACK FILLED IN THE SAME MANNER AS THE TOP 3'-0" OF A TRENCH SECTION IN EXISTING STREETS.  
SEE STANDARD DWG. NO. R-36.
- WATER SERVICE AND SANITARY SERVICE SHALL HAVE A MINIMUM LATERAL CLEARANCE OF 2'-6".
- UTILITIES TO BE PLACED AS PER PUBLIC UTILITY COMPANY REGULATIONS.
- SANITARY HOUSE LATERAL SHALL HAVE 4'-6" MIN. AND 7'-0" MAX. COVER AT PROPERTY LINE.
- GAS LINE LOCATION TO BE DETERMINED BY DEVELOPER AND P.G.&E. COMPANY.
- ALL SERVICES CROSSING UNDERNEATH PRIMARY AND SECONDARY ELECTRICAL LINES SHALL HAVE A MINIMUM CLEARANCE OF 6". ELECTRICAL LINES SHALL HAVE A CLEARANCE OF 12" IF PLACED BELOW SERVICE LATERALS.
- FOR ALTERNATE LOCATIONS, SEE DWG. NO. R-28.

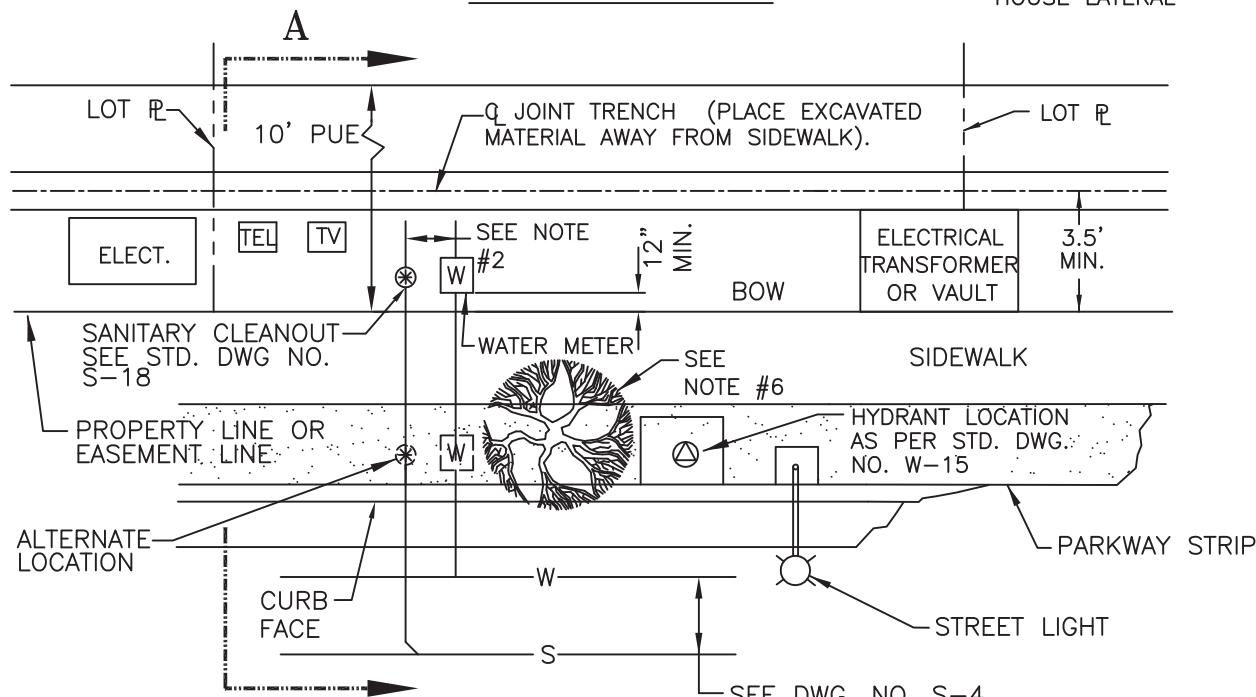
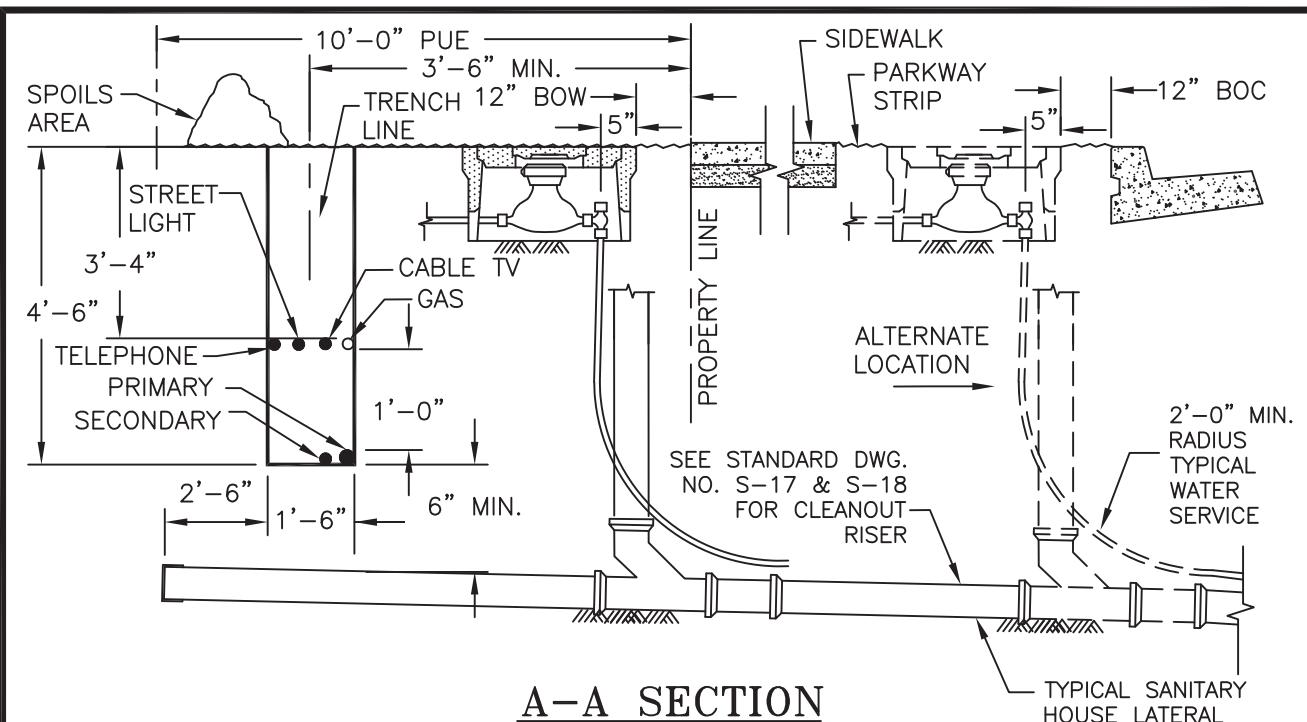
UNDERGROUND UTILITY LOCATIONS CASE 1 - C, G, & SW WITH PARKWAY	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO.	R-26



NOTES:

- DENOTES CABLE AND/OR CONDUIT.
- IF THE TRENCH LIES MORE THAN 9" UNDER THE SIDEWALK IT SHALL BE BACK FILLED IN THE SAME MANNER AS THE TOP 3'-0" OF A TRENCH SECTION IN EXISTING STREETS.  
SEE STANDARD DWG. NO. R-36.
- WATER SERVICE AND SANITARY SERVICE SHALL HAVE A MINIMUM LATERAL CLEARANCE OF 2'-6".
- UTILITIES TO BE PLACED AS PER PUBLIC UTILITY COMPANY REGULATIONS.
- SANITARY HOUSE LATERAL SHALL HAVE 4'-6" MIN. AND 7'-0" MAX. COVER AT PROPERTY LINE.
- GAS LINE LOCATION TO BE DETERMINED BY DEVELOPER AND P.G.&E. COMPANY.
- ALL SERVICES CROSSING UNDERNEATH PRIMARY AND SECONDARY ELECTRICAL LINES SHALL HAVE A MINIMUM CLEARANCE OF 6". ELECTRICAL LINES SHALL HAVE A CLEARANCE OF 12" IF PLACED BELOW SERVICE LATERALS.
- FOR ALTERNATE LOCATIONS, SEE DWG. NO. R-28.

UNDERGROUND UTILITY LOCATIONS CASE 2 - C, G, & SW WITH NO PARKWAY	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO.	R-27



NOTES:

- DENOTES CABLE AND/OR CONDUIT.
- WATER SERVICE AND SANITARY SERVICE SHALL HAVE LATERAL CLEARANCE OF 2'-6" MIN.
- UTILITIES TO BE PLACED AS PER PUBLIC UTILITY COMPANY REGULATIONS.
- GAS LINE LOCATION TO BE DETERMINED BY THE DEVELOPER AND P.G.&E. CO.
- THIS PLAN SHALL BE USED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
- TREE (TO BE PLANTED BY PERMIT) REQUIRES 6'-0" LATERAL CLEARANCE FROM CONCRETE DRIVE, SIDEWALK, SEWER, GAS AND WATER, LOCATE UTILITIES ACCORDINGLY.

**ALTERNATE UNDERGROUND UTILITY LOCATIONS  
CASE 1 - C, G, & SW WITH PARKWAY**

REVISION NO.  
5

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

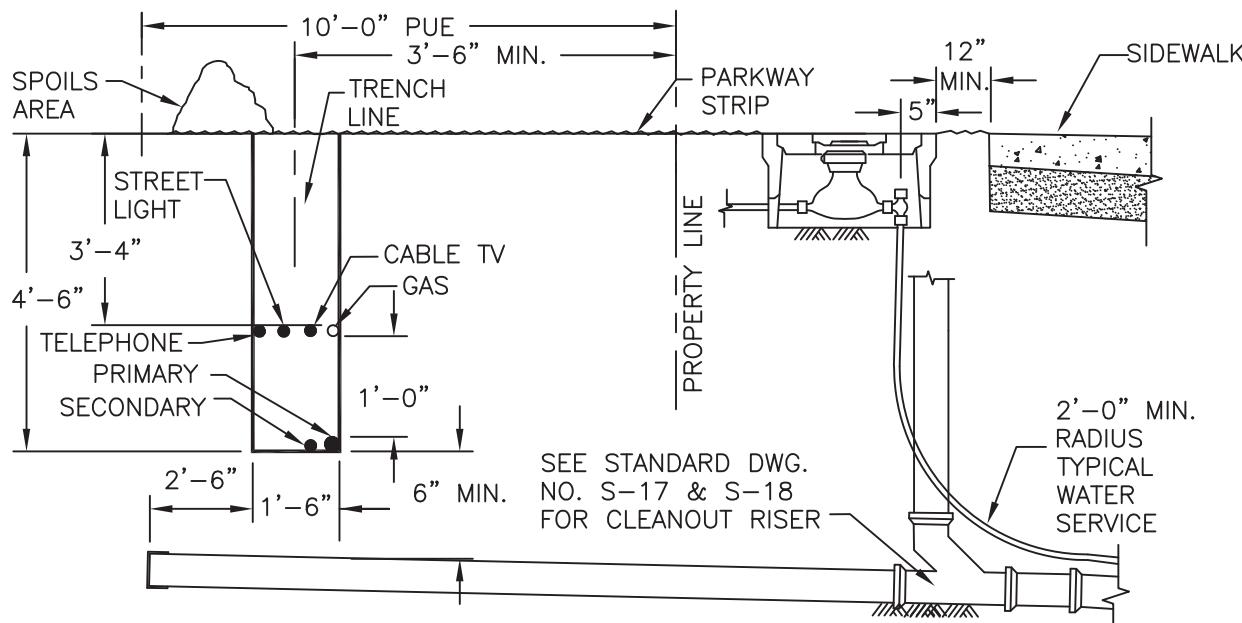


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

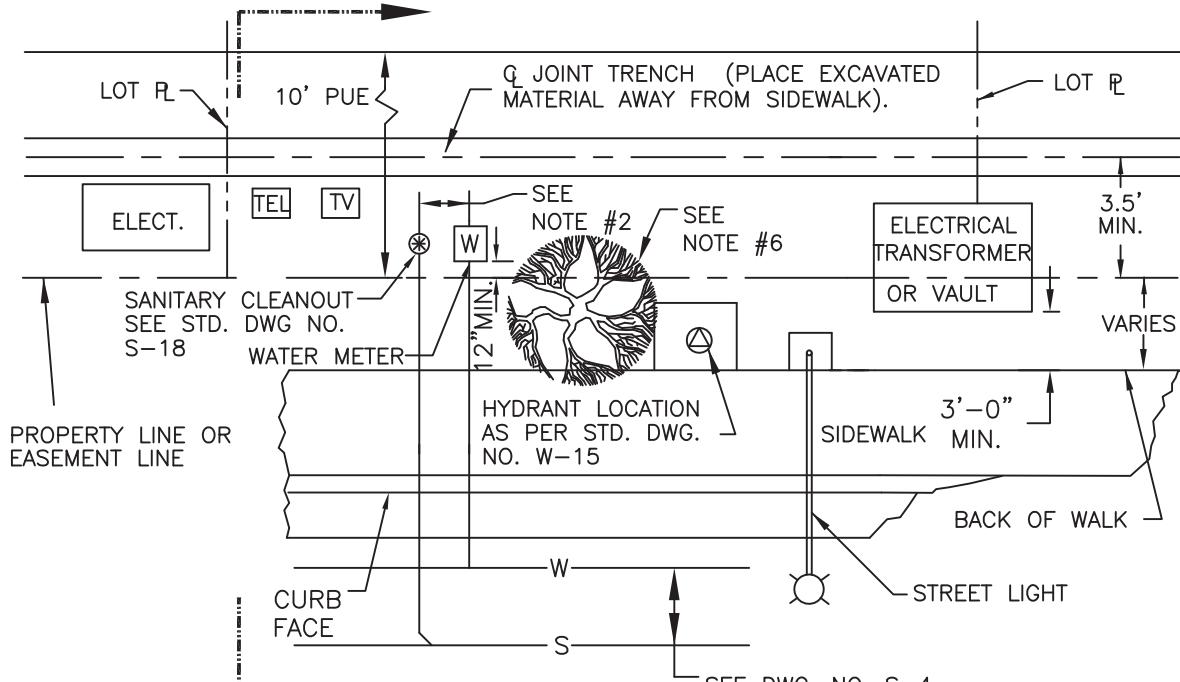
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-28**



**A-A SECTION**



NOTES:

**A** **PLAN**

- DENOTES CABLE AND/OR CONDUIT.
- WATER SERVICE AND SANITARY SERVICE SHALL HAVE LATERAL CLEARANCE OF 2'-6" MIN.
- UTILITIES TO BE PLACED AS PER PUBLIC UTILITY COMPANY REGULATIONS.
- GAS LINE LOCATION TO BE DETERMINED BY THE DEVELOPER AND P.G.&E. CO.
- THIS PLAN SHALL BE USED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
- TREE (TO BE PLANTED BY PERMIT) REQUIRES 6'-0" LATERAL CLEARANCE FROM CONCRETE DRIVE, SIDEWALK, SEWER, GAS AND WATER, LOCATE UTILITIES ACCORDINGLY.

**ALTERNATE UNDERGROUND UTILITY LOCATIONS  
CASE 2 - C, G, & SW WITH NO PARKWAY**

REVISION  
NO.  
5

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

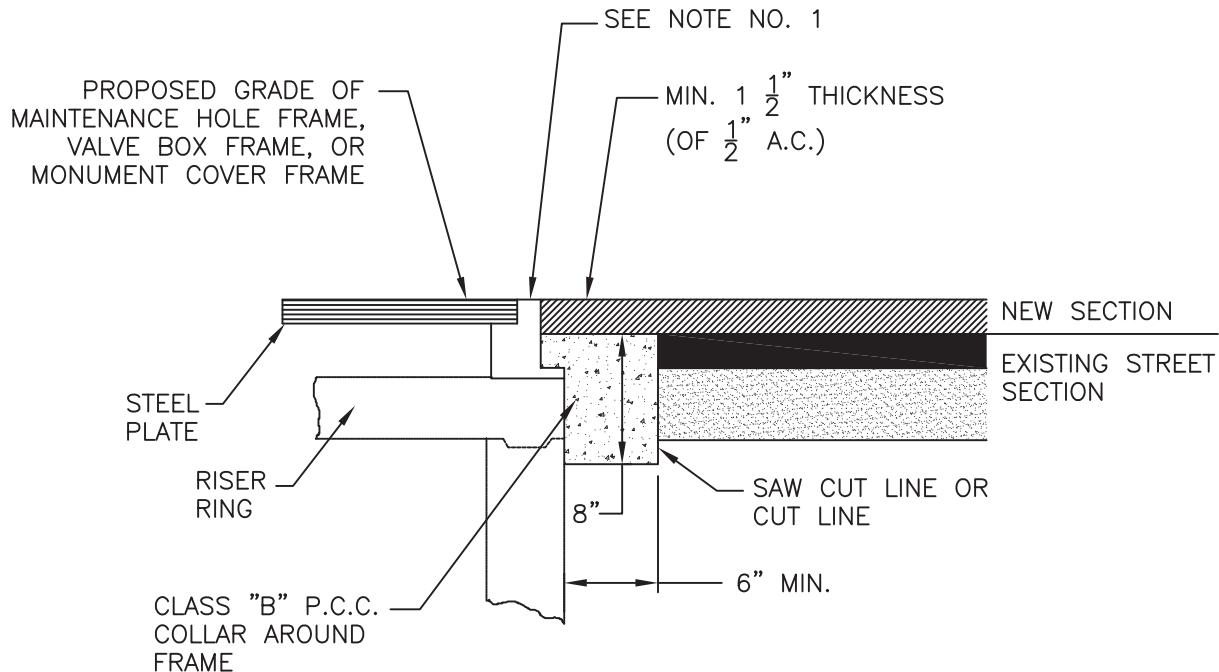


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-29**



### ADJUSTING EXISTING FRAMES

#### NOTES:

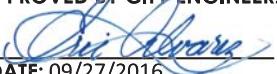
1. ELEVATION OF FRAME SHALL MATCH FINISH GRADE OF ADJACENT PAVEMENT  $\pm 1/8"$ .

### **ADJUSTING STREET FACILITIES TO GRADE**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

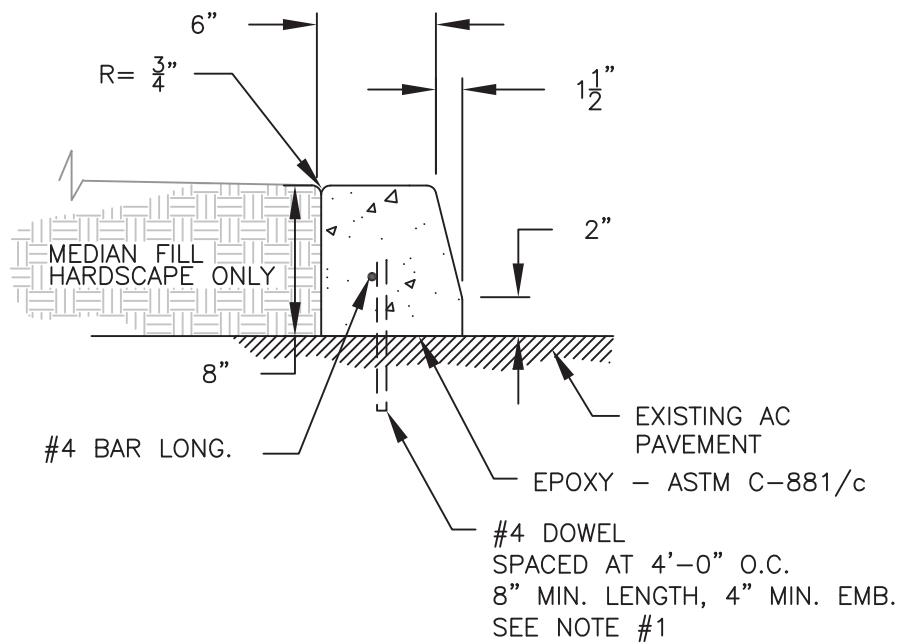
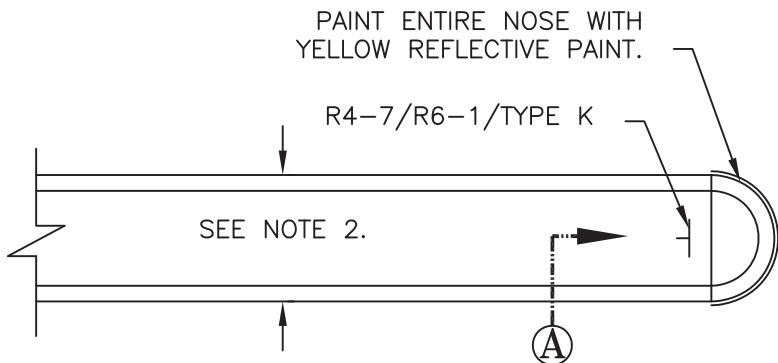
REVISION NO.  
4

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

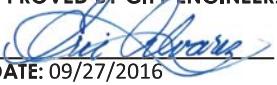
DRAWING NO.  
**R-30**

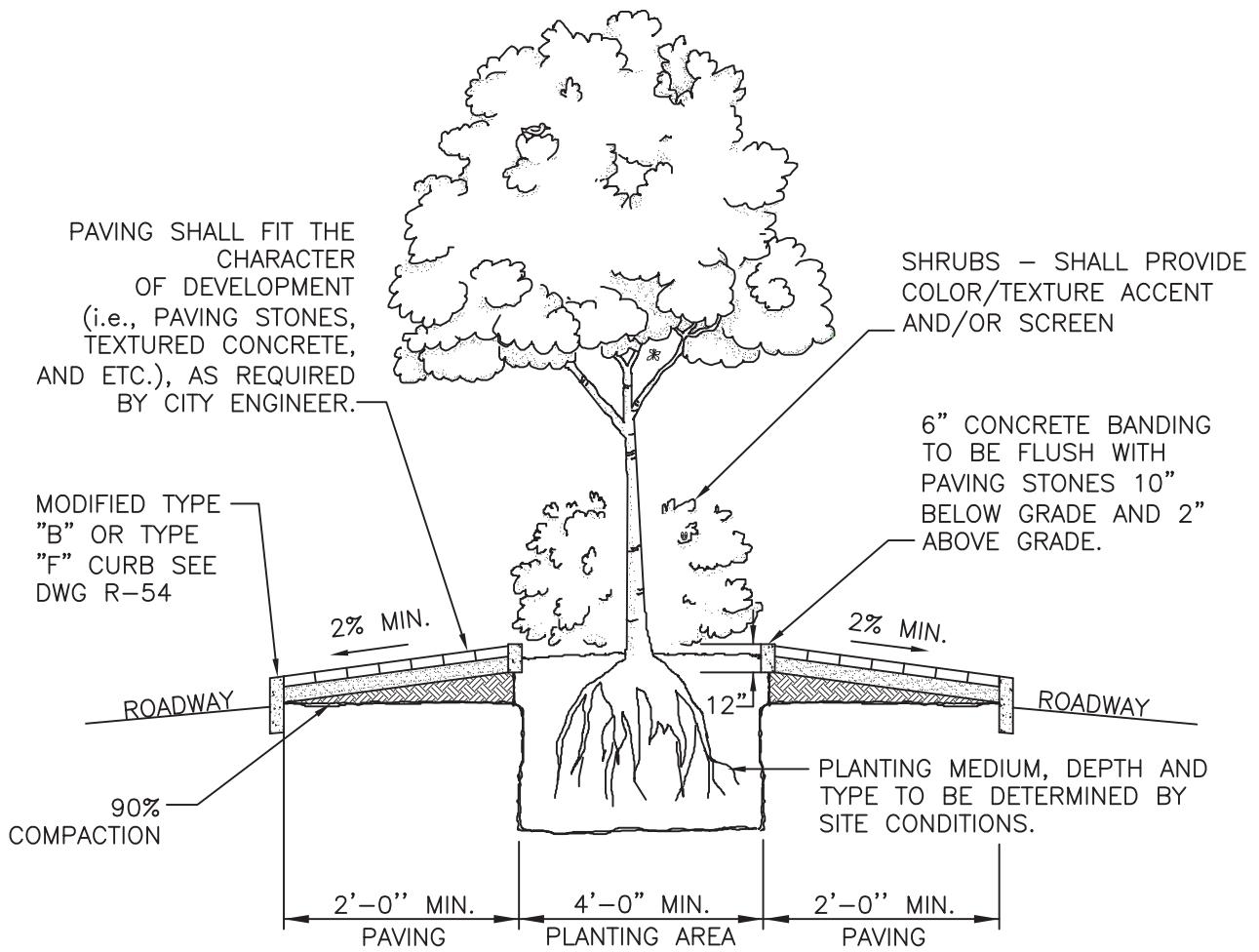


(A) MEDIAN CURB - TYPE A3  
N.T.S

NOTES:

1. PLACE STEEL DOWELS WITHIN THE FIRST 20'-0" OF MEDIAN FROM ANY END.
2. FOR APPLICATION INSTRUCTIONS, FOLLOW CALTRANS STANDARD SECTION 73.
3. MINIMUM MEDIAN 2'-0" WIDTH, UNLESS APPROVED BY THE CITY ENGINEER.

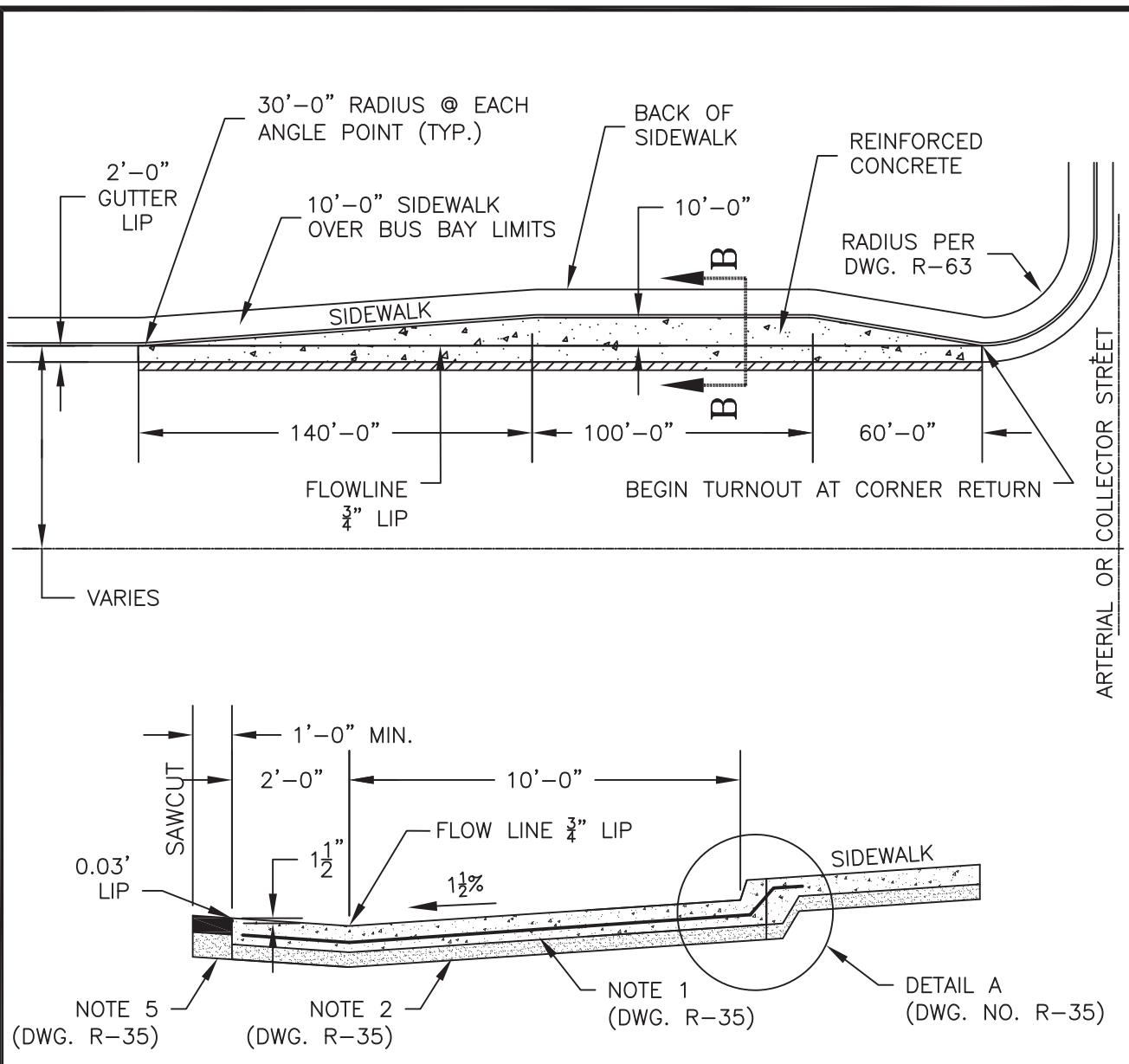
<b>MEDIAN CURBING OVER EXISTING PAVEMENT</b>	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



NOTES:

1. TREES SHALL BE SELECTED FROM THE CITY'S TREE PLANTING LIST. THEY SHALL BE PLANTED A MINIMUM OF 30'-0" TO 50'-0" ON CENTER SPACING, OR MAY BE PLANTED IN GROUPS FOR AN INFORMAL PLANTING EFFECT USING THE SAME NUMBER OF TREES, AS DETERMINED BY THE CITY LANDSCAPE ARCHITECT.
2. SHRUBS SHALL BE PLANTED IN GROUPINGS TO PROVIDE A CONSISTENT PLANTING SCHEME. SHRUBS SHALL REQUIRE MINIMUM MAINTENANCE AND BE DROUGHT TOLERANT.
3. A GROUND COVER OR TURF AREA MAY BE INCLUDED BETWEEN THE PLANTING AND PAVING AREAS WHERE APPLICABLE. MAINTENANCE SHALL BE PROVIDED BY A MAINTENANCE AGREEMENT OR HOME OWNER'S ASSOCIATION.
4. COMPLETE LANDSCAPE AND IRRIGATION PLANS AND DETAILS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL AS PART OF THE DEVELOPMENT PLANS. ALL DESIGN PROPOSALS SHALL BE SUBJECT TO APPROVAL BY THE CITY LANDSCAPE ARCHITECT AND THE CITY ENGINEER.
5. TYPE "F" CURB SHALL BE ALLOWED IN NON-LANDSCAPED MEDIAN ONLY.

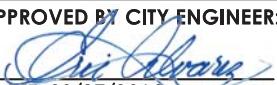
<b>MEDIAN LANDSCAPE</b>		REVISION NO. 5	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>R-32</b>

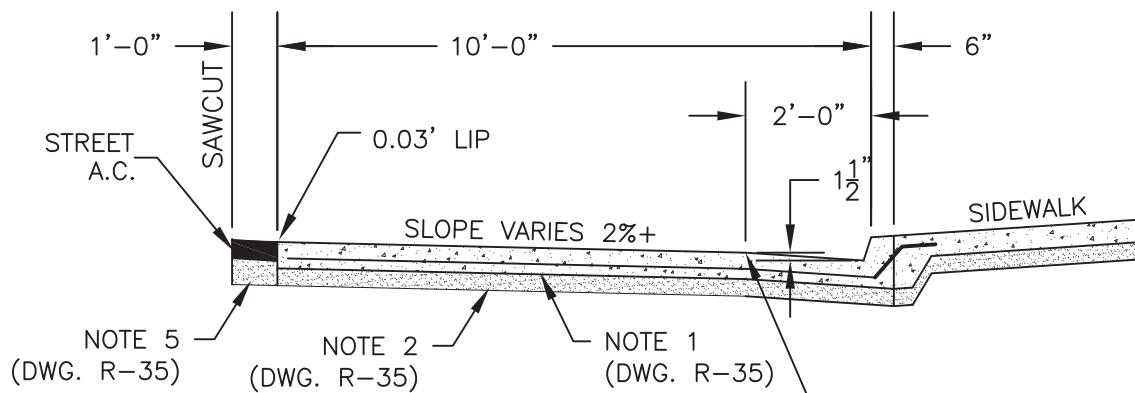
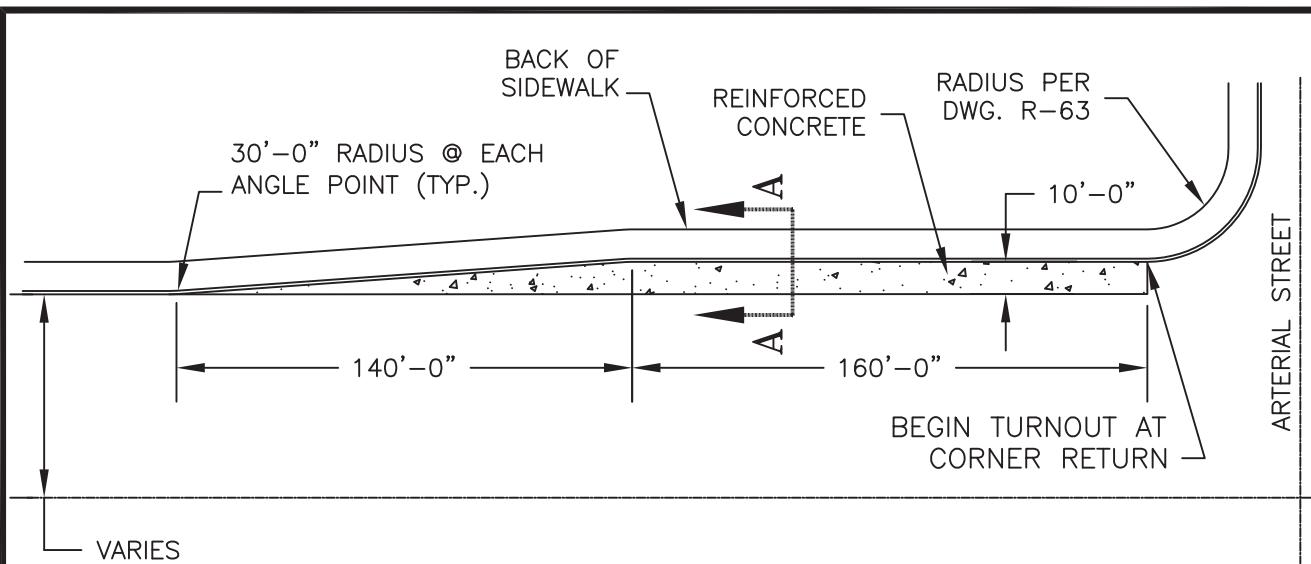


- \* BUS TURNOUT CROSS SECTION SHOWN FOR COLLECTOR STREETS CAN ALSO BE USED FOR ARTERIAL STREETS.
- \* SEE DWG. R-35 FOR NOTES.

CRITERIA FOR INSTALLATION:

BUS TURNOOTS SHALL BE INSTALLED ON ALL FOUR DEPARTURE LEGS WHEN AN ARTERIAL STREET INTERSECTS WITH AN ARTERIAL STREET OR COLLECTOR STREET. BUS TURNOOTS AT THE INTERSECTION OF AN ARTERIAL STREET AND LOCAL STREET SHALL BE INSTALLED ON A CASE-BY-CASE BASIS WITH SJRTD RECOMMENDATION.

<b>BUS TURNOOTS ARTERIAL STREETS</b>	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
DRAWING NO. <b>R-33</b>		



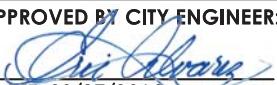
### **SECTION A-A**

**NOTE:**  
GRADE BREAK GUTTER SLOPE  
IS CRITICAL AND CONTRACTOR  
WILL BE RESPONSIBLE FOR  
EXACT ELEVATIONS AND SLOPE

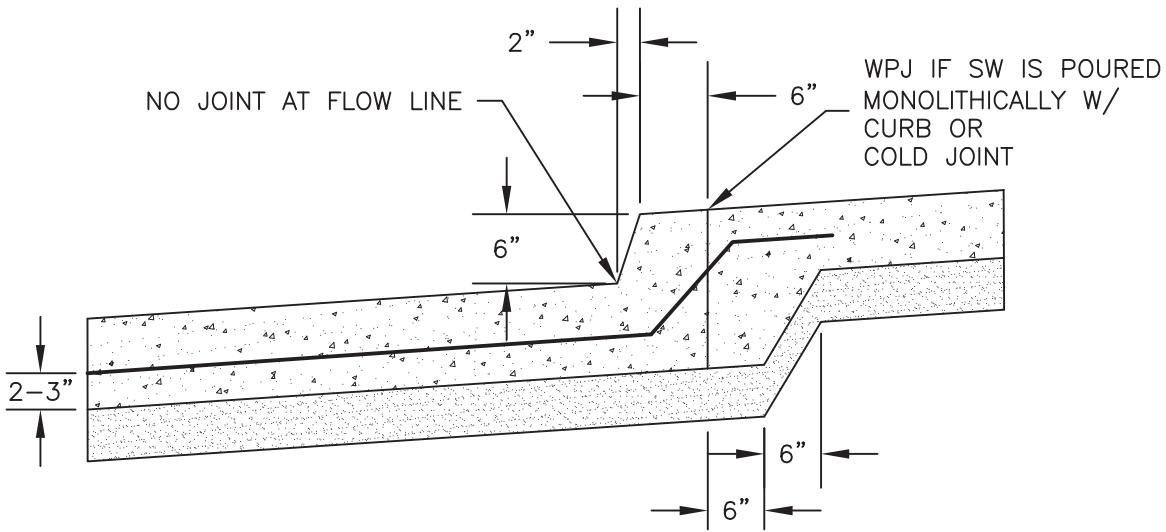
SEE DWG. R-35 FOR NOTES.

**CRITERIA FOR INSTALLATION:**

BUS TURNOUTS SHALL BE INSTALLED ON ALL FOUR DEPARTURE LEGS WHEN A COLLECTOR STREET INTERSECTS WITH AN ARTERIAL STREET. BUS TURNOUTS AT THE INTERSECTION OF TWO COLLECTOR STREETS SHALL BE INSTALLED ON A CASE-BY-CASE BASIS WITH SJRTD RECOMMENDATION.

<b>BUS TURNOUTS COLLECTOR STREETS</b>	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03

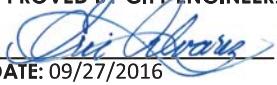
DRAWING NO.  
**R-34**

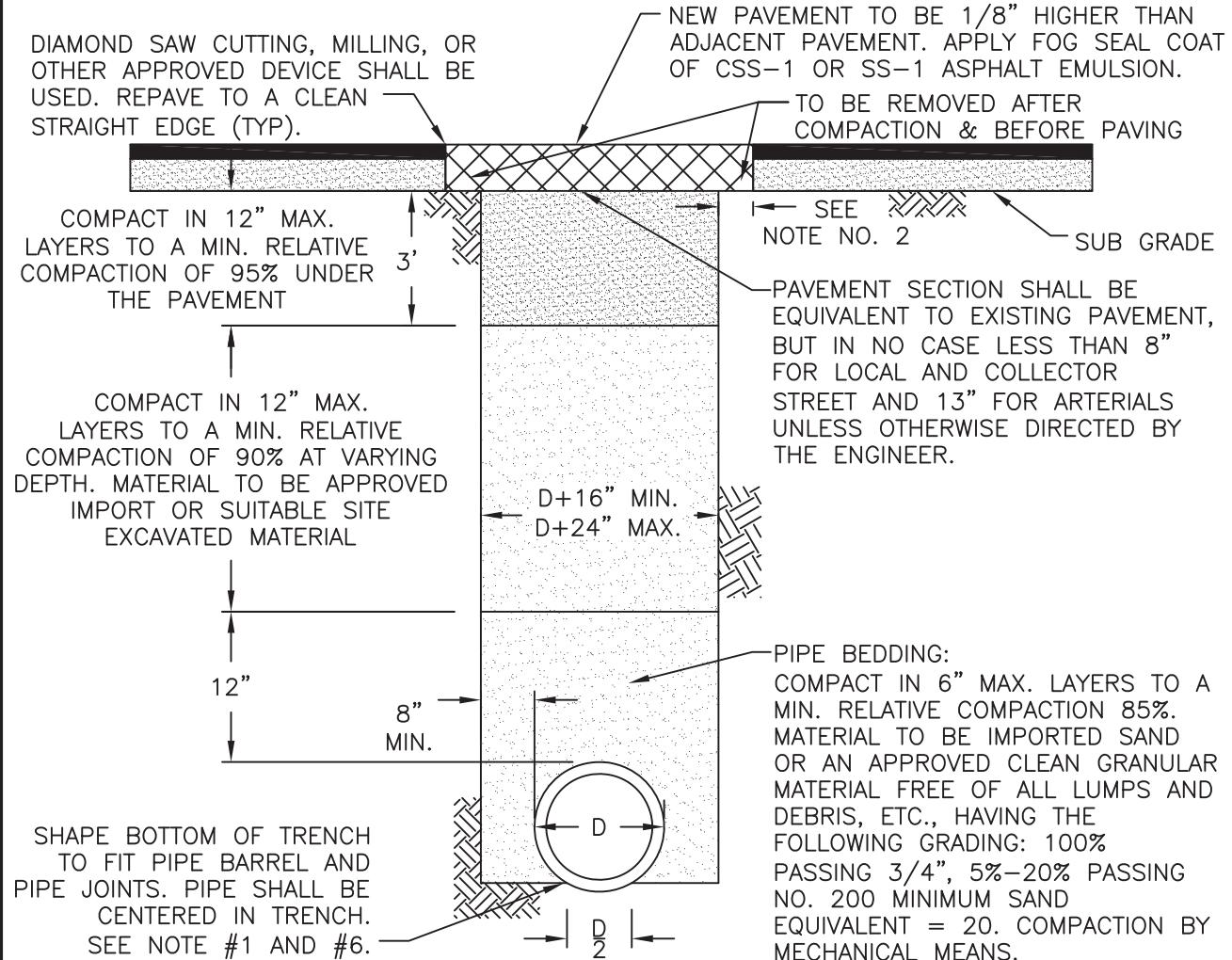


DETAIL A

NOTES:

1. CONCRETE SHALL BE 9" THICK WITH #4, GRADE 60 REBAR AT 18" CENTER EACH WAY ON (DOBIES) REBAR SPACERS. CONCRETE SHALL BE STRUCTURAL CONCRETE, SIX SACK, ALL FINISH SHALL BE MEDIUM BROOM. CONCRETE SHALL CONFORM TO STRUCTURAL CONCRETE AS DEFINED IN THESE SPECIFICATIONS SECTION 90.
2. PLACE 6" OF 3/4" AGGREGATE BASE AT 95% RELATIVE COMPACTION.
3. THE SLAB FOR THE BUS TURNOUT SHALL BE PLACED MONOLITHICALLY WITH THE CURB AND GUTTER.
4. PLACE 2 INCH DEEP JOINTS AT 10 FOOT CENTERS, PERPENDICULAR TO THE LIP OF GUTTER IN THE TURNOUT SLAB AND EXTENDED PERPENDICULAR TO THE FACE OF CURB IN THE CURB AND SIDEWALK.
5. EXISTING STRUCTURAL SECTION OR PER PLANS WHICHEVER IS GREATER.
6. SEE DWG R-38 FOR CURB TO SIDEWALK CONNECTION DETAIL.

<b>BUS TURNOUTS</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>R-35</b>



#### TYPICAL TRENCH SECTION IN EXISTING IMPROVED STREETS

##### NOTES

1. FOR RIGID PIPE, CONTRACTOR MAY, AT THEIR EXPENSE, EXCAVATE 6" BELOW THE BOTTOM OF THE PIPE AND REPLACE WITH SAND OR AGGREGATE SUBBASE IN LIEU OF SHAPING BOTTOM OF TRENCH TO FIT PIPE BARREL. JOINTS SHALL BE SHAPED IN EITHER CASE.
2. WHEN EXCAVATION IS IN EXISTING PAVED STREETS, REPLACE PAVEMENT 12" ON EACH SIDE OF EXCAVATION, TRENCH, BELL HOLE OR POT HOLES. TO BE REMOVED AFTER COMPACTION & BEFORE PAVING.
3. DEVIATION FROM ABOVE MAY BE ALLOWED WHEN APPROVED BY THE CITY ENGINEER.
4. TRENCH – WHERE THE TRENCH SECTION PARALLELS THE EXISTING CURB AND GUTTER, THE EDGE OF THE TRENCH SHALL BE A MIN. OF 1'-0" FROM LIP OF THE EXISTING GUTTER. THE PAVEMENT SHALL BE REMOVED AND REPLACED TO THE LIP OF THE GUTTER.
5. CONTROLLED DENSITY FILL (CDF) MAY BE USED IN LIEU OF SPECIFIED BACKFILL METHOD. MINIMUM TRENCH WIDTH MAY BE REDUCED TO 2-1/2" CLEAR OF EACH SIDE OF PIPE.
6. FLEXIBLE PIPE SHALL HAVE A 6" BEDDING OF GRANULAR MATERIAL AS DESCRIBED IN NOTE NO. 1.
7. ALL VERTICAL EDGES OF EXISTING ASPHALT CONCRETE SHALL BE TACK COATED.
8. PAVING SHALL CONFORM TO SECTION 100-1.06 OF THE STANDARD SPECIFICATIONS.
9. ALL JOINT PIPE REPAIRS SHALL BE BEDDED WITH A MINIMUM OF 6 INCHES OF  $\frac{3}{4}$ " CRUSHED ROCK.

#### **EXISTING STREET TRENCH SECTION FOR TRENCHES LARGER THAN 8"**

REVISION  
NO.  
6

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

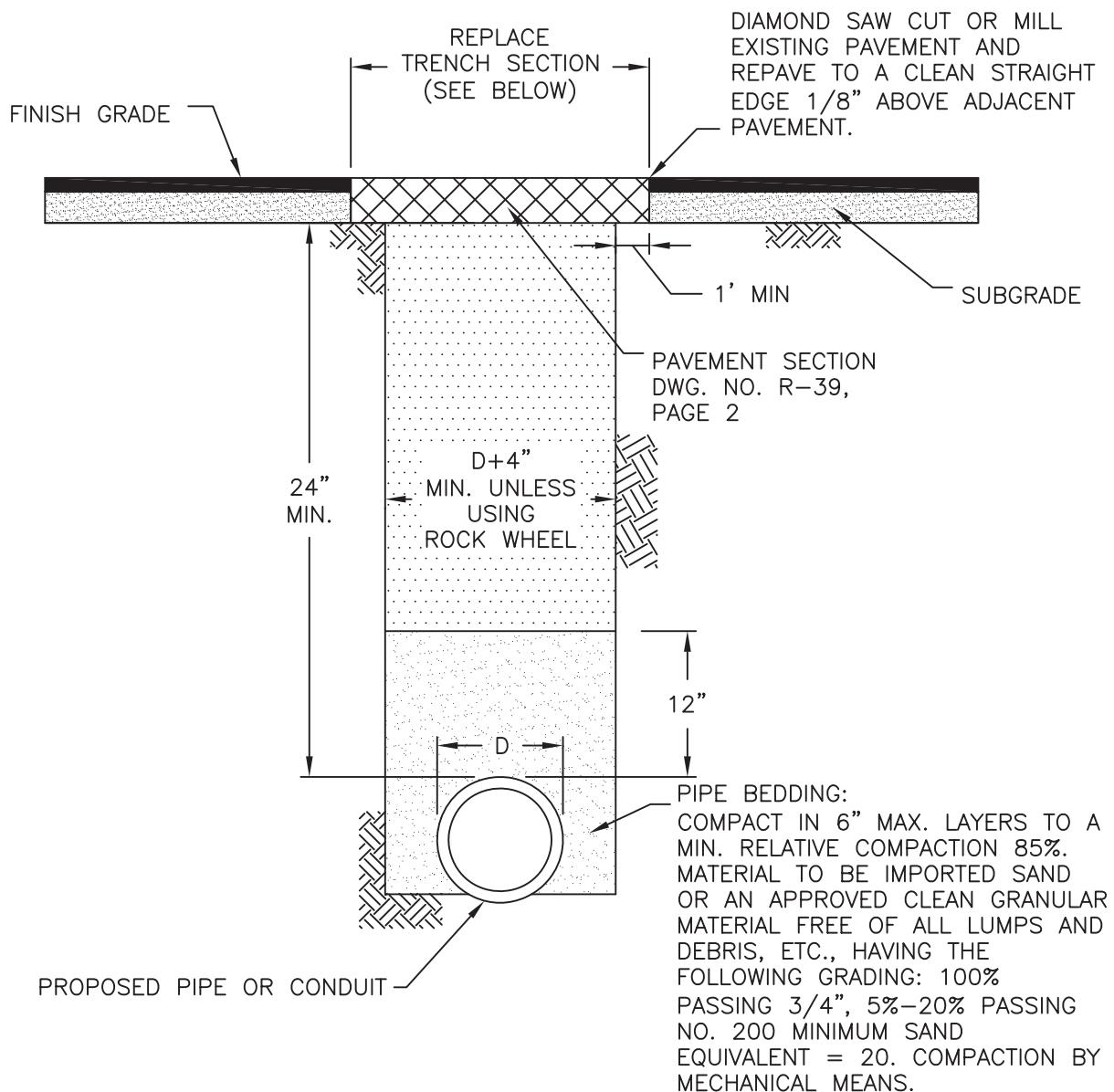


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-36**



#### TYPICAL TRENCH SECTION IN EXISTING STREETS

NOTES:

1. TRENCH – WHERE THE TRENCH SECTION PARALLELS THE EXISTING CURB AND GUTTER. THE EDGE OF THE TRENCH SHALL BE A MIN. OF 1'-0" FROM THE LIP OF THE EXISTING GUTTER AND THE PAVEMENT SHALL BE REMOVED AND REPLACED TO THE LIP OF THE GUTTER.
2. BACKFILL – CONTROLLED DENSITY FILL (CDF) SHALL BE MANDATORY FOR TRENCHES 8" WIDE OR LESS AS PER SECTION 19-3.03I OF THE STANDARD SPECIFICATIONS.
3. APPLY FOG SEAL COAT OF CSS-1 OR SS-1 ASPHALT EMULSION.
4. PAVING SHALL CONFORM TO SECTION 100-1.06 OF THE STANDARD SPECIFICATIONS.
5. ALL VERTICAL EDGES OF EXISTING ASPHALT CONCRETE SHALL BE TACK COATED.
6. GRIND 3" DEEP, 12" EACH SIDE OF TRENCH, AND REPAVE.

#### **EXISTING STREET TRENCH SECTION FOR TRENCHES 8" AND LESS**

REVISION  
NO.  
5

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016



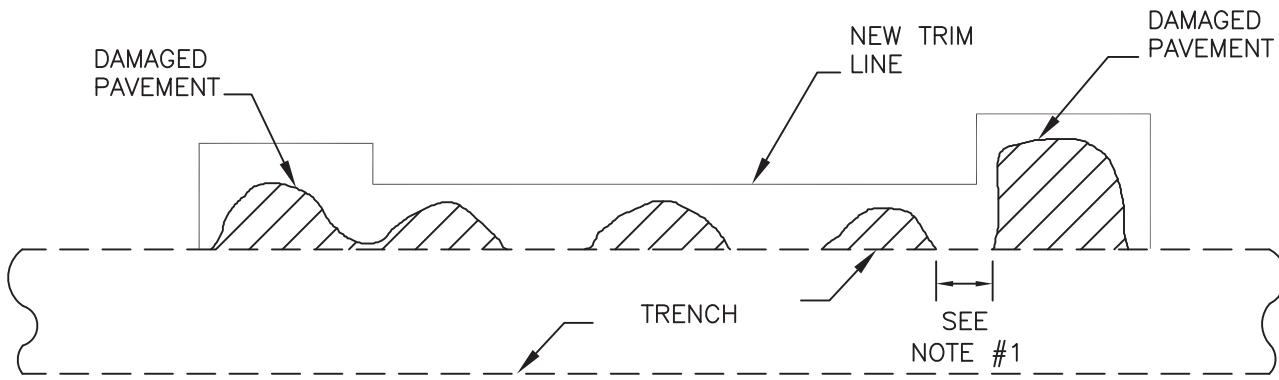
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

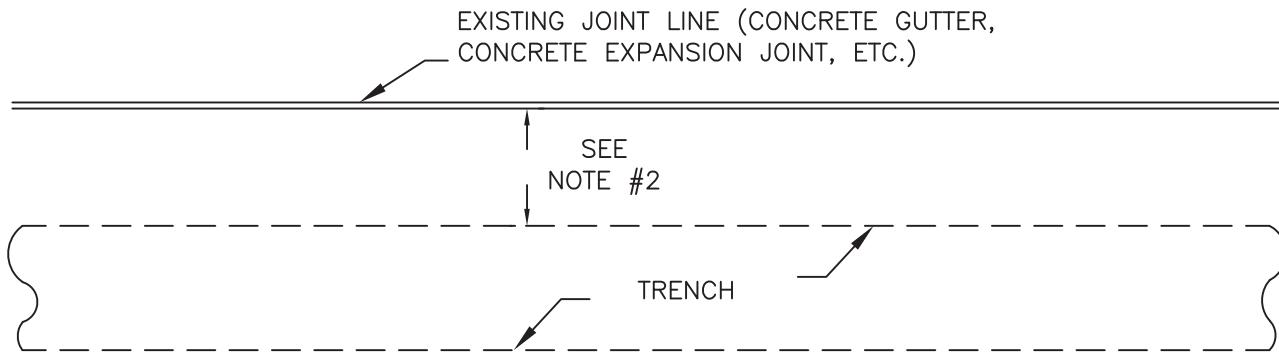
SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-37**

PLAN - CASE 1

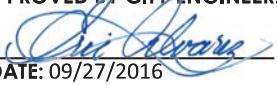


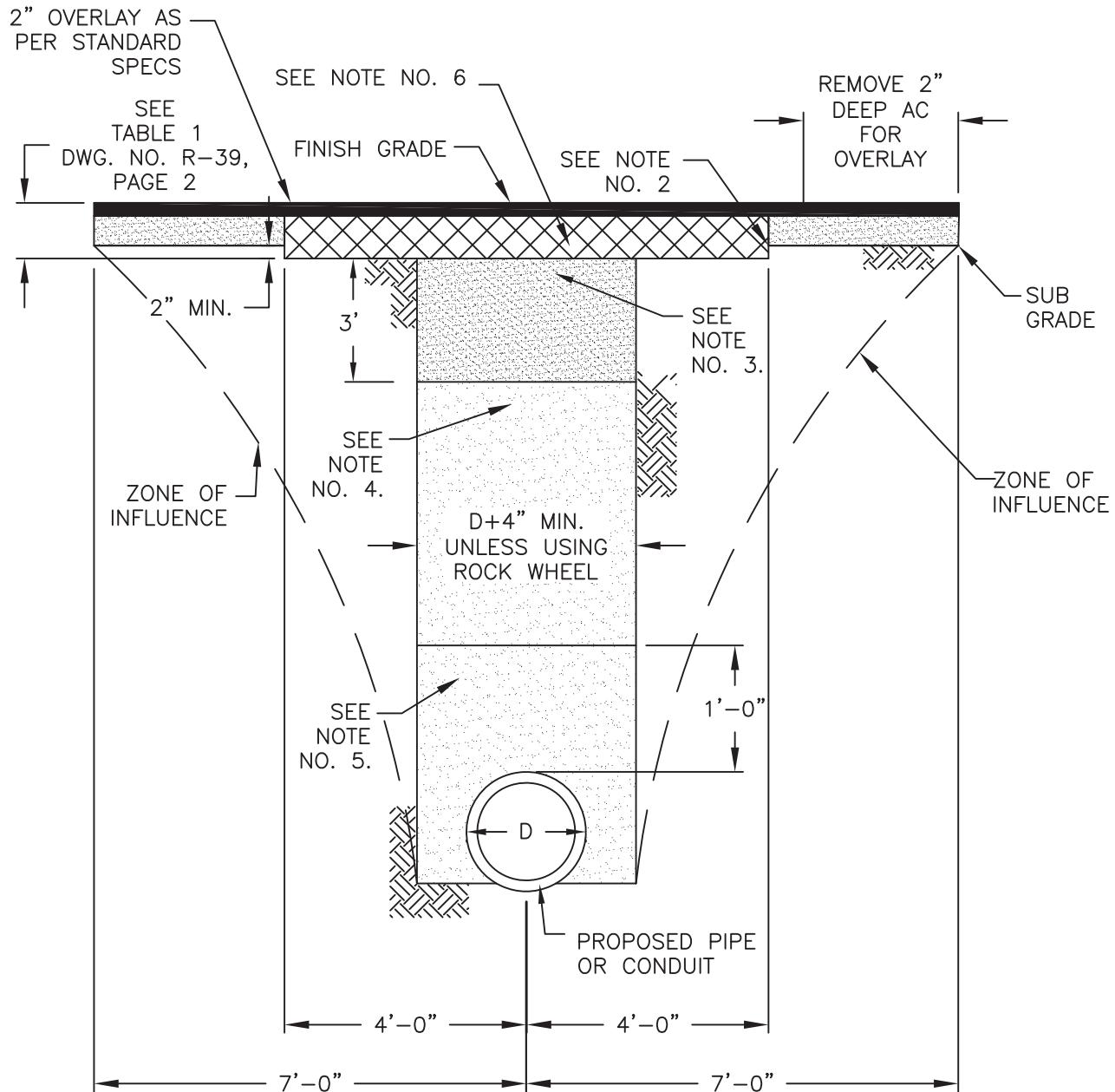
PLAN - CASE 2



NOTES

1. UNDAMAGED PAVEMENT OF 3'-0" OR LESS BETWEEN DAMAGED SECTIONS OF PAVEMENT SHALL BE REMOVED AND REPAVED WITH TRENCH RESTORATION.
2. UNDAMAGED PAVEMENT OF 3'-0" OR LESS BETWEEN EDGE OF TRENCH AND EXISTING JOINT LINE SHALL BE REMOVED AND REPAVED WITH TRENCH RESTORATION.

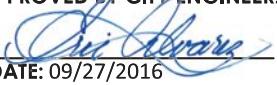
TRENCH SECTION (EXISTING STREET) ADDITIONAL PAVEMENT RESTORATION	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>R-38</b>	



TYPICAL OVERLAY OVER TRENCH

SEE DWG. NO. R-39, PAGE 2 FOR TABLE AND NOTES.

Page 1 of 2

ALTERNATIVE TRENCH OVERLAY	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO. <b>R-39</b>	

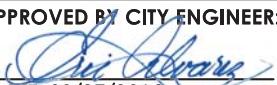
**TABLE 1**

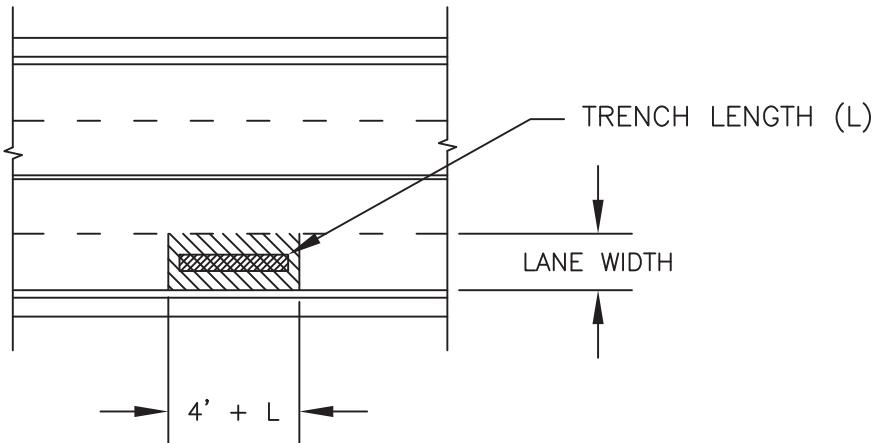
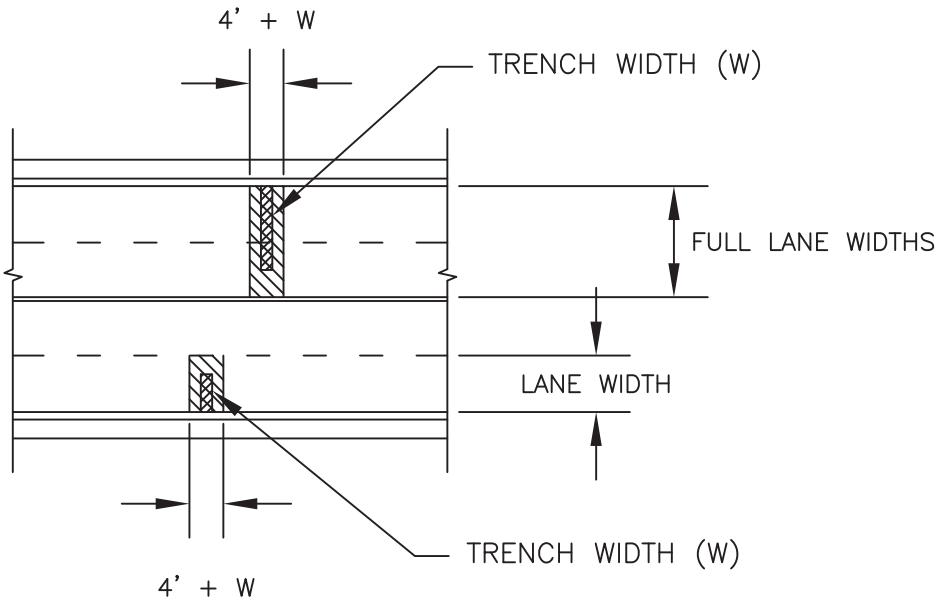
TI	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
DEEP LIFT AC (INCHES)	9.50	10.50	11.0	11.0	12.50	13.50	14.50	15.50	16.00	17.00	17.50
R VALUE = 5.0											

NOTES:

1. IF THE TRENCH IS ADJACENT TO LIP OF GUTTER, ONLY 7'-0" WIDE OVERLAY IS REQUIRED.
2. DIAMOND SAWCUT OR MILL EXISTING PAVEMENT REPAVE TO A CLEAN STRAIGHT EDGE 1/8" ABOVE ADJACENT PAVEMENT.
3. 95% RELATIVE COMPACTION.
4. 90% RELATIVE COMPACTION.
5. 85% RELATIVE COMPACTION. ON TRENCH DEPTHS 18" OR LESS, RELATIVE COMPACTION SHALL BE 95%.
6. CONSTRUCT DEEP LIFT AC PAVEMENT AS PER ABOVE TABLE 1.
7. FOR R VALUES GREATER THAN 5, SUBMIT GEOTECH AND STRUCTURAL DEEP LIFT PAVEMENT CALCULATIONS.
8. CONTACT THE CITY OF STOCKTON, PERMIT CENTER TO ACQUIRE THE LATEST TI VALUE.

Page 2 of 2

ALTERNATIVE TRENCH OVERLAY	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-39</b>

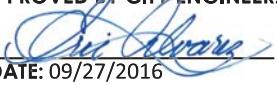


## MORATORIUM STREET TRENCHES REPAIR LIMITS



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

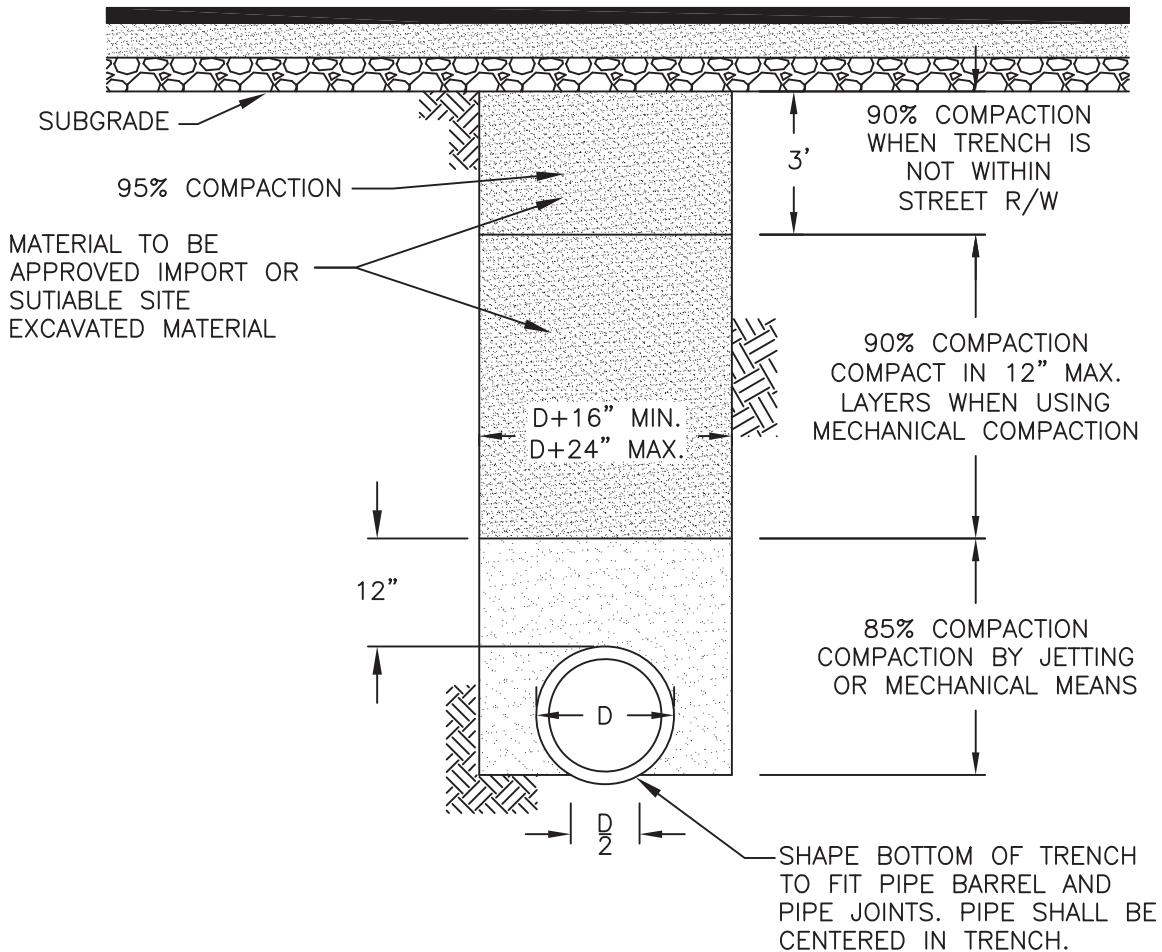
REVISION  
NO.  
2

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

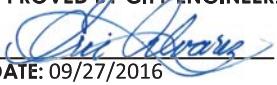
SUPERSEDES  
DWG. DATED  
11/25/03

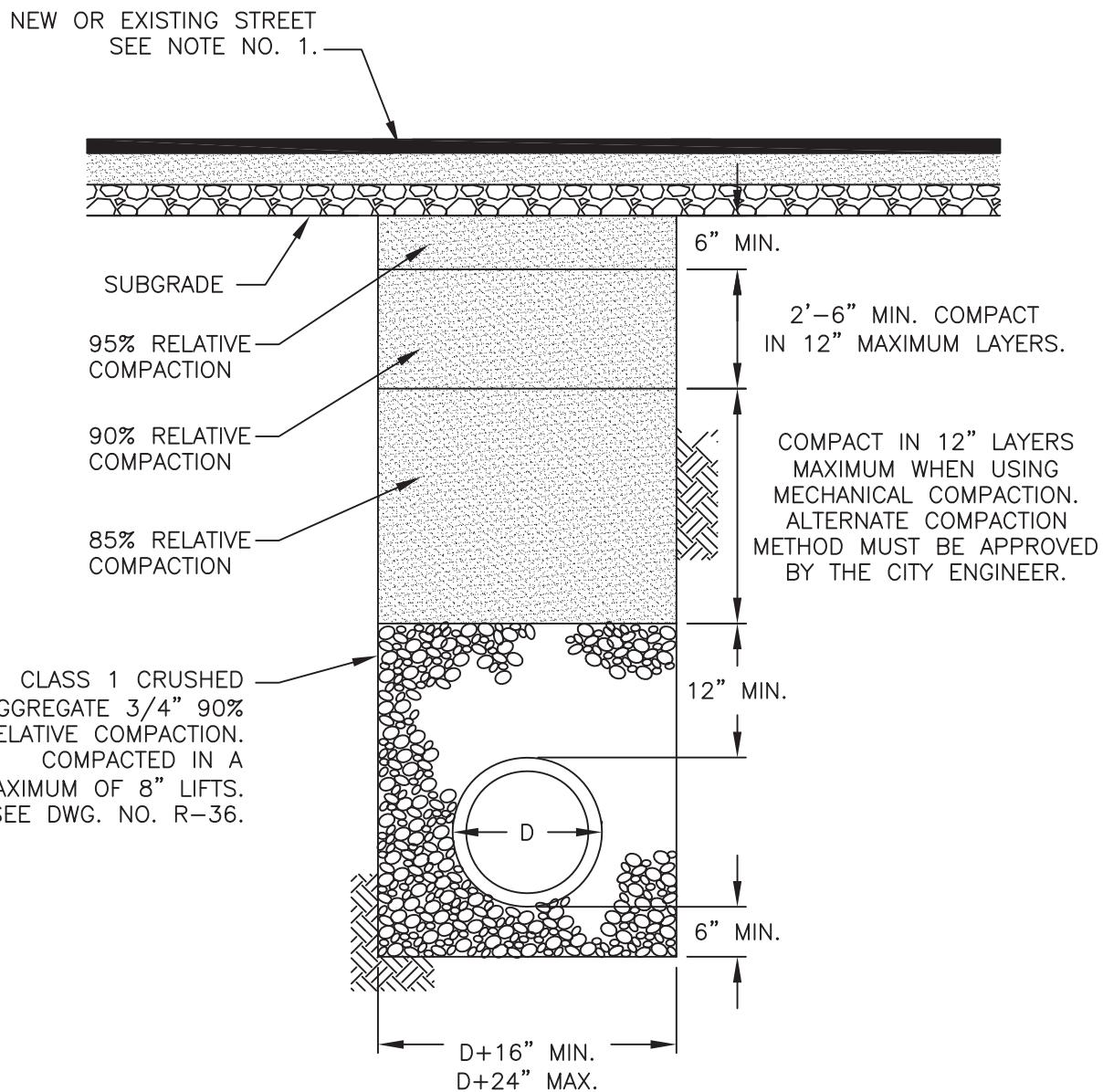
DRAWING NO.  
**R-40**



NOTES:

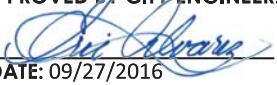
1. THIS PIPE BEDDING DETAIL IS APPLICABLE TO STABLE SOIL CONDITIONS ONLY.
2. BEDDING AROUND PIPE SHALL CONFORM TO C.O.S. STD. DWG. NO. R-36.
3. THIS TRENCH SECTION MAY ALSO BE USED FOR NEW STREET RIGHTS OF WAY OR EASEMENT.

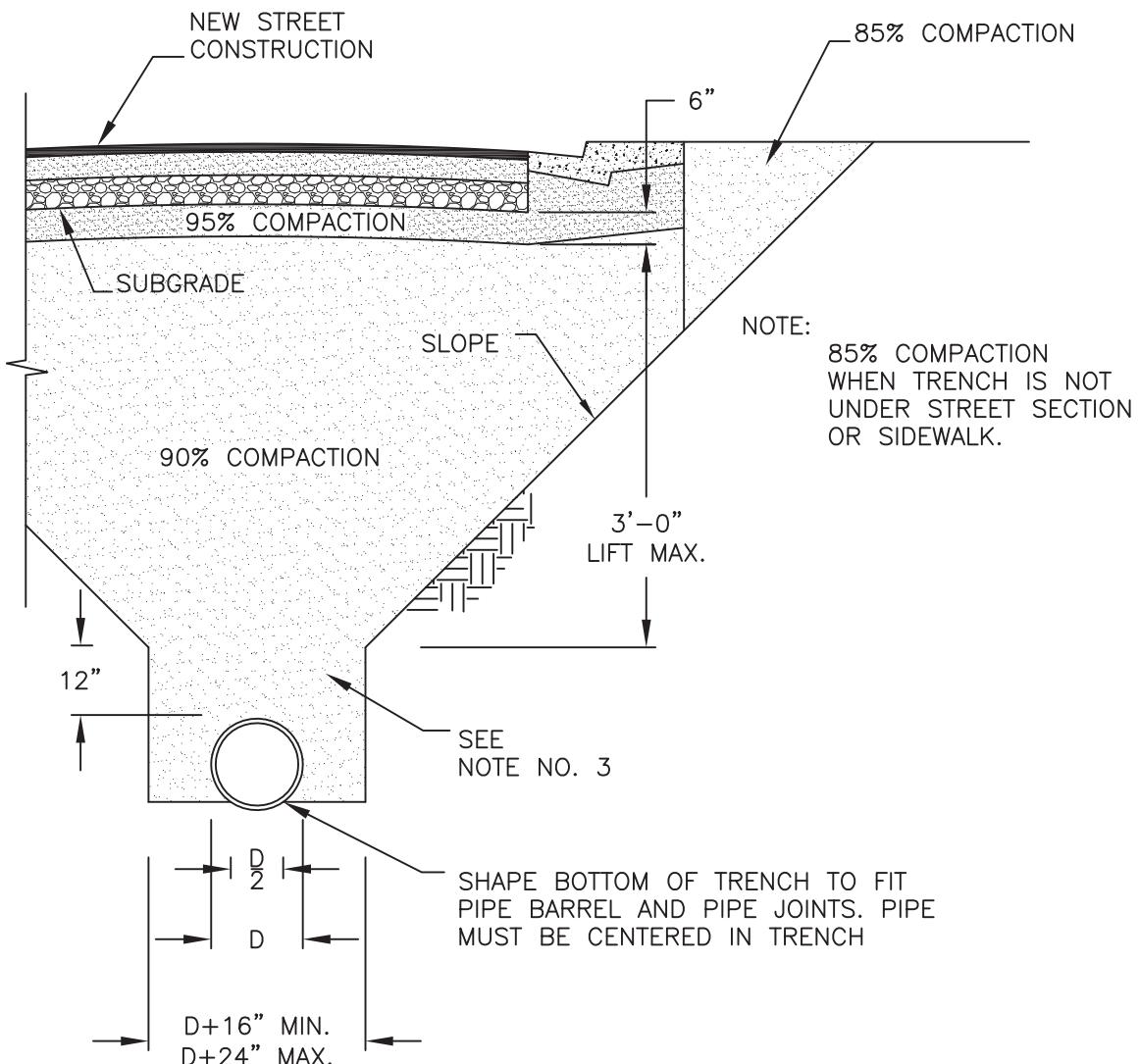
<b>TRENCH SECTION NEW STREETS</b>		REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>R-41</b>



NOTES:

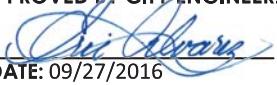
1. IF CONSTRUCTED IN AN EXISTING STREET, THE PAVEMENT AND SUBGRADE SHALL BE SUBJECT TO THE CONDITIONS SHOWN ON STANDARD DWG. NO. R-36.
2. THIS PIPE BEDDING DETAIL SUITABLE TO STABLE SOIL CONDITIONS ONLY.
3. REFER TO SECTION 71 IN THE STANDARD SPECIFICATIONS.
4. HDPE = HIGH DENSITY POLYETHYLENE PIPE.

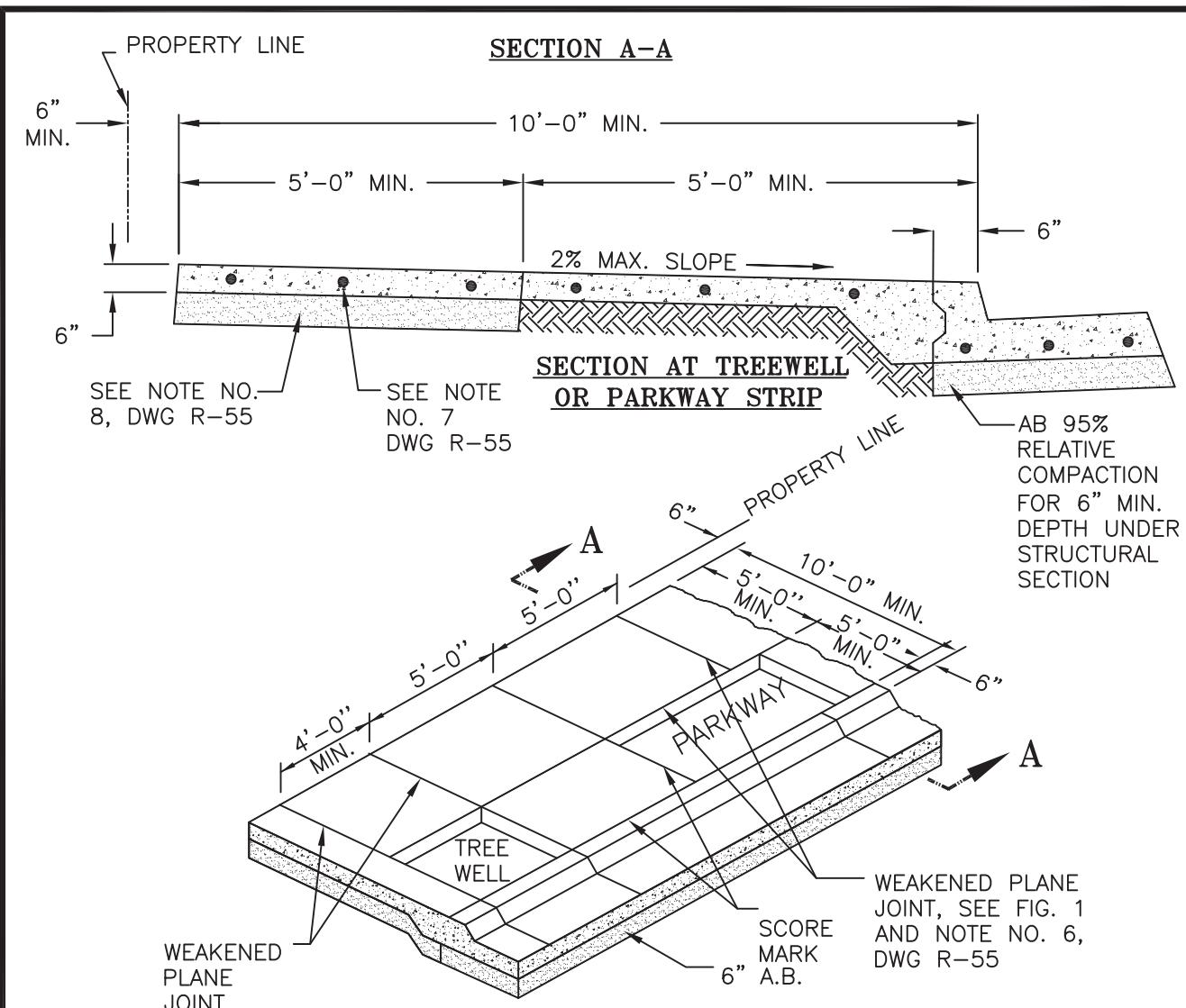
TRENCH SECTION HDPE PIPE	REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>R-42</b>	



NOTES:

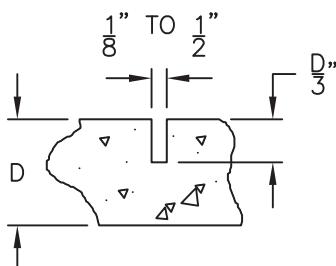
1. BEDDING AROUND PIPE SHALL CONFORM TO C.O.S. STD. DWG. NO. R-36.
2. THIS TRENCH SECTION MAY BE USED FOR UNIMPROVED STREET RIGHTS OF WAY OR EASEMENTS
3. MATERIAL INDICATED TO BE IMPORTED SAND OR APPROVED CLEAN GRANULAR MATERIAL, FREE OF ALL LUMPS AND DEBRIS. GRADING SHALL BE 100% PASSING A 3/4" SIEVE AND 5%-20% PASSING A #200 SIEVE WITH MINIMUM SAND EQUIVALENT EQUAL TO 20.

<b>OPEN CUT TRENCH SECTION NEW STREETS</b>		REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>R-43</b>

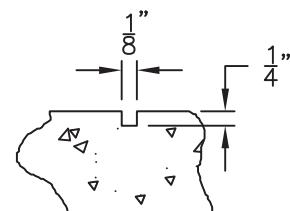
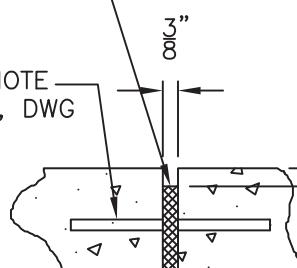


**VERTICAL CURB, GUTTER & SIDEWALK WITH TREE WELLS OR PARKWAY STRIP**

PREFORMED FIBER EXPANSION JOINT FILLER CONFORMING TO  
ASTM D-1751



SEE NOTE  
NO. 7, DWG  
R-55



**FIGURE 1 WEAKENED PLANE JOINT**

**FIGURE 2 EXPANSION JOINT**

**FIGURE 3 SCORE MARK**

## SIDEWALK DETAILS



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

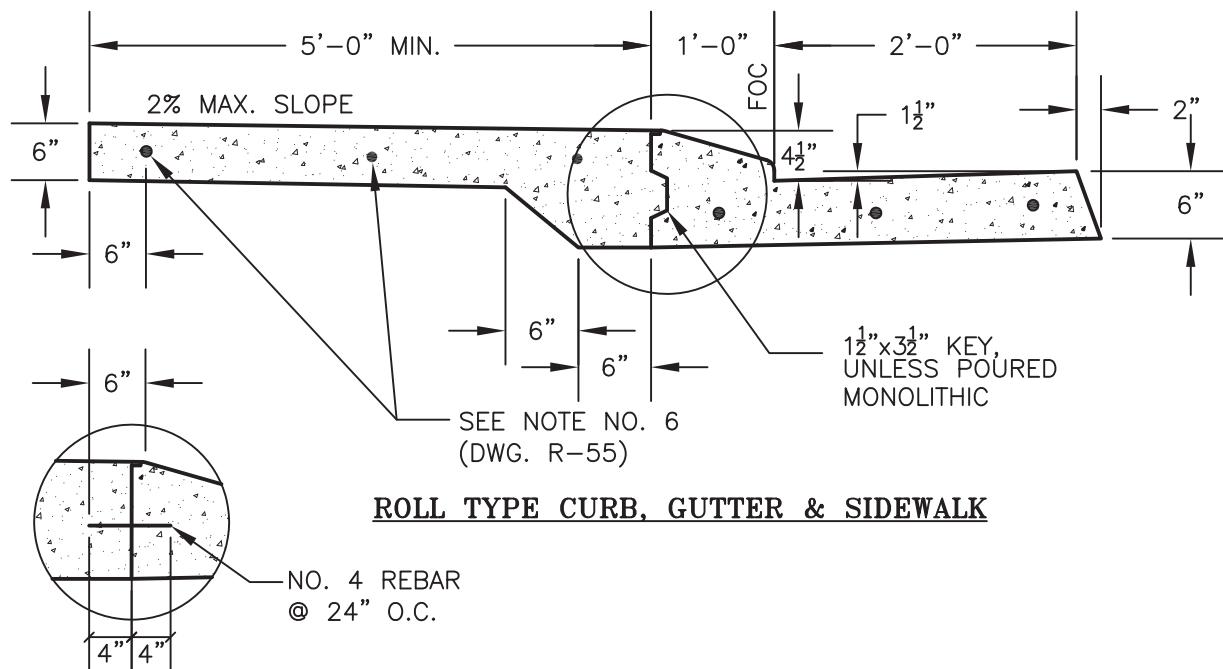
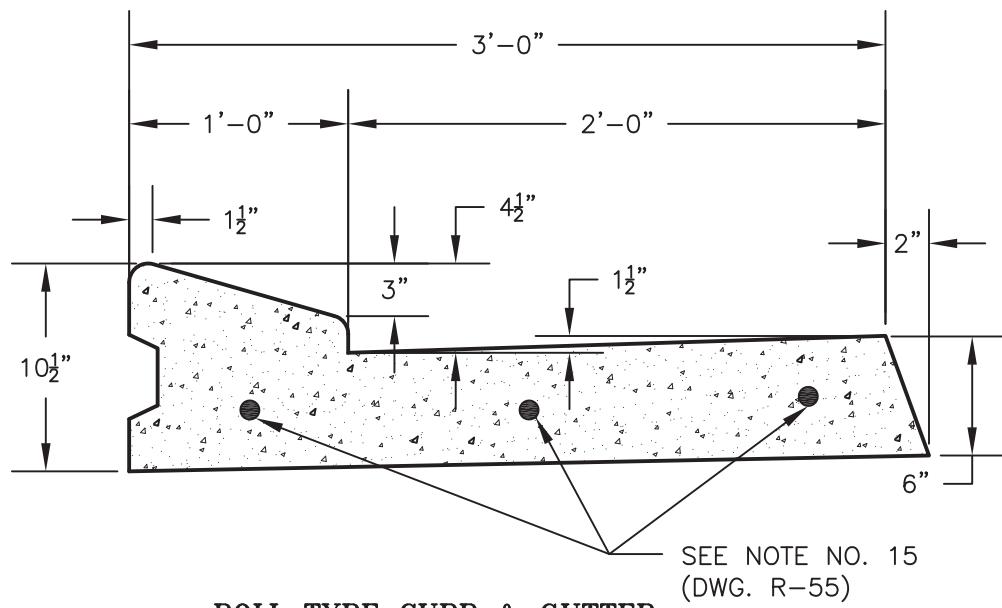
REVISION  
NO.  
9

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

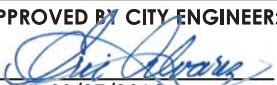
DRAWING NO.  
**R-50**

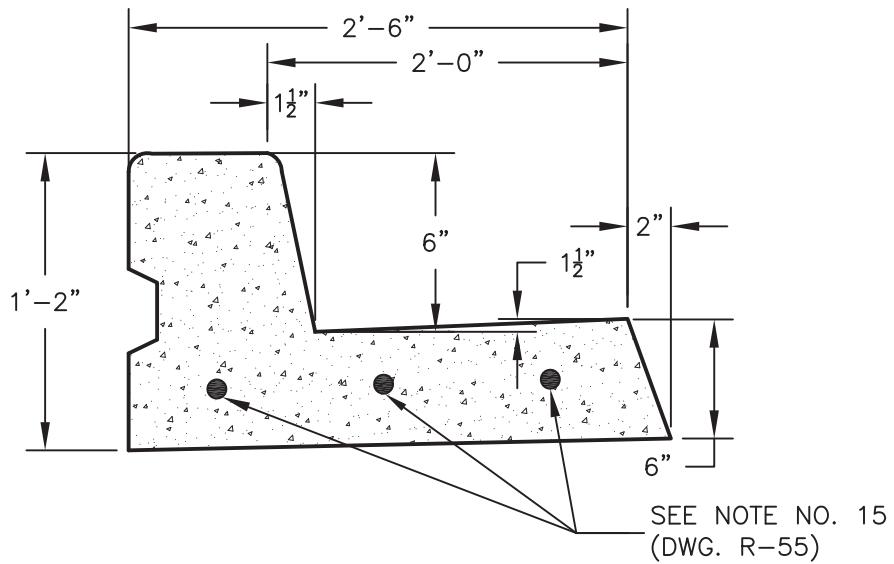


#### ALTERNATE CONNECTION AT BOC

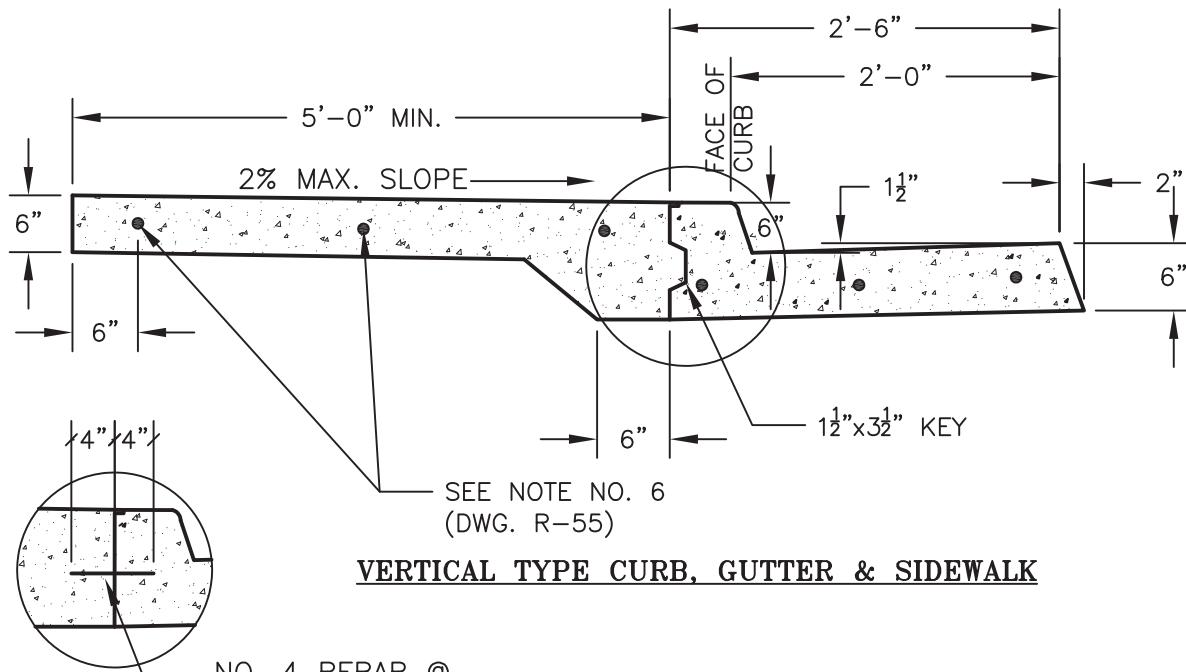
##### NOTES:

1. SEE DWG. R-55 FOR CURB, GUTTER, AND SIDEWALK CONSTRUCTION NOTES.
2. NEITHER KEY NOR CONNECTING REBAR IS NECESSARY IF CURB & GUTTER ARE POURED MONOLITHICALLY WITH SIDEWALK.

<b>ROLL CURB, GUTTER &amp; SIDEWALK</b>	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



#### VERTICAL TYPE CURB & GUTTER



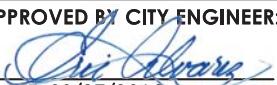
#### VERTICAL TYPE CURB, GUTTER & SIDEWALK

NO. 4 REBAR @  
24" O.C.

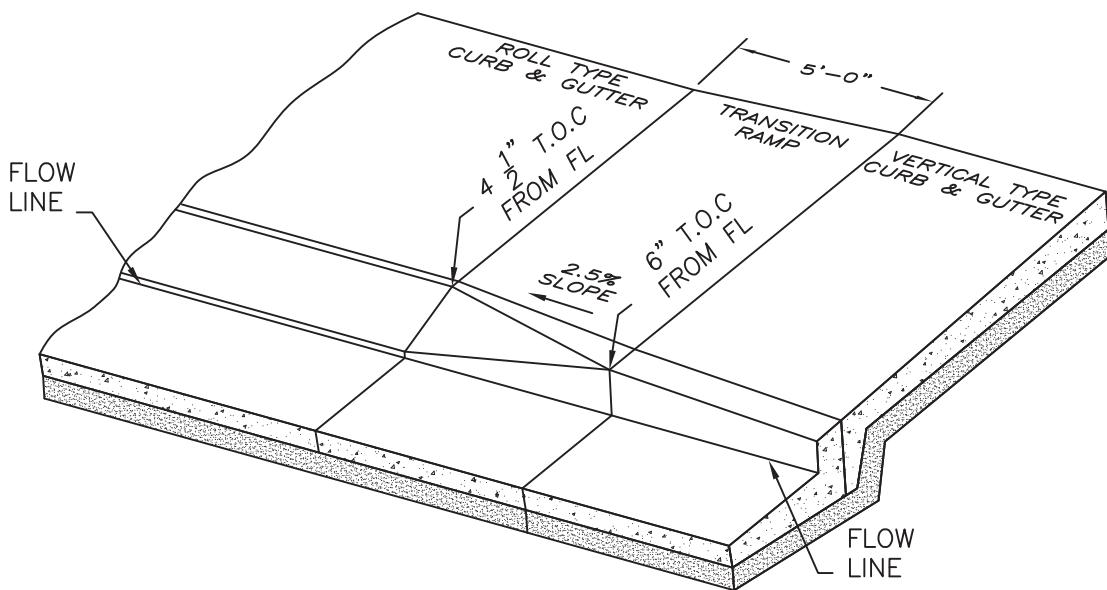
#### ALTERNATE CONNECTION

##### NOTES:

1. SEE DWG. R-55 FOR CURB, GUTTER, AND SIDEWALK CONSTRUCTION NOTES.
2. NEITHER KEY NOR CONNECTING REBAR IS NECESSARY IF CURB & GUTTER ARE POURED MONOLITHICALLY WITH SIDEWALK.

<b>VERTICAL CURB, GUTTER &amp; SIDEWALK</b>	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03

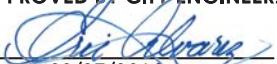
**R-52**

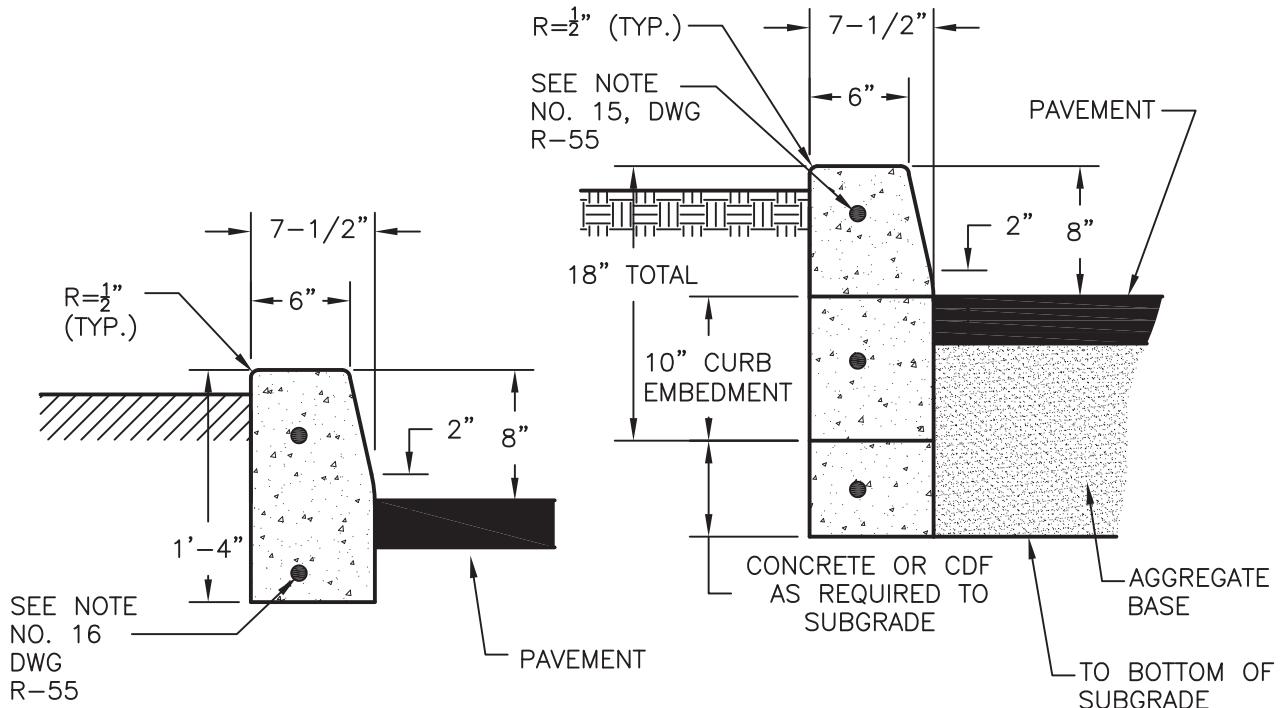


### 3-D VIEW

#### NOTES:

1. MINIMUM TRANSITION LENGTH IS 5'-0". IF LESS THAN 5'-0", NEED CITY ENGINEER APPROVAL.
2. MAXIMUM TRANSITION SLOPE IS 2.5%.

<b>ROLL CURB TO VERTICAL CURB TRANSITION</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>R-53</b>



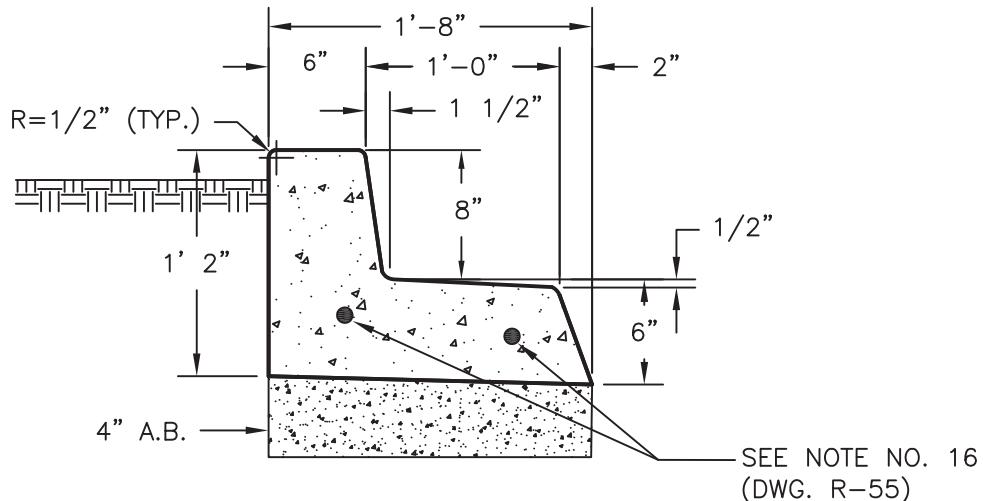
### TYPE "B" VERTICAL CURB\*

\*FOR USE WITH HARDCAPES ONLY

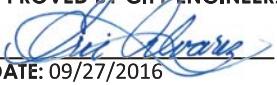
### MODIFIED

### TYPE "B" VERTICAL CURB\*

\*FOR USE IN LANDSCAPED MEDIANS,  
SEE DWG NO. R-32



### TYPE "F" CURB & APRON

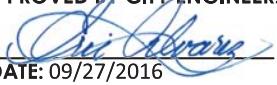
VERTICAL CURB & APRON	REVISION NO.	APPROVED BY CITY ENGINEER:
	2	 DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE	SUPERSEDES DWG. DATED 11/25/03
	NONE	DRAWING NO. <b>R-54</b>

NOTES:

1. CURB, GUTTER AND SIDEWALK AND ALL P.C.C. FLATWORK SHALL HAVE A FINE HAIR LIGHT BROOM FINISH; CURB AND GUTTER PARALLEL TO THE FLOW LINE.
2. CONSTRUCT EXPANSION JOINTS 150'-0" ON CENTER MAXIMUM, AND AT RETURNS, LIGHT POLES, HYDRANTS, CATCH BASINS, BOTH SIDES OF DRIVEWAY. AND OTHER FIXED OBJECTS.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CURRENT CITY OF STOCKTON STANDARDS SPECIFICATIONS.
4. SEE DEFINITION SECTION OF STANDARD SPECIFICATIONS FOR DEFINITION OF SAND.
5. WEAKENED PLANE JOINTS AND SCORE MARKS AS SHOWN. SEE DWG R-50 FOR WEAKENED PLANE JOINT WIDTH AND DEPTH.
6. PLACE 5/8" X 24" LONG STEEL DOWELS THROUGH EVERY EXPANSION JOINT SPACED AT 1'-6" ON CENTER (MIN.) GREASED AND WRAPPED ON ONE SIDE, OFFSET 6" FROM CONCRETE EDGES, UNLESS OTHERWISE SHOWN OR SPECIFIED. MINIMUM THREE DOWELS IN 5' WIDE SIDEWALK.
7. SIDEWALK CONSTRUCTION SHALL CONFORM TO SECTION 73, STANDARD SPECIFICATIONS, CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS), EXCEPT AS MODIFIED HEREIN.
8. SUBGRADE FOR SIDEWALK SHALL BE SCARIFIED AND COMPAKTED TO A MINIMUM RELATIVE COMPACTION OF 90% TO A DEPTH OF 6". PLACE 4" MINIMUM OF AGGREGATE SUBBASE CLASS II OR IV UNDER THE CONCRETE SECTIONS AND COMPACT TO A MINIMUM OF 90%.
9. SUBGRADE FOR CURB, GUTTER, AND DRIVEWAYS SHALL BE SCARIFIED AND COMPAKTED TO A MINIMUM RELATIVE COMPACTION OF 95% TO A DEPTH OF 6", BASE FOR CURB, GUTTER, AND DRIVEWAYS TO BE AB ONLY.
10. ALL RADII FOR ROUNDING EDGES SHALL BE 3/4" UNLESS NOTED.
11. CONCRETE SHALL BE PER SECTION 90. MINOR CONCRETE PER SPECIFICATION.
12. EXPANSION JOINTS AND WEAKENED PLANE JOINTS SHALL BE INSTALLED AS INDICATED ON THE PLANS OR STANDARD DETAILS.
13. DEPRESS A 2" HIGH LETTER 'W', 'S', OR 'I' FOR IRRIGATION SLEEVE LOCATION, 1/4" DEEP INTO THE TOP OF CURB TO IDENTIFY SERVICE LOCATIONS.
14. WATER SHALL BE USED TO ENSURE PROPER DRAINAGE OF GUTTERS AT BOTH THE FINAL WALKTHROUGH AND PRIOR TO THE EXPIRATION OF THE ONE-YEAR WARRANTY.
15. 3-5/8" X 24" LONG STEEL DOWELS MINIMUM THROUGH EVERY EXPANSION JOINT.
16. 2-5/8" X 24" LONG STEEL DOWELS MINIMUM THROUGH EVERY EXPANSION JOINT.
17. IN AN EXISTING STREET, WHENEVER THE CURB AND GUTTER ARE REMOVED, SAWCUT EXISTING STREET 1' OUT FROM LIP OF GUTTER MIN. & REPLACE WITH 8" OF ASPHALT CONCRETE, MIN., MATCHING EXISTING SECTION.

**CONCRETE CURB, GUTTER & SIDEWALKS  
CONSTRUCTION STANDARDS**

REVISION NO.  
1

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

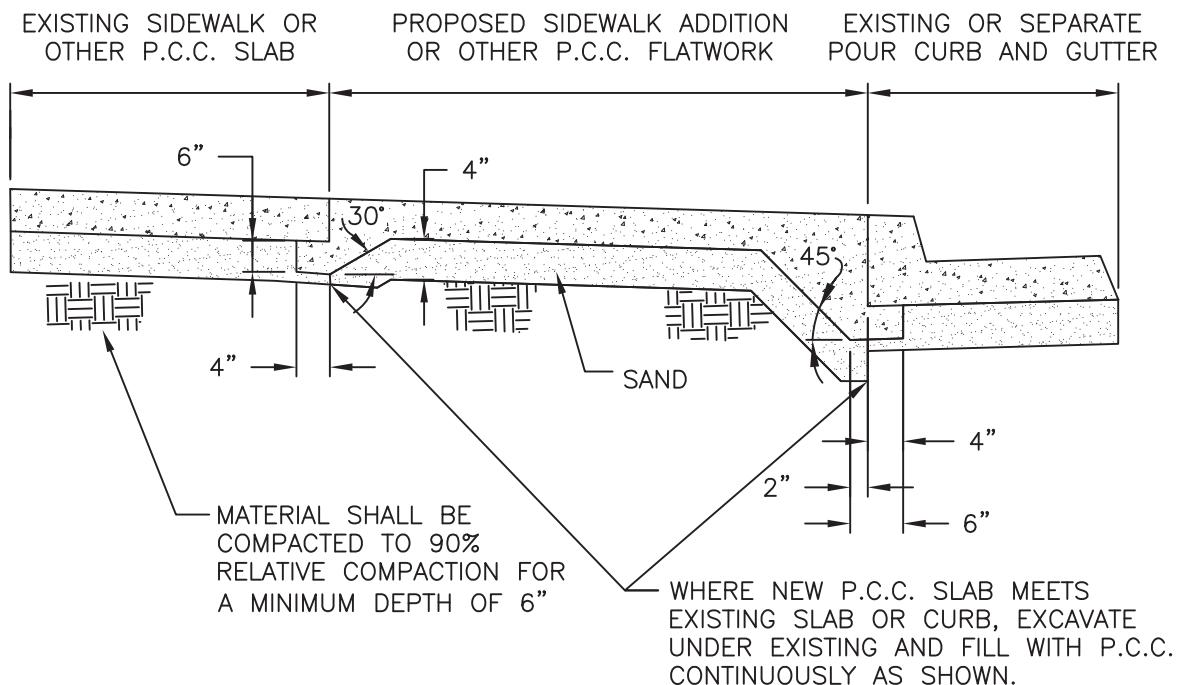


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

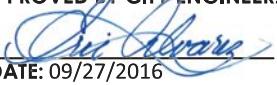
SUPERSEDES  
DWG. DATED  
11/25/03

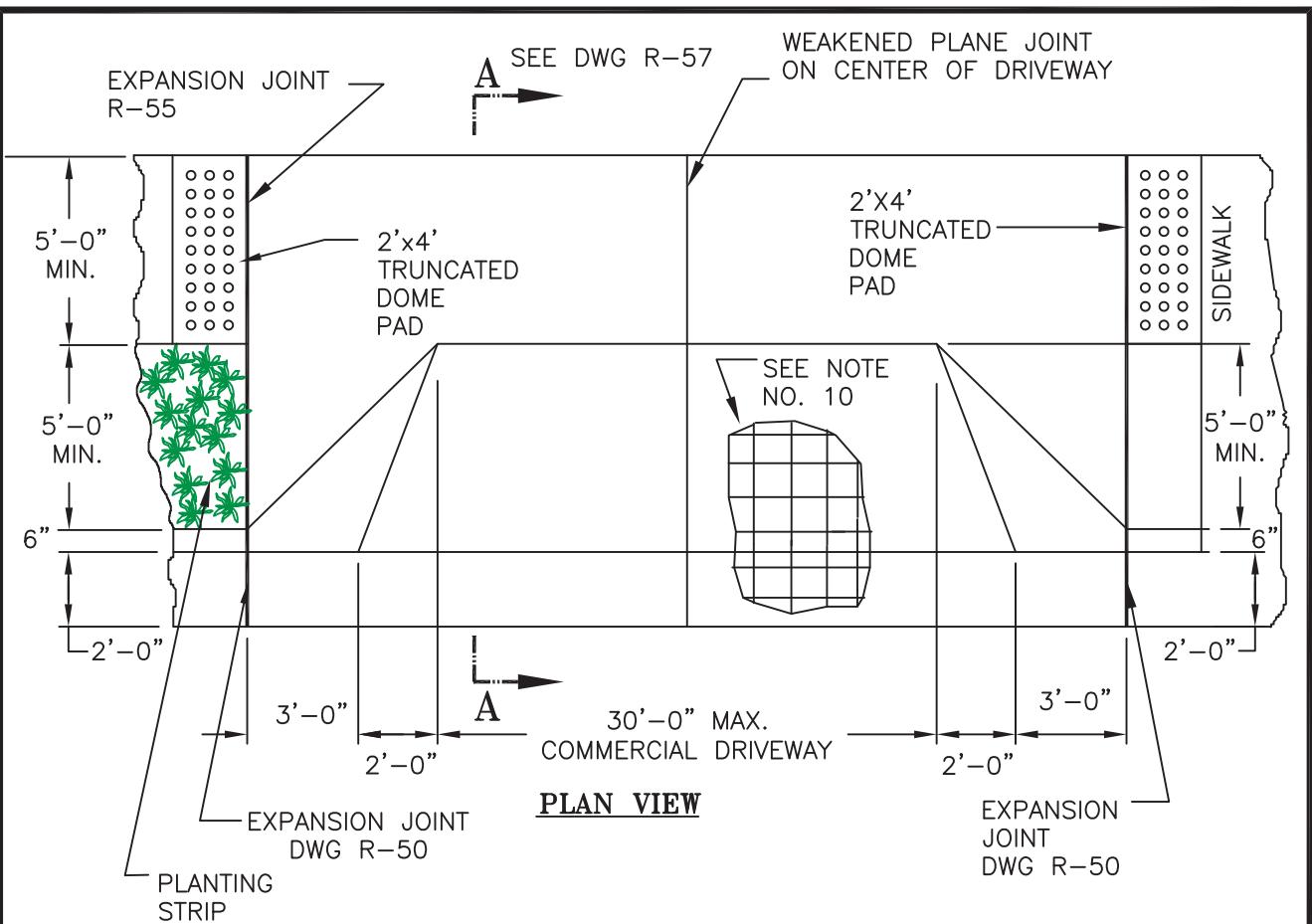
DRAWING NO.  
**R-55**



NOTES:

1. THE ABOVE KEY SHALL BE REQUIRED BETWEEN EXISTING AND PROPOSED P.C.C. AT ALL DRIVEWAYS.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CURRENT CITY OF STOCKTON STANDARD SPECIFICATIONS.
3. MATERIAL UNDER ALL SAND BASE SHALL BE COMPACTED TO 90% RELATIVE COMPACTION FOR A MINIMUM DEPTH OF 6".
4. CURB, GUTTER, AND ALL P.C.C. FLATWORK TO HAVE A FINE HAIR LIGHT BROOM FINISH.
5. SEE DWG R-55 FOR CURB, GUTTER AND SIDEWALK CONSTRUCTION NOTES.

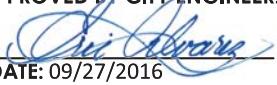
<b>KEYING CONCRETE SLAB</b>		REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>R-56</b>

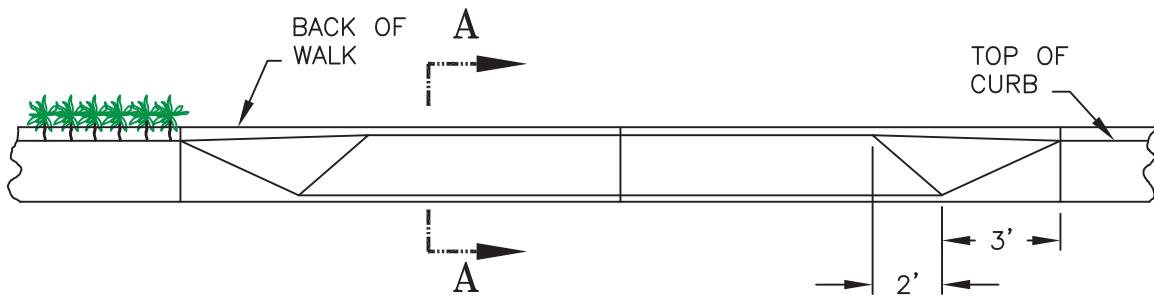


NOTES:

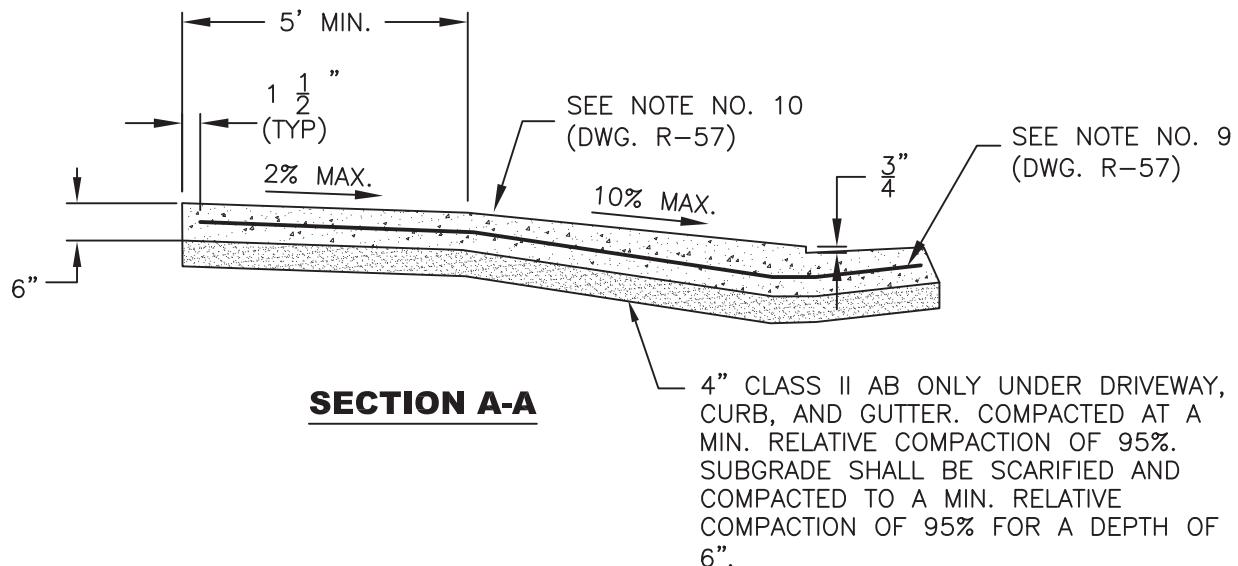
1. THIS DRIVEWAY TO BE USED ONLY WHERE APPROVED BY THE CITY ENGINEER.
2. DRIVEWAY TO CONFORM WITH EXISTING SIDEWALK. ALL CONCRETE TO STRUCTURAL CONCRETE PER SECTION 90, CITY STANDARDS.
3. IF SIDEWALK IN BACK EXISTS, WHERE NEW RAMP TO BE PLACED, IT SHALL BE REMOVED AND REPLACED WITH 6" THICK PORTLAND CEMENT CONCRETE.
4. WHERE DRIVEWAY PROVIDES ACCESS TO A ONE-WAY STREET, APPROPRIATE SIGNS AS SPECIFIED BY THE CITY TRAFFIC ENGINEER WILL BE REQUIRED.
5. DRIVEWAY RAMP SHALL BE AS WIDE AS EXISTING DRIVEWAY INTO YARD, ROUNDED UP TO NEXT EVEN FOOT (10'-0" MINIMUM).
6. IN EVENT OF OBSTRUCTIONS IN PARKWAY (E.G., POWER POLES, ETC.) WIDTH MAY BE MODIFIED TO MEET EXISTING CONDITIONS AS APPROVED BY THE CITY ENGINEER.
7. PARKWAY WARP WINGS SHALL BE 3'-0" FOR 6" CURB OR HIGHER.
8. WHEN IT IS NOT POSSIBLE TO PROVIDE 2'-0" OF FULL HEIGHT CURB WITH STANDARD 3'-0" WARPS ON EITHER SIDE BETWEEN ADJACENT DRIVEWAYS, A COMMON DRIVEWAY SHALL BE INSTALLED.
9. #4 BAR AT 18" ON CENTER, EACH WAY AND SHALL BE INSTALLED 2" FROM BOTTOM OF THE CONCRETE PAD.
10. FINE HAIR LIGHT BROOM FINISH.
11. TRUNCATED DOMES NOT REQUIRED FOR SINGLE FAMILY, DUPLEX OR TRIPLEX SITE.

Page 1 of 2

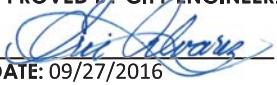
<b>SPECIAL COMMERCIAL RAMP DRIVEWAY</b>		REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>R-57</b>



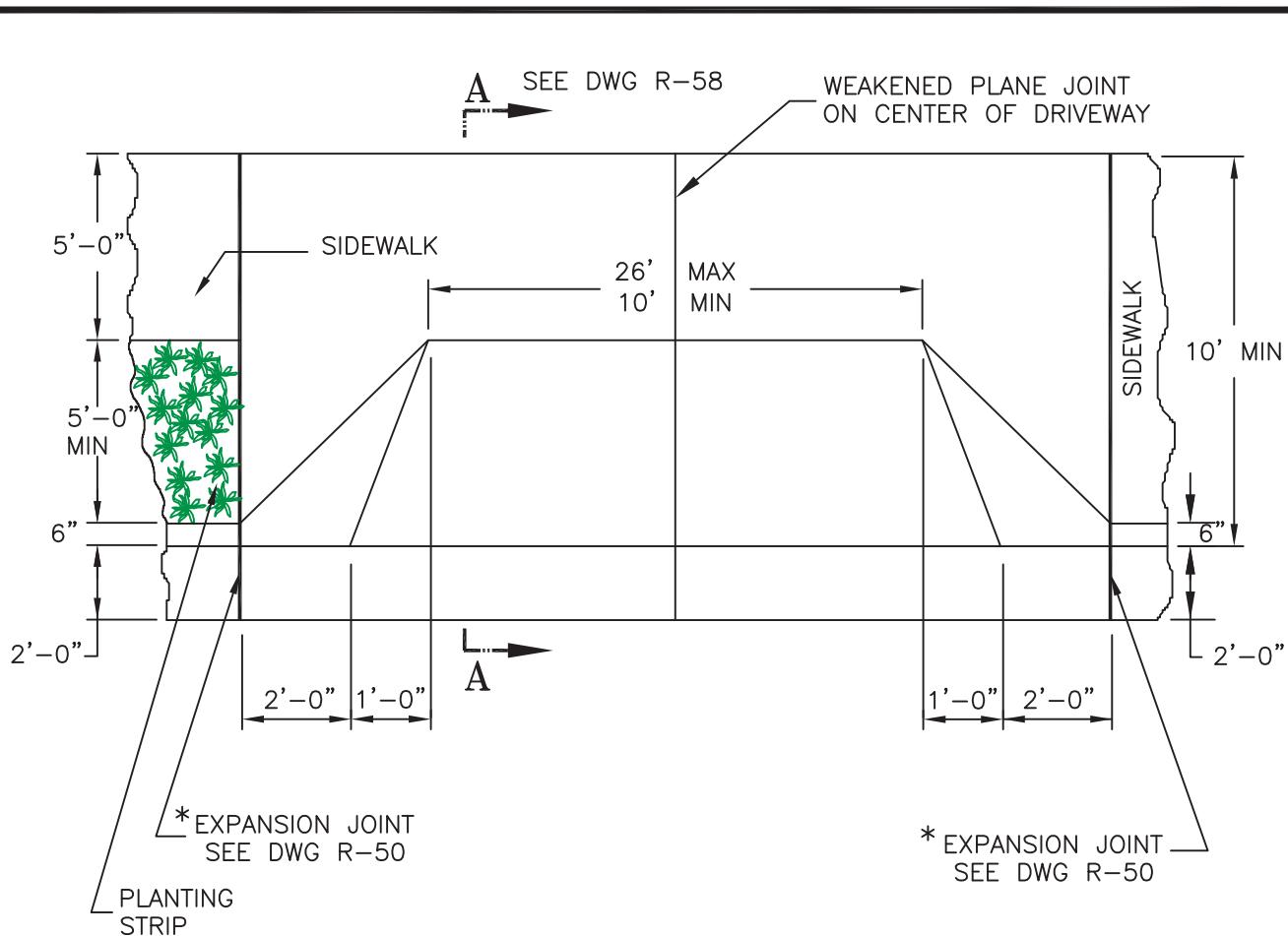
FRONT ELEVATION



Page 2 of 2

<b>SPECIAL COMMERCIAL RAMP DRIVEWAY</b>	REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

**DRAWING NO.  
R-57**



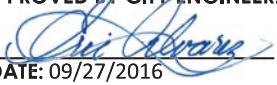
### PLAN VIEW

#### NOTES:

1. DRIVEWAY TO CONFORM WITH EXISTING SIDEWALK. ALL CONCRETE TO BE STRUCTURAL CONCRETE PER SECTION 90, CITY SPECIFICATIONS.
2. IF SIDEWALK IN BACK EXISTS, WHERE NEW RAMP TO BE PLACED. IT SHALL BE REMOVED AND REPLACED WITH 6" THICK PORTLAND CEMENT CONCRETE.
3. DRIVEWAY RAMP SHALL BE AS WIDE AS EXISTING DRIVEWAY INTO YARD, ROUNDED UP TO NEXT EVEN FOOT (10'-0" MINIMUM).
4. IN EVENT OF OBSTRUCTIONS IN PARKWAY (E.G., POWER POLES, ETC.) WIDTH MAY BE MODIFIED TO MEET EXISTING CONDITIONS AS APPROVED BY THE CITY ENGINEER.
5. PARKWAY WARP WINGS SHALL BE 3'-0" FOR 6" CURB OR HIGHER. FOR 4.5" CURB WARP WINGS SHALL BE 2'-0".
6. WHEN IT IS NOT POSSIBLE TO PROVIDE 2'-0" OF FULL HEIGHT WITH STANDARD 2'-0" WARPS ON EITHER SIDE BETWEEN ADJACENT DRIVEWAYS, A COMMON DRIVEWAY SHALL BE INSTALLED.
7. FINE HAIR LIGHT BROOM FINISH.

\* EXPANSION JOINTS MAY NOT BE REQUIRED WITH NEW STREET CONSTRUCTION.

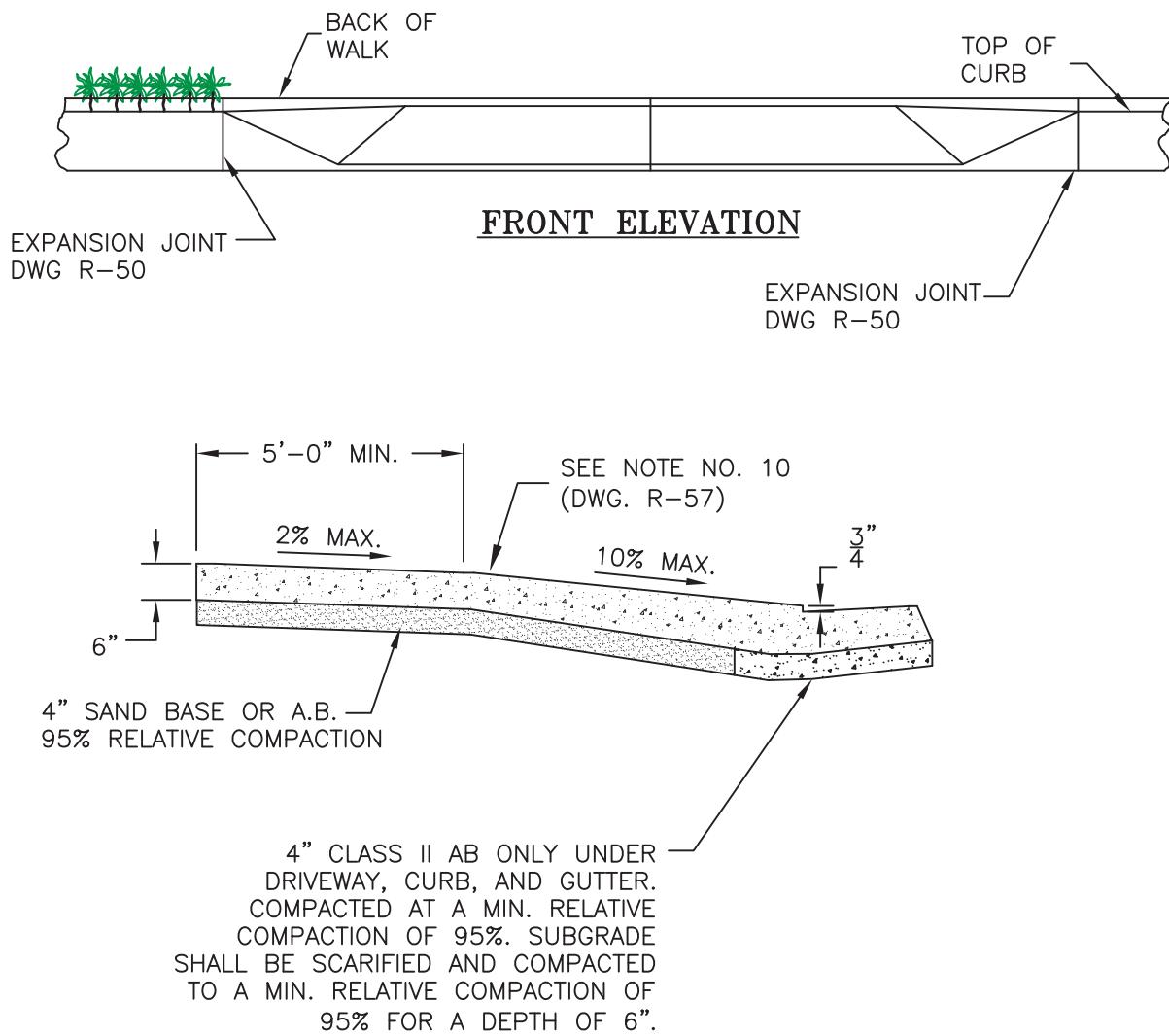
Page 1 of 2

REVISION NO.	APPROVED BY CITY ENGINEER:
6	 DATE: 09/27/2016
SCALE	SUPERSEDES DWG. DATED
NONE	11/25/03
DRAWING NO.	R-58

### **RESIDENTIAL RAMP DRIVEWAY**



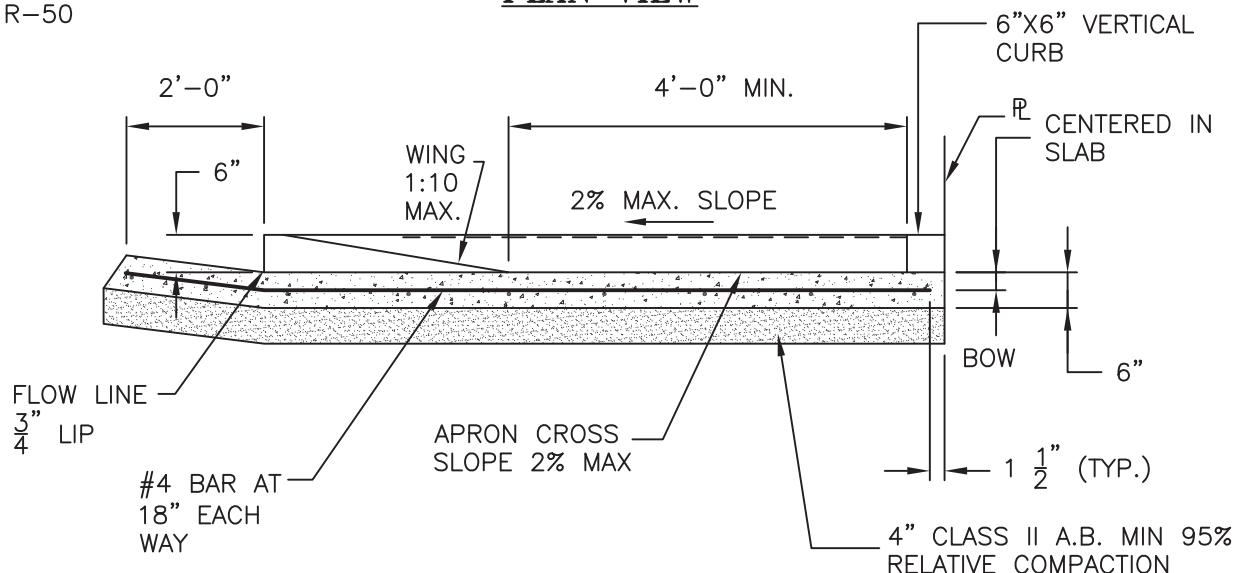
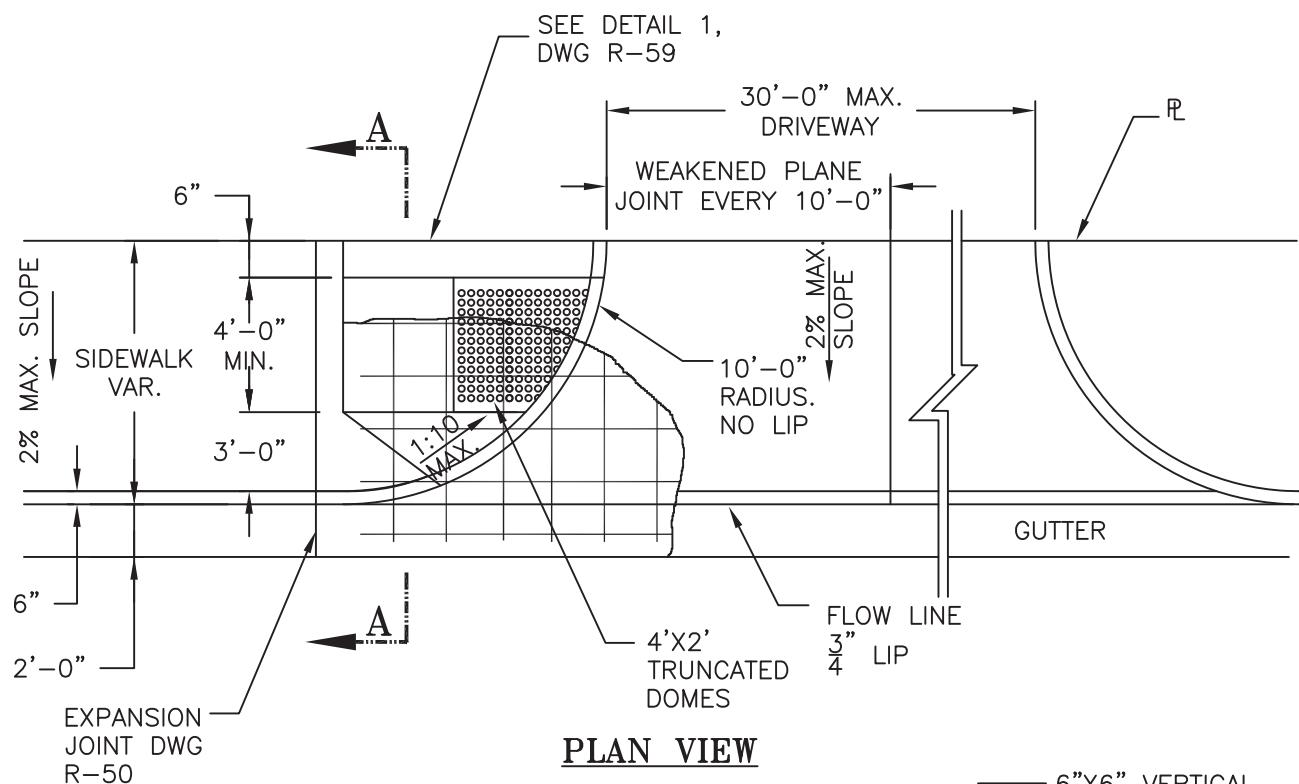
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS



Page 2 of 2

<b>RESIDENTIAL RAMP DRIVEWAY</b>	REVISION NO. 7	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 04/07/04

**DRAWING NO.  
R-58**

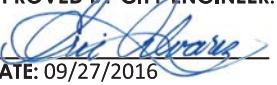


**SECTION A-A**

**NOTES:**

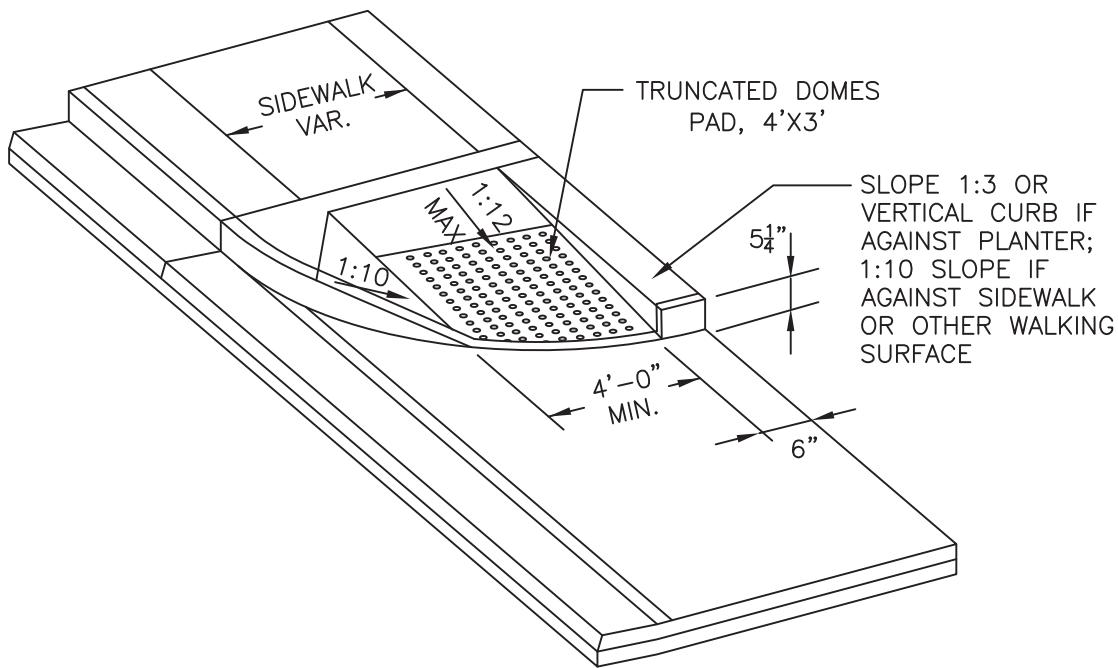
1. WHEELCHAIR RAMP LIGHT BROOM FINISH WITH THE SLOPE OF THE RAMP.
2. ALSO SEE COMMERCIAL RAMP DRIVEWAY DWG. R-57.
3. SEE ISOMETRIC VIEW ON DRAWING R-59, PAGE 2.
4. DRIVEWAYS OVER 30'-0" SHALL BE APPROVED BY THE CITY ENGINEER.

Page 1 of 2

STANDARD COMMERCIAL DRIVEWAY	REVISION NO.	APPROVED BY CITY ENGINEER:
	5	 DATE: 09/27/2016
SCALE	SUPERSEDES DWG. DATED	DRAWING NO.
NONE	11/25/03	<b>R-59</b>

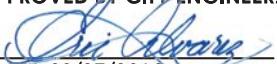


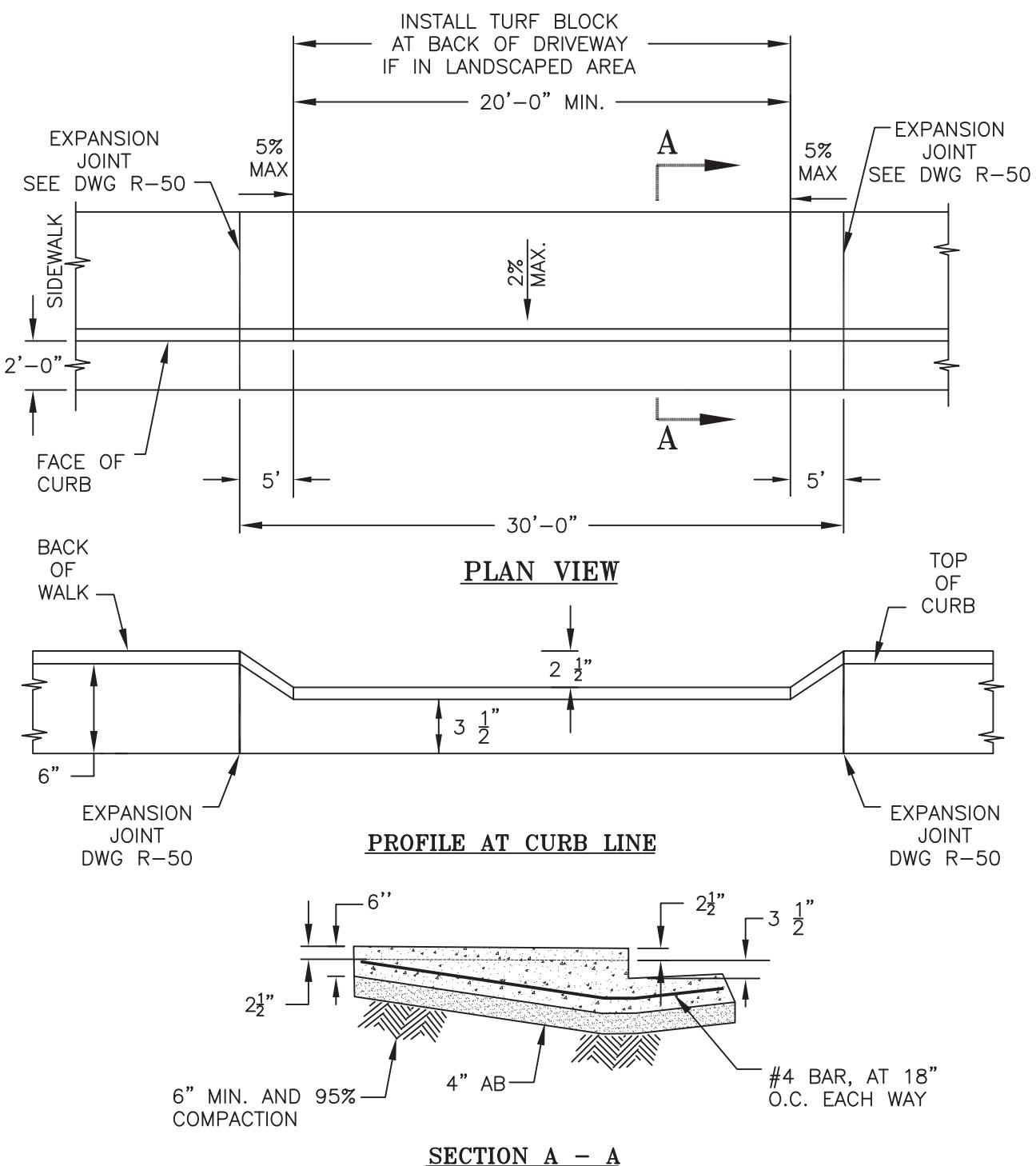
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS



DETAIL 1

Page 2 of 2

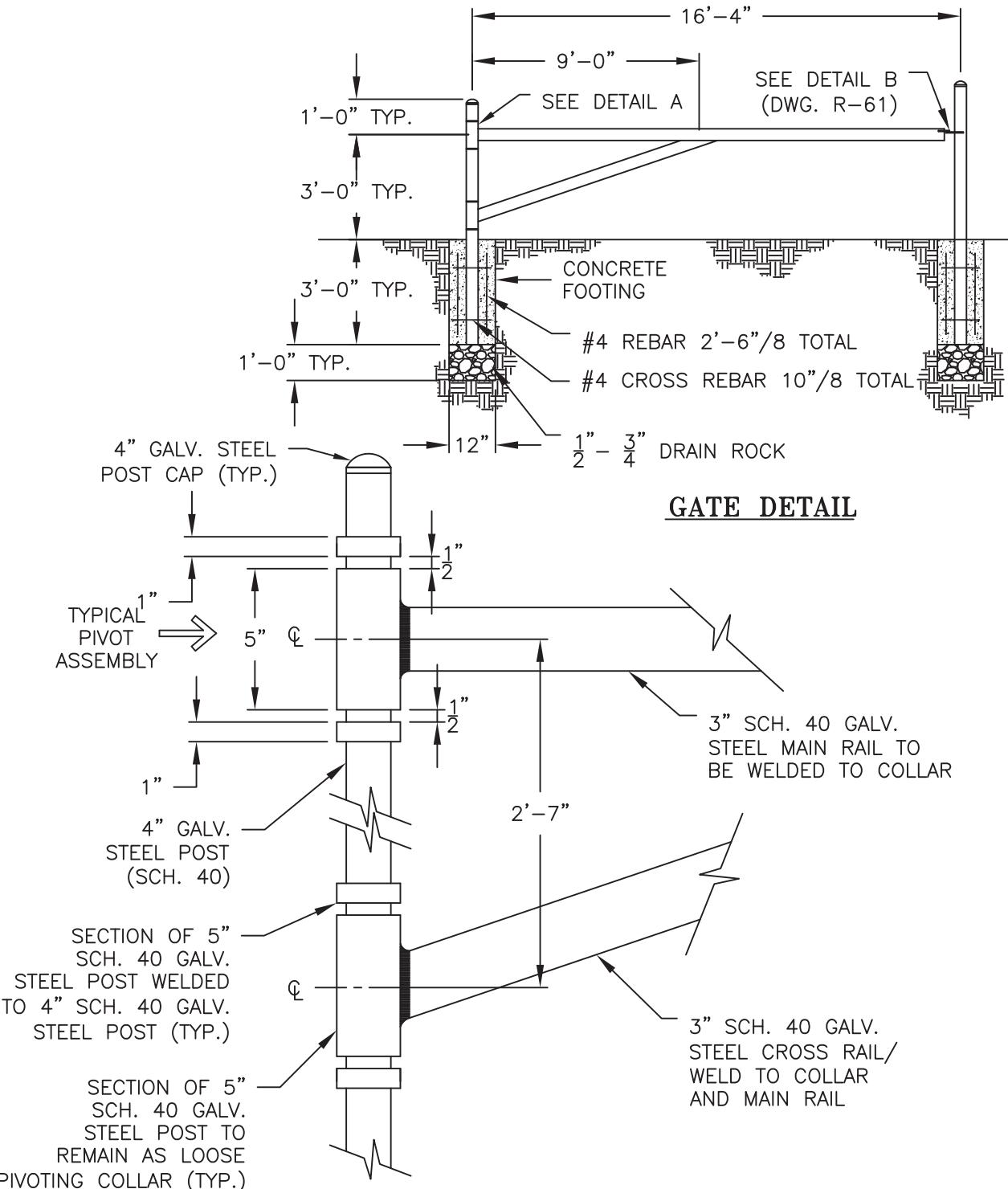
<b>STANDARD COMMERCIAL DRIVEWAY</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>R-59</b>



NOTES:

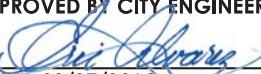
1. SEE C.O.S. STANDARD DRAWING NO. R-59 FOR DETAILS NOT SHOWN.
2. INSTALL TURF BLOCK IN LANDSCAPED AREA AS REQUIRED BY CITY ENGINEER.
3. INSTALL PIPE GATE (COS STD DWG NO. R-61) AS REQUIRED BY CITY ENGINEER AND FIRE CHIEF.

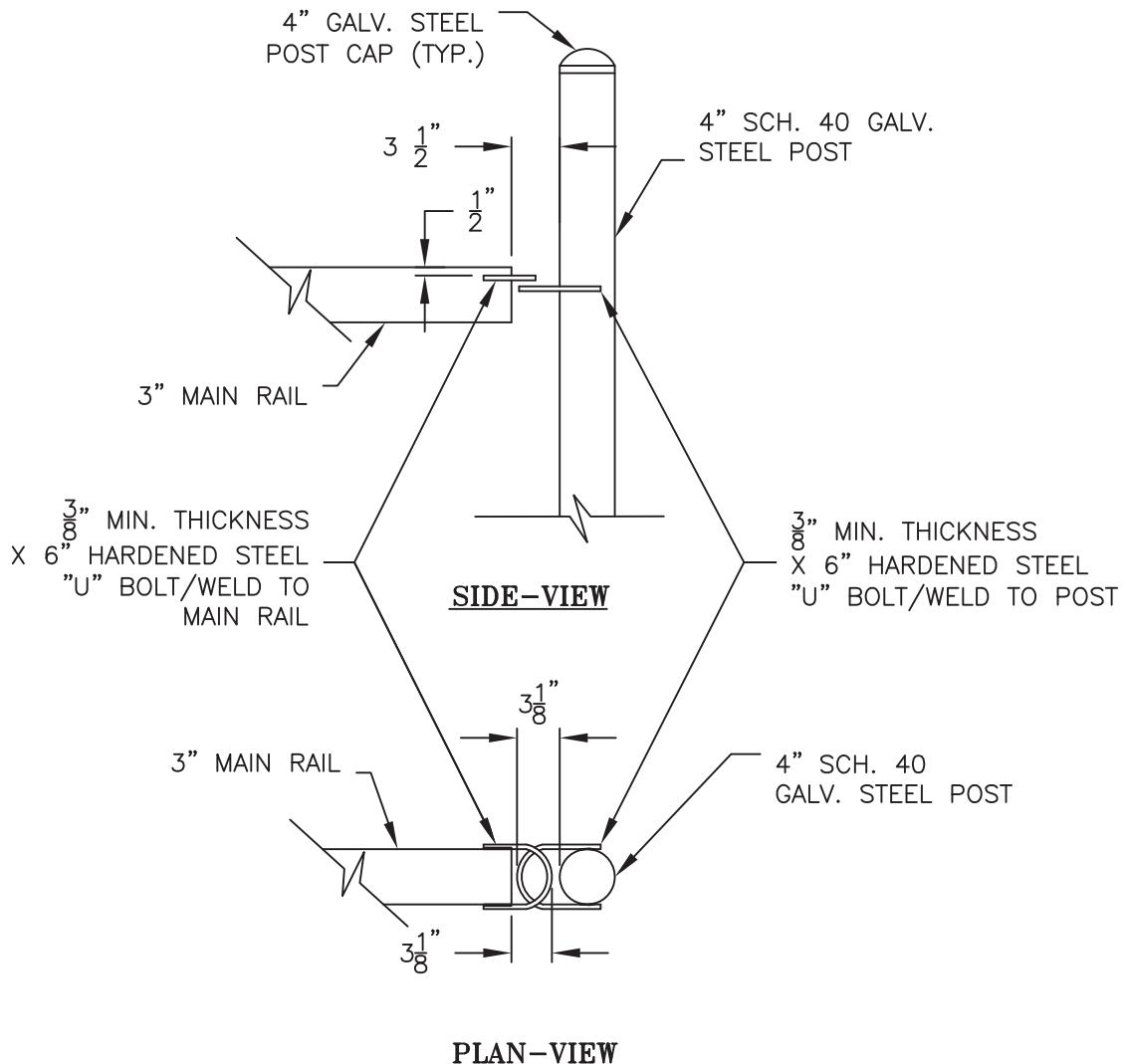
<b>FIRE ACCESS DRIVEWAY</b>	REVISION NO. 6	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



**DETAIL A (GATE TO POST DETAIL PIVOT)**

Page 1 of 2

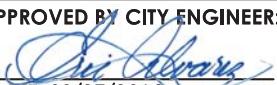
ACCESS GATE	REVISION NO.	APPROVED BY CITY ENGINEER:
	1	 DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE	SUPERSEDES DWG. DATED
NONE	R-61	01/09/02



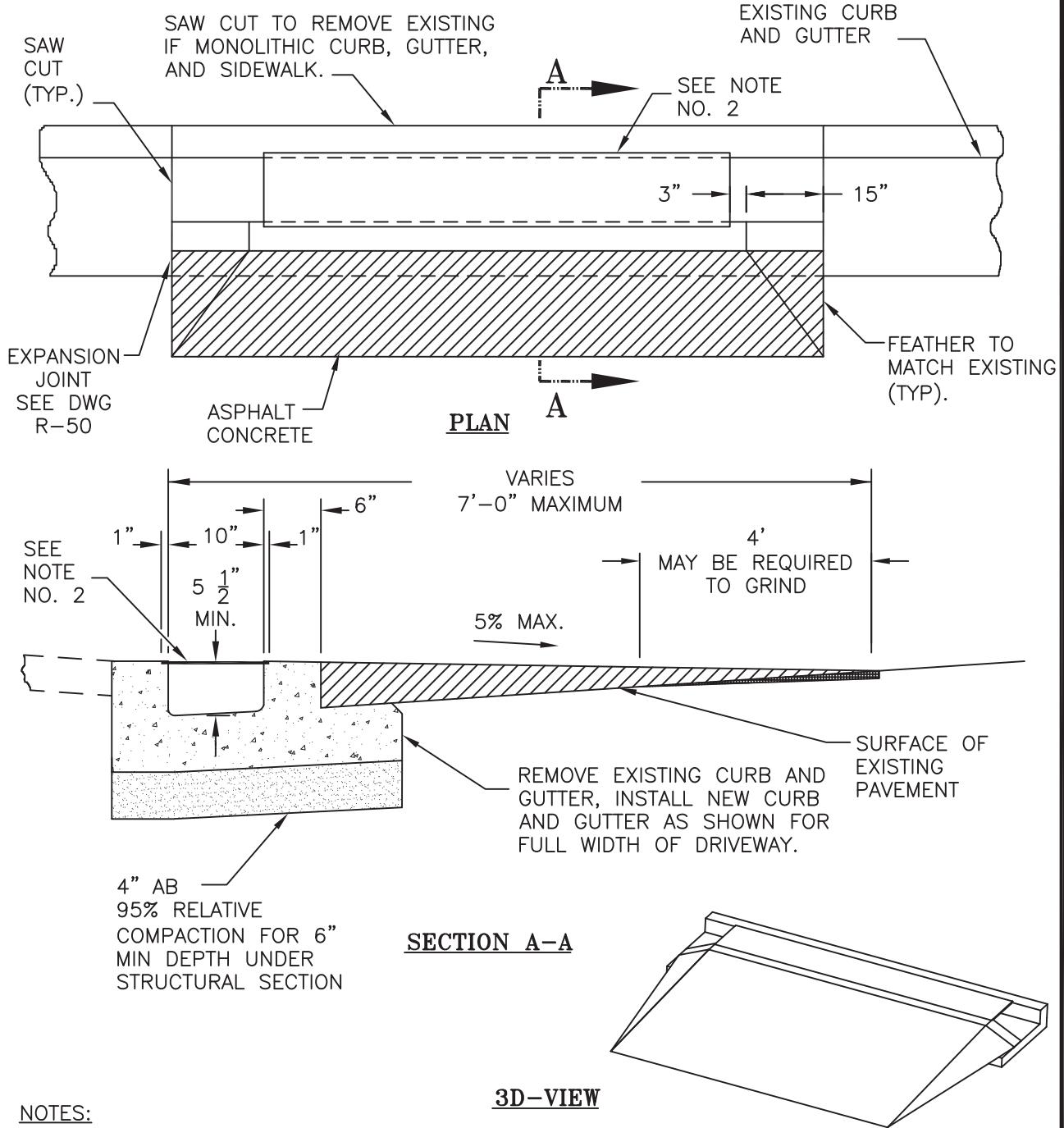
### DETAIL B (RAIL TO POST LOCK DETAIL)

NOTE: LOCKING MECHANISM SHALL BE SUBJECT TO THE APPROVAL OF THE FIRE DEPARTMENT.

Page 2 of 2

<b>ACCESS GATE</b>	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

**DRAWING NO.  
R-61**



<b>BRIDGE-TYPE-DRIVEWAY</b>	REVISION NO. 5	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

THE FOLLOWING MINIMUM CURB RADII SHALL BE USED  
AT THE INTERSECTION OF STREETS:

STREET TYPE (WIDTH)		STREET TYPE (WIDTH)												
ROW	54'	60'	56'	78'	96'	120'	142'	LOCAL, RESIDENTIAL & COMMERCIAL (34')	LOCAL, RESIDENTIAL & INDUSTRIAL (40')	COLLECTOR, BACK-UP RESIDENTIAL (26')	COLLECTOR, NON-RESIDENTIAL (48')	ARTERIAL, MINOR (26'-14'median-26')	ARTERIAL, MAJOR (38'-14'median-38')	ARTERIAL, MAJOR (49'-14'median-49')
LOCAL, RESIDENTIAL & COMMERCIAL (34')	54'	20'	30'	20'	30'	30'	30'	54'	60'	30'	30'	50'	50'	60'
LOCAL, RESIDENTIAL & INDUSTRIAL (40')	60'	30'	30'	30'	30'	50'	50'	54'	56'	20'	15'	25'	30'	56'
COLLECTOR, BACK-UP RESIDENTIAL (26')	56'	20'	30'	15'	25'	25'	50'	50'	78'	78'	30'	30'	30'	78'
COLLECTOR, NON-RESIDENTIAL (48')	78'	30'	30'	25'	25'	50'	50'	96'	96'	30'	30'	30'	30'	96'
ARTERIAL, MINOR (26'-14'median-26')	96'	30'	50'	30'	50'	30'	30'	120'	120'	30'	30'	30'	30'	120'
ARTERIAL, MAJOR (38'-14'median-38')	120'	30'	50'	30'	50'	30'	30'	142'	142'	30'	30'	30'	30'	142'
ARTERIAL, MAJOR (49'-14'median-49')	142'	30'	50'	30'	50'	30'	30'	54'	54'	30'	30'	30'	30'	54'

WIDTH: MAJ (1) = 38'/14' MEDIAN/38'; MAJ (2) = 49'/14' MEDIAN/49'

NOTE:

CORNERS WITH A 15' CURB RADIUS MUST INSTALL TWO (2) SPECIAL WHEELCHAIR RAMPS.

## CURB RETURN RADII

REVISION NO.

1

APPROVED BY CITY ENGINEER:

DATE: 09/27/2016

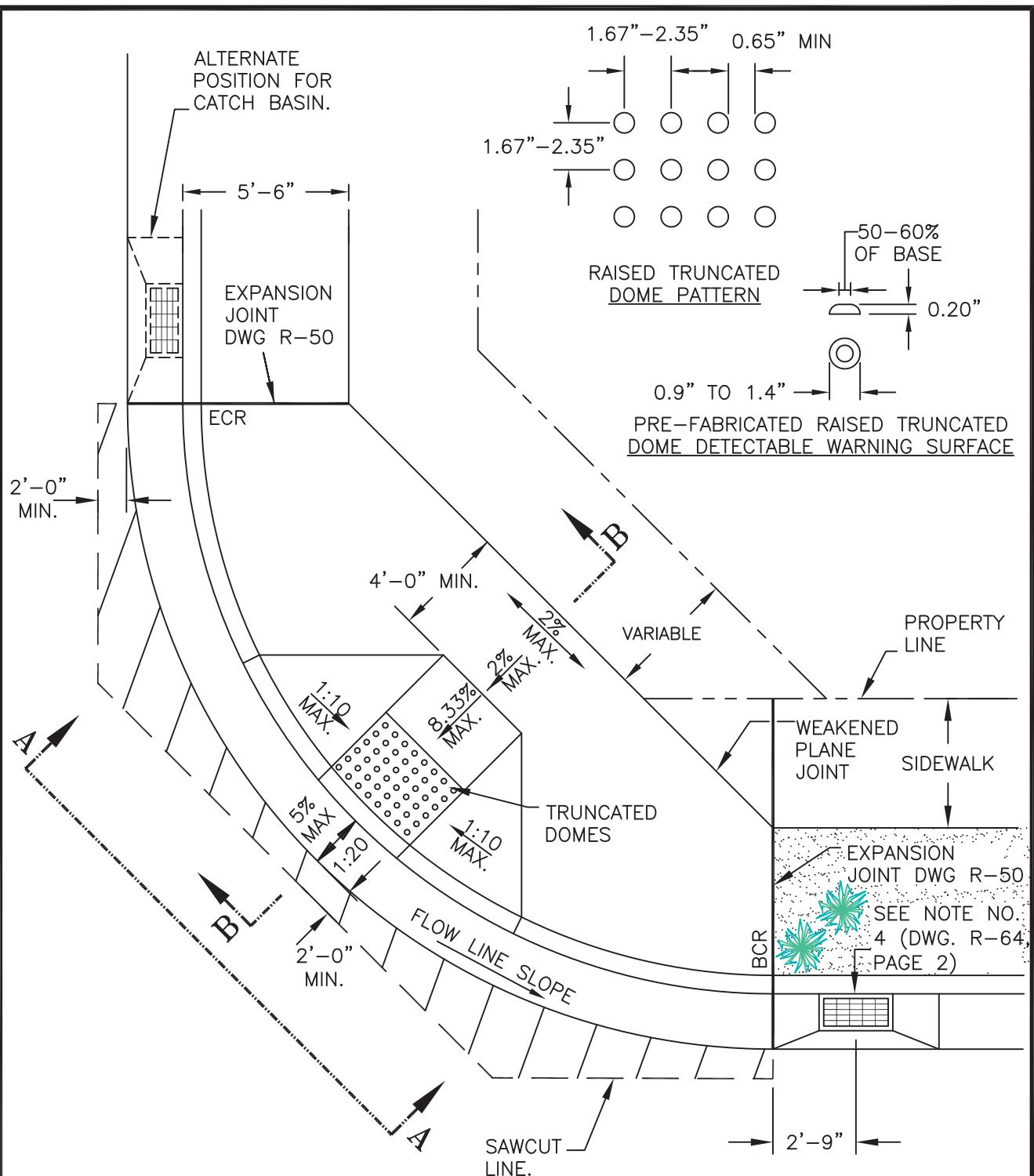


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

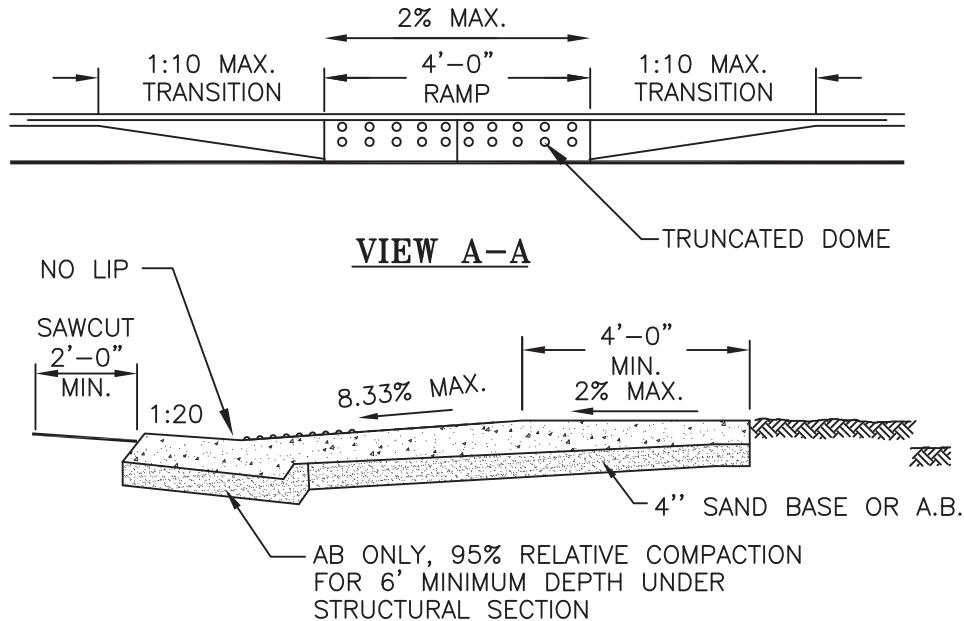
SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**R-63**



Page 1 of 2

<b>TYPICAL WHEELCHAIR RAMP AT INTERSECTIONS</b>	REVISION NO. 8	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
		DRAWING NO. <b>R-64</b>

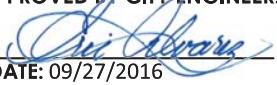


### SECTION B-B

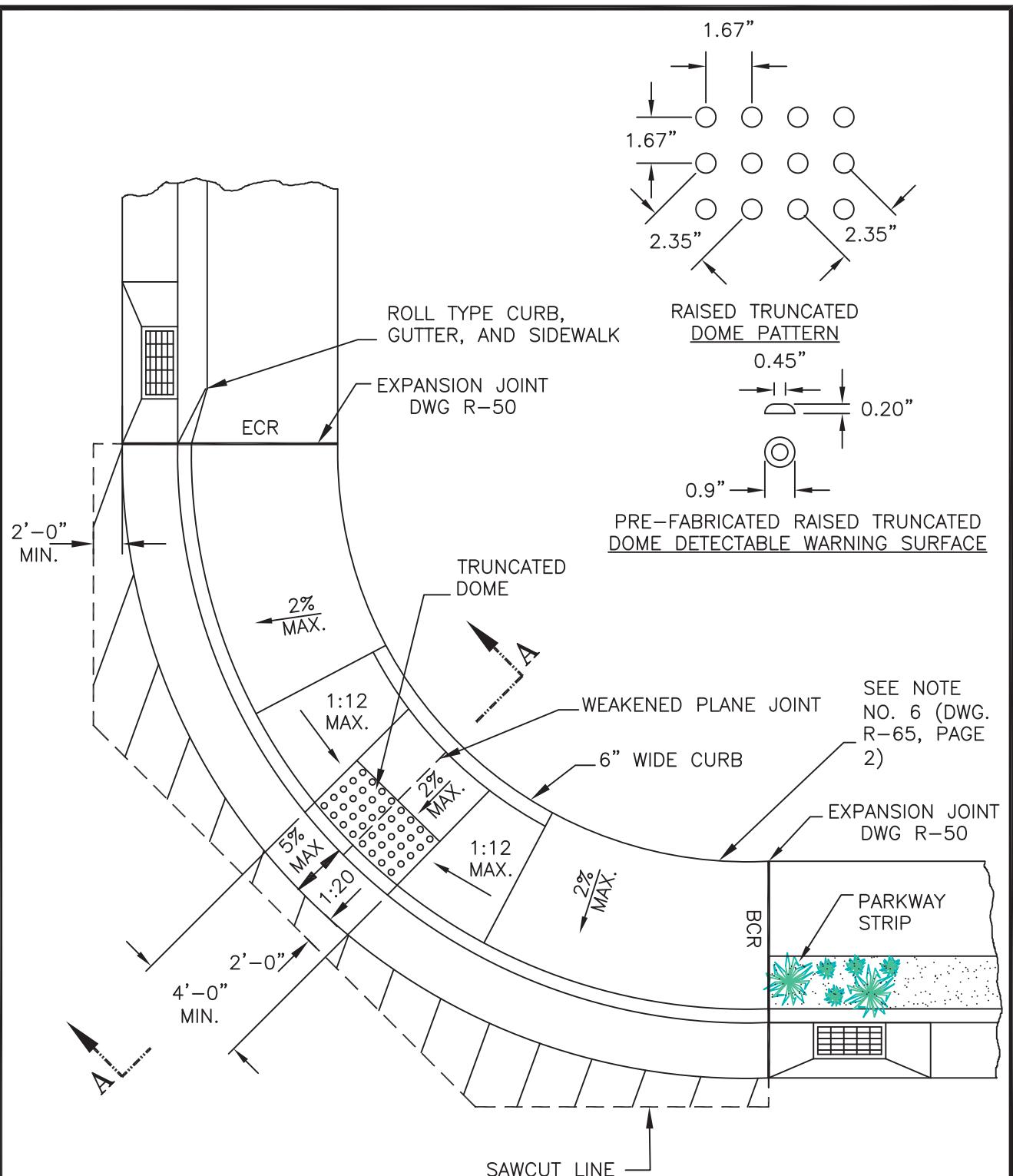
NOTES:

1. TOTAL FLOWLINE DROP, ECR TO BCR SHALL BE MINIMUM 0.01 FT/FT. ALONG THE ARCLENGTH OF CORNERS.
2. MAINTAIN 4 FT. MIN. FROM BACK OF RAMP TO BACK OF SIDEWALK. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO AND WITHIN 24" OF THE CURB RAMP SHALL NOT BE STEEPER THAN 1V:20H (5%). THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS, AND STREETS SHALL BE AT THE SAME LEVEL.
3. PERPENDICULAR AND PARALLEL CURB RAMPS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1V:12H (8.3%) BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET. BLENDED TRANSITIONS, BULB OUTS, SHALL HAVE A RUNNING SLOPE OF NOT STEEPER THAN 1V:20H (5%).
4. THE CLEAR WIDTH OF CURB RAMPS (EXCLUDING ANY FLARED SIDES), BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 48" MIN.
5. LANDINGS SHALL BE PROVIDED AT THE TOPS OF CURB RAMPS AND BLENDED TRANSITIONS. THE LANDING CLEAR LENGTH SHALL BE 48" MIN. EXCEPT FOR PARALLEL CURB RAMPS SHALL NOT BE REQUIRED TO COMPLY WITH THE TOP LANDING REQUIREMENT.
6. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1V:10H (10%).
7. DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 24" LONG MIN. LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.
8. DIAGONAL CURB RAMPS PROVIDED AT MARKED CROSSINGS SHALL PROVIDE THE 48" MIN. CLEAR SPACE WITHIN THE MARKINGS.
9. THE CROSS SLOPE OF CURB RAMPS, BLENDED TRANSITIONS, AND TURNING SPACES (LANDINGS) SHALL BE 2.0% MAX.
10. FINE HAIR LIGHT BROOM FINISH.
11. SAWCUT EXISTING ASPHALT AND CONCRETE TO BE REMOVED. REPLACE PAVEMENT WITH 8" ASPHALT CONCRETE MINIMUM (THICKER WHERE REQUIRED).

Page 2 of 2

<b>TYPICAL WHEELCHAIR RAMP AT INTERSECTIONS</b>	REVISION NO. 8	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03

DRAWING NO.  
**R-64**

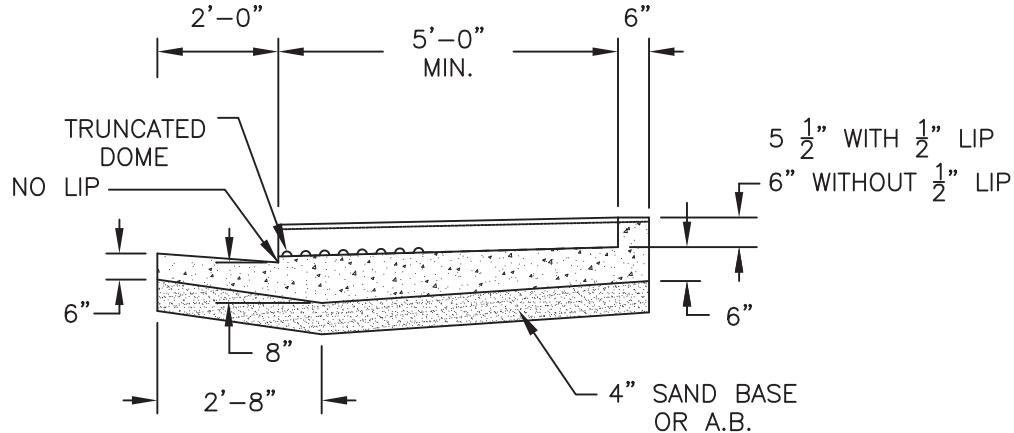


NOTES:

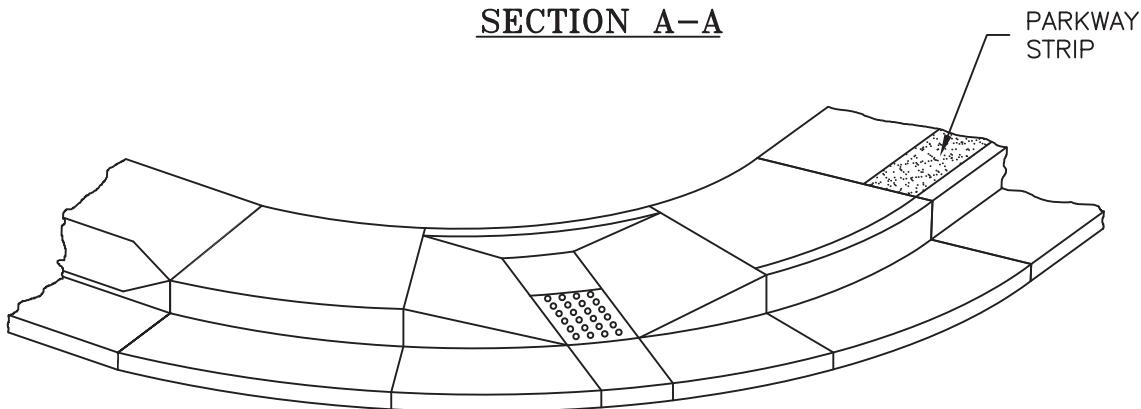
1. THIS PLAN SHALL BE USED ONLY WITH APPROVAL OF THE CITY ENGINEER.
2. SEE DWG R-65, PAGE 2 FOR CONSTRUCTION NOTES AND CROSS SECTIONS.

Page 1 of 2

SPECIAL WHEELCHAIR RAMP INSTALLATION FOR EXISTING SIDEWALKS	REVISION NO. 7	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
		DRAWING NO. <b>R-65</b>



SECTION A-A

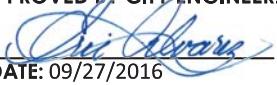


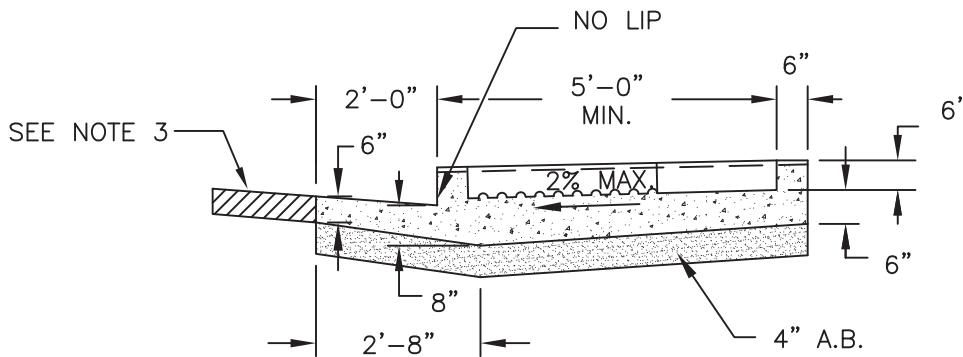
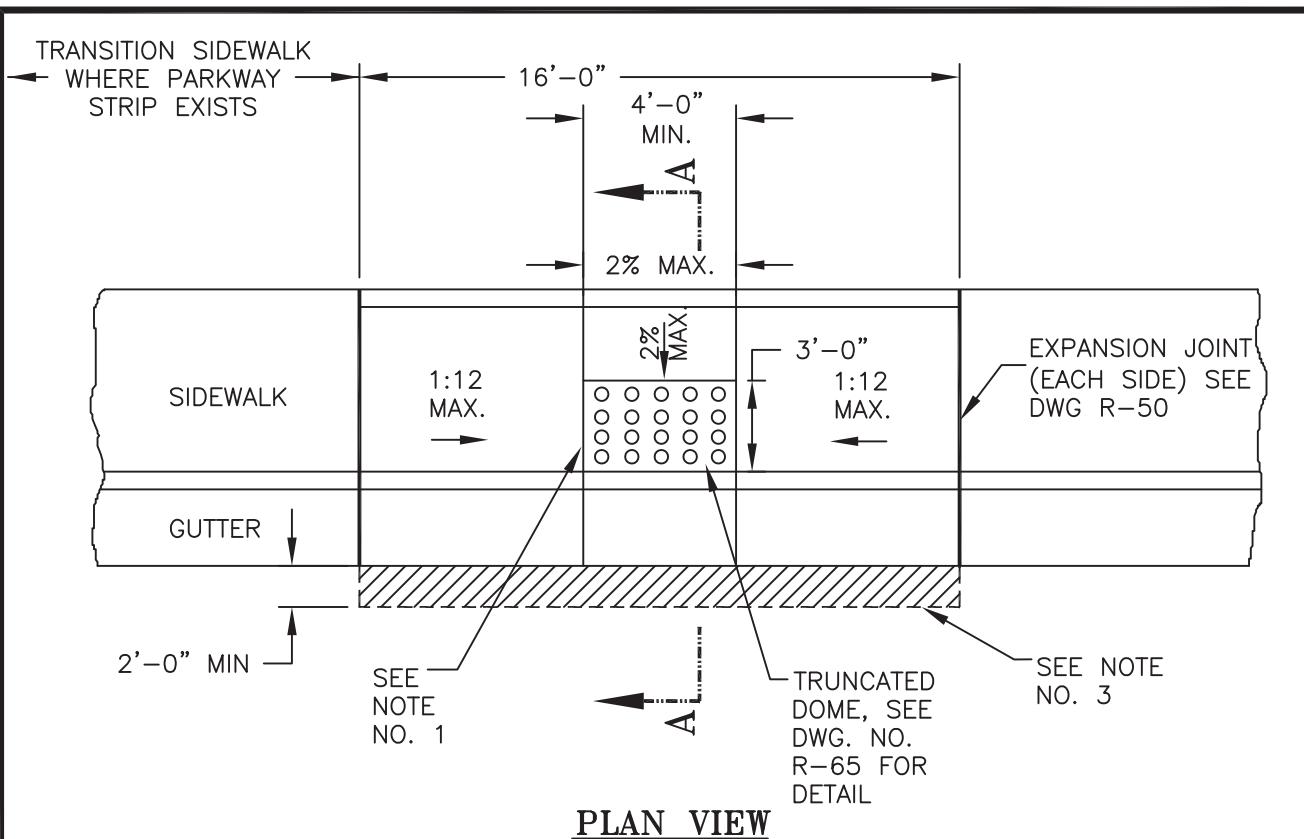
PICTORIAL VIEW

NOTES:

1. THIS DESIGN TO BE USED FOR RECONSTRUCTION WORK ONLY WHERE R/W RESTRICTIONS DO NOT PERMIT THE USE OF STANDARD NO. R-64.
2. THIS PLAN SHALL NOT BE USED ON NEW SUBDIVISION WORK.
3. THIS PLAN SHALL BE USED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
4. WHEELCHAIR RAMP SHALL BE FROM BCR TO ECR, INCLUDING CURB AND GUTTER.
5. FINE HAIR LIGHT BROOM FINISH.
6. SAWCUT EXISTING ASPHALT AND CONCRETE TO BE REMOVED. REPLACE PAVEMENT WITH 8" ASPHALT CONCRETE MINIMUM (THICKER WHERE REQUIRED).
7. PERPENDICULAR AND PARALLEL CURB RAMPS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1V:12H (8.3%) BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET. BLENDED TRANSITIONS, BULB OUTS, SHALL HAVE A RUNNING SLOPE OF NOT STEEPER THAN 1V:20H (5%).
8. THE CLEAR WIDTH OF CURB RAMPS (EXCLUDING ANY FLARED SIDES), BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 48" MIN.

Page 2 of 2

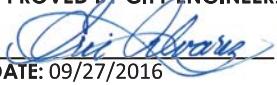
SPECIAL WHEELCHAIR RAMP INSTALLATION FOR EXISTING SIDEWALKS	REVISION NO. 7	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO. <b>R-65</b>	

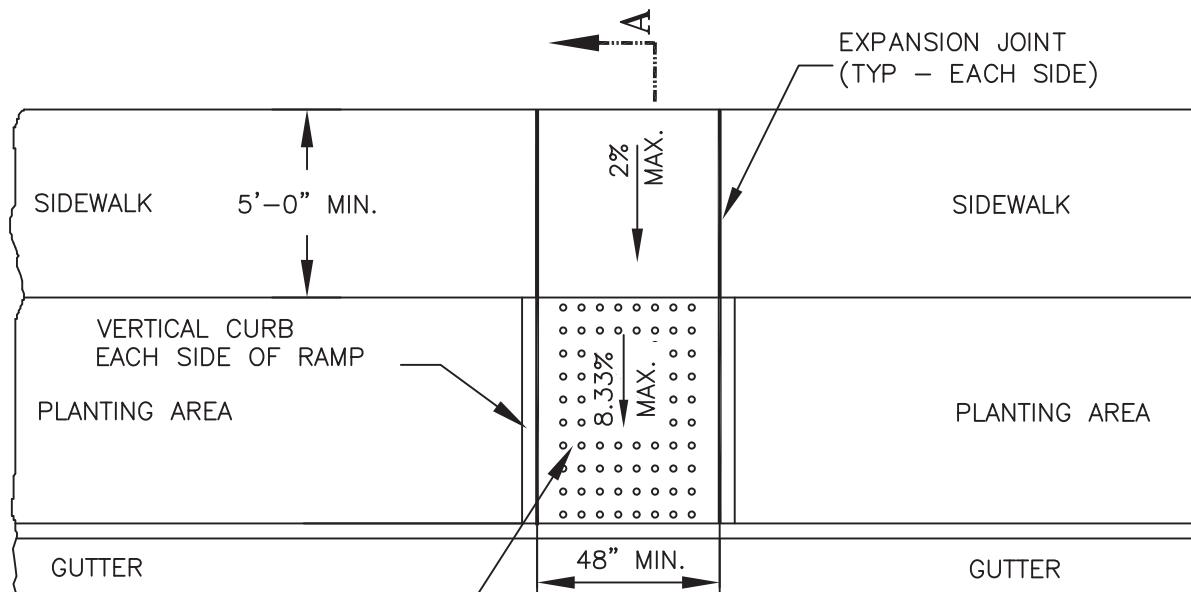


NOTES:

SECTION A-A

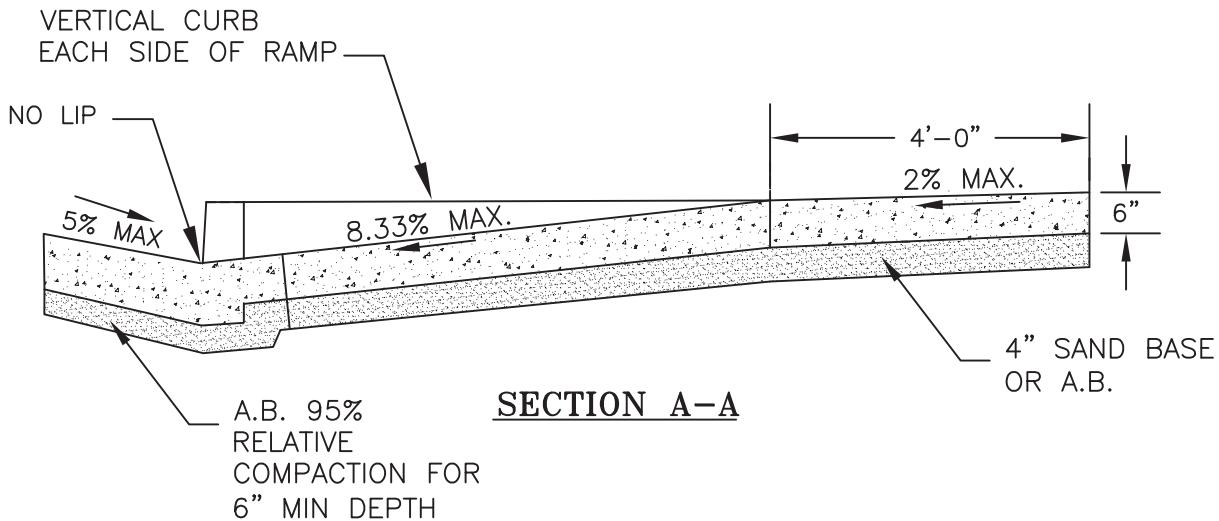
1. MAXIMUM CROSS SLOPE OF RAMP.....1:50 (2%)  
MAXIMUM TRANSITION SIDE SLOPE.....1:12 (8.33%)  
MAXIMUM GUTTER PAN SLOPE.....1:20 (5%)
2. KEY SIDEWALK PER DRAWING NO. R-56.
3. SAWCUT EXISTING ASPHALT AND CONCRETE TO BE REMOVED. REPLACE PAVEMENT WITH 8" ASPHALT CONCRETE MINIMUM (THICKER WHERE REQUIRED).
4. FINE HAIR LIGHT BROOM FINISH.
5. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO AND WITHIN 24" OF THE CURB RAMP SHALL NOT BE STEEPER THAN 1V:20H (5%). THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS, AND STREETS SHALL BE AT THE SAME LEVEL.

<b>SPECIAL WHEELCHAIR RAMP AT MIDBLOCK</b>	REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



TRUNCATED DOME  
SEE DWG. NO. R-65  
FOR DETAIL

### PLAN VIEW



### NOTES:

1. KEY SIDEWALK PER DRAWING NO. R-56.
2. FINE HAIR LIGHT BROOM FINISH.
3. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO AND WITHIN 24" OF THE CURB RAMP SHALL NOT BE STEEPER THAN 1V:20H (5%). THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS, AND STREETS SHALL BE AT THE SAME LEVEL.

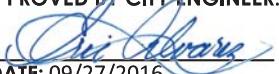
## **SPECIAL WHEELCHAIR RAMP AT MIDBLOCK WITH PARKWAY**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.

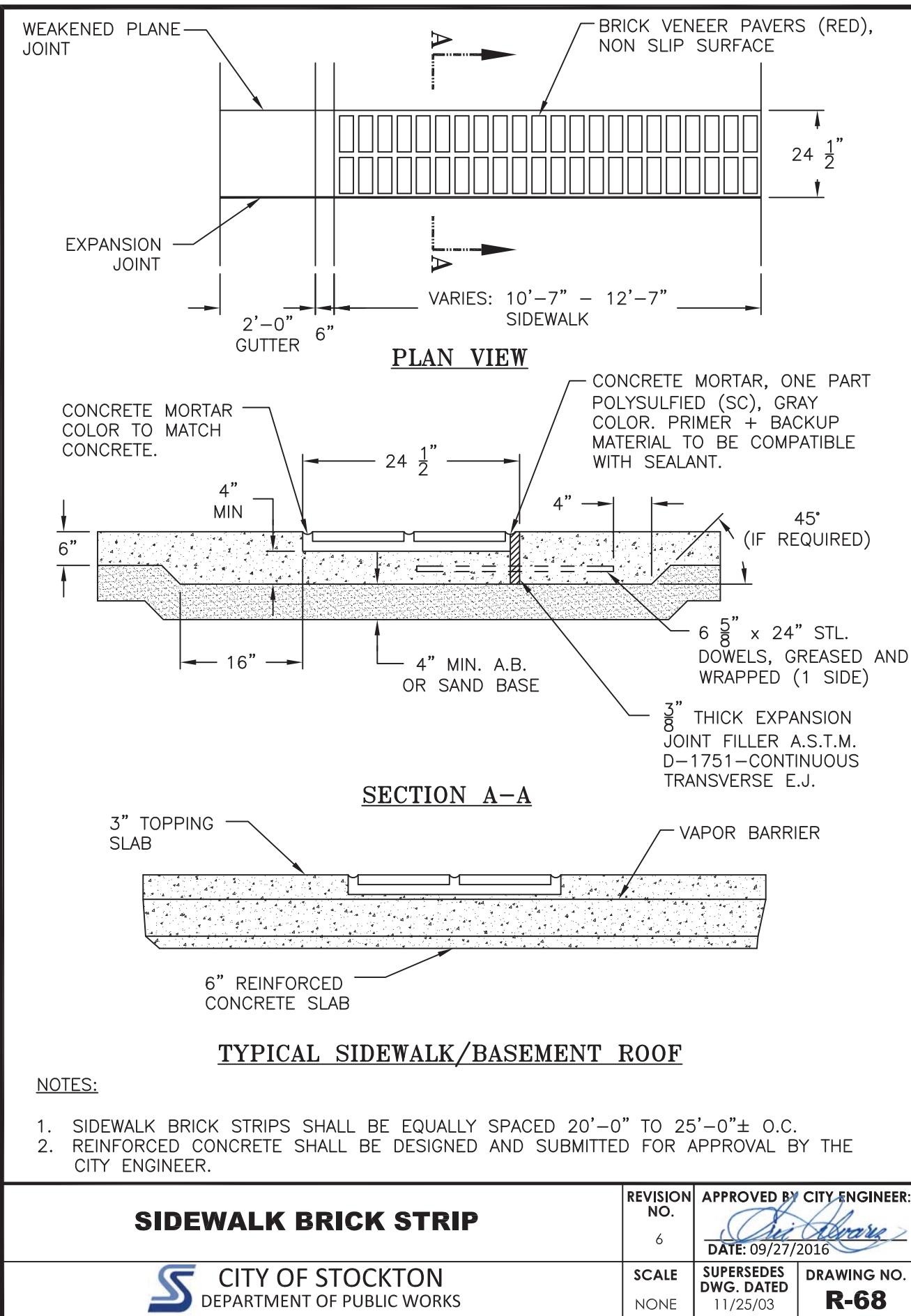
APPROVED BY CITY ENGINEER:

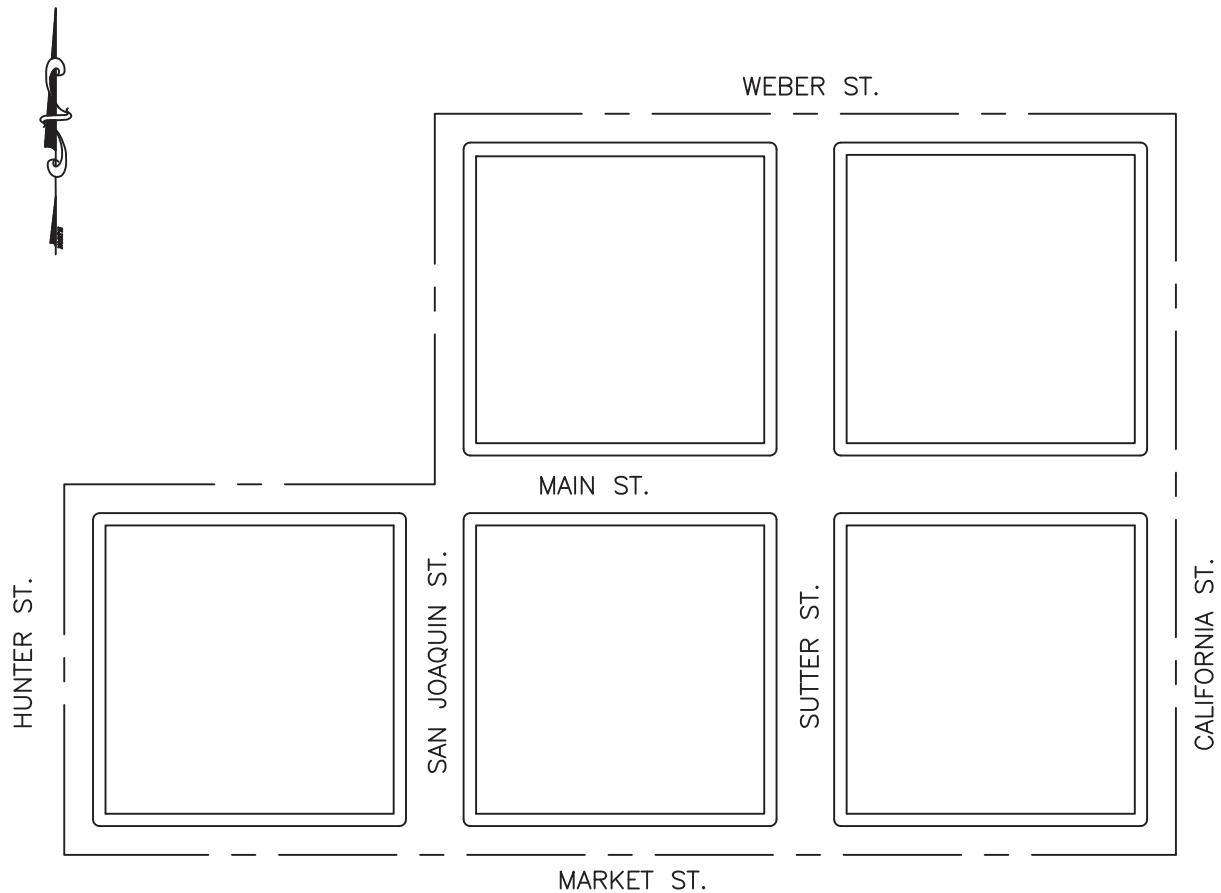
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED

DRAWING NO.  
**R-67**





**AREA REQUIRING BRICK PAVERS  
IN SIDEWALKS**

REVISION  
NO.

2

APPROVED BY CITY ENGINEER:

*[Signature]*  
DATE: 09/27/2016

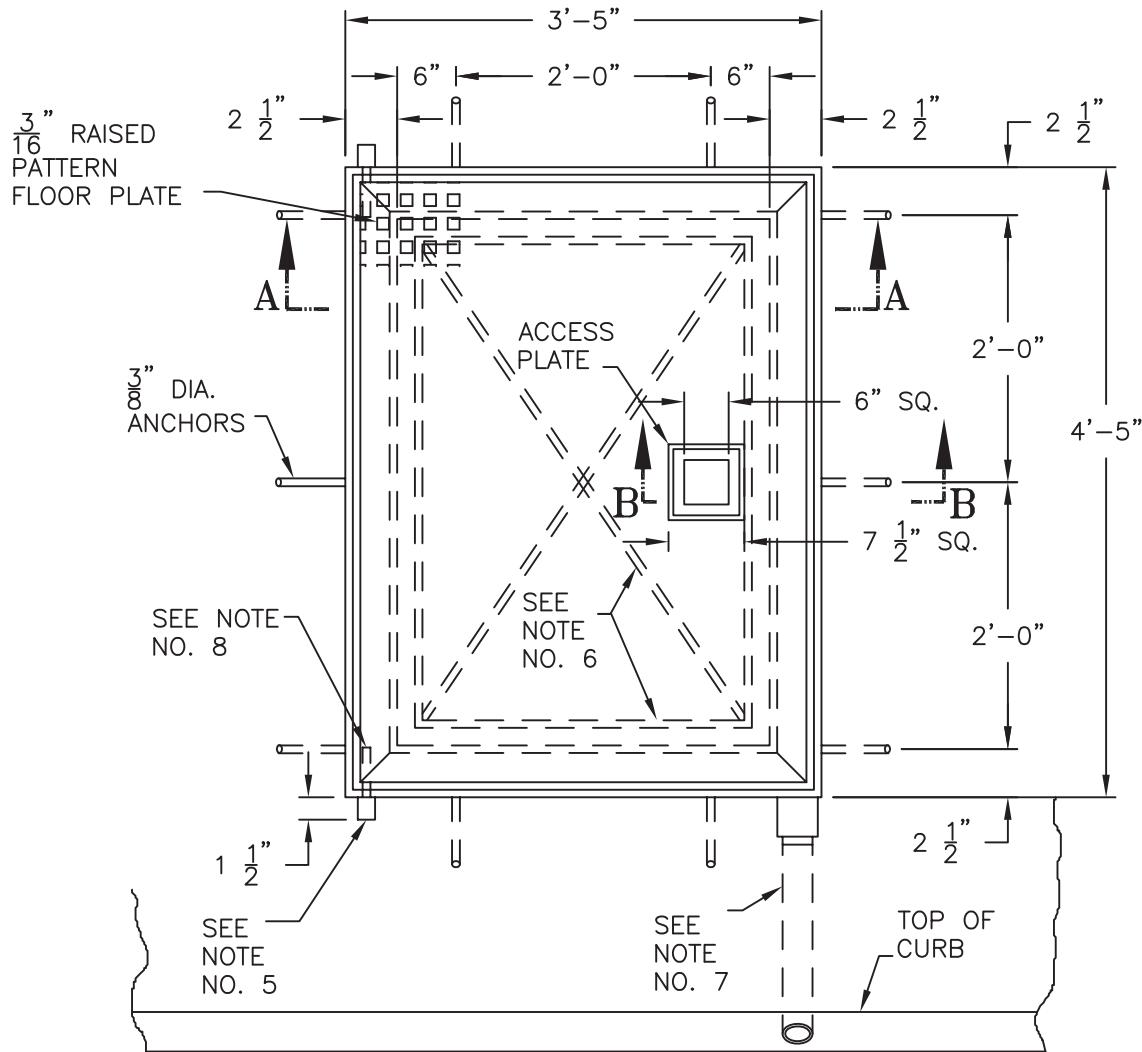


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

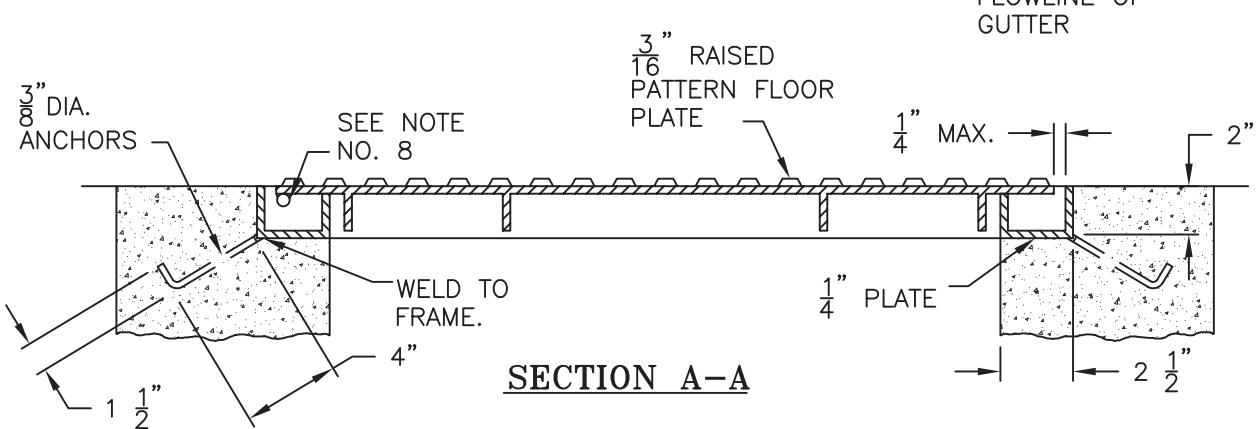
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-69**



PLAN



SECTION A-A

SEE DWG NO. R-70, PAGE 2 FOR NOTES.

Page 1 of 2

## SIDEWALK VAULT ACCESS DOOR

REVISION  
NO.  
4

APPROVED BY CITY ENGINEER:  
*Dan Schaefer*  
DATE: 09/27/2016

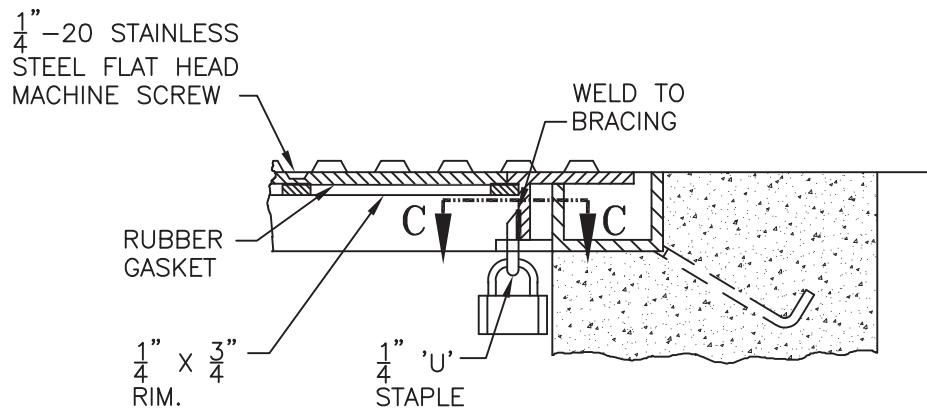


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

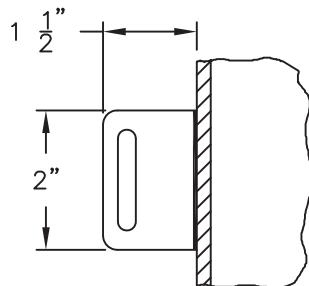
SCALE  
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SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-70**



SECTION B-B



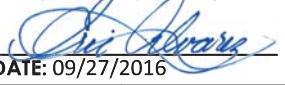
SECTION C-C

NOTES:

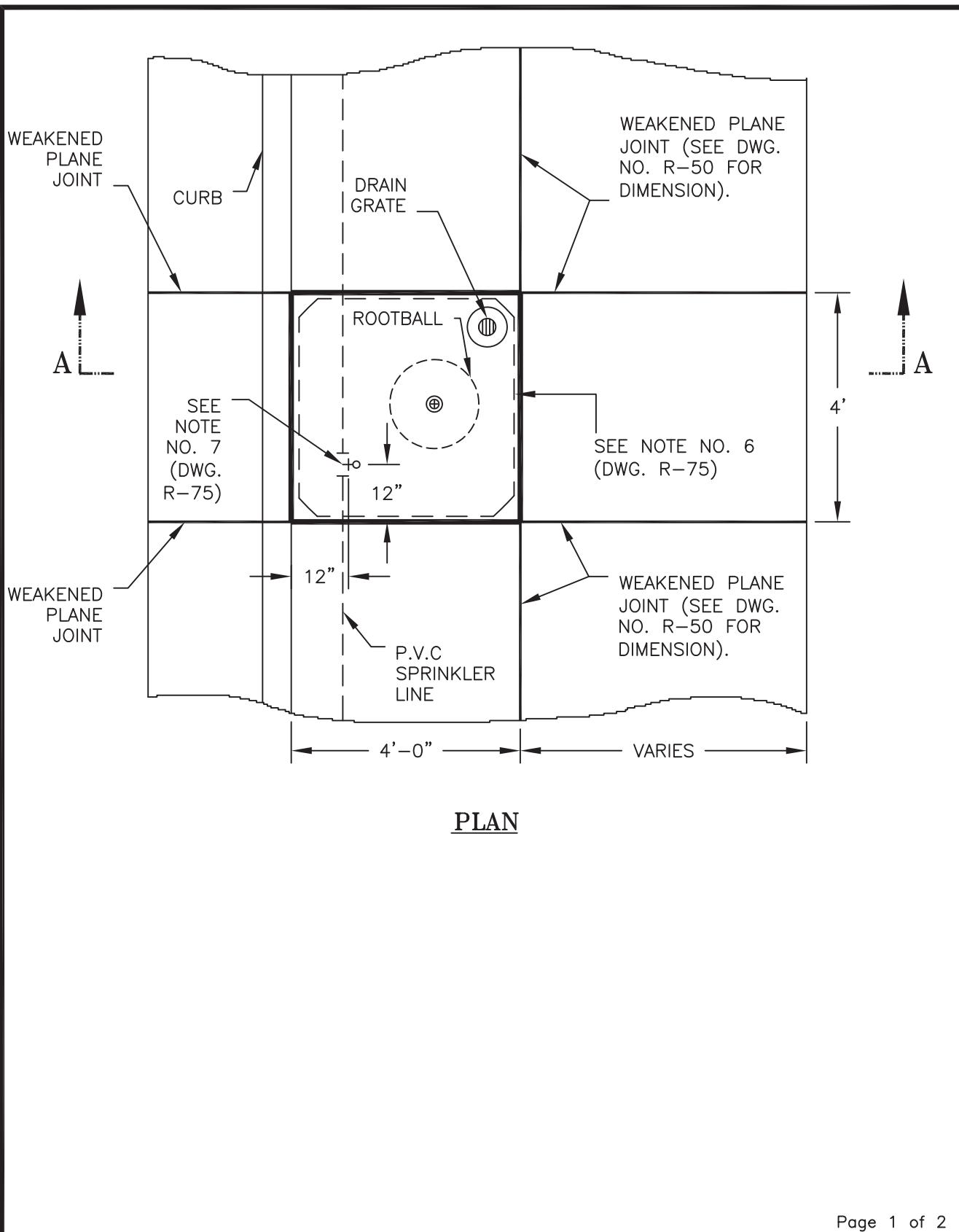
WHERE AN OPEN GRATE IS USED, THE REQUIREMENTS ARE AS FOLLOWS:

1. GRATE SHALL HAVE 1/2" MAXIMUM WIDTH OPENINGS.
2. OPENINGS TO BE PERPENDICULAR TO CURB.
3. SIDEWALK SLAB ADJACENT TO THE VAULTS AND THE GRATE SHALL BE DESIGNED FOR 100 LBS./SQ. FT. MINIMUM LOADING.
4. VAULT ACCESS DOOR SHALL BE GALVANIZED PRIOR TO INSTALLATION.
5. 3/4" I.D. TUBING WITH 0.12" WALL. CLOSE END, PACK WITH GREASE.
6. 3/16" x 1-1/2" FLAT BRACES.
7. 1-1/4" STANDARD PIPE COUPLING WITH 1-1/4" PIPE DRAIN TO CURB.
8. 5/8" DIA. x 3" BAR TO EXTEND 1" FROM FLOOR PLATE (WELD TO FLOOR PLATE).

Page 2 of 2

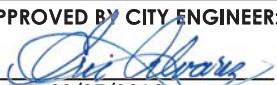
<b>SIDEWALK VAULT ACCESS DOOR</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

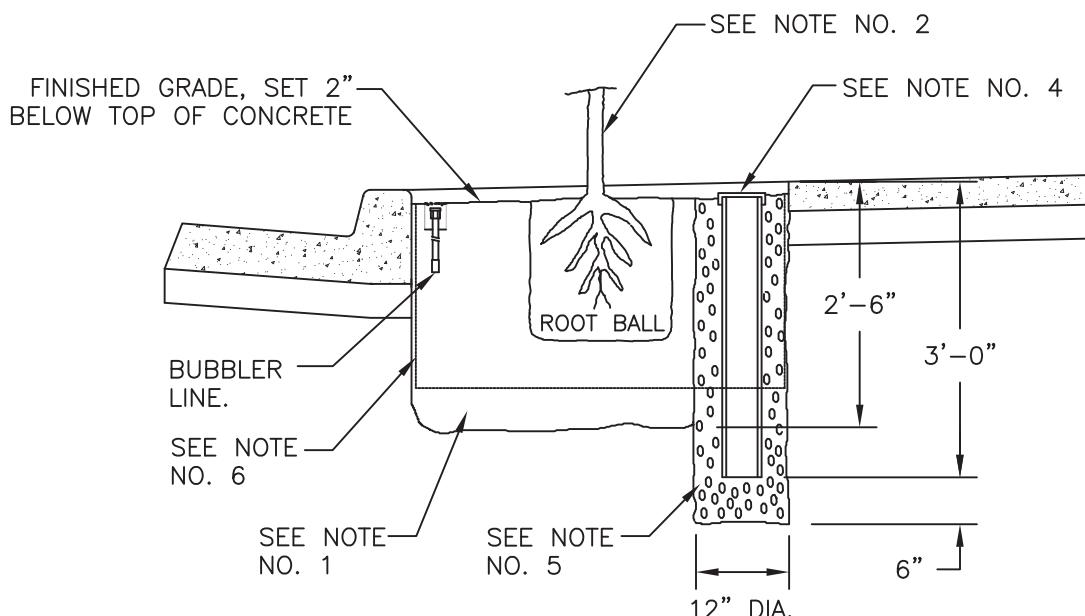
DRAWING NO.  
**R-70**



PLAN

Page 1 of 2

TREE WELL DETAIL	REVISION NO.	APPROVED BY CITY ENGINEER:
	6	 DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO.	
		R-75



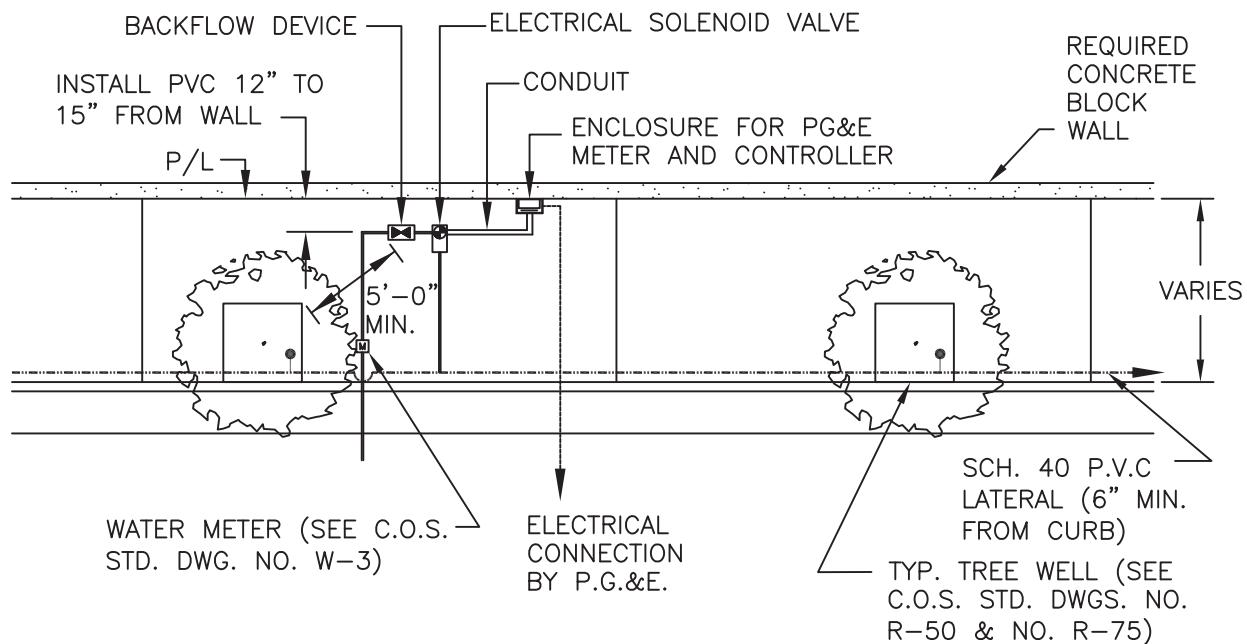
SECTION A - A

NOTES:

1. BACK FILL SHALL BE FRIABLE LOAM, TYPICAL OF CULTIVATED TOPSOIL LOCALLY, CONTAINING AT LEAST 2% HUMUS. IT SHALL BE REASONABLY FREE OF SUBSOIL, STONES, CLODS, STICKS, OR OTHER OBJECTIONABLE EXTRANEOUS MATTER OR DEBRIS. IT SHALL NOT CONTAIN TOXIC MATERIALS.
2. IF CONTRACTOR TO PLANT TREES, PER SECTION 16.162 (STREET TREE PERMIT) OF STOCKTON MUNICIPAL CODE SHALL BE FOLLOWED PRIOR TO PLANTING ANY TREES.
3. COMPLETE IRRIGATION SYSTEM PLANS INCLUDING VALVES, VACUUM BREAKER, PIPE SIZING AND ROUTING, SPRINKLER TYPE, AND CONTROLLER LOCATION, ETC. SHALL BE SUBMITTED BY A LICENSED ENGINEER EXPPIERENCED WITH IRRIGATION DESIGN OR LICENSED LANDSCAPE ARCHITECT FOR APPROVAL AS A PART OF THE IMPROVEMENT PLANS. THE SYSTEM SHALL BE INSTALLED BY A LICENSED LANDSCAPE CONTRACTOR.
4. 4" DIAMETER ABS PERFORATED PIPE WITH PLASTIC DRAIN GRATE. GRATE AND PIPE TO BE COMPATIBLE PLASTIC FOR SOLVENT WELDING. SET DRAIN GRATE 2" BELOW TOP OF SIDEWALK AND AT FINISHED GRADE.
5. 3/4" DRAIN ROCK.
6. ROOT BARRIER, 24" DEPTH (4 PANELS) AS MANUFACTURED BY ROOT SOLUTIONS, 1-800-554-0914, OR APPROVED EQUAL (SET TOP 1" ABOVE FINISHED GRADES).
7. BUBBLER SPRINKLER HEAD RAINBIRD, 1400 SERIES BUBBLER. SEE DETAIL DRAWING NO. R-76, PAGE 4 & 5.

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TREE WELL DETAIL	REVISION NO. 6	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>R-75</b>	



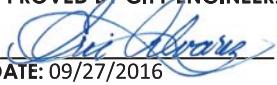
### DIAGRAMMATIC IRRIGATION LAYOUT

IRRIGATION LEGEND	
KEY	DESCRIPTION
[M]	WATER METER INSTALLED BY OTHERS. SEE C.O.S. STANDARD DRAWING NO. W-3.
[B]	REDUCED PRESSURE BACKFLOW DEVICE (SEE STANDARD DRAWING NO. W-7).
[V]	24 VOLT SOLENOID VALVE. GRISWOLD MODEL DWS OR EQUAL (IN CONC. VALVE BOX) (SEE COS STANDARD DRAWING NO. R-76).
[L]	PVC SCH. 40 LATERAL WITH BUBBLER (PER C.O.S. STANDARD DRAWING NO. R-76).
[C]	PVC SCH. 80 CONDUIT (SEE CABINET DETAIL STANDARD DRAWING NO. R-76).
[E]	P.G.&E METER AND RAINBIRD ESP CONTROLLER INSTALLED IN A TESCO CABINET WITH CONDUIT. CABINET AS PER TESCO DWG. NO. COS-112790 OR EQUAL (SEE COS STANDARD DRAWING NO. R-76).

NOTE:

SUBMIT LANDSCAPE & IRRIGATION PLANS FOR CITY APPROVAL.

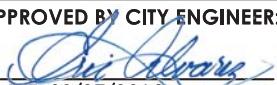
Page 1 of 5

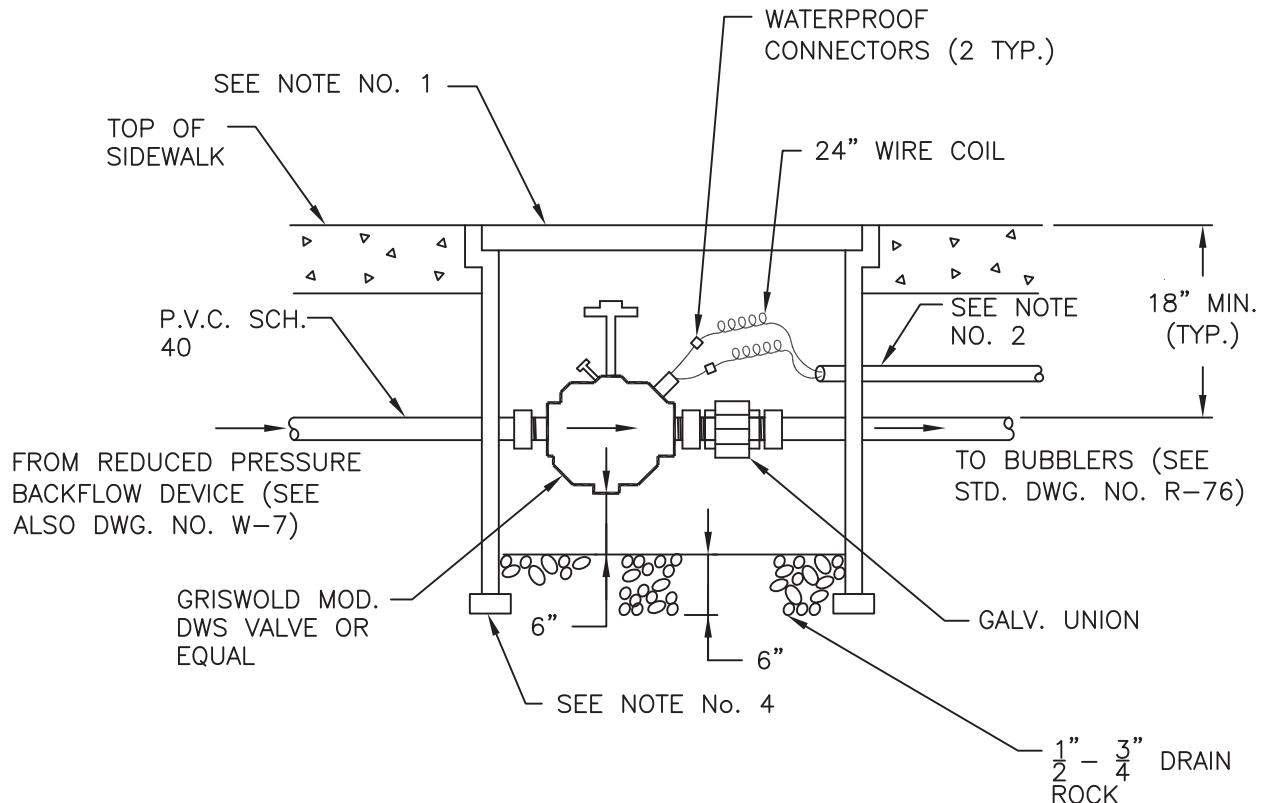
TYPICAL TREE WELL IRRIGATION SYSTEM REQUIREMENTS	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
		DRAWING NO. <b>R-76</b>

NOTES:

1. THE ENGINEER OR ARCHITECT SHALL USE DRAWING NO. R-76 AS A GENERAL GUIDELINE FOR IRRIGATION REQUIREMENTS RELATING TO STREET FRONTOAGE IMPROVEMENTS WHERE TREE WELLS WILL BE INSTALLED.
2. THE DIAGRAMMATIC IRRIGATION LAYOUT IS AN EXAMPLE OF MINIMUM REQUIRED INFORMATION FOR CONSTRUCTION PURPOSES. AN IRRIGATION PLAN SUBMITTAL IS REQUIRED AND SHALL SHOW ALL POINTS OF INSTALLATION AND CONNECTION AND PROVIDE INSTALLATION AND CONNECTION DETAILS. PIPES, VALVES, BACKFLOW PREVENTION, WIRING, ETC., SHALL BE PROPERLY SIZED AND INDICATED ON THE SUBMITTED PLANS.
3. PLANS SHALL SHOW ENTIRE PROJECT AREA UNDER REVIEW WITH PROPOSED IRRIGATION SYSTEM, ETC.
4. DETAILS GIVEN ARE DIAGRAMMATIC AND SHALL NOT BE DIRECTLY COPIED ONTO WORKING DRAWINGS. THESE DETAILS SHOW MATERIAL REQUIREMENTS BY THE CITY AND SERVE AS EXAMPLES OF REQUIRED INFORMATION FOR INSTALLATION BY A LICENSED LANDSCAPE CONTRACTOR.
5. SIZE SYSTEM COMPONENTS AS NECESSARY FOR FUTURE EXPANSION AS REQUIRED BY CITY.

Page 2 of 5

<b>TYPICAL TREE WELL IRRIGATION SYSTEM REQUIREMENTS</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-76</b>



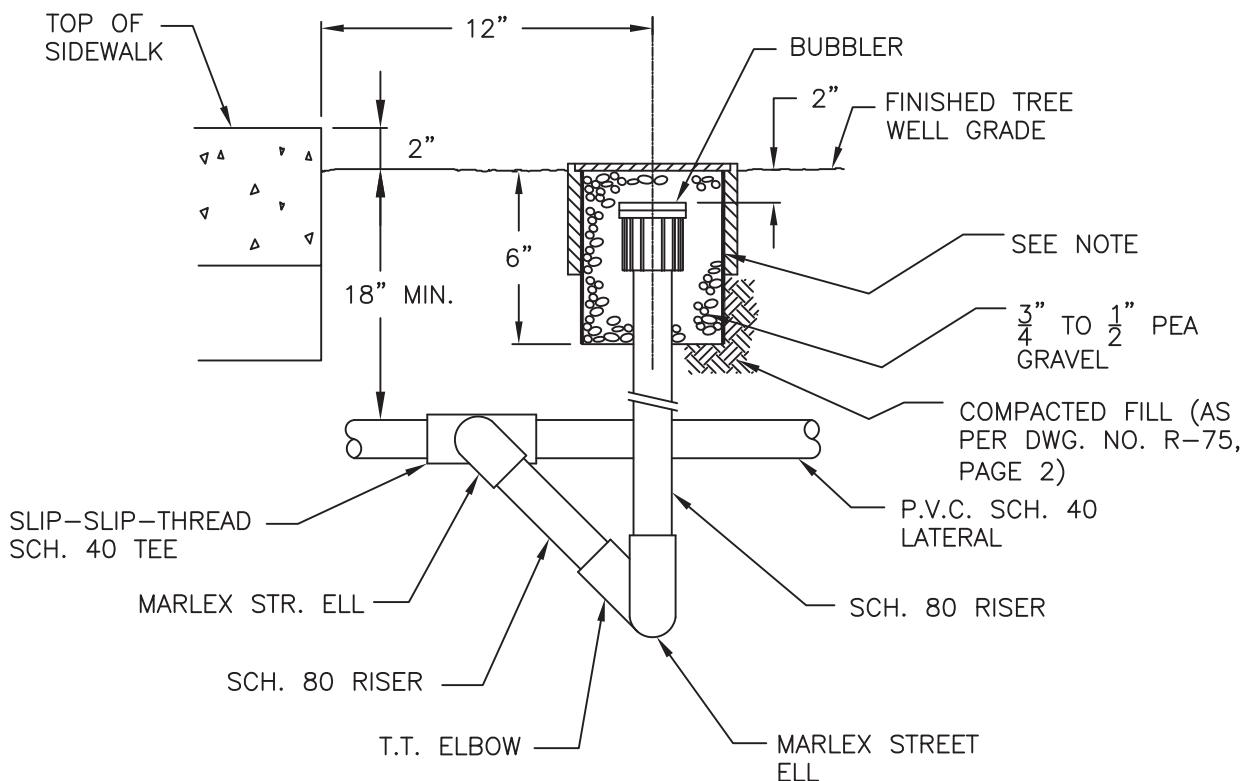
### ELECTRIC VALVE INSTALLATION

#### NOTES:

1. CHRISTY CONCRETE VALVE BOX WITH BOLT DOWN COVER OR APPROVED EQUAL (SIZE AS REQUIRED).
2. 14 GAUGE UL APPROVED DIRECT BURY WIRE, 2 STRANDS, IN 1" CONDUIT TO CONTROLLER. ONE STRAND SHALL BE WHITE FOR COMMON (CONDUIT SHALL BE EXTENDED TO CONST. LIMITS FOR FUTURE VALVES).
3. SCH. 80 NIPPLES AND UNIONS MAY BE USED WHEN SUPPORT POSTS ARE INSTALLED.
4. CONTRACTOR SHALL PROVIDE ADEQUATE FOUNDATION TO ASSURE STABILITY OF ALL VALVE BOXES.

Page 3 of 5

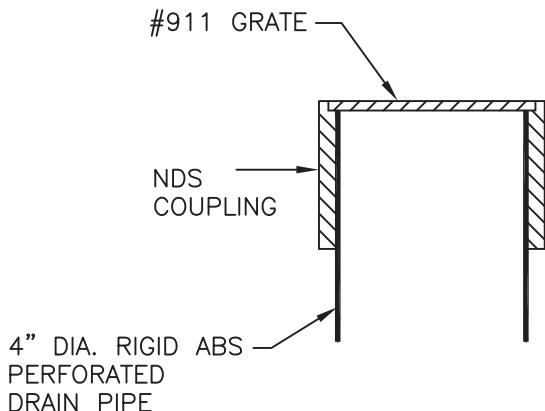
TYPICAL TREE WELL IRRIGATION SYSTEM REQUIREMENTS	REVISION NO. 3	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>R-76</b>	



### BUBBLER INSTALLATION

(SEE C.O.S STD. DWG. NO. R-76, PAGE 1 & 2)

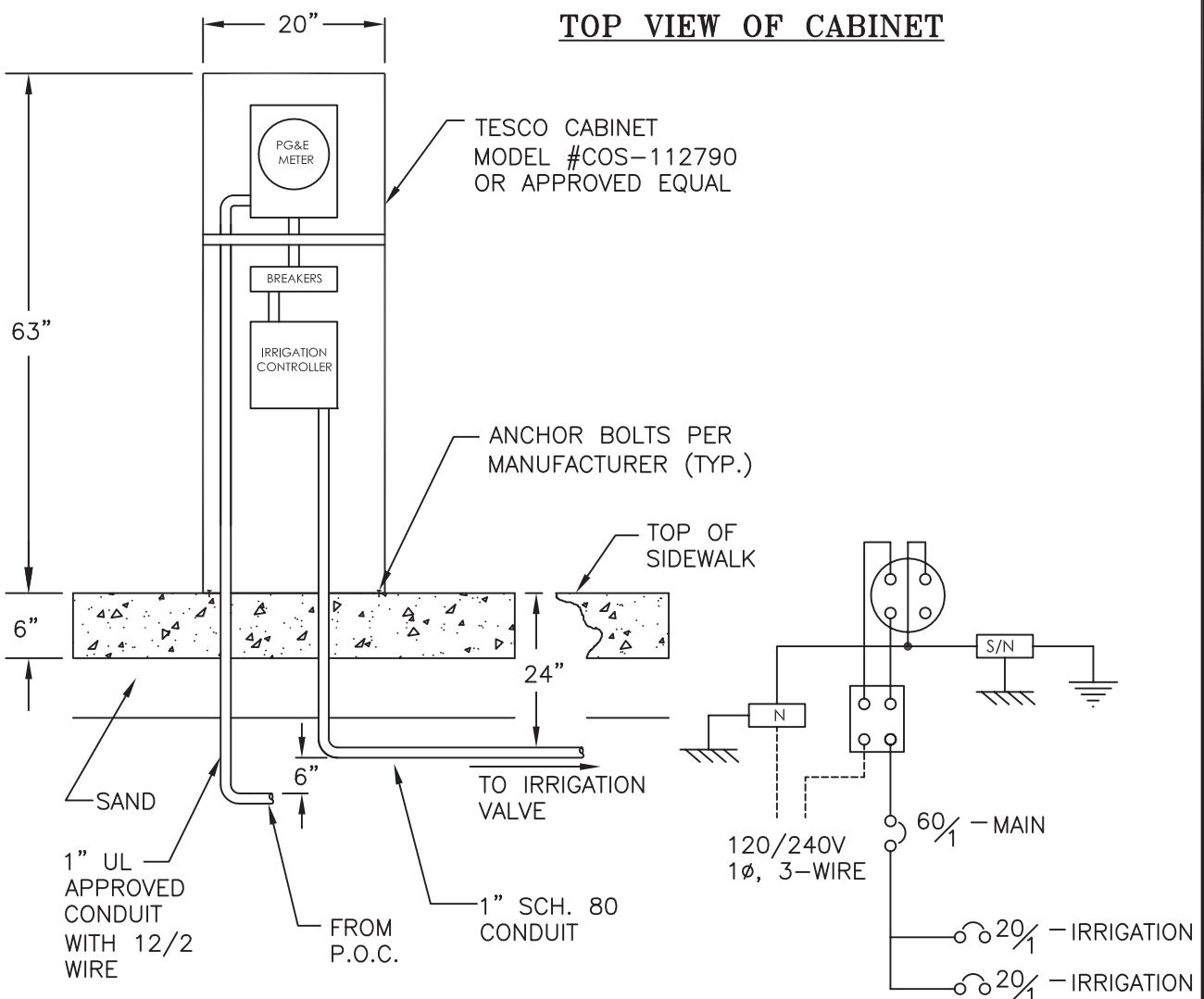
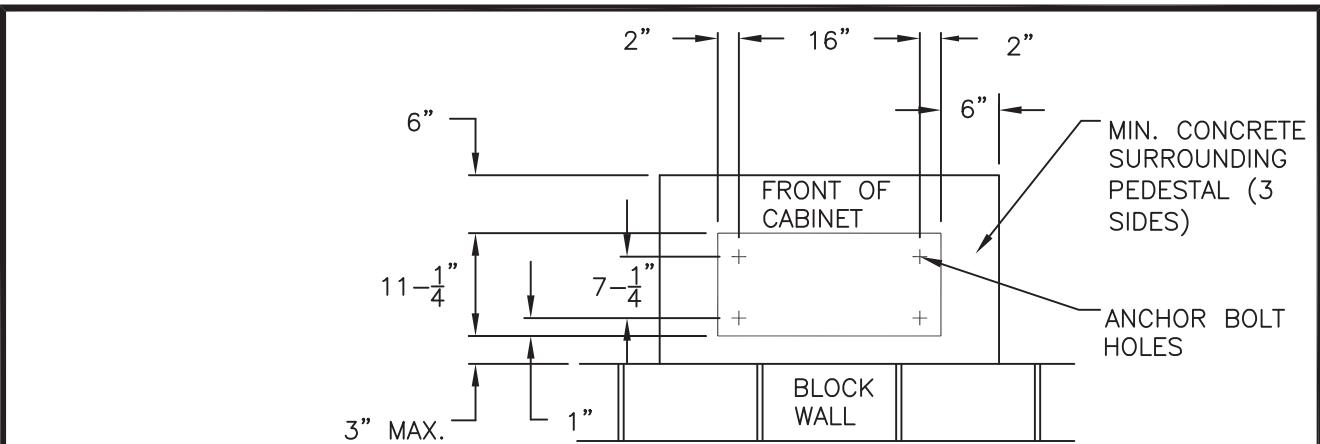
NOTE: 4" DIA. PVC SCH. 40 SECTION OF PIPE WITH NDS COUPLING AND #911 GRATE.



### GRATE DETAIL

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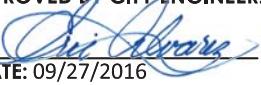
TYPICAL TREE WELL IRRIGATION SYSTEM REQUIREMENTS	REVISION NO. 3	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO.	R-76

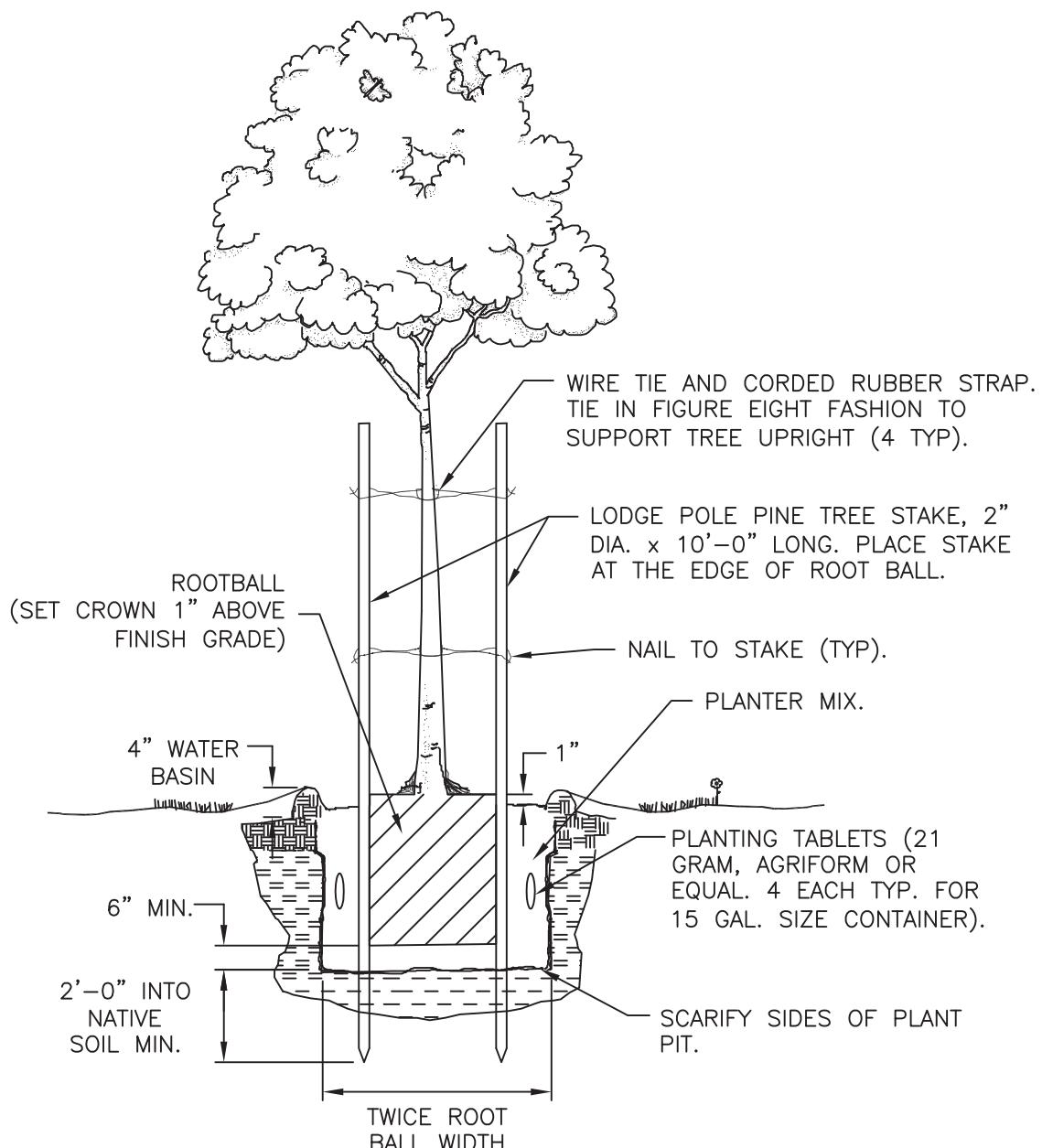


SECTION VIEW OF TESCO CABINET

PANEL DIAGRAM

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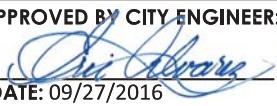
TYPICAL TREE WELL IRRIGATION SYSTEM REQUIREMENTS	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
		DRAWING NO. <b>R-76</b>



NOTES:

1. OMIT WATERING BASIN WHEN INSTALLING IN TREE WELL + SET FINISH GRADE AT 2" BELOW TOP OF CONCRETE.
2. WHERE A 5'-6" WALK EXISTS, IRRIGATION WILL BE PROVIDED BY PROPERTY OWNER + TREE SHALL BE INSTALLED 4'-6" FROM BACK OF CURB + MIN. 4'-6" FROM ANY UTILITY LINE OR CONCRETE. THIS NOTE DOES NOT APPLY TO BACK-UP SITUATIONS.
3. WATER-IN THOROUGHLY AFTER PLANTING.
4. TREE PLANTED IN TREE WELLS OR PARKWAYS SHALL REQUIRE A ROOT BARRIER AS PER DRAWING NO. R-75.
5. PLANTING PERMIT AND APPROVED LANDSCAPE/IRRIGATION PLANS REQUIRED PRIOR TO PLANTING.

Page 1 of 2

TYPICAL TREE PLANTING DETAIL	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>R-77</b>	

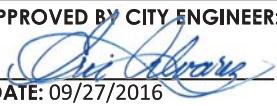
NOTES:

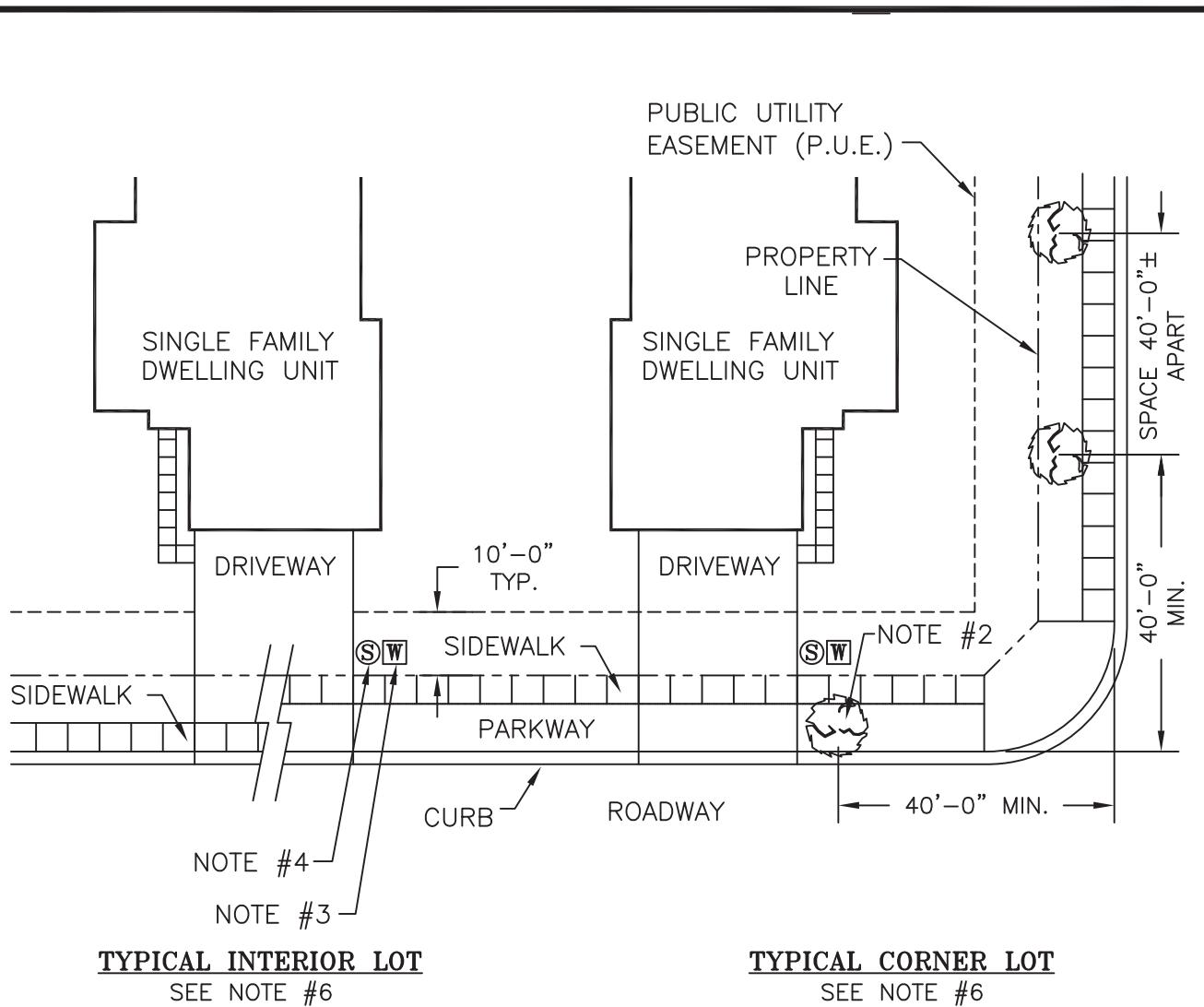
AT THE CITY'S OPTION, NEW OR REDEVELOPED AREAS MAY ELECT TO INSTALL A 5'-6" WALK IN LIEU OF 10'-0" WALK WITH TREE WELLS AND AN IRRIGATION SYSTEM. THIS MAY BE DONE PROVIDING THE FOLLOWING CONDITIONS ARE MET:

1. IRRIGATION SHALL BE PROVIDED BY THE OWNERS PRIVATE LANDSCAPE IRRIGATION SYSTEM.
2. THE BALANCE OF THE PUBLIC EASEMENT SHALL BE MAINTAINED IN PERPETUITY BY THE PROPERTY OWNER (O.D.S.) AND A MAINTENANCE AGREEMENT SHALL BE FILED WITH THE CITY OR THE AREA SHALL BE INCORPORATED INTO THE CITY'S CONSOLIDATED LANDSCAPE MAINTENANCE DISTRICT.
3. COMPLETE LANDSCAPE PLANS INCLUDING ALL CONSTRUCTION ELEMENTS, IRRIGATION PLAN, PLANTING PLAN, CONSTRUCTION PLAN, ETC., SHALL BE SUBMITTED TO THE CITY AND APPROVED MAINTENANCE AGREEMENT/DISTRICT ESTABLISHED PRIOR TO START OF WORK.
4. WHEN LANDSCAPING IS TO BE MAINTAINED BY A MAINTENANCE DISTRICT, O.D.S. SHALL MAINTAIN SUCH LANDSCAPING UNTIL THE MAINTENANCE DISTRICT OFFICIALLY TAKEN OVER.

IN REDEVELOPED AREAS WHERE THE DEVELOPER ELECTS TO INSTALL A 10'-0" WALK WITH TREE WELLS, THE MAIN WATER SUPPLY OF THE IRRIGATION SYSTEM SHALL BE TAKEN AT THE EXISTING PRIVATE WATER METER WHICH SERVES THE INTERIOR STRUCTURES.

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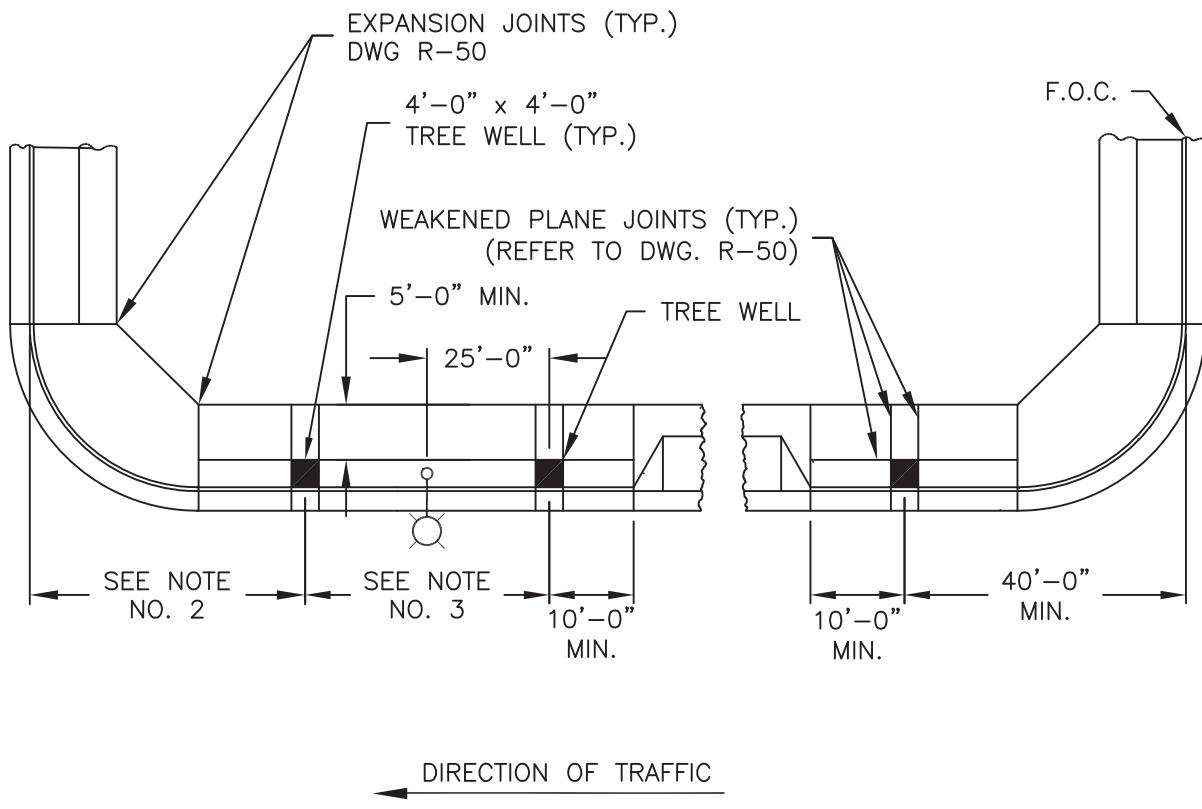
<b>ADDITIONAL TREE PLANTING NOTES</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-77</b>



NOTES:

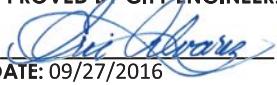
1. ALL APPROVED TREES TO BE INSTALLED PER CITY OF STOCKTON STANDARD DETAILS.
2. APPROVED STREET TREE TO BE LOCATED 6'-0" FROM BACK OF SIDEWALK IF NO PARKWAY STRIP AND 6'-0" MIN. AWAY FROM ANY UTILITY BOX AND 25'-0" MIN. AWAY FROM ALL STREET LIGHTS & 15'-0" MIN. AWAY FROM SIGNS.
3. WATER METER
4. SANITARY CLEANOUT
5. STREET TREE/S TO BE PLANTED BY DEVELOPER IN ACCORDANCE WITH SMC 16.162 (STREET TREE PERMIT).
6. UNLESS SITE CONDITIONS REQUIRE OTHERWISE, CORNER LOTS SHALL HAVE AT LEAST 3 STREET TREES AND INTERIOR LOTS SHALL HAVE AT LEAST ONE STREET TREE.

<b>TYPICAL TREE PLANTING LOCATIONS</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>		SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



NOTES:

1. STREET LIGHT SHALL BE INSTALLED 25'-0" MINIMUM FROM CENTER OF TREE WELL TO STREET LIGHT.
2. MINIMUM OF 100'-0" BETWEEN THE FACE OF THE CROSS-STREET CURB AND THE CENTER OF THE FIRST TREE WELL ON MAJOR ARTERIALS. MINIMUM OF 40'-0" ON ALL OTHER CITY STREETS. BOTH INSTALLATIONS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
3. SPACING OF TREE WELLS SHALL BE 30'-0" MINIMUM; 50'-0" MAXIMUM EQUALLY DIVIDED THROUGHOUT BLOCK, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. STANDARD SIZE OF TREE WELLS IS 4'-0" x 4'-0". WHEN APPROVED BY THE CITY ENGINEER, A MINIMUM 3'-0" DIMENSION MAY BE USED.
5. ALL NEW OR IMPROVED COMMERCIAL FRONTAGE SHALL HAVE TREE WELLS IF MONOLITHIC SIDEWALK IS INSTALLED. PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
6. SEE "TYPICAL TREE WELL DETAIL" DRAWING NO. R-75.
7. AVOID UTILITY SERVICE EQUIPMENT BY A MINIMUM OF 6'-0".
8. PROVIDE BUBBLER SPRINKLER HEAD TO EACH TREE WELL FROM ADJACENT LANDSCAPE AREA OR WATER SOURCE. FOR BACK-UP FRONTAGES, LOCATION OF METER AND VALVE TO BE APPROVED BY CITY ENGINEER.
9. TREE WELLS AT COMMERCIAL PROPERTY FRONTAGE SHALL BE SERVED BY COMMERCIAL PROPERTY WATER METER.

<b>TREE WELL INSTALLATION</b>		REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>R-79</b>

## ELECTRICAL IMPROVEMENT PLAN STANDARDS

ALL IMPROVEMENT PLANS INVOLVING THE INSTALLATION OR RELOCATION OF A STREET LIGHTING SYSTEM SHALL INCLUDE THE FOLLOWING DETAILED INFORMATION:

1. LOCATION OF THE PG&E POWER SOURCE, TO INCLUDE THE POLE QUADRANT (SEE DWG R-92).
2. LOCATION OF ALL STREET LIGHT POLES AND PULL BOXES.
3. LOCATION, SIZE, AND TYPE OF ALL UNDERGROUND CONDUITS.
4. NUMBER, SIZE, AND TYPE OF ALL CONDUCTORS IN EACH CONDUIT.
5. VOLTAGE FOR ALL LIGHTING CIRCUITS.
6. WATTAGE AND BULB TYPE FOR EACH LUMINAIRE.
7. WIRE SIZE CALCULATIONS FOR ALL CIRCUITS EXCEEDING 1000' AND/OR FOR MULTIPLE CIRCUITS.
8. A SUBDIVISION MASTER PLAN SHOWING ALL STREET LIGHTS SHALL BE REQUIRED FOR DEVELOPMENTS HAVING MORE THAN ONE FINAL MAP OR AS REQUIRED BY THE CITY ENGINEER.
9. AN ISOLUX CHART MAY BE REQUIRED.

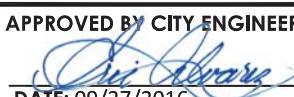
### **PLAN REQUIREMENTS FOR STREET LIGHTING WORK**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.  
5

APPROVED BY CITY ENGINEER:

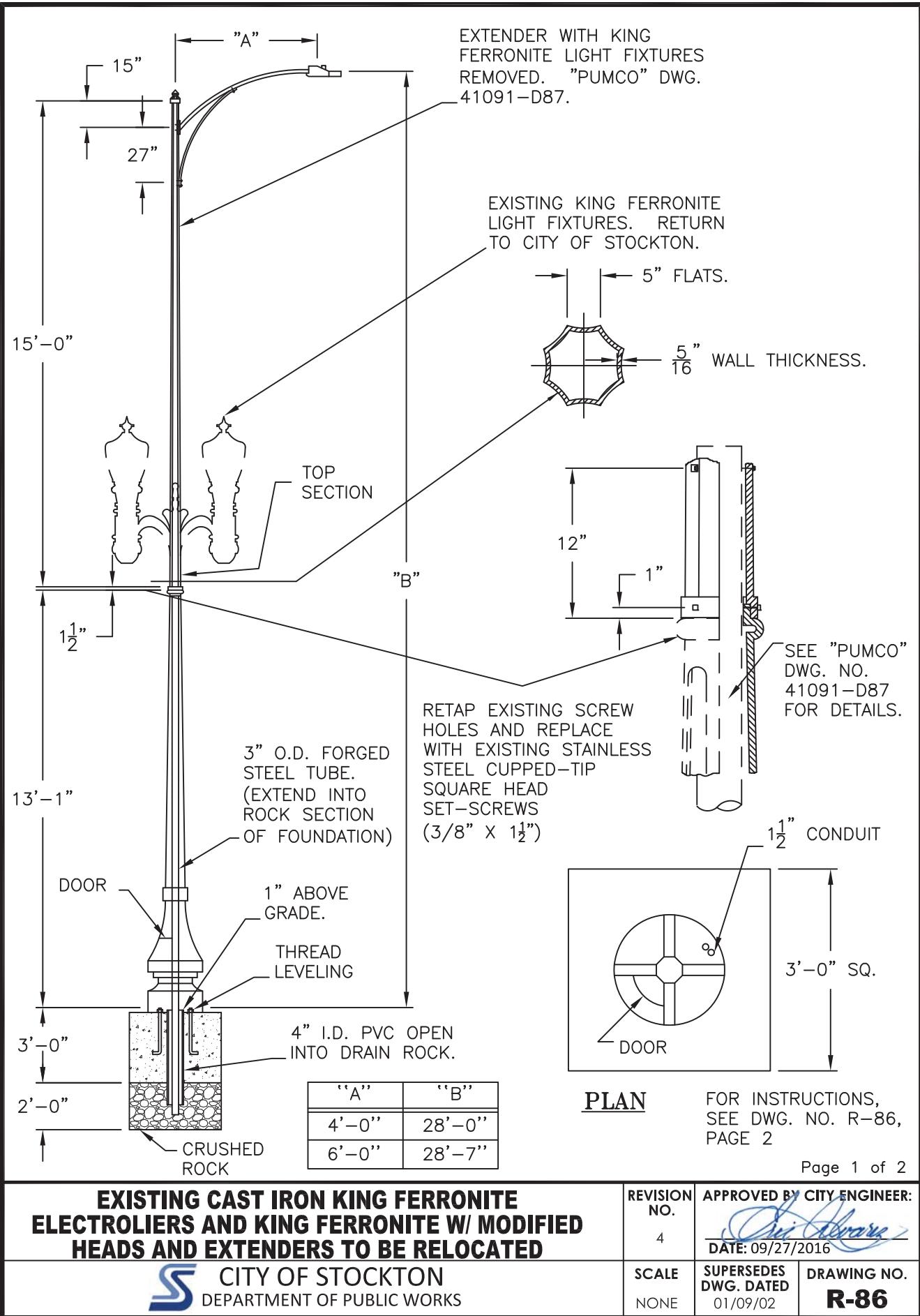


DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-85**



## GENERAL RELOCATION INSTRUCTIONS FOR DOWNTOWN KING FERRONITE ELECTROLIERS

### **FOUNDATION:**

CONCRETE – 5 SACK/1-1/2" ROCK  
BOLT CIRCLE – 17-1/4" (VERIFY WITH UNIT BEING RELOCATED)  
THREADED ANCHOR BOLTS – 24" X 4" X 1" GALV. WITH DOUBLE NUTS  
CENTER HOLE – 6" DIA. X 3'-0" DEEP  
WIRE – LEAD WIRE MAY NOT BE USED

### **STIFFARM:**

EXTEND 3'-0" INTO NEW LUMINAIRE PVC, CENTERED, SAND PACKED,  
AND GROUTED, TYP.

### **CONDUIT:**

1-1/2" RIGID MINIMUM. REPLACE AS REQUIRED. BOND ALL  
CONDUITS.

### **STANDARD:**

REMOVE TOP SECTION BEFORE ATTEMPTING TO PULL STANDARD.  
STANDARD IS CAST IRON. PAST EXPERIENCE HAS SHOWN THAT A  
CRANE IS REQUIRED TO MOVE THE UNIT. CENTER STIFFENER IS  
EMBEDDED IN CRUSHED ROCK AND CAPPED WITH CONCRETE. CAP  
SHOULD BE BROKEN BEFORE ATTEMPTING TO PULL STANDARD.

**BALLAST:** AS REQUIRED TO MATCH EXISTING CIRCUIT.

**EXTENDER:** SEE EXTENDER DETAIL: "PUMCO" DWG. NO. 41091-D87.

**HEAD:** LED LOTEK DUSK-TO-DAWN AREA LIGHT

### **WIRE:**

EXISTING SERIES CIRCUIT  
#8 SOLID COPPER – 8000V  
POLY INSULATION 120 MIL  
PVC JACKET 47 MIL  
SINGLE CONDUIT  
PARALLEL CIRCUITS  
MIN. #8 – 600V

REPAIR DOOR AND HARDWARE IF NECESSARY.

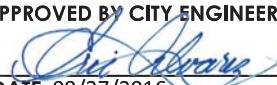
REPAIR RUST-OUTS, ETC.

SAND ALL FLAKING, RUST OR LOOSE PAINT OFF ENTIRE UNIT.

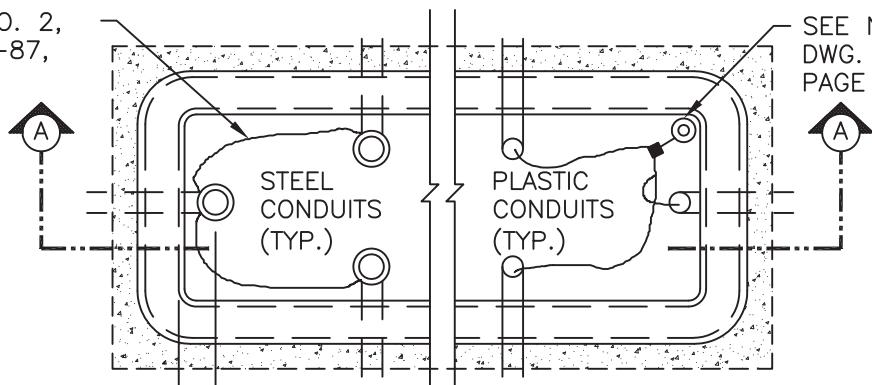
### **PAINT:**

COBRA STYLE INSTALLATION: SHERWIN-WILLIAMS #F63-SXG-8692-8127  
LOW LEAD "STOCKTON GREEN".  
KING FERRONITE STYLE INSTALLATION: SHERWIN WILLIAMS  
#F63-SXG-8692-8127 LOW LEAD "STOCKTON GREEN" OR  
AMERICAN 179A "GROTTO GREEN".

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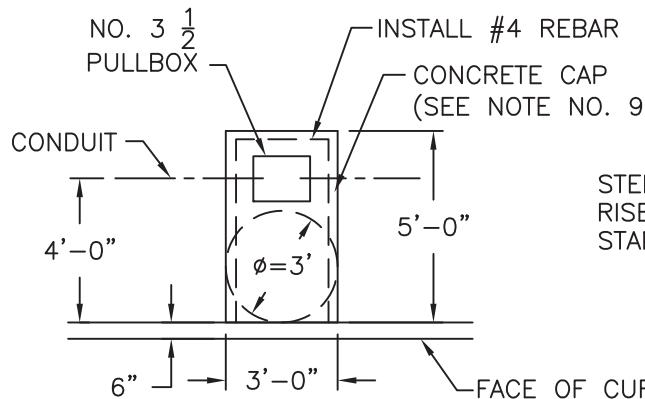
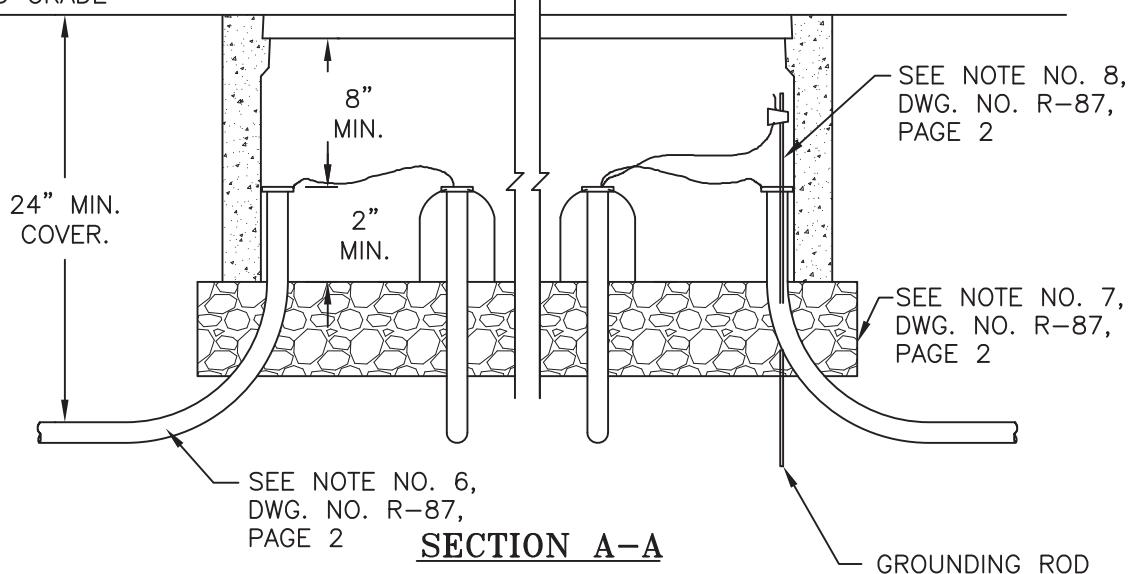
<b>EXISTING CAST IRON KING FERRONITE ELECTROLIERS AND KING FERRONITE W/ MODIFIED HEADS AND EXTENDERS TO BE RELOCATED</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

SEE NOTE NO. 2,  
DWG. NO. R-87,  
PAGE 2

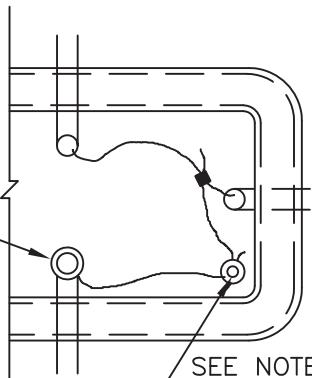


SEE NOTE NO. 3,  
DWG. NO. R-87, PAGE 2 **PLAN**

FINISHED GRADE



STEEL CONDUIT  
RISER TO  
STANDARD.



### **CONCRETE CAP FOR STREET LIGHTING**

SEE DRAWING NO. R-87, PAGE 2 FOR BACKFILLING STREET LIGHT PULL BOXES

### **GROUNDING DETAIL**

Page 1 of 2

### **CONDUIT PULL BOX**

REVISION  
NO.  
4

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-87**

NOTES:

1. ALL NONMETALLIC CONDUIT SHALL HAVE A NO. 8 STRANDED (WITH GREEN INSULATION) COPPER BONDED/GROUNDING WIRE. (EXCEPT THE CONDUIT BETWEEN THE P.G.&E. SERVICE POINT/POLE AND THE FIRST STREET LIGHT PULL BOX). THESE BONDING /GROUNDING WIRES SHALL BE CONNECTED IN THE PULL BOX WITH CABLE CONNECTORS – BURNDY-SERVIT NO. KS-15 OR AN APPROVED EQUAL MEETING CALTRANS SPECIFICATIONS.
2. ENDS OF ALL STEEL CONDUITS ENTERING PULL BOX SHALL BE CAPPED WITH O-Z, TYPE "GB" BRONZE GROUNDING BUSHINGS AND CONNECTED TOGETHER WITH NO. 8 SOLID COPPER WIRE.
3. CONDUIT SHALL NOT EXTEND MORE THAN 3" INTO PULL BOX (TYPICAL ON ALL LOCATIONS).
4. MIDRUN PULL BOXES SHALL BE INSTALLED AT A DISTANCE OF NO MORE THAN 2'-0" FROM THE BACK OF CURB (IF NO SIDEWALK EXISTS) OR 2'-0" FROM THE BACK OF WALK (IF SIDEWALK EXISTS).
5. AFTER CONDUCTORS HAVE BEEN INSTALLED, THE ENDS OF CONDUITS TERMINATING IN PULL BOXES SHALL BE SEALED WITH AN APPROVED SEALING COMPOUND.
6. ALL CONDUITS USE 45° SWEEPS.
7. SET PULL BOX ON TOP OF 6" OF 3/4" MAX. CLEAN CRUSHED ROCK OR 1/2" MAX. PEA GRAVEL.
8. GROUND ROD AND CLAMP SHALL BE DRIVEN INTO NATIVE SOIL IN CORNER OF PULL BOX NO MORE THAN 3" FROM EITHER INSIDE WALL. GROUND ROD SHALL BE 8'-0" X 1/2" COPPERWELD. FOR GROUND ROD DELETION, PLAN APPROVAL BY CITY ENGINEER MUST BE GIVEN PRIOR TO INSTALLATION.
9. REFER TO C.O.S. DWG. NO. R-89 FOR LIGHT POLE FOUNDATION AND DWG. NO. R-88 FOR STREET LIGHT LOCATION.

BACKFILLING NOTES, FOLLOW THESE INSTRUCTIONS:

STEP 1:

- REMOVE LOOSE MATERIAL AND RE-GRADE BOTTOM OF PULL BOX.
- ORGANIZE AND COMPRESS WIRES AT THE BOTTOM.
- CLEAN LIP (WHERE LID SITS) INSIDE OF PULL BOX.

STEP 2:

- DUST SEAL CONDUITS USING GARNER BENDER DS-110N, OR APPROVED EQUAL.

STEP 3:

- COVER WIRE WITH 6-MIL PLASTIC SHEETING TO PROTECT OPENINGS FROM SAND INTRUSION.
- CUT SHEETING LARGE ENOUGH TO PROVIDE WRAPPING AFTER STEP 4 BELOW.

STEP 4:

- BACKFILL WITH CLEAN SAND, MINIMUM OF 3-INCHES.
- FOLD PLASTIC SHEETING OVER SAND.

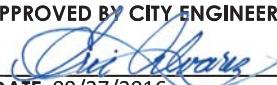
STEP 5:

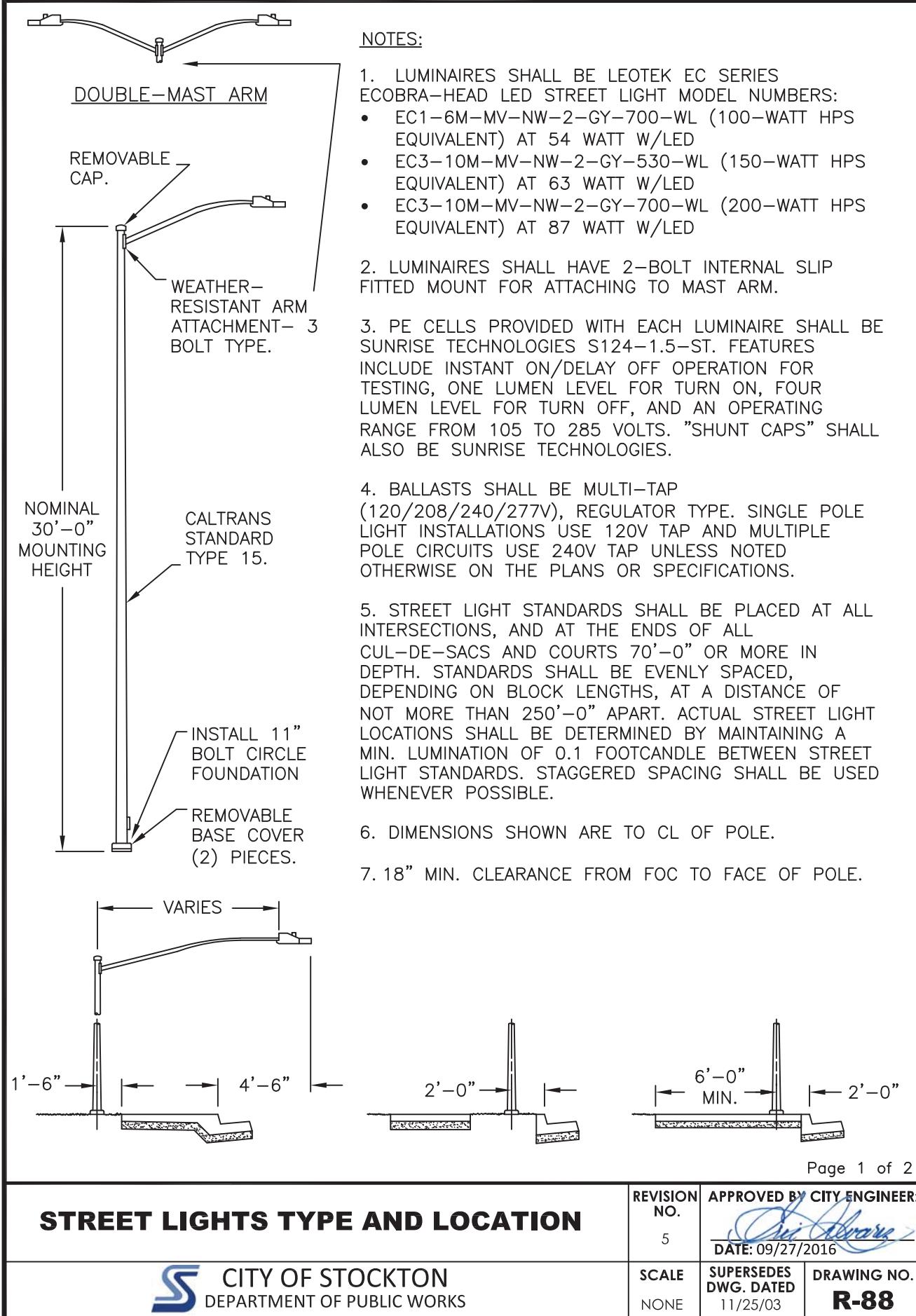
- PLACE A LAYER OF #30 ROOFING PAPER ON TOP OF PLASTIC AND SAND.
- CUT ROOFING PAPER TO PROVIDE A NEAT FIT.

STEP 6:

- BACKFILL WITH CONTROL-DENSITY FILL (CDF), NON-STRUCTURAL MIX WITHOUT AGGREGATE. REFER TO CITY OF STOCKTON STANDARD SPECIFICATION 19-3.03I(5).
- POUR A MINIMUM OF 3-INCHES, WITH TOP OF CDF POUR FLUSH WITH THE LIP.
- PLACE LID.
- GROUT BETWEEN LID AND RIM.

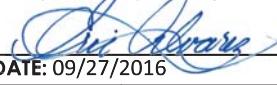
Page 2 of 2

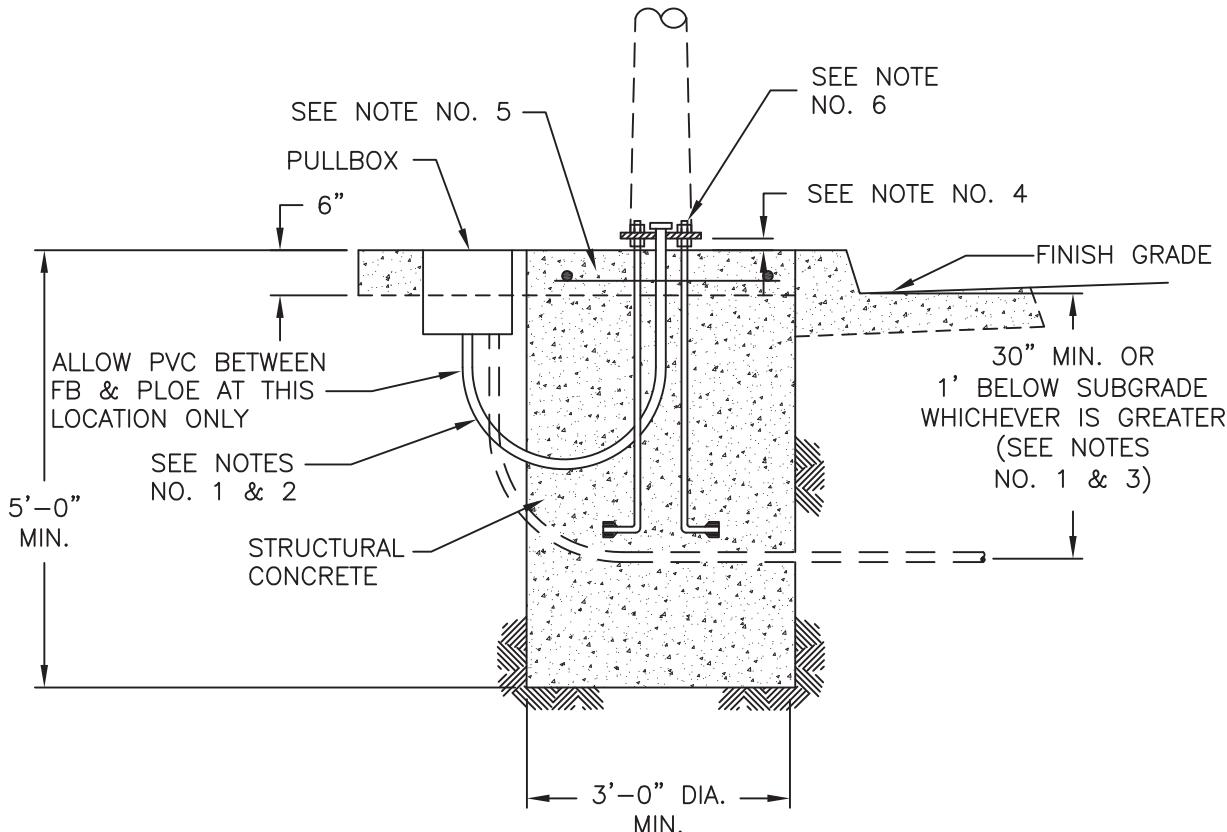
CONDUIT PULL BOX	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
S CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-87</b>



7. WIRING SHALL BE UNDERGROUND IN 1-1/2" UL APPROVED SCHEDULE 40 PVC CONDUIT (SPECIAL CONDITION MAY REQUIRE VARIATION OF CONDUIT SIZE AS APPROVED BY THE CITY ENGINEER) AND SHALL BE INSTALLED AS DIRECTED BY THE CITY OF STOCKTON. ALL CONDUCTORS SHALL BE COPPER. ALL GROUNDING CONDUCTORS SHALL BE BARE OR HAVE A GREEN INSULATION. ALL GROUNDED CONDUCTORS SHALL HAVE A WHITE OR NATURAL GREY INSULATION. PHASE TAPPING AND/OR PAINTING ARE NOT ALLOWED. (ALL COLORING MUST BE PERMANENT ALONG THE ENTIRE LENGTH OF THE CONDUCTOR.)
8. OVERHEAD SERVICE TO A STREET LIGHT IS NOT ALLOWED. REFER TO C.O.S. STANDARD DWG. NO. R-92 FOR UNDERGROUND SERVICE REQUIREMENTS.
9. CONDUIT SYSTEM SHALL BE COMPLETE FROM THE STREET LIGHT TO THE P.G.&E. SOURCE.
10. SEE C.O.S. STANDARD DWGS. NO. R-87, R-89, AND R-92 FOR ADDITIONAL DETAILS.
11. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH SECTIONS 86-1, 86-2, AND 86-6 STATE OF CALIFORNIA STANDARD SPECIFICATIONS.
12. WATERPROOF FUSE HOLDERS AND FUSES (BAF15, BLF15) SHALL BE INSTALLED IN THE BASE OF THE POLE ADJACENT TO THE HAND HOLE IN EACH POLE. FUSE HOLDERS FOR THE 120 VOLT SERVICE SHALL BE "BUSS HEX" TYPE OR EQUAL. FUSE HOLDERS FOR 208/240 VOLT SERVICE SHALL BE "BUSS HEX TYPE" OR EQUAL. FUSE HOLDERS SHALL HAVE WIRE LUGS THAT ARE APPROPRIATE FOR THE WIRE SIZE. TYPE "AA" FOR WIRES UP TO #8 AND TYPE "AB" FOR #6 AND #4 WIRES. FUSE HOLDERS SHALL BE WATERPROOFED BY USING AN INSULATING BOOT (BUSSMAN P/N 1A0512) OR EQUAL. EACH LUMINAIRE ON A DOUBLE MAST ARM POLE SHALL HAVE A SEPARATE FUSE AND FUSE HOLDER.
13. WHEN SERVICING A SINGLE LUMINAIRE, A MINIMUM OF NO. 12 COPPER WIRE SHALL BE USED FROM THE PULLBOX TO THE FUSE HOLDER(S), AND FROM THE FUSE HOLDER(S) TO THE HEAD. WHERE MULTIPLE LUMINAIRES ARE BEING SERVED, A MINIMUM OF NO. 10 COPPER WIRE SHALL BE USED FROM THE PULLBOX TO THE FUSE HOLDER(S), AND A MINIMUM OF NO. 12 COPPER WIRE FROM THE FUSE HOLDER(S) TO EACH HEAD.
14. WIRE IN UNDERGROUND CONDUIT SHALL NOT BE SMALLER THAN NO. 10 COPPER SERVING A SINGLE LUMINAIRE WITHIN 150'-0" OF THE SERVICE POINT; NO. 8 COPPER OR LARGER SERVING 2 OR MORE LUMINAIRES.
15. THE OWNER OR CONTRACTOR OF ANY LIGHTING PROJECT IS REQ'D TO PAY P.G.&E. CO. THE CONNECTION FEE BEFORE ACCEPTANCE BY THE CITY.
16. DOUBLE-MAST ARM STREET LIGHT STANDARDS SHALL BE INSTALLED IN ALL MEDIAN STRIPS AND OTHER AREAS DESIGNATED BY THE CITY ENGINEER. ALL SINGLE-ARM LIGHTING SPECIFICATIONS SHALL ALSO APPLY TO THE DOUBLE ARM STANDARDS. EACH LUMINAIRE SHALL BE WIRED SEPARATELY.
17. ALL BONDING/GROUNDING WIRE SHALL BE INSTALLED AS SHOWN ON "CONDUIT PULLBOX" STANDARD DWG. NO. R-87.
18. ALL CONDUCTOR SPLICES SHALL BE MADE WEATHERPROOF.
19. WHEN STREET LIGHT POLES ARE PAINTED, WITH THE APPROVAL OF THE CITY ENGINEER, THE LUMINAIRES SHALL BE PAINTED THE SAME COLOR.
20. PHOTOCELL UNIT SHALL BE INSTALLED WITH PHOTOCELL FACING NORTH.
21. DOWNTOWN STREET LIGHTING: A TOTAL OF SIX (6) ORNAMENTAL KING FERRONITE STYLE POLES, EACH WITH TWO (2) FIXTURE HEADS REQUIRED PER BLOCK, UTILIZING 250W-MH WITH AN IES TYPE III LIGHTING DISTRIBUTION PATTERN, PROVIDING 2.5 FOOTCANDLES AVERAGE LIGHTING LEVEL.
22. INSTALL PULL TAPE IN ALL CONDUIT.

Page 2 of 2

STREET LIGHTS TYPE AND LOCATION	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-88</b>



NOTES:

1. SCHEDULE 40 PVC SHALL BE USED FOR ALL STREET LIGHTING, EXCEPT ALL CONDUIT BENDS SHALL BE RIGID STEEL CONDUIT WITH 18" RADIUS SWEEPS (EXCEPT AS INDICATED ABOVE).
2. INSTALL TO PULLBOX. 1-1/2" DIA. (MIN.) CONDUIT WITH 18" RADIUS BEND. CONDUIT SHALL EXTEND NOT MORE THAN 2" ABOVE THE TOP OF THE BASE PLATE. IF RIGID CONDUIT IS USED, PROVIDE GROUNDING BUSHING AT THE TOP END.
3. ANY CONDUIT IN STREET AREA SHALL BE MIN. OF 30" FINISH GRADE OR 1' BELOW SUBGRADE, WHICHEVER IS GREATER.
4. 2"±1/4" TO BOTTOM OF BASE PLATE. WHERE POLES ARE INSTALLED IN CENTERLINE MEDIAN, THE BOTTOM OF STEEL BASE PLATE MUST BE INSTALLED 2-3/4" ABOVE MEDIAN CROWN IN ORDER TO PROVIDE FOR CROSS-SLOPE ON MEDIAN PAVING.
5. TOP 6" TO BE FORMED AND POURED AS A 3'-0" x 5'-0" CAP. WITH (1) #4 REBAR EF, PER DWG R-87.
6. ANCHOR BOLTS SHALL BE GALVANIZED. A MIN. OF 1/2 THE TOTAL LENGTH FROM EACH THREADED END. BOLT SHALL BE PROVIDED WITH A LEVELING NUT, TWO WASHERS, AND A HOLD DOWN NUT. MAXIMUM LENGTH OF ANCHOR BOLT ABOVE THE TOP OF THE HOLD DOWN NUT SHALL BE 1". FOR BOLT SIZE SEE CALTRANS STANDARDS DWG ES-6D. AN 11" BOLT CIRCLE SHALL BE USED.
7. ALTERNATE FOOTINGS SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.

**LIGHT POLE FOUNDATION TYPE 15**

REVISION  
NO.  
4

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

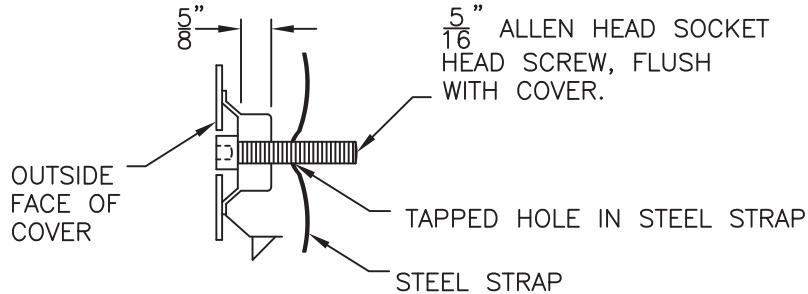


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

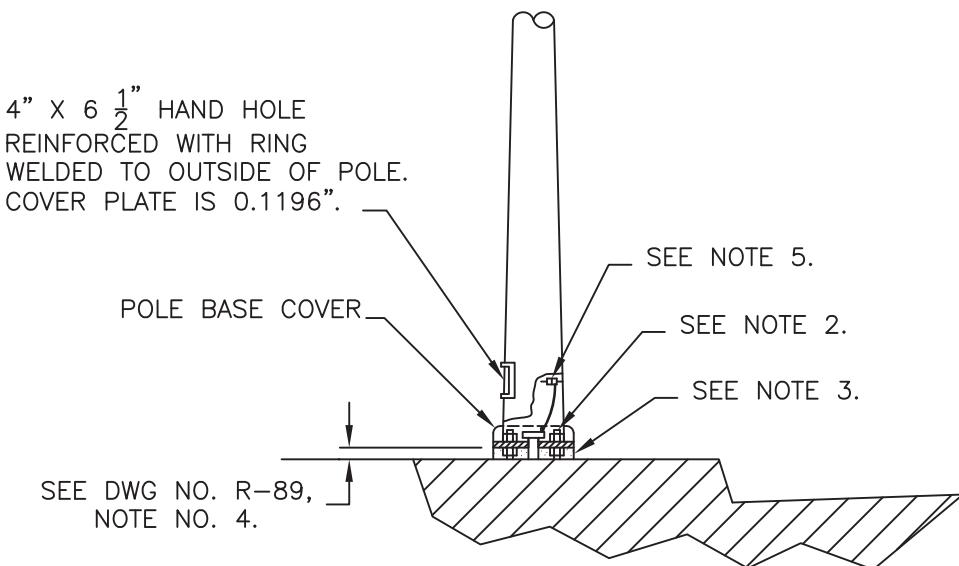
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-89**



### TAMPER RESISTANT HANDHOLE COVER



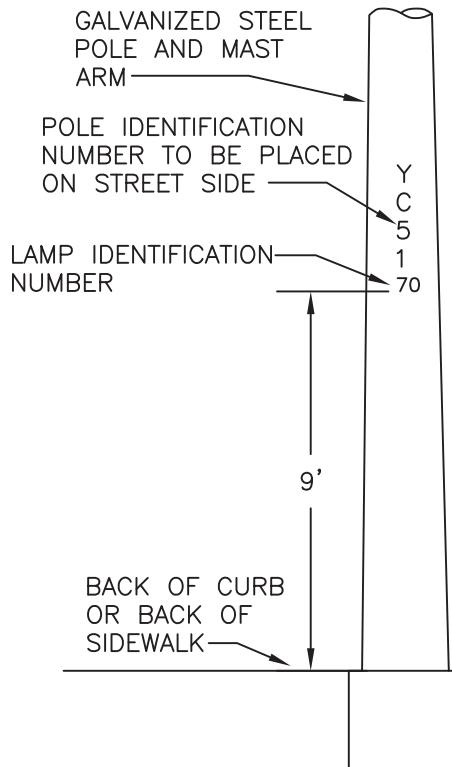
#### NOTES:

1. HAND HOLE SHALL BE LOCATED ON DOWNSTREAM SIDE OF TRAFFIC IF POLE IS NEAR FACE OF CURB. IT SHALL BE FACING THE STREET IF POLE IS BEHIND THE SIDEWALK. HAND HOLE SHALL NOT BE OBSTRUCTED BY A FIXED OBJECT.
2. MAXIMUM LENGTH OF ANCHOR BOLT ABOVE THE TOP OF THE HOLD DOWN NUT SHALL BE 1".
3. GROUT AFTER ERECTING AND LEVELING POLE. WHEN SETTING POLES WITH FLAT STEEL BASES, PROVIDE A DRAINAGE HOLE (UNDER THE STEEL PLATE) TO THE CENTER OF THE POLE. FORM HOLE BEFORE CONCRETE SETS USING A PIECE OF WELDING ROD OR EQUAL.
4. A 1 1/2" DIA. TAPPED HOLE IN HAND HOLE COVER HOLDING FLANGE MAY BE SUBSTITUTED.
5. 1/2" X 1" FLATHEAD STEEL MACHINE SCREW WITH COURSE THREADS WELDED TO INSIDE OF POLE FOR GROUND. PROVIDE WITH 2 HEX HEAD NUTS AND 2 WASHERS. CONNECT TO GROUNDING BUSHING OF END OF CONDUIT WITH #8 SOLID COPPER WIRE (SEE NOTE 4.). #8 SOLID COPPER WIRE SHALL CONNECT POLE TO GROUND ROD IN PULL BOX. GROUND WIRE SHALL BE TERMINATED AT THE GROUND LUG AT THE BASE OF THE POLE.

<b>LIGHT POLE INSTALLATION</b>		REVISION NO. 2	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	<b>SCALE</b> NONE	<b>SUPERSEDES DWG. DATED</b> 01/09/02	<b>DRAWING NO.</b> <b>R-90</b>

### DECAL TEXT SCHEDULE

POLE SYMBOL	POLE INDENT. NO.	LAMP INDENT. NO.
Ⓐ	YC-	
Ⓑ	YC-	
Ⓒ	YC-	
Ⓓ	YC-	
Ⓔ	YC-	
Ⓕ	YC-	
Ⓖ	YC-	
Ⓗ	YC-	
Ⓘ	YC-	
Ⓛ	YC-	
Ⓜ	YC-	
Ⓝ	YC-	
Ⓞ	YC-	
Ⓟ	YC-	
	COLOR BLACK BLACK NUMBERS	COLOR BLACK & GOLD OR BLACK AND WHITE



### DECAL LOCATION

N.T.S.

#### NOTES:

1. PROVIDE DECAL TEXT SCHEDULE SIMILAR TO ONE SHOWN ABOVE ON PLANS.
2. PLACE NUMBERS FACING STREET
3. CITY TO PROVIDE POLE NUMBERING INFORMATION.
4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING MATERIAL FOR NUMBER INSTALLATION.
5. INSTALLATION INSTRUCTIONS FOR REFLECTIVE NUMERALS AND NUMBERS.
  - A. CLEAN AND THOROUGHLY DRY THE APPLICATION AREA.
  - B. PEEL BACKING PAPER OFF REFLECTIVE NUMERAL AND APPLY.
  - C. PRESS REFLECTIVE NUMERAL FIRMLY FROM CENTER OUTWARD TO REMOVE ANY ENTRAPPED AIR.



POLE NUMBERS  
2" HEIGHT  
3"X3" DECAL

LAMP ID. NUMBERS  
¾" HEIGHT  
1"X3" DECAL

### IDENTIFICATION DECAL DETAIL

N.T.S.

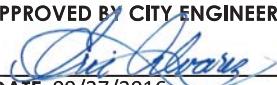
## STREET LIGHT POLE IDENTIFICATION NUMBER



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.

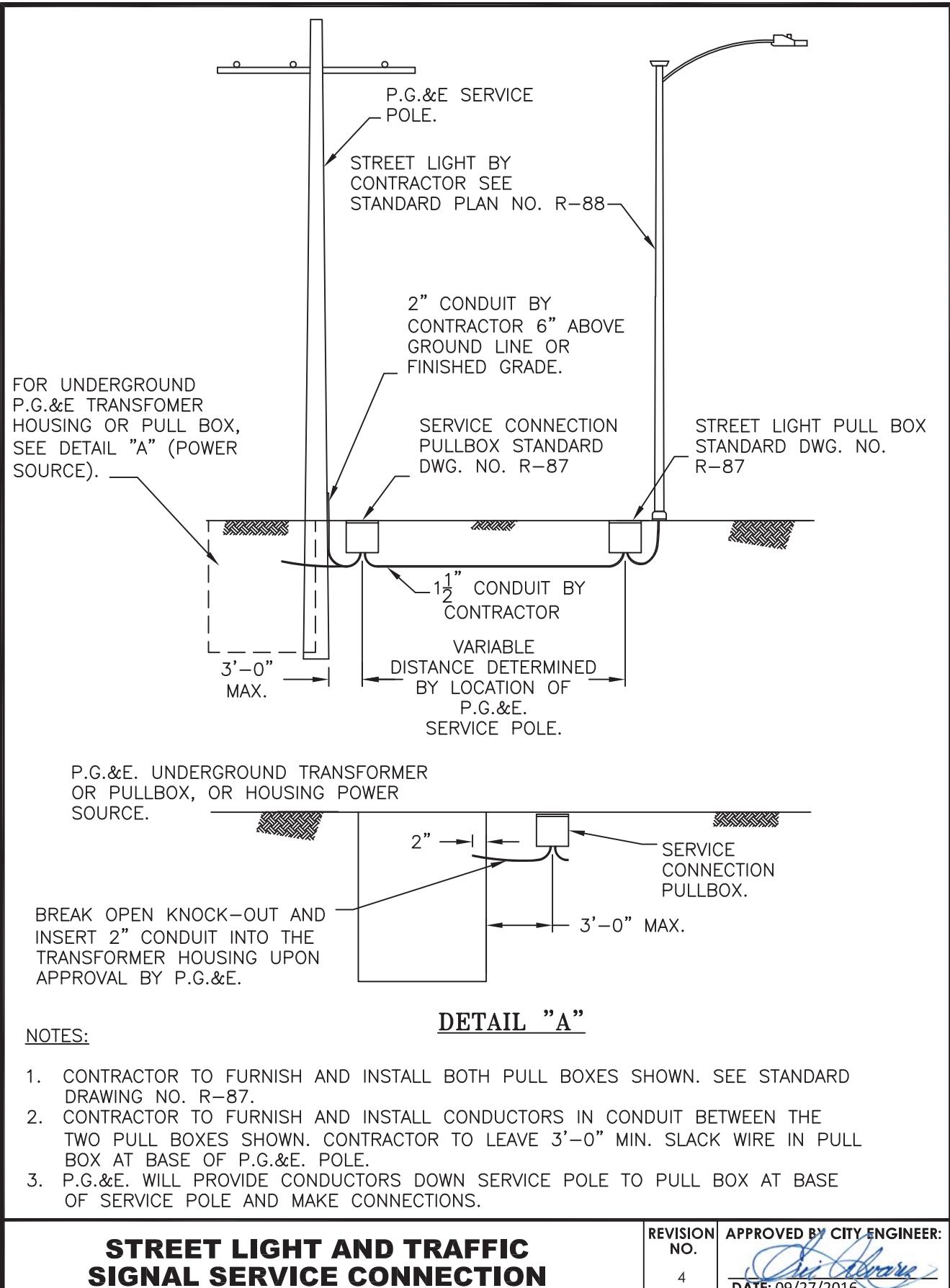
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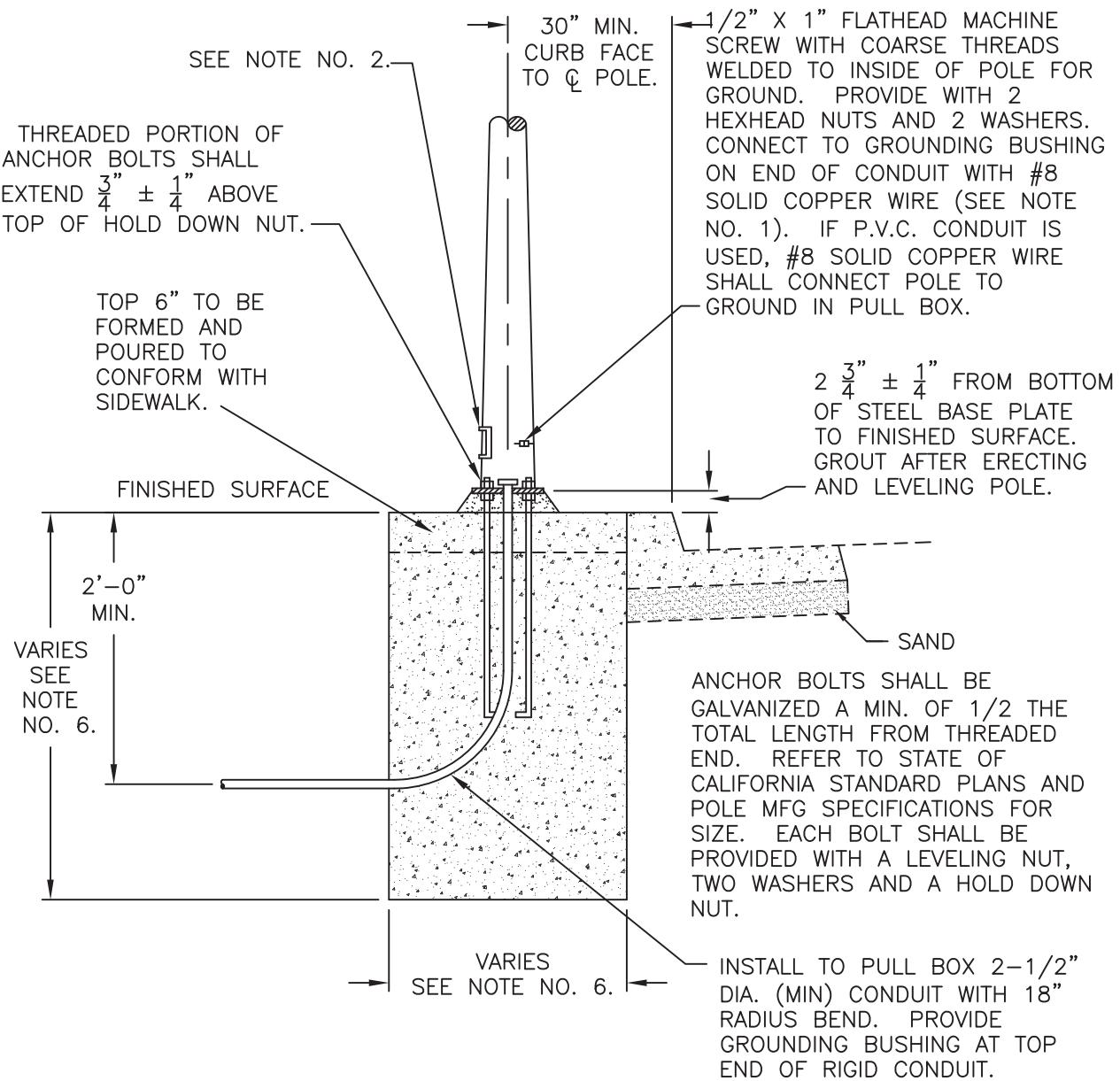
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED

DRAWING NO.  
**R-91**





NOTES:

1. A 1/2" DIA. TAPPED HOLE IN HAND HOLE COVER HOLDING FLANGE MAY BE SUBSTITUTED.
2. SEE CALTRANS STANDARD PLANS FOR DETAILS FOR HANDHOLE AND COVER.
3. WHEN SETTING POLES, PROVIDE A DRAINAGE HOLE (UNDER STEEL PLATE) TO THE CENTER OF THE POLE. FORM HOLE BEFORE GROUTING SETS USING A PIECE OF WELDING ROD OR EQUAL.
4. HAND HOLE TO BE LOCATED IN SAME QUADRANT AS MAST ARM.
5. CONDUIT TO BE INSTALLED AS NOTED ON TRAFFIC SIGNAL DESIGN PLANS OR AS APPROVED BY THE ENGINEER.
6. FOUNDATION REQUIREMENTS AS PER STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS.
7. SEE DRAWING NO. R-95 FOR TYPE 1-B FOUNDATION.

**TRAFFIC SIGNAL FOUNDATION**

REVISION  
NO.  
3

APPROVED BY CITY ENGINEER:  
*Dan Harlan*  
DATE: 09/27/2016

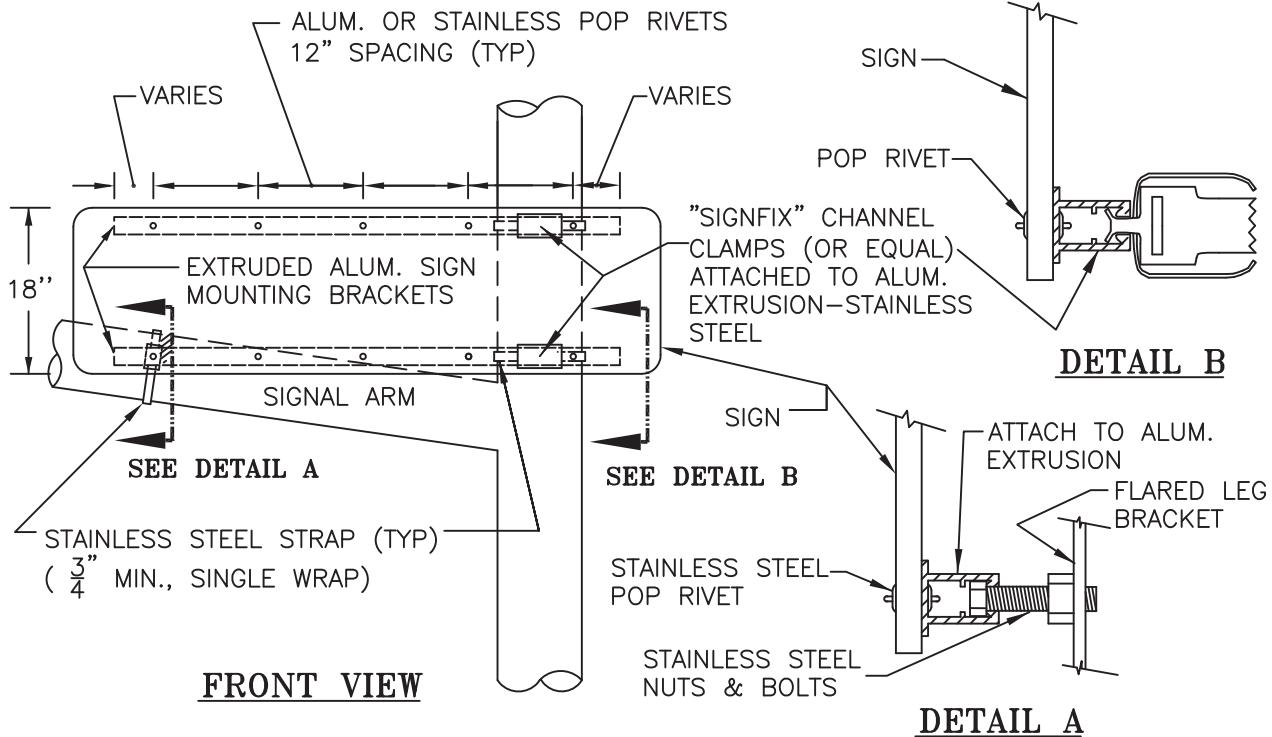


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-93**



SINGLE-NAME SIGN



SPECIAL DOUBLE-NAME SIGN

(SEE NOTE NO. 3, DWG. NO. R-94, PAGE 2)

Page 1 of 2

**TRAFFIC SIGNAL MAST ARM  
SIGN ASSEMBLY**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.  
4

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

SCALE  
NONE

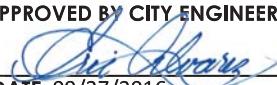
SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-94**

## NOTES FOR TRAFFIC-SIGNAL-ARM SIGN MOUNTING:

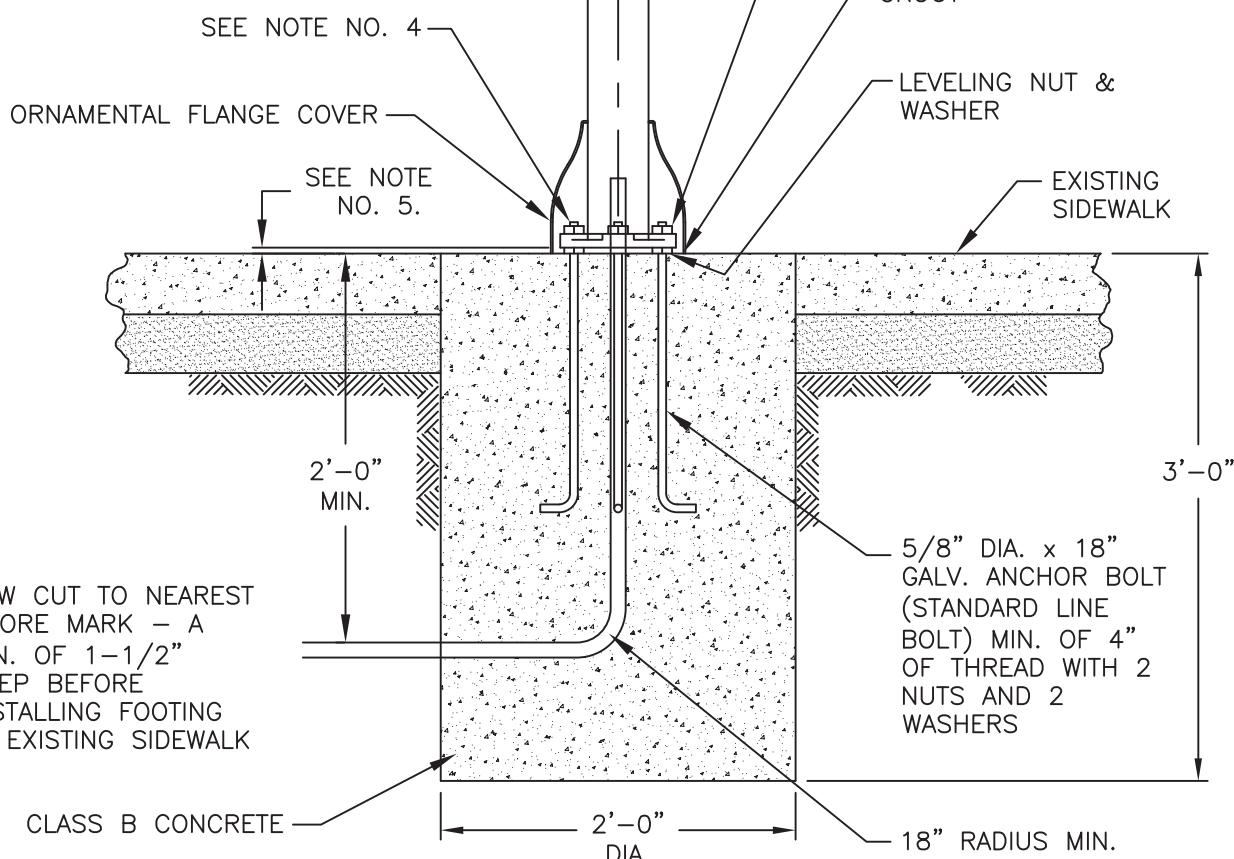
1. ALL MATERIAL FURNISHED SHALL BE RUST RESISTANT. ALL SIGN HARDWARE SHALL BE ALUMINUM AND ANY MOVING PARTS MUST BE MADE OF STAINLESS STEEL TO PREVENT RUSTING.
2. THE SIGN MOUNTING EXTRUDED ALUMINUM MOUNTING BRACKETS SHALL BE EITHER MEDIUM ALUMINUM EXTRUSIONS (SIGNFIX PART NO. SX-073) OR LARGER ALUMINUM EXTRUSIONS (SIGNFIX PART NO. SX-0130). EXTRUDED ALUMINUM MOUNTING BRACKETS MUST BE BY SIGNFIX OR MUST BE DIRECTLY ADAPTABLE TO UNIVERSAL SIGNFIX CHANNEL CLAMPS E.P. (PART NO. SX-0220) OR EQUAL. FLARED LEG MOUNTING BRACKET FOR MOUNTING TO POLE OR MAST ARM SHALL BE HAWKINS PART NO. M2G-FUB OR APPROVED EQUAL. THREADED PORTION OF BRACKET SHALL ACCEPT COURSE THREAD 5/16 INCH ALL-THREAD BOLT.
3. SINGLE STREET NAME SIGN SHALL HAVE NAME AND SUFFIX CENTERED IN SIGN. SIGNS SHALL BE SINGLE FACE AND FABRICATED ON ALUMINUM BLANKS 0.063-INCH THICKNESS. BLANK SHALL BE 18-INCHES IN WIDTH AND VARY IN LENGTH DEPENDING ON THE NUMBER OF LETTERS OF THE STREET (MIN. OF 6 FEET IN LENGTH). SIGN BLANK SHALL HAVE GREEN ELECTROCUT FILM (EC) OVER 3M HIGH INTENSITY GRADE. REFLECTIVE VINYL SHEETING. UPPER CASE LETTERS SHALL BE 10-INCHES AND LOWER CASE LETTERS SHALL BE 7.5-INCHES. ALL LETTERS SHALL BE HIGHWAY FONT "D". SIGN SHALL HAVE 1-INCH WHITE BORDER COVERING THE ENTIRE EDGE OF SIGN BLANK. CORNERS SHALL BE NEATLY ROUNDED TO A 3-INCH RADIUS. WORDS SHALL BE SPACED 10-INCHES APART AND THERE SHALL BE 10-INCHES OF SPACING BETWEEN BORDER AND SIDES OF STREET NAME. LETTERS SHALL BE SPACED A MIN. OF 1.5-INCHES.
4. VARIOUS STREETS IN THE CITY CHANGE NAMES AT MAJOR INTERSECTIONS. SIGNS THAT DESIGNATE DIFFERENT NAMES SHALL BE MADE AS PER STANDARD DWG. NO. R-94, PAGE 1.
5. ALL SIGNS SHALL BE APPROVED FOR CONFORMANCE BY THE CITY TRAFFIC DEVICES STAFF PRIOR TO INSTALLATION.

Page 2 of 2

<b>TRAFFIC SIGNAL MAST ARM SIGN ASSEMBLY</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

NOTES:

1. 2" DIA. MIN. CONDUIT IN FOOTING SHALL ENTER FOOTING A MIN. OF 2'-0" BELOW SIDEWALK OR 3'-0" BELOW UNFINISHED GRADE.
2. CONDUITS SHALL EXTEND 2" MAX. ABOVE FINISHED SURFACE OF FOUNDATION.
3. ONE ANCHOR BOLT SHALL BE BONDED TO CONDUIT.
4. THREADED PORTION OF ANCHOR BOLTS SHALL EXTEND  $3/4" \pm 1/4"$  ABOVE TOP OF HOLD DOWN NUT.
5. 2" $\pm 1/4$ " FROM BOTTOM ON STEEL BASE PLATE TO FINISH SURFACE.
6. WHEN SETTING POLES, PROVIDE A DRAINAGE HOLE (UNDER STEEL PLATE) TO THE CENTER OF THE POLE. FORM HOLE BEFORE GROUTING SETS USING A PIECE OF WELDING ROD OR EQUAL.



**TYPE 1-B SIGNAL AND CONTROLLER STANDARD**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

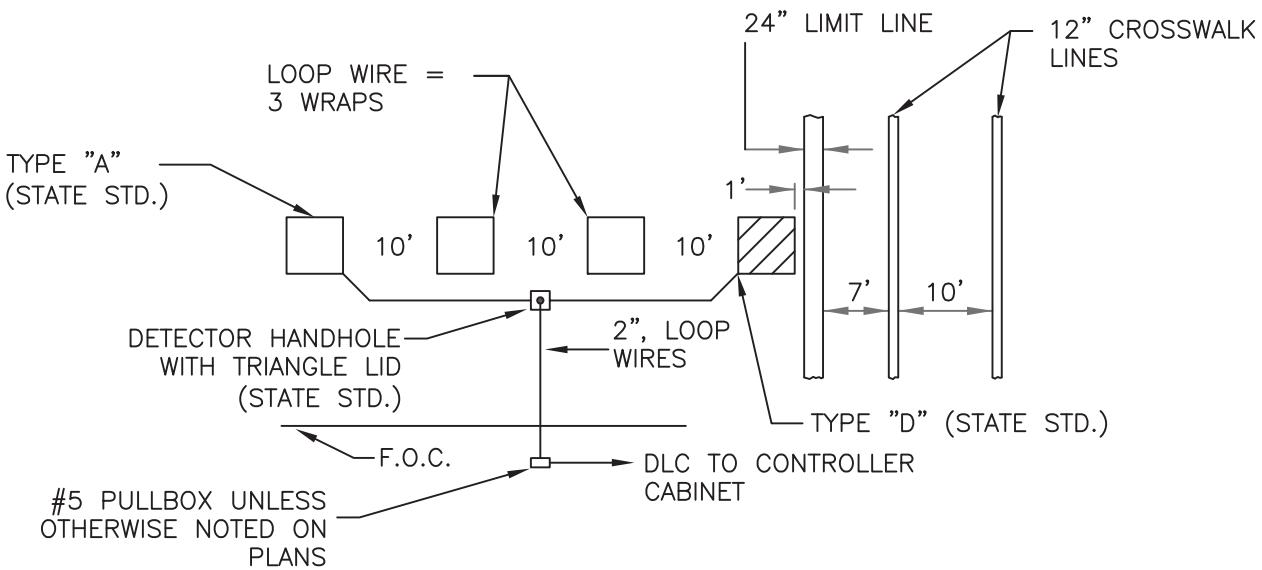
REVISION NO.  
5

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

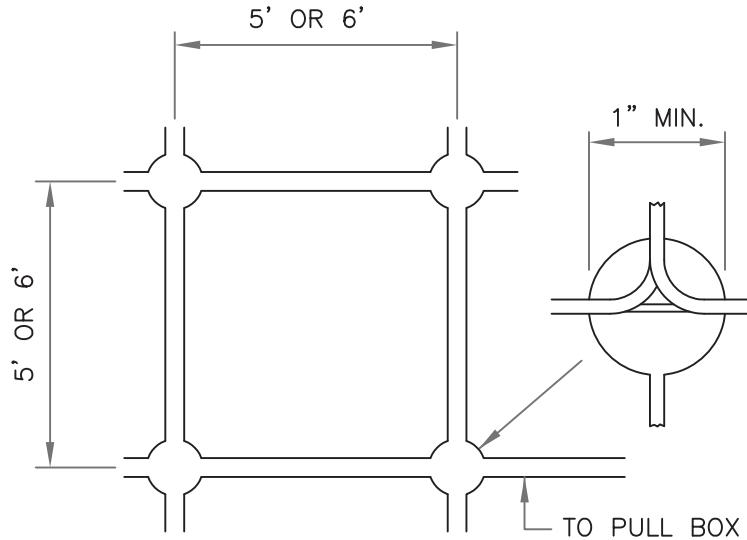
DRAWING NO.  
**R-95**



NOTE:

1. 5'x5' LOOPS FOR 11' LANES AND NARROWER.
2. 6'x6' LOOPS FOR LANES WIDER THAN 11'.
3. ALL SAMPLER AND ADVANCE LOOPS SHALL BE 6'x6'.
4. TWO LOOP SET FOR DELAY, BOTH LOOPS 4 WRAPS. - DIMENSIONS ARE EDGELINE TO EDGELINE.
5. ALL WRAPS SHALL BE CLOCKWISE
6. LABEL "START" AND "FINISH" WITH PHASE TAPE (IN ADJACENT PULLBOX)

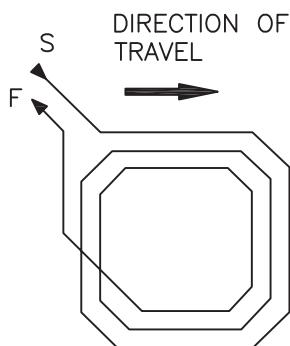
TYPICAL DETECTOR PLACEMENT DETAIL



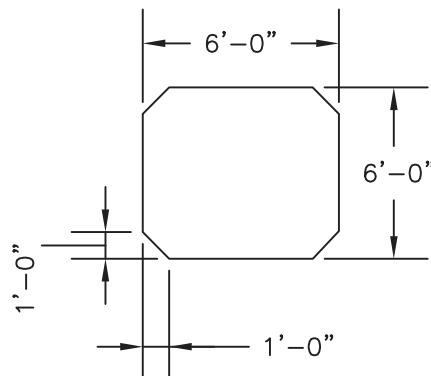
TYPE "A" LOOPS

DETECTOR INSTALLATION DETAIL - DRILLED CORNERS

TRAFFIC SIGNAL DETECTOR INSTALLATION DETAILS	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED DRAWING NO. <b>R-96</b>

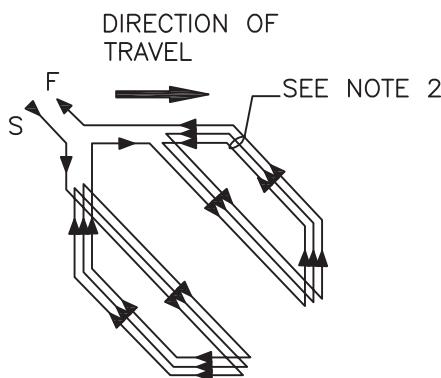


WIDENING DETAIL

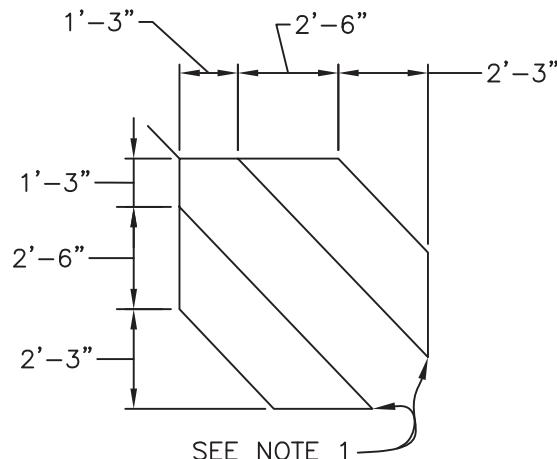


SAWCUT DETAIL

### TYPE A LOOP DETECTOR CONFIGURATION



WINDING DETAIL

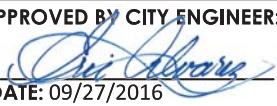


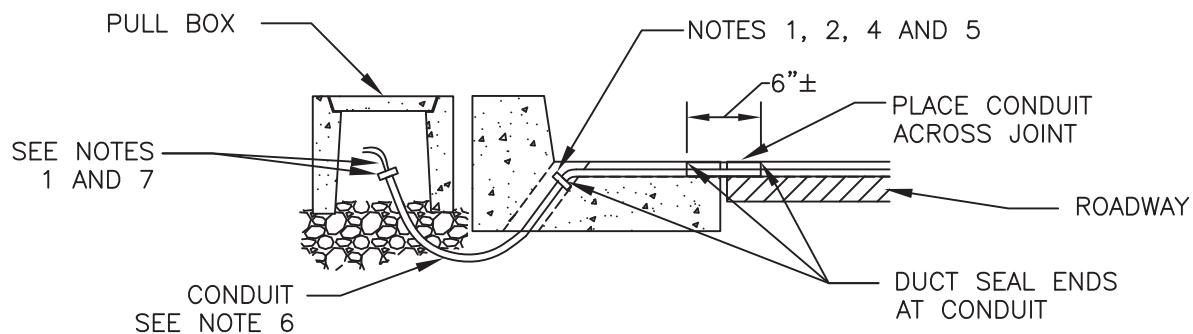
SAWCUT DETAIL

### TYPE D LOOP DETECTOR CONFIGURATION

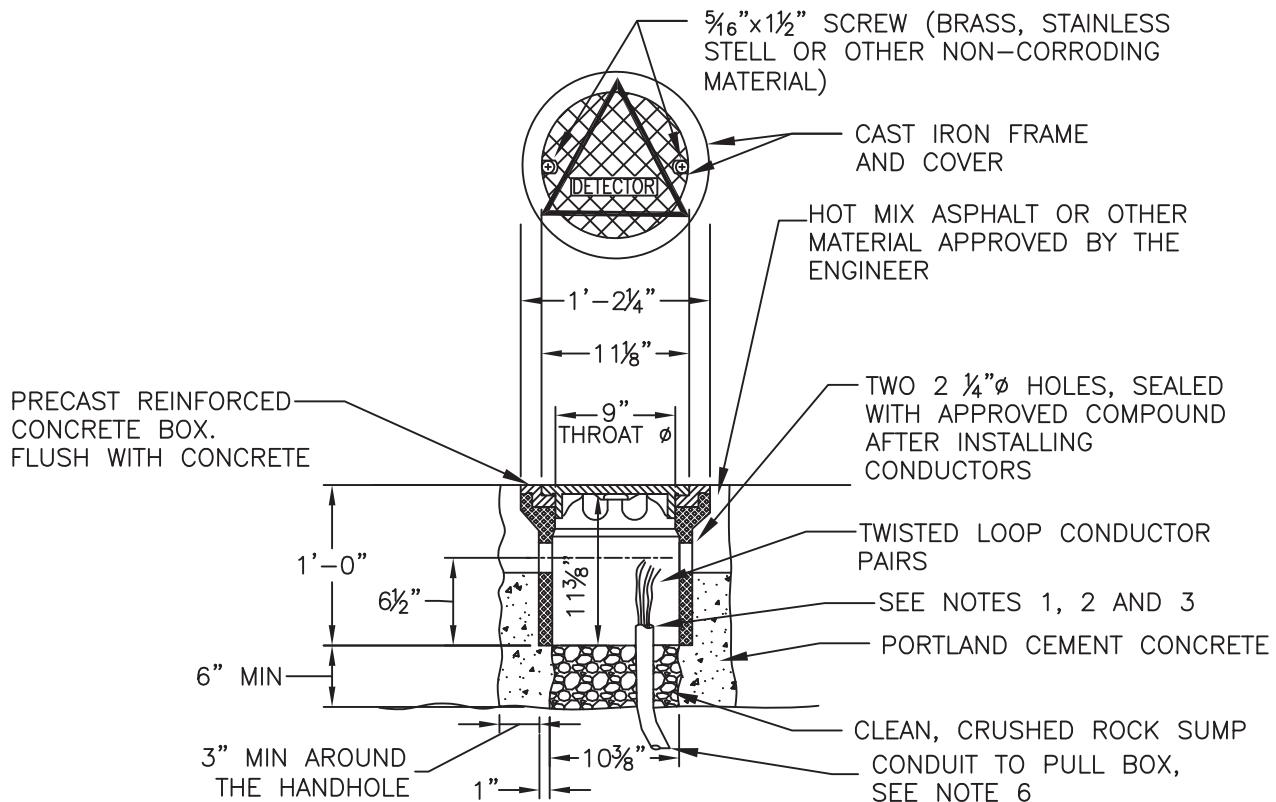
#### NOTES:

1. ROUND CORNERS OF ACUTE ANGLE SAWCUTS TO PREVENT DAMAGE TO CONDUCTORS.
2. INSTALL 3 TURNS WHEN ONLY ONE TYPE D LOOP IS ON A SENSOR UNIT CHANNEL.  
INSTALL 5 TURNS WHEN ONE TYPE D LOOP IS CONNECTED WITH 3 ADDITIONAL 6'-0" x 6'-0" LOOPS ON A SENSOR UNIT.
3. TYPICAL DISTANCE SEPARATING LOOPS FROM EDGE TO EDGE IS 10' FOR TYPE A, B AND E INSTALLATION IN SINGLE LANE.

<b>LOOP DETECTOR</b>	REVISION NO.	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED <b>R-97</b>



### HANDHOLE DETAIL CROSS SECTION



#### NOTES:

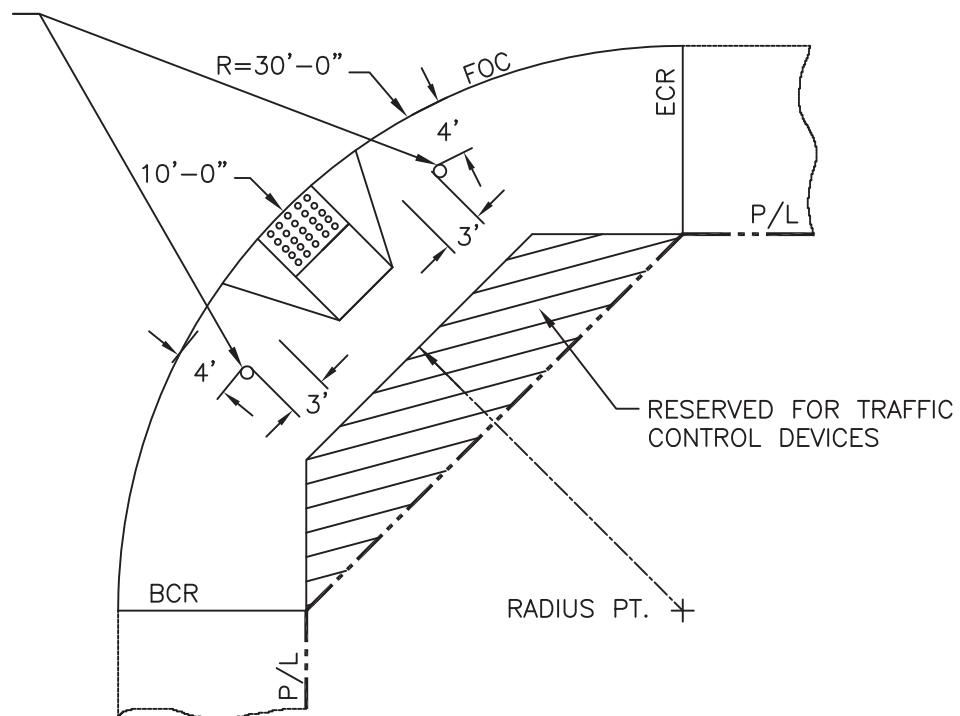
#### DETECTOR HANDHOLE DETAIL

1. BUSHING SHALL BE USED AT END OF CONDUIT.
2. TAPE DETECTOR CONDUCTORS OR CABLES 3" EACH SIDE OF BUSHINGS.
3. INSTALL DUCT SEAL COMPOUND TO EACH END OF TERMINATION CONDUIT BEFORE INSTALLING SEALANT.
4. ROUND ALL SHARP EDGES WHERE DETECTOR CONDUCTORS OR CABLES HAVE TO PASS.
5. END OF CONDUIT SHALL BE 3 1/8" BELOW ROADWAY SURFACE.
6. CONDUIT SIZE      LOOP CONDUCTORS

1" C MIN	1 TO 2 PAIRS
1 1/2" C MIN	3 TO 4 PAIRS
2" C MIN	5 OR MORE PAIRS
7. SPLICE DETECTOR CONDUCTORS OR CABLES TO DETECTOR LEAD-IN-CABLE.

DETECTOR HANDHOLE	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED DRAWING NO. <b>R-98</b>

EXAMPLE OF TRAFFIC SIGNAL POLE LOCATIONS

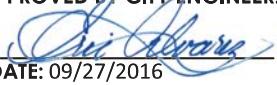


NOTES:

1. FOR UNDERGROUND UTILITY LOCATIONS, REFER TO COS STD. DWG. NOS. R-26 AND R-27.

**TRAFFIC CONTROL DEVICE LOCATION  
IN NEW SUBDIVISIONS**

REVISION  
NO.  
2

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

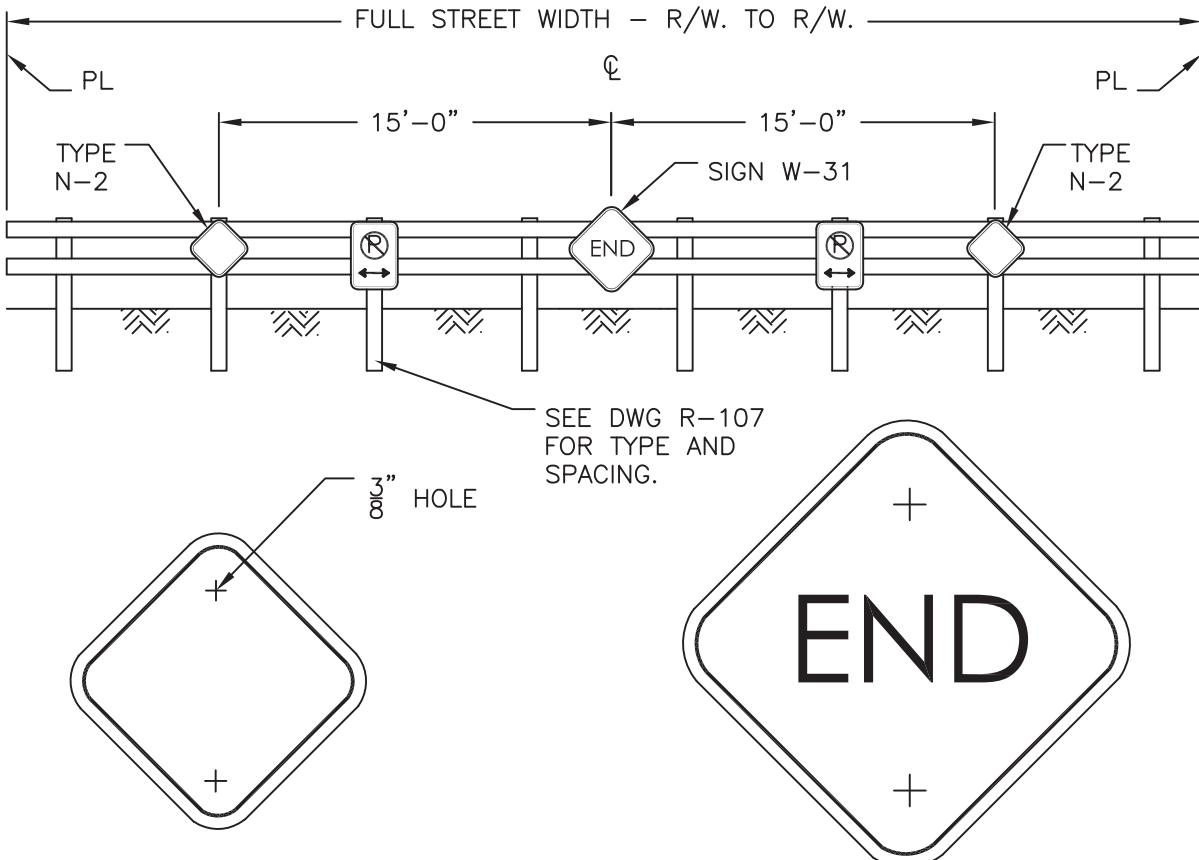


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

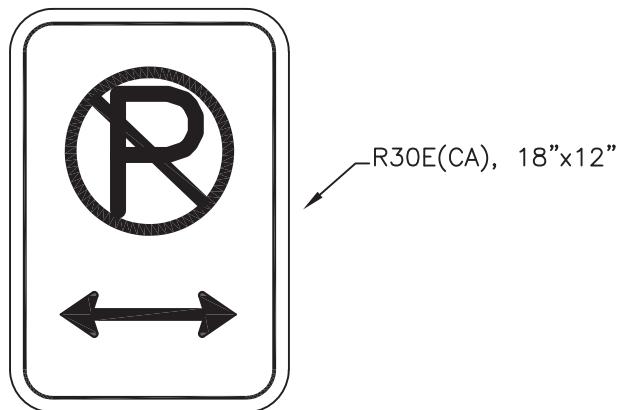
SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-99**



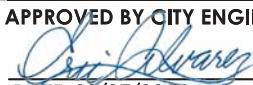
REFLECTOR SIGN – CALTRANS  
TYPE N-2, RED SIZE 18" x 18".

CALTRANS W-31  
(STANDARD 30" SIGN – YELLOW)

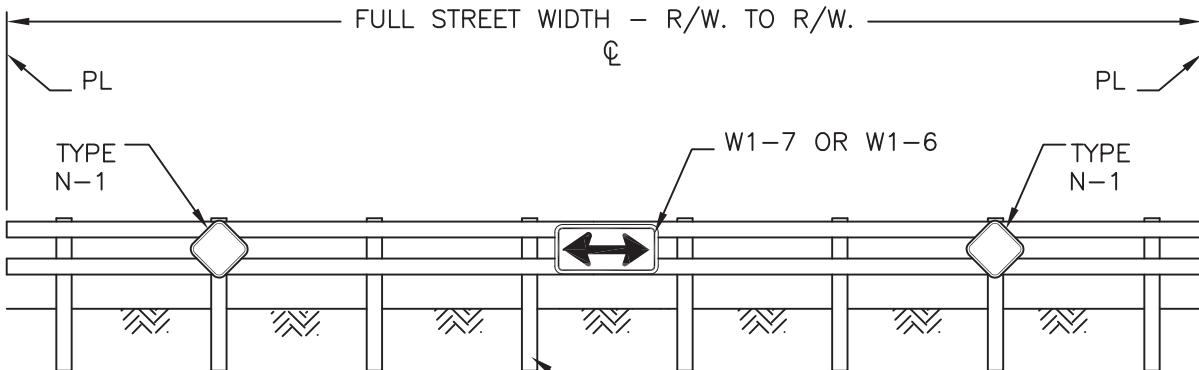


NOTES:

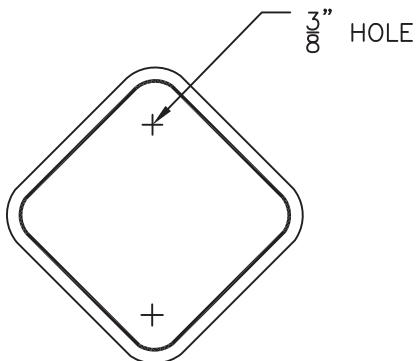
1. BARRICADE TO BE PAINTED WHITE. USING TWO COATS OF "EXTERIOR ALKYD RESIN HI-GLOSS ENAMEL" OVER A COMPATIBLE PRIMER – APPLY REFLECTIVE GLASS BEADS COATING.
2. FOR MARKERS, SEE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FHWA, AND CURRENT CALIFORNIA SUPPLEMENT.

<b>BARRICADE FOR TERMINATING STREETS</b>	REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

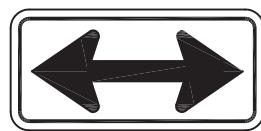
**DRAWING NO.  
R-105**



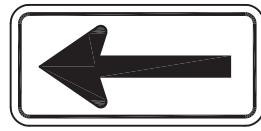
SEE DWG R-107  
FOR TYPE AND  
SPACING



REFLECTOR SIGN - CALTRANS  
N-1, SIZE 18" x 18"



W1-7 (FOR T-INTERSECTION)

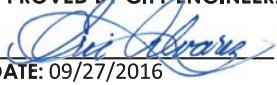


W1-6 (FOR RIGHT OR  
LEFT TURN ONLY)

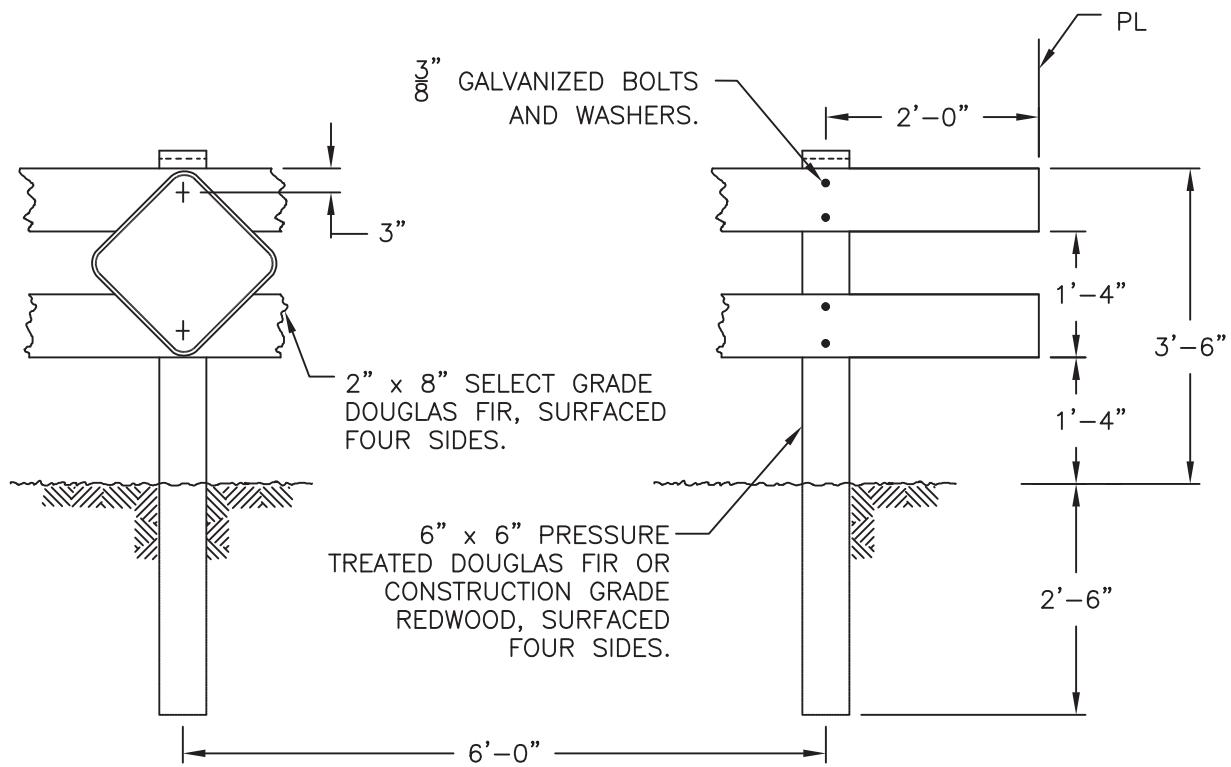
CALTRANS W1-7 OR W1-6  
(STANDARD 30" SIGN - YELLOW)

NOTES:

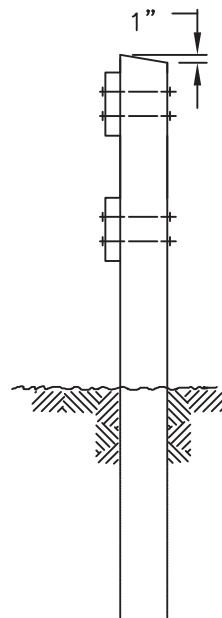
1. BARRICADE TO BE PAINTED WHITE. USING TWO COATS OF "EXTERIOR ALKYD RESIN HI-GLOSS ENAMEL" OVER A COMPATIBLE PRIMER - APPLY REFLECTIVE GLASS BEADS COATING.
2. FOR MARKERS, SEE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FHWA, AND CURRENT CALIFORNIA SUPPLEMENT.

<b>BARRICADE FOR ENDING STREET WITH INTERSECTION STREET</b>	REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

DRAWING NO.  
**R-106**



FRONT VIEW



END VIEW

<b>BARRICADE FOR TERMINATING STREETS</b>	REVISION NO. 6	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

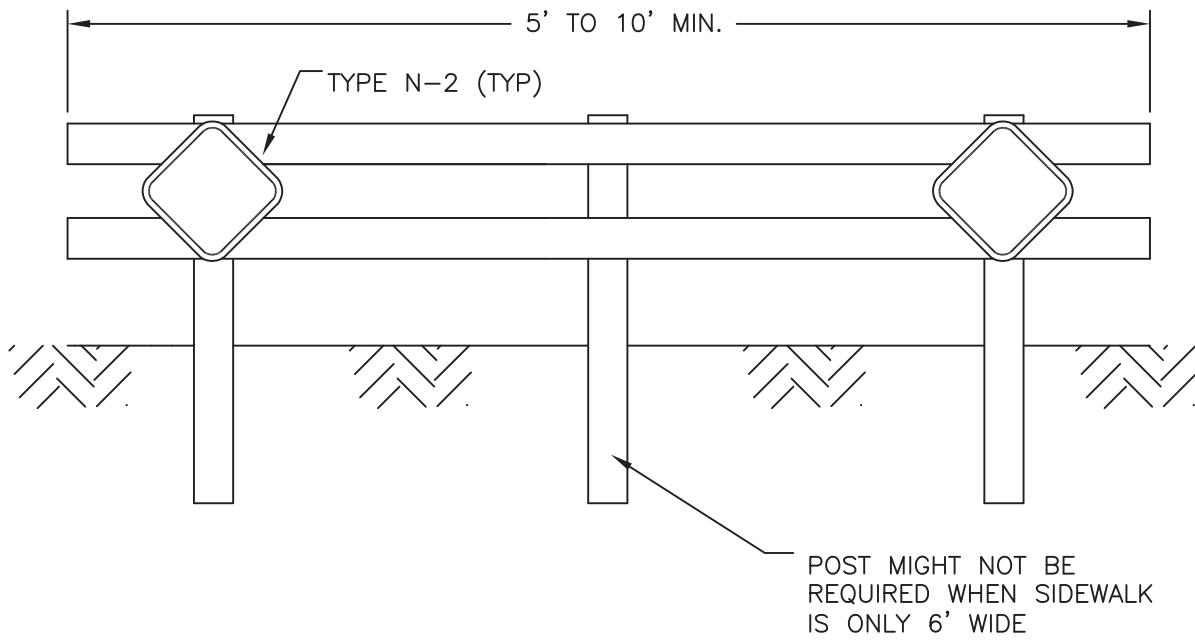


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

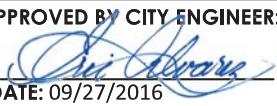
DRAWING NO.  
**R-107**

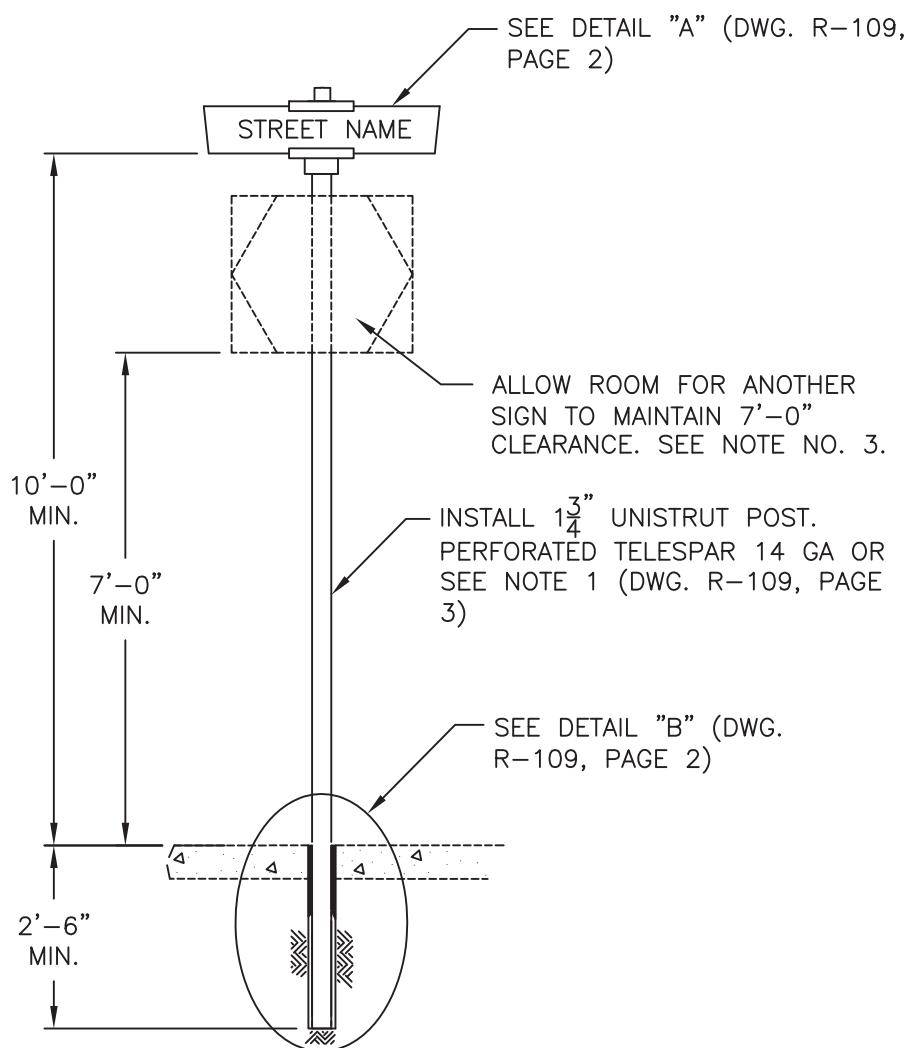


REFLECTOR SIGN – CALTRANS  
TYPE N-2, RED SIZE 18" x 18".

NOTES:

1. BARRICADE TO BE PAINTED WHITE. USING TWO COATS OF "EXTERIOR ALKYD RESIN HI-GLOSS ENAMEL" OVER A COMPATIBLE PRIMER – APPLY REFLECTIVE GLASS BEADS COATING.
2. FOR MARKERS, SEE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FHWA, AND CURRENT CALIFORNIA SUPPLEMENT.

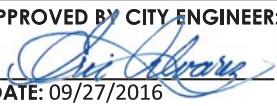
<b>BARRICADE FOR TERMINATING SIDEWALKS</b>		REVISION NO.	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED	DRAWING NO. <b>R-108</b>

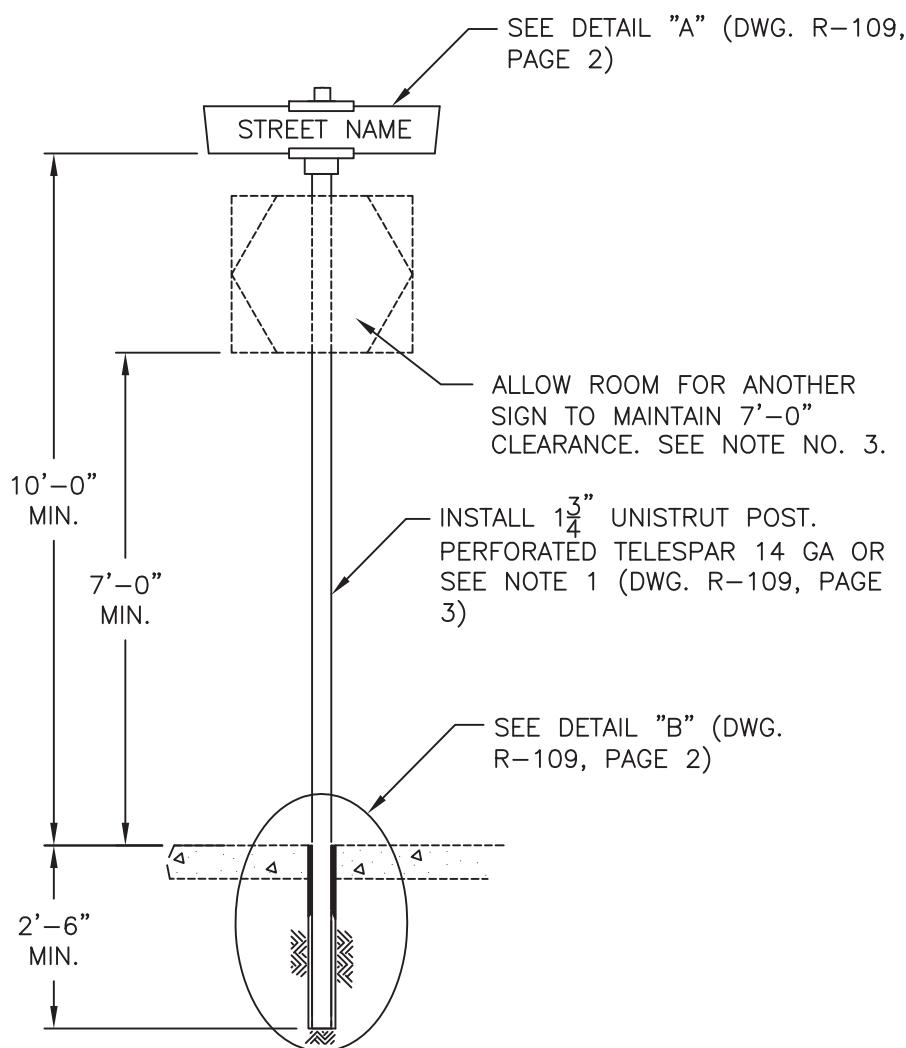


NOTES:

1. (UNISTRUT ANCHOR) PERFORATED TUBE BASE TO BE 2" TO 3" ABOVE SURFACE GRADE.
2. IF ADDITIONAL SIGNS ARE APPROVED OR REQUIRED BY THE CITY TRAFFIC ENGINEER, THE INSTALLATION SHALL MEET OTHER REGULATIONS REQUIRED UNDER CHAPTER 4 OF CALTRANS TRAFFIC MANUAL.
3. FOR INSTALLATION NOTES SEE DRAWING R-109, PAGE 3.
4. ALL LETTERS ARE UPPER CASE, HIGHWAY "C" SERIES FONT.

Page 1 of 3

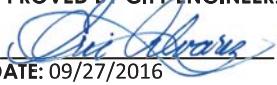
STREET NAME AND TRAFFIC SIGN INSTALLATION DETAIL	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-109</b>

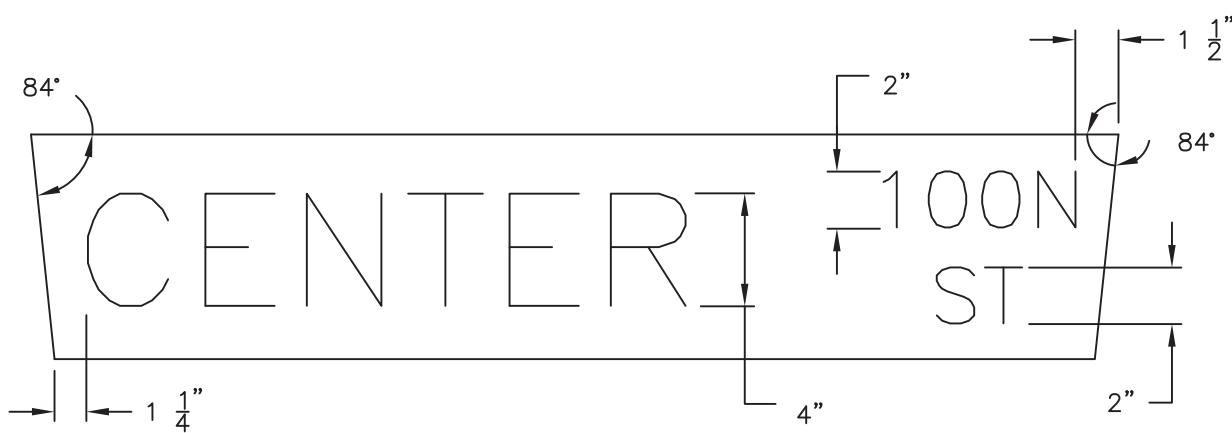


NOTES:

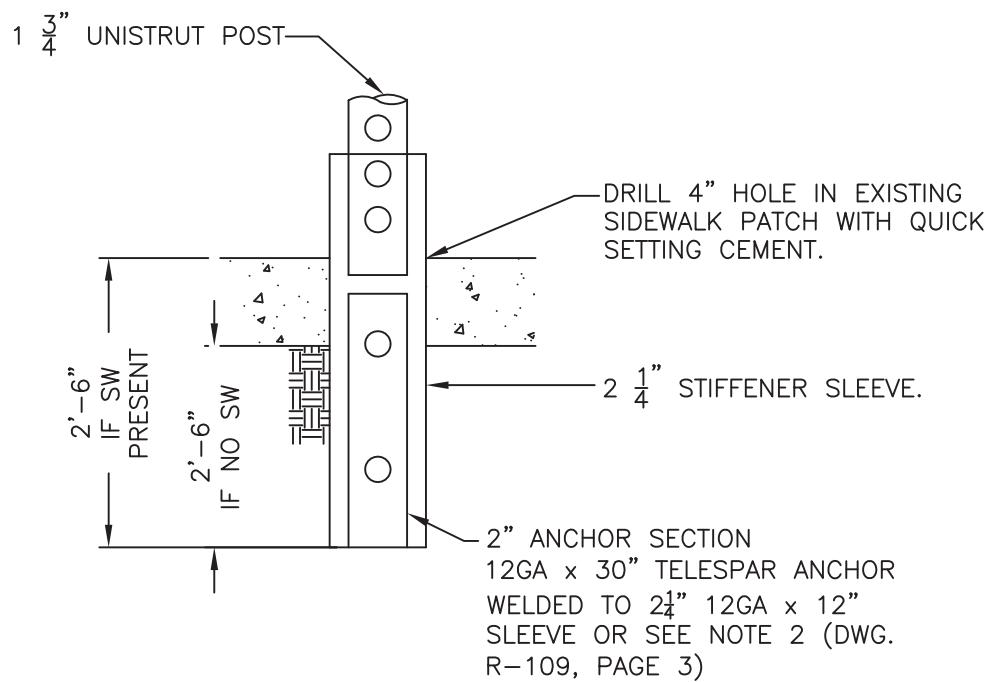
1. (UNISTRUT ANCHOR) PERFORATED TUBE BASE TO BE 2" TO 3" ABOVE SURFACE GRADE.
2. IF ADDITIONAL SIGNS ARE APPROVED OR REQUIRED BY THE CITY TRAFFIC ENGINEER, THE INSTALLATION SHALL MEET OTHER REGULATIONS REQUIRED UNDER CHAPTER 4 OF CALTRANS TRAFFIC MANUAL.
3. FOR INSTALLATION NOTES SEE DRAWING R-109, PAGE 3.
4. ALL LETTERS ARE UPPER CASE, HIGHWAY "C" SERIES FONT.

Page 1 of 3

STREET NAME AND TRAFFIC SIGN INSTALLATION DETAIL	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-109</b>



DETAIL A

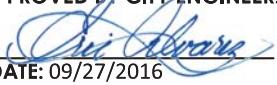


DETAIL B    1 $\frac{3}{4}$ " UNISTRUT POST

NOTE:

1. SEE DWG R-109, PAGE 3 FOR NOTES

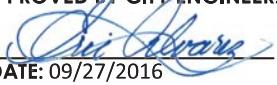
Page 2 of 3

STREET NAME AND TRAFFIC SIGN INSTALLATION DETAIL	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-109</b>

NOTES:

1. DRILL 4" HOLE IN CONCRETE IF SIGN IS INSTALLED AFTER SIDEWALK IS CONSTRUCTED. INSTALL 2 1/4" PERFORATED SQUARE PIPE STIFFENER SLEEVE WITH 1 3/4" PERFORATED SQUARE PIPE ANCHOR SECTION 30" BELOW SIDEWALK GRADE. PATCH SIDEWALK WITH QUICK SETTING CEMENT (ALL PERFORATED SQUARE PIPE SHALL BE TELSPAR. 14 GAUGE, GALVANIZED STEEL OR EQUAL).
2. WHEN INSTALLED BEFORE SIDEWALK IS CONSTRUCTED, DRIVE 2 1/4" SQUARE PIPE STIFFENER SLEEVE WITH 2" ANCHOR 30" INTO EXISTING GROUND SURFACE. SET TOP OF STIFFENER SLEEVE MINIMUM OF 2 FULL PERFORATION HOLES ABOVE ULTIMATE SIDEWALK GRADE. CAP END AND TAPE HOLES TO PREVENT CONCRETE FROM ENTERING PIPE DURING SIDEWALK CONSTRUCTION.
3. TWO (2) 3/8" DRIVE RIVETS, PERPENDICULAR TO EACH OTHER, SHALL BE USED TO INSTALL 1 3/4" PERFORATED SQUARE PIPE TO STIFFENER SLEEVE. TWO (2) 3/8" DRIVE RIVETS SHALL BE USED TO INSTALL ALL SIGNS OTHER THAN STREET NAME SIGNS TO SQUARE SIGN PIPE.
4. SIGN LOCATION SHALL BE ON N.E. CORNER ONLY, FOR RESIDENTIAL STREETS. SIGNS SHALL BE INSTALLED ON N.E. AND S.W. CORNERS FOR INTERSECTION OF MAJOR ARTERIAL WITH COLLECTOR OR RESIDENTIAL STREETS. INSTALL STREET NAME SIGN ON STREET LIGHTING STANDARD WHERE APPLICABLE. BRACKET SHALL BE HAWKINS, WING BRACKET, PART NO. V14F-(HD)SL-AB-0.125 OR EQUAL.
5. CITY TO REVIEW AND APPROVE SIGN LOCATIONS PRIOR TO INSTALLATION. CONTRACTOR TO WORK WITH INSPECTOR AS SINGLE POINT OF CONTACT.
6. ALL SIGNS SHALL BE INSTALLED AS CLOSE TO BACK OF WALK AS POSSIBLE BUT NO CLOSER THAN 6", TO RETAIN AND A MINIMUM OF 3'-6" CLEARANCE FOR WHEELCHAIR ACCESS. LOCATION 2' FROM FOC IS ALSO ACCEPTABLE IF AREA BEHIND SIGN PROVIDES ADEQUATE WHEELCHAIR ACCESS.
7. STREET NAME SIGNS SHALL BE DOUBLE FACED ALUMINUM BLANKS (0.125" THICKNESS). SIGNS SHALL HAVE GREEN 3M ELECTROCUT FILM (EC) OVERLAYING WHITE HIGH INTENSITY GRADE VINYL SHEETING. LETTERING SHALL BE AS ILLUSTRATED IN DETAIL A, STD. DWG. NO. R-109, PAGE 2. ALL SIGNS SHALL BE APPROVED FOR CONFORMANCE TO CITY STANDARDS BY CITY TRAFFIC DEVICES STAFF PRIOR TO INSTALLATION.
8. SQUARE PIPE TOP SIGN BRACKET SHALL BE HAWKINS, PART NUMBER V14F-(HD)SL-107(2C)-0.125 OR EQUAL. CROSSPIECE SIGN BRACKET SHALL BE 90°, HAWKINS PART NUMBER V14F-(HD)SL-105(90)-0.125 OR EQUAL.
9. ALL STREET SIGNS THAT WILL BE INSTALLED PER DRAWING 36 SHALL HAVE AN ANTI-GRAFFITI FILM. USE A 3M SERIES 1160 PS PROTECTIVE FILM OR NIKKALITE SCAL TRANSPARENT PS PROTECTIVE FILM OR APPROVED EQUAL.

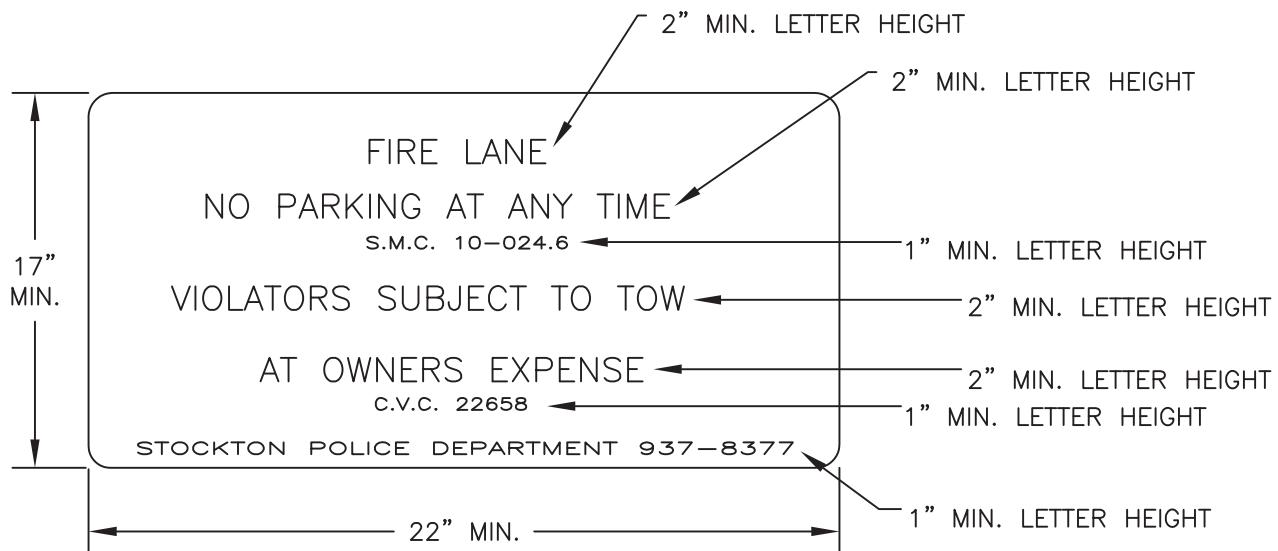
Page 3 of 3

<b>STREET NAME AND TRAFFIC SIGN INSTALLATION NOTES</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

**R-109**

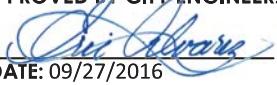
## FIRE LANE SIGNING

1. FIRE LANE SIGNS AS DESIGNATED BY THE CITY OF STOCKTON SHALL BE APPROVED BY THE CITY FIRE DEPARTMENT PRIOR TO INSTALLATION.
2. SIGNS SHALL BE ALL WEATHER CONSTRUCTION WITH RED LETTERS ON WHITE BACKGROUND.
3. SIGNS SHALL READ AS FOLLOWS:



## **FIRE LANE SIGNING**

REVISION  
NO.  
3

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

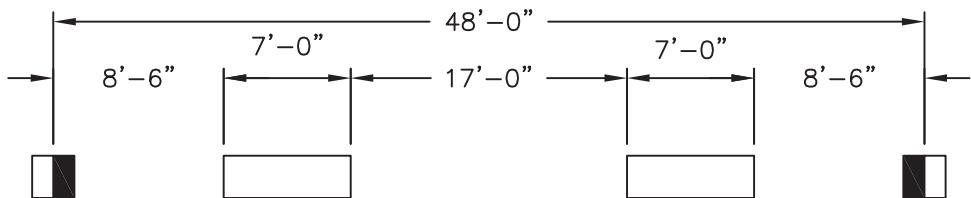
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

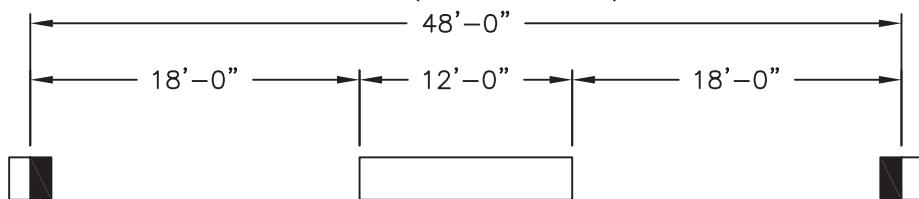
DRAWING NO.  
**R-110**

## LANE LINES

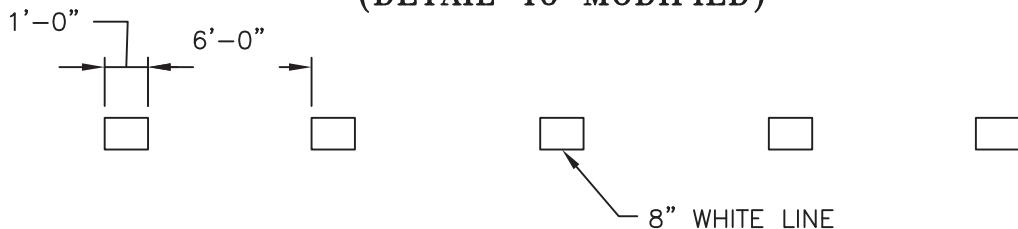
### FOR SPEEDS 40 MPH OR LOWER (DETAIL 9)



### FOR SPEEDS 45 MPH OR HIGHER (DETAIL 12)



### LANE LINE EXTENSIONS THROUGH INTERSECTION (DETAIL 40 MODIFIED)



#### NOTES:

1. ALL LANE LINES AND MARKINGS SHALL BE THERMOPLASTIC. PERMANENT TO STATE STANDARDS EXCEPT ON INTERIM STRIPING ANTICIPATED TO CHANGE WITHIN 2 YEARS. INTERIM STRIPING SHALL BE PAINT.
2. "FLEXIBLE MARKER ADHESIVE" SHALL BE USED WHEN INSTALLING RETROREFLECTIVE MARKERS.

## **PAVEMENT DELINEATION**

REVISION  
NO.

APPROVED BY CITY ENGINEER:

DATE: 09/27/2016

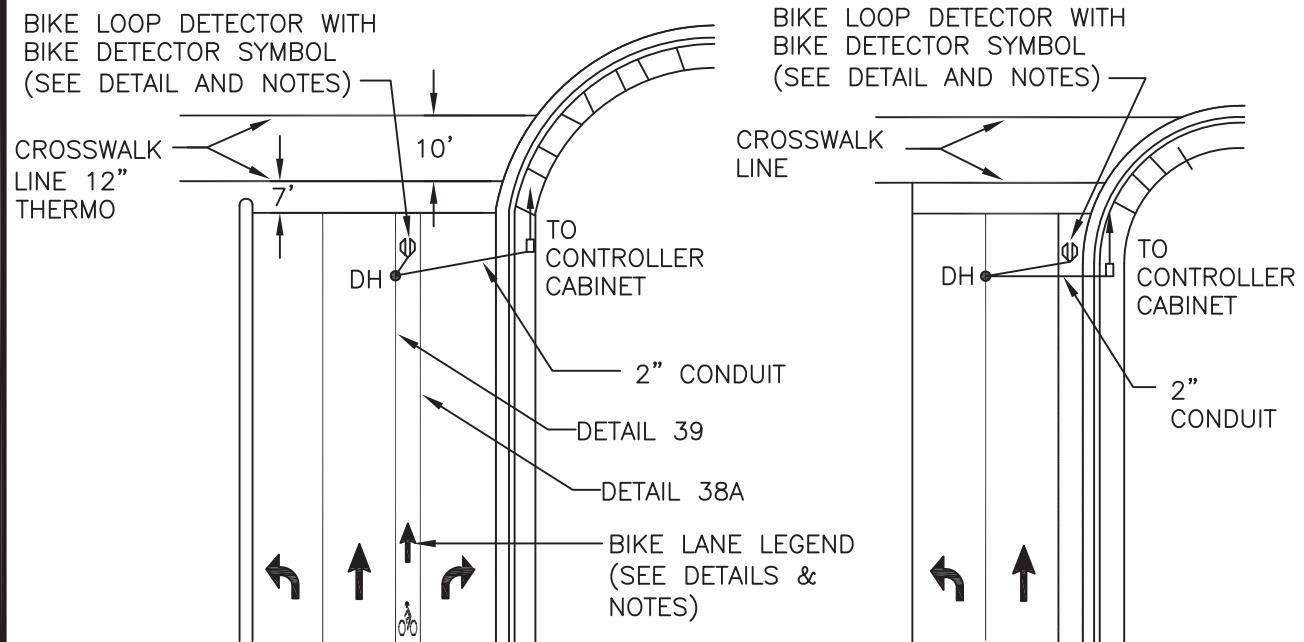


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

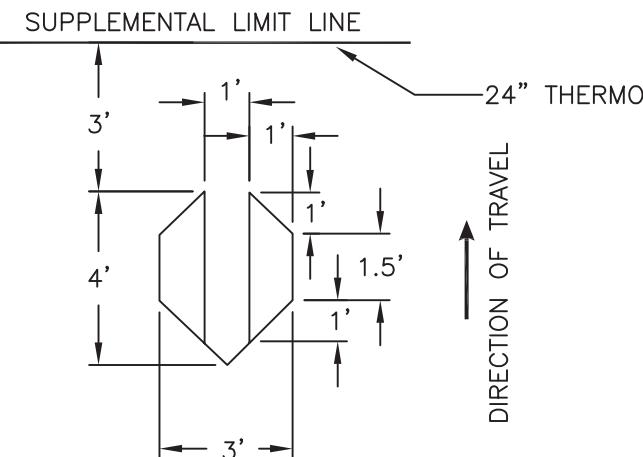
SUPERSEDES  
DWG. DATED

DRAWING NO.  
**R-111**



BIKE LOOP INSTALLATION AT MAJOR  
INTERSECTIONS WITH RIGHT TURN LANE

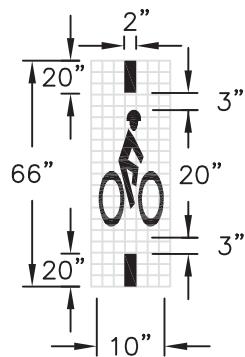
BIKE LOOP INSTALLATION  
ADJACENT TO CURB AND GUTTER



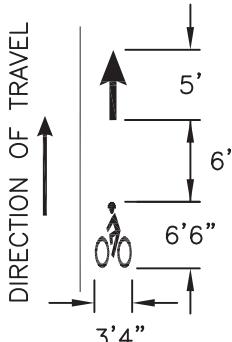
BIKE LOOP DETECTOR DETAIL

NOTES:

1. BIKE LOOP SHALL BE INSTALLED WITH CONDUIT, DETECTOR HANDHOLE(DH) AND DETECTOR LEAD IN CABLE (DLC) AND CONNECTED IN CONTROLLER WITH SEPARATE CHANNEL FOR OPERATION, UNLESS OTHERWISE NOTED ON THE PLANS.
2. FOR BIKE LANE WITH LESS THAN 3 FEET IN WIDTH, MEASURING FROM BIKE LANE STRIPE AND LIP OF GUTTER, USE  $\frac{3}{4}$  SIZE OF BIKE LANE SYMBOL WITH PERSON.
3. BIKE LANE SYMBOL, ARROWS AND BIKE DETECTOR SYMBOLS SHALL BE 2 COATS WATER BASED WHITE PAINT PER SECTION 84-3.02 OF THE STATE STANDARD SPECIFICATIONS.



BIKE DETECTOR SYMBOL



BIKE LANE LEGEND DETAIL

**BIKE LOOP AND BIKE LEGEND  
INSTALLATION DETAIL**

REVISION NO.   APPROVED BY CITY ENGINEER:  
John Devereux  
DATE: 09/27/2016

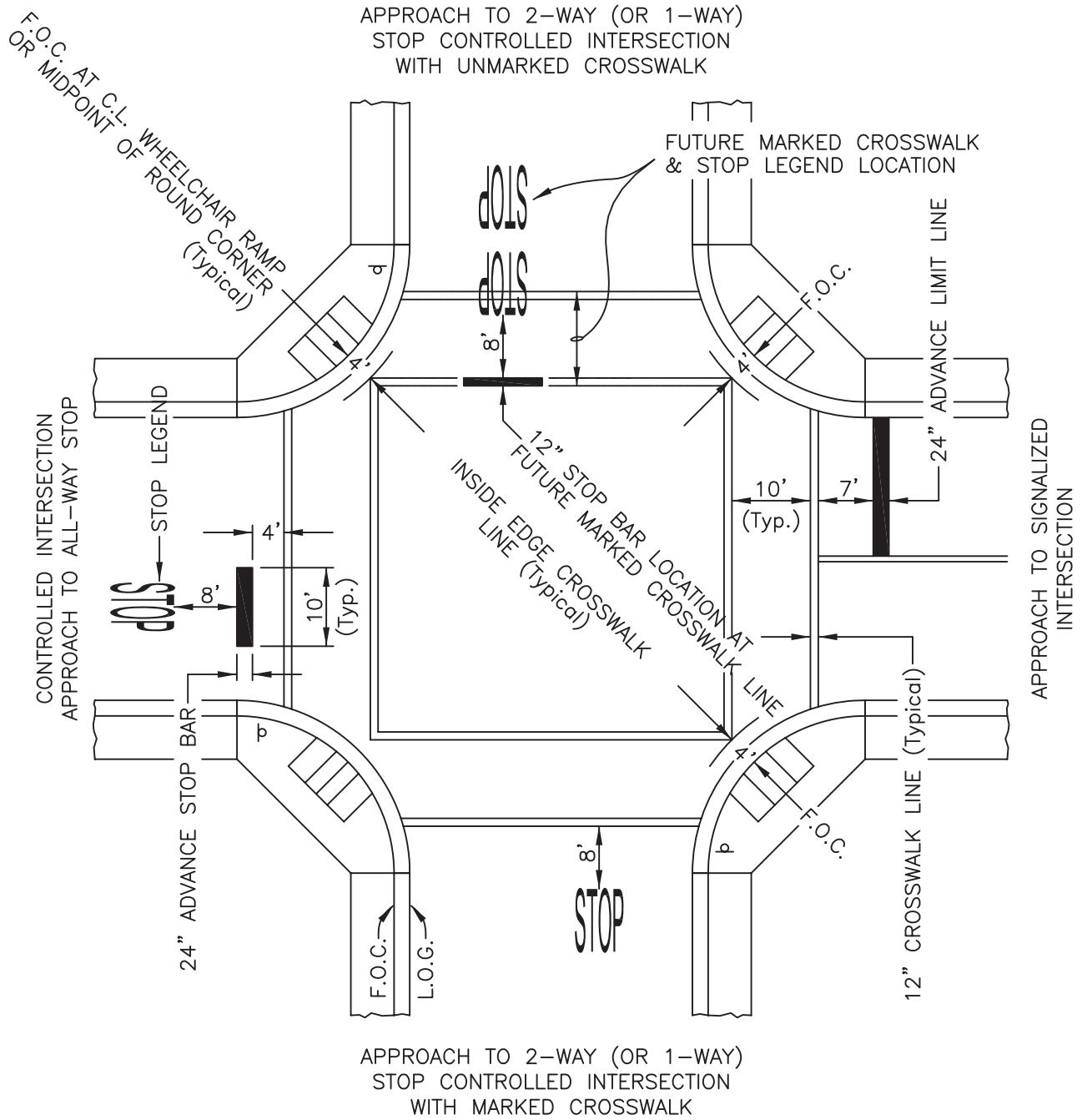


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

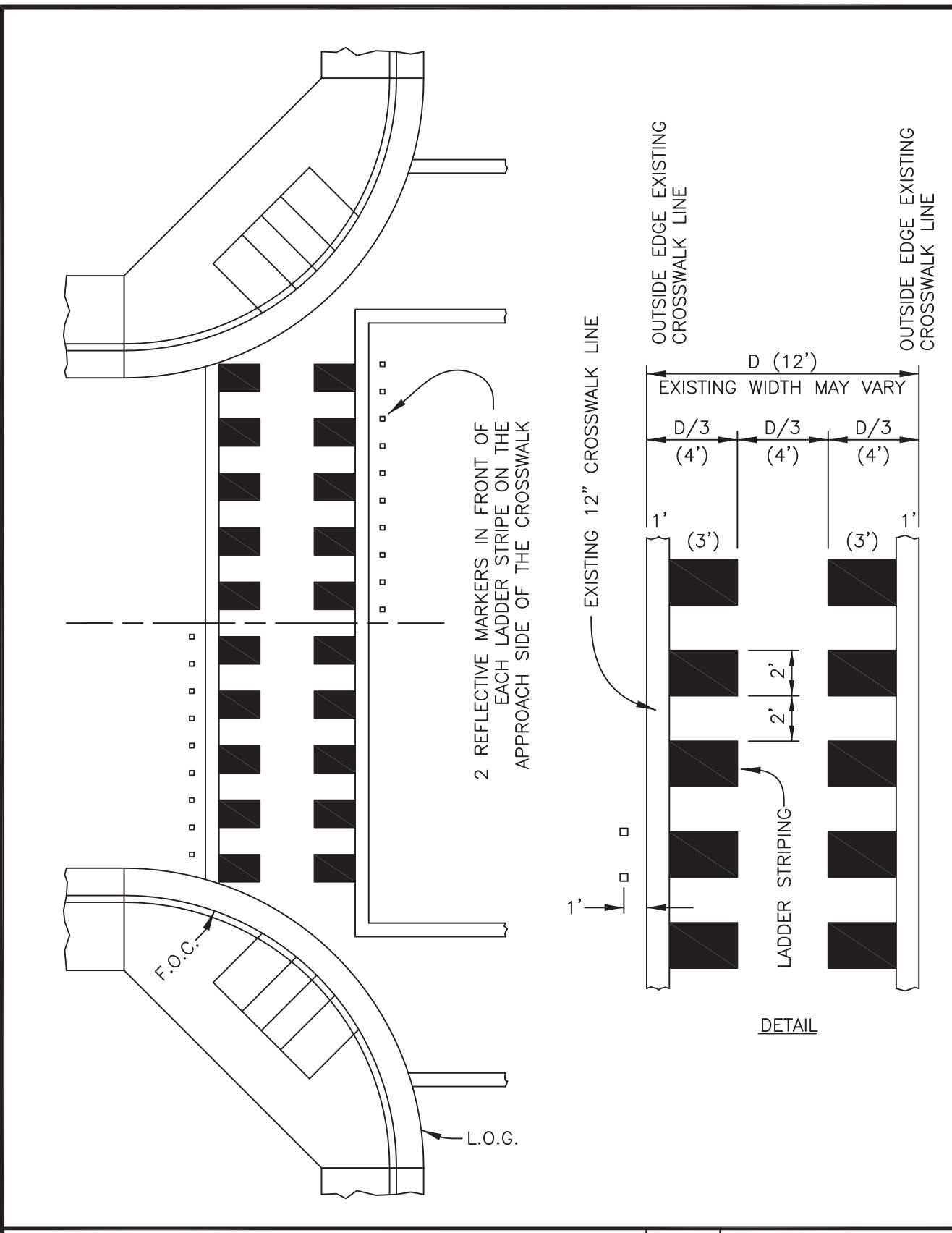
SUPERSEDES  
DWG. DATED

DRAWING NO.  
**R-112**



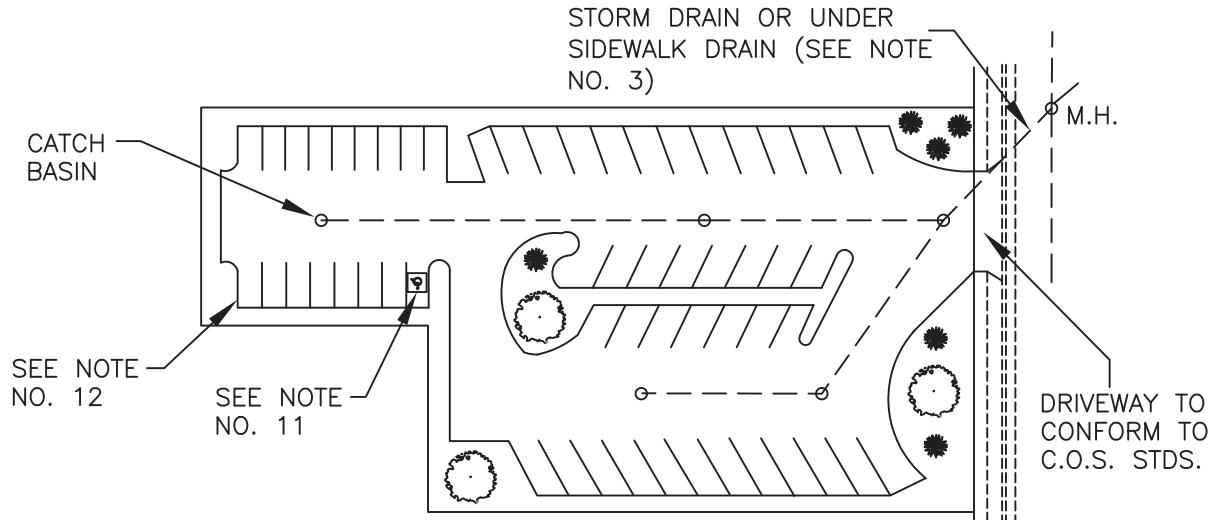
APPROACH TO 2-WAY (OR 1-WAY)  
STOP CONTROLLED INTERSECTION  
WITH MARKED CROSSWALK

TYPICAL CROSSWALK LAYOUT AT INTERSECTION	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED
		DRAWING NO. <b>R-113</b>



<b>"TRIPLE 4" HIGH VISIBILITY CROSSWALK INSTALLATION AT EXISTING CROSSWALKS</b>	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED <b>R-114</b>

SEE DWG D-10 FOR STORM  
DRAIN MESSAGE AND LOCATION

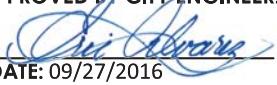


NOTES:

1. THE STANDARD PAVED SURFACE FOR PARKING LOTS, INCLUDING FIRE DEPARTMENT REQUIRED CIRCULATION SHALL BE ASPHALT OR CONCRETE WITH A STANDARD SECTION BASED ON A MINIMUM TI = 4 AND AN R = 5. OTHER ALTERNATIVES OF DUST AND TRACK FREE MATERIALS MAY BE SUBMITTED FOR CITY ENGINEER/FIRE DEPARTMENT APPROVAL. SAND, DECOMPOSED GRANITE, GRAVEL AND/OR SIMILAR TYPE MATERIAL ARE NOT ACCEPTABLE.
2. PARKING LOTS WHICH WILL EXPERIENCE TRUCK TRAFFIC MAY REQUIRE HIGHER T.I. VALUES AND SHALL BE DESIGNED ACCORDINGLY.
3. UNDER SIDEWALK DRAINS ALLOWED FOR PARCELS UP TO ONE ACRE IN SIZE (SEE STANDARD DRAWING NO. D-11). LARGER PARCELS MUST CONNECT TO A STORM SEWER AT A CATCH BASIN OR MAINTENANCE HOLE.
4. A MINIMUM CROSS SLOPE OF 1% IS REQUIRED.
- \* 5. THE MINIMUM NUMBER OF PARKING SPACES REQUIRED SHALL CONFORM TO CHAPTER 16 OF THE STOCKTON MUNICIPAL CODE.
- \* 6. PARKING LAYOUT AND DESIGN SHALL BE IN CONFORMANCE WITH "PARKING LOT DEVELOPMENT STANDARDS" ESTABLISHED BY THE COMMUNITY DEVELOPMENT DEPARTMENT OF THE CITY OF STOCKTON AND STANDARD PLAN NO. R-115, R-116 AND R-110.
- \* 7. ANY PARKING LAYOUT NECESSITATING A CUL-DE-SAC OR SIMILAR TURNING FACILITY FOR REVERSING THE DIRECTION OF TRAVEL IN ORDER TO EXIT FROM THE AREA OR ANY PARKING SPACES WILL GENERALLY BE DISCOURAGED, AND IT SHOULD BE ACCEPTED BY CITY STAFF PRIOR TO INCORPORATION INTO THE PLAN.
- \* 8. IN ALL PARKING LOT DESIGN, PROVISIONS SHALL BE MADE FOR THE MANEUVERING OF EMERGENCY VEHICLES, AND THE ARRANGEMENT SHALL BE ACCEPTED BY CITY STAFF PRIOR TO INCORPORATION INTO THE PLAN.
- \* 9. PARKING OR BACKING AREA WITHIN A PARKING LOT SHALL NOT EXTEND INTO THE PUBLIC RIGHT-OF-WAY EXCEPT AS PROVIDED IN THE STOCKTON MUNICIPAL CODE.
10. ALL UNUSABLE AREAS SHALL BE LANDSCAPED WHERE PRACTICAL.
11. END STALLS SHOULD BE PROTECTED FROM THE TURNING MOVEMENTS OF OTHER VEHICLES.

Page 1 of 2

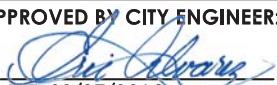
\* DEVIATION FROM THESE SECTIONS  
REQUIRES PLANNING COMMISSION  
APPROVAL

PARKING AREA STANDARDS	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>R-115</b>

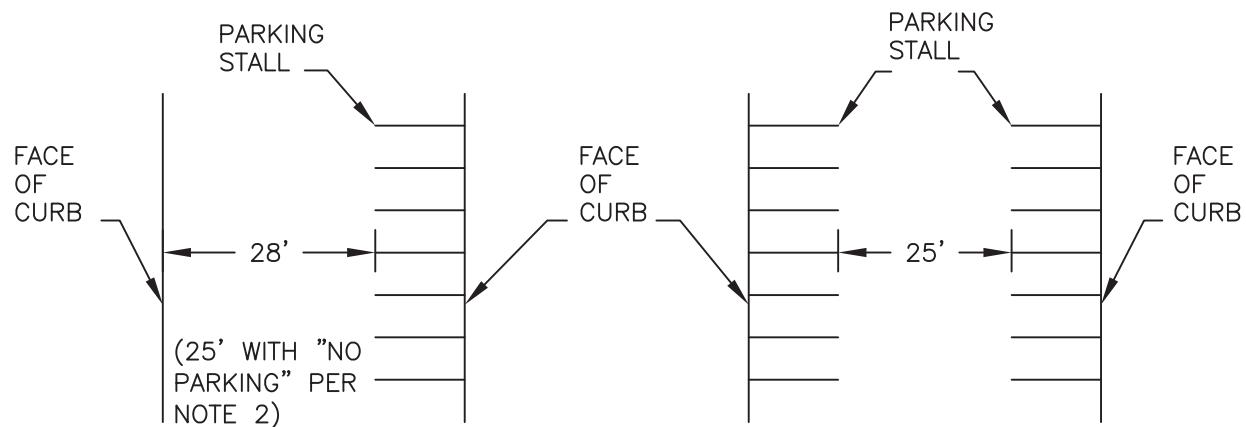
12. CONTINUOUS CONCRETE CURBING SHALL BE USED AS WHEEL STOPS WHEREVER POSSIBLE. THE USE OF BUMPER BLOCKS IS DISCOURAGED.
13. HANDICAPPED STALLS SHALL COMPLY WITH THE STATE BUILDING CODE AND CITY OF STOCKTON STANDARD PLANS AND SPECIFICATIONS.
14. DEAD-END 90° PARKING SHALL BE PROVIDED WITH ADEQUATE TURNING ROOM.
15. IN LOCATIONS WHERE PARALLEL PARKING IS PERMITTED OR POSSIBLE, AN ADDITIONAL 3'-0" SHALL BE ADDED TO THE AISLE WIDTH TO ACCOMMODATE PARKED VEHICLES ON ONE SIDE OR AN ADDITIONAL 11'-0" SHALL BE ADDED TO THE AISLE WIDTH TO ACCOMMODATE PARKED VEHICLES ON BOTH SIDES (i.e., PARKING ON ONE SIDE 28'-0", ON BOTH SIDES 36'-0"). PARALLEL PARKING IS CONSIDERED POSSIBLE WHEREVER 20'-0" OR MORE OF CLEAR, REASONABLY STRAIGHT CURB EXISTS.
- \* 16. CIRCULATION REQUIRING USE OF A PUBLIC STREET TO TRAVEL FROM AISLE TO AISLE IN SEARCH OF A PARKING SPACE IS NOT PERMITTED.
17. PARKING STALL INFORMATION CAN BE FOUND IN THE PARKING AND LOADING DEVELOPMENT STANDARDS, AVAILABLE AT THE CITY OF STOCKTON PERMIT CENTER.

Page 2 of 2

\* DEVIATION FROM THESE SECTIONS  
REQUIRES PLANNING COMMISSION  
APPROVAL

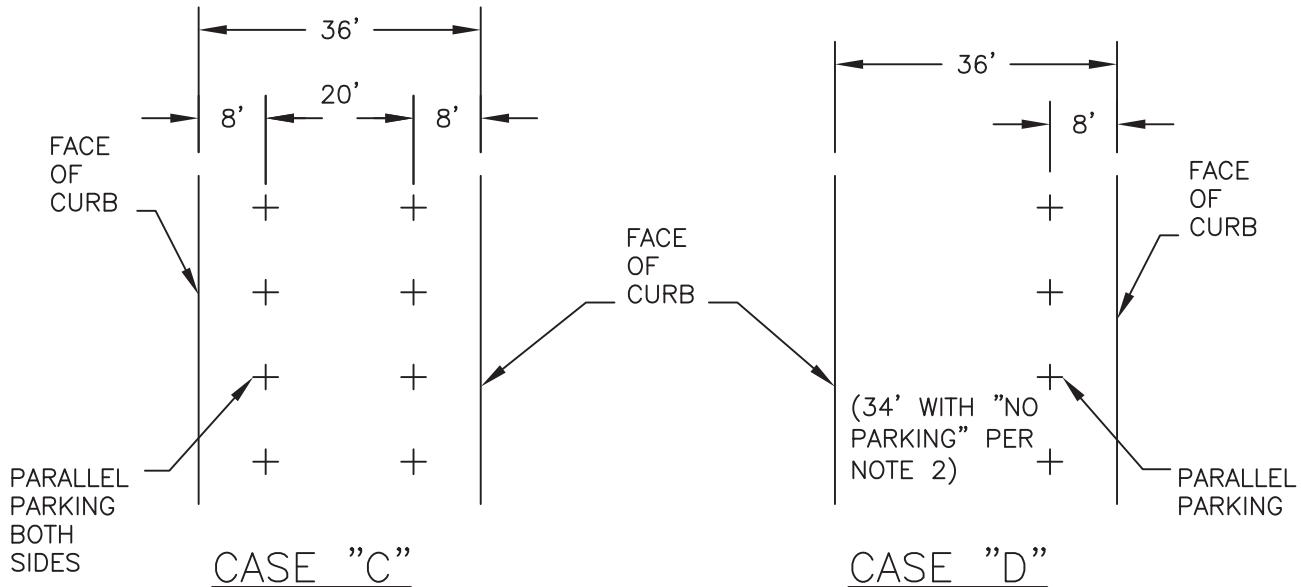
<b>PARKING AREA STANDARDS</b>	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

**DRAWING NO.  
R-115**



CASE "A"

CASE "B"



NOTES:

1. THE ABOVE MINIMUM WIDTHS SHOWN ARE REQUIRED FOR OFF-STREET PARKING AREAS IN CONNECTION WITH BUILDING DEVELOPMENTS.
2. WHEN ANY PORTION OF A STRUCTURE IS MORE THAN 150'-0" FROM A PUBLIC STREET, THE ABOVE WIDTHS MAY BE REDUCED WITH THE APPROVAL OF THE FIRE DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT. ANY SUCH REDUCTIONS WILL REQUIRE THE ESTABLISHMENT OF APPROPRIATE "NO PARKING" ZONES TOGETHER WITH THE INSTALLATION OF "NO PARKING" SIGNS BY THE DEVELOPER AS SHOWN ON DRAWING NO. R-110.
3. ALL PARKING AREA CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD DRAWING NO. R-115.

**AISLE WIDTH REQUIREMENTS FOR PARKING AREAS**

REVISION NO.  
2

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**R-116**

PEAK FACTOR:

FOR AVG. FLOW < 0.5 MGD  $PF = 2.29 (\text{AVG. FLOW})^{-0.338}$

FOR 0.5 MGD < AVG. FLOW < 1.8 MGD  $PF = 2.50 (\text{AVG. FLOW})^{-0.216}$

FOR AVG. FLOW > 1.8 MGD  $PF = 2.37 (\text{AVG. FLOW})^{-0.124}$

NOTE:

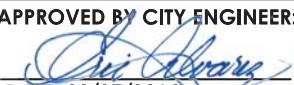
USE A MAXIMUM PEAKING FACTOR = 5

<u>AVERAGE FLOW:</u>	<u>PLANNING VALUES</u>	<u>DESIGN VALUES</u>	
	GAL/DAY/ACRE	GAL/DAY/UNIT	GAL/DAY/1000S.F.
RESIDENTIAL			
SINGLE FAMILY	2100	300	---
MULTI FAMILY	6800	270	---
PURD	3700	270	---
COMMERCIAL			
OFFICE	2400	---	90
RETAIL	2000	---	80
EATING AND DRINKING	8600	---	500
WHOLESALE, STORAGE	800	---	40
INDUSTRIAL			
FOOD PROCESSING		SPECIAL	
LIGHT	3000	---	150
HEAVY (LOW WASTEWATER)	3000	---	150
HEAVY (HIGH WASTEWATER)		SPECIAL	
SCHOOLS			
PRIMARY	1800	---	340
SECONDARY	1400	---	310

INFLOW/INFILTRATION (I/I): 400 GALS/DAY/ACRE = 0.0004 MGD/ACRE

DESIGN FLOW: (AVERAGE FLOW + I/I) PEAK FACTOR

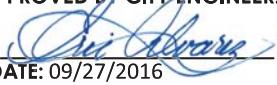
Page 1 of 2

<b>SANITARY SEWER DESIGN DATA</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016	
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>S-1</b>

NOTES:

1. A. PIPE SHALL SHALL BE DESIGNED TO HAVE A MINIMUM A MINIMUM VELOCITY OF 2 FT/SEC AT DESIGN FLOW. THE USE OF 8" DIAMETER PIPE (NOT EXCEEDING A LENGTH OF 500' AND A MINIMUM SLOPE AS SHOWN IN TABLE ON DWG. NO. S-3) ON NON-EXTENDABLE RUN IS PERMITTED.  
B. AT REQUEST OF THE CITY ENGINEER OR MUD DIRECTOR, A CATHODIC PROTECTION REPORT MAY BE REQUIRED. FORCE MAIN LINES SHALL HAVE CATHODIC PROTECTION (FIBER/BAG OR SOMETHING TO PROTECT PIPE).
2. PUMPING STATIONS SHALL CONFORM TO THE REQUIREMENTS AS DESCRIBED IN CHAPTER 16 STOCKTON MUNICIPAL CODE.
3. PUMPS:
  - A. PUMPING CAPACITY TO HANDLE DESIGN FLOW WITH THE LARGEST PUMP OUT OF SERVICE. THIS SHALL BE DONE BY PROVIDING A REDUNDANT PUMP.
  - B. MULTIPLE PUMPS OF EQUAL CAPACITY.
  - C. AT LEAST 3 PUMPS FOR GREATER THAN 2.0 MGD OR 2 PUMPS FOR FLOW LESS THAN 2.0 MGD.
  - D. PUMPING STATIONS SHALL BE EQUIPPED WITH:
    1. TELEMETRY EQUIPMENT CAPABLE OF TRANSMITTING VARIOUS ALARM CONDITIONS SUCH AS HIGH AND LOW SUMP, FLOODED DRY WELL PUMP OR POWER FAILURE, TO A CENTRAL DISPATCH LOCATION.
    2. STANDBY POWER GENERATING EQUIPMENT SIZED TO OPERATE ALL PUMP STATION EQUIPMENT EXCEPT THE REDUNDANT PUMP, UNLESS IT CAN BE SHOWN THAT A SUSTAINED FAILURE WILL NOT CAUSE OVERFLOW OR FLOODING.
    3. FLOW MONITORING EQUIPMENT WITH A METER IN THE DISCHARGE LINE, PUMP RUNNING TIME RECORDERS WITH SUMP LEVEL RECORDERS, OR OTHER APPROVED METHODS. ALSO, PROVISION SHALL BE MADE FOR FACILITATING INSTALLATION OF PORTABLE GRAVITY FLOW METERS IN INFLOW METERS.
    4. EQUIPMENT AS NECESSARY (VENTILATION, FALL PROTECTION, ETC.) TO CONFORM TO O.S.H.A. AND OTHER PERTINENT REGULATORY AGENCY REGULATIONS.
    5. FITTING TO DIVERT AND BYPASS SEWER FLOWS.
  - E. NON-CLOG TYPE PUMPS DESIGNED FOR SANITARY SEWAGE PUMPING.  
MANUFACTURED BY FLYGHT WITH "N" IMPELLER OR EQUIVALENT.
  - F. FORCE MAINS SIZED TO LIMIT VELOCITIES TO APPROXIMATELY 7 FT/SEC FOR UP TO 300 FT. IN LENGTH, TO APPROXIMATELY 5 FT/SEC FOR LENGTH IN EXCESS OF 1000 FT. THESE VALUES ARE APPROXIMATE, AND FINAL DESIGN SHOULD BE BASED UPON ANALYSIS OF A SYSTEM HEAD CURVE BASED UPON COMMERCIALLY AVAILABLE PUMPS AND PIPE DIAMETERS.
  - G. ALL NEW STORMWATER PUMP STATIONS MUST BE EQUIPPED WITH A SANITARY LINE CONNECTED TO AN EXISTING SANITARY MAIN ALREADY IN SERVICE, PRIOR TO COMMISSIONING THE STATION. SANITARY SEWER LINES SHALL BE EXTENDED TO ALL NEW STORM WATER PUMP STATIONS. SEE DWG. NO. D-3.

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SANITARY SEWER DESIGN DATA	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/11/03
		DRAWING NO. <b>S-1</b>

SANITARY DESIGN SHEET

CITY OF STOCKTON

DEPARTMENT OF PUBLIC WORKS

TITLE:

DATE:  
BY: \_\_\_\_\_  
SHEET

\*\*LOT FLOW + 1/1

\* INCLUDING 1/1

## **SANITARY DESIGN SHEET**

**REVISION  
NO.**

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

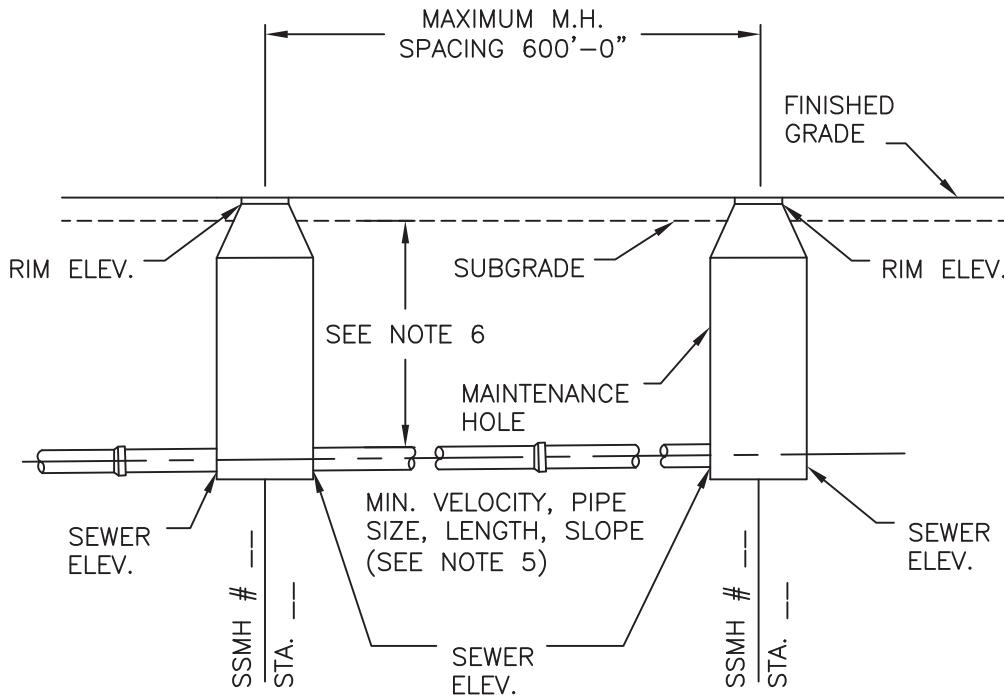


**CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS**

SCALE  
NONE

**SUPERSEDES  
DWG. DATED  
01/09/02**

**DRAWING NO.**  
**S-2**

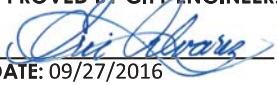


SSLH = SANITARY SEWER LAMP HOLE.

NOTES:

1. THE MINIMUM SIZE PIPE SHALL BE 8" DIAMETER.
2. A M.H. SHALL BE INSTALLED AT ALL INTERSECTING STREETS. INTERMEDIATE M.H. SHALL BE UNIFORMLY SPACED.
3. ALL CONNECTIONS TO SANITARY SEWERS SHALL BE MADE WITH WYE OR TEE. CITY TO INSTALL SADDLE AT OWNER'S/DEVELOPER'S EXPENSE ON EXISTING LINES.
4. THE DEPARTMENT OF PUBLIC WORKS SHALL BE SUPPLIED WITH A RECORD DRAWING PLAN SHOWING LATERAL LOCATIONS BY THE ARCHITECT OR PROJECT ENGINEER.
5. PIPE SHALL BE DESIGNED TO HAVE A MINIMUM VELOCITY OF 2 FPS AT DESIGN FLOW. THE USE OF 8" DIAMETER PIPE (NOT EXCEEDING A LENGTH OF 500' AND A MINIMUM SLOPE AS SHOWN IN TABLE ON DWG NO. S-3, PAGE 2) ON NON-EXTENDABLE RUNS IS PERMITTED.
6. SANITARY SEWERS AND SEWER LATERALS SHALL BE DESIGNED TO MINIMIZE THEIR DEPTH AT ALL LOCATIONS. MINIMUM COVER FOR SANITARY SEWERS SHALL BE 4'-6" FROM THE BOTTOM OF SUBGRADE TO THE TOP OF THE PIPE. MINIMUM COVER FOR SANITARY SEWER LATERALS SHALL BE 4'-6" FROM THE FINISHED GRADE AT BACK OF WALK TO THE TOP OF THE LATERAL. IN RESIDENTIAL AREAS, THE DEPTH OF THE SEWER LATERAL, FROM THE FINISHED GRADE AT BACK OF WALK TO TOP OF LATERAL, SHALL BE NO GREATER THAN 7'-0" AT THE PROPERTY LINE. WHERE MINIMUM COVER CANNOT BE OBTAINED, ONLY DUCTILE IRON PIPE OR SDR 26 PIPE SHALL BE USED. CONCRETE ENCASEMENT MAY BE USED IN CERTAIN AREAS ONLY IF APPROVED BY THE CITY ENGINEER. SEE STANDARD DRAWING NO. S-15.

Page 1 of 2

SANITARY SEWER DATA	REVISION NO. 6	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
DRAWING NO. <b>S-3</b>		

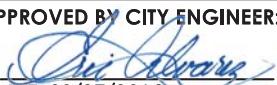
NOTES:

7. CUT SHEETS SHALL BE SUPPLIED TO THE CITY ENGINEER PRIOR TO THE CONSTRUCTION OF SANITARY SEWER.
8. ALL SEWERS MUST BE DESIGNED FOR GRAVITY FLOW UNLESS OTHERWISE PERMITTED BY SPECIAL APPROVAL OF THE CITY ENGINEER. THE CITY REQUIRES MATCHING OF TOPS OF PIPES (CROWNS) RATHER THAN INVERTS UNLESS AN ALTERNATE DESIGN IS APPROVED BY THE CITY ENGINEER AT THE TENTATIVE MAP OR MASTER PLAN STAGE.
9. PIPES AND STRUCTURES SHALL BE LABELED WITH STATIONS AND ELEVATIONS AS SHOWN ABOVE.
10. A SEWER DESIGN SHEET (STD. DWG. NO. S-2) SHALL BE SUBMITTED WITH ALL PROJECT DESIGNS.
11. MANNING "N" SHALL NOT BE LESS THAN 0.011 FOR P.V.C. AND H.D.P.E PIPE, OR LESS THAN 0.013 FOR OTHER PIPE MATERIALS. THE FOLLOWING SLOPES SHALL BE USED AS MINIMUMS:

PIPE SIZE	MIN. SLOPE (N=0.013)	MIN. SLOPE (N=0.011)
6" DIA.	.0070 FT/FT	.0050 FT/FT
8" DIA.	.0045 FT/FT	.0032 FT/FT
10" DIA.	.0025 FT/FT	.0018 FT/FT
12" DIA.	.0020 FT/FT	.0014 FT/FT
15" DIA.	.0015 FT/FT	.0011 FT/FT
18" DIA.	.0012 FT/FT	.0009 FT/FT

12. SANITARY SEWER LATERAL DEPTH IN RESIDENTIAL AREAS SHALL NOT EXCEED 12'-0" FROM THE FINISHED GRADE TO THE POINT OF CONNECTION AT THE SEWER MAIN LINE. (SEE DWG. NO. S-17)
13. NO DIRECT SERVICE TAPS SHALL BE ALLOWED ON SEWER MAINS 15" AND LARGER.
14. FOR SANITARY SEWER SERVICE CONNECTIONS TO M.H.'S, NO MORE THAN 1 SHALL BE ALLOWED PER QUADRANT (i.e., IN ANY 1/4 OF THE PERIMETER).
15. RECORD DRAWINGS OR AS BUILT PLANS SHALL INCLUDE GPS COORDINATES FOR ALL POINTS OF CONNECTION (SURVEY GRADE) FOR MAINTENANCE HOLES, LATERALS, AND CLEAN OUTS.

Page 2 of 2

SANITARY SEWER DATA	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>S-3</b>

STATE OF CALIFORNIA  
DEPARTMENT OF HEALTH  
CRITERIA FOR THE SEPARATION OF WATER MAINS  
WITH SANITARY SEWERS AND STORM SEWERS

**A. BASIC STANDARDS**

THE "CALIFORNIA WATERWORKS STANDARDS" SETS FORTH THE MINIMUM SEPARATION REQUIREMENT FOR WATER MAINS WITH SANITARY AND STORM SEWER LINES. THESE STANDARDS, CONTAINED IN SECTION 64630, TITLE 22, CALIFORNIA ADMINISTRATIVE CODE, SPECIFY:

- 1) PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE WATER MAINS AND SEWER LINES SHALL BE AT LEAST 10 FEET.
- 2) PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATER MAINS SHALL BE AT LEAST ONE FOOT ABOVE SANITARY SEWER LINES WHERE THESE LINES MUST CROSS.
- 3) SEPARATION DISTANCES SPECIFIED ABOVE SHALL BE MEASURED FROM THE NEAREST EDGES OF THE FACILITIES.
- 4) WATER MAINS AND SEWER LINES MUST NOT BE INSTALLED IN THE SAME TRENCH.
- 5) WATER MAINS AND SEWERS OF 24 INCHES DIAMETER OR GREATER MAY CREATE SPECIAL HAZARDS BECAUSE OF THE LARGE VOLUMES OF FLOW. INSTALLATIONS OF WATER MAINS AND SEWER LINES 24 INCHES DIAMETER OR LARGER MUST BE REVIEWED AND APPROVED BY THE HEALTH AGENCY AND CITY ENGINEER PRIOR TO CONSTRUCTION.
- 6) WHEREVER THE WORD "SEWER" IS USED IN CONNECTION WITH ANY REQUIREMENTS AS SHOWN ON DRAWINGS S-4, PAGE 4 & 5 THE WORD SHALL APPLY EQUALLY TO SANITARY OR STORM SEWER INSTALLATIONS.

**B. EXCEPTIONS TO BASIC SEPARATION STANDARDS**

REFER TO STD DWG S-4, PAGE 4 & 5 FOR SEPARATION DETAILS.

LOCAL CONDITIONS, SUCH AS AVAILABLE SPACE, LIMITED SLOPE, EXISTING STRUCTURES, ETC., MAY CREATE A SITUATION WHERE THERE IS NO ALTERNATIVE BUT TO INSTALL WATER MAINS OR SEWER LINES AT A DISTANCE LESS THAN THAT REQUIRED BY THE BASIC SEPARATION STANDARDS. IN SUCH CASES, ALTERNATIVE CONSTRUCTION CRITERIA AS SPECIFIED IN SECTION C SHALL BE FOLLOWED, SUBJECT TO THE SPECIAL PROVISIONS IN SECTION D.

**C. ALTERNATE CRITERIA FOR CONSTRUCTION**

THE CONSTRUCTION CRITERIA FOR SEWER LINES OR WATER MAINS WHERE THE BASIC SEPARATION STANDARDS CANNOT BE ATTAINED ARE SHOWN ON DRAWINGS S-4, PAGE 4 & 5. THERE ARE TWO SITUATIONS ENCOUNTERED:

CASE 1 -- NEW SEWER LINE - NEW OR EXISTING WATER MAIN.

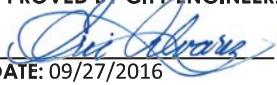
CASE 2 -- NEW WATER MAIN - EXISTING SEWER LINE.

FOR CASE 1, THE ALTERNATE CONSTRUCTION CRITERIA APPLY TO THE SEWER LINE.

FOR CASE 2, THE ALTERNATE CONSTRUCTION CRITERIA MAY APPLY TO EITHER OR BOTH WATER MAIN AND SEWER LINE.

THE CONSTRUCTION CRITERIA APPLY TO THE HOUSE LATERALS THAT CROSS ABOVE A PRESSURE WATER MAIN BUT NOT TO THOSE HOUSE LATERALS THAT CROSS BELOW A PRESSURE WATER MAIN.

Page 1 of 5

<b>CALIFORNIA HEALTH DEPARTMENT REQUIREMENTS</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

**CASE 1: NEW SEWER BEING INSTALLED (DRAWING NO. S-4, PAGE 4)**

ZONE    SPECIAL CONSTRUCTION REQUIRED FOR SEWER

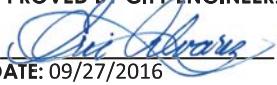
- A    SEWER LINES PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE RESPONSIBLE HEALTH AGENCY AND WATER SUPPLIER.
- B    A SEWER LINE PLACED PARALLEL TO A WATER LINE SHALL BE CONSTRUCTED OF:
1. EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS.
  2. PLASTIC SEWER PIPE WITH RUBBER RING JOINTS (PER ASTM D3034) OR EQUIVALENT.
  3. CAST OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.
- C    A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF:
1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS.
  2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA C900) PLASTIC PIPE OR EQUIVALENT, CENTERED OVER THE PIPE BEING CROSSED.
  3. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE.

**CASE 2: NEW WATER MAINS BEING INSTALLED (DRAWING NO. S-4, PAGE 5)**

ZONE    SPECIAL CONSTRUCTION REQUIRED FOR SEWER

- A    NO WATER MAINS PARALLEL TO SEWERS WITHIN 10 FEET SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE HEALTH AGENCY.
- B    IF THE SEWER PARALLELING THE WATER MAIN DOES NOT MEET THE CASE 1, ZONE B, REQUIREMENTS, THE WATER MAIN SHALL BE CONSTRUCTED OF:
1. CEMENT LINED DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
  2. DIPPED AND WRAPPED ONE-FOURTH-INCH-THICK WELDED STEEL PIPE.
  3. CLASS 200 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
  4. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-74 OR C301-79 OR C303-70).
- C    IF THE SEWER CROSSING THE WATER MAIN DOES NOT MEET THE CASE 1, ZONE C, REQUIREMENTS, THE WATER MAIN SHALL HAVE NO JOINTS IN ZONE C AND BE CONSTRUCTED OF:

Page 2 of 5

<b>CALIFORNIA HEALTH DEPARTMENT REQUIREMENTS</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

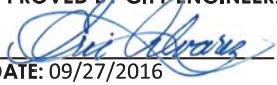
**S-4**

1. CEMENT LINED DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
  2. CLASS 200 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
  3. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-74 OR C301-79 OR C303-70). REQUIRES SPECIFIC DESIGN APPROVAL OF PIPE AND FITTING PRIOR TO Possible USE.
- D IF THE SEWER CROSSING THE WATER MAIN DOES NOT MEET THE REQUIREMENTS FOR ZONE D, CASE 1, THE WATER MAIN SHALL HAVE NO JOINTS WITHIN FOUR FEET FROM EITHER SIDE OF THE SEWER AND SHALL BE CONSTRUCTED OF:
1. CEMENT LINED DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
  2. CLASS 200 PRESSURE RATED PLASTIC WATER PIPE (DR 14 PER AWWA C900) OR EQUIVALENT.
  3. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-74 OR C301-79 OR C303-70). REQUIRES SPECIFIC DESIGN APPROVAL OF PIPE AND FITTING PRIOR TO Possible USE.

#### D SPECIAL PROVISIONS

1. THE BASIC SEPARATION STANDARDS ARE APPLICABLE UNDER NORMAL CONDITIONS FOR SEWAGE COLLECTION LINES AND WATER DISTRIBUTION MAINS. MORE STRINGENT REQUIREMENTS MAY BE NECESSARY IF CONDITIONS, SUCH AS HIGH GROUND WATER EXIST.
2. SEWER LINES SHALL NOT BE INSTALLED WITHIN 25 FEET HORIZONTALLY OF A LOW HEAD (5 PSI OR LESS PRESSURED) WATER MAIN.
3. NEW WATER MAINS AND SEWER SHALL BE PRESSURE TESTED WHERE THE CONDUITS ARE LOCATED TEN FEET APART OR LESS.
4. IN THE INSTALLATION OF WATER MAINS OR SEWER LINES, MEASURES SHOULD BE TAKEN TO PREVENT OR MINIMIZE DISTURBANCES OF THE EXISTING LINE.
5. SPECIAL CONSIDERATION SHALL BE GIVEN TO THE SELECTION OF PIPE MATERIALS IF CORROSIVE CONDITIONS ARE LIKELY TO EXIST.
6. SEWER FORCE MAINS
  - a. SEWER FORCE MAINS SHALL NOT BE INSTALLED WITHIN TEN FEET (HORIZONTALLY) OF A WATER MAIN.
  - b. WHEN A SEWER FORCE MAIN MUST CROSS A WATER LINE, THE FORCE MAIN SHOULD BE AS CLOSE TO PERPENDICULAR AS PRACTICAL. THE SEWER FORCE MAIN SHOULD BE AT LEAST ONE FOOT BELOW THE WATER LINE.
  - c. WHEN A NEW SEWER FORCE MAIN CROSSES UNDER AN EXISTING WATER MAIN, ALL PORTIONS OF THE SEWER FORCE MAIN WITHIN TEN FEET (HORIZONTALLY) OF THE WATER MAIN SHALL BE ENCLOSED IN A CONTINUOUS SLEEVE.
  - d. WHEN A NEW WATER MAIN CROSSES OVER AN EXISTING SEWER FORCE MAIN, THE WATER MAIN SHALL BE CONSTRUCTED OF PIPE MATERIALS WITH A MINIMUM RATED WORKING PRESSURE OF 200 PSI OR EQUIVALENT PRESSURE RATING.

Page 3 of 5

<b>CALIFORNIA HEALTH DEPARTMENT REQUIREMENTS</b>		REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>S-4</b>

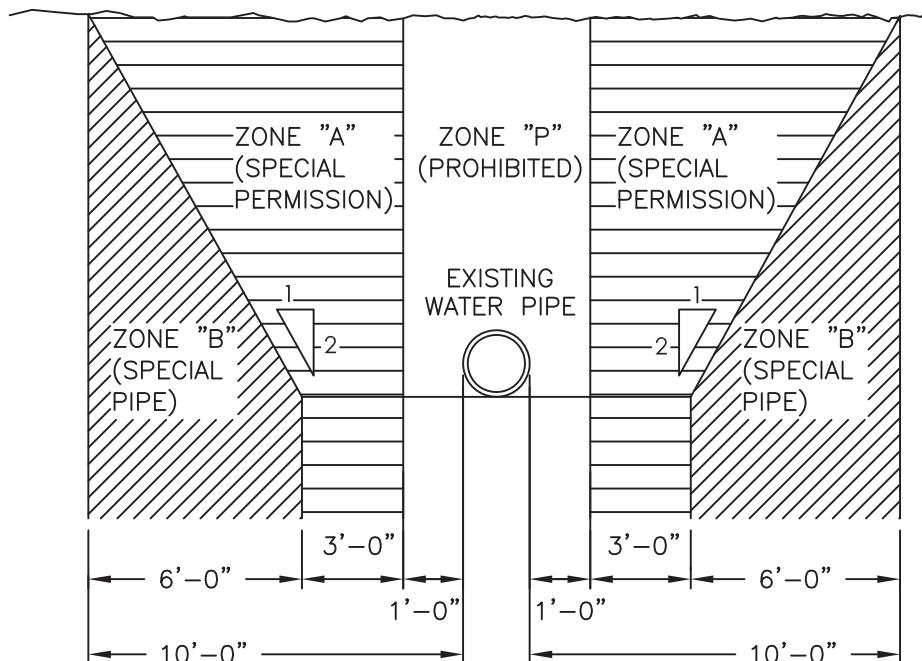
## SPECIAL CONSTRUCTION REQUIREMENTS

(TO BE USED ONLY WHERE REQUIRED SEPARATION CANNOT BE OBTAINED)

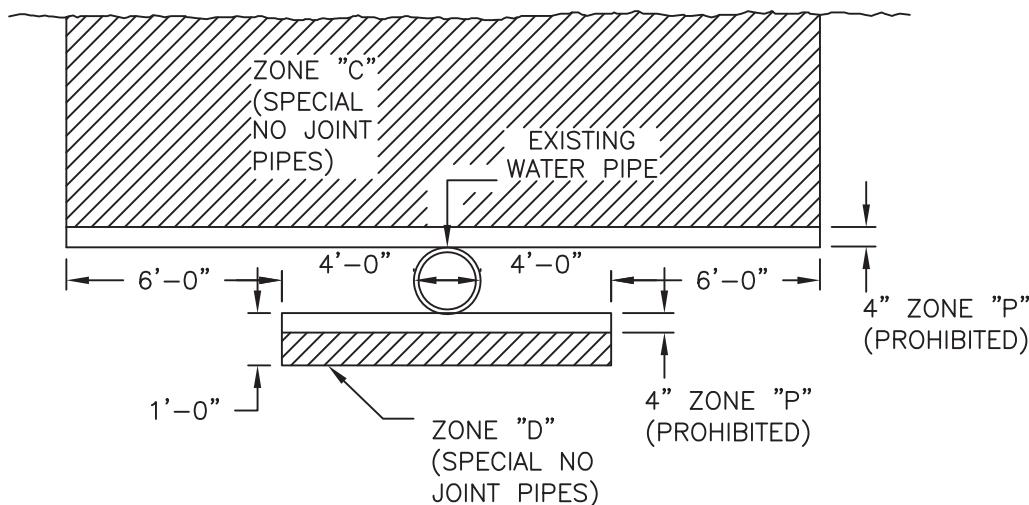
### CASE 1 - NEW SEWER BEING INSTALLED

ZONES A.B.C. AND D INDICATE RESTRICTED AREAS.

ZONES P INDICATE PROHIBITED USE AREAS.



### PARALLEL CONSTRUCTION



### PERPENDICULAR CONSTRUCTION

Page 4 of 5

<b>CALIFORNIA HEALTH DEPARTMENT REQUIREMENTS</b>	REVISION NO. 2	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

**DRAWING NO.**

**S-4**

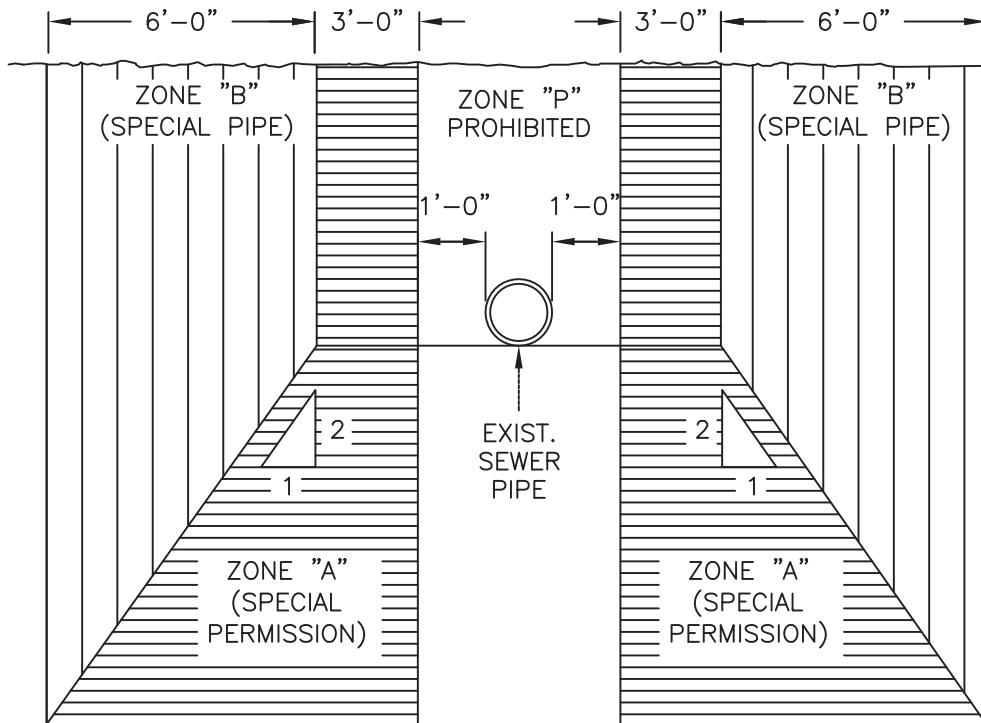
## SPECIAL CONSTRUCTION REQUIREMENTS

(TO BE USED ONLY WHERE REQUIRED SEPARATION CANNOT BE OBTAINED)

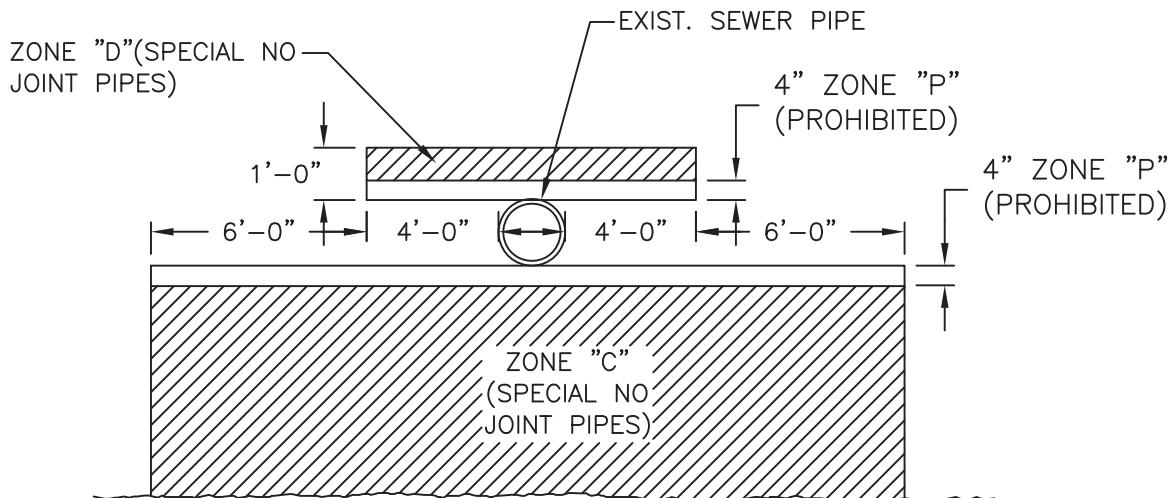
### CASE 2 - NEW WATER LINE BEING INSTALLED

ZONES A.B.C. AND D INDICATE RESTRICTED AREAS.

ZONES P INDICATE PROHIBITED USE AREAS.

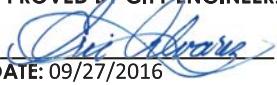


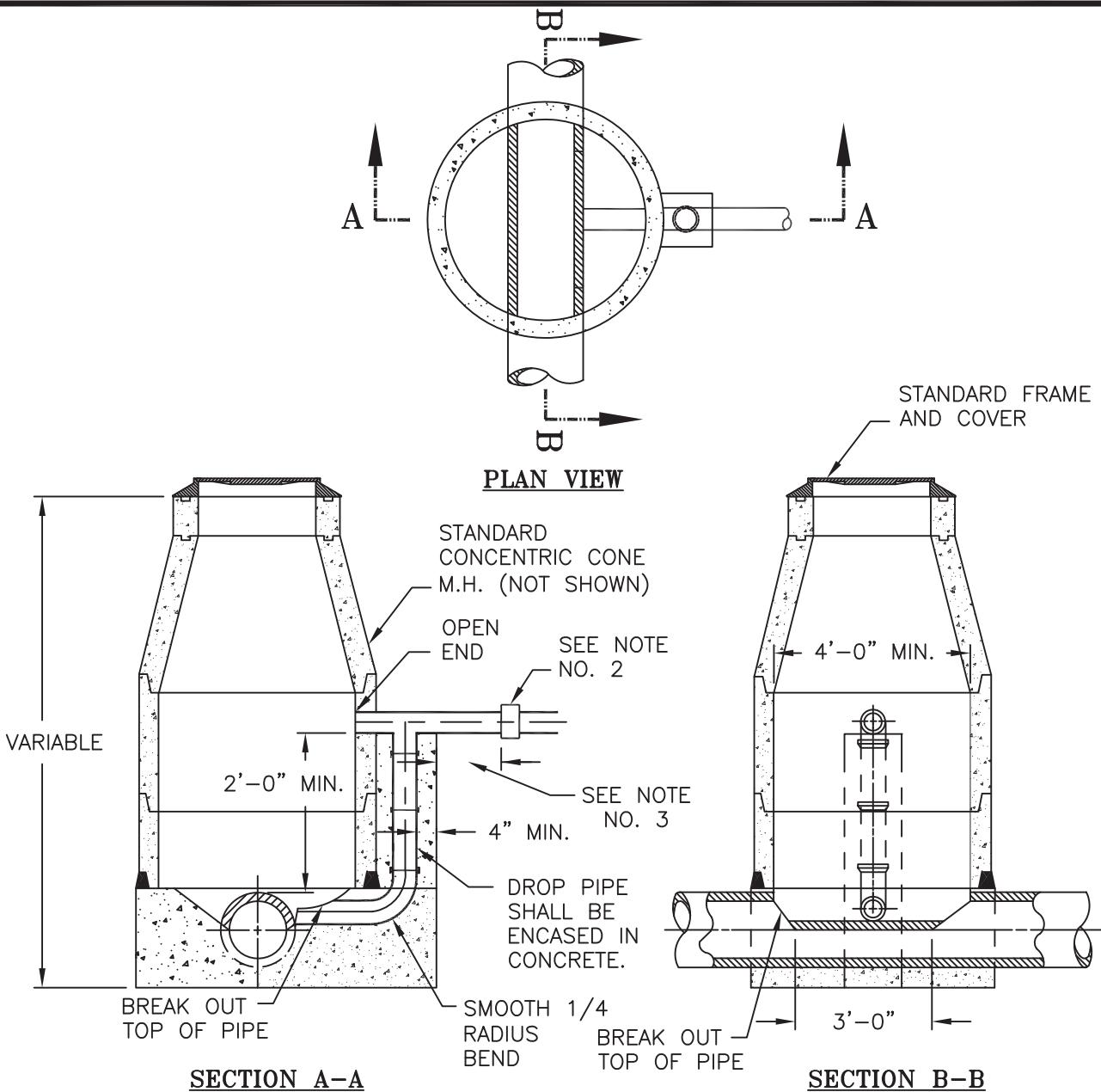
### PARALLEL CONSTRUCTION



### PERPENDICULAR CONSTRUCTION

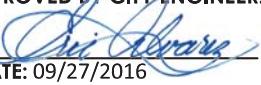
Page 5 of 5

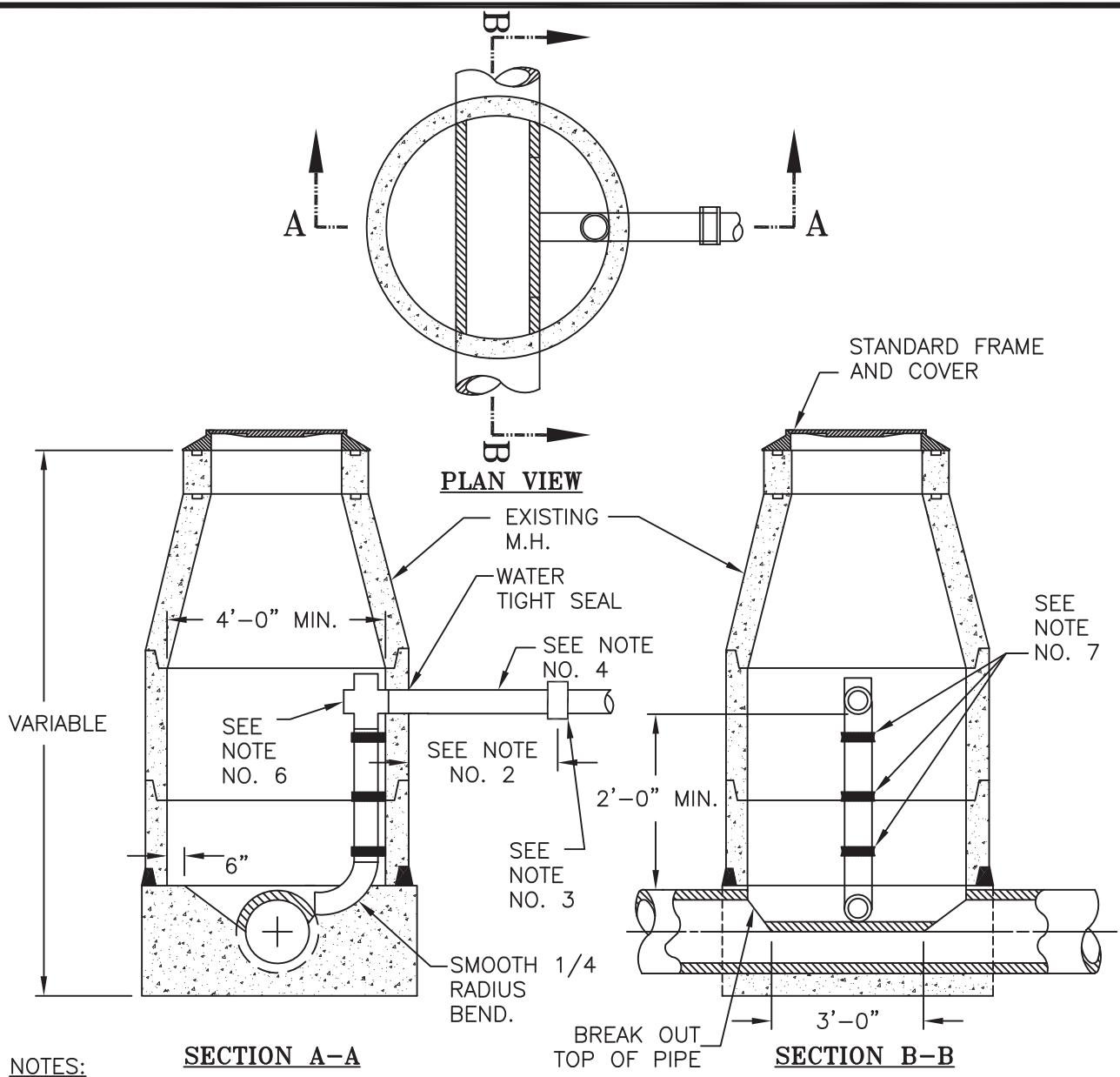
<b>CALIFORNIA HEALTH DEPARTMENT REQUIREMENTS</b>		REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016	
 <b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>S-4</b>	



NOTES:

1. THIS INSTALLATION SHALL BE USED ON NEW M.H. WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE OUTLET PIPE AND THE INVERT OF THE FEEDER OR COLLECTOR SEWER EXCEEDS 24".
2. FLEXIBLE JOINT - BELL AND SPIGOT OR CAULDER COUPLING. SOLVENT WELDED JOINT NOT PERMITTED.
3. 24" MAXIMUM.
4. THIS DETAIL SHALL ONLY BE USED FOR DROP PIPES 12" OR LESS. PIPES LARGER THAN 12" SHALL REQUIRE INDIVIDUAL DESIGN AND APPROVAL BY THE CITY ENGINEER.
5. INTERIOR OF M.H. TO BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.
6. SEAL ALL JOINTS WITH GASKETS OR RAMNECK. GROUT INSIDE ALL JOINTS.

<b>OUTSIDE SANITARY SEWER DROP</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

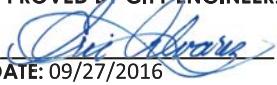


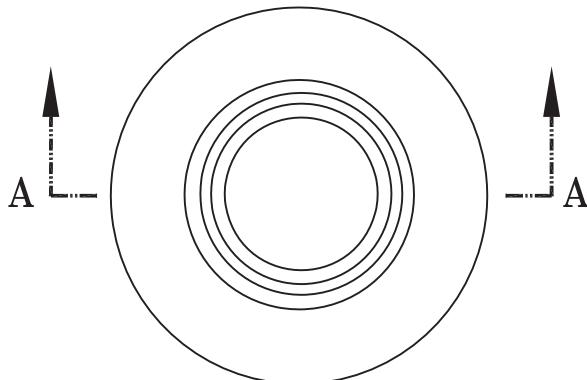
NOTES:

SECTION A-A

SECTION B-B

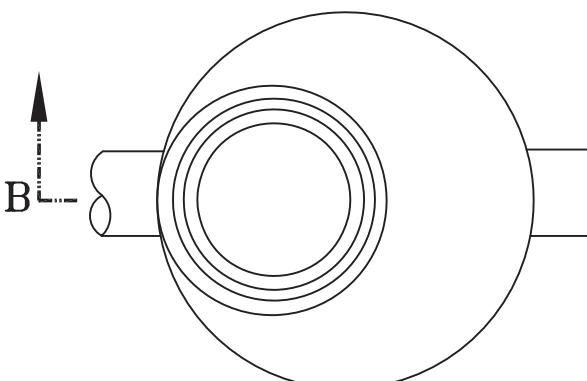
1. THIS INSTALLATION SHALL BE USED ON EXISTING M.H. WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE OUTLET PIPE AND THE INVERT OF THE FEEDER OR COLLECTOR SEWER EXCEED 24".
2. 24" MAXIMUM.
3. FLEXIBLE JOINT - BELL & SPIGOT OR CAULDER COUPLING. SOLVENT WELDED JOINT NOT PERMITTED.
4. THIS DETAIL SHALL ONLY BE USED FOR NEW SANITARY SEWER PIPES 4" OR LESS. PIPES LARGER THAN 4" SHALL USE OUTSIDE SANITARY SEWER DROP. SEE DWG S-5.
5. INTERIOR OF M.H. TO BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.
6. OPEN ENDED CROSS FITTING.
7. STAINLESS STEEL BANDS ANCHORED WITH STAINLESS STEEL BOLTS TO WALL 24" O.C. (TWO BANDS MIN.)
8. SEAL ALL JOINTS WITH GASKETS OR REMNECK. GROUT INSIDE OF ALL JOINTS.

INSIDE SANITARY SEWER DROP	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO. <b>S-6</b>	



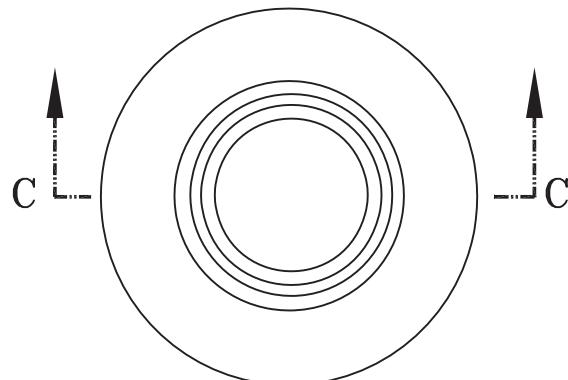
CONCENTRIC CONE

(STANDARD INSTALLATION)



ECCENTRIC CONE

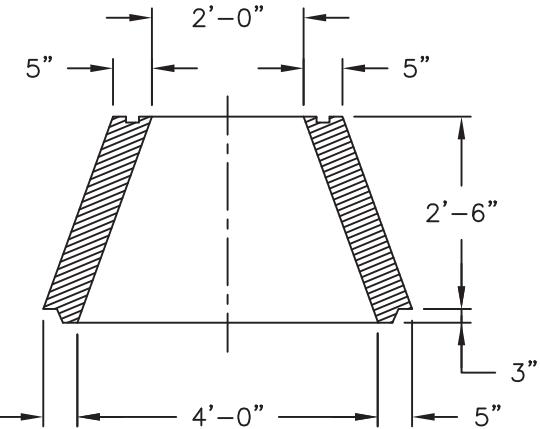
(USE WITH PRIOR APPROVAL)



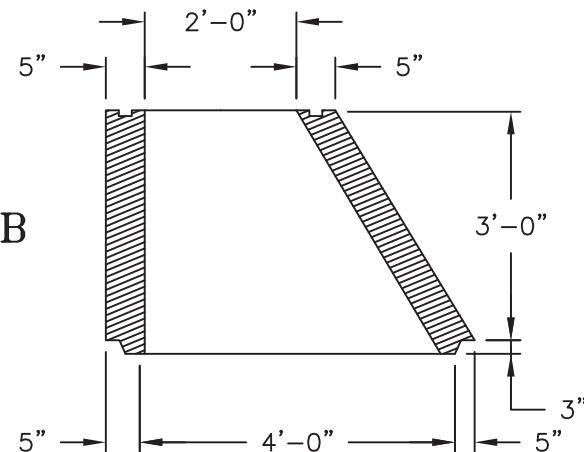
CONCENTRIC SHORT CONE

NOTES: (USE WITH PRIOR APPROVAL)

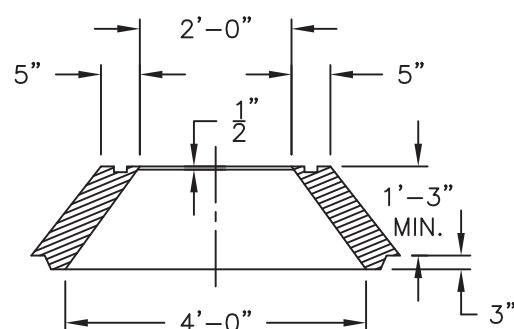
1. INTERIOR OF CONE TO BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.
2. ALL HANDLING HOLES SHALL BE PLUGGED WITH CONCRETE MORTAR AFTER CONE INSTALLATION



SECTION A-A



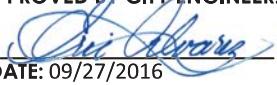
SECTION B-B



SECTION C-C

## PRE-CAST CONCRETE MAINTENACE HOLE CONES

REVISION  
NO.  
4

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

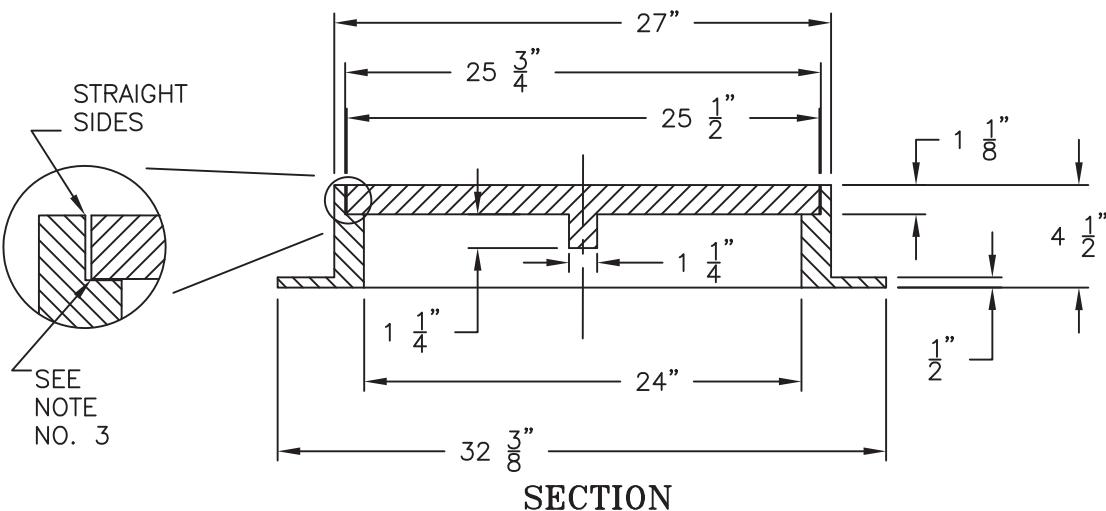
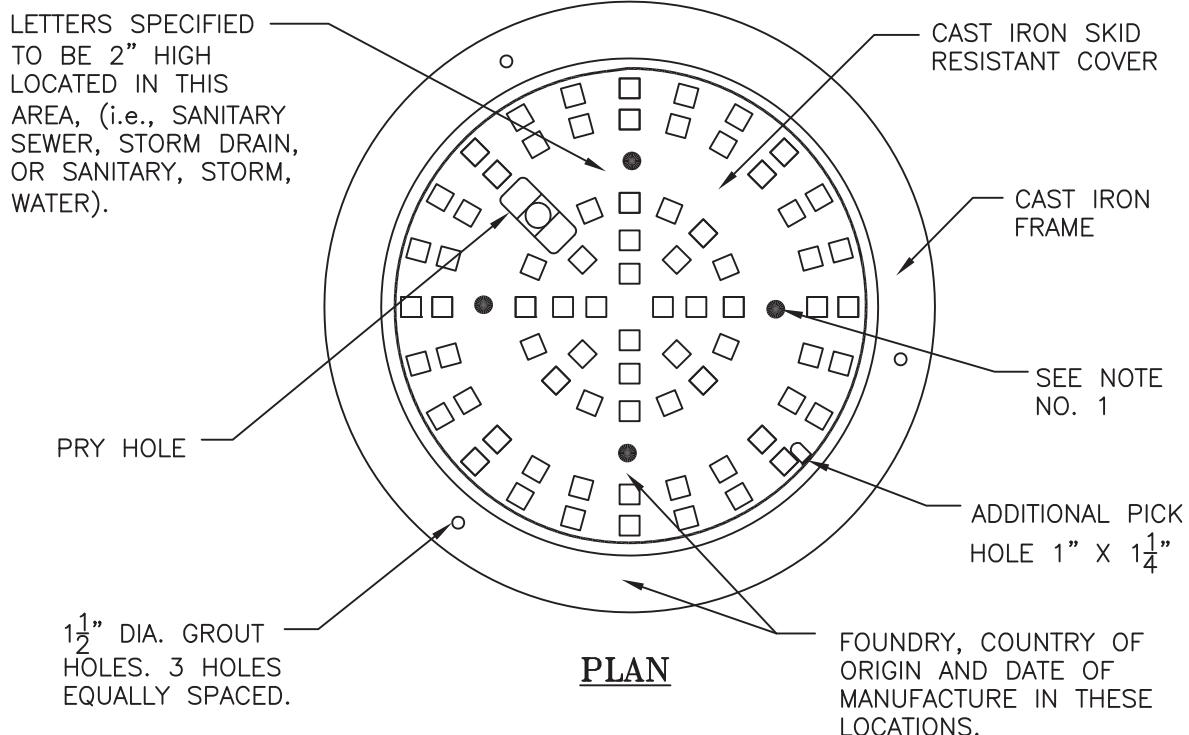


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

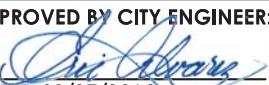
SUPERSEDES  
DWG. DATED  
01/09/02

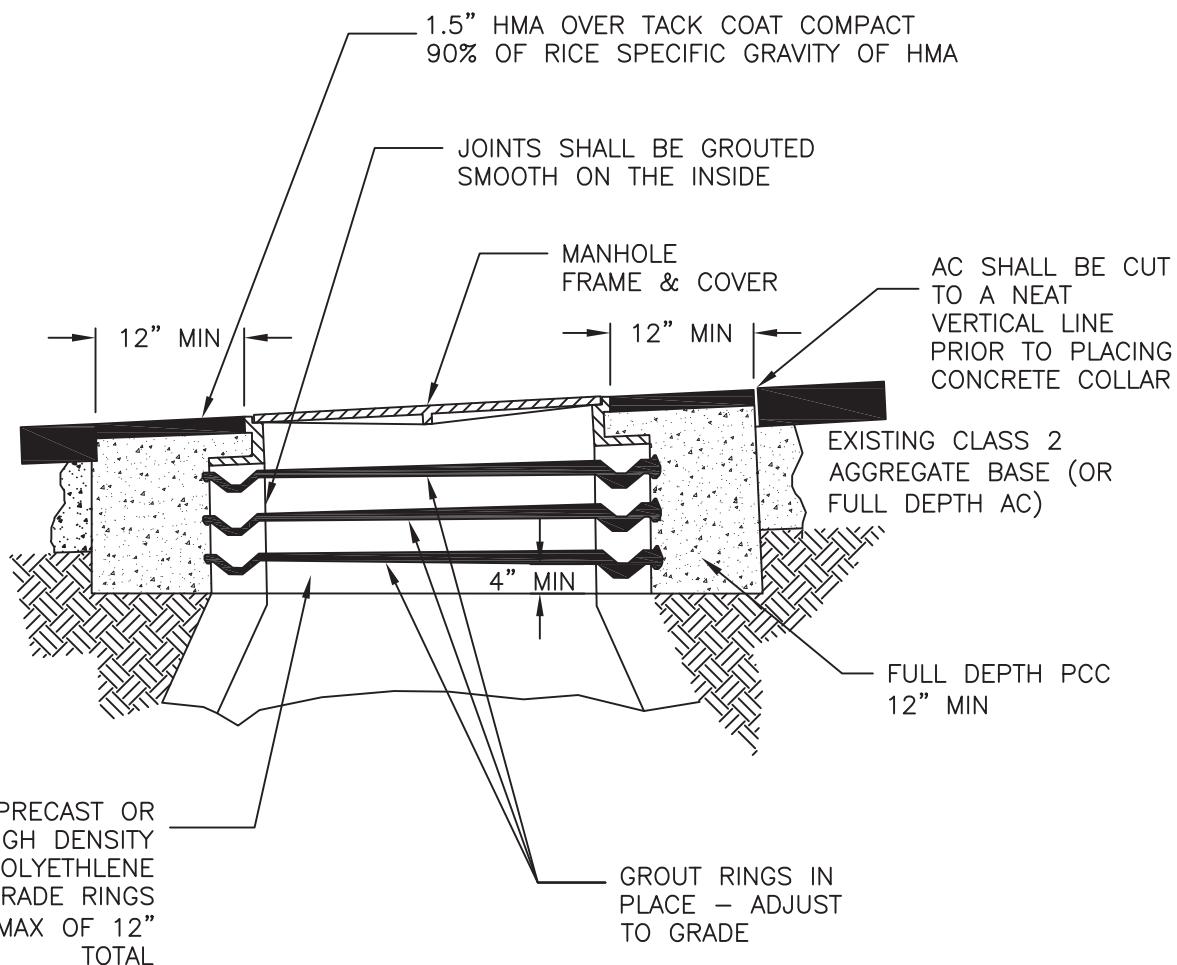
DRAWING NO.  
**S-7**



NOTES:

1. M.H. FRAME AND COVER TO BE "PINKERTON TYPE" A-624 PARAMEX OR APPROVED EQUAL.
2. M.H. COVERS, FOR STORM DRAIN ONLY SHALL HAVE 4 (FOUR)  $\frac{3}{4}$ " VENT HOLES IN THE COVER.
3. COVER SHALL BE DESIGNED TO WITHSTAND HS-20 HIGHWAY LOADING.
4. FRAME AND COVER SHALL BE FULLY MACHINED TO ASSURE INTERCHANGEABILITY AND A CLOSE, QUIET FIT.
5. SEE SECTION 75-1.02B OF THE STANDARD SPECIFICATIONS.
6. IN HIGH HYDROGEN SULFIDE ENVIRONMENTS, USE A COMPOSITE MANHOLE COVER AND FRAME.

<b>MAINTENANCE HOLE FRAME AND COVER</b>	REVISION NO. 7	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03



### TYPICAL UTILITY ADJUSTMENT DETAIL

#### NOTE:

1. COVER MANHOLE WITH BUILDING PAPER PRIOR TO PAVING.
2. SAWCUT CIRCULAR OR SQUARE 12" MIN. AROUND MANHOLE FRAME.
3. RAISE MANHOLE FRAME AND COVER TO FINISH GRADE BY INSTALLING CONC. RINGS AND LEVELING MORTAR.
4. BACKFILL WITH PCC TO 1.5" LESS THAN FINISH GRADE.
5. SPRAY TACK COAT AS PER CALTRANS STD. 39-4.02.
6. PATCH WITHIN  $\frac{1}{2}$ " NMAS 1.5" THICK COMPACT MIN. 90% OF RICE DENSITY OF HMA.

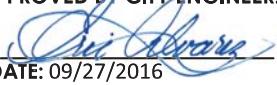
### **MAINTENANCE HOLE FRAME AND COVER ADJUSTMENT**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.

APPROVED BY CITY ENGINEER:

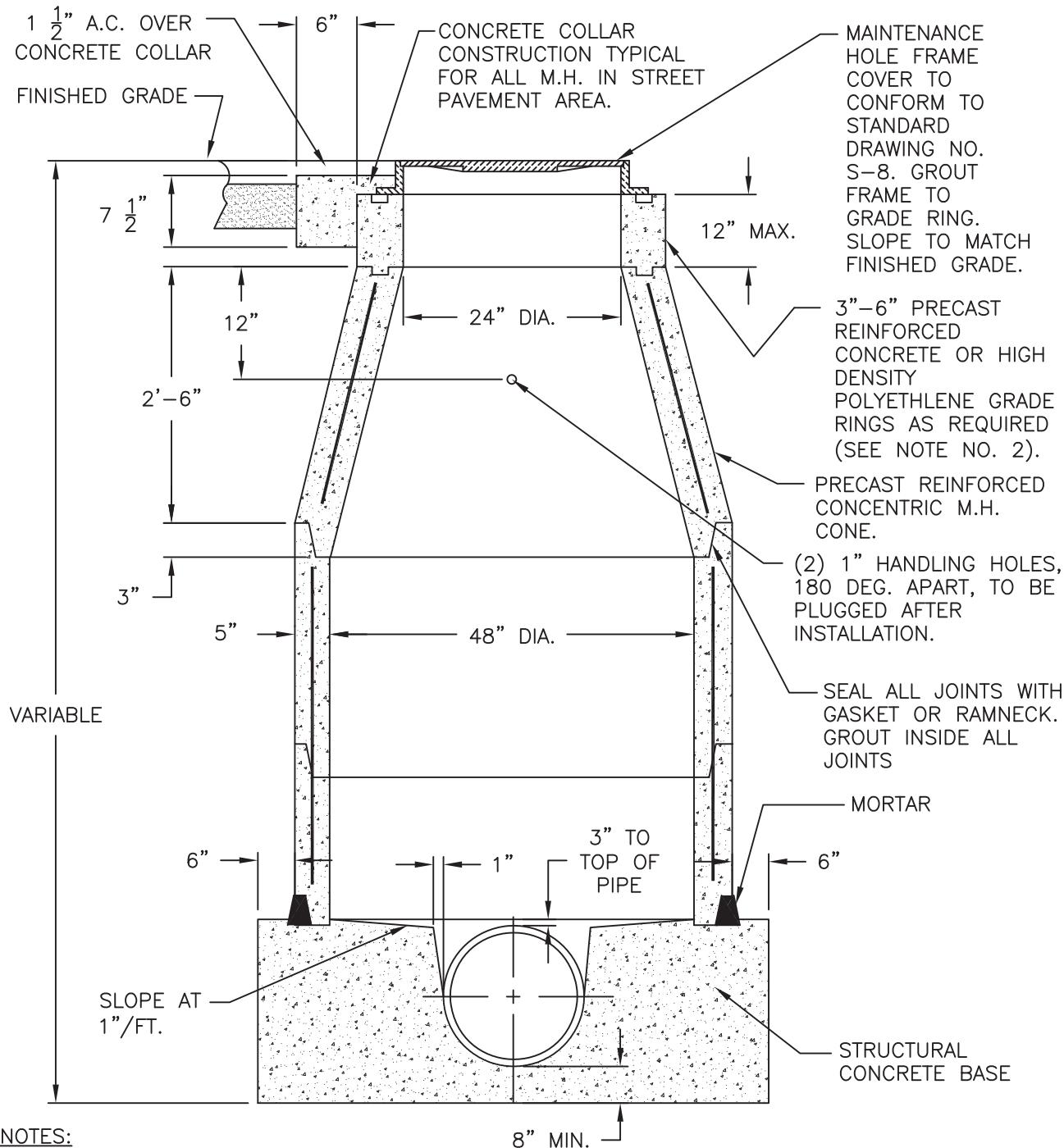


DATE: 09/27/2016

SCALE  
NONE

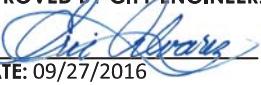
SUPERSEDES  
DWG. DATED

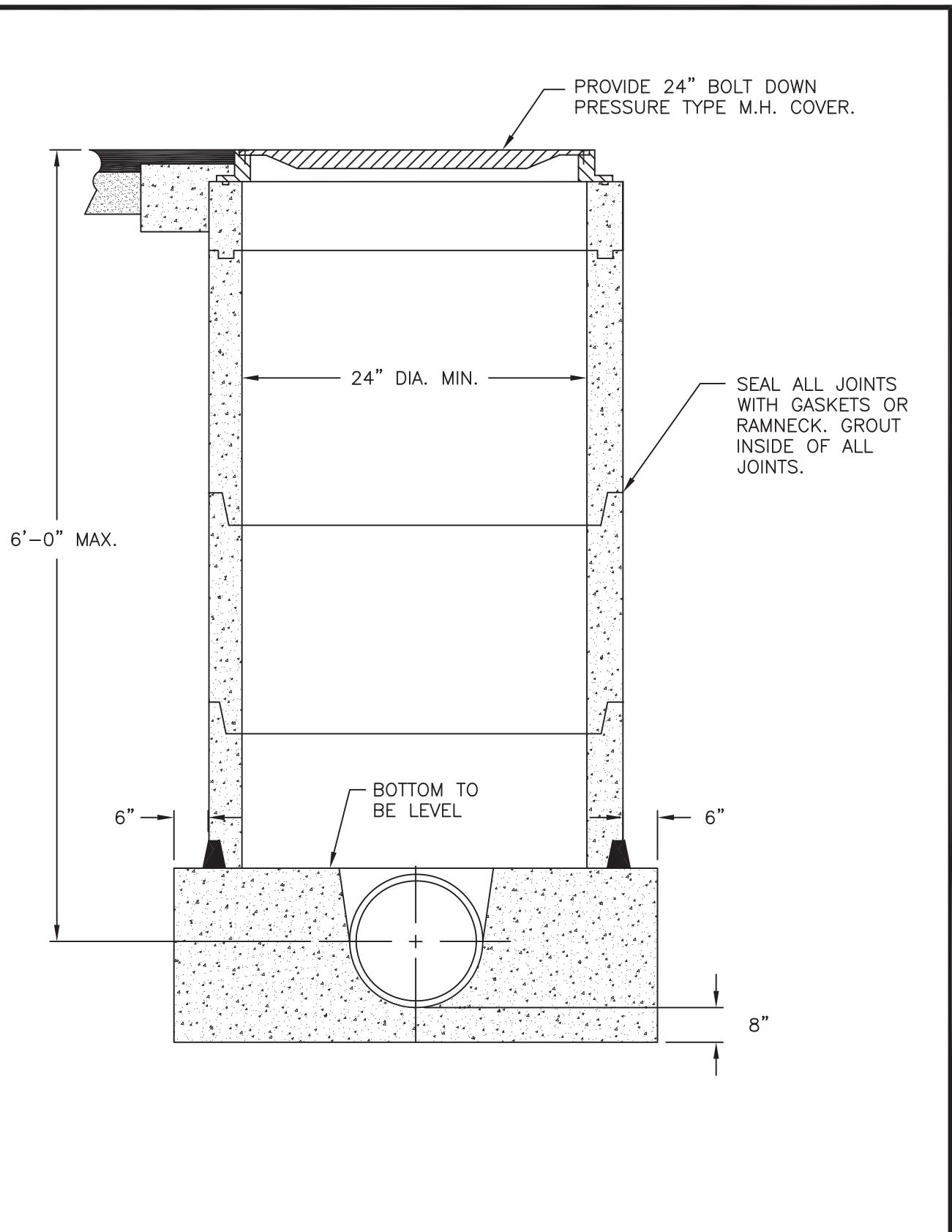
DRAWING NO.  
**S-9**



NOTES:

1. PRECAST CONCRETE M.H. UNITS SHALL CONFORM TO A.S.T.M. C-478.
2. PRIOR APPROVAL FROM THE CITY ENGINEER MUST BE OBTAINED BEFORE INSTALLING MORE THAN 12" OF GRADE RINGS.
3. FOR TYPICAL PIPE INTERSECTION DETAIL SEE DRAWING NO. D-5.
4. INTERIOR OF SANITARY SEWER M.H. SHALL BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.

<b>TYPE 1 MAINTENANCE HOLE FOR PIPES 33" DIAMETER OR SMALLER</b>		REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>S-10</b>



**PRETREATMENT SAMPLING  
STATION HOLE - ONSITE ONLY**

REVISION NO.  
4

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**S-11**

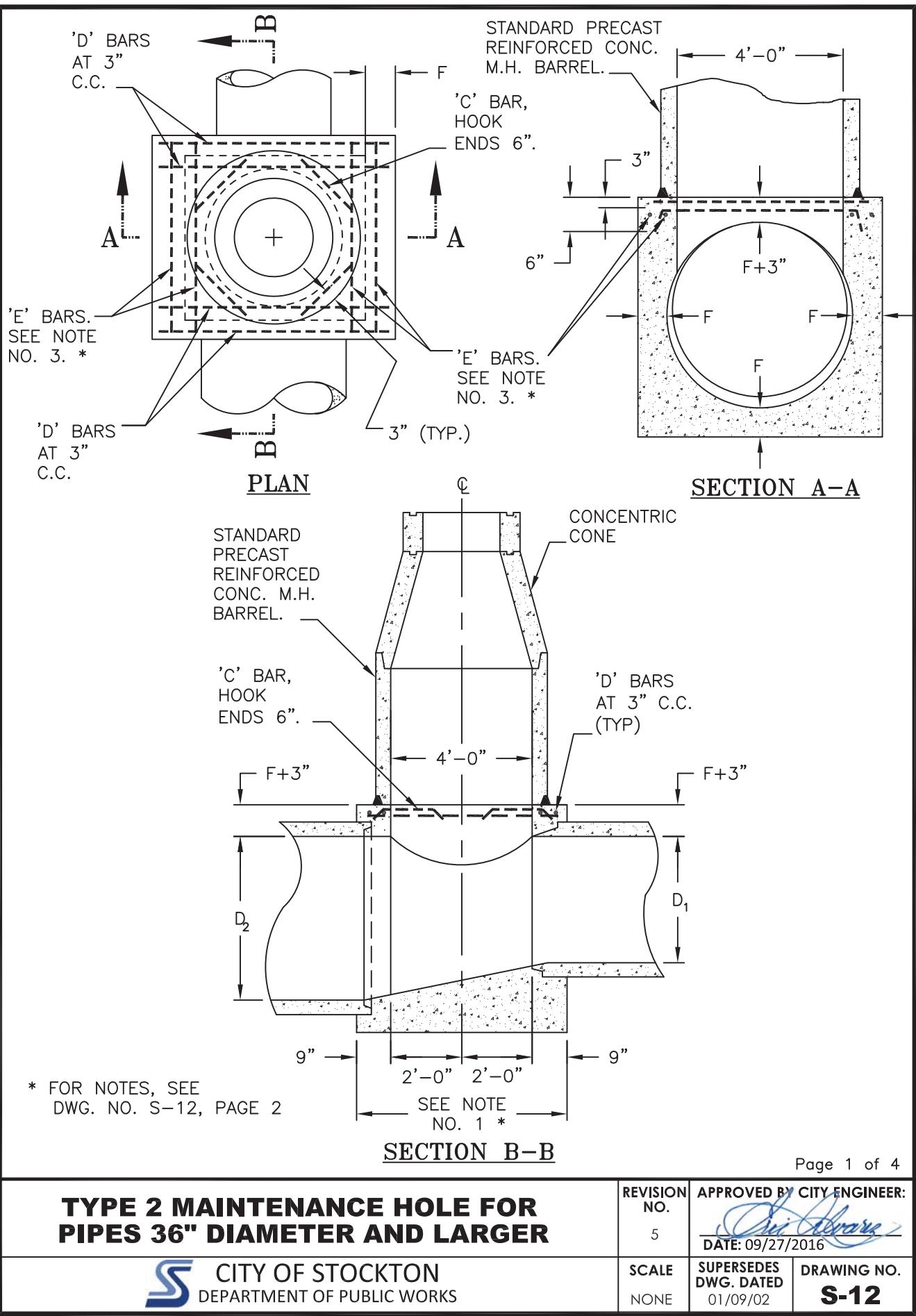


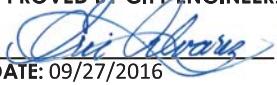
TABLE VALUES FOR 'F'			
D <sub>2</sub>	'F'	D <sub>2</sub>	'F'
36"	11"	63"	10"
39"	10"	66"	10 $\frac{1}{4}$ "
42"	8 $\frac{3}{4}$ "	69"	10 $\frac{3}{4}$ "
45"	7 $\frac{3}{4}$ "	72"	11"
48"	8"	78"	11 $\frac{3}{4}$ "
51"	8 $\frac{1}{2}$ "	84"	12 $\frac{1}{2}$ "
54"	9"	90"	13 $\frac{1}{4}$ "
57"	9 $\frac{1}{4}$ "	96"	14"
60"	9 $\frac{1}{2}$ "		

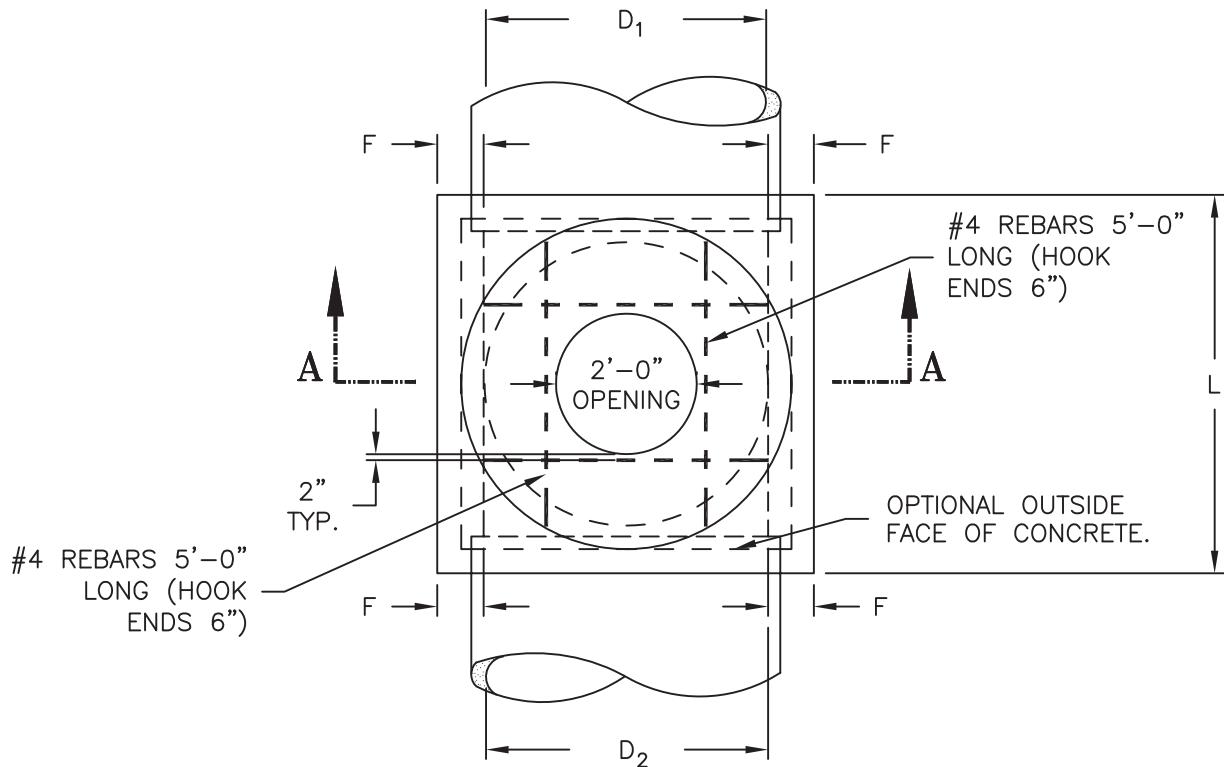
(SEE DRAWING NO. S-12, PAGE 3 & 4 FOR ADDITIONAL DETAILS)

NOTES:

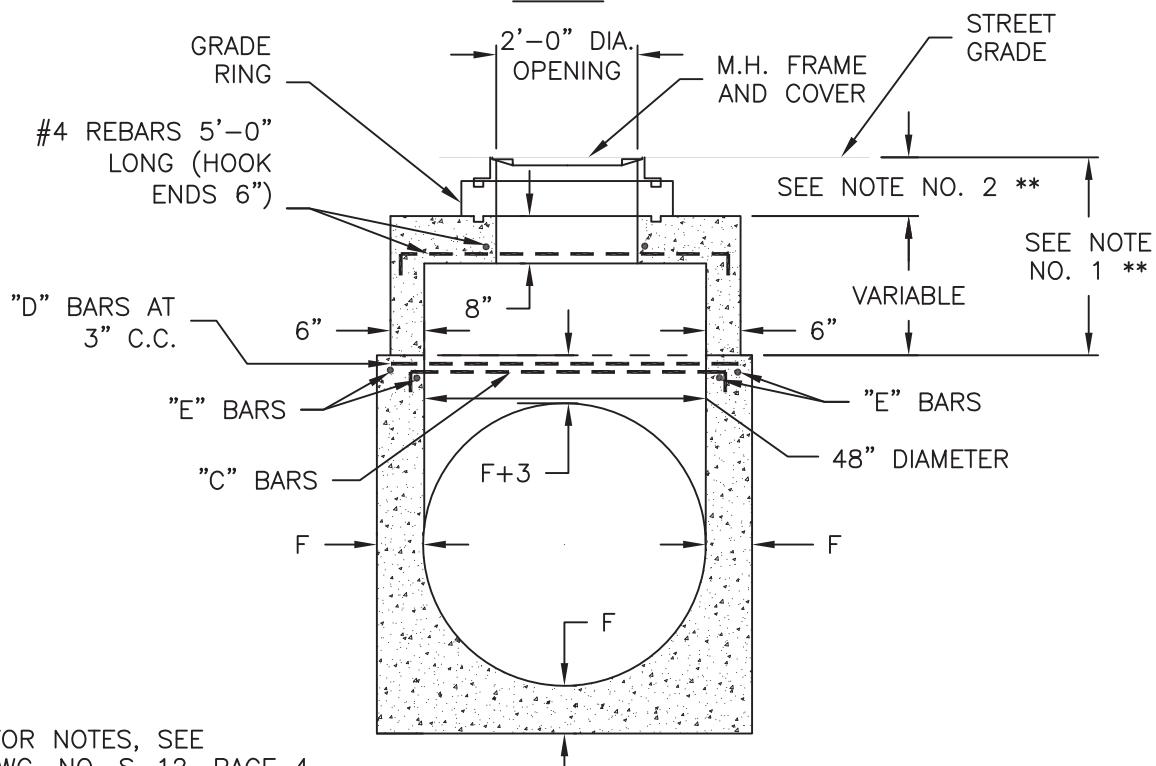
1. LENGTH SHALL BE 5'-6" UNLESS OTHERWISE SHOWN ON THE IMPROVEMENT PLANS.
2. THICKNESS OF DECK SHALL VARY WHEN NECESSARY TO PROVIDE LEVEL SEAT FOR M.H. BARREL.
3. REINFORCING STEEL SHALL BE ROUND, DEFORMED BARS, 2" CLEAR MINIMUM FROM FACE OF CONCRETE. SIZES AND LENGTH ARE SHOWN IN TABLE ON DRAWING S-12, PAGE 4.
4. CONCRETE SHALL BE 3000 LBS. PER SQ. INCH MINIMUM AT 28 DAYS.
5. RINGS, REDUCERS, AND M.H. BARRELS FOR ACCESS SHAFT SHALL BE SEATED IN CONCRETE. MORTAR COMPOSED OF ONE PART CEMENT TO 1-1/2" PARTS SAND BY VOLUME AND NEATLY POINTED OR WIPE INSIDE THE SHAFT.
6. FLOOR OF M.H. SHALL BE STEEL TROWELED TO SPRING LINE.
7. BASE OF M.H. SHALL BE POURED IN ONE CONTINUOUS OPERATION, EXCEPT THAT THE CONTRACTOR SHALL HAVE THE OPTION OF PLACING A CONSTRUCTION JOINT AT THE SPRING LINE, WITH A LONGITUDINAL KEYWAY.
8. INTERIOR OF SANITARY SEWER M.H.'S SHALL BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.
9. M.H. STATIONING ON IMPROVEMENT PLAN SHALL BE TO THE CENTER OF M.H.

Page 2 of 4

<b>TYPE 2 MAINTENANCE HOLE FOR PIPES 36" DIAMETER AND LARGER</b>	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02



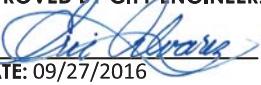
PLAN



\*\* FOR NOTES, SEE  
DWG. NO. S-12, PAGE 4

SECTION A-A

Page 3 of 4

TYPE 2 MAINTENANCE HOLE FOR PIPES 36" DIAMETER AND LARGER	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
DRAWING NO. <b>S-12</b>		

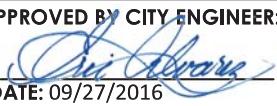
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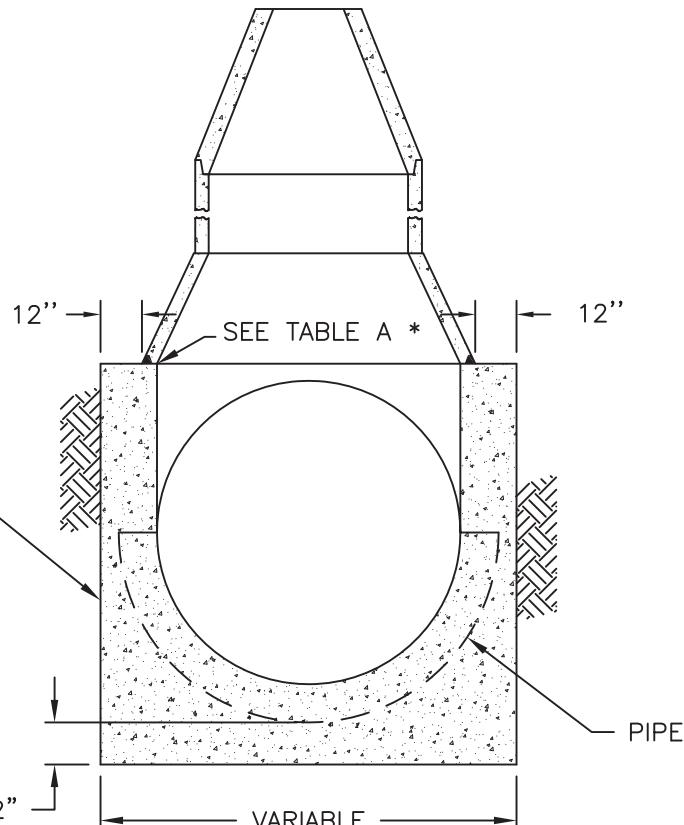
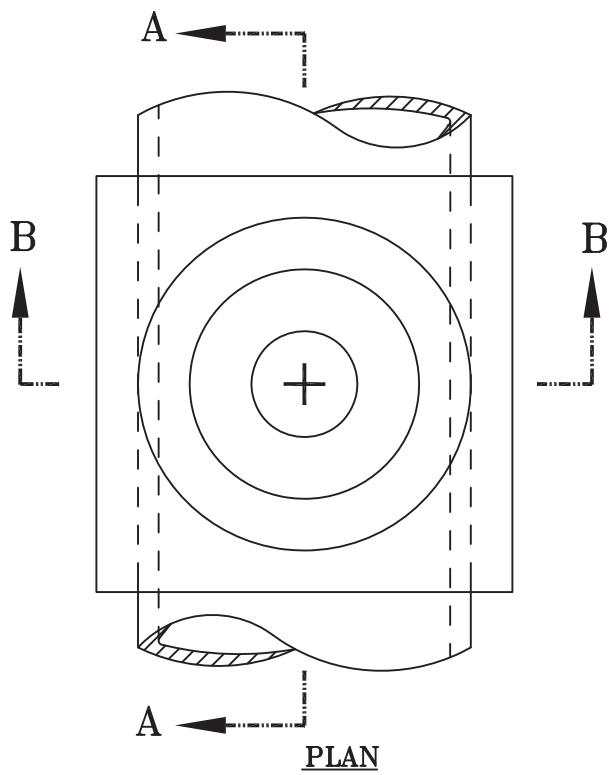
1. WHEN DEPTH OF MAINTENANCE HOLE FROM STREET GRADE TO TOP OF BOX IS LESS THAN 2'-10.5" FOR PAVED STREETS OR 3'-6" FOR UNPAVED STREETS. CONSTRUCT MONOLITHIC SHAFT AS SHOWN. THE CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING SHAFT AS SHOWN FOR ANY DEPTH OF MAINTENANCE HOLE.
2. PER SECTION A-A DWG. S-12, PAGE 3, IN PAVED STREETS THE MAXIMUM HEIGHT SHALL BE 10.5"  
AND THE MINIMUM HEIGHT 7.5"; IN UNPAVED STREETS THE MAXIMUM HEIGHT SHALL BE 16.5" AND THE MINIMUM HEIGHT 13.5".

REINFORCING STEEL FOR M.H. BOX									
D <sub>2</sub>	'C' BAR 45° ↘/↗ HOOK ENDS 6"			'D' BAR _____			'E' BAR _____		
DIA.	NO.REQ'D	SIZE	LENGTH	NO.REQ'D	SIZE	LENGTH	NO.REQ'D	SIZE	LENGTH
36"	2	# 4	6'-4"	4	# 4	4'-6"	2	# 4	5'-2"
39"	2	# 4	6'-4"	4	# 4	4'-7"	2	# 4	5'-2"
42"	2	# 4	6'-4"	4	# 5	4'-7 $\frac{1}{2}$ "	2	# 4	5'-2"
45"	2	# 4	6'-4"	4	# 5	4'-8 $\frac{1}{2}$ "	2	# 4	5'-2"
48"	2	# 4	6'-4"	4	# 5	5'-0"	4	# 4	5'-2"
51"	2	# 4	6'-4"	4	# 5	5'-4"	4	# 4	5'-2"
54"	2	# 4	6'-4"	4	# 5	5'-8"	4	# 4	5'-2"
57"	2	# 4	6'-4"	4	# 5	5'-11 $\frac{1}{2}$ "	4	# 4	5'-2"
60"	2	# 4	6'-4"	4	# 5	6'-3"	4	# 4	5'-2"
63"	2	# 4	6'-4"	4	# 5	6'-7"	4	# 4	5'-2"
66"	2	# 4	6'-4"	4	# 5	6'-10 $\frac{1}{2}$ "	4	# 4	5'-2"
69"	2	# 4	6'-4"	4	# 5	7'-2 $\frac{1}{2}$ "	4	# 4	5'-2"
72"	2	# 4	6'-4"	4	# 5	7'-6"	4	# 4	5'-2"
78"	2	# 4	6'-4"	4	# 5	8'-1 $\frac{1}{2}$ "	4	# 4	5'-2"
84"	2	# 4	6'-4"	4	# 5	8'-9"	4	# 4	5'-2"
90"	2	# 4	6'-4"	4	# 6	9'-4 $\frac{1}{2}$ "	4	# 4	5'-2"
96"	2	# 4	6'-4"	4	# 6	10'-0"	4	# 4	5'-2"

3. INTERIOR OF SANITARY SEWER MAINTENANCE HOLE SHALL BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.

Page 4 of 4

<b>TYPE 2 MAINTENANCE HOLE FOR PIPES 36" DIAMETER AND LARGER</b>			REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS			SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
			DRAWING NO. <b>S-12</b>	



\* FOR TABLE A, SEE  
DWG. NO. S-13,  
PAGE 2.

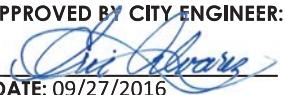
Page 1 of 2

### TYPE 3 MAINTENANCE HOLE FOR PIPES 36" DIAMETER AND LARGER



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

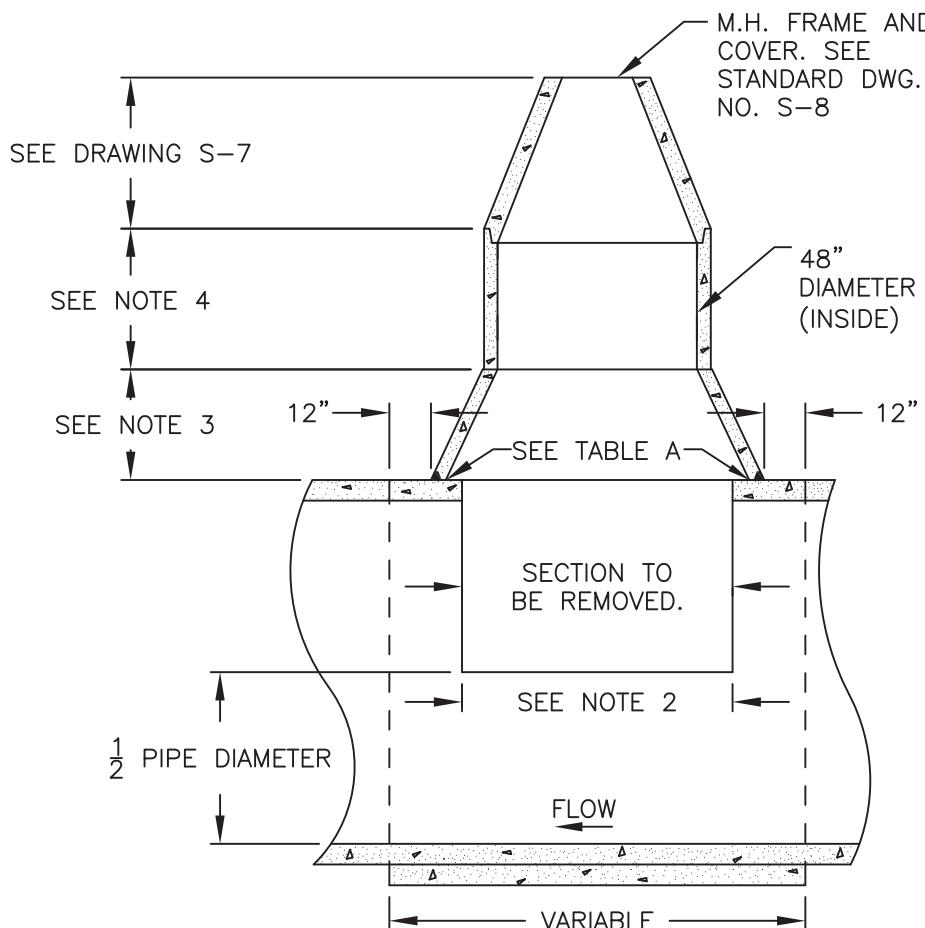
REVISION  
NO.  
3

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**S-13**



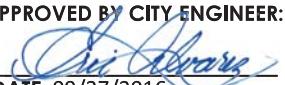
SECTION A-A

TABLE A		
PIPE DIAMETER	36" THRU 39"	42" THRU 48"
CONE DIAMETER	48"	60"
		54" THRU 72"
		72"

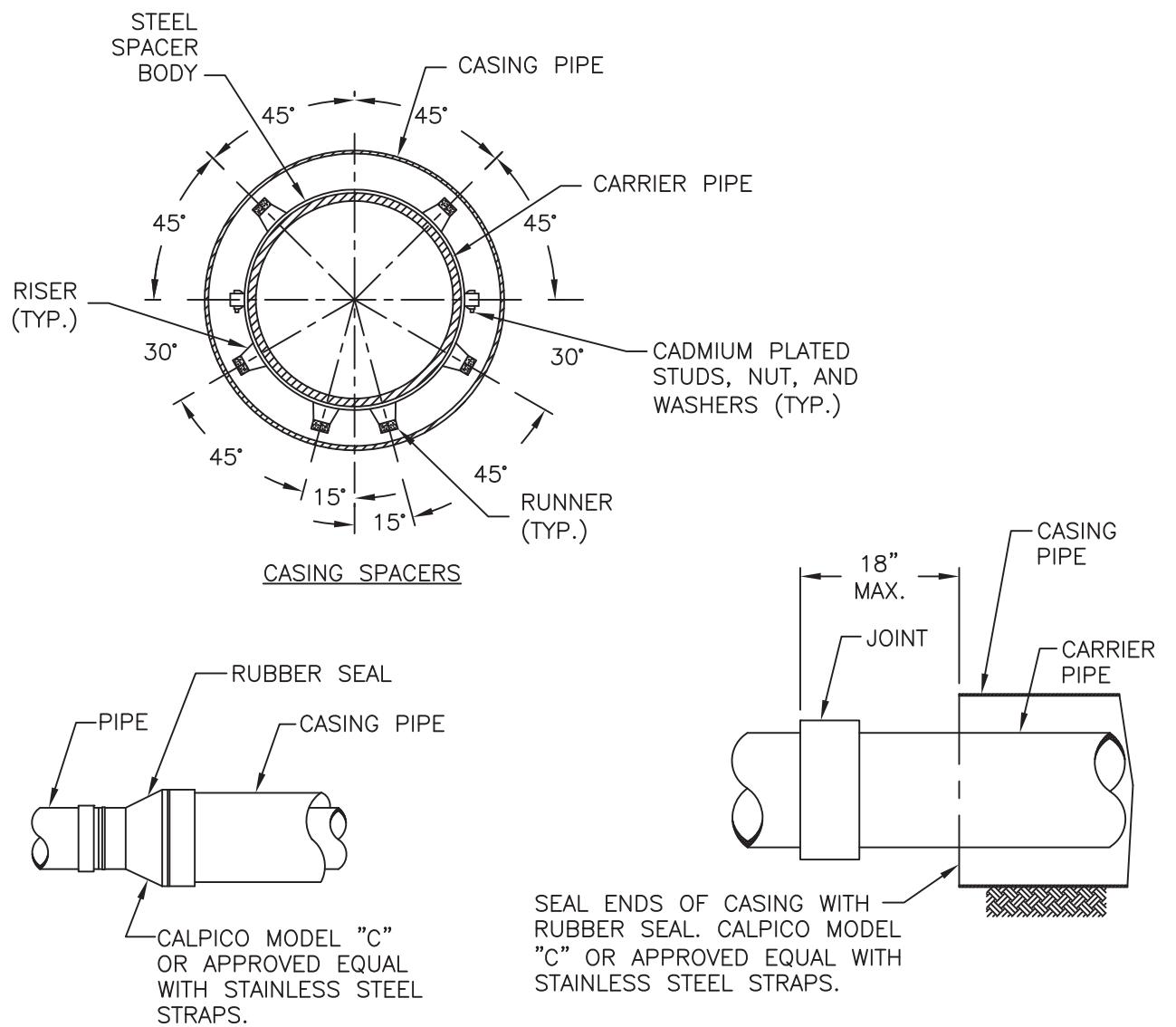
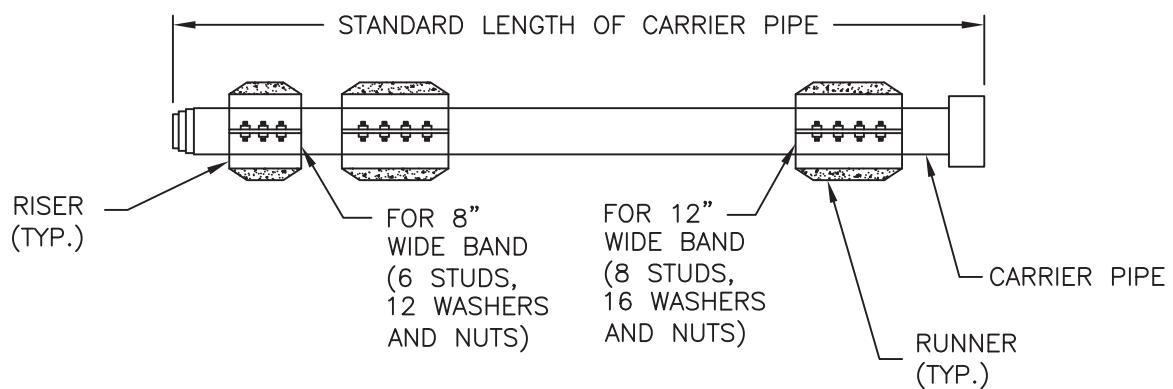
NOTES:

1. ALL CONE SECTIONS TO CONFORM TO A.S.T.M. C-478.
2. MAINTENANCE HOLE TO BE PLACED SUCH THAT EXISTING, OR CAST IN PLACE PIPE, RUNS STRAIGHT THROUGH, BREAK OUT TOP OF PIPE TO A LENGTH EQUAL TO THE PIPE DIAMETER TO PIPE SPRING LINE.
3. INSTALL CONCENTRIC PRE CAST CONCRETE CONE.
4. IF REQUIRED, INSTALL STANDARD 48" PRE CAST CONCRETE VERTICAL SECTIONS TO MEET GRADE.
5. CONSTRUCT FLEXIBLE PIPE JOINTS AT 2'-0" MAX. FROM BASE OF M.H.
6. GROUT ALL M.H. JOINTS WITH 2 : 1 MIX MORTAR.
7. INTERIOR OF SANITARY SEWER M.H. TO BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF THE STANDARD SPECIFICATIONS.

Page 2 of 2

<b>TYPE 3 MAINTENANCE HOLE FOR PIPES 36" DIAMETER AND LARGER</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

DRAWING NO.  
**S-13**

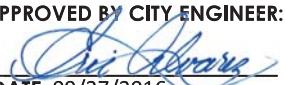


FOR NOTES, SEE  
DWG. NO. S-14, PAGE 2

Page 1 of 2

## JACKING DETAILS FOR PIPES

REVISION NO.  
4

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

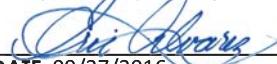
DRAWING NO.  
**S-14**

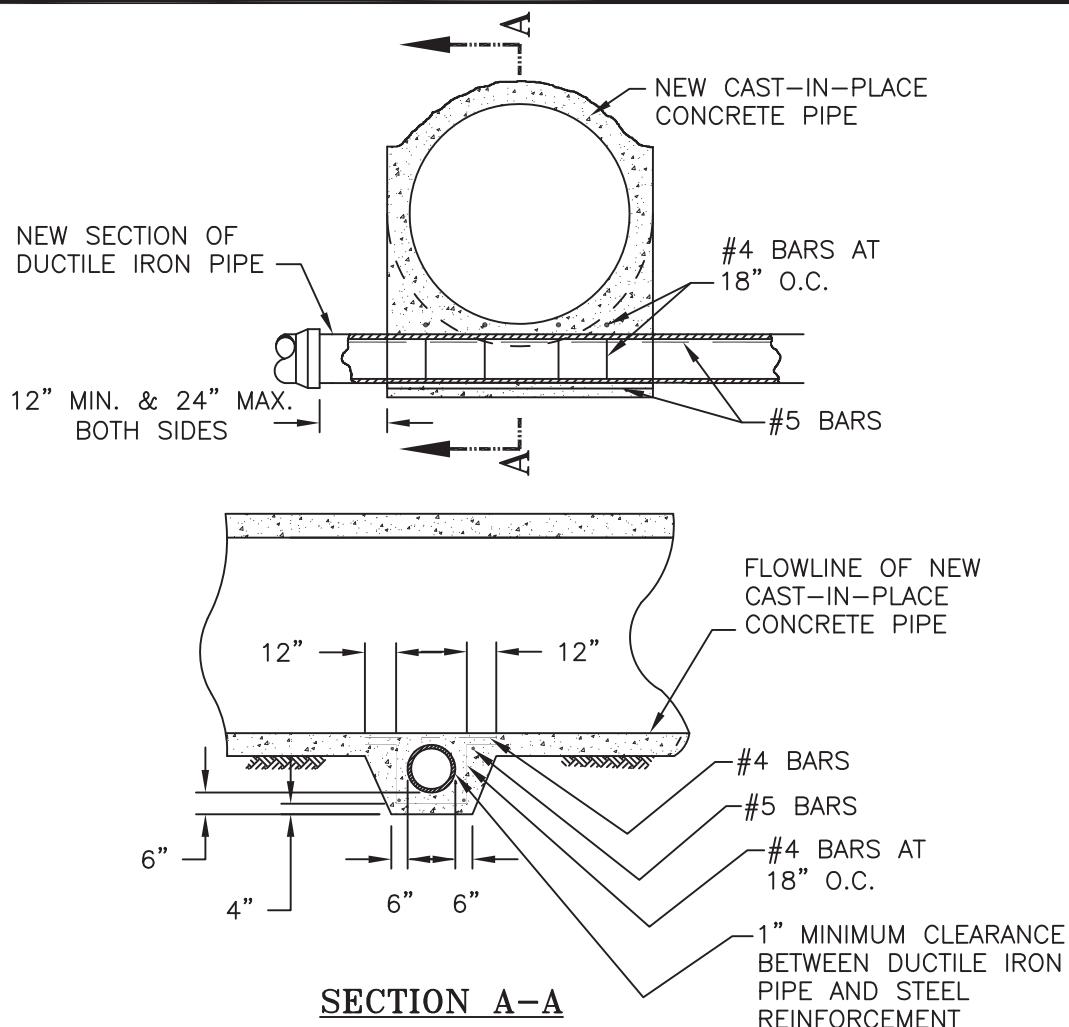
STEEL CASING SCHEDULE		
PIPE SIZE & TYPE	CASING	THICK
6" VITRIFIED CLAY	14" I.D.	$\frac{3}{16}$ "
8" VITRIFIED CLAY	16" I.D.	$\frac{1}{4}$ "
10" VITRIFIED CLAY	20" I.D.	$\frac{1}{4}$ "
12" VITRIFIED CLAY	22" I.D.	$\frac{1}{4}$ "

NOTES:

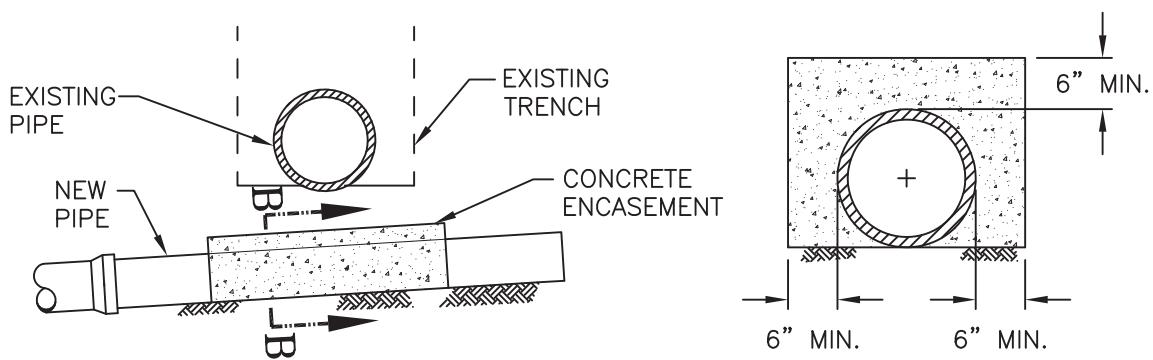
1. CASING SHALL BE INSTALLED BY THE JACKING AND BORING METHOD.
2. CASING JOINTS SHALL BE WELDED IN ACCORDANCE WITH AWWA STANDARD C-206 EXCEPT THAT HYDROSTATIC TESTING WILL NOT BE REQUIRED.
3. CASING SPACERS SHALL BE PROVIDED PER DRAWING NO. S-14, PAGE 1.
4. ENDS OF BORE HOLE SHALL BE SEALED TO PREVENT ENTRANCE OF FILL MATERIAL, AS REQUIRED.
5. JOINT SHALL BE INSTALLED AT END OF CASING PIPE PER DRAWING NO. S-14, PAGE 1.
6. CASING OF LARGER SIZE THAN SHOWN IN THE ABOVE CHART OR CASING FOR PIPES LARGER THAN 12" OR OF DIFFERENT TYPE THAN SHOWN SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.

Page 2 of 2

<b>JACKING DETAILS FOR PIPES</b>		REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>S-14</b>



### CAST-IN-PLACE STORM DRAIN



### DETAILS OF PROTECTION FOR NEW SEWERS

Page 1 of 2

## **PROTECTION OF STORM DRAINS AND SANITARY SEWER LINES**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

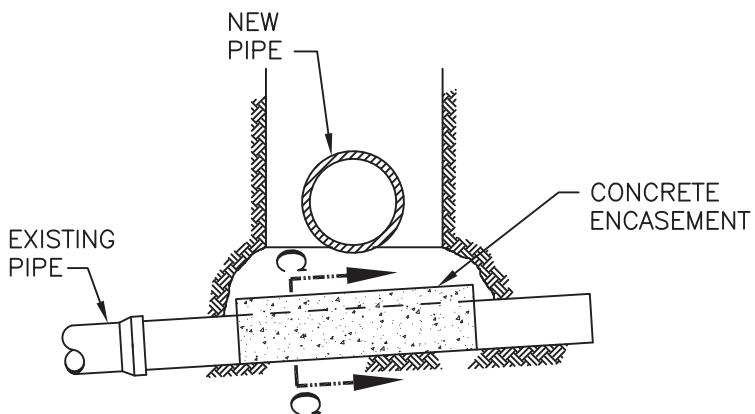
REVISION NO.  
3

APPROVED BY CITY ENGINEER:  
*Dan Harpe*  
DATE: 09/27/2016

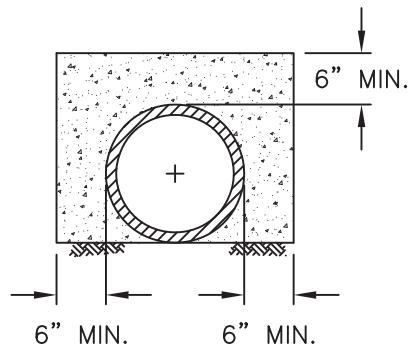
SCALE  
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SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**S-15**



TYPICAL SECTION



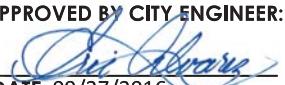
SECTION C-C

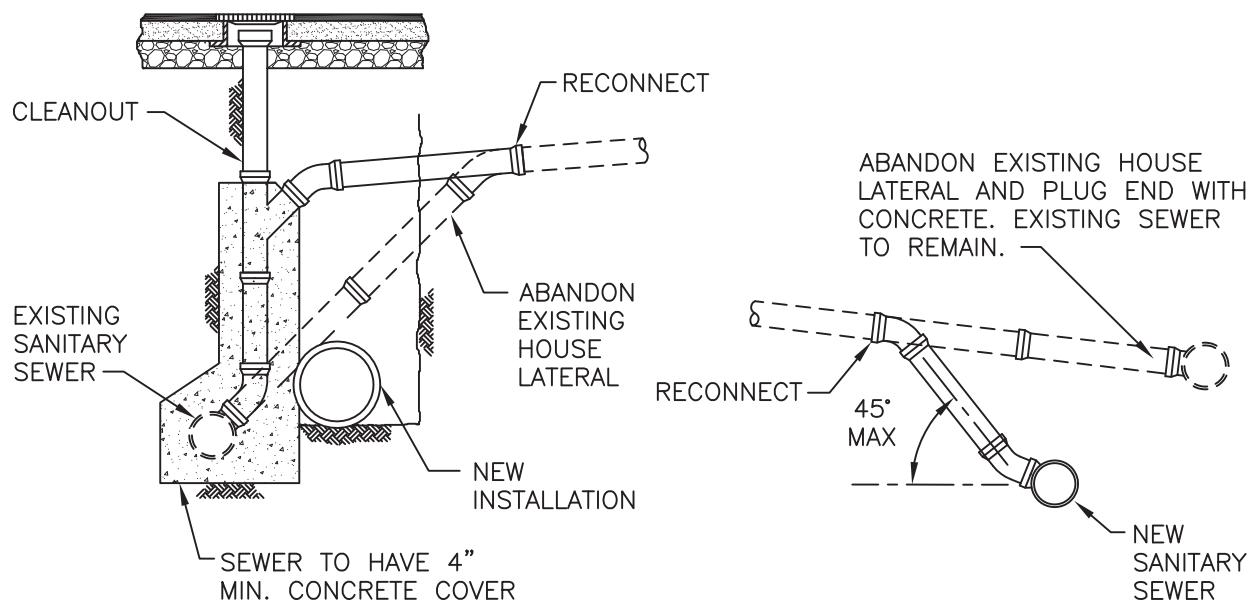
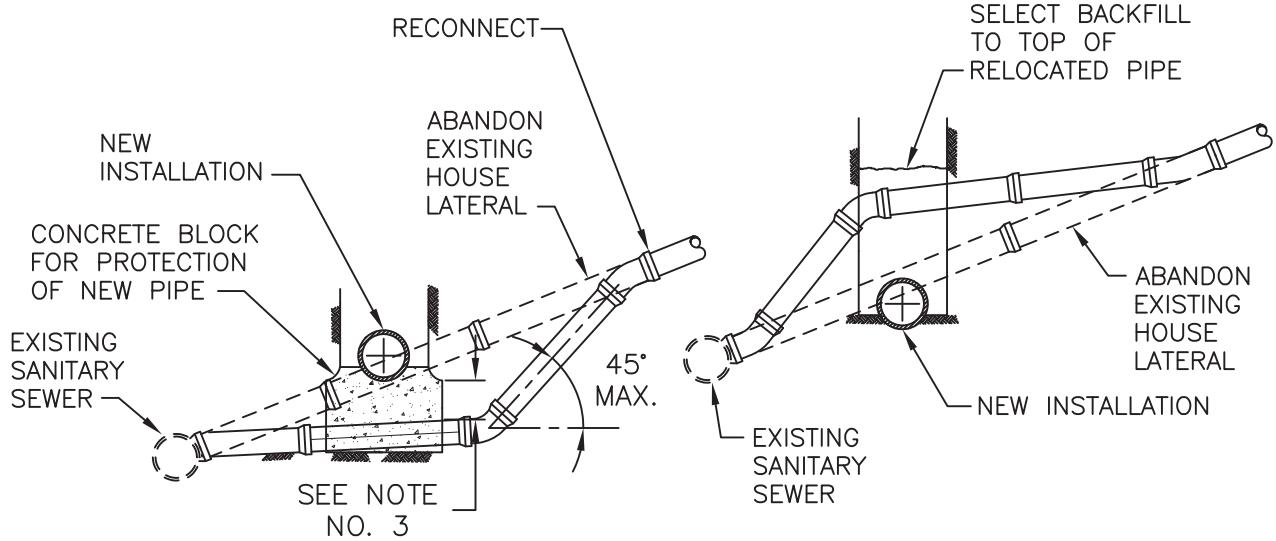
DETAILS OF PROTECTION FOR EXISTING SEWERS

NOTES:

1. CONCRETE FOR ENCASEMENT SHALL BE CLASS "B" CONCRETE POURED AGAINST THE UNDISTURBED EARTH.
2. THE CONCRETE ENCASEMENT SHALL EXTEND ACROSS THE FULL WIDTH OF THE TRENCH PLUS AN ADDITIONAL 12" INTO UNDISTURBED EARTH ON EACH SIDE OF THE TRENCH.
3. WHEN THE CLEARANCE BETWEEN THE BOTTOM OF THE DRAIN AND THE TOP OF THE SEWER IS LESS THAN 18", THE SEWER SHALL BE ENCASED OR BLANKETED AS INDICATED.
4. CAST-IN-PLACE STORM DRAINS
  - (A) WHEN THE CLEARANCE BETWEEN THE BOTTOM OF THE STORM DRAIN AND THE TOP OF THE SANITARY SEWER IS LESS THAN 6". THE SANITARY SEWER SHALL BE ENCASED MONOLITHICALLY WITH THE BASE OF THE DRAIN. IN ADDITION IT SHALL BE CONSTRUCTED OR REPLACED WITH DUCTILE IRON PIPE.
  - (B) WHEN THE BOTTOM SLAB OF THE CAST-IN-PLACE STORM DRAIN INTERSECTS SEWERS UNDER 15" IN DIAMETER, CONSTRUCT PER TYPICAL ENCASEMENT AS SHOWN ABOVE.

Page 2 of 2

<b>PROTECTION OF STORM DRAINS AND SANITARY SEWER LINES</b>		REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>S-15</b>



NOTES:

1. THE 6" SADDLE SHALL BE USED WHERE NECESSARY AND SHALL BE CONNECTED TO THE PIPE CONSTITUTING THE EXISTING "WYE" OR "TEE" OR TO THE NEXT LOWER PIPE LENGTH.
2. WYE MAY BE LAID "FLAT" UPON SPECIAL APPROVAL OF THE CITY ENGINEER. CASE NO. 3 SHALL BE USED ONLY WHEN CASE NO. 1 HAS LESS THAN THEN REQUIRED SLOPE.
3. IF 4" OR MORE CLEARANCE, NO CONCRETE IS NECESSARY. IF CONCRETE IS REQUIRED, TAKE IT DOWN TO UNDISTURBED EARTH.

**EXISTING HOUSE LATERAL  
RELOCATION**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

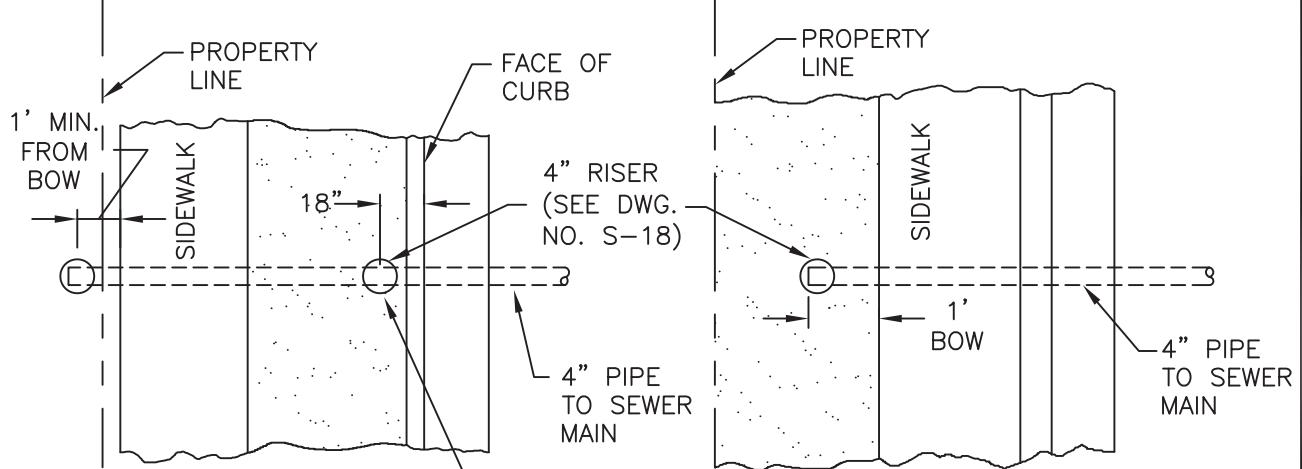
REVISION NO.  
4

APPROVED BY CITY ENGINEER:  
*Dan Harpe*  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

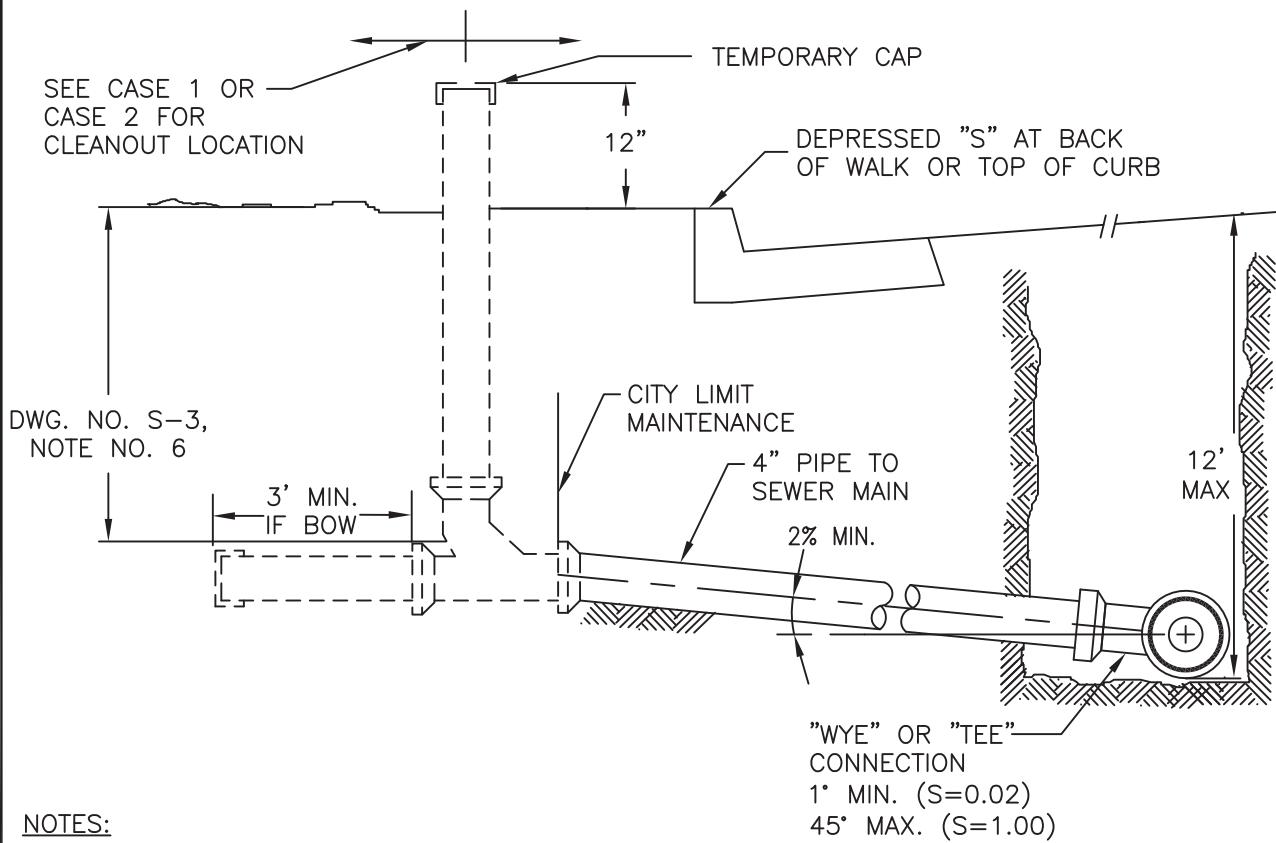
DRAWING NO.  
**S-16**



**CASE 1**  
(SEE DWG. NO. S-18)  
CURB, GUTTER, SIDEWALK WITH  
PARKWAY STRIP

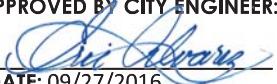
ALTERNATE LOCATION  
WITH CITY ENGINEER  
APPROVAL ONLY

**CASE 2**  
(SEE DWG. NO. S-18)  
CURB, GUTTER, SIDEWALK WITH NO  
PARKWAY STRIP



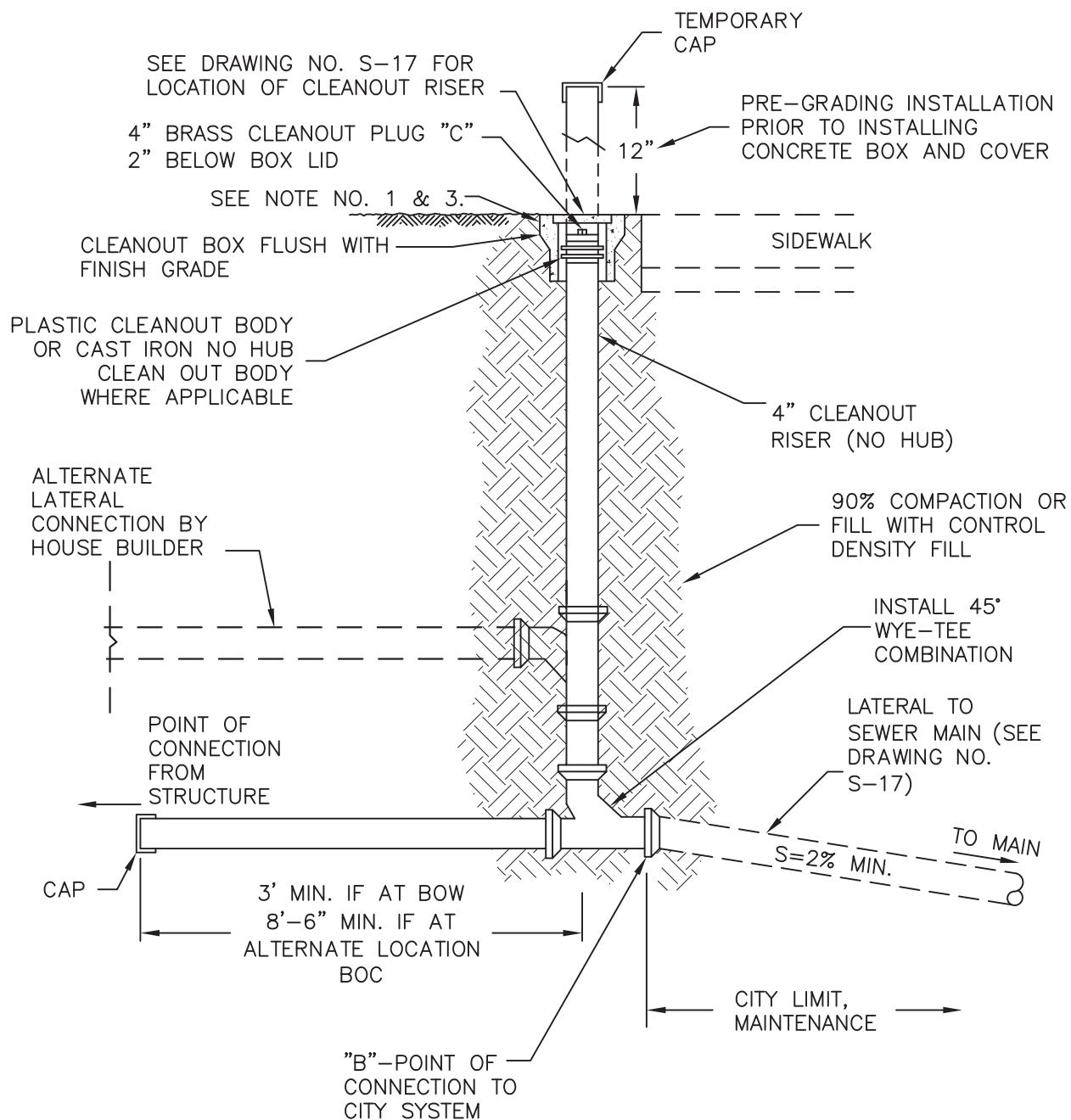
NOTES:

1. WHEN MODIFIED CURB, GUTTER, AND SIDEWALK, MEANDERING SIDEWALKS, OR ANY OTHER SPECIAL CASES ARE ENCOUNTERED, CLEANOUTS AND OTHER UTILITY LOCATIONS SHALL BE DETERMINED BY THE ENGINEER AT TIME SUBDIVISION PLANS ARE SUBMITTED FOR APPROVAL AND FINAL APPROVAL SHALL BE BY THE CITY ENGINEER.

SEWER CLEANOUT LOCATION	REVISION NO.	APPROVED BY CITY ENGINEER:
	7	 DATE: 09/27/2016
SCALE	SUPERSEDES DWG. DATED	DRAWING NO.
NONE	11/25/03	<b>S-17</b>

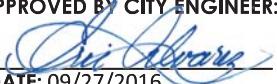


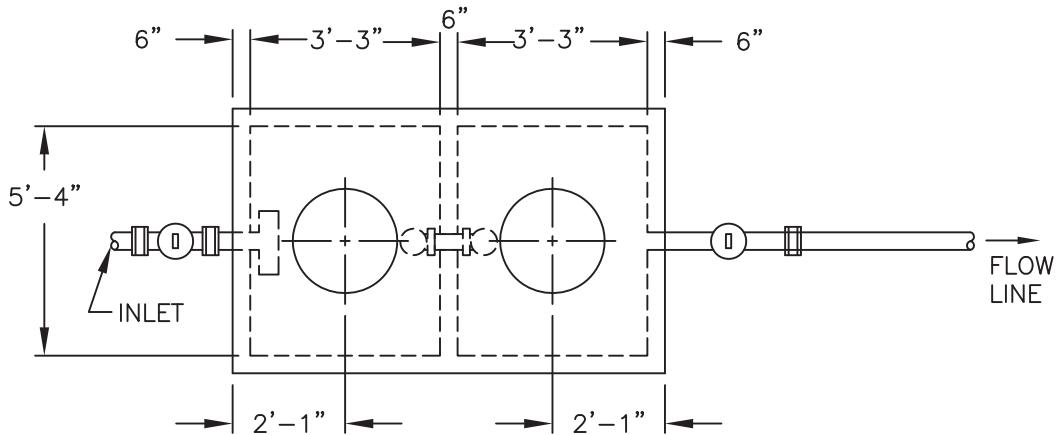
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS



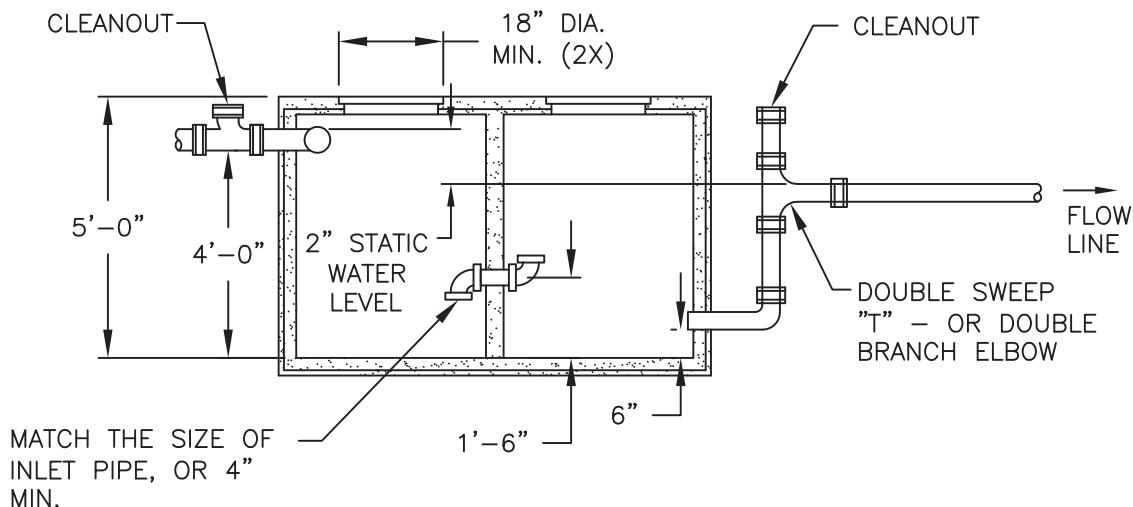
NOTES:

1. ALL FACILITIES TO BE INSTALLED BY SUBDIVIDER, EXCEPT CLEANOUT, BOX AND COVER WHICH SHALL BE INSTALLED BY PLUMBER. ALL FACILITIES ABOVE POINT "B" TO BE MAINTAINED BY PROPERTY OWNER IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.
2. ALL FACILITIES BELOW POINT "B" TO BE MAINTAINED BY THE CITY THROUGH PROPERTY OWNER'S CLEANOUT "C".
3. WHEN CLEANOUT FALLS IN DRIVEWAY, INSTALL "CHRISTY" #F08C OR "BROOKS" #1-SP WITH CAST IRON TRAFFIC COVER (OR EQUAL CONCRETE BOX AND CAST IRON COVER). "BROOKS" #3-RT WITH CAST IRON COVER MAY ALSO BE USED.

CLEANOUT	REVISION NO. 7	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>S-18</b>
	SCALE NONE	



PLAN - VIEW



SECTION

NOTES:

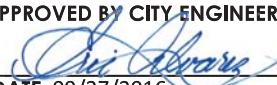
1. UNDER SINK GREASE INTERCEPTOR NOT ALLOWED.
2. DIMENSIONS SHOWN ARE FOR MINIMUM SIZE (750 GALLON) INTERCEPTOR.
3. EACH UNIT SHALL BE DESIGNED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY THE CITY ENGINEER. STREET INSTALLATIONS SHALL BE DESIGNED FOR HS20 44 LOADING.
4. ALL KITCHEN FIXTURES SHALL BE PLUMBED TO FLOW THROUGH INTERCEPTOR.
5. CONCRETE SHALL BE A MINIMUM OF 3000 PSI AT 28 DAYS.
6. COVERS SHALL BE STEEL AND SHALL BE GAS TIGHT.
7. ALL WASTE SHALL ENTER INTERCEPTOR THROUGH THE INLET PIPE ONLY.
8. NO WASTE FROM RESTROOMS SHALL FLOW THROUGH INTERCEPTOR.
9. EFFLUENT PIPE SHALL EXIT TANK 6" FROM BOTTOM.

**TYPICAL GREASE INTERCEPTOR  
(750 TO 1199 GALLON)**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

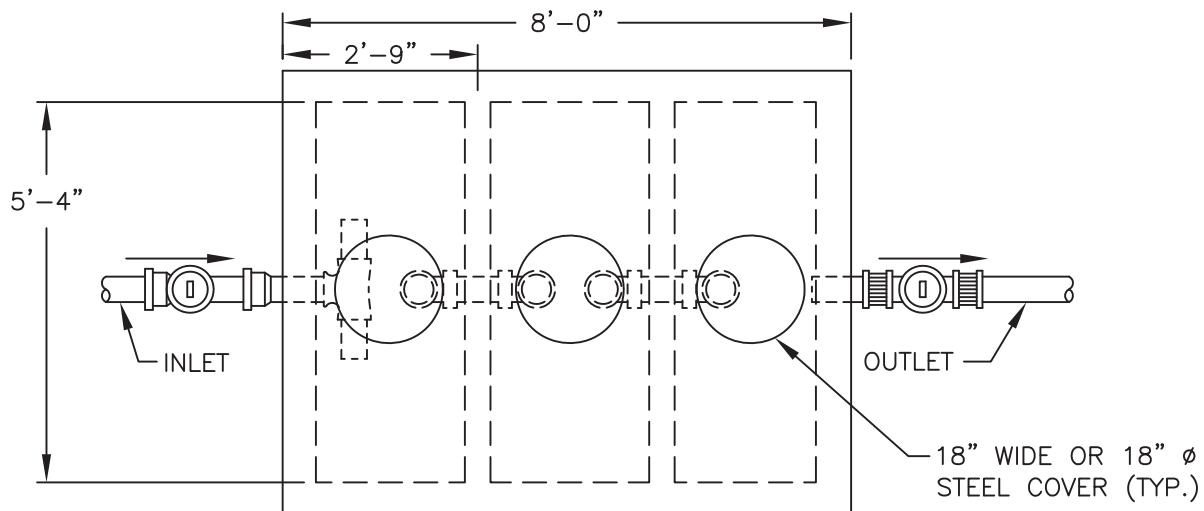
REVISION  
NO.  
8

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

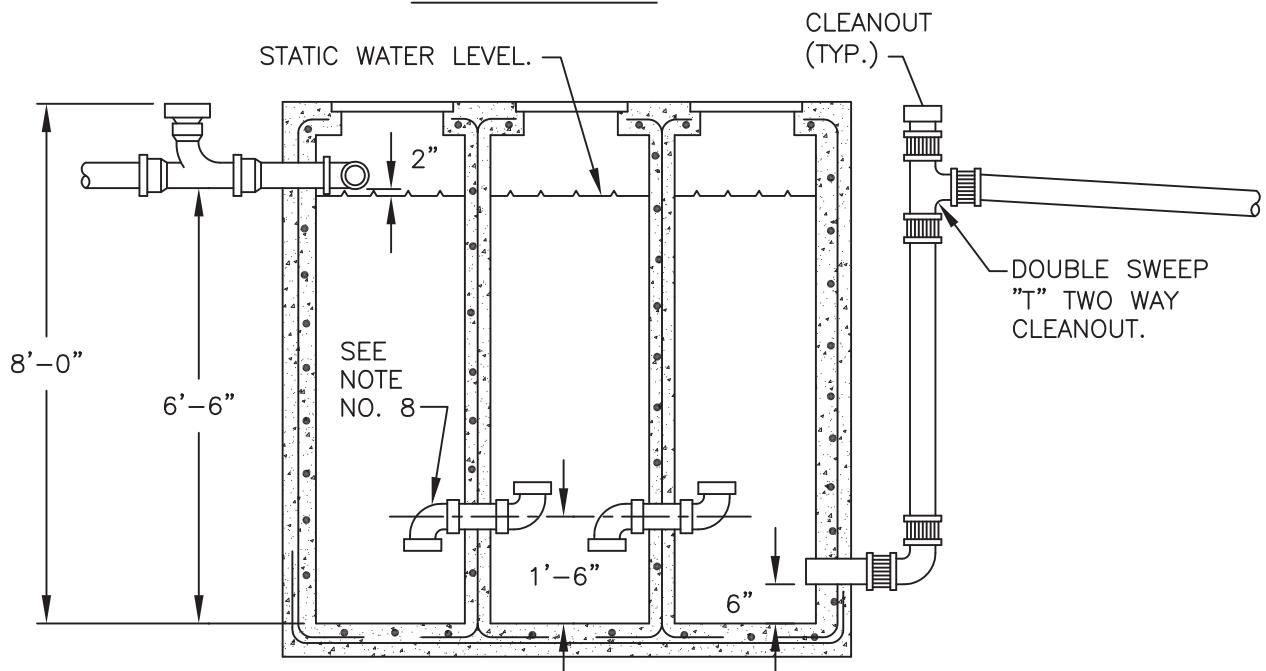
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**S-19**



PLAN - VIEW



SECTION

NOTES:

1. EACH UNIT SHALL BE DESIGNED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY THE CITY ENGINEER.
2. COVERS SHALL BE STEEL AND GAS TIGHT. PROVIDE AMPLE ACCESS FOR MAINTENANCE.
3. REINFORCEMENT SHALL BE ADEQUATE FOR TRAFFIC CONDITIONS WHERE INTERCEPTOR IS LOCATED.
4. ALL KITCHEN FIXTURES TO BE PLUMBED TO FLOW THROUGH INTERCEPTOR.
5. CONCRETE SHALL BE 3000 PSI MINIMUM AT 28 DAYS.
6. ALL WASTE SHALL ENTER INTERCEPTOR THROUGH INLET PIPE ONLY.
7. RESTROOM WASTE SHALL NOT FLOW THROUGH INTERCEPTOR.
8. MATCH THE SIZE OF THE INLET PIPE, OR 4" MINIMUM DIAMETER (MAY INSTALL TWO STEEL BAFFLES INSTEAD OF 4" PIPE AND WALL IN SAME CONFIGURATION—SEE DWG. S-19).

**TYPICAL GREASE INTERCEPTOR  
(1200 GALLON OR LARGER)**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

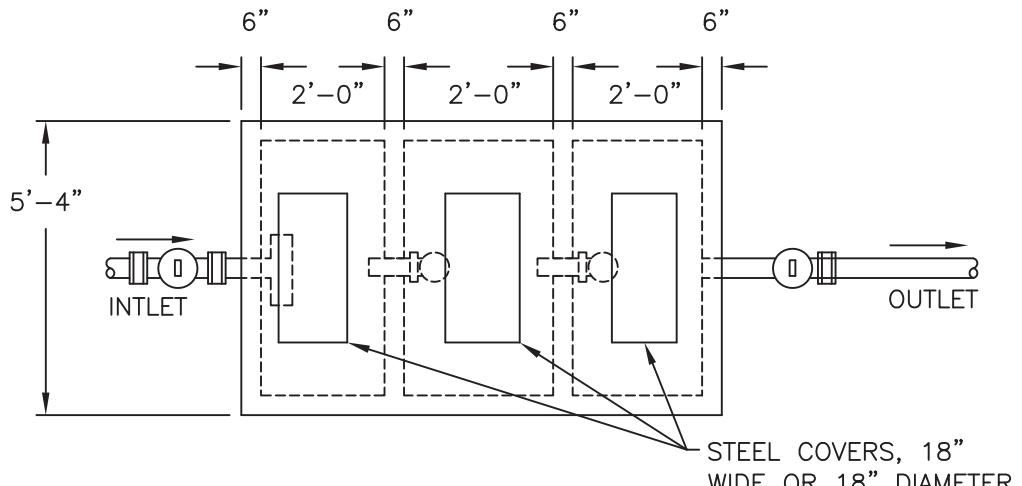
REVISION  
NO.  
5

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

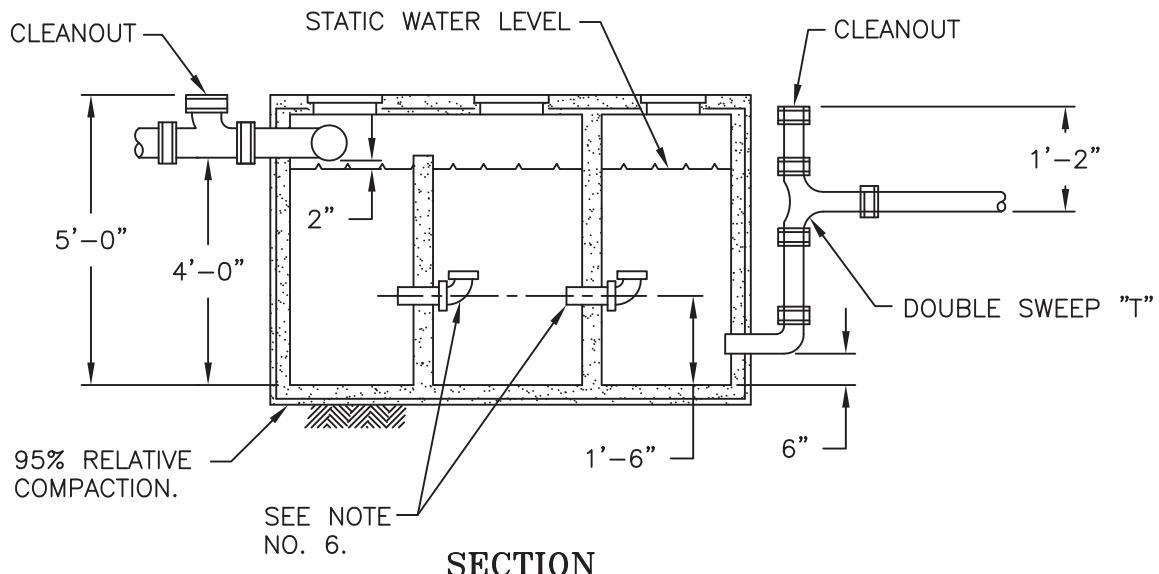
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**S-20**



PLAN - VIEW



SECTION

NOTES:

1. NO PERSON OWNING OR OPERATING A PRIVATE OR PUBLIC AUTOMOBILE WASH RACK SHALL PERMIT ANY WATER OR EFFLUENT THEREFROM TO FLOW INTO ANY PUBLIC SEWER UNLESS SUCH WASH RACK IS ROOFED OVER AND IS EQUIPPED WITH A SAND-OIL INTERCEPTOR APPROVED BY THE DIRECTOR OF MUNICIPAL UTILITIES OR HIS REPRESENTATIVE. (ADDED BY ORDINANCE 3690C.S.—EFFECTIVE OCT. 13, 1983)
2. DIMENSIONS SHOWN ARE FOR MINIMUM SIZE (750 GALLON) SEPARATOR.
3. EACH UNIT SHALL BE DESIGNED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY THE CITY ENGINEER. STREET INSTALLATIONS SHALL BE DESIGNED FOR HS20 44 LOADING.
4. CONCRETE SHALL BE A MINIMUM OF 3,000 PSI AT 28 DAYS.
5. FLOOR DRAINS AND WASH RACK WATER FLOWS SHALL ENTER SEPARATOR THROUGH INLET PIPE ONLY.
6. COVERS SHALL BE STEEL AND SHALL BE GAS TIGHT.
7. 4" MINIMUM PIPE WITH 90° ELBOW. INSTALL AS SHOWN OR MATCH INLET PIPE SIZE.
8. INSIDE FLOOR DRAINS SHALL BE CONNECTED TO AN APPROVED SAND/OIL SEPARATOR. TOILETS AND URINALS SHALL NOT BE CONNECTED TO THE SAND/OIL SEPARATOR.

**TYPICAL SAND & OIL SEPARATOR**

REVISION  
NO.  
7

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

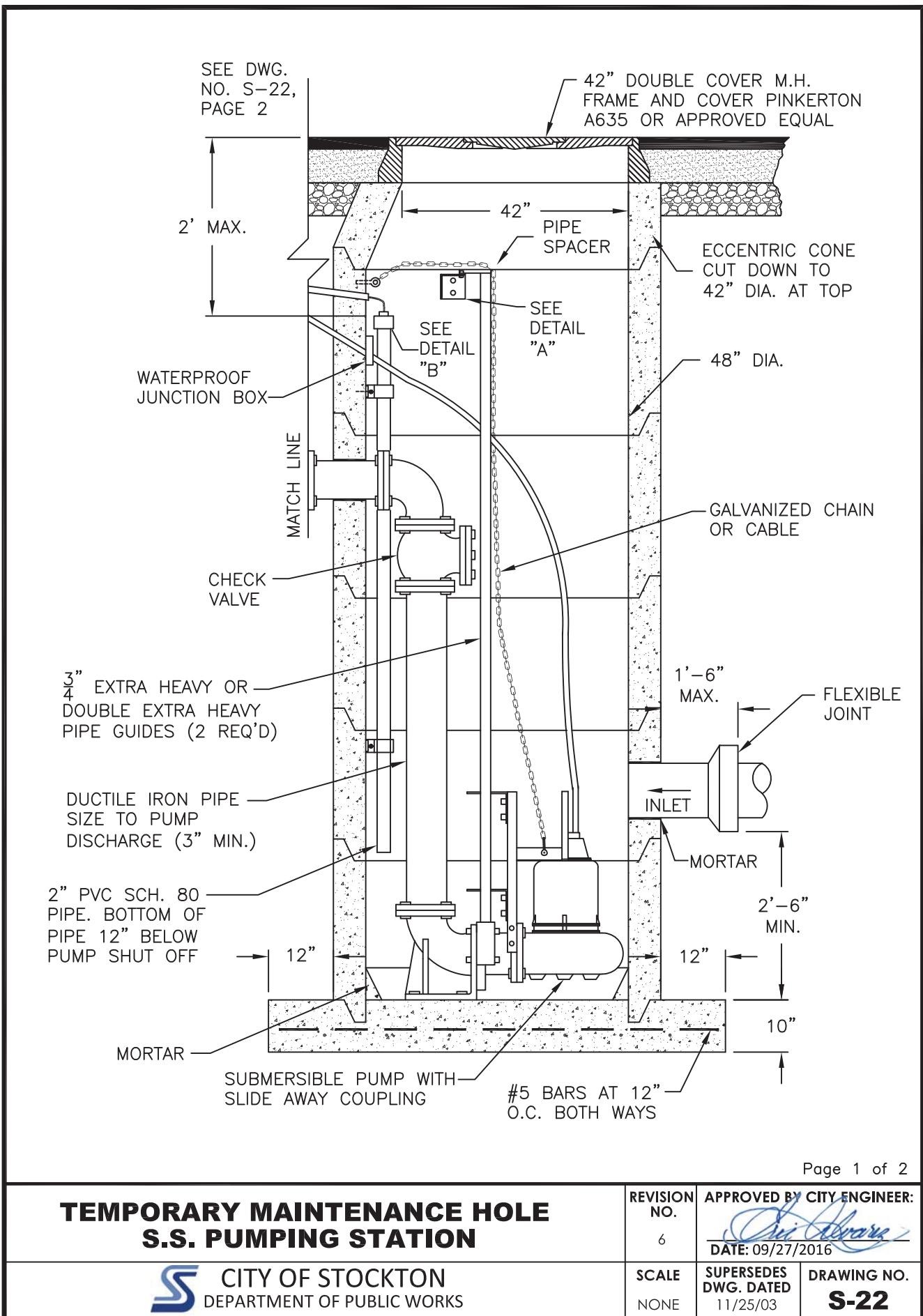


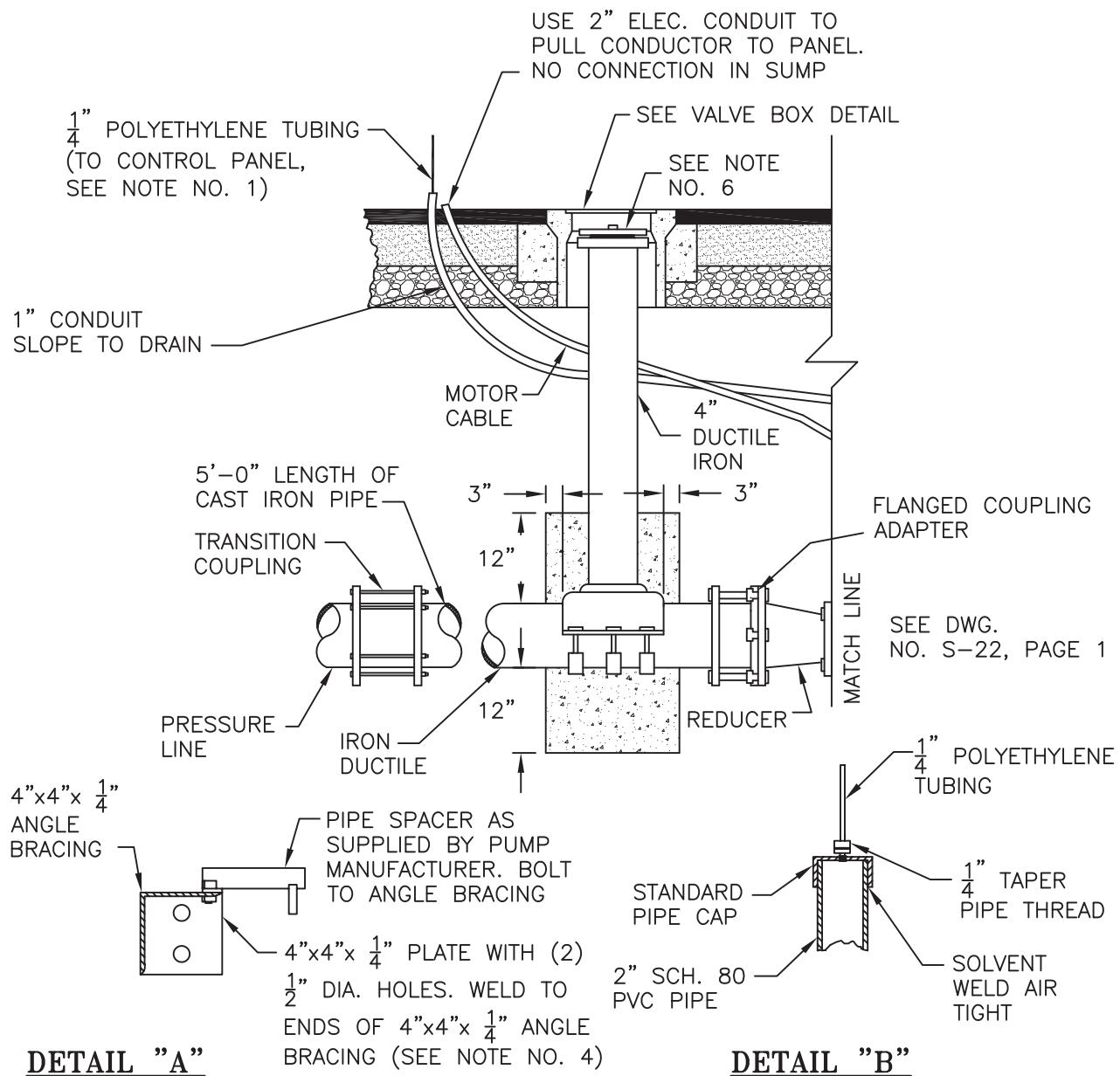
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**S-21**





DETAIL "A"

DETAIL "B"

NOTES:

1. PANEL SHALL HAVE EXTERNAL RESET, EXTERNAL LOCKABLE "ON" OR "OFF", AND KEY TYPE H-O-A IN WEATHERPROOF PANEL.
2. PUMPING STATION TO BE USED FOR TEMPORARY INSTALLATIONS ONLY WHEN APPROVED BY THE CITY ENGINEER.
3. PUMP DATA:  
3Ø 220 VOLTS HIGH HEAD SEWAGE PUMP WITH "SLIDE AWAY COUPLING" OR EQUAL.
4. CUT THE ENDS OF THE 4"x4"x 1/4" ANGLE BRACE TO FIT THE CURVATURE OF THE M.H., VERIFY IN FIELD.
5. INTERIOR OF M.H. TO BE COATED IN ACCORDANCE WITH SECTION 71-1.09A OF STANDARD SPECIFICATIONS.
6. SCREW CAP WITH 2 1/2" STANDARD FIRE HYDRANT CONNECTION.

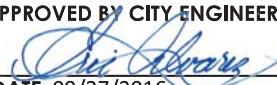
Page 2 of 2

**TEMPORARY MAINTENANCE HOLE  
S.S. PUMPING STATION**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.  
6

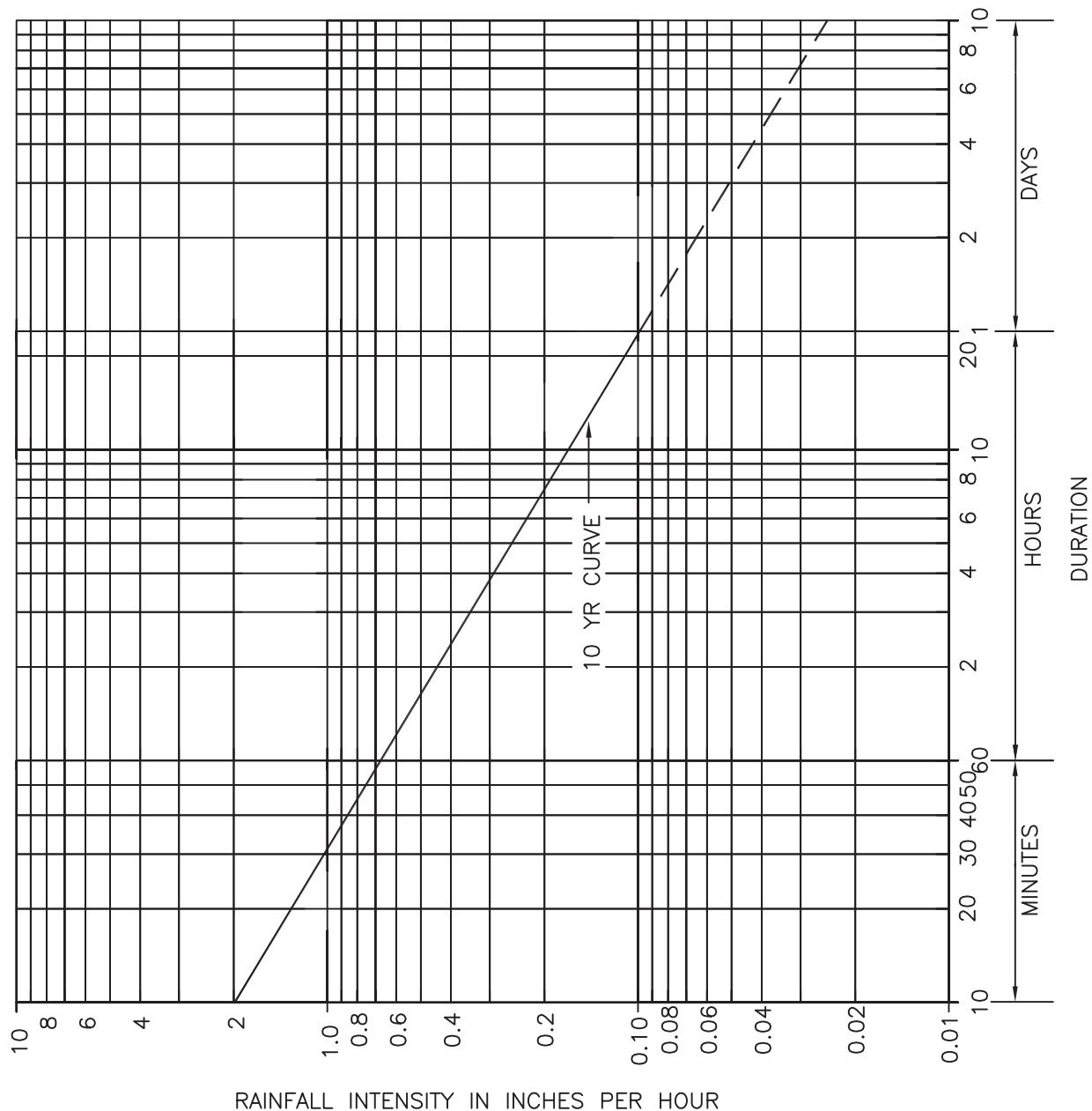
APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**S-22**

INTENSITY-DURATION-FREQUENCY CURVE (STOCKTON, CALIFORNIA)



EQUATION:  $I = (7.9659)X(D)^{(-0.604)}$

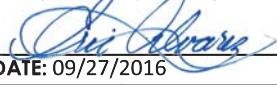
I IS IN INCHES/HOUR  
D IS IN MINUTES

**CITY OF STOCKTON  
10-YR. RAINFALL INTENSITY CURVE**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.  
3

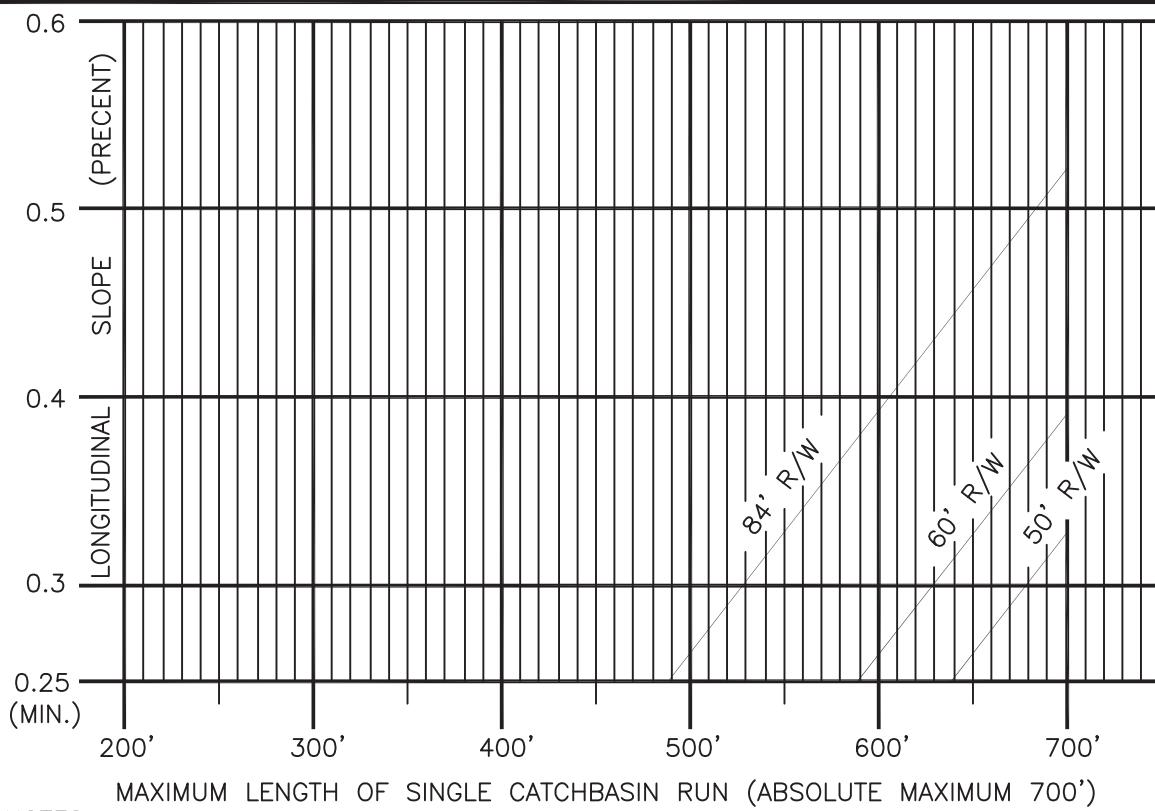
APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**D-1**





NOTES:

1. INITIAL RAINFALL INTENSITY = 1.30 IN./HR. (10-YRS. STORM)  
INITIAL TIME OF CONCENTRATION = 20 MINUTES  
RUNOFF COEFFICIENTS: PARK=15%, LOT=35%, RESIDENTIAL=35%, PARKWAY=60%, HIGH DENSITY RESIDENTIAL=65%, COMMERCIAL=75%-90%, INDUSTRIAL AND PAVED AREA=90%.
2. STORM SYSTEMS SHALL HAVE A MINIMUM DESIGN USING THE CITY OF STOCKTON 10-YEARS RAINFALL CURVE.
3. THE ABOVE FIGURES MAY BE ADJUSTED FOR THE INDIVIDUAL DEVELOPMENTS UPON PRESENTATION BY THE DEVELOPER OF A DETAILED RUNOFF ANALYSIS.
4. PIPE SLOPES AS PER STANDARD DRAWING NO. 77. MANNING "N" SHALL BE 0.011 FOR PVC AND HDPE PIPE AND SHALL BE 0.013 FOR OTHER PIPE MATERIALS.
5. MAIN STORM TRUNKS SHALL BE 12" DIAMETER MINIMUM AND HAVE 3'-0" MINIMUM OF COVER FROM SUBGRADE.
6. THE SANITARY EXTENSION MUST BE LOCATED ON-SITE WITHIN 20'-0" OF THE LOCATION WHERE A PORTABLE SUBMERSIBLE PUMP CAN BE DROPPED INTO THE LOWEST AREA OF THE WET WELL. THE END OF THIS EXTENSION SHALL BE PROVIDED WITH A 4" CAMLOCK COUPLING AND ENDCAP.
7. THE SANITARY LINE EXTENDED INTO THE PUMP STATION SHALL BE DESIGNED TO CARRY AT LEAST 600 GPM WITH THE HYDRAULIC GRADE LINE BELOW GRADE.
8. AT THE LOCATION WHERE THE SUBMERSIBLE PUMP CAN BE LOWERED INTO THE LOWEST AREA OF THE WET WELL, A 30 AMP FUSIBLE DISCONNECT SHALL BE AT THE MOTOR CONTROL CENTER (MCC) WHICH OPERATES THE LOW FLOW PUMP. THIS CONNECTION SHALL HAVE APPROPRIATELY SIZED WIRE ENCLOSED IN CONDUIT BELOW GRADE. THE WIRES SHALL BE PROPERLY TERMINATED AT THE REMOTE FUSIBLE DISCONNECT AT THE MCC, THE WIRES SHALL NOT BE TERMINATED. INSTEAD, SUFFICIENT WIRE SHALL BE COILED IN THE CONTROL CUBICLE FOR THE LOW FLOW PUMP TO ALLOW THE CITY TO DISCONNECT THE INPLACE PUMP AND CONNECT THE FUSIBLE DISCONNECT.
9. SANITARY SEWER LINE SHALL BE EXTENDED TO ALL FUTURE STORM WATER PUMP STATIONS (SEE DWG. NO. S-1).

**STORM RUNOFF DATA**

REVISION NO.  
3

APPROVED BY CITY ENGINEER:  
*D. J. Alvarez*  
DATE: 09/27/2016

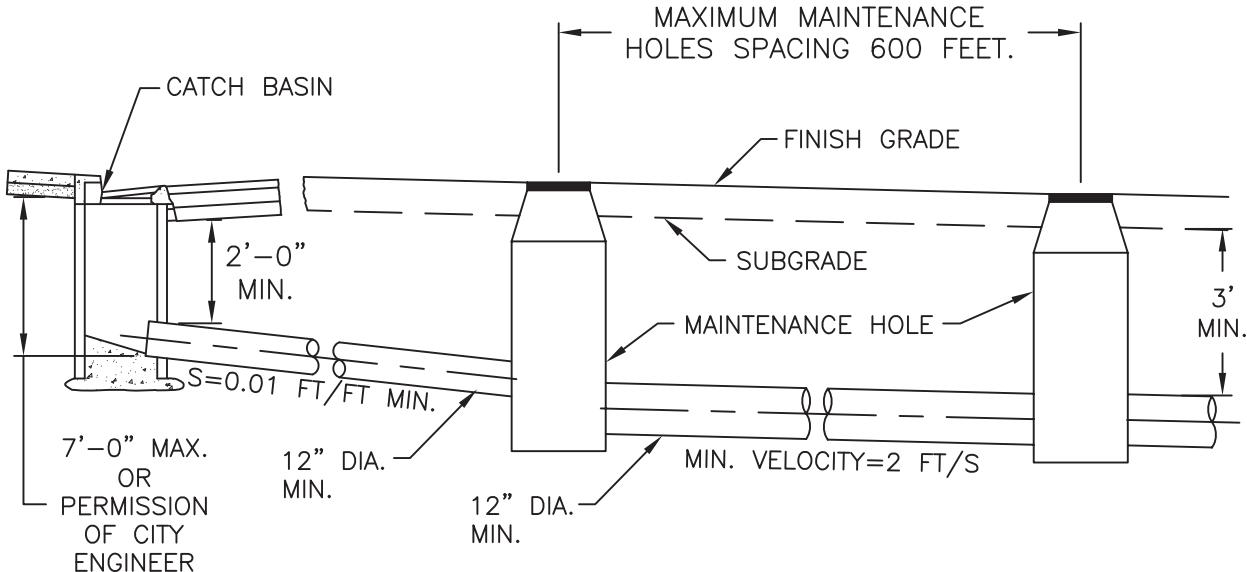


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**D-3**

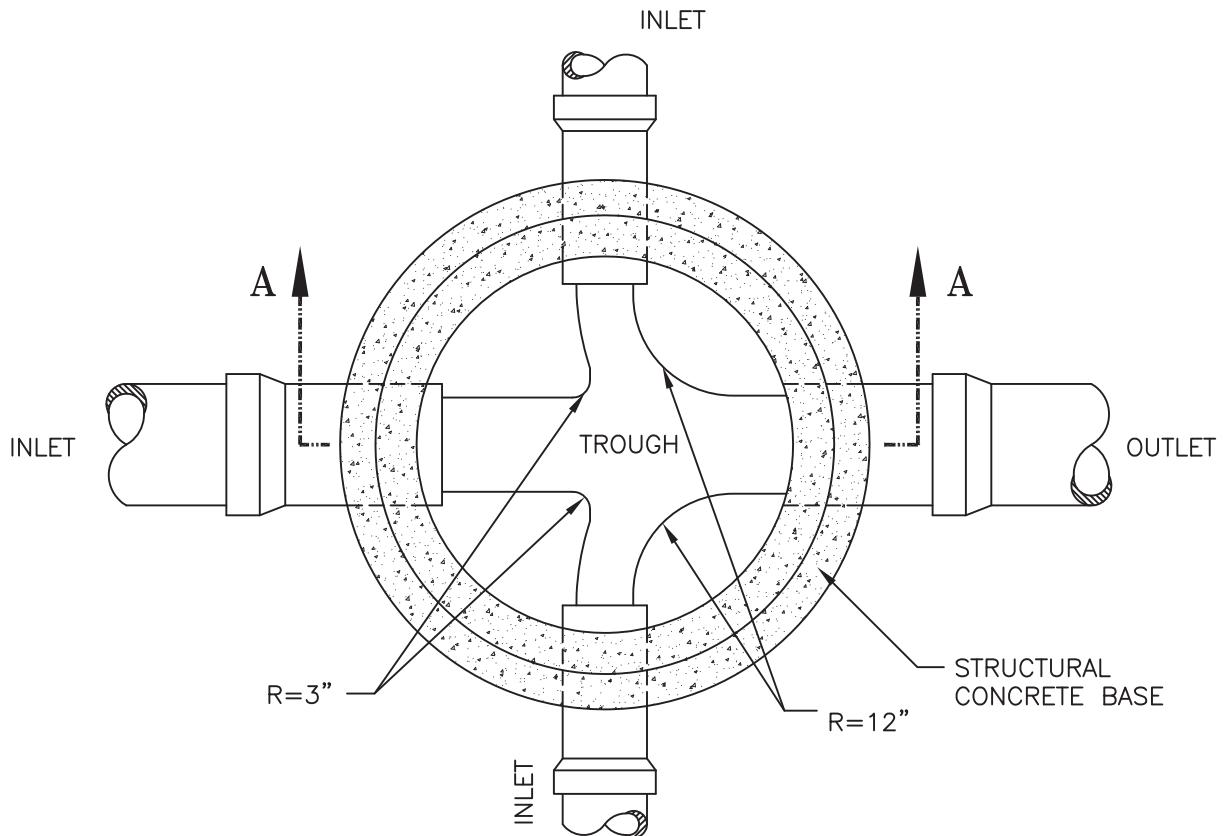


PIPE SIZE	MIN. SLOPE (N=0.013)	MIN. SLOPE (N=0.011)
12" DIA.	.0020 FT/FT	.0014 FT/FT
15" DIA.	.0015 FT/FT	.0010 FT/FT
18" DIA.	.0012 FT/FT	.0009 FT/FT
24" DIA.	.0008 FT/FT	.0006 FT/FT
30" DIA.	.0006 FT/FT	.0001 FT/FT

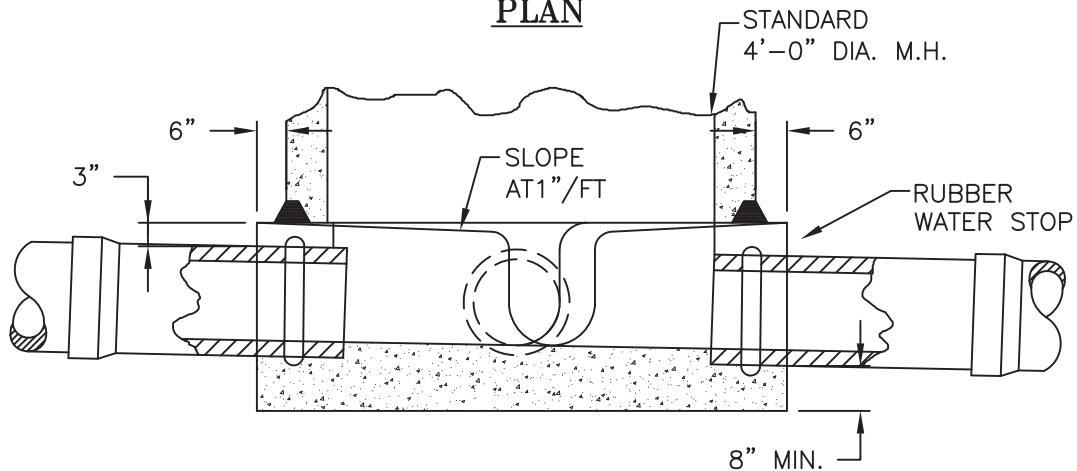
NOTES:

1. CATCH BASINS SHALL BE INSTALLED AT ALL INTERSECTIONS AND AT ENDS OF ALL CUL-DE-SACS WHERE THE SLOPE AROUND THE CUL-DE-SAC IS LESS THAN 0.0035 FT/FT. SLOPE SHALL BE A MINIMUM OF .01 FT/FT ALONG THE ARC LENGTH OF CORNERS.
2. ALL CATCH BASIN LATERALS SHALL BE CONNECTED AT MAINTENANCE HOLES AND NOT DIRECTLY INTO TRUNK LINES.
3. MAXIMUM RUNS BETWEEN CATCH BASINS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING NO. D-3.
4. ALL STORM DRAINS TO BE DESIGNED FOR GRAVITY FLOW (MATCHING OF PIPE CROWNS – NOT INVERT ELEVATIONS).
5. RUBBER GASKETED PIPE REQUIRED.
6. 12" THROUGH 36" PIPE SHALL BE CLASS III MIN. R.C.P.; OR NON-REINFORCED CONCRETE PIPE MEETING CAL-TRANS SPECIFICATIONS AND A "D" LOADING EQUIVALENT TO CLASS III R.C.P., 34" AND LARGER PIPE SHALL BE CLASS III R.C.P. ONLY.
7. FOR 12" THROUGH 15" PLASTIC PIPE, SDR 35 PVC. MEETING ASTM 3034 STANDARDS MAY BE USED.

STORM DRAIN DATA	REVISION NO. 4	APPROVED BY CITY ENGINEER: <i>D. J. Alvarez</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>D-4</b>



PLAN

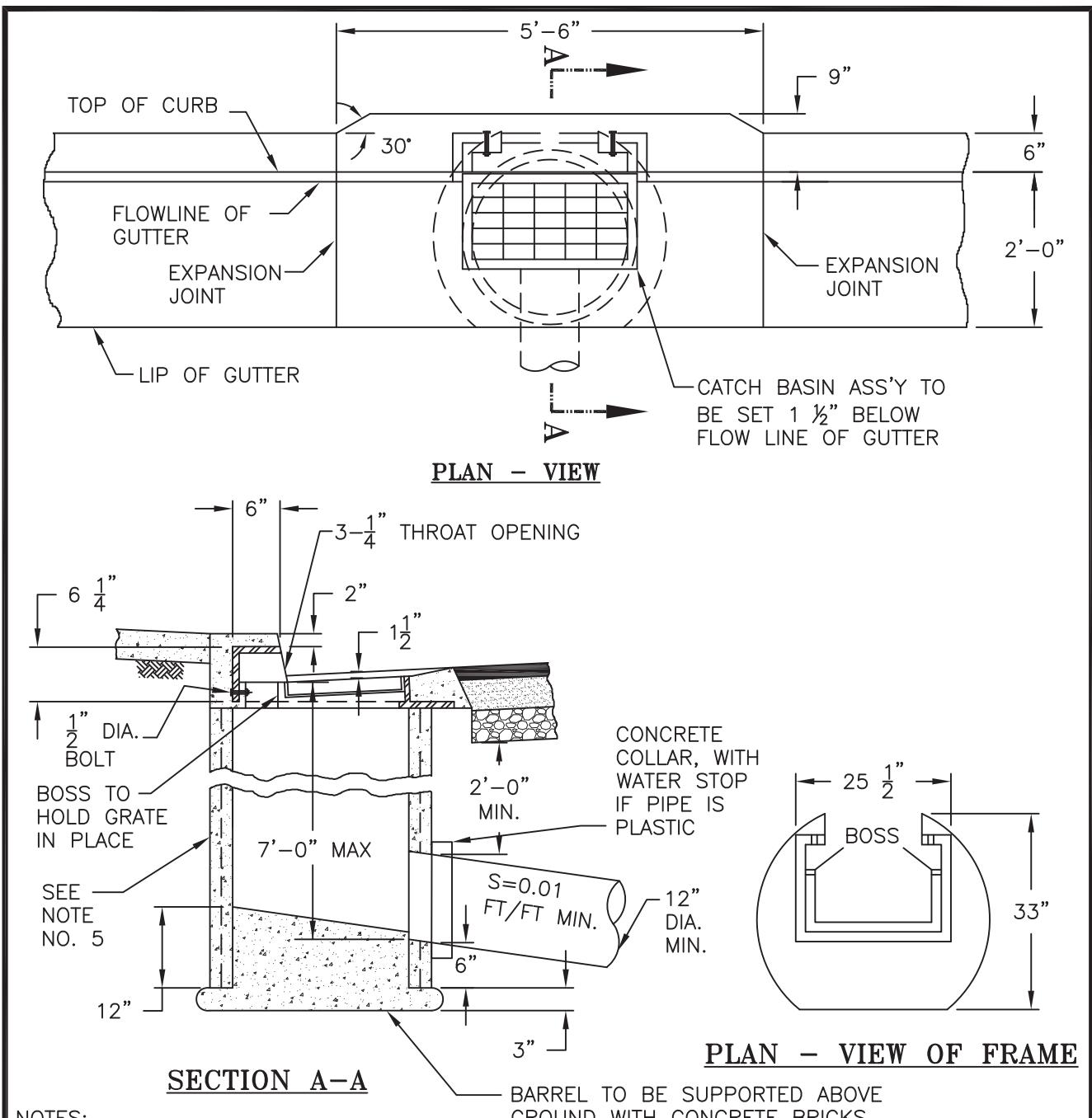


SECTION A-A

NOTES:

1. TROUGH WITHIN M.H. TO BE FULLY ACCESSIBLE.
2. INLET PIPES NOT TO EXTEND MORE THAN 3" INTO M.H.
3. OUTLET PIPE TO BE FLUSH AND ALL EDGES SMOOTH WITH M.H. WALL.
4. CONSTRUCT PIPE STUB JOINTS, 2'-0" MINIMUM TO 12'-0" MAXIMUM FOR PVC PIPE AND 2'-0" MAXIMUM FOR RIGID PIPE FROM BASE OF M.H.
5. M.H. BOTTOM SHALL BE HYDRAULICALLY SHAPED IN THE FIELD AS DIRECTED.

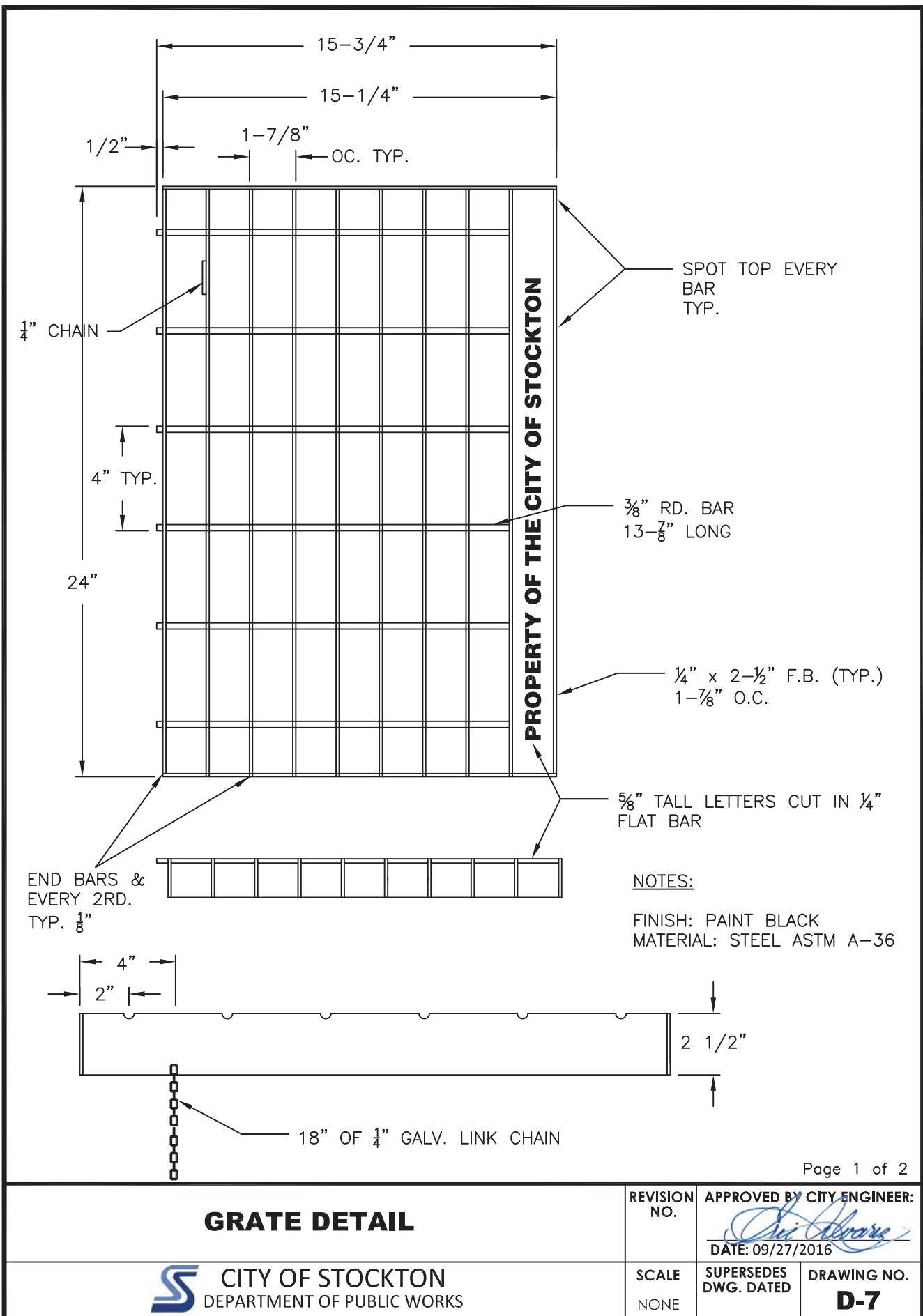
<b>TYPICAL INTERSECTION FOR TYPE 1 MAINTENANCE HOLE</b>	REVISION NO. 5	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03

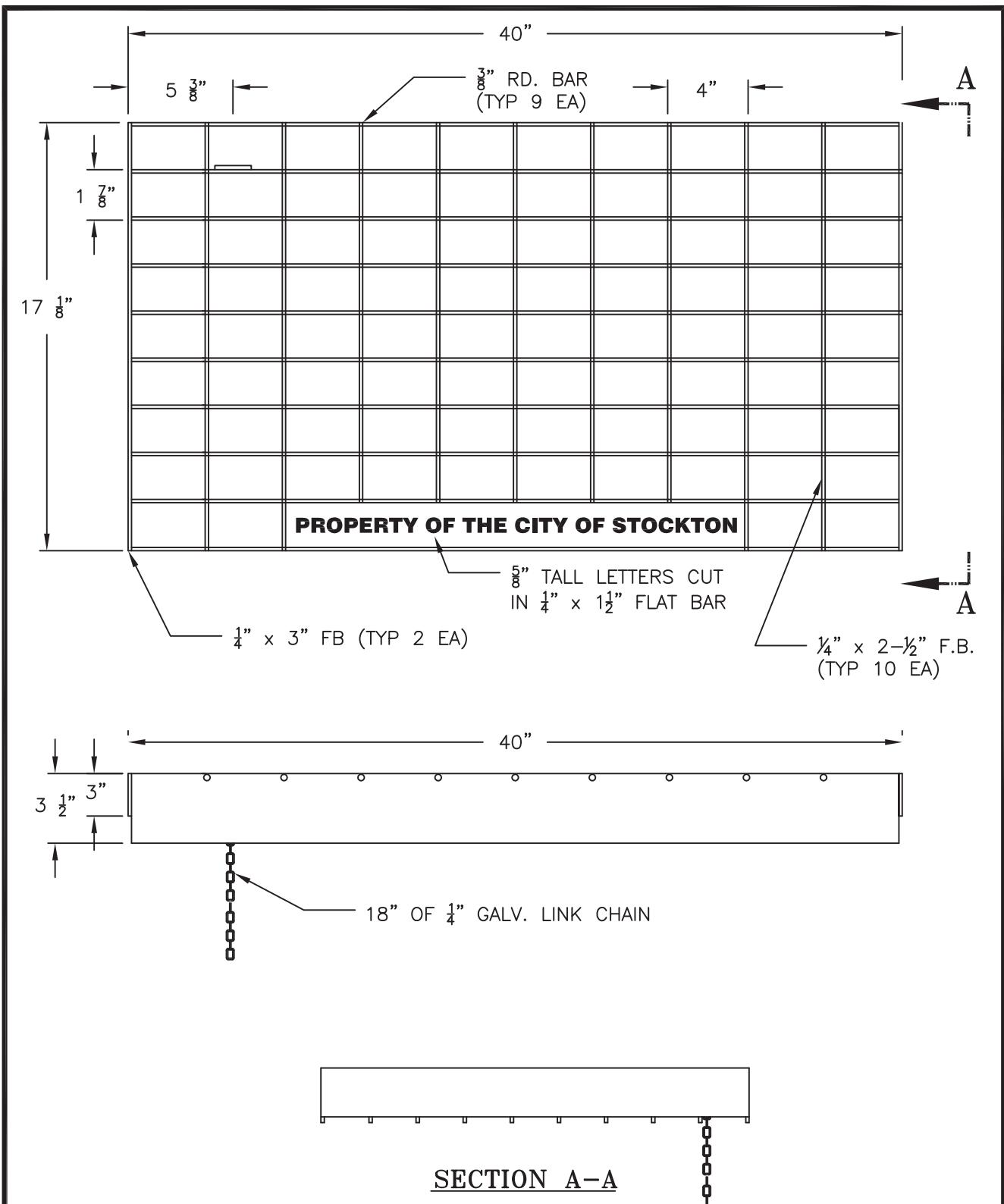


NOTES:

1. ALL EXPOSED STEEL SHALL BE COATED WITH 2 COATS OF COAL TAR PITCH HEATED TO A MINIMUM OF 180°F OR GALVANIZED.
2. GRATE, FRAME AND MODIFIED SIDE INLET SHALL CONFORM TO PINKERTON A-645 FRAME WITH EITHER A-390 RIVETED OR A-390-M FABRICATED STEEL GRATE.
3. GRATE SHALL BE CHAINED TO FRAME.
4. GRATE SHALL BE DEPRESSED 1 1/2" BELOW GUTTER PROFILE GRADE.
5. 24" DIA. PIPE BARREL SHALL BE CLASS II R.C.P., OR CLASS 2 OR 3 NON-REINFORCED CONCRETE PIPE.
6. TOP OF CURB SHALL BE STAMPED PER DWG. NO. D-10.
7. SEE DWG. NO. D-7 FOR GRATE DETAIL.

TYPE 1 CURB INLET CATCH BASIN	REVISION NO. 8	APPROVED BY CITY ENGINEER: <i>John J. Hayes</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03
	DRAWING NO.	D-6





Page 2 of 2

### GRATE DETAIL

REVISION  
NO.

APPROVED BY CITY ENGINEER:

*[Signature]*  
DATE: 09/27/2016

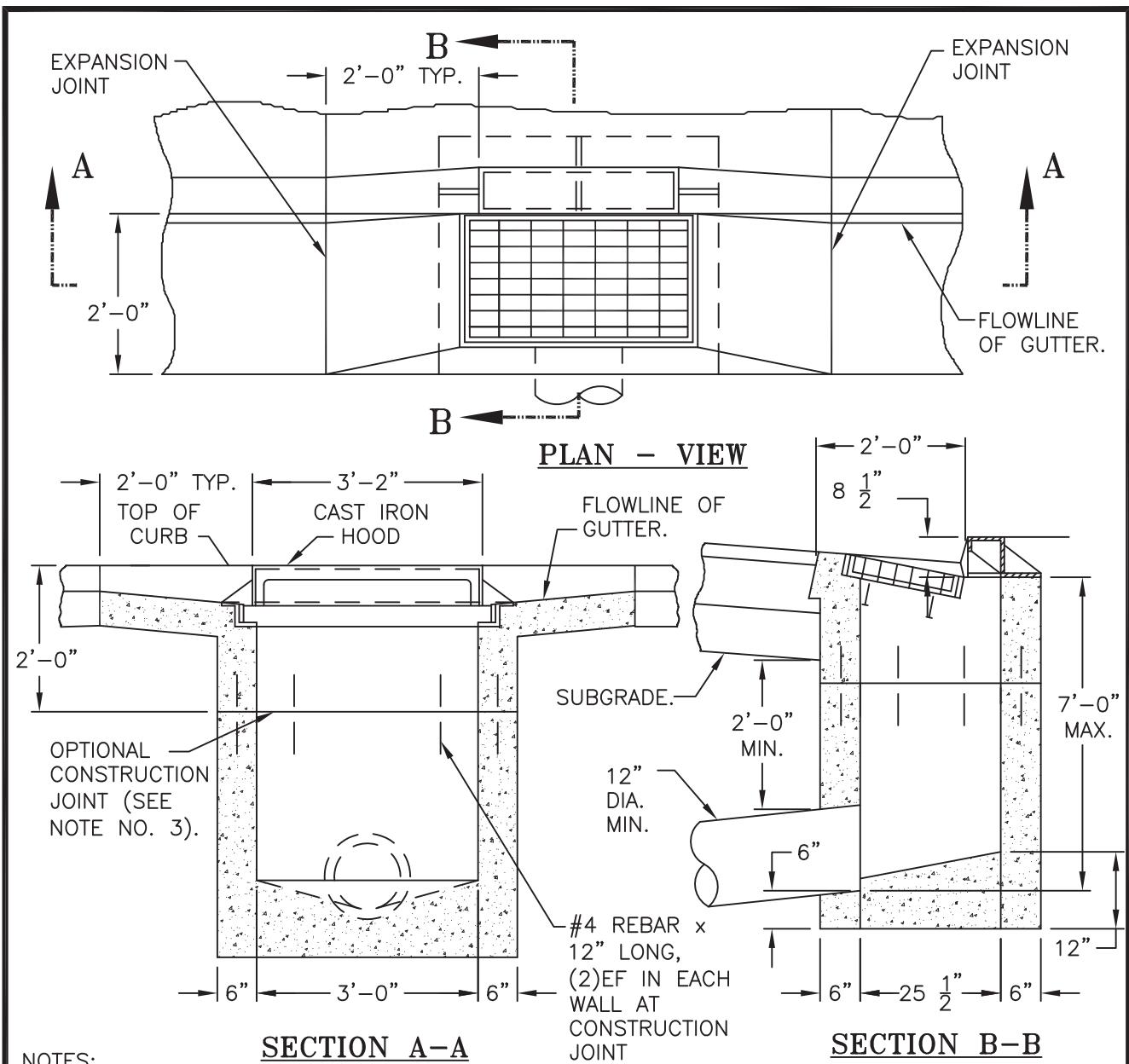


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED

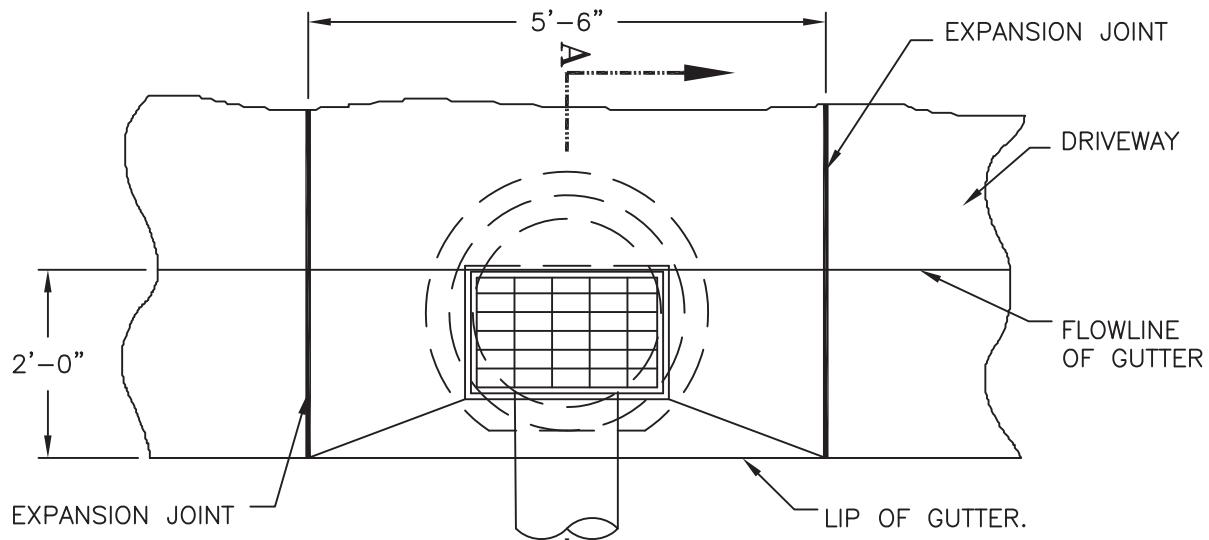
DRAWING NO.  
**D-7**



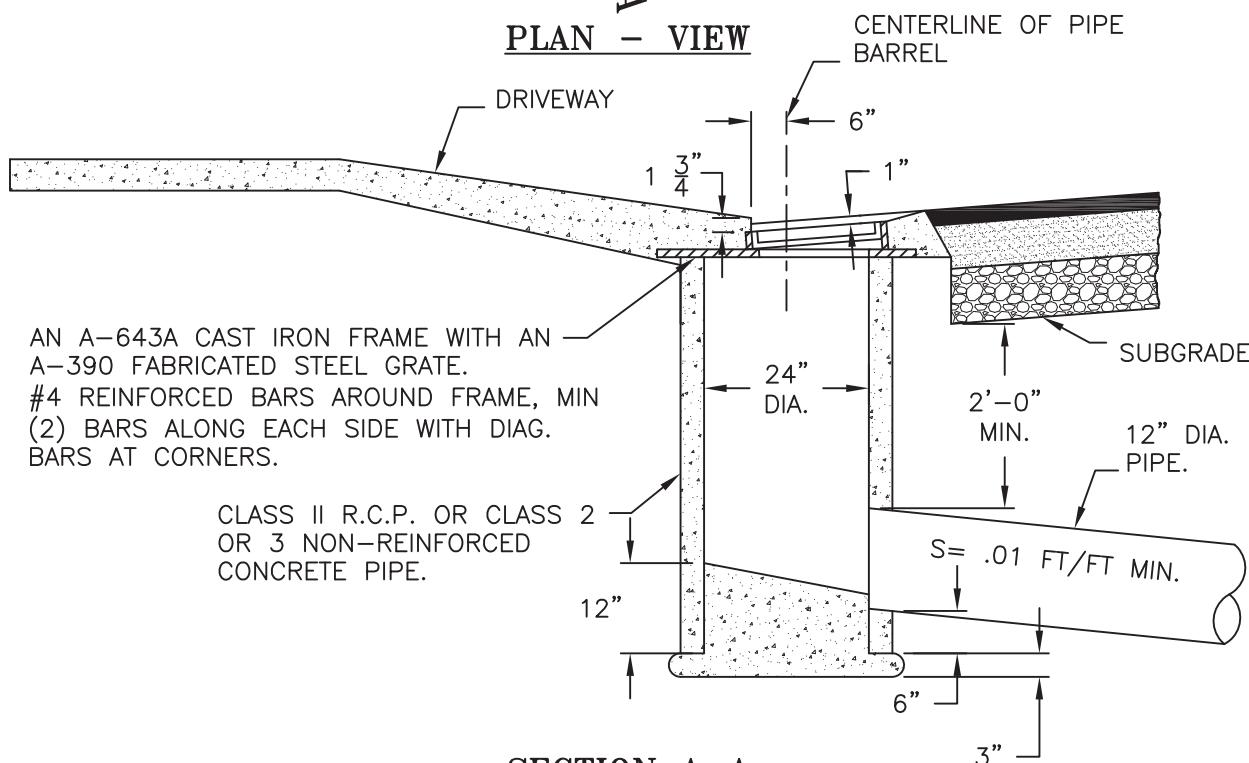
NOTES:

- HOOD SHALL BE CAST IRON AND BE EQUAL TO AN A-285. FRAME AND GRATE SHALL BE EQUAL TO AN A-553 WITH CHAIN AND BLACK FINISH.
- PRECAST CONCRETE CATCH BASIN MAY BE USED WITH THE WRITTEN APPROVAL OF THE CITY ENGINEER.
- CATCH BASIN WALLS MAY BE POURED TO AN ELEVATION NOT LESS THAN 2'-0" BELOW TOP OF CURB. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FRAME IN AND POUR THE UPPER 2'-0" OF THE CATCH BASIN MONOLITHICALLY WITH THE CURB AND GUTTER.
- ALL EXPOSED STEEL SHALL BE COATED WITH 2 COATS OF COAL TAR PITCH HEATED TO A MINIMUM OF 180°F OR GALVANIZED.
- THIS CATCH BASIN TO BE INSTALLED IN INDUSTRIAL AND COMMERCIAL AREAS AS DIRECTED BY THE CITY ENGINEER.
- TOP OF CURB SHALL BE STAMPED PER DWG. NO. D-10.
- SEE DWG. NO. D-7 FOR GRATE DETAILS.

TYPE 2 CURB INLET CATCH BASIN	REVISION NO. 4	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON</b> DEPARTMENT OF PUBLIC WORKS	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>D-8</b>
<b>S</b>	SCALE NONE	



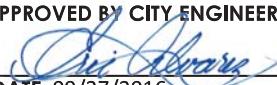
PLAN - VIEW



SECTION A-A

NOTES:

1. TO BE USED IN RESIDENTIAL AREAS ONLY.
2. ALL EXPOSED STEEL SHALL BE COATED WITH 2 COATS OF COAL TAR PITCH HEATED TO A MINIMUM OF 180°F OR GALVANIZED.
3. CHAIN GRATE TO FRAME.
4. GRATE SHALL BE DEPRESSED 1" BELOW GUTTER PROFILE GRADE.
5. TOP OF CURB SHALL BE STAMPED PER DWG. NO. D-10.
6. SEE DWG D-7 FOR GRATE DETAIL.

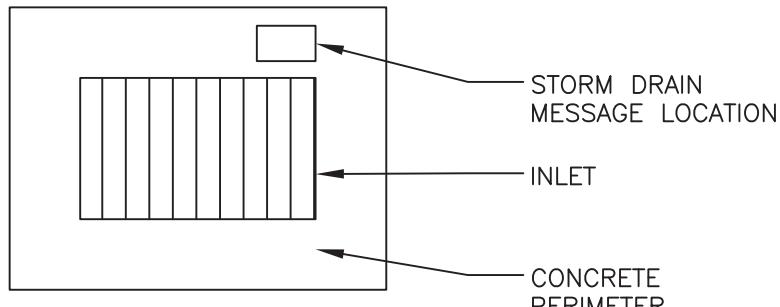
DRIVeway CATCH BASIN	REVISION NO.	APPROVED BY CITY ENGINEER:
	3	 DATE: 09/27/2016
SCALE	SUPERSEDES DWG. DATED	DRAWING NO.
NONE	01/09/02	<b>D-9</b>



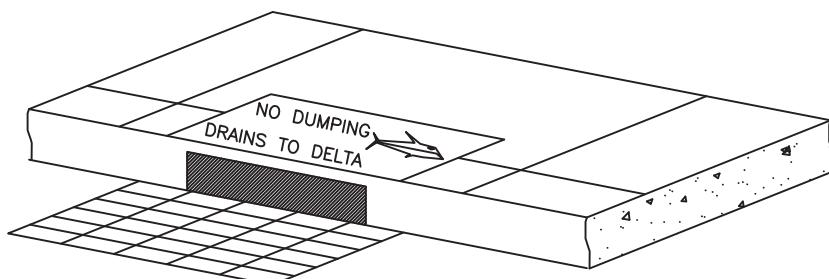
CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

NOTES:

1. STORM DRAIN MESSAGE MARKERS OR SIGNS, INCLUDING A MESSAGE AND FISH SYMBOL, ARE REQUIRED AT ALL DRAIN INLETS.
2. THE STORM DRAIN MESSAGE SHALL BE PLACED ADJACENT TO THE INLET AS SHOWN IN THE FIGURES. DRIVEWAY CATCH BASINS SHALL HAVE MESSAGE IN DRIVEWAY ADJACENT TO THE INLET.
3. LETTERS SHALL BE 12" IN HEIGHT. OUTSIDE DIMENSION OF BACKGROUND SHALL FIT THE BACK OF INLET OR BE PLACED IN SIDEWALK IMMEDIATELY BEHIND INLET, 8" BY 24" MINIMUM. LETTERING AND GRAPHIC SHALL BE BLACK WITH GRAY BACKGROUND UNLESS APPROVED BY CITY ENGINEER.
4. THE STORM DRAIN MESSAGE SHALL PROVIDE A CLEAR, LEGIBLE, AND PERMANENT IMAGE. FOR NEW DEVELOPMENTS, THE MESSAGE SHALL BE PLACED WITH THE USE OF BOMANITE STAMPED INTO THE CONCRETE, OR AS APPROVED BY THE CITY ENGINEER. FOR REDEVELOPMENT, THE MESSAGE SHALL BE PLACED WITH THE USE OF STAINLESS STEEL ALMATEK DRAIN MARKERS.
5. PAINTING SHALL NOT BE ALLOWED FOR EITHER NEW DEVELOPMENT OR REDEVELOPMENT. PAINTING SHALL ONLY BE ALLOWED IN EXISTING AREAS AS A PART OF COMMUNITY AWARENESS ACTIVITIES.
6. THE STORM DRAIN MESSAGE SHALL BE APPLIED DURING THE CONSTRUCTION OF THE STORM DRAIN INLET.
7. ALL DEVELOPMENT PLANS SHALL IDENTIFY ALL STORM DRAIN INLET LOCATIONS ON THE DEVELOPMENT SITE MAP.
8. CONTRACTORS SHALL CONTACT THE CITY STORMWATER STAFF AT THE MUNICIPAL UTILITIES DEPARTMENT TO DETERMINE SPECIFIC, UPDATED REQUIREMENTS FOR STORM DRAIN MESSAGES.
9. DESIGN GUIDANCE: STORM WATER QUALITY CONTROL CRITERIA PLAN PER MUNICIPAL UTILITIES DEPARTMENT.

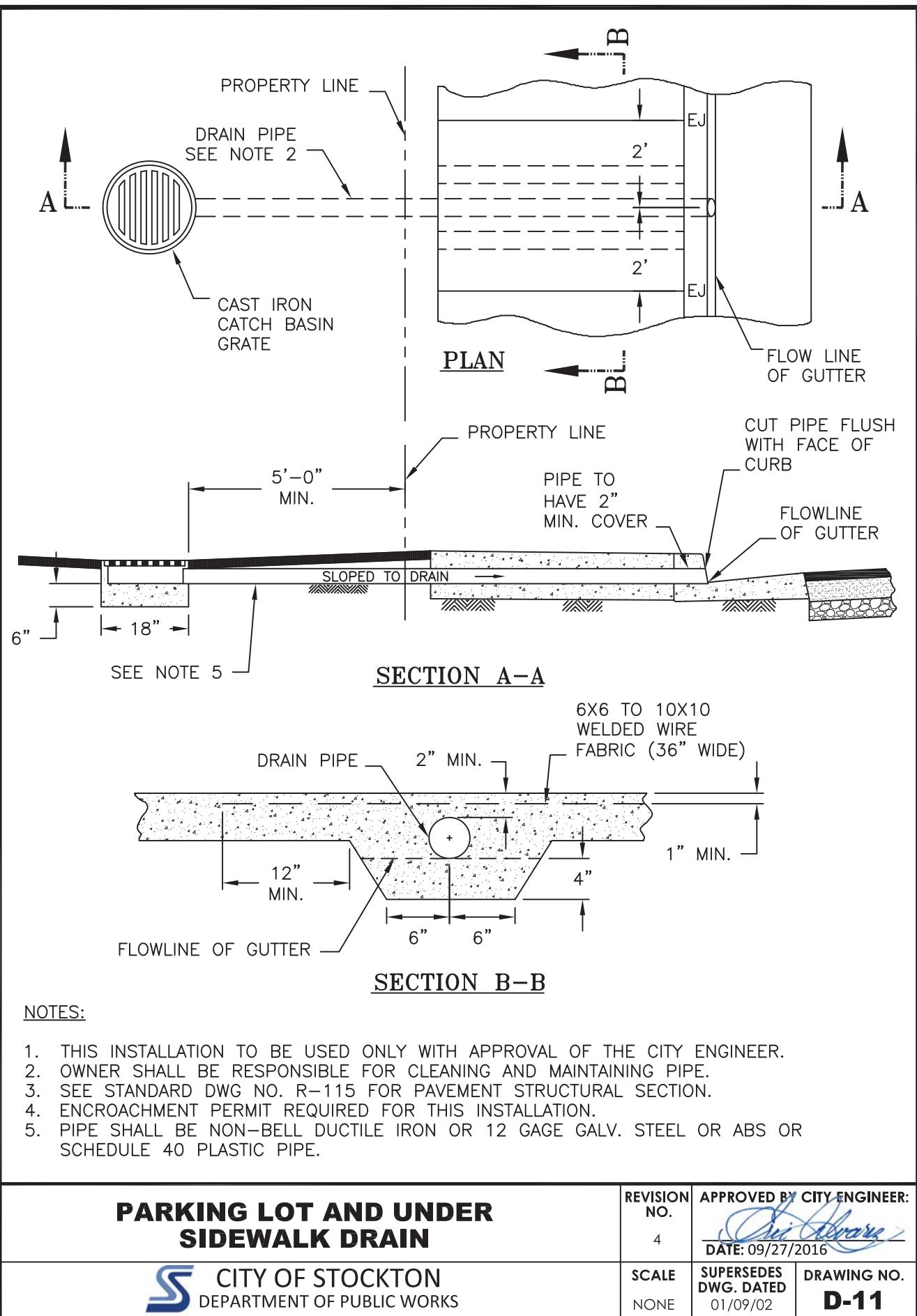


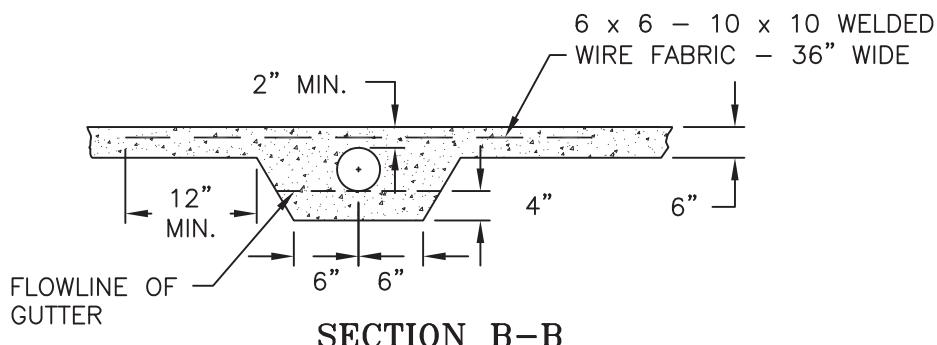
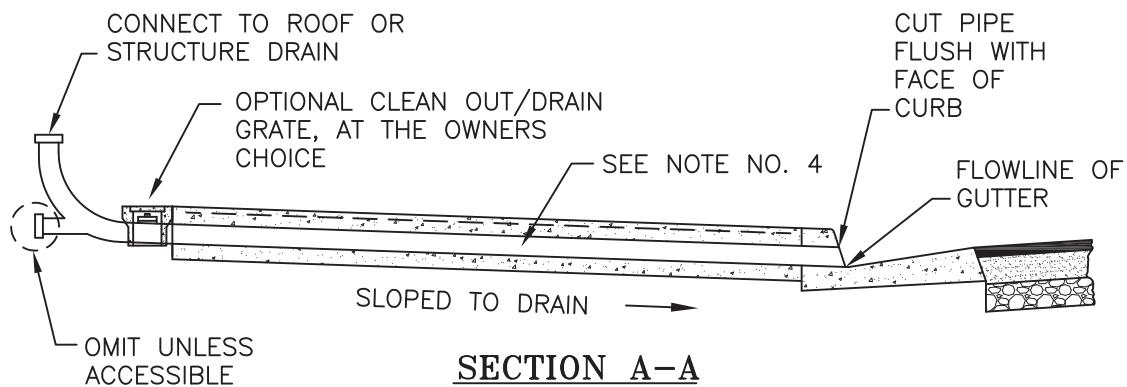
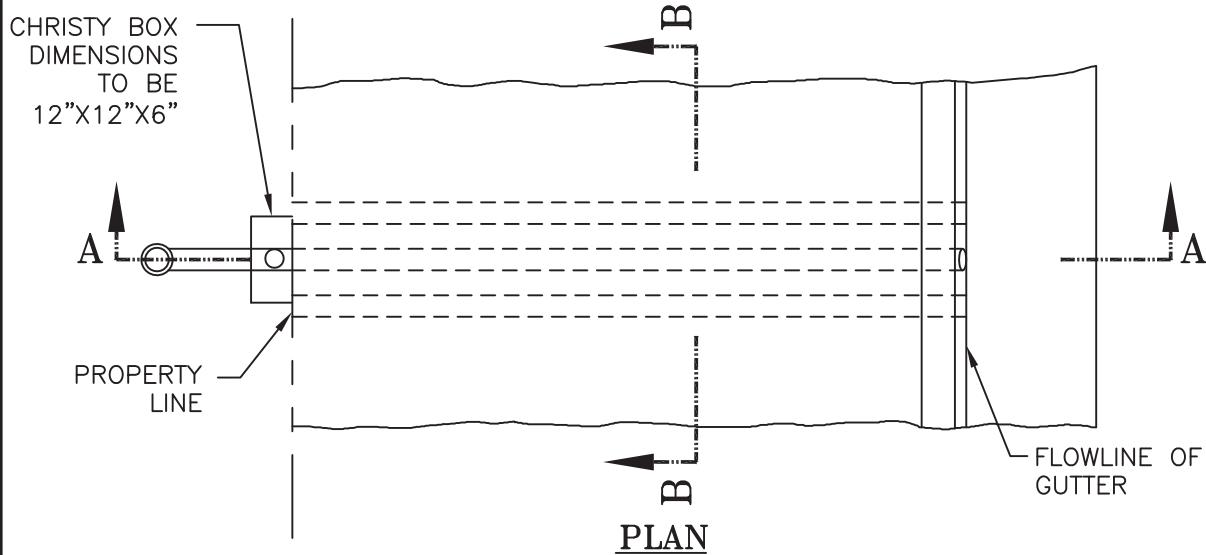
AREA TYPE (PARKING LOT) INLET



CURB TYPE INLET

STORM DRAIN MESSAGE AND LOCATION	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
S CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED
	DRAWING NO. <b>D-10</b>	





#### NOTES:

1. THIS INSTALLATION TO BE USED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
2. OWNER SHALL BE RESPONSIBLE FOR MAINTAINING AND CLEANING PIPE.
3. ENCROACHMENT PERMIT REQUIRED FOR THIS INSTALLATION.
4. PIPE SHALL BE NON-BELL DUCTILE IRON OR 12 GAGE GALV. STEEL OR ABS OR SCHEDULE 40 PLASTIC PIPE.

## UNDER SIDEWALK DRAIN FOR ROOF DRAINS



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

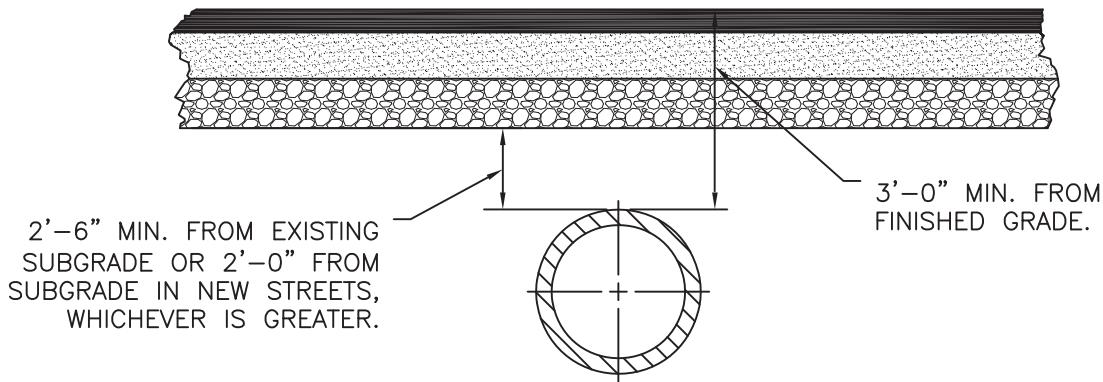
REVISION NO.  
4

APPROVED BY CITY ENGINEER:  
*Don Alvarez*  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

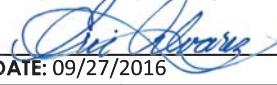
DRAWING NO.  
**D-12**



NOTES:

1. 6" MIN. PIPE SIZE IS ACCEPTABLE ONLY IN RESIDENTIAL CUL-DE-SACS LESS THAN 400 FEET IN LENGTH AND WITHOUT FIRE HYDRANTS. CUL-DE-SACS GREATER THAN 400'-0" SHALL REQUIRE A MINIMUM 8" DIAMETER PIPE SIZE.  
8" MIN. PIPE SIZE IS REQUIRED IN ALL OTHER AREAS.
2. ALL WATER DISTRIBUTION SYSTEMS SHALL BE LOOPED IN ALL AREAS EXCEPT CUL-DE-SACS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. A NON-LOOSED WATER DISTRIBUTION SYSTEM MAY SERVE A MAXIMUM OF 25 RESIDENTIAL LOTS.
3. 10" AND 14" PIPES SHALL NOT BE ALLOWED. IF DESIGN CALCULATIONS RESULT IN DESIGNS USING 10" AND 14" PIPES, THEN 12" AND 16" PIPES, RESPECTIVELY, MUST BE USED.
4. 12" MIN. MAINS REQUIRED WHEN DISTANCE BETWEEN INTERCONNECTED LINES EXCEEDS 600'-0".
5. FIRE HYDRANT LOCATION AND PLACEMENT SHALL BE AT THE DIRECTION OF THE CITY OF STOCKTON FIRE DEPARTMENT.
6. AT ANY INTERCONNECTION OF THREE OR MORE PIPES, THE NUMBER OF VALVES REQUIRED SHALL EQUAL THE TOTAL NUMBER OF PIPES MINUS ONE.
7. VALVE SPACING ON TRANSMISSION LINES SHALL BE DETERMINED BY THE CITY ENGINEER. VALVES ON ALL OTHER LINES SHALL BE LOCATED SUCH THAT NO MORE THAN 600'-0" OF WATER LINE WILL BE SHUT DOWN AT ANY ONE TIME AND WILL NOT REQUIRE THE SHUT DOWN OF A PIPE SIZE 16" OR GREATER.
8. ALL WATER LINES, VALVES AND OTHER APPURTENANCES SHALL CONFORM TO A.W.W.A. AND CITY OF STOCKTON STANDARD SPECIFICATIONS AND DRAWINGS.

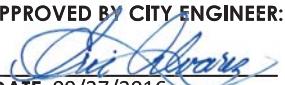
Page 1 of 2

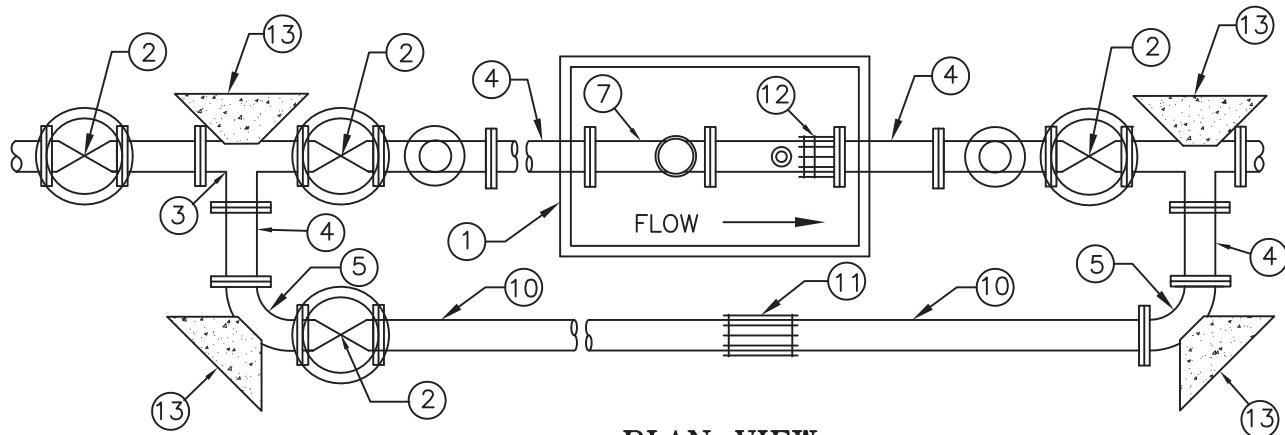
WATER DESIGN DATA	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. W-1

NOTES CONTINUED:

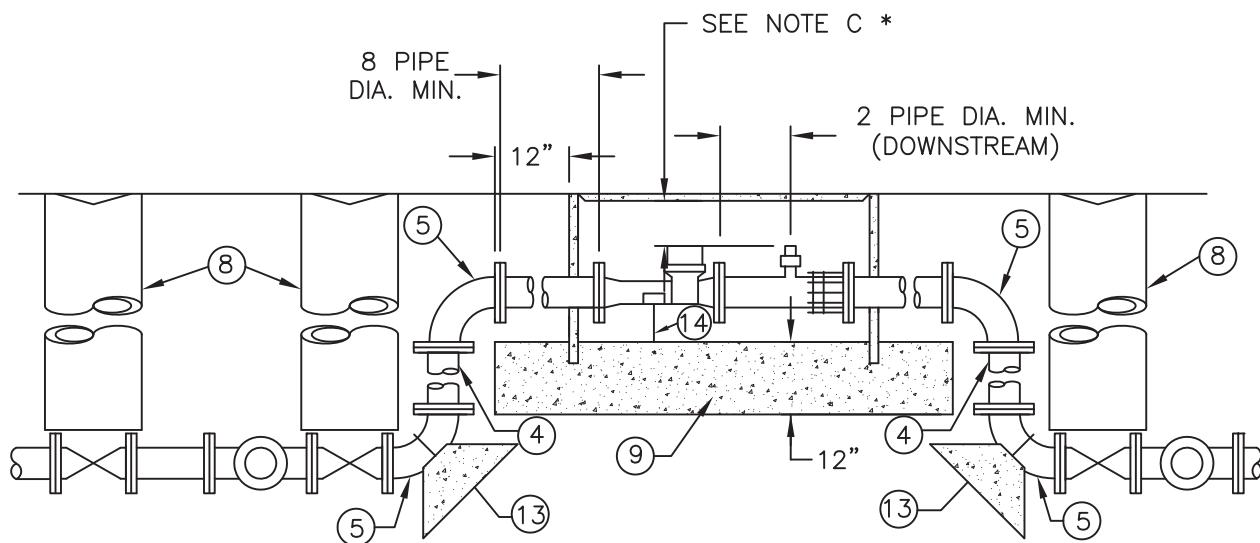
9. CONTRACTOR SHALL CALL CITY AND/OR PRIVATE WATER COMPANY IF ANY LINES ARE BROKEN. NO WATER VALVES SHALL BE SHUT OFF BY ANYONE UNLESS SO DIRECTED BY AN AUTHORIZED REPRESENTATIVE OF THE WATER COMPANY CONCERNED.
10. REFER TO THE RULES AND POLICIES OF THE OPERATING COMPANY OR CITY FOR METER CONNECTION.
11. MINIMUM CLEARANCE OF 4'-6" FROM THE GRADE AT BACK OF SIDEWALK TO WATER SERVICE. SEE DRAWING NO. W-3.
12. WATER LINE ELEVATIONS TO BE SHOWN ON ALL PLAN AND PROFILE SHEETS.
13. WATER SYSTEM DESIGN SHALL CONFORM TO STATE HEALTH CODES. SEE STD. DWG NO. S-4.
14. SERVICE TAPS SHALL NOT BE PERMITTED ON PIPE SIZES 16" AND GREATER.
15. SUBDIVISION WATER SYSTEMS SHALL BE DESIGNED USING AN ENGINEERING ANALYSIS THAT DEMONSTRATES:
  - A. FOR ULTIMATE DEVELOPMENT OF THE SUBDIVISION, WITH A GIVEN SYSTEM PRESSURE OF 45 PSI AT THE POINT OF CONNECTION TO THE CITY WATER SYSTEM AND NO WELLS ON WITHIN THE SUBDIVISION, THE WATER SYSTEM IMPROVEMENTS SHALL PROVIDE AT LEAST 40 PSI PRESSURE AT ANY LOCATION DURING THE PERIOD OF PEAK HOUR DEMAND.
  - B. FOR ULTIMATE BUILDOUT OF THE SUBDIVISION, WITH A GIVEN SYSTEM PRESSURE OF 45 PSI AT THE POINT OF CONNECTION TO THE CITY WATER SYSTEM AND NO WELLS ON WITHIN THE DEVELOPMENT, THE WATER SYSTEM IMPROVEMENTS SHALL PROVIDE AT LEAST 20 PSI PRESSURE AT ANY LOCATION DURING THE PERIOD OF MAXIMUM DAY DEMAND COMBINED WITH A FIRE FLOW OF 2000 GPM AT ANY LOCATION IN THE SUBDIVISION.
  - C. FOR ANY PERIOD OF TIME DURING THE INTERIM PHASES OF DEVELOPMENT OF THE SUBDIVISION, WITH A GIVEN SYSTEM PRESSURE OF 45 PSI AT THE POINT OF CONNECTION TO THE CITY WATER SYSTEM AND NO WELLS ACTIVE WITHIN THE DEVELOPMENT, THE WATER SYSTEM IMPROVEMENTS SHALL PROVIDE AT LEAST 20 PSI PRESSURE AT ANY LOCATION DURING THE PERIOD OF MAXIMUM DAY DEMAND COMBINED WITH ONE FIRE FLOW OF 1500 GPM OUT OF ANY FIRE HYDRANT IN THE RESIDENTIAL SUBDIVISION.
  - D. USE A HAZEN-WILLIAMS COEFFICIENT OF 110
16. DEPTH OF PIPE SHALL BE 3'-0" MIN. FROM FINISHED GRADE, 2'-6" MIN. FROM EXISTING SUBGRADE, OR 2'-0" FROM SUBGRADE IN NEW STREETS WHICHEVER IS GREATER.
17. ALL COMMERCIAL/INDUSTRIAL DESIGN DATA TO BE PROVIDED BY MUNICIPAL UTILITIES DEPARTMENT DIRECTOR.

Page 2 of 2

<b>WATER DESIGN DATA</b>	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016	
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>W-1</b>



PLAN VIEW



PROFILE VIEW

\* FOR COMPONENTS AND NOTES, SEE DWG. NO. W-2, PAGE 2.

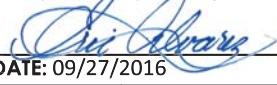
Page 1 of 2

**LAYOUT FOR 3" OR LARGER METER BYPASS INSTALLATION**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.  
6

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**W-2**

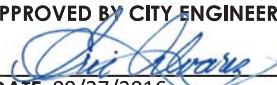
COMPONENTS:

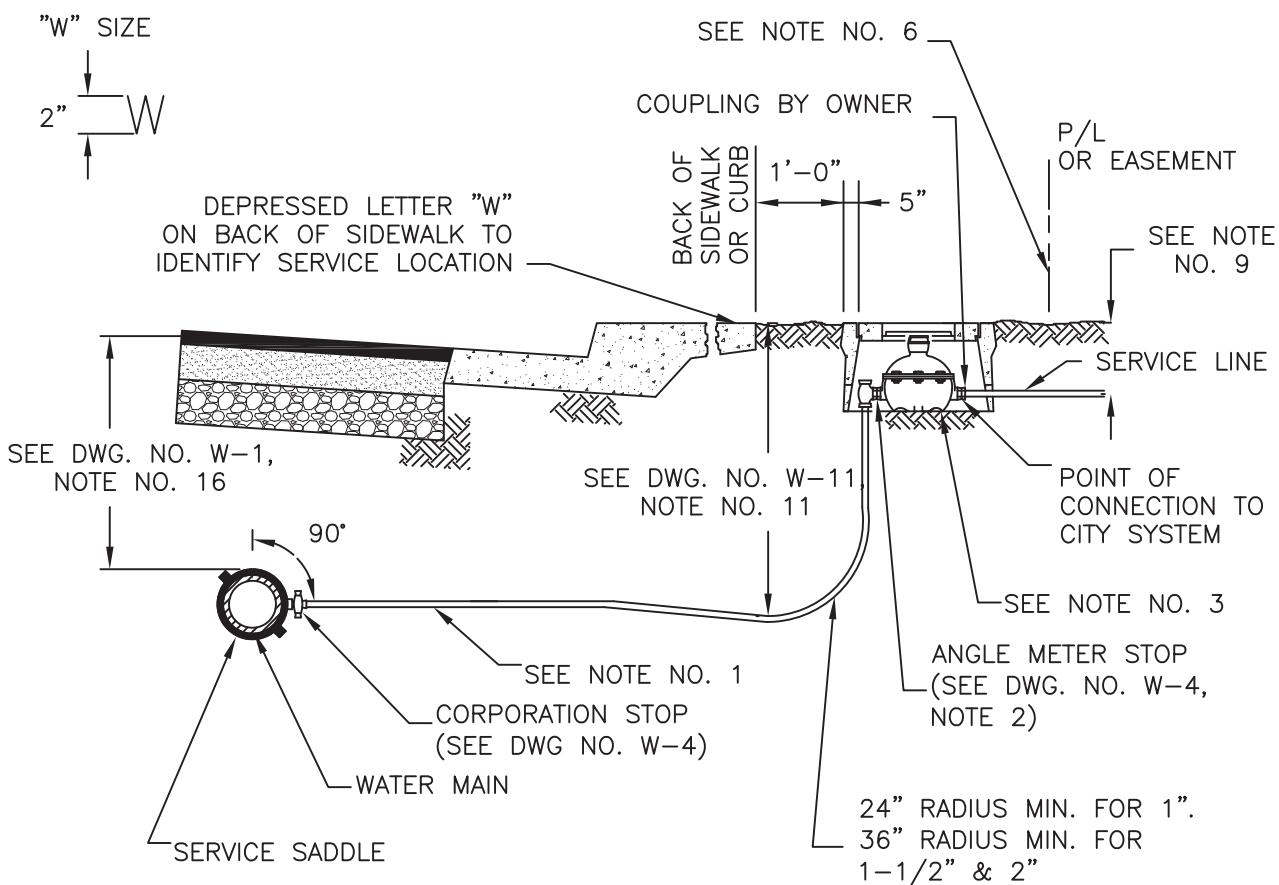
1. SIZE OF METER VAULT SHALL BE DETERMINED BY METER SIZE. VAULT COVERS SHALL BE 2 OR 3 PIECE METAL WITH CUT-IN 1 $\frac{3}{4}$ " DIAMETER HOLE RIGHT OR LEFT CORNER.
2. VALVE - SEE STANDARD SPECIFICATION 78-1.02D
3. CLASS 125 DUCTILE IRON PIPE TEE.
4. CLASS 125 DUCTILE IRON PIPE SPOOL.
5. CLASS 125 DUCTILE IRON PIPE 90° LONG RADIUS ELBOW.
6. ---
7. METER AS SPECIFIED BY CITY WATER DIVISION.
8. CHRISTY G-8 VALVE BOX OR BROOKS NO. 1-RT VALVE BOX. BOTH WITH DUCTILE IRON PIPE COVERS. SEE DWG. NO. W-11.
9. GRAVEL BASE. 12" MIN. DEPTH.
10. FLANGED BY PLAIN END CAST IRON PIPE. SEE STANDARD SPECIFICATION NO. 78-1.02B.
11. FLEX COUPLING - ROCKWELL 411 STEEL COUPLING OR EQUAL.
12. FLANGED COUPLING ADAPTER - ROCKWELL 912 OR EQUAL.
13. THRUST BLOCKS - SEE STANDARD SPECIFICATION 78-1.02H AND DWG. NO. W-12.
14. METER AND PIPE SUPPORTS AS REQUIRED.

NOTES:

- A. DETAILED DESIGN WILL BE REQUIRED AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
- B. BYPASS ASSEMBLY INSTALLATION SHALL BE EVALUATED ON AN INDIVIDUAL BASIS AND SHALL ONLY BE ALLOWED WITH APPROVAL BY MUNICIPAL UTILITIES DEPARTMENT.
- C. DIMENSION SHALL VARY FROM 12" TO 24" DEPENDING ON METER AND SERVICE SIZE.
- D. BYPASS IS NOT REQUIRED FOR IRRIGATION.

Page 2 of 2

LAYOUT FOR 3" OR LARGER METER BYPASS INSTALLATION	REVISION NO.	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
S CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	5	
	NONE	DRAWING NO. <b>W-2</b>



**TYPICAL WATER SERVICE INSTALLATION  
FOR CITY WATER SERVICE AREAS ONLY**

NOTES:

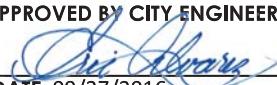
1. 1" IPS DIA. MINIMUM LINE TO EACH LOT. 1.5" AND 2" SERVICE LINES TO BE CTS SIZE ACCORDINGLY. PLASTIC SERVICE PIPE TO BE CONTINUOUS WITH NO SPLICING ALLOWED.
2. SEE DWG. NO. W-4 FOR FITTINGS AND BOX ASSEMBLY.
3. METERS SHALL BE FURNISHED AND INSTALLED BY CITY OF STOCKTON.
4. SERVICE CONNECTION AT THE METER SHALL BE A DEPTH OF 8" MIN. TO 12" MAX.
5. THE LOCATION OF THE TAP SHALL BE A MIN. OF 24" FROM ANOTHER TAP, BELL, SPIGOT, OR OTHER FITTING.
6. METER BOX MAY BE PLACED ADJACENT TO PROPERTY OR EASEMENT LINE WITH PRIOR APPROVAL OF THE CITY ENGINEER.
7. USE CHRISTY B-12 METER BOX WITH B12 TR/PL COVER OR EQUIVALENT. ALL BOXES LOCATED IN DRIVEWAY AREAS TO HAVE TRAFFIC COVERS MEET HS20 44 LOADING WITH TOUCH READ HOLE 1-3/4" DIA. HOLE FOR T/R METER IN UPPER RIGHT OR LOWER LEFT CORNER OF LID.
8. INSTALLATION OF A BACKFLOW PREVENTION DEVICE SHALL BE REQUIRED FOR ALL CONNECTIONS TO THE CITY WATER SYSTEM, EXCEPT FOR SINGLE FAMILY RESIDENCES.
9. SERVICE LINES FROM ALL METERS TO PROPERTY LINES SHALL HAVE A MINIMUM OF 8" OF COVER FROM TOP OF SIDEWALK OR GROUND LINE.
10. MULTIPLE METER MANIFOLDS SUBJECT TO APPROVAL BY MUNICIPAL UTILITIES DEPARTMENT.

**WATER SERVICE INSTALLATION  
1", 1.5", AND 2" SERVICE**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION  
NO.  
8

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**W-3**

NOTE: SEE DWG. NO. W-3 FOR DETAILS.

PLASTIC PIPE:

PLASTIC SERVICE PIPE SHALL BE ULTRA HIGH MOLECULAR WEIGHT (UHMW) P.E. 3406 CS 255-63, POLYETHYLENE (STANDARD SPECIFICATIONS 78-1.02J) AS MANUFACTURED BY ADS OR APPROVED EQUAL WITH MINIMUM PRESSURE RATING OF 160 P.S.I.

CONNECTION SHALL BE AS FOLLOWS:

**1. CORPORATION STOPS**

A. 6 INCH DIAMETER LINES

1" X 1" CORPORATION STOPS AS MANUFACTURED BY FORD OR EQUIVALENT COMPLETE WITH STAINLESS STEEL INSERTS FOR 1" I.D. PLASTIC PIPE.

B. 8 AND 12 INCH DIAMETER LINES

1" DIAMETER CORPORATION STOPS AS MANUFACTURED BY FORD OR EQUIVALENT COMPLETE WITH STAINLESS STEEL INSERTS FOR 1" I.D. PLASTIC PIPE.

C. ALTERNATE PRODUCT SUPPLIER

(1) 1" CORPORATION STOP. FORD NO. 1001 WITH SS INSERTS.

(2) 1" X 1" CORPORATION STOP. FORD NO. 800 PLUS A C-16-44 COMPRESSION ADAPTER WITH SS INSERTS.

(3) 1-1/2" AND 2" CORPORATION STOPS. FORD NO. FB-1000.

**2. ANGLE METER STOPS**

A. 1 INCH DIAMETER ANGLE METER STOPS

1" I.D. ANGLE METER STOP AS MANUFACTURED BY FORD OR EQUIVALENT COMPLETE WITH LOCK WING AND STAINLESS STEEL INSERT FOR 1" I.D. PLASTIC PIPE.

B. 1-1/2 AND 2 INCH DIAMETER ANGLE METER STOPS

ANGLE METER STOPS AS MANUFACTURED BY FORD OR EQUIVALENT SHALL BE USED WITH STAINLESS STEEL INSERTS.

C. ALTERNATE PRODUCT SUPPLIER

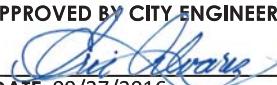
(1) 1" ANGLE METER STOP. FORD NO. KV63-444 WITH SS INSERT.

(2) 1-1/2" ANGLE METER STOP. FORD FV 43-666 WITH SS INSERT.

(3) 2" ANGLE METER STOP. FORD FV 43-777 WITH SS INSERT.

D. ALL 1", AND 1.5", AND 2" ANGLE METER STOPS SHALL HAVE A COMPRESSION FITTING WITH STAINLESS STEEL RESTRAINING CLAMP WITH NUT

Page 1 of 2

FITTINGS FOR WATER SERVICE	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
S CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. W-4

### **3. SERVICE SADDLES**

ALL SERVICE SADDLES SHALL BE MANUFACTURED BY FORD WITH DOUBLE FLAT BRONZE STRAPS AND BRONZE NUTS. SERVICE SADDLE FOR ALL SIZE C-900 MAINS SHALL BE MANUFACTURED BY FORD.

### **4. WATER METER BOXES**

1" METER BOXES SHALL BE CHRISTY B-12 BOX.  
FOR LIDS, SEE NOTE NO. 5.

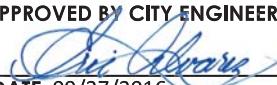
1-1/2" AND 2" METER BOXES SHALL BE CHRISTY  
B-36.

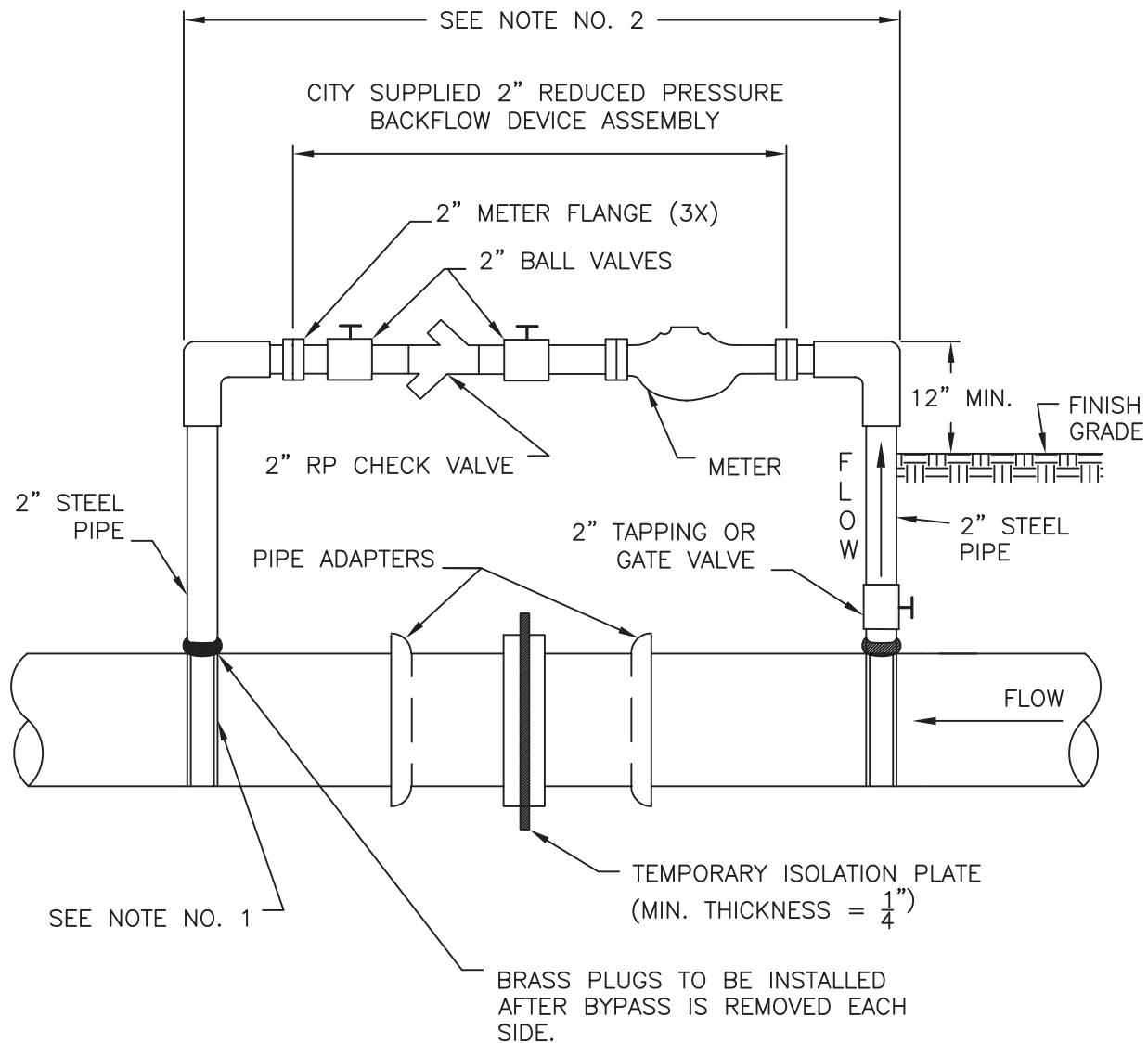
### **5. WATER METER BOX COVER**

1" METER BOX COVER SHALL BE CHRISTY B-12 TR/PL COVER. ALL BOXES LOCATED IN DRIVEWAY AREAS TO HAVE TRAFFIC COVERS MEETING HS20 44 LOADING WITH TOUCH READ HOLE 1-3/4" DIA.

1-1/2" AND 2" METER BOXES SHALL HAVE CHRISTY B-36 FIBERLYTE TR/PL COVER.  
ALL BOXES LOCATED IN DRIVEWAY AREAS TO HAVE TRAFFIC COVERS MEETING HS20 44 LOADING WITH TOUCH READ HOLE 1-3/4" DIA.

Page 2 of 2

FITTINGS FOR WATER SERVICE	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016	
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>W-4</b>



NOTES:

1. TAP NOT TO BE MADE CLOSER THAN 24" FROM END OF PIPE.
2. LENGTH TO BE AS NEEDED TO ACCOMMODATE SPECIFIED FITTINGS.  
(THE CITY SUPPLIED ASSEMBLY IS APPROXIMATELY 34" TO 36").

**ISOLATION OF NEW MAINS  
(12" AND SMALLER)**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

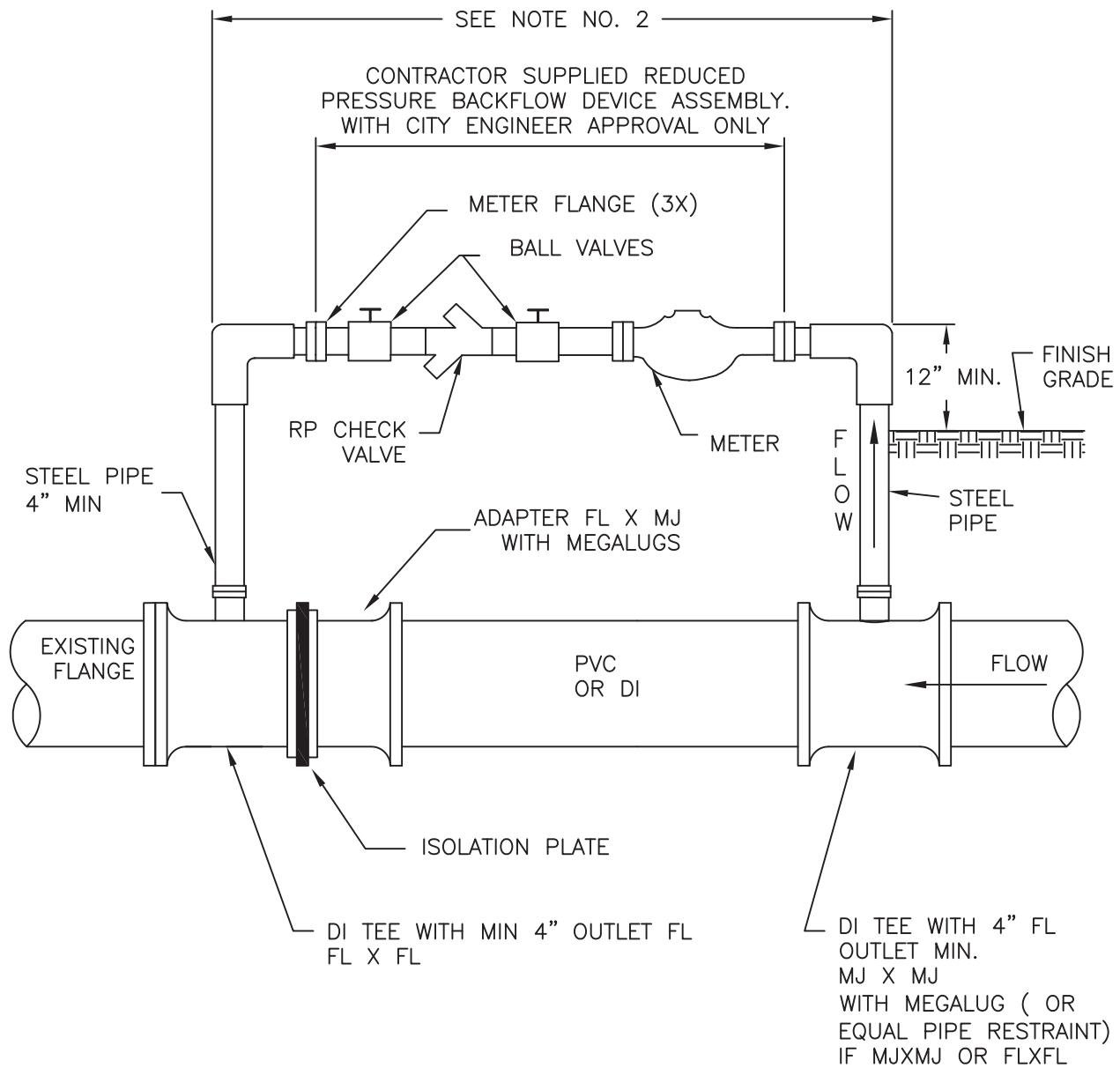
REVISION NO.  
2

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**W-5**



NOTES:

1. TAP NOT TO BE MADE CLOSER THAN 24" FROM END OF PIPE.
2. LENGTH TO BE AS NEEDED TO ACCOMMODATE SPECIFIED FITTINGS.  
(THE CITY SUPPLIED ASSEMBLY IS APPROXIMATELY 34" TO 36").
3. THIS INSTALLATION TO BE USED WHEN JUMPER SIZE IS 3" OR GREATER.

**ISOLATION OF NEW MAINS  
LARGER THAN 12"**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.

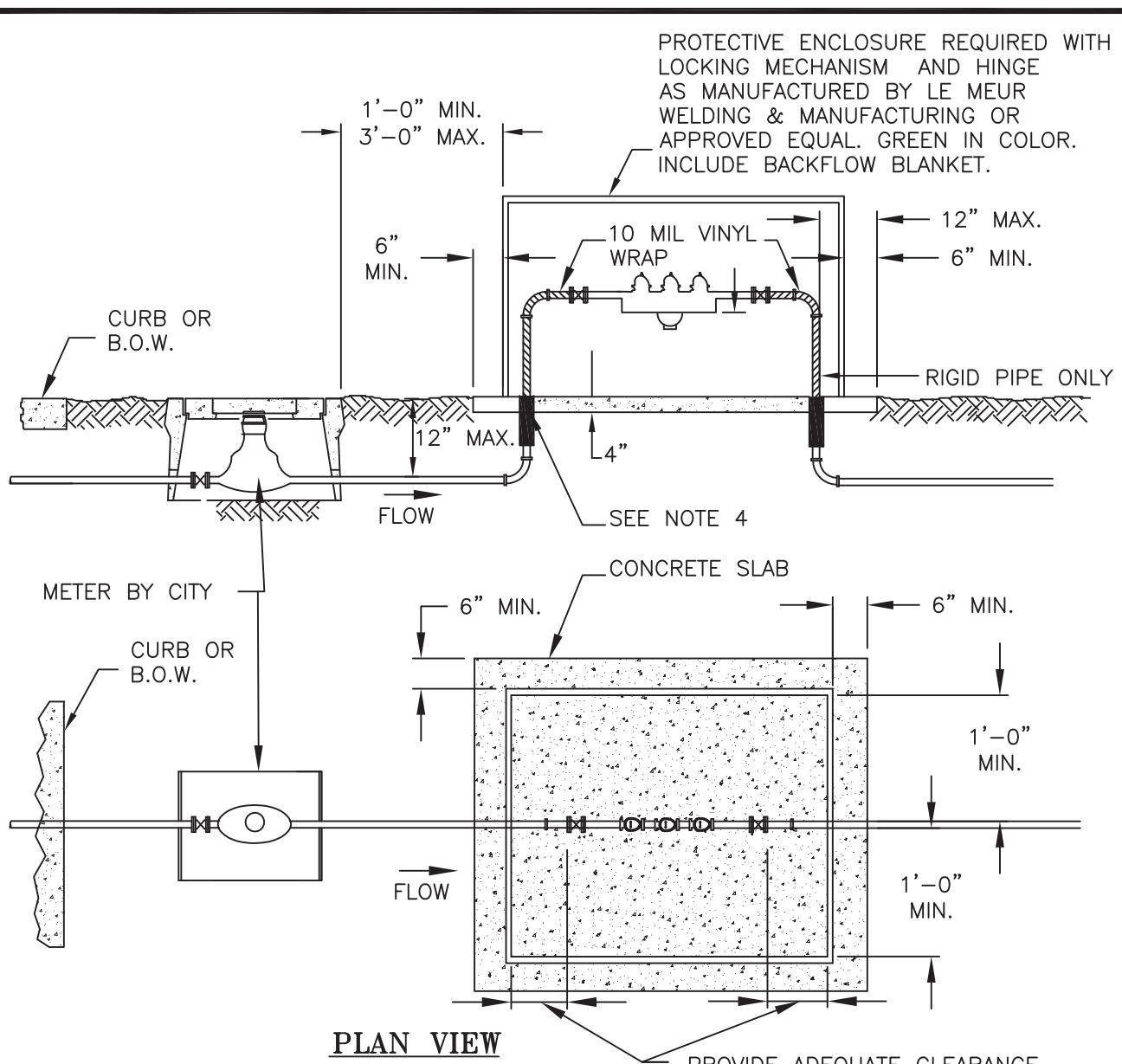
APPROVED BY CITY ENGINEER:

DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED

DRAWING NO.  
**W-6**



NOTES:

1. THE MINIMUM STANDARD OF PROTECTION ALLOWED IS A REDUCED PRESSURE PRINCIPLE PREVENTION DEVICE.
2. A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED A MINIMUM OF TWELVE INCHES (12") AND NOT MORE THAN THIRTY SIX INCHES (36") ABOVE GRADE, MEASURED FROM THE BOTTOM OF THE DEVICE, AND WITH A MINIMUM OF TWELVE TWELVE INCHES (12") SIDE CLEARANCE.
3. INSTALLATIONS SHALL MEET ALL REQUIREMENTS OF THE STATE CODE TITLE 17.
4. SLEEVE REQUIRED MAINTAINING 2" CLEARANCE BETWEEN PIPE RISER AND CONCRETE PAD.
5. SUPPORTS ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES LARGER THAN 1".
6. NO CONNECTIONS OR TEES ARE ALLOWED BETWEEN THE METER AND BACKFLOW PREVENTION DEVICE.
7. ALL NEW REDUCED PRESSURE DEVICES REQUIRE PROOF OF CERTIFICATION IMMEDIATELY AFTER INSTALLATION AND PRIOR TO BEING PLACED IN SERVICE.
8. SIZE OF ASSEMBLY TO MATCH SIZE OF METER.

**TYPICAL INSTALLATIONS FOR BACKFLOW  
PREVENTION DEVICES (IRRIGATION)**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

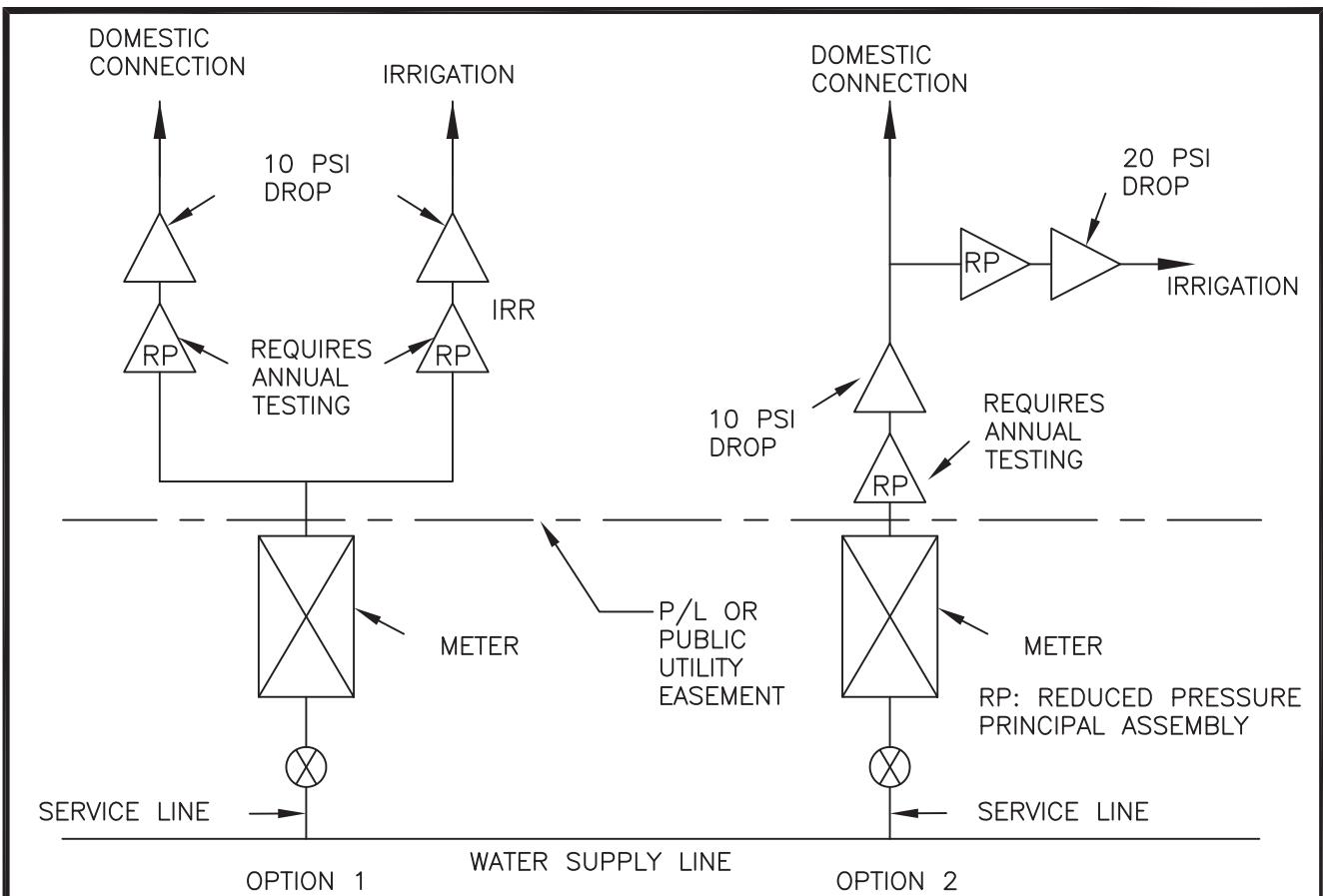
REVISION  
NO.  
4

APPROVED BY CITY ENGINEER:  
*Joe Alvarez*  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**W-7**



NOTES:

- ALL CONNECTIONS TO THE CITY WATER SYSTEM SHALL REQUIRE THE USE OF BACKFLOW PREVENTION ASSEMBLY. AN EXCEPTION IS SINGLE FAMILY DWELLINGS.
- APPROVED BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED IMMEDIATELY AFTER INSTALLATION, RELOCATION, REPAIR, REPLACEMENT OR UPGRADE AND SHALL NOT BE PLACED INTO SERVICE UNLESS THE ASSEMBLY HAS SUCCESSFULLY PASSED TESTING.
- LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE FROM THE CITY OR CITY'S AGENT.
- APPROVED BACKFLOW PREVENTION DEVICES SHALL BE THE DIAMETER OF THE WATER SERVICE CONNECTION WHEN INSTALLED ON UNMETERED SERVICES.
- BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSPECTED AND TESTED ANNUALLY BY AN APPROVED CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTER. INSPECTION AND TESTING COST SHALL BE PAID FOR BY THE OWNER. TESTING VERIFICATION AND RESULTS SHALL BE PROVIDED TO THE CITY.
- BACKFLOW ASSEMBLIES SHALL BE LOCATED A MINIMUM OF 1 FOOT TO A MAXIMUM OF 3 FEET FROM THE WATER METER. DISTANCES GREATER THAN 3 FEET WILL REQUIRE APPROVAL FROM THE MUNICIPAL UTILITIES DEPARTMENT.
- BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GRADE AND IN A MANNER THAT IS READILY ACCESSIBLE FOR TESTING AND MAINTAINCE.
- BACKFLOW PREVENTION DEVICES MUST REMAIN IN THE ORIGINAL CONFIGURATION AS PURCHASED FROM THE MANUFACTURER.
- 
- METER AND RP DEVICE SHALL BE THE SAME SIZE.

**ASSEMBLY INSTALLATION  
BACKFLOW PREVENTION**

REVISION NO.  
1

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

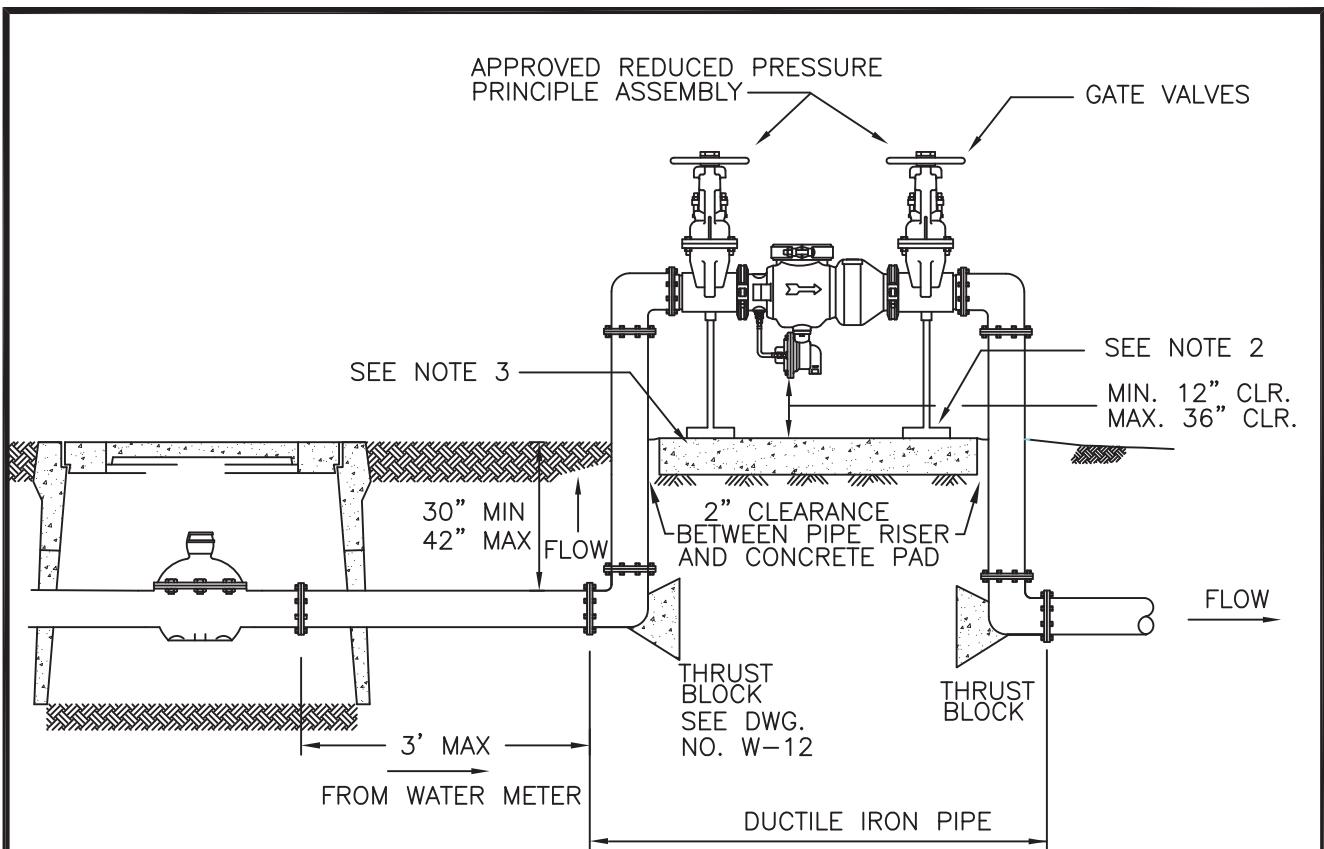


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**W-8**



NOTES:

1. THE MINIMUM STANDARD OF PROTECTION ALLOWED IS A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE.
2. SUPPORTS ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES.
3. A CONCRETE PAD WITH A MINIMUM OF 4" THICKNESS IS REQUIRED.
4. ---
5. NO CONNECTIONS OR TEES ARE ALLOWED BETWEEN THE METER AND BACKFLOW PREVENTION DEVICE.
6. SEPARATE SUBMITTALS TO THE MUNICIPAL UTILITIES DEPARTMENT ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES.
7. CITY'S MAINTENANCE RESPONSIBILITIES END AT THE WATER METER.
8. SIZE OF ASSEMBLY TO MATCH SIZE OF METER. METER BOX B43 MIN.
9. PROTECTIVE ENCLOSURE REQUIRED WITH LOCKING MECHANISM AND HINGE AS MANUFACTURED BY LE MEUR WELDING & MANUFACTURING OR APPROVED EQUAL. GREEN IN COLOR. INCLUDE BACKFLOW BLANKET.

**3" AND LARGER BACKFLOW PREVENTION ASSEMBLY DOMESTIC CONNECTION**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.

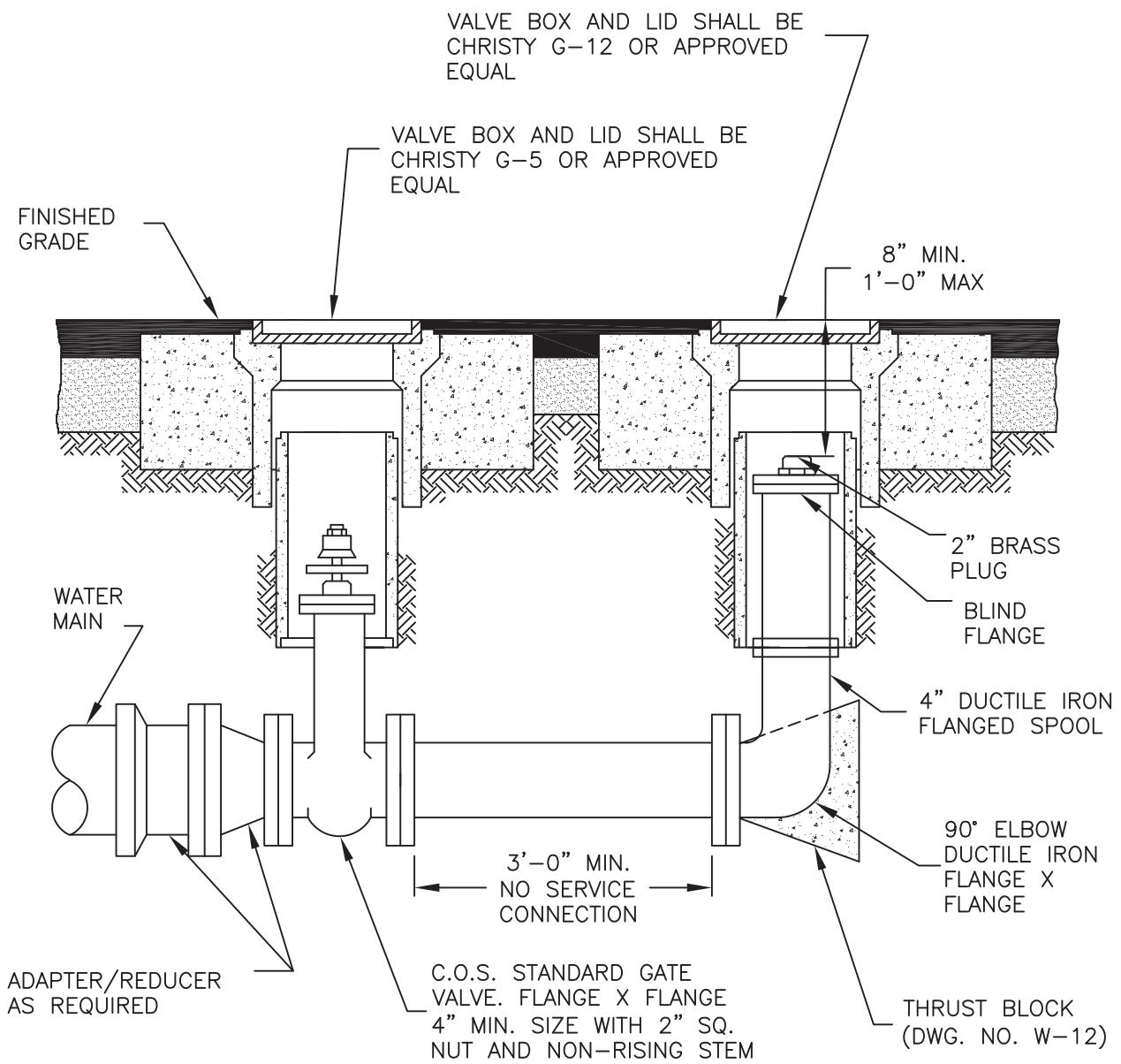
APPROVED BY CITY ENGINEER:

DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED

DRAWING NO.  
**W-9**



## BLOW-OFF

REVISION NO.  
6

APPROVED BY CITY ENGINEER:  
*Don Harpe*  
DATE: 09/27/2016

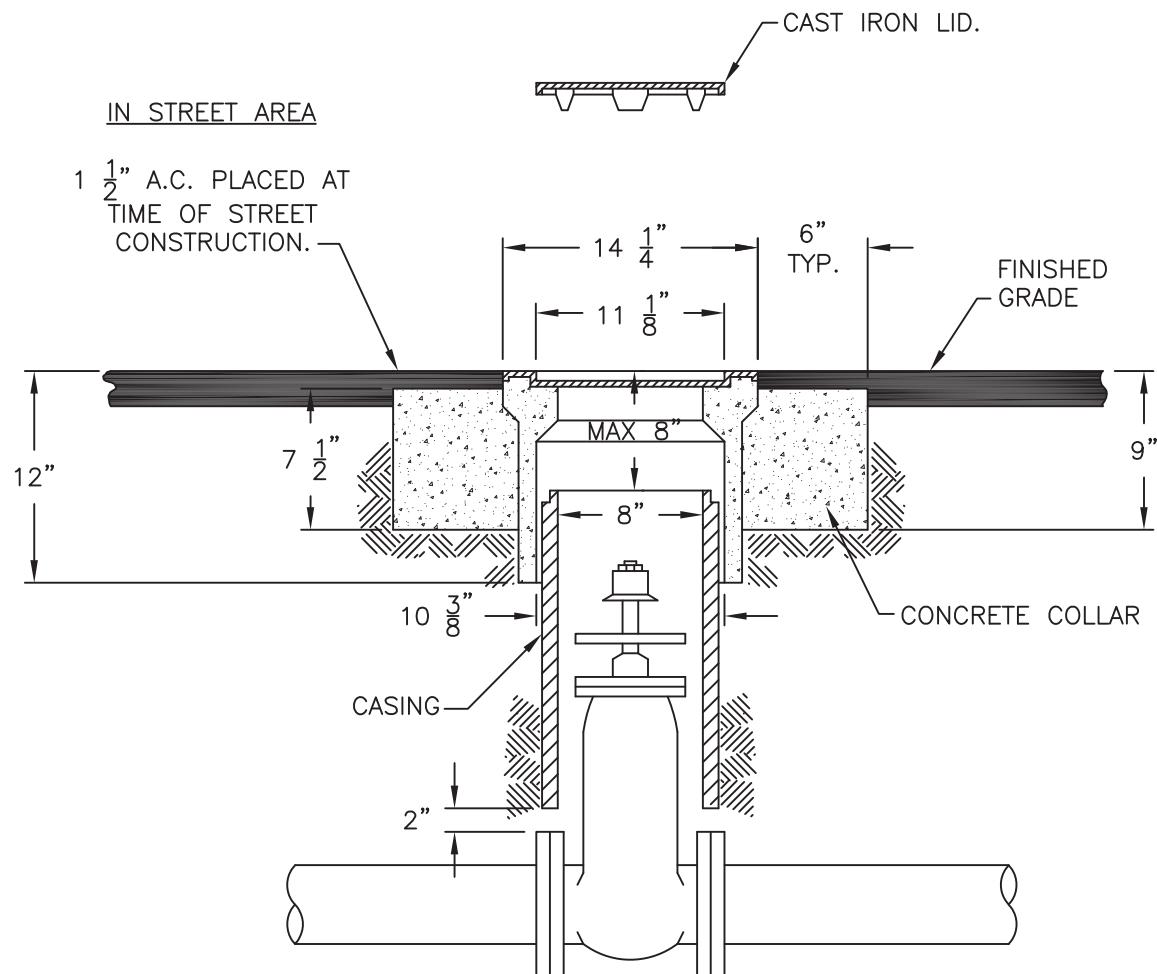


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

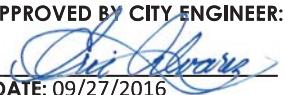
SUPERSEDES  
DWG. DATED  
11/25/03

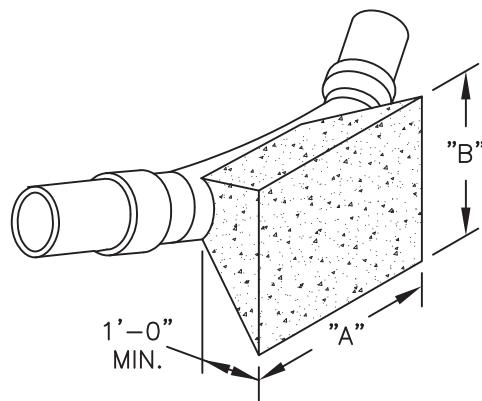
DRAWING NO.  
**W-10**



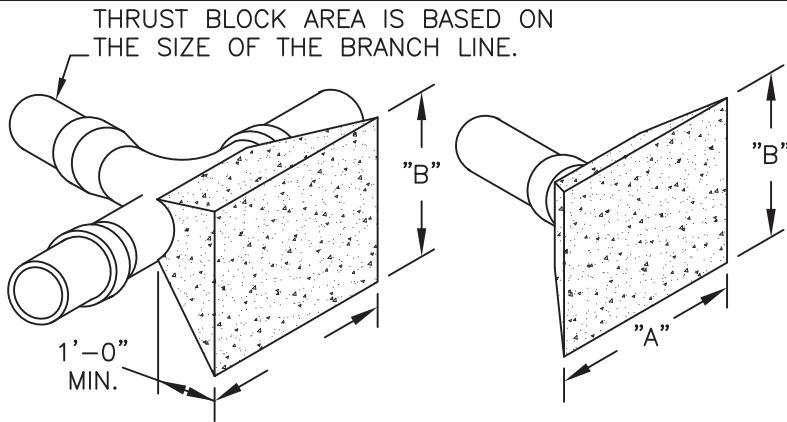
NOTES:

1. VALVE BOX AND LID SHALL BE CHRISTY NO. G5 OR EQUAL.
2. ALL LIDS SHALL HAVE MACHINED SEATING SURFACES.
3. CASING SHALL BE C900 PVC WATER PIPE OR SDR 35 PVC SEWER PIPE. CASING SHALL BE ONE CONTINUOUS PIECE.
4. FOR BLOWOFF INSTALLATION, REFER TO DRAWING NO. W-10.
5. CONCRETE COLLAR NOT REQUIRED WHEN VALVE BOX IS LOCATED IN CONCRETE SIDEWALK AREA.
6. OPERATING NUT EXTENSION REQUIRED IF DEEPER THAN 6 FEET.

VALVE BOX DETAILS	REVISION NO.	APPROVED BY CITY ENGINEER:
	6	 DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE	SUPERSEDES DWG. DATED
	NONE	01/09/02
		DRAWING NO.
		<b>W-11</b>

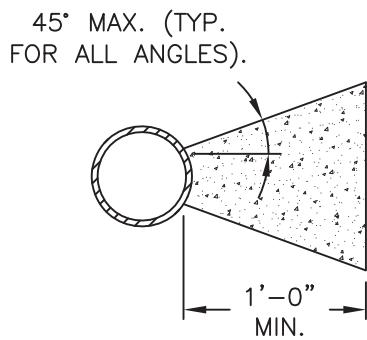


**TYPICAL THRUST BLOCK BEND**



**TYPICAL THRUST BLOCK TEE OUTLET**

**TYPICAL THRUST BLOCK DEAD END**



**TYPICAL SECTION THRU THRUST BLOCK**

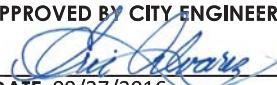
**NOTES:**

1. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
2. RESTRAINT SYSTEM FOR VERTICAL PIPE BENDS SHALL BE APPROVED BY THE CITY ENGINEER.
3. THRUST RESTRAINT SYSTEMS FOR PIPES LARGER THAN 12" SHALL BE DESIGNED ON A CASE BY CASE BASIS AND SHALL BE APPROVED BY THE CITY ENGINEER.

THRUST BLOCK AREA REQUIRED		
FITTINGS	ALLOWABLE SOIL BEARING VALUE 1000 LBS. PER SQ. FT.	
6" LINE OR SMALLER	"A"	"B"
22 $\frac{1}{2}$	1'-6"	1'-6"
45°	2'-0"	2'-0"
90°	3'-0"	2'-6"
TEE OUTLET	2'-6"	2'-0"
DEAD END	2'-6"	2'-0"
8" LINE		
22 $\frac{1}{2}$	2'-0"	2'-0"
45°	3'-0"	2'-6"
90°	4'-0"	3'-0"
TEE OUTLET	3'-0"	3'-0"
DEAD END	3'-0"	3'-0"
10" LINE		
22 $\frac{1}{2}$	3'-0"	2'-0"
45°	3'-6"	3'-0"
90°	5'-0"	4'-0"
TEE OUTLET	4'-0"	3'-6"
DEAD END	4'-0"	3'-6"
12" LINE		
22 $\frac{1}{2}$	3'-0"	3'-0"
45°	4'-0"	4'-0"
90°	7'-0"	4'-0"
TEE OUTLET	5'-0"	4'-0"
DEAD END	5'-0"	4'-0"

**THRUST BLOCK DETAILS**

REVISION NO.  
4

APPROVED BY CITY ENGINEER:  


DATE: 09/27/2016

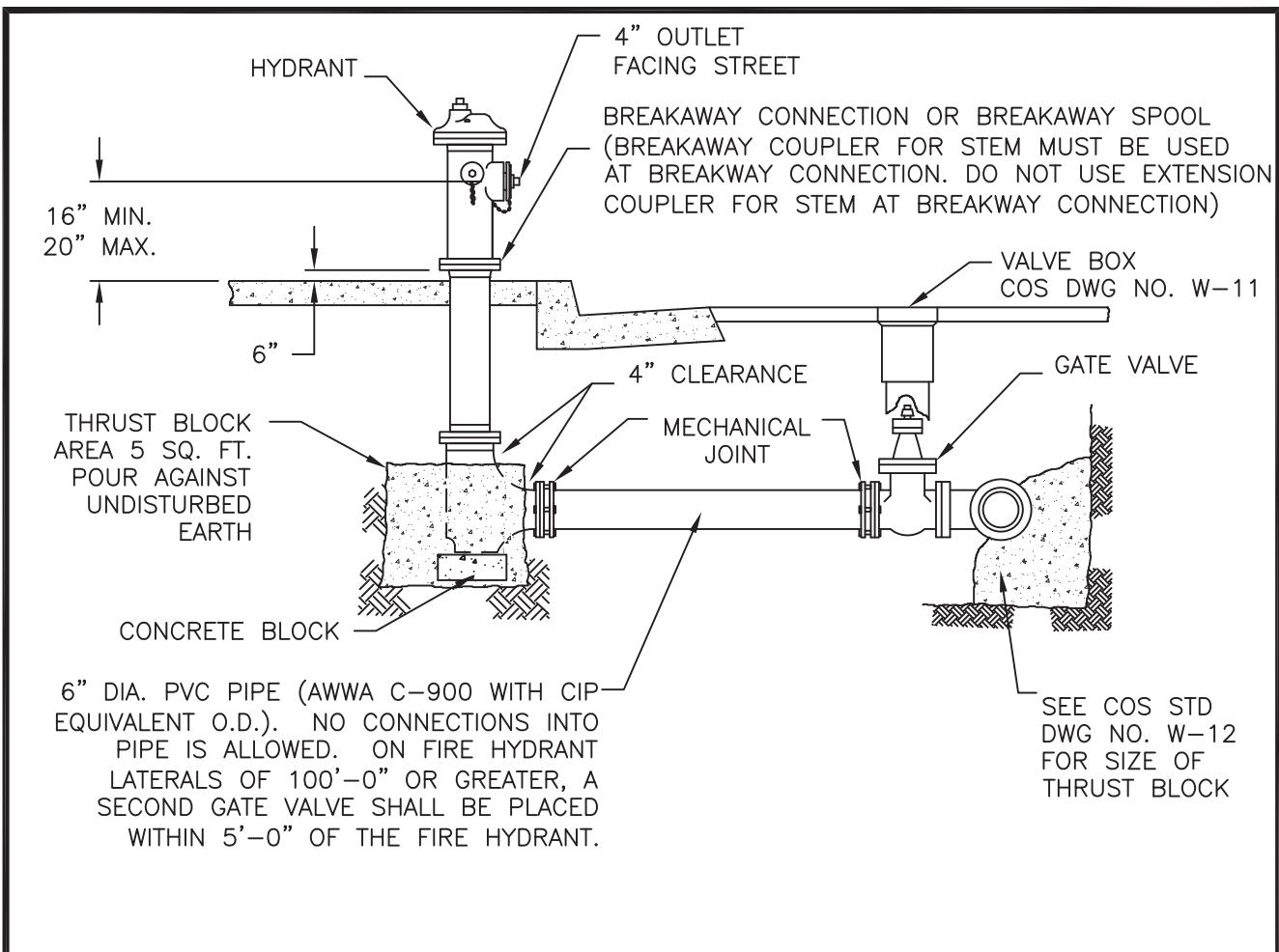


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**W-12**



## HYDRANTS

1. HYDRANTS SHALL BE ONE OF THE FOLLOWING: CLOW "MEDALLION", KENNEDY "GUARDIAN K81" OR MUELLER "SUPER CENTURIAN" (VERTICAL SHOE HYDRANTS ONLY).
2. HYDRANTS SHALL HAVE 2-1/2" AND 4" NST OUTLETS, WHICH SHALL OPEN COUNTER CLOCKWISE.
3. HYDRANTS SHALL HAVE 1-1/4" PENTAGON OPERATING AND CAP NUTS.
4. DRIP PLUGS, IF ANY, SHALL BE PLUGGED.
5. HYDRANTS SHALL BE LOCATED AT P/L EXTENSION, AT END OF CURB RETURN, 3' MIN. FROM DRIVEWAYS OR AS SHOWN ON PLANS.

### HYDRANT "T" TO DUCTILE IRON PIPE OR PVC C-900 FOR NEW DEVELOPMENT

CITY WATER SYSTEM:

RING TITE BY RING TITE BY FLANGE.

CALIFORNIA WATER SERVICE CO.:

GRIP TITE BY GRIP TITE BY FLANGE.

CONTACT RESPECTIVE WATER SYSTEM REGARDING CONNECTION TO PIPE BY OTHER MATERIAL.

### GATE VALVES

CLOW "RESILIENT WEDGE"

MUELLER "RESILIENT SEAT"

AMERICAN DARLING

KENNEDY RESILIENT

WATEROUS SERIES 500

## **FIRE HYDRANT**

REVISION NO.  
4

APPROVED BY CITY ENGINEER:  
*D. J. Harpe*

DATE: 09/27/2016



**CITY OF STOCKTON**  
DEPARTMENT OF PUBLIC WORKS

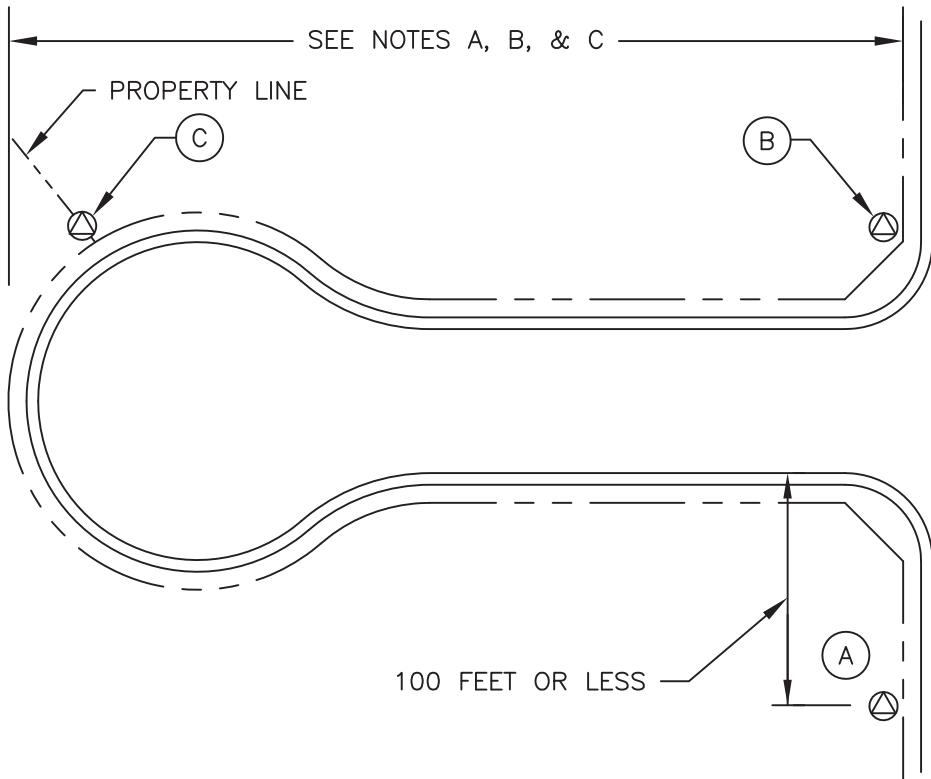
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**W-13**

IF THE LENGTH OF THE CUL-DE-SAC IS:

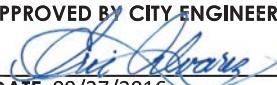
- A. LESS THAN 250'-0",  
THEN THE FIRE HYDRANT SHALL BE PLACED WITHIN 100'-0" OF THE CUL-DE-SAC ENTRANCE AND NO FIRE HYDRANT SHALL BE PLACED IN THE CUL-DE-SAC (SEE LOCATION A, BELOW).
- B. GREATER THAN 250'-0" BUT LESS THAN 400'-0",  
THEN THE FIRE HYDRANT SHALL BE PLACED AT THE CUL-DE-SAC ENTRANCE AND NO FIRE HYDRANT SHALL BE PLACED IN THE CUL-DE-SAC (SEE LOCATION B, BELOW).
- C. GREATER THAN 400'-0",  
THEN THE FIRE HYDRANT SHALL BE PLACED AT THE PROPERTY LINE (SEE LOCATION C BELOW).

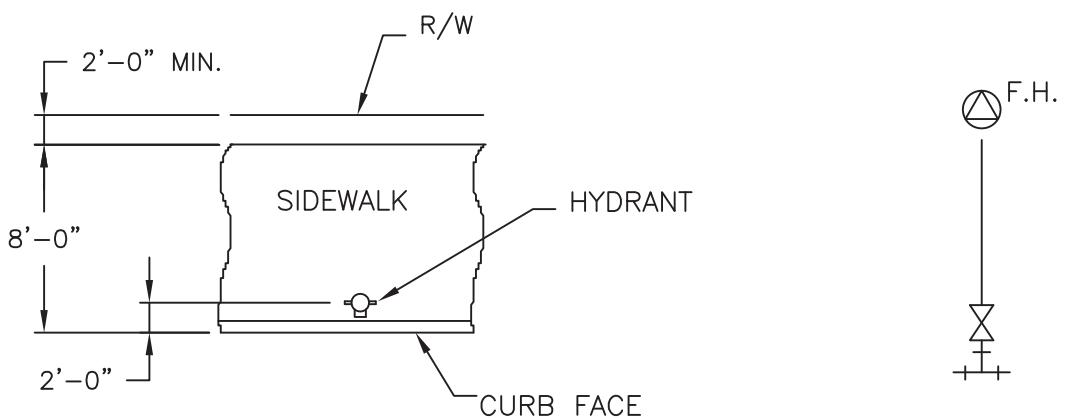


FIRE HYDRANT LOCATION ON CUL-DE-SACS

NOTES:

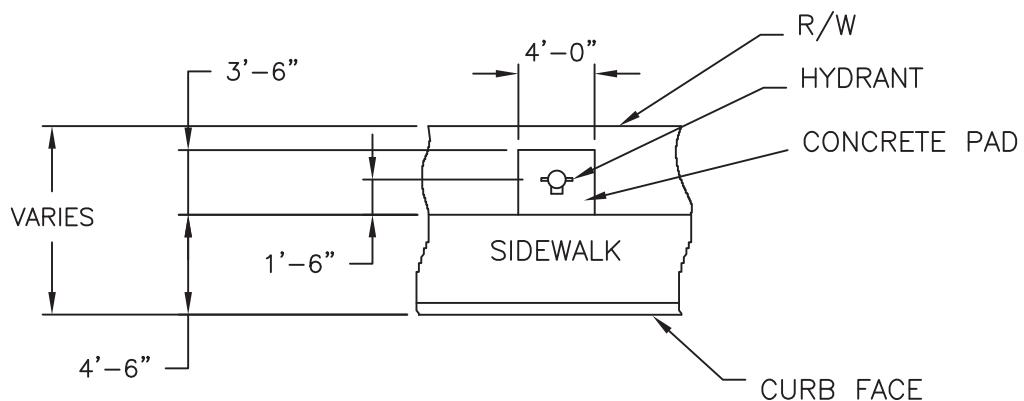
1. FIRE HYDRANTS SHALL BE LOCATED ON ALL REQUIRED ACCESS ROADWAYS AND CITY STREETS ACCORDING TO THE FOLLOWING REQUIREMENTS:
  - a) 300'-0" ON CENTER FOR ALL COMMERCIAL/INDUSTRIAL PROPERTIES.
  - b) 400'-0" ON CENTER FOR GROUP R-1 OCCUPANCIES AS DEFINED IN THE UBC (UNIFORM BUILDING CODE).
  - c) 600'-0" ON CENTER FOR GROUP R-3 OCCUPANCIES AS DEFINED IN THE UBC (UNIFORM BUILDING CODE).
2. DOG-LEGGED CUL-DE-SACS REQUIRE FIRE HYDRANT(S) TO BE LOCATED BY THE FIRE MARSHAL.

<b>FIRE HYDRANT SPACING</b>	REVISION NO. 3	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>W-14</b>

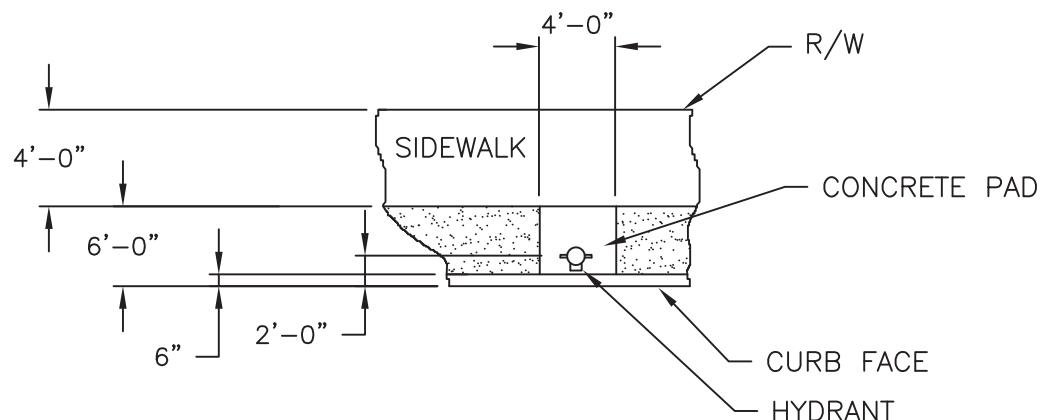


COMMERCIAL

SYMBOL ON PLANS



WITHOUT PLANTER STRIP



WITH PLANTER STRIP

## FIRE HYDRANT LOCATION

REVISION  
NO.  
5

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

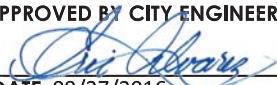
DRAWING NO.  
**W-15**

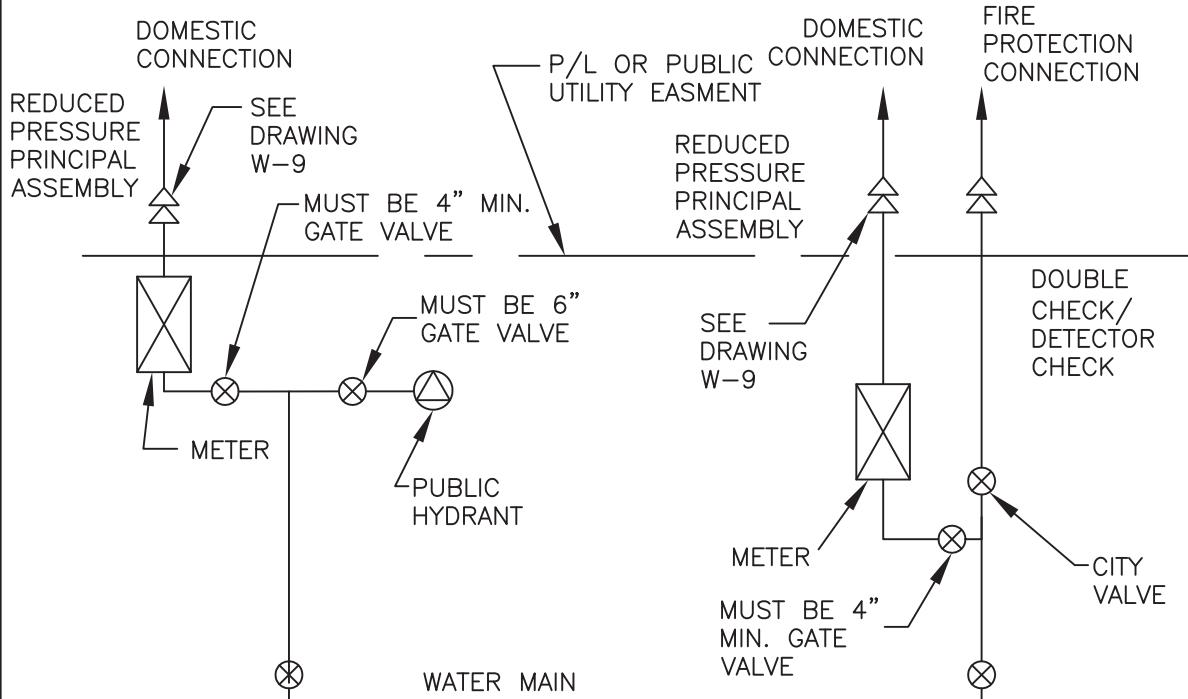
## STANDARDS FOR FIRE PROTECTION SYSTEMS

### GENERAL:

1. ALL PRIVATE UNDERGROUND FIRE SYSTEMS, INCLUDING HYDRANT SYSTEMS AND UNDERGROUND MAINS FOR SPRINKLER SYSTEMS AND FIRE PUMPS SERVING SPRINKLER SYSTEMS, CROSS-CONNECTED TO UNAPPROVED WATER SOURCES AND CONNECTED TO DOMESTIC WATER MAINS SHALL HAVE BACKFLOW PREVENTION AS REQUIRED BY AWWA M-14 FOR CLASSES III, IV, V AND VI FIRE SYSTEMS.
2. PLANS SHALL BE SUBMITTED FOR APPROVAL BY THE FIRE DEPARTMENT AND CITY MUNICIPAL UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION. "AS BUILT" DRAWINGS SHALL BE PROVIDED PRIOR TO CONSTRUCTION TO THE PUBLIC WATER SYSTEM. (THE SAME PLAN SUBMITTAL REQUIREMENTS APPLY TO INSTALLATIONS CONNECTED TO CALIFORNIA WATER SERVICE COMPANY MAINS.)
3. SYSTEM DESIGN SHALL BE BASED ON THE CALIFORNIA FIRE CODE, APPLICABLE PROVISION OF NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS 13 AND 24, AND REQUIREMENTS OF THE STOCKTON FIRE DEPARTMENT. NOTE: CALIFORNIA WATER SERVICE COMPANY MAY HAVE OTHER REQUIREMENTS WHEN CONNECTION TO THEIR MAINS. THRUST BLOCK LOCATION AND THRUST BLOCK SIZE, HYDRANT SPACING, PIPE SIZES AND LENGTHS AND OTHER RELEVANT INFORMATION IS REQUIRED ON THE PLANS. PLANS MUST CLEARLY SHOW THAT BOLTS AND TIE RODS WILL BE COATED WITH A BITUMINOUS MATERIAL AND WRAPPED PRIOR TO COVERING.
4. THE STOCKTON FIRE DEPARTMENT REQUIRES CLASS 200 C-900 PIPE FOR PRESSURIZED UNDERGROUND MAINS. POST INDICATOR VALVES AND FIRE DEPARTMENT CONNECTIONS FOR SPRINKLER SYSTEMS SHALL BE AT LEAST 40 FEET FROM BUILDINGS. SECTIONAL VALVES SHALL BE UL LISTED FIRE PROTECTION VALVES. ALL VALVES CONTROLLING WATER SUPPLIES TO SPRINKLER SYSTEMS SHALL BE MONITORED BY A UL LISTED CENTRAL STATION. THIS REQUIRES THE CONTRACTOR TO PROVIDE PVC PIPE FOR LOW VOLTAGE CONNECTION OF THE VALVE'S TAMPER SWITCH TO THE FIRE ALARM PANEL NORMALLY LOCATED IN THE BUILDING. THIS REQUIREMENT IS MANDATORY, REGARDLESS IF THE BUILDING CONTAINS LESS THAN 100 SPRINKLER HEADS. TRACER WIRE IS REQUIRED FOR ALL UNDERGROUND MAINS FOR BOTH HYDRANT AND SPRINKLER SYSTEMS.

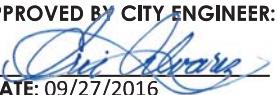
Page 1 of 2

<b>FIRE PROTECTION SYSTEM STANDARDS</b>	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
		DRAWING NO. <b>W-16</b>

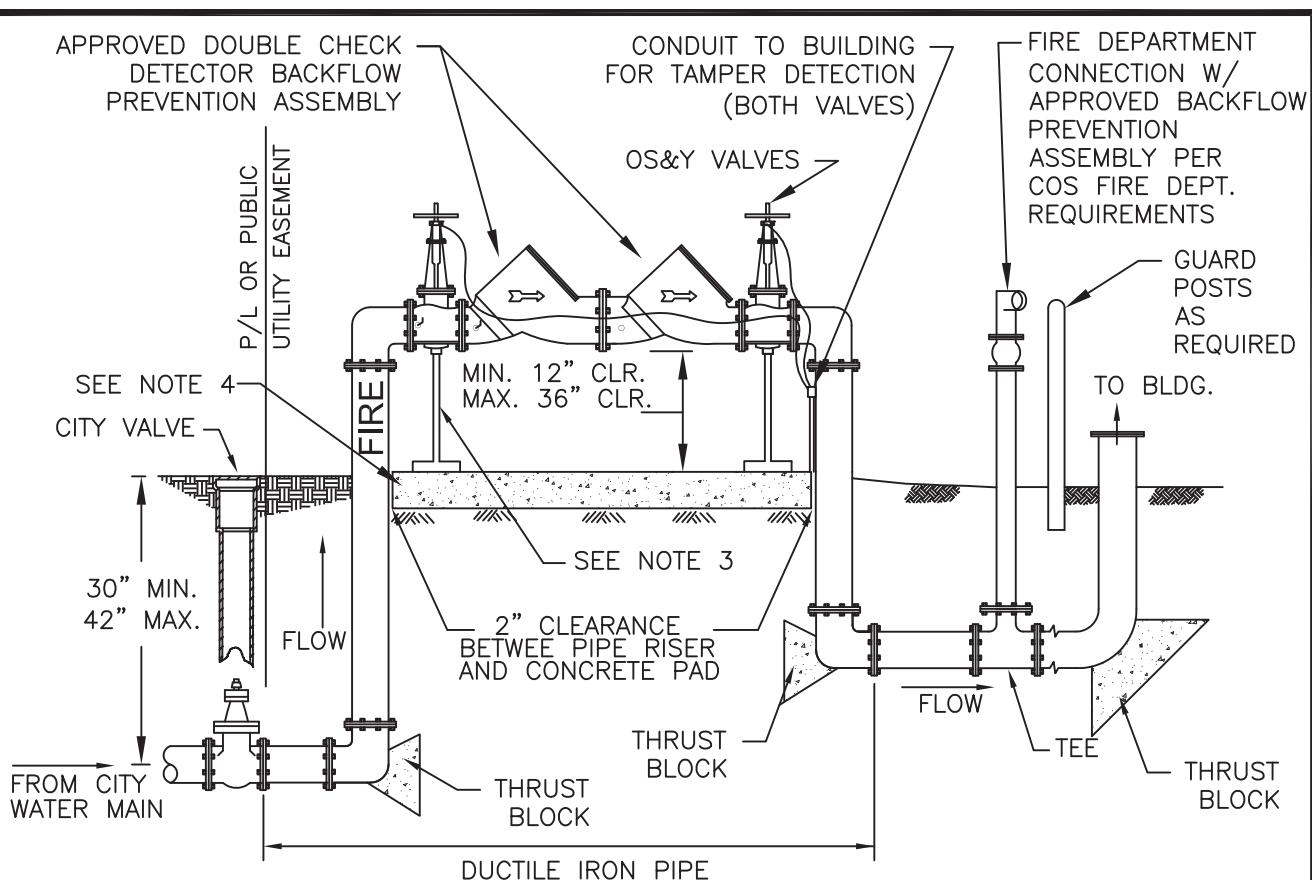


1. APPROVED BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED IMMEDIATELY AFTER INSTALLATION, RELOCATION, REPAIR, REPLACEMENT, OR UPGRADE AND SHALL NOT BE PLACED INTO SERVICES UNLESS THE ASSEMBLY HAS SUCCESSFULLY PASSED TESTING.
2. LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE FROM THE CITY OR CITY'S AGENT.
3. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE THE DIAMETER OF THE WATER SERVICE CONNECTION WHEN INSTALLED ON UNMETERED SERVICES.
4. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSPECTED AND TESTED ANNUALLY BY AN APPROVED CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTER. INSPECTION AND TESTING COST SHALL BE PAID FOR BY THE OWNER. TESTING VERIFICATION AND RESULTS SHALL BE PROVIDED TO THE CITY.
5. FIRE HYDRANTS, ON-STREET AND/OR ON-SITE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF STOCKTON STANDARD SPECIFICATIONS. INSPECTION APPROVAL BY FIRE DEPARTMENT IS REQUIRED PRIOR TO ANY BACKFILL.
6. FIRE BACKFLOW PREVENTION ASSEMBLIES SHALL BE LOCATED A MINIMUM OF 1 FOOT TO A MAXIMUM OF 3 FEET FROM THE PROPERTY LINE OR PUBLIC UTILITY EASEMENT. DISTANCES GREATER THAN 3 FEET WILL REQUIRE APPROVAL FROM THE STOCKTON FIRE DEPARTMENT.
7. FIRE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GRADE AND IN A MANNER THAT IS READILY ACCESSIBLE FOR TESTING AND MAINTENANCE.
8. BACKFLOW PREVENTION DEVICES MUST REMAIN IN THE ORIGINAL CONFIGURATION AS PURCHASED FROM THE MANUFACTURER.
9. ---
10. REDUCED PRESSURE PRINCIPLE ASSEMBLIES MAY BE REQUIRED FOR FACILITIES WITH POTENTIAL OF HAZARD TO THE PUBLIC WATER SYSTEM OR AT DISCRETION OF MUD.
11. IF A HYDRANT IS SERVED FROM A FIRE SERVICE, THE MINIMUM SIZE SHALL BE 8 INCHES.

Page 2 of 2

<b>FIRE PROTECTION SYSTEM STANDARDS</b>	REVISION NO. 5	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02

DRAWING NO.  
**W-16**



#### NOTES

1. A PRESSURE TEST AT 200 P.S.I FOR 2 HOURS WITNESSED BY THE FIRE DEPARTMENT IS REQUIRED FOR ALL SYSTEMS. THE FIRE PROTECTION SYSTEM CAN ONLY BE FILLED USING A JUMPER EQUIPPED WITH A BACKFLOW PREVENTION DEVICE ACCORDING TO THE CITY OF STOCKTON STANDARD PLANS AND SPECIFICATIONS. PLEASE NO AND WRAPPING OF BOLTS, AND TIE RODS, IF REQUIRED, MUST BE COMPLETED BEFORE CALLING FOR AN INSPECTION.
2. THE MINIMUM STANDARD OF BACKFLOW PROTECTION ALLOWED IS THE DOUBLE CHECK DETECTOR BACKFLOW-PREVENTION ASSEMBLY.
3. SUPPORTS ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES.
4. A CONCRETE PAD WITH A MINIMUM OF 4" THICKNESS AND 12" CLEARANCE ON EACH SIDE OF THE BACKFLOW PREVENTION DEVICE IS REQUIRED.
5. PROTECTIVE ENCLOSURE IS REQUIRED.
6. CITY'S MAINTENANCE RESPONSIBILITIES ARE BETWEEN THE WATER MAIN AND CITY VALVE.
7. OS&Y GATE VALVES ARE REQUIRED.
8. A MATERIALS INSPECTION IS REQUIRED BEFORE ASSEMBLING FIRE PROTECTION SYSTEMS.
9. FIRE DEPARTMENT APPROVAL OF PLANS AND SUBMITTALS ARE REQUIRED FOR BACKFLOW PREVENTION ASSEMBLIES AND FIRE PROTECTION SYSTEMS PRIOR TO CONSTRUCTION.
10. DETECTOR CHECK METER ASSEMBLIES ARE REQUIRED ON BACKFLOW PREVENTION ASSEMBLIES IN FIRE PROTECTION SYSTEMS WITH PRIVATE HYDRANTS.

#### TYPICAL FIRE PROTECTION CONNECTION



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

REVISION NO.  
3

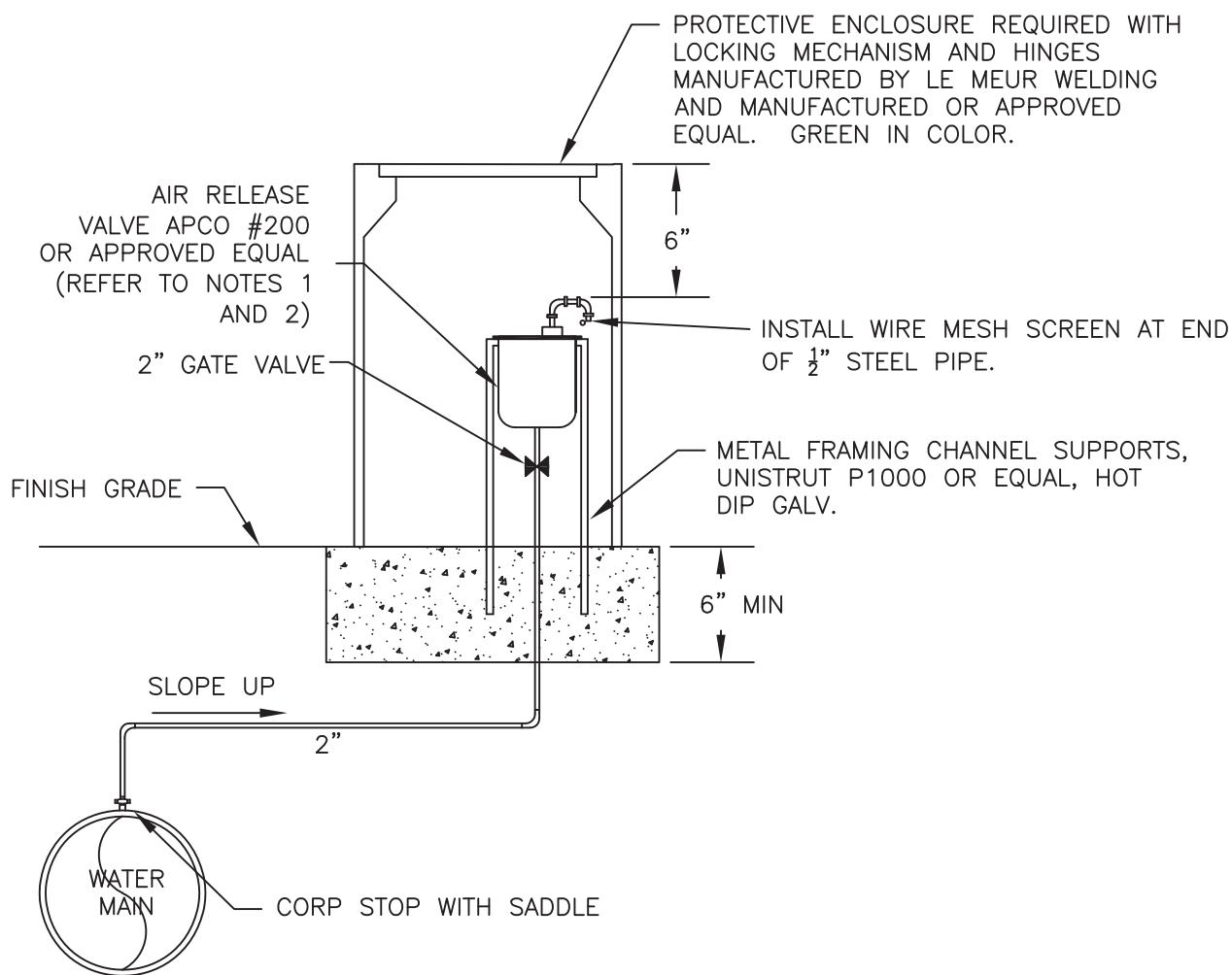
APPROVED BY CITY ENGINEER:  
*[Signature]*

DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

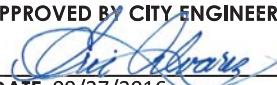
DRAWING NO.  
**W-17**



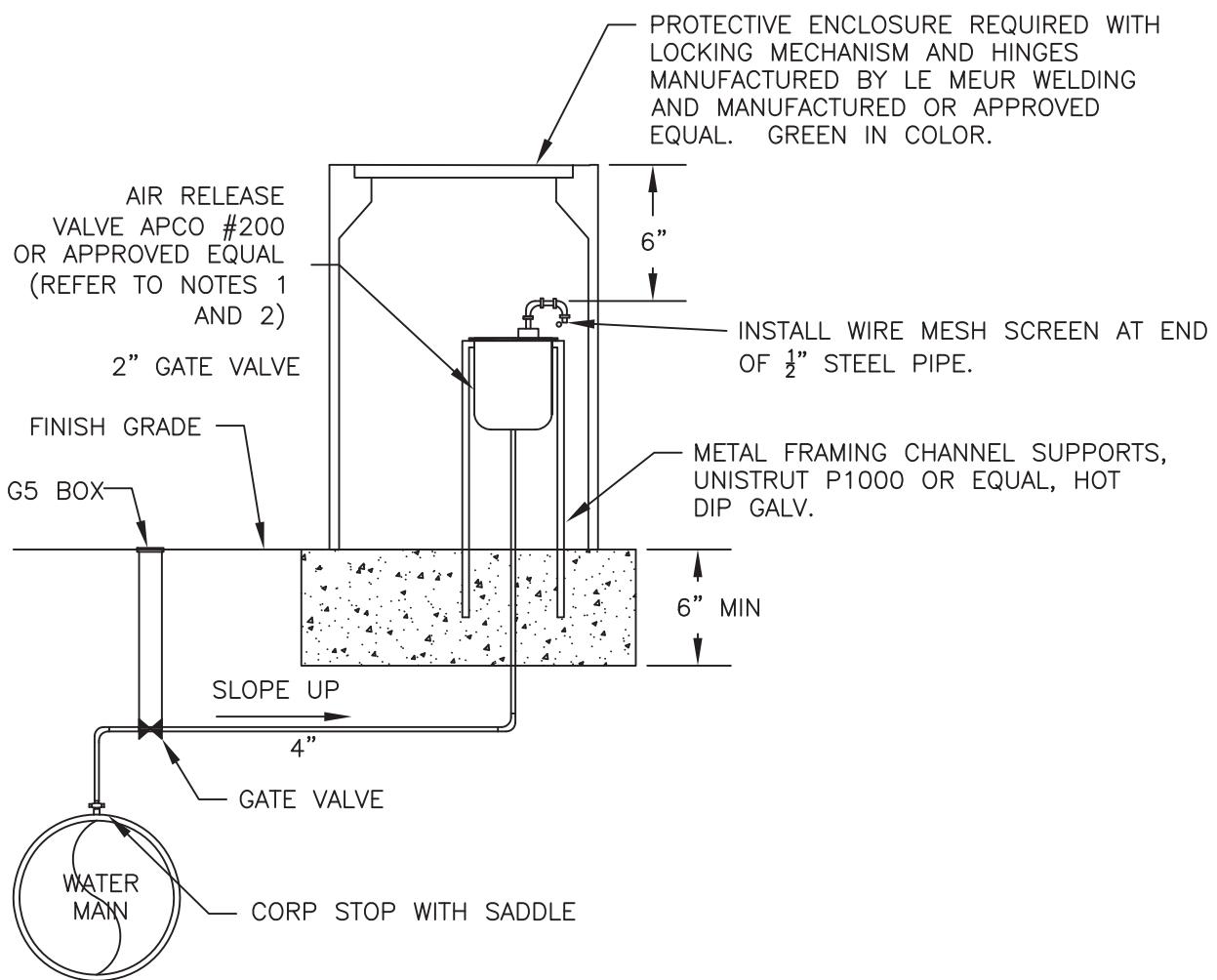
NOTES:

1. 1" AIR RELEASE VALVE FOR PIPE SIZES 12" AND 16"
2. 2" AIR RELEASE VALVE FOR PIPE SIZES 18" THROUGH 36"

Page 1 of 2

<b>AIR RELEASE VALVE WATER MAINS 12" - 36" DIAMETER</b>	REVISION NO. 1	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03

DRAWING NO.  
**W-18**



NOTES:

1. 1" AIR RELEASE VALVE FOR PIPE SIZES 12" AND 16"
2. 2" AIR RELEASE VALVE FOR PIPE SIZES 18" THROUGH 36"

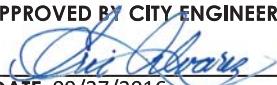
Page 2 of 2

**AIR RELEASE VALVE  
WATER MAINS 12" - 36" DIAMETER**



CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

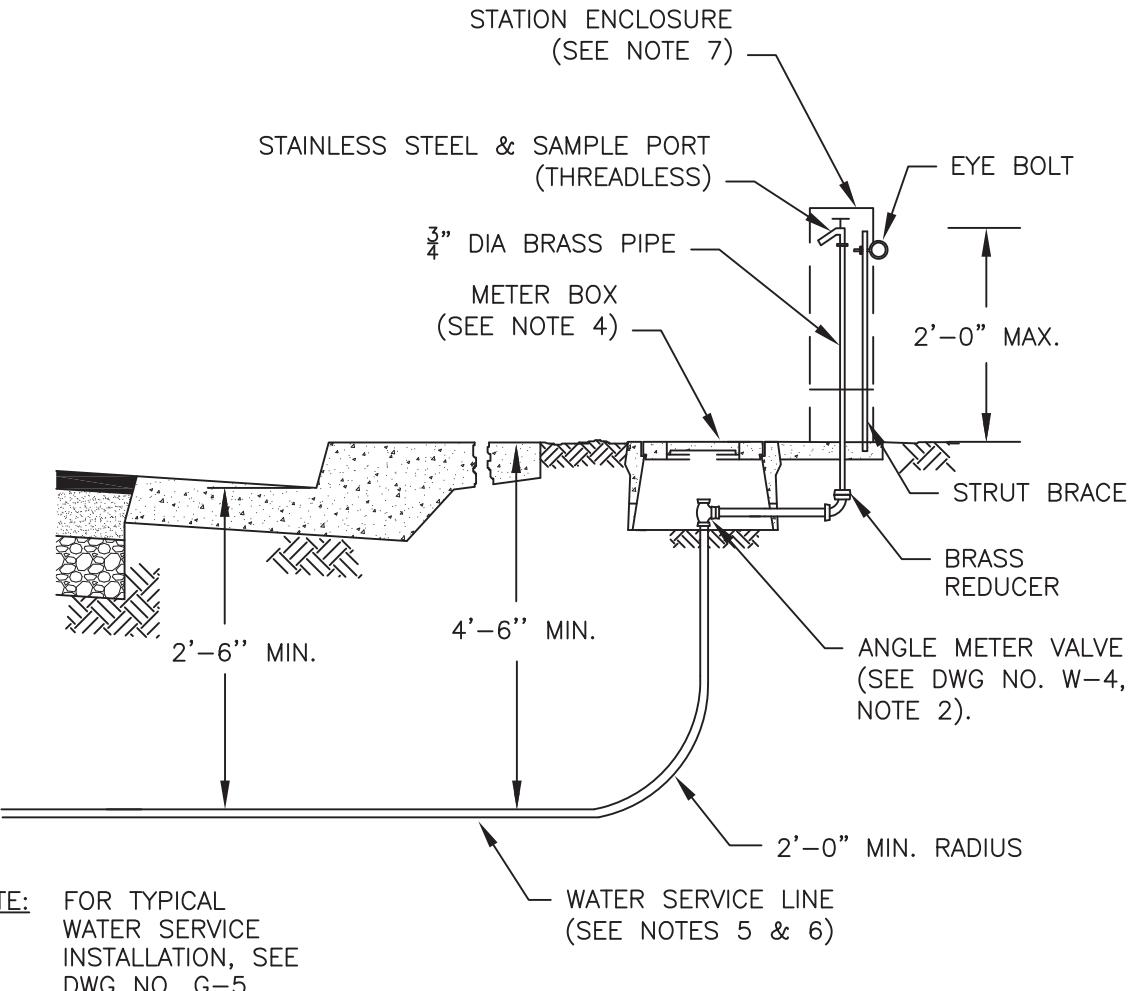
REVISION  
NO.  
2

APPROVED BY CITY ENGINEER:  
  
DATE: 09/27/2016

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

DRAWING NO.  
**W-18**



#### NOTES:

1. SEE DWG NO. W-4 FOR FITTINGS.
2. SERVICE LINE SHALL BE A DEDICATED LINE FOR THE SAMPLING STATION UNLESS PRIOR APPROVAL OF MUNICIPAL UTILITIES DEPARTMENT.
3. SAMPLING STATION MAY BE PLACED ADJACENT TO PROPERTY OR EASEMENT LINE WITH PRIOR APPROVAL OF MUNICIPAL UTILITIES DEPARTMENT.
4. SEE DWG NO. W-4, NOTES 4 & 5, FOR METER BOX & LID TYPE.
5. PLASTIC SERVICE PIPE TO BE CONTINUOUS WITH NO SPLICING ALLOWED.
6. 1" DIAMETER MINIMUM LINE FOR EACH STATION.
7. STATION ENCLOSURE SHALL BE PROVIDED BY CITY OF STOCKTON.

#### WATER SAMPLING STATION

REVISION  
NO.  
1

APPROVED BY CITY ENGINEER:  
*[Signature]*  
DATE: 09/27/2016

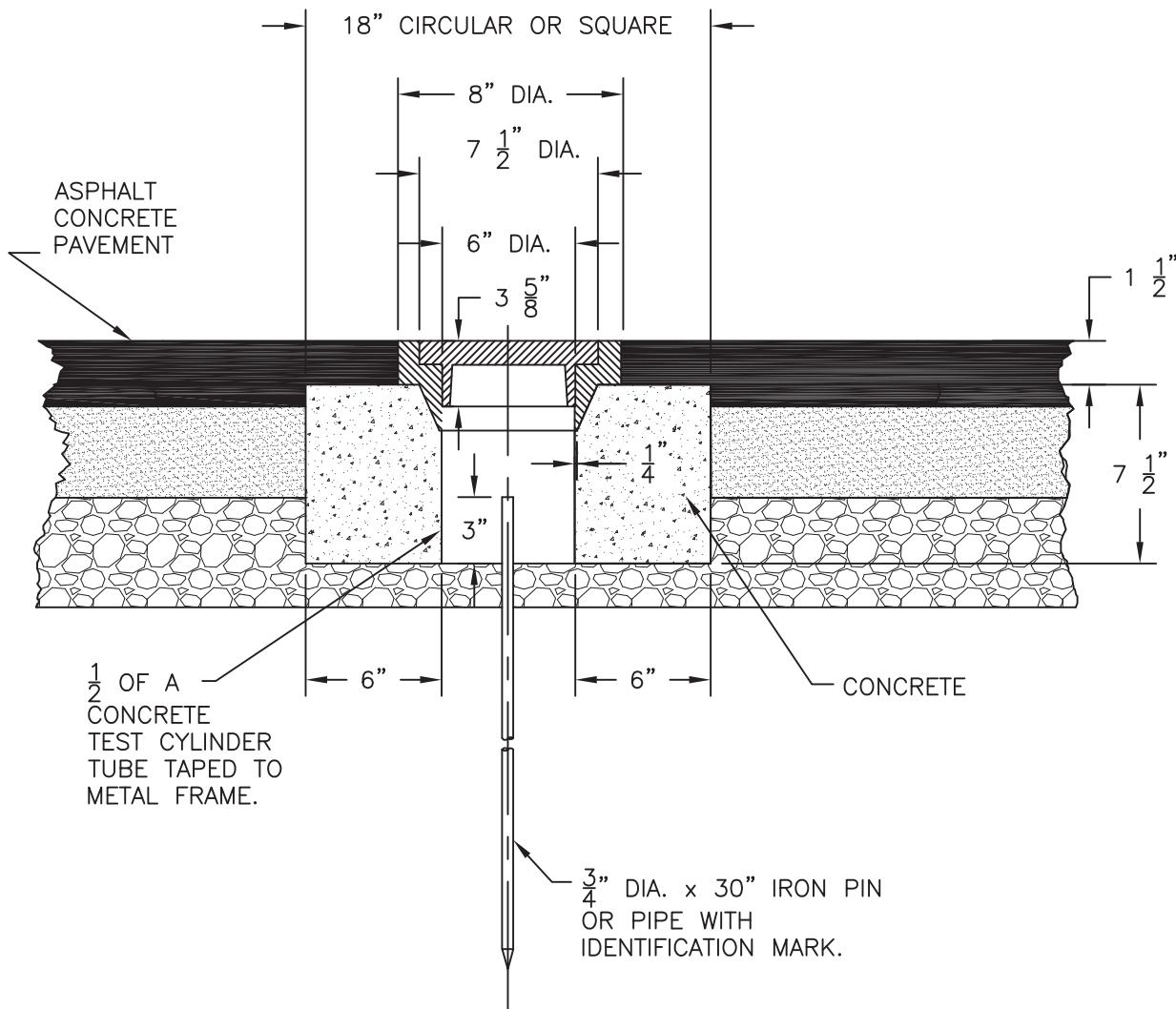


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

SCALE  
NONE

SUPERSEDES  
DWG. DATED  
11/25/03

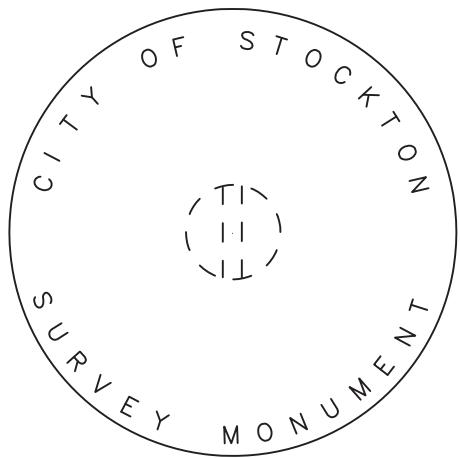
DRAWING NO.  
**W-19**



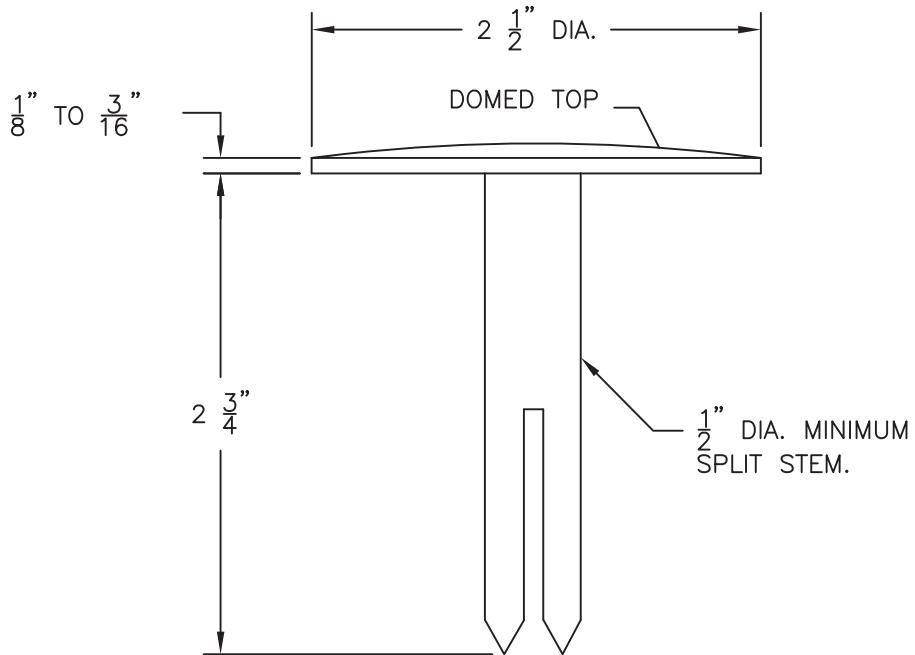
NOTES:

1. SET MONUMENT, FRAME AND COVER AFTER PAVEMENT IS IN PLACE.
2. MONUMENT FRAMES AND COVERS SHALL BE TOUGH GREY IRON CASTING CONFORMING TO THE LATEST A.S.T.M. REQUIREMENTS. EACH COVER SHALL BE GROUND OR OTHERWISE FINISHED SO THAT IT WILL FIT ITS FRAME WITHOUT ROCKING.
3. FRAME AND COVER TO BE "PINKERTON FOUNDRY" # A-581M. AMERICAN BRASS AND IRON, OR EQUAL. CAST IRON COVER TO BE MARKED "MONUMENT."
4. MONUMENTS TO BE SET AT ALL INTERSECTIONS, ENDS OF CUL-DE-SACS AT B.C. & E.C. OF CURVES, AND AT ENDS OF SUBDIVISION. ON LONG TANGENTS, THE MAXIMUM DISTANCE BETWEEN MONUMENTS SHALL NOT EXCEED 800', MONUMENTS SHALL BE EQUALLY SPACED.
5. WHEN MONUMENTS EXIST THAT CONTROL THE LOCATION OF SUBDIVISIONS, TRACT, BOUNDARIES, ROADS, STREETS, OR HIGHWAYS, OR PROVIDE HORIZONTAL OR VERTICAL SURVEY CONTROL, THE MONUMENT SHALL BE LOCATED AND REFERENCED BY OR UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER.

CITY MONUMENT	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02
	DRAWING NO.	M-1



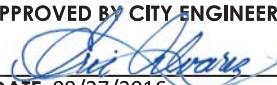
PLAN

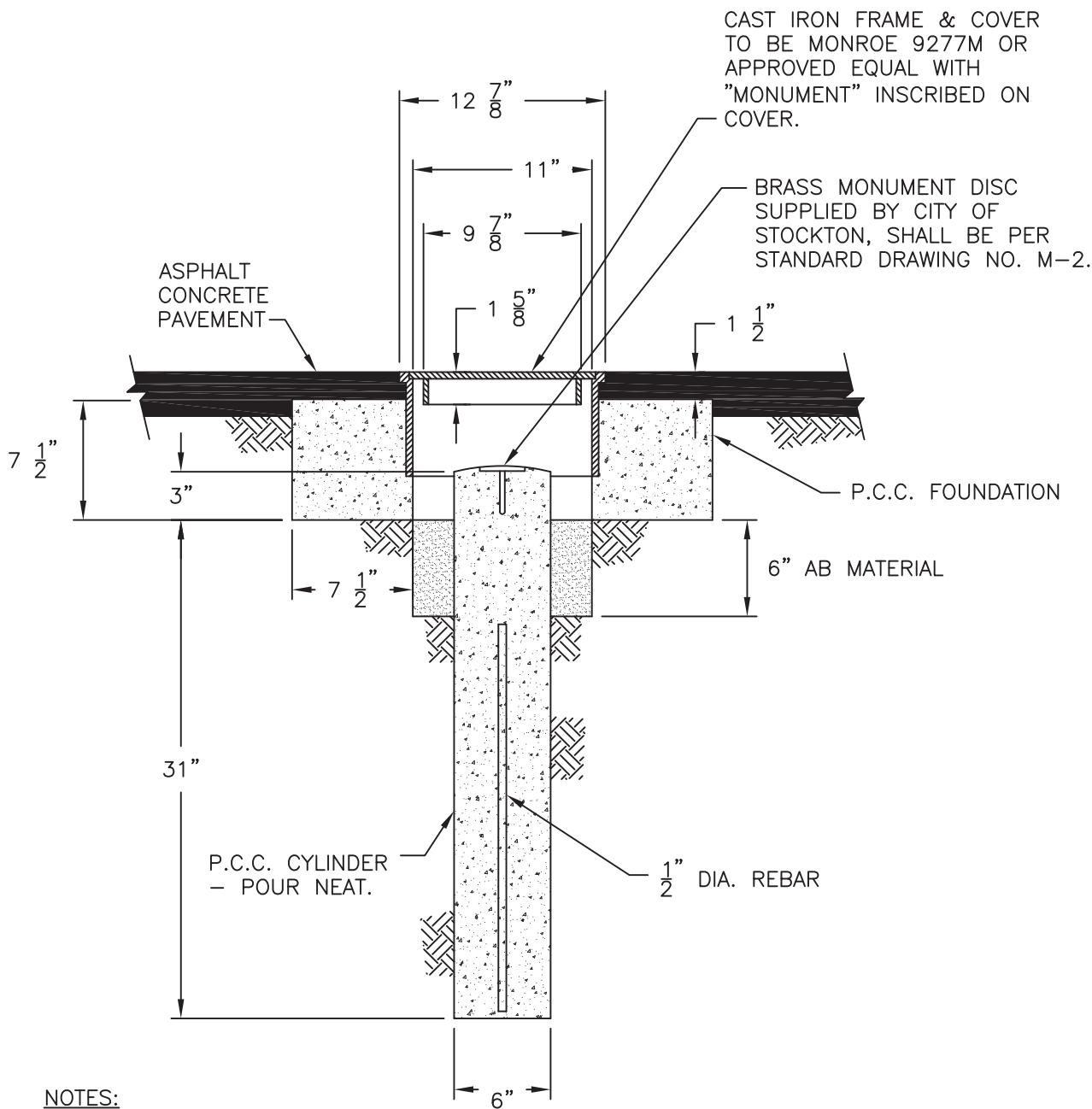


ELEVATION

NOTE:

THIS MARKER IS FOR USE IN C.O.S. SPECIAL MONUMENT INSTALLATIONS PER STANDARD DRAWING M-3.

<b>SURVEY MONUMENT MARKER</b>		REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02	DRAWING NO. <b>M-2</b>



1. MONUMENT FRAME AND COVER SHALL CONFORM TO THE CURRENT A.S.T.M. SPECIFICATIONS. COVER SHALL BE GROUND OR OTHERWISE FINISHED SO THAT IT WILL FIT THE FRAME WITHOUT ROCKING.
2. EXTENSION GRADE RINGS MUST BE AVAILABLE FOR FRAME AND COVER (USE MONROE 9278 OR EQUAL).
3. STAMP IDENTIFICATION MARK ON BRASS DISC OF LICENSED INDIVIDUAL SETTING MONUMENT.
4. MONUMENTS TO BE INSTALLED AT THE INTERSECTION OF ARTERIAL STREETS AS ESTABLISHED IN THE CITY OF STOCKTON GENERAL PLAN.

## SPECIAL MONUMENT INSTALLATION

REVISION NO. 3 APPROVED BY CITY ENGINEER:  
Dan Harpe  
DATE: 09/27/2016

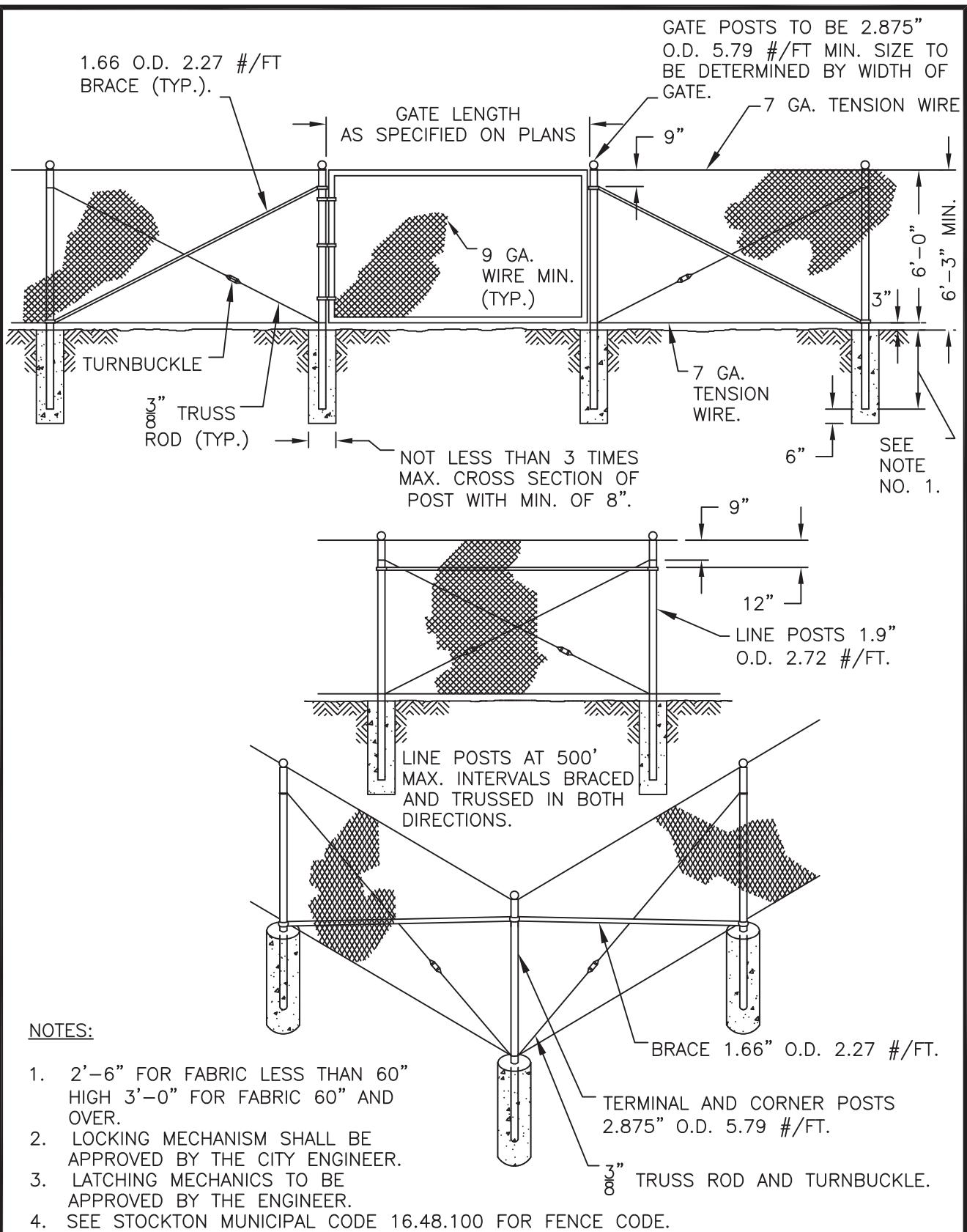


CITY OF STOCKTON  
DEPARTMENT OF PUBLIC WORKS

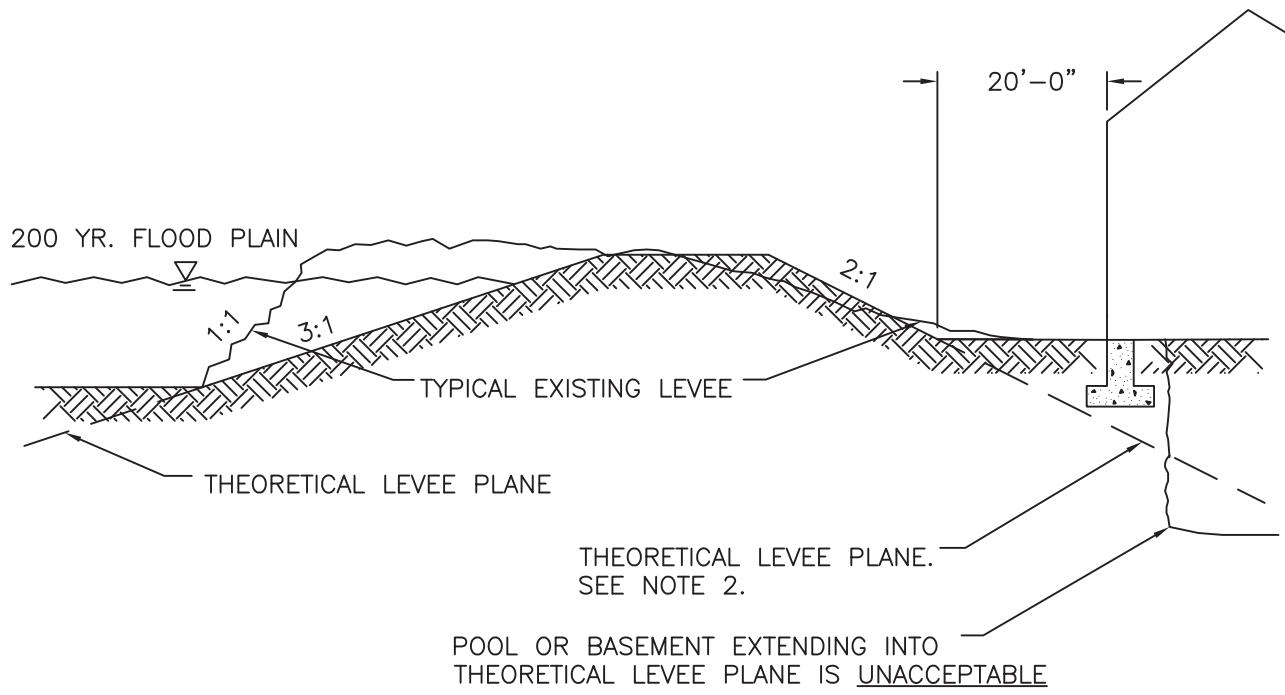
SCALE  
NONE

SUPERSEDES  
DWG. DATED  
01/09/02

DRAWING NO.  
**M-3**

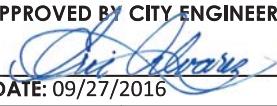


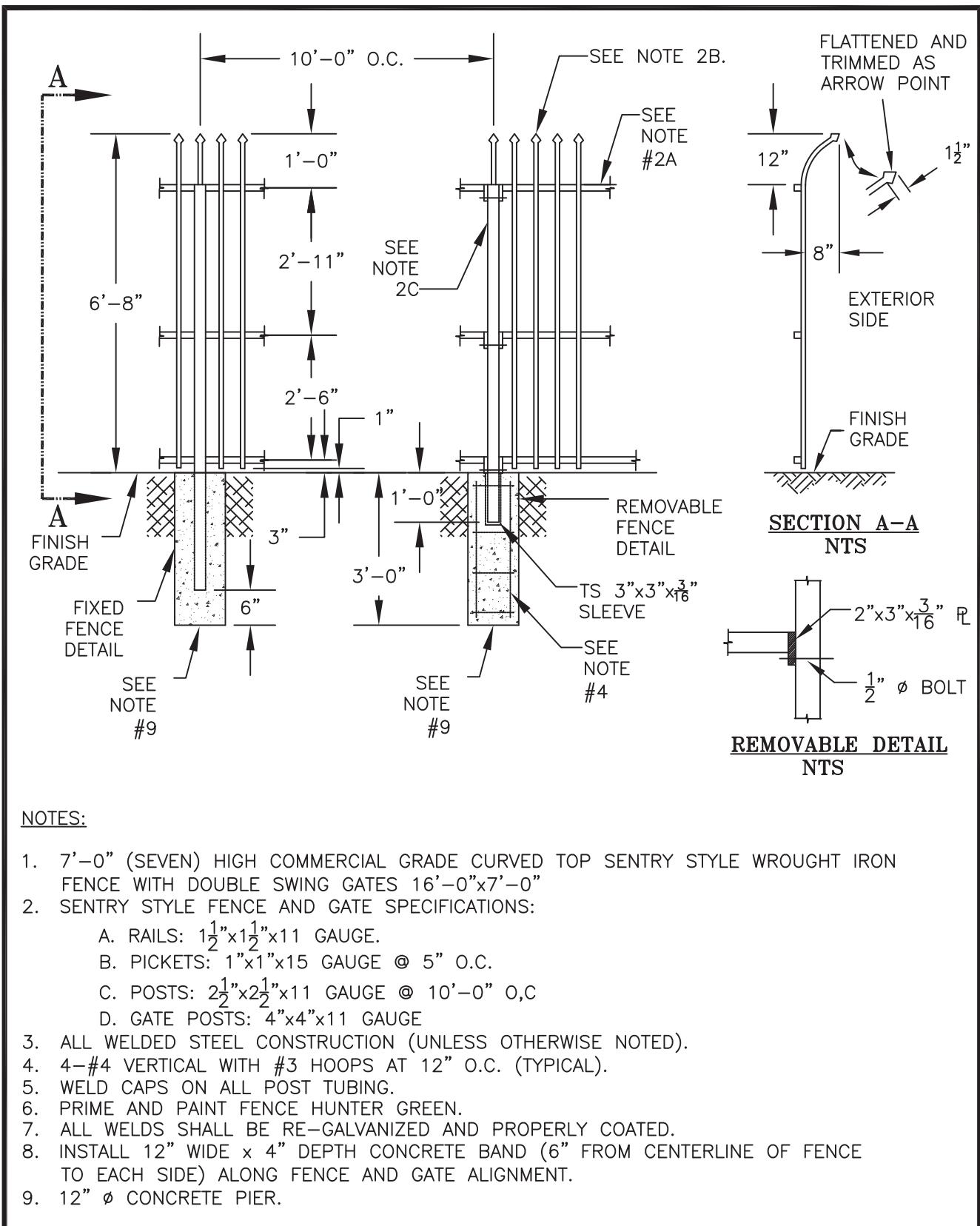
CHAIN LINK FENCE AND GATE	REVISION NO. 4	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/2
		DRAWING NO. <b>M-4</b>



NOTES:

1. NO CONSTRUCTION WITHIN 20'-0" OF TOE OF SLOPE.
2. NO PENETRATION OF THEORETICAL LEVEE PLANE.
3. THE RESPONSIBLE LEVEE MAINTAINING AGENCY MUST REVIEW PLANS FOR WORK ADJACENT TO LEVEE PRIOR TO ISSUANCE OF A PERMIT OR START OF WORK. THIS INCLUDES WORK THAT IS OUTSIDE OF THE LEVEE EASEMENT.
4. ADDITIONAL REQUIREMENTS APPLY TO LEVEES DESIGNATED BY THE CITY TO BE IMPROVED TO 200-YEAR FLOOD PROTECTION. SUCH REQUIREMENTS ARE SPECIFIED IN THE CALIFORNIA DEPARTMENT OF WATER RESOURCES URBAN LEVEE DESIGN CRITERIA, AND INCLUDE, BUT ARE NOT LIMITED TO, SETBACKS, RIGHT-OF-WAY DEDICATIONS, AND ESTABLISHMENT OF NO EXCAVATION PRISMS.
5. ENCROACHMENTS OF LEVEED AND NON-LEVEED PROJECT CHANNELS SHALL MEET THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 23, WATERS, DIVISION 1, CENTRAL VALLEY FLOOD PROTECTION BOARD.

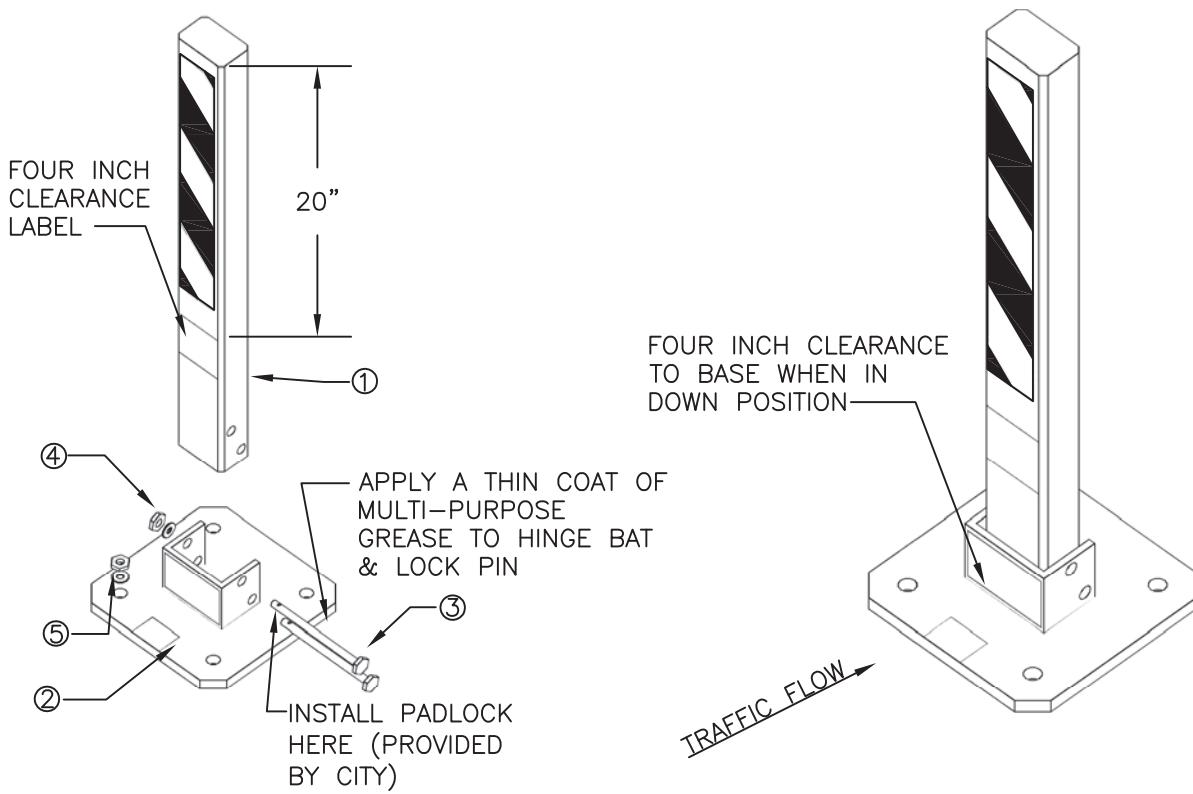
<b>BUILDING SETBACKS ADJACENT TO LEVEES</b>	REVISION NO. 2	APPROVED BY CITY ENGINEER:  DATE: 09/27/2016
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SCALE NONE	SUPERSEDES DWG. DATED 01/09/02



NOTES:

1. 7'-0" (SEVEN) HIGH COMMERCIAL GRADE CURVED TOP SENTRY STYLE WROUGHT IRON FENCE WITH DOUBLE SWING GATES 16'-0"x7'-0"
2. SENTRY STYLE FENCE AND GATE SPECIFICATIONS:
  - A. RAILS: 1 $\frac{1}{2}$ "x1 $\frac{1}{2}$ "x11 GAUGE.
  - B. PICKETS: 1"x1"x15 GAUGE @ 5" O.C.
  - C. POSTS: 2 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x11 GAUGE @ 10'-0" O.C.
  - D. GATE POSTS: 4"x4"x11 GAUGE
3. ALL WELDED STEEL CONSTRUCTION (UNLESS OTHERWISE NOTED).
4. 4-#4 VERTICAL WITH #3 HOOPS AT 12" O.C. (TYPICAL).
5. WELD CAPS ON ALL POST TUBING.
6. PRIME AND PAINT FENCE HUNTER GREEN.
7. ALL WELDS SHALL BE RE-GALVANIZED AND PROPERLY COATED.
8. INSTALL 12" WIDE x 4" DEPTH CONCRETE BAND (6" FROM CENTERLINE OF FENCE TO EACH SIDE) ALONG FENCE AND GATE ALIGNMENT.
9. 12" ø CONCRETE PIER.

<b>TUBULAR STEEL FENCE DETAIL</b>		REVISION NO. 1	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED 11/25/03	DRAWING NO. <b>M-6</b>

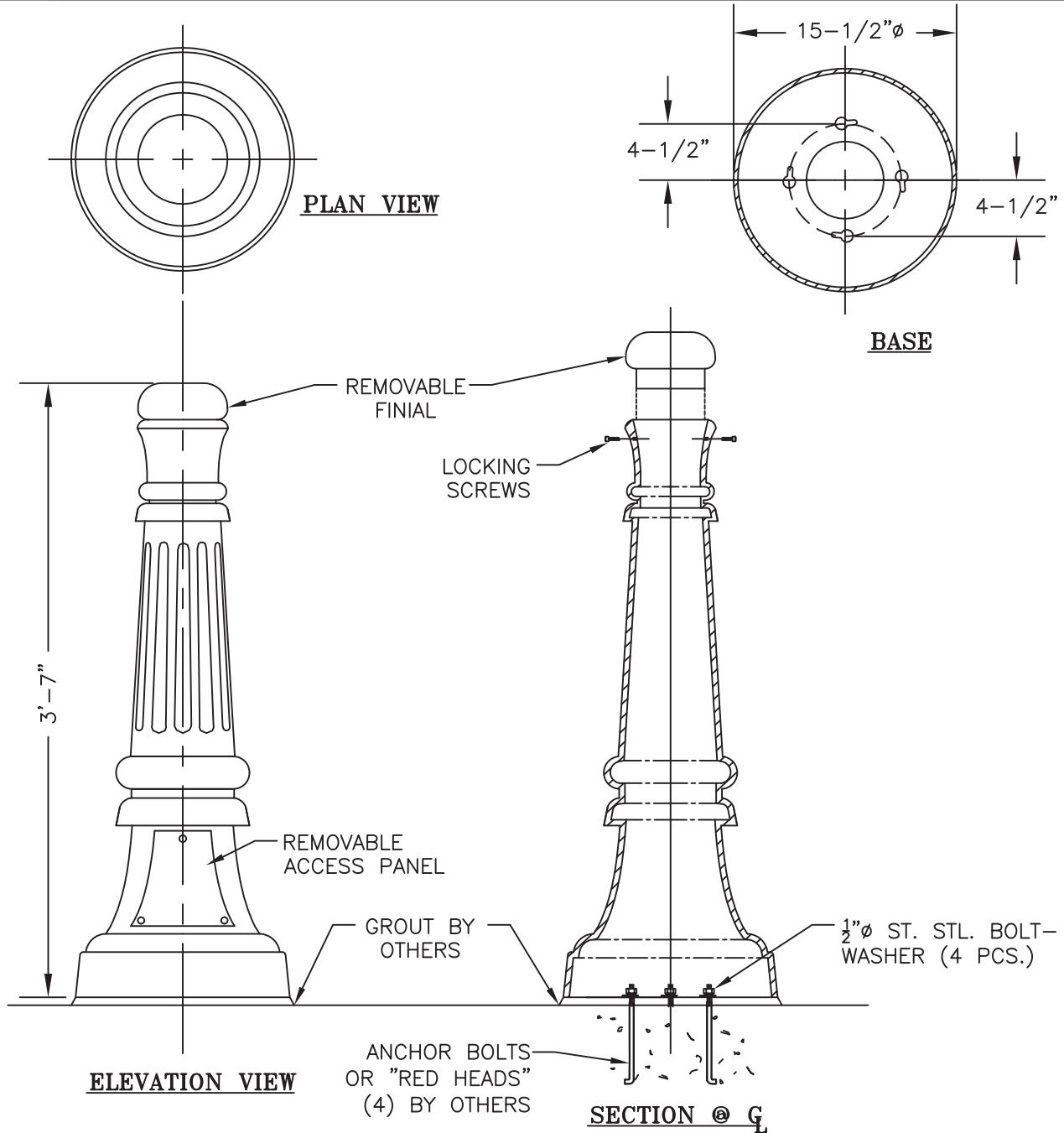


INSTALLATION INSTRUCTIONS FOR:

**LOW PROFILE HEAVY DUTY HINGED BOLLARD (TRAFFICGUARD LPHDHB & HDHB)**

1. VERIFY THAT ALL LOW PROFILE HEAVY DUTY HINGED BOLLARD PARTS ARE IN THE SHIPMENT PACKAGE AS SHOWN ON THE "BILL OF MATERIAL".
2. INSTALL LPHDHB BASE (ITEM 2) TRUE AND LEVEL ON YOUR SELECTED ANCHOR SYSTEM USING THE FLAT WASHERS AND HEX NUTS INCLUDED IN YOUR ANCHOR SYSTEM KIT. USE S.S. SHIMS TO LEVEL IF NEEDED. TORQUE HEX NUTS TO MINIMUM 100 FT-LBS FOR ANCHOR SYSTEMS CPAS AND ESAS. TORQUE HEX NUTS FOR OTHER ANCHOR SYSTEMS TO MANUFACTURERS SPECIFICATION.
3. INSTALL LPHDHB POST (ITEM 1) TO LPHDB BASE (ITEM 2) USING HINGE BOLT (ITEM 3), FLAT WASHER (ITEM 5), AND HEX NUT (ITEM 4) AS SHOWN. TACK WELD HEX NUT TO HINGE BOLT OR CHISEL HINGE BOLT THREADS SUCH THAT HEX NUT CANNOT BE EASILY REMOVED.
4. INSTALL LOCKING PIN THRU UP POSITION BOLLARD POST, AND INSTALL PADLOCK WHERE SHOWN. A HEX NUT (ITEM 4) IS INCLUDED IN CASE A PADLOCK IS NOT AVAILABLE.
5. INSTALL THE FOUR LABELS AT THE LOCATIONS SHOWN.
6. CHECK THE FUNCTIONAL OPERATION OF THE LOW PROFILE HEAVY DUTY HINGED BOLLARD.
7. INSTALL TRAFFICGUARD CONCRETE PIER ANCHOR SYSTEM INSTALLATION DRAWING CPAS 12 AND DETAIL DRAWING CPAS 12 (DETAIL NOT SHOWN).

BOLLARD STANDARD	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016	
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED	DRAWING NO. <b>M-7</b>



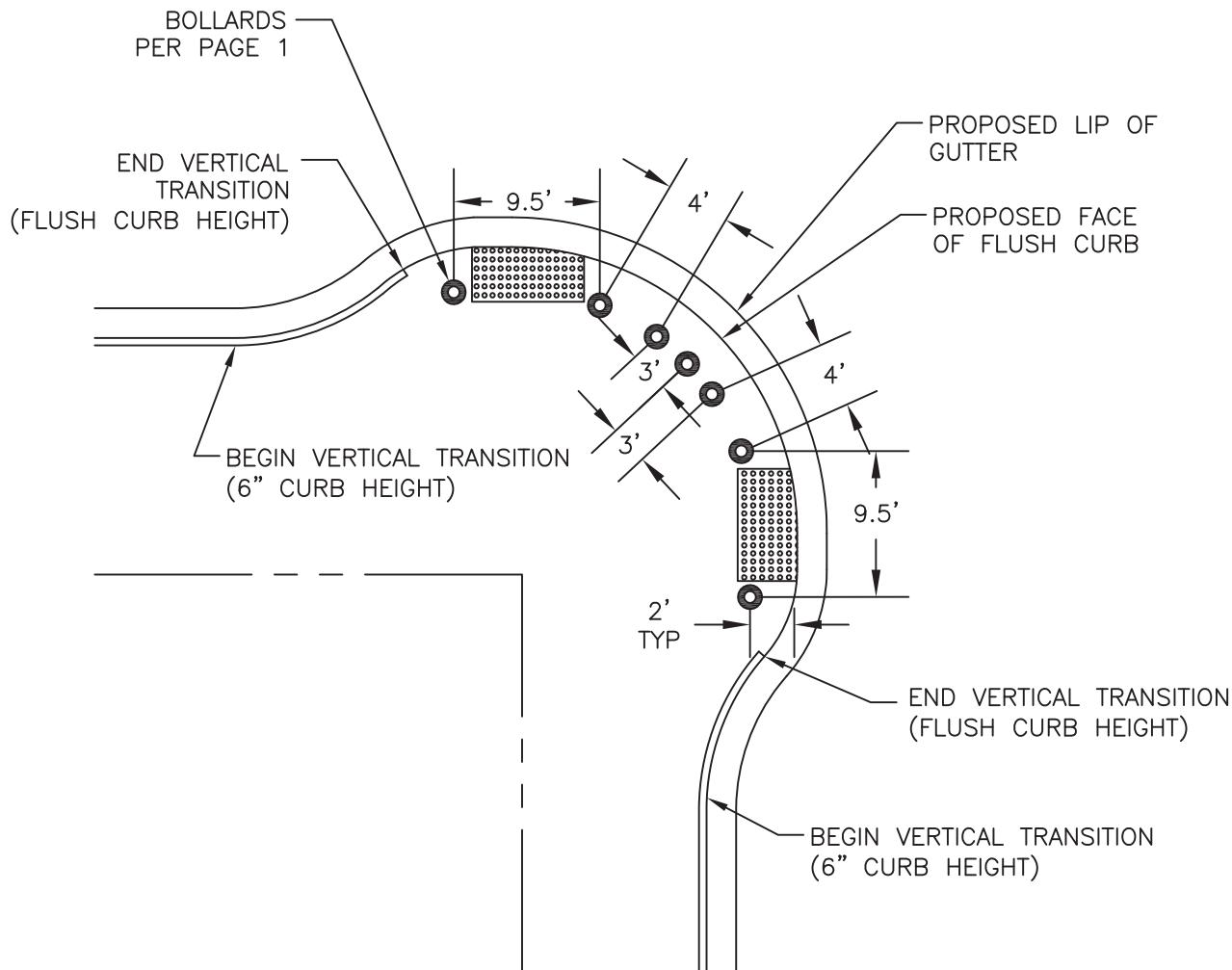
NOTES:

MATERIAL: CAST IRON  
 FINISH: GREEN SHERWIN WILLIAMS F63-SXG-8692-8127  
 MOUNTING: FASTEN TO ANCHOR PLATE THRU REMOVABLE ACCESS PANEL  
 ORDERING: CANTERBURY INTERNATIONAL "1890 BOLLARD-PERMANENT-43" HIGH" PLUS MATERIAL AND FINISH

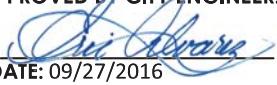
\*INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

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<b>DOWNTOWN BOLLARD</b>	REVISION NO.	APPROVED BY CITY ENGINEER: <i>[Signature]</i> DATE: 09/27/2016
<b>CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS</b>	SCALE NONE	SUPERSEDES DWG. DATED <b>M-8</b>



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<b>DOWNTOWN BOLLARD</b>	REVISION NO.	APPROVED BY CITY ENGINEER:
 CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS		 DATE: 09/27/2016
	SCALE NONE	SUPERSEDES DWG. DATED <b>M-8</b>