
Santa Clara City Construction Design Drawings



Special Thanks To:

St. George City

Washington City

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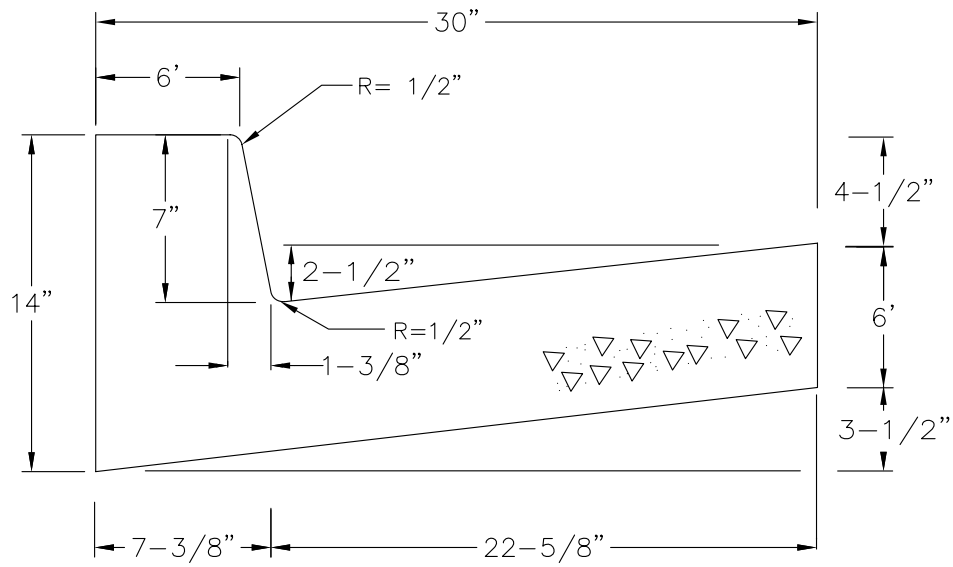
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STANDARD CURB & GUTTER
(TYPE HB30-7)

NOTES:

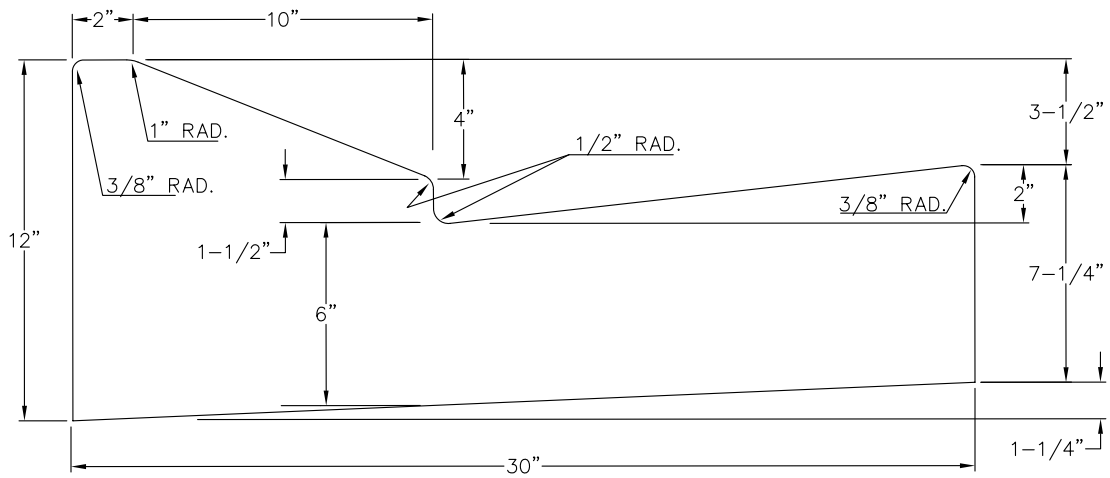
1. ALL CONCRETE SHALL BE CLASS "A".

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD CURB & GUTTER
DETAIL

STANDARD DWG. NO.	
100	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



RU30

NOTES:
 1- ALL CONSTRUCTION & MATERIALS SHALL CONFORM TO CITY STANDARDS.

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CONCRETE CURB & GUTTER
 (RU30 & PR24)

STANDARD DWG. NO.

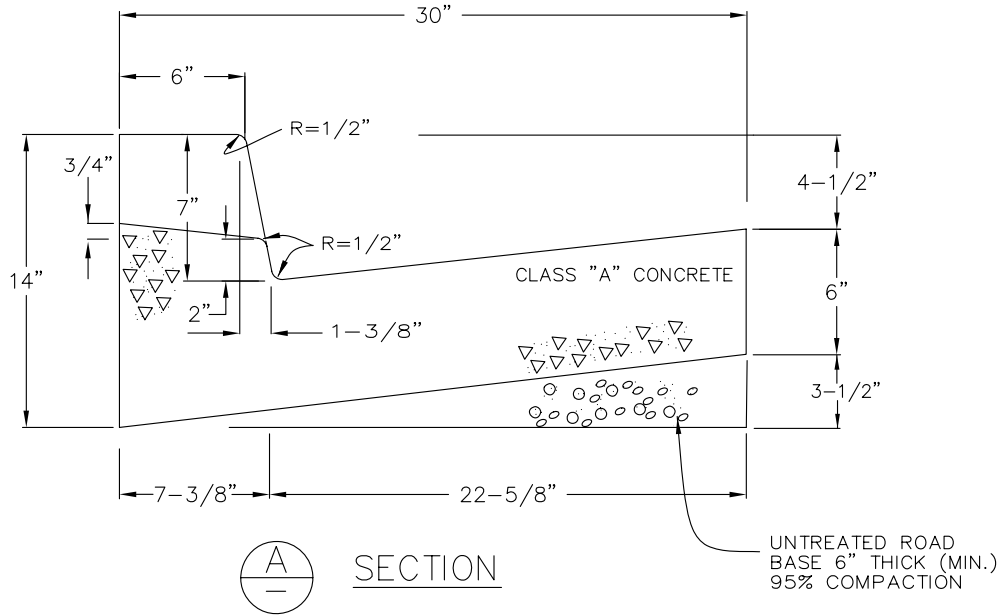
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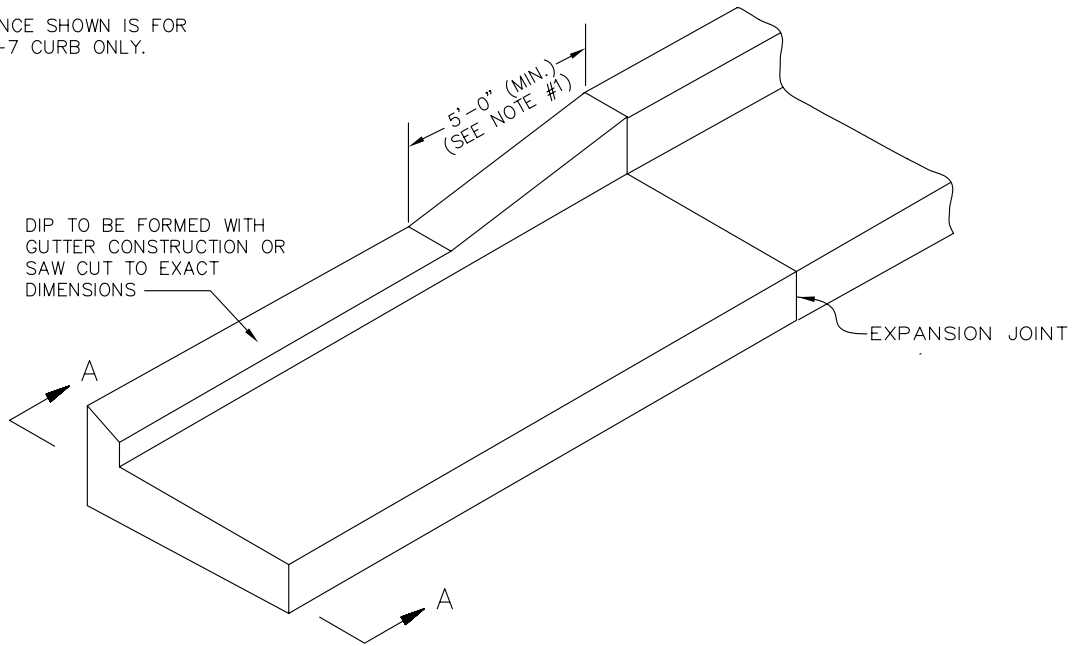
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REVISIONS

DATE	DESCRIPTION	BY



NOTES:
1- DISTANCE SHOWN IS FOR
HB30-7 CURB ONLY.



NO SCALE

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DRIVEWAY CURB (TYPE HB30-7)
DETAILS

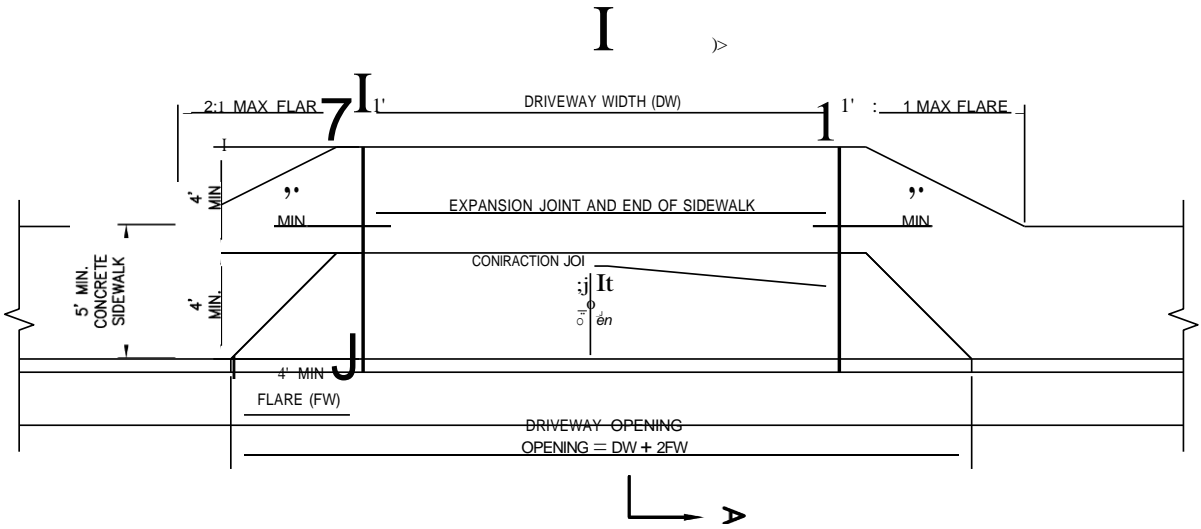
STANDARD DWG. NO.

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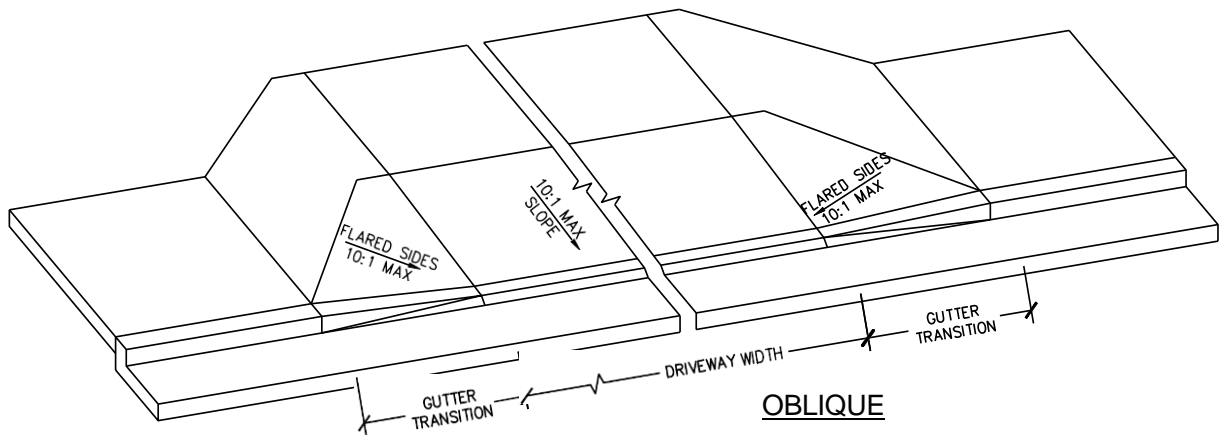
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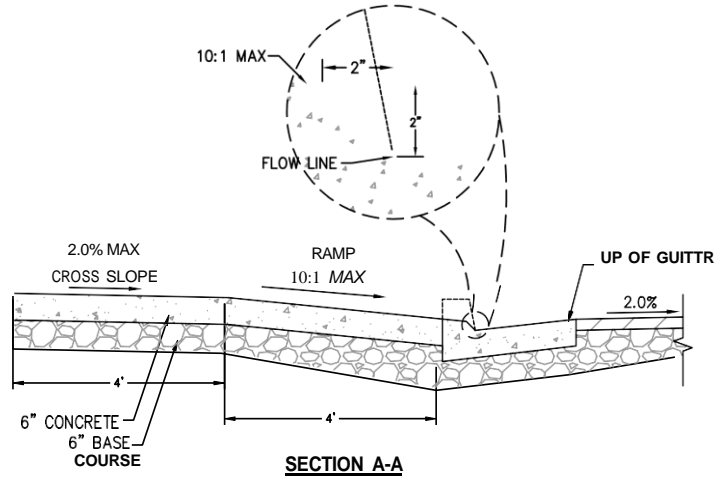
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FLARED DRIVEWAY WITH ADJACENT SIDEWALK - PLAN VIEW



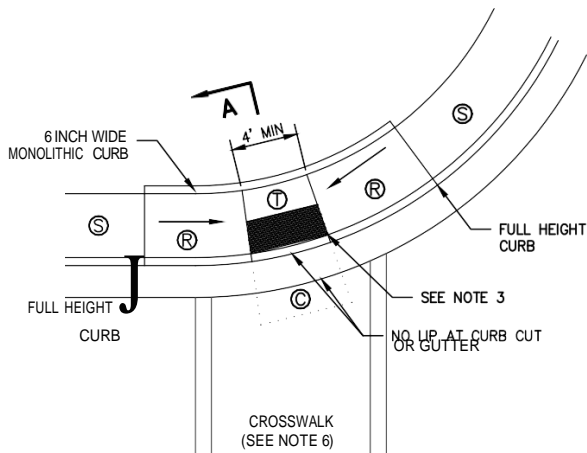
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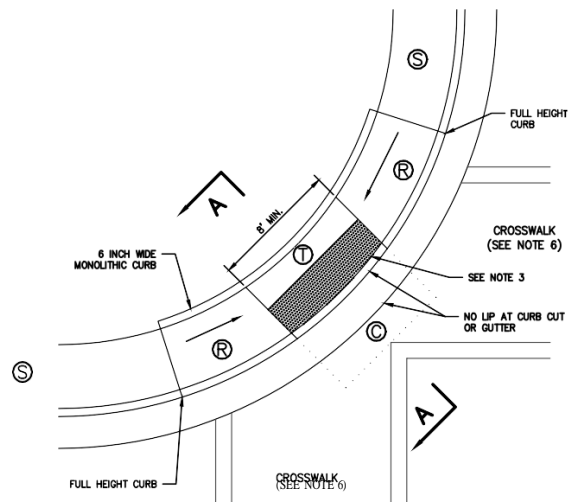
SECTION A-A

- NOTES:
1. WIDTH OF DRIVEWAYS VARIES WITH USE - SEE CITY STANDARDS OR CONTACT CITY PUBLIC SERVICES DEPARTMENT.
 2. DRIVEWAYS WITH COMMERCIAL OR INDUSTRIAL USE REQUIRE ADDITIONAL THICKNESS SEE PUBLIC SERVICES DEPARTMENT

REVISIONS			SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	DRIVEWAY APRON DETAILS		111	1 OF 1
					APPROVED: FEB 8 2023	
					DATE: DEC 2022	BY: LB



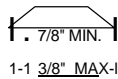
CORNER PEDESTRIAN RAMP



**CORNER PEDESTRIAN RAMP
DUAL CROSSING**

SINGLE CROSSING
50% 6" CURB
BASE DIMENSION 4.8'

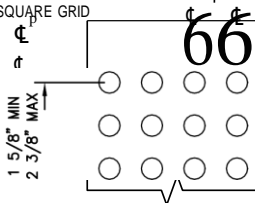
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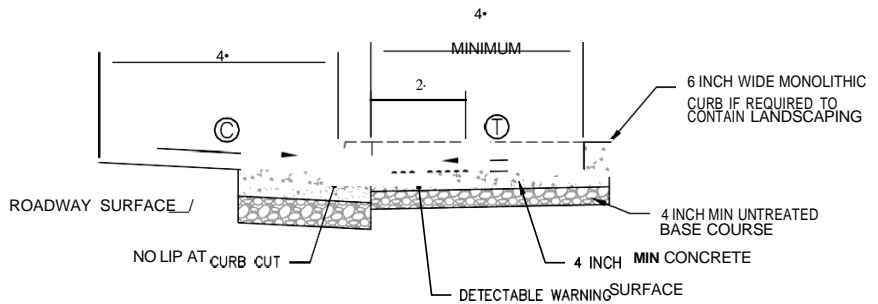
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1 5/8" MIN
2 3/8" MAX

IN SQUARE GRID



DETECTABLE WARNING SURFACE



SECTION A-A

SLOPE TABLE			
ITEM	MAX. RUNNING SLOPE *	MAX CROSS SLOPE *	
(T)	TURNING SPACE	2%	2% (c)
(R)	RAMP	8.33%	2% (c)
(C)	CLEAR SPACE	5%	2% (c)
(S)	SIDEWALK	STREET GRADE	2%

* RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. CROSS SLOPE IS PERPENDICULAR TO PEDESTRIAN TRAVEL

(a) LENGTH OF RUNNING SLOPE FOR PARALLEL RAMPS IS REQUIRED TO NOT EXCEED 15 FT.

(b) MAINTAIN CONSISTENCY OF CLEAR SPACE RUNNING SLOPE ACROSS ENTIRE CURB CUT. STRIPING PLAN. WARP GUTTER PAN TO MEET REQUIRED CLEAR SPACE SLOPE AT CURB CUT.

(c) DO NOT EXCEED THE ROADWAY GRADE FOR THE CROSS SLOPE AT CROSSWALKS WITHOUT STOP OR YIELD CONTROL AND AT MID-BLOCK CROSSWALKS.

NOTES:

1. DIMENSIONS SHOWN IN THE SLOPE TABLE ARE NOT SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES. CONSTRUCT SIDEWALKS AND RAMPS SUCH THAT THE MAXIMUM OR MINIMUM VALUES ARE NOT EXCEEDED. WORK THAT EXCEEDS THOSE VALUES WILL NOT BE ACCEPTED.

2. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF CURB CUT.

3. LOCATE DETECTABLE WARNING SURFACE SO THE CORNERS NEAREST THE STREET ARE WITHIN 1 INCH OF THE BACK OF CURB.

4. RAMP GRADE BREAK MUST BE PERPENDICULAR TO THE RUNNING SLOPE.

5. CLEAR SPACE AND TURNING SPACE SIZE: 4 FT MIN. X 4 FT MIN.

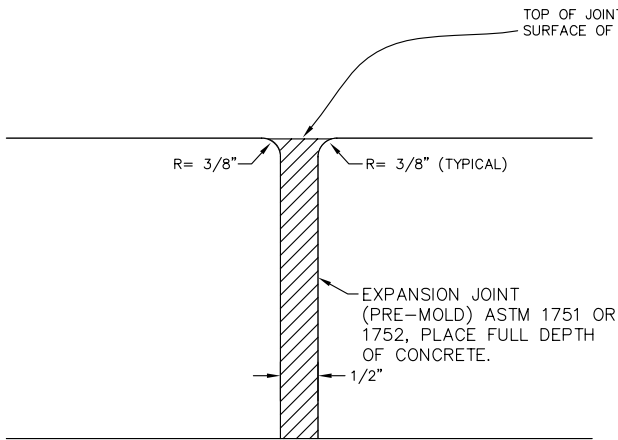
6. CROSS WALK DELINEATION IF REQUIRED TO BE SHOWN ON PROJECT

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

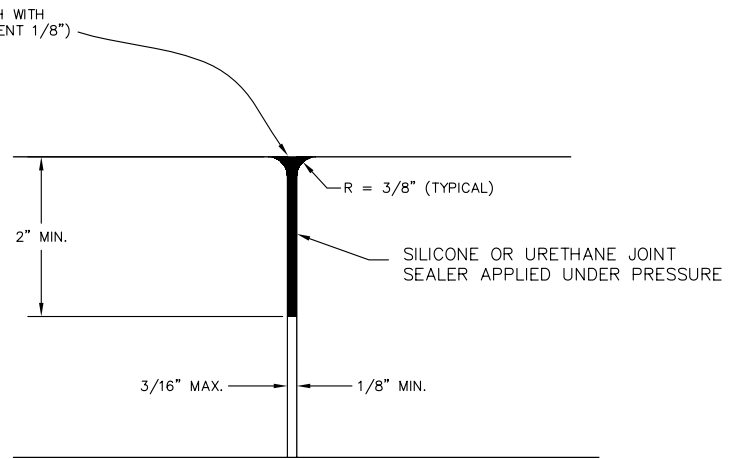
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PEDESTRIAN RAMP DETAILS

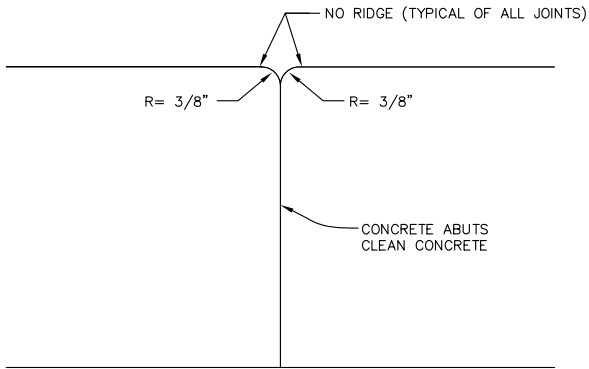
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DATE: DEC 2022	BY: LB



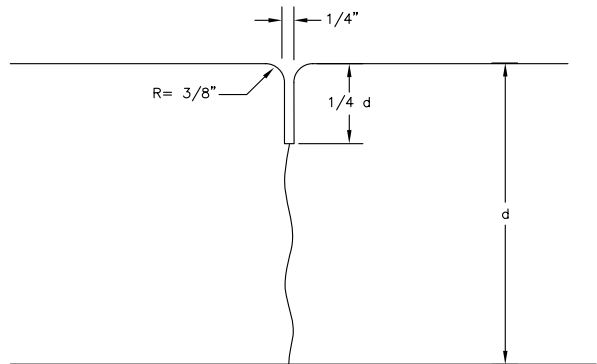
EXPANSION JOINT



FORM PLATE JOINT



COLD JOINT



CONTROL JOINT

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STANDARD CONCRETE JOINT
DETAILS

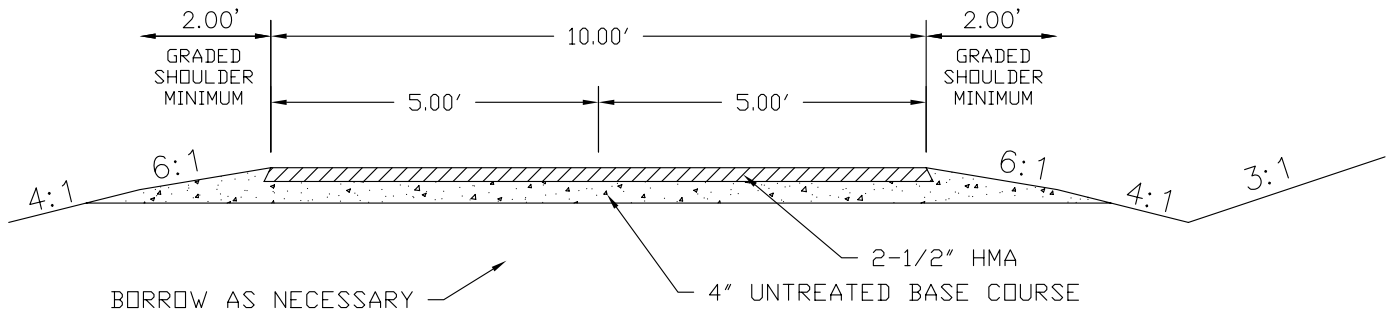
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TYPICAL SECTION

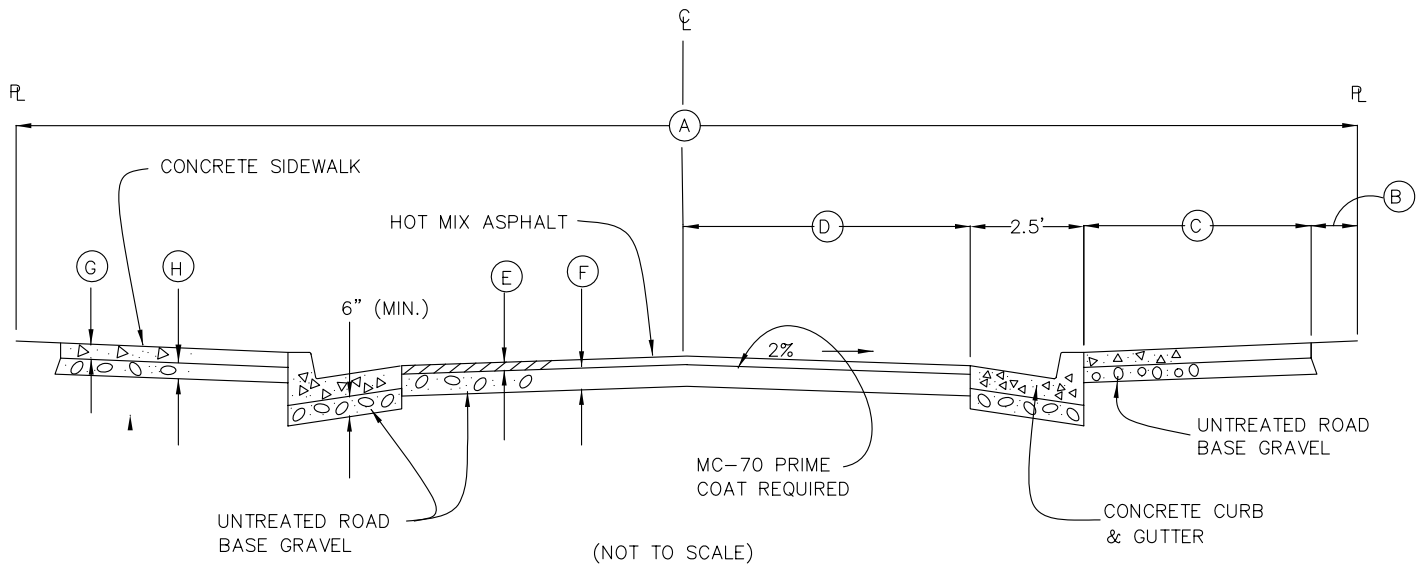
NOTE: TRAIL TO MEET AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (ASHTO) "GUIDE FOR DEVELOPMENT OF BICYCLE FACILITIES" DESIGN STANDARDS.

CITY OF WASHINGTON ENGINEERING DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

10' TRAIL SECTION

STANDARD DWG. NO.	
130	1 OF 1
APPROVED:	
DATE:	BY: -



DIMENSIONS			
MARK	LOCAL	COLLECTOR	ARTERIAL
A	50'	60'	80'
B	1'	0.5'	0'
C	4'	5'	5'+
D	17.5'	23.0'	32.5'
E(MIN)	2.5"	3"	3.5"
F	SEE STANDARD SPECIFICATIONS		
G	4" FOR SIDEWALK, 6" FOR DRIVEWAY APRONS		
H	4" UNDER SIDEWALKS, 6" UNDER DRIVEWAYS		

NOTES:

- 1- MAXIMUM ALLOWABLE DIFFERENCE IN CURB ELEVATION SHALL BE 12 INCHES AND MUST HAVE CITY ENGINEER APPROVAL PRIOR TO ITS USE.
- 2- FOR ROADS IN OR SERVING INDUSTRIAL AREAS, ASPHALT AND BASE THICKNESS SHALL BE INCREASED ACCORDING TO PROVISIONS FOR HEAVY TRUCK TRAFFIC.
- 3- MINIMUM ASPHALT THICKNESS IS SHOWN. THICKNESS SHALL BE BASED UPON ACTUAL ENGINEERING ANALYSIS, BUT IN NO CASE SHALL IT BE LESS THAN THE MINIMUM.

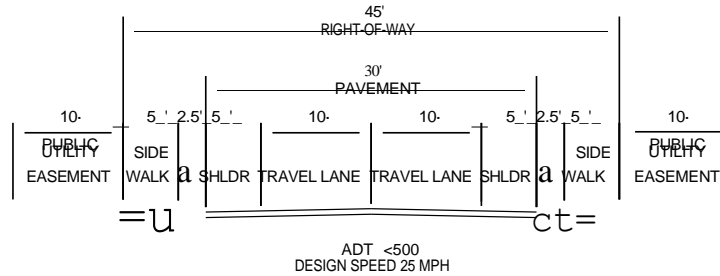
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REVISIONS		
DATE	DESCRIPTION	BY

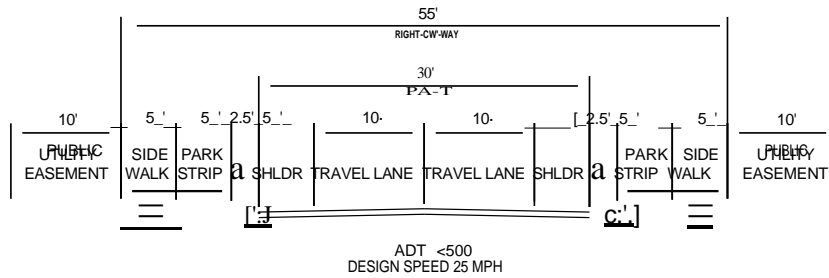
STANDARD ROAD CROSS SECTIONS

STANDARD DWG. NO.	
140	1 OF 1
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DATE: OCT 2008	BY: TE

RESIDENTIAL LOCAL



RESIDENTIAL LOCAL ALTERNATIVE



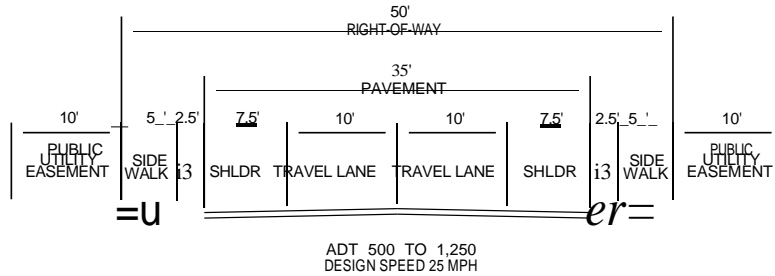
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DATE	DESCRIPTION	BY

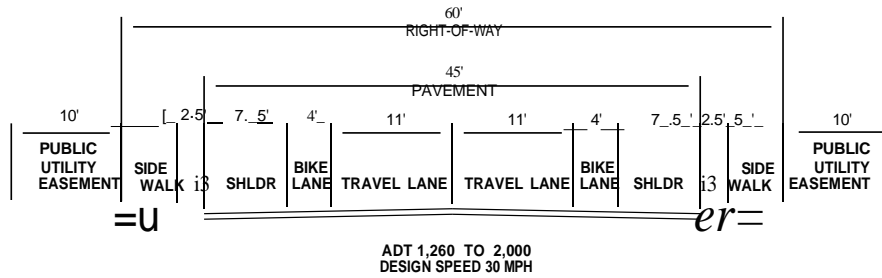
STANDARD ROAD CROSS SECTIONS

STANDARD DWG. NO.	
140-A	1 OF 1
APPROVED: FEB 8 2023	
DATE: DEC 2022	BY: LB

RESIDENTIAL STANDARD



MINOR COLLECTOR



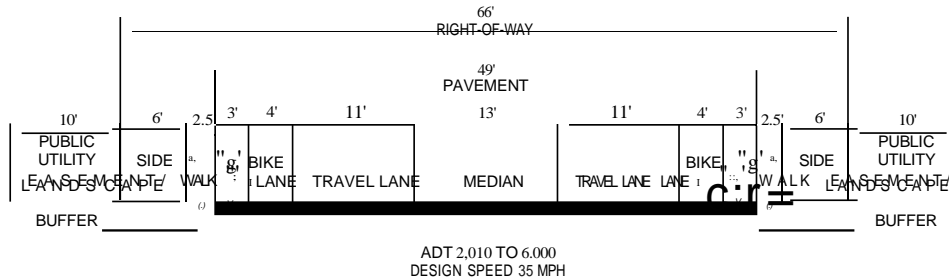
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DATE	DESCRIPTION	BY

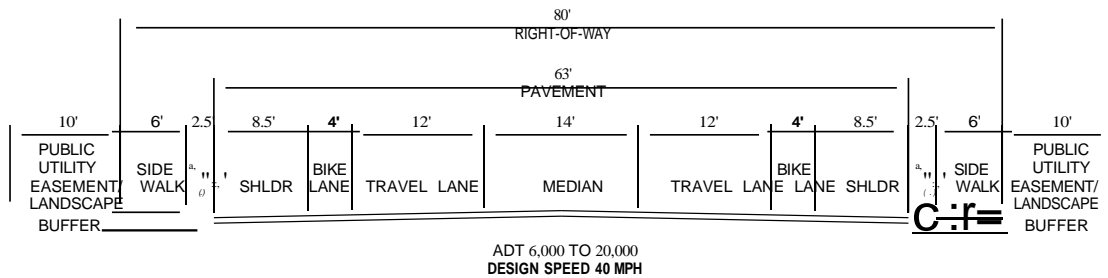
STANDARD ROAD CROSS SECTIONS

STANDARD DWG. NO.	
140-8	1 OF 1
APPROVED: FEB 8 2023	
DATE: DEC 2022	BY: LB

MAJOR COLLECTOR



MINOR ARTERIAL



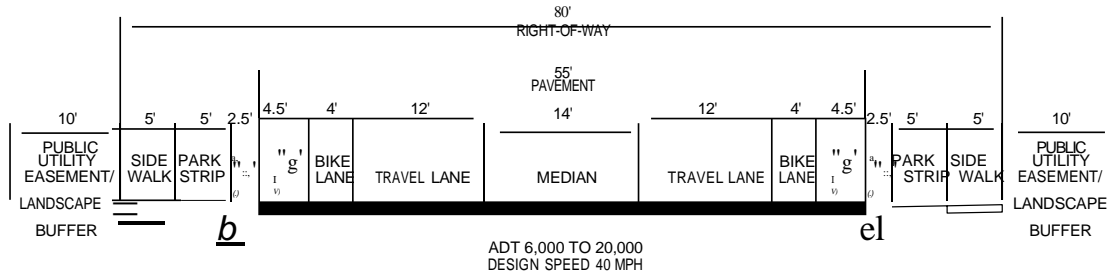
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DATE	DESCRIPTION	BY

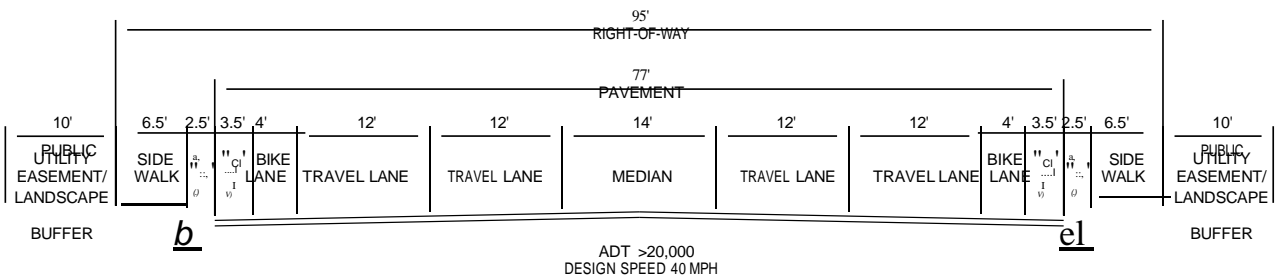
STANDARD ROAD CROSS SECTIONS

STANDARD DWG. NO.	
140-C	1 OF 1
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MINOR ARTERIAL ALTERNATIVE



MAJOR ARTERIAL



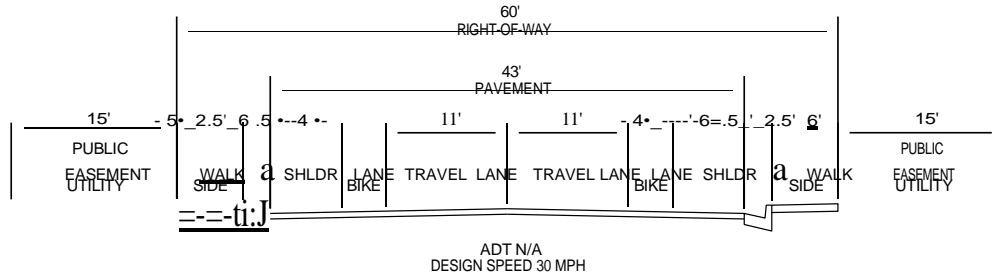
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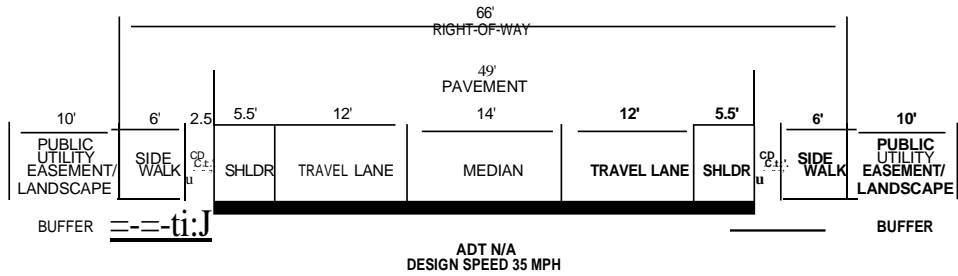
STANDARD ROAD CROSS SECTIONS

STANDARD DWG. NO.	
140-D	1 OF 1
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COMMERCIAL LOCAL



INDUSTRIAL LOCAL

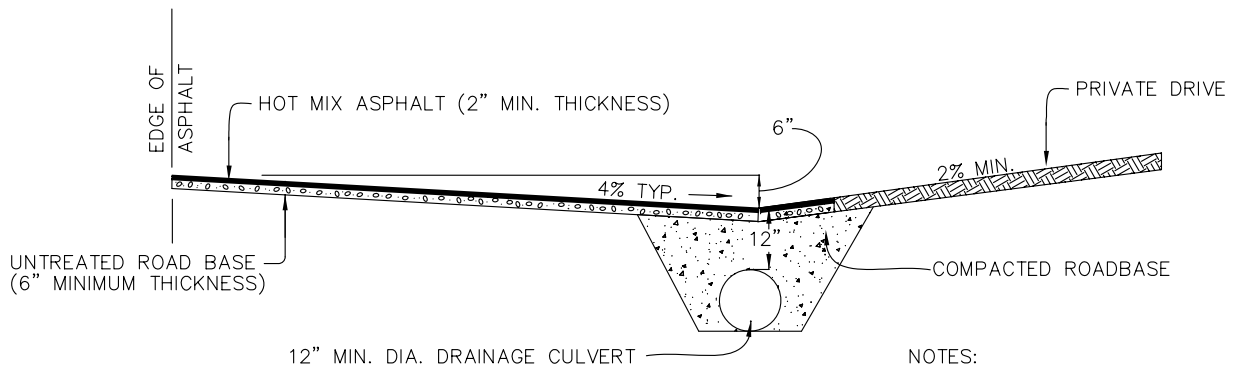


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STANDARD ROAD CROSS SECTIONS

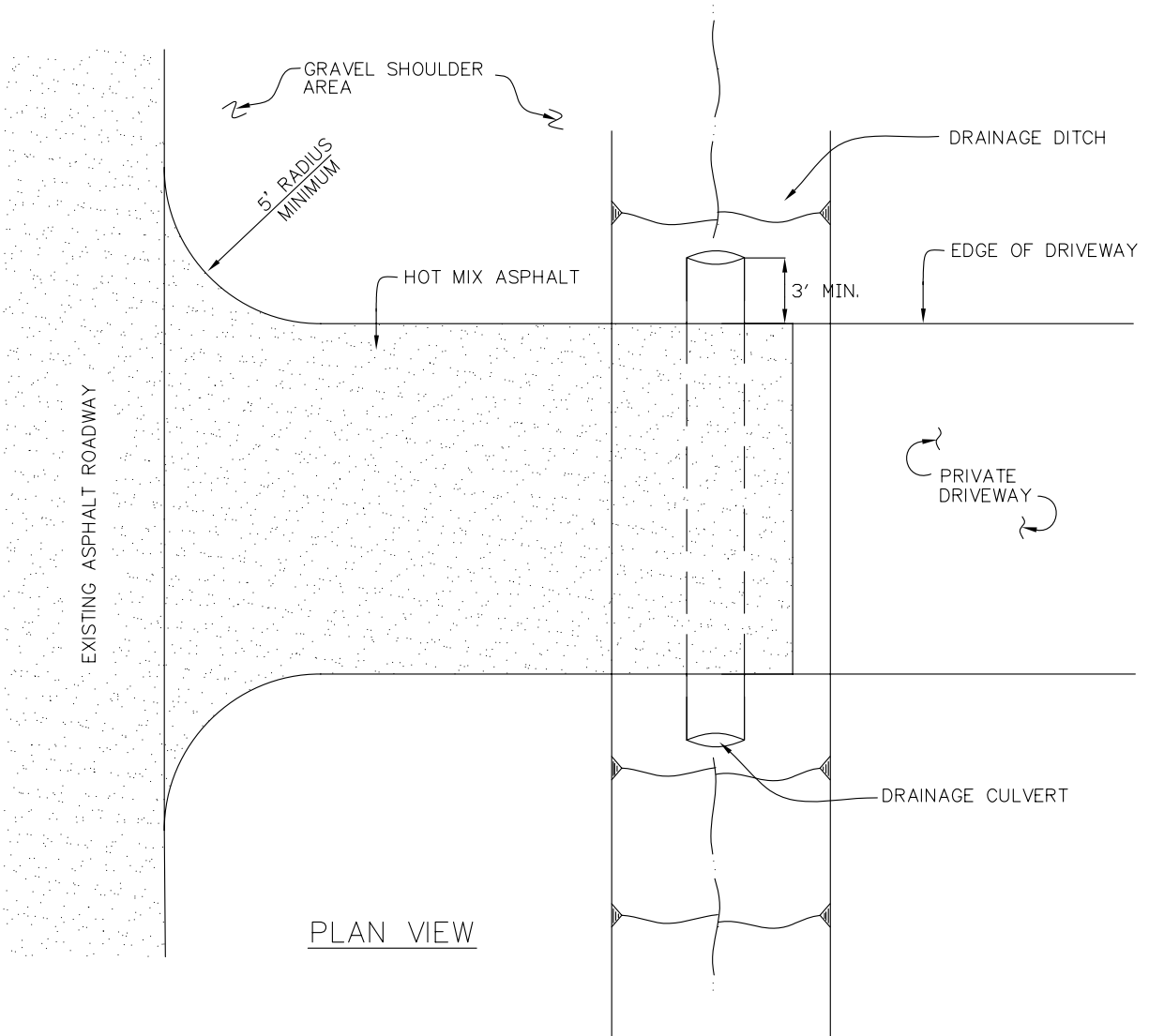
STANDARD DWG. NO.	
140-E	1 OF 1
APPROVED: FEB 8 2023	
DATE: DEC 2022	BY: LB



NOTES:

- 1- ALL PIPE AND INSTALLATION TO MEET CITY STANDARDS.
- 2- CULVERT TO HAVE A MINIMUM SLOPE OF 0.5%.
- 3- DO NOT PAVE BETWEEN EDGE OF ASPHALT AND DRAINAGE DITCH EXCEPT AT DRIVEWAY.

SECTION AT DRIVEWAY CL



PLAN VIEW

SANTA CLARA PUBLIC SERVICES DEPARTMENT

DRIVEWAY ACCESS DETAILS
WITHOUT CURBING

STANDARD DWG. NO.

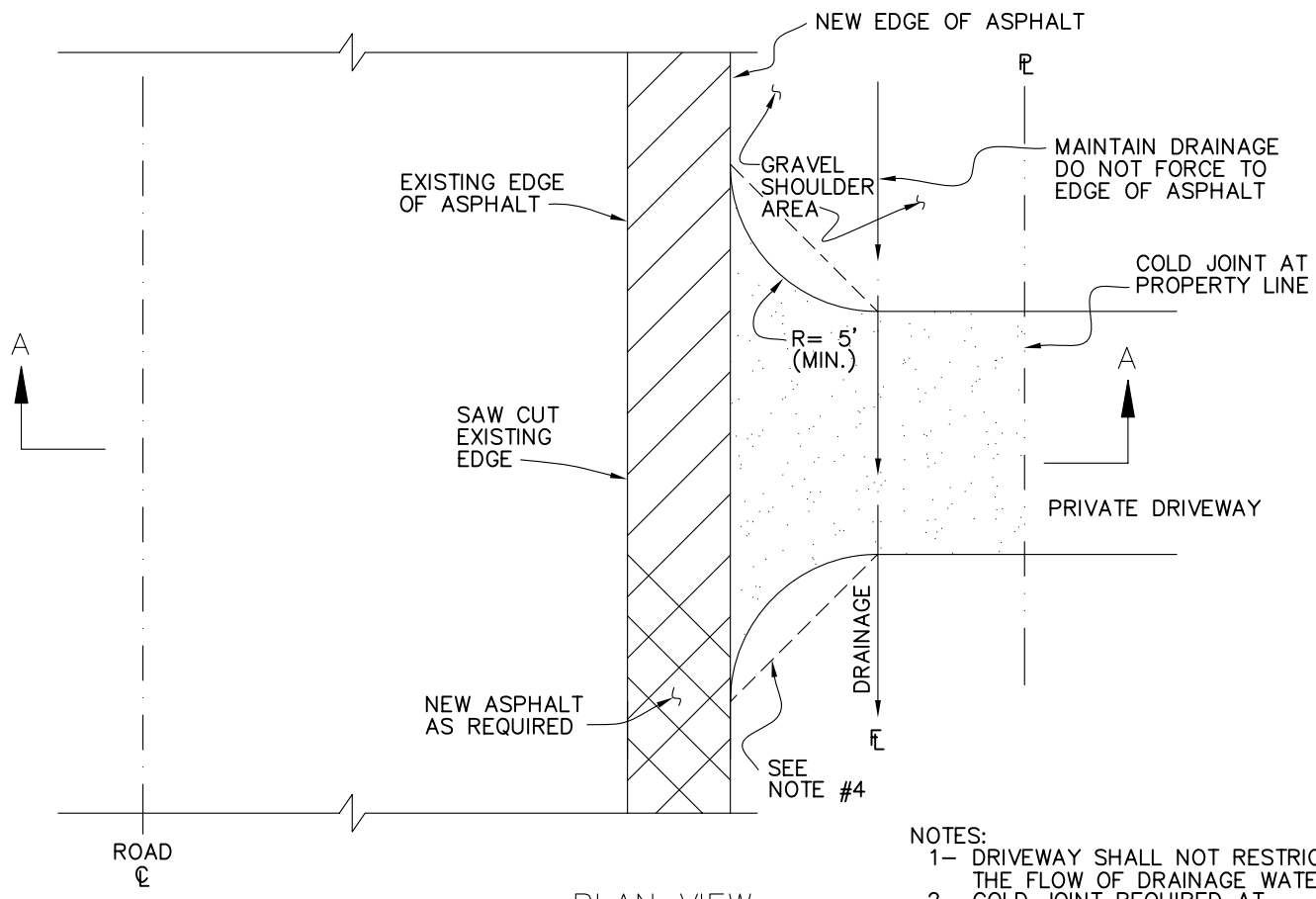
152 1 OF 1

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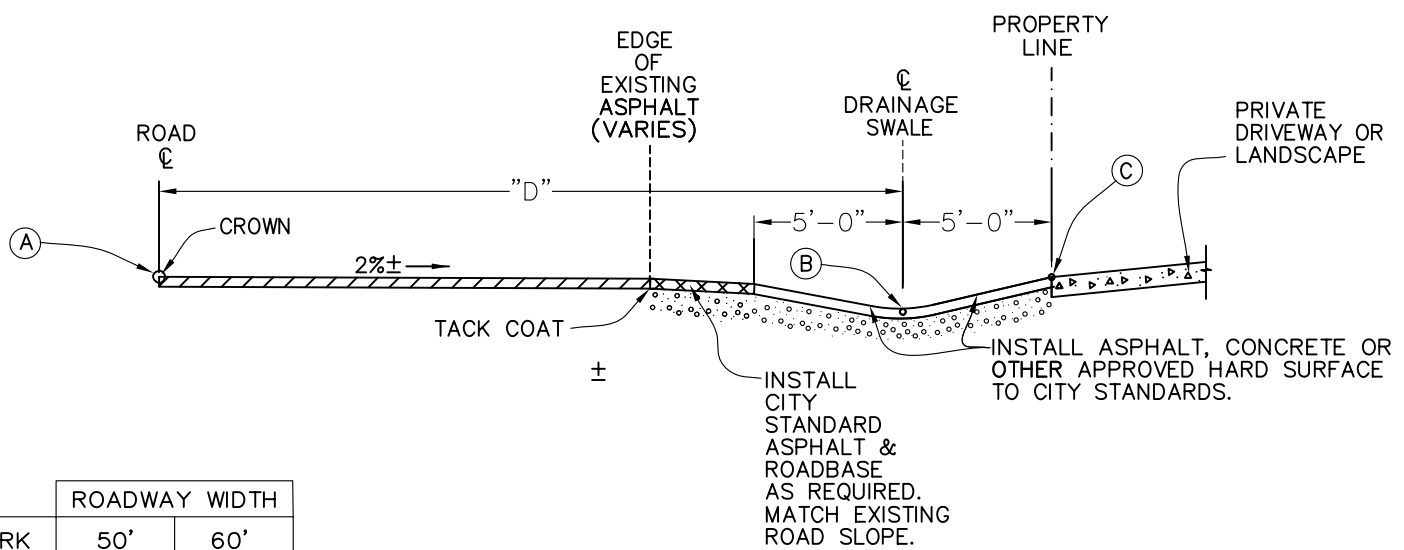
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DATE	DESCRIPTION	BY



PLAN VIEW

- NOTES:
- 1- DRIVEWAY SHALL NOT RESTRICT THE FLOW OF DRAINAGE WATER
 - 2- COLD JOINT REQUIRED AT PROPERTY LINE.
 - 3- DO NOT PAVE BETWEEN NEW EDGE OF ASPHALT AND DRAINAGE CENTERLINE EXCEPT AT DRIVEWAY.
 - 4- 45° ANGLE MAY REPLACE RADIUS.



SECTION-A

	ROADWAY WIDTH	
MARK	50'	60'
A	VARIES	VARIES
B(MIN.)	A-6"	A-7"
C	A+1"	A+1"
D	20'	25'

SANTA CLARA PUBLIC SERVICES DEPARTMENT

DRIVEWAY ACCESS
WITHOUT CURBING (50' & 60' RIGHT OF WAY)

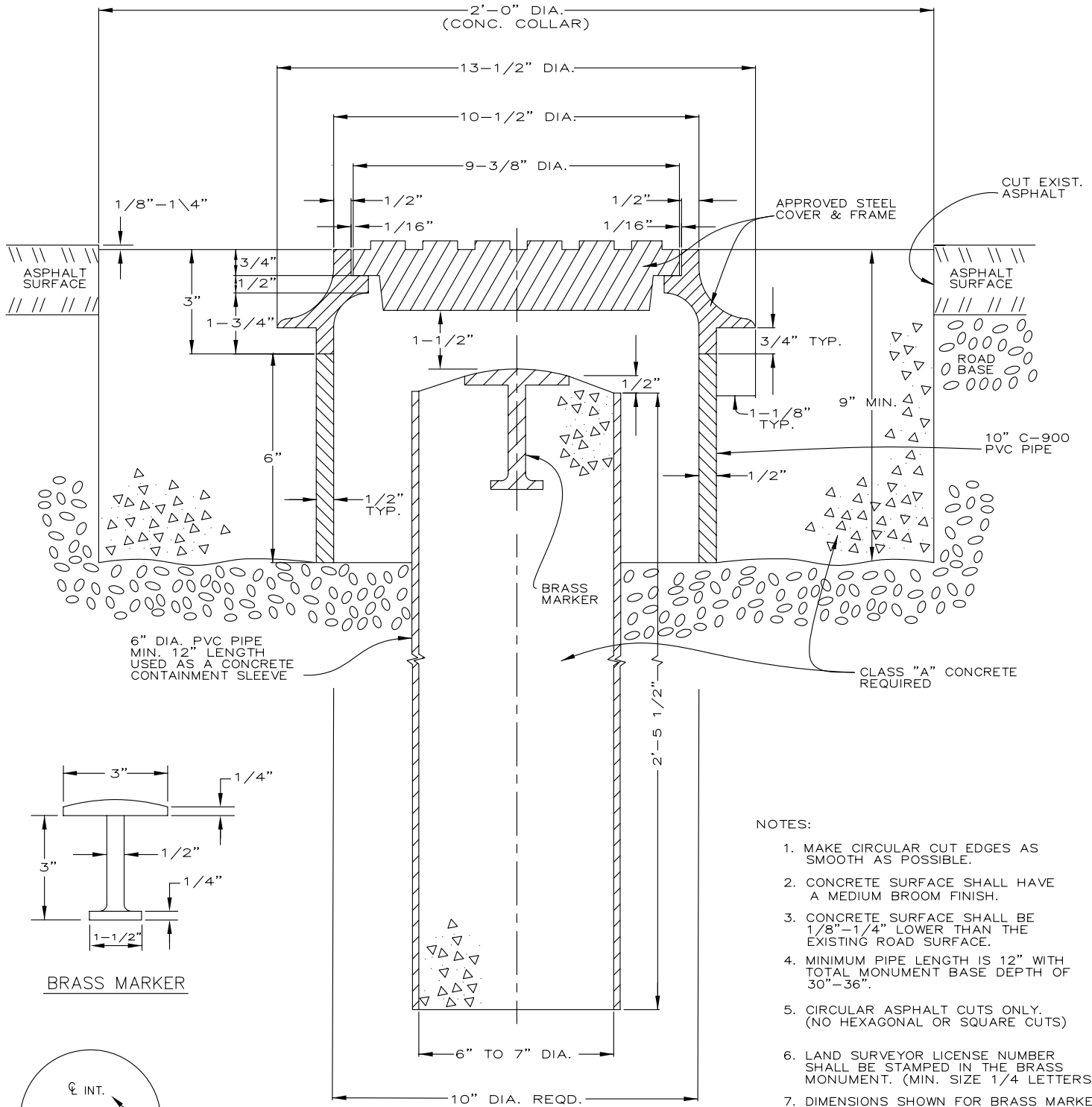
STANDARD DWG. NO.

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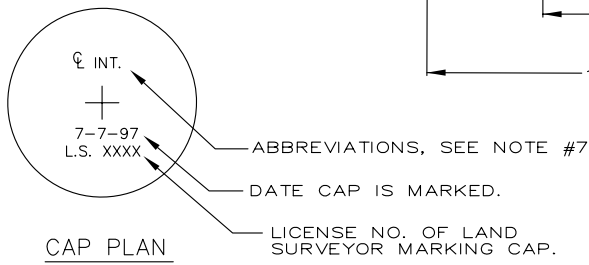
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- NOTES:
1. MAKE CIRCULAR CUT EDGES AS SMOOTH AS POSSIBLE.
 2. CONCRETE SURFACE SHALL HAVE A MEDIUM BROOM FINISH.
 3. CONCRETE SURFACE SHALL BE 1/8"-1/4" LOWER THAN THE EXISTING ROAD SURFACE.
 4. MINIMUM PIPE LENGTH IS 12" WITH TOTAL MONUMENT BASE DEPTH OF 30"-36".
 5. CIRCULAR ASPHALT CUTS ONLY. (NO HEXAGONAL OR SQUARE CUTS)
 6. LAND SURVEYOR LICENSE NUMBER SHALL BE STAMPED IN THE BRASS MONUMENT. (MIN. SIZE 1/4 LETTERS)
 7. DIMENSIONS SHOWN FOR BRASS MARKER ARE THE MINIMUM.
 8. SEE CITY SURVEYOR FOR LIST OF COMMONLY USED ABBREVIATIONS.



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CLASS I STANDARD MONUMENT
DETAILS

STANDARD DWG. NO.

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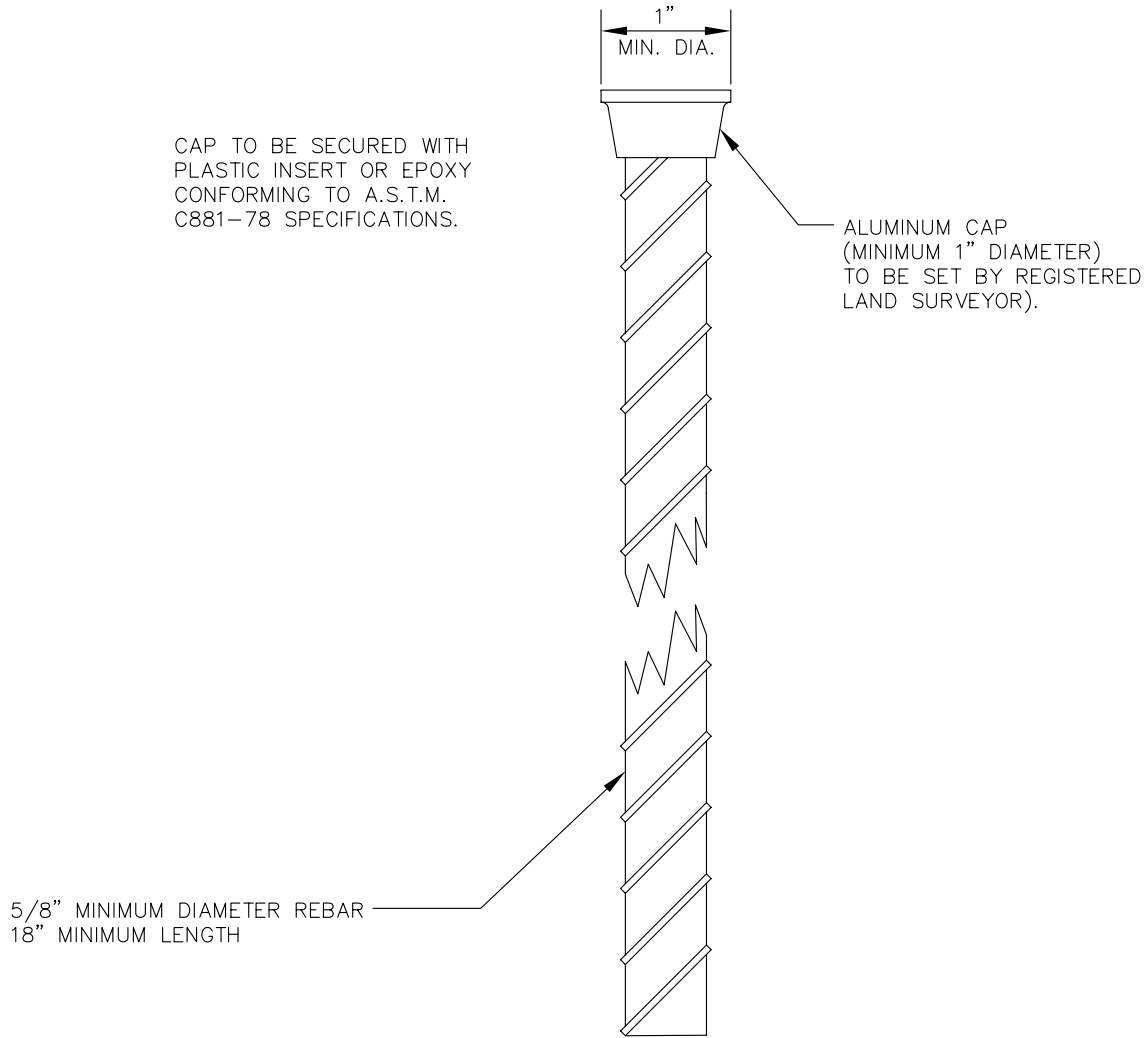
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NOTES:

- 1- TYPE II MONUMENTS TO BE SET AT ALL CENTERLINE CONTROL POINTS NOT OTHERWISE IDENTIFIED BY A TYPE I MONUMENT AND AS REQUIRED BY THE CITY SURVEYOR.
- 2- THE REGISTERED LAND SURVEYOR'S NUMBER, AND A PUNCH MARK ARE TO APPEAR ON THE SURFACE OF THE CAP.
- 3- ALUMINUM CAP SHALL BE SET FLUSH WITH SURFACE OF ROAD.



TYPE II MONUMENT

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CLASS II MONUMENT

STANDARD DWG. NO.

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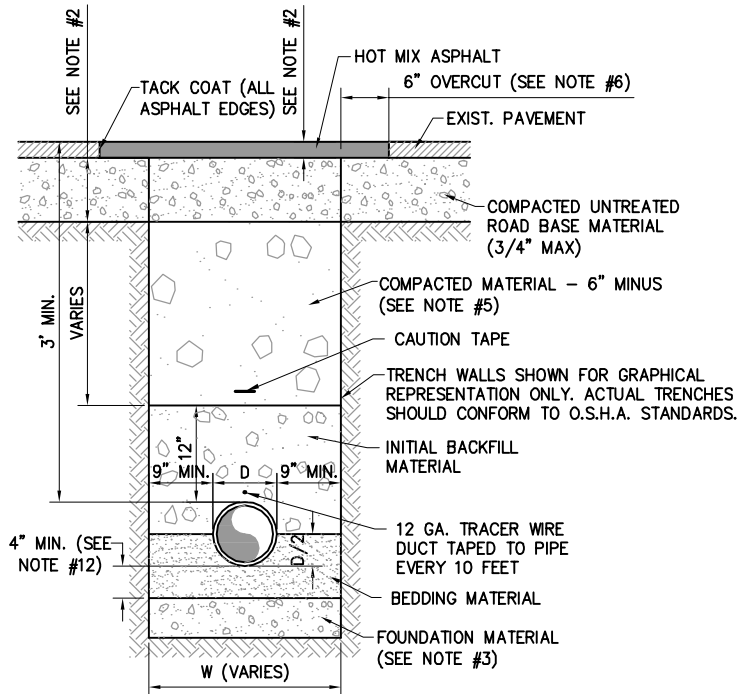
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NOTES:

1. ALL EXCAVATIONS WITHIN PUBLIC RIGHT-OF-WAY REQUIRE AN ENCROACHMENT PERMIT FROM THE CITY ENCROACHMENT OFFICER.
2. MINIMUM THICKNESS OF ASPHALT AND BASE SHALL BE AS OUTLINED IN THE ROADWAY STRUCTURAL REQUIREMENTS. IN NO CASE SHALL THE THICKNESS BE LESS THAN THE EXISTING.
3. FOUNDATION MATERIAL SHALL BE USED WHEN TRENCH BOTTOM IS UNSTABLE.
4. ALL STATE HIGHWAY CROSSINGS SHALL BE APPROVED BY THE U.D.O.T. DISTRICT ENGINEER (U.D.O.T. PERMIT REQUIRED).
5. MINIMUM COMPACTION SHALL BE 95%. WHEN APPROVED FLOWABLE FILL OR SLURRY IS USED COMPACTION TESTING WILL NOT BE REQUIRED.
6. WHEN MATERIAL UNDER THE 6" OVERCUT SLUFFS OFF OR IS REMOVED, BASE SHALL BE COMPACTED, TO THE BOTTOM LEVEL OF EXISTING ASPHALT. AN ADDITIONAL 6" IN WIDTH OF ASPHALT SHALL BE CUT, REMOVED AND REPLACED AS PART OF THE OVERALL PATCH.
7. WHERE ROAD SECTION HAS A DESIGNED GRANULAR SUB-BASE, IT SHALL BE REPLACED IN KIND OR WITH ROAD BASE GRAVEL.
8. IN GENERAL, STREET SURFACES LESS THAN 24 MONTHS OLD WILL NOT BE CUT! IF A CUT MUST BE MADE, ADDITIONAL, STRICTER REQUIREMENTS MAY BE INVOKED. SEE ENCROACHMENT OFFICER.
9. 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS.
10. ALL TRENCH BACKFILL SHALL MEET MIN. COMPACTION REQUIREMENTS.
11. EXCLUDING EMERGENCY CLOSURES ALL ROAD CLOSURES AND DETOURS REQUIRE 48 HOURS PRIOR NOTICE.
12. 6" BEDDING MATERIAL UNDER PIPE IS REQUIRED IN ROCKY AREAS.



SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

TRENCH BACKFILL AND REPAIR DETAIL

STANDARD DWG. NO.

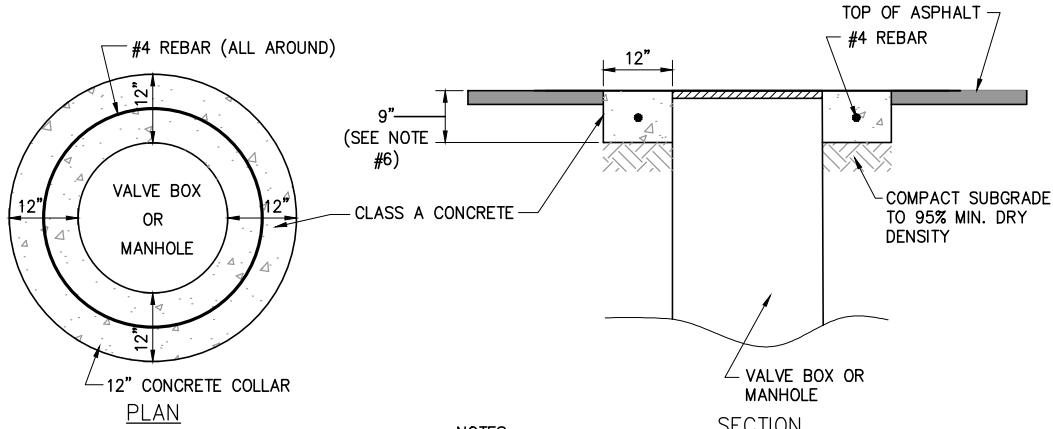
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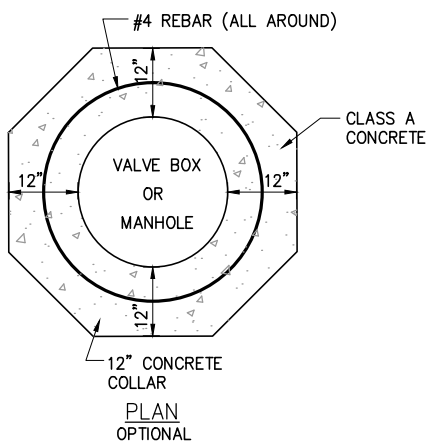
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APR 2012	MISC. NOTES	MJW



NOTES:

1. MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL BE ADJUSTED TO GRADE AFTER PAVING IS COMPLETE.
2. THE SURFACE OF THE ADJUSTED RING SHALL MATCH THE GRADE OF THE CONCRETE COLLAR. CONCRETE COLLAR SHALL BE 1/8" TO 1/4" LOWER THAN ASPHALT.
3. ASPHALT SHALL BE CUT IN STRAIGHT VERTICAL LINES.
4. ADJUSTMENTS TO GRADE SHALL BE MADE WITH STANDARD RINGS OR EXTENSIONS OR AS APPROVED BY THE CITY REPRESENTATIVE.
5. ALL MANHOLES, VALVE BOXES, AND OTHER SIMILAR ITEMS SHALL HAVE CONCRETE COLLAR AS REQUIRED UNLESS OTHERWISE APPROVED. WHERE OUTSIDE OF ASPHALT, TOP OF COLLAR SHALL BE 6" ABOVE GRADE.
6. 9" THICK COLLARS SHALL BE REINFORCED. 12" THICK COLLARS DO NOT REQUIRE REINFORCEMENT.
7. MARK CONCRETE COLLAR ON WATER VALVE BOXES WITH ARROW INDICATING DIRECTION OF FLOW AND PIPE SIZE.

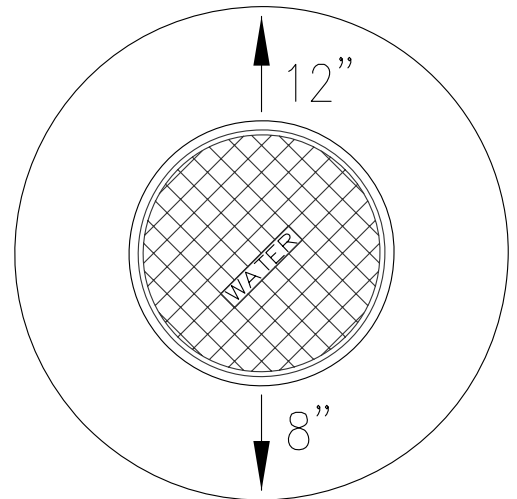
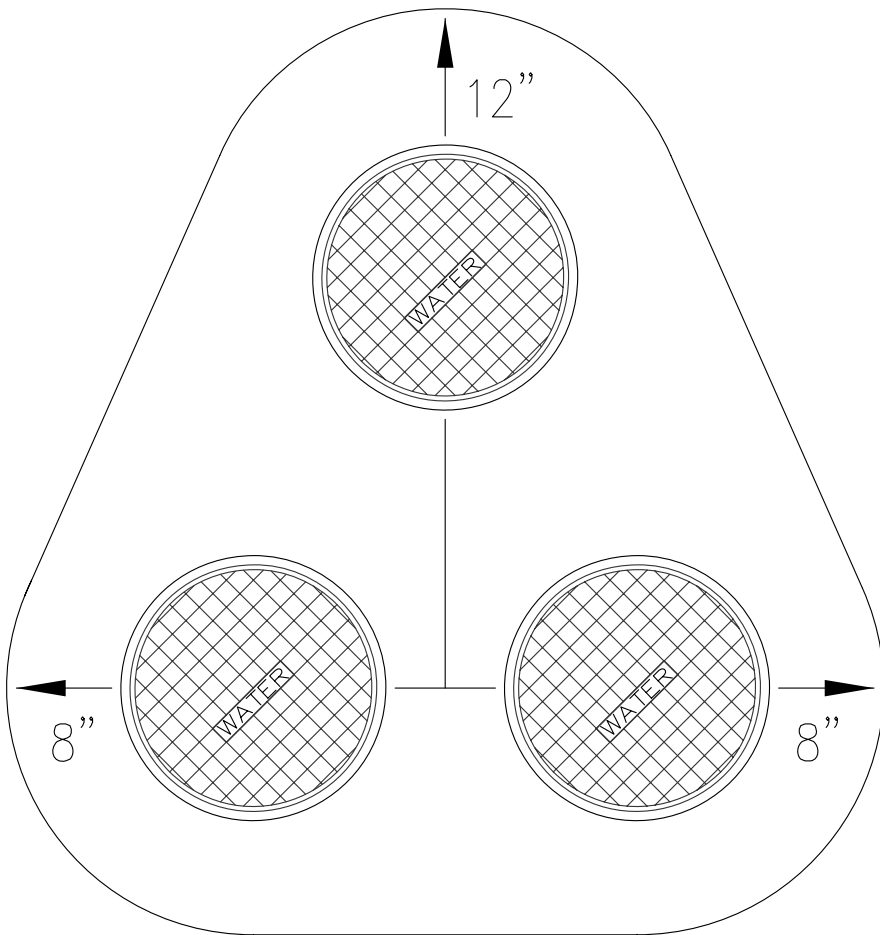
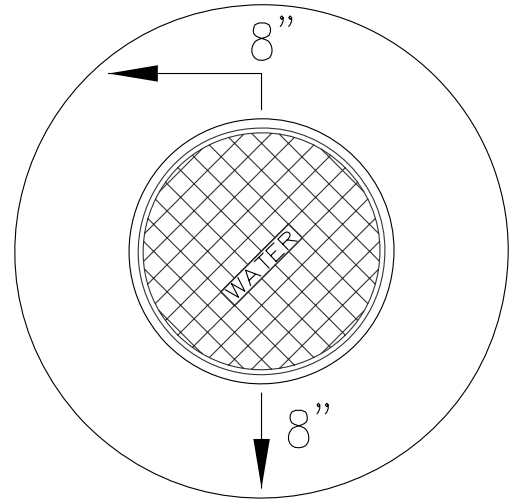
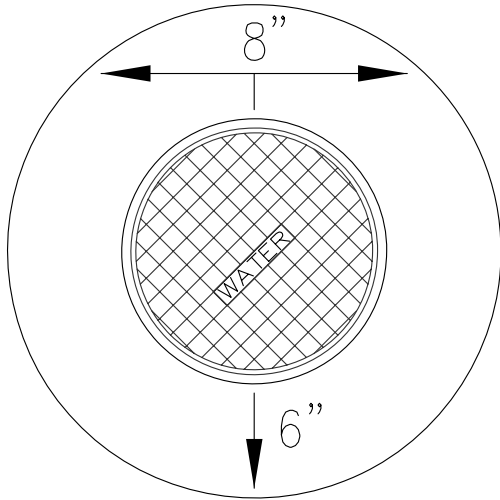


SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY
APR 2012	MISC. NOTES	MJW

MANHOLES & VALVE BOXES CONCRETE COLLAR

STANDARD DWG. NO.	
171	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



NOTE:
 WATER VALVE COLLARS SHALL BE
 ENGRAVED WITH A SCHEMATIC OF
 FITTINGS AND PIPE SIZES

SANTA CLARA PUBLIC SERVICES DEPARTMENT

CONCRETE WATER VALVE COLLAR

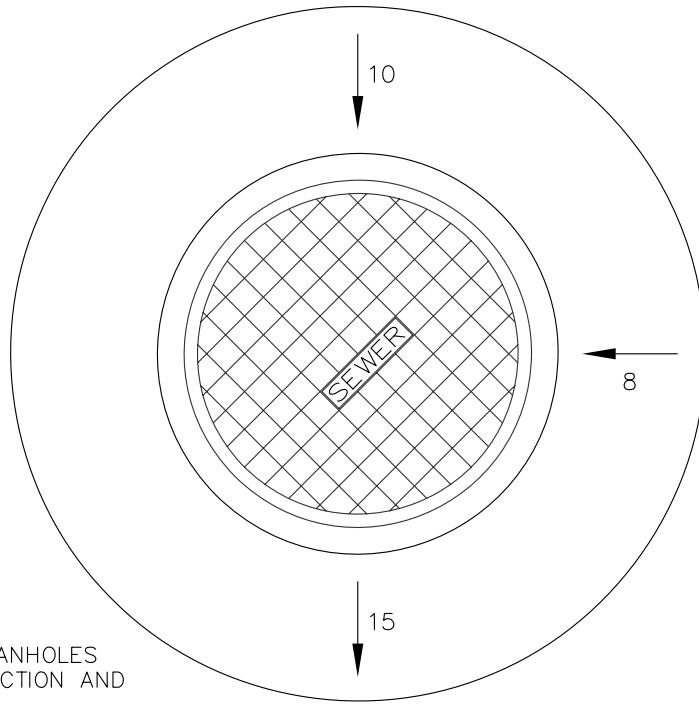
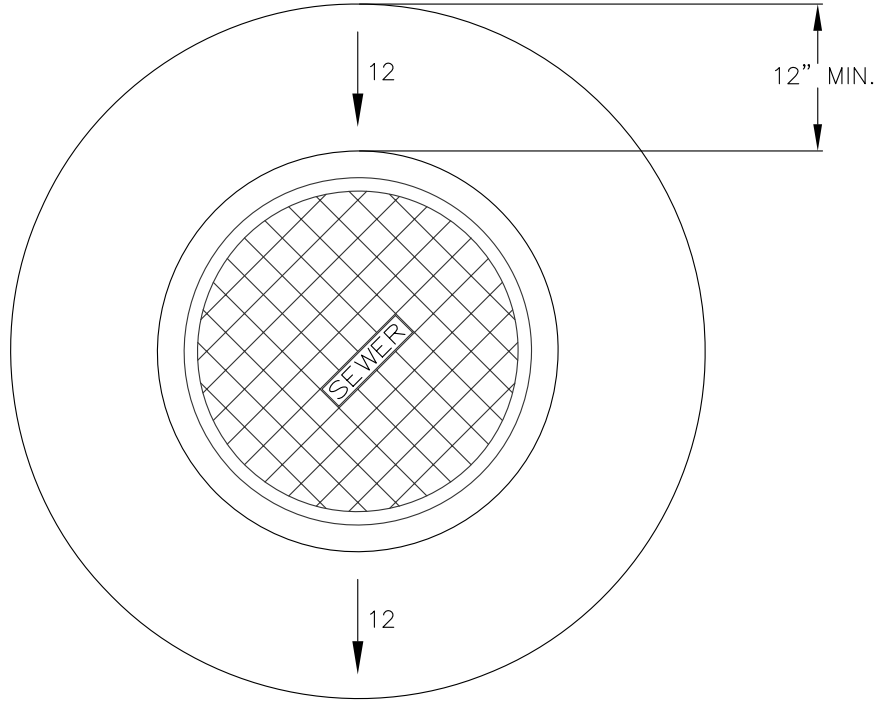
STANDARD DWG. NO.

172 1 OF 1

APPROVED:

DATE: OCT 2008 BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



NOTE:

CONCRETE COLLARS FOR SEWER MANHOLES SHALL BE ETCHED WITH FLOW DIRECTION AND SIZE OF PIPE.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

CONCRETE MANHOLE COLLAR

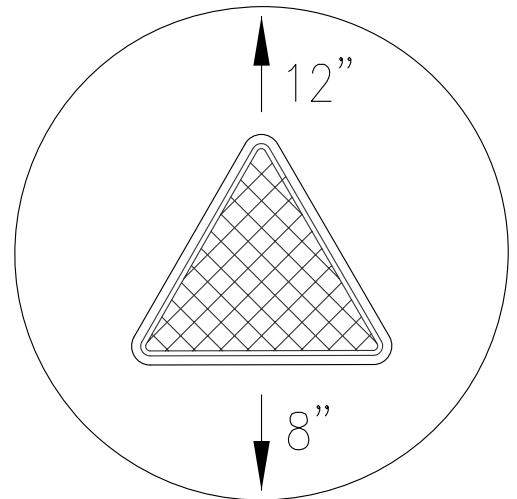
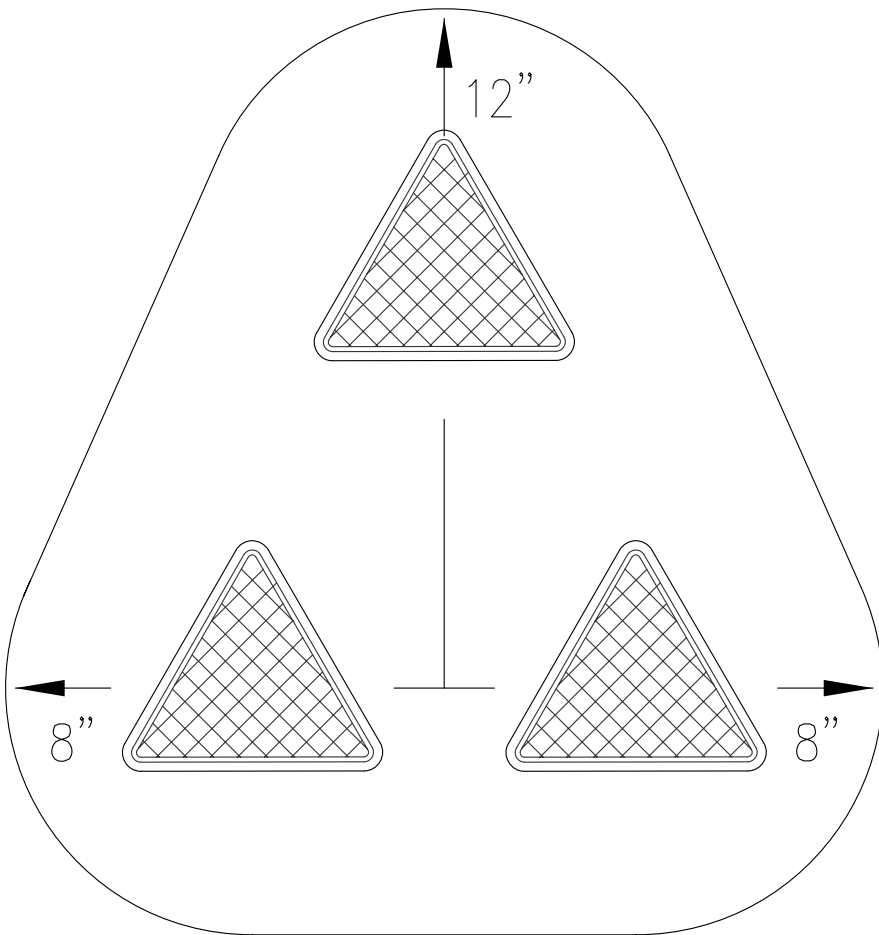
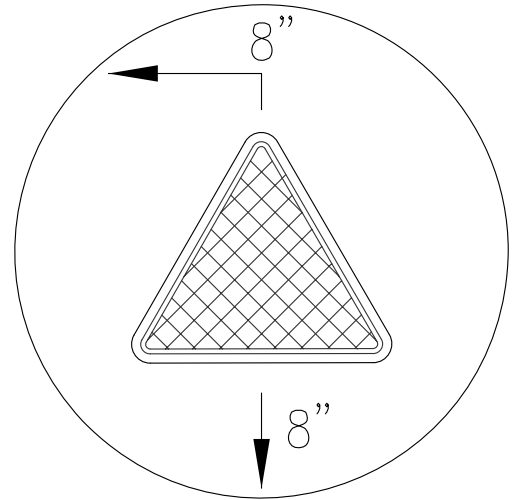
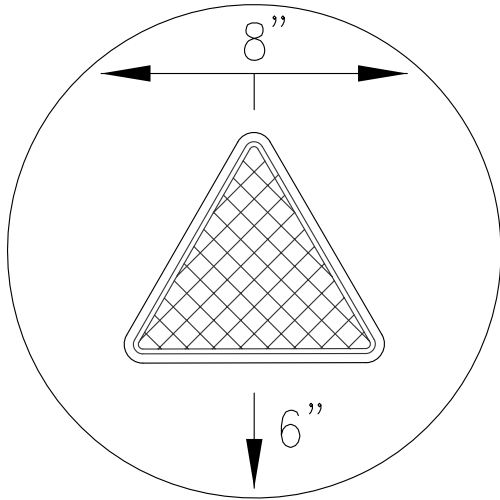
STANDARD DWG. NO.

173 | 1 OF 1

APPROVED:

DATE: | BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



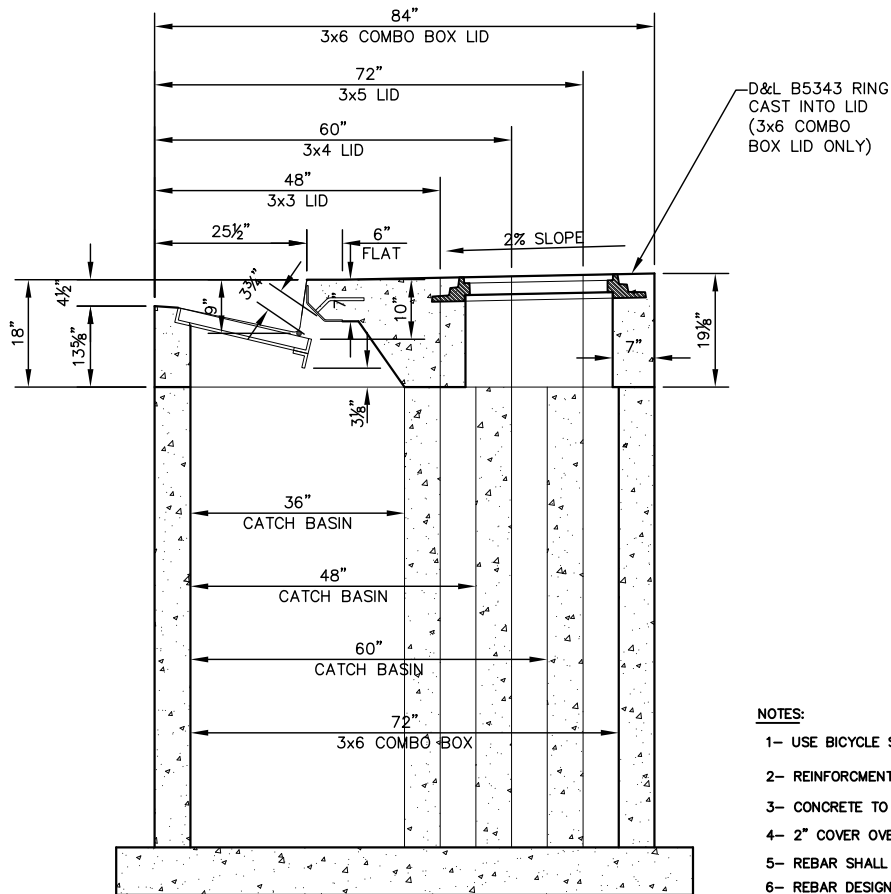
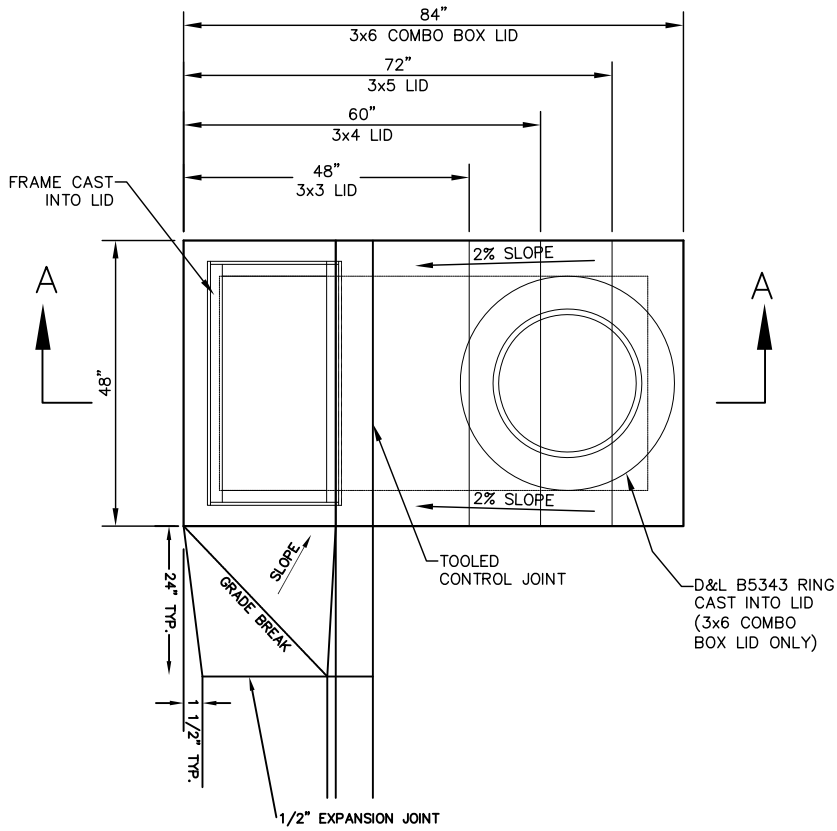
NOTE:
IRRIGATION VALVE COLLARS SHALL BE ENGRAVED WITH A SCHEMATIC OF FITTINGS AND PIPE SIZES

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

CONCRETE IRRIGATION VALVE COLLAR

STANDARD DWG. NO.	
174	1 OF 1
APPROVED:	
DATE:	BY: TE



NOTES:

- 1- USE BICYCLE SAFE GRATES ONLY.
- 2- REINFORCEMENT SHALL MEET HS-20 LOADING REQUIREMENTS.
- 3- CONCRETE TO BE 4,000 PSI MIN.
- 4- 2" COVER OVER REINFORCING MIN.
- 5- REBAR SHALL BE 60 KSI MIN.
- 6- REBAR DESIGN SHALL BE SUBMITTED MEETING HS20 TRAFFIC LOAD RATINGS.

SECTION VIEW

SANTA CLARA PUBLIC SERVICES DEPARTMENT

CURB INLET SINGLE CATCH BASIN BOX

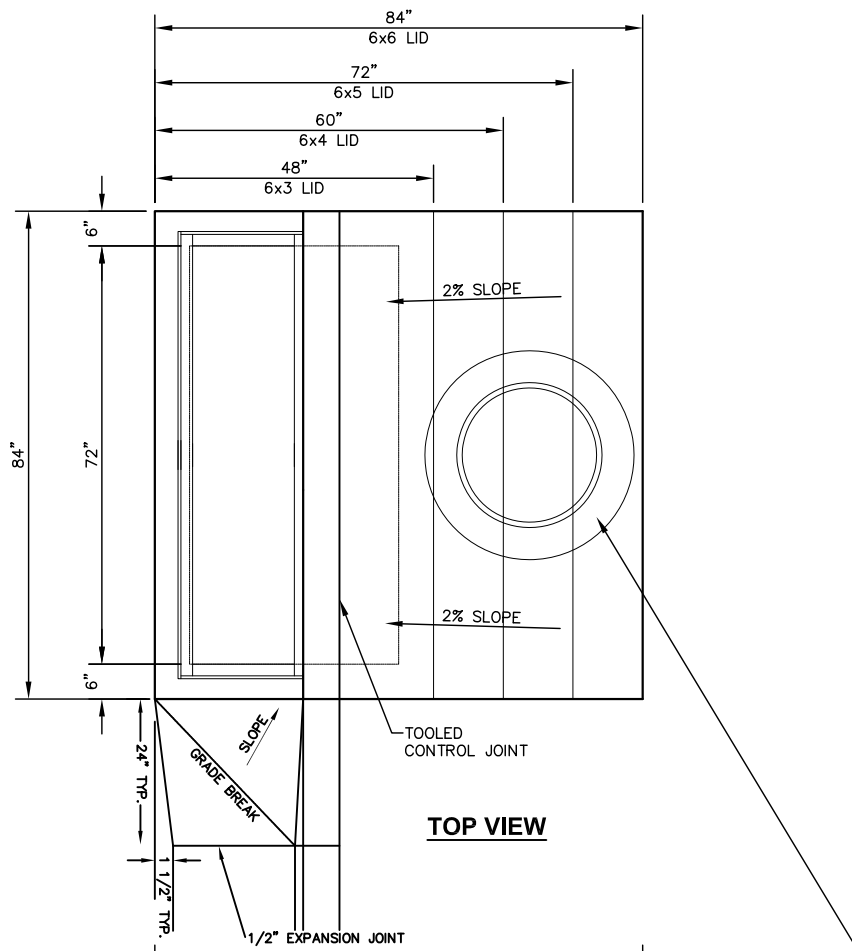
STANDARD DWG. NO.

200A 1 OF 4

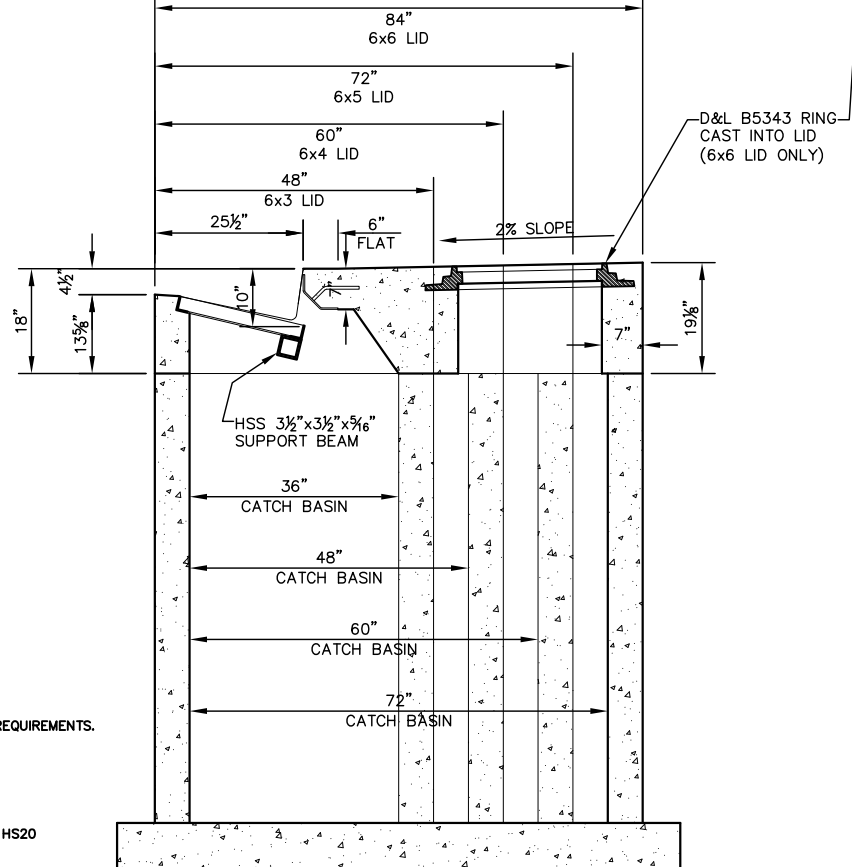
APPROVED:

DATE: APR 2016 BY: TO

REVISIONS		
DATE	DESCRIPTION	BY



TOP VIEW



SECTION VIEW

- NOTES:**
- 1- USE BICYCLE SAFE GRATES ONLY.
 - 2- REINFORCEMENT SHALL MEET HS-20 LOADING REQUIREMENTS.
 - 3- CONCRETE TO BE 4,000 PSI MIN.
 - 4- 2" COVER OVER REINFORCING MIN.
 - 5- REBAR SHALL BE 60 KSI MIN.
 - 6- REBAR DESIGN SHALL BE SUBMITTED MEETING HS20 TRAFFIC LOAD RATINGS.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

CURB INLET DOUBLE CATCH BASIN BOX

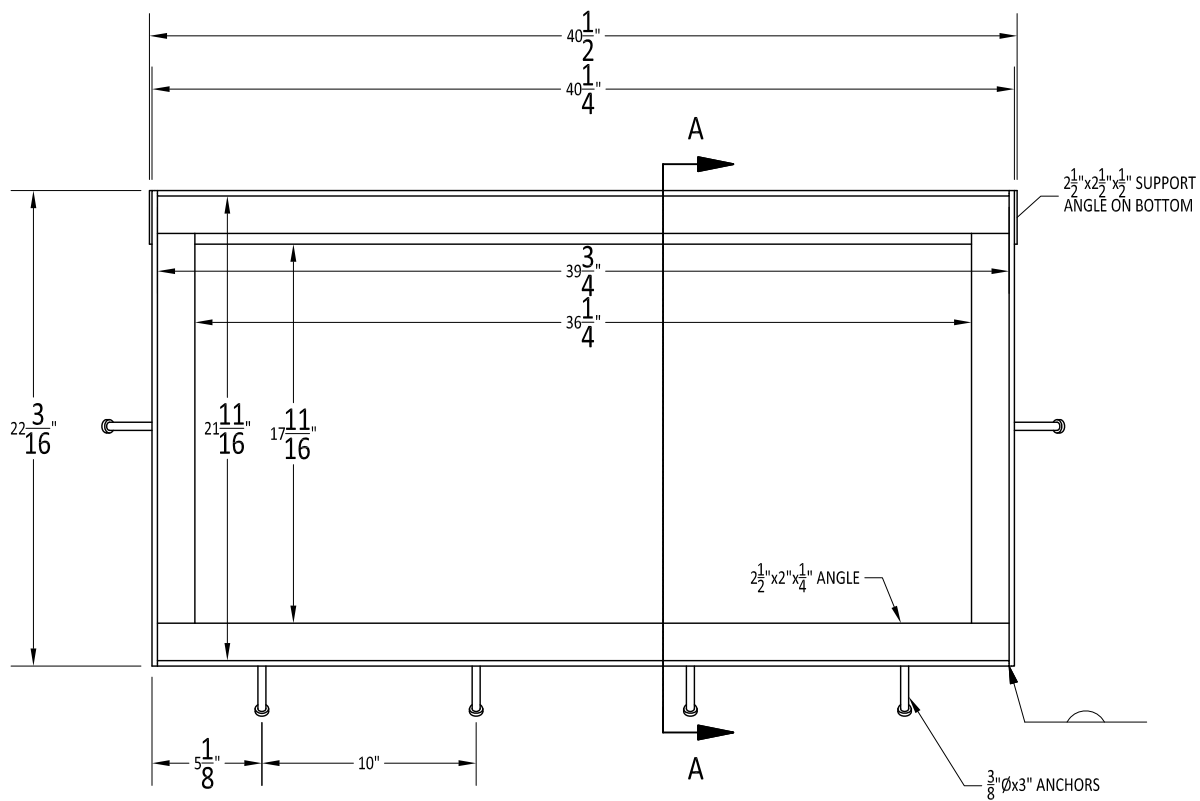
STANDARD DWG. NO.

200B 2 OF 4

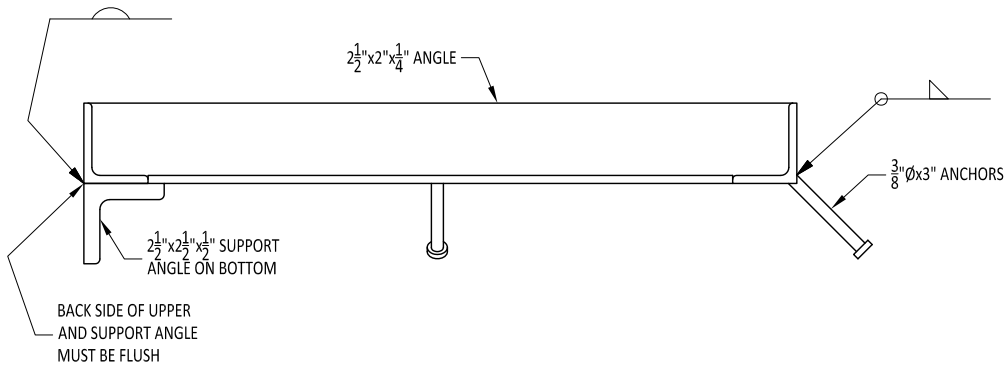
APPROVED:

DATE: APR 2016 BY: TO

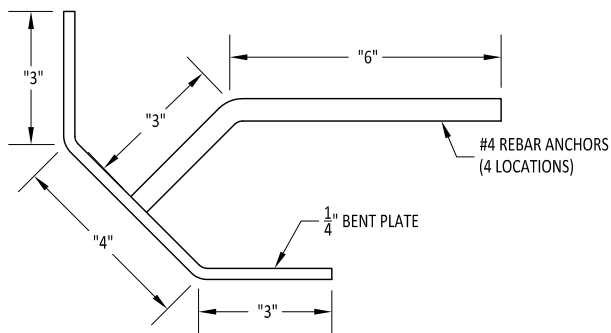
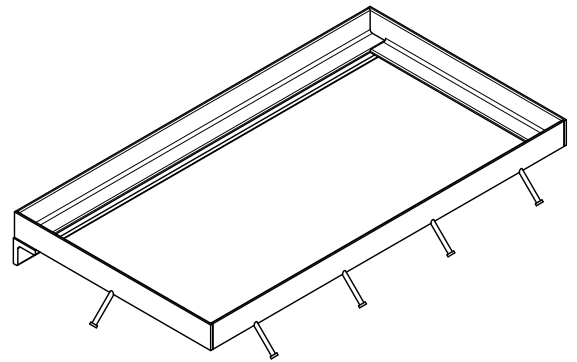
REVISIONS		
DATE	DESCRIPTION	BY



FRAME PLAN



SECTION A-A



STEEL SUPPORT (40" LONG)

NOTES:

- 1- AS AVAILABLE FROM D&L SUPPLY - OR EQUAL.
- 2- ALL COMPONENTS SHALL BE HOT DIPPED GALVANIZED.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

CURB INLET SINGLE CATCH BASIN FRAME

STANDARD DWG. NO.

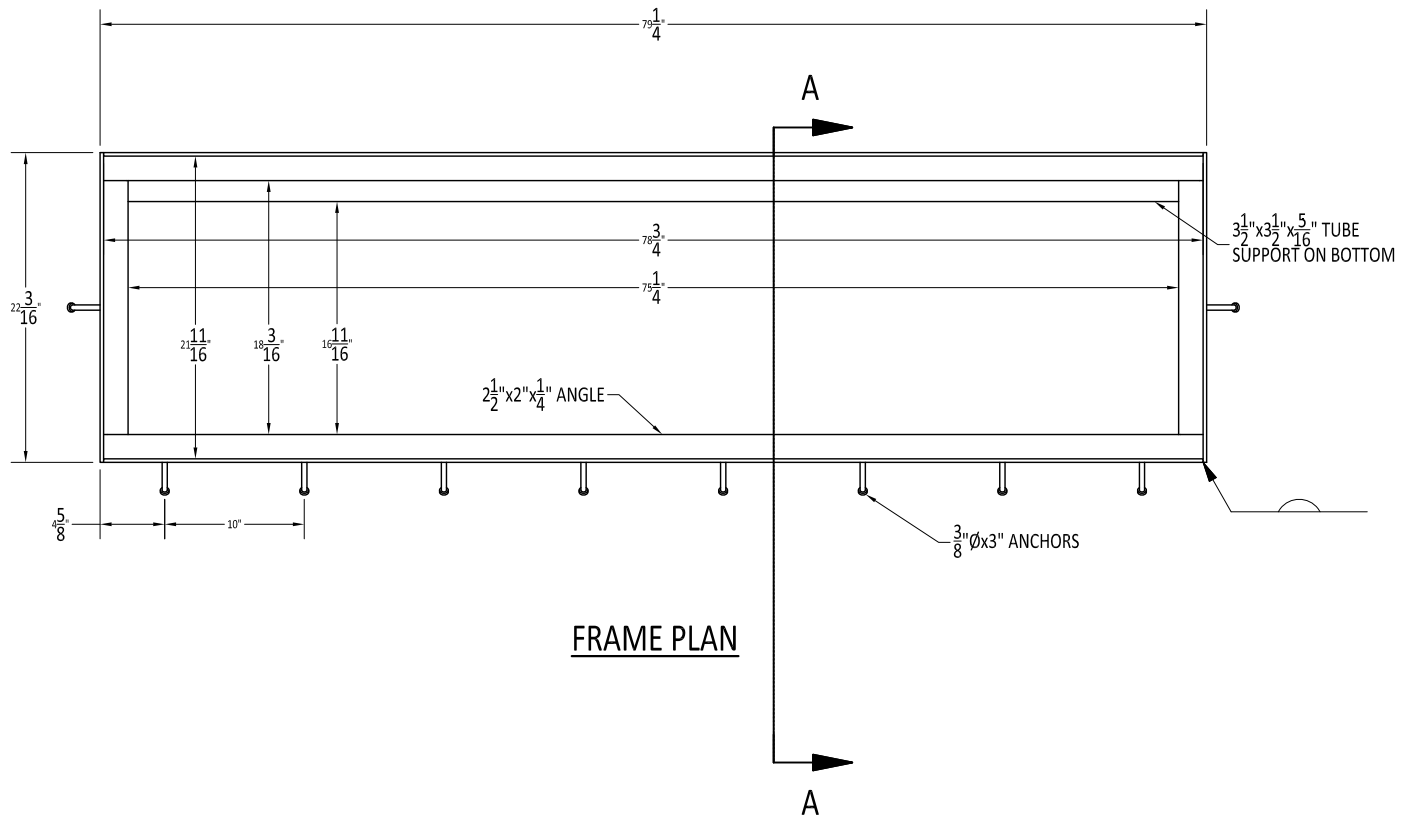
200C 3 OF 4

APPROVED:

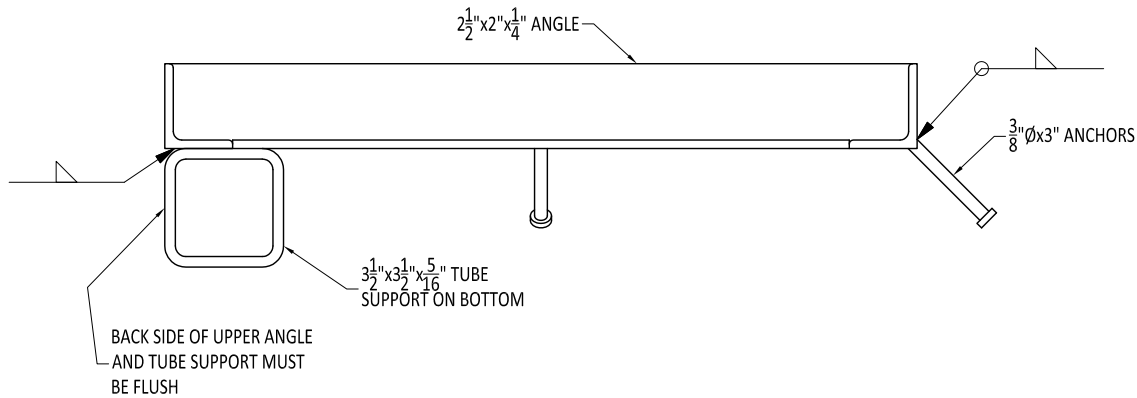
DATE: APR 2016 BY: TO

REVISIONS

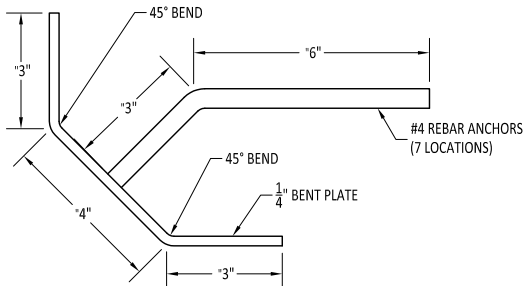
DATE	DESCRIPTION	BY



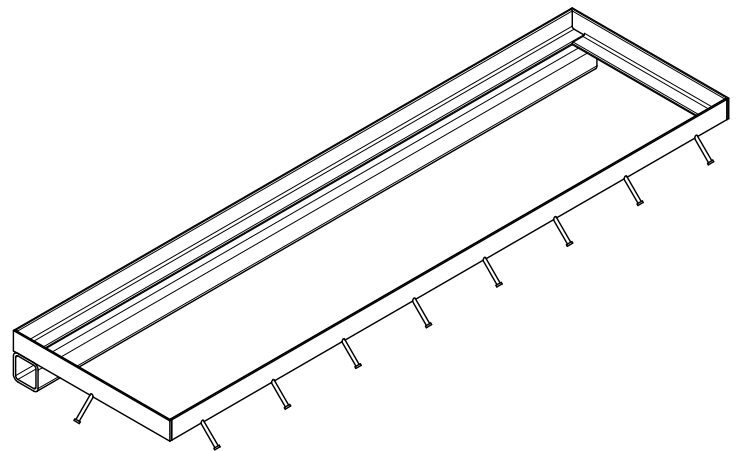
FRAME PLAN



SECTION A-A



STEEL SUPPORT (76" LONG)



NOTES:

- 1- AS AVAILABLE FROM D&L SUPPLY - OR EQUAL.
- 2- ALL COMPONENTS SHALL BE HOT DIPPED GALVANIZED.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

CURB INLET DOUBLE CATCH BASIN FRAME

STANDARD DWG. NO.

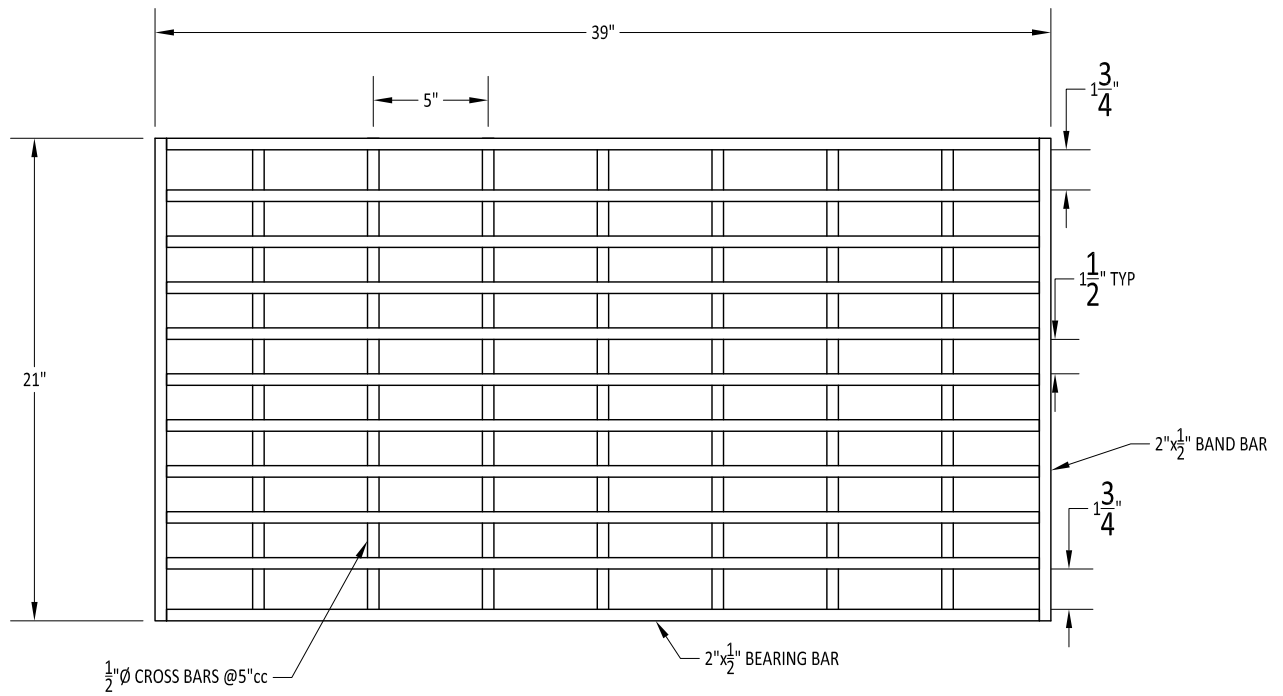
200D 4 OF 4

APPROVED:

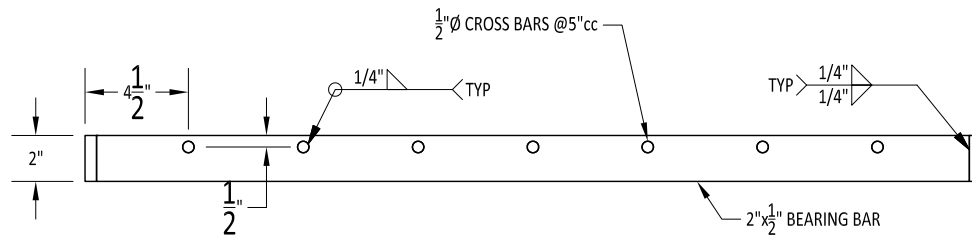
DATE: APR 2016 BY: TO

REVISIONS

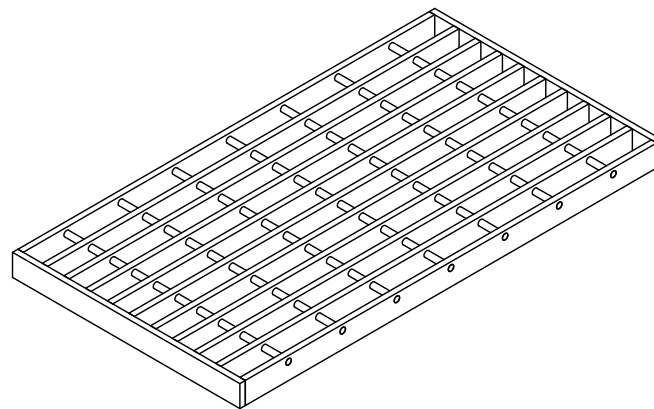
DATE	DESCRIPTION	BY



GRATE PLAN



SECTION



NOTES:

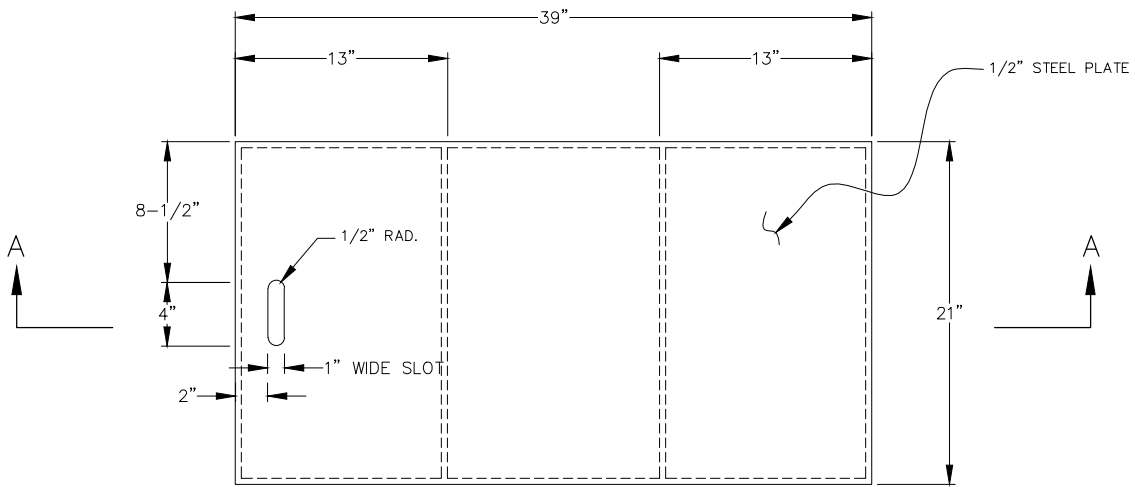
- 1- AS AVAILABLE FROM D&L SUPPLY - OR EQUAL.
- 2- ALL COMPONENTS SHALL BE HOT DIPPED GALVANIZED.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

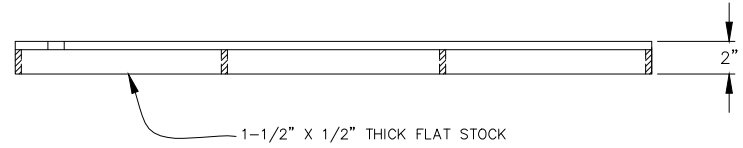
REVISIONS		
DATE	DESCRIPTION	BY

STANDARD CATCH BASIN GRATE
BICYCLE SAFE

STANDARD DWG. NO.	
202	1 OF 1
APPROVED:	
DATE: APR 2016	BY: TO



- NOTES:
- 1- FINISH SHALL BE ONE COAT PRIMER, ONE FINISH COAT, LIGHT GRAY ENAMEL.
 - 2- LID SHALL BE ALL WELDED CONSTRUCTION.
 - 3- FOR USE IN NON-TRAFFIC INSTALLATIONS.
 - 4- LID SHALL BE DIAMOND PLATE STEEL.



SECTION A-A

SANTA CLARA PUBLIC SERVICES DEPARTMENT

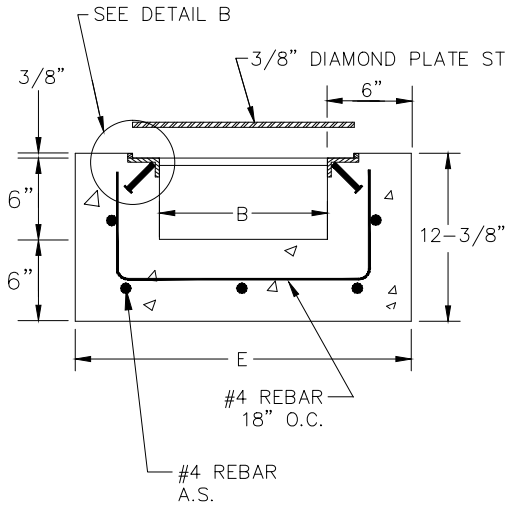
39" SOLID LID DETAILS

STANDARD DWG. NO.
203 | 1 OF 1

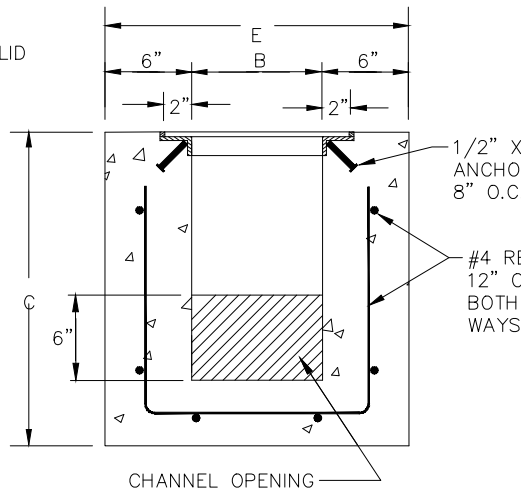
APPROVED:
DATE: OCT 2008 | BY: TE

REVISIONS		
DATE	DESCRIPTION	BY

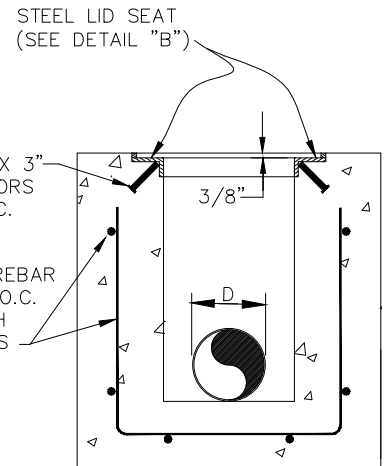
NOTE:
STEEL LID TO BE FLUSH
WITH CONCRETE SIDEWALK.



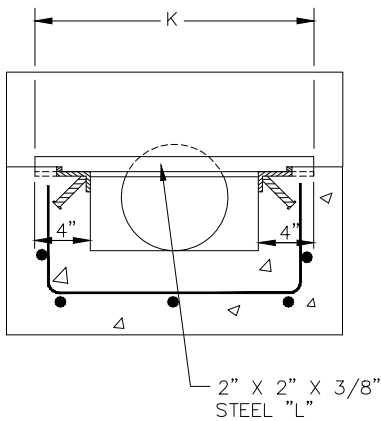
SECTION B-B



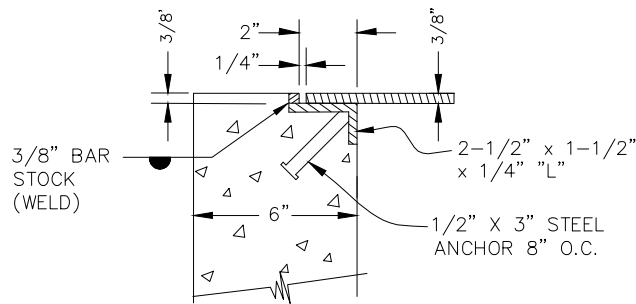
SECTION C-C



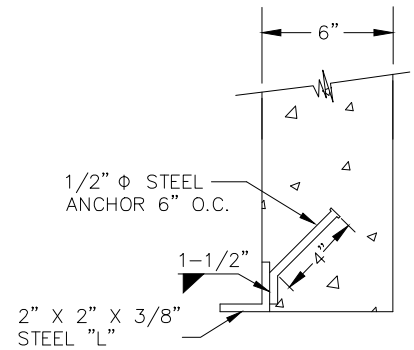
SECTION D-D



SECTION E-E



DETAIL B



DETAIL C

NOTES:

- 1- ALL REBAR SHALL HAVE 2" MIN. CLEAR.
- 2- STEEL LID SHALL BE FLUSH WITH CONCRETE.
- 3- BOX DIMENSIONS BASED UPON INLET PIPE SIZE "D".
- 4- ALL STEEL SHALL BE GRADE 60.
- 5- LID FOR CLEANOUT BOX SHALL HAVE 1-4 INCH X 1" SLOT FOR LIFTING. LID MAY BE SMOOTH OR DIAMOND PLATE STEEL.
- 6- SIDEWALK LID SHALL BE DIAMOND PLATE STEEL.
- 7- STANDARD REBAR SHALL NOT BE USED FOR STEEL ANCHORS.
- 8- ALL EXTERIOR EDGES OF CLEANOUT BOX TO HAVE 3/4" TO 1" CHAMFER (NOT SHOWN IN DETAILS FOR CLARITY).
- 9- STEEL LIDS AND SEAT TO BE PAINTED GREY IN ACCORDANCE WITH CITY STANDARDS.

MARK	DIMENSION (INCHES)				COMMENTS
	B	C	D	E	
B	10	15	20	30*	INSIDE WIDTH
C	20	22	24	27	CLEANOUT BOX HEIGHT
D	≤8	10	12	15	INLET PIPE
E	22	27	32	42	BOX WIDTH
K	18	23	28	38	STEEL END SUPPORT

DIMENSION TABLE

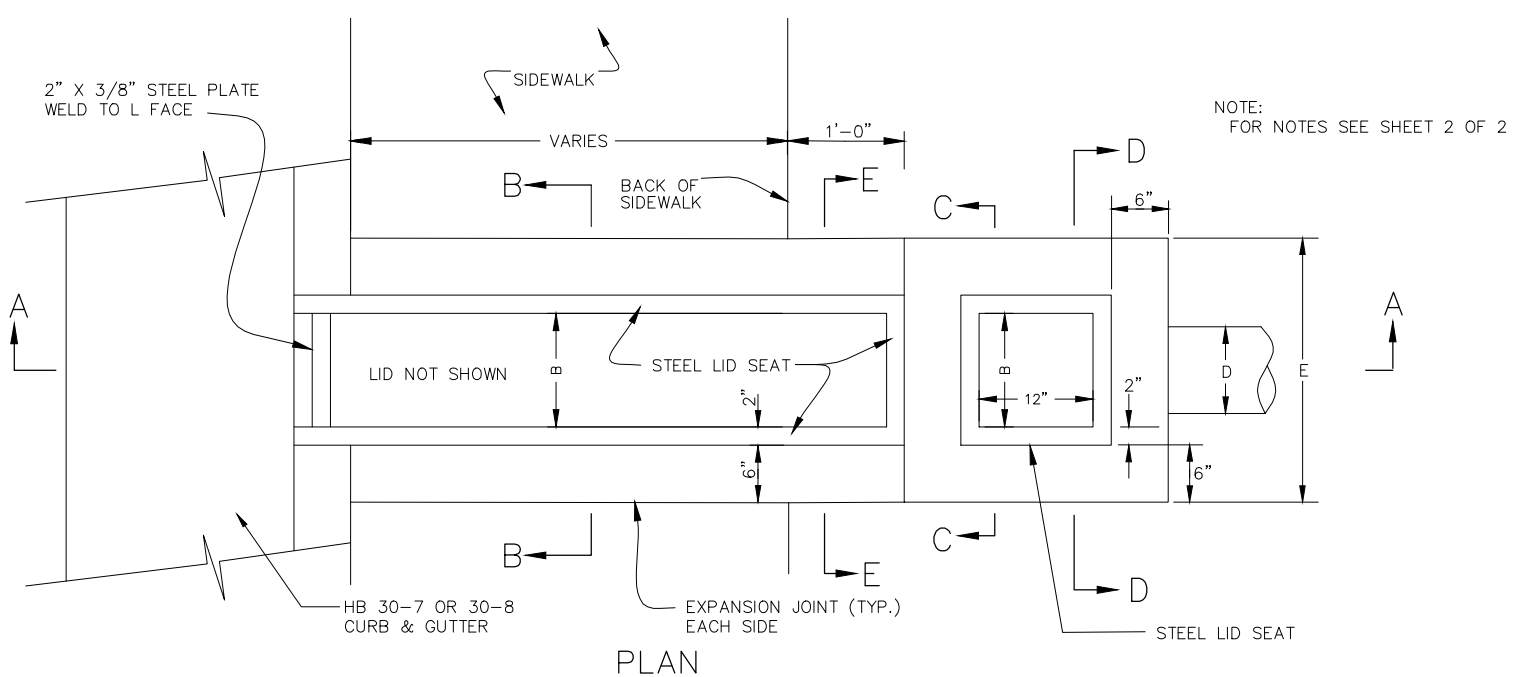
*REQUIRES ENGINEERED DESIGN FOR LID & BOX.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

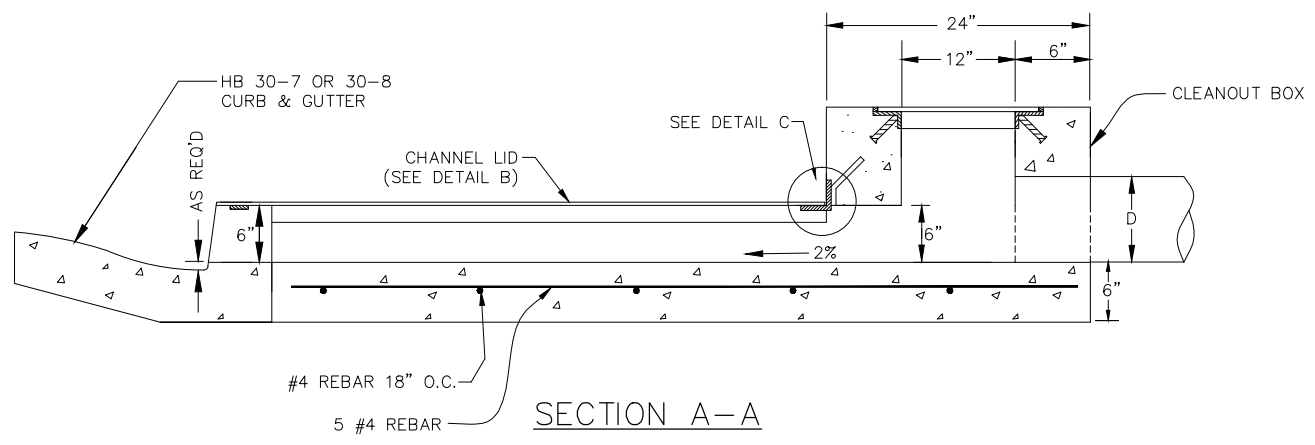
SIDEWALK DRAINAGE STRUCTURE

STANDARD DWG. NO.	
204A	1 OF 2
APPROVED:	
DATE: OCT 2008	BY: TE

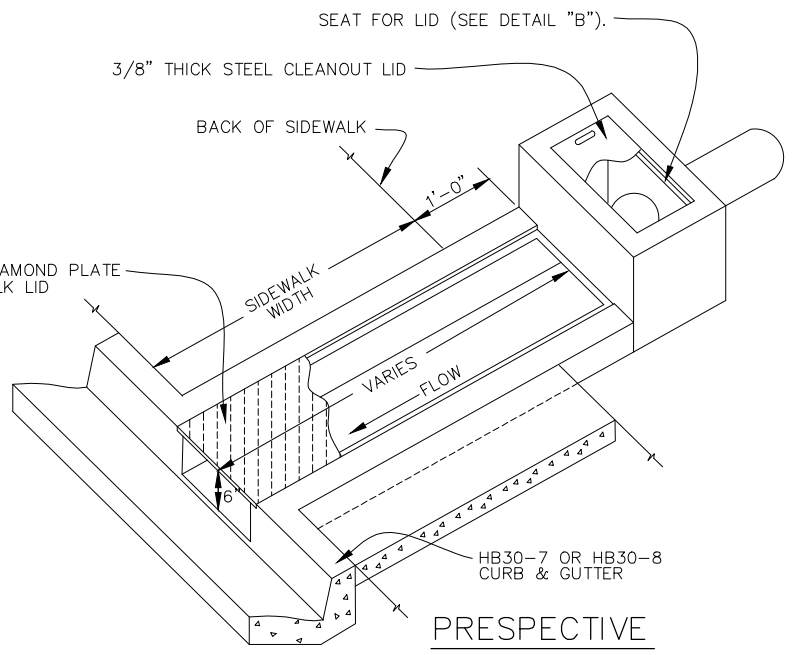


NOTE:
FOR NOTES SEE SHEET 2 OF 2

PLAN



SECTION A-A



PRESPECTIVE

MARK	DIMENSION (INCHES)				COMMENTS
B	10	15	20	30*	INSIDE WIDTH
C	20	22	24	27	CLEANOUT BOX HEIGHT
D	≤8	10	12	15	INLET PIPE
E	22	27	32	42	BOX WIDTH
K	18	23	28	38	STEEL END SUPPORT

DIMENSION TABLE

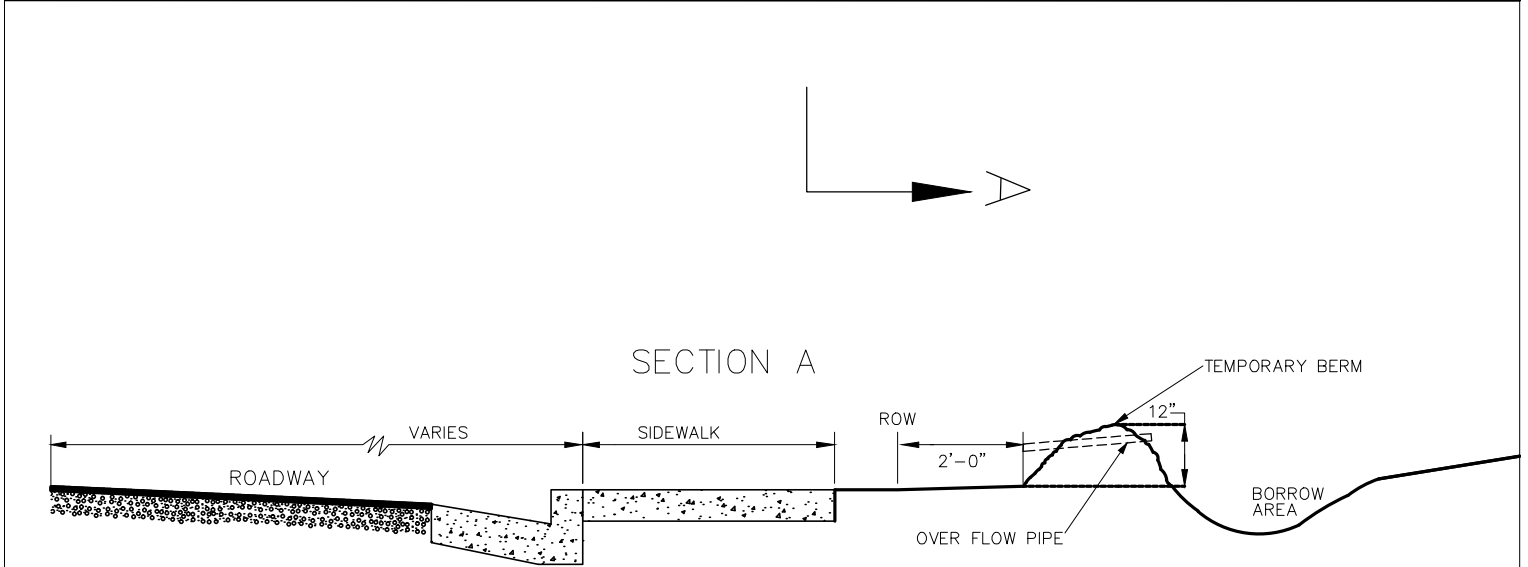
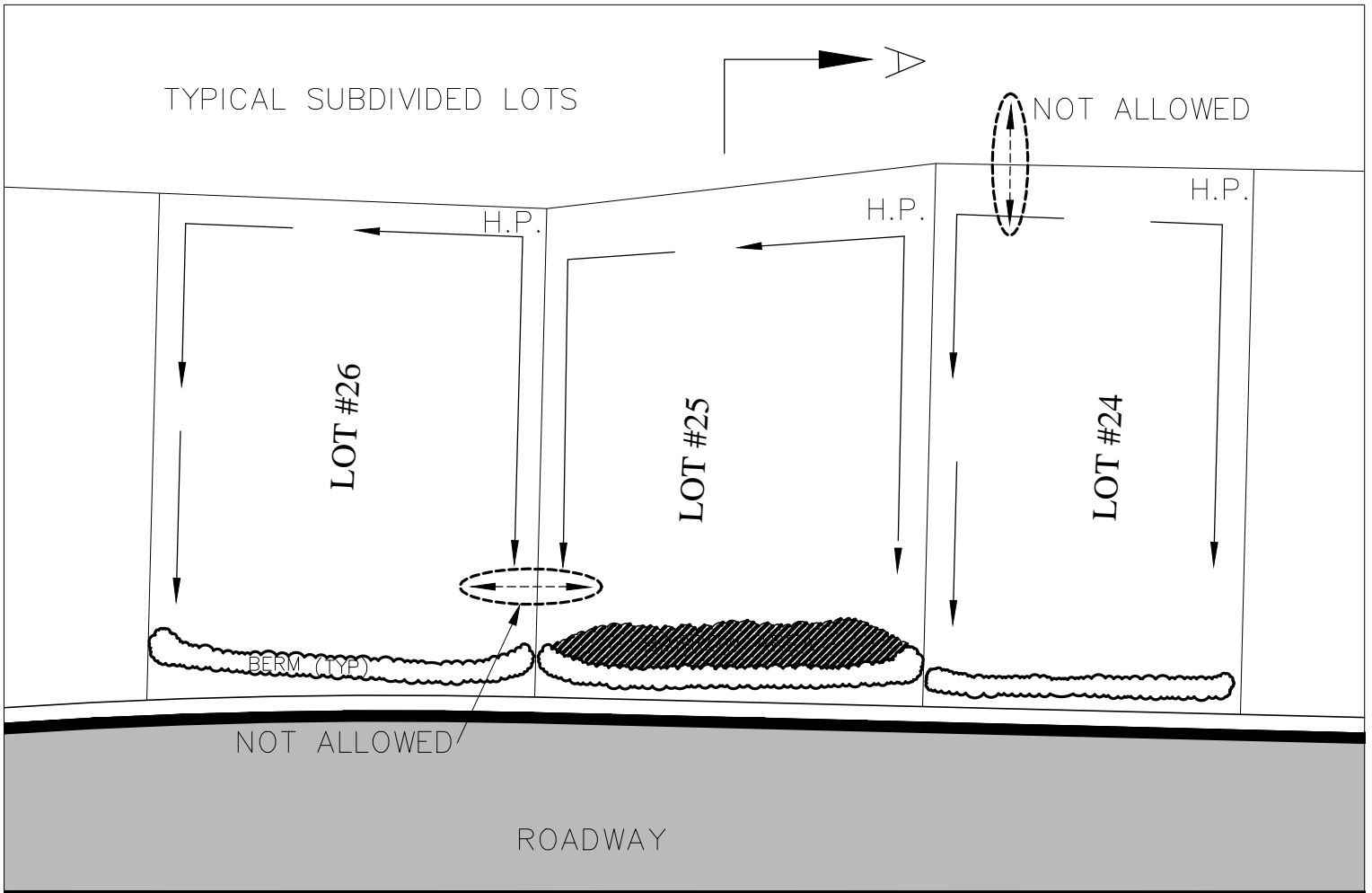
*REQUIRES ENGINEERED DESIGN FOR LID & BOX.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

SIDEWALK DRAINAGE STRUCTURE

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DWG. NO.	
204B	2 OF 2
APPROVED:	
DATE: OCT 2008	BY: TE



NOTES:

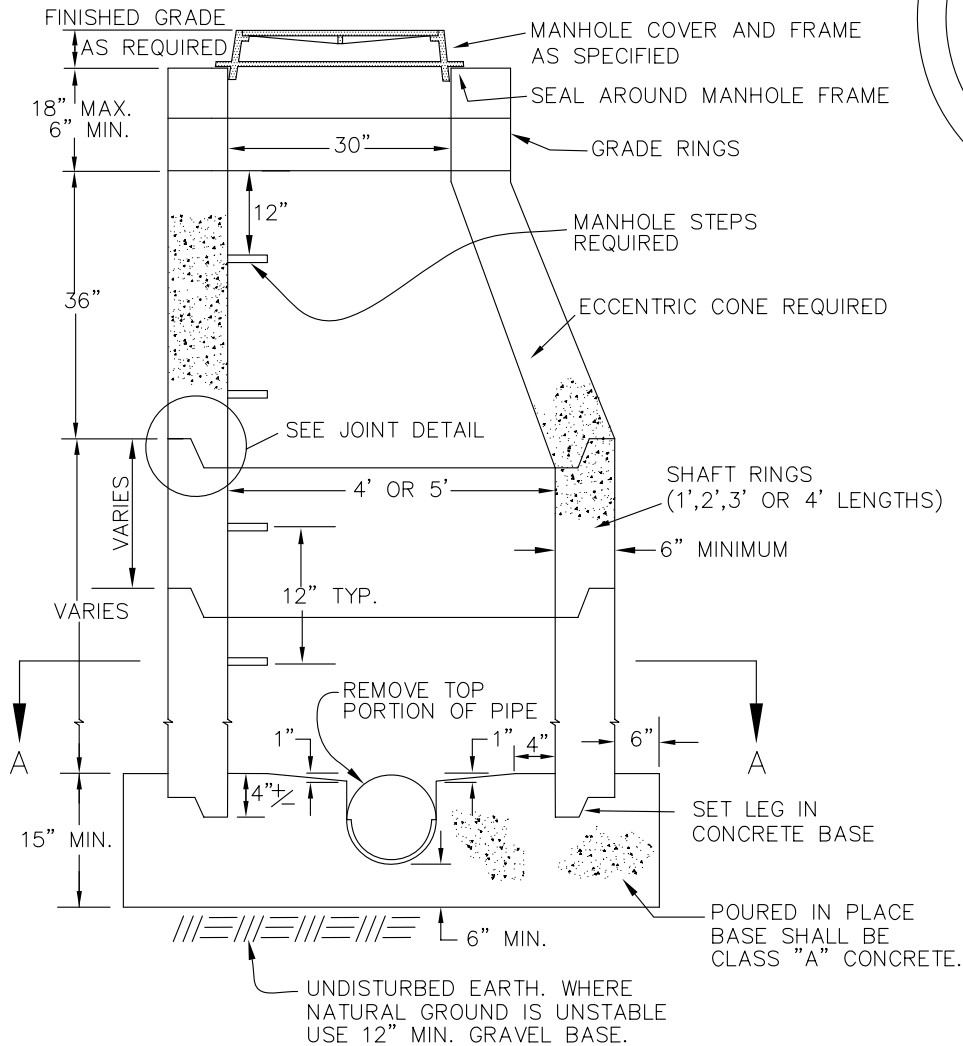
1. BERM SHALL INCLUDE $\phi 2"$ DRAIN PIPE. PIPE MUST EXTEND BEYOND THE OUTER FACE OF THE BERM.
2. EACH LOT MUST CONTAIN IT'S OWN STORM WATER.
3. CROSS LOT DRAINAGE SHALL NOT BE ALLOWED.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

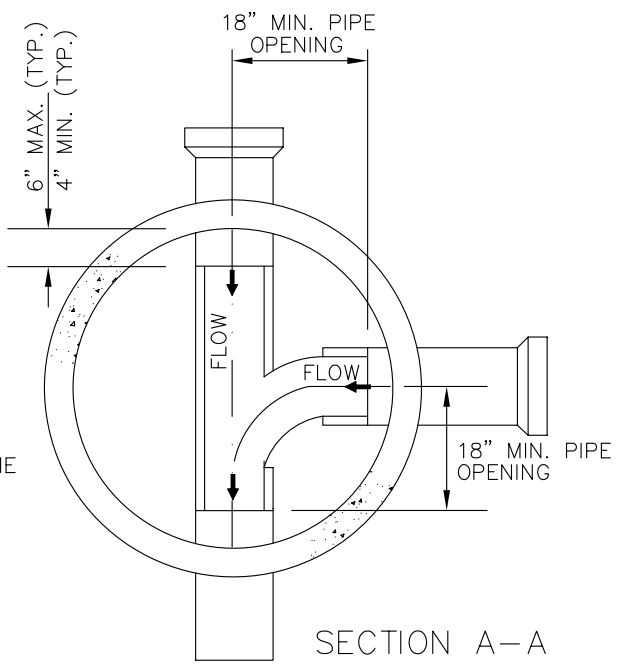
TEMPORARY ON-SITE DRAINAGE RETENTION BERM
FOR UNIMPROVED SUBDIVISION LOTS

STANDARD DWG. NO.	
207	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

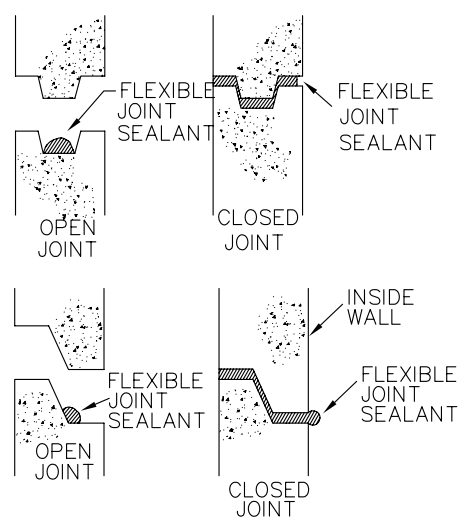


SECTION THRU CENTER

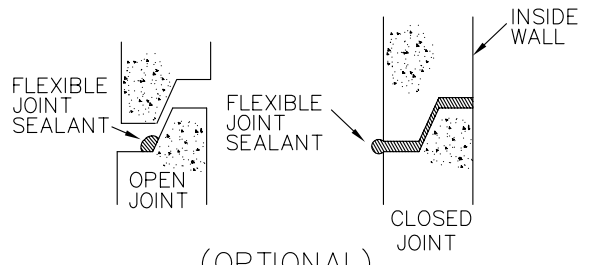
- NOTES:
- 1- SEE DRAWING NO. 220 FOR JUNCTION AND DROP MANHOLE DETAILS AND MANHOLE SIZES.
 - 2- PRECAST BASE MAY BE USED, BUT REQUIRES ADVANCED APPROVAL.
 - 3- IF OPTIONAL JOINT IS USED, ALL MANHOLE SECTIONS SHALL BE CLEARLY MARKED ON THE INSIDE AS TO THE MANUFACTURER AND TYPE OF JOINT BEING USED.



SECTION A-A



(STANDARD)



(OPTIONAL)

JOINT DETAILS

NO SCALE

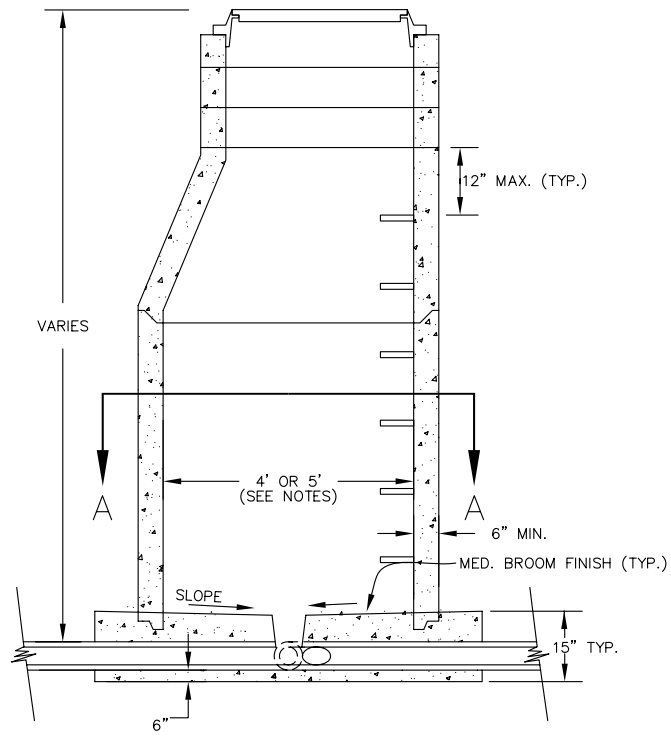
SANTA CLARA PUBLIC SERVICES DEPARTMENT

STANDARD MANHOLE
DETAILS

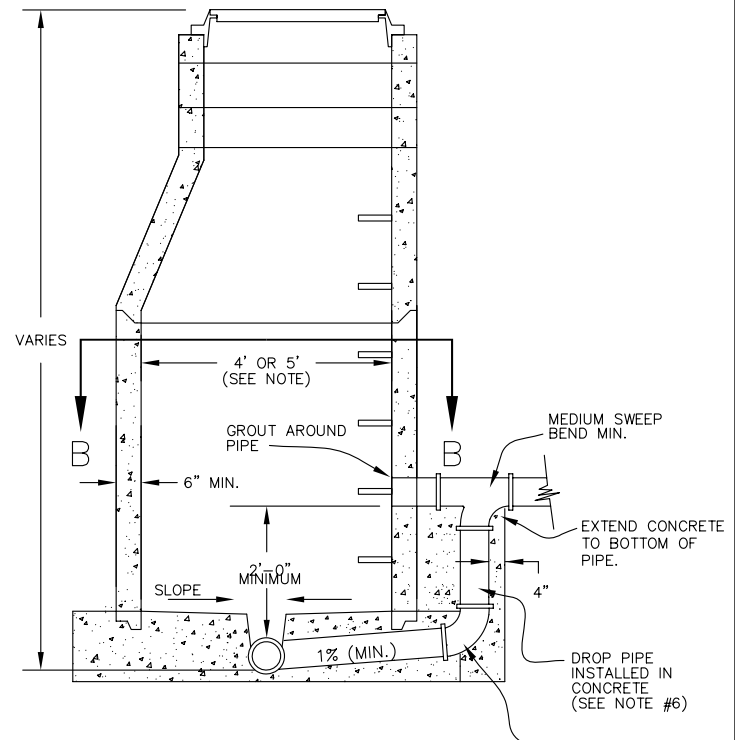
STANDARD DWG. NO.
220 1 OF 1

APPROVED:
DATE: OCT 2008 BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



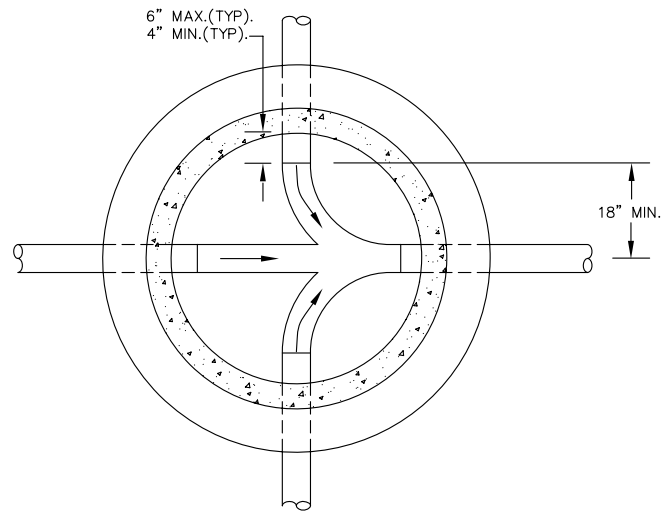
TYPICAL JUNCTION MANHOLE
(SECTION THRU CENTER)



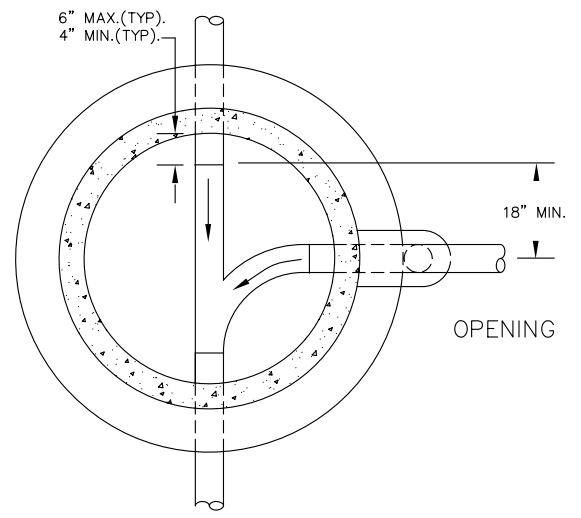
TYPICAL DROP MANHOLE
(SECTION THRU CENTER)

NOTES:

- 1- FOR SEWER PIPES LESS THAN 12-INCH DIAMETER USE 4-FOOT DIAMETER MANHOLE.
- 2- FOR SEWER PIPES WITH 12-INCH OR GREATER DIAMETER USE 5-FOOT DIAMETER MANHOLE.
- 3- WHEN THE SUM OF ALL PIPE SIZES CONNECTED TO THE MANHOLE TOTALS 24 INCHES OR GREATER USE A 5-FOOT DIAMETER MANHOLE.
- 4- WHEN SEWER DEPTH IS 12 FEET OR GREATER USE A 5-FOOT DIAMETER MANHOLE.
- 5- SEE DRAWING NO. _____ FOR ADDITIONAL DETAILS.
- 6- VERTICAL DROP PIPE AND FITTINGS SHALL BE THE SAME SIZE AS THE INCOMING SEWER PIPE.



SECTION A-A



SECTION B-B

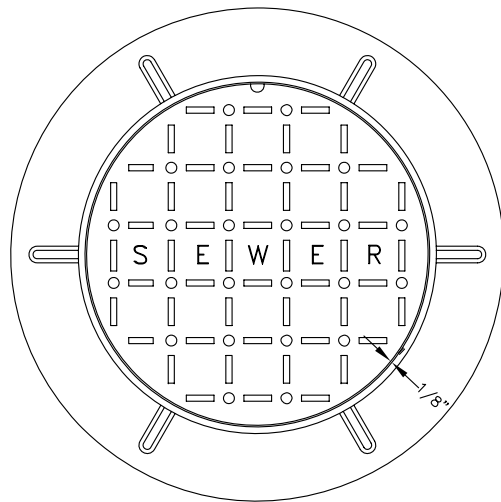
NO SCALE

SANTA CLARA PUBLIC SERVICES DEPARTMENT

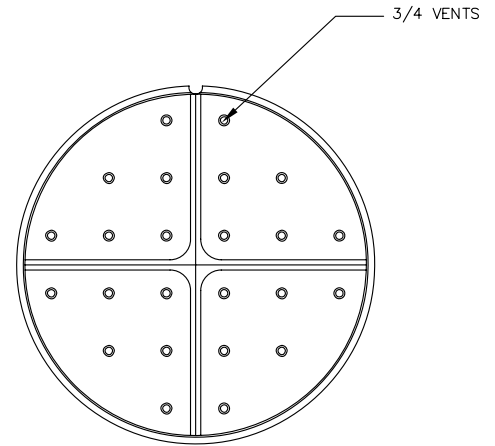
JUNCTION & DROP MANHOLE
DETAILS

REVISIONS		
DATE	DESCRIPTION	BY

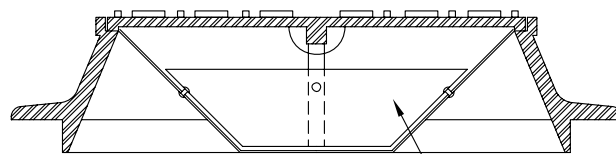
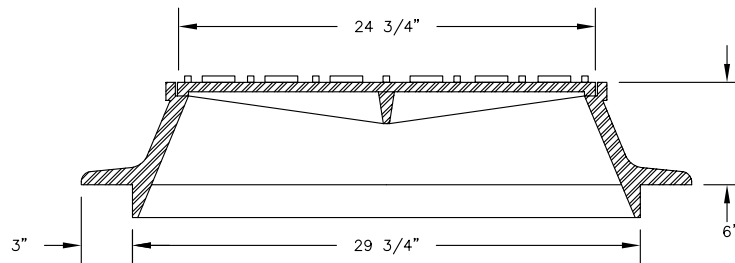
STANDARD DWG. NO.	
221	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



PLAN OF COVER & RING



BOTTOM VIEW OF COVER



SECTIONS

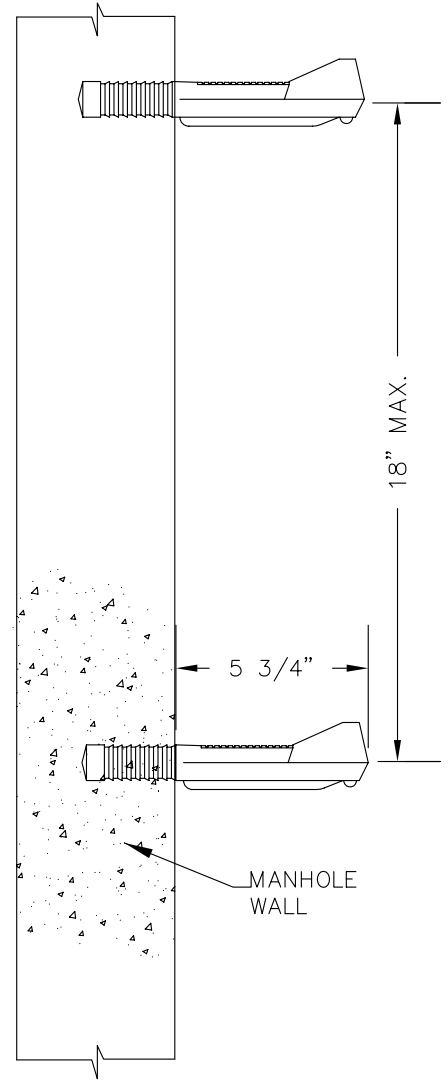
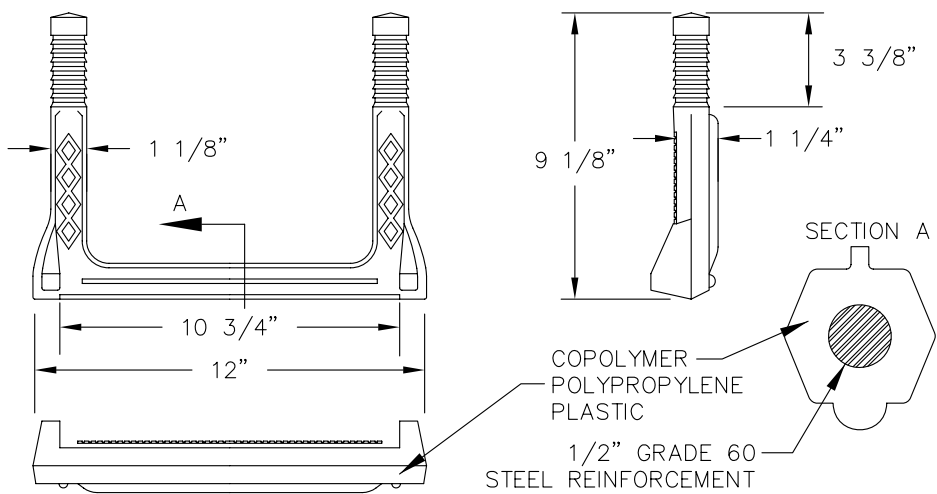
DUST PAN
ALUMINUM OR GALVANIZED
(WHERE REQUIRED)

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

MANHOLE FRAME & COVER
DETAILS

STANDARD DWG. NO.	
222	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



MANHOLE STEPS

NOTES:

- 1- INSTALL STEPS PER MANUFACTURERS RECOMMENDATIONS.
- 2- STEPS SHALL BE ALIGNED VERTICALLY.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

MANHOLE STEP
DETAILS

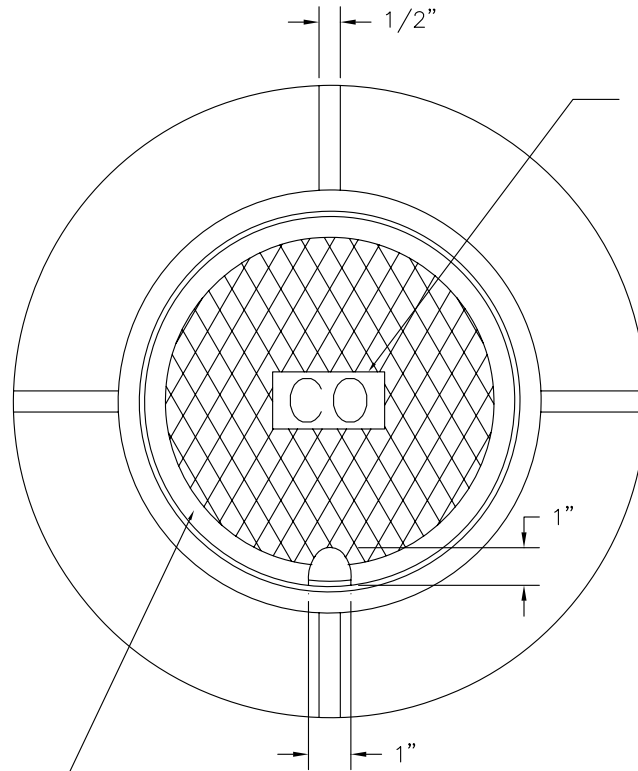
STANDARD DWG. NO.

223 1 OF 1

APPROVED:

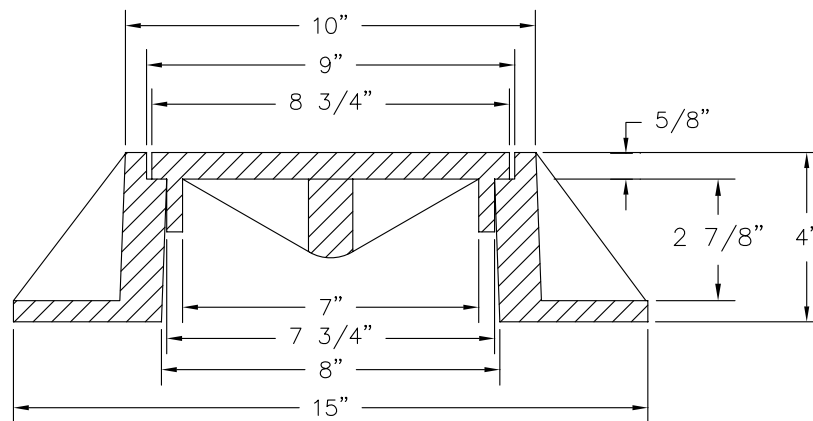
DATE: OCT 2008 BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



1/8" RAISE - 1/2"
WIDE BORDER

LETTERING AS REQUIRED
("CO", "SEWER CO")



NOTES:

1- MATERIAL SHALL BE CAST IRON ASTM A48, CL30

SANTA CLARA PUBLIC SERVICES DEPARTMENT

SEWER CLEANOUT COVER DETAIL

STANDARD DWG. NO.

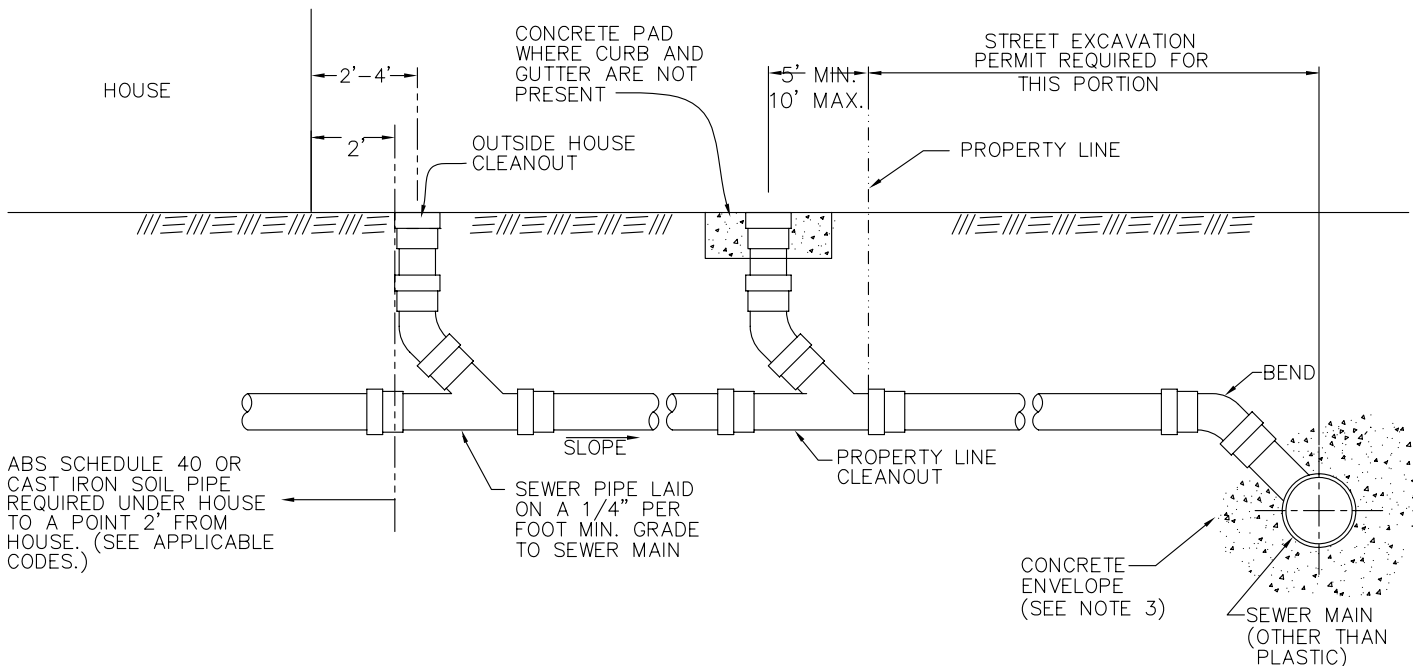
224 1 OF 1

APPROVED:

DATE: OCT 2008 BY: TE

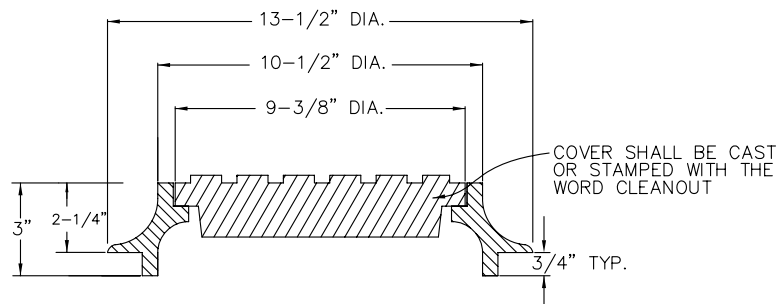
REVISIONS

DATE	DESCRIPTION	BY

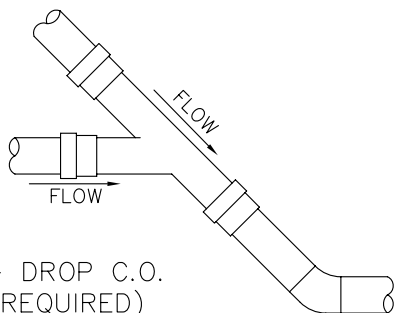


NOTES:

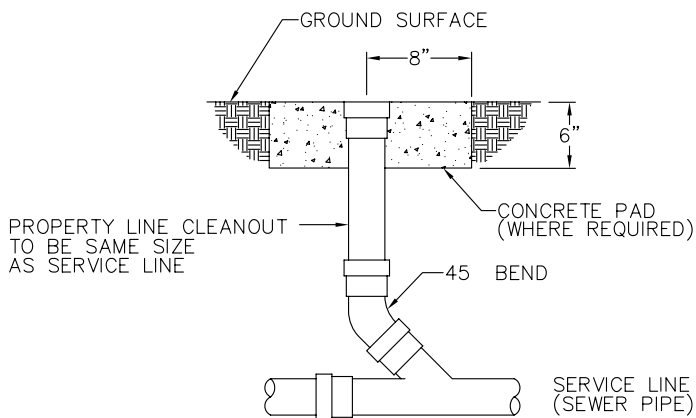
- 1- PROPERTY LINE AND OUTSIDE HOUSE CLEANOUTS ARE REQUIRED AS SHOWN.
- 2- CLEANOUT REQUIRED AT 100' MAX. SPACING (STRAIGHT RUNS) AND FOR EACH AGGREGATE CHANGE IN DIRECTION, WHERE TOTAL AGGREGATE CHANGE EXCEEDS 135 DEGREES.
- 3- ALL LATERALS CUT INTO EXISTING MAINS SHALL BE ADAPTED WITH SADDLES. WHERE SADDLES ARE NOT WATER TIGHT, A CONCRETE ENVELOPE SHALL BE REQUIRED. LATERALS SHALL NOT PROTRUDE INTO SEWER MAINS.
- 4- ALL CLEANOUTS LOCATED IN DRIVEWAYS OR OTHER AREAS SUBJECT TO VEHICLE TRAFFIC SHALL HAVE A CAST IRON RING AND COVER OR OTHER APPROVED PROTECTIVE DEVICE.
- 5- FOR COMMERCIAL APPLICATION CONTACT WASTE WATER DEPARTMENT.



STANDARD CLEANOUT RING & LID (H-20 RATING)



DETAIL - DROP C.O. (WHERE REQUIRED)



CLEANOUT DETAIL B

SANTA CLARA PUBLIC SERVICES DEPARTMENT

TYPICAL RESIDENTIAL SEWER CONNECTION DETAILS

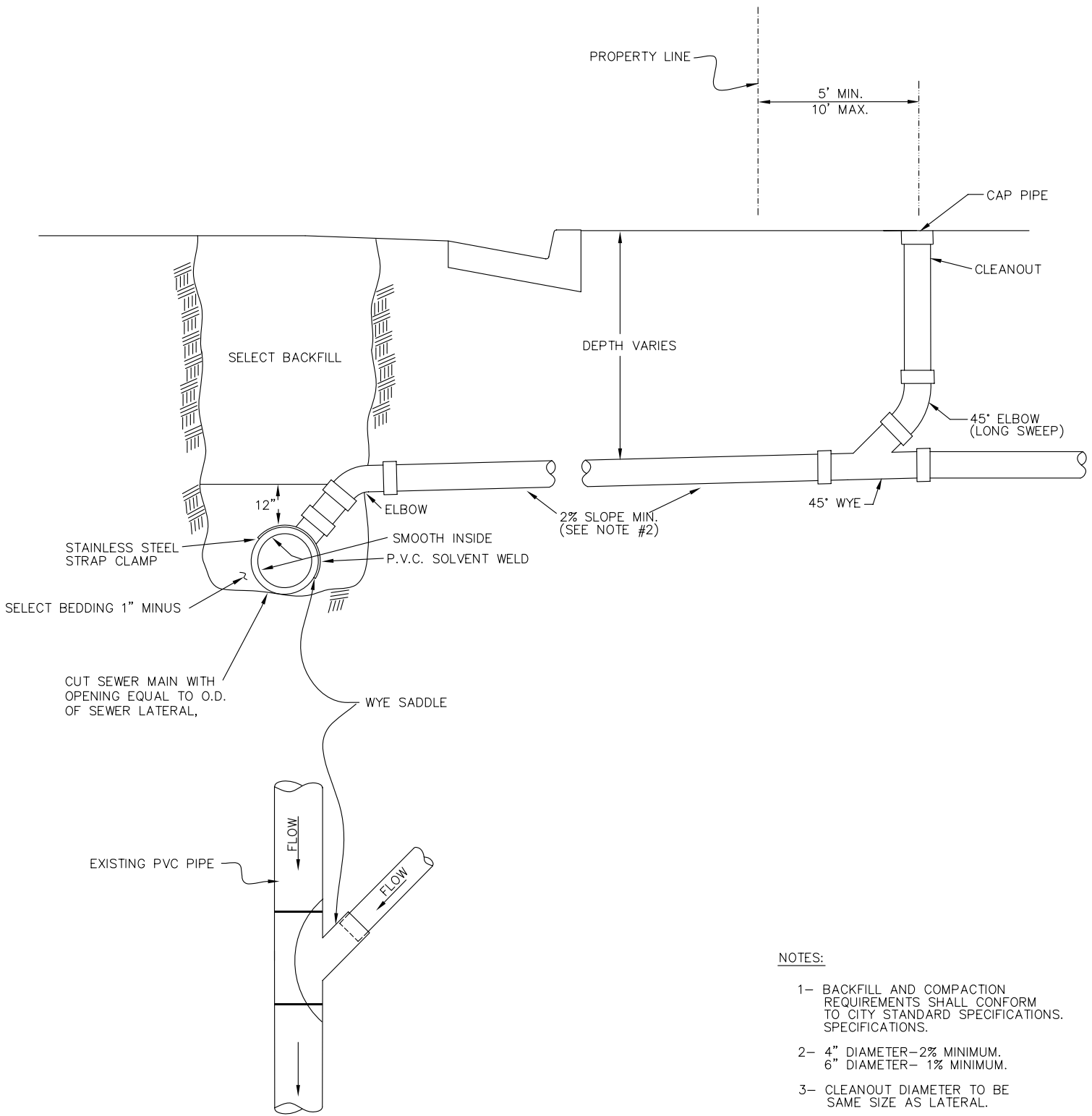
STANDARD DWG. NO.

230 1 OF 1

APPROVED:

DATE: OCT 2008 BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



- NOTES:**
- 1- BACKFILL AND COMPACTION REQUIREMENTS SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.
 - 2- 4" DIAMETER- 2% MINIMUM.
6" DIAMETER- 1% MINIMUM.
 - 3- CLEANOUT DIAMETER TO BE SAME SIZE AS LATERAL.
 - 4- INSTALL WYE SADDLE PER MANUFACTURER'S RECOMMENDATIONS.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

P.V.C. SERVICE CONNECTION
EXISTING P.V.C. SEWER MAINS

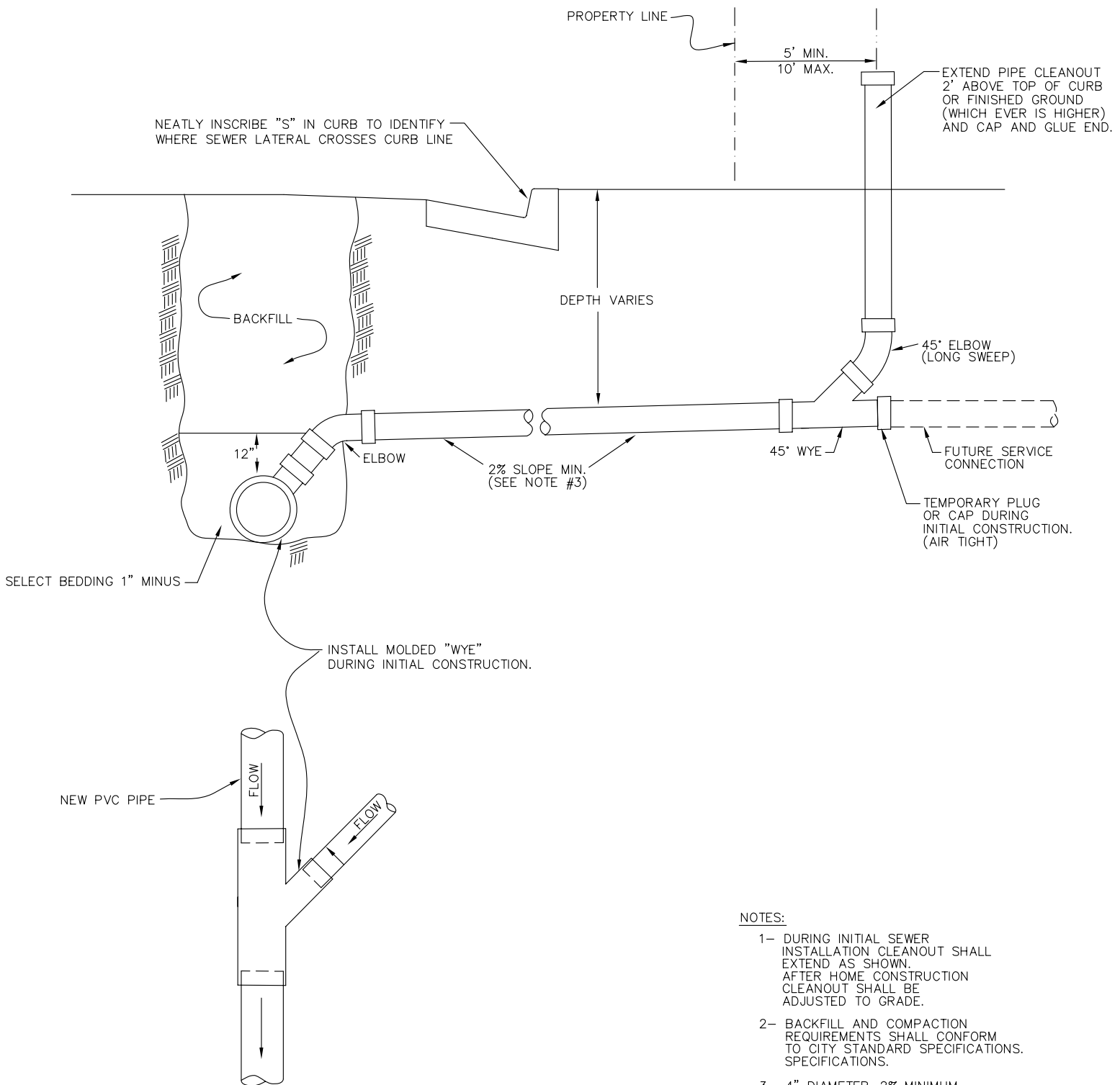
STANDARD DWG. NO.

231 | 1 OF 1

APPROVED:

DATE: OCT 2008 | BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



NOTES:

- 1- DURING INITIAL SEWER INSTALLATION CLEANOUT SHALL EXTEND AS SHOWN. AFTER HOME CONSTRUCTION CLEANOUT SHALL BE ADJUSTED TO GRADE.
- 2- BACKFILL AND COMPACTION REQUIREMENTS SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.
- 3- 4" DIAMETER-2% MINIMUM.
6" DIAMETER- 1% MINIMUM.
- 4- CLEANOUT DIAMETER TO BE SAME SIZE AS LATERAL.
- 5- BRASS PLUG MARKED WITH "S" PLACED IN TOP OF CURB MAY BE USED IN LIEU OF INSCRIBED "S" IN FACE.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

P.V.C. SERVICE CONNECTION
NEW P.V.C. SEWER MAINS

STANDARD DWG. NO.

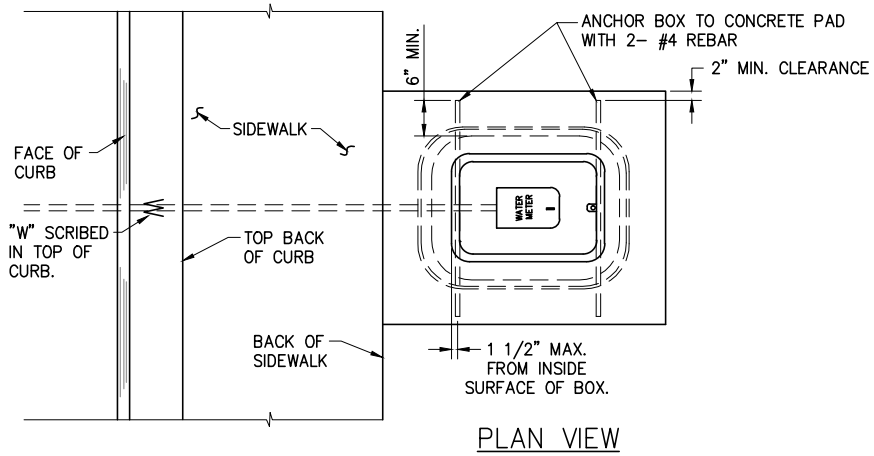
232 | 1 OF 1

APPROVED:

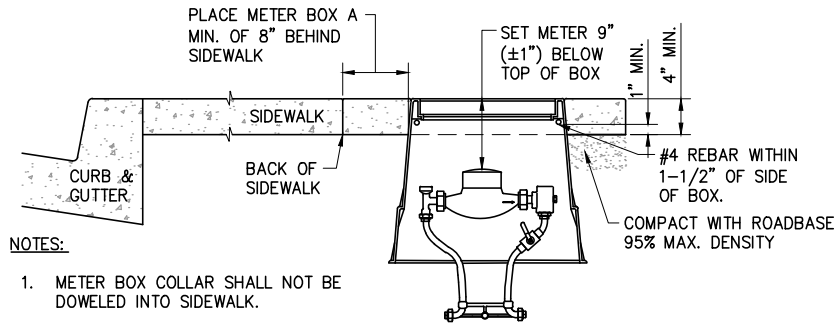
DATE: OCT 2008 | BY: TE

REVISIONS

DATE	DESCRIPTION	BY



PLAN VIEW



SECTION

NOTES:

1. METER BOX COLLAR SHALL NOT BE DOWELED INTO SIDEWALK.
2. IN DRIVEWAYS, USE H-20 RATED BOX AND LID.
3. LOCATE METER BOX OUTSIDE OF DRIVEWAY WHERE POSSIBLE.
4. A "W" SHALL BE SCRIBED IN THE TOP OF CURB.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

WATER METER BOX DETAILS

STANDARD DWG. NO.

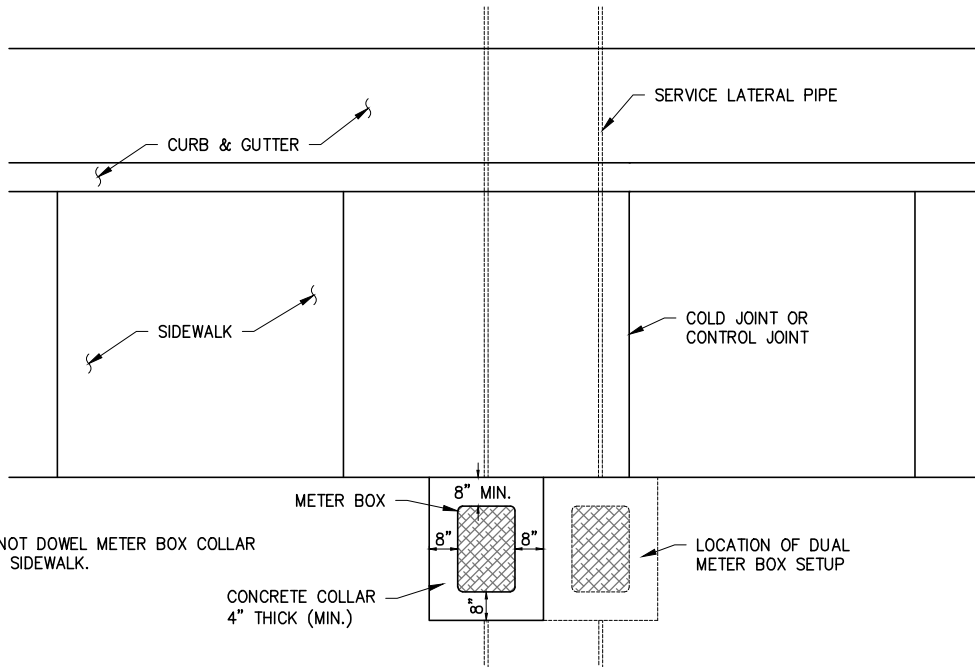
300 1 OF 1

APPROVED:

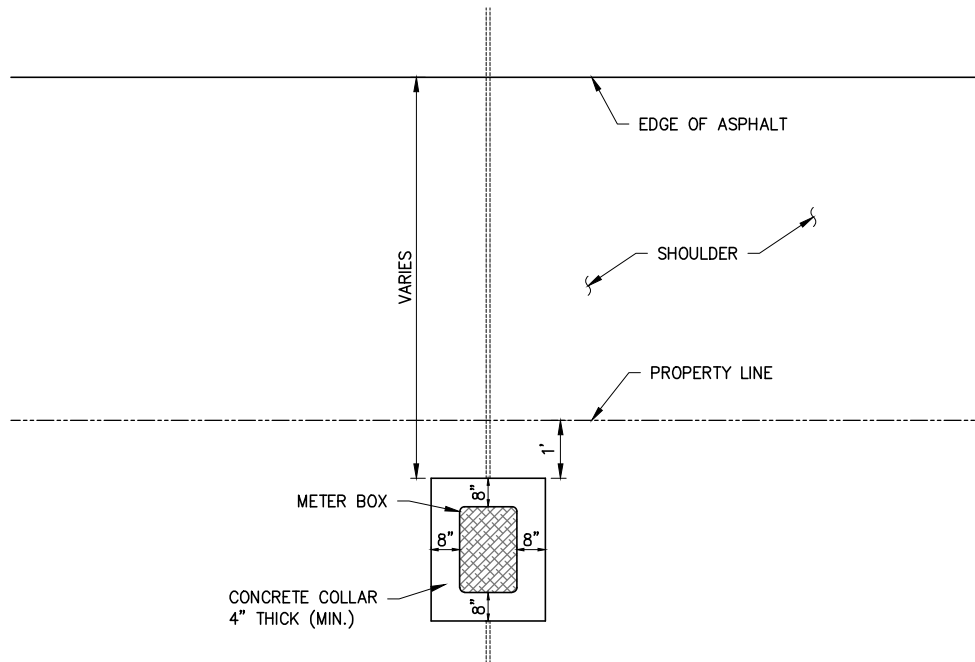
DATE: OCT 2008 BY: TE

REVISIONS

DATE	DESCRIPTION	BY
APR 2012	MISC. NOTES	MJW



PLAN VIEW W/ SIDEWALK



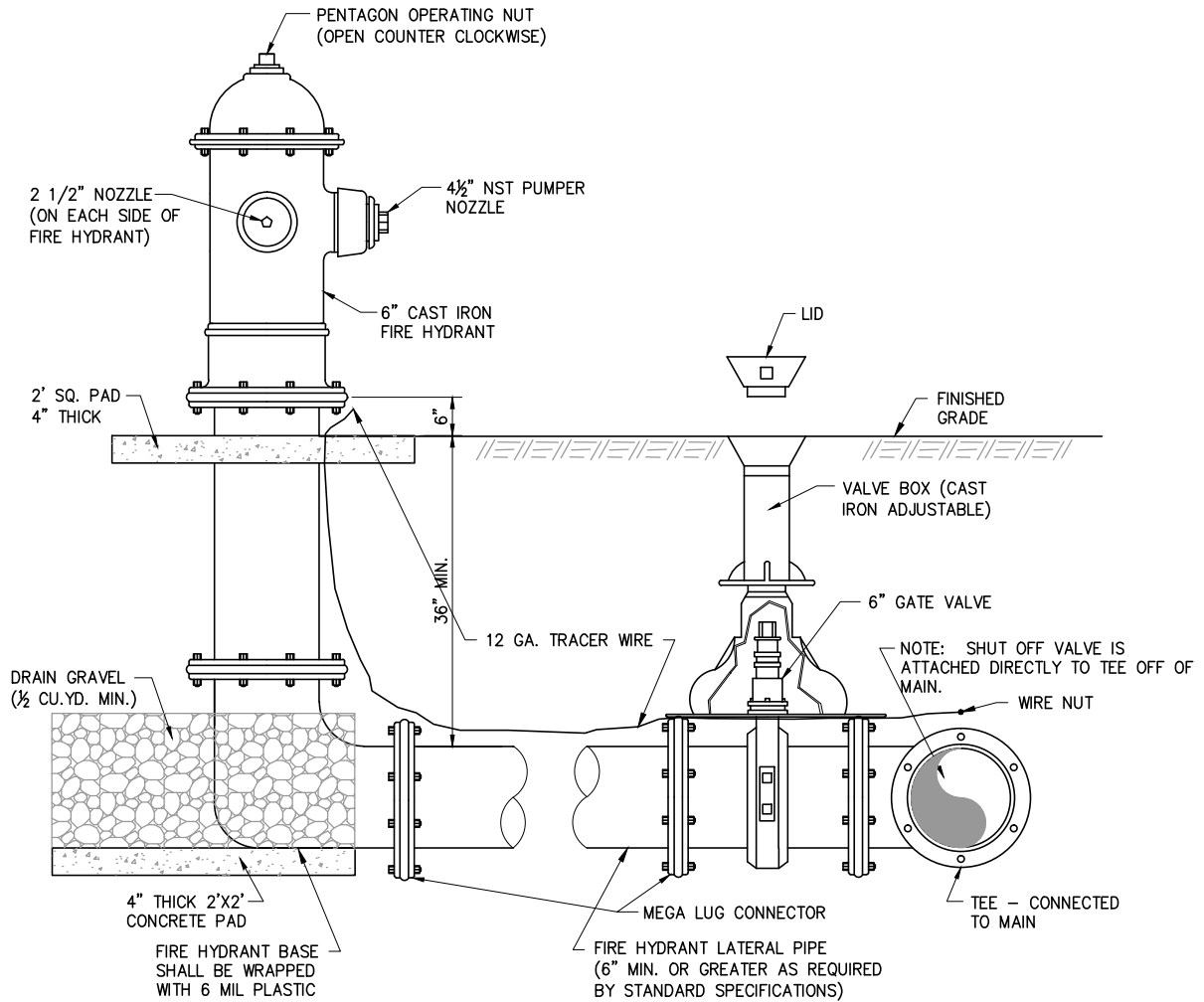
PLAN VIEW NO SIDEWALK

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY
APR 2012	SINGLE LATERALS	MJW

WATER METER BOX LOCATION DETAILS

STANDARD DWG. NO.	
301	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



NOTES:

1. IN GENERAL, HYDRANTS SHALL BE PLACED A MINIMUM OF 1' BEHIND SIDEWALK. WHERE A PLANTER STRIP IS USED, HYDRANT MAY BE PLACED IN CENTER PROVIDED WIDTH OF PLANTER IS 4' OR GREATER.
2. INSTALL TRACER WIRE FROM SHUT-OFF VALVE TO HYDRANT.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

STANDARD FIRE HYDRANT DETAILS

STANDARD DWG. NO.

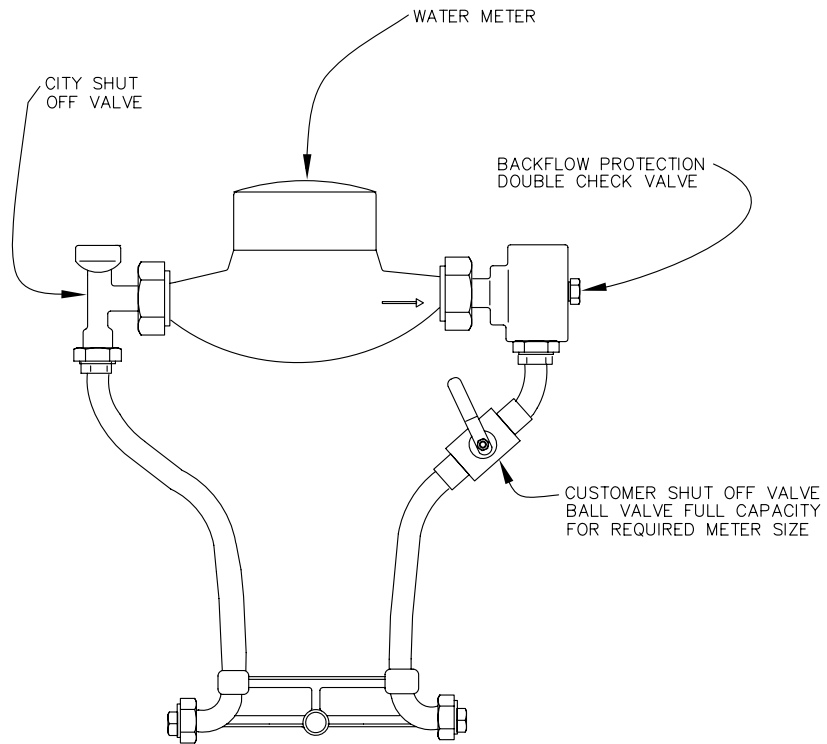
302 1 OF 1

APPROVED:

DATE: OCT 2008 BY: TE

REVISIONS

DATE	DESCRIPTION	BY
APR 2012	MISC. NOTES	MJW



SANTA CLARA PUBLIC SERVICES DEPARTMENT

WATER METER SETTER
DETAILS

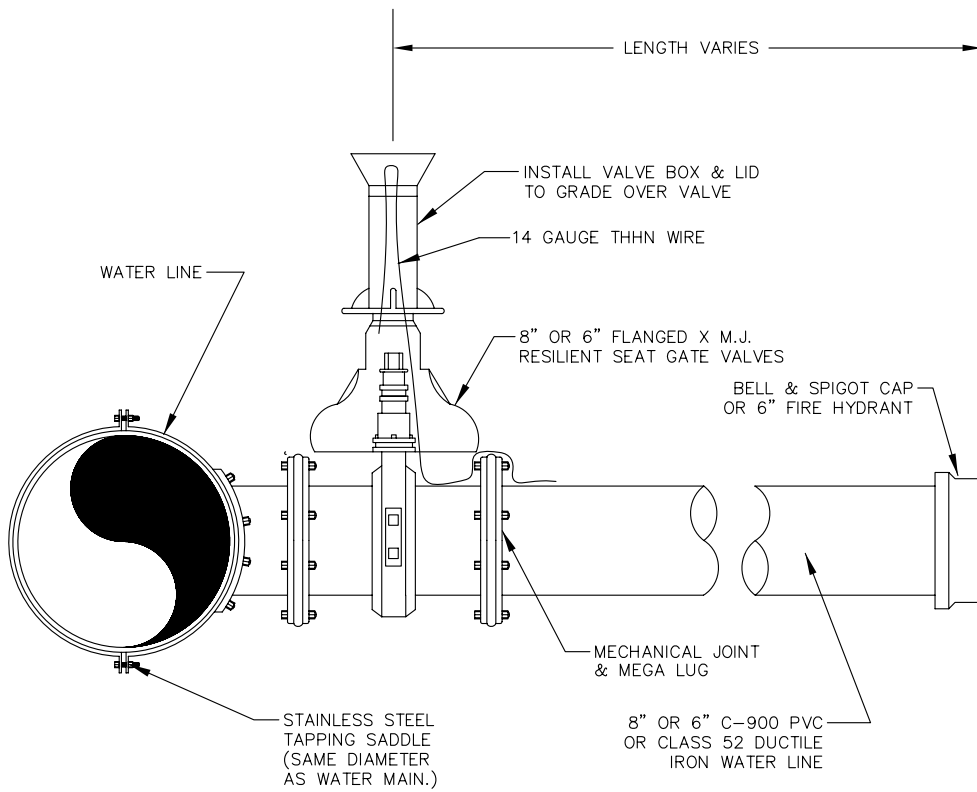
STANDARD DWG. NO.

303 | 1 OF 1

APPROVED:

DATE: OCT 2008 | BY: TE

REVISIONS		
DATE	DESCRIPTION	BY

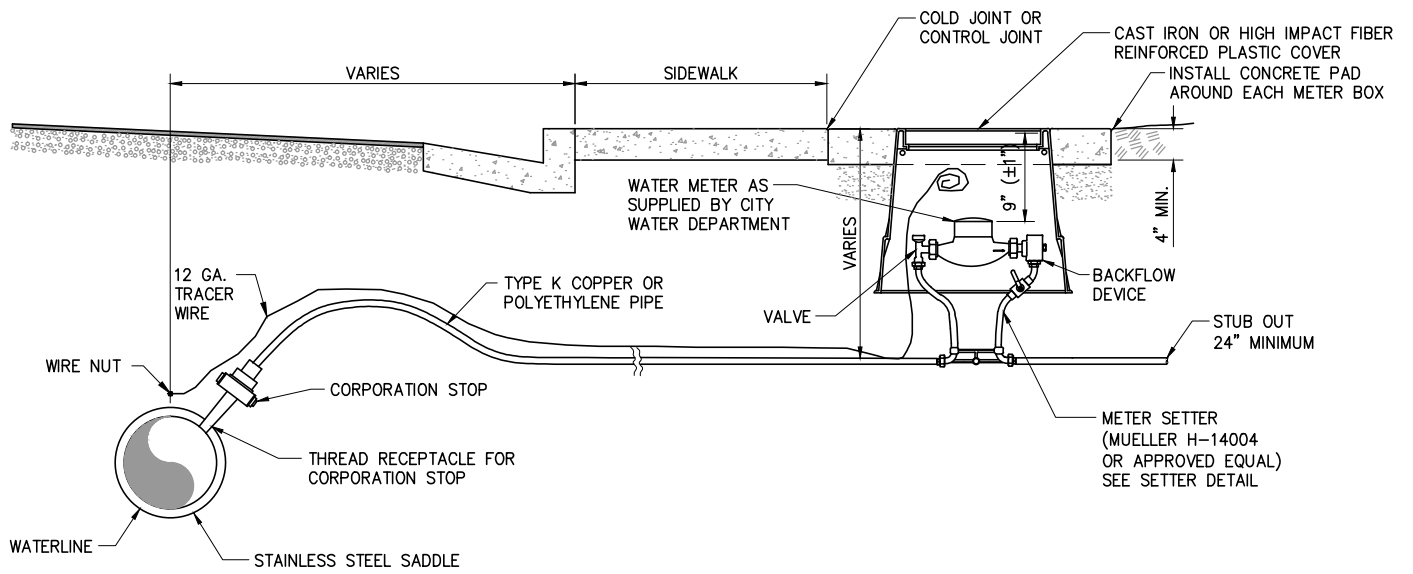


SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

8" OR 6" WATER LATERAL
(CONNECTION TO EXISTING LINE)

STANDARD DWG. NO.	
304	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



NOTES:

1. ALL TRENCH EXCAVATION AND COMPACTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
2. METER BOX SHALL BE RATED FOR H-20 LOADING IN TRAFFIC AREAS.
3. A "W" SHALL BE SCRIBED IN THE TOP OF CURB.
4. FOR SERVICES LARGER THAN 3/4", CONTACT WATER DEPARTMENT.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

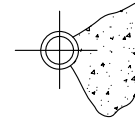
REVISIONS		
DATE	DESCRIPTION	BY
APR 2012	MISC. NOTES	MJW

3/4" WATER SERVICE CONNECTION & METER

STANDARD DWG. NO.	
305	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

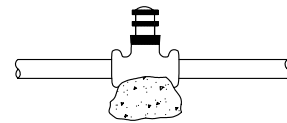
THRUST BLOCK BEARING AREA IN SQUARE FEET								
PIPE SIZE	CONDITION							
	I	II	III	IV	V	VI	VII	VII
4"	2.6	3.3	2.6	1.3	1.3	2.0	3.3	2.6
6"	4.6	6.5	3.9	2.0	2.6	3.3	6.5	4.6
8"	7.8	11.0	5.9	3.3	3.9	5.9	11.0	7.8
10"	12.4	17.5	9.8	5.2	6.5	9.1	17.5	12.4
12"	17.5	24.8	13.6	7.8	9.1	12.3	24.8	17.5
14"	24.0	33.8	18.2	9.7	12.3	16.9	33.8	24.0
16"	31.1	44.0	23.8	12.7	15.5	23.2	44.0	31.1

1. CALCULATED ON 225 LB. TEST PRESSURE & ALLOWABLE BEARING PRESSURE OF 2000 LBS. PER SQUARE FOOT.
2. IN POOR SOILS SPECIAL DESIGN IS REQUIRED.
3. CONCRETE SHALL BE CLASS "C" OR BETTER.
4. ALL THRUST BLOCK BEARING FACES SHALL BE Poured AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
5. PRIOR APPROVAL FROM THE WATER DEPARTMENT REQUIRED FOR USE OF CONCRETE THRUST BLOCKS.

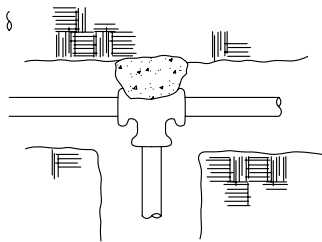


TYPICAL SECTION THRU THRUST BLOCKS

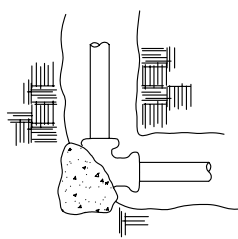
VALVE ANCHOR REQUIRED FOR VALVES 12" OR LARGER



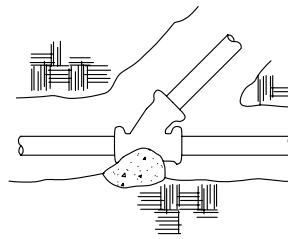
THRUST BLOCKING



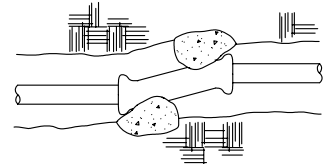
CONDITION I



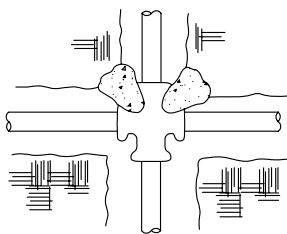
CONDITION II



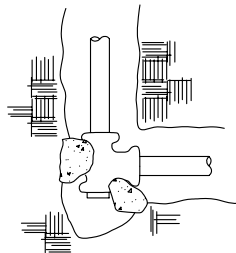
CONDITION III



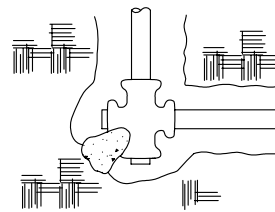
CONDITION IV



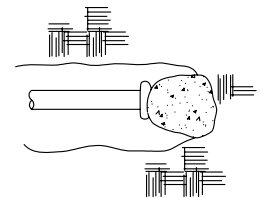
CONDITION V



CONDITION VI



CONDITION VII



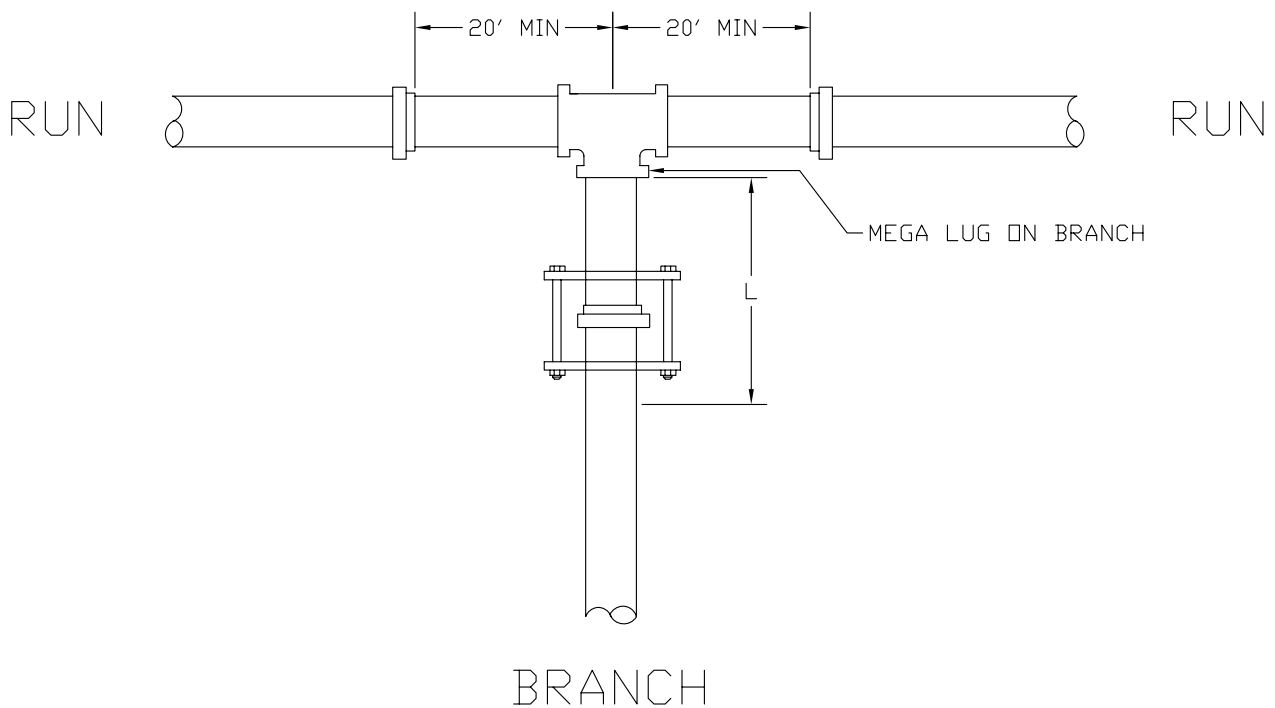
CONDITION VIII

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

WATER LINE THRUST BLOCK
DETAILS

STANDARD DWG. NO.	
306	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



		RUN SIZE DIAMETER									
		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE DIAMETER	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				10	*	*	*	*	*	*
	12					28	12	4	*	*	*
	14						45	31	17	3	*
	16							62	49	37	11
	18								78	67	44
	20									95	74
	24										127

* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 20' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER CITY SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

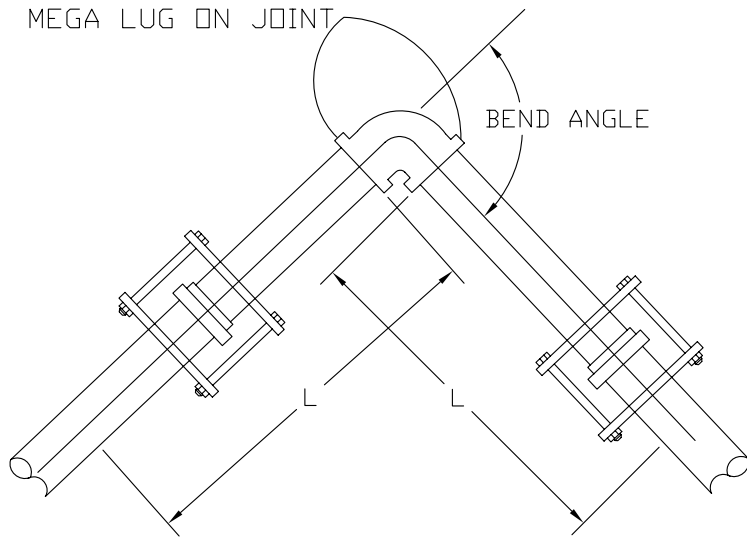
SANTA CLARA PUBLIC SERVICES DEPARTMENT

STANDARD TEE PVC
RESTRAINING SYSTEM DETAIL

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DWG. NO.	
307	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

MEGA LUG ON JOINT



HORIZONTAL BEND

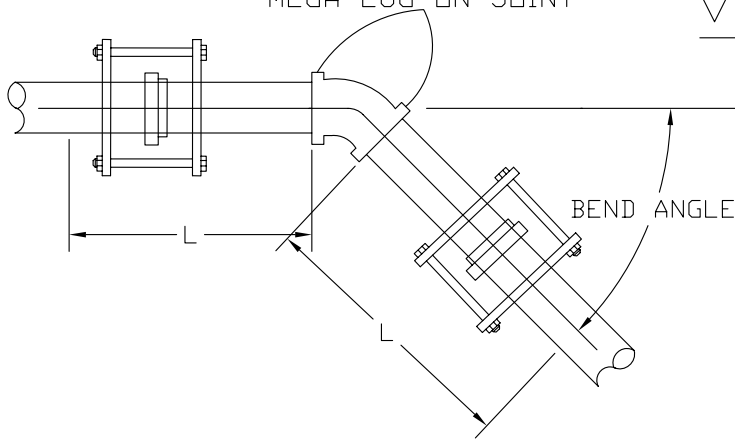
1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

SIZE DIAMETER

		4	6	8	10	12	14	16	18	20
BEND ANGLE	11.25	2	3	4	4	5	6	7	7	8
	22.5	4	6	7	9	10	12	13	15	16
	45	8	12	15	18	21	24	28	30	33
	90	20	28	37	44	52	59	67	73	81

RESTRAINED LENGTHS, "L" (IN FEET)

MEGA LUG ON JOINT



VERTICAL DOWN BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

SIZE DIAMETER

		4	6	8	10	12	14	16	18	20
BEND ANGLE	11.25	6	8	10	12	14	15	17	20	20
	22.5	11	15	19	23	27	31	35	40	40
	45	23	31	40	48	56	64	72	80	80

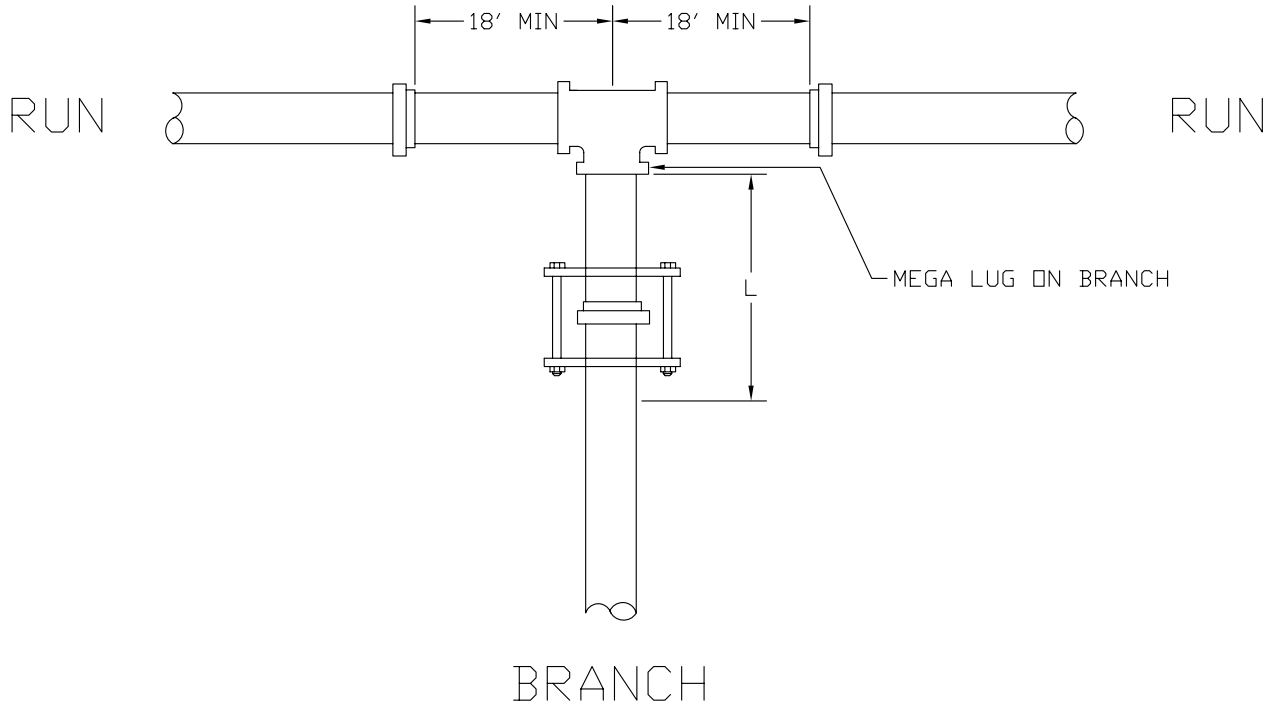
RESTRAINED LENGTHS, "L" (IN FEET)

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD BENDS FOR PVC
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
308	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

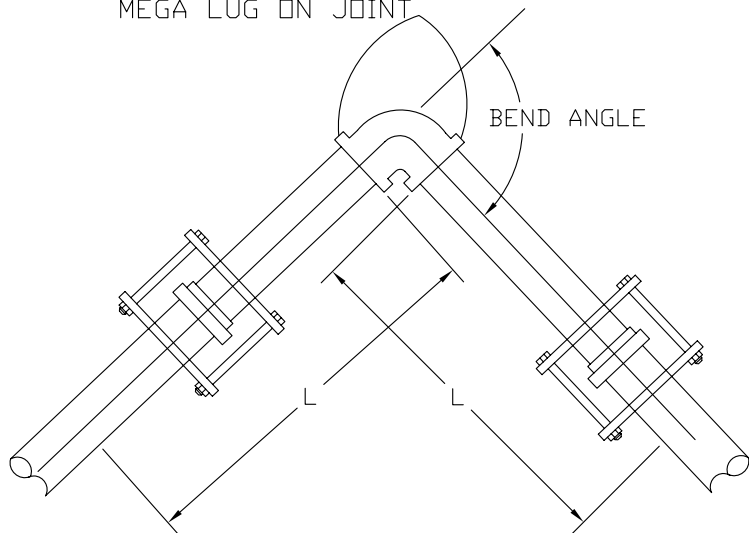


		RUN SIZE DIAMETER									
		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE DIAMETER	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				10	2	*	*	*	*	*
	12					19	12	4	*	*	*
	14						28	22	15	8	*
	16							37	31	26	13
	18								46	41	30
	20									55	45
	24										72

* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.
 RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 18' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER CITY SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

MEGA LUG ON JOINT



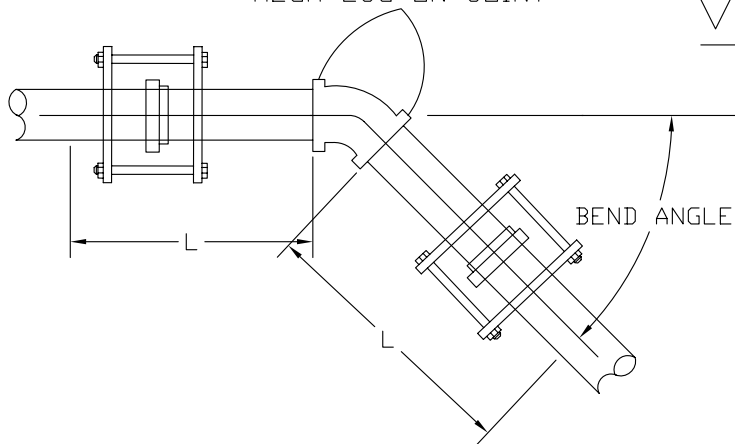
HORIZONTAL BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER							
		4	6	8	10	12	14	16	20
BEND ANGLE	11.25	3	2	3	3	4	4	5	6
	22.5	3	4	7	7	8	9	10	12
	45	6	9	12	14	16	19	21	26
	90	15	21	28	34	40	45	51	62

RESTRAINED LENGTHS, "L" (IN FEET)

MEGA LUG ON JOINT



VERTICAL DOWN BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER							
		4	6	8	10	12	14	16	20
BEND ANGLE	11.25	3	5	7	8	8	10	11	13
	22.5	6	10	11	14	16	18	22	25
	45	14	18	24	28	33	38	43	53

RESTRAINED LENGTHS, "L" (IN FEET)

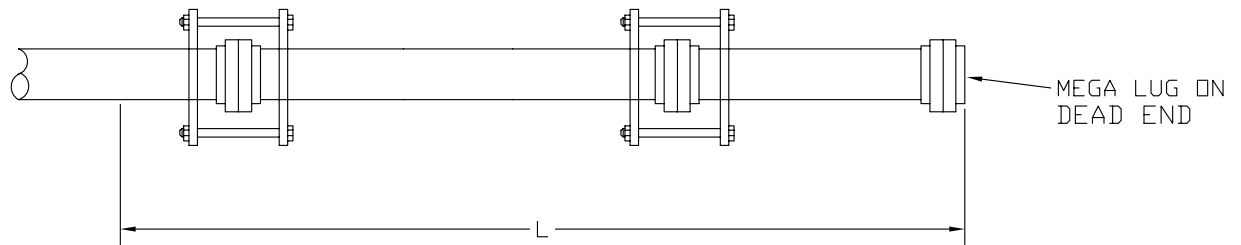
SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD BENDS FOR DUCTILE IRON
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
310	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

STANDARD DEAD END FOR DUCTILE IRON



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

PIPE SIZE IN INCHES

4	6	8	10	12	14	16	18	20
23	33	45	52	62	71	80	89	98

RESTRAINED LENGTHS, "L" (IN FEET)

RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN TYPICALLY USED WITH BACKFILL IN ST. GEORGE.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFTEY FACTOR OF 1.5
3. SOIL TYPE SANDY CLAY
4. TYPE 5 TRENCH COMPACTION FROM FOUR (4) INCHES MINIMUM UNDER THE PIPE TO THE CENTER LINE OF THE PIPE, AND COMPACTED GRANULAR OR SELECTED MATERIAL FROM THE CENTER LINE OF THE PIPE TO THE TOP OF THE PIPE (90 PERCENT STANDARD PROCTOR DENSITY, AASHTO T-99).
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.
6. AN INLINE VALVE IS CONSIDERED A DEAD END

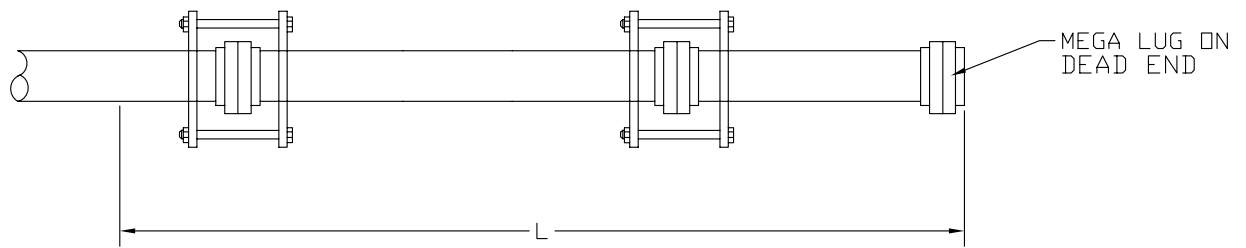
IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE CITY ENGINEER.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DEAD END FOR DUCTILE IRON
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
311	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

PIPE SIZE IN INCHES

4	6	8	10	12	14	16	18	20
44	62	82	99	118	135	153	169	187

RESTRAINED LENGTHS, "L" (IN FEET)

RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN TYPICALLY USED WITH BACKFILL IN ST. GEORGE.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFTEY FACTOR OF 1.5
3. SOIL TYPE SANDY CLAY
4. TYPE 5 TRENCH COMPACTION FROM FOUR (4) INCHES MINIMUM UNDER THE PIPE TO THE CENTER LINE OF THE PIPE, AND COMPACTED GRANULAR OR SELECTED MATERIAL FROM THE CENTER LINE OF THE PIPE TO THE TOP OF THE PIPE (90 PERCENT STANDARD PROCTOR DENSITY, AASHTO T-99).
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.
6. AN INLINE VALVE IS CONSIDERED A DEAD END.

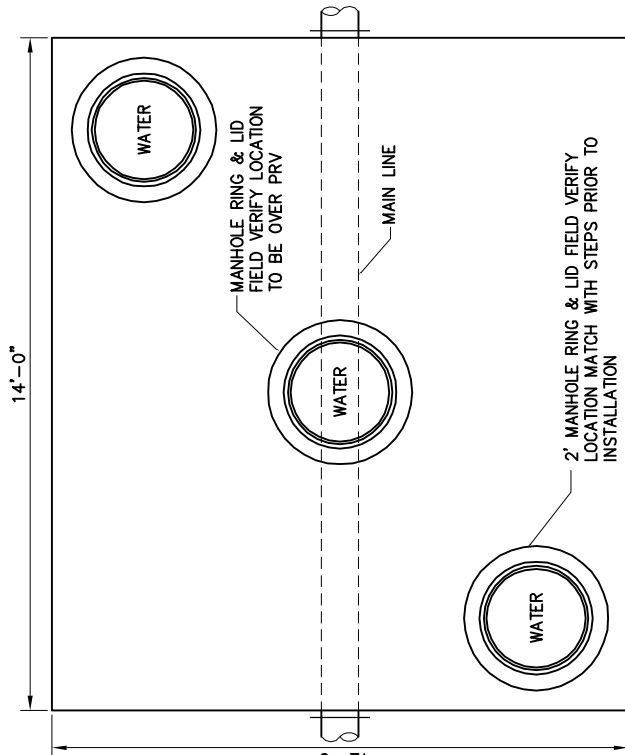
IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE CITY ENGINEER.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

IN LINE VALVE \ DEAD END ON PVC PIPE
DETAIL

STANDARD DWG. NO.	
312	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

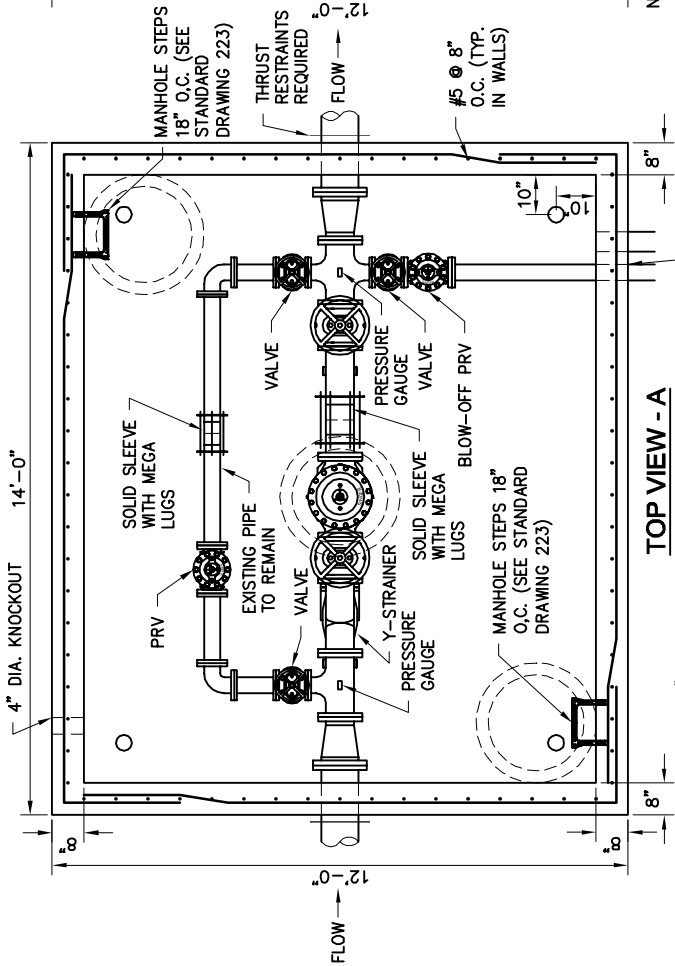


TOP VIEW LID

NOTE: SIZE OF MANHOLE RING & LID WILL VARY WITH SIZE OF PRV.

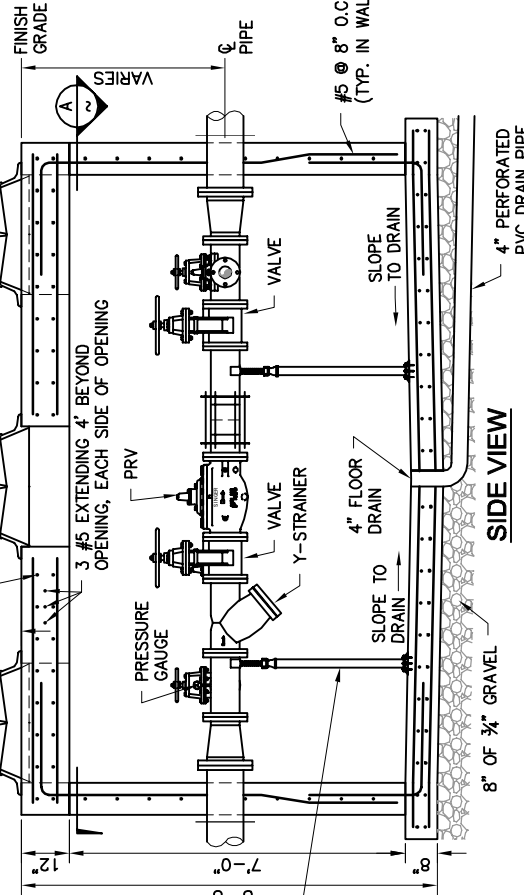
PRV STATION NOTES:

1. REMOVE EXISTING PRV VAULT STRUCTURE.
2. FIELD VERIFY EXISTING PIPING CONFIGURATION & SIZES TO DETERMINE KNOCKOUT AND MANHOLE LOCATIONS.
3. IF VAULT IS IN SIDEWALK THE FINISH GRADE OF VAULT SHALL MATCH SLOPE OF EXISTING SIDEWALK.
4. IF VAULT IS IN ROADWAY, FINISH GRADE SHALL MATCH SUBGRADE.
5. MANHOLE RING & LID WILL VARY WITH SIZE OF PRV. (24" MIN. ACCESS PORTS REQUIRED).



TOP VIEW - A

PROVIDED KNOCKOUT FOR BLOW-OFF. FIELD VERIFY LOCATION WITH CITY OF SANTA CLARA (SEE NOTE 4)



SIDE VIEW

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

STANDARD PRESSURE REDUCING VALVE FOR EXISTING PRV & PIPING

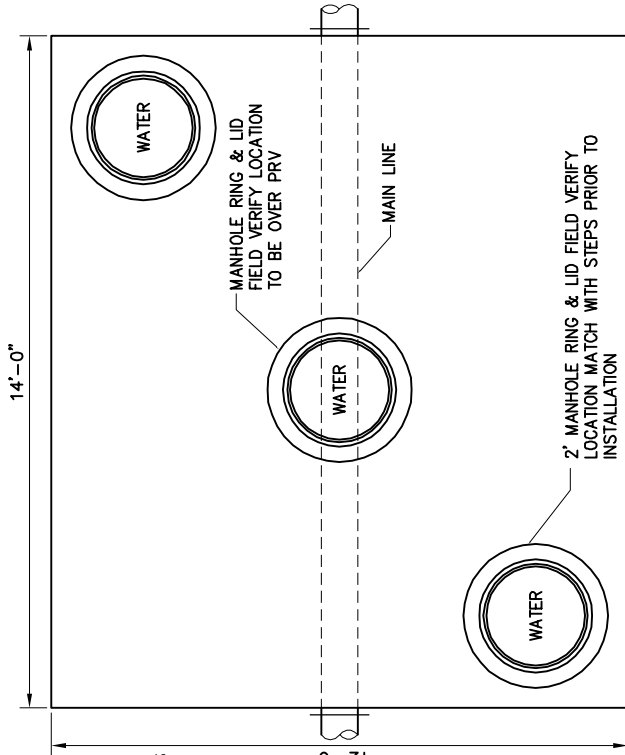
STANDARD DWG. NO.

314 1 OF 1

APPROVED:

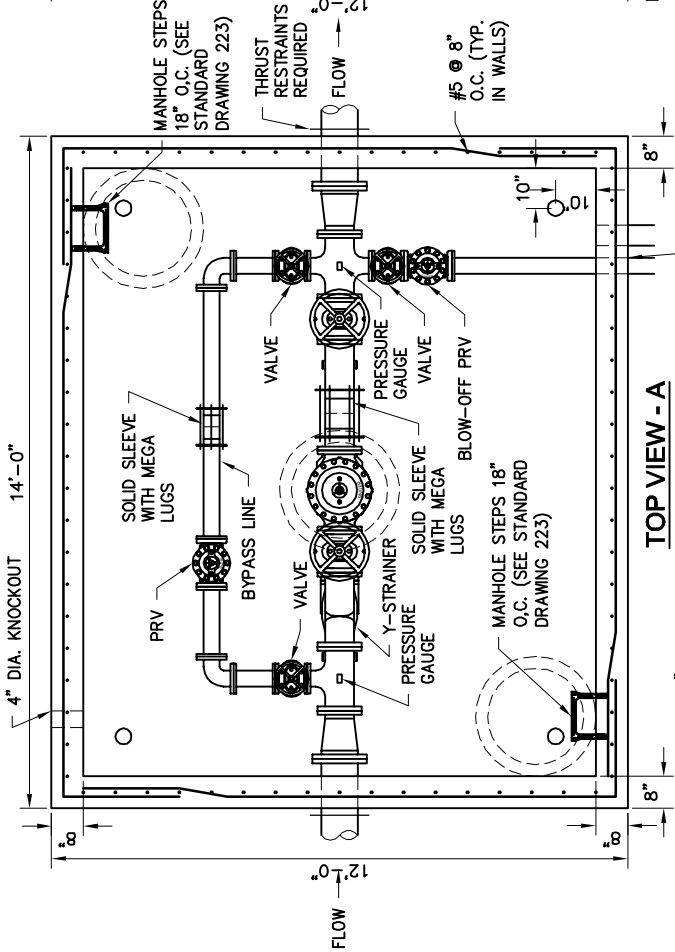
DATE: APR 2012 BY: MJW

REVISIONS		
DATE	DESCRIPTION	BY



TOP VIEW LID

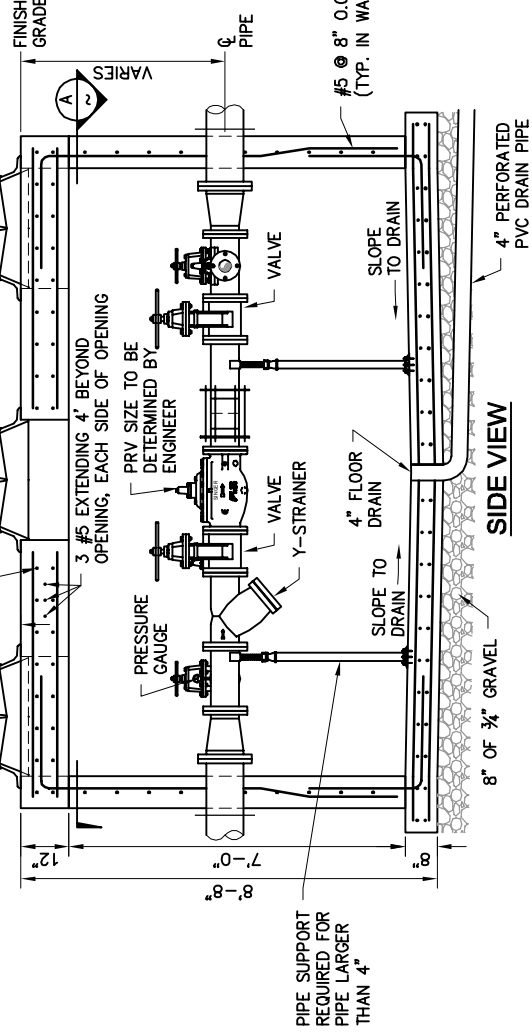
NOTE: SIZE OF MANHOLE RING & LID WILL VARY WITH SIZE OF PRV.



TOP VIEW - A

PROVIDED KNOCKOUT FOR BLOW-OFF. FIELD VERIFY LOCATION WITH CITY OF SANTA CLARA

(SEE NOTE 4)



SIDE VIEW

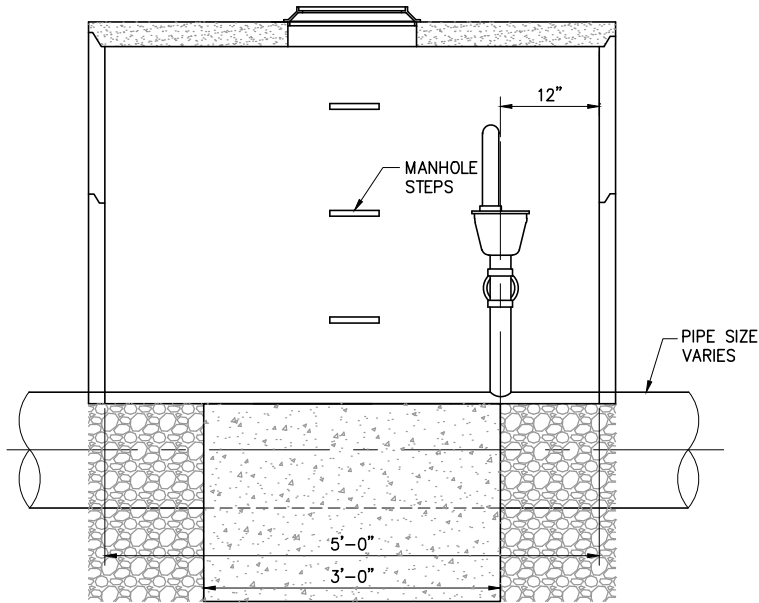
PRV STATION NOTES:

1. REFER TO NORTH ORIENTATION FOR SITE AND DETAIL VIEWS.
2. IF VAULT IS IN SIDEWALK THE FINISH GRADE OF VAULT SHALL MATCH SLOPE OF EXISTING SIDEWALK.
3. ALL FITTINGS SHALL BE FLANGED AND MEGA LUGGED.
4. MANHOLE RING & LID WILL VARY WITH SIZE OF PRV. (24" MIN. ACCESS PORTS REQUIRED).
5. SIZES OF ALL LINES DETERMINED BY CITY ENGINEER.
6. REQUIREMENTS FOR BLOW-OFF MAY BE WAIVED UPON APPROVAL FROM CITY WATER DEPARTMENT.

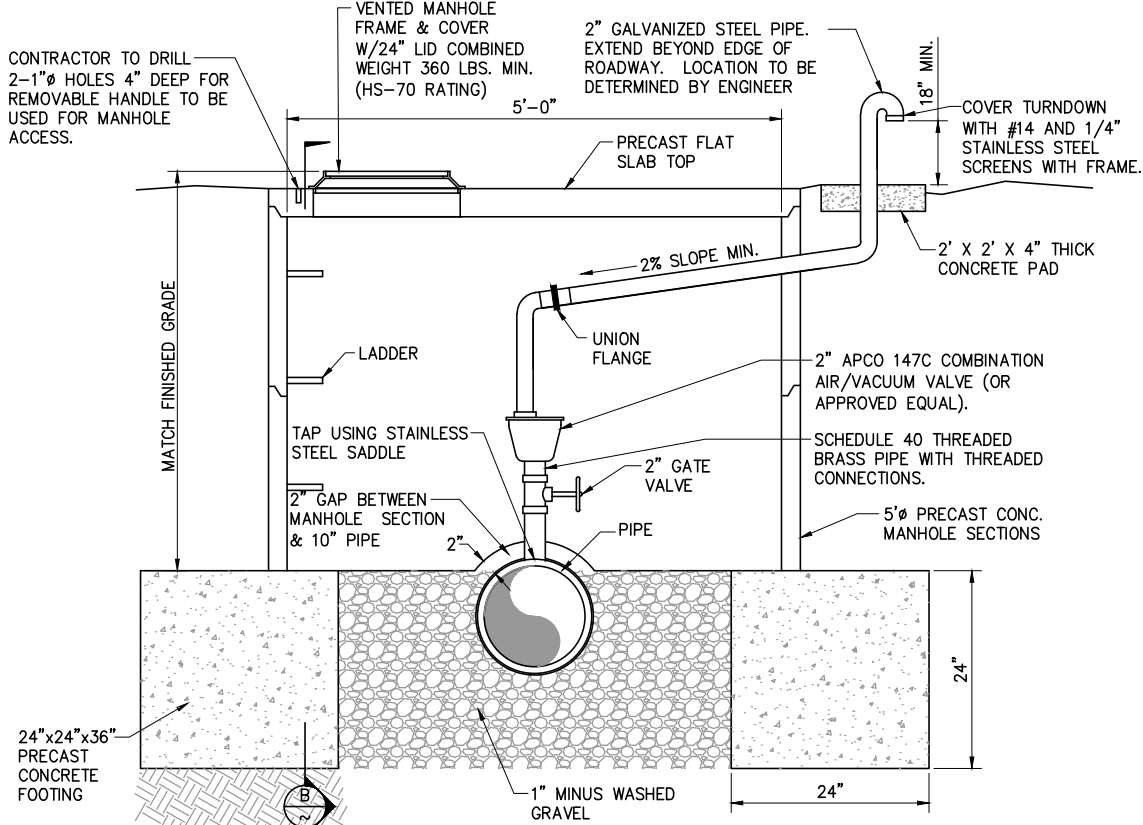
SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT
STANDARD PRESSURE REDUCING VALVE & VAULT
FOR NEW CONSTRUCTION

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DWG. NO.	
315	1 OF 1
APPROVED:	
DATE: APR 2012	BY: MJW



SECTION - B



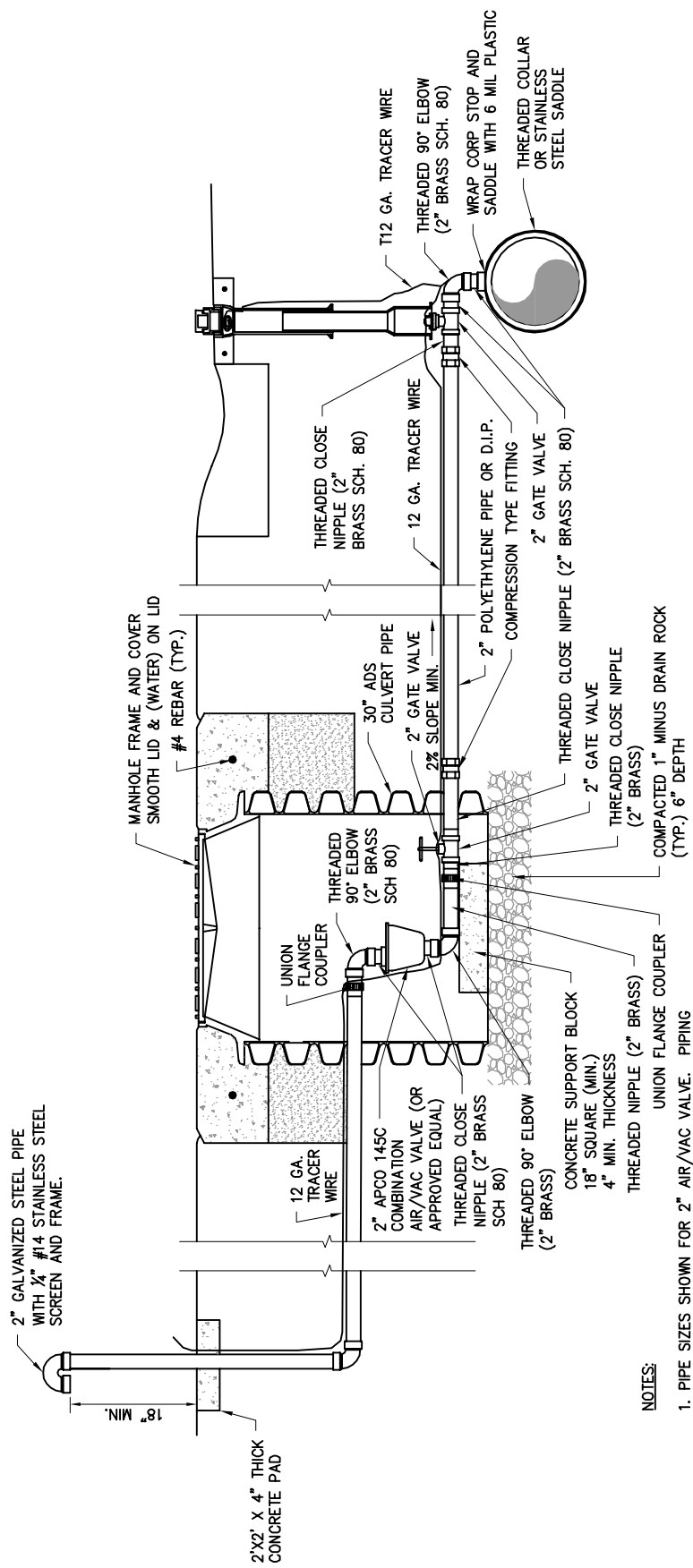
- NOTES:**
1. ALL AIR VALVES SHALL BE INSTALLED VERTICALLY PLUMB.
 2. PIPE SIZES SHOWN FOR 2" AIR/VAC VALVE. PIPING TO CORRESPOND WITH ACTUAL AIR/VAC VALVE SIZE.
 3. VALVES 2" AND GREATER SHALL BE GATE VALVES. VALVES LESS THAN 2" SHALL BE BRASS BALL VALVES.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

STANDARD AIR VAC DETAIL

REVISIONS		
DATE	DESCRIPTION	BY
APR 2012	MISC. NOTES	MJW

STANDARD DWG. NO.	
316	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



NOTES:

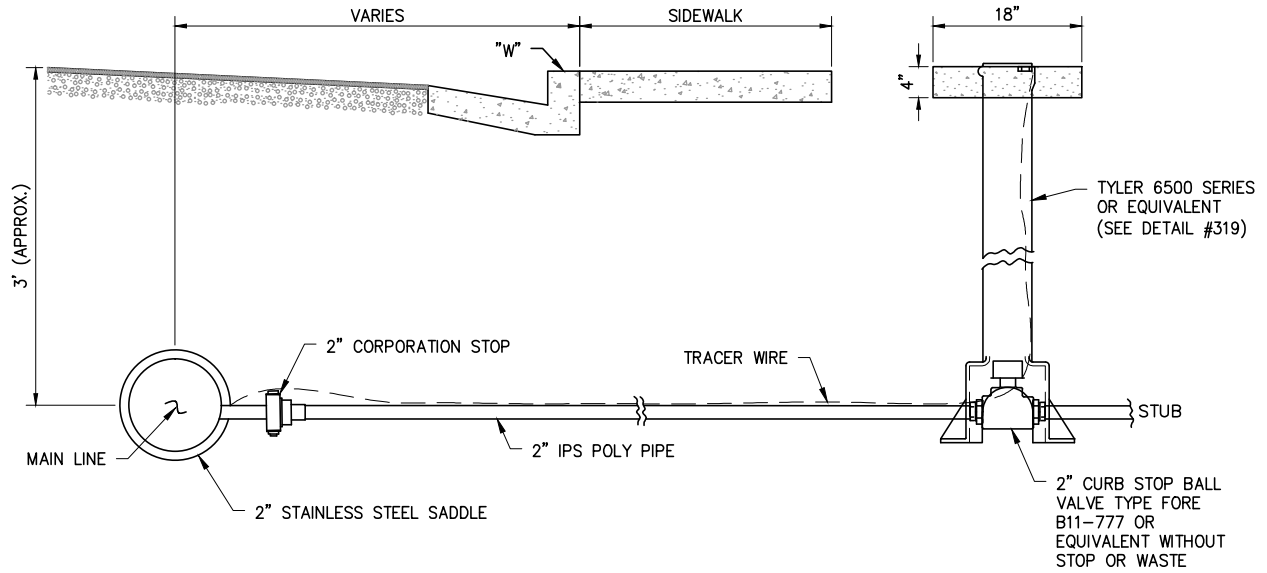
1. PIPE SIZES SHOWN FOR 2" AIR/VAC VALVE. PIPING TO CORRESPOND WITH ACTUAL AIR/VAC VALVE SIZE.
2. VALVES 2" AND GREATER SHALL BE GATE VALVES. VALVES LESS THAN 2" SHALL BE BRASS BALL VALVES.
3. SHOWN FOR P.E. PIPE. MAY ALSO USE DIP BETWEEN GATE VALVES.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REMOTE AIR VAC VALVE

REVISIONS		
DATE	DESCRIPTION	BY
APR 2012	GATE VALVE NOTES	MJW

STANDARD DWG. NO.	
317	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



NOTES:

1. ALL FITTINGS ARE TO BE BRASS EXCEPT AS NOTED.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

2" FIRE LINE DETAIL

STANDARD DWG. NO.

318

1 OF 1

APPROVED:

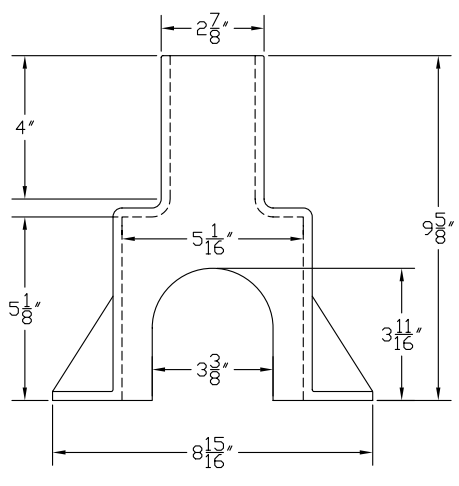
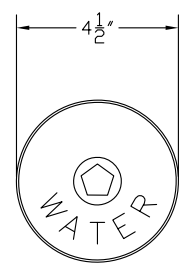
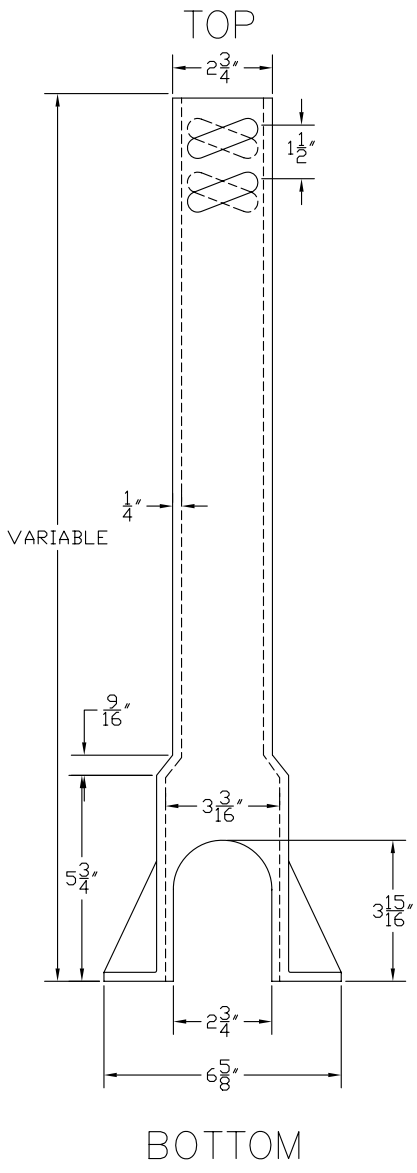
DATE: OCT 2008

BY:

TE

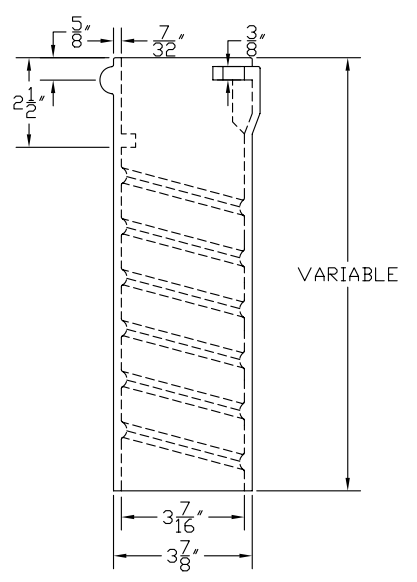
REVISIONS

DATE	DESCRIPTION	BY
MAY 2012	MISC. NOTES	MJW



ENLARGED BASE
FOR 2" CURBSTOP

ITEM	HEIGHT INCREASE
6500	6"

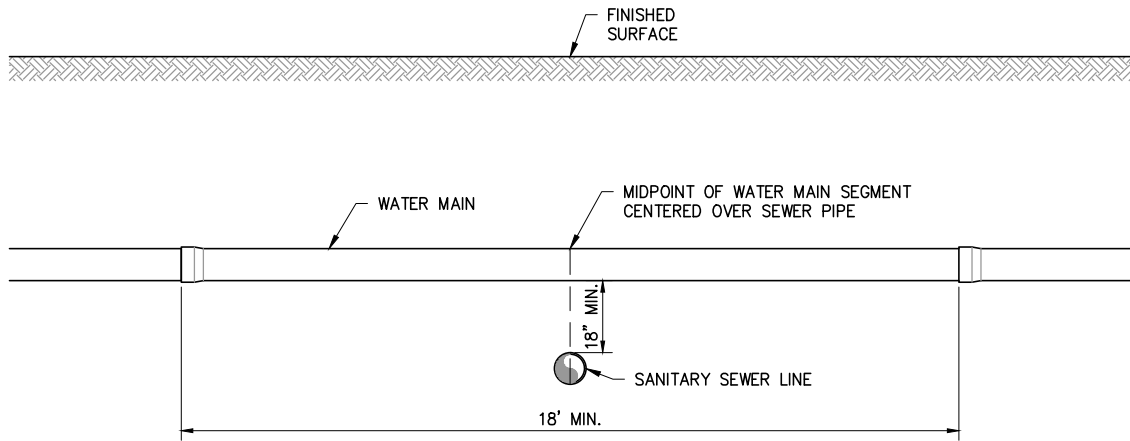


SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

FIRE LINE VALVE BOX

REVISIONS		
DATE	DESCRIPTION	BY

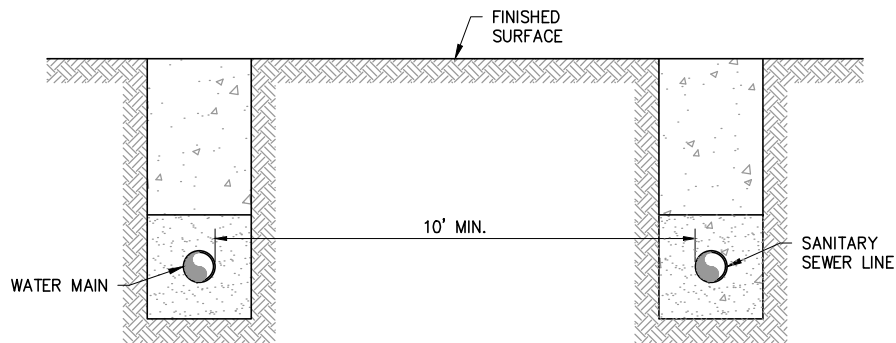
STANDARD DWG. NO.	
319	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



TYPICAL WATER & SEWER PIPE CROSSING

NOTES:

1. PIPE SEPARATION SHALL ADHERE TO SANTA CLARA CITY CONSTRUCTION DESIGN STANDARDS 3.5.6 AND 3.6.8 AND APPLICABLE SECTIONS OF THE UTAH ADMINISTRATIVE CODE. (SEE R309-550-7).
2. DISTANCES ARE MEASURED BETWEEN NEAREST OUTSIDES OF PIPES.



TYPICAL WATER & SEWER PIPE SEPARATION

NOTES:

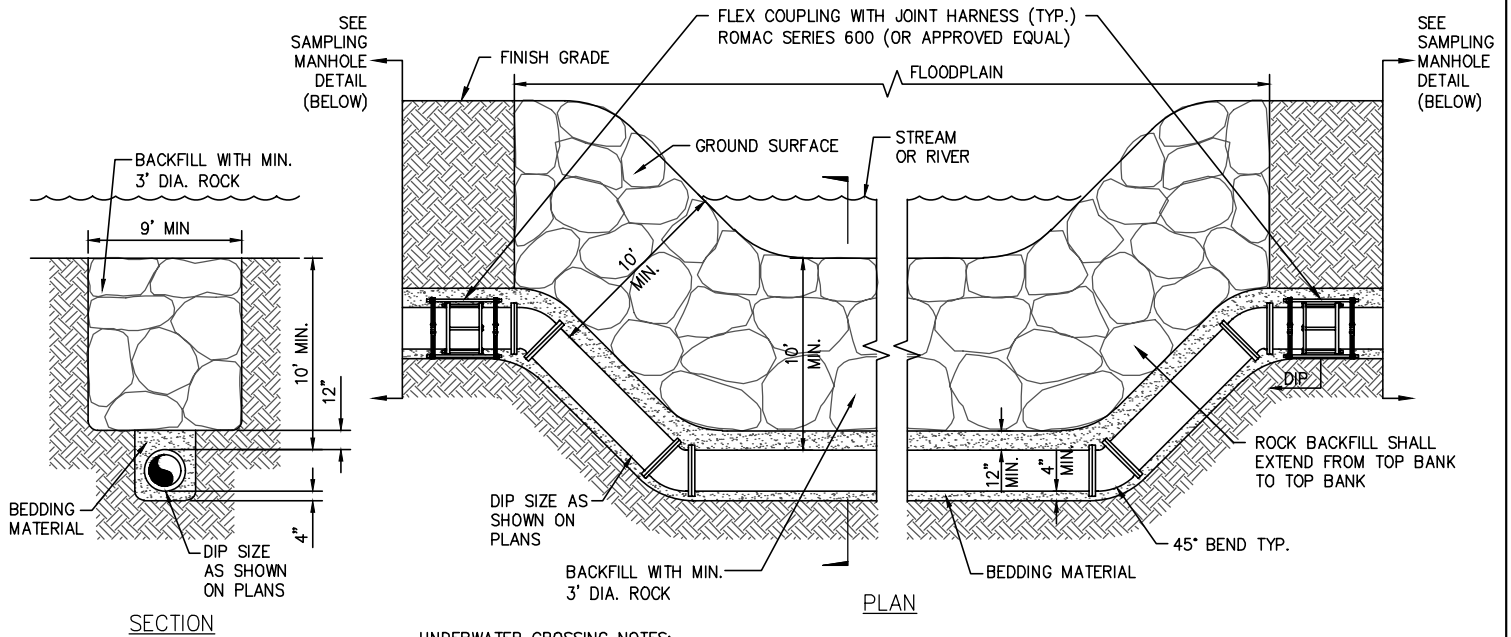
1. PIPE SEPARATION SHALL ADHERE TO SANTA CLARA CITY CONSTRUCTION DESIGN STANDARDS 3.5.6 AND 3.6.8 AND APPLICABLE SECTIONS OF THE UTAH ADMINISTRATIVE CODE. (SEE R309-550-7).
2. DISTANCES ARE MEASURED BETWEEN NEAREST OUTSIDES OF PIPES.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

TYPICAL WATER & SEWER CROSSING AND PIPE SEPARATION

STANDARD DWG. NO.	
320	1 OF 1
APPROVED:	
DATE: MAY 2012	BY: MJW



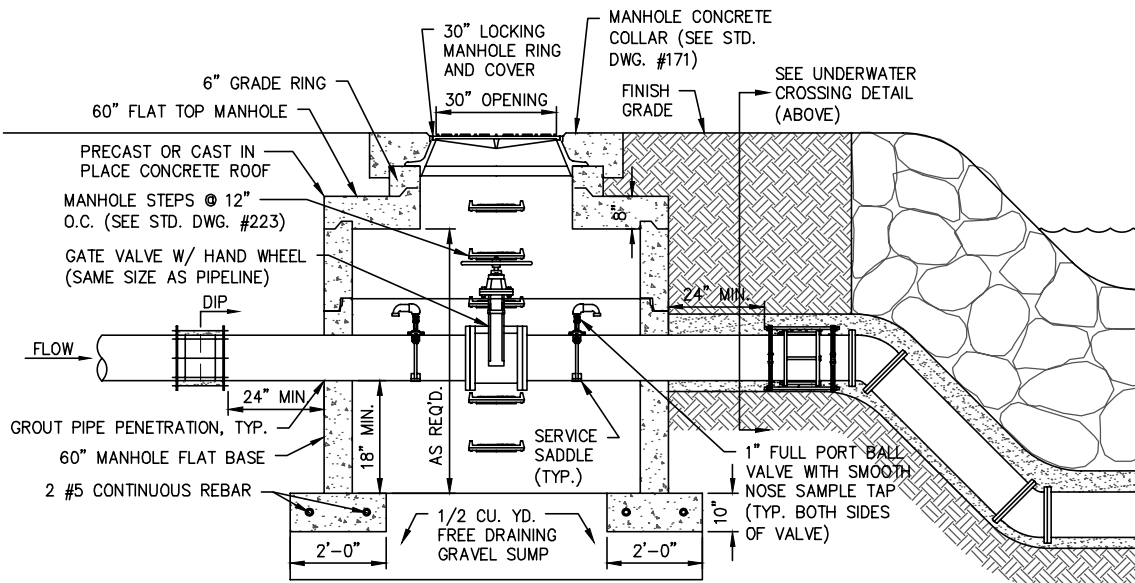
SECTION

PLAN

UNDERWATER CROSSING NOTES:

1. ROCK SHALL BE BASALT OR APPROVED EQUIVALENT IN DENSITY.
2. WHEN HDPE PIPE IS USED FOR CROSSING, THE FLEX COUPLING WITH JOINT HARNESS AS SHOWN ON BOTH SIDES OF THE WATER COURSE ARE NOT REQUIRED.
3. MECHANICAL JOINT RESTRAINTS OR FIELD LOCK GASKETS REQUIRED ON ALL JOINTS WITHIN THE FLOODPLAIN.

DETAIL – UNDERWATER CROSSING



SAMPLING MANHOLE NOTES:

1. PATCH ALL JOINTS, OPENINGS, AROUND PIPES, AND OTHER VOIDS WITH NON-SHRINK GROUT.
2. PAINT ALL NON-GALVANIZED EXPOSED PIPE.
3. SAMPLING MANHOLES SHALL BE LOCATED ON BOTH SIDES OF THE UNDERWATER CROSSING AT LOCATIONS NOT SUBJECT TO HIGH GROUND WATER OR FLOODING.

DETAIL – SAMPLING MANHOLE

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

UNDERWATER CROSSING & SAMPLING MANHOLE

STANDARD DWG. NO.

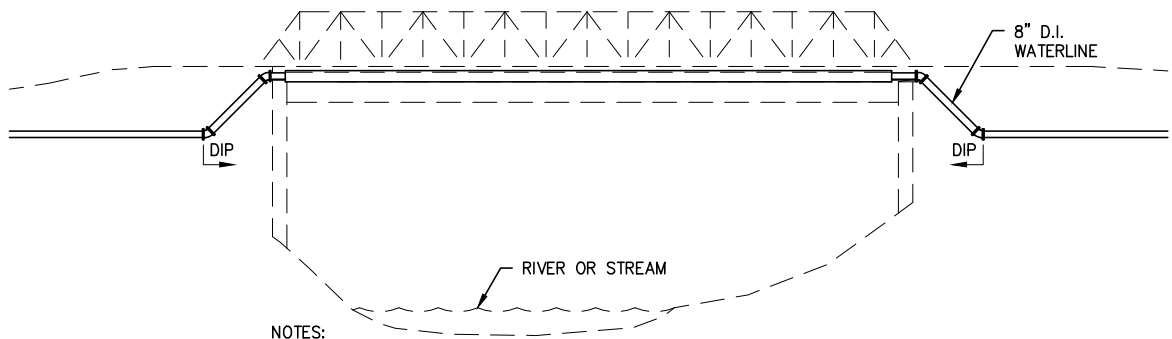
321 1 OF 1

APPROVED:

DATE: MAY 2012 BY: MJW

REVISIONS

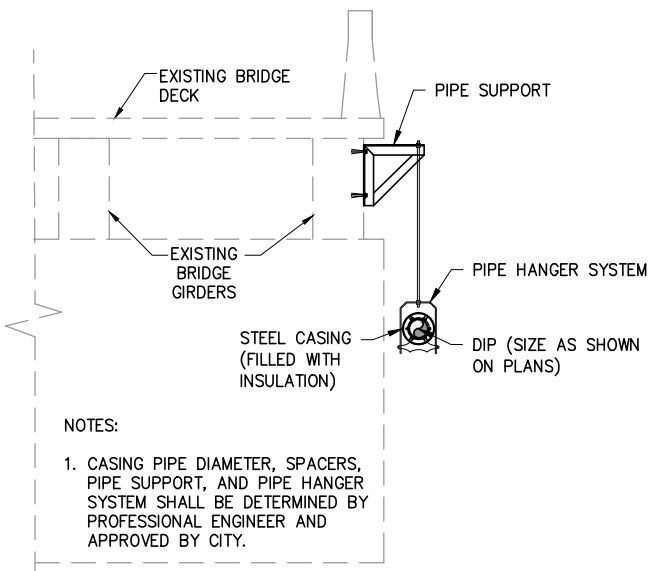
DATE	DESCRIPTION	BY



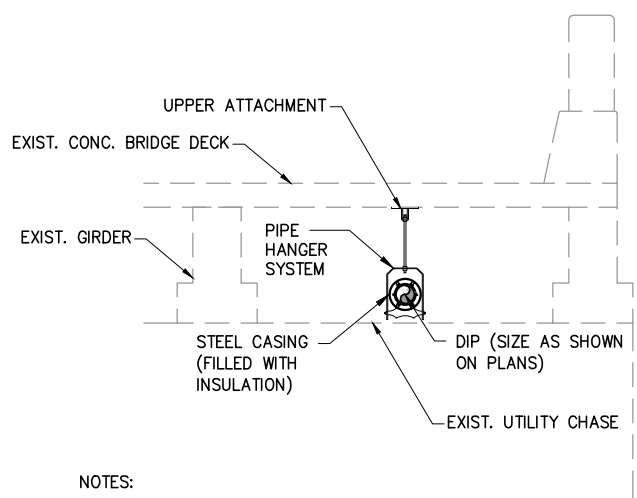
NOTES:

1. OPTIONS 1 OR 2 SHOULD BE SELECTED DEPENDENT ON THE SPECIFIC SITUATION OF THE CROSSING.
2. EXPANSION JOINTS SUCH AS EBAA IRON EX-TEND SHALL BE UTILIZED TO PROVIDE LATERAL MOVEMENT.
3. PIPE SHALL BE INSULATED UNTIL THREE FOOT DEPTH MINIMUM TO TOP OF PIPE IS ACHIEVED.
4. MECHANICAL JOINT RESTRAINTS OR FIELD LOCK GASKETS REQUIRED ON ALL JOINTS WITHIN THE FLOODPLAIN. FIELD LOCK GASKETS REQUIRED ON ALL JOINTS INTEGRAL TO THE ASSEMBLY.

DETAIL – ABOVE WATER CROSSING



OPTION 1



OPTION 2

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

ABOVE WATER CROSSING

STANDARD DWG. NO.

322 1 OF 1

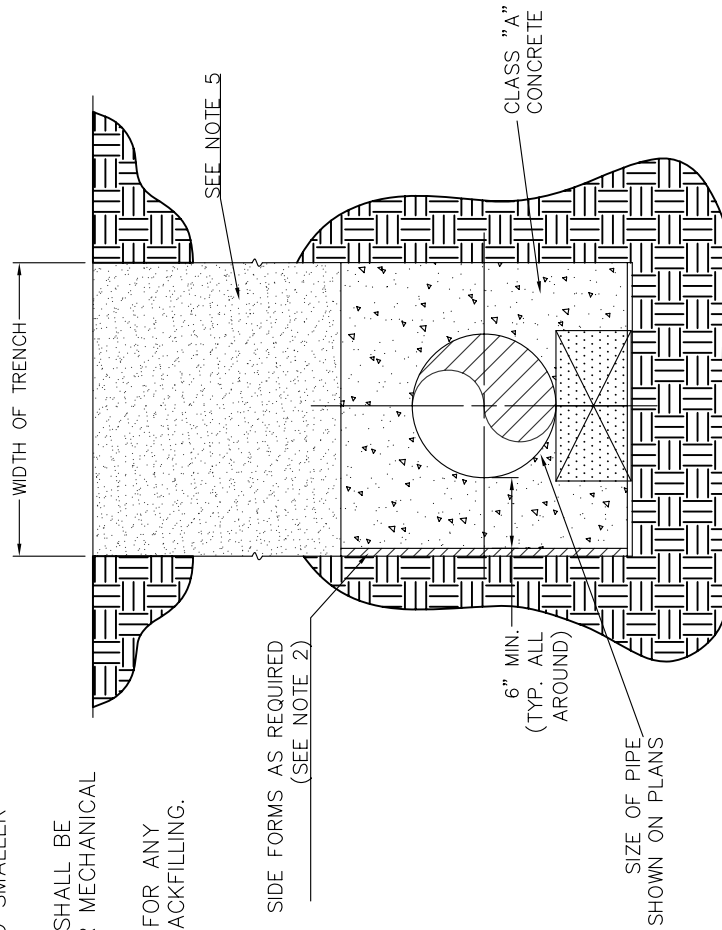
APPROVED:

DATE: MAY 2012 BY: MJW

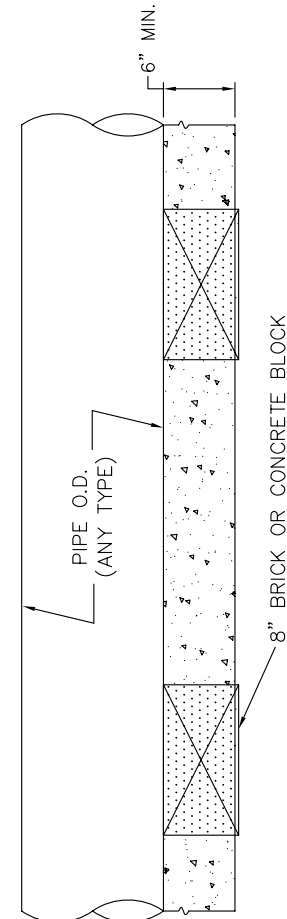
REVISIONS		
DATE	DESCRIPTION	BY

NOTES:

1. THIS DETAIL SHALL BE REQUIRED WHEN NEW OR EXISTING PIPE INSTALLATIONS WILL BE SUBJECT TO DAMAGE ANYTIME IN THE FUTURE DUE TO LACK OF PROPER COVER OR WHEN MINIMUM SEPARATION BETWEEN CROSSING OR ADJACENT UTILITIES CAN NOT BE MAINTAINED, AS DETERMINED BY THE ENGINEER.
2. FOR PIPE OVER 18" DIA., WOOD, METAL, OR GYPSUM BOARD FORMS MUST BE USED TO FORM THE SIDES OF THE ENCASEMENT. GYPSUM BOARD FORMS MAY BE LEFT IN THE GROUND BELOW THE TOP OF THE ENCASEMENT. THIS SHALL BE OPTIONAL WITH POURING AGAINST TRENCH WALLS FOR ENCASEMENT OF 18" AND SMALLER PIPE.
3. FOR ALL SITUATIONS WHERE SIDE FORMS ARE USED, TRENCH WALLS SHALL BE OVER-EXCAVATED TO ALLOW SUFFICIENT ROOM TO OPERATE PROPER MECHANICAL COMPACTION EQUIPMENT.
4. CONCRETE WHICH SPILLS BEYOND 12" FROM THE SIDES OF THE PIPE FOR ANY REASON SHALL BE REMOVED BACK TO THE PROPER LINE PRIOR TO BACKFILLING.
5. COVER TO BE APPROVED BY ENGINEER.
6. THE CONCRETE ENCASEMENT SHALL BE 3000 PSI CONCRETE WITH A MINIMUM THICKNESS ON ALL SIDES OF 6".
 - 1) 8" DIA. = .11 C.Y. OF CONCRETE PER LINEAL FT.
 - 2) 10" DIA. = .12 C.Y. OF CONCRETE PER LINEAL FT.
 - 3) 12" DIA. = .14 C.Y. OF CONCRETE PER LINEAL FT.
 - 4) 15" DIA. = .15 C.Y. OF CONCRETE PER LINEAL FT.



END SECTION

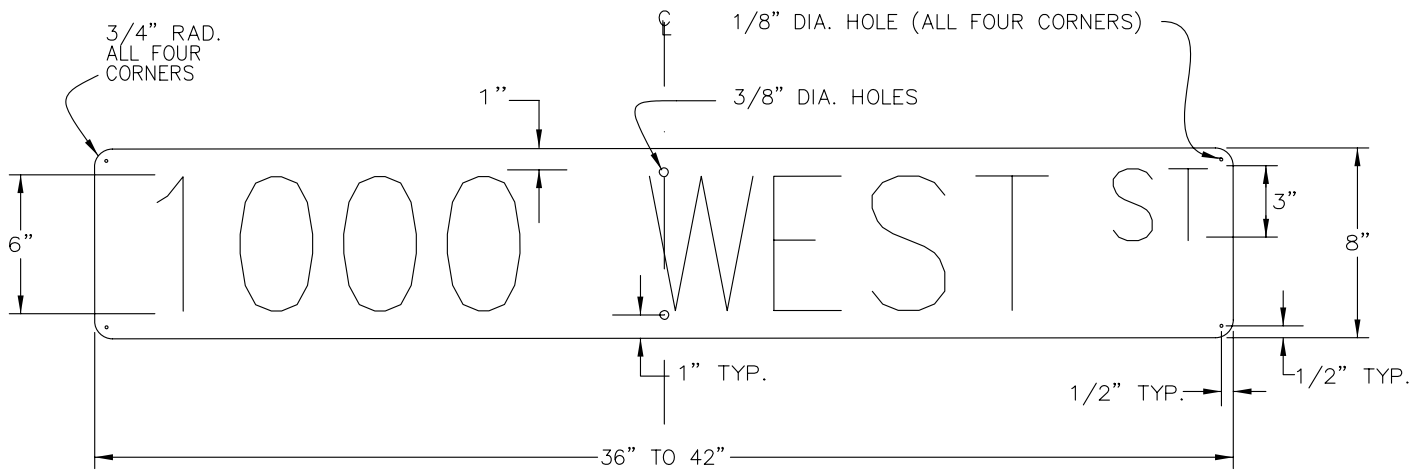
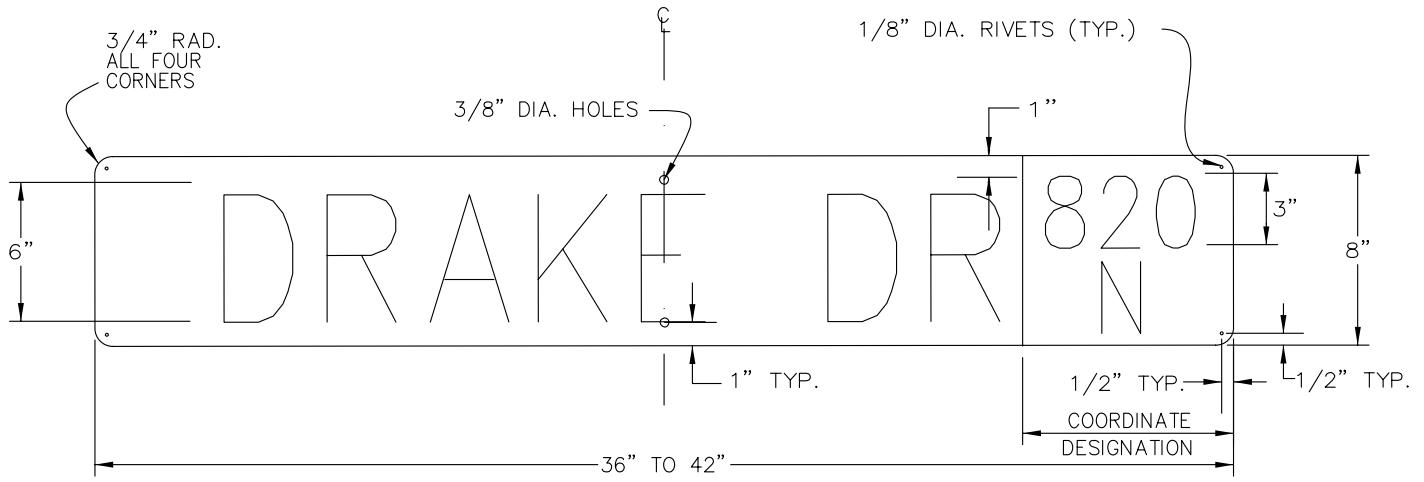


LONGITUDINAL SECTION

CONCRETE ENCASEMENT
DETAIL

STANDARD DWG. NO.	
330	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

REVISIONS		
DATE	DESCRIPTION	BY



NOTES:

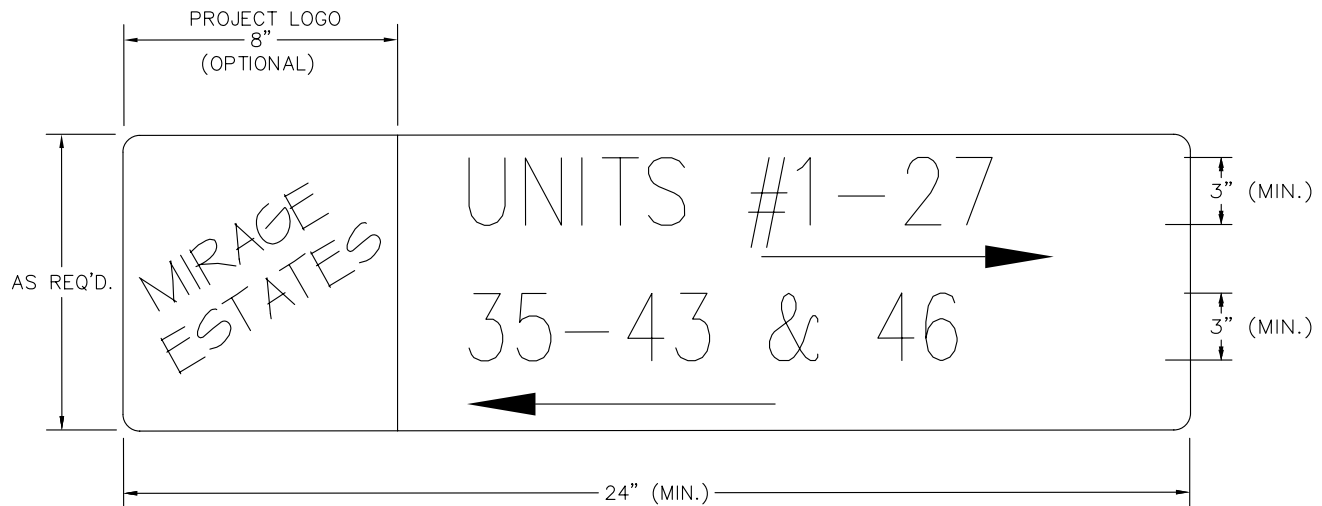
- 1- BACKGROUND SHALL BE GREEN, LEGEND AND LETTERS SHALL BE WHITE.
- 2- ALL SHEETING SHALL BE HIGH INTENSIVY REFLECTIVE SHEETING.
(FP-85 TYPE III A)
- 3- SIGNS SHOULD BE MADE BY THE "REVERSE OUT" PROCESS. NO STICK ON LETTERS.
CONTACT CITY SIGN SHOP FOR DETAILS.
- 4- SIGN BLANK SHALL BE 6061-T6 HEAT TREATED HIGH TENSILE DEGREASED
ALUMINUM WITH ALODINE 1200 FINISH. MIN. THICKNESS SHALL BE 0.080".
- 5- EACH SIGN SHALL CONSIST OF TWO PLATES RIVETED TOGETHER
AND MOUNTED AS REQUIRED.
- 6- SIGNS ON PRIVATE ROADS ARE REQUIRED AND SHOULD MEET SAME SPECIFICATIONS
OF STANDARD SIGNS EXCEPT FOR BACKGROUND COLOR.
- 7- ALL STREETS WITH NAMES SHALL ALSO HAVE THE COORDINATE DESIGNATION ON THE
SIGN IN THE APPROPRIATE LOCATION UNLESS OTHERWISE APPROVED.
- 8- ADDRESS COORDINATOR SHALL BE CONTACTED PRIOR TO MAKING SIGNS
TO VERIFY PROPER NAMES AND COORDINATES.
- 9- ALL LETTERS SHALL BE UPPER CASE. LETTERS AND NUMBERS SHALL
CONFORM TO THE HEIGHT, WIDTH, STROKE WIDTH, AND SPACING AS PER THE
U.S. DEPT. OF TRANSPORTATION PUBLICATION "STANDARD ALPHABET
FOR HIGHWAY SIGNS".

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

STANDARD STREET SIGN

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DWG. NO.	
400	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



INTERIOR DIRECTIONAL SIGN



MAIN ENTRANCE STREET SIGN

NOTES:

- 1- SIGNS SHALL CONFORM TO CITY STREET SIGN STANDARDS AND SPECIFICATIONS.
- 2- STANDARD BACKGROUND IS BLUE. LETTERS AND LEGEND SHALL BE WHITE. SHEETING TYPE SHALL BE HIGH INTENSITY
- 3- SIGNS MOUNTED ON PUBLIC RIGHT OF WAY SHALL FOLLOW CITY INSTALLATION AND PLACEMENT STANDARDS. SAID STANDARDS ARE RECOMMENDED FOR INTERIOR SIGNS.
- 4- WHEN PROJECT IS ADDRESSED SIMILAR TO A SUBDIVISION WITH PUBLIC STREETS, THE ABOVE INTERIOR DIRECTIONAL SIGN IS NOT USED. SEE CITY ADDRESS COORDINATOR.
- 5- PROJECT LOGO, IF USED, MUST BE APPROVED BY THE CITY ADDRESS COORDINATOR PRIOR TO USE.

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

PRIVATE STREET SIGNS

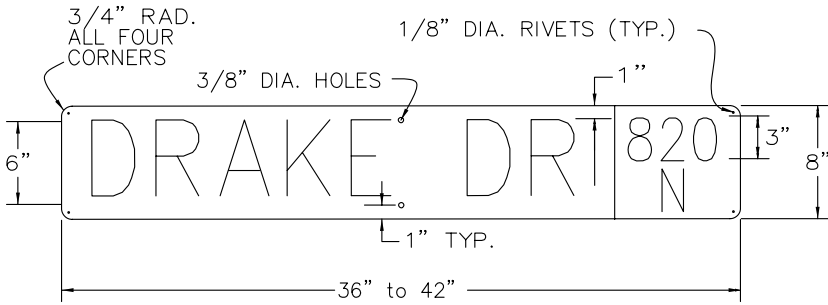
STANDARD DWG. NO.	
401	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

SIGN DESIGNATION FORM

PROJECT NAME _____

DATE _____

BY _____



STANDARD ST. GEORGE CITY SIGN

THIS FORM TO BE COMPLETED BY THE CITY ADDRESS COORDINATOR PRIOR TO ORDERING OF STREET SIGNS BY DEVELOPER.

NOTES:

- 1- SEE DRAWINGS #400 & 401 FOR SIGN SPECIFICATIONS.
- 2- SIGNS ON PRIVATE ROADS WHEN REQUIRED BY THE CITY ENGINEER SHALL MEET ALL SPECIFICATIONS OF STANDARD SIGNS EXCEPT BACKGROUND SHALL BE BLUE.
- 3- ADDRESS COORDINATOR MUST BE CONTACTED PRIOR TO MAKING SIGNS TO VERIFY PROPER NAMES AND COORDINATES.
- 4- ALL STREETS WITH NAMES WILL ALSO HAVE COORDINATES DESIGNATED ON SIGN.

LOCATION GUIDE

	<input type="checkbox"/>	
	<input type="checkbox"/>	
	<input type="checkbox"/>	
	<input type="checkbox"/>	
	<input type="checkbox"/>	

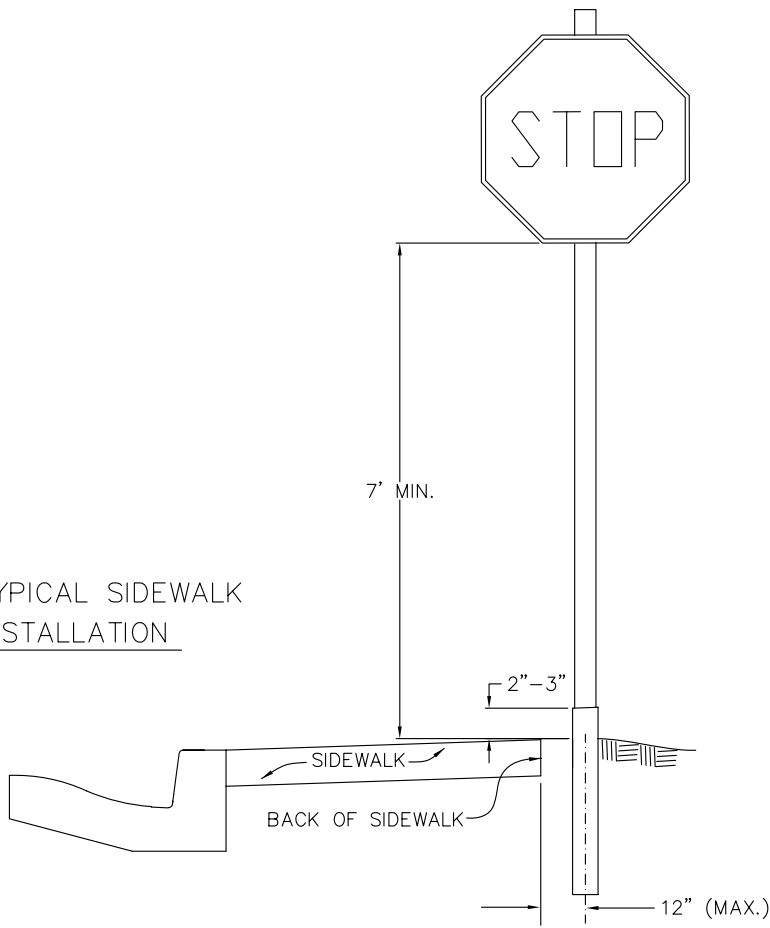
SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

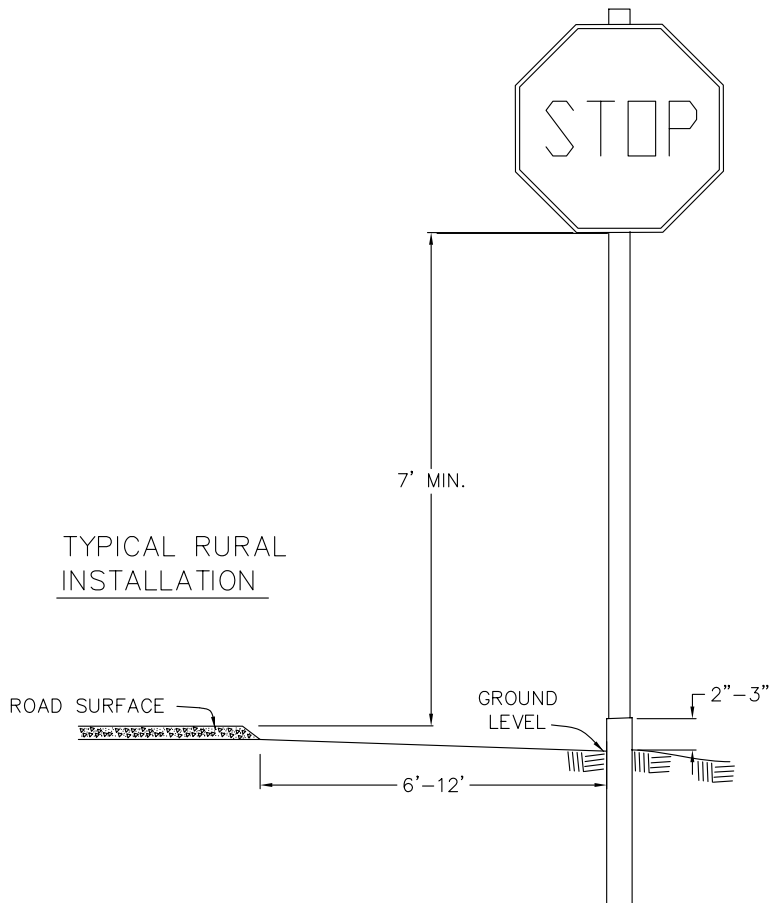
SIGN DESIGNATION FORM

STANDARD DWG. NO.	
402	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE

TYPICAL SIDEWALK INSTALLATION



TYPICAL RURAL INSTALLATION



NOTES:

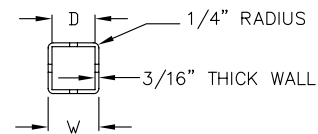
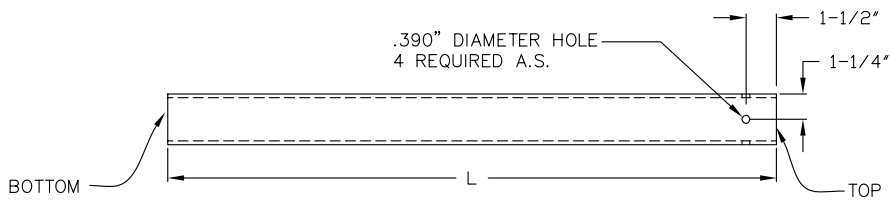
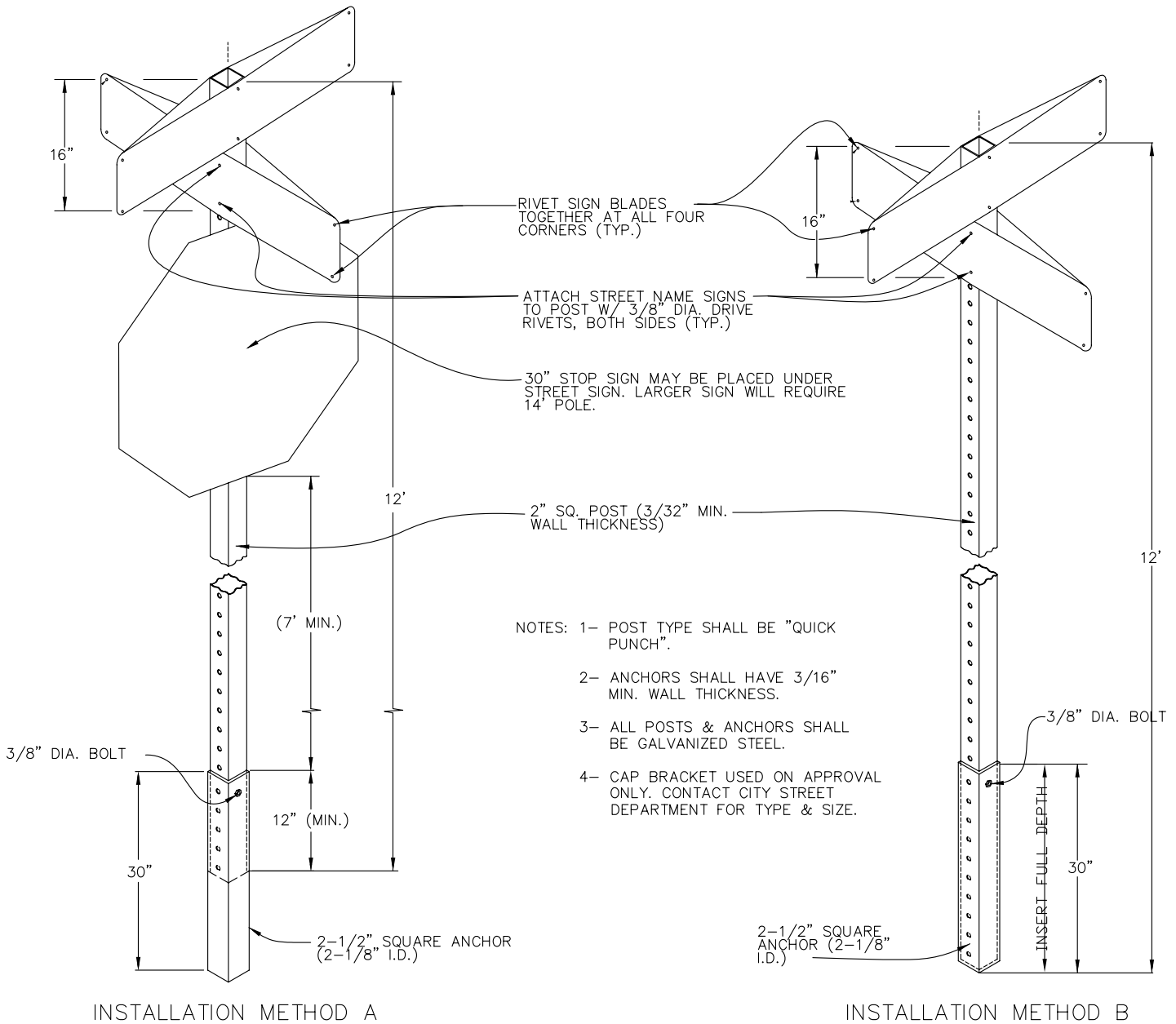
- 1- SIGNS SHALL BE PLACED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. (M.U.T.C.D.).
- 2- STREET NAME SIGNS SHALL BE REQUIRED ON ALL CITY STREETS.
- 3- ALL POST COMPONENTS SHALL BE GALVANIZED STEEL.
- 4- STREET NAME SIGNS PLACED ABOVE STOP SIGN SHALL BE AS SHOWN IN DRAWING 110 (2 OF 2).
- 5- WHERE PLANTER STRIP LIES BETWEEN SIDEWALK AND CURB, SIGNS SHALL BE INSTALLED IN PLANTER STRIP AS PER M.U.T.C.D.
- 6- SIGNS SHALL BE PLACED TO BE CLEARLY VISABLE. ALL OBSTRUCTIONS SUCH AS TREES, POLES, OTHER SIGNS, ETC, SHALL BE AVOIDED.

SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

SIGN, POST AND INSTALLATION
DETAILS

STANDARD DWG. NO.	
410	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



SIGN ANCHOR DETAIL

MARK	DIM.	TOLERANCE
D	2-1/8"	+1/16", -0"
L	30"	±1/2"
W	2-1/2"	±1/64"

SANTA CLARA PUBLIC SERVICES DEPARTMENT

SIGN POST & MOUNTING DETAILS

STANDARD DWG. NO.

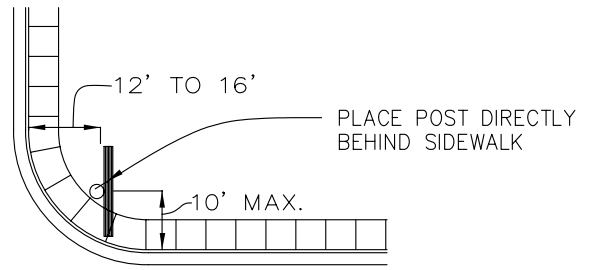
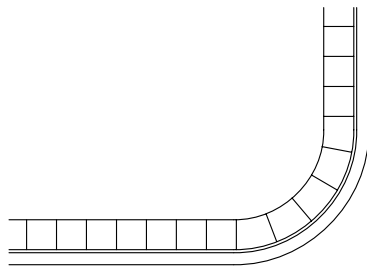
411 1 OF 1

APPROVED:

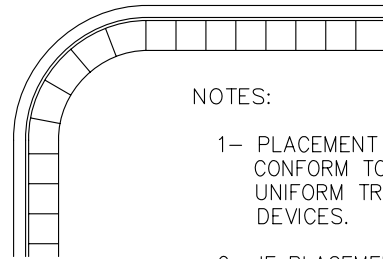
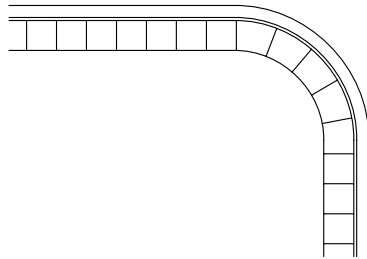
DATE: OCT 2008 BY: TE

REVISIONS

DATE	DESCRIPTION	BY

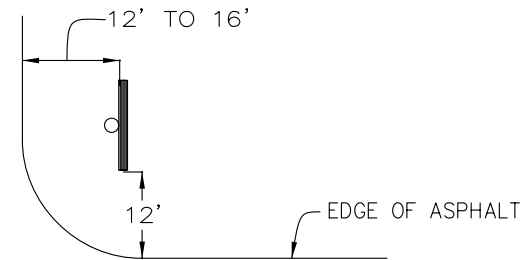
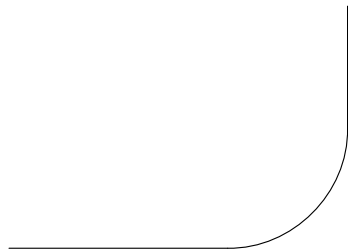


TYPICAL URBAN INSTALLATION

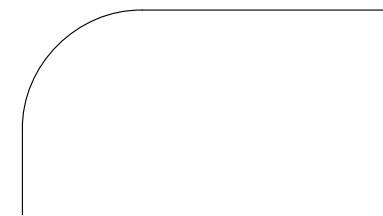
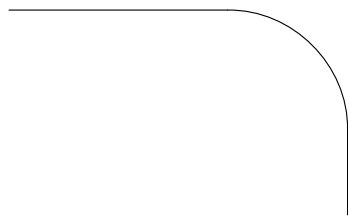


NOTES:

- 1- PLACEMENT OF ALL SIGNS TO CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 2- IF PLACEMENT STANDARDS CANNOT BE MET, CONTACT CITY ENGINEERING DEPARTMENT.
- 3- IF INSTALLATION ACCORDING TO STANDARDS CAUSES THE SIGN TO BE OBSTRUCTED OR ITS VISIBILITY IMPAIRED IN ANY WAY, MODIFICATIONS MAY BE NECESSARY. CALL ENGINEERING DEPT. FOR ASSISTANCE.



TYPICAL RURAL INSTALLATION

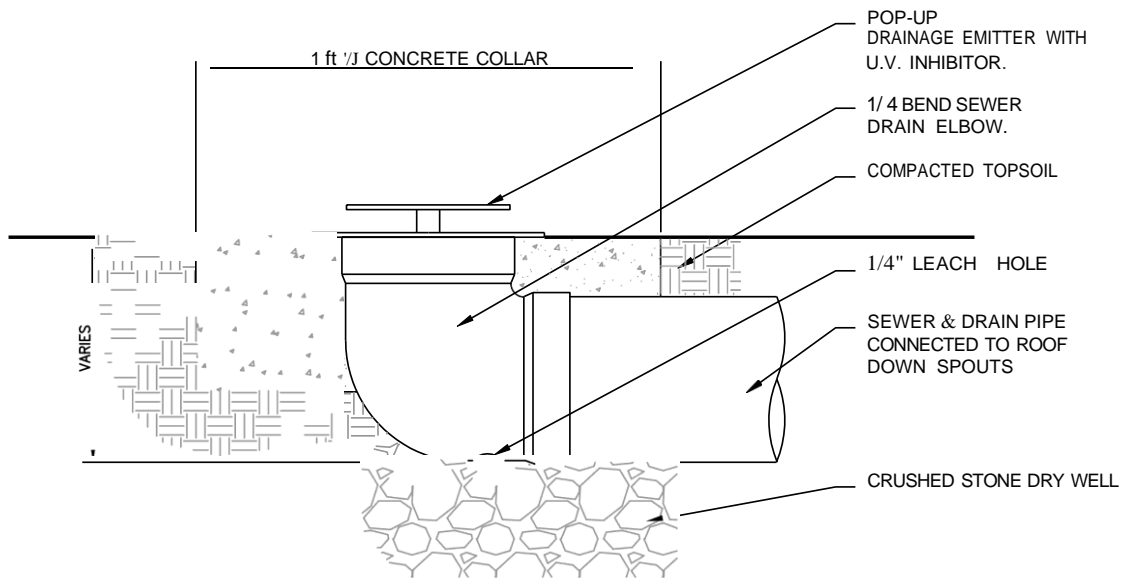


SANTA CLARA PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

TYPICAL SIGN PLACEMENT DETAILS

STANDARD DWG. NO.	
412	1 OF 1
APPROVED:	
DATE: OCT 2008	BY: TE



SECTION

SANTA CLARA CITY PUBLIC SERVICES DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

YARD DRAIN TERMINATION

STANDARD DWG. NO.	
413	1 OF 1
APPROVED: FEB B 2023	
DATE: JAN 2023	BY: LB