TRACY

Think Inside the Triangle™

City of Tracy

Engineering Design & Construction Standards



STANDARD PLANS

(STREETS & UTILITIES)

Development and Engineering Services Department
Resolution No. 2020-XXX ♦ FEBRUARY 18, 2020

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Resolution 2020-XXX

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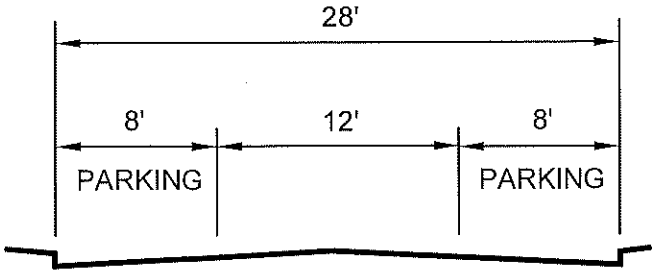
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END

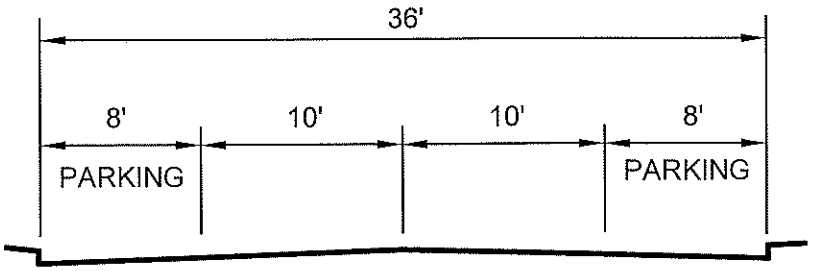
ONE WAY LOOP

(1 TO 15 UNITS)



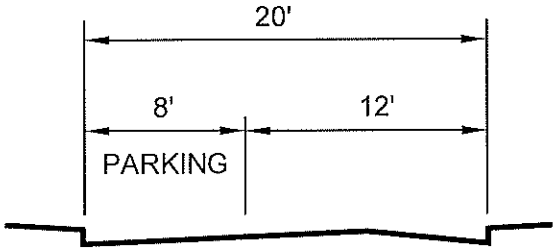
CUL-DE-SAC, LANE, PLACE, MINOR STREETS

(1 TO 80 UNITS)



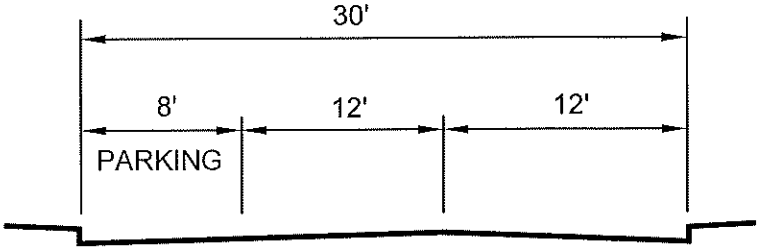
PARKING BOTH SIDES

N.T.S.



PARKING BOTH SIDES

N.T.S.

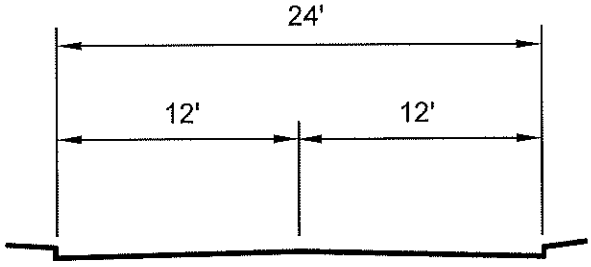


PARKING ONE SIDE

N.T.S.

PARKING ONE SIDE

N.T.S.

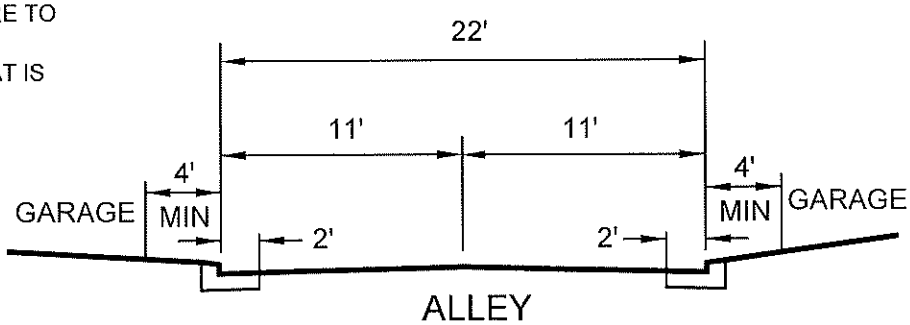


NOTES:

1. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH CITY STANDARDS.
2. DEPENDING UPON THE LENGTH OF STREET, PERIMETER ACCESS AND TYPE OF STRUCTURE TO BE PROTECTED, THE FIRE DEPARTMENT MAY REQUIRE A GREATER ROAD WIDTH THAN WHAT IS SPECIFIED HEREIN.
3. WIDTHS MAY VERY PER INDIVIDUAL SPECIFIC PLANS.

NO PARKING

N.T.S.



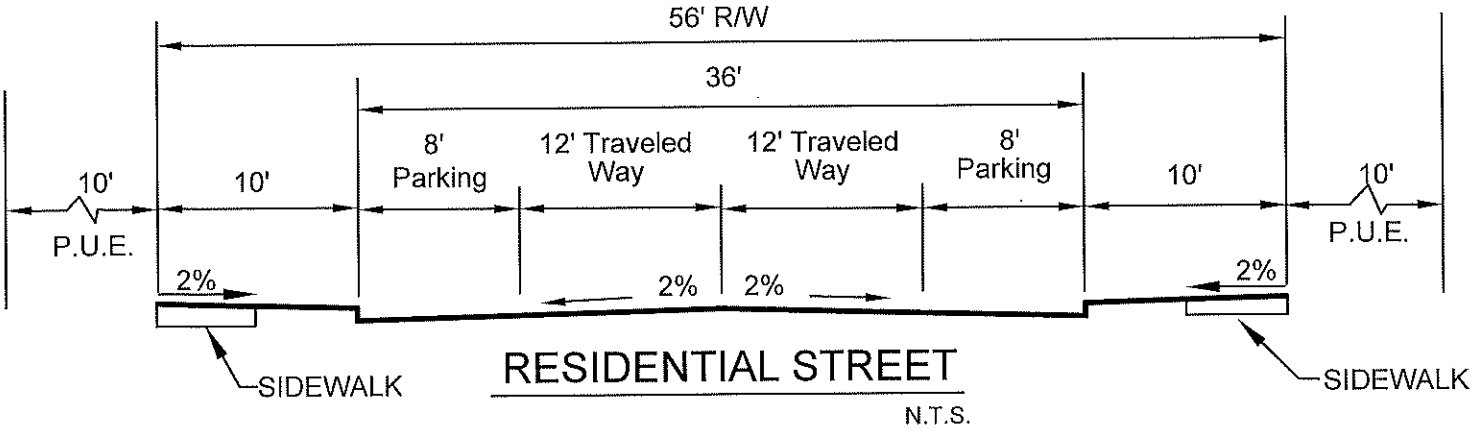
ALLEY

N.T.S.

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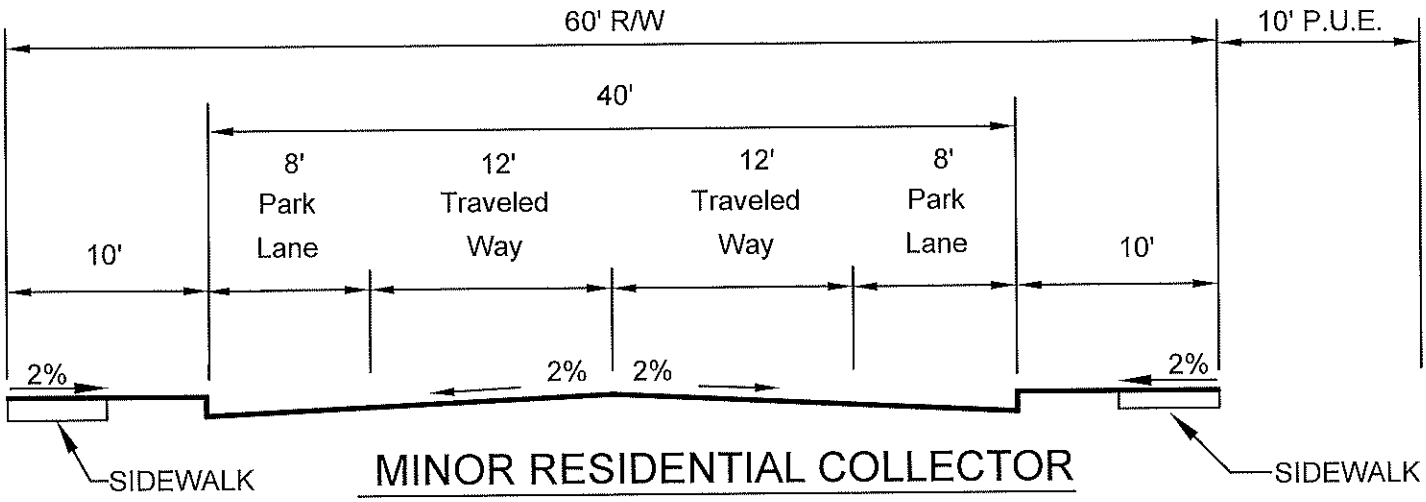
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **100**
Res No. 2020-	DATE: February 18, 2020	**INFILL PRIVATE STREET**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



RESIDENTIAL STREET

N.T.S.

For streets which serve less than fifty fronting houses or carrying less than an average of 500 vehicles per day.



MINOR RESIDENTIAL COLLECTOR

N.T.S.

For streets which serve more than fifty but less than 200 fronting houses or carrying an average of between 500 and 2,000 cars per day.

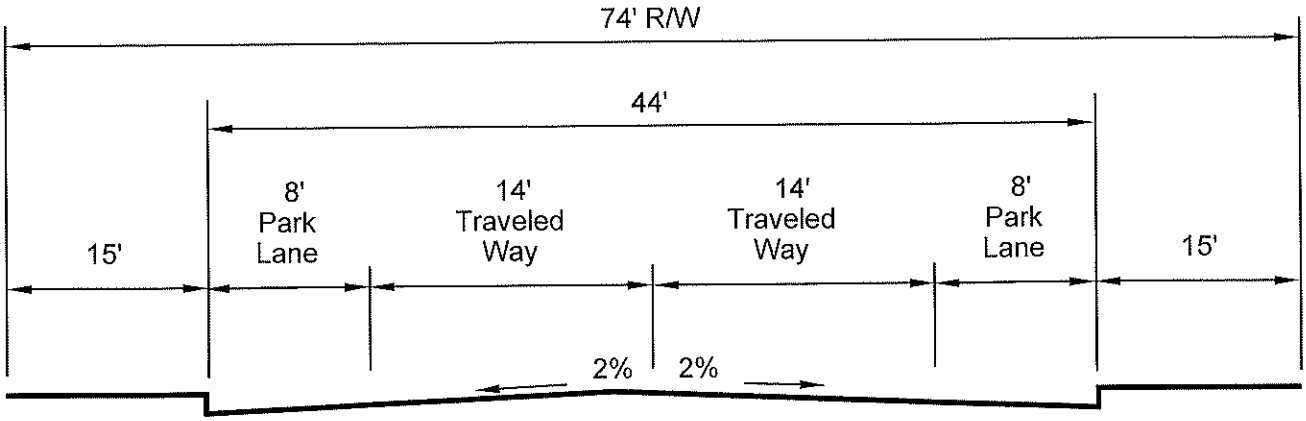
NOTES:

1. RIGHT-OF-WAY WIDTH MAY BE REDUCED UNDER SPECIAL CONDITIONS UPON APPROVAL OF CITY ENGINEER.
2. STREET SLOPES MAY BE INCREASED TO A MAXIMUM OF 4% IF REQUIRED DUE TO SPECIAL CIRCUMSTANCES.
3. PEDESTRIAN WALK CROSS SLOPE NOT TO EXCEED 2%. THE CLEAR WIDTH FOR SIDEWALKS SHALL BE 48" MINIMUM. WHEN BECAUSE OF RIGHT-OF-WAY RESTRICTIONS, NATURAL BARRIERS OF OTHER EXISTING CONDITIONS, THE ENFORCING AGENCY DETERMINES THAT COMPLIANCE WITH THE 48" CLEAR SIDEWALK WIDTH WOULD CREATE AN UNREASONABLE HARDSHIP, THE CLEAR WIDTH MAY BE REDUCED TO 36".
4. THE CLEAR WIDTH OF SIDEWALKS SHALL BE ALLOWED TO BE 48" MINIMUM GIVEN THAT IF THE ACCESSIBLE ROUTE IS LESS THAN 60" WIDE, PASSING SPACES WILL BE PROVIDED TO MEET REQUIREMENTS OF APPLICABLE CURRENT CALIFORNIA BUILDING CODE.

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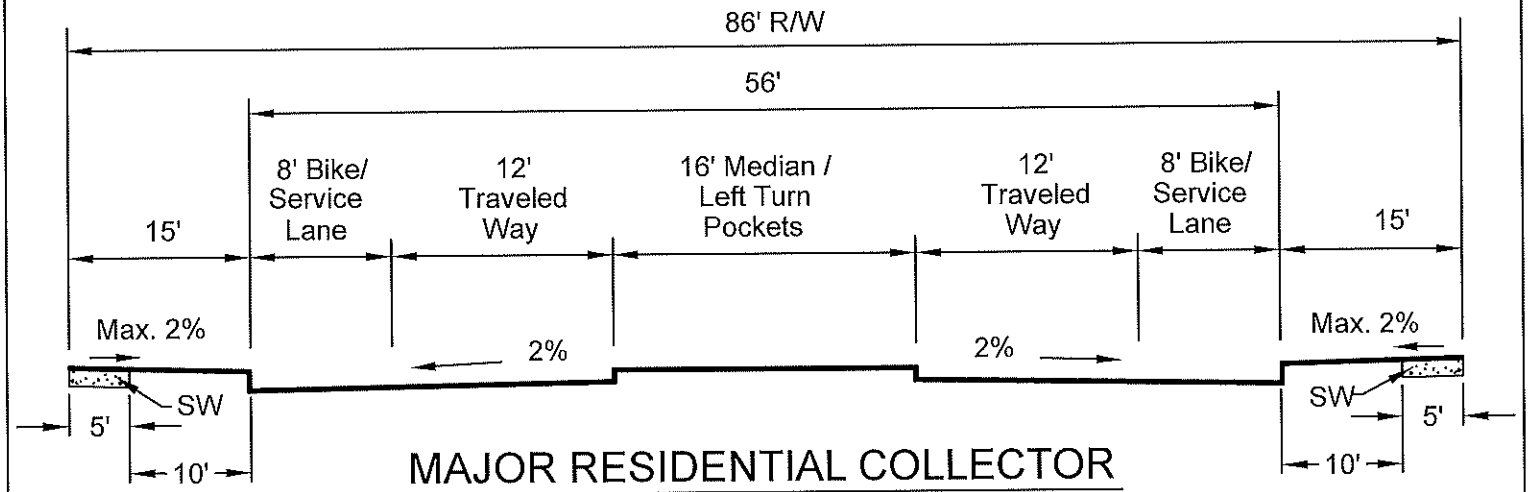
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 101
Res No. 2020-	DATE: February 18, 2020	**INFILL RESIDENTIAL STREETS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



SPECIFIC PLAN COLLECTOR

N.T.S.

For streets which serve more than fifty but less than 200 fronting houses or carrying an average of between 500 and 2,000 cars per day.



MAJOR RESIDENTIAL COLLECTOR

N.T.S.

For streets with no fronting houses serving 200 to 500 houses or carrying an average of between 2,000 and 5,000 vehicles per day.

NOTES:

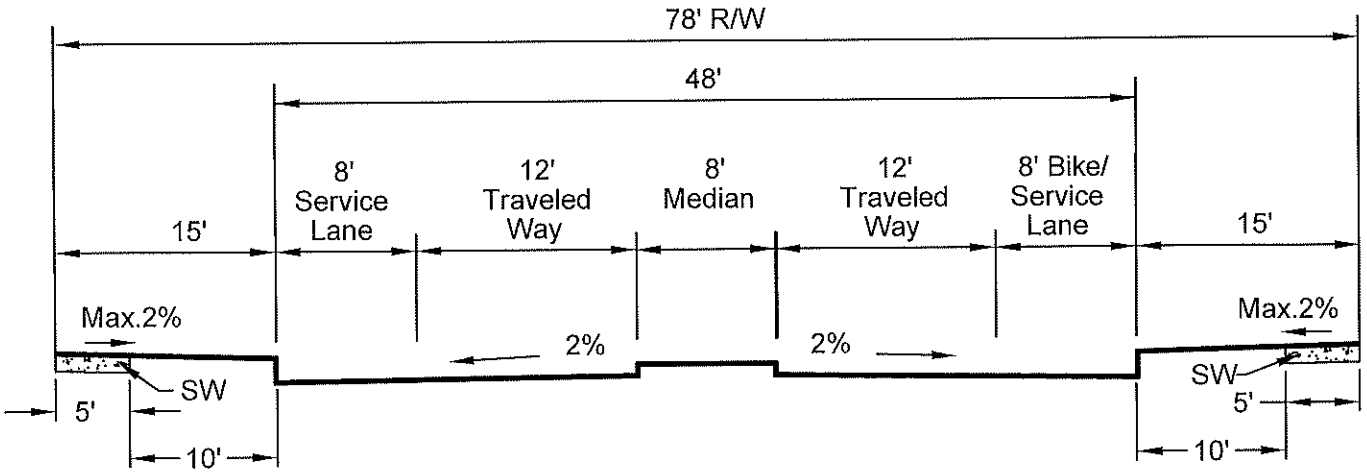
1. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% LONGITUDINAL SLOPE.

2. THE CLEAR WIDTH OF SIDEWALKS SHALL BE ALLOWED TO BE 48" MINIMUM GIVEN THAT IF THE ACCESSIBLE ROUTE IS LESS 60" WIDE, PASSING SPACES OF 60" X 60" WILL BE PROVIDED EVERY 400 FEET TO MEET REQUIREMENTS OF APPLICABLE CURRENT CA BUILDING CODE.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **102**
Res No. 2020-	DATE: February 18, 2020	**INFILL COLLECTOR STREETS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



NEIGHBORHOOD ENTRY

N.T.S.

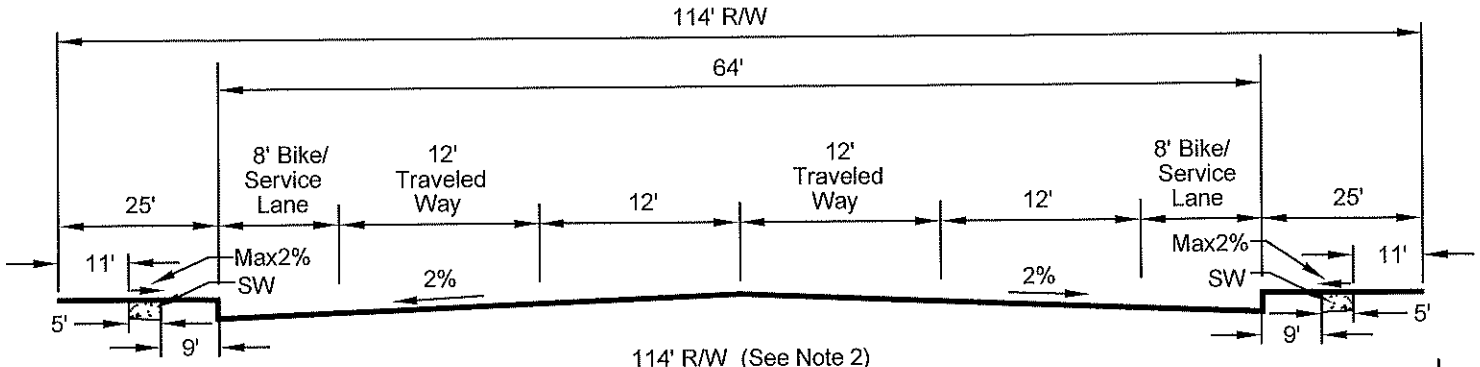
NOTES:

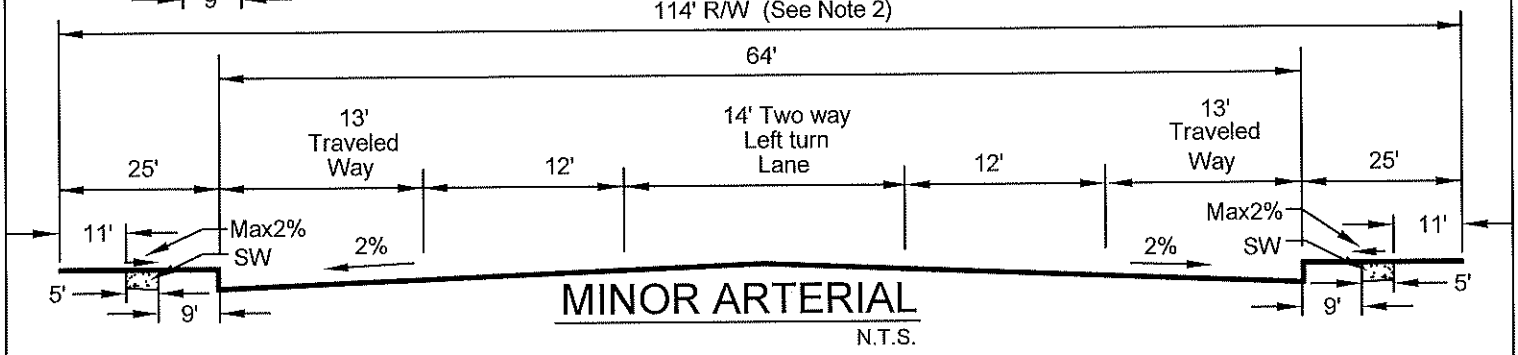
1. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% LONGITUDINAL SLOPE.
2. THE CLEAR WIDTH OF SIDEWALKS SHALL BE ALLOWED TO BE 48" MINIMUM GIVEN THAT IF THE ACCESSIBLE ROUTE IS LESS THAN 60" WIDE, PASSING SPACES OF 60" X 60" WILL BE PROVIDED EVERY 400' FEET TO MEET REQUIREMENTS OF APPLICABLE CURRENT CALIFORNIA BUILDING CODE.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 103
Res No. 2020-	DATE: February 18, 2020	INFILL NEIGHBORHOOD ENTRY
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

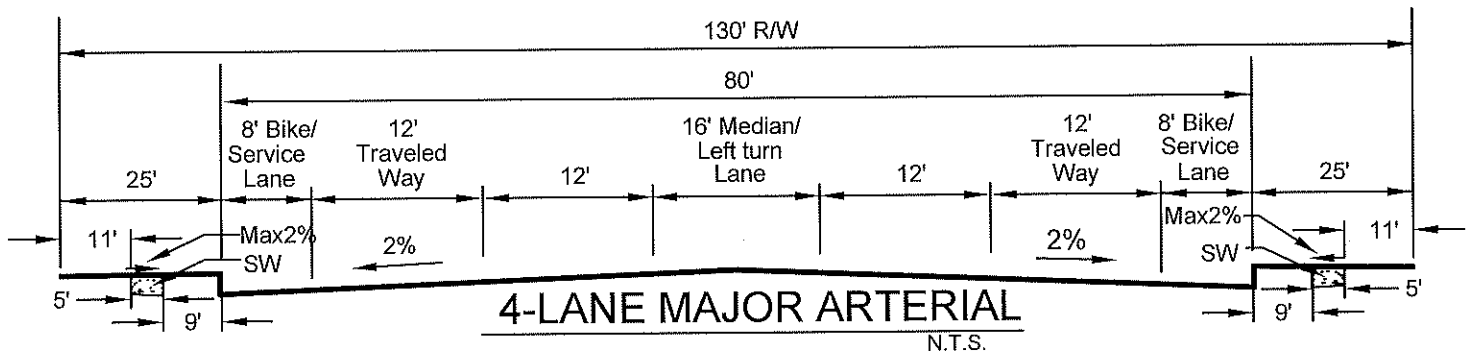




MINOR ARTERIAL

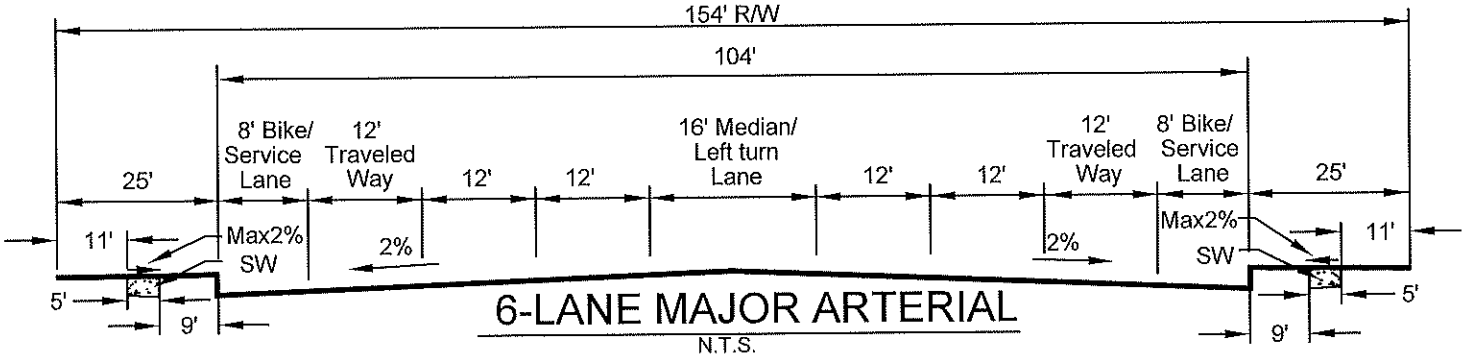
N.T.S.

Sound walls shall be used when passing through residential areas for streets which serve 500 to 1,000 homes or carry an average of between 5,000 and 12,000 vehicles per day.



4-LANE MAJOR ARTERIAL

N.T.S.



6-LANE MAJOR ARTERIAL

N.T.S.

Sound walls shall be used when passing through residential areas for streets which carry in excess of 10,000 cars per day.

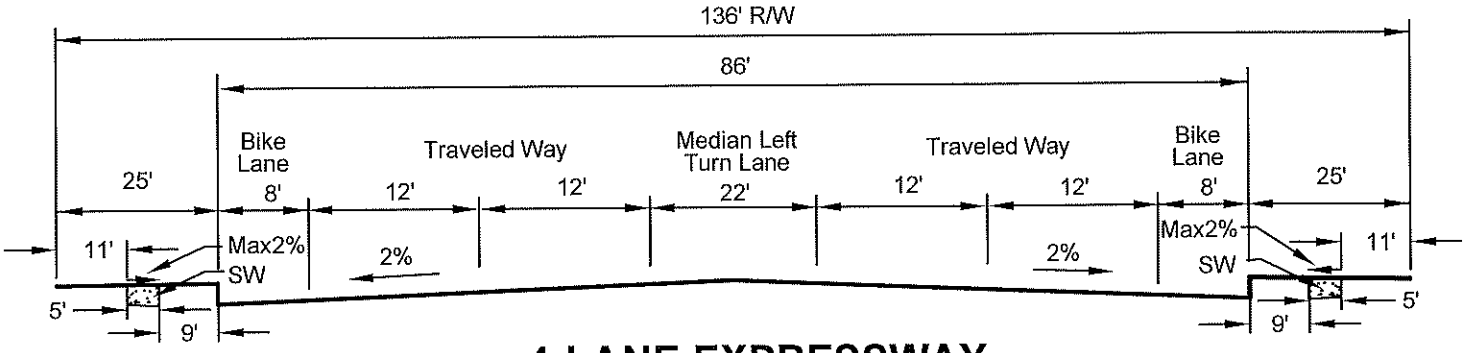
NOTES:

1. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% LONGITUDINAL SLOPE.
2. SPECIFIC PLAN MAY REQUIRE ADDITIONAL RIGHT OF WAY.

CITY OF TRACY

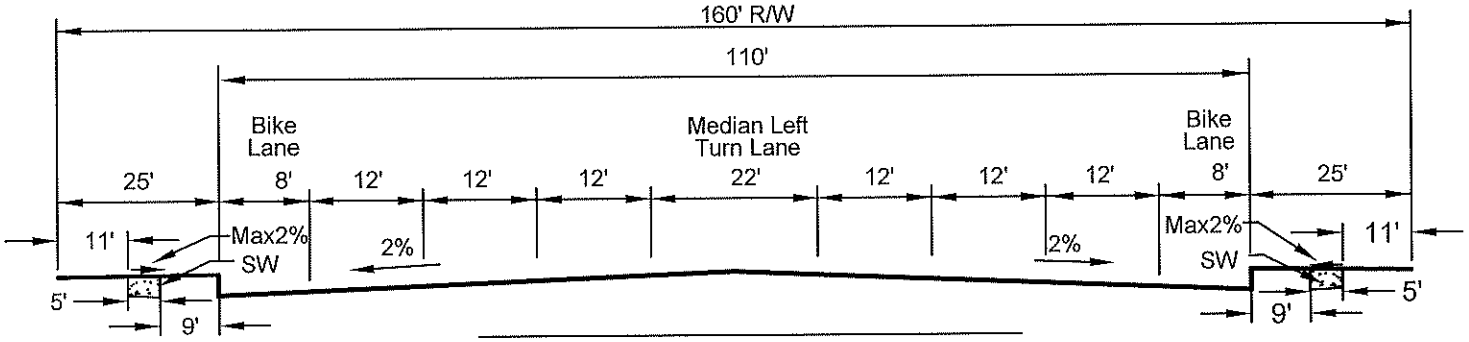
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **104**
Res No. 2020-	DATE: February 18, 2020	**INFILL ARTERIAL STREETS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



4-LANE EXPRESSWAY

N.T.S.



6-LANE EXPRESSWAY

N.T.S.

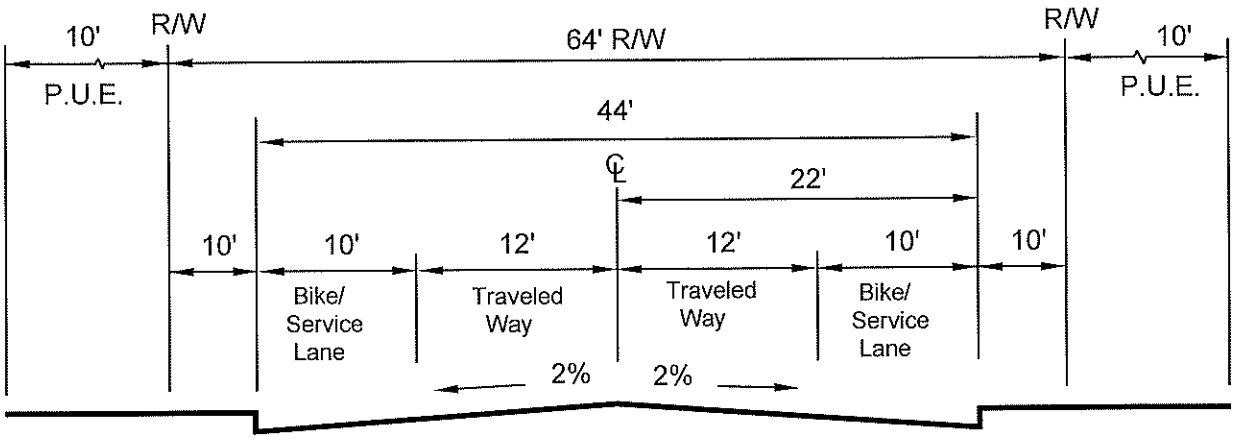
NOTES:

1. SOUND WALLS SHALL BE USED ADJACENT TO RESIDENTIAL AREAS WHEN THE EXPRESSWAY CARRIES MORE THAN 10,000 CARS PER DAY.
2. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% LONGITUDINAL SLOPE.
3. SPECIFIC PLAN MAY REQUIRE ADDITIONAL RIGHT OF WAY.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 105
Res No. 2020-	DATE: February 18,2020	INFILL EXPRESSWAY/PARKWAY
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

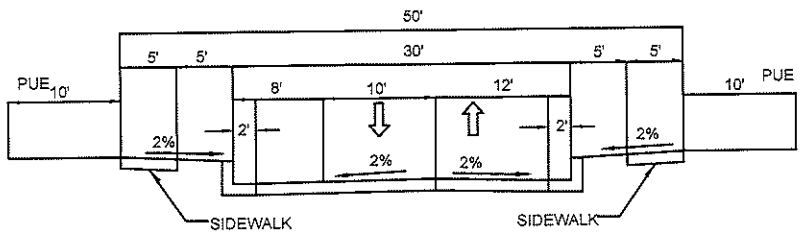


INDUSTRIAL STREETS

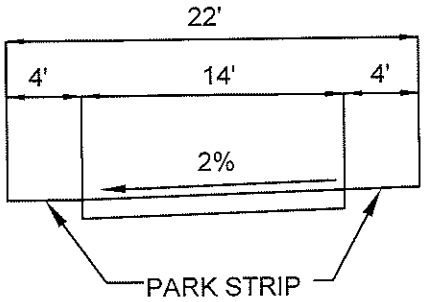
N.T.S.

CITY OF TRACY

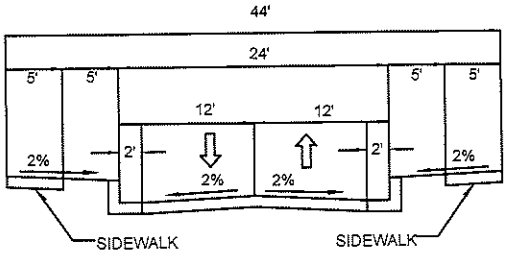
TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 106
	Res No. 2020-	DATE: 2020-	INFILL INDUSTRIAL STREETS
	Rev: Leisser M.	Rev: Thomas W.	
	Rev:	Rev:	



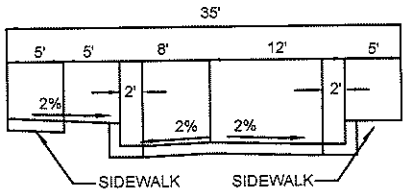
PARKING ONE SIDE
LOW VOLUME-UP TO 500 VEHICLES PER DAY
MAXIMUM BLOCK LENGTH 500 FEET



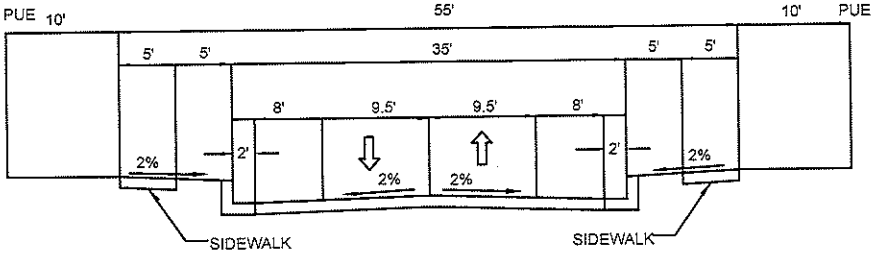
ONE-WAY ALLEY



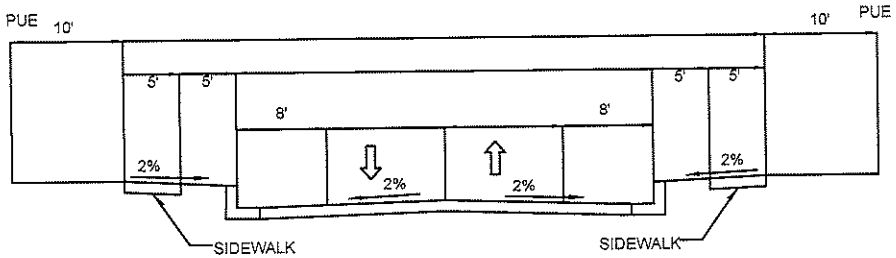
NO PARKING
(10' PUE MAY BE REQUIRED ON EITHER SIDE OF STREET)



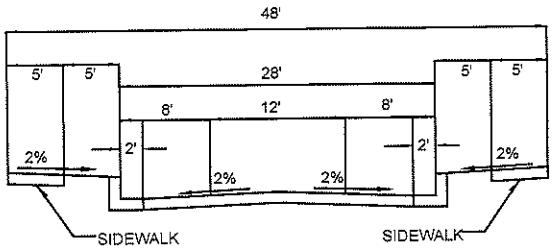
ONE-WAY STREET
PARKING ONE SIDE
(10' PUE MAY BE REQUIRED ON EITHER SIDE OF STREET)



TWO LANE PARKING BOTH SIDES
MEDIUM VOLUME-500 TO 1000 VEHICLES PER DAY
MAXIMUM BLOCK LENGTH OF 500 FEET



TWO LANE PARKING BOTH SIDES
HIGH VOMLUME-1500 TO 2500 VEHICLES PER DAY

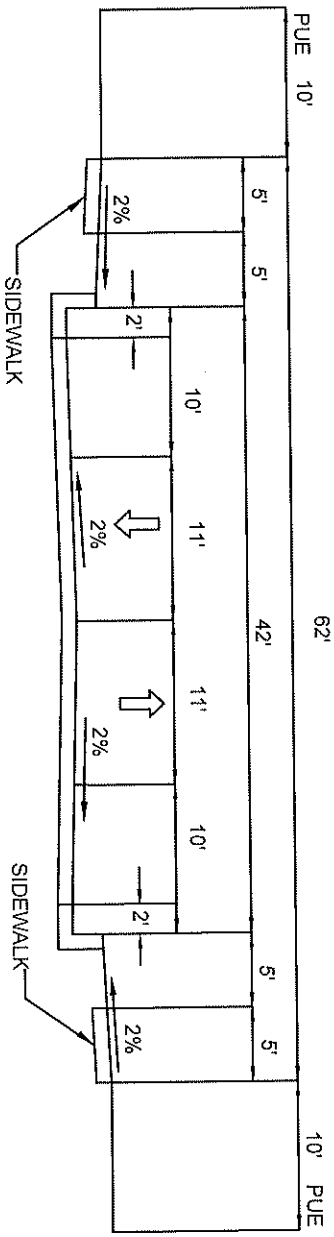


ONE-WAY STREET PARKING BOTH SIDES
(10' PUE MAY BE REQUIRED ON EITHER SIDE OF STREET)

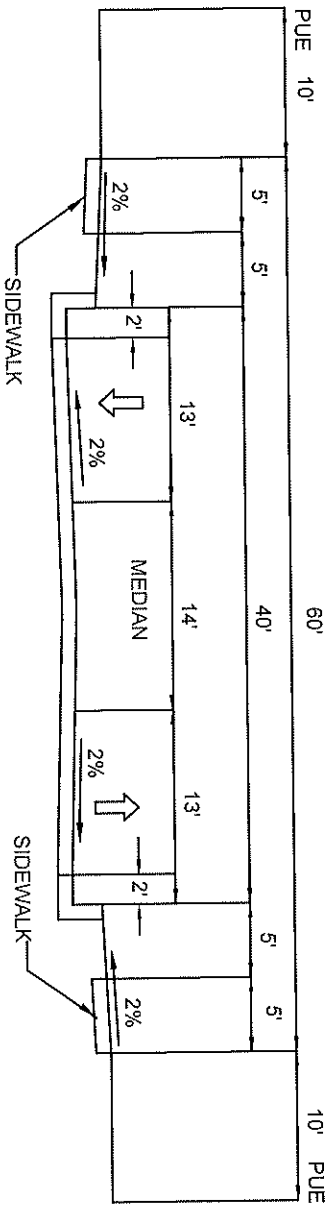
CITY OF TRACY

STANDARD PLAN No.	107	MASTER PLAN RESIDENTIAL STREET ROADWAYS CROSS SECTION	
REVIEWED BY: Robert Armijo	RCE 63173		
CITY ENGINEER		DATE: February 18, 2020	
Res No. 2020-		Rev: Thomas W.	
Rev: Leisser M.		2012 MASTER PLAN	

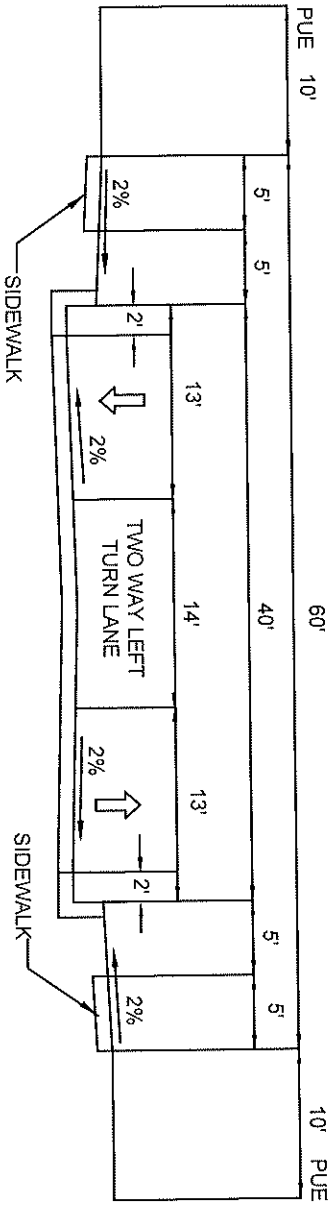
TRACY
Think Inside the Triangle



INDUSTRIAL STREET



INDUSTRIAL STREET WITH MEDIAN

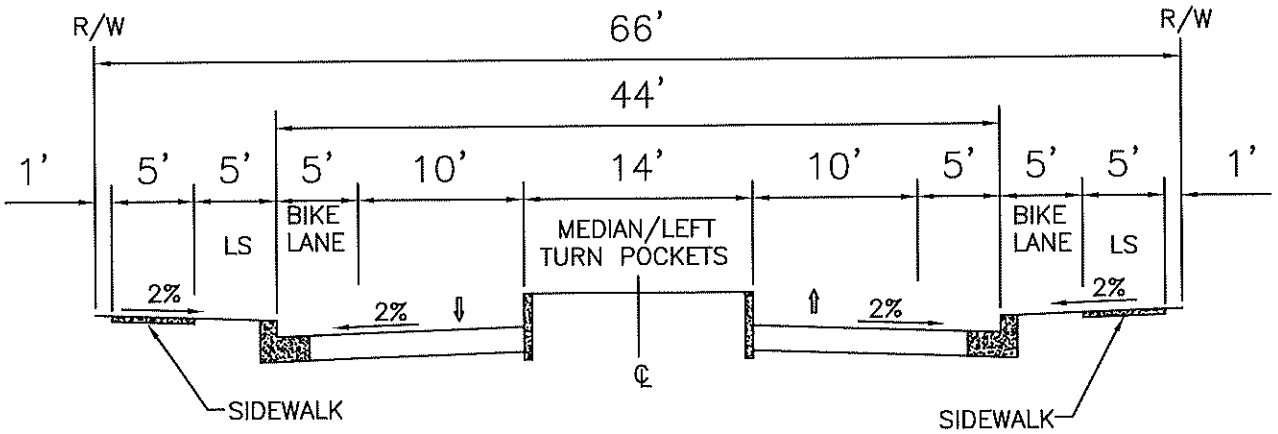


INDUSTRIAL STREET WITH TWLTL

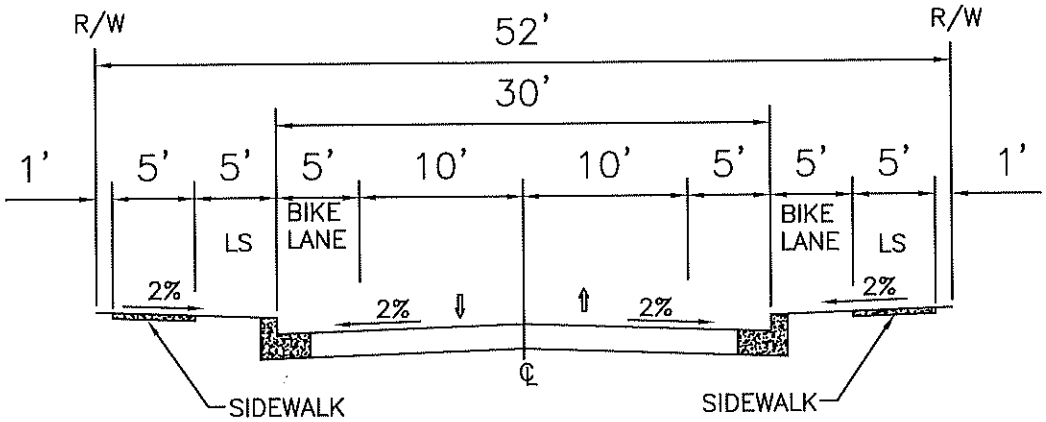
CITY OF TRACY

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REVIEWED BY: Robert Armijo		STANDARD PLAN No. 108
CITY ENGINEER	RCE 63173	
Res No. 2020-	DATE: February 18, 2020	**MASTER PLAN INDUSTRIAL STREET**
Rev: Leisser M.	Rev: Thomas W.	
2012 MASTER PLAN		



TWO LANE MAJOR COLLECTOR
2000 TO 5000 VEHICLES PER DAY

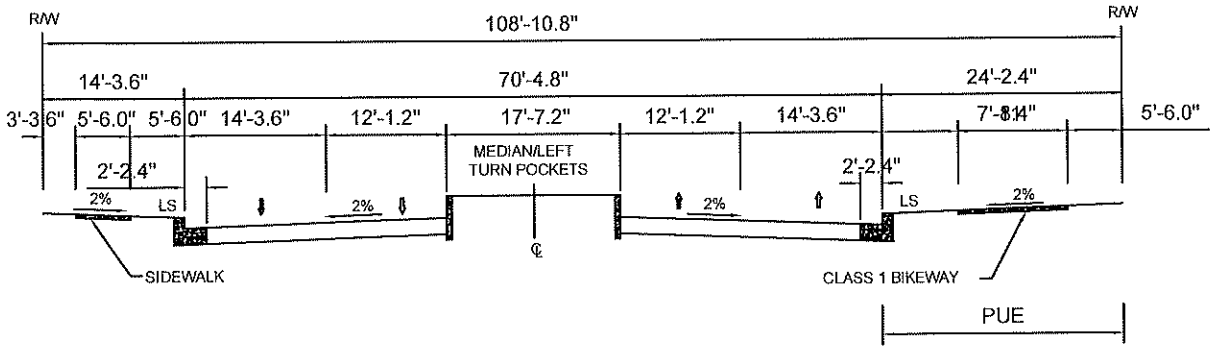


TWO LANE COLLECTOR
<2000 VEHICLES PER DAY

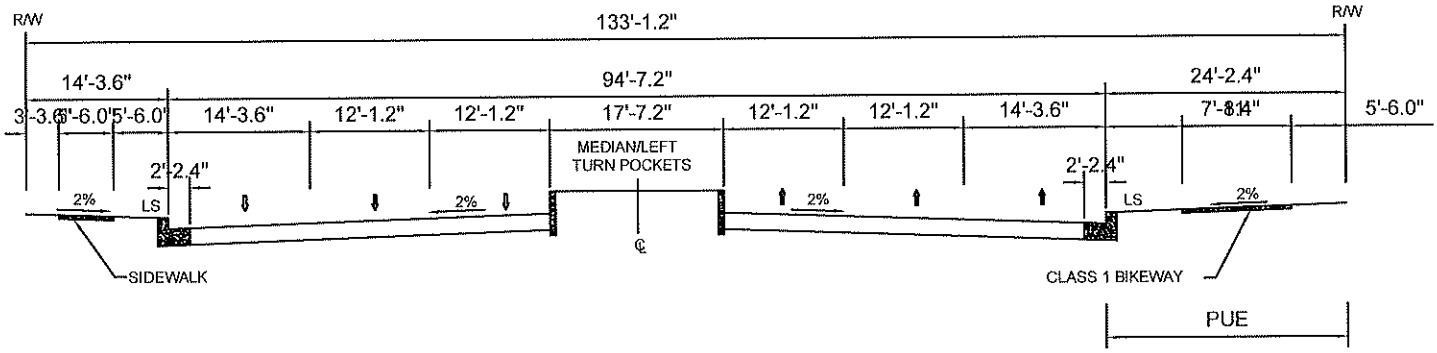
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 109
Res No. 2020-	DATE: February 18, 2020	MASTER PLAN 2-LANE MAJOR COLLECTOR 2-LANE COLLECTOR
Rev: Leisser M.	Rev: Thomas W.	
2012 MASTER PLAN		



FOUR LANE MAJOR ARTERIAL WITH MEDIAN

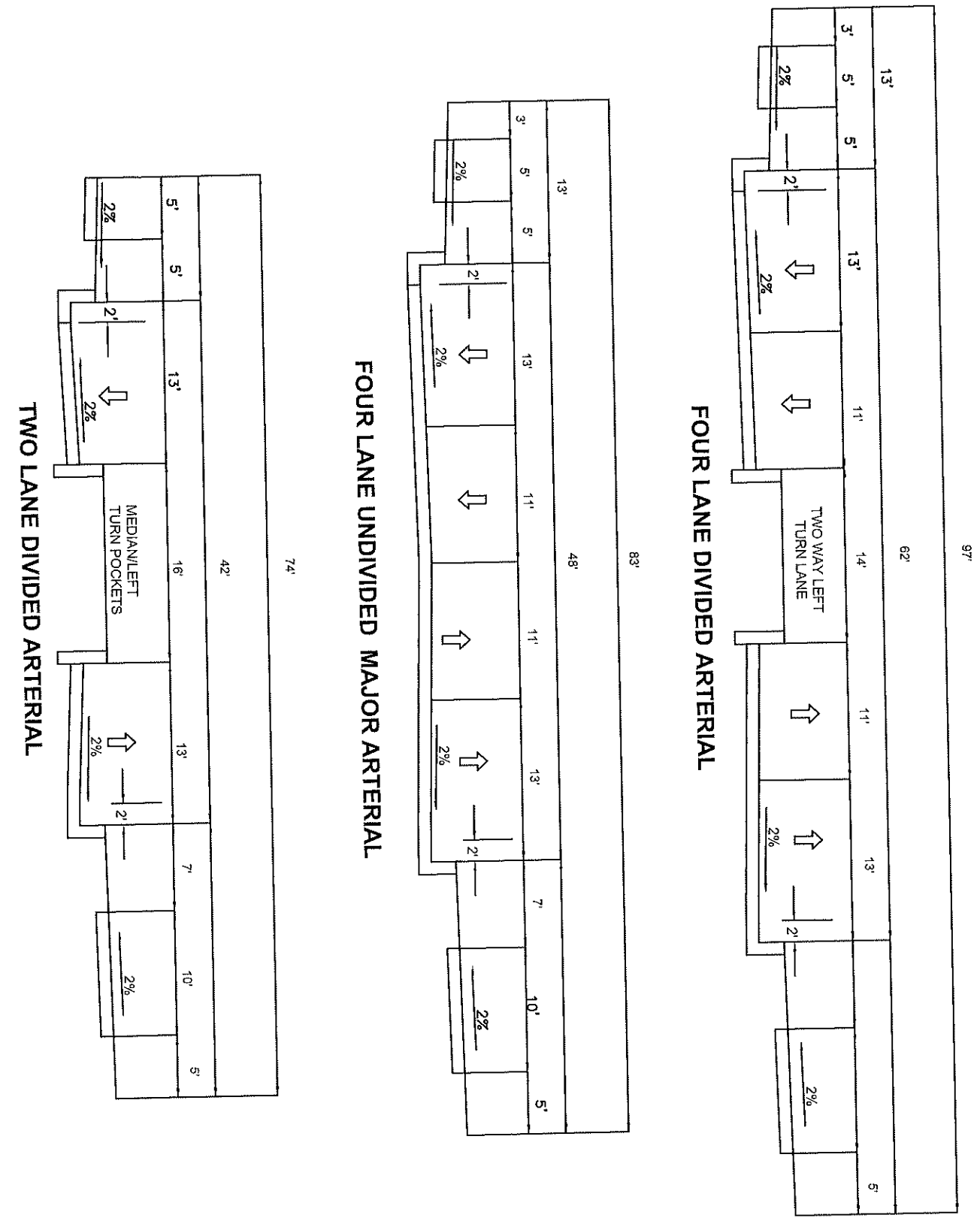


SIX LANE MAJOR ARTERIAL WITH INTERMITTENT 8 FOOT PULLOUTS

CITY OF TRACY

TRACY
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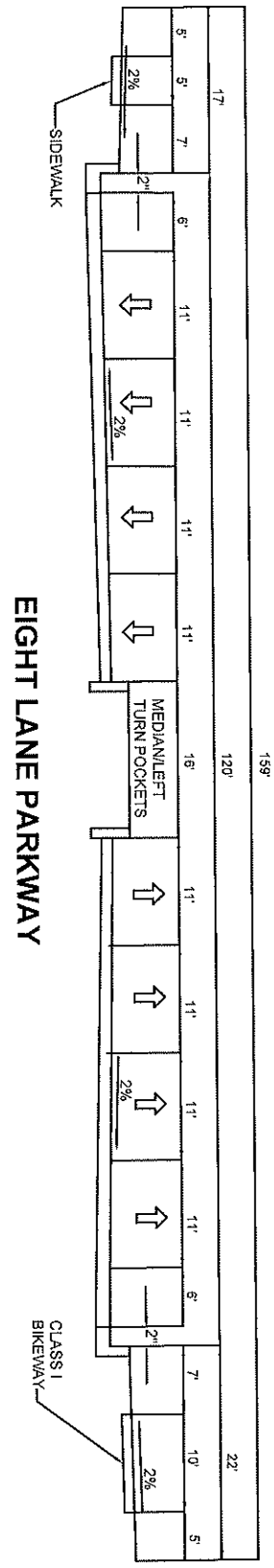
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 110
Res No. 2020-	DATE: February 18, 2020	**MASTER PLAN** **4-LANE MAJOR ARTERIAL** **6-LANE MAJOR ARTERIAL**
Rev: Leisser M.	Rev: Thomas W.	
2012 Master Plan		



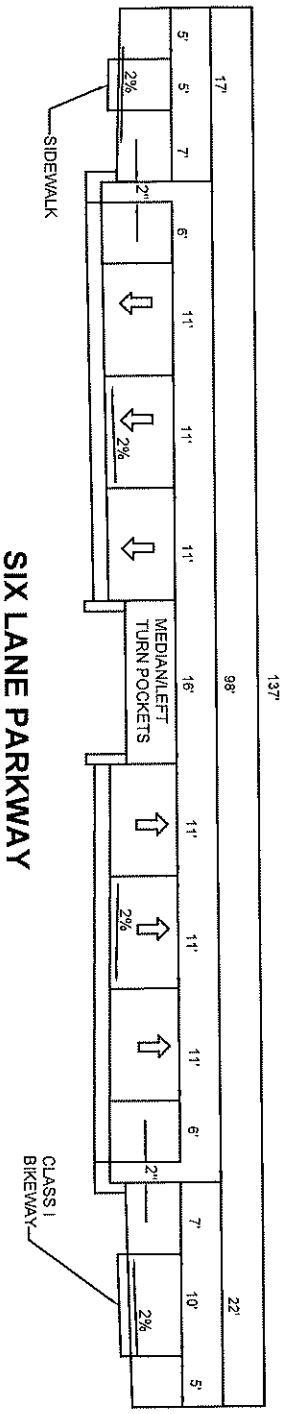
CITY OF TRACY

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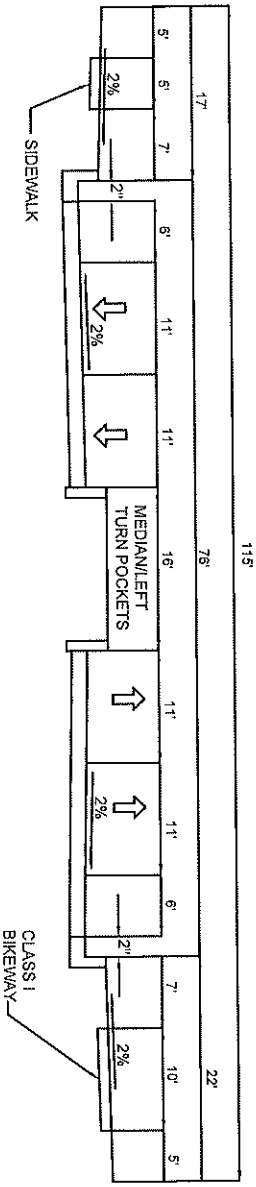
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 111
Res No. 2020-	DATE: February 18, 2020	MASTER PLAN 2 LANE ARTERIAL DIVIDED 4 LANE ARTERIAL WITH AND WITHOUT TWLTL
Rev: Leisser M.	Rev: Thomas W.	
2012 MASTER PLAN		



EIGHT LANE PARKWAY



SIX LANE PARKWAY

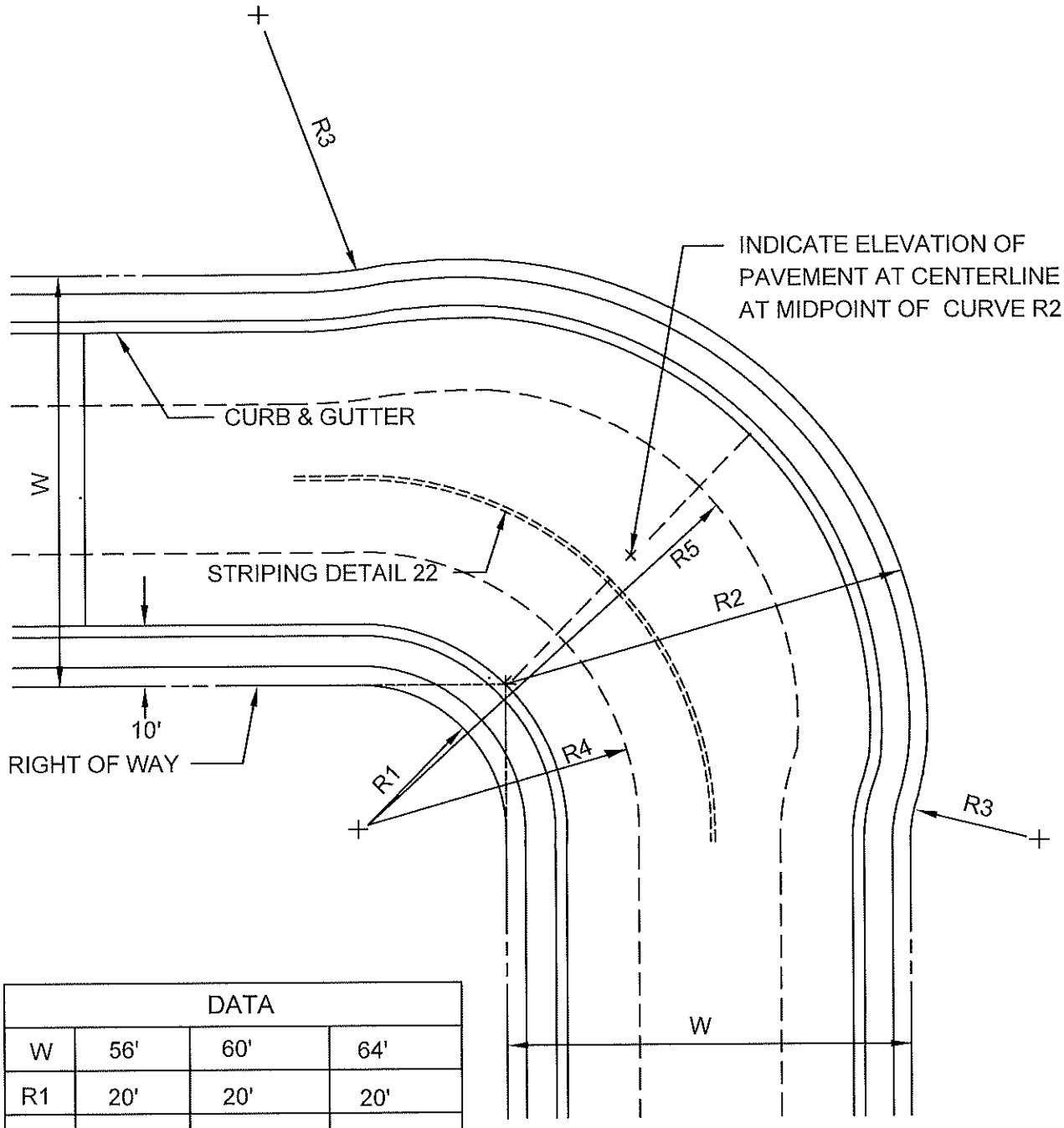


FOUR LANE PARKWAY

CITY OF TRACY

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REVIEWED BY: Robert Armijo		STANDARD PLAN No. 112
CITY ENGINEER	RCE 63173	
Res No. 2020-	DATE: February 18, 2020	**MASTER PLAN FOUR LANE, SIX LANE & EIGHT LANE PARKWAY**
Rev: Leisser M.	Rev: Thomas W.	
2012 MASTER PLAN		



DATA			
W	56'	60'	64'
R1	20'	20'	20'
R2	70'	70'	70'
R3	50'	50'	50'
R4	38 - 0" MIN. W/ STREET PARKING		
R5	47' - 7" MIN. W/ STREET PARKING		

CITY OF TRACY

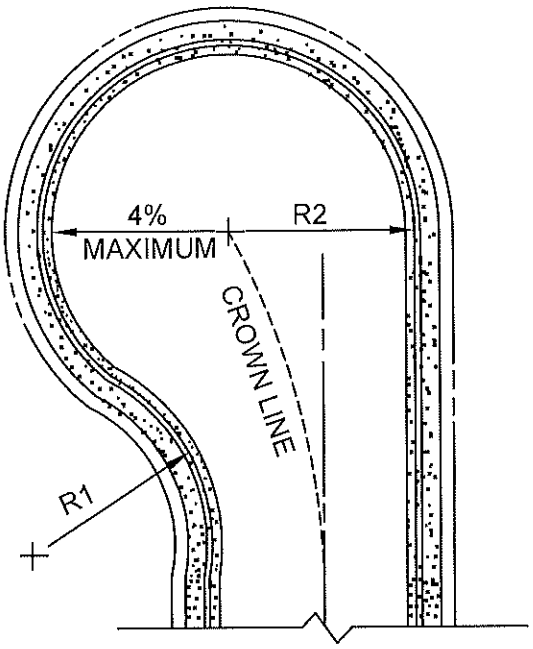
TRACY
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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

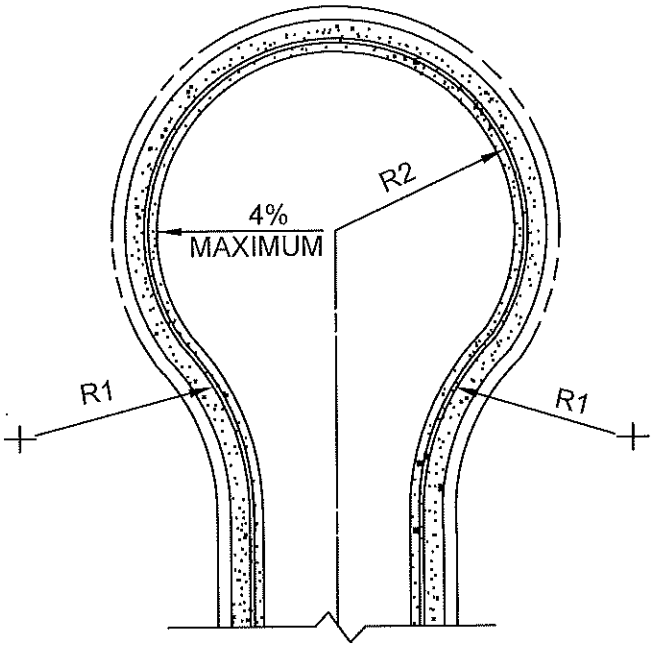
STANDARD PLAN No. 113

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STREET KNUCKLE



N.T.S.



N.T.S.

FACE OF CURB		
RADIUS	RESIDEN.	INDUST.
R1	50'	60'
R2	48' W/NO PARKING	50' W/NO PARKING
	56' WITH PARKING	58' WITH PARKING

NOTES:

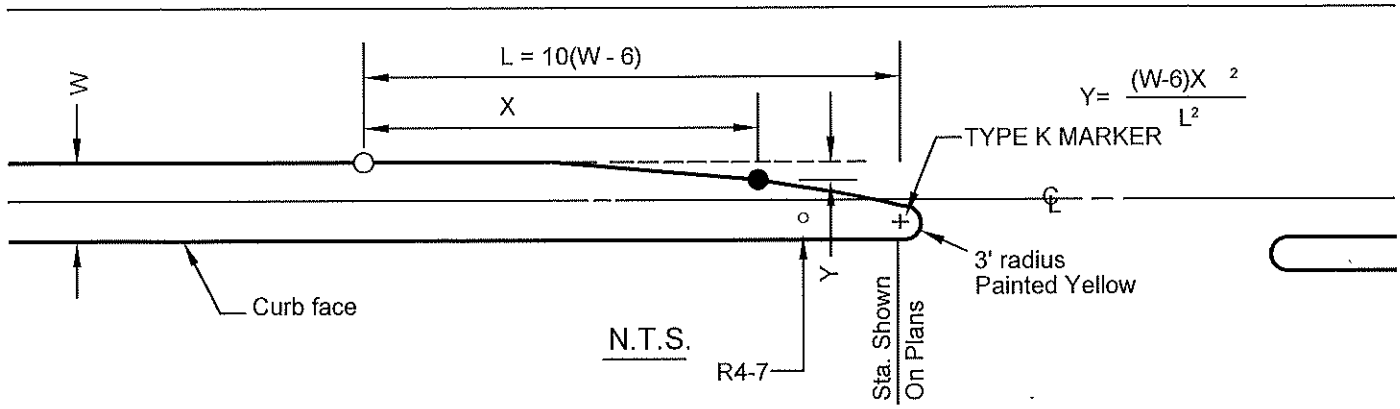
1. MAXIMUM LENGTH OF A CUL-DE-SAC STREET FROM CENTER OF INTERSECTING STREET TO CENTER OF TURN-AROUND SHALL BE 500 FEET.

2. BULB OFF-SET MAY BE ON EITHER SIDE.

CITY OF TRACY

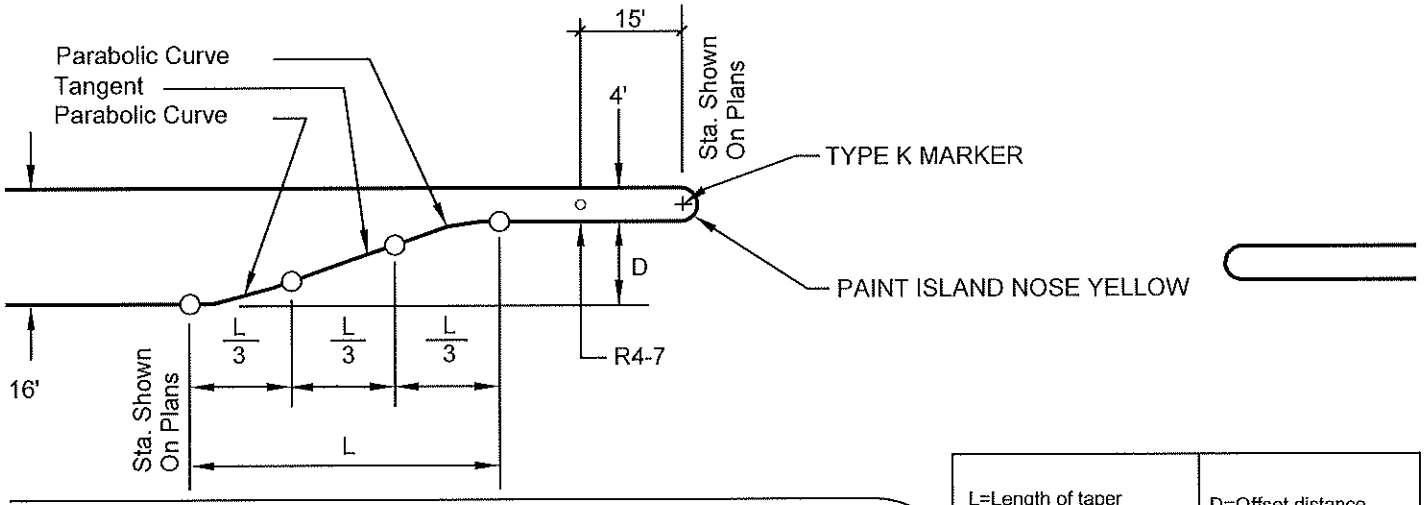
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 114
Res No. 2020-	DATE: February 18, 2020	CUL-DE-SAC BULBS
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



1:10 FLARE OFFSETS

16' Median	X	0	10	20	30	40	50	60	70	80	90	100
L = 100	Y	0.00	0.10	0.40	0.90	1.60	2.50	3.60	4.90	6.40	8.10	10.00



N.T.S.

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

NOTES:

1. OFFSETS ARE MEASURED FROM A BASE LINE, ESTABLISHED BY EXTENDING THE CURB LINE.
2. DISTANCE ALONG THE BASE LINE IS MEASURED FROM THE POINT OF TANGENCY OF THE BEGINNING OF TAPER.
3. TAPER LENGTH SHALL BE 120' AND LANE WIDTH OFFSET SHALL BE 12' UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR SHOWN ON THE PLANS.
4. MEDIAN NOSE SHOULD BE PAINTED YELLOW WITH REFLECTIVE GLASS BEADS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

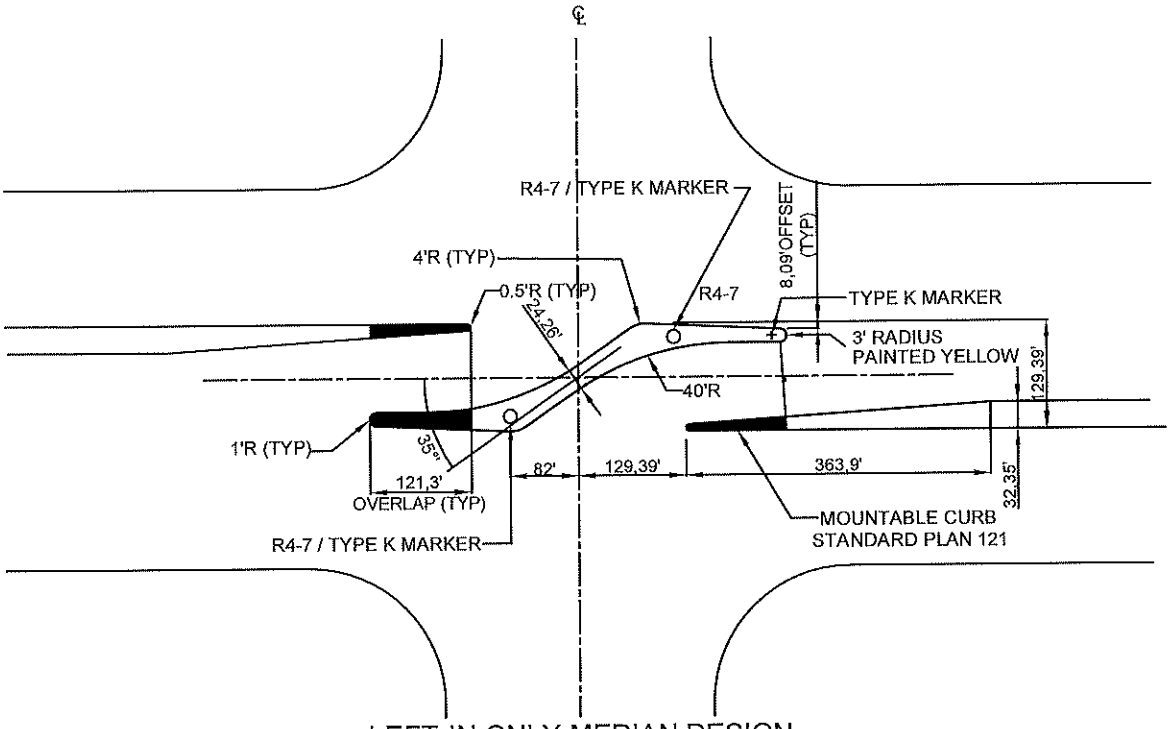
STANDARD PLAN No. 115

Res No. 2020 | DATE: February 18, 2020

Rev: Leisser M. | Rev: Thomas W.

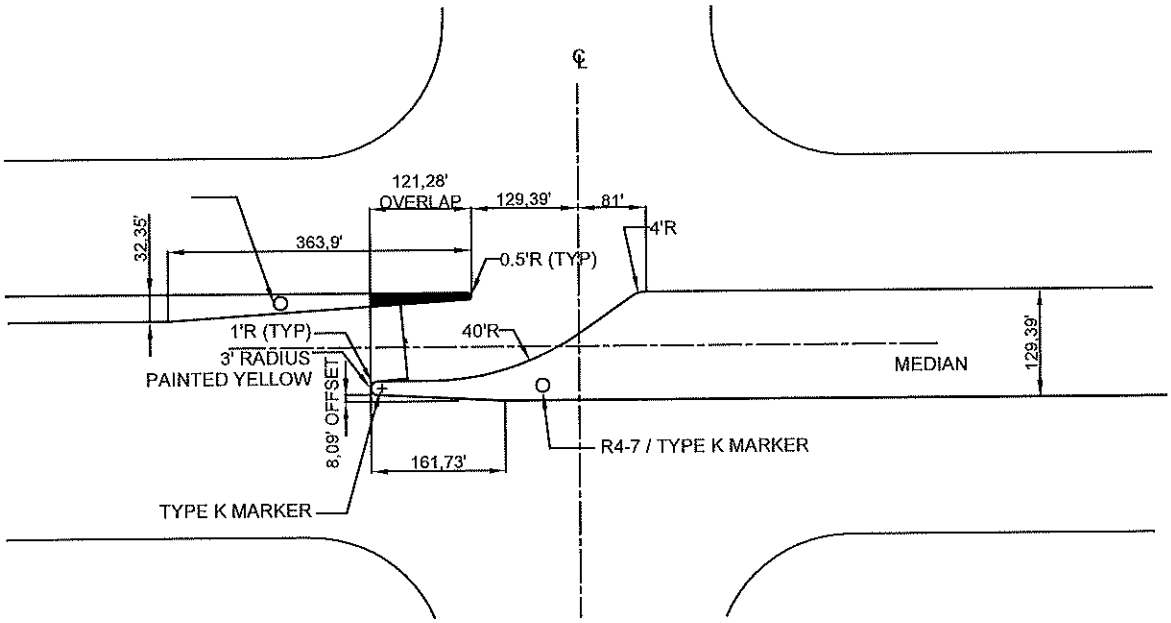
Rev: | Rev:

MEDIAN FLARE & MEDIAN TAPER



LEFT-IN ONLY MEDIAN DESIGN

N.T.S.



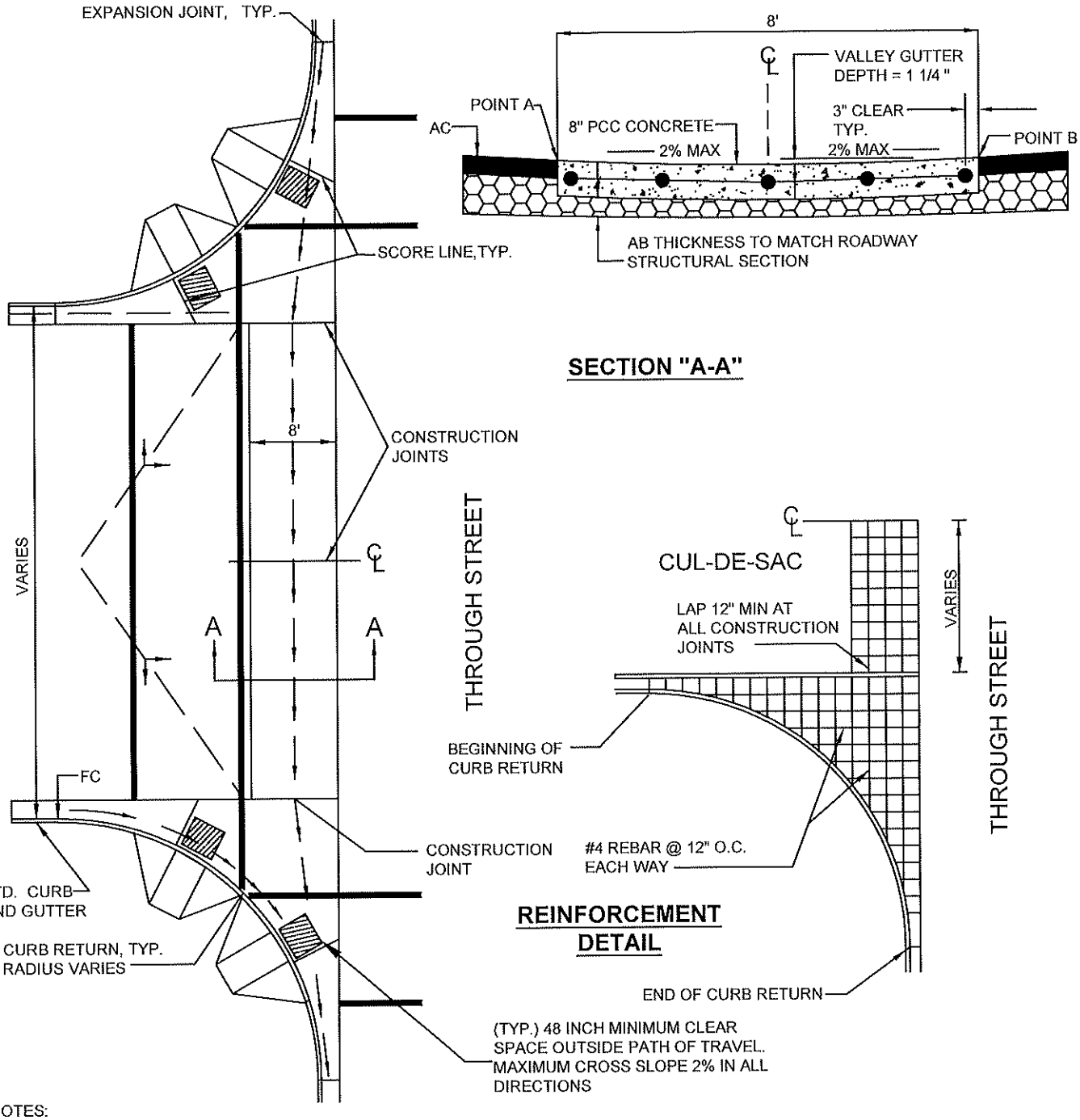
MEDIAN DESIGN TO RESTRICT EXITING LEFT TURNS

N.T.S.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 116
Res No. 2020	DATE: February 18, 2020	**LEFT-IN ONLY MEDIAN**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



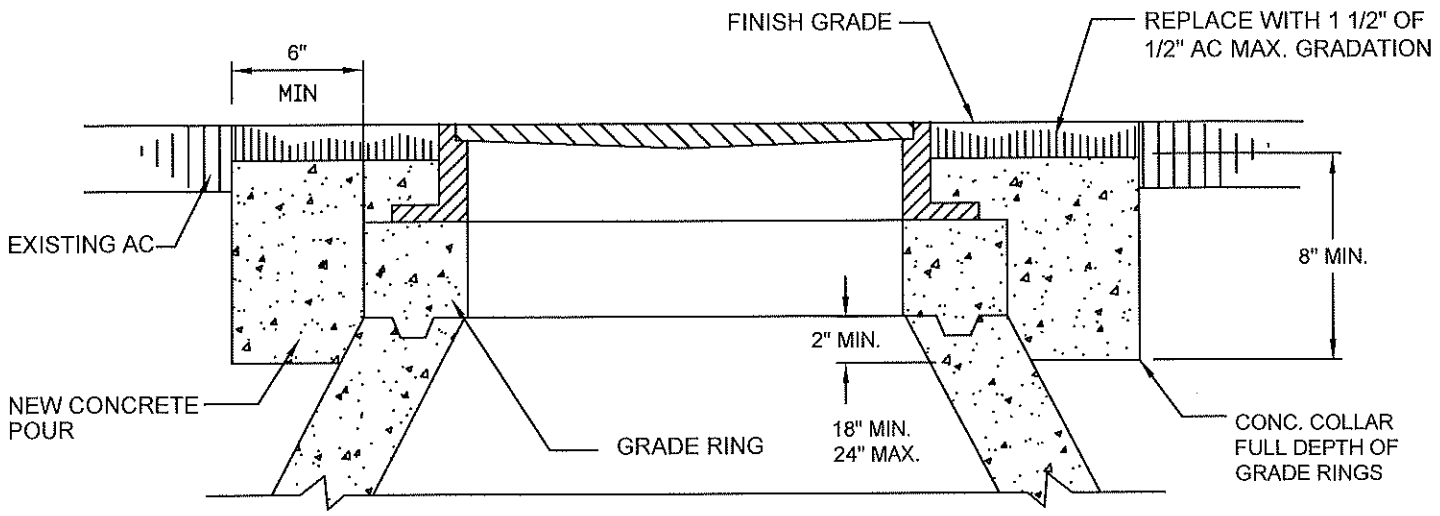
NOTES:

1. SEE STANDARDS PLAN 120 FOR CURB AND GUTTER
2. POINTS A & B SHALL BE AT THE SAME ELEVATION
3. THIS STANDARD PLAN SHALL BE USED ONLY WITH PERMISSION OF CITY ENGINEER

CITY OF TRACY

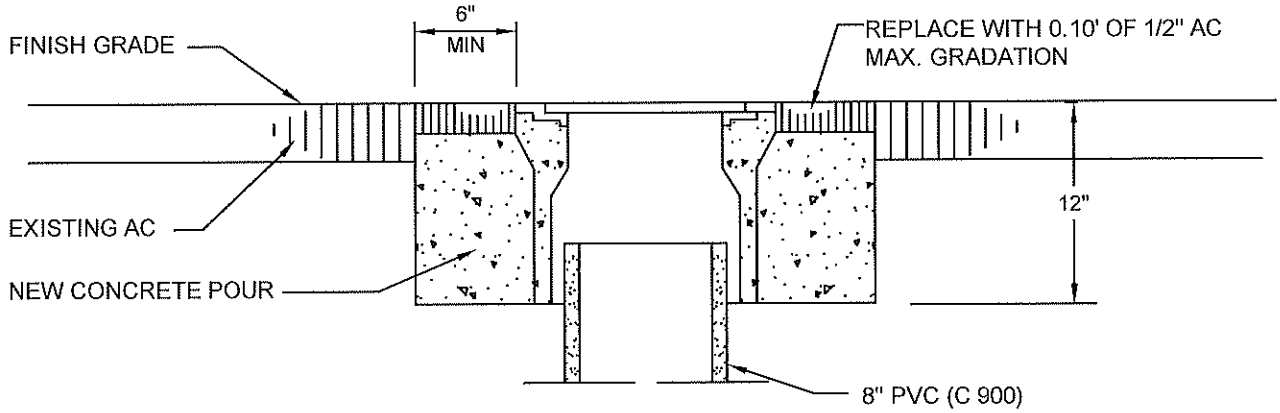
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 117
Res No. 2020-	DATE: February 18, 2020	VALLEY GUTTER
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



MANHOLE

N.T.S.



WATER VALVE

N.T.S.

NOTES:

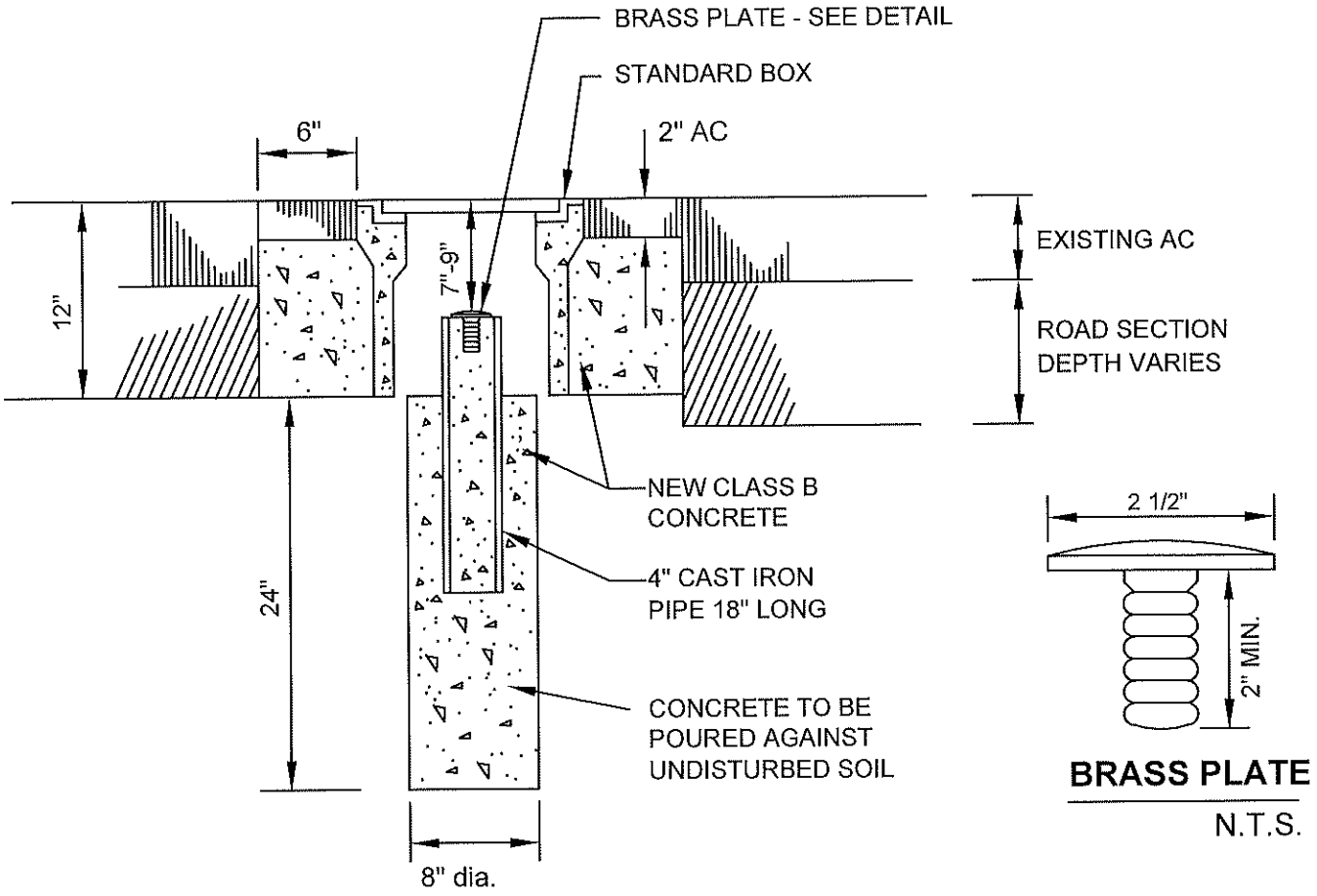
1. THIS DETAIL SHALL BE USED WHERE FRAMES AND COVERS ARE BEING ADJUSTED TO GRADE.
2. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS; 4" MAX. SLUMP: 3/4" MAXIMUM AGGREGATE SIZE.
3. ALL CONCRETE SHALL BE POURED AGAINST NEAT EXCAVATION. DISTURBED SOIL OR A.B. SHALL BE COMPACTED TO 95%, COMPACT AT 3"- 4" LIFTS
4. ASPHALT SHALL MATCH FINISH GRADE OF ADJACENT PAVEMENT
5. ALL IRON MUST BE LOWERED PRIOR TO GRIND
6. ALL IRON MUST BE RAISED AFTER FINAL LIFT OF ASPHALT HAS BEEN PLACED

POTABLE WATER
TRAFFIC BOX G04BOX CAST IRON LID G4C STAMPED WATER
RECLAIMED WATER (PURPLE PIPE)
TRAFFIC BOX G04BOX CAST IRON LID G4C (PURPLE) STAMPED RECLAIMED WATER

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 118
Res No. 2020-	DATE: February 18, 2020	**FRAME & COVER ADJUSTMENTS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



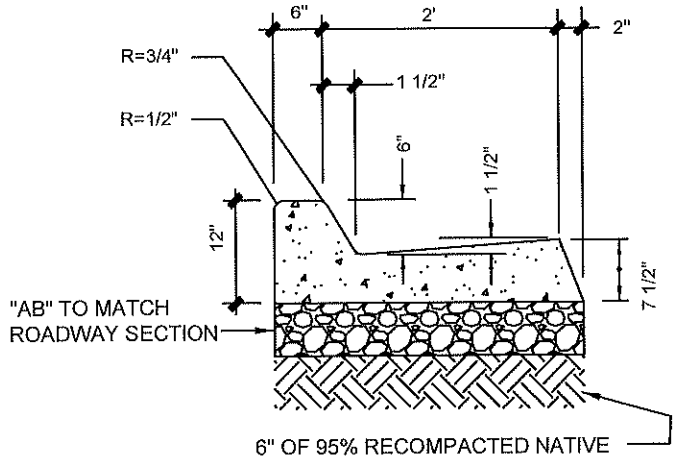
NOTES:

1. CONCRETE SHALL BE FIVE SACK CLASS "B" 2500 PSI AT 28 DAYS; 4" MAXIMUM SLUMP; 3/4" MAXIMUM AGGREGATE SIZE.
2. THE BRASS PLATE SHALL HAVE THE EXACT SPOT INDICATED BY A CHISELED CROSS OR A PUNCHED HOLE AND BEAR THE LICENSE NUMBER OF THE ENGINEER OR SURVEYOR MAKING THE SURVEY AND THE DATE OF MARKING. THE BOTTOM OF THE BRASS PLATE SHALL BE FLUSH WITH THE TOP OF THE CAST IRON PIPE.
3. MONUMENT BOX SHALL BE CHRISTY G-5 OR APPROVED EQUAL WITH MARKING "MONUMENT" IN RAISED LETTERS ON COVER. BRASS PLATE SHALL BE LEITZ 8134-16 DOMED SURVEY MARKERS.
4. THE ENGINEER OR SURVEYOR SHALL NOTIFY THE CITY ENGINEER IN WRITING THAT FINAL MONUMENTS HAVE BEEN PLACED AS REQUIRED BY THE SUBDIVISION MAP ACT AND PAYMENTS HAVE BEEN RECEIVED FROM THE DEVELOPER IN CONFORMANCE WITH SECTION 66497 OF THE SUBDIVISION MAP ACT.

CITY OF TRACY

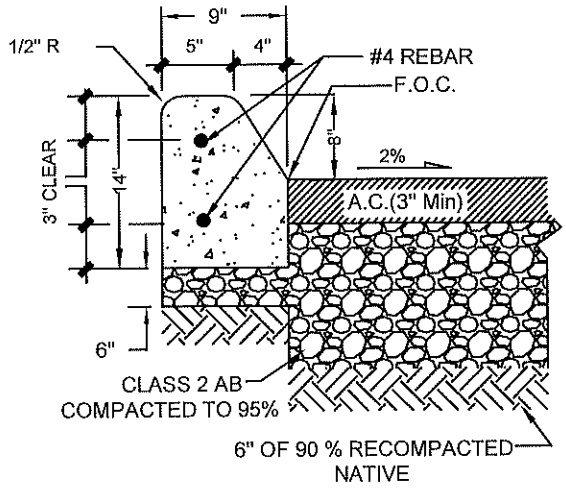
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 119
Res No. 2020-	DATE: February 18, 2020	SURVEY MONUMENT
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



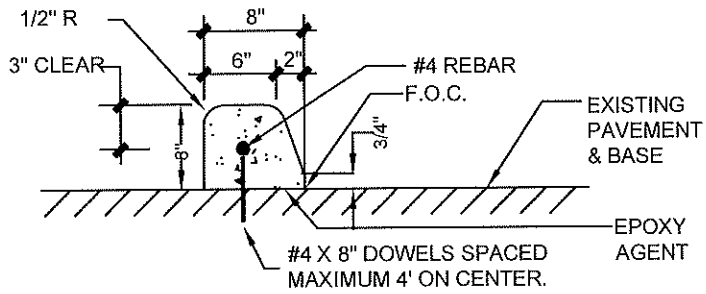
VERTICAL CURB AND GUTTER

N.T.S.



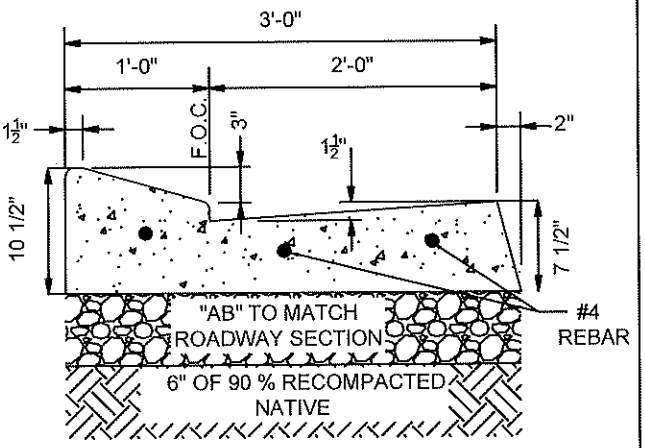
MEDIAN ISLAND CURB

N.T.S.



EXTRUDED CONC. CURB

N.T.S.



ROLL TYPE CURB & GURB

N.T.S.

NOTES:

1. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 8 FOOT INTERVALS. JOINTS TO BE MINIMUM 1 ½ INCH DEPTH.
2. EXPANSION JOINTS TO BE INSTALLED AT MAX. 200 FOOT INTERVALS, AT EACH SIDE OF STRUCTURES AND AT ENDS OF CURB RETURNS. EXPANSION JOINTS SHALL NOT BE CONSTRUCTED WITHIN 20 FEET OF AN ISLAND NOSE. THE JOINTS SHALL BE FILLED WITH 1/4" PRE MOLDED FILLER CONFORMING TO CALTRANS SPECIFICATIONS 51-1.1 2C (ASTM 1751)
3. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ. FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
4. IMPRESS 2" HIGH LETTERS "S" (SEWER), "W" (WATER) OR I (IRR. SLEVE), 1/4" DEEP INTO THE FACE OF CURB TO IDENTIFY SERVICE LOCATIONS.
5. CONCRETE SHALL BE 5 SACK CLASS "B", 2500 PSI @ 28 DAYS; 3/4" MAX. AGGREGATE SIZE, 4" MAX. SLUMP AT TIME OF PLACEMENT, 1/2 LB LAMP BLACK PER CUBIC YARD.
6. ASPHALT PAVING SHALL BE PLACED 1/4" ABOVE LIP OF GUTTER.
7. WHEN ATTACHING SIDEWALK TO CURBS, INSTALL 12" LONG #4 DOWELS 18" O.C.

CITY OF TRACY

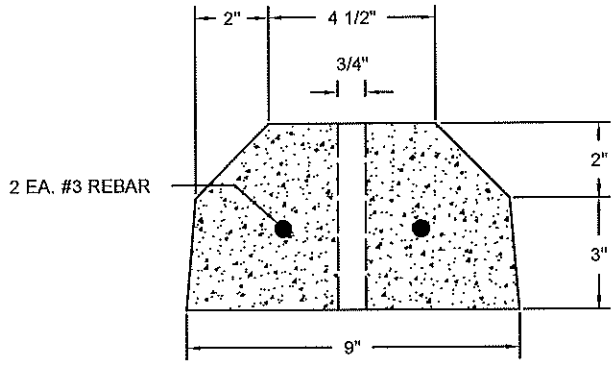
TRACY
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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

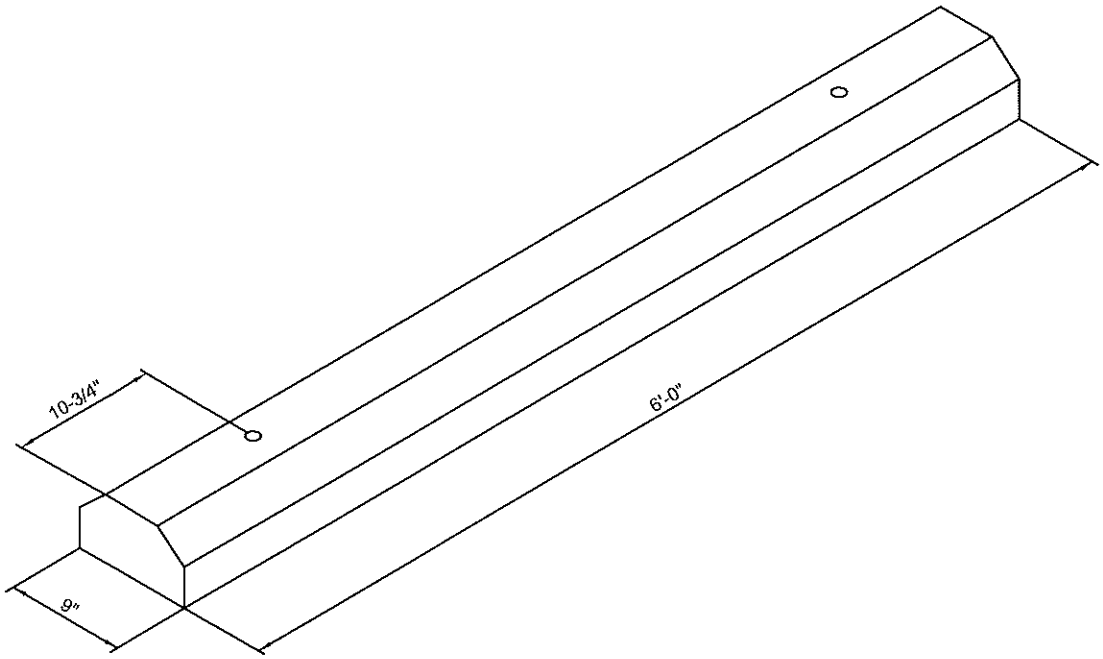
STANDARD PLAN No. **120**

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

CURBS



① SECTION
SCALE: NTS



② ISOMETRIC VIEW
SCALE: NTS

NOTES:
1. REBAR AMERICAN GRADE 60 SIZE #3
2. 4000 PSI CONCRETE 28 DAYS.
3. WEIGHT 200 POUNDS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 121
Res No. 2020-	DATE: February 18, 2020	PARKING STALL CURB
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

NOTES

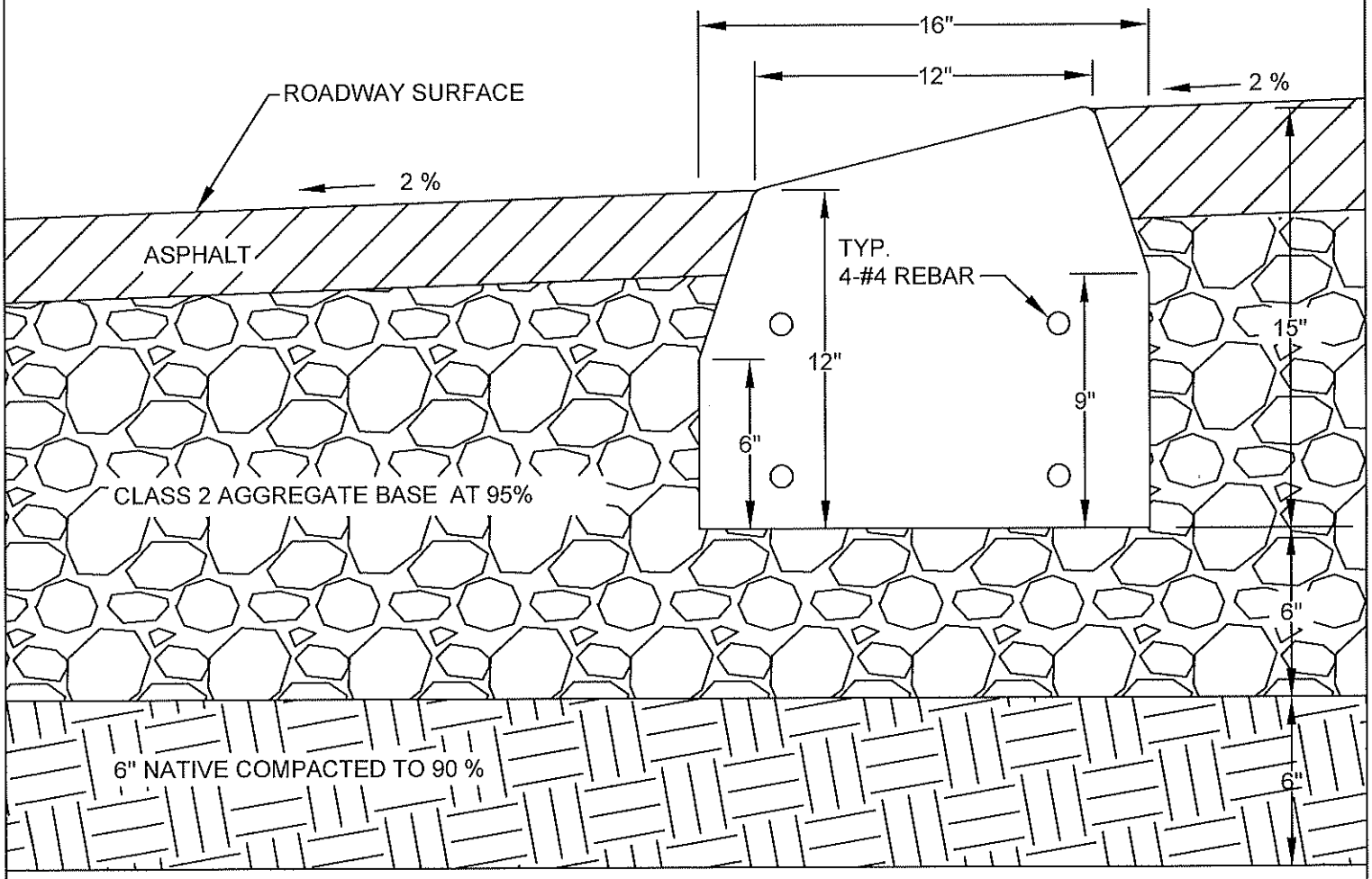
1.TOP 6" OF NATIVE MATERIAL SHALL BE COMPACTED TO 90% OR MOISTENED IF UNDISTURBED.

2. ALL EXPOSED CORNERS SHALL HAVE A 3/4" RADIUS.

3. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS; 3/4 MAXIMUM AGGREGATE SIZE 4" MAXIMUM SLUMP AT TIME OF PLACEMENT. 1/2 LB. LAMPBLACK PER YARD.

4. TOP SURFACE AND FACE OF CONCRETE IMPROVEMENTS SHALL BE TRUE, STRAIGHT AND FREE OF BLEMISHES OR IRREGULARITIES. SURFACE MUST NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE PLACED ON ITS SURFACE. THE WIDTH MUST BE UNIFORM.

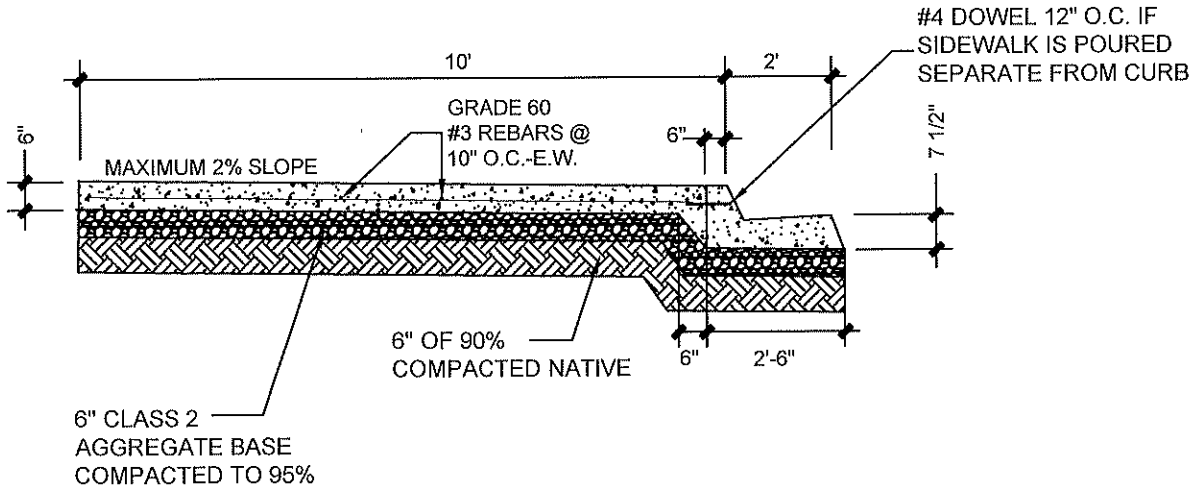
5. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL/ 150 SQ. FT, CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.

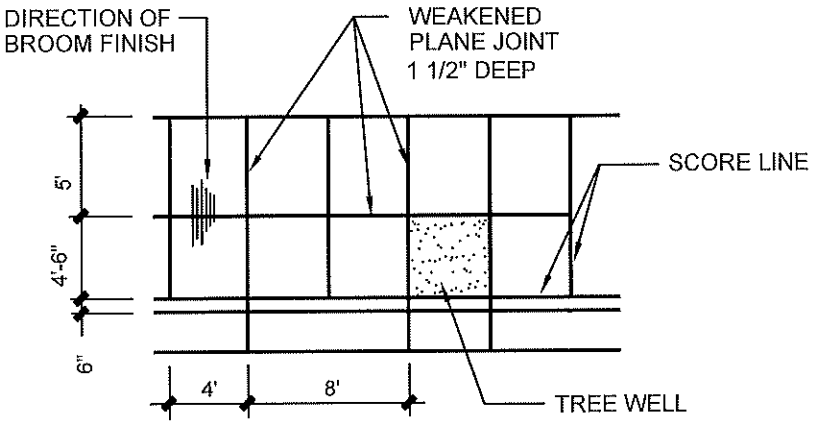


CITY OF TRACY

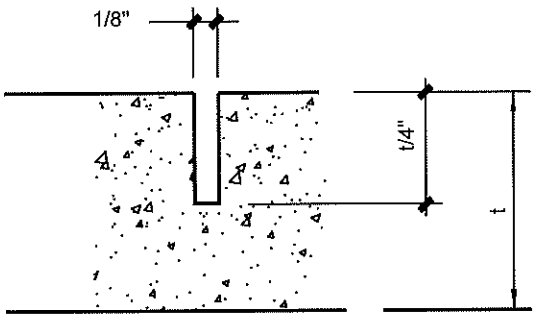
TRACY
Think Inside the Triangle

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **122**
Res No. 2020-	DATE: February 18, 2020	**MOUNTABLE CURB**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





PLAN
N.T.S.



WEAKENED PLANE JOINT
N.T.S.

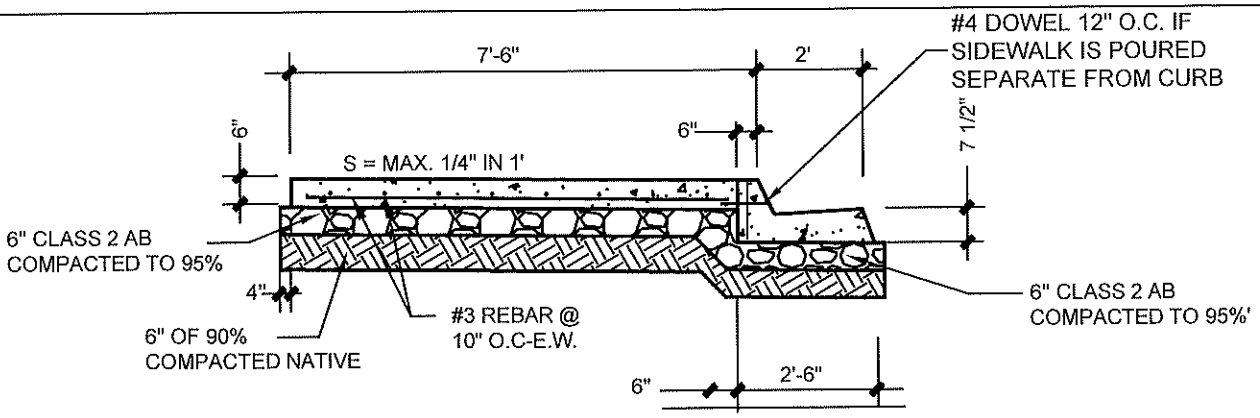
NOTES:

1. TOP 6" OF NATIVE MATERIAL SHALL BE SCAIFED, MOISTURE CONDITIONED, AND COMPACTED TO 90% OR MOISTENED IF UNDISTURBED. SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL EXPOSED CORNERS SHALL HAVE A 1/2" RADIUS.
3. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS; 3/4" MAXIMUM AGGREGATE SIZE 4" MAXIMUM SLUMP AT TIME OF PLACEMENT. 1/2 IB. LAMPBLACK PER YARD.
4. EXPANSION JOINTS SHALL BE SHAPED TO FIT CONCRETE AND PLACED AT ALL RETURNS; AROUND FIXED OBJECTS SUCH AS HYDRANTS, POLES AND DROP INLETS; AND MAX. 200' INTERVALS. THE JOINTS SHALL BE FILLED WITH 1/4" PRE MOLDED FILLER CONFORMING TO CALTRANS SPECIFICATIONS 51-2.
5. THE TOP SURFACE AND FACE OF CONCRETE IMPROVEMENTS SHALL BE TRUE, STRAIGHT AND FREE OF BLEMISHES OR IRREGULARITIES. THE SURFACE MUST NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE PLACED ON ITS SURFACE. THE WIDTH MUST BE UNIFORM.
6. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ.FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
7. ELEVATION DIFFERENTIAL BETWEEN SIDEWALK & TREE WELL FINISHED GRADE SHALL NOT EXCEED 4 INCHES.
8. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE.

CITY OF TRACY

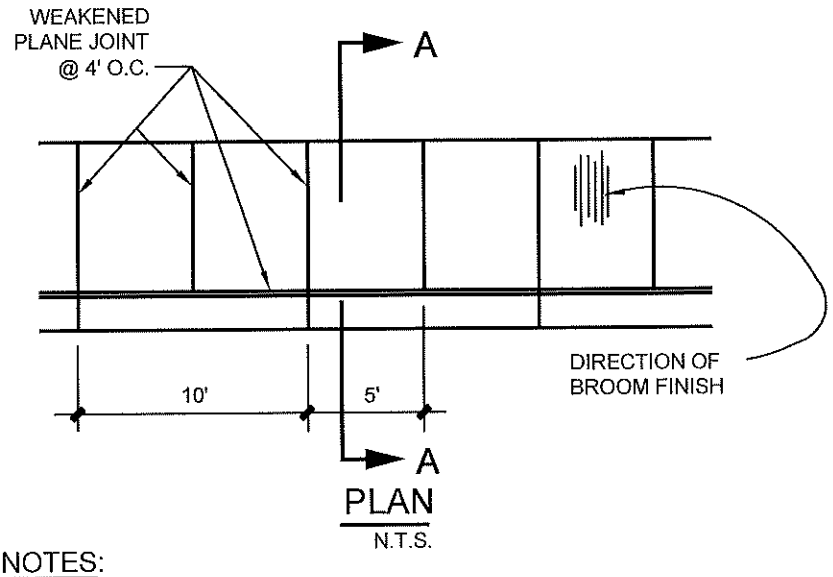
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 123
Res No. 2020-	DATE: February 18, 2020	
Rev: Leisser M.	Rev: Thomas W.	**10' SIDEWALK**
Rev:	Rev:	



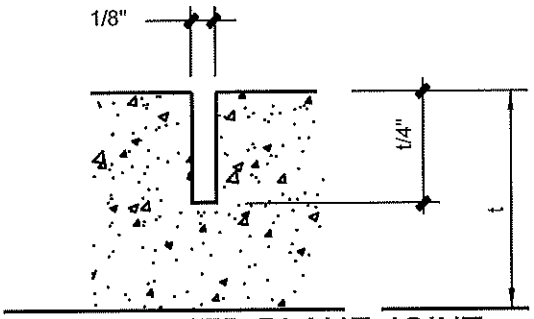
SECTION A-A

N.T.S.



PLAN

N.T.S.



WEAKENED PLANE JOINT

N.T.S.

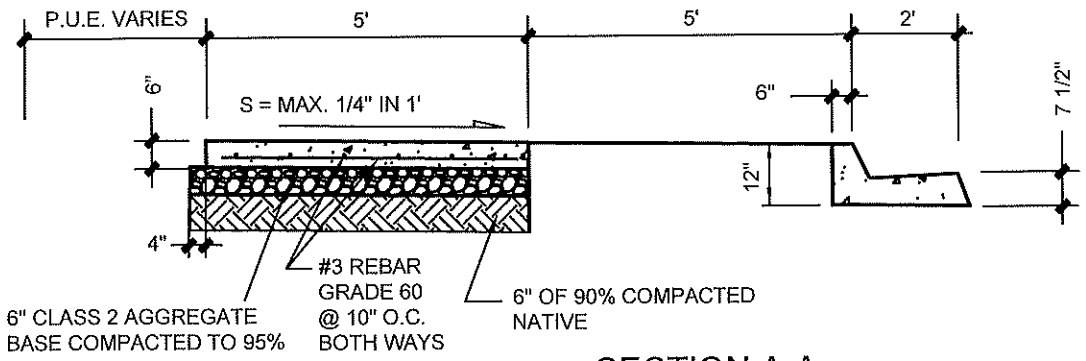
NOTES:

1. TOP 6" OF NATIVE SUBGRADE SHALL BE COMPACTED TO 90% OR MOISTENED IF UNDISTURBED. SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL EXPOSED CORNERS SHALL HAVE A 1/8" RADIUS.
3. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS: 3/4" MAXIMUM AGGREGATE SIZE, 4" MAXIMUM SLUMP AT TIME OF PLACEMENT WITH 1/2 POUND LAMPBLACK PER YARD.
4. EXPANSION JOINTS SHALL BE SHAPED TO FIT CONCRETE AND PLACED AT ALL RETURNS; AROUND FIXED OBJECTS SUCH AS HYDRANTS, POLES AND DROP INLETS; AND MAX. 200' INTERVALS. THE JOINTS SHALL BE FILLED WITH 1/4" PRE MOLDED FILLER CONFORMING TO CALTRANS SPECIFICATIONS 51-1.12C (ASTM 1751). REFER TO STD. 128 FOR EXPANSION JOINTS DETAIL.
5. THE TOP SURFACE AND FACE OF CONCRETE IMPROVEMENTS SHALL BE TRUE, STRAIGHT AND FREE OF BLEMISHES OR IRREGULARITIES.THE SURFACE MUST NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE PLACED ON ITS SURFACE. THE WIDTH MUST BE UNIFORM.
6. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ.FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
7. ANY RESIDENTIAL SIDEWALK WIDER THAN 5' REQUIRES A SCORE PATTERN DESIGN THAT MUST BE ACCEPTABLE TO THE CITY ENGINEER.
8. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE.

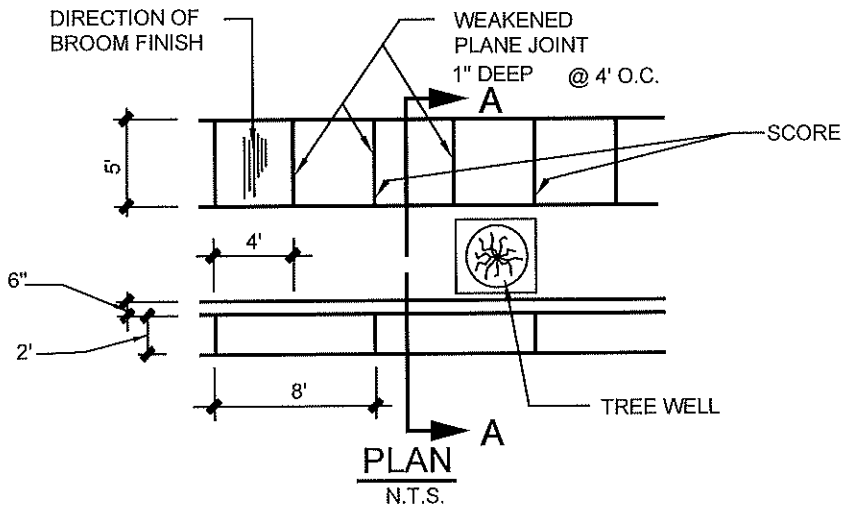
CITY OF TRACY

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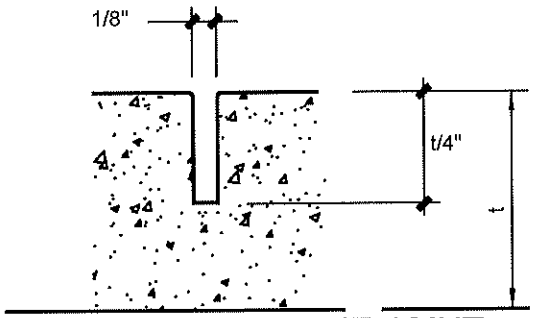
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 124
Res No. 2020-	DATE: February 18, 2020	**RESIDENTIAL SIDEWALK**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



SECTION A-A
N.T.S.



PLAN
N.T.S.



WEAKENED PLANE JOINT
N.T.S.

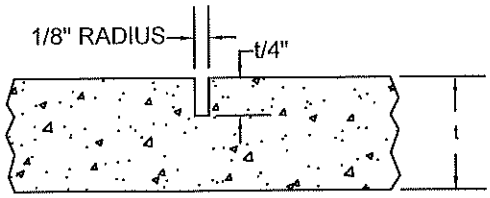
NOTES:

1. TOP 6" OF NATIVE MATERIAL SHALL BE (SEE SP-122) SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER
2. ALL EXPOSED CORNERS SHALL HAVE A 1/2" RADIUS.
3. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS: 3/4" MAXIMUM AGGREGATE SIZE, 4" MAXIMUM SLUMP AT TIME OF PLACEMENT WITH 1/2 LB. LAMPBLACK PER YARD.
4. EXPANSION JOINTS SHALL BE SHAPED TO FIT CONCRETE AND PLACED AT ALL RETURNS, AROUND FIXED OBJECTS SUCH AS HYDRANTS, POLES, AND DROP INLETS, AT MAXIMUM 200' INTERVALS. THE JOINTS SHALL BE FILLED WITH 1/4" PRE MOLDED FILLER CONFORMING TO CALTRANS SPECIFICATIONS 51-1.12C (ASTM 1751). REFER TO STANDARD #128 FOR EXPANSION JOINTS DETAIL.
5. THE TOP SURFACE AND FACE OF CONCRETE IMPROVEMENTS SHALL BE TRUE, STRAIGHT AND FREE OF BLEMISHES OR IRREGULARITIES. THE SURFACE MUST NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE PLACED ON ITS SURFACE. THE WIDTH MUST BE UNIFORM.
7. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ.FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
8. ELEVATION DIFFERENTIAL BETWEEN SIDEWALK AND TREE WELL FINISHED GRADE SHALL NOT EXCEED 4 INCHES.
9. SIDEWALK SHALL HAVE 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE.
10. BACK FLUSH BEHIND SIDEWALKS
11. #3 REBAR @ 10" O.C.E.W

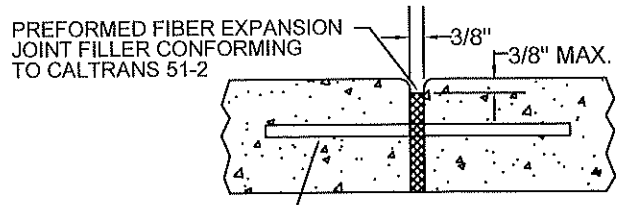
CITY OF TRACY

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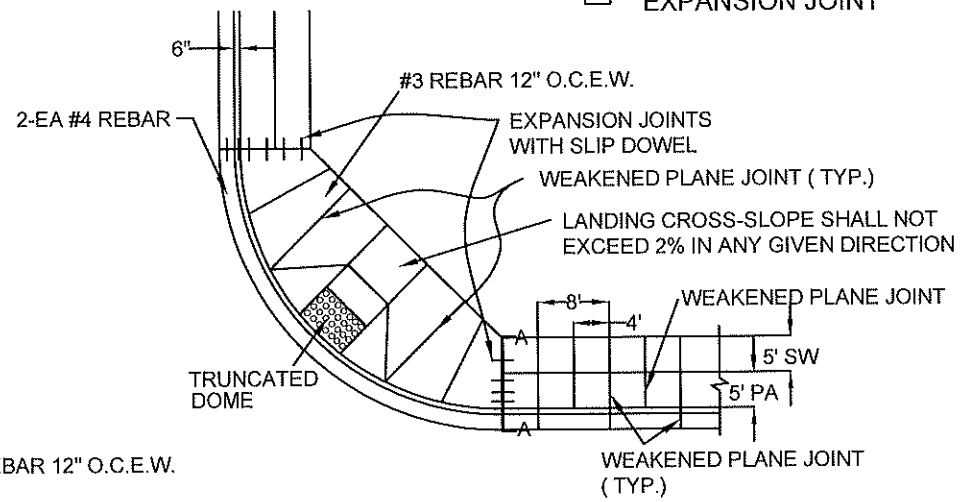
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 125
Res No. 2020-	DATE: February 18, 2020	**RESIDENTIAL SIDEWALK WITH PLANTING STRIP**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

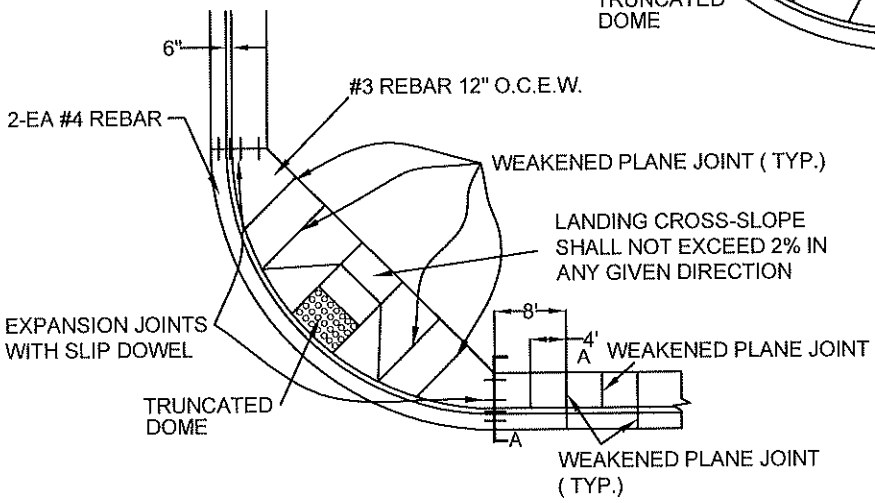


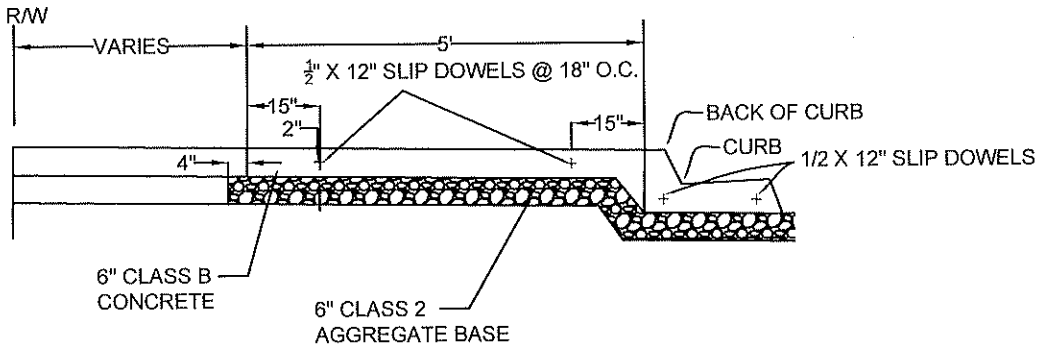
WEAKENED PLANE JOINT



EXPANSION JOINT







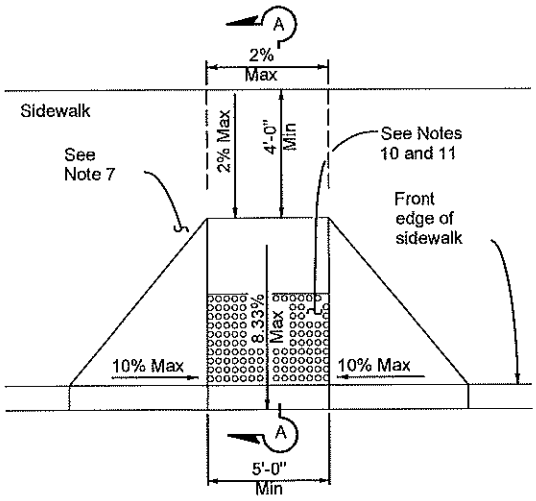
NOTES:

1. SIDEWALKS GREATER THAN 5 FEET SHALL REQUIRE PRIOR APPROVAL OF A SCORE PATTERN DESIGN.
2. EXPANSION JOINTS SHALL BE SHAPED TO FIT CONCRETE AND PLACED AT ALL RETURNS, AROUND FIXED OBJECTS SUCH AS HYDRANTS, POLES AND DROP INLETS, AND AT MAXIMUM 200' INTERVALS. THE JOINTS SHALL BE FILLED WITH 1/4" PRE MOLDED FILLER CONFORMING TO CALTRANS SPECIFICATIONS 51-1.2C (ASTM D-1751).

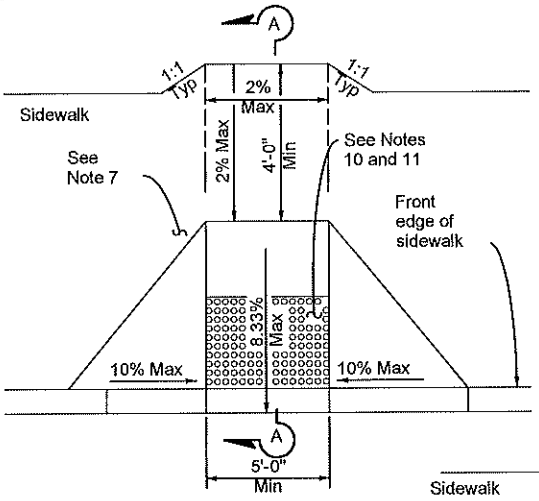
CITY OF TRACY

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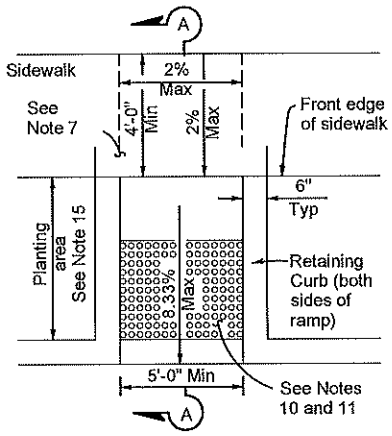
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 126
Res No. 2020-	DATE: February 18, 2020	**EXPANSION JOINTS, WEAKENED PLANE JOINTS AND SCORE LINES**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



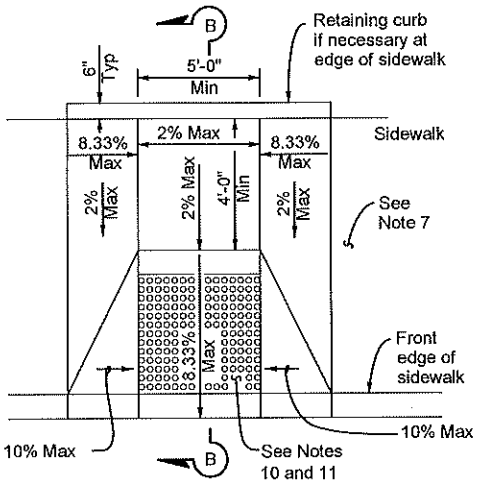
CASE A



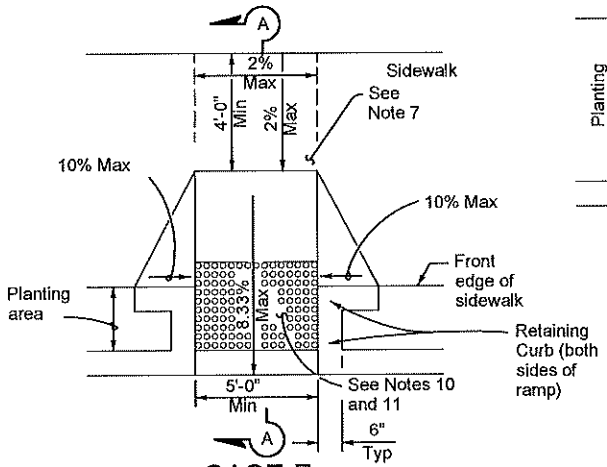
CASE D



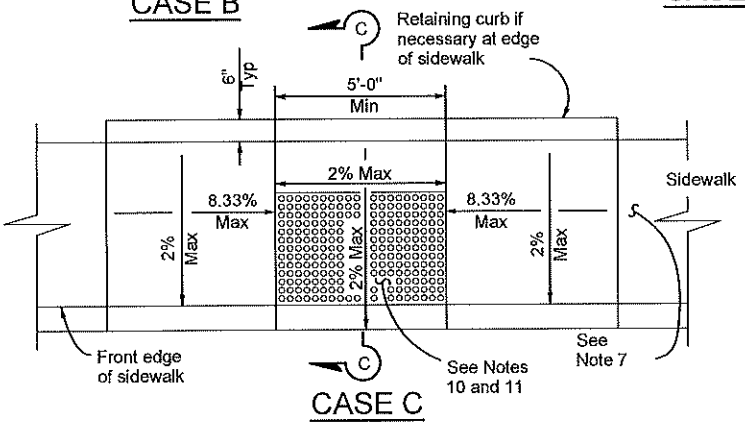
CASE F



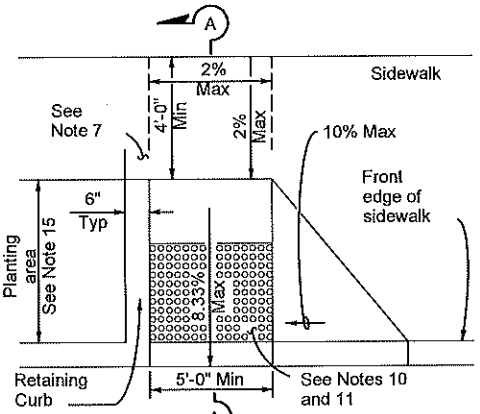
CASE B



CASE E

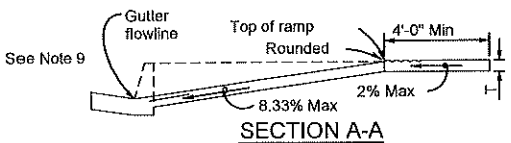


CASE C

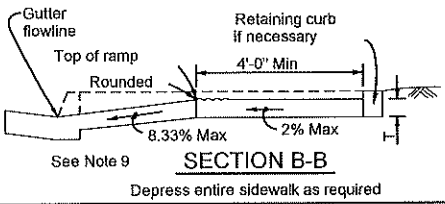


CASE G

See Note 4

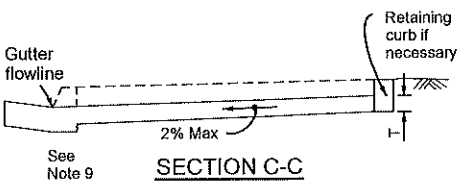


SECTION A-A



SECTION B-B

Depress entire sidewalk as required



SECTION C-C

CITY OF TRACY

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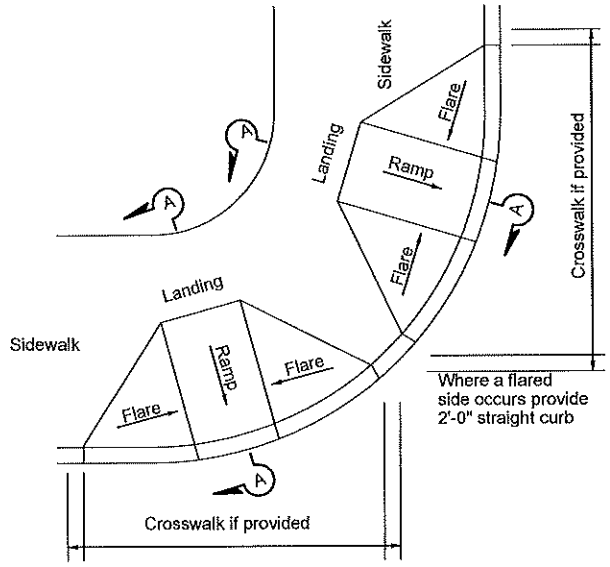
REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. **127**

SHEET 1 OF 3

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

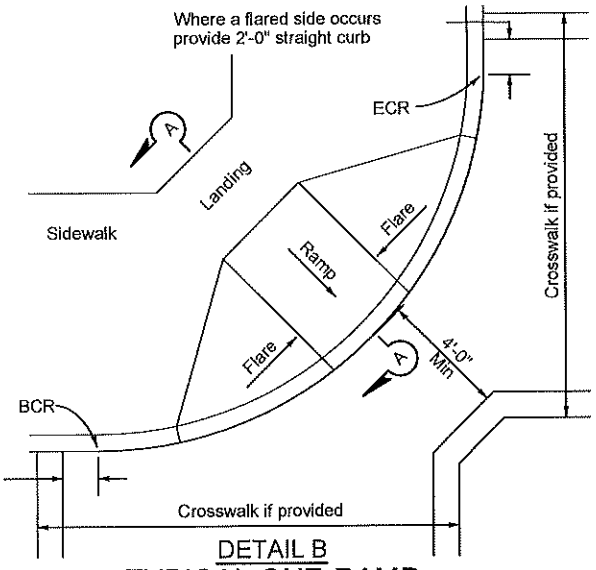
CURB RAMPS



DETAIL A

TYPICAL TWO-RAMP CORNER INSTALLATION

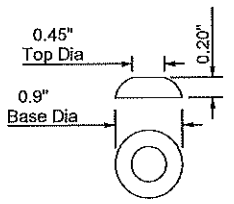
See Note 1



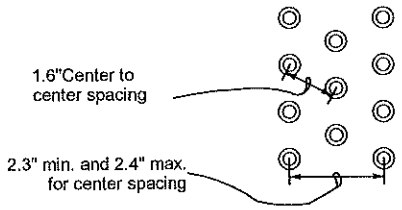
DETAIL B

TYPICAL ONE-RAMP CORNER INSTALLATION

See Notes 1 and 3



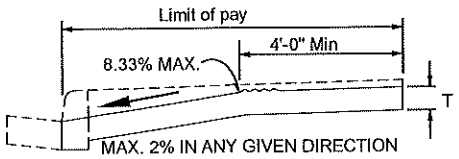
RAISED TRUNCATED DOME



RAISED TRUNCATED DOME PATTERN (IN-LINE)

DETECTABLE WARNING SURFACE

See Note 10



RETROFIT DETAIL

Existing curb and sidewalk

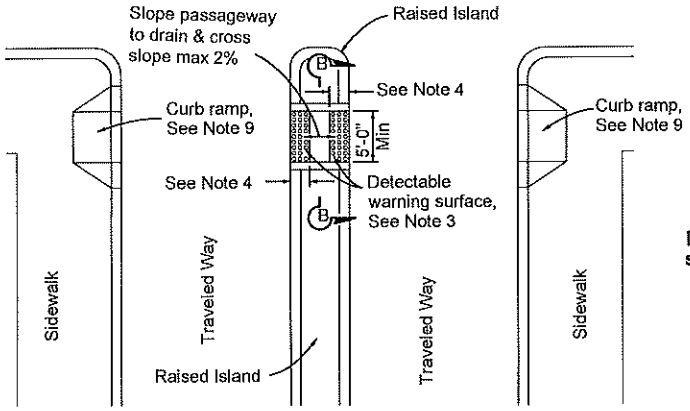
NOTES:

1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'–0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'–0".
6. Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
8. Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'–0" of the bottom of the curb ramp.
9. Curb ramps shall have a detectable warning surface that extends the full width and 3'–0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
10. The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
11. Sidewalk and ramp thickness, "T", shall be 6" minimum.
12. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
13. For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.
14. Finished Planter area surface shall be not extend any lower than 4" from the top of the retaining curb.
15. All ramps require #3 rebar @ 10" o.c. each way.
16. Landing area shall not exceed 2% in any given direction.

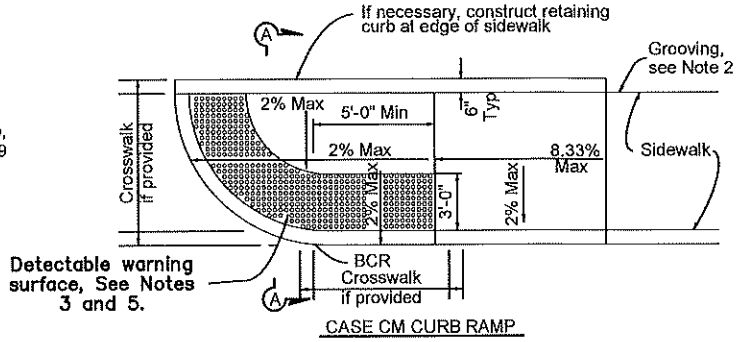
CITY OF TRACY

TRACY
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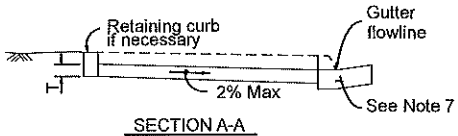
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 127 SHEET 2 OF 3
Res No. 2020-	DATE: February 18, 2020	**CURB RAMP NOTES & DETAILS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



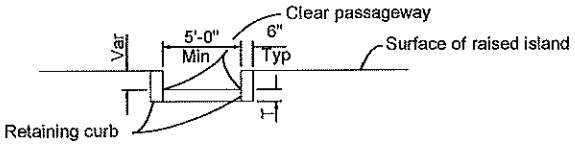
TYPE A PASSAGEWAY



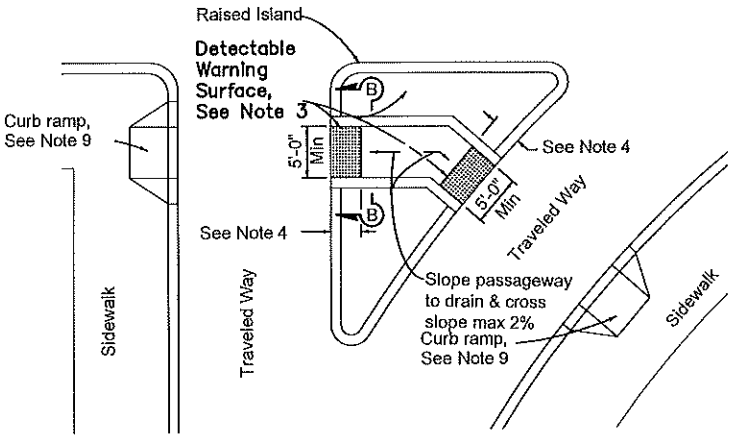
CASE CM CURB RAMP



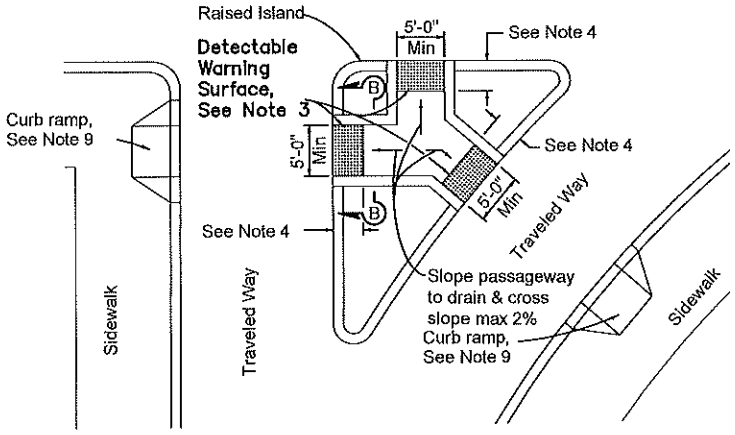
SECTION A-A



SECTION B-B



TYPE B PASSAGEWAY



TYPE C PASSAGEWAY

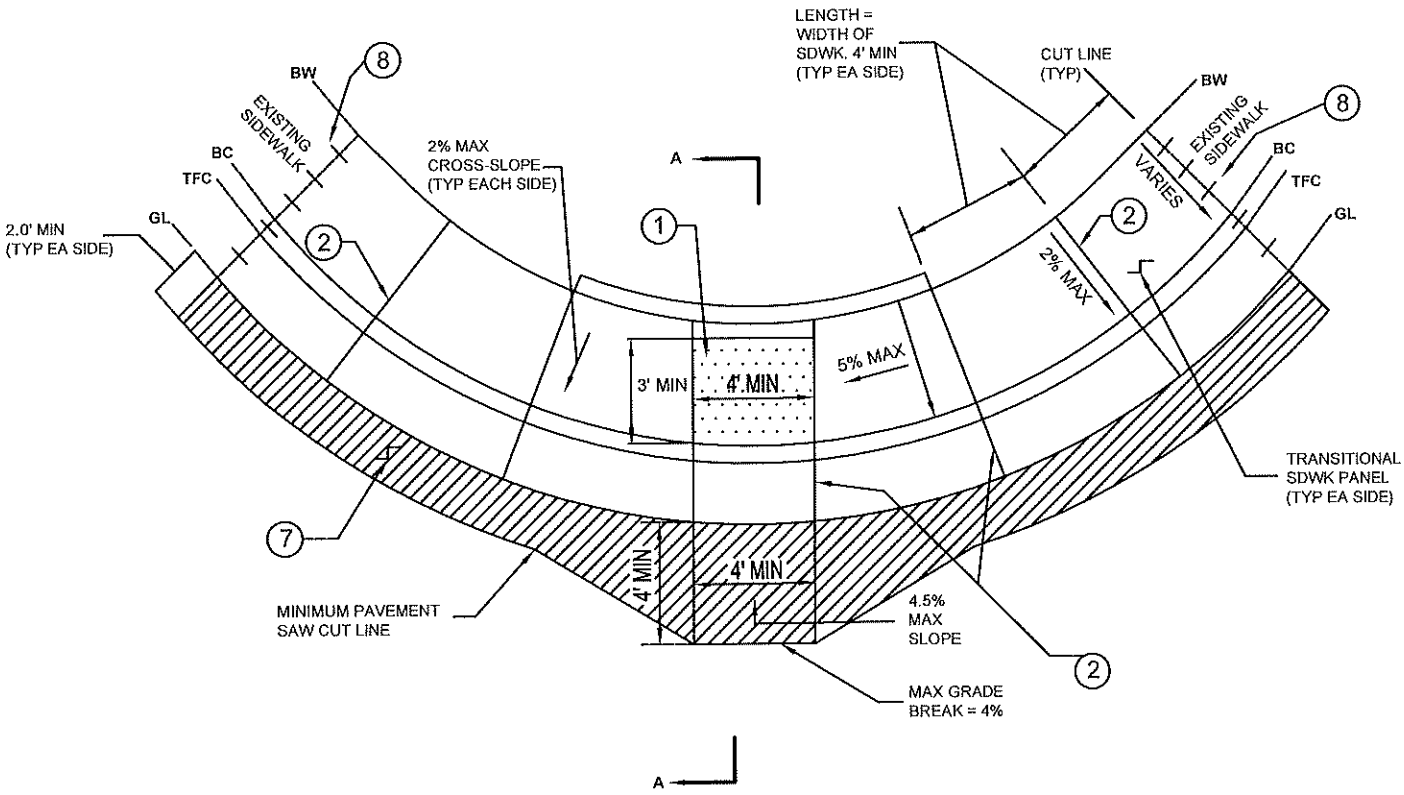
NOTES:

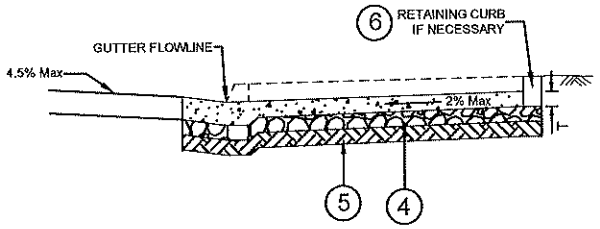
1. Sidewalk, ramp and passageway thickness, "T", shall be 3½" minimum.
2. For details of grooving used with Case CM curb ramp, see Standard Plan 130–2 of 3.
3. For details of detectable warning surfaces, see Standard Plan 130–2 of 3.
4. Detectable warnings at pedestrian islands or cut–through meidans shall be 36" minimum in depth extending the full width of the pedestrian path or cut–through less 2 inches maximum on each side, placed at the edges of the pedestrian island or cut–through median, and shall be separated by 24" minimum of walking surface without detectable warnings. Exception: Detectable warnings shall be 24" inches minimum in depth at pedestrian islands or cut–through medians that are less than 96" inches in length in the direction of travel.
5. For Case CM curb ramp, the edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
6. Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes.
7. Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'–0" of the top and bottom of the curb ramp.
8. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
9. For additional curb ramp details, see City Standard Plan 130, Sheets 1 and 2.
10. #3 Rebars at 10" OCEW

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 127 SHEET 3 OF 3
Res No. 2020-	DATE: February 18, 2020	**CURB RAMP & ISLAND PASSAGEWAY**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





SECTION "A-A"

NOTES

1. RAMPS SHALL HAVE A MEDIUM BROOM FINISH TRANSVERSE TO THEIR SLOPE.
2. NO PULL BOX, UTILITY VAULT, UTILITY POLE, MANHOLE OR SIMILAR APPURTENANCE SHALL BE LOCATED WITHIN THE RAMP AREA WITHOUT PRIOR OR WRITTEN APPROVAL BY THE CITY ENGINEER.
3. THE LANDING AREA SLOPE, SHALL NOT EXCEED 2% IN ANY DIRECTION.
4. TRANSITIONS TO SIDEWALK, GUTTER AND STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGE.
5. RAMP SHALL BE DESIGNED AND CONSTRUCTED SUCH THAT WATER DOES NOT ACCUMULATE ON RAMP.
6. DETECTABLE WARNING SURFACES SHALL EXTEND THE FULL WIDTH OF THE RAMP
7. THE LEADING EDGE OF THE DETECTABLE WARNING SURFACE SHALL BE LOCATED 6" TO 8" FROM THE GUTTER FLOW-LINE, DETECTABLE WARNING SURFACES SHALL BE INSTALLED PARALLEL TO THE PATH OF TRAVEL, AND SHALL EXTEND THE FULL WIDTH OF THE LANDING AREA, AND A MINIMUM DEPTH OF 3' FROM THE LEADING EDGE TOWARDS THE BACK OF THE LANDING AREA.

1	DETECTABLE WARNING SURFACE
2	DEEP TOOL JOINT - 1½" MIN DEPTH
3	6" 2500 PSI CONCRETE
4	6" CLASS 2 AB (¾" MAX.) PROCESSED TO 95% RELATIVE COMPACTION

5	6" SUBGRADE OR CLASS 2 ASB PROCESSED TO 95% RELATIVE COMPACTION
6	6" WIDE RETAINING CURB WITH VARIABLE HEIGHT ALONG RUNNING SLOPE
7	SAW CUT, REMOVE AND REPLACE AC / MATCH EXISTING A.C. PLUS 1"
8	INSTALL 12" LENGTHS OF #4 REBAR SPACED AT 12" ON CENTER WITH 4" MIN. DOWELED AND EPOXY INTO EXISTING SIDEWALK, CURB AND GUTTER (TYP.)

CITY OF TRACY

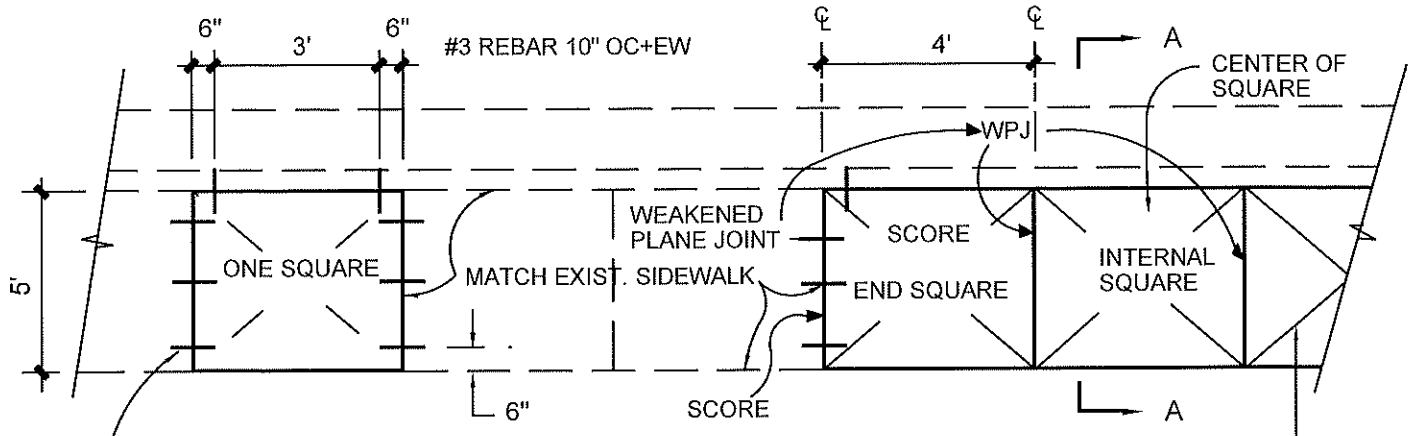
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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 128

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

PARALLEL CURB RAMP RETROFIT



REPLACEMENT OF ONE SQUARE

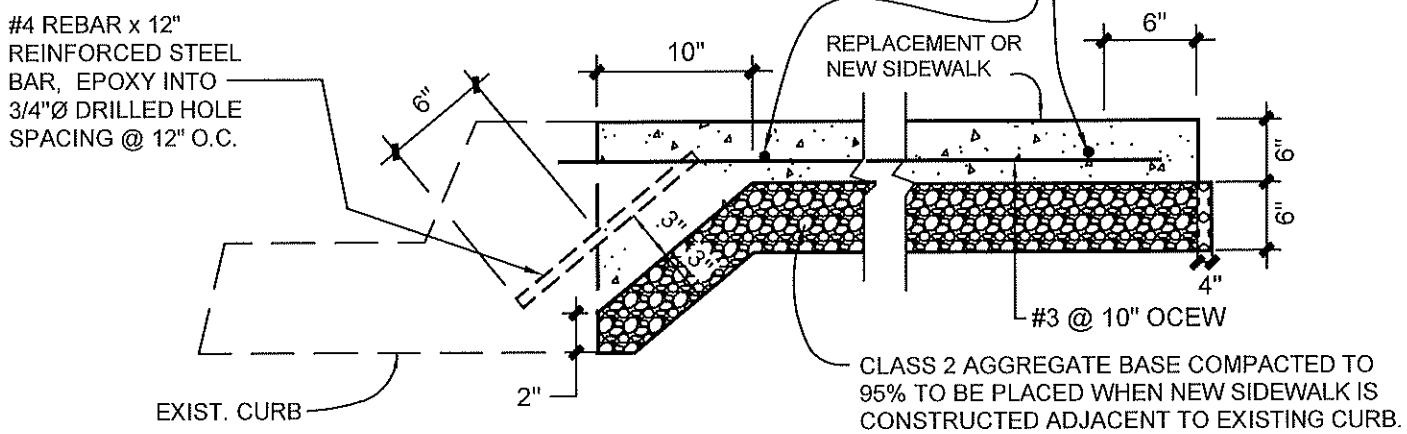
REPLACEMENT OF TWO OR MORE SQUARES

#4 REBAR x 12" REINF. STEEL BAR GRADE 60. EPOXY INTO 3/4"Ø HOLE DRILLED INTO EXISTING SIDEWALK. (TYP.)

#4 REBAR x 12" REINF. STEEL BAR EPOXY INTO 3/4"Ø HOLE DRILLED INTO EXISTING SIDEWALK. (3 MINIMUM - MORE AS NEEDED)

LOCATION FOR REPLACEMENT SIDEWALK

N.T.S.



SECTION A-A

N.T.S.

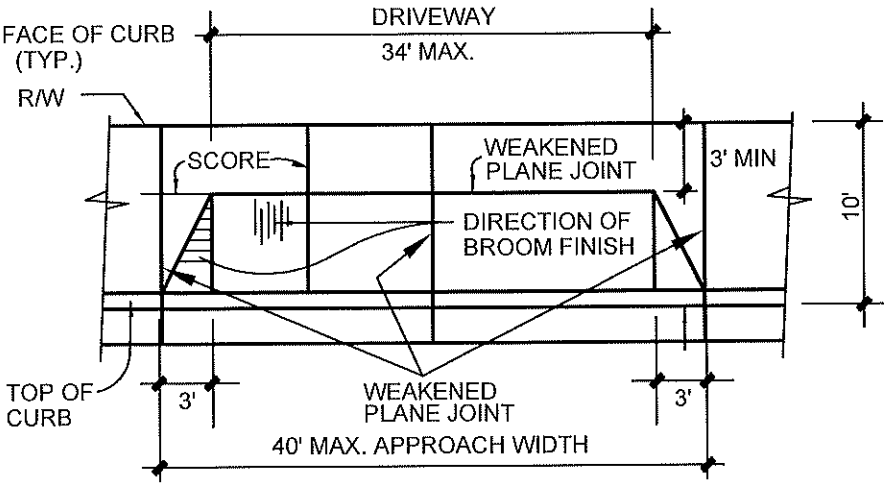
NOTES:

1. MATCH WIDTH AND SCORING PATTERN WITH ADJACENT EXISTING SIDEWALK.
2. TOP 6" OF NATIVE SUBGRADE SHALL BE COMPACTED TO 90% OR MOISTENED IF UNDISTURBED. SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER.
3. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS: 3/4" MAXIMUM AGGREGATE SIZE, 4" MAXIMUM SLUMP AT TIME OF PLACEMENT WITH 1/2 LB. LAMPBLACK PER YARD.
4. THE SURFACE SHALL BE FREE OF BLEMISHES OR IRREGULARITIES AND NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE.
5. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ.FT. CURING COMPOUND SHALL BE CLEAR, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
6. ALL EXPOSED CORNERS SHALL HAVE 1/2" RADIUS.
7. CONFORM OF REPLACEMENT SIDEWALK SHALL BE SAW CUT AT A SCORE LINE OR WEAKENED PLAN JOINT.
8. TWO #4 REBARS ONE-FOOT LONG SHALL BE DRILLED INTO EACH JOINT WITHIN EXISTING SIDEWALK.

CITY OF TRACY

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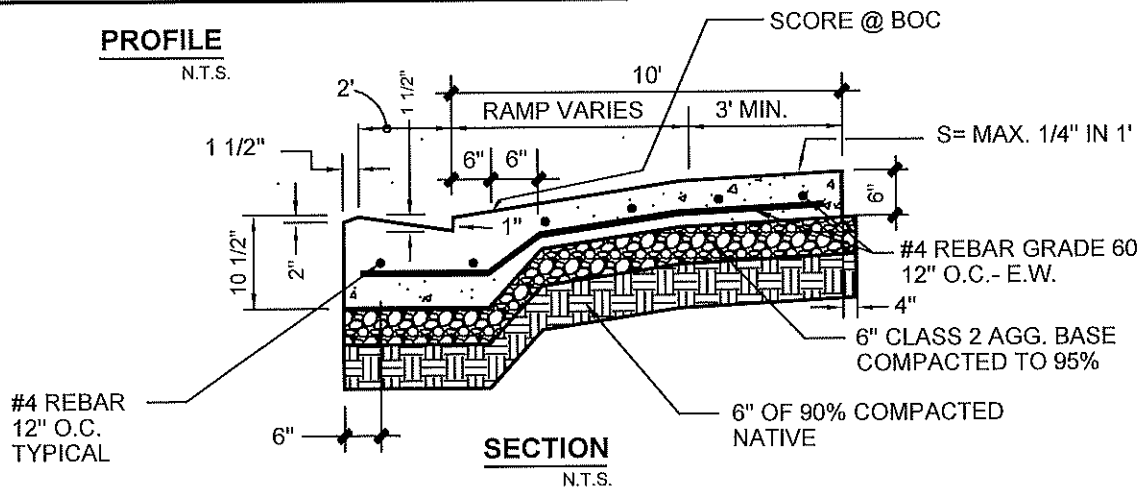
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 129
Res No. 2020-	DATE: February 18, 2020	**SIDEWALK REPAIR**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PLAN
N.T.S.



PROFILE
N.T.S.



SECTION
N.T.S.

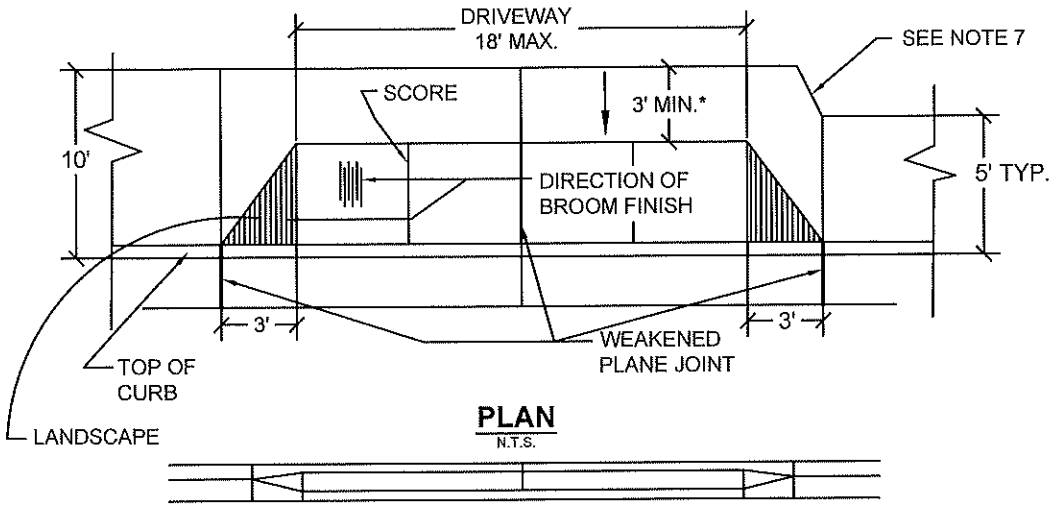
NOTES:

1. COMMERCIAL DRIVEWAY APPROACH SHALL NOT EXCEED 34'
2. TOP 6" OF NATIVE SUBGRADE SHALL BE COMPACTED TO 90% OR MOISTENED IF UNDISTURBED. SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER.
3. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS: 3/4" MAXIMUM AGGREGATE SIZE, 4" MAXIMUM SLUMP AT TIME OF PLACEMENT WITH 1/2 LB LAMPBLACK PER YARD.
4. SIDEWALK, GUTTERS, ISLANDS AND DRIVEWAY SHALL HAVE SURFACE FREE OF BLEMISHES OR IRREGULARITIES. THE SURFACE SHALL NOT VARY MORE THAN 1/4" (S.P.126) FROM A 10' STRAIGHT EDGE EXCEPT AT GRADE CHANGES.
5. ALL EXPOSED CORNERS SHALL HAVE A 1/2" RADIUS.
6. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ.FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
7. WEAKENED PLANE JOINT SPACING NOT TO EXCEED 8'.
8. IN EXISTING STREETS, ASPHALT SHALL BE SAW CUT ALONG LIMITS **APPROVED BY THE INSPECTOR**, 12" MINIMUM FROM LIP OF GUTTER. MATCH AC WITH EXISTING PLUS 1" AC OVER 12" AB.

CITY OF TRACY

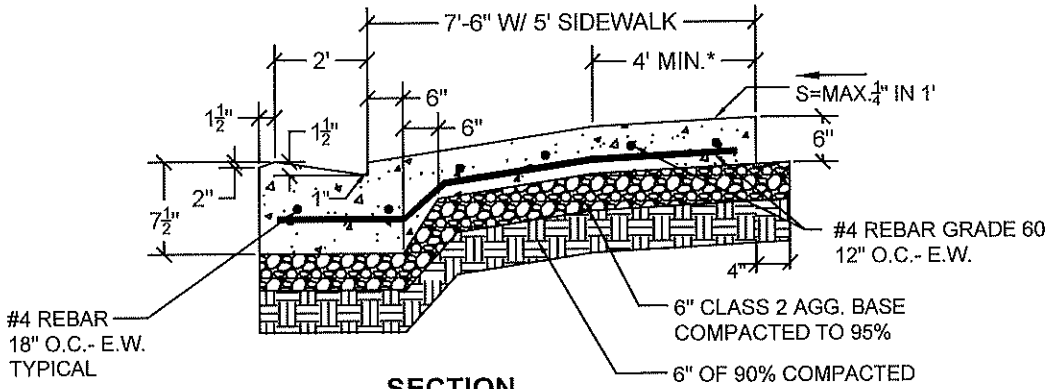
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **130**
Res No. 2020-	DATE: February 18, 2020	**COMMERCIAL DRIVEWAY APPROACH**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PLAN
N.T.S.

PROFILE
N.T.S.



SECTION
N.T.S.

NOTES:

1. TOP 6" OF NATIVE SUBGRADE SHALL BE COMPACTED TO 90% OR MOISTENED IF UNDISTURBED. SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER.

2. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS: 3/4" MAXIMUM AGGREGATE SIZE, 4" MAXIMUM SLUMP AT TIME OF PLACEMENT WITH 1/2 LB LAMPBLACK PER YARD.

3. SIDEWALK, GUTTERS, ISLANDS AND DRIVEWAYS SHALL HAVE SURFACE FREE OF BLEMISHES OR IRREGULARITIES. THE SURFACE SHALL NOT VARY MORE THAN 1/4" (S.P. 126) FROM A 10' STRAIGHT EDGE EXCEPT AT GRADE CHANGE.

4. ALL EXPOSED CORNERS SHALL HAVE A 1/2" RADIUS.

5. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ. FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.

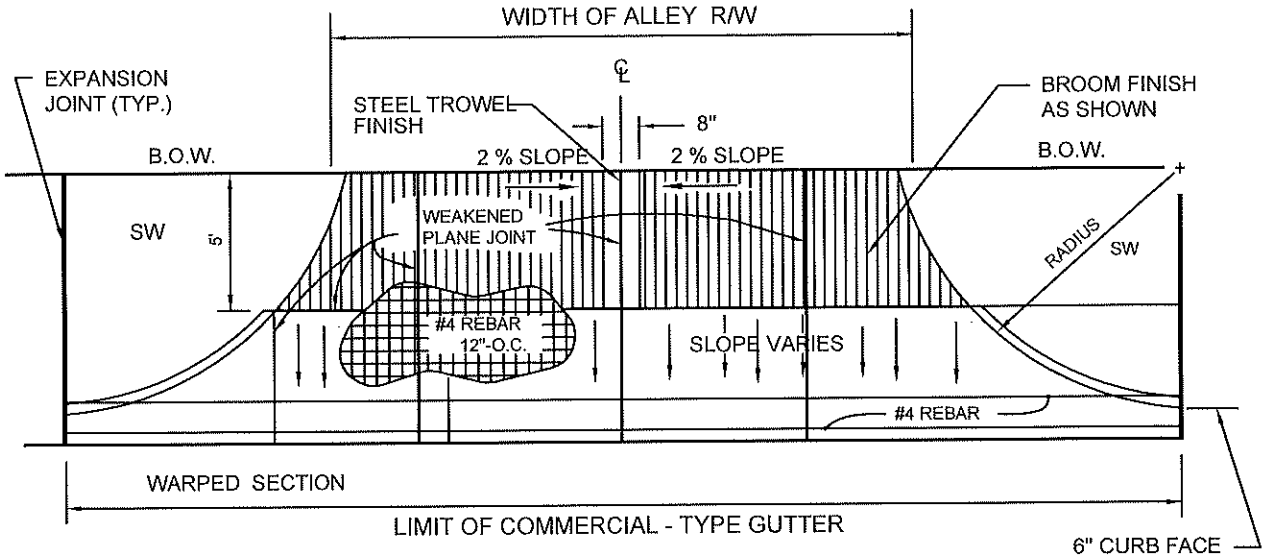
6. IN EXISTING STREETS, ASPHALT SHALL BE SAW CUT ALONG LIMITS **APPROVED BY THE INSPECTOR**, 12" MINIMUM FROM LIP OF GUTTER. REPLACE A.C. WITH 3" AC OVER 12" AB.

7. A MINIMUM 3' WIDE SIDEWALK AREA WITH A MAXIMUM CROSS SLOPE OF 1/4" IN ONE FOOT SHALL BE INSTALLED AS A TRANSITION ADJACENT TO AND BEHIND RESIDENTIAL DRIVEWAY TO COMPLY WITH TITLE 24 ACCCESSIBILITY STANDARDS OF THE CALIFORNIA CODE OF REGULATIONS.

CITY OF TRACY

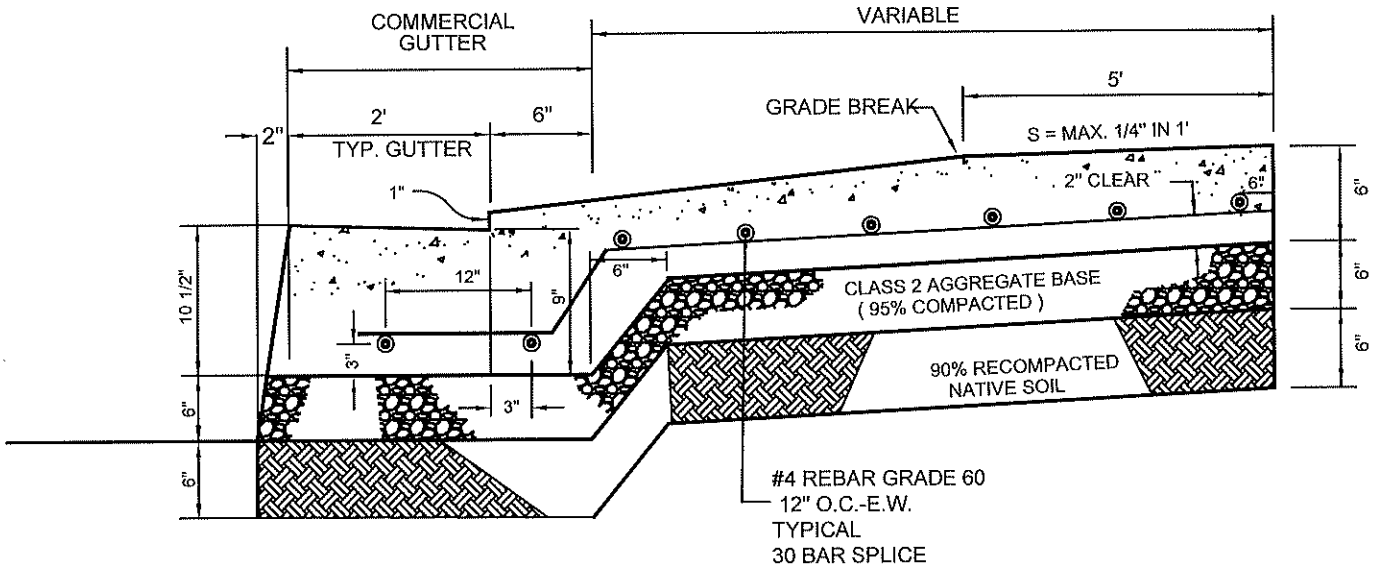
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **131**
Res No. 2020-	DATE: February 18, 2020	**RESIDENTIAL DRIVEWAY APPROACH**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PLAN

N.T.S



CROSS SECTION

N.T.S

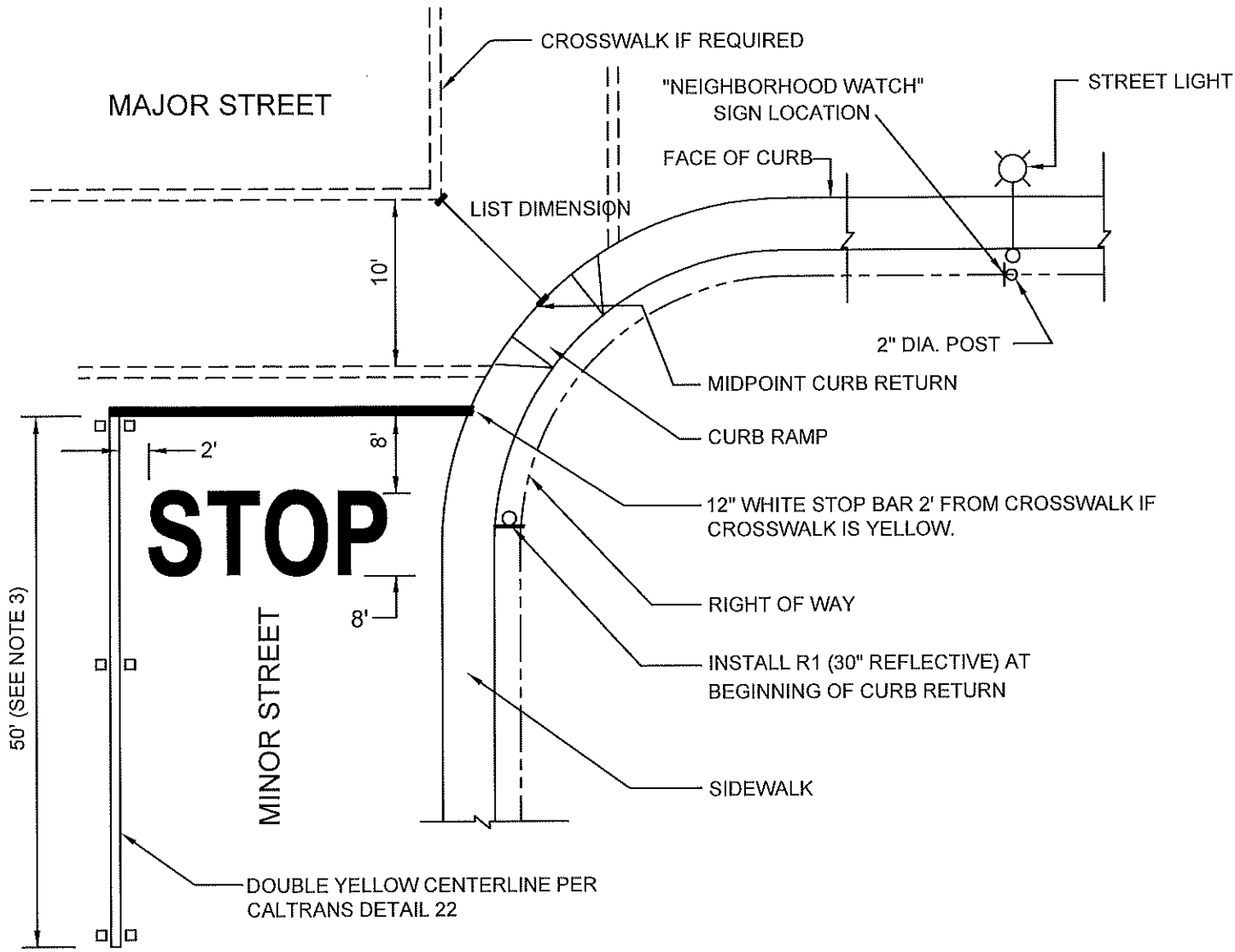
NOTES:

1. CONCRETE SHALL BE FIVE SACK CLASS "B", 2500 PSI AT 28 DAYS: 3/4" MAXIMUM AGGREGATE SIZE, 4" MAXIMUM SLUMP AT TIME OF PLACEMENT WITH 1/2 LB. LAMPBLACK PER YARD.
2. TOP 6" OF NATIVE SUBGRADE SHALL BE COMPACTED TO 90% OR MOISTENED IF UNDISTURBED. SUBGRADE COMPACTION SHALL BE APPROVED BY THE CITY ENGINEER.
3. CONCRETE SHALL HAVE A LIGHT BROOM FINISH AND AN IMPERVIOUS MEMBRANE OR SPRAY CURING COMPOUND APPLIED AT 1 GAL./150 SQ. FT. CURING COMPOUND SHALL BE CLEAR PIGMENTED, TYPE 2, CONFORMING TO ASTM C309, CLASS B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
4. ALL SCORE LINES AND GRADE SHALL BE REVIEWED AND APPROVED BY THE CITY ENGINEER.
5. RADIUS EQUALS DISTANCE FROM FACE OF CURB TO BACK OF SIDEWALK OR FROM FACE OF CURB TO PROPERTY LINE IF NO SIDEWALK EXISTS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 132
Res No. 2020-	DATE: February 18, 2020	
Rev: Leisser M.	Rev: Thomas W.	**ALLEY APPROACH**
Rev:	Rev:	



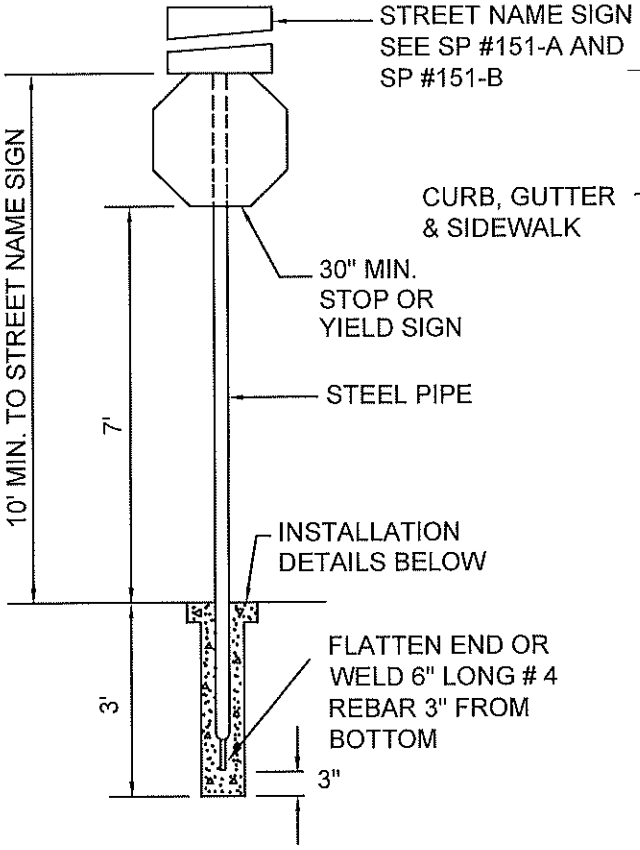
NOTES:

1. PAVEMENT MARKING SHALL CONFORM TO THE CURRENT STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SPECIFICATION.
2. STOP LEGEND, LIMIT LINE, CROSSWALK, AND CENTERLINE SHALL BE PLACED WITH THERMOPLASTIC.
3. AT INTERSECTIONS OF TWO MAJOR STREETS, DOUBLE YELLOW CENTERLINE SHALL EXTEND 100 FEET.
4. " NEIGHBORHOOD WATCH " SIGN SHALL BE INSTALLED ON THE RIGHT SIDE OF ROADWAY NEAR ENTRANCE TO NEIGHBORHOOD WATCH AREA ON STREETLIGHT OR ON 2" DIAMETER STEEL POST IF STREETLIGHT IS NOT AVAILABLE.
5. WHEN CONCRETE IS USED AS A DECORATIVE CROSSWALK, THERMOPLASTIC STRIPING SHALL BE PLACED ON THE ASPHALT CONCRETE IMMEDIATELY ADJACENT TO THE CONCRETE CROSSWALK, NOT ON THE CONCRETE SURFACE.

CITY OF TRACY

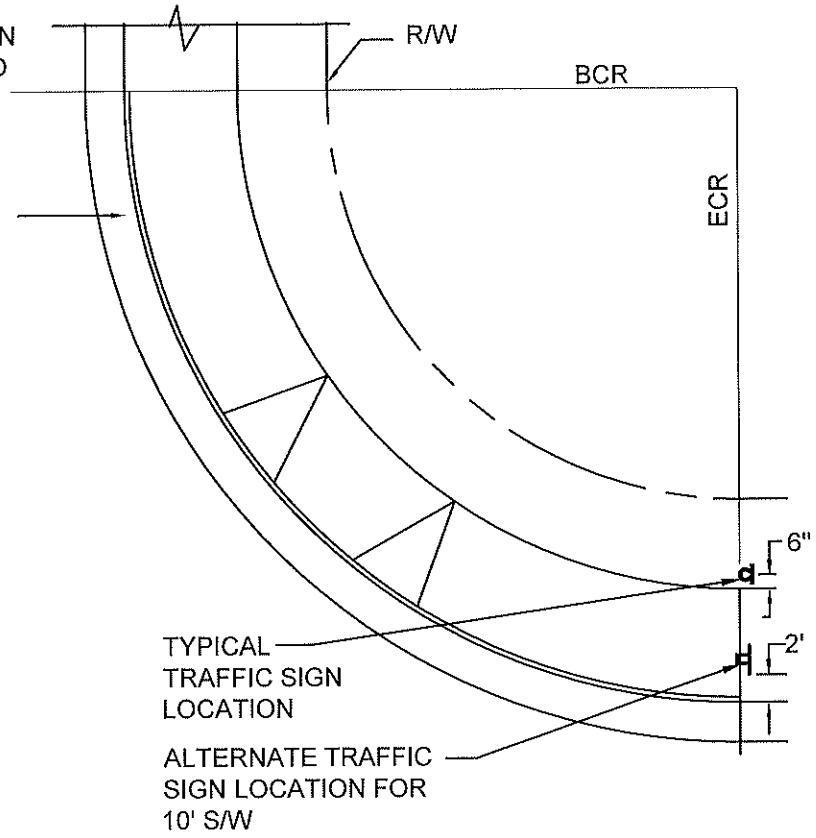
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 133
Res No. 2020-	DATE: February 18, 2020	STOP INTERSECTION
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



POLE DETAIL

N.T.S.

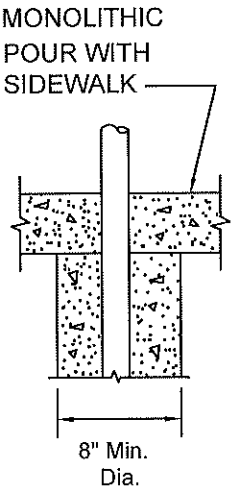


SIGN POST LOCATION

N.T.S.

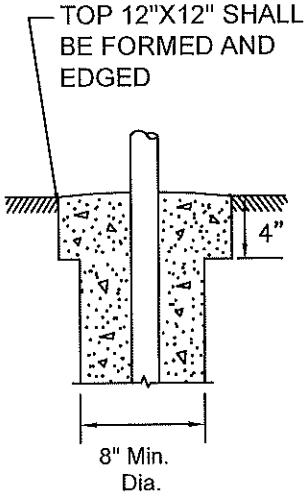
NOTES:

1. CONCRETE SHALL BE CLASS B (2500 PSI), 3/4" MAX. AGGREGATE SIZE WITH 1/2 LB. LAMPBLACK PER YARD.
2. POST SHALL BE 2" STD. GALVANIZED STEEL PIPE AND SHALL BE SET PLUMB.
3. REGULATORY SIGNS SHALL BE ATTACHED TO POST WITH SINGLE BRACKET. CLAMP ON "U" BRACKET WITH HAWKINS M2G-VPB VANDAL PROOF SCREW.
4. SIGNS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
5. DRILL 3" DIA. HOLE IN CONCRETE IF SIGN INSTALLED AFTER SIDEWALK HAS BEEN CONSTRUCTED.
6. AT T- INTERSECTIONS, SIGNS SHALL BE PLACED AT THE CENTER POINT.
7. ON ALL SIGNS PROVIDE PROTECTIVE OVERLAY FILM 3M SERIES 1160.



SIDEWALK INSTALLATION

N.T.S.



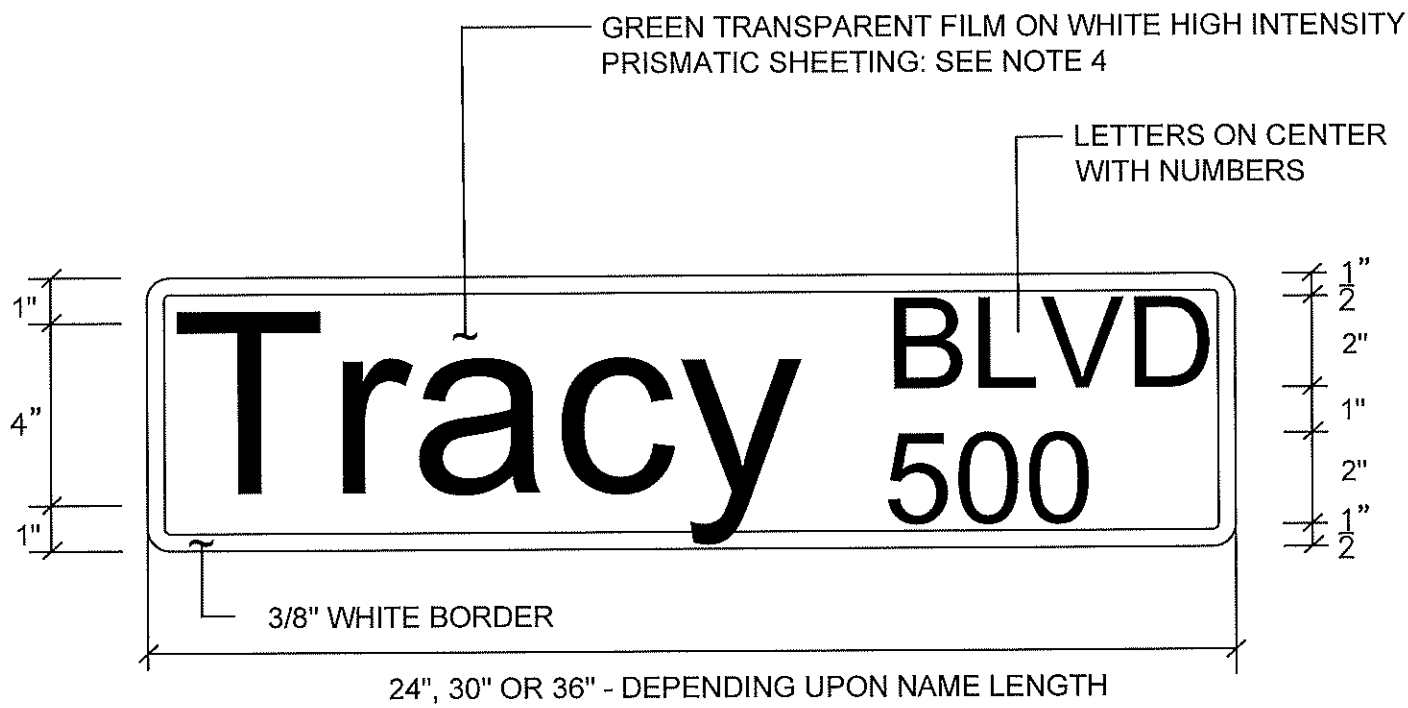
BACK OF WALK INSTALLATION

N.T.S.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 134
Res No. 2020-	DATE: February 18, 2020	SIGN POST INSTALLATION
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



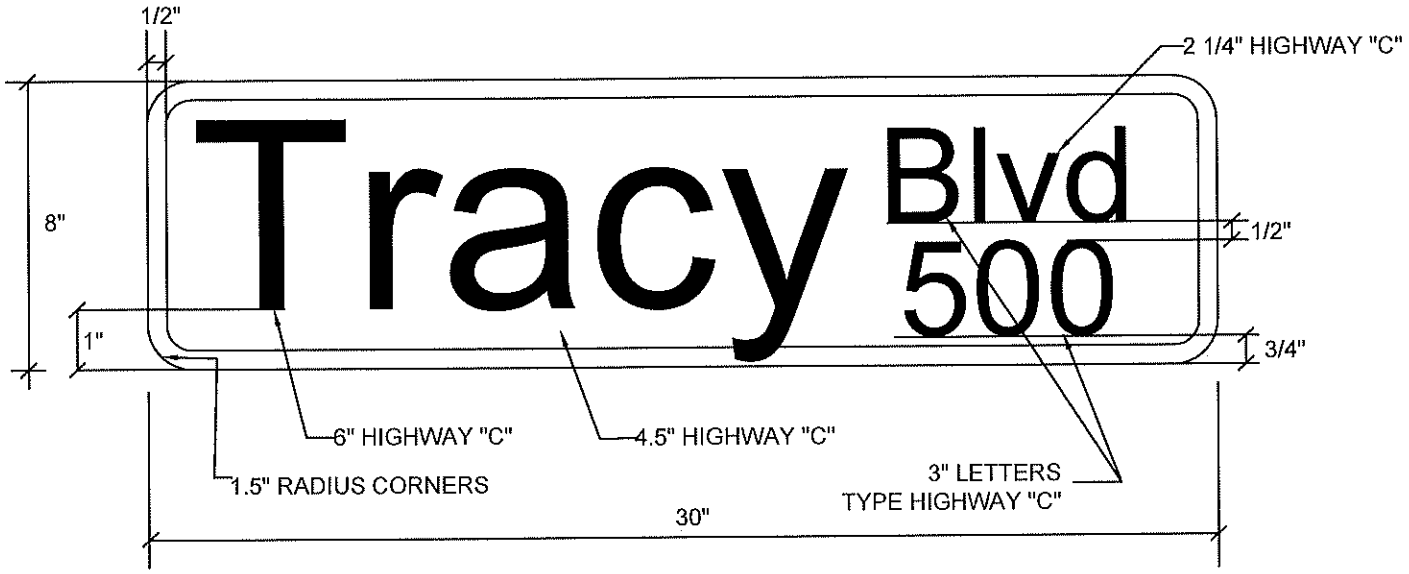
NOTES:

1. STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS, AND AS SHOWN ON THE PLANS. INSTALL ON ELECTROLIER WHERE AVAILABLE.
2. SIGN LOCATION SHALL BE AS FOLLOWS:
   ON RESIDENTIAL STREETS: N.E. OR S.E. CORNER.
   ON ARTERIALS: ON BOTH SIDES OF THE STREET.
3. SIGN SHALL HAVE REFLECTIVE GREEN BACKGROUND
4. FOR ROADS WITH SPEED LIMITS WITH 25 MPH OR LESS, STREET NAME SIGNS SHALL BE COMPOSED OF INITIAL UPPER CASE LETTERS 4" AND LOWER CASE LETTERS 3".
5. BLOCK LETTERS OR NUMBERS SHALL BE 2", IN HIGHWAY "C" FONT. SPACE BETWEEN LETTERS SHALL NOT EXCEED 1/2 IN.
6. 3-M GREEN EC FILM SERIES 1177 OR EQUAL LAID OVER 3-M HIGH INTENSITY PRISMATIC WHITE SHEETING SERIES 3930 OR EQUAL, ON 0.125" THICKNESS ALUMINUM SIGN BLANK, FLAT BLADE (NOT EXTRUDED).
7. STREET NAME SHALL BE ON BOTH SIDES OF THE SIGN. REVERSE ARROW AS NEEDED.
8. POST MOUNTING HARDWARE: CROSSPIECE AND CAP SHALL BE HAWKINS 809F BOLT THRU.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 135
Res No. 2020-	DATE: February 18, 2020	**STREET NAME SIGNS 25 MPH OR LESS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



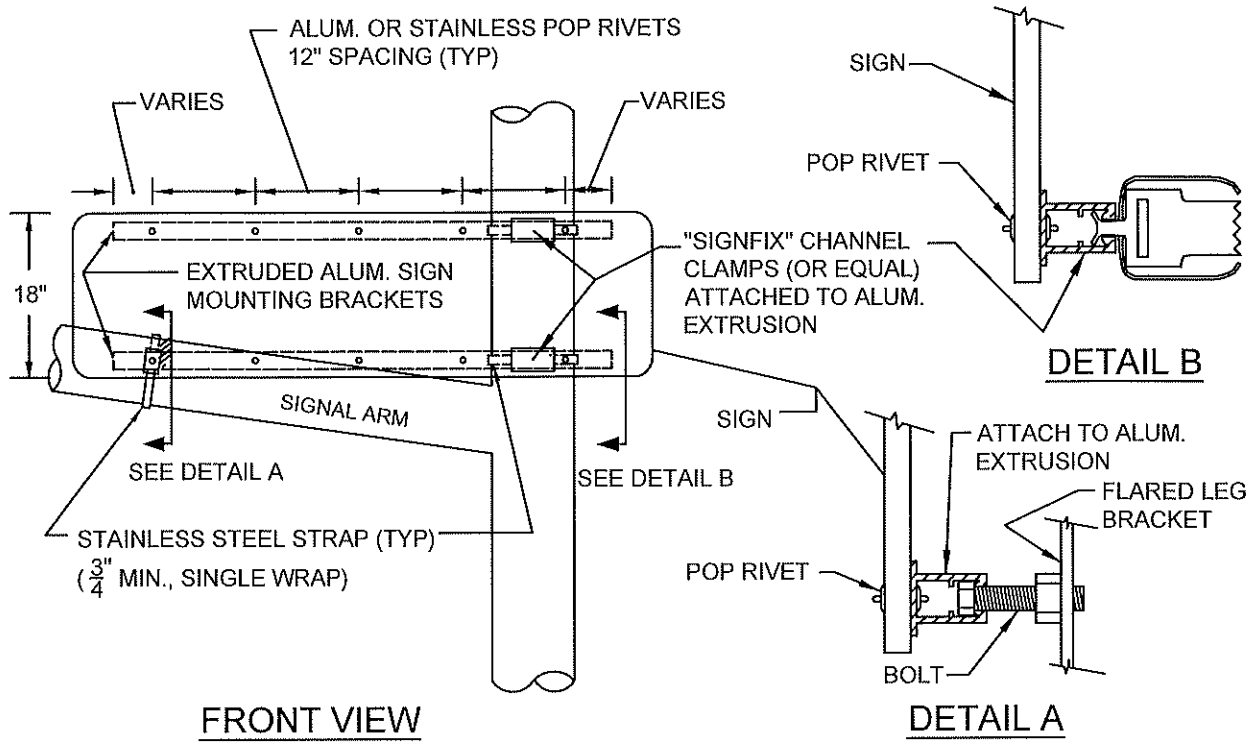
NOTES:

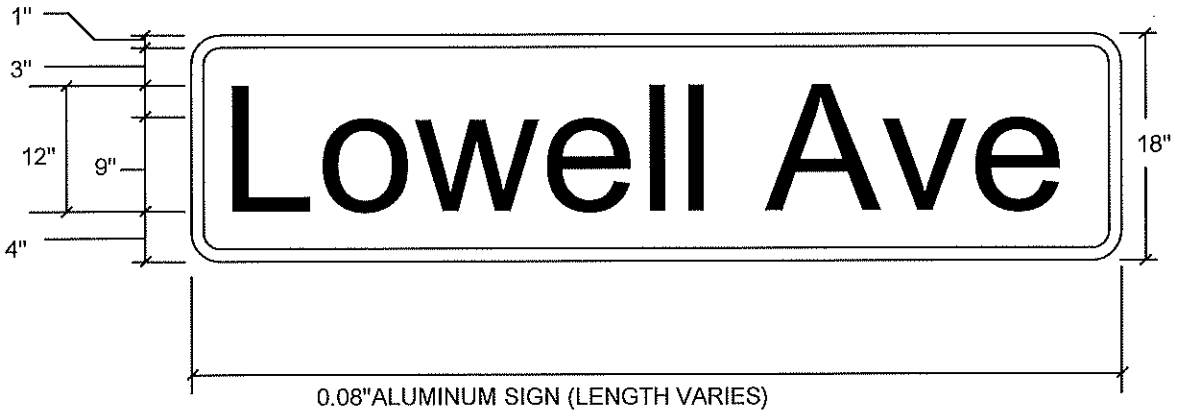
1. STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS, AND AS SHOWN ON THE PLANS. INSTALL ON ELECTROLIER WHERE AVAILABLE.
2. SIGN LOCATION SHALL BE AS FOLLOWS:
   ON RESIDENTIAL STREETS: N.E. OR S.E. CORNER.
   ON ARTERIALS: ON BOTH SIDES OF THE STREET.
3. SIGN SHALL HAVE REFLECTIVE GREEN BACKGROUND
4. FOR ROADS WITH SPEED LIMITS WITH 25 MPH OR GREATER, STREET NAME SIGNS SHALL BE COMPOSED OF INITIAL UPPER CASE LETTERS 6" AND LOWER CASE LETTERS 4 1/2".
5. BLOCK LETTERS OR NUMBERS SHALL BE 2 1/4", IN HIGHWAY "C" FONT. SPACE BETWEEN LETTERS SHALL NOT EXCEED 1/2 IN.
6. 3-M GREEN EC FILM SERIES 1177 OR EQUAL LAID OVER 3-M HIGH INTENSITY PRISMATIC WHITE SHEETING SERIES 3930 OR EQUAL, ON 0.125" THICKNESS ALUMINUM SIGN BLANK, FLAT BLADE (NOT EXTRUDED).
7. STREET NAME SHALL BE ON BOTH SIDES OF THE SIGN. REVERSE ARROW AS NEEDED.
8. POST MOUNTING HARDWARE: CROSSPIECE AND CAP SHALL BE HAWKINS 809F BOLT THRU.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 136
Res No. 2020-	DATE: February 18, 2020	**STREET NAME SIGN GREATER THAN 25 MPH**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





NOTES:

1. SEE NOTES, SHEET 137 SHEET 2 OF 2

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 137 SHEET 1 OF 2
Res No. 2020-	DATE: February 18, 2020	OVERHEAD STREET NAME SIGNS
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

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. HPN-053) OR LARGER ALUMINUM EXTRUSIONS (SIGNFIX PART NO. HPN-055). EXTRUDED ALUMINUM MOUNTING BRACKETS MUST BE BY SIGNFIX OR MUST BE DIRECTLY ADAPTABLE TO UNIVERSAL SIGNFIX CHANNEL CLAMPS E.P. (PART NO. HPN-034EP) 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.

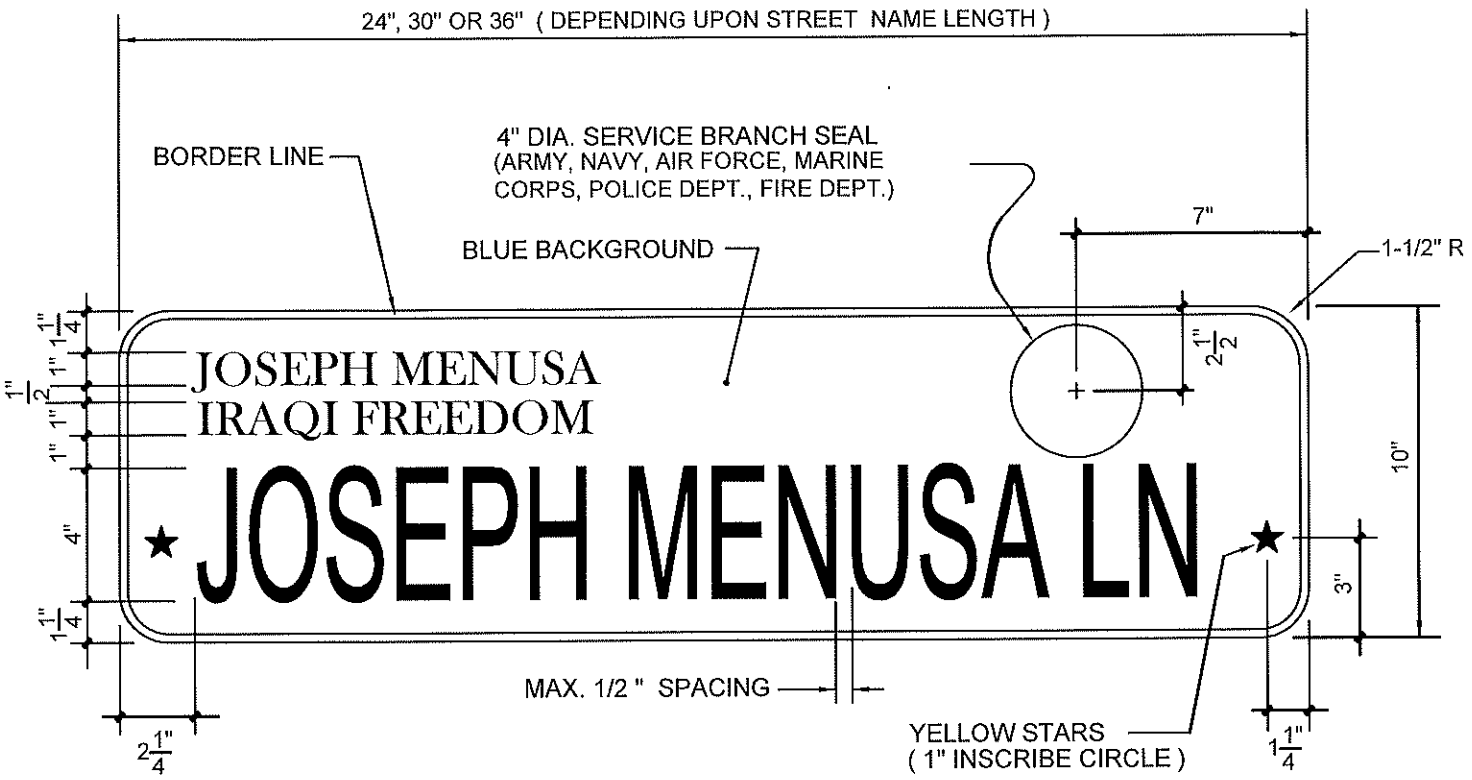
3. SINGLE STREET NAME SIGN SHALL HAVE NAME AND SUFFIX CENTERED IN SIGN. SIGNS SHALL BE SINGLE FACE AND FABRICATED ON ALUMINUM BLANKS 0.063-INCH THICKNESS. BLANK SHALL BE 18-INCHES IN WIDTH AND VARY IN LENGTH DEPENDING ON THE NUMBER OF LETTERS OF THE STREET (MIN. OF 6-FEET IN LENGTH). SIGN BLANK SHALL HAVE BLUE BACKGROUND USING 3M DIAMOND (CUBE) GRADE REFLECTIVE VINYL SHEETING. UPPER CASE LETTERS SHALL BE 12" AND LOWER CASE LETTERS SHALL BE 9". ALL LETTERS SHALL BE HIGHWAY FONT "D". SIGN SHALL HAVE 1" WHITE BORDER COVERING THE ENTIRE EDGE OF SIGN BLANK. CORNERS SHALL BE NEATLY ROUNDED TO A 2.25" RADIUS. WORDS SHALL BE SPACED MINIMUM OF 6" AND NOT TO EXCEED 10" APART AND THERE SHALL BE 3" OF SPACING BETWEEN BORDER AND SIDES OF STREET NAME. LETTERS SHALL BE SPACED TO MAXIMUM OF 1.5".

4. ALL SIGNS SHALL BE APPROVED FOR CONFORMANCE BY THE CITY TRAFFIC ENGINEERING STAFF PRIOR TO INSTALLATION.

CITY OF TRACY

TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 137 SHEET 2 OF 2
Res No. 2020-	DATE:	**NOTES FOR TRAFFIC SIGNAL-ARM SIGN MOUNTING**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



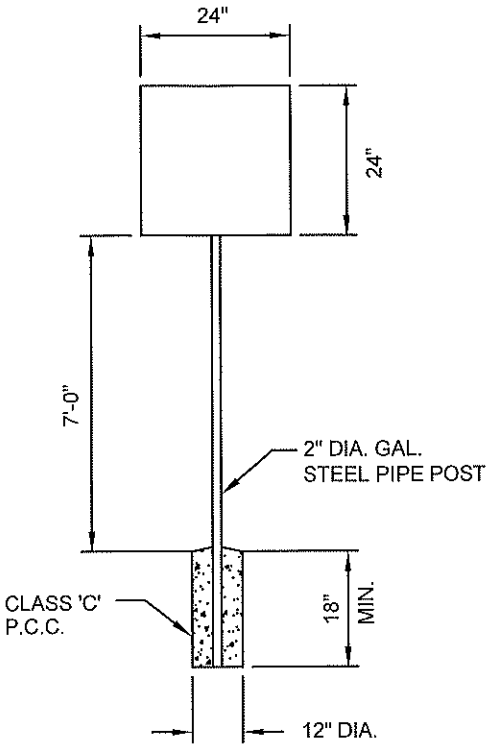
NOTES:

1. STREET NAME PLATE SHALL BE IN ALUMINUM SIGN MATERIAL - 0.08 THICK.
2. BACKGROUND SHALL BE BLUE.
3. OUTSIDE BORDER SHALL BE YELLOW WITH 1/4" WIDTH.
4. ALL LETTERING, SERVICE BRANCH SEAL, BACKGROUND AND YELLOW STARS SHALL BE MADE OF REFLECTIVE ENGINEER GRADE MATERIAL.
5. STREET NAME - HIGHWAY "B" FONT - WHITE. SPACE BETWEEN LETTERS SHALL SHALL NOT EXCEED 1/2".
6. FONT ABOVE STREET NAME - WHITE " BASKERVILLE OLD" OR SIMILAR.
7. BRANCH SEAL (ARMY, NAVY, AIR FORCE, MARINE) SHALL BE 4" DIAMETER.
8. YELLOW STARS AT BOTH ENDS - 1" DIAMETER.
9. STREET NAME SIGN SHALL BE INSTALLEED AT ALL INTERSECTIONS AND AS SHOWN ON THE PLANS. INSTALL ON ELCTROLIER WHERE AVAILABLE.
10. SIGN LOCATION SHALL BE AS FOLLOWS;
    ON RESIDENTIAL STREETS: N.E. OR S.E. CORNER
    ON ARTERIALS; ON BOTH SIDES OF THE STREET
11. POST MOUNTING HARDWARE; CROSSPIECE AND CAP SHALL BE HAWKINS 809F BOLT THRU.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 138
Res No. 2020-	DATE: February 18, 2020	VETERANS STREET NAME SIGN
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



POLE DETAIL
N.T.S.



SIGN LETTERING DETAIL
N.T.S.

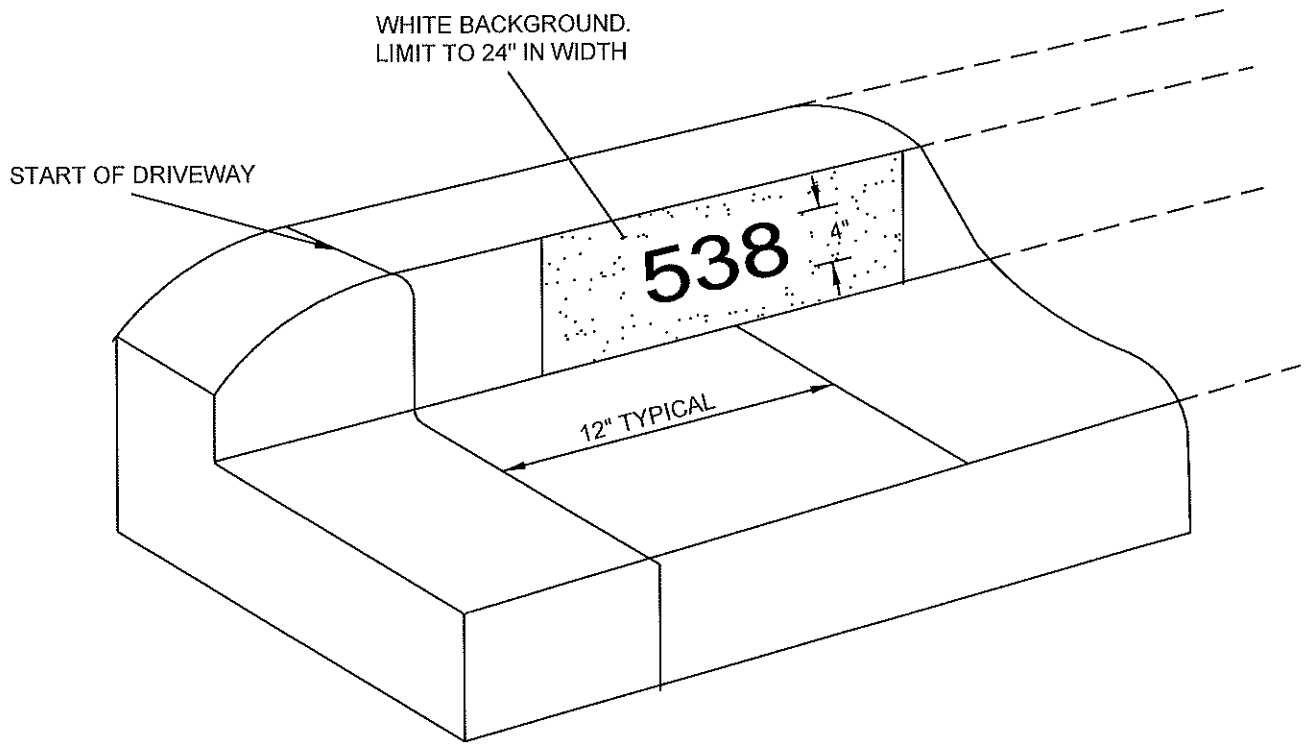
NOTES:

1. SIGNS SHALL BE MADE ON FLAT ALUMINUM PLATE WITH A MINIMUM THICKNESS OF 0.080", WITH BLACK LETTERS ON A WHITE BACKGROUND.
2. 3" HIGH LETTERS MESSAGE SHALL INDICATE LIMITS OF ENFORCEMENT SUCH AS " NO PARKING " " NO TRESPASSING OR LOITERING ", " TENANT PARKING ONLY " , ETC.
3. SIGNS SHALL BE INSTALLED BY PROPERTY OWNER, AT EACH PARKING LOT ENTRANCE.
4. PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE SIGN.
5. SIGN SHALL BE LOCATED AND ORIENTED SO AS NOT TO CONFLICT WITH PEDESTRIAN TRAFFIC.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **139**
Res No. 2020-	DATE: February 18, 2020	**POSTED PROPERTY NO PARKING OR LOITERING**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



CURB PAINTING STANDARD

N.T.S.

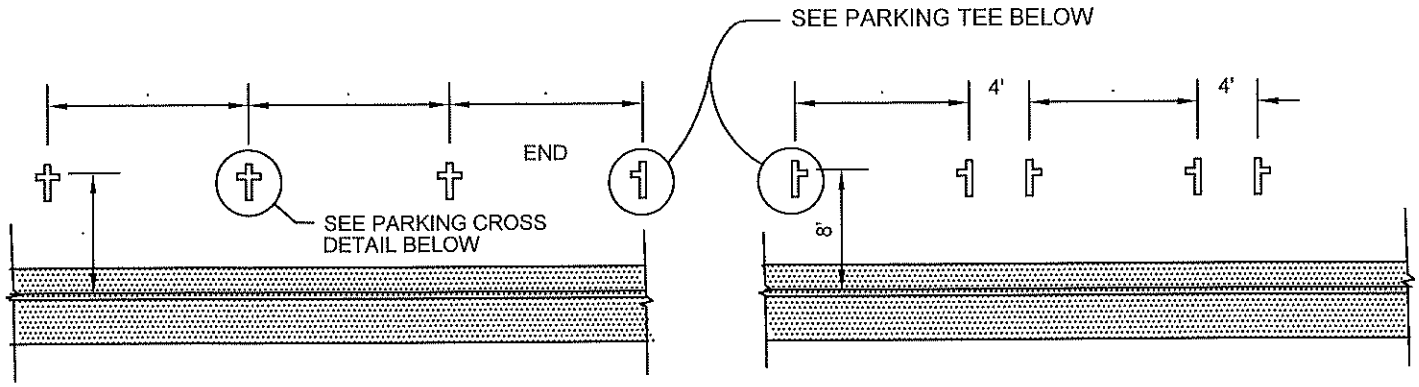
NOTES:

1. BUILDING NUMBERS MAY BE PAINTED ON CURB SURFACES IN ACCORDANCE WITH CITY COUNCIL POLICY AND THIS STANDARD DRAWING.
2. NUMBERS SHALL BE PAINTED WITH BLACK 4" BLOCK LETTERS HAVING 1/2" STROKE ON A WHITE REFLECTORIZED BACKGROUND.
3. NUMBERS SHALL BE PAINTED WITHIN 2 FT. OF THE DRIVEWAY TO THE PROPERTY.
4. AN APPROVED ENCROACHMENT PERMIT FROM THE OFFICE OF THE CITY ENGINEER SHALL BE OBTAINED BEFORE CURBS MAY BE PAINTED.
5. PAINT MUST BE APPROVED BY THE CITY ENGINEER.
6. PAINTING CONTRACTOR MUST HAVE A VALID BUSINESS LICENSE IN THE CITY OF TRACY.
7. A SPECIFIED FEE SHALL BE CHARGED FOR WORK PERFORMED (NO DONATIONS).
8. APPROVAL IN WRITING OF THE PROPERTY OWNER PRIOR TO PAINTING SHALL BE SUBMITTED TO THE CITY ENGINEER.
9. NUMBER SHALL BE CENTERED WITHIN WHITE BACKGROUND.

CITY OF TRACY

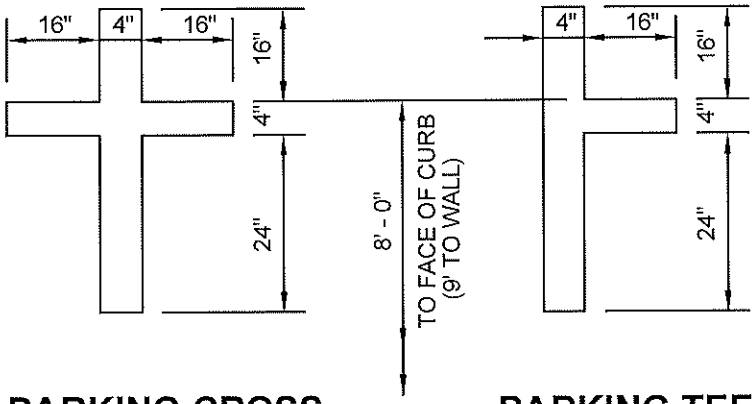
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 140
Res No. 2020-	DATE: February 18, 2020	CURB NUMBERS
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



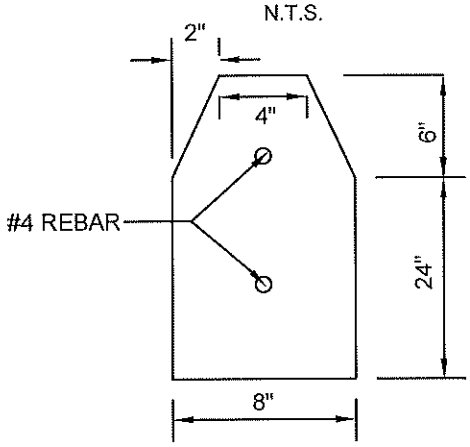
INTERIOR & END
N.T.S.

PAIRED PARKING
N.T.S.

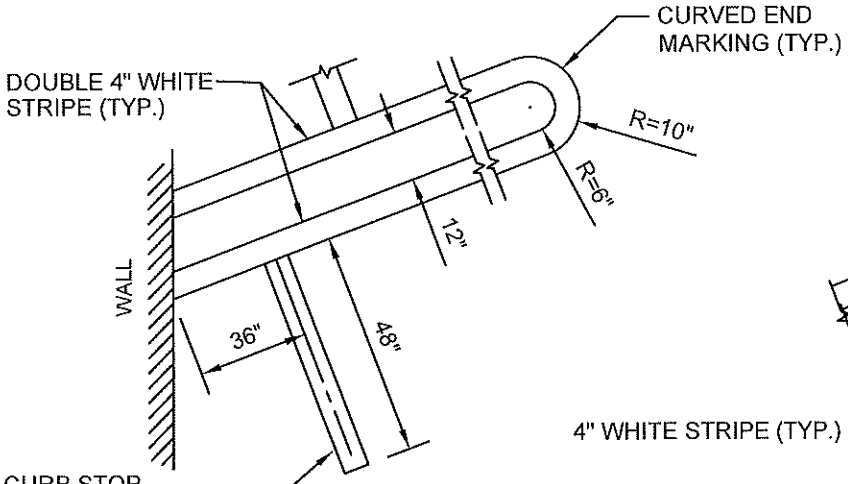


PARKING CROSS
N.T.S.

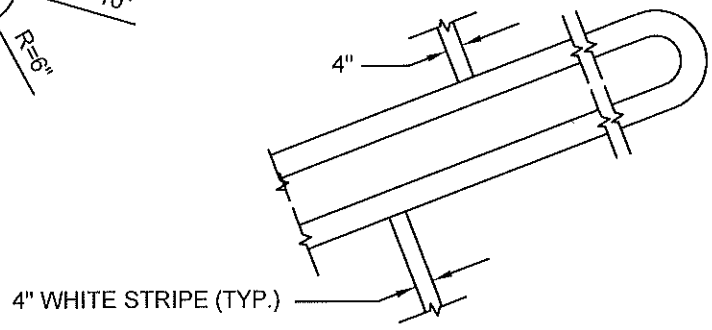
PARKING TEE
N.T.S.



CURB STOP
N.T.S.



DETAIL " A "
N.T.S.

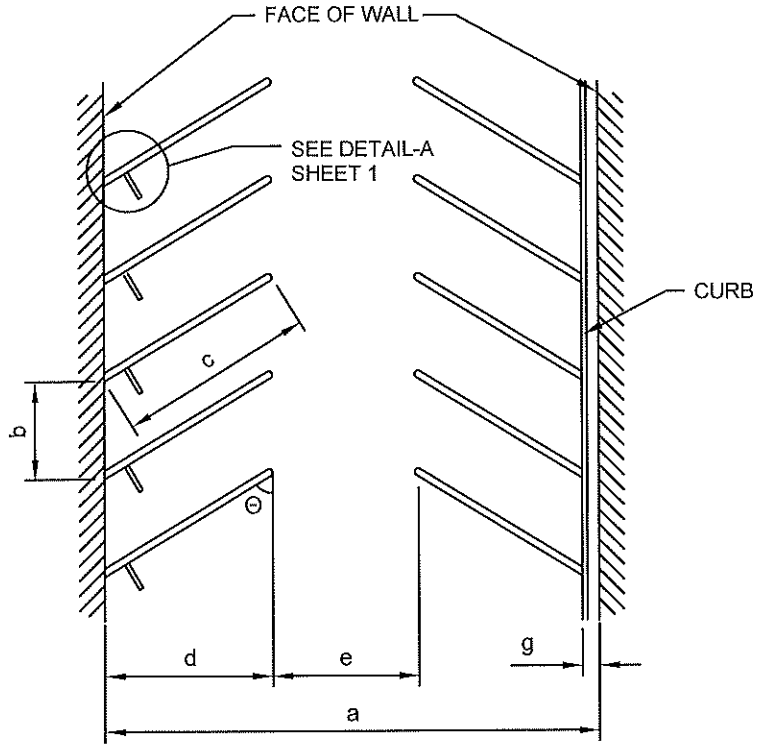


DETAIL " B "
N.T.S.

CITY OF TRACY

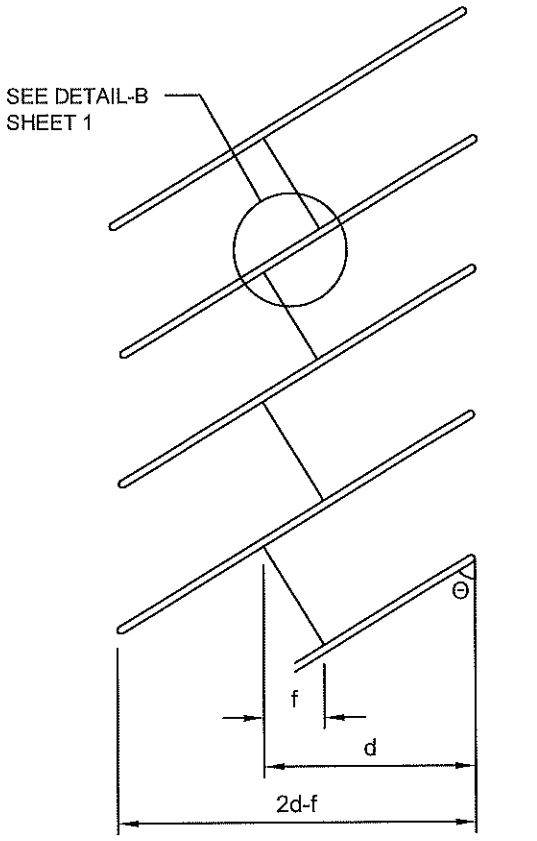
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63178		STANDARD PLAN No. **141** SHEET 1 OF 3
Res No. 2020-	DATE: February 18, 2020	**PARKING SPACES**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



WALL TO WALL MODULE

N.T.S.



INTERLOCKING MODULE

ONLY TO BE USED WITH BUMPER TO BUMPER DESIGN

N.T.S.

DESIGN STANDARD

Parking Angle Θ	Stall Type	a	b	c	d	e	f	g
90°	Standard	63'	9'	18.5'	18.5'	26'	0	2.5'
	Compact	56'	8'	16'	16'	24'	0	2.5'
75°	Standard	62'	9.3'	20'	19.5'	23'	1'	2.5'
	Compact	55'	8.2'	17.4'	17'	21'	1'	2.5'
60°	Standard	57'	10.4'	22'	19'	19'	3'	2.3'
	Compact	50.4'	9.1'	19.3'	16.7'	17'	3'	2.3'
45°	Standard	49'	12.7'	25'	17.5'	14'	4'	2'
	Compact	46'	11.3'	22.2'	16'	14'	4'	2'

NOTES:

1. PARKING ANGLE Θ IS THE ACUTE ANGLE FORMED AT THE INTERSECTION OF THE PARKING SPACE AND THE DRIVE AISLE.
2. SEE ADDITIONAL NOTES ON SHEET 3.

CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 141

SHEET 2 OF 3

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

PARKING SPACES

NOTES:

1. ACCESSIBLE PARKING SPACES SHALL COMPLY WITH TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS AND CITY STANDARDS PLANS.

2. IMPROVEMENTS REQUIRED:

   A) THE SURFACE SHALL BE PAVED WITH ASPHALTIC CONCRETE OR PORTLAND CEMENT CONCRETE DESIGN WITH A MINIMUM T.I. OF 4 AND AN R-VALUE OF 5. THE STRUCTURAL SECTION SHALL BE DESIGNED BASED ON ACTUAL T.I. AND R-VALUE.

   B) STRIPING OF PARKING SPACES, AISLES OR DRIVEWAYS AND THE DESIGN AND PLACEMENT OF DIRECTIONAL SIGNS SHALL BE PROVIDED AS NECESSARY TO ENSURE SAFE AND EFFICIENT OPERATION AND SHALL COMPLY WITH APPLICABLE CITY STANDARDS.

   C) PARKING FACILITIES INCLUDING DRIVE ISLES, PARKING STALLS, AND WALKWAYS THAT ARE REQUIRED FOR USE DURING THE HOURS OF DARKNESS, SHALL BE ILLUMINATED TO PROVIDE A MINIMUM OF 1 FT. CANDLE.

   D) PERMEABLE PAVEMENT MAY BE REQUIRED BY STORM WATER QUALITY REGULATIONS.

3. A PARKING SPACE LOCATED IN A GARAGE OR CARPORT SHALL NOT BE LESS THAN 10' WIDE BY 20' LONG; HOWEVER, WHERE GARAGES OR CARPORTS CONTAIN 3 OR MORE SPACES IN A ROW (NON-TANDEM), THE WIDTH REQUIREMENT FOR EACH SPACE MAY BE REDUCED TO 9'.

4. STALL WIDTHS SHALL BE MEASURED FROM C/L OF DOUBLE STRIPE.

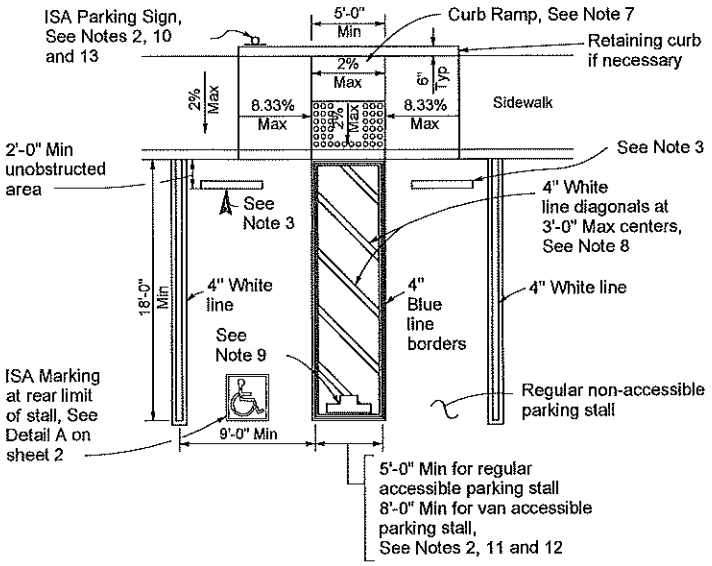
5. SINGLE STALL STRIPING SHALL ONLY BE USED TO MATCH EXISTING CONDITIONS. NEW CONSTRUCTION SHALL REQUIRE DOUBLE 4" STRIPE.

6. PRE-CAST CURB STOPS MAY BE CONSIDERED FOR USE WITH THE APPROVAL OF THE CITY ENGINEER.

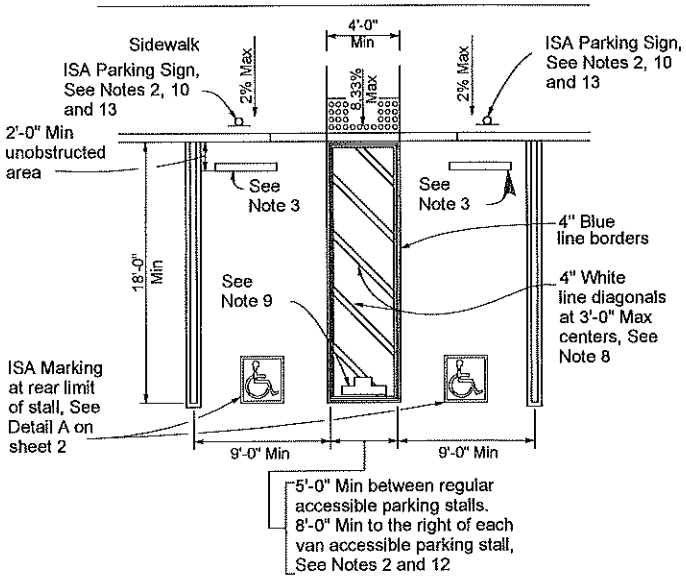
CITY OF TRACY

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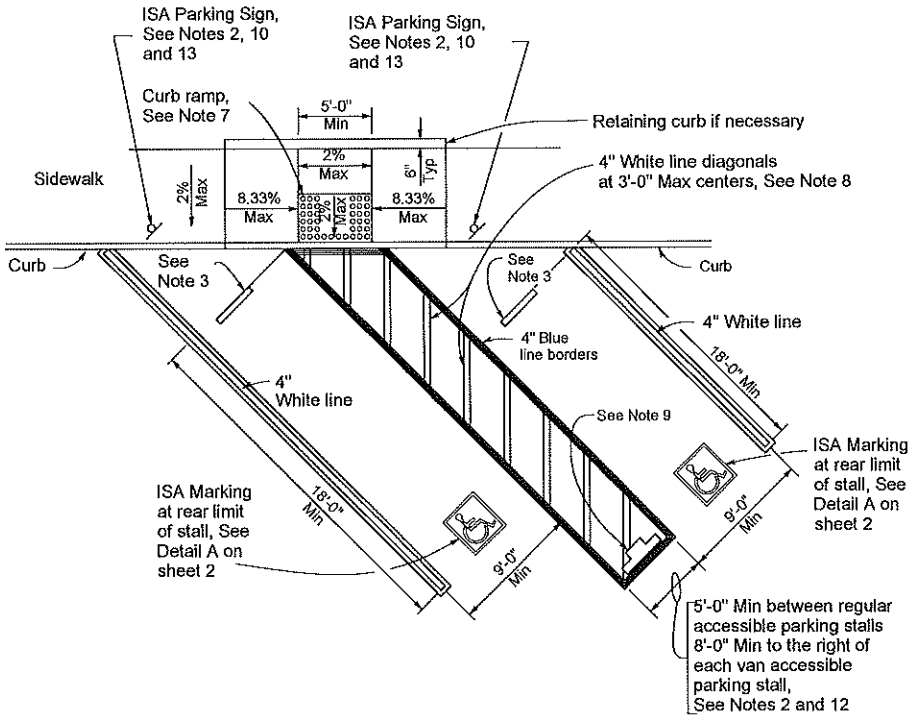
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **141** SHEET 3 OF 3
Res No. 2020-	DATE: February 18, 2020	**PARKING SPACES**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



SINGLE PARKING STALL



DOUBLE PARKING STALL



DIAGONAL DOUBLE PARKING STALLS

CITY OF TRACY

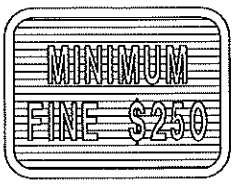
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 142 SHEET 1 OF 3
Res No. 2020-	DATE: February 18, 2020	**ACCESSIBLE PARKING OFF-STREET STALLS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

PARKING STALL LEGENDS

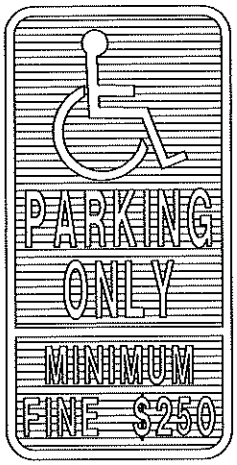


SIGN R99 (CA)

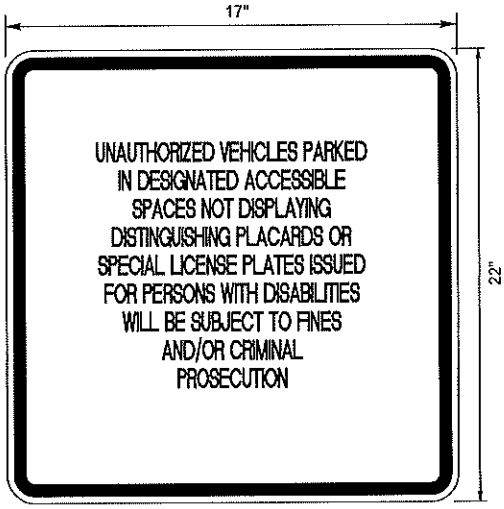


PLAQUE R99B (CA)

SIGN R99 (CA) with PLAQUE R99B (CA)
See Note 6



SIGN R99C (CA)
See Note 6



SIGN R100B (CA)
See Note 10

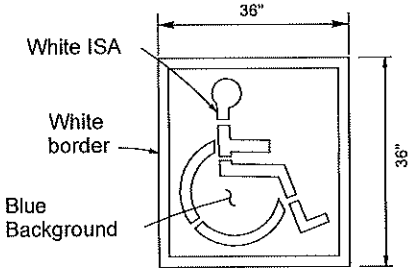


SIGN R7-8b
See Notes 2 and 6

PARKING SIGNS

NO
PARKING

NO PARKING
See Note 9



ISA MARKING
See Revised Std Plan RSP A24C

DETAIL A

PARKING LEGENDS

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 142 SHEET 2 OF 3
Res No. 2020-	DATE: February 18, 2020	**ACCESSIBLE PARKING SIGNS & LEGENDS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

NOTES:

1. Accessible parking spaces serving a particular building shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance. In parking facilities that do not serve a particular building, accessible parking shall be dispersed on the shortest accessible route of travel to an accessible pedestrian entrance of the parking facility. Parking spaces shall be so located that persons with disabilities are not compelled to wheel or walk behind parked cars other than their own.

2. One in every eight accessible off-street parking stalls, but not less than one, shall be served by an accessible aisle of 8'-0" minimum width and shall be signed van accessible. The R7-8b sign shall be mounted below the R99B (CA) plaque or the R99C (CA) sign. See sheet 2

3. In each parking stall, a curb or bumper shall be provided and located to prevent encroachment of vehicles over the required width of walkways. Parking stalls shall be so located that persons with disabilities are not compelled to wheel or walk behind parked cars other than their own.

4. Surface slopes of accessible off-street parking stalls and accessibility aisles shall be the minimum possible and shall not exceed 2 percent in any direction.

5. Table A shall be used to determine the required number of accessible parking stalls in each parking lot or garage.

TABLE A

Total Number of Parking Spaces or Stalls	Minimum Number of Disabled Accessible Parking Spaces or Stalls
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1000	2 percent of total
Greater than 1000	20 plus 1 for each 100 or fraction thereof over 1001

6. Where Plaque R99B (CA), Sign R99C (CA) or Sign R7-8b are installed, the bottom of the sign or plaque panel shall be a minimum of 7'-0" above the surrounding surface.

7. Curb ramps shall conform to the details shown on City Standard Plan 130.

8. Blue paint, instead of white shall be used for marking accessibility aisle diagonals in areas such as concrete where white markings are not as visible.

9. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high and located so that it is visible to traffic enforcement officials at rear of aisle.

10 A R100B (CA) sign with 1" lettering shall be posted in a conspicuous place at each entrance to off-street parking facilities or immediately adjacent to and visible from each stall. The sign shall include the telephone number of the local traffic law enforcement agency.

11. Where a single (non-van) accessible parking space is provided, the loading and unloading access aisle shall be on the passenger side of the vehicle as the vehicle is going forward into the parking space.

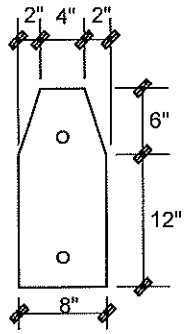
12. Where a van accessible parking space is provided, the loading and unloading access aisle shall be 8'-0" wide minimum, and shall be on the passenger side of the vehicle as the vehicle is going forward into the parking space.

13. Accessible Parking Only Sign shall be Sign R99C (CA) or Sign R99 (CA) with Plaque R99B (CA).

14. Accessible on-street parking spaces shall not be smaller in length or width than that specified for other parking spaces, but not less than 20'-0" in length and not less than 8'-0" in width.

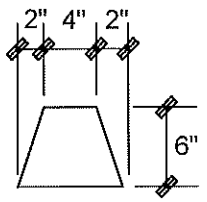
15. There shall be no obstructions on the sidewalk adjacent to and for the full length of the parking space, except for the ISA parking sign shown.

ISA = International Symbol of Accessibility



CURB STOP

N.T.S.



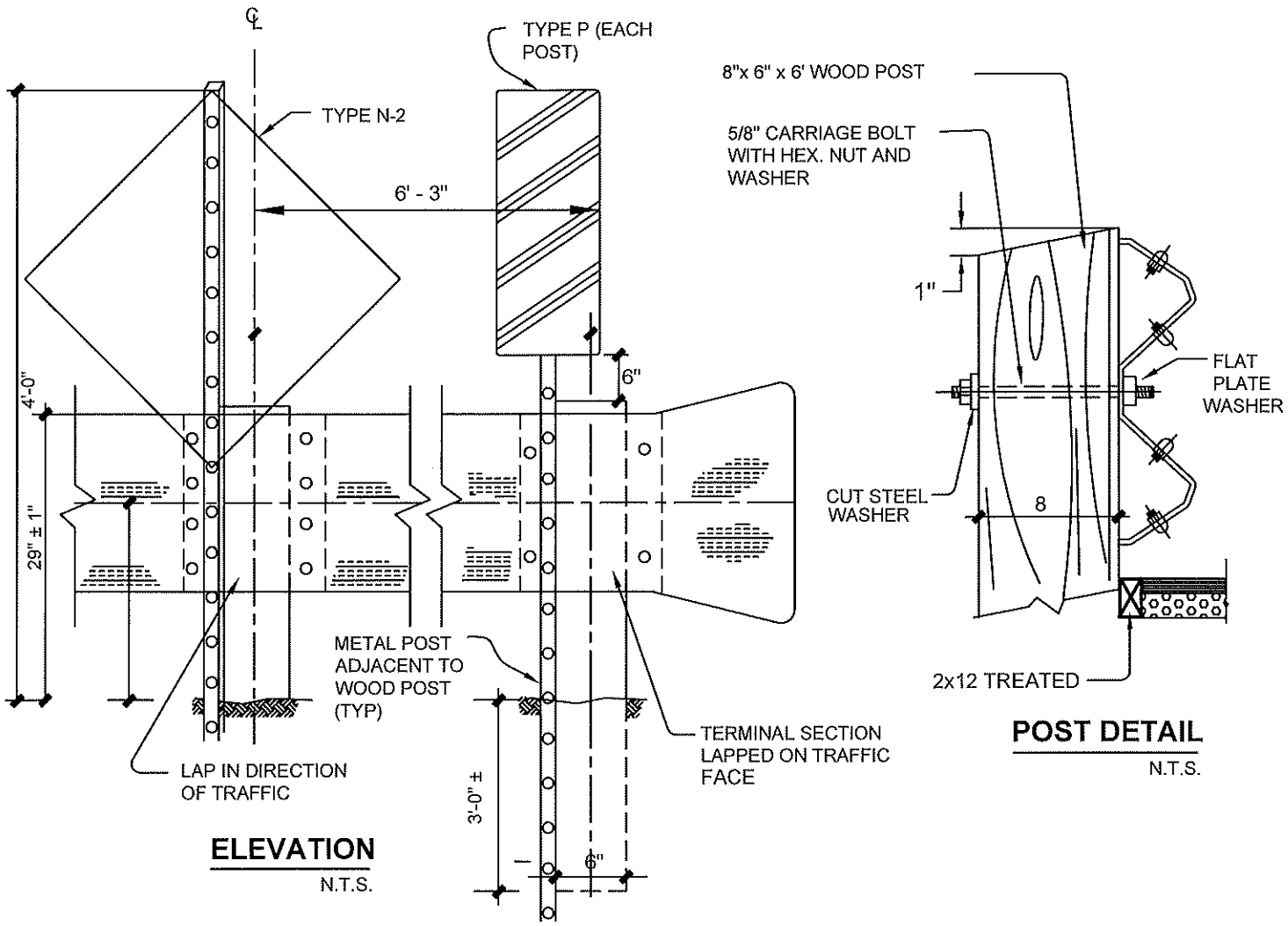
PRE-CAST CURB STOP

N.T.S.

CITY OF TRACY

TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 142 SHEET 3 OF 3
Res No. 2020-	DATE: February 18, 2020	**ACCESSIBLE PARKING NOTES**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



ELEVATION
N.T.S.

POST DETAIL
N.T.S.

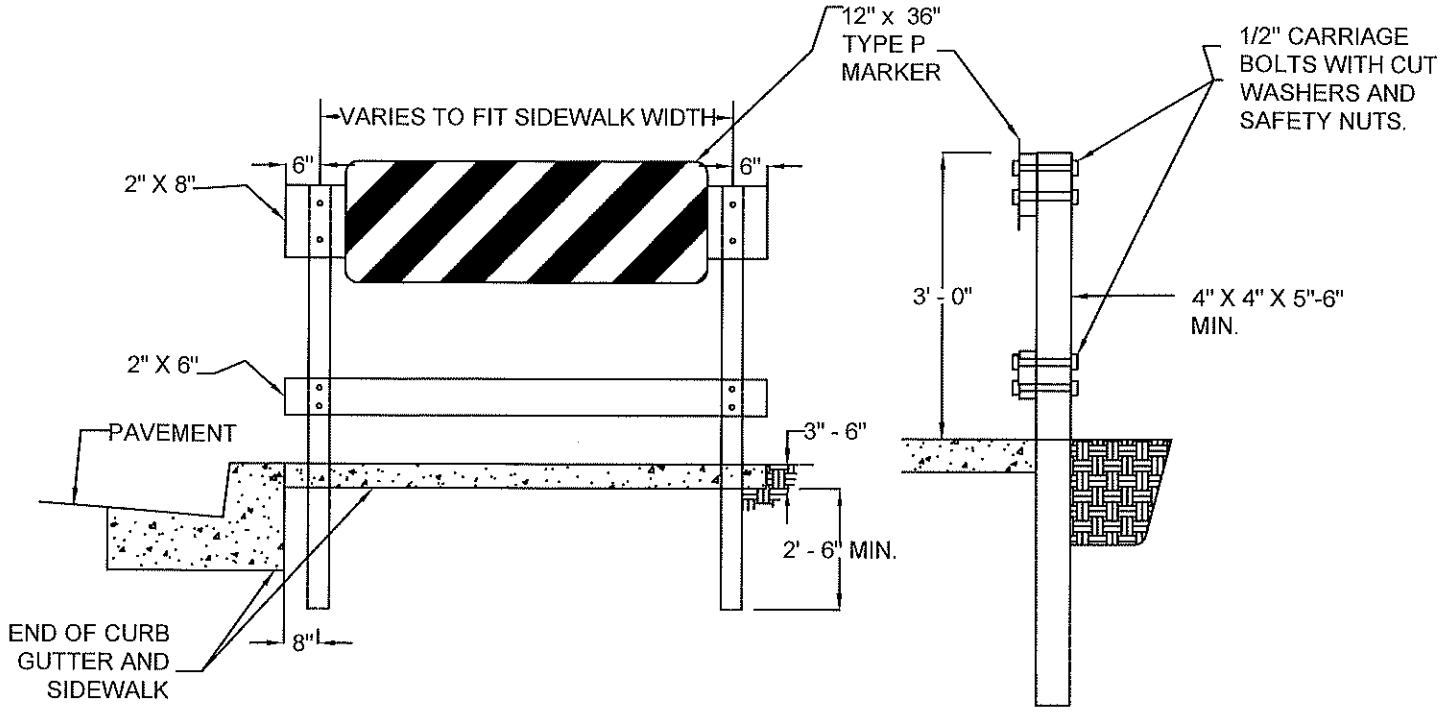
NOTES:

1. METAL BEAM GUARD RAILING SHALL BE STANDARD CALTRANS W-BEAM RAIL ELEMENT A-77A1.
2. POSTS SHALL BE 8" x 6" x 6' DOUGLAS FIR PRESSURE TREATED IN CONFORMANCE WITH THE ABOVE SPECIFICATION.
3. THE SPACE AROUND POSTS SHALL BE BACKFILLED WITH NATIVE MATERIAL PLACED IN 4" LAYERS AND THOROUGHLY COMPACTED.
4. FOR DEAD-END BARRICADE INSTALL ONE TYPE "N-2" (CALTRANS, CURRENT EDITION) MARKERS IN CENTER OF RIGHT OF WAY.
5. FOR GUARD RAIL INSTALL ONE TYPE "N-1" (CALTRANS, CURRENT EDITION) SIGN ON FIRST POST NEAREST TRAVELED WAY
6. INSTALL ONE TYPE "P" (CALTRANS, CURRENT EDITION) OBJECT MARKERS FACING ON COMING TRAFFIC AT EACH POST PER CALTRANS STANDARD PLAN A-73B.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 143
Res No. 2020-	DATE: February 18, 2020	**GUARD RAIL & BARRICADE**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



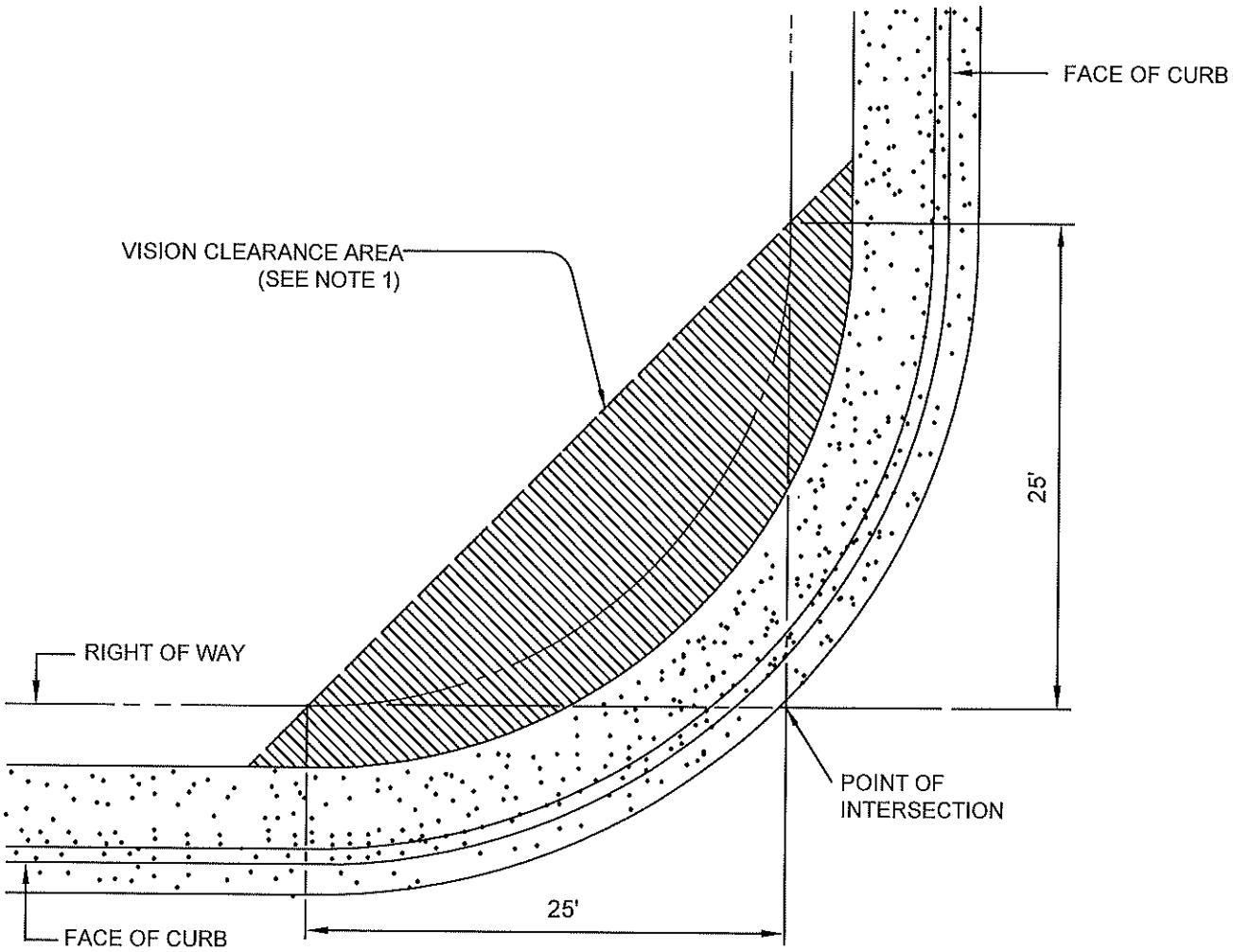
NOTES:

1. SIDEWALK BARRICADE TO BE ERECTED AT EACH LOCATION WHERE SATISFACTORY PROVISION CANNOT BE MADE FOR PEDESTRIANS TO CONTINUE BEYOND THE TERMINUS OF THE SIDEWALK.
2. ALL EXPOSED SURFACES TO BE PAINTED WITH TWO (2) COATS OF WHITE PAINT. ALL PAINT TO CONFORM TO SEC. 91-3.02 OF CALTRANS STANDARD SPECIFICATIONS.
3. ALL MATERIAL USED IN THE CONSTRUCTION OF BARRICADE SHALL BE TREATED DOUGLAS FIR IN CONFORMANCE WITH SEC.56-2.02 OF CALTRANS STANDARD SPECIFICATIONS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 144
Res No. 2020-	DATE: February 18, 2020	SIDEWALK BARRICADE
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PLAN VIEW

N.T.S.

NOTES:

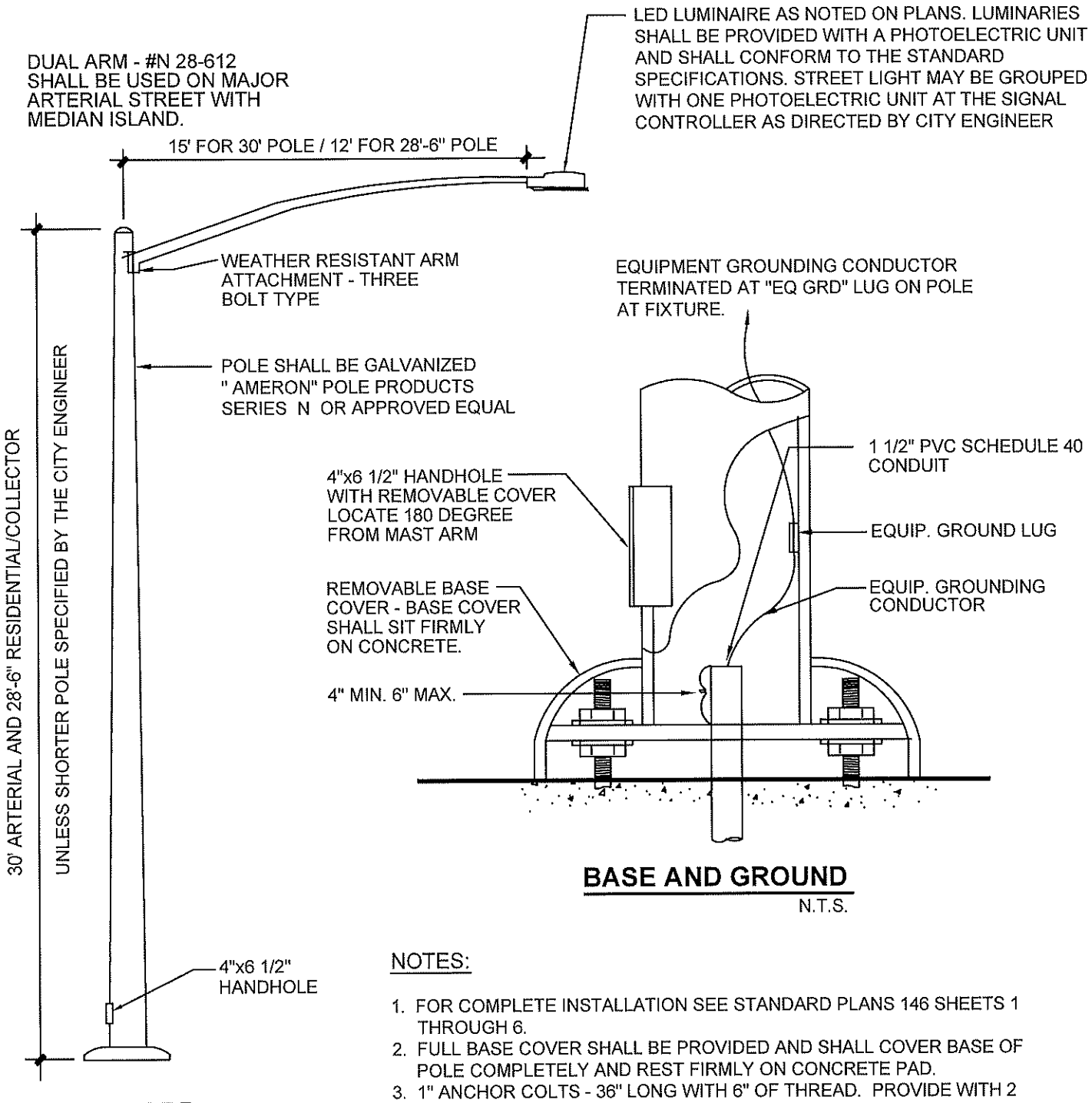
1. VISION CLEARANCE AREA IS THE AREA IN WHICH NO STRUCTURE OR VEGETATION IS TO BE HIGHER THAN 18" ABOVE TOP OF CURB EXCEPT TREES HAVING NO LIMB OR VEGETATION LESS THAN 8' ABOVE THE TOP OF CURB AS REQUIRED BY ORDINANCE CODE, SECTIONS 10.08.3230 AND 10.08.3250(4)(C).

2. NO FENCE SHALL BE CONSTRUCTED WITHIN THE PUBLIC RIGHT-OF-WAY.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 145
Res No. 2020-	DATE: February 18, 2020	**CORNER VISION CLEARANCE AREA**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



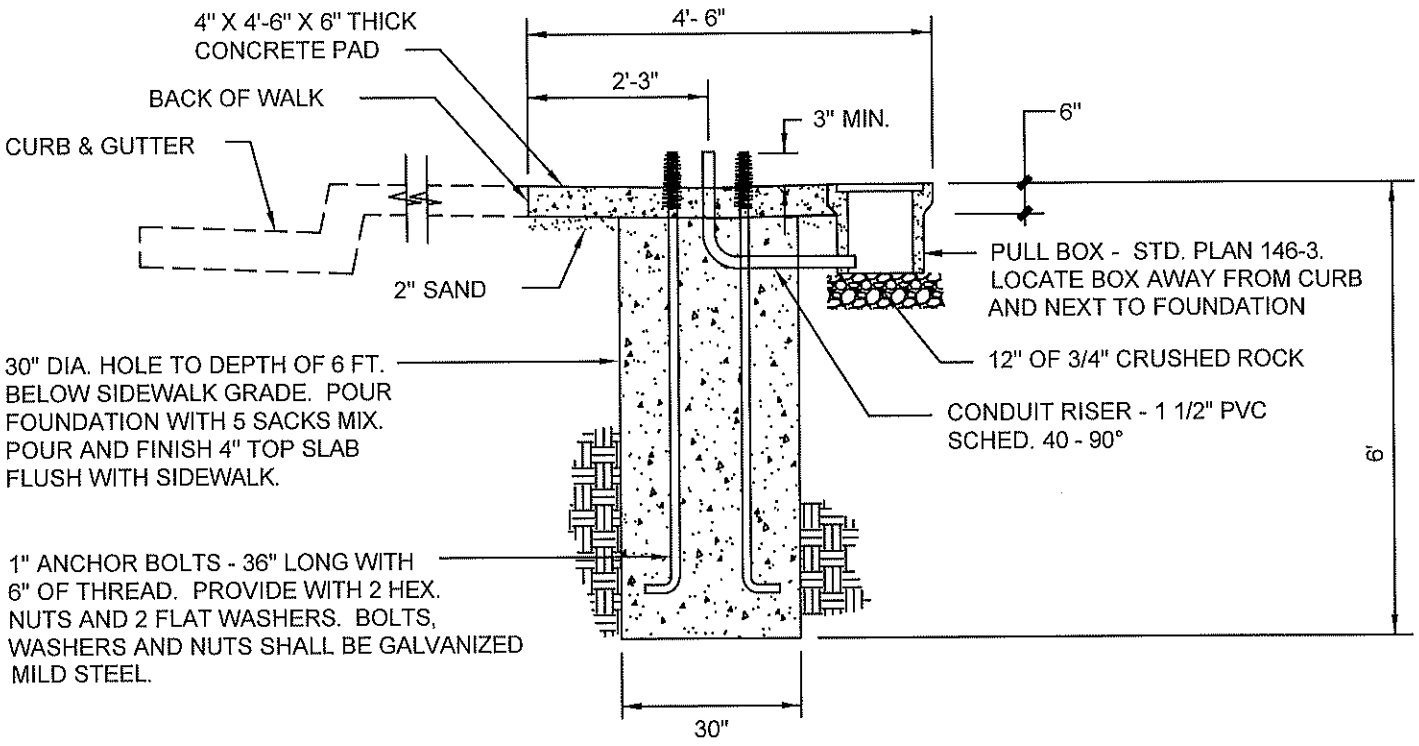
NOTES:

1. FOR COMPLETE INSTALLATION SEE STANDARD PLANS 146 SHEETS 1 THROUGH 6.
2. FULL BASE COVER SHALL BE PROVIDED AND SHALL COVER BASE OF POLE COMPLETELY AND REST FIRMLY ON CONCRETE PAD.
3. 1" ANCHOR COLTS - 36" LONG WITH 6" OF THREAD. PROVIDE WITH 2 HEX. NUTS AND 2 FLAT WASHERS. BOLTS, WASHERS AND NUTS SHALL BE GALVANIZED MILD STEEL.

CITY OF TRACY

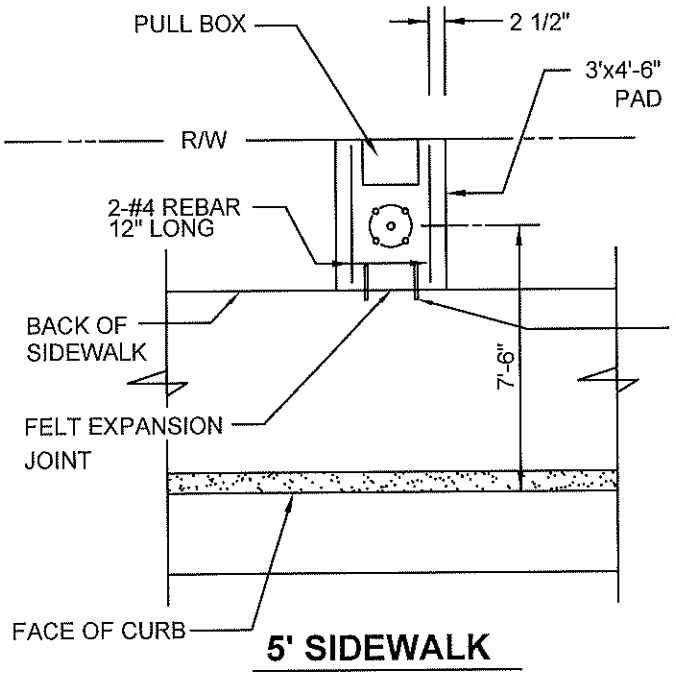
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 146 SHEET 1 OF 10
Res No. 2020-	DATE: February 18, 2020	STREET LIGHT
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

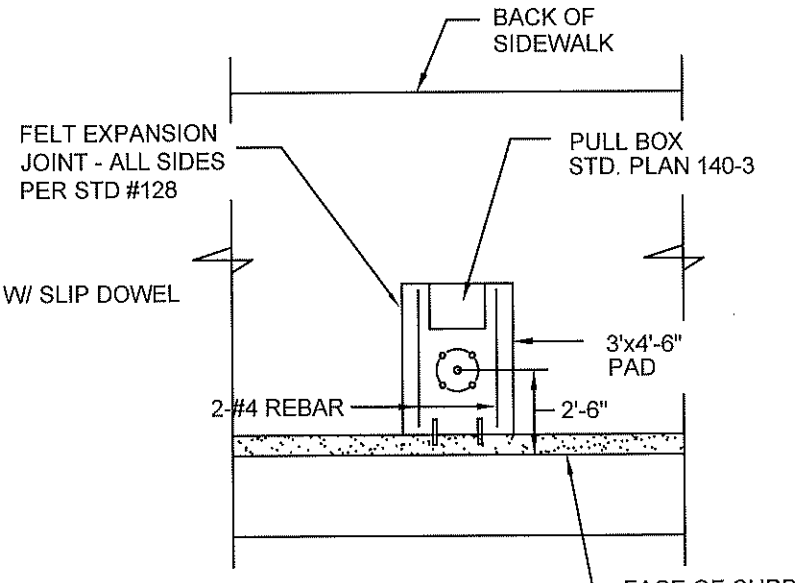


PROFILE

N.T.S.



5' SIDEWALK



10' SIDEWALK

PLAN

N.T.S.

NOTES:

1. SOMETIMES PAD IS TURNED
2. PLANTER AREA CONFLICT WITH STORM DRAINS

CITY OF TRACY

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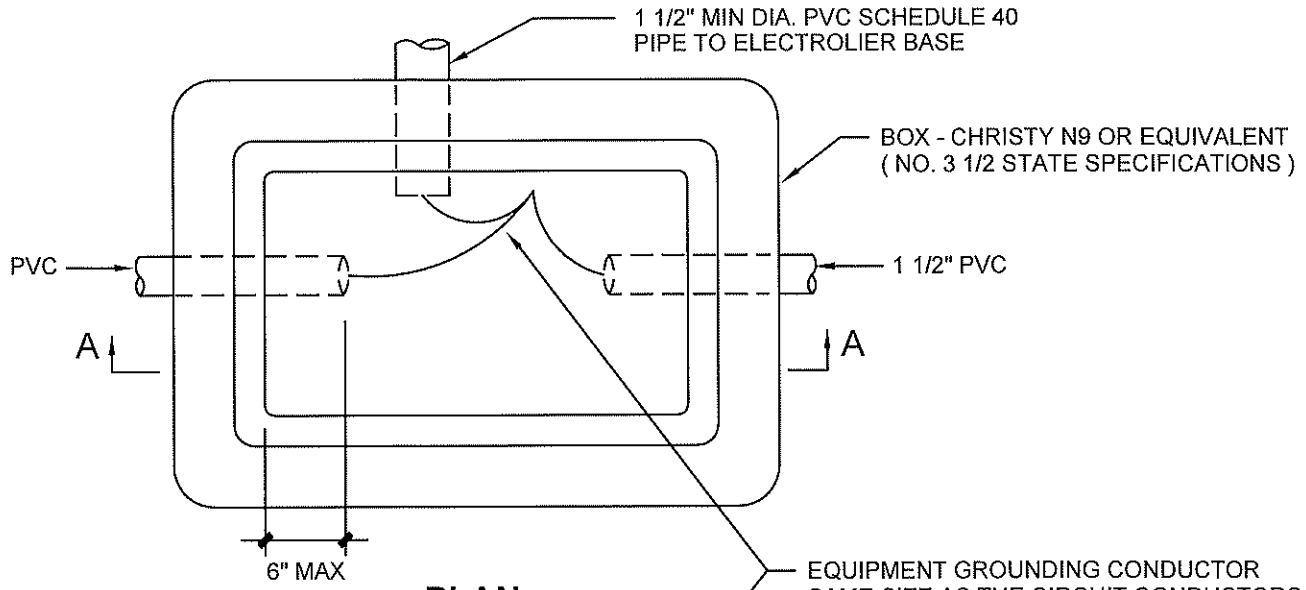
REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 146

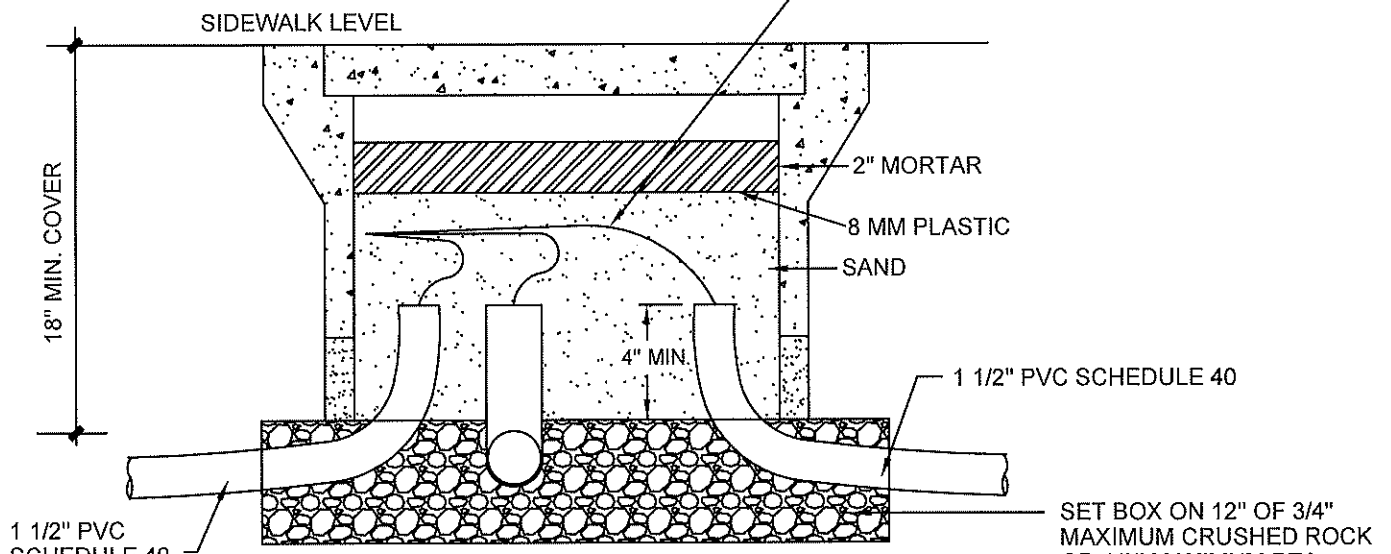
SHEET 2 OF 10

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STREET LIGHT POLE FOUNDATION



PLAN
N.T.S.



SECTION A-A
N.T.S.

NOTES:

2. PULL BOX SHALL HAVE A LOCKING LID MARKED " STREET LIGHT ".

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TRACY Think Inside the Triangle™	REVIEWED BY:		STANDARD PLAN No. 146
	CITY ENGINEER RCE 63173		SHEET 3 OF 10
	Res No. 2020-	DATE: February 18, 2020	**STREET LIGHT PULL BOX**
	Rev: Leisser M.	Rev: Thomas W.	
	Rev:	Rev:	

NOTES:

1. THE MAXIMUM DISTANCE BETWEEN STREET LIGHT STANDARDS SHALL BE: 200 FEET ON RESIDENTIAL STREETS, 150 FEET ON COLLECTORS AND INDUSTRIAL STREETS, 120 FEET ON MINOR ARTERIAL STREETS, 70 FEET ON MAJOR ARTERIAL STREETS WITHOUT A MEDIAN, AND 120 FEET ON MAJOR ARTERIAL STREETS WITH A MEDIAN. STREET LIGHT STANDARDS SHALL BE INSTALLED ON ALTERNATING SIDES EXCEPT WHEN MEDIANS ARE TO BE CONSTRUCTED. STREETLIGHTS IN MEDIANS ARE TO BE INSTALLED USING DOUBLE, 15' MAST ARMS ON 30-FOOT HIGH POLES MAXIMUM 120 FEET APART AND AT LEAST 20' FROM THE MEDIAN ISLAND NOSE. LIGHTS SHALL BE EVENLY SPACED AS MUCH AS POSSIBLE.

2. WIRING SHALL BE UNDERGROUND IN 1 1/2" MIN. UL APPROVED SCHEDULE 40, HEAVY WALL RIGID PVC CONDUIT. (SPECIAL CONDITIONS MAY REQUIRE INCREASE OF CONDUIT SIZE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.) ALL CONDUCTORS SHALL BE COPPER.

3. CONDUIT SYSTEM SHALL BE COMPLETE FROM THE STREET LIGHT TO THE PG&E SOURCE.

4. INSTALL A CONCRETE PULL BOX AT EACH ELECTROLIER PER CITY OF TRACY STANDARDS. MINIMUM SIZE NO. 3-1/2, LID MARKING - "STREET LIGHT" (LOCKING LID).

5. SEE CITY OF TRACY STANDARD DRAWINGS 146 SHEETS 1-5 FOR ADDITIONAL DETAILS.

6. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH SECTIONS 86 AND 87 OF THE LATEST STATE OF CALIFORNIA STANDARD SPECIFICATIONS

7. WATERPROOF FUSED SPLICE CONNECTORS WITH PROPER 10 AMP FUSE SHALL BE INSTALLED IN EACH PULL BOX ADJACENT TO A LIGHT STANDARD.

8. WIRE SIZE IN POLE FROM LUMINARIE TO PULL BOX @ BASE OF POLE AND IN UNDERGROUND CONDUITS SHALL BE SIZED ACCORDING TO CONDUCTOR CHARTS 1-3 PROVIDED ON STANDARD PLAN 146 SHEETS 6-8.

9. THE OWNER OR CONTRACTOR OF ANY LIGHTING PROJECT IS REQUIRED TO PAY PG&E COMPANY THE CONNECTION FEE BEFORE ACCEPTANCE BY THE CITY.

10. ALL ELECTROLIERS SHALL HAVE EQUIPMENT GROUNDING CONDUCTORS INSTALLED PER CITY STANDARD PLANS.

11. ALL CONDUIT ENDS IN PULL BOXES OR STANDARDS SHALL BE SECURELY PACKED WITH AN APPROVED SEALANT AFTER WIRE IS PULLED.

12. ALL SPLICES IN CONDUCTORS SHALL BE MADE WITH APPROVED WIRE CONNECTOR AND MADE WATER PROOF BY APPROVED METHOD. SEE CALTRANS STANDARD PLAN ES-13A.

13. ALL CONDUIT SHALL BE A MINIMUM OF 3' BELOW THE FLOWLINE OF GUTTER EXCEPT WHEN UNDER THE SIDEWALK. CONDUIT SHALL BE A MINIMUM OF 18" DEEP.

14. THE DEVELOPER OF SUBDIVISIONS SHALL BE REQUIRED TO PROVIDE THE CITY WITH ONE ELECTROLIER FOR EACH TWENTY (20) ELECTROLIERS (OR FRACTION THEREOF) OF EACH SIZE INVOLVED IN THE TRACT LIGHTING. THE ELECTROLIERS SHALL BE IDENTICAL TO THOSE INSTALLED IN THE SUBDIVISION. THIS REQUIREMENT WILL BE WAIVED IF THE TOTAL NUMBER OF ELECTROLIERS INSTALLED IN THE TRACT IS LESS THAN FIVE (5). THE ELECTROLIERS FURNISHED TO THE CITY SHALL BE COMPLETE, INCLUDING POLE, MAST ARM, LUMINAIRE AND ADEQUATE WIRE TO COMPLETE THE SPLICE IN THE PULL BOX ADJACENT TO THE POLE BASE AND SHALL BE DELIVERED TO THE CITY AT BOYD SERVICE CENTER.

15. THE SERVICE POINT AND ALL CONDUIT SHALL BE INSTALLED WITHIN CITY RIGHT-OF-WAY.

16. ANY DEVIATIONS OR SPECIAL PROVISIONS OF THESE STANDARDS WILL REQUIRE PRIOR APPROVAL BY CITY ENGINEER.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 146 SHEET 4 OF 10
Res No. 2020-	DATE: February 18, 2020	STREET LIGHT NOTES
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

NOTES: (CON'T.)

18. ALL LUMINAIRES SHALL BE LED AND SHALL CONFORM TO THE STANDARD SPECIFICATIONS

19. GENERAL NOTE OF LUMINAIRES:

STREET TYPE	VOLTAGE	MASTER ARM LENGTH	POLE HEIGHT	ARM RISE
ARTERIAL	120/240	15'	30'	+4' 9"
COLLECTOR AND INDUSTRIAL	120/240	12'	28'-6"	+4' 3"
RESIDENTIAL	120	12'	28'-6"	+4' 3"

20. LAMP BULBS SHALL HAVE OPERATING LIFE OF 3 YEARS OR A MINIMUM OF 13,140 HOURS.

22. ALL WORK SHALL COMPLY WITH LATEST REVISION OF NATIONAL ELECTRIC CODE STANDARDS.

23. INTERSECTION AND ROADWAY LIGHTING PHOTOMETRIC DESIGN SHALL MEET THE FOLLOWING:

INTERSECTION LIGHTING DESIGN REQUIREMENTS		
FUNCTIONAL CLASSIFICATION	MINIMUM AVG. ILLUMINATION AT PAVEMENT Eavg (Fc)	MINIMUM AVG. UNIFORMITY RATIO (avg/min)
ARTERIAL/ARTERIAL	2.6	3.0
ARTERIAL/COLLECTOR	2.2	3.0
COLLECTOR/RESIDENTIAL	1.6	4.0
RESIDENTIAL/RESIDENTIAL	1.4	6.0

ROADWAY LIGHTING DESIGN REQUIREMENTS		
STREET CLASSIFICATION	MINIMUM AVG. LUMINANCE Lavg (cd/m²)	MINIMUM AVG. UNIFORMITY RATIO (avg/min)
ARTERIAL	0.9	3.0
COLLECTOR	0.6	3.5
RESIDENTIAL	0.5	6.0

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REVIEWED BY: Robert Armijo
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STANDARD PLAN No. 146

SHEET 5 OF 10

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STREET LIGHT NOTES

CONDUCTOR SIZE CHART 1

120 VOLT VOLTAGE DROP CALC. @ 2 PERCENT..

DISTANCE FROM ELECTRICAL SERVICE	NO. POLES ON CIRCUIT	1	2	3	4
0 to 100 ft.	# 12 CU	# 10	# 8	# 6	#
101 to 200 ft.	# 10 CU	# 6	# 6	# 4	#
201 to 400 ft.	# 6 CU	# 4	# 3	# 3	#
401 to 600 ft.	# 6 CU	# 3	# 1	# 1	#
601 to 800 ft.	# 4 CU	# 2	# 1/0	# 1/0	#
1000 ft.	# 3 CU	# 1	# 2/0	# 2/0	#

THIS TABLE BASED ON THE FOLLOWING:

EACH FIXTURE LOAD IS 4 AMPS AT 120 VOLT, TWO FIXTURES PER POLE (DOUBLE ARM)

ALL CONDUCTORS ARE THE SAME SIZE; THE UNDER-GROUNDED (BLACK AND RED), THE GROUNDED (WHITE) AND THE EQUIPMENT GROUNDING (GREEN).

ALL CONDUCTORS ARE COPPER, TYPE THW, THWN, THWN-2 OR XHHW.

VOLTAGE DROP IS CALCULATED AT 2%.

CITY OF TRACY

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REVIEWED BY: Robert Armijo
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STANDARD PLAN No. 146

SHEET 6 OF 10

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STREET LIGHT CONDUCTOR CHART 1

CONDUCTOR SIZE CHART 2

120 VOLT VOLTAGE DROP CALC.

DISTANCE FROM ELECTRICAL SERVICE	NO. POLES ON CIRCUIT	1	2	3	4
0 to 100 ft.	# 12 CU	# 12	# 12	# 12	#
101 to 200 ft.	# 12 CU	# 12	# 10	# 8	#
201 to 400 ft.	# 12 CU	# 8	# 6	# 6	#
401 to 600 ft.	# 10 CU	# 6	# 4	# 4	#
601 to 800 ft.	# 8 CU	# 6	# 4	# 3	#
1000 ft.	# 8 CU	# 4	# 3	# 2	#

THIS TABLE BASED ON THE FOLLOWING:

EACH FIXTURE LOAD IS 120 VOLT @ 4 AMP (DOUBLE ARM FIXTURE)

ALL CONDUCTORS ARE THE SAME SIZE; UNGROUNDED (BLACK AND RED), GROUNDED NEUTRAL (WHITE) EQUIPMENT GROUND (GREEN OR BARE).

ALL CONDUCTORS ARE COPPER, TYPE THW, THWN, THWN-2 OR XHHW.

VOLTAGE DROP IS CALCULATED AT 5%.

CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 146

SHEET 7 OF 10

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STREET LIGHT CONDUCTOR CHART 2

CONDUCTOR SIZE CHART 3

230 VOLT VOLTAGE DROP CALC.

DISTANCE FROM ELECTRICAL SERVICE	NO. POLES ON CIRCUIT	1	2	3	4
0 to 100 ft.	# 12 CU	# 12	# 12	# 12	#
101 to 200 ft.	# 12 CU	# 12	# 12	# 12	#
201 to 400 ft.	# 12 CU	# 12	# 10	# 8	#
401 to 600 ft.	# 12 CU	# 12	# 8	# 6	#
601 to 800 ft.	# 12 CU	# 8	# 8	# 6	#
1000 ft.	# 10 CU	# 8	# 6	# 4	#

THIS TABLE BASED ON THE FOLLOWING:

EACH FIXTURE LOAD IS RATED AT 4 AMPS @ 240 VOLT (A DOUBLE ARM FIXTURE)

ALL CONDUCTORS ARE THE SAME SIZE; UNGROUNDED (BLACK AND RED), GROUNDED (WHITE) AND THE EQUIPMENT GROUNDING (GREEN).

ALL CONDUCTORS ARE COPPER, TYPE THW, THWN, THWN-2 OR XHHW.

VOLTAGE DROP IS CALCULATED AT 5%.

CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 146

SHEET 8 OF 10

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STREET LIGHT CONDUCTOR CHART 3

DOWNTOWN STREETSCAPE LIGHTS

TYPE F1
150W LED 16 FT ANTIQUE STREETLIGHT (ACORN STYLE) UNION METAL CORPORATION 13'-2" POLE WITHOUT RECEPTACLE DESIGN #P874-730-B151-Y3F OR EQ WITH LUMINAIRE HADCO #R53-B-B-N-N-2J-T-N-G-150S-F, WITH MULTI-TAP BALLAST, WITH ACRYLIC LENS.

TYPE F2
150W 30 FT ANTIQUE STREETLIGHT (TEARDROP STYLE) UNION METAL CORPORATION 28'-0" POLE WITHOUT RECEPTACLE DESIGN #B99-B258-Y2 OR EQ WITH LUMINAIRE LUMEC #RN20-150HPS-THA3-ACDR-QTA/-SMA-BKTX FIXTURE, WITH MULTI-TAP BALLAST, WITH ACRYLIC LENS.

TYPE F3
70W 3.5 FT ANTIQUE LIGHTED BOLLARD WITH BALL TOP 3'-6" HIGH LIGHTED BALLTOP CAST ALUMINUM BOLLARD, ANTIQUE STREET LAMPS "WASHINGTON SERIES" BLCA BW 14BTL 70S AWS - ANDG.

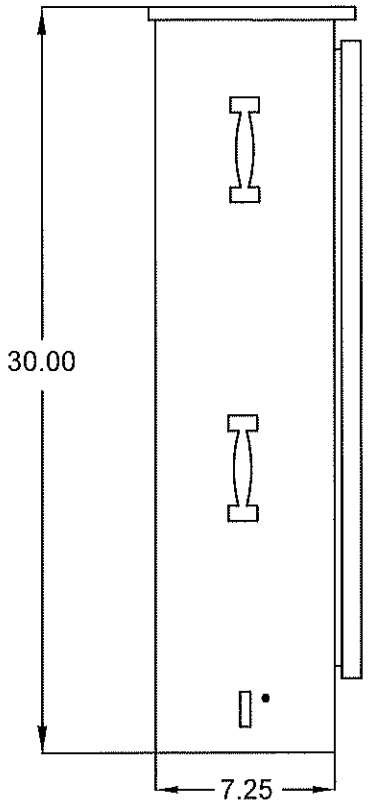
TYPE F4
100W MH (METAL HALIDE) TREE UPLIGHT RECESSED, GRADE MOUNTED TREE UPLIGHT WITH 100 W METAL HALIDE LAMP, REMOTE BALLAST BOX, CONCRETE BASE, BRANCH CIRCUIT CONDUITS AND CONDUCTORS; HYDREL 9350 ED B 100M 208 SP DL 34B DEL CFD673 LP.

TYPE F5
175W 240V 17.5 FT ANTIQUE STREETLIGHT FOR PARKING LOTS (ACORN STYLE NARROW) UNION METAL CORPORATION 14'-6" POLE DESIGN #P874-730-B137-Y-1F OR EQ. WITH HADCO #R51-B-B-N-N-1J-NBG-175H-G FIXTURE WITH MULTI-TAP BALLAST, WITH ACRYLIC LENS.

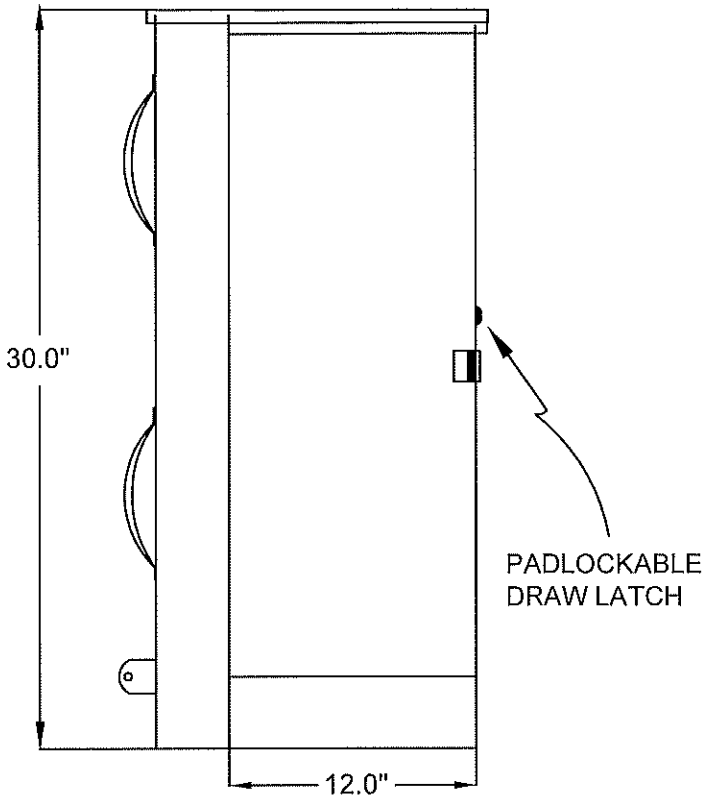
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No.	146 SHEET 9 OF 10
Res No. 2020-	DATE: February 18, 2020	STREET LIGHT NOTES	
Rev: Leisser M.	Rev: Thomas W.		
Rev:	Rev:		



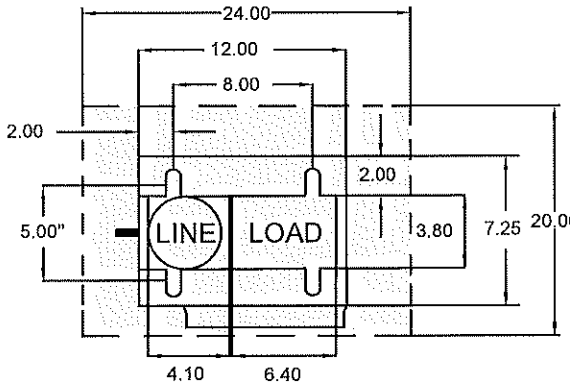
LEFT SIDE



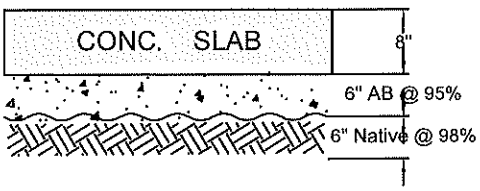
FRONT VIEW

NOTES:

1. Main breakers shall be 1, 2 or 3 pole
2. May be rated 120 volt up to 480 volt
3. Single or three phase
4. Continuous welded seams
5. Fully framed side hinged outer door for flush fit with top drip lip & closed cell neoprene flange compressed gaskets
6. Separate pull section
7. Service enclosure stainless steel pedestal
8. Full length deadfront with stainless steel hinge from 1/4 turn latch & knurled knobs
9. Deadfront hinged same side as the front door and opens up to 120 degrees
10. Completely prewired in the factory
11. Wiring will be to NEWA IIB standards showing external connections & external equipment
12. 24"X20"X8" thick conc. base slab



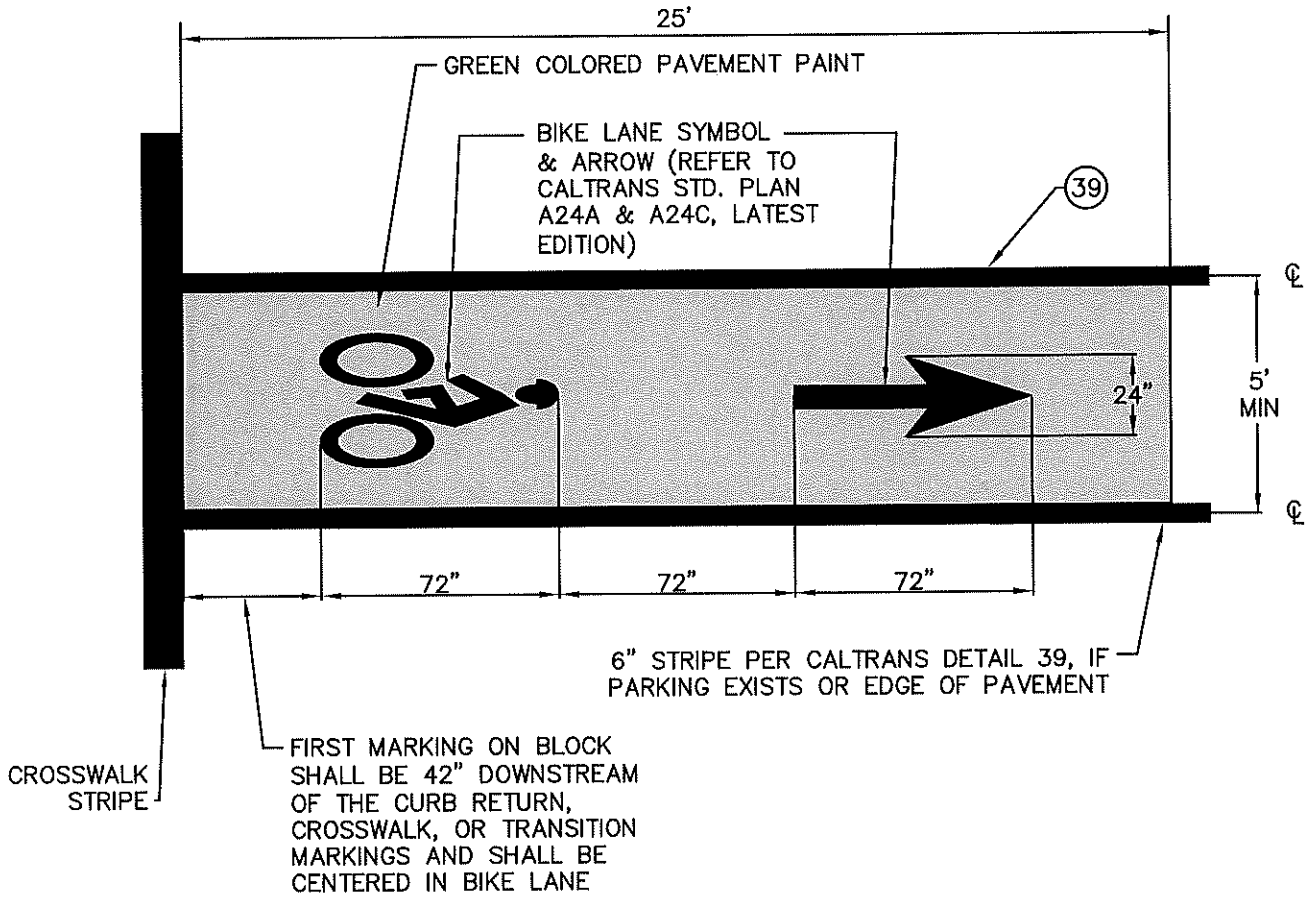
BASE PLAN



CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **146** **SHEET 10 OF 10**
Res No. 2020-	DATE: February 18, 2020	**STREET LIGHT UN-METERED PEDESTAL**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



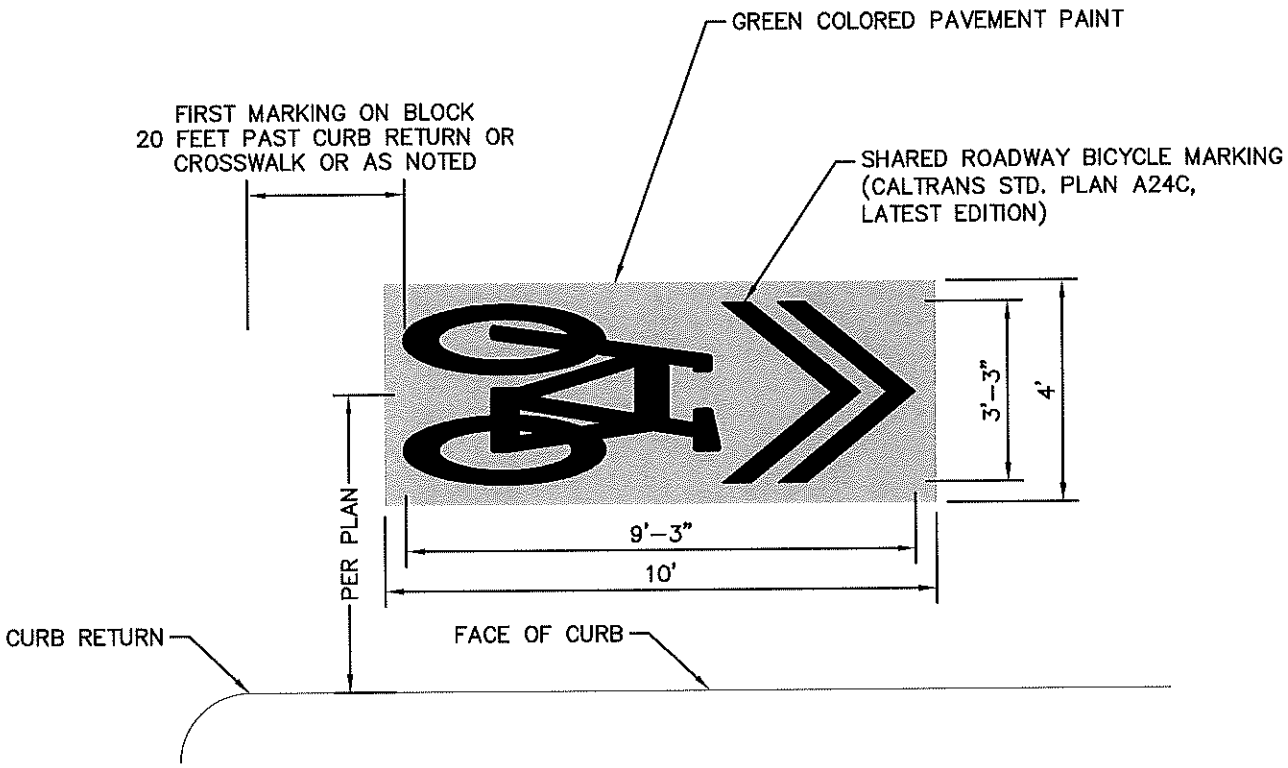
NOTES

1. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
2. LONGITUDINAL SPACING MEASURED FROM THE BASE OF EACH MARKING.
3. LOCATE MARKINGS AT 250' MAXIMUM SPACINGS IN EACH BLOCK.
4. ALL GREEN PAVEMENT PAINT TO BE CYCLE GRIP MMAX GREEN MMA OR APPROVED EQUAL.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147	SHEET 1 OF 14
Res No. 2020–	DATE: February 18, 2020	**CLASS II BICYCLE LANE MARKING DETAIL**	
Rev: Leisser M.	Rev: Thomas W.		
Rev: Edgar T.	Rev:		



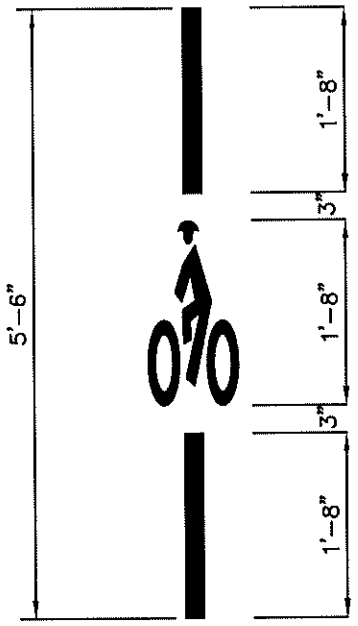
NOTES

1. LEAVE AT LEAST 10' SPACING FROM WORD LEGENDS, LANE ASSIGNMENT ARROWS, OTHER MARKINGS, AND SPEED HUMPS IN THE SAME LANE OF TRAVEL.
2. DISTANCE BETWEEN SHARROWS IS MEASURED FROM BASE OF MARKING TO BASE OF MARKING.
3. PLACE A MINIMUM OF TWO SHARROW MARKINGS ON EACH BLOCK.
4. SHARED LANE MARKINGS USED TO BRIDGE DISCONTINUOUS BICYCLE FACILITIES OR ALONG BUSIER STREETS SHOULD BE PLACED MORE FREQUENTLY (50' TO 100' SPACINGS) THAN ALONG LOW TRAFFIC BICYCLE ROUTES (UP TO 250' SPACINGS).
5. ALL GREEN PAVEMENT PAINT TO BE CYCLE GRIP MMAX GREEN MMA OR APPROVED EQUAL.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 2 OF 14
Res No. 2020–	DATE: February 18, 2020	**SHARED ROADWAY BICYCLE MARKING**
Rev: Leisser M.	Rev: Thomas W.	
Rev: Edgar T.	Rev:	



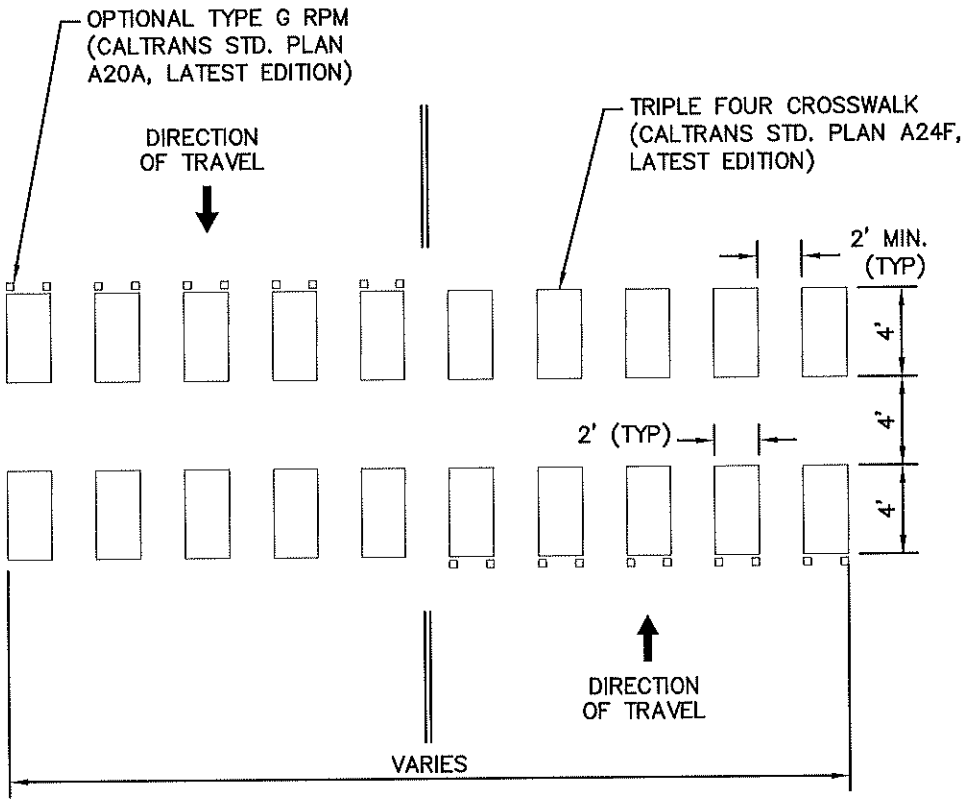
BICYCLE LOOP DETECTOR SYMBOL
(REFER TO CALTRANS STD. PLAN
A24C, LATEST EDITION)

NOTES

1. THE BICYCLE DETECTOR PAVEMENT MARKING (SYMBOL) SHALL BE USED AT ALL ACTUATED TRAFFIC SIGNAL APPROACHES THAT ARE CAPABLE OF DETECTING BICYCLES.
2. A SYMBOL SHALL BE INSTALLED IN THE RIGHT-MOST LANE SERVING THE BICYCLIST'S DESTINATION, INCLUDING LEFT TURN LANES, THROUGH LANES, AND BIKE LANES.
3. THE LEADING EDGE OF THE SYMBOL SHALL BE INSTALLED ONE FOOT BEHIND THE LIMIT LINE (OR CROSSWALK).
4. CENTER THE SYMBOL IN LANE (ALIGNED WITH THE LANE ASSIGNMENT ARROW).

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 3 OF 14
	Res No. 2020–	DATE: February 18, 2020	**BICYCLE DETECTOR PAVEMENT MARKING**
	Rev: Leisser M.	Rev: Thomas W.	
	Rev: Edgar T.	Rev:	

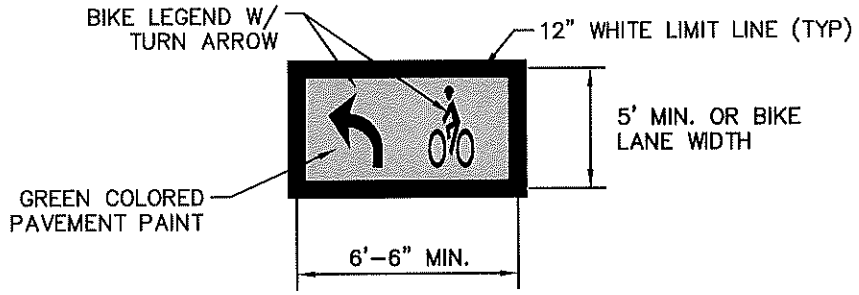


NOTES

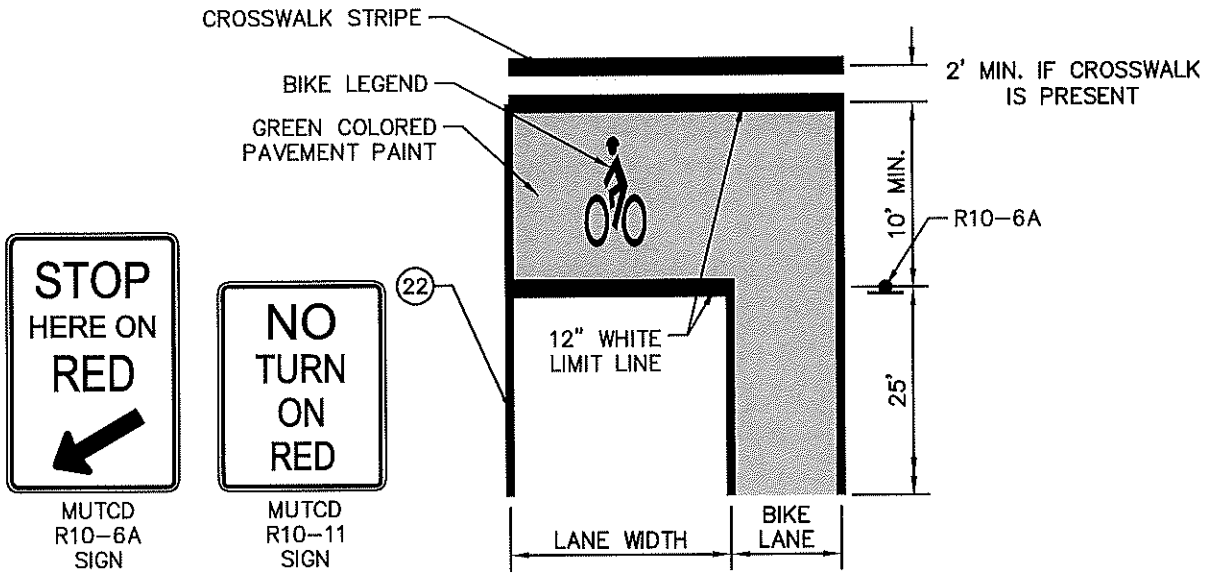
1. SPACES BETWEEN MARKINGS SHALL BE PLACED IN WHEEL TRACKS OF EACH LANE.
2. ALL CROSSWALK MARKINGS SHALL BE WHITE EXCEPT THOSE NEAR SCHOOLS MAY BE YELLOW, REFER TO THE CA MUTCD.
3. TWO RAISED PAVEMENT MARKERS (RPM) SHOULD BE PLACED NEXT TO EACH STRIPE ON THE APPROACH SIDE OF THE CROSSWALK.
4. TRIPLE FOUR CROSSWALK TO BE INSTALLED AS SPECIFIED BY THE ENGINEER.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	STANDARD PLAN NO. 147	SHEET 4 OF 14
	Res No. 2020–	DATE: February 18, 2020	**TRIPLE FOUR CROSSWALK**
	Rev: Leisser M.	Rev: Thomas W.	
	Rev: Edgar T.	Rev:	



TWO-STAGE LEFT-TURN QUEUE BOX



THROUGH MOVEMENT QUEUE BOX

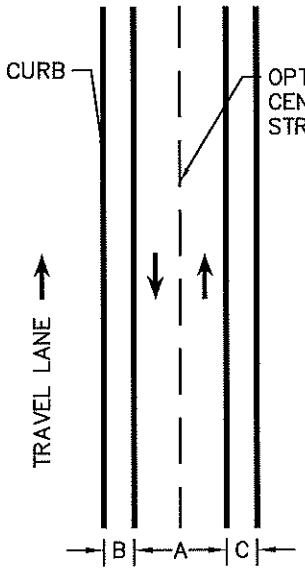
NOTES

1. "NO RIGHT-TURN ON RED" RESTRICTION SHALL BE IMPLEMENTED WITH THE APPLICATION OF THROUGH MOVEMENT QUEUE BOX WHEN THERE IS NO DEDICATED RIGHT-TURN LANE ADJACENT TO THE CURRENT LANE.
2. FOR BIKE LEGEND AND TURN ARROW, REFER TO CALTRANS STD. PLANS A24B AND A24C, LATEST EDITION.
3. TWO-STAGE LEFT-TURN QUEUE BOX PAVEMENT MARKINGS SHALL BE PLACED CENTERED VERTICALLY AND EVENLY SPACED HORIZONTALLY WITHIN THE BOX.
4. THROUGH MOVEMENT QUEUE BOX PAVEMENT MARKINGS SHALL BE CENTERED VERTICALLY BETWEEN THE TWO LIMIT LINES AND CENTERED HORIZONTALLY ON THE LANE CENTERLINE.
5. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20A AND A20D, LATEST EDITION.
6. MUTCD R10-6A AND R10-11 SIGNS SHALL BE POSITIONED PER CA MUTCD GUIDELINES.
7. ALL GREEN PAVEMENT PAINT TO BE CYCLE GRIP MMAX OR APPROVED EQUAL.
8. BIKE BOX DETAIL SHALL NOT BE IMPLEMENTED WITHOUT PRIOR APPROVAL FROM THE CITY ENGINEER.

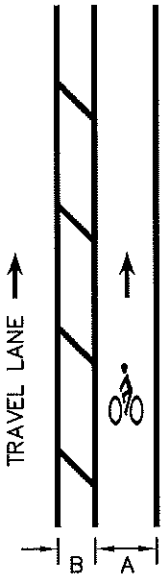
CITY OF TRACY

TRACY
Think Inside the Triangle™

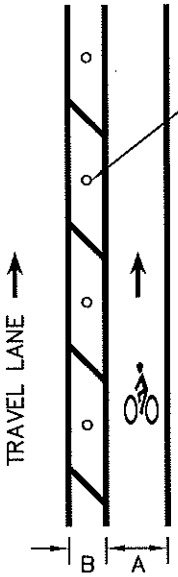
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO.	147 SHEET 5 OF 14
Res No. 2020-	DATE: February 18, 2020	BIKE BOX DETAILS	
Rev: Lelsser M.	Rev: Thomas W.		
Rev: Edgar T.	Rev:		



CLASS I DETAILS



CLASS II DETAILS



CLASS IV DETAILS

TABLE 1

	WIDTH (A)		TRAVEL LANE BUFFER (B)		NON TRAVEL LANE BUFFER (C)	
CLASS	MINIMUM WIDTH	RECOMMENDED WIDTH	MINIMUM BUFFER WIDTH	RECOMMENDED BUFFER WIDTH	MINIMUM BUFFER WIDTH	RECOMMENDED BUFFER WIDTH
I	8'	10'	2'	5'	2'	5'
II	5'	7'	NONE	3'	N/A	N/A
III	N/A	N/A	N/A	N/A	N/A	N/A
IV	5'	7'	2'	3'	N/A	N/A

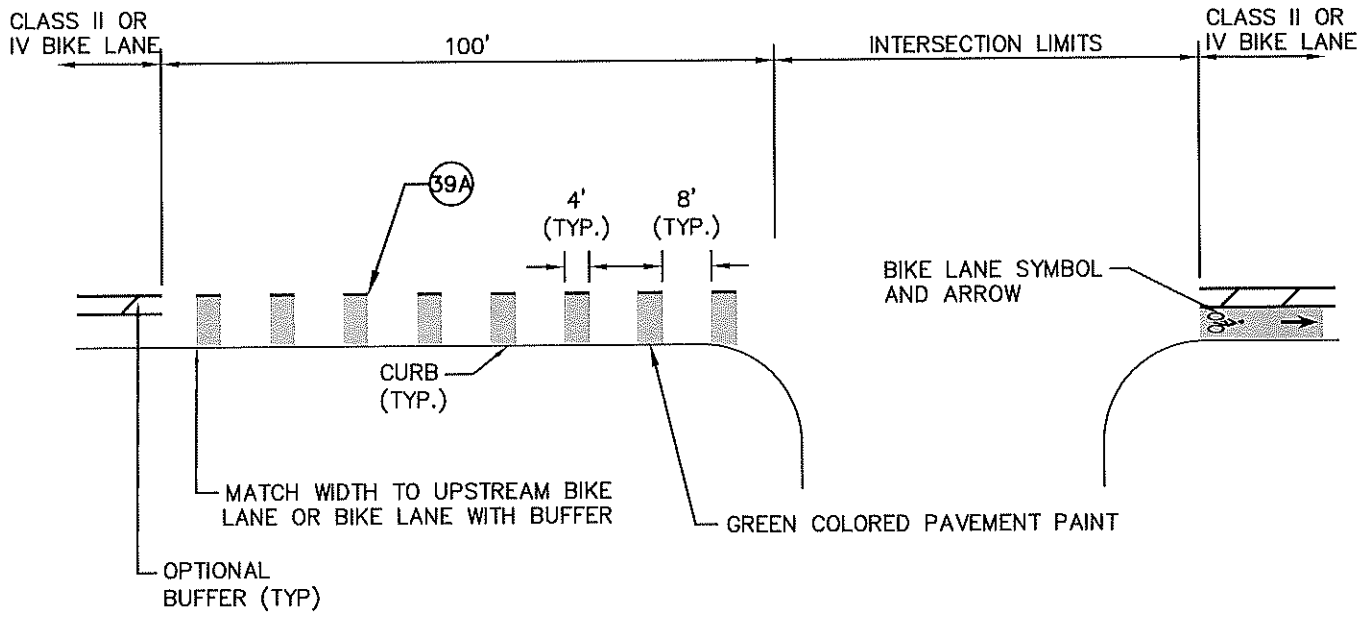
NOTES

1. SEE TABLE 1 FOR DIMENSIONS.
2. DIAGONAL CROSSHATCH MARKINGS SHALL BE USED IN BUFFERS 2–4 FEET WIDE.
3. NO MARKINGS SHALL BE USED IN BUFFERS LESS THAN 2 FEET.
4. CHEVRONS SHALL BE USED IN BUFFERS GREATER THAN 4 FEET.
5. FOR BIKE LANE SYMBOL AND ARROW SPACING, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
6. CLASS II MINIMUM WIDTH MAY BE REDUCED TO 4 FEET IF NOT ADJACENT TO CURB OR OTHER VERTICAL APPURTENANCES.
7. FOR CLASS IV BIKE LANES ADJACENT TO PARKING A MINIMUM BUFFER WIDTH OF 3 FEET SHALL BE USED.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 6 OF 14
Res No. 2020–	DATE: February 18, 2020	**CLASS I, II, III, IV WIDTHS**
Rev: Leisser M.	Rev: Thomas W.	
Rev: Edgar T.	Rev:	



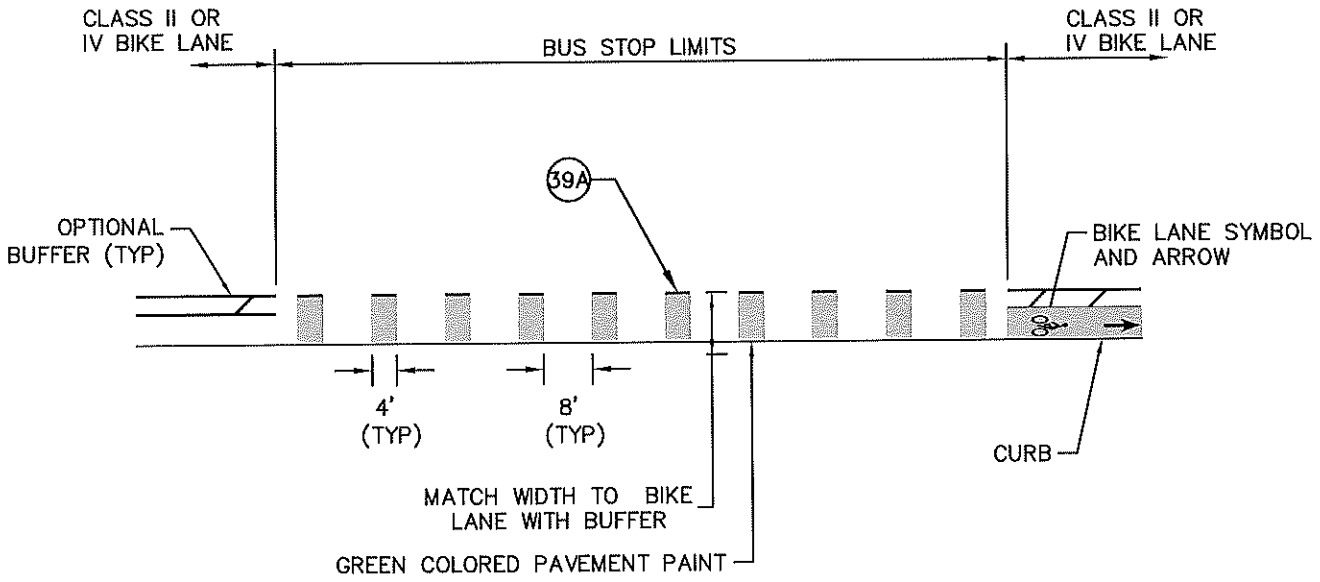
NOTES

1. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
2. FOR BIKE LANE SYMBOL AND ARROW, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
3. FOR CLASS II OR IV BIKE LANE DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 7 OF 14
Res No. 2020–	DATE: February 18, 2020	**BIKE LANE AT INTERSECTION**
Rev: Leisser M.	Rev: Thomas W.	
Rev: Edgar T.	Rev:	



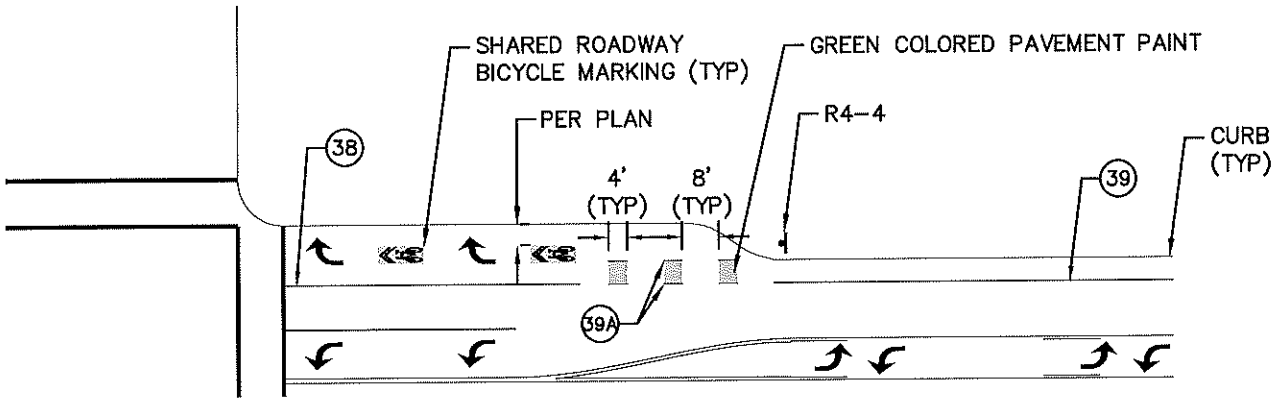
NOTES

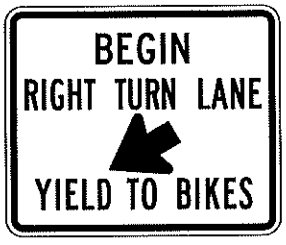
1. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
2. FOR BIKE LANE SYMBOL AND ARROW, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
3. FOR CLASS II AND IV BIKE LANE DETAILS, SEE CITY OF TRACY STD PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147	SHEET 8 OF 14
Res No. 2020–	DATE: February 18, 2020	**BIKE LANE AT BUS STOP**	
Rev: Leisser M.	Rev: Thomas W.		
Rev: Edgar T.	Rev:		





MUTCD R4-4 SIGN

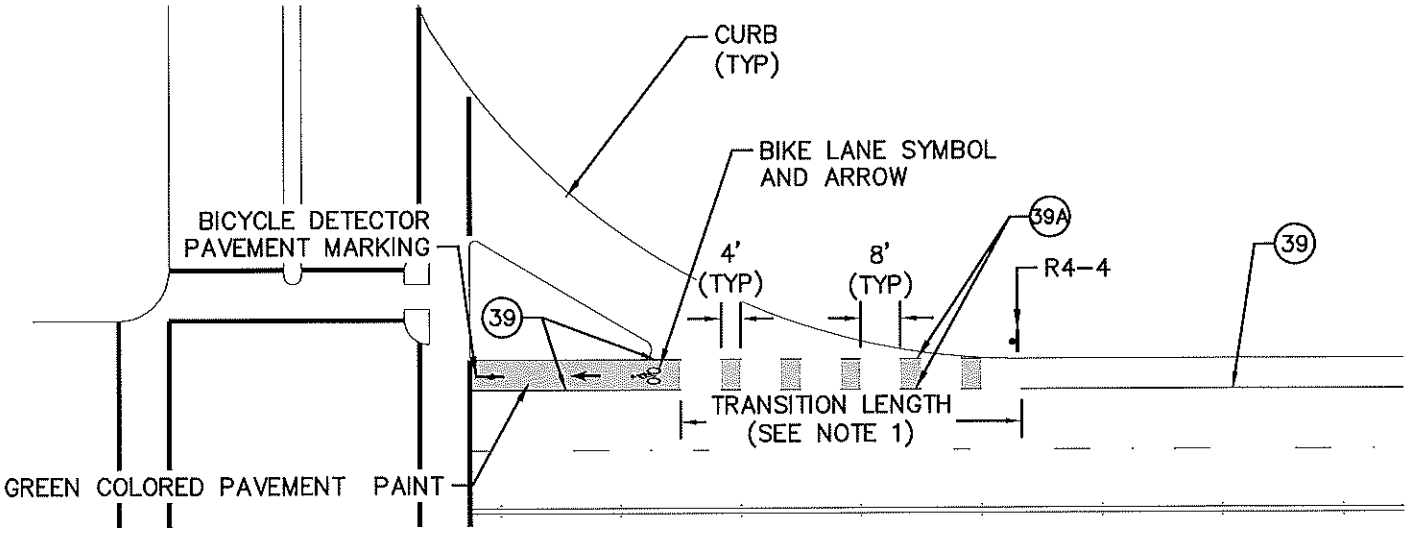
NOTES

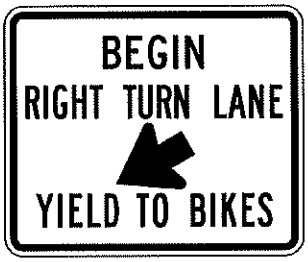
1. THIS TREATMENT USES GREEN BACKED SHARROWS AND RIGHT-TURN ARROWS TO MARK THE MIXING ZONE. THE MARKINGS SHALL BE CENTERED IN THE CHANNELIZED LANE. THE SHARROWS ARE TO BE SPACED EVENLY BETWEEN EACH RIGHT-TURN ARROW. SHARROW SHALL BE PLACED AT BEGINNING OF RIGHT TURN LANE.
2. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
3. FOR SHARED ROADWAY BICYCLE MARKING DETAIL, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 2 OF 14.
4. FOR CLASS II OR IV BIKE LANE DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147	SHEET 9 OF 14
Res No. 2020-	DATE: February 18, 2020	SHARED BIKE/ RIGHT-TURN LANE	
Rev: Leisser M.	Rev: Thomas W.		
Rev: Edgar T.	Rev:		





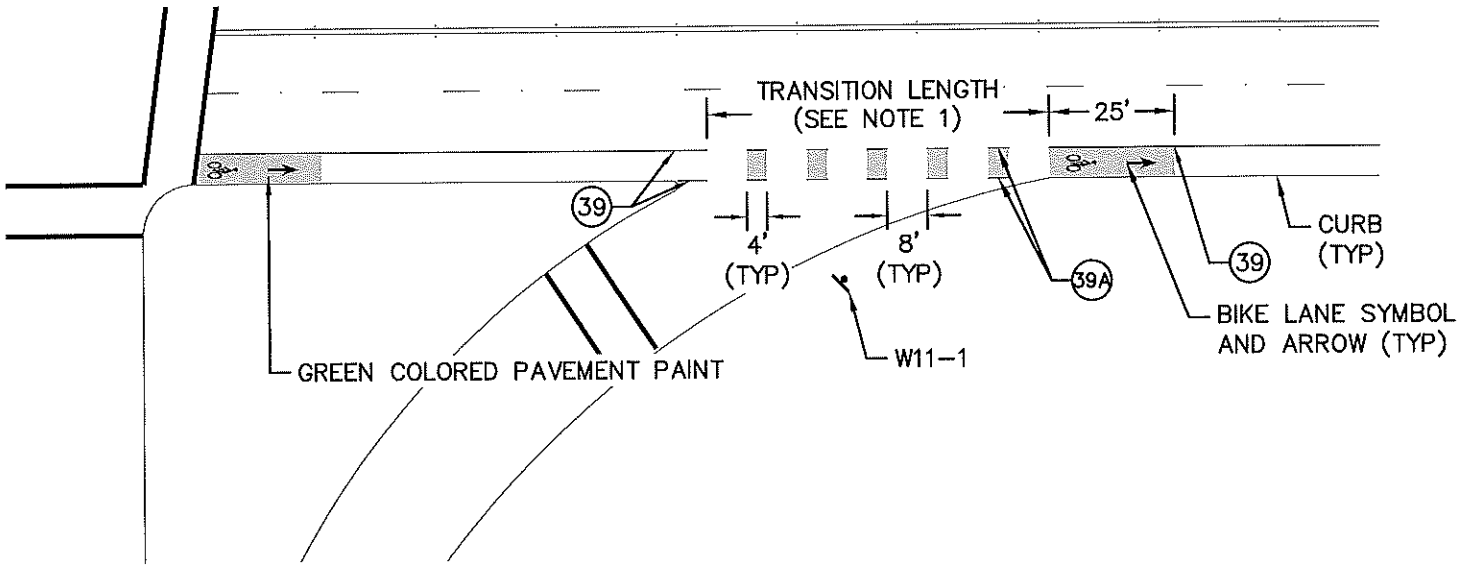
MUTCD R4-4 SIGN

NOTES

1. TRANSITION LENGTH IS DETERMINED BY ROADWAY GEOMETRY.
2. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
4. FOR BIKE LANE SYMBOL AND ARROW, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
5. FOR BICYCLE DETECTOR PAVEMENT MARKING, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 3 OF 14.
6. FOR CLASS II OR IV BIKE LANE DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	STANDARD PLAN NO. 147	SHEET 10 OF 14
	Res No. 2020–	DATE: February 18, 2020	**SLIP TURN UPSTREAM**
	Rev: Leisser M.	Rev: Thomas W.	
	Rev: Edgar T.	Rev:	





MUTCD W11-1 SIGN

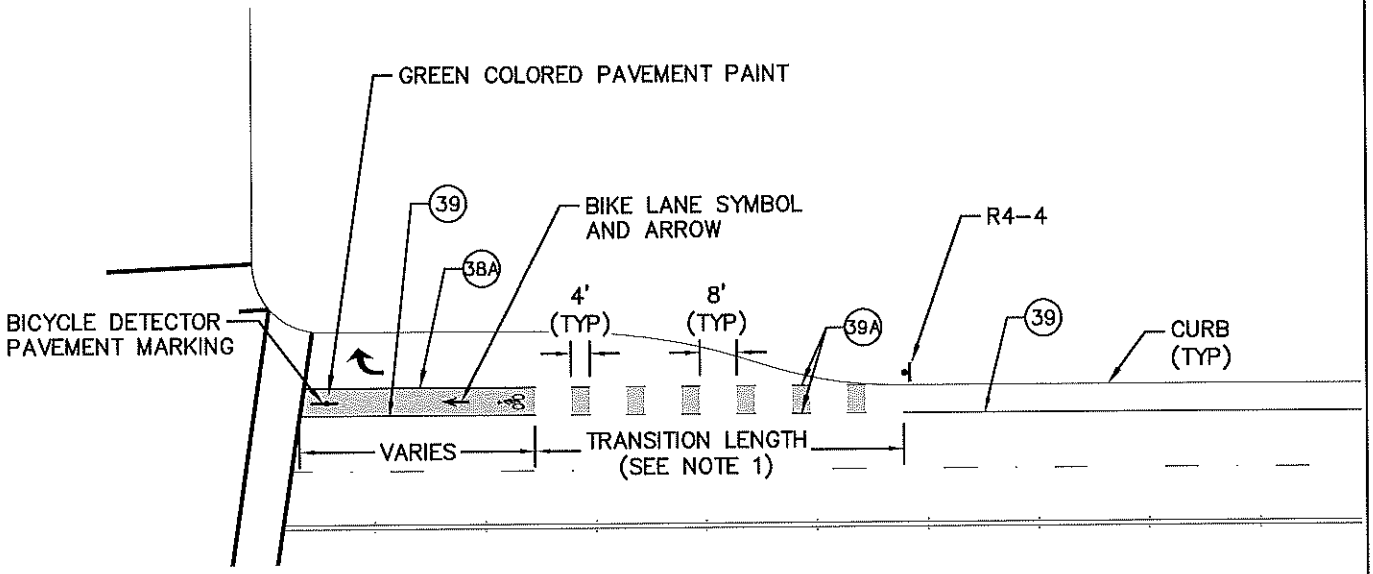
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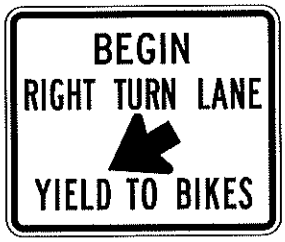
1. TRANSITION LENGTH IS DETERMINED BY ROADWAY GEOMETRY.
2. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
3. FOR BIKE SYMBOL AND ARROW DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
4. FOR CLASS II OR IV BIKE LANE DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147	SHEET 11 OF 14
Res No. 2020–	DATE: February 18, 2020	**SLIP TURN DOWNSTREAM**	
Rev: Leisser M.	Rev: Thomas W.		
Rev: Edgar T.	Rev:		





MUTCD R4-4 SIGN

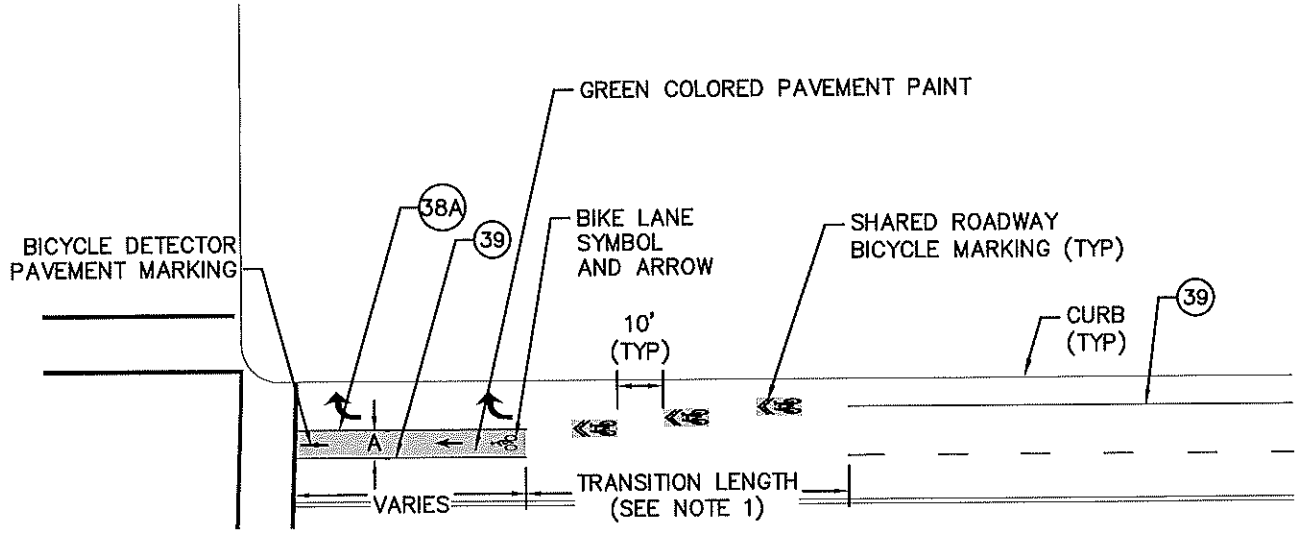
NOTES

1. TRANSITION LENGTH TO MATCH BAY TAPER LENGTH (60 FEET MINIMUM).
2. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
4. FOR BIKE LANE SYMBOL AND ARROW, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
5. FOR BICYCLE DETECTOR PAVEMENT MARKING, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 3 OF 14.
6. FOR CLASS II AND IV BIKE LANE DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 12 OF 14
Res No. 2020–	DATE: February 18, 2020	**TURN POCKET**
Rev: Leisser M.	Rev: Thomas W.	
Rev: Edgar T.	Rev:	



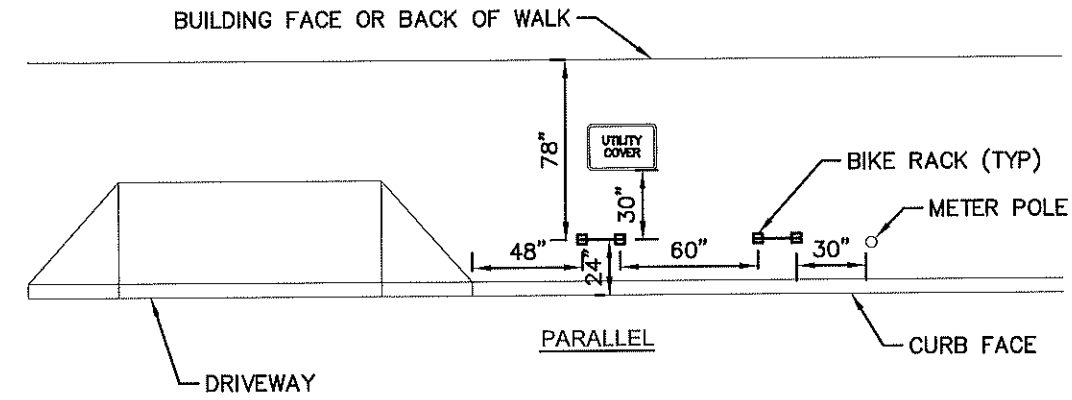
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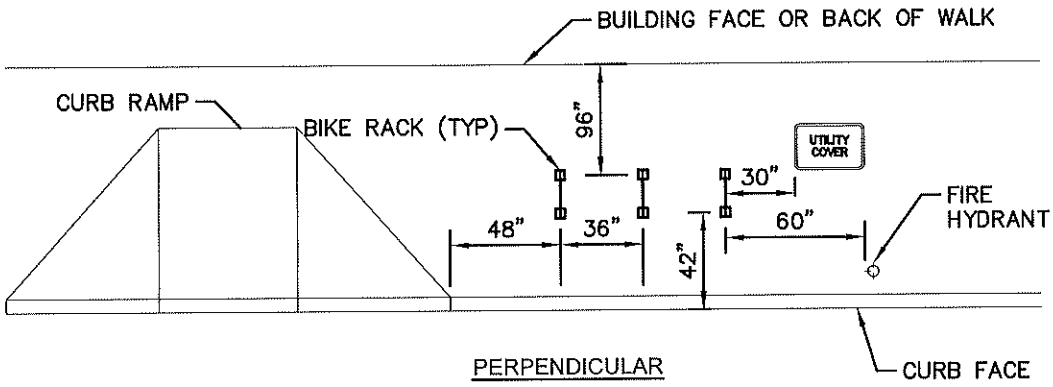
1. THIS TREATMENT USES GREEN BACKED SHARROWS TO MARK THE MIXING ZONE. THE FIRST SHARROW SHOULD BE CENTERED ON THE RIGHT EDGE OF THE UPSTREAM TRAVEL LANE. THE LAST SHOULD BE CENTERED ON THE LEFT EDGE OF THE RIGHT TURN LANE. THE SHARROWS IN BETWEEN SHOULD SHIFT EVENLY TO THE LEFT. THE TYPICAL TRANSITION LENGTH IS 12 X A (70' AS SHOWN).
2. KEYNOTES REFERENCE DETAILS ON CALTRANS STD. PLAN A20D, LATEST EDITION.
4. FOR BIKE LANE SYMBOL AND ARROW, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 1 OF 14.
5. FOR SHARED ROADWAY BICYCLE MARKING SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 2 OF 14.
6. FOR BICYCLE DETECTOR PAVEMENT MARKING, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 3 OF 14.
7. FOR CLASS II AND IV BIKE LANE DETAILS, SEE CITY OF TRACY STD. PLAN NO. 147 SHEET 6 OF 14.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 13 OF 14
Res No. 2020–	DATE: February 18, 2020	**RIGHT TURN ONLY TRAP LANE**
Rev: Leisser M.	Rev: Thomas W.	
Rev: Edgar T.	Rev:	





MINIMUM SETBACK DISTANCE	OBSTRUCTION TYPE
24" (PARALLEL), 42" (PERPENDICULAR)	CURB FACE, BUILDING FACE (IF RACK IS SITED ADJACENT)
30"	LIGHT POLE, NEWSPAPER RACK, SIGN POLE, USPS MAILBOX, TREE WELL, STREET FURNITURE, TRASH CAN, SURFACE HARDWARE (PG&E, CABLE GRATES, ETC.)
48"	CURB RAMP, CROSSWALK, WHITE/YELLOW LOADING ZONE, STORM DRAIN INLET, BLUE ZONE (DISABLED PARKING), DRIVEWAY
60"	FIRE HYDRANT

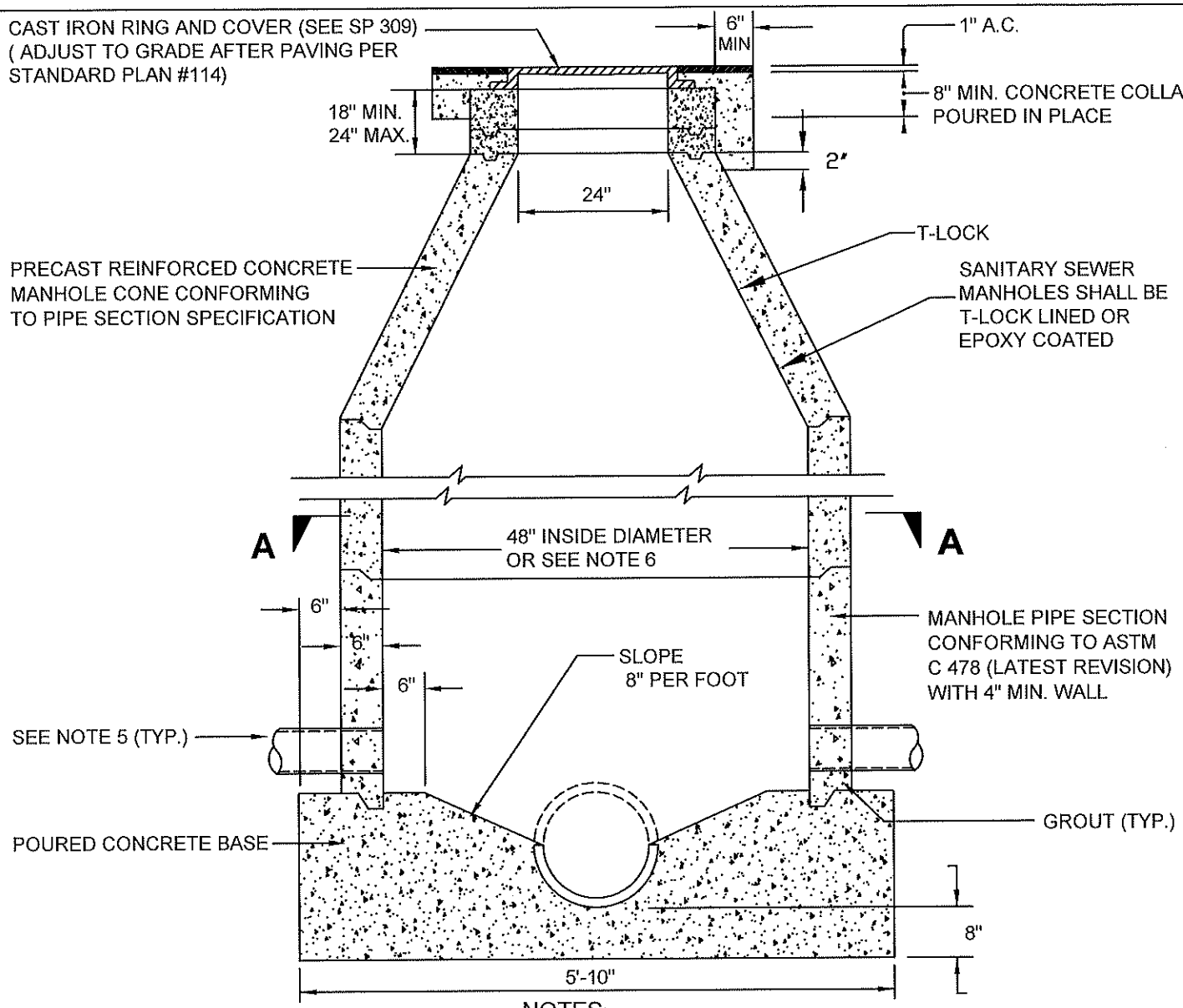
NOTES

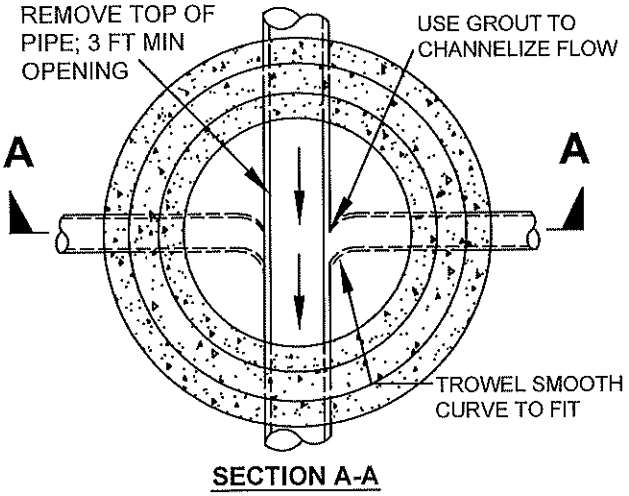
1. ALL DIMENSIONS ARE MINIMUMS AND SHOULD BE EXCEEDED WHERE POSSIBLE, DEPENDING ON SITE–SPECIFIC CONDITIONS.
2. ALL SETBACK DISTANCES ARE MEASURED FROM THE CENTER OF THE RACK FLANGE, TO THE LEADING EDGE OF OBSTRUCTION.
4. FOR CLASS I BIKE LOCKER, SEE CITY OF TRACY PARKS AND STRETSCAPE STD. D4.5.2.
5. FOR CLASS II RACKS, SEE CITY OF TRACY PARKS AND STREETSCAPE STD. D4.5.1.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN NO. 147 SHEET 14 OF 14
Res No. 2020–	DATE: February 18, 2020	**CLASS II BIKE RACK LAYOUT**
Rev: Leisser M.	Rev: Thomas W.	
Rev: Edgar T.	Rev:	





SECTION A-A

NOTES:

1. ALL JOINTS SHALL BE SEALED RAM-NEK OR KENT-SEAL #2.
2. BACKFILL AROUND MANHOLE SHALL HAVE 95% COMPACTION.
3. CONCRETE SHALL BE FIVE SACK CLASS "B" 2500 PSI AT 28 DAYS; 4" MAX. SLUMP; 3/4" MAX. AGGREGATE.
4. NO JOINTS IN THE PIPE WILL BE PERMITTED WITHIN THE MANHOLE.
5. PIPES SHALL HAVE AT LEAST ONE JOINT WITHIN 3 FEET FROM MANHOLE.
6. FOR PIPE SIZE GREATER THAN 36" OR DEPTH GREATER THAN 10 FT., INSIDE DIAMETER SHALL BE 60"
7. ECCENTRIC IS OPTIONAL WHEN NEEDED WITH APPROVAL FROM CITY ENGINEER.
8. 95% COMPACTION REQUIRED.
9. RAISED CONC. COLLAR & BOLLARDS IF INSTALLED OUTSIDE PAVED CONCRETE AREA.
10. BOLT DOWN LID REQUIRED OUTSIDE PAVED AREA.

CITY OF TRACY

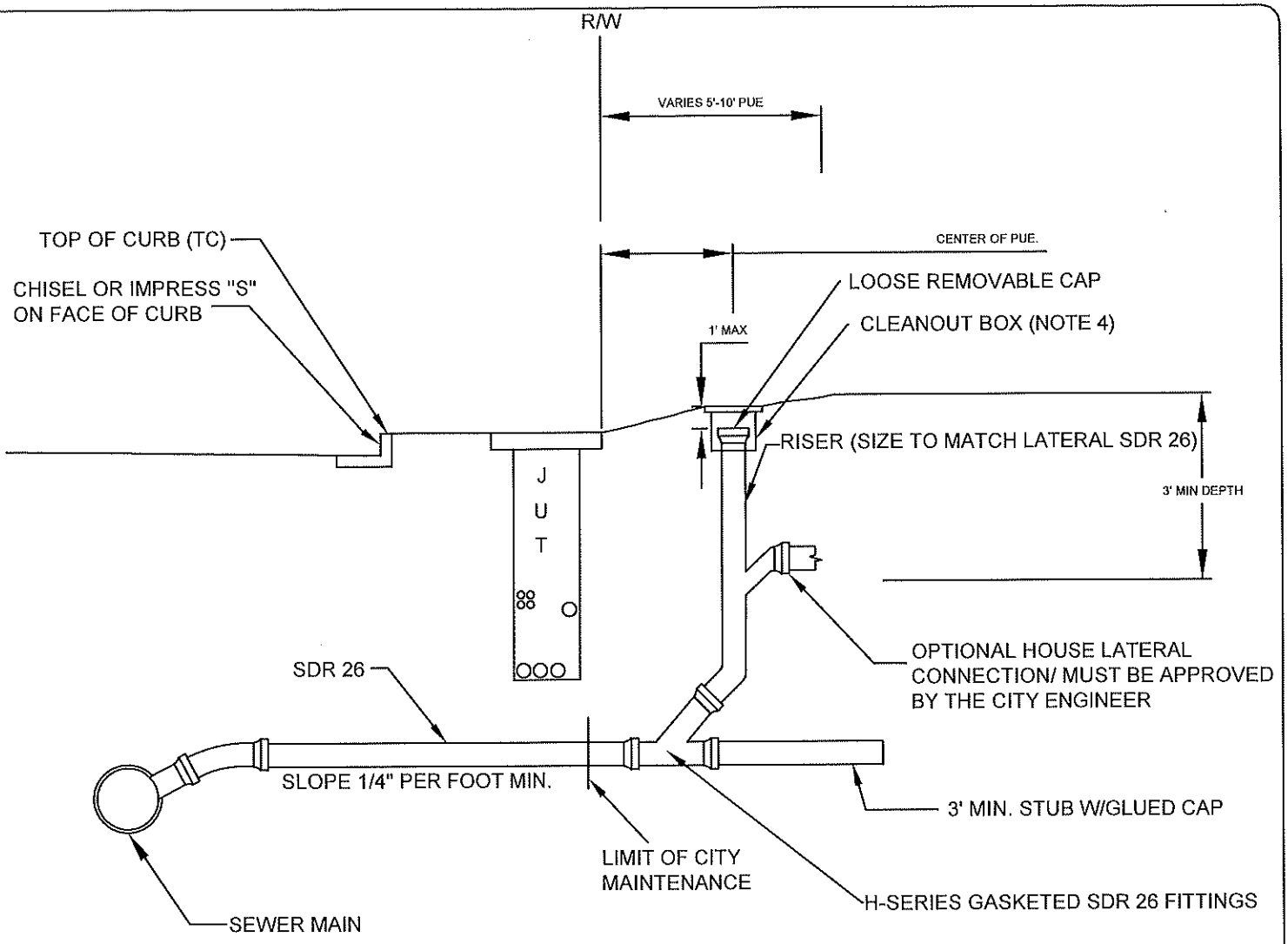
TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. **200**

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

SANITARY SEWER MANHOLE



PROFILE

N.T.S.

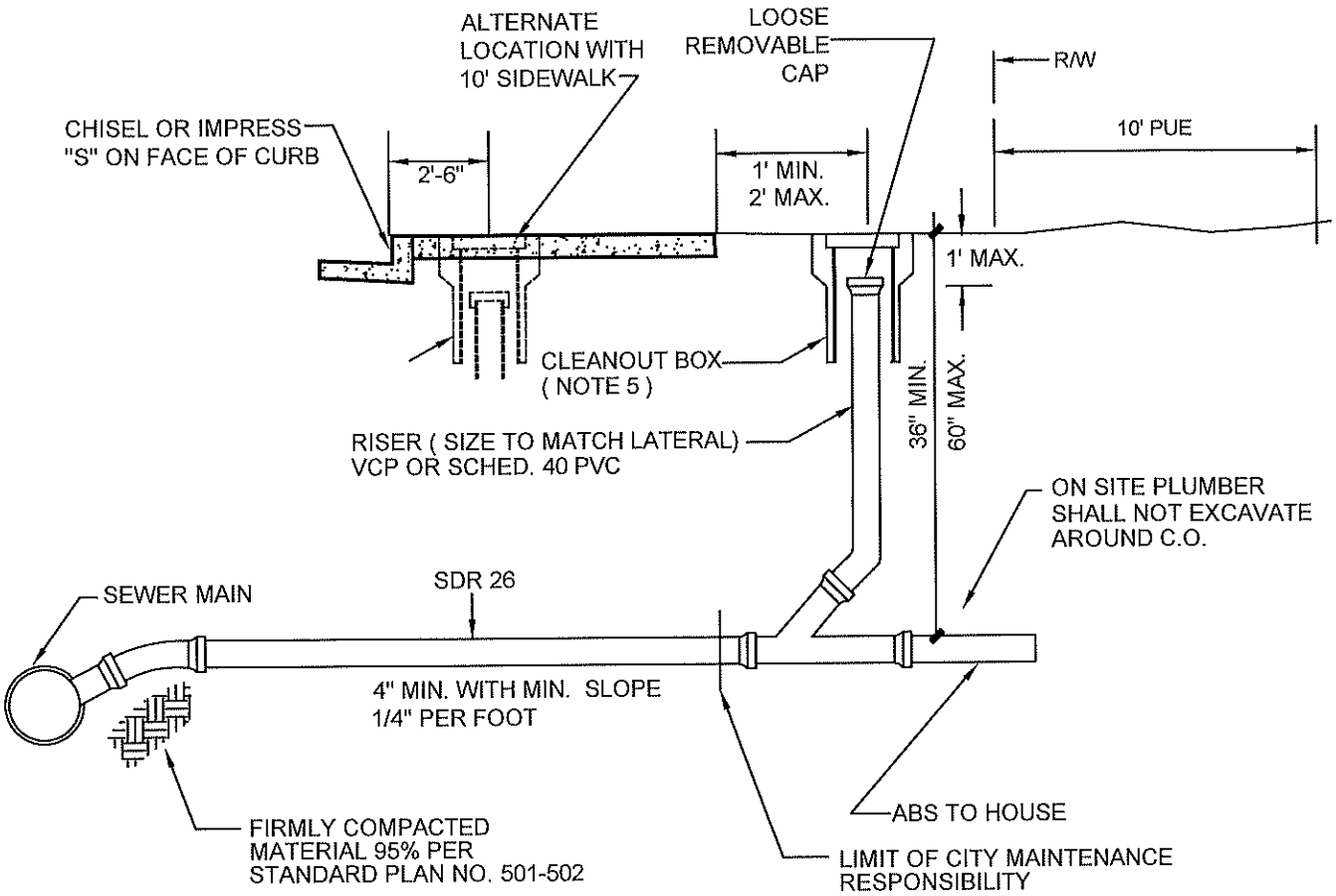
NOTES: **THE USE OF THIS STD MUST HAVE APPROVAL FROM THE CITY ENGINEER, AND WILL BE ONLY CONSIDERED ON A CASE BY CASE BASIS.**

1. NO CLEANOUTS SHALL BE LOCATED IN DRIVEWAYS, UNLESS APPROVED BY THE CITY ENGINEER.
2. HOUSE CONNECTION SHALL BE MADE UNDER THE SUPERVISION OF THE BUILDING INSPECTOR.
3. SEWER LATERAL SHALL BE CONSTRUCTED WITH A PERPENDICULAR ALIGNMENT FROM THE MAIN TO THE PROPERTY LINE, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. CLEANOUT BOX SHALL BE CHRISTY F8, OR APPROVED EQUAL, WITH CAST IRON COVER MARKED "C.O."
5. PIPE SLOPE MAY BE INCREASED TO ACCOMMODATE DEEP SEWERS AND PROVIDE MAXIMUM 60" COVER AT RIGHT OF WAY.
6. SEWER LATERAL PIPE AND FITTINGS SHALL BE SDR26 AND SHALL BE 4" MINIMUM.
7. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR OF THE LATERAL CLEANOUT IN GOOD CONDITION TO ALLOW ACCESS BY CITY PUBLIC WORKS MAINTENANCE.
8. MINIMUM DISTANCE (8 FT) FROM TREE TO SEWER LATERAL.
9. LATERAL SHALL HAVE TRACER WIRE AND MARKER TAPE FROM MAIN TO CLEANOUT.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 201
Res No. 2020-	DATE: February 18, 2020	SEWER LATERAL NEW DEVELOPMENT
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PROFILE
N.T.S.

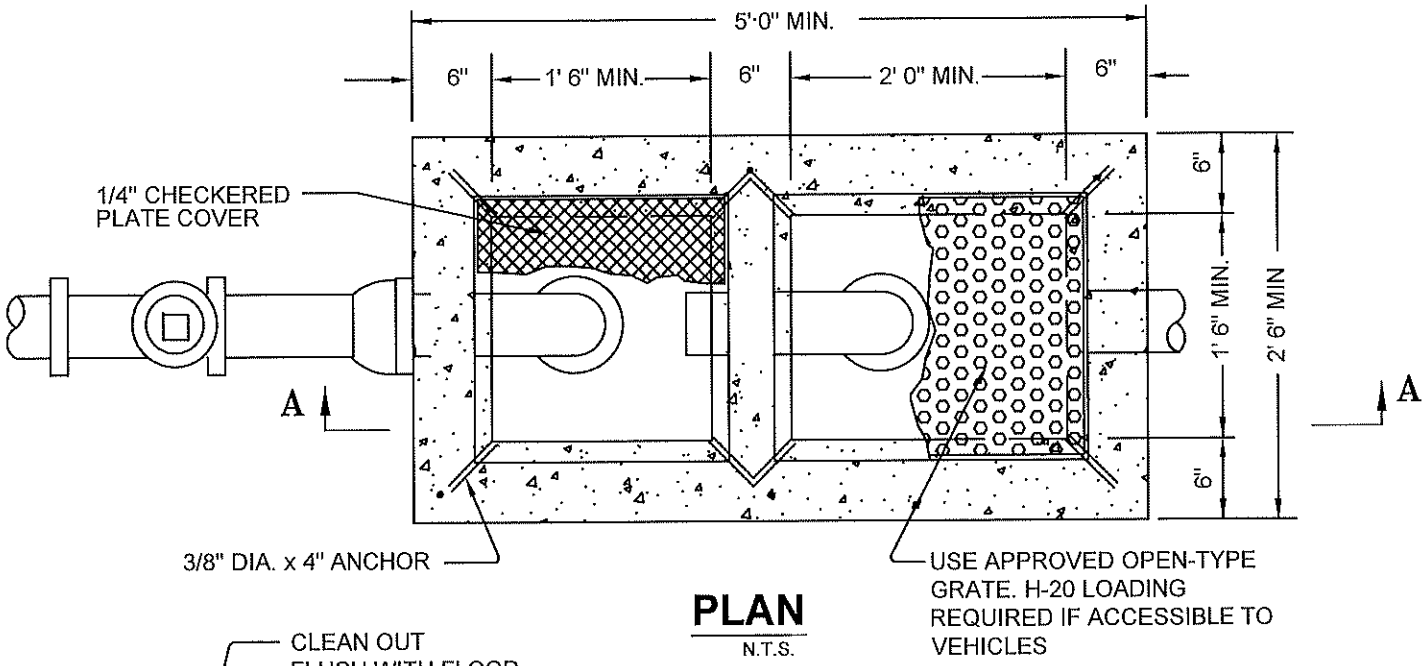
NOTES:

1. NO CLEANOUTS SHALL BE LOCATED IN DRIVEWAYS, UNLESS APPROVED BY THE CITY ENGINEER.
2. IF THE SIDEWALK IS SEPARATE FROM THE CURB, CLEANOUT RISER SHALL BE INSTALLED IN THE APPROXIMATE CENTER OF THE PLANTING STRIP.
3. HOUSE CONNECTION SHALL BE MADE UNDER THE SUPERVISION OF THE BUILDING INSPECTOR.
4. SEWER LATERAL SHALL BE CONSTRUCTED WITH A PERPENDICULAR ALIGNMENT FROM THE MAIN TO THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. CLEANOUT BOX SHALL BE CHRISTY F8, OR APPROVED EQUAL, WITH CAST IRON COVER MARKED "C.O."
6. PIPE SLOPE MAY BE INCREASED TO ACCOMMODATE DEEP SEWERS AND PROVIDE MAXIMUM 60" COVER AT RIGHT OF WAY.
7. SEWER LATERAL PIPE AND FITTINGS SHALL BE SDR 26 AND SHALL BE 4 INCH MINIMUM.
8. PROPERTY OWNER SHALL BE RESPONSIBLE FOR REPAIR AND MAINTENANCE OF THE LATERAL CLEANOUT IN GOOD CONDITION TO ALLOW ACCESS BY CITY PUBLIC WORKS MAINTENANCE.
9. NO REPAIR COUPLINGS SHALL BE USED WITHIN R/W DURING NEW CONSTRUCTION, UNLESS APPROVED BY THE CITY ENGINEER.
10. ON SITE PLUMBER SHALL NOT EXCAVATE AROUND THE CLEANOUT.
11. USED EXISTING SERVICES SHALL BE ABANDONED AT THE RIGHT OF WAY BY POTHOLING AND INSTALLING A WATERTIGHT PLUG OR CAP AT THE END OF THE LATERAL AND SURROUNDING THE SEAL WITH A 50 # BAG OF CONCRETE MIX.
12. LATERAL SHALL BE INSTALLED ABOVE JOINT TRENCH.
13. TRACER WIRE AND MARKER TAPE FROM MAIN TO CLEANOUT BOX.
14. MIN. DISTANCE (8FT) FROM TREE TO SEWER LATERAL.

CITY OF TRACY

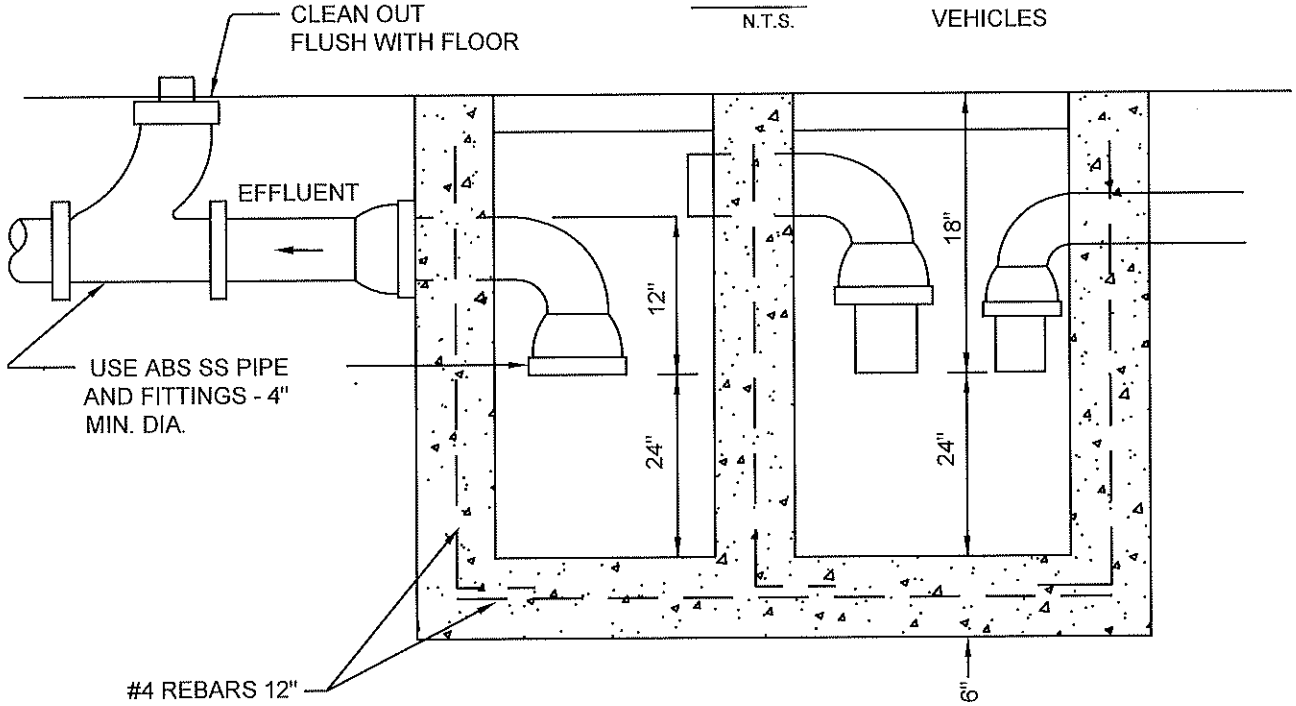
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **202**
Res No. 2020-	DATE: February 18, 2020	**SEWER LATERAL**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PLAN

N.T.S.



SECTION A-A

N.T.S.

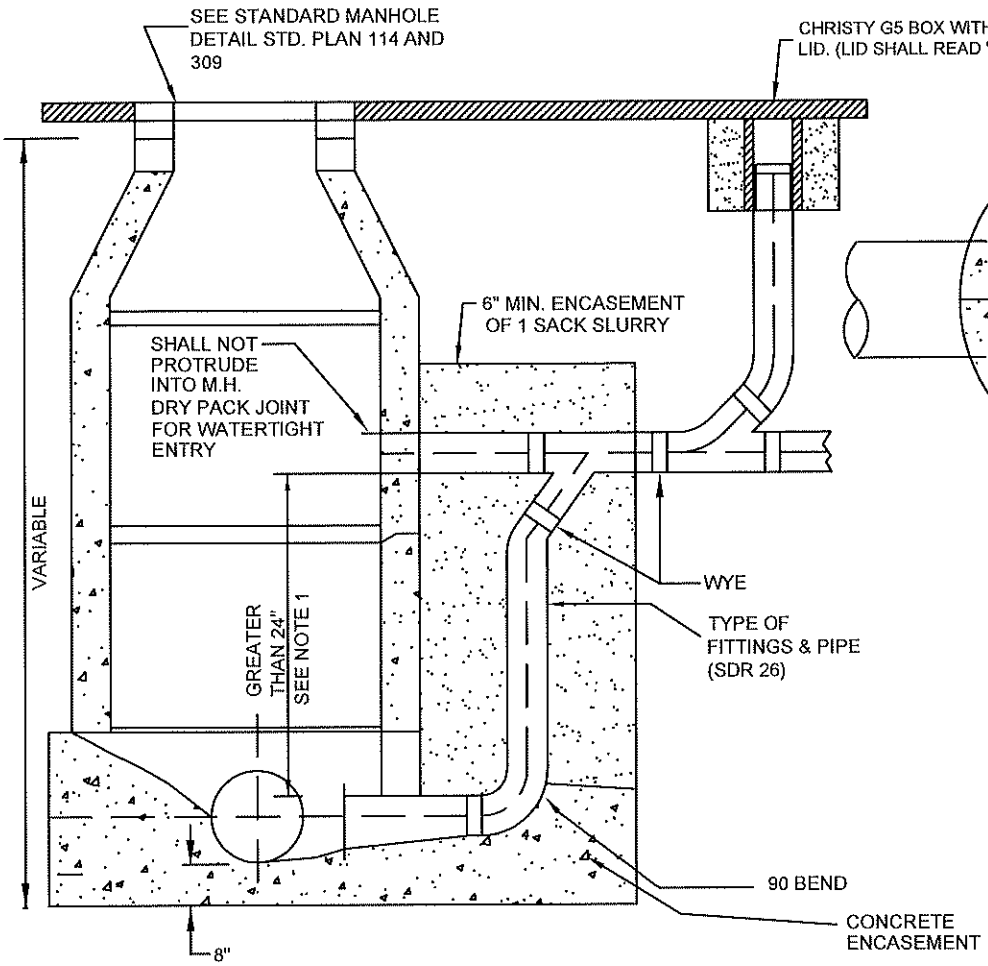
NOTES:

1. ALTERNATE TRAPS MAY BE SUBMITTED FOR APPROVAL BY THE CITY ENGINEER.

CITY OF TRACY

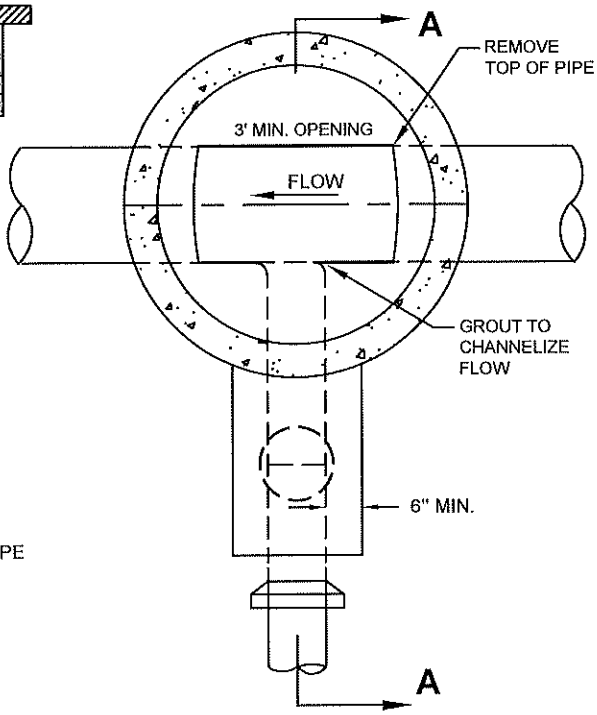
TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	STANDARD PLAN No. 203
	Res No. 2020-	DATE: February 18, 2020
	Rev: Leisser M.	Rev: Thomas W.
	Rev:	Rev:

SAND/OIL INTERCEPTOR



SECTION A-A

N.T.S.



PLAN VIEW

N.T.S.

NOTES:

1. THIS TYPE OF MANHOLE SHALL BE USED WHEN THE INCOMING PIPE IS 10" OR GREATER AND THE DIFFERENCES IN INVERT ELEVATIONS EXCEEDS 24". FOR FEEDER PIPES 8" OR LESS, SEE SD 206A.

2. PIPE SHALL HAVE AT LEAST ONE JOINT WITHIN 3 FEET FROM MANHOLE.

3. DROP PIPE TO BE ONE SIZE LARGER THAN THE INCOMING PIPE.

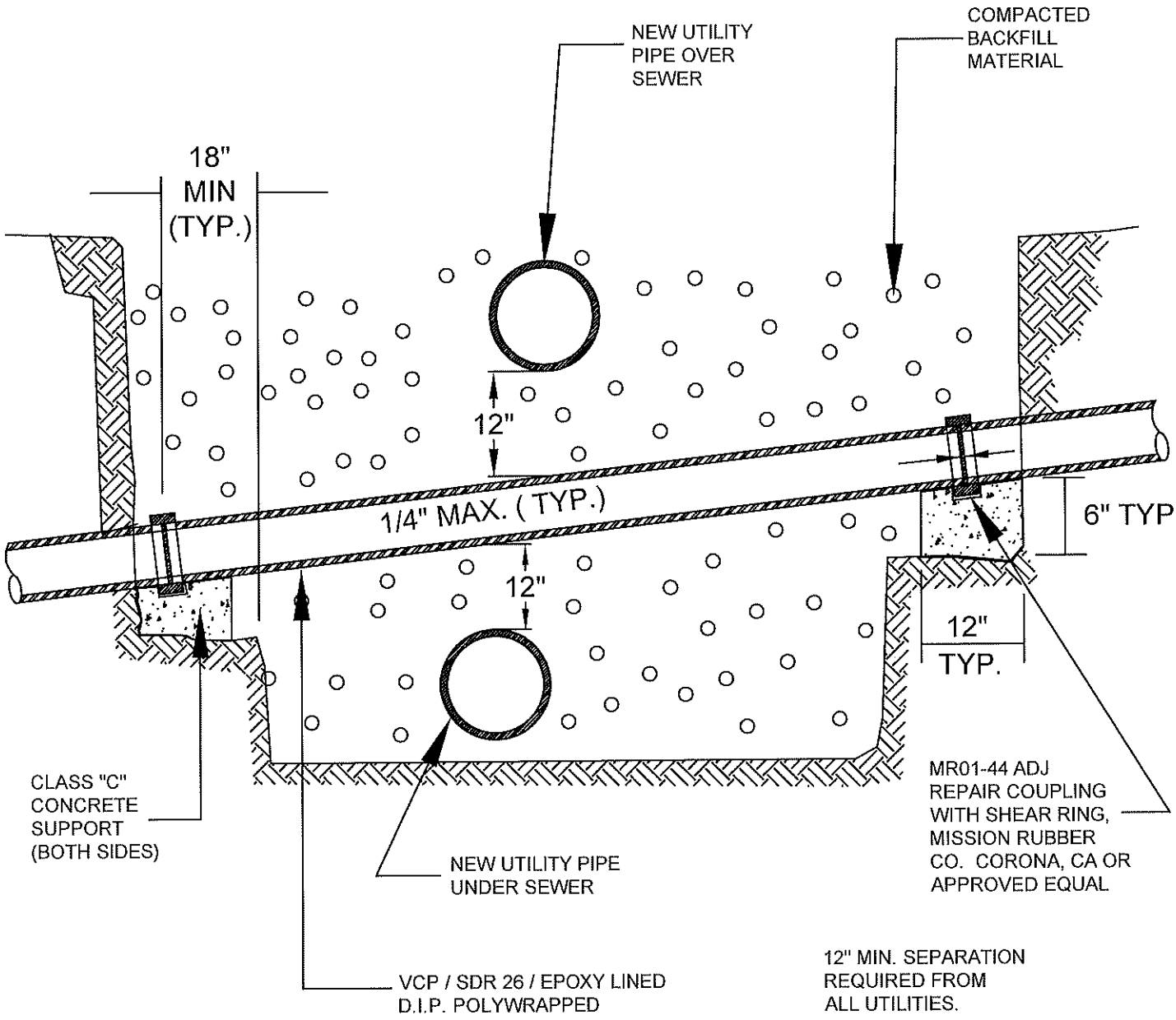
4. ENCASING CONCRETE SHALL BE CLASS "B", 2500 PSI AT 28 DAYS; $\frac{3}{4}$" MAXIMUM AGGREGATE SIZE.

5. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SD 301.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 204
Res No. 2020-	DATE: February 18, 2020	DROP MANHOLE
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



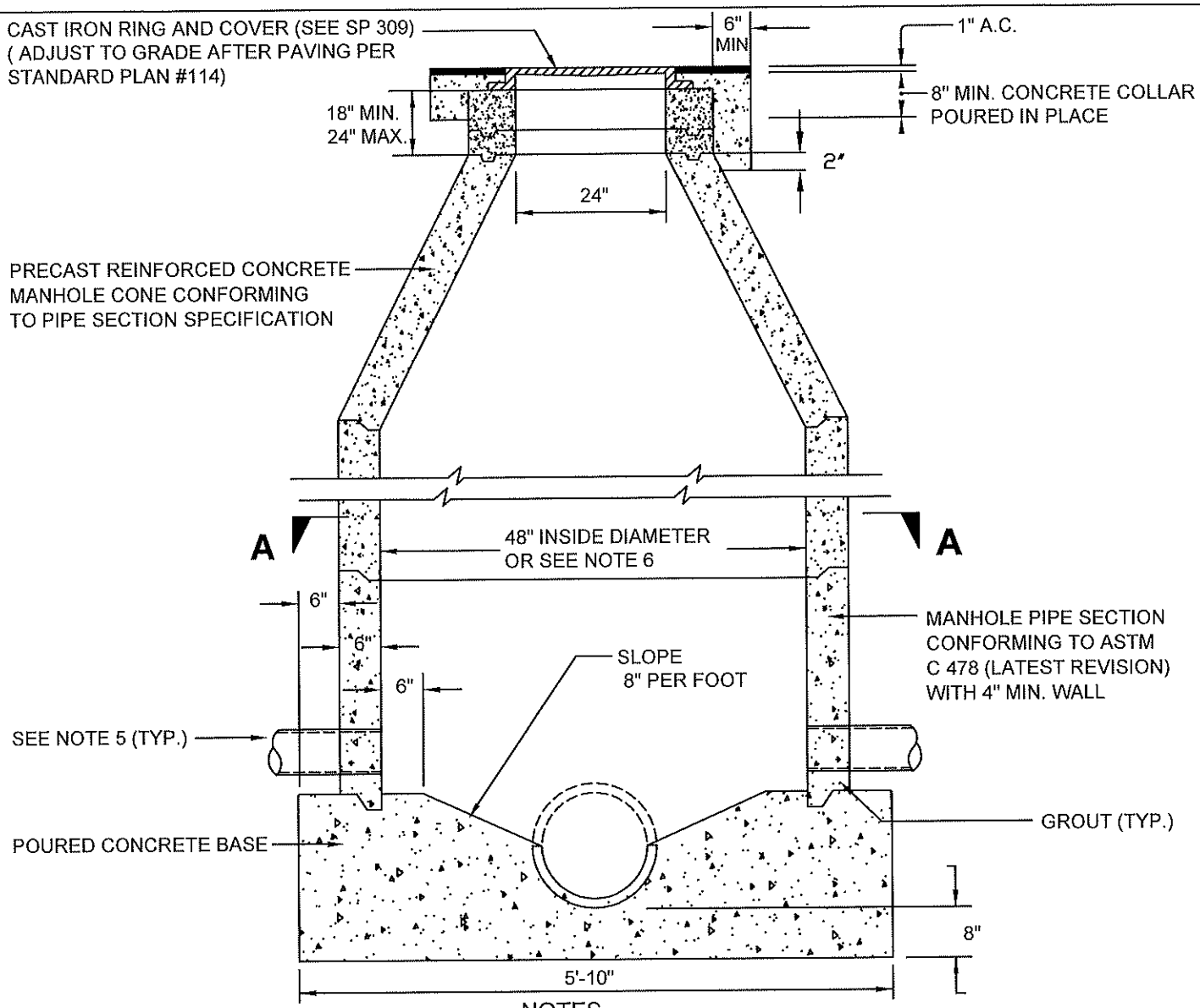
SEWER REPAIR - NO CONFLICT IN GRADE

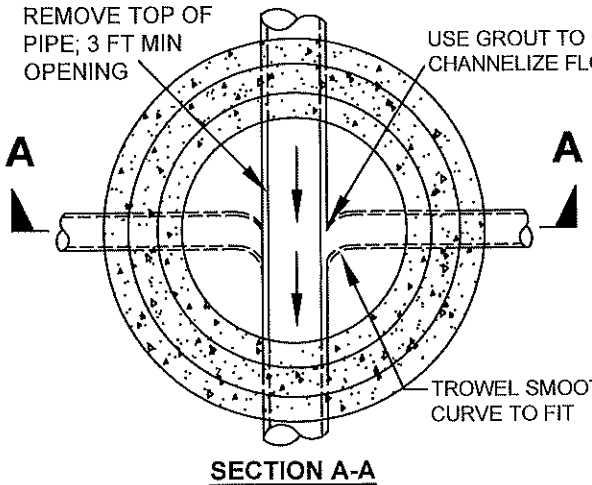
N.T.S.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 205
Res No. 2020-	DATE: February 18, 2020	SEWER LATERAL REPAIR
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





SECTION A-A

NOTES:

1. ALL JOINTS SHALL BE SEALED RAM-NEK OR KENT-SEAL #2.
2. BACKFILL AROUND MANHOLE SHALL HAVE 95% COMPACTION.
3. CONCRETE SHALL BE FIVE SACK CLASS "B" 2500 PSI AT 28 DAYS; 4" MAX. SLUMP; 3/4" MAX. AGGREGATE. VIBRATE, CONCRETE TO CONSOLIDATE
4. NO JOINTS IN THE PIPE WILL BE PERMITTED WITHIN THE MANHOLE.
5. PIPES SHALL HAVE AT LEAST ONE JOINT WITHIN 3 FEET FROM MANHOLE.
6. FOR PIPE SIZE GREATER THAN 36" OR DEPTH GREATER THAN 10 FT., INSIDE DIAMETER SHALL BE 60"
7. ECCENTRIC IS OPTIONAL WHEN NEEDED WITH APPROVAL FROM CITY ENGINEER.
8. 95% COMPACTION REQUIRED.
9. RAISED CONC. COLLAR & BOLLARDS IF INSTALLED OUTSIDE PAVED CONCRETE AREA.
10. BOLT DOWN LID REQUIRED OUTSIDE PAVED AREA.

CITY OF TRACY

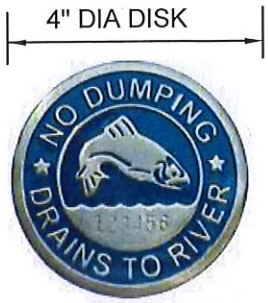
TRACY
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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. **300**

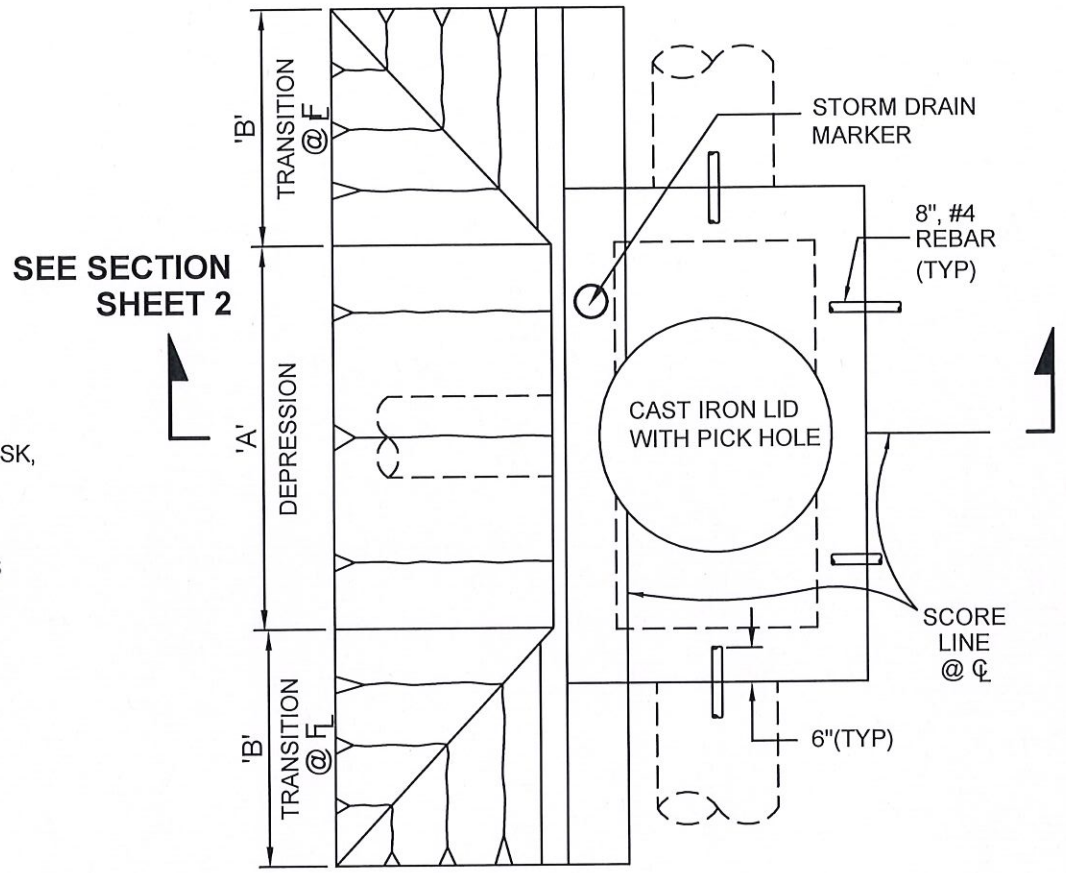
Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

STORM DRAIN MANHOLE

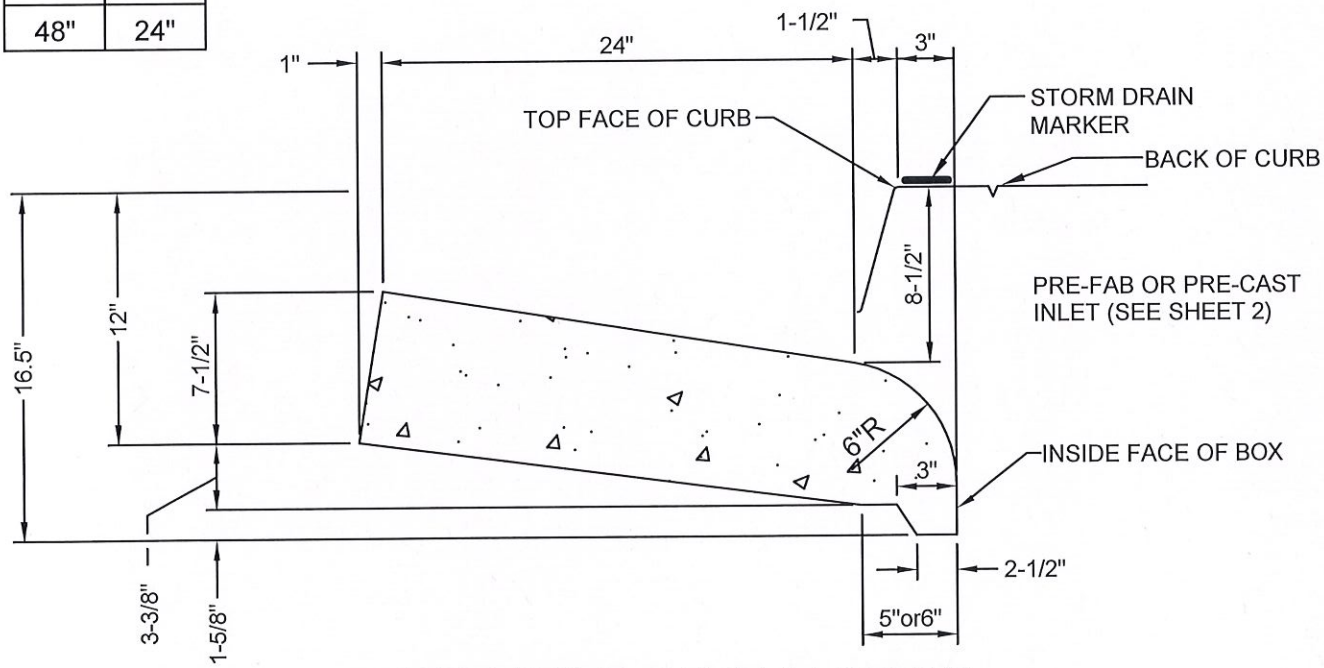


STORM DRAIN MARKER

MARKER TO BE ALMETEK STAINLESS STEEL PAINTED DISK, BLUE WITH FISH LOGO AND LETTERING STATING "NO DUMPING, DRAINS TO RIVER." APPLY PER MANUFACTURERS RECOMMENDATION.



DIMENSIONS	
'A'	'B'
30"	33"
48"	24"



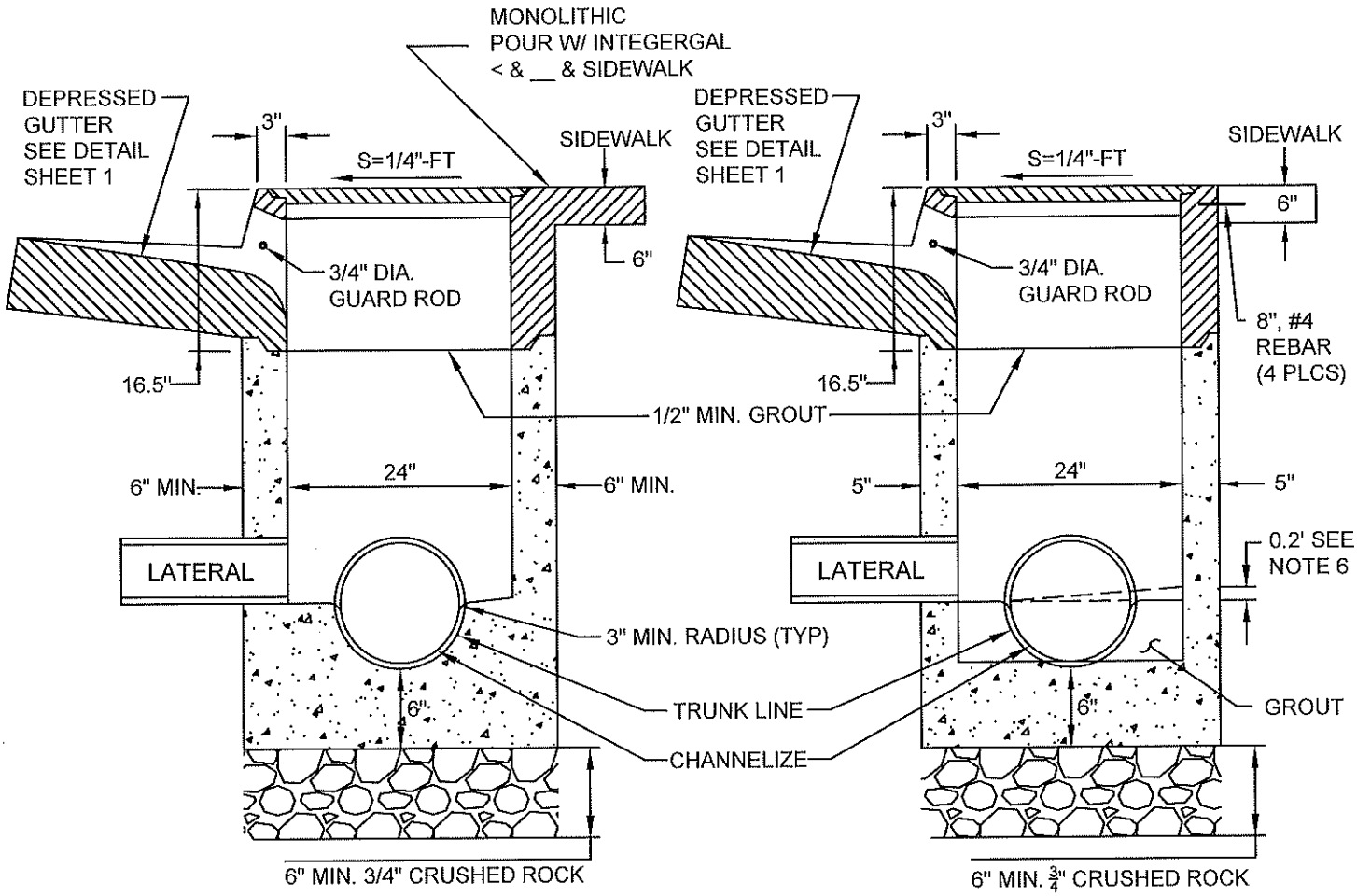
DEPPRESSED GUTTER DETAIL

N.T.S.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 301 SHEET 1 OF 2
Res No. 2020-	DATE: February 18, 2020	DROP INLET
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



SECTION

N.T.S.

PRE-FAB INLET (PELICAN STYLE)
CAST - IN - PLACE BOX

SECTION

N.T.S.

PRE-CAST INLET
PRE-CAST BOX

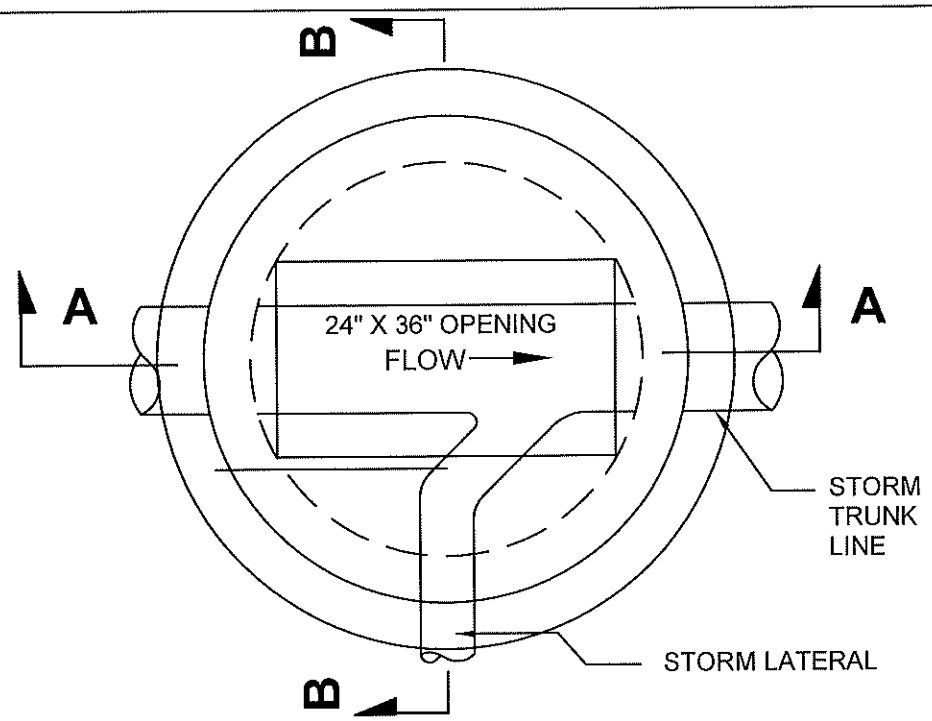
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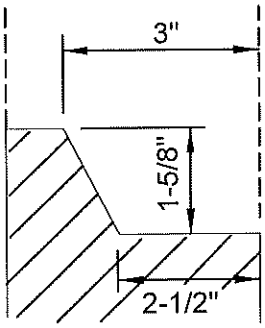
1. LATERAL CROWN TO MATCH TRUNK CROWN, OR LATERAL FLOWLINE TO BE A MINIMUM OF 0.2' HIGHER THAN TRUNK FLOWLINE, WHICHEVER GOVERNS.
2. WHERE TRUNK LINE IS LARGER THAN 18" DIA., USE MANHOLE BASE OR SPECIAL DESIGN BOX. DESIGN TO BE REVIEWED BY CITY ENGINEER.
3. PRECAST INLETS TO BE SANTA ROSA 4A, OR EQUAL. PREFAB INLETS TO BE SANTA ROSA PELICAN 4A OR EQUAL.
4. PRECAST BOX TO BE CHRISTY U36, SANTA ROSA 1K, 3K OR EQUAL.
5. HOLD BOTTOM OF KEY TO THE BOX 16.5" BELOW TOP OF CURB.
6. SLOPE TO DRAIN WITH GROUT IF BOX HAS NO INLET PIPE.

CITY OF TRACY

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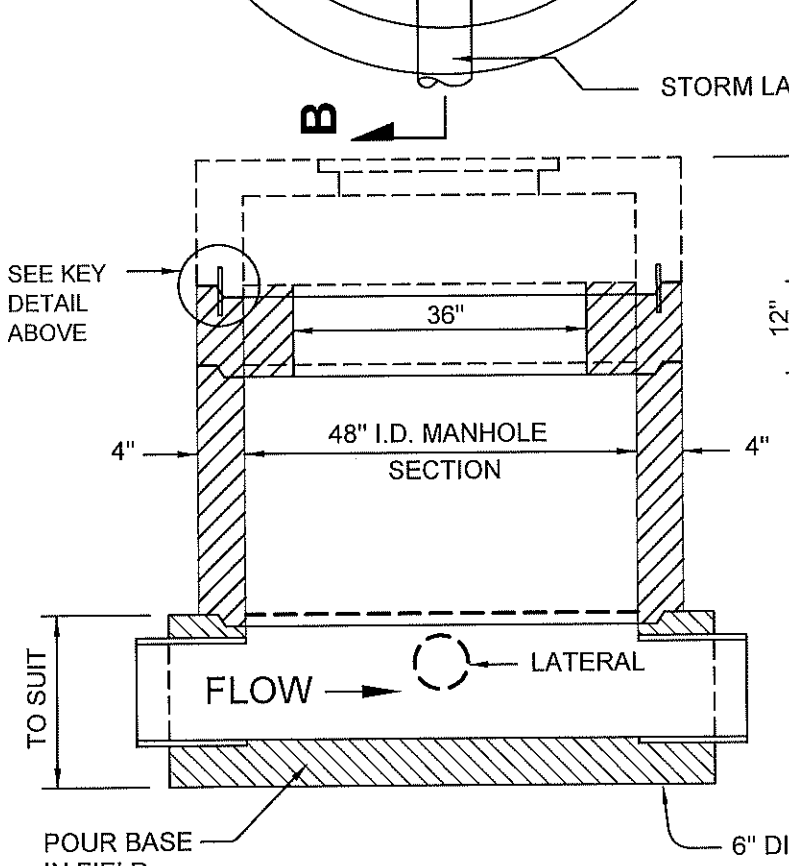
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 301 SHEET 2 OF 2
Res No. 2020-	DATE: February 18, 2020	**DROP INLET**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





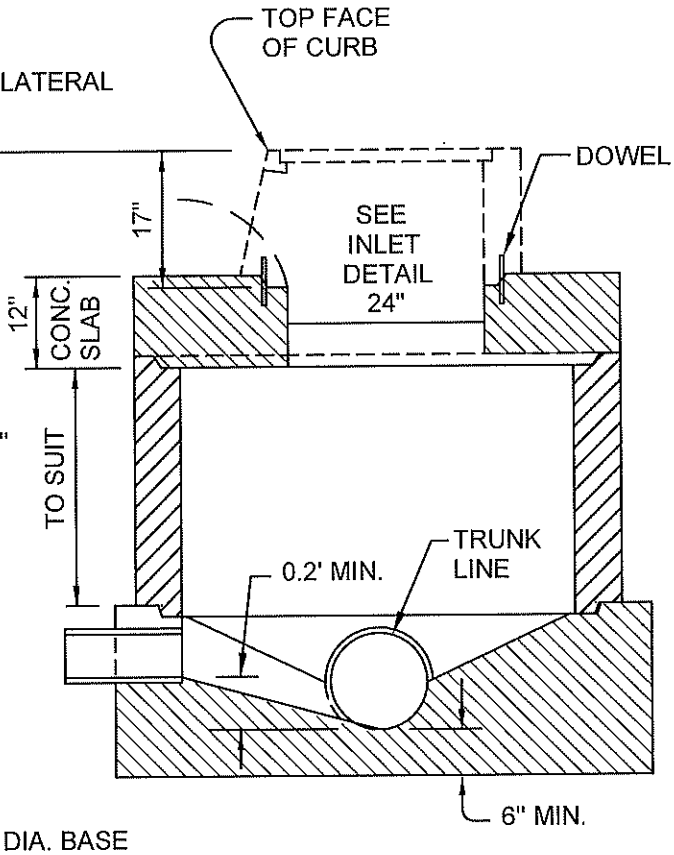
KEY DETAIL

N.T.S.



SECTION A-A

N.T.S.



SECTION B-B

N.T.S.

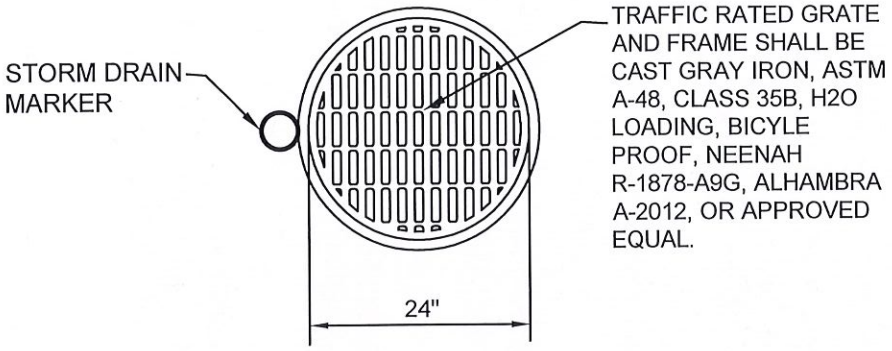
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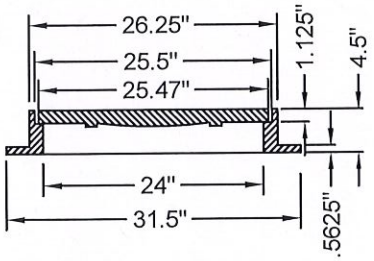
1. FOR USE WITH 24" & LARGER TRUNK LINES.
2. LATERAL CROWN TO MATCH TRUNK CROWN ELEVATION OR FLOW LINE TO BE A MINIMUM OF 0.2' HIGHER THAN TRUNK FLOW LINE, WHICHEVER GOVERNS.
3. FOR DEPRESSED GUTTER, SEE DROP INLET DETAIL 302.

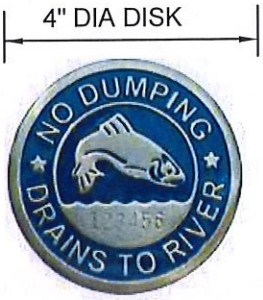
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 302
Res No. 2020-	DATE: February 18, 2020	INLET MANHOLE BASE
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

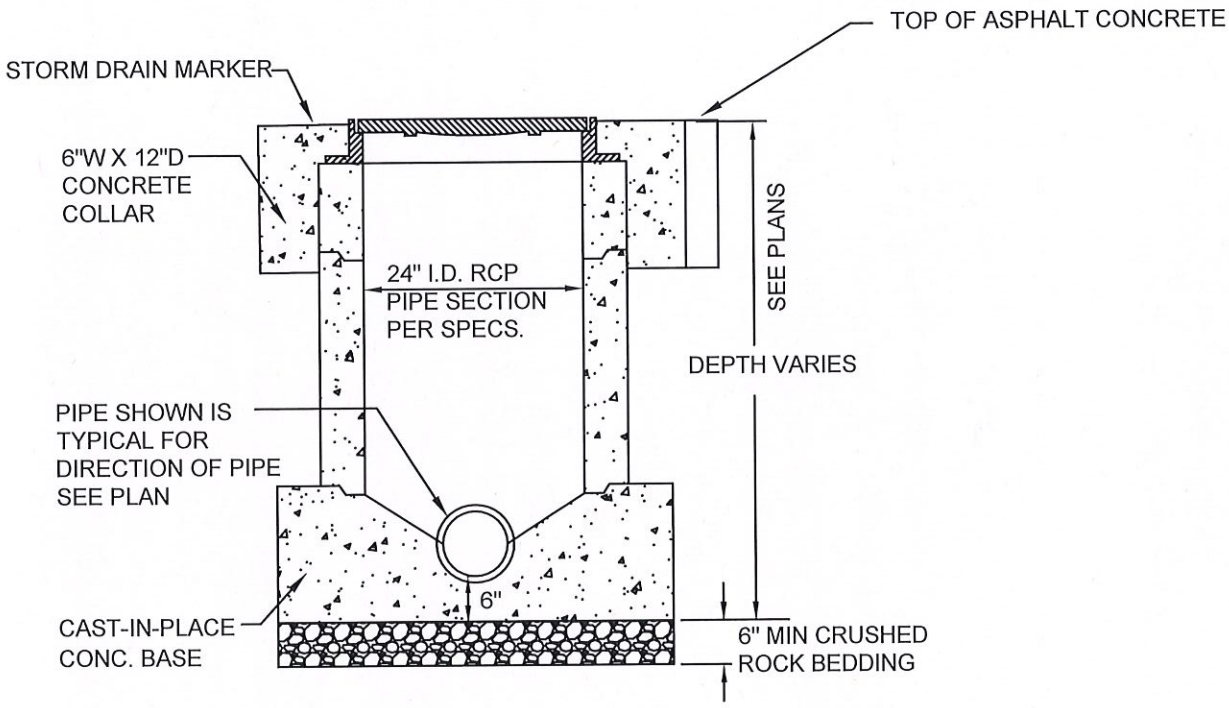






STORM DRAIN MARKER

MARKER TO BE ALMETEK STAINLESS STEEL PAINTED DISK, BLUE WITH FISH LOGO AND LETTERING STATING "NO DUMPING, DRAINS TO RIVER." APPLY PER MANUFACTURERS RECOMMENDATION.



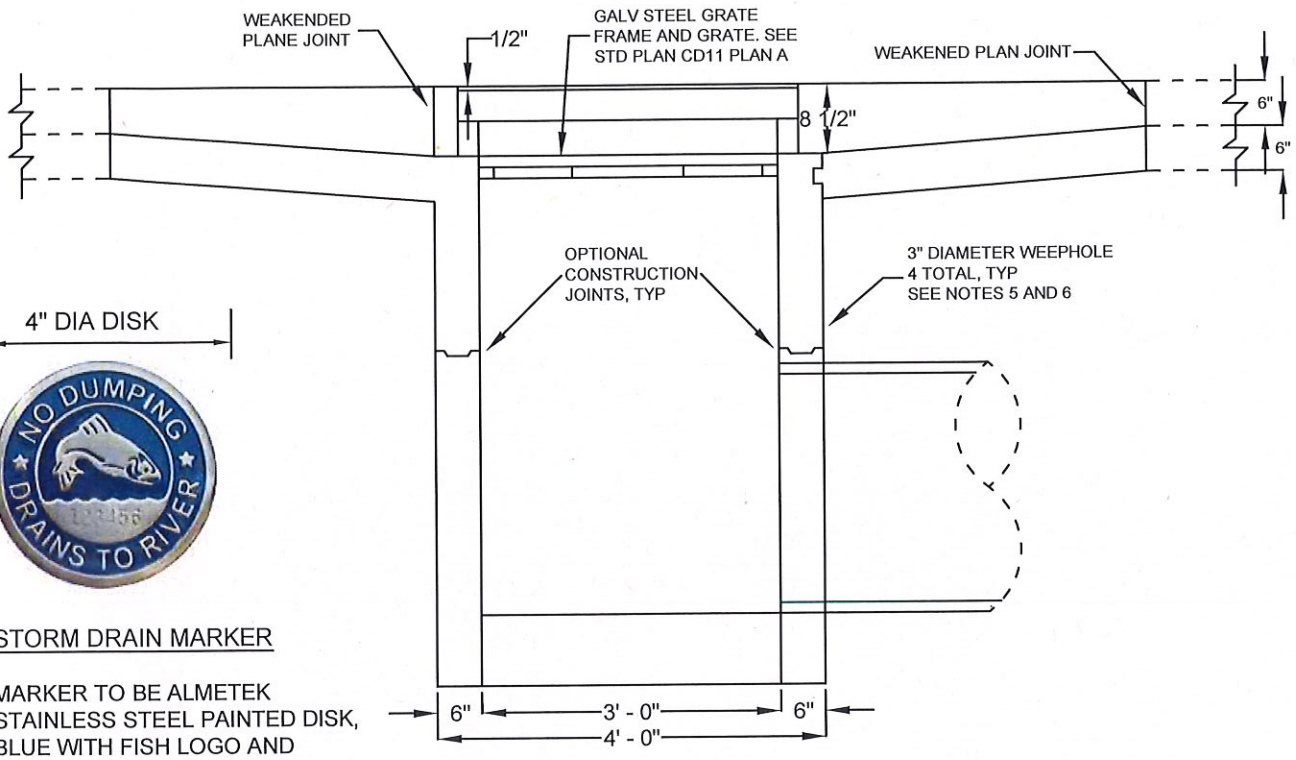
NOTES:

SEE PARKS AND STREETSCAPE DETAIL D1.12, "AREA DRAIN" FOR NON-STRUCTURAL INLET APPLICATIONS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 303
Res No. 2020-	DATE: February 18, 2020	**SHALLOW DROP/CURB INLET**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

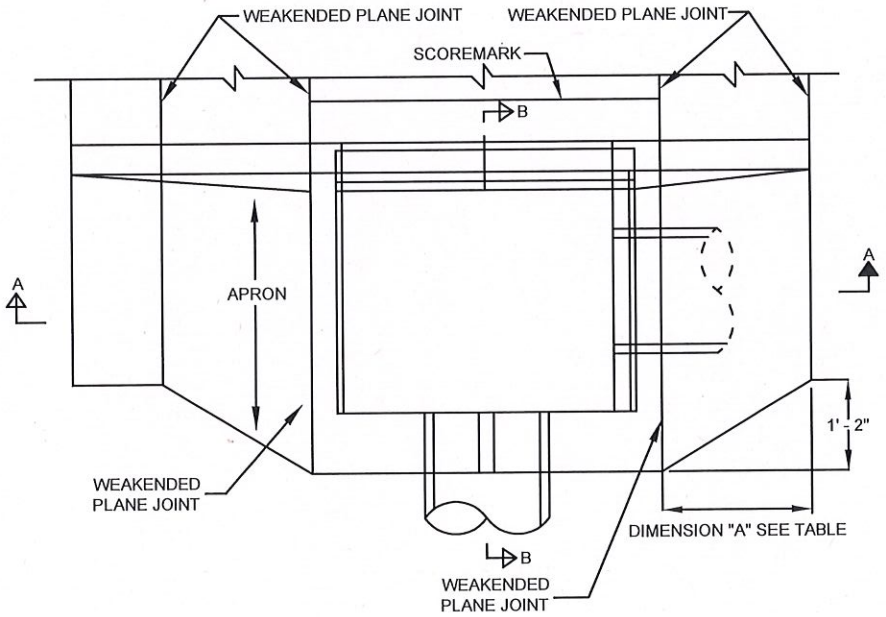


4" DIA DISK

STORM DRAIN MARKER

MARKER TO BE ALMETEK STAINLESS STEEL PAINTED DISK, BLUE WITH FISH LOGO AND LETTERING STATING "NO DUMPING, DRAINS TO RIVER." APPLY PER MANUFACTURERS RECOMMENDATION.

SECTION A-A
N.T.S.



CITY OF TRACY

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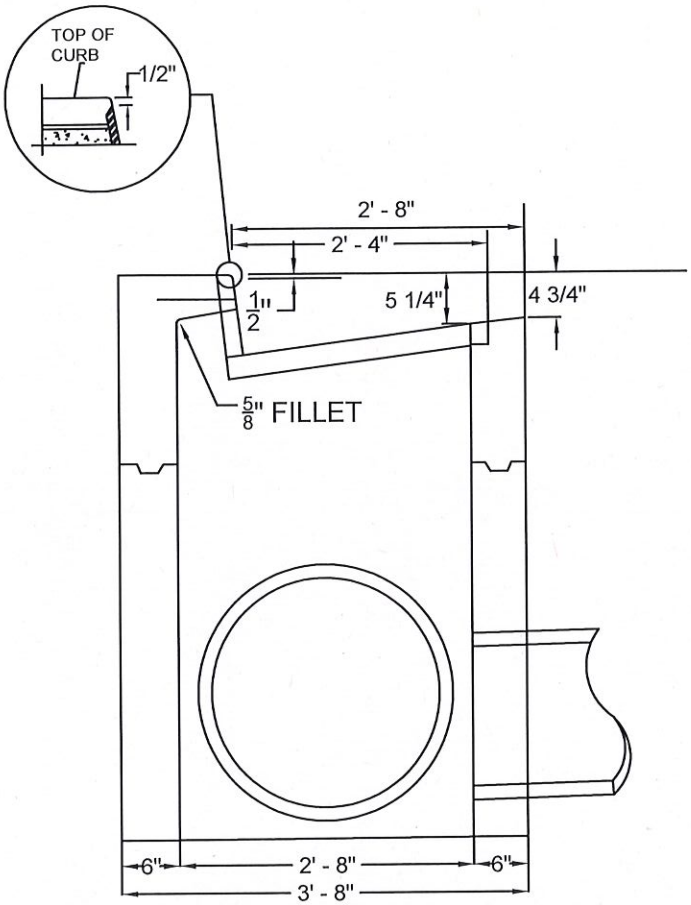
REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

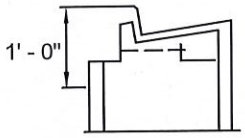
STANDARD PLAN No. **304**

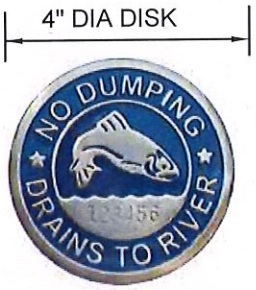
SHEET 1 OF 2

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev: Edgar T.	Rev:

TYPE "A" INLET



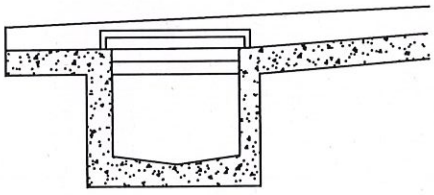




STORM DRAIN MARKER

MARKER TO BE ALMETEK STAINLESS STEEL PAINTED DISK, BLUE WITH FISH LOGO AND LETTERING STATING "NO DUMPING, DRAINS TO RIVER." APPLY PER MANUFACTURERS RECOMMENDATION.

DIMENSION "A" (in)		
UPSTREAM CURB GRADE	"A" UPSTREAM	"A" DOWNSTREAM
2% AND LESS	24	24
3%	36	24
4%	48	24
5%	60	24
6%	72	24
7%	84	12
8%	96	12
9%	108	12
10% AND GREATER	120	12



CITY OF TRACY

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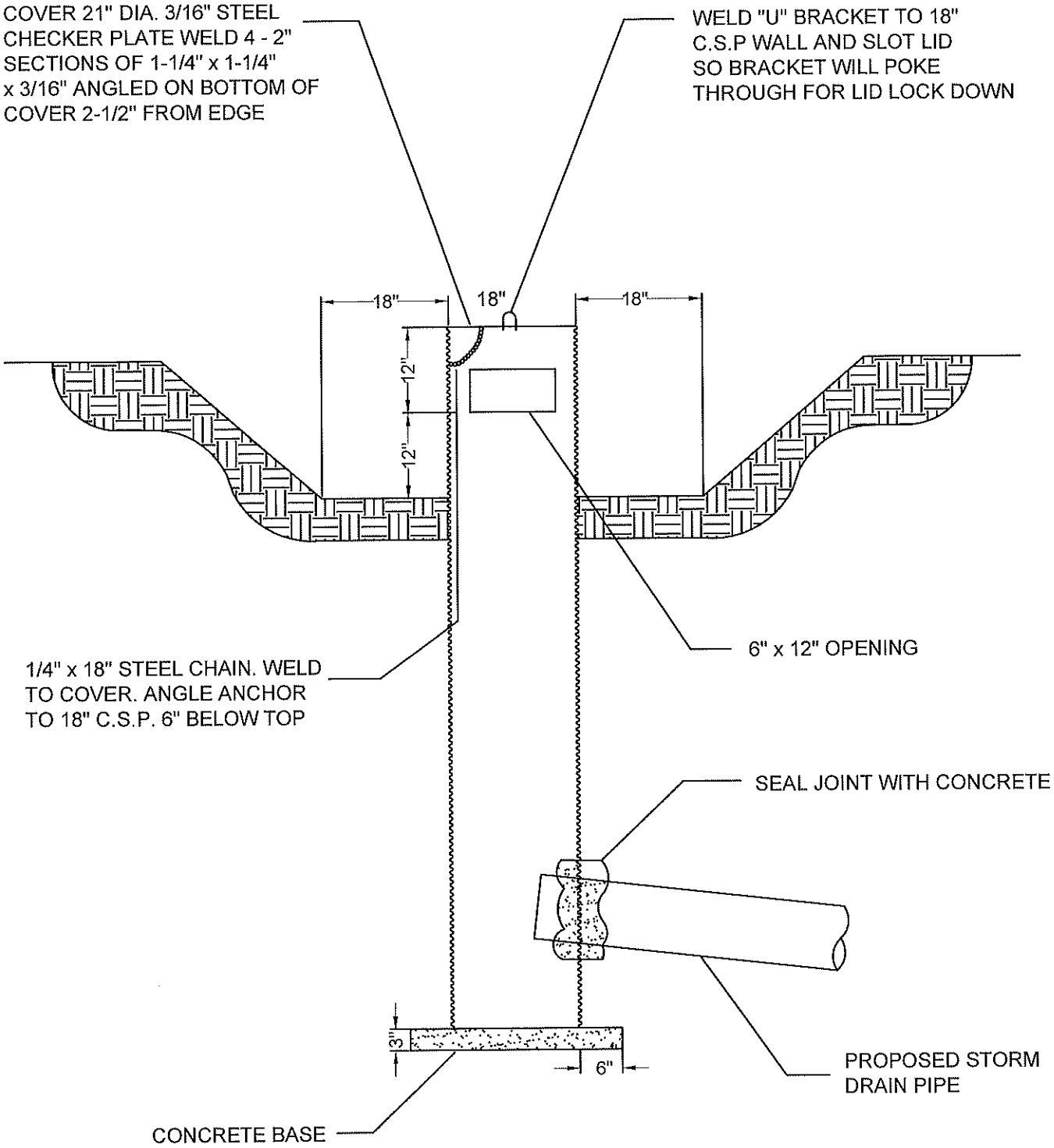
REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 304

SHEET 2 OF 2

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev: Edgar T.	Rev:

TYPE "A" INLET



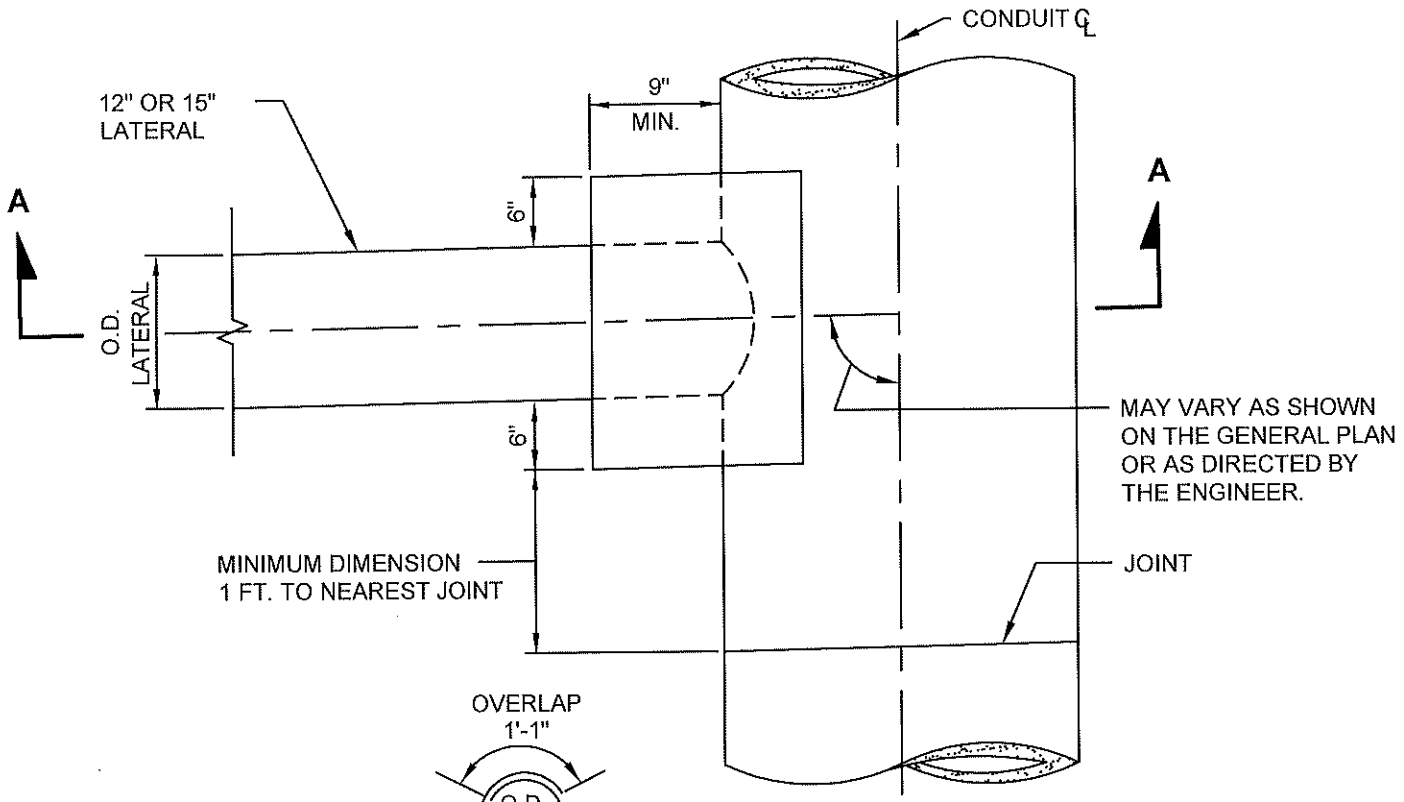
NOTE:

ALL SHARP CORNERS AND EDGES THAT ARE MARRED, CUT OR ROUGHENED SHALL BE ROUNDED BY GRINDING AND PAINTED WITH 2 APPLICATIONS OF UNTHINNED COMMERCIAL QUALITY ZINC-RICH PRIMER CONFORMING TO THE REQUIREMENTS OF SECTION 91-2.01 OF THE STATE STANDARD SPECIFICATIONS.

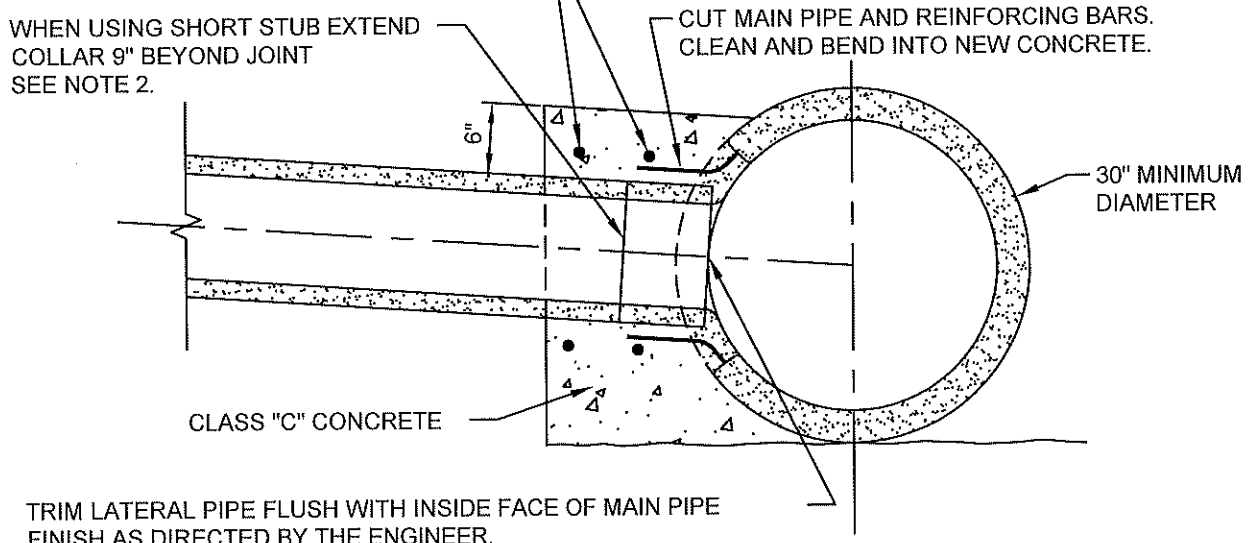
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **305**
Res No. 2020-	DATE: February 18, 2020	**TEMPORARY DRAINAGE INLET**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



PLAN



SECTION A-A

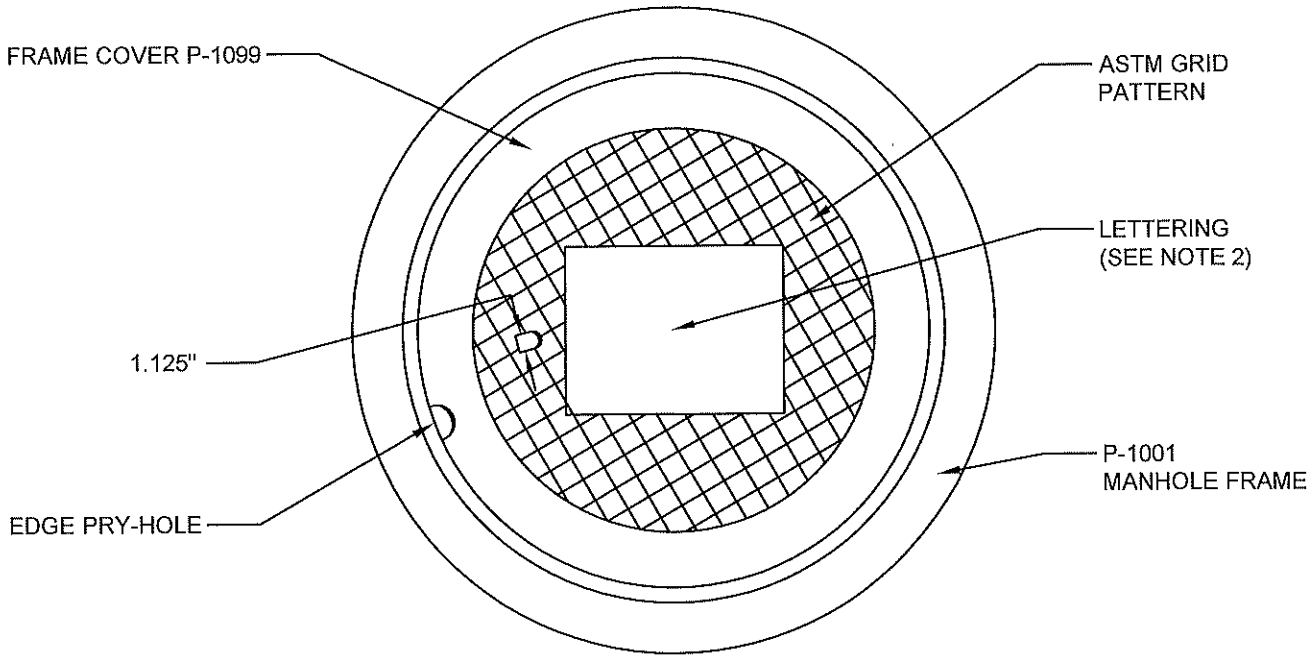
NOTES:

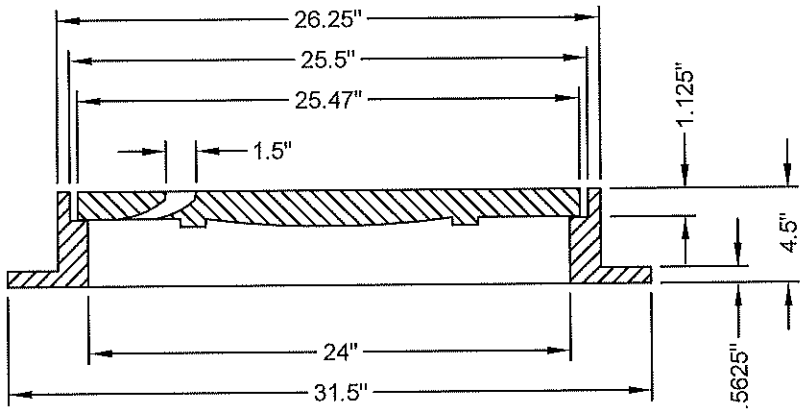
1. INSIDE DIAMETER OF LATERAL SHALL NOT BE LARGER THAN 1/2 OF INSIDE DIAMETER FOR MAIN PIPE.
2. USE SHORT STUB WHEN PIPE IS TOO SMALL TO FINISH FROM INSIDE.
3. LATERAL MUST INTERSECT MAIN LINE RADIALLY. HOLE SHALL BE CUT TO MINIMUM DIAMETER.
4. INSTALLATION SUBJECT TO CITY ENGINEER'S APPROVAL.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 306
Res No. 2020-	DATE: February 18, 2020	**LATERAL SIDE CONNECTION**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





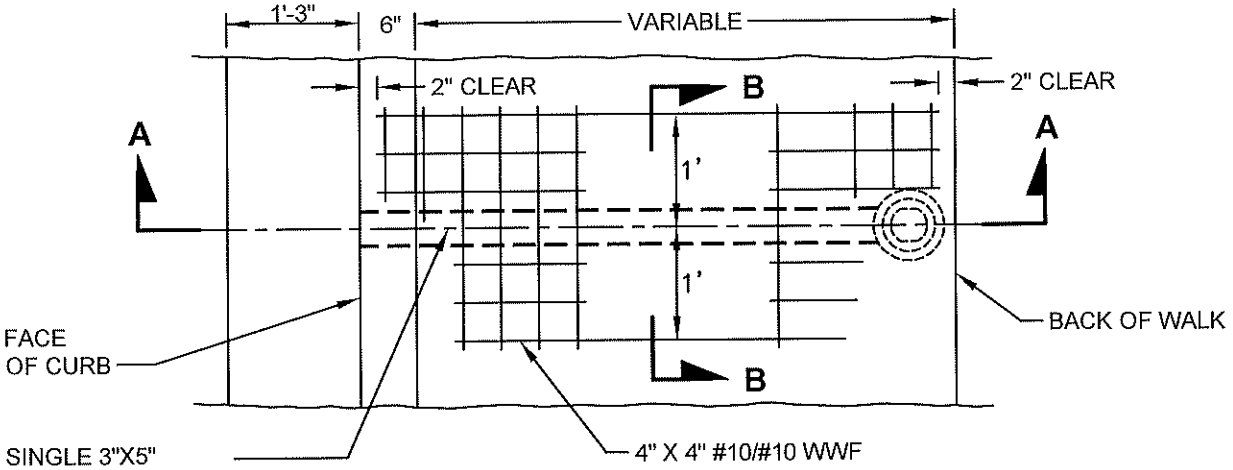
NOTES:

1. FRAME AND COVER SHALL BE PHOENIX IRON WORK P-1090, TEICHERT NO. 6622, PINKERTON A - 193, OR SOUTH BAY FOUNDRY SBF 1900.
2. MANHOLE COVER SHALL INCLUDE LETTERING FOR DESIGNATION OF "SANITARY SEWER" OR "STORM DRAIN - AS APPLICABLE.

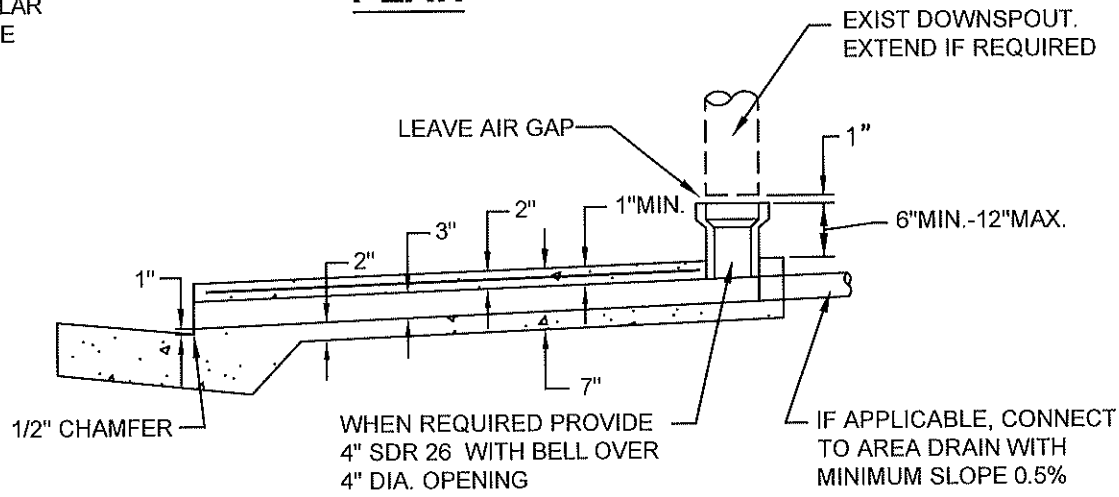
CITY OF TRACY

TRACY
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REVIEWED BY:		STANDARD PLAN No. 307
CITY ENGINEER	RCE 63173	
Res No. 2020-	DATE: February 18, 2020	**FRAME AND MANHOLE COVER ASSEMBLY**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



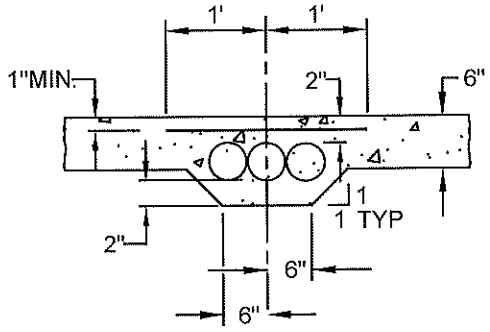
PLAN



SECTION A-A

NOTES:

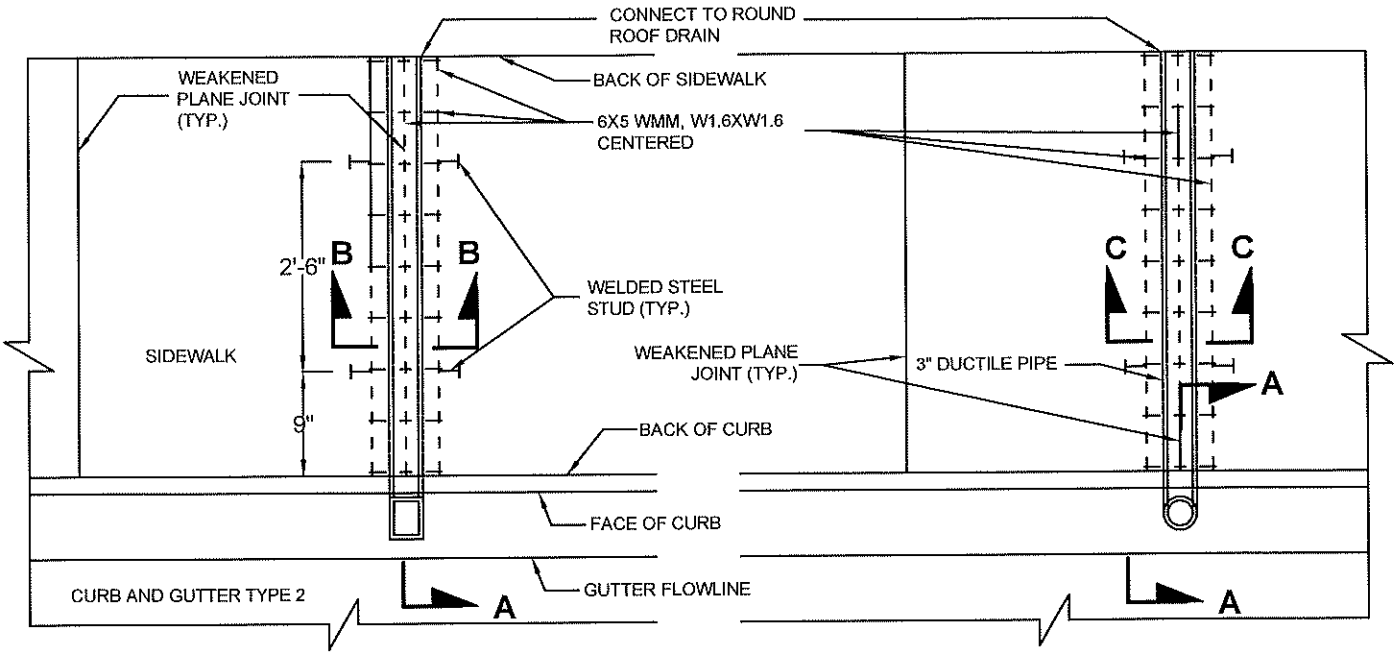
1. CURB DRAIN SHALL GRATUITY FLOW FROM PRIVATE CATCH BASIN OR ROOF DRAIN. ROOF DRAINS SHALL HAVE 1" OF SEPARATION BETWEEN DOWN SPOUT AND UNDERGROUND SYSTEM.
2. EXISTING CONCRETE SHALL BE REMOVED TO NEAREST SCORELINE. INSTALL 8" X #4 REBAR DOWELS IN THE EXISTING CONCRETE 1' O.C.
3. MODIFICATION TO THE NUMBER OF OUTLET PIPE IS SUBJECT TO REVIEW BY THE CITY ENGINEER.



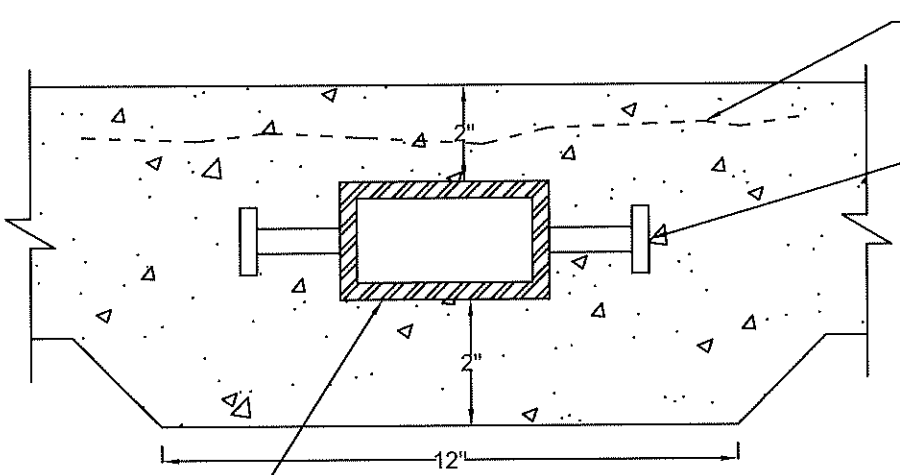
SECTION B-B

CITY OF TRACY

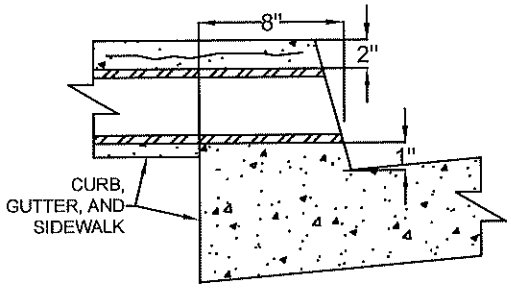
TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	STANDARD PLAN No. 308	SHEET 1 OF 3
	Res No. 2020-	DATE: February 18, 2020	CURB DRAIN INSTALLATION
	Rev: Leisser M.	Rev: Thomas W.	
	Rev:	Rev:	



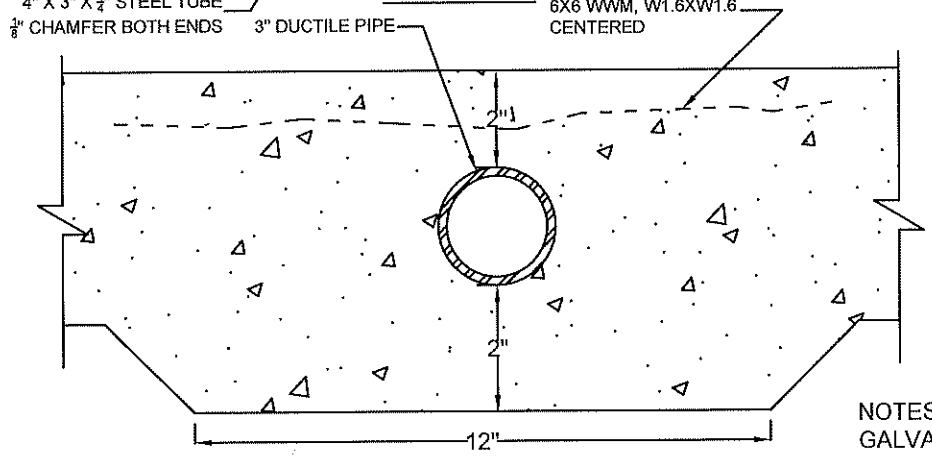
PLAN



SECTION B-B



SECTION A-A



SECTION C-C

NOTES:
GALVANIZE AFTER FABRICATION AND ASSEMBLY

CITY OF TRACY

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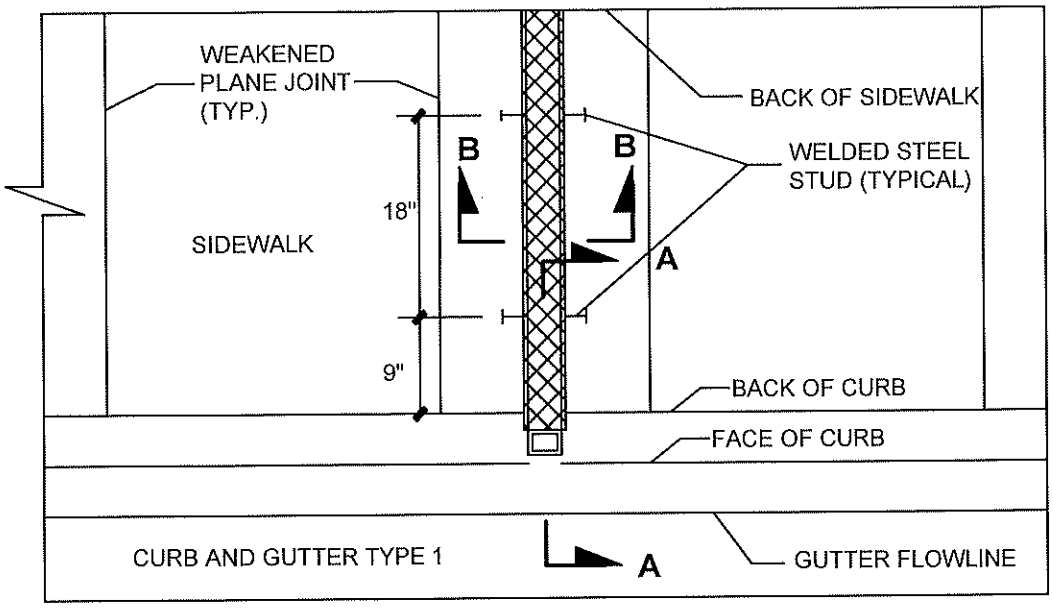
REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. **308**

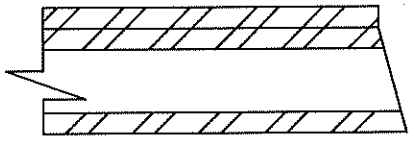
SHEET 2 OF 3

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

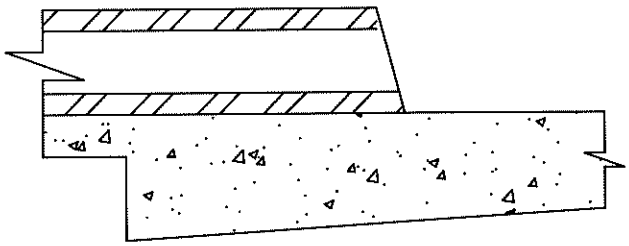
CURB DRAIN INSTALLATION



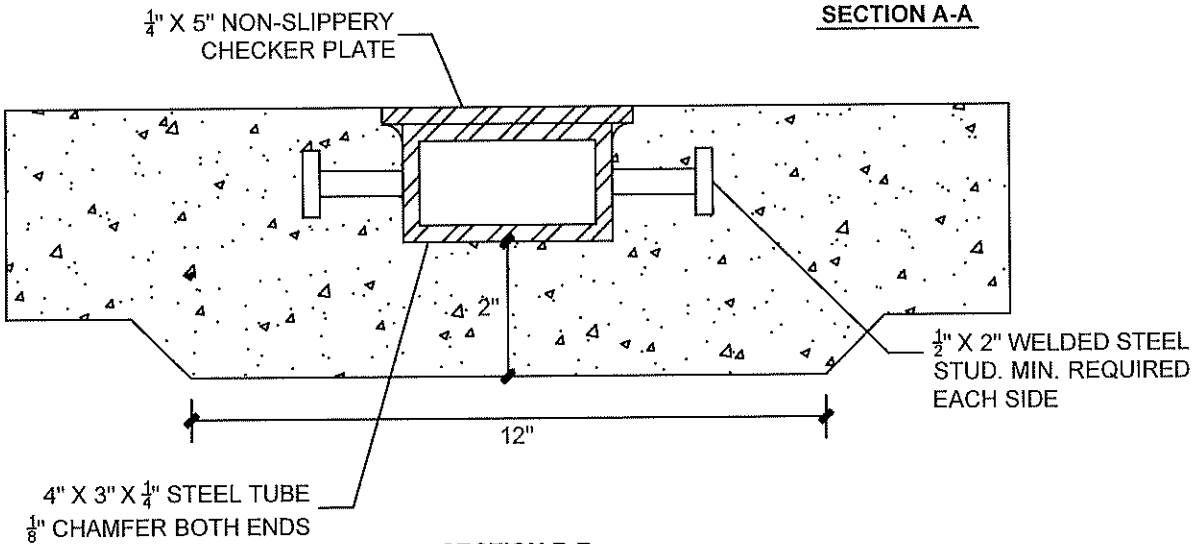
PLAN



CURB END OF DRAIN



SECTION A-A



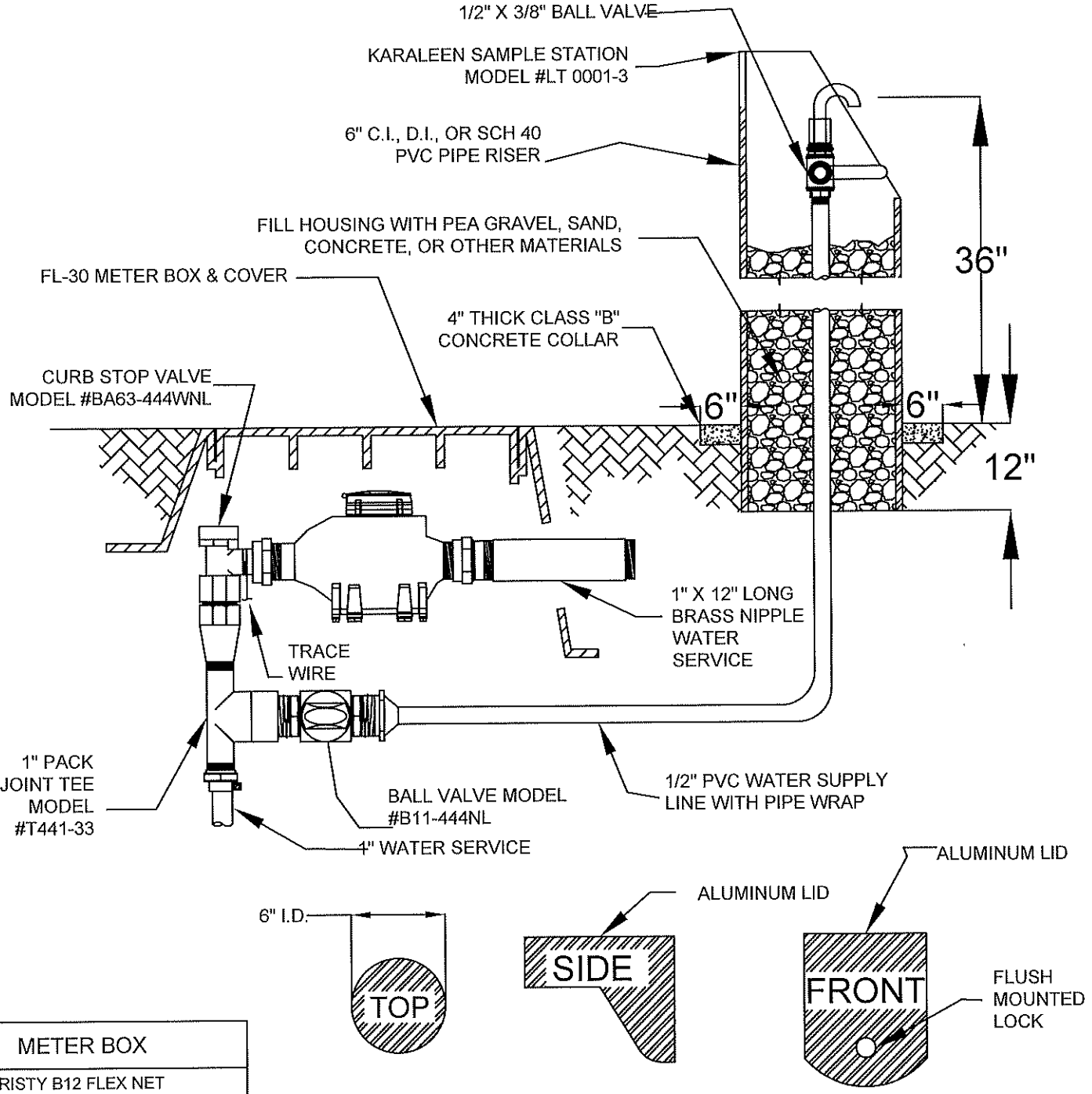
SECTION B-B

NOTE:
GALVANIZE AFTER FABRICATION AND ASSEMBLY

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **308** SHEET 3 OF 3
Res No. 2020-	DATE: February 18, 2020	**CURB DRAIN INSTALLATION**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



METER BOX
1) CHRISTY B12 FLEX NET RECESSED WITH PROBE HOLE
2) 3/4"x3/4" SHORT (7.5LL) METER

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 400 SHEET 1 OF 2
Res No. 2020-	DATE: February 18, 2020	**WATER QUALITY SAMPLING STATION**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

NOTES:

1. Meter shall be sensus touch read (TR/PL) with touch read pad installed with flex net transceiver unit (M X U model 520M). One transceiver unit shall be with each meter and read in 100 cubic feet. Meter shall be minimum size as specified by the City Engineer and shall be set with rubber gaskets. Meter shall be furnished and set by contractor with the M X U model 520M read unit to be given to the City to be installed by the City at a later date.

2. Meter box shall be designed and set to accommodate sensus flex net recessed box with probe hole lid in addition to sensus radio read meter reading system.

3. No galvanized pipe shall be used.

4. Compact around the meter to 95%. Onsite plumber shall not remove meter box to connect the pipe.

5. All underground copper water lines within the city right-of-way shall be a single continuous piece polywrapped to City of Tracy Standards.

6. Unused existing services shall be abandoned by potholing, cutting out and removing the corporation stop and saddle at the main and installing a full circle 316 stainless steel repair clamp with 316 accessories over the hole.

7. FZ sensus meters should be used in locations where domestic and fire services share one service line.

8. Polyethylene type encasement wrap or 10MIL pipe wrap $\frac{1}{2}$ lapped from main to Christy Box.

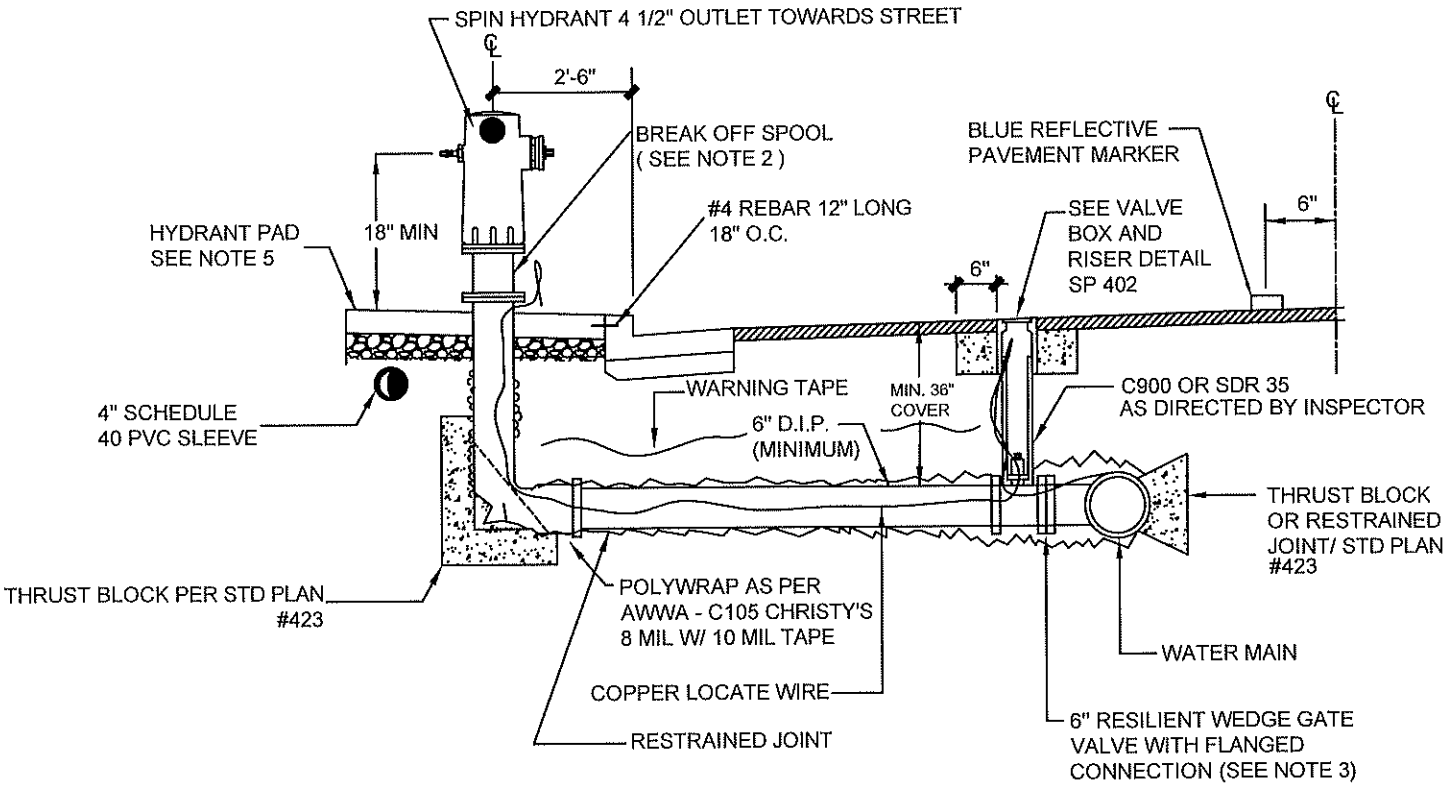
9. Tracer wire and marker tape from main to Christy Box.

10. Polywrap from main to box polyethylene sleeve or 10 MIL tape - $\frac{1}{2}$ tapped from main to Christy box

CITY OF TRACY

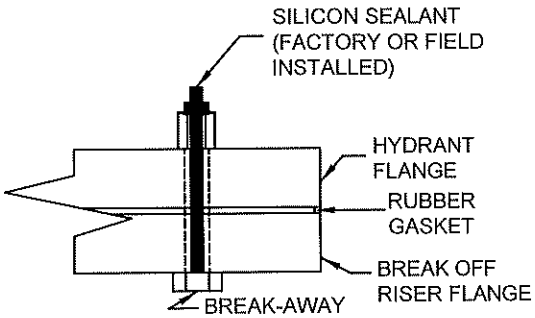
TRACY
Think Inside the Triangle™

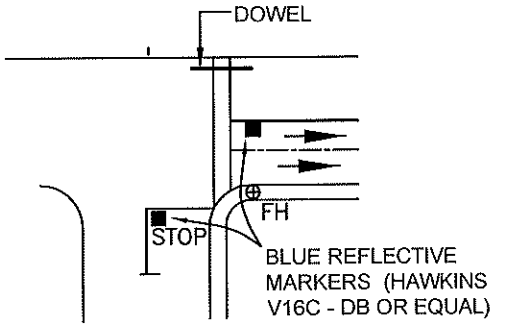
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 400 SHEET 2 OF 2
Res No. 2020-	DATE: February 18, 2020	**WATER QUALITY SAMPLING STATION**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



NOTES:

1. HYDRANT SHALL HAVE 1, 4 1/2" OUTLET AND 1, 2 1/2" HOSE OUTLET, JONES 4040/CLOW 850 OR APPROVED EQUAL. HYDRANTS AND ALL EXPOSED PARTS SHALL BE PAINTED ONE COAT PRIMER AND TWO FINISHING COATS OF BENJAMIN MOORE SAFETY YELLOW OR EQUAL. ALL HYDRANTS FROM ONSITE FIRE SYSTEMS TO BE PAINTED RED
2. BREAK OFF SPOOL 6" MIN. IN LENGTH SHALL BE INSTALLED 2" ABOVE CONCRETE SLAB. THE BOLTS ATTACHING HYDRANT TO SPOOL AND SPOOL TO BURY SHALL BE BREAK-OFF TYPE, HEX HEAD, STAINLESS STEEL. NUTS SHALL BE DOWN. PAINT SPOOL.
3. VALVE SHALL BE PLACED ADJACENT TO THE MAIN AS A RESILIENT WEDGE GATE VALVE. TOTALLY ENCAPSULATED, FACTORY EPOXY LINED & COATED.
4. THRUST BLOCK SHALL BE INSPECTED AND APPROVED AT THE TIME OF CONSTRUCTION PER CITY STANDARD PLAN 423.
5. CONCRETE PAD SHALL BE 4'-6" x 5'-0". SLOPE SHALL BE 1/4" IN 1' TO CURB. CONCRETE SHALL BE CLASS "B" 2500 PSI ; 4" MAXIMUM SLUMP ; 3/4" MAXIMUM AGGREGATE WITH 1/2 LB. LAMPBLACK PER CUBIC YARD. PAD SHALL BE FINISHED TO THE SPECIFICATIONS OF THE SIDEWALK.
6. 10 AWG LOCATE WIRE 1'-0" ABOVE PIPE (COLOR BLUE)
7. BLUE 6" WIDE WARNING TAPE. "CAUTION POTABLE WATER LINE BURIED BELOW (CHRISTY'S DETECTABLE MARKING TAPE)
8. HYDRANTS SHALL BE PLACED AT PROPERTY LINE EXTENSION, 3 FT. FROM DRIVEWAYS, AND NEAR STREET LIGHTS, OR AS SHOWN ON PLANS APPROVED BY CITY ENGINEER. 4' MIN CLEARANCE FROM ALL ABOVE GROUND OBSTRUCTIONS. CENTERLINE OF HYDRANT 2'-6" BEHIND FACE OF CURB.
9. HYDRANT BODIES ARE TO BE LINED WITH FACTORY TWO PART EPOXY.
10. TRENCH BACKFILL AS PER STD PLAN #501.
11. ONSITE/PRIVATE PROPERTY HYDRANTS SHALL BE PAINTED RED.
12. CENTER LINE OF HYDRANT IS 2'-6" BEHIND FACE OF CURB WHEN LOCATED IN PLANTER.
    CENTERLINE OF HYDRANT IS 2'-6" BEHIND FACE OF CURB WHEN IN 10' ATTACHED WALK. CENTERLINE OF HYDRANT IS 7'-6" BEHIND FACE OF CURB WHEN IN 5' WALK. CENTERLINE OF HYDRANT IS 2'-6" BEHIND FACE OF CURB WHEN IN 7'-6" WALK.



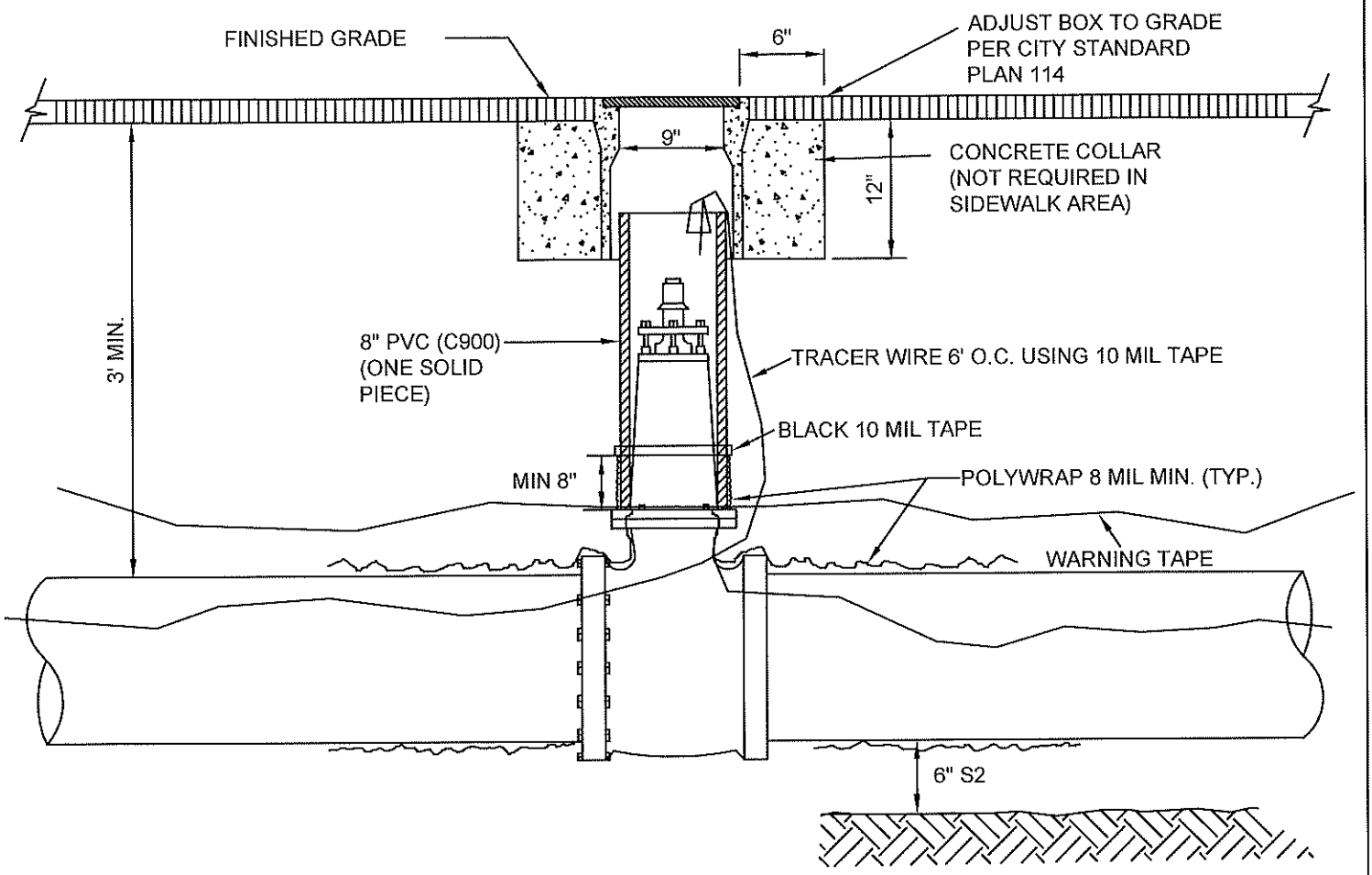


BLUE REFLECTIVE MARKER:
BLUE MARKERS SHALL BE PLACED ON THE LEFT HAND SIDE OF TRAVEL LANE ADJACENT TO THE FIRE HYDRANT TO THE CENTER OF STREET.

MARKER LOCATION

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	STANDARD PLAN No. 401
	Res No. 2020-	DATE: February 18, 2020
	Rev: Leisser M.	Rev: Thomas W.
	Rev:	Rev:
		FIRE HYDRANT



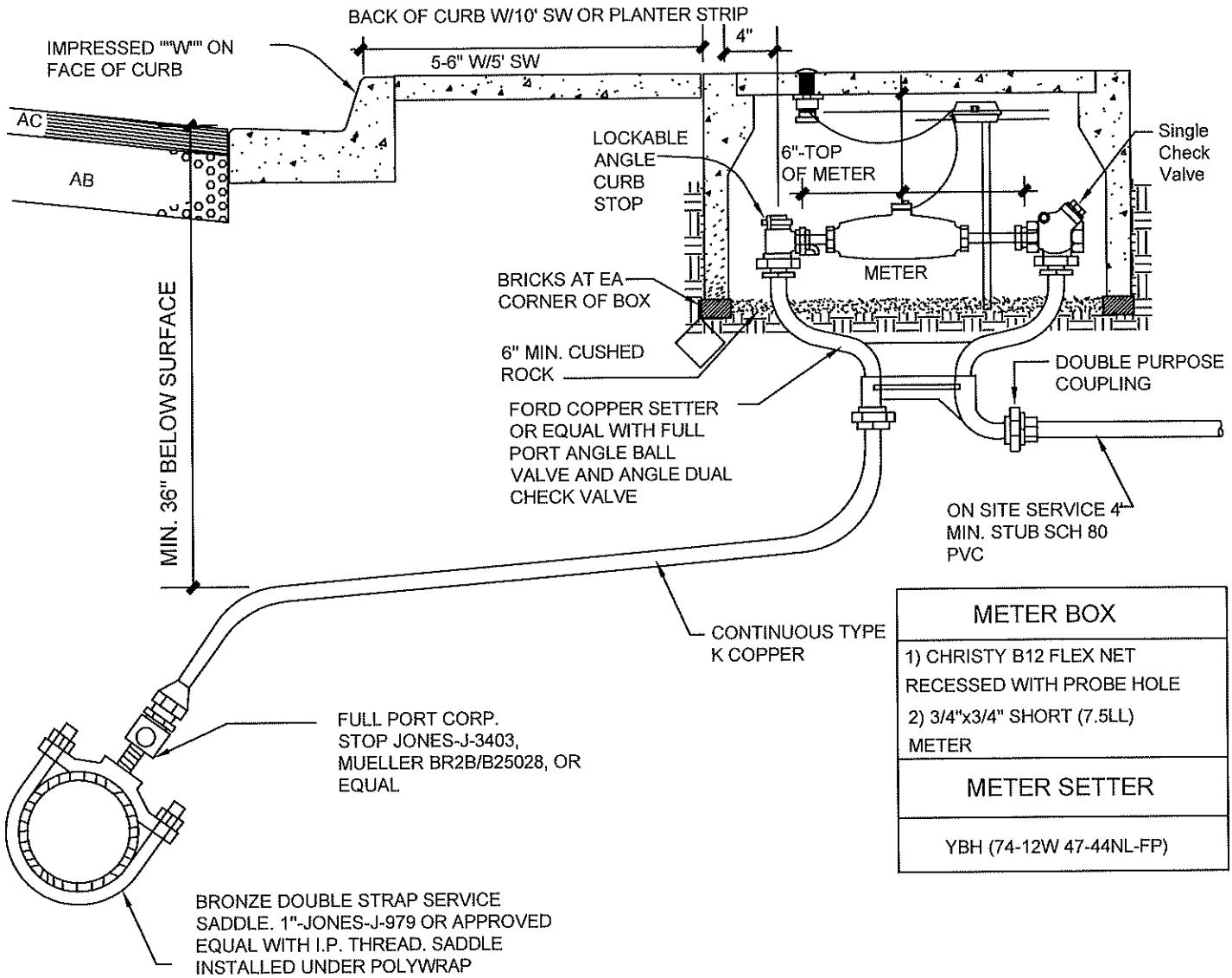
NOTES :

1. VALVES SHALL BE ONE OF THE FOLLOWING:
   A) BUTTERFLY VALVES: 12" AND LARGER AS SHOWN ON APPROVED MATERIALS LIST SHALL BE USED. APPROVED LIST INCLUDE: ("GROUNDHOG"), ("AMERICAN"), MUELLER, B.I.F., KENNEDY, DRESSER.
   B) GATE VALVES: 10" AND SMALLER AS SHOWN ON LIST OF APPROVED MATERIALS. APPROVED LIST INCLUDES: MUELLER RESILIENT SEAT, CLOW R/W, KENNEDY, AMERICAN-80 "CRS".
2. IF OPERATING NUT EXCEED 7" DEEP FROM FINNISH GRADE EXTENSIONS SHALL BE REQUIRED TO 18"
3. POLYWRAP ALL PIPES AND VALVES. DOUBLE POLYWRAP IN & NORTH OF 11TH STREET. VALVES SHALL BE TESTED BY MANUFACTURER AS FOLLOWS: 6"-12"", 350 PSI; 14" AND LARGER, 300 PSI.
4. VALVE BOX: BROOKS 3-RT OR CHRISTY G4 WITH G4C LID. ALL VALUES TO BE INSTALLED FOR MINIMUM DISTANCE BETWEEN VALUE RISER OF 48" MIN. RECYCLED WATER LID NEEDS TO BE PURPLE.
5. WARNING TAPE 12" ABOVE PIPE.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **402**
Res No. 2020-	DATE: February 18, 2020	**VALVE, BOX & RISER**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



METER BOX
1) CHRISTY B12 FLEX NET RECESSED WITH PROBE HOLE 2) 3/4"x3/4" SHORT (7.5LL) METER
METER SETTER
YBH (74-12W 47-44NL-FP)

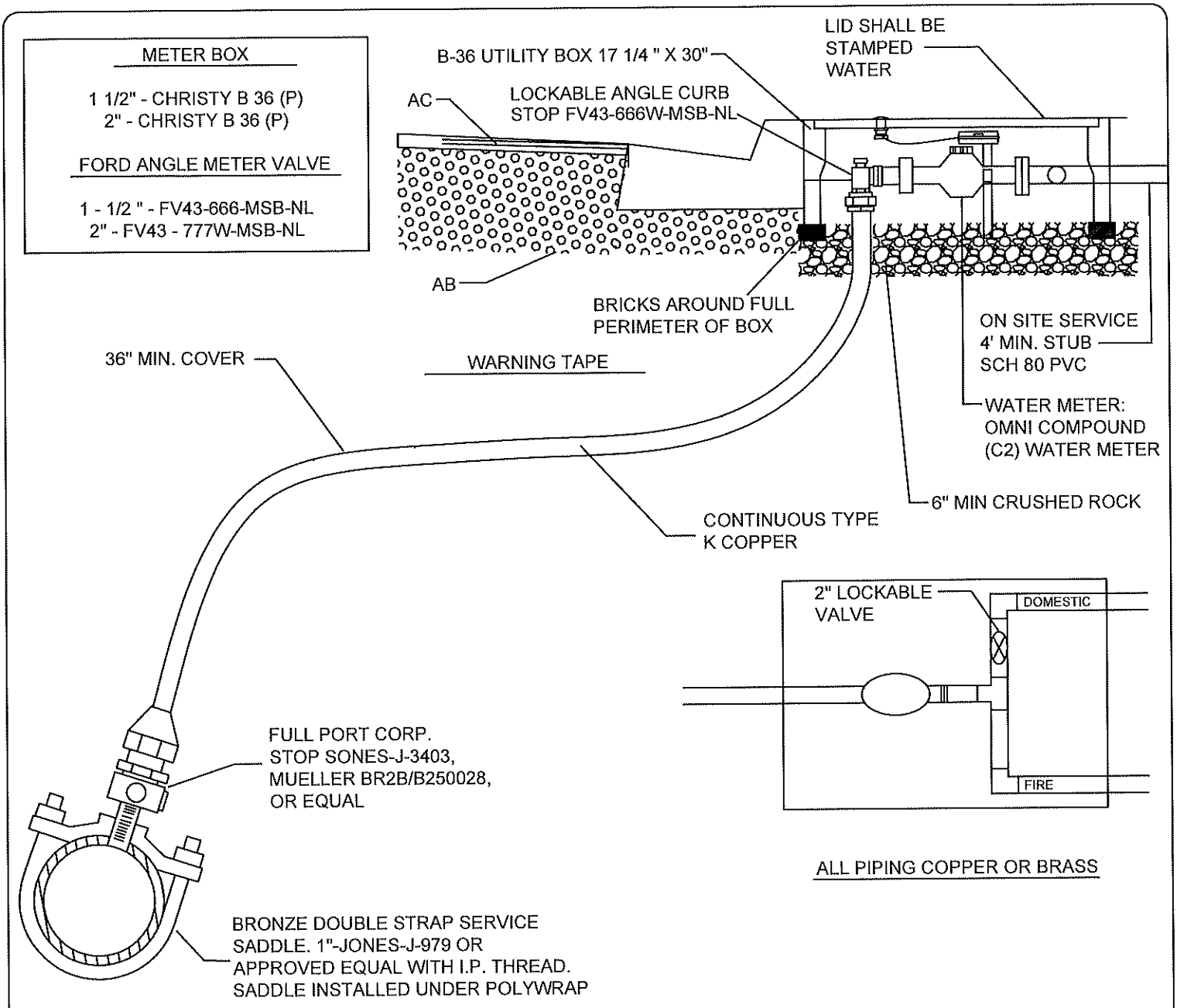
NOTES:

1. Meter shall be sensus touch read (TR/PL) with touch read pad installed with flex net transceiver unit (M X U model 520M). One transceiver unit shall be with each meter and read in 100 cubic feet. Meter shall be minimum size as specified by the City Engineer and shall be set with rubber gaskets. Meter shall be furnished and set by contractor with the M X U model 520M read unit to be given to the City to be installed by the City at a later date.
2. Meter box shall be designed and set to accommodate sensus flex net recessed box with probe hole lid in addition to sensus radio read meter reading system.
3. No galvanized pipe shall be used.
4. Compact around the meter to 95%. Onsite plumber shall not remove meter box to connect the pipe.
5. All underground copper water lines within the city right-of-way shall be a single continuous piece polywrapped to City of Tracy Standards.
6. No landscape irrigation lines shall be allowed between the meter box & the sidewalk.
7. Unused existing services shall be abandoned by potholing, cutting out and removing the corporation stop and saddle at the main and installing a full circle 316 stainless steel repair clamp with 316 accessories over the hole.
8. FZ sensus meters should be used in locations where domestic and fire services share one service line.
9. Polyethylene type encasement wrap or 10MIL pipe wrap ½ lapped from main to Christy Box
10. Tracer wire and marker tape from main to Christy Box.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **403**
Res No. 2020-	DATE: February 18, 2020	**1" WATER SERVICE**
Rev: Leisser M.	Rev: Thomas W.	**(1" METER OR 3/4"x3/4" SHORT LAY LENGTH)**
Rev:	Rev:	



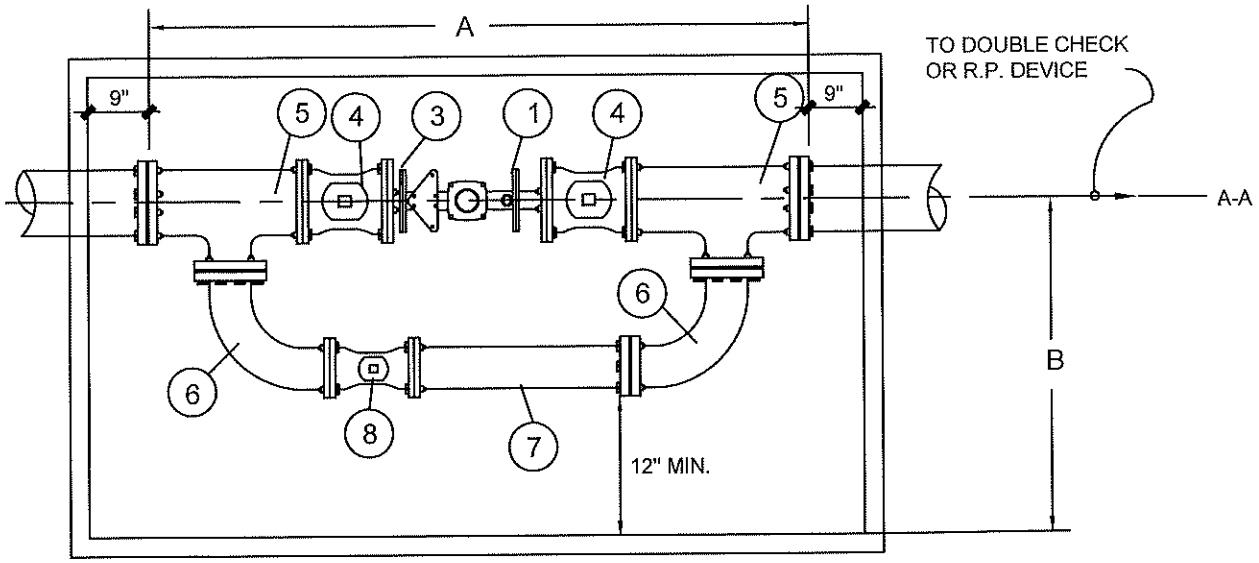
NOTES:

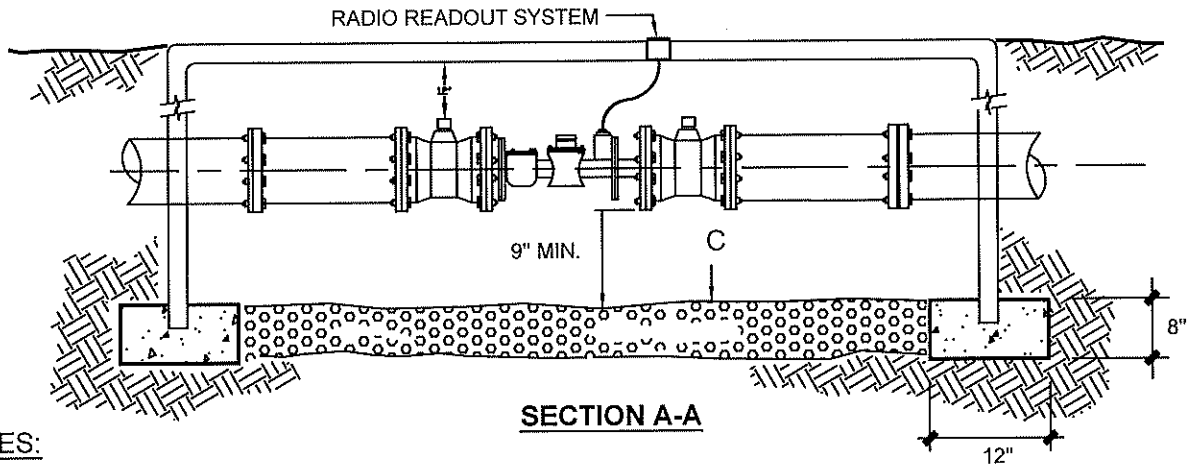
1. Meter shall be sensus touch read (TR/PL) with touch read pad installed with flex net transceiver unit (M X U model 520M). One transceiver unit shall be with each meter and read in 100 cubic feet. Meter shall be minimum size as specified by the City Engineer and shall be set with rubber gaskets. Meter shall be furnished and set by contractor with the M X U model 520M read unit to be given to the City to be installed by the City at a later date.
2. Meter box shall be designed and set to accommodate sensus flex net recessed box with probe hole lid in addition to sensus radio read meter reading system.
3. No galvanized pipe shall be used.
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6. No landscape irrigation lines shall be allowed between the meter box & the sidewalk.
7. Unused existing services shall be abandoned by potholing, cutting out and removing the corporation stop and saddle at the main and installing a full circle 316 stainless steel repair clamp with 316 accessories over the hole.
8. F2 sensus meters should be used in locations where domestic and fire services share one service line.
9. Polyethylene Encasement Wrap or 10MIL Pipe Wrap Tape - $\frac{1}{2}$ lapped from main to Christy Box.
10. Tracer wire and marker tape from main to Christy Box.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 404
Res No. 2020-	DATE: February 18, 2020	1 1/2 " & 2" SERVICE
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	





SECTION A-A

NOTES:

1. METER TYPE T2 TURBO FOR IRRIGATION/C2 COMPOUND FOR DOMESTIC FLEX NET TRANSCEIVER.
2. INSTALL LOCKABLE STEEL VAULT LID WITH METER REGISTER IN LID. LID STAMPED RECLAIMED WATER.
3. FOR WATER METERS LARGER THAN 6", DESIGNER SHALL SUBMIT A SEPARATE DESIGN FOR APPROVAL BY CITY ENGINEER.
4. ALL PIPE AND FITTINGS WITHIN VAULT SHALL BE FLANGED DUCTILE IRON PIPE.
5. THE MINIMUM SIZE SERVICE FOR A STREETSCAPE APPLICATION AND NEIGHBORHOOD PARK IS 4 INCH.
6. NO LANDSCAPE IRRIGATION LINES SHALL BE ALLOWED BETWEEN THE METER BOX AND THE SIDEWALK.
7. WATER METER SHALL BE LOCATED WITHIN THE CITY R.O.W

No.	NAME		
1	FLEX NET METER	6	90° ELBOW
2	COUPLING	7	BYPASS PIPE DIP SAME SIZE
3	ADAPTER	8	BYPASS GATE VALVE W/ NUT
4	GATE VALVE W/ NUT		
5	TEE		

DIMENSIONS		3"	4"	6"
A	OVER ALL LENGTH	63	73	86
B	WIDTH PIPE ℄ TO BYPASS	19	21	26
C	PIPE ℄ TO MAXIMUM HEIGHT	16	17	21
	MAIN LINE WIDTH			
	WEIGHT			
	BY PASS SIZE	3"	3"	4"

CITY OF TRACY

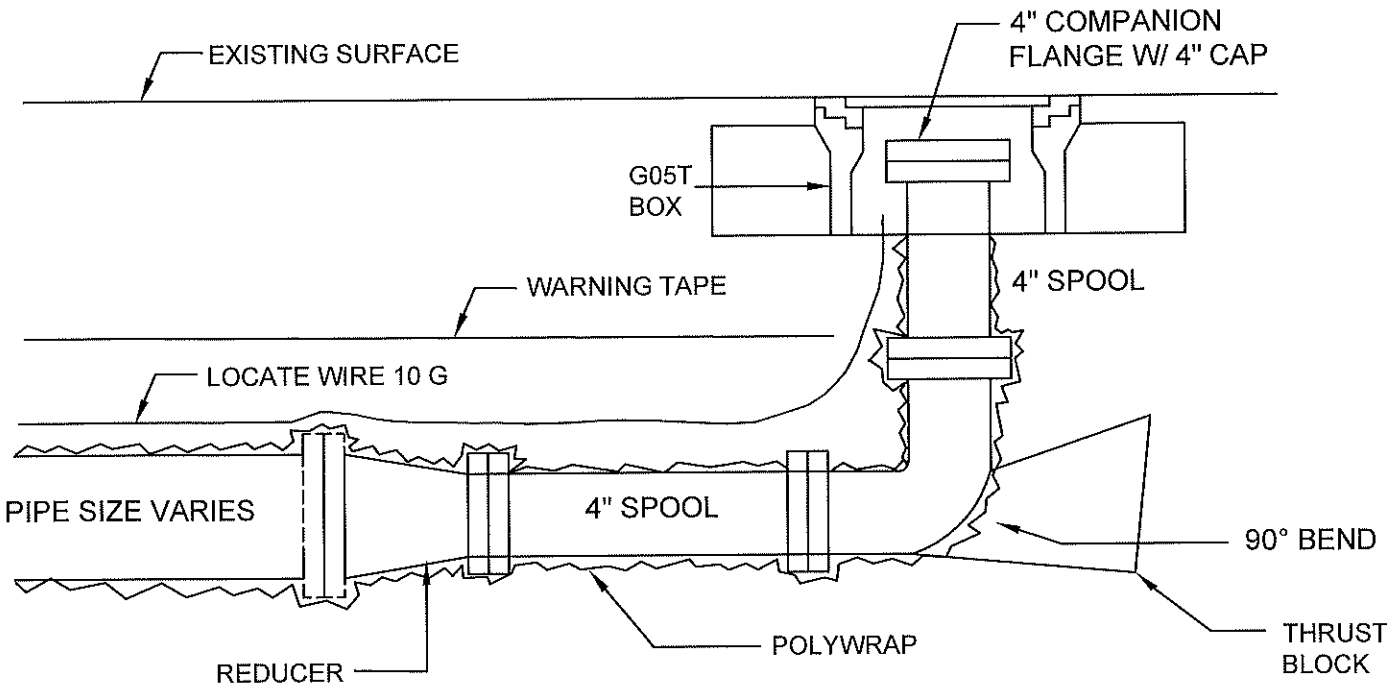
TRACY
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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 406

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

3", 4" & 6" DOMESTIC/IRRIGATION METER



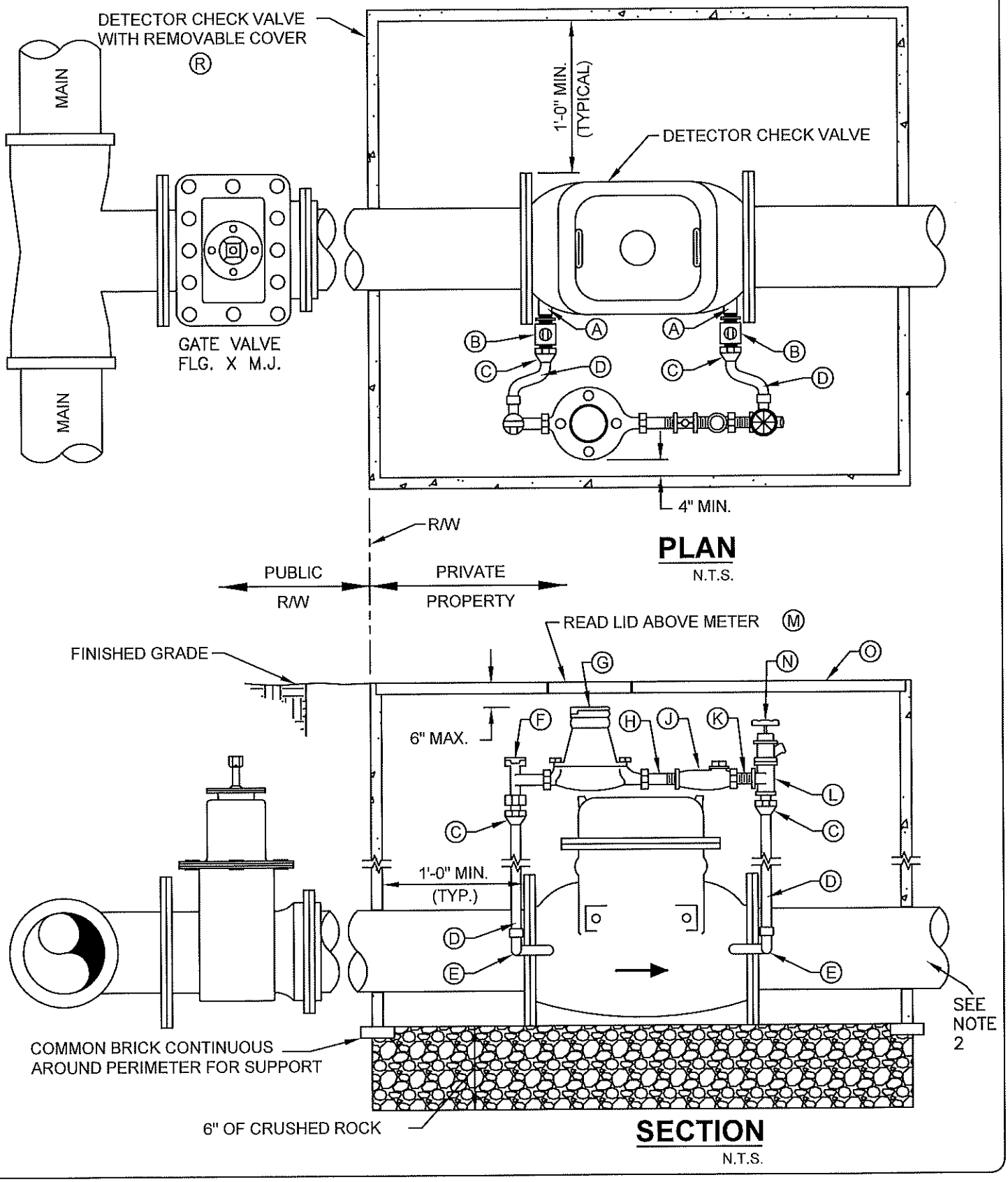
NOTES:

1. FOR THRUST BLOCK DIMENSIONS, SEE STANDARD PLAN NO. 423
2. THE FUTURE EXTENSION STUB SHALL BE TESTED AND CHLORINATED WITH THE REST OF THE MAIN AND BLOWN OFF THROUGH THE PIPE.
3. BLOW OFF SHALL BE 4" MINIMUM FOR BACTERIOLOGICAL TESTING FOR DUCTILE IRON FLANGED PIPE.
4. USE CURB STOP ON 2" SVC OR BLOW OFF ONLY.
5. TRAFFIC BOX SHALL BE CHRISTY G04 WITH G4C LID OR APPROVED EQUAL.
6. VALVE AND BLOW OFF BOXES SHALL BE INSTALLED IN PAVED AREA ONLY UNLESS APPROVED BY THE CITY ENGINEER.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 407
Res No. 2020-	DATE: February 18, 2020	**BLOWOFF FOR FUTURE EXTENSION**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 408 SHEET 1 OF 2
Res No. 2020-	DATE: February 18, 2020	DETECTOR CHECK VALVE
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

BILL OF MATERIAL		
ITEM	QTY.	DESCRIPTION
SERVICE (- FS)		
A	2	BUSHING (SIZE AS REQUIRED)
B	2	3/4" CORP. STOP, I.P. x K
C	4	3/4" CPLG. K x I.P. FE. - SI
D	2	3/4" COPPER TUBING
E	2	3/4" ELL 90° K x K - SI
F	1	3/4" ANGLE STOP I.P.
G	1	3/4" x 3/4" (SHORT 7.5) SENSUS METER (FLEXNET 520R)
H	1	3/4" METER SPUD
J	1	DOUBLE CHECK VALVE ASSEMBLY
K	2	3/4" x CLOSE NIPPLE
L	1	3/4" TEE SS BRASS
M	1	SELF CLOSING READ LID
N	1	3/4" x 1/4" TEE SS BRASS
O	1	BOLT DOWN COVER

NOTES:

1. DETECTOR CHECK VALVE TYPE SHALL BE APPROVED BY UNDERWRITERS LABORATORIES, INC.
2. POST INDICATOR VALVE AND FIRE DEPARTMENT CONNECTION REQUIRED ON ALL FIRE SERVICE LINES.

CITY OF TRACY

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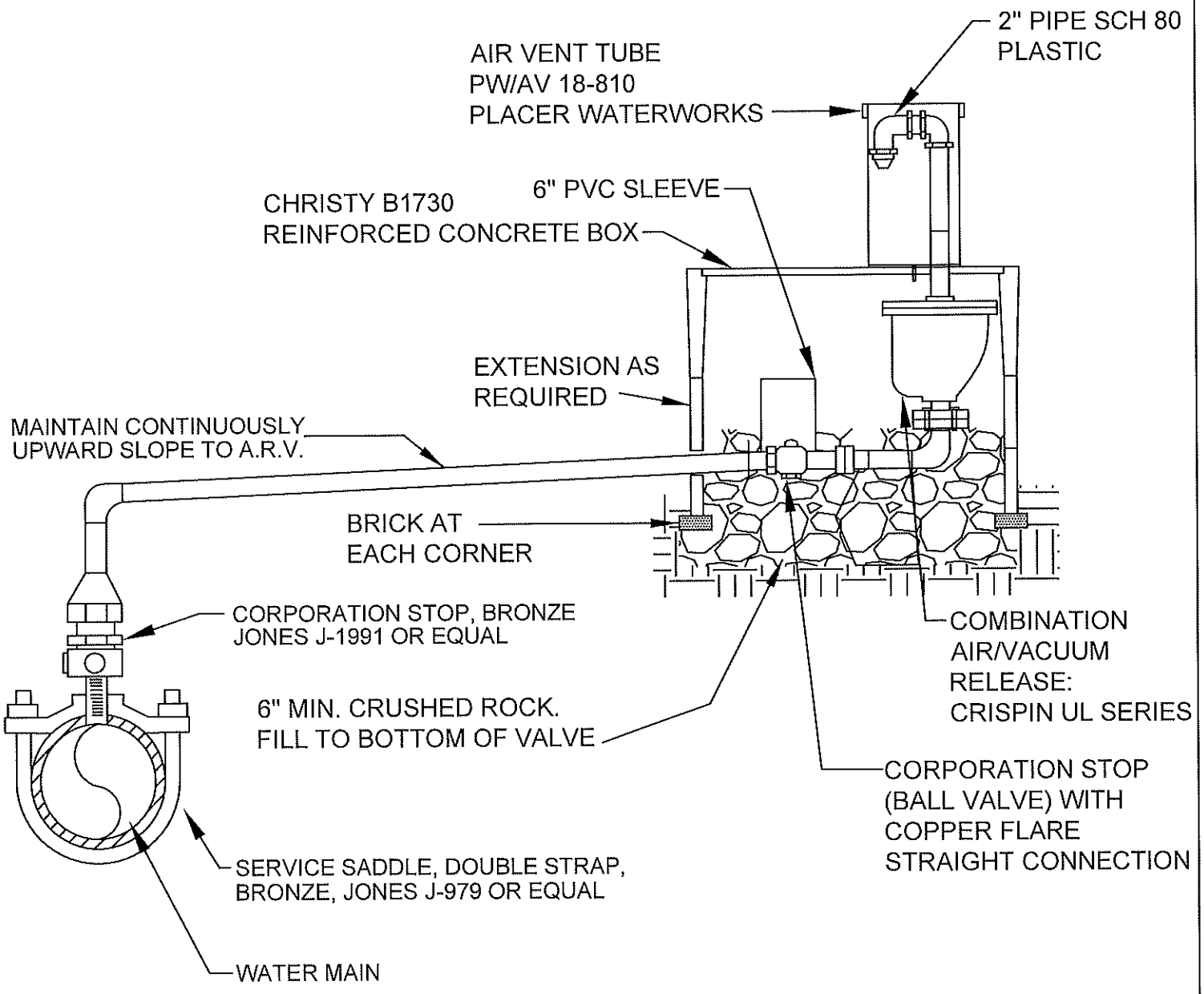
REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 408

SHEET 2 OF 2

Res No. 2020-	DATE: February 18, 2020
Rev: Leisser M.	Rev: Thomas W.
Rev:	Rev:

DETECTOR CHECK VALVE



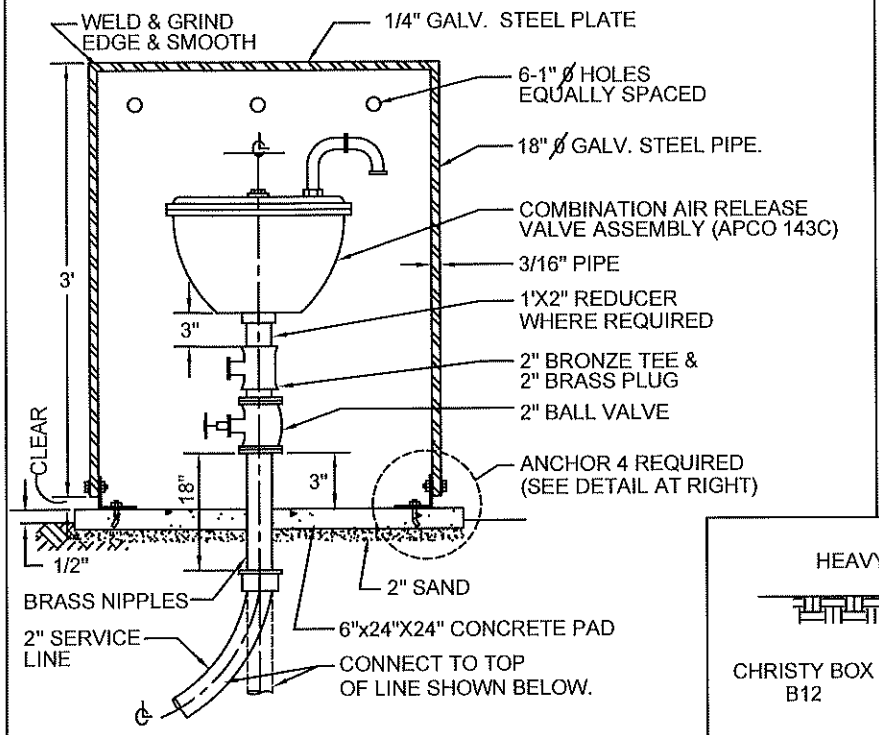
NOTES:

1. VENT TUBE SHALL BE LABELED "POTABLE WATER" USING 2" LETTERS.
2. ALL PIPING SHALL BE BRASS OR COPPER BETWEEN THE MAIN AND ARV.
3. TRACER WIRE AND MARKER TAPE FROM MAIN TO CHRISTY BOX.
4. COPPER TYPE K POLYWRAP FROM MAIN WITH POLYETHYLENE SLEEVE OR 10MIL TAPE ½ LAPPED FROM MAIN TO CRISTY BOX.

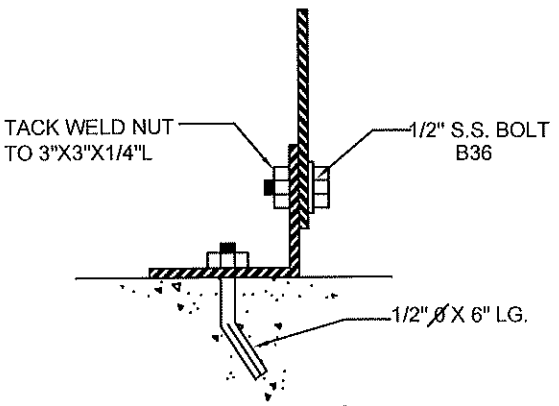
CITY OF TRACY

TRACY
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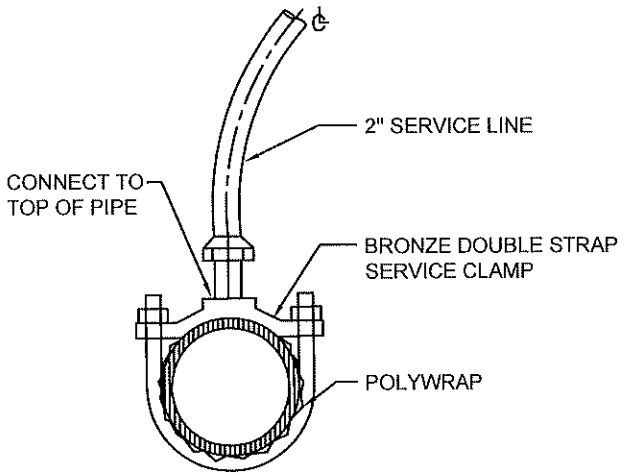
REVIEWED BY: Robert Armijo		STANDARD PLAN No. 409
CITY ENGINEER	RCE 63173	
Res No. 2020-	DATE: February 18, 2020	**COMBINATION AIR & VACUUM RELEASE VALVE WITH AIR VENT TUBE**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



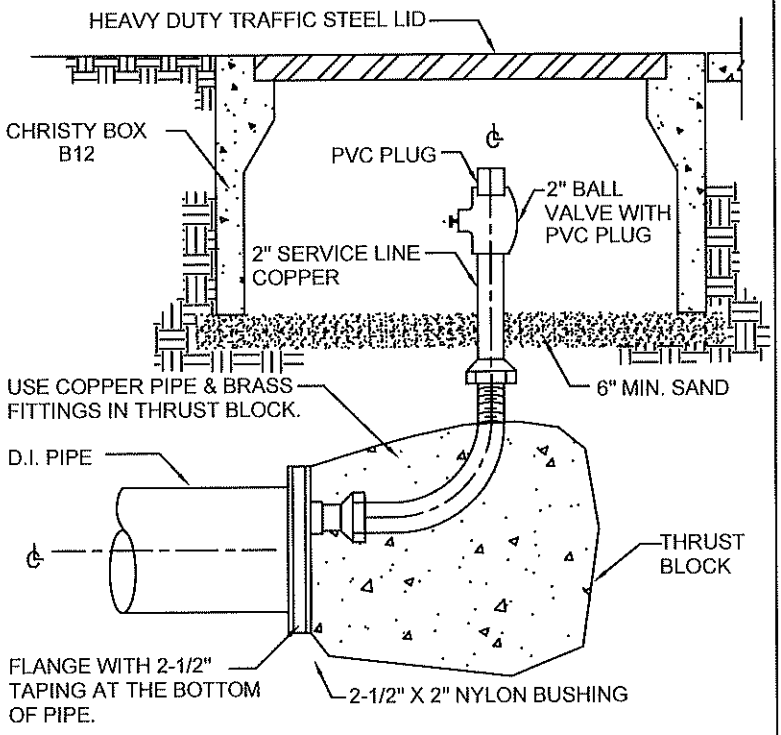
ELEVATION
N.T.S.



ANCHOR DETAIL
N.T.S.



CONNECTION AT MAINLINE HIGH POINT
N.T.S.



BLOW OFF CONNECTION AT END OF MAIN LINE
N.T.S.

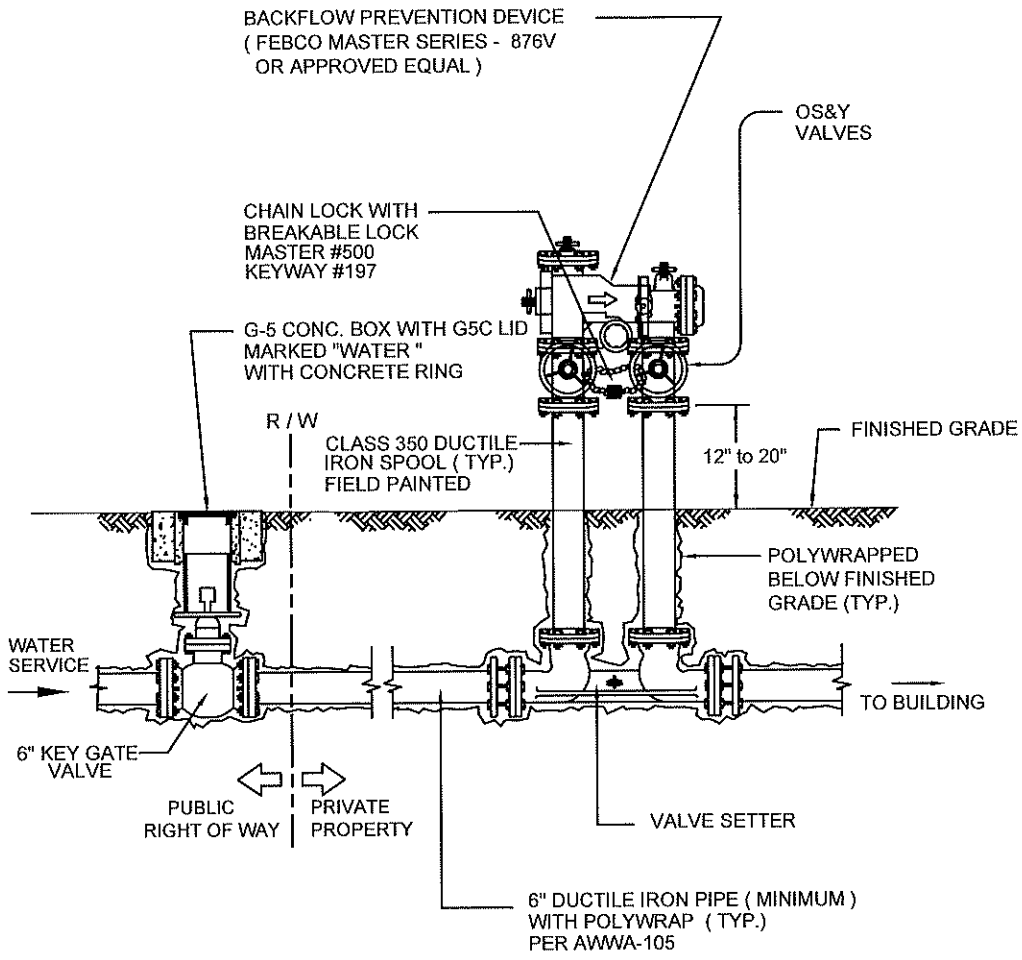
NOTES:

1. ASSEMBLIES INSTALLED AT EASEMENTS, ROADS AND STREETS WITHOUT CURBS SHALL BE PROTECTED WITH GUARD POST.
2. POST CONSISTS OF 6' LENGTH OF 4" PIPE FILLED WITH GROUT AND SET 3' BE GRADE IN 16" O.D. CONC. BASE POSITION POSTS 2' IN FRONT OF AND 2.5' EACH SIDE OF ASSEMBLIES. CROWN CONC. BASE AT TOP TO SHED WATER.
3. NO GALVANIZED STEEL PIPE SHALL BE USED.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **410**
Res No. 2020-	DATE: February 18, 2020	**COMBINATION AIR & VACUUM RELEASE VALVE ASSEMBLY & BLOWOFF**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



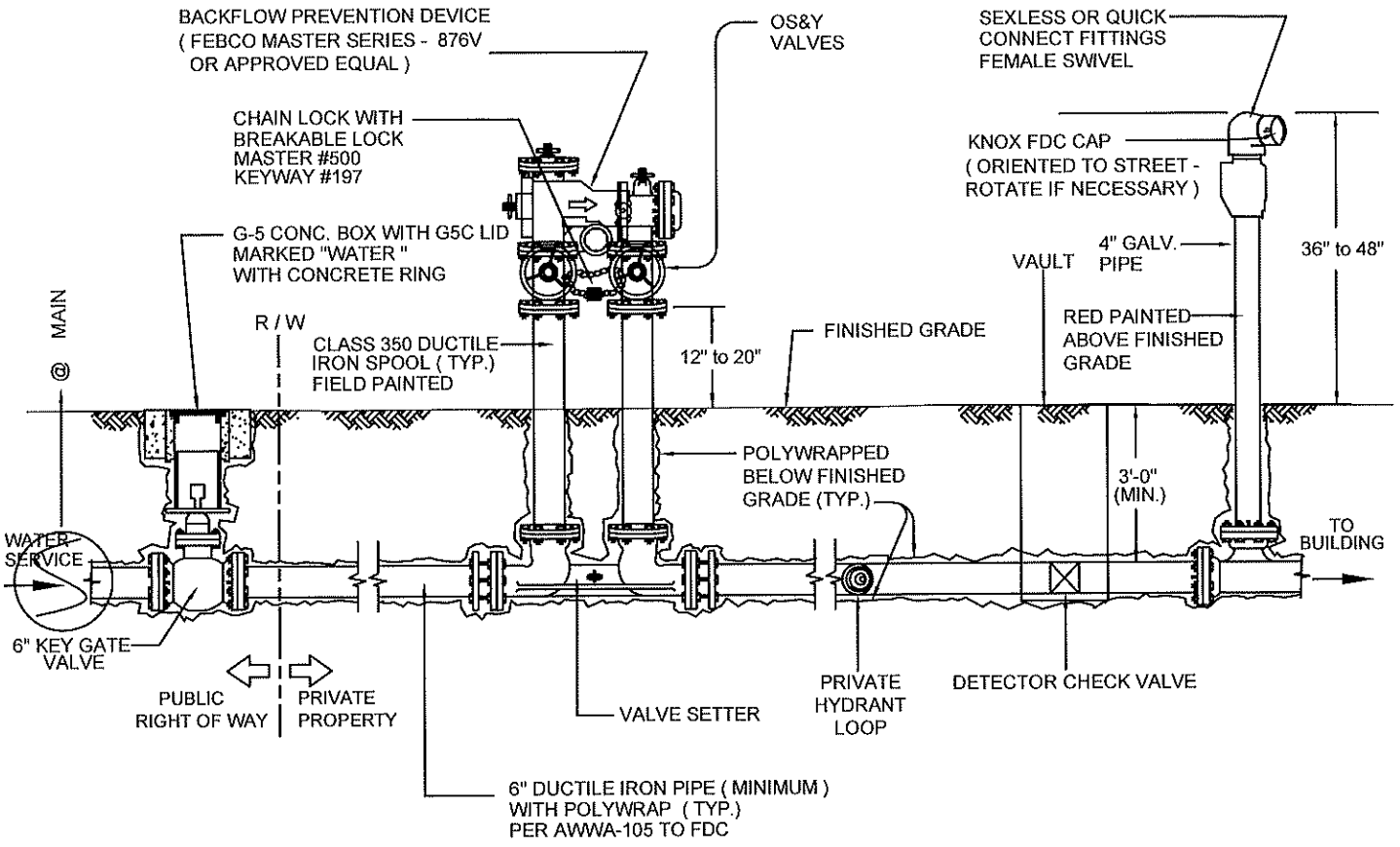
NOTES:

1. A LISTED BACKFLOW PREVENTION DEVICE IS REQUIRED TO BE INSTALLED ON ALL FIRE SPRINKLER SUPPLY LINES.
2. A POST INDICATOR VALVE MAY NOT BE REQUIRED IF THE PROXIMITY OF THE BACKFLOW PREVENTOR TO BUILDING IS ACCEPTABLE TO FIRE DEPARTMENT.
3. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED IN THE PRIVATE PROPERTY.
4. DESIGN ENGINEER SHALL CALCULATE AND DETERMINE THE SIZE OF THE IRON PIPE. MINIMUM 6" DIAMETER PIPE IS REQUIRED.
5. FDC SHALL BE LOCATED AT BUILDING.

CITY OF TRACY

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REVIEWED BY: Robert Armijo		STANDARD PLAN No. 411
CITY ENGINEER	RCE: 63173	
Res No. 2020-		FIRE DEPARTMENT CONNECTION/ BACKFLOW PREVENTOR
REVIEWED BY: Amy Ray	Rev: Leisser M.	
Prevention Chief		



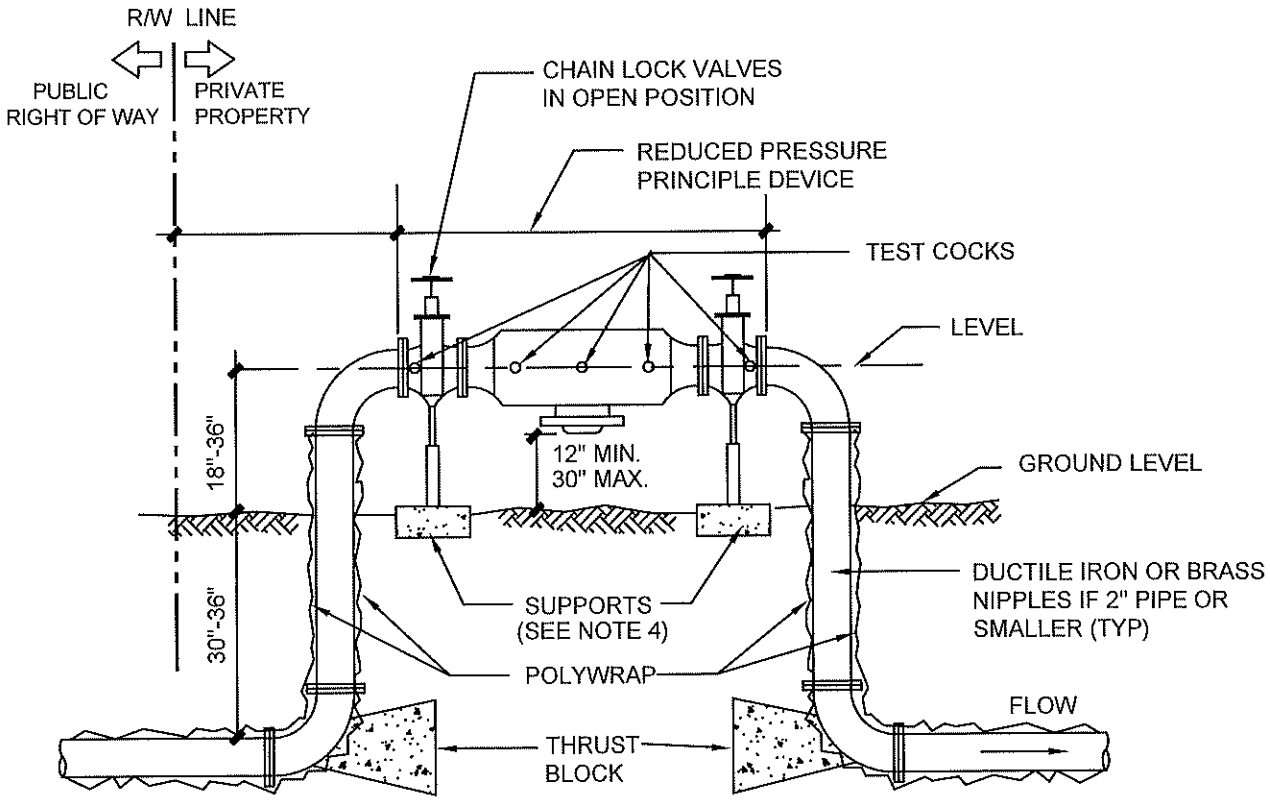
NOTES:

1. A LISTED BACKFLOW PREVENTION DEVICE IS REQUIRED TO BE INSTALLED ON ALL FIRE SPRINKLER SUPPLY LINES.
2. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED IN THE PRIVATE PROPERTY.
3. DESIGN ENGINEER SHALL CALCULATE AND DETERMINE THE SIZE OF THE IRON PIPE. MINIMUM 6" DIAMETER PIPE IS REQUIRED.
4. A POST INDICATOR VALVE MAY NOT BE REQUIRED IF THE PROXIMITY OF THE BACK FLOW PREVENTOR TO THE BUILDING IS ACCEPTABLE TO THE FIRE DEPARTMENT.
5. FOR LARGE SYSTEM DEMANDS FDC'S WITH A MINIMUM OF 3-4 HOSE CONNECTIONS SHALL BE REQUIRED.

CITY OF TRACY

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REVIEWED BY: Robert Armijo		STANDARD PLAN No. 412
CITY ENGINEER	RCE: 63173	
Res No. 2020-		FIRE DEPARTMENT CONNECTION/ BACKFLOW PREVENTOR
REVIEWED BY: Amy Ray	Rev: Leisser M.	
Prevention Chief		



REDUCED PRESSURE ASSEMBLY

N.T.S.

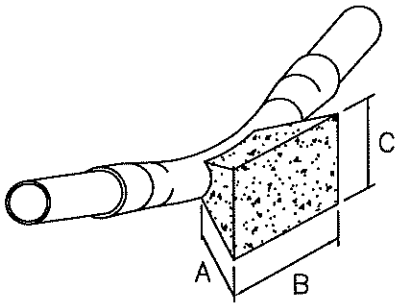
NOTES:

1. BACKFLOW PREVENTION DEVICE SHALL BE LOCATED ON PRIVATE PROPERTY IN A LOCATION APPROVED BY THE CITY PRIOR TO INSTALLATION.
2. BACKFLOW PREVENTION DEVICE SHALL CONSIST OF REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE AS REQUIRED BY TITLE 17 OF FOUNDATION FOR CROSS CONNECTION U.S.C. AND AS SHOWN ON APPROVED LIST ON FILE WITH PUBLIC WORKS. SIZE AND MODEL OF BACKFLOW DEVICE TO BE DETERMINED FOR EACH INSTALLATION DEPENDING UPON ALLOWABLE HEAD LOSS . WHERE BACKFLOW PREVENTION DEVICE IS INSTALLED IN COMBINATION WITH FIRE AND DOMESTIC SERVICE IT SHALL BE APPROVED BY FIRE MARSHALL.
3. BARRIER POST SHALL BE LOCATED TO PROTECT PIPING AND VAULTS. CURB AND PARKING BARRIERS CAN BE CONSIDERED AS PROTECTION IF EFFECTIVELY LOCATED. MINIMUM DISTANCE 4' FROM FACE OF CURB.
4. BACKFLOW PREVENTION DEVICE 3" OR LARGER SHALL BE SUPPORTED . USE GRINNELL FIG. 264 , WITH 4" THICK , 12" SQUARE CONCRETE FOOTING .
5. WATER SUPPLY - NO CONNECTIONS OR TEES WILL BE ALLOWED BETWEEN METER AND DEVICE .
6. TEST COCKS SHALL BE MUELLER H-11007 OR AS FURNISHED WITH THE BACKFLOW PREVENTION DEVICE.
7. DEVICE SHALL BE ACCESSIBLE FOR TESTING AND MAINTENANCE .
8. CERTIFICATION REQUIRED PRIOR TO ACCEPTANCE .
9. NO GALVANIZED PIPE.

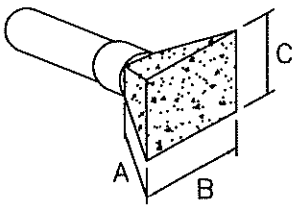
CITY OF TRACY

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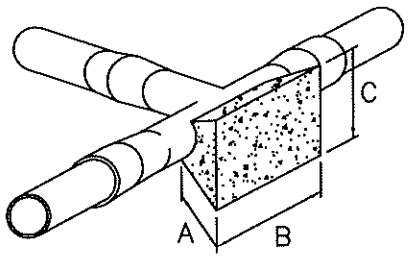
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 413
Res No. 2019-	DATE: February 18, 2020	**BACKFLOW PREVENTION DEVICE**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



BENDS



DEAD ENDS



TEES

THRUST BLOCK AREA REQUIRED												
ALLOWABLE SOIL BEARING VALUE - 2500 POUNDS PER SQUARE FOOT												
FITTINGS	6" LINE			8" LINE			10" LINE			12" LINE		
	A	B	C	A	B	C	A	B	C	A	B	C
22 1/2° BEND	1'	1'-6"	1'-6"	1'	2'	2'	1'	3'	2'	1'-6"	3'	3'
45° BEND	1'	2'	2'	1'-6"	3'	2'-6"	1'-6"	3'-6"	3'	2'	4'	4'
90° BEND	1'-6"	3'	3'	1'-6"	4'	3'	2'	5'	4'	2'	7'	4'
DEAD END	1'	2'-6"	2'	1'-6"	3'	3'	2'	4'	3'-6"	2'	5'	4'
TEE	1'	2'-6"	2'	1'-6"	3'	3'	2'	4'	3'-6"	2'	5'	4'

NOTES:

1. CONCRETE SHALL BE CLASS B, 2500 PSI MINIMUM AT 28 DAYS.
2. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED SOIL.
3. MINIMUM BEARING AREAS ARE SHOWN IN THE ABOVE TABLE.
4. THRUST BLOCKS WILL BE WEDGE-SHAPED AND SHALL NOT OVERLAP BELL ON FITTINGS OR INTERFERE WITH BOLTS ON FLANGE.

CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

STANDARD PLAN No. 414

Res No. 2020-

DATE: February 18, 2020

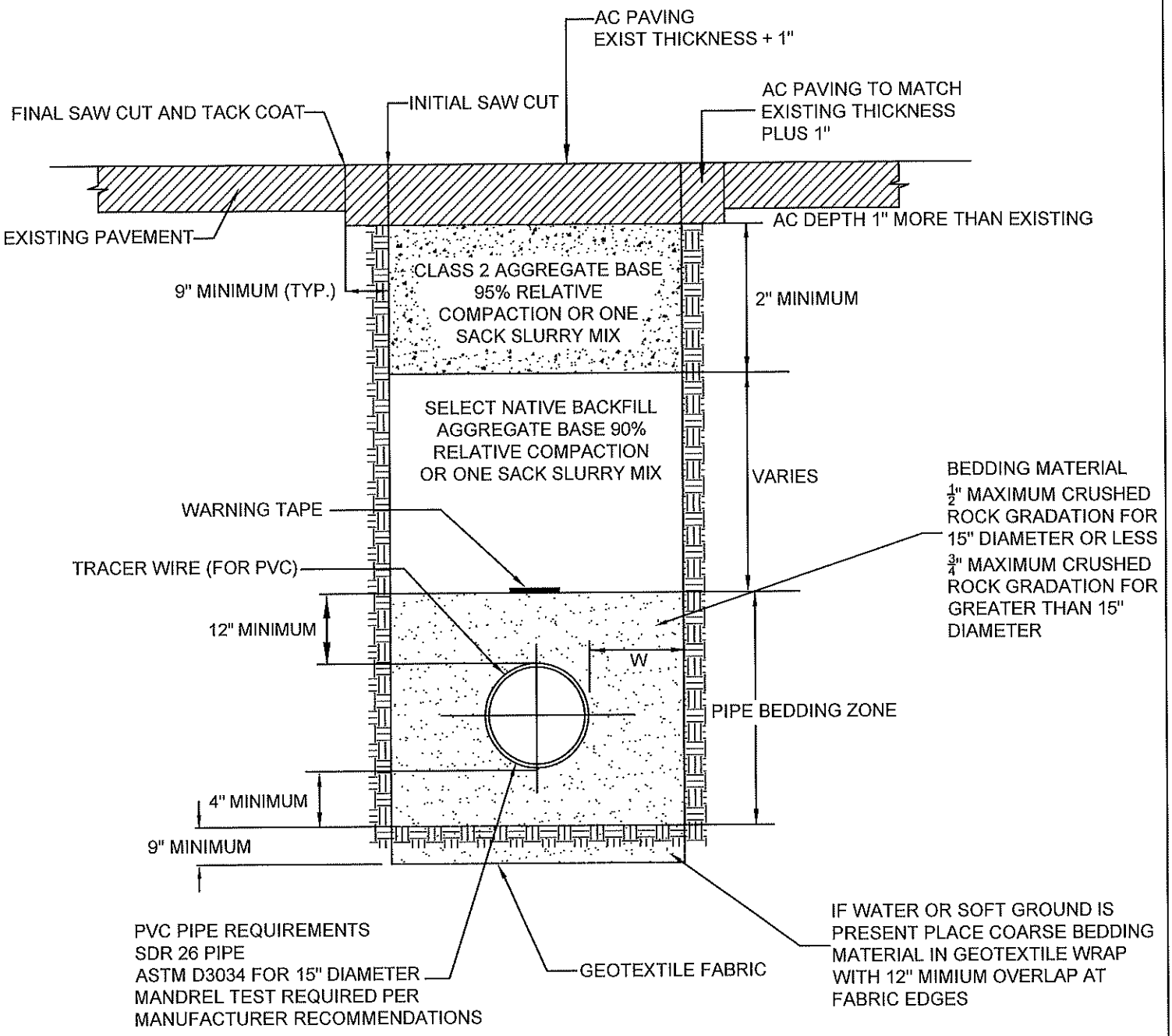
Rev: Leisser M.

Rev: Thomas W.

Rev:

Rev:

THRUST BLOCK



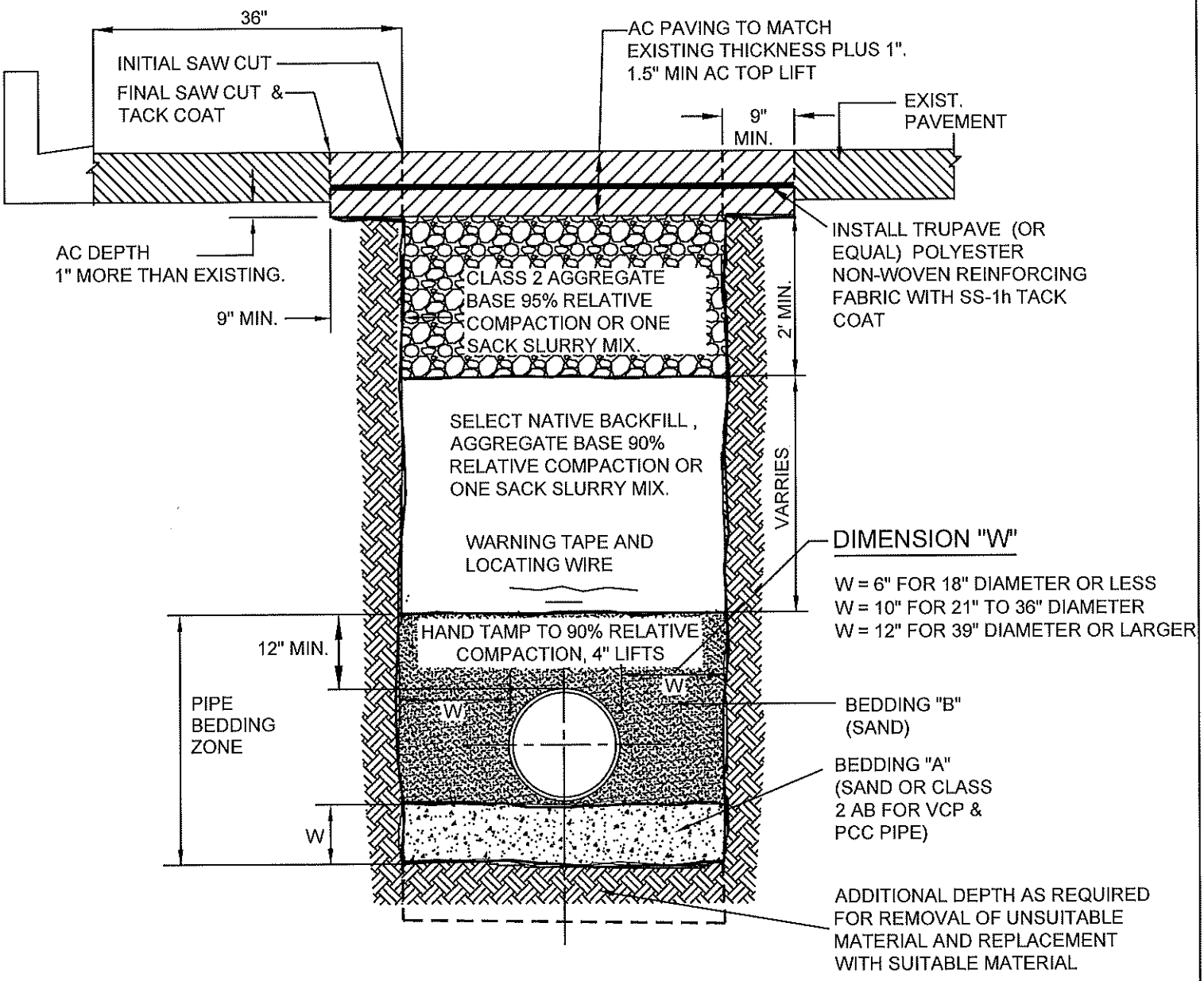
NOTES:

1. GEOTEXTILE FABRIC FOR FOUNDATION ROCK SHALL BE PROVIDED BENEATH SANITARY SEWERS, MANHOLES AND STRUCTURES WHERE WATER OR SOFT GROUND IS PRESENT, THE GEOTEXTILE FABRIC SHALL BE WRAPPED ENTIRELY AROUND THE ROCK WITH A MINIMUM TWELVE (12) INCHES OVERLAP, PUNCTURES IN THE GEOTEXTILE FABRIC SHALL BE COVERED WITH TWELVE (12) INCH SQUARE MINIMUM PATCH.
2. THESE ARE MINIMUM REQUIREMENTS, IF OTHER JURISDICTIONAL AGENCY REQUIREMENTS EXCEED THOSE SHOWN, THE GREATER REQUIREMENT SHALL BE MET.
3. ALL FLEXIBLE PIPE SHALL HAVE LOCATING WIRE ATTACHED EVERY 5FT TO PIPE.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 500
Res No. 2020-	DATE: February 18, 2020	**TRENCH BACKFILL DETAIL FLEXIBLE PIPE**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



TYPE I

N.T.S.

EXISTING STREET AREAS
TRENCH BACKFILL AND RESURFACING DETAIL

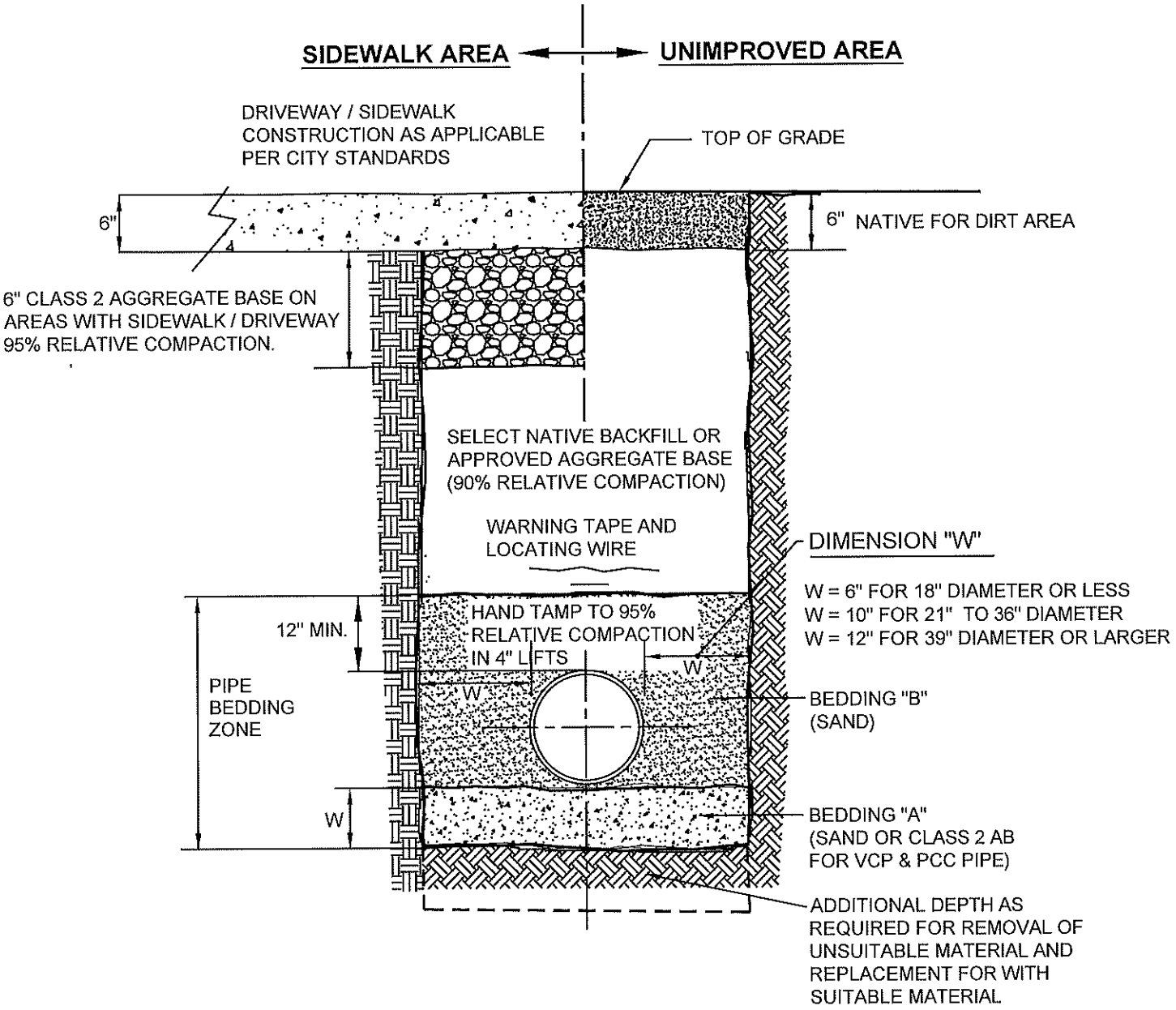
NOTE:

1. SEE NOTES ON SHEET 3

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 501 SHEET 1 OF 3
Res No. 2020-	DATE: February 18, 2020	TRENCHING & RESURFACING
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



TYPE 2

N.T.S.

SIDEWALK OR UNIMPROVED AREAS TRENCH BACKFILL DETAIL

NOTES:

1. SEE NOTES ON SHEET 3

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 501 SHEET 2 OF 3
	Res No. 2020-	DATE: February 18, 2020	TRENCHING & RESURFACING
	Rev: Leisser M.	Rev: Thomas W.	
	Rev:	Rev:	

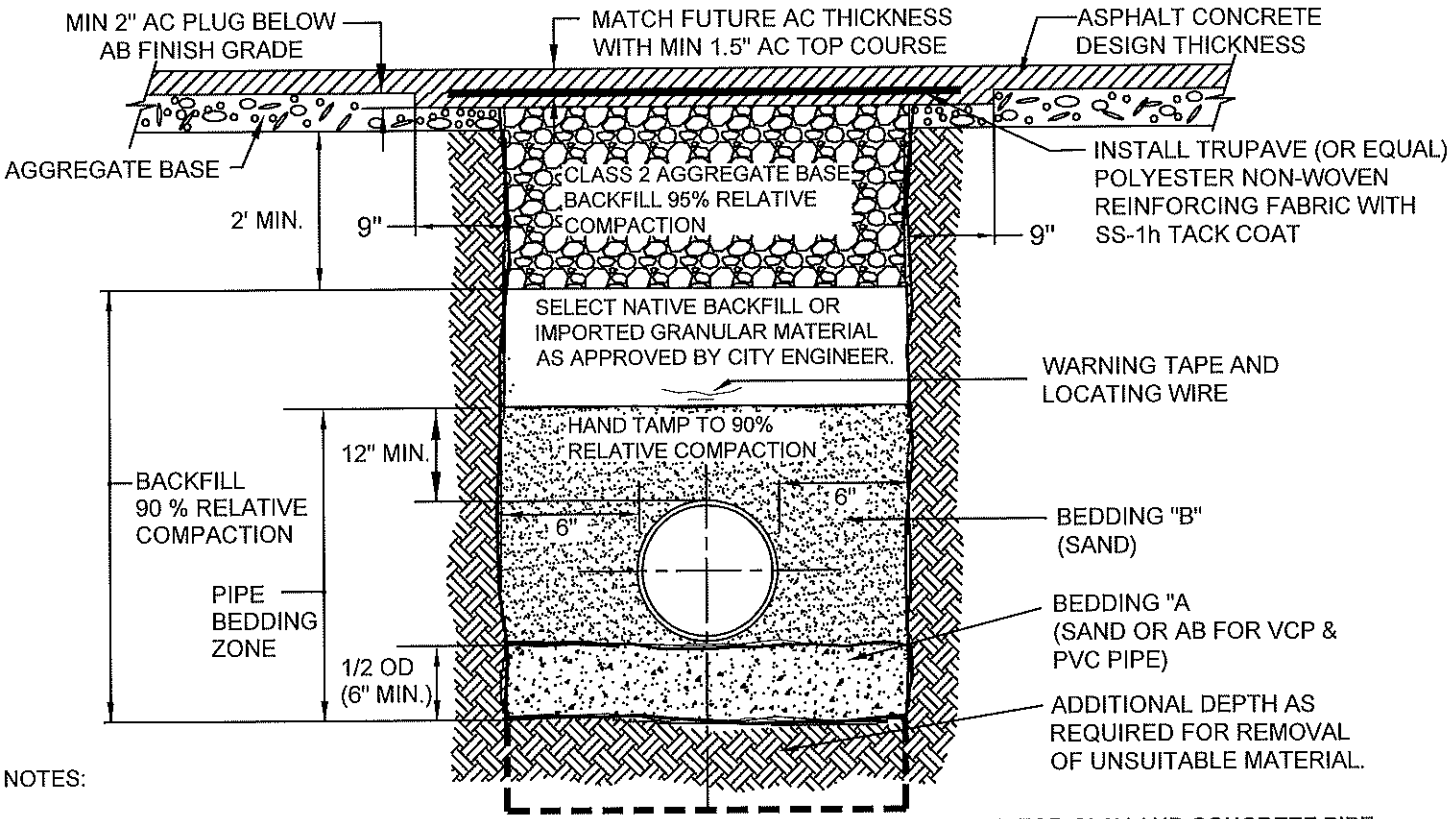
NOTES:

1. UNSUITABLE SUB GRADE MATERIAL SHALL BE EXCAVATED AND STABILIZED WITH #3 ROCK (PER ASTM C-33 OR APPROVED EQUAL) OR ONE SACK CEMENT SLURRY AS APPROVED BY THE CITY ENGINEER.
2. BEDDING "A" SHALL BE COMPOSED OF SAND (SAND EQUIVALENT NOT LESS THAN 30). FOR CLAY AND CONCRETE PIPE, CLASS 2 AGGREGATE BASE PER CITY STANDARD SPECIFICATIONS MAY BE USED.
3. BEDDING "B" SHALL BE COMPOSED OF SAND (SAND EQUIVALENT NOT LESS THAN 30).
4. SELECT NATIVE BACKFILL MATERIAL - MATERIAL FROM EXCAVATION, FREE FROM STONES, LUMPS EXCEEDING 3" IN GREATEST DIMENSION, VEGETABLE MATTER, CLAY, OR UNSATISFACTORY MATERIAL.
5. ALL TRENCHES SHALL BE SHORED OR PROTECTED IN ACCORDANCE WITH "OSHA" AND OTHER STATE AND FEDERAL SAFETY CODES, REGULATIONS AND ORDINANCES.
6. PLACEMENT OF BACKFILL SHALL BE IN 12" LIFTS EVENLY PLACED AND MECHANICALLY COMPACTED TO THE RELATIVE DENSITY SPECIFIED. COMPACTION TESTS SHALL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER. ALL COST RELATED TO THESE TESTS SHALL BE BORNE BY OWNER/CONTRACTOR/UTILITY COMPANY WHEN SUCH TESTS ARE REQUIRED. IF RESULTS OF THESE TESTS DO NOT MEET THE SPECIFIED REQUIREMENTS, BACKFILL SHALL BE EXCAVATED, REPLACED, COMPACTED AND RETESTED. IN CASE OF ONE SACK SLURRY MIX, NO COMPACTION TEST WILL BE REQUIRED. COMPACTION BY JETTING WITHIN THE PIPE BEDDING ZONE MAY BE ALLOWED BY SPECIAL PERMISSION OF THE CITY ENGINEER.
7. INITIAL CUT IN STREET PAVEMENT SHALL BE EQUAL TO THE WIDTH OF THE TRENCH WITH THE OPTION OF BEING JACK HAMMERED OR SAW CUT.
8. FINAL CUT IN STREET PAVEMENT SHALL BE 18" WIDER THAN THE TRENCH WIDTH (9" ON EACH SIDE) AS SHOWN IN THE DETAIL AND SHALL BE MADE BY AN ASPHALT GRINDER OR SAW CUTTING ONLY.
9. ALL TRENCHES SHALL BE BACKFILLED AND TEMPORARILY PAVED OR STEEL PLATED AT THE END OF EACH WORKING DAY.
10. TEMPORARY BITUMINOUS SURFACING (CUTBACK) SHALL BE PLACED AND COMPACTED IMMEDIATELY ABOVE THE TRENCH FOLLOWING BACKFILL COMPACTION AND APPROVAL OF THE CITY ENGINEER. MINIMUM DEPTH OF CUTBACK SHALL BE 2" OR AS SPECIFIED BY THE CITY ENGINEER. CUTBACKS SHALL BE MAINTAINED IN A CONDITION SATISFACTORY TO THE CITY ENGINEER UP UNTIL THE TIME OF FINAL PAVING.
11. FINAL PAVING ABOVE TRENCH SECTION SHALL BE PLACED WITHIN 14 DAYS OF ITS BACKFILL AND COMPACTION. EXTENSION MAY BE GRANTED BY THE CITY ENGINEER DUE TO WEATHER CONDITIONS. DEPTH OF FINAL PAVING SHALL BE 1" GREATER THAN EXISTING PAVEMENT. IN THE EVENT PERMANENT PAVING IS NOT COMPLETED WITHIN 14 DAYS, THE CITY WILL CONSIDER THIS AS INCOMPLETE WORK AND WILL TAKE THE ACTION NECESSARY, IN ACCORDANCE WITH PREVAILING CITY ORDINANCES AND POLICIES.
12. TEMPORARY CUTBACK SHALL BE REMOVED PRIOR TO THE PLACEMENT OF FINAL PAVING. FINAL PAVING SHALL BE PLACED ON UNDISTURBED, PREVIOUSLY INSPECTED AND COMPACTED AGGREGATE BASE OR ONE SACK SLURRY MIX. RECOMPACTION SHALL BE REQUIRED FOR ANY DISTURBED BASE OR SURFACE.
13. ASPHALT CONCRETE SHALL BE IN ACCORDANCE WITH CITY OF TRACY STANDARD SPECIFICATIONS.
14. FOR A PARALLEL TRENCH LONGER THAN ONE HALF THE LENGTH OF A BLOCK, A SLURRY SEAL SHALL BE REQUIRED ON THE ENTIRE HALF WIDTH OF THE STREET, ON THE TRENCH SIDE, OVER THE ENTIRE LENGTH OF THE BLOCK OR AS DIRECTED BY THE CITY ENGINEER.
15. PROPER TRAFFIC CONTROL AND COVERING OF TRENCHES SHALL BE MAINTAINED IN ACCORDANCE WITH PREVAILING SAFETY AND TRAFFIC CONTROL STANDARDS FOR WORK IN CONSTRUCTION AREAS.
16. NO TRENCH SHALL BE OPENED IN ANY STREET FOR THE PURPOSE OF LAYING PIPES OR CONDUITS MORE THAN SIX HUNDRED (600) FEET AT A TIME.
17. TRENCHING SHALL NOT BE ALLOWED ON ANY STREET WHICH HAS BEEN RECONSTRUCTED OR REPAVED WITHIN THE PAST THREE YEARS NOR ON ANY SLURRY SEALED STREET FOR A PERIOD OF EIGHTEEN (18) MONTHS.
18. 48 HOURS ADVANCE NOTICE SHALL BE REQUIRED FOR ALL CITY INSPECTIONS. CALL THE CITY OF TRACY CONSTRUCTION MANAGEMENT DIVISION AT (209) 831-4600.
19. REMOVE AND REPLACE THE REMAINING SECTION OF PAVEMENT IF DISTANCE BETWEEN T-CUT EDGE AND LIP OF GUTTER IS LESS THAN 36"
20. FILTER FABRIC BETWEEN DRAIN ROCK AND BEDDING REQUIRED

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **501** SHEET 3 OF 3
Res No. 2020-	DATE: February 18, 2020	**TRENCHING & RESURFACING**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



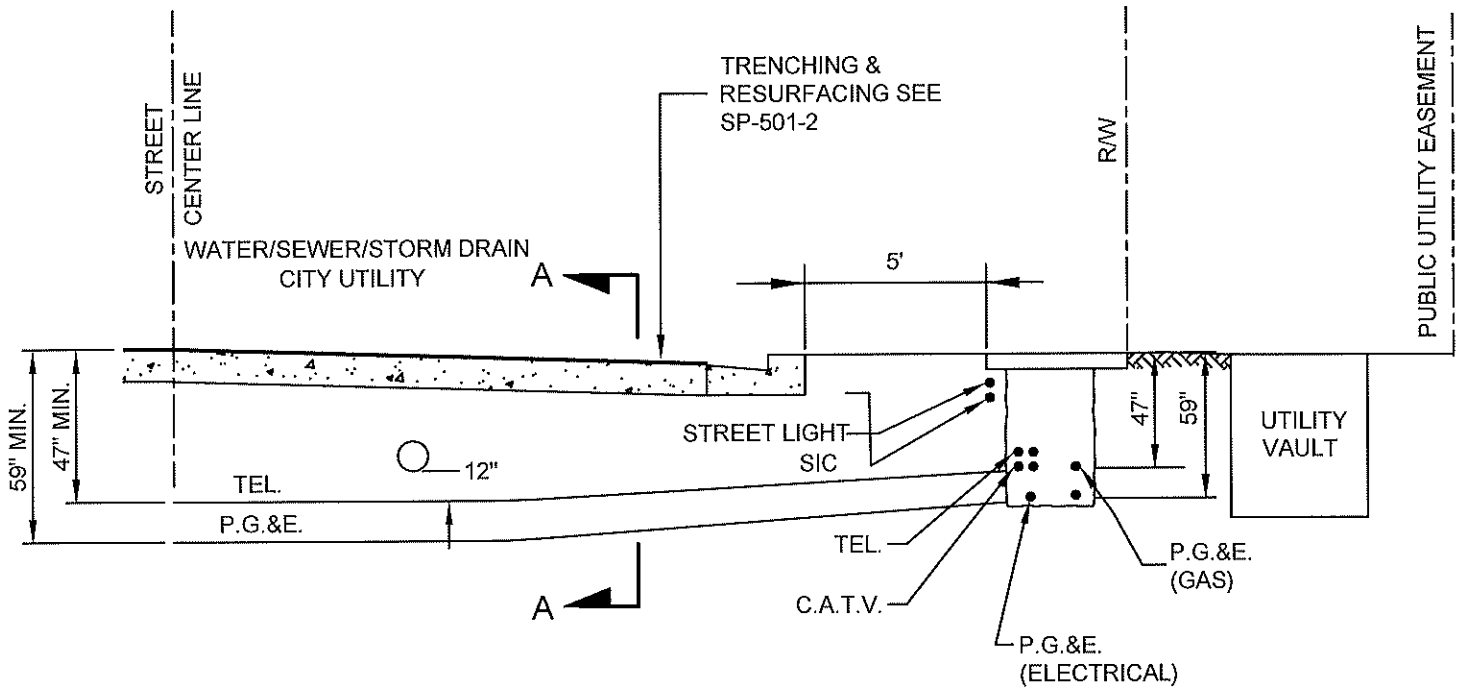
NOTES:

1. BEDDING "A" SHALL BE COMPOSED OF SAND (SAND EQUIVALENT NOT LESS THAN 30). FOR CLAY AND CONCRETE PIPE, CLASS 2 AGGREGATE BASE PER CITY STANDARD SPECIFICATIONS MAY BE USED. BEDDING "B" SHALL BE COMPOSED OF SAND (SAND EQUIVALENT NOT LESS THAN 30).
2. SELECT NATIVE BACKFILL MATERIAL - MATERIAL FROM EXCAVATION, FREE FROM STONES, LUMPS EXCEEDING 3" IN GREATEST DIMENSION, VEGETABLE MATTER, CLAY, OR UNSATISFACTORY MATERIAL.
3. UNSUITABLE SUBGRADE MATERIAL SHALL BE EXCAVATED AND STABILIZED WITH #3 ROCK (PER ASTM C-33 OR APPROVED EQUAL) OR WITH CEMENT SLURRY / CONCRETE AS APPROVED BY THE CITY ENGINEER.
4. ALL TRENCHES SHALL BE SHORED OR PROTECTED IN ACCORDANCE WITH "OSHA" AND OTHER STATE AND FEDERAL SAFETY CODES, REGULATIONS AND ORDINANCES.
5. THE FINAL 2 FEET OF BACKFILLED MATERIAL SHALL BE EITHER AGGREGATE BASE (95% RELATIVE COMPACTION) OR ONE (1) SACK SLURRY MIX.
6. PLACEMENT OF BACKFILL SHALL BE IN 12" LIFTS EVENLY PLACED AND MECHANICALLY COMPACTED TO THE RELATIVE DENSITY SPECIFIED. COMPACTION TESTS SHALL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER. ALL COST RELATED TO THESE TESTS SHALL BE BORNE BY OWNER/CONTRACTOR/UTILITY COMPANY WHEN SUCH TESTS ARE REQUIRED. IF RESULTS OF THESE TESTS DO NOT MEET THE SPECIFIED REQUIREMENTS, BACKFILL SHALL BE EXCAVATED, REPLACED, COMPACTED AND RETESTED. IN CASE OF ONE SACK SLURRY MIX, NO COMPACTION TEST WILL BE REQUIRED. COMPACTION BY JETTING WITHIN THE PIPE BEDDING ZONE MAY BE ALLOWED BY SPECIAL PERMISSION OF THE CITY ENGINEER.
7. 48 HOURS ADVANCE NOTICE SHALL BE REQUIRED FOR ALL CITY INSPECTIONS. CALL THE CITY OF TRACY CONSTRUCTION MANAGEMENT DIVISION AT (209) 831-4600.
8. PROPER TRAFFIC CONTROL AND COVERING OF TRENCHES SHALL BE MAINTAINED IN ACCORDANCE WITH PREVAILING SAFETY AND TRAFFIC CONTROL STANDARDS FOR WORK IN CONSTRUCTION AREAS.
9. ASPHALT CONCRETE SHALL BE IN ACCORDANCE WITH CITY OF TRACY STANDARD SPECIFICATIONS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **502**
Res No. 2020-	DATE: February 18, 2020	**SUBDIVISION TRENCHING AND BACKFILL**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



TYPICAL SECTION

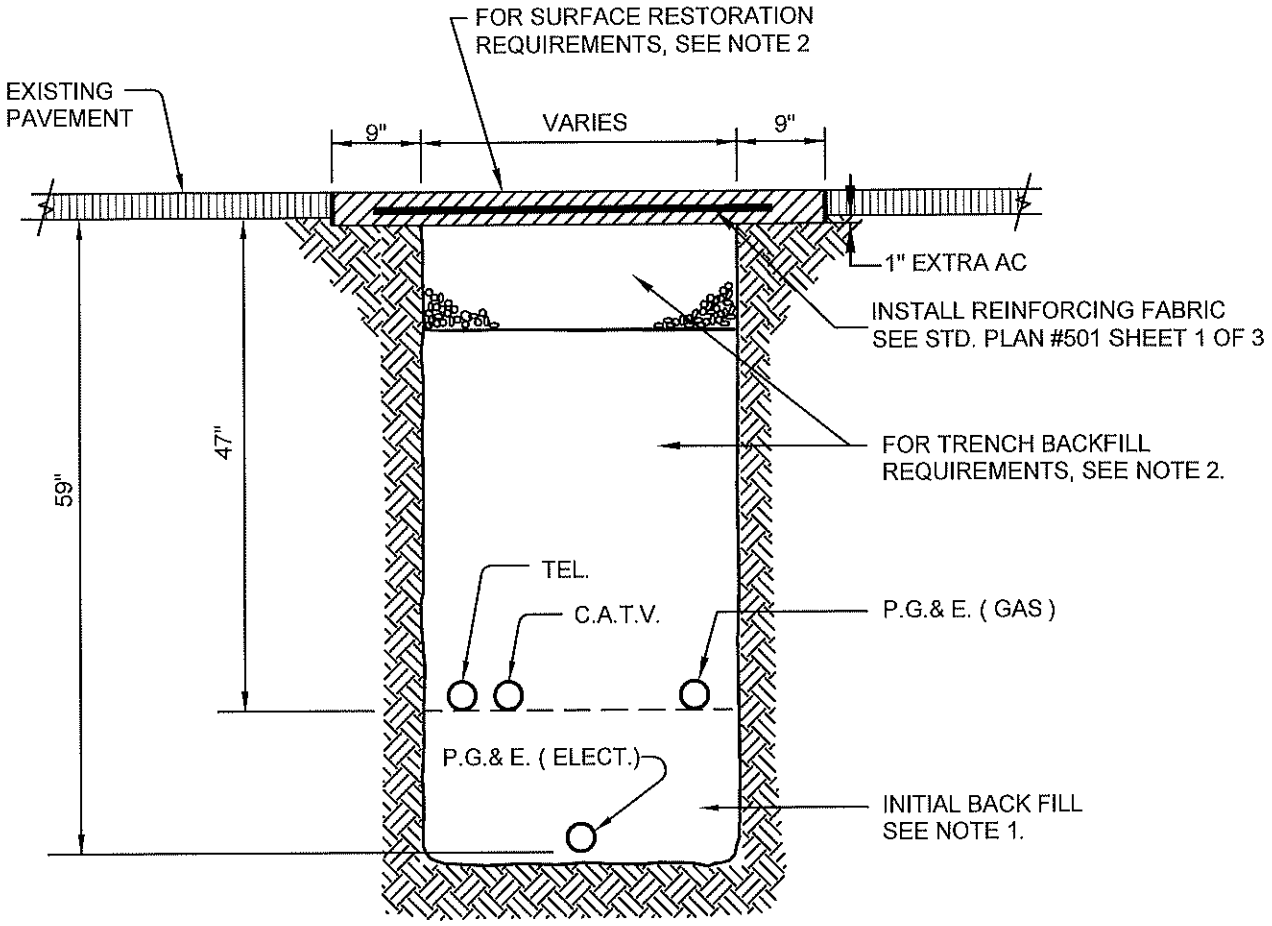
NOTES:

1. SEE CITY STANDARD PLAN SP 560, SHEET 2 0F 2 FOR "UTILITY CROSSING TRENCH SECTION"

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. 503 SHEET 1 OF 2
Res No. 2020-	DATE: February 18, 2020	DRY UTILITY CROSSINGS
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	



TRENCH DETAIL

N.T.S.

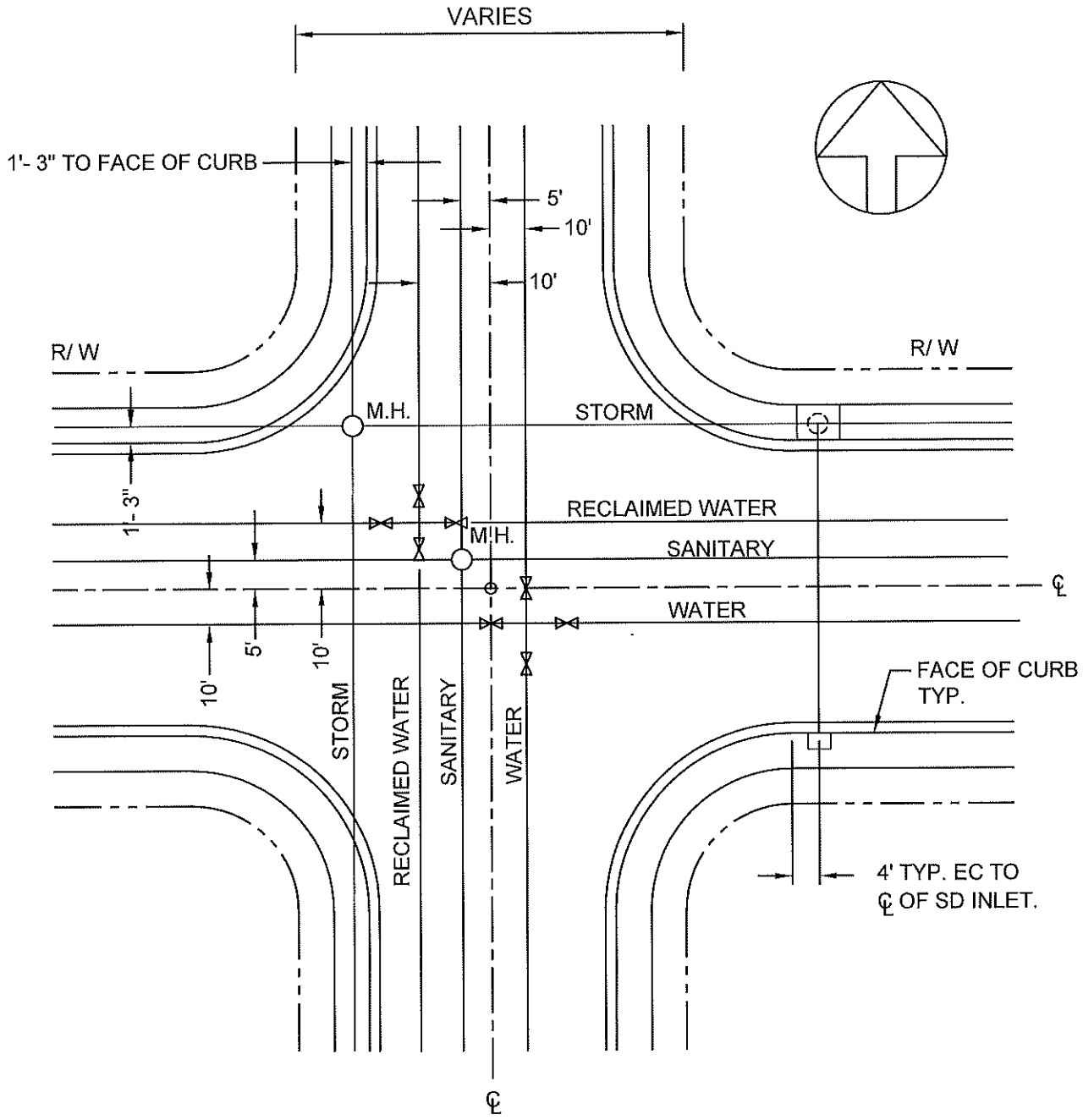
SECTION "A"

NOTES:

1. WHEN MULTIPLE DUCTS ARE IN A COMMON TRENCH, BACK FILL MATERIAL SHALL CONFORM TO CITY OF TRACY STD. PLAN #501.
2. PAVEMENT REPLACEMENT AND TRENCH BACKFILL SHALL CONFORM TO STANDARD PLANS FOR " TRENCHING AND RESURFACING ". (STANDARD PLAN NO. 501)
3. A SINGLE UTILITY MAY BE PLACED IN 6" MIN. WIDE ROCKWHEEL TRENCH IN EXISTING STREETS. BACKFILL FOR 6" WIDE TRENCH SHALL CONSIST OR ONE SACK SLURRY MIX. SURFACE RESTORATION WITHIN PAVED AREAS SHALL STILL REQUIRE 9" TEE CUT ON EACH SIDE OF TRENCH.
4. TEMPORARY PAVEMENT SHALL BE PLACED AND MAINTAINED AT THE LEVEL OF THE ADJACENT ROADWAY AT ALL TIMES UNTIL FINAL PAVEMENT REPLACEMENT IS COMPLETED.
5. 48 HOURS WRITTEN NOTICE IS REQUIRED PRIOR TO COMMENCEMENT OF WORK. CALL CITY OF TRACY CONSTRUCTION MANAGEMENT DIVISION AT (209) 831-4600

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	STANDARD PLAN No. 503	SHEET 2 OF 2
	Res No. 2020-	DATE: February 18, 2020	"DRY" UTILITY LOCATIONS
	Rev: Leisser M.	Rev: Thomas W.	
	Rev:	Rev:	



NOTE:

1. WHEN USING STD PLAN #304, TYPE "A" INLET ℄ OF A STORM DRAIN PIPE SHALL BE 10 INCHES INSIDE FACE OF CURB

CITY OF TRACY

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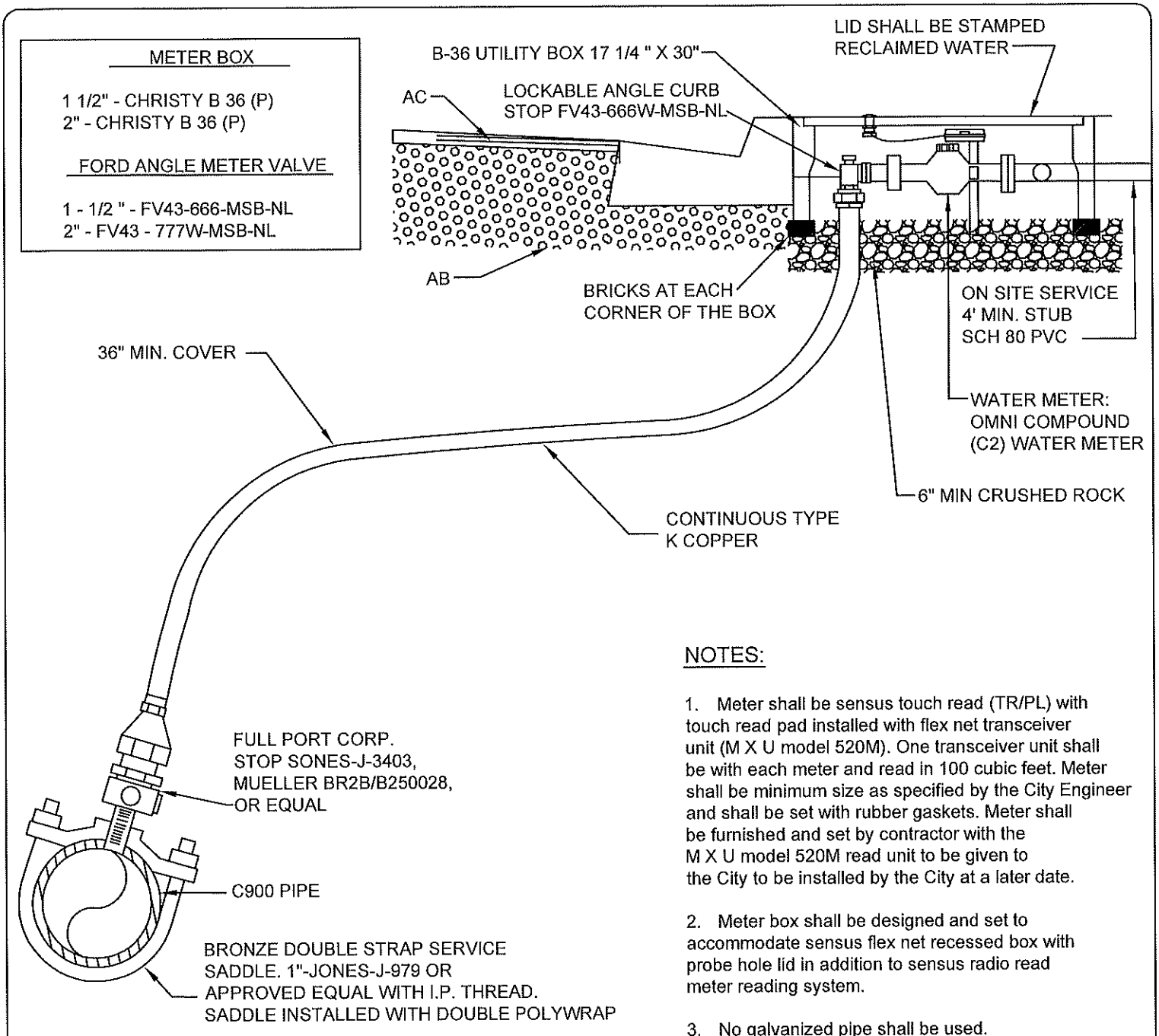
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **504**
Res No. 2020-	DATE: February 18, 2020	**STORM, SEWER & WATER LOCATIONS**
Rev: Leisser M.	Rev: Thomas W.	
Rev:	Rev:	

METER BOX

1 1/2" - CHRISTY B 36 (P)
2" - CHRISTY B 36 (P)

FORD ANGLE METER VALVE

1 - 1/2 " - FV43-666-MSB-NL
2" - FV43 - 777W-MSB-NL



NOTES:

1. Meter shall be sensus touch read (TR/PL) with touch read pad installed with flex net transceiver unit (M X U model 520M). One transceiver unit shall be with each meter and read in 100 cubic feet. Meter shall be minimum size as specified by the City Engineer and shall be set with rubber gaskets. Meter shall be furnished and set by contractor with the M X U model 520M read unit to be given to the City to be installed by the City at a later date.

2. Meter box shall be designed and set to accommodate sensus flex net recessed box with probe hole lid in addition to sensus radio read meter reading system.

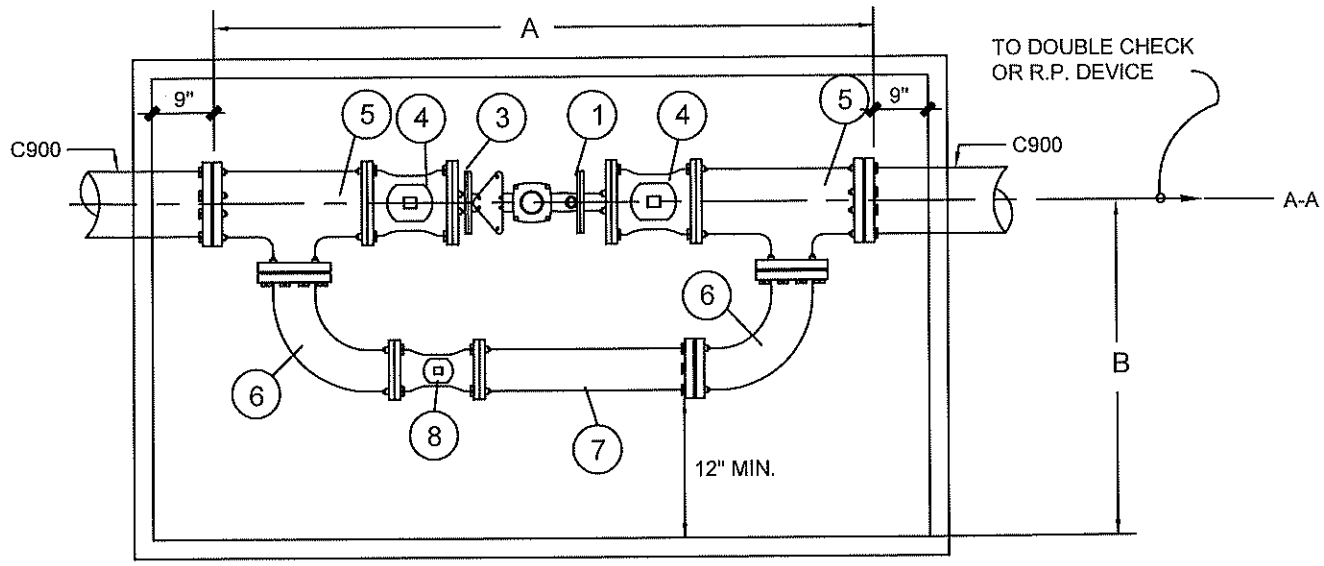
3. No galvanized pipe shall be used.

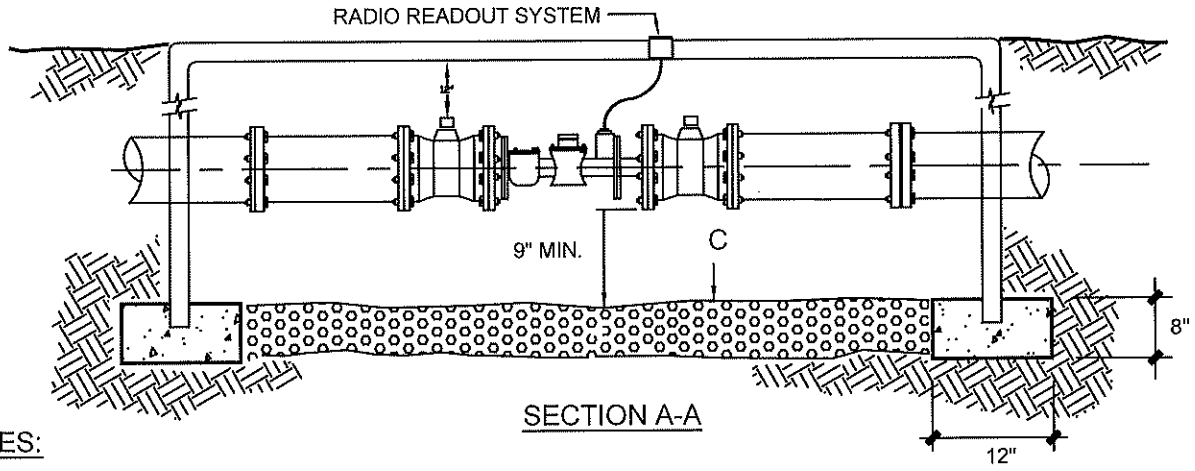
4. Compact around the meter to 95%. Onsite plumber shall not remove meter box to connect the pipe.
5. All underground copper water lines within the city right-of-way shall be a single continuous piece polywrapped to City of Tracy Standards.
6. No landscape irrigation lines shall be allowed between the meter box & the sidewalk.
7. Unused existing services shall be abandoned by potholing, cutting out and removing the corporation stop and saddle at the main and installing a full circle 316 stainless steel repair clamp with 316 accessories over the hole.
8. FZ sensus meters should be used in locations where domestic and fire services share one service line.
9. Purple Christy Polyethylene Pipe encasement wrap or 10ML pipe wrap tape from main to Christy Box.
10. Tracer wire and marker tape from main to Christy box.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **600**
Res No. 2019-	DATE:	**RECLAIMED WATER 1 1/2 " & 2" SERVICE**
Prepared By: Leisser M.	Scale: N.T.S	
Checked By: Thomas W.	Checked By: Aleck C.	





SECTION A-A

NOTES:

1. METER TYPE T2 TURBO WITH FLEX NET FOR IRRIGATION SERVICE.
2. INSTALL LOCKABLE STEEL VAULT LID WITH METER REGISTER IN LID. LID STAMPED RECLAIMED WATER.
3. FOR WATER METERS LARGER THAN 6", DESIGNER SHALL SUBMIT A SEPARATE DESIGN FOR APPROVAL BY CITY ENGINEER.
4. ALL PIPE AND FITTINGS WITHIN VAULT SHALL BE FLANGED DUCTILE IRON PIPE.
5. THE MINIMUM SIZE SERVICE FOR A STREETSCAPE APPLICATION AND NEIGHBORHOOD PARK IS 4 INCH.
6. NO LANDSCAPE IRRIGATION LINES SHALL BE ALLOWED BETWEEN THE METER BOX AND THE SIDEWALK.
7. WATER METER SHALL BE LOCATED WITHIN THE CITY R.O.W

No.	NAME		
1	FLEX NET METER	6	90° ELBOW
2	COUPLING	7	BYPASS PIPE DIP SAME SIZE
3	ADAPTER	8	BYPASS GATE VALVE W/ NUT
4	GATE VALVE W/ NUT		
5	TEE		

DIMENSIONS		3"	4"	6"
A	OVER ALL LENGTH	63	73	86
B	WIDTH PIPE ℄ TO BYPASS	19	21	26
C	PIPE ℄ TO MAXIMUM HEIGHT	16	17	21
	MAIN LINE WIDTH			
	WEIGHT			
	BY PASS SIZE	3"	3"	4"

CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

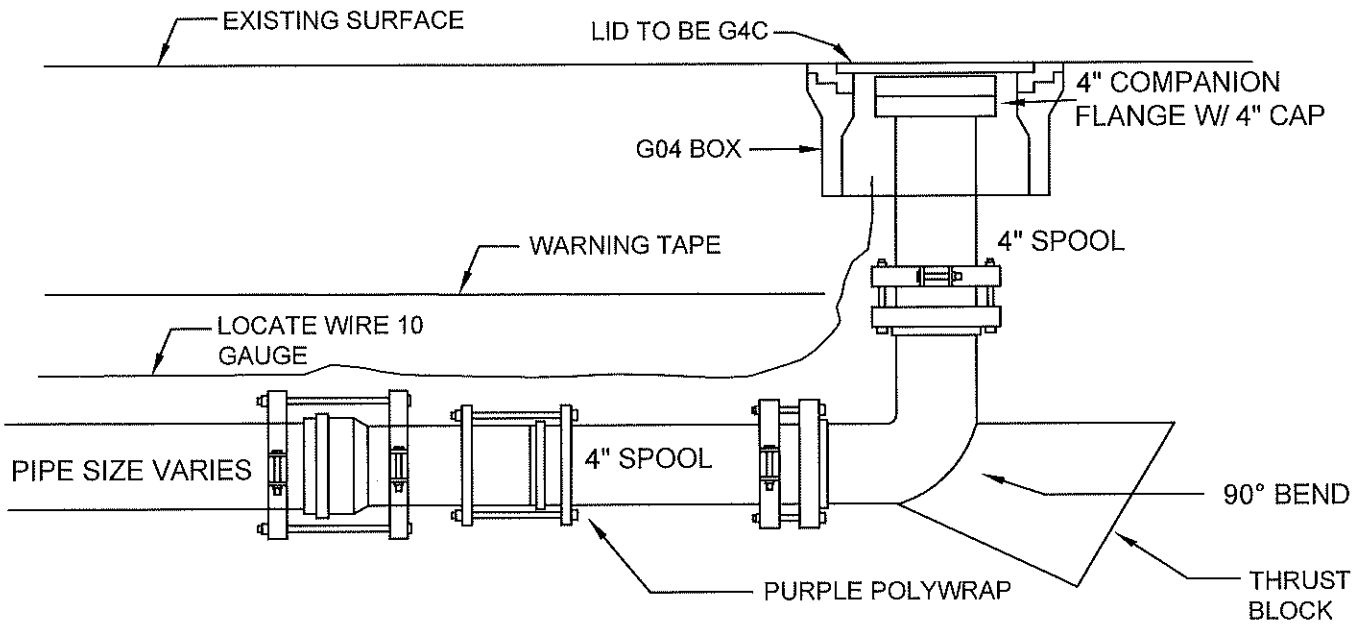
STANDARD PLAN No. **601**

Res No. 2020- | DATE: February 18, 2020

Prepared By: Leisser M. | Scale: N.T.S

Checked: Thomas W. | Checked: Aleck C.

3", 4" & 6" RECLAIMED WATER METER



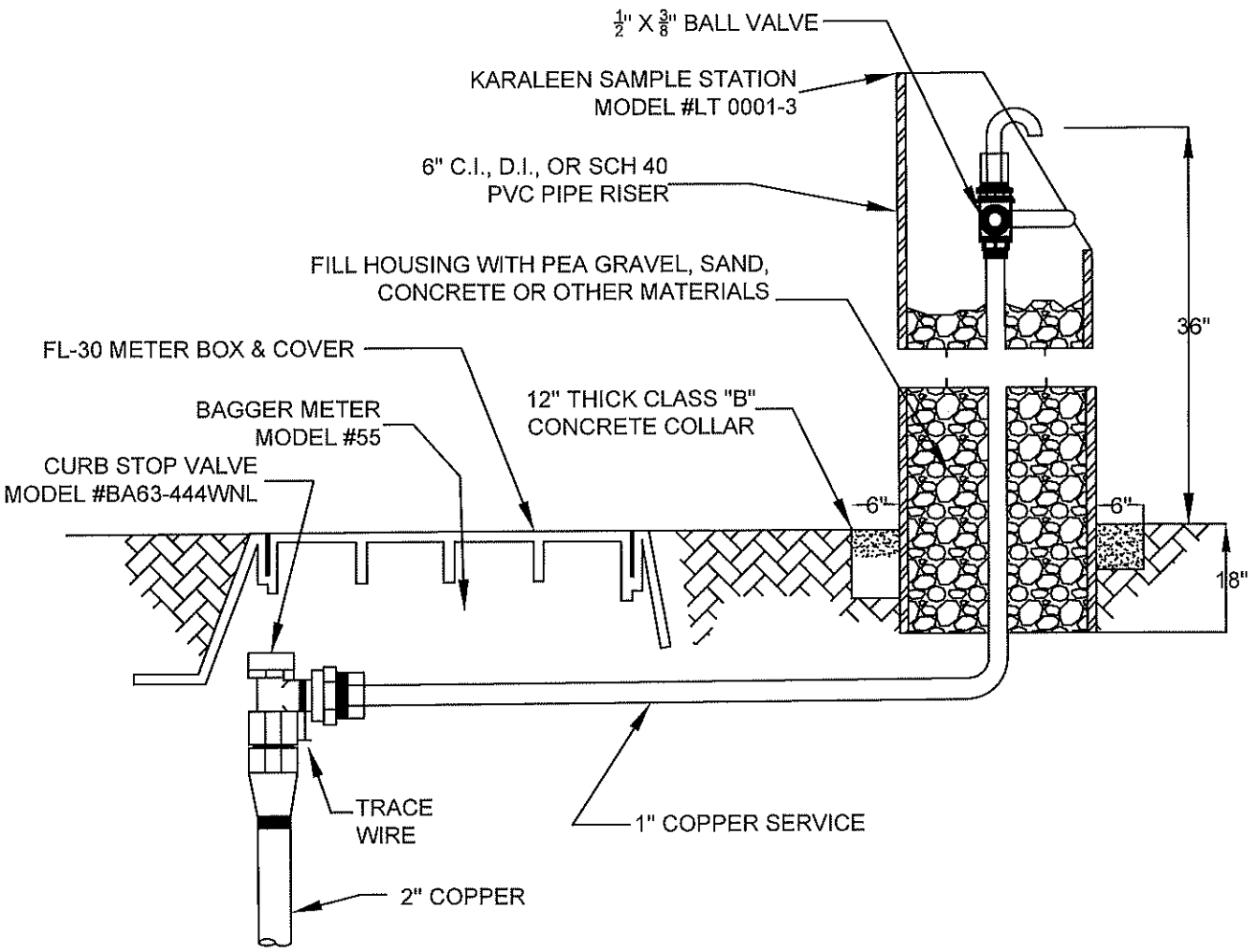
NOTES:

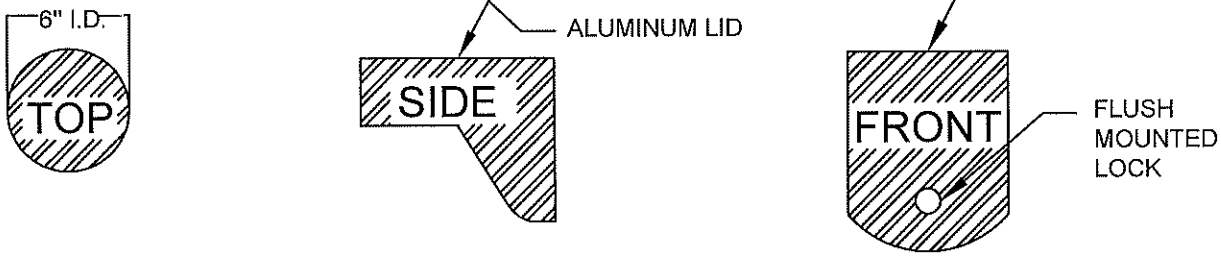
1. FOR THRUST BLOCK DIMENSIONS, SEE STANDARD PLAN NO. 423
2. THE FUTURE EXTENSION STUB SHALL BE TESTED AND CHLORINATED WITH THE REST OF THE MAIN AND BLOWN OFF THROUGH THE PIPE.
3. BLOW OFF SHALL BE 4" MINIMUM FOR BAC-TEE OR 4" DUCTILE IRON FLANGED PIPE.
4. USE BALL VALVE ON 2" SVC OR BLOW OFF ONLY
5. TRAFFIC BOX SHALL BE CHRISTY G04 WITH G4C LID OR APPROVED EQUAL.
6. VALVE AND BLOW OFF BOXES SHALL BE INSTALLED IN PAVED AREA ONLY UNLESS APPROVED BY THE CITY ENGINEER.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **602**
Res No. 2020-	DATE: February 18. 2020	**BLOW OFF FOR FUTURE EXTENSION WITH VALVE FOR RECLAIMED WATER**
Prepared By: Leisser M.	Scale: N.T.S	
Checked By: Thomas W.	Checked By: Aleck C.	





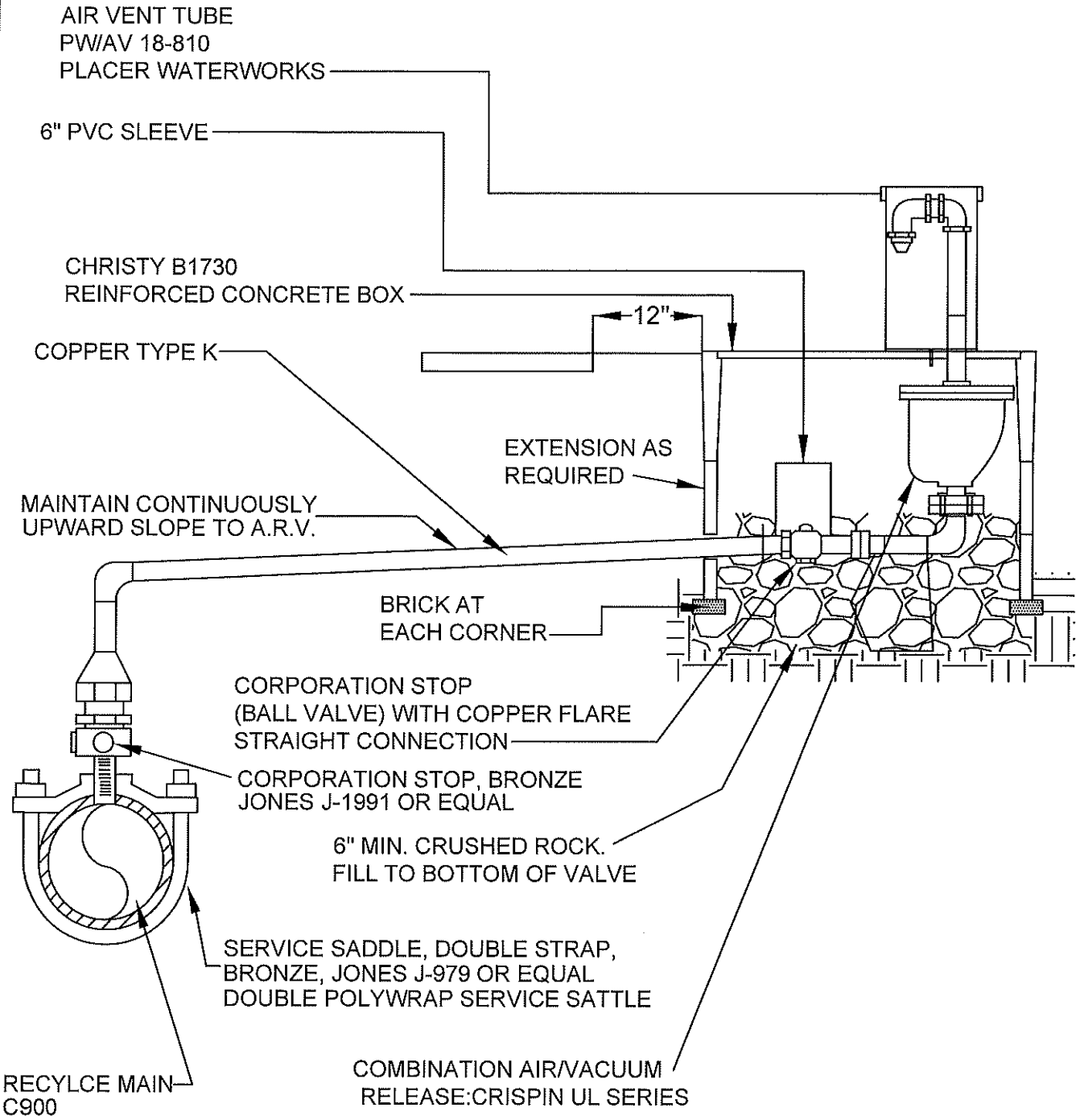
NOTE:

1. Polywrap from main to box with polyethylene sleeve or 10MIL tape - ½ lapped from main to Christy box.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **603**
Res No. 2020-	DATE: 2020-	**RECLAIMED WATER QUALITY SAMPLING STATION**
Prepared By: Leisser M.	Scale: N.T.S	
Checked By: Thomas W.	Checked By: Aleck C.	



NOTES:

1. VENT TUBE SHALL BE POWDER COATED - PURPLE.
2. ALL PIPING SHALL BE BRASS OR COPPER BETWEEN THE MAIN AND ARV.
3. TRACER WIRE AND MARKER TAPE FROM MAIN TO CHRISTY BOX.
3. PURPLE POLYWRAP FROM MAIN TO BOX WITH POLYETHYLENE SLEEVE OR PURPLE 10MIL TAPE-1/2 LAPPED FROM MAIN TO CHRISTY BOX..

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		STANDARD PLAN No. **604**
Res No. 2020-	DATE: February 18, 2020	**COMBINATION AIR & VACCUM RELEASE VALVE WITH BOLLARD**
Prepared By: Leisser M.	Scale: N.T.S	
Checked By: Thomas W.	Checked By: Aleck C.	

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City of Tracy

Engineering Design & Construction Standards



DESIGN STANDARDS

Development Services Department

Resolution No. 2020-XXX ♦ February 18, 2020

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Resolution 2020-XXX

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SECTION 1

GENERAL

1.01 Purpose and Intent

The purpose and intent of these Design Standards is to provide minimum standards for the design, construction, maintenance, repair, and alteration of all public facilities and specified private improvements. The public facilities and private improvements subject to these Design Standards shall include roadways (including streets, alleys, bikeways, medians, sidewalks, curbs, gutters, driveways, right of way landscaping, and intersection improvements), storm drainage (including channels, pipes, detention and retention facilities), wastewater facilities (including collection and treatment), recycled and potable water facilities (including conveyance, storage, and treatment), parks (including mini parks, neighborhood parks, and community parks), public buildings, and all appurtenances thereto, within the City.

1.02 Legal Authority for Design Standards

These Design Standards are an implementation of existing obligations imposed upon applicants for design and construction of public improvements pursuant to: state law including the California Constitution, the Planning and Zoning Law (Government Code Sections 65000 *et seq.*), the Subdivision Map Act (Government Code Sections 66410 *et seq.*), the California Environmental Quality Act (Public Resources Code Sections 21000 *et seq.*, "CEQA"), and the Guidelines for California Environmental Quality Act (California Administrative Code, Title 14, Sections 15000 *et seq.*, "CEQA Guidelines"); all City Regulations including the City's General Plan , the Tracy Municipal Code ("TMC"), all mitigation measures set forth in environmental documents relevant to the application prepared pursuant to CEQA, all conditions of approval for any development project relevant to the application, and all other relevant City Regulations set forth in ordinances, resolutions, specific plans, policies, and procedures, including the City's Design Documents (including the Standard Plans, Standard Specifications, Design Standards, and relevant Public Facility Master Plans); and the court cases which interpret those laws and regulations. Any items not included in the Standards shall be designed in accordance with the State Planning Manual, California Code of Regulations Title 24, State Highway Design Manual, Subdivision Ordinance or Zoning Ordinance as defined below, or as directed by the City Engineer.

1.03 Application of Design Standards to Public and Private Facilities

The primary scope and intent of these Design Standards is for public facilities to be constructed and turned over to the City for operation and/or maintenance. However, these Design Standards shall also apply to privately owned and maintained

improvements that have a potential effect on the public health, safety, and welfare, as determined by the City Engineer.

1.04 Limitations of Design Standards

These Design Standards shall not be construed to be a maximum required design on any project, or portion of a project. These Design Standards are not intended to replace the professional discretion and judgment of any Design Engineer, Land Surveyor, or Landscape Architect. It is the responsibility of each Design Engineer, Land Surveyor, and Landscape Architect to exercise the required standard of care in designing the facilities and improvements described herein.

1.05 Requests by Applicant for Minor Deviations from Design Standards

1.05(A). An applicant may make a request for a minor deviation from these Design Standards provided that the applicant pays a fee to cover all City costs in reviewing the request (including costs related to City staff time and any consultant services deemed necessary by the City Engineer), and the applicant establishes in writing, to the satisfaction of the City Engineer, that: (1) there are extraordinary circumstances which: (a) warrant the proposed deviation to the Design Standards, and (b) are particular to the development project application, and (c) are not equally applicable to a significant portion of development projects in the City; and (2) the proposed deviation meets or exceeds the standard of care relevant to the circumstances of the request; and (3) the proposed deviation will not result in a negative impact on the health, safety, or welfare of City residents; and (4) the proposed deviation will not result in any unreasonable maintenance or operation costs to the City; and (5) approval of the proposed deviation could not be used by other applicants with similar circumstances to effectively modify the City's ability to enforce the Design Standards. If an applicant desires to request a deviation from these Design Standards, the applicant shall have the burden of submitting the request in a timely manner, in order to provide sufficient time for complete review and consideration of the request by the City Engineer.

1.05(B). After a request for a minor deviation is made in accordance with Section 1.05(A), the City Engineer shall prepare a written response to the applicant in one of the following forms: (1) if additional documentation is required to be submitted by the applicant in order to substantiate or clarify the request, the response shall outline the additional documentation; or (2) if the City Engineer determines that the applicant has provided documentation which satisfies the requirements of Section 1.05(A), the response shall identify the parameters of the approved minor deviation from the Design Standards; or (3) if the City Engineer determines that the applicant has not provided documentation which satisfies the requirements of Section 1.05(A), the response shall identify which requirements of Section 1.05(A) have not been satisfied.

1.05(C). If the City Engineer provides a written response, in accordance with Section 1.05(B)(2), which identifies the parameters of the approved minor deviation from the Design Standards, then the written response shall be incorporated by reference into the document (e.g., Subdivision Improvement Agreement) to which the request applies.

1.06 Initiation of Changes to Design Standards by the City Engineer

The City Engineer shall review the Design Standards on a regular basis, and make recommendations to the City Council to make modifications or updates to the Design Standards in the best interests of the City. Any modifications or updates to the Design Standards shall be subject to the final approval of the City Council.

1.07 Final Authority

The City Engineer shall be the final authority on all questions, which may arise as to the interpretation or enforcement of these Design Standards. Appeals of the City Engineer's decisions may be made in accordance with Tracy Municipal Code Chapter 1.12.

1.08 Definitions

Unless otherwise provided in these Design Standards, the definitions set forth in Tracy Municipal Code Chapter 1.08, Chapter 10.08 and Chapter 12.08 shall apply to these Design Standards. As used in these Design Standards:

"American Water Works Association Standards" means Publications of the American Water Works Association that specify the quality of materials used in the construction of potable water systems.

"Applicant" means "Developer" as defined herein.

"Best Management Practices" means a technique or series of techniques which when used in an erosion control plan is effective in controlling construction related runoff, erosion and sedimentation. The City of Tracy Multi-Agency Post-Construction Storm water Standards Manual (June 2015), the State Water Resources Control Board General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), and the Caltrans Construction Site Best Management Practices (BMP) Manual (latest edition) are the reference documents that the City of Tracy uses to evaluate erosion control plans.

"Caltrans Construction Site Best Management Practices (BMP) Manual" is a reference document that the City of Tracy uses to evaluate erosion control plans.

"CBC" means the latest version of the California Building Code, as adopted and amended by the City of Tracy pursuant to Tracy Municipal Code Title 9.

"City" means the City of Tracy.

"City Engineer" means the City Engineer of the City of Tracy, California or any duly licensed person designated by the City Manager or City Engineer to perform the functions of the "City Engineer" specified herein.

"City Regulations" means all written laws, rules, and policies established by the City, including those set forth in the City of Tracy General Plan, Tracy Municipal Code, ordinances, resolutions, specific plans, policies, procedures, and the City's Design Documents (including the Standard Plans, Standard Specifications, Design Standards, and relevant Public Facility Master Plans).

"Design" means the written description of improvements planned to be constructed (depicted with graphics and/or words), as set forth on plans and/or specifications prepared by an Engineer of Record in accordance with these Design Standards, subject to the review and approval of the City Engineer, including, but not limited to, vertical and horizontal alignments and locations of improvements, grade, geometric section, structural section, and size or dimensions of improvements.

"Design Engineer" means any duly licensed professional engineer who is registered to practice engineering in the State of California for the field of engineering related to the design or document submitted to the City for review in accordance with these Design Standards.

"Developer" means a person, or other legal entity, who applies to the City to divide, or cause to be divided, real property into a Development Project, or who applies to the City to develop or improve into a Development Project any existing parcel of real property.

"Development Project" means any project undertaken for the purpose of development, as defined in the Mitigation Fee Act (California Government Code Sections 66000, et seq., also known as "AB 1600", and shall specifically include any tentative parcel map, tentative subdivision map, final parcel map, final subdivision map, preliminary development plan, final development plan, or building permit.

"Final Erosion and Sediment Control Plan" means a set of Best Management Practices designed to control surface runoff and erosion and to retain sediment on a particular

site after all other planned final structures and permanent improvements have been erected or installed.

"Highway Design Manual" means the Highway Design Manual of the State of California, Department of Transportation, and latest edition.

"Hill Area" means a development project or a definable portion thereof with a natural slope of six percent (6%) or greater.

"Improvement" means the completed work of construction for the types of facilities described by these Design Standards, including, but not limited to, roadways (including streets, alleys, bikeways, medians, sidewalks, curbs, gutters, driveways, right of way landscaping, and intersection improvements), storm drainage (including channels, pipes, temporary retention, and permanent detention), wastewater facilities (including collection and treatment), potable and recycled water facilities (including conveyance, storage, and treatment), parks (including mini parks, neighborhood parks, and community parks), public buildings, and all appurtenances thereunto, within the City.

"Interim Erosion and Sediment Control Plan" means a set of Best Management Practice designed to control surface runoff and erosion, and to retain sediment on a particular site during the period in which construction related land disturbances, fills and soil storage occurs, but before final improvements are accepted.

"Land Surveyor" means any duly licensed Land Surveyor who is registered to practice land surveying in the State of California for the document submitted to the City for review in accordance with these Design Standards.

"Landscape Architect" means any duly licensed landscape architect who is registered to practice landscape architecture in the State of California for the design or document submitted to the City for review in accordance with these Design Standards.

"National Fire Protection Association Standards" means publications of the National Fire Protection Association establishing standards for the location and fire flow of fire hydrants.

"Natural Slope" means a slope which is not man made, and is the predominate slope of land in a natural condition, disregarding minor surface humps or hollows.

"Parks and Parkways Design Manual" means the latest edition of the Parks and Streetscapes Standard Plans (2019) and Streetscape Design Guidelines (2019).

"Plans and Specifications" means the graphic representation ("plans") and the verbal description ("specifications") of the design, prepared by an Engineer of Record and subject to the review and approval of the City Engineer in accordance with these Design Standards.

"Private Facility" or "Private Improvement" means an improvement, which is to remain in private ownership, and is not to be dedicated, or offered for dedication, to the public.

"Public Facility" or "Public Improvement" means an improvement, which is dedicated, or to be offered for dedication, to the public.

"Public Facility Master Plans" means the collective reference to all of the master plans for each public facility as adopted by the City Council, which generally includes: an identification of the City's standards regarding the level of service to be provided to users of the public facility; and a technical analysis of the infrastructure and services required to provide the identified level of service to the City under buildout conditions.

"Required Public Improvements" means all public facilities required to serve the development project, as determined by the City Engineer. The scope of public facilities included within the definition of required public improvements shall be sufficient to allow the development project to have the capability to be functional for its intended land uses in accordance with the standards set forth in City Regulations including the Public Facility Master Plans.

"Recycled Water" means non-potable water that as a result of treatment of wastewater by the City of Tracy is suitable for outside landscape irrigation use or other controlled use as approved by the City of Tracy.

"Ridge "shall mean a long narrow, conspicuous elevation of land, at the top of a range of hills or mountains.

"Ridgeline" means a distinct edge of landform against a backdrop of land either visible from in or around the City of Tracy, or from major vehicular corridors.

"Roadway Master Plan" means Citywide Roadway & Transportation Master Plan, November 2012 by RBF Consulting, and latest updates.

"Standard Plans" means the Standard Plans of the City of Tracy.

"Standard Specifications" means the Standard Specifications of the City of Tracy.

"Standard Plans and Specifications for Public Works Construction" means the plans and specifications written and promulgated by Public Works Standards, Inc., popularly known as the "Green Book", latest edition.

"State Standard Plans and Specifications" means the plans and specifications written by The State of California, Department of Transportation, and latest edition.

"Subdivider" means "Developer" as defined herein.

"Subdivision Ordinance" means the Subdivision Ordinance of the City of Tracy.

"TMC" means the Tracy Municipal Code.

"Zoning Ordinance" means the Zoning Ordinance of the City of Tracy, Tracy Municipal Code chapter 10.08.

1.09 Abbreviations

Unless otherwise provided in these Design Standards, the abbreviations set forth in the "Standard Specifications" and the "Standard Specifications for Public Works Construction" shall apply to these Design Standards. As used in these Design Standards:

"AB" means Aggregate Base, which is compacted granular material creating a foundation for the surface course in the street pavement section.

"AC" means Asphalt Concrete, which is the top course of the street flexible pavement section consisting of a mixture of mineral aggregates and asphaltic materials.

"ASB" means Aggregate Sub Base, which is an optional layer in the street pavement section, between the aggregate base and the compacted natural soil material.

"BCR, ECR" means beginning or end of the curb return where the curve for the curb return is tangent to the curb, which is parallel to the street centerline.

"EGL" means energy grade line, which is the combination of pressure head, velocity head, and elevation head, in a storm drainage system.

"HGL" means hydraulic grade line, which is the water surface elevation slope of a storm drainage system, when flowing at design storm capacity.

"PCC" means Portland cement concrete, which includes cement, aggregates, water and any mixtures such as fly ash or lamp black as required.

"R value" means resistance value, which is a measure of the strength or bearing capacity of soil to sustain the structural loads of buildings or pavement traffic loads.

"TI" means traffic index, which is a measure of traffic volumes and wheel loads on the street pavement section.

SECTION 2

PLANS AND SPECIFICATIONS

2.01 General

No work of construction for any development project or public improvement shall be performed by any person without first obtaining written approval from the City Engineer of all required plans and specifications, and all required supporting documents. Supporting documentation includes dedications, or offers to dedicate, all required interests in real property. The requirements of this Section 2 are in addition to the requirements of all other City Regulations, including the Subdivision Ordinance.

2.02 Preparation of Plans and Specifications

Plans and specifications shall be prepared in accordance with the following requirements:

2.02(A). Persons authorized to prepare documents: Each document required by these Design Standards shall be prepared by a person duly licensed and registered, in accordance with State law. Generally, State law requires all improvement plans and grading plans to be prepared by a Design Engineer (a civil engineer, structural engineer, or soil engineer, depending upon the particular document prepared), and all landscape plans to be prepared by a Landscape Architect.

2.02(B). General Drafting Requirements

1. Dimensions - Plans shall be clearly and legibly drawn in ink on City of Tracy Standard 24"x 36" Improvement Plan Sheets.

2. City of Tracy title block is available from the City Engineer.

3. Scale - Horizontal scale shall be a minimum of 1" = 40'; vertical scale shall be appropriate to the site.

4. Standard Drafting Symbols- Plans shall include standard drafting symbols shown in the Legend, attached hereto as Appendix A. All lettering shall be a minimum height of 0.1".

2.02(C). Format of all Plans

1. Title Sheet

a. Title block indicating name of Subdivision or development project (including tract number and/or project number).

b. Vicinity Map with North Arrow.

c. Index of sheets.

d. City Engineer's Signature Block.

e. Fire Department Signature Block

f. Signature Block for Design Engineer(s) (or Landscape Architect, for landscape plans), including stamp.

g. General and special notes relating to construction methods. City Standard Notes, as set forth in Appendix B of these Design Standards, shall be included. These notes may be shown on Sheet 2.

h. List of applicable City Standards, with latest revision date.

i. Temporary and permanent bench marks locations including their descriptions and reference to City Datum (NAVD88).

2. Sheet No. 2

a. Plan view showing the entire street right-of-way layout (Scale: 1" = 100'), proposed water and sewer mains, storm drainage system, fire hydrants, street light locations, lot numbers and other miscellaneous improvements to be installed. This sheet shall show the limits of each sheet of the plans.

b. Complete Legend using the standard symbols as shown in Appendix A of these Design Standards.

c. Typical Street Sections. Show storm drain open channels where applicable in these sections.

d. Pavement Design Chart showing street name (and station if section changes), TI, R value, AC, AB, and ASB thickness.

2.02(D). Technical Elements to be Included in Plans. The following elements shall be included as separate sheets within the improvement plans; provided, however, if the City Engineer determines that practical considerations (such as the size of the development project, or other design complications) dictate separate sets of plans for

one or more of the following elements, the City Engineer may require the developer to submit separate sets of plans concurrently with the improvement plans.

1. Demolitions and Abandonment Plan

    a. Plan view showing existing topography at a scale large enough to clearly show existing improvements.

    b. Existing surface and subsurface improvements, including but not limited to buildings, wells, septic tanks, and leach fields.

2. Grading Plan

    a. Plan view at 1" = 40' showing existing and proposed topography on site and a minimum 50' of the immediately adjacent areas.

    b. Contours shall be drawn at one-foot intervals where existing ground slopes are less than 6%, and at two-foot intervals where existing slopes are between 6% and 10%, and at five-foot intervals where existing slopes are greater than 10%.

    c. Top of curb elevations at all property line extensions and grade breaks.

    d. Street slopes at centerline.

    e. Pad elevations.

    f. Lot numbers.

    g. Storm drain structures and pipelines.

    h. Retaining walls and sound walls.

    i. Typical lot grading details showing plan and section.

    j. Elevations at rear of all lots.

    k. Erosion and Sediment Control Plan for all Grading Plans. Both interim and final erosion control plans shall be prepared in accordance with Best Management Practices.

3. Signing and Striping Plan

a. Provide a plan at a scale sufficient to clearly indicate all street striping and signing.

4. Street Plan and Profiles

   a. Plan views at a scale of 1″ = 40′ for all proposed improvements, and all existing improvements in the vicinity of the proposed improvements.

   b. Proposed improvements shall include sidewalk, curb, gutter, curb ramps, driveways, sewer mains and laterals, recycled water systems, water mains and services, storm drains, manholes, drainage inlets, valves, fire hydrants, barricades, street lights, survey monuments, post-construction stormwater treatment devices and facilities, and other information relevant to the construction of the proposed improvements.

   c. Centerline stationing shall be shown with grades indicated in plain view for street intersections, drainage structures (include dimensions or station offsets from centerline), beginning and ending of curb returns and other curves.

   d. Street plans shall include right-of-way lines and widths, street widths and names, and easement widths.

   e. Profile view of each street shall be shown on the same sheet as plan view and at vertical scale of 1″ = 2′ for non-Hill Area development plan, and vertical scale 1″ = 4′ for Hill Area development plans. Plan sheets with alternate, or additional scales may be required if the City engineer determines (based upon characteristics of the project, such as topography or size) that the alternates are necessary to adequately describe the improvements.

   f. Profile view shall show existing grade at centerline of street, proposed top of curb, sanitary sewer mains, water mains, storm drains, recycled water and utility crossings.

   g. Elevations shall be shown in profile of top of curb at grade breakpoints, sanitary sewer manholes, storm drain manholes and drainage inlet inverts, high points and low points of water mains. Vertical curves shall show station and elevation of beginning points, points of intersections, low points and ending points.

   h. Street, storm drain, and sewer main slopes shall be shown. Size, type/class of pipe and pipe lengths shall be shown.

i. Curve data shall be shown in plain view or by tabulation for street centerlines, face of curbs, (including curb returns) storm drain, sanitary sewer and water lines. Curve data may be omitted on storm drainpipes, sewer lines or water lines if they are concentric with the street centerline.

j. Hydraulic Grade Lines (HGL) elevations shown in profile view at every structure.

5. Detail Sheets or Off-Site Improvements

a. Additional drawings may be required to show special project improvements or structures.

b. Plan and profiles of streets, storm drain lines, sanitary sewers or water lines required off site of the development project.

2.02(E). Landscape Plans. The following elements shall be submitted as a separate set of plans, concurrently with the improvement plans:

1. Include all elements required by Section 2.02(C).

2. Scale shall be 1″ = 20′.

3. Irrigation and Planting Specification.

4. Water Efficient Landscape Ordinance (WELO) compliance statement.

2.03 Submittals

The applicant shall submit a complete set of plans and required submittals, in accordance with these Design Standards, and in accordance with the checklist set forth in Appendix D. This checklist will be used by the City Engineer, and City staff, to review the adequacy of plans and specifications submitted to the City. However, use of the checklist shall not relieve the Design Engineer or the applicant of the obligation to comply with all requirements set forth in City Regulations, including these Design Standards, and the Subdivision Ordinance. Incomplete plans or partial submittals will be returned to the Design Engineer without a complete review by the City. Delays may be incurred by the applicant when incomplete plans or partial packages are submitted for review.

2.03(A). Improvement Plans. A complete submittal of improvement plans shall include, at a minimum, the following elements:

1. Final Report of Action of the City Council (or Planning Commission if the Planning Commission is the governing body with approval authority over the development project), including a complete set of the conditions of approval for the project (including both Planning Division and Engineering Division) - 2 Sets.

2. Approved Tentative Map - 1 Original (in accordance with the Final Report of Action signed by the City Engineer and the City Planner), and 1 copy of the Original.

3. Improvement Plans (with supporting calculations) - 5 Sets. Striping Plans are required for each development project. Demolition Plans are required when existing structures will be or have recently been removed. Supporting calculations are required for pavement sections and retaining walls.

4. Water Package

    a. Hydraulic calculations are required in compliance with Section 6 of these Standards.

5. Sanitary Sewer Package - 2 Sets. Engineering calculations for the design of all proposed sanitary sewer systems shall include the following items:

    a. A plan at 1″ = 100′ scale, showing the proposed street system, tributary sub-areas, existing and future tributary area outside the project limits, zoning, projected land use, and any features affecting the system design.

    b. Design flows at major junction points including flows coming from outside the project limits.

    c. Size, length, slope, and invert elevations of all proposed sanitary sewer mains, and location of manholes.

6. Storm Drain Package - 4 Sets.

    Drainage calculations are required for any new subdivision or development and shall comply with Section 5 of these Standards. Submittal of drainage calculations shall include the following items:

    a. Hydrology calculations for 10 year and 100 year storms, together with assumptions, charts, tables, references and methods used.

b. A plan at 1" = 100' scale, showing proposed street system, existing and proposed drainage system, tributary sub-areas (including off-site drainage), and peak-flow in all pipes.

c. The hydraulic calculations shall show as a minimum the hydraulic grade line (HGL), Energy Grade Line (EGL) (in Hill Area), the proposed storm drain, including slopes and sizes, the flow in the pipes, velocities in pipes, structure losses, tail water assumptions, energy dissipaters, and top of curb elevations (or freeboard at structures).

d. Calculations for temporary storm drain detention/retention basins, if to be installed.

e. Storm water quality calculations as required per the City's Multi-Agency Post-Construction Storm Water Standards Manual.

7. Erosion and Sediment Control Plan – 3 Sets.

8. Joint trench plans

9. Landscape and Irrigation plans, including Landscape Document Package as required by the Water Efficient Landscape Ordinance (WELO)

10. Photometric exhibit for street lighting

11. Engineers' Estimate - 3 Sets. The estimate shall utilize the City's standard unit cost estimates and other requirements as defined in Section 10 and Appendix G of these Design Standards.

12. Final Map Package - 5 Sets. The final map package shall include the following elements:

    a. The complete Final Map prepared in conformance with the State Subdivision Map Act, the City's Subdivision Ordinance, and the Certificate/Statement Sheets attached hereto in Appendix C.

    b. Title report, no more than 3 months old as of the date of submittal.

    c. Copies of all deeds and easements referenced in the Title Report.

d. Deeds of all adjoining parcels.

e. Copies of all maps referenced on the Final Map.

f. Fee Title deed.

g. Lot, parcel and boundary closure calculations.

h. For off-site improvements, copies of all required easements, or rights-of-way, or rights of entry.

i. In addition to the filing requirements listed herein, all Final Maps submitted to the City for review shall also be filed electronically in a format consistent with the City's use of the NAD 83 grid system and the City's Auto CAD format. In lieu of an electronic submittal, the applicant may pay a fee established by the City Council.

j. Building Architectural approval.

k. Evidence of ECU's granted by Capacity Allocation Review Board (CARB).

13. Soils Report - 3 Sets.

14. Plan Check Fee Payment.

2.03(B). Grading Permit. A developer may seek a Grading Permit prior to the approval of the Improvement Plans. However, prior to obtaining a grading permit, the project applicant shall prepare a detailed grading plan, with erosion and sediment control plan, which conforms to these Design Standards and Chapter 9.04 of Tracy Municipal Code Title 9 for review and approval by the City Engineer. Grading Plans in the Hill Area shall identify (but not be limited to) limits and techniques of grading, cut and fill data, proposed slope angles, erosion control measure, re-vegetation plan and stabilization techniques in accordance with Section 8 of these Design Standards. Special conditions may require additional items. A complete submittal for a grading permit shall include, at a minimum, the following elements:

1. All requirements of Section 2.03(A), above, except:

   a. For Section 2.03(A)(3), the improvement plans shall be required to have, at a minimum, a complete second plan check review by the City, with only minor corrections remaining to be made by the developer.

b. For Section 2.03(A)12, the final map shall be required to have, at a minimum, a complete second plan check review by the City, with only minor corrections remaining to be made by the developer.

2. Grading Plans - 3 Sets.

3. Grading Permit Fee payment.

4. Storm Water Pollution Prevention Plan (SWPPP) submitted with the WD ID number, or Notice of Intent.

SECTION 3

STREET DESIGN STANDARDS

3.01 General

Roadway and street systems shall be designed and constructed in accordance with all City Regulations, including the Roadway Master Plan (and all supplements thereto), the Standard Specifications, The Caltrans Highway Design Manual, and these Design Standards. For each development project, the design of roadway and street systems shall be of such a size to provide capacity to adequately accommodate all traffic trips that can be reasonably anticipated to be generated for the development project, and the surrounding areas as identified in the Roadway Master Plan.

3.02 Streets Rights-of-Way/Easements

3.02(A). The right-of-way widths and typical sections for all streets shall be in accordance with all City Regulations, including the Roadway Master Plan and the Standard Plans. Required right of way widths and street cross sections in Infill areas shall conform to Standard Plans 100-106 inclusive or as directed by the City Engineer. Required right of way widths and street cross sections in new service areas shall conform the Roadway Master Plan and Standard Plans 107-112, inclusive.

3.02(B). Right-of-way corner returns shall have a minimum radius of 25'; except, in industrial areas, where the minimum radius shall be either 45' or 50' (A 50' foot corner return radius shall be used within an industrial area that intersects with an arterial roadway).

3.02(C). Public Utility Easements on private property shall be 10' in width and provide for placement and maintenance of privately owned underground utilities. Where the City Engineer finds that sufficient public right-of-way exists, underground utilities may be placed within said public right-of-way under a franchise agreement.

3.02(D). Public sewer, water, recycled water and storm drain easements on private property shall be 20' in width and provide for the purposes of installation, operation, and maintenance of said utilities.

3.03 Subdivision Boundaries / Monuments

3.03(A). Subdivision boundary lines should follow lot lines where possible and should cross streets perpendicular to street centerlines. Streets shall be fully improved within tract boundaries.

3.03(B). Street centerlines shall be monumental. All new street monuments proposed by a tract map shall be constructed in accordance with the Survey Monument Standard Plan 116.

3.04 Structural Section

3.04(A). Design. For the purpose of structural design, streets shall be designed utilizing the following minimum traffic indices. If there is insufficient soils data, specifically R-values, then streets shall be designed using an assumed R-value of 5. The table below lists typical sections for an R-value of 5.

		Sections with R=5	
Class	**Traffic Index**	**A.C.**	**A.B.**
Arterials	11	0.55′	2.20′
Major Residential Collector	9	0.40′	1.80′
Minor Residential Collector	9	0.40′	1.80′
Specific Plan Collector	9	0.40′	1.80′
Residential	9	0.40′	1.80′
Cul-de-Sac	9	0.40′	1.80′
Parking Lots	9	0.40′	1.80′
Neighborhood Entry	9	0.40′	1.80′
Industrial	9	0.40′	1.80′
Frontage	9	0.40′	1.80′

Note: Under special circumstances the City Engineer may consider alternates roadway section designs, including, but not limited to lime or cement treat subgrade, and deep lift asphalt sections.

3.04(B). The minimum street section shall be determined from "R" values obtained from material gathered from the level of the proposed sub-grade using the design method described in the Highway Design Manual. In no case shall the minimum

street section be less than 0.25 feet of asphalt concrete and 0.95 feet of aggregate base. Aggregate base section may be comprised of an equivalent section of aggregate base and aggregate sub-base.

3.04(C). The final lift of asphalt concrete shall be placed prior to street by street acceptance. Prior to tract acceptance, by City Council, all streets damaged by construction shall be repaired to the City's Satisfaction. Streets damaged by construction activities shall have a grind and minimum 2" overlay from curb to curb for the entire block length.

3.04(D). During construction, R-values will be taken at the final sub-grade elevation after rough grading. Variations from the Improvement Plans will require redesign of the street section. Number and location of tests will be at the discretion of the City Engineer, based on Project specific soil conditions. Costs for all testing shall be the responsibility of the developer. These requirements shall not apply if R-values of 5 were used in the original design.

3.04(E). Subgrade Preparation. A minimum of 6" below finished subgrade shall be compactible native material scarified, moisture conditioned, and compacted at 95% relative compaction. A certified soils laboratory under contract with the City shall conduct the necessary soils tests. Heavy truck proof-rolling will be required to observe subgrade stability.

3.04(F). Roadway shoulders shall be a minimum of four feet wide. Cross slope shall not exceed 2%. Minimum section shall be 6" of AB compacted to 95% over 6" of native material compacted to no less than 90%. Finished slopes from edge of shoulder backing to conform limits shall not exceed 4:1.

3.05 Horizontal Alignment

3.05(A). Intersections. Streets shall intersect at as near right angles as practicable, and in no case shall be greater than 10 degrees from perpendicular without City Engineer approval. Curved streets shall have at least 50 feet of centerline tangent from the projected curb line of the intersecting street.

3.05(B). Minimum Spacing between Streets

1. Streets entering upon opposite sides of a given street shall have their centerlines directly opposite each other, or their centerlines shall be offset by at least 150 feet on all residential and minor collector streets with actual (or projected) traffic volumes less than 2000 ADT (Average Daily Traffic). The minimum offset or spacing shall be 250 feet on streets with traffic volumes higher than 2000 ADT.

2. Neighborhood entries with traffic volumes less than 2000 ADT shall have the following minimum spacing between intersecting streets:

Maximum ADT	**Minimum Spacing**
2000	250 feet
1500	200 feet

3. The City Engineer may require intersections spacing to be greater than the above stated minimum distances if site-specific conditions present an unusual safety concern. Intersection traffic volumes and intersection traffic control are factors to be considered in any instance where deviation from these standards are requested by the developer in accordance with Section 1.05, or required by the City. At neighborhood entries with less than 1000 ADT, the City Engineer may allow a minimum spacing of 150 feet, subject to completion of a traffic analysis and recommendation by a registered Traffic Engineer.

3.05(C). Street Curvature. Design of curved arterial and collector streets shall be based on the State of California Department of Transportation Highway Design Manual. The minimum radius of curvature of centerline shall be 750 feet on arterial and 500 feet on collectors. Minimum radius on other streets shall be 300 feet.

3.05(D). Cul-de-Sac and Knuckles. The maximum length of a cul-de-sac street, from center of intersecting street to center of turnarounds, shall be 500 feet. Bulb and knuckle radius shall be designed to allow unimpeded emergency vehicle turning.

3.05(E). Curb Return Radii.

1. Residential and Non-Residential - Minimum radius shall be 35 feet.

2. Commercial - In the downtown area, the minimum radius shall be 20 feet. In other areas, the radius shall be determined by the City Engineer, subject to completion of a traffic analysis of the project specific demands, and recommendation by a registered Traffic Engineer.

3. Industrial - Minimum radius shall be 55 feet. Maximum shall be 60.

3.05(F). Minor Streets. Minor streets shall be so laid out that their use by through traffic will be discouraged.

3.05(G). Block Lengths. Block lengths shall not exceed 1,000 feet.

3.06 Vertical Alignment

3.06(A). Top of Curb Grades

1. Grades shall be not less than 0.40 percent and not greater than 6 percent (6%), except in Hill Area, where grades of Collector and Arterial streets shall not exceed ten percent (10%) and grades of residential local streets shall not exceed twelve percent (12%). A developer may request a deviation from this standard, in accordance with Section 1.05, if the developer provides documentation to the satisfaction of the City Engineer, which establishes that the grading impact would be significantly reduced, scarring of natural terrain minimized and emergency vehicle access not compromised. The use of split-level roads shall be encouraged in the Hill Area, wherever the terrain warrants.

2. A minimum top of curb elevation of 1 foot above the hydraulic grade line shall be maintained. The Energy Grade Line shall be no higher than 0.1 foot below the storm drain manhole rim elevation or storm drain catch basin grate elevation.

3. Grades on opposite sides of the street shall be the same wherever practical, and may be super-elevated when required to accommodate design speeds.

3.06(B). Curb Returns. The minimum fall around returns shall be 0.20 feet or a slope of 0.005 whichever is greater.

3.06(C). Cross Slope. The standard cross slope of the street shall be 2 percent. Where necessary when matching existing facilities, the cross slope may vary between 1 percent and 4 percent.

3.06(D). Vertical Curves. Where the algebraic difference in slope exceeds 2 percent, a vertical curve shall be used. The minimum length of vertical curve shall be 50′ minimum or as required by the Highway Design Manual, whichever is larger.

3.07 Curb, Gutter & Sidewalk

3.07(A). General

1. Curb, gutter, and sidewalk shall be installed in conformance with the City Standard Specifications and Standard Plans. Concrete shall be class "B" 2500psi at 28 days, 1 inch maximum aggregate size with ½-lb lampblack per yard.

2. Vertical curb and gutter shall be installed along all frontages conforming to the City Regulations.

3. Rolled type curb and gutter shall not be installed other than as replacement. Rolled type curb and gutter is not allowed on new developments.

4. Hot Mix Asphalt Dikes may be used on an interim basis and shall conform to State of California Department of Transportation Standard Plan A87B.

3.07(B). Sidewalk. The minimum widths of sidewalk shall be 5 feet in residential areas, 10 feet in commercial areas, or as noted on the Standard Plans. All sidewalks shall be reinforced and have a minimum of 6 inches in thickness.

3.07(C). Curb Ramps.

1. Curb ramps shall be installed in all locations required by the City for ADA access including curb returns, crosswalks, etc. Where existing improvements do not have curb ramps, or the ramps do not meet current standards, the requirement to install new ramps shall be triggered when an asphalt overlay is placed adjacent to the curb ramp. Street maintenance in the form of seal coats or spot reconstruction (dig-out repairs) does not trigger new or replacement curb ramps construction.

2. Curb ramps shall conform to current ADA standards, California Code of Regulations Title 24, and Standard Plan 130 (which identifies Case A and Case B). Case B shall be used for all new construction in curb returns, except for Hill Areas, when a maximum ramp slope of 8.33% would be exceeded by utilizing Case B, in which case, Case A shall be used.

3. Curb ramps shall be positioned to align with crosswalks, providing a pedestrian route perpendicular to roadway centerline and at a safe offset distance from parallel traffic. In certain cases more than one ramp may be required along the same curb return.

3.07(D). Replacement and Repair

1. Where existing curb, gutter, sidewalk, and/or driveways do not meet current City Regulations and are in need of repair, it shall be the Developer responsibility to remove and replace necessary curb, gutter, sidewalk and driveway. Refer to Standard Plan 132 for minimum repair standards.

2. Where curb, gutter, sidewalk, and/or driveways are removed, the concrete shall be removed to the nearest expansion, weakened plane, score line or construction joint by saw cutting. When concrete curbs, gutters and driveway

approaches abut asphalt concrete a minimum one foot shall be removed to allow forms to be set and concrete placed. Asphalt shall be replaced in lifts not to exceed 2 ½" and compacted to no less than 95%. The asphalt thickness shall be 1 inch greater than the existing road section.

3. The City Engineer or designee may require the replacement or repair of curb gutter, sidewalk, and/or driveways during the review of plans submitted for Building or Construction Permits. Concrete shall be deemed in need of repair if the horizontal or vertical displacement between sections exceeds ½-inch.

3.08 Driveway Standards

3.08(A). General

1. The driveway standards set forth in these Design Standards are not applicable to freeway or controlled access highways where access is limited by deed restrictions or other controls.

2. The City Engineer may apply a higher standard than those set forth in these Design Standards, if there is documentation of unique demands for a particular development project, which require additional mitigation measures.

3. Design and construction of driveways shall be of the Standard City of Tracy design as shown on Standard Plans 130 and 131. For the Hill Area, driveway grades exceeding 12%, up to a maximum of 15%, shall be constructed of a grooved concrete-paved surface to provide sufficient traction for emergency vehicles. The angle of approach shall be no more than 8 degrees and there shall be minimum clearances of 8 inches in accordance with the current edition of the National Fire Protection Association publication (NFPA) 1901.

4. Driveway ramps up or down the elevated or depressed parking lots or garages shall start at a point 3 feet beyond the right-of-way line with a 6-foot minimum vertical curve.

5. Common use driveways are not allowed for residential driveways.

6. Residential lots shall have only one driveway.

3.08(B). Width

1. Maximum **-** Driveway width shall not be greater than 34 feet for commercial parcels and 18 feet for residential lots. Driveways shall conform to Standard Plans 130 and 131. The total width of commercial and industrial driveways

shall not exceed 60 percent of the frontage. The driveway approach at the face of curb shall have 3 feet wide tapers on each side of the driveway. Thus the maximum width of the driveway approach at the face of curb for residential is 24 feet and for commercial is 40 feet.

2. Minimum - The minimum width of a single driveway shall be 9 feet.

3.08(C). Distance from Curb Returns

1. Intersecting Streets.

   a. Multi-family or commercial driveways shall be located so that the closest point of the fully depressed section shall be a minimum 25' to the BCR or a minimum 50' to the extension of the face of curb of the intersecting streets.

   b. Commercial and industrial driveways on arterials are prohibited within 100 feet of the projected curb line of the intersecting street where the intersection is presently or is planned for signalization, or intersection capacity is critical.

2. Alley. The driveway transition shall be permitted no closer than 10 feet from the projected intersecting alley curb face, and no closer than 2 feet from the nearest alley BCR or ECR.

3.08(D). Distance from Utilities, Safety Devices and Street Trees. The driveway transition shall clear all public facilities such as electroliers, traffic signal standards, utility poles, fire hydrants, sanitary sewer cleanout boxes, water meter boxes, street sign posts and street trees by a minimum of 3 feet. Any relocation of public facilities required to maintain such clearance shall be at the expense of the property owner who is installing the driveway.

3.08(E). Distance Between Driveways. A minimum of 3 feet of full height curb shall be maintained between the transitions of adjoining residential driveways. Proposed locations of commercial or multi-family driveways shall be considered on a case by case basis by the City Engineer.

3.08(F). Distance from Property Line. A minimum of 1.5 feet of full height curb shall be maintained between the property line and driveway transition.

3.08(G). Removal. Any abandoned driveway shall be completely removed and replaced with standard sidewalk, curb, and gutter per City Standard Plans.

3.08(H). Parking Lots. Parking lot driveways shall be designed in such a manner as to preclude the use of the abutting public street for vehicular circulation solely related to the parking lot. Design shall conform to Standard Plan 130 for Commercial Driveway.

3.09 Intersections

3.09(A). All Major Arterials, Expressways, Parkways and Industrial Streets shall meet WB-50, 60-foot turning radius to allow for Fire Department design vehicle access.

3.09(B). Street intersections shall be designed so that the larger street or through street maintains its cross-slope through the intersection. The plans shall clearly indicate which street cross-slope is to be maintained.

3.09(C). Sufficient elevations shall be shown on the plan or profile to clearly indicate storm drainage patterns and cross slopes. As a minimum, the elevation at the centerline intersection point and at grade breaks on the centerline of side streets shall be shown, as well as curb and gutter profiles. Larger intersections may require additional details of pavement grading.

3.09(D). Intersections shall be designed to drain all water to drainage inlets without ponding or draining upstream water across intersections. The City Engineer may require detailed design submittals for problem intersections.

3.09(E). In the Hill Area, the grade of the pavement surface across an intersection shall not be more than 6%. The gradient of any street entering an intersection shall not be more than 2% within a distance of 50-feet from near curb line of the crossing street. Proper sight and stopping distances shall be provided.

3.09(F). Sight distances at intersections are critical in the Hill Area because of the added vertical dimension. Sight distances shall be established in accordance with Caltrans Highway Design Manual and City Standard Plan 145. An intersection sight distance plan shall be submitted for all Development plans.

3.09(G). Subdivisions that intersect a major arterial roadway without a signalized intersection shall prohibit left turn movements. Only right-in and right-out movements will be allowed. All entries shall have deceleration and acceleration lanes on the major arterial. Additional right-of-way to accommodate these deceleration and acceleration lanes shall be provided by the developer.

3.10 Design Speed

Street speeds shall be posted as listed in the following table. Design speeds shall be a minimum of ten (10) miles per hour above the posted speed.

STREET TYPE	POSTED SPEED	DESIGN SPEED
Residential Streets	25 mph	35 mph
Collector Streets	35 mph	45 mph
Minor Collector Streets	25 mph	35 mph
Arterial Streets	45 mph	55 mph
Minor Arterial Streets	45 mph	55 mph

3.11 Street Striping

A separate plan sheet shall be prepared at a scale sufficient to clearly indicate all street striping, including centerline, stop street markings per the Standard Plans, crosswalks, etc. Street signs shall be shown on the same plan sheet.

3.12 Undergrounding of Utilities

All development projects shall provide for undergrounding of utilities in accordance with the requirements of the Tracy Municipal Code, Chapter 11.08.

3.13 Overlaying of Streets

3.13(A).The City Standard overlay shall be a 2-inch Type A, Asphalt Concrete overlay with TruPave (or equal) pavement reinforcing fabric.

3.13(B).If a development project connects to existing utilities which require trenching of existing street pavement, the Developer is required to repair the street by providing a 2 inch grind of the existing asphalt and replacing with 2 inches of new AC with TruPave (or equal) pavement reinforcing fabric. The limits of the overlay shall extend 25 feet beyond the last trench in each direction and shall be from curb to curb. Any work on newly resurfaced streets (by overlay or slurry) are subject to the Moratorium conditions of the Tracy Municipal Code 7.04.080

3.13(C) Slurry Seal for a parallel trench longer than one half the length of the block, a slurry seal shall be required on the entire half width of the street, on the trench side, over the entire length of the block or as directed by the City Engineer.

3.14 Street Names

New street names shall be reviewed and approved by the Traffic Engineer prior to approval of the Final Map. Street names shall not conflict with other similar names within San Joaquin County.

SECTION 4

SANITARY SEWER DESIGN STANDARDS

4.01 General

4.01(A). Sanitary sewer systems shall be designed and constructed in accordance with all City Regulations, including the current Wastewater Master Plan (including all supplements thereto), the City's Standard Plans, Standard Specification and these Design Standards. For each development project, the design of the sanitary sewer system shall be sized so as to provide wastewater capacity to adequately convey all wastewater that can be reasonably anticipated to be generated by the development project, and the surrounding areas identified in the Wastewater Master Plan.

4.01(B). Storm water shall not be connected or discharged into a sanitary sewer. City standards which regulate the discharge of non-domestic wastewater into the City's sanitary sewer system are set forth in the Tracy Municipal Code, 5.24.140.

4.02 Average Flow

Unless otherwise specified in the Wastewater Master Plan (including supplements thereto), the estimated average wastewater flows for residential dwelling units ("DU") and other land use types are summarized in the table below, based upon an estimated wastewater generation rate of 100 gallons per person per day. The residential DU types are abbreviated as: SFDU (single family detached), MF2-4 (multi-family structure with 2 to 4 DU's per structure), and MF5+ (multi-family structure with 5 or more DU's per structure). The school generation rates are abbreviated as: GPCD (gallons per capita per day).

Estimated Average Sewer Flows

DU Type and Land Use	Density DU/Acre	Persons per DU	Estimated Avg. Flow: GPD/DU & GPD/Acre
Very Low Density Residential	1	3.0	300
SFDU	5	3.0	300
MF2-4	8	2.5	250
MF5+	18	2.0	200
Commercial Office			1375
Limited Industrial			2500
General Industrial			1375
Schools (6-8, 9-12)			30 GPCD
Schools (K-6, K-8)			15 GPCD

The averages shown above are minimum flows and in some situations, may have to be increased due to higher densities or differing land uses.

4.03 Infiltration and Inflow (I/I) and Peaking Factors

4.03(A). Infiltration and Inflow (I/I) represents any non-wastewater discharges that enter the wastewater collection system via facility defects and direct connections. An infiltration value of 500 gallons per day per inch diameter mile is used for all WWMP pipes eight inches and larger. An inflow rate of 400 gallons per day per acre is applied to all the development polygons within the Tracy Hills Specific Plan area.

4.03(B). Residential: The peaking factor corresponds to the population of the tributary area at build out. See Figure 4 for the Tracy Hills peaking factor curve (modified from City of Tracy Engineering Design Standard Figure 4-1).

4.03(C). Commercial and Industrial: The peaking factor is based on the tributary acreage and respective land use designation. The peak dry weather flow factor is 2.5 for industrial flows and 3.0 for commercial flows in accordance with City of Tracy Engineering and Design Standard Figure 4-2.

4.04 Design Criteria

4.04(A). A total design flow shall be determined by multiplying the estimated average flow by a peaking factor obtained from the appropriate graph attached to these Design Standards. Figure 4-1 is based on residential population and shall be used with an assumed 3.0 persons per dwelling unit. Figure 4-2 shall be used for contributory areas when the exact number of units is not known or non-residential areas are included.

4.04(B). Manning's formula shall be used to determine the relation of design flow, slope, velocity, and pipe diameter. The friction factor, "n", shall be 0.013 for all types of pipe.

4.05 Vertical Alignment

4.05(A). Minimum pipe cover and clearance shall be maintained in the design of sanitary sewers. If certain conditions exist which make it impractical to meet the minimum cover and clearance requirements, the developer may request a deviation from this standard, in accordance with Section 1.05. If the City Engineer approves the deviation, the conditions and locations shall be specifically noted above the sewer profile on the plans.

4.05(B). Under no conditions or circumstances shall other utilities be allowed to be installed directly over and parallel to any sanitary sewer installation.

4.05(C). Main and trunk sewers shall have a minimum depth of 3 feet from the top of the pipe to the finished grade and a minimum of 2 feet to bottom of street sub-grade. Main and Trunk Sewers shall have a maximum depth of 15 feet to the top of pipe unless approved by the City Engineer in accordance with the procedure outlined in Section 1.05. For mains and trunk lines exceeding 15 feet in depth, an acceptable alternative design is to oversize the pipe by one pipe-size. Inverts of pipes shall be matched at these design exception locations.

4.05(D). Main and trunk sewers shall be at least 10 feet horizontally from, and 1 foot vertically below water lines. A minimum of 12 inches clearance from all other improvements and utilities is required. Construction shall conform to Standard Plan 506.

4.05(E). At points of convergence of pipes of various sizes, the soffits of the pipe elevations shall match.

4.05(F). A change of direction requires a 0.2-foot minimum drop from the incoming pipe flow line to the outgoing pipe flow line in the structure.

4.05(G). Sewer lines shall be installed on a straight grade between manholes.

4.06 Horizontal Alignment

4.06(A). Sanitary sewers shall be placed within the curb-to-curb section of the street right of way per City Standard Plan 563. When necessary to locate sewers in easements, such easement shall be at least 20 feet in width.

4.06(B). Alignment shall be parallel to the street centerline wherever possible.

4.06(C). The horizontal alignment of sanitary sewers in new subdivision streets shall be 5 feet north or 5 feet west of the street centerline, as shown on Standard Plan 563. In existing streets and non-residential streets, the alignment may vary from Standard Plan 563 with approval of the City Engineer in accordance with Section 1.05, but in no case shall there be less than 10 feet horizontal clearance to a water main and 6 feet horizontal clearance to recycled water. Curved sewers are not recommended, however, they may be considered in curved streets when curvature does not exceed 80% of the manufacturer's recommendations.

4.06(D). Sanitary sewers shall not be constructed within 100 feet of any existing or proposed well site. Installations within 200 feet of an existing well or future well site

shall be brought to the attention of the City Engineer and shall be designed in accordance with the California State Department of Public Health recommendations and Tracy Municipal Code.

4.07 Slope

Sanitary sewers shall be designed for the total design flow with a minimum velocity of 2.0 feet per second. The maximum velocity shall be 10 feet per second.

4.08 Pipe

Pipe used for sanitary sewers shall have a minimum diameter of 8 inches. Pipe shall conform to City of Tracy Design Standards and Standard Specifications. Pipe shall be Vitrified Clay Pipe (VCP), Ductile Iron Pipe (DIP), Polyvinyl Chloride (PVC, SDR-26). The City will require a mandrel test to be conducted for all PVC pipe. The City may require an additional mandrel test during the warranty period.

4.09 Sewer Laterals

4.09(A). Sewer laterals are those portions of sewage systems between the sewer main and the sanitary sewer clean out. Sewer laterals shall be constructed in accordance with Standard Plan Nos. 201 and 202. All laterals shall have a cleanout. Each sewer lateral shall be referenced to the plan stationing. All sanitary sewer laterals shall be SDR-26 including the clean out.

4.09(B). The minimum size sewer lateral is four (4) inches for single-family residences, and six (6) inches for commercial, duplex and multi-family lots. The minimum slope of laterals shall be two percent (2%). The minimum separation between sewer and water lateral shall be eleven (11) feet center to center or 10 feet from exterior pipe face to exterior pipe face whichever is greater. Sewer laterals shall have a minimum depth of 3 feet and maximum depth of 5-feet from the top of the pipe to the finished grade at the right-of-way.

4.09(C). All sewer laterals, from property line or edge of easement to the point of connection with the main or manhole shall have an alignment that provides an angle of intersection with the downstream section of the main sewer of no less than 90°.

4.09(D). All sewer laterals shall gravity drain within the right-of-way. Private sewer systems requiring pumping shall pump to a manhole outside the right-of-way prior to discharging into the City maintained system.

4.09(E). Sewer laterals connected to systems having a pumping system or houses having a finished floor elevation 12 inches or less above the rim elevation of the

nearest upstream manhole structure shall require installation of a backflow prevention device immediately upstream of the clean out at the right-of-way.

4.09(F). The maximum deflection at any one point in a sewer lateral, not including fittings at saddle or wye connection to main sewer or at angle points having clean outs, shall be 22-1/2° (1/16 bend) and any two consecutive deflections (bends) shall not be less than 2 feet apart.

4.09(G). Building drains shall not be connected to the sanitary sewer system.

4.09(H). Unused existing services shall be removed. Abandoned at the main by installing a watertight plug or cap at the wye.

4.10 Sanitary Sewer Mains or Lateral Installed in High Ground Areas

If the sanitary sewer main or lateral is to be installed below the high groundwater elevation the design must include special construction features to minimize the amount of inflow and infiltration to the system including but not limited to lining the sewer main and waterproofing the manholes. PVC pipe is the preferred choice when installing below high ground water. Pipe bedding shall be encapsulated in filter fabric when installed in ground water conditions.

4.11 Manholes

4.11(A). Manholes shall be placed at the intersections of all sanitary sewers, at all locations where there is a change in size, grade or direction, at the ends of all permanent lines.

Manhole spacing shall conform to the following limits:

Diameter	**Maximum Spacing**
12″ and under	400 feet
15″ and over	600 feet

4.11(B). Manholes installed in areas outside of the street shall have bolted manhole covers. Rim elevations shall be a minimum of one (1) foot above ground. Bollards shall be installed around the manholes. A minimum of 3-4″ diameter, 6 feet high painted white bollards with a 2-foot yellow band at the top shall be installed at each manhole.

4.11(C). Manholes deeper than 10 feet, measured from invert to rim elevation, shall be sixty-inch (60″) diameter manholes.

4.11(D). Manholes shall be constructed at all service lateral connections where the main line is not at least 1-1/2 times the size of the service lateral.

4.11(E). Sanitary sewer manholes shall be constructed in conformance with the Standard Plans. The distance between manholes shall be approximately equal. Sewers on curved alignment shall have manholes spaced at a maximum of 300 feet.

4.11(F). Whenever, at manholes, a change in the size of pipe, or an angle of 20° or more in alignment occurs, the flow line of the incoming pipe shall be a minimum of 0.20 feet above the flow line of the outgoing pipe, or an amount necessary to match pipe soffits, whichever is greater. The improvement plans shall show invert in and invert out of the manhole.

4.11(G). A maximum drop of 2 feet from invert of incoming pipe to the top of the outgoing pipe shall be in a standard manhole. Drop manholes shall be used for larger drops. Drop manholes shall be in accordance with Standard Plans 206 and only used with permission of City Engineer. Inside drop manholes are not allowed.

4.11(H). Manholes shall be used at the termination of cul-de-sac sewer mains. Side sewers shall be connected to this manhole for services to adjacent properties.

4.11(I). All weather access roads with turnarounds suitable for maneuvering City maintenance equipment shall be provided for any sewer or storm drain line installed in undeveloped areas or properties. The access road shall be 3″ of A.C. over 6″ of A.B. and a minimum of 12′ wide, or as approved by the City Engineer.

4.11(J). All sanitary manholes shall have water tight gaskets. Manholes with outgoing pipes larger than 10 inches shall be either epoxy coated or have T-lock lining. Manholes installed in high ground water conditions shall have water proofing applied.

4.12 Pump Systems, including Lift Station

4.12(A). All requests to use a sewer force main or lift stations shall be consistent with the Sewer Master Plan and subject to the review and approval of the City Engineer.

1. All sewage pump systems, including residential sewage pumps, when proposed, shall be submitted to the City Engineer for determination of circumstances necessitating such pump usage and design thereof.

2. Use of Submersible type pumps for residential sewer pumping systems will be considered where the installation as a whole will be made in conformance with

the general requirements of the California Division of Industrial Safety and any local electrical codes that may be applicable. In general, a raw sewage sump is classified as a hazardous location, which requires explosion proof equipment with a UL label and/or equivalent construction. Float control equipment must have positive level control to preclude exposing the motor if the motor is not explosion proof. Where electrical devices are immersed in the sewage, controls must be intrinsically safe with redundant controls and positive cutoff to avoid automatic total pump shut down that would expose motor where motor is not explosion proof. Use of submersible pumps will not be approved unless the developer provides the City Engineer with information that the proposed pump meets the above requirements. Where used, pump requirements in so far as solids handling capacity and pump rate head must conform to basic standards required for standard wet pit installations.

3. Pump stations shall have 50 percent standby and a minimum of 2 pumps. Standby power shall be provided.

4. In addition to a properly designed wet well, all pump stations must be designed with a retention chamber capable of storing 8 hours (minimum) of flow in case there is an outage or a break in the force main system.

4.13 Maintenance Responsibility

4.13(A). The City will maintain sanitary sewer mains and sanitary sewer laterals located within the public right-of-way or within dedicated public utility easements between the main and the point at which the wye branches off to accommodate the cleanout. The City will not, however, perform maintenance under the following situations:

1. No cleanout exists within the City right-of-way or easement;

2. The cleanout does not conform to City Standard Plans and Specifications;

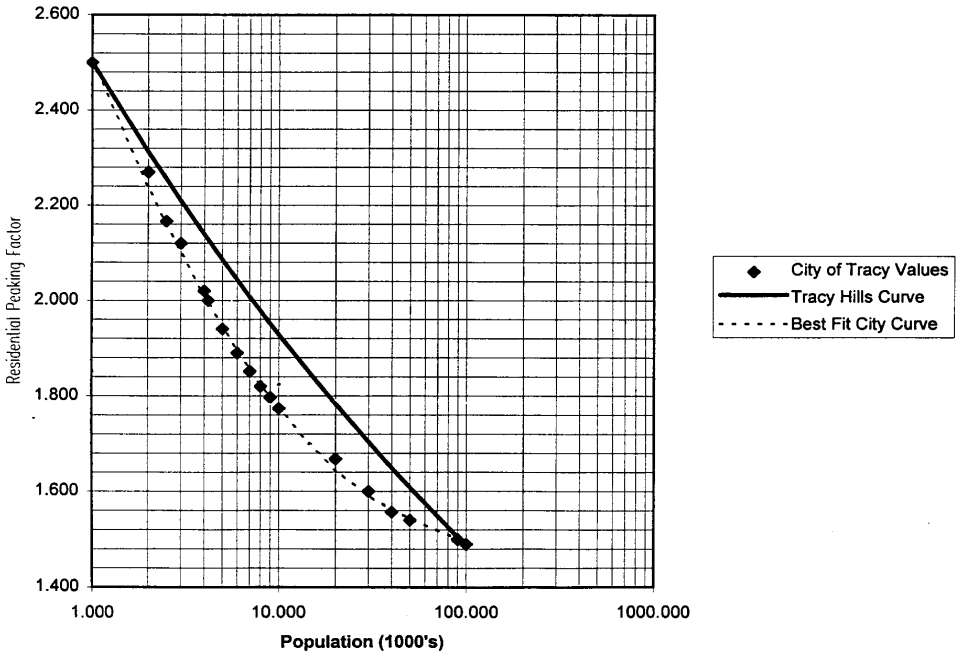
3. The sewer lateral is not directly accessible from the City right-of-way.

4.13(B). The Property Owner shall be responsible for the installation, repair, and maintenance of the sewer cleanout, riser, wye and all on-site improvements beyond the cleanout.

Figure 4. Residential Peaking Factor Curve

Tracy Hills
Residential Peaking Factor

Peaking Factor [1]	Population (1000's)	Tracy Hills Curve [2]	Best Fit City Curve
2.500	1.000	2.500	2.503
2.270	2.000	2.312	2.237
2.166	2.500	2.255	2.160
2.120	3.000	2.209	2.100
2.020	4.000	2.138	2.010
2.000	4.200	2.127	1.996
1.940	5.000	2.085	1.946
1.890	6.000	2.043	1.896
1.852	7.000	2.007	1.857
1.820	8.000	1.978	1.824
1.797	9.000	1.951	1.797
1.774	10.000	1.928	1.774
-	14.444	1.850	1.700
1.668	20.000	1.783	1.645
1.600	30.000	1.704	1.591
1.557	40.000	1.649	1.562
1.540	50.000	1.608	1.543
1.500	90.000	1.505	1.501
1.490	100.000	1.487	1.491



1. Values read from the City of Tracy Standards Figure 4-1
2. y = 2.5 * (x) ^ -0.11275

PEAK FACTORS

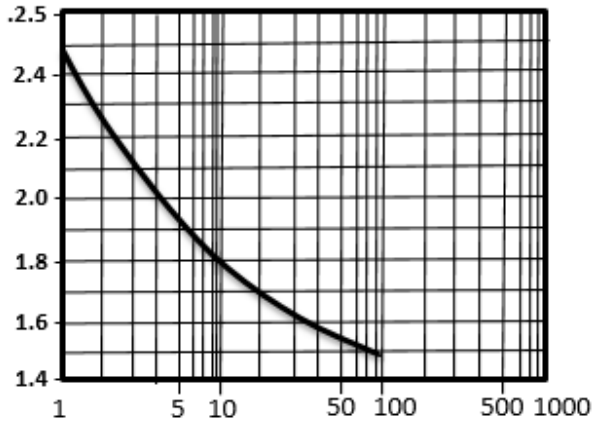


FIGURE 4-1

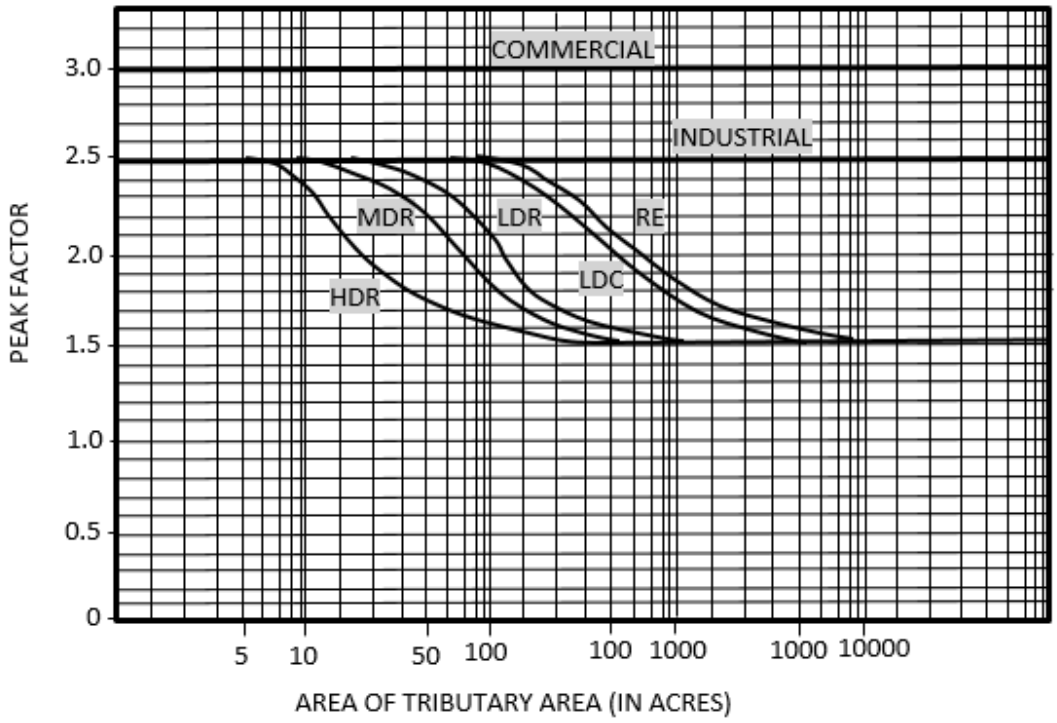


FIGURE 4-2

SECTION 5

STORM DRAINAGE DESIGN STANDARDS

5.01 General

5.01(A). Storm drainage systems shall be designed and constructed in accordance with all City Regulations, including the Citywide Storm Drainage Master Plan (including all supplements thereto), the City of Tracy Multi-Agency Post Construction Stormwater Standards Manual, the Standard Plans and Specifications, and these Design Standards. For each development project, the design of the storm drainage system shall be of such a size to provide storm drainage capacity to adequately convey all storm water that can be reasonably anticipated to be generated for the development project, and the surrounding areas identified in the Citywide Storm Drainage Master Plan. Design Engineers are advised to review proposals, which are potentially at variance with the Citywide Storm Drainage Master Plan or these Design Standards with the City Engineer prior to proceeding with design studies.

5.01(B). Storm water shall not be connected or discharged into a sanitary sewer.

5.01(C). For storm drainage infrastructure that is not identified in the Citywide Storm Drainage Master Plan as being required to have a 100-year storm design capacity, the following criteria shall be applied:

1. The 100-year storm is to be contained within the right-of-way of the public street.

2. The 10-year storm is to be contained within the top of the street curb.

3. Storm drainage facilities will be required where either of the above conditions cannot be satisfied.

5.02 Storm Water Pollution Prevention

5.02(A).Any person performing construction in the City shall prevent pollutants from entering the stormwater conveyance system and comply with all applicable federal, state and local laws, ordinances or regulations including but not limited to the NPDES Construction General Permit and the City's grading, erosion and sediment control policies.

5.02(B).City design standards and best management practices to control the volume, rate, and potential pollutant load of stormwater runoff from new development and

redevelopment projects can be found in the City's Multi-Agency Post-Construction Stormwater Standards Manual. To the extent permitted by law, such requirements shall be incorporated in any development or redevelopment land use entitlement, construction project or building-related permit covering such development that is identified in the manual as being regulated by the manual.

5.02(C)

1. For all construction activities where clearing, grading and excavation results in a land disturbance of one acre or more, prior to issuance of a grading permit through the City's Planning Division, the applicant must file a Notice of Intent. A Storm Water Pollution Prevention Plan (SWPPP) must also be developed, approved by the City, and implemented prior to any land disturbance. The SWPPP shall contain a site map detailing the Best Management Practices (BMPs) to be used in order to contain sediment onsite and prevent erosion.

2. For all construction activities where clearing, grading and excavation results in a land disturbance of less than one acre, prior to issuance of a grading permit through the City's Planning Division, the applicant must complete and submit an Erosion and Sediment Control Plan to the City of Tracy Utilities Department for review and approval. This Plan shall include information detailing the Best Management Practices (BMPs) to be used in order to contain sediment onsite and prevent erosion.

5.02(D).Stormwater Treatment and Control Device Access and Maintenance Agreements

1. The City requires that all structural and non-structural permanent stormwater best management practices not within the control of the City shall be the subject of an enforceable maintenance agreement to ensure the system functions as designed.

2. The maintenance agreement shall provide for the conveyance of any and all easements or other permissions necessary to provide the City with adequate access to the relevant sites in order to facilitate necessary inspections of the stormwater best management practices and to perform routine maintenance as required.

3. Each maintenance agreement shall specify the parties responsible for the proper maintenance of all stormwater best management practices.

4. Information to complete the maintenance agreement (Owner name, approved signatory, legal description, facility map and project stormwater plan including maintenance and operations plan) shall be provided to the Utilities Department within two months of construction documents submittal for Building Permit or before. Prior to final approval for occupancy a completed and fully executed maintenance agreement must be recorded by the County Recorder.

5.03 Submittal of Drainage Calculations

5.03(A). General. Drainage calculations are required for any new subdivision or development project and shall comply with these Design Standards. Submittal of drainage calculations shall include the items outlined in this section.

1. Hydrology calculations for 10 year and 100 year storms, together with assumptions, charts, tables, references, and methods used.

2. A plan, at 1" = 100' scale, showing proposed street system, existing and proposed drainage system, tributary sub-areas (including off-site drainage), and peak-flow in all pipes.

3. The hydraulic calculations shall show as a minimum the hydraulic grade line (HGL), the proposed storm drain, including slopes and sizes, the flow in the pipes, velocities in pipes, structure losses, tailwater assumptions, and top of curb elevations (or freeboard at structures). The Energy Grade Line (EGL) shall also be shown for hydraulic calculations when the development is in the Hill Area.

5.04 Hydrology Calculations

5.04(A). Areas of 200 Acres or Less. The Rational Method of runoff estimation may be used for tributary areas of 200 acres or less. The Rational Method Formula is as follows:

$$Q = CIA$$

Where: Q = Peak discharge in cubic feet per second (cfs)
C = Coefficient of runoff (see below)
I = Rainfall intensity in inches per hour (in/hr)
A = Tributary area in acres

1. Coefficient of Runoff. The coefficient of runoff (or ratio of runoff/rainfall) is intended to account for the land use factors, which influence peak discharge rate. The following coefficients of runoff shall be used:

Residential		C
Rural Residential	(1-5 acres)	0.25
Suburban Density	(0.5 to 1.0 acre lots)	0.30
Low Density	(Single Family)	0.35
Medium Density	(Multi-Family)	0.50
High Density	(Apartment)	0.65

Non-Residential	
Commercial/Industrial/Office	0.80
Schools	0.50
Parks	0.20
Open Space	0.10
Paved Areas	0.95

In rare instances, unique site development conditions may warrant adjustments to these coefficients of runoff; however, any adjustments to these values will be subject to the prior approval of the City Engineer.

2. Rainfall Intensity

a. Rainfall intensity is determined using the intensity-duration-frequency (IDF) curves contained on Figure 5-1 of these Design Standards. To use the IDF curves, first determine the time of concentration (T_C) for the reach under consideration.

b. For the initial area assume an initial time of concentration (T_i) of 20 minutes for residential and rural residential areas and 10 minutes for commercial or industrial areas. The times of concentration for subsequent downstream areas are increased by the estimated travel time of the pipeline or channelized flow.

c. Enter the IDF curve with the estimated time of concentration and determine the corresponding rainfall intensity for both the 10-year and 100-year storm occurrences.

3. Estimated Peak Discharge (Peak Rate of Runoff).

   a. The product of the coefficient of runoff, the rainfall intensity and the area equals the estimated peak discharge. The process is repeated progressively for each succeeding downstream sub-area.

4. Street Carrying Capacity

   a. At each juncture or nodal point of calculation, the estimated 10-year and 100-year storm flows shall be compared to the surface carrying capacity of the street. Use the graph appropriate to the street under consideration as shown in Figures 5-2, 5-3, and 5-4 or perform specific normal depth calculations to determine the depth of flow. If the depth of flow is above the top of curb for the 10-year event, a separate drainage conveyance is required.

   b. In theory, storm runoff may be carried indefinitely on the surface of streets until its interception by facilities defined by the Citywide Storm Drainage Master Plan. In practice, it is recognized that subsurface drainage conduits may be required either by the developer for better site utilization or by the City for reasons of traffic safety, circulation, or other reasons based on public health, safety, or welfare.

5.04(B). Areas Greater than 200 Acres

1. Where the tributary area of a development project exceeds 200 acres, storm drainage facilities should be designed utilizing methods other than the Rational Method Formula.

2. Among the methods available for the estimation of storm flows in tributary areas in excess of 200 acres are:

   a. HSP. A computer based analysis system, Hydrocomp Simulation Program, based on the Stanford Watershed Model. This is a proprietary model available through Hydrocomp, Inc. of Palo Alto, California.

   b. HydroCAD. A computer based stormwater modeling software package developed by HydroCAD Software Solutions, L.L.C.

c. TR-20. This hydrologic analysis program can be used for general project formulation and is available from the US Soil Conservation Service.

d. HEC-1 or HEC-HMS. This flood hydrograph package is a computer-based model available from the US Army Corps of Engineers and vendors. HEC-HMS is the model that currently supports the Citywide Storm Drainage Master Plan.

e. TR-55. Urban hydrology for Small Watersheds - Technical release No. 55, is available from the US Soil Conservation Service.

3. Prior to initiating design of the development project, the Design Engineer shall review the drainage requirements and design approach with the City Engineer, and Engineering Division Staff.

5.04(C). Manning's formula shall be used to determine the relation of design flow, slope, velocity, and pipe diameter. The friction factors, "n", shall be 0.013 for all types of pipe, except for corrugated steel pipe where the "n" shall be 0.025. Corrugated steel pipe shall only be used for arch culvert crossings of streets.

5.05 Hydraulic Grade Line

5.05(A). General. All storm drains shall be designed for the maximum storm water entering the drain at the point of concentration and shall have a minimum of 1 foot of freeboard between the top of curb and the Hydraulic grade Line.

1. The hydraulic grade line (HGL) between structures shall be based upon the Manning's formula. Use an "n" factor of 0.013.

2. Hydraulic losses in structures shall be based upon a value of K, as defined in the table below, and multiplied by $V^2/2$ where V is the velocity of the water in the pipe exiting the structure with the pipe flowing full. $HL = K (V^2/2g)$

TABLE OF HEAD LOSS FACTORS THROUGH STRUCTURES	**K**
1. Straight Run with same size pipe	0.17
2. Straight Run with change pipe size	0.025
3. 0° to 45° Deflection with same in pipe size	0.42
4. 0° to 45° Deflection with change in pipe size	0.50
5. 45° to 90° Deflection with same pipe size	0.75
6. 45° to 90° with change in pipe size	1.00
7. 90° Deflection	1.25
8. Drop Manhole	1.25
9. Short Radius Curves from 50′ and down	0.35

10. #1 Inlet in a storm drain line 1.50

5.06 Temporary Retention Basins, Single Parcel

5.06(A). General. If a temporary retention basin on private property is approved by the City Engineer to drain a single parcel (in accordance with the criteria outlined in Section 5.07(A), below), it shall be designed based on the following:

1. A 48-hour, 10-year storm, total rainfall of 3.12 inches shall be used to determine the required volume if a reasonable outlet is provided. If no disposal other than evaporation, transpiration or, percolation is provided, calculations shall be done per Section 5.07 of these Design Standards.

2. The maximum water surface of the basin shall be one foot below the elevation of the top of curb at the lowest drainage inlet within the tributary area. A minimum one-foot of freeboard shall be provided.

3. Six-foot chain link fence with redwood or plaster lath filler shall be provided around all basins greater than three feet in depth. A vehicle access gate with City master padlock shall be installed.

4. Adequate all-weather access shall be provided.

5. The tributary drainage system shall be designed to connect to the City's future storm drainage system.

6. Developer must provide the long-term method of compliance with the City's Multi-Agency Post-Construction Stormwater Standards once the temporary retention basin is removed. This shall include the type of stormwater treatment along with the Project Stormwater Plan.

5.07 Temporary Retention Basins, Multiple Parcel

5.07(A). General

1. Developer may propose the use of a temporary retention basin as a temporary measure for a new development project if the developer establishes to the satisfaction of the City Engineer that: (a) the storm drain system for the development project cannot be connected to the City's permanent storm drainage system; and (b) the temporary retention basin is designed in accordance with all City Regulations, including these Design Standards; and (c) the developer agrees to maintain the temporary retention basin until the storm drainage system for the development project is connected to the City's

permanent storm drainage system; and (d) the developer agrees to remove the temporary retention basin, and connect the storm drainage system for the development project to the City's permanent storm drainage system when the connection is available.

2. If a temporary retention basin is approved by the City Engineer for other than a single, one-ownership parcel with a positive outflow discharge, the criteria set forth in this Section 5.07 shall be utilized in its design.

3. Developer must provide the long-term method of compliance with the City's Multi-Agency Post-Construction Stormwater Standards once the temporary retention basin is removed. This shall include the type of stormwater treatment along with the Project Stormwater Plan.

5.07(B). The design of temporary retention basin having no method of runoff disposal other than evaporation, transpiration or percolation shall meet the minimum requirements set forth in this Section 5.07. These requirements are listed below:

1. The retention basin design shall be the responsibility of the Design Engineer, and subject to review and approval of the City Engineer.

2. Permeability and differential head available must be considered for the life of the development project, not just present values.

3. Earth materials and groundwater conditions evaluation shall be made on a site-specific basis by a qualified geotechnical engineer and include development project-specific subsurface data and percolation tests, all subject to review by the City Engineer.

4. The volume of runoff required to be able to be stored in the retention basin is 2 times the volume of runoff that will discharge to the retention basin during a 10-year 48 hour storm (3.12" of rainfall). Note: The amount of storage required is not reduced by the rate of percolation.

5. Retention basins shall be designed to empty one hundred (100) percent of the computed volume of storage within ten (10) calendar days.

6. The volume of storage required shall be two hundred (200) percent of the computed volume of runoff. In areas of the City where it is demonstrated by site specific geotechnical and percolation testing and/or past performance that underlying soils at a temporary retention basin site are capable of achieving a high rate of percolation, the City may consider reducing the volume of storage requirement to account for a degree of said

percolation. The reduction, if granted by the City Engineer, will be based upon a review of factors of safety, future maintenance commitments, anticipated length of service, future permeability, downstream conditions and/or other considerations. If percolation consideration is granted by the City, the maximum reduction in the volume of storage requirement shall be limited to 25 percent.

7. Levees shall not be permitted around retention basins.

8. The bottom elevation shall be designed to provide five (5) feet of clearance to the groundwater elevation. The City Engineer may approve a clearance less than five (5) feet to groundwater if a written report is provided from a soils engineer establishing the high groundwater elevation taking into account the seasonal variations. In no case shall the clearance be less than two (2) feet.

5.07(C). The design of storm water drainage facilities, which will not be maintained by the City, shall be the responsibility of the Design Engineer and subject to review and approval of the City Engineer.

5.07(D). Calculation of Temporary Retention Basin Capacity

1. Basic Run-off Coefficients

SURFACE	**COEFFICIENT**
Pond or Basin	1.00
Paving (concrete, asphalt, oiled surface)	0.95
Building or Roof	0.80
Compacted Earth (gravel)	0.75
Lawn or Landscaping	0.20

2. Formulas. The run-off shall be calculated at 3.12" (0.26') for a 10-year, 48-hour storm.

SURFACE AREA (in sq. ft.)			**COEFFICIENT**	**RUN-OFF (in ft.)**
Pond Basin	= _____	x	1.00 x 0.26′	= _____
Paving	= _____	x	0.95 x 0.26′	= _____
Roof	= _____	x	0.80 x 0.26′	= _____

Comp Earth = _____	x	0.75 x 0.26′	= _____
Lawn & Landscape = _____	x	0.20 x 0.26′	= _____
		Subtotal	= _____

a. The required basis capacity = subtotal x 2 = _____ cubic feet. (This provides for the occurrence of two ten-year, forty-eight hour storms consecutively.)

b. If the individual run-off coefficients cannot be determined, average runoff coefficients for various land use areas listed in Section 5.04 may be utilized.

5.07(E). The developer shall provide an easement to the City for emergency access to the temporary retention basin site for maintaining and operation the storm water drainage system and appurtenances.

5.07(F). The maximum side slope shall be 4 to 1.

5.07(G). Six-foot chain link fencing with redwood or plastic lath filler shall be provided around the basin with double eight-foot gates with a City master padlock. Provide Top-Lock slat from PDS Fence Products or approved equal. Alternate fencing types may be required by the City for aesthetic purposes.

5.07(H). A minimum freeboard of one foot shall be provided above the maximum water surface without the use of levees.

5.07(I). The maximum design water surface of the basin shall be a minimum of one foot below the elevation of the top of curb of the lowest catch basin inlet within the tributary area.

5.07(J). The tributary drainage system shall be designed to be easily retrofitted to connect to the City's future permanent storm drainage system.

5.07(K). Show groundwater maximum elevation in basin cross-section.

5.07(L). Provide riprap protection at pipe outfalls into the basin. Riprap shall be 12 inches in size and placed on filter fabric. A minimum of 8 cubic yards is required.

5.07(M). Maintenance of Temporary Retention Basins. Developer shall conduct regular monitoring of retention basin performance to assure compliance with design requirements, particularly percolation and basin emptying rates. Developer shall report to the City annually with observed performance measurements and

maintenance activities. In cases where retention basins fail to meet required performance standards Developer shall propose and carry out necessary remediation to bring the retention basin into compliance.

5.08 Abandonment and Decommissioning of Existing Retention Basins

If a retention basin is no longer needed due to the downstream facilities being installed, the owner of the basin will be required to hire a licensed geotechnical engineer who will prepare a report addressing the proper procedures to abandon and fill the basin. The report must be approved by the City. The report should address removal of all pipe material and vegetation, proper benching, over excavation, maximum lift height and compaction requirements as well as any other items the geotechnical engineer deems appropriate. The owner shall remove all fencing and access roads. Prior to abandoning the basin, the owner shall conduct in the presence of the City's representative a flow test using dye to verify that the downstream system can accept the upstream flows and that all temporary plugs in the downstream system have been removed. Storm drain extensions, connections and other measures needed for contributing storm drainage facilities to be connected to the downstream system must be provided and will need to be approved by the City prior to decommissioning of the basin. The Developer shall submit for City review and approval all import material used to fill the abandoned basin. A grading permit and approved haul route will be required.

5.09 Detention Basin Design

Detention Basins that are considered to be integral to the City's master plan drainage infrastructure are identified in the Citywide Storm Drainage Master Plan. These detention basins are sized to store the contributing runoff produced by a 100-year 24-hour storm under a fully developed watershed condition that is attenuated via storage and outflow discharges. Required volumes and outflow discharge rates are provided in the Master Plan. Development planning and design proposals to make geometric adjustments to these detention basins will be given reasonable consideration by the City as long as the functional storage volumes, outflow rates and other hydraulic parameters presented in the Master Plan are retained.

Appurtenant features of Master Plan detention basins (such as inlet and outlet structures, forebays, landscaping, tiering, emergency spillways or other unique site-specific features) shall be designed using criteria approved by the City Engineer.

Detention Basins that are not identified in the Citywide Storm Drainage Master Plan will require prior approval by the City. If approved by the City, these detention basins shall be designed using criteria approved by the City Engineer.

5.10 Vertical Alignment

5.10(A). The minimum cover on main line storm drains shall be three (3) feet in all streets from the top of pipes to finished grade and two (2) feet from street sub-grade to top of pipe.

5.10(B). Laterals are hereby defined as those storm drain lines connecting a single storm drain inlet to another drainage structure. Lateral lines with less than 36" cover and more than 18" shall be Class IV RCP.

5.10(C). A minimum vertical clearance of 12 inches shall be maintained between a sanitary sewer, water main, and other underground utility.

5.10(D). At points of convergence of pipes of various sizes, the soffits of the pipe elevations shall match. This requirement does not apply to catch basin laterals. The flow line of a lateral entering a drainage structure shall be a minimum 0.2 feet above the flow line of the trunk storm drain line. In all cases, all laterals must be tied into main line storm drain inlet. In instances where grade and topographic constraints do not reasonably allow the soffits of pipes to match at points of convergence of pipes of various sizes, the City may consider matching of pipe inverts as an acceptable alternative, subject to the approval of the City Engineer.

5.10(E). A structure with a change of direction of the trunk line shall have a drop of 0.2 foot from inlet flowline to outlet flowline. The plans shall show the flowline in and out of all structures. In instances where grade and topographic constraints do not reasonably allow for this drop, the City may consider matching of pipe inverts as an acceptable alternative, subject to the approval of the City Engineer. In storm drain systems, for the Hill Area, an energy dissipater shall be provided at the downstream end of the drainage system when velocities exceed 6 fps. In earthen channels or natural swales, rock riprap protection is required when velocities exceed 6 fps.

5.10(F). On concrete-lined ditches, splash walls, shall be provided whenever two ditches converge, at bends, or where longitudinal slope flattens out.

5.10(G). Concrete valley gutters are required within channel ways to accommodate low flow or nuisance water.

5.11 Horizontal Alignment

5.11(A). Storm drains shall be placed within the street right-of-way whenever possible per Standard Plan 504.

5.11(B). Alignment shall be parallel to the street centerline wherever possible.

5.11(C). The horizontal alignment of storm drains in new streets shall be 1.25 feet behind the top face of the curb, as shown on Standard Plan 563. In existing streets and non-residential streets, the developer may request a deviation from this standard in accordance with Section 1.05, but in no case shall there be less than 6 feet horizontal clearance to other utilities.

5.11(D). Curved storm drains are not recommended, however, they may be considered in curved streets when curvature does not exceed 80% of the manufacturer's recommendations.

5.12 Slope

5.12(A). Storm drains shall have minimum slopes equal to that necessary to give a velocity of 2.0 feet per second when flowing half full regardless of the slope of the Hydraulic Grade Line.

1. Drop inlet laterals shall have a minimum fall of 0.10 foot between the drop inlet and manhole. Desirable fall is 0.30 foot or more. A lateral between two drop inlets shall have a minimum fall of 0.20 foot.

5.13 Pipe

5.13(A). The minimum size for storm drains, including laterals, shall be 12-inch diameter.

5.13(B). Reinforced concrete pipe, for storm drains in the Hill Area, which carry flows with velocities exceeding 14 feet per second shall be centrifugally spun, dense, thick walled RCP and have double gasketted joints when located in fill areas and single gasketted with smooth concentric joints in all other areas. The concrete protective cover from the inner surface to the reinforcement shall be 2-inch minimum. Other requirements may apply under these conditions to maintain position, seal and stability.

5.13(C). When storm drain pipe lines are steeper than 20%, cut off walls shall be designed & constructed at maximum 50-foot intervals around the pipes in the trench area.

5.14 Manholes

5.14(A). Manholes shall be placed at the intersections of all storm drains, at all locations where there is a change in size, change in horizontal or vertical alignment and at the ends of all permanent lines. Drop inlets may be substituted for manholes.

5.14(B). Manhole spacing shall conform to the following limits:

Diameter	Maximum Spacing
12" to 30 "	400 feet
30 " and over	600 feet

5.14(C). All storm drain manholes shall be constructed in conformance with Standard Plan 300. All storm drain manholes installed outside the public right-of-way shall have bolted lids. When the manhole is designed with head then bolted lids and rubber seals are required.

5.14(D). Where energy dissipation is necessary due to high flow velocities, Design Engineer shall submit design assumptions and mitigations to the City.

5.15 Catch Basins

5.15(A). Drop inlets shall be located at all low points. Drop inlets shall be constructed in conformance with Standard Plan 301. Manhole bases for inlets shall be used on all lines larger than 24".

5.15(B). A "No Dumping – Drains to River" storm drain marker is required at all storm drain inlets. The marker shall be permanently placed in clear site, adjacent to the inlet.

5.15(C). In the Hill Area, inlet capacity shall be verified to ensure that gutter flow with high velocities would be able to enter the underground system. Caltrans Inlet Type GOL 1992, which has a large gallery and an extended curb opening, shall be used where higher gutter flow velocities are expected. Inlets more closely spaced than City minimum requirements may be required. The developer may request a deviation from these standards by following the procedure outlined in Section 1.05.

5.16 Siphons

Inverted siphons will not be permitted.

5.17 Valley Gutters

Valley gutters are not allowed to be used within the City's rights-of-way.

5.18 On-Site Drainage

All developed areas larger than ¼ acre shall tie on-site drainage into the City's storm drain system.

5.19 Private Storm Drain Connections

5.19(A). The minimum size for private storm drain connections shall be 6-inch diameter.

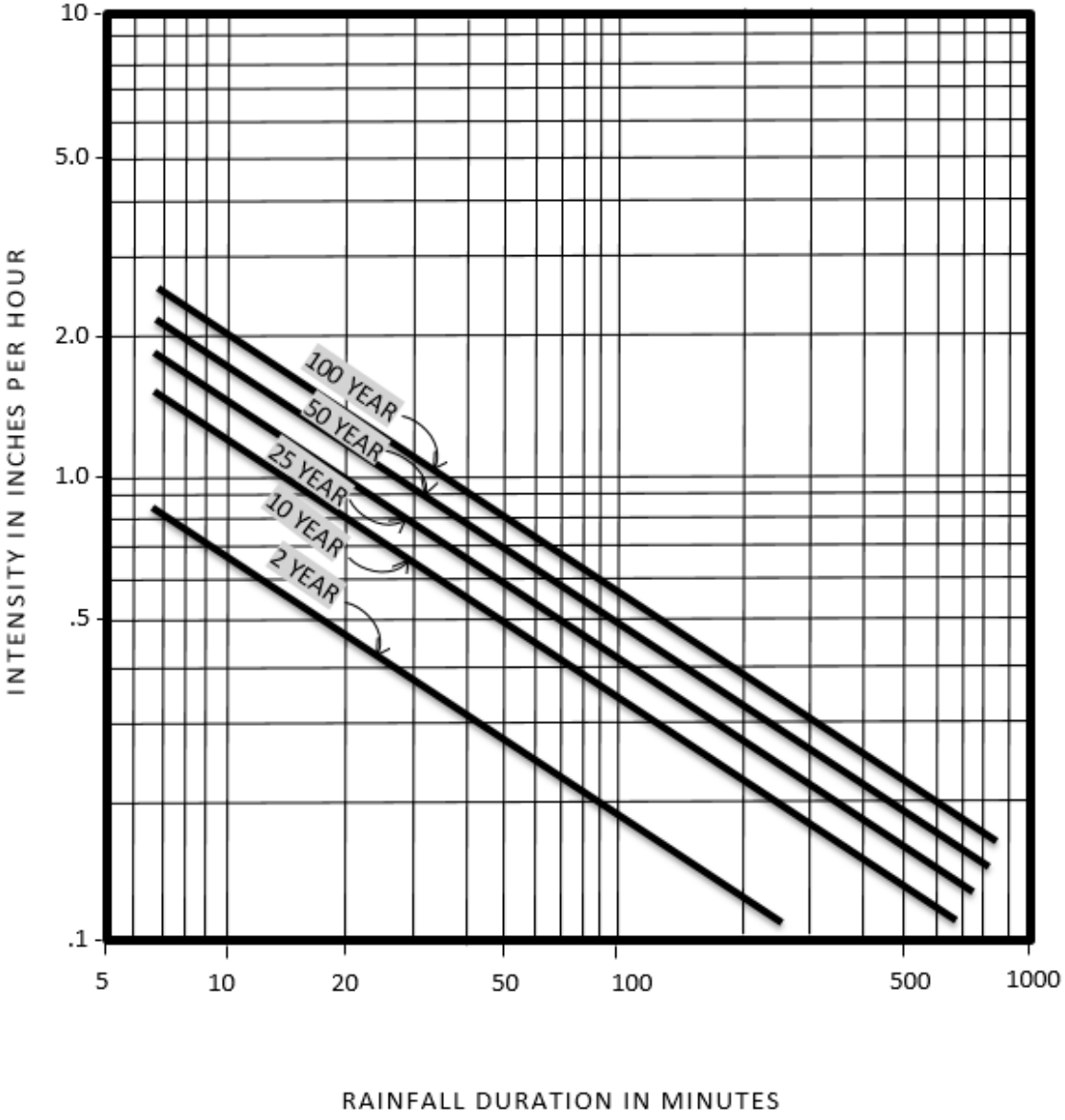
5.19(B). The pipe shall conform to the storm drain specifications.

5.19(C). A reasonably accessible structure shall be provided on the private storm drain connection within 10 feet of the street or alley right-of-way line. Private storm drain connections shall be tied into alley or street catch basins or manholes when practical.

5.20 Park Storm Drain Connections

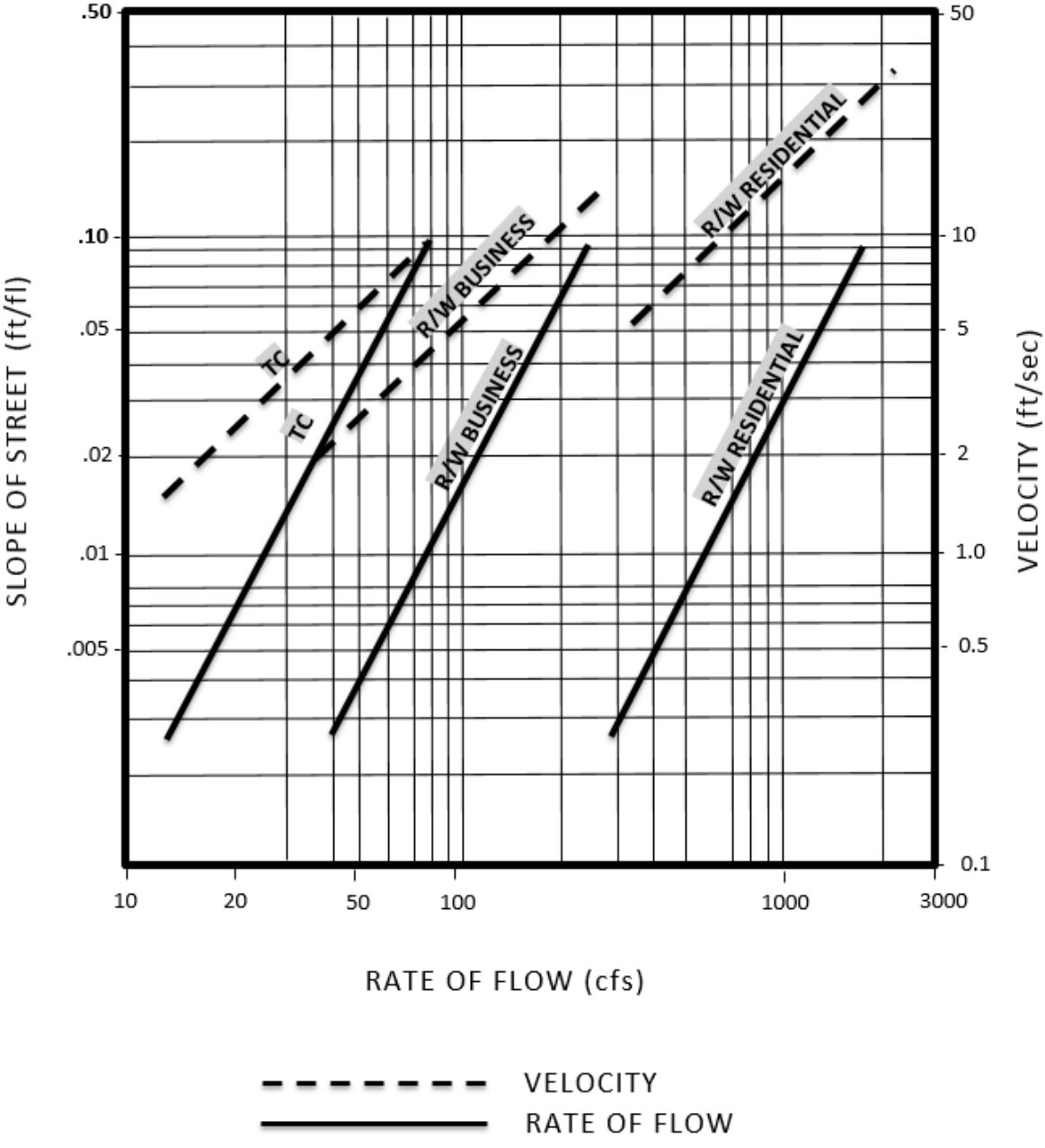
Provide a storm drain stub into every park site. The minimum size for park storm drain connection shall be 12-inch diameter.

RAINFALL INTENSITY CURVE



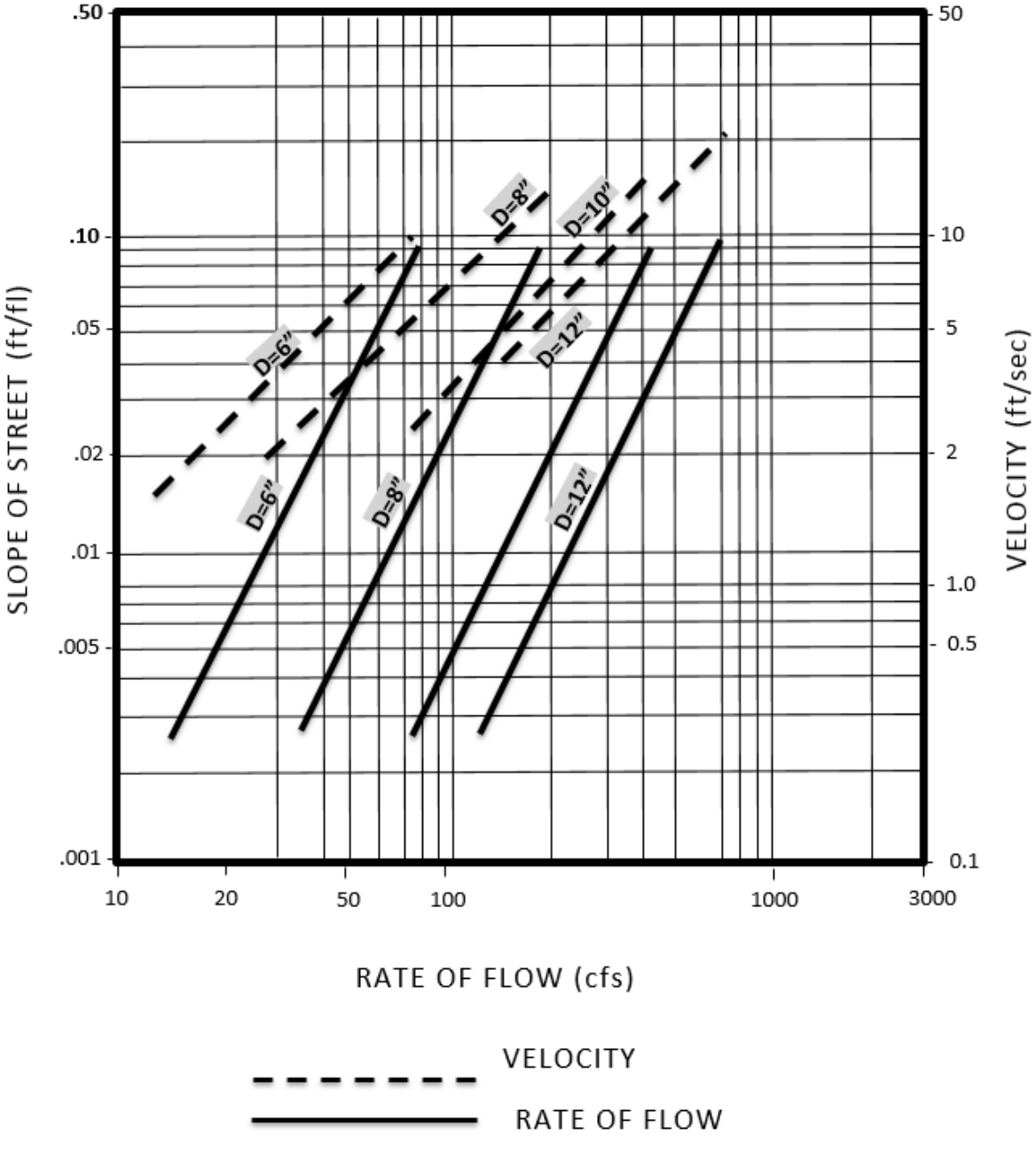
5 - 1

COLLECTOR STREET DRAINAGE



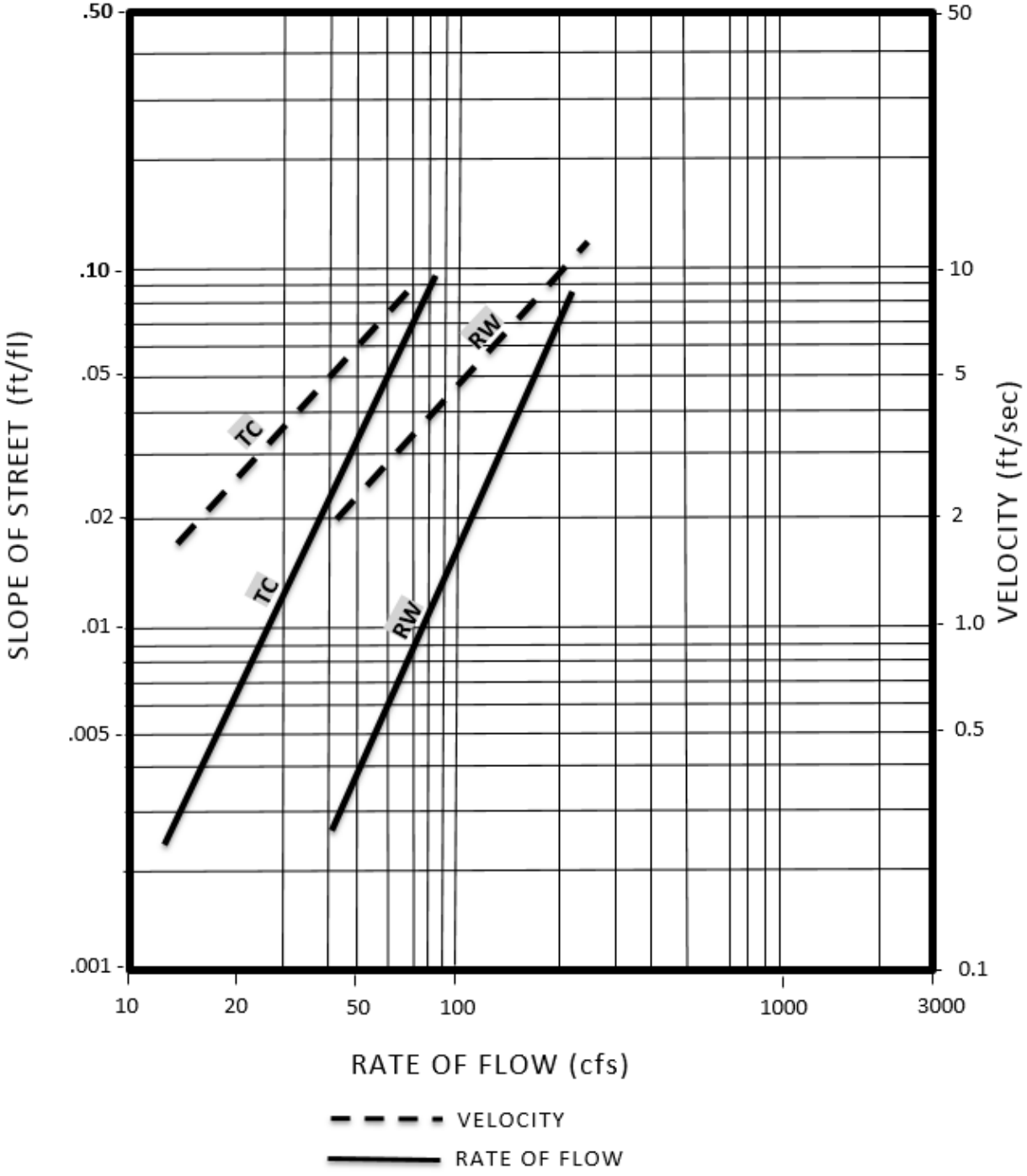
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INDUSTRIAL STREET DRAINAGE



5 - 3

ARTERIAL STREET DRAINAGE



5 - 4

CITY OF TRACY

DEVELOPMENT AND ENGINEERING SERVICES DEPARTMENT

STORM SEWER DESIGN

RUNOFF COEFFICENTS:
Land Use_____.
Weighted coefficient _____.

TIME OF CONCENTRATION:
Overland Flow_____Min
Gutter Flow_____Min
Total Inlet Time_____Min

RAINFALL CURVES:
Source_____.
Max. Annual Precip. _____Inches
Frequency_____Years

PIPES:
Type _____.
Roughness Coefficent n = _____.
Minimum Velocity at_____fps
Design Flow v = _____fps

ENGINEER :_____.
DES. BY_____DATE_____.
CHK. BY_____DATE_____.

LOCATION:
Track No._____.
Name_____.

Line Designation or Street Name	Description		A, Incremental Area (Acres)	C, Runoff Coeff.	(AXC), Product Area x Coeff.	Tc, Duration (min) Time of	I, Rainfall Intensity (Inch/Hour)	Runoff, cfs (C=CIA)	Length (Feet)	Pipe Diameter (Inch)	Pipe Slope	Capacity (cfs)	Velocity (fps)	Flow Time (min)	Fall (feet)	Gutter Flow Depth (feet)	Invert Elevation		Top of Curb Elevation		HG L Slope	Hydraulic Grade Line Elevation		Remarks
	From	To															In	Out	In	Out		In	Out	

SECTION 6

WATER DESIGN STANDARDS

6.01 General

6.01(A). Water systems shall be designed and constructed in accordance with all City Regulations, including the Water Master Plan (including all supplements thereto), the Standard Plans and Specifications, and these Design Standards. For each development project, the design of the water system shall be of such a size to provide water supply and distribution capacity to adequately convey all water that can be reasonably anticipated to be needed for the development project, and the surrounding areas identified in the Water Master Plan. Design Engineers are advised to review proposals, which are potentially at variance with the Master Plan with the City Engineer prior to proceeding with design studies.

6.01(B). Unless otherwise specified in these Design Standards, all materials shall conform to the American Water Works Association Standards.

6.01(C). Unless otherwise specified in these Design Standards, all installations shall conform to regulations prescribed by the California State Department of Public Health and Water Resources Control Board.

6.02 Standard Operational and Design Criteria for Water Distribution System

6.02(A). The following tables provide design criteria and operational standards for water distribution systems.

1. **Table 6-1**. Potable Water Facility Planning Criteria

Description	Planning Criteria
Facilities	
Water treatment plant	**Maximum day demands**
Reservoirs [(a)]	• **Emergency: 2 x average day** • **Operational: 30% of max day** • **Fire: fire flow x duration**
Distribution Pump Stations	
Number	**Two (2) per pressure zone boundary (except where redundant pumps are included in single pump station)**

Description	Planning Criteria
Capacity	Equal to maximum day demand plus fire flow for the immediate pressure zone it is serving, and maximum day demand for all additional pressure zones, which are provided service from this pressure zone.
Backup Power	Equip each pump station with a plug in adapter to allow interconnection to a portable generator. Generator must supply enough power to meet firm capacity of pump stations. (Firm capacity is equal to pump station capacity with the largest pump out of service)
Pipelines	
Material [(b)]	Ductile Iron
Minimum diameter	8" Main Line, 6'' Main Lane only at cul-de-sac beyond fire hydrant, 6" min. Laterals Serving Fire Hydrant
Hazen Williams "C"	130 for Ductile Iron & Cement Mortar Lined Pipe
Appurtenances	
Minimum isolation valve spacing	800' (Residential), 1,000' (Commercial/Industrial)
Minimum fire hydrant spacing	500' (Residential), 300' (Commercial/Industrial)
Pressure Zone Service Elevation Boundaries	
Zone 1 – lower/upper (feet)	0/75
Zone 2 – lower/upper (feet)	75/150
Zone 3 – lower/upper (feet)	150/310
Zone 4 – lower/upper (feet)	310/470
Zone 5 – lower/upper (feet)	470/630

(a) Each pressure zone shall have two reservoirs: provided, however, one reservoir may be permitted if the Applicant provides documentation to the satisfaction of the City Engineer that establishes that the existing and proposed water system improvements provide storage redundancy adequate to serve the pressure zone in the event that the reservoir is temporarily out of service.

(b) Pipeline material is subject to change depending on depth of cover, chemical makeup of soil and internal pressure.

2. **Table 6-2.** Potable Water Facility Design Criteria

Description	Value
Distribution Pipelines	
Maximum head loss. During non-fire flow conditions (ft/1,000 ft)	7
Maximum velocity. During peak hour conditions (ft/sec)	8
Maximum velocity. During maximum day plus fire flow conditions (ft/sec)	12
System Pressures	
Minimum pressure (psi)[(a)]	40
Minimum pressure. During maximum day plus fire flow conditions (psi)[(b)]	30
Maximum pipeline pressure (pressure in the main line)(psi)	120
Maximum service pressure (pressure at the customer tap)(psi).PRV required for 80+ P.S.I.	80
Reservoirs	
Type	Buried Concrete Reservoirs and Above Ground Tanks are allowed on a case by case basis
Pipelines	
Minimum depth of cover	3′ for mains 10″ and less, 4′ cover for mains larger than 10″

[(a)] Pressure assumed at pad elevation; which is assumed to be no greater than 10 feet above the pipeline main.

[(b)] Pressure assumed to be at the hydrant location.

6.02(B). Fire Flow Requirements.

1. The minimum fire flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1 of the California Fire Code, with the following exceptions:

    a. A reduction in required fire flow of up to 50 percent, as approved by the Fire Chief, is allowed when the building is provided with an automatic sprinkler system approved pursuant to the adopted NFPA Standards. The resulting fire flow shall not be less than 1500 gallons

per minute. Reduction of fire flow does not apply to the number of fire hydrants required or duration of fire flow required.

b. A reduction in required fire flow of up to 75 percent, as approved by the Fire Chief, is allowed for warehouse buildings of Type I, Type II, and Type III-N construction when the building is provided with an early suppression fast response fire sprinkler systems. Reduction of fire flow does not apply to number of fire hydrants required or duration of fire flow required.

2. The minimum fire flows identified are to be met concurrently with maximum day demand conditions on the rest of the system while maintaining a minimum residual system pressure of 30 psi. These fire flows and their expected durations are also to be used in identifying treated water storage requirements.

6.03 Vertical Alignment

6.03(A). The minimum cover on water mains 10" and smaller shall be 3 feet from the top of pipe to finished grade. For mains 12" and larger minimum cover shall be 4 feet from top of pipe to finish grade.

6.03(B). When crossing another pipeline the water main shall be installed above the pipeline with a minimum clearance of 12 inches. Proposed exceptions shall conform to California Code of Regulations Title 22.

6.03(C). Top of pipe elevations shall be shown on all water main improvement plans at high points, low points and grade breaks.

6.03(D). At high points within the system combination air valves (CAV) shall be required. Combination air valves shall be shown in both profile view and plan view and located at lot line extensions. Combination air valves shall conform to Standard Plan 411.

6.04 Horizontal Alignment

6.04(A). Water mains shall be installed within the paved portion of the street right-of-way unless an easement installation is specifically approved by the City Engineer. Alignment shall be parallel to the street centerline wherever possible.

6.04(B). In new development projects, the horizontal alignment of water mains shall be 10 feet south or 10 feet east of the street centerline, as shown on Standard Plan 504. In existing streets and non-residential streets, the developer may request a deviation from this standard in accordance with Section 1.05, but in no case shall there be less

than 10 feet horizontal clearance to a sanitary sewer and 4 feet horizontal clearance to a storm drain or tertiary recycled water main. Curved water mains are allowed in curved streets when curvature does not exceed 80% of the manufacturer's recommendations.

6.04(C). The water system shall be looped, as required, to provide adequate fire flow and water circulation.

6.05 Pipe Size and Material

6.05(A). Unless otherwise specified in the Water Master Plan: the minimum size pipe used for water mains shall have a nominal diameter of 8 inches; however, water mains serving a cul-de-sac beyond a fire hydrant may use a 6 inch diameter line, and industrial areas may require installation of 12 inch mains.

6.05(B). All pipe for potable water systems shall be ductile iron, conforming to the Standard Specifications.

6.05(C). Pipe material for recycled water system shall be PVC (AWWA C-900), "purple pipe".

6.06 Water Service

6.06(A). The minimum size service is 1 inch and shall be installed in conformance with Standard Plan 403. The minimum size irrigation service for a streetscape application is 2 inch, and neighborhood parks require 4 inch.

6.06(B). All water services shall be metered. Meters shall be furnished and installed by developer. The minimum separation between the water and sewer laterals shall be eleven (11) feet center to center. All water meters shall be Sensus SR2 Radio Read with Flexnet 520M transceiver or approved equal. Meters shall not be located in driveways or areas subject to traffic.

6.06(C). A pressure-regulating valve (PRV) will be required on all water services with a static service pressure greater than eighty (80) pounds per square inch (psi). The PRV installation shall conform to the requirements in the current edition of the California Plumbing Code.

6.06(D). A check value shall be installed on the house side of all water meters 2" or less.

6.06(E). Any water connection larger than 4 inches must be made with a cut in and a tee installed on the main. If any water main will experience a shutdown, all affected

users must be provided a 72-hour advance written notice. Written notices must be reviewed and approved by the City prior to distribution.

6.06(F). Unused, existing services shall be abandoned by removing the service from the right-of-way to the main. For services 2″ diameter or less, pothole, cut-out and remove the corporation stop and saddle at the main and install a full-circle 3/16 stainless steel repair clamp over the hole. For services larger than 2″ diameter, remove the existing valve and install a blind flange on the tee at the main.

6.07 Fire Hydrants

6.07(A). Fire hydrants shall be supplied from the largest available main.

6.07(B). Fire hydrants shall be fed from two directions unless located in a cul-de-sac.

6.07(C). Fire hydrant spacing and distribution shall be determined based upon Table No. C105.1 from the California Fire Code, amended to read as follows:

Table No. C105.1
Number and Distribution of Fire Hydrants

FIRE FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS [a,b&c] (Ft.)	MAXIMUM DISTANCE FROM HYDRANT TO ANY POINT ON STREET OR ROADWAY FRONTAGE[d, e] (Ft.)
1750 or less	1	300	150
2000-2250	2	300	150
2500	3	300	150
3000	3	300	150
3500-4000	4	300	150
4500-5000	5	300	150
5500	6	300	150
6000	6	250	150
6500-7000	7	250	150
7500 or more	8 or more[b]	200	120

a. Reduce by 150 feet for dead-end streets or roadways.
b. One Hydrant for each 1000 gpm or fraction thereof.
c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants should be provided at not less than 1000 foot (305 m) spacing to provide for transportation hazards. In addition, there shall be at least one hydrant at each intersection.
d. Average spacing between hydrants may be extended to 500 feet on streets serving one and two family dwellings.

e. A fire hydrant shall be located within 200 feet of the center of all cul-de-sacs.

6.07(D).Hydrants shall be required on both sides of the street whenever one or more of the following conditions exist:

1. When streets have median center dividers that make access to hydrants difficult, cause time delay, or create undue hazard or both.

2. When the street is a state highway or has four or more lanes of traffic.

3. When the street width is in excess of 88 feet.

4. When the planned street calls for either center dividers, four or more lanes of traffic, or a street width in excess of 88 feet pursuant the Roadway Master Plan.

6.07(E). Fire hydrant shall be installed in conformance with Standard Plan 401 and shall be approved by the City Engineer and Fire Chief based on National Fire Protection Association (NFPA) Standards. Fire hydrants shall be Jones "4040" or approved equal.

6.07(F). City owned street fire hydrants shall have their own separate connection to the street water main. No additional users shall connect to the fire hydrant lateral. No private connections for domestic, fire or irrigation supply are allowed to connect to the fire hydrant lateral.

6.08 Valves

6.08(A). Main valves shall be located so that any section of the water system can be controlled by operating a maximum of 3 valves. In addition, valves shall be spaced so that a maximum of 1,000 feet of water main is controlled by the valves. When butterfly valves are used, butterfly operator shall be toward nearest property lines.

6.08(B). Valves installed on all ten inch (10") and smaller lines shall be gate valves. Mains twelve inch (12") and larger shall utilize butterfly valves.

1. Butterfly valves: 12" and larger rubber seated, tight closing type meeting or exceeding A.W.W.A C504. Valves body shall be cast iron, A.S.T.M. A48 Class 40 with rubber seat secured with an integral 18-8 stainless steel nylon locked screws. Rubber seat shall be a full circle 360' seated no penetrated by the valve shaft. Packing shall be "triple seal" rubber designed for permanent underground duty. Valve operator shall be of the traveling nut type, sealed, gasketed and lubricated for service. It shall withstand an input torque of 450

ft.-lbs. Only valves on approved materials list "Standard Specifications, Appendix A "shall be used.

2. Gate Valves: 10" and smaller as shown on list of approved materials "Standard Specifications, Appendix A".

6.08(C). Valves shall be installed in conformance with Standard Plan 402.

6.08(D). All valve box risers shall be installed with a concrete base below the valve box to prevent the riser from shifting.

6.09 Backflow Prevention Devices

6.09(A). All commercial private water supply pipelines shall be provided with an approved backflow prevention device.

6.09(B). Backflow prevention device shall be in the form of either a Double Detector Check Valve Assembly or a Reduced Pressure Principal Backflow Preventer, per City Standard Plans.

6.09(C). The type of Backflow Preventer required will be recommended by the Design Engineer, depending on whether the location is deemed to be a low hazard potential or whether dangerous or toxic substances are involved, and approved by the City Engineer.

6.09(D). Backflow prevention devices shall be approved by the City and shall bear the stamp of Underwriters Laboratories (U.L.).

6.09(E). Devices shall be installed on private property.

6.10 Dead end Runs

Permanent dead end runs shall be no longer than 250 feet unless on a cul-de-sac. Eight-inch mains shall be used on dead end runs, which serve fire hydrants. Reasonable looping of water mains will be required.

6.11 Blow-Offs

Blow-Offs shall be constructed at the end of all dead end runs. Blow-Offs for future extensions shall be installed at mains to be extended at a later date. Installation shall be in paved areas in conformance with Standard Plan 407. For dead ends at high points of water mains a combination air and vacuum release valve assembly and blow-off conforming to Standard Plan 410 is required.

6.12 Thrust Blocks

Thrust blocks shall be installed in conformance with Standard Plan 414. Joint Restraints are an acceptable alternative.

6.13 Maintenance Responsibility

6.13(A). The City will maintain water mains and water services located within the public right-of-way or within dedicated public utility easements from the main up to and including the domestic meter and the detector meter.

6.13(B). Property owners shall maintain backflow prevention devices and service runs beyond the meter. Backflow prevention devices shall be located on private property.

SECTION 7

RECLAIMED WATER STANDARDS

7.01 General

7.01(A). Reclaimed Water Systems shall be designed and constructed in accordance with all City Regulations, including the Water Master Plan (including all supplements thereto), Sanitary Sewer Master Plan (including all supplements thereto), City Standard Plans, City Standard Specifications, and City Design Standards. For each Development project, the design of the reclaimed water system shall be of such size to provide reclaimed water supply and distribution to adequately convey all reclaimed water that can be reasonably anticipated to be needed for the development project, and the surrounding areas identified in the City's master plans. Design Engineers are advised to review proposals, which are potentially at variance with the Master Plans with the City Engineer prior to proceeding with design studies.

7.01(B). Unless otherwise specified in these Design Standards, all materials shall conform to the City's Standard Plans and approved material list.

7.01 (C). Unless otherwise specified in these Design Standards, all installations shall conform to the City's Standard Plans, Manufacturers installation instructions and all regulations prescribed by the California State Department of Public Health.

7.01 (D). California Department of Public Health regulations require water mains and supply line to be installed at least 4 feet horizontally from, and one foot above a parallel pipeline conveying reclaimed water.

7.02 Vertical Alignment

7.02(A). The minimum cover on all reclaimed water mains shall be 4 feet from the top of pipe to finish grade.

7.02(B). Separation from potable water pipelines shall comply with California Code of Regulations Title 22.

7.02(C). Where a reclaimed water main and a potable water main cross, the reclaimed water main shall have a minimum clearance of 12 inches below the potable water main. Reclaimed water mains shall only cross potable water mains at an approximate 90 degree angle.

7.02(D). Top of pipe elevations shall be shown on all reclaimed water main improvement plans at high points, low points, grade breaks, and at all water main crossings.

7.02(E). At high points (any elevation difference greater than ½ diameter of the pipe) within the distribution system, combination air release and air/vacuum release valves (CAV) shall be required. CAVs shall be located at lot lines where practical and shall conform to Standard Plan 604. The polyethylene CAV enclosure shall be by Pipeline Products, model #VCAS-1830-PR (purple), or approved equal. CAVs shall be either APCO or Crispin valves with surge attenuation, as determined by the Design Engineer and approved by the City Engineer. Location shall be shown in plan and profile view on all improvement plans.

7.03 Horizontal Alignment

7.03(A). Reclaimed water mains shall be installed within the paved portion of the street right of way when possible. All reclaimed water mains shall be installed within dedicated right of way or dedicated easements with a minimum width of 20 feet. Alignment shall be parallel to the street centerline wherever possible.

7.03(B). In new development projects, the horizontal alignment of reclaimed water mains shall be 10 feet north or 10 feet west of the street centerline, as shown on Standard Plan #563. In existing streets and nonresidential streets, the Developer may request a deviation from this standard in accordance with Section 1.05, but in no case shall there be less than 4 feet horizontal clearance to a water main. Curved reclaimed water mains are allowed in curved streets when curvature does not exceed 80% of the manufacturer's recommendations.

7.03(C). The reclaimed water system shall be looped, as required, to provide adequate flow and circulation.

7.04 Pipe Size and Material

7.04(A). Unless otherwise specified in the Water Master Plan, the minimum size pipe used for reclaimed water mains shall be 4 inches. All reclaimed water systems shall be installed with tracer wire and warning tape as per Standard Plan #6xx.

7.04(B). Pipe material for reclaimed water mains shall be PVC. All reclaimed water main distribution pipe 4 inch thru 12 inch shall be C900 "purple pipe". All reclaimed water main distribution pipe greater than 12 inches shall be C905 "purple pipe". Ductile iron pipe shall only be used in special cases and with the City Engineer's approval. Buried ductile iron pipe shall be wrapped with a purple colored polyethylene membrane in accordance with AWWA C105. The

polyethylene sheets shall be 8 mils thick, minimum, and labeled "RECLAIMED WATER - DO NOT DRINK".

7.04(C). Material for recycled water fittings shall be ductile iron in conformance with the Standard Specifications for potable water fittings.

7.05 Services

7.05(A). The minimum size service is 1-1/2 inch and shall be installed in conformance with Standard Plan 600. The minimum size service for a streetscape application and neighborhood park shall be 4 inches

7.05(B). All water services shall be metered. Meters shall be furnished and installed by the developer. The minimum separation between reclaimed water and potable water services shall be 4 feet outside of pipe to outside of pipe. All water meters shall be Sensus radio read with Flexnet 520M. Meters shall not be installed in driveways or areas subject to traffic.

7.05(C). Any reclaimed water connection larger than 4 inches connecting to an existing main shall be subject to review by the City Engineer. Connections shall be made with a cut in and a tee installed on the main. Hot taps may be considered by the City Engineer. If any reclaimed water main will experience a shutdown, all affected users must be provided a 72 hour advanced written notice. All written notices shall be reviewed and approved prior to the Developers distribution of said notices.

7.06 Valves

7.06(A). Valves shall be installed on all reclaimed water mains according to the following schedule: 4 valves at crosses; 3 valves at tees. Where no reclaimed water line intersections are existing, a main line valve shall be installed every 1000 feet maximum. Valves installed on all 10 inch and smaller mains shall be gate valves. Mains 12 inch and larger shall utilize butterfly valves. List valve information on approved material list.

7.06(B). Valves shall be installed in conformance with Standard Plan 402.

7.07 Backflow Prevention Devices

7.07(A). The need for and type of backflow prevention device required will be determined by the Design Engineer and approved by the City Engineer prior to

installation. If a backflow prevention device is required, all backflow prevention devices shall bear the stamp of Underwriters Laboratories (U.L.). All backflow prevention devices shall be tested and certified prior to acceptance by the City. Devices shall be installed on private property.

7.07(B). Property owners shall maintain backflow prevention devices and service runs beyond the reclaimed water meter. Backflow prevention devices shall be tested and certified once a year.

7.08 Meters Boxes and Vaults

7.09 Dead end Runs

7.09(A). Permanent dead end runs shall be no longer than 250 feel unless on a cul-de-sac. Eight inch mains shall be used on dead end runs which serve fire hydrants. Reasonable looping of water mains will be required.

7.10 Blow-Offs

7.10(A). Blow-offs shall be installed in conformance with Standard Plan 602.

7.11 Thrust Blocks and Joint Restraint

7.11(A). Thrust blocks shall be installed in conformance with Standard Plan 414.

7.11(B). All PVC bell joints shall be restrained for both C900 and C905 PVC pipe. The bell joint restraint shall consist of either an approved restrained PVC joint provided by the same manufacturer of the PVC pipe or approved bell joint harness. All bell joint restraint harness assemblies shall be made of ductile iron , coated with a manufacturer applied epoxy coating or polyester powder coating, including stainless steel bolts, nuts and rods. The bell joint restraint harness shall be manufacturer approved for use with PVC pipe and rated for at least 200 psi.

7.11(C). All valve and fittings shall be restrained to C900 and C905 pipe with an approved wedge action retainer gland or other approved restraining method. All DIP fittings for reclaimed water use shall be identified by purple wrapping with 8 mil polyethylene wrap. Alternate restraining methods and mechanical joint restraints may be used upon approval of the City Engineer.

7.12 Tracer Wire

7.12(A). Tracer wire shall be installed along all portions of the main including service runs regardless of size and type of material. Tracer wire shall be attached to the

reclaimed water main or service run in no less than three locations per pipe section by using Christy's 10 mil tape or approved equal. Duct tape of any kind is not allowed. Tape shall be wrapped around the entire pipe a minimum of one complete wrap.

7.12(B). Tracer wire shall be 10 AWG annealed bare copper solid strand wire with HMW-PE (High Molecular Weight Polyethylene) insulation material, a minimum insulation thickness of 0.045". Insulation color shall be "PURPLE".

7.13 Detectable Marking Tape

7.13(A). Detectable marking tape shall be Christy's or approved equal 6 inch wide marking tape. The standard color/legend combination shall be as follows: color-purple, text "Caution Recycled/Reclaimed Water Line Buried Below".

SECTION 8

STREET LIGHTING

8.01 General

8.01(A). All street lighting shall be LED, installed as required by the City Standard Plans. The lighting system shall be designed to best serve the area and to minimize the length of service runs from the points of connection to the street lights.

8.01(B). In the Hill Area, low glare streetlights shall be utilized. The lamps shall be shielded from the top and sides. Developer shall submit plans for City Engineer review and approval, which indicate compliance of low, glare street lighting and appropriate shielding.

8.01(C).Developer shall submit photometric analysis plans for City Engineer review and approval, which will indicate compliance with lighting design requirements of Standard Plan #146 and Figures 8-1 through 8-5.

8.02 Locations

All streetlights shall be shown on the Improvement Plans. The location and spacing shall be as outlined below and as shown on Figures 8-1 through 8-5. Additional streetlights shall be provided per note #15, Standard Plan 146.

8.02(A). Spacing

1. The maximum distance between street light standards shall be: 200 feet on residential streets, 150 feet on collectors and industrial streets, 120 feet on minor arterial streets, 70 feet on major arterial streets without a median, and 120 feet on major arterial streets with a median.

2. Street light standards shall be installed on alternating sides except when medians are to be constructed. Street lights in medians are to be installed using double, 15' mast arms on 30-foot high poles maximum 120 feet apart and at least 20' from the median island nose. Lights shall be evenly spaced as much as possible.

8.02(B). Cul-de-sacs

1. A streetlight is required when the cul-de-sac is more than 100 feet deep as measured from the face-of-curb extension of the through street to the face-of-curb at the rear of the cul-de-sac.

2. A streetlight is required at the midpoint of the cul-de-sac if the depth, as measured above, is greater than 300 feet.

8.02(C). Intersections. When standard is to be placed at an intersection, preference shall be given to the larger street. The number of electroliers placed at intersections shall be as follows.

1. For a residential/residential intersection, a collector/residential intersection, or a minor arterial/collector intersection there shall be a minimum of 4 electroliers, one at each corner extending over each approach.

2. For a major arterial/minor arterial intersection, there shall be a minimum of 6 electroliers: 4 shall extend over the major arterial and 2 over the minor arterial.

3. Additional electroliers shall be provided as necessary to comply with the intersection lighting design requirements of Standard Plan 146, Figures 8-1 and 8-2.

8.03 Design Criteria

8.03(A). Poles, mast arms and footings shall be designed to resist the overturning caused by a 100 mph wind load.

8.03(B). Street light conduit shall be a minimum of one and a half (1.5) inches in diameter and designed for a maximum fill of 26%. Existing conduits may be sized for a maximum fill of 40%.

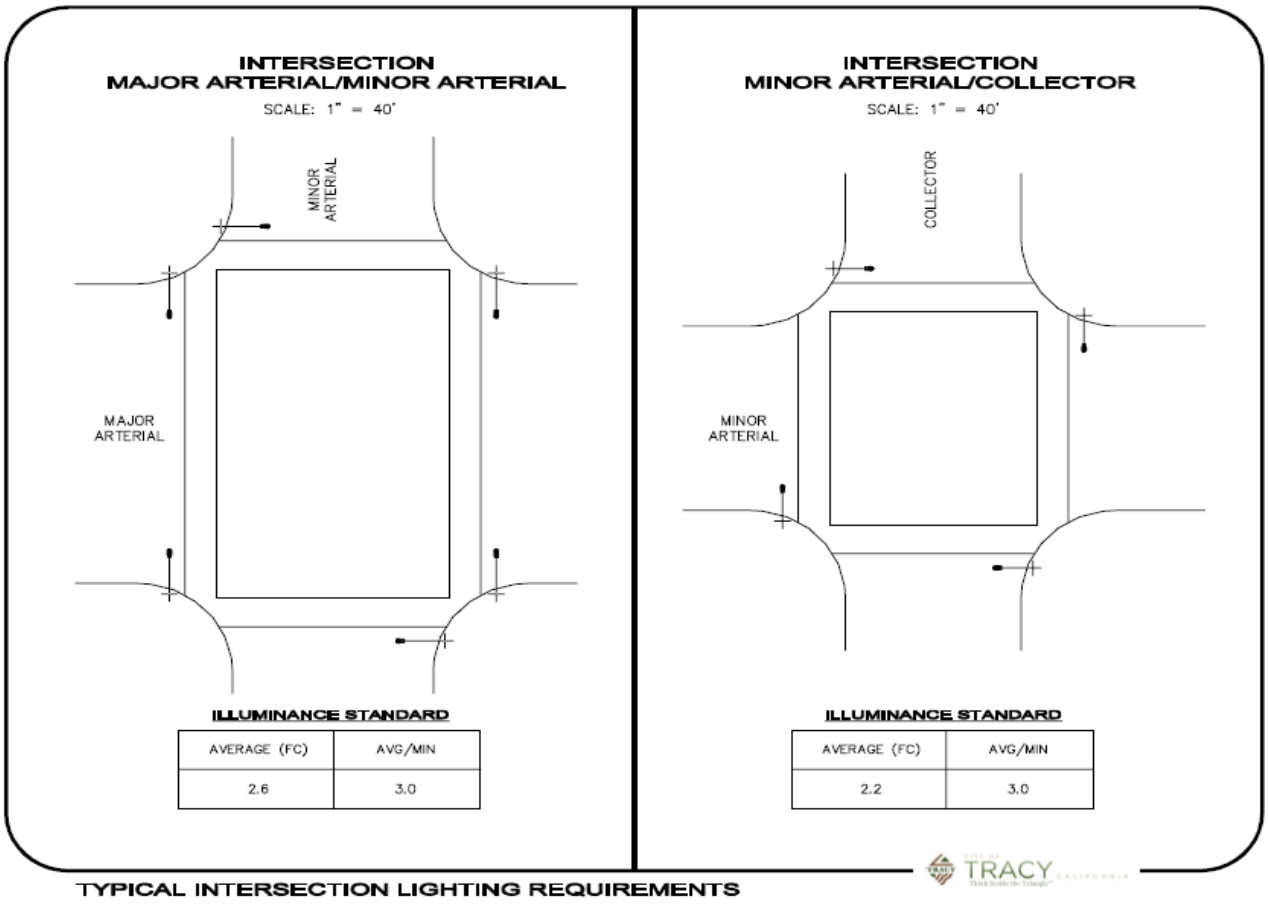
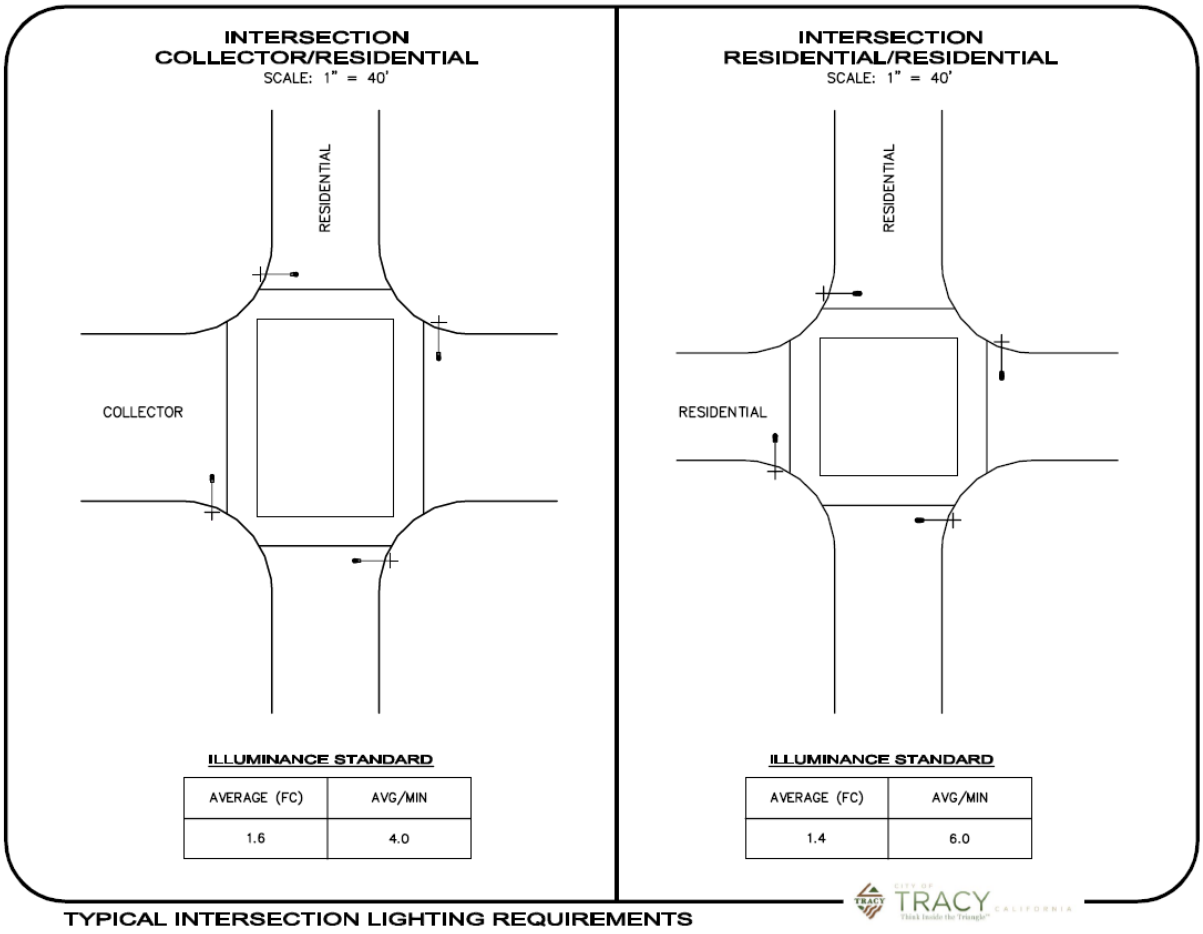
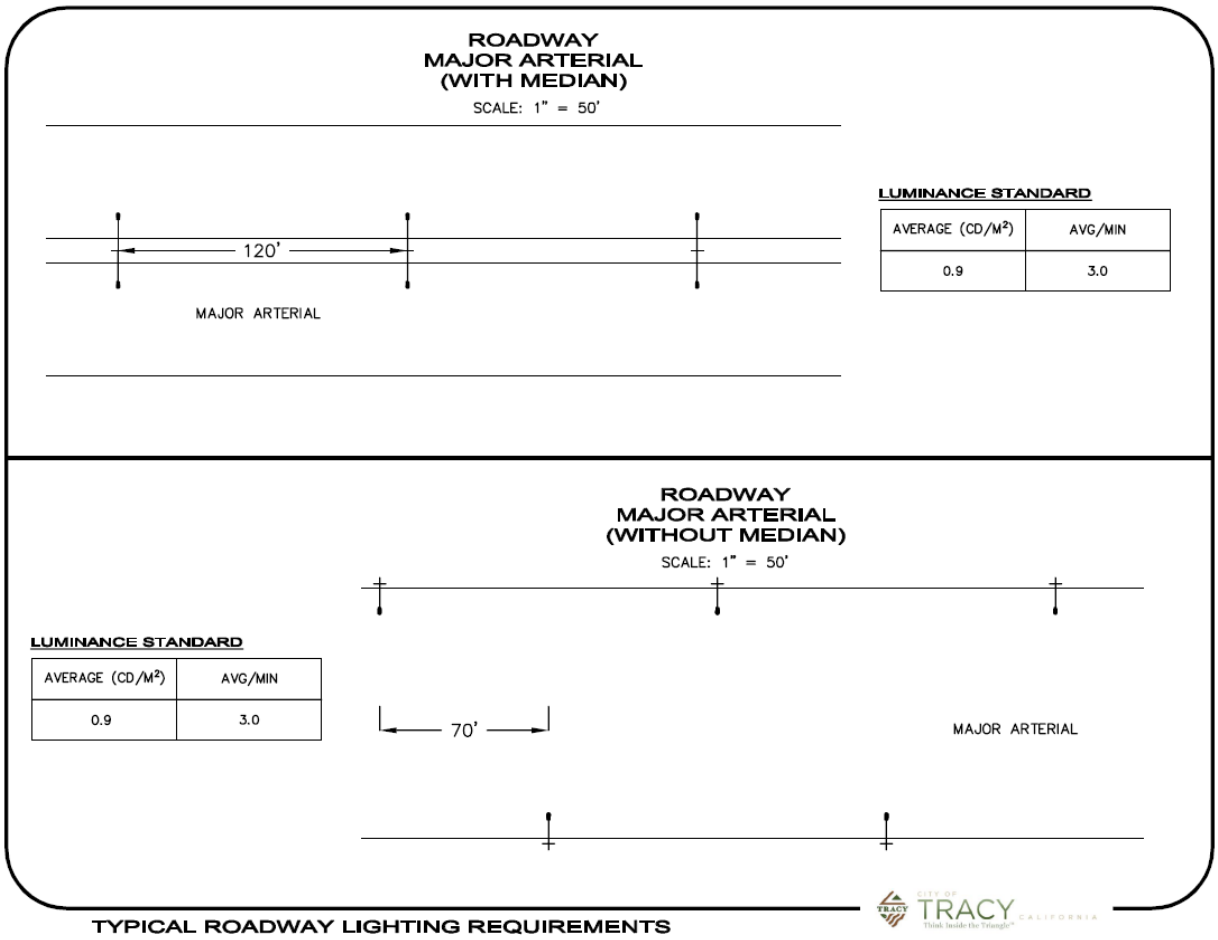

INTERSECTION
MAJOR ARTERIAL/MINOR ARTERIAL
SCALE: 1" = 40'
MINOR ARTERIAL
MAJOR ARTERIAL
ILLUMINANCE STANDARD
AVERAGE (FC)
AVG/MIN
2.6
3.0
INTERSECTION
MINOR ARTERIAL/COLLECTOR
SCALE: 1" = 40'
COLLECTOR
MINOR ARTERIAL
ILLUMINANCE STANDARD
AVERAGE (FC)
AVG/MIN
2.2
3.0
TRACY
TYPICAL INTERSECTION LIGHTING REQUIREMENTS

FIGURE 8-1



TYPICAL INTERSECTION LIGHTING REQUIREMENTS

FIGURE 8-2



TYPICAL ROADWAY LIGHTING REQUIREMENTS

FIGURE 8-3

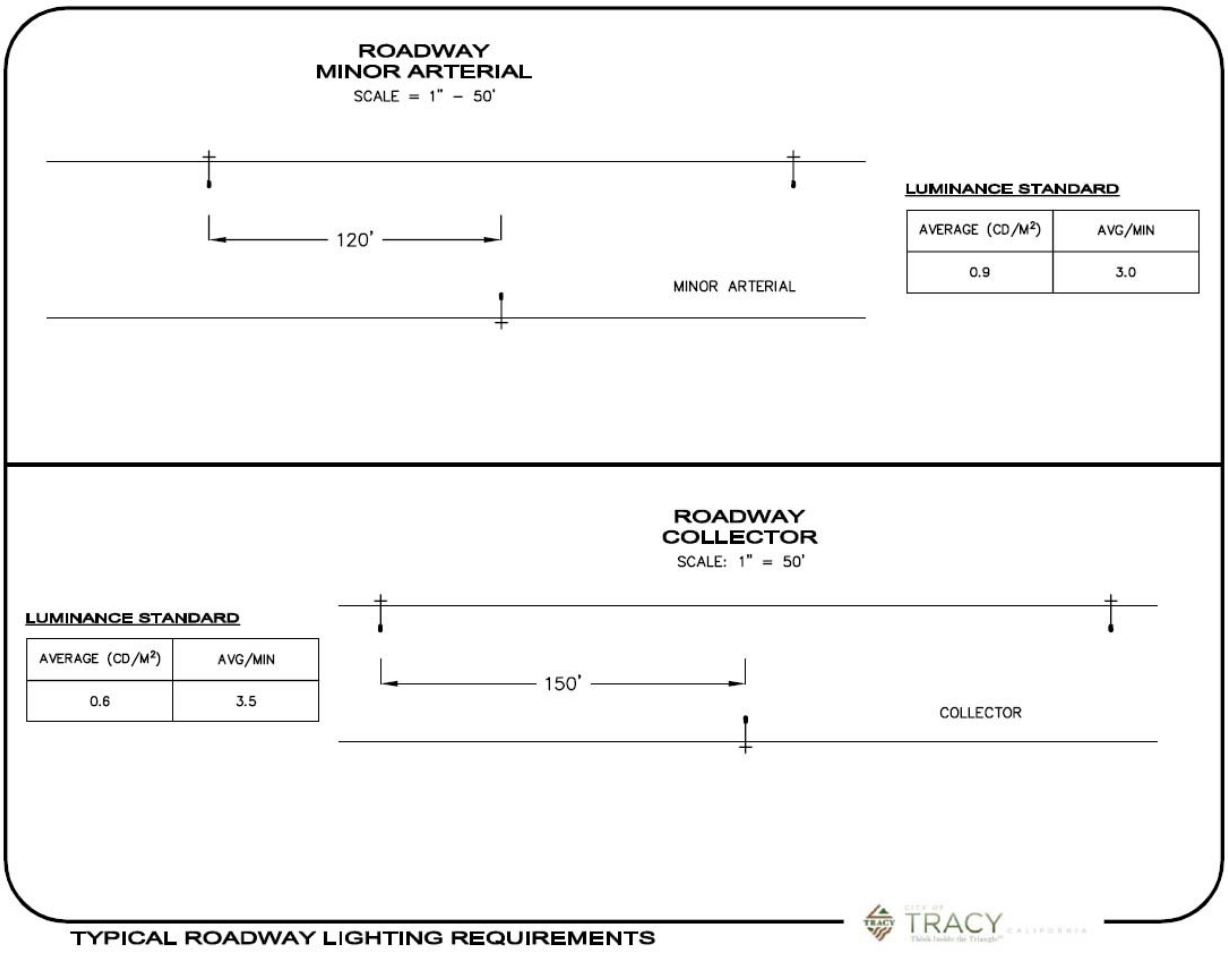
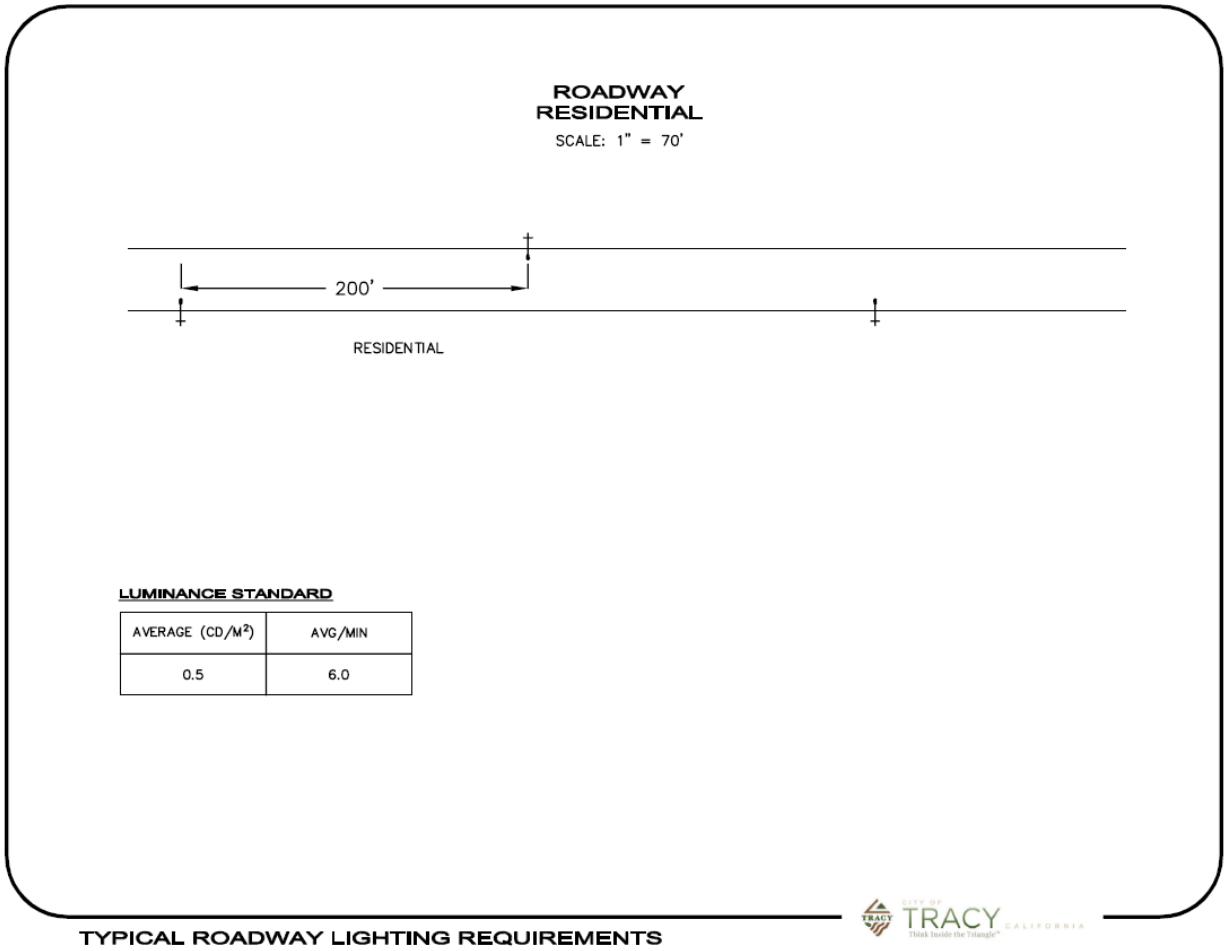

ROADWAY
MINOR ARTERIAL
SCALE = 1" – 50'
120'
MINOR ARTERIAL
LUMINANCE STANDARD
AVERAGE (CD/M²)
AVG/MIN
0.9
3.0
ROADWAY
COLLECTOR
SCALE: 1" = 50'
LUMINANCE STANDARD
AVERAGE (CD/M²)
AVG/MIN
0.6
3.5
150'
COLLECTOR
TRACY
TYPICAL ROADWAY LIGHTING REQUIREMENTS

FIGURE 8-4



TYPICAL ROADWAY LIGHTING REQUIREMENTS

FIGURE 8-5

SECTION 9

GRADING DESIGN STANDARDS

9.01 General

9.01(A). All grading shall be designed in accordance with the soils report and Chapter 18 of the latest California Building Code as specified in Chapter 9.04 of Tracy Municipal Code Title 9.

9.01(B). In the Hill Area, phasing of grading shall be identified within the grading permit and shall address stock piling and hauling of excess material, temporary and permanent erosion control, and drainage provisions. All finished slopes between 5 and 15 feet in height, as measured from the toe of slope to the top of slope, shall be contour graded. Contour grading shall include the use of horizontal and vertical curve variations, creating undulating terrain, rounding of slopes at slope intersections and transition zones with natural grade, and creating pad configurations with some curvilinear perimeters. All finished slopes greater than 15 feet in height, as measured from toe of slope to top of slope shall be landform graded. Grading shall include following underlying topographic features, rather than cutting across them for a maximum of 15 feet in depth.

9.01(C). The maximum slope allowed in the Hill Area shall be a 3:1 ratio except where the grade differential is one foot or less where the slope may be 2:1 if supported by the soils report. It is recognized that certain limited exceptions may be necessary. Exceptions shall be minimized and shall provide compensating engineering mitigations. Further, all property lines for lots shall be at the top of the slopes in accordance with paragraph 9.03(A) of this section. Grading shall conform to the following standards for pad-graded lots:

1. SIDE YARDS - The vertical differential between adjacent building pads shall not exceed 5 feet. A combination of retaining walls and 3:1 slope may be used. Where retaining walls are used, the property line may be at the face of the retaining wall provided that no slope is involved.

2. REAR YARDS - Slopes shall not exceed 10 feet in vertical height. Where 3:1 slopes are used, there shall be a minimum of 10 feet between the toe of slope and the furthest projection of the building footprint. Where retaining walls are used, there shall be a minimum of 18 inches of level soil at both the top and bottom faces of the retaining wall and a minimum of 10 feet between the face of a retaining wall and the furthest projection of a building footprint.

9.01(D). In the Hill Area, every reasonable effort shall be made to minimize grading impacts to harmonize with the natural contours and character of the land, including preservation of trees and their drip lines. The natural Preservation of open, undisturbed ridgelines shall be further achieved through site planning and grading plan review.

9.02 Soils Report

A comprehensive soils report shall be prepared for each development project in the City. The report must be prepared by a duly licensed Professional Engineer. A minimum of five tests samples shall be taken. It shall include R values (if greater than 5) taken at the site with a map showing the locations and depths of the test samples. Additionally, it shall include ground water elevations, excavation and grading recommendations, determination if expansive soil is present, foundation recommendations, drainage and erosion control methods, etc.

9.03 Grading at Property Lines

9.03(A). The fence for any proposed or existing site or parcel located within the grading project shall be setback a minimum 1.5' from the top of the slope.

9.03(B). Excavation and fill slopes shall be set back a minimum of two feet from the project boundary line except as provided below.

9.03(C). Pad excavations may cross a phasing line of a project as long as a method has been provided to allow construction on the newly created parcel, which will protect the right of any future owners of either phase of the project. The pad extension shall extend a minimum two (2) feet across the phasing boundary line of the project.

9.03(D). Cut or fill slopes may be allowed on adjacent existing parcels with a recorded slope easement from the current owners of the existing parcel.

9.03(E). Retaining walls shall be masonry or reinforced concrete. Calculations shall be provided with submittal of improvement plans for walls 4 feet and higher from bottom of footing to top of wall and will require a City Building Permit.

9.04 Lot Grading

9.04(A). Lots shall be graded to slope a minimum of 1% toward a public street from the rear of the lot to the back of fronting sidewalks or top of curb grades. Level pad elevations for building shall be at least 0.1' above the high point as determined above. A developer may request a deviation from this standard, in accordance with Section 1.05, if the developer provides documentation to the satisfaction of the City Engineer that special

conditions exist and that disposal of all site drainage can be provided in a safe manner. However, no bubble up drains or low points at the backyard will be allowed.

9.04(B). Lots shall be graded such that no pad elevation shall be less than 0.7' above the release point of the subdivision. The release point shall be defined as the point at which storm waters leave the subdivision with total failure of the storm drain system.

9.04(C). Within the Hill Area, grading shall be limited to required building pad areas, driveways, and adjacent outdoor amenities. Developers shall use foundation systems that minimize grading, forcing the building to conform to the land, rather than conforming the land to the building. Where feasible, lot-building pads shall be designed to conform with contours and to daylight in the center of the building pad to ensure a minimum of cut and fill. Individual lot retaining walls within required front or side yard setbacks shall not exceed 3 feet in height. All other retaining walls shall not exceed 6 feet in height. The combined height of a retaining wall and fence shall not exceed 8 feet except that in side yard conditions the combined height of a retaining wall and fence combination may be up to 10 feet if side yard set backs are increased one foot for each foot that the combination exceeds 8 feet.

9.05 Work During Rainfall Months

9.05(A). Grading operations shall be targeted for the dry months of the year (April 15 to October 15). If project construction occurs during rainy weather season (October 15 to April 15), erosion and sediment control measures must be in place prior to and during construction. All stockpiled materials must be covered and shall not be deposited or stored where material may be transported to the City's storm drainage system. Best Management Practices described in the ESCP or SWPPP shall be maintained continuously during active construction.

9.05(B). All slopes constructed as part of the cut/fill operations shall be hydro seeded as soon as final grading of each slope has been completed. All storm drain inlets shall be protected by best management practices described in either the site SWPPP or ESCP prior to construction activities and maintained throughout active construction. Construction entrances shall be stabilized per Caltrans Construction Site Best Management Practices (BMP) Manual or the California Stormwater Quality Association (CASQA) BMP Handbook for New Development and Redevelopment.

9.06 Erosion Control

9.06(A). An Erosion and Sediment Control Plan is required for any grading project. The plan shall be submitted for review and approval by the City Engineer or his designee.

9.06(B). The Erosion and Sediment Control Plan shall show control facilities such as, desilting basins, detention basins, interim seeding, silt fences, etc. Erosion Control Plans will be reviewed and approved in the same manner as grading plans.

9.06(C). Erosion Control Plans shall include the following:

1. All slopes constructed as part of cut/fill operations shall be seeded and planted as soon as final grading has been completed. Slopes shall be covered when not actively being worked on and shall not be placed where sediment may discharge to the City's storm drainage system.

2. Temporary stockpiles of soil shall have in place best management practices as described in the approved project SWPPP or ESCP.

3. Temporary runoff channels that drain construction zones shall have best management practices outlined in the approved project SWPPP or ESCP.

4. All storm drain inlets shall be protected per Caltrans Construction Site Best Management Practices Manual or the California Stormwater Quality Association (CASQA) BMP Handbook for New Development and Redevelopment until the area is stabilized.

5. Construction entrances to all City streets shall be stabilized per Caltrans Construction Site Best Management Practices Manual or the California Stormwater Quality Association (CASQA) BMP Handbook for New Development and Redevelopment

9.06(D). Both an Interim and Final Erosion Control Plan shall be submitted, and shall be designed to protect adjacent property, water courses, public facilities and receiving water from an abnormal deposition of sediment of dust. The Design Engineer shall be responsible for inspection and modification of the erosion and sediment control devices during the rainy season. After each rainstorm, per the SWPPP or ESCP, conduct BMP site inspection and make any necessary repairs, changes, and cleanups necessary to ensure BMP's are working properly.

9.06(E). For all grading on property of 1 acre or more, the designer shall submit one (1) electronic copy of the SWPPP to the Utilities Department and one (1) hard copy to the Design Engineer. A copy of the SWPPP must be available for review at all times during construction at the project site.

9.07 Trenching and Backfill

9.07(A). Where the depth of cover over any utility is less than three feet or greater than 15 feet, the Design Engineer must provide load calculations, special trench designs, or both, to ensure integrity of the utility.

9.07(B). In existing public streets the standard "Tee" trench is to be used with no trenches left open overnight; temporary paving or plating is required.

SECTION 10

WALL DESIGN STANDARDS

10.01 General

10.01(A). Walls shall be designed and constructed in accordance with all City Regulations, including Tracy Municipal Code Title 9, the Parks and Streetscapes Standard Plans (including all supplements thereto), Chapter 16 of the California Building Code, the Standard Specifications, and these Design Standards.

10.02 Design Standards

10.02(A). Sub Drains. Sub drains shall be installed at the bottom of all retaining walls. The holes, or perforations in the pipe(s), shall be placed downward to prevent them from becoming plugged, and the pipes shall be laid in gravel (pervious) bedding which entirely surrounds the pipe. The pipe and gravel shall be wrapped in a filter fabric. A building permit shall be required prior to the construction of any retaining wall. Discharge locations for sub drains shall be shown on the civil plans and approved by the City Engineer.

9.02(B). Pier Depth. Pier depth shall be calculated per Tracy Municipal Code Title 9.

9.02(C). Wall Foundation Encroachments. If the foundation of the wall encroaches on private property, an easement to the City for the width of this encroachment must be provided.

10.03 Finish Treatments

Finish treatments shall be approved by the City and shall be in general conformance with the Parks and Streetscapes Standard Plans.

10.04 Color

All color shall be integral to the wall.

10.05 Panel Walls

Panel walls are not permitted in the City.

10.06 Walls in Hill Areas

10.06(A). In the Hill Area, where wall heights are within fifty (50) feet of major roadways, residences, commercial or public facilities or sites (such as parks or parkways), and where the grade differential is greater than 10 feet, walls shall be broken into tiers or steps, each of which shall not exceed a height of 6'. Each wall tier shall be offset a minimum distance of 4 feet and appropriately landscaped/irrigated to further reduce visual impacts of the wall system. Shrubs, vines, climbing groundcover or other approved landscaping could be used. Design of the wall (materials, colors) shall be compatible with the natural surroundings. The maximum height of any wall, regardless of its visibility from off-site viewpoints, shall be 12 feet.

10.06(B). No retaining wall shall adjoin the edge of any public walkway. A landscaping/setback buffer width of not less than 4 feet shall be provided between the wall and the walkway.

10.07 Improvement Plans for Masonry Walls

10.07(A). Improvement plans for masonry walls must include the following information at a minimum:

1. Top and bottom elevation of the wall on both sides.

2. Top of curb elevation.

3. Drainage behind (private side) and along the wall, with subdrain details and discharge locations shown.

4. Wall stationing.

4. Offset of the wall (staggering) in accordance with the final map.

5. Structural details for wall and foundation/footing.

SECTION 11

ESTIMATES FOR BONDING PURPOSES

11.01 General

Concurrently with the submittal of improvement plans, and prior to the City's approval of any final map, the developer shall prepare an estimated cost to construct all public improvements required for the development project, in accordance with the City's standard estimated unit costs, set forth in Appendix G of these Design Standards.

11.02 Costs

10.02(A). The City has established standard estimated unit costs for the most common public improvements constructed in conjunction with development projects. The City's standard estimated unit costs are based upon an estimate of the cost to the City to construct the public improvements, and are not intended to estimate the costs which the developer may incur. The City's standard estimated unit costs are set forth in Appendix G of these Design Standards.

11.02(B). A ten percent (10%) contingency shall be added to the standard estimated unit costs to protect the City from inflation of costs and unforeseen conditions.

11.02(C). The cost estimate must include the cost to underground overhead utilities if undergrounding of utilities is required.

11.03 Form

The estimate shall be in the form of a table listing items, units, and unit costs, quantity of each item and the total cost of the improvement.

11.04 Grading

11.04(A). Estimates for grading shall indicate cubic yards of both cut and fill to be moved onsite and cubic yards of import or export required, if any. Estimates for grading shall include the costs of any grading performed under a grading permit. Estimates for grading shall also include erosion and sediment control measures.

11.04(B). Grading of temporary drainage basins shall be shown as a separate item and shall include cost of refilling the basin, including all cost of restoring the basin area to its original condition.

11.05 Construction in Existing Streets

When new facilities are to be installed in existing streets, unit prices for underground improvements shall be increased. To simplify the estimation of these costs the City will require a fifty percent (50%) increase in unit prices.

11.06 Groundwater

If the City Engineer has information, based on a soils report or other reliable information, which indicates that ground water will be encountered during construction, unit costs for all pipelines installed within 2 feet of the ground water shall be increased by $10.00 per lineal foot.

SECTION 12

DEMOLITIONS AND ABANDONMENT PLAN

12.01 General

A Demolition and Abandonment Plan shall be prepared when the development site has existing improvements upon it. The City's primary purpose for requiring the developer to prepare this plan is to identify those sites, which may have wells, septic tanks, septic tank leach fields, pipelines, underground storage tanks, utilities, drain tiles, irrigation facilities, retention basins, etc. that require special treatments for abandonment or significant costs to prepare the site for construction.

12.02 Content

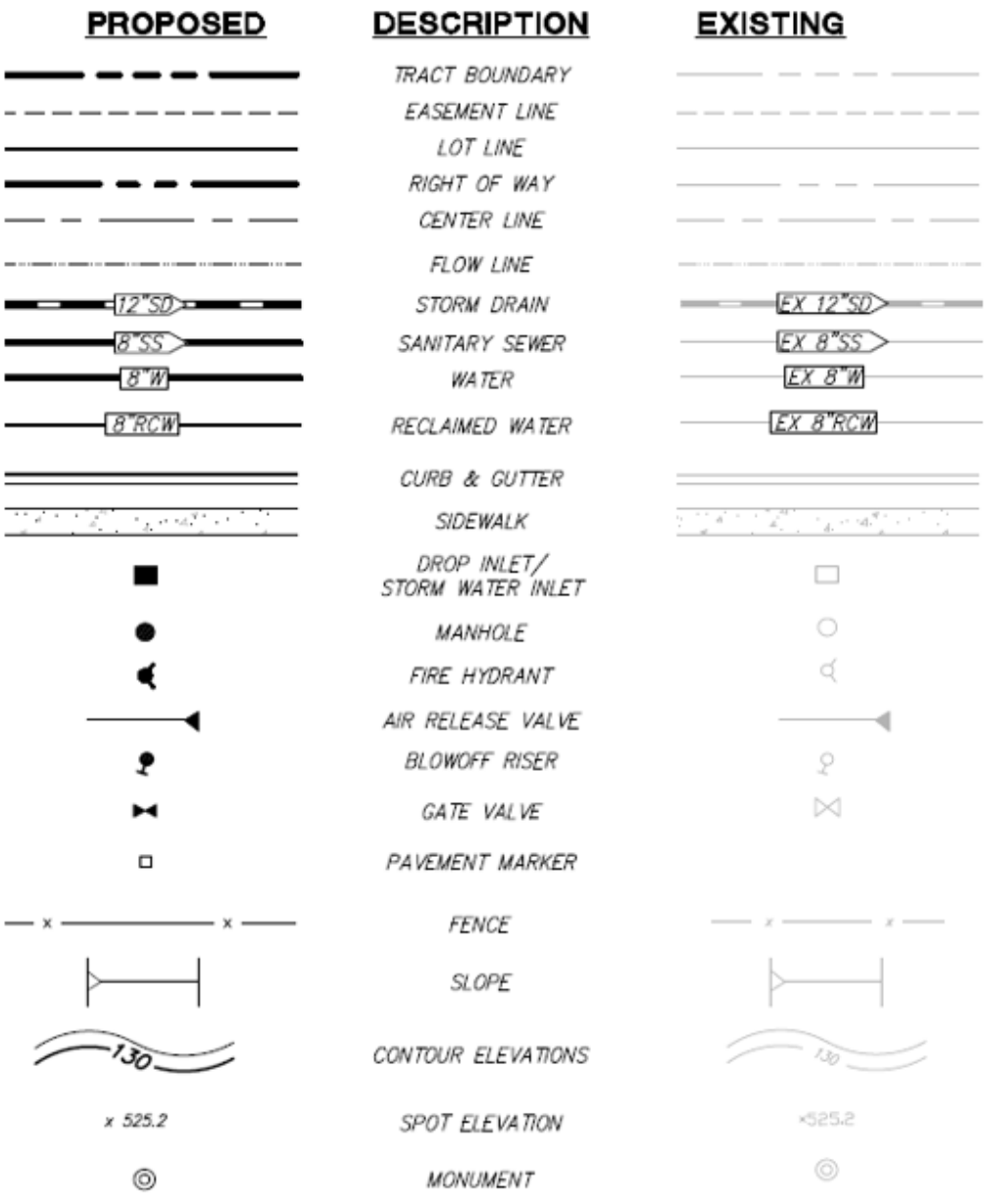
The demolition and abandonment plan, when required, shall show all houses or other structures, wells, septic tanks, septic tank leach fields, pipelines, storm drain retention or detention basins, irrigation facilities, utilities, streets or roads, bridges or other concrete structures that currently exist at the site of the planned development. The Design Engineer is encouraged to contact the City Engineer, and Engineering Division staff, as early as possible during the design process to determine if this demolition and abandonment plan is required, what scale will be acceptable and which existing improvements are required to be shown. A San Joaquin County Valley Unified Air Pollution Control District " Compliance Questionnaire " must be filled out and submitted to the City of Tracy Building Department prior to any demolition work.

12.03 Scale

The drawings shall be prepared at a scale sufficient to clearly show all existing improvements, as described above.

APPENDIX A

LEGEND



APPENDIX B

CITY STANDARD NOTES

1. All work shall conform to City of Tracy Standard Specifications and Standard Plans. The work is subject to the inspection and approval of the City Engineer, and the Engineering Division inspectors. Contact Engineering Division Construction Management at (209) 831-4600, two working days (48 hours) prior to the start of any work to arrange for inspection.

2. These plans have been checked by the City of Tracy for conformance with the City's minimum standards, but such checking by the City does not relieve the developer from its responsibility to find and correct errors, omissions or make changes required by conditions discovered in the field during the course of construction. Any request by the developer to change these plans shall be submitted in writing to the City Engineer.

3. All revisions to this plan must be reviewed by the City Engineer prior to construction and shall be accurately shown on revised plans stamped and signed by the City Engineer prior to the installation of the improvements.

4. All construction staking for curb, gutter, sidewalk, sanitary sewers, storm drains, water lines, fire hydrants, and electroliers, etc., shall be done by the registered civil engineer of record or licensed Land Surveyor. Horizontal control and cut sheets shall be provided to the City prior to start of work.

5. Existing utilities are plotted from available records. The developer shall take precautionary measures to protect these utilities. The developer shall perform no excavation until all utility agencies and the City of Tracy have been notified and have been given the opportunity to mark their facilities in the field. Notify Underground Service Alert at (800) 227-2600 at least two (2) working days prior to any excavation. Some agencies such as irrigation districts may not be part of Underground Service Alert and must be contacted separately.

6. Water mains and services, sanitary sewer mains and laterals, storm drain mains and laterals, joint trench utilities, street light conduit, and all other underground utilities shall be installed, tested, repaired and retested if necessary prior to curb, gutter, sidewalk and street paving installation.

7. Survey Monuments shall be furnished and installed by the developer at locations shown on the Final Map. Submit to the City Engineer a Letter of Certification from the Licensed Land Surveyor certifying all fees have been paid and that all

monuments are installed and tagged in accordance with the approved Final Map prior to tract acceptance.

8. All underground utilities abandoned during construction shall be removed.

9. All sanitary sewer mains shall be balled and flushed, pass a low air leakage test, and video inspected (copies shall be given to the City of Tracy), in conformance with City of Tracy Standard Specifications prior to acceptance by the City. All testing shall be performed after 80% of the street aggregate base has been placed and compacted prior to paving.

10. All water lines shall be pressure-tested, disinfected, flushed, and tested for bacteria in conformance with the City of Tracy Design Standards and Standard Specifications prior to acceptance by the City. Testing shall be performed after 80% of the street base rock has been placed and compacted and prior to final lift of asphalt paving. Bacteria sampling shall be conducted by the City. After collection, the samples will be submitted to an independent lab for testing.

11. Testing

    a) All sampling and testing called for by the City Engineer shall be paid for by the Developer or contractor.

    b) Roadway subbase, base, asphalt, and trench backfill compaction testing shall be performed by a soils lab contracting with the City of Tracy.

    c) Tests for subgrade R-values are required prior to the installation of base rock when R-values assumed in design are greater than 5.

    d) A minimum of 48 hours' notice is required to schedule all soils testing services.

12. Street signs shall be installed at all intersections per City Design Standards, Standard Plans, and Standard Specifications.

13. Traffic signs shall be installed in conformance with the California Manual on Uniform Traffic Control Devices (CA MUTCD) at locations specified by City Design Standards, Standard Plans, and Standard Specifications.

14. Street striping shall include stop bars, centerline striping or markers, crosswalks and all other markings required by the City Design Standards, Standard Plans, Standard Specifications and CA MUTCD. Striping shall be done with

thermoplastic and reflective markers. Striping on all roadways shall be cat-tracked and approved by the City Engineer or designee prior to final installation.

15. All trenches shall be backfilled in accordance with City Design Standards, Standard Plans, and Standard Specifications. Compaction shall be achieved by mechanical means. No flooding, ponding or jetting shall be permitted.

16. When widening the pavement on an existing road, the existing pavement shall be cut to a neat line and removed back to an existing adequate structural section, or to the original road section. An exploratory trench, or pot holing, may be required to determine the limits of pavement removal.

17. Existing curb, gutter, and sidewalk within the project limits that are damaged or displaced, even though they were not to be removed, shall be replaced per City Standard Plans even if damage or displacement occurred prior to any work performed by the Developer.

18. At the intersection of two streets, the full structural section of the most prominent street shall be continued through the intersection.

19. Asbestos Cement Pipe (ACP) or fittings shall not be used within the City of Tracy and shall be removed if found.

20. Contractor shall notify the City Engineer immediately upon the discovery of a survey monument within the construction limits.

21. All street monuments, lot corner, and other permanent pipe or monuments within the construction limits shall be referenced by a registered land surveyor by means of a pre-construction corner record. Monuments disturbed during the process of construction shall be replaced prior to City acceptance of improvements.

22. The Developer shall control dust at all times during construction as required by the City of Tracy.

23. Prior to trenching for any sewer, water, or storm drain pipe, the Developer shall verify, in the field, the size and location of the existing pipe at the point of connection. Any deviation from the plans shall be resolved by the Design Engineer and reviewed by the City Engineer prior to trenching.

24. Manholes, valves, cleanouts, etc., shall be brought to finish grade by the developer after the final paving course is placed. Existing iron shall be lowered, then raised after final paving per Standard Plan 114. Locking grade rings of any kind are not allowed.

25. The installation of erosion and sediment controls per the approved SWPPP or ESCP shall be implemented prior to construction and maintained throughout the duration of the project. The BMPs shall not allow turbid or sediment-laden waters to enter the storm drainage system.

26. If, during construction, archaeological remains are encountered, construction in the vicinity shall be halted, an archaeologist consulted, and the City Engineer notified. If, in the opinion of the archaeologist, the remains are significant, measures as may be required by the City of Tracy, shall be taken to protect them.

27. Work shall be restricted to weekdays between 7:30 AM and 7:00 PM and weekends between 9:00 AM and 5:00 PM. Alternate hours must be approved by the City Engineer. Work which requires any traffic lane closures or restriction of the traveled way shall be limited to 9:00 AM to 3:30 PM in the commute direction and 8:00 AM to 4:30 PM in the non-commute direction. Commute directions shall be as determined by the City Engineer.

28. The overtime cost for inspecting work requiring City inspection, performed before 7:00 AM and after 3:30 PM, shall be paid by the developer before the work is authorized.

29. Construction equipment which operates at a noise level in excess of 85 decibels (measured on the A-weighted scale defined in ANSI S-1.4) at a distance of 100 feet from the equipment is prohibited.

30. The developer shall keep excavations free from water during construction. The static water level shall be drawn down a minimum of 2 feet below bottom of excavations to maintain undisturbed state of natural soils and allow placement of any fill to specified density. Disposal of water shall not damage property or create a public nuisance.

31. Disposal of construction dewater into the City sanitary sewer or storm drain system may be allowed by the City when jurisdictional water quality standards are satisfied. Contractor shall submit a dewatering plan, obtain all necessary permits, and conduct water quality testing as required to comply with permit requirements. The dewatering plan must be approved by the Utilities Department prior to beginning any dewatering activities.

32. Developer shall maintain all streets, sidewalks, and all other public right-of-way in a clean, safe and usable condition throughout the course of construction. All spills of soil, rock, construction debris, etc., shall be removed immediately from publicly owned property. All adjacent property, private or public, shall be maintained in a clean, safe and usable condition. The developer shall provide for

safe, unobstructed access to private property adjacent to work throughout the period of construction.

33. If a development project connects to existing utilities, which require trenching of existing street pavement, the Developer is required to repair the street by providing a 2″ grind of the existing asphalt and replacing with 2″ of asphalt concrete over pavement reinforcement fabric. The limits of the overlay shall extend 25′ on either side of trenches crossing perpendicular to the street centerline and from centerline to lip of gutter for longitudinal trenches.

APPENDIX C

OWNER'S STATEMENTS

Pursuant to Government Code Section 66436, the undersigned, _____ (hereinafter "Owner(s)"), do hereby state that I (we) are the owner(s) of all the real property and easements delineated and embraced within the exterior boundary line of the herein embodied final map entitled "_____, City of Tracy, County of San Joaquin, State of California" consisting of _____ ( ) sheets (hereinafter "Final Map"), that (Owner(s)) have caused the Final Map to be prepared for record and consent to the preparation and recordation of the Final Map; that the Final Map particularly sets forth and describes all the lots intended for sale by number with their precise length and width; that the Final Map particularly sets forth and describes the parcels of land reserved for public or private purposes by their boundaries, courses and extent.

Pursuant to Government Code Section 66439, the Owner(s), do hereby offer to dedicate to the City of Tracy forever the parcels of real property shown upon the Final Map marked _____ as embraced within the exterior boundary line upon the Final Map, for the uses and purposes of public highways.

Pursuant to Government Code Section 66439, the Owner(s), do hereby offer to dedicate to the City of Tracy forever the parcels of real property shown upon the Final Map marked _____ as embraced within the exterior boundary line upon the Final Map, for the uses and purposes of public _____ [parks].

Pursuant to Government Code Section 66439, the Owner(s), do hereby dedicate to the public forever a non-exclusive easement together with the right to construct, reconstruct, repair and maintain poles, wires, cables, pipes, and conduits and their appurtenances upon, over and under the real property shown upon the Final Map marked "P.U.E." or "Public Utility Easement" as embraced within the exterior boundary line upon the Final Map.

Pursuant to Government Code Section 66439, the Owner(s), do hereby dedicate to the City of Tracy forever a non-exclusive easement together with the right to construct, reconstruct, repair and maintain public improvements and their appurtenances upon, and under the real property shown upon the Final Map marked "P.S.E." or "Public Service Easement" as embraced within the exterior boundary line upon the Final Map.

CITY CLERK'S STATEMENT

State of_____)
County of_____)

Pursuant to Government Code Section 66440, I, _____, am the City Clerk of the City of Tracy (hereinafter "City Clerk"), and the clerk of the City Council of the City of Tracy (hereinafter "City Council"). I do hereby state that the herein embodied final map entitled "_____, City of Tracy, County of San Joaquin, State of California" consisting of ____ sheets (hereinafter "Final Map"), was presented to the City Council, at the duly noticed meeting held on the _____day of _____, 202_, and that the City Council did thereupon by Resolution No. _____, duly passed and adopted at said meeting: (1) approved the Final Map and authorized its recordation, and (2) accepted on the behalf of the public, for public use, the dedication of all real property shown upon the Final Map marked "P.U.E." (or "Public Utility Easement") and "P.S.E." (or "Public Service Easement"); and (3) accepted, subject to completion of improvements, the offer of dedication of all real property shown upon the Final Map marked _____ for the uses and purposes of public highways and _____ [parks].

In witness whereof I have hereby signed this Final Map this _____ day of _____, 20__.

_____ By: _____

CITY CLERK, AND CLERK OF THE CITY COUNCIL, OF THE CITY OF TRACY, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA

CITY CLERK

COUNTY RECORDER'S STATEMENT

Filed on this ____ day of _____, 200__, at _____M, Book_____ of parcel maps, at page _____, at the request of _____.

_____
COUNTY RECORDER

Recorded at the request of _____ at _____.M. on the _____day of _____, 200__, in Book _____ of maps at Page _____, in the office of the County Recorder of the County of San Joaquin, State of California.

_____
COUNTY RECORDED IN AND FOR THE
COUNTY OF SAN JOAQUIN, STATE OF
CALIFORNIA

By: _____
DEPUTY COUNTY RECORDER

SURVEYOR'S STATEMENT

Pursuant to Government Code Section 66441, I, the undersigned, _____, do hereby state that I am the surveyor responsible for the survey from which the herein embodied final map entitled "_____, City of Tracy, County of San Joaquin, State of California" consisting of _____( ) sheets (hereinafter "Final Map"), has been prepared. I further hereby state that: (1) the date of survey was _____; and (2) that said survey and this Final Map were made by me or under my direction; and (3) that said survey is true and complete as shown; and (4) the monuments are of the character and occupy the positions indicated on the Final Map [***ALTERNATIVE LANGUAGE FOR STATEMENT #4: the monuments will be set in the positions indicated on the Final Map by no later than two years after City Council approval of this Final Map**]; and (5) said monuments are [***ALTERNATIVE LANGUAGE: will be***] sufficient to enable the survey to the retraced.

Signed this _____ day of _____, 200__.

CITY ENGINEER'S STATEMENT

Pursuant to Government Code Section 66442, I, _____, City Engineer of the City of Tracy, do hereby state that I have examined the herein embodied final map entitled "_____, City of Tracy, County of San Joaquin, State of California" consisting of _____ ( ) sheets (hereinafter "Final Map"). I further hereby state that: (1) the subdivision as shown upon the Final Map is substantially the same as it appeared on the tentative map, and any approved alterations thereof; and (2) all provision of Government Code, division 2, chapter 2, and all provisions of any local ordinances applicable at the time of approval of the tentative map have been complied with.

In witness were of, I have hereby signed this Final Map this _____, day of _____, 20__.

_____

[NAME] RCE [LICENCE NO.]
CITY ENGINEER OF THE CITY OF TRACY
COUNTY OF SAN JOAQUIN,
STATE OF CALIFORNIA

CITY LAND SURVEYOR'S STATEMENT

Pursuant to Government Code Section 66442, I _____, do hereby state that I have examined the herein embodied final map and am satisfied that said map is technically correct.

_____

[NAME] [Pre-1982] RCE or LS [LICENCE NO.]
LICSNSE EXPIRES 12-31-[YEAR]

ACKNOWLEDGMENT (CORPORATION)

State of _____)
County of _____)

On _____, 200__ before me, the undersigned, a Notary Public in and for said County and State, personally appeared _____& _____, known to me (or proven to me on the basis of satisfactory evidence) to be the _____ & _____ of the corporation that executed the foregoing statement, and also known to me to be the persons who executed it on behalf of such corporation and acknowledged to me that such corporation executed the within statement pursuant to its by-laws or a resolution of its Board of Directors.

Witness my hand and official seal.

Signature: _____
NOTARY PUBLIC
IN AND FOR SAID
COUNTY & STATE

My commission expires: _____

ACKNOWLEDGMENT (PARTNERSHIP)

State of _____)
County of _____)

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me (or proven to me on the basis of satisfactory evidence) to be the persons that executed the within instrument as _____ partners on behalf of _____, the Partnership therein named and acknowledged to me that the partnership executed it.

Signature _____

My commission expires_____

ACKNOWLEDGEMENT (INDIVIDUAL)

State of _____)
County of _____) S.S.

On this _____ day of ____, 200__, before me, the undersigned, a Notary Public in and for said County and State, personally appeared _____,
personally known to me (or proven to me on the basis of satisfactory evidence) to be the person (s) that execute the within instrument, and acknowledged to me that said individual (s) executed it.

_____ _____

MY COMMISSION EXPIRES NOTARY PUBLIC IN AND FOR
THE COUNTY OF ALAMEDA
STATE OF CALIFORNIA

The undersigned, do hereby reserve to the homeowners of subdivision _____ a non-exclusive easement together with the right to construct, reconstruct, repair and maintain roads, streets or alleys and their appurtenances upon, and under the strips of land shown upon said map marked "P.A.E." or "Private Access Easement" as embraced within the exterior boundary line upon said map.

The undersigned, do hereby reserve to the Homeowners Association of subdivision _____ a non-exclusive easement together with the right to construct, reconstruct, repair and maintain, a private storm drain line and their appurtenances including the clearing of obstructions and vegetation upon and under the strips of land shown upon said map marked "P.S.D.E." or "Private Storm Drain Easement" as embraced within the exterior boundary line upon said map.

APPENDIX D

PLAN REVIEW CHECK LIST

Development Project Name _____
Development Project Number _____

Design Engineer _____
Contact Person _____
Telephone Number _____

Owner Name _____
Contact Person _____
Telephone Number _____

Developer Name _____
Contact Person _____
Telephone Number _____

Assessor's Parcel No. _____
Tentative Map Approval Date _____
Tentative Map Expiration Date _____

( ) First Check ( ) Recheck # _____

____ Sets of Final Report of Action (Conditions of Approval) (Minimum: 2)
____ Original Signed Tentative Map (Minimum: 1)
____ Copy of Original Signed Tentative Map (Minimum: 1)
____ Sets of Plans (with calculations) (Minimum: 5)
____ Sets of Storm Drainage Package (Minimum: 4)
____ Sets of Engineer's Estimate (Minimum: 3)
____ Sets of Sanitary Sewer Package (Minimum: 2)
____ Sets of Final Map Package (Minimum: 5)
____ Sets of Soils Report (Minimum: 3)
____ Sets of SWPPP (Minimum: 1 electronic to WaterResources@cityoftracy.org and 1 hard copy)
____ Sets of Erosion and Sediment Control Plan (Minimum: 3)

Preliminary Bond Estimate $_____
Preliminary Plan Review Fee @ 5.78% $_____
Final Bond Estimate $_____
Final Plan Review Fee @ 5.78% $_____

I. General

____1. Plans on 24" x 36" standard City plan sheets.
____2. North arrow and scale on each sheet. North up and/or left.
____3. Titles and numbers on all sheets and match index.
____4. Conformance to Tentative Map and Conditions of Approval, including street and R/W widths, grading, drainage, sewerage, water lines, recycled water, number and size of lots etc.
____5. Complete package has been submitted, including joint trench plans, landscape and irrigation plans, and erosion and sediment control plans.

II. Title Sheet

____1. Name of Subdivision Tract or development project.
____2. Tract Number and Assessor's Parcel Number (APN).
____3. Vicinity Map with north arrow (north up and/or left).
____4. Sheet Index, show street names.
____5. City Engineer's Signature Block.
____6. Fire Code Official Signature Block.
____7. Design Engineer Signature Block, Geotechnical Engineer's signature block on Grading Plan.
____8. General Notes per Appendix B of the Design Standards (may be on sheet 2).
____9.

III. Sheet Two (And Three If Required)

____1. Utility map showing all streets, utilities, structures, etc. and show improvement plan sheet layout. (1"= 100' scale).
____2. Drafting symbol legend, specific to project.
____3. Street typical sections shown with street name, AC, AB, and ASB thickness, curbs, sidewalks, and right of way.
____4. Structural sections shown and agree with City Standards.
____5. Curb shown.
____6. Right-of-way and street widths shown.
____7. Cross-slope shown-note relative difference of and T/C.
____8. Sidewalk shown.
____9. Pedestrian paths shown.
____10. Drainage ways shown.
____11. Temporary and permanent bench marks and descriptions.
____12. List of Abbreviations.
____13. Provide minimum three temporary benchmarks established and shown on the plans.

IV. Demolition and Abandonment Plan (If Required)

____1. Show existing buildings and structures.
____2. Existing septic tanks and leach fields shown.
____3. Existing wells shown.
____4. Show existing trees and trees to be removed.
____5. Show existing private and public utilities.
____6. Show exiting tile drains and any required mitigation.
____7. Show existing pavements and concrete flatwork.

V. Grading Plans

____1. Existing contours and spot elevations shown at grade breaks and minimum 50 feet on center shown and extended 50′ beyond project boundary. Provide a sufficient amount of contour lines to clearly represent surrounding terrain.
____2. Proposed pad grades.
____3. T/C elevations at property line extensions.
____4. T/C at grade breaks and curb returns shown.
____5. T/C at storm drain inlets shown.
____6. Storm drain lines and structures shown, including cleanouts or junction boxes.
____7. Street slopes at centerlines.
____8. Lot number, property and boundary lines shown.
____9. Show retaining wall and sound wall location and height, provide top and bottom wall elevations.
____10. Plan view of typical lot drainage. Minimum slope of drainage swales shall be 1%
____11. Section of typical lot to show property line, graded slopes, retaining walls, and fences.
____12. Show grading required for off-site drainage.
____13. Grading shown between back-of-curb or sidewalk and original ground at right-of-way line.
____14. Grading beyond right of way or project boundary to original ground/conform limits with associated construction easements.
____15. Grading conforms to adjacent properties shown such that no storm drainage is released from the site.
____16. Check no drainage across lot lines and lots to drain to streets.
____17. Maximum slopes 4:1 or per Soils Report.
____18. All pads elevations must conform to Design Standard 8.04(B).
____19. Elevations at rear of lots shown.
____20. Temporary erosion control and/or slope protection devices.

VI. Streets

A. Plan Views

____1. Wheelchair ramps shown per Standard Plans. Call out case numbers.
____2. Radius of curvature, central angle, and length shown on all street centerline curves as per Design Standard 3.06(C).
____3. Curb curve data given - central angle, length, and radius as per Design Standard 3.06(E).
____4. Scale 1″ = 40′ minimum or 1″ = 20′ if needed to adequately show improvements if required by City Engineer.
____5. Cul-de-sac radius (40′ - residential or 50′ - industrial).

____6. Property corner cutoffs used when wheelchair ramps installed, otherwise concentric with curb.
____7. R/W and street width dimensions shown.
____8. Centerline stationing at 100′ and at BC and EC of curves.
____9. Lot/parcel lines and numbers/letters shown.
____10. Cul-de-sac cross slopes from high point to gutter lip minimum 2% and Maximum 4%.
____11. Valley gutters (Standard Plan 112) – provide adequate amount of grades to clearly show flow across entire span
____12. 4′ Valley Gutter (Standard Plan 113) – provide flow line grades minimum 20′ on center.
____13. Stationing and offset on all utilities and drainage structures shown.
____14. T/C elevation shown at all drain structures and fire hydrants.
____15. All public and private easements shown and dimensioned.
____16. Location of existing and proposed underground pipes and utilities shown.
____17. Location of fire hydrants as approved by Fire Code Official.varify
____18. Street monuments and benchmarks shown.
____19. Pedestrian Paths shown. Basic grades shown.
____20. Street names shown.
____21. Stations and elevations street intersections shown.
____22. All notes and symbols standard and conforming to legend.
____23. All existing utility poles, manholes, valves, air release valves, signs, mailboxes, trees, etc. shown. Indicate those to be removed, relocated or adjusted to grade.
____24. Continuations and cross streets properly referenced (For example: Match Line See sheet # ____).
____25. Project limits.
____26. Standard street knuckle per Standard Plan 107.
____27. Street signs, traffic signs and barricades shown.
____28. Driveway locations and widths shown. 3′ vertical curb between driveways and 1.5′ to property lines. Clearance requirements per Design Standard 3.09(D).
____29. Field inspection should identify any damaged frontage improvements. Damaged improvements shall be replaced per City Standards.

B. Profiles

____1. Vertical curves designed for proper speeds per Highway Design Manual.
____2. Minimum vertical curve lengths observed (50′).
____3. Vertical scale 1″ = 2″.
____4. Vertical curve used for grade breaks greater than 2%.
____5. In cul-de-sacs, show profiles at centerline from end on T/C profile through the radius point to top of curb at end of cul-de-sac (dashed line).
____6. 2% maximum grade observed across intersections.
____7. 0.4% minimum grade observed on all streets at curb.

____8. All existing and proposed underground pipes and utilities shown; storm drain, water and sewers.
____9. Existing ground on centerline shown.
____10. Finished grade profile for top of curb shown.
____11. Centerline profiles and slopes of intersecting streets shown on to their point of intersection.
____12. Off-site profile to catch point shown where road is constructed beyond subdivision boundary (minimum 50-foot beyond project limits).
____13. Centerline stations and elevations shown at all BVC, EVC, PIVC, grade breaks, low points and high points, and TC or rim elevation at all drainage structures.
____14. All slopes in profile shown.
____15. Show all utility crossings with clearances indicated.
____16. Manhole and drop inlet invert and flowline elevations shown.
____17. Elevation at high and low points of water mains shown.

VII Sanitary Sewers

____1. System in agreement with Tentative map and Master plan.
____2. Design conforms to City Standards.
____3. Size of line shown (8″ min. main, 4″ min. lateral).
____4. Adequate cover (3′ min to finished grade - 2′ min. to sub-grade). Ductile pipe or engineered alternatives if shallower.
____5. Clearance with water main (1′ vertical, 10′ horizontal O.D.).
____6. Size, slope, length between structures, and type of pipe.
____7. Connection to existing facilities possible. Manhole installed when tying to existing lines.
____8. Extension possible. Lines to subdivision boundary.
____9. Sewer line to be located per Standard Plan 563.
____10. Curves allowed within 80% of recommendations of pipe manufacturer. Show curve data or offsets if concentric with centerline.
____11. On all curves where short pipe lengths are used, indicate clearly on plans.
____12. Top of manhole elevations shown.
____13. Stations given for manholes.
____14. Sizes of existing lines shown.
____15. Pipe types allowed - VCP only (D.I. if cover requires it).
____16. 600′ maximum distance manhole to manhole and for pipe 15″ and over, 400′ maximum spacing for pipe 12″ and under.
____17. Minimum 2 fps velocity.
____18. 0.2′ drop around corner through manhole.
____19. Bolted manhole covers for any off street manholes.
____20. In unimproved areas, manholes extended 1′ above ground.
____21. Check sanitary calculations.

____22. Laterals shown in plan and 11′ center to center separation from water services and 3′ below water if crossing (follow health department's diagram).
____23. Special approval areas shall be noted in profile (less than minimum cover and clearances).

VIII. Drainage

A. Hydrology - Hydraulics

____1. Calculations per City Design Standards and based on 10-year storm with minimum velocity of 2 fps.
____2. Calculations shall include: HGL, FL, EL, Q, A, S, V, freeboard at structures, structure losses, and tailwater assumptions.
____3. Adequacy of on-site and off-site drainage system verified.
____4. All starting water surface and tributary area calculations adequately verified.
____5. Drainage plan showing street systems, existing and proposed drainage system, slope arrows, tributary sub-areas in acres, peak flow in all pipes (1″ = 100′ preferred).
____6. All pipe and structures in tributary areas labeled to correspond with calculations.
____7. Multi-Agency Post-Construction Stormwater Standards – Project Stormwater Plan (for over 2500 square feet of impervious surfaces).

B. Easements

____1. Off-site drainage improvements (plan and profile) and accompanying easements shown. Off-site offers of dedication (plat map and legal description) for drainage easement submitted for review.
____2. Off-site work to be done but no easement required (right-of-entry submitted for review).
____3. Easement widths indicated.
____4. Easements across lots not permitted.

C. Structures

_____ 1. Max. Diameter pipes through drainage structures observed.
Standard D.I. - 24″
Manhole Base - > 24″
_____ 2. 1.00′ minimum HGL to TC.
_____ 3. Special structure calculation provided.

D. Pipe

____1. Minimum pipe slope of 0.5% observed for pipes 33″ and larger.
____2. Size, slope, length between structures, type and class or thickness of pipe shown in profiles (12″ minimum).
____3. RCP, CIPP and double-dipped bituminous spiral ribbed pipe only.
____4. Trunk lines 1.25′ behind face of curb.
____5. On all curves where non-standard pipes are to be used, indicate clearly on the plans.
____6. Outlet protection provided.
____7. 3′ minimum cover over pipe to finished grade observed (provided manufacturer specs do not require more) unless special design and calcs submitted.
____8. Curve radii allowed to within 80% of pipe manufacturer's recommendations.
____9. All curve data at centerline of pipe shown unless concentric with street then offsets allowed.
____10. Elevations, slopes and distances all mathematically correct.
____11. Match hydraulic/hydrology calculations.
____12. 600′ maximum distance manhole to manhole for pipe 30″ and greater, 400′ maximum spacing for pipe 12″ to 30″.

E. Channels

____1. Maximum velocity in earth channel verified by soils report.
____2. Channel side slopes as specified by soils report.
____3. Channel design per Drainage Master Plan.

F. Temporary Storm Drain Retention Basins

____1. Runoff volume calculations per City Design Standards.
____2. Groundwater level shown on basin section.
____3. Basin bottom 5′ above water table unless statement from soils engineer indicates range of depths then 2′ allowed.
____4. Outfall protection using riprap required.
____5. Chain link fence with slats around basin required.
____6. Ramp at 10% maximum required.
____7. Off-tract basins require an access road around the basin.
____8. Easements are required.
____9. 4:1 side slopes, or flatter.

IX. Water Lines

____1. System in agreement with Tentative Map.
____2. Design conforms to City Design Standards.
____3. Size - 8″ min. except cul-de-sacs without hydrants where 6″ is allowed.

____4. Valves (minimum 3 at a cross, 2 at a tee; every 1000′ max.).
____5. Hydrants - locations as shown on approved Tentative Map.
____6. Cover - 3′ min. to finished grade.
____7. Proper separation from sewer lines (1′ vertical, 10′ horizontal O.D.).
____8. Location - per City Standard Plan 563.
____9. Lines kept in streets.
____10. Crossings with sewer mains or laterals meet health standards.
____11. Length, size and class of pipe shown in profile.
____12. Length shown as distance between crosses or tees.
____13. Invert elevations shown at grade breaks, high points, and low points.
____14. Sizes of all existing lines shown.
____15. Top of curb at hydrant locations shown.
____16. Curves allowed to within 80% of pipe manufacturers recommendations. Curve data shown unless concentric with street improvements where slowing offsets are acceptable.
____17. Combination Air Valves and Blow-offs behind walks.
____18. Air and vacuum valves at high points and elevated cul-de-sacs if difference in elevation greater than ½ pipe diameter.
____19. Connection to existing facilities.
____20. At points of future expansion install temporary blowoff with valve.
____21. Lines extended to tract boundaries and along frontage.
____22. House services shown in plan (11′ center to center separation from sewer lateral).
____23. Fire hydrants maximum spacing - 500′ residential and 300′ other. Hose lay lengths 250′ residential and 150′ other. Cul-de-sacs within 200′ of radius point.

X. Street Lighting

____1. Shown on 1″ = 100′ scale plan.
____2. Cul-de-sacs - street light required if longer than 100′. Midpoint light required if longer than 300 ′.
____3. Residential streets - evenly spaced at 250 feet maximum. 100 watt on 28′ - 6″ poles with 12′ arms.
____4. Collector and Industrial Streets - evenly spaced at 250 feet maximum. 150 watt on 28′ - 6″ poles with 12-foot arms.
____5. Arterial Streets - evenly spaced at 170 feet maximum. 200 watt on 30′ - 0″ poles with 15 foot arms.
____6. Wattage and pole heights indicated on plans.

XI. Engineer's Cost Estimate

____1. Verify that unit costs agree with City Standard Costs. Check that costs are current version.

____2. Verify quantities of all items.
____3. Review with plans to determine if there are missing items.
____4. 10% contingency required.
____5. Grading quantities shown - lump sum not acceptable.
____6. Driveways included as separate item.
____7. Sidewalk on lineal foot and not included in curb and gutter item.
____8. Increase costs of facilities installed in existing streets by 50%.
____9. Check groundwater depth. If pipes installed below water table increase costs by $10 per lineal foot.
____10. For each 20 electroliers, 1 extra is required.
____11. When resubmitted verify that all changes in plans are reflected in the estimate.

XII. Landscape

A. Landscape Improvement Plans

____1. Three prints of plans on 24″ x 36″ with 1″ margin on City's title block, scale 1:20 or 1:10 (when public right-of-way or landscape maintenance district is involved).
____2. Three prints each of Title Sheet and Map.
____3. Three Grading and Drainage Plans.
____4. Two copies of quantity and cost estimate for public improvements.
____5. Two non-interference letters from public utility companies with any existing easements or facilities.
____6. Two copies of the preliminary soils report from Soils Lab.
____7. Two copies of calculations for shade structures.
____8. Two copies of water conservation concept statements.
____9. Two copies of calculations of the maximum applied water allowance.
____10. Two copies of calculations of the estimated applied water use.
____11. Two copies of calculations of the estimated total water use.
____12. Two copies of irrigation controller schedules (establishment & long term).
____13. Two copies of certificates of substantial completion (to be submitted after installation of landscaping).

B. Site Improvement Plans/Grading Plans

____1. Three prints of plans on 24″ x 36″ with 1″ margin on City's standard title block showing existing and new public sewer lines.
____2. Copy of the preliminary soils report.
____3. Two copies of the on-site and off-site drainage study.
____4. Two copies of any other calculations.
____5. Print of boundary survey or map of property, or an acceptable legal description if a map is not available.

____6. Non-interference letter from public utility companies, with any existing facilities/easements.

Note: All landscape design and details must conform to City of Tracy's Parks and Streetscapes Standard Plans, current edition. Final submittal must be made on mylar sheets with licensed California Landscape Architect and original signature on wet stamp for each sheet.

APPENDIX E

SANITARY SEWER DESIGN PROCEDURE

The following procedure is used in determining design Q's for City of Tracy Projects.

Procedure:

1. A plan, preferably 1" = 100' scale, showing the proposed street system, tributary sub-areas, existing and future tributary areas outside of the project limits, zoning, projected land use, and any features affecting the system design.

2. Determine and show the tributary sub-areas to the nearest 0.1-acre.

3. Considering all criteria (available slope, cover and design standards), establish pipe size and slope, then determine velocity and pipe capacity.

APPENDIX F

STORM DRAIN DESIGN EXAMPLE

The following procedure, BASED ON THE Rational Formula Q = CIA in conjunction with the City of Tracy Design Standards, is used in determining design Q's for City of Tracy projects.

Procedure:

1. A plan, preferably 1" - 100' scale, showing the proposed street system, existing and proposed drainage systems and delineating tributary sub-areas.

2. Assume initial time of concentration (T_i); roof to gutter runoff time, normally 20 minutes for residential development and 10 minutes for commercial or industrial areas.

3. Calculate travel time (T_t) to the first inlet. Assume average velocity in curb and gutter to be 1.5 feet per second.

4. The time of concentration (T_c) to the inlet is then the sum of the initial time of concentration and the travel time. $T_c = T_i + T_t$

5. Determine "I", rainfall intensity in inches per hour, for a time equal to the time of concentration (T_c) from the Rainfall Intensity Curve, Figure 5-1 of these Design Standards.

6. Determine "C", coefficient of runoff using C values given in the City of Tracy Design Standards, Section 5.04(A) (1).

7. Determine "A", the area of the tributary sub-areas to the nearest 0.1-acre.

8. Compute Q = CIA, where Q equals the peak flow in cubic feet per second.

10. Considering all criteria (available slope, cover, hydraulic grade line, etc.), establish pipe size and slope, and then determine pipe velocity and travel time (T_t) required to carry the above Q to the next M.H. inlet or M.H. confluence. Use Manning's "n" of 0.013 for all pipes.

APPENDIX G

UNIT PRICE LIST FOR LAND DEVELOPMENT PROJECTS		
Description	**Unit**	**Unit Price**
Site Preparation and Grading		
Clearing and Grubbing	Acre	$500.00
Remove exist pavement	SF	$1.00
Remove exist pavement	CY	$25.00
Remove concrete sidewalk	CY	$15.00
Remove concrete curb and gutter	CY	$15.00
Remove concrete underground R.C.C. structures	CY	$30.00
Remove concrete culverts	LF	$10.00
Remove exist abandoned utilities	LF	$10.00
Tree removal	EA	$150.00
Remove barricade	EA	$500.00
Earthwork	CY	$2.00
Imported fill	CY	$12.00
Finish lot grading	EA	$1,000.00
Retaining wall, < 2-ft	LF	$30.00
Retaining wall, < 3-ft	LF	$40.00
Tree protection	EA	$300.00
Tree planting	EA	$500.00
Erosion Control		
Silt fence	LF	$6.00
Straw bale barrier - complete	EA	$200.00
Stabilized construction entrance	EA	$1,000.00
Erosion control	Acre	$2,000.00
Water		
6" DIP	LF	$18.00
6" PVC	LF	$15.00
8" DIP	LF	$22.00
8" PVC	LF	$18.00
12" PVC	LF	$30.00
16" DIP	LF	$40.00
16" PVC	LF	$36.00
6" valve	EA	$650.00
8" valve	EA	$750.00
12" valve	EA	$1,200.00
12 " b'fly valve	EA	$1,500.00
16" valve	EA	$2,300.00
Hydrant bury, valve, and tee	EA	$2,500.00
Connect to exist water - incl isolation ass'y	EA	$2,000.00
1" service to new water	EA	$400.00

UNIT PRICE LIST FOR LAND DEVELOPMENT PROJECTS		
Description	**Unit**	**Unit Price**
1" service to exist water	EA	$700.00
2" blowoff	EA	$800.00
Air release valve	EA	$1,000.00
Steel casing	LF	varies $2.00 per inch of diameter
Corrosion monitoring test station	EA	varies
Sanitary		
6" VCP	LF	$15.00
6" PVC	LF	$12.00
8" VCP	LF	$22.00
8" PVC	LF	$20.00
10" VCP	LF	$25.00
10" PVC	LF	$22.00
12" VCP	LF	$30.00
12" PVC	LF	$25.00
15" PVC	LF	$40.00
18" PVC	LF	$50.00
Sanitary sewer manhole - Type 1	EA	$2,000.00
Sanitary sewer manhole - Type 2	EA	$2,200.00
Sanitary sewer manhole - Type 3	EA	$2,500.00
Sanitary sewer manhole - deep	EA	$4,000.00
Drop manhole	EA	$3,000.00
60" diameter manhole	EA	$4,000.00
Lamphole	EA	$500.00
Clean out	EA	$500.00
Connect to exist	EA	$1,000.00
Lateral on new mains	EA	$400.00
Lateral on exist mains	EA	$700.00
Lateral	EA	$400.00
Lateral - deep	EA	$1,000.00
Plug end	EA	$200.00
Storm		
Field inlet	EA	$1,200.00
Catch basin - Type 1	EA	$1,500.00
Catch basin - Type 2	EA	$1,800.00
Storm drain manhole - Type 1	EA	$2,000.00
Storm drain manhole - Type 2	EA	$2,500.00
Storm drain manhole - Type 3	EA	$2,800.00
60" manhole	EA	$3,000.00
72" manhole	EA	$4,000.00
12" RCP	LF	$22.00
15" RCP	LF	$25.00

UNIT PRICE LIST FOR LAND DEVELOPMENT PROJECTS		
Description	**Unit**	**Unit Price**
18" RCP	LF	$33.00
24" RCP	LF	$40.00
30" RCP	LF	$50.00
36" RCP	LF	$60.00
48" RCP	LF	$90.00
60" RCP	LF	$125.00
Plug end	EA	$200.00
Streets		
6-in vert curb and gutter	LF	$10.00
4-1/2" roll curb and gutter	LF	$8.00
8" median curb	LF	$10.00
Sidewalk, incl ramp and return	SF	$4.00
Sidewalk	SF	$2.50
HC ramp - labor	EA	$750.00
HC ramp	EA	$750.00
Curb return, incl. ramp	EA	$1,500.00
Mid-block HC ramp	EA	$750.00
Residential driveway apron	SF	$3.00
Driveway approach	EA	$500.00
Commercial driveway - Type 27	EA	$1,500.00
Commercial driveway - Type 38	EA	$2,000.00
Fine grading	SF	$0.20
0.10-ft overlay	SF	$1.00
0.25-ft overlay	SF	$1.50
2.5" A.C./4" A.B.	SF	$2.40
3" A.C./5" A.B.	SF	$3.00
5" A.C./12" A.B.	SF	$5.00
3" A.C.	SF	$1.50
3-1/2" A.C.	SF	$1.76
4" A.C.	SF	$2.00
5" A.C.	SF	$2.50
6" A.C.	SF	$3.00
7" A.C.	SF	$3.50
8" A.C.	SF	$4.00
9" A.C.	SF	$4.50
10" A.C.	SF	$5.00
11" A.C.	SF	$5.50
7" A.B.	SF	$1.40
9" A.B.	SF	$1.80
11" A.B.	SF	$2.20
Sawcut	LF	$1.00
A.C. dike	LF	$5.00

UNIT PRICE LIST FOR LAND DEVELOPMENT PROJECTS		
Description	**Unit**	**Unit Price**
Grind	SF	$0.25
Fog seal	SF	$0.20
Slurry	SF	$0.50
2” AC Overlay	SF	$0.85
Street lights		
100-watt	EA	$2,000.00
150-watt	EA	$2,200.00
200-watt	EA	$3,000.00
Street lights (200 watt)	EA	$3,000.00
Elect panel	EA	$1,500.00
Installation of pumps	EA	varies depending on the pump size
Miscellaneous		
Street name sign	EA	$250.00
Traffic sign	EA	$250.00
Stop sign with street name sign and striping	EA	$500.00
Traffic signal	EA	$250,000.00
Fiber conduit	EA	$12,500.00
Delineators	EA	$200.00
Bike path	LF	$12.50
Street monument	EA	$250.00
Survey monument	EA	$500.00
Timber barricade	EA	$1,500.00
Landscape with irrigation	SF	$6.00
6" high fencing	LF	$25.00
Fencing removal	LF	$5.00
Masonry wall	LF	$60.00
Retaining wall	LF	$90.00
Cobblestone (grouted)	SF	$12.00

Please note the unit prices will be reviewed annually and will be adjusted at a minimum to reflect inflation as reported in the Engineer News Record (ENR).

Think Inside the Triangle™

City of Tracy

Engineering Design & Construction Standards



STANDARD SPECIFICATIONS

Development Services Department
Resolution No. 2020-XXX ♦ February 18, 2020

Note: Only the sections of the Standard Specifications for Public Works Construction (SSPWC) and State of California Department of Transportation Standard Specifications referenced in these City of Tracy Standard Specifications apply. All other sections of the SSPWC and State of California Department of Transportation Standard Specifications are not applicable to the City. Whenever a conflict exists between these City Standard Specifications and either the SSPWC or the State of California Department of Transportation Standard Specifications, the City of Tracy Standard Specifications shall govern.

STANDARD SPECIFICATIONS
Resolution 2019-

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PART 1
GENERAL REQUIREMENTS

SECTION 100 - GENERAL

100.01 Definitions – Whenever in these Standard Specifications the following terms, names or pronouns are used, the intent and meaning shall be interpreted as follows.

1. *Agreement* – The written contract between the City and the Contractor covering the performance of the Work.

2. *City* - City of Tracy, California, acting through the City Council or other duly authorized agents.

3. *City Council* - The City Council of the City of Tracy.

4. *City Regulations* - All written laws, rules, and policies established by the City, including those set forth in the General Plan, Tracy Municipal Code, ordinances, resolutions, policies, procedures, and City Design Documents (including the Standard Plan, Standard Specifications, Design Standards, and relevant Public Facility Master Plans).

5. *Contractor* - An individual, partnership, corporation, developer, joint venture, subdivider or other legal entity entering into a contract or agreement with the City to perform the Work.

6. *Engineer* - The City Engineer of the City of Tracy, acting either directly or through properly authorized agents acting within the scope of the particular duties delegated to them.

7. *Work* - The construction and services required as amended by modifications, whether completed or partially completed, including all labor, materials, equipment, tools, and services provided or to be provided, by the Contractor to fulfill the Contractor's obligations.

100.02 Reference to Other Specifications – Whenever in these Standard Specifications or on the plans, reference is made to the Standard Specifications for Public Works Construction (SSPWC) "Green Book", the Standard Plans for Public Works Construction, the State of California Department of Transportation Standard Specifications, or the State of California Department of Transportation Standard Plans, the current edition shall apply. Whenever in these reference specifications, the following terms are used, they shall be understood to mean and refer to the following:

1. *Department of Public Works or Department of Transportation* - shall mean the City of Tracy, Development Services Department.

2. *Director of Public Works* - shall mean the City of Tracy, City Engineer

3. *Engineer* - shall mean the City of Tracy, City Engineer.

4. *State* - shall mean the City of Tracy.

100.03 Application – These City of Tracy Standard Specifications are to be used in conjunction with City of Tracy Standard Plans, (including the City of Tracy Parks and Streetscape Standard Plans) and may be modified or supplemented by other permits, agreements, conditions of approval or other City requirements, as stipulated by the City Engineer.

100.04 Notifications – The Contractor shall notify the City Engineer at least two (2) working days prior to commencing Work, unless otherwise provided, and shall keep the Tracy Police Department and Fire Department informed daily regarding excavations, barricades and detours in roadway areas.

The Contractor shall notify Underground Service Alert (USA) at (800) 642-2444, at least (3) three working days in advance of the start of any excavation.

100.05 Permission to Work in Public Right of Way – No work shall be started in public streets, easements, or right-of-way until such time as a valid Encroachment Permit is issued by the City Engineer of the City of Tracy.

100.06 Insurance – Contractor shall procure and maintain for the duration of the work, General Liability, Automobile and Workers Compensation insurance against claims for injuries to persons, or damages to property which may arise from or in connection with the performance of the work by the Contractor, his agents, representatives, employees or subcontractors. Coverage shall be at least as broad as that defined in Appendix B or shall be as stipulated by any Agreement entered into by the Contractor with the City.

100.07 Hold Harmless and Indemnification Clause – To the fullest extent allowed by law, Contractor shall indemnify, defend and hold harmless the City (including its elected officials, officers, agents, and employees) from and against any and all claims resulting from or arising out of the performance of the work by the Contractor (including Contractor's agents, representatives, contractors, subcontractors, and employees), except only for those claims arising from the established willful misconduct or active negligence of the City. The exact indemnification language to be included in the Agreement, to be entered into between the Contractor and the City, is shown in Appendix B.

SECTION 101 – SCOPE AND CONTROL OF THE WORK

101.01 Removal of Defective and Unauthorized Work – Should the Contractor deliberately proceed with any portion or phase of construction which is obviously incorrectly indicated on the plans or documents, he shall be responsible for any corrective measures required to make adequate repairs or adjustment. This shall include any work done beyond the lines and grades shown on the plans or established by the Engineer, or any extra work done without written authority.

All work that has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed for such removal or replacement.

101.02 Shop Drawing Submittals - When shop drawings, submittals or samples are required or requested by the Engineer, they shall be prepared in accordance with Construction Management best practices. Unless otherwise specified, six (6) copies of all submittals shall be provided to the Engineer for review at least 30 days before approved submittals will be required for the work. One (1) set will be returned to the Contractor marked "No Exceptions Taken", "Furnish as Corrected", "Revise and Resubmit", or "Rejected". If changes are required, six (6) copies of corrected shop drawings shall be resubmitted to the Engineer.

For items requiring shop drawings, no materials shall be furnished, and no work shall be performed, until the drawings have been favorably reviewed. Shop drawings shall be of a size and scale to clearly show all necessary details.

Favorable review of the shop drawings by the Engineer is interpreted to mean that there is substantial and acceptable conformance with the plans or documents describing the work, but details of design may not necessarily be checked for adequacy or accuracy. Such acceptance shall not relieve the Contractor from the responsibility for errors or omissions in the shop drawings or from deviations from the plans unless such errors, omissions, or deviations were specifically called to the attention of the Engineer in writing. The Contractor shall be responsible for the correctness of the shop drawings, for shop fits and field corrections, and for the results obtained by the use of such plans.

101.03 Construction Staking - Stakes or marks shall be set by a California Licensed Surveyor or a California Registered Civil Engineer to establish the lines and grades required for the completion of the work.

Contractor shall furnish horizontal control and cut sheets to the Engineer immediately upon the setting of construction stakes. Upon completion, all work shall conform to the lines, elevations, and grades shown on the plans.

101.04 Inspection of Work and Materials - All work is subject to inspection and approval of the Engineer, and unless otherwise authorized, work shall be done only in the presence of the Engineer. Any work done without proper inspection will be subject to rejection. The Engineer shall at all times have access to the work during its construction at shops and yards as well as the project site.

Unless otherwise specified, inspection may be required at the source for such typical materials and fabricated items as bituminous paving mixtures, structural concrete, metal

fabrication, metal casting, welding, concrete pipe manufacture, protective coating application, and similar shop or plant operations.

Standard items of equipment such as electric motors, conveyers, elevators, plumbing fixtures, etc., are subject to inspection at the job site. Special items of equipment such as designed electrical panel boards, large pumps, sewage plant equipment, etc., are subject to inspection at the source, normally only for performance testing.

If a portion of the work is covered contrary to the Engineer's request or direction, or contrary to the requirements of the plans it must, if required in writing by the Engineer, be uncovered for the Engineer's observation.

The Contractor shall notify the Engineer before noon of the working day before inspection is required. In the event the Contractor elects to work beyond the specified hours of work, or on a Saturday, Sunday or recognized City holiday, the Contractor shall notify the Engineer at least forty-eight (48) hours in advance to seek approval and if approved, shall reimburse the City for the cost of overtime inspection.

101.05 Testing of Work and Materials - Unless otherwise stated in the Agreement, all required testing will be performed directly by an independent laboratory, coordinated and paid for by the City. Contractor shall reimburse the City for the cost of testing in accordance with the terms of the Agreement.

101.06 Materials and Workmanship - All materials, parts and equipment furnished by the Contractor in the work shall be new, high grade, and free from defects. Workmanship shall be in accordance with generally accepted standards. Materials and workmanship shall be subject to the Engineer's approval.

Materials and workmanship not conforming to the requirements of these Standard Specifications shall be considered defective and will be subject to rejection. Defective work or material, whether in place or not, shall be removed immediately from the site by the Contractor, at his expense, when so directed by the Engineer. Used or secondhand materials, parts and equipment are permissible only if approved by the Engineer.

101.07 Protection of Work and Materials - The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality and fitness of materials to be used in the Work. Stored materials shall be reasonably accessible for inspection. The Contractor shall also adequately protect new and existing work and equipment for the duration of the Agreement.

101.08 Certification – The Engineer may waive material testing requirements of the Specifications and accept the manufacturer's written Certificate of Compliance or test data demonstrating that the materials to be supplied meet the requirements of the specifications. A Certificate of Compliance is acceptable for authorizing the use of steel pipe in sizes less than 18 inches and vitrified clay, cast iron, polyvinyl chloride (PVC), or ductile iron pipe in all sizes. All materials used on the basis of a Certificate of Compliance may require sampling or testing at the request of the City at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of the responsibility for incorporating materials in the Work which conforms to the requirements of the Agreement.

SECTION 102 –RESPONSIBILITIES OF THE CONTRACTOR

102.01 Contractor's Responsibility for the Work - The Contractor shall be responsible for assuring that all portions of the work, including those portions previously completed under the Agreement, conform to the requirements of the City and are ready to receive subsequent work.

The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.

102.02 Laws to be Observed - The Contractor shall keep himself fully informed of, and at all times observe and comply with, all Federal, State and County laws, all municipal ordinances and regulations of the City of Tracy, and all orders and decrees of bodies having jurisdiction over the work.

1. Non-Discrimination – Attention is directed to Labor Code, Section 1735 which reads as follows: "A contractor shall not discriminate in the employment of persons upon public works on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every contractor for public works who violates this section is subject to all the penalties imposed for a violation of this chapter.."

2. Hours of Labor – Pursuant to Labor Code, Sections 1810, eight (8) hours labor shall constitute a legal day's work and as such, the Contractor shall not permit any worker to labor more than eight (8) hours during any one (1) calendar day or more than forty (40) hours during any one (1) calendar week, except as permitted by law and in such cases only upon such conditions as are provided by law.

102.03 Permits and Fees – The Contractor shall procure all permits and licenses, including a City business license, pay all charges and fees, and give all notices necessary for lawful prosecution of the work. The Contractor shall comply with the provisions of said permits, licenses and other authorizations.

102.04 Coordination and Cooperation - Construction work by utility companies or other Contractors may be needed or may be occurring simultaneously within or adjacent to the limits of work for this project. The Contractor shall coordinate and cooperate with all other Contractors and utility companies throughout the duration of this project to avoid delays and minimize interference and conflicts. Cooperation will be required in the arrangement for the storage of materials, and in the detailed execution of the work. It is the Contractor's responsibility to ascertain the nature of work by others, coordinate his work, and install, modify, and maintain traffic control as necessary to avoid interferences and delays on the construction activities. Failure of the Contractor to keep informed of the work progressing on the site and failure to give written notice of lack of progress or defective workmanship by others shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with his own work.

Where work of one trade joins or is on the other's work, there shall be no lack of continuity or discrepancy when work is completed. In conforming one kind of work with another, marring or damaging other work will not be permitted. Should improper work of any trade be covered by

another which results in damage or defects, the whole work affected shall be made good by the Contractor.

The City reserves the right to perform work or allow others to perform work, as necessary, within or adjacent to the limits of this project, at any time. If the Contractor or any of his Subcontractors or employees cause loss or damage to any separate contractor on the site, the Contractor, by agreement or arbitration, if he deems it necessary, will settle any claim for such loss or damage. If such separate contractor shall sue the City, on account of any loss so sustained, the City shall notify the Contractor, who shall indemnify and save harmless the City against any loss or damage arising therefrom, including the cost and expense of defending any such suit.

102.05 Use of Premises - The Contractor shall confine construction activities to the project limits; which shall consist of right-of-way, easements and/or property owned by the City of Tracy. With prior approval of the Engineer, adjacent street right-of-way may also be utilized for day-to-day operations. Unless approved by the Engineer, no storage of materials and equipment will be allowed to remain within the right-of-way during non-working hours, on the weekends, or during holidays.

Each day, after the completion of construction operations, unless otherwise approved by the Engineer, the project limits shall be secured and made accessible to the public. All excess materials and equipment not protected by approved traffic control devices (such as k-rails) shall be relocated to a staging area or demobilized. Trench spoils shall be off-hauled daily and open excavations shall be protected with steel plates.

Personnel of Contractor and Subcontractors shall not occupy, live upon, or otherwise make use of the project site during any time that work is not being performed at the project site, except as otherwise provided for in the Agreement for issues such as site security.

102.06 Construction Staging and Field Office - If additional space beyond the construction limits is necessary for staging, the Contractor shall, at his own cost and initiative, make special arrangements. For use of private property, the Contractor may also need to secure a Use Permit from the City's Planning Division.

102.07 Site Security - Contractor shall be responsible for the care and custody of work and the site, including all necessary security provisions, on a 24-hour per day basis throughout the entire term of the Agreement. The Contractor shall provide and maintain storage facilities and employ such measures as will preserve the specified quality and fitness of materials to be used in the work.

102.08 Construction Water - The Contractor is responsible for obtaining the required permit from the City and providing an approved water truck, installed with backflow prevention devices, prior to obtaining any construction water from City hydrants.

102.09 Project Site Maintenance

1. Disposal of Material - Unless otherwise shown on the plans or specified herein, all excess materials and materials removed from existing improvements shall become the property of, and be disposed by the Contractor in a safe and legal manner. No material shall be placed on private or public property without prior approval from the City and the property

owner. The Contractor shall not allow any refuse, excavated material, surplus concrete or mortar, or any associated washings, to be disposed upon paved streets, into manholes or into the City's storm drain system.

Contractor shall establish a system for daily collection and disposal of waste materials from construction areas and elsewhere on the site. Contractor shall handle waste materials that are hazardous, dangerous, or unsanitary separately from inert waste by containerizing appropriately. Burning or burying of waste materials on site will not be permitted.

2. Cleanup and Dust Control – at all times during construction, including weekends and holidays, and throughout all phases of construction, including work suspensions and until final acceptance of the project, the Contractor shall keep the work site clean and free from rubbish, debris, and prevent the formation of an airborne dust nuisance.

Materials and equipment shall be removed from the site as soon as they are no longer necessary. Upon completion of the work and before final inspection, the entire site shall be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance.

The Contractor shall abate dust nuisance by cleaning, sweeping, and sprinkling with water, those excavated areas of dirt or other materials which are prone to causing dust, within both the project site and the storage or staging area. Contractor shall provide all necessary dust control equipment and labor to comply with dust control laws, ordinances, and regulations.

The Contractor shall be required to apply water for dust control immediately during construction efforts and within one (1) hour after notification by the Engineer that an airborne nuisance exists.

All hauling trucks or other construction vehicles leaving the site shall be cleaned of mud or dirt clinging to exterior body surfaces or wheel rims before traveling on City streets outside the work limits. All trucks coming to or leaving the site with materials or loose debris shall be loaded in a manner, which will prevent the dropping of materials or debris on City streets. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately at the Contractor's expense.

When construction operations cause dirt to be deposited on public streets, the Contractor shall immediately remove such material. Streets shall be cleaned by street sweeping, rather than flushing, so as to prevent mud from entering the storm drain system.

Excess excavated material shall be removed from the site immediately. Sufficient material may remain for use as backfill if permitted by the specifications. Forms and form lumber shall be removed from the site as soon as practicable after stripping.

Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend work until the condition is corrected.

3. Air Pollution Control - The Contractor shall not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.

4. Noise Control - The Contractor shall make every reasonable effort to control noise generated as a result of construction to the satisfaction of the Engineer. Use of an air compressor, jackhammer or other loud, vibrating sound generating device shall be limited to operations between the hours of 8:00 a.m. and 4:30 p.m. unless otherwise authorized by the Engineer.

5. Vermin Control - At the time of acceptance, structures entirely constructed under the Agreement shall be free of rodents, insects, vermin and pests. Necessary extermination work shall be performed by a licensed exterminator in accordance with requirements of governing authorities. The Contractor shall be liable for injury to persons or property and responsible for the elimination of offensive odors resulting from extermination operations.

6. Sanitation - The Contractor shall provide and maintain enclosed toilets for the use of employees engaged in the work. These accommodations shall be maintained in a neat and sanitary condition. They shall also comply with all applicable laws, ordinances and regulations pertaining to the public health, sanitation, and accessibility of dwellings and camps.

7. Wastewater - Wastewater systems shall not be interrupted. Should the Contractor disrupt existing sewer facilities, the Contractor shall immediately notify the Engineer, and the Contractor shall establish a plan, subject to the approval of the City, to convey the sewage in closed conduits and disposed of it back into the sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.

8. Temporary Light, Power and Water - The Contractor shall furnish, install, maintain, and remove all temporary light, power, and water, including piping, wiring, lamps, and other equipment, necessary for the work. The Contractor shall not draw water from any City water source without first obtaining a permit from the City.

9. Storm Water Pollution Control – Storm Water Pollution Control work shall consist of following Best Management Practices (BMP) for storm water pollution prevention, submitting a Storm Water Pollution Prevention Plan (SWPPP) in compliance with all NPDES requirements, and constructing those facilities which may be required to provide prevention, control, and abatement of water pollution.

In compliance with State and Federal regulations on construction storm water management and non-point source pollution control, no pollutants will be allowed to enter the storm drainage system. The Contractor shall be responsible for containing and removing any waste from the Contractor's construction operations using the appropriate BMP. The Contractor shall be responsible for cleaning catch basins of solid or liquid waste materials originating from the Contractor's operation before this material migrates further into the storm drain system. Violation of this provision shall cause the City to issue a stop-work notice and take necessary action to require the Contractor to correct and comply with regulations.

All construction efforts shall be conducted in a manner which prevents the release of hazardous material or hazardous waste into the soil or groundwater, and minimizes the discharge of pollutants into the storm drain system.

102.10 Protection and Preservation of Property - The Contractor shall be responsible for the protection of public and private property adjacent to the work.

Due care shall be exercised to avoid damage to existing roadway improvements and facilities, adjacent property, roadside trees, lawn and shrubbery not designated for removal, pole lines, fences, signs, survey markers and monuments, buildings and structures, conduits, pipe lines under or above ground, sewer and water laterals, and any other improvements or facilities within or outside the limits of construction. As ordered and approved by the Engineer, the Contractor shall provide and install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored to a condition as good as when the Contractor entered upon the work, or as good as required by the Agreement.

Existing striping damaged during construction within and adjacent to the project site shall be replaced with thermoplastic. Partially damaged striping (such as what might occur trenching through a pavement legend), shall be replaced in their entirety.

Any survey monuments within the construction limits and at risk of disturbance during the prosecution of the Work shall be referenced by a licensed Land Surveyor, as required by State law. The licensed Land Surveyor shall replace monuments removed or disturbed by Contractor's activities and file appropriate corner records with the County Surveyor.

The fact that any such improvement or facility is not shown upon the plans shall not relieve the Contractor of his responsibility under this Section. It shall be the Contractor's responsibility to ascertain the existence of any underground improvements or facilities indicated on the plans, indicated by locating services, or as evidenced by facilities visible in the field.

102.11 Restoration of Adjacent and Existing Improvements - Contractor shall do all cutting, fitting, or patching of the work required to make all parts of the work come together properly with existing and adjacent conditions.

Unless otherwise provided, the Contractor shall repair or replace all existing improvements (e.g., curbs, sidewalks, driveways, fences, signs, utilities, street surfaces, structures, etc.) damaged or removed as a result of his operations. Repairs and replacements shall be at least equal to existing improvements, and shall match in terms of condition, finish and dimension.

All traffic signs and street signs within the limit of work necessarily removed during the various phases of operations shall be temporarily reset by the Contractor at or near the original location upon completion of each phase of construction operations. Prior to removal of all traffic control signs, the Contractor shall take photographs of the site which show the existing location of these signs so that upon completion the photographs will aid in resetting the signs at or near their original location. Traffic control signs and street signs will be replaced upon completion of the work and the cost of removal and replacement will be included in various bid items and no separate payment will be made. Rural type mail boxes shall be maintained by the Contractor in a manner satisfactory to the property owner and postal service, and the Contractor shall relocate the same as soon as possible to a permanent location in accordance with postal regulations and in a location acceptable to the property owner.

102.12 Archeological Remains - If archeological remains are uncovered during excavation, earthwork within 100 feet of these materials will be stopped until a professional

archeologist (SCA) and/or the Society of Professional Archeology (SOPA) has had an opportunity to evaluate the significance of the find and suggest appropriate mitigation measures.

102.13 Access to Private Property - The Contractor shall schedule and perform operations so as to minimize disruption of access to private property. Prior to blocking access to any private driveway or parking lot entrance, the Contractor shall notify the resident, business owner or tenant of pending closure and allow residents to remove vehicles. During non-working hours no driveway, house or parking lot shall be denied access to a public roadway.

The Contractor shall coordinate with the adjacent property owners and businesses and maintain vehicle and pedestrian access to their properties at all times. Temporary access ramps, fencing, or other measures shall be provided as needed.

102.14 Public Convenience and Traffic Control – The Contractor shall provide for safe movement of all vehicular, bicycle and pedestrian traffic through and around the construction operations with as little inconvenience and delay as possible. The Contractor shall have no amount of work under construction other than what he can properly prosecute with due regard to the rights and convenience of the public.

Proper conveyance of vehicular traffic and pedestrians through the work area depends upon navigating under unexpected situations. The means of clarifying such conditions to the public include the Contractor's use of signs, flagmen, pavement markings, barricades, lights, cones and delineators. No one standard sequence of signs or control devices will suit all conditions which may result from construction operations. Even for the same work, the conditions may vary from hour to hour, requiring adjustment and revisions of the traffic control in effect. The traffic control requirements specified herein are therefore intended to establish general principles to be observed in the control and regulation of traffic through and around the construction operations anticipated for this project. The requirements set forth in this Section represent the minimum traffic control requirements imposed and the Contractor shall be solely responsible for providing the full extent of traffic control measures that are necessary. Only individuals trained in the principles of implementing traffic control and/or traffic control flagging shall be assigned that responsibility at the work site.

1. Traffic Control Plan – The Contractor shall submit a Traffic Control Plan to clearly describe proposed traffic control measures. The plan shall be generally in accordance with the illustrations included in the "Manual of Uniform Traffic Control Devices" and the "Work Area Traffic Control Handbook", (Building News Incorporated P.O. Box 3031, Terminal Annex, Los Angeles, CA 90051). The submittal shall consist of scaled drawings for each situation anticipated to be encountered, i.e., intersections, mid-block (each during working and non-working hours), etc. The drawings shall show signs, traffic control devices and flagmen as required. Depending upon its complexity, the Engineer may require the traffic control plan to be stamped by a licensed Civil or Traffic Engineer.

The Traffic Control Plan shall be directed equally to the regulation and protection of non-vehicular traffic including pedestrians, bicyclists, joggers, skaters, skateboarders, etc. The Contractor shall provide for the protection and separation of non-vehicular traffic from construction operations at all times. No work involving the implementation of traffic control shall begin until the Engineer has favorably reviewed the traffic control plans. The Contractor may implement a revised Traffic Control Plan only with subsequent review and acceptance by the Engineer.

2. Traffic Control Devices - Traffic control devices shall be provided in sufficient quantities and types as required to provide safe and adequate traffic control. During hours of darkness, approved lights and/or flares shall be included, in proper working order, to illuminate signs and hazards and alert approaching traffic. Barricades shall be furnished and maintained along all open trenches in contact with traffic. No work may begin on any day or at any time before traffic control devices have been placed, test driven and, if required, adjusted and revised. All traffic control devices shall be placed in accordance with the Manual of Uniform Traffic Control Devices and the Contractor's favorably reviewed traffic control plans. Locations of devices shall be adjusted to suit the conditions and circumstances of each detour situation. In all cases, signs shall be placed to most effectively convey their messages to approaching traffic.

The Contractor shall maintain all traffic control devices, at proper locations and in proper working order, at all times during construction operations and whenever a hazard resulting from Contractor's operations exists. The Contractor shall adjust and revise traffic control devices, placement, etc., to suit changing conditions around construction operations. Traffic control devices shall remain in place at all times, as required to alert approaching traffic of upcoming hazards. After hazards have been removed, all traffic control devices shall be removed. Temporary signs shall be removed or their messages covered.

Daily traffic control measures shall continue until cleanup activities have been satisfactorily completed and all of the Contractor's equipment has been removed from the traveled way.

3. Traffic Control Detours - The Contractor shall direct, divert and detour traffic through, around and adjacent to construction operations in accordance with the traffic control plans specified in the plans or in accordance with the Contractor's favorably reviewed traffic control plans.

(a). Field Review of Detours - Immediately after traffic control devices have been placed, the detour shall be test driven by the Contractor's Superintendent. The test drive shall include approaches to the detour from each possible direction, and traverse the full length of each detour route. The Contractor shall adjust and revise all traffic control devices as determined to be required by the test drive and the test drive shall be repeated, if deemed necessary. The Contractor shall provide additional traffic control devices as required to maintain the flow of traffic throughout construction operation.

(b). Diverting Bicycle and Pedestrian Traffic – Whenever construction operations obstruct the flow of bicycle and pedestrian traffic or present a hazard to bicycles and pedestrians, the Contractor shall take appropriate action to protect and separate bicycles and pedestrians from the work area. Such action may include placement of barricades between bicycles and pedestrians and the work areas, placement of warning signs, and provisions utilizing personnel as required to protect and maintain access for bicycles and pedestrians as conditions warrant.

(c). Diverting Vehicular Traffic - Whenever construction operations obstruct the flow of vehicular traffic or present a hazard to vehicles operating in the vicinity of construction operations, the Contractor shall take appropriate action to warn, detour and otherwise protect approaching drivers and vehicles.

(d). Flagmen - The Contractor shall employ flagmen as required for each specific detour and at all locations where barricades and warning signs cannot control the movement of traffic. A warning sign shall be placed ahead of the flagman reading: "Flagman Ahead." The distance between the sign and the flagman should be based on the average traffic speed, allowing approximately 50 feet for each 10 miles per hour. During hours of darkness, flagman stations shall be illuminated such that the flagman will be clearly visible to approaching traffic. Lights for illuminating the flagman station shall receive favorable review by the Engineer. The flagman shall wear a red or orange warning garment when flagging. Flagmen shall be provided with approved red flags or STOP/SLOW hand paddles, and two-way radios for communication. When flagging during hours of darkness, the flagman shall signal with a red light or flare and shall have a belt and suspender harness outside his garment fitted with reflectors or made from reflectorized cloth, unless the garment is well reflectorized in one of these ways.

(e). Notice to Agencies - The Contractor shall notify the Engineer and all agencies having jurisdiction over the work, in writing, at least ninety-six (96) hours, excluding holidays and weekends, prior to instituting any lane closure or detour. At the end of each workday, the Contractor shall inform the Engineer, Police Department and Fire Departments of the status of all detours, lane restrictions, or road closures. The Contractor shall cooperate and coordinate with the various parties involved in the collection and removal of trash and garbage, the transit providers, the U.S. Postal Service, and others, as necessary, in order to maintain existing schedules and services.

(f). Emergency Vehicle Access Through Detours - During all detours and/or street closures the Contractor shall provide for the movement of emergency vehicles through the work area. It is essential that the Contractor's work and equipment does not impede emergency access.

(g). Night Detours - The Contractor shall not be permitted to maintain any lane closure or road closure during non-working hours without first obtaining written approval from the Engineer. During non-working hours the Contractor shall restore travel lanes to their original alignment and configuration by means of placing temporary asphalt pavement or bridging with steel plates. The Contractor shall place "ROUGH ROAD" signs conforming to the Manual of Uniform Traffic Control Devices at uneven temporary pavement or bridging locations.

(h). Temporary Traffic Lanes – Temporary traffic lanes shall be at least 10 feet wide, or 11 feet wide around curves. Provide an additional two (2) feet of clearance from curbs. The length of temporary lanes should be limited to the area under construction and the distance necessary to divert traffic.

4. Parking Restrictions - The Contractor shall post approved "No Parking" signs at all locations necessary to establish work areas and detour traffic. Signs shall read: "NO PARKING - CONSTRUCTION TOW-AWAY ZONE," show the actual day and hours of parking restriction and indicate the telephone number of the City's Police Department or agency having jurisdiction. Signs shall be placed at least seventy-two (72) hours in advance of the restriction. The Engineer shall approve the location and duration of no parking limits. "No Parking" signs shall be removed when no work is under construction and must be reposted seventy-two (72) hours before the resumption of construction activities.

For any violation of "No Parking" signs by motorists, the Contractor shall contact and coordinate directly with the City's Police Department for removal of vehicles in accordance with the California Vehicle Code. The Contractor shall also coordinate with the Police Department directly for enforcement and towing of parked vehicles.

102.15 Safety - The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the work. The Contractor's responsibilities shall specifically provide for the safety of persons involved in the project, other persons who are affected by the performance of the work, the work in place, materials and equipment to be incorporated in the work, the project site, and adjoining property.

1. Safety Orders – As applicable, the Contractor shall have at the work site, copies or suitable extracts of: Construction Safety Orders, Tunnel Safety Orders, and General Industry Safety Orders issued by the State Division of Industrial Safety. The Contractor shall comply with provisions of these and all other applicable laws, ordinances, and regulations.

2. Trench Safety Requirement - As required by California Labor Code, Section 6705 and in addition thereto, for any excavation of any trench or trenches five feet (5') or more in depth, the Contractor shall submit to the Engineer for acceptance, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. Structural calculations prepared, stamped and signed by a Registered Engineer licensed to practice in the State of California shall accompany the plan to verify the structural safety and adequacy of the sheeting, shoring and bracing to be used on the project. No such plan shall allow any shoring, sloping or a protection system less effective than that required by the Construction Safety Orders of the State Division of Occupational Safety and Health.

The maximum length of open trench shall be 200 feet or the distance that pipe can be installed in a single day. Trenches shall be backfilled and covered with 2 inches of cutback (in paved areas) or bridged with tack-welded steel plates at the end of each workday. Cutback shall be placed around plate edges to provide a smooth transition and to secure against displacement.

As soon as possible under the provisions of these specifications, the Contractor shall backfill all excavations and restore to usefulness all improvements that existed prior to the start of construction.

3. Confined Space Entry Program (CSEP) - Entry into permit-required confined spaces as defined in Section 5157, Title 8, California Code of Regulations (CCR) may be required as a part of the work. All manholes, tanks, vaults, pipelines, excavations, or other enclosed or partially enclosed spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The Contractor shall be responsible for implementing, administering, and maintaining a confined space entry program (CSEP) in accordance with Sections 5156, 5157, 5158, Title 8, CCR and shall implement such a program prior to performing any work in a permit-required confined space. A copy of the permit shall be available at all times for review by the Contractor and City personnel at the work site.

Prior to starting work, the Contractor shall prepare and submit its comprehensive CSEP to the Engineer. The CSEP shall address all potential physical and environmental hazards and contain procedures for safe entry into confined spaces, including, but not limited to the following:

a. Training of personnel
b. Purging and cleaning the space of materials and residue
c. Potential isolation and control of energy and material inflow
d. Controlled access to the space
e. Atmospheric testing of the space
f. Ventilation of the space
g. Special hazards consideration
h. Personal protective equipment
i. Rescue plan provisions

The Contractor's CSEP submittal shall also include the names of the Contractor's and Subcontractor's personnel assigned to the project who will have CSEP responsibilities, their CSEP training, their specific assignment and their responsibilities in carrying out the CSEP.

4. Hazardous Conditions: Contractor's Responsibility for Precautions - Contractor agrees that if, during the progress of the work, a hazardous condition is identified which involves a risk of bodily harm to any person or a risk of damage to any property, the Contractor will take such special precautions as shall be necessary to make the progress of the work safe under such condition. Conditions may result from, but are not limited to, the use of specified materials or equipment, the location of the work, the condition of the site, the kind or method of construction, or the manner in which any of the work is required to be done. The Contractor agrees to assume the sole responsibility for determining whether any such hazardous condition exists or will be created during the course of the work.

5. Use of Explosives – Explosives may be used only when authorized in writing by the Engineer, or as otherwise stated in the Agreement. Explosives shall be handled, used, and stored in accordance with all applicable regulations. The Engineer's approval of the use of explosives shall not relieve the Contractor from liability for claims caused by blasting operations.

6. Special Hazardous Substances and Process – Materials that contain hazardous substances or mixtures may be required on the work. A Material Safety Data Sheet as described in California Code of Regulations, Section 5194 shall be requested by the Contractor from the manufacturer of any hazardous products used.

Hazardous material usage shall be accomplished with strict adherence to California Division of Industrial Safety requirements and all manufacturer warnings and application instructions listed on the Material Safety Data Sheet and on the product container label. The Contractor shall notify the Engineer if a specified product cannot be used under safe conditions.

SECTION 103 – PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK

103.01 Construction Schedule – To facilitate the coordination of testing and inspection services by the City, the Contractor shall submit to the Engineer a progress schedule showing the effort required for the various major items of work over time. The schedule shall show the order in which the Contractor proposes to carry out the items of work and the dates on which he proposes to start and finish the various items (including procurement of materials and equipment). The Contractor shall submit updated schedules, as applicable, should a major change occur in the scheduling or sequencing of work.

103.02 Construction Sequence – If requested by the Engineer, the Contractor shall prepare and submit for approval, a staging or phasing plan identifying the sequence of construction work and traffic control needed to complete the project. The staging plan shall be subject to review and approval by the Engineer, prior to the start of construction, with the goal of minimizing impacts to surrounding businesses and residents in the project areas.

103.03 Recording Existing Conditions - Existing conditions throughout the project site that are located within the public right-of-way or city maintained easements shall be photographed and videotaped by the Contractor before starting construction. Recording shall include and show every detail of existing improvements, including the current condition of the curb, gutter, sidewalk, signs, landscaping, streetlights, structures near the project including face of buildings, canopies, shades, fences and any other features within the limits of work. Photos and videotape shall be delivered to the Engineer.

103.04 Hours of Construction - Construction activities shall be limited to the hours of 7:30 a.m. to 4:30 p.m., unless otherwise noted or further restricted in the Agreement, or as directed by the Engineer. No work shall be done on weekends, holidays or outside these specified hours, unless otherwise approved by the Engineer. The Contractor shall take into consideration and coordinate time constraints for special events or activities organized by the City or other agencies. No mechanical equipment, including hauling or deliveries by trucks, shall start before 7:30 a.m. and all equipment must shut down before 4:30 p.m. unless approved by the Engineer.

103.05 Prosecution of Work - To minimize public inconvenience and possible hazards and to restore the streets and other work areas to their original condition and former state of usefulness as soon as practicable, the Contractor shall diligently prosecute the work to completion within the number of days set forth in the Agreement or permit.

103.06 Suspension of Work - Work may be stopped or suspended in whole or in part for up to ninety (90) days when, in the Engineer's opinion, the suspension is necessary and in the interest of the City. The Contractor shall immediately comply with any written order of the Engineer suspending work.

103.07 Final Completion - Final Completion shall occur when the Engineer determines that the work is fully completed and in accordance with the approved plans and Agreement. After final completion has occurred, the City will recommend final acceptance to the City Council, if applicable.

103.08 Final Acceptance – Final acceptance by the City Council will be made promptly after the work has been fully completed, and a final inspection and determination of final completion has been made by the Engineer.

Should it become necessary, due to developed conditions, for the City to occupy any portion of the work, or any part of any structure or equipment, before the Agreement is completed or accepted, such occupancy shall not constitute an acceptance of any part of the work, unless so stated in writing by the City.

103.09 Risk of Loss - The Contractor shall be responsible for the charge and care of the project and shall bear all risks of injury or damage to the work, materials or equipment delivered to the site, by any means including fire, earthquake, wind, storm or other action of the elements, vandalism, or loss by theft, from the date of commencement of construction to the date of formal acceptance by the City Council. The Contractor shall rebuild, repair, restore and make good all injuries or damage to any portion of the work, and shall bear the entire expense thereof, except such injuries or damages that are caused by riot, insurrection, acts of the Federal or State Government, or a public enemy in time of war.

103.10 Use of Improvements During Construction - The City reserves the right to take over and utilize all or part of any completed facility or appurtenance. Such action by the City will not relieve the Contractor of responsibility for injury or damage to said completed portions of the improvement resulting from use by public traffic, from the action of the elements or from any other cause attributable to the Contractor's operations or negligence. The Contractor will be required to restore such portions of the improvement before final acceptance. Nothing in this Section shall be construed as relieving the Contractor from full responsibility for correcting defective work or materials.

103.11 Contractor's Guarantee - Prior to final acceptance, the Contractor or Developer shall warrant and guarantee to the City that all work is in accordance with the Agreement and is not defective.

The guarantee shall be accompanied by a warranty bond, submitted by the Contractor or Developer, in accordance with the Agreement, in an amount of not less than ten percent (10%) of the final improvement amount of work to be accepted by the City. The warranty bond shall warrant the quality of the work for a period of one (1) year after acceptance.

103.12 Correction of Defective Work During the Guarantee Period - If within one (1) year after the date of City acceptance, or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Agreement, any work is found to be defective, the Contractor or Developer shall promptly without cost to the City and in accordance with the City's written instructions, either correct such defective work or if it has been rejected by the City, remove it from the site and replace it with non-defective work.

If the Contractor or Developer does not promptly comply with the terms of such instructions within ten (10) working days after written demand by the City, the City may have the defective work corrected. The City may also correct defective work immediately in cases of emergency where delay would cause serious risk of loss or damage. All direct, indirect and consequential costs of correcting defective work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) shall be absorbed by the Contractor or Developer.

SECTION 104 – UTILITIES

104.01 Contractor's Obligation to Identify and Protect Subsurface Infrastructure – The Contractor shall familiarize himself with the type, material, age and condition of any utility which may be affected by the work. The Contractor shall assume responsibility for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the site. The Contractor shall locate and protect service laterals, conduits, and appurtenances of any underground facility.

Where underground main distribution conduits, such as water, gas, sewer, electric power, telephone, or cable television are shown on the plans, the Contractor shall assume that every parcel will be served by a service connection for each type of utility. The Contractor shall comply with all requirements for the protection of underground infrastructure as set forth in Government Code, Sections 4215 through 4216.9.

It shall be the Contractor's responsibility to complete all work in a manner that satisfies utility company standards, providing if requested, detailed plans prepared by a California Registered Civil Engineer showing necessary temporary support of utilities during coordinated construction work.

The Contractor agrees to assume liability and to hold the City of Tracy, its officers, and employees harmless from any damages resulting from the existence of underground utilities and structures.

104.02 Location - The fact that any facility is not shown on the plans shall not relieve the Contractor of his responsibility under this Section. As necessary or as directed by the Engineer, the Contractor shall field adjust proposed improvements to avoid conflicts with existing improvements. It shall be the Contractor's responsibility to determine the existence and location of utilities shown on the plans, indicated by field locating services, or evidenced by facilities visible in the field.

At least two (2) working days prior to commencing work, the Contractor shall request utility owners to mark or otherwise indicate the location of their substructures. Contractor shall contact Underground Service Alert (USA) at (800) 642-2444 and the Engineer at least 48 hours prior to excavation. The location of utilities as shown on the plans are approximate and are not to be construed as certainty. It shall be the Contractor's responsibility to determine the true location and depth of all utilities and service connections affecting or conflicting with the work, prior to the performance of the work. As necessary, the Contractor shall pothole these utilities prior to working in the area to avoid damage to them.

104.03 Protection - The Contractor shall not interrupt the service function or disturb the supporting base of any utility, without authority from the utility owner or order from the Engineer.

The Contractor shall furnish and place protection as required to insure support of existing underground, overhead and at-grade utilities (including their associated structures and service connections). In case of damage, the Contractor shall restore utilities to as good of a condition as they were found.

Upon learning of the existence and location of any utility omitted from or shown incorrectly on the plans, the Contractor shall notify the owner and be fully responsible for protecting such utility.

The Contractor shall immediately notify the Engineer and the utility owner if he disturbs, disconnects or damages any utility.

When placing concrete around or contiguous to any utility, the Contractor shall furnish and install a cushion of expansion joint material, clear opening, sleeve, or other suitable material approved by the Engineer so as to prevent embedment or bonding of the utility with the concrete.

104.04 Shut Down Notification - Contractor shall coordinate all shut downs with the City's Public Works Maintenance Department, and follow all of their requirements for exercising and shutting off water valves on main lines. The Contractor shall have all materials required for the work at the job site prior to requesting a shut off.

Shut down of water or sewer services shall be done only after the Contractor has coordinated the shut down with the Engineer and the property owners. When a water main, sewer main, or service lateral is to be shut down, the Contractor shall coordinate with and notify the Engineer in writing, at least seventy-two (72) hours in advance of the shut down. Except for scheduled shutdowns and in cases of emergency, the Contractor shall notify all customers and affected parties of a shut down at least forty-eight (48) hours in advance by writing and four (4) hours in advance by person to allow adequate draw time. Once shut down, the Contractor shall proceed with the work in an expedient manner until the water lines or sewer lines are back in service.

104.05 Removal - Unless otherwise specified, the Contractor shall remove all portions of interfering utilities shown on the plans as 'abandoned' or "to be abandoned in place". Before starting removal operations, the Contractor shall ascertain from the utility owner whether abandonment is complete.

104.06 Relocation - When feasible, the owners of utilities within the area affected by the work will complete their necessary installations, relocations, repairs, or replacements before commencement of work by the Contractor.

Utilities interfering with the permanent project work shall either be relocated, altered, or reconstructed by the utility owners, or the Engineer may order changes in the work to avoid interference

The Contractor may, for his own convenience or to expedite the work, agree with the owner of any utility to disconnect and reconnect interfering service connections. The City shall not be involved in any such agreement.

104.07 Cooperation - When necessary, the Contractor shall conduct his operations so as to permit access to the worksite and provide time for utility work to be accomplished during the progress of the work.

PART 2
CONSTRUCTION MATERIALS

SECTION 200 - ROCK MATERIALS

Rock materials for aggregate subbase, aggregate base, and pipe bedding shall conform to the requirements of the State of California Standard Specifications (SCSS), as modified by the City Standard Specification herein. Whenever a conflict exists between the State Standard Specifications and the City Standard Specifications, the City Standard Specifications shall govern.

200.01 Aggregate Subbase - shall be coarse select subbase conforming to provisions in Section 25 Aggregate Subbases of the SCSS.

Description – This work shall consist of furnishing, spreading and compacting aggregate subbases as specified in these specifications and the technical specifications. Aggregate subbases are designated as Class 1, Class 2, Class 3, Class 4 and Class 5. The class of aggregate subbase will be shown on the plans or specified in the technical specifications.

Materials – Aggregate for the various classes of aggregate subbases at the time it is deposited on the roadbed shall conform to the following requirements.

Class 1, Class 2, and Class 3 Aggregate Subbases – Aggregate for Class 1, Class 2 and Class 3 aggregate subbases shall be clean and free from organic matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base. Aggregate may include material processed from reclaimed asphalt concrete, Portland cement concrete, lean concrete base, cement treated base, or a combination of any of these materials. The amount of reclaimed material shall not exceed 50 percent of the total volume of the aggregate used. Aggregate shall conform to the grading and quality requirements of Section 25-1.02B of the SCSS.

Class 4 Aggregate Subbase – Aggregate for Class 4 aggregate subbase shall be clean and free from organic matter and other deleterious substances and shall conform to the grading and quality requirements set forth in the technical specifications. Aggregate may include material processed from reclaimed asphalt concrete, Portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials. The amount of reclaimed material shall not exceed 50 percent of the total volume of the aggregate used.

Class 5 Aggregate Subbase – Aggregate for Class 5 aggregate subbase shall be selected from excavation at the locations designated on the plans or in the technical specifications and processed to the grading specified in the technical specifications.

The Contractor may break up, crush, screen, waste material or any combination thereof, or use another process that will produce the required grading.

Subgrade – The subgrade to receive aggregate subbase, immediately prior to spreading, shall conform to the compaction and elevation tolerance specified for the material involved and shall be free of loose or extraneous material. No material of any kind shall project above the grade established by the Engineer at the time placement of aggregate subbase material is started.

Spreading – Aggregates for subbases shall be delivered to the roadbed as uniform mixtures and shall be deposited in layers or windrows. Segregation shall be avoided and the material shall be free from pockets of coarse or fine material.

The layers or windrows of aggregate subbase shall be shaped to a thickness that after watering and compacting, the completed subbase shall conform to the required grade and cross sections shown in the Plans within the tolerance specified in State Standard Specification Section 25-1.03D.

Where the required thickness is 0.50-foot or less, the aggregate subbase may be spread and compacted in one layer. Where the required thickness is more than 0.50-foot, the aggregate subbase shall be spread and compacted in 2 or more layers of approximately equal thickness, and the maximum compacted thickness of any one layer shall not exceed 0.50-foot. At locations where the aggregate subbase is to be placed over areas inaccessible to the spreading equipment, the aggregate subbase may be spread and compacted by any means to obtain the specified results.

Compacting – Aggregate subbases shall be watered in conformance with the provisions in State Standard Specification Section 17, "Watering."

The relative compaction of each layer of compacted subbase material shall be not less than 95 percent. The surface of the finished subbase at any point shall not vary more than 0.08-foot above or below the grade established by the Engineer.

Subbase which does not conform to the above requirements shall be reworked, watered and thoroughly recompacted to conform with the specified requirements.

200.02 Aggregate Base (A.B.) - Aggregate base will be designated on the plans or specified in the technical specifications as either Class 2 or Class 3 and shall conform to provisions in Section 26 "Aggregate Bases" of the SCSS.

Description – This work shall consist of furnishing, spreading and compacting aggregate bases as specified in these specifications and the technical specifications.

Materials – Aggregate for the various classes of aggregate base at the time it is deposited on the roadbed shall conform to the following requirements:

Class 2 Aggregate Base – Aggregate for Class 2 aggregate base shall be free from organic matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base. Aggregate may include material processed from reclaimed asphalt concrete, Portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials. The amount of reclaimed material shall not exceed 50 percent of the total volume of the aggregate used.

Aggregate shall conform to the grading and quality requirements shown in the following tables. Unless otherwise specified in the plans or technical specifications, ¾" maximum aggregate shall be used.

AGGREGATE GRADING REQUIREMENTS

Sieve Size	Percentage Passing			
	1-1/2" Maximum		3/4" Maximum	
	Operating Range	Contract Compliance	Operating Range	Contract Compliance
2"	100	100	---	---
1 ½"	90-100	87-100	---	---
1"	---	---	100	100
3/4"	50-85	45-90	90-100	87-100
No. 4	25-45	20-50	35-60	30-65
No. 30	10-25	6-29	10-30	5-35
No. 200	2-9	0-12	2-9	0-12

QUALITY REQUIREMENTS

Test	Operating Range	Contract Compliance
Resistance (R-Value)	---	78 Min.
Sand Equivalent	25 Min.	22 Min.
Durability Index	---	35 Min.

The aggregate shall not be treated with lime, cement or other chemical material before the Durability Index test is performed. Untreated reclaimed asphalt concrete and Portland cement concrete will not be considered to be treated with lime, cement or other chemical material for purposes of performing the Durability Index test.

Class 3 Aggregate Base – Aggregate for Class 3 aggregate base shall conform to the requirements set forth in the special provisions. Aggregate may include material processed from reclaimed asphalt concrete, Portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials. The amount of reclaimed material shall not exceed 50 percent of the total volume of the aggregate used.

The grading of aggregate for Class 3 aggregate base shall conform either to the grading specified in the special provision or to either the 1-1/2-inch maximum or the 3/4-inch maximum grading for Class 3 aggregate base specified in State Standard Specification Section 26-1.02C, "Class 3 Aggregate Base. Unless otherwise specified in the plans or technical specifications, ¾" maximum aggregate shall be used.

Subgrade – The subgrade to receive aggregate base, immediately prior to spreading shall conform to the compaction and elevation tolerance specified for the material involved, and shall be free of loose or extraneous material.

Adding Water – At the time aggregate base is spread it shall have a moisture content sufficient to obtain the required compaction. The moisture shall be uniformly distributed throughout the material.

Spreading – Aggregate bases shall be delivered to the roadbed as uniform mixtures. The mixture shall be deposited and spread to the required compacted thickness within the tolerances specified in State Standard Specification Section 26-1.03D, "Compacting," by means which will maintain the uniformity of the mixture. Each layer shall be free from pockets of coarse or fine material.

Where the required thickness is 0.50-foot or less, the base material may be spread and compacted in one layer. Where the required thickness is more than 0.50-foot, the base material shall be spread and compacted in 2 or more layers of approximately equal thickness, and the maximum compacted thickness of any one layer shall not exceed 0.50-foot.

Aggregate bases, placed on road approaches and connections, street intersection areas, median strip areas, shoulder areas, and at locations which are inaccessible to the spreading equipment, may be spread in one or more layers by any means to obtain the specified results.

When the subgrade for aggregate base consists of cohesionless sand, and written permission is granted by the Engineer, a portion of the aggregate base may be dumped in piles upon the subgrade and spread ahead from the dumped material in sufficient quantity to stabilize the subgrade. Segregation of aggregate shall be avoided and each layer shall be free from pockets of coarse or fine material.

Compacting – Aggregate subbases shall be watered in conformance with the provisions in State Standard Specification Section 17, "Watering."

The relative compaction of each layer of compacted subbase material shall be not less than 95 percent.

The surface of the finished aggregate base at any point shall not vary more than 0.05-foot above or below the grade established by the Engineer. Base which does not conform to the above requirements shall be reshaped or reworked, watered and thoroughly recompacted to conform with the specified requirements.

200.03 Concrete Aggregate Material - shall be concrete aggregate gradation No. 4 conforming to provisions in Section 200-1.4 "Coarse Aggregate for Portland Cement Concrete" of SSPWC.

200.04 Pipe Bedding and Pipe Zone Material - except when otherwise specified in the plans or technical specifications,pipe bedding and pipe zone materials shall confom to the provisions of Standard Plan 501.

SECTION 201 - CONCRETE, MORTAR, AND RELATED MATERIALS

Concrete, mortar and related materials shall conform to the provisions in Section 201 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specification shall govern

201.01 Portland Cement Concrete - Portland Cement Concrete shall be Grade B in accordance with Section 201-1.3.2, "Combined Aggregate Gradings" of the SSPWC and have a 28-day minimum compressive strength of 2500 psi with a maximum slump of four (4) inches, or as specified in the Special Provisions. A copy of the concrete tags, complete with all the pertinent information shall be provided to the Engineer for each load of concrete delivered to the project.

201.02 Precast Concrete Manhole Sections - Precast sections shall be manufactured in conformity to Class II, A.S.T.M., Designation: C-76 (Latest Revision) for their respective diameters.

201.03 Transit Mixers - Discharge from transit mixers shall be completed within ninety (90) minutes of addition of water at the batch plant.

201.04 Temperature of Concrete Mix - The temperature of mixed concrete at the time of discharge shall not be less than 50°F nor more than 90°F.

201.05 Admixtures - In addition to other required admixtures, concrete with exposed surfaces (i.e. sidewalks, curbs, gutters, driveways, etc.) shall contain one half (1/2) pound lampblack per yard.

SECTION 202 - MASONRY MATERIALS

All masonry materials shall conform to the provisions of Section 202 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 203 - BITUMINOUS MATERIAL

Bituminous material shall conform to the provisions in State of California Standard Specifications (SCSS) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SGCSS and the City Standard Specifications, the City Standard pecifications shall govern.

203.01 Asphalt Concrete (A.C.) - Asphalt concrete shall conform to the grading requirements of AMA Type A per Section 39 of the SCSS. Recycled Asphalt shingles are not allowed in the job mix formula.

203.02 Tack Coat - Tack coat shall be PG 64-10.

203.03 Asphaltic Emulsions - Aspaltic Emulsions shall conform to Section 94 "Asphaltic Emulsions" of SCSS.

203.04 Slurry Seal - Slurry seal shall be Type II as specified in "Emulsion - Aggregate Slurry" 37-3.02B (2) SCSS.

203.05 Rubberized hot mix asphalt shall be RHMA-G and conform with section 39 (SCSS)

SECTION 204 - LUMBER AND TREATMENT WITH PRESERVATIVES

All lumber and treatment with preservatives shall conform to the provision of Section 204 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 205 - PILES

All piles shall conform to the provisions of Section 205 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 206 - MISCELLANEOUS METAL ITEMS

All miscellaneous metal items shall conform to the provisions in Section 206 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between SSPWC and the City Standard Specifications, the City Standard Specifications shall govern.

206.01 Drop Inlets and Catch Basins - Cast iron for drop inlets and catch basin frames and covers shall be gray cast-iron and shall conform to Section 206-3 "Gray Iron and Ductile Iron Castings" of SSPWC.

206.02 Manhole Frame and Covers - Manhole frame and covers shall be gray cast-iron and shall conform to Section 206-3 "Gray Iron and Ductile Iron Castings" of SSPWC. Covers shall be marked "Storm" or "Sanitary" as applicable.

206.03 Chain Link Fence - Shall be Class 1 fence conforming to the provisions of section 206-6 "Chain Link Fence" of SSPWC.

SECTION 207 - PIPE

All pipe shall conform to the provisions in Section 207 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specifications shall govern,

207.01 Sanitary Sewer Pipe - Sanitary Sewer pipe shall be either Vitrified Clay Pipe (VCP), Ductile Iron Pipe (DIP), or SDR26 Polyvinyl Chloride (PVC) and shall conform to Section 207-8 "Vitrified Clay Pipe (VCP)", Section 209-1 "Iron Pipe and Fittings" of SSPWC, and Section 207-17 "PVC Gravity Pipe" of SSPWC.

207.02 Storm Drain Pipe - Storm drain pipe shall be Reinforced Concrete Pipe (RCP) conforming to Section 207-2 "Reinforced Concrete Pipe" of SSPWC.

207.03 Cast-in-Place Concrete Pipe - Concrete for non-reinforced, cast-in-place concrete pipe shall have a minimum compressive strength at 28 days of 3000 psi with grading as determined by pipe size. Admixtures to prevent segregation and improve the workability of the concrete will be permitted with the approval of the Engineer. Slump shall not exceed three (3) inches as determined by a slump test.

Portland Cement shall be Type II low alkali conforming to Section 201-1.2.1, "Portland Cement" of SSPWC.

All aggregates shall conform to Section 201-1.2.2, "Aggregates" of SSPWC and have a maximum size limitation not-to-exceed one-third of the finished pipe wall thickness of the cast-in-place pipe, 3/4 inch maximum for 24-inch to 48-inch diameter pipe; 1-1/2 inch maximum for 48-inch pipe and over.

207.04 Water Pipe - All water mains shall be constructed of ductile iron pipe and shall conform to Section 209-1 "Iron Pipe and Fittings" as modified herein.

All pipe for water mains shall be ductile iron pipe, thickness Class 51 for 4" and Class 50 for all other sizes, cement mortar lined, and shall conform to the provisions of AWWA C151 and C104 and shall have "Tyton" type joints. Standard bituminous coating shall be applied to outside of pipe by manufacturer.

Unless otherwise specified, fittings for ductile iron pipe shall be Class 250 for 3-inch size and larger, mechanical joints conforming to the requirements of AWWA C110. Fittings shall be cement mortar lined in accordance with AWWA C104. The outside of the fittings shall be bituminous coated. Nuts and bolts shall conform to the provisions of ANSI Specifications B18.2. Fittings for 2-inch diameter and smaller shall be of brass construction.

All buried ferrous metal shall be protected from corrosion, including but not limited to valves, fittings, pipe, flexible couplings and hydrant piping with polywrap in accordance with AWWA C105. Polyethylene protective wrapping (Polywrap) shall require 2 layers of 8 mil. thick sheets cut from tubes supplied by U.S. Pipe and Foundary Company or approved equal. The edges shall be secured with 8 mil. thick, 1-inch wide Scotchwrap as manufactured by Minnesota Mining and Manufacturing Co., or approved equal. Ductile iron pipe shall be provided with a zinc coating for added corrosion protection.

SECTION 208 - PIPE JOINT TYPES AND MATERIALS

Pipe joints shall conform to the provisions of Section 208 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 209 - ELECTRICAL COMPONENTS

All electrical components and equipment shall conform to the provisions of Section 209 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specifications shall govern.

209.01 Poles. Street light poles shall be steel, round tapered shafts complete with base flange, access hole with plug, base plate cover and shaft cap with set screw. The access hole shall be located on the side of the pole facing the curb unless otherwise specified.

Concrete poles may be substituted for steel poles with approval of the Engineer. The concrete poles shall be round, tapered poles complete with hand hole and cover. The hand hole shall be located on the side of the pole facing the curb unless otherwise specified.

Shop drawings for street light poles shall be submitted to the Engineer for approval prior to placing orders for poles and mast arms.

Foundations shall be required as detailed herein for all street light poles. Direct burial of poles will not be permitted.

Plumbing of standards shall be accomplished by adjusting the nuts on the anchor bolts before the foundation cap is placed. Shims or other similar devices for plumbing or raking will not be permitted. After plumbing the standard, anchor bolts shall be cut off 1/4 inch above the nuts and the exposed surfaces shall be repaired.

All steel standards and mast arms shall be galvanized as provided in Section 210-3 “Galvanizing” of SSPWC.

209.02 Mast Arms - Shop drawings of mast arms shall be submitted to the Engineer for approval prior to placing orders.

209.03 LED Luminaries – LED Luminaries shall be as follows:

1. Be self-contained, not requiring assembly.
2. Comply with UL 1598 for luminaires in wet locations.
3. Have a power supply with ANSI/IEC rating of at least IP65.
4. Weigh less than 35 lb.
5. Have a minimum operating life of 100,000 hours when operated for an average time of 11.5 hours at an average temperature of 70 degrees F.
6. Operate over a temperature range from 40 to 130 degrees F.
7. Be operationally compatible with photoelectric controls.
8. Have a correlated color temperature range from 2700 to 3500 K and a color rendering index of 70 or greater.
9. Have a maximum-effective projected area of 1.4 sq ft when viewed from either side or end.
10. Comply with California Test 611.
11. Have a power factor of 0.90 or greater. The total harmonic distortion, current, and voltage induced into a power line by a luminaire must not exceed 20 percent.
12. Comply with the maximum power consumption and isofootcandle curves as shown.

13. Have an ANSI C136.41-compliant, locking-type, photocontrol receptacle with dimming connections and a watertight shorting cap.
14. Have a photoelectric unit that plugs into the twist lock receptacle, integral with the luminaire.
15. Not allow more than 2.5 percent of the rated lumens to project above 80 degrees measured up from the vertical plane in the direction of the roadway
16. Comply with Class A emission limits under 47 CFR 15(B) for the emission of electronic noise.
17. Have a power supply with:
    17.1. 2 leads to accept standard 0-10 V(dc).
    17.2. Dimming control compatible with IEC 60929, Annex E. If the control leads are open or the analog control signal is lost, the circuit must default to 100-percent power.
    17.3. Case temperature self rise of 77 degrees F or less above ambient temperature in free air with no additional heat sinks.
18. Have passive thermal management with enough capacity to ensure proper heat dissipation and functioning of the luminaire over its minimum operating life. The maximum junction temperature for the minimum operating life must not exceed 221 degrees F.
19. Have a junction-to-ambient thermal resistance of 95 degrees F per watt or less.
20. Contain circuitry that automatically reduces the power to the LEDs so the maximum junction temperature is not exceeded when the ambient temperature is 100 degrees F or greater.
21. Have a heat sink made of aluminum or other material of equal or lower thermal resistance. The use of fans or other mechanical devices is not allowed for cooling the luminaire.

The luminaire must include a surge protection device to withstand high-repetition noise transients caused by utility line switching, nearby lightning strikes, and other interferences. The device must protect the luminaire from damage and failure due to transient voltages and currents as defined in Tables 1 and 4 of ANSI/IEEE C64.41.2 for location category C-High. The surge protection device must comply with UL 1449 and ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for location category C-High.
The luminaire must operate over the entire voltage range from 120 to 480 V(ac), 60 ± 3 Hz or one of the following:
1. From 95 to 277 V(ac) for luminaires rated 120 V(ac) or 240 V(ac)
2. From 347 to 480 V(ac) for luminaires rated 480 V(ac)

The fluctuations of line voltage must have no visible effect on the luminous output.
The L70 of the luminaire must be the minimum operating life or greater. Illuminance measurements must be calibrated to standard photopic calibrations.
The luminaire's housing must withstand a 1008 hour cyclic salt fog spray/UV test under ASTM D5894 and an evaluation under ASTM D714 with a blister size of 8 or greater and no more than medium density.
The luminaire's housing must be marine-grade alloy with less than 0.2 percent copper or die cast aluminum. All exposed aluminum must be anodized. A chromate conversion undercoating must be used underneath a thermoplastic polyester powder coat.
External bolts, screws, hinges, hinge pins, and door closure devices must be corrosion resistant.
The housing must be designed to prevent the buildup of water on its top surface. Exposed heat sink fins must be oriented to allow water to run off the luminaire and carry dust and other accumulated debris away from the unit. The optical assembly of the luminaire must be protected against dust and moisture intrusion to at least an UL 60529 rating of IP66. The power supply enclosure must be protected to at least an UL 60529 rating of IP43.
If the components are mounted on a down-opening door, the door must be hinged and secured to the luminaire's housing separately from other components. The door must be secured to the

housing to prevent accidental opening. A safety cable must mechanically connect the door to the housing.
A luminaire must have a barrier-type terminal block secured to the housing to connect field wires. The terminal screws must be captive and equipped with wire grips for conductors up to no. 6.
The conductors and terminals must be identified and marked.
If needed, each refractor or lens must be made of UV-inhibiting high-impact plastic, such as acrylic or polycarbonate, or heat and impact-resistant glass. The refractor or lens must be resistant to scratching. Polymeric materials, except for the lenses of enclosures containing either the power supply or electronic components of the luminaire, must be made of UL94 V-0 flame-retardant materials.
The luminaire must be permanently marked inside the unit and outside of its packaging box. Marking consists of:

1. Manufacturer's name or trademark
2. Month and year of manufacture
3. Model, serial, and lot numbers
4. Rated voltage, wattage, and power in VA

The catastrophic loss or failure of 1 LED must not result in the loss of more than 20 percent of the total luminous output of the LED luminaire.
The luminaire’s housing must have a slip fitter that must:

1. Fit on mast arms with outside diameters from 1-5/8 to 2-3/8 inches
2. Be adjustable to a minimum of ±5 degrees from the axis of the tenon in a minimum of 5 steps: +5, +2.5, 0, -2.5, -5
3. Have clamping brackets that:
   3.1. Are made of corrosion-resistant materials or treated to prevent galvanic reactions
   3.2. Do not bottom out on the housing bosses when adjusted within the designed angular range
   3.3. Do not permanently set in excess of 1/32 inch when tightened

Photoelectric unit must:

1. Have a screen to prevent artificial light from causing cycling.
2. Have a rating of 60 Hz, 105-130 V(ac), 210-240 V(ac), or 105-240 V(ac).
3. Operate at a temperature range from -20 to 55 degrees C.
4. Consume less than 10 W.
5. Be a 3-prong, twist-lock type with a NEMA IP 65 rating, ANSI C136.10-compliant.
6. Have a fail-on state.
7. Fit into a NEMA-type receptacle.
8. Turn on from 1 to 5 footcandles and turn off from 1.5 to 5 times the turn-on level. Measurements must be made by procedures in EEI-NEMA Standards for Physical and Electrical Interchangeability of Light-Sensitive Control Devices Used in the Control of Roadway Lighting.

Photoelectric control's contactor must be:

1. Normally open
2. Mechanical-armature type with contacts of fine silver, silver alloy, or equal or better material
3. Installed to provide a minimum space of 2-1/2 inches between the contactor terminals and the enclosure's sides

Photoelectric terminal blocks must be rated at 25 A, 600 V(ac), molded from phenolic or nylon material, and be the barrier type with plated-brass screw terminals and integral marking strips.

209.04 Anchor Bolts - Anchor bolts shall conform to the provision of Section 209-2.2 “Anchor Bolts” of SSPWC.

209.05 Pull Boxes - The bottom of the pull box shall rest firmly on a 6-inch thick bed of ¾-inch maximum crushed rock or ½-inch maximum pea gravel extending 6-inches beyond the outside edges of the pull box.

The grade for the top of pull boxes shall be established as provided for in Section 301, Treated Soil, Subgrade, Preparation, and Placement of Base Material” of SSPWC.

Voids between the conduit and pull box shall be grouted and troweled smooth with the inside of the box. Concrete pull box covers shall be inscribed “Street Light.”

209.06 Foundations - Foundations shall be constructed as shown on the Standard Plans.

Concrete used for the foundations shall conform to Section 201, “Concrete, Mortar, and Related Materials” of SSPWC.

SECTION 210 - PAINT AND PROTECTIVE COATINGS

All paint and protective coatings shall conform to Section 210 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 211 - SOILS AND AGGREGATE TEST

All soils and aggregate testing shall be in conformance with Section 211 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 212 - LANDSCAPE AND IRRIGATION MATERIALS

All landscape and irrigation materials shall conform to the provisions of Section 212 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein, and City's Parks and Streetscapes Standard Plans. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specifications shall govern.

212.01 Trees. All trees shall be of 15 gallon minimum size unless approved otherwise by the City. The height shall be measured from the root crown, and diameter shall be measured six inches (6") above the root crown.

212.02 Tree Stakes. Tree stakes shall be 10-foot Lodgepole Pine with 10-inch tapered driving point and chamfered top, treated with copper napthanate or pentachlorophenol to heartwood, green color. Ties shall be of black rubber tire tie or other suitable material approved by the Engineer. Alternately, stakes may be a single galvanized steel, l-1/4-inch diameter (O.D.) by 12-foot long, powdercoated black, as manufactured by J.R. Partners, Turlock, CA or approved equal.

212.03 Mulch. Mulch shall be fir, cedar or Deco bark, 1/2-inch to 1-inch diameter free of sticks, dirt, dust, rocks and other debris, or pea gravel with a diameter not-to-exceed ½-inch with a minimum depth of three (3") inches.

212.04 Irrigation System Materials - Pipe and fittings shall be polyvinyl chloride (PVC) and shall conform to Section 212-2 "Irrigation Systems Materials" of SSPWC. Remote control valves shall be brass or plastic and placed in plastic valve boxes, unless otherwise specified. Shut off valves shall be full port ball valves when under 4 inches in size.

212.05 Anti-Desiccant. Anti-desiccant for retarding excessive loss of plant moisture and inhibiting wilt shall be sprayable, water insoluble, vinyl-vinyledine complex which will produce a moisture retarding barrier not removable by rain, Wilt-Proof Formula NCF as manufactured by Nursery Specialty Products, Greenwich, Connecticut, or approved equal.

212.06 Tree Root Barrier - Tree root barrier shall be UB24-2 barrier panels as manufactured by Deep Root Corp., Westminister, California or approved equal. No encircling root barriers will be allowed.

212.07 Drain Rock - Drain rock shall be crushed aggregate base and shall conform to Section 200-2.2 "Crushed Aggregate Base" of SSPWC.

212.08 Cast-Iron Tree Grates and Frames: Tree grates and frames shall be cast-iron as manufactured by South Bay Foundry or approved equal.

212.09 Engineered Fill Soil - Engineered fill soil shall be used where the root systems of trees or shrubs must grow under hard or impermeable surfaces, such as sidewalks, streets, planting areas over structures or parking garages, parking lot medians and islands, and other similar conditions. Engineered fill soil is structural soil such as "Cornell University Structural Soil" to safely bear pavement loads after compaction and still allow root penetration and vigorous tree growth.

SECTION 213 - ENGINEERING GEOSYNTHETICS

All engineering geosynthetics shall conform to the provision of Section 213 of the Standard Specifications for Public Works Construction (SSPWC).

PART 3
CONSTRUCTION METHODS

SECTION 300 - EARTHWORK

All earthwork including clearing and grubbing shall conform to the provisions of Section 300 in the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specifications shall govern.

300.01 Preservation of Property - Whether shown on the plan or not, existing improvements on adjacent property, utility and other facilities, trees, turf and plants that are not to be removed shall be protected from injury or damage resulting from the Contractor's operation.

The Contractor shall make such investigations and examinations as are required to determine the existence and locations of all pipes, conduits and other underground improvements and shall consult with and advise the owners of the utilities before undertaking any work that might endanger them.

At locations where lawn sprinkler systems exist, the Contractor will cut and cap water lines at the property lines or at such point as directed by the Engineer. All heads and pipe removed shall be salvaged and returned to their respective owners.

Existing land subdivision monuments and stakes shall be fully protected from damage or displacement and they shall not be disturbed unless directed by the Engineer.

300.02 Disposal of Materials - Unsuitable and surplus materials shall be properly disposed of outside the project area in accordance with the provisions of Part 1, Section 7.

300.03 Slopes - Cut slopes shall be rounded. All slopes shall be constructed in accordance with the California Building Code.

300.04 Import Borrow - All import borrow shall have a minimum "R" value of 55 unless otherwise specified in the Special Provisions. Tests for "R" value shall be made in accordance with Test Method No. California 301.

SECTION 301 - TREATED SOILS, SUBGRADE PREPARATION AND PLACEMENT OF BASE MATERIALS

All treated soils, subgrade preparation and placement of base materials shall conform to the provisions in Section 301 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications the City Standard Specification shall govern.

301.01 Subgrade Preparation - Before aggregate base or asphalt concrete paving is placed, the Engineer may require (at the Contractor's expense) a test roller of size and weight to meet his approval to pass over the finished subgrade to ensure that there are no soft or spongy areas.

301.02 Curb and Gutter Subgrade - No excavation shall be made below the bottom of the curb and gutter subsequent to installing curb and gutter until backfill has been placed behind the curb.

301.03 Base Thickness - Base thickness for trenches or other structure excavations that have been cut in existing streets or alleys shall be a minimum of 1.33 times the existing base thickness. In no case shall the replaced base be less than twelve (12) inches.

SECTION 302 - ROADWAY SURFACING

All roadway surfacing shall conform to Section 302 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 303 - CONCRETE AND MASONRY CONSTRUCTION

Concrete and masonry construction shall conform to provision of Section 303 Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications the City Standard Specifications shall govern.

303.01 Curb and Gutter

Expansion joints shall be constructed in conformance with Section 303-5.4.2 "Expansion Joints" of SSPWC at the end of each curb return and at intervals not to exceed two hundred feet (200 ft). Where the existing sidewalk and curb is cut to install new driveways, expansion joints shall be constructed on each side of the driveway.

Weakened plane joints shall be constructed in conformance with Section 303-5.4.3 "Weakened Plane Joints" of SSPWC at eight (8) foot intervals and at each end of the driveway approaches.

When curb, gutter and sidewalk are poured monolithically, scoring lines in conformance with Section 303-5.5.3 "Walk" of the SSPWC shall be placed along the back of the curb.

303.02 Sidewalk

Expansion joints for new construction shall be located opposite the expansion joints as placed for curbs and gutters.

Expansion joints placed in sidewalks where curbs and gutters exist shall be placed to match the expansion joints in existing curbs and gutters.

Expansion joints shall not exceed ½ inch in width.

Sidewalk weakened plane joints and score lines shall conform to weakened plane joints and score lines of existing sidewalks when new construction is placed contiguous and in line with existing sidewalk or as indicated on the contract plans or standard plans for sidewalk. Sidewalk weakened plane joints for new construction shall be as indicated on the Standard Plans.

303.03 Driveways

When back of approach is poured against existing concrete a 1/4-inch pre-molded expansion joint filler shall be placed against the existing concrete.

Weakened plane joints shall correspond with joints of adjacent sidewalk.

303.04 Concrete Alley Approach

An expansion joint shall be constructed between the approach and adjacent sidewalks.

303.05 Manholes - Manholes shall be constructed in accordance with the Standard Plans as modified by the contract plans, as specified herein and as directed by the Engineer. Concrete

manholes shall consist of reinforced concrete base section, a reinforced concrete pipe section, a reinforced concrete taper section, grade rings, and cast-iron frame and cover.

303.06 Curb Ramps - Locations of ramps shall be verified with the Engineer to avoid conflict with proposed poles, pull boxes, hydrants, etc.

303.07 Median and Traffic Divider Islands

Median and traffic divider islands shall be surfaced with one of the following 3 options as specified in the Special Provisions:

1. Three and one-half (3-1/2) inches of Portland Cement Concrete.

2. Stamped Concrete.

3. Landscaping as per Section 308, "Landscape and Irrigation Installations" of these specifications.

303.08 Median Surfacing - If paving brick or paving tile is approved for use in the median, it shall be embedded in a minimum of three (3) inches of Portland Cement Concrete as specified in Section 201 and shall have a surface which is sufficiently abrasive to ensure pedestrian safety and convenience. City approval will be limited to the use of brick or tile with standard colors, standard shapes and sizes, to enable future repair and replacement in kind. Applicants shall furnish the Engineer a sample of the proposed brick or tile for consideration, approval or disapproval. Cement mortar shall be Class C conforming to Section 201-5 "Cement Mortar" of the SSPWC.

303.09 Portland Cement Concrete Finishing

1. Driveways - Steel trowel with light broom finish parallel to vehicle traffic. Wings to have light broom finish parallel to pedestrian traffic.

2. Curb Ramp - Steel trowel with heavy broom finish transverse to pedestrian traffic on ramp and heavy broom finish parallel to traffic on the wings.

303.10 Backfilling - After removal of forms, the area between the property line and curb shall be cleaned of all surplus concrete and other debris. No street work shall start before backfill is placed behind all curbs.

When new curb is installed in an existing street, the Contractor shall repair all excavations for gutters and shall backfill and pave with similar surfacing material thoroughly tamped into place and leveled off to meet the existing street surface and the gutter.

If more than 2-inches cut or fill is required, the Contractor shall construct a slope not steeper than 5:1.

303.11 Protecting Concrete - Concrete shall not be placed on frozen or ice-coated ground or subgrade nor on ice-coated forms, reinforcing steel, structural steel, conduits, pre- cast members, or construction joints.

Under rainy conditions, placing of concrete shall be stopped before the quantity of surface water is sufficient to damage surface mortar or cause a flow or wash of the concrete surface, unless the Contractor provides adequate protection against damage.

All concrete shall be protected from rain for a period of not less than two (2) hours after finishing.

All concrete that has been frozen, or damaged by other causes, as determined by the Engineer, shall be removed and replaced by the Contractor at his expense.

All structural concrete and air-blown mortar used as structural concrete shall be maintained at a temperature of not less than 45° F for 72 hours after placing and at not less than 40° F for an additional 4 days. Pavement concrete shall be maintained at a temperature of not less than 40° F for 72 hours. The Contractor shall protect concrete pavement against all construction and other activities which abrade, scar, discolor, reduce texture depth, lower coefficient of friction or otherwise damage the surface. Stockpiling, drifting or excessive spillage of soil, gravel, petroleum products, and concrete of asphalt mixes on the surface of concrete pavement is prohibited unless otherwise permitted by the Engineer. No traffic or Contractor's equipment, except as herein provided, will be permitted on the pavement before a period of 10 calendar days has elapsed after the concrete has been placed, nor before the concrete has developed compressive strength of 2000 pounds per square inch. When required by the Engineer, the Contractor shall submit a written outline of his proposed method for protecting the concrete.

303.12 Rock Pockets - Immediately upon stripping curb forms and prior to backfilling, all rock pockets or honeycombs shall be repaired to the satisfaction of the Engineer.

SECTION 304 - METAL FABRICATION AND CONSTRUCTION

Metal fabrication and construction shall conform to Section 304 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 305 - PILE DRIVING AND TIMBER CONSTRUCTION

All pile driving and timber construction shall conform to the provisions of Section 305 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 306 - UNDERGROUND CONDUIT CONSTRUCTION

Underground conduit construction shall include all utility piping such as sewer, water, storm drain, etc. and shall conform to the provisions of Section 306 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specifications shall govern. Underground conduit specifications for public utilities and licensed users of franchise areas shall be as per the requirements of those utilities and licensed users as new installations and undergrounding of existing overhead facilities proceeds in accordance with City policy and requirements.

306.01 Trench Safety - In addition to the requirements of Section 306-1.1.6, "Bracing Excavations" of SSPWC, Section 7-10.4.1, "Safety Orders" of SSPWC shall be implemented.

306.02 Subsurface Obstructions – The Contractor shall be responsible for the location of subsurface obstructions in the field and shall notify the Engineer immediately to resolve the conflict.

306.03 Trench Bottom - Trenches bottoming in hardpan shall be excavated a minimum of four inches (4") below the grade established for the bottom of the pipe and couplings and then backfilled to the pipe grade with pipe bedding, thoroughly compacted. No additional payment will be made for such excavation or refill. Where a firm foundation is not encountered due to soft, spongy or other unsuitable material, all of such unsuitable material under the pipe and for a width of at least 1/2 pipe diameter on each side of the pipe shall be removed to a depth as directed by the Engineer and refilled with coarse select subbase.

In all cases, a firm foundation will be created prior to bedding placement. Approval of trench shall be obtained from the Engineer prior to placement of pipe bedding.

Where the pipe is to be placed on less than optimum moisture, as determined by the Engineer, AB is to be used. The contractor shall apply sufficient water and compact AB prior to placing the pipe.

306.04 Pipe Bedding - Pipe bedding shall be as specified in Section 200, "Rock Materials" of these specifications and installed in conformance with Standard Plan No. 502, "Pipe Zone Bedding". No bedding shall be installed above the spring line of the pipe without approval of the Engineer.

306.05 Bedding Densification – Flooding is permitted to densify material in the pipe bedding zone. Where pipe bedding zone is beneath normal water table, dewatering shall be done to keep the water table below the pipe bedding until densification is complete.

306.06 Maximum Length of Open Trench - All excavation or backfilling in a public street shall be done as quickly as possible. Not more than 600 linear feet of trench shall be open ahead of any sewer, pipe line or conduit in any street or alley, except that upon written permission of the Engineer such trenches may be opened for a distance of not more than 1,200 linear feet where public traffic will not be seriously inconvenienced. No excavation or trench shall be opened and left open more than twenty-four hours before the installation of the sewer, pipe line or conduit which is to be placed in said excavation or trench; and the backfilling of said excavation or trench shall be completed within twenty-four hours after the installation of the facility for

which the excavation was made, excepting that portion of the trench or excavation to be used for connecting the extension of the installation, provided said portion is adequately barricaded and protected and backfilled the following work day. Excavations or trenches for cast-in-place concrete pipe may remain open for a period not to exceed seven days, providing said excavations or trenches are adequately barricaded and access is provided for abutting property owners and at all street intersections.

306.07 Trench Widths - The width of the trench at the top of the pipe shall not be greater than 24 inches more than the outside diameter of the barrel of the pipe to be placed therein. The above clearances shall be increased to accommodate shoring and also provide space for banding at points required. Excavation for structures shall be at least 12 inches beyond the dimension of structures as shown on the Standard Plans.

306.08 Excavated Material - Material excavated from the trench shall be placed so as to offer minimal obstructions to traffic.

If all excavated material cannot be stored on the roadway in such a manner as to maintain access to property adjacent the work, the surplus material shall be removed from the work and stored until needed for backfill. If the surplus material is to be stored on other than private property, prior approval must be obtained from the Engineer for the site to be used. The cost of removing and returning material shall be at the Contractor's expense. Unsuitable and surplus materials shall be disposed of outside the project area in accordance with Part 1, Section 9.12, "Project Site Maintenance" of these specifications.

306.09 Dewatering - Dewatering shall be required to maintain dry trenches for pipelaying operations. The dewatering of the area shall be accomplished by the installation of shallow wells with portable pumping units, sand points or other approved methods. These wells shall be at such a depth as to drain the lowest point of the proposed trench and shall be spaced along the line in sufficient number to ensure a dry trench.

Prior to the start of any dewatering work, the Contractor shall submit his dewatering plan to the Engineer for approval.

All existing gas pipes, water pipes, conduits, sewers, drains, fire hydrants and other structures shall be carefully supported and protected from damage which may be a result of dewatering by the Contractor, and in case of damage, they shall be restored by him, without additional compensation, to their original condition.

The Contractor shall provide, without additional compensation, suitable temporary channels for the water that may flow along or across the site of the work, when necessary. Water is not allowed to flow across gutters if pumping is to exceed 3 calendar days. Special provisions must be made with approval of the Engineer.

306.10 Existing Ditches - Existing ditches shall be kept clean of debris and excess drainage flows. Special drainage requirements shall be submitted for approval by the Engineer.

306.11 Street Crossings - Where an excavation or trench crosses a street or alley intersection, the excavation and backfilling shall be completed in accordance with Section 9.17, "Public Convenience and Traffic Control" of these specifications, or bridging shall be provided

capable of supporting vehicular traffic, to provide access across said excavation or trench in accordance with Section 9.18 (b), "Trench Safety Requirement" of this specification.

306.12 Trench Resurfacing - Trench resurfacing shall conform with Section 306-1.5 "Trench Resurfacing" of SSPWC as modified herein.

The aggregate base shall be prepared in conformance with the provisions of Sections 200, "Rock Materials" and 301, "Treated Soil, Subgrade Preparation and Placement of Base Materials" of these specifications. Aggregate base shall be placed, rolled and compacted to 95 percent relative compaction as determined by California Test Method No. 216.

Prior to placing permanent asphalt concrete or Portland Cement Concrete, and after completion of backfill, existing pavement shall be sawcut on a neat line beyond the trench limit as shown on Standard Plan No. 501, "Trenching & Resurfacing". Existing pavement surfaces shall be cleaned of all foreign material.

The Contractor shall not complete surface paving until the subbase has been inspected and approved. Violation of this paragraph shall be cause for rejection of that portion of paving involved.

Tack coat shall be applied in accordance with Sections 203, "Bituminous Material" and 302, "Roadway Surfacing" of these specifications.

The Contractor shall reference location of all valve boxes, monuments, and manhole rings and covers prior to paving operations. All castings must be set to finish grade after laying surface course of asphaltic concrete.

Asphaltic concrete surface course shall conform to and be placed in accordance with Sections 203, "Bituminous Material" and 302, "Roadway Surfacing" of these specifications. The top of the new surfacing shall be flush with a line struck off from two points on the existing road surface, one each side of the trench, to a maximum tolerance of 1/8 inch, plus or minus. A deviation from this maximum allowable tolerance shall be cause for rejection of the surfacing.

Upon completion of paving, a fog coat of a penetration type emulsion (RS-1) is to be applied over the complete length of the new pavement. Prior to the application, the surface to be sealed shall be thoroughly cleaned of all dirt and loose material by sweeping. The rate of application of this material shall not be less than 0.05 gallon per square yard of area or as required by the Engineer.

Before final inspection of the work, the Contractor shall clean the entire job site of all dirt, aggregate, concrete, asphalt, and other foreign substances. All parts of the work shall be left in a neat and presentable condition.

The Contractor at all times shall maintain the work area in such a manner so as not to create a nuisance. The Engineer may require the Contractor to sweep, water or a combination of both if conditions in his judgment so warrant.

Unless otherwise specified in the Special Provisions, temporary resurfacing shall be considered incidental to other items of work and will not be paid for separately.

Compaction requirements for backfill of abandon pipe or structure shall conform to City of Tracy Standard Plan No. 501, "Trenching & Resurfacing".

306.13 Removal or Abandonment of Pipe and Structures - Storm drains, and sanitary sewers to be abandoned or abandoned pipe necessarily cut by new construction, the open ends of all pipe shall be securely plugged at the locations designated with brick and mortar bulk heads and all pipelines shall be filled with CLSM. Intervening structures to be abandoned shall be removed to a depth of two (2) feet below finished street grade.

Compaction requirements for backfill of abandoned pipe or structure shall conform to City of Tracy Standard Plan No. 501, "Trenching & Resurfacing".

All frames, covers, gratings, and other cast iron components shall be carefully removed from abandoned or removed, structures indicated on the plans and delivered to the City Service Center for salvage.

All costs involved in the abandonment or removal of storm drains, sanitary sewers or other abandon pipe and their intervening appurtenant structures; salvage of cast iron components, backfilling and compacting the resulting voids shall be considered as incidental to other items of work, no additional compensation will be paid.

306.14 Corrosion Protection - All buried ferrous metal shall be protected with polywrap in accordance with Section 207.04, "Water Pipe" of these specifications. The polywrap material shall be placed under the item to be protected and wrapped completely around with the edge lapped at least 6-inches. The edges shall be secured with Scotchwrap or approved equal. All slack polywrap shall be gathered to the top of the pipe and secured.

306.15 Water Main Pressure Testing and Disinfection - Pipes shall be maintained clean and any chance of major contamination avoided during construction. All new water mains shall be pressure tested in accordance with AWWA C-600 prior to disinfection. The test pressure, allowable leakage and test medium shall be as specified below:

Method: AWWA C 600, as modified herein.

Duration: Two hours.

Test Pressure: Text pressure should be 1.5x the working pressure or working pressure plus surge. 150 psig measured at highest point of section of pipeline being tested.

Medium: Potable water.

Allowable Leakage: Leakage shall be defined as the quantity of test medium that must be added to the section of pipeline being tested to maintain pressure within 5 psig of the test pressure for the specified test duration. Maximum leakage shall be as specified in AWWA C 600. Following hydrostatic testing and prior to placing in service, all water mains and interconnected piping shall be flushed and disinfected to comply with AWWA C 601. Following disinfection and flushing, the City will take water samples for bacteriological analysis of the water. If the specified bacteriological requirements are not satisfied, the disinfection procedure must be repeated until the requirements are met. Disinfection and flushing for water mains that have been completely or partially dewatered shall comply with AWWA C 601.

306.16 Testing - Before sewer lines are accepted, they shall be cleaned in the presence of the Engineer with a Wayne Sewer Cleaning Ball, or approved equal, and all foreign matter removed by the Contractor in a manner satisfactory to the Engineer.

Upon completion of cleaning, sewer lines shall be tested in the presence of the Engineer by the methods outlined below for tightness.

The section of pipe to be tested shall be isolated by completely blocking all outlets in the section under test. Careful attention must be given to the bracing of all plugs, as the line will be under pressure. One of the plugs used at the manhole must be equipped for an air inlet to fill the line from the air compressor. The air compressor which feeds air into the pipe section must be equipped to control the air entry rate and to prevent the pressure from exceeding 5 psig. The air compressor shall be fitted with a blow-off valve to operate at 5.0 psig to prevent an increase in pressure which could be hazardous to the pipeline.

After the pipe has been wetted, the air shall be allowed to slowly fill the pipe line until a constant pressure of 4.0 psig is maintained. At this point, the air compressor shall be controlled so that the internal pressure in the line is maintained between 4.0 and 3.5 psig for at least two minutes to permit the temperature of the entering air to equalize with the temperature of the pipe wall. If it is necessary to bleed off the air to repair a faulty plug, a new two-minute interval must be allowed when the line has been refilled.

When the temperature of the air has reached equilibrium with that of the pipe wall, the air source shall be disconnected. Before disconnecting the air supply, the pressure shall be at 4.0 psig. The gauge is then watched until the air pressure reaches 3.5 psig. When the pressure has reached 3.5 psig a stop watch will be started and stopped when the pressure has reached 2.5 psig. The time required, as shown on the watch, for the loss of 1.0 psig at an average pressure of 3.0 psig, is used to calculate the rate of air loss. The leakage criteria on air test time required for 1 psig drop shall be in accordance with ASTM C 828 or NCPI Low Pressure Air Tables for Sanitary Sewer.

The air test shall be performed after the completion of backfill and compaction and prior to final paving and pouring of the curbs, gutters and sidewalks.

The Contractor shall furnish all equipment needed to complete this test.

306.17 Televised Inspection of Sewer or Storm Drains - The City may, at the Engineer's discretion, request an inspection by pulling a television camera through the pipe prior to acceptance of the line. The televised inspection shall be made at the locations indicated by the Engineer and in the presence of the Contractor and the Engineer. The televised inspection shall be made after completion of backfill and compaction, but prior to final paving. A VHS video tape shall be furnished by the Contractor to the City at the initial inspection and upon completion of any repairs made.

All defects and deficiencies discovered in this inspection shall be corrected by the Contractor to the satisfaction of the Engineer and at the Contractor's expense.

Measuring devices and depth tolerances for trapped water shall be:

Depth		Device Tolerance
6”	-	.08’
8”	-	.11’
10”	-	.13’
12”	-	.16’
15”	-	.20’
15”	-	depth tolerance = 10% of pipe area.

If the City suspects any damage or break in the line, the televised inspection may be repeated within the one year warranty period. All defects discovered in this subsequent inspection shall be corrected.

306.18 Backfilling of Trenches - No backfilling shall be done in the trenches prior to the approval of the pipe bedding by the Engineer. Backfill material and installation shall be done in conformance with Standard Plan No. 501, “Trenching & Resurfacing”.

306.19 Sewer Service Connections - The end of the sewer service shall extend a maximum of 48 inches and a minimum of 24 inches beyond the rear edge of the sidewalk in streets having sidewalks adjacent to the curb and shall extend a maximum of 12 inches and a minimum of 6 inches beyond the back edge of the curb for sidewalks that are separated from the curb by a planter strip and in commercial sidewalks.

The location of every sewer service shall be marked with an “S” directly above the service on the face of curb, the “S” to be 1-1/2 inches in height and 1/4 inch in depth.

A cleanout shall be installed on the sewer service 24 inches to 48 inches from the back edge of sidewalk. (See Standard Plan No. 203, “Sewer Lateral” for installation details.) Said cleanout shall consist of a combination “Y” and eighth bend. The sewer service shall extend a maximum of 48 inches and a minimum of 24” beyond the cleanout.

The “Y” branches, unless otherwise specified, shall be inclined at any angle not greater than 45 degrees from the horizontal.

306.20 Manhole Construction - Manholes shall conform to Standard Plan No. 301, “Manhole”.

Elliptical single-line reinforcement shall not be permitted. Single line circular reinforcement will be permitted and the minimum steel area shall equal the minimum steel area required for the intercage reinforcement.

Tapered sections shall conform to the requirements for pipe of the size equal to the largest internal diameter of the tapered sections.

Concrete for the base section shall be Grade B, conforming to Section 201-1.3.2 “Combined Aggregate Gradings” of SSPWC and have a 28-day compressive strength of 2500 psi.

The inside of the manhole shall be formed to the flow line of the sewer or storm drain.

If a sewer main or storm drain is laid through the manhole, the top half of the pipe shall be carefully broken out and removed so the bottom half of the pipe forms the flow line.

Stub-outs shall be installed in the manholes at the locations and of the size shown on the plans. All stub-outs shall be sealed with a plug of a type approved by the manufacturer of the pipe.

306.21 Cleanouts - Cleanouts shall be constructed at the locations indicated and as shown on Standard Plan No. 203.

Concrete shall be Grade B conforming to Section 201-1.3.2 "Combined Aggregate Gradings" of SSPWC and have a 28-day compressive strength of 2500 psi.

Cleanout frames and covers shall be manufactured, tested and otherwise furnished in accordance with the Standard Specification for Gray Iron Castings A.S.T.M. serial designation A48.48, Class 30. The contact surfaces of frames and covers shall be machine surfaced to eliminate rattling and other movement under traffic. Castings shall be equal in material and construction to cleanout assemblies Christy F 14, or approved equal.

306.22 Storm Drains Using Cast-in-Place Pipe - The actual internal diameter of the pipe at any point shall not be less than 95% of the nominal internal diameter for pipes up to and including 30 inches, and 97% for the remaining pipe sizes up to and including 60-inch diameter. Actual internal cross-sectional area of the pipe at any point shall not be less than the cross-sectional area of a circle computed from the nominal internal diameter.

Wall thickness, unless modified in the Special Provisions or detailed drawings, for the various sizes of pipe shall be as follows:

Internal Diameter	Minimum Wall Thickness
24"	2-1/2"
27"	3"
30"	3"
33"	3-1/2"
36"	3-1/2"
42"	4"
48"	5"
54"	5-1/2"
60"	6"
66"*	6-1/2"
72"	7"
84"	8"
96"	9"

*Note: Pipe over 60" in diameter may be constructed only with the approval of the City Engineer.

SECTION 307 - STREET LIGHTING AND TRAFFIC SIGNALS

Street lighting and traffic signal construction shall conform to the provisions of Section 307 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and the City Standard Specifications, the City Standard Specifications shall govern.

307.01 Regulations and Codes - All regulations and codes as specified in Section 209-1 "Regulations and Codes" of SSPWC apply. Applicable provisions of the City of Tracy Municipal Code concerning the disturbance and excavation of streets shall be considered a part of these specifications. Section 7.04.010, "Public right-of-way excavation and encroachment permits." of the City of Tracy Municipal Code specifically requires that a written permit must be obtained from the street department before disturbing or excavating streets.

307.02 Excavation and Backfill - Location of existing facilities shown on the plans are approximate only. The Contractor shall be responsible for location of all underground facilities before beginning any excavation.

307.03 Conduit - The line to be followed by each run of conduit, as indicated in the plans, is necessarily approximate; and such deviations from the lines indicated on the plans as may be reasonably necessary in order to clear obstructions are to be determined and made by the Contractor, subject to the approval of the Engineer. It is not contemplated or intended that any existing underground structures shall be changed or moved in order to permit carrying out the work covered by these specifications.

All conduit shall be installed beneath sidewalk or roadway areas excepting riser conduits. Conduit which is placed under a street or roadway shall be placed at a minimum depth of thirty-six (36) inches below the surface of the roadway. Gutters are to be considered as part of the roadway. Conduit which is placed in the ground under sidewalks shall, so far as practicable, be placed at a minimum depth of eighteen (18) inches below adjacent curb grade. Conduit which is placed under sidewalks shall be placed as near the adjacent existing curb position as is practicable without making repeated bends to clear poles, water meters, and similar obstructions, but in no case more than forty (40) inches from the adjacent curb line unless otherwise expressly authorized by the Engineer.

Conduit shall be 1-1/2 inch PVC (polyvinyl chloride), Schedule 40, heavy wall rigid, unless otherwise noted on the plans. Only standard fittings shall be used and all conduit bends shall have a minimum radius of six (6) times the inside diameter of the conduit.

Installing Conduit - The following restrictions shall apply in appropriate circumstances

1. The contractor shall inform himself of the location of underground pipes, sewers or other underground structures by consulting the proper utility Companies or agencies.

2. The contractor shall open, by hand digging, test holes to locate existing sewers or other underground structures which could be damaged by the new installation.

3. No conduit shall run through catch basins, drainage ducts or other underground installations.

4. The contractor shall have full responsibility for repairing any underground structure damaged by his operations.

5. The City shall have the right to require any additional inspection holes that the inspector finds necessary.

307.04 Bonding and Grounding - All poles shall be grounded as indicated on the grounding and bonding details.

Ground rods shall be 15' of #4 copper wire installed in bottom of foundation and attached to pole by approved method.

Equipment grounding shall conform to the California Electrical Code.

PVC conduit shall be grounded as detailed on the pull box Standard Plans.

307.05 Street Light Service - The contractor shall furnish and install all material and equipment necessary to complete the electrical connection between the terminating point of the serving utility and the electrical system, as shown on the plans.

The Contractor shall be responsible for coordinating the service installation with the power company and to furnish and install all necessary hardware, conduit and wire to complete the connections. The Contractor shall also pay all connection and service costs levied by the utility company.

Street lighting wire, underground, shall be No. 8 copper stranded wire (insulation rating shall be THNN/THW 600 V rated) and No. 10 in the pole riser; stranded, copper conductors (insulation rating shall be THHN/THW insulation 600 volt rated). Insulation coloring shall be yellow, unless otherwise noted.

All wire shall meet A.S.T.M. - D734 Column B Standards for PVC building wire.

Wire shall be installed in continuous lengths from luminaire to curb box and from curb box to curb box without intermediate splices.

Sufficient slack wire shall be provided in curb boxes so that finished loops may extend at least two (2) feet beyond the limits of enclosure.

307.06 City Review and Inspection - The work will be reviewed and inspected by the Engineer. He may approve a work sequence to obtain the best results and to protect the City's interests. The contractor shall promptly comply with instructions from the Engineer or his authorized representative.

All work and materials are subject to inspection and approval of the Engineer. The contractor shall notify the Engineer before noon of the working day before inspection is required. Unless otherwise authorized, work shall be done only in the presence of the Engineer or his authorized representatives. Any work done without proper inspection will be subject to rejection. The Engineer and his authorized representatives shall at all times, have access to the work during its construction at shops and yards as well as the project site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with

these specifications. Inspection of the work shall not relieve the contractor of the obligation to fulfill all conditions of the contract.

SECTION 308 - LANDSCAPE AND IRRIGATION INSTALLATION

Landscape and irrigation installation shall conform to Section 308 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein and the City Parks and Streetscapes Standard Plans. Whenever a conflict exists between the SSPWC and the City Standard Specifications or City Parks and Streetscapes Standard Plans, the City Standard Specifications or City Parks and Streetscapes Standard Plans shall govern.

308.01 Topsoil Preparation and Conditioning - shall conform to Section 308-2.3 "Topsoil Preparation and Conditioning" of the SSPWC and requires that all existing undesired vegetation be sprayed out with a City approved herbicide.

308.02 Plant Staking and Guying - shall use City approved staking and anchoring methods.

308.03 Ground Cover and Vine Planting - shall conform to Section 308-4.7 "Ground Cover and Vine Planting" of the SSPWC. All ground cover and shrubbery areas shall be treated immediately after planting with a City approved pre-emergent herbicide.

308.04 Irrigation System Installation - shall conform to Section 308-5 ''Irrigation System Installation" of the SSPWC except that no steel pipeline shall be used.

308.05 Sprinkler Head Installation and Adjustment - shall conform to Section 308-5.4 "Sprinkler Head Installation and Adjustment" of the SSPWC except that all risers shall be Schedule 80 PVC, all sprinkler head riser assemblies shall be top outlet, double swing joint.

308.06 Automatic Control System Installation - shall conform to Section 308-5.5 "Automatic Control System Installation" of the SSPWC except that no hydraulic control tubing shall be used.

308.07 Maintenance - shall conform to Section 308-6 "Maintenance and Plant Establishment" of the SSPWC except that the maintenance period shall be for 90 days.

SECTION 309 - MONUMENTS

All Portland Cement concrete right-of-way and cast-in-place survey monuments shall conform to Section 309 of the Standard Specifications for Public Works Construction (SSPWC) as modified by the City Standard Specifications herein. Whenever a conflict exists between the SSPWC and these City Standard Specifications, the City Standard Specifications shall govern.

309.01 Marker Plates - Marker plates for survey monuments will be furnished by the Contractor. The marker plates shall be brass and have the exact spot indicated by a chiseled cross or a punched hole and bear the license number of the engineer or surveyor making the survey and the date of the marking. The bottom of the brass plate shall be flush with the top of the cast iron pipe.

309.02 Survey Monuments - Shall be installed in accordance with the Standard Plans.

SECTION 310 - PAINTING

Painting shall conform to Section 310 of the Standard Specifications for Public Works Construction (SSPWC).

SECTION 311 - SPECIAL PROTECTIVE MATERIALS

All special protective materials shall conform to Section 311 of the Standard Specifications for Public Works Construction (SSPWC).

APPENDIX A

APPROVED MATERIAL LISTS

CITY OF TRACY
APPROVED MATERIAL LIST

The following materials have been approved for use on public improvement projects in the City of Tracy. Exceptions must be approved by the City Engineer.

Storm Drainage

° Pipe	Reinforced Concrete Pipe, Rubber gasket
° Drop Inlets (on-site only)	Santa Rosa Cast Products Model 2K Flat Grate 2' x 2'
° Drop Inlets, 21"	Phoenix P.O. 2416 Empire S-110 Pinkerton 279A
° Drop Inlets, 34"	Pinkerton A-285A

Water

° Monument Box	FORNI Ironsides Approved by City Engineer
° Valve Box and Cover	Brooks Model 3-RT Series Christy Model G-5
° Meter Boxes, 5/8" x ¾"	Brooks B36 Christy B9X
" " 2" Service	Christy B-36
° Butterfly Valves - Epoxy Lined (12" & larger)	("Pratt") ("American") Mueller DeZurik
° Gate Valves (all sizes)	Mueller Resilient Seat Clow R/W Kennedy American-80 "CRS"

Water (Cont'd)

° Blackflow Prevention Devices:	
Reduced Pressure Principle & Double Check Valve Assemblies	Only Cross-Connection Control Foundation Approved Types
° Fire Hydrants	Clow 850 (4-1/2" x 2-1/2")
° Service Saddles (Iron Pipe Thread)	Jones, Mueller, Smith-Blair ¾" double strap bronze 1" double strap bronze 1-1/2" double strap bronze 2" double strap bronze (No Tapped Collars)
° Corporation Stops Iron pipe Thread x Polyethylene	Jones Mueller Ford (Brass)
° Tapping Tees (Sleeves)	(Mueller H-165 Mechanical Joints Clow Corey Tyler, American
° Tapping Valves – Resilient Wedge (full flow) Epoxy lined and coated	Clow, R/W Mueller, A2370 American
° Water Meter	Rockwell
5/8" – ¾" meter	Rockwell SR-TRPL Water Meter with Bronze Register Box, Bronze Bottom and L/CONNS.
¾" meter	Rockwell SR-TRPL Water Meter with Bronze Register Box, Bronze Bottom and L/CONNS.
1" meter	Rockwell SR/TRPL Water Meter wotj a Bronze Bottom and L/CONNS.
1-1/2" meter	Rockwell SR-TRPL Water Meter with L/Flanges.
2", 3", 4" and 6" meters	Rockwell SRM Compound – TRPL Water Meter with L/Flanges or a Rockwell Turbo TRPL Water Meter with L/Flanges.

Water (Cont'd)

° Combination Air & Vacuum Valves	1" APCO 142-C 2" APCO 145-C Crispin U-20 3" APCO 147-C

Sanitary Sewer

° Manholes	South Bay Foundry, SBF 1900 Teichert No. 6622

APPENDIX B

CONTRACTORS' INSURANCE REQUIREMENTS

General Liability Endorsement

1. POLICY INFORMATION

Endorsement No. _____
Policy No. _____

1.1 Insurance Company _____ ("Company")
(Must have a current A.M. Best's rating of no less than A:VII)
Address & Telephone of Insurance Company
_____
_____
ATTN:_____
Phone:_____

1.2 Named Insured _____ ("Named Insured")
Address & Telephone of Named Insured
_____
_____
ATTN:_____
Phone:_____

1.3 City of Tracy ("City"). (The term "City" shall include the City, its elected and appointed officials, officers, employees, agents and volunteers.)
Address & Telephone of City
City of Tracy, _____ Department
333 Civic Center Plaza, Tracy CA 95376
ATTN:_____
Phone:_____

1.4 Policy Term (From) _____ (To) _____

1.5 Endorsement Effective Date _____

1.6 Limit of Liability
Any One Occurrence $_____ (minimum $1 million)
General Aggregate $_____ (minimum $2 million)

1.7 Excess Liability
Each Occurrence $_____
Aggregate $_____

1.8 Deductible or Self-Insured Retention: $_____
(Nil Unless Otherwise Specified)

2. POLICY AMENDMENTS

2.1 COVERAGE. Contractor shall furnish the City with original certificates and endorsements, including amendatory endorsements, in consideration of the policy premium. Not withstanding any inconsistent statement in the Policy to which this Endorsement or any other endorsement is attached thereto, it is agreed as set forth in the requirements herein.

2.2 INSURED. The City is included as an insured regarding damages and defense of claims arising from: (a) Activities performed by or on behalf of the Named Insured; (b) Products and completed operations of the Named Insured; or (c) Premises owned, leased, or used by the Named Insured.

2.3 CONTRIBUTION NOT REQUIRED. The insurance provided by the Policy shall be primary insurance, with respect to the City, for: (a) Work performed by the Named Insured for or on behalf of the City, (b) Products sold by the Named Insured for or on behalf of the City, (c) Products sold by the name Insured to the City, or (d) Premises leased by the Named insured from the City. Any insurance maintained by the City shall be in excess of the insurance provided by the Policy, and the City's insurance shall not contribute with it.

2.4 SCOPE OF COVERAGE. The Policy provides coverage at least as broad as Insurance Services Office (ISO) Commercial General Liability Coverage, "occurrence" form CG 00 01.

2.5 SEVERABILITY OF INTEREST. The insurance provided by the Policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought.

2.6 PROVISIONS REGARDING THE NAMED INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure by the Named Insured to comply with reporting provisions of the Policy shall not affect coverage provided to the City.

2.7 CANCELLATION NOTICE. The insurance provided by the Policy shall not be suspended, voided, canceled, or materially changed in coverage or in limits except after thirty (30) days prior written notice has been given to the City.

2.8 METHOD OF PROVIDING NOTICE. All notices, demands, or other communications contemplated by this Endorsement, including: (a) notices of claims provided to the Insurance Company, (b) cancellation notices provided to the City, and (c) notices of change of address, shall be in writing and personally delivered or mailed to the respective party at the address designated in this Endorsement. Communications shall be deemed to have been given and received on the first to occur of: (i) actual receipt at the address designated above, or (ii) three working days following the deposit in the United States Mail of registered or certified mail, sent to the address designated in this Endorsement.

3. SIGNATURE OF AUTHORIZED REPRESENTATIVE OF THE INSURER

The individuals executing this Endorsement represent and warrant that they have the right, power, legal capacity, and authority to bind the Insurance Company identified on this endorsement, and by their signature hereby bind the Insurance Company.

_____ _____

SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

_____

TYPED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Address & Telephone of Authorized Representative

_____

_____

ATTN:_____

Phone:_____

Automobile Liability Endorsement

1. POLICY INFORMATION

Endorsement No. _____
Policy No. _____

1.1 Insurance Company _____ ("Company")
(Must have a current A.M. Best's rating of no less than A:VII)
Address & Telephone of Insurance Company
_____
_____
ATTN:_____
Phone:_____

1.2 Named Insured _____ ("Named Insured")
Address & Telephone of Named Insured
_____
_____
ATTN:_____
Phone:_____

1.3 City of Tracy ("City"). (The term "City" shall include the City, its elected and appointed officials, officers, employees, agents and volunteers.)
Address & Telephone of City
City of Tracy, _____ Department
333 Civic Center Plaza, Tracy CA 95376
ATTN:_____
Phone:_____

1.4 Policy Term (From) _____ (To) _____

1.5 Endorsement Effective Date _____

1.6 Limit of Liability
Any One Occurrence $_____
General Aggregate $_____

1.7 Excess Liability
Each Occurrence $_____ (minimum $1 million)
Aggregate $_____

1.8 Deductible or Self-Insured Retention: $_____
(Nil Unless Otherwise Specified)

2. POLICY AMENDMENTS

2.1 COVERAGE. Contractor shall furnish the City with original certificates and endorsements, including amendatory endorsements, in consideration of the policy premium. Not withstanding any inconsistent statement in the Policy to which this Endorsement or any other endorsement is attached thereto, it is agreed as set forth in the requirements herein.

2.2 INSURED. The City is included as an insured regarding damages and defense of claims arising from: the ownership, operation, maintenance, use, loading, or unloading of any vehicle owned, leased, hired, or borrowed by the Named Insured.

2.3 CONTRIBUTION NOT REQUIRED. The insurance provided by the Policy shall be primary insurance, with respect to the City, for Work performed by the Named Insured for or on behalf of the City. Any insurance maintained by the City shall be in excess of the insurance provided by the Policy, and the City's insurance shall not contribute with it.

2.4 SCOPE OF COVERAGE. The Policy provides coverage at least as broad as Insurance Services Office form CA 00 01, Code 1 for "any auto."

2.5 SEVERABILITY OF INTEREST. The insurance provided by the Policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought.

2.6 PROVISIONS REGARDING THE NAMED INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure by the Named Insured to comply with reporting provisions of the Policy shall not affect coverage provided to the City.

2.7 CANCELLATION NOTICE. The insurance provided by the Policy shall not be suspended, voided, canceled, or materially changed in coverage or in limits except after thirty (30) days prior written notice has been given to the City.

2.8 METHOD OF PROVIDING NOTICE. All notices, demands, or other communications contemplated by this Endorsement, including: (a) notices of claims provided to the Insurance Company, (b) cancellation notices provided to the City, and (c) notices of change of address, shall be in writing and personally delivered or mailed to the respective party at the address designated in this Endorsement. Communications shall be deemed to have been given and received on the first to occur of: (i) actual receipt at the address designated above, or (ii) three working days following the deposit in the United States Mail of registered or certified mail, sent to the address designated in this Endorsement.

3. <u>SIGNATURE OF AUTHORIZED REPRESENTATIVE OF THE INSURER</u>
The individuals executing this Endorsement represent and warrant that they have the right, power, legal capacity, and authority to bind the Insurance Company identified on this endorsement, and by their signature hereby bind the Insurance Company.

_____ _____
SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

_____
TYPED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Address & Telephone of Authorized Representative
_____
_____
ATTN:_____
Phone:_____

Worker's Compensation/Employers Liability Endorsement

1. POLICY INFORMATION

Endorsement No. _____
Policy No. _____

1.1 Insurance Company _____ (the "Company)
Address & Telephone of Insurance Company
_____
_____
ATTN:_____
Phone:_____

1.2 Named Insured _____ ("Named Insured")
Address & Telephone of Named Insured
_____
_____
ATTN:_____
Phone:_____

1.3 City of Tracy ("City"). (The term "City" shall include the City, its elected and appointed officials, officers, employees, agents and volunteers.)
Address & Telephone of City
City of Tracy, _____ Department
333 Civic Center Plaza, Tracy CA 95376
ATTN:_____
Phone:_____

1.4 Policy Term (From) _____ (To) _____

1.5 Endorsement Effective Date _____

1.6 Employer's Liability Limit: $_____ (minimum $1 million)

2. POLICY AMENDMENTS

2.1 COVERAGE. Contractor shall furnish the City with original certificates and endorsements, including amendatory endorsements, in consideration of the policy premium. Not withstanding any inconsistent statement in the Policy to which this Endorsement or any other endorsement is attached thereto, it is agreed as set forth in the requirements herein.

2.2 WAIVER OF SUBROGATION. The Insurance Company hereby waives all rights of subrogation against the City for losses paid under the terms of the Policy which arise from Work performed by the Named Insured for the City.

2.3 SCOPE OF COVERAGE. The Policy provides coverage of at least as broad as required by the State of California and Employer's Liability Insurance.

2.4 CANCELLATION NOTICE. The insurance provided by the Policy shall not be suspended, voided, canceled, or materially changed in coverage or in limits except after thirty (30) days prior written notice has been given to the City.

2.5 METHOD OF PROVIDING NOTICE. All notices, demands, or other communications contemplated by this Endorsement, including: (a) notices of claims provided to the Insurance Company, (b) cancellation notices provided to the City, and (c) notices of change of address, shall be in writing and personally delivered or mailed to the respective party at the address designated in this Endorsement. Communications shall be deemed to have been given and received on the first to occur of: (i) actual receipt at the address designated above, or (ii) three

working days following the deposit in the United States Mail of registered or certified mail, sent to the address designated in this Endorsement.

3. SIGNATURE OF AUTHORIZED REPRESENTATIVE OF THE INSURER
The individuals executing this Endorsement represent and warrant that they have the right, power, legal capacity, and authority to bind the Insurance Company identified on this endorsement, and by their signature hereby bind the Insurance Company.

_____ _____
SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

_____
TYPED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Address & Telephone of Authorized Representative
_____
_____
ATTN:_____
Phone:_____

HOLD HARMLESS AND INDEMNIFICATION AGREEMENT

Construction Agreements:

Contractor shall indemnify, defend, and hold harmless the City (including its elected officials, officers, agents, and employees) from and against any and all claims (including all litigation, demands, damages, liabilities, costs, and expenses) resulting from or arising out of the performance of the work by the Contractor (including Contractor's agents, representatives, contractors, subcontractors, and employees), except only for those claims arising from the established willful misconduct or active negligence of the City. Contractor's indemnification shall specifically include, but not be limited to, all claims arising out of: contract claims, property damage, personal injury, and any infringement of patent rights or copyrights incidental to the use in the performance of the work or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the plans or documents describing the work. Contractor's indemnification shall include any and all costs, expenses, court costs, attorneys' fees and liability incurred by the City in enforcing the provisions of this section, and in defending against such claims, whether the same proceed to judgment or not. Contractor shall reimburse City for any expenditures City incurs by reason of such matters.

TRACY

Think Inside the Triangle™

City of Tracy

Engineering Design & Construction Standards



STANDARD PLANS

(PARKS & STREETSCAPE)

Development and Engineering Services Department
Resolution No. 2020-XXX ♦ FEBRUARY 18, 2020

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ENGINEERING DESIGN STANDARDS
Resolution 2020-XXX

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END

LANDSCAPE DESIGN CHECKLIST

PROJECT NAME: _____

PROJECT ADDRESS: _____

SUBMITTAL REQUIREMENTS

A. Landscape Document Package

____1. Project information including:
- a.) Project Applicant
- b.) Project Address
- c.) Project Owner
- d.) Total Landscape Area (square feet) (Landscape Area is only the irrigated space)
- e.) Project water type
- f.) Identify the local retail water purveyor

B. Landscape Improvement Plans (Electronic Submittal)

____1. Plans on 24" X 36" with 1" margin on city's title block, scale 1:20 or 1:10 (when public right-of-way or landscape maintenance district is involved).
____2. Title sheet and map.
____3. Grading and drainage plans.
____4. Quantity and cost estimate for public improvements.
____5. Non-interference letters from public utility companies with any existing easements or facilities.
____6. Preliminary soils report from Soils Lab. (on plans).
____7. Calculations for shade structures.
____8. Water Efficient Landscape Worksheet (on plans) Including:
- a.) Hydrozone Information Table
- b.) Water Budget Calculation Including:
  - i.) Maximum applied water allowance (MAWA)
  - ii.) Estimated total water use (ETWU)

____9. Irrigation controller schedules (establishment & long term). (on plans)
____10. Two copies of certificates of substantial completion (to be submitted on as-built mylars after installation of landscaping).
____11. Provide a signature block (with signature, license number, and date) stating:
- a.) "I agree to comply with the requirements of Water Efficiency Landscape Ordinance and submit a complete Landscape Document Package".

C. Site Improvement Plans / Grading (Electronic Submittal)

____1. Plans on 24"X36" with 1" margin on City's title block, scale 1:20 or 1:10 (existing and new sewer lines).
____2. Copy of the preliminary soils report.
____3. Copy of the on-site and off-site drainage study.
____4. Copies of any other calculations.
____5. Print of boundary survey or map of property, or an acceptable legal description if a map is not available.
____6. Non-interference letter from public utility companies, with any existing facilities/easements.
____7. Show, identify and place in background any and all existing and proposed utilities including Joint Trench.
____8. Show and identify any and all sight vision clearance areas
____9. Provide an 8" wide concrete strip per D 7.11 adjacent to the curb:
a) In a parking lot planter island for access to a vehicle
b) In the median for maintenance access

D. Planting and Irrigation Submittal (Electronic Submittal)

____1. Plans on 24"X36" with 1" margin on city's title block, scale 1:20 or 1:10 (existing and new sewer lines).

____2. Location of all proposed plant materials with legend including botanical names, common names, quantity, size, spacing, and water use per WUCOLS (Water Use Classification of Landscape Species).

____3. Minimum turf width to be 10'. Maximum slope for turf area maintained by the city to be 6:1

____4. Where applicable, specification for stockpiling and reapplying site topsoil and/or imported topsoil. All imported top soil is subject to soils testing.

____5. Include city's standards notes, D 7.0, D 8.0, and city's details on the plans.

____6. Maintain 20' distance from trees to street lights, 8' distance from trees to sewer lines, and 10' distance from trees to storm drain lines. Hardscape and paving within 8' of trees will need root barrier protection. Maintain a distance of 6' from shrubs to fire hydrants.

____7. Show, identify and place in background any and all existing and proposed utilities including Joint Trench.

____8. Show and identify any an all sight vision clearance areas.

____9. Show layout and note sizes of irrigation system with service line, water meter backflow prevention device, flow meter.

____10. Show layout and location of automatic controller and the secondary electrical power source for controller. Irrigation controllers must be metered and within a metered pedestal.

____11. Show layout of other irrigation equipment such as ball and gate valves, main and lateral lines with pipe sizes, valves, sprinklers, bubbler and quick couplers. Drip irrigation is not allowed within City Right-of-Way.

____12. Indicate static water and design pressure (psi) and design flow (gpm). Water pressure can be obtained from Public Works (209) 831-4420

____13. Preliminary soils report from Soils Lab (on plans)

____14. Water Efficient Landscape Worksheet (on plans). (Annual ETo for Tracy is 48.5)

____15. Irrigation controller schedules (establishment & long term) (on plans).

E. As-Built Submittal (Mylar Submittal)

____1. Provide as-built drawings on mylar and include a sheet with the signed MWELO "Certificate of Completion, Certificate of Installation, revised Irrigation Schedules, Landscape and Maintenance Schedules, Soils Management Report (if differs from plans)". An irrigation Audit Report is required, and if feasible, place on as-built plans. Otherwise, supply two bound hard copies.

CERTIFICATE OF COMPLETION

This certificate is filled out by the project applicant upon completion of the landscape project

PART 1: PROJECT INFORMATION SHEET

Date		
Project Name		
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Project Address and Location:

Street Address		Parcel, Tract or Lot Number (If available)
City		Lattitude/Longitude (optional)
State	Zip Code	

Property Owner or their designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

"I/We certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature _____ Date _____

CITY OF TRACY

TRACY
Think Inside the Triangle ™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. A 1.2 Sheet 1 of 2
Res No. 2020–	DATE: February 18, 2020	**APPENDIX** **Certificate of Completion**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

CERTIFICATE OF COMPLETION

This certificate is filled out by the project applicant upon completion of the landscape project

PART 2: CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENT PACKAGE

"I/We certify that based upon periodic site observations, the work has been substantially completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specification of the approved Landscape Document Package."

Signature*	Date	
Name (print)	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.		
Company	Street Address	
City	State	Zip Code

*Signer of the landscape design plan, signer of the irrigation plan, or a licensed landscape contractor.

PART 3: IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per ordinance Section 492.10.

PART 4: SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.

PART 5: LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

PART 6: SOIL MANAGEMENT REPORT

Attach soil analysis report, if not previously submitted with the Landscape Document Package per ordinance Section 492.5.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 492.5.

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is to be filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Please complete all sections (A, B and C) of the worksheet.

SECTION A: HYDROZONE INFORMATION TABLE

Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone or Valve	Water Use*	Irrigation Method**	Area (sq.ft.)	% of Landscape Area
TOTAL:				**100%**

*Water Use:
HW = High Water Use Plants
MW = Moderate Water Use Plants
LW = Low Water Use Plants

**Irrigation Method
MS = Micro-Spray
S = Spray
R = Rotor
RN = Rotary Nozzle
B = Bubbler
D = Drip
O = Other

CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

DETAIL No. A 1.3

Res No. 2020-- DATE: February 18, 2020

Rev: Lyle C. Rev:

Rev: Rev:

APPENDIX
Hydrozone Information Table

PARKS AND STREETSCAPE STANDARD PLANS

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is to be filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Please complete all sections (A, B and C) of the worksheet.

SECTION B: WATER BUDGET CALCULATIONS MAXIMUM APPLIED WATER ALLOWANCE (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using this equation:

MAWA = (ETo)(0.62) [(ETAF x LA) + (1-ETAF xSLA)]

Where:

MAWA	=	Maximum Applied Water Allowance (gallons per year)
ETo	=	Reference Evapotransporation Rate - 48.5
0.62	=	Conversion factor (to gallons per square foot)
ETAF	=	Residential Landscapes = 0.55, Non-Residential Landscapes = 0.45
LA	=	Portion of the irrigated Landscape Area (square feet). Non-irrigated space is not included.
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)
EPPT	=	

MAXIMUM APPLIED WATER ALLOWANCE = _____ gallons per year

Show calculations:

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. A 1.4
Res No. 2020–	DATE: February 18, 2020	APPENDIX MAWA Calculations
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is to be filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Please complete all sections (A, B and C) of the worksheet.

SECTION C: WATER BUDGET CALCULATIONS ESTIMATED TOTAL WATER USE (ETWU)

The project's Estimated Total Water Use shall be calculated using this equation:

ETWU = (ETo)(0.62) ETAF x LA

Where:

ETWU	=	Estimated Total Water Use (gallons per year)
ETo	=	Reference Evapotransporation Rate - 48.5
0.62	=	Conversion factor (to gallons per square foot)
PF	=	Plant Factor (High Water Use = 0.7-1.0, Moderate Water Use = 0.4-0.6, Low Water Use = 0.1-0.3) *
IE	=	IrrigationEfficiency (Overhead Spray = 0.75, Drip = 0.81) **
ETAF	=	Plant Factor / Irrigation Efficiency
LA	=	Portion of the irrigated Landscape Area (square feet). Non-irrigated space is not included.
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)

Hydrozone or Valve	Plant Factor*	Irrigation Efficiency**	ETAF (PF/IE)	LA (Landscape Area)	ETAF x LA	ETWU (gallons)
Regular Landscape Areas						
				REGULAR LANDSCAPE AREA ETWU TOTAL		
Special Landscape Areas						
			1			
			1			
			1			
			1			
					SPECIAL LANDSCAPE AREA ETWU TOTAL	
					ETWU TOTAL	
					Maximum Allowed Water Allowance (MAWA) TOTAL	

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CITY ENGINEER RCE 63173

DETAIL No. **A 1.5**

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Rev:	Rev:

APPENDIX
ETWU Calculations

PARKS AND STREETSCAPE STANDARD PLANS

LOCAL CLIMATE AND SOIL CHARACTERISTICS

CLIMATIC INFORMATION

The City of Tracy is located approximately 25 miles southwest of Stockton, in the San Joaquin Valley in northern California and 60 miles east of San Francisco. The Tracy area falls into Sunset Garden Book' climate Zone 14, Northern California's Inland Areas with some ocean influence. The key climate factors in the area are:

1. Temperature: Lows range from 26 to 16 degrees F over a 20-year period. Some frost tender plants may thrive in sheltered or selected locations.

2. Humidity: Humidity can be higher here than might be expected due to summer irrigation of surrounding agricultural lands. However, this is changing with increased development conversion of agricultural land within and near the city.

3. Wind: Most of Tracy is characterized by persistent, moderate winds from the northwest and west in summer afternoons; Winter storm winds come from the southwest.

4. Precipitation: Mean annual rainfall 12-16 inches occurring primarily between October and March. Potential evapotranspiration stress is 52-56 inches per year.

5. Water Table: Tracy is characterized by a seasonal high water table in summer due to surrounding agricultural irrigation; this tends to grade from high in the northern half of the City of up to 18" to much lower depths in the south. This does fluctuate throughout the City, and each site should be checked prior to design. The water table is lowering due to the conversion of agricultural land; there is no prediction currently of what the final effect will be on the water table condition. For more information see the following section concerning Soils Information.

6. Plant Habitats: The Tracy area is characterized by cultivated agricultural lands interspersed with drainage channels where willows, locusts, walnuts, scrub oak and elm thrive. Old walnut trees may be found in old orchard areas. In the developed town areas, large trees planted 30 to 40 years ago are primarily mulberry, elm, ash, sycamore and Celtis; some oak (both deciduous and evergreen), she-oak, cedar, and pines are also found. Old farmstead properties are characterized by the presence of a mix of these trees, along with large date palms (Phoenix canariensis)

GENERAL SOILS NOTES:

The following soils information was obtained from the USDA Soil Conservation Service Stockton Field Office. Their soil descriptions are dated October 1988 and noted as preliminary drafts and subject to revision

The basic soil types found within the area are:
El Solyo clay loam and silty clay loam (BR) - a well drained soil located between MacArthur Drive and Tracy Blvd, north of Valpico Road. This soil is typically 60" deep and calcareous (High lime) between the depths of 10" and 60". PH will vary between 6.6 and 7.8. Water holding capacity is rated high and infiltration rates low (0.2 to 0.6" per hour)

LOCAL CLIMATE AND SOIL CHARACTERISTICS

Capay Clay (CP) - a moderately well drained soil widely present north of Schulte Rd. East of MacArthur Dr. and north of Lowell Ave. This soil is 60" deep and calcareous between the depths of 20" and 60". PH will vary from 5.6 to 8.4. Water holding capacity is high and infiltration rates are very low (0.06 to 0.2" per hour) Within this soil unit are areas of clay soils with perched water tables at depths of 48". Small areas within this soil unit may be saline-sodic.

Zacharias clay loam (LS and LR) - Well drained soils located through the sites south of Schulte Rd. and west of Tracy Blvd.. These soils are to 60" in depth. PH varies from 6.6 to 8.4. Water holding capacities high and infiltration rates are low (0.2 to 0.6" per hour)

Stomar clay loam (RM) - A well drained soil occurring primarily north of Valpico Rd to Approximately Lowell Ave. This soil is typically 60" in depth and calcareous between the depths of 17" and 60". PH varies from 6.6 to 8.4. Available water capacity is high and infiltration rates are low (0.2 to 0.6" per hour).

Reiff loam (RK) - A very well drained soil occurring to a depth of 60". "Reiff loam has been identified from Eleventh St. south to past Schulte Rd. PH ranges from 6.1 to 84.. Available water capacity is moderate and infiltration rates are rapid (2.0 to 6.0" per hour)

Soil Characteristics

These soils are suitable for most landscape plant species providing individual sites are evaluated for the occasional conditions of excessive alkalinity, high lime concentrations, perched water tables, and possible saline/sodic soils. As a general guideline, plants should be selected for tolerance of slightly to moderately alkaline soils and possible high lime concentrations where calcareous soils are present. Where pH or lime sensitive species are desired for use, the planting sites should be adequately tested prior to planting to check for this condition within root zone depths.

Plant growth problems associated with these soil conditions are chlorosis, stunted growth, and dieback or decline. Severity of symptoms varies according to concentration levels and individual plant species. Often symptoms will not become apparent for three to five years after planting.

Soil pH may be lowered to more desirable levels with the use of soil sulphur, though the size of the planting and respective cost may limit the practicality of this type of procedure. High lime concentrations are not treatable, with the only solution being the selection of lime tolerant species.

Perched water tables should not be a restraint providing the water level is below 2' to 3'. This amount of soil will provide ample volume for healthy root growth. For deep rooting tree and shrub species, a high water table may provide a summer water source, diminishing or eliminating the need for supplemental irrigation after plants are established. If the water table is less than 2' for extended periods of time, then water tolerant species should be selected. In this situation, surface rooting should be anticipated and methods employed to limit associated problems.

LOCAL CLIMATE AND SOIL CHARACTERISTICS

The textural qualities of these soils will affect cultural procedures such as irrigation and organic amendment incorporation. Generally, these soils are fine textured with high water holding capacity and relatively slow infiltration rates (usually less than .5" per hour). The strong prevailing seasonal winds are another important consideration. Irrigation design should utilize appropriate equipment selection to respond to these site characteristics.

In areas of turf and high water requirement groundcovers, there will be a tendency for trees to surface root in response to shallow, frequent irrigations. Proper tree selection, appropriate installation techniques (i.e. root barriers, deep cultivation, etc) and knowledgeable irrigation management are all necessary to avoid this problem.

Organic Amendments

The role of organic soil amendments should be considered carefully. With the exception of the clay soils (Capay clay), the use of organic amendments in container plant backfill mixes is optional. The use of organic amendments in well drained loam to clay loam soils is generally not required and often contributes to problems associated with over-irrigation. If organic amendments are used in backfill mixes, then they should be a nitrolized wood residue and incorporated minimally 30% by volume.

The most beneficial soil preparation is the alleviation of soil compaction resulting from construction activities. Soils should be well cultivated to a depth of 24" to 3" for trees, 18" to 24" for shrubs and 6" to 12" for ground covers. If grading has been minimal, then compaction may only be in the top 6" of soil, making deep cultivation unnecessary. Cultivation requirements should be established based upon individual site conditions.

The use or organic amendment incorporation is desirable for planting of turf and herbaceous ground covers.For this application, 4 to 6 cubic yards of coarse nitrolized fir/redwood bark or shavings should be uniformly incorporated to a depth of 6". This procedure provides a uniform rooting medium for establishment of these plants. The critical aspect of this method is the consistent and uniform incorporation to 6", which is not easily accomplished given soils that are either too wet or too dry.

Fertilizers

Fertilizer requirements can be anticipated to be primarily nitrogen and phosphorous (for herbaceous species). Potassium may also be necessary in certain sites. Fertilizer formulations should be acid based which will contribute to lowering of soil pH. In addition, soil sulphur and iron sulfates may be appropriate for lowering pH in alkaline soils and supplying additional iron.

For most planting conditions, the use of high nitrogen, slow release, IBDU/SCU formulations provide the most consistent source of nutrients. Specific formulations and application procedures will be dependent on plant types and site specific conditions.

STANDARD FINISHES AND COLORS

ITEM	FINISH	COLOR
CONCRETE		
SIDEWALKS, STEPS, OTHER WALKING SURFACES	MEDIUM BROOM	INTEGRAL COLOR 'DAVIS 5447 'MIAMI BUFF', 1 LB. PER SACK OF CEMENT OR EQUAL. NOTE: USE OF STANDARD GREY CONCRETE WILL BE CONSIDERED WHERE SITE CONDITIONS AND/OR BUDGET ARE FACTORS. 1/2 LB. LAMP BLACK PER CUBIC YARD.
WET WALKING SURFACES WALKING SURFACES	FLOAT FINISH	SAME AS ABOVE
WALLS, SEATING SURFACES WALKING SURFACES	BROOM FINISH	SAME AS ABOVE
LANDSCAPE MOW STRIPS, CURBS AND BANDS	FLOAT FINISH	STANDARD GREY. APPLY INTEGRAL COLOR 'LAMP BLACK' 1/2 LB. PER CUBIC YARD.
SPECIAL CONCRETE TRAFFIC SECTION	ROUGH BROOM FINISH	INTEGRAL COLOR SOLOMON #417 'APPLE RED', 4% LIQUID PER 100 LBS CEMENT OR 25 LBS DRY COLOR PER 1 CUBIC YARD CONCRETE, OR APPROVED EQ.
WOOD ELEMENTS		
FENCES, SLATS, FABRICATED AND STRUCTURAL WOOD ELEMENTS	PENOFIN TRANSPARENT REDWOOD COATING OR APPROVED EQUAL	LIGHT NATURAL REDWOOD
PICKET FENCES, FABRICATED AND STRUCTURAL WOOD ELEMENTS	PRIMER AND 2 COATS SEMI-GLOSS EXTERIOR ENAMEL	IVORY WHITE

NOTES

1. CONTRACTOR TO SUPPLY SUBMITTALS / SAMPLES TO CITY FOR APPROVAL PRIOR TO CONSTRUCTION.
2. PROVIDE WRITTEN TECHNICAL SPECIFICATIONS AND CUTSHEETS FOR ALL FINISHES INCLUDING SEALANTS, HARDENERS AND RELEASE AGENTS.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 0.0 Sheet 1 of 2
Res No. 2020–	DATE:February 18, 2020	**STANDARD FINISHES** **Finish and Color**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

STANDARD FINISHES AND COLORS

ITEM	FINISH	COLOR
METAL ELEMENTS		
PLAY STRUCTURE METAL PARTS	POWDERCOATED BY MANUFACTURER	AS SPECIFIED
BOLLARDS	POWDERCOATED BY MANUFACTURER	PINE
HANDRAILS	POWDERCOATED BY MANUFACTURER	FOREST GREEN
BIKE RACKS	POWDERCOATED BY MANUFACTURER	FOREST GREEN
BIKE LOCKER	POWDERCOATED BY MANUFACTURER	FOREST GREEN (RAL-6009)
DRINKING FOUNTAIN	POWDERCOATED BY MANUFACTURER	ROYAL BLUE
BARBECUE UNIT	STANDARD AS SUPPLIED BY MANUFACTURER	FLAT BLACK
TRASH RECEPTACLE	POWDERCOATED BY MANUFACTURER	PINE - TRASH ROYAL BLUE - RECYCLE
BENCH	POWDERCOATED BY MANUFACTURER	PINE
PICNIC TABLE	POWDERCOATED BY MANUFACTURER	PINE
SHADE STRUCTURE POSTS, FRAME	POWDERCOATED BY MANUFACTURER	AS SPECIFIED
CHAIN LINK FENCE POSTS	POWDER COAT	BLACK
CHAIN LINK FABRIC	VINYL COATED	BLACK OR GREEN
IRRIGATION CONTROLLER STRONG BOX	STAINLESS STEEL	NATURAL

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 0.0 Sheet 2 of 2
Res No. 2020–	DATE: February 18, 2020	**STANDARD FINISHES** **Finish and Color**
Rev: Lyle C.	Rev:	
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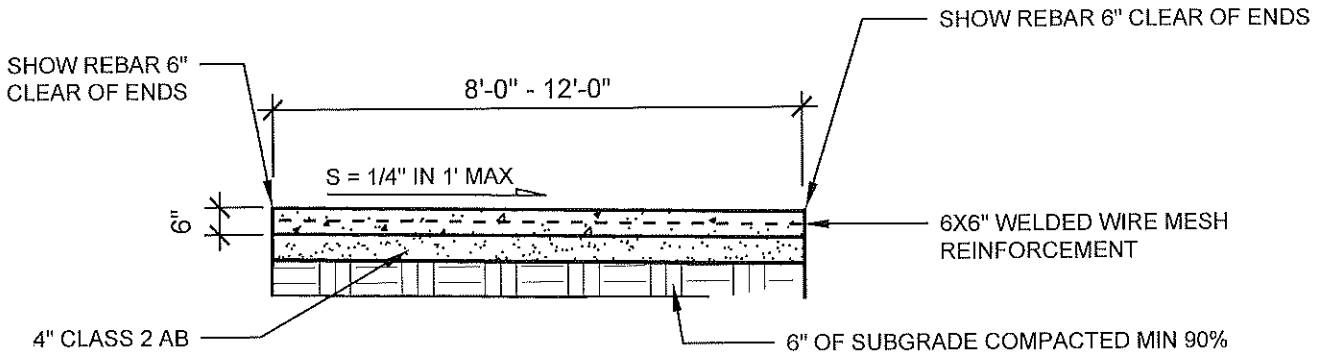
SURFACING GUIDELINES

1. ALL SURFACING GUIDELINES MUST MEET A.D.A STANDARDS AND CALIFORNIA CODE OF REGULATION TITLE 24 ACCESSIBILITY STANDARDS.
2. ELONGATED OPENINGS OR EXPANSION JOINTS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINATE DIRECTION OF TRAVEL AND SHALL NOT BE WIDER THAN 1/2 INCH.
3. CELLULAR CONCRETE PAVERS SHALL NOT BE USED AS PART OF AN ACCESSIBLE PATH OF TRAVEL.
4. ABRUPT CHANGES IN LEVEL SHALL EXCEED 4" IN VERTICAL DIMENSION BETWEEN WALKS, SIDEWALKS, AND OTHER PEDESTRIAN WAYS.
5. DECOMPOSED GRANITE SHALL NOT BE USED FOR PRIMARY PATH OF TRAVEL.
6. MAXIMUM CROSS SLOPE OF CONCRETE NOT TO EXCEED 2%, AND THE RUNNING SLOPE SHALL NOT EXCEED 5% IN THE PATH OF TRAVEL.
7. ASSEMBLY AREAS SHALL PROVIDE WHEEL CHAIR SPACES, COMPANION SEATS, DESIGNATED AISLE SEATS, AND SEMI-AMBULANT.
8. THE NUMBER OF WHEELCHAIR SPACES SHALL BE PROVIDED PER CBC TABLE 11B-221.2.1.1.
9. WHEELCHAIR SPACES SHALL PROVIDE LINE OF SIGHT. IN PROVIDING IN LINES OF SIGHT, WHEELCHAIR SPACES SHALL BE DISPERSED TO PROVIDE SPECTATORS WITH CHOICES OF SEATING LOCATIONS AND VIEWING ANGLES AVAILABLE TO ALL OTHER SPECTATORS. WHEELCHAIR SPACES SHALL BE DISPERSED HORIZONTALLY IN ASSEMBLY AREAS THAT HAVE SEATING ENCIRCLING, IN WHOLE OR PART, A FIELD OF PLAY OR PERFORMANCE.
10. AT LEAST ONE COMPANION SEAT SHALL BE PROVIDED IMMEDIATELY ADJACENT TO EACH WHEELCHAIR SPACE REQUIRED BY CBC TABLE 11B-221.2.1.1.
11. COMPANION SEATS SHALL BE LOCATED TO PROVIDE SHOULDER ALIGNMENT WITH ADJACENT WHEELCHAIR SPACES. THE SHOULDER ALIGNMENT POINT OF THE WHEELCHAIR SPACE SHALL BE MEASURE 36" FROM THE FRONT OF THE WHEELCHAIR SPACE. THE FLOOR SPACE OF COMPANION SEAT SHALL BE AT THE SAME LEVEL OF THE WHEELCHAIR SPACE. ADDITIONALLY, COMPANION SEATS SHALL BE EQUIVALENT IN SIZE, QUALITY, COMFORT, AND AMENITIES.
12. RAMPS AND SURFACING TO MEET THE CURRENT CALIFORNIA CODE OF REGULATION TITLE 24 AND A.D.A REQUIREMENTS; SURFACING TO COMPLY WITH ASTM 1951 (AND ASTM F1292 IF WITHIN USE ZONES OF PLAYGROUND EQUIPMENT).
13. A CONTRASTING STRIPE THAT IS 2" WIDE MINIMUM TO 4" WIDE MAXIMUM PLACED PARALLEL TO, AND NOT MORE THAN 1 INCH FROM THE NOSE OF THE STEP ON THE UPPER APPROACH.

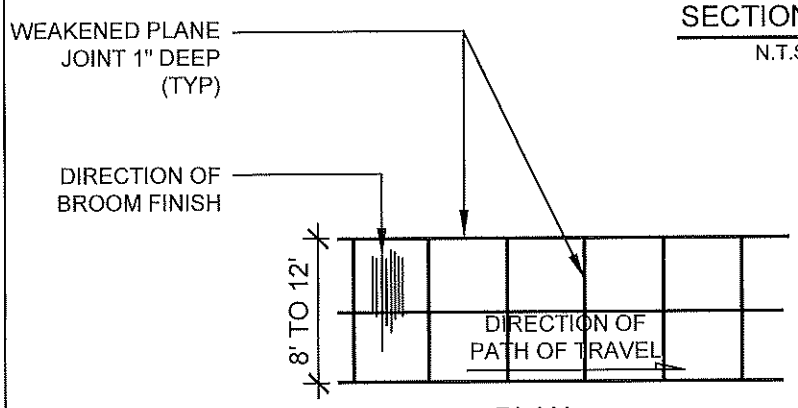
CITY OF TRACY

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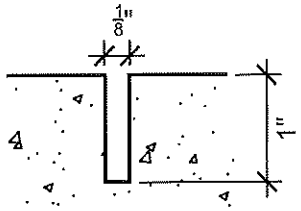
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 1.0
Res No. 2020–	DATE: February 18, 2020	SURFACING GUIDELINES
Rev: Lyle C.	Rev:	
Rev:	Rev:	



SECTION
N.T.S.



PLAN
N.T.S.



WEAKENED PLANE JOINT
N.T.S

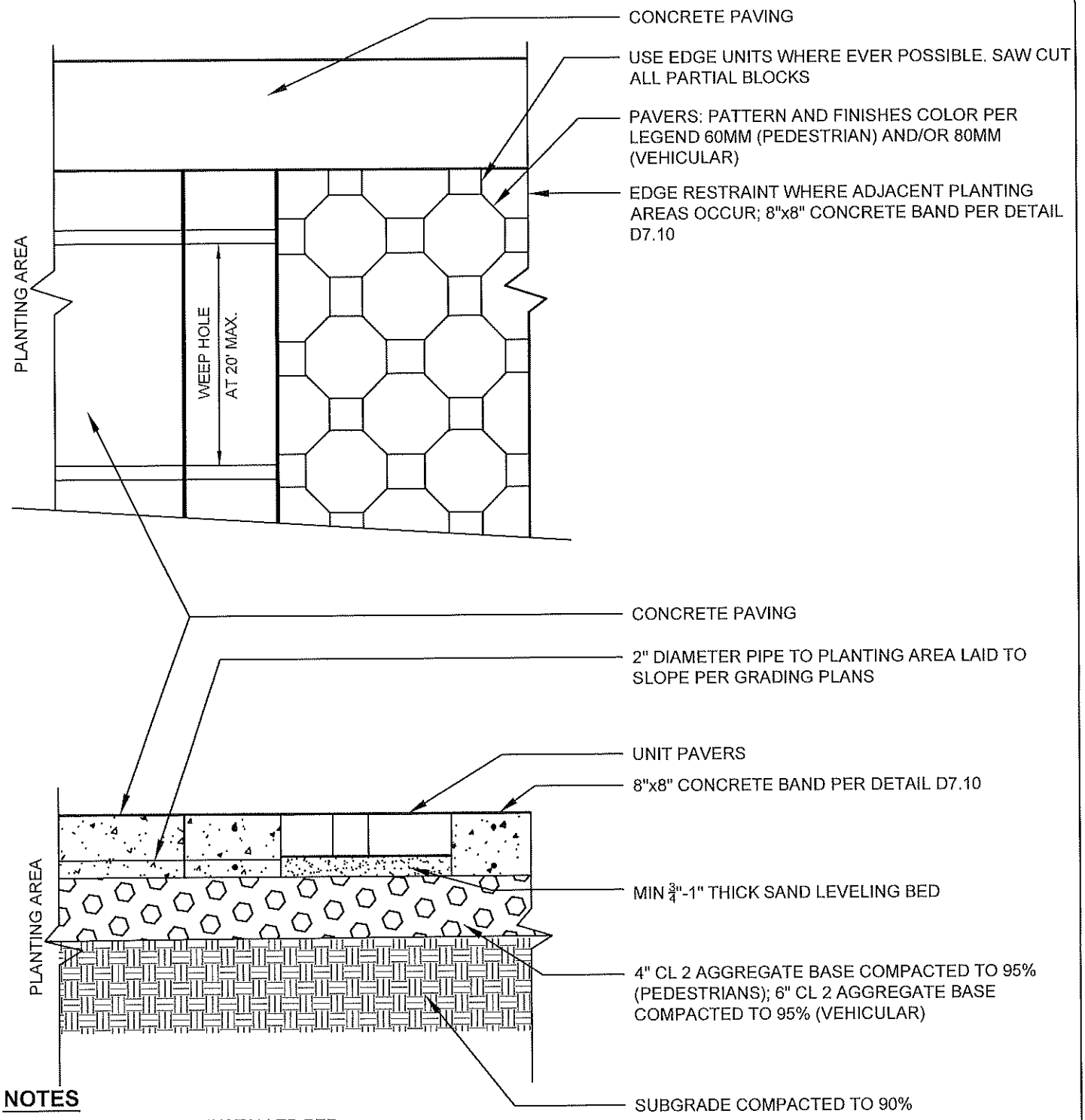
NOTES

1. SUBGRADE SHALL BE MIN. 6" THICK OF 90% COMPACTED NATIVE OR MOIST UNDISTURBED NATIVE SUBGRADE MAY BE APPROVED BY THE CITY ENGINEER.
2. CONCRETE SHALL BE: FIVE SACKS CLASS "B" 2500 PSI AT 28 DAYS: 4" MAXIMUM SLUMP; 3/4" MAXIMUM AGGREGATE SIZE; 1/2 LB. LAMPBLACK PER CUBIC YARD, UNLESS OTHERWISE SPECIFIED.
3. EXPANSION JOINTS SHALL BE SHAPED TO FIT CONCRETE AND PLACED AT EC, BC, DROP INLETS AND AT 20' MAXIMUM INTERVALS.
4. THE TOP AND SURFACE OF THE CURB SHALL BE TRUE, STRAIGHT AND FREE OF IRREGULARITIES. THE SURFACE MUST NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE PLACED ON ITS SURFACE. THE WIDTH MUST BE UNIFORM.
5. SIDEWALKS, GUTTERS, ISLANDS AND DRIVEWAYS SHALL HAVE SURFACES FREE OF BLEMISHES. THE SURFACE SHALL NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE EXCEPT BECAUSE OF GRADE CHANGES.
6. ALL EXPOSED CORNERS SHALL HAVE A 1/2" RADIUS.
7. CONCRETE SHALL HAVE A LIGHT BROOM FINISH UNLESS OTHERWISE SPECIFIED AND AN IMPERVIOUS MEMBRANE OR SPRAY CURE. 1 GAL./150 S.F. PIGMENTED CURING COMP., CLASS A OR B. APPLY IMMEDIATELY AFTER MOISTURE SHEEN DISAPPEARS.
8. FOR COLOR FINISHES SEE D0.0.
9. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.1**
Res No. 2020—	DATE: February 18, 2020	**SURFACES** **8'-12' Walk/Vehicular Path**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



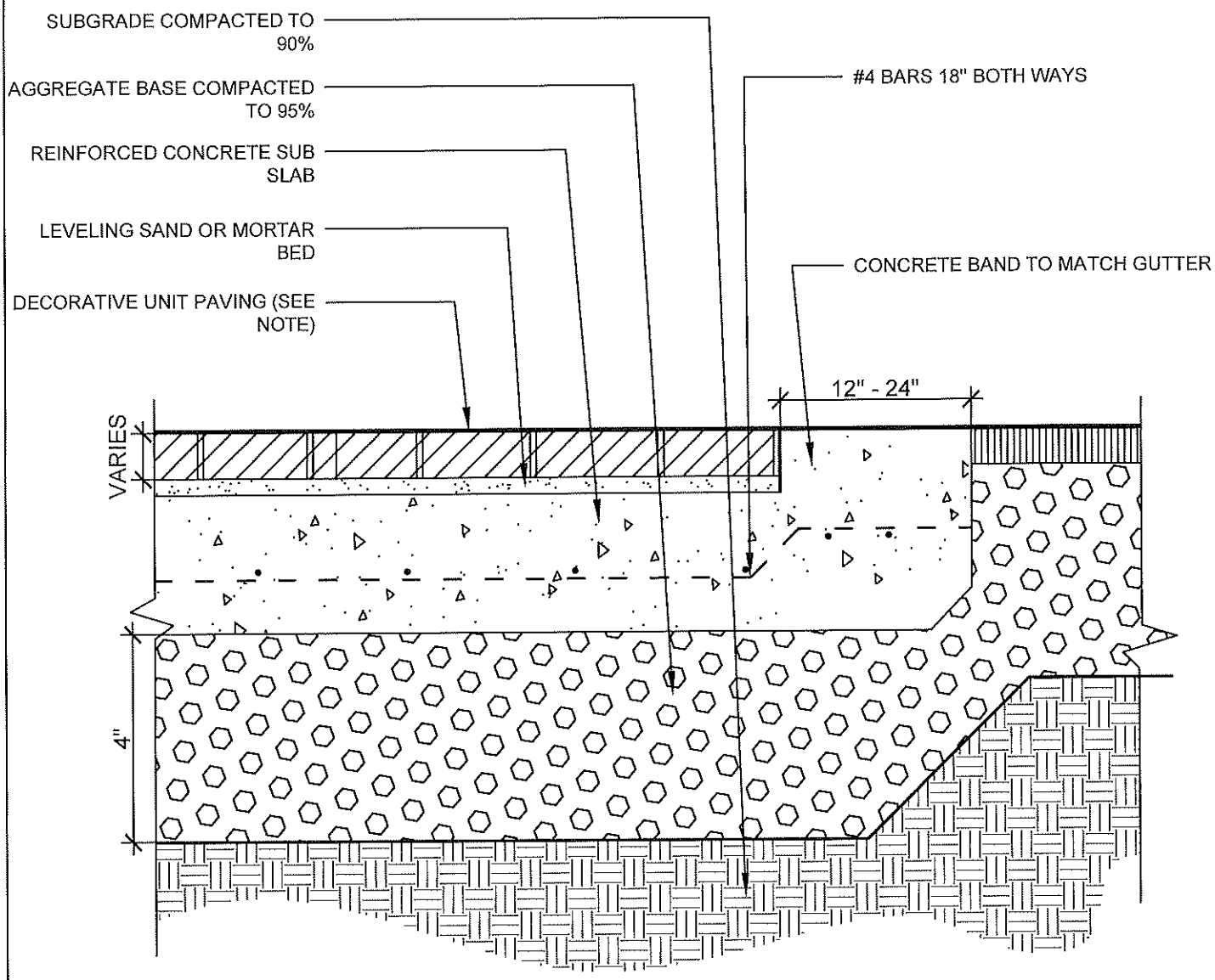
NOTES

1. ALL PAVERS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. PAVERS TO BE VIBRATED INTO PLACE WITH TECHI-SEAL OR OTHER APPROVED EQUAL POLYMERIC SAND. SWEEP BUTT JOINTS.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.2**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Unit Pavers in Sand**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



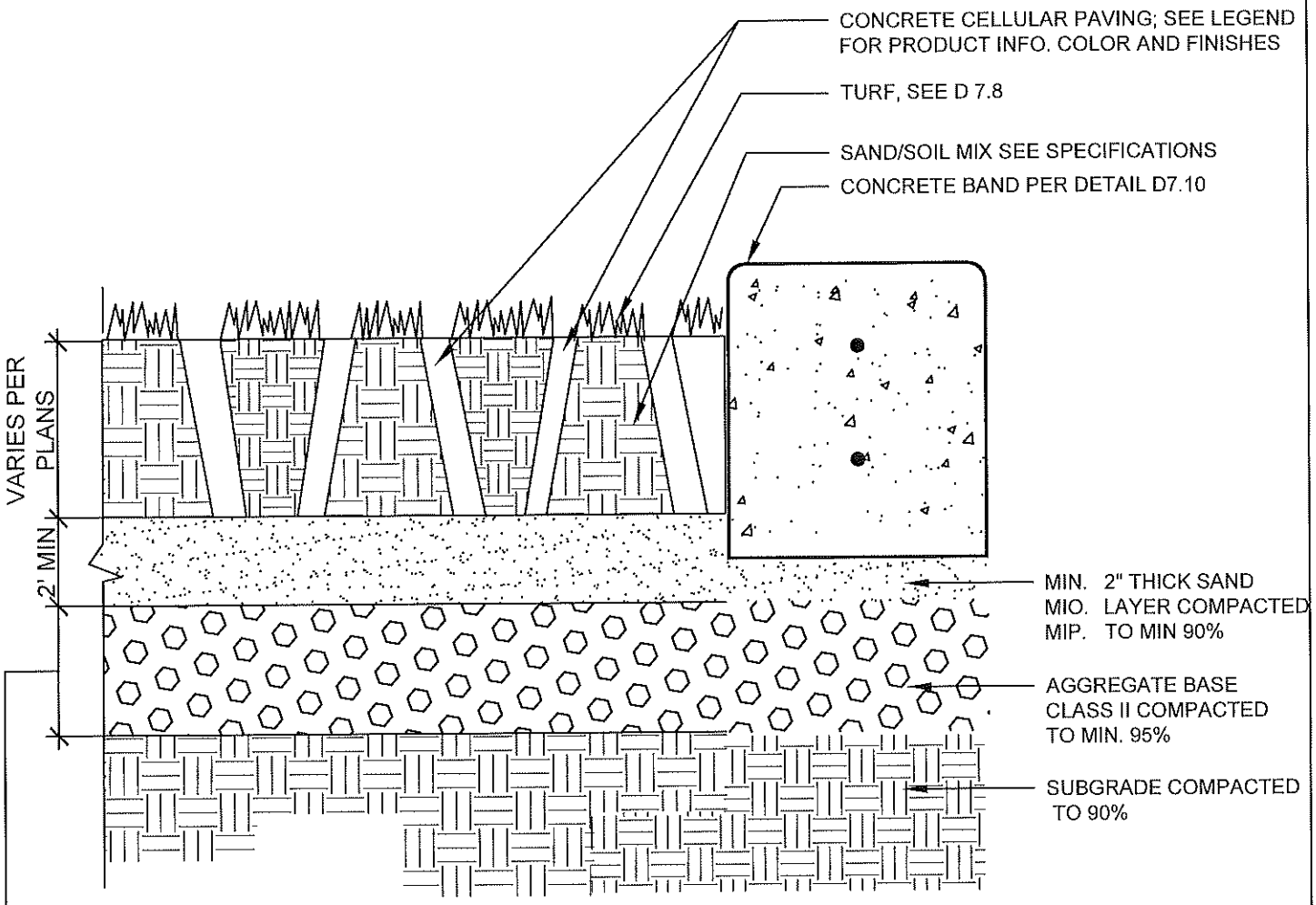
NOTES

1. PAVING MATERIAL ALTERNATIVES:
   (A) NATURAL STONE PAVERS IN MORTAR BED.
   (B) BRICK PAVERS IN MORTAR BED.
   (C) CONCRETE UNIT PAVERS IN SAND BED.
2. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER."

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.3**
Res No. 2020–	DATE:February 18, 2020	**SURFACES** **Unit Pavers Over Concrete**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



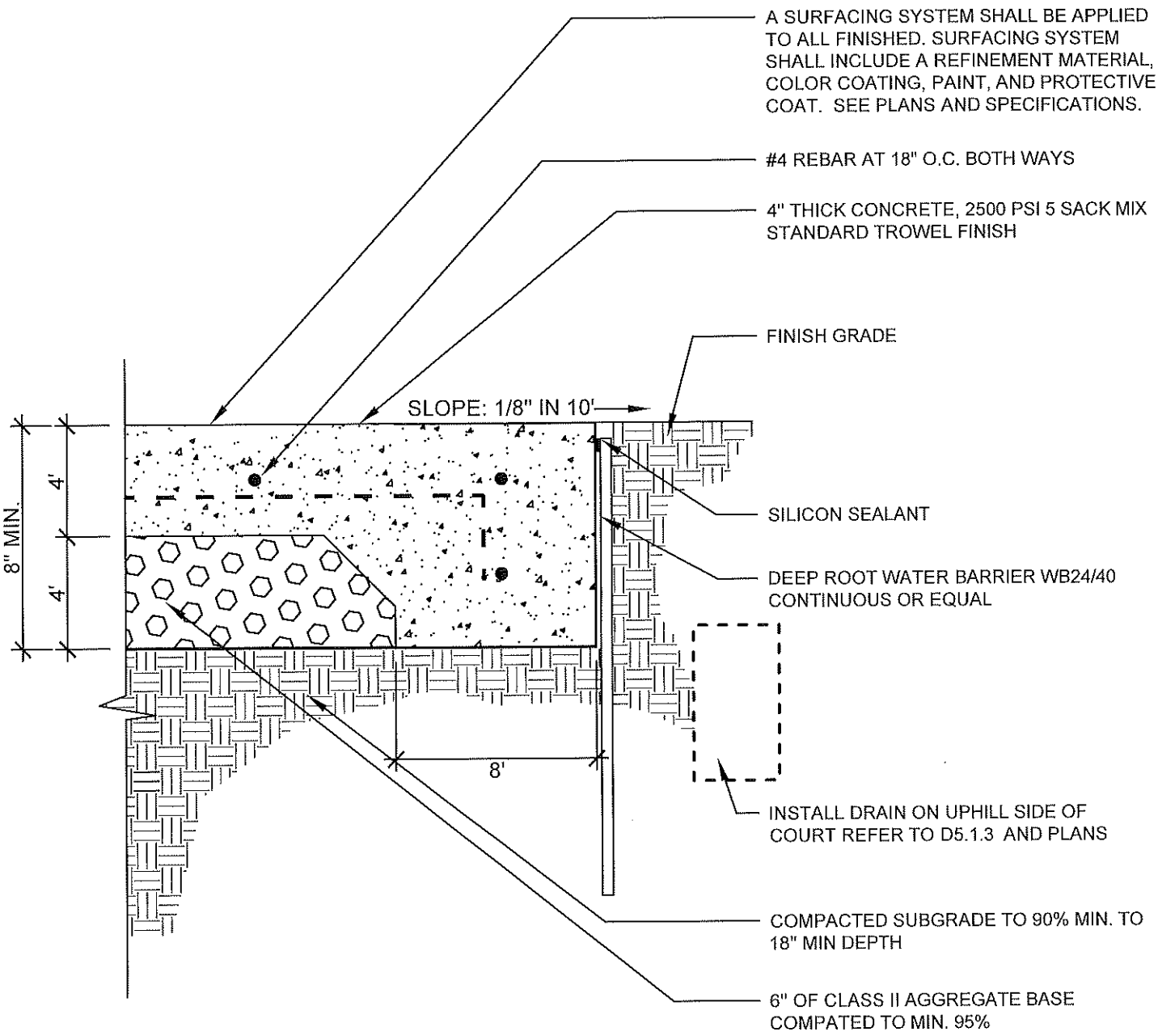
NOTES

1. CELLULAR CONCRETE PAVING SHALL BE 4000 PSI MIN. PREFORMED UNIT BLOCKS UNLESS OTHERWISE SPECIFIED. ACCEPTABLE MANUFACTURERS:
   GRASSCRETE BY BOMANITE PAVING SYSTEMS, TURFSTONE BY BELGARD OR APPROVED EQ.
2. INSTALLATION PER MANUFACTURERS RECOMMENDATIONS
3. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.4**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Cellular Concrete Pavers**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



NOTES

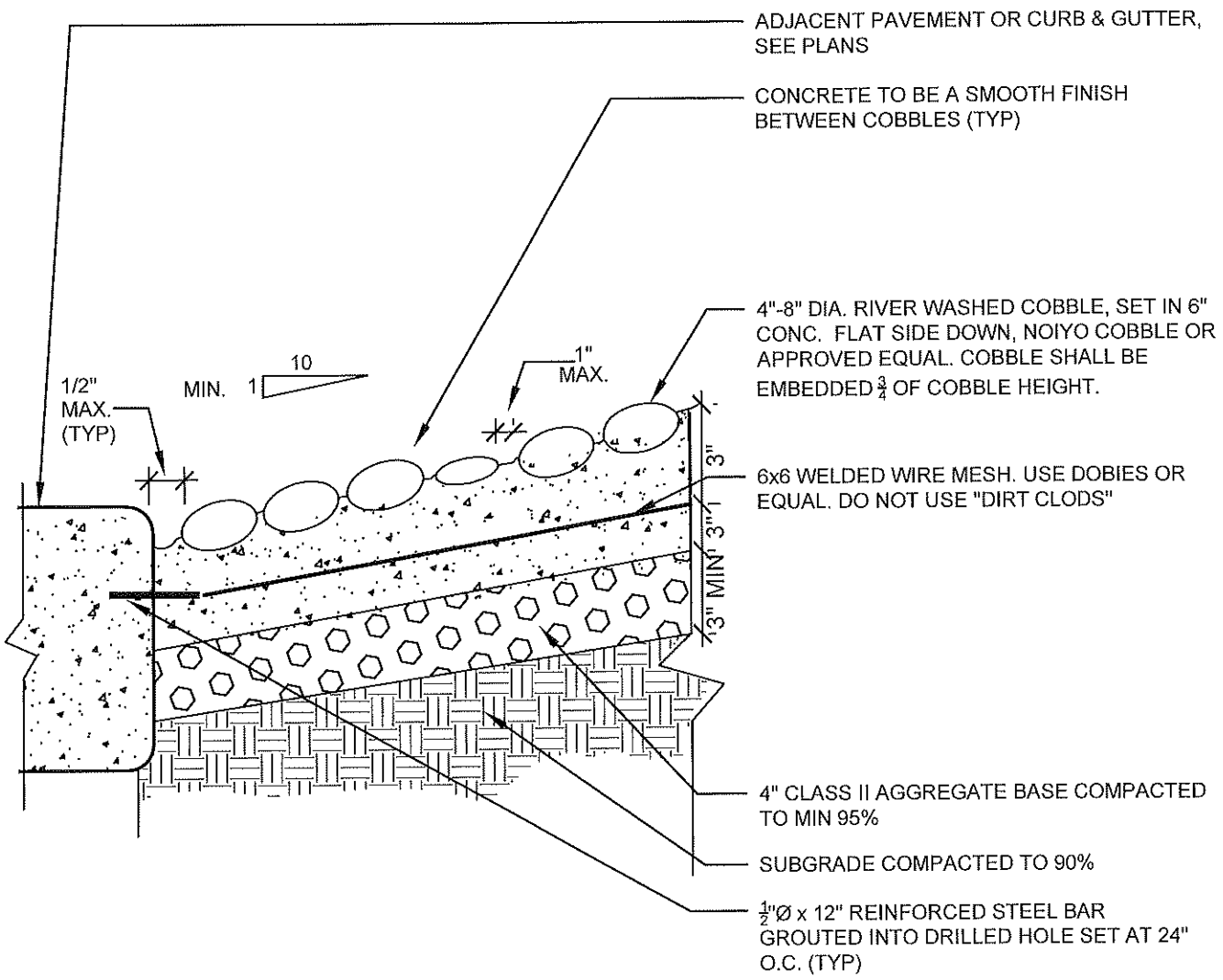
1. DRAINAGE SYSTEM SHALL BE INSTALLED AROUND PERIMETER OF SPORTS COURT PER PLANS.
2. CONCRETE SHALL BE SAW CUT 1" DEEP ON A 10'X10' GRID PATTERN OR PER PLANS.
3. SEE D5.0 FOR MORE INFORMATION.
4. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.5.3**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Concrete Sport Court**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



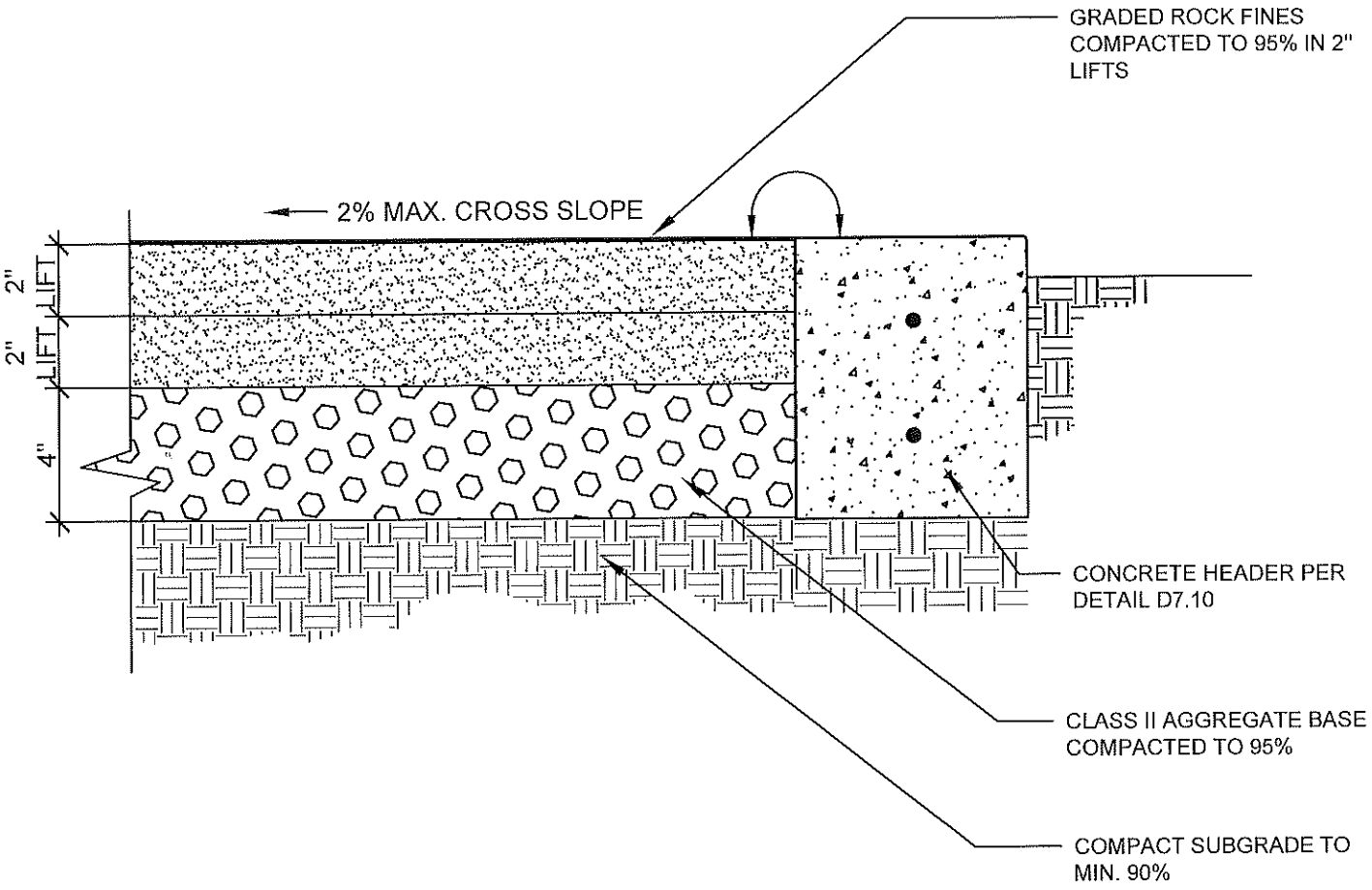
NOTES

1. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE ARE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.
2. CONCRETE TO BE COLORED CONCRETE, COLOR PER DETAIL D0.0
3. CONCRETE MIX TO USE 3/8" PEA GRAVEL
4. DEEP-ROOT BARRIERS SHALL BE INSTALLED AT PAVING EDGES ADJACENT TO TREES. PER DETAIL D7.1 PLANTING DESIGN GUIDE
5. REINFORCE CONCRETE WITH POLYPROPYLENE FIBERS, MIN 1/2 LB. PER CU. YD.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.6**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Cobble Paving**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



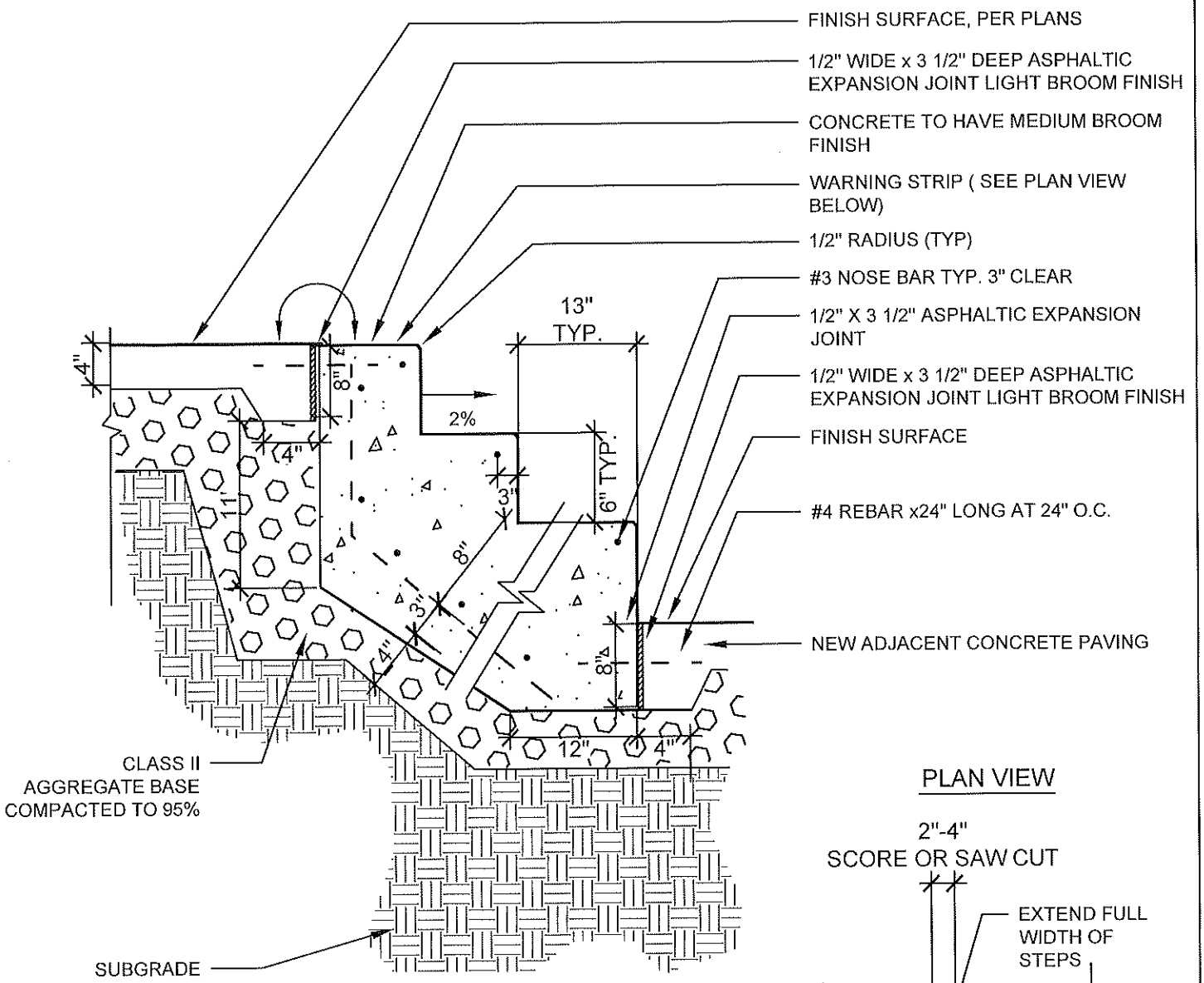
NOTES

1. CONCRETE MOW STRIP PER D 7.10 AT LAWN AND PLANTER EDGES.
1. ORGANIC STABILIZER SHALL BE ADDED TO ROCK FINES AT BATCH PLANT AND BLENDED THOROUGHLY PER THE MANUFACTURERS RECOMMENDED RATE.
2. BEFORE INSTALLING ROCK FINES, APPLY AND ACTIVATE AN APPROVED PRE-EMERGENT HERBICIDE TO BASE AS PER SPECIFICATIONS.
3. ROCK FINES SHALL BE "GOLD PATH FINES" OR APPROVED EQUAL.
4. WHEN ROCK FINES ARE PLACED IN TREE WELLS OR PLANTERS. COMPACTION SHALL NOT EXCEED 85% MINIMUM.
5. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.7**
Res No. 2020–	DATE:February 18, 2020	**SURFACES** **Rock Fines**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



NOTES

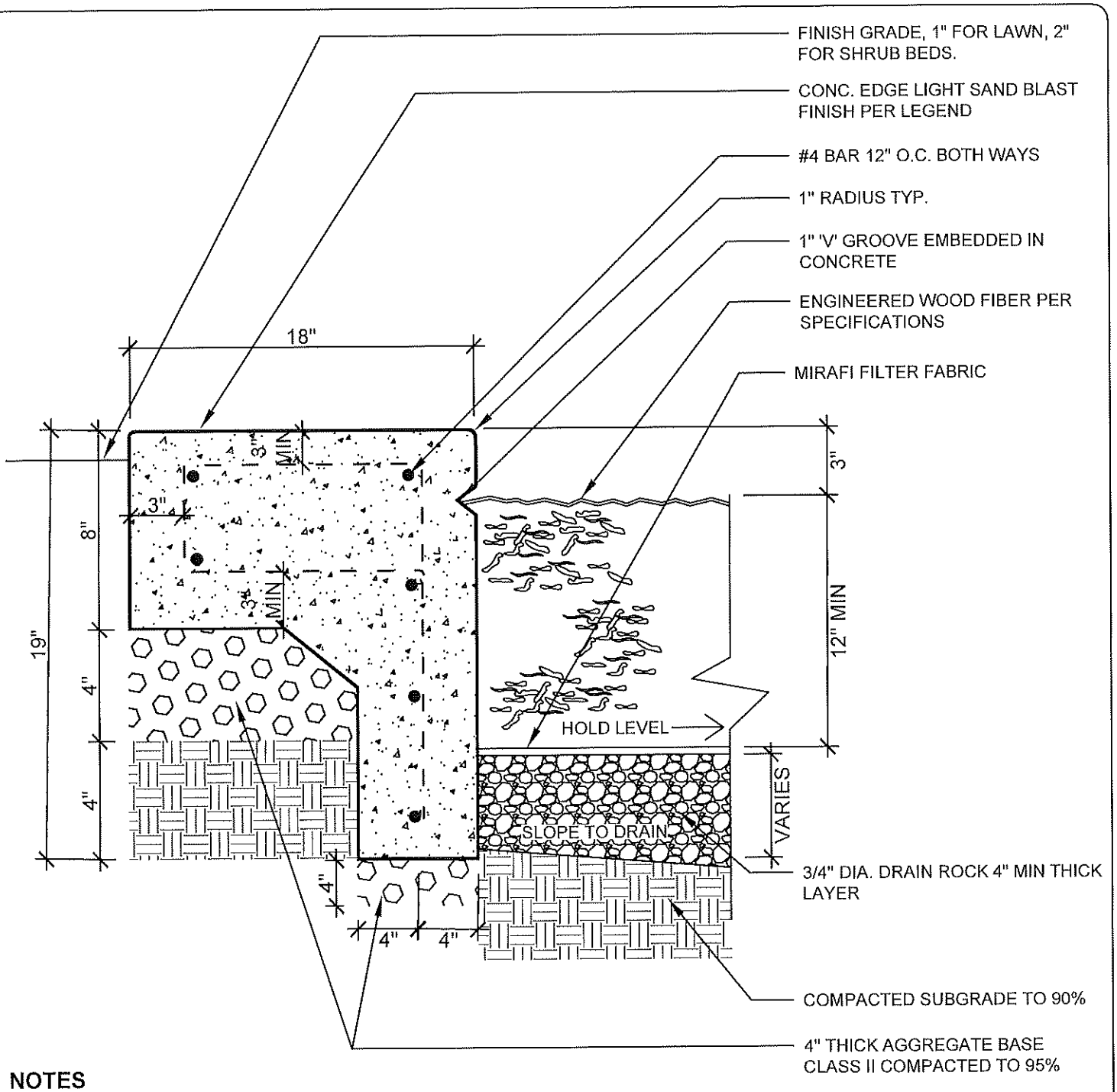
1. CONCRETE PER STANDARD CITY SPECIFICATIONS.
2. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY THE CITY ENGINEER.
3. SEE D 0.0 FOR COLOR
4. DESIGN SHALL ADHERE TO ALL CURRENT ADA REQUIREMENTS

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.8**
Res No. 2020–	DATE:February 18, 2020	**SURFACES** **Concrete Steps**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

CITY OF TRACY PARKS AND STREETSCAPE STANDARD PLANS



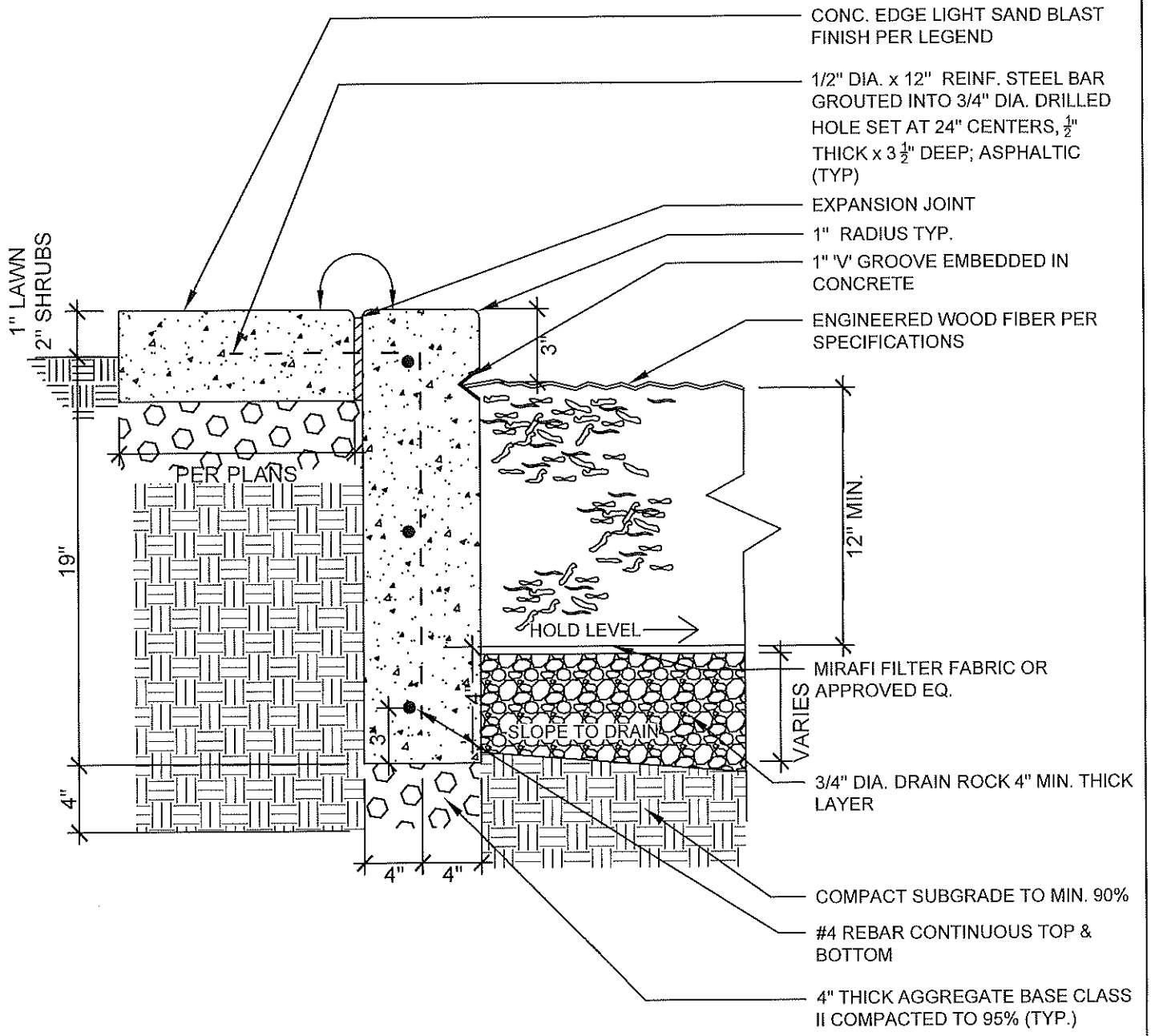
NOTES

1. CONCRETE PER CITY STANDARD SPECIFICATIONS.
2. SEE D 0.0 FOR CONCRETE COLOR AND FINISHES.
3. WHERE PLAY AREA CURB IS ADJACENT TO CONCRETE SIDEWALK, SEE D1.10.
4. WOOD FIBER TO BE PLACED IN SUFFICIENT QUANTITY TO RESULT IN 3" MAX CLEARANCE AFTER SETTLEMENT.
5. PLACEMENT OF FILTER FABRIC ABOVE BASE ROCK AREA TO BE APPROVED BY CITY ENGINEER TO MITIGATE PLACEMENT OF SEEMS IN HIGH TRAFFIC AREAS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.9**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Play Area Curbing** **Adjacent to Planter Area**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



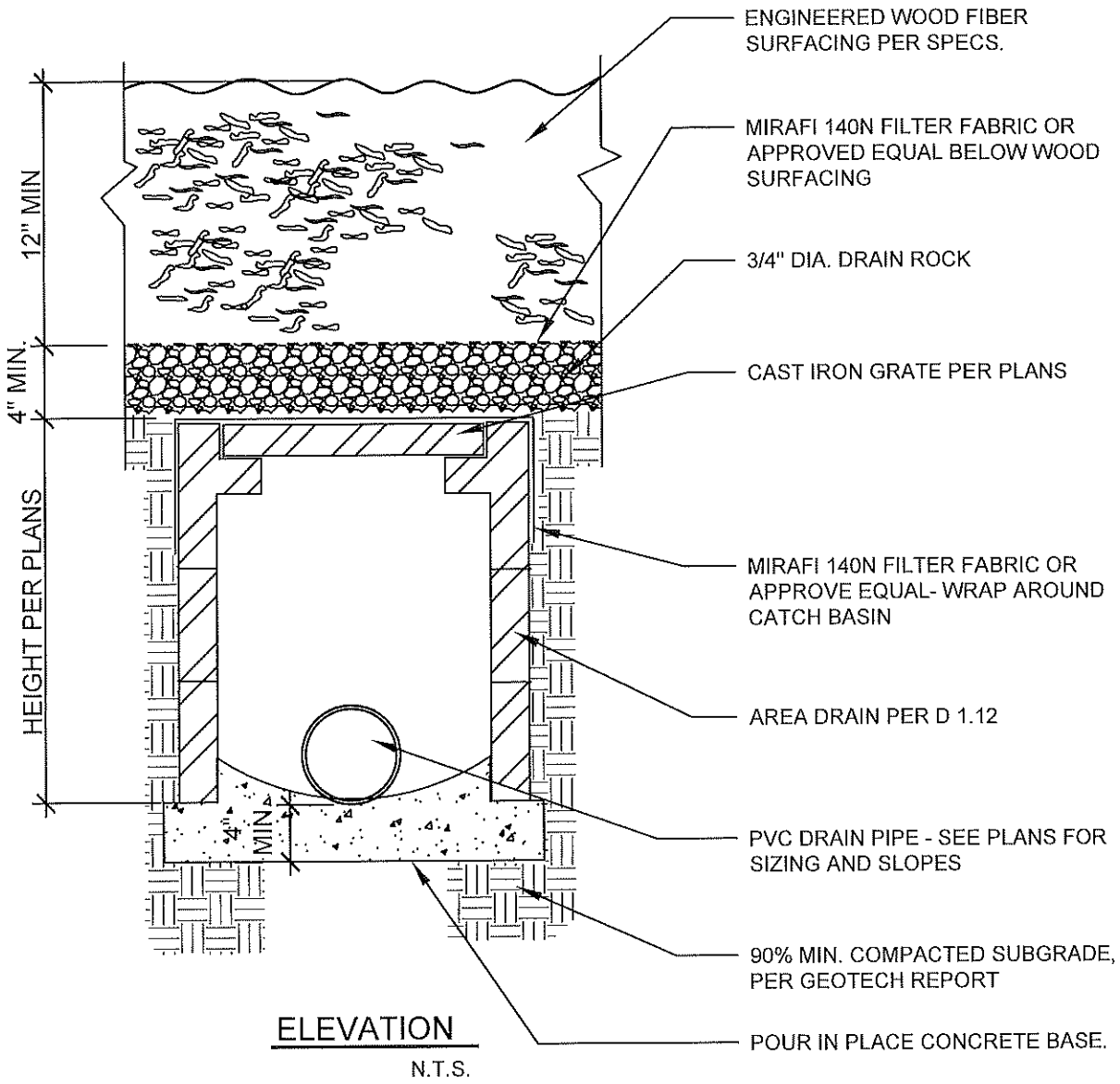
NOTES

1. CONCRETE PER CITY STANDARD SPECIFICATIONS.
2. SEE D 0.0 FOR CONCRETE COLOR AND FINISHES.
3. WHERE PLAY AREA CURB IS ADJACENT TO TURF, SEE D1.9
4. ENGINEERED WOOD FIBER TO BE PLACED IN SUFFICIENT QUANTITY TO RESULT IN 3" MAX CLEARANCE AFTER SETTLEMENT.
5. PLACEMENT OF FILTER FABRIC ABOVE BASE ROCK AREA TO BE APPROVED BY CITY ENGINEER.
6. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF FINISH ELEVATIONS OF PLAY EQUIPMENT AND 'V' GROOVE.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.10**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Tot Lot Curbing**
Rev: Lyle C.	Rev:	
Rev:	Rev:	



ELEVATION

N.T.S.

NOTES

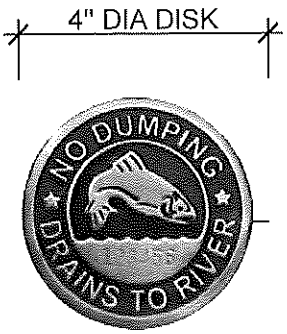
1. PVC DRAIN PIPE, SIZING AND SLOPES PER PLANS
2. GROUT BETWEEN PIPE AND CATCH BASIN, INSIDE AND OUTSIDE OF BASE & EXTENSION.
3. DRAIN STRUCTURE TO BE PRECAST OR POURED IN PLACE CONCRETE PER MANUFACTURER'S RECOMMENDATIONS.
4. MINIMUM PIPE COVER SHALL BE 12".

CITY OF TRACY

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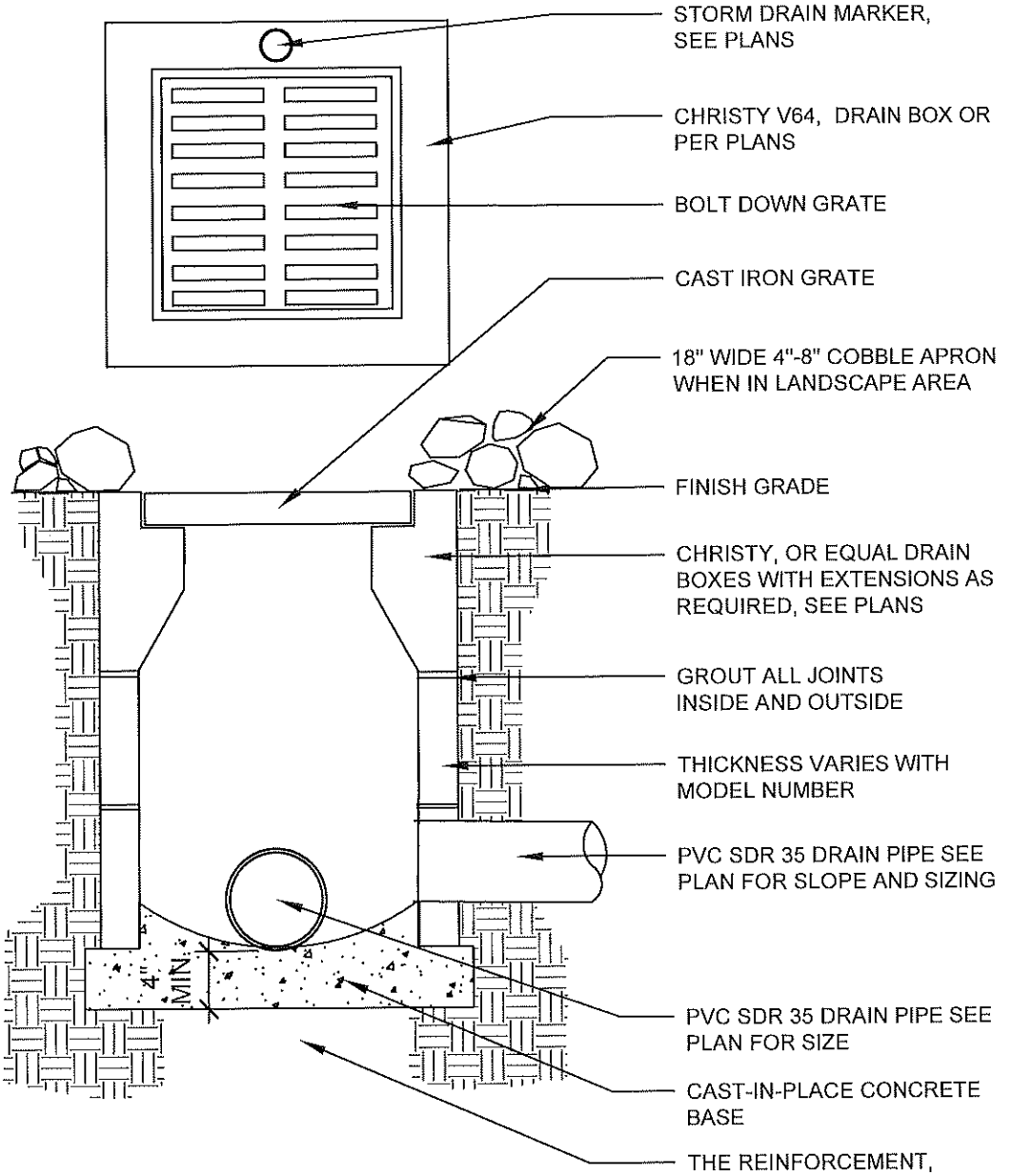
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.11**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Play Area Drain Catch Basin**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



STORM DRAIN MARKER

MARKER TO BE ALMETEK STAINLESS STEEL PAINTED DISK, BLUE WITH FISH LOGO AND LETTERING STATING "NO DUMPING, DRAINS TO RIVER." APPLY PER MANUFACTURERS RECOMMENDATION



NOTES

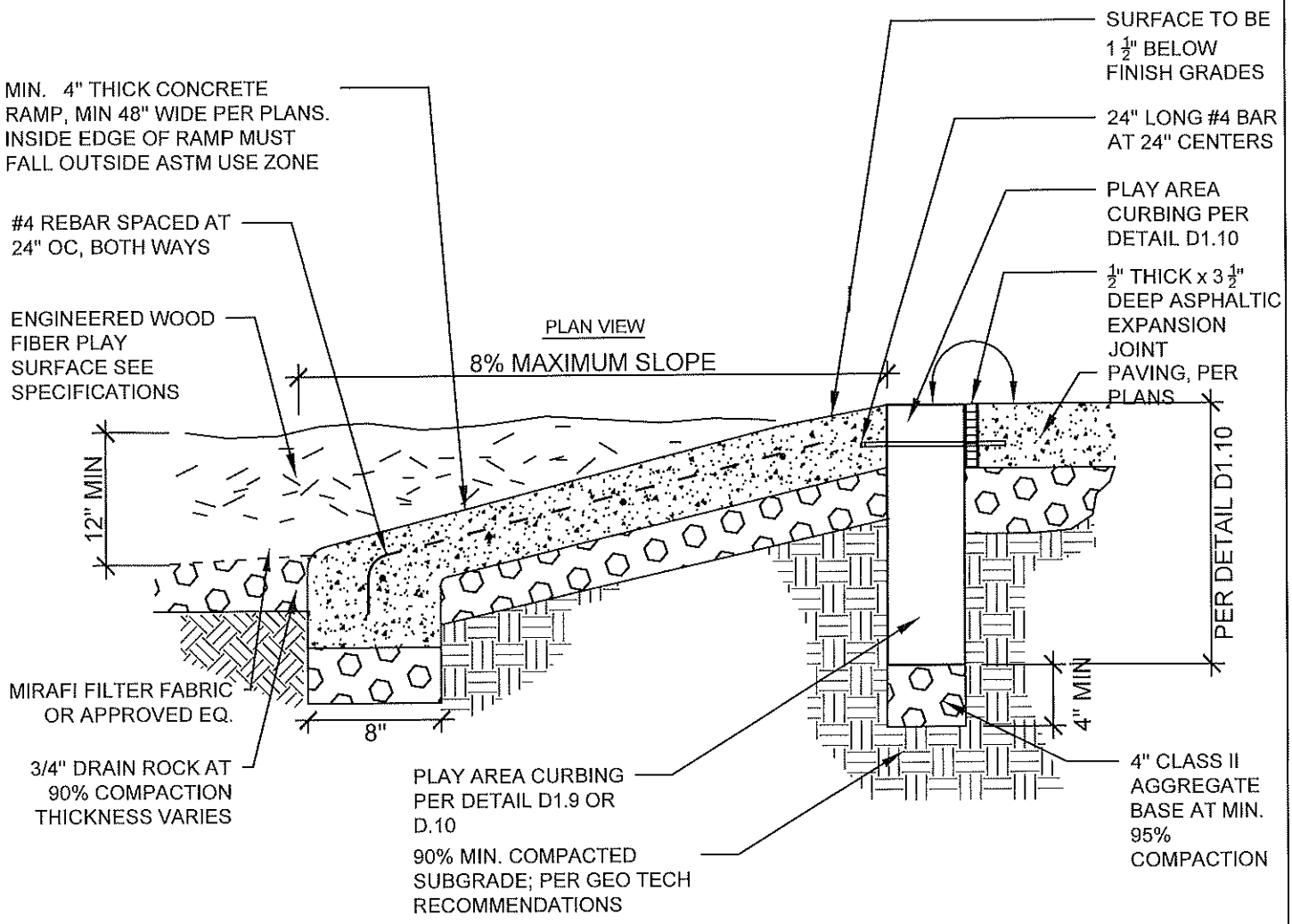
1. SDR 35 DRAIN PIPE, SIZING AND SLOPE PER PLANS, GROUT BETWEEN PIPE AND CATCH BASIN.
2. DRAIN STRUCTURE TO BE PRECAST OR POURED IN PLACE CONCRETE PER MANUFACTURER'S RECOMMENDATIONS.
3. GROUT INSIDE AND OUTSIDE OF BASE AND EXTENSIONS.
4. APPLY AN APPROVED SEALANT W/ PUTTY KNIFE TO CLEAN, DRY SURFACES BETWEEN GRATE AND FRAME.
5. MINIMUM PIPE COVER SHALL BE 12". MINIMUM PIPE SIZE IS 6".

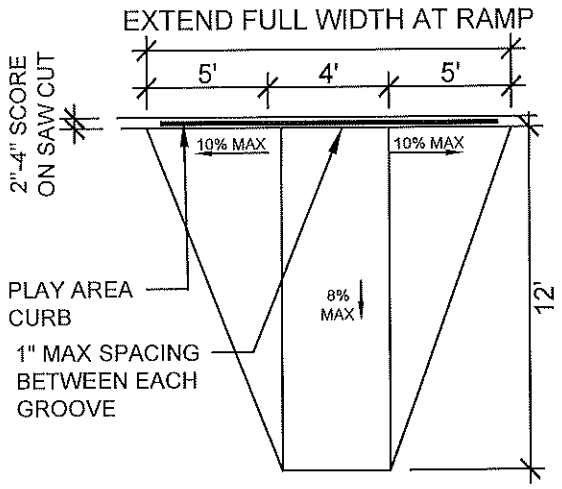
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.12**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Area Drain**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS





NOTES

1. EPOXY FABRIC TO FACE OF CONCRETE RAMP ALL SIDES.
2. RAMP SLOPE SHALL NOT EXCEED 8%, CROSS-SLOPE SHALL NOT EXCEED 2%.
3. CONCRETE RAMP TO BE MEDIUM BROOM FINISH.
4. DOWEL RAMP INTO CURBING AND SIDEWALK AS SHOWN, TYP.
5. DIAGRAM NOT TO SCALE. FOR ILLUSTRATION PURPOSE ONLY.
6. RAMPS AND SURFACING SHALL MEET CURRENT ADA STANDARDS.
7. ALL PLAY SURFACING TO HAVE PASSED HEAD INJURY CRITERIA (H.I.C.) TEST FOR UP TO 12'-6" HEIGHTS.

CITY OF TRACY

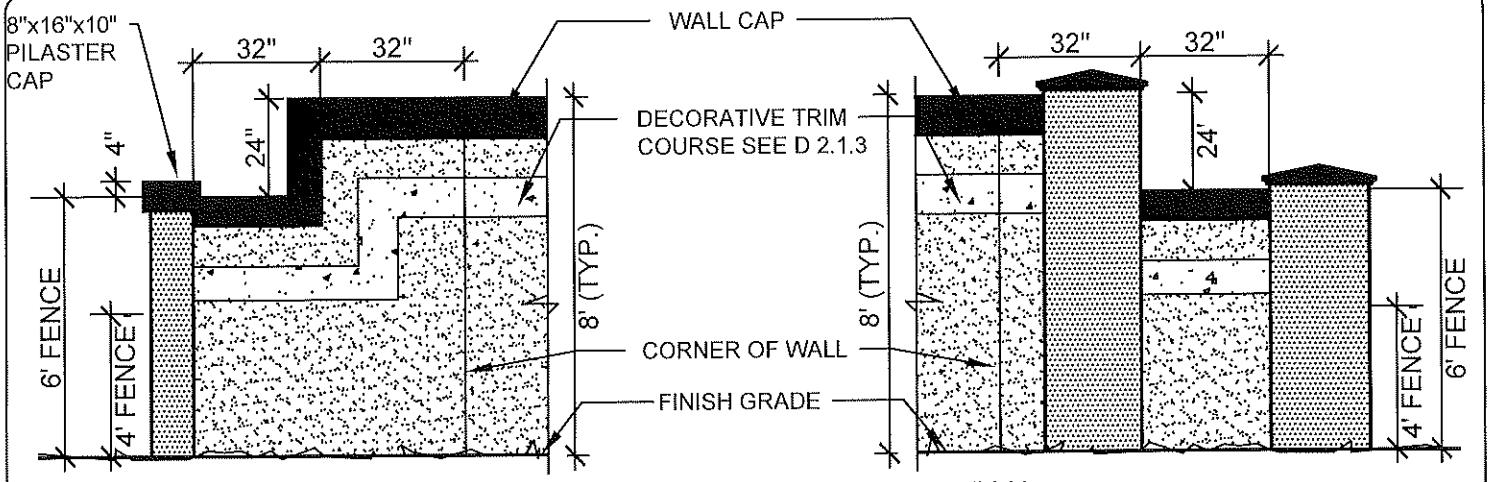
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 1.13**
Res No. 2020–	DATE: February 18, 2020	**SURFACES** **Play Area Ramp**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

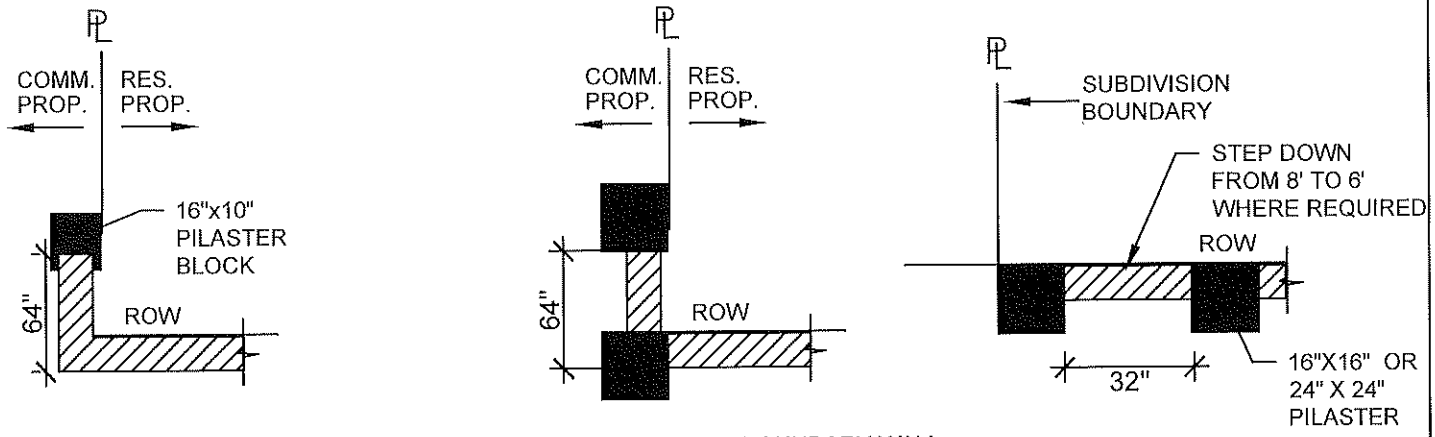
PARKS AND STREETSCAPE STANDARD PLANS

WALLS AND FENCES GUIDELINES

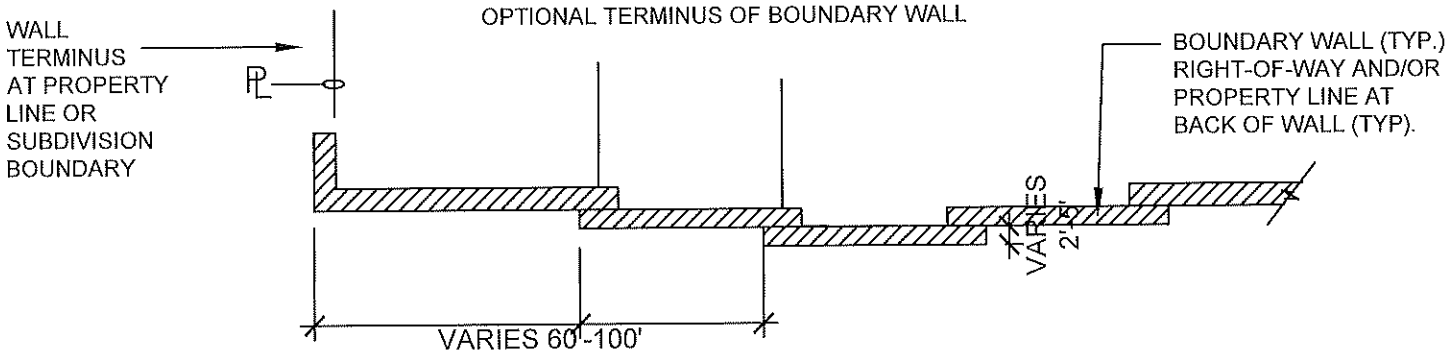
1. ALL FREESTANDING WALLS GREATER THAN OR EQUAL TO 4-FEET INCLUDING FOOTING SHALL REQUIRE A BUILDING PERMIT.
2. FENCES GREATER THAN 7FT. SHALL REQUIRE BUILDING PERMIT.
3. ALL RETAINING WALLS GREATER THAN OR EQUAL TO 4-FEET INCLUDING FOOTING SHALL REQUIRE A BUILDING PERMIT.
4. ALL RETAINING WALLS WITH SUPERIMPOSED LOADS REQUIRE A BUILDING PERMIT.
5. GATE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 LBS MAXIMUM.
6. GATE SURFACES WITHIN 10 INCHES OFF THE GROUND MEASURED VERTICALLY SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN THESE SURFACES SHALL BE WITHIN 1/16 INCH OF THE SAME PLANE AS OTHER AND SHALL BE FREE OF SHARP ABRASIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED.
7. GATE CLOSERS SHALL BE ADJUSTED SO THAT FROM THE OPEN POSITION OF 70 DEGREES, THE GATE SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM.
8. GATE OPENING HARDWARE SHALL BE LOCATED BETWEEN 34 AND 44 INCHES ABOVE GRADE AND SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 LBS. MAXIMUM.
9. GATES WITHIN A DOG PARK REQUIRE PANIC BARS.
10. GATES AT PASEOS ADJACENT TO A HIGH VEHICLE TRAFFIC AREA SHALL OPEN INWARDLY AND AWAY FROM THE FLOW OF TRAFFIC. GATES SHALL BE SELF-CLOSING AND SELF-LATCHING.
11. CONTACT BUILDING SAFETY AND FIRE PREVENTION DEPARTMENT FOR MORE INFORMATION ON BUILDING PERMITS AND STRUCTURAL REQUIREMENTS.
12. PRE-FABRICATED OR PANEL WALLS ARE NOT AN ACCEPTABLE NEIGHBORHOOD BOUNDARY WALL.
13. PROVIDE WRITTEN TECHNICAL SPECIFICATION FOR ALL WALLS AND FENCES.
14. PROVIDE SCHEMATIC RENDERINGS FOR WALLS, ENTRY FEATURES, PILASTERS OR OTHER DESIGN FEATURES INCLUDING WRITTEN DESCRIPTION FOR COLOR, TEXTURE & FINISHES DURING THE DESIGN PHASE FOR APPROVAL.
15. PROVIDE SUBMITTAL AND SAMPLES FOR APPROVAL PRIOR TO CONSTRUCTION.
16. REFER TO CITY OF TRACY DESIGN SECTION 9, WALL DESIGN STANDARDS FOR ADDITIONAL INFORMATION.



MASONRY WALL END DETAIL ELEVATION



OPTIONAL TERMINUS OF BOUNDARY WALL



BOUNDARY WALL CONDITION AT LOT LINE / RIGHT OF WAY

NOTES

1. STEP WALL WHERE NEEDED IN 8" INCREMENTS TO ACCOMMODATE GRADE OR AS DETERMINED BY CITY OF TRACY DESIGN STANDARDS CHAPTER 9.
2. FOR INDIVIDUAL WALL DETAILS SEE D2.1.3 ,D2.1.5.
3. FOR CONDITION AT ENTRIES SEE D2.1.6.
4. FOR CONDITION AT INTERSECTIONS SEE D2.1.2.
5. WALL AND FOOTING TO BE LOCATED ENTIRELY WITHIN THE CITY RIGHT OF WAY.
6. WALL, CAP, & FINISH PER STREETSCAPE DESIGN GUIDELINES.
7. BOUNDARY WALL TO BE CONSTRUCTED AS A 'SOUNDWALL' AS REQUIRED BY GOVERNING ENVIRONMENTAL DOCUMENTS.

CITY OF TRACY

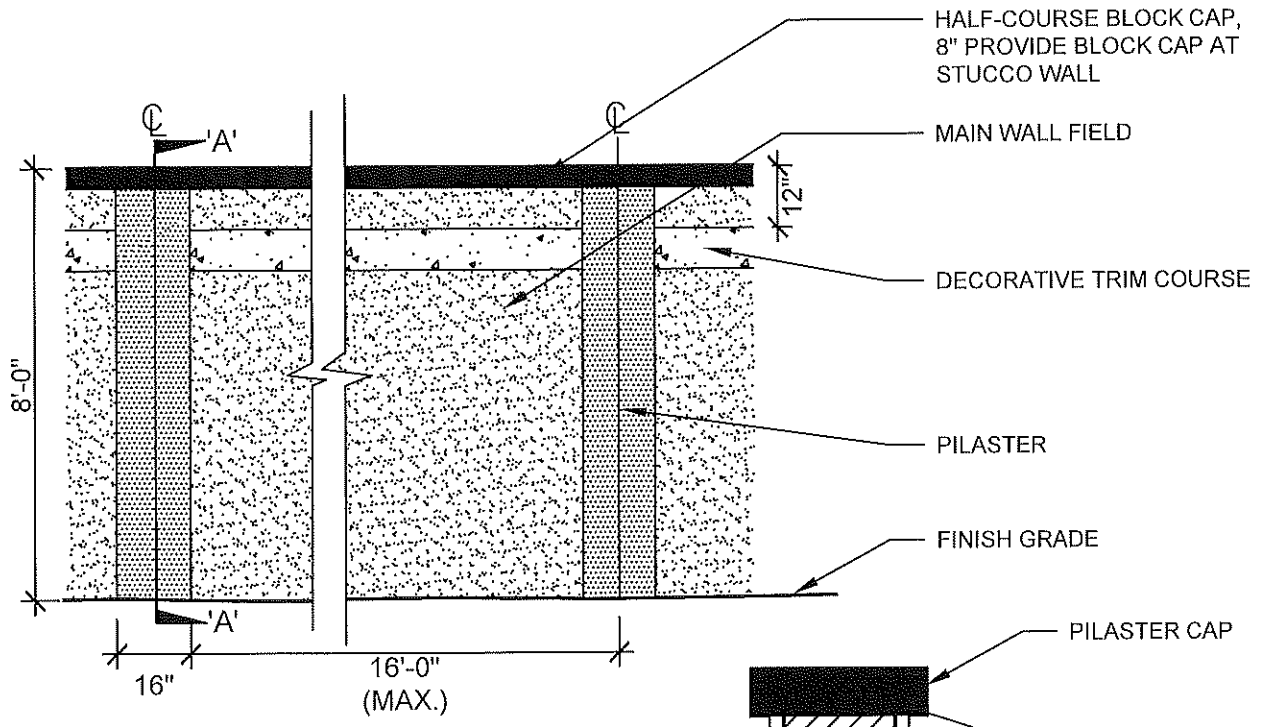
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173	DETAIL No. **D 2.1.1**
Res No. 2020–	DATE: February 18, 2020
Rev: Lyle C.	Rev:
Rev:	Rev:

WALLS AND FENCES

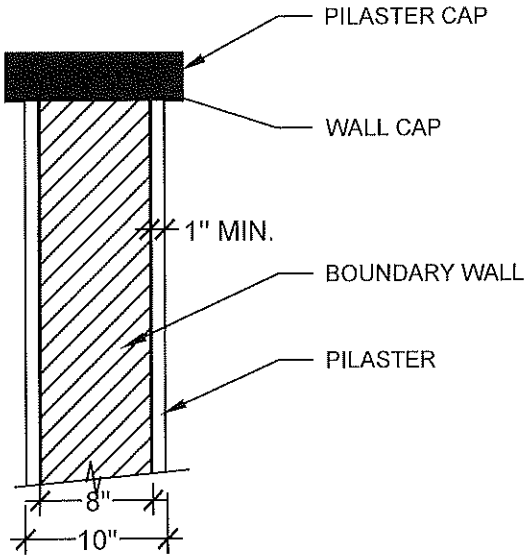
Boundary Walls: Typ. Layout

PARKS AND STREETSCAPE STANDARD PLANS



ELEVATION

N.T.S.



SECTION 'A' -'A'

N.T.S.

NOTES

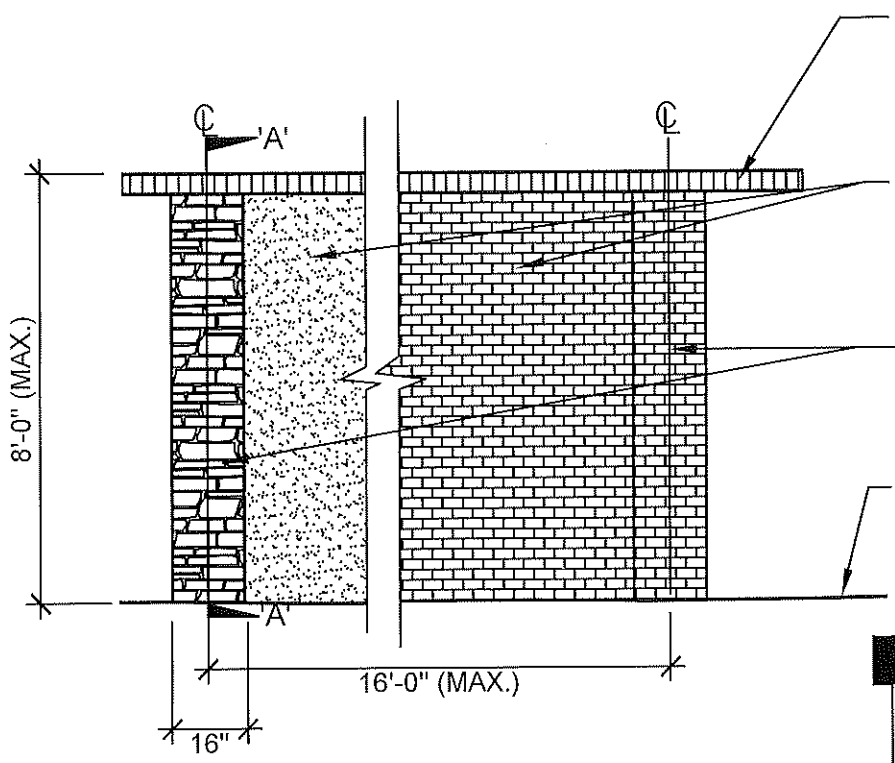
1. BOUNDARY WALLS TO MEET CITY STANDARDS.
2. CONSTRUCT WALL AS PER GEOTECHNICAL REPORT AND STRUCTURAL ENGINEER WITH APPROVAL BY CITY ENGINEER.
3. FOOTING TO ACCOMMODATE RETAINING WALL ON ONE SITE IF APPLICABLE. MAX. RETENTION IS 24". WALLS AND FOOTING TO BE INSTALLED ENTIRELY WITHIN THE CITY RIGHT-OF-WAY
4. WALL CONSTRUCTION SHALL MEET CITY STANDARDS AND REQUIREMENTS OF SITE STRUCTURAL ENGINEER. DESIGN FOOTING TO ACCOMMODATE RETAINING ON ONE SIDE IF APPLICABLE.
5. WALL TYPE, COLOR, TEXTURE AND FINISH PER STREETSCAPE DESIGN GUIDELINES
6. FOR LAYOUT ALONG PROPERTY LINE AND AT WALL ENDS, SEE D 2.1.1
7. FOR CONDITION AT INTERSECTIONS, SEE D 2.1.2
8. FOR CONDITION AT NEIGHBORHOOD ENTRIES, SEE D 2.1.6
9. ALL BLOCKS SHALL BE SAME FINISH, FRONT AND BACK SIDES.
10. BOUNDARY WALL TO BE CONSTRUCTED AS A 'SOUNDWALL' AS REQUIRED BY GOVERNING ENVIRONMENTAL DOCUMENTS.

CITY OF TRACY

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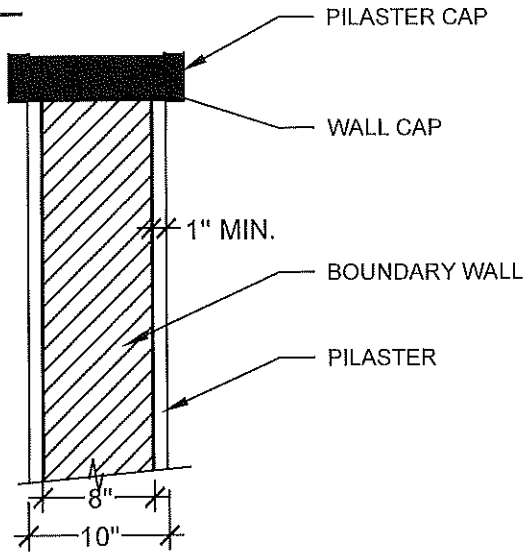
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.1.2**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES**
Rev: Lyle C.	Rev:	**Boundary Walls: Block/Stucco**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



ELEVATION

N.T.S.



SECTION 'A' -'A'

N.T.S.

NOTES

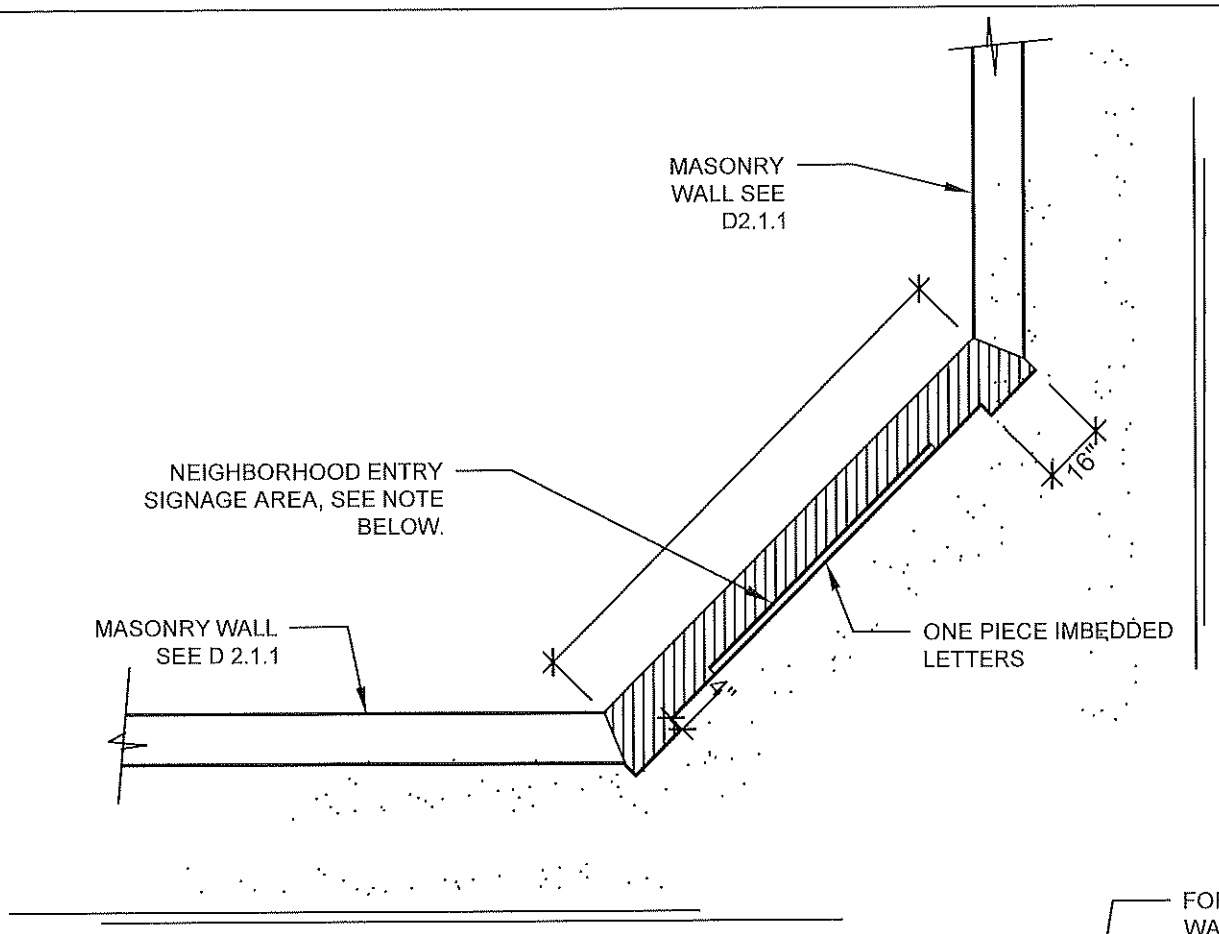
1. MASONRY WALLS TO MEET CITY STANDARDS.
2. CONSTRUCT WALL AS PER GEOTECHNICAL REPORT AND STRUCTURAL ENGINEER AND APPROVAL BY CITY ENGINEER.
3. FOOTING TO ACCOMMODATE WALL ON ONE SITE IF APPLICABLE. MAX RETENTION IS 24". WALLS AND FOOTING TO BE INSTALLED ENTIRELY WITHIN THE CITY RIGHT-OF-WAY.
4. WALL CONSTRUCTION SHALL MEET CITY STANDARDS AND REQUIREMENTS OF SITE STRUCTURAL ENGINEER. DESIGN FOOTING TO ACCOMMODATE RETAINING ON ONE SIDE IF APPLICABLE.
5. WALL TYPE, COLOR, TEXTURE AND FINISH PER STREETSCAPE DESIGN GUIDELINES
6. FOR LAYOUT ALONG PROPERTY LINE AND AT WALL ENDS, SEE D 2.1.1
7. FOR CONDITION AT INTERSECTIONS, SEE D 2.1.2
8. FOR CONDITION AT NEIGHBORHOOD ENTRIES, SEE D 2.1.6
9. ALL BLOCKS SHALL BE SAME FINISH, FRONT AND BACK SIDES.
10. BOUNDARY WALL TO BE CONSTRUCTED AS A 'SOUNDWALL' AS REQUIRED BY GOVERNING ENVIRONMENTAL DOCUMENTS.

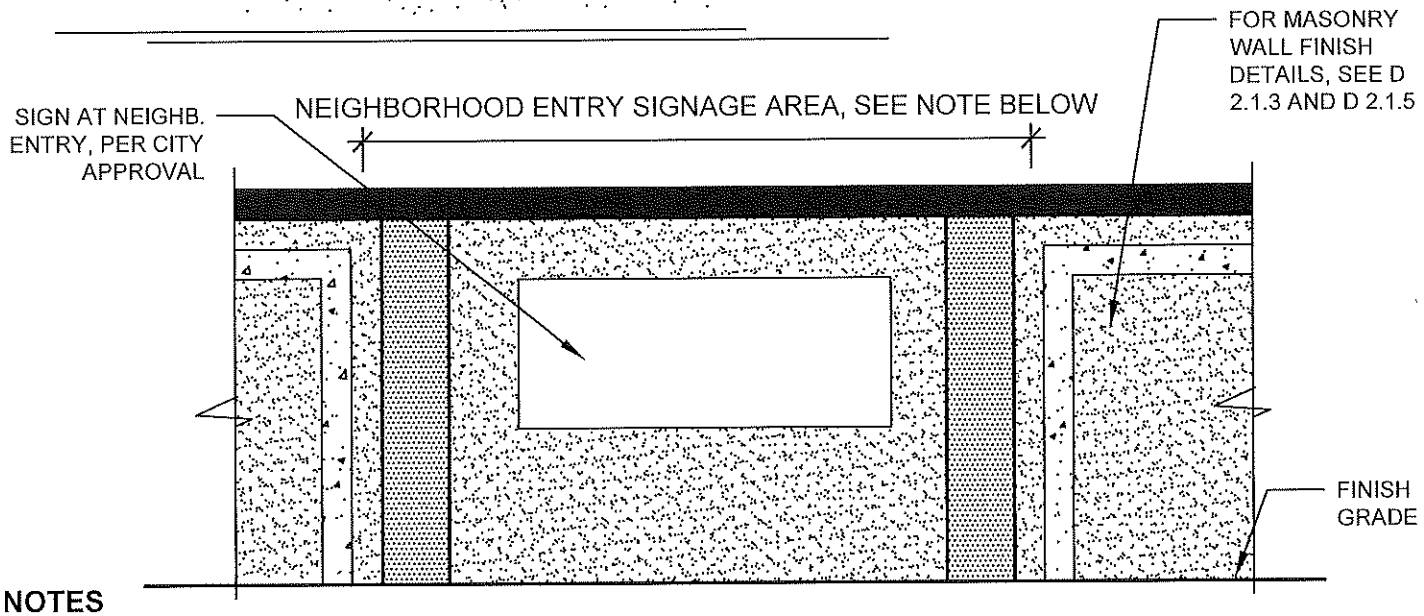
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.1.3**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES**
Rev: Lyle C.	Rev:	**Boundary Walls: Brick/Stone**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS





NOTES

1. VISION CLEARANCE REQUIREMENT SET BY ROADWAY DESIGN SPEED OR CALTRANS STANDARDS FOR SAFE SIGHT DISTANCES WHICHEVER IS GREATER AND APPROVED BY CITY ENGINEER.
2. LETTERING SHALL BE IMBEDDED, EMBOSSED OR ETCHED. NO BRASS LETTERS.
3. NEIGHBORHOOD ENTRY SIGNAGE AREA PER OWNER AND SUBJECT TO APPROVAL BY CITY ENGINEER. APPLICANTS TO PROVIDE CONCEPTUAL RENDERING AT DESIGN STAGE AND SUBMIT SAMPLES AT CONSTRUCTION STAGE FOR REVIEW.
4. BOUNDARY/ENTRY WALL TYPE, COLOR, TEXTURE & FINISH PER STREETSCAPE DESIGN GUIDELINES.

CITY OF TRACY

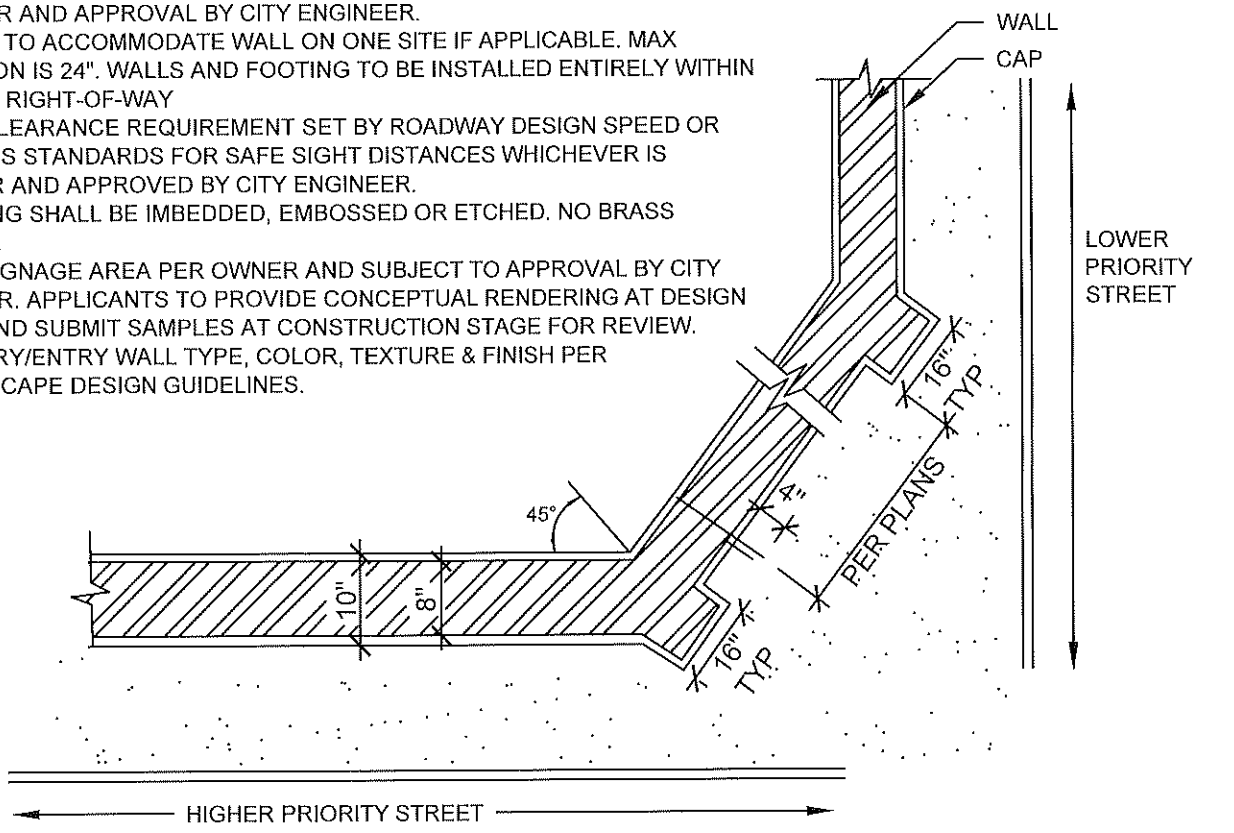
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.1.4**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES** **Boundary Walls:** **Neighborhood Entry**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

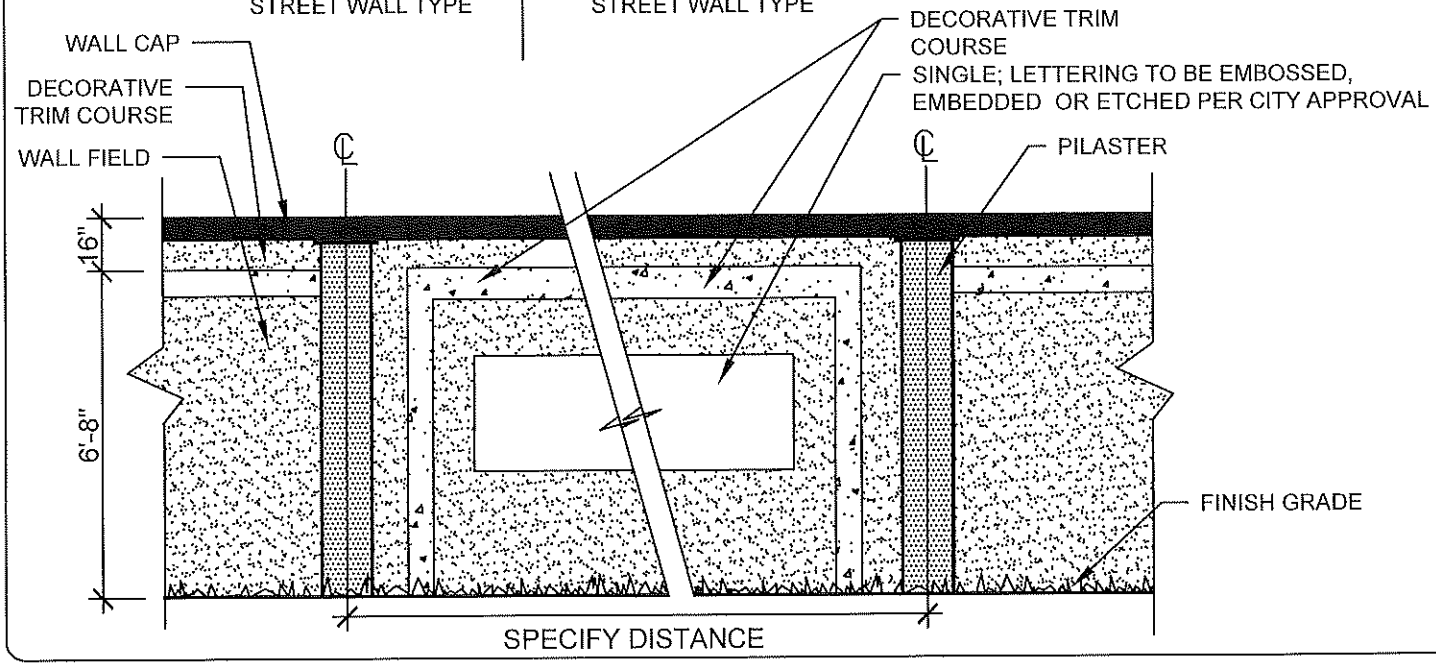
PARKS AND STREETSCAPE STANDARD PLANS

NOTES

1. BOUNDARY WALLS TO MEET CITY STANDARDS AND REQUIREMENTS.
2. CONSTRUCT WALL AS PER GEOTECHNICAL REPORT AND STRUCTURAL ENGINEER AND APPROVAL BY CITY ENGINEER.
3. FOOTING TO ACCOMMODATE WALL ON ONE SITE IF APPLICABLE. MAX RETENTION IS 24". WALLS AND FOOTING TO BE INSTALLED ENTIRELY WITHIN THE CITY RIGHT-OF-WAY
4. VISION CLEARANCE REQUIREMENT SET BY ROADWAY DESIGN SPEED OR CALTRANS STANDARDS FOR SAFE SIGHT DISTANCES WHICHEVER IS GREATER AND APPROVED BY CITY ENGINEER.
5. LETTERING SHALL BE IMBEDDED, EMBOSSED OR ETCHED. NO BRASS LETTERS.
6. ENTRY SIGNAGE AREA PER OWNER AND SUBJECT TO APPROVAL BY CITY ENGINEER. APPLICANTS TO PROVIDE CONCEPTUAL RENDERING AT DESIGN STAGE AND SUBMIT SAMPLES AT CONSTRUCTION STAGE FOR REVIEW.
7. BOUNDARY/ENTRY WALL TYPE, COLOR, TEXTURE & FINISH PER STREETSCAPE DESIGN GUIDELINES.



HIGHER PRIORITY STREET WALL TYPE — LOWER PRIORITY STREET WALL TYPE



CITY OF TRACY

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REVIEWED BY: Robert Armijo
CITY ENGINEER RCE 63173

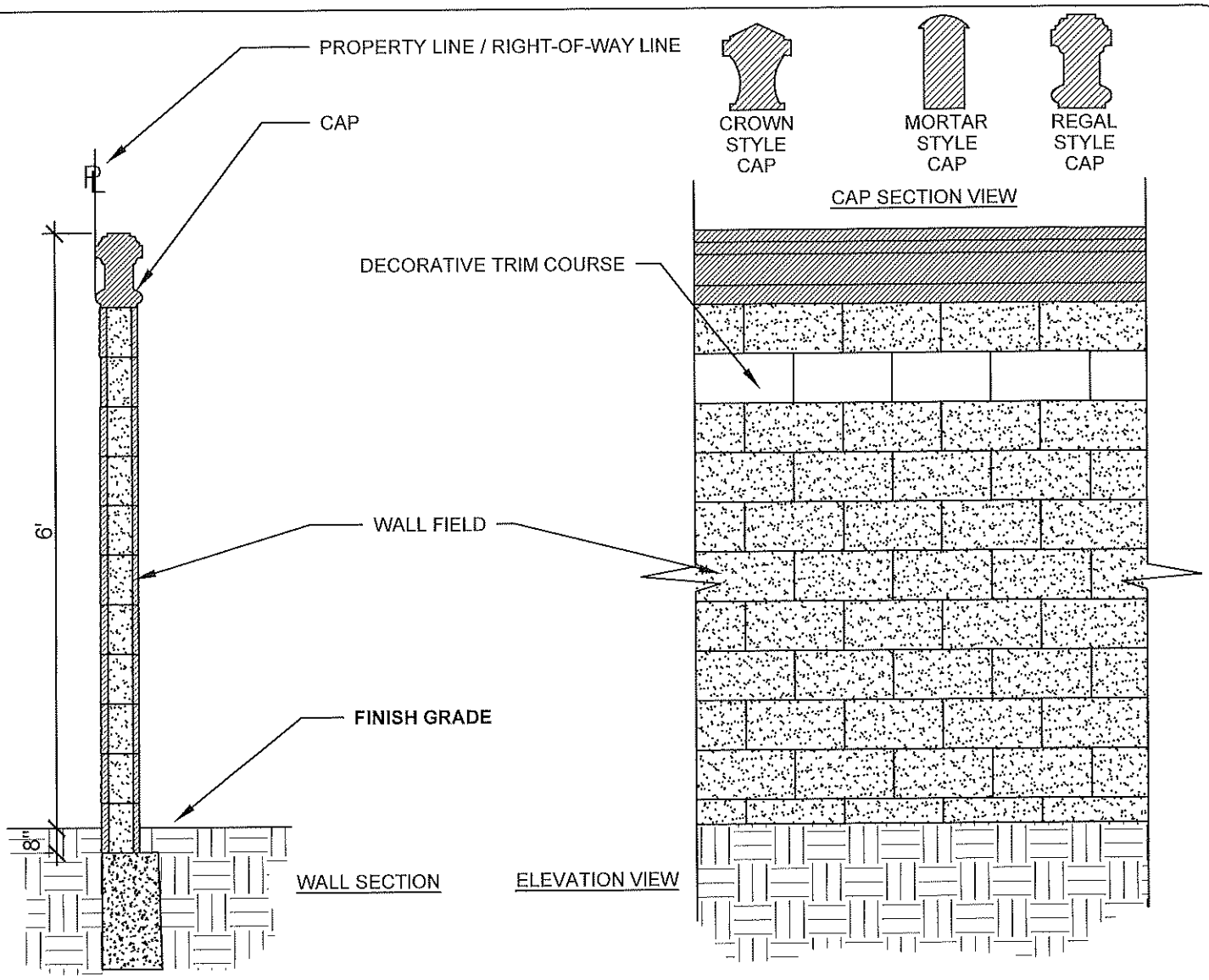
Res No. 2020–	DATE: February 18, 2020
Rev: Lyle C.	Rev:
Rev:	Rev:

DETAIL No. **D 2.1.5**

WALLS AND FENCES

Boundary Walls: Typical Intersection

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

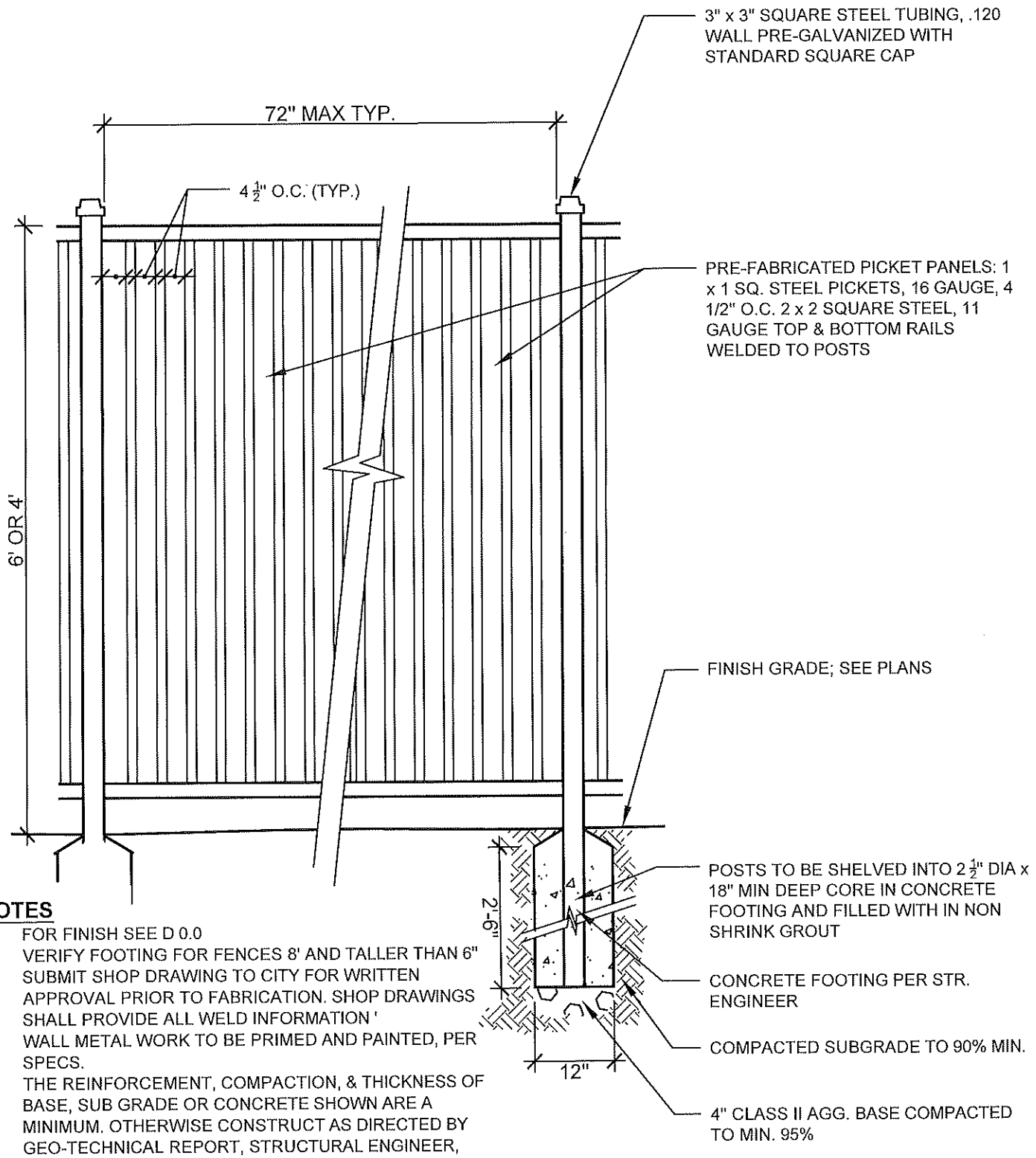
1. MASONRY WALLS TO MEET CITY STANDARDS.
2. CONSTRUCT WALL AS PER GEOTECHNICAL REPORT AND STRUCTURAL ENGINEER WITH APPROVAL BY CITY ENGINEER.
3. FOOTING TO ACCOMMODATE RETAINING WALL ON ONE SITE IF APPLICABLE. MAX. RETENTION IS 24". WALLS AND FOOTING TO BE INSTALLED ENTIRELY WITHIN THE CITY RIGHT-OF-WAY/PARK/CITY PROPERTY.
4. FOR CONDITION AT INTERSECTIONS, SEE D 2.1.2
5. FOR CONDITION AT NEIGHBORHOOD ENTRIES, SEE D 2.1.6
6. BOUNDARY WALL TO BE CONSTRUCTED AS A 'SOUNDWALL' AS REQUIRED BY GOVERNING ENVIRONMENTAL DOCUMENTS.
7. CAP: BASALITE COLOR #345 OR AN APPROVED EQUAL. CAP STYLE TO BE DETERMINED BY CITY.
8. WALL FIELD: BASALITE SPLIT FACE BLOCK COLOR #345, OR AN APPROVED EQUAL. BLOCK TO BE ONE SIDED SPLIT FACE AT PROPERTY LINE AND DOUBLE FACE AT RIGHT-OF-WAY.
9. DECORATIVE TRIM COURSE: BASALITE SMOOTH FACE BLOCK COLOR #345, OR AN APPROVED EQUAL.
10. GROUT: BASALITE MORTAR COLOR #345, OR AN APPROVED EQUAL.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.1.6**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES**
Rev: Lyle C.	Rev:	**Boundary Wall: Park Boundary**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

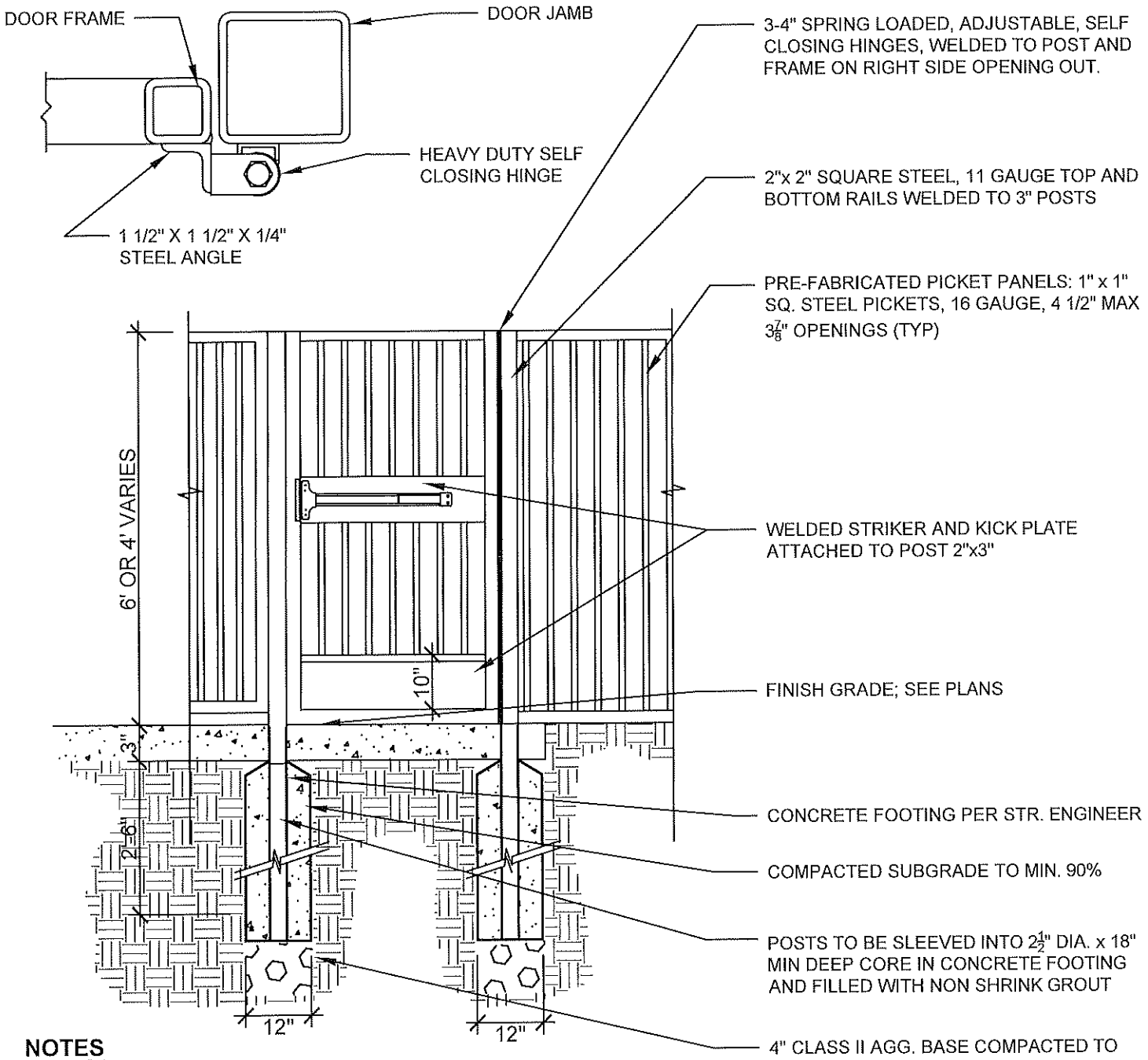
1. FOR FINISH SEE D 0.0
2. VERIFY FOOTING FOR FENCES 8' AND TALLER THAN 6"
3. SUBMIT SHOP DRAWING TO CITY FOR WRITTEN APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL PROVIDE ALL WELD INFORMATION '
4. WALL METAL WORK TO BE PRIMED AND PAINTED, PER SPECS.
5. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.2.1**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES** **Metal Fence**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

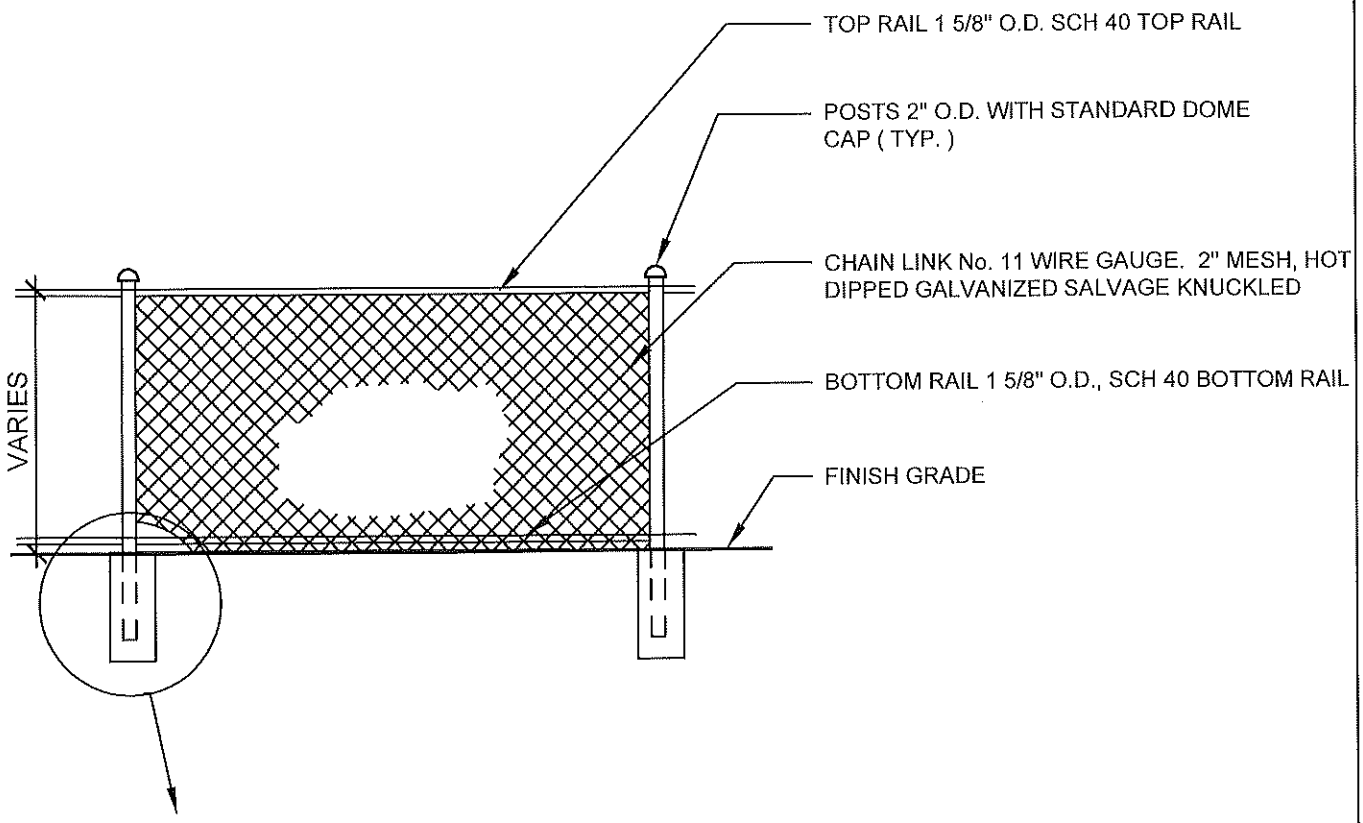
1. SEE D 0.0 FOR FINISHES AND D 2.0 FOR GENERAL INFORMATION.
2. ALL HARDWARE SHALL BE FINISHED TO MATCH FENCE.
3. SUBMIT SHOP DRAWINGS TO CITY FOR WRITTEN APPROVAL PRIOR TO FABRICATION
4. ALL FENCE PANEL ELEMENTS, INCLUDING POSTS, FRAME AND FOOTING KICK PLATES TO MATCH FENCE FINISH.
5. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.
6. GATES AT PASEOS ADJACENT TO A HIGH VEHICLE TRAFFIC AREA SHALL OPEN INWARDLY AND AWAY FROM THE FLOW OF TRAFFIC. GATES SHALL BE SELF-CLOSING AND SELF-LATCHING.

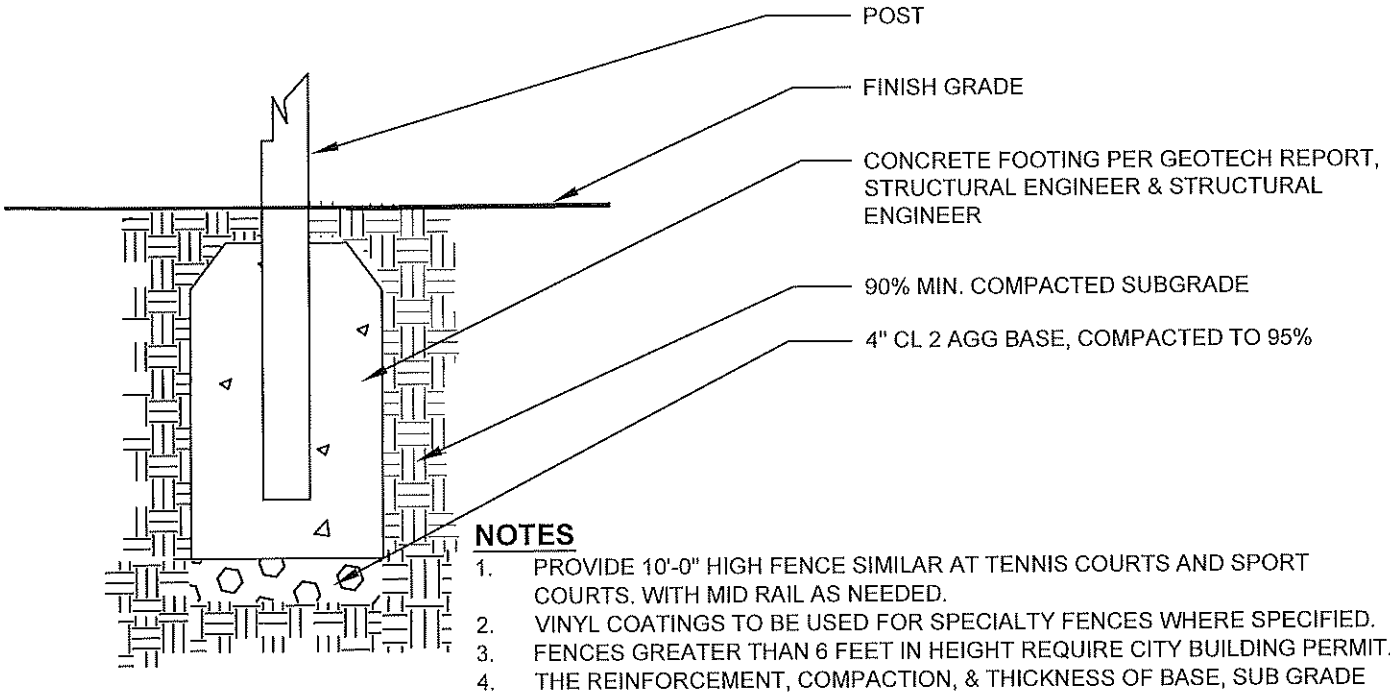
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.2.2**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES** **Metal Gate**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS





NOTES

1. PROVIDE 10'-0" HIGH FENCE SIMILAR AT TENNIS COURTS AND SPORT COURTS. WITH MID RAIL AS NEEDED.
2. VINYL COATINGS TO BE USED FOR SPECIALTY FENCES WHERE SPECIFIED.
3. FENCES GREATER THAN 6 FEET IN HEIGHT REQUIRE CITY BUILDING PERMIT.
4. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO TECHNICAL REPORT, STRUCTURAL ENGINEER, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 2.3**
Res No. 2020–	DATE: February 18, 2020	**WALLS AND FENCES**
Rev: Lyle C.	Rev:	**Vinyl Clad Chain Link Fence**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

SHADE STRUCTURE GUIDELINES

1. SHALL BE INSTALLED PER LOCATIONS IN THE PLANS. LOCATION OF STRUCTURE SHALL TAKE INTO CONSIDERATION ORIENTATION FOR SUN AND WIND PROTECTION. LOCATE PICNIC AND SHADE STRUCTURES ADJACENT TO OPEN TURF OR PLAY AREAS AS SHOWN IN THE PLANS.

2. STRUCTURES SHALL HAVE A SOLID ROOF UNLESS OTHERWISE SPECIFIED. ACCEPTED MANUFACTURES INCLUDE CLASSIC RECREATION SYSTEMS, POLIGON PARK ARCHITECTURE OR EQUAL. CITY APPROVED CUSTOM STRUCTURES WILL BE CONSIDERED.

3. POST AND TRIM COLORS SHALL COORDINATE WITH OTHER PARK AMENITIES AND SHALL BE APPROVED BY THE CITY ENGINEER.

4. NO LIGHTS SHALL BE INSTALLED WITHIN STRUCTURES UNLESS OTHERWISE SPECIFIED.

5. STRUCTURE AND ADJOINING FACILITY MUST COMPLY WITH ALL RELEVANT TITLE 24, AND ACCESSIBILITY REGULATIONS.

6. ALL SHADE STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH CURRENT LOCAL BUILDING CODES. THE DESIGN SHALL INCLUDE LATERAL ANALYSIS, DESIGN OF ALL MEMBERS, POSTS, BEAMS, RAFTERS, ETC. DESIGN MUST ALSO INCLUDE A FOOTING DESIGN TO RESIST WIND LOADS AND SEISMIC FORCES. ALL DESIGNS AND CALCULATIONS MUST BE STAMPED AND SIGNED BY A LICENSED CALIFORNIA ARCHITECT OR STRUCTURAL ENGINEER. NOTE: DESIGN CRITERIA SHALL BE AS FOLLOWS: WIND SPEED = 110 MPH, EXPOSURE "C" SEISMIC ZONE = 3

7. UPRIGHT POSTS SHALL BE EMBEDDED IN CONCRETE. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

8. SUBMIT PLANS TO BUILDING DEPARTMENT FOR REVIEW AND PERMITS.

9. DETAILED SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY FOR WRITTEN APPROVAL PRIOR TO FABRICATION.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 3.0**
Res No. 2020–	DATE: February 18, 2020	**SHADE STRUCTURE** **General Guidelines**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

SITE FURNISHINGS GUIDELINES

A. BENCHES
1. ALLOWABLE TYPES INCLUDE: PROTECTIVE COATED STRAP METAL. BENCHES SHALL BE SURFACE MOUNT. WOOD BENCHES ALLOWED ONLY FOR RETROFITS.
2. MANUFACTURER SHALL TOURNESOL PLAZA COLLECTION PZ-0100-60 (TYP) OR PZ-0100-48 (OPTIONAL CENTER ARM) OR AN APPROVED EQUAL.
3. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.

B. PICNIC TABLES
1. ALLOWABLE TYPES INCLUDE: PROTECTIVE COATED STRAP METAL (PREFERRED), OR CONCRETE.
2. METAL STRAP TABLES SHALL BE TOURNESOL PLAZA COLLECTION PZ-1000 & PZ-400 (OR LENGTH AS SPECIFIED) OR AN APPROVED EQUAL, SURFACE MOUNT.
3. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.
4. TABLES SHALL BE PLACED INDIVIDUALLY OR IN CLUSTERS WITH MINIMUM OF TWO TABLES PER ACRE, DEPENDING ON USE AND CONFIGURATION OF PARK, OR SPORTS FACILITY.
5. MINIMUM OF ONE ACCESSIBLE TABLE SHALL BE PROVIDED.
6. A MINIMUM DISTANCE BETWEEN TABLES SHALL BE 5'.

C. BOLLARDS
1. KNOCK DOWN BOLLARDS SHALL BE INSTALLED AT WALK ENTRANCES 8 FEET AND WIDER.
2. INSTALL BOLLARDS PER DETAILS ON THE PLANS.
3. MANUFACTURER TO BE TOURNESOL B-0240-40-3604 (HINGE/BOLLARD) OR B-0200-40-*3604 (FIXED) OR AN APPROVED EQUAL.
4. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.

D. TRASH RECEPTACLES
1. TRASH RECEPTACLES SHALL BE PLACED THROUGHOUT PARKS, MINIMUM ONE TRASH AND ONE RECYCLING PER EVERY TWO PICNIC TABLES SUPPLIED. TYPE OF FACILITY WILL DICTATE QUANTITY; PER PLAN.
2. TRASH RECEPTACLE SHALL BE COATED STRAP METAL, TOURNESOL PLAZA COLLECTION, PZ-072D-30 OR AN APPROVED EQUAL. WOOD RECEPTACLES ALLOWED ONLY FOR RETROFITS UNLESS OTHERWISE SPECIFIED.
3. LINER FOR EACH RECEPTACLE SHALL BE GALVANIZED, 30 GALLON SIZE, POWDERCOATED IF PROVIDED BY MANUFACTURER.
4. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.

E. DRINKING FOUNTAINS
1. EACH PARK SHALL HAVE A MINIMUM OF ONE DRINKING FOUNTAIN.
2. UNIT SHALL BE MOST DEPENDABLE, MODEL 440 SM OR 410 SM OR APPROVED EQUAL.
3. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.
4. UNIT AND LOCATION SHALL FOLLOW ALL ACCESSIBILITY REQUIREMENTS.

F. BIKE RACKS
1. BIKE RACKS SHALL BE PROVIDED IN PARKS, SPORTS & OTHER CITY OWNED FACILITIES, AND RIGHT-OF-WAY AS DETERMINED BY THE CITY ENGINEER. BIKE RACKS SHALL BE TOURNESOL SITEWORKS MODEL LP-1500 OR AN APPROVED EQUAL.
2. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.

G. BIKE LOCKERS
1. BIKE LOCKERS SHALL BE PROVIDED AT CITY OWNED FACILITIES AND RIGHT-OF-WAY AS DETERMINED BY THE CITY ENGINEER. BIKE LOCKERS SHALL BE DURA BIKE LOCKER MODEL DL-2 OR AN APPROVED EQUAL.
2. COLOR TO BE PER D 0.0 UNLESS OTHERWISE SPECIFIED.

G. PARK SIGN
1. ONE PARK SIGN MINIMUM SHALL BE PROVIDED AT PARK ENTRY. DESIGN SHALL BE PER D 9.1 FOR PARK LESS THAN 5 (FIVE) ACRES IN SIZE. DESIGN SHALL BE PER D9.2 FOR PARKS LARGER THAN 5 (FIVE) ACRES. COLORS TO BE PER D 9.1 OR D 9.2 UNLESS OTHERWISE SPECIFIED.

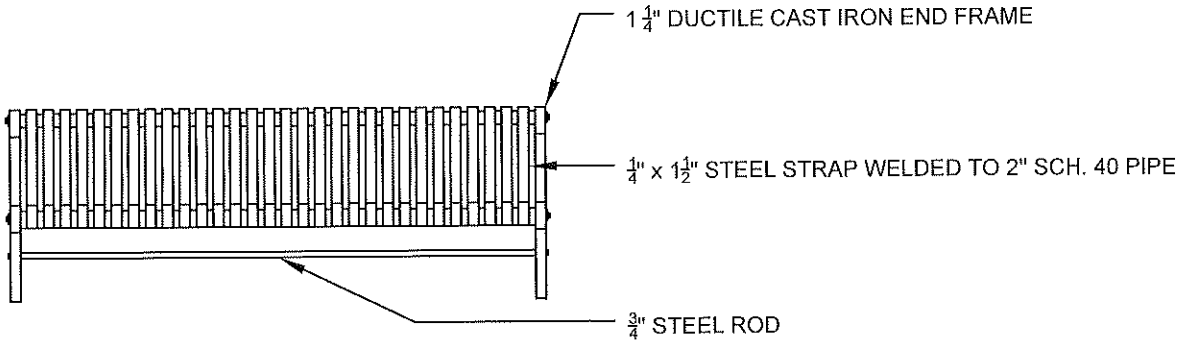
SITE FURNISHINGS GUIDELINES

I. ACCESSIBILITY

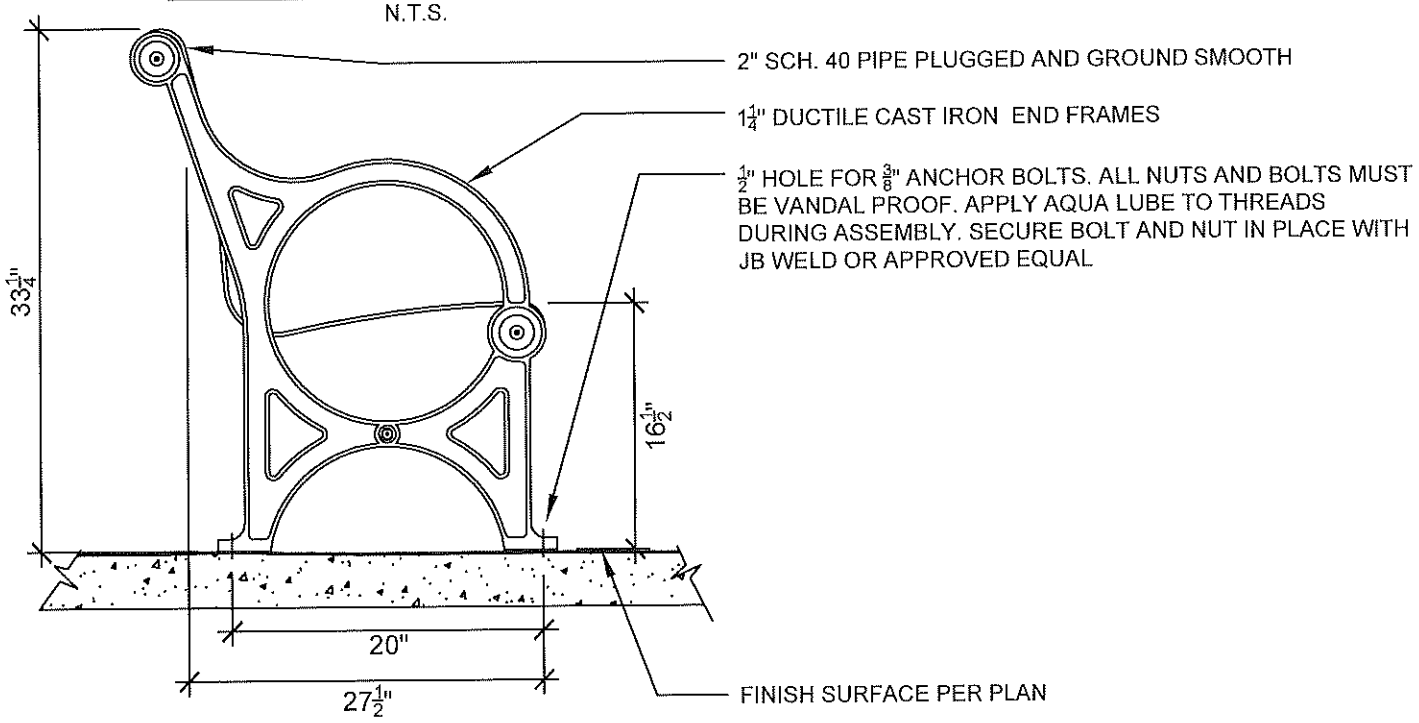
1. ALL FURNISHINGS GUIDELINES MUST MEET A.D.A. STANDARDS AND THE CALIFORNIA CODE OF REGULATIONS TITLE 24 ACCESSIBILITY STANDARDS.
2. WHERE BOLLARDS ARE INSTALLED ACROSS PEDESTRIAN PATHS, SUCH SHALL BE SET SO THAT A CLEAR WIDTH OF 48 INCHES IS MAINTAINED ON PEDESTRIAN PATH.
3. DRINKING FOUNTAINS SHALL HAVE MINIMUM OF 30"X48" CLEAR SPACE WITH CROSS SLOPES NOT EXCEEDING 1:48 SHALL BE PROVIDED.
4. DRINKING FOUNTAINS SHALL HAVE A 17-INCH MINIMUM TO 25-INCH MAXIMUM TOE CLEARANCE SHALL BE PROVIDED UNDERNEATH THE DRINKING FOUNTAIN. KNEE CLEARANCE SHALL BE PROVIDED AT A MIN 27-INCHES ABOVE FLOOR OR GROUND.

J. SUBMITTALS

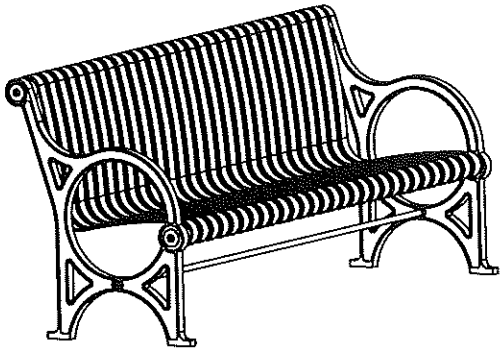
1. PROVIDE WRITTEN TECHNICAL SPECIFICATION FOR ALL FINISHES.
2. PROVIDE SUBMITTAL AND SAMPLES FOR APPROVAL PRIOR TO CONSTRUCTION.



FRONT ELEVATION
N.T.S.



SIDE ELEVATION
N.T.S.



NOTES

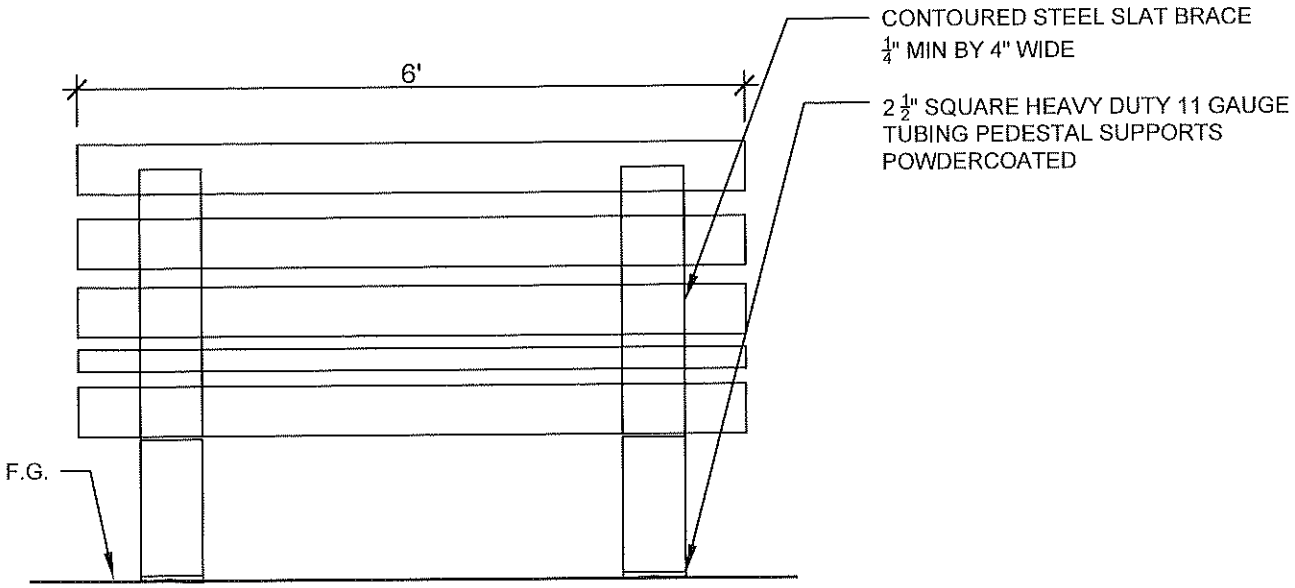
1. FOR FINISHES, SEE D 0.0.
2. ACCEPTABLE MANUFACTURER: TOURNESOL MODEL PZ-0100 OR PZ-01C00 (OPTIONAL CENTER ARM) OR AN APPROVED EQUAL. SPECIFY LENGTH AS REQUIRED.
3. BENCH TO COMPLY WITH CURRENT A.D.A. STANDARDS.

CITY OF TRACY

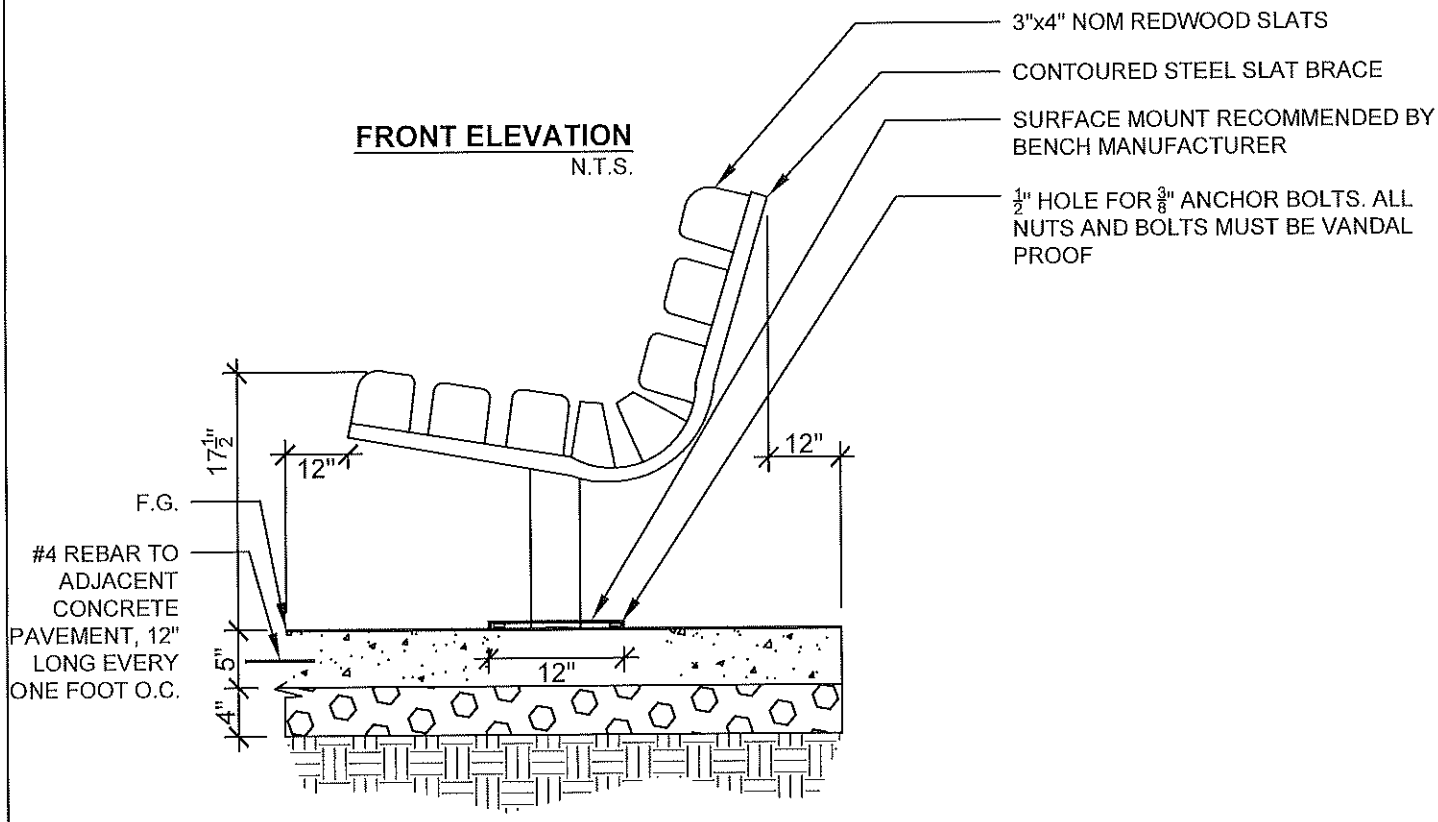
TRACY
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.1.1**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS**
Rev: Lyle C.	Rev:	**Park, Streetscape or Transit Bench**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



FRONT ELEVATION
N.T.S.



NOTES

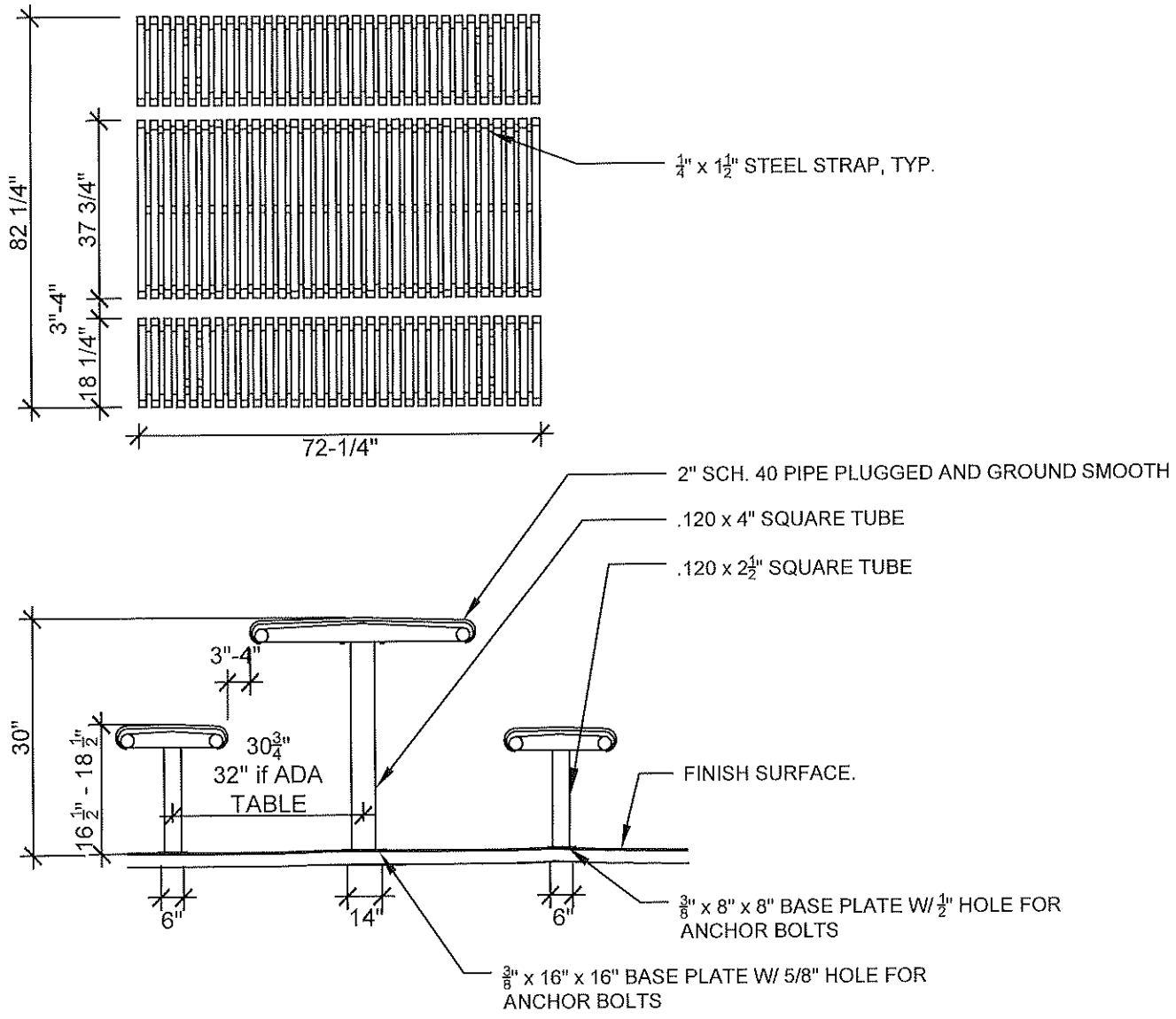
1. FOR FINISHES SEE D 0.0
2. ACCEPTABLE MANUFACTURER: DUMOR #39-60D S-2 OR EQUAL.
3. APPLY AQUA LUBE TO THREADS DURING ASSEMBLY. SECURE BOLT AND NUT IN PLACE WITH JB WELD OR APPROVED EQUAL.
4. WOOD BENCH SHALL BE SPECIFIED ONLY WHEN MATCHING AN EXISTING WOOD BENCH.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.1.2**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS** **Wood Bench**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SIDE ELEVATION
N.T.S.

NOTES

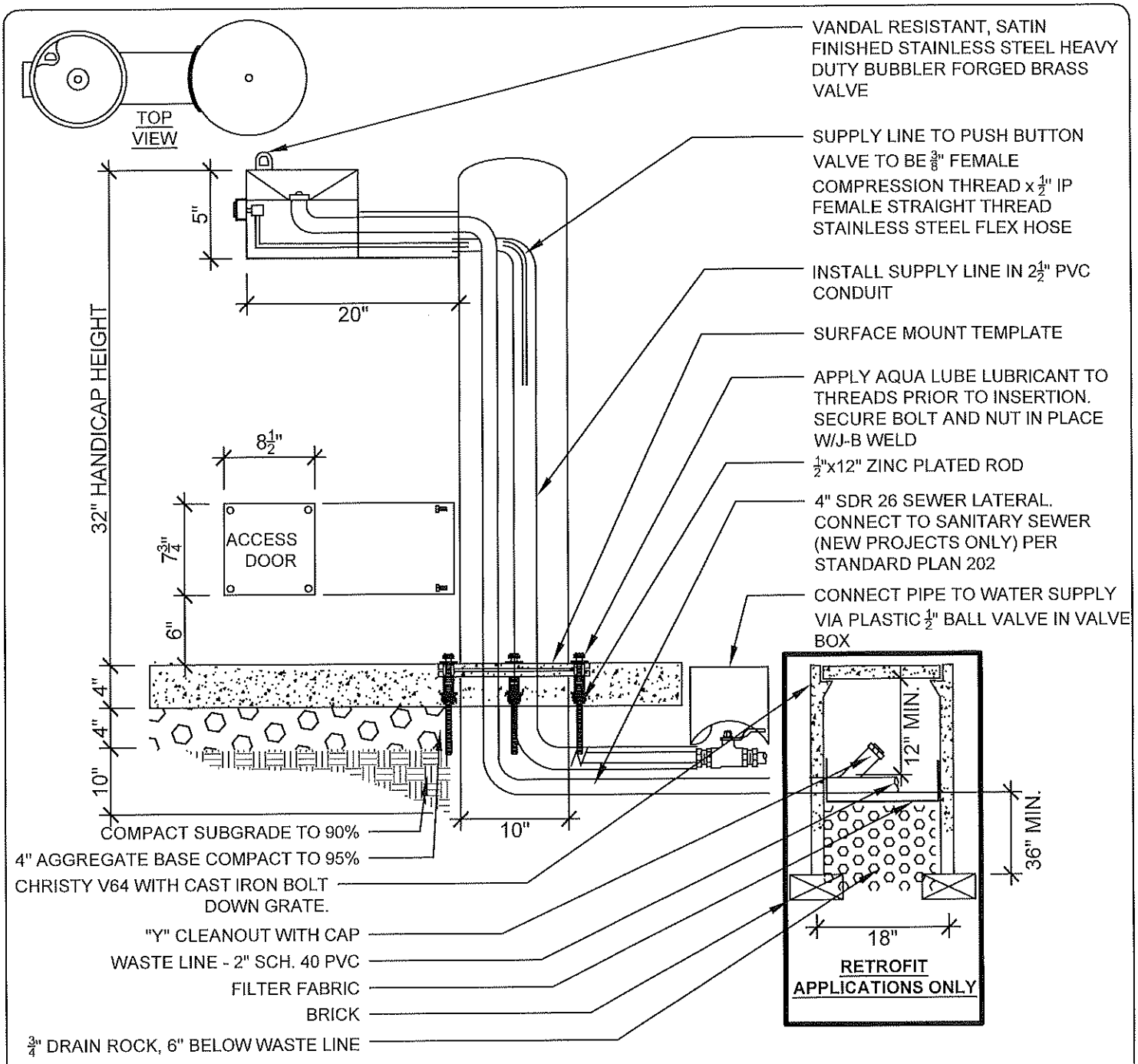
1. FOR FINISHES, SEE D 0.0.
2. PICNIC TABLE TO CONFORM TO CURRENT A.D.A STANDARDS.
3. CONTRACTOR TO PROVIDE ANCHOR BOLTS FOR MOUNTING.
4. ACCEPTABLE MANUFACTURER: TOURNSEOL, SURFACE MOUNT MODEL PZ-1000 TABLE WITH PZ- 400 BENCHES (OR LENGTH AS SPECIFIED) OR AN APPROVED EQUAL.
5. PROVIDE AN ACCESSIBLE MODEL AS REQUIRED.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.2**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS** **Metal Picnic Table**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

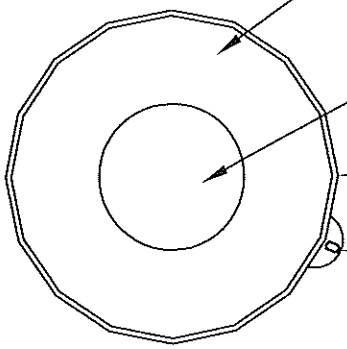
1. DRINKING FOUNTAIN TO BE M.D.F. (MOST DEPENDABLE FOUNTAINS) MODEL 410 SM (SHOWN) OR EQUAL USE MODEL 440 SM IN LARGER PARKS OR AS DIRECTED.
2. BALL VALVE SHALL NOT BE MORE THAN 4' FROM MOUNTAIN; UNLESS OTHERWISE SPECIFIED.
3. CONNECT TO SANITARY SEWER SYSTEM.
4. LOCATE A QUICK COUPLER VALVE WITHIN A 20' RADIUS OF DRINKING FOUNTAIN; UNLESS OTHERWISE SPECIFIED.
5. WATER LINE TO BE PRESSURE TESTED, FLUSHED, AND CHLORINATED; PER SPECS.
6. DEDICATE REDUCED PRESSURE PRINCIPAL BACKFLOW DEVICE FOR DRINKING FOUNTAIN, MINIMUM 1".
7. PROVIDE CLEAN OUT ON WASTE LINE, PER 100' OR OTHERWISE NOTED ON PLANS.
8. COLOR AND FINISHES PER D 0.0

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.3**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS** **Drinking Fountain**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

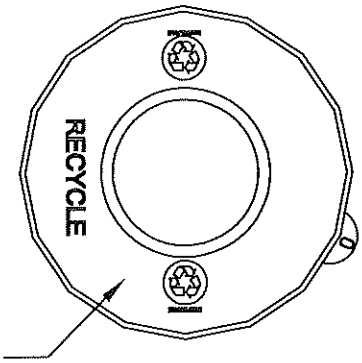


W/ OPTIONAL TOURNESOL SFT 16 GA. SPUN STEEL FLAT TOP LID 10" DIAMETER OPENING (OR AN APPROVED EQUAL)

10" DIAMETER OPENING

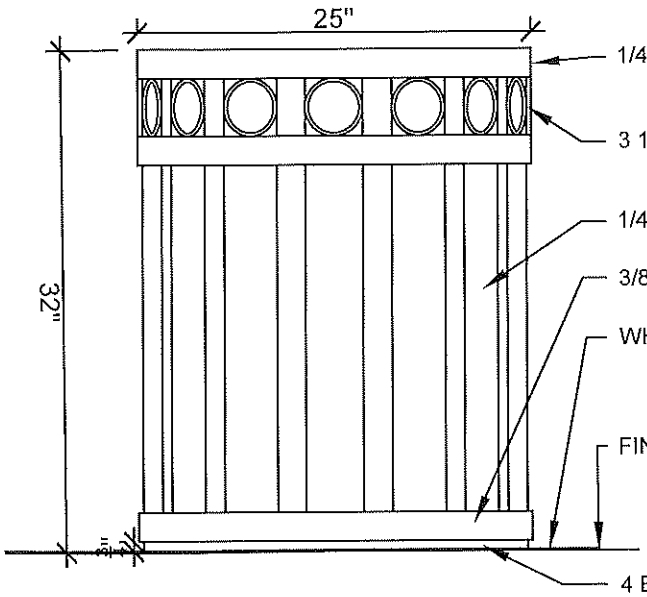
1/4" X 2" HOOP

SECURE LID TO ENCLOSURE WITH CABLE AND SUPPLY CUSTOM LOCK TAB



RECYCLING LID (BLUE) WITH WHITE VINYL LETTERING AND RECYCLE LOGO

PLAN VIEW



1/4"X2" HOOPS (3 PLACES)

3 1/2" X 1/2" DECORATIVE RINGS SCH 80 PIPE (13 PLACES)

1/4" X 2" VERTICAL STRAPS (26 PLACES)

3/8" X 3/4" BASE HOOP

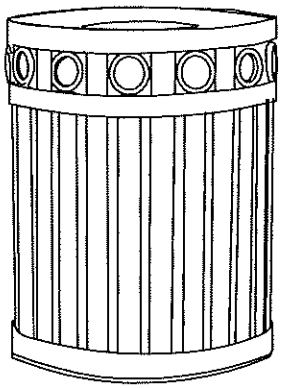
WHEN IN TURF, PAD TO BE 12" WIDER

FINISH GRADE

4 EACH MOUNTING HOLES 20-3/8" CENTER TO CENTER

ELEVATION

N.T.S.



TOURNSEOL MODEL PZ-072D-30

NOTES

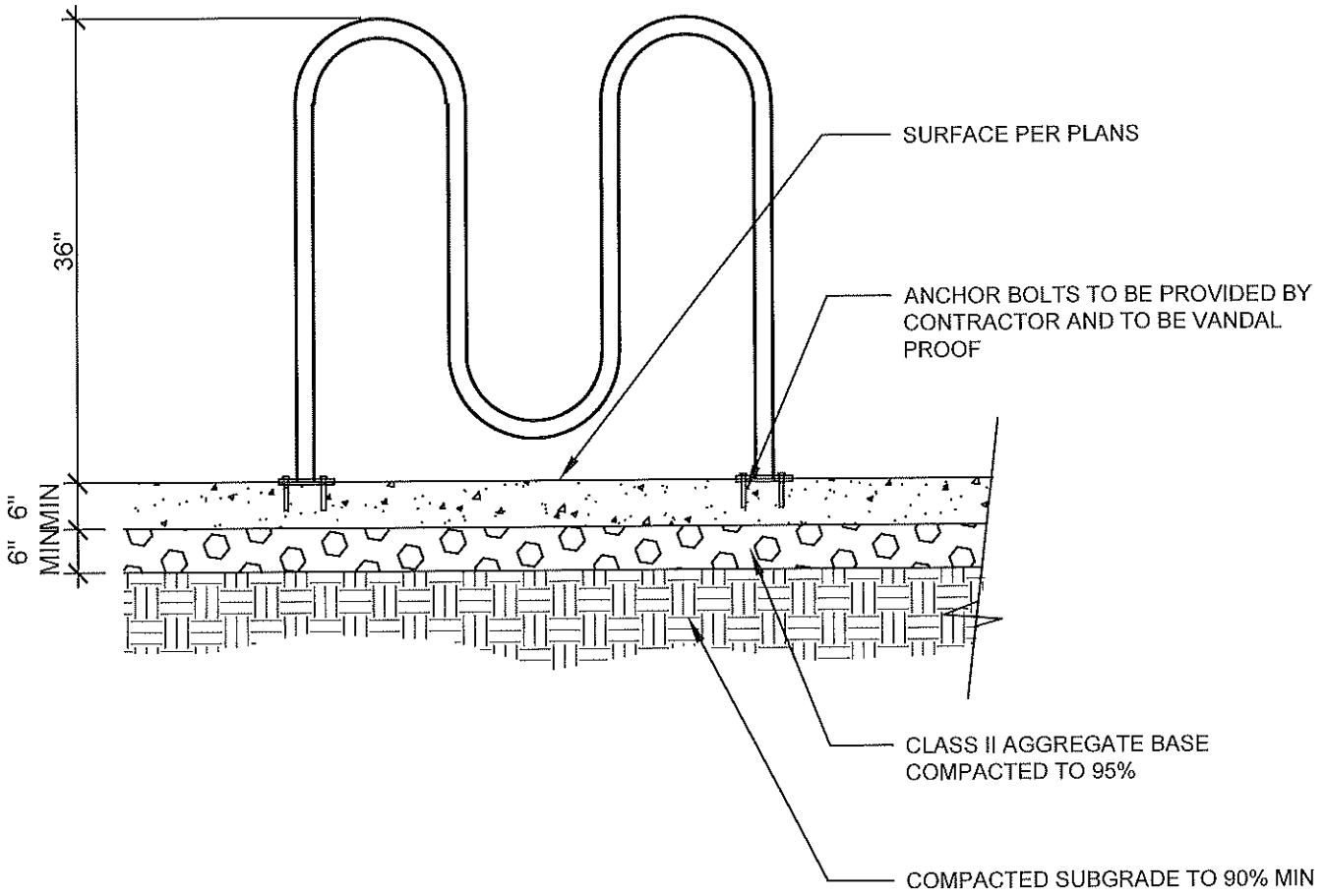
1. INSTALL TRASH RECEPTACLE PLUMB WITH FINISH GRADE PER MFG.
2. APPLY AQUA LUBE TO THREADS DURING ASSEMBLY. SECURE BOLT AND NUT IN PLACE WITH JB WELD OR APPROVED EQUAL.
3. FOR COLOR & FINISHES, SEE D 0.0
4. LINER: 30 GALLON STEEL CAN POWDER COATED TO MATCH RECEPTACLE. DRILL HOLE IN BOTTOM FOR DRAINAGE
5. ACCEPTABLE MANUFACTURER: TOURNSEOL xxx OR APPROVED EQUAL

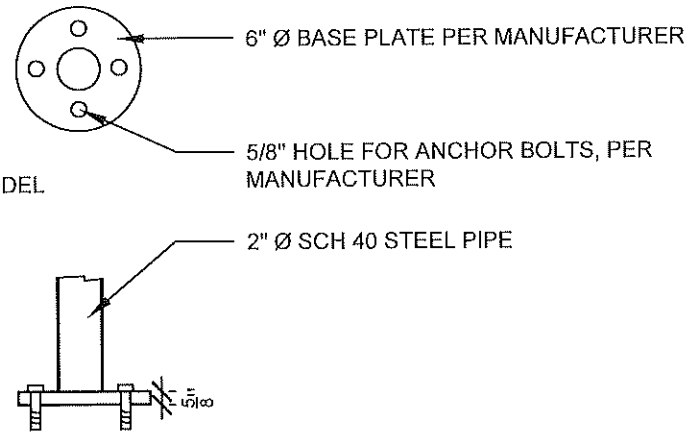
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.4**
Res No. 2020–	DATE:February 18, 2020	**FURNISHINGS** **Trash Receptacle: Metal**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS





NOTES

1. FOR FINISHES SEE D0.0
2. ACCEPTABLE MANUFACTURERS: TOUNESOL SITEWORKS MODEL LP-1500 OR AN APPROVED EQUAL.
3. APPLY RUBBER COATING ON BOLTS, APPLY AQUA LUBE TO THREADS PRIOR TO INSERTION.
4. USE ONLY STAINLESS STEEL FASTENERS.

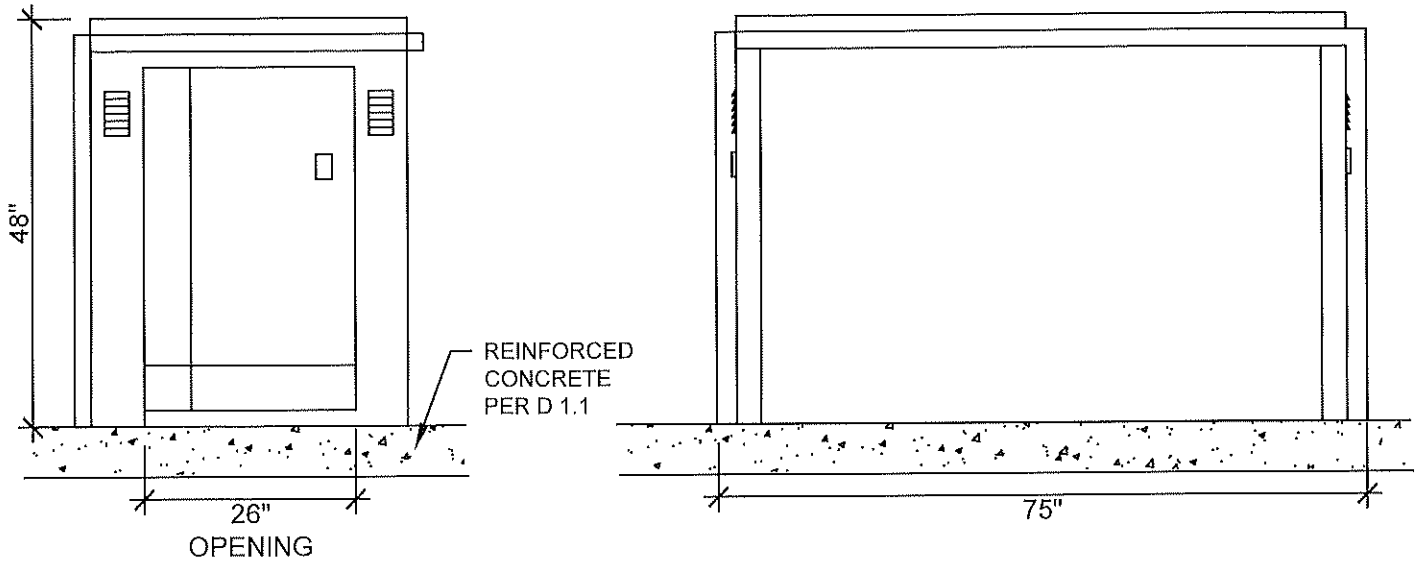
SURFACE MOUNT

CITY OF TRACY

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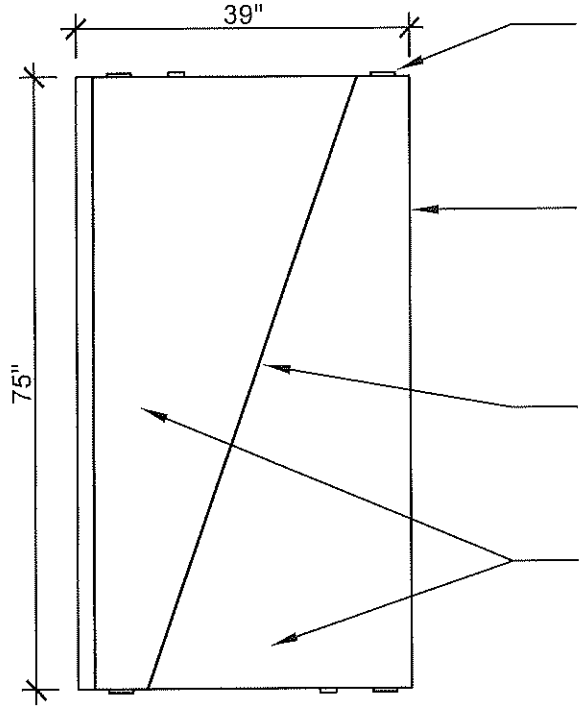
REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.5**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS** **Bike Rack**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



FRONT VIEW

SIDE VIEW



DOOR HINGES: 16 GAUGE
STAINLESS STEEL

LOCKER EXTERIOR: 16 GAUGE
POWDER COATED GALVANIZED STEEL
LOCKER INTERIOR: 14 GAUGE
POWER COATED GALVANIZED STEEL

DIVIDER PANELS: 18 GAUGE
POWDER COATED GALVANIZED STEEL

DOUBLE BIKE LOCKER

TOP VIEW

NOTES

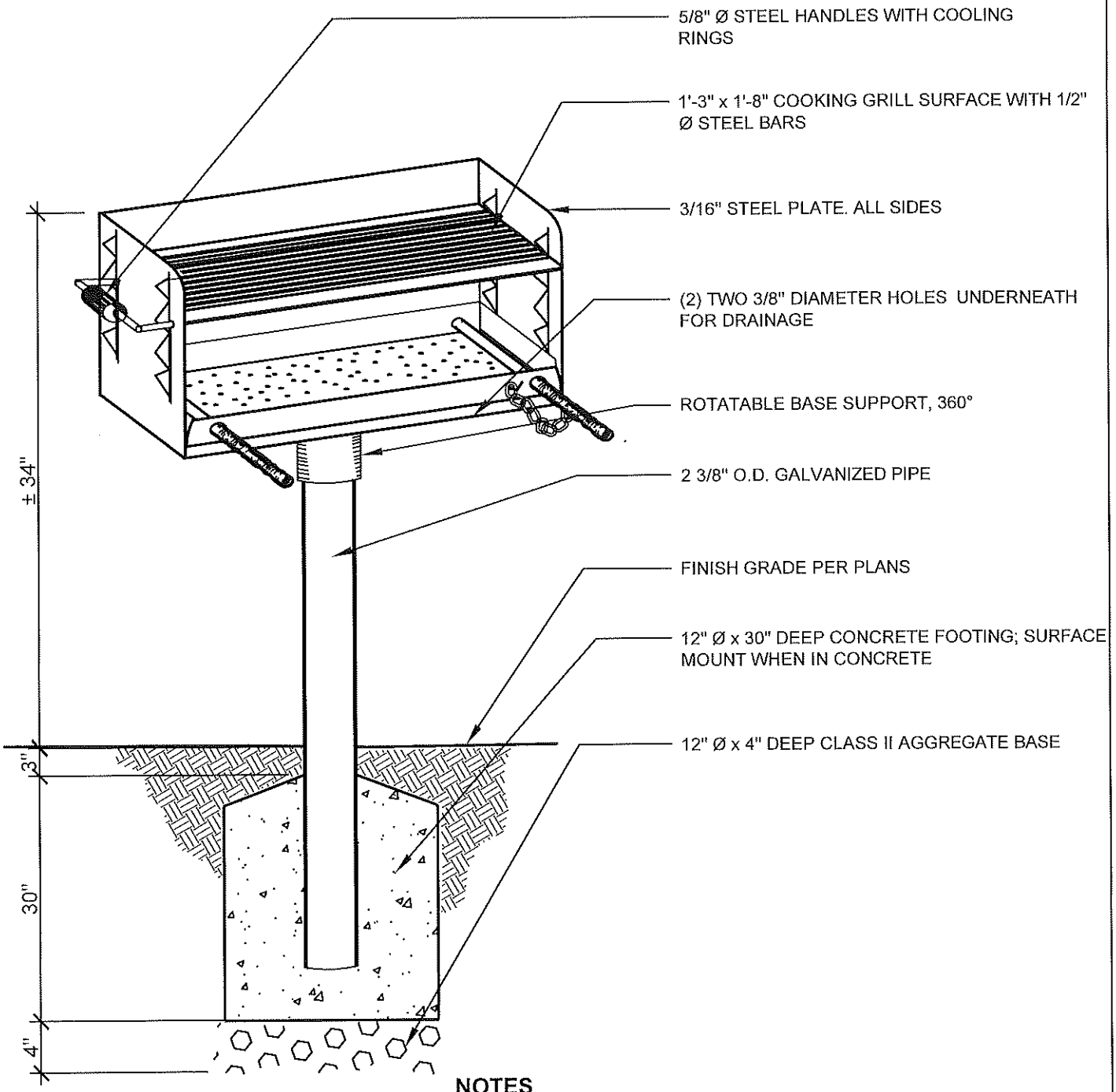
1. FOR FINISHES SEE D0.0
2. ACCEPTABLE MANUFACTURERS: DURA BIKE LOCKER MODEL DL-2 DOUBLE BIKE LOCKER WITH PAD LOCK HANDLE OR AN APPROVED EQUAL. INSTALL AS PER MANUFACTURE'S RECOMMENDATIONS.
3. PROVIDE 72" CLEARANCE TO ANY OBSTRUCTION.
4. LOCKERS CAN BE BANKED SIDE-BY-SIDE AS NEEDED.
5. LOCKERS CAN BE STACKED TO MAXIMUM HEIGHT OF 96"

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.5.2**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS** **Bike Locker**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SECTION/ELEVATION
N.T.S.

NOTES

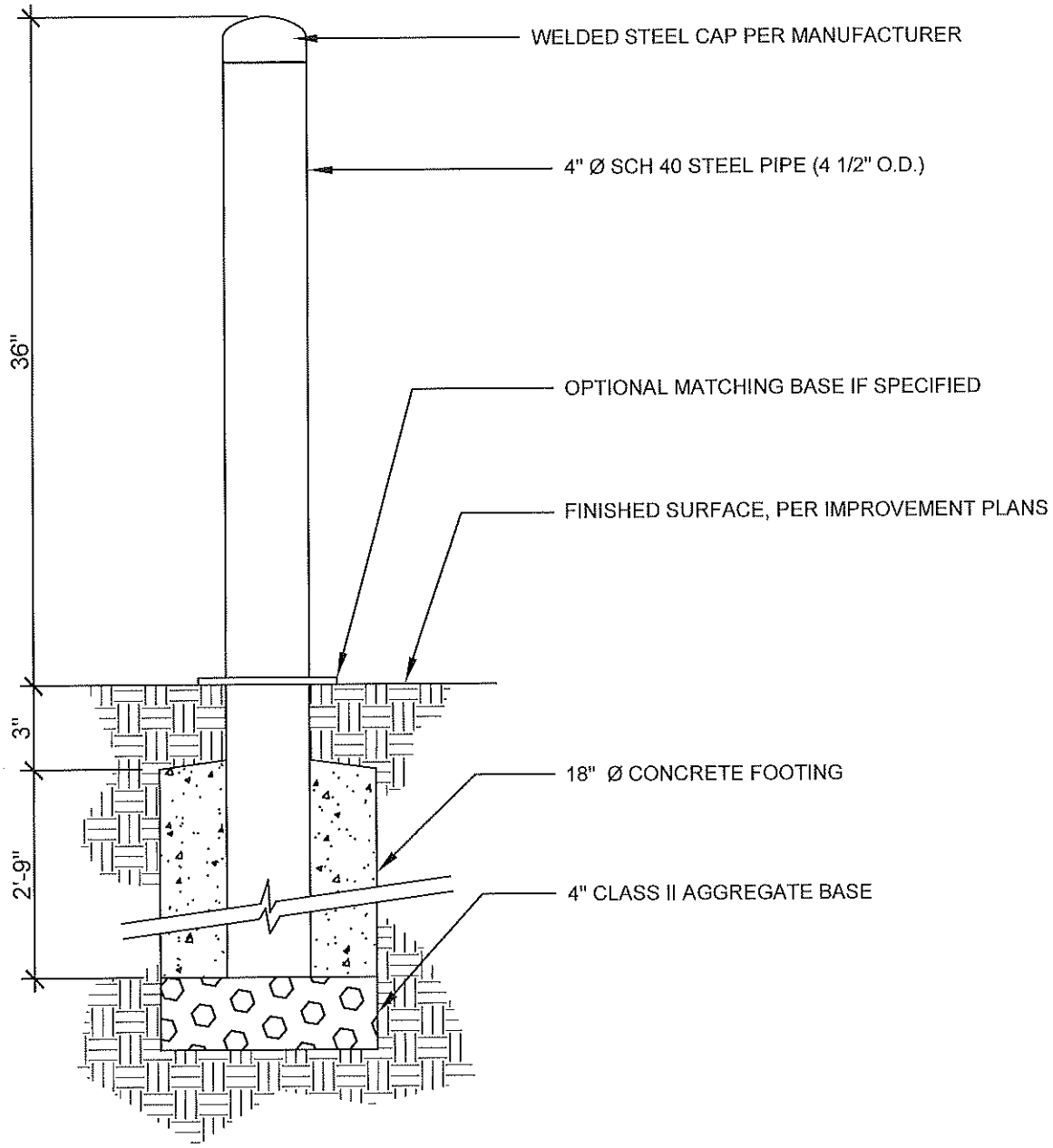
1. FOR FINISH, SEE D 0.0.
2. ACCEPTABLE MANUFACTURER: GAMETIME MODEL 60 OR AN APPROVED EQUAL.
3. UNIT TO HAVE REMOVABLE CHARCOAL TRAY, SIMILAR TO FIRE GRATE.
4. FIRE GRATE TO BE REPLACEABLE.
5. USE ONLY STAINLESS STEEL FASTENERS

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.6**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS**
Rev: Lyle C.	Rev:	**Barbeque Stand**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

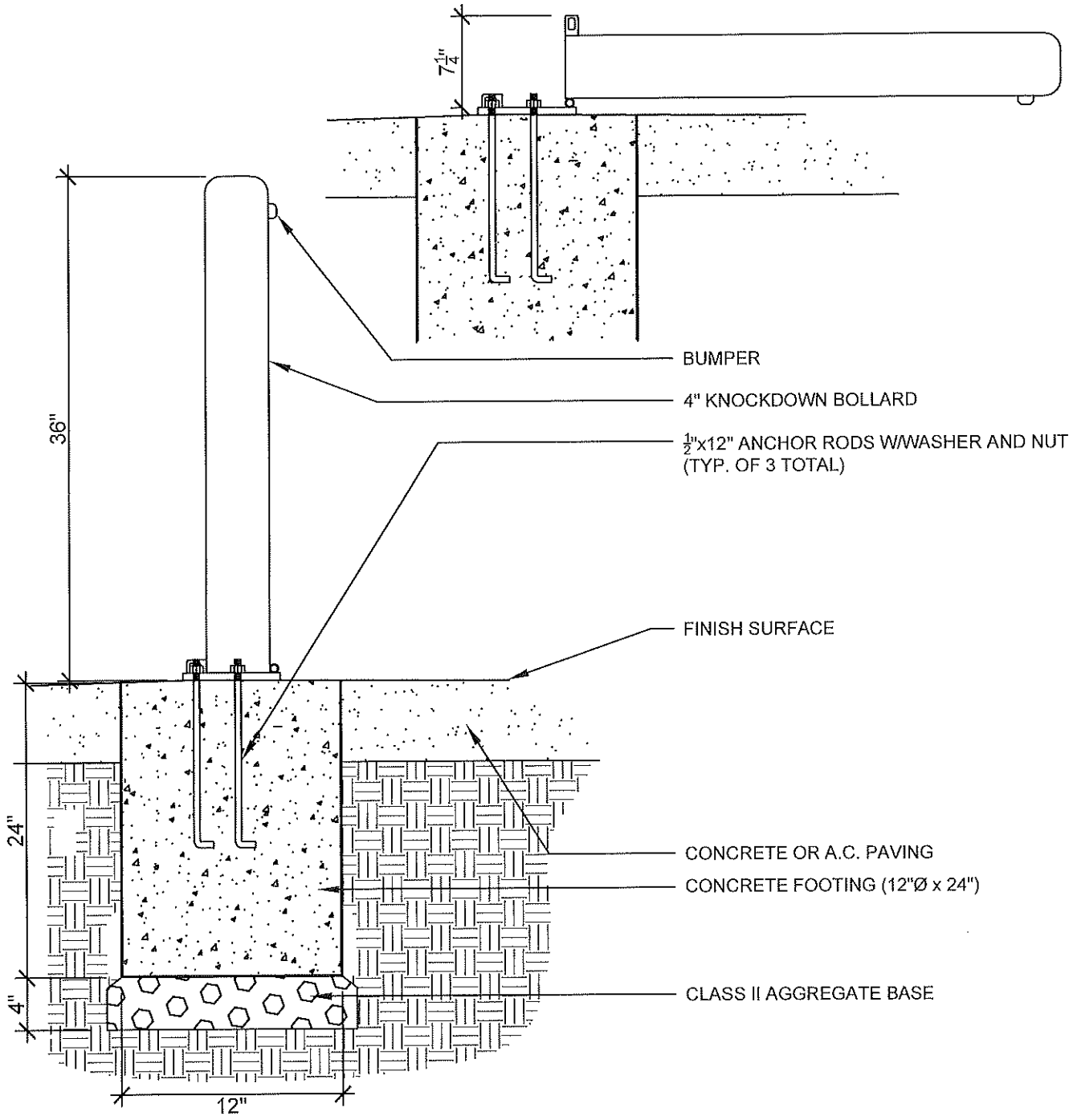
1. ACCEPTABLE BOLLARD: TOURNESOL MODEL B-0200-40-3604 OR AN APPROVED EQUAL.
2. FOR COLOR AND FINISH SEE D 0.0.
3. FOR REMOVABLE METAL BOLLARD SEE SHEET 4 7.2.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.7.1**
Res No. 2020–	DATE:February 18, 2020	**FURNISHINGS**
Rev: Lyle C.	Rev:	**Bollard: Metal Pipe**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

1. BOLLARD BY TOURNESOL MODEL # B-0240-40-3604 OR AN APPROVED EQUAL
2. FOR FINISH, SEE D 0.0.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 4.7.2**
Res No. 2020–	DATE: February 18, 2020	**FURNISHINGS**
Rev: Lyle C.	Rev:	**Bollard: Metal Knockdown**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

SPORT COURT SURFACING

PAVING FOR CONCRETE COURTS

1. LIME TREAT NATIVE SOIL PER GEOTECHNICAL REPORT.
2. INSTALL A 6 MIL PLASTIC LINER/VAPOR BARRIER BETWEEN NATIVE SOIL AND BASE ROCK.
3. WOOD FLOAT OR MEDIUM BROOM FINISH CONCRETE ONLY.
4. CURING COMPOUNDS SHALL NOT BE USED. SURFACE SHALL BE KEPT CONTINUALLY MOIST FOR SEVEN DAYS. COVER WITH PLASTIC POLY FILM OR WATER PROOF CURING PAPER. CONCRETE MUST CURE FOR A MINIMUM OF 28 DAYS.
5. SURFACE AREA SHOULD NOT EXCEED 1/8" IN 10' WHEN MEASURED IN ANY DIRECTION WITH A STRAIGHT EDGE AND SLOPE 1" IN 10' ALL IN ONE PLANE, PER PLANS.
6. THOROUGHLY REMOVE ALL DUST, DIRT, OIL AND FOREIGN MATTER. FLOOD THE SURFACE, LOCATE AND MARK ALL DEPRESSIONS GREATER THAN THE THICKNESS OF A NICKEL.
7. CONCRETE SURFACE MUST BE ETCHED WITH A CONCRETE PREPARE SOLUTION. AFTER DRYING, ALL LATENT MATERIAL MUST BE REMOVED FROM SURFACE.
8. AFTER SURFACE HAS DRIED, FILL MARKED DEPRESSIONS WITH A COURT PATCH BINDER ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND DIRECTIONS. ALL COMPATIBLE MATERIAL, FOLLOW DIRECTIONS.
9. A TACK COAT IS NECESSARY UNDER PATCHES ONLY AND SHALL BE MIXED PER SPECIFICATIONS MIX.
10. APPLY PRIMER COAT PER MANUFACTURER'S SPECIFICATIONS AND DIRECTION.
11. A COAT OF ACRYLIC FILLER SHALL BE APPLIED WITHIN 1-3 HOURS OF THE APPLICATION OF THE PRIMER COAT WHILE STILL TACKY TO FINGERTIP TOUCH.
12. ACRYLIC TEXTURED COLOR COATS SHALL BE APPLIED ON THE CLEAN, DRY, UNDERLYING SURFACE IN 3 APPLICATIONS PER SPECIFICATIONS. NO APPLICATION SHALL BE COVERED BY A SUCCEEDING APPLICATION UNTIL THOROUGHLY DRIED.
13. FOUR HOURS MINIMUM AFTER COMPLETION OF THE COLOR COATING, 2 INCH WIDE, TEXTURED PLAYING LINES SHALL BE ACCURATELY LOCATED, MARKED AND PAINTED WITH TEXTURED LINE PAINT PER IMPROVEMENT PLANS AND SPECIFICATIONS.
14. FOR ASPHALT COURTS, SEE DETAIL D 1.6.2.

FOR PLEXIPAVE FINISH SURFACE:

CRACK FILLER

MATERIALS FOR FILLING CRACKS SHALL BE OVER KOTE CRACK FILLER MANUFACTURED BY REED & GRAHAM, OR AN APPROVED EQUAL COMMERCIALLY PREPARED CRACK FILLER.

REFINEMENT MATERIAL

MATERIAL FOR LEVELING LOW AREAS AND FOR THE REFINEMENT COURSE SHALL BE OVER KOTE PAVEMENT COATING MANUFACTURED BY REED & GRAHAM, OR AN APPROVED EQUAL MINERAL FILLED ASPHALT EMULSION PRODUCT.

COLOR COATING

COLOR COATING IS TO BE "PLEXI-PAVE" SYSTEM MANUFACTURED BY CALIFORNIA PRODUCTS CORP., OR APPROVED EQUAL. COLORS TO MEET CURRENT NCAA STANDARDS.

PAINT

PLEXICOLOR LINE PAINT BY CALIFORNIA PRODUCTS CORP., OR APPROVED EQUAL.

PROTECTIVE COATING

ON ALL SURFACES, APPLY TWO COATS OF "CLEAR-GLO 3", APPLIED OVER COLOR COATINGS, MANUFACTURED BY CALIFORNIA PRODUCTS CORP., OR APPROVED EQUAL.

NOTES:

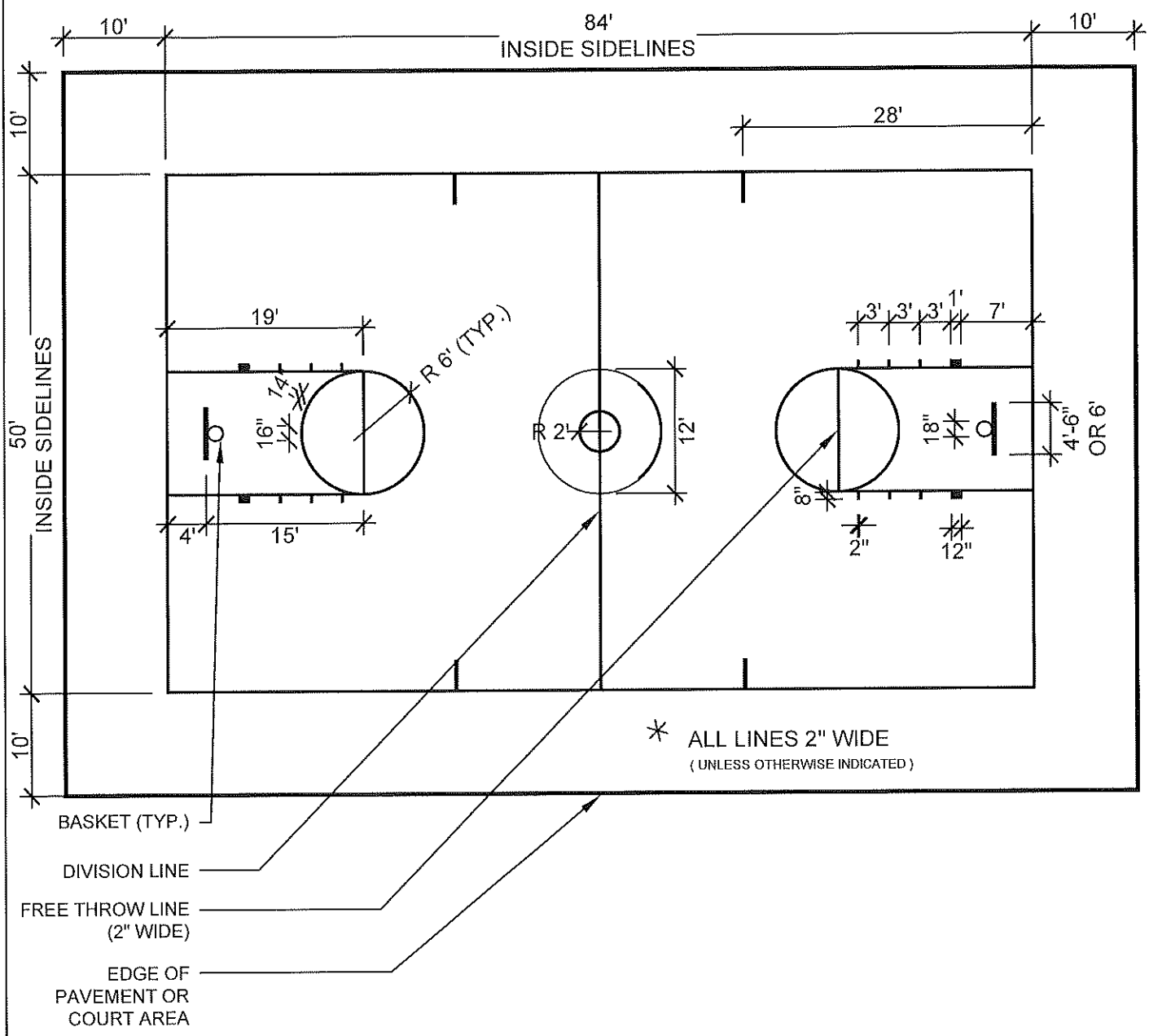
SPORTS COURTS TO MEET CALTRANS STANDARD SPECIFICATIONS, IN CASE OF TENNIS COURTS COMPLY WITH THE UNITED STATES TENNIS ASSOCIATION (USTA) STANDARDS THAT GIVES RISE TO INDUSTRY STANDARDS REGARDING PONDING ON TENNIS COURTS.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.0**
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES** **Sport Court Surfacing**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

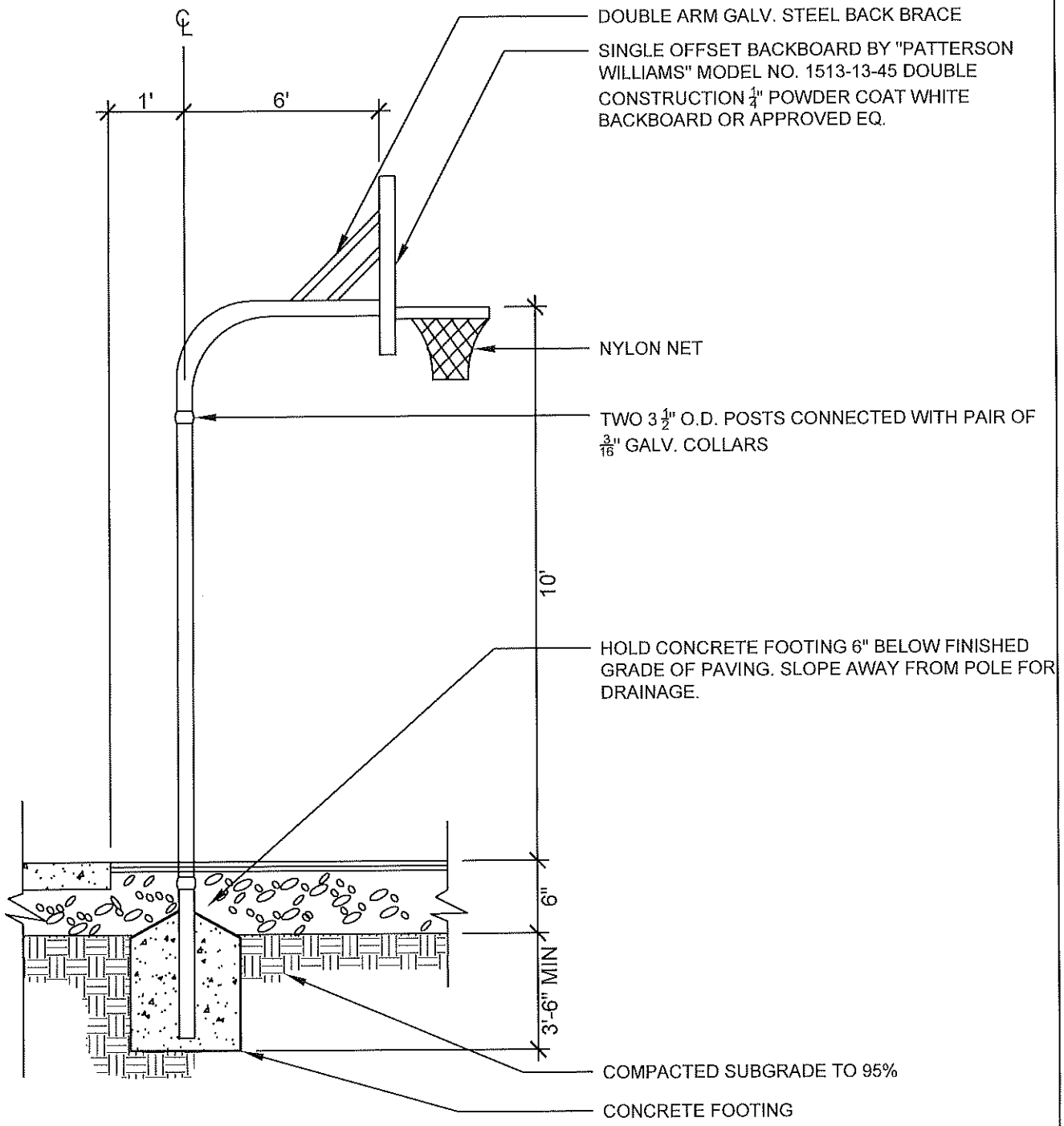
1. SEE D 1.5.2, D 1.5.3 AND D 5.0 FOR COURT SURFACING.
2. ALL LINES TO BE 2" WIDE.
3. VERIFY LAYOUT WITH CURRENT NCAA STANDARDS.
4. SEE D 5.1.2 FOR BASKETBALL STANDARD
5. INSTALL SUBSURFACE DRAIN SYSTEM PER PLAN AND D5.1.3
6. FOR HALF COURT, PROVIDE MINIMUM SPACE OF 48'X56'

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.1.1**
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES** **Basketball Court (Half, Full)**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

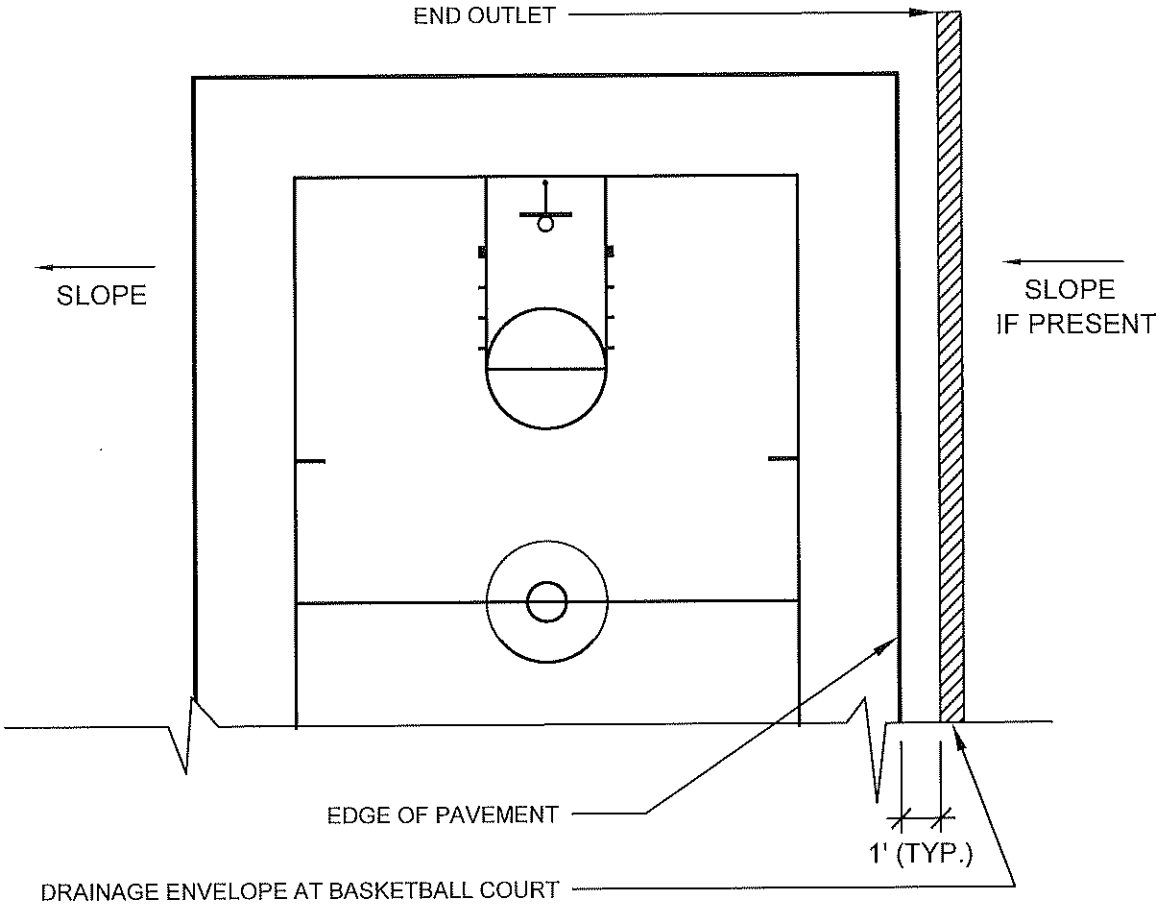
1. BACKBOARD AVAILABLE FROM PATTERSON WILLIAMS THROUGH PACIFIC OR APPROVED EQ. (888) 460-7275
2. DIMENSIONS MAY CHANGE BASED UPON FINAL COURT SIZE, REFER TO PLANS
3. MAINTAIN 10' HEIGHT FROM FINISHED PLAY SURFACE TO BASKETBALL RIM
4. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR CONCRETE SHOWN ARE MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO TECHNICAL REPORT, STRUCTURAL ENGINEER, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

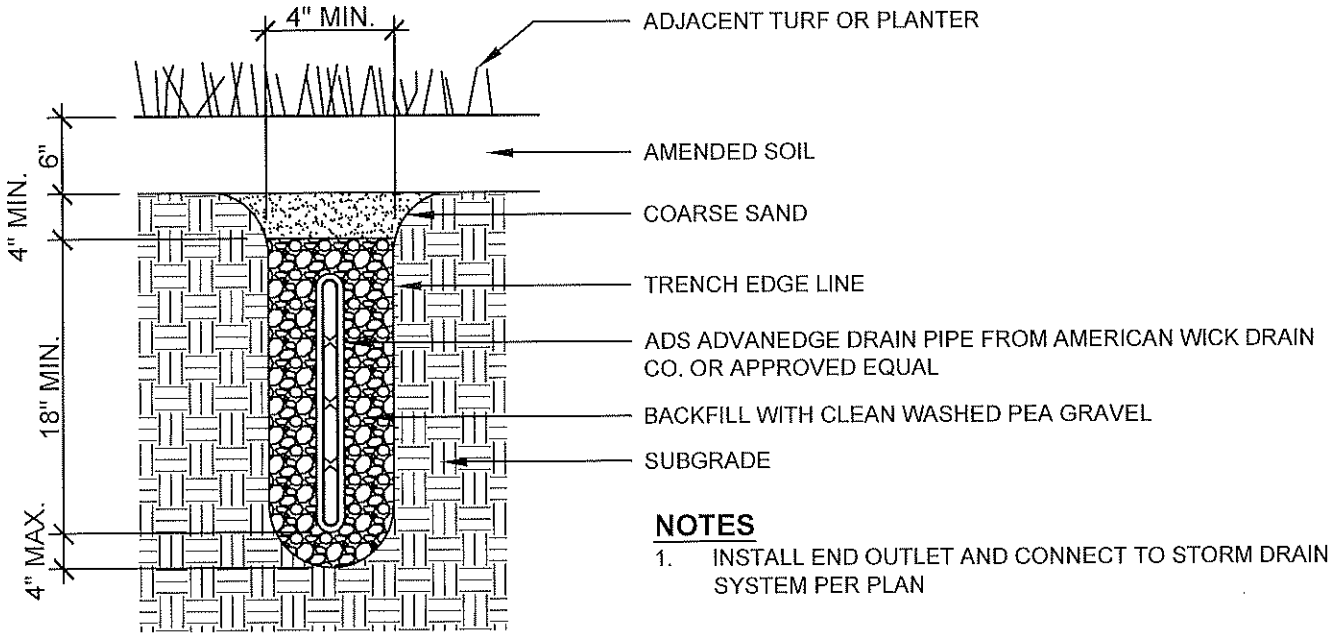
CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.1.2**
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES** **Basketball Standard**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS





NOTES

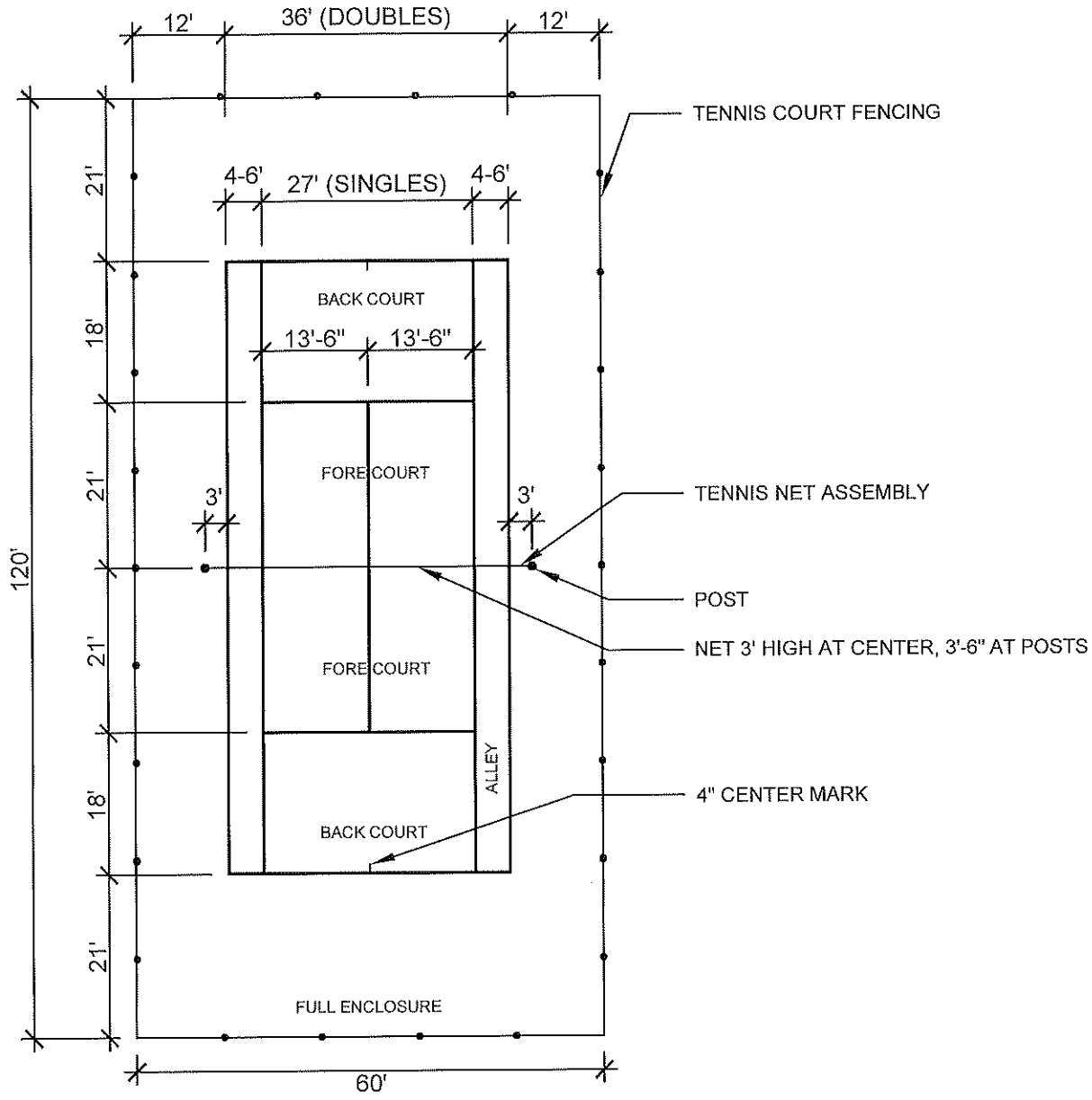
1. INSTALL END OUTLET AND CONNECT TO STORM DRAIN SYSTEM PER PLAN

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.1.3**
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES** **Basketball Court Drainage**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



STANDARD COURT
N.T.S.

NOTES

1. SEE D1.6.2 FOR COURT SURFACING
2. VERIFY LAYOUT WITH CURRENT NCAA STANDARDS
3. ORIENT IN A NORTH SOUTH DIRECTION; UNLESS OTHERWISE NOTED ON PLANS
4. DIMENSIONS GIVEN TO OUTSIDE OF LINES EXCEPT CENTER LINE. LINES 2" WIDE EXCEPT BASE LINE TO BE 4" WIDE

CITY OF TRACY

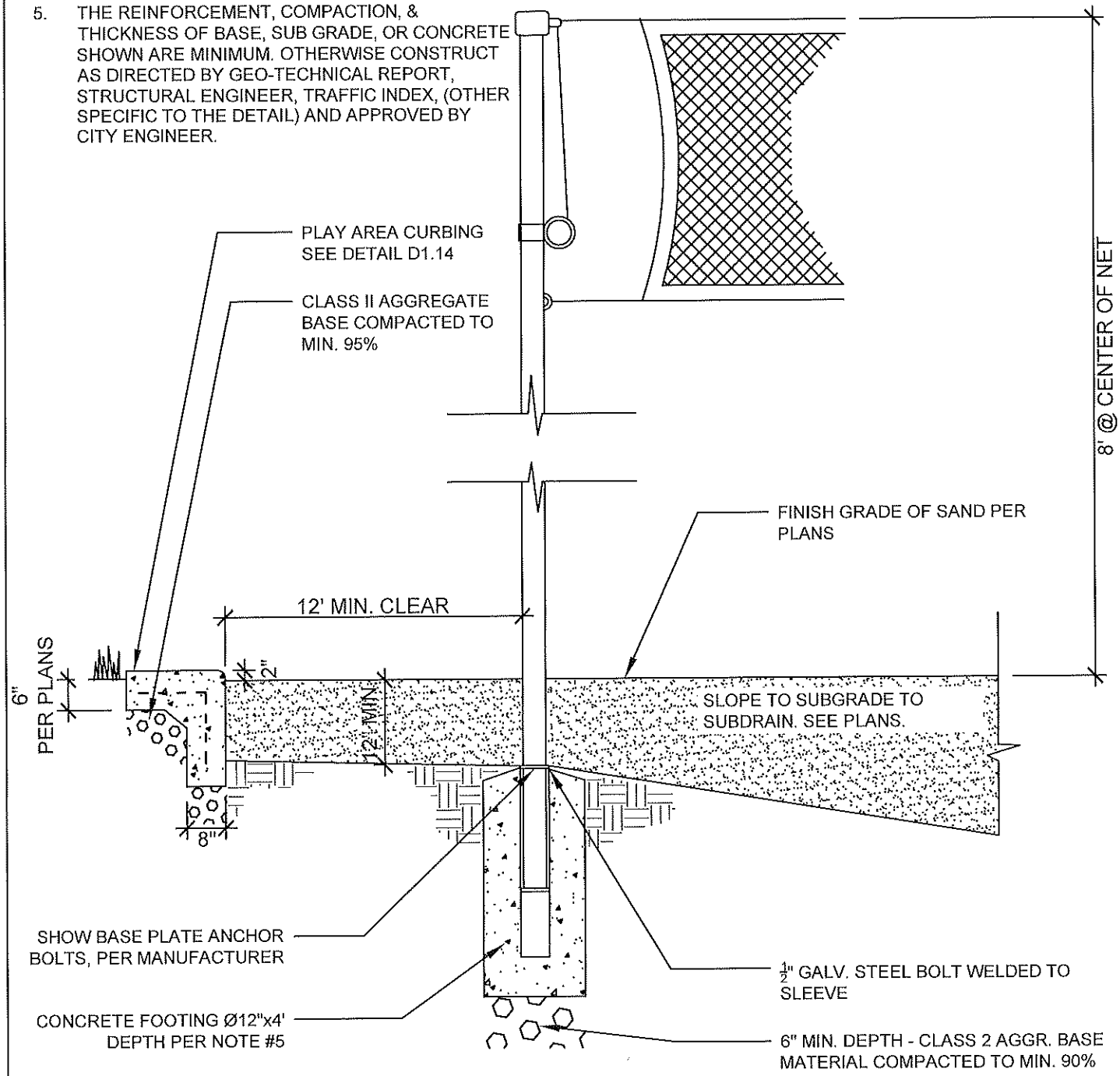
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 5.2
Res No. 2020–	DATE: February 18, 2020	SPORTS FACILITIES Tennis Court
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

NOTES

1. VOLLEYBALL POST TO BE GALVANIZED PATTERSON WILLIAMS ATHLETIC OR APPROVED EQUAL POST 2 7/8" MODEL #2214-21 WITH EXTENSION FOR SAND PLAY. NET TO BE MODEL #8361-20 OR APPROVED EQUAL
2. VOLLEYBALL POST, SLEEVE & FITTINGS PER SPECIFICATIONS
3. SAND SHALL BE OLYMPIC #12 OR APPROVED EQUAL
4. ALLOW AREA OR 100x60' MIN. FOR COURT. ORIENT NORTH/SOUTH UNLESS OTHERWISE SHOWN ON THE PLAN.
5. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE, OR CONCRETE SHOWN ARE MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, TRAFFIC INDEX, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

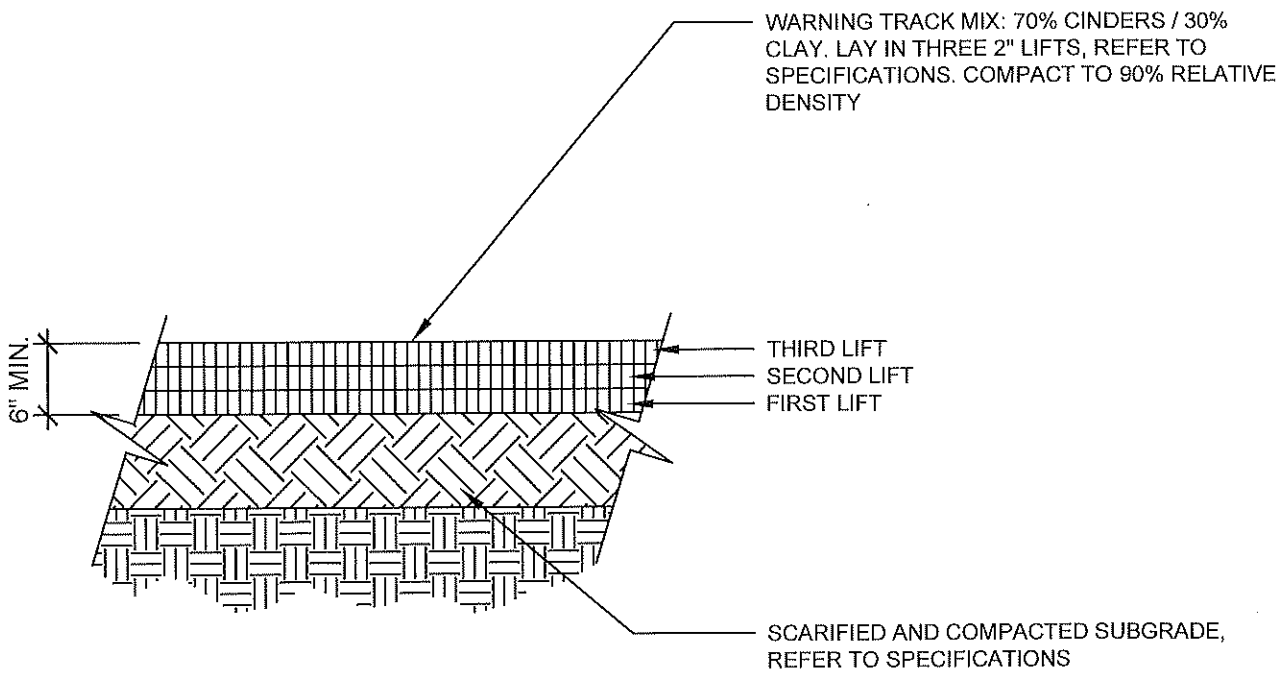


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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.3**
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES** **Sand Volleyball Court**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

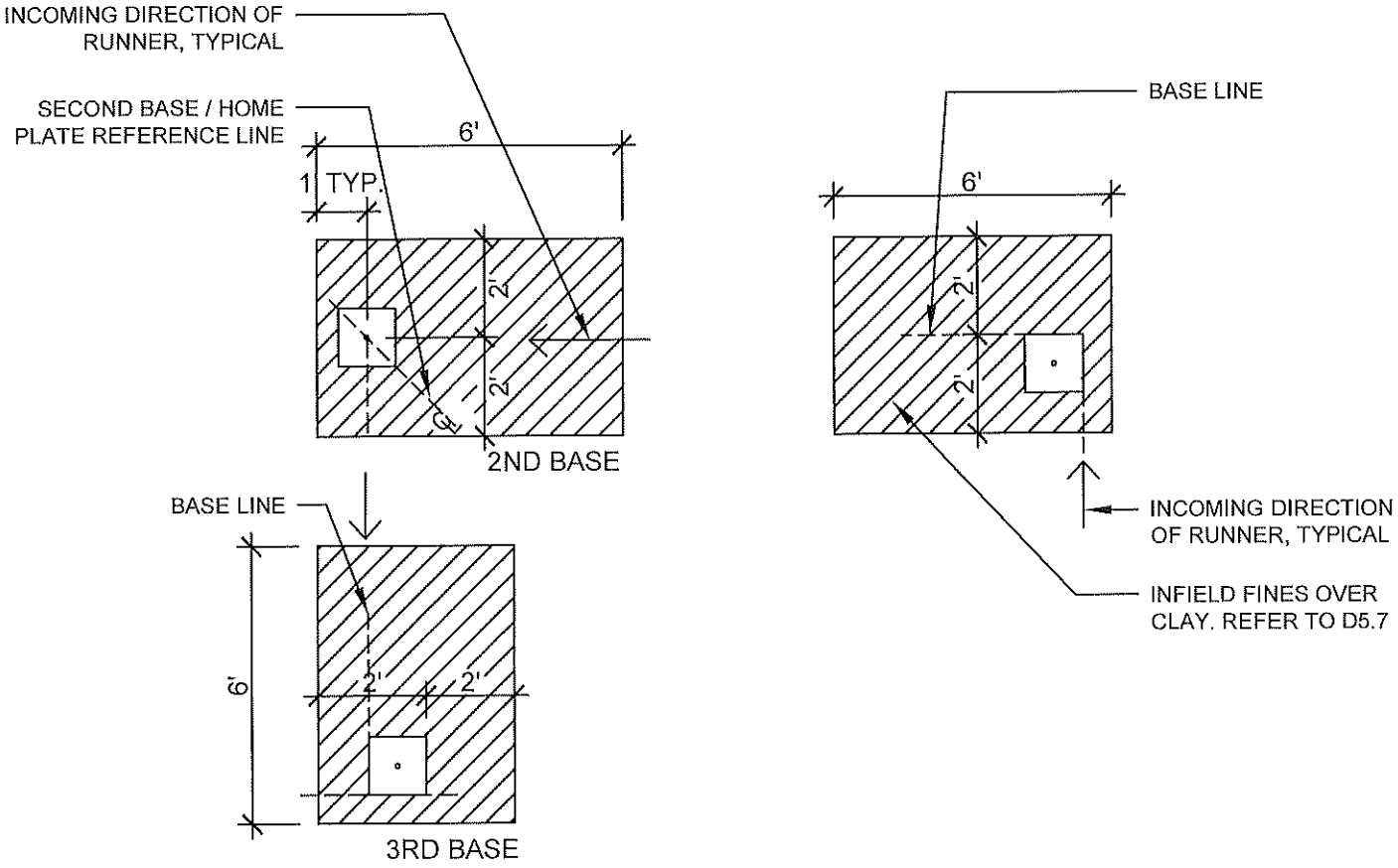
1. INSTALL WARNING TRACK AND FOUL LINE RUN ADJACENT TO FENCE WITH 6" DEPTH OF FINES PER IMPROVEMENT PLANS.
2. WARNING TRACK SURFACE TO BE FREE OF ROCK, DEBRIS, VEGETATION, AND FOREIGN MATERIAL.
3. SUBSURFACE TO BE STERILIZED TO ELIMINATE POSSIBLE VEGETATIVE GROWTH PER RECOMMENDATION BY PCA AND APPROVED BY CITY ENGINEER.
4. SPREAD MIX IN 2" LIFTS. WATER LIGHTLY AND COMPACT WITH ROLLER AFTER EACH LIFT.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 5.4
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES** **Warning Track**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

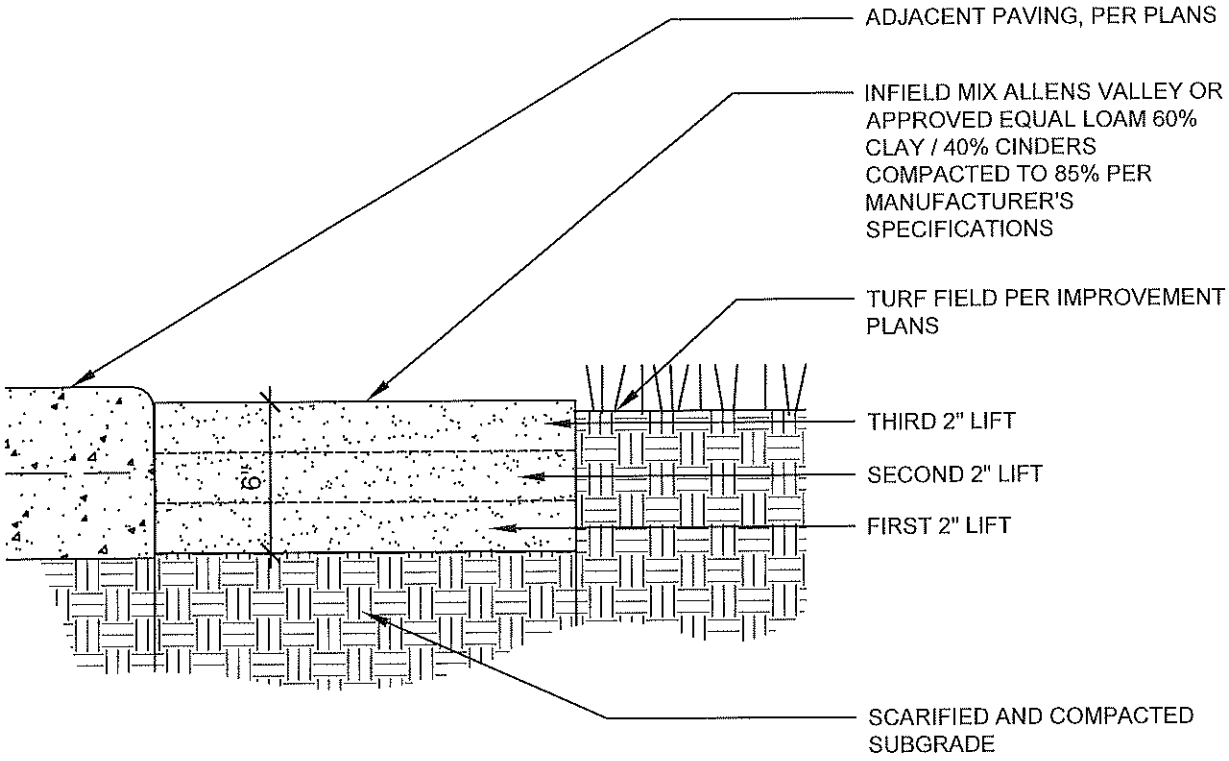
1. PEGS LOCATED CENTERED ON BASE, 6" FROM INTERSECTION OF BASE LINE FOR 1ST AND 3RD BASES.
2. PEGS LOCATED ON INTERSECTION OF BASE LINE FOR 2ND BASE.
3. DETAIL PROVIDED FOR LOCATION ONLY.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.5**
Res No. 2020–	DATE:February 18, 2020	**SPORTS FACILITIES**
Rev: Lyle C.	Rev:	**Bases Layout**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

1. INFIELD MIX SHALL PASS PHYSICAL PROPERTIES BELOW:

SIEVE SIZE	% PASSING
5MM	100
2MM	95–100
1MM	70–95
.5MM	60–80
.05MM	20–30
<.05MM	20–30%

2. ENTIRE INFIELD SKINNED SURFACE SHALL BE FREE OF ROCK, DEBRIS, VEGETATION, AND FOREIGN MATERIAL, PER SPECIFICATIONS.
3. STERILIZE SUBGRADE TO ELIMINATE POSSIBLE VEGETATION GROWTH PER MANUFACTURER SPECIFICATIONS / RECOMMENDATIONS.
4. SPREAD INFIELD MIX IN 2" THICK LIFTS. WATER LIGHTLY AND COMPACT WITH ROLLER AFTER EACH LIFT, PER MANUFACTURER'S RECOMMENDATIONS.
5. INCORPORATE INFIELD CONDITIONER "PROS CHOICE SELECT RED OR APPROVED EQUAL" AT A RATE OF 1 TON/1000 SQ. FT. UNIFORMLY INTO THE TOP 3" OF THE SURFACE AFTER APPROXIMATE GRADE IS ESTABLISHED, PER MANUFACTURER SPECIFICATIONS. DISTRIBUTED BY ALLENS VALLEY LOAM OR APPROVED EQUAL.
6. RECOMPACT TO 85% MIN. UNTIL FINAL GRADE ELEVATION IS ACHIEVED, PER IMPROVEMENT PLANS.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 5.6**
Res No. 2020–	DATE: February 18, 2020	**SPORTS FACILITIES**
Rev: Lyle C.	Rev:	**Infield Surfacing**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

PLAY EQUIPMENT GENERAL NOTES

1. GENERAL: EACH PLAY EQUIPMENT INSTALLATION SHALL BE AN INTEGRATED MODULAR SYSTEM AS DESIGNED BY A SINGLE MANUFACTURER, AND SHALL INCLUDE ELEMENTS AS DESCRIBED IN THE PARKS SECTION. PLAY EQUIPMENT SHALL BE OF METAL POST CONSTRUCTION WITH PLASTIC AND STEEL ATTACHMENTS CLAMPED TO IT. ALL EQUIPMENT, DESIGN, LAYOUT, INSTALLATION, AND ANY OPTIONS OR MODIFICATIONS SHALL BE IN CONFORMANCE WITH MANUFACTURER'S SPECIFICATIONS, MEET CURRENT U.S. CONSUMER PRODUCT SAFETY COMMISSION HANDBOOK FOR PLAYGROUND SAFETY, ASTM STANDARDS, AND MEET CURRENT A.D.A. REQUIREMENTS AND CALIFORNIA CODE OF REGULATIONS, TITLE 22, DIVISION 4, CHAPTER 22.

2. POSTS: POSTS SHALL BE 4 1/2" MINIMUM OUTSIDE DIAMETER STEEL PIPE. ALL ENDS SHALL BE FITTED WITH CAST ALUMINUM OR GLASS FIBER-IMPREGNATED POLYETHYLENE ROUNDED CAPS, MOUNTED IN VANDAL PROOF PERMANENT FASHION; PER PLANS.

3. FOOTINGS: SHALL BE PER MANUFACTURER'S SPECIFICATIONS, VERIFIED BY CITY ENGINEER.

4. HARDWARE: CLAMPS SHALL BE CAST ALUMINUM ALLOY, MINIMUM TENSILE STRENGTH 45,000 PSI; UNLESS OTHERWISE INDICATED. BOLTS SHALL BE STAINLESS STEEL, TAMPER RESISTANT. SUPPLY ALL SPECIALTY MAIN. TOOLS TO THE OWNER; PER SPECIFICATIONS.

5. ATTACHMENTS: ALL HANDRAILS AND PIPE ATTACHMENTS SHALL BE GALVANIZED STEEL PIPE, SCHED. 40 OR APPROVED EQUAL. PLASTIC PANELS AND SLIDES SHALL BE MOLDED MEDIUM DENSITY POLYETHYLENE, MINIMUM 7/16" THICK; CHAINS SHALL BE GALVANIZED STEEL LINK, MINIMUM 1/4" GAUGE. SLIDES SHALL BE ORIENTED TO THE NORTH WHENEVER POSSIBLE; UNLESS OTHERWISE INDICATED ON THE PLANS.

6. PAINT FINISHES: ALL METAL POSTS, HANDRAILS, HARDWARE, CLAMPS AND OTHER NON-STAINLESS STEEL PARTS OF THE ASSEMBLY SHALL RECEIVE ELECTROSTATICALLY APPLIED POWDERCOAT BONDED TO METAL TO PROHIBIT PEELING, PER MANUFACTURER'S SPECIFICATIONS. COLOR SHALL BE U.V.-STABILIZED. ACCESSORY CLAMPS MAY BE POWDER-COAT FINISHED, MINIMUM 5 MILS THICKNESS. ALL METAL PARTS SHALL BE GROUND SMOOTH AND DEBURRED PRIOR TO COATING; PER SPECIFICATIONS.

7. ACCEPTABLE MANUFACTURERS: LANDSCAPE STRUCTURES; GAMETIME; BCI BURKE, BERLINER, LAPPSET OR AN APPROVED EQUAL.

8. SURFACING SHALL MEET REGULATIONS AS NOTED IN ITEM 1 ABOVE AND BE ONE OR A COMBINATION OF THE FOLLOWING:

   A) RESILIENT SURFACE: POLYURETHANE/FOAM COMPOSITE OVER A CONCRETE BASE (PREFERRED) OR COMPACTED AGGREGATE BASE. SURFACE SHALL MEET OR EXCEED THE STANDARDS SET FORTH BY THE U.S. CONSUMER PRODUCT SAFETY COMMISSION HANDBOOK FOR PLAYGROUND SAFETY. MINIMUM THICKNESS OF RESILIENT SURFACE 2 1/4 INCHES; UNLESS OTHERWISE INDICATED. SURFACE SHALL BE SINGLE UNIT, SHRINK RESISTANT, SEAMLESS, BONDED TO SUBSTRATE WITH MANUFACTURER APPROVED ADHESIVE. EDGES SHALL BE BEVELED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ACCEPTABLE MANUFACTURERS: ITRI-TURF, SURFACE AMERICA, SPECTRA TURF OR TOT TURF BY ROBINSON OR APPROVED EQUAL TO SATISFY REQUIREMENTS OF PLAYGROUND MANUFACTURER.

   B) ENGINEERED WOOD FIBERS, FIBAR OR EQUAL, MINIMUM OF 12" DEEP; UNLESS OTHERWISE INDICATED.

9. PLAY EQUIPMENT SHOP DRAWINGS AND SITE LAYOUT BY MANUFACTURER IN DESIGNED AREA AND SHALL SHOW ALL DIMENSIONS, OFFSETS, AREA CURB AND USE ZONE REQUIREMENTS. OPERATORS SHALL HAVE PLAYGROUND EQUIPMENT ASSEMBLED AND INSTALLED IN COMPLIANCE WITH THE WRITTEN INSTRUCTIONS OF THE MANUFACTURER. THE PLAYGROUND EQUIPMENT SHALL BE ASSEMBLED AND INSTALLED BY OR UNDER THE DIRECT SUPERVISION OF AN INDIVIDUAL WHO IS AUTHORIZED BY THE MANUFACTURER TO ASSEMBLE AND INSTALL THE EQUIPMENT.

CITY OF TRACY

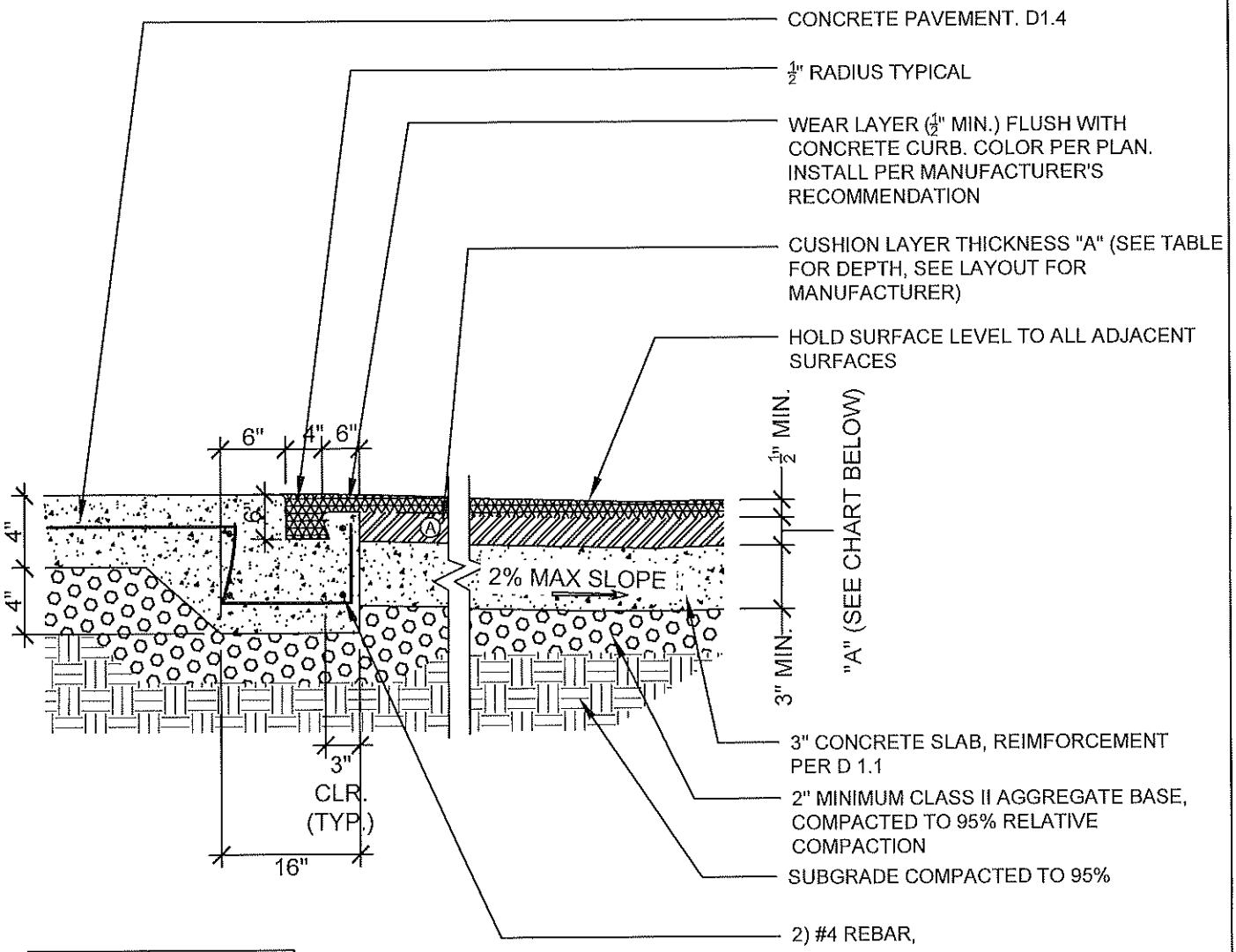
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 6. 0 Sheet 1 of 2
Res No. 2020–	DATE: February 18, 2020	**PLAY EQUIPMENT** **General Guidelines**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

PLAY EQUIPMENT GENERAL NOTES

10. PRIOR TO ITS FIRST USE, THE PLAYGROUND EQUIPMENT SHALL BE INSPECTED BY AN INDEPENDENT CERTIFIED PLAYGROUND SAFETY INSPECTOR WHO SHALL CERTIFY TO THE CITY IN WRITING THAT THE EQUIPMENT IS IN COMPLIANCE WITH ALL CURRENT CODES AND REQUIREMENTS.



DEPTH "A"	FALL HEIGHT
1-3/4	4'
2-1/4"	5'
2-1/2"	6'
3"	7'
3-1/2"	8'
4-1/4"	9'-10'

NOTES

1. THE REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE, OR CONCRETE SHOWN ARE AT A MINIMUM. OTHERWISE CONSTRUCT AS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, (OTHER SPECIFIC TO THE DETAIL) AND APPROVED BY CITY ENGINEER.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 37186		DETAIL No. **D 6.1**
Res No. 2020–	DATE: February 18, 2020	**PLAY EQUIPMENT**
Rev: Lyle C.	Rev:	**PIP Rubber**
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

PLANTING DESIGN GUIDELINES

A. GENERAL

1. SELECT PLANTS ACCORDING TO THE FUNCTIONAL CHARACTERISTICS DESCRIBED IN THE PLANTING ZONES SECTION OF THE STREETSCAPE AND DESIGN GUIDELINES DOCUMENT, AND D7.1.

2. EXISTING SITE VEGETATION SHALL BE CHEMICALLY CONTROLLED AS SPECIFIED BY A LICENSED PEST CONTROL ADVISOR AND APPROVED BY CITY PRIOR TO CLEARING THE SITE, STRIPPING, OR SCARIFYING.

3. EXISTING TOPSOIL ON A SITE SHOULD BE STRIPPED AND STOCKPILED FOR REDISTRIBUTION IN THE PLANTING AREAS ONCE GRADING AND HEAVY CONSTRUCTION OPERATIONS ARE COMPLETE. IN ANY CASE, A MINIMUM OF 6" OF CLEAN, FRIABLE TOPSOIL MUST BE PROVIDED IN ALL PLANTING AREAS, OR THE DEPTH THAT ORIGINALLY EXISTED ON THE SITE, WHICHEVER IS DEEPER. WHERE IMPORT TOPSOIL MUST BE USED TO MEET THIS CRITERIA, IT SHALL BE CERTIFIED AS PHYSICALLY AND CHEMICALLY COMPATIBLE WITH THE UNDERLYING SOIL BY THE SOIL TESTING LABORATORY AS DESCRIBED BELOW.

4. SITE SHALL BE RIPPED AND CROSS RIPPED TO A DEPTH OF 12" PRIOR TO THE ESTABLISHMENT OF ROUGH GRADE.

5. ALL PLANTING WATER USE TO BE DETERMINED BY THE LATEST EDITION OF CALIFORNIA WATER USE CLASSIFICATION OF LANDSCAPE SPECIES (WUCOLS).

6. PLANTING DESIGN SHALL COMPLY WITH CALIFORNIA TITLE 23 CHAPTER 2.7. (MWELO) AND AB1881 INCLUDING ALL REQUIRED NOTES AND COMPLIANCE STATEMENT WITH SIGNATURE BLOCK.

7. PROVIDE LANDSCAPE DOCUMENTATION PACKAGE INFORMATION PER TITLE 23, CHAPTER 7. NOTE THE CITY OF TRACY HAS ADDITIONAL REQUIREMENTS FOR SOILS TESTING.

8. ALL PLANS ARE TO BE PREPARED AND UNDER THE DIRECTION OF A CALIFORNIA LICENSED LANDSCAPE ARCHITECT EXCEPT WHERE PROHIBITED BY CALIFORNIA LANDSCAPE ARCHITECTS PRACTICE ACT, BUSINESS AND PROFESSION CODE.

B. SOIL TESTING

1. GENERAL: FOR RENOVATED LANDSCAPES AND AREAS OF UNDISTURBED SOILS SCHEDULED FOR PLANTING WHERE MASS GRADING DOES NOT OCCUR; PROVIDE A SOIL TEST, PRIOR TO THE PLANTING DESIGN, AND RECOMMENDATIONS FOR EACH SITE DEVELOPED. AFTER THE FINAL GRADE HAS BEEN ESTABLISHED FOR THE PROJECT, THE SOIL SHALL BE RETESTED AND THE FINAL SOIL AMENDMENT DETERMINED. THIS SOILS TEST IS TO BE PRESENTED TO THE CITY OF TRACY FOR REVIEW PRIOR TO ANY PLANTING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL NOT COMMENCE WORK WITH OUT PRIOR APPROVAL BY THE CITY. THE GUIDELINES FOR THE SOIL TESTING ARE AS FOLLOWS:
   A. PARKS: MINIMUM 2 SAMPLES PER ACRE.
   B. PARKWAYS: MINIMUM 1 SAMPLE PER 2000 LF OF EACH SIDE OF PARKWAY.
   C. PROVIDE ONE ADDITIONAL SAMPLE FOR EVERY BATCH OF IMPORT SOIL; PROVIDE ONE ADDITIONAL SAMPLE PER ACRE FOR EVERY 3-FOOT DROP IN GRADE.

2. TESTING SHALL BE DONE BY A REPUTABLE CERTIFIED LABORATORY FOR SOIL AND PLANT DISEASE DIAGNOSIS AND ANALYSIS, WITH A MINIMUM OF FIVE YEARS EXPERIENCE. CITY MUST APPROVE SELECTED LABORATORY BEFORE SAMPLING AND TESTING BEGINS. ALL TESTING SHALL COMPLY WITH CALIFORNIA TITLE 23 CHAPTER 2.7. (MWELO) AND AB1881.

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	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

PLANTING DESIGN GUIDELINES

3. TAKE SOIL SAMPLES IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
   A. A SOIL SAMPLE SHOULD REPRESENT ONLY ONE SOIL OR PLANT CONDITION. THE SAMPLE SHOULD BE A MIXTURE OF 10 OR MORE SUB-SAMPLES TAKEN FROM THE ROOTING DEPTHS OF EXISTING OR PROPOSED PLANTINGS. TYPICAL ROOTING DEPTHS ARE:
   TURF AND HERBACEOUS GROUND COVER: 0 TO 6"
   SHRUBS: 0 TO 18"
   SHRUBS: 0 TO 12" AND 13" TO 36" (SAMPLE FROM EACH DEPTH)
   LANDSCAPE CONDITIONS REQUIRING DIFFERENT SAMPLES WOULD BE:
   DIFFERENT SOIL TEXTURES OR COLORS.
   DIFFERENT DRAINAGE PATTERNS.
   IMPORT FILLS.

4. AREAS RECEIVING DIFFERENT FERTILIZER OR AMENDMENT TREATMENTS.SAMPLES SHOULD NOT CONTAIN ANY PLANT OR ORGANIC MATERIAL FROM THE SOIL SURFACE. THE BEST COLLECTING TOOL IS A SAMPLING TUBE WHICH REMOVES A CORE OF SOIL FROM THE SURFACE TO THE LOWER ROOTING DEPTHS. IF A SHOVEL IS USED, THEN A HOLE SHOULD BE DUG TO THE CORRECT DEPTH AND A VERTICAL 1" SLICE TAKEN FROM THE SIDE OF THE HOLE.

5. THE SUB-SAMPLES SHOULD BE RANDOMLY COLLECTED FROM EACH REPRESENTATIVE AREA. THEY SHOULD BE MIXED THOROUGHLY AND PLACED IN A WATER PROOF BAG OR CONTAINER (GALLON ZIP LOCK FREEZER BAGS WORK WELL). LABELS WITH ALL PERTINENT INFORMATION SHOULD BE PLACED ON THE OUTSIDE OF THE CONTAINER. COLLECT AT LEAST TWO CUPS OF SOIL FOR EACH SAMPLE.

6. SOIL ANALYSIS AT A MINIMUM SHOULD BE DONE FOR SOIL CHEMISTRY INCLUDING PH; FERTILITY; AGRICULTURAL SUITABILITY; PARTICLE SIZE ANALYSIS; PERCOLATION RATE; AND PRESENCE OF CALCAREOUS CONDITIONS. ADDITIONAL TESTS MAY BE REQUIRED; IF DEEMED APPROPRIATE.

7. SOIL TEST RESULTS SHALL BE PRESENTED IN A REPORT FORM, AND SHOULD INCLUDE RECOMMENDATIONS FOR SOIL AMENDMENT, FERTILIZATION, DRAINAGE MITIGATION, AND OTHER NECESSARY MEASURES, FOR BOTH PLANTING AND DURING THE INITIAL 60 OR 90-DAY MAINTENANCE PERIOD. DEPTH OF WATER TABLE SHALL BE ASCERTAINED AND INCLUDED IN THE REPORT.

8. SOIL REPORT SHALL BE SUBMITTED TO THE CITY ON THE LANDSCAPE AND IRRIGATION PLANS FOR THE PROJECT, AND SHALL BE ACCOMPANIED BY A STATEMENT FROM A LANDSCAPE ARCHITECT, HORTICULTURAL CONSULTANT OR THE SOIL AND PLANT LABORATORY THAT THE PROPOSED PLANT LIST, PLANTING AND IRRIGATION METHODS ARE IN COMPLIANCE WITH THE SOIL REPORT RECOMMENDATIONS AND WITH THE INTENT OF THE DESIGN GUIDELINES MANUAL. A LOCATION MAP SHALL BE PLACE ON THE PLANS IDENTIFYING SOIL SAMPLES SITES.

C. PLANTING

1. PLANT SELECTION AND PLANTING METHODS SHALL COMPLY WITH THIS MANUAL, THE DESIGN DETAILS AND WITH ANY SPECIAL RECOMMENDATIONS GIVEN IN THE SOILS REPORT.

2. PLANT MATERIAL NEEDS TO BE SECURED FROM A NURSERY WITHIN 30 DAYS AFTER AWARD OF CONTRACT. IF UNAVAILABLE, SUBSTITUTIONS NEED TO BE REQUESTED DURING THIS TIME. AFTER 30 DAYS, NO SUBSTITUTIONS WILL BE ALLOWED; UNLESS OTHERWISE APPROVED BY CITY.

3. ALL TREES SHALL BE STAKED RATHER THAN GUYED. A ROOTBALL ANCHORING SYSTEM MAY BE ALLOWED UNDER SPECIAL CIRCUMSTANCES.

4. MINIMUM TREE SIZE SPECIFIED SHALL BE 15-GALLON CAN
   MINIMUM CONTAINER SIZE SHALL AS FOLLOWS:
   SHRUBS AND VINES 5-GALLON CAN
   GRASSES AND GROUND COVERS 1-GALLON CAN
   FLATS AND LINERS ARE NOT ALLOWED

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5. PRIOR TO PLANTING, CONTAINERIZED TREE AND SHRUB ROOTBALLS SHALL BE SCARIFIED.

6. TREES TO BE PLANTED 20' FROM STREET LIGHTS, 10' FROM FIRE HYDRANTS AND 8' FROM UTILITIES
SHRUBS TO BE PLANTED A MIN. OF 6' FROM FIRE HYDRANTS.

7. ALL PLANTING TO CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1 AND CALIFORNIA STATE DEPARTMENT OF AGRICULTURE REGULATION FOR NURSERY INSPECTION, RULES AND GRADING.

8. PLANTING AT ROADWAY INTERSECTIONS SHALL CONFORM TO CORNER VISION CLEARANCE, CITY OF TRACY STANDARD PLAN 174, ROADWAY DESIGN SPEED AS DETERMINED BY TRAFFIC ENGINEER, OR CALTRANS STANDARD.

9. SELECTION OF TREES FOR ANY PROJECT TO BE LIMITED TO THE FOLLOWING:
10% OF TOTAL FROM ANY ONE GENIUS
10% OF ANY ONE SPECIES OF THE SPECIFIED GENIUS
10% OF ANY ONE CULTIVAR OF THE SPECIFIED SPECIES

10. TURF SHALL NOT BE PERMITTED IN PLANTED AREAS LESS THAN 10' IN WIDTH; OR WITHIN 20" OF EXISTING TREE TRUNK BASE.

11. TURF SHALL NOT BE INSTALLED ON SLOPES GREATER THAN 10% OR 10:1. THE TOE OF ANY SLOPING SECTION SHALL BE A MINIMUM OF 24" BEHIND A CURB OR SIDEWALK. GRADES FOR SHRUB AND GROUND COVER AREAS SHALL NOT EXCEED 25% OR 4:1.

D. SEED

1. HYDROSEEDING OR HYDRO SPRIGGING (OPTION):

2. HYDROSEED OR HYDRO-SPRIGGING MAY BE USED TO PLANT LAWN AREAS, AND MAY BE REQUIRED BY CITY FOR SPECIFIC PROJECTS WITH SOIL PREPARATION PER D7.8.1. HYDROSEED MIXTURE SHALL BE 90% TURF TYPE TALL FESCUE & 10% BLUEGRASS SEED PER CITY:
HYDRO-SPRIG BERMUDA SHALL BE USED FOR SPORTS FIELDS

VIRGIN WOOD FIBER	WEYERHEUSER SILVA CANFOR ECO-FIBER OR APPROVED EQUAL	2000 LBS/ACRE (46.0 LBS/1000 SQ FT.)
SEED;	SPECIFY VARIETY	435 LBS/ACRE
STOLONS:	SPECIFY VARIETY	200-300 BUSHELS/ACRE
FERTILIZER:	6-20-20 OR PER SOILS REPORT	650 LBS/ACRE

3. SPRAY MIXTURE UNIFORMLY ON PLANTING AREA. USE A NOZZLE WHICH PRODUCES A SPRAY THAT DOES NOT CONCENTRATE OR ERODE THE MATERIAL. PROTECT BUILDINGS, TREES, SHRUBS, CARS, ETC. FROM SPRAY.

4. A DISPERSING AGENT MAY BE ADDED IF EVIDENCE IS PROVIDED THAT THE AGENT IS NOT HARMFUL TO THE MIXTURE OR TO PLANT GROWTH. MIX MATERIALS IN TANK HAVING A BUILT-IN CONTINUOUS AGITATION AND RECIRCULATION SYSTEM OF SUFFICIENT CAPACITY TO PRODUCE A HOMOGENEOUS SLURRY. IF APPLIED MATERIAL BEGINS TO DRY OUT, SPRAY DRIED AREA WITH WATER.

5. ALLOW SEED TO GERMINATE AND GROW TO 3" BEFORE FIRST MOWING. MOW AT LEAST TWICE, AND ENSURENO MORE THAN 2% WEEDS. ALL AREAS MUST BE FULLY GERMINATED. CONTACT THE CITY OF TRACY FOR A WALK-THROUGH BEFORE THE START OF THE MAINTENANCE OF LANDSCAPE AND IRRIGATION.

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6. HYDROSEEDING WILL BE ALLOWED ONLY BETWEEN APRIL 1 AND OCTOBER 15. HYDRO SPRIGGING SHALL BE ALLOWED BETWEEN APRIL 1 AND SEPTEMBER 1. HYDRO-APPLICATIONS ARE NOT PERMITTED DURING THE WINTER MONTHS.

E. SOD PLANTING

1. SOD SHALL CONSIST OF 90% TALL FESCUE VARIETIES & 10% BLUEGRASS OR EQUAL PER PLAN.
2. GRADING FOR SOD SHALL BE LEVEL AND SMOOTH WITH NO LOW SPOTS, AND ONE INCH BELOW TOP OF PAVEMENT FOR SOD, 1/2" BELOW FOR SEED OR AS DIRECTED.
3. SOIL SHALL BE MOISTENED TO A DEPTH OF 6" BEFORE SOD IS INSTALLED.
4. EDGES OF SOD SHALL BE LAID IN STAGGERED ROWS WITH EDGES BUTTING TIGHTLY TOGETHER.
5. AFTER LAYING, SOD SHALL BE WATERED AND ROLLED WITH A WEIGHTED ROLLER TO ENSURE ADEQUATE CONTACT WITH THE SOIL.

F. MAINTENANCE

1. ALL PLANTING INSTALLATION CONTRACTS SHALL INCLUDE PROVISION FOR A 90 DAY MAINTENANCE PERIOD AND CONFORM TO THE CITY'S STANDARD MAINTENANCE SPECIFICATIONS. THE 60-90 DAY MAINTENANCE PERIOD SHALL NOT BEGIN UNTIL AFTER CITY HAS ACCEPTED ALL LANDSCAPING AND IRRIGATION FOR MAINTENANCE. FOLLOW THE GUIDELINES INDICATED IN SECTION ON MAINTENANCE.
2. MAINTENANCE SHALL INCLUDE THE FOLLOWING: MOWING, WATERING, WEEDING, ROLLING, TRIMMING, EDGING, FERTILIZING, SPRAYING INSECT AND PEST CONTROLS, RODENT CONTROL, RE-SEEDING, RE-SODDING, OR REPLACEMENT OF DAMAGED MATERIALS.
3. USE A PRE-EMERGENT WEED CONTROL BEFORE MAINTENANCE BEGINS AND AGAIN AT THE END OF THE MAINTENANCE PERIOD.
4. TURF SHALL NOT BE PERMITTED IN PLANTED AREAS LESS THAN 10' IN WIDTH; OR WITHIN 20" OF EXISTING TREE TRUNK BASE.
5. ALL PLANTING INSTALLATION CONTRACTS SHALL INCLUDE PROVISION FOR A 90 DAY MAINTENANCE PERIOD AND CONFORM TO THE CITY'S STANDARD MAINTENANCE SPECIFICATIONS. THE 60-90 DAY MAINTENANCE PERIOD SHALL NOT BEGIN UNTIL AFTER CITY HAS ACCEPTED ALL LANDSCAPING AND IRRIGATION FOR MAINTENANCE. FOLLOW THE GUIDELINES INDICATED IN SECTION ON MAINTENANCE.
6. FERTILIZE AT 30 DAY INTERVALS AND AGAIN AT THE END OF THE MAINTENANCE PERIOD.
7. MAINTENANCE PERIOD SHALL BE FOR 90 DAYS.
8. ALL GUARANTEE BINDERS, SITE INFORMATION AND AS-BUILTS MUST BE TURNED OVER AT THE END OF THE MAINTENANCE PERIOD.
9. ALL TREES AND PLANTS SHALL BE WARRANTED FOR A MINIMUM OF ONE YEAR BEYOND THE END OF THE MAINTENANCE PERIOD.
10. ALL NURSERY STAKES SHALL BE REMOVED ON OR BEFORE THE END OF THE MAINTENANCE PERIOD.

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PARKS AND STREETSCAPE STANDARD PLANS

PLANTING DESIGN GUIDELINES

"DO NOT PLANT & RESTRICTED PLANT LIST"

TREES

BOTANICAL NAME	COMMON NAME	REMARKS / RESTRICTIONS
ACACIA DEALBATA	SILVER WATTLE	NOT ALLOWED
ACACIA MELANOXYLON	BLACKWOOD ACACIA	NOT ALLOWED
ACER SACCHARIUM	SILVER MAPLE	OPEN SPACE AREAS
ACER NEGUNDO CULTIVARS	BOX ELDER	OPEN SPACE / NATURAL AREAS
ALBIZIA JUILBRISSIN	SILK TREE CULTIVARS	NOT ALLOWED
AILANTHUS ALTISSIMA	TREE OF HEAVEN	NOT ALLOWED
ALNUS SPECIES	ALDER	OPEN SPACE / NATURAL AREAS
BETULA SPECIES EXCEPT BETULA PENDULA CULTIVARS	BIRCH EUROPEAN WHITE BIRCH	OPEN SPACE / NATURAL AREAS NOT ALLOWED
CRATAEGUS MONOGYNA	COMMON HAWTHORN	NOT ALLOWED
CRATAEGUS LAVIAGATA CULTIVARS	ENGLISH HAWTHORN	NON-PEDESTRIAN / VEHICLE AREA / MEDIAN PLANTER 12' WIDE MIN.
CATALPA SPECIES	CATALPA	OPEN SPACE AREAS
CELTIS SPECIES	HACKBERRY	NON-PEDESTRIAN / VEHICLE AREAS
CERCIS CANADENSIS CULTIVARS	EASTERN RED BUD	ESTABLISHED DEEP SHADE
CORNUS SPECIES	DOGWOOD	ESTABLISHED DEEP SHADE
FAGUS SPECIES	BEECH	NOT ALLOWED
FRANINUS SPECIES	ASH	NOT ALLOWED
LIQUIDAMBER STYRACIFULA	SWEETGUM	OPEN SPACE / MEDIAN PLANTER 12' WIDE MIN.
LIRODENDRON TULIPIFERA	TULIP TREE	NOT ALLOWED
MAGNOLIA GRANDIFLORIA CULTIVARS	SOUTHERN MAGNOLIA	NON-PEDESTRIAN / VEHICLE AREAS
MAYTEN BORIA	MAYTEN TREE	NOT ALLOWED
MORUS ALBA	MULBERRY	OPEN SPACE
MYOPORUM LAETUM	NGAIO TREE	NOT ALLOWED
NERIUM SPECIES	OLEANDER	NOT ALLOWED
PALMS	VARIOUS SPECIES	NOT ALLOWED
POPULUS SPECIES	POPLAR	NATURAL SPACES

NOTES

1. NO FRUIT TREES SHALL BE PLANTED
2. DO NOT SPECIFY ANY TREES ON THE CALIFORNIA INVASIVE PLANT LISTING.

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Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

PLANTING DESIGN GUIDELINES

"DO NOT PLANT & RESTRICTED PLANT LIST"

TREES

BOTANICAL NAME	COMMON NAME	REMARKS / RESTRICTIONS
PRUNUS BLIREANA CULTIVARS	FLOWERING PLUM	NON-PEDESTRIAN / VEHICLE AREAS
PRUNUS CERISIFERIA CULTIVARS	FLOWERING PLUM	NOT ALLOWED
PRUNUS SERRULATA CULTIVARS	FLOWERING CHERRY	NOT ALLOWED
PYRUS SPECIES	FLOWERING PEAR	NOT ALLOWED
ROBINIA SPECIES	LOCUST	NOT ALLOWED
SALIX SPECIES	WILLOW	NATURAL AREAS
SAPIUM SEBIFERUM	CHINESE TALLOW	NOT ALLOWED
SCHINUS SPECIES	PEPPER TREE	NOT ALLOWED
SEQUIOA SEMPERVIRENS CULTIVARS	COAST REDWOOD	NOT ALLOWED
STYRAX JAPONICUS	JAPANESE SNOWBELL	ESTABLISHED DEEP SHADE
TAMARIX SPECIES	TAMARIX	NOT ALLOWED

NOTES

1. NO FRUIT TREES SHALL BE PLANTED
2. DO NOT SPECIFY ANY TREES ON THE CALIFORNIA INVASIVE PLANT LISTING.

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PLANTING DESIGN GUIDELINES

SHRUBS "DO NOT PLANT LIST"

BOTANICAL NAME	COMMON NAME	REMARKS / RESTRICTIONS
CARPOBROTUS CHILENSIS	ICE PLANT	NOT ALLOWED
CORTADERIA SELLOANA	PAMPAS GRASS	NOT ALLOWED
COTONEASTER SPECIES	CONTONEASTER	NOT ALLOWED
CYTISUS SPECIES	BROOM	NOT ALLOWED
FESTUCA ARUNDINACEA	BUNCH GRASS	NOT ALLOWED
GAZANIA SPECIES	GAZANIA	NON-PEDESTRIAN AREAS
HEUCHERA SPECIES	CORAL BELLS	NOT ALLOWED
HEDRA SPECIES	IVY	NOT ALLOWED
ILEX VOMITORIA	YAUPON HOLLY	NOT ALLOWED
LIGUSTRUM SPECIES	PRIVET	NOT ALLOWED
LONICERA SPECIES	HONEYSUCKLE	NOT ALLOWED
MAHONIA REPENS	CREEPING MAHONIA	ESTABLISHED DEEP SHADE
MACFADYENA UNGUS-CATI	CAT'S CLAW	NOT ALLOWED
NASSELLA TENUISSIMA	MEXICAN FEATHER GRASS	NOT ALLOWED
NERIUM OLEANDER CULTIVARS	OLEANDER	NOT ALLOWED
PACHYSANDRA TERMINALIS	JAPANESE SPRUGE	ESTABLISHED DEEP SHADE
PENNISETUM SETACEUM	FOUNTAIN GRASS	NOT IN OPEN SPACE OR NATURAL AREAS
PENSTEMON HYBRIDS	BEARDTOUNGE	NOT ALLOWED
PRUNUS LYONII	CATALINA CHERRY	NON-PEDESTRIAN / VEHICLE AREAS
PRUNUS LUSITANICA	PORTUGUESE LAUREL	NOT ALLOWED
STACHYS BYANTINA	LAMB'S EAR	NOT ALLOWED
VERBENA SPECIES	VERBENA	NOT ALLOWED
VINCA MAJOR	PERIWINKLE	NOT ALLOWED

NOTES

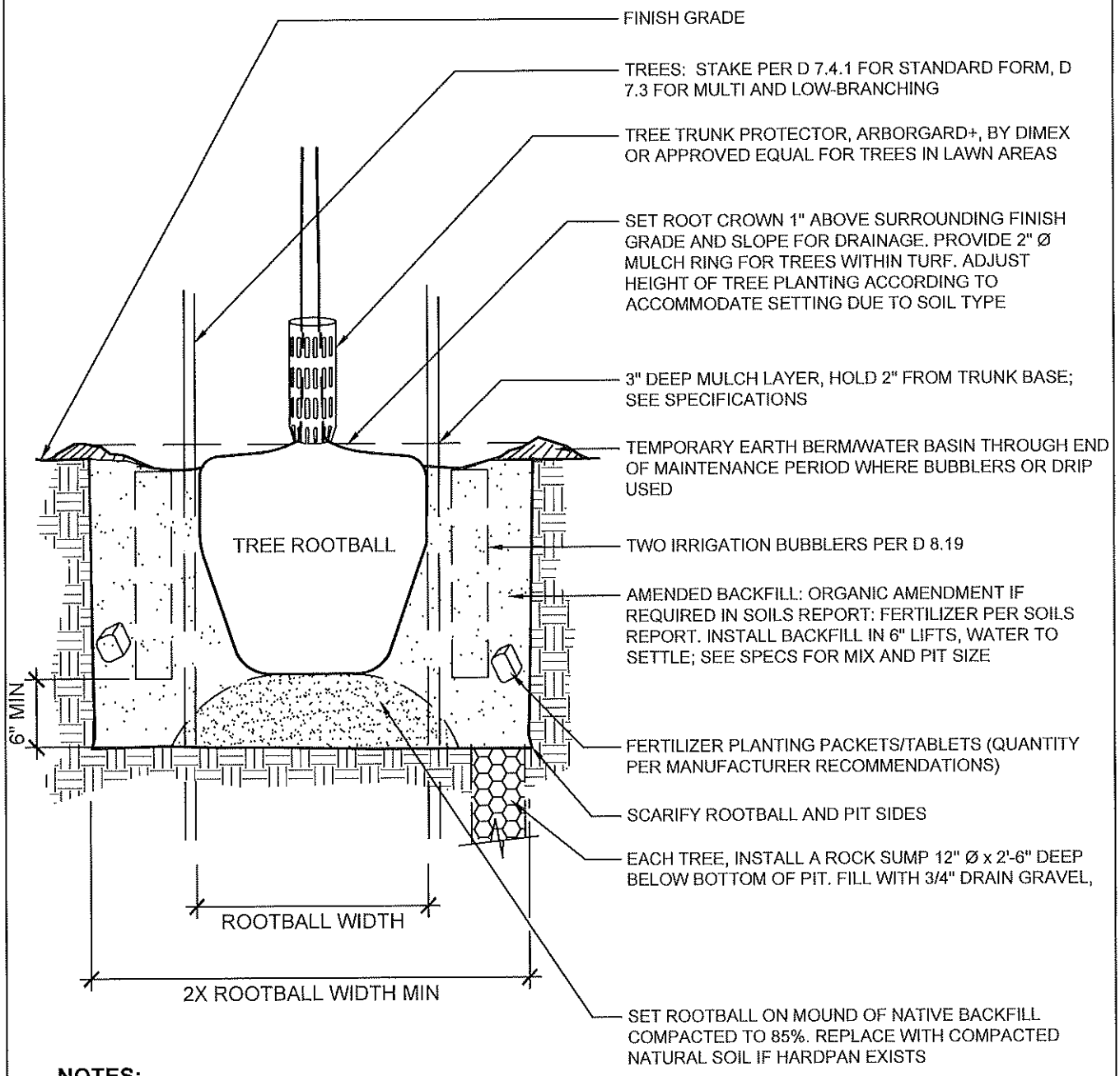
1. WOODY SHRUBS SHOULD BE AVOIDED IN AREAS OF HIGH FOOT TRAFFIC SUCH AS PARKS, DOG PARK, PEDESTRIAN WALKWAYS AND TRAILS.
2. DO NOT SPECIFY ANY SHRUBS ON THE CALIFORNIA INVASIVE PLANT LISTING.
3. ORNAMENTAL NO-MOW, BIOSWALE, BIO-RETENTION, OR SPORT FIELD TURF GRASSES TO BE REVIEWED UPON SUBMITTAL.

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Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



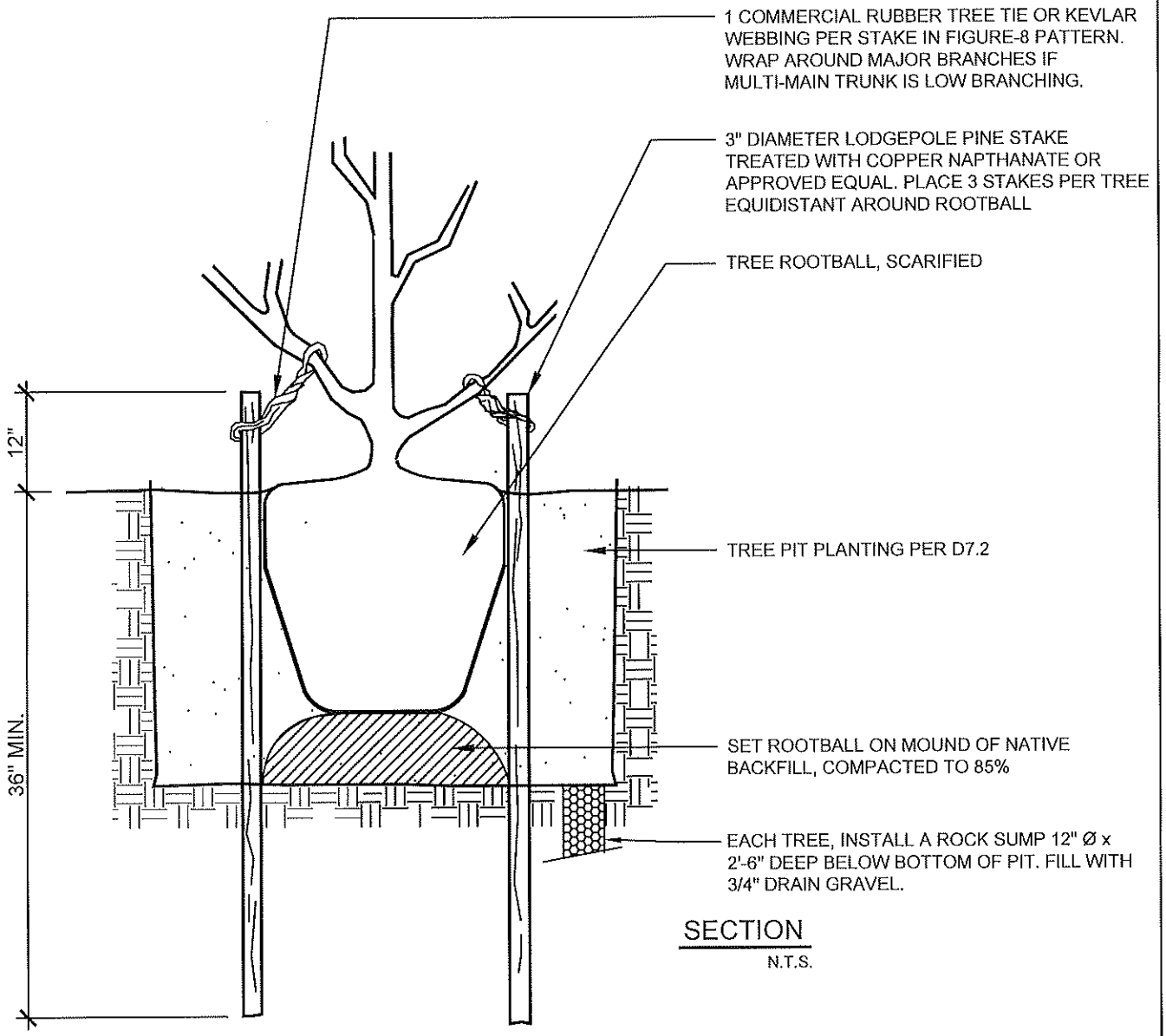
NOTES:

1. WHERE CONSTRUCTION COMPACTION HAS OCCURRED, RIP OR SCARIFY TOP 18" OF SUB GRADE IN A 10'-0" Ø CIRCLE MINIMUM AT EACH TREE LOCATION.

CITY OF TRACY

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	Res No. 2020– DATE: February 18, 2020	**PLANTING** **Tree Planting**
	Rev: Lyle C. Rev:	
	Rev: Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SECTION
N.T.S.

NOTES

1. DUCKBILL ANCHOR SYSTEM MODEL 40 DTS KIT MAY BE USED FOR TREES TO 3" DIAMETER
2. TRUNK DIAMETER AT 6" ABOVE THE SOIL SURFACE SHALL BE WITHIN THE DIAMETER RANGE SHOWN FOR EACH CONTAINER SIZE BELOW:

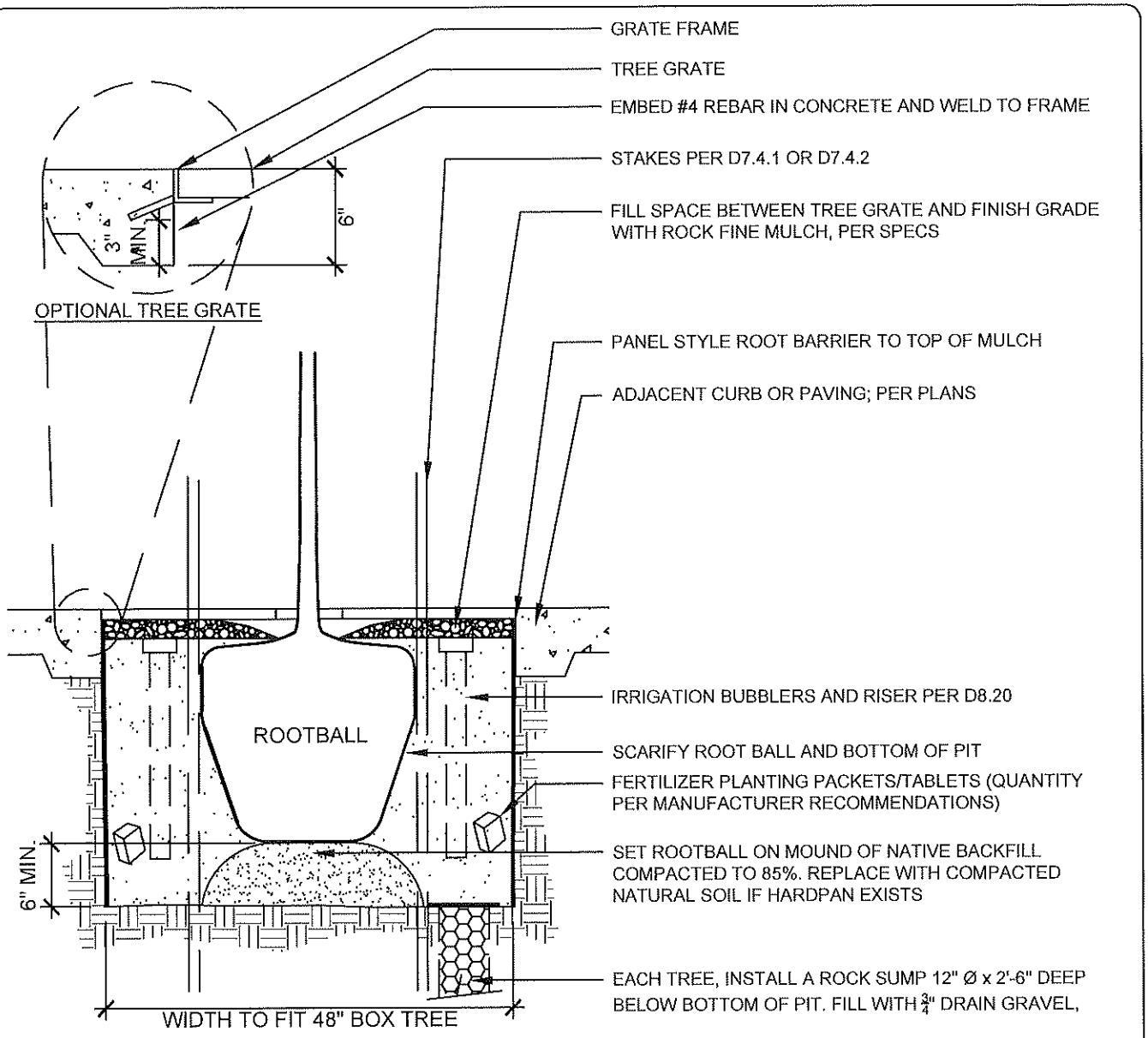
5 GALLON	.5" TO .75"
15 GALLON	.75" TO 1.5"
24" BOX	1.5" TO 2.5"
36" BOX	2.5" TO 4"

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 7.3 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**PLANTING** **Anchor Tree Staking**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



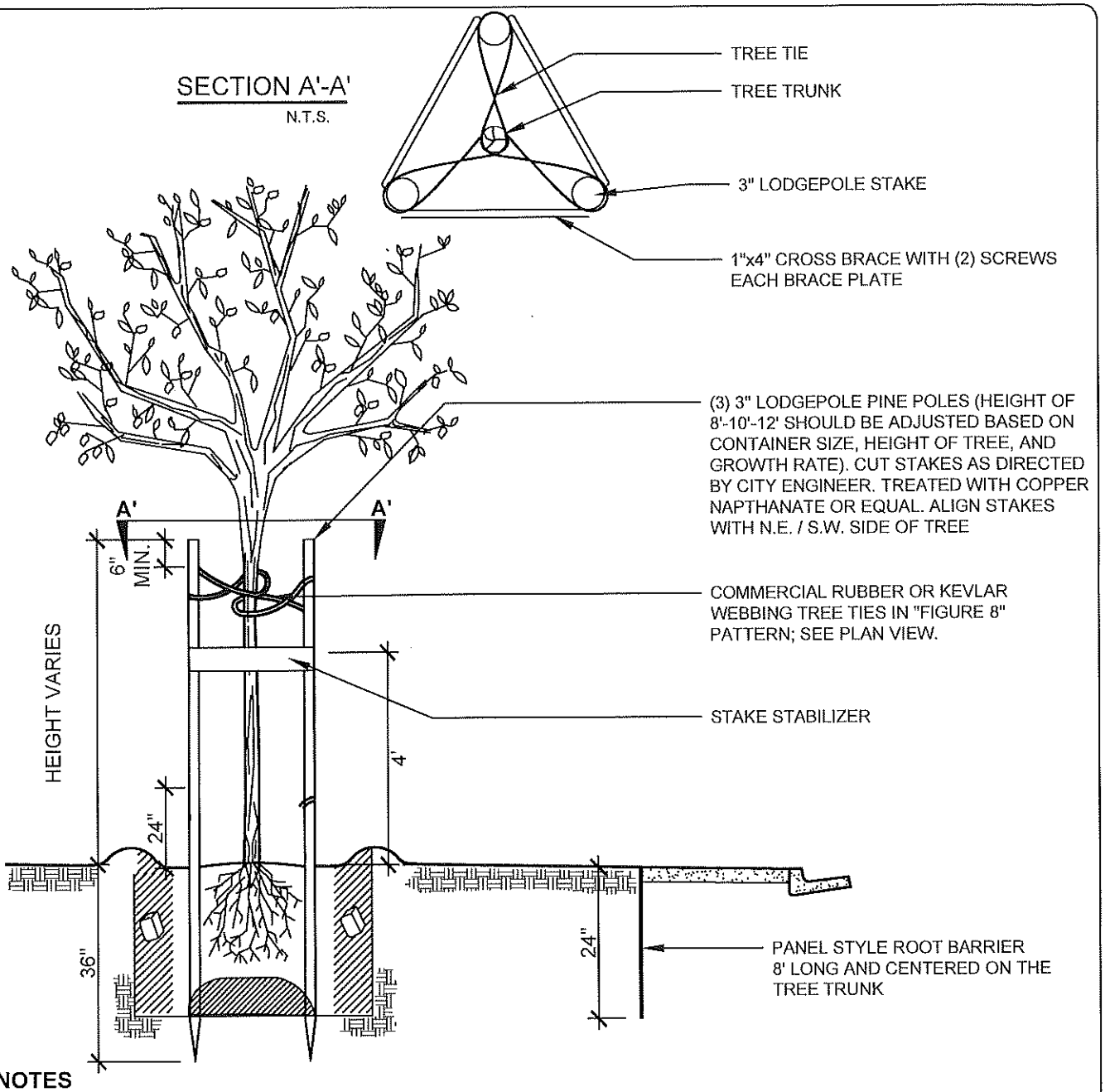
NOTES

1. WHERE CONSTRUCTION COMPACTION HAS OCCURRED, RIP OR SCARIFY TOP 18" OF SOIL IN A 10' DIAMETER CIRCLE MINIMUM AT EACH TREE LOCATION.
2. FOR SOME APPLICATIONS, DECOMPOSED GRANITE MAY BE SUBSTITUTED FOR GRATE AND GRAVEL, AS DETERMINED BY CITY ENGINEER.
3. USE CU STRUCTURED SOIL AS SPECIFIED.
4. ROOT BARRIER MANUFACTURER: DEEP ROOT OR AN APPROVED EQUAL.

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TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 7.4 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**PLANTING** **Tree Well**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

1. TREES SHALL BE 15 GALLON MIN., 24" MAX. SIZE AND BE PLACED 10 FEET FROM EDGE OF PAVING WHENEVER POSSIBLE.
2. AS DETERMINED BY CITY ENGINEER, ROOT CONTROL BARRIER PANELS SHALL BE REQUIRED WHERE TREE IS 10 FEET OR LESS FROM EXISTING OR FUTURE SIDEWALK OR CURB. DEEP ROOT UB-24-2 OR APPROVED EQUAL MAY BE USED. LENGTH OF BARRIER=8' CENTERED ON TREE.
3. TREES SHALL BE PROVIDED W/ AUTOMATIC IRRIGATION SYSTEMS (INDIVIDUAL BUBBLERS WITH WATERING BASIN).
4. ROOT BARRIERS SHALL NOT BE CUT
5. REFER TO D7.2 FOR TREE PLANTING DETAIL

CITY OF TRACY

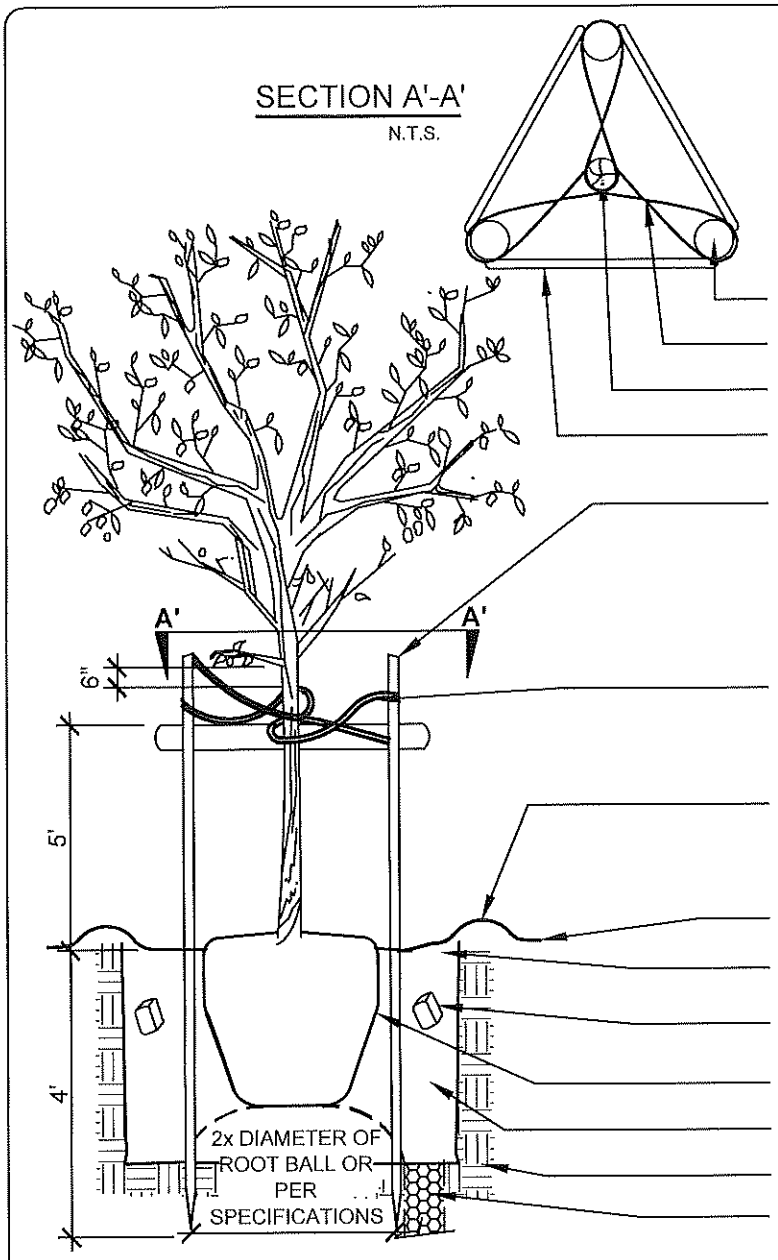
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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 37186		DETAIL No. D 7.4.1 Sheet 1 of 1
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Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

SECTION A'-A'

N.T.S.



3" LODGEPOLE STAKE

TREE TIES

TREE TRUNK

1"x4" CROSS BRACE WITH (2) SCREWS EACH BRACE PLATE

(3) 3" LODGEPOLE PINE POLES (HEIGHT OF 8'-10'-12' SHOULD BE ADJUSTED BASED ON CONTAINER SIZE, HEIGHT OF TREE, AND GROWTH RATE). CUT STAKES AS DIRECTED BY CITY ENGINEER, TREATED WITH COPPER NAPTHANATE OR EQUAL. ALIGN STAKES WITH N.E. / S.W. SIDE OF TREE

COMMERCIAL RUBBER OR KEVLAR WEBBING TREE TIES IN "FIGURE 8" PATTERN; HEIGHT AS REQUIRED. MAINTAIN 2" CLEARANCE FROM TOP ATTACHING FIGURE PATTERN, SEE PLAN VIEW.

4" HIGH BERM TO ENCLOSE WATERING BASIN AROUND TREE IN SHRUB AREA. MIN 4" DEPTH FOR 5 GAL. AND 2" MIN. DEPTH FOR 1 GAL. REMOVE BASIN IN LAWN AREAS AS DIRECTED BY CITY ENGINEER

FINISH GRADE

PREPARED AMENDED BACKFILL MIX; SEE SPECS FOR MIX

FERTILIZER PLANTING PACKETS/TABLETS (QUANTITY PER MANUFACTURER RECOMMENDATIONS)

SCARIFY ROOTBALL AND PIT SIDES

TREE PLANTING PER D 7.2

NATIVE SOIL

EACH TREE, INSTALL A ROCK SUMP 12" Ø x 2'-6" DEEP BELOW BOTTOM OF PIT. FILL WITH 3/4" DRAIN GRAVEL.

NOTES

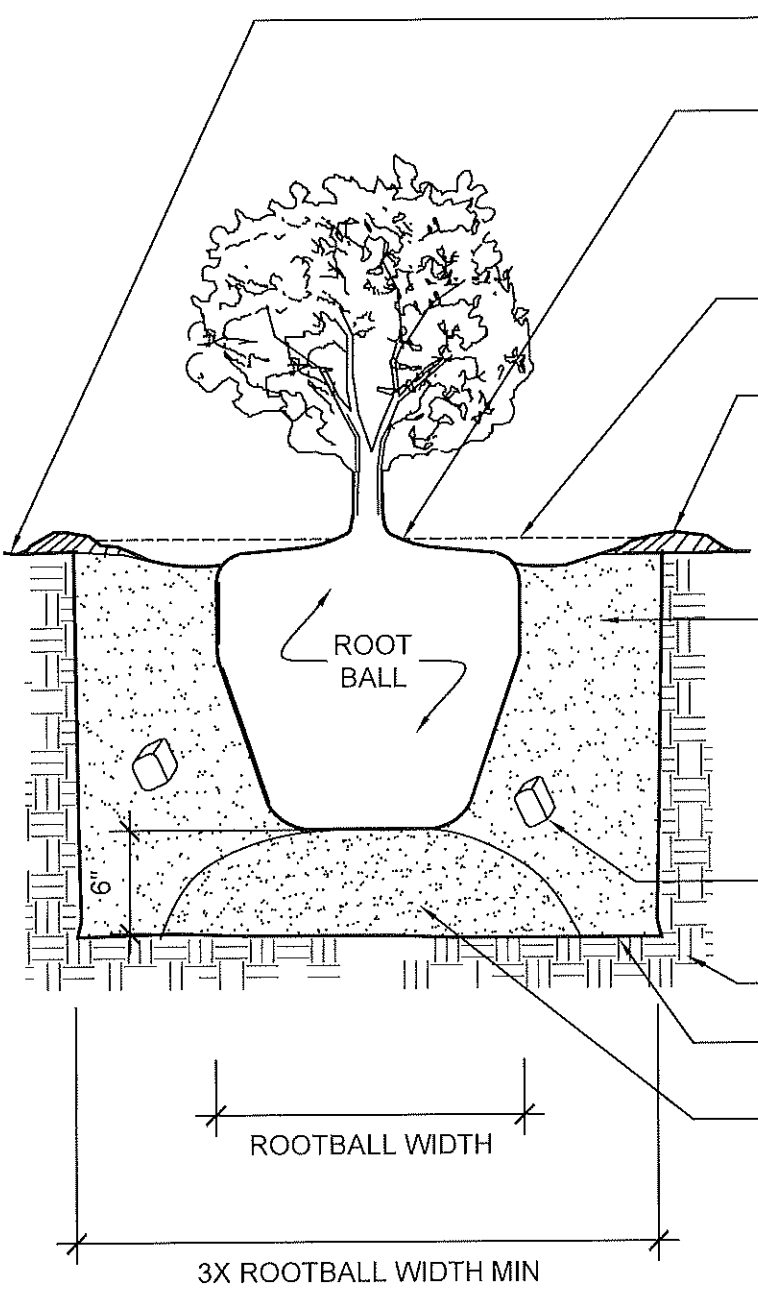
1. USAGE SHALL BE FOR TREES 36" BOX SIZE AND LARGER AS DESIGNATED BY CITY.
2. TREES SHALL BE PROVIDED WITH AUTOMATIC IRRIGATION SYSTEMS. REFER TO D8.11.
3. TREE STAKE TO BE LOCATED ON NORTH WEST SIDE OF TREE UNLESS OTHERWISE SPECIFIED.
4. ROOT CONTROL BARRIER PANELS SHALL BE REQUIRED WHERE TREE IS 8 FEET OR LESS FROM EXISTING OR FUTURE SIDEWALK OR CURB. DEEP ROOT UB-24-2 OR APPROVED EQUAL. LENGTH OF BARRIER=8' CENTERED ON TREE.
5. TREES SHALL BE PROVIDED W/ AUTOMATIC IRRIGATION SYSTEMS (INDIVIDUAL BUBBLERS WITH WATERING BASIN).
6. ROOT BARRIERS SHALL NOT BE CUT.
7. REFER TO D7.2 FOR PLANTING DETAIL

CITY OF TRACY

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Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



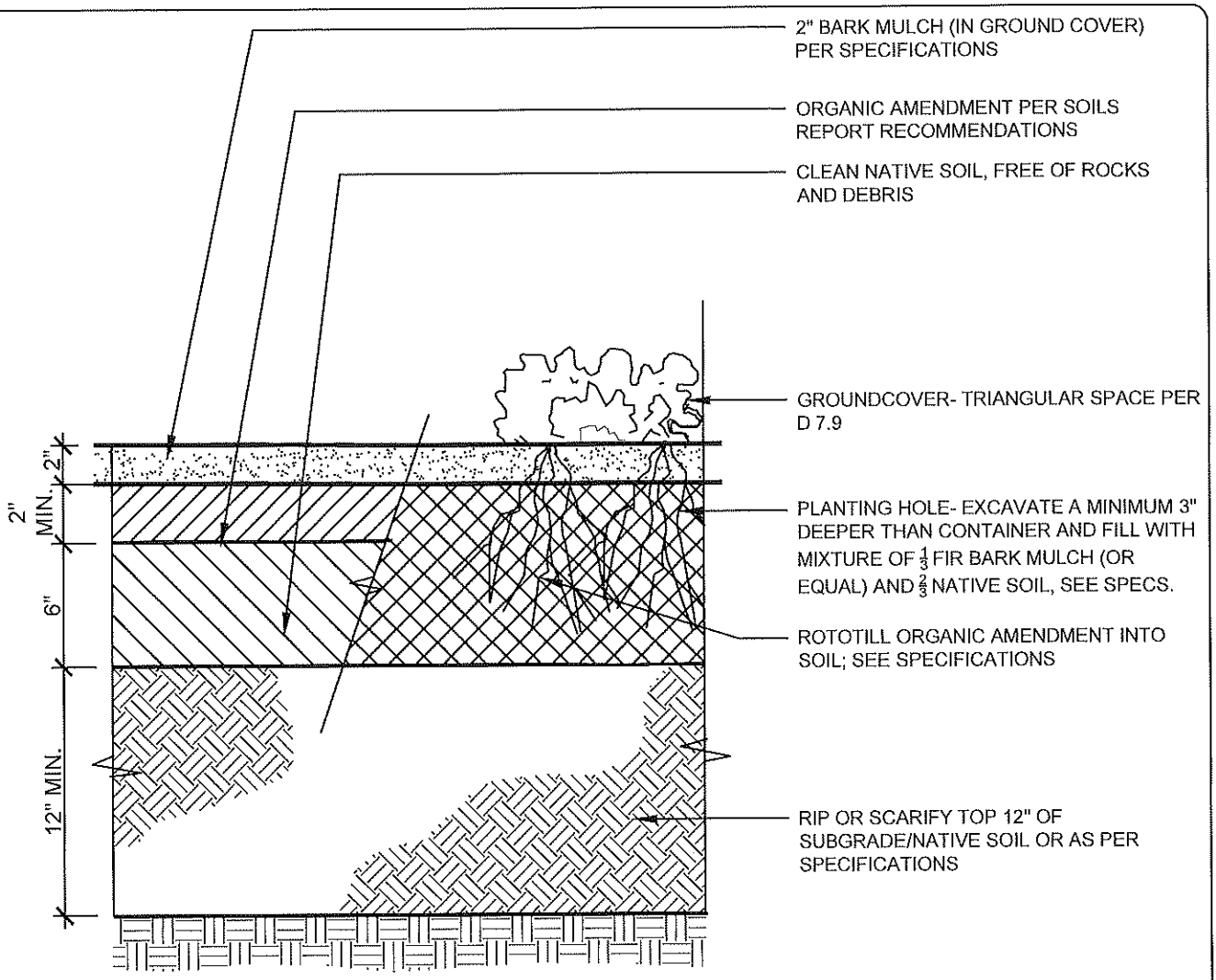
SECTION
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CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. **D 7.5**
Res No. 2020–	DATE: February 18, 2020	**PLANTING** **Shrub Planting**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SECTION
N.T.S.

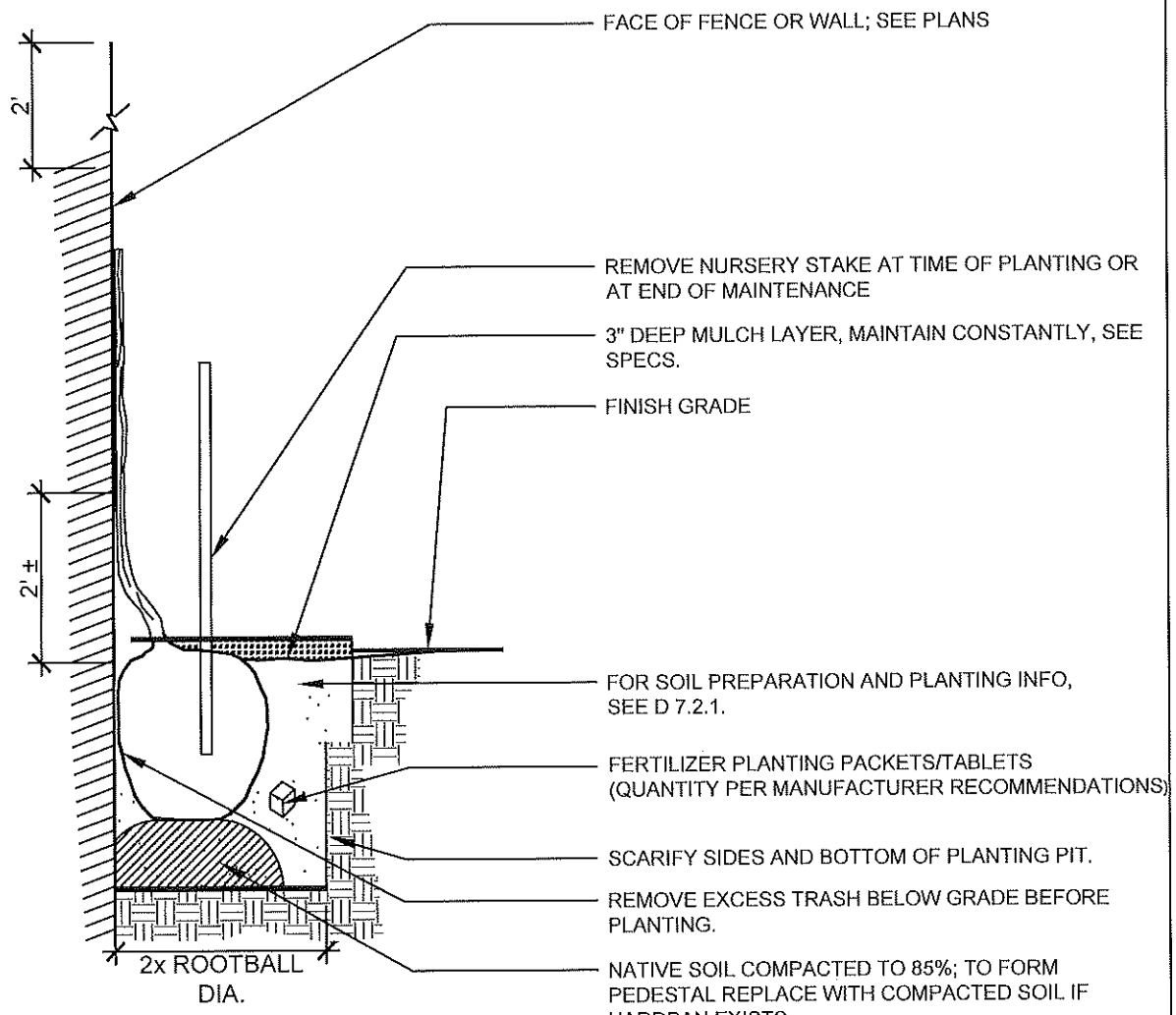
NOTES

1. ORGANIC AMENDMENTS SHALL BE NITROGEN-STABILIZED FIR OR REDWOOD BARK, MIN. DENSITY OF 300 LBS./CU. YD.
2. INCORPORATE FERTILIZER PER SOILS REPORT RECOMMENDATIONS SEE PLANTING GUIDELINES D7.0

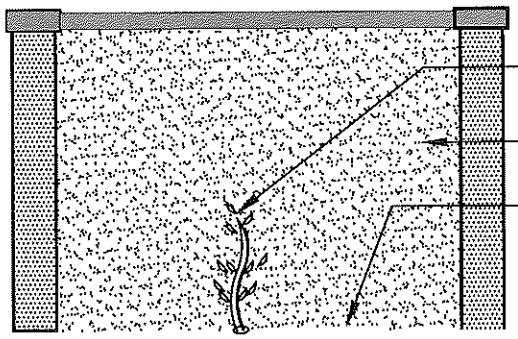
CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 7.6 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**PLANTING Groundcover**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SECTION
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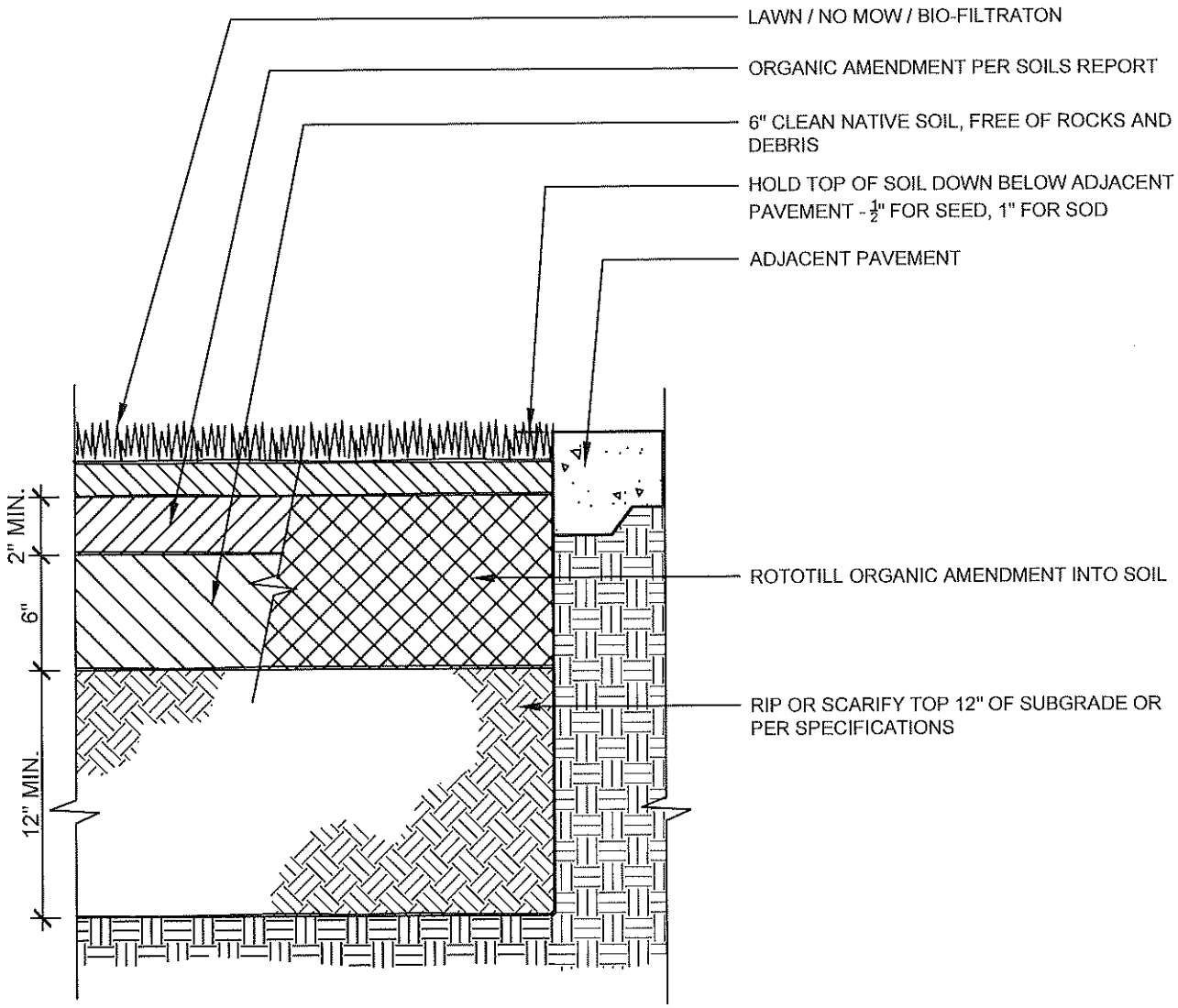


NOTES
1. DO NOT PLANT VINES IN LAWN AREAS.
2. ALL VINES SHALL BE SELF CLIMBING.

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	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SECTION
N.T.S.

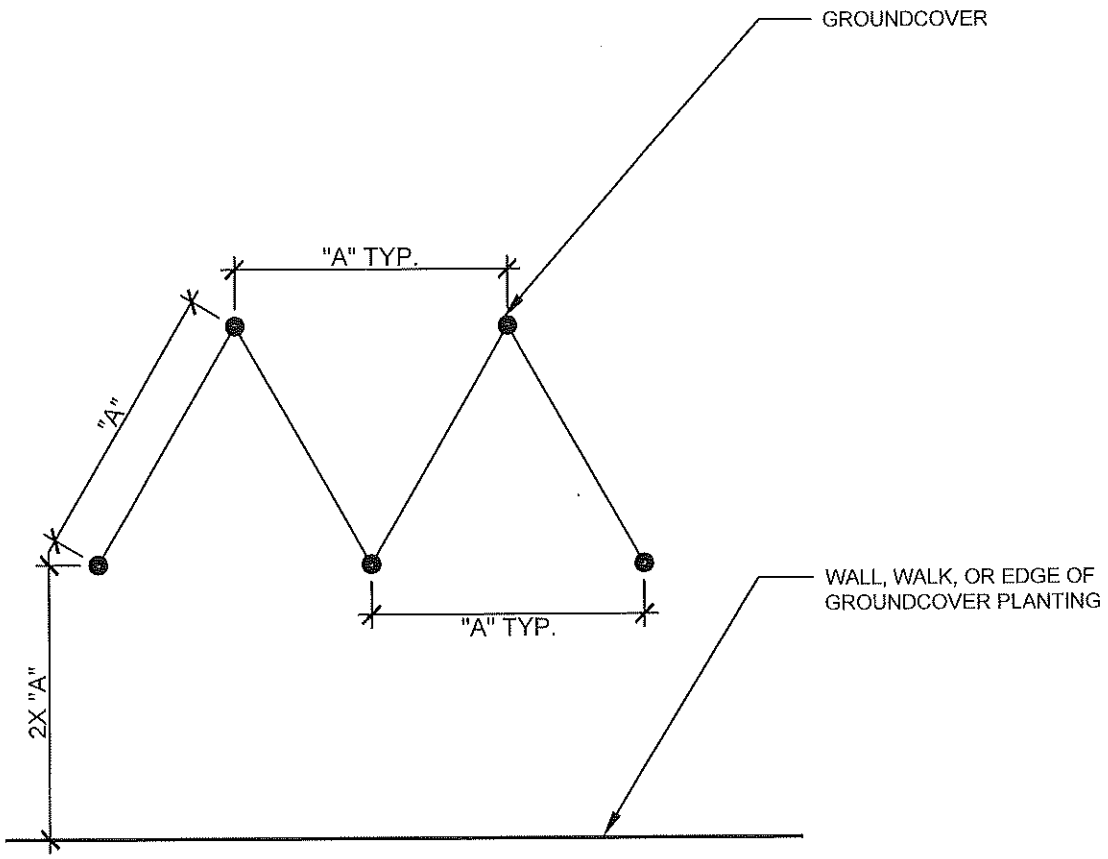
NOTES

1. ORGANIC AMENDMENT SHALL BE NITROGEN STABILIZED FIR OR REDWOOD BARK MIN. BULK DENSITY 300 LBS. PER CU. YD.
2. INCORPORATE FERTILIZER PER SOILS REPORT. SEE GENERAL GUIDELINES D7.0
3. FINISH GRADE SLOPE SHALL BE MINIMUM 1%, MAXIMUM 16%

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TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 7.8 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**PLANTING** **Turf**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



PLAN
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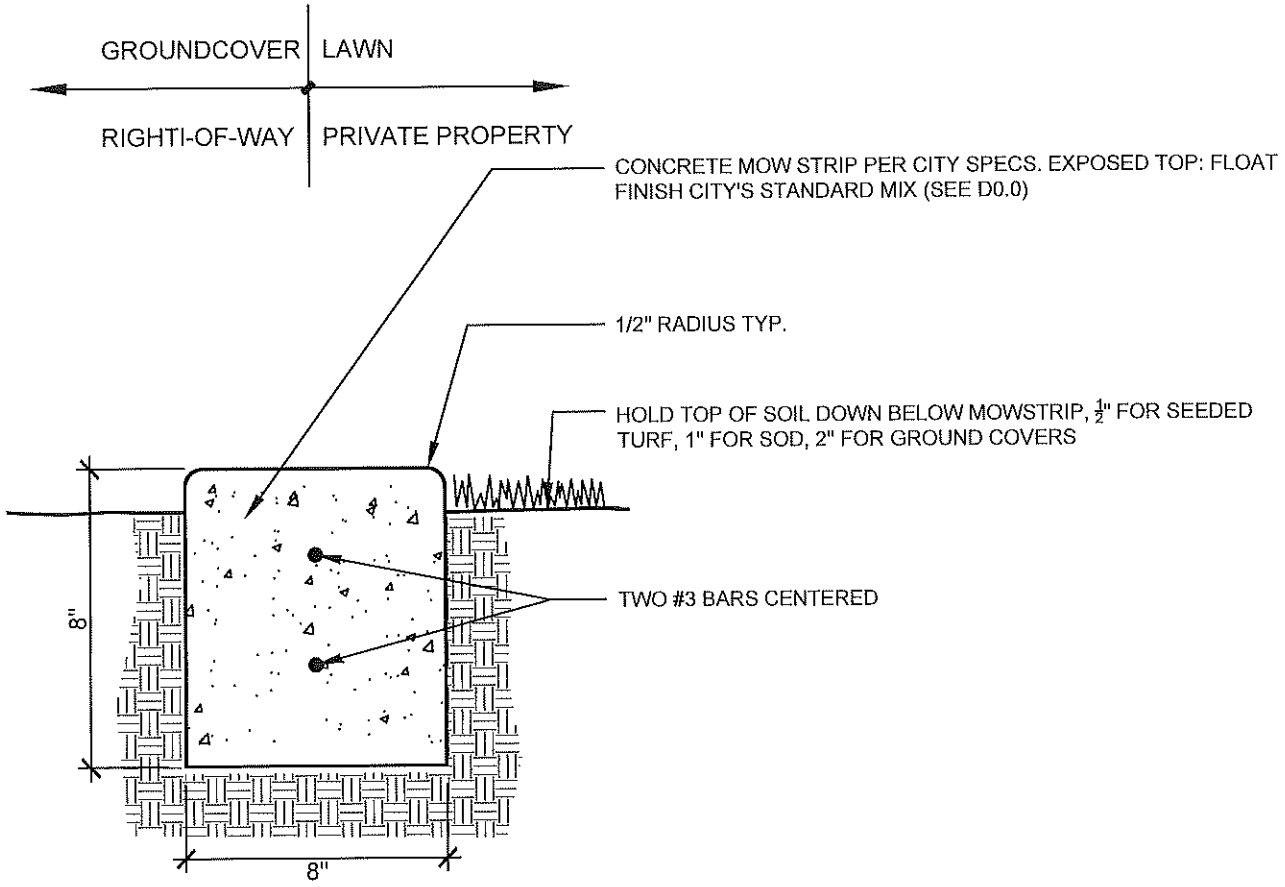
NOTES

1. SEE PLANT LEGEND FOR DIMENSION "A"

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 7.9 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**PLANTING** **Triangular Spacing**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SECTION

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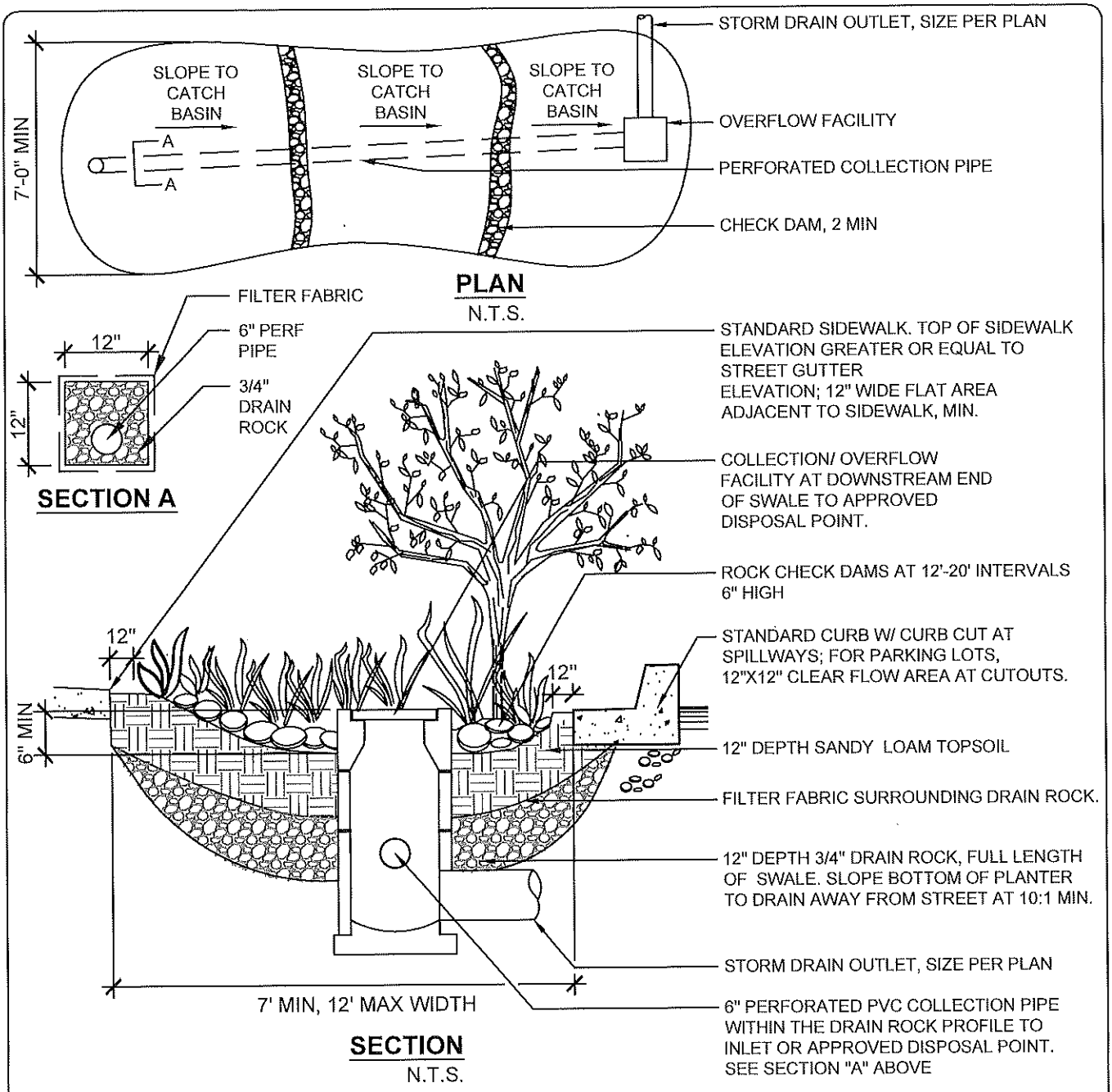
NOTES

1. FINISH ELEVATION OF MOW STRIPS SHALL NOT EXCEED FINISH ELEVATION OF ADJACENT PAVING OR SIDEWALK.
2. PLACE MOW CURB AT RIGHT-OF-WAY / PROPERTY LINE TO DELINEATE WHERE PRIVATE DEVELOPMENT ABUTS CITY PROPERTY. MOW CURB TO ENTIRELY WITHIN RIGHT-OF-WAY / CITY PROPERTY,

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	Rev: Lyle C.	Rev:	**Concrete Mow Strip**
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



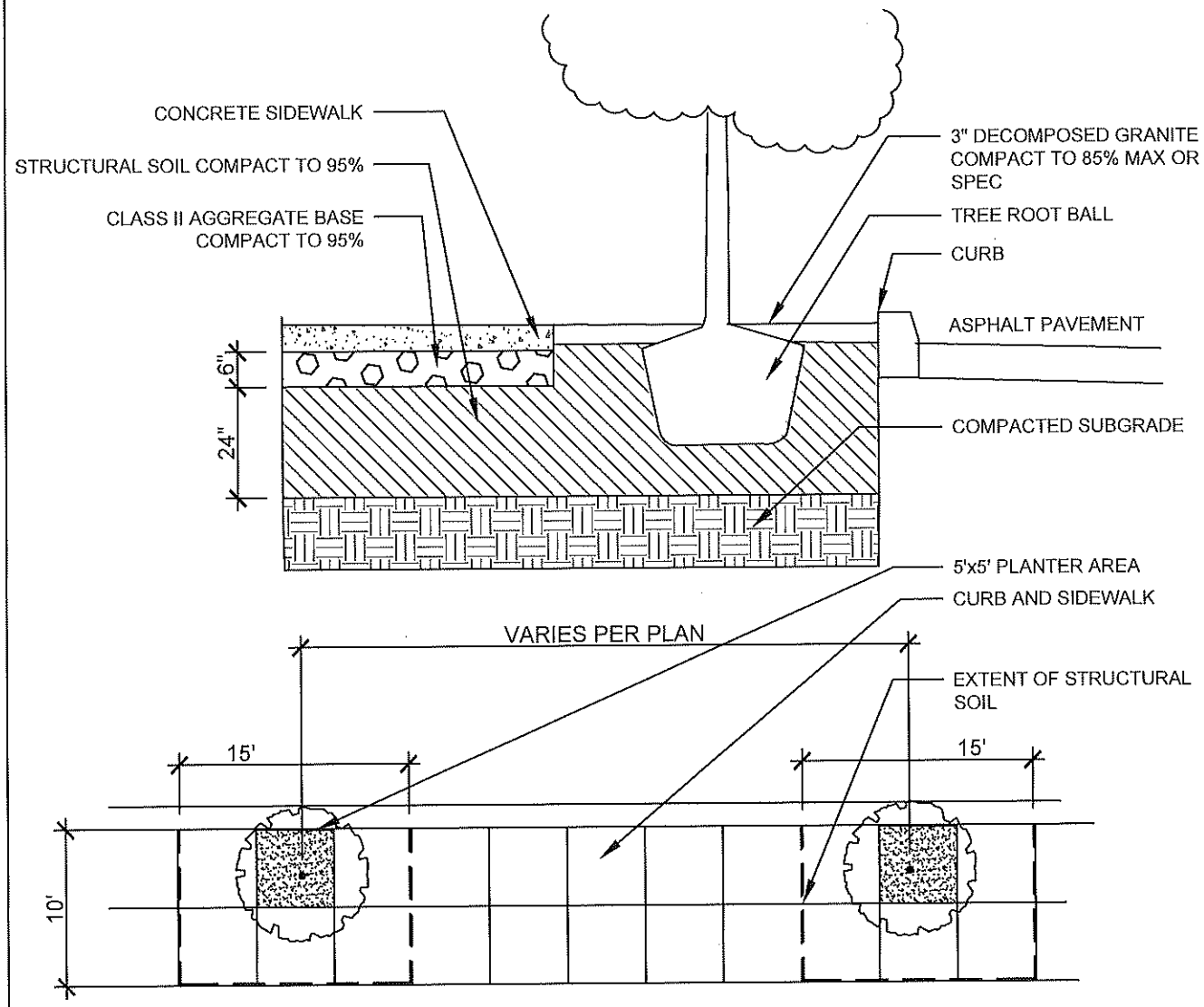
NOTES

1. SEE CITY OF TRACY MANUAL OF STORM WATER QUALITY CONTROL STANDARDS FOR NEW DEVELOPMENT, DATED JULY 1, 2008 FOR DESIGN CRITERIA AND OTHER TREATMENT CONTROL STANDARDS.
2. ROCK CHECK DAMS TO BE 3-5" SMOOTH COBBLE AT 12'-20' INTERVALS OR MIN. 2 DAMS PER SWALE.
3. REFER TO D 1.16 FOR OVER FLOW CATCH BASIN INSTALLATION

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	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



PLAN- TYPICAL CU STRUCTURAL SOIL PLACEMENT AT WELLS

NOT TO SCALE

NOTES

1. STRUCTURAL SOIL WILL BE REQUIRED WHERE TREES ARE SURROUNDED BY PAVING, OR HAVE LESS THAN 8 FEET OF PLANTING AREA ON EITHER SIDE.
2. DESIGN MAY VARY BASED ON CONFIGURATION OF SIDEWALK AND CURB LOCATIONS.
3. STAKE PER D7.4 AS NOTED.
4. CU STRUCTURAL SOIL IS AVAILABLE THROUGH
   "TMT ENTERPRISES, INC.
   1996 OAKLAND ROAD,
   SAN JOSE, CA 95131
   PHONE: 408-432-9040"
   OR EQUAL

CITY OF TRACY

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	Res No. 2020–	DATE: February 18, 2020	**PLANTING STRUCTURAL SOIL**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

GENERAL IRRIGATION GUIDELINES

1. ALL PLANS ARE TO BE PREPARED AND UNDER THE DIRECTION OF A CALIFORNIA LICENSED LANDSCAPE ARCHITECT OR CERTIFIED IRRIGATION DESIGNER EXCEPT WHERE PROHIBITED BY CALIFORNIA LANDSCAPE ARCHITECTS PRACTICE ACT, BUSINESS AND PROFESSION CODE.

2. ALL IRRIGATION SYSTEMS SHALL BE INSTALLED WITH A REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY AT POINT OF CONNECTION. D 8.2-D 8.2.2

3. BALL VALVES SHALL BE INSTALLED OFF MAINLINE BEFORE EACH VALVE TO FACILITATE EASE OF MAINTENANCE OF VALVES, BEFORE MAINLINE CROSSED UNDER STREET, AND ALSO AT LOCATIONS ALONG MAINLINE TO ALLOW SERVICE TO SYSTEM.

3. MAIN LINES (CONSTANT PRESSURE) SHALL BE SCHEDULE 40 SOLVENT WELD WITH SCHEDULE 40 FITTINGS FOR SIZES 2" AND LESS. FOR MAIN LINES 2 1/2" AND LARGER PVC CLASS 315 WITH SCHEDULE 80 SOLVENT WELD FITTINGS - 18" MINIMUM COVER, 36" UNDER PAVING. ALL MAINLINE SHALL HAVE DETECTABLE TAPE ALONG FULL LENGTH OF MAINLINE. ALL SOLVENT WELDING OF PIPE JOINTS PER MAIN INSTRUCTIONS. D 8.9

4. LATERAL LINES SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT WELD FITTINGS - 12" MINIMUM COVER, 24" UNDER PAVING. D 8.9

5. THRUST BLOCKS SHALL BE PROVIDED TO RESIST SYSTEM PRESSURE ON RING-TITE PIPE AND FITTINGS, BASED ON AVERAGE SOIL SAFE BEARING LOAD OF 1000# PER SQUARE FOOT. D 8.10

6. QUICK COUPLERS SHALL BE PROVIDED AT INTERVALS OF 100 FEET AT PARKWAYS. AT PARKS, QUICK COUPLERS SHALL BE PLACED AT FUNCTIONAL USE ZONES, SUCH AS BUS STOPS, TRASH RECEPTACLES, PLAYGROUNDS, DRINKING FOUNTAINS, AND AT AREAS OTHERWISE DIRECTED BY THE CITY. PLACE IN VALVE BOX FOR PROTECTION AND EASE OF USE. INSTALL EMS DEVICE IN BOX. D 8.5

7. REMOTE CONTROL VALVES SHALL BE 200 PSI RATED PLASTIC BODY AND BONNET. ONE VALVE PER VALVE BOX. VALVE BOX SHALL BE AT GRADE AND HAVE AN EMS DEVICE PLACED IN THE BOX TO FACILITATE DETECTION MY METAL DETECTOR. D 8.6

9. CITY DOES NOT ALLOWS DRIP SYSTEMS FOR CITY MAINTAINED LANDSCAPES.

10. WIRE SPLICES SHALL BE MADE WITH 3M-DBY CONNECTORS OR APPROVED EQUAL FOR PROJECTS IN PUBLIC WORKS' JURISDICTION, AND DRI-SPLICE CONNECTORS OR EQ. FOR PROJECTS IN THE L.M.D. ALL SPLICES SHALL BE MADE IN VALVE BOX ONLY & SHOWN ON AS-BUILTS. D 8.11

11. THREADED PVC FITTINGS SHALL BE WRAPPED WITH TEFLON TAPE, MINIMUM THREE WRAPS.

12. VALVE WIRE SHALL BE BURIED WITH MAIN LINE - 18" MINIMUM COVER. COMMON WIRE TO BE WHITE, CONTROL WIRES TO EACH VALVE COLOR CODED AS PER GROUPING BY AREA AS DESIGNATED BY CITY. MINIMUM SIZE TO BE 14 GAUGE. INSTALL 1 (ONE) EXTRA WIRE FOR EACH 3 VALVES WITH 2 (TWO) MAXIMUM PER EVERY 10 (TEN) VALVES. EXTRA WIRE SHALL BE A DIFFERENT COLOR FROM VALVE WIRES. D 8.9

13. ALL VALVE WIRES SHALL BE LABELED BY NUMBER WITH PERMANENT MARKING IN THE CONTROLLER. ALL VALVE BOXES SHALL BE HOT STAMPED WITH 2" TALL LETTERS/NUMBERS. MARK BOXES WITH THE CORRESPONDING VALVE NUMBER OR BOX IDENTIFICATION (QC, SV, GV etc.) AND BE PERMANENTLY MARKED.

14. LEAVE A 36" INCH COIL OF EXCESS WIRE AT EACH SPLICE ALONG THE MAINLINE RUN AND AT 100 FEET ON CENTER ALONG ANY WIRE RUN.

15. ALL POP-UP HEADS SHALL HAVE A CHECK VALVE TO PREVENT LOW HEAD DRAINAGE AND INTEGRAL PRESSURE REGULATING DEVICE.

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Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

GENERAL IRRIGATION GUIDELINES

16. ALL SHRUB SPRAYS AND SHRUB ROTORS WITHOUT INTERNAL CHECK VALVES SHALL HAVE A CHECK VALVE INSTALLED ON THE RISER IN PLACE OF THE SCHEDULE 80 COUPLING AND INTEGRAL PRESSURE REGULATING DEVICE IF AVAILABLE.

17. NOZZLES SHALL BE MATCHED PRECIPITATION RATE NOZZLES.

18. OVERHEAD IRRIGATION SHALL NOT BE PLACED WITHIN 24" OF ANY NON PERMEABLE SURFACE UNLESS THE ADJACENT NON PERMEABLE SURFACE DRAINS TO A LANDSCAPE AREA EFFORTS TO CONTROL OVER SPRAY SHALL BE MADE TO REDUCE SPRAY FROM HITTING TRUNKS OF TREES.

19. NO OVERHEAD IRRIGATION SHALL BE INSTALLED IN AREAS LESS THAN TEN (10) FEET IN ANY DIRECTION.

20. SOILS SHOULD BE INVESTIGATED AT EACH SITE FOR WATER RETENTION CAPABILITIES. SOILS REPORTS SUGGEST INFILTRATION RATES RANGE FROM .2 TO .6 INCHES/HOUR.

21. IRRIGATION SYSTEMS SHALL BE DESIGNED SO THAT THE APPLICATION RATE OF WATER DOES NOT EXCEED THE INFILTRATION RATE OF THE SOIL (SEE SOILS REPORT) AND WILL NOT ALLOW EXCESSIVE OVERSPRAY AND RUNOFF. IN GENERAL, LOW VOLUME SPRINKLER HEADS, AND PRESSURE COMPENSATION BUBBLERS SHALL BE USED THROUGHOUT THE SYSTEM.

22. CONTROLLERS SHALL HAVE MULTIPLE PROGRAMS AND WATER BUDGETING AVAILABLE. INSTALL CONTROLLERS INTO A VANDAL RESISTANT CONTROLLER ENCLOSURE. THE CITY WILL UTILIZE A MOTOROLA CENTRAL IRRIGATION CONTROL SYSTEM, AND SATELLITE FIELD CONTROLLERS, OR AN APPROVED EQUAL. D 8.1. CONTROLLER SHALL BE PROGRAMMED TO OPERATE BETWEEN THE HOURS OF 10:00 PM AND 7:00 AM. RESTRICTED WATERING TIMES MAY BE ESTABLISHED BASED UPON SITE CONDITIONS AS DETERMINED BY THE CITY. CONTROLLERS OPERATION STICKER SHALL BE APPLIED TO ALL CONTROLLERS PER CITY OF TRACY REQUIREMENTS.

23. ALL CONTROLLERS ARE TO BE METERED AND WITHIN AN PG&E APPROVED METERED CONTROLLER CABINET.

24. SPRINKLERS AT TOPS OF SLOPES SHALL BE VALVED SEPARATELY FROM SPRINKLERS AT BOTTOM OF SLOPES. PRECIPITATION RATES OF HEADS SHALL BE CONSIDERED.

25. FOR INSTALLATION, USE STRAP WRENCHES ONLY ON ALL EQUIPMENT WITH UNIONS, EXCEPT ON BACKFLOWS. NO PIPE WRENCHES SHALL BE USED.

26. MAIN LINE IRRIGATION NEEDS TO BE CENTER LOADED WITH VALVES INSTALLED AND FITTINGS COMPLETELY VISIBLE. A WATER PRESSURE OF 125 PSI SHALL BE APPLIED AND HELD FOR 2.5 HOURS. ALL LEAKS SHALL BE REPAIRED AND ALL LINES APPROVED BY THE CITY BEFORE ANY OF THE SYSTEM IS BACKFILLED.

27. CONTRACTOR SHALL KEEP AN AS-BUILT FIELD COPY OF IRRIGATION SYSTEM SHOWING ALL CHANGES. MAIN LINE SHALL NOT BE BACKFILLED UNTIL AS-BUILT DRAWINGS ARE APPROVED BY CITY ENGINEER. MARKED UP AS-BUILTS SHALL BE TURNED OVER TO CITY BEFORE MAINTENANCE BEGINS. LANDSCAPE ARCHITECT OF RECORD SHALL PREPARE RECORD DRAWINGS IN AUTOCAD FORMAT, AND PRINT AND SUBMIT NEW MYLARS.

28. IF EXPANDING EXISTING PARKWAY OR FACILITY, CONTRACTOR WILL UPDATE EXISTING CONTROLLER CHARTS, REFLECTING MODIFICATIONS TO THE EXISTING PROJECT AND PROVIDING A NEW CHART. UPON INSTALLATION OF A NEW PICCOLO UNIT, CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPROGRAMMING OF THE EXISTING OR NEW IRRINET FROM WHICH THE SCORPIO WILL COMMUNICATE.

29. FOR EACH IRRINET INSTALLED, PROVIDE CITY WITH TWO SETS OF LAMINATED REDUCED (11"x17") AS-BUILT IRRIGATION CHARTS, 10 ML. THICKNESS OF LAMINATION, SHOWING ZONES AND CORRESPONDING CORRESPONDING CONTROLLER STATIONS. FOR EACH SCORPIO CONTROLLER, PROVIDE THREE CHARTS.

30. ALL WATERING SHALL TAKE PLACE WITHIN THE CITY'S REQUIRED WATER WINDOW, OF 10PM TO 7AM. PROVIDE AN AUDIT TO SHOW WATERING SCHEDULE AND HOW IT MEETS REQUIREMENTS.

31. IRRIGATION SYSTEMS MUST BE COMPLETE AND FULLY OPERATIONAL BEFORE ANY PLANTING BEGINS.

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	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

GENERAL IRRIGATION GUIDELINES

32. A BOOSTER PUMP WILL BE REQUIRED FOR ALL PARKS BUT MAY NOT BE REQUIRED FOR STREETSCAPES. PLACEMENT SHALL BE WITHIN CITY'S RIGHT OF WAY. BOOSTER PUMP, BACKFLOW, FLOW METER AND CONTROLLER SHALL BE SECURED WITHIN A LOCKED CHAIN LINK OR OTHER ENCLOSURE WHERE AS DIRECTED BY THE CITY ENGINEER. AN EXTERNAL ROUTED BY-PASS SHALL BE INCLUDED WITH ALL INSTALLATIONS.

33. IRRIGATION SYSTEMS MUST BE TESTED BY A THIRD PARTY WATER AUDITOR, FOR THE PLANT ESTABLISHMENT PERIOD AND LONG TERM MAINTENANCE. AUDIT SHALL INCLUDE APPLIED WATER IRRIGATION, IRRIGATION DAYS PER WEEK, CYCLES PER DAY, MINUTES OF RUN TIME PER CYCLE. CONSIDERATION SHOULD BE GIVEN TO THE FLOW RATE, AREA COVERED BY VALVE, AND PRECIPITATION RATE. WATER AUDIT REPORT SHALL BE SUBMITTED TO THE CITY ALONG WITH LANDSCAPING AND IRRIGATION PLANS.

34. PRESSURE LOSS CALCULATIONS SHALL BE PROVIDED UPON FIRST IRRIGATION SUBMITTAL TO THE CITY. SHOW LOSSES BASED ON VALVE WITH POTENTIAL FOR GREATEST LOSS.

35. TO ENSURE THAT SYSTEMS DON'T FAIL UPON BUILD-OUT, WE REQUIRE A MINIMUM 5 PSI DYNAMIC RESIDUAL FOR TYPICAL SYSTEMS AND A MINIMUM 10 PSI DYNAMIC RESIDUAL PRESSURES FOR SYSTEMS WITH BOOSTER PUMPS. IF IRRIGATION CALCULATIONS FALL BELOW THESE PERIMETERS, ANOTHER SERVICE LINE / POINT OF CONNECTION WILL BE REQUIRED AND NO FUTURE TIE-INS WILL BE ALLOWED.

36. ALL WARRANTY REPAIRS ARE TO BE COMPLETED WITHIN 72 HOURS OF NOTIFICATION, OR CITY MAY MAKE REPAIRS AT CONTRACTOR'S EXPENSE.

37. A 4-INCH IRRIGATION SERVICE IS REQUIRED FOR ALL PARK SITES. A 2-INCH SERVICE IS REQUIRE FOR ALL STREETSCAPES WHICH MUST BE A SEPARATE SERVICE THAN THE ADJOINING PRIVATE PROPERTY.

38. WHEN SYSTEM USES RECLAIMED WATER, ADD ALL PERTINENT COMPONENTS, DETAILS AND NOTES.

39. IRRIGATION CONTROLLERS ARE TO BE MOTOROLA BY CENTRAL CONTROL SYSTEMS
    CONTACT: CENTRAL CONTROL SYSTEMS
    PHONE: 530-662-6841
    CCS@CCONTROLSYSTEMS.COM

40. IRRIGATION SHALL COMPLY WITH CALIFORNIA TITLE 23 CHAPTER 2.7 (MWELO) AND AB1881 INCLUDING ALL REQUIRED NOTES AND COMPLIANCE STATEMENT WITH SIGNATURE BLOCK.

41. RECYCLED WATER FOR IRRIGATION SHALL COMPLY WITH CALIFORNIA TITLE 22 CHAPTER 3

42. IDENTIFY AND LOCATE ON PLANS IRRIGATION POINT OF CONNECTION SHOWING SERVICE LINE, METER, BACKFLOW, AND FLOW METER LOCATION AND SIZES.

43. IDENTIFY AND LOCATE ON PLANS SECONDARY POWER SOURCE FOR IRRIGATION CONTROLLER. POWER SOURCE MUST BE A RIGHT-OF-WAY UTILITY.

44. PROVIDE ONE 6" SLEEVE AND TWO 4" SLEEVES FOR ALL CROSSINGS. SLEEVING TO BE SCHEDULE 40 PVC

45. PROVIDE AN ISOLATION VALVE AT EACH SIDE OF MAJOR CROSSINGS. REFER TO DETAILS FOR VALVE TYPE.

46. THE EVAPOTRANSPIRATION (ETO) RATE FOR THE CITY OF TRACY IS 48.5.

47. PROVIDE WRITTEN TECHNICAL SPECIFICATION FOR IRRIGATION.

48. PROVIDE SUBMITTALS AND / OR SAMPLES FOR APPROVAL PRIOR TO CONSTRUCTION.

49. FOR PROJECT WITH SPECIFIC PLANS AND/OR TO BE CONSTRUCTED IN PHASES, AN IRRIGATION MASTERPLAN WILL BE REQUIRED SHOWING POINTS OF CONNECTION (INCLUDING SERVICE LINE, METER, BACKFLOW SIZES), NOTE POTABLE OR RECYCLED, MAIN LINE ROUTING AND PROJECTED PEAK FLOW AND PRESSURE LOSS.

CITY OF TRACY

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Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

GENERAL IRRIGATION GUIDELINES

RECYCLED WATER NOTES

1. ALL PLANS ARE TO BE PREPARED AND UNDER THE DIRECTION OF A CALIFORNIA LICENSED LANDSCAPE ARCHITECT OR CERTIFIED IRRIGATION DESIGNER EXCEPT WHERE PROHIBITED BY CALIFORNIA LANDSCAPE ARCHITECTS PRACTICE ACT, BUSINESS AND PROFESSION CODE.

2. NO WORK SHALL START UNTIL THE CONTRACTOR HAS FULL UNDERSTANDING OF THE CITY OF TRACY DESIGN STANDARDS, STREET & UTILITY STANDARDS AND PARKS & STREETSCAPE DESIGN STANDARDS.

3. NOTIFY THE CITY'S AUTHORIZED REPRESENTATIVE NO LESS THAN (2) TWO WORKING DAYS PRIOR TO THE START OF WORK FOR INSPECTION SCHEDULE COORDINATION.

4. THE IRRIGATION SYSTEM DESIGN SHALL BE BASED ON THE STATIC WATER PRESSURE AT THE POINT OF CONNECTION AND NOTED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE AVAILABLE STATIC PRESSURE AT THE POINT OF CONNECTION PRIOR TO START OF CONSTRUCTION. ANY DEVIATION FROM THE DESIGN PRESSURE SHALL BE REPORTED TO THE IRRIGATION DESIGN AND THE CITY'S REPRESENTATIVE.

5. ALL PIPING AND IRRIGATION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED SO THAT SPRAY OR RUNOFF SHALL NOT ENTER A SWELLING, FOOD HANDLING FACILITY, OR EATING AREA AND SHALL NOT CONTACT ANY POTABLE WATER SOURCE NOR SHALL AN RECYCLED WATER SYSTEM BE CONNECTION TO A POTABLE WATER SOURCE.

6. IRRIGATION SYSTEMS WITH RECYCLED WATER SHALL BE ACCOMPLISHED AT TIME AND MANNER THAT MINIMIZES THE POSSIBILITY OF PUBLIC CONTACT. THE CONTRACTOR SHALL CONDUCT PRESSURE AND COVERAGE TESTS WHEN WIND CONDITIONS ARE SUCH THAT WATER WILL NOT BE WINDBLOWN. RECYCLED WATER OVERSHAPY ON TO AREAS NOT CONTROLLED BY THE CITY IS PROHIBITED.

7. THE CONTRACTOR SHALL PROPERLY SUPERVISE, INFORM AND WARN ALL INDIVIDUALS INVOLVE IN THE INSTALLATION OF RECYCLED WATER IRRIGATION SYSTEM REGARDING THE HAZARDS OF CONTACT WITH RECYCLED WATER. A FIRST AID KIT SHALL BE AVAILABLE AT ALL TIMES DURING INSTALLATION AND OPERATION OF IRRIGATION SYSTEMS. AN EYE WASH STATION SHALL BE PROVIDED ON THE PROJECT SITE.

8. ALL RECYCLED WATER PIPING SHALL USE PURPLE COLORED AND STENCILED PIPE. ALL MARKINGS SHALL INCLUDE THE FOLLOWING OR SIMILAR WORDS: "CAUTION: RECYCLED WATER - DO NOT DRINK". PURPLE PIPE SHALL BE "PWPURPLE PLUSA" MANUFACTURED BY PW PIPE, INC., JAM "PURPLE SAVE" OR AN APPROVED EQUAL.

9. INSTALL VALVES, METERS AND APPURTENANCES IN PURPLE COLORED VALVE BOXES WITH PURPLE LIDS. THE VALVE BOX LIDS SHALL HAVE THE FOLLOWING WARNING MOLDED OR HOT-STAMPED UPON IT: "RECYCLED WATER" OR USE WARNING LABELS BY T. CHRISTY ENTERPRISES 3800 OR AN APPROVED EQUAL.

10. ALL SPRINKLERS AND OTHER EMISSION DEVICES USED IN RECYCLED WATER FACILITIES SHALL HAVE AN EXPOSED SURFACE COLORED PURPLE TO ASSOCIATE THEM WITH RECYCLED WATER USE. THE EXPOSED SURFACE MAY BE COLORED PURPLE THROUGH THE USE OF:
    A. DYED PLASTIC OR RUBBER
    B. WEATHERPROOF PAINT.

11. INSTALL WARNING TAGS AS MANUFACTURED BY T. CHRISTY ENTERPRISES 3150 OR AN APPROVED EQUAL FOR ALL CONTROL VALVES, GATE OR BALL ISOLATION VALVES, QUICK COUPLERS, CONTROLLERS METERS, OR OTHER APPARATUS AS REQUIRED BY CITY ENGINEER. TAGS SHALL BE WEATHERPROOF PLASTIC, 3" x 4", PURPLE IN COLOR WITH THE WORDS "WARNING: RECYCLED WATER - DO NOT DRINK" IMPRINTED ON ONE SIDE AND "AVISO: AQUA IMPURA - NO TOMAR" ON THE OTHER SIDE, OR SIMILAR AS APPROVED BY THE CITY ENGINEER. IMPRINTING SHALL BE PERMANENT AND BLACK IN COLOR.

12. PRIOR TO INSTALLATION, LOCATE DOMESTIC WATER MAINS AND/OR LATERALS IN PROXIMITY TO THE PROJECT LIMIT OF WORK. RECYCLED IRRIGATION WATER LINES AND POTABLE WATER LINES SHALL BE INSTALLED IN SEPARATE TRENCHES . A MINIMUM 10-FOOT HORIZONTAL SEPARATION AND A MINIMUM 1-FOOT VERTICAL COVER SHALL BE MAINTAINED BETWEEN POTABLE AND RECYCLED WATER LINES. WHERE RECYCLED IRRIGATION WATER LINES CROSS, THE RECYCLED WATER SHALL BE INSTALLED WITHIN A 10-FOOT PURPLE SCHEDULE 40 PVC SLEEVE, CENTERING ON THE POTABLE WATER LINE.

GENERAL IRRIGATION GUIDELINES

RECYCLED WATER NOTES

13. RECYCLED IRRIGATION WATER PIPING SHALL BE INSTALLED PER D 8.8.

14. NO HOSE BIBS SHALL BE USED FOR RECYCLED WATER SYSTEMS. QUICK COUPLERS VALVES SHALL BE RAIN BIRD 33DLRC WITH LOCKING CAP (OR AN APPROVED EQUAL) AND A PURPLE RUBBER OR VINYL COVER.

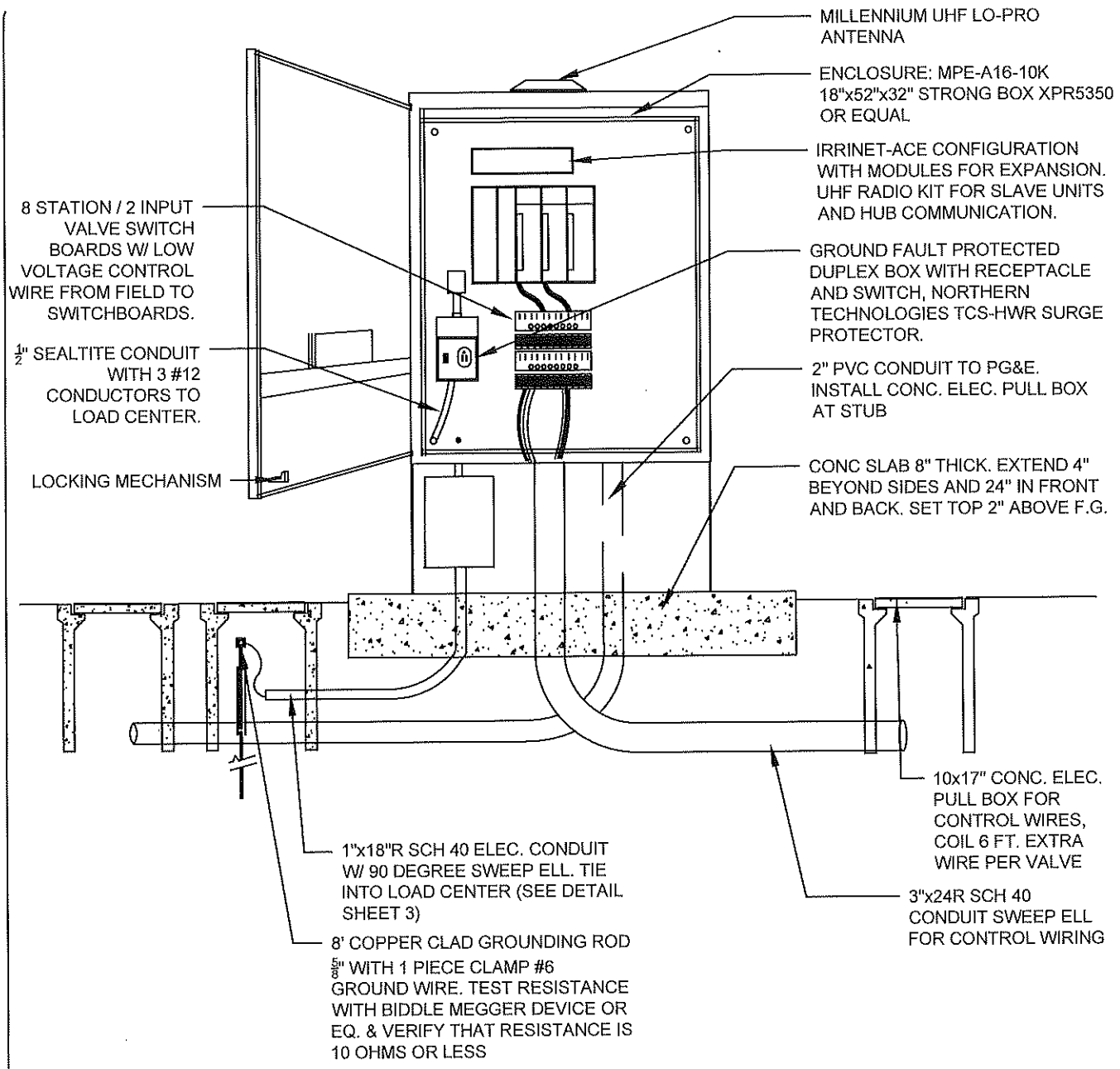
15. IRRIGATION CONTROLLER SHALL BE PROGRAMMED AS THESE GENERAL IRRIGATION GUIDELINES.

16. FLUSHING OF RECYCLED WATER THROUGH IRRIGATION SYSTEM PIPING SHALL BE PERFORMED IN A MANNER THAT MINIMIZES DISCHARGE FROM THE SITE OR CREATES PONDING. FLUSHING SHALL BE NOT BE PERMITTED IN A WAY THAT CREATES PUDDLES ALLOWING THE RECYCLED WATER TO BECOME STAGNANT. FLUSHING INTO THE SANITARY SEWER IS THE MOST ACCEPTABLE WAY TO DISCHARGE RECYCLED WATER. IF THIS IS NOT POSSIBLE, THEN FLUSHING MAY BE DONE BY DIVERTING RECYCLED WATER INTO A STORAGE TANK, TANK TRUCK OR ANOTHER APPROVED HOLDING FACILITY. HOLDING FACILITIES MUST BE CLEARLY MARKED WITH WARNING SIGNS. RECYCLED WATER SHALL BE TRANSPORTED AND DISCHARGED AT AN APPROVED SITE IN AN APPROVED MANNER.

17. WHERE BOTH POTABLE AND RECYCLED IRRIGATION WATER EXIST AT AT SITE, A CROSS-CONNECTION INSPECTION AND TEST SHALL BE PREFORMED ON BOTH THE POTABLE AND RECYCLED IRRIGATION WATER SYSTEMS. THE CROSS-CONNECTION TEST WILL BE CONDUCTED BY THE CITY OF TRACY PUBLIC WORK DEPARTMENT IN ACCORDANCE WITH RECYCLED WATER GUIDELINES. THE CONTRACTOR SHALL REQUEST THE CROSS-CONNECTION A TEST BY TRACY PUBLIC WORKS A MINIMUM OF 2 DAYS PRIOR TO PERFORMING THE TEST.

18. AN IRRIGATION AUDITOR SHALL PERFORM A COVERAGE TEST IN PRESENCE OF THE CONSTRUCTION MANAGEMENT INSPECTOR TO CONFIRM THAT EXCESSIVE OVERSPRAY DOES NOT OCCUR IN ACCORDANCE WITH THE CITY OF TRACY STANDARDS. ANY MODIFICATIONS IN EITHER THE SYSTEM EQUIPMENT, OR ADJUSTMENT IDENTIFIED BY THE AUDITOR SHALL BE COMPLETED IN ACCORDANCE WITH THE IRRIGATION AUDIT.

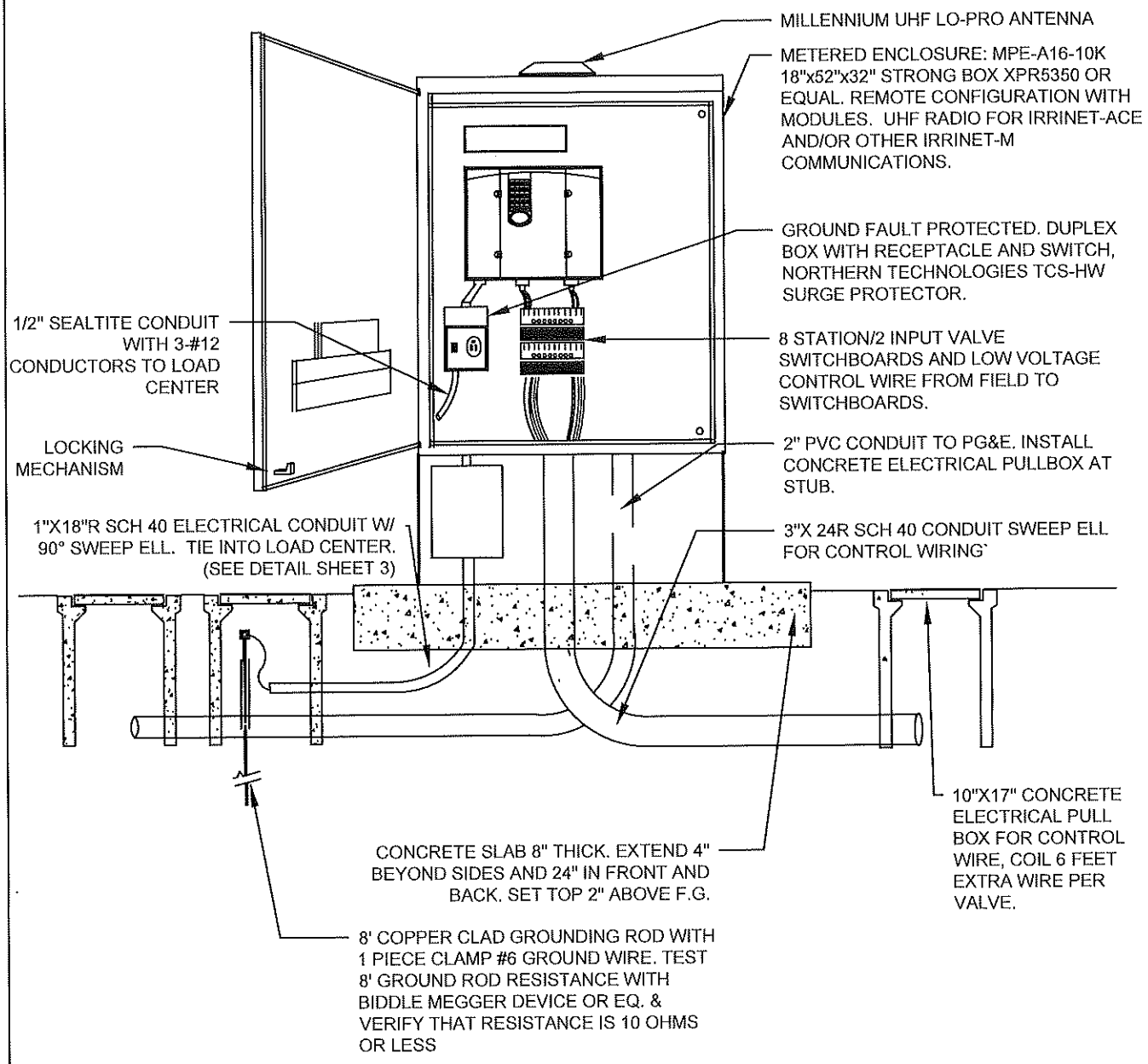
19. IN ALL AREAS WITHER RECYCLED WATER IS USED AND IS ACCESSIBLE TO THE PUBLIC, A RECYCLED WATER WARNING SHALL BE INSTALLED AT CITY APPROVED LOCATIONS.



CITY OF TRACY

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	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION Controller in Enclosure (MOTOROLA - IRRINET-ACE)**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

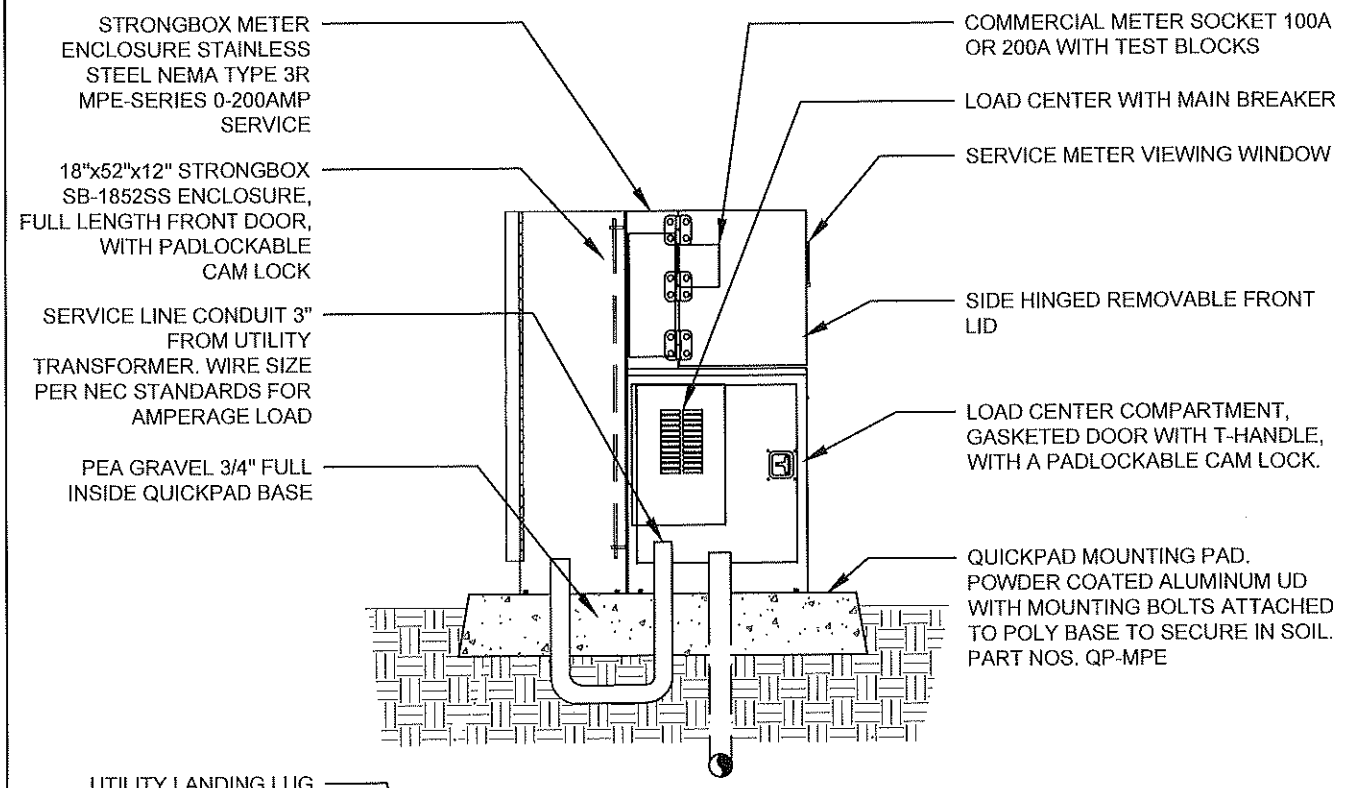
PARKS AND STREETSCAPE STANDARD PLANS



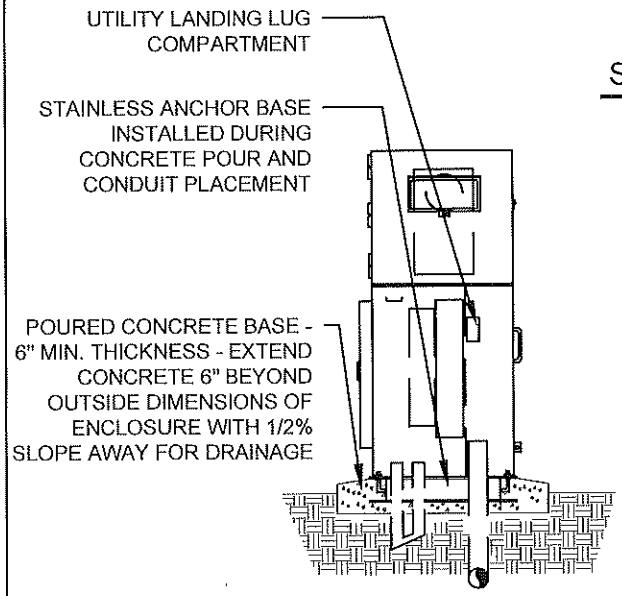
CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.1 Sheet 2 of 4
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Controller in Enclosure** **(MOTOROLA - IRRINET-M)**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

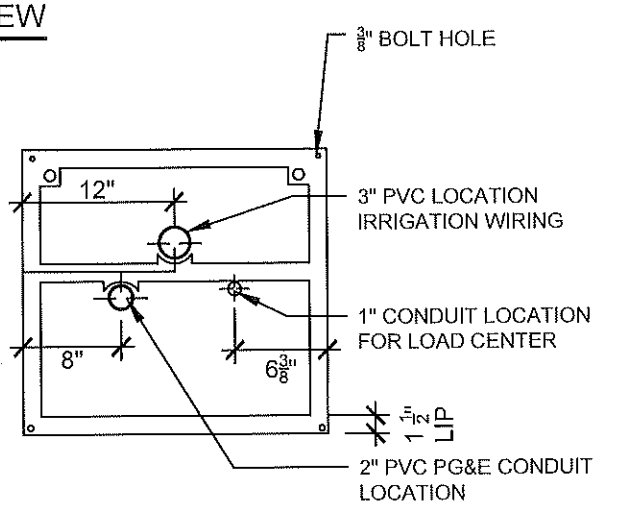
PARKS AND STREETSCAPE STANDARD PLANS



SIDE VIEW



FRONT VIEW



PLAN VIEW

(TEMPLATE)

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.1 Sheet 3 of 4
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	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

MOTOROLA IRRINET-ACE INCLUDES:

* 8 STATION TO 144 STATION IN INCREMENTS OF 8 STATIONS
* UHF XPR5350 RADIO KIT
* UHF MILLENNIUM LO-PRO ANTENNA
* 8 STATION/2 INPUT VALVE SWITCHBOARDS
* NORTHERN TECHNOLOGIES TCS-HW SURGE PROTECTOR
* ASSEMBLY, TEST AND TERMINATE
* MAY OR MAY NOT REQUIRE HUB FOR SATELLITE COMMUNICATIONS
* 8' COPPER CLAD GROUNDING ROD (SUPPLIED BY CONTRACTOR)

MOTOROLA IRRINET-M INCLUDES:

* 12, 24, 36, OR 48 STATION CONTROLLER
* UHF XPR5350
* UHF MILLENNIUM LO-PRO ANTENNA
* 8 STATION/2 INPUT VALVE SWITCHBOARDS
* NORTHERN TECHNOLOGIES TCS-HW SURGE PROTECTOR
* ASSEMBLY, TEST AND TERMINATE
* 8' COPPER CLAD GROUNDING ROD (SUPPLIED BY CONTRACTOR)

MOTOROLA PICCOLO-XR INCLUDES:

* 2 STATION OR 4 STATION MOTOROLA PICCOLO-XR
* CONNECTION TERMINAL
* 6 VDC BATTERY
* 6 VDC SOLAR PANEL
* NEMA 3R OR PLASTIC TELECOM ENCLOSURE
* VANDAL RESISTANT ANTENNA SYSTEM
* ADD AS NEEDED; UNISTRUT ASSEMBLY FOR NEMA 3R INSTALLATION
* NOTE: MUST COMMUNICATE VIA LOCAL PICCOLO PIU (PICCOLO INTERFACE UNIT)
* STRONG BOX STAINLESS STEEL CABINETS AS REQUIRED

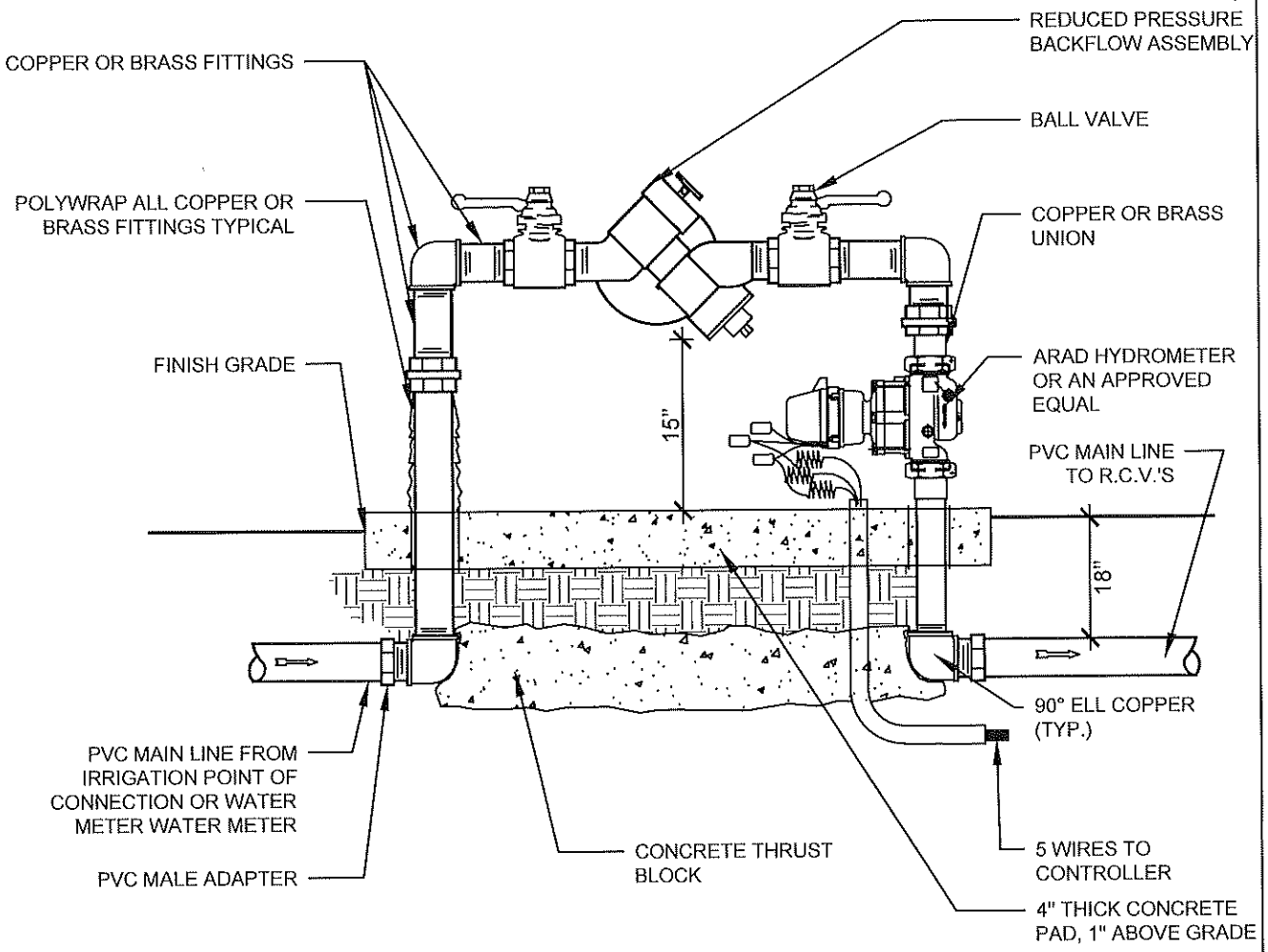
NOTES

1. PULL PERMIT FROM BUILDING DEPARTMENT FOR ELECTRICAL WORK.
2. VERIFY CONTROLLER OPTIONS WITH CITY

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.1 Sheet 4 of 4
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Controller Components**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



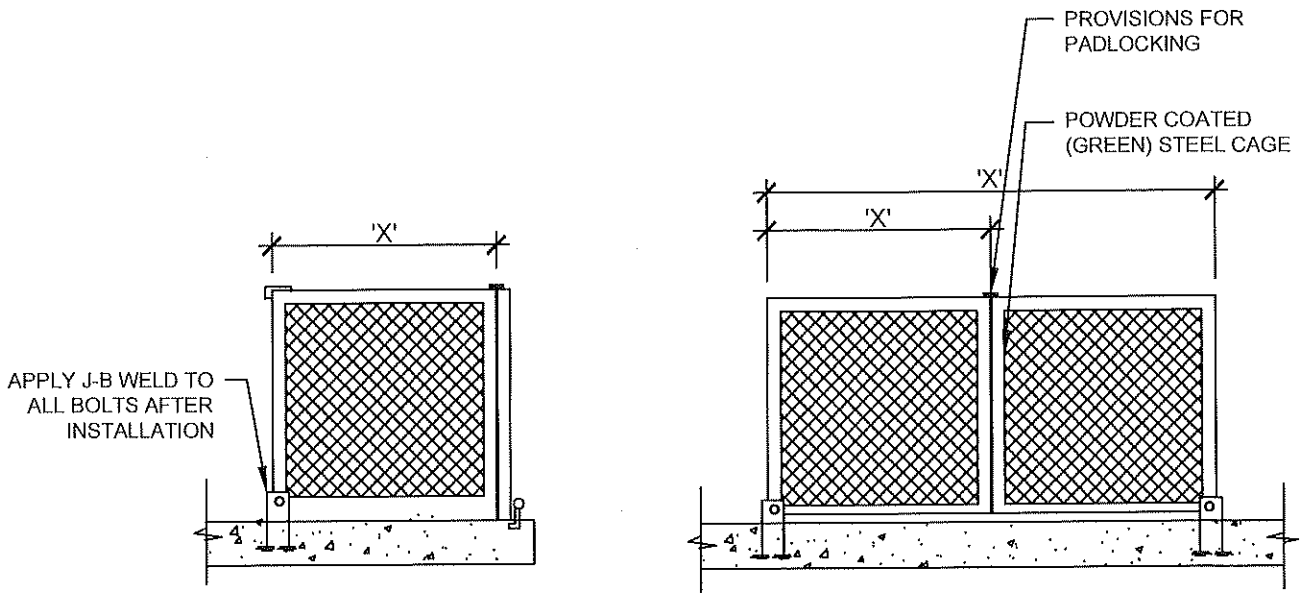
NOTES

1. INSTALL REDUCED PRESSURE BACKFLOW PREVENTER DEVICE PER STANDARD PLAN 415.
2. BACKFLOW PREVENTER ENCLOSURE PER DETAIL D 8.2.1.
3. BACKFLOW PREVENTION DEVICE TO BE TESTED BY A CERTIFIED BACKFLOW
4. INSTALL WEATHERMATIC WEATHER BLANKET, OR AN APPROVED EQUAL, OVER BACKFLOW, SIZED TO FIT.
5. RUN 5 WIRES BACK TO CONTROLLER (1 EXTRA, 2 WHITE, 1 PURPLE, 1 YELLOW), BUNDLE, LABEL & TAPE TOGETHER.
6. CONNECT PER MANUFACTURERS INSTRUCTIONS.
7. MINIMUM FLOW THROUGH THE FLOW METER IS 6.6 GPM.

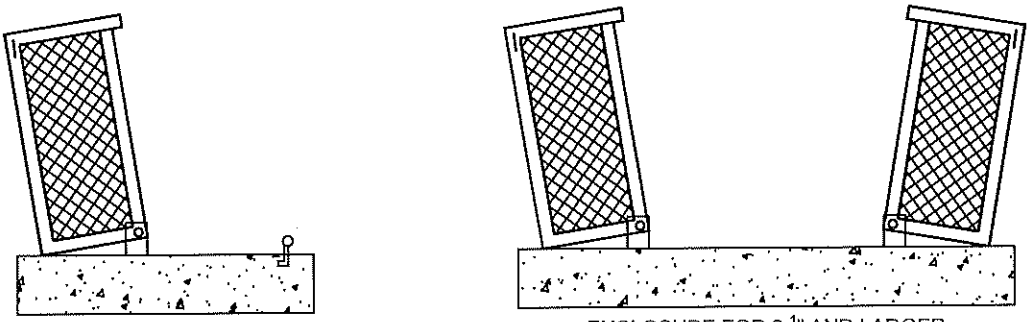
CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.2 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Reduced Pressure Backflow With Hydrometer**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



FRONT VIEW OF ENCLOSURE



ENCLOSURE FOR 2" AND SMALLER

ENCLOSURE FOR 2 $\frac{1}{2}$" AND LARGER

ENCLOSURE OR EQUAL IN OPEN POSITION

'X' REFER TO DIMENSION DENOTED ON IRRIGATION PLAN

NOTES

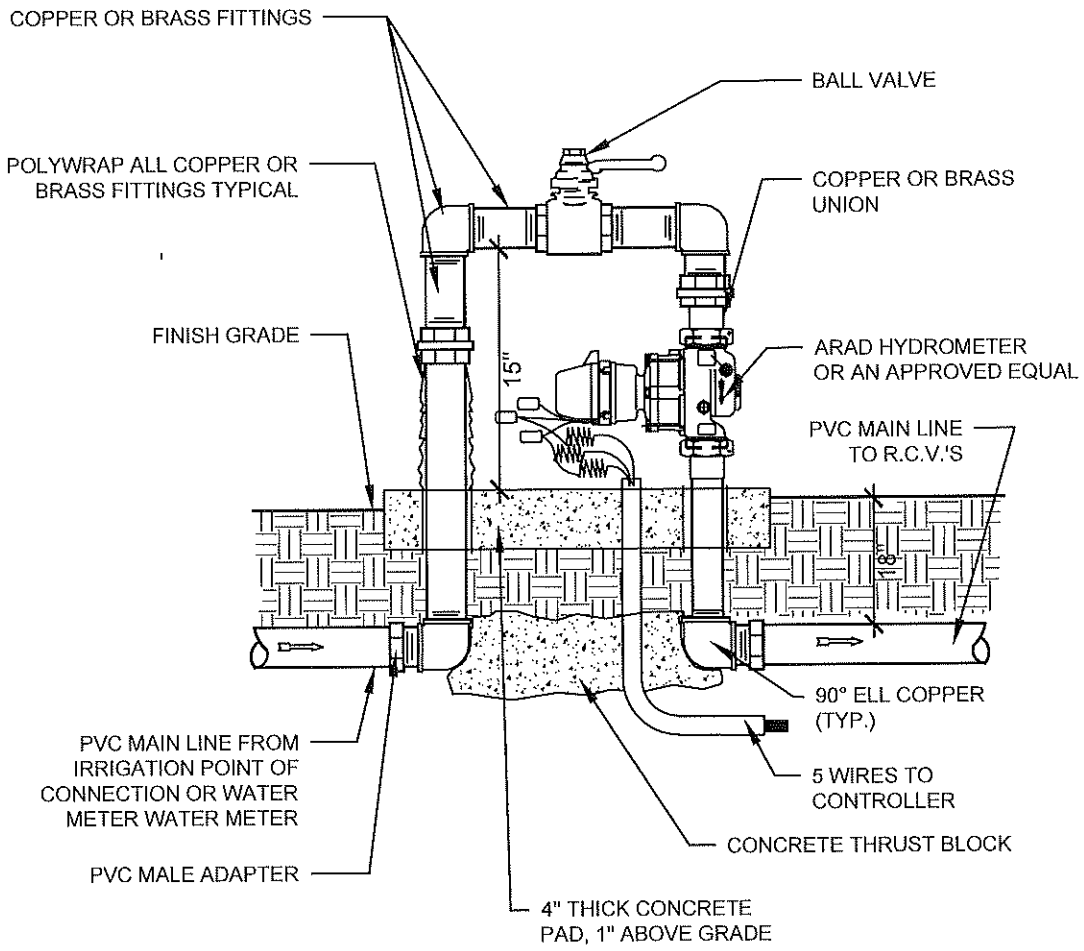
1. REFER TO MANUFACTURER'S CATALOG FOR CORRECT DIMENSIONS TO FIT SIZE OF SPECIFIED BACKFLOW.
2. CONCRETE FOUNDATION DIMENSIONS TO SUIT EACH INDIVIDUAL INSTALLATION. SLAB SHALL BE 4" THICK, 4" AB, 95% COMPACTION, AND EXTEND 10" BEYOND ALL SIDES OF CAGE.
3. CONTRACTOR TO SUPPLY ENCLOSURE LOCKS - MASTER 3KALH OR EQUAL.
4. ALL FASTENERS TO BE STAINLESS STEEL
5. FOR FINISHES, SEE D 0.0.

CITY OF TRACY

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.2.1 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Enclosure for Backflow Preventer or Hydrometer**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

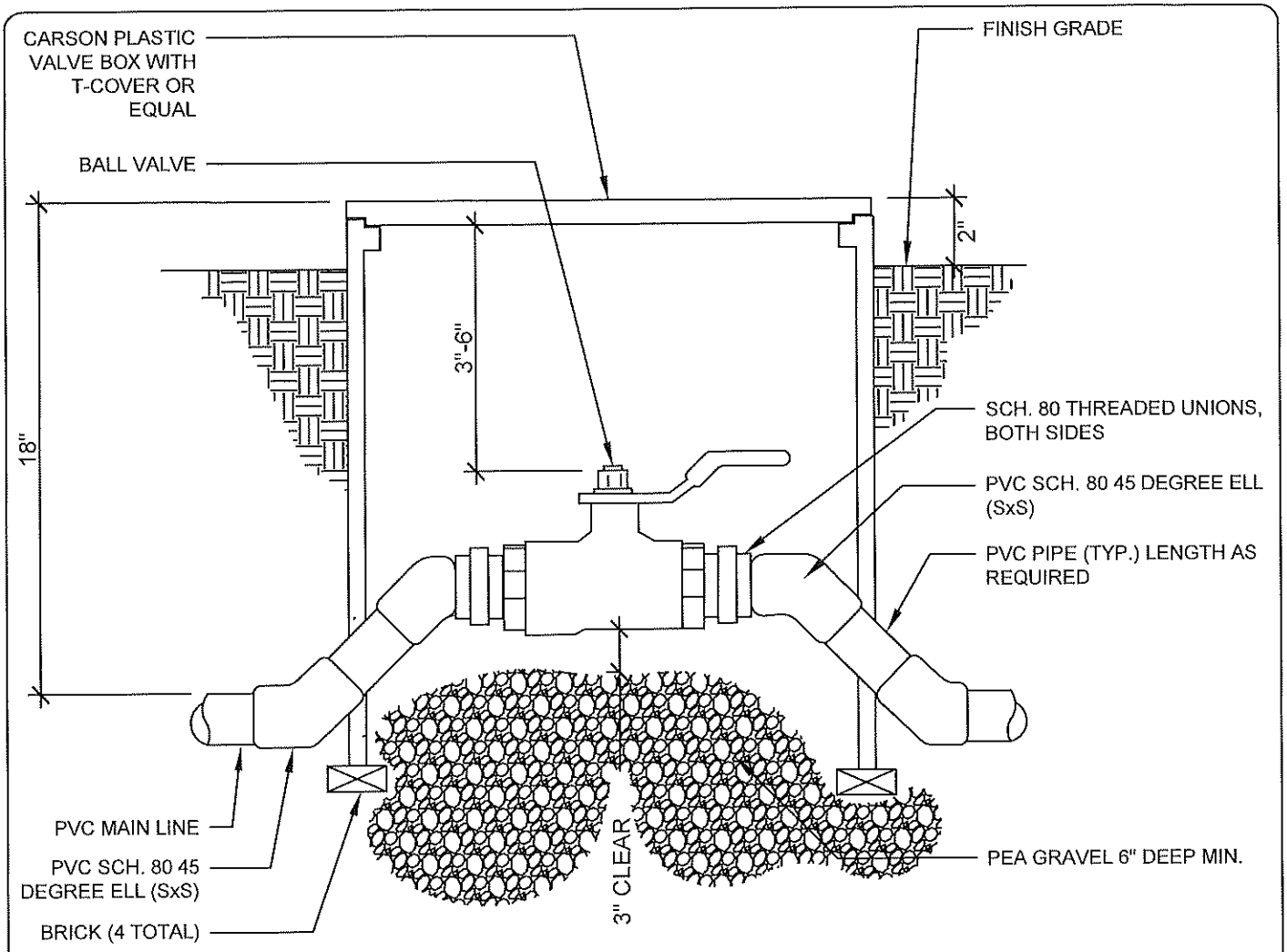
1. HYDROMETER SHALL BE INSTALLED ABOVE GRADE UNLESS OTHERWISE SPECIFIED.
2. INSTALL HYDROMETER ENCLOSURE PER DETAIL D 8.2.1.
4. INSTALL WEATHERMATIC WEATHER BLANKET, OR AN APPROVED EQUAL, OVER BACKFLOW, SIZED TO FIT.
5. PROVIDE WIRE SPLICE CONNECTIONS AT ALL SPLICES PER D 8.20.
6. CONTROL WIRE SHALL BE SIZED A MINIMUM OF #14 U.L. APPROVED.
7. RUN 5 WIRES BACK TO CONTROLLER (1 EXTRA, 2 WHITE, 1 PURPLE, 1 YELLOW), BUNDLE, LABEL & TAPE TOGETHER.
8. PURPLE TAGS SHALL BE USED WITH RECLAIMED WATER SYSTEMS
9. MINIMUM FLOW THROUGH HYDROMETER TO BE 6.6GPM.

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.2.2 Sheet 1 of 1
Res No. 2020–	DATE:February 18, 2020	**IRRIGATION HYDROMETER**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



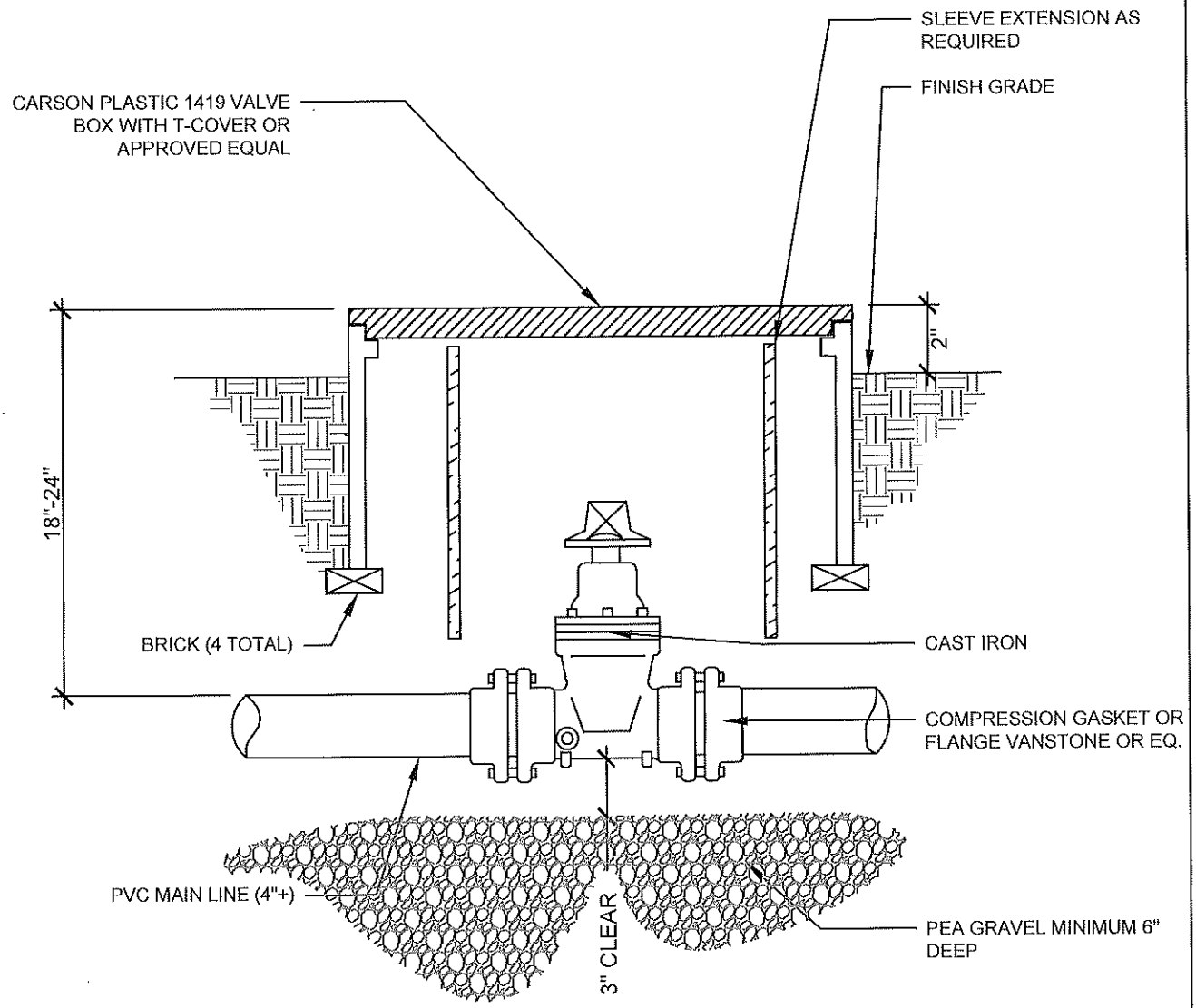
NOTES

1. INSTALL BALL VALVE BEFORE EACH GROUP OF VALVES TO FACILITATE EASE OF MAINTENANCE TO VALVES.
2. INSTALL ALONG MAIN LINE FOR ISOLATION OF MAIN. USE NIBCO T-FP-0600A-LF VALVE OR APPROVED EQUAL FOR MAINLINES 3" & LARGER
3. BALL VALVE SHALL BE SIZE OF MAINLINE UNLESS NOTED.
4. BALL VALVE SHALL BE BRASS FULL PORT.
5. VALVE BOXES SHALL BE CARSON 1419 MODEL OR APPROVED EQUAL FOR 1 1/2" OR SMALLER AND SHALL HAVE T-COVER LIDS, USE CARSON 1324 MODEL OR APPROVED EQUAL FOR 2" VALVES.
6. ROTATE VALVE SO THAT HANDLE IS 90° OFF MAINLINE
7. FITTINGS SHALL BE SPEARS OR LASCO ONLY.
8. VALVE BOX LID TO FIT WITH VALVE IN OFF POSITION
9. HOT STAMP VALVE ON TOP OF VALVE BOX WITH 2" BLOCK LETTERS-BV
10. PURPLE COVER AND PURPLE BOX SHALL BE USED WITH RECLAIMED WATER SYSTEMS

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.3 Sheet 1 of 1
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	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



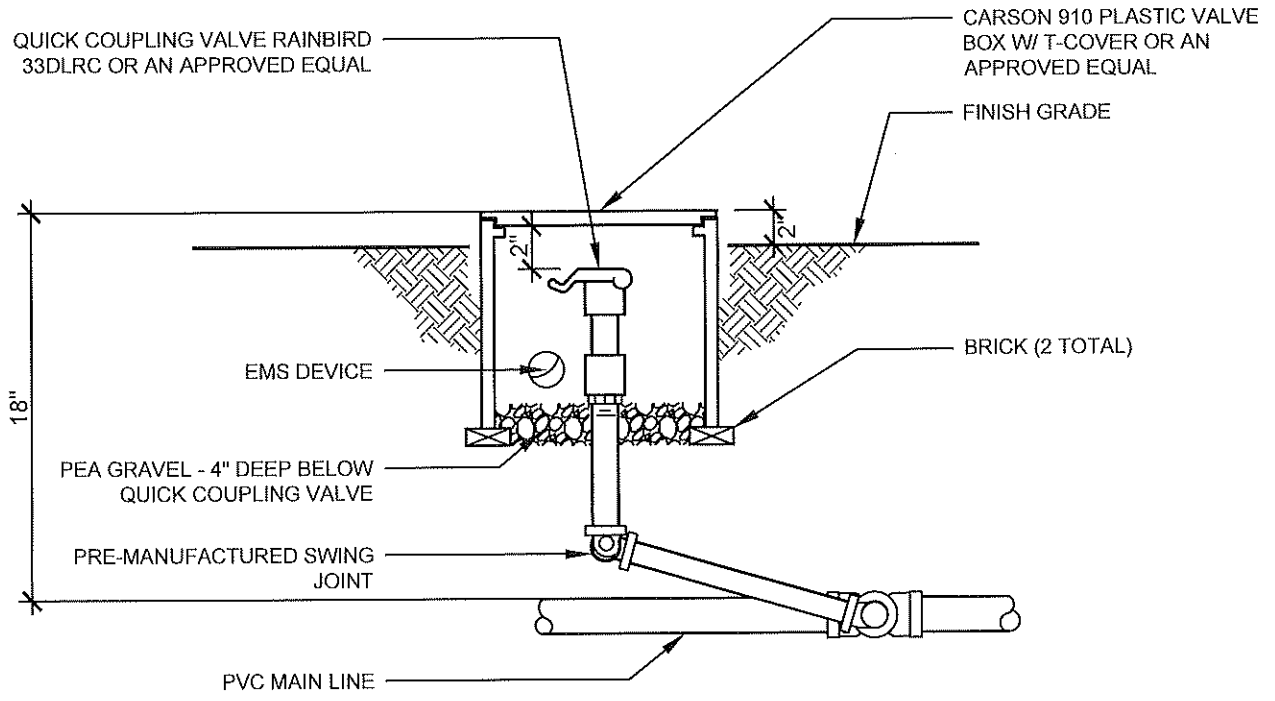
NOTES

1. INSTALL GATE VALVES ON MAINLINES 4" AND LARGER FOR ISOLATION.
2. GATE VALVE SHALL BE: 3" AND ABOVE - CAST IRON WITH SCREW-IN BONNET. NIBCO F-619-RW-SON OR AN APPROVED EQUAL; BELOW 3" - CAST BRONZE NIBCO T-113 OR AN APPROVED EQUAL
3. PROVIDE 2 KEYS PER PROJECT PRIOR TO ACCEPTANCE BY CITY
4. HOT STAMP VALVE ON TOP OF VALVE BOX WITH 2" BLOCK LETTERS - GV
5. VALVE BOXES SHALL BE MODEL CARSON 1324 OR AN APPROVED EQUAL FOR 2"+ VALVES AND SHALL HAVE T-COVE LIDS.
6. PURPLE COVER AND PURPLE BOX SHALL BE USED WITH RECLAIMED WATER SYSTEMS.

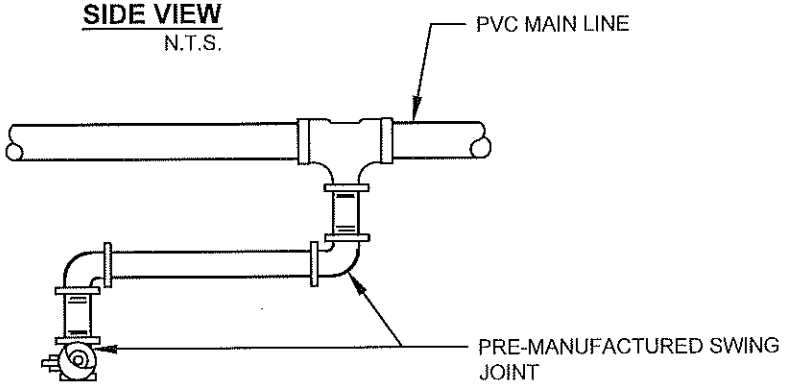
CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.3.1 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Gate Valve**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SIDE VIEW
N.T.S.



TOP VIEW
N.T.S.

NOTES

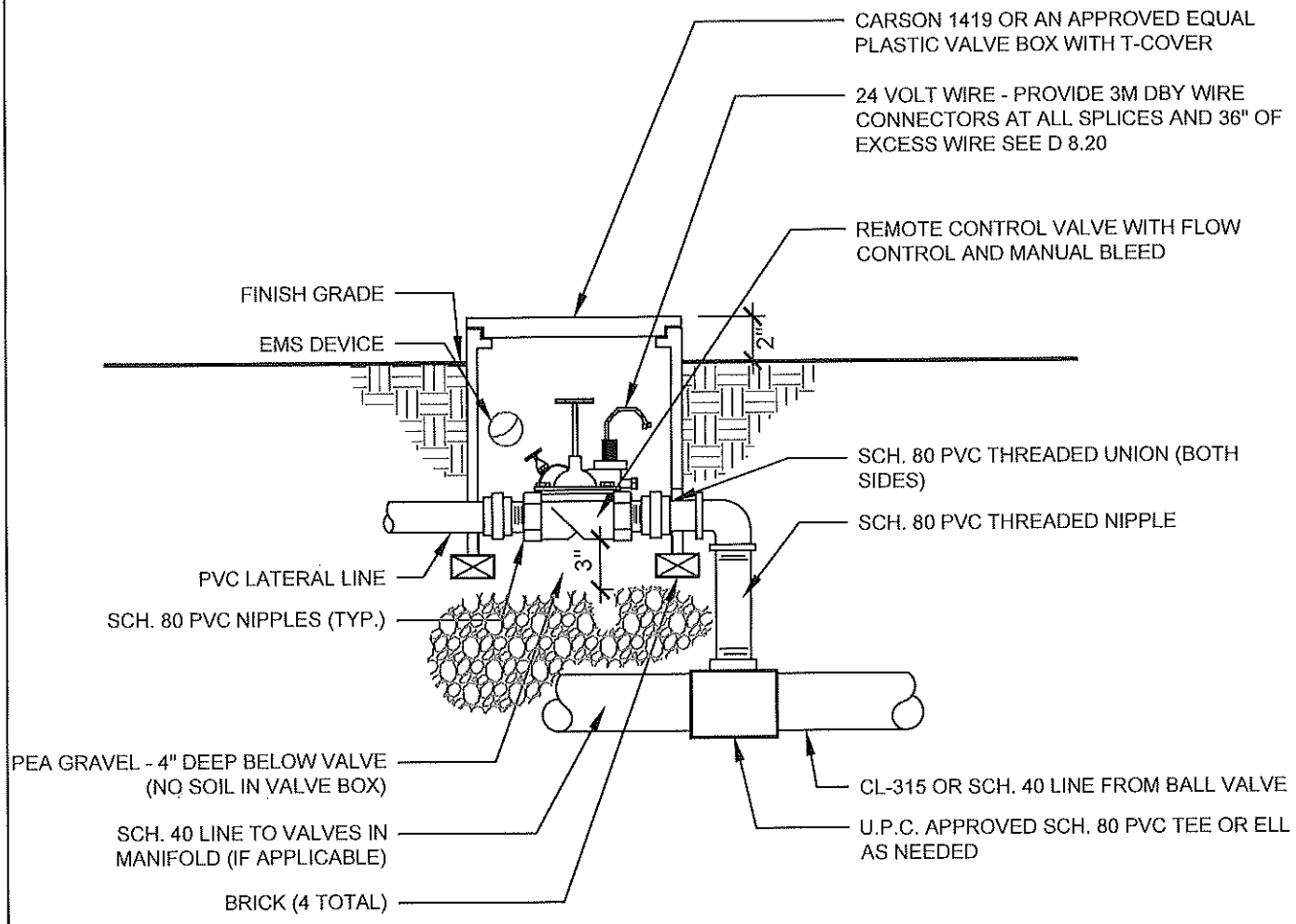
1. VALVE BOX SHALL HAVE A LOCK BOLT. VALVE BOX SHALL BE CARSON 910 WITH T COVER OR AN APPROVED EQUAL.
2. PROVIDE TWO QUICK COUPLER KEYS TO CITY AT COMPLETION OF PROJECT.
3. RAINBIRD, SPEARS OR LASCO PRE-MANUFACTURED SWING JOINTS OR AN APPROVED EQUAL.
4. PURPLE COVER SHALL BE USED WITH RECLAIMED WATER SYSTEMS.
5. HOT STAMP VALVE TOP OF VALVE BOX WITH 2" BLOCK LETTERS - QC

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REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.4 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Quick Coupling Valve**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

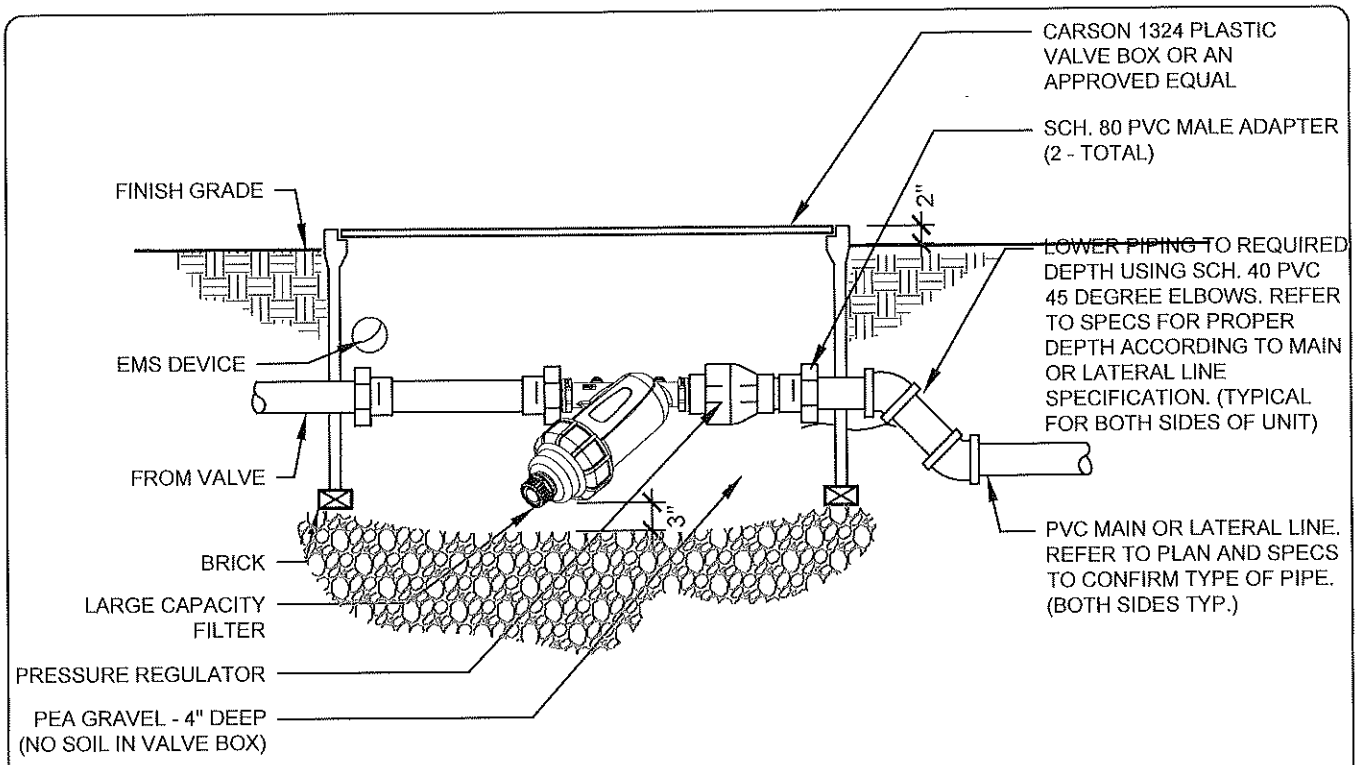
1. INSTALL AN EMS DEVICE IN THE BOX TO FACILITATE DETECTION BY A METAL DETECTOR. ATTACH CHRISTY ID MARKER OR EQUAL TO VALVE IN BOX.
2. ONLY ONE (1) REMOTE CONTROL VALVE PER BOX - NO EXCEPTIONS.
3. MAINTAIN MIN. 1/2" CLEARANCE BETWEEN VALVE BOX AND PVC LINES.
4. PROVIDE WIRE SPLICE CONNECTIONS AT ALL SPLICES PER D 8.11.
5. THREADED UNIONS TO BE SPEARS, LASCO, OR APPROVED EQUAL ONLY.
6. CONTROL WIRE SHALL BE SIZED A MINIMUM OF #14 U.L. APPROVED.
7. VALVE BOXES FOR 1 1/2" SMALLER SHALL BE CARSON 1419 MODEL WITH T-COVER LIDS OR AN APPROVED EQUAL . FOR 2" VALVES, USE CARSON 1324 MODEL WITH T-COVER LID OR AN APPROVED EQUAL
8. HOT STAMP VALVE ON TOP OF VALVE BOX WITH 2" BLOCK LETTERS WITH VALVE NUMBER.
9. PURPLE COVER SHALL BE USED WITH RECLAIMED SYSTEMS.

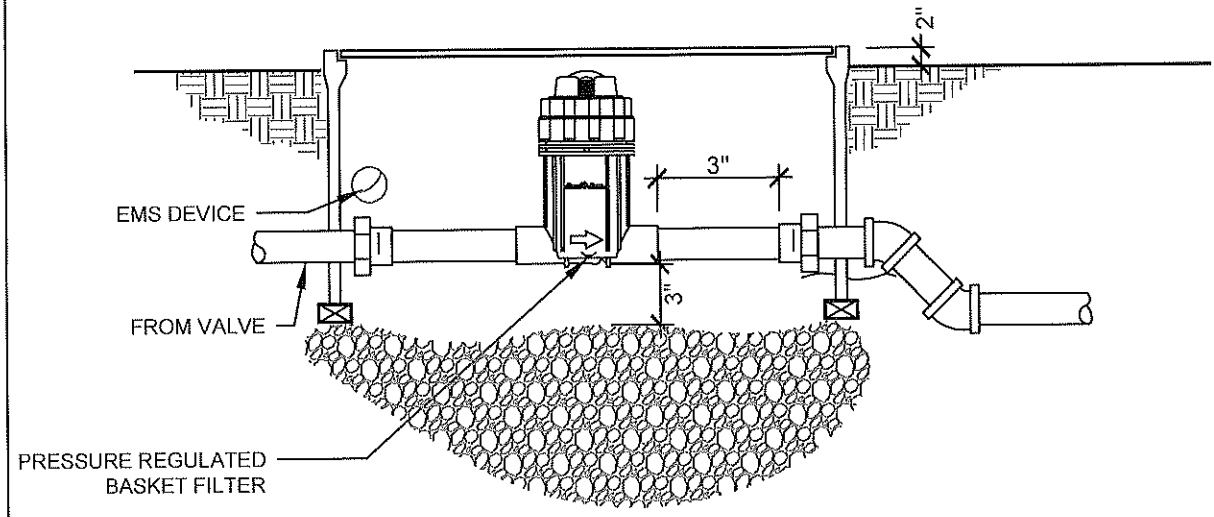
CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.5 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Remote Control Valve**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS





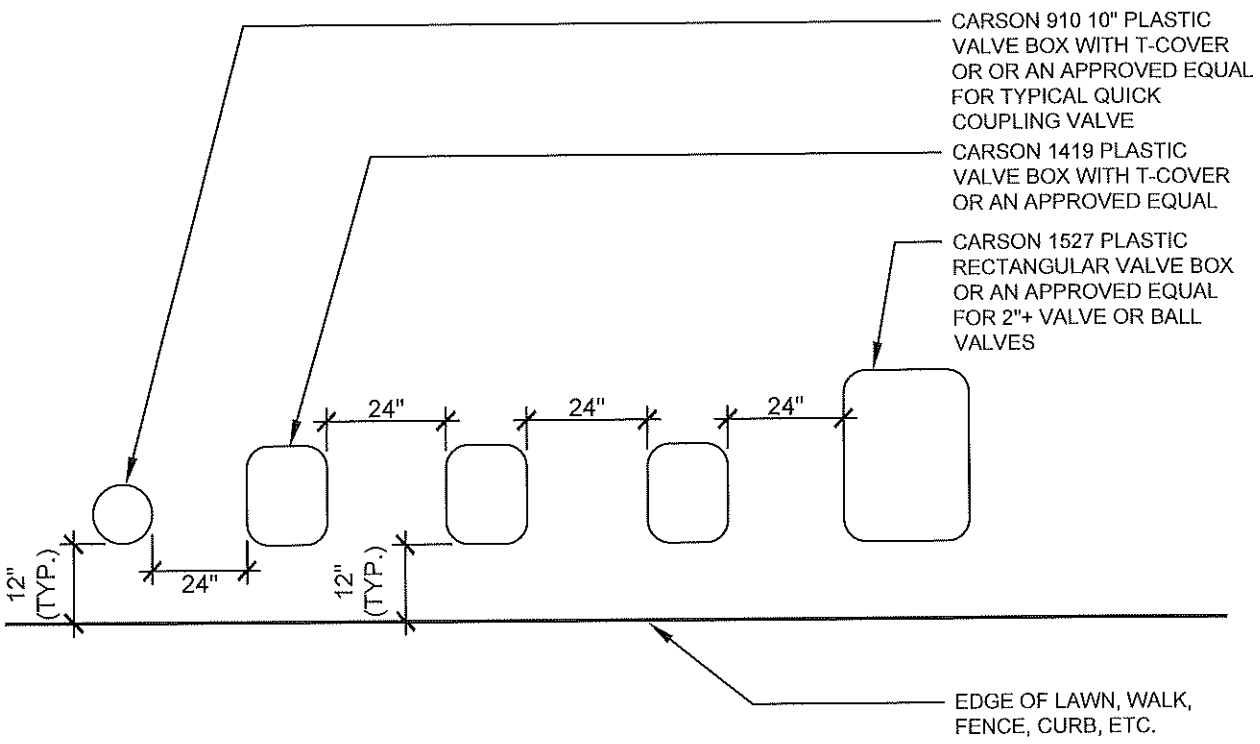
NOTES

1. PLACE MANIFOLD UNIT DOWNSTREAM OF A SINGLE DRIP VALVE.
2. RAIN BIRD PRB-QKCHK-100 (LOW FLOW), RAIN BIRD LCRBY 150/200 S W/ PSI-M40X-100 PRESSURE REGULATOR OR AN APPROVED EQUAL.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.6 Sheet 1 of 1
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	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



TOP VIEW

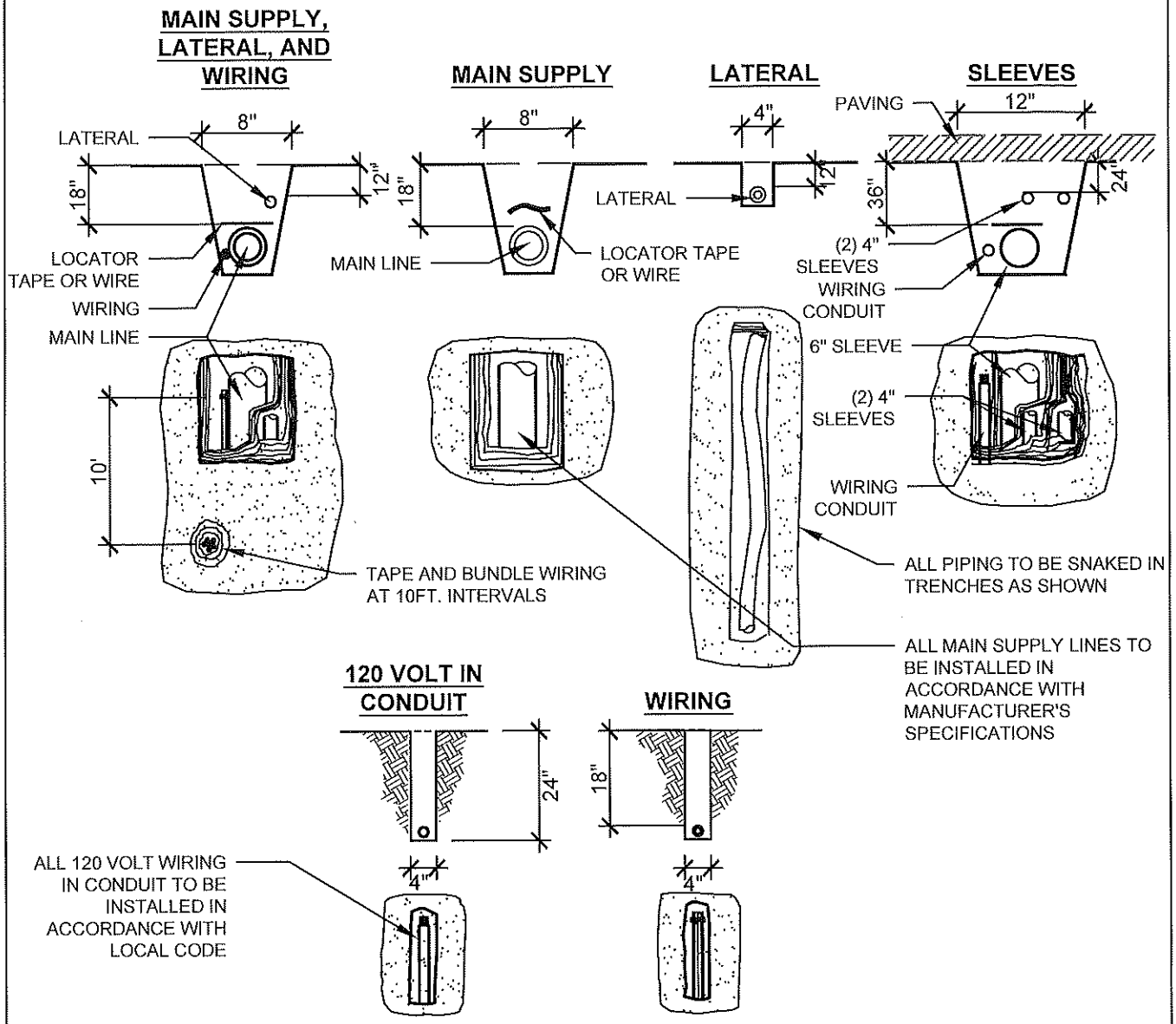
NOTES

1. HEAT BRAND ALL VALVE BOX LID INITIALS OF BOX CONTENTS AND/OR CORRESPONDING VALVE NUMBER AT CONTROLLER. EXAMPLE: QC, BV, MV, FS, C21
2. CENTER VALVE BOX OVER REMOTE CONTROL VALVE TO FACILITATE SERVICING VALVE. MAINTAIN MINIMUM 1/2" CLEARANCE BETWEEN VALVE BOX AND LATERAL LINES.
3. VALVE BOXES SHALL BE PLACED AT FINISH GRADE. USE A T-COVER LID. BOXES SHALL HAVE AN EMS DEVICE IN THE BOX TO FACILITATE LOCATION WITH METAL DETECTOR.
4. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER / SHRUB AREA WHERE POSSIBLE, INSTALL IN LAWN ONLY IF GROUND COVER DOES NOT EXIST ADJACENT TO LAWN.
5. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.
6. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
7. VALVE BOXES SHALL NOT REST ON PVC PIPE.
8. DO NOT PLACE VALVE BOXES IN VEHICULAR AREAS.
9. PURPLE VALVE LID TO BE USED WITH RECLAIMED WATER SYSTEMS.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.7 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Valve Box**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

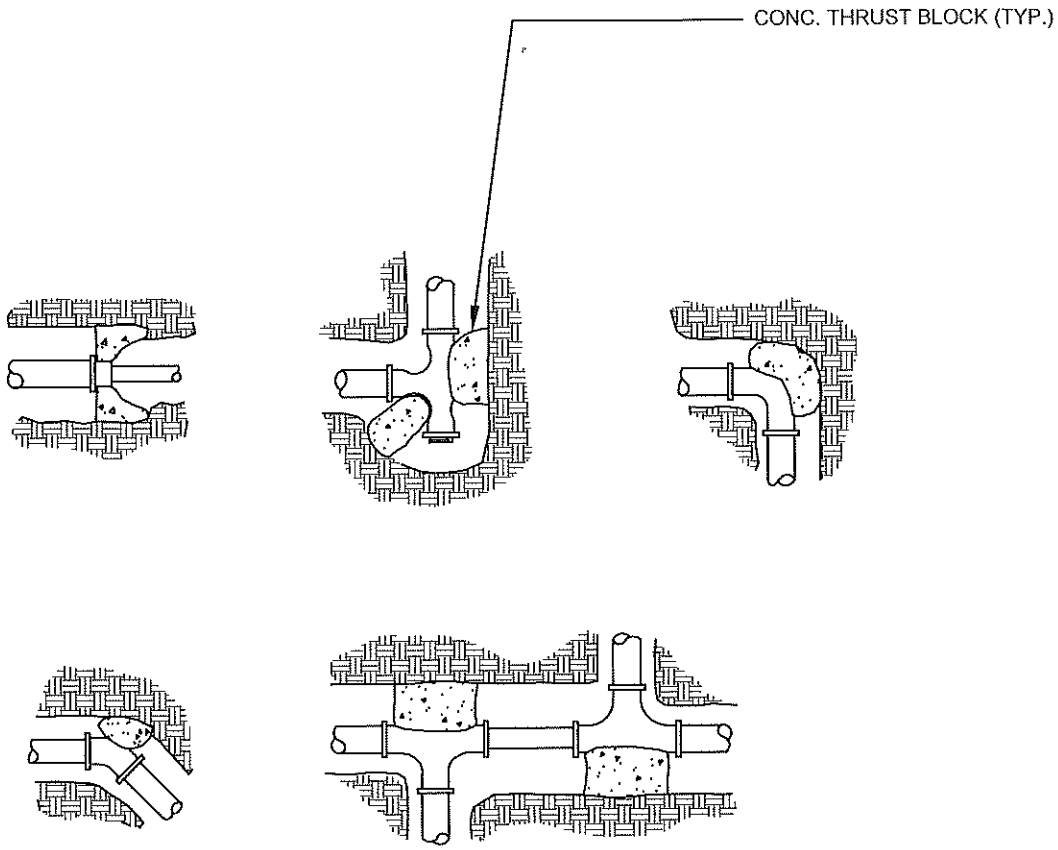
1. COMMON TRENCHING OF IRRIGATION PIPE LINE AND/OR REMOTE CONTROL VALVE WIRING TO BE DONE WHEREVER POSSIBLE.
2. MAINTAIN MINIMUM 4" SPACE BETWEEN PARALLEL PIPE LINES AND 6" BETWEEN VERTICAL MAIN LINE AND LATERAL LINES.
3. WIRING AND MAIN LINE TO BE AT SAME MINIMUM DEPTH OF 18". WHERE CONTROL IS NOT INSTALLED, INSTALL LOCATOR WIRE OR TAPE ALONG LENGTH OF MAIN.
4. UNDER CONCRETE OR PAVING, CONTROL WIRE TO BE SLEEVED SEPARATELY FROM MAINLINE OR LATERAL SLEEVES.
5. FITTINGS FOR MAINLINE 2" SMALLER TO USE SCH 40 FITTINGS, MAINLINES 2 $\frac{1}{2}$-4" TO USE SCH 80 FITTINGS, 6" AND LARGER TO BE LEEMCO STRAP FITTING OR EQUAL WITH THRUST BLOCKS.
6. INTSLL (1) ALL 6" SLEEVE AND (2) 4" SLEEVES AT EACH CROSSING, MINIMUM.

CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.8 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Trenching Detail**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



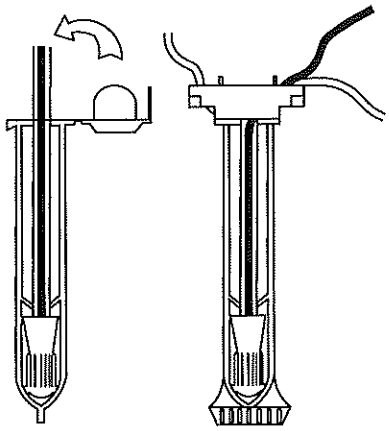
NOTES

1. INSTALL MAIN LINE AS PER MANUFACTURER'S INSTALLATION GUIDE.
2. SIZE OF CONCRETE THRUST BLOCKS SHALL BE PER PIPE MANUFACTURER'S INSTALLATION GUIDE.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.9 Sheet 1 of 1
	Res No. 2020–	DATE:February 18, 2020	**IRRIGATION** **Thrust Blocks**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



STRIP WIRES, APPLY THE ELECTRICAL CONNECTOR AND TWIST IN A CLOCKWISE DIRECTION.

INSERT THE SPLICE INTO THE GEL FILLED INSULATOR TUBE. PUSH PAST THE LOCKING FINGERS TO HOLD THE CONNECTOR IN PLACE.

POSITION WIRE INTO CHANNELS AND SNAP INSULATOR TUBE COVER CLOSED.

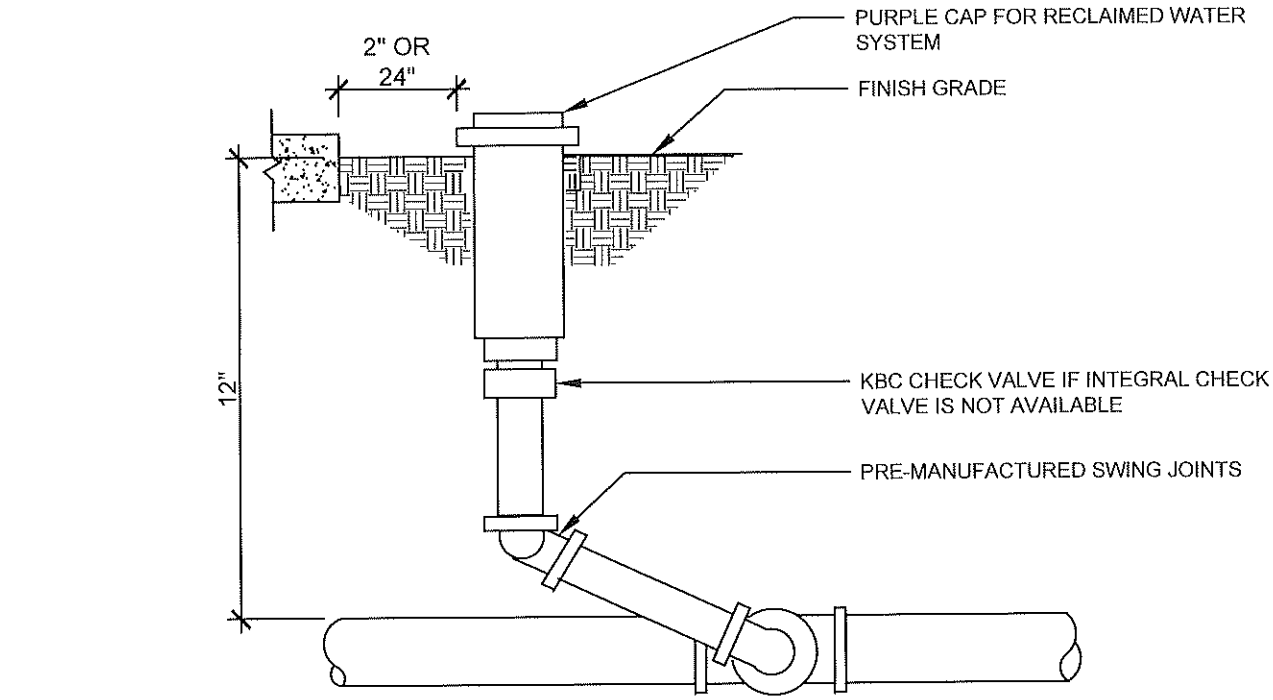
NOTES

1. ONE CONNECTOR HANDLES #10 -AWG, #12, AND #14 -AWG WIRE.
2. WIRE CONNECTOR WILL ACCEPT THREE WIRE OR TWO WIRE CONNECTIONS.
3. WIRE CONNECTORS TO BE 3M-DBY OR AN APPROVED EQUAL

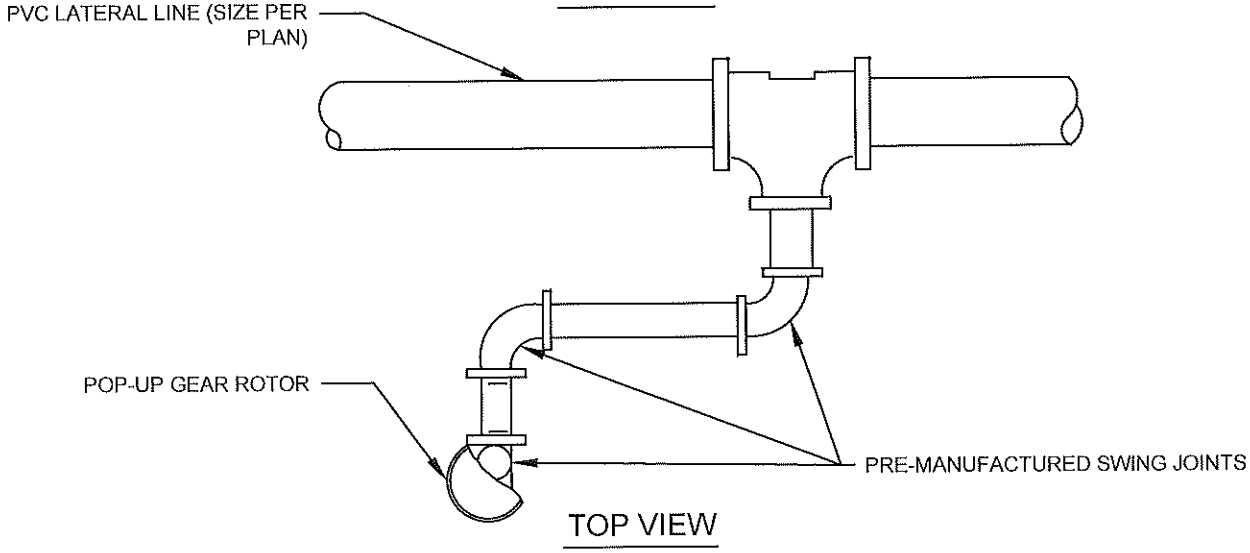
CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.10 Sheet 1 of 1
	Res No. 2020–	DATE:February 18, 2020	**IRRIGATION** **Wire Connector**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SIDE VIEW



TOP VIEW

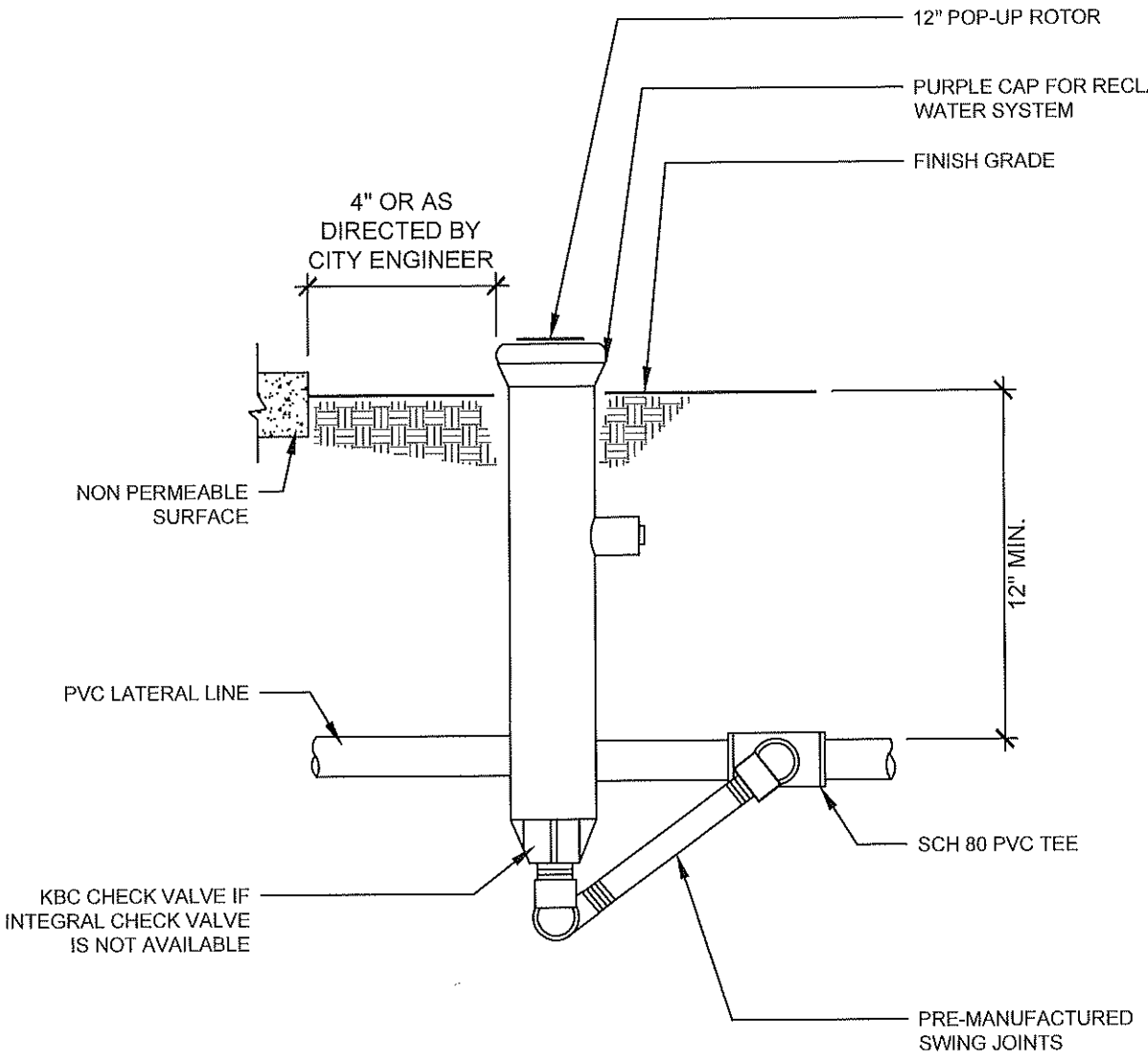
NOTES

1. SPRINKLER SHALL HAVE INTEGRAL CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
2. SET SPRINKLERS 1" ABOVE FINISH GRADE AT TIME OF INSTALLATION.
3. RB-TSJ-12 OR PRE MANUFACTURED SWING JOINTS.
4. OVEREAD IRRIGATION SHALL NOT BE PLACED WITHIN 24" OF ANY NON PERMEABLE SURFACE UNLESS THE ADJACENT NON PERMEABLE SURFACE DRAINS TO A LANDSCAPE SPACE, OR ADJACENT NON-RENEWABLE SURFACE DRAINS BACK TO THE LANDSCAPE AREA.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.11 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Popup Gear Rotor**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



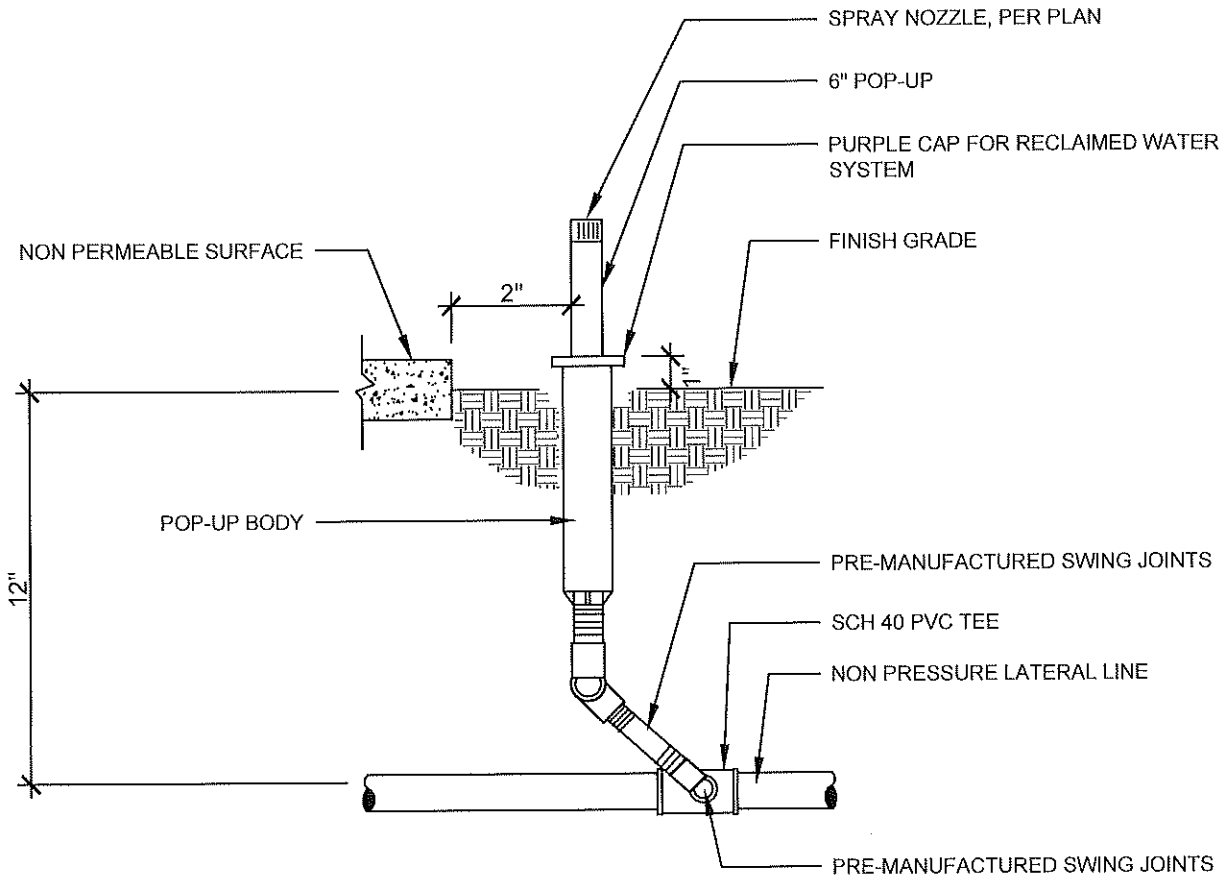
NOTES

1. SPRINKLER TO HAVE INTEGRAL CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
2. SPRINKLER TO HAVE INTEGRAL PRESSURE REGULATION.
3. IRRIGATION HEADS TO BE SET 1" ABOVE FINISH GRADE.
4. PRE-MANUFACTURED SWING JOINTS, RB-SA125050, RB-SA 125075 OR EQUAL.
4. OVEREAD IRRIGATION SHALL NOT BE PLACED WITHIN 24" OF ANY NON PERMEABLE SURFACE UNLESS THE ADJACENT NON PERMEABLE SURFACE DRAINS TO A LANDSCAPE SPACE, OR ADJACENT NON-RENEWABLE SURFACE DRAINS BACK TO THE LANDSCAPE AREA.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.12 Sheet 1 of 1
	Res No. 2020--	DATE: February 18, 2020	**IRRIGATION** **12" Popup Shrub Rotor**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



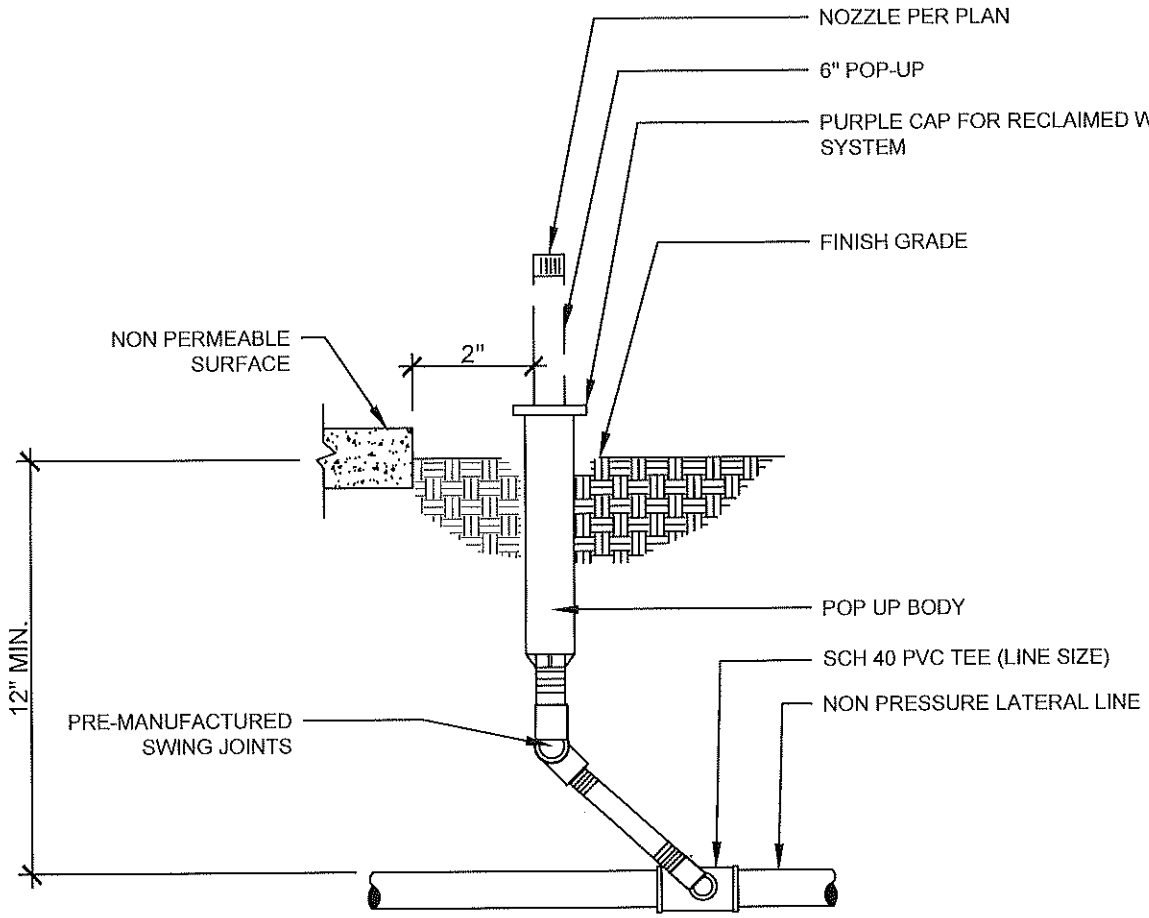
NOTES

1. SPRINKLER TO HAVE INTEGRAL CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
2. SPRINKLER TO HAVE INTEGRAL PRESSURE REGULATION.
3. IRRIGATION HEADS TO BE SET 1" ABOVE FINISH GRADE IN SODDED AREA.
4. PRE-MANUFACTURED SWING JOINTS, RB-SR125050, RB-SR125075 OR EQUAL.
4. OVEREAD IRRIGATION SHALL NOT BE PLACED WITHIN 24" OF ANY NON PERMEABLE SURFACE UNLESS THE ADJACENT NON PERMEABLE SURFACE DRAINS TO A LANDSCAPE SPACE, OR ADJACENT NON-RENEWABLE SURFACE DRAINS BACK TO THE LANDSCAPE AREA.
5. NO SPRAY IRRIGATION SHALL BE USED IN AREAS LESS THAN 10' IN ANY DIRECTION.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.13 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **6" Pop-Up Lawn Spray**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

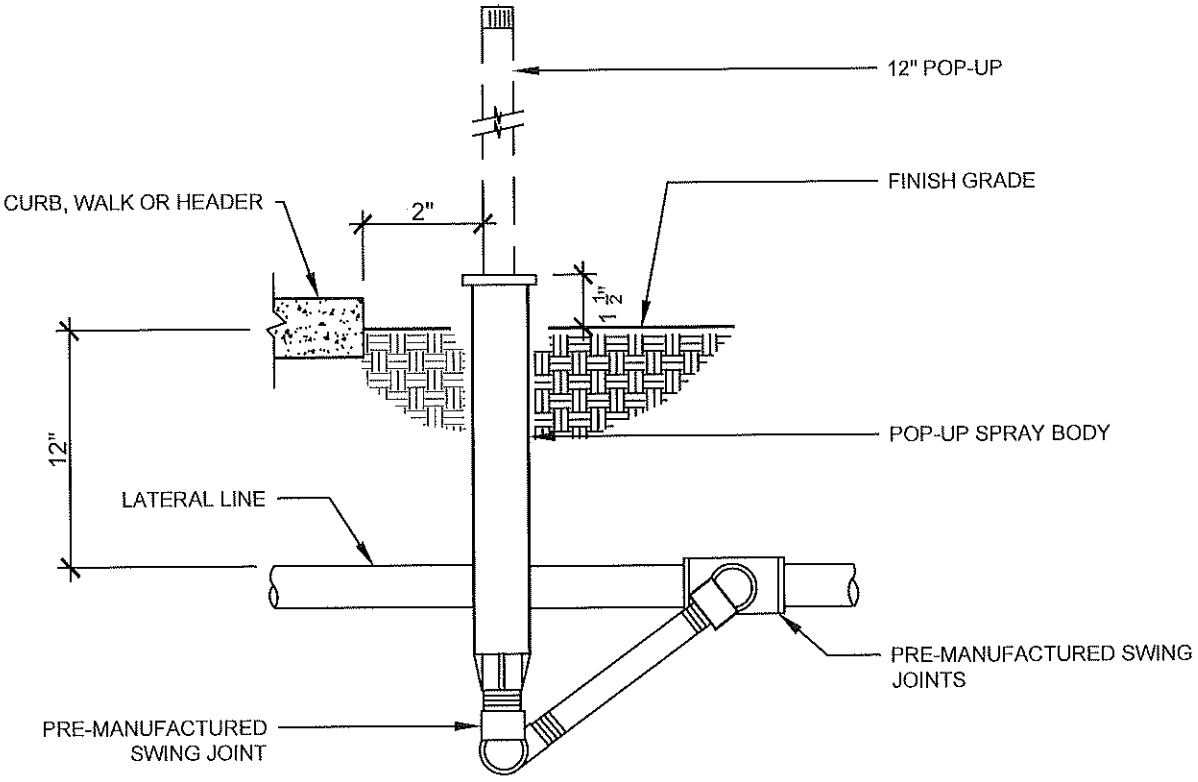
1. SPRINKLER TO HAVE INTEGRAL CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
2. SPRINKLER TO HAVE INTEGRAL PRESSURE REGULATION
3. IRRIGATION HEADS TO BE SET 1" ABOVE FINISH GRADE.
4. PRE-MANUFACTURED SWING JOINTS, RB-SR125050, RB-SR125075 OR EQUAL.
4. OVERHEAD IRRIGATION SHALL NOT BE PLACED WITHIN 24" OF ANY NON PERMEABLE SURFACE UNLESS THE ADJACENT NON PERMEABLE SURFACE DRAINS TO A LANDSCAPE SPACE, OR ADJACENT NON-RENEWABLE SURFACE DRAINS BACK TO THE LANDSCAPE AREA.
5. NO SPRAY IRRIGATION SHALL BE USED IN AREAS LESS THAN 10' IN ANY DIRECTION.

CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.14 Sheet 1 of 1
Res No. 2020--	DATE: February 18, 2020	**IRRIGATION** **6" Popup Shrub Spray** **(Retrofit Areas only)**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



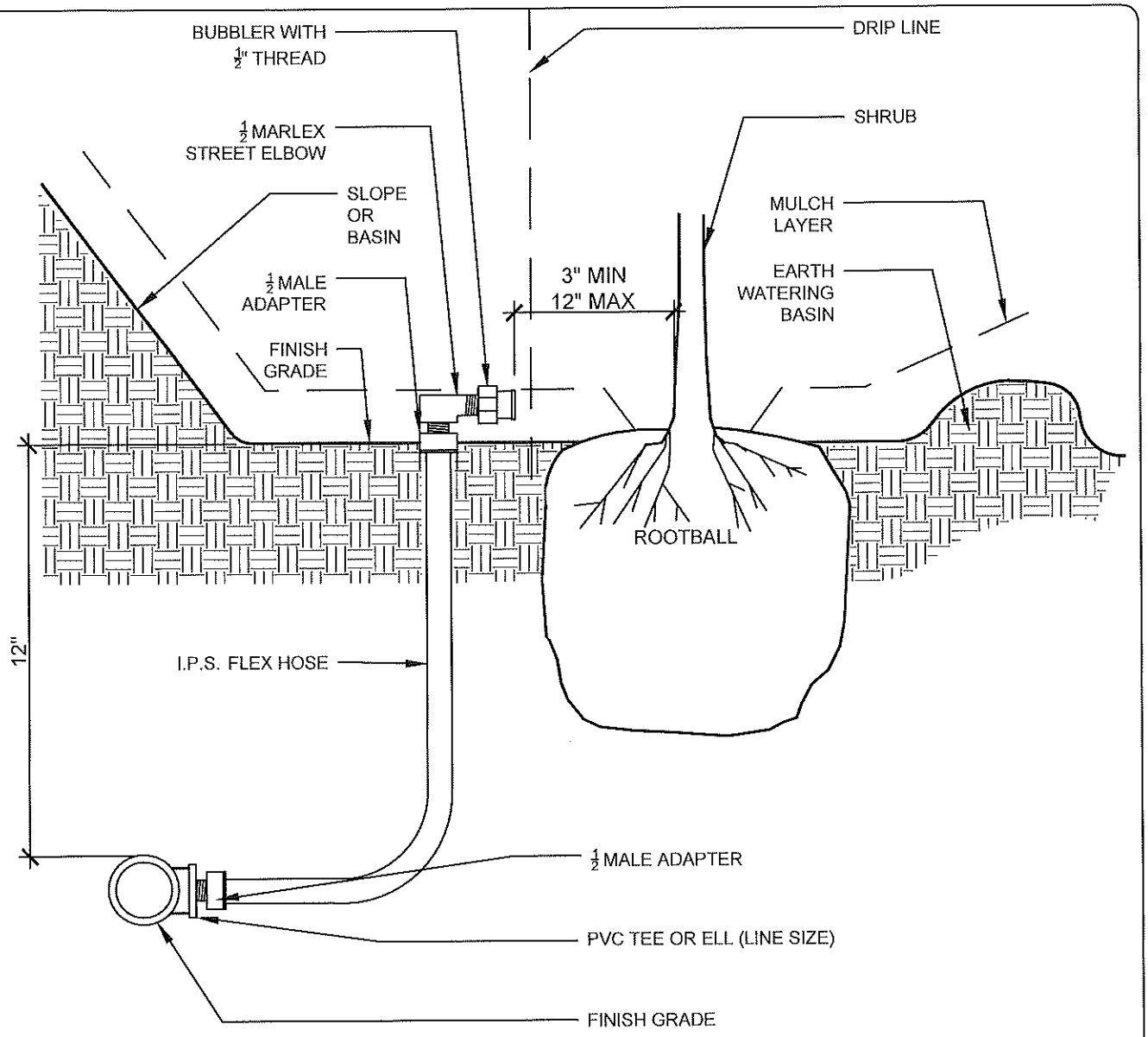
NOTES

1. SPRINKLER TO HAVE INTEGRAL CHECK VALVE TO PREVENT LOW HEAD DRAINAGE.
2. IRRIGATION HEADS TO BE SET 1" ABOVE FINISH GRADE.
3. PRE-MANUFACTURED SWING JOINTS, RB-SR125050, RB-SR125075 OR EQUAL.
4. OVEREAD IRRIGATION SHALL NOT BE PLACED WITHIN 24" OF ANY NON PERMEABLE SURFACE UNLESS THE ADJACENT NON PERMEABLE SURFACE DRAINS TO A LANDSCAPE SPACE, OR ADJACENT NON-RENEWABLE SURFACE DRAINS BACK TO THE LANDSCAPE AREA.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.15 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **12" Popup Shrub Spray** **(Retrofit Areas only)**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

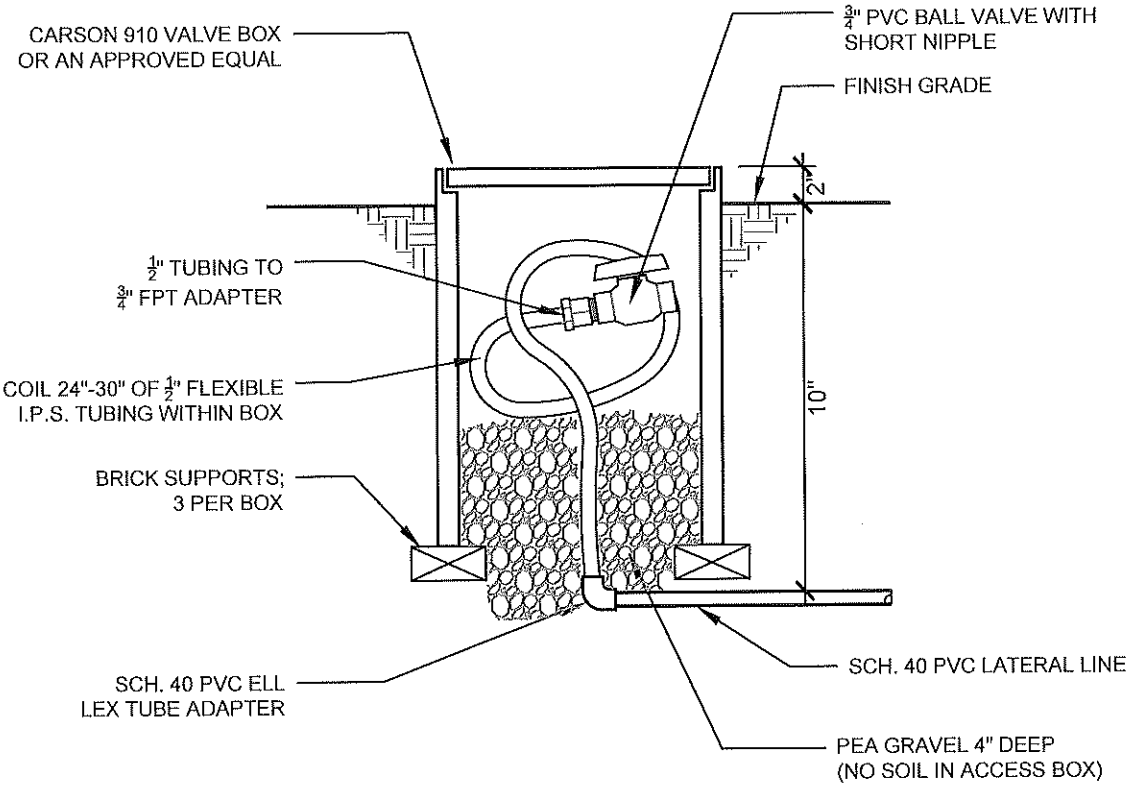
1. FOR BUBBLER TO SHRUBS OR GROUNDCOVER WHERE APPLICABLE.
2. INSTALL ONE BUBBLER PER PLANT.
3. INSTALL NOZZLE AT DRIP LINE OF PLANT WITHIN BASIN.
4. USE LOWER FLOW BUBBLERS WHERE PERCOLATION RATES ARE LOW.
5. USE CEMENT APPROVED FOR I.P.S. FLEX HOSE.
6. NO SPLICING OF I.P.S. TUBING
7. BUBBLERS SHALL HAVE INTEGRAL CHECK VALVE. MINIMUM FLOW RATE 4 G.P.H.

CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.16 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Shrub Bubbler**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



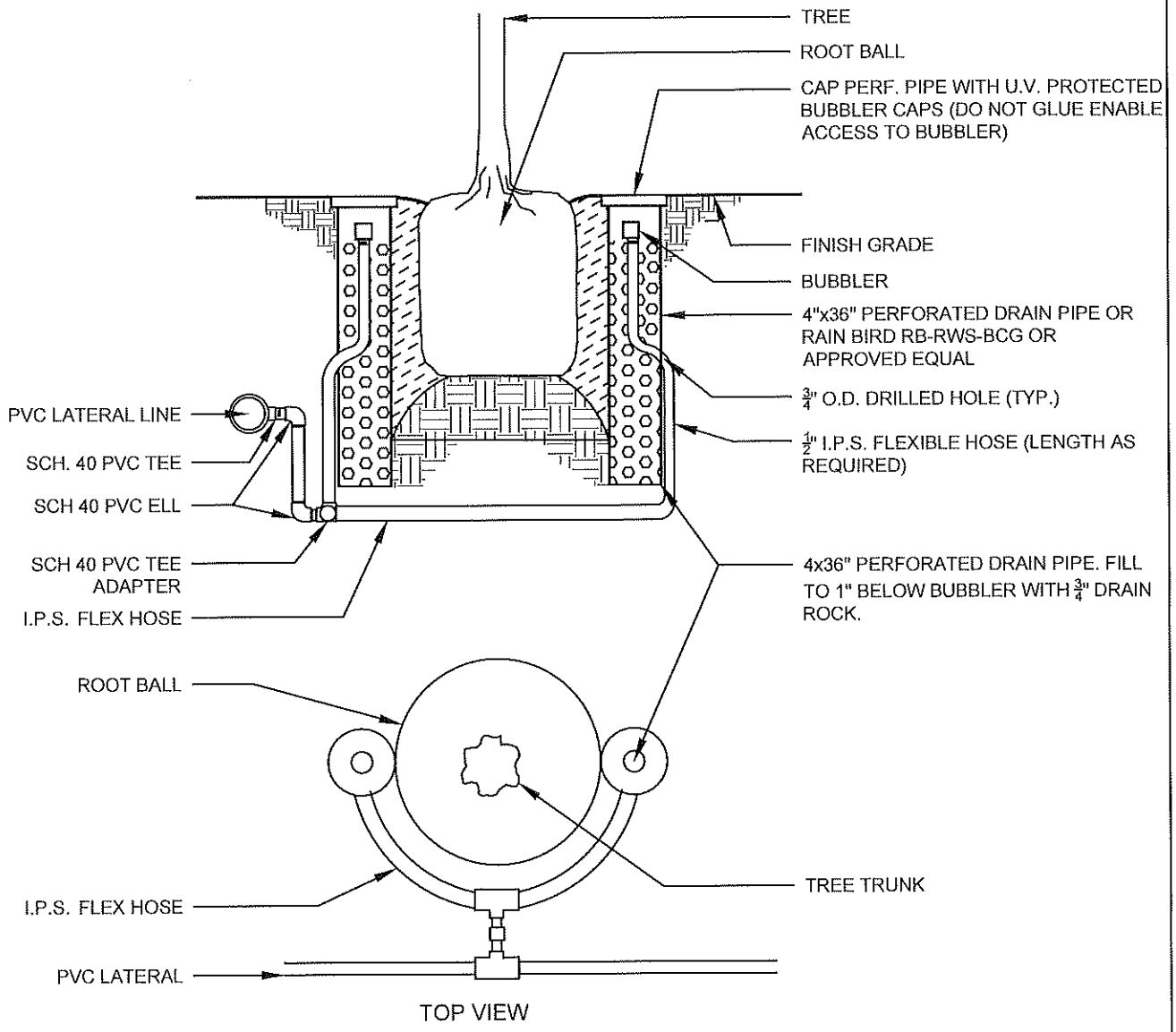
NOTES

1. THIS FLUSH VALVE IS TYPICAL FOR ALL LATERAL ENDS IN BUBBLER SYSTEM.
2. USE CEMENT APPROVED FOR I.P.S. FLEX HOSE AND PVC ONLY.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.17 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Flush Valve**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



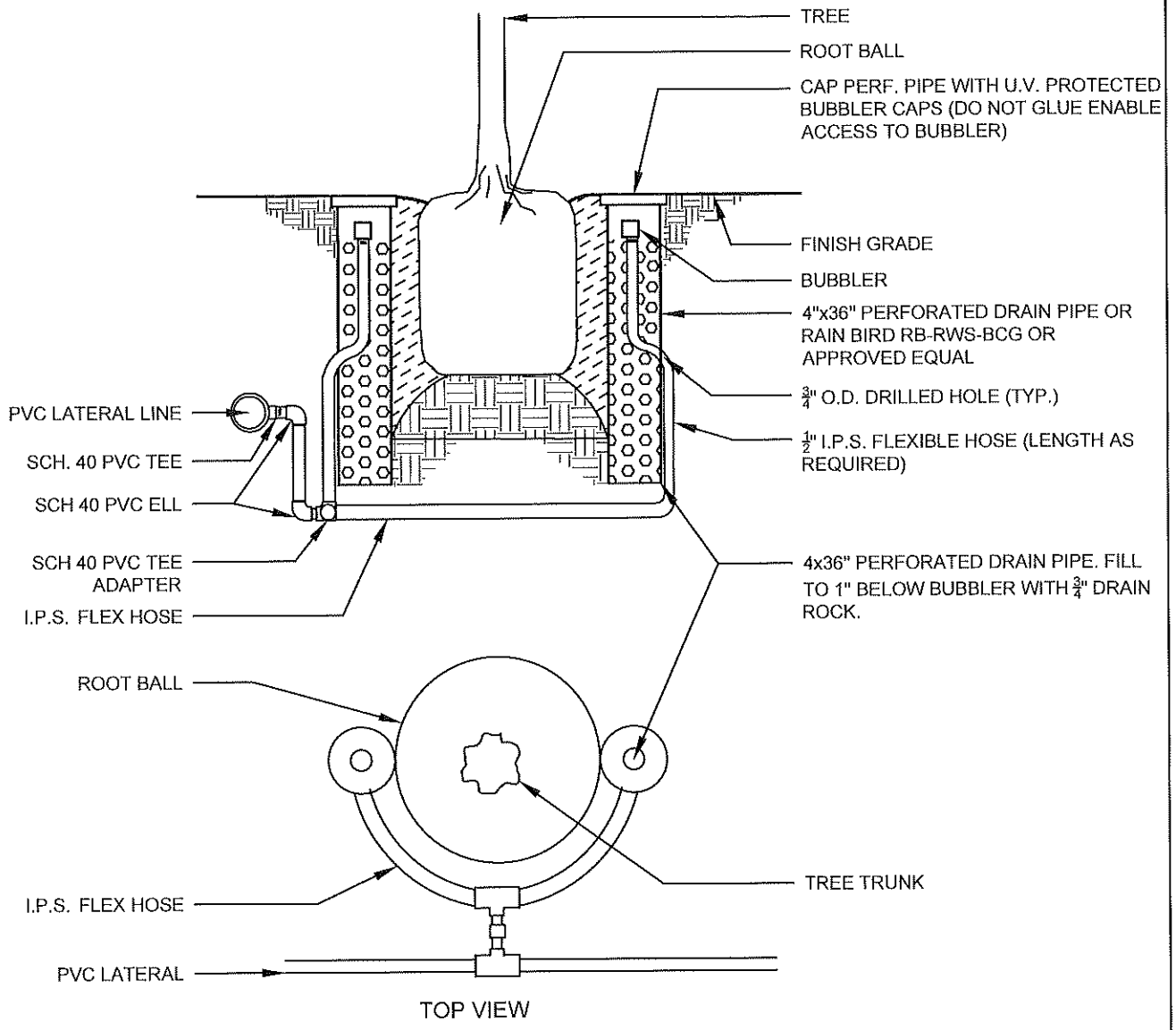
NOTES

1. BUBBLERS ARE REQUIRED FOR TREES IN LAWN AND SHRUB AREAS. TWO BUBBLERS PER TREE ARE TO BE PLACED ON OPPOSITE SIDES OF ROOTBALL. ORIENT BUBBLERS 180 DEGREES FROM EACH OTHER.
2. WHERE ROOT BARRIERS ARE REQUIRED, INSTALL PER DETAIL D 7.4.
3. USE PROPER RATED GLUE FOR I.P.S. FLEX HOSE.
4. RAIN BIRD RB-RWS-BCG 4"x36" ROOT WATERING SYSTEM OR APPROVED EQUAL.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.18 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**IRRIGATION** **Tree Bubblers in Areas With Surface Spray**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

1. BUBBLERS ARE REQUIRED FOR TREES IN LAWN AND SHRUB AREAS. TWO BUBBLERS PER TREE ARE TO BE PLACED ON OPPOSITE SIDES OF ROOTBALL. ORIENT BUBBLERS 180 DEGREES FROM EACH OTHER.
2. WHERE ROOT BARRIERS ARE REQUIRED, INSTALL PER DETAIL D 7.4.
3. USE PROPER RATED GLUE FOR I.P.S. FLEX HOSE.
4. RAIN BIRD RB-RWS-BCG 4"x36" ROOT WATERING SYSTEM OR APPROVED EQUAL.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 8.19 Sheet 1 of 1
	Res No. 2020–	DATE:February 18, 2020	**IRRIGATION** **Tree Bubblers in Areas With Surface Spray**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

SIGNAGE GUIDELINES

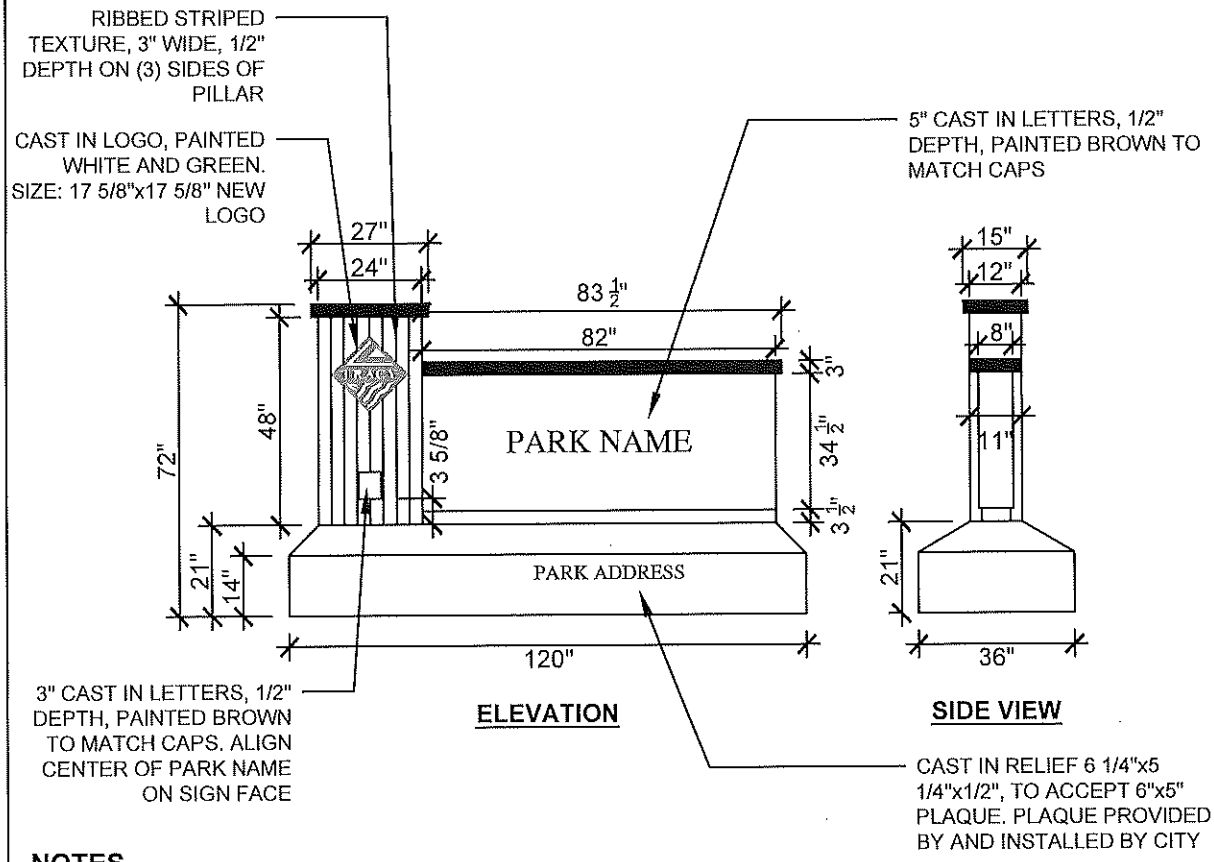
1. ONE PARK SIGN MINIMUM SHALL BE PROVIDED AT PARK ENTRY. DESIGN SHALL BE PER D 9.1 FOR PARK LESS THAN 5 (FIVE) ACRES IN SIZE. DESIGN SHALL BE PER D 9.2 FOR PARKS LARGER THAN 5 (FIVE) ACRES. COLORS TO BE PER D 9.1 OR D 9.2 UNLESS OTHERWISE SPECIFIED.

2. SIGNS CAN BE ORDERED THROUGH OUTDOOR CREATIONS, INC. (530)365-6106 OR APPROVED EQUALALL SIGN TEXT, ARTWORK AND COLOR SELECTION SHALL BE FINALIZED WITH THE PARKS & RECREATION DEPARTMENT & APPROVED BY THE CITY, PRIOR TO ORDERING THE SIGN.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 9.0 Sheet 1 of 1
	Res No. 2020–	DATE: February 18, 2020	**SIGNAGE** **General Guidelines**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



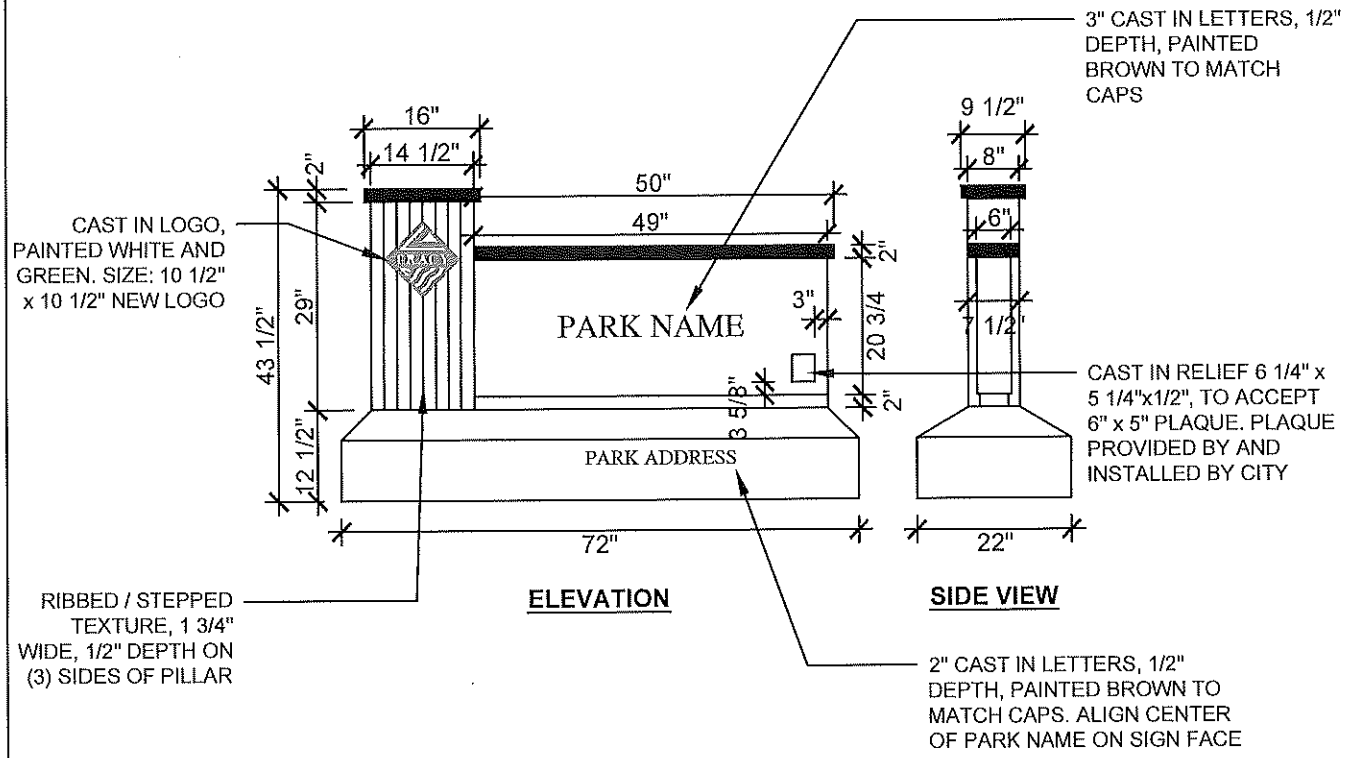
NOTES

1. FONT SHALL GOUDY OLD STYLE OR AN APPROVED EQUAL.
2. PAINT COLORS: WHITE, GREEN: PPG 1226 7 BLARNEY STONE, BROWN: PPG 1075 6 POPPY PODS (APPROXIMATE TO CAP COLOR).
3. WEIGHT: SIGN W/CAP: 1870LBS, PILLAR W/CAP: 1174LBS, BASE: 6500LBS
4. TEXTURE: LIGHT SANDBLAST.
5. COLOR: SIGN/BASE/PILLAR: INCRETE DESERT TAN, CAPS: INCRETE AUTUMN BROWN, SEALER: NANO TECH BARRIER.
6. CONCRETE FOOTING, REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR PER MANUFACTURES'S RECOMMENDATION OR OTHERWISE CAS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, AND APPROVED BY CITY ENGINEER.
7. CONTRACTOR TO PROVIDE SHOP DRAWING AND SUBMIT FOR APPROVAL.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 9.1 Sheet 1 of 2
	Res No. 2020–	DATE: February 18, 2020	**SIGNAGE** **Park Monument Sign** **Park Sites 10 Acer and Larger**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



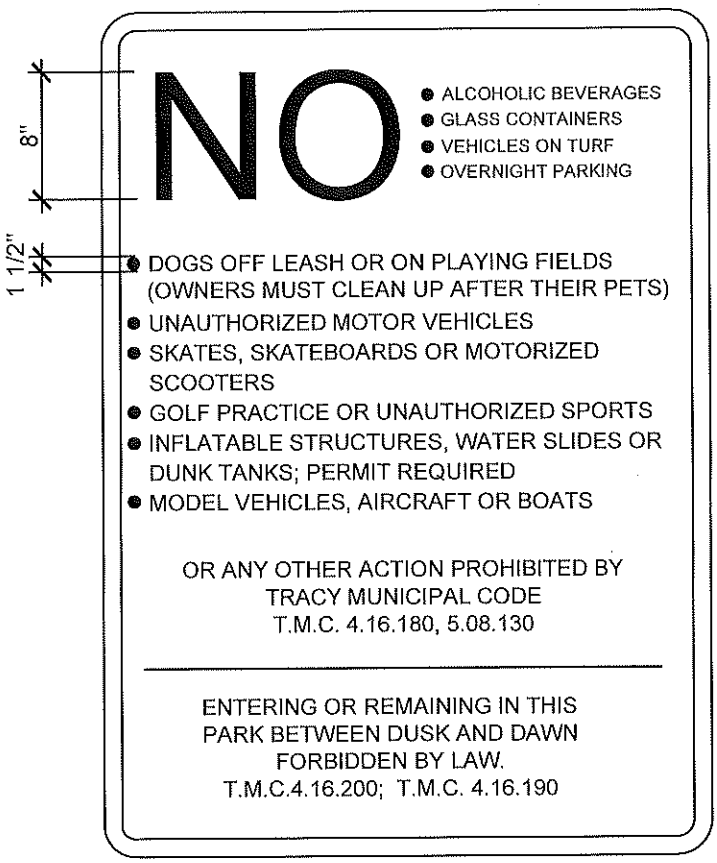
NOTES

1. FONT SHALL GOUDY OLD STYLE OR AN APPROVED EQUAL.
2. PAINT COLORS: WHITE, GREEN: PPG 1226 7 BLARNEY STONE, BROWN: PPG 1075 6 POPPY PODS (APPROXIMATE TO CAP COLOR)
3. WEIGHT: SIGN W/CAP: 1870LBS, PILLAR W/CAP: 1174LBS, BASE: 6500LBS
4. TEXTURE: LIGHT SANDBLAST
5. COLOR: SIGN/BASE/PILLAR: INCRETE DESERT TAN, CAPS: INCRETE AUTUMN BROWN, SEALER: NANO TECH BARRIER
6. CONCRETE FOOTING, REINFORCEMENT, COMPACTION, & THICKNESS OF BASE, SUB GRADE OR PER MANUFACTURES'S RECOMMENDATION OR OTHERWISE CAS DIRECTED BY GEO-TECHNICAL REPORT, STRUCTURAL ENGINEER, AND APPROVED BY CITY ENGINEER.
7. CONTRACTOR TO PROVIDE SHOP DRAWING AND SUBMIT FOR APPROVAL.

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 9.1 Sheet 2 of 2
	Res No. 2020–	DATE: February 18, 2020	**SIGNAGE** **Park Monument Sign** **Park Sites 10 Acer and Smaller**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



SEPARATE SIGN TO BE INSTALLED SHALL READ:

IT IS PUNISHABLE BY FINE TO SMOKE OR DISPOSE OF ANY TOBACCO OR PLANT RELATED PRODUCTED INTENDED FOR INHALATION, WHETHER NATURAL OR SYNTHETIC, IN ANY MANNER OR FORM WITHIN A PUBLIC PARK OR PLAYGROUND. HEALTH & SAFETY CODE 1104495

SEPARATE SIGN TO BE INSTALLED IN:

SPORTS FACILITIES OR AT SPORTS FIELDS IN PARKS AS REQUIRED.

NOTES

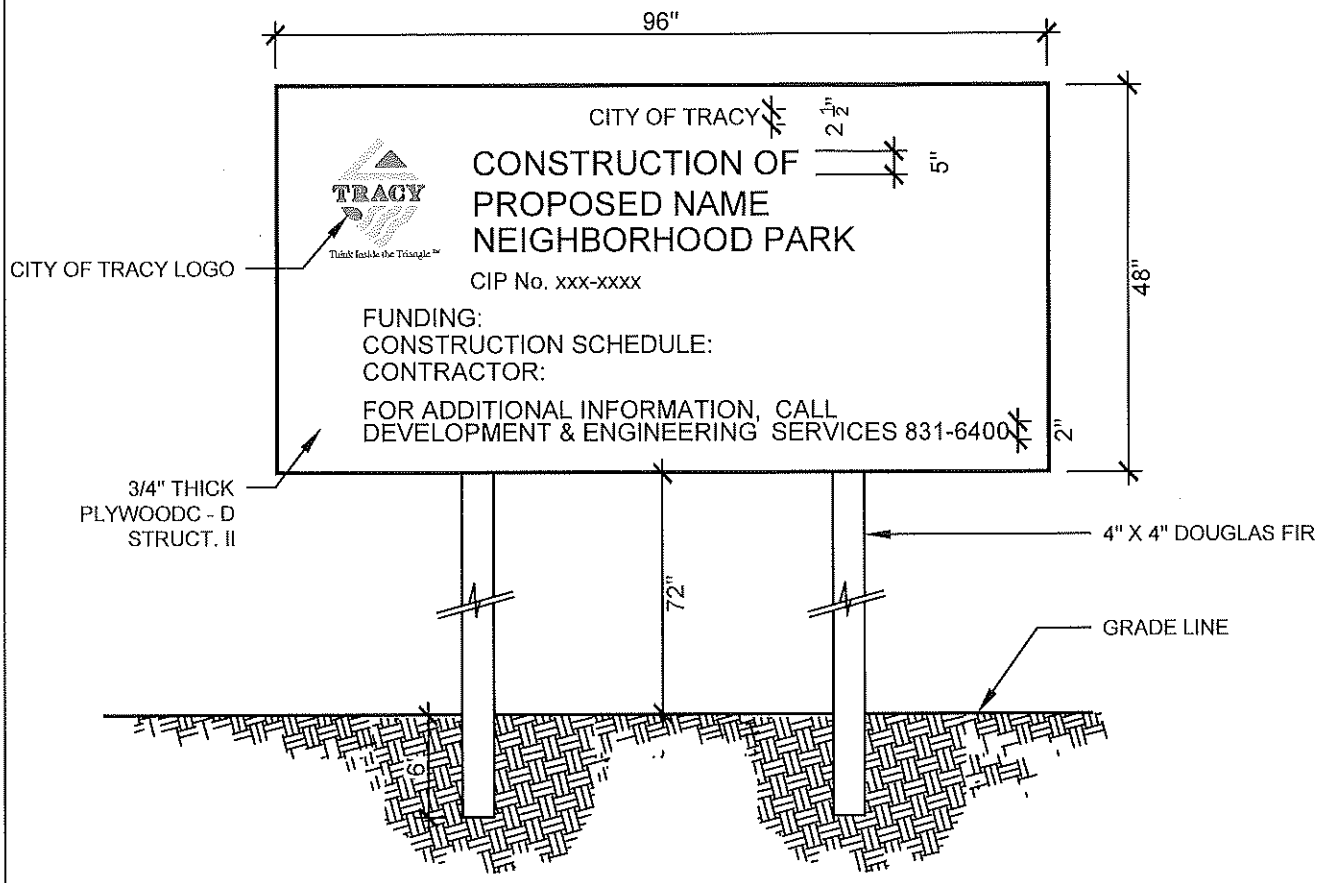
1. SIZE OF SIGN SHALL BE 24"X36" IN SIZE.
2. BACKGROUND SHALL BE BLUE
3. LETTERS SHALL BE HELVETICA COMPRESSED TYPE, WHITE 1 1/2" TALL
4. WORDING SHALL BE PER CURRENT CITY CODE.
5. SIGNS SHALL BE PLACED PER CITY'S DIRECTION. VERIFY WITH ENGINEER.
6. SIGN MATERIAL TO BE .125" ALUMINUM
7. APPLY GRAFITTI COATING TO SIGNS
8. CONTACT CITY ENGINEER FOR SAMPLE LETTERING, COLOR AND VERICATION OF WORDING.
9. SEPARATE SIGNAGE MAY BE REQUIRED AT A SPORTS FACILITY. CONTACT CITY ENGINEER FOR CURRENT SIGNAGE WORDING.

CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 9.2 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**SIGNAGE** **Park Law Signs**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS



NOTES

1. BACKGROUND - WHITE
2. LETTERS - BLACK
3. THICKNESS OF LETTERS SHALL BE AS FOLLOWS:
   A. PROJECT NAME - 1".
   B. ALL OTHER LOCATIONS - 1/2".
2. COORDINATE WITH THE CITY ENGINEER FOR EXACT LETTERING OF THE PROJECT BEFORE CONSTRUCTION.
3. SHALL BE USED FOR CIP PROJECTS ONLY

CITY OF TRACY

TRACY Think Inside the Triangle™	REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 9.3 Sheet 1 of 1
	Res No. 2020–	DATE:February 18, 2020	**SIGNAGE** **Project Sign Board**
	Rev: Lyle C.	Rev:	
	Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

GENERAL LIGHTING GUIDELINES

1. SECURITY OR DECORATIVE LIGHTING INSTALLATION IN A PARK WILL BE RECOMMENDED FOR INCLUSION IN THE DESIGN BASED ON THE DISCRETION OF THE CITY ENGINEER. WITH FINAL RECOMMENDATIONS MADE TO THE PARKS COMMISSION. LIGHTING WILL BE EVALUATED AND DETERMINED ON A SITE BY SITE BASIS.

2. ALL LIGHTING DESIGN SHALL BE REVIEWED WITH CITY STAFF WITH REGARD TO MAINTENANCE AND UTILITY COSTS.

4. ALL LIGHT SOURCES SHALL BE DESIGNED AND ORIENTED SO AS TO SHIELD NEIGHBORING RESIDENCES FROM LIGHT TO THE EXTENT POSSIBLE.

5. CONSULTANT MUST PROVIDE DETAILS FOR PROPOSED FIXTURES, ONCE FIXTURE TYPE IS DETERMINED. ALL LIGHTING LAYOUTS, DESIGN AND SPECIFICATIONS SHALL BE DONE BY A LICENSED ELECTRICAL ENGINEER ON A SITE-BY-SITE BASIS TO MEET SITE DESIGN REQUIREMENTS.

6. ALL LIGHT FIXTURES AND COMPONENTS SHALL BE APPROVED BY U.L. (UNDERWRITERS LABORATORIES).

7. ALL TRANSFORMERS, JUNCTION BOXES, AND ASSOCIATED APPURTENANCES SHALL BE BELOW-GRADE OR INTEGRAL WITH FIXTURE WHEREVER POSSIBLE AND WHERE PERMITTED BY CODE. WHERE SEPARATE APPURTENANCES ARE REQUIRED, THEY SHALL BE PAINTED FLAT BLACK AND LOCATED AWAY FROM DIRECT VIEW. ALL CONDUIT SHALL BE BURIED BELOW GRADE, OR HIDDEN INSIDE STRUCTURES.

8. NO LIGHTING OR ELECTRICAL APPURTENANCES SHALL BE PLACED IN OR ON TREES.

9. LIGHTING MANUFACTURER SHALL BE EMCO LIGHTING ERA ECOROUND SERIES OR EQUAL; 10, 20, OR 30', HEIGHT AS SPECIDIED.

10. LIGHT SOURCES SHALL BE AS FOLLOWS:
A. STREET LIGHTS - PER CITY STANDARD
B. PARK AREA LIGHTING - LED
C. INTEGRAL SIGNAGE LIGHTING - LED
D. SPORTS FIELD LIGHTING - MUSCO

11. ALL LIGHTING SHALL BE STANDARD VOLTAGE (120V, 240V). NO LOW-VOLTAGE LIGHTING (12V) SHALL BE PROVIDED.

12. ALL LIGHTING CONTROL IN PARKS SHALL BE IN THE DESIGNATED STORAGE AREA WITHIN RESTROOM STRUCTURE OR WITHIN THE STAINLESS STEEL IRRIGATION CONTROLLER ENCLOSURE. LIGHTS SHALL BE DESIGNED WITH PHOTOCELL FOR SECURITY LIGHTING AND TIMER WHEN LIGHTS ARE USED THROUGHOUT THE PARK.

13. DESIGN SHALL SPECIFY COORDINATION OF INSTALLATION WITH BUILDING DIVISION. ALL COMPLETED WORK SHALL BE INSPECTED BY CITY'S BUILDING DIVISION FOR CONFORMANCE. A BUILDING PERMIT IS REQUIRED FOR ALL ELECTRICAL WORK.

CITY OF TRACY

TRACY
Think Inside the Triangle™

REVIEWED BY: Robert Armijo CITY ENGINEER RCE 63173		DETAIL No. D 10.0 Sheet 1 of 1
Res No. 2020–	DATE: February 18, 2020	**LIGHTING** **General Guidelines**
Rev: Lyle C.	Rev:	
Rev:	Rev:	

PARKS AND STREETSCAPE STANDARD PLANS

CITY OF TRACY
STREETSCAPE DESIGN GUIDELINES

A GUIDELINE FOR IMPROVEMENTS AND RENOVATIONS TO NEW AND EXISTING STREETSCAPES



PREPARED BY
CITY OF TRACY

ACKNOWLEDGMENTS

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PREFACE

The City of Tracy is a great place to live. With a strong Downtown, high quality educational facilities, low crime rate, and beautiful public facilities, the City welcomes people of all backgrounds.

Streetscape design presents the first impression of our City to visitors and new residents alike. The City strives to grow its unique, hometown feel by creating residential neighborhoods that provide a true sense of place. Well-designed streetscapes reinforce this vision by blending appropriately chosen natural and built element to create a cohesive aesthetic.

The City of Tracy's streetscapes must be attractive, safe, and walkable. At the same time, streetscapes must seek to contribute to the City's unique character, a mix of historic charm and contemporary sensibilities. Features such as quality site amenities and materials, combined with planting that will thrive in the local climate, demonstrates the City's investment in its public realm. Consistent use of current best practices in lighting and irrigation technology not only achieves resource and cost savings for the City, but also shows visitors and residents that the City is committed to smart management of environmental and financial assets.

The primary streetscape character of the City of Tracy is tied to the character of its distinctive historic neighborhoods and Downtown developments. Historic neighborhoods personify timeless American style, blending classic elements including white fences, low shrubs, and tree lined streets shading sidewalks. Downtown redevelopment projects have utilized similar design elements, from shade trees, formal planting areas, and enhanced pavement in locations such as Civic Center Plaza, Transit Center, and Central Avenue.

Tracy's streetscape aesthetic combines classic American hometown design with an uniquely Californian style Downtown business feature storefronts with Spanish architectural influences in the form of tile roofs and adobe facades. Brick pavements in areas of high pedestrian activity emphasizes traditional style, as do generous planter areas and shade trees throughout the Downtown district. Formal shrub plantings are adapted to California's climate by using native or Mediterranean plants. Planters with open wood, rock mulch areas or cobbles are not only visually interesting, but the inert material contributes to water conservation and reduces maintenance.



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I. INTRODUCTION

The City of Tracy maintains a large system of public streetscape improvements, which include median islands and street landscaping and amenities. Pathways, miscellaneous pavement areas and boundary walls are integral components of the landscape and are included in these discussions. The City goal in establishing guidelines is to ensure that the installed landscape is aesthetically pleasing, drought tolerant, and durable with minimal maintenance and watering requirements.

The City's primary concern is with the plant material that has been specified and installed. A significant amount of the plant material are not thriving; many are in poor health. Some plants are growing well, but were installed in areas where their visual impact is ineffective. Others which are thriving are overgrown due to aggressiveness or too large of a plant in a small planter

GOAL

The goal is to prepare solutions to use as guidelines that by the City, Consultants and Applicants to renovate existing streetscapes or guide future developments where streetscape designs are included in the improvement plans.

OBJECTIVES

A. Design considerations such as spacing and types of appropriate plant materials for medians and associated setbacks, irrigation system guidelines, bio-swale requirements, maintenance impact, ratio of hardscape (paving or impervious surfaces) to planting, types of allowable hardscape material, etc., must be addressed for near-term future development.

B. These new guidelines, in conjunction with the Parks and Streetscape Standard Plan, are to be incorporated by the developers working within the City of Tracy.





II. ANALYSIS OF EXISTING CONDITIONS

The following is a summary of design issues that require attention and subsequent solutions:

A. Setback.
There are observed problems related to the layout of the landscape areas along the streetscape. An example is the available space created for the landscape to occur. Some areas have a property line wall very close (less than 5 feet) to the public sidewalk or street curb, creating a limited planting space. Trees are often planted in these narrow areas, and when they mature, their canopies overhang deeply into the private owner's property. Some residents consider this a nuisance, since they must collect the falling leaves.

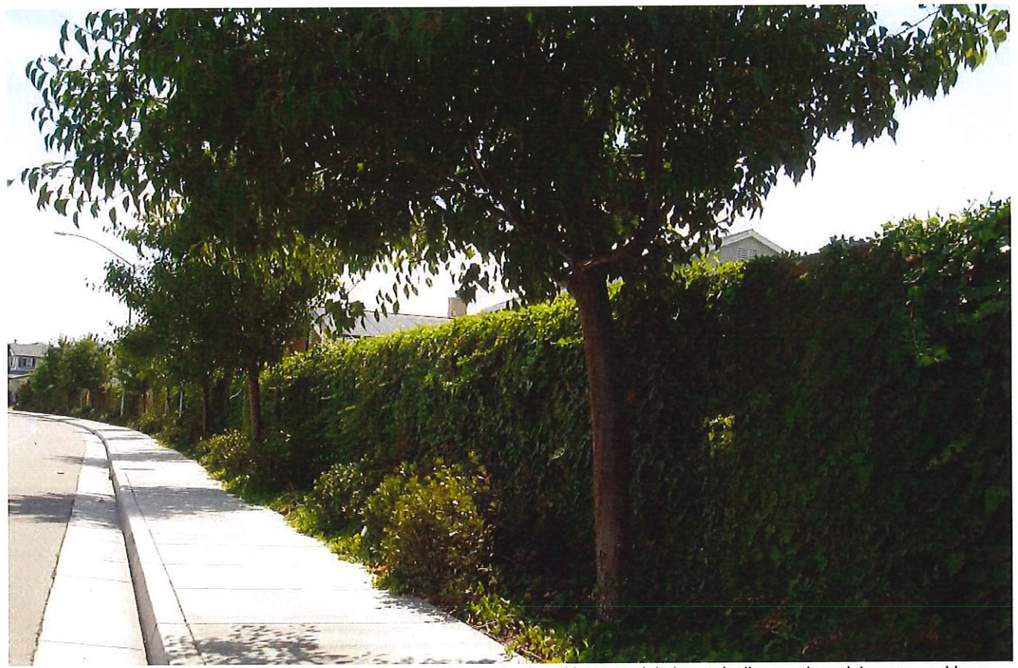
B. Soil Composition.
Restricted plant growth is often caused in part by poor soil structure, drainage, and/or chemistry. Much of the native soil contains a high concentration of clay, salts, and/or boron, which is a difficult medium for promoting healthy root growth. Plants struggle in this type of soil and do not grow to their maximum potential. Many plants will not tolerate high Boron soils (30ppm). Additionally, poor soil preparation results in the presence of numerous rocks and construction debris.

C. Masonry Wall Design.
Vines growing on masonry walls has proven to be a maintenance problem. Vines, which are aggressive in nature, tend to grow too profusely and increase the maintenance to control them. Wood fencing is particularly prone to damage from vines growing on them.

D. Sidewalk & Bikeway Design.
Future streetscape development should conform to the Citywide Roadway & Transportation Master Plan and Bikeways Master Plan Design Supplement. Bikeways can be effective in providing new recreational opportunities, or in some instances, desirable commuter routes.

E. Plant Selection.
Some plants are inappropriate for various horticultural reasons, as listed below:

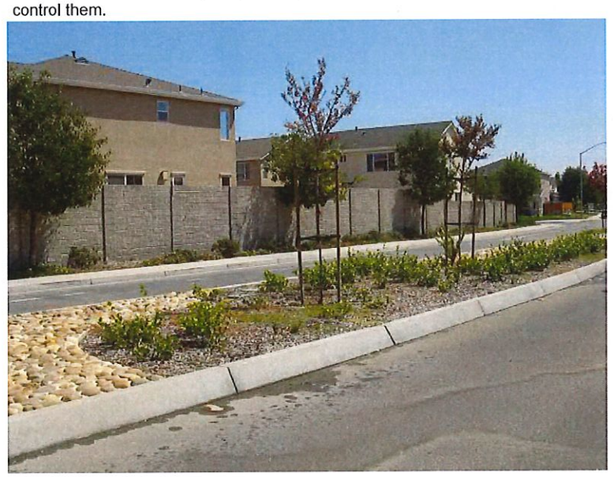
1. Plants that do not withstand the hot and dry climate nor the pervasive winds. Tracy receives an average of approximately 12 inches of rain per year. Many plants suitable for other regions of California, and not suitable for streetscapes in Tracy.
2. Plants that are intolerant of soils with high clay, salt and/or high boron content.
3. Plants that require fast drainage.
4. Trees that are modified shrubs (headed up to a standard), which are difficult to maintain in a tree-form and are susceptible to wind damage.
5. Plants that require excessive pruning.
6. Plants that seed profusely.
7. Trees with inappropriate canopy, depending on location.
8. Trees with aggressive root systems that cause damage to surrounding pavement and results in tripping hazard.



▲ Narrow set back and inappropriate tree selection create maintenance problems for neighbors. Also, vines grow profusely on walls and increase maintenance to control them.



Where designated by the City, paths should be at least 10' to meet minimum 2-way path standard requirements for Class I Bikeway (Caltrans Highway Design Manual, Chapter 1000: Bikeway Planning and Design).



Poor soil structure inhibits growth rate of plants. Irrigation water runoff should be contained in the planting area.

9. Trees that are prone to wind damage or are difficult to train.

10. Trees that bear fruit and litter the landscape, resulting in safety or maintenance problems.

F. Planting Design.
Planting Design. Problems have been identified with existing planting design in many areas that affect the City's ability to maintain the landscape, such as:

1. Over planting an area with material that often requires different watering requirements. Multiple layers of shrub massing create a 'complicated' landscape.

2. Plants installed too close together, when mature, crowd each other and require heavy pruning, thinning and other maintenance issues. Improper distances between trees and shrubs causing shrubs to grow up into trees. Improper distances between shrubs or ground covers and hardscape causing plants to be sheered and other maintenance issues.

3. Trees selected in the median are often too small and visually unimpressive.

4. Extent or quantity of planting areas increases maintenance requirements.

5. Too many trees planted in turf areas, which increases the time to maintain turf and is unhealthy for trees.

G. Turf.
The use of turf areas within Streetscape right-of-way should be minimal and designed effectively to reduce maintenance requirements.

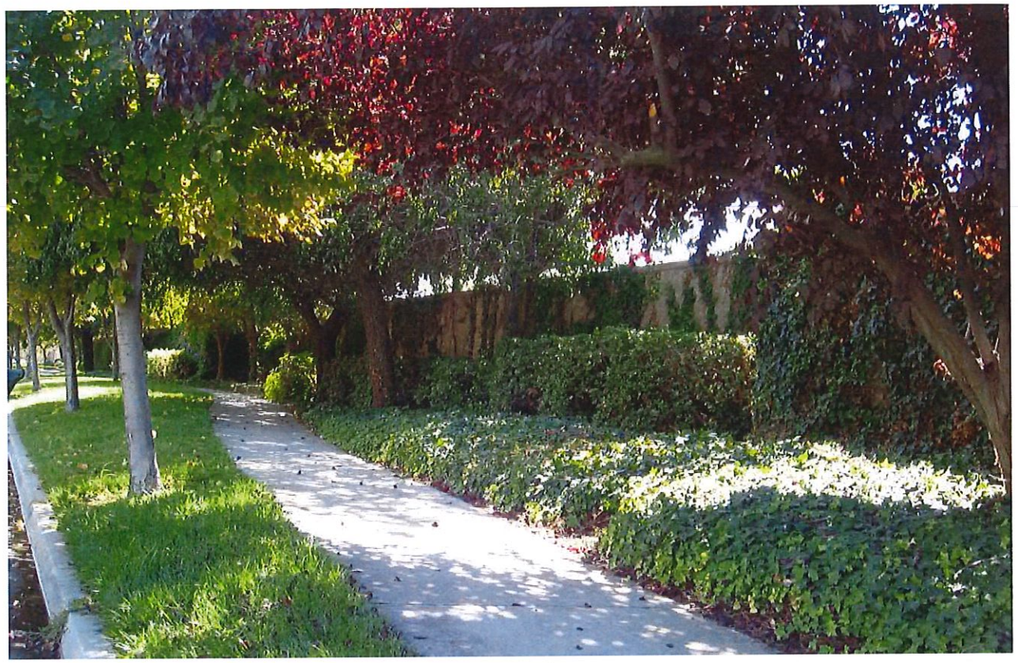
1. Narrow turf areas are difficult to irrigate and maintain are no longer allow under new water conservation ordinance.

2. Turf located on steep slopes is difficult to, irrigate efficiently or mow and maintain in a healthy state.

3. Some turf species require a lot of water to survive or thrive; some grow too quickly; some are susceptible to certain diseases.

4. Turf located in medians requires vehicular lane closures in order to conduct safe mowing operations. This results in a very time-consuming and expensive maintenance program. Additionally, irrigation of turf at medians is affected by windy conditions common to the region, resulting in over-spray.

H. Planting Schedule.
Plants installed during the summer are more susceptible to damage from the extreme heat.



Narrow turf areas are difficult to maintain. Tight tree spacing creates crowded canopy. Many layers and varieties of plants can result in high maintenance costs.



Narrow median should contain hardscape material only.



Narrow planting areas need ground cover that do not spread aggressively to minimize pruning requirements. Replacing plants with pavement would also reduce maintenance.

I. Irrigation Design.

1. Drip Irrigation. Although drip irrigation is often effective in providing water to limited areas of a planting area, as plant root systems grow away from its base, the water is not always reaching the areas where roots area growing. This ultimately limits the ability of the plant to grow to its full potential.

2. Bubbler Heads. Bubbler irrigation heads are successful at providing water to confined or narrow planting areas. But in expansive planting areas with tighly spaced plant materials (greater than 10 feet in width), bubbler heads are limited in their ability to wet the entire ground surface.

3. Spray heads or rotors are a more cost effective irrigation design for larger planter areas (greater than 10 feet in width), where shrubs or ground covers are closely spaced.

J. Stormwater Drainage Design.

Issues related to stormwater runoff requirements indicate that surface water running off streetscape areas should be collected to prevent it from flowing onto sidewalks and streets, wherever possible. Allowing the water to filter back into the site soils and percolate into the subsurface water table is an environmentally sound practice.

GENERAL CONDITIONS

A. Setbacks.

1. Streetscape setback have been established through the Citywide Roadway and Transportation Master Plan and City of Tracy Street and Utilities Standard Plans.

2. Where narrow planting spaces occur, limit planting or the type of plants in these areas to minimize maintenance problems that typically occur. Consider use of various hardscape options for these areas.

B. Soil Composition & Testing.

1. Soils Testing procedures are documented in the Planting General Guidelines section of the City of Tracy Parks and Streetscape Standard Plans, including but not limited to the following requirements:
   a. Testing requirements are to conform with current water efficiency landscape ordiance.
   b. Testing procedures for existing and imported soil.
   c. Incorporate soil amendments as per soils analysis.
2. Encourage the use of Structural Soil (CU Soil - Cornell University) for trees planted in or near pavement, or in medians..
3. Revise the plant list as needed based upon soils testing resulsts

C. Wall and Sign Design.

1. Masonry Boundry, Entry, or Retaining Walls and Signage layout and materials are established within the City of Tracy Park and Streetscape Standard Plans.

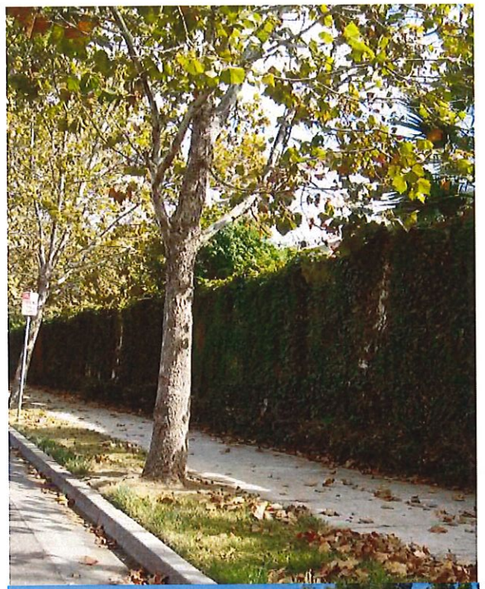
2. Specific Boundary, Entry wall and Signage design is located within the Wall Matrix of this document. Wall and sign design are to incorporate, but is not limited to, the following:
   a. Specify durable, long lasting and easy-to-maintain or repair. Wood walls do not meet these requirements and should not be used as walls.
   b. Concrete masonry walls that are built in-place are preferred. They are durable and can be customized to create attractive designs.
   c. The wall façade should have a variety of well-designed textures, colors and patterns, to enhance the streetscape environment. Avoid monotonous and plain-looking walls that do not add interest to the public landscape.
   d. Consider the use of decorative pilasters, caps on walls, or walls that are aligned perpendicular to the street that create shadows on the walls or onto the landscape; all which help to provide interest and break up the monotony of a long wall along a street.

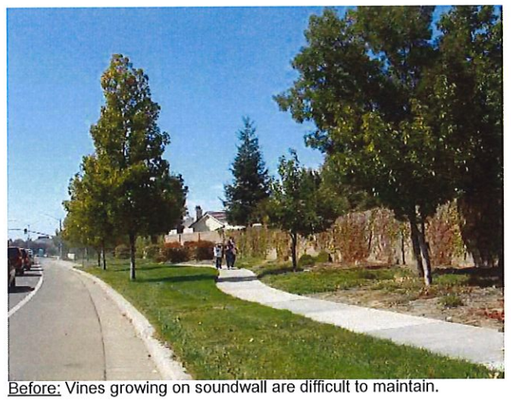
3. Allow vines only for existing walls that are considered unattractive, or where planting space in front of the wall is limited, leaving no other option but to plant vines.



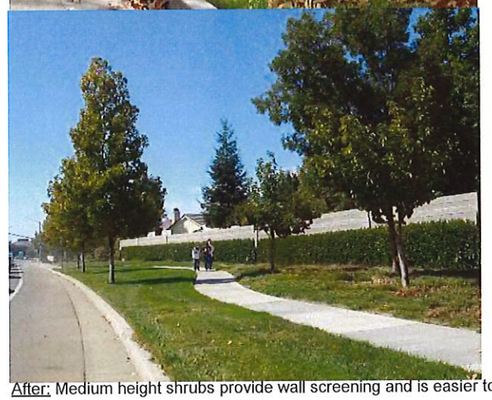
Crape myrtle trees (Lagerstroemia indica) are not suitable because they do not tolerate soils with high clay and boron content.

Narrow setbacks result in inadequate spaces for planting areas and pathways.





Before: Vines growing on soundwall are difficult to maintain.



After: Medium height shrubs provide wall screening and is easier to maintain.

D. Plant Selection.

Revise the current Plant List in the Planting Design Guidelines included in the City of Tracy Parks and Parkways Design Manual as follows:

E. Planting Design.

1. Approach with the 'less is more' design concept by simplifying planting design, using fewer plants and fewer plant species in any one area. Planting trees and shrubs in front of the walls to screen and filter views of the wall (but not cover it).

2. Massing of plants should consider the scale of the project, and that most view the landscape from passing automobiles.

3. Include minimum plant spacing requirements for all plants.

4. Select large canopy and fast-to-moderate growing trees suitable for the medians. Where trees are desired on side streetscapes with minimal setbacks, specify small canopy species.

5. Require root barriers at all median planting areas, installed lineally along all hardscape edges and curbs, or where tree is planted within 10 feet of hardscape.

6. At medians, require all improvement areas to include 50%-67% paved (hardscape) surfaces. Include combinations of hardscape to create aesthetically pleasing areas such as cobble, stamped concrete, bricks, pavers or decomposed granite paving

7. Where overhead wires are present, use only low-growing trees.

8. Provide trees, shrubs and plants of quantity, size, genus, species complying with recommendations and requirements of the "American Standard for Nursery Stock." Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice and free of disease, insects, and defects.

F. Turf.

1. At all no-turf planting areas, establish minimum allowable width of 5 feet (measured from inside face of curb line) with 10' for turf areas. At medians, prohibit turf planting.

2. Turf areas should not occur in steep areas. Maximum slope of turf planting areas shall be less than 10:1 ratio (10%). Minimum slope shall be greater than 50:1 ratio (2%) .

3. Where turf planting is allowed, encourage limited use of turf to reduce irrigation water and maintenance costs.

4. Specify only turf species and blends that are water-wise, hardy, and slow-growing.

G. Planting Schedule.

1. Avoid heat-sensitive plant installation during June, July and August, due to potential plant damage resulting from extremely high temperatures.

H. Irrigation Design.

1. Require spray or stream spray irrigation in all planting areas to allow the entire planting area to become wet, which is necessary for a successful herbicide application or fertilization program.

2. Wind-related Issues. In response to wind-related impact to irrigation design, specify only low-angle nozzles, decrease spacing of irrigation heads and/or use pressure compensation heads/screens.

I. Stormwater Drainage Design.

1. Surface water running off streetscape areas should be collected to prevent it from flowing onto sidewalks and streets, wherever possible.

2. Allowing the water to filter back into the site soils and percolate into the subsurface water table is an environmentally sound practice.

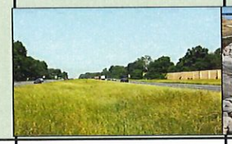
3. Ensure that all local, state and federal guidelines for stormwater runoff are met.
Planting trees and shrubs in front of the walls to screen and filter views of the wall (but not cover it).

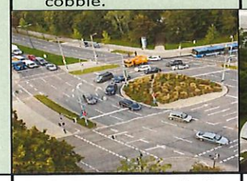
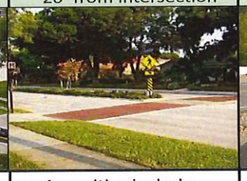
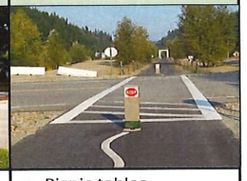
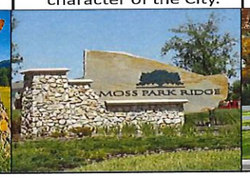
IV. DESIGN MATRIX

Landscape Type	Arterial Road Right-of-Way	Collector Road Right-of-Way	Local Streets Right-of-Way	Trails, Recreation Facilities, and Other Public Amenities
A. Walls / Fences	• Concrete masonry unit, cast or pre-formed concrete boundary walls to be installed adjacent to residential uses. • Walls should include decorative elements such as stamped patterns, natural colors, and/ or decorative cap to soften the visual impact of walls. • Landscape screening of walls kept to a minimum to reduce maintenance & fire hazards. • Walls should be treated with anti-graffiti coating approved by City.	• Concrete masonry unit, cast or pre-formed concrete boundary walls to be installed adjacent to residential uses. • Walls should include decorative elements such as stamped patterns, natural colors, and/ or decorative cap to soften the visual impact of walls. • Use of dense landscape screening is discouraged. • Trees and ground cover permitted. • Trees must be 5' (min) from wall. Root barrier per City standards when planted within 10' of wall.	• Wood privacy fences installed adjacent to residential uses, per City standard details. • Stucco facade privacy walls should have decorative cap and columns at intervals. • Tall or vining landscape screening is discouraged. • Trees, shrubs, and ground cover permitted. • Trees must be spaced at least 5' from the wall. Root barrier must be used per City standards whenever trees are planted within 10' of pavement or wall.	• Concrete masonry unit, cast or pre-formed concrete boundary walls to be used when amenity is adjacent to arterial or collector roads. • Tubular steel, chain link, or wood (or wood-substitute) split-plank fencing options are appropriate for sports areas, play facilities, dog parks, and along multi-use trails where necessary to focus direction and flow of non-motorized traffic.
				
C. Hardscape	• Durable traffic surfaces requiring a minimum of maintenance, per Caltrans standards. • Use contrasting color, texture, or material pedestrian crossings & non-motorized traffic areas. • Cobble or crushed stone in varying colors may be used as a ground cover to provide visual interest.	• Use contrasting integral color or color coating, texture, or material for surfaces at pedestrian crossings & non-motorized traffic areas. • Permeable systems (concrete, unit paver, etc.) are encouraged where appropriate. • Cobble or crushed stone in varying colors may be used as a ground cover to provide visual interest.	• Use contrasting integral color or color coating, texture, or material for surfaces at pedestrian crossings & non-motorized traffic areas. • Permeable systems (pervious concrete, unit pavers, etc.) are encouraged where appropriate. • Cobble or crushed stone in varying colors may be used as a ground cover to provide visual interest.	• Use contrasting color, texture, or material to indicate pedestrian crossings & non-motorized traffic areas. • Permeable systems (pervious concrete, unit pavers, etc.) are encouraged where appropriate. • Integrate tree planters and/or shade structures into paved areas of parks and plazas in order to reduce heat and encourage public use of the space.
				

Landscape Type	Arterial Road Right-of-Way	Collector Road Right-of-Way	Local Streets Right-of-Way	Trails, Recreation Facilities, and Other Public Amenities
B. Trees	• Low maintenance species, large canopy species as street trees and medians with narrow or columnar canopies on street frontage secondary trees. Street Trees to be planted at consistent intervals of 30'-40'o.c. • Accent trees kept to a minimum and used in clusters or as single trees toward end of median or near intersection and neighborhood entries. • Conform to all Caltrans regulations.	• Low maintenance species with narrow or columnar canopies on street frontage and large canopy trees within the meidans. • Trees to be planted at regular spacing intervals, consistent with City standard (at least 30' spacing). • Single species per city block is preferred (not counting accent trees or shrubs). • Accent trees kept to a minimum and used in clusters.	• Low maintenance species with narrow or columnar canopies are preferred. • Trees to be planted at regular spacing intervals, consistent with City standard (at least 30' spacing). • Single species per city block is preferred (not counting accent trees or shrubs). • Accent trees kept to a minimum and used in clusters.	• Low maintenance species appropriate to local climate to be selected. • Use group plantings including accent trees and trees of varying height, texture, and typology for visual interest. • Choose trees with large shade canopies to provide sufficient shade. • Select trees with low allergen ratings to make public spaces welcoming for all users.
				
D. Shrubs	• Low maintenance species which tolerate heat and airborne particulates are preferred. • Species shall be low-growing and conform to all Caltrans regulations.	• Minimum allowable width of all planting areas is 5'. • Spray irrigaion is not allowed in planted areas less than 10' width per MWELO. The City requires use of bubblers per Parks and Streetscape Standard Plans. • Group plantings of low maintenance species. • Accent shrubs should be used in clusters.	• Minimum allowable width of all planting areas is 5'. • Spray irrigaion is not allowed in planted areas less than 10' width per MWELO. The City requires use of bubblers per Parks and Streetscape Standard Plans. • Group plantings of low maintenance species. • Accent shrubs should be used in clusters.	• Minimum allowable width of all planting areas is 5'. • Spray irrigaion is not allowed in planted areas less than 10' width per MWELO. The City requires use of bubblers per Parks and Streetscape Standard Plans. • Shrub species must be compatible with public use of the space and emit low allergens and low litter hazards. • Select shrub species which contribute positively to the environment and predominantly low-water using, low maintenance species.
				

IV. DESIGN MATRIX

Landscape Type	Arterial Road Right-of-Way	Collector Road Right-of-Way	Local Streets Right-of-Way	Trails, Recreation Facilities, and Other Public Amenities
E. Turf	• Species shall be low-growing and conform to all Caltrans regulations. • Low-mow or other drought-tolerant varieties of heat-tolerant grasses are preferable. • Encourage limited use of turf to reduce irrigation and maintenance costs.	• Minimum allowable width of all non-turf planting areas is 5'. • Spray irrigation is not allowed in planted areas less than 10' width per MWELO. • Do not plant turf on steeply sloped areas greater than 10:1 (10%) slope. • Low-mow or other drought-tolerant varieties of heat-tolerant grasses are preferable to traditional warm-season turf grass. • Encourage limited use of turf to reduce irrigation and maintenance costs.	• Minimum allowable width of all non-turf planting areas is 5'. • Spray irrigation is not allowed in planted areas less than 10' width per MWELO. • Do not plant turf on steeply sloped areas greater than 10:1 (10%) slope. • Low-mow or other drought-tolerant varieties of heat-tolerant grasses are preferable to traditional warm-season turf grass. • Encourage limited use of turf to reduce irrigation and maintenance costs.	• Turf is appropriate in designated Special Landscape Areas (SLA) per MWELO (Min. 10' width). • Do not plant turf on steeply sloped areas greater than 10:1 (10%) slope. • Low-mow or other drought-tolerant varieties of heat-tolerant grasses are preferable to traditional warm-season turf grass. • Encourage limited use of turf to reduce irrigation and maintenance costs.
				
G. Other Landscape Materials	• Design shall conform to all Caltrans regulations. • Include varied rock, organic mulch, and permeable hardscape for visual interest.	• Use of varied rock, organic mulch, and permeable hardscape adds visual interest and assists in storm water management. • Rock mulch should be used together with organic mulch or planting areas to avoid creating heat island effect. • Crushed stone and stone cobble are preferred inorganic surface materials. • Separate landscape materials with landscape edging to maintain long-term design integrity.	• Use of varied rock, organic mulch, and permeable hardscape adds visual interest and assists in storm water management. • Rock mulch should be used together with organic mulch or planting areas to avoid creating heat island effect. • Crushed stone and stone cobble are preferred inorganic surface materials. • Separate landscape materials with landscape edging to maintain long-term design integrity. • Express neighborhood individuality through choice of materials.	• Use of varied rock, organic mulch, and permeable hardscape adds visual interest and assists in storm water management. • Crushed stone and stone cobble are preferred inorganic surface materials. • Crushed stone is an acceptable pathway surface material for pedestrian paths. • Separate landscape materials with landscape edging to maintain long-term design integrity. • Express individuality of parks, plazas, etc. through choice of materials.
				

Landscape Type	Arterial Road Right-of-Way	Collector Road Right-of-Way	Local Streets Right-of-Way	Trails, Recreation Facilities, and Other Public Amenities
F. Intersections	• Design shall conform to all Caltrans regulations. • Signage or other visual cues such as planting, surface material, or lighting, may emphasize specific intersections. • Landscape design typology should be consistently applied to all sides of an intersection. • Landscape materials should include low-growing, hardy plant materials, paired with non-flammable mulches such as crushed stone or cobble.	• Pedestrian and non-vehicular crossings shall be clearly marked and emphasized with signs, lights, or other means. • Visual cues such as integral pavement color or color coating of pedestrian crossings may be used. • Landscape design typology should be consistently applied to all sides of an intersection. • Trees planted at least 20' from intersection or as determined by City Engineer.	• Pedestrian and non-vehicular crossings shall be clearly marked and emphasized with signs, lights, or other means. • Visual cues such as integral pavement color or color coating of pedestrian crossings may be used. • Integrate medians or curb bump-outs at intersections for traffic calming. • Medians and bump-outs should be planted with hardy shrubs or grasses. • Trees planted at least 20' from intersection	• Varying materiality and planting selections are useful in establishing theme, repetition, and wayfinding in public spaces. • Maintain line of sight for pedestrians. Avoid bushy shrubs over 3' in height at walkway or bikeway intersections.
				
H. Site Fixtures	• All site fixtures shall be compliant with Caltrans regulations. • Signs marking City of Tracy boundaries and neighborhood entries are to be constructed of durable, robust materials with long product lifespans. • Design of signs should reflect the character of the City. • Plantings in front of signs should be less than 2' at maturity. Perennial plantings are preferred.	• Signs marking City of Tracy boundaries and neighborhood entries are to be constructed of durable, robust materials with long product lifespans. • Design of signs should reflect the character of the City. • Plantings in front of signs should be less than 2' at maturity. Perennial plantings are preferred. • Additional amenities include directional signage, lighting, transit stops, bollards, and other roadway components. All items shall reflect the character of the City.	• Amenities include directional signage, lighting, transit stops, bollards, and other roadway components. All items shall reflect the character of the City. • Low maintenance, durable amenities, including signage, lighting, transit stops, bollards, and other roadway components. • Include seating areas and waste receptacles at regular intervals near transit stops and in other high-use areas.	• Picnic tables, benches, drinking fountains, bollards, bbq, and lighting to be consistent with City details. • Preferred material is powder-coated galvanized steel. • Components may include artistic elements and accent materials such as wood or stone with City approval. • Include seating areas and waste receptacles at regular intervals in high-use areas.
				

IV. DESIGN MATRIX

Street Name	Walls-Pilasters-Cap	Street Trees	Median Trees	Secondary Trees	Accent Trees
Grant Line Road Major Alterial	• West of Lincoln - Red Brick • East of Lincoln - Tan Stucco	• Pistacia chinensis 'Keith Davey' • Platanus racemosa • Acer rubrum 'October Glory'	• Platanus racemosa • Ulmus 'Prospector'	• Acer Buergeranum • Laurus noblis 'Saratoga' • Arbutus 'Marina' - (Standard)	• Rhus lancea • Lagerstroemia indica 'Red' • Rhaphiolepis ''Majestic Beauty'
Eleventh Street Major Alterial	• Grey Split Face Block	• Pistacia chinensis 'Keith Davey' • Platanus × acerfolia cultivars • Zelkova serrata 'Green Vase'	• Pistacia chinensis 'Keith Davey' • Acer platanoides 'Crimson King'	• Olea europaea ' Swan HIll' • Laurus noblis 'Saratoga' • Acer x freemanii 'Jeffersed'	• Malus floribunda • Lagerstroemia indica 'Dynamite' • Photina x fraseri - Standard
Schulte Road Major Alterial Minor Alterial	• Brown Split Face Block	• Ulmus 'True Green' • Quercus wislizensii • Pistachia x 'Red Push'	• Pistachia x 'Red Push' • Quercus phellos	• Olea europaea ' Swan HIll' • Quercus macrocarpa 'Urban Pinnacle' • Laurus noblis 'Saratoga'	• Lagerstroemia indica 'Red' • Cercidium x 'Desert Museum' • Magnolia grandiflora 'Majestic Beauty'
Valpico Road Major Alterial	• Tan Split Face Block • Brown Post & Panel Precast Wall, Ledgestone Pilasters, Grey Precast Cap	• Platanus × acerfolia 'Yarwood' • Sophora japonica 'Regent' • Quercus suber	• Quercus suber • Pistachia chinensis 'Keith Davey'	• Olea europaea ' Swan HIll' • Prunus caroliniana • Pinus flexis 'Vanderwolf'	• Malus floribundia • Rhaphiolepis 'Majestic Beauty' ' • Arbutus 'Marina' Mulit-stem
Linne Road Expressway	• Grey Split Face Block	• Qucus rubra • Acer pseudoplatanus 'Atropurpureum' • Cinnamonum camphora	• Cinnamonum camphora • Crataegus laveigata 'Paul's Scarlet'	• Acer x freemanii 'Jeffersed' • Juniperus 'Skyrocket' • Zelkova serrata 'City Sprite'	• Malus floribunda • Chilopsis linearis 'Bubba' • Chionanthus retusus
Corral Hollow Road Major Alterial Minor Alterial	• Grey Split Face Block	• Acer rubrum 'October Glory' • Quercus wislizensii • Liriodendron tulipifera	• Quercus wislizensii • Acer rubrum 'October Glory'	• Acer rubrum 'Armstrong' • Quercus robur 'Fastigiata' • Ginkgo biloba 'Princeton Sentry'	• Lagerstroemia indica cultivars • Chitalpa 'Pink Dawn' • Chionathus retusus
Tracy Boulevard Major Alterial	• Tan Stucco • White Post & Panel Precast Wall, Pilasters & Cap	• Ulmus 'Frontier' • Acer platanoides 'Crimson King' • Pistachia x 'Red Push'	• Quercus phellos • Acer platanoides 'Crimson King'	• Acer Buergeranum • Zelkova serrata 'City Sprite' • Ginkgo biloba 'Princeton Sentry'	• Malus sentinel • Cotinus coggygria 'Purpureus' • Magnolia grandiflora 'Majestic Beauty'
MacArthur Drive Major Alterial	• Grey Split Face Block	• Cinnamonum camphora • Qucus rubra • Tllia cordata 'Greenspire'	• Qucus rubra • Tllia cordata 'Greenspire'	• Prunus caroliniana • Elaeocarpus sylvestris • Pinus flexis 'Vanderwolf'	• Lagerstroemia indica 'Pink' • Cotinus coggygria 'Purpureus' • Heteromeles arbutifolia
Lowell Avenue	• Tan Stucco	• Tillia cordata 'Greenspire' • Quercus phellos • Ginko biloba 'Autumn Gold'	• Ginkgo biloba 'Autumn Gold' • Quercus palustris	• Acer x freemanii 'Jeffersed' • x • x	• Cercidium x 'Desert Museum' • Photina x fraseri - Standard • Pinus mugo

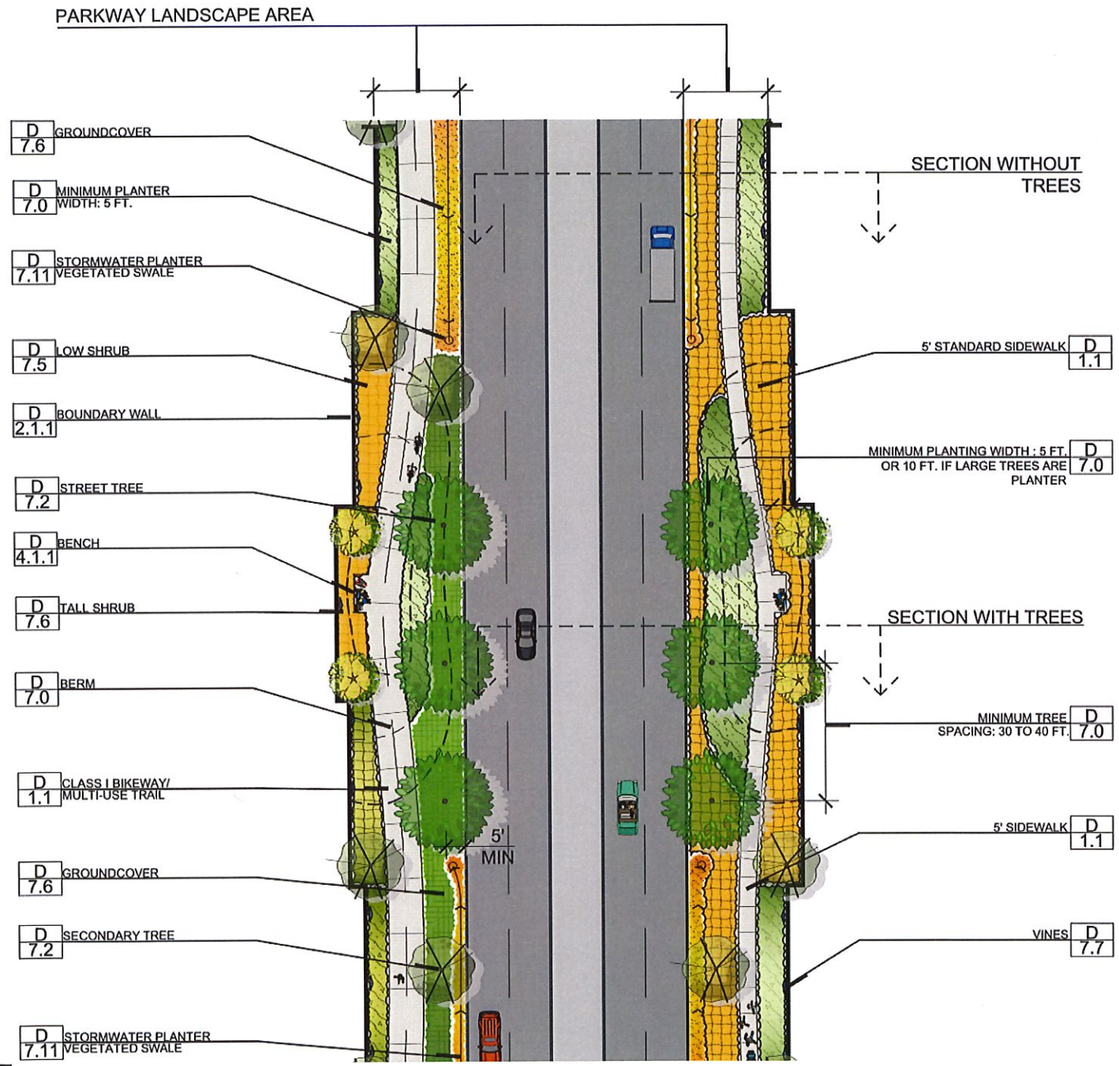
Street Name	Walls-Pilasters-Cap	Street Trees	Median Trees	Secondary Trees	Accent Trees
Sycamore Parkway Minor Arterial	• Tan Stucco	• Platanus × acerfolia cultivars • Acer pseudoplatanus 'Atropurpureum' • Platanus racemosa	• Platanus × acerfolia cultivars • Quercus robur 'Fastigata'	• Acer pseudoplatanus 'Esk Sunset' • Arbutus 'Marina' - (Standard) • Elaeocarpus sylvestris	• Lagerstroemia indica 'Red' • Cercis occidentalis (Standard) • Pinus mugo
Central Avenue Minor Arterial	• Grey Comb Face Block	• Zelkova serrata 'Green Vase' • Acer rubrum 'October Glory' • Quercus coccinea	• Acer rubrum 'October Glory' • Ginkgo biloba 'Autumn Gold'	• Laurus noblis 'Saratoga' • Prunus caroliniana • Acer griseum	• Malus 'Profusion' • Magnolia 'Edith Bouge' • Rhaphiolepis 'Majestic Beauty'
Orchard Parkway Major Collector	• Tan Stucco	• Platanus × acerfolia cultivars • Nyssa sylvatica • Quercus phellos	• Quercus phellos • Crataegus laevigata 'Crimson Cloud'	• Olea europaea ' Swan Hill' • Laurus noblis 'Saratoga' • Prunus caroliniana	• Malus 'Liset' • Lagerstroemia indica 'Lavender' • Cercis occidentalis (Standard)
Cypress Drive Major Collector	• Tan Stucco	• Platanus racemosa • Ginkgo biloba 'Autumn Gold' • Quercus suber	• Quercus suber • Cupressocyparis leyandii	• Olea europaea ' Swan Hill' • Cupressus sempervirens 'Tiny Towers' • Elaeocarpus sylvestris	• Malus 'Red Baron' • Rhaphiolepis 'Majestic Beauty' • Arbutus 'Marina' Mulit-stem
Mt. Diablo Avenue Major Collector	• Light Tan Comb Face Block	• Tillia cordata 'Greenspire' • Nyssa sylvatica • Quercus ilex	• Quercus ilex • Acer Buergeranum	• Acer platanoides 'Crimson Sentry' • Quercus robur 'Fastigata'	• Malus 'Profusion' • Chilopsis linearis • Cercidium x 'Desert Museum'
Lauriana Lane Major Collector	• Tan Stucco	• Tillia cordata 'Greenspire' • Ulmus parvifolia 'Frontier' • Quercus palustris	• Quercus palustris • Ginkgo biloba 'Autumn Gold'	• Pinus flexis 'Vanderwolf' • Acer griseum • Ginkgo biloba 'Princeton Sentry'	• Lagerstroemia indica 'White' • Cercis occidentalis (Standard) • Chitalpa 'Pink Dawn'
Lammers Road Major Arterial Expressway	• Split Face Block	• Pistacia chinensis 'Keith Davey' • Acer rubrum 'October Glory' • Ulmus parvifolia 'Frontier'	• Acer rubrum 'October Glory' • Acer Buergeranum	• Carpinus betulus 'Fastigata' • Calocedrus decurrens • Acer x freemanii 'Jeffersed'	• Lagerstroemia indica 'Natchez' • Cercidium x 'Desert Museum' • Heteromeles arbutifolia
Chrisman Road Major Arterial	• Sand Stucco Wall • Sand Post & Panel Precast • Sand Stucco Pilasters	• Pistacia chinensis 'Keith Davey' • Nyssa sylvatica • Sophora japonica 'Regent'	• Tillia cordata 'Greenspire' • Ginkgo biloba 'Autumn Gold'	• Juniperus 'Skyrocket' • Acer ruburm 'Bowhall' • Elaeocarpus sylvestris	• Lagerstroemia indica 'Tuscarora' • Magnolia stelleta • Acer ginnala 'Flame'
Crossroads Drive Minor Arterial	• Grey Comb Face Block • Freestanding Entry Pilasters w/Faux River Stone Veneer	• PPistachia x 'Red Push' • Acer pseudoplatanus 'Atropurpureum' • Quercus rubra	• Arbutus 'Marina' (Standard) • Acer pseudoplatanus 'Atropurpureum'	• Carpinus betulus 'Fastigata' • Acer platanoides 'Erectum' • Ginkgo biloba 'Princeton Sentry'	• Malus 'Adams' • Cercis occidentalis (Standard) • Pinus mugo

IV. DESIGN MATRIX

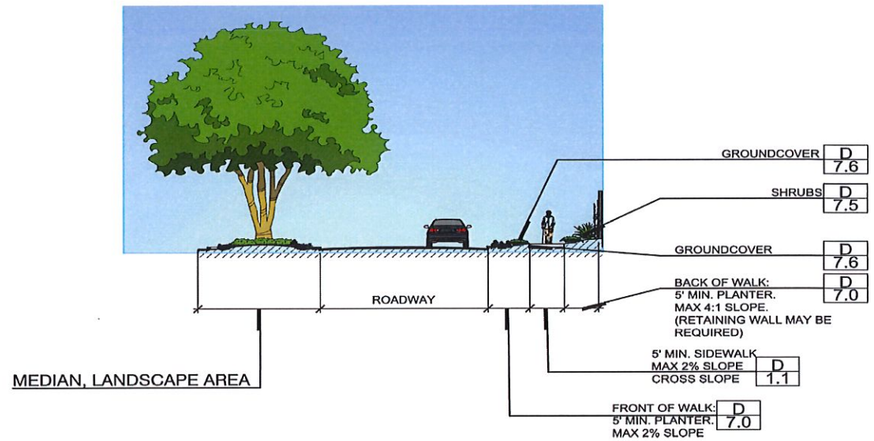
Street Name	Walls-Pilasters-Cap	Street Trees	Median Trees	Secondary Trees	Accent Trees
Paradise Road Major Arterial	• N/A	• Pistachia x 'Red Push' • Nyssa sylvatica • Cinnamonum camphora	• Cinnamonum camphora • Ginkgo biloba 'Autumn Gold'	• Ginkgo biloba 'Princeton Sentry' • Acer griseum • Quercus robur 'Fastigata'	• Malus 'Profusion' • Magnolia 'Edith Bouge' • Lagerstroemia indica 'Purple'
Patterson Road Major Arterial	• N/A	• Ulmus 'True Green' • Quercus schumardii • Quercus ilex	• N/A	• Quercus macrocarpa 'Urban Pinnacle' • Acer platanoides 'Erectum' • Olea europaea ' Swan Hill	• Lagerstroemia indica 'Dynamite' • Olea europaea ' Swan Hill • Arbutus 'Marina' Multi-stem
Byron Road Major Collector	• Brown Split Face Block	• Quercus rubra • Pistacia chinensis 'Pearl Street' • Platanus × acerfolia 'Yarwood'	• N/A	• Acer griseum • Zelkova serrata 'City Sprite' • Acer griseum	• Cercis occidentalis - (Standard) • Chitalpa 'Pink Dawn' • Arbutus 'Marina' Multi-stem
Joe Pombo Parkway Minor Arterial	• Grey Stucco Wall w/ Grey Split Face Block Pilasters	• Pistacia chinensis 'Keith Davey' • Sophora japonica 'Regent' • Quercus suber	• N/A	• Olea europaea ' Swan Hill' • Prunus caroliniana • Laurus noblis 'Saratoga'	• Malus floribundia • Rhaphiolepis 'Majestic Beauty' • Lagerstroemia indica 'Pink'
Promontory Parkway Expressway	• Charcoal Grey Smooth Face Block w/Ebony Split Face Banding • Grey Regal Cap	• Ulmus 'True Green' • Quercus wislizensii • Ginkgo biloba 'Autumn Gold'	• Quercus robur 'Pyramich' • Ulmus 'True Green'	• Olea europaea ' Swan Hill • Quercus macrocarpa 'Urban Pinnacle' • Laurus noblis 'Saratoga'	• Lagerstroemia indica 'Dynamite' • Laurus noblis 'Saratoga' • Heteromeles arbutifolia
Capitol Parks Drive Major Arterial	• Tan Split Face Block w/Rose Comb Face Banding • Grey Precast Cap	• Quercus wislizensii • Ulmus 'True Green' • Acer platanoides 'Crimson King'	• Quercus robur 'Pyramich' • Ulmus 'True Green'	• Olea europaea ' Swan Hill • Quercus macrocarpa 'Urban Pinnacle' • Laurus noblis 'Saratoga'	• Lagerstroemia indica 'Dynamite' • Rhus typhina • Cotinus coggygria 'Purpureus'
International Parkway Major Arterial	• N/A	• Zelkova serrata 'Village Green' • Quercus ilex • Ulmus 'True Green'	• Arbutus 'Marina' (Standard) • Quercus macrocarpa 'Urban Pinnacle'	• Olea europaea ' Swan Hill • Quercus macrocarpa 'Urban Pinnacle' • Laurus noblis 'Saratoga'	• Lagerstroemia indica 'Dynamite' • Rhaphiolepis 'Majestic Beauty' • Heteromeles arbutifolia
Pavillion Parkway Major Arterial	• Tan Split Face Block w/Rose Comb Face Banding • Grey Regal Cap	• Zelkova serrata 'Village Green' • Quercus ilex • inkgo biloba 'Autumn Gold'	• Arbutus 'Marina' (Standard) • Quercus macrocarpa 'Urban Pinnacle'	• Olea europaea ' Swan Hill • Quercus macrocarpa 'Urban Pinnacle' • Laurus noblis 'Saratoga'	• Lagerstroemia indica cultivars • Rhaphiolepis 'Majestic Beauty' • Cotinus coggygria 'Purpureus'
Iron Horse Parkway Major Arterial	• N/A	• Zelkova serrata 'Village Green' • Quercus ilex • Arbutus 'Marina' (Standard)	• Arbutus 'Marina' (Standard) • Quercus macracarpa 'Urban Pinnacle'	• Olea europaea ' Swan Hill • Quercus macrocarpa 'Urban Pinnacle' • Laurus noblis 'Saratoga'	• Lagerstroemia indica 'Dynamite' • Olea europaea ' Swan Hill • Rhus typhina

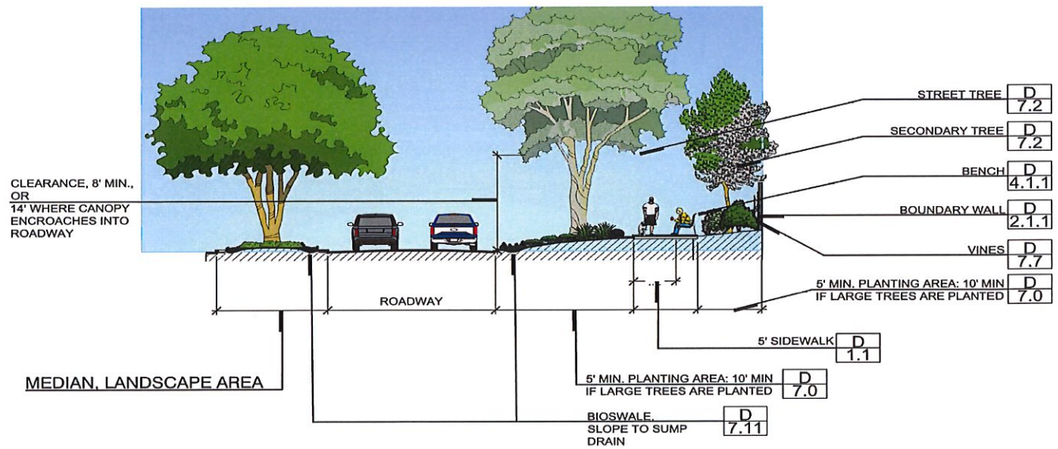
Street Name	Walls-Pilasters-Cap	Street Trees	Median Trees	Secondary Trees	Accent Trees
Daylight Road Major Alterial	• N/A	• Quercus schumardii • Zelkova serrata 'Village Green' • Arbutus 'Marina' (Standard)	• Arbutus 'Marina' (Standard) • Quercus macrocarpa 'Urban Pinnacle'	• Olea europaea ' Swan Hill' • Quercus macrocarpa 'Urban Pinnacle' • Acer platanoides 'Erectum'	• Lagerstroemia indica 'Dynamite' • Magnolia 'Edith Bouge' • Chitalpa 'Pink Dawn'
Hansen Road Major Alterial	• N/A	• Zelkova serrata 'Village Green' • Quercus ilex • Arbutus 'Marina' (Standard)	• Arbutus 'Marina' (Standard) • Quercus macrocarpa 'Urban Pinnacle'	• Quercus macrocarpa 'Urban Pinnacle' • Acer platanoides 'Erectum' • Quercus robur 'Fastigata'	• Lagerstroemia indica 'Dynamite' • Olea europaea ' Swan Hill • Rhus typhina
Commerce Way Major Alterial	• N/A	• Quercus rubra • Acer pseudoplatanus 'Atropurpureum' • Nyssa sylvatica	• Crataegus laevigata 'Crimson Cloud' • Nyssa sylvatica	• Elaeocarpus sylvestris • Carpinus betulus 'Fastigata' • Acer platanoides 'Erectum'	• Lagerstroemia indica 'Lavender' • Magnolia 'Edith Bouge' • Acer ginnala 'Flame'
Larch Road Major Alterial	• N/A	• Liriodendron tulipifera • Platanus racemosa • Quercus palustris	• Platanus racemosa • Acer Buergeranum	• Acer rubrum 'Armstrong' • Zelkova serrata 'City Sprite' • Ginkgo biloba 'Princeton Sentry'	• Lagerstroemia indica 'White' • Rhaphiolepis 'Majestic Beauty' • Cotinus coggygria 'Purpureus'
Arbor Ave Major Alterial	• Tan Split Face Block w/Rose Comb Face Banding • Grey Regal Cap	• Cinnamonum camphora • Acer pseudoplatanus 'Atropurpureum' • Nyssa sylvatica	• Cinnamonum camphora • Acer Buergeranum	• Elaeocarpus sylvestris • Carpinus betulus 'Fastigata' • Acer Buergeranum	• Lagerstroemia indica 'Lavender' • Magnolia 'Edith Bouge' • Acer ginnala 'Flame'
Naglee Road Major Arterial	• N/A	• Pistachia x 'Red Push' • Ulmus 'Homestead' • Sophora japonica 'Regent'	• Quercus palustris • Acer Buergeranum	• Acer x freemanii 'Jeffersed' • Carpinus betulus 'Fastigata' • Ginkgo biloba 'Princeton Sentry'	• Lagerstroemia indica cultivars • Photina x fraseri - Standard • Cotinus coggygria 'Purpureus'

PROPOSED GUIDELINES FOR PARKWAY LANDSCAPE



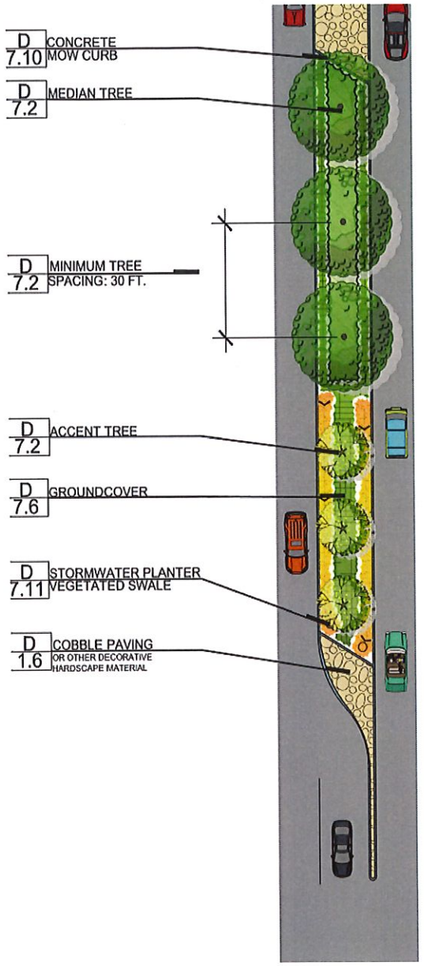
PLAN



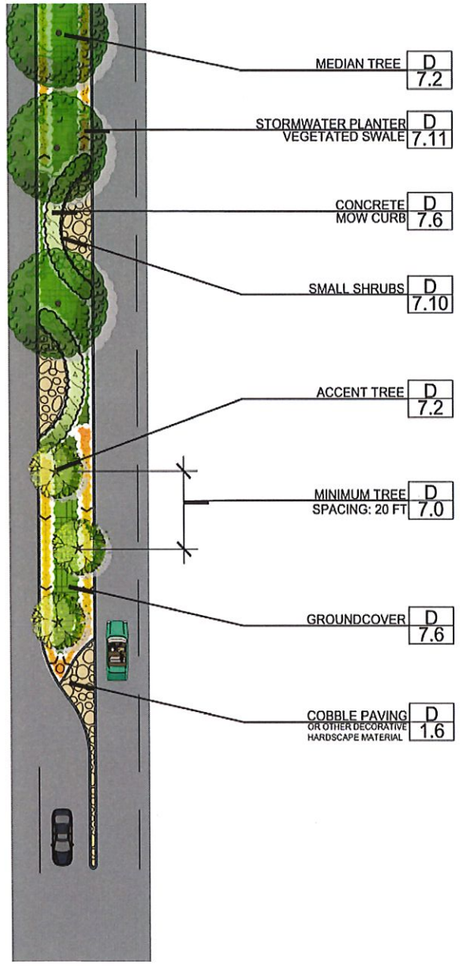


SECTION WITH TREES

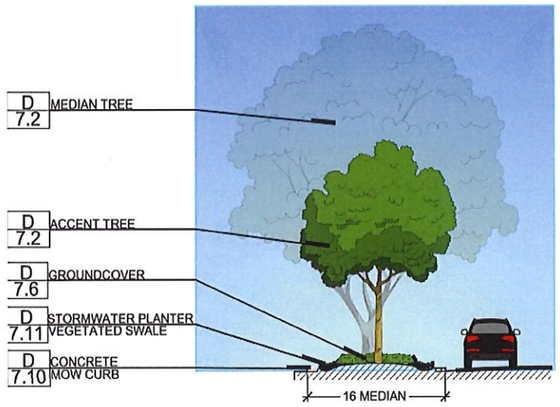
PROPOSED GUIDELINES FOR MEDIAN LANDSCAPE



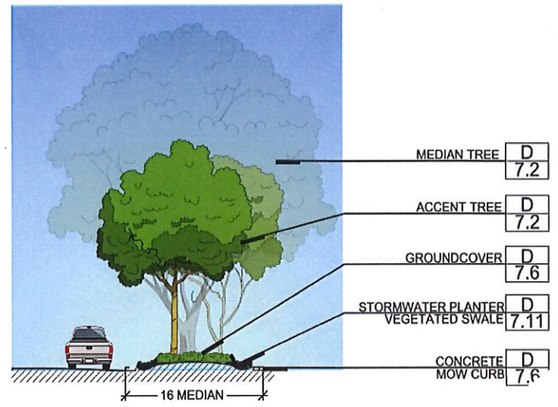
PLAN Alternative A



Alternative B



Alternative A



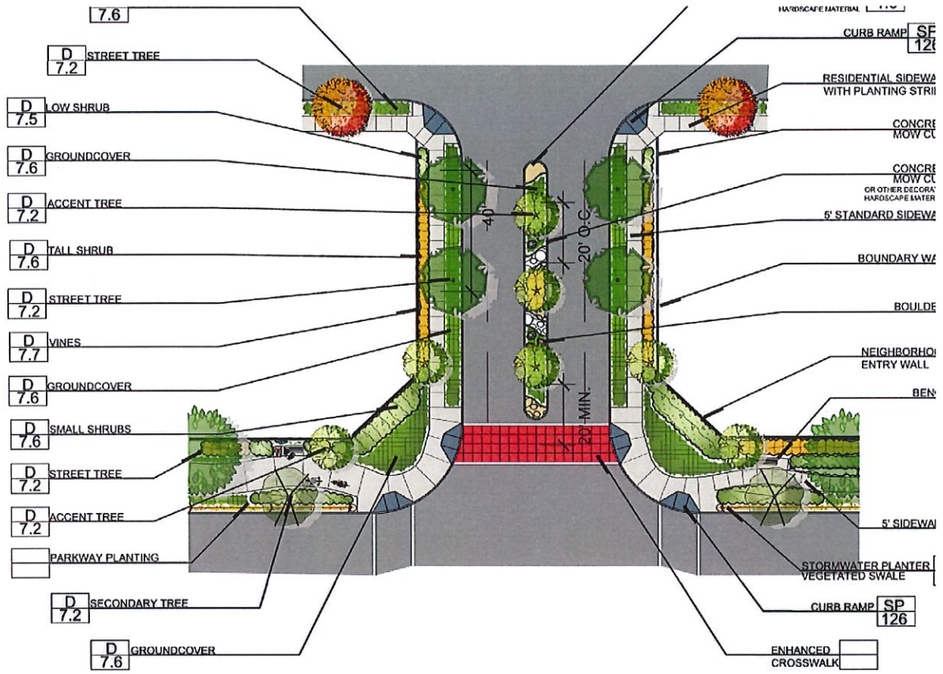
Alternative B

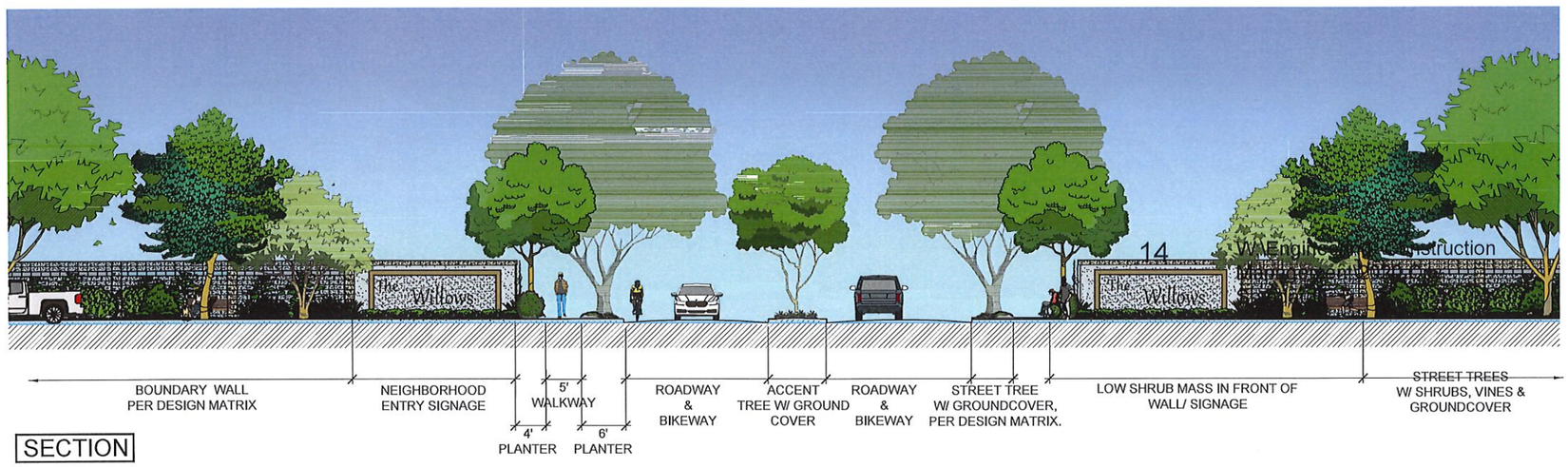
NOTES:
1. ALTERNATIVE MATERIALS FOR COBBLE INCLUDE DECORATIVE PAVING (I.E., COLORED AND STAMPED CONCRETE, CONCRETE OR BRICK PAVERS), DECORATIVE ROCK/STONE OR DECOMPOSED GRANITE.
2. STANDARD DETAIL CONCRETE MOW CURB USED, ALONG WITH CURB AS AN 14" MAINTENANCE STRIP.

SECTION

PROPOSED GUIDELINES FOR ENTRY TO SUBDIVISION

PLAN





SECTION

V. REFERENCES

City of Tracy, Street and Utilities Standard Plans, December 2019

City of Tracy, Parks and Streetscape Standard Plans, December 2019

City of Tracy, Standard Specifications, December 2019

City of Tracy, Design Standards, December 2019

City of Tracy, Roadway Master Plan, September 1994

City of Tracy, Bikeways Master Plan, February 2009

City of Tracy, Parks Master Plan, April 2013

California Code of Regulation, Title 23 Division 2, Chapter 27, Model Water Efficient Landscape Ordinance (MELOW) April 2015

California Center for Urban Horticulture, University of California, Davis - Water Use Claddification of Landscape Species (WUCOLS), 4th edition 2014

California Invasive Plant Council

Caltran Highway Design Manual, Chapter 1000 Bicycle transportation design 2018