

Standard Drawings



Adopted by City Council on October 24, 2018

Amended by Public Works Director on January 17, 2020

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1) Sidewalk Transitions

- a: Located adjacent to the top of ramp as needed
- b: 48" minimum width
- c: 1.5% (1:66) maximum cross slope
- d: 4.5% (1:22) maximum parallel slope

2) Landings

- a: Located above the ramp (as shown in details)
- b: 48" minimum clear space in all directions
- c: 1.5% (1:66) maximum parallel and cross slope

3) Perpendicular Curb Ramps

- a: Located above pan or below landing
- b: 48" minimum width
- c: 1.5% (1:66) maximum cross slope
- d: 7.5% (1:13) maximum slope
- e: All ramps shall have a Detectable Warning Surface(truncated domes) and shall be placed on the ramp unless the ramp is connected to a pan.
- f: Transition to gutter shall be flush and free of abrupt changes
- g: Grade breaks shall be perpendicular to direction of ramp run.

4) Parallel Curb Ramps

- a: Located below ramp (as shown in details)
- b: 60" minimum width at back of pan
- c: 54" minimum depth from back of pan to flow line
- d: 1.5% (1:66) maximum cross slope
- e: On corners, pan boundaries are to be radial
- f: Transitions to gutter shall be flush and free of abrupt charges.
- g: All pans shall have a Detectable Warning Surface (truncated domes).

5) Flares

- a: Located adjacent to ramp (as shown in details)
- b: Required between ramps where there is no planter area
- c: Required on the exterior of ramps where there is an adjacent concrete sidewalk, regardless of obstacles
- d: Shall also have at least 24" long segment of straight curb located on each side of the curb ramp and within marked crossings.
- e: Generally triangular in nature
- f: 9% (1:11) maximum slope when not in the path of travel
- g: 7.5% (1:13) maximum slope when flare is in the path of travel

6) Gutters

- a: Adjacent to ramp or pan
- b: 4.5% (1:22) maximum slope for 4' out from face of curb
- c: Transition to ramp or pan shall be flush and free of abrupt changes

7) Retaining Curbs


- a: Required adjacent to sidewalk transitions, landings, ramps and pans where the existing landscape (planter area) is 1" or higher at any point above the newly constructed curb ramp element
- b: Required for existing planter areas between ramps
- c: Retaining curbs are to have a 6" width and a vertical face
- d: Retaining curb foundations are to extend 8" below the adjacent ramp element surface
- e: Outside corners of retaining curbs must have a 6" radius

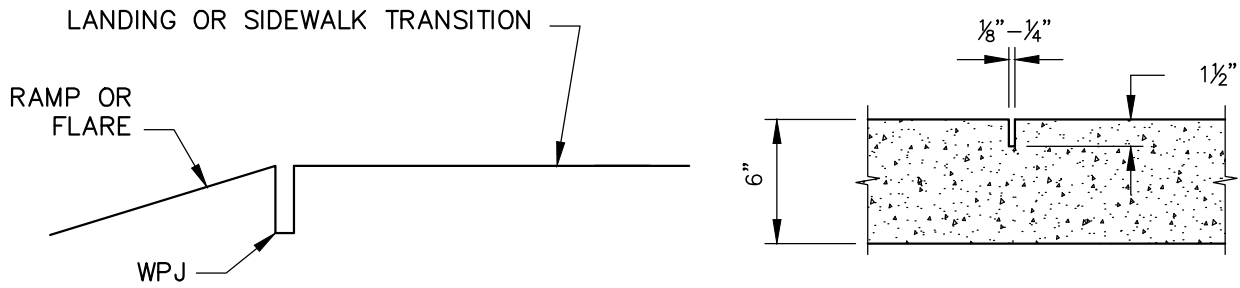
8) Detectable Warnings

- a: Placement of detectable warnings shall be per drawings AR - 3.2
- b: 6" - 8" from the face of curb
- c: 3' depth x full width
- d: Detectable Warning requirements, see AR - 3.1

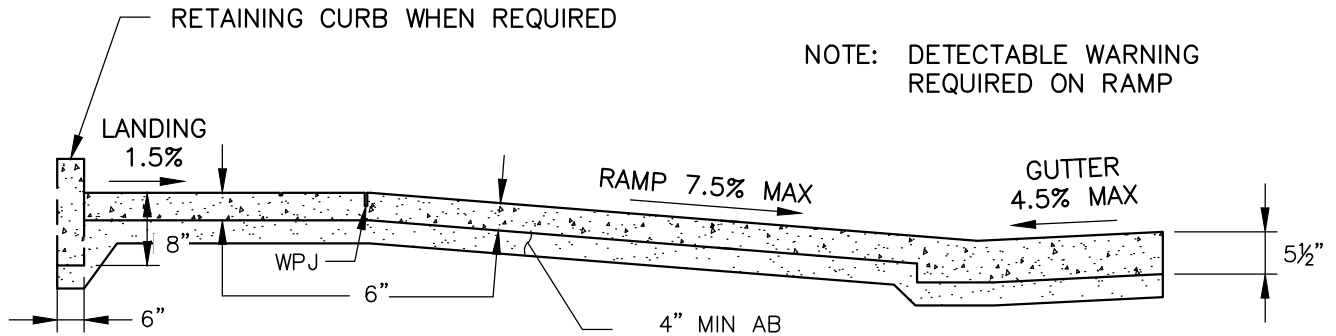
General Notes:

1. Directional curb ramps are required unless otherwise approved by the Engineer.
2. All elements, except gutters and retaining curbs, must be constructed planar in nature with weakened plane joints scored between each element.
3. Opposing curb ramps shall align unless otherwise approved by the Engineer.
4. These Elements, Definitions and Standards, General Details, and Standard Drawings shall apply to all curb and gutter types.
5. There are variations and adjustments that may be required upon the approval of the Engineer.
6. References to maximum cross slope of 1.5% are intended to allow for normal construction tolerances in an effort to keep the actual constructed cross slope to less than the required ADA standard of 2.0% maximum cross slope. Any installations of cross slopes greater than 2.0% will be unacceptable.

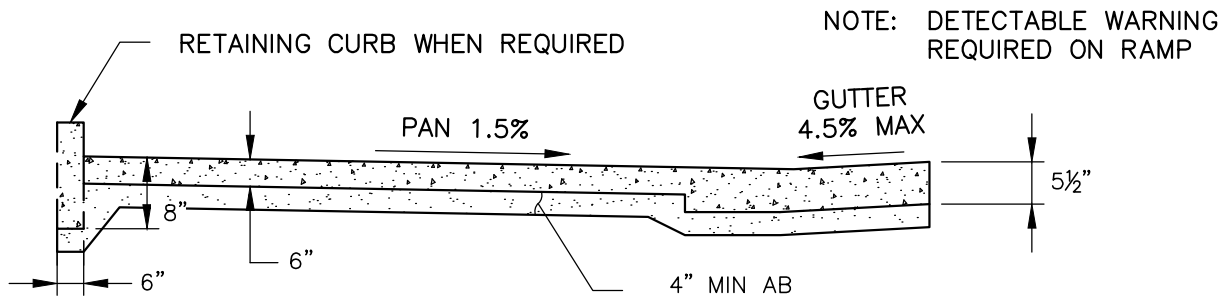
DATE: 09/22/2017		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Paul M. ...</i> 1/16/2020	
REVISION	BY	APPROVED	DATE	CURB RAMP ELEMENTS DEFINITIONS AND STANDARDS		CITY ENGINEER	DATE
1	LM	TW	07-18-2019				
						DRAWING NUMBER	
						AR - 2.0	



WEAKENED PLANE JOINT (WPJ)



**TYPICAL CROSS SECTION FOR CENTER LINE OF FLARE,
COMBO OR PLANTER STRIP CURB RAMP**



**TYPICAL CROSS SECTION FOR CENTER LINE OF PAN
CURB RAMP**

NOTES:

1. SURFACE OF RAMPS AND PANS SHALL HAVE A TRANSVERSE BROOM SURFACE TEXTURE ROUGHER THAN ADJACENT SIDEWALK.
2. COLORING SHALL BE ADDED TO NEW CONCRETE AS NECESSARY TO MATCH EXISTING COLOR.

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CURB RAMP GENERAL DETAILS

APPROVED BY:
Paul M. ...
CITY ENGINEER

1/16/2020
DATE

DRAWING NUMBER
AR - 3.0



Approved CBC Detectable Warnings must meet the following Criteria:

1) **A written 5-year Product Warranty for Shape, Color Fastness, Sound-on-Cane Acoustic Quality, Resilience, and Attachment:**

- A) **Shape:**
Must be able to retain its original shape when subjected to varying degrees of temperature, moisture, pressure, or other stress.
- B) **Color Fastness:**
The ability of the material or coating to retain its original hue without fading or changing when exposed to environmental conditions.
- C) **Sound-on-Cane Acoustic Quality:**
The ability of a material to retain its original sound characteristics when impacted by an object.
- D) **Resilience:**
The ability of the material to absorb energy when deformed elastically without creating a permanent deformation.
- E) **Attachment:**
Attachment will not degrade significantly for at **least five (5) years after initial installation**-meaning the product maintains at least 90% of original product and bond. Bolt down products shall not be used.

2) **Confirmation - A written dimensional specifications:**

A written dimensional specification of the truncated domes and raised bars as specified in the codes - see below dimensions:

- A) **Base Diameter:** 0.9" to 0.92"
- B) **Top Diameter:** 0.45" to 0.47"
- C) **Center-to-Center Spacing:** 2.3" to 2.4"
- D) **Height:** 0.18" to 0.22"

3) **Light on Dark or Dark on Light**

70% contrast with adjoining surfaces - Contrast = [(B1-B2)/B1] x 100 percent, where B1=light reflectance value (LRV) of the lighter area, B2=light reflectance value (LRV) of the darker area

4) **Methods of installations:**

Cast-in-place (required for all new construction) or Surface mount (retrofit only)

5) **Size:**

3' depth by full width

6) **Color:**

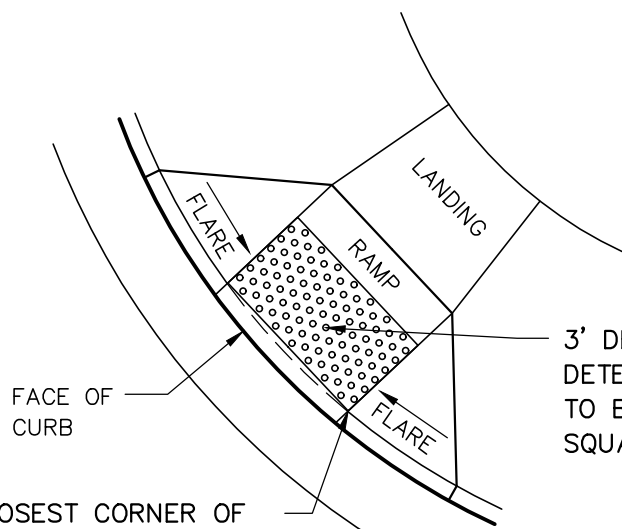
Color shall be Dark Gray #36118 of FED-STD-595 unless specified otherwise

7) **Approval:**

Armor-Tile or equal as approved by City

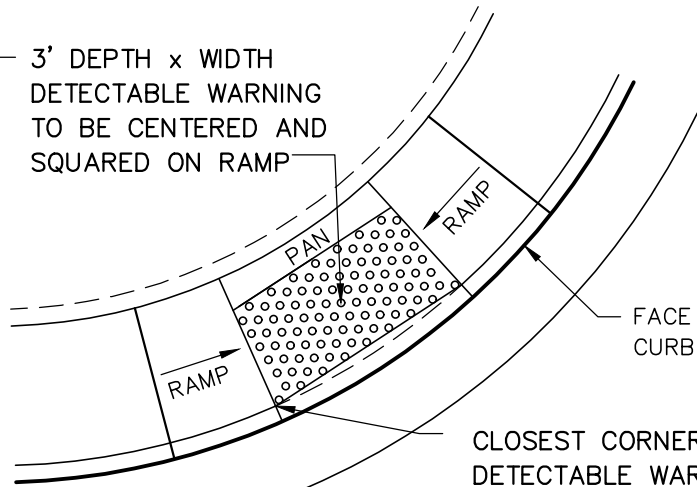


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				DETECTABLE WARNING SPECIFICATIONS		1/16/2020 DATE	
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1	LM	TW	07-18-2019	AR - 3.1			

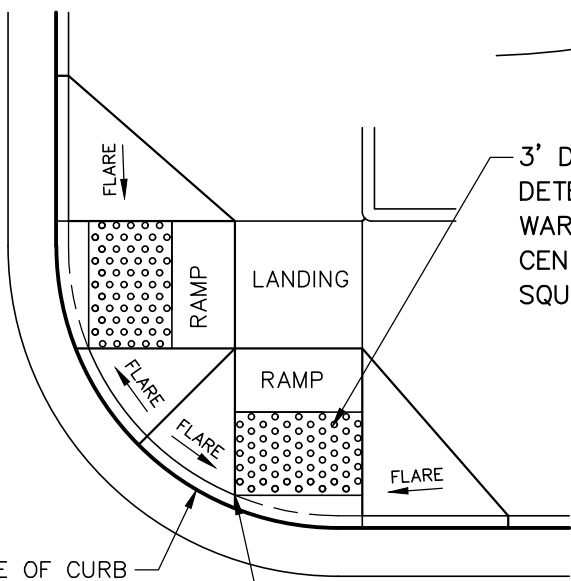


CLOSEST CORNER OF
DETECTABLE WARNING TO
STREET TO BE SET 6" -
8" FROM FACE OF CURB

3' DEPTH x WIDTH
DETECTABLE WARNING
TO BE CENTERED AND
SQUARED ON RAMP

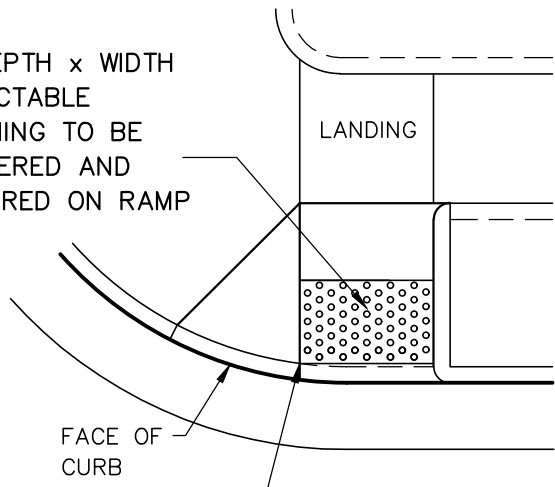


CLOSEST CORNER OF
DETECTABLE WARNING TO
STREET TO BE SET 6" -
8" FROM FACE OF CURB



CLOSEST CORNER OF DETECTABLE
WARNING TO STREET TO BE SET 6" -
8" FROM FACE OF CURB

3' DEPTH x WIDTH
DETECTABLE
WARNING TO BE
CENTERED AND
SQUARED ON RAMP




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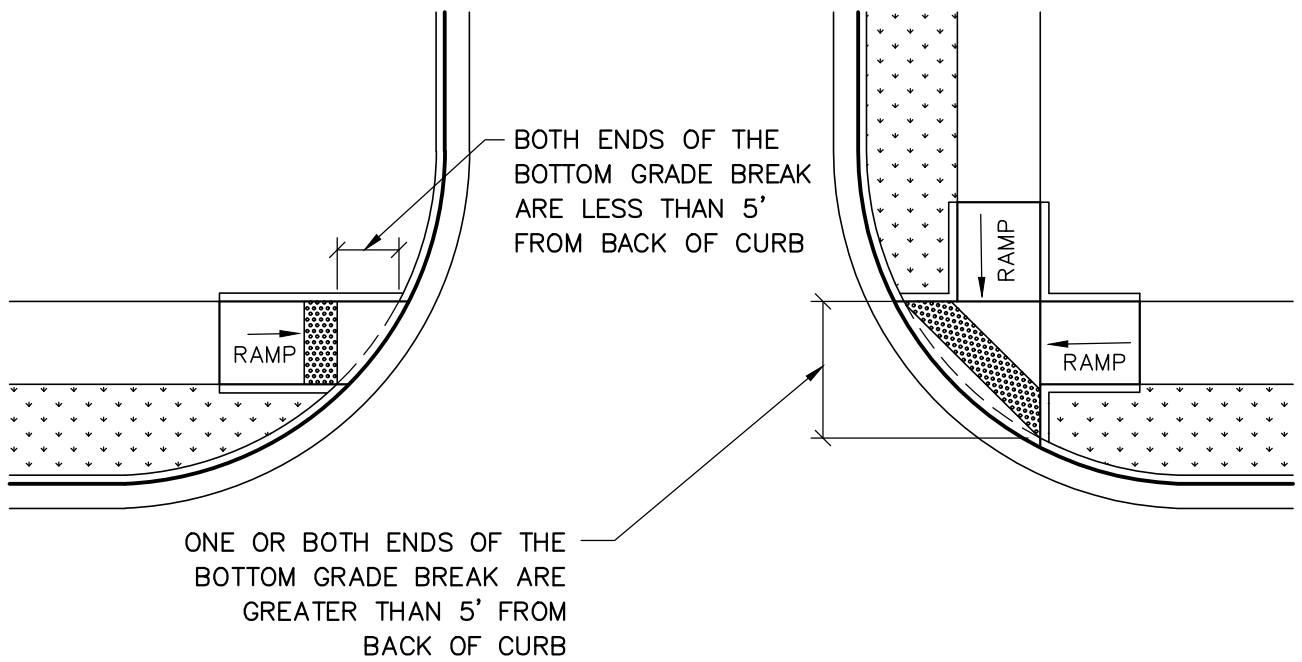
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**DETECTABLE WARNING
STANDARD LAYOUT**

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AR - 3.2A






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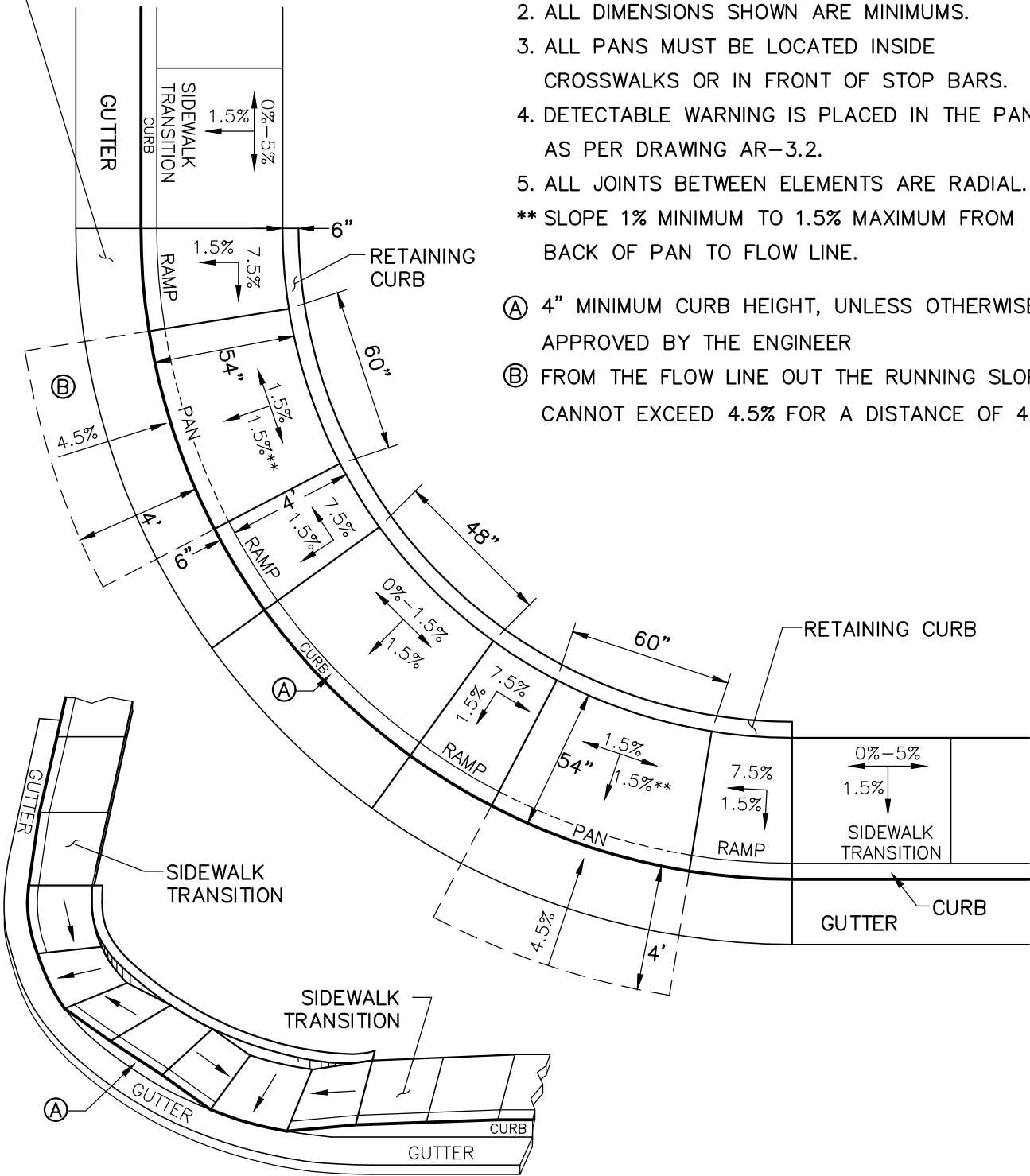
**DETECTABLE WARNING
STANDARD LAYOUT**

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AR - 3.2B



TRANSITION GUTTER CROSS SLOPE TO 4.5% ALONG TOTAL LENGTH OF AREA OF RAMPED PORTION (TYP.)



NOTES:

1. ALL SLOPES SHOWN ARE MAXIMUMS.
 2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
 3. ALL PANS MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
 4. DETECTABLE WARNING IS PLACED IN THE PAN AS PER DRAWING AR-3.2.
 5. ALL JOINTS BETWEEN ELEMENTS ARE RADIAL.
- ** SLOPE 1% MINIMUM TO 1.5% MAXIMUM FROM BACK OF PAN TO FLOW LINE.
- Ⓐ 4" MINIMUM CURB HEIGHT, UNLESS OTHERWISE APPROVED BY THE ENGINEER
 - Ⓑ FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.


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DUAL PARALLEL CURB RAMPS

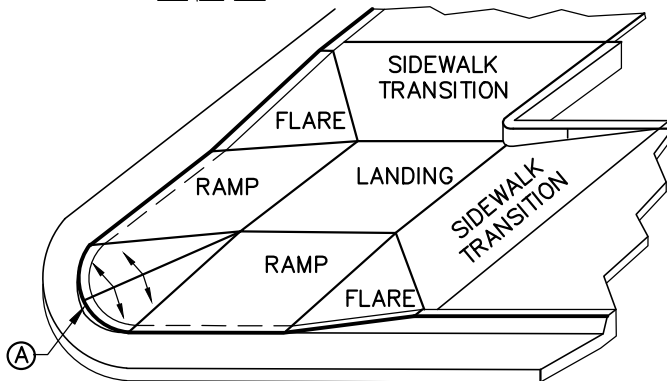
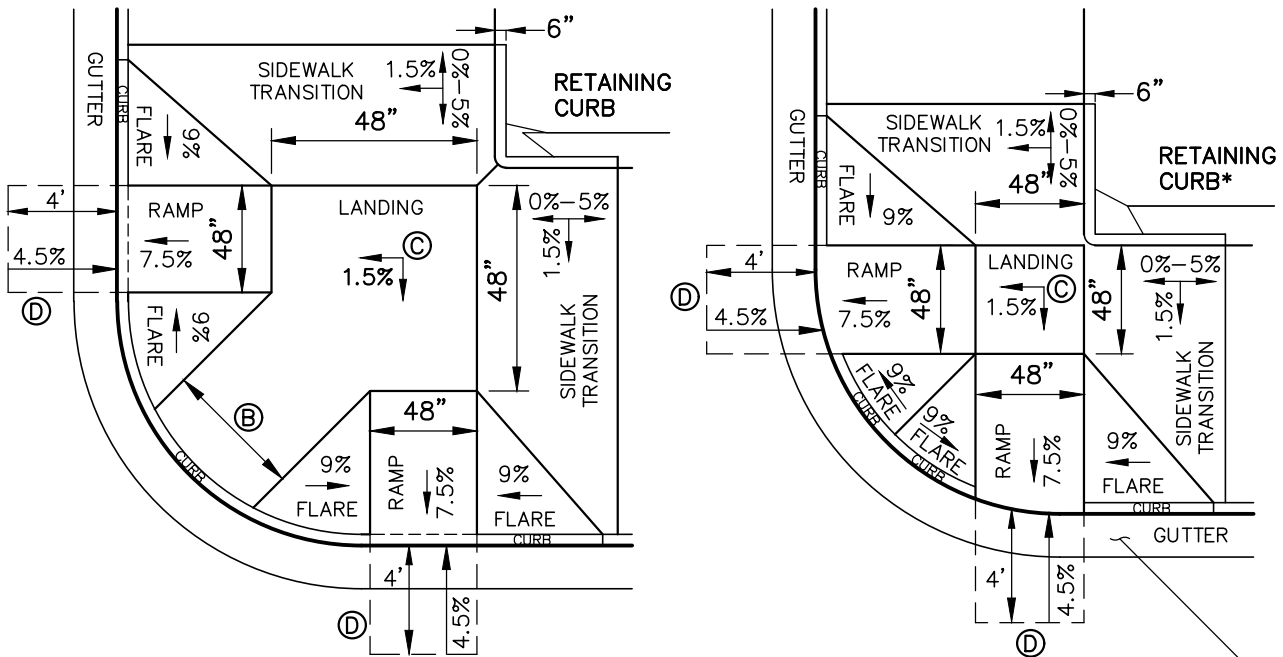
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DRAWING NUMBER
AR - 4.1



NOTES:

1. ALL SLOPES SHOWN ARE MAXIMUMS.
 2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
 3. THE RAMP MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
 4. DETECTABLE WARNING IS PLACED IN THE RAMP AND AS PER DRAWING AR-3.2.
 5. IF THE FLARE IS IN THE PATH OF TRAVEL THEN THE SLOPE SHALL NOT EXCEED 7.5%.
- (A) 4" MINIMUM CURB HEIGHT DESIRABLE – 9% MAX SLOPE CONTROLS CURB HEIGHT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- (B) NO. MINIMUM DIMENSION. FLARES CAN INTERSECT.
- (C) ALL RAMPS WILL HAVE A MINIMUM OF 48"x48" LANDING. TWO RAMPS CAN SHARE ONE LANDING.
- (D) FROM THE FACE OF CURB OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.



TRANSITION GUTTER CROSS SLOPE TO 5% ALONG TOTAL LENGTH OF AREA OF RAMPED PORTION (TYP.)


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**DUAL PERPENDICULAR CURB RAMPS
WITH ATTACHED SIDEWALK**

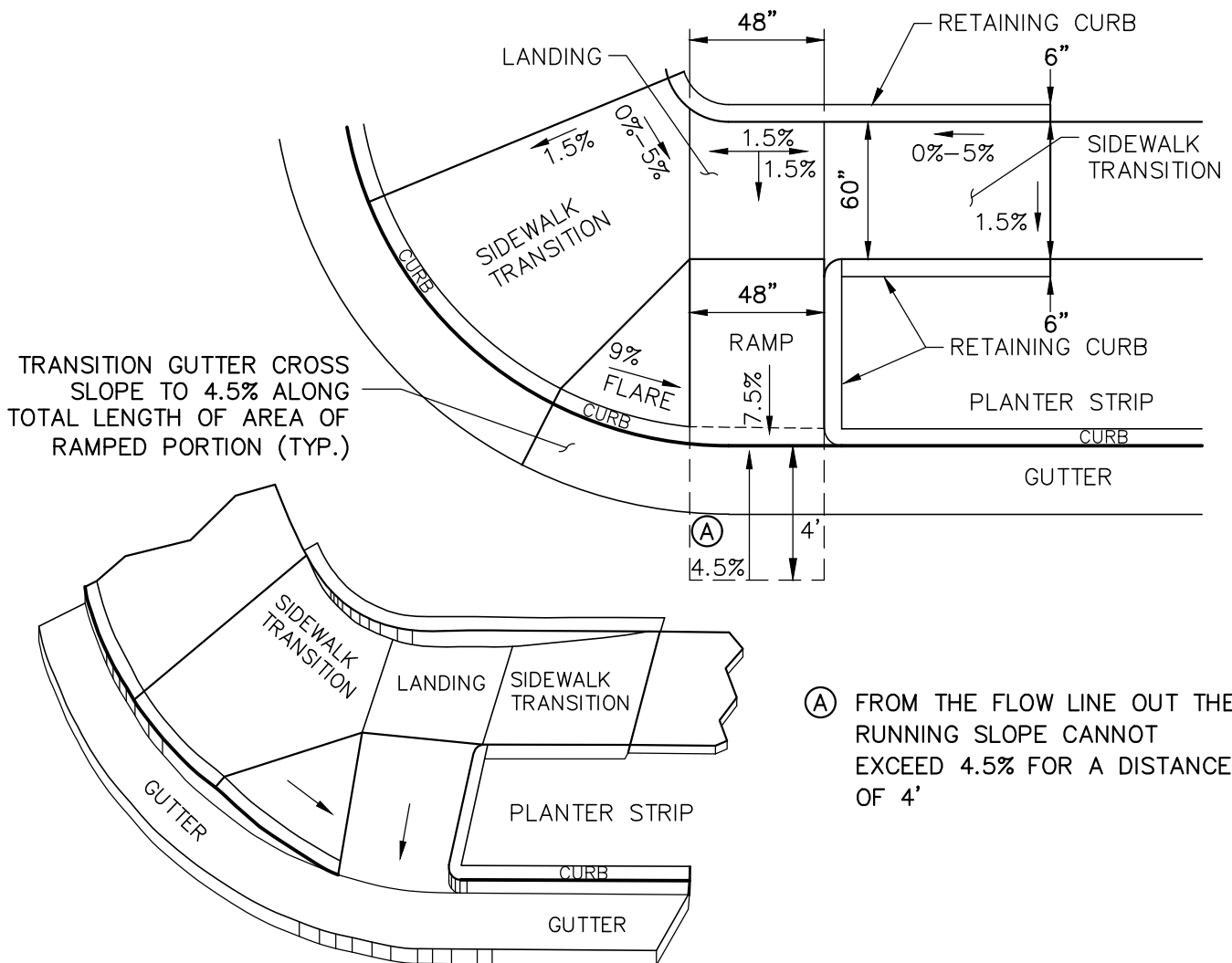
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DRAWING NUMBER
AR - 4.3



NOTES:

1. ALL SLOPES SHOWN ARE MAXIMUMS.
2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
3. RAMP MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS
4. DETECTABLE WARNING SURFACE IS PLACED IN THE RAMP PER STANDARD DRAWING AR-3.2.
5. ALL JOINTS BETWEEN ELEMENTS, EXCEPT BETWEEN RAMP AND FLARE ARE RADIAL. RAMP WIDTH REMAINS CONSTANT.
6. IF THE FLARE IS IN THE PATH OF TRAVEL THEN THE SLOPE SHALL NOT EXCEED 7.5%.
7. SINGLE RAMPS SHALL BE CONSTRUCTED PARALLEL TO CROSSING DIRECTION.



Ⓐ FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'


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CITY OF ELK GROVE - PUBLIC WORKS

SINGLE PERPENDICULAR CURB RAMP

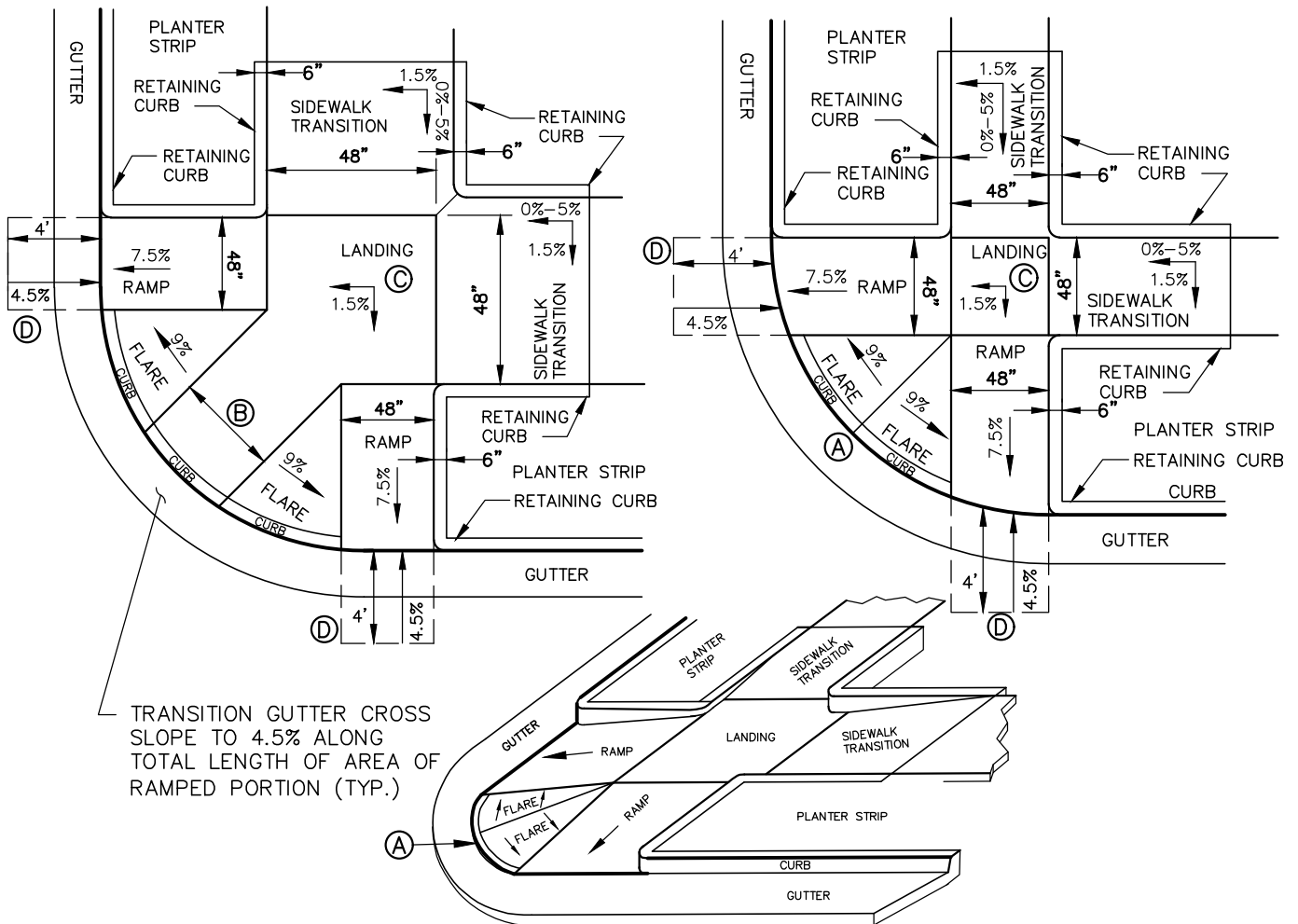
APPROVED BY:
Paul M. ... 1/16/2020
CITY ENGINEER DATE

DRAWING NUMBER
AR - 4.4



NOTES:

1. ALL SLOPES SHOWN ARE MAXIMUMS.
 2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
 3. THE RAMP MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
 4. DETECTABLE WARNING IS PLACED IN THE RAMP AND AS PER DRAWING AR-3.2.
 5. IF THE FLARE IS IN THE PATH OF TRAVEL THEN THE SLOPE SHALL NOT EXCEED 7.5%.
- (A) 4" MINIMUM CURB HEIGHT DESIRABLE – 9% MAX SLOPE CONTROLS CURB HEIGHT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- (B) NO. MINIMUM DIMENSION. FLARES CAN INTERSECT.
- (C) ALL RAMPS WILL HAVE A MINIMUM OF 48"x48" LANDING. TWO RAMPS CAN SHARE ONE LANDING.
- (D) FROM THE FACE OF CURB OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.



DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE
1	LM	TW	07-18-2019


CITY OF ELK GROVE - PUBLIC WORKS

**DUAL FLARED PERPENDICULAR CURB
RAMPS WITH DETACHED SIDEWALK**

APPROVED BY:
Paul M. ...
CITY ENGINEER

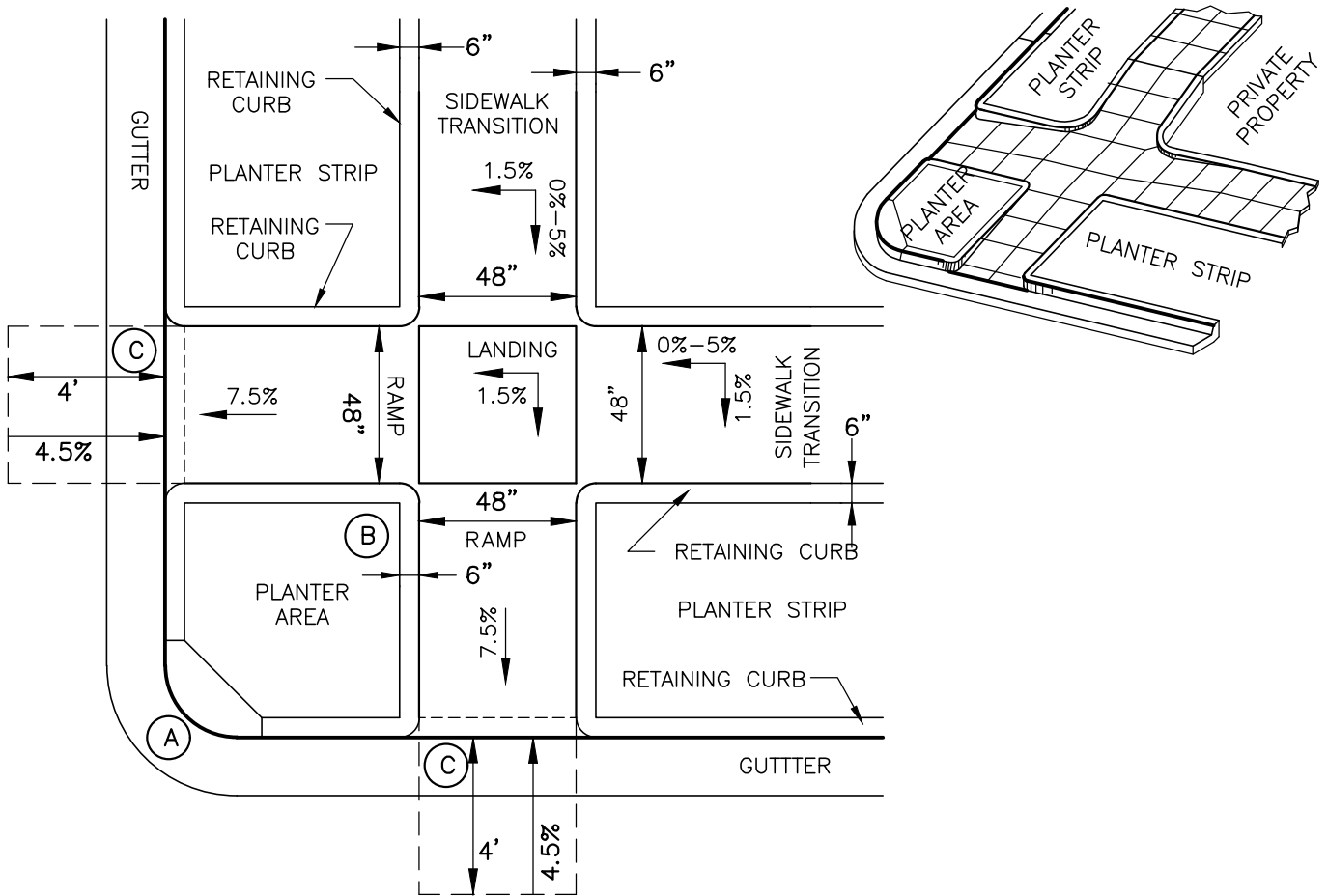
1/16/2020
DATE

DRAWING NUMBER
AR - 4.5



NOTES:

1. ALL SLOPES SHOWN ARE MAXIMUMS.
 2. ALL DIMENSIONS SHOWN ARE MINIMUMS.
 3. ALL RAMPS MUST BE LOCATED INSIDE CROSSWALKS OR IN FRONT OF STOP BARS.
 4. DETECTABLE WARNING IS PLACED IN THE RAMP AND AS PER DRAWING AR-3.2.
 5. ADD LAMP BLACK TO NEW CONCRETE AS DIRECTED BY ENGINEER. MATCH EXISTING COLOR.
- (A) STANDARD CURB HEIGHT TO MATCH EXISTING.
- (B) TOP OF RETAINING CURB TO MATCH ADJACENT RETAINING CURB ELEVATIONS CAN BE FLUSH WITH LANDING.
- (C) FROM THE FLOW LINE OUT THE RUNNING SLOPE CANNOT EXCEED 4.5% FOR A DISTANCE OF 4'.




DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE
1	LM	TW	07-18-2019

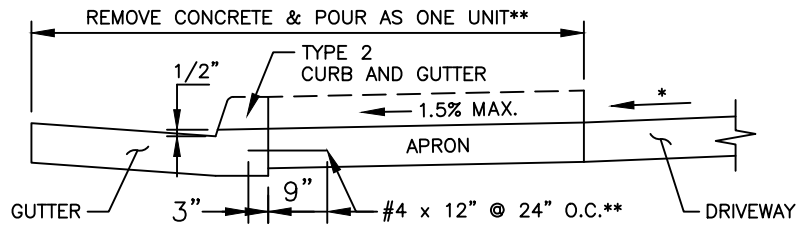
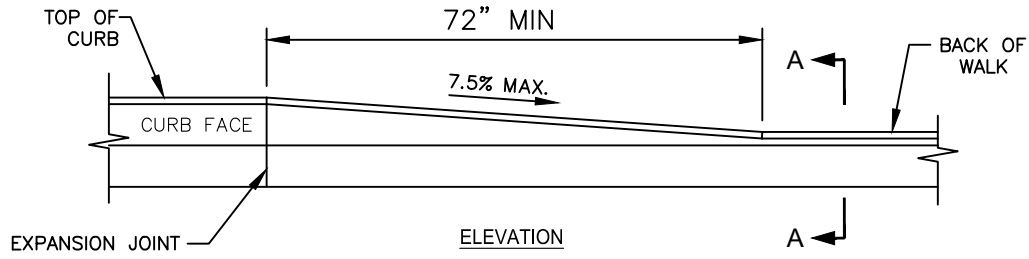
CITY OF ELK GROVE - PUBLIC WORKS

**DUAL PERPENDICULAR CURB
RAMPS WITH DETACHED SIDEWALK**

APPROVED BY:
Paul Muddoch 1/16/2020
CITY ENGINEER DATE

DRAWING NUMBER
AR - 4.6

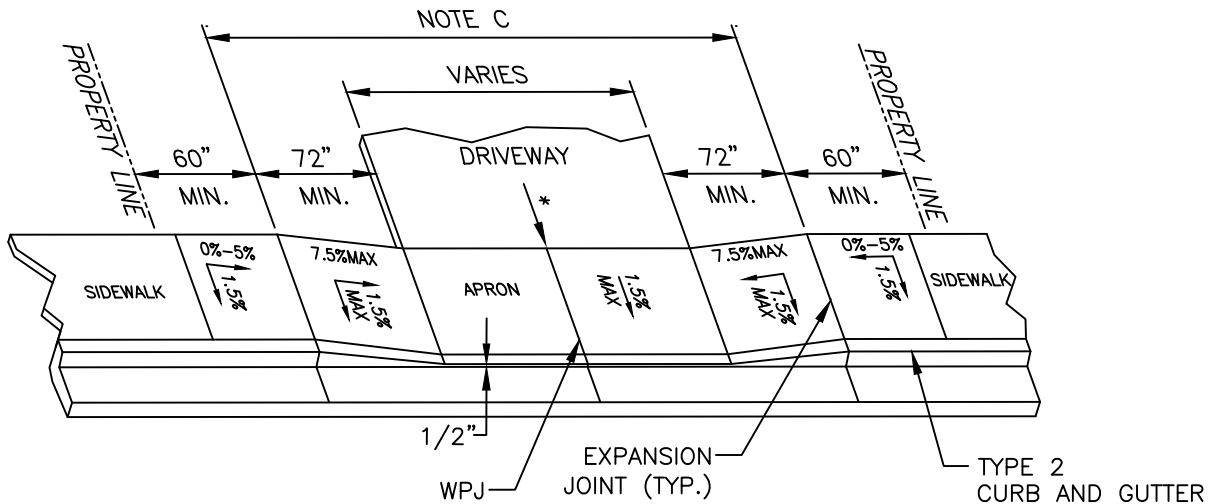




SECTION A-A

NOTES:

- A. DRIVEWAY WIDTH AS PER CITY CODE.
- B. WEAKENED PLANE JOINTS (WPJ) REQUIRED ON CENTERLINE FOR DRIVEWAYS 10' TO 20' WIDE. DRIVEWAYS 22' TO 35' WIDE SHALL HAVE TWO WPJ EVENLY SPACED AT 1/3 AND 2/3 POINTS.
- C. THICKNESS OF APRONS SHALL BE 6" ON RESIDENTIAL DRIVEWAYS AND 6" ON COMMERCIAL DRIVEWAYS.
- D. APRON WILL BE DEPRESSED ON CURB AND GUTTER WHEN RECONSTRUCTING EXISTING COMMERCIAL DRIVEWAYS.
- * SEE SECTION 4-10
- ** IF CURB & GUTTER ARE POURED SEPARATE OF APRON THEN DOWELS ARE REQUIRED AT BACK OF CURB.



DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

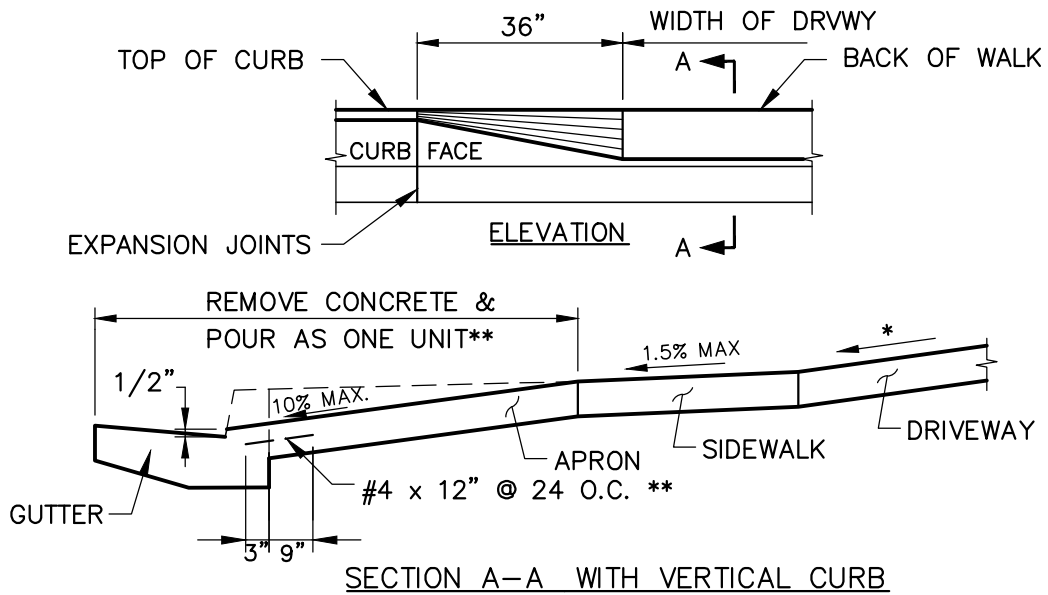
SIDEWALK DRIVEWAY DETAIL

APPROVED BY:
Robert M. ...
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER

AR - 4.7

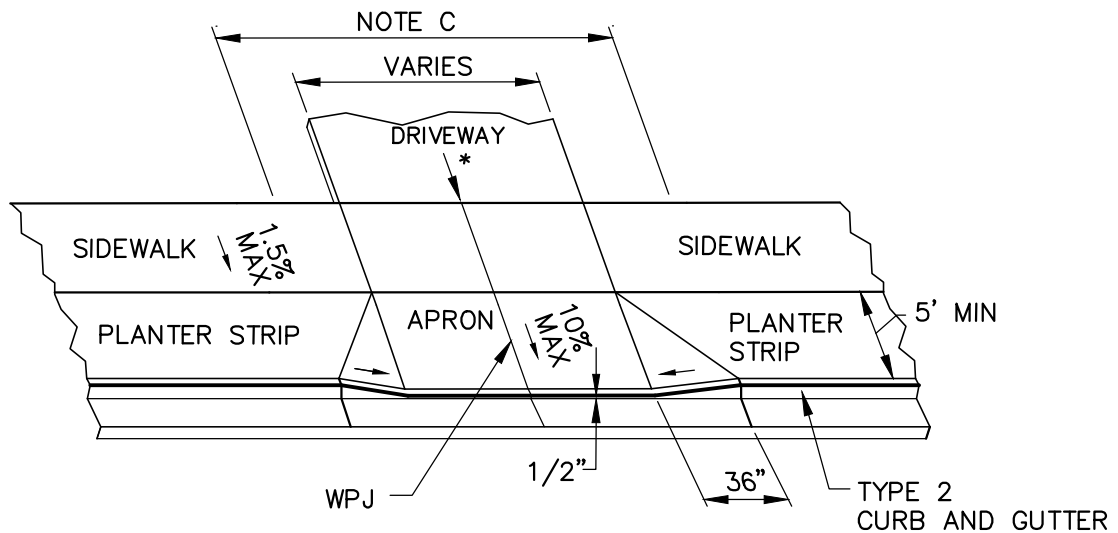


NOTES:

1. DRIVEWAY WIDTH AS PER CITY CODE.
2. WEAKENED PLANE JOINTS (WPJ) REQUIRED ON CENTERLINE FOR DRIVEWAYS 10' TO 20' WIDE DRIVEWAYS 22' TO 35' WIDE SHALL HAVE TWO WPJ EVENLY SPACED AT 1/3 AND 2/3 POINTS.
3. THICKNESS OF APRONS SHALL BE 6".

* SECTION 4-10

** IF CURB & GUTTER ARE POURED SEPARATE OF APRON THEN DOWELS ARE REQUIRED AT BACK OF CURB.




DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE
1	LM	TW	07-18-2019

CITY OF ELK GROVE - PUBLIC WORKS

**DETACHED SIDEWALK
DRIVEWAY DETAIL**

APPROVED BY:
Paul M. ... 1/16/2020
CITY ENGINEER DATE

DRAWING NUMBER
AR - 4.8

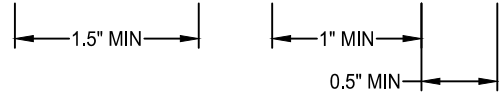


CITY OF ELK GROVE PLAN APPROVAL BLOCK

CITY OF ELK GROVE PUBLIC WORKS	
<i>(PUT PROJECT NAME HERE)</i>	
Parcel No.:	
California Map Coordinates: <small>(Can use Thomas Brothers Guide to estimate coordinates)</small>	
Facility Code:	County Drainage Fee Paid:
City's Project No.: "EG - # - #"	
Accepted By:	
CITY OF ELK GROVE PUBLIC WORKS _____ DATE	

PLAN REVISION BLOCK

Rev. No.	Description	Engr Init.	CITY ACCEPTANCE	
			By	Date



- PROJECT NAME, PARCEL NUMBER AND MAP COORDINATES SHALL BE IN 10 POINT ARIAL FONT.
- APPROVAL BLOCK SHALL BE LOCATED AT THE LOWER RIGHT CORNER OF TITLE SHEET, WITHIN BOTTOM 6 INCHES AND RIGHT 8 INCHES OF PAGE.

1. PUT REVISION BLOCK ON ALL SHEETS.

OTHER AGENCY APPROVAL BLOCKS

INCLUDE ON PLANS AS NECESSARY

Approved By:

ELK GROVE CSD - FIRE DEPARTMENT _____ DATE

Approved By:

ELK GROVE CSD - PARKS AND RECREATION DEPT. _____ DATE

Approved By:

COUNTY SANITATION DISTRICT 1 _____ DATE


Approved For: Water Conservation Only

CITY OF ELK GROVE LANDSCAPE ARCHITECT _____ DATE

Approved By:

WATER AGENCY NAME _____ DATE

- PUT "SACRAMENTO COUNTY WATER AGENCY" OR "ELK GROVE WATER SERVICE" OR BOTH IN PLACE OF "WATER AGENCY NAME" ABOVE.

DATE: 09/22/2017		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Robert M. ...</i> CITY ENGINEER		10/24/2018 DATE
REVISION	BY	APPROVED	DATE	APPROVAL BLOCKS				DRAWING NUMBER
								D - 1
								

DRAFTING STANDARDS

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

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


2. SUBDIVISION PLANS

	<u>LINE WIDTH</u>	
STREET CENTER LINES	—————	0.01" WIDTH
RADIAL BEARING LINES	—————	0.01" WIDTH
EASEMENT LINES	—————	0.01" WIDTH
LOT LINES	—————	0.02" WIDTH
RIGHT-OF-WAY LINES	—————	0.03" WIDTH
BLOCK OUTLINE	—————	0.03" WIDTH
SUBDIVISION OUTLINE	—————	0.04" WIDTH
MONUMENTS SET	○	
MONUMENTS SET IN MONUMENT BOX	⊙	
MONUMENTS FOUND	⊗	
MONUMENTS FOUND IN MONUMENT BOX	⊗	
BENCH MARK ELEVATION	⊕	
STREET NAMES	NAME	LETTERS 0.175" HIGH AND 0.04" LINE WIDTH
LOT NUMBERS	36	LETTERS 0.175" HIGH AND 0.02" LINE WIDTH
BEARINGS, DISTANCES, CURVE DATA,		LETTERS 0.100" HIGH AND 0.01" LINE WIDTH
COORDINATES, ETC.		LETTERS 0.175" HIGH AND SHADOW LETTERING AND 0.01" LINE WIDTH
ADJACENT SUBDIVISIONS		LETTERS 0.175" HIGH AND DOTTED LETTERING AND 0.01" LINE WIDTH
ADJACENT LOT NUMBERS		

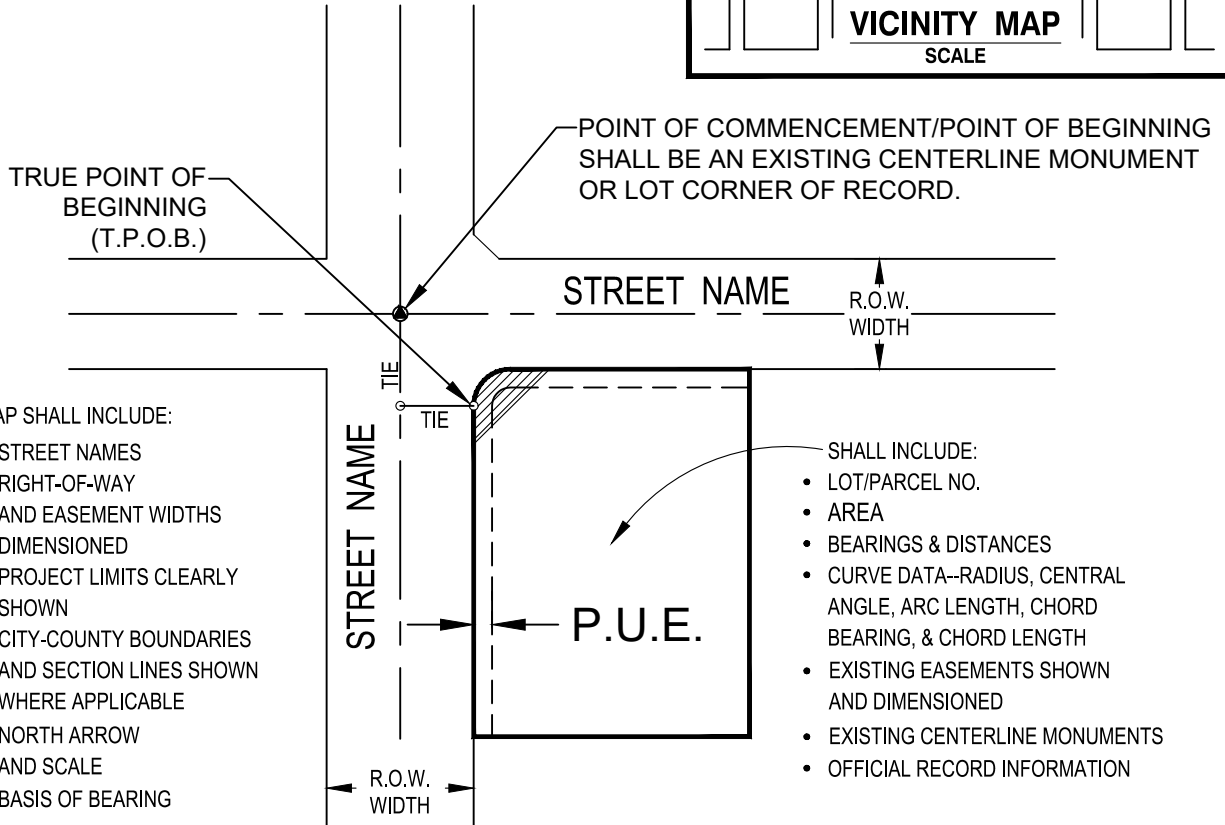
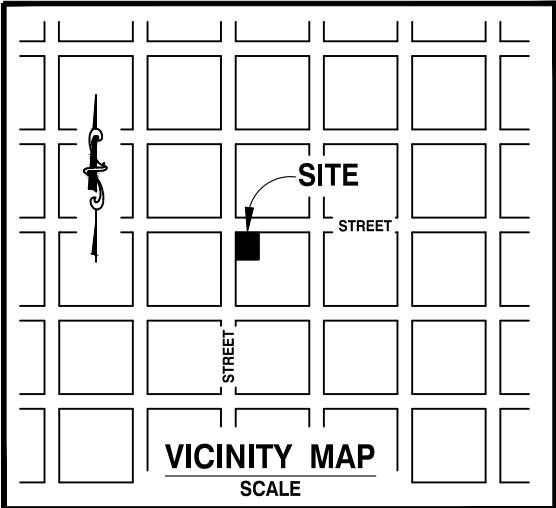
TITLE BLOCK AND OTHER RELATED LETTERING SHALL BE IN ACCORDANCE WITH STANDARD ACCEPTED ENGINEERING PRACTICE, BUT IN NO CASE SHALL THE LETTERING BE LESS THAN 0.100 INCH IN HEIGHT AND USING LINE WIDTH OF 0.01".

3. IMPROVEMENT PLANS

<u>DESCRIPTION</u>	<u>PROPOSED</u>	<u>EXISTING</u>
SANITARY SEWER	6" SS	6" SS
STORM SEWER (AKA STORM DRAIN)	8" SD	8" SD
GAS LINE	4" G	4" G
WATER LINE	8" W	8" W
TELEPHONE	T	T
CABLE TELEVISION	TV	TV
GAS VALVE	G ⊗	G
WATER VALVE	W ⊗	W
ELECTRICAL CONDUIT	E	E
MATCH LINE	—————	
	STA. 5+00	

DATE: 09/22/2017	NOT TO SCALE	CITY OF ELK GROVE - PUBLIC WORKS	APPROVED BY:  CITY ENGINEER
REVISION	BY	APPROVED	DATE
DRAFTING STANDARDS			DRAWING NUMBER D - 2





- MAP SHALL INCLUDE:
- STREET NAMES
 - RIGHT-OF-WAY AND EASEMENT WIDTHS DIMENSIONED
 - PROJECT LIMITS CLEARLY SHOWN
 - CITY-COUNTY BOUNDARIES AND SECTION LINES SHOWN WHERE APPLICABLE
 - NORTH ARROW AND SCALE
 - BASIS OF BEARING

- SHALL INCLUDE:
- LOT/PARCEL NO.
 - AREA
 - BEARINGS & DISTANCES
 - CURVE DATA--RADIUS, CENTRAL ANGLE, ARC LENGTH, CHORD BEARING, & CHORD LENGTH
 - EXISTING EASEMENTS SHOWN AND DIMENSIONED
 - EXISTING CENTERLINE MONUMENTS
 - OFFICIAL RECORD INFORMATION

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


PREPARED BY:

 (ENGINEERING FIRM)


DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

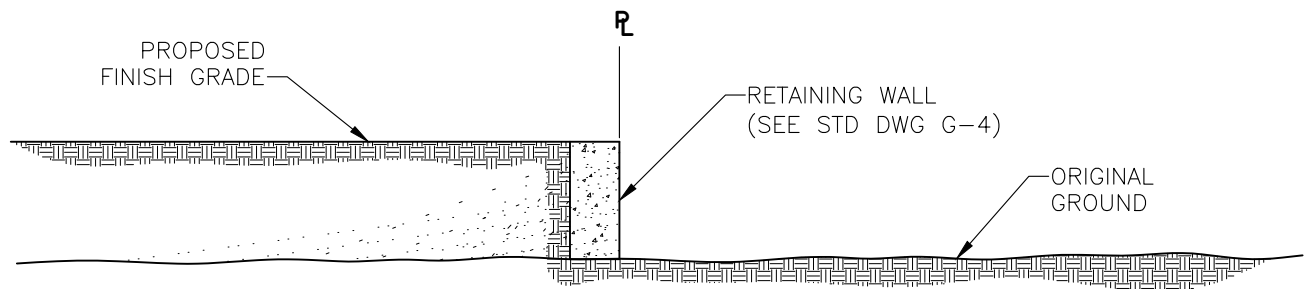
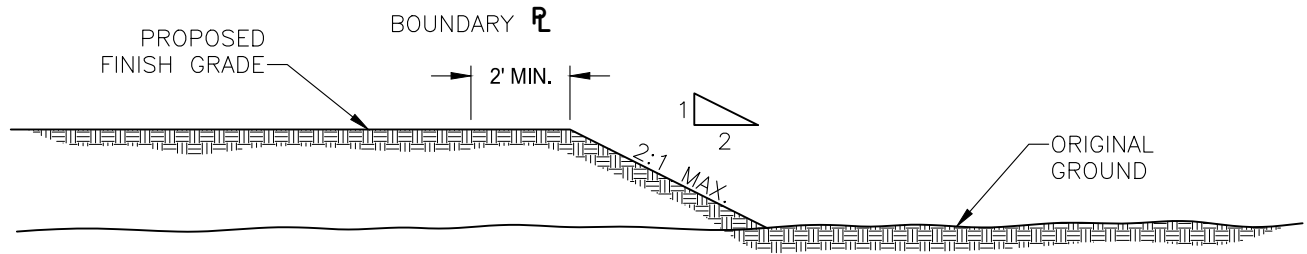
CITY OF ELK GROVE - PUBLIC WORKS

**STANDARD MAP ASSOCIATED
WITH LEGAL DESCRIPTION FOR
8-1/2 " x 11" SHEET**

APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
D - 3







DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

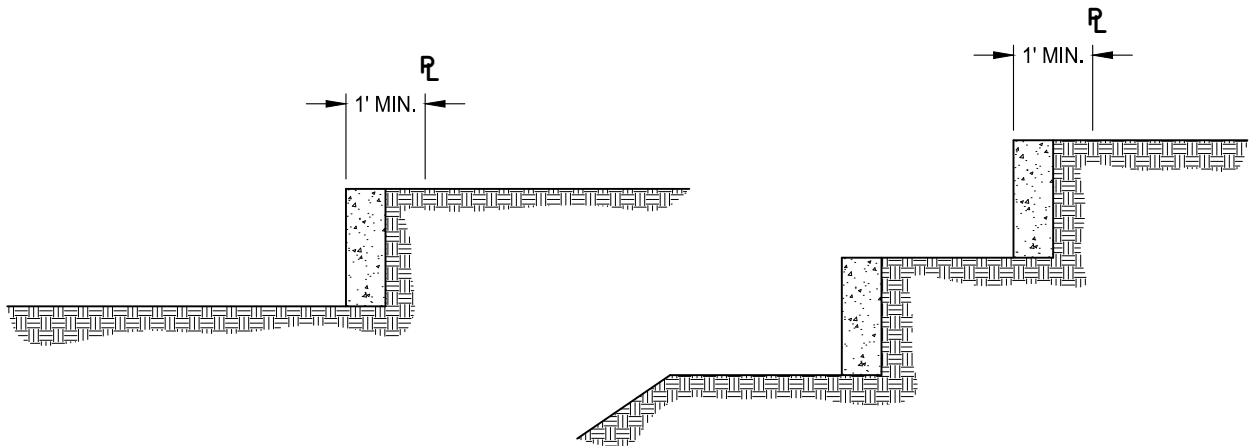
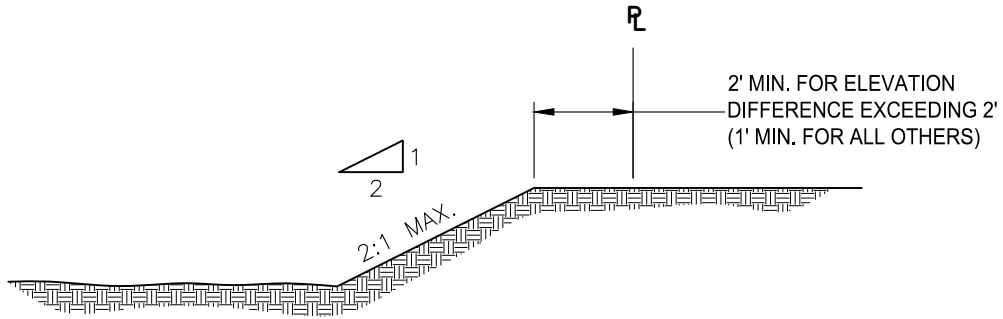
CITY OF ELK GROVE - PUBLIC WORKS

**EXTERIOR PERIMETER
PROPERTY LINE GRADING FOR
FILL AREAS**

APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
G - 1

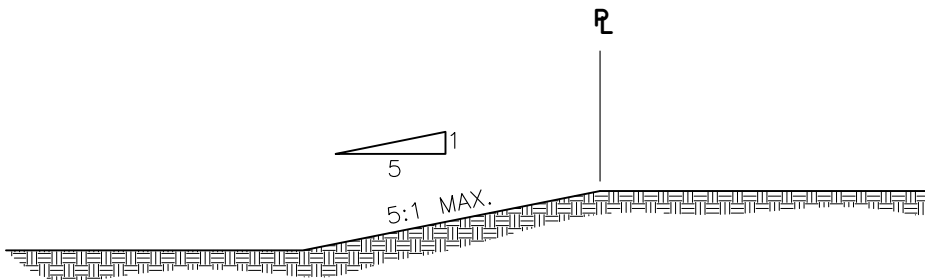




RETAINING WALL

(SEE STD DWG G-3 AND G-4)

NOTE: NO DOUBLE RETAINING WALLS SHALL BE CONSTRUCTED ON SIDE YARD



DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

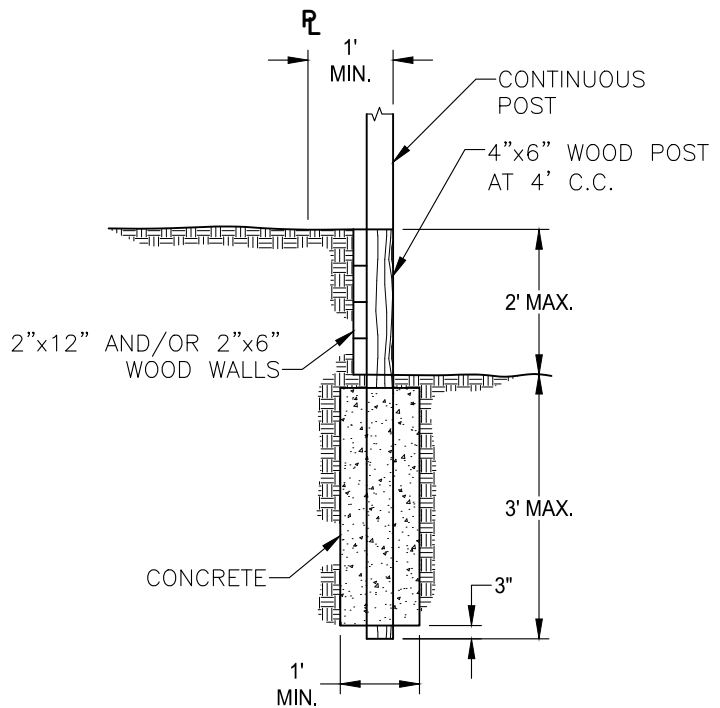
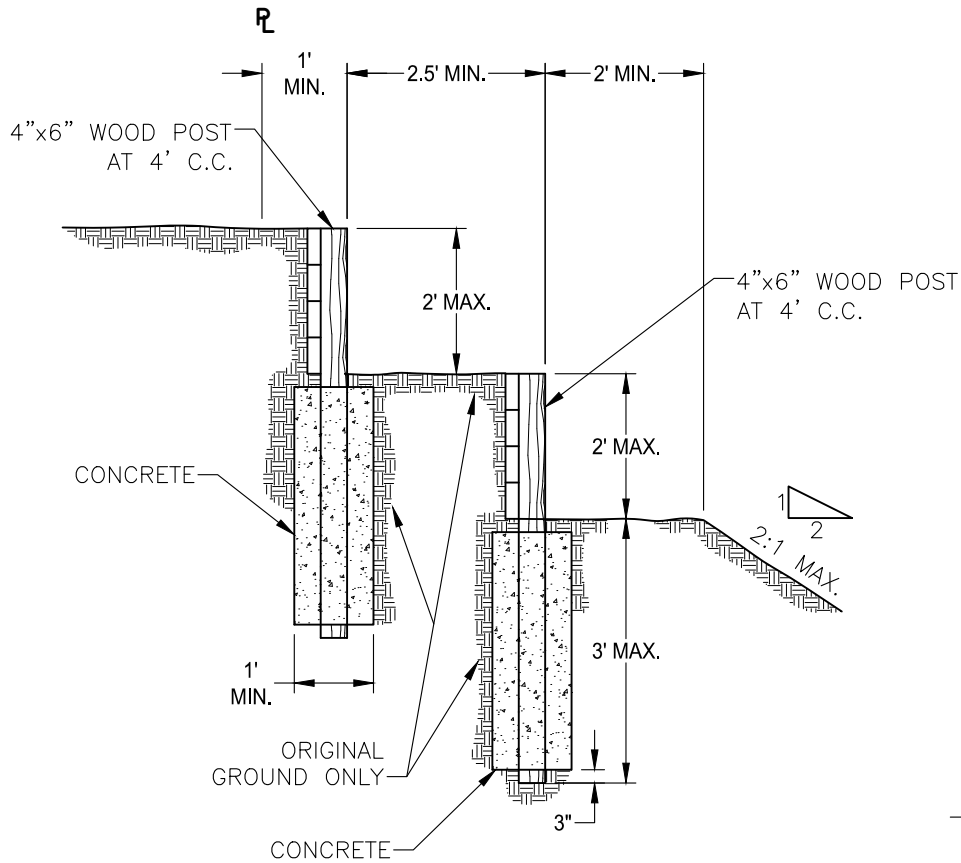
**GRADING FOR INTERIOR
PROPERTY LINES AND PERIMETER
PROPERTY LINES IN CUT AREAS**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
G - 2





NOTES:

1. MATERIAL FOR WALLS SHALL BE GRADE NO. 2 OR BETTER REDWOOD WITH NO OPEN GRAIN MATERIAL.
2. WOOD WALLS SHALL NOT BE USED ADJACENT TO PUBLIC RIGHTS OF WAY.
3. ALL WALLS WITHIN 8 FEET OF A BOUNDARY OR PROJECT PHASE LINE SHALL BE CONSTRUCTED WITH MASONRY OR CONCRETE.
4. 4-INCH BY 6-INCH POSTS AT 4-FOOT ON CENTER SHALL BE USED AS FENCE POSTS WHEN FENCES ARE ATTACHED TO RETAINING WALLS.
5. NO DOUBLE RETAINING WALLS SHALL BE CONSTRUCTED ON SIDE YARDS.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

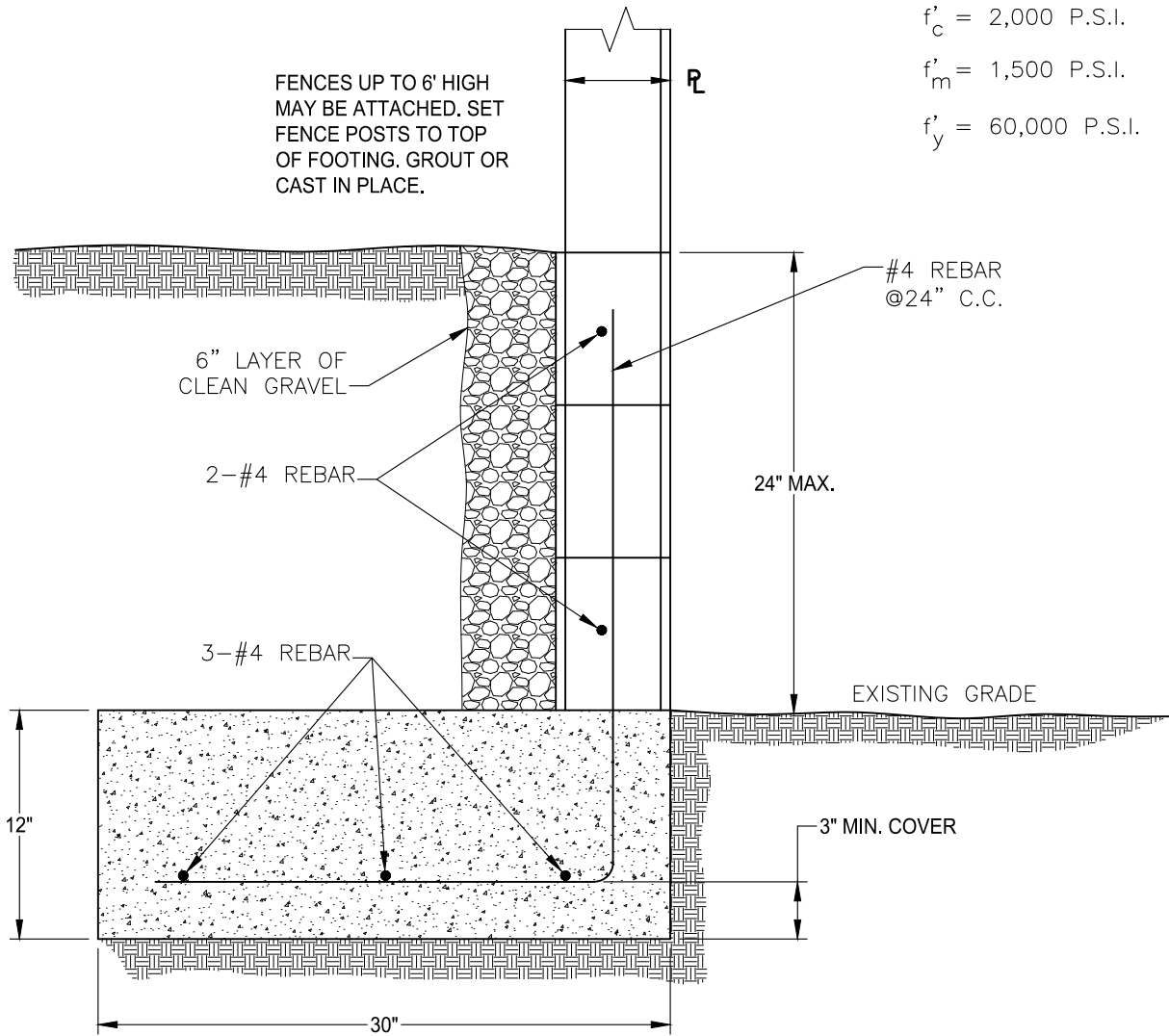
WOOD RETAINING WALL DETAILS FOR INTERIOR PROPERTY LINES

APPROVED BY:
Robert Muldoon
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
G - 3





NOTES:

1. 8-INCH NORMAL WEIGHT BLOCK WITH FULL GROUTING REQUIRED.
2. A 6-INCH WIDE CAST-IN-PLACE CONCRETE STEM WALL MAY BE USED IN LIEU OF MASONRY.
3. SPECIAL INSPECTION IS NOT REQUIRED.
4. A BUILDING PERMIT IS REQUIRED FOR WALLS EXCEEDING 24" IN HEIGHT WHEN CONSTRUCTION DETAILS ARE NOT SHOWN ON APPROVED IMPROVEMENT PLANS.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

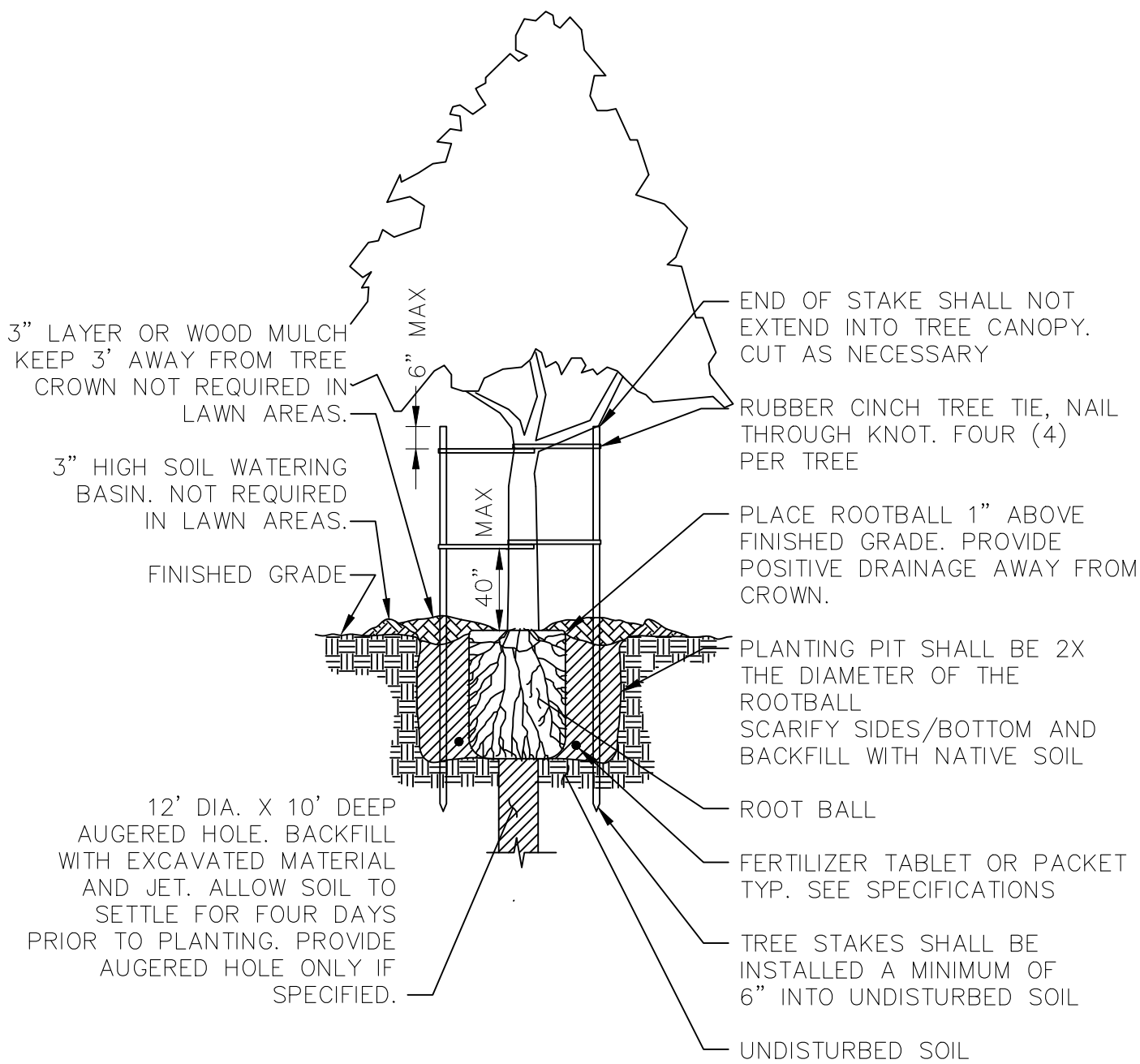
**MASONRY/CONCRETE RETAINING WALL
 DETAIL FOR FILL AREAS AT BOUNDARY
 AND PROJECT PHASE LINES**

APPROVED BY:
Robert M. Muddoch
 CITY ENGINEER

10/24/2018
 DATE

DRAWING NUMBER
G - 4





NOTE:
FOR 36" BOX TREES. STAKE WITH TWO 2" X 12'
LONG SCHEDULE 40 GALVANIZED STEEL PIPES.
PAINTED WITH TWO COATS OF DARK GREEN
PAINT. TIE TREE WITH A METAL TWIST BRACE
BOLTED TO THE STAKES OR OTHER APPROVED
TREE TIE AS SPECIFIED.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

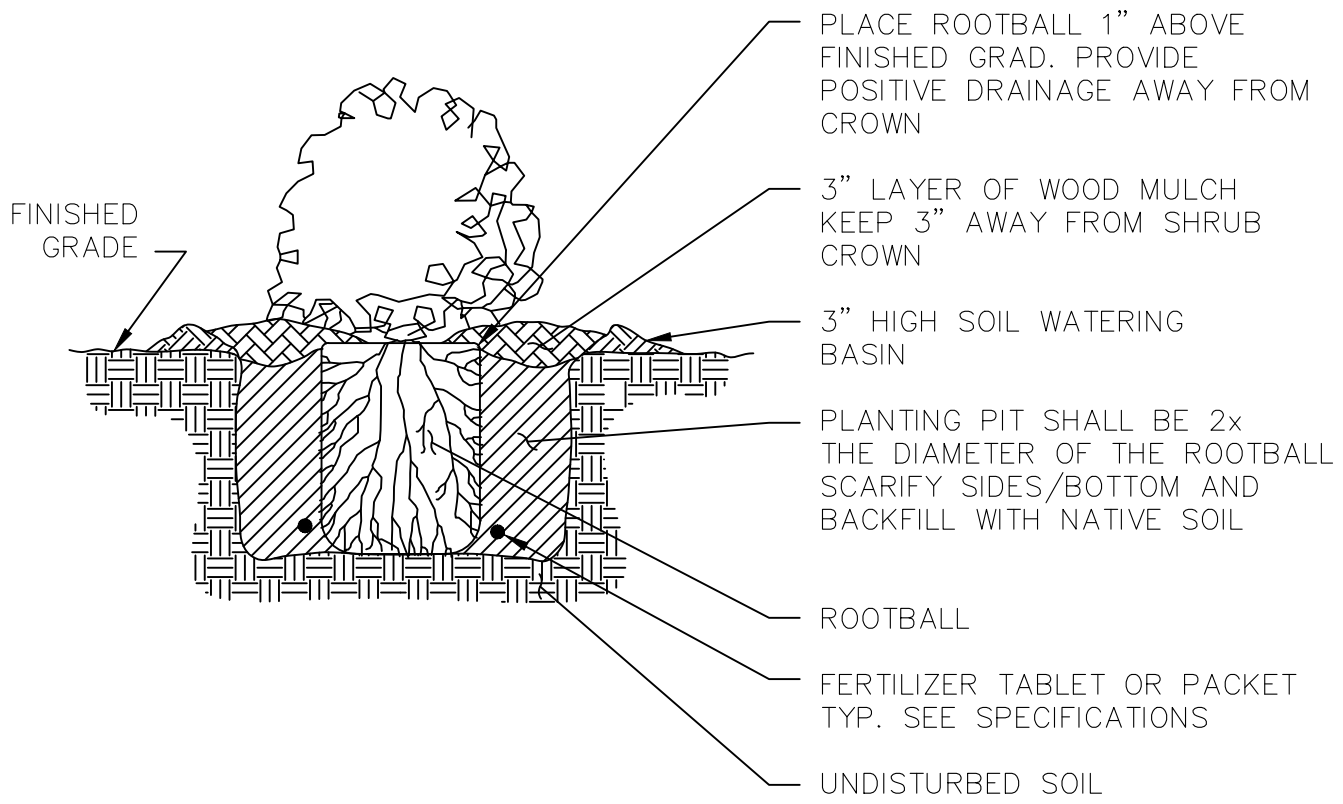
TREE PLANTING

APPROVED BY:
Robert Murdoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
L-1







DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

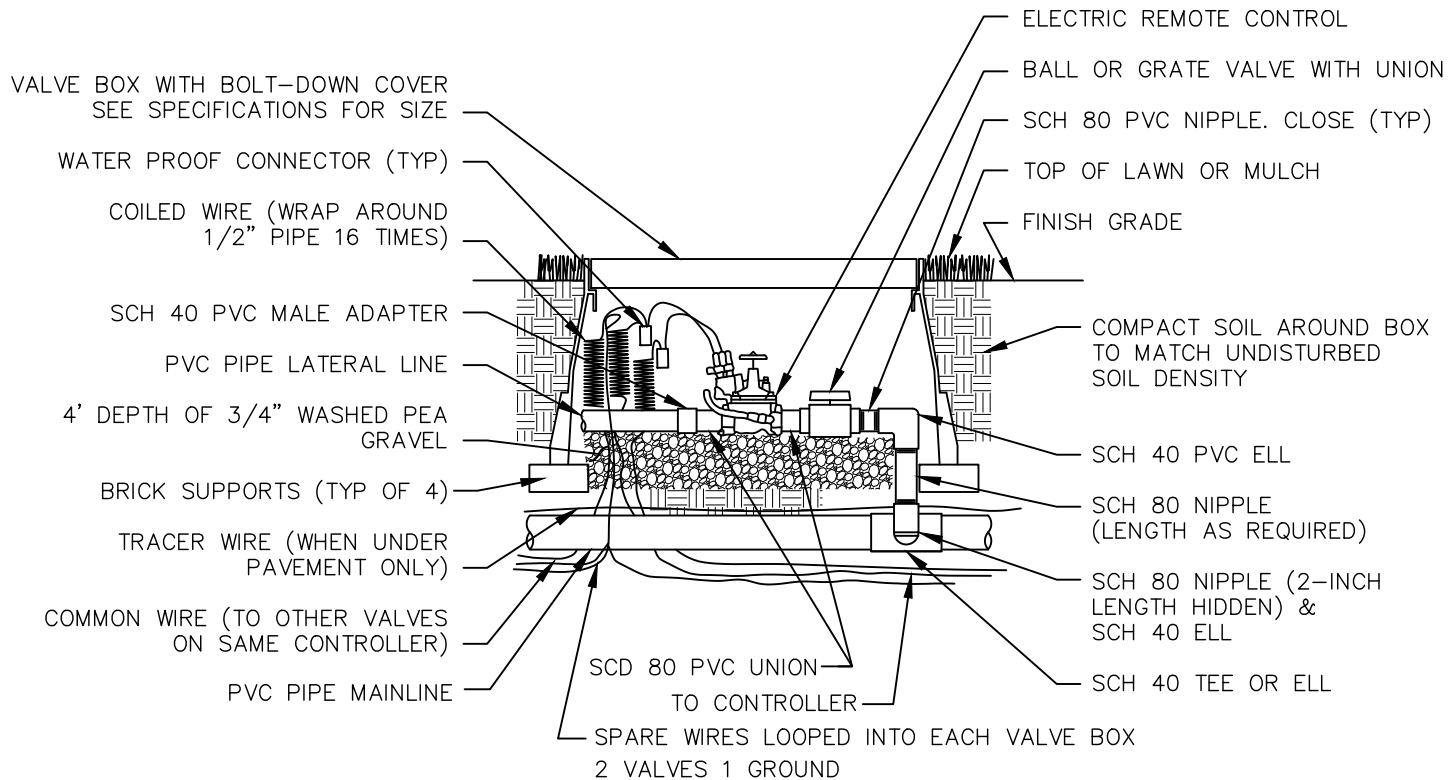
CITY OF ELK GROVE - PUBLIC WORKS

SHRUB PLANTING

APPROVED BY:

 CITY ENGINEER 10/24/2018
DATE

DRAWING NUMBER
L - 2





NOTE:

1. ALL WIRE SHALL BE TAPED AND BUNDLED EVERY TEN FEET AND SHALL BE INSTALLED AS PER LOCAL CODE.
2. SHUT-OFF VALVES 3" AND SMALLER SHALL BE SCH. 80 BALL VALVES. VALVES LARGER THAN 3" SHALL BE BRASS GATE VALVES.
3. ALL VALVE BOXES AND LIDS WITHIN THE SIDEWALK SHALL BE OF TRAFFIC RATED QUALITY.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

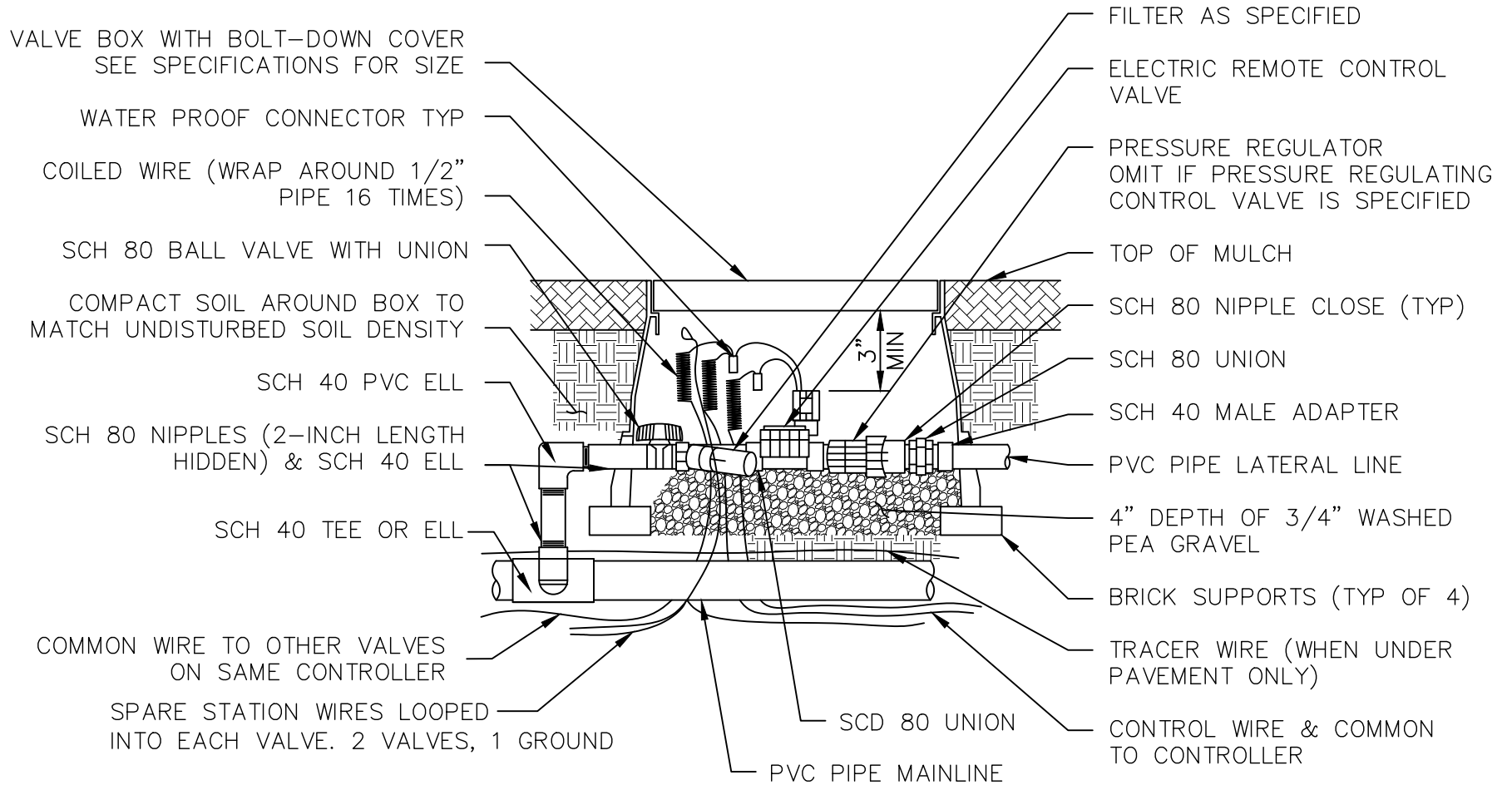
CITY OF ELK GROVE - PUBLIC WORKS

REMOTE CONTROL VALVE

APPROVED BY:
Paul Muddoch 10/24/2018
CITY ENGINEER DATE

DRAWING NUMBER
L - 3





NOTES:

1. ALL WIRE SHALL BE TAPED AND BUNDLED EVERY TEN FEET AND SHALL BE INSTALLED AS PER LOCAL CODE.
2. ALL VALVE BOXES AND LIDS WITHIN THE SIDEWALK SHALL BE OF TRAFFIC RATED QUALITY.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

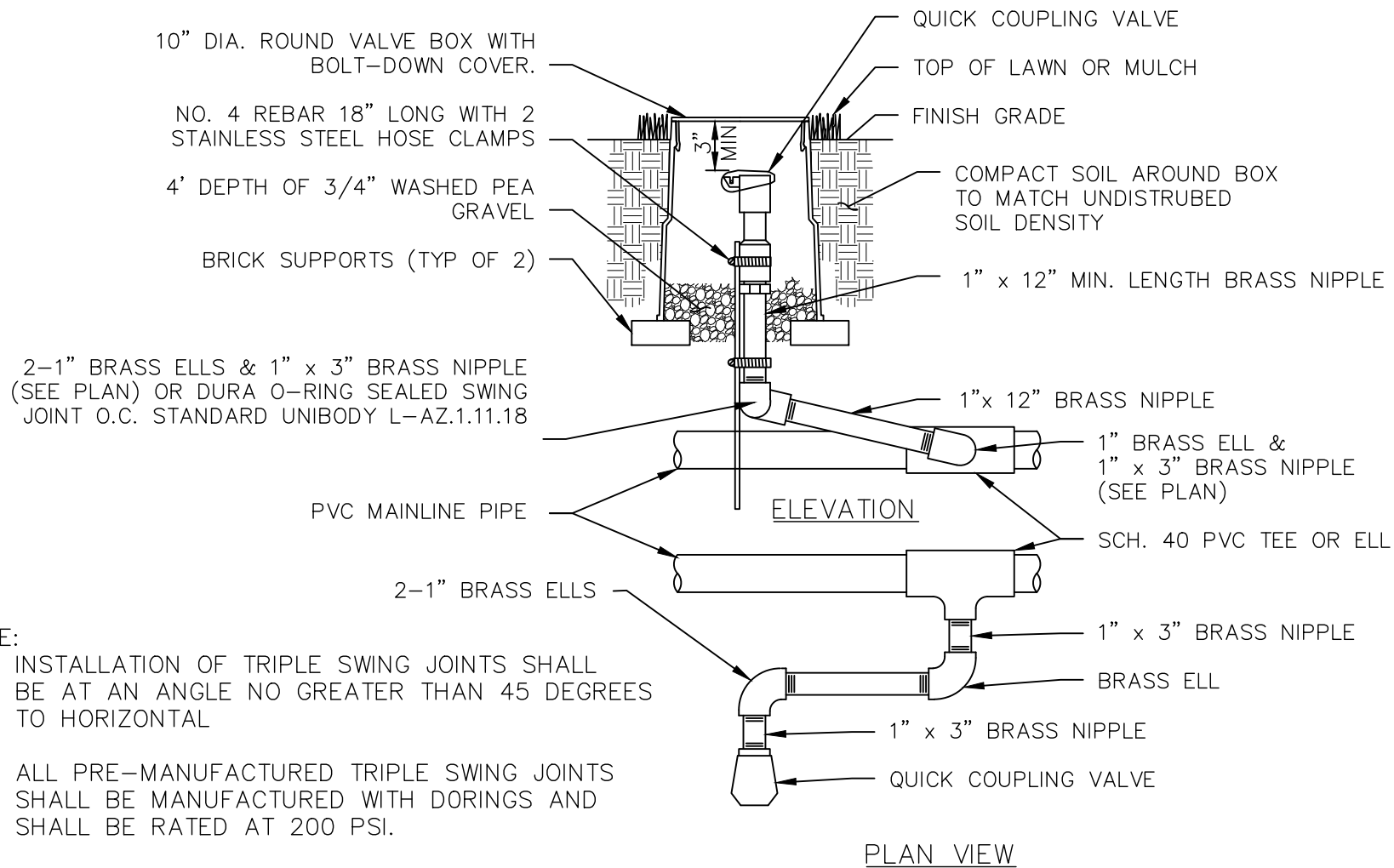
CITY OF ELK GROVE - PUBLIC WORKS

**DRIP IRRIGATION
VALVE ASSEMBLY**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER
L - 4



NOTE:

1. INSTALLATION OF TRIPLE SWING JOINTS SHALL BE AT AN ANGLE NO GREATER THAN 45 DEGREES TO HORIZONTAL
2. ALL PRE-MANUFACTURED TRIPLE SWING JOINTS SHALL BE MANUFACTURED WITH DORINGS AND SHALL BE RATED AT 200 PSI.
3. ALL VALVE BOXES AND LIDS WITHIN THE SIDEWALK SHALL BE OF TRAFFIC RATED QUALITY.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

QUICK COUPLING VALVE

APPROVED BY:

Paul Mudoch

CITY ENGINEER

10/24/2018

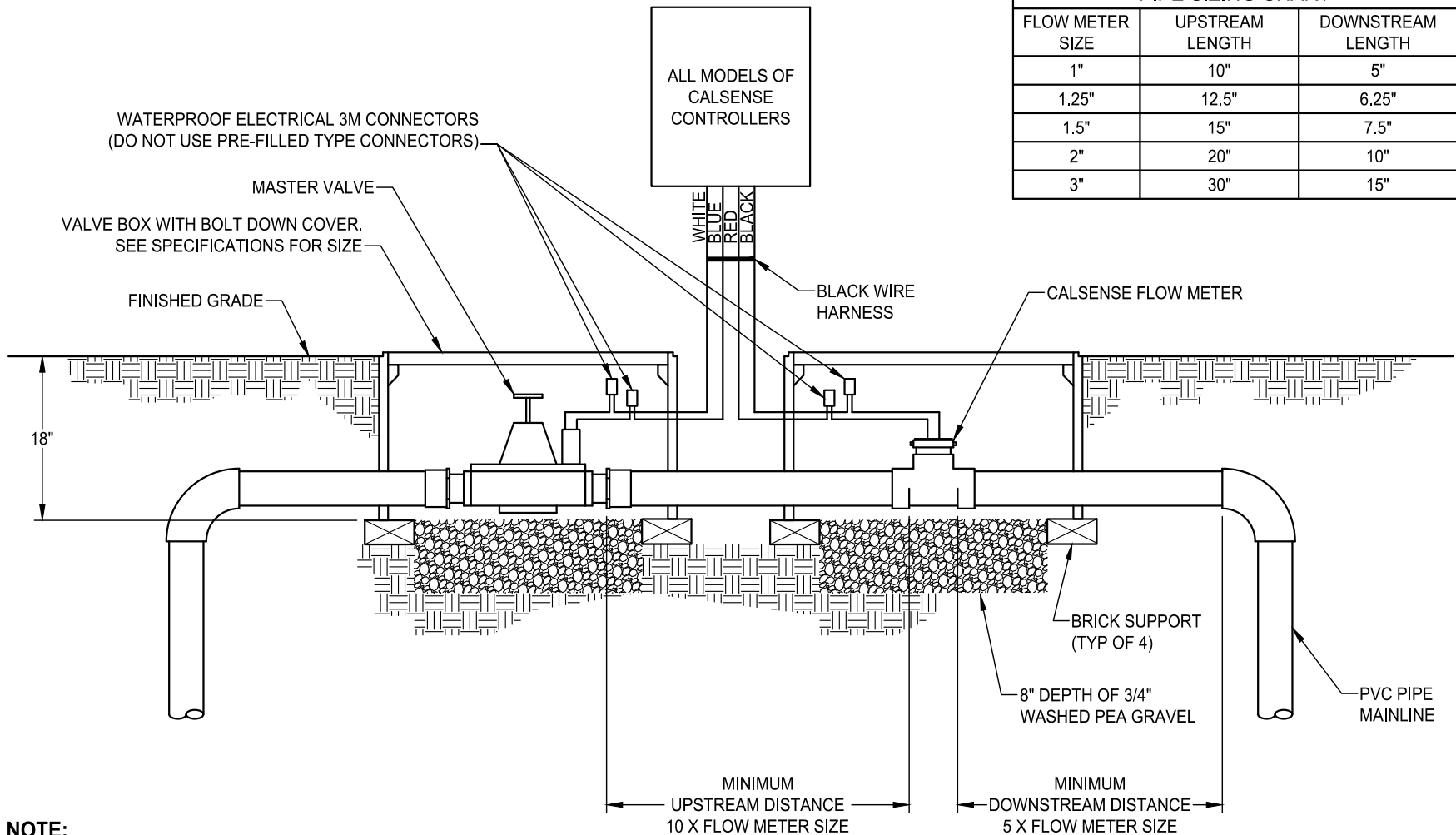
DATE



DRAWING NUMBER

L-5

PIPE SIZING CHART		
FLOW METER SIZE	UPSTREAM LENGTH	DOWNSTREAM LENGTH
1"	10"	5"
1.25"	12.5"	6.25"
1.5"	15"	7.5"
2"	20"	10"
3"	30"	15"



NOTE:

1. ALL VALVE BOXES AND LIDS WITHIN THE SIDEWALK AREA SHALL BE TRAFFIC RATED QUALITY.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

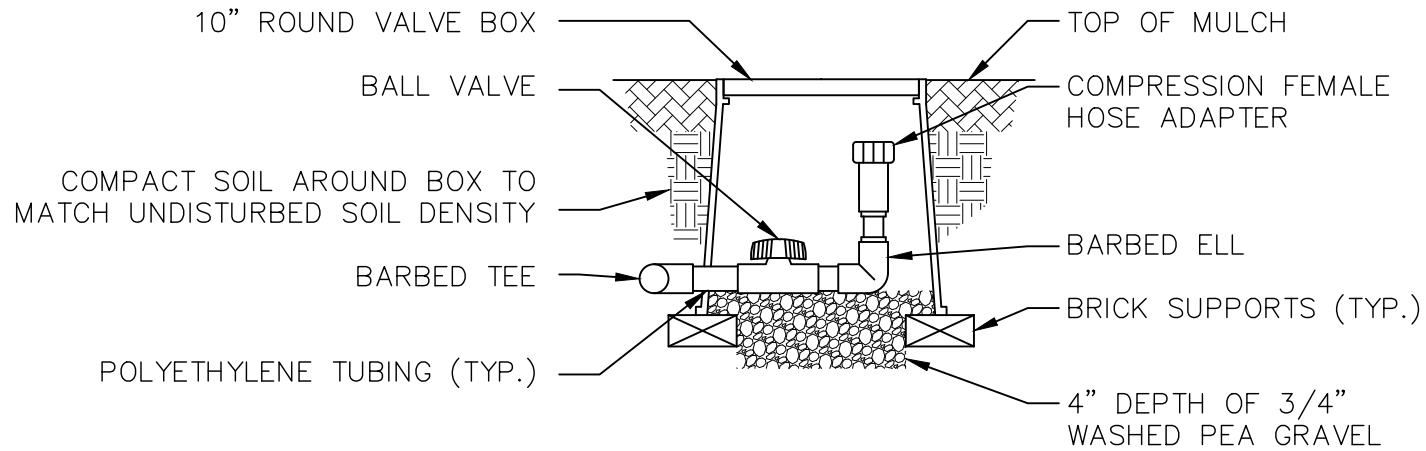
CITY OF ELK GROVE - PUBLIC WORKS

**MASTER VALVE
FLOW SENSOR**

APPROVED BY: *Paul M. Muddoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
L - 6





NOTE:

1. ALL VALVE BOXES AND LIDS WITHIN THE SIDEWALK AREA SHALL BE OF TRAFFIC RATED QUALITY.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

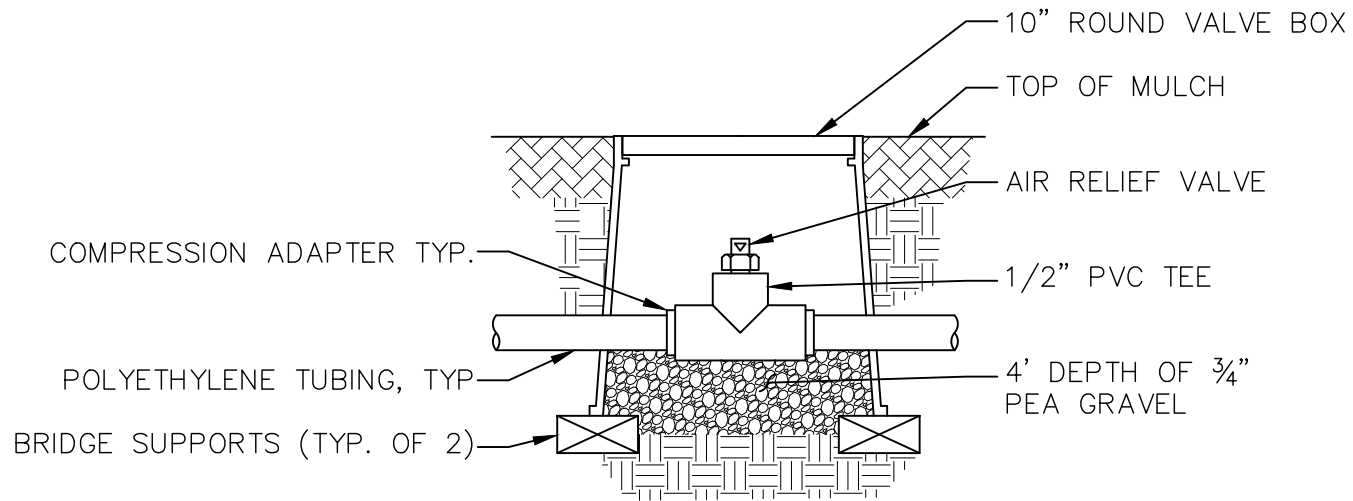
CITY OF ELK GROVE - PUBLIC WORKS

FLUSH VALVE

APPROVED BY:
Paul Muddoch 10/24/2018
CITY ENGINEER DATE


DRAWING NUMBER
L-7

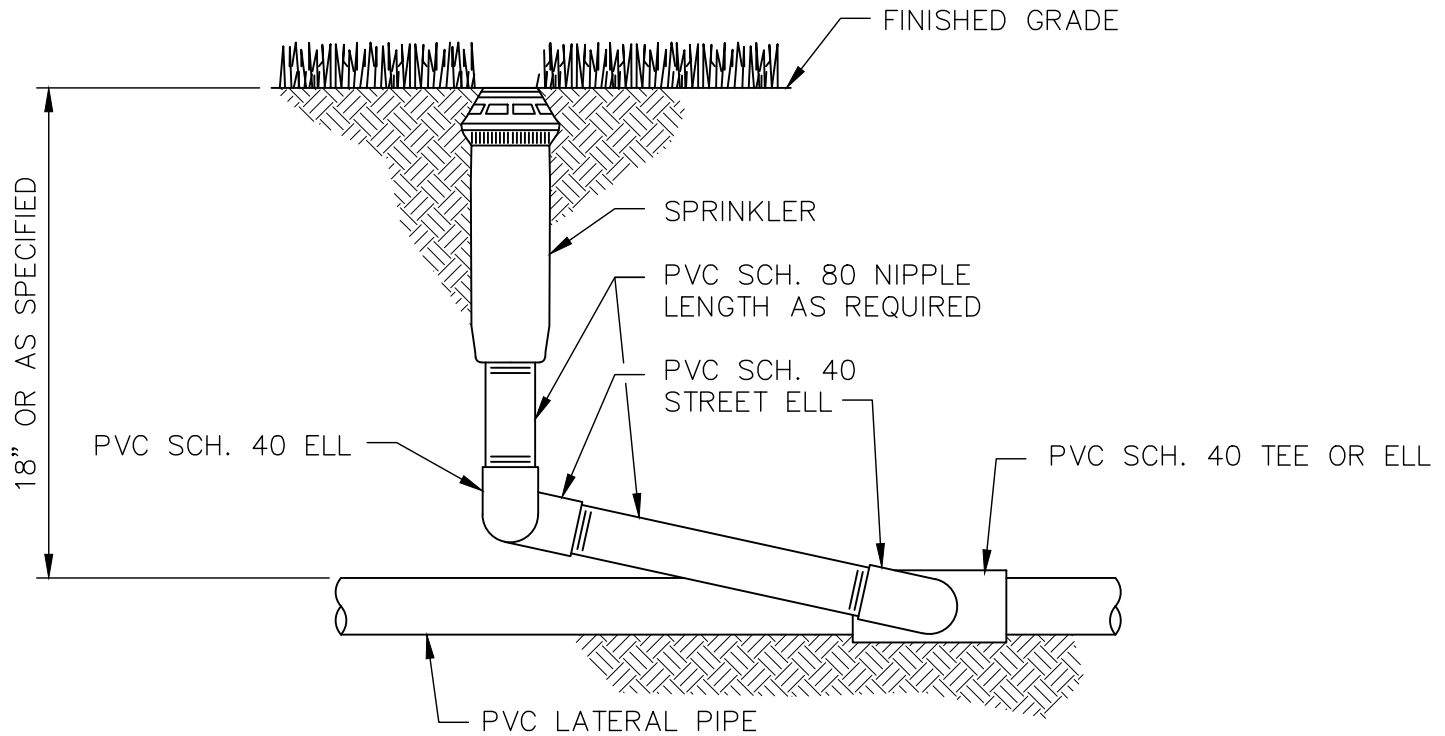




NOTE:

1. AIR RELIEF VALVE SHALL BE INSTALLED AT THE HIGHEST POINT OF THE SYSTEM ABOVE ALL DRIPLINE LATERALS.
2. ALL VALVE BOXES AND LIDS WITHIN THE SIDEWALK SHALL BE OF TRAFFIC RATED QUALITY.

DATE: 09/22/2007		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Paul Muddoch</i>	
REVISION	BY	APPROVED	DATE			CITY ENGINEER	DATE
				AIR RELIEF VALVE		DRAWING NUMBER	
						L - 8	
							



NOTE:

1. INSTALLATION OF TRIPLE SWING JOINTS SHALL BE AT AN ANGLE NO GREATER THAN 45 DEGREES TO HORIZONTAL
2. ALL PRE-MANUFACTURED TRIPLE SWING JOINTS SHALL BE MANUFACTURED WITH DORINGS AND SHALL BE RATED AT 200 PSI.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

POP-UP ROTOR SPRINKLER

APPROVED BY:

Paul Muddoch

CITY ENGINEER

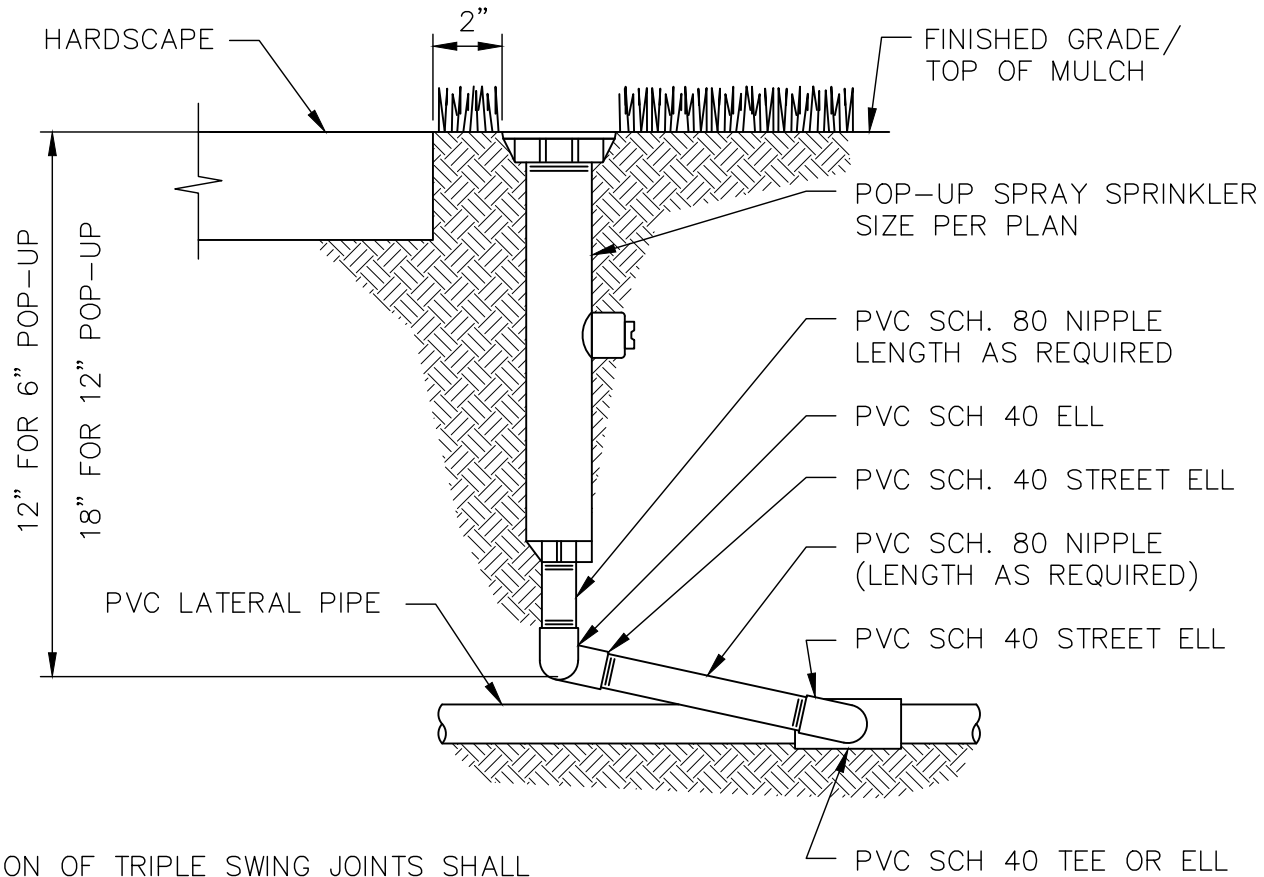
10/24/2018

DATE



DRAWING NUMBER

L - 9



NOTE:

1. INSTALLATION OF TRIPLE SWING JOINTS SHALL BE AT AN ANGLE NO GREATER THAN 45 DEGREES TO HORIZONTAL
2. ALL PRE-MANUFACTURED TRIPLE SWING JOINTS SHALL BE MANUFACTURED WITH DORINGS AND SHALL BE RATED AT 200 PSI.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

POP-UP SPRAY SPRINKLER

APPROVED BY:

Paul Muddoch

CITY ENGINEER

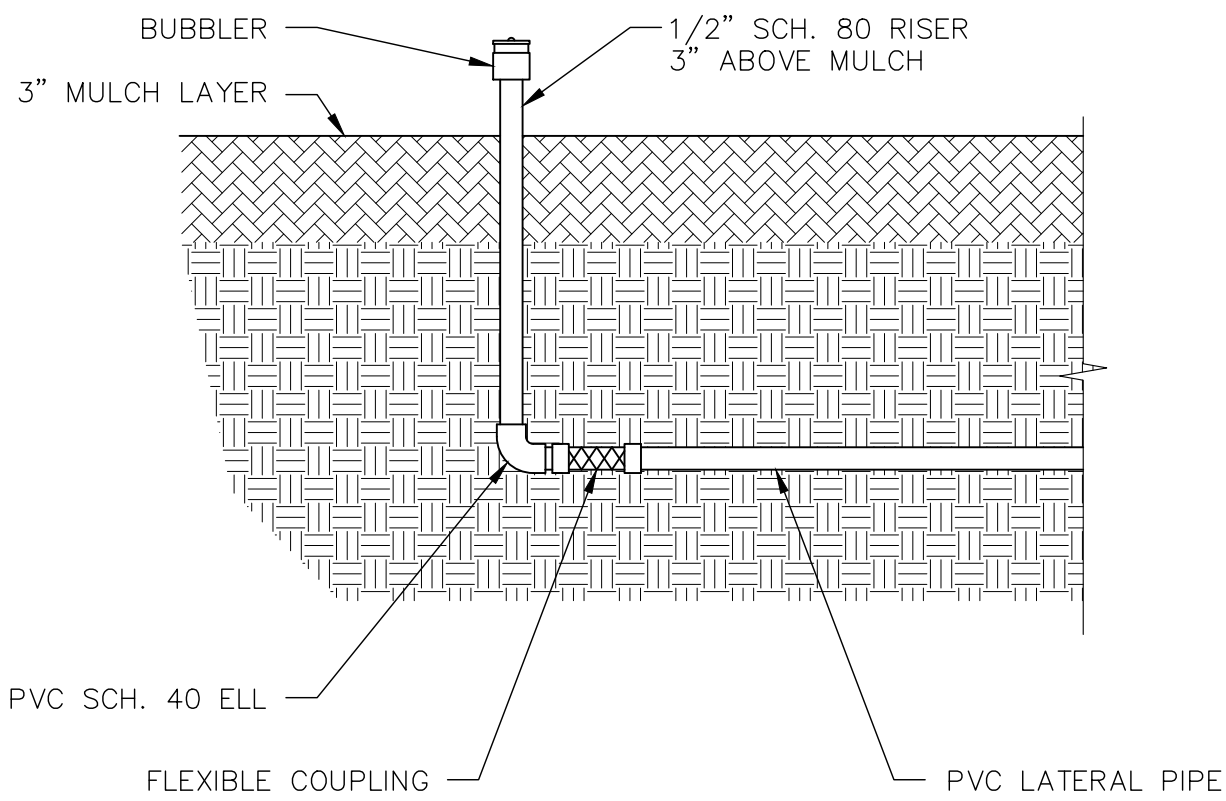
10/24/2018

DATE



DRAWING NUMBER

L - 10



DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

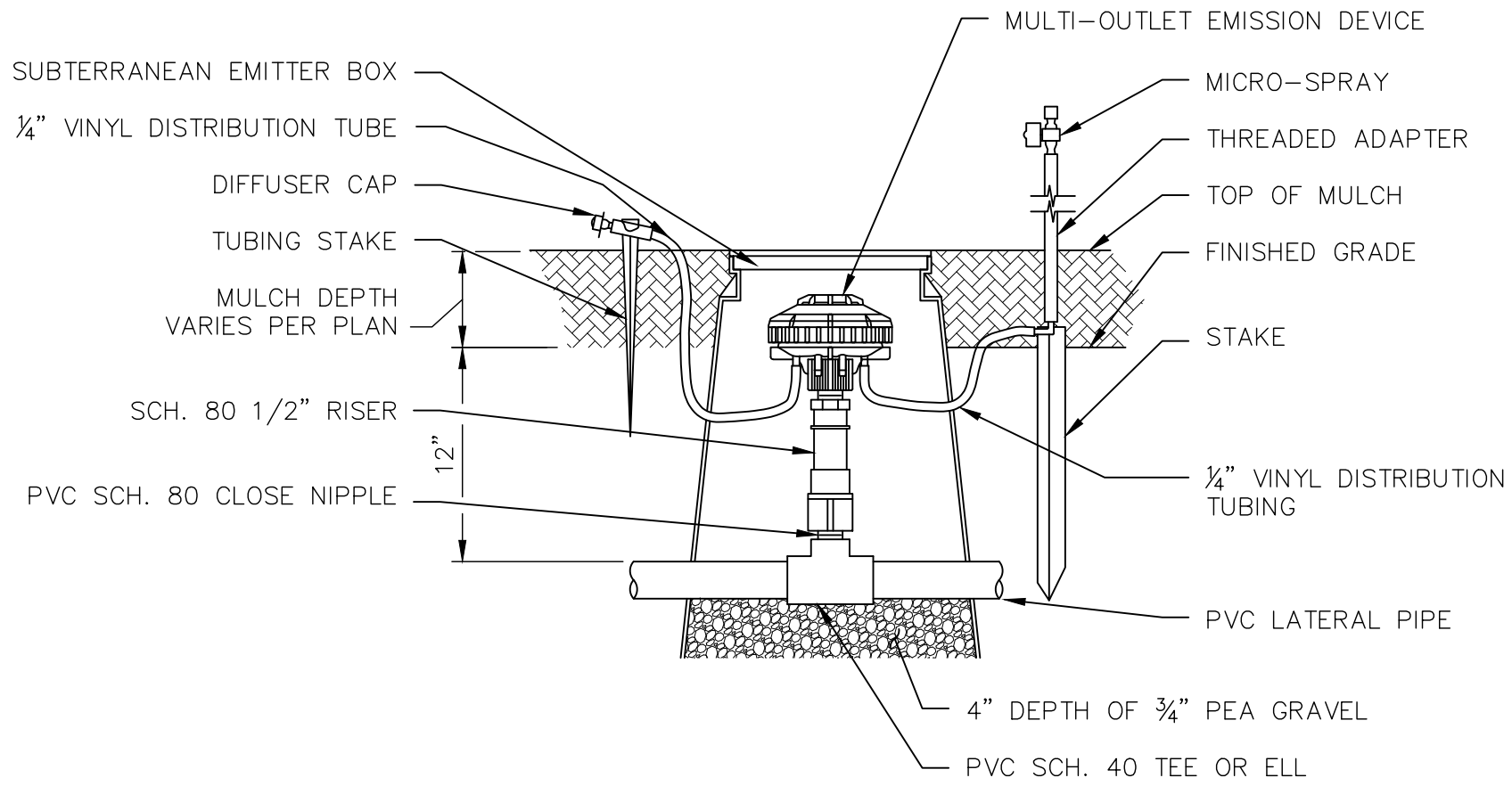
BUBBLER SPRINKLER HEAD

APPROVED BY:
Paul Muddoch
CITY ENGINEER

10/24/2018
DATE

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L - 11







DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**DRIP IRRIGATION
MULTI-OUTLET EMITTER**

APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
L - 12



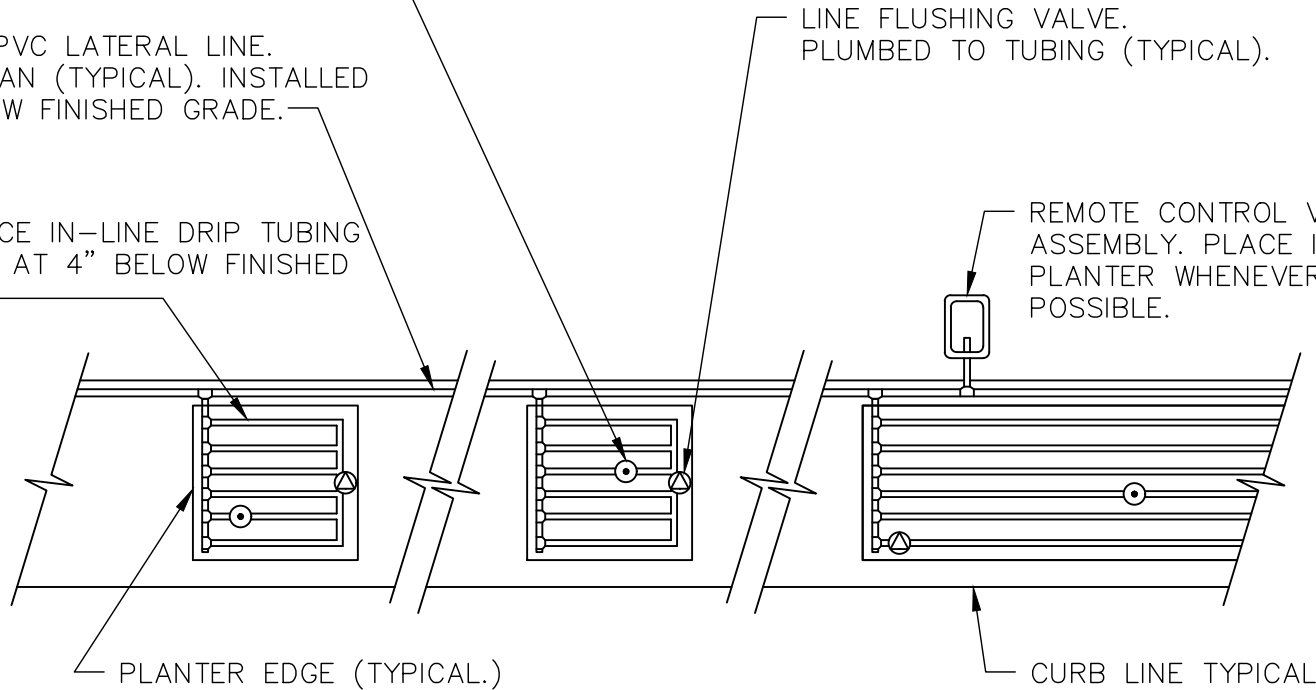
AIR/VACUUM RELIEF VALVE.
PLUMBED TO TUBING AT HIGH
POINT OF PLANTER (TYPICAL).

CLASS 200 PVC LATERAL LINE.
SIZE PER PLAN (TYPICAL). INSTALLED
AT 12" BELOW FINISHED GRADE.

SUBSURFACE IN-LINE DRIP TUBING
INSTALLED AT 4" BELOW FINISHED
GRADE

LINE FLUSHING VALVE.
PLUMBED TO TUBING (TYPICAL).

REMOTE CONTROL VALVE
ASSEMBLY. PLACE IN
PLANTER WHENEVER
POSSIBLE.



NOTE: ALL DRIP TUBING FITTINGS SHALL BE BARBED.

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CITY OF ELK GROVE - PUBLIC WORKS

**SUBSURFACE IN-LINE
DRIP IRRIGATION LAYOUT**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

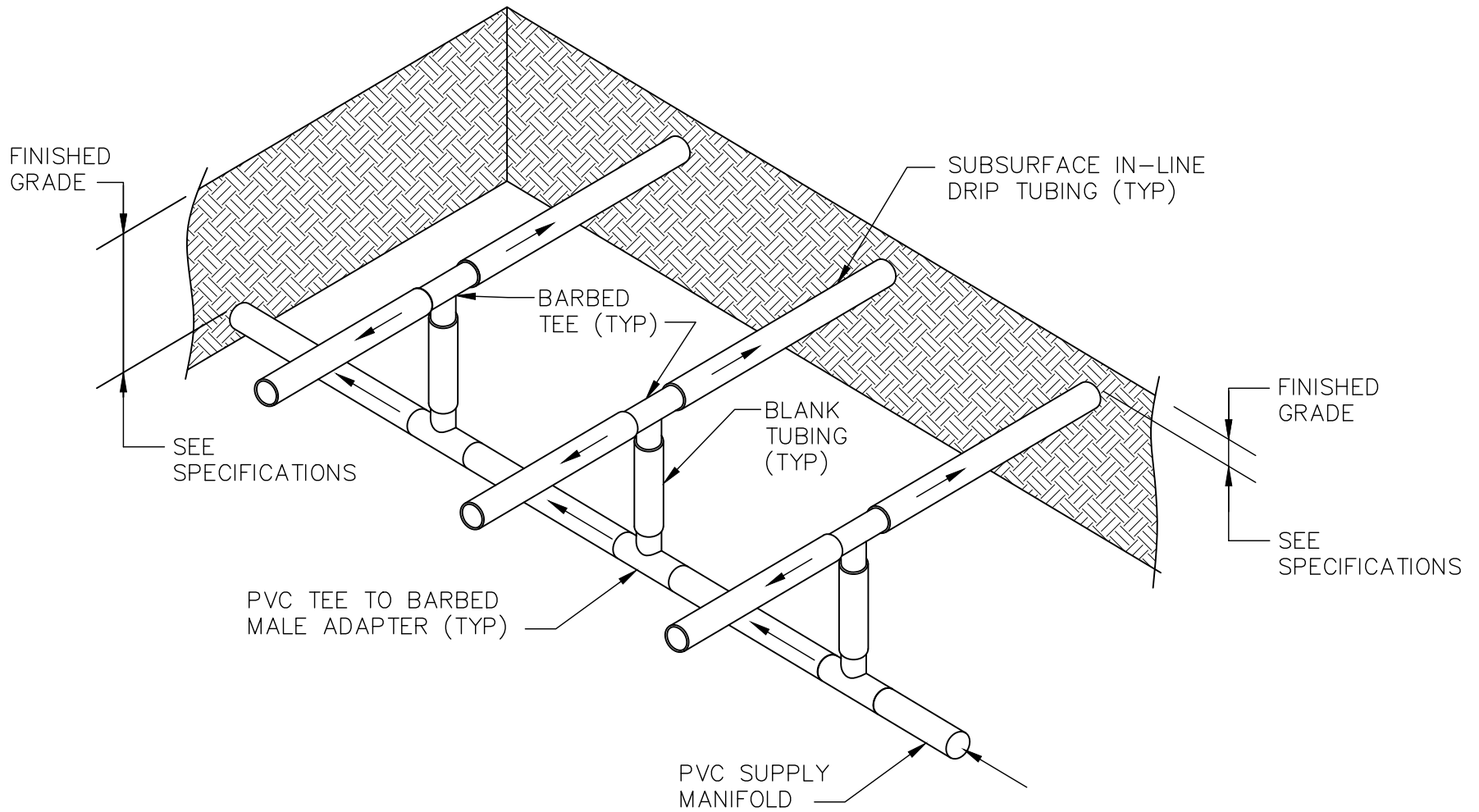
10/24/2018

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L - 13



DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

**SUBSURFACE IN-LINE DRIP
IRRIGATION CENTER-FEED
SUPPLY MANIFOLD**

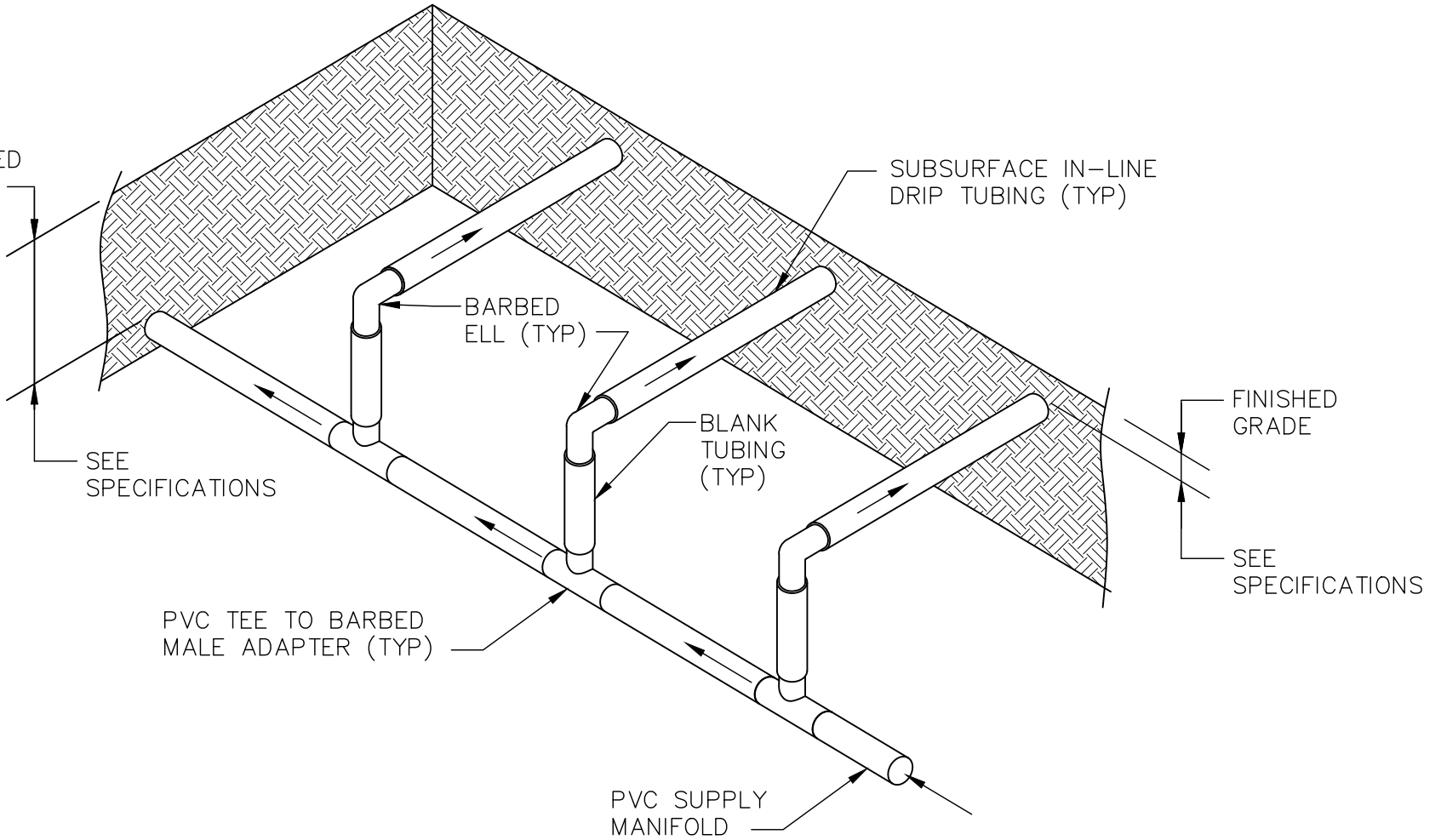
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Paul Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
L - 14



FINISHED GRADE



PVC TEE TO BARBED MALE ADAPTER (TYP)

PVC SUPPLY MANIFOLD

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**SUBSURFACE IN-LINE DRIP
IRRIGATION END-FEED
SUPPLY MANIFOLD**

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Paul Muddoch

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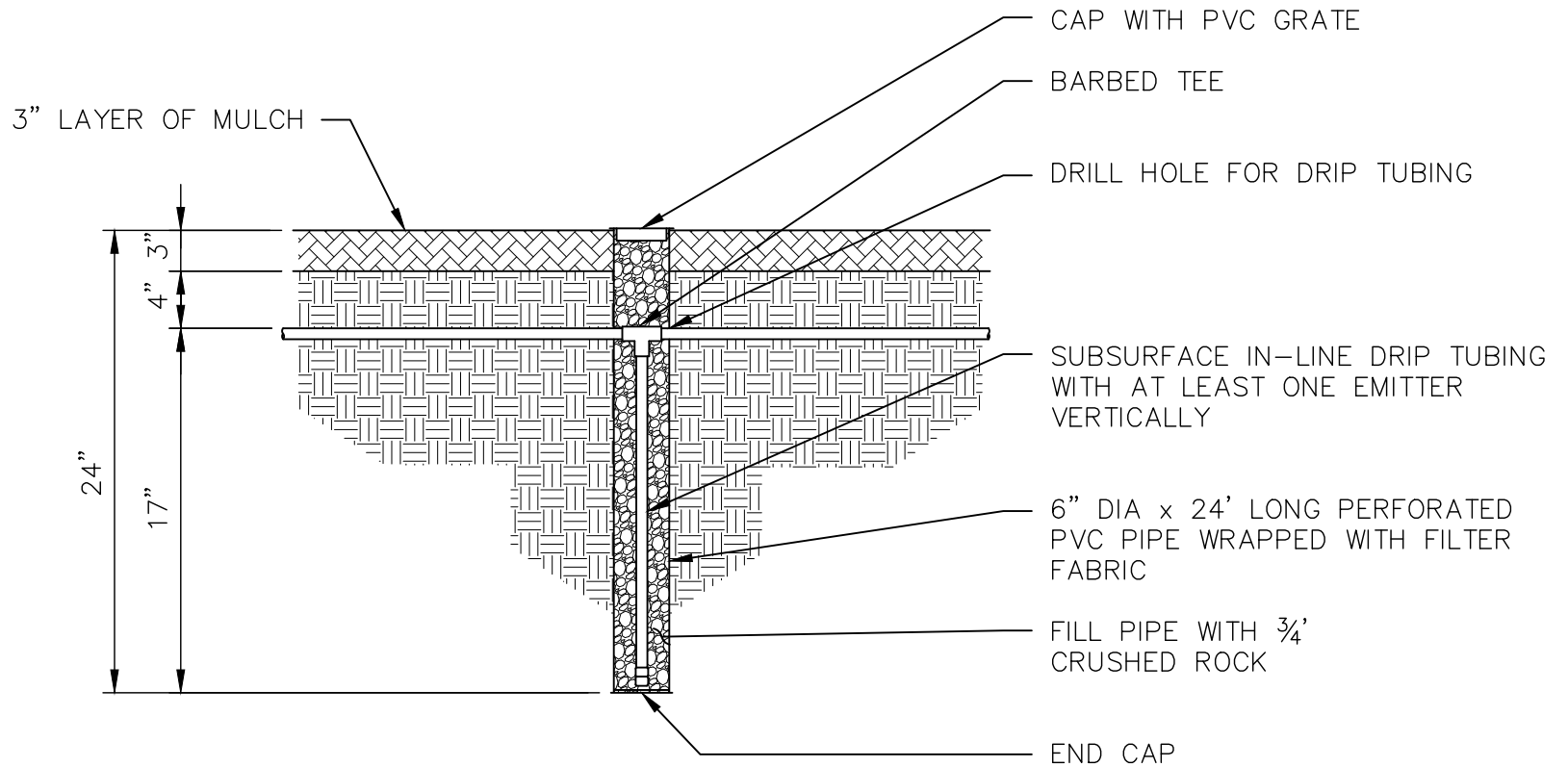
10/24/2018

DATE



DRAWING NUMBER

L - 15



DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**DEEP WATERING PIPE
FOR TREES**

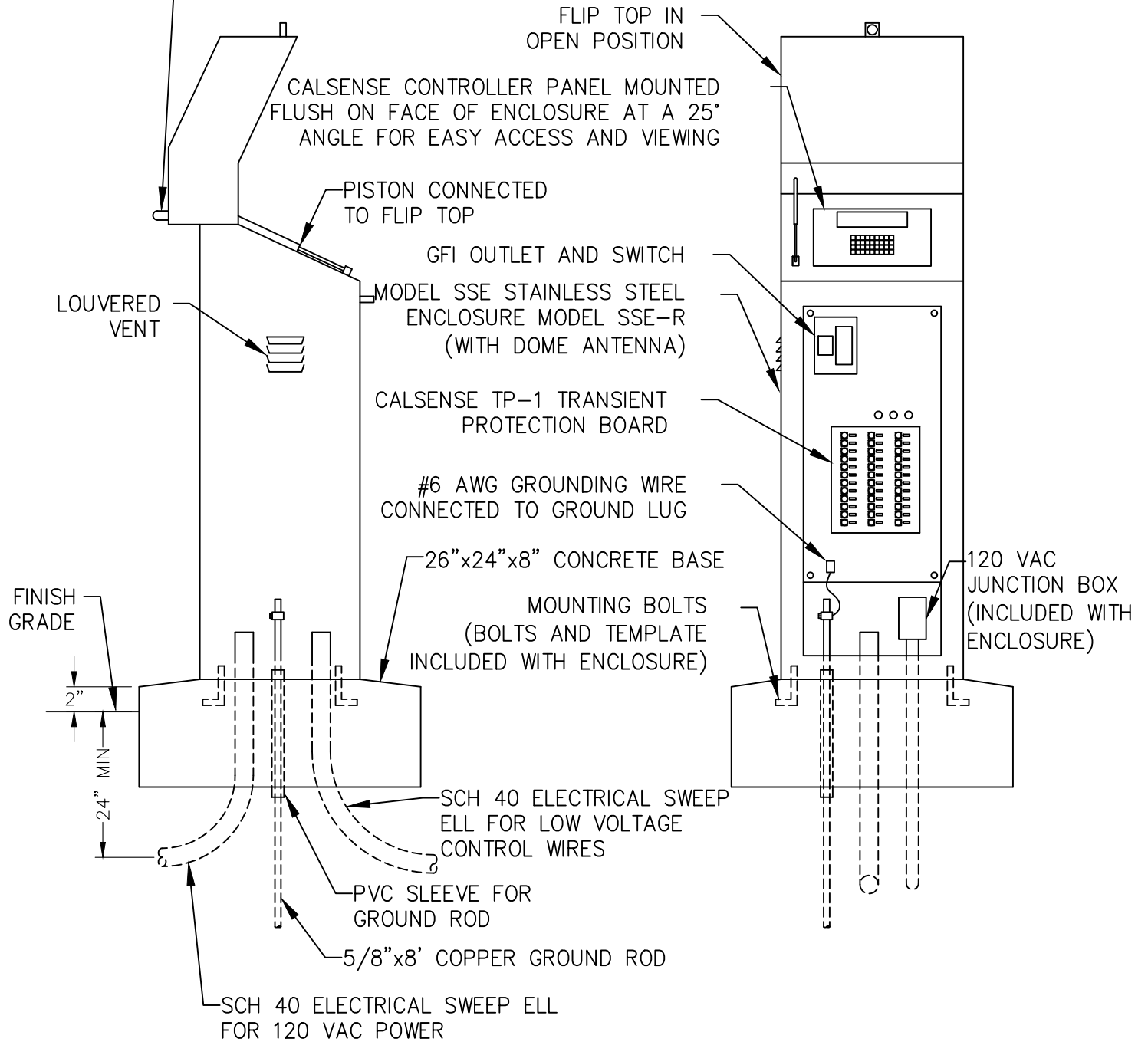
APPROVED BY:
Paul Muddoch
CITY ENGINEER 10/24/2018
DATE



DRAWING NUMBER

L - 16

- OPTIONAL DOME ANTENNA
- MODEL ANT-1 (DIGITAL RADIO)
- MODEL ANT-1-RR (DIGITAL RADION AND RR RADIO REMOTE OPTION
- MODEL LR-DOME (LOCAL RADIO)
- MODEL LR-DOME-RR (LOCAL RADIO AND RR RADIO REMOTE OPTION
- MODEL RR-DOME (RADIO REMOTE OPTION)



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REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

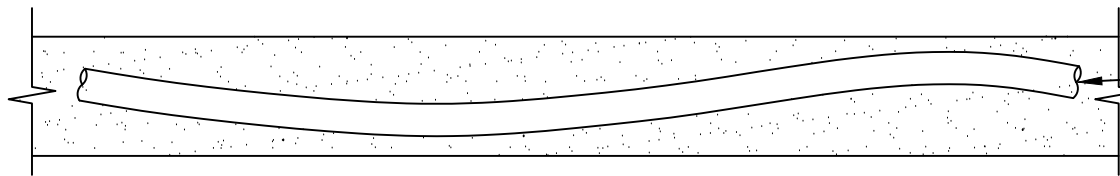
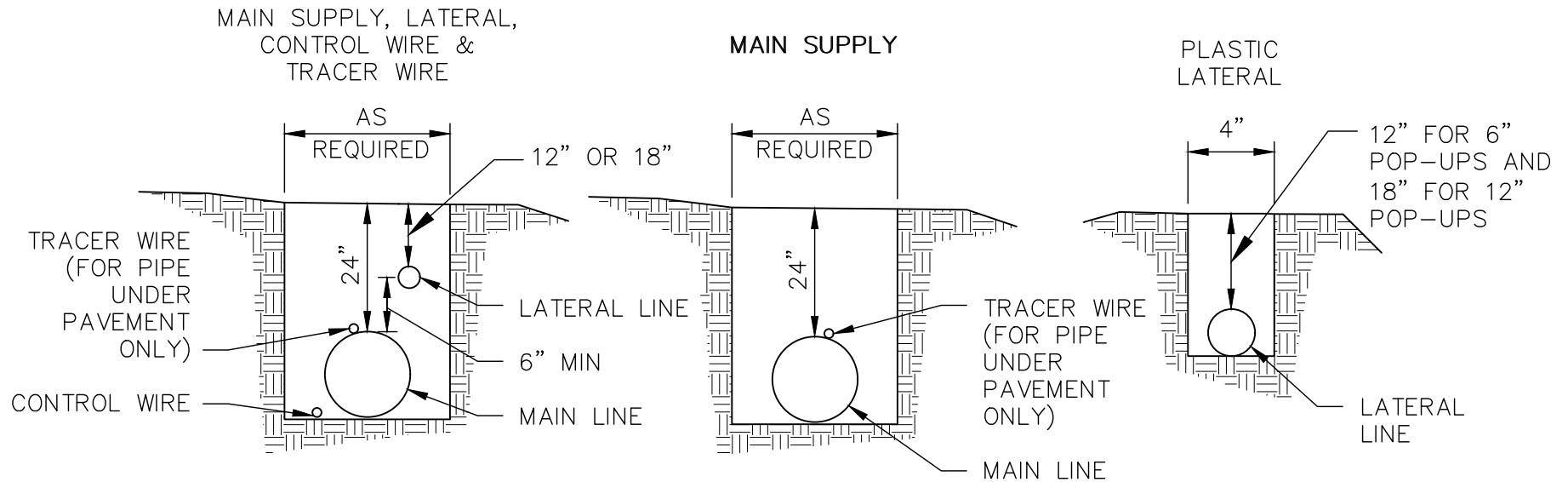
IRRIGATION CONTROLLER ENCLOSURE

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
L - 17





PLAN

NOTES:

1. ALL TRENCH DEPTHS ARE MEASURED FROM TOP OF FINISH GRADE.
2. TRACER WIRE SHALL BE REQUIRED ONLY WHEN PIPES ARE INSTALLED UNDER PAVEMENT.
3. ALL PIPE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTALLATION SPECIFICATIONS.
4. IF SPRINKLER HEAD AND NIPPLE HEIGHT EXCEED 11" LATERAL LINE DEPTH SHALL BE 18".
5. INSTALL PIPE BEDDING UNDER PIPING, WHEN SPECIFIED.
6. INSTALL SLEEVING UNDER PAVING PER PLANS.

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CITY OF ELK GROVE - PUBLIC WORKS

**IRRIGATION SYSTEM
TRENCHING**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

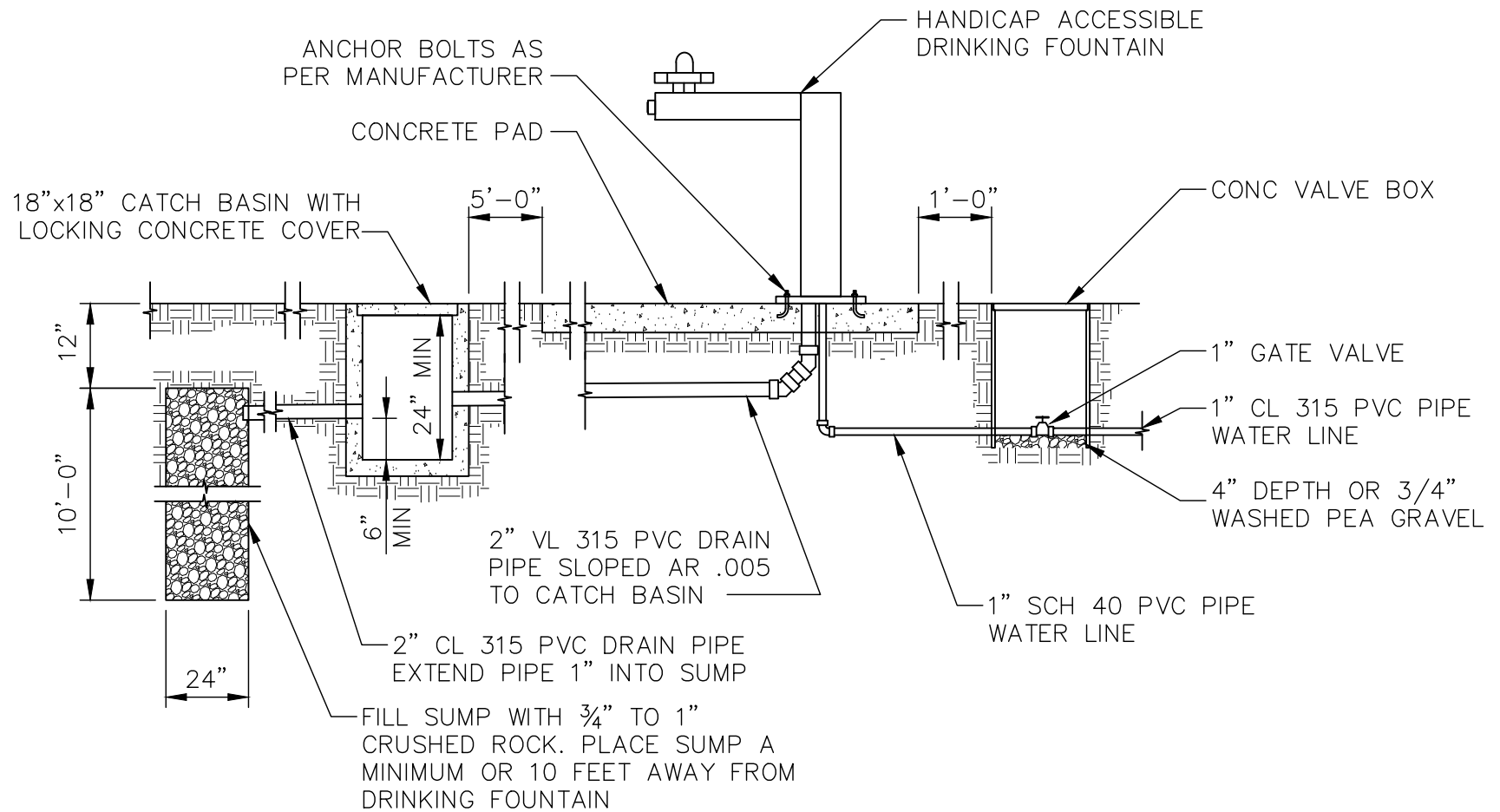
10/24/2018

DATE



DRAWING NUMBER


L - 18




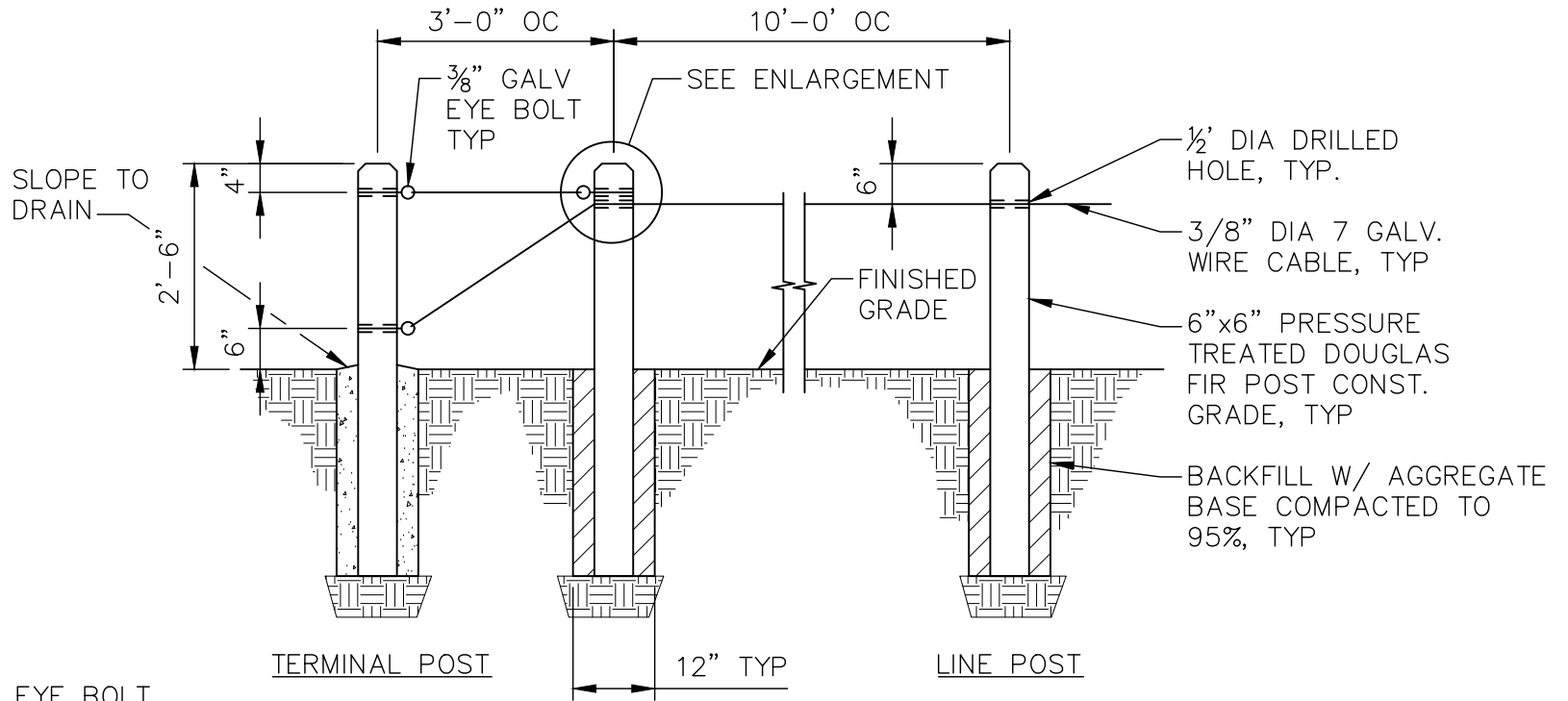
DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

DRINKING FOUNTAIN

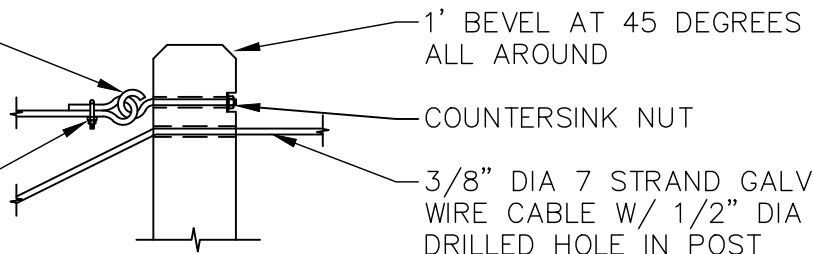
APPROVED BY:

 CITY ENGINEER DATE 10/24/2018

 DRAWING NUMBER
L - 19



3/8" GALV EYE BOLT W/ GALV WASHERS & NUT

3/8" GALV CABLE W/ GALV CLAMP USE CLAMPS FOR CONNECTIONS AND SPLICES



ENLARGEMENT

NOTE: CONCRETE FOOTING SHALL BE INSTALLED AT ALL TERMINAL POSTS AND AT ALL BENDS

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

POST AND CABLE FENCING

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Paul M. Muddoch

CITY ENGINEER

10/24/2018

DATE

DRAWING NUMBER



L - 20

$\frac{3}{16}$ " STEEL PLATE WELDED TO POST & GROUND SMOOTH

3" YELLOW HIGH INTENSITY RETRO-REFLECTIVE TAPE (TYP)

2- $\frac{1}{2}$ " DIA. GALVANIZED STEEL POST. PAINTED WITH 2 COATS OF PRIMER AND INSIGNIA YELLOW

$\frac{3}{4}$ " DIA. STEEL PIN W/ HEAD W/ $\frac{3}{8}$ " DIA HOLE FOR LOCK

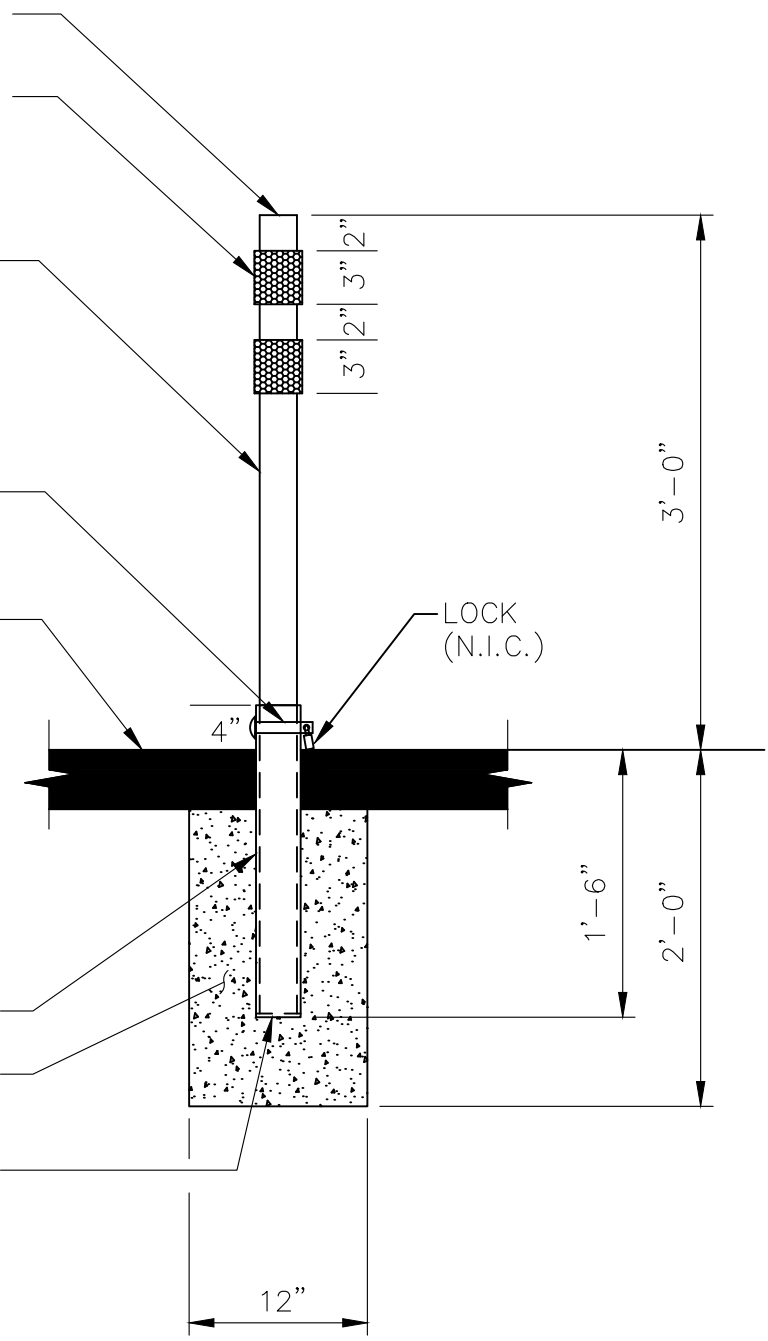
FINISH SURFACE

LOCK (N.I.C.)

3" DIA. GALVANIZED STEEL PIPE SLEEVE (PAINT ABOVE GROUND PORTION SAME AS POST)

CONCRETE FOOTING

$\frac{3}{16}$ " STEEL PLATE WELDED TO SLEEVE



NOTE: DRILL A $1\frac{3}{16}$ " DIA HOLE THRU BOTH THE POST AND SLEEVE FOR PIN PLACEMENT

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

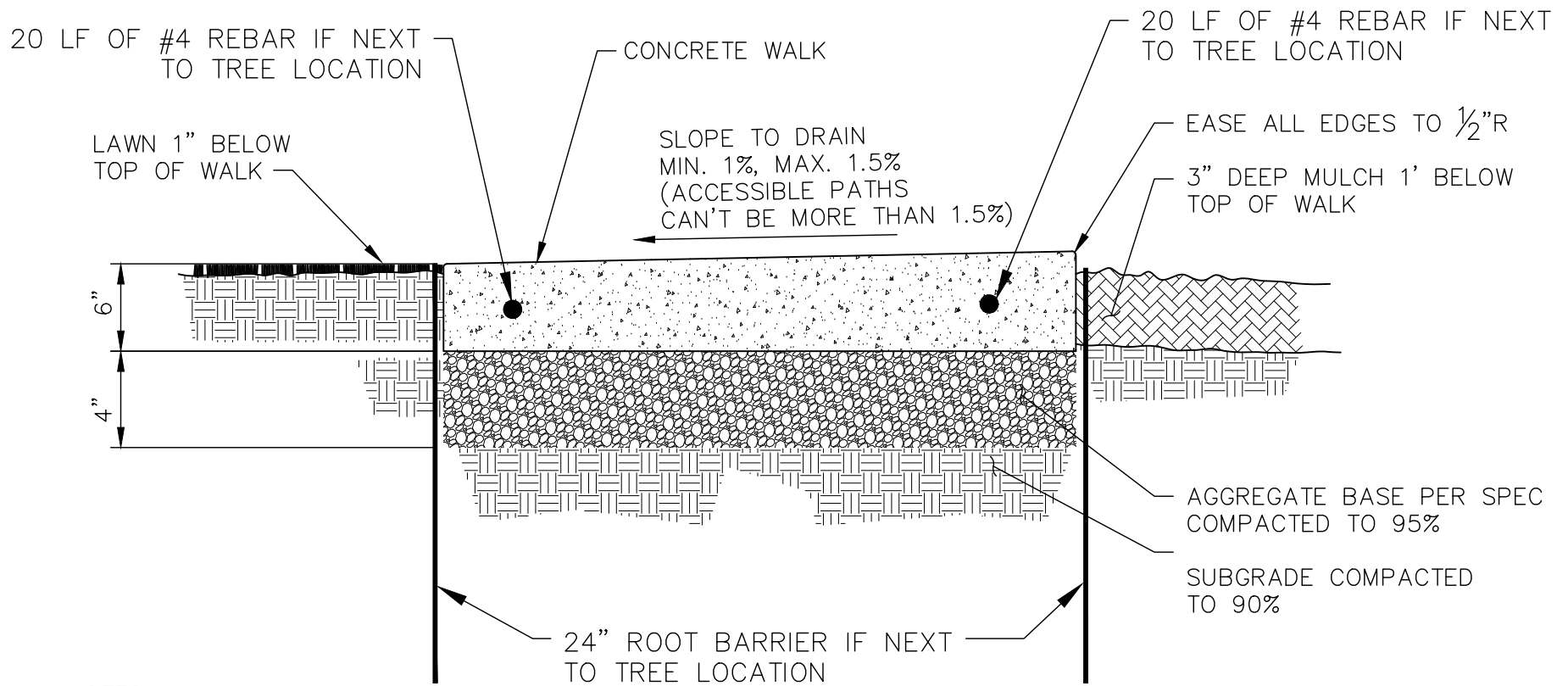
CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:
Robert Muddoch
CITY ENGINEER
10/24/2018
DATE

REMOVABLE BOLLARD



DRAWING NUMBER
L - 22



NOTES:

1. PROVIDE 1" DEEP SCORE JOINTS AT 10'-0" ON CENTER.
2. PROVIDE EXPANSION JOINTS AT 20'-0" INTERVALS.
3. CLASS "B" CONCRETE.
4. MEDIUM BROOM FINISH PERPENDICULAR TO WALK EDGE UNLESS OTHERWISE SPECIFIED.
5. PROVIDE FULL DEPTH FELT EXPANSION JOINTS WHEN ABUTTING WALKS, WALLS AND BUILDINGS.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

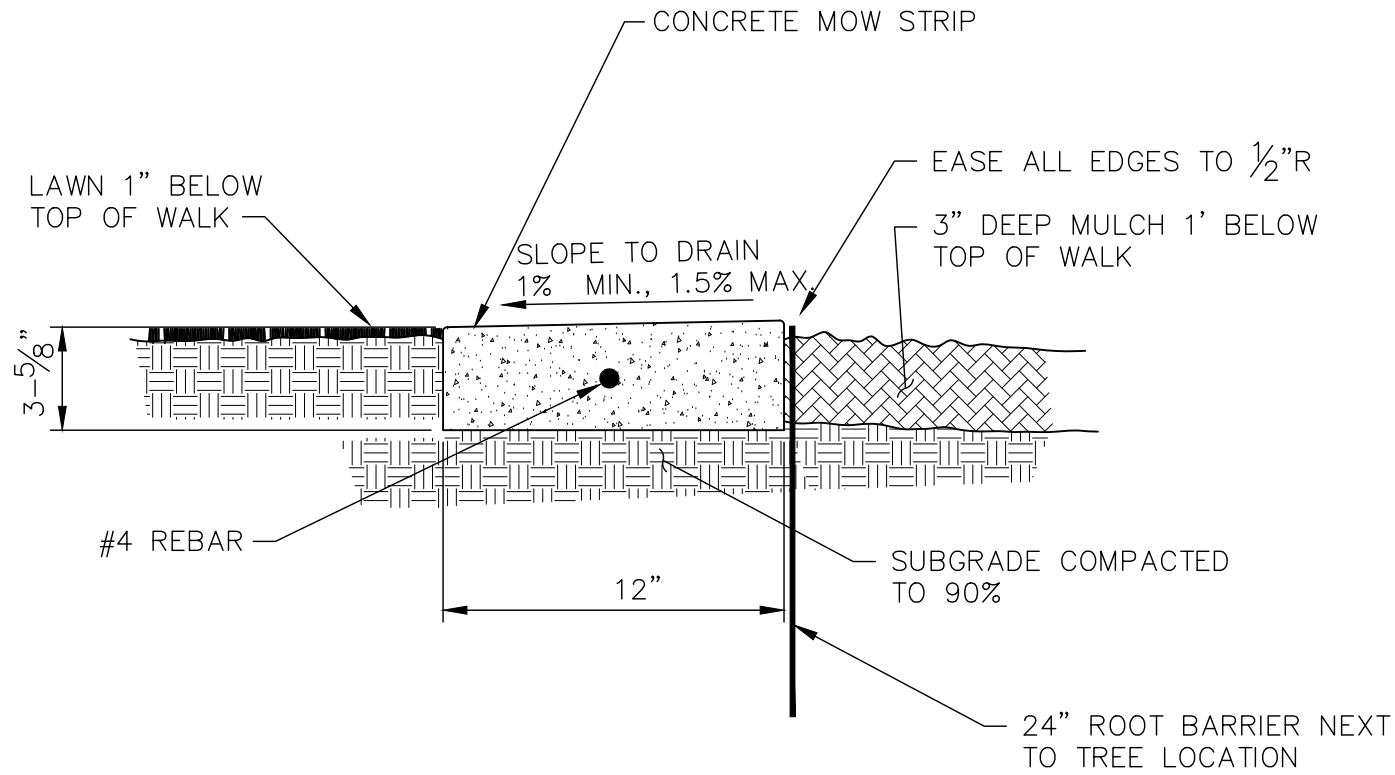
CITY OF ELK GROVE - PUBLIC WORKS

**CONCRETE WALK
(IN PARK AREAS, NOT FRONTAGE
AREAS)**

APPROVED BY:
Paul Mudoch 10/24/2018
CITY ENGINEER DATE

DRAWING NUMBER
L - 23

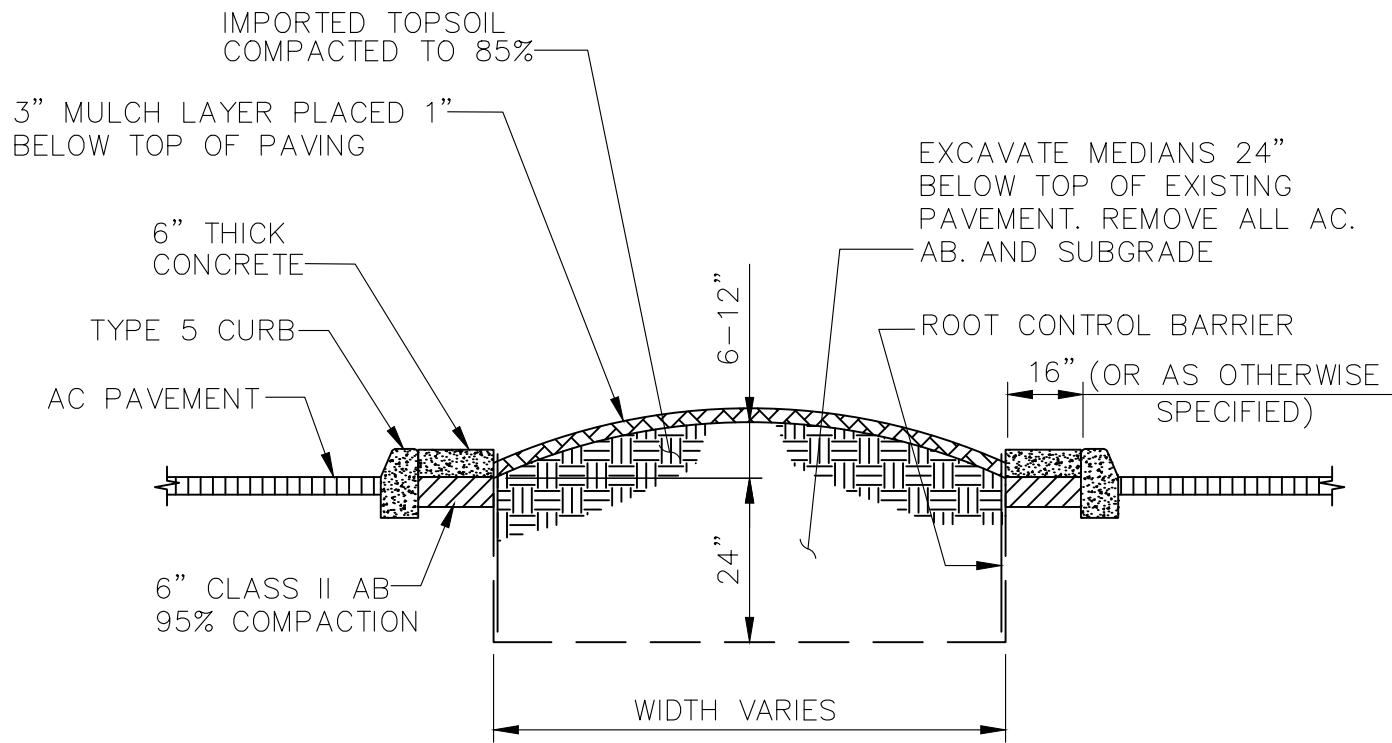




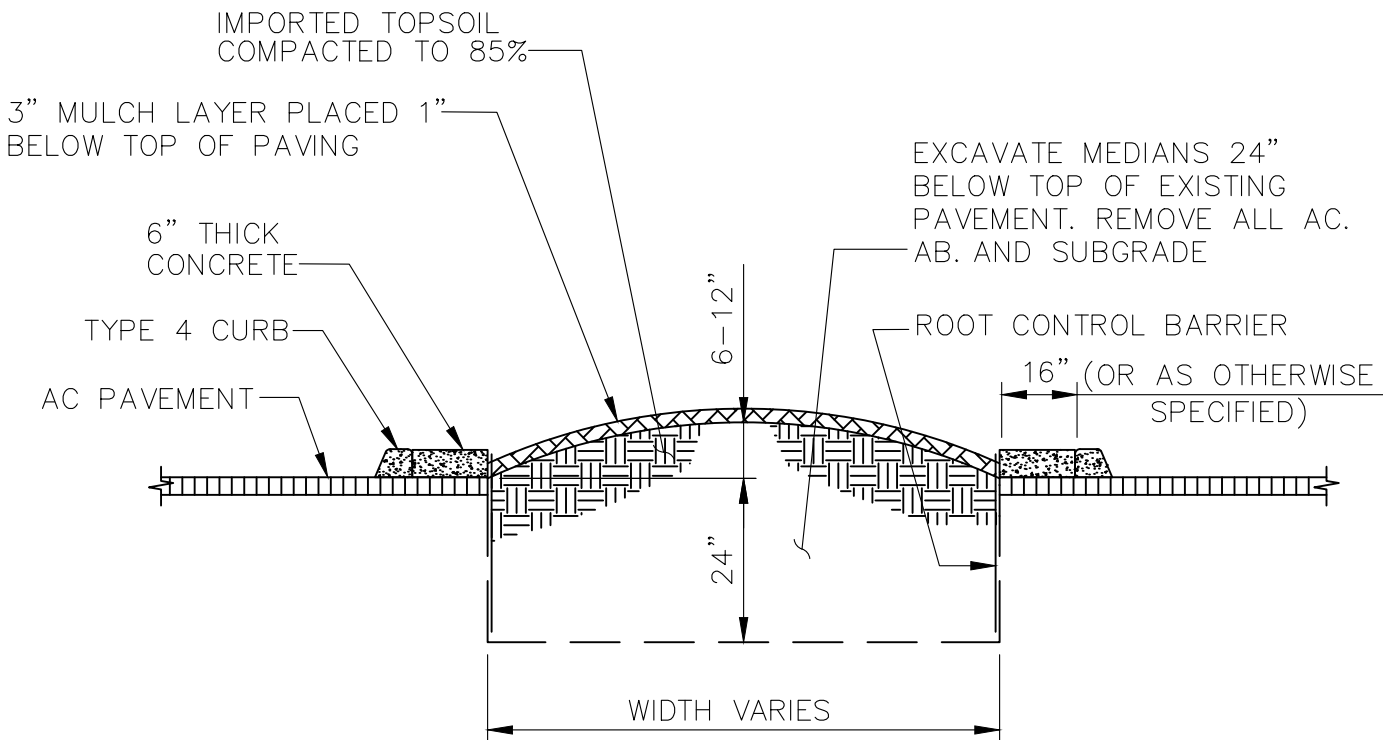
NOTES:

1. PROVIDE 1" DEEP SCORE JOINTS AT 10'-0" ON CENTER.
2. PROVIDE EXPANSION JOINTS AT 20'-0" INTERVALS.
3. CLASS "B" CONCRETE.
4. MEDIUM BROOM FINISH UNLESS OTHERWISE SPECIFIED.
5. PROVIDE FULL DEPTH FELT EXPANSION JOINTS WHEN ABUTTING WALKS, WALLS AND BUILDINGS.

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REVISION	BY	APPROVED	DATE	CONCRETE MOW STRIP		CITY ENGINEER	DATE 10/24/2018
CITY OF ELK GROVE CALIFORNIA						DRAWING NUMBER	
						L - 24	



TYPE 5 CURB



TYPE 4 CURB

NOTE: CONTOUR OF MEDIAN WILL VARY DEPENDING UPON MEDIAN WIDTH. DO NOT EXCEED BID QUANTITY OF IMPORTED TOPSOIL TO ACHIEVE 12" HEIGHT.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

ROADWAY MEDIAN SECTION

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

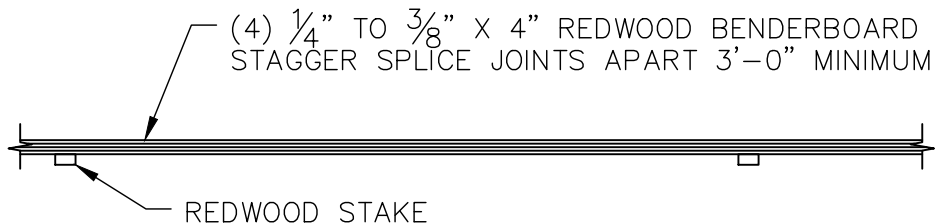
10/24/2018

DATE

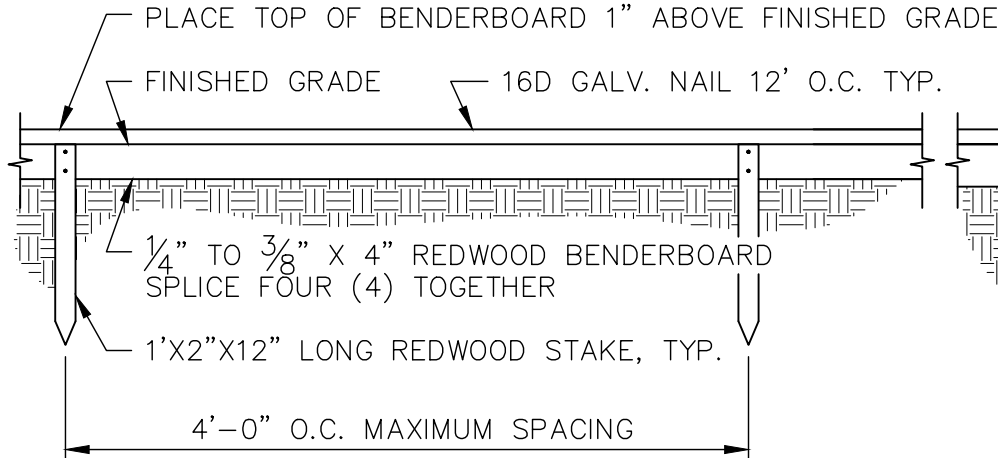


DRAWING NUMBER

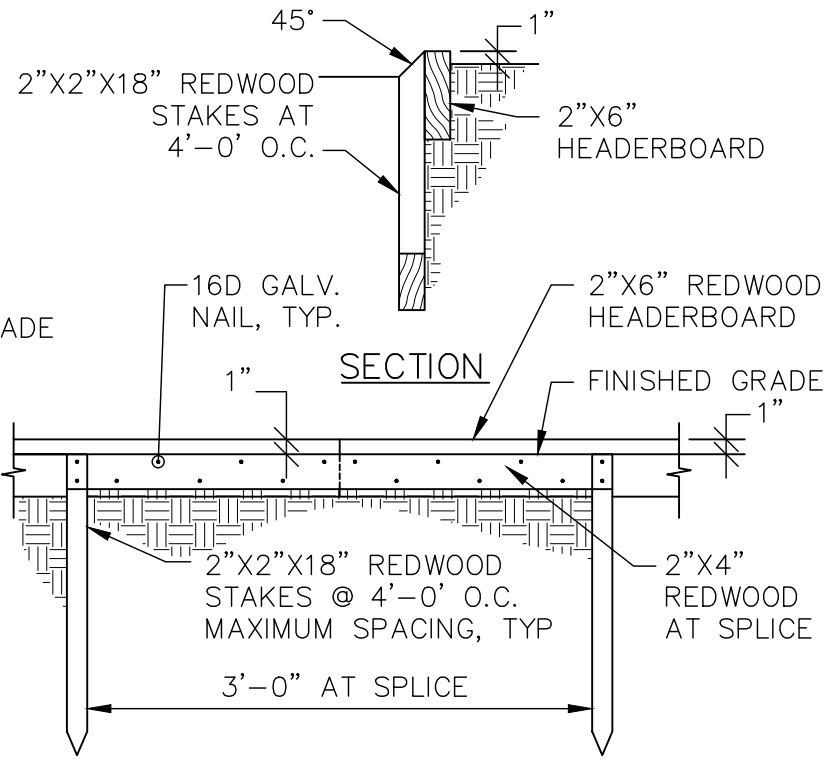
L - 26



BENDERBOARD PLAN VIEW



ELEVATION VIEW
1/4" TO 3/8" X 4" BENDERBOARD



SPlice DETAIL
2" X 6" HEADERBOARD

NOTES:

1. INSTALL ALL STAKES AND SPLICES ON PLANTING SIDE OF HEADERBOARD.
2. ALL NAILS SHALL BE GALVANIZED.
3. ALL REDWOOD SHALL BE ROUGH CONSTRUCTION COMMON GRADE IN ACCORDANCE TO CALIFORNIA REDWOOD ASSOCIATION GRADING RULES. DRIVE STAKES TO RESISTANCE AND CUT TOP AT 45 DEGREE ANGLE.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

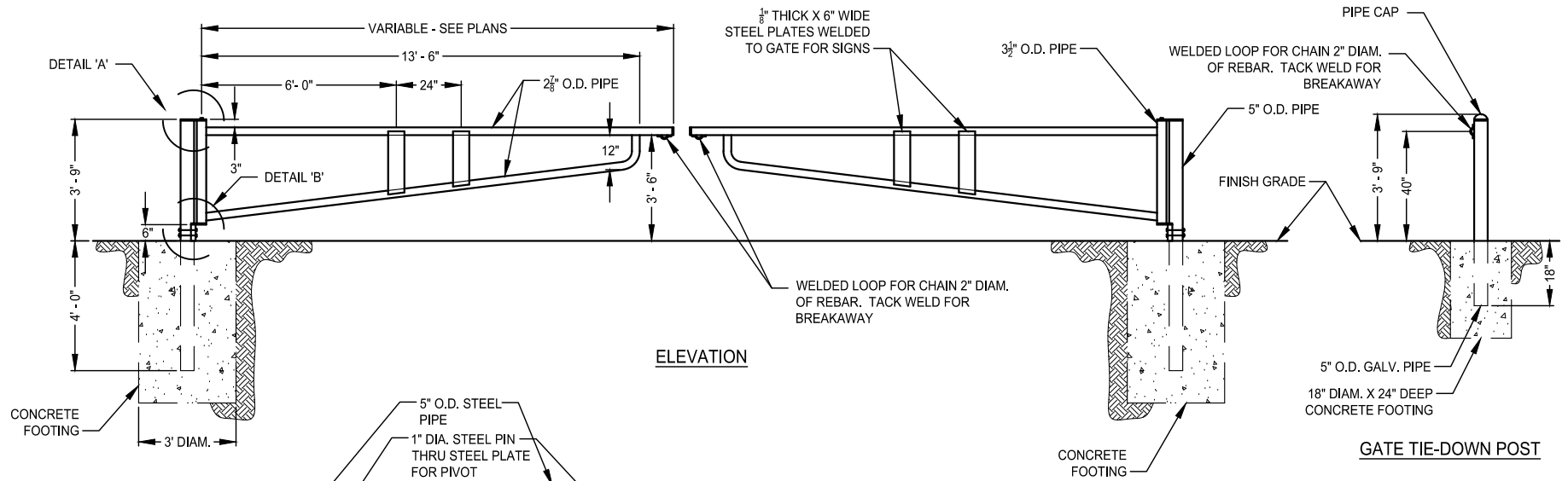
CITY OF ELK GROVE - PUBLIC WORKS

REDWOOD HEADERBOARD

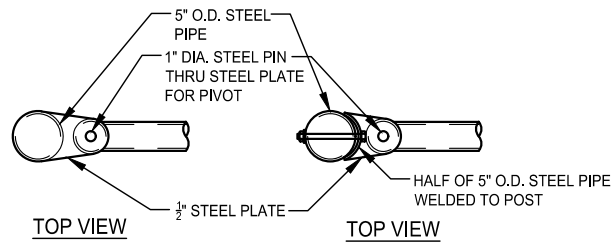
APPROVED BY:
Paul Mudoch 10/24/2018
CITY ENGINEER DATE

DRAWING NUMBER
L - 27



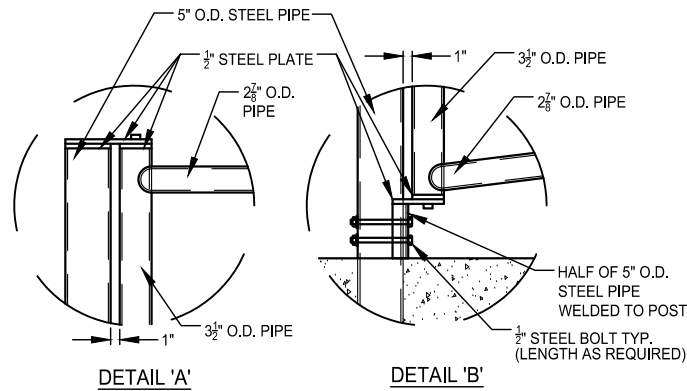


ELEVATION



TOP VIEW

TOP VIEW



DETAIL 'A'

DETAIL 'B'

NOTES:

1. DOUBLE PIPE GATES SHALL BE USED FOR ROADWAYS OR DRIVEWAYS OVER 24' WIDE OPENING.
2. ALL PIPES SHALL BE BLACK STEEL PIPES, OUTSIDE DIAMETER (O.D.) AND WELDED.
3. ALL STEEL TO BE PAINTED WITH 2 COATS OF PRIMER AND INSIGNIA YELLOW.
4. PROVIDE TWO (2) 5" O.D. PIPES AND INSTALL WITH CONCRETE FOOTING (18" X 24" D) FOR TIE-DOWN WHEN GATE IS OPENED AND CLOSED.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul M. Muddoch

10/24/2018

CITY ENGINEER

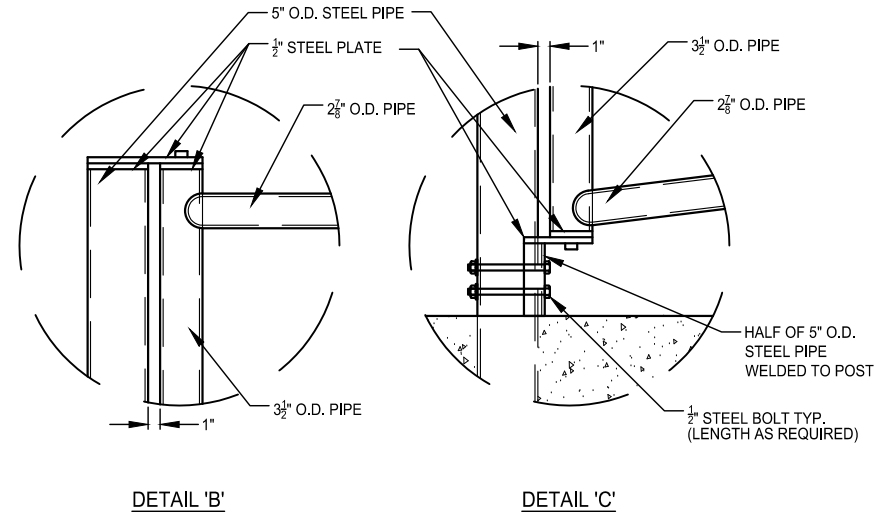
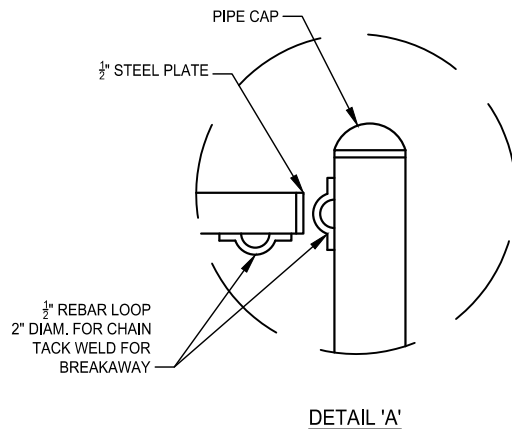
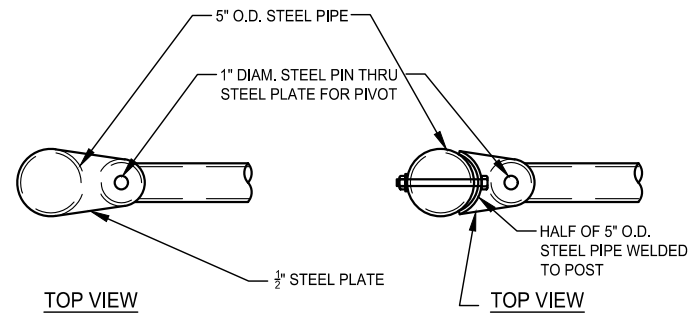
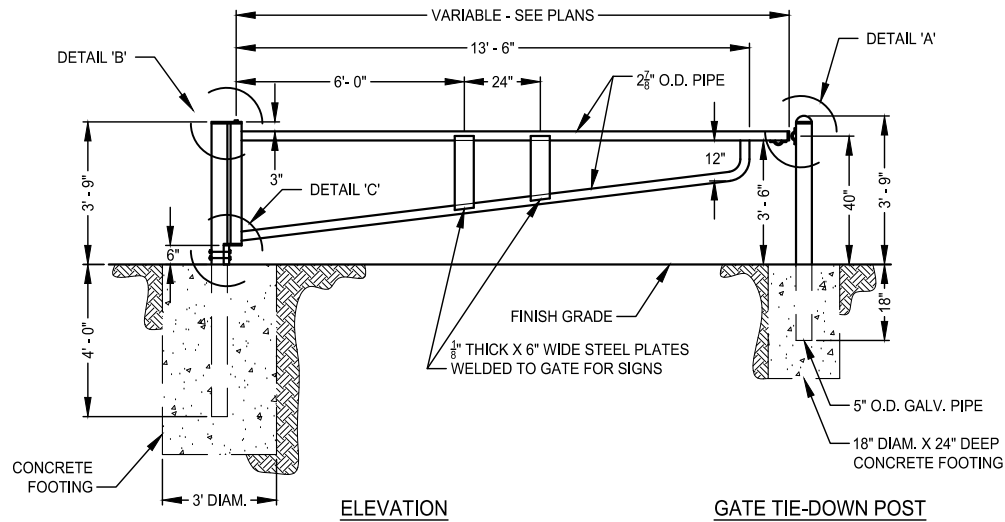
DATE

DOUBLE PIPE GATE



DRAWING NUMBER

L - 28



NOTES:

1. SINGLE PIPE GATE SHALL BE USED FOR ROADWAYS OR DRIVEWAYS UP TO 24' WIDE MAXIMUM OPENING.
2. ALL PIPES SHALL BE BLACK STEEL PIPES, OUTSIDE DIAMETER (O.D.) AND WELDED.
3. ALL STEEL TO BE PAINTED WITH 2 COATS OF PRIMER AND INSIGNIA YELLOW.
4. PROVIDE TWO (2) 5" O.D. PIPES AND INSTALL WITH CONCRETE FOOTING (18" X 24" D) FOR TIE-DOWN WHEN GATE IS OPENED AND CLOSED.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul Muddoch

10/24/2018

CITY ENGINEER

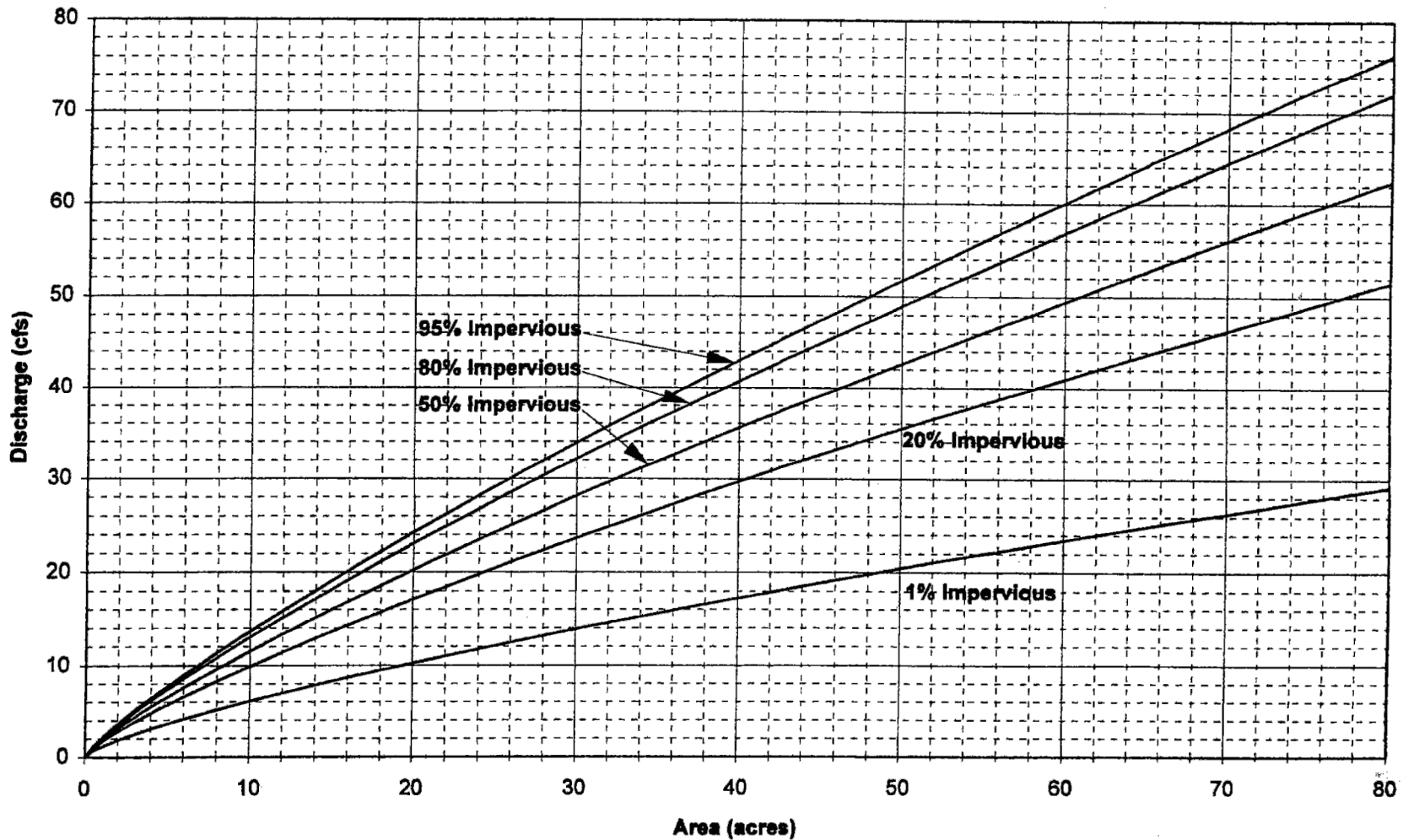
DATE

SINGLE PIPE GATE



DRAWING NUMBER

L - 29



NOTE:

REFER TO VOLUME 2 HYDROLOGY STANDARDS OF THE CITY/COUNTY DRAINAGE MANUAL FOR ASSUMPTIONS MADE IN DERIVING THIS FIGURE.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**10-YEAR PEAK FLOW
SACRAMENTO METHOD
RAINFALL ZONE 2, <80 ACRES**

APPROVED BY:

Robert Muddoch

CITY ENGINEER

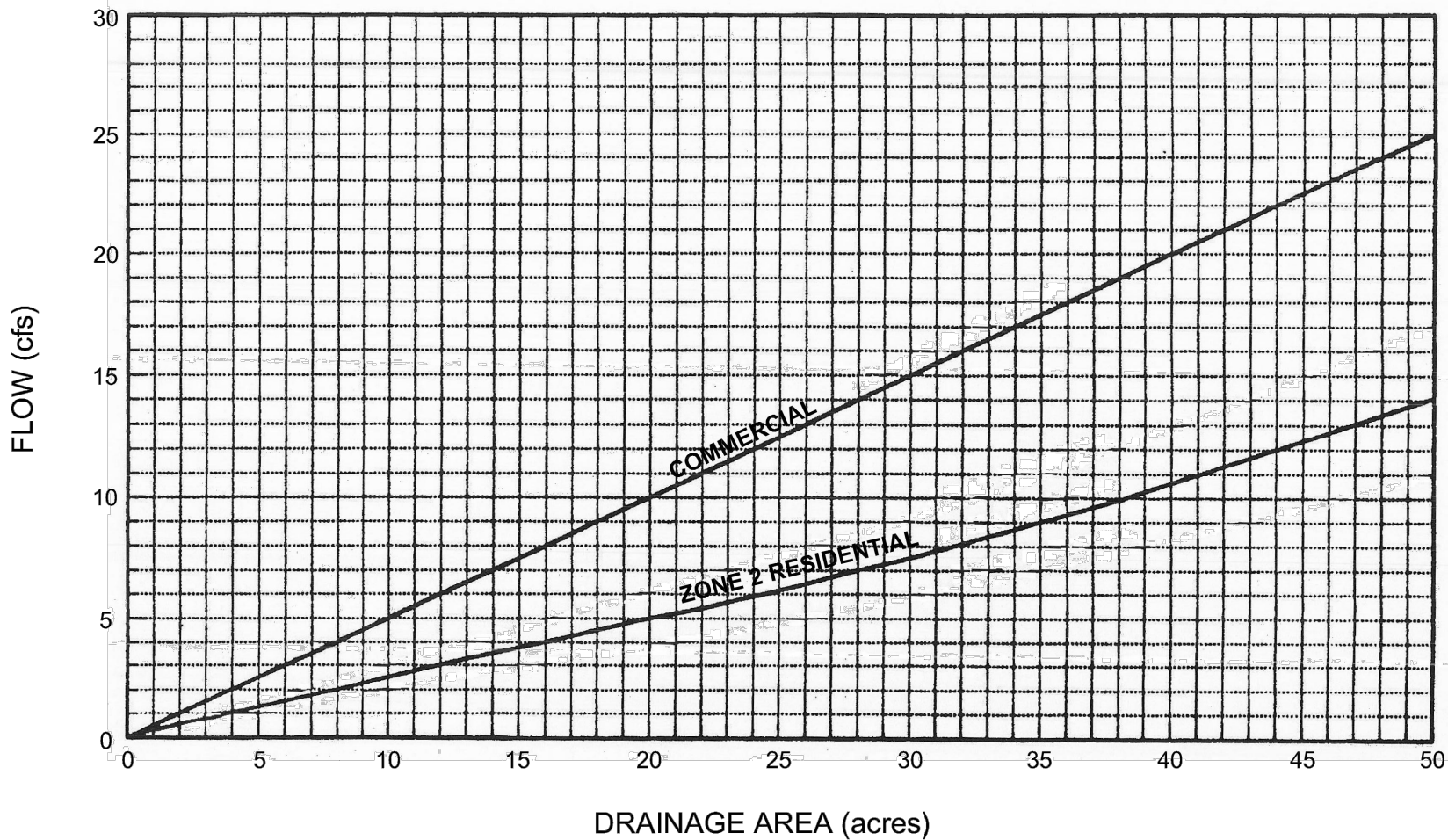
10/24/2018

DATE



DRAWING NUMBER

SD - 1



NOTE: Design runoff for multiple family development shall be based on the following formula:

$$Q_m = Q_r + (Q_c - Q_r)(I - 50)/40$$

Where:

- RD-7 I = 60
- RD-10 I = 70
- RD-20 I = 80
- RD-30 I = 90

Source: County of Sacramento Master Drainage Plan, Part 1, County-wide Hydrology, Nolte and Assoc.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**DESIGN RUNOFF
NOLTE METHOD
DRAINAGE AREAS, <50 ACRES**

APPROVED BY:

Paul Muddoch

CITY ENGINEER

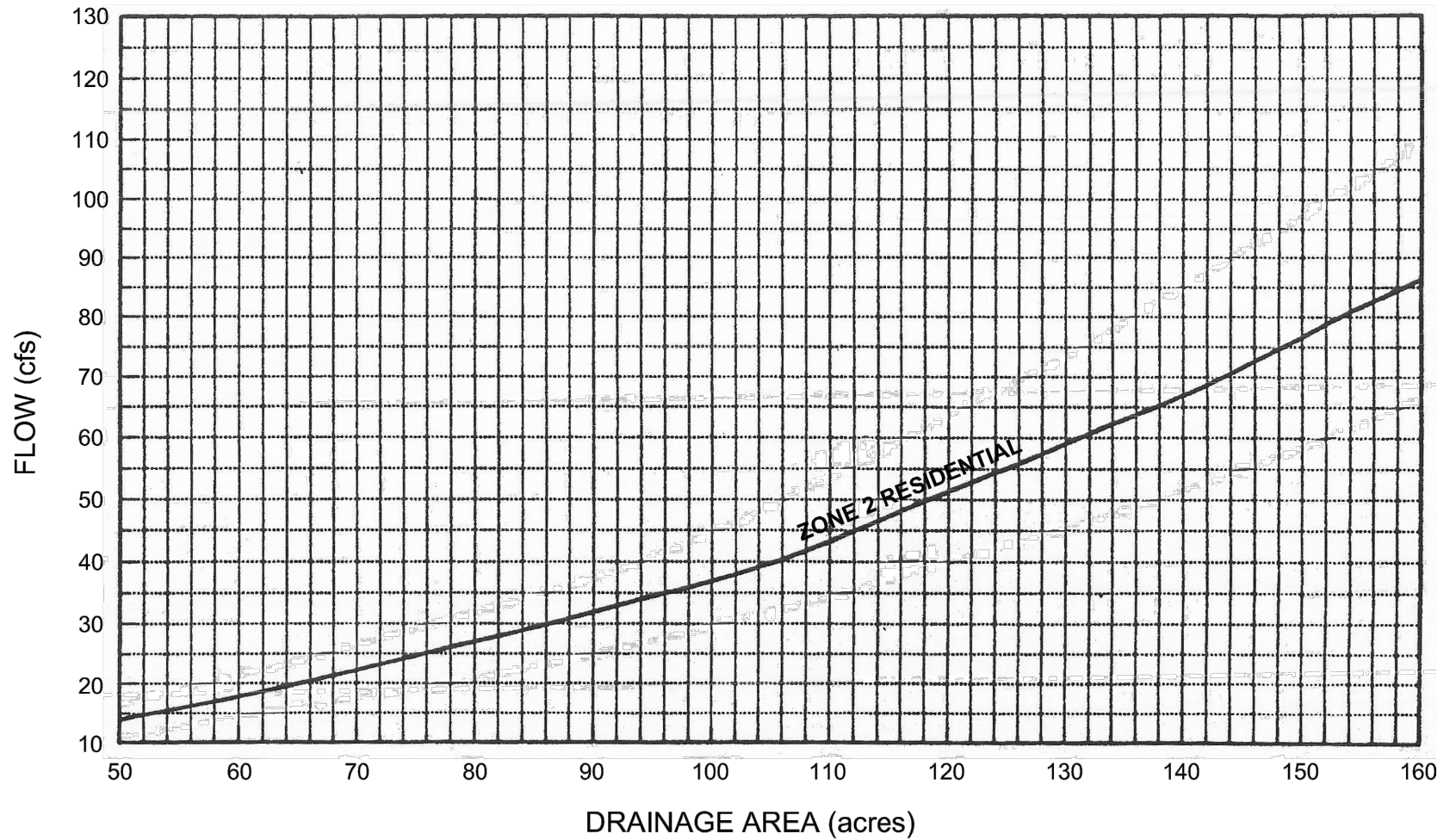
10/24/2018

DATE



DRAWING NUMBER

SD - 1A



NOTE: Design runoff for multiple family development shall be based on the following formula:

$$Q_m = Q_r + (Q_c - Q_r)(I - 50)/40$$

Where:

- RD-7 I = 60
- RD-10 I = 70
- RD-20 I = 80
- RD-30 I = 90

Source: County of Sacramento Master Drainage Plan, Part 1, County-wide Hydrology, Nolte and Assoc.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**DESIGN RUNOFF
NOLTE METHOD
RESIDENTIAL AREAS, 50-160 ACRES**

APPROVED BY:

Paul Muddoch

CITY ENGINEER

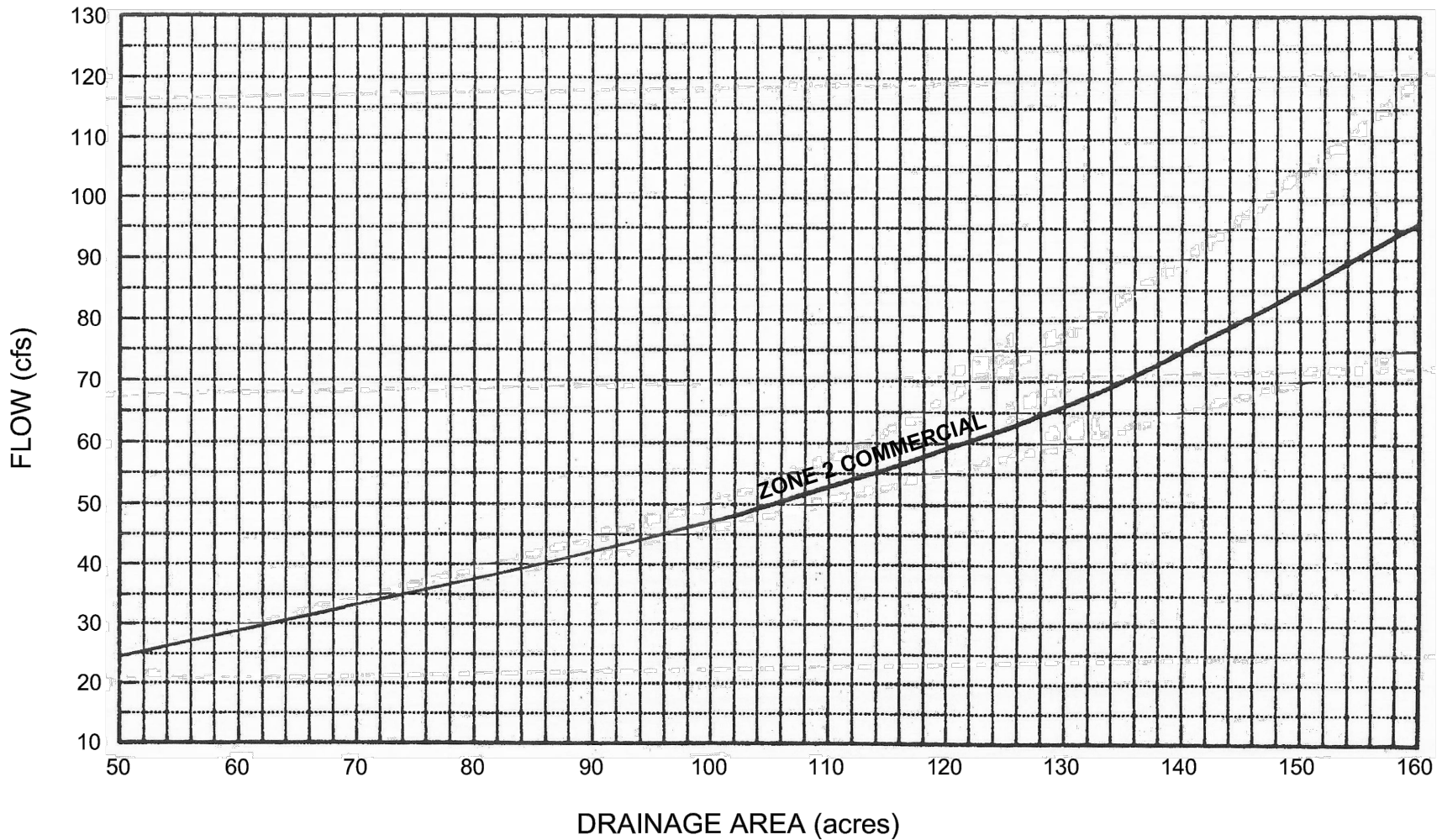
10/24/2018

DATE



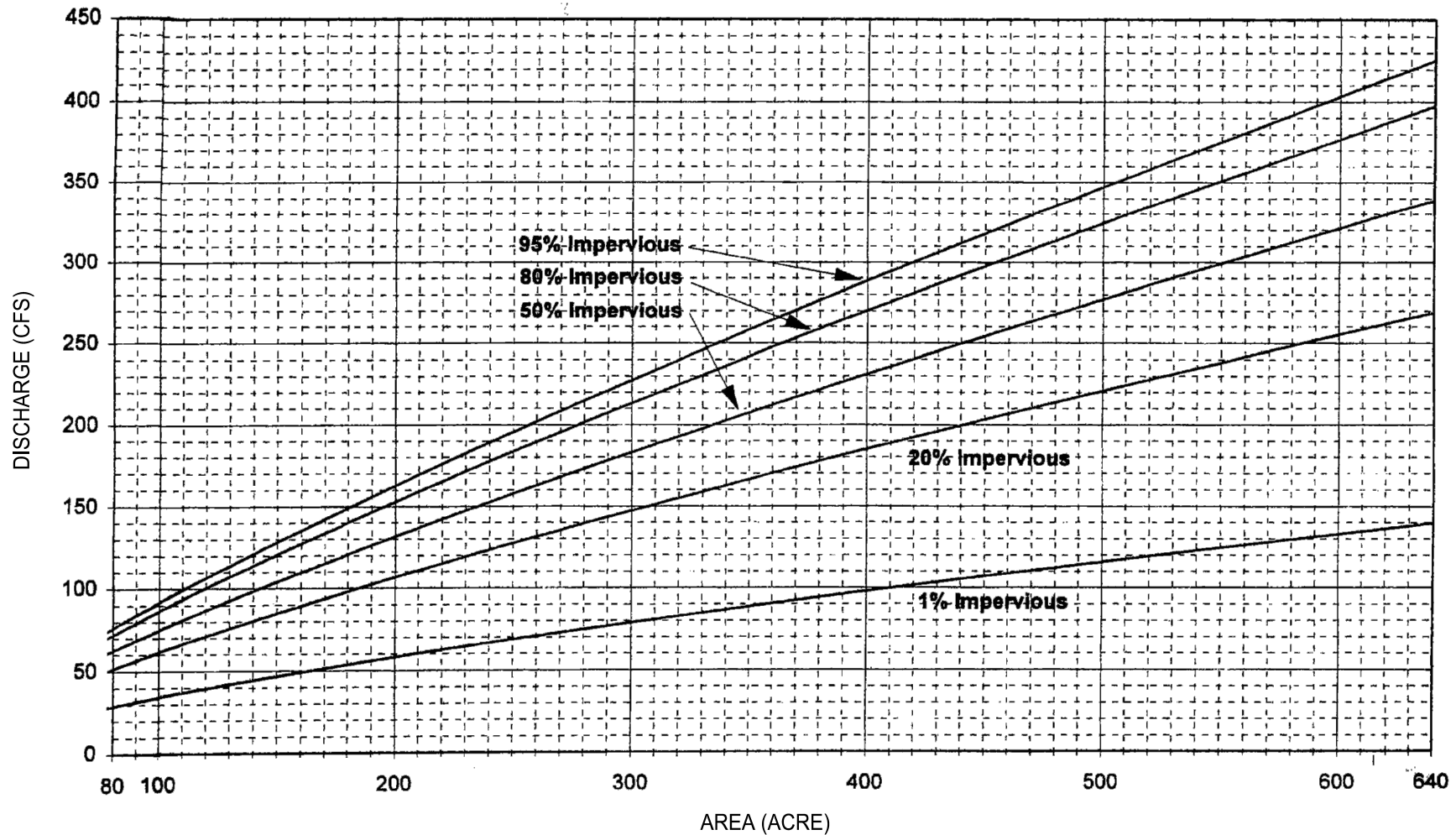
DRAWING NUMBER

SD - 1B



Source: County of Sacramento Master Drainage Plan, Part 1, County-wide Hydrology, Nolte and Assoc.

DATE: 09/22/2007		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Paul Muddoch</i>	
REVISION	BY	APPROVED	DATE	DESIGN RUNOFF NOLTE METHOD COMMERCIAL AREAS, 50-160 ACRES		CITY ENGINEER	10/24/2018 DATE
				DRAWING NUMBER SD - 1C			



NOTE:

REFER TO VOLUME 2 HYDROLOGY STANDARDS OF THE CITY/COUNTY DRAINAGE MANUAL FOR ASSUMPTIONS MADE IN DERIVING THIS FIGURE.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**10-YEAR PEAK FLOW
SACRAMENTO METHOD
RAINFALL ZONE 2, 80-640 ACRES**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

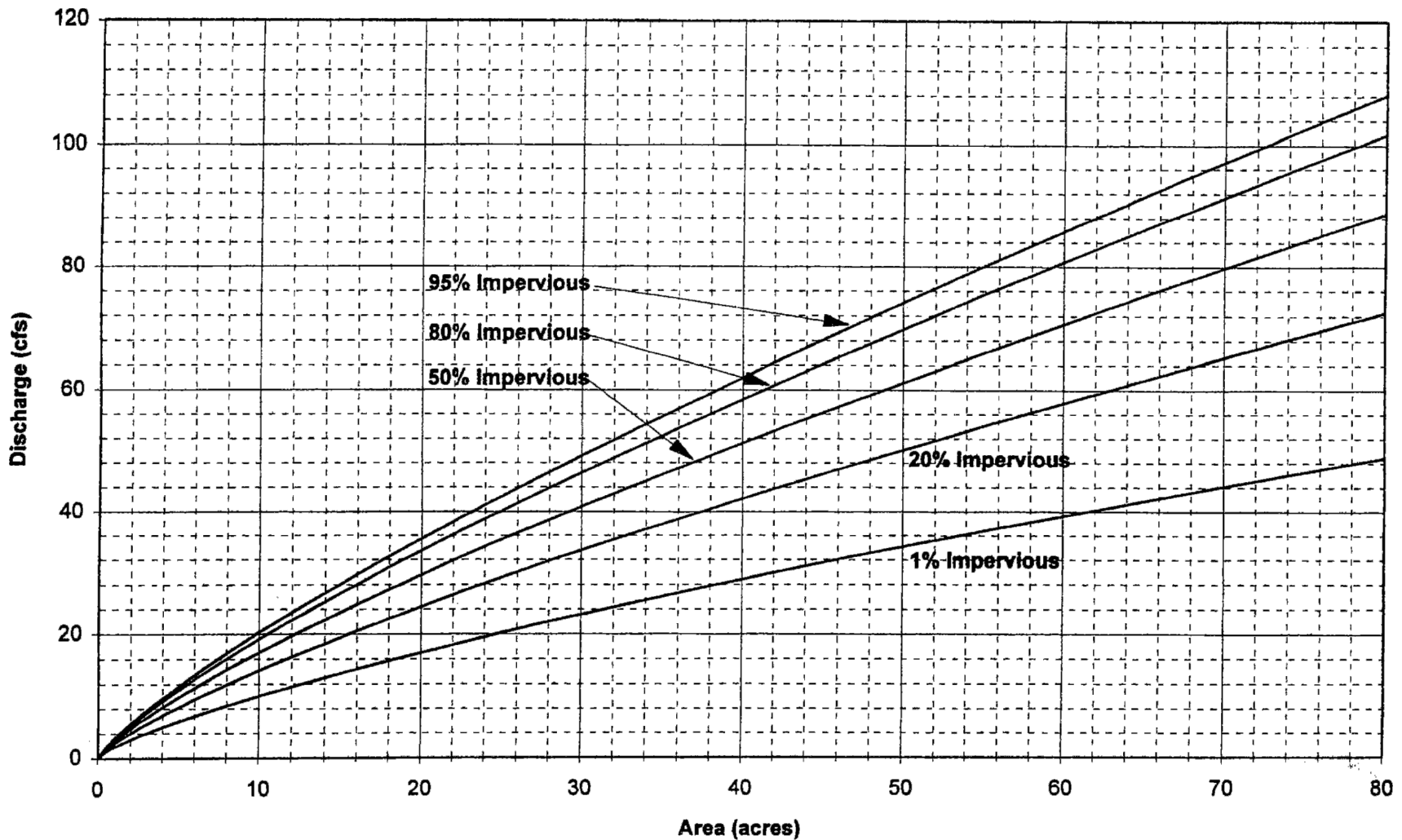
10/24/2018

DATE



DRAWING NUMBER

SD - 2



NOTE:

REFER TO VOLUME 2 HYDROLOGY STANDARDS OF THE CITY/COUNTY DRAINAGE MANUAL FOR ASSUMPTIONS MADE IN DERIVING THIS FIGURE.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**100-YEAR PEAK FLOW
SACRAMENTO METHOD
RAINFALL ZONE 2, <80 ACRES**

APPROVED BY:

Paul Muddoch

CITY ENGINEER

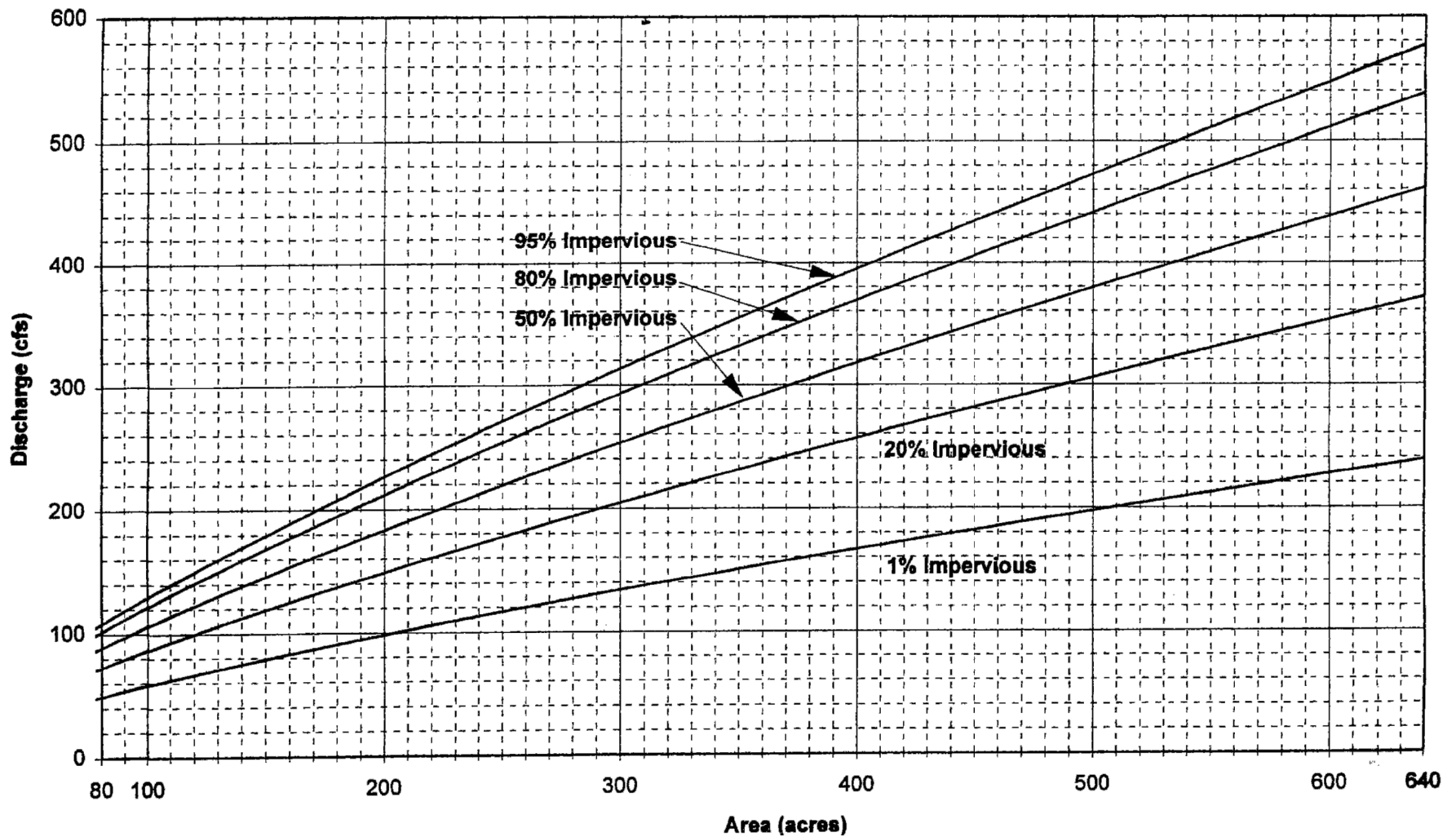
10/24/2018

DATE



DRAWING NUMBER

SD - 3



NOTE:

REFER TO VOLUME 2 HYDROLOGY STANDARDS OF THE CITY/COUNTY DRAINAGE MANUAL FOR ASSUMPTIONS MADE IN DERIVING THIS FIGURE.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**100-YEAR PEAK FLOW
SACRAMENTO METHOD
RAINFALL ZONE 2, 80-640 ACRES**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

10/24/2018

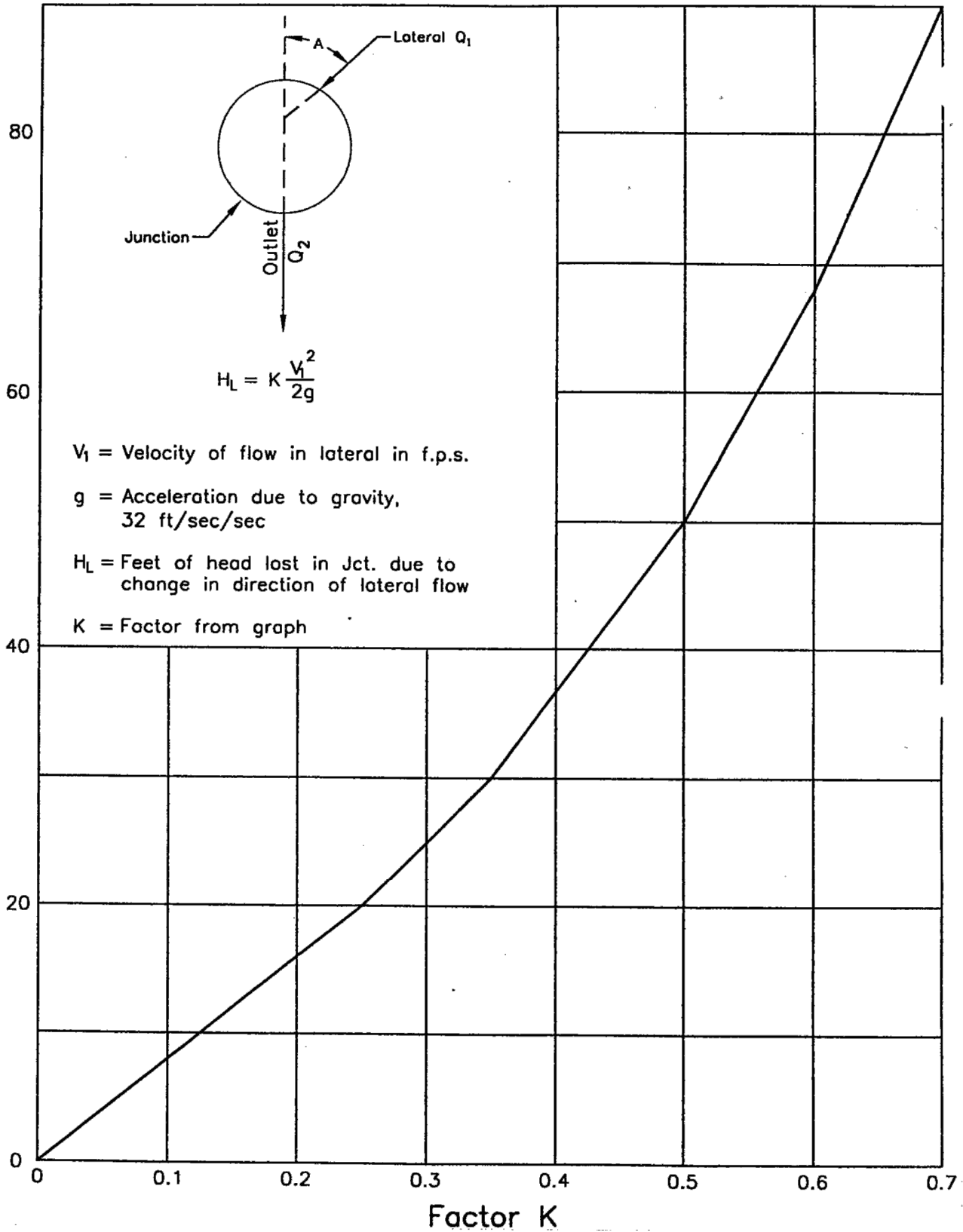
DATE



DRAWING NUMBER

SD - 4


Degree of Angle "A" Between Lateral & Outlet




DATE: 09/22/2017	NOT TO SCALE		
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

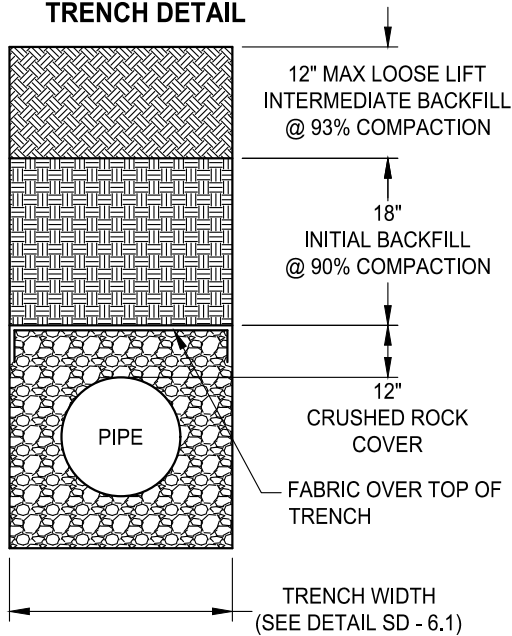
**LOSS IN JUNCTION DUE TO CHANGE
IN DIRECTION OF FLOW IN LATERAL**

APPROVED BY:

 CITY ENGINEER 10/24/2018
DATE

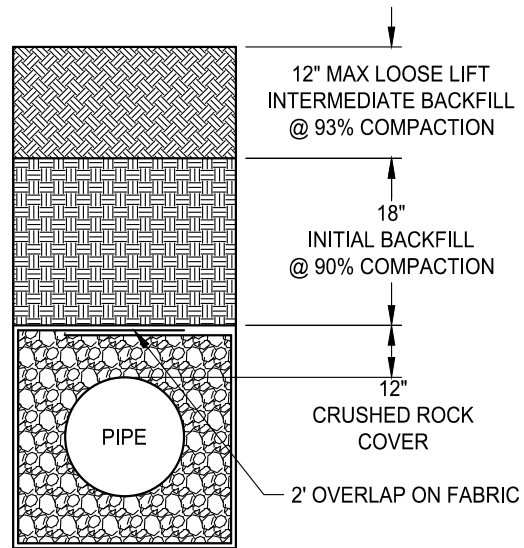
DRAWING NUMBER
SD - 5



**TYPE "A"
SANITARY SEWER / STORM DRAIN
TRENCH DETAIL**



**TYPE "B"
SANITARY SEWER / STORM DRAIN
TRENCH DETAIL**

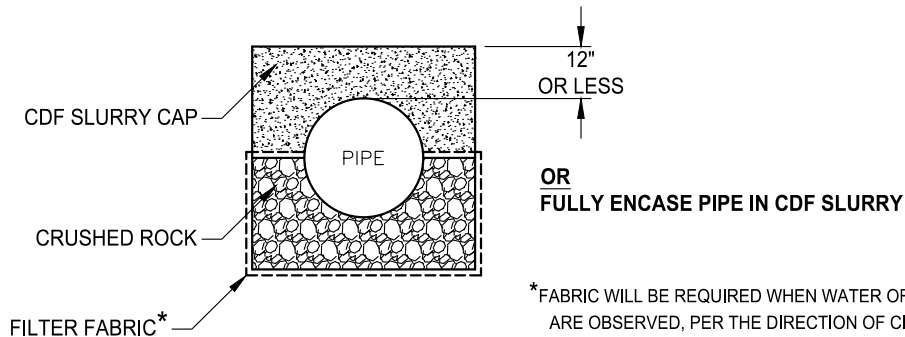


NOTES

- 1 GEOTECTILE FABRIC, PER CITY OF ELK GROVE STANDARD SPECIFICATIONS.
- 2 IF SUBGRADE IS WITHIN 12" OF TOP OF PIPE, BACKFILL MATERIAL TO BE CLASS 2 AGGREGATE BASE, OR CDF PER SPECIFICATIONS.
- 3 INITIAL BACKFILL TO BE PLACED IN AN 18" LOOSE LIFT, COMPACTED TO 12".
- 4 TRENCH DAMS TO BE INSTALLED EVERY MANHOLE RUN.
- 5 CDF BACKFILL AROUND MANHOLES TO BE INSTALLED PER SPECIFICATIONS.

**TYPE "C"
STORM DRAIN TRENCH DETAIL FOR SHALLOW COVER**

FOR USE WITH PVC PIPE ONLY
RCP CLASS IV OR V TO BE BACKFILLED PER NOTE 2



*FABRIC WILL BE REQUIRED WHEN WATER OR SOIL STABILITY CONDITIONS ARE OBSERVED, PER THE DIRECTION OF CITY GEOTECHNICAL STAFF.

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

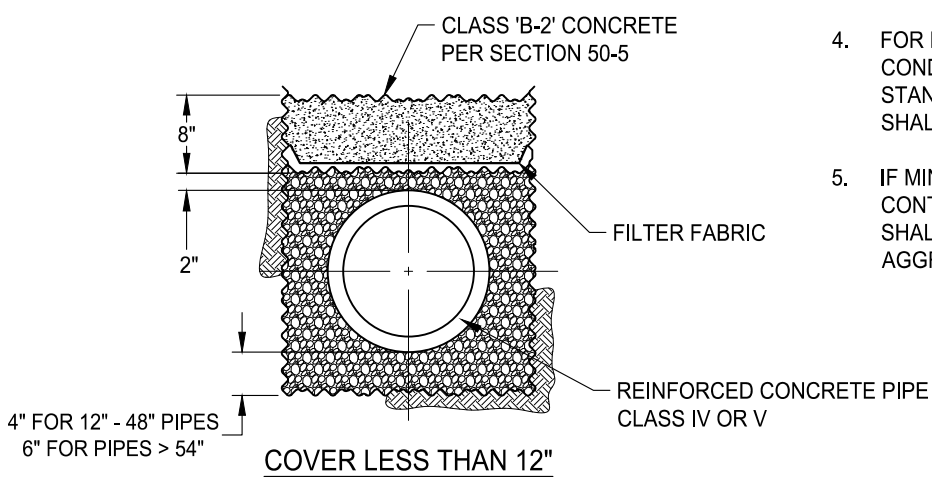
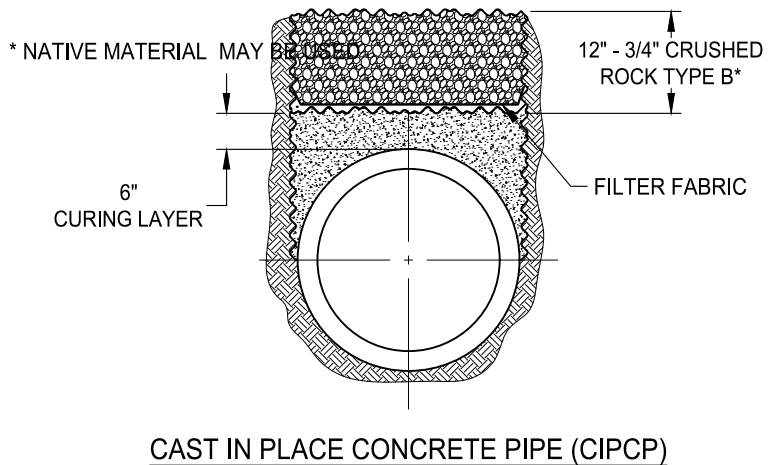
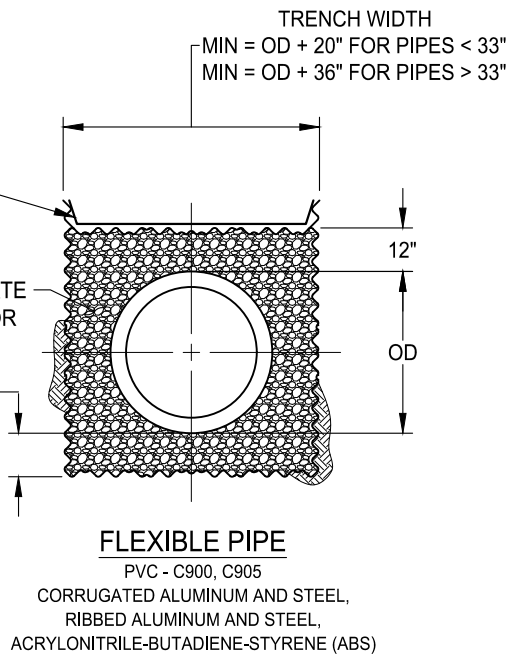
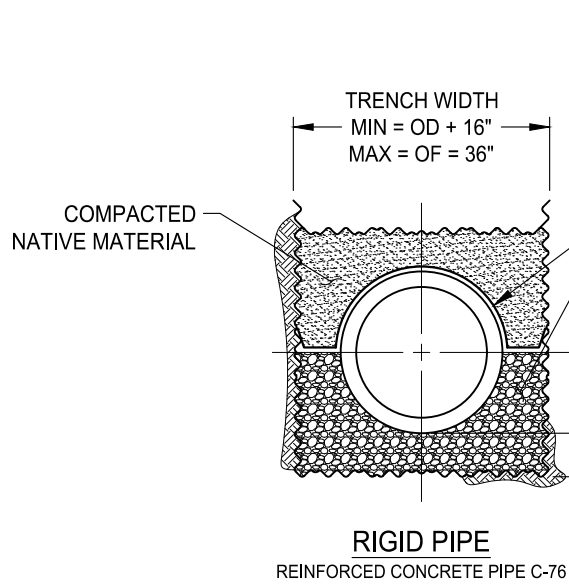
APPROVED BY:
Robert Murdoch
CITY ENGINEER 10/24/2018
DATE

STORM DRAIN TRENCH DETAIL



DRAWING NUMBER

SD - 6.0



GENERAL NOTES:

1. INITIAL BACKFILL MATERIAL SHALL BE THOROUGHLY COMPACTED AROUND PIPE BY SHOVEL SLICING OR TAMPING.
2. SEE SECTION 19 "TRENCH EXCAVATION, BEDDING AND BACKFILL."
3. MINIMUM DEPTH OF BEDDING MATERIAL SHALL BE 1-1/2 INCHES BELOW THE PIPE BELL.
4. FOR ROCKY OR FOR UNSTABLE BEDDING CONDITIONS, SECTION 19-1.07 OF THE STANDARD CONSTRUCTION SPECIFICATIONS SHALL APPLY.
5. IF MINIMUM WIDTH CANNOT BE ACHIEVED, CONTROL DENSITY FILL PER SECTION 50-15 SHALL BE USED IN LIEU OF 3/4" CRUSHED AGGREGATE AT NO EXTRA COST.

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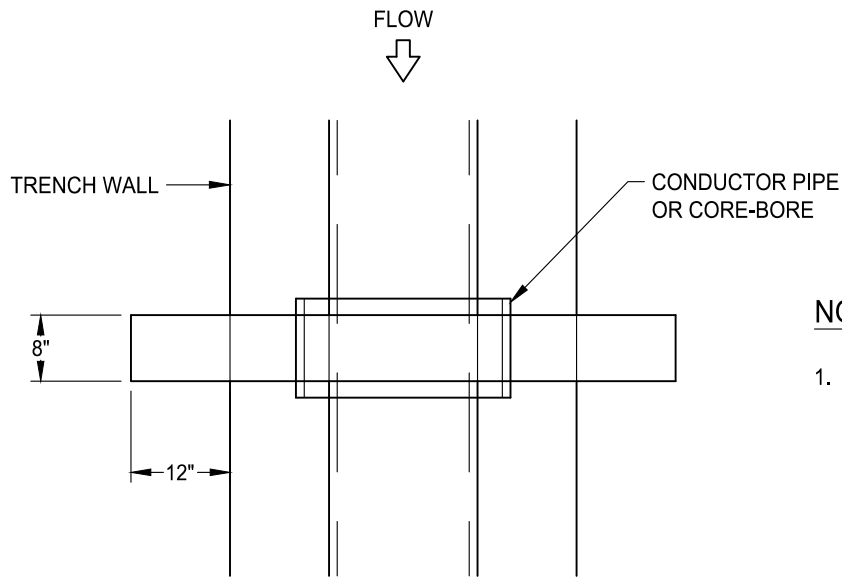
**STORM DRAIN PIPE BEDDING AND
INITIAL BACKFILL**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

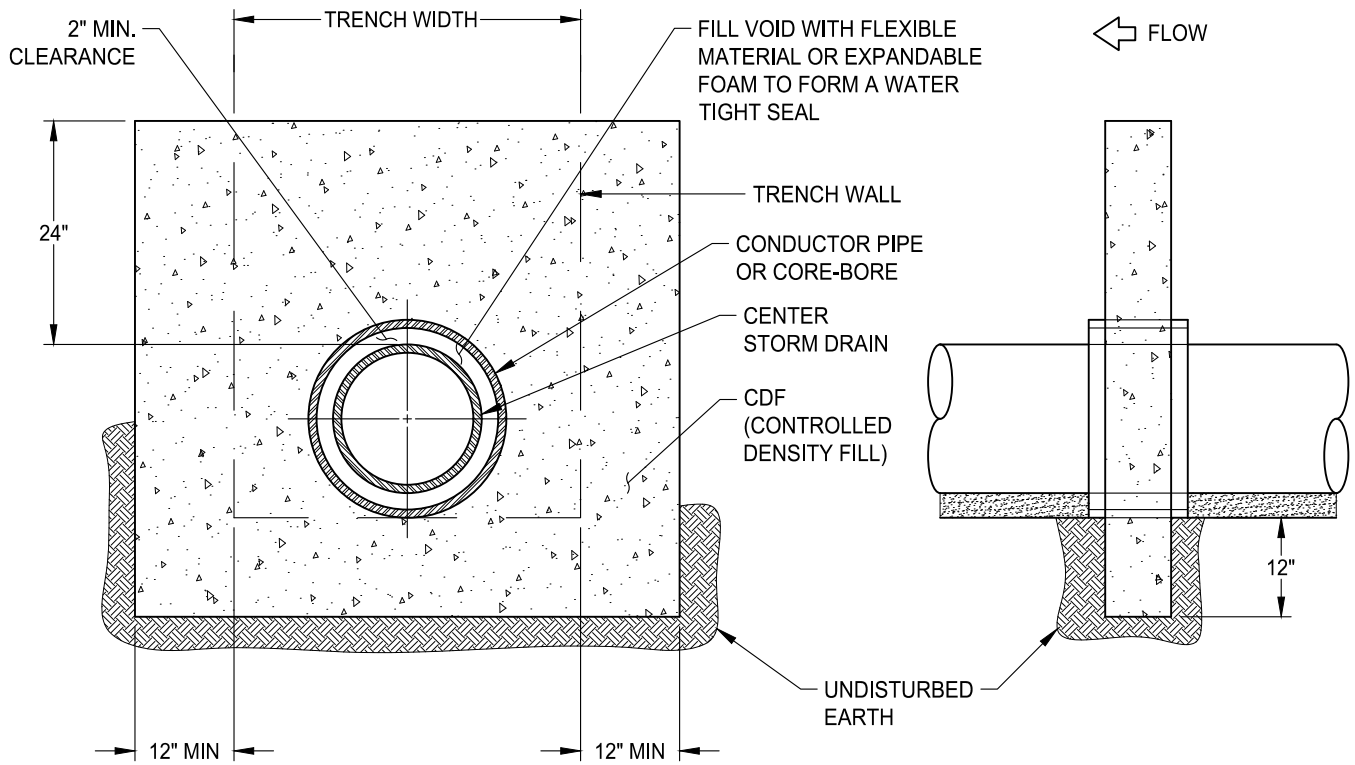
DRAWING NUMBER
SD - 6.1





NOTES:

1. TOP OF DAM TO EXTEND INTO INTERMEDIATE BACKFILL 12" MINIMUM OR TOP OF GROUND WATER HGL.



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CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER 10/24/2018
DATE

TRENCH DAM DETAIL



DRAWING NUMBER
SD - 6.2

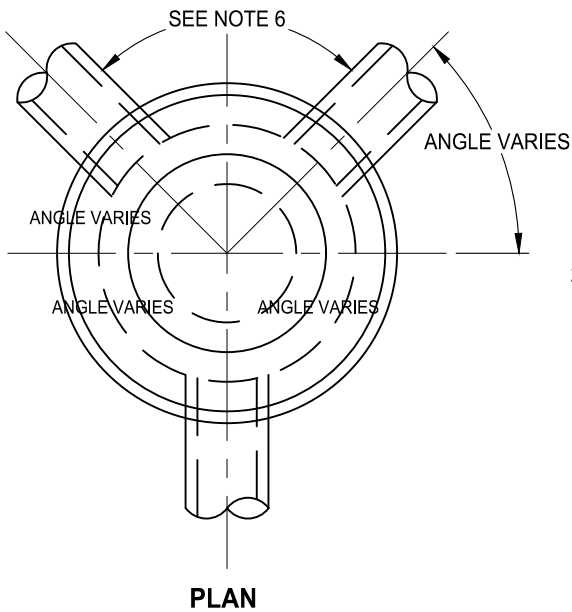
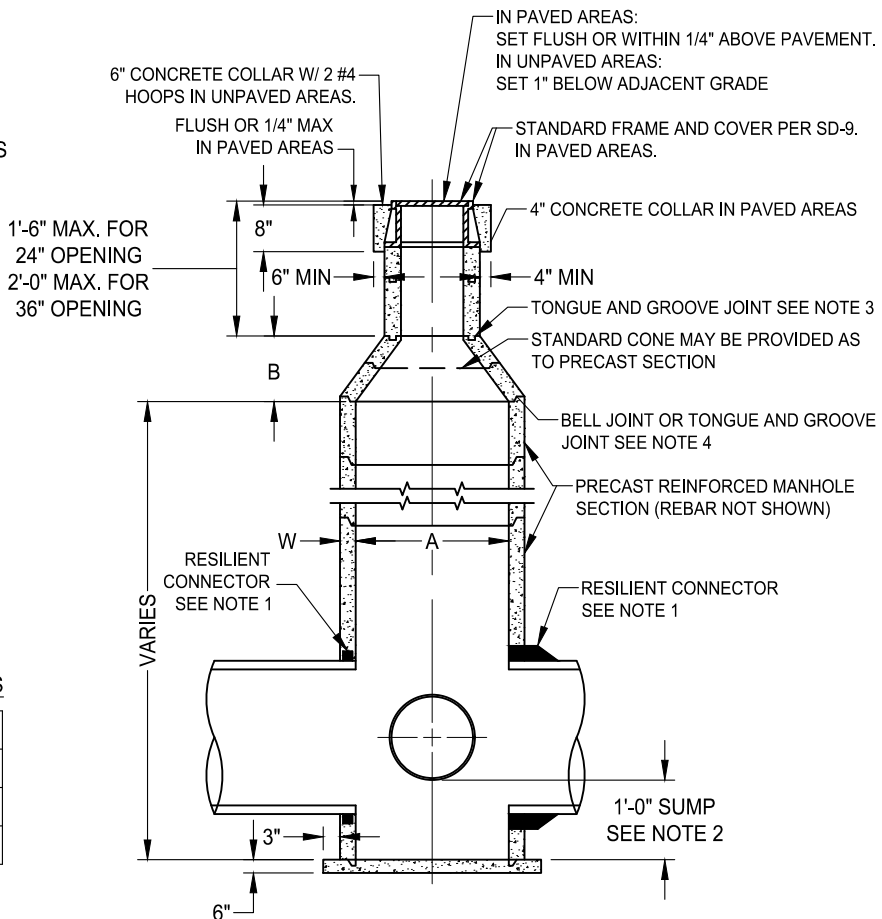


TABLE OF MINIMUM DIMENSIONS

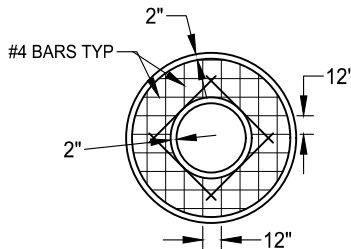
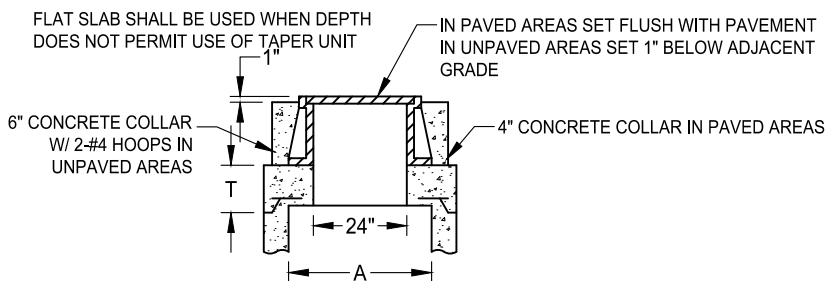
M.H.	A	B	T*	W
48"	48"	18"	8"	4'
60"	60"	28"	9"	6'
72"	72"	SEE NOTE 8	10"	7'

NOTES:

- ON ALL PIPES UP TO 30" I.D. USE FLEXIBLE COMPRESSION GASKET OR BOOT CONNECTOR CONFORMING TO ASTM C-923. CONNECTION SHALL BE WATER AND SOIL TIGHT. FOR PIPES GREATER THAN 30" I.D., BASE MAY BE CAST-IN-PLACE AND A WATER STOP CONFORMING TO ASTM C-923 SHALL BE USED.
- SUMP SHALL BE 1'-0" DEEP, MEASURED FROM INVERT OF OUTFALL PIPE. SUMP NOT REQUIRED IF OUTFALL PIPE IS 24" I.D. OR LARGER.
- RISER SECTIONS, CONES, AND ADJUSTING RINGS SHALL CONFORM TO ASTM C-478.
- ALL JOINTS SHALL BE MADE WITH PREFORMED PLASTIC JOINT SEALING COMPOUND. FOLLOWING INSTALLATION GROUT ALL INTERIOR AND EXTERIOR JOINTS.
- CONCENTRIC COMPONENTS SHALL BE USED UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- PRECAST MANHOLES SHALL BE SIZED TO PROVIDE THE FOLLOWING: THE ANNULAR SPACE ON THE INSIDE OF THE MANHOLE BARREL BETWEEN CORED PIPE CONNECTION HOLES SHALL BE A MINIMUM OF 10 INCHES, IF THE CONNECTION HOLE IS CAST MONOLITHICALLY WITH THE MANHOLE BARREL THE MEASUREMENT SHALL BE TAKEN FROM THE FINISHED CONCRETE CONNECTION.
- SEE SECTION 39, CONSTRUCTION SPECIFICATIONS, "MANHOLES"
- CONE FOR MANHOLES GREATER THAN 60" DIAMETER SHALL BE INDIVIDUALLY DESIGNED.



PROFILE



FLAT SLAB TOP

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CITY OF ELK GROVE - PUBLIC WORKS

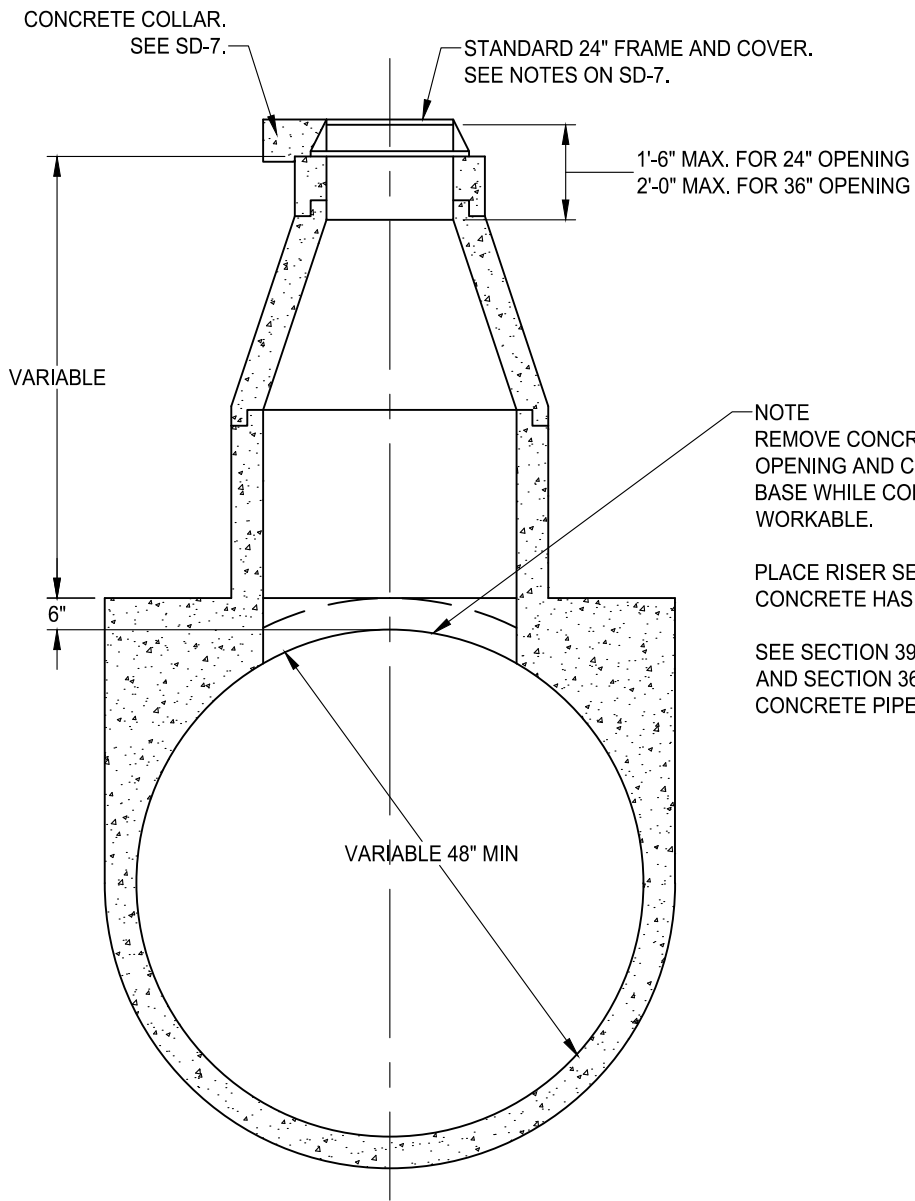
STANDARD PRECAST CONCRETE DRAINAGE MANHOLE

APPROVED BY:
Paul Mulock
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SD - 7





NOTE
 REMOVE CONCRETE IN MANHOLE
 OPENING AND CONSTRUCT RISER
 BASE WHILE CONCRETE IS STILL
 WORKABLE.

PLACE RISER SECTION AFTER
 CONCRETE HAS SET.

SEE SECTION 39, "MANHOLES,"
 AND SECTION 36, CAST-IN-PLACE
 CONCRETE PIPE.

TYPE A
CAST-IN-PLACE PIPE ONLY

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:
Robert Muroch
 CITY ENGINEER 10/24/2018
 DATE

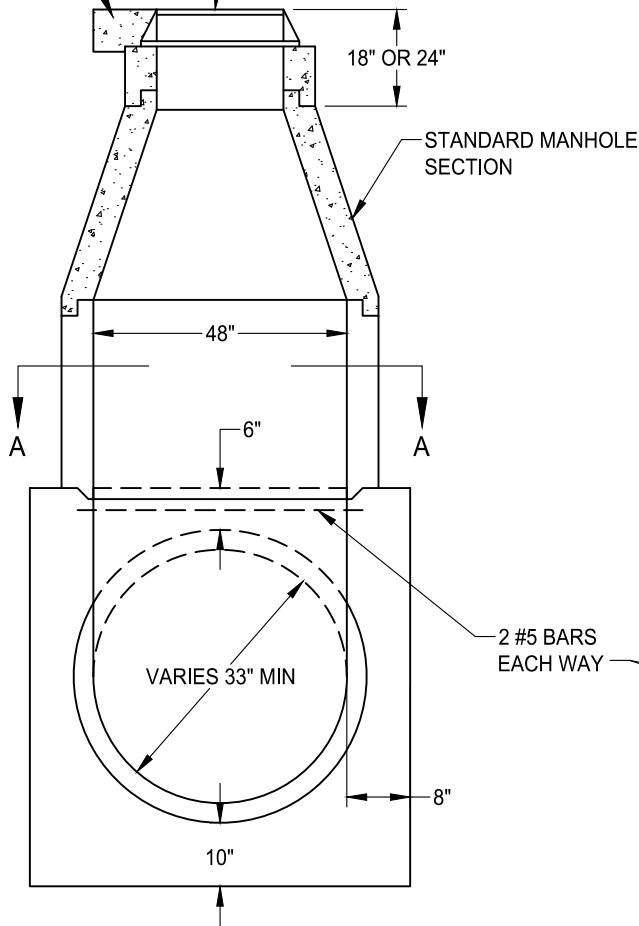
TYPE A
SADDLE MANHOLE



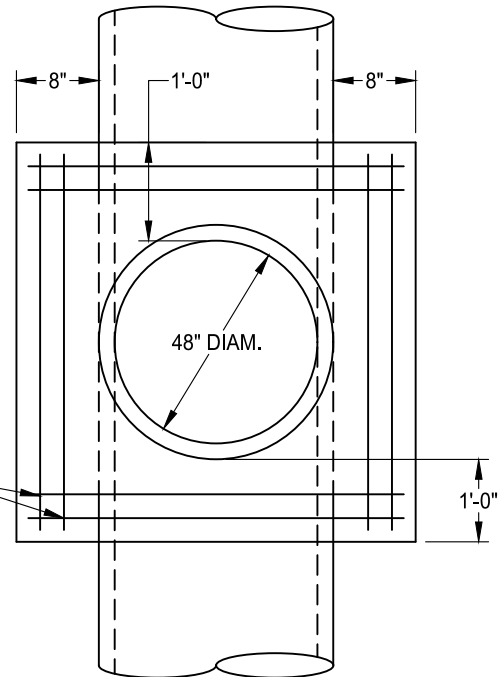
DRAWING NUMBER
SD - 8A

CONCRETE COLLAR
(SEE STD DWG SD-7)

STANDARD 24" FRAME AND COVER
SEE NOTES ON STD DWG SD-7



TYPE B



SECTION A-A

NOTES:

1. CONCRETE SHALL BE CLASS "A" IN CONFORMANCE WITH ARTICLE 50-5 "PORTLAND CEMENT CONCRETE."
2. SEE SECTION 39, "MANHOLES."

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REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

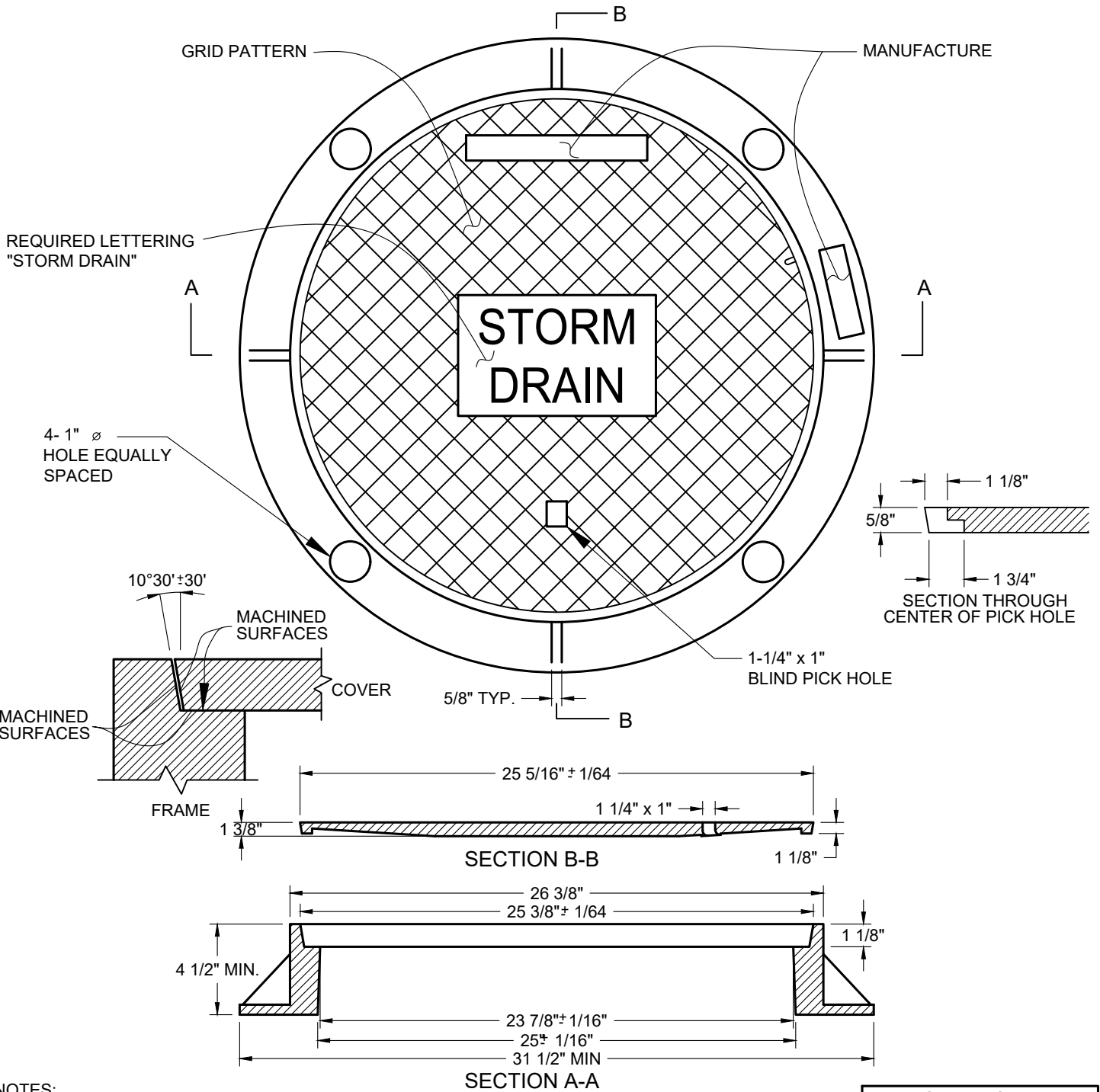
**TYPE B
SADDLE MANHOLE**

APPROVED BY:
Paul Mulock
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SD - 8B





NOTES:

1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B.
2. FRAME AND COVER TO MEET H-20 LOAD SPECIFICATIONS.
3. MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES NOT TO EXCEED 1/64" TOLERANCE.
4. FRAME AND COVER SHALL HAVE A COATING OF BLACK BITUMINOUS MATERIAL.
5. LOCKING COVER TYPE FRAME AND COVERS SHALL BE USED IN EASEMENT AREAS UNLESS OTHERWISE APPROVED.

SET WEIGHT	
FRAME	140 LBS
COVER	130 LBS
TOTAL	270 LBS

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REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

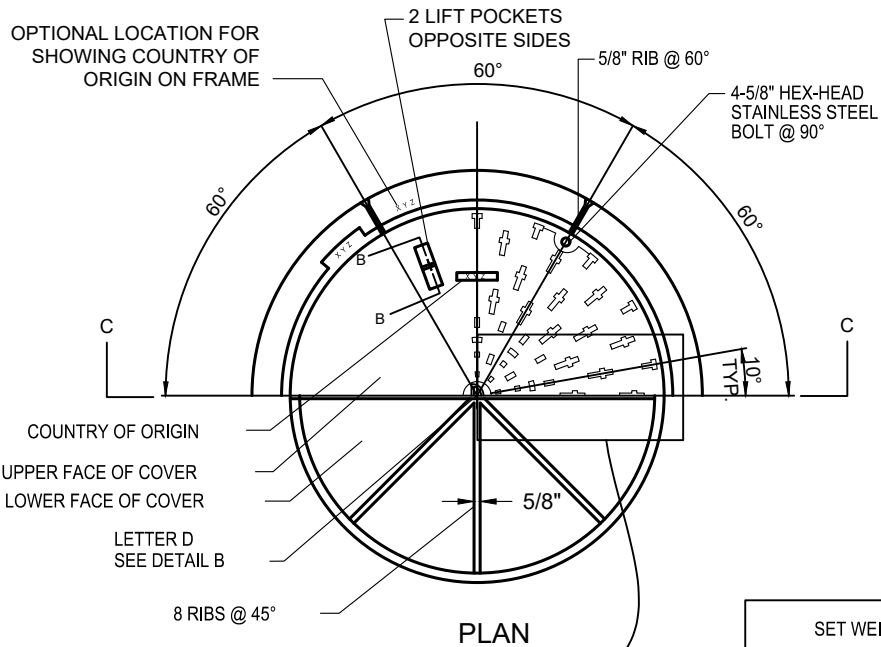
**GREY CAST IRON
STANDARD 24" MANHOLE
FRAME & COVER**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SD - 9

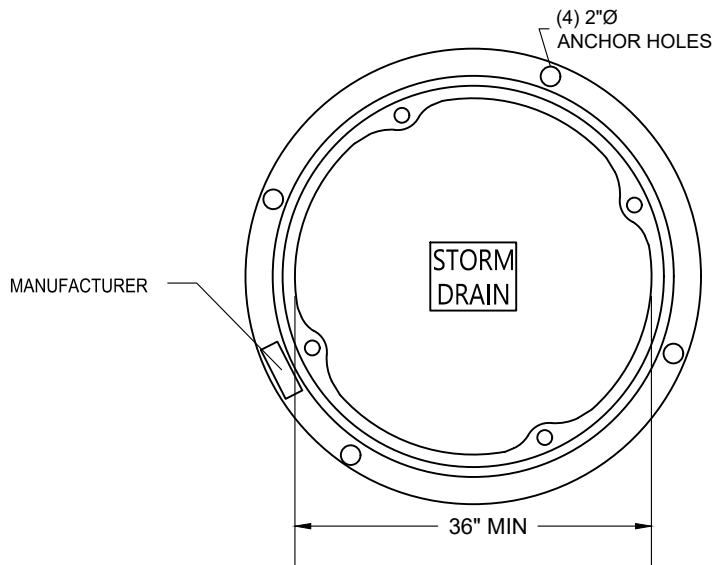




SET WEIGHT	
FRAME	310 LBS
COVER	290 LBS
TOTAL	600 LBS

NOTES:

1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B.
2. FRAME AND COVER TO MEET H-20 LOAD SPECIFICATIONS.
3. MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES NOT TO EXCEED 1/64" TOLERANCE.
4. FRAME AND COVER SHALL HAVE A COATING OF BLACK BITUMINOUS PAINT.
5. LOCKING COVER TYPE FRAME AND COVERS SHALL BE USED WHEN SPECIFIED IN CONTRACT DOCUMENTS.
6. H20 RATED SLOTTED GRATE OR GRATE TYPE MANHOLE COVER MAY BE SUBSTITUTED FOR COVER WHEN SPECIFIED IN CONTRACT DOCUMENTS OR UPON APPROVAL OF DIRECTOR.
7. COVER SHALL BE "STORM DRAIN" STAMPED.



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CITY OF ELK GROVE - PUBLIC WORKS

**GREY CAST IRON
STANDARD 36" MANHOLE
FRAME & COVER (PG 1 OF 2)**

APPROVED BY:

Robert M. Mueloch

CITY ENGINEER

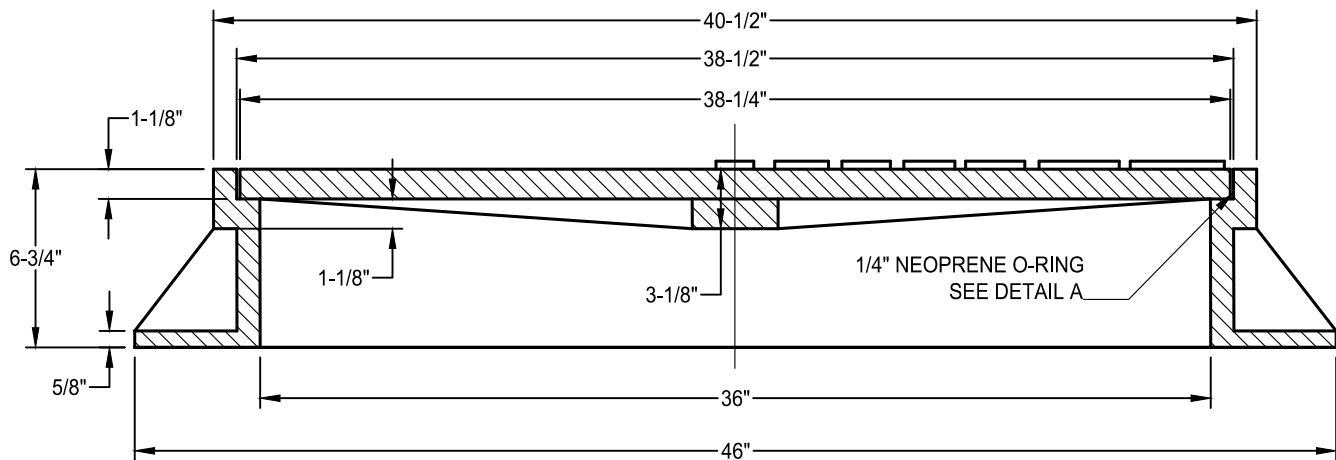
10/24/2018

DATE

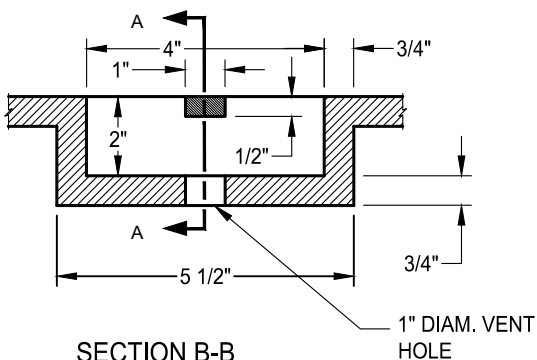


DRAWING NUMBER

SD - 10.1

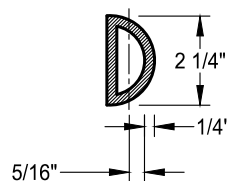


SECTION C-C

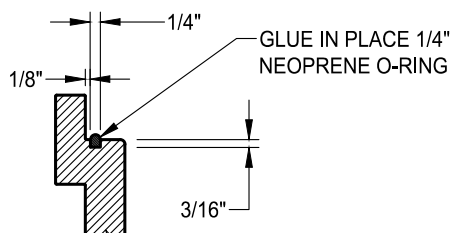


SECTION B-B

1" DIAM. VENT HOLE

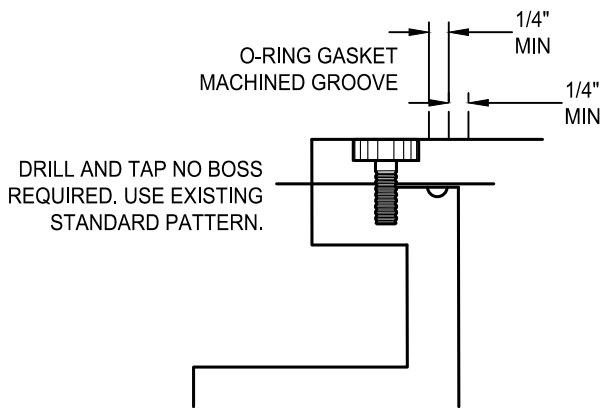


DETAIL B

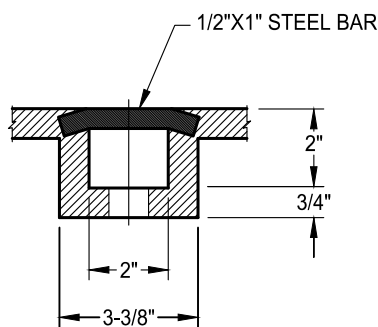


DETAIL A

GLUE IN PLACE 1/4" NEOPRENE O-RING



BOLT DOWN COVER DETAIL



SECTION A-A

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**GREY CAST IRON
STANDARD 36" MANHOLE
FRAME & COVER (PAGE 2 OF 2)**

APPROVED BY:

Paul Mudoch

CITY ENGINEER

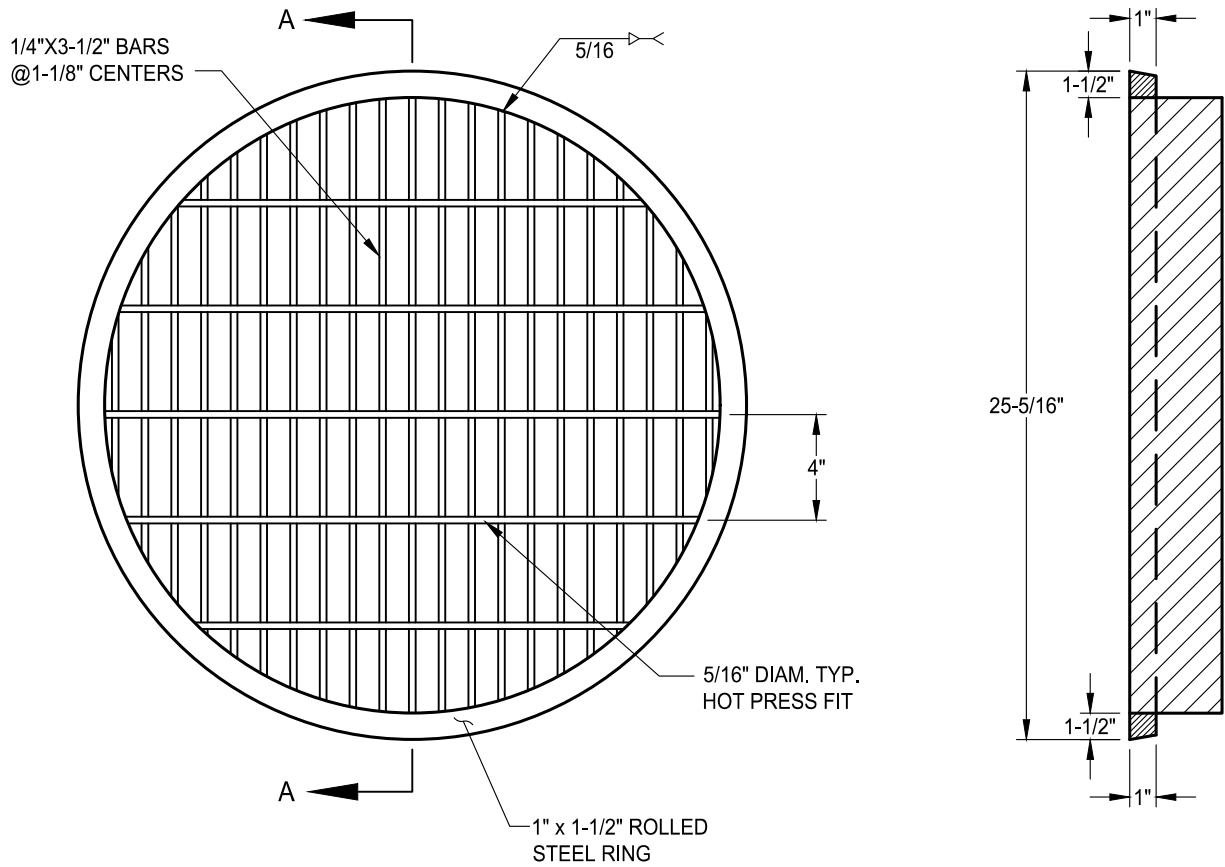
10/24/2018

DATE



DRAWING NUMBER

SD - 10.2

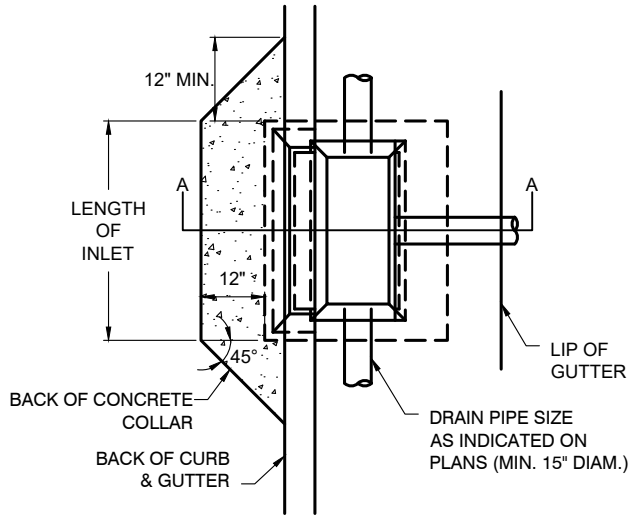


SECTION A-A

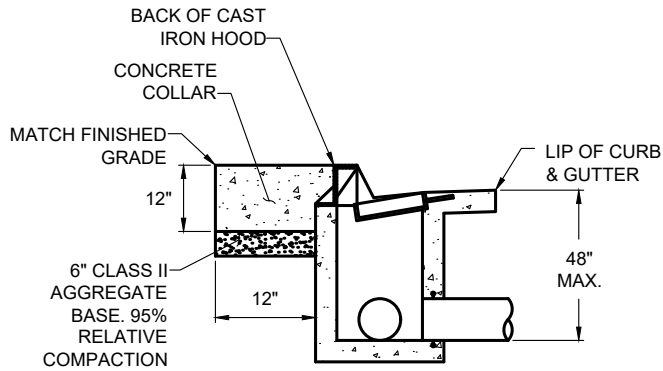
NOTES:

1. MANHOLE COVER SHALL FIT FRAME SHOWN ON STANDARD DRAWING SD-9.
2. SEATING SURFACES SHALL BE MACHINED AS SHOWN IN DETAIL ON STANDARD DRAWING SD-9.
3. THIS COVER MAY BE USED ONLY WITH APPROVAL OF THE CITY ENGINEER.
4. GALVANIZE AFTER FABRICATION.

DATE: 09/22/2017		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Paul Muddoch</i>		
REVISION	BY	APPROVED	DATE	GRATE TYPE MANHOLE COVER		CITY ENGINEER	10/24/2018 DATE	
						DRAWING NUMBER		
						SD - 11		



PLAN



SECTION A-A

NOTES

1. TO BE USED ON TYPE1A AND TYPE 2 CURB AND GUTTER WHERE INLETS ARE AT DETACHED SIDEWALKS.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

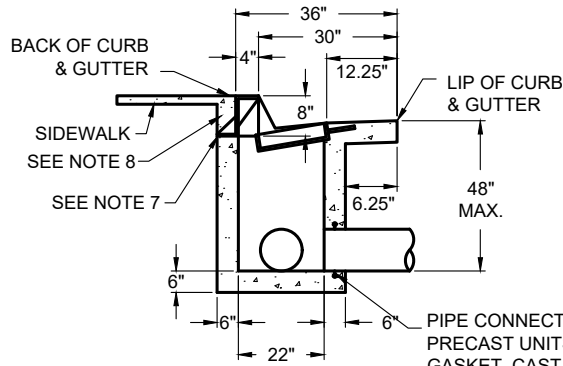
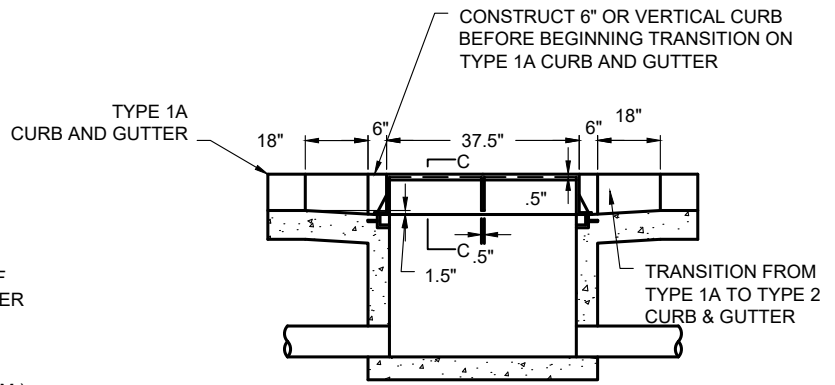
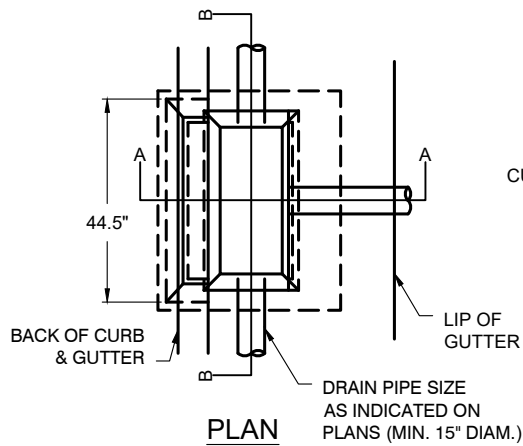
CITY OF ELK GROVE - PUBLIC WORKS

**DROP INLET
TYPE B
AT DETACHED SIDEWALK**

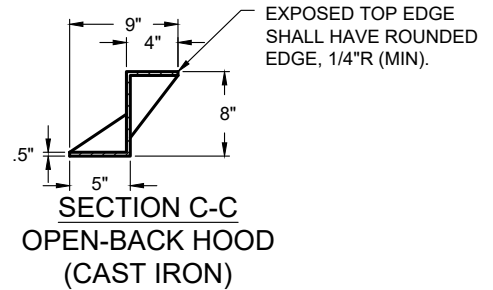
APPROVED BY:
Robert Muddoch
CITY ENGINEER 10/24/2018
DATE



DRAWING NUMBER
SD - 12.1

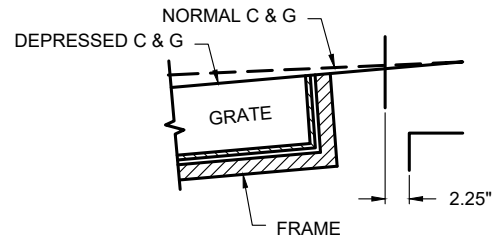
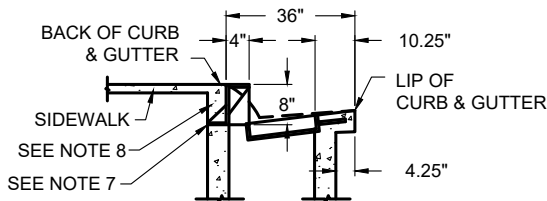


SECTION B-B



SECTION A-A
TYPE 2-VERTICAL C&G

SECTION C-C
OPEN-BACK HOOD
(CAST IRON)



SECTION A-A
TYPE 1A - ROLLED C&G

CURB AND GUTTER
WITH FRAME DETAIL

NOTES

1. STANDARD DEPRESSION FOR INLET IS 1-1/2" AND LIP OF GUTTER MUST BE SET BACK 3" FROM GUTTER FLOW LINE.
2. FRAME AND GRATE SHALL CONFORM TO STANDARD DRAWINGS SD-14 AND SD-15.
3. OPEN-BACK HOOD SHALL BE H-20 RATED.
4. EXPOSED EDGES SHALL HAVE A 1/8" R (MINIMUM).
5. AN EDGING TOOL SHALL BE USED ON ALL EDGES WHERE THE CONCRETE SIDEWALK AND CURB MEET THE TOP OF THE HOOD.
6. ALL EXPOSED PARTS TO BE HOT DIP GALVANIZED PER ASTM A123, AFTER FABRICATION.
7. SEE SD-12.1 FOR INSTALLATION OF INLETS AT DETACHED SIDEWALKS.
8. INCREASE SIDEWALK THICKNESS TO 8" IN ORDER TO ANCHOR CAST IRON HOOD AND INLET WALL. WIDTH TO BE 6" MINIMUM.
9. WHEN MORE THAN ONE GRATE IS PROPOSED, STD DWG SD-16 FOR SUPPORT ASSEMBLY.

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul Murock

10/24/2018

CITY ENGINEER

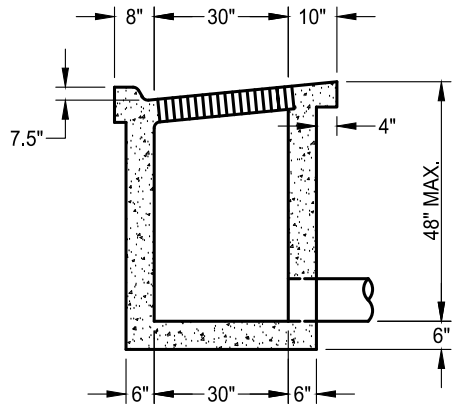
DATE

**DROP INLET
TYPE B**

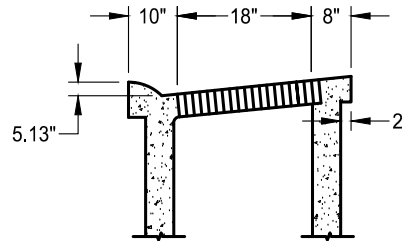


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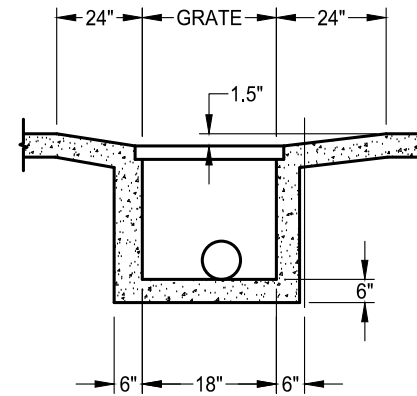
SD - 12



TYPE 2 CURB

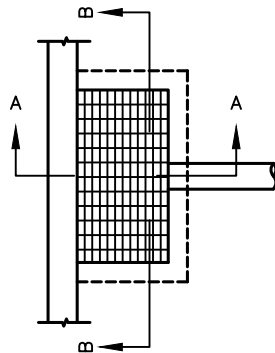


TYPE 1A CURB



SECTION B-B

SECTION A-A



NOTES

1. STANDARD DEPRESSION FOR INLET IS 1-1/2".
2. FRAME AND GRATE SHALL CONFORM TO STANDARD DRAWINGS SD-14 AND SD-15.
3. OPEN-BACK HOOD SHALL BE H-20 RATED.
4. ALL EXPOSED EDGES SHALL HAVE A 1/8" R (MINIMUM).
5. AN EDGING TOOL SHALL BE USED ON ALL EDGES WHERE THE CONCRETE SIDEWALK AND CURB MEET THE TOP OF THE HOOD.
6. ALL EXPOSED PARTS TO BE HOT DIP GALVANIZED PER ASTM A123, AFTER FABRICATION.

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CITY OF ELK GROVE - PUBLIC WORKS

**DROP INLET
TYPE C**

APPROVED BY:

Paul Muddoch

CITY ENGINEER

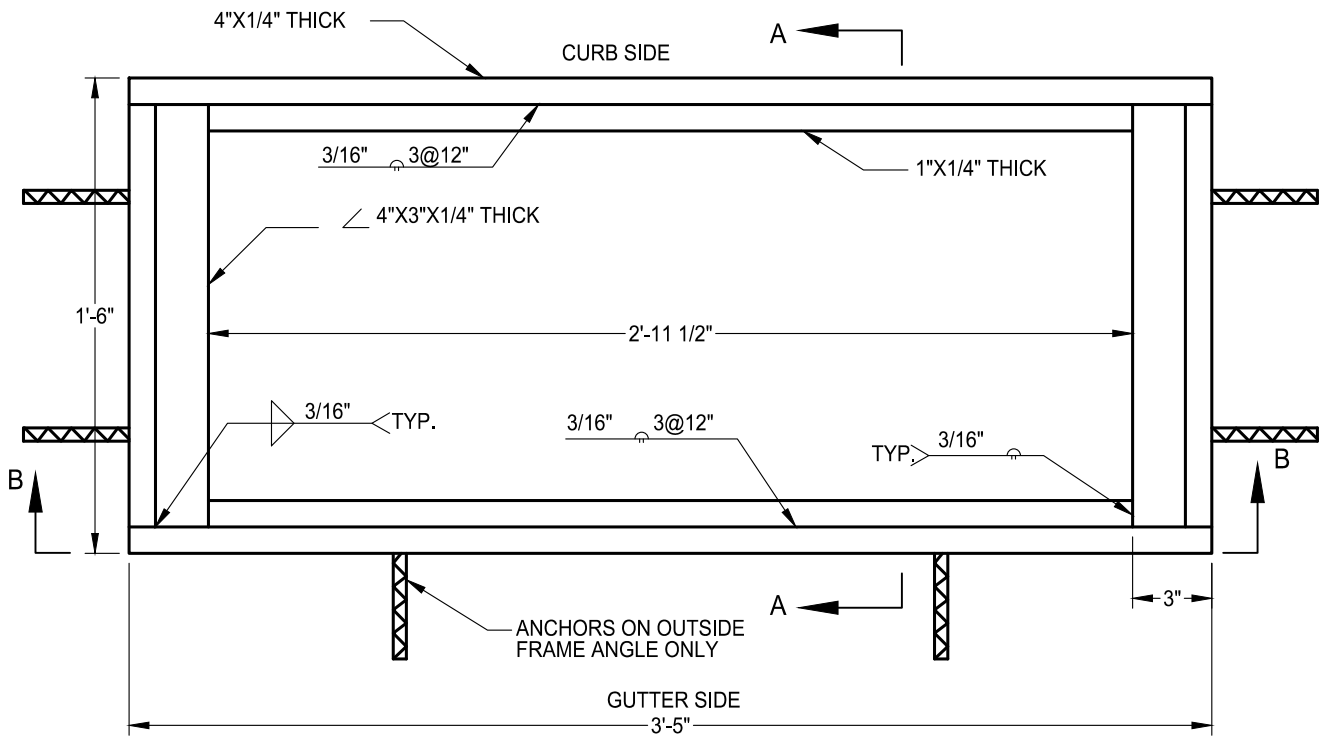
10/24/2018

DATE

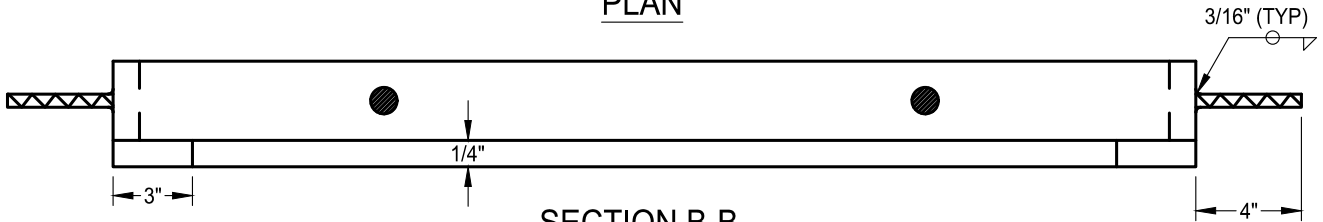
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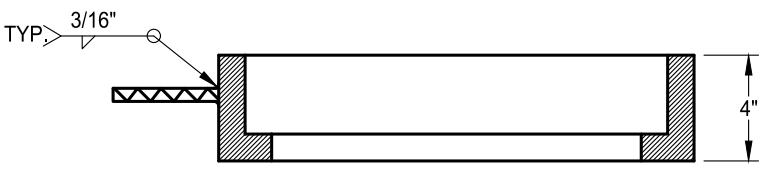
SD - 13



PLAN



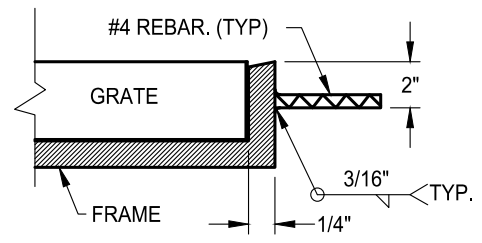
SECTION B-B



SECTION A-A

NOTES:

1. OMIT 1/2" FRAME ANCHORS OVER CENTER SUPPORT ASSEMBLY WHEN MULTIPLE FRAMES ARE USED.
2. MATERIAL: ASTM A36 MILD STEEL
3. SEE ARTICLE 50-31, "SEWER AND STORM DRAIN CASTINGS," OF SECTION 50.
4. ALL EXPOSED PARTS TO BE HOT DIP GALVANIZED PER ASTM A123, AFTER FABRICATION.



FRAME ANCHOR DETAIL

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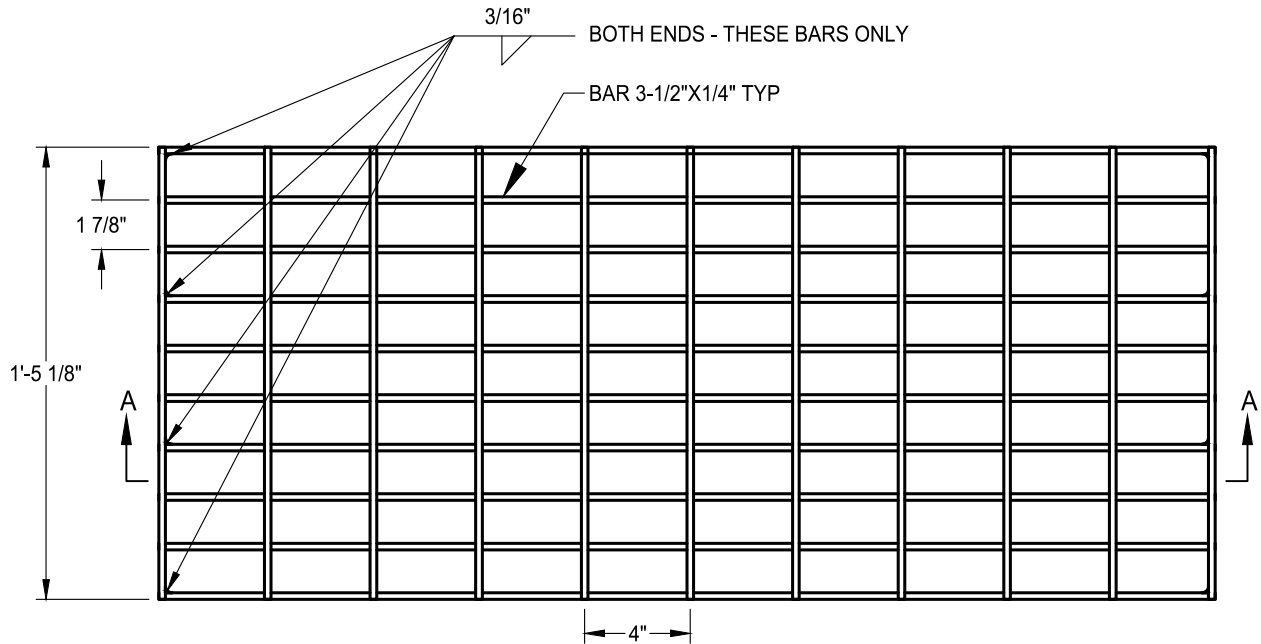
WELDED STEEL GRATE FRAME

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

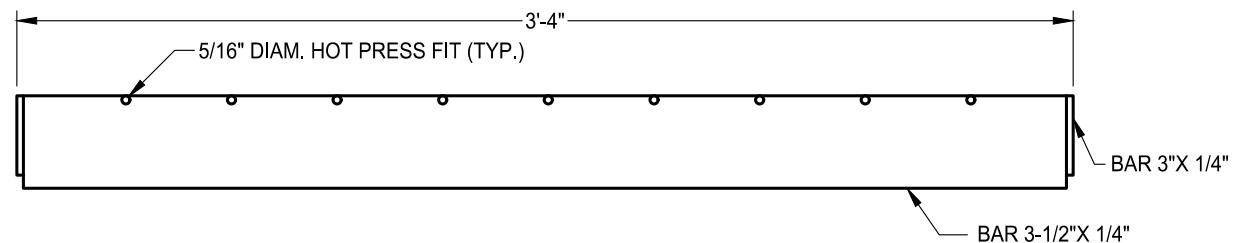
10/24/2018
DATE

DRAWING NUMBER
SD - 14





PLAN

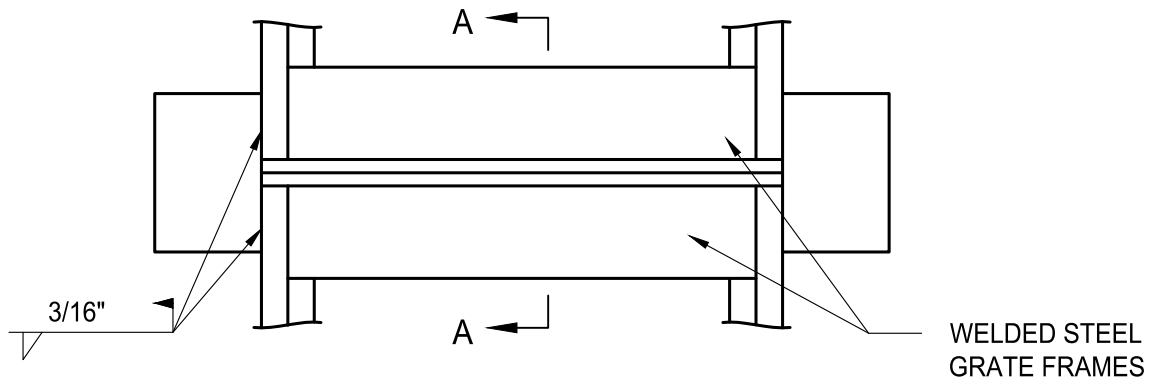


SECTION A-A

NOTES:

1. DIMENSIONS TO CENTERLINE OF BARS UNLESS OTHERWISE NOTED.
2. ALL EXPOSED PARTS TO BE HOT DIP GALVANIZED PER ASTM A123, AFTER FABRICATION.

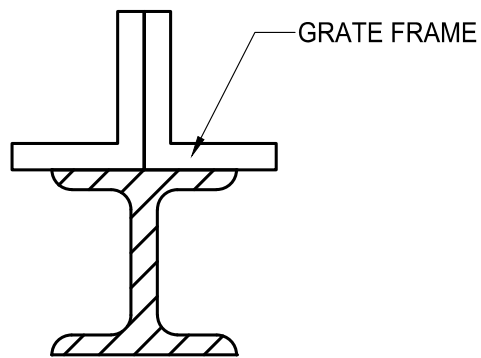
DATE: 09/22/2017		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: CITY ENGINEER			
REVISION	BY	APPROVED	DATE	WELDED STEEL GRATE				10/24/2018 DATE	
								DRAWING NUMBER	
								SD - 15	



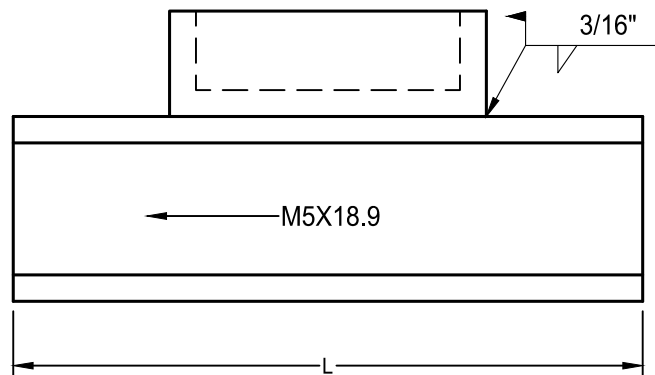
PLAN

NOTES:

1. OMIT 1/2" FRAME ANCHORS OVER CENTER SUPPORT.
2. L=57 INCHES FOR CURB OPENING CATCH BASIN WITH GRATING(S) AND DEBRIS SKIMMER (STANDARD PLAN 301).
3. ALL EXPOSED PARTS TO BE HOT DIP GALVANIZED PER ASTM A123, AFTER FABRICATION.



SECTION A-A



ELEVATION

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CITY OF ELK GROVE - PUBLIC WORKS

**CENTER SUPPORT ASSEMBLY
FOR MULTIPLE GRATES**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

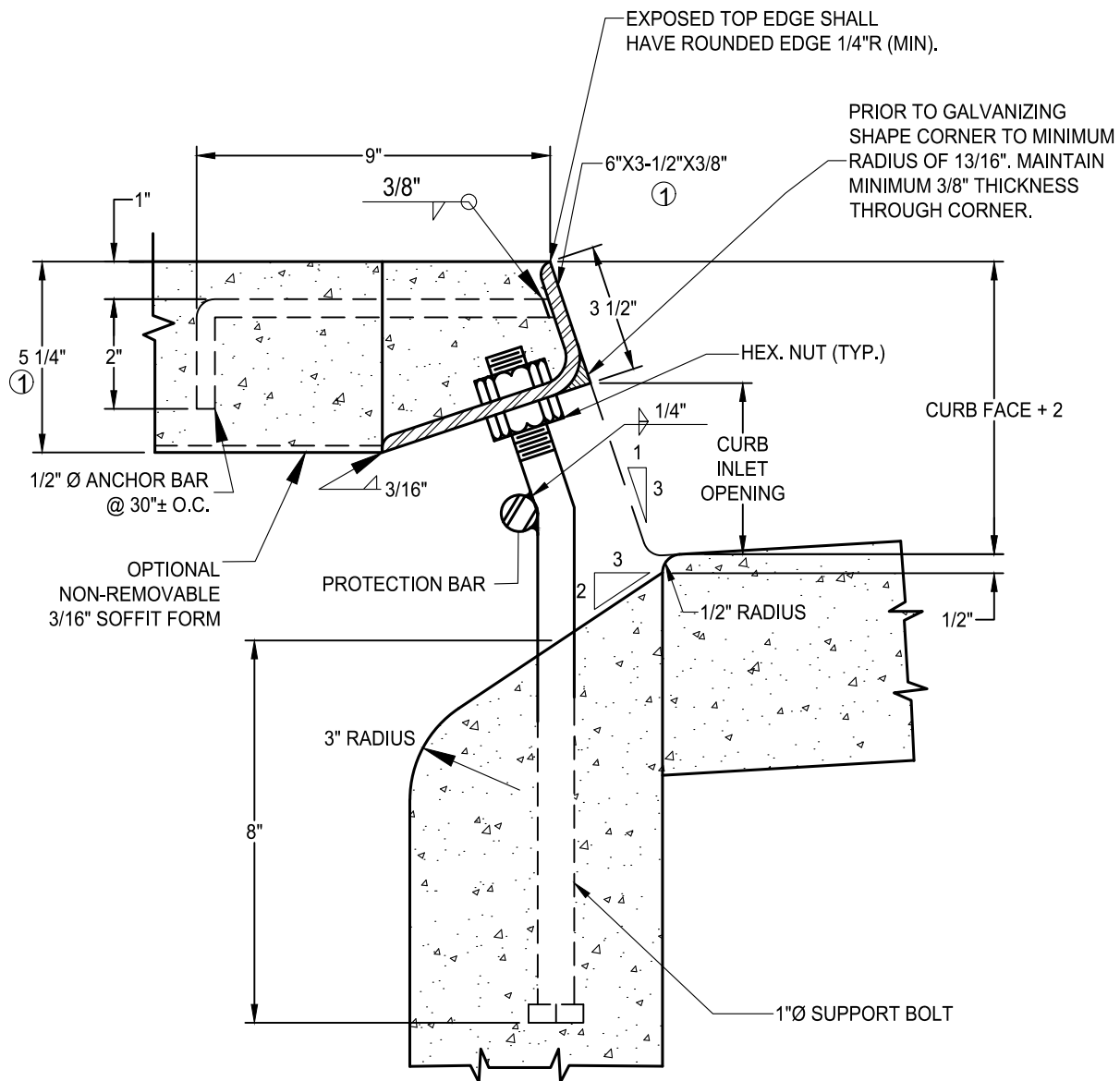
10/24/2018

DATE



DRAWING NUMBER

SD - 16



NOTES:

1. TO BE USED ONLY IN TYPE 2 CURB AND GUTTER WITH 2" DEPRESSION. USE IN TYPE 1A CURB AND GUTTER ONLY UPON APPROVAL OF THE CITY ENGINEER. SEE KEYNOTE 1.
2. FACE ANGLE SHALL BE CAST INTO STRUCTURE CONTINUOUS FOR THE FULL LENGTH "W".
3. ALL EXPOSED METAL PARTS TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. WHEN CURB INLET OPENING HEIGHT (H) EXCEEDS 6" INSTALL 1" Ø STEEL PROTECTION BAR.
5. INSTALL ADDITIONAL BARS AT 3-1/2" CLEAR SPACING ABOVE FIRST BAR WHEN OPENING EXCEEDS 13".
6. WHEN CURB INLET OPENING LENGTH EXCEEDS 8' INSTALL 1" Ø STEEL SUPPORT BOLTS, SPACED AT NOT MORE THAN 5' O.C.

KEYNOTES:

1. ALTERNATE ANGLE IRON SIZE, DEPRESSION DEPTH, AND SLAB THICKNESS MAY BE USED UPON APPROVAL OF THE CITY ENGINEER.

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CITY OF ELK GROVE - PUBLIC WORKS

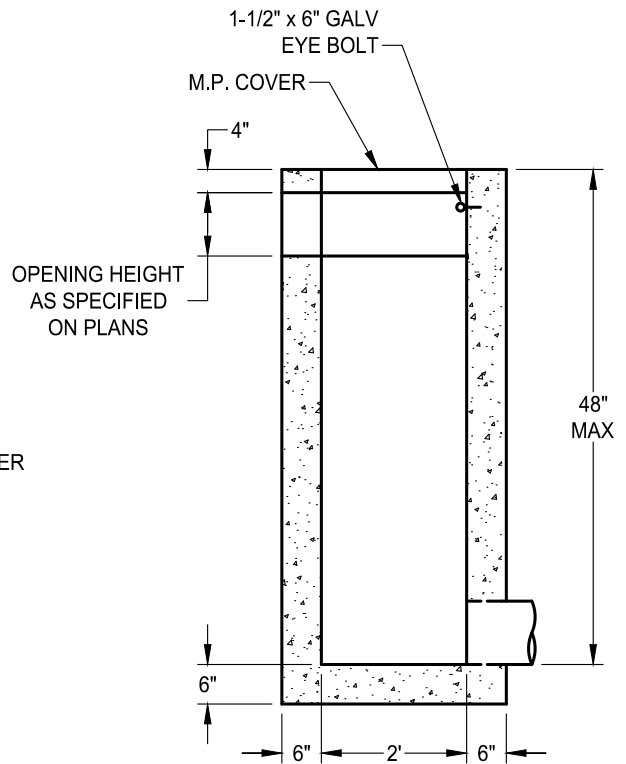
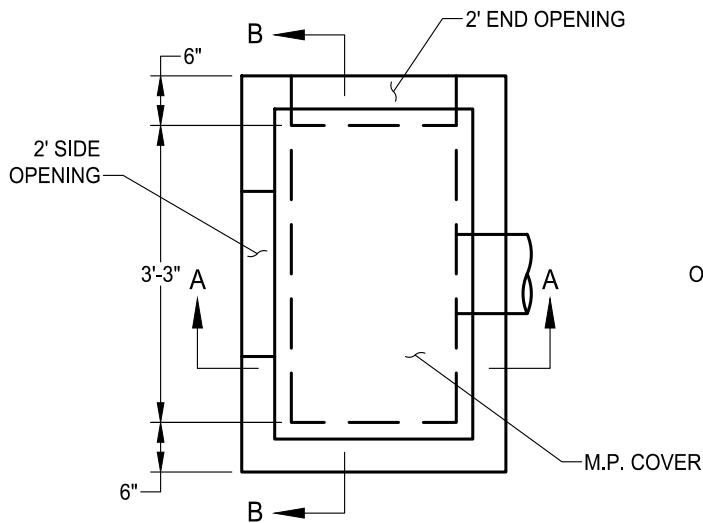
**CATCH BASIN FACE PLATE
ASSEMBLY AND PROTECTION BAR**

APPROVED BY:
Robert Murdoch
CITY ENGINEER

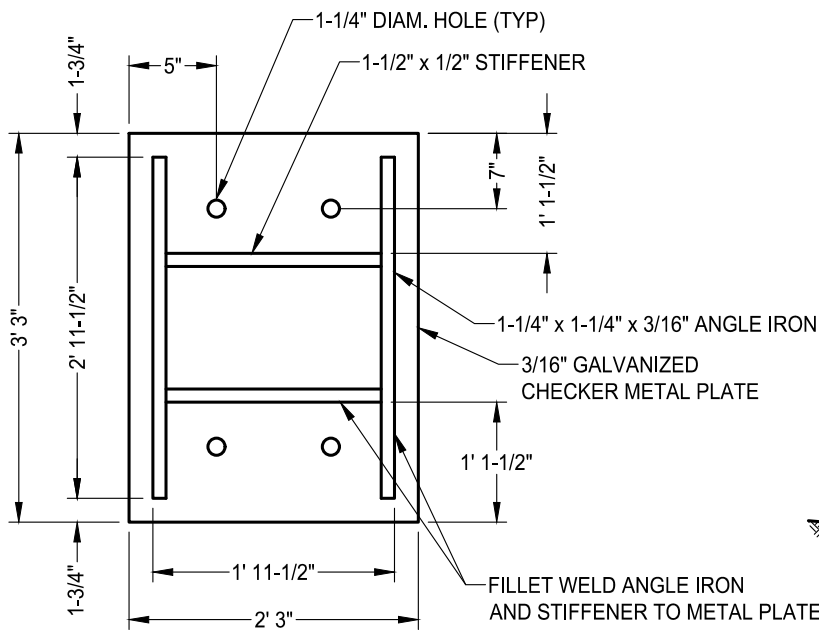
10/24/2018
DATE

DRAWING NUMBER
SD - 17



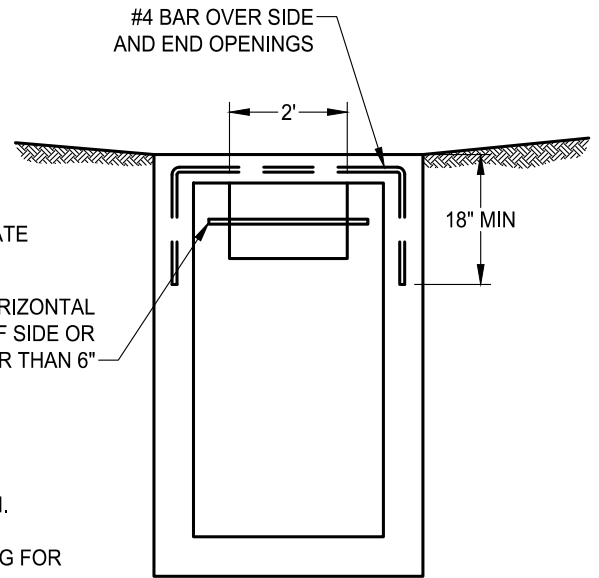


SECTION A-A



METAL COVER (UNDERSIDE)

PLACE 1/2" DIAM. HORIZONTAL BAR IN CENTER OF SIDE OR END OPENING GREATER THAN 6"



SECTION B-B

NOTES:

1. PROVIDE 1/4" x 18" GALVANIZED CHAIN WELD TO COVER AND EYE BOLT.
2. PROVIDE END OR SIDE OPENINGS AS SHOWN ON PLANS OR CROSS SECTION.
3. TOP OF WALLS TO BE FINISHED TO A FLAT PLANE TO PROVIDE EVEN BEARING FOR PLATE COVER.
4. ALL METALS SHALL BE HOT DIP GALVANIZED PER ASTM A123.

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CITY OF ELK GROVE - PUBLIC WORKS

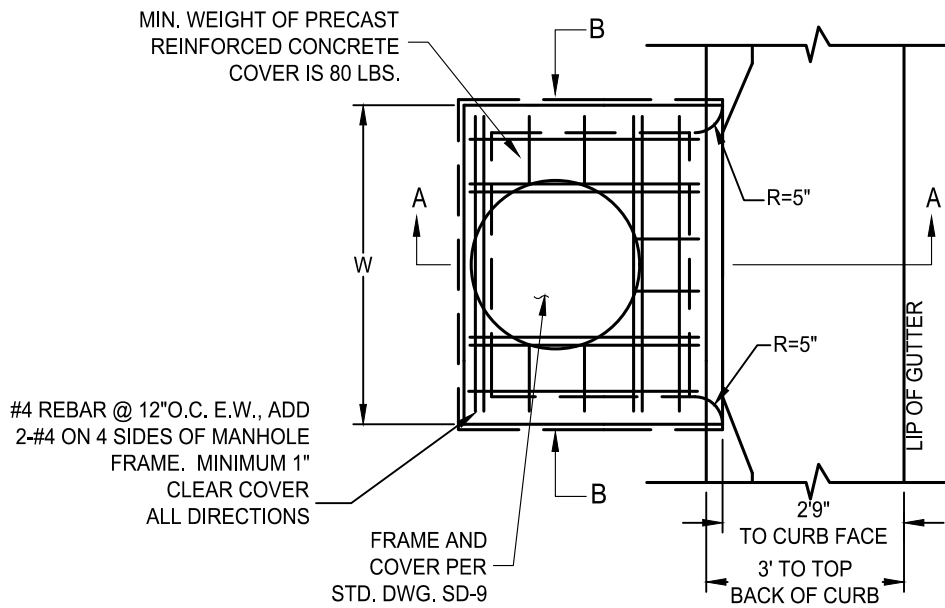
**DROP INLET
TYPE F**

APPROVED BY:
Paul Mulock
CITY ENGINEER 10/24/2018
DATE

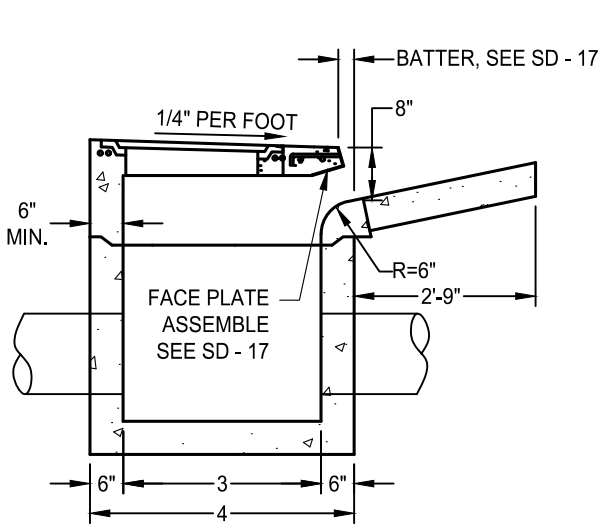


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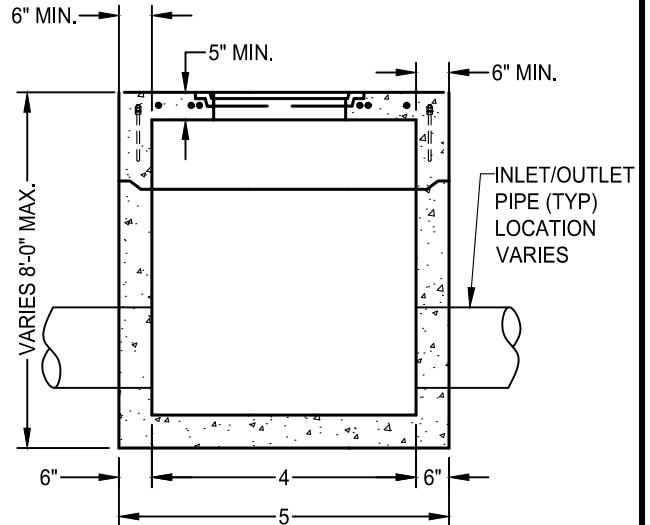
SD - 18



PLAN



SECTION A-A



SECTION B-B

NOTES:

1. CURB INLET ASSEMBLY MAY BE PRECAST CONCRETE OR FORMED AND CAST-IN-PLACE P.C.C.
2. ALL METAL SHALL BE HOT DIP GALVANIZED PER ASTM A123.
3. SEE STANDARD DRAWING SD - 17 FOR FACE PLATE ASSEMBLY.

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CITY OF ELK GROVE - PUBLIC WORKS

**DROP INLET TYPE G
TYPE 2 C&G ONLY
(PG 1 OF 2)**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

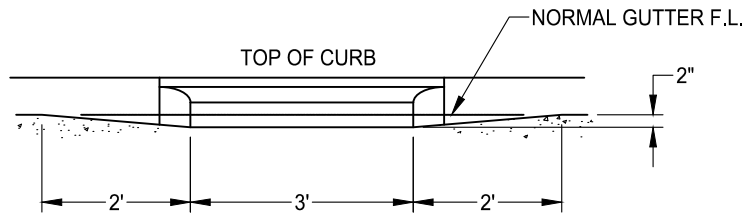
10/24/2018

DATE

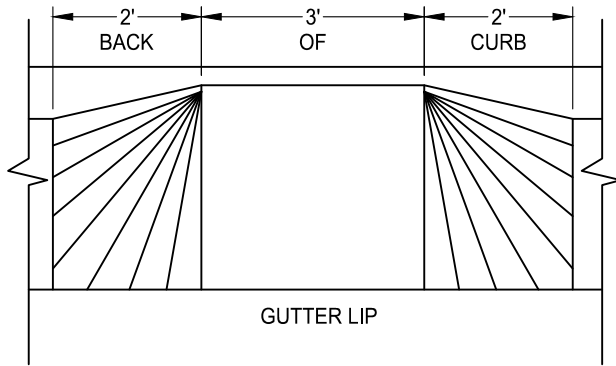
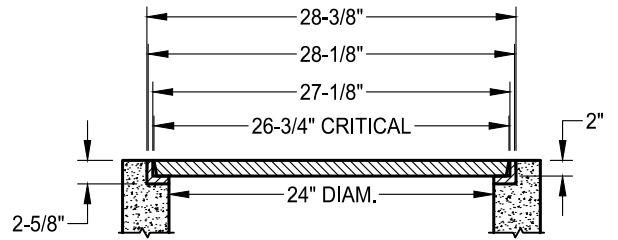


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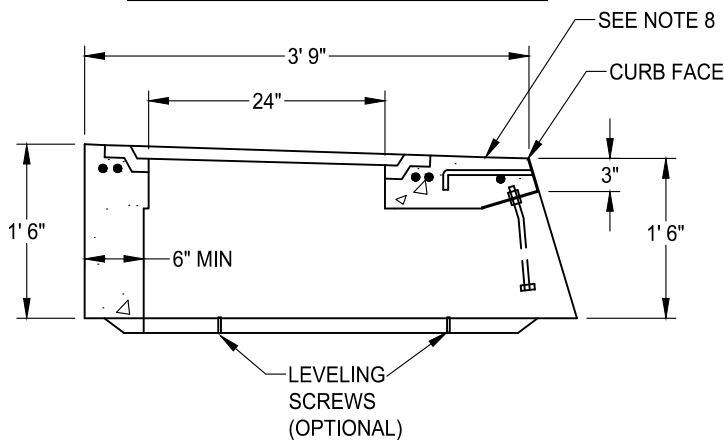
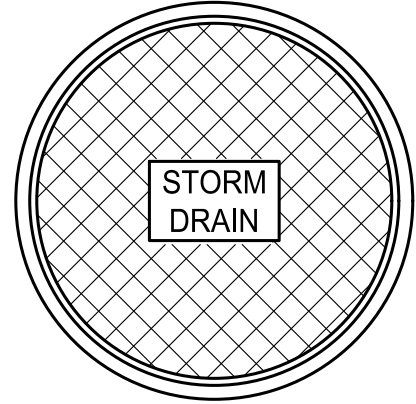
SD - 19.1



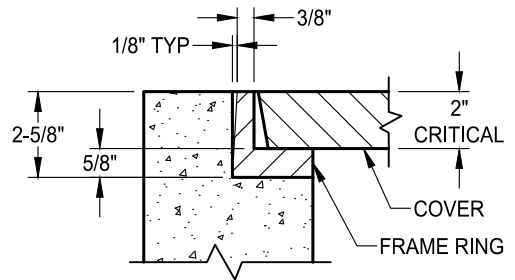
GUTTER TRANSITION ELEVATION



GUTTER TRANSITION PLAN



CURB INLET DETAIL



FRAME AND LID DETAIL

WEIGHT	
CAST IRON COVER	91 LBS
CAST IRON FRAME RING	52 LBS

NOTES:

1. CURB INLET ASSEMBLY MAY BE PRECAST CONCRETE, OR FORMED AND CAST-IN-PLACE P.C.C.
2. ALL METAL SHALL BE HOT DIPPED GALVANIZED ASTM A123.
3. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 35B
4. FRAME AND COVER TO MEET H-20 LOAD SPECIFICATIONS.
5. BEARING SURFACES ARE MACHINE BEVELED TO ASSURE A CLOSE, NON ROCKING SURFACE.
6. FRAME AND COVER SHALL HAVE A COATING OF BLACK BITUMINOUS MATERIAL CONFORMING TO ASTM 48-30.
7. SEE ARTICLE 50-31 "SEWER AND STORM DRAIN CASTINGS" OF SECTION 50, CONSTRUCTION SPECIFICATIONS.
8. INSTALL "NO DUMPING, DRAINS TO CREEK" PLACARD ON TOP OF CURB.

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CITY OF ELK GROVE - PUBLIC WORKS

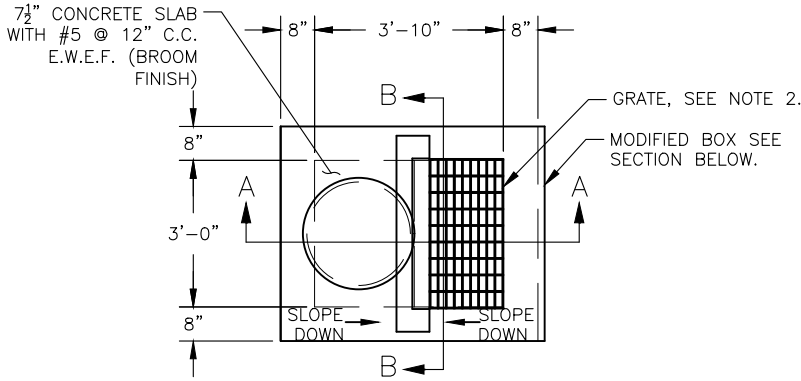
**DROP INLET TYPE G
TYPE 2 C&G ONLY
(SHEET 2 OF 2)**

APPROVED BY:
Paul Muddoch
CITY ENGINEER

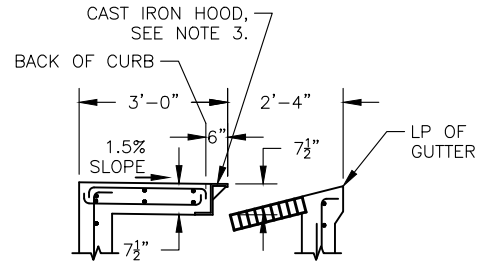
10/24/2018
DATE

DRAWING NUMBER
SD - 19.2





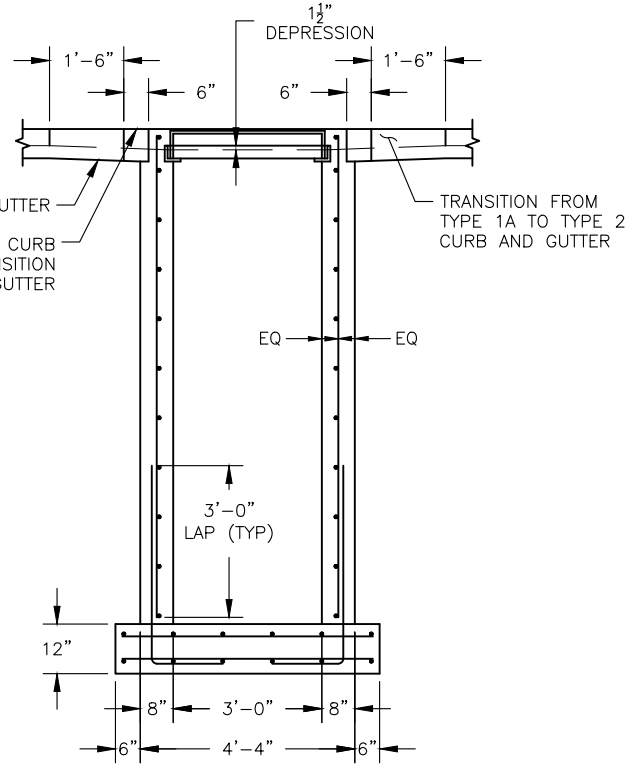
PLAN VIEW



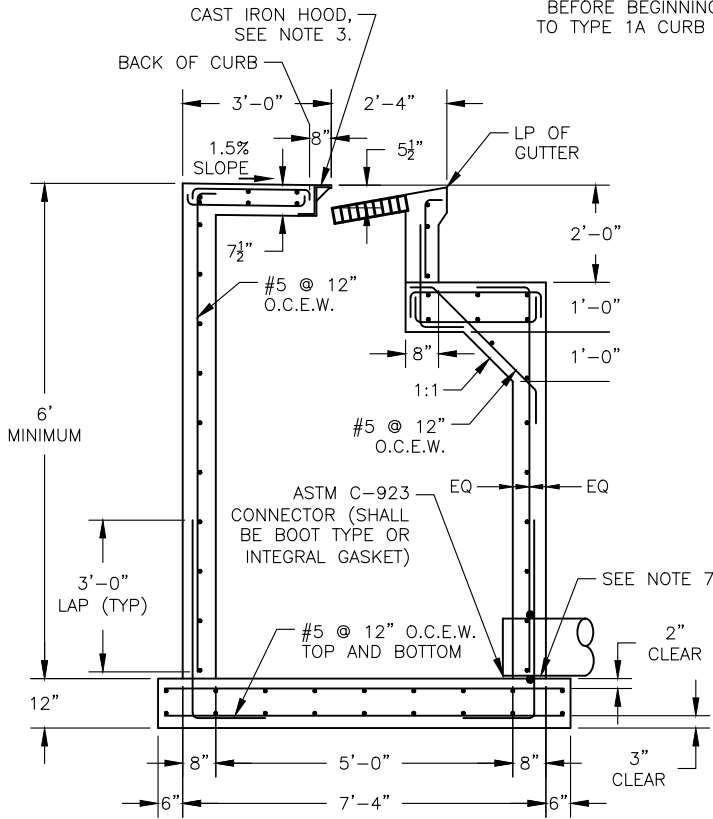
SECTION A-A

TYPE 2 CURB AND GUTTER

(FOR INFORMATION NOT SHOWN OR NOTED REFER TO SECTION A-A TYPE 1A CURB AND GUTTER)



SECTION B-B



SECTION A-A
TYPE 1A CURB AND GUTTER

NOTES:

1. STANDARD DEPRESSION FOR INLET IS 1 1/2".
2. FRAME AND GRATE SHALL CONFORM TO STANDARD DRAWINGS SD-14 AND SD-15.
3. OPEN BACK CAST IRON HOOD SHALL BE H-20 RATED, 3/4" THICK AND CONFORM TO STANDARD DRAWING SD-12.
4. ALL EXPOSED EDGES SHALL HAVE A 1/4" RADIUS (MINIMUM).
5. AN EDGING TOOL SHALL BE USED ON ALL EDGES WHERE THE CONCRETE SIDEWALK AND CURB MEET THE TOP OF THE HOOD.
6. EXPOSED SURFACES OF THE GRATES, FRAMES, AND HOODS WITH THE PARTS ASSEMBLED DISASSEMBLED SHALL BE PAINTED WITH COMMERCIAL QUALITY ASPHALTUM PAINT AFTER TESTING AND ASSEMBLY.
7. THE MINIMUM PIPE SIZE IS 12" IF THE INLET DEPTH IS GREATER THAN 4', THE MINIMUM PIPE SIZE SHALL BE 15".
8. THE MANHOLE FRAME AND COVER SHALL BE PER STANDARD DRAWING SD-9.

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CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul Mulock

10/24/2018

CITY ENGINEER

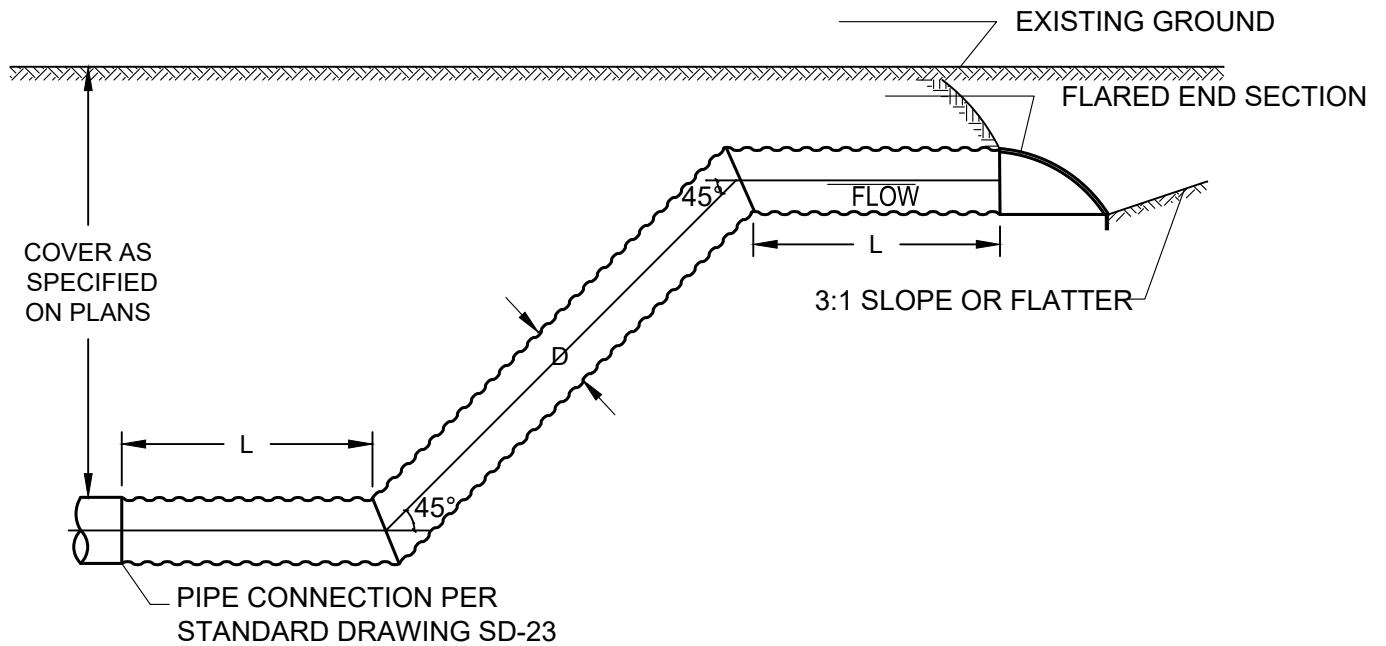
DATE

MODIFIED TYPE J INLET



DRAWING NUMBER

SD - 19.3

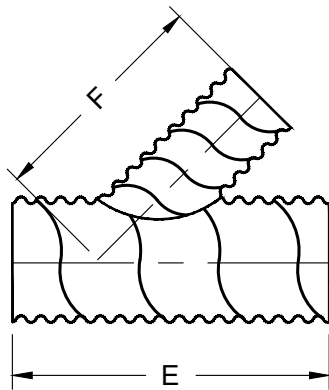


RISER DIAMETER, D	LENGTH OF HORIZONTAL PIPE, L
15"	1'-0"
18"	1'-6"
21"	1'-6"
24"	1'-6"
30"	2'-0"
36"	3'-0"
42"	4'-0"
48"	4'-0"

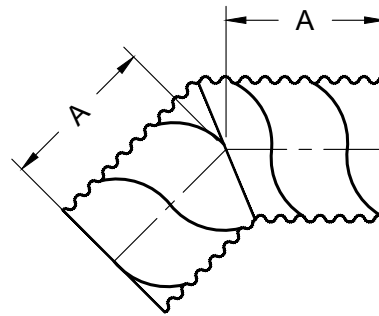
NOTES

1. USE 2-PIECE ELBOW AT BOTH ENDS OF RISER. ELBOWS SHALL CONFORM TO STANDARD DRAWING SD-22.
2. TO BE USED ONLY WITH THE SPECIFIC APPROVAL OF THE CITY ENGINEER.
3. PIPE MATERIAL TO BE CMP.

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REVISION	BY	DRAINAGE INLET TYPE H	10/24/2018 DATE
			DRAWING NUMBER SD - 20



WYE LATERAL



ELBOW
0° to 45°

FITTING SIZES

DIAM (IN)	A (FT)	E (FT)	F (FT)
15	1	4	4
18	1	4	4
21	2	6	4
24	2	6	4
30	2	6	4
36	2	8	6
42	2	8	6
48	2	10	8
54	3	10	8
60	3	12	10
66	3	12	10
72	3	14	10
78	3	14	10
84	3	16	12
90	3	16	12
96	3	16	12

NOTES

1. TO USE TABLE, REFER TO DIAGRAM AND SELECT LETTER REPRESENTING DESIRED DIMENSION, THEN ENTER TABLE AT CORRECT PIPE DIMENSION AND READ DIMENSION IN COLUMN UNDER APPROPRIATE LETTER HEADING.
2. DIMENSIONS ON TABLE ALLOW FOR USE OF STANDARD 12 INCH WIDE BAND COUPLER ON SIZES 15 INCH THROUGH 54 INCH AND 24 INCH WIDE BAND ON 60 INCH AND LARGER SIZES.
3. FOR PIPE-ARCH FITTINGS, CHOOSE PIPE DIAMETER EQUAL TO OR GREATER THAN ARCH SPAN. (EXAMPLE: 35 INCH X 24 INCH PIPE-ARCH; USE DIMENSIONS FOR 36 INCH PIPE).
4. STRUCTURAL REINFORCEMENT MAY BE REQUIRED ON SOME LARGER SIZES.

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CITY OF ELK GROVE - PUBLIC WORKS

CORRUGATED PIPE FITTINGS

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

10/24/2018

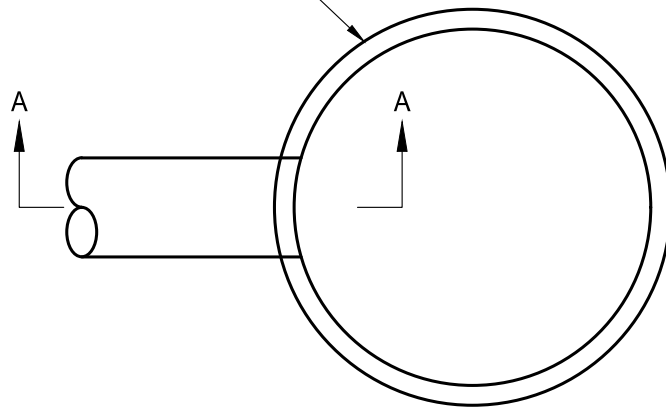
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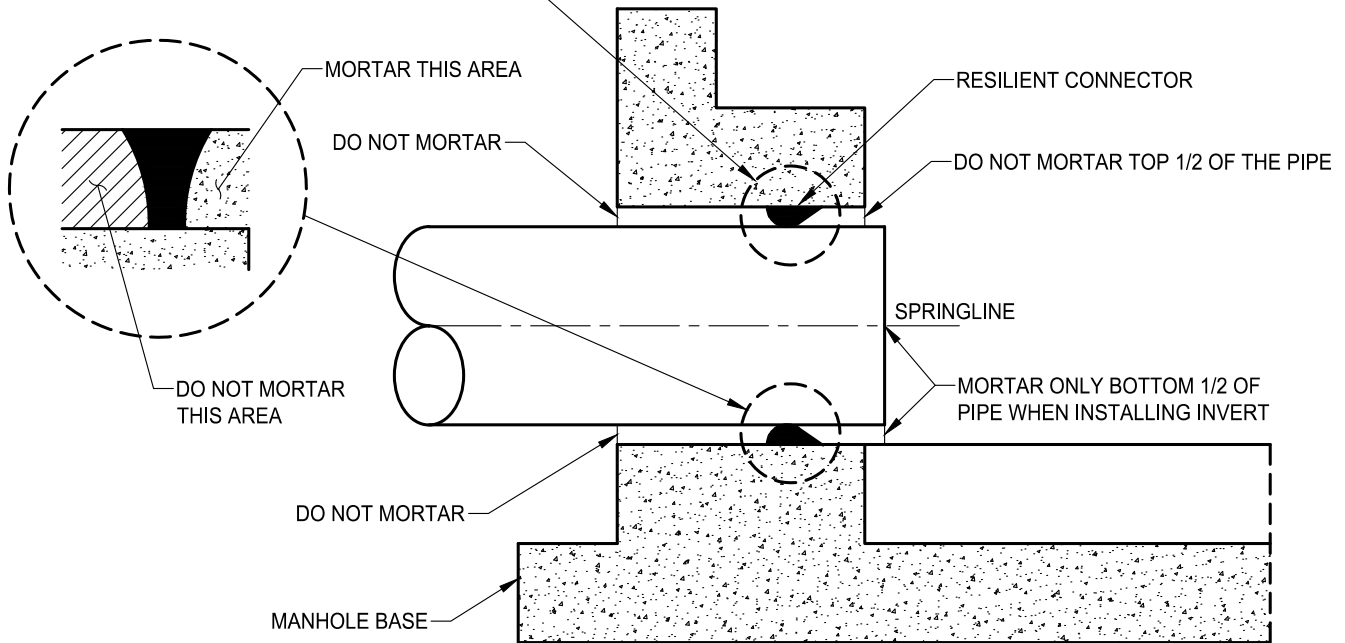
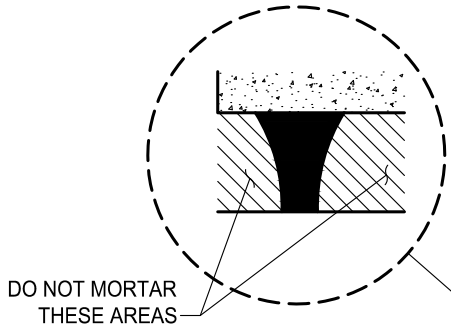
SD - 22



MANHOLE BASE AND BARREL SECTION. MANHOLE CONE, FRAME, AND COVER OMITTED FOR CLARITY.



PLAN



SECTION A-A

NOTES:

1. TO HELP CREATE A FLEXIBLE, WATERTIGHT JOINT, DO NOT PLACE MORTAR AROUND THE CONNECTOR ON THE OUTSIDE OF THE STRUCTURE OR AROUND THE TOP HALF OF THE CONNECTOR ON THE INSIDE WHEN COMPLETING THE INVERT WORK.
2. RESILIENT CONNECTORS SHALL BE A FLEXIBLE COMPRESSION GASKET OR BOOT CONNECTOR PER SECTION 39-2.01 "PRECAST CONCRETE STORM DRAIN MANHOLES" OF THE CITY OF ELK GROVE CONSTRUCTION SPECIFICATIONS.
3. ALL CONNECTORS SHALL MEET OR EXCEED THE REQUIREMENTS OF A.S.T.M. C-923.

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CITY OF ELK GROVE - PUBLIC WORKS

FLEXIBLE PIPE TO MANHOLE CONNECTION

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

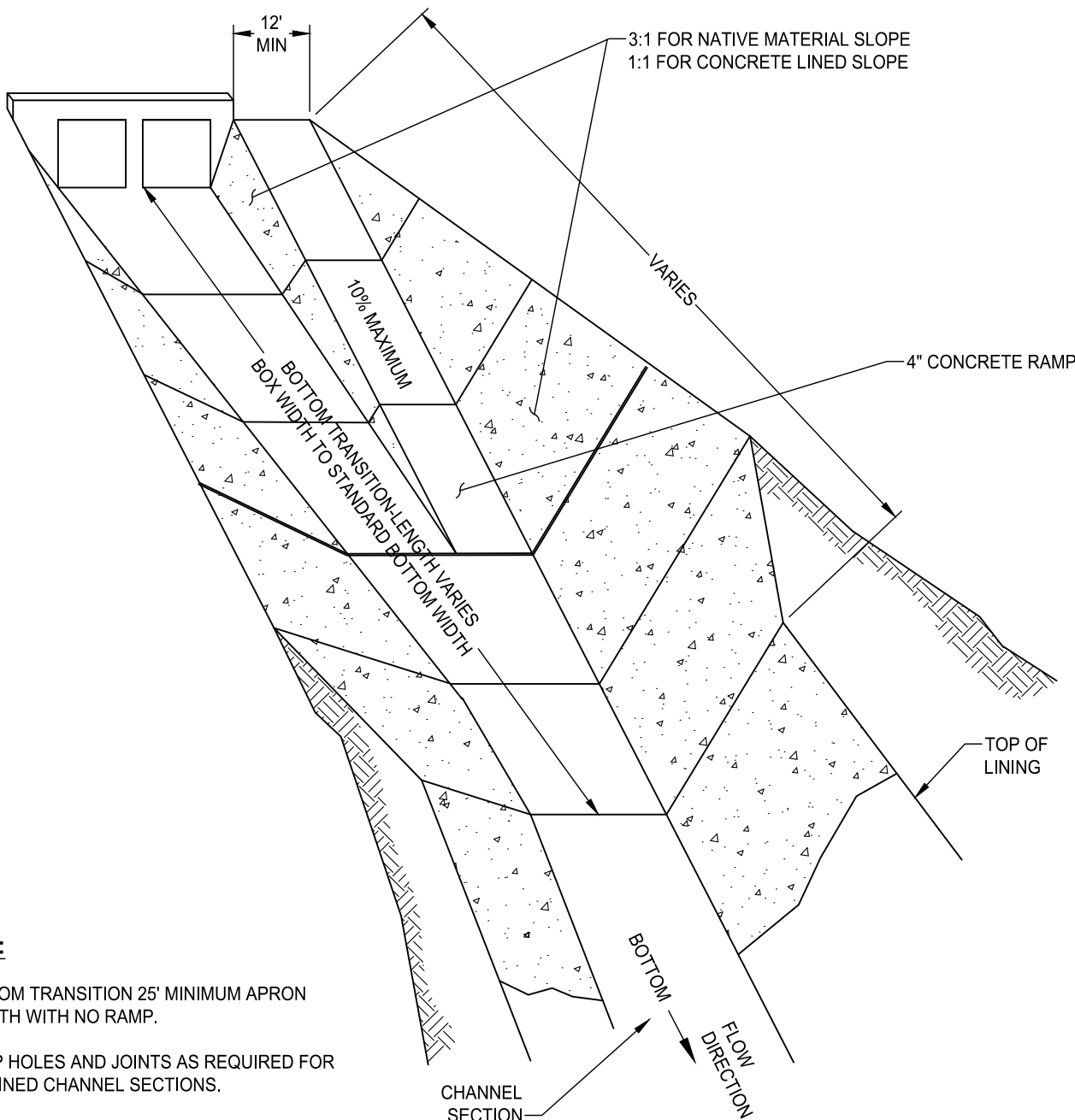
10/24/2018

DATE



DRAWING NUMBER

SD - 24




NOTES:

1. BOTTOM TRANSITION 25' MINIMUM APRON LENGTH WITH NO RAMP.
2. WEEP HOLES AND JOINTS AS REQUIRED FOR ALL LINED CHANNEL SECTIONS.
3. LOW SIDE OF CHANNEL TO BE OPPOSITE RAMP.
4. SIDE SLOPE LINING MAY BE USED AT RAMP LOCATIONS TO INCREASE SLOPE TO MAXIMUM 1:1. TOP OF SLOPE GREATER THAN 3:1 MUST BE FENCED.


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CITY OF ELK GROVE - PUBLIC WORKS

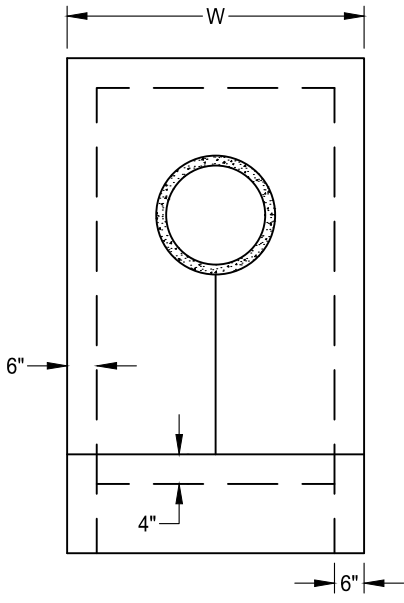
**TYPICAL RAMP AND TRANSITION
DETAIL**

APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

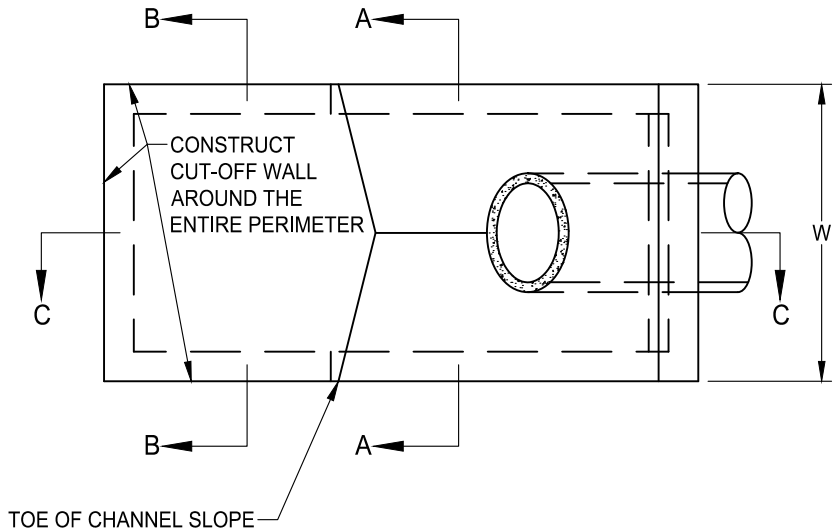
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SD - 25



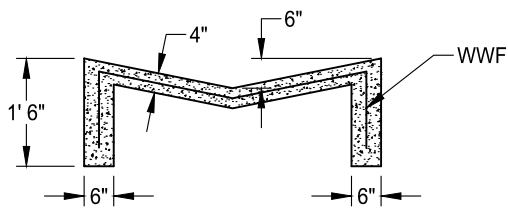
W = 6' 0" MINIMUM
 W = 2 x PIPE DIAM. (3'+)



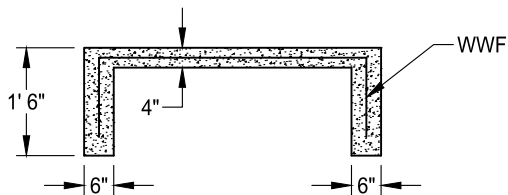
FRONT VIEW



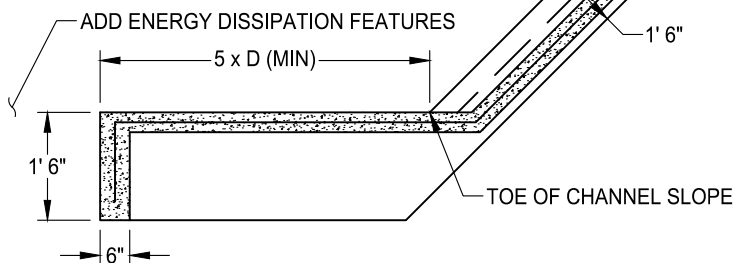
TOP VIEW



SECTION A-A

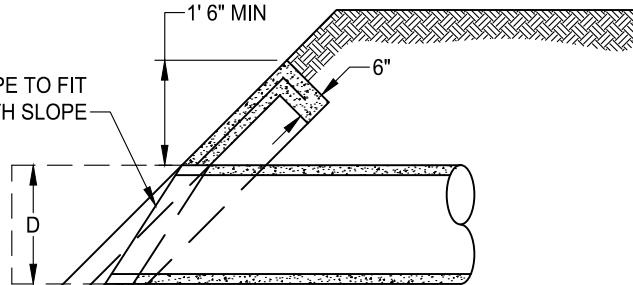


SECTION B-B



SECTION C-C

MITER CUT PIPE TO FIT FLUSH WITH SLOPE



NOTES:

1. USE CLASS "B" CONCRETE.
2. 6" x 6" - W6 x W6 WWF THROUGHOUT CONCRETE.
3. ADD ENERGY DISSIPATION FEATURES SUCH AS COBBLES, RIP-RAPS, OR MOLDED CONCRETE AT END OF APRON.

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

OUTLET PIPE HEADWALL AND APRON

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

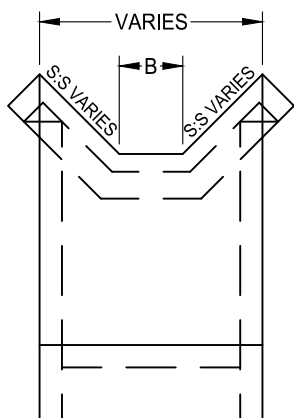
10/24/2018

DATE

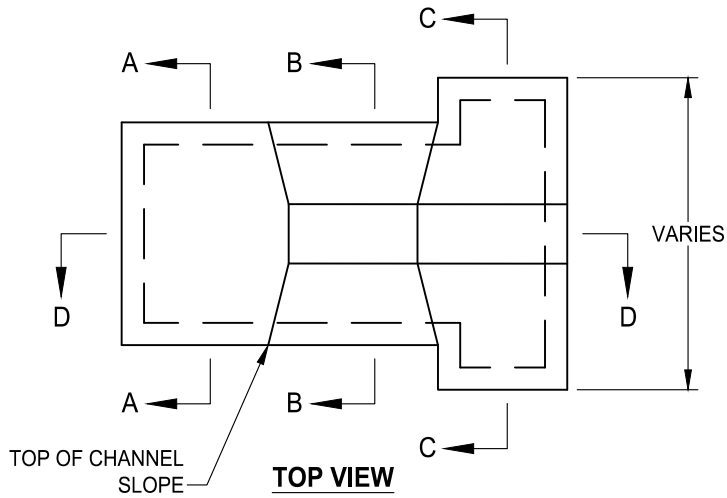


DRAWING NUMBER

SD - 26



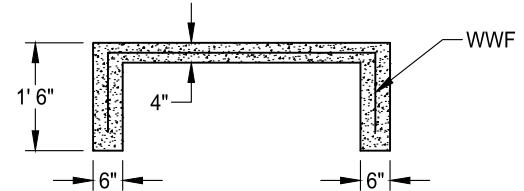
FRONT VIEW



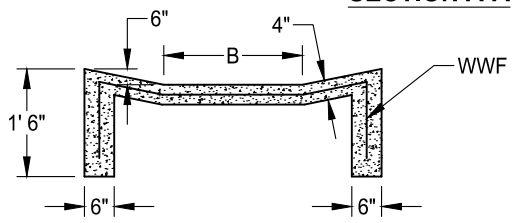
TOP VIEW

NOTES:

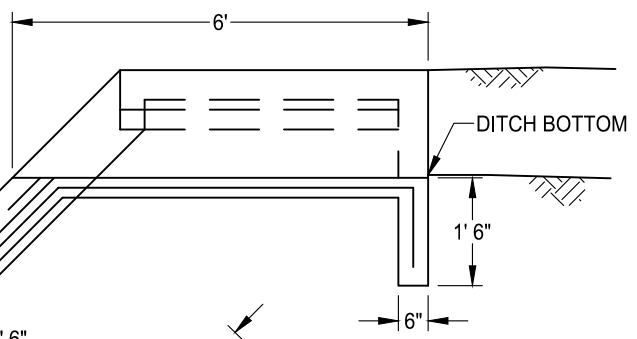
1. USE CLASS "B" CONCRETE OR GROUTED COBBLES AS SPECIFIED.
2. 6" x 6" -W6 x W6 WWF THROUGHOUT CONCRETE.
3. ON LINED CHANNELS APRON SHALL CONNECT TO SIDE LINING.
4. B = DITCH BOTTOM WIDTH OR AS SHOWN ON PLANS.
5. D = DITCH WATER DEPTH PLUS ONE FOOT OF FREEBOARD.
6. ADD ENERGY DISSIPATION FEATURES SUCH AS COBBLES, RIP-RAP, OR MOLDED CONCRETE AT END OF APRON.



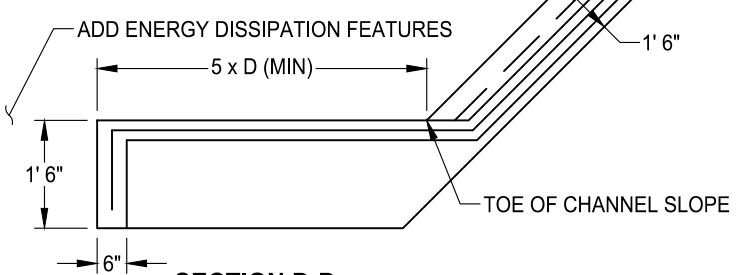
SECTION A-A



SECTION B-B



SECTION C-C




SECTION D-D


DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

DITCH DISCHARGE CONTROL AND APRON

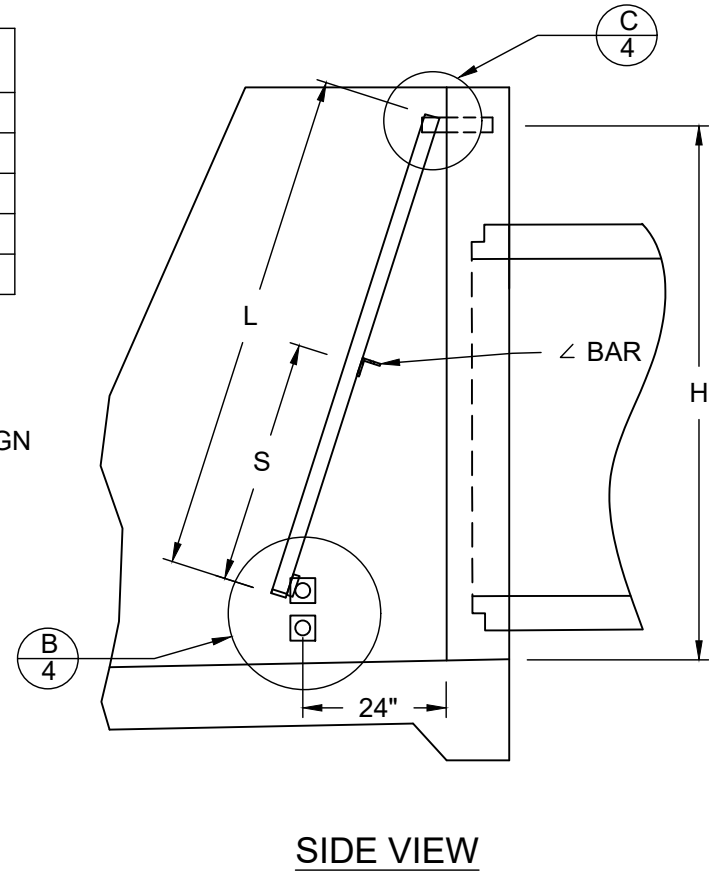
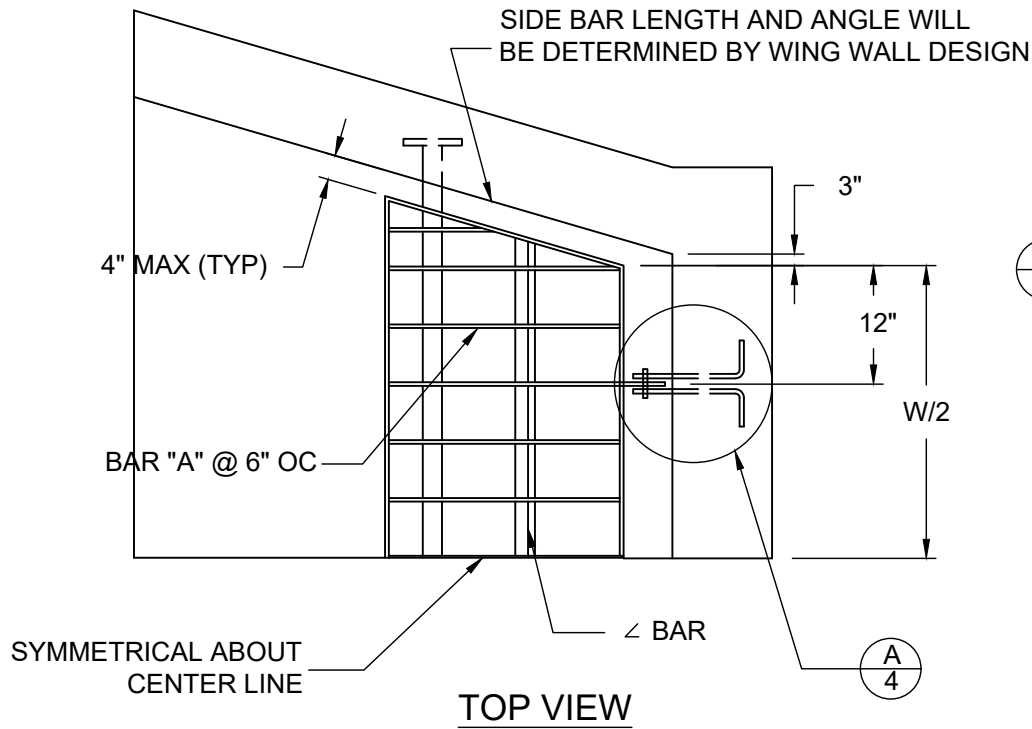
APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
SD - 27



PIPE DIA. (IN)	PIPE OD (IN)	QUANTITY* BAR "A"	BAR "A" SIZE (IN)	H (IN)	W (IN)	L (IN)	S (IN)
24	30	11	3/8x2 1/2	46	48	40	18
27	33.5	11	3/8x2 1/2	50	48	42	19
30	37	11	3/8x2 1/2	53	48	46	21
33	40.5	11	3/8x2 1/2	57	48	52	24
36	44	13	3/8x2 1/2	60	60	52	24

*INCLUDES OUTSIDE FRAME



DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

TRASH RACK
24"-36" PIPE
(SHEET 1 OF 4)

APPROVED BY:

Paul Muddoch

CITY ENGINEER

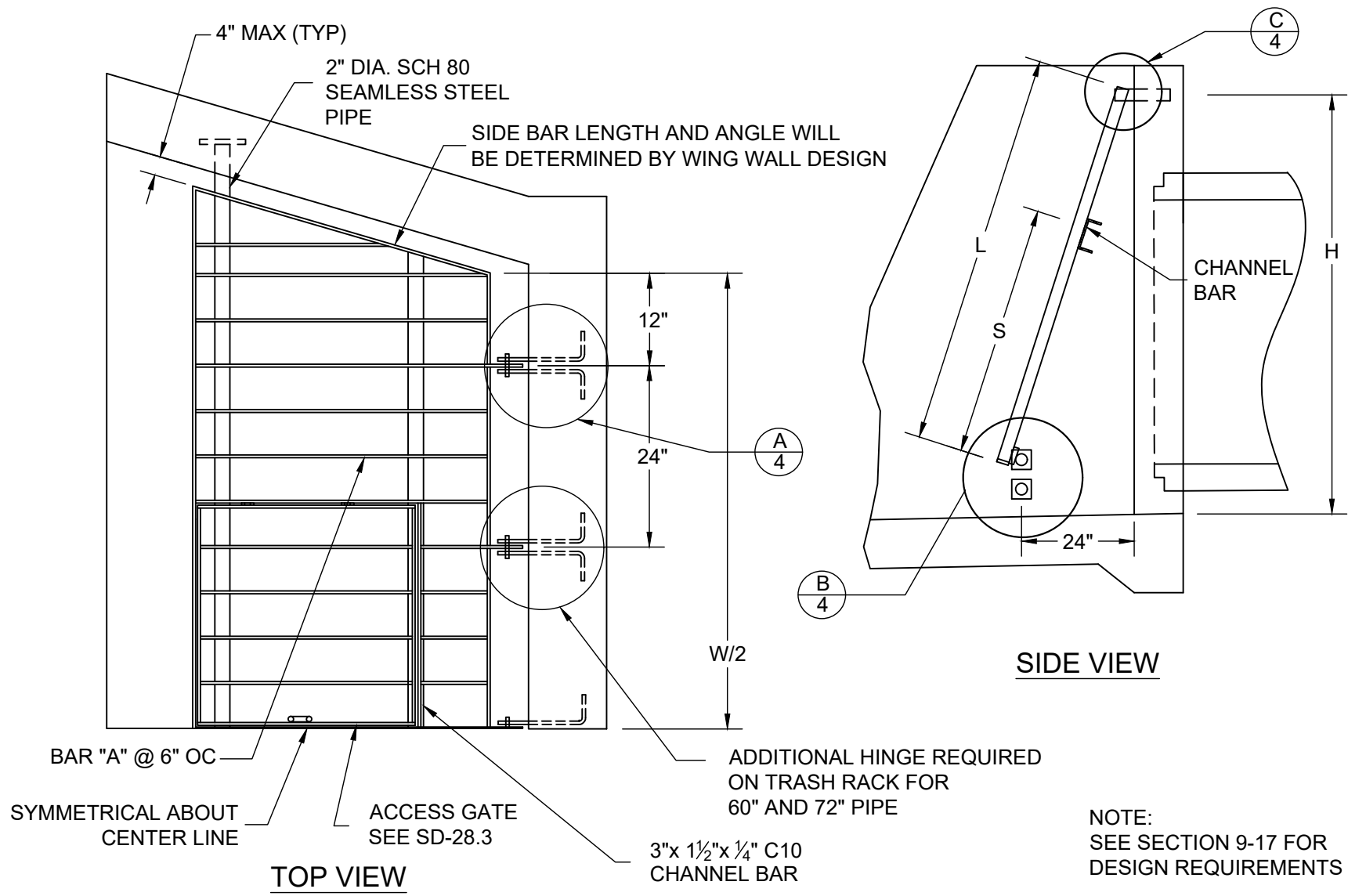
10/24/2018

DATE

DRAWING NUMBER

SD - 28.1





BAR "A" @ 6" OC
 SYMMETRICAL ABOUT CENTER LINE

TOP VIEW

ACCESS GATE
 SEE SD-28.3

3"x 1 1/2"x 1/4" C10
 CHANNEL BAR

ADDITIONAL HINGE REQUIRED
 ON TRASH RACK FOR
 60" AND 72" PIPE

SIDE VIEW

NOTE:
 SEE SECTION 9-17 FOR
 DESIGN REQUIREMENTS

DATE: 09/22/2007		NOT TO SCALE	
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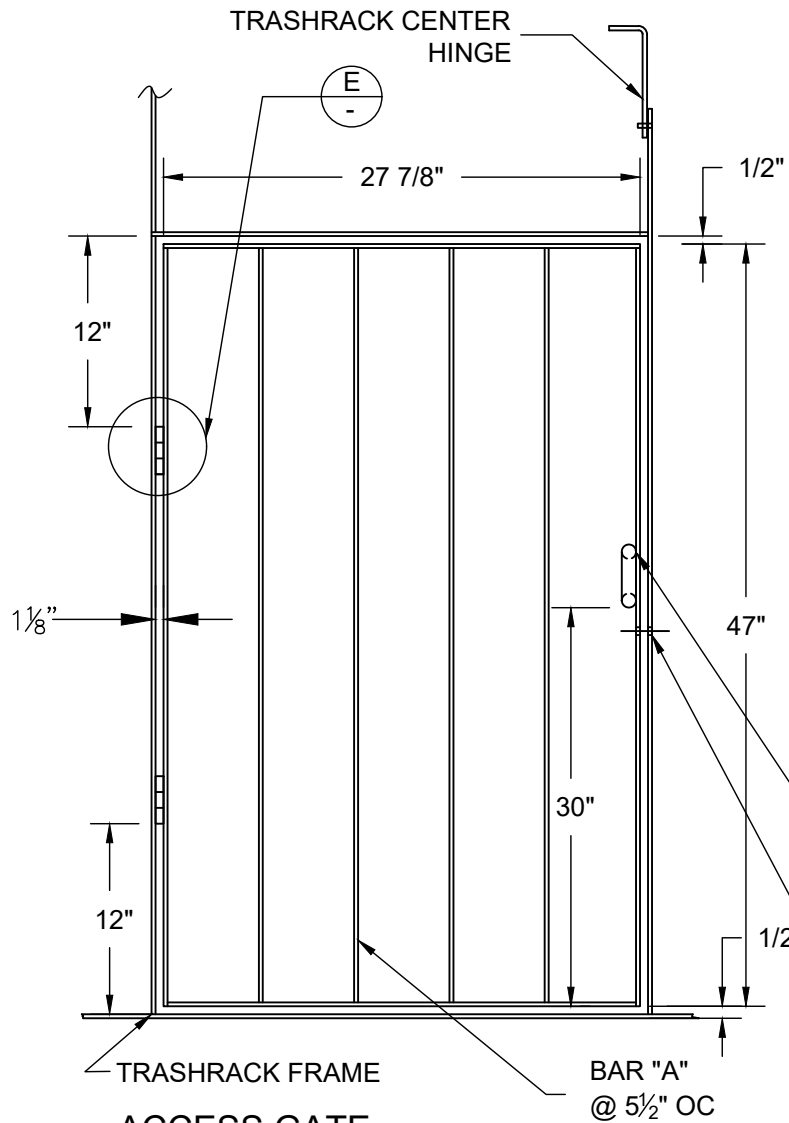
CITY OF ELK GROVE - PUBLIC WORKS

**TRASH RACK
 42" PIPE AND LARGER
 (SHEET 2 OF 4)**

APPROVED BY:
Paul M. Muddock
 CITY ENGINEER
 10/24/2018
 DATE



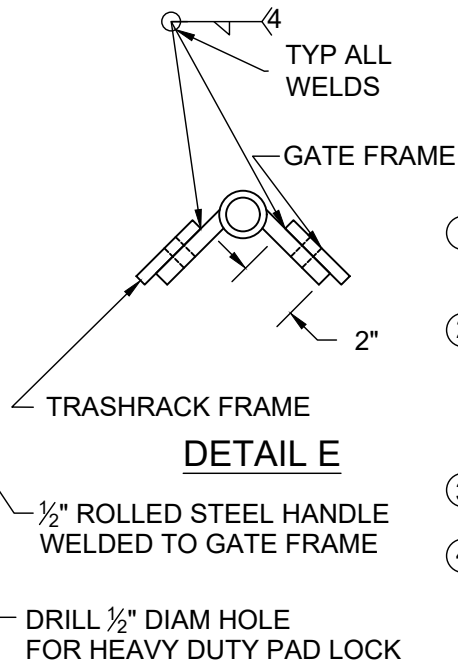
DRAWING NUMBER
SD - 28.2



**ACCESS GATE
DETAIL**

PIPE DIAM (IN)	PIPE OD (IN)	QUANTITY* BAR "A"	BAR "A" SIZE (IN)	H (IN)	W (IN)	L (IN)	S (IN)
42	51	15	3/8x2 1/2	67	72	60	47-3/4
48	58	17	3/8x2 1/2	74	84	70	47-3/4
54	65	21	3/8x2 1/2	81	108	72	47-3/4
60	72	23	3/8x2 1/2	88	120	80	47-3/4
72	86	27	3/8x2 1/2	102	144	96	47-3/4

*INCLUDES OUTSIDE FRAME



DETAIL E

NOTES:

- ① SEE STANDARD DRAWINGS SD-29.1 AND SD-29.2 FOR PIPE HEADWALL DETAILS.
- ② MATERIAL TO CONFORM TO ASTM DESIGNATION A-36. GALVANIZE ALL EXPOSED FERROUS PARTS AFTER FABRICATION.
- ③ ALL FILLET WELDS TO BE 3/16".
- ④ ALL STEEL SHALL CONFORM TO SECTION 75 OF THE STATE SPECIFICATIONS AND ASTM A36, A575 AND A576.
- ⑤ GATE HINGES TO BE COATED TO RESIST CORROSION.

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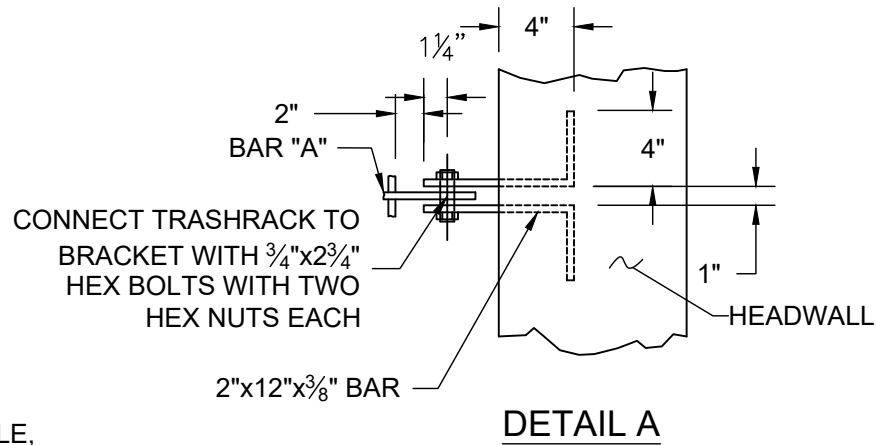
CITY OF ELK GROVE - PUBLIC WORKS

**TRASH RACK
42" PIPE AND LARGER
(SHEET 3 OF 4)**

APPROVED BY:
Paul M. Muddock
CITY ENGINEER
10/24/2018
DATE

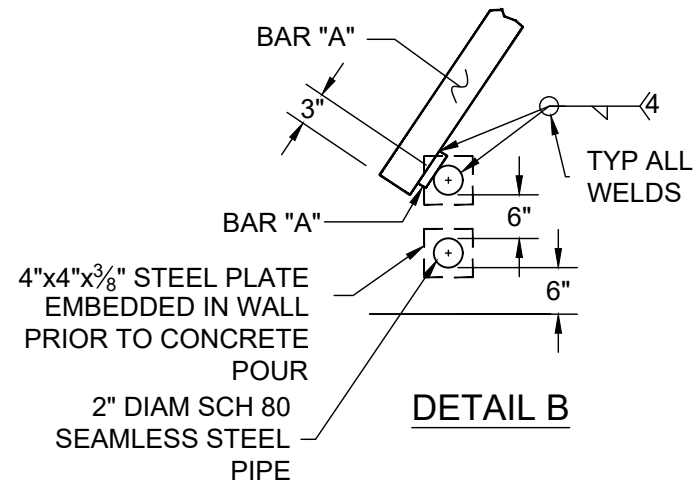
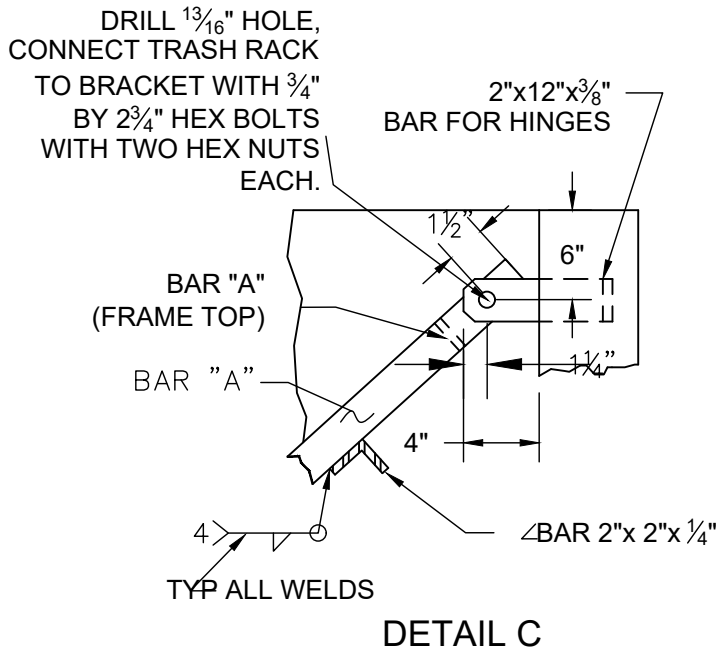


DRAWING NUMBER
SD - 28.3



NOTES:

- ① SEE STANDARD DRAWINGS SD-29.1 AND SD-29.2 FOR PIPE HEADWALL DETAILS.
- ② MATERIAL TO CONFORM TO ASTM DESIGNATION A-36. GALVANIZE ALL EXPOSED FERROUS PARTS AFTER FABRICATION.
- ③ ALL FILLET WELDS TO BE $\frac{3}{16}$ ".
- ④ ALL STEEL SHALL CONFORM TO SECTION 75 OF THE STATE SPECIFICATIONS AND ASTM A36, A575 AND A576.



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CITY OF ELK GROVE - PUBLIC WORKS

**TRASH RACK
DETAILS
(SHEET 4 OF 4)**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

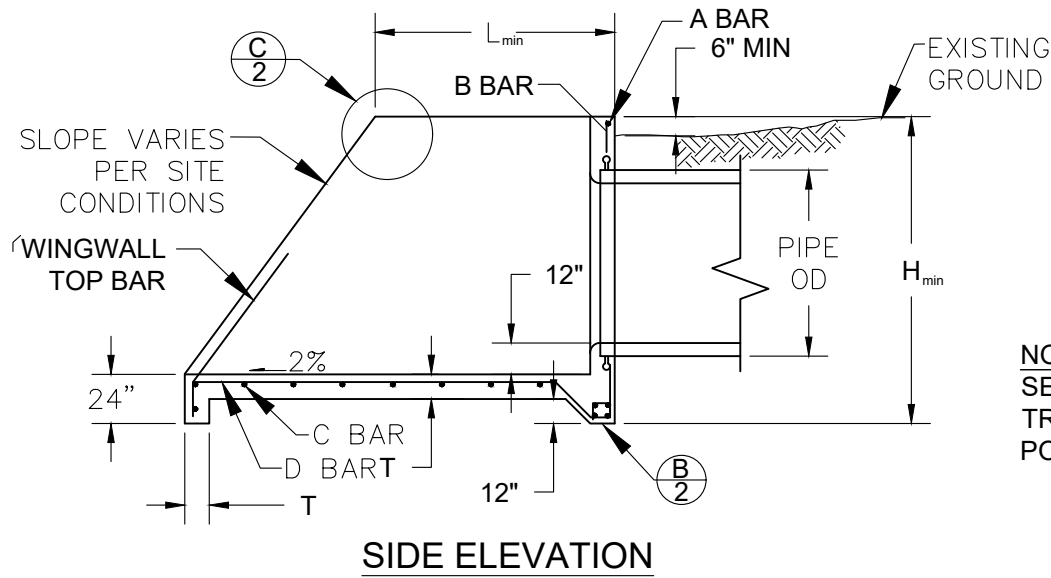
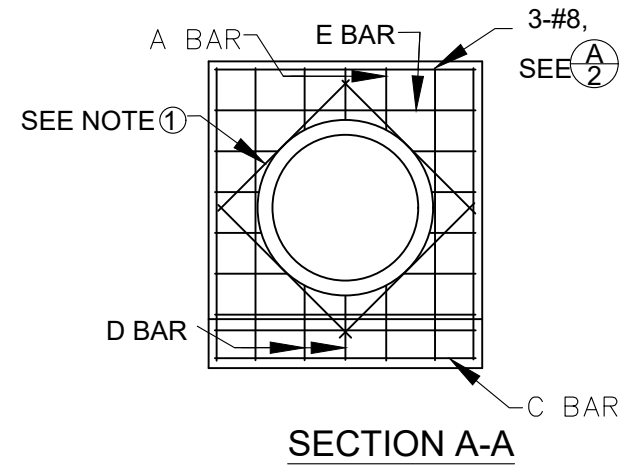
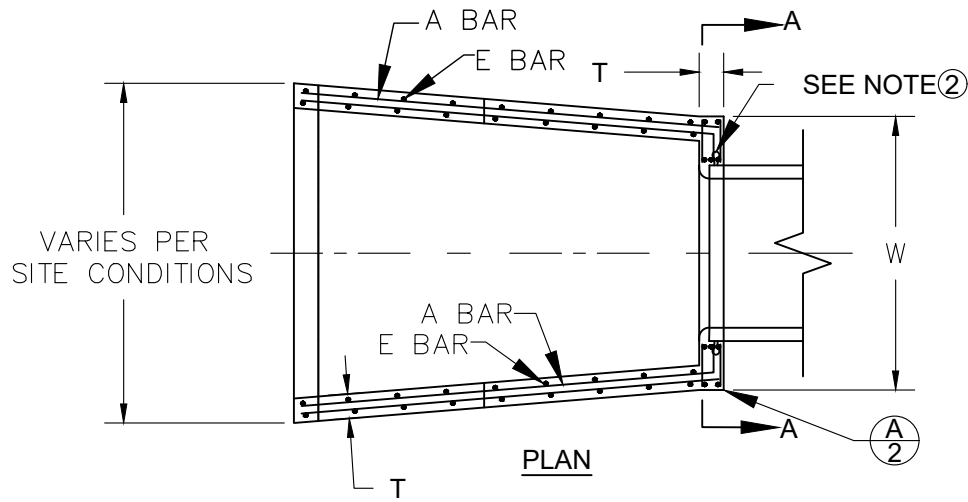
10/24/2018

DATE

DRAWING NUMBER

SD - 28.4





NOTE
SEE DWG SD-28 FOR EMBEDMENT OF
TRASH RACK COMPONENTS PRIOR TO
POURING CONCRETE

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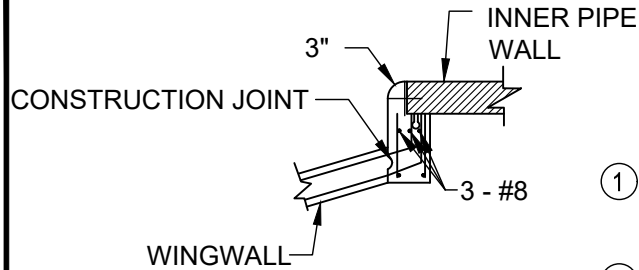
CITY OF ELK GROVE - PUBLIC WORKS

**INLET PIPE HEADWALL
WINGWALL STRUCTURE
(SHEET 1 OF 2)**

APPROVED BY:
Paul M. Muddoch
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER
SD - 29.1



DETAIL A

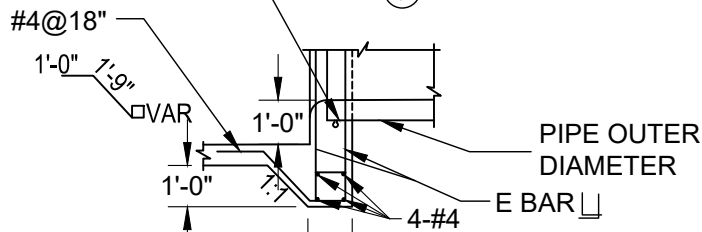
NOTES

- ① PLACE #5 REBAR ON DIAGONALS @ 4" FROM PIPE OD.
- ② PIPE CONNECTIONS SHALL CONFORM TO ASTM C-923. UNITS SHALL INCLUDE A WATER STOP.
- ③ CHAMFER ALL EXPOSED EDGES $\frac{3}{4}$ ".
- ④ ALL STEEL MINIMUM 2" FROM CONCRETE EDGES.
- ⑤ ALL LAP SPLICES MINIMUM 12".

HEADWALL DIMENSIONS

PIPE DIA	PIPE OD	W	H _{min}	T	L _{min}
24"	30"	4'-6"	4'-8"	8"	2'-9"
27"	33.5"	4'-6"	4'-10"	8"	3'-0"
30"	37"	4'-6"	5'-3"	8"	3'-3"
33"	40.5"	4'-6"	5'-9"	8"	3'-6"
36"	44"	5'-6"	5'-9"	8"	3'-9"
42"	51"	6'-6"	6'-6"	8"	4'-3"
48"	58"	7'-6"	7'-5"	10"	5'-3"
54"	65"	9'-6"	7'-7"	10"	5'-9"
60"	72"	10'-6"	8'-3"	10"	6'-0"
72"	86"	12'-6"	9'-8"	10"	7'-3"

1/2" EXPANSION JOINT FILLER, WHERE "H" MAX > 10'-0"

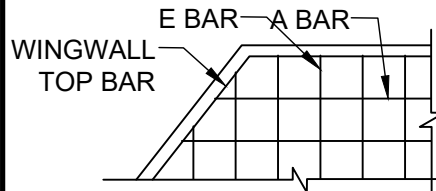


DIM IS 1'-0" WHERE H < 10'
DIM IS 2'-0" WHERE H > 10'

DETAIL B

REINFORCING STEEL DIMENSIONS AND DATA

	A BAR	B BAR	C BAR	D BAR	E BAR	WINGWALL TOP BAR
H ≤ 7'	#4@12"OC	#4@12"OC	#4@12"OC	#4@12"OC	#4@12"OC	#4
7' < H ≤ 8'	#4@12"OC EF	#4@12"OC EF	#4@12"OC EF	#4@12"OC EF	#4@12"OC EF	#4
8' < H ≤ 10'	#5@12"OC EF	#5@6"OC EF	#5@12"OC EF	#5@12"OC EF	#5@12"OC EF	#5



DETAIL C

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CITY OF ELK GROVE - PUBLIC WORKS

**INLET PIPE HEADWALL
WINGWALL STRUCTURE
(SHEET 2 OF 2)**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

10/24/2018

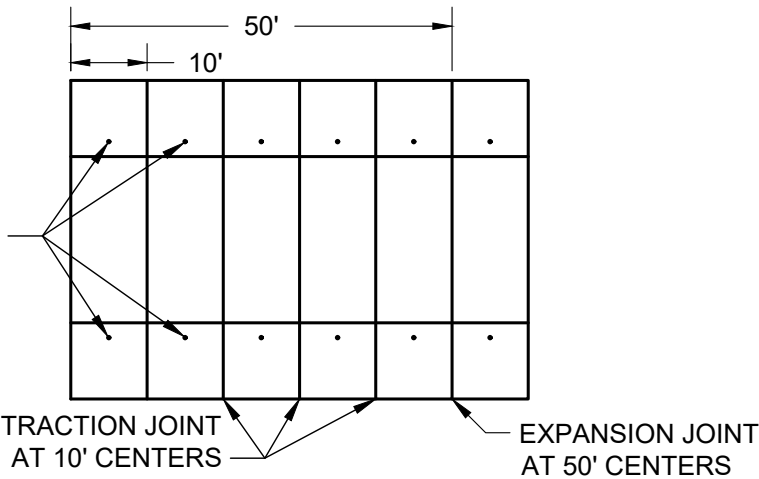
DATE



DRAWING NUMBER

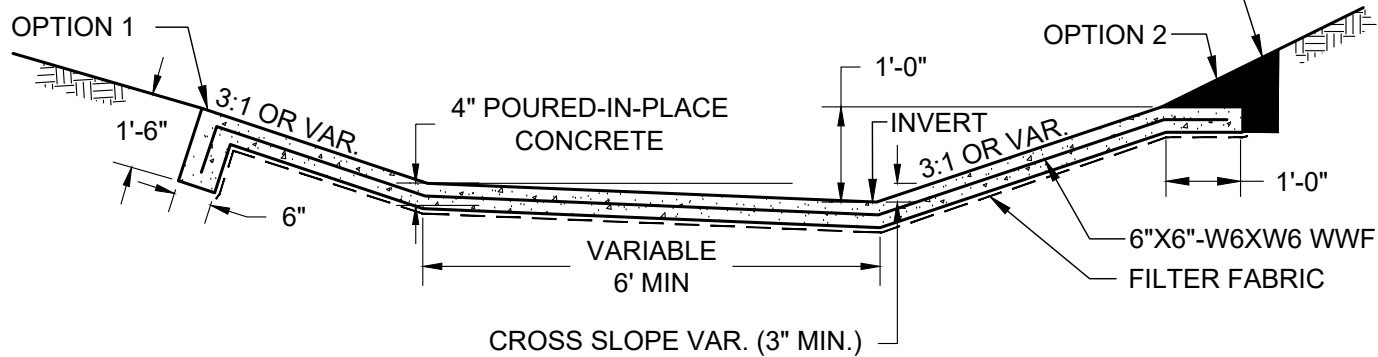
SD - 29.2

2" WEEP HOLES
AT 10' CENTERS



PLAN VIEW

NATIVE OR OTHER BACKFILL SELECT
90% RELATIVE COMPACTION



TYPICAL BOTTOM LINING

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CITY OF ELK GROVE - PUBLIC WORKS

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10/24/2018

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DATE

**LINED CHANNEL SECTION
(SHEET 1 OF 2)**



DRAWING NUMBER

SD - 30.1

OPTION 2

NATIVE OR OTHER SELECT
BACKFILL 90%
RELATIVE COMPACTION

WEEP HOLE SHALL BE CENTERED IN A
MINIMUM OF 1 C.F. OF 3/4" CRUSHED
ROCK CONFORMING TO SECTION 50
"CLEAN CRUSHED ROCK", TYPE B.
ROCK SHALL BE WRAPPED IN FABRIC
CONFORMING TO SECTION 50
"GEOTEXTILE FABRIC". HOLE SHALL BE
2" DIAMETER PIPE CUT TO FIT FLUSH
WITH CHANNEL FACE. (TYPICAL)

4" POURED-IN-PLACE
CONCRETE

6' CHAIN LINK FENCE

ALTERNATE FOR
LINING TO R/W

INVERT

4"

6" 6"

R/W

3" POURED-IN-PLACE
CONCRETE OR AIR-BLOWN
MORTAR

1'-0"

6"X6"-W6XW6 WWF

1:1 OR VAR.

1:1 OR VAR.

12"

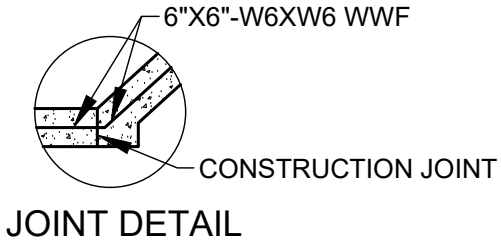
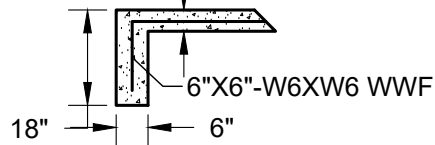
VARIABLE
6' MIN

CROSS SLOPE VAR. (3" MIN.)

SEE JOINT DETAIL

TYPICAL FULL LINING

OPTION 1 VAR.



CUTOFF WALL

TO BE PLACED ALONG ENTIRE
END OF LINED SECTION AT
BEGINNING AND AT END OF
LINING

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul M. Muddoch

10/24/2018

CITY ENGINEER

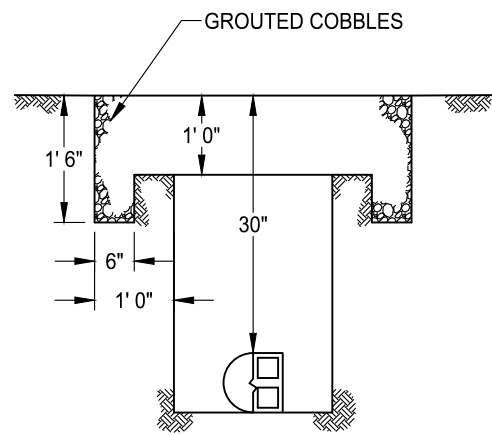
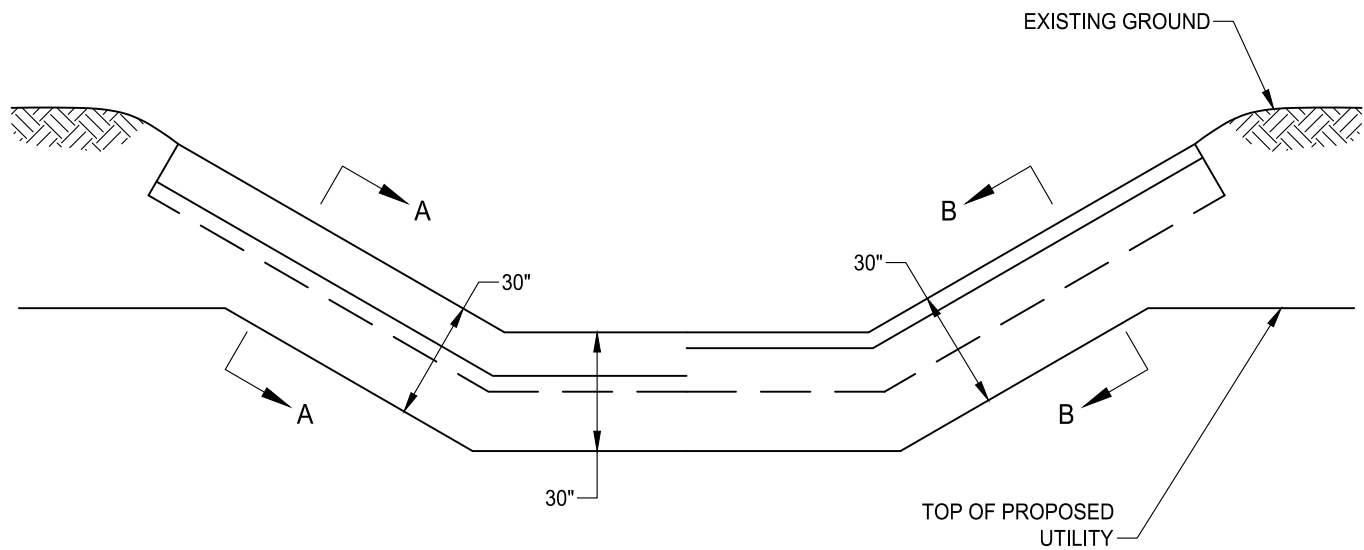
DATE

**LINED CHANNEL SECTION
(SHEET 2 OF 2)**

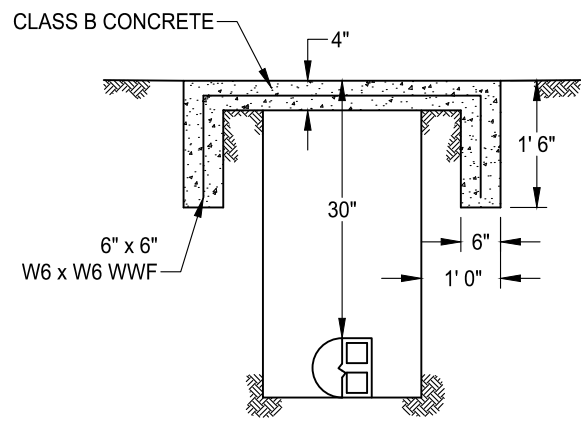
DRAWING NUMBER



SD - 30.2



SECTION A-A



SECTION B-B

NOTES:

1. ALL UTILITY CROSSINGS OF EXISTING STREAMS SHALL BE AT LEAST 30" BELOW EXISTING CHANNEL SIDES AND BOTTOMS. DEEPER PLACEMENT MAY BE REQUIRED IF FUTURE CHANNEL IMPROVEMENTS ARE ANTICIPATED.
2. THE CUT SHALL BE SEALED AS SHOWN WITH GROUTED COBBLES OR CLASS B CONCRETE TO A WIDTH OF 1 FOOT EACH SIDE OF THE UTILITY TRENCH. ALL NATURAL STREAMS, AS SHOWN ON THE NATURAL STREAMS PLAN, SHALL UTILIZED GROUTED COBBLES.
3. CONSTRUCTION IS TO CONFORM TO SECTION 44 OF THE CITY OF ELK GROVE CONSTRUCTION SPECIFICATIONS WITH CUT OFF WALLS CONFORMING TO STANDARD DRAWING SD-30.

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CITY OF ELK GROVE - PUBLIC WORKS

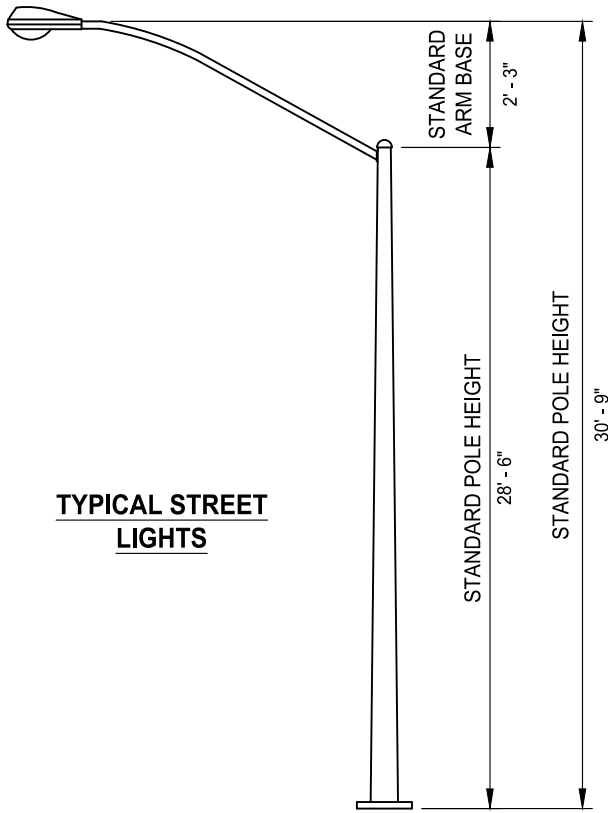
UTILITY STREAM CROSSING

APPROVED BY:
Robert M. Mulock
CITY ENGINEER

10/24/2018
DATE

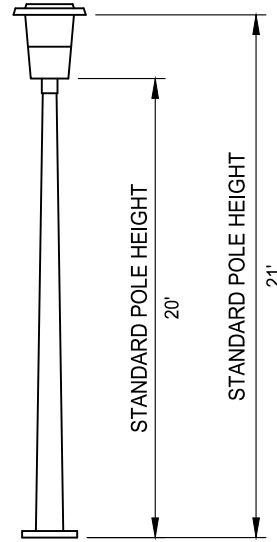
DRAWING NUMBER
SD - 31





TYPICAL STREET LIGHTS

SERIES 'A'



SERIES 'B'

SYMBOLS

PROPOSED	EXISTING	
	SERIES 'A' STREET LIGHT
	SERIES 'B' STREET LIGHT
	PULL BOX
	SERVICE POINT PULL BOX
	CONDUIT
	SERVICE ENCLOSURE
	U.G. UTILITY SERVICE
	TRANSFORMER
	WOOD POLE

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**STREET LIGHTING
POLES AND SYMBOLS**

APPROVED BY:
Robert Muddoch
CITY ENGINEER

10/24/2018
DATE


DRAWING NUMBER
SL - 1



STREET CLASSIFICATION	RIGHT-OF-WAY WIDTH	STREET LIGHT SUB-TYPE (SERIES)	STANDARD MOUNTING TYPE	AVERAGE MAINTAINED FOOTCANDLE	MAINTENANCE FACTOR
SPECIAL THOROUGHFARE	118'	A	30' - 9"	0.57	0.65
THOROUGHFARE	96'	A	30' - 9"	0.56	0.65
ARTERIAL	72'	A	30' - 9"	0.36	0.65
COLLECTOR	60'	A	30' - 9"	0.26	0.65
RESIDENTIAL	< 50'	B	21'	0.13	0.70
PEDESTRIAN LANE	--	B	14'	0.17	0.70

NOTE:

LUMENS USED TO CALCULATE THE AVERAGE MAINTAINED FOOTCANDLE SHALL BE 80% OF INITIAL LUMEN VALUE RATED BY THE LAMP MANUFACTURER.

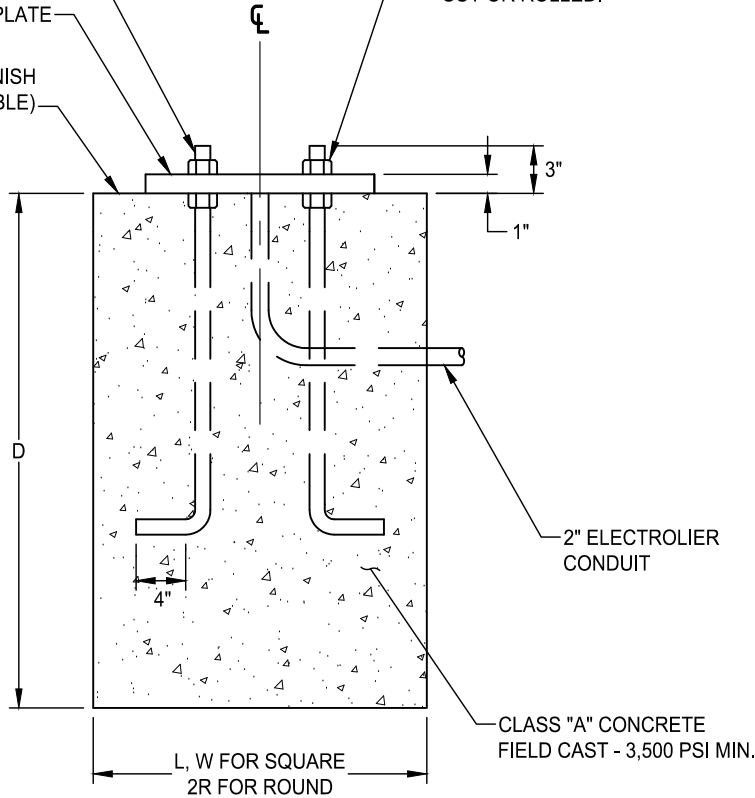
DATE: 09/22/2007		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Paul Muddoch</i>	
REVISION	BY	APPROVED	DATE	STREET LIGHTING ILLUMINATION CRITERIA		CITY ENGINEER	10/24/2018 DATE
							DRAWING NUMBER
							SL - 2

ELECTROLIER MUST BE GROUNDED BACK TO THE SERVICE POINT

BASE PLATE

SIDEWALK FINISH (IF APPLICABLE)

FOUR (4) 1" x 36" ANCHOR BOLTS WITH 4" BEND. 6" OF THREAD WITH TWO NUTS AND TWO WASHERS FOR EACH BOLT. THREAD MAY BE CUT OR ROLLED.



ELEVATION

MINIMUM FOUNDATION DIMENSIONS *						
STREET LIGHT AREAS	STREET LIGHT SUB-TYPE (SERIES)	SQUARE			ROUND	
		L	W	D	R	D
CT	SERIES 'A'	30"	30"	5'	15"	5'
CT, OT, LW	SERIES 'B'	24"	24"	4'	12"	4'
LW, ZONE 2	SERIES 'A'	30"	30"	6'-6"	15"	6'-6"
ZONE 2	SERIES 'B'	24"	24"	4'-6"	12"	4'-6"

CT - COMMON TYPE
 OT - OLD TOWN
 LW - LAGUNA WEST

SEE SL-19 FOR STREET LIGHT AREAS

* IN LIEU OF USING THE STANDARD MINIMUM DIMENSIONS, A LICENSED PROFESSIONAL ENGINEER MAY SUBMIT A SITE-SPECIFIC (BY STREET LIGHT TYPE/LOCATION) FOUNDATION DESIGN FOR APPROVAL.

* STABLE SOILS ONLY. UNSTABLE SOIL MAY REQUIRE A DEEPER FOUNDATION AS DETERMINED BY THE DESIGN ENGINEER.

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CITY OF ELK GROVE - PUBLIC WORKS

STREET LIGHT FOUNDATIONS

APPROVED BY:

Paul M. Muddoch

10/24/2018

CITY ENGINEER

DATE



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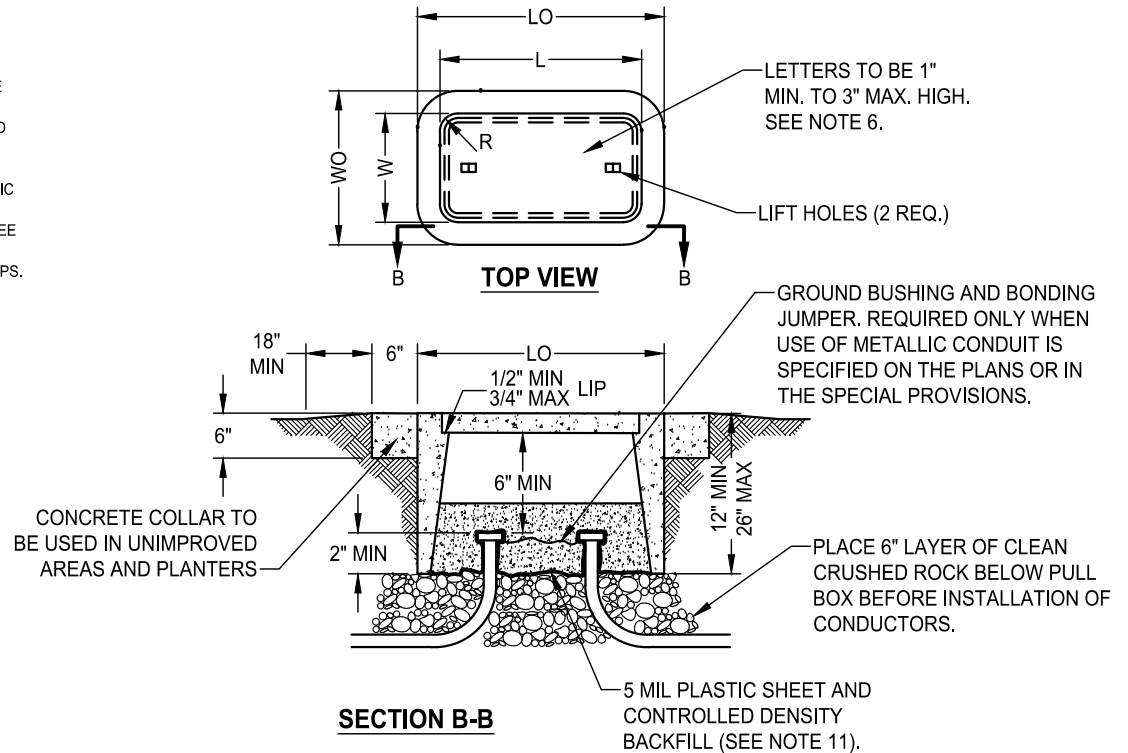
SL - 3

PULL BOX No.	REINFORCED CONCRETE BOX				COMPOSITE BOX		REINFORCED CONC. OR COMPOSITE COVER				
	MIN.** THICKNESS	MIN DEPTH BOX AND EXTENSION	LO	WO	MIN.** THICKNESS	MIN DEPTH BOX AND EXTENSION	L***	W***	R	EDGE THICKNESS	EDGE TAPER
3-1/2	1"	NO EXTENSION	20"	14"	5/16"	NO EXTENSION	15-3/8"	10-1/8"	1-1/8"	1-3/4"	1/8"
5	1"	22"	28"	18"	5/16"	20"	23-1/4"	13-3/4"	1-1/4"	2"	1/8"
5A	1"	22"	25-1/4"	15-3/4"	5/16"	20"	20-5/8"	10-1/2"	1-1/4"	2"	1/8"
6	1-1/2"	24"	36"	23"	3/8"	20"	30-5/8"	17-5/8"	1-1/4"	2"	1/8"

** EXCLUDING CONDUIT WEB *** TOP DIMENSION

NOTES:

- IN UNIMPROVED AREAS, THE TOP OF PULL BOXES SHALL BE PLACED 0.10 FOOT ABOVE THE SURROUNDING GRADE OR, WHEN ADJACENT TO A CURB, FLUSH WITH THE TOP OF THE CURB. THE SURROUNDING GRADE SHALL BE RAMPED UP TO MATCH THE TOP OF THE CONCRETE COLLAR. UNLESS OTHERWISE NOTED, PULL BOXES SHOWN IN THE VICINITY OF SIDEWALK SHALL BE PLACED ADJACENT TO THE BACK OF SIDEWALK, AND PULL BOXES SHOWN ADJACENT TO POLES SHALL BE PLACED ON THE SIDE OF THE FOUNDATION FACING AWAY FROM TRAFFIC.
- PLACEMENT OF PULL BOXES IN AREAS SUBJECT TO VEHICULAR TRAFFIC LOADS (INCLUDES TRAFFIC LANES, BIKE LANES, SHOULDERS, AND DRIVEWAYS) SHALL BE AVOIDED WHENEVER POSSIBLE. IF UNAVOIDABLE, THEN A TRAFFIC RATED PULL BOX WITH STEEL TRAFFIC COVER SHALL BE USED. SEE STANDARD DRAWING SL-5.
- PULL BOXES SHALL NOT BE PLACED WITHIN THE BOUNDARIES OF SIDEWALKS AND SIDEWALK RAMPS.
- PULL BOXES SHOULD NOT BE PLACED WITHIN PLANTER AREAS WHENEVER POSSIBLE.
- PULL BOX COVERS SHALL BE MARKED AS FOLLOWS:
 - "TRAFFIC SIGNAL" TRAFFIC SIGNAL CIRCUITS WITH OR WITHOUT STREET LIGHTING CIRCUITS.
 - "STREET LIGHTING" STREET LIGHTING CIRCUITS WHERE NO VOLTAGE IS ABOVE 600V.
 - "STREET LIGHTING-HIGH VOLTAGE" STREET LIGHTING CIRCUITS WHERE VOLTAGE IS ABOVE 600V.
 - "SERVICE" SERVICE CIRCUITS BETWEEN SERVICE POINT AND SERVICE DISCONNECT.
 - "SPRINKLER CONTROL" SPRINKLER CONTROL CIRCUITS, 50 VOLTS OR LESS.
 - "IRRIGATION" CIRCUIT FOR IRRIGATION CONTROLLER, 120 VOLTS OR MORE.
 - "RAMP METER" RAMP METER CIRCUITS.
 - "COUNT STATION" COUNT AND/OR SPEED MONITOR CIRCUITS.
 - "TELEPHONE" TELEPHONE SERVICE.
 - "TOS COMMUNICATIONS" TOS COMMUNICATIONS TRUNK LINE.
 - "TOS POWER" TOS POWER.
 - "TDC POWER" TELEPHONE DEMARCATION CABINET POWER.
 - "SIGNAL INTERCONNECT" TRAFFIC SIGNAL INTERCONNECT CIRCUIT.
- COVERS SHALL FIT FLUSH WITH THE TOP OF PULL BOXES. THERE SHALL BE 1/8" MAXIMUM CLEARANCE ALL AROUND BETWEEN COVERS AND PULL BOX OPENINGS.
- ALL COVERS AND BOXES SHALL BE INTERCHANGEABLE WITH CALIFORNIA STANDARD MALE AND FEMALE GAUGES. WHEN INTERCHANGED WITH STANDARD MALE OR FEMALE GAUGE, THE TOP SURFACES SHALL BE FLUSH WITHIN 1/8 INCH.
- THE TOP EDGES OF ALL CONCRETE COVER AND PULL BOXES SHALL HAVE A 1/4" MINIMUM RADIUS.
- STACKING OF PULL BOXES IS PERMITTED (TWO PULL BOXES MINIMUM).
- STEEL REINFORCING SHALL BE A REGULARLY USED IN THE STANDARD PRODUCTS OF THE RESPECTIVE MANUFACTURER.
- PULL BOXES FOR STREET LIGHTING, UPON COMPLETION OF BURN TEST, SHALL BE FILLED WITH CONTROLLED DENSITY BACKFILL, PER CITY OF ELK GROVE CONSTRUCTION SPECIFICATIONS SECTION 50-15. A 5 MIL. PLASTIC SHEET SHALL COVER THE CONDUITS/WIRES PRIOR TO POURING OF BACKFILL TO A DEPTH OF TWO (2) INCHES OVER THE CONDUITS.




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CITY OF ELK GROVE - PUBLIC WORKS

STANDARD PULL BOX

APPROVED BY: *Robert Murdoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
SL - 4



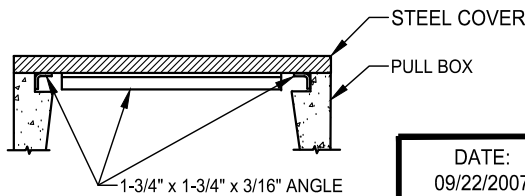
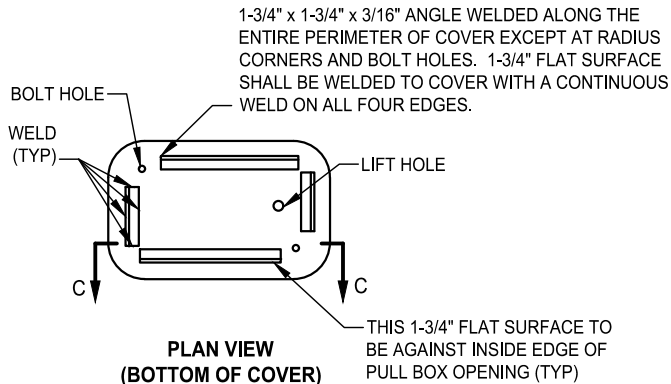
PULL BOXES SHALL BE PLACED BEHIND THE SIDEWALK OR IN THE PLANTER AREA WHENEVER POSSIBLE. TRAFFIC RATED BOXES AND COVERS SHALL BE USED IF A PULL BOX MUST BE INSTALLED IN THE SIDEWALK OR DRIVEWAY.

NOTES:

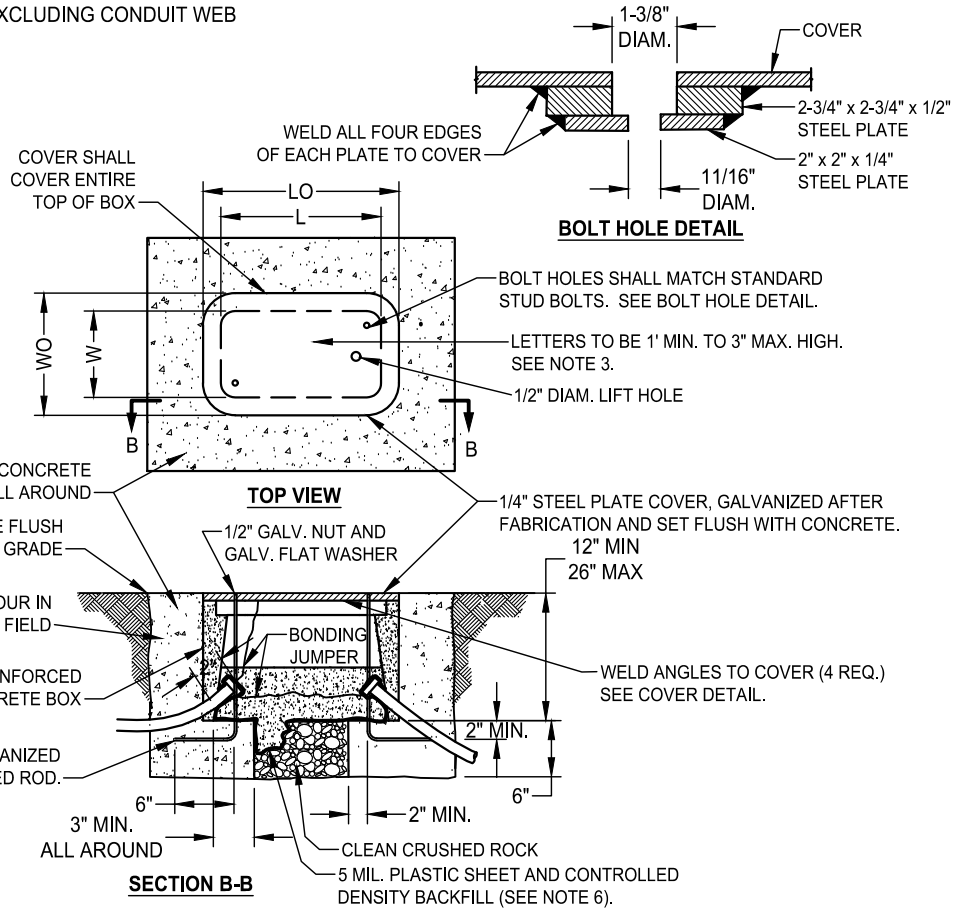
1. STEEL COVER SHALL HAVE EMBOSSED NON-SKID PATTERN.
2. STEEL REINFORCING SHALL BE AS REGULARLY USED IN THE STANDARD PRODUCTS OF THE RESPECTIVE MANUFACTURER.
3. PULL BOX COVERS SHALL BE MARKED AS DESCRIBED IN NOTE 5 ON STANDARD DRAWING SL-4. MARKING SHALL BE APPLIED TO EACH COVER PRIOR TO GALVANIZING BY BEAD WELDING THE LETTERS ON THE COVERS. THE LETTERS SHALL BE RAISED AT LEAST 3/32 INCH.
4. BONDING JUMPER FOR COVER SHALL BE A MIN. OF 36" LONG. WHEN NON-METALLIC CONDUIT IS USED, THE BONDING JUMPER FOR THE COVER SHALL BE SPLICED TO THE BOND WIRE IN THE CONDUITS. WHEN THE USE OF METALLIC CONDUIT IS SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, THE BONDING JUMPER FOR THE COVER SHALL BE CONNECTED TO THE CONDUIT GROUND BUSHING, AND THE CONDUITS SHALL BE BONDED TOGETHER WITH GROUND BUSHINGS AND A BONDING JUMPER.
5. CONDUITS SHALL ENTER AT BOTTOM OF PULL BOX AS SHOWN IN THE DRAWING.
6. PULL BOXES FOR STREET LIGHTING, UPON COMPLETION OF BURN TEST, SHALL BE FILLED WITH CONTROLLED DENSITY BACKFILL PER CITY OF ELK GROVE CONSTRUCTION SPECIFICATIONS SECTION 50-15. A 5 MIL. PLASTIC SHEET SHALL COVER THE CONDUITS/WIRES PRIOR TO POURING OF BACKFILL, TO A DEPTH OF TWO (2) INCHES OVER THE CONDUITS.

PULL BOX No.	REINFORCED CONCRETE BOX					
	MIN.** THICKNESS	MIN. DEPTH BOX AND EXTENSION	LO	WO	L	W
3-1/2	1"	NO EXTENSION	20"	14"	15-1/2"±	10"±
5	1"	22"	28"	18"	23"±	13-1/2"±
5A	1"	22"	25-1/4"	15-3/4"	21"±	10-1/2"±

** EXCLUDING CONDUIT WEB



SECTION C-C
COVER DETAIL



DATE: 09/22/2007		NOT TO SCALE	
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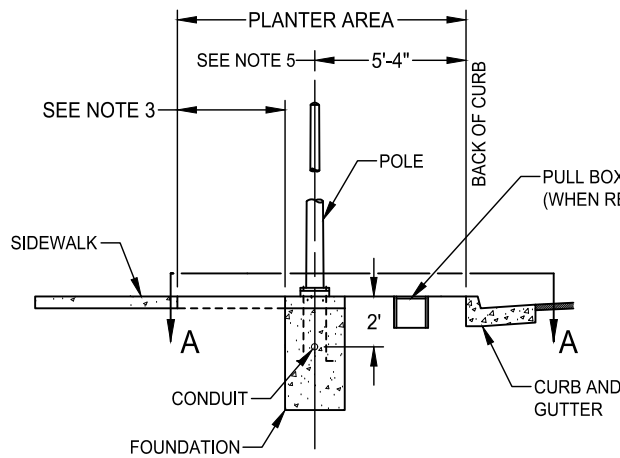
CITY OF ELK GROVE - PUBLIC WORKS

TRAFFIC-RATED PULL BOX

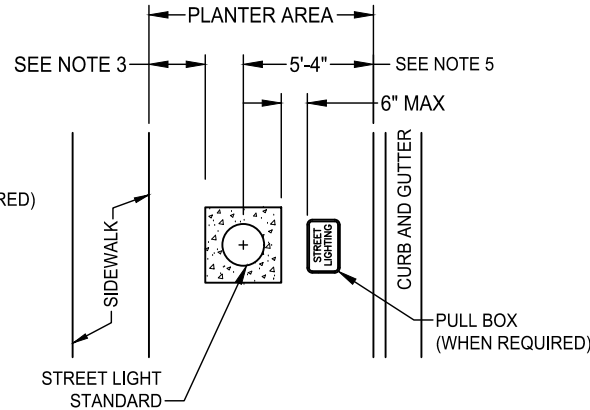
APPROVED BY:
Robert Murdoch
CITY ENGINEER

10/24/2018
DATE

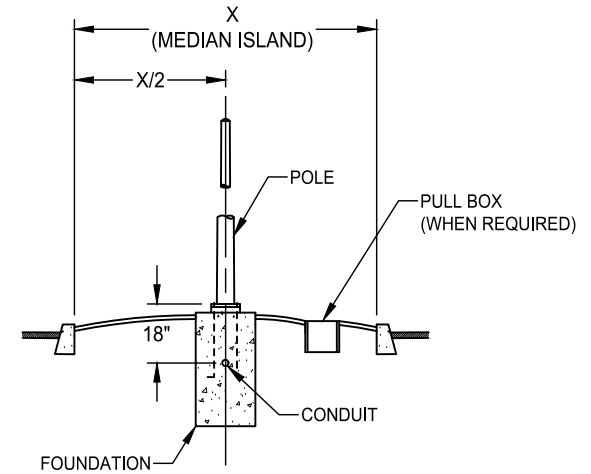
DRAWING NUMBER
SL - 5



SIDEWALK WITH PLANTER AREA



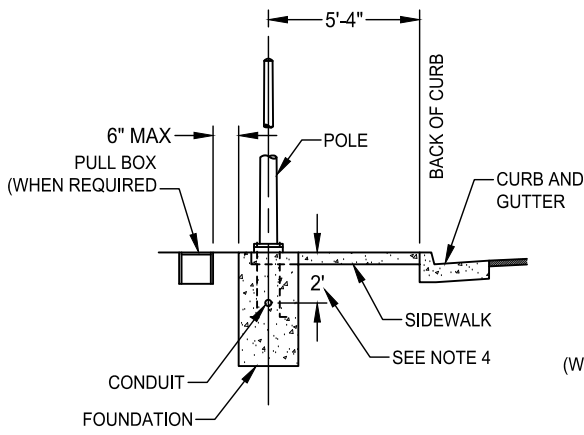
SECTION A-A



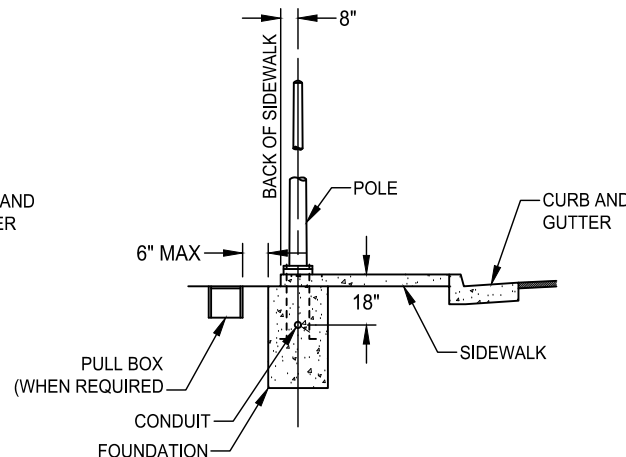
MEDIAN

NOTES

1. BACKFILL FOR CONDUIT TRENCH LOCATED UNDER CURB, GUTTER & SIDEWALK AND IN UNIMPROVED AREAS SHALL BE COMPACTED TO 90% RELATIVE COMPACTION. BACKFILL FOR CONDUIT TRENCH LOCATED IN PAVEMENT SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
2. LANDSCAPING IN THE AREA OF THE STREET LIGHT STANDARD TO MATCH BASE ELEVATION AND HAVE A MINIMUM OF 12" OF CLEARANCE FROM THE BASE.
3. IF THIS LENGTH IS 12" OR LESS, PLACE 3-1/2" THICK CONCRETE FROM STREET LIGHT BASE TO EDGE OF SIDEWALK. WIDTH TO MATCH CONCRETE AROUND STREET LIGHT FOUNDATION.
4. IF CONDUIT IS LOCATED BENEATH THE SIDEWALK, IT MAY BE PLACED AT 18" DEPTH INSTEAD OF 2'.
5. IF THE PLANTER AREA IS LESS THAN 6' WIDE, THEN PLACE STREET LIGHT SO THAT THE BASE PLATE ALIGNS WITH THE EDGE OF SIDEWALK. TOP OF FOUNDATION TO MATCH SIDEWALK GRADE.
6. PULL BOXES SHALL NOT BE PLACED IN SIDEWALK. THEY SHALL BE PLACED IN PUE OR PLANTER AREA.



5' TO 6' SIDEWALK



OVER 6' SIDEWALK

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

BASE LOCATION FOR STREET LIGHT

APPROVED BY:

Robert M. Muddock

CITY ENGINEER

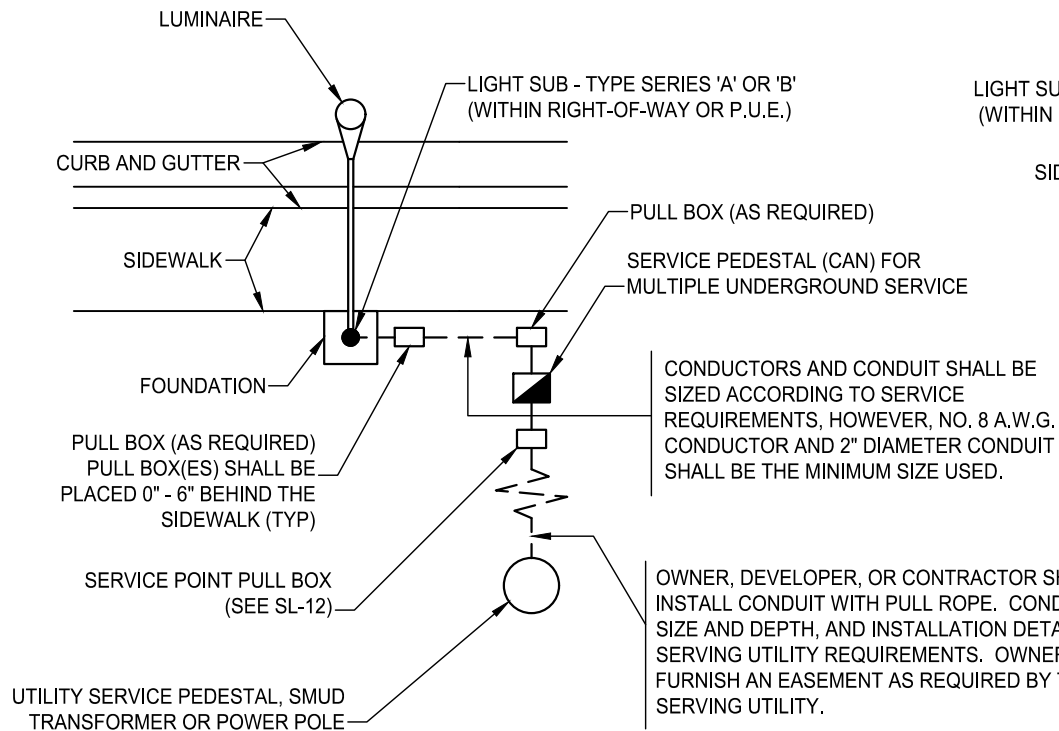
10/24/2018

DATE

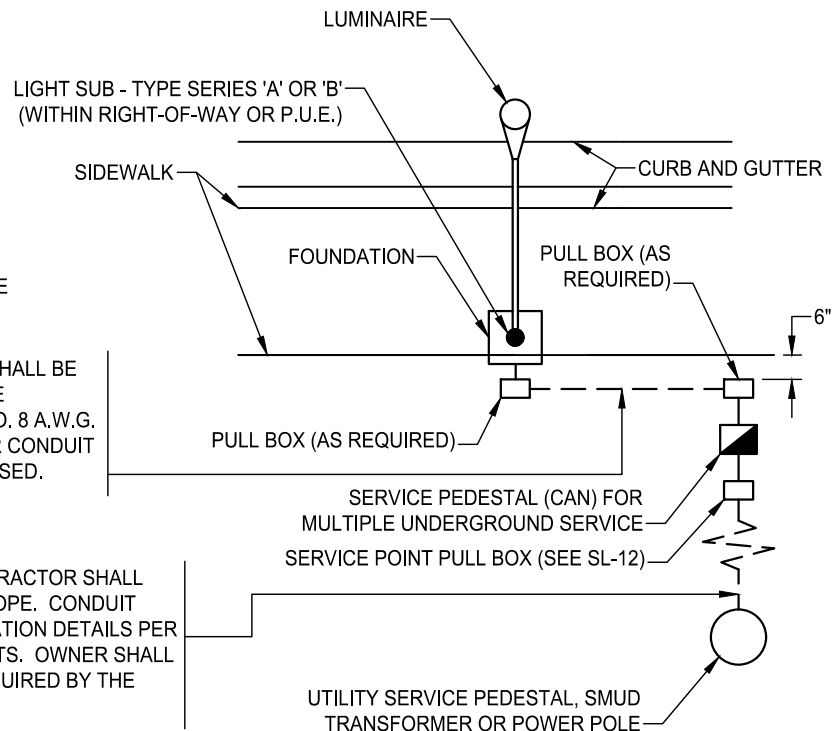


DRAWING NUMBER

SL - 6



5 TO 6 FOOT SIDEWALK



6 FOOT OR WIDER SIDEWALK

NOTES:

1. ALL CITY OWNED FACILITIES SHALL BE WITHIN RIGHT-OF-WAY (R/W) OR PUBLIC UTILITY EASEMENT (PUE).
2. SEE STANDARD DRAWING SL-12 FOR SERVICE POINT PULL BOX DETAILS AND WIRING DIAGRAM.
3. SEE STANDARD DRAWING SL-4 FOR PULL BOX DETAILS.
4. PHOTOCELLS SHALL BE INSTALLED ON THE TOP OF THE LUMINAIRE NEAREST THE SERVICE PEDESTAL OR SERVICE POINT.
5. THE SERVICING UTILITY WILL INSTALL AND MAINTAIN CONDUCTORS FROM THEIR TRANSFORMER, OR POWER POLE TO THE SERVICE POINT PULL BOX.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**UNDERGROUND SERVICE
INSTALLATION**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

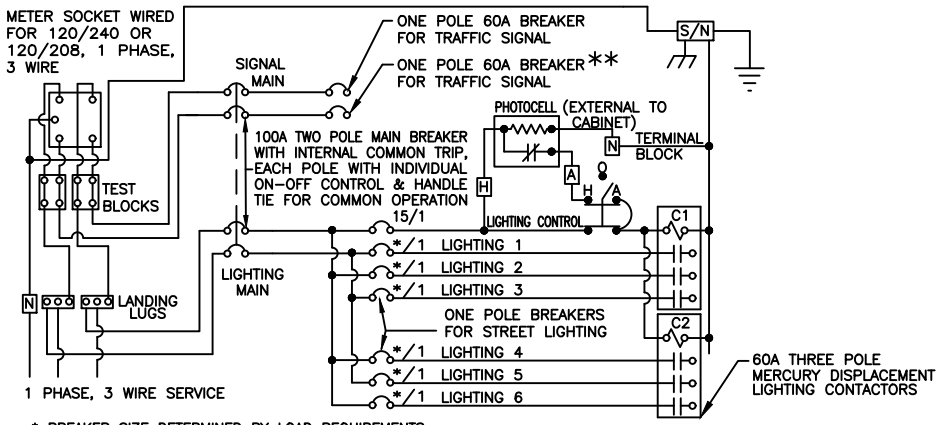
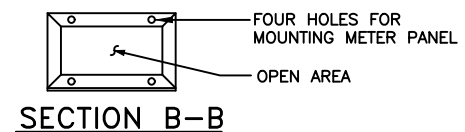
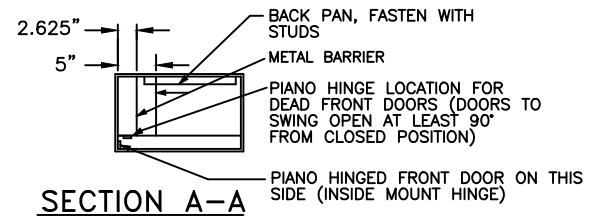
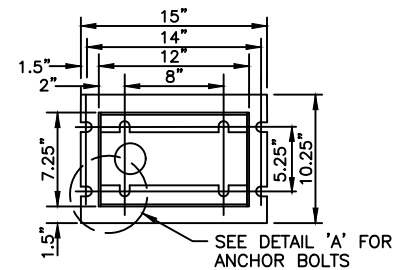
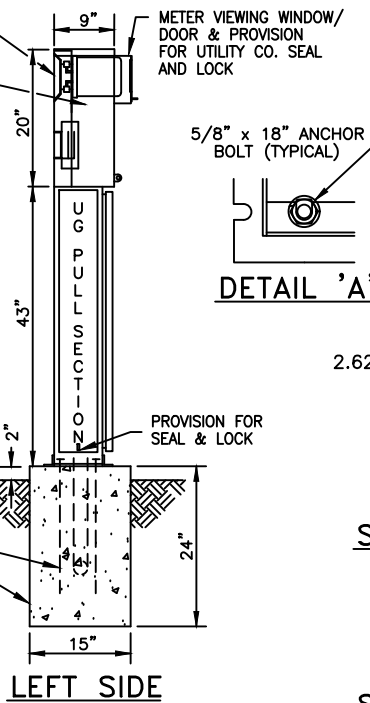
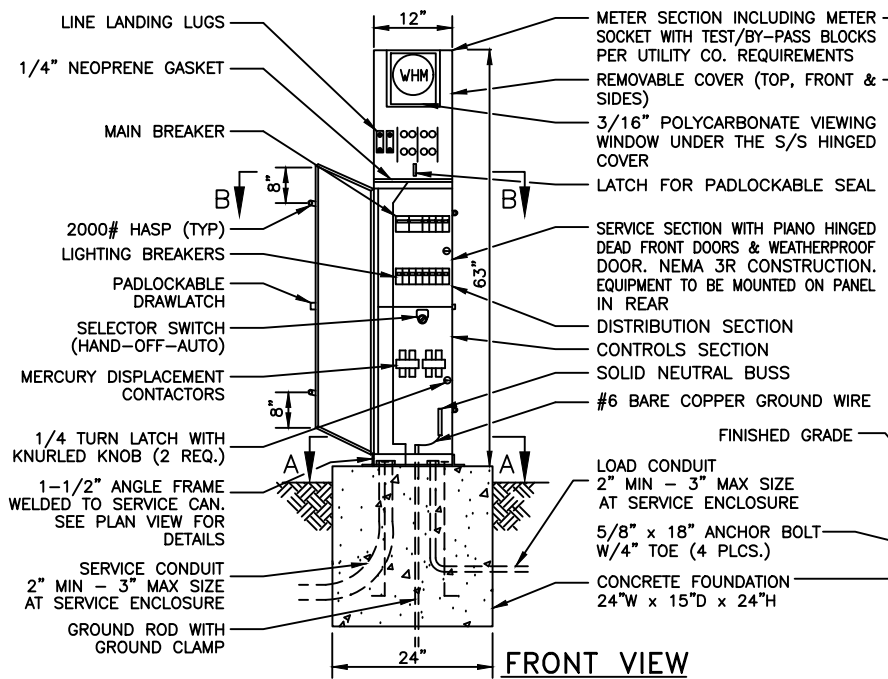
10/24/2018

DATE



DRAWING NUMBER

SL - 7



1. EXTERIOR SHALL BE 14 GAUGE #304D STAINLESS STEEL, INTERIOR DEAD FRONT PANEL AND BACK PAN SHALL BE 14 GAUGE STEEL, PAINTED WHITE. ENCLOSURE SHALL BE ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
2. CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT.
3. ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL.
4. NUTS, BOLTS, AND SCREWS SHALL NOT BE USED ON THE OUTSIDE OF THE SERVICE ENCLOSURE.
5. PHENOLIC NAMEPLATES SHALL BE USED TO IDENTIFY ALL OPERATOR CONTROLS.
6. CONTROL WIRING SHALL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.
7. A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
8. SERVICE ENCLOSURE SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
9. SERVICE ENCLOSURE SHALL BE U.L. LISTED AS INDUSTRIAL CONTROL PANELS U.L. 508 FILE NO. E62062.
10. WIRING BETWEEN CIRCUIT BREAKER AND CONTACTOR SHALL BE #6 THWN OR THHN MINIMUM.
11. SERVICE ENCLOSURE SHALL BE OF TWO-PIECE CONSTRUCTION.
12. THE WIRING SCHEMATIC DIAGRAM AS SHOWN IS FOR A 2-WIRE STREET LIGHTING SYSTEM. IF THE SERVICE ENCLOSURE WILL BE USED FOR A 3-WIRE STREET LIGHTING SYSTEM, THEN THE LIGHTING BREAKERS SHALL CONSIST OF 2-POLE BREAKERS WITH INTERNAL COMMON TRIP, EACH POLE WITH INDIVIDUAL ON-OFF CONTROL AND HANDLE TIE FOR COMMON OPERATION. FOR EACH 2-POLE BREAKER, THE CIRCUIT LOAD SHALL BE EQUALLY DIVIDED ACROSS THE LIGHTING MAIN.
13. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
14. DUAL METERS SHALL BE PROVIDED AND SHALL CONFORM TO CALTRANS STANDARD DRAWING ES-2F.

METERED SERVICE WIRING SCHEMATIC DIAGRAM

**MODIFY TRAFFIC SIGNAL BREAKER TO PROVIDE A 15 AMP. 120V, 1P CIRCUIT BREAKER FOR IISNS. MODIFY WIRINGS TO USE 60 AMP. LIGHTING CONTACTOR FOR IISNS.

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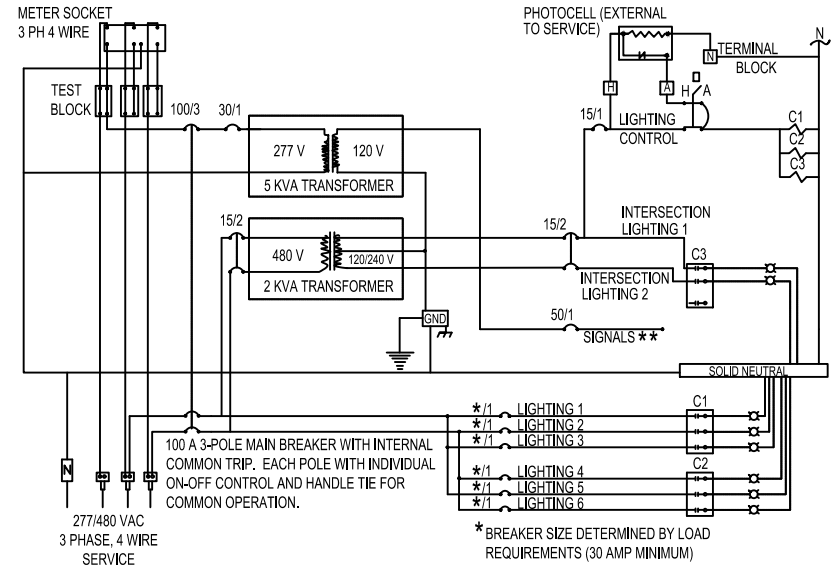
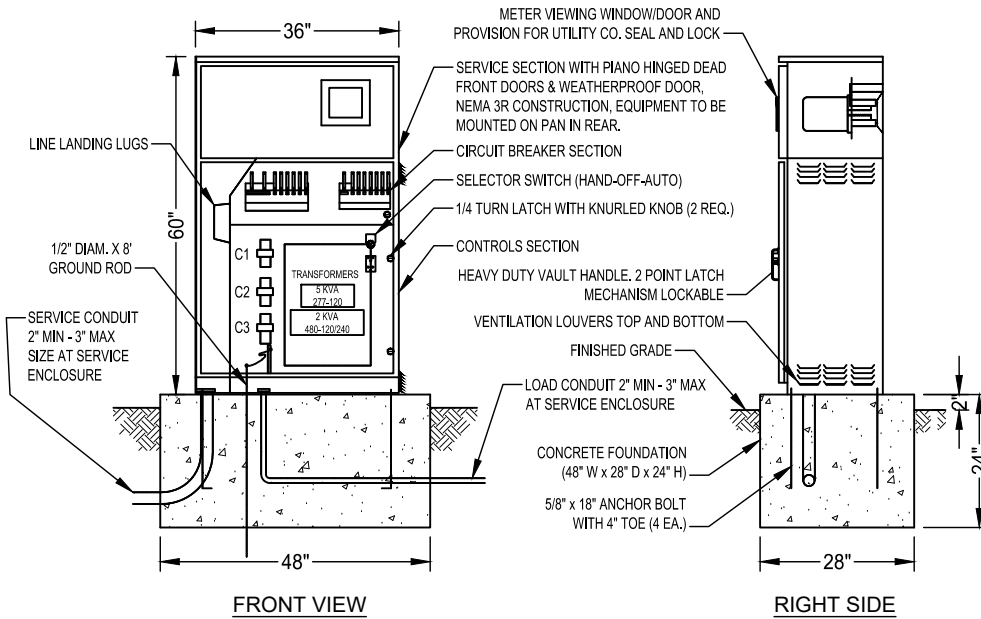
CITY OF ELK GROVE - PUBLIC WORKS

METERED SERVICE PEDESTAL (Can) (120/208V, 120/240V)

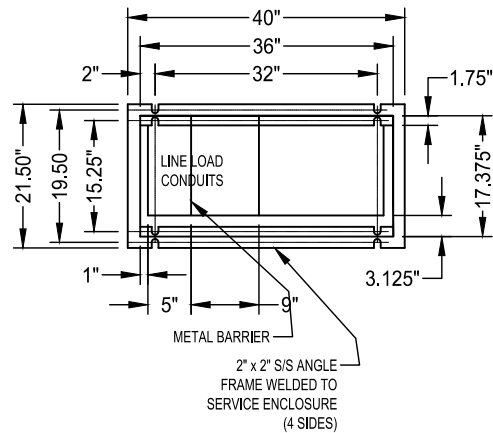
APPROVED BY:
Robert M. Muddoch
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER
SL - 8



METERED SERVICE WIRING SCHEMATIC DIAGRAM



BASE PLATE DETAIL

- EXTERIOR SHALL BE 14 GAUGE #304D STAINLESS STEEL, INTERIOR SHALL BE 14 GAUGE STEEL, PAINTED WHITE. ENCLOSURE SHALL BE ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
- CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN-TIGHT AND DUST-TIGHT.
- ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL.
- NUTS, BOLTS, AND SCREWS SHALL NOT BE USED ON THE OUTSIDE OF THE SERVICE ENCLOSURE.
- PHENOLIC NAMEPLATES SHALL BE USED TO IDENTIFY ALL OPERATION CONTROLS.
- CONTROL WIRING SHALL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.
- A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
- SERVICE ENCLOSURE SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
- SERVICE ENCLOSURE SHALL BE U.L. LISTED AS INDUSTRIAL CONTROL PANELS U.L. 508 FILE NO. E62062.
- WIRING BETWEEN CIRCUIT BREAKER AND CONTACTOR SHALL BE #6 THWN OR THHN MINIMUM.
- SIZE OF TRANSFORMER FOR SIGNALS SHALL BE 5 KVA. SIZE OF TRANSFORMER FOR 120 V INTERSECTION SHALL BE 2 KVA.
- WHEN CHANGING VOLTAGE ON A RETROFIT PROJECT WHERE A NEW SERVICE ENCLOSURE WITH A STEP-DOWN TRANSFORMER IS REQUIRED, THE NEW SERVICE ENCLOSURE THE NEW SERVICE ENCLOSURE SHALL BE PLACED BETWEEN THE SERVICE POINT AND THE OLD SERVICE ENCLOSURE LOCATION WITHIN THE CITY R/W. VOLTAGE OUTPUT FROM THE NEW SERVICE ENCLOSURE MAY BE CONNECTED INTO THE EXISTING CONDUIT SYSTEM.
- THE WIRING SCHEMATIC DIAGRAM AS SHOWN IS FOR A 2-WIRE STREET LIGHTING SYSTEM. IF THE SERVICE ENCLOSURE WILL BE USED FOR A 3-WIRE STREET LIGHTING SYSTEM, THEN THE LIGHTING BREAKERS SHALL CONSIST OF 2-POLE BREAKERS WITH INTERNAL COMMON TRIP, EACH POLE WITH INDIVIDUAL ON-OFF CONTROL AND HANDLE TIE FOR COMMON OPERATION. FOR EACH 2-POLE BREAKER, THE CIRCUIT LOAD SHALL BE EQUALLY DIVIDED ACROSS THE LIGHTING MAIN.
- SEE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
- DUAL METERS SHALL BE PROVIDED AND SHALL CONFORM TO CALTRANS STANDARD DRAWING ES-2F.

* BREAKER SIZE DETERMINED BY LOAD REQUIREMENTS (30 AMP MINIMUM)
 ** PROVIDE A 15 AMP, 1P CIRCUIT BREAKER FOR IISNS. MODIFY WIRINGS TO USE LIGHTING CONTACTOR FOR IISNS.


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REVISION	BY	APPROVED	DATE

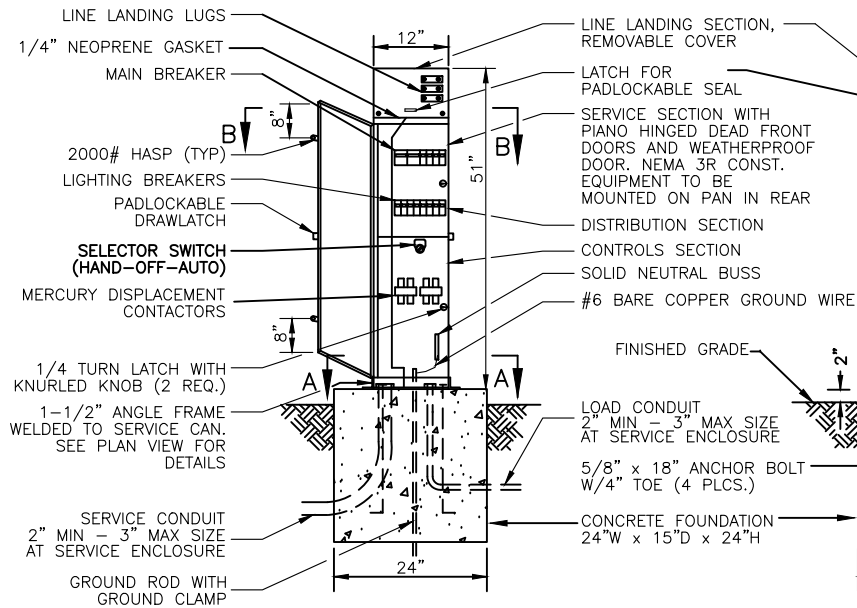
CITY OF ELK GROVE - PUBLIC WORKS

METERED SERVICE PEDESTAL (Can)
WITH STEP-DOWN TRANSFORMER
(277/480V TO 120/240V)

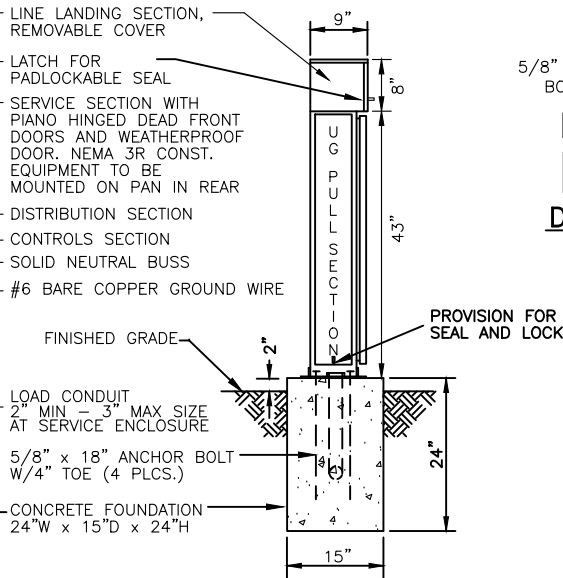
APPROVED BY:
Robert M. Muddoch
 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
SL - 9

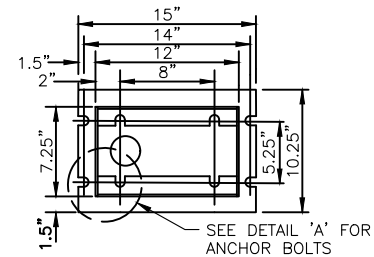
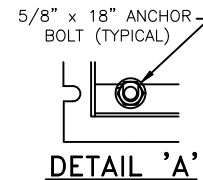




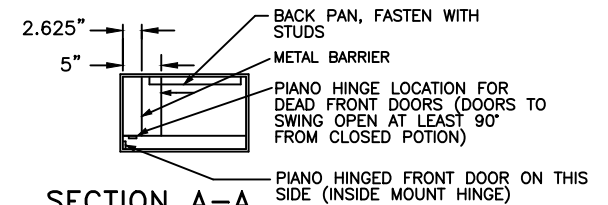
FRONT VIEW



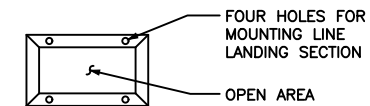
LEFT SIDE



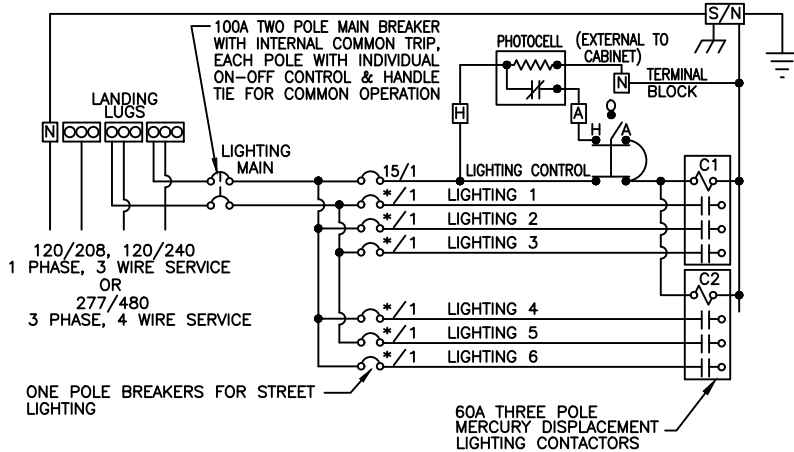
FRONT BASE PLATE DETAIL



SECTION A-A



SECTION B-B



UNMETERED SERVICE WIRING SCHEMATIC DIAGRAM

* BREAKER SIZE DETERMINED BY LOAD REQUIREMENTS (30 AMP MINIMUM)

1. EXTERIOR SHALL BE 14 GAUGE #304D STAINLESS STEEL. INTERIOR DEAD FRONT PANEL AND BACK PAN SHALL BE 14 GAUGE STEEL, PAINTED WHITE. ENCLOSURE SHALL BE ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
2. CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT.
3. ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL.
4. NUTS, BOLTS, AND SCREWS SHALL NOT BE USED ON THE OUTSIDE OF THE SERVICE ENCLOSURE.
5. PHENOLIC NAMEPLATES SHALL BE USED TO IDENTIFY ALL OPERATOR CONTROLS.
6. CONTROL WIRING SHALL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.
7. A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
8. SERVICE ENCLOSURE SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
9. SERVICE ENCLOSURE SHALL BE U.L. LISTED AS INDUSTRIAL CONTROL PANELS U.L. 508 FILE E62062.
10. WIRING BETWEEN CIRCUIT BREAKER AND CONTACTOR SHALL BE #6 THWN OR THHN MINIMUM.
11. SERVICE ENCLOSURE SHALL BE OF TWO-PIECE CONSTRUCTION.
12. THE WIRING SCHEMATIC DIAGRAM AS SHOWN IS FOR A 2-WIRE STREET LIGHTING SYSTEM. IF THE SERVICE ENCLOSURE WILL BE USED FOR A 3-WIRE STREET LIGHTING SYSTEM, THEN THE LIGHTING BREAKERS SHALL CONSIST OF 2-POLE BREAKERS WITH INTERNAL COMMON TRIP, EACH POLE WITH INDIVIDUAL ON-OFF CONTROL AND HANDLE TIE FOR COMMON OPERATION. FOR EACH 2-POLE BREAKER, THE CIRCUIT LOAD SHALL BE EQUALLY DIVIDED ACROSS THE LIGHTING MAIN.
13. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

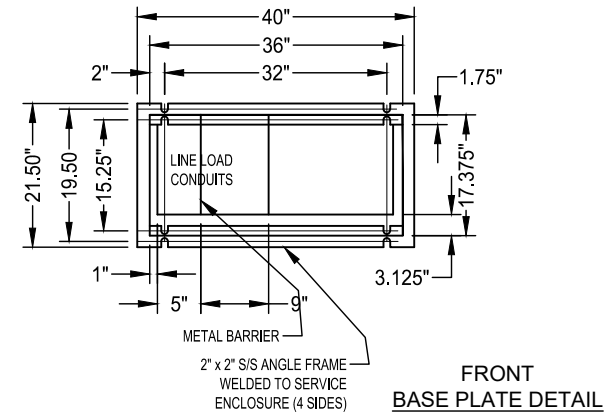
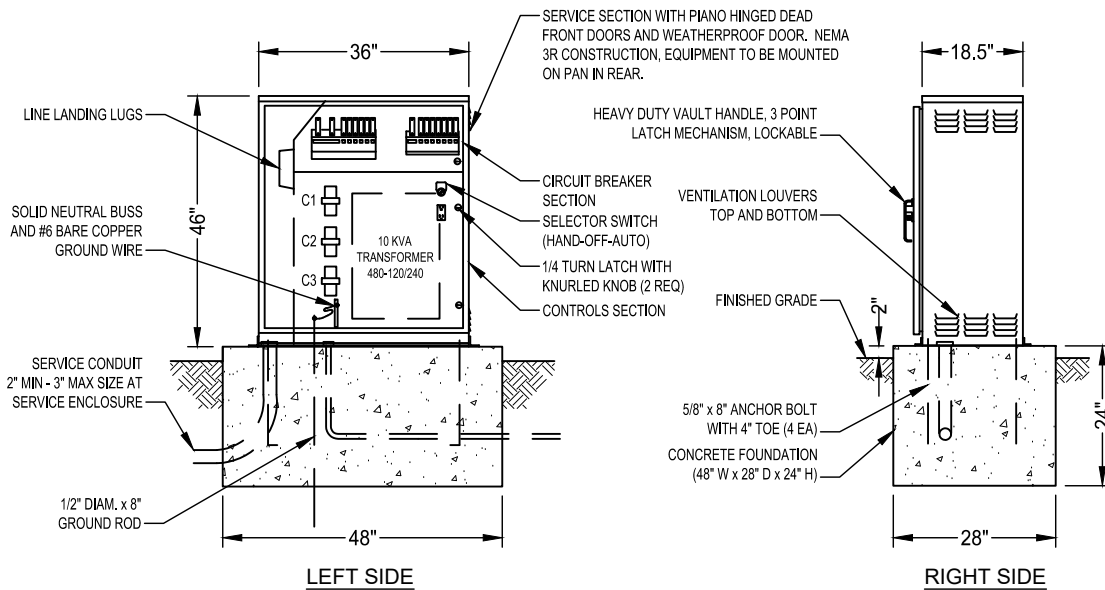
**UNMETERED SERVICE PEDESTAL
(Can) (120/208V, 120/240V, 277/480V)**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER 10/24/2018
DATE



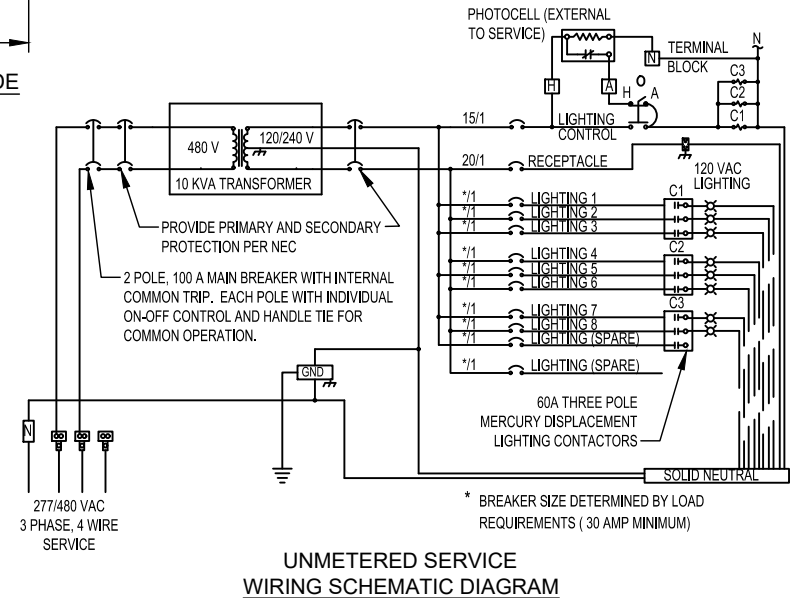
DRAWING NUMBER

SL - 10



NOTES:

- EXTERIOR SHALL BE 14 GAUGE #304D STAINLESS STEEL, INTERIOR SHALL BE 14 GAUGE STEEL, PAINTED WHITE. ENCLOSURE SHALL BE ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
- CONSTRUCTION SHALL BE NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT.
- ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL.
- NUTS, BOLTS, AND SCREWS SHALL NOT BE USED ON THE OUTSIDE OF THE SERVICE ENCLOSURE.
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- CONTROL WIRING SHALL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.
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- SERVICE ENCLOSURE SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
- SERVICE ENCLOSURE SHALL BE U.L. LISTED AS INDUSTRIAL CONTROL PANELS U.L. 508 FILE NO. E62062.
- WIRING BETWEEN CIRCUIT BREAKER AND CONTACTOR SHALL BE #6 THWN OR THHN MINIMUM.
- SIZE OF TRANSFORMER FOR SIGNALS SHALL BE 5 KVA. SIZE OF TRANSFORMER FOR 120 V INTERSECTION SHALL BE 2 KVA.
- WHEN CHANGING VOLTAGE ON A RETROFIT PROJECT WHERE A NEW SERVICE ENCLOSURE WITH A STEP-DOWN TRANSFORMER IS REQUIRED, THE NEW SERVICE ENCLOSURE THE NEW SERVICE ENCLOSURE SHALL BE PLACED BETWEEN THE SERVICE POINT AND THE OLD SERVICE ENCLOSURE LOCATION WITHIN THE CITY R/W. VOLTAGE OUTPUT FROM THE NEW SERVICE ENCLOSURE MAY BE CONNECTED INTO THE EXISTING CONDUIT SYSTEM.
- THE WIRING SCHEMATIC DIAGRAM AS SHOWN IS FOR A 2-WIRE STREET LIGHTING SYSTEM, IF THE SERVICE ENCLOSURE WILL BE USED FOR A 3-WIRE STREET LIGHTING SYSTEM, THEN THE LIGHTING BREAKERS SHALL CONSIST OF 2-POLE BREAKERS WITH INTERNAL COMMON TRIP, EACH POLE WITH INDIVIDUAL ON-OFF CONTROL AND HANDLE TIE FOR COMMON OPERATION. FOR EACH 2-POLE BREAKER, THE CIRCUIT LOAD SHALL BE EQUALLY DIVIDED ACROSS THE LIGHTING MAIN.
- SEE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.



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REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

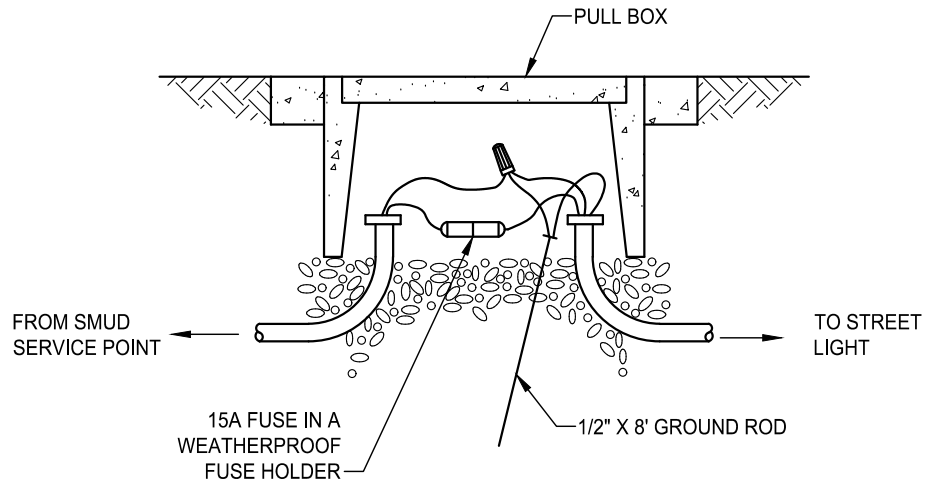
**UNMETERED SERVICE ENCLOSURE (CAN)
WITH STEP DOWN TRANSFORMER
(277/480V TO 120/240V)**

APPROVED BY:
Robert Murdoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 11



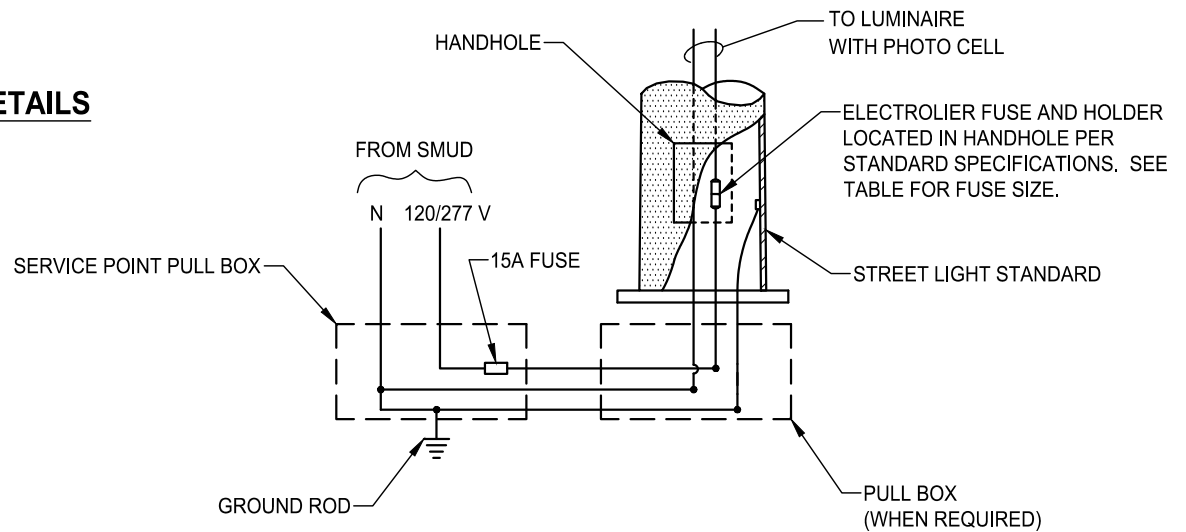


SERVICE POINT PULL BOX DETAILS

LAMP WATTAGE	ELECTROLIER FUSE SIZE
200 WATT OR LESS	6 AMP
250 WATT-400 WATT	10 AMP

NOTES:

1. FUSE SHALL BE A MIDGET FERRULE TYPE, RATED AT 600 VOLTS.
2. ATTACH GROUND CONDUCTOR TO THE ELECTROLIER.
3. ALL PULL BOXES SHALL HAVE PROVISIONS FOR LOCKING.



WIRING DIAGRAM

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

IN-LINE FUSE REQUIREMENTS

APPROVED BY:

Paul Mudoch

CITY ENGINEER

10/24/2018

DATE



DRAWING NUMBER

SL - 12

TYPICAL VOLTAGE DROP CALCULATION FOR 2 - WIRE SYSTEM

VOLTAGE DROP (COPPER CONDUCTOR) = $\frac{D \times A \times N \times 22}{\text{CIRCULAR MILS}}$

D = Length of section, in feet.

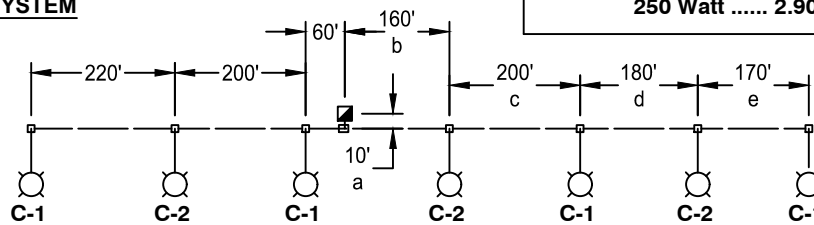
A = Line operating amperes drawn by one light.

N = Number of lights in the circuit beyond the section.

WIRE SIZE (AWG)	AREA (Circular Mils)
14	4,110
12	6,530
10	10,380
8	16,510
6	26,250
4	41,740

LINE OPERATING AMPERES FOR HIGH PRESSURE SODIUM LUMINAIRES (AT 115 VOLTS)
100 Watt 1.10 Amps ENERGY EFFICIENT
100 Watt 1.25 Amps
150 Watt 1.80 Amps
200 Watt 2.35 Amps
250 Watt 2.90 Amps

TYPICAL MULTIPLE STREET LIGHTING SYSTEM



EXAMPLE CALCULATION:

FIND TOTAL VOLTAGE DROP IN CIRCUIT #1:
(115 volt system)

NOTE:

Dimension "a" is the distance between the service can and the adjacent load pull box. Use "a"=10' for standard installations where the load pull box is immediately adjacent to the service can.

LEGEND



250W High Pressure Sodium Luminaire

Circuit #1

Service Can

Conduit with #10 AWG Conductors

Voltage drop calculations

Section a = $\frac{10 (2.9 \times 4) (22)}{10,380} = 0.25$

Section b + c = $\frac{360 (2.9 \times 2) (22)}{10,380} = 4.43$

Section d + e = $\frac{350 (2.9 \times 1) (22)}{10,380} = 2.15$

TOTAL VOLTAGE DROP = 6.83

NOTES:

1. Design must be based on a two (2) wire system, even though three (3) wires (with a single common wire) are actually used.
2. Maximum voltage drop allowed in 115 volt system = 8.05 volts.

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CITY OF ELK GROVE - PUBLIC WORKS

**2 - WIRE STREET LIGHT SYSTEM
WIRE SIZE AND VOLTAGE DROP
CALCULATION**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 13

TYPICAL VOLTAGE DROP CALCULATION FOR 3 - WIRE SYSTEM

VOLTAGE DROP (COPPER CONDUCTOR) = $\frac{D \times A \times N \times 22}{\text{CIRCULAR MILS}}$

D = Length of section, in feet.

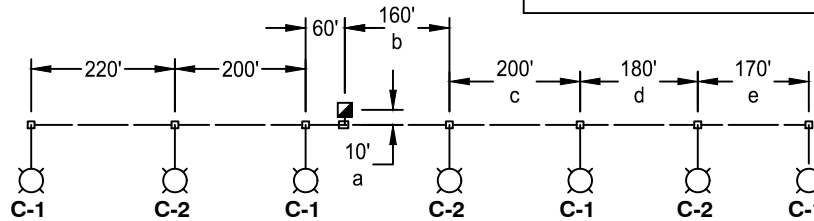
A = Line operating amperes drawn by one light.

N = Number of lights in the circuit beyond the section.

WIRE SIZE (AWG)	AREA (Circular Mils)
14	4,110
12	6,530
10	10,380
8	16,510
6	26,250
4	41,740

LINE OPERATING AMPERES FOR HIGH PRESSURE SODIUM LUMINAIRES (AT 115 VOLTS)
100 Watt 1.10 Amps ENERGY EFFICIENT
100 Watt 1.25 Amps
150 Watt 1.80 Amps
200 Watt 2.35 Amps
250 Watt 2.90 Amps

TYPICAL MULTIPLE STREET LIGHTING SYSTEM



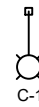
EXAMPLE CALCULATION:

FIND TOTAL VOLTAGE DROP IN CIRCUIT #1:
(115 volt system)

NOTE:

Dimension "a" is the distance between the service can and the adjacent load pull box. Use "a"=10' for standard installations where the load pull box is immediately adjacent to the service can.

LEGEND



250W High Pressure Sodium Luminaire

Circuit #1

Service Can

Conduit with #12 AWG Conductors

Voltage drop calculations

Section a = $\frac{10 (2.9 \times 4) (11)}{6,530} = 0.20$

Section b + c = $\frac{360 (2.9 \times 2) (11)}{6,530} = 3.52$

Section d + e = $\frac{350 (2.9 \times 1) (11)}{6,530} = 1.71$

TOTAL VOLTAGE DROP = 5.43

NOTE:

Maximum voltage drop allowed in 115 volt system = 6.90 volts.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

3 - WIRE STREET LIGHT SYSTEM
WIRE SIZE AND VOLTAGE DROP
CALCULATION

APPROVED BY:
Robert Murdoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 14

CONDUIT SIZING

CONDUCTOR	EQUIVALENT NUMBER OF #14 AWG CONDUCTORS FOR USE IN CONDUIT SIZING
#12 CONDUCTOR	1.2
#10 CONDUCTOR	1.5
#8 CONDUCTOR	2.3
#6 CONDUCTOR	3
#4 CONDUCTOR	4
#2 CONDUCTOR	5.3
#0 CONDUCTOR	11.5
INTERCONNECT CABLE	18
DETECTOR LEAD-IN CABLE	2.5
EMERGENCY VEHICLE DETECTOR CABLE	2

CONDUIT SIZE	2"	2.5"	3"	3.5"	4"
MAXIMUM NUMBER OF #14 AWG CONDUCTORS	31	44	69	91	113

NOTE: MINIMUM SIZE FOR NEW CONDUITS IS 2.0".

SERVICE WIRE MAXIMUM LENGTHS FOR TRAFFIC SIGNALS

CIRCUIT BREAKER SIZING

CONDUCTOR SIZE (AWG)	MAXIMUM CIRCUIT BREAKER AMPERAGE
#2	100
#4	80
#6	50
#8	40
#10	30

WIRE SIZE	LENGTH
#0	576'
#2	360'
#4	224'

NOTE:
THE BREAKER SIZE SHALL BE DETERMINED BY THE LOAD REQUIREMENTS. MINIMUM BREAKER SIZE IS 30 AMPS.

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CITY OF ELK GROVE - PUBLIC WORKS

CONDUIT, SERVICE WIRE AND BREAKER SIZING

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER 10/24/2018
DATE

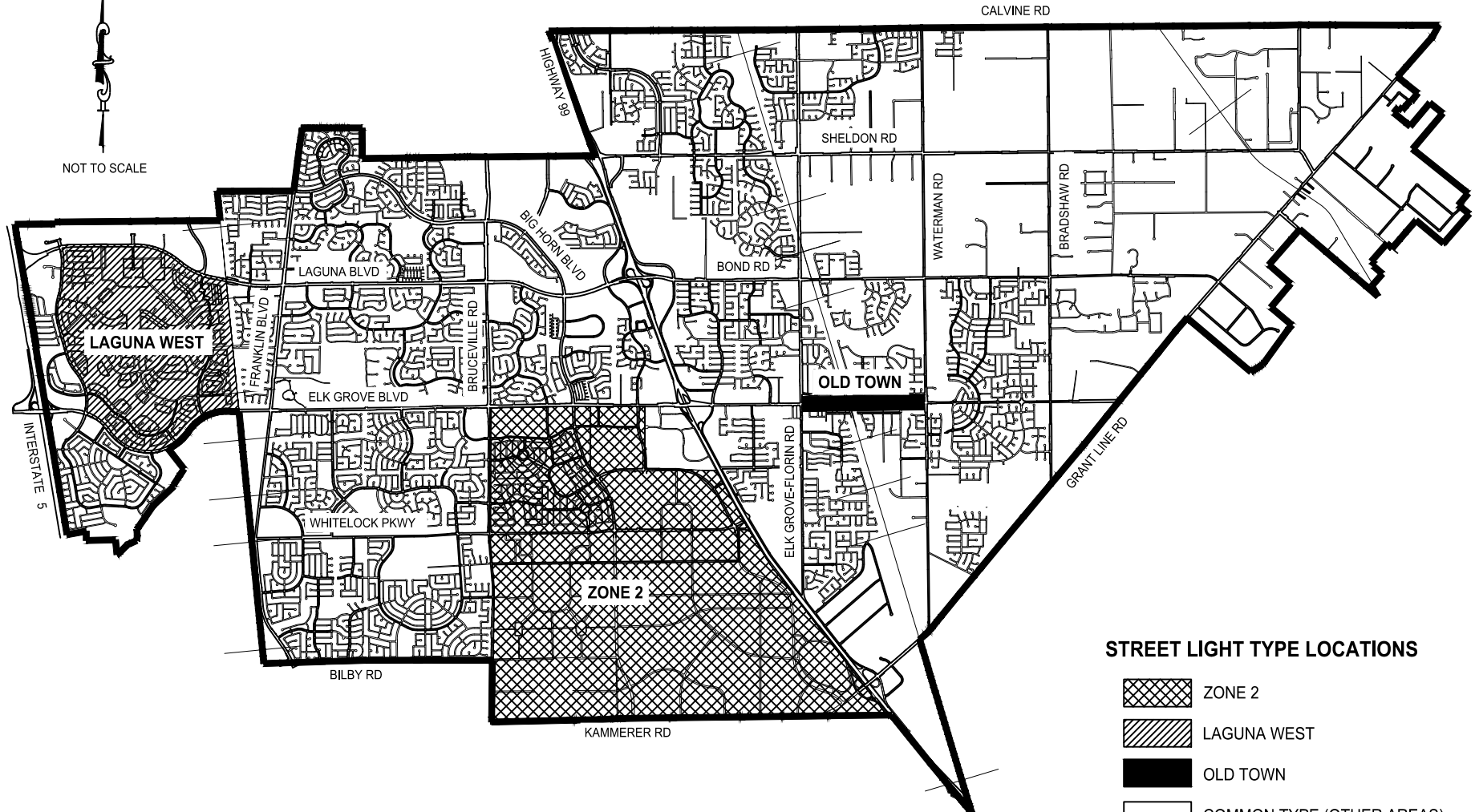


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

SL - 15



NOT TO SCALE



STREET LIGHT TYPE LOCATIONS

-  ZONE 2
-  LAGUNA WEST
-  OLD TOWN
-  COMMON TYPE (OTHER AREAS)

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

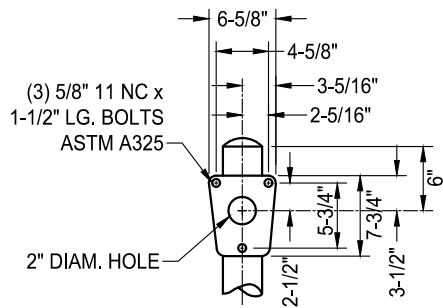
APPROVED BY:

 CITY ENGINEER 10/24/2018
DATE

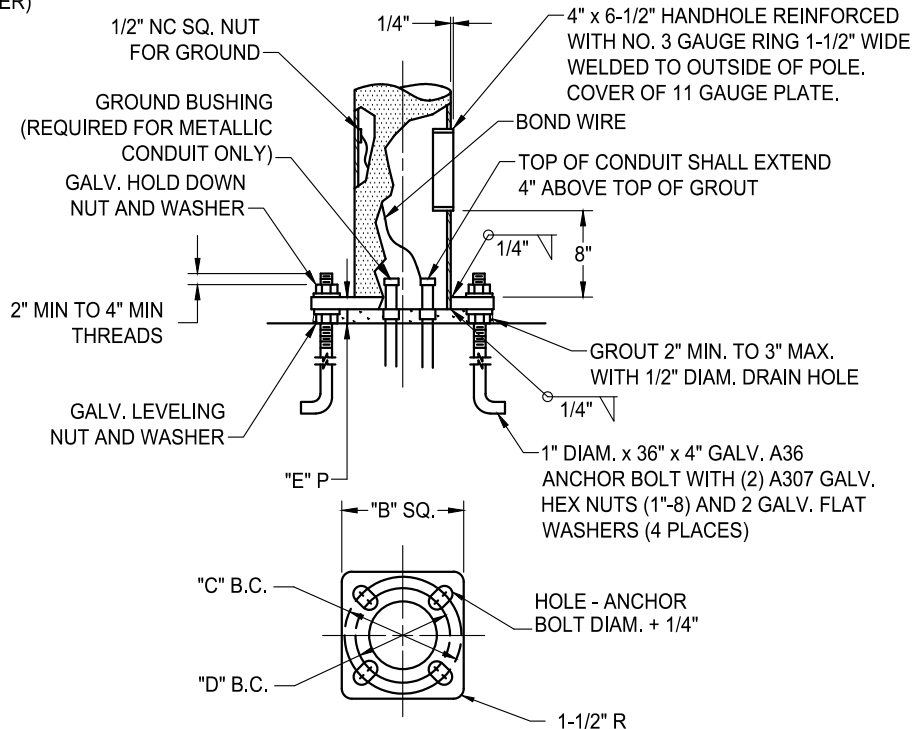
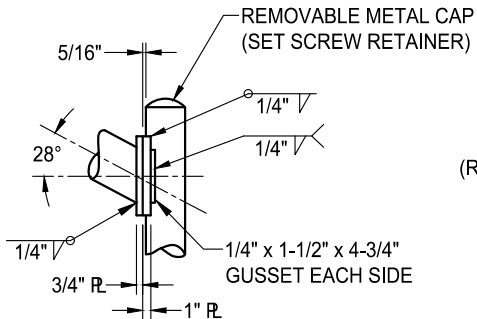
STREET LIGHT AREAS



DRAWING NUMBER
SL - 19



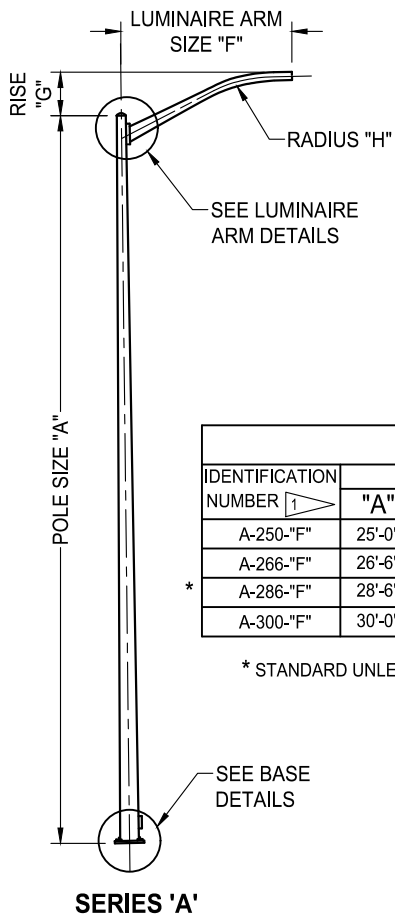
LUMINAIRE ARM DETAILS



BASE DETAILS

NOTES:

- SERIES 'A' NUMBERING PROCEDURE
 POLE SIZE 'A' → A-286-8
 SERIES → LUMINAIRE ARM SIZE 'F'
 (STANDARD UNLESS OTHERWISE SPECIFIED)
- STANDARD SHALL BE INSTALLED SO HANDHOLE FACES THE STREET.



FOUNDATION DIMENSIONS		
	SQUARE	ROUND
SERIES 'A'	2'6" x 2'6" x 5'	2'6" x 5'

LUMINAIRE ARM DATA						
"F"	END OD	BASE OD	GA	"G"	"H"	
6'-0"	2-3/8"	3-3/8"	10	1'-6"	7'-5"	
* 8'-0"	2-3/8"	3-11/16"	10	2'-3"	7'-5"	
10'-0"	2-3/8"	3-7/8"	10	2'-6"	13'-3"	
12'-0"	2-3/8"	4-5/16"	10	3'-9"	13'-3"	
15'-0"	2-3/8"	4-3/4"	10	4'-3"	13'-3"	
18'-0"	2-3/8"	4-3/4"	10	5'-3"	13'-3"	

'A' SERIES									
IDENTIFICATION NUMBER	POLE DATA				BASE PLATE DATA				ANCHOR BOLTS
	"A"	TOP OD	BASE OD	GA	"B"	"C"	"D"	"E"	
A-250-"F"	25'-0"	3-7/8"	7-5/16"	10	12"	11-1/2"	11"	1"	1" x 36" x 4"
A-266-"F"	26'-6"	3-7/8"	7-1/2"	10	12"	11-1/2"	11"	1"	1" x 36" x 4"
* A-286-"F"	28'-6"	3-7/8"	7-3/4"	10	12"	11-1/2"	11"	1"	1" x 36" x 4"
A-300-"F"	30'-0"	3-7/8"	8"	10	12"	11-1/2"	11"	1"	1" x 36" x 4"

* STANDARD UNLESS OTHERWISE SPECIFIED

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

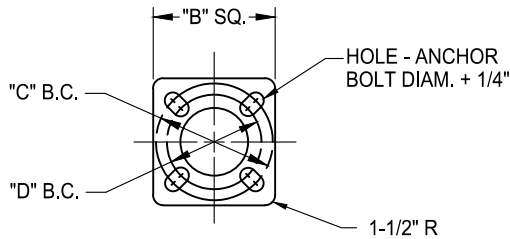
COMMON TYPE ELECTROLIER (SERIES 'A')

APPROVED BY: *Paul M. M... 10/24/2018*
 CITY ENGINEER DATE



DRAWING NUMBER

SL - 20



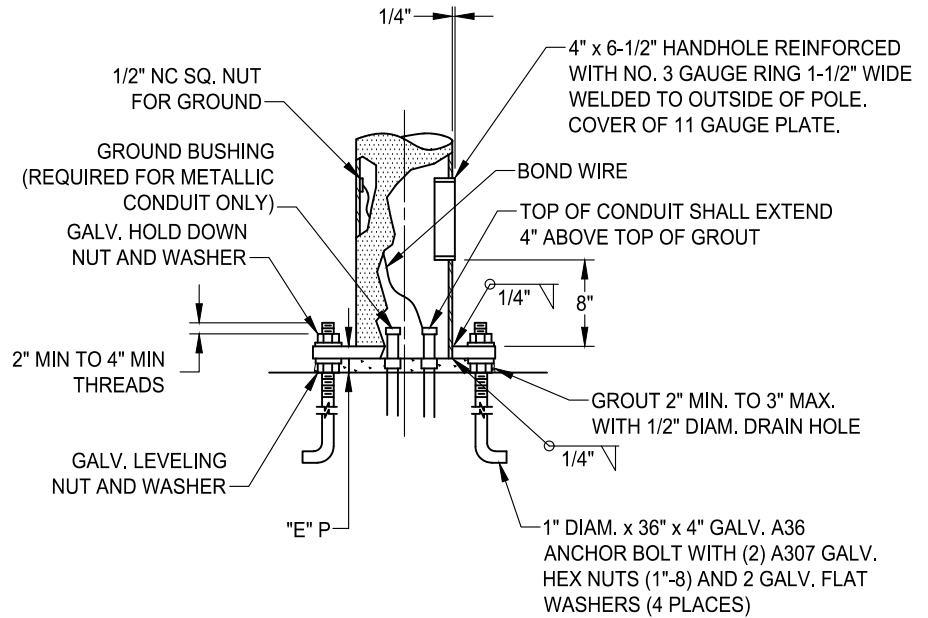
BASE DETAILS



SERIES 'B'

SEE BASE
DETAIL

FOUNDATION DIMENSIONS		
	SQUARE	ROUND
SERIES 'B'	2' x 2' x 4'	2'6" x 3'6" or 2' x 4'



'B' SERIES									
POLE DATA					BASE PLATE DATA				ANCHOR BOLTS
"A"	TOP OD	BASE OD		GAUGE	"B"	"C"	"D"	"E"	
		MIN	MAX						
20'-0"	2-7/8"	5.61"	5.85"	10	10"	9-1/2"	9"	1"	1" x 36" x 4"

NOTES:

- STANDARD SHALL BE INSTALLED SO HANDHOLE FACES THE STREET.
- FOR USE IN ALL IN-FILL PROJECTS EAST OF HIGHWAY 99 OR NORTH OF ELK GROVE BLVD AND WEST OF HIGHWAY 99.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**COMMON TYPE ELECTROLIER
(SERIES 'B')**

APPROVED BY:
Paul Mudoch
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER

SL - 22

STREET CLASSIFICATION	RIGHT - OF - WAY WIDTH	STREET LIGHT SUB-TYPE (SERIES)	STANDARD MOUNTING HEIGHT	MAXIMUM SPACING** (ONE SIDE ONLY)
SPECIAL THOROUGHFARE	130'	A	30' - 9"	180'
THOROUGHFARE	108'	A	30' - 9"	220'
ARTERIAL	84'	A	30' - 9"	220'
				MAXIMUM SPACING** (TWO-SIDES)
MAJOR COLLECTOR	74'	A*	30' - 9"	220'
	70'	A*	30' - 9"	220'
COLLECTOR	60'	A*	30' - 9"	220'
	56'	B	21'	180'
RESIDENTIAL	50'	B	21'	200'
	40'	B	21'	240'

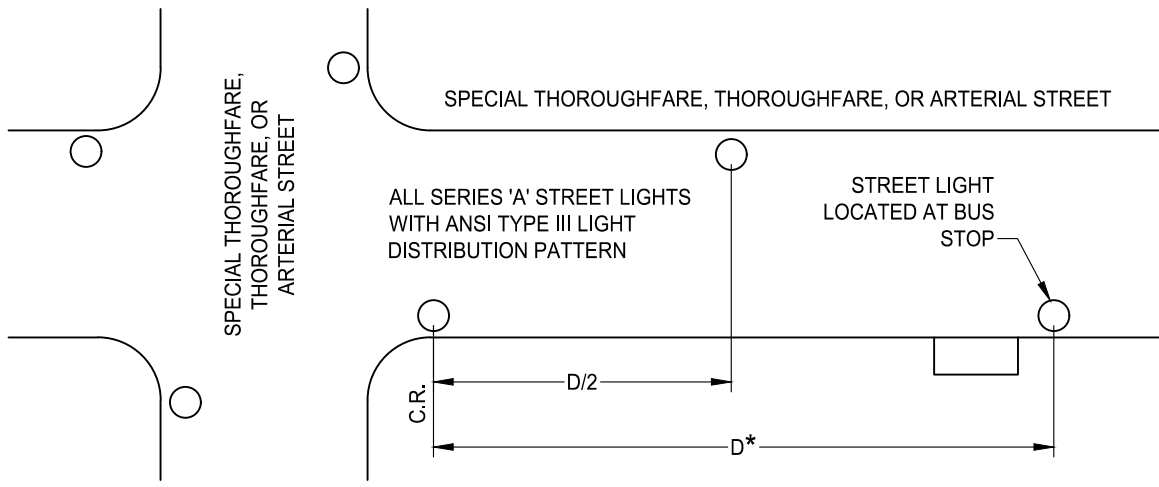
NOTES:

1. WATTAGE AND MODEL NUMBER FOR LIGHT EMITTING DIODE (LED) LAMP SHALL BE SPECIFIED ON THE PLANS. EQUIPMENT SHALL CONFORM TO CITY OF ELK GROVE APPROVED EQUIPMENT LIST.
2. ILLUMINATION SHALL CONFORM TO STANDARD DRAWING SL-2.
3. SEE SECTION 5-7D, "SPACING," FOR DEFINITIONS OF ONE-SIDE AND TWO-SIDE SPACING.
- *4. SINGLE FAMILY AND DUPLEX FAMILY ZONING SHALL USE SERIES 'B' STREET LIGHT, 21' MOUNTING HEIGHT,, AND 180' SPACING.
- **5. MAXIMUM SPACING MAY BE ADJUSTED AS LONG AS ILLUMINATION CRITERIA ARE MET WITH APPROVAL OF THE ENGINEER.

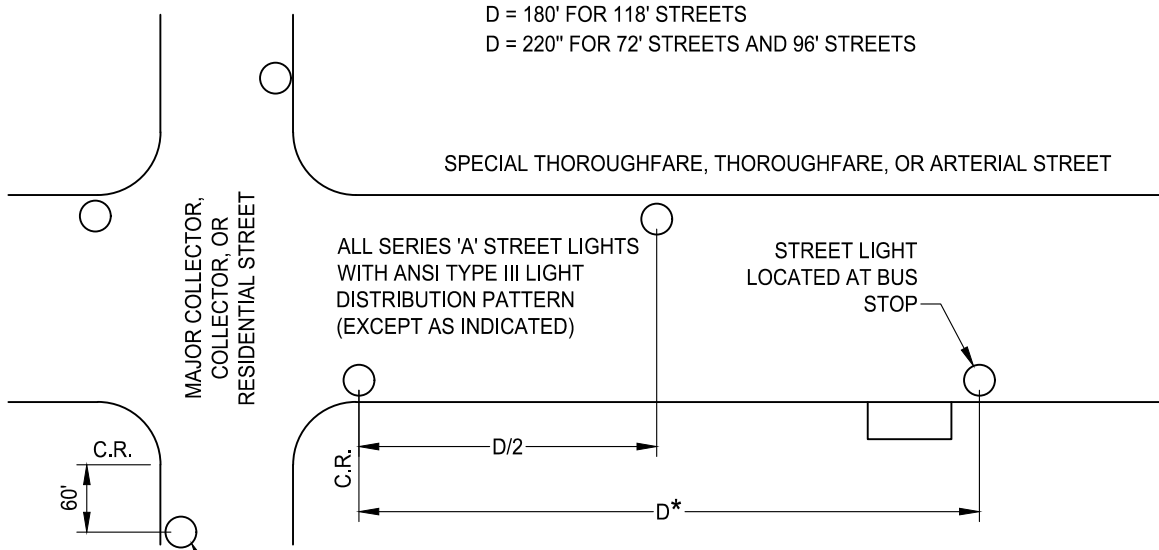
DATE: 09/22/2007		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Robert M. M... ..</i> CITY ENGINEER		10/24/2018 DATE	
REVISION	BY	APPROVED	DATE	COMMON TYPE STREET LIGHT POLE SPACING GUIDE (SERIES 'A'/ SERIES 'B')				DRAWING NUMBER	
								SL - 24	



STREET LIGHT PLACEMENT ON SPECIAL THOROUGHFARE, THOROUGHFARE, AND ARTERIAL STREETS (118', 96', AND 84' STREETS)



*SEE STANDARD DRAWING SL-24
 D = 180' FOR 118' STREETS
 D = 220' FOR 72' STREETS AND 96' STREETS




IN ACCORDANCE WITH STREET CLASSIFICATION, SERIES 'A' OR SERIES 'B' STREET LIGHT WITH ANSI TYPE III LIGHT DISTRIBUTION PATTERN. SEE STANDARD DRAWINGS SL-2 AND SL-24


DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

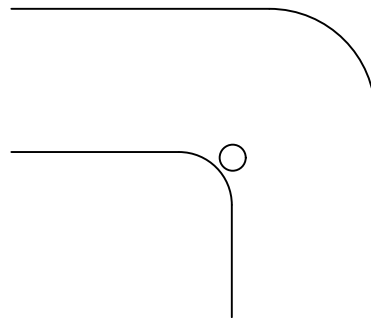
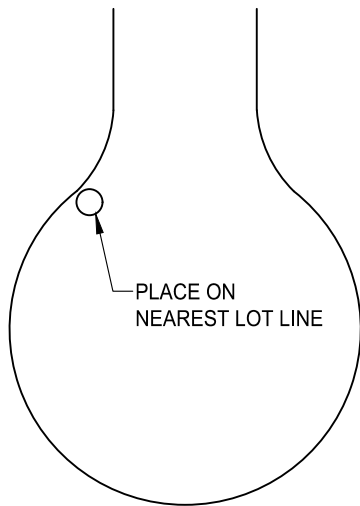
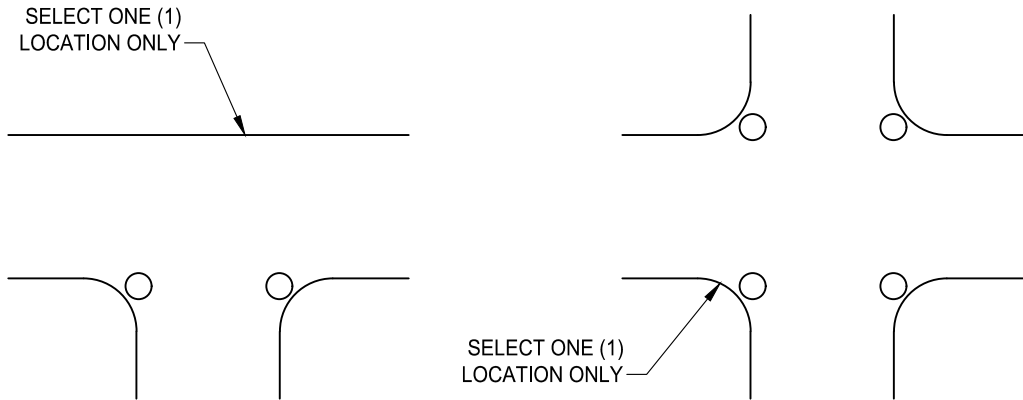
**COMMON TYPE TYPICAL LOCATIONS
ARTERIAL STREETS
(SERIES 'A'/ SERIES 'B')**

APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
SL - 25



**STREET LIGHT PLACEMENT
ON MAJOR COLLECTOR,
COLLECTOR, AND RESIDENTIAL STREETS
(ALL STREETS OTHER THAN 118', 96' AND 72' STREETS)**



NOTE:

IN ACCORDANCE WITH STREET CLASSIFICATIONS, ALL ARE SERIES 'A' OR SERIES 'B' STREET LIGHTS WITH ANSI TYPE III LIGHT DISTRIBUTIONS PATTERN. SEE STANDARD DRAWINGS SL-2 AND SL-24

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

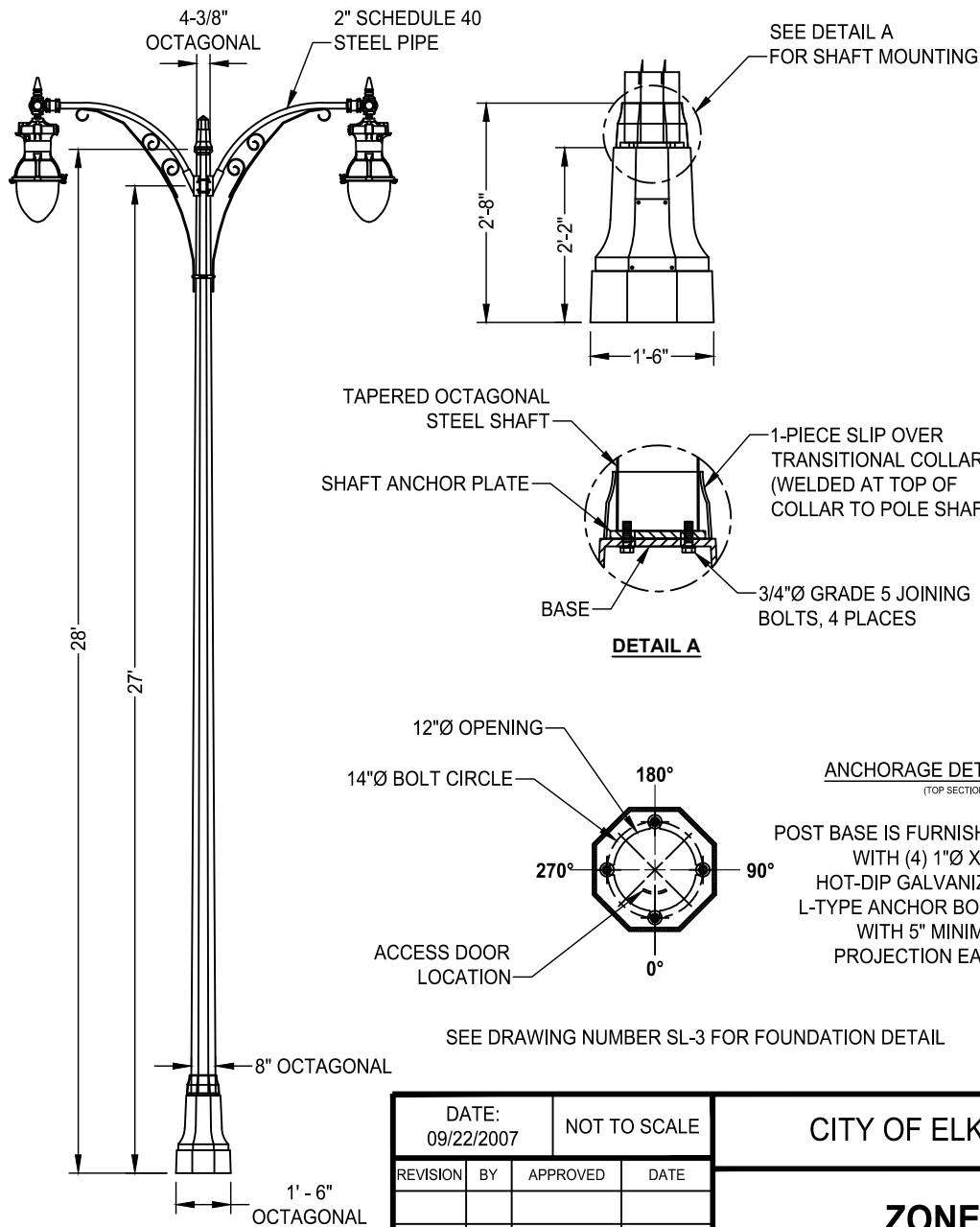
**COMMON TYPE TYPICAL LOCATIONS
COLLECTOR AND RESIDENTIAL STREETS
(SERIES 'A' / SERIES 'B')**

APPROVED BY:
Robert Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 26





APPLICATION

WIDE MEDIANS ON ARTERIALS AND THOROUGHFARES

SPECIFICATIONS

POST BASE

THE BASE SHALL BE CAST IRON CONSTRUCTION WITH A TAPERED AND STEPPED OCTAGONAL PATTERN. A 1-PIECE SLIP OVER TRANSITION COLLAR COVERS THE BASE OF THE SHAFT. A DOOR IS LOCATED IN THE BASE FOR ANCHORAGE AND WIRING ACCESS. A GROUND SCREW (5/8") SHALL BE PROVIDED INSIDE THE BASE, OPPOSITE THE ACCESS DOOR.

POST SHAFT

THE POST SHAFT SHALL BE 11-GAUGE STEEL WITH A STEEL PLATE FOR MOUNTING TO THE BASE. THE OCTAGONAL SHAFT TAPERS FROM 8" (FLAT TO FLAT) AT THE BOTTOM TO 4-3/8" AT THE TOP, WITH A DECORATIVE OCTAGONAL FINIAL.

CROSSARM

THE CLAMP ON CROSSARM SHALL BE STEEL PIPE CONSTRUCTION WITH FLAT BAR SCROLLS AND 1-1/2" X 1/2" FLAT BAR CLAMP-ON BRACE. A SLEEVE GASKET SHALL BE INSTALLED TO PREVENT ARM MOVEMENT. ARMS SHALL HAVE A 2" PIPE SLEEVE FOR LUMINAIRE MOUNTING. THE CROSSARM MEASURES 52" FROM POST TO LUMINAIRE CENTERS. A LUMINAIRE LEVELING FITTER SHALL BE MOUNTED TO THE END OF THE PIPE ARM FOR LUMINAIRE MOUNTING.

FINISH

THE POST SHALL BE SHIPPED FINISHED WITH A STANDARD BLACK POWDER COAT FINISH.

NOTE

ALL HARDWARE STAINLESS STEEL. ALL EXTERIOR HARDWARE TAMPER RESISTANT. BASE AND SHAFT TO BE SHIPPED AS A ONE-PIECE UNIT.

POLES AND LIGHTING EQUIPMENT SHALL CONFORM TO CITY OF ELK GROVE APPROVED EQUIPMENT LIST

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**ZONE 2 ELECTROLIER
(DUAL ARM)**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

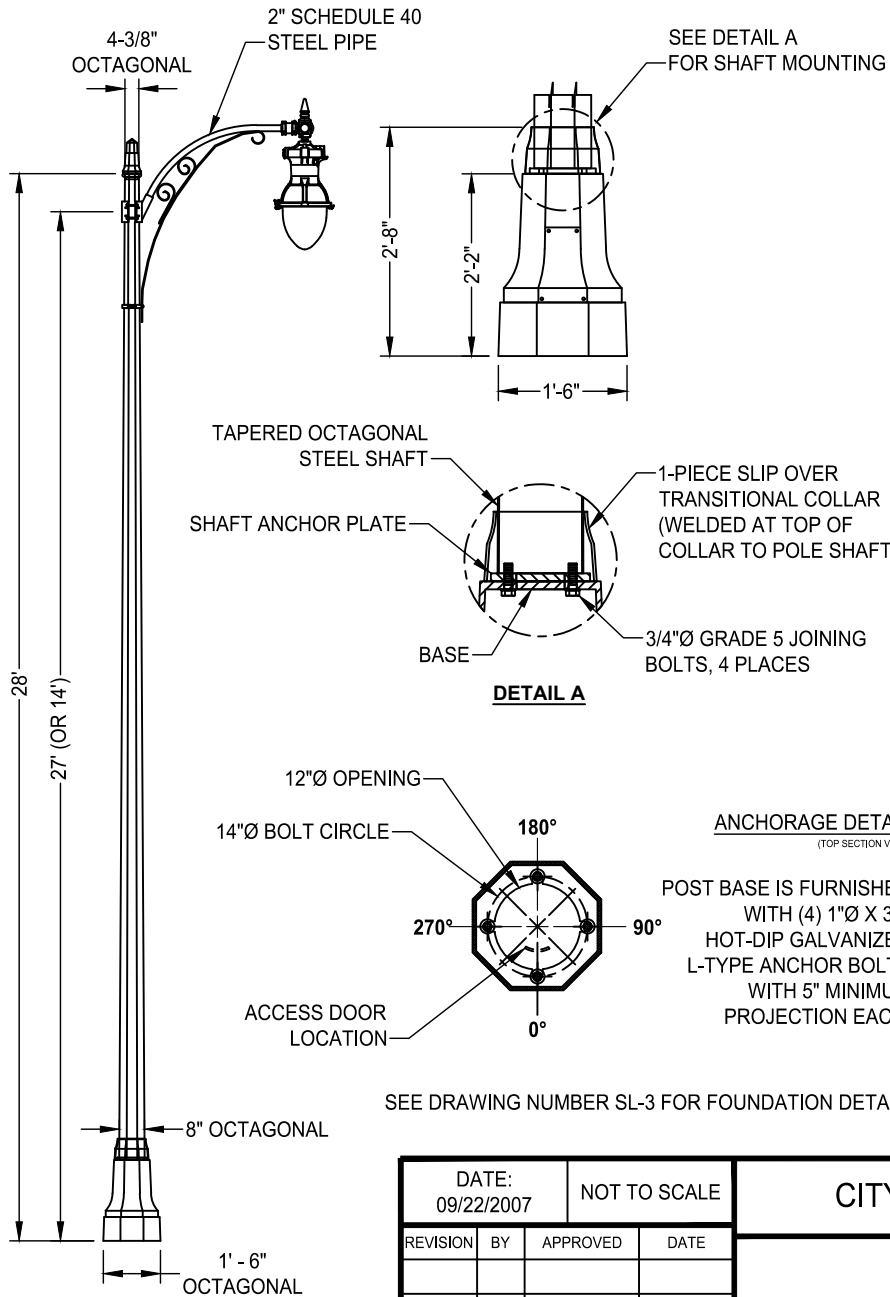
10/24/2018

DATE



DRAWING NUMBER

SL - 30



APPLICATION

ARTERIAL (REDUCED MEDIUM) AND COLLECTOR STREETS

SPECIFICATIONS

POST BASE

THE BASE SHALL BE CAST IRON CONSTRUCTION WITH A TAPERED AND STEPPED OCTAGONAL PATTERN. A 1-PIECE SLIP OVER TRANSITION COLLAR COVERS THE BASE OF THE SHAFT. A DOOR IS LOCATED IN THE BASE FOR ANCHORAGE AND WIRING ACCESS. A GROUND SCREW (5/8") SHALL BE PROVIDED INSIDE THE BASE, OPPOSITE THE ACCESS DOOR.

POST SHAFT

THE POST SHAFT SHALL BE 11-GAUGE STEEL WITH A STEEL PLATE FOR MOUNTING TO THE BASE. THE OCTAGONAL SHAFT TAPERS FROM 8" (FLAT TO FLAT) AT THE BOTTOM TO 4-3/8" AT THE TOP, WITH A DECORATIVE OCTAGONAL FINIAL.

CROSSARM

THE CLAMP ON CROSSARM SHALL BE STEEL PIPE CONSTRUCTION WITH FLAT BAR SCROLLS AND 1-1/2" X 1/2" FLAT BAR CLAMP-ON BRACE. A SLEEVE GASKET SHALL BE INSTALLED TO PREVENT ARM MOVEMENT. ARMS SHALL HAVE A 2" PIPE SLEEVE FOR LUMINAIRE MOUNTING. THE CROSSARM MEASURES 52" FROM POST TO LUMINAIRE CENTERS. A LUMINAIRE LEVELING FITTER SHALL BE MOUNTED TO THE END OF THE PIPE ARM FOR LUMINAIRE MOUNTING.

FINISH

THE POST SHALL BE SHIPPED FINISHED WITH A STANDARD BLACK POWDER COAT FINISH.

NOTE

ALL HARDWARE STAINLESS STEEL. ALL EXTERIOR HARDWARE TAMPER RESISTANT. BASE AND SHAFT TO BE SHIPPED AS A ONE-PIECE UNIT.

POLES AND LIGHTING EQUIPMENT SHALL CONFORM TO CITY OF ELK GROVE APPROVED EQUIPMENT LIST.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul M. Muddoch

10/24/2018

CITY ENGINEER

DATE

**ZONE 2 ELECTROLIER
(SERIES 'A')**



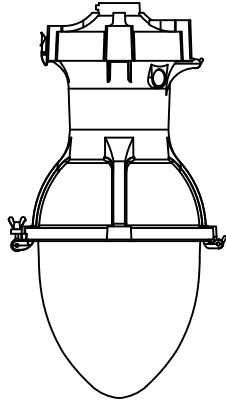
DRAWING NUMBER

SL - 31

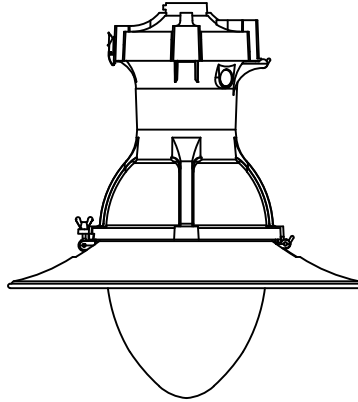
TEARDROP GLASS

ASYMMETRIC

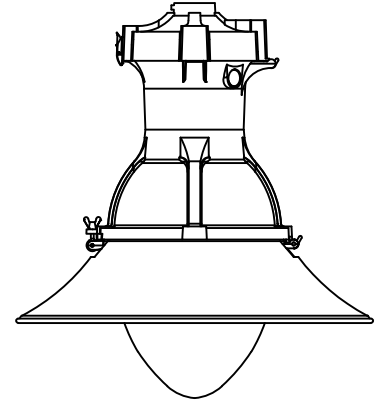
STANDARD



SHALLOW SKIRT*

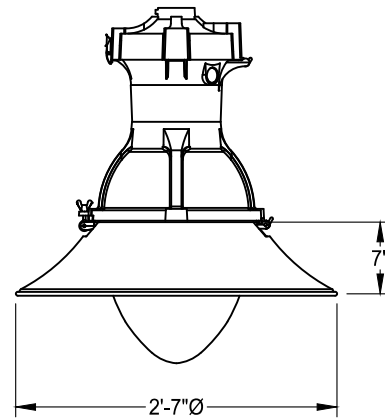
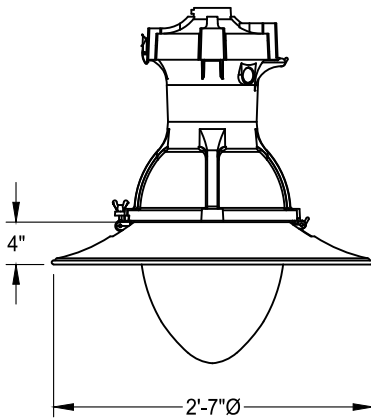


DEEP SKIRT*



*OPTIONAL UPON WRITTEN APPROVAL OF PLANNING DIRECTOR AND CITY ENGINEER

SKIRT DIMENSIONS (OPTIONAL)



DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

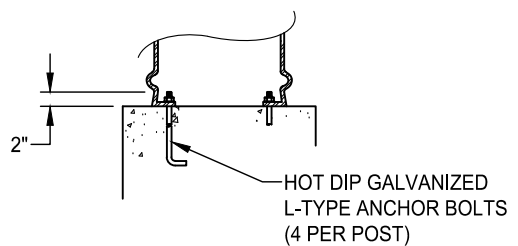
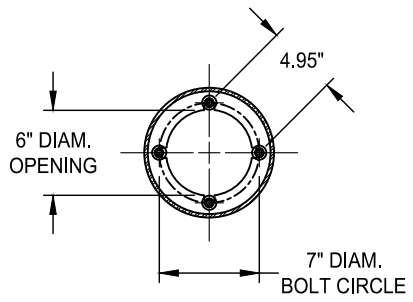
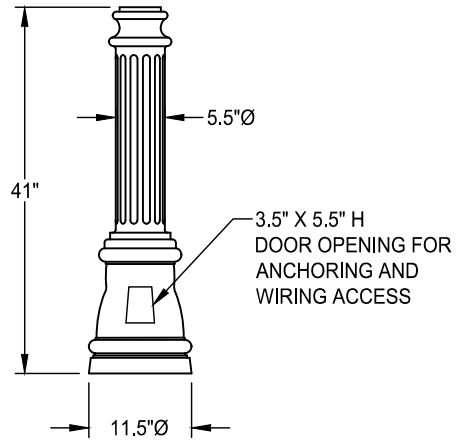
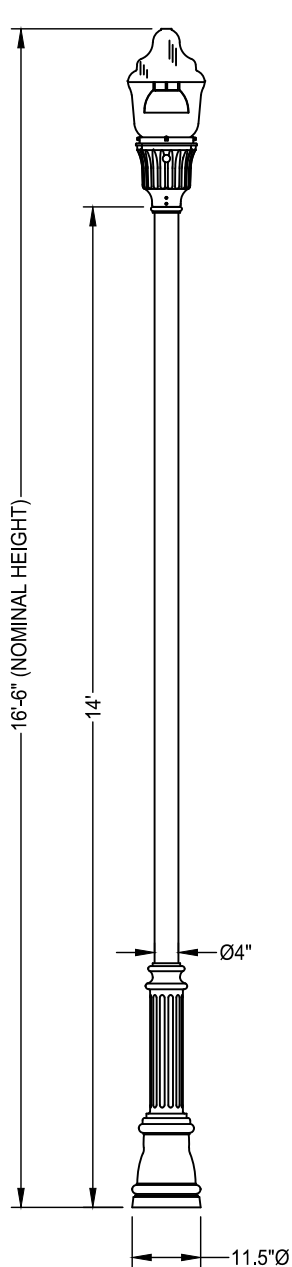
**ZONE 2 LUMINAIRE OPTIONS
(SERIES 'A')**

APPROVED BY:
Paul Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 33





SEE DRAWING NUMBER SL-3 FOR FOUNDATION DETAIL

APPLICATION

PEDESTRIAN TRAILS AND RESIDENTIAL STREETS

SPECIFICATIONS

POST DESCRIPTION

THE LIGHTING POST SHALL BE ALL ALUMINUM, ONE-PIECE CONSTRUCTION, WITH A CLASSIC FLUTED BASE DESIGN. THE SHAFT SHALL BE Ø4" SMOOTH. THE POST SHALL BE SHIPPED WITH BLACK POWDER COAT FINISH.

MATERIALS

THE BASE SHALL BE HEAVY WALL, CAST ALUMINUM PRODUCED FROM CERTIFIED ASTM 356.1 INGOT PER ASTM B-179-95A OR ASTM B26-95. THE STRAIGHT SHAFTS SHALL BE EXTRUDED FROM ALUMINUM, ASTM 6061 ALLOY, HEAT TREATED TO A T6 TEMPER. ALL HARDWARE SHALL BE TAMPER RESISTANT STAINLESS STEEL. ANCHOR BOLTS TO BE COMPLETELY HOT DIP GALVANIZED.

CONSTRUCTION

THE SHAFT SHALL BE DOUBLE WELDED TO THE BASE CASTING AND SHIPPED AS ONE PIECE FOR MAXIMUM STRUCTURAL INTEGRITY. THE SHAFT SHALL BE CIRCUMFERENTIALLY WELDED INSIDE THE BASE CASTING AT THE TOP OF THE ACCESS DOOR, AND EXTERNALLY WHERE THE SHAFT EXITS THE BASE. ALL EXPOSED WELDS BELOW 8' SHALL BE GROUND SMOOTH. ALL WELDING SHALL BE PER ANSI/AWS D1.2-90. ALL WELDERS SHALL BE CERTIFIED PER SECTION 5 OF ANSI/AWS D1.2-90.

DIMENSIONS

THE POST SHALL BE 14' IN HEIGHT WITH AN 11-1/2" DIAMETER BASE. THE SHAFT DIAMETER SHALL BE 4". AT THE TOP OF THE POST, AN INTEGRAL 3" O.D. TENON WITH A TRANSITIONAL DONUT SHALL BE PROVIDED FOR LUMINAIRE MOUNTING.

INSTALLATION

THE POST SHALL BE PROVIDED WITH FOUR, HOT DIP GALVANIZED L-TYPE ANCHOR BOLTS TO BE INSTALLED ON AN 7" DIAMETER BOLT CIRCLE. A DOOR SHALL BE PROVIDED IN THE BASE FOR ANCHORAGE AND WIRING ACCESS. A GROUNDING SCREW (5/8") SHALL BE PROVIDED INSIDE THE BASE OPPOSITE THE DOOR.

POLES AND LIGHTING EQUIPMENT SHALL CONFORM TO CITY OF ELK GROVE APPROVED EQUIPMENT LIST.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**ZONE 2 ELECTROLIER
(SERIES 'B')**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER
10/24/2018
DATE

DRAWING NUMBER
SL-34



STREET CLASSIFICATION	NUMBER OF LANE	STREET LIGHT SUB-TYPE (SERIES)	STANDARD POLE HEIGHT	MEDIAN	NO MEDIAN (SERIES 'A') (BOTH SIDES)
				MAXIMUM SPACING ("D") (FEET)	
SPECIAL THOROUGHFARE	8	DUAL ARM	28'	160	160
THOROUGHFARE	6	DUAL ARM	28'	160	160
ARTERIAL	2 - 4	DUAL ARM	28'	180	180
SPACING (BOTH SIDES) (FEET)					
COLLECTOR	2, 3	SERIES 'A'***	28'	180	
	2, 3	SERIES 'B'**	14'	150	
	2	SERIES 'A'***	28'	80	
	2	SERIES 'B'***	14'	80	
LOCAL RESIDENTIAL	2	SERIES 'B'	14'	180	
	2	SERIES 'A'	28'	180	
PASEO, BIKE TRAILS, AND SEPARATED PEDESTRIAN PATHS	-	SERIES 'B'	14'	120	
PEDESTRIAN PATHS ON 4 - 8 LANE STREETS	-	SERIES 'B'	14'	160 - 180***	

1. WATTAGE AND MODEL NUMBER FOR LIGHT EMITTING DIODE (LED) LAMP SHALL BE SPECIFIED ON THE PLANS. EQUIPMENT SHALL CONFORM TO CITY OF ELK GROVE APPROVED EQUIPMENT LIST.
2. ILLUMINATION SHALL CONFORM TO STANDARD DRAWING SL-2.

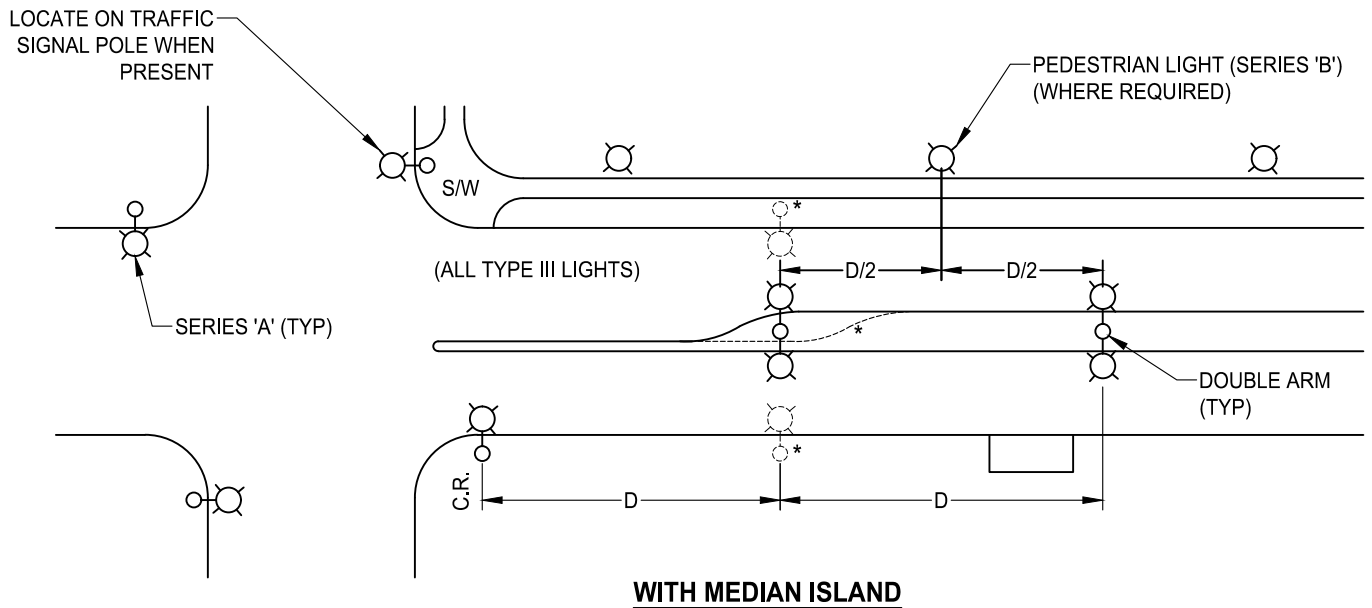
* BOTH SIDES OF STREET, NO ALTERNATING (2 PER LOCATION). NOT FOR USE ON STREETS LONGER THAN 800 FEET.

** SINGLE SIDE OF STREET, ALTERNATING SPACING.

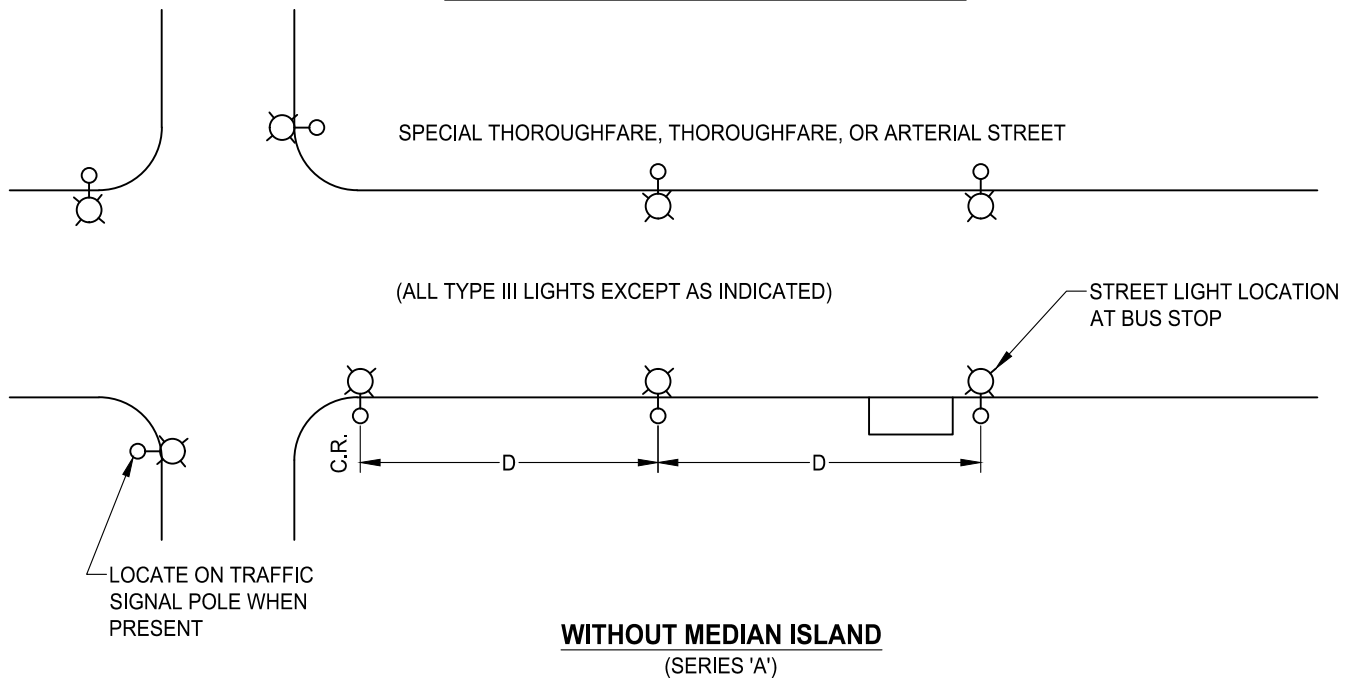
*** MATCH STREET SPACING. LOCATE HALFWAY BETWEEN STREET LIGHT LOCATIONS.

DATE: 09/22/2007		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: <i>Paul Muddoch</i>	
REVISION	BY	APPROVED	DATE			CITY ENGINEER	DATE
				ZONE 2 POLE SPACING GUIDE (SERIES 'A'/SERIES 'B'/DUAL ARM)		DRAWING NUMBER	
						SL - 36	
							

STREET LIGHT PLACEMENT ON SPECIAL THOROUGHFARE, THOROUGHFARE, & ARTERIAL STREETS (INCLUDES COLLECTORS WITH MEDIAN)



*SEE STANDARD DRAWING SL-36 FOR DISTANCE "D"



DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

**ZONE 2 TYPICAL LOCATIONS ARTERIALS
AND COLLECTORS WITH MEDIANS
(SERIES 'A' / SERIES 'B' / DUAL ARM)**

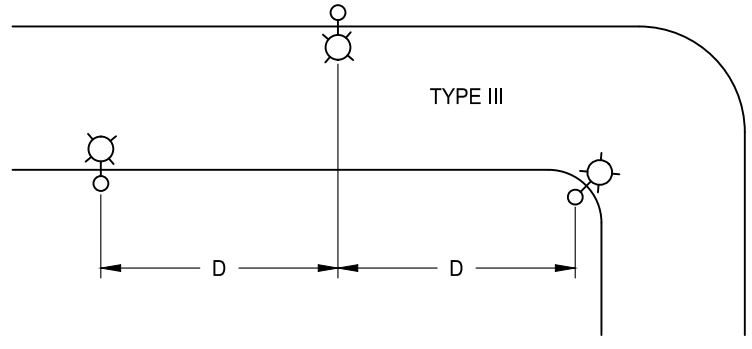
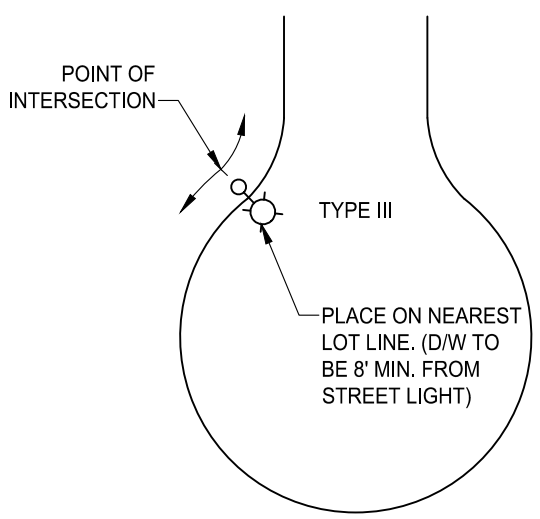
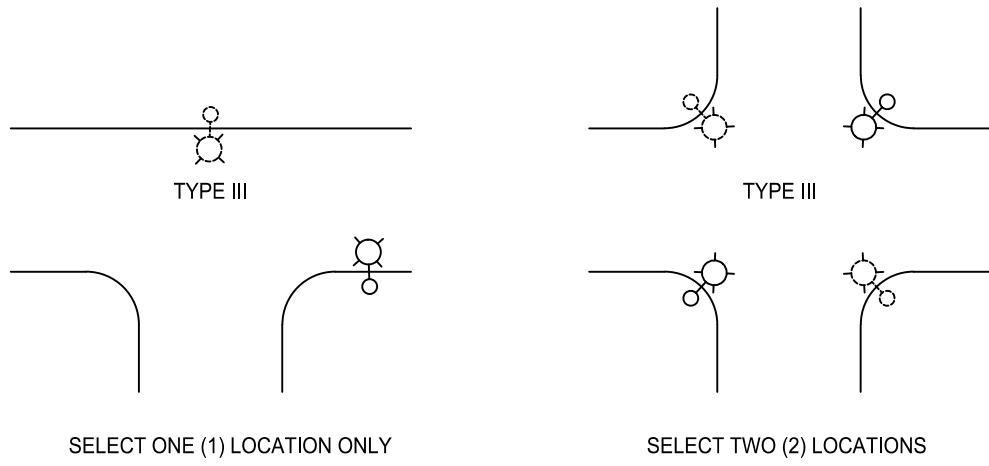
APPROVED BY:
Paul Mudoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 37



STREET LIGHT PLACEMENT ON MAJOR COLLECTOR, COLLECTOR (NO MEDIAN), & RESIDENTIAL STREETS



***SEE STANDARD DRAWING SL-36 FOR DISTANCE "D"**

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

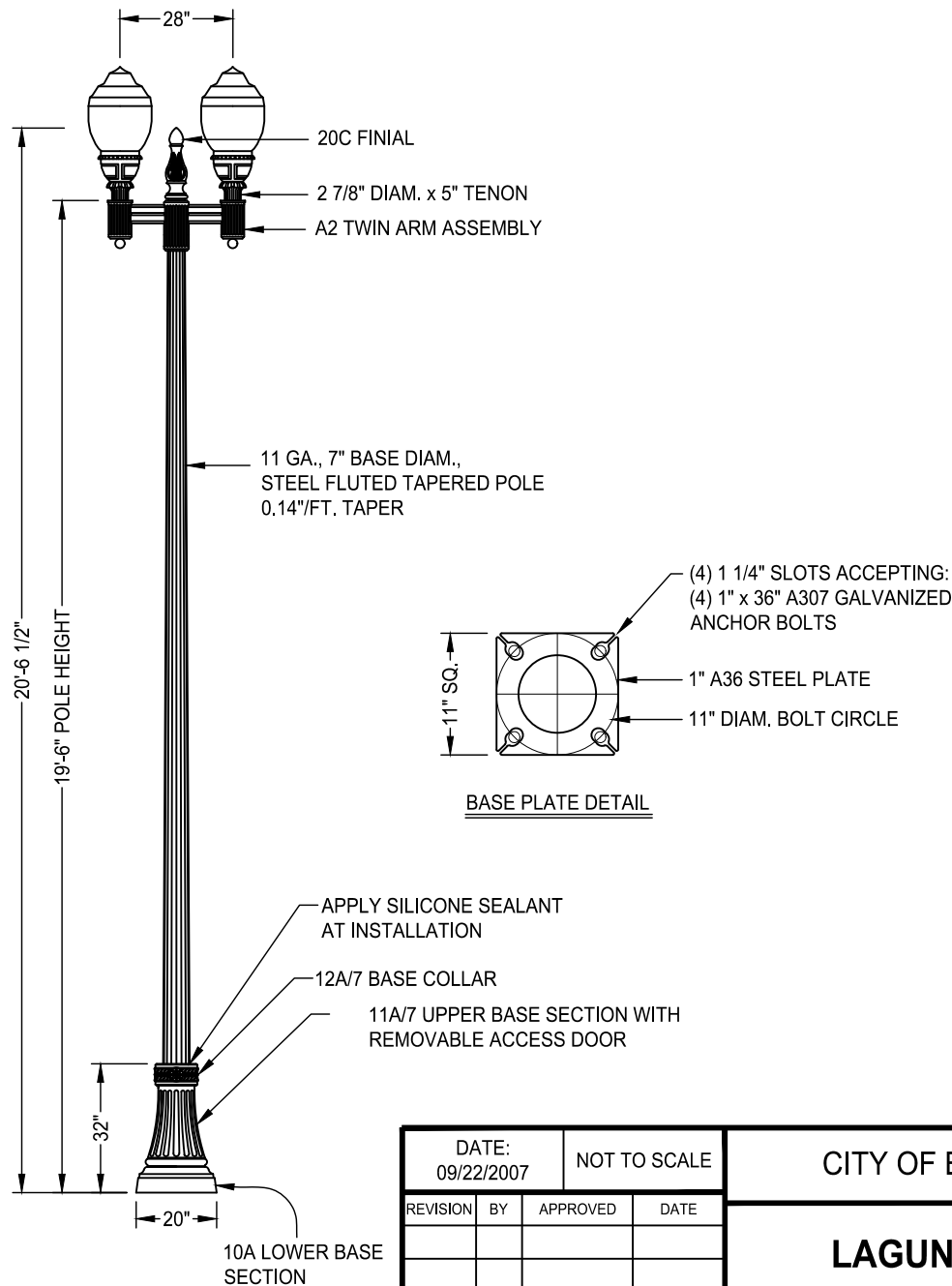
**ZONE 2 TYPICAL LOCATIONS
COLLECTOR AND RESIDENTIAL STREETS
(SERIES 'A' / SERIES 'B')**

APPROVED BY:
Paul Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SL - 38





APPLICATION

THOROUGHFARE AND ARTERIAL STREETS

SPECIFICATIONS

POST DESCRIPTION

THE LAGUNA WEST LIGHTING POST SHALL BE ALL STEEL OR CAST IRON CONSTRUCTION WITH A FLUTED BASE DESIGN. THE STEEL SHAFT SHALL BE FLUTED AND TAPERED WITH A 7" BASE DIAMETER. THE POST SHALL BE SHIPPED WITH FINISH NOTED BELOW.

MATERIALS

THE BASE SHALL BE CAST IRON AND SHAFT SHALL BE STEEL. THE BASE AND SHAFT SHALL BE PRIME PAINTED INSIDE AND OUT WITH A ZINC-RICH RUST INHIBITING, EPOXY BASED PAINT.

POLES INSTALLED ON OR NEAR LAGUNA BLVD (NORTH OF THE ELIOT RANCH ROAD ALIGNMENT) SHALL BE PAINTED OUTSIDE WITH URETHANE GLOSS ENAMEL OF FEDERAL COLOR STANDARD 595B, COLOR #14516 "AQUA MARINE". POLES INSTALLED ON OR NEAR ELK GROVE BLVD (SOUTH OF THE ELIOT RANCH ROAD ALIGNMENT) SHALL BE PAINTED OUTSIDE WITH URETHANE GLOSS ENAMEL OF FEDERAL COLOR STANDARD 595B, COLOR #17083 "GLOSS BLACK". ONE PINT OF TOUCH-UP PAINT SHALL BE SHIPPED WITH EACH POLE ORDER.

ALL POLES SHALL BE FINISHED WITH A CLEAR COAT OF URETHANE GLOSS FINISH. ANCHOR BOLTS AND NUTS SHALL BE HOT DIPPED GALVANIZED STEEL.

CONSTRUCTION

THE POLE SHAFT SHALL BE WELDED TO THE ANCHOR PLATE AND PAINTED AFTER WELDING. WELDS SHALL CONFORM TO THE MOST RECENT EDITION OF AWS D1.1. THE BASE SHALL BE FABRICATED OF ONE OR TWO PIECES AND INSTALLED AFTER THE POLE SHAFT IS BOLTED TO THE FOUNDATION. THE FINISH OF THE POLE SHAFT SHALL BE PROTECTED FROM DAMAGE WHEN THE BASE IS INSTALLED. POLE AND BASE SHALL BE SHIPPED AS TWO PIECES.

DIMENSIONS

THE POST SHALL BE 19' 6" IN HEIGHT WITH A 20" DIAMETER BASE. THE SHAFT SHALL BE TAPERED 0.14" PER FOOT WITH A 7" BASE DIAMETER. AT THE TOP OF THE POST, TWO INTEGRAL 2 7/8" X5" TENONS SHALL BE PROVIDED FOR LUMINAIRE MOUNTING.

INSTALLATION

THE POST SHALL BE PROVIDED WITH FOUR, HOT DIP GALVANIZED L-TYPE ANCHOR BOLTS TO BE INSTALLED AS SHOWN IN THE BASE PLATE DETAIL. AN ACCESS DOOR SHALL BE PROVIDED IN THE BASE FOR ANCHORAGE AND WIRING ACCESS. A GROUNDING SCREW (5/8") SHALL BE PROVIDED INSIDE THE BASE OPPOSITE THE DOOR.

PRODUCT

VISCO V1-A7-A2-F/19' 6", ELK GROVE

BASE PLATE DETAIL

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**LAGUNA WEST ELECTROLIER
(DUAL ARM)**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

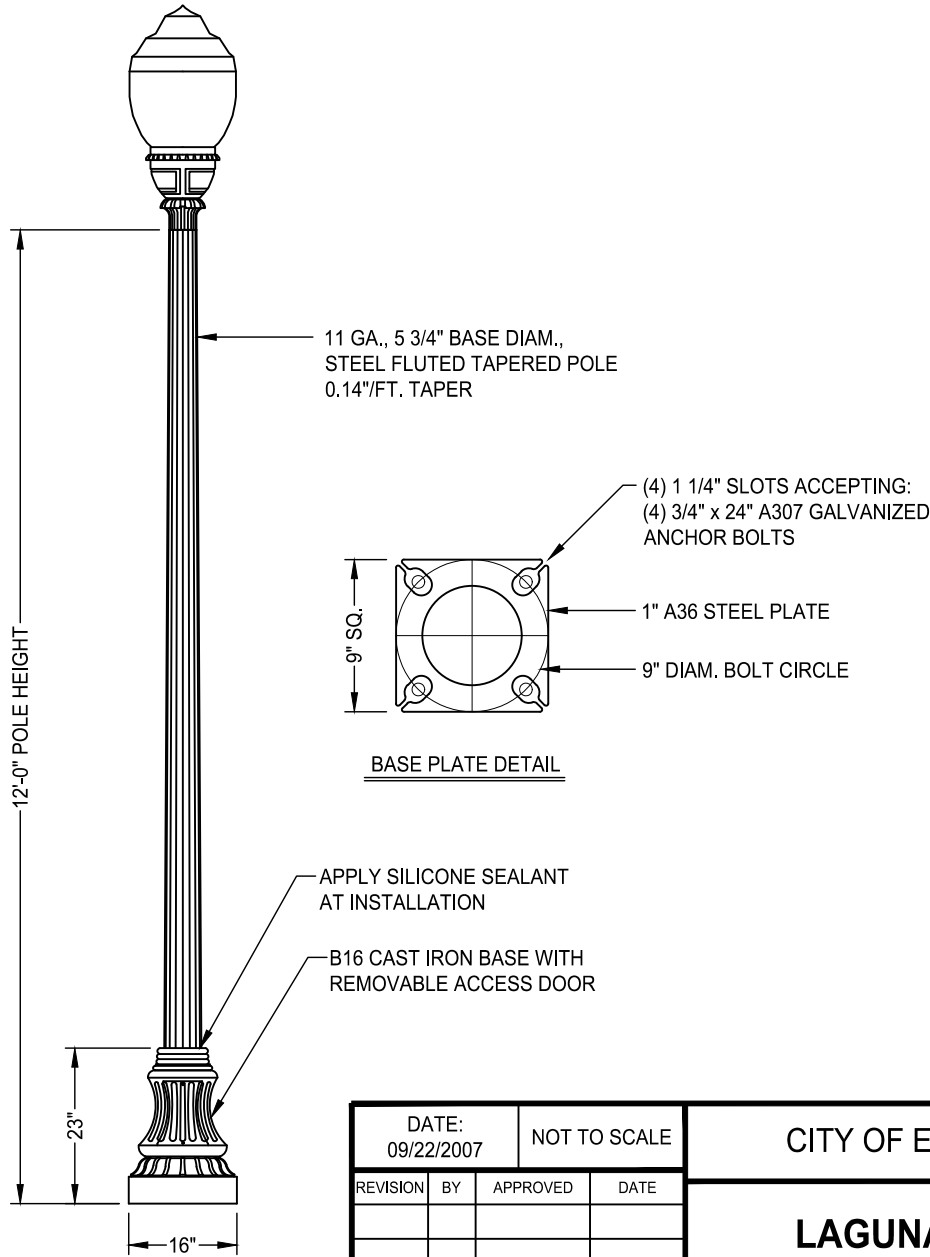
10/24/2018

DATE



DRAWING NUMBER

SL - 40



APPLICATION

RESIDENTIAL STREETS AND PEDESTRIAN TRAILS

SPECIFICATIONS

POST DESCRIPTION

THE LAGUNA WEST LIGHTING POST SHALL BE ALL STEEL OR CAST IRON CONSTRUCTION WITH A FLUTED BASE DESIGN. THE SHAFT SHALL BE FLUTED AND TAPERED WITH A 5/8" BASE DIAMETER. THE POST SHALL BE SHIPPED WITH FINISH NOTED BELOW.

MATERIALS

THE BASE SHALL BE CAST IRON AND SHAFT SHALL BE STEEL. THE BASE AND SHAFT SHALL BE PRIME PAINTED INSIDE AND OUT WITH RUST INHIBITING, EPOXY BASED PAINT.

POLES INSTALLED ON OR NEAR LAGUNA BLVD (NORTH OF THE ELLIOT RANCH ROAD ALIGNMENT) SHALL BE PAINTED OUTSIDE WITH URETHANE GLOSS ENAMEL OF FEDERAL COLOR STANDARD 595B, COLOR #14516 "AQUA MARINE". POLES INSTALLED ON OR NEAR ELK GROVE BLVD (SOUTH OF THE ELLIOT RANCH ROAD ALIGNMENT) SHALL BE PAINTED OUTSIDE WITH URETHANE GLOSS ENAMEL OF FEDERAL COLOR STANDARD 595B, COLOR #17083 "GLOSS BLACK". ONE PINT OF TOUCH-UP PAINT SHALL BE SHIPPED WITH EACH POLE ORDER.

ALL POLES SHALL BE FINISHED WITH A CLEAR COAT OF URETHANE GLOSS FINISH. ANCHOR BOLTS AND NUTS SHALL BE HOT DIPPED GALVANIZED STEEL.

CONSTRUCTION

THE POLE SHAFT SHALL BE WELDED TO THE ANCHOR PLATE AND PAINTED AFTER WELDING. WELDS SHALL CONFORM TO THE MOST RECENT EDITION OF AWS D1.1. THE BASE SHALL BE FABRICATED OF ONE OR TWO PIECES AND INSTALLED AFTER THE POLE SHAFT IS BOLTED TO THE FOUNDATION. THE FINISH OF THE POLE SHAFT SHALL BE PROTECTED FROM DAMAGE WHEN THE BASE IS INSTALLED. POLE AND BASE SHALL BE SHIPPED AS TWO PIECES.

DIMENSIONS

THE POST SHALL BE 12' 0" IN HEIGHT WITH A 16" DIAMETER BASE. THE SHAFT SHALL BE TAPERED 0.14" PER FOOT WITH A 5/8" BASE DIAMETER. AT THE TOP OF THE POST, AN INTEGRAL 2 7/8" X3" TENON SHALL BE PROVIDED FOR LUMINAIRE MOUNTING.

INSTALLATION

THE POST SHALL BE PROVIDED WITH FOUR, HOT DIP GALVANIZED L-TYPE ANCHOR BOLTS TO BE INSTALLED AS SHOWN IN THE BASE PLATE DETAIL. AN ACCESS DOOR SHALL BE PROVIDED IN THE BASE FOR ANCHORAGE AND WIRING ACCESS. A GROUNDING SCREW (5/8") SHALL BE PROVIDED INSIDE THE BASE OPPOSITE THE DOOR.

PRODUCT

VISCO V1-B16-1-F/12', ELK GROVE

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**LAGUNA WEST ELECTROLIER
(SERIES 'B')**

APPROVED BY:

Robert Murdoch

10/24/2018

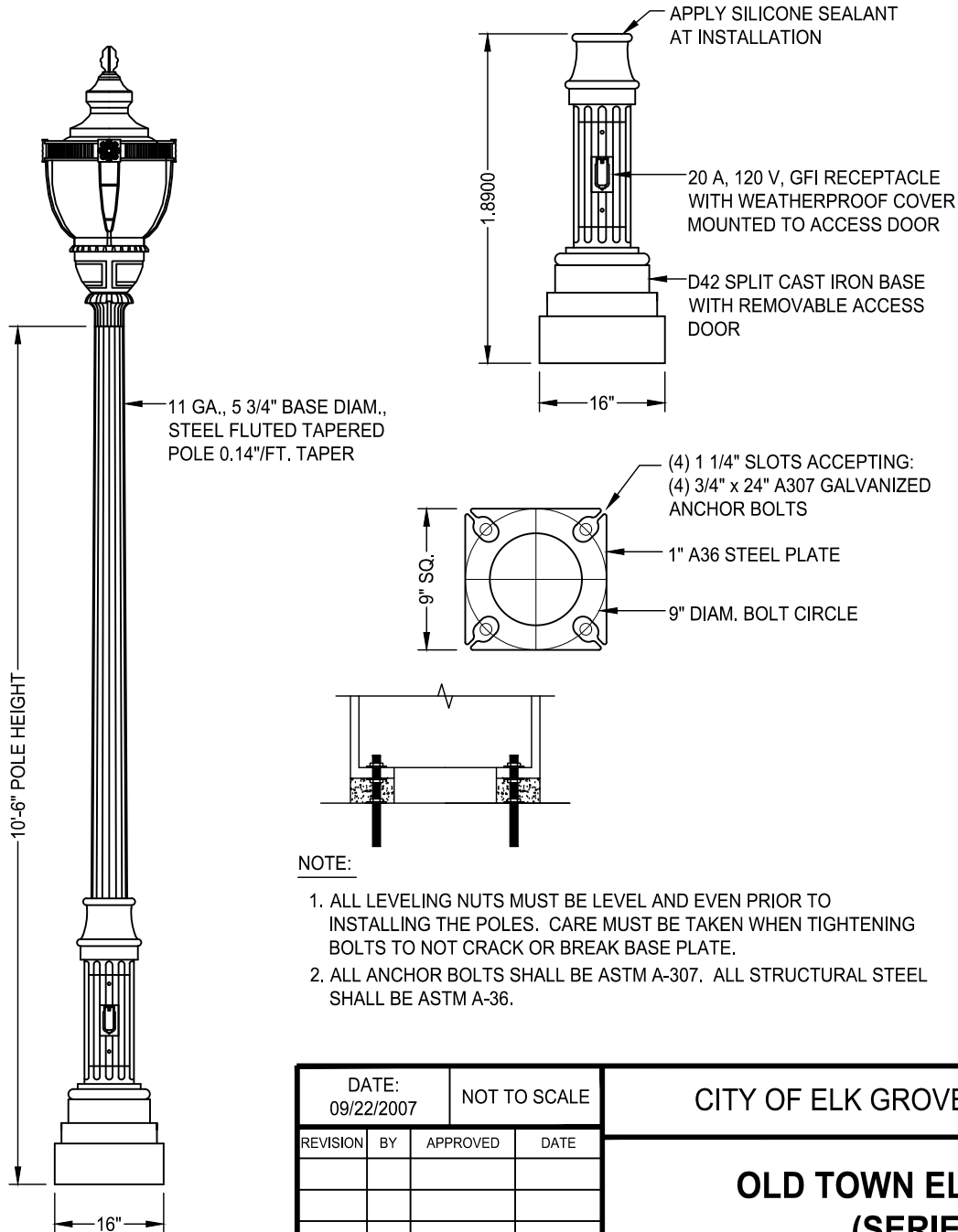
CITY ENGINEER

DATE



DRAWING NUMBER

SL - 42



APPLICATION

BUSINESS DISTRICT OLD TOWN

SPECIFICATIONS

POST DESCRIPTION

THE OLD TOWN LIGHTING POST SHALL BE ALL STEEL CONSTRUCTION WITH A FLUTED BASE DESIGN. THE SHAFT SHALL BE FLUTED AND TAPERED WITH A 5 3/4" BASE DIAMETER. THE POST SHALL BE SHIPPED WITH FINISH NOTED BELOW.

MATERIALS

THE BASE AND POLE SHALL BE CAST STEEL. THE BASE AND POLE SHALL BE PRIME PAINTED INSIDE AND OUT WITH RUST INHIBITING, EPOXY BASED PAINT, PAINTED OUTSIDE WITH URETHANE GLOSS ENAMEL OF FEDERAL COLOR STANDARD 595B, COLOR #17083 "GLOSS BLACK", AND FINISHED WITH A CLEAR COAT OF URETHANE GLOSS FINISH. ANCHOR BOLTS AND NUTS SHALL BE HOT DIPPED GALVANIZED STEEL.

CONSTRUCTION

THE SHAFT AND BASE SHALL BE CAST IN ONE PIECE OR SHALL BE DOUBLE WELDED (TOP AND BOTTOM OF BASE). WELDS SHALL BE GROUND SMOOTH. WELDS SHALL CONFORM TO AWS D1.1. POLE AND BASE SHALL BE SHIPPED AS ONE PIECE.

DIMENSIONS

THE POST SHALL BE 10' 6" IN HEIGHT WITH AN 11.5" DIAMETER BASE. THE SHAFT SHALL BE TAPERED WITH A 5 3/4" BASE DIAMETER. AT THE TOP OF THE POST, AN INTEGRAL 2 7/8" X3" TENON SHALL BE PROVIDED FOR LUMINAIRE MOUNTING.

INSTALLATION

THE POST SHALL BE PROVIDED WITH FOUR, HOT DIP GALVANIZED L-TYPE ANCHOR BOLTS TO BE INSTALLED AS SHOWN IN THE BASE DETAIL. AN ACCESS DOOR SHALL BE PROVIDED IN THE BASE FOR ANCHORAGE AND WIRING ACCESS. A GROUNDING SCREW (5/8") SHALL BE PROVIDED INSIDE THE BASE OPPOSITE THE DOOR.

PRODUCT

VISCO V1-D42-F, ELK GROVE 3A

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**OLD TOWN ELECTROLIER
(SERIES 'B')**

APPROVED BY:

Paul M. Muddoch

10/24/2018

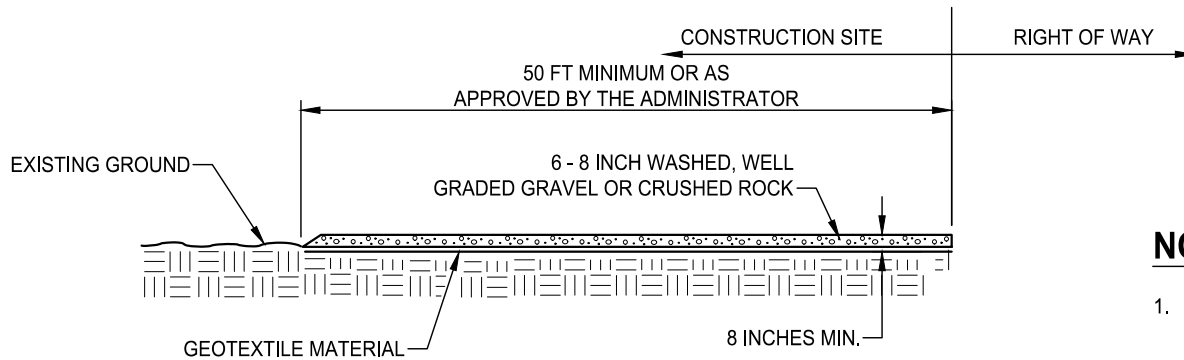
CITY ENGINEER

DATE

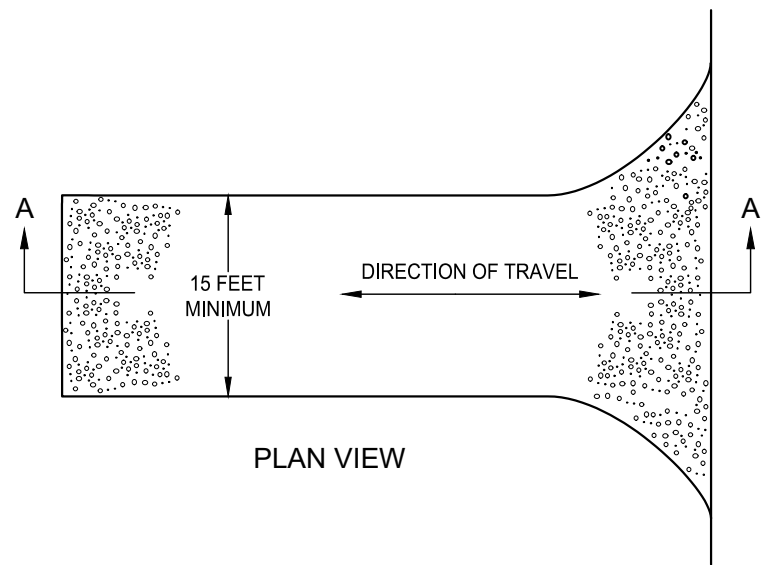


DRAWING NUMBER

SL - 46



SECTION A-A



PLAN VIEW

NOTES

1. STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 6 - 8 INCH WASHED, WELL GRADED GRAVEL OR CRUSHED ROCK. MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF 8 INCHES. ROUND ROCK (RIVER ROCK) NOT ALLOWED.
2. LENGTH OF ENTRANCE SHALL BE A MINIMUM OF 50 FEET. WIDTH SHALL BE A MINIMUM OF 15 FEET OR GREATER IF NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS. PROVIDE AMPLE TURNING RADII.
3. THE ENTRANCE SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH MATERIAL AS SPECIFIED IN NOTE 1.
4. ACCESS SHALL BE INSPECTED WEEKLY DURING PERIODS OF HEAVY USAGE, MONTHLY DURING NORMAL USAGE, AND AFTER EACH RAINFALL, WITH MAINTENANCE PROVIDED AS NECESSARY. PERIODIC TOP DRESSING SHALL BE DONE AS NEEDED.


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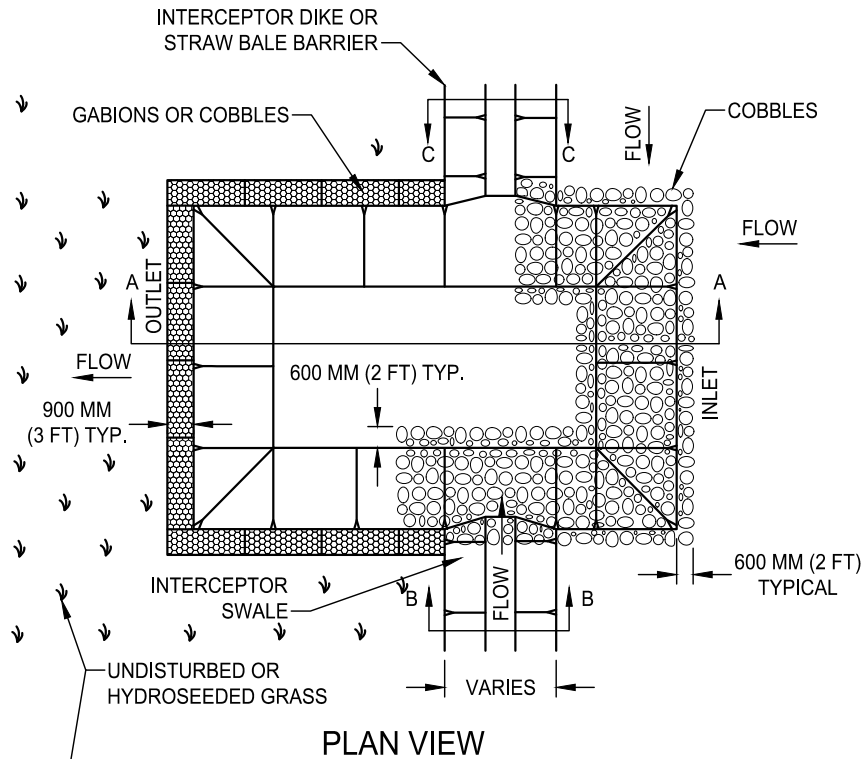
CITY OF ELK GROVE - PUBLIC WORKS

**STABILIZED CONSTRUCTION SITE
ACCESS**

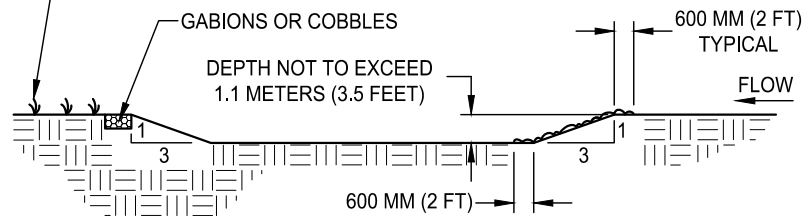
APPROVED BY:
Paul Muddoch 10/24/2018
CITY ENGINEER DATE

DRAWING NUMBER
SQ - 1

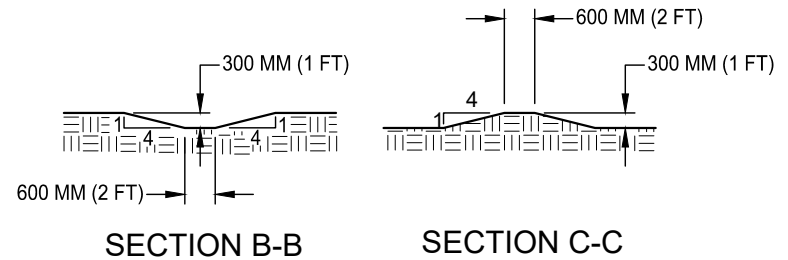




PLAN VIEW



SECTION A-A



SECTION B-B

SECTION C-C

NOTES:

1. DIMENSIONS OF SEDIMENT TRAPS, DIKES, AND SWALES SHALL BE APPROVED BY THE ADMINISTRATOR.
2. INTERCEPTION DIKES AND SWALES SHALL BE CONSTRUCTED TO DRAIN SURFACE RUNOFF INTO SEDIMENT TRAPS.
3. TRAPS SHALL BE EXCAVATED WITH APPROPRIATE EQUIPMENT, TAKING CARE NOT TO DISTURB VEGETATION OR SOIL AT OUTLET CREST. SIDE SLOPES SHALL BE 1:3 OR FLATTER. MAXIMUM TRAP DEPTH SHALL BE 1.1 METERS (3.5 FEET).
4. COBBLES CONFORMING TO CITY OF ELK GROVE SPECIFICATIONS SHALL BE PLACED ON THE TOPS, SLOPES, AND BOTTOMS OF THE INLET SIDES. COBBLES SHALL EXTEND A MINIMUM OF 600 MM (2 FEET) BEYOND THE TOP AND TOE OF SLOPES.
5. PERIMETER OF SEDIMENT TRAPS SHALL BE STABILIZED WITH GABIONS OR COBBLES AND HYDROSEEDED 3 METERS (10 FEET) BEYOND EDGE OF EXCAVATION IF EXISTING VEGETATION IS THIN, DISTURBED OR NONEXISTENT.
6. THE CONTRACTOR SHALL INSPECT SEDIMENT TRAPS WEEKLY AND AFTER EACH RAINFALL AND CLEAN AND REPAIR AS NECESSARY. SEDIMENT SHALL BE REMOVED FROM THE BOTTOM OF THE TRAP WHEN 300 MM (1 FOOT) DEEP OR LESS.

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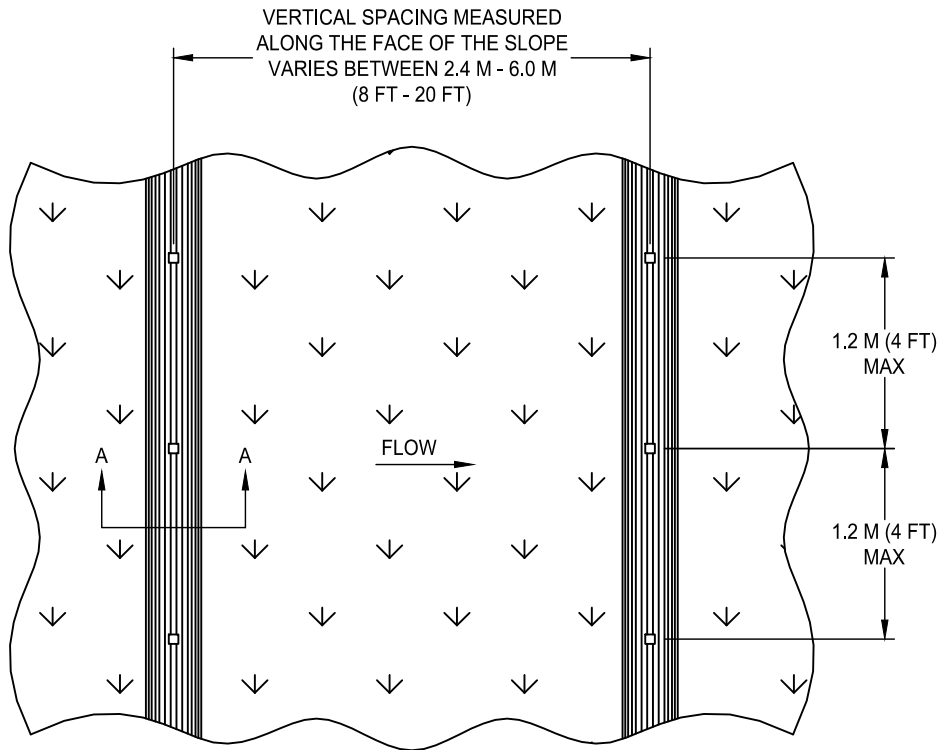
CITY OF ELK GROVE - PUBLIC WORKS

**SEDIMENT TRAP
STABILIZED OUTLET**

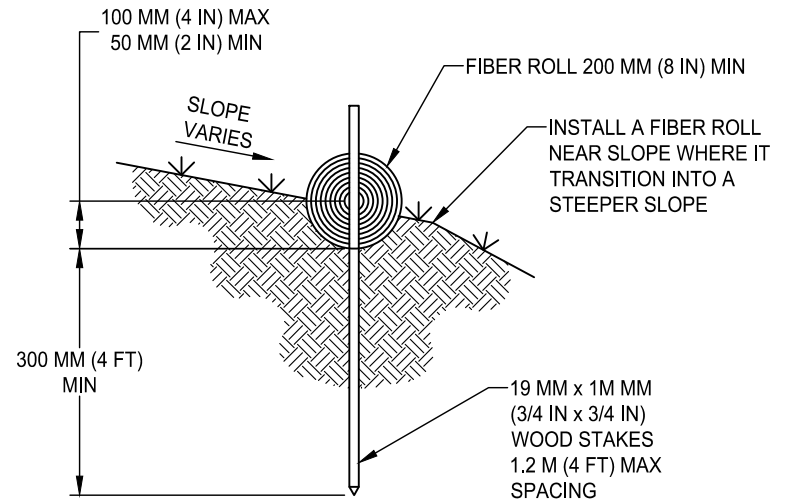
APPROVED BY:
Robert M. Murock
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER
SQ - 3



TYPICAL FIBER ROLL INSTALLATION



SECTION A-A

NOTES:

1. INSTALL FIBER ROLL IN A ROW ALONG A LEVEL CONTOUR.
2. AT ENDS OF A ROW TURN THE LAST TWO FET UP SLOPE SLIGHTLY.
3. FIBER ROLLS SHALL BE BUTTED TIGHTLY AT THE JOINTS.
4. DO NOT OVERLAP JOINTS.

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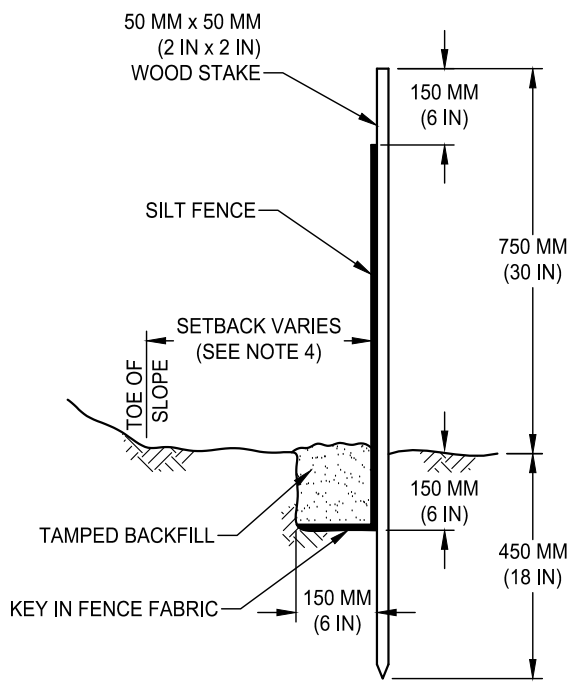
CITY OF ELK GROVE - PUBLIC WORKS

FIBER ROLLS

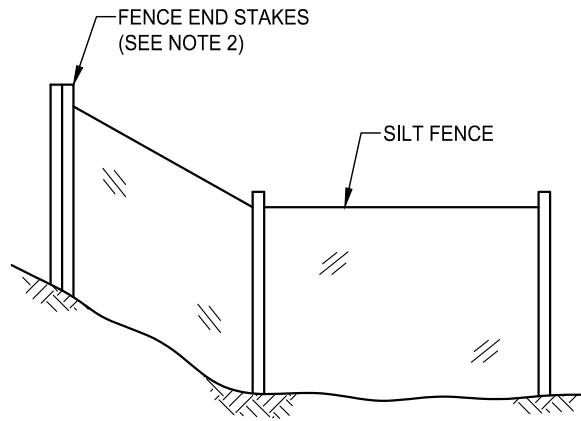
APPROVED BY:
Paul M. Muddoch
CITY ENGINEER
10/24/2018
DATE



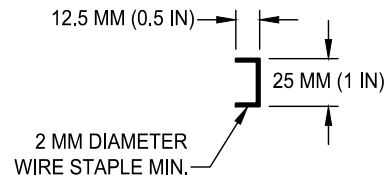
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SQ - 4



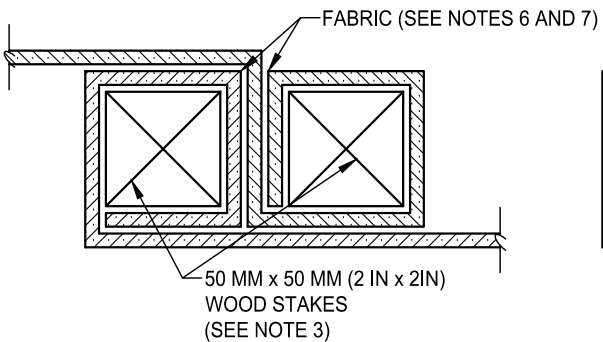
FENCE SECTION DETAIL



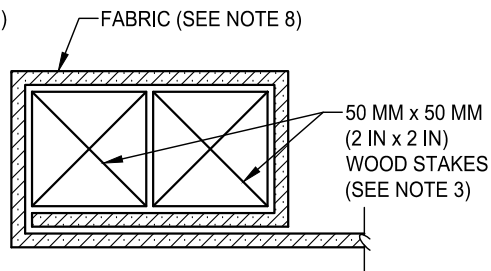
FENCE END DETAIL



STAPLE DETAIL



JOINT DETAIL



END STAKE DETAIL

NOTES:

1. CONSTRUCT THE LENGTH OF EACH REACH SO THAT THE CHANGE IN BASE ELEVATION ALONG THE REACH DOES NOT EXCEED 1/3 THE HEIGHT OF THE LINEAR BARRIER. IN NO CASE SHALL THE REACH LENGTH EXCEED 150 MM (6 IN)
2. THE LAST 2.4 M (8 FT) OF FENCE SHALL BE TURNED UP SLOPE.
3. STAKE DIMENSIONS ARE NOMINAL.
4. DIMENSIONS MAY VARY TO FIT FIELD CONDITION.
5. STAKES SHALL BE SPACED AT 2.4 M (8 FT) MAXIMUM AND SHALL BE POSITIONED ON THE DOWNSTREAM SIDE OF THE FENCE.
6. OVERLAP STAKES, AND FOLD FENCE FABRIC TO ROUND EACH STAKE ONE FULL TURN.
7. STAKES SHALL BE DRIVEN TIGHTLY TOGETHER TO PREVENT POTENTIAL FLOW THROUGH OF SEDIMENT AT THE JOINT.
8. FOR END STAKE CONDITION FOLD FENCE FABRIC AROUND (2) STAKES (1) FULL TURN AND SECURE WITH (4) STAPLES.
9. MINIMUM (4) STAPLES PER STAKE.
10. CROSS BARRIERS SHALL BE MINIMUM OF 1/3 AND MAXIMUM OF 1/2 THE HEIGHT OF THE LINEAR BARRIER.

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CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

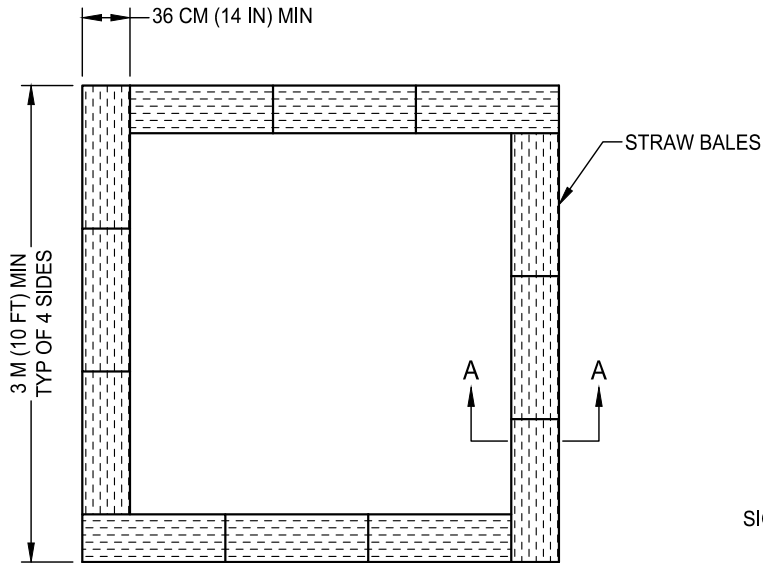
Robert M. Muddoch 10/24/2018
CITY ENGINEER DATE

SILT FENCE

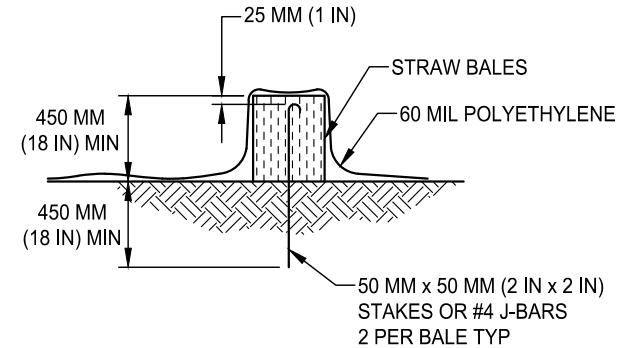
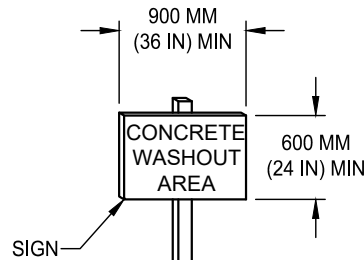


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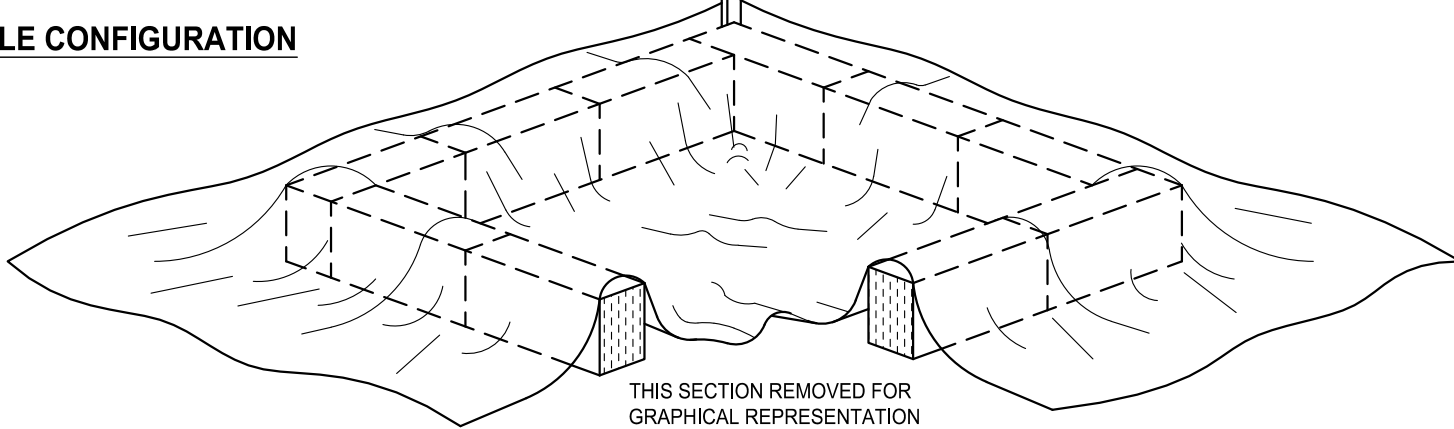
SQ - 5



BALE CONFIGURATION



SECTION A-A



THIS SECTION REMOVED FOR GRAPHICAL REPRESENTATION ONLY. STRAW BALE PERIMETER SHALL BE CONTINUOUS.

NOTES:

1. FACE SIGN TOWARD NEAREST STREET OR ACCESS POINT.
2. CONCRETE WASHOUT SHALL BE LOCATED BEHIND THE CURB AND 15 M (50 FT) MINIMUM FROM DRAINAGE INLETS OR WATERCOURSES.

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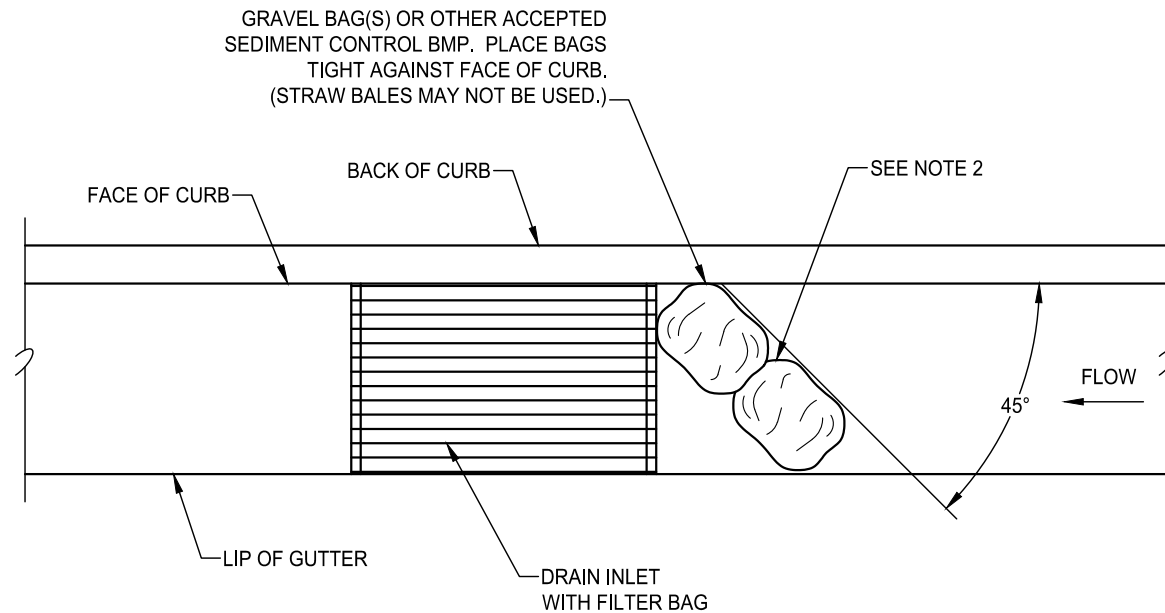
CITY OF ELK GROVE - PUBLIC WORKS

CONCRETE WASHOUT

APPROVED BY:
Paul Muddoch
CITY ENGINEER 10/24/2018
DATE



DRAWING NUMBER
SQ - 6



PLAN VIEW

NOTES:

1. SEDIMENT TRAP UPSTREAM OF SEDIMENT CONTROL BMP SHALL BE CLEANED WEEKLY AND PRIOR TO A RAINFALL EVENT.
2. PLACE BAGS TIGHTLY TOGETHER AT JOINTS TO PREVENT OR MINIMIZE SEEPAGE AT JOINTS.

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CITY OF ELK GROVE - PUBLIC WORKS

INLET SEDIMENT CONTROL

APPROVED BY:

Paul Muddoch

CITY ENGINEER

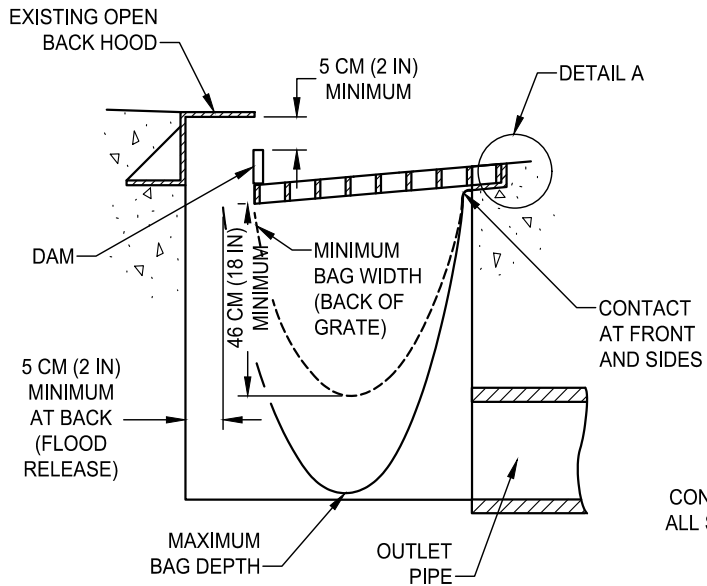
10/24/2018

DATE

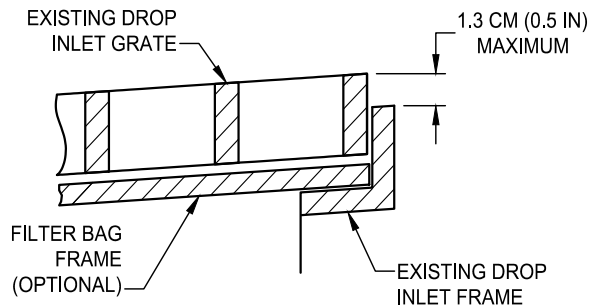


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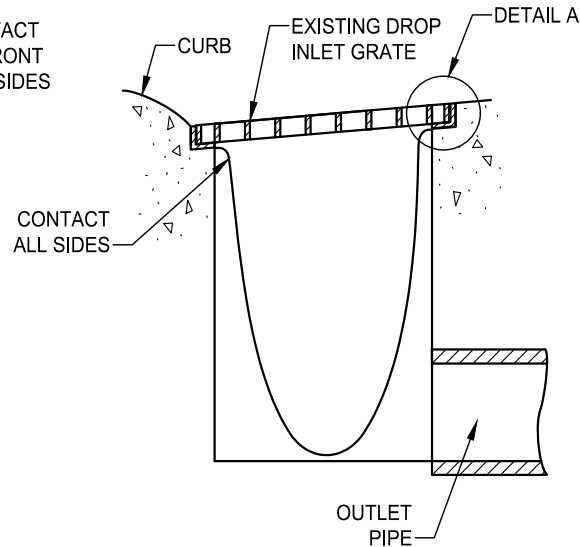
SQ - 7



PLACEMENT AT TYPE B AND E DROP INLETS



DETAIL A



PLACEMENT AT TYPE A, C, D, & F DROP INLETS AND PARKING LOTS

NOTES:

1. THE MAXIMUM DRAINAGE AREA PER FILTER SHALL BE NO MORE THAN 0.8 HECTARES (2 ACRES).
2. THE FILTER BAG SHALL BE MANUFACTURED FROM UV RESISTANT POLYPROPYLENE, NYLON, POLYESTER, OR ETHYLENE FABRIC WITH A MINIMUM TENSILE STRENGTH OF 50 LBS PER LINEAL FOOT, AN EQUIVALENT OPENING SIZE NOT GREATER THAN 20 SIEVE AND WITH GALLONS/MINUTE/SQ FT.
3. THE FILTER BAG MAY BE SUSPENDED FROM OR HELD IN PLACE ON EXISTING INLET GRATE (OR OTHER APPROVED METHOD), PROVIDING NO MODIFICATION OR DAMAGE SHALL BE DONE TO THE INLET GRATE OR FRAME. THE INLET GRATE SHALL NOT BE CAUSED TO REST MORE THAN 13 MM (0.5 IN) ABOVE THE INLET FRAME (SEE DETAIL A).
4. THE FILTER BAG MAY EXTEND TO THE BOTTOM OF THE INLET BOX PROVIDED THE OUTLET PIPE IS UNOBSTRUCTED.
5. FLOWS SHALL NOT BE ALLOWED TO BYPASS THE BAG. THE BAG OR ITS FRAME SHALL CATCH FLOWS AT ALL SIDES OF THE INLET, EXCEPT AS SHOWN FOR FLOOD RELEASE.
6. INLET FILTER BAGS SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL DURING THE WET SEASON AND MONTHLY DURING THE DRY SEASON. SEDIMENT AND DEBRIS SHALL BE REMOVED BEFORE ACCUMULATIONS HAVE REACHED ONE THIRD THE DEPTH OF THE BAG. BAGS SHALL BE REPAIRED OR REPLACED AS SOON AS DAMAGE OCCURS.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

STORM DRAIN INLET FILTER BAG

APPROVED BY:

Robert Murdoch

10/24/2018

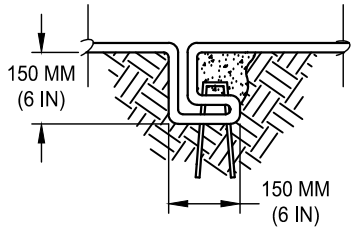
CITY ENGINEER

DATE

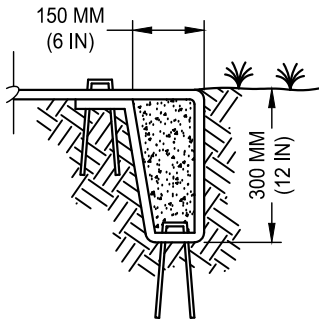


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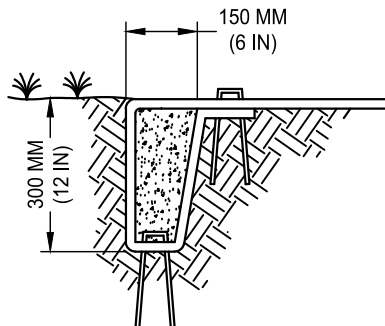
SQ - 8



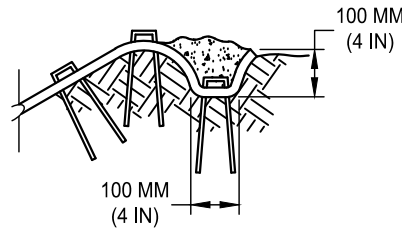
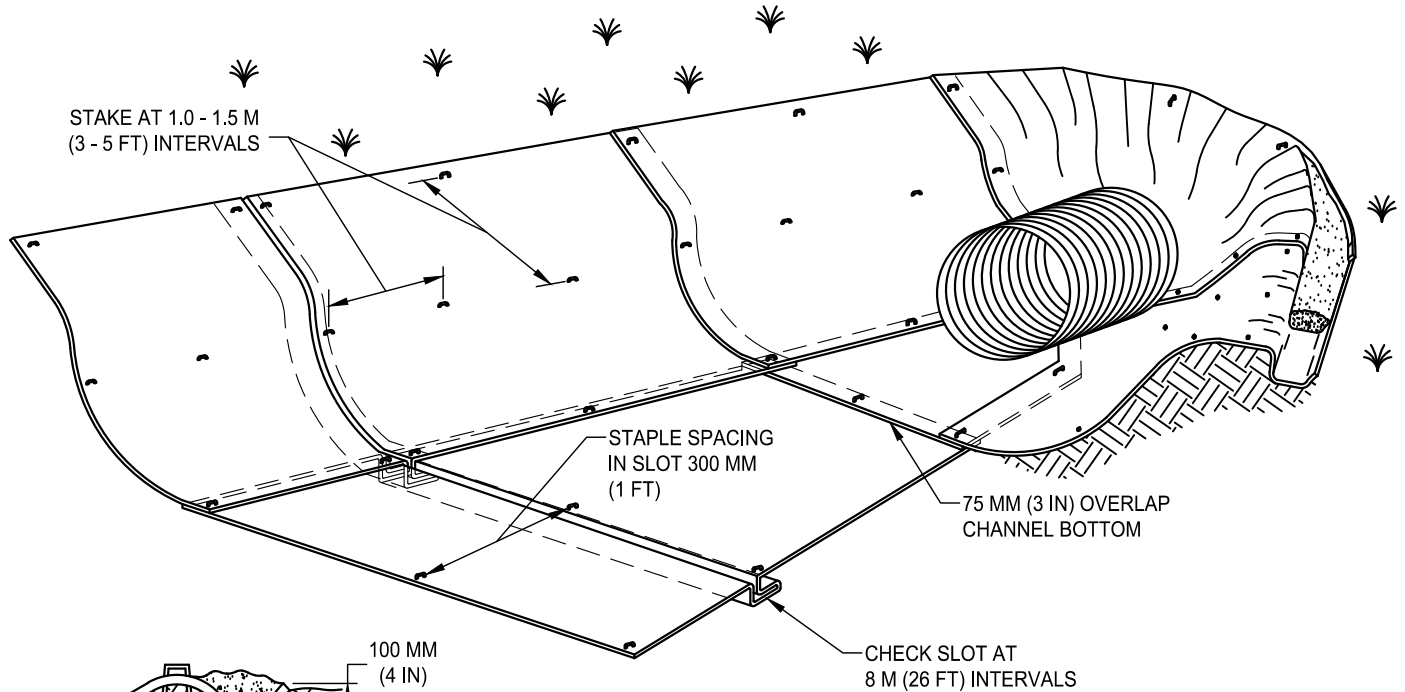
CHECK SLOT



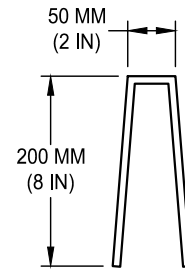
INITIAL CHANNEL ANCHOR TRENCH



TERMINAL SLOPE AND CHANNEL ANCHOR TRENCH



LONGITUDINAL ANCHOR TRENCH



WIRE STAPLES

TYPICAL CHANNEL SOIL STABILIZATION

NOTE:

1. CONSTRUCTION OF CHECK SLOTS, STAKING, STAPLING LAYOUT, AND MAT INSTALLATION ALL TO BE DONE PER MANUFACTURER'S SPECIFICATIONS.

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CITY OF ELK GROVE - PUBLIC WORKS

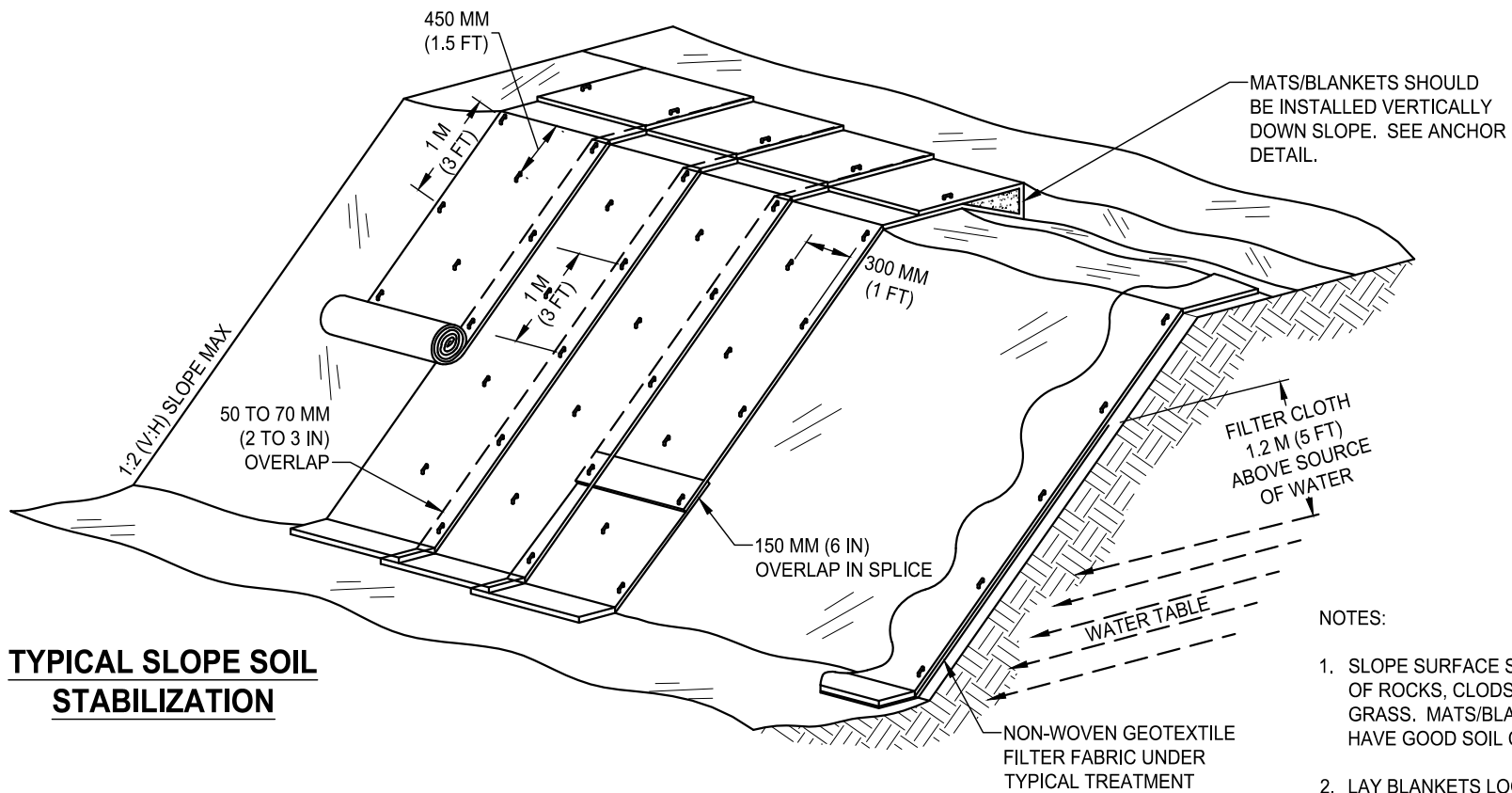
EROSION CONTROL BLANKETS / MATS CHANNEL INSTALLATION

APPROVED BY:
Paul Muddoch
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER

SQ - 9A

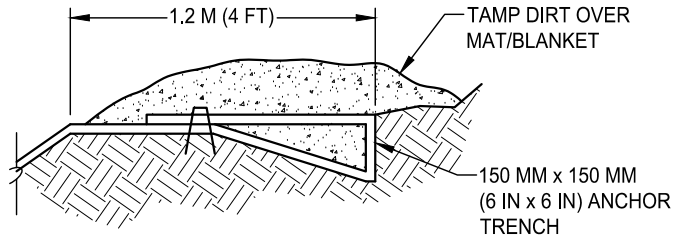


TYPICAL SLOPE SOIL STABILIZATION

WET SLOPE LINING

NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.



ANCHOR DETAIL

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

EROSION CONTROL BLANKETS/MATS SLOPE INSTALLATION

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

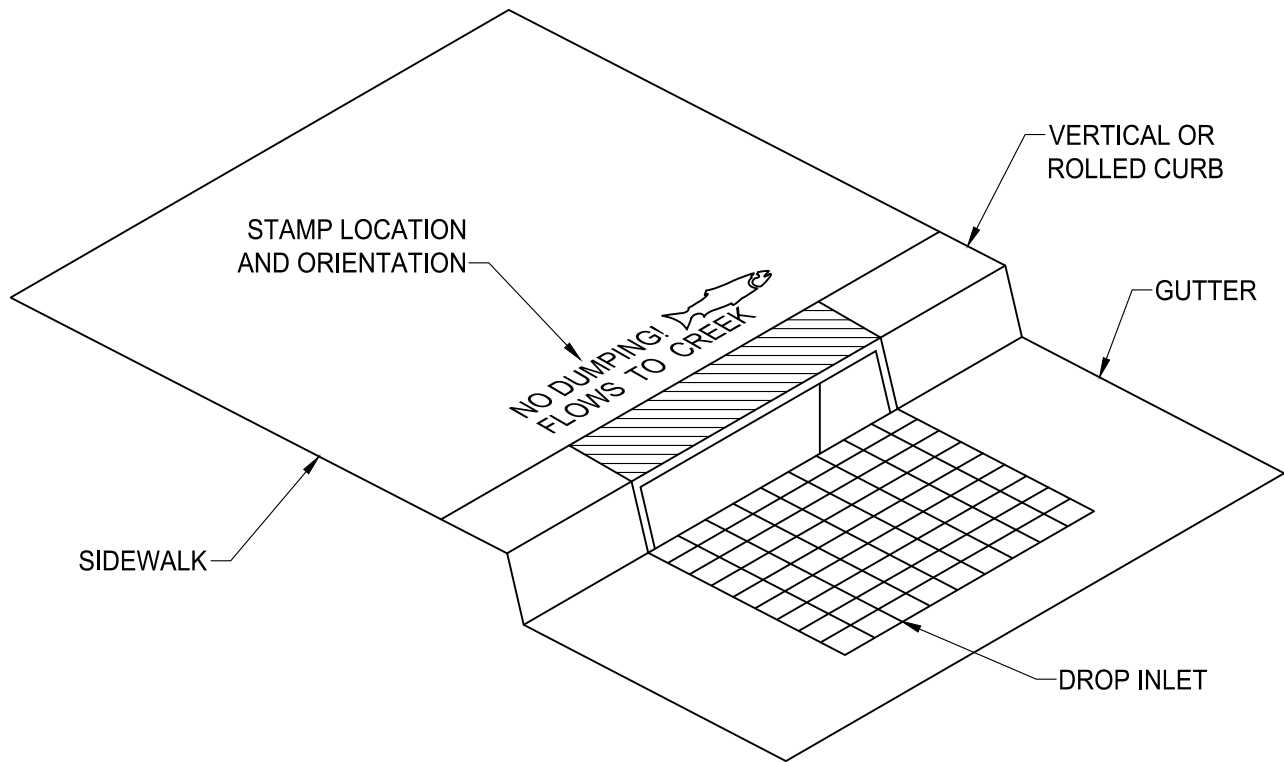
10/24/2018

DATE



DRAWING NUMBER

SQ - 9B



NOTES:

1. MESSAGE AND SYMBOL SHALL BE AS SHOWN ON SQ-10.2 OR AS APPROVED BY THE DIRECTOR.
2. LETTERS SHALL BE 1.5 INCHES (38 MM) IN HEIGHT. THE MESSAGE SHALL BE CENTERED ON THE BACK OF THE INLET.
3. CONCRETE SHALL BE STAMPED IN SUCH A WAY AS TO PROVIDE FOR A CLEAR AND LEGIBLE IMAGE. (APPROXIMATE DEPTH OF 0.25 INCH OR 6 MM).

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

**DROP INLET CONCRETE STAMP
(SHEET 1 OF 2)**

APPROVED BY:
Robert M. Muddock
CITY ENGINEER

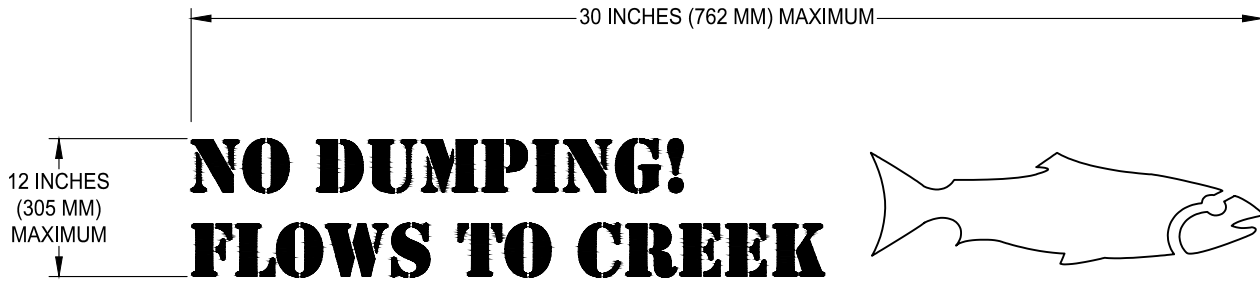
10/24/2018
DATE

DRAWING NUMBER
SQ - 10.1

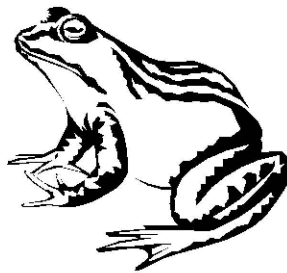


STAMP MESSAGES AND SYMBOLS

DIMENSIONS MAY VARY AMONG THE STAMP DESIGNS SHOWN BELOW, BUT SHALL NOT EXCEED THE MAXIMUM DIMENSIONS.



**NO
DUMPING!**



**DRAINS TO
CREEK**

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

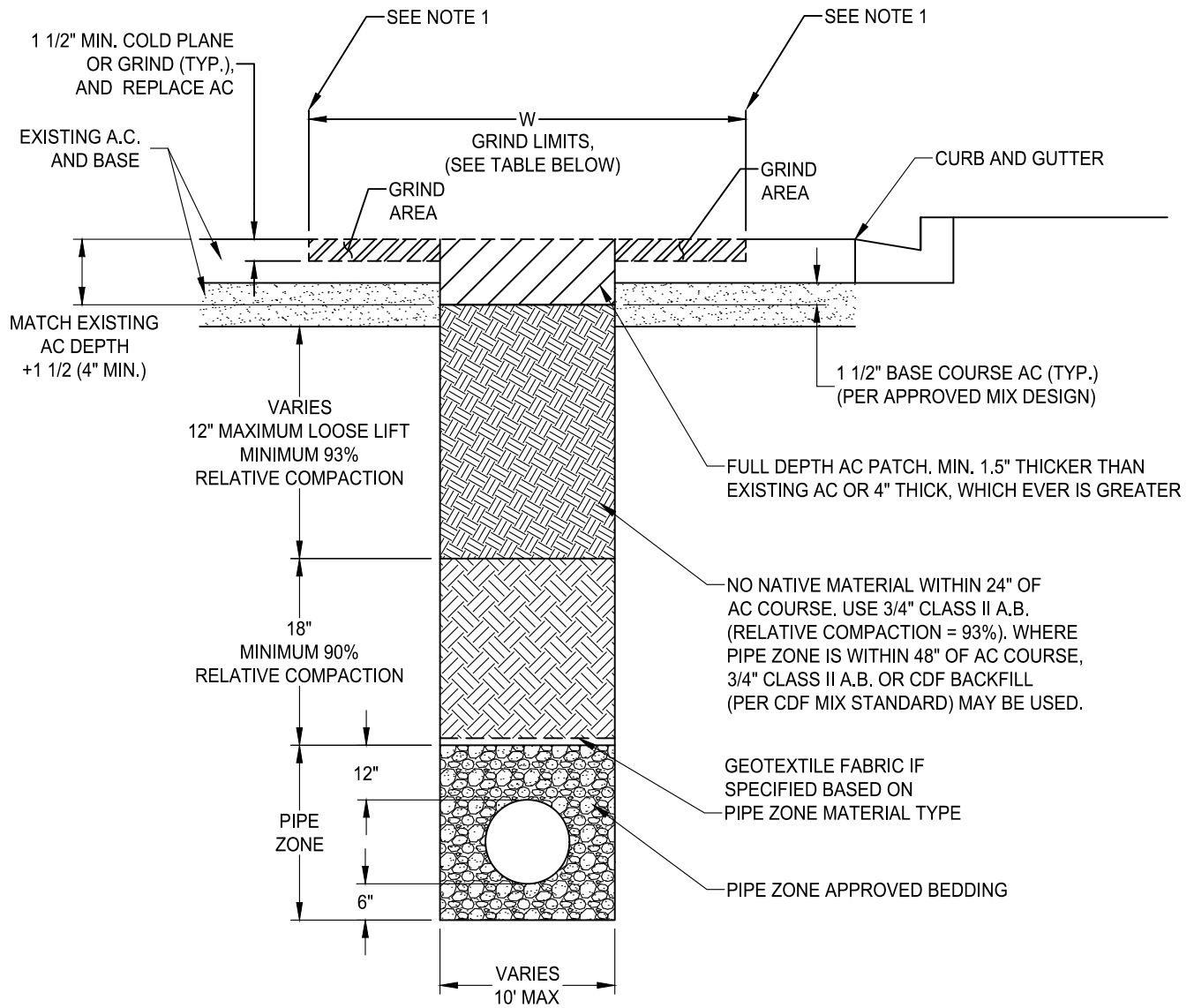
**DROP INLET CONCRETE STAMP
(SHEET 2 OF 2)**

APPROVED BY:
Robert Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
SQ - 10.2





TRENCH CUT DETAILS		
PAVEMENT CONDITION PCI	W	
	ACROSS TRAFFIC (PERPENDICULAR)	ALONG TRAFFIC (LONGITUDINAL)
85-100	TRENCH + 2' EACH SIDE (10' MIN)	TRENCH + 2' EACH SIDE
70<85	TRENCH + 2' EACH SIDE (5' MIN)	TRENCH + 2' EACH SIDE (8' MIN)
50<70	TRENCH + 2' EACH SIDE (5' MIN)	TRENCH + 2' EACH SIDE (5' MIN)
<50	TRENCH + 1' EACH SIDE (5' MIN)	TRENCH + 1' EACH SIDE (4' MIN)

NOTES:

1. GRINDING/PAVEMENT JOINT SHALL BE LOCATED ALONG GUTTER LINES, LANE LINES, OR CENTER OF LANES AND SHALL NOT BE PLACED IN WHEEL LINES.
2. ENTIRE BIKE LANE SHALL BE REPAVED WHEN TRENCHING OCCURS IN BIKE LANE AREA.

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CITY OF ELK GROVE - PUBLIC WORKS

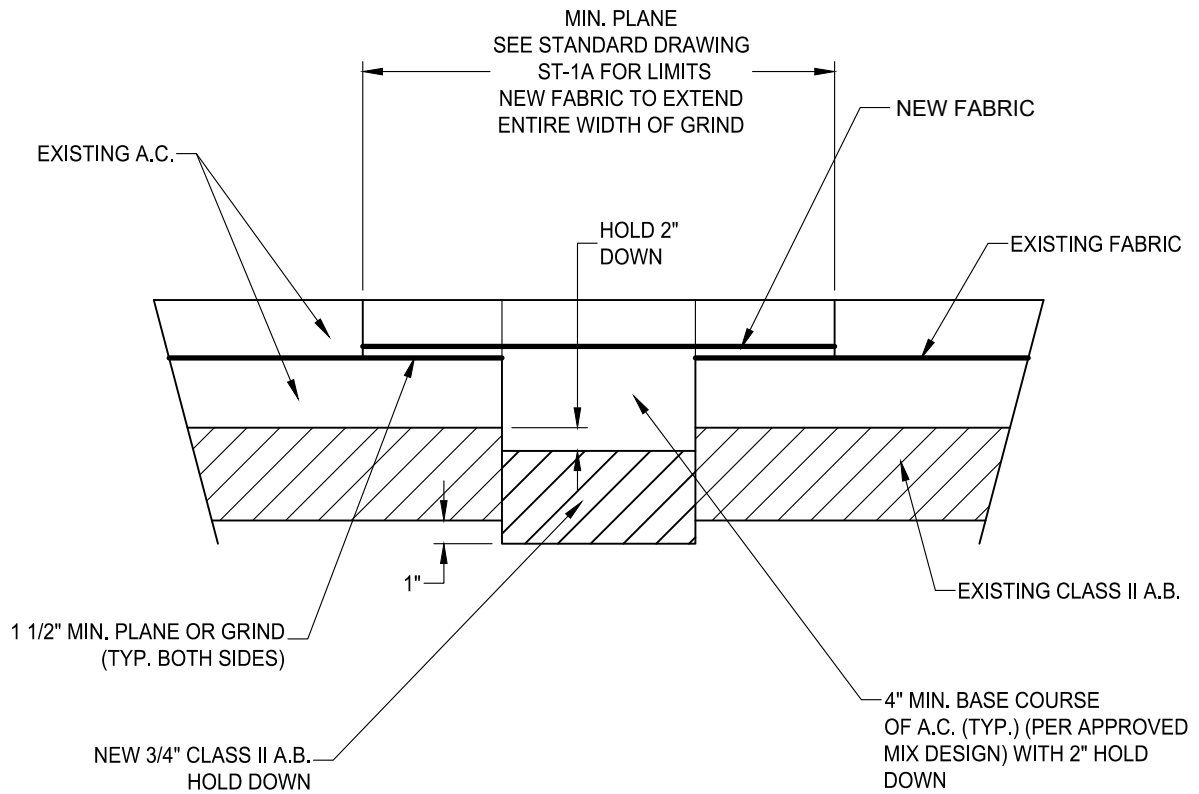
TRENCH BACKFILLING AND RESURFACING

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
ST - 1A





NOTES:

1. NO NATIVE MATERIAL WITHIN 24" OF AC COURSE. USE 3/4" CLASS II A.B. (RELATIVE COMPACTION = 93%). WHERE PIPE ZONE IS WITHIN 48" OF AC COURSE, 3/4" CLASS II A.B. OR CDF BACKFILL (PER CDF MIX STANDARDS) MAY BE USED.
2. ADDITIONAL GRINDING AND PAVING MAY BE REQUIRED IF WITHIN TWO (2) FEET OF A SURFACE CRACK OR A LOCATION UNSUITABLE TO PAVE AGAINST AT THE INSPECTORS DISCRETION. AT THE CONTRACTORS EXPENSE.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

**TRENCH RESURFACING WHEN
FABRIC IS REQUIRED**

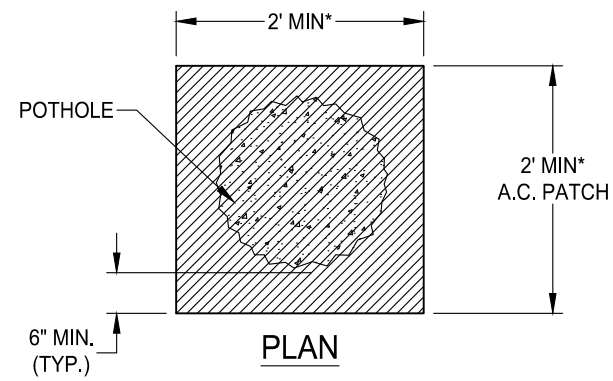
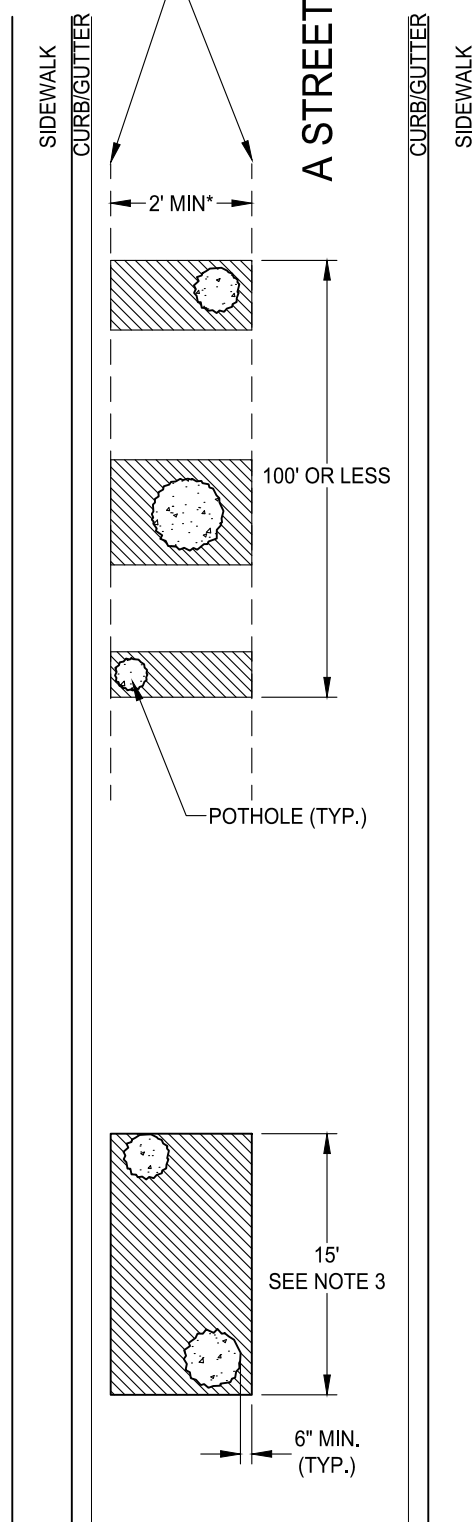
APPROVED BY:
Robert M. Mueloch
CITY ENGINEER

10/24/2018
DATE

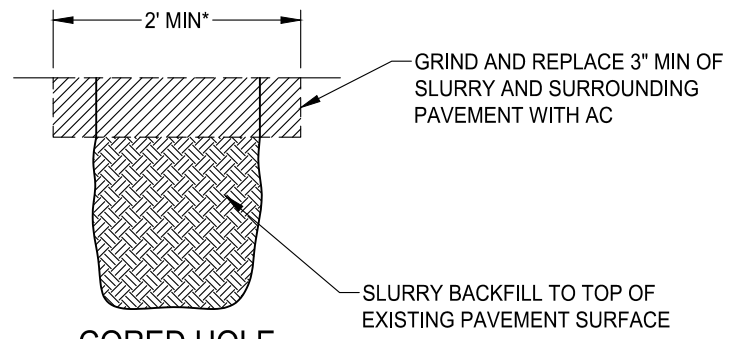
DRAWING NUMBER
ST - 5



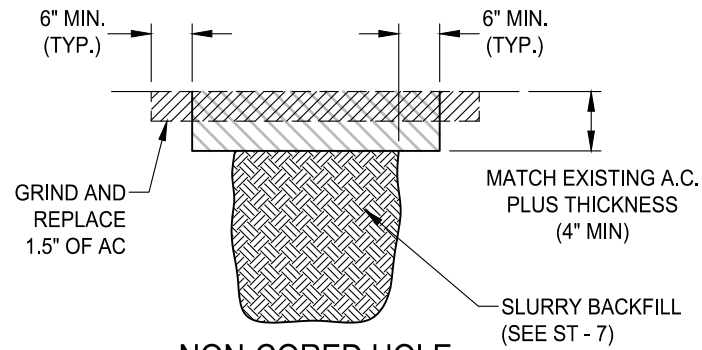
SEE NOTE 1 & 2



PLAN



CORED HOLE REPAIR



NON-CORED HOLE REPAIR

NOTES:

1. EDGES OF POTHOLE REPAIRS SHALL BE ALIGNED WHEN DISTANCE BETWEEN 3 CONSECUTIVE POTHOLE IS 100' OR LESS
2. EDGES OF POTHOLE REPAIRS SHALL BE PLACED ALONG PAVEMENT STRIPES, GUTTER LINES, OR MID-LANE, AND SHALL NOT BE PLACED IN WHEEL PATH.
3. POTHOLE REPAIRS SHALL BE JOINED IF SPACING BETWEEN HOLES IS 15' OR LESS UNLESS APPROVED BY THE CITY.
4. REPAIR OF CORED POTHOLE SHALL INCLUDE A FULL DEPTH BASE SLURRY BACKFILL. AFTER MINIMUM OF 48 HOURS OF CURE, THE SLURRY BACKFILL AND SURROUNDING PAVEMENT SHALL BE GROUND A MINIMUM OF 3" DEEP.

* OR LARGER AS NEEDED TO KEEP ALL PATCHES ALIGNED

REFERENCE STANDARD DETAILS:
ST - 1A, ST - 7, ST - 9

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:
Robert M. Muddock
CITY ENGINEER 10/24/2018
DATE

UTILITY POTHOLE REPAIR



DRAWING NUMBER
ST - 6A

GENERAL NOTES



1. PLANE EXISTING ASPHALT TO A 1 1/2" MIN. DEPTH.
2. A TACK COAT SHALL BE APPLIED TO THE AREA PRIOR TO PLACING NEW ASPHALT CONCRETE.
3. ASPHALT CONCRETE MIX SHALL BE APPROVED BY THE CITY PRIOR TO PLACEMENT.
4. ASPHALT CONCRETE SHALL BE SAND SEALED WITHIN 24 HOURS OF TRENCH RESURFACING.
5. TRAFFIC CONTROL PLAN SHALL BE REQUIRED. ALL TRENCH WORK IN RIGHT-OF-WAY WILL REQUIRE TRAFFIC CONTROL PLAN.
6. VIBRATORY ROLLERS SHALL BE USED ON ALL TRENCH REPAIRS IF CLASS II AGGREGATE BASE IS USED. VIBRATORY PLATES MAY ONLY BE USED WHERE APPROVED IN ADVANCE BY CITY ENGINEER.

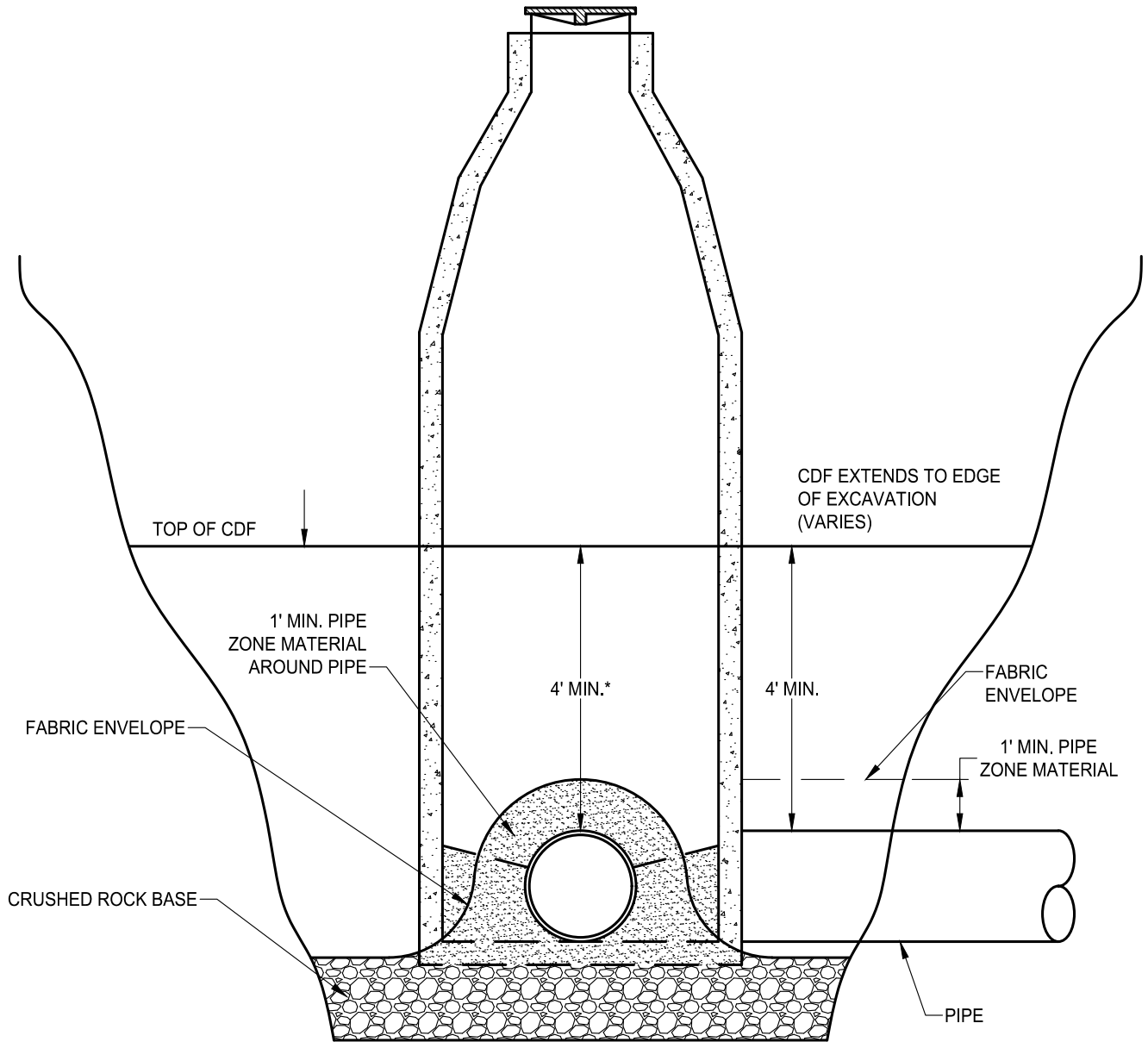
GENERAL NOTES (FOR FABRIC)

1. AN APPROVED TACK COAT IS REQUIRED PRIOR TO PLACING NEW FABRIC.
2. NEW FABRIC IS TO OVERLAP EXISTING FABRIC A MINIMUM OF 3' ON EACH SIDE OF THE TRENCH.

GENERAL NOTES (FOR NARROW TRENCH / CDF BACKFILL)

1. CDF BACKFILL SHALL HAVE A MINIMUM 8" SLUMP
2. CDF BACKFILL SHALL BE THOROUGHLY CONSOLIDATED TO ENCASE CONDUITS. CONCRETE VIBRATORS SHALL BE USED DURING PLACEMENT OF SAND CEMENT.
3. CDF SHALL BE SCREENED OFF TO MATCH PLANED PAVEMENT GRADE.
4. ALLOW CDF BACKFILL 48 HOURS MINIMUM CURE AND DRY TIME BEFORE APPLYING ASPHALT CONCRETE.
5. IN SECONDARY, MAJOR OR PRIME ARTERIAL STREETS, TO ACCELERATE CURING TIMES PER NOTE 4, AN APPROVED SET ACCELERATING ADMIXTURE MAY BE USED WITH CITY ENGINEER'S APPROVAL.
6. TYPE "F" CDF BACKFILL IS NOT ALLOWED OVER CSD-1 OR SCWA PIPES. USE TYPE "C".

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REVISION	BY	APPROVED	DATE	GENERAL NOTES				DRAWING NUMBER ST - 7
								



*OR THE BASE OF CONE, WHICHEVER IS LESS. FLATTOP MANHOLES, CDF TO BE PLACED NO HIGHER THAN SUBGRADE.

NOTE: SEE SECTION 50-15 FOR CDF MATERIAL SPECIFICATIONS.

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CITY OF ELK GROVE - PUBLIC WORKS

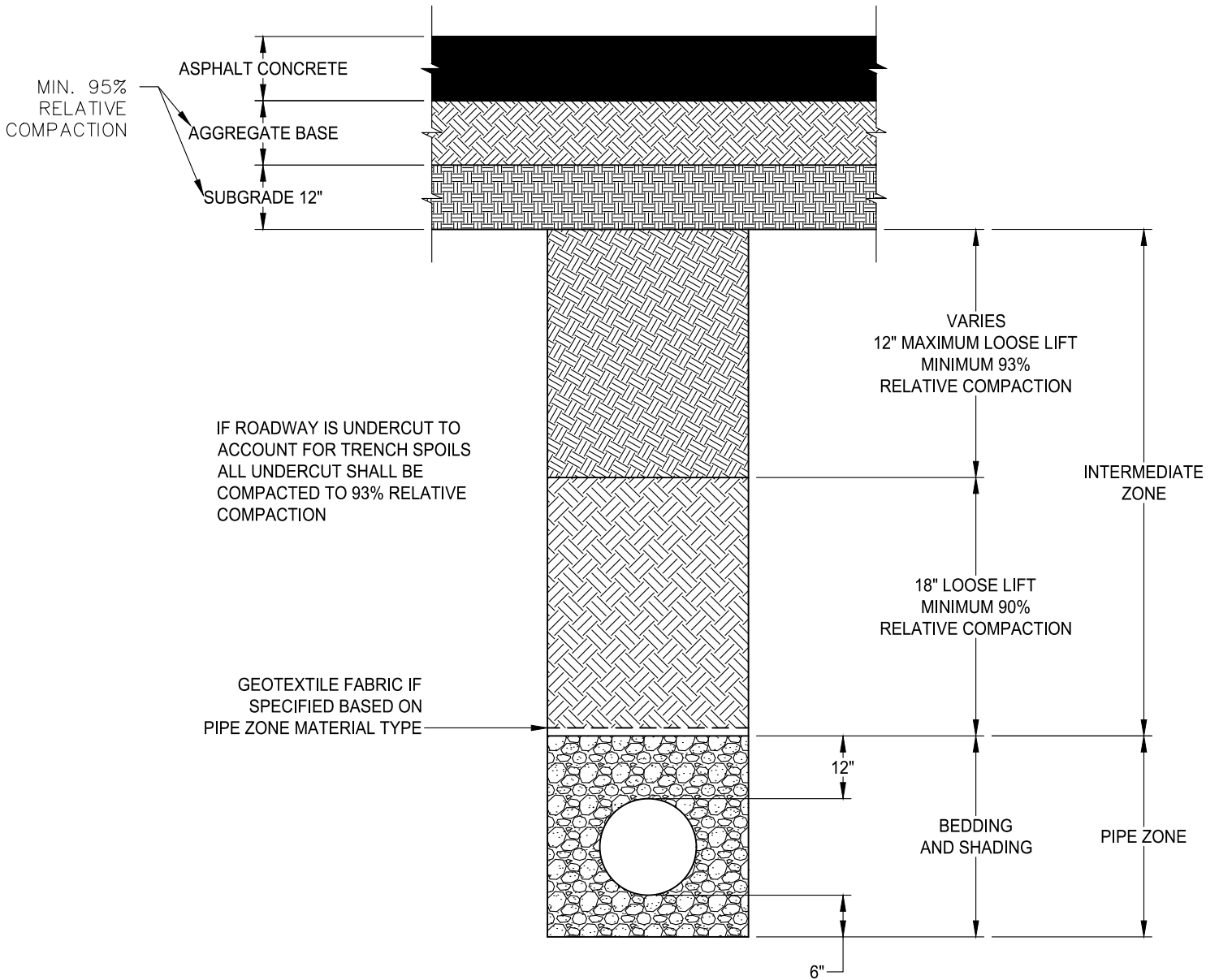
MANHOLE BACKFILL DETAIL

APPROVED BY:
Robert Muddoch
CITY ENGINEER 10/24/2018
DATE



DRAWING NUMBER


ST - 8A




DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

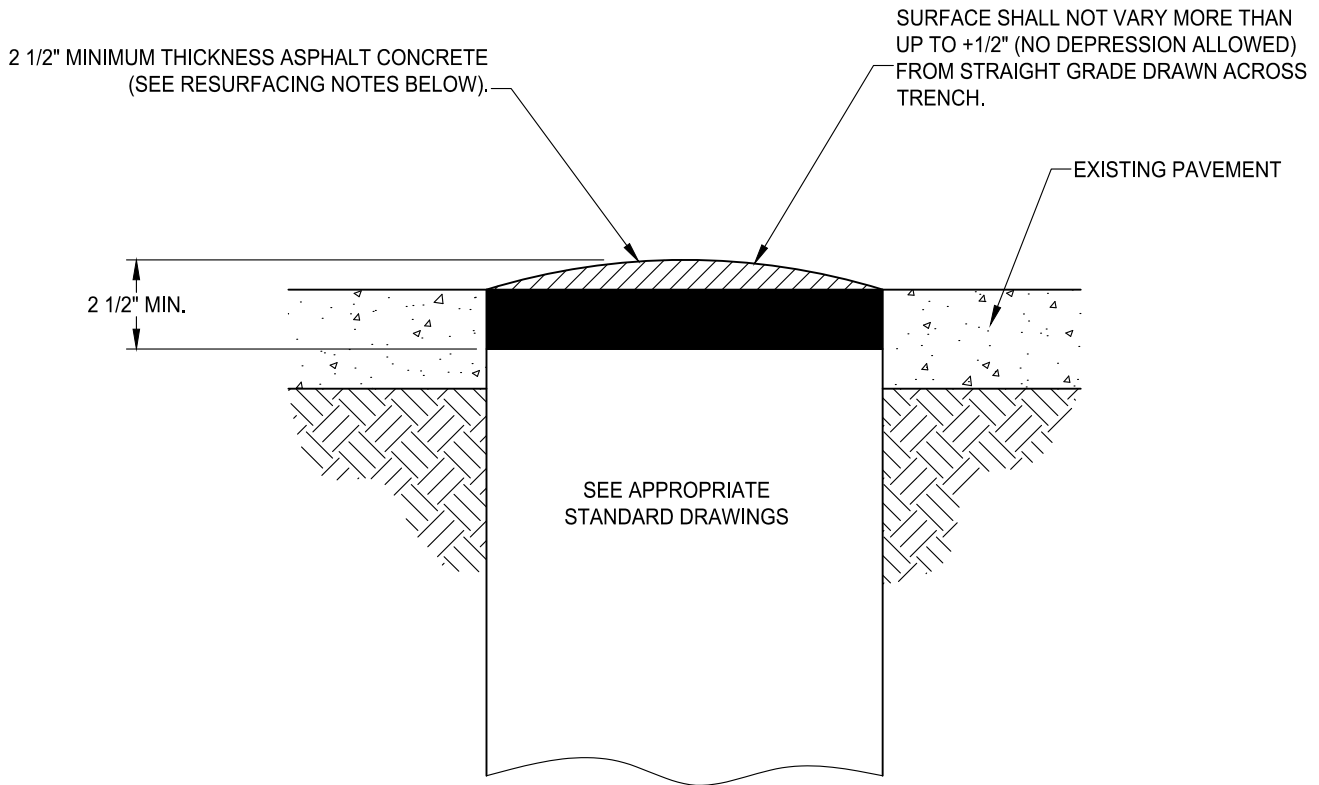
**TYPICAL TRENCH COMPACTION
DETAIL**

APPROVED BY:

 CITY ENGINEER 10/24/2018 DATE

DRAWING NUMBER
ST - 8



TEMPORARY



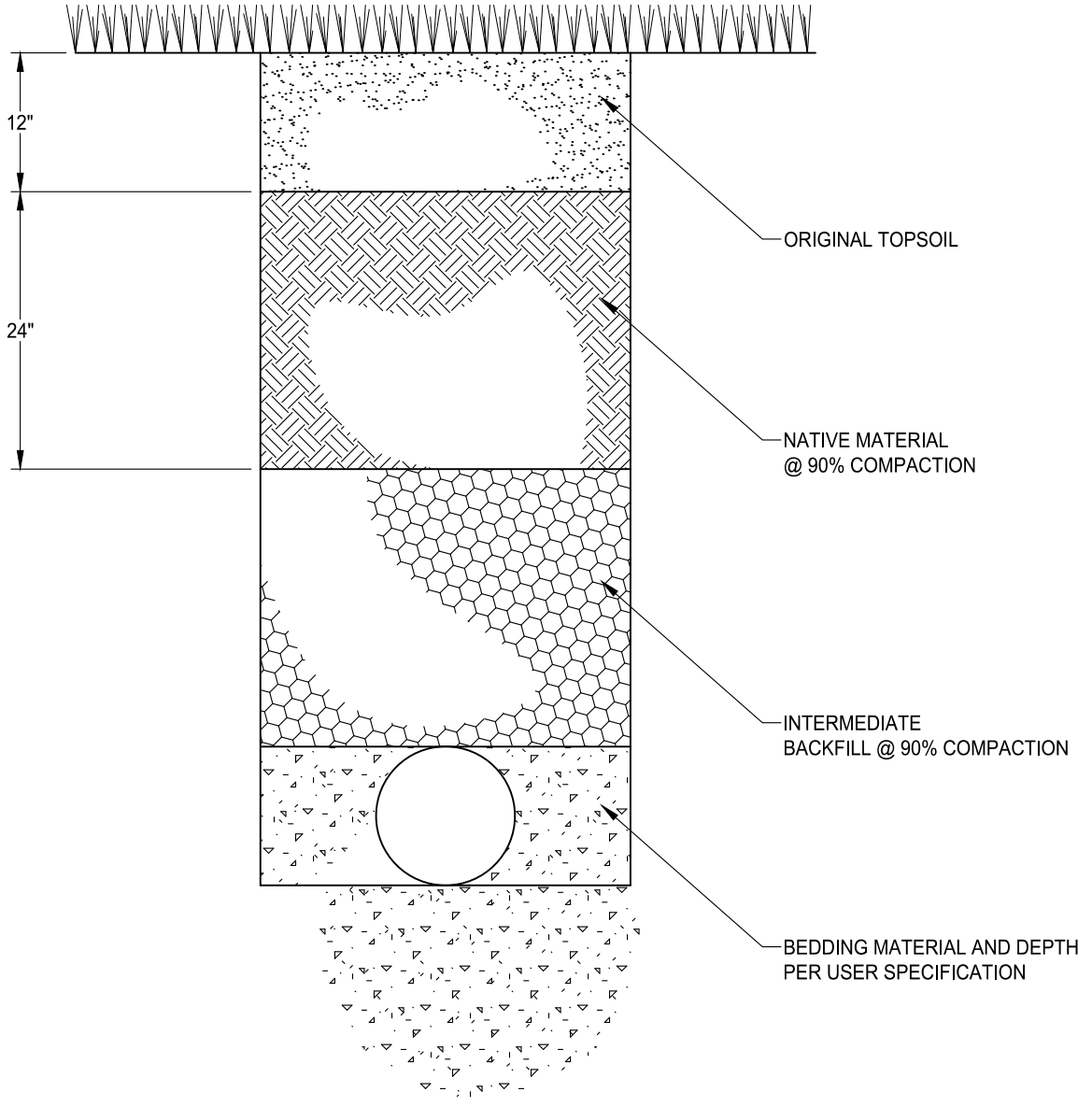
TEMPORARY RESURFACING

- A. 30 DAYS MAXIMUM ON NON-OCCUPIED RESIDENTIAL STREETS.
- B. 72 HOURS MAXIMUM ON OCCUPIED RESIDENTIAL STREETS.
- C. 48 HOURS MAXIMUM ON LOCAL COLLECTORS, MAJOR ROADS, AND PRIME ARTERIALS (HOT MIX ONLY 3/4" PG 64-16).
- D. TRAFFIC CONTROL PLAN REQUIRED.

GENERAL NOTES

1. "COLD MIX" WILL BE ALLOWED TO REMAIN AS SURFACING FOR A MAXIMUM OF 24 HOURS. EARLIER REPLACEMENT WILL BE REQUIRED IF MAINTENANCE OF THE SURFACE IS UNSATISFACTORY, SOLELY AT THE DISCRETION OF THE CITY ENGINEER OR HIS DESIGNATED REPRESENTATIVE.

DATE: 09/22/2017		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: 			
				TEMPORARY TRENCH RESURFACING		10/24/2018 DATE			
REVISION	BY	APPROVED	DATE			CITY ENGINEER		DATE	
						DRAWING NUMBER		ST - 9	



DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

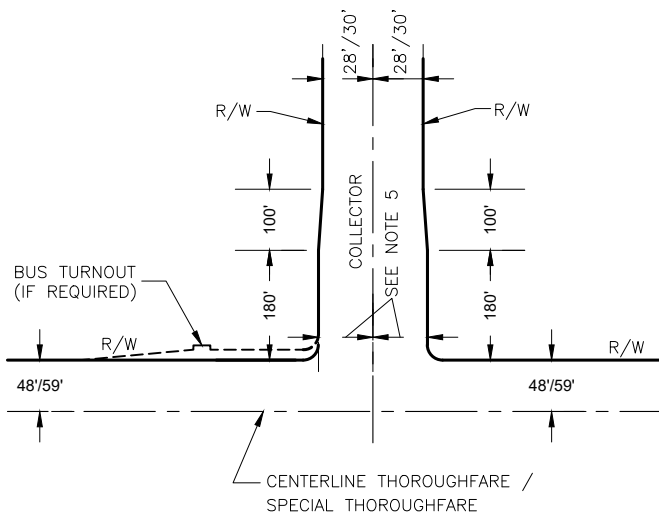
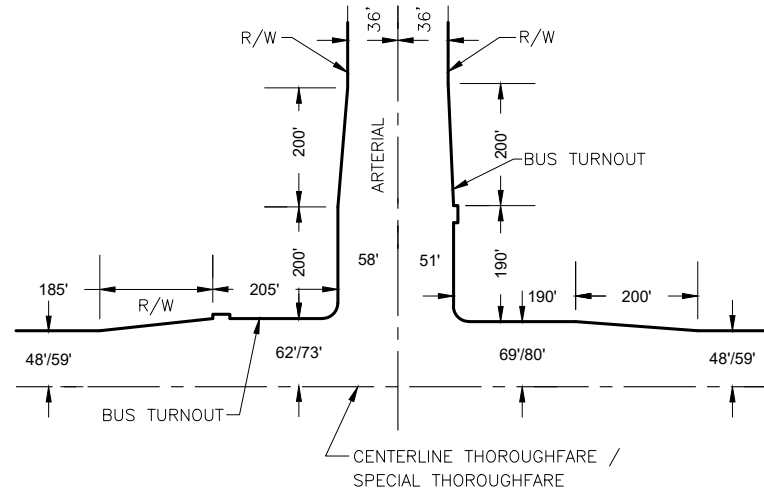
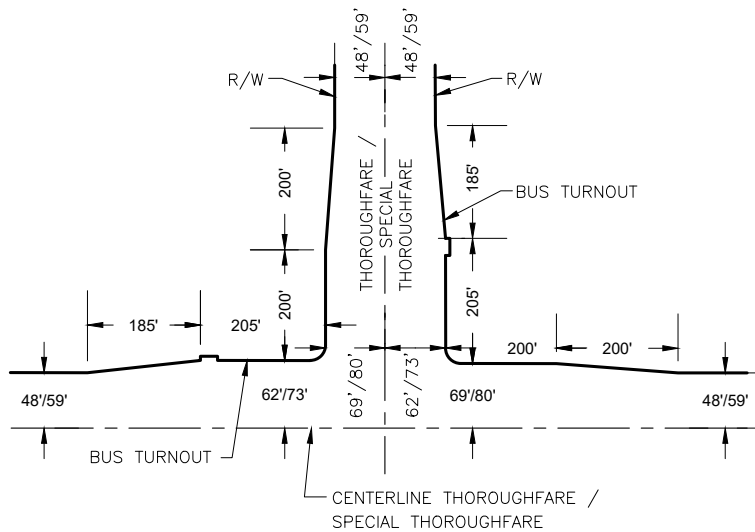
**TRENCH SECTIONS IN IMPROVED AREAS
HORTICULTURE, LAWN, OR CULTIVATED
AREAS**

APPROVED BY:
Robert Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
ST - 10





NOTES:

1. RADIUS AT CORNERS IS 25'.
2. FOR BUS TURNOUT DIMENSIONS, SEE STANDARD DRAWING ST-27
3. PEDESTRIAN EASEMENTS PER STANDARD DRAWINGS ST-27 AND ST-28 ARE REQUIRED.
4. TYPE 2 CURB AND GUTTER SHALL BE REQUIRED WITHIN ALL CURB RETURNS, AND AT ALL BUS TURNOUTS AS SHOWN ON STANDARD DRAWINGS ST-27 AND ST-28.
5. HALF WIDTH OF 56' COLLECTOR STREETS AT APPROACH TO MAJOR STREETS SHALL BE 31' IF STREET DOES NOT HAVE BICYCLE LANES AND 35' IF IT DOES. HALF WIDTH OF 60' COLLECTOR STREETS AT APPROACH TO MAJOR STREETS SHALL BE 33' IF STREET DOES NOT HAVE BICYCLE LANES AND 37' IF IT DOES.
6. SIDEWALK SHALL BE INCLUDED AS PART OF THE RIGHT-OF-WAY WHEN ADJACENT TO THE BACK OF CURB SUCH AS AT INTERSECTIONS AND DRIVEWAYS.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**WIDENING DETAILS FOR
THOROUGHFARES AT VARIOUS
STREET INTERSECTIONS**

APPROVED BY:

Paul M. Muddock

10/24/2018

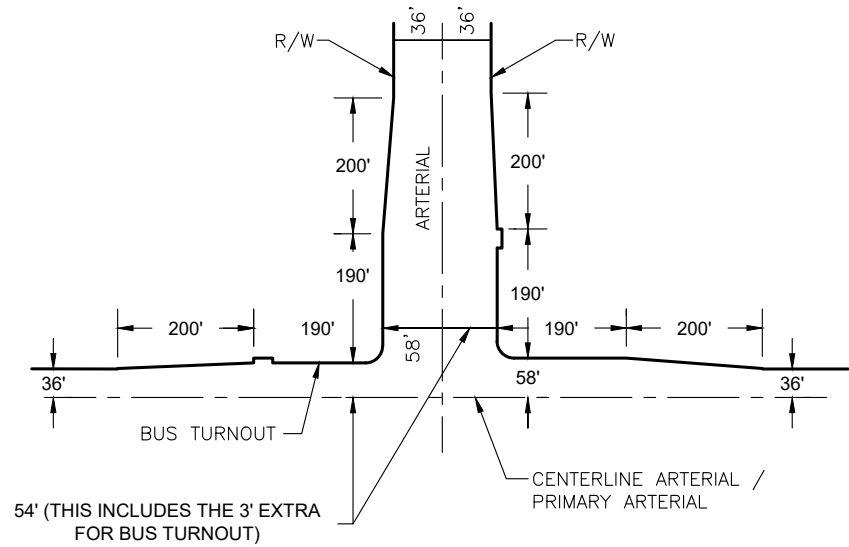
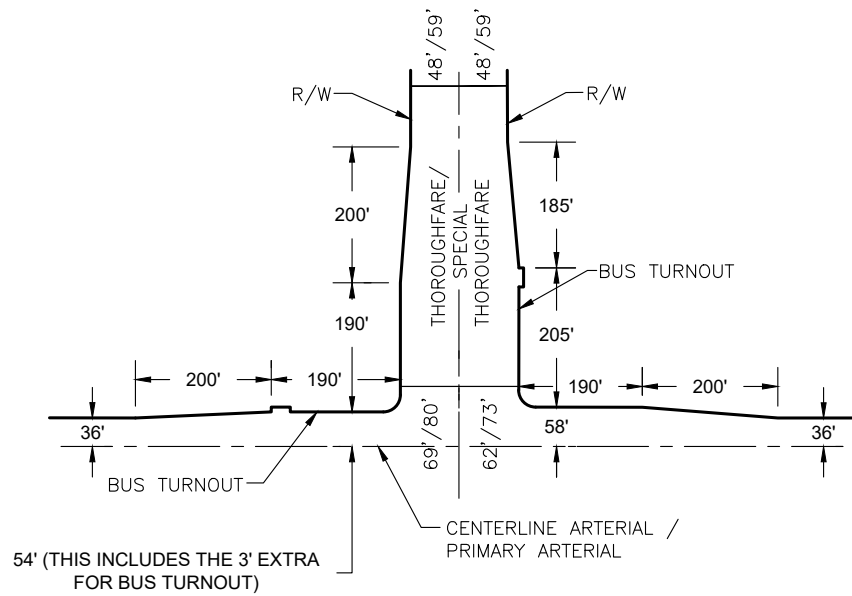
CITY ENGINEER

DATE

DRAWING NUMBER



ST - 11



NOTES:

1. RADIUS AT CORNERS IS 25'.
2. FOR BUS TURNOUT DIMENSIONS, SEE STANDARD DRAWING ST-27.
3. PEDESTRIAN EASEMENTS PER STANDARD DRAWINGS ST-27 AND ST-28 ARE REQUIRED.
4. TYPE 2 CURB AND GUTTER SHALL BE REQUIRED WITHIN ALL CURB RETURNS, AND AT ALL BUS TURNOUTS AS SHOWN ON STANDARD DRAWINGS ST-27 AND ST-28.
5. SIDEWALK SHALL BE INCLUDED AS PART OF THE RIGHT-OF-WAY WHEN ADJACENT TO THE BACK OF CURB SUCH AS AT INTERSECTIONS AND DRIVEWAYS.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**WIDENING DETAILS
FOR ARTERIALS AT MAJOR
STREET INTERSECTIONS**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

10/24/2018

DATE

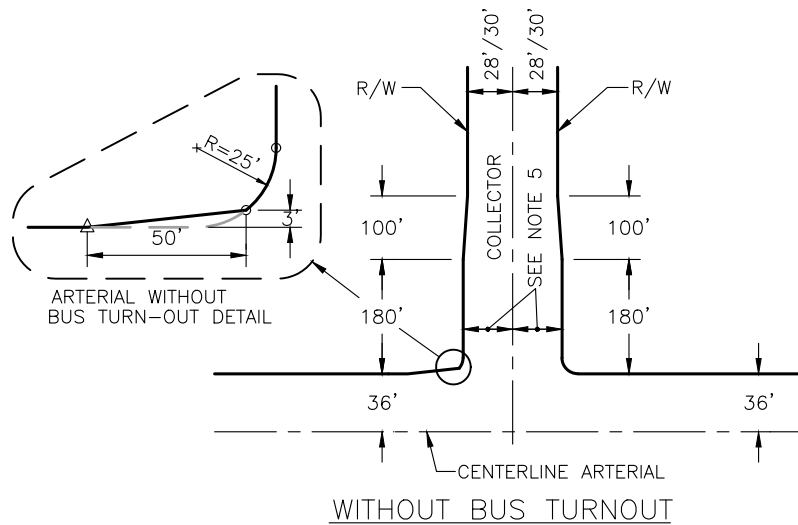
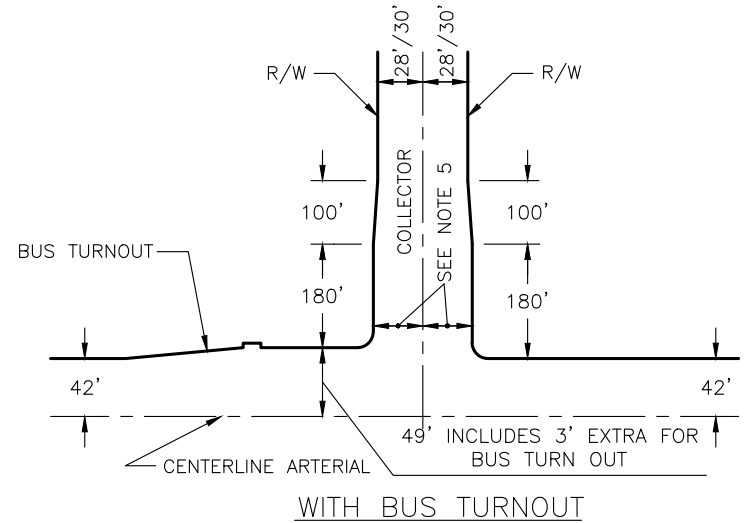


DRAWING NUMBER

ST - 12A

NOTES:

1. RADIUS AT CORNERS IS 25'.
2. FOR BUS TURNOUT DIMENSIONS, SEE STANDARD DRAWING ST-27.
3. PEDESTRIAN EASEMENTS PER STANDARD DRAWINGS ST-27 AND ST-28 ARE REQUIRED.
4. TYPE 2 CURB AND GUTTER SHALL BE REQUIRED WITHIN ALL CURB RETURNS, AND AT ALL BUS TURNOUTS AS SHOWN ON STANDARD DRAWINGS ST-27 AND ST-28.
5. HALF WIDTH OF 56' COLLECTOR STREETS AT APPROACH TO MAJOR STREETS SHALL BE 31' IF STREET DOES NOT HAVE BICYCLE LANES AND 35' IF IT DOES. HALF WIDTH OF 60' COLLECTOR STREETS AT APPROACH TO MAJOR STREETS SHALL BE 33' IF STREET DOES NOT HAVE BICYCLE LANES AND 37' IF IT DOES.
6. SIDEWALK SHALL BE INCLUDED AS PART OF THE RIGHT-OF-WAY WHEN ADJACENT TO THE BACK OF CURB SUCH AS AT INTERSECTIONS AND DRIVEWAYS.



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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**WIDENING DETAILS FOR
ARTERIALS AT COLLECTOR
STREET INTERSECTIONS**

APPROVED BY:

Robert M. ...

CITY ENGINEER

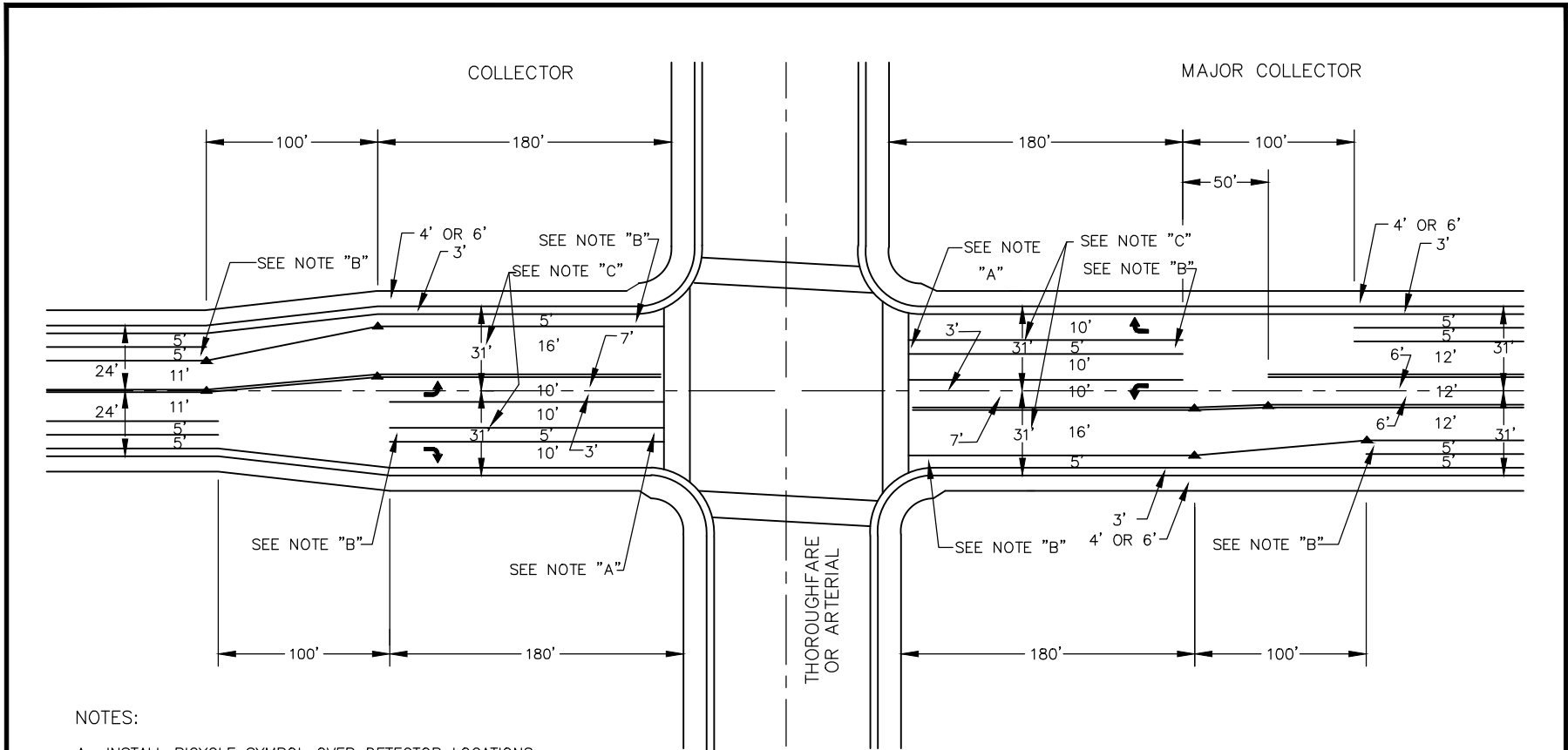
10/24/2018

DATE



DRAWING NUMBER

ST - 12B



NOTES:

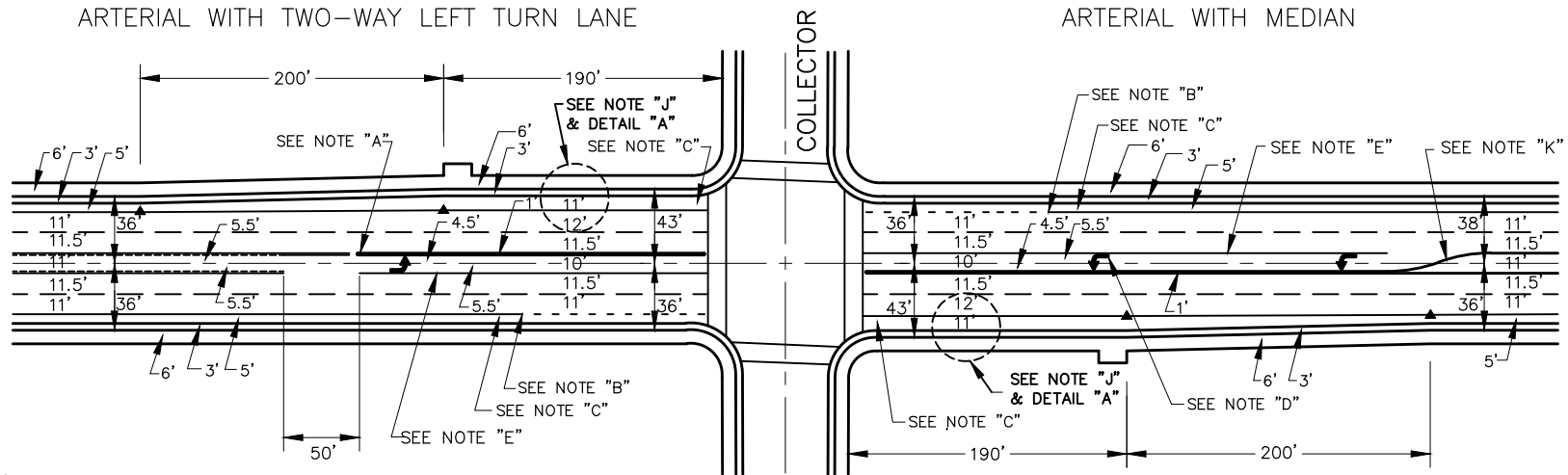
- A. INSTALL BICYCLE SYMBOL OVER DETECTOR LOCATIONS.
- B. INSTALL "BIKE", "LANE" AND " " PAVEMENT LEGENDS AT THE FOLLOWING LOCATIONS:
 - APPROXIMATELY 10' PAST CROSSWALKS.
 - AT THE BEGINNING OF BICYCLE LANE ADJOINING RIGHT-TURN LANES.
- C. FOR COLLECTORS WITH 6' SIDEWALKS, THE RIGHT-OF-WAY WIDTH IS 37'.
- D. DIMENSIONS ARE TO CENTERLINE OF STRIPES.
- E. SIDEWALK SHALL BE INCLUDED AS PART OF THE RIGHT-OF-WAY WHEN ADJACENT TO THE BACK OF CURB SUCH AS AT INTERSECTIONS AND DRIVEWAYS.

F. BIKE LANE MARKINGS SHALL BE IN ACCORDANCE WITH CALTRANS VERSION.

DATE: 09/22/2007		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS		APPROVED BY: CITY ENGINEER		10/24/2018 DATE	
REVISION	BY	APPROVED	DATE	TYPICAL STRIPING FOR COLLECTOR STREETS WITH BICYCLE LANES AT INTERSECTIONS WITH THOROUGHFARE OR ARTERIAL STREETS				DRAWING NUMBER	
								ST - 13	
	RS	RM	12/19						

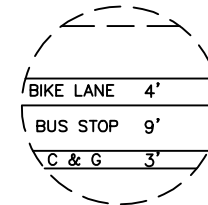
ARTERIAL WITH TWO-WAY LEFT TURN LANE

ARTERIAL WITH MEDIAN



NOTES:

- A. END OF RAISED MEDIAN MAY BE MOVED AS NECESSARY FOR DRIVEWAY LOCATIONS. SEE IMPROVEMENT STANDARD SECTION 4-10 (J)
- B. BIKE LANE STRIPING TO BE DASHED BEGINNING 120' FROM INTERSECTION.
- C. INSTALL "BIKE", "LANE", AND "→" PAVEMENT LEGENDS PER CoMUTCD AND CALTRANS STANDARD PLANS, AT THE FOLLOWING LOCATIONS:
 - APPROXIMATELY 10' PAST CROSSWALKS;
 - BEFORE START OF DASHED BICYCLE LANE STRIPING.
- D. DIRECTIONAL ARROWS ARE PROVIDED AT THE BEGINNING OF ALL TURN POCKETS. INSTALL ADDITIONAL LEFT-TURN ARROW MIDWAY IN THE LENGTH OF THE TURN LANE IF IT EXCEEDS 250'.
- E. LENGTH OF TURN POCKET IS TO BE SIZED ACCORDING TO TRAFFIC NEEDS. 180' MIN. SEE 3-10 (H) OF DEPARTMENT OF TRANSPORTATION DESIGN PRACTICE GUIDE.
- F. DIMENSIONS ARE TO CENTERLINE OF STRIPES.
- G. SHOULD DESIGN OF ROADWAY NOT INCLUDE BUS TURNOUTS, DESIGN OF INTERSECTIONS OF ARTERIAL & COLLECTOR STREETS SHALL CONFORM TO THE DETAIL ON DRAWING ST-12B
- H. ALL PAVEMENT MARKINGS & STRIPING PER CALTRANS STANDARD PLANS.
- I. SIDEWALK SHALL BE INCLUDED AS PART OF THE RIGHT-OF-WAY WHEN ADJACENT TO THE BACK OF CURB SUCH AS AT INTERSECTIONS AND DRIVEWAYS.
- J. IF THE DRIVEWAY, APPROVED BY PUBLIC WORKS, IS WITHIN THE EXPANDED INTERSECTION, ADDITIONAL 2 FEET RIGHT-OF-WAY WILL BE REQUIRED. SEE DETAIL "A".
- K. 90' BAY TAPER PER CALTRANS STANDARD PLANS.



Detail "A"

- L. BIKE LANE MARKINGS SHALL BE IN ACCORDANCE WITH CoMUTCD, CALTRANS VERSION.

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▲	RS	RM	12/19

CITY OF ELK GROVE - PUBLIC WORKS

**TYPICAL STRIPING FOR
ARTERIAL INTERSECTIONS
WITH COLLECTORS**

APPROVED BY:

Robert M. ...

10/24/2018

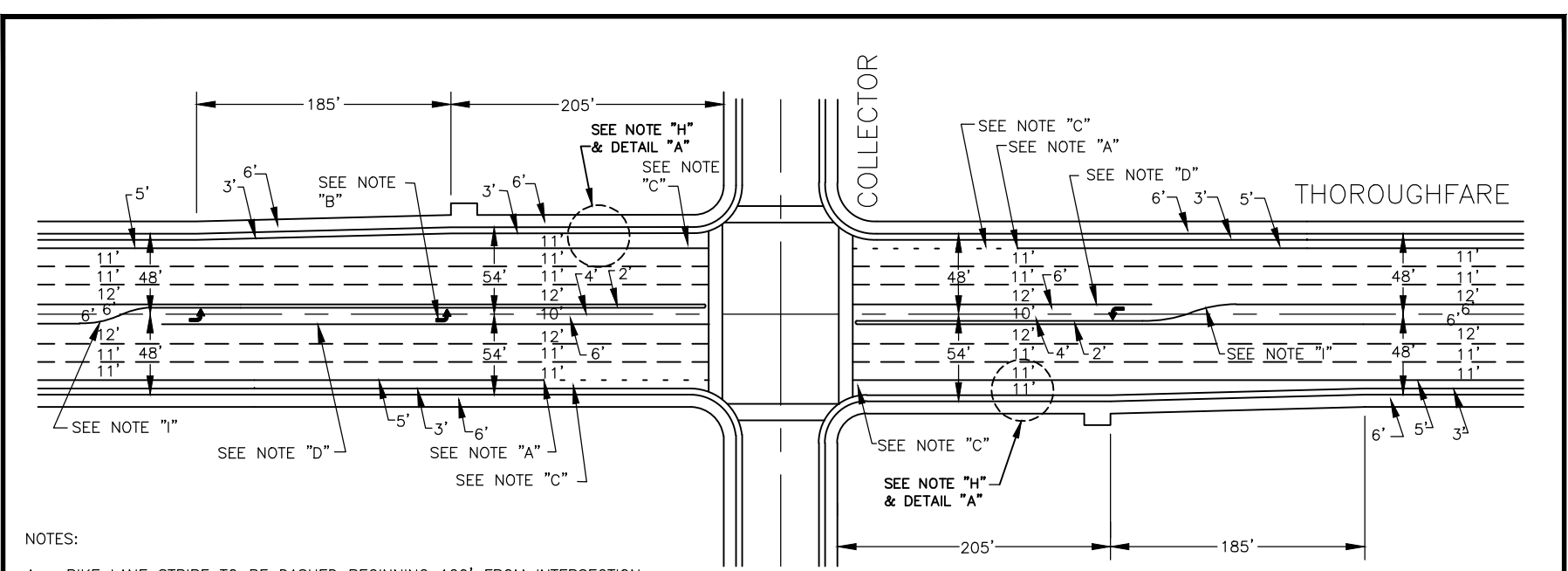
CITY ENGINEER

DATE



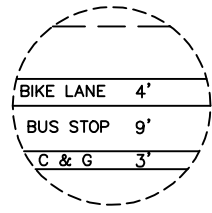
DRAWING NUMBER

ST - 14B



NOTES:

- A. BIKE LANE STRIPE TO BE DASHED BEGINNING 120' FROM INTERSECTION.
- B. INSTALL ADDITIONAL LEFT TURN ARROW MIDWAY IN THE LENGTH OF THE TURN LANE IF IT EXCEEDS 250'.
- C. INSTALL "BIKE", "LANE" AND "➔" PAVEMENT LEGENDS PER CaMUTCD AND CALTRANS STANDARD PLANS AT THE FOLLOWING LOCATIONS:
 - APPROXIMATELY 10' PAST CROSSWALKS;
 - BEFORE START OF DASHED BICYCLE LANE STRIPING.
- D. LENGTH OF TURN POCKET IS TO BE SIZED ACCORDING TO TRAFFIC NEEDS. 180' MIN. SEE 3-10 H OF TRANSPORTATION DIVISION DESIGN PRACTICE GUIDE. AND DIRECTIONAL ARROWS ARE PROVIDED AT THE BEGINNING OF ALL TURN POCKETS. IF POCKET IS LONGER THAN 100 FT. ADDITIONAL ARROWS SHALL BE PLACED AT THE END.
- E. DIMENSIONS ARE TO CENTERLINE OF STRIPES.
- F. ALL PAVEMENT MARKINGS & STRIPING PER CALTRANS STANDARD PLANS.
- G. SIDEWALK SHALL BE INCLUDED AS PART OF THE RIGHT-OF-WAY WHEN ADJACENT TO THE BACK OF CURB SUCH AS AT INTERSECTIONS AND DRIVEWAYS.
- H. IF THE DRIVEWAY, APPROVED BY PUBLIC WORKS, IS WITHIN THE EXPANDED INTERSECTION, ADDITIONAL 2 FEET RIGHT-OF-WAY WILL BE REQUIRED. SEE DETAIL "A".
- I. 90' BAY TAPER PER CALTRANS STANDARD PLANS.



Detail "A"

J. BIKE LANE MARKINGS SHALL BE IN ACCORDANCE WITH CaMUTCD.

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REVISION	BY	APPROVED	DATE
△	RS	RM	12/19

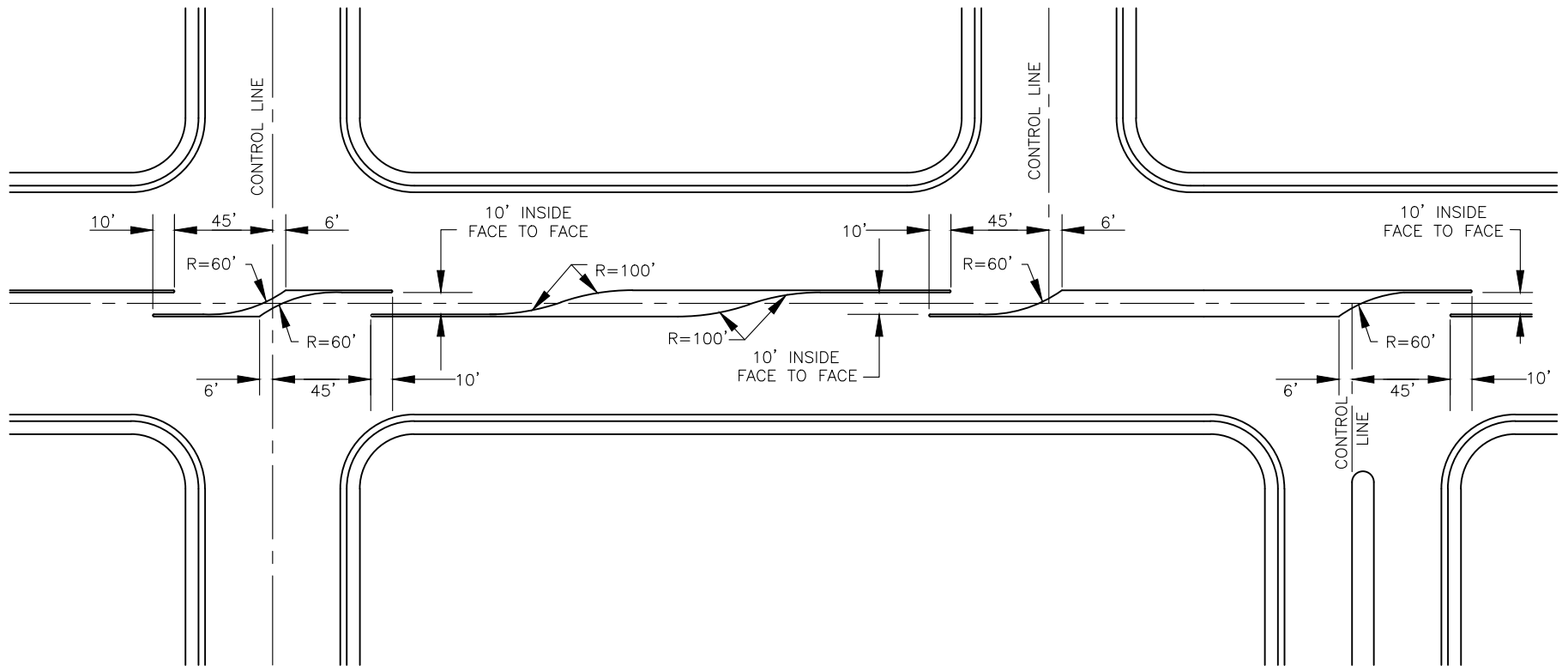
CITY OF ELK GROVE - PUBLIC WORKS

TYPICAL STRIPING FOR THOROUGHFARE INTERSECTIONS WITH COLLECTORS

APPROVED BY:

CITY ENGINEER 10/24/2018 DATE


DRAWING NUMBER
ST - 15B



DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

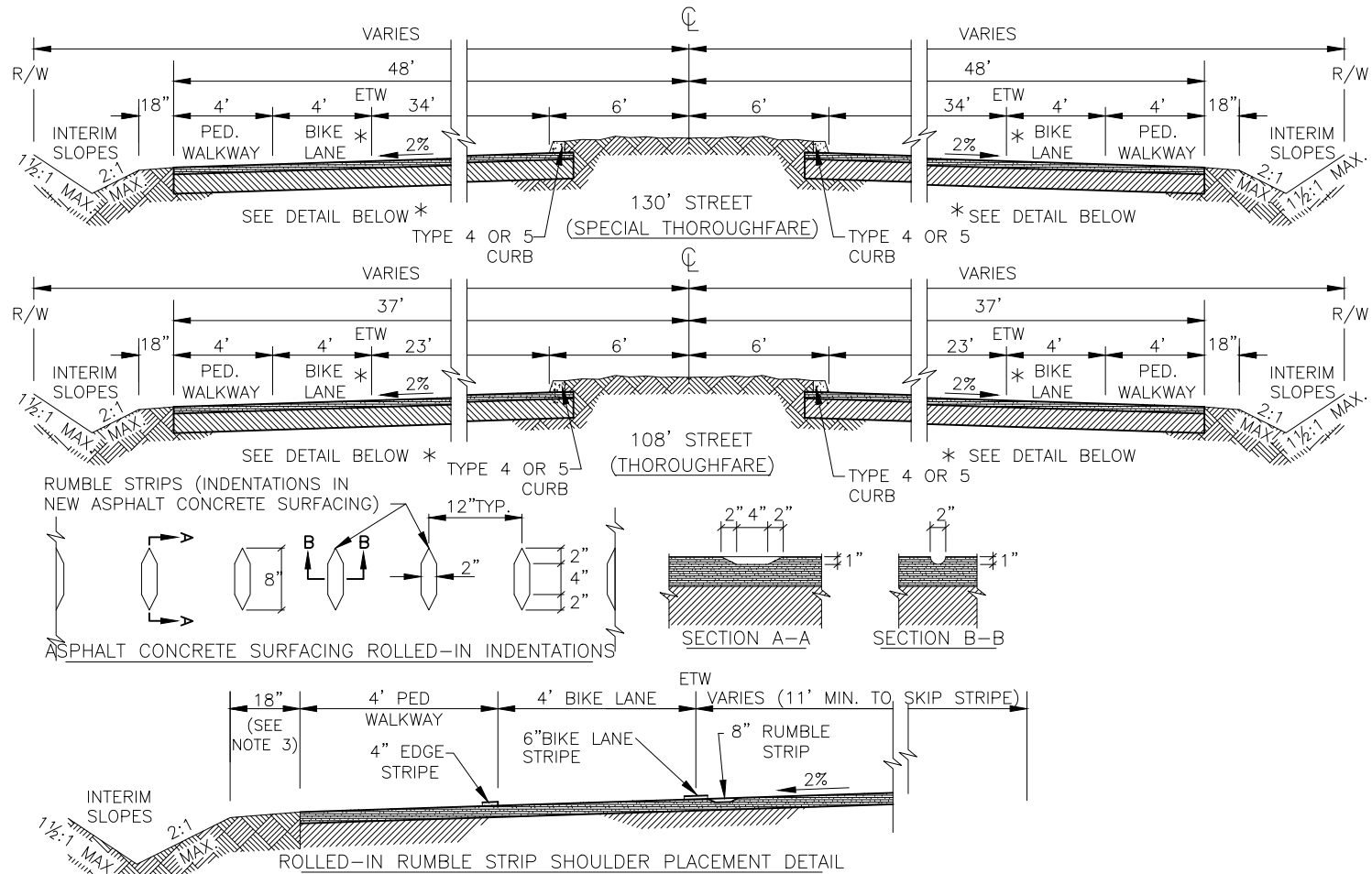
**TYPICAL RAISED ISLAND DESIGNS
FOR LIMITING ACCESS**

APPROVED BY:

 CITY ENGINEER

10/24/2018
 DATE

DRAWING NUMBER
ST - 16





1. RUMBLE STRIP SHALL STOP 120' FROM THE C.R. ON THE MAJOR ROAD APPROACHING ENTERING SIDE STREETS, AND BEGIN AT C.R. ON THE MAJOR ROAD DEPARTING ENTERING SIDE STREETS.
2. POSITION BIKE LANE LEGENDS BETWEEN RUMBLE STRIP AND EDGE LINE STRIPE.
3. EARTHEN SHOULDER MAY BE ELIMINATED IF SHOULDER CONFLICTS WITH TREES OR RIGHT-OF-WAY LIMITS AND FULL DEPTH ASPHALT SECTION IS USED.

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REVISION	BY	APPROVED	DATE

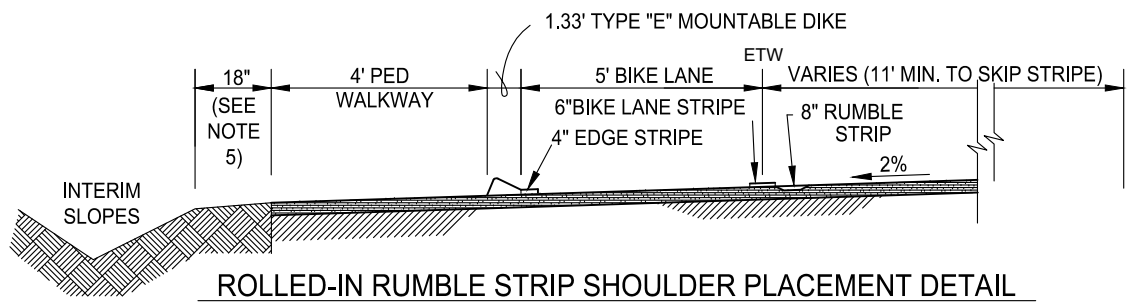
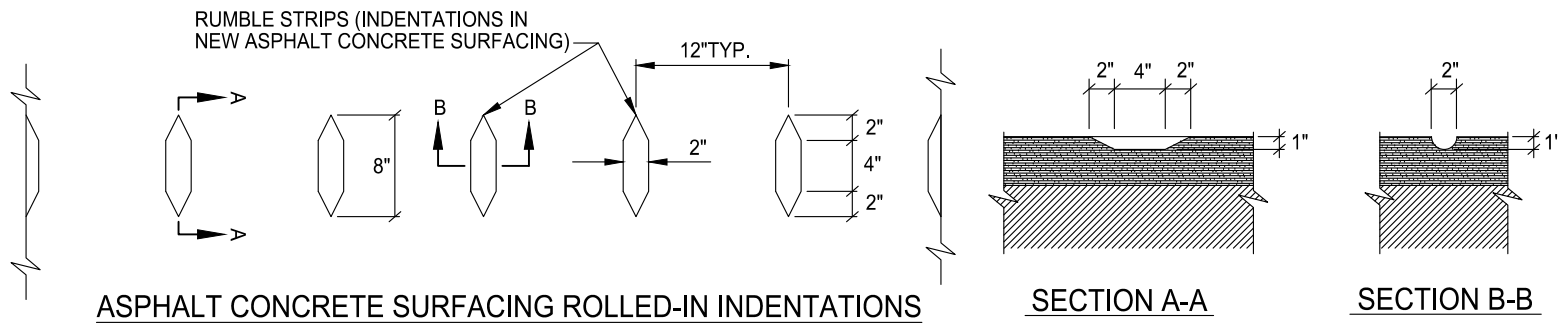
CITY OF ELK GROVE - PUBLIC WORKS

**TYPICAL SECTIONS INTERIM IMPROVEMENTS
FOR SPECIAL THOROUGHFARE AND
THOROUGHFARE STREETS WITH ROLLED-IN
RUMBLE STRIPS**

APPROVED BY:
Robert M. ...
CITY ENGINEER
10/24/2018
DATE

DRAWING NUMBER
ST - 17A





1. ROLLED-IN RUMBLE STRIPS SHALL BE USED WHERE REQUIRED BY THE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION.
2. ROLLED-IN RUMBLE STRIPS MAY BE USED ON ROADWAYS THAT ARE DESIGNATED FOR 80' OR MORE OF RIGHT-OF-WAY AND ARE CONSTRUCTED WITH INTERIM IMPROVEMENTS (WITHOUT CURB & GUTTER).
3. RUMBLE STRIP SHALL STOP 120' FROM THE C.R. ON THE MAJOR ROAD APPROACHING ENTERING SIDE STREETS, AND BEGIN AT C.R. ON THE MAJOR ROAD DEPARTING ENTERING SIDE STREETS.
4. POSITION BIKE LANE LEGENDS BETWEEN RUMBLE STRIP AND EDGE LINE STRIPE.
5. EARTHEN SHOULDER MAY BE ELIMINATED IF SHOULDER CONFLICTS WITH TREES OR RIGHT-OF-WAY LIMITS AND FULL DEPTH ASPHALT SECTION IS USED.
6. TYPE "E" MOUNTABLE DIKE PER CALTRANS STD. PLANS DRAWING A-87B.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

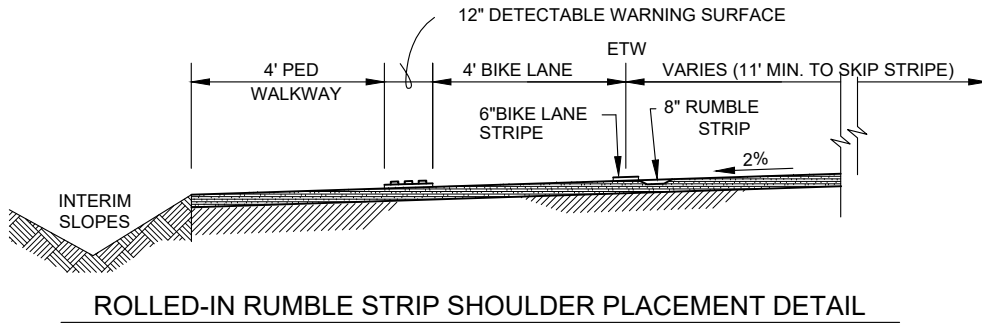
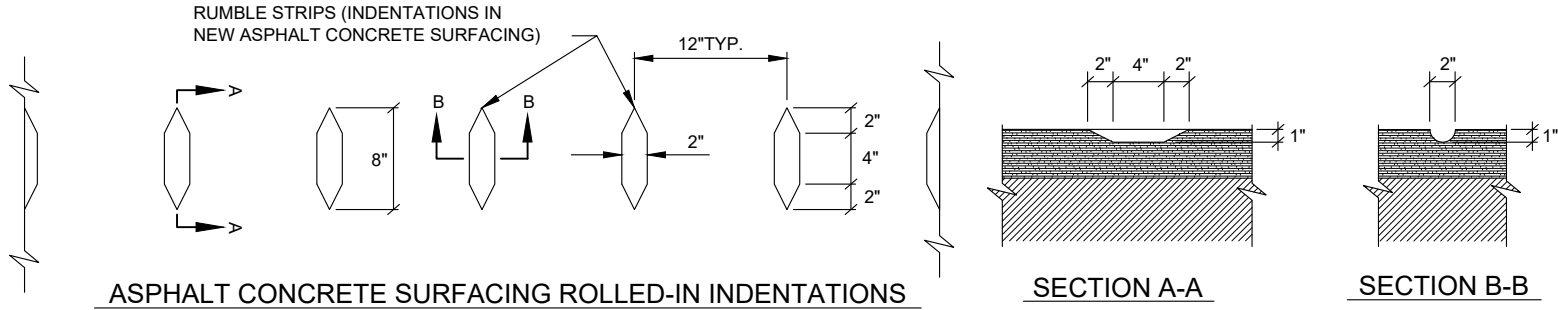
**ROLLED-IN RUMBLE STRIPS
FOR INTERIM ROADWAY
IMPROVEMENTS**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
ST - 17B





1. ROLLED-IN RUMBLE STRIPS SHALL BE USED WHERE REQUIRED BY THE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION.
2. ROLLED-IN RUMBLE STRIPS MAY BE USED ON ROADWAYS THAT ARE DESIGNATED FOR 80' OR MORE OF RIGHT-OF-WAY AND ARE CONSTRUCTED WITH INTERIM IMPROVEMENTS (WITHOUT CURB & GUTTER).
3. RUMBLE STRIP SHALL STOP 120' FROM THE C.R. ON THE MAJOR ROAD APPROACHING ENTERING SIDE STREETS, AND BEGIN AT C.R. ON THE MAJOR ROAD DEPARTING ENTERING SIDE STREETS.
4. POSITION BIKE LANE LEGENDS BETWEEN RUMBLE STRIP AND EDGE LINE STRIPE.
5. EARTHEN SHOULDER MAY BE ELIMINATED IF SHOULDER CONFLICTS WITH TREES OR RIGHT-OF-WAY LIMITS AND FULL DEPTH ASPHALT SECTION IS USED.

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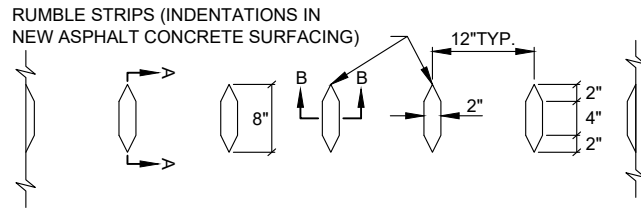
**ROLLED-IN RUMBLE STRIPS
FOR INTERIM ROADWAY
IMPROVEMENTS**

APPROVED BY:
Paul Muddoch
CITY ENGINEER

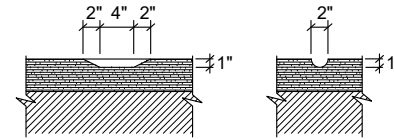
10/24/2018
DATE

DRAWING NUMBER
ST - 17C

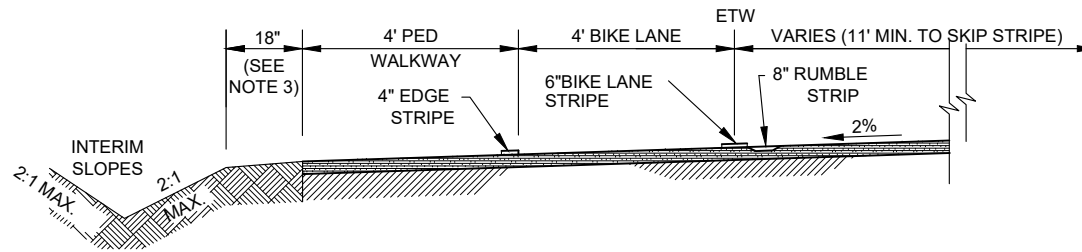




ASPHALT CONCRETE SURFACING ROLLED-IN INDENTATIONS



SECTION A-A SECTION B-B



ROLLED-IN RUMBLE STRIP SHOULDER PLACEMENT DETAIL

1. RUMBLE STRIP SHALL STOP 120' FROM THE C.R. ON THE MAJOR ROAD APPROACHING ENTERING SIDE STREETS, AND BEGIN AT C.R. ON THE MAJOR ROAD DEPARTING ENTERING SIDE STREETS.
2. POSITION BIKE LANE LEGENDS BETWEEN RUMBLE STRIP AND EDGE LINE STRIPE.
3. EARTHEN SHOULDER MAY BE ELIMINATED IF SHOULDER CONFLICTS WITH TREES OR RIGHT-OF-WAY LIMITS AND FULL DEPTH ASPHALT SECTION IS USED.


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REVISION	BY	APPROVED	DATE

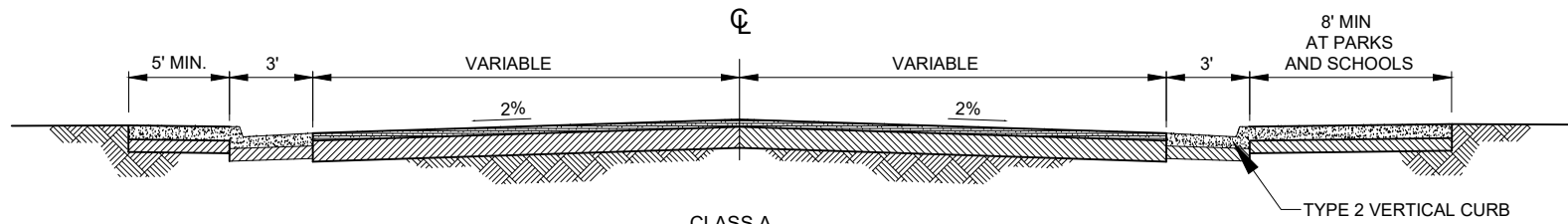
CITY OF ELK GROVE - PUBLIC WORKS

**TYPICAL SECTIONS INTERIM IMPROVEMENTS FOR
SPECIAL THOROUGHFARE AND THOROUGHFARE
STREETS WITH ROLLED-IN RUMBLE STRIPS**

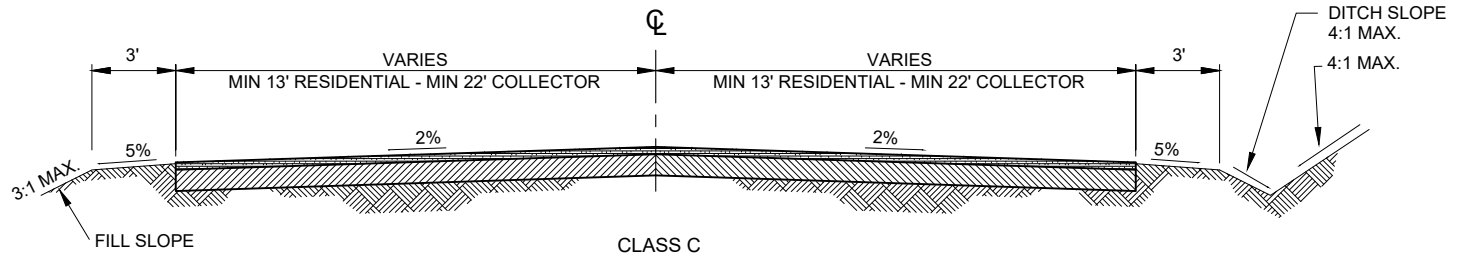
APPROVED BY:
Paul Muroch 10/24/2018
CITY ENGINEER DATE

DRAWING NUMBER
ST - 17D





CLASS A
 CLASS B (SAME AS CLASS A EXCEPT SIDEWALKS MAY BE OMITTED)



CLASS C

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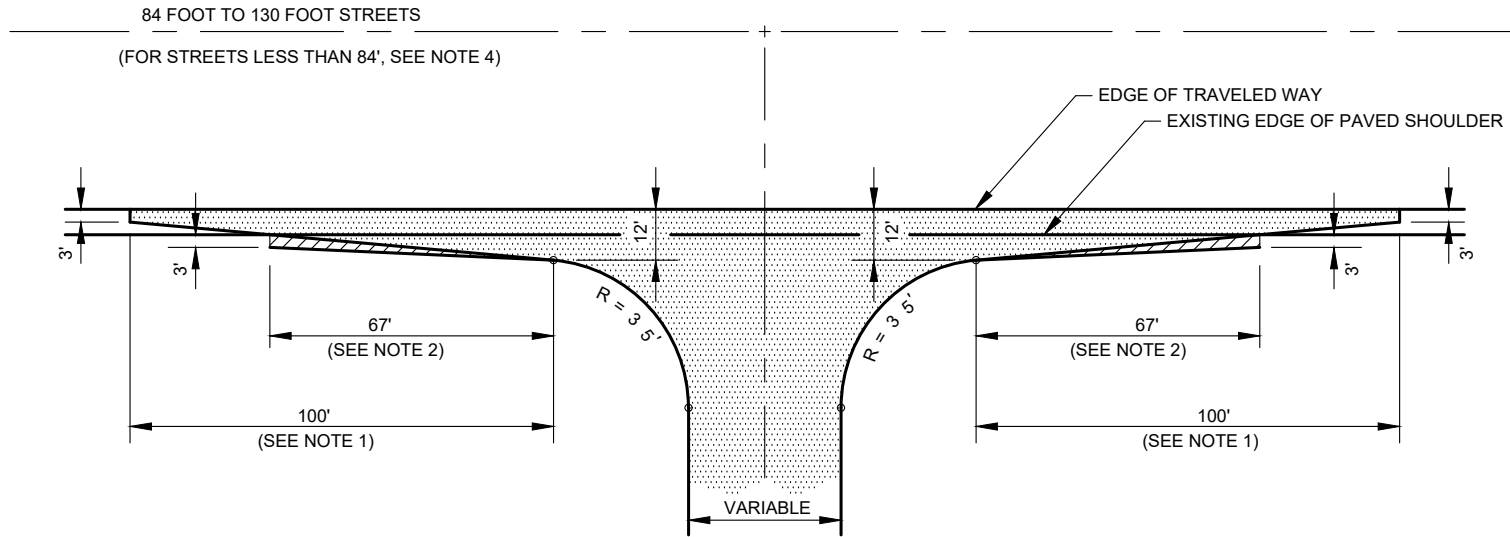
CITY OF ELK GROVE - PUBLIC WORKS

**TYPICAL SECTIONS
 STREET CLASSES
 "A", "B" & "C"**

APPROVED BY:
Paul M. Muddoch
 CITY ENGINEER
 10/24/2018
 DATE



DRAWING NUMBER
ST - 17



NOTE:

1. USE 100' PAVEMENT TAPER SECTION WHEN MAJOR STREET SHOULDER IS UNPAVED OR SEAL COATED, OR WHERE PAVED SHOULDER IS LESS THAN 4' WIDE.
2. USE 67' PAVEMENT TAPER SECTION WHEN MAJOR STREET SHOULDER IS FULLY PAVED, AND A MINIMUM OF 4' WIDE.
3. FULL ROADBED STRUCTURAL SECTION TO BE PLACED IN ACCORDANCE WITH CITY STANDARDS FOR AREA TO BE PAVED.
4. PAVEMENT TAPER SECTION MAY BE DELETED WHERE NEW STREET INTERSECTS WITH MINOR OR COLLECTOR STREETS.

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CITY OF ELK GROVE - PUBLIC WORKS

**CLASS "C"
STREET INTERSECTION**

APPROVED BY:

Paul Muddoch

CITY ENGINEER

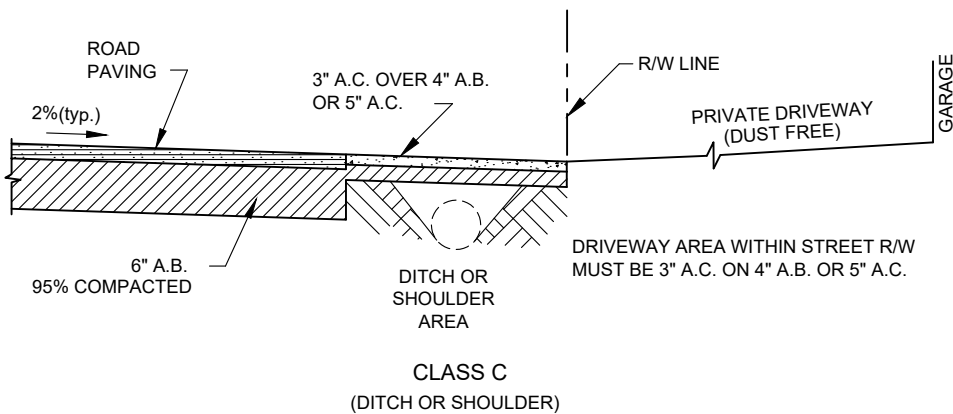
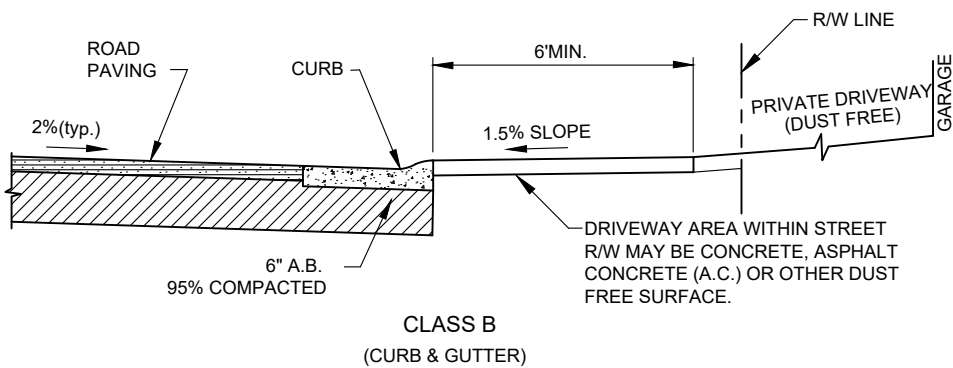
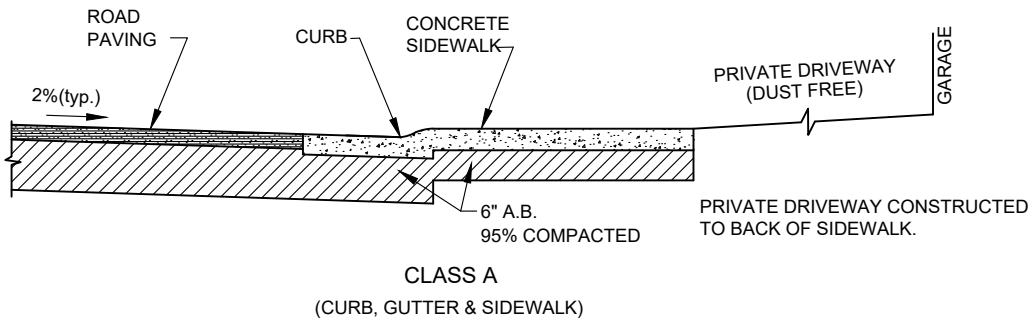
10/24/2018

DATE



DRAWING NUMBER

ST - 18



NOTE: SEE CITY OF ELK GROVE IMPROVEMENT STANDARDS SECTION 4-10 FOR DRIVEWAY REQUIREMENTS.

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CITY OF ELK GROVE - PUBLIC WORKS

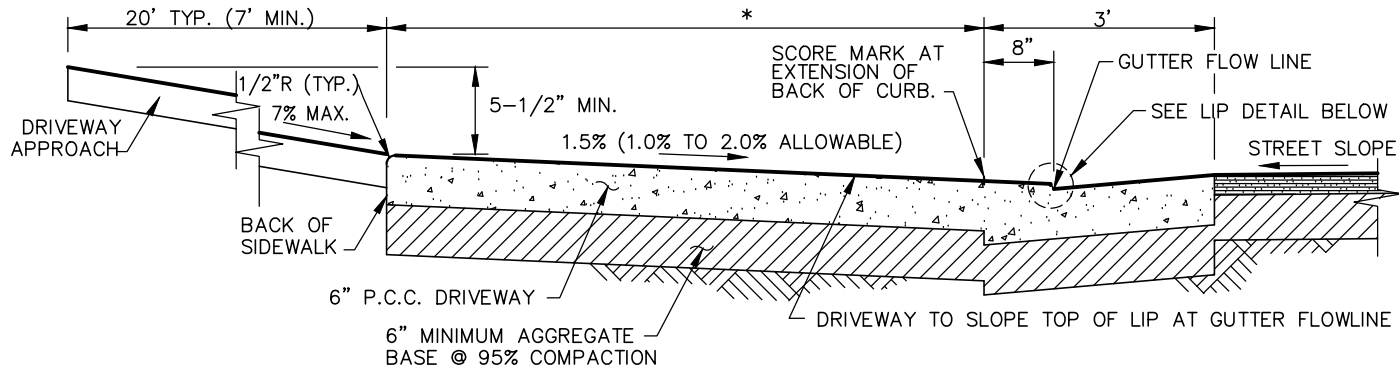
**TYPICAL STREET SECTIONS
AT RESIDENTIAL DRIVEWAYS**

APPROVED BY:
Paul Muddoch
CITY ENGINEER 10/24/2018
DATE

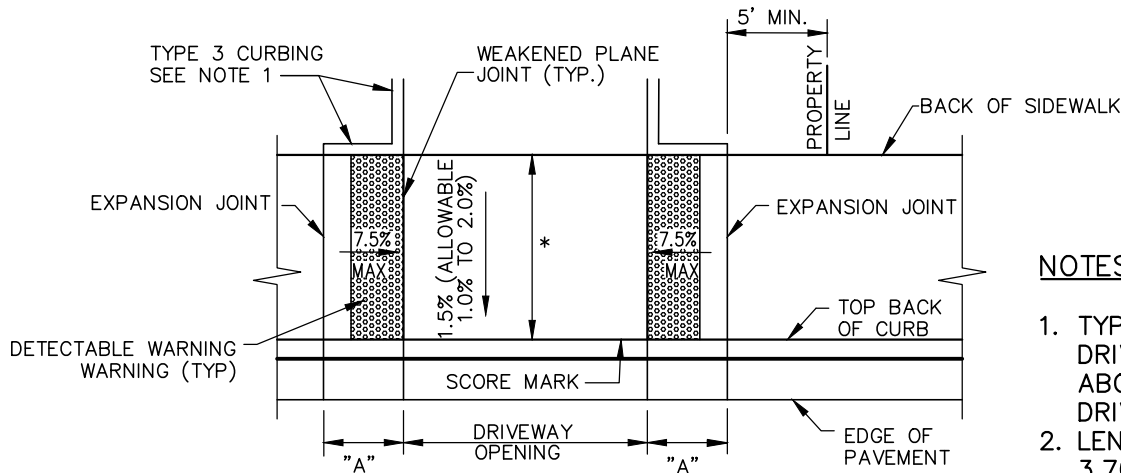


DRAWING NUMBER

ST - 19



TYPICAL DRIVEWAY SECTION

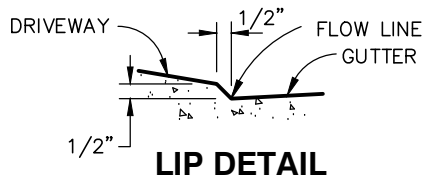


SLOPE OF GUTTER	"A" (APPROX. LENGTH)
0.25% TO 0.65%	6'-0"
> 0.65% TO 1.75%	7'-0"
> 1.75% TO 2.55%	8'-0"
> 2.55% TO 3.20%	9'-0"
> 3.20% TO 3.70%	10'-0"
> 3.70%	SEE NOTE 2

NOTES:

1. TYPE 3 CURBING ON SITE SHALL EXTEND TO WHERE THE DRIVEWAY APPROACH IS A MINIMUM OF FOUR INCHES ABOVE THE BACK OF SIDEWALK ELEVATION AT THE DRIVEWAY.
2. LENGTH OF DRIVEWAY FLAIR ON STREETS STEEPER THAN 3.70% SHALL REQUIRE SPECIAL APPROVAL BY DESIGN CHIEF OF THE DEPARTMENT OF TRANSPORTATION.
3. A 1/2-INCH CONCRETE BATTER SHALL BE PLACED ON ALL CURB LIPS.
4. SEE STD. DWG. AR-4.7 FOR ELEMENTS NOT SHOWN HEREON.

* DRIVEWAY APRON MATCHES SIDEWALK WIDTH



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CITY OF ELK GROVE - PUBLIC WORKS

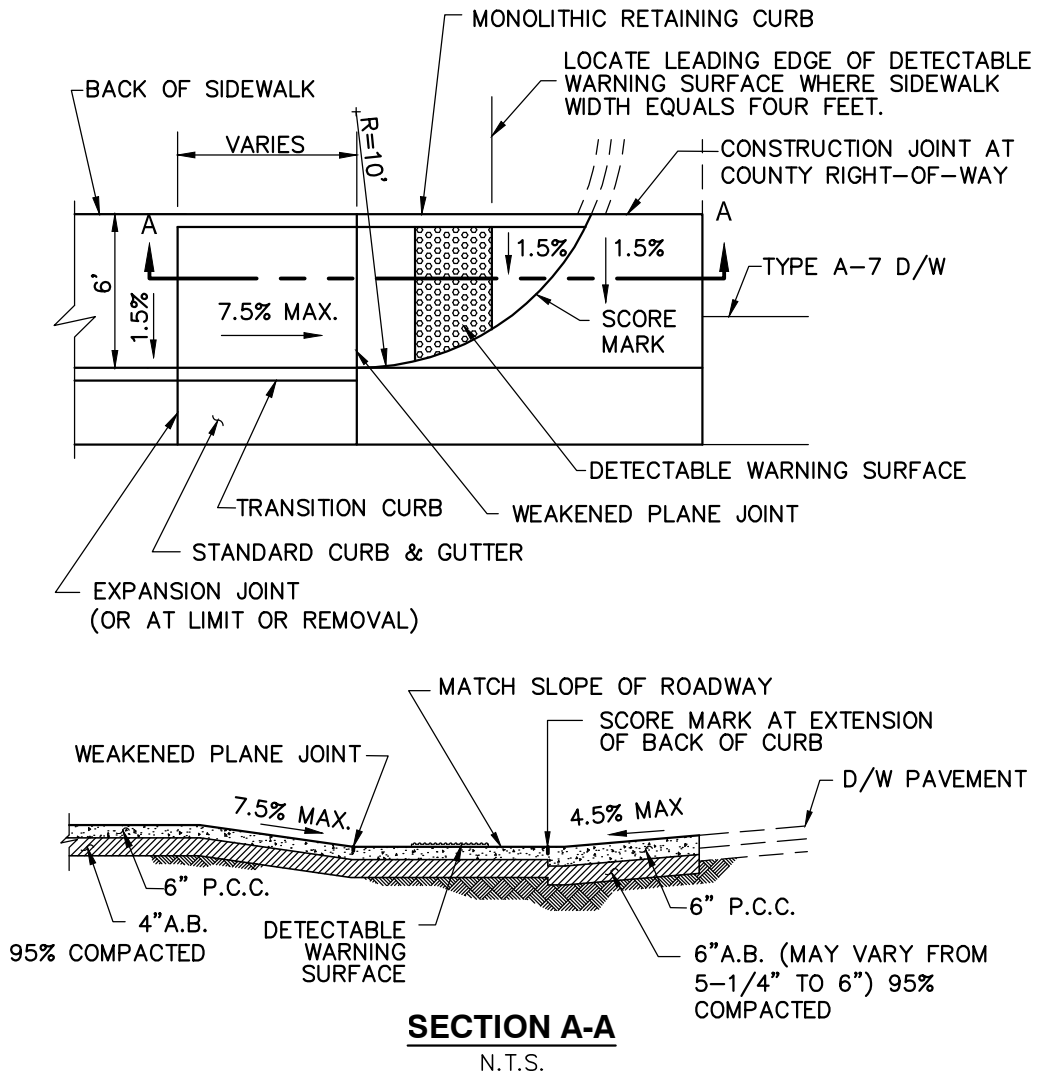
**COMMERCIAL DRIVEWAYS
TYPE A-6**

APPROVED BY:
Robert Muroch
1/16/2020
CITY ENGINEER DATE



DRAWING NUMBER

ST - 20



NOTES:

1. IT MAY BE USED FOR RECONSTRUCTION OF TYPE A-7 DRIVEWAYS IN AREAS WITHOUT SUFFICIENT RIGHT-OF-WAY FOR STANDARD TYPE A-7 DRIVEWAY CONSTRUCTION AND WITHOUT WALKWAY EXTENSION ON TO ABUTTING PROPERTY.
2. NO PULL BOX, UTILITY VAULT, UTILITY POLE, MANHOLE OR SIMILAR APPURTENANCE SHALL BE LOCATED WITHIN SIDEWALK RAMP AREA.
3. IT IS DESIRABLE TO LOCATE ALL DRAIN INLETS OUT OF SIDEWALK RAMP AREA. USE OF DRAIN INLET WITHIN RAMP AREA REQUIRES SPECIAL DESIGN OF INLETS.


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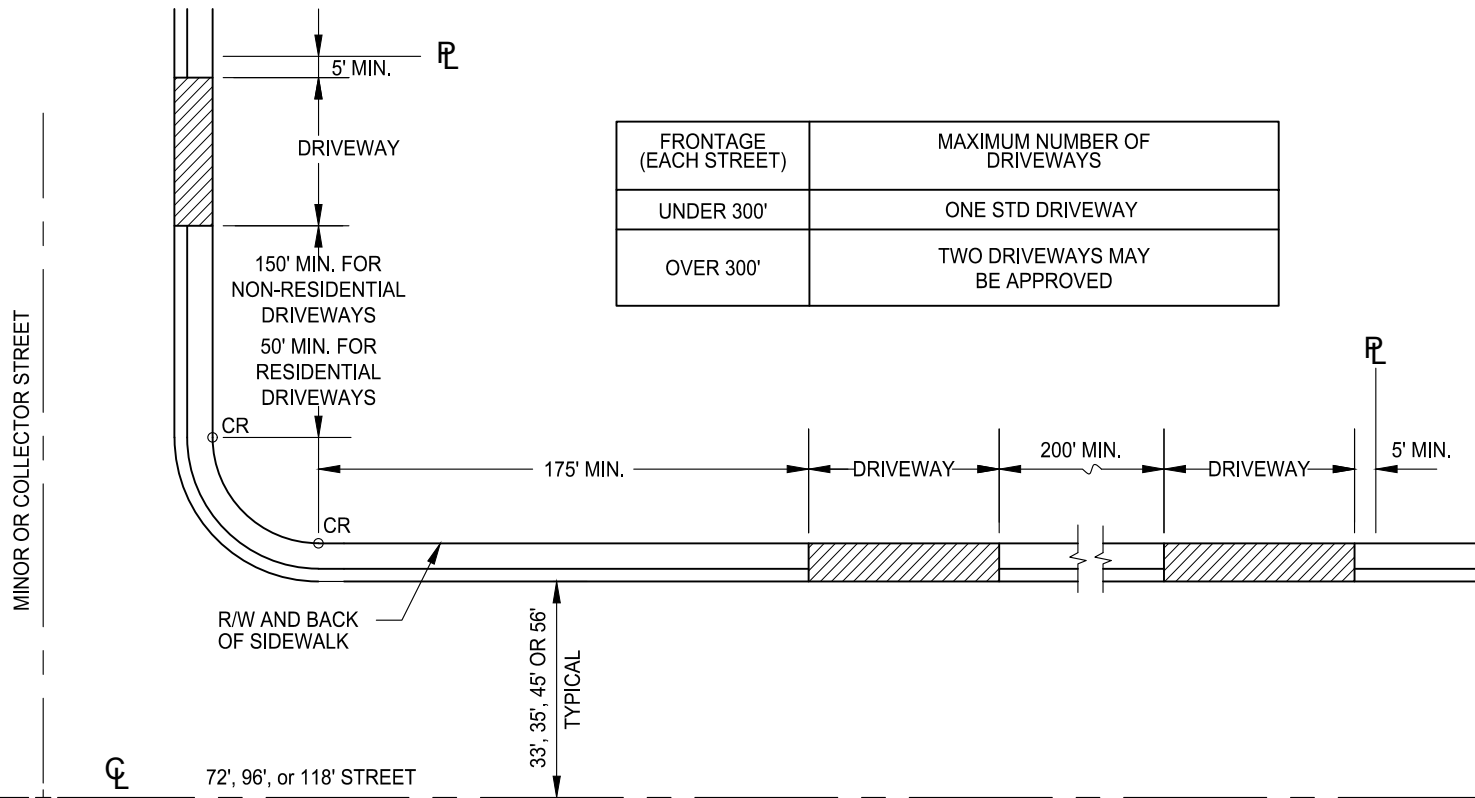
CITY OF ELK GROVE - PUBLIC WORKS

**SIDEWALK RAMP FOR A-7 DRIVEWAYS
WITHOUT ADDITIONAL R/W
(NOT FOR NEW CONSTRUCTION)**

APPROVED BY:
Paul M. ... 1/16/2020
CITY ENGINEER DATE

DRAWING NUMBER
ST - 21B





NOTES:

1. DRIVEWAYS ON 72', 96', AND 118' STREETS SHALL HAVE A MINIMUM CLEAR SPACING OF 200' BETWEEN DRIVEWAYS. LESSER SPACING MAY BE APPROVED BY THE DIRECTOR FOR SMALL LOTS WHERE A MINIMUM OF ONE DRIVEWAY PER STREET FRONTAGE WILL BE APPROVED.
2. FOR ADDITIONAL DRIVEWAY REQUIREMENTS SEE SECTION 4-10 OF THE CITY IMPROVEMENT STANDARDS.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

DRIVEWAY LOCATION STANDARDS

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

10/24/2018

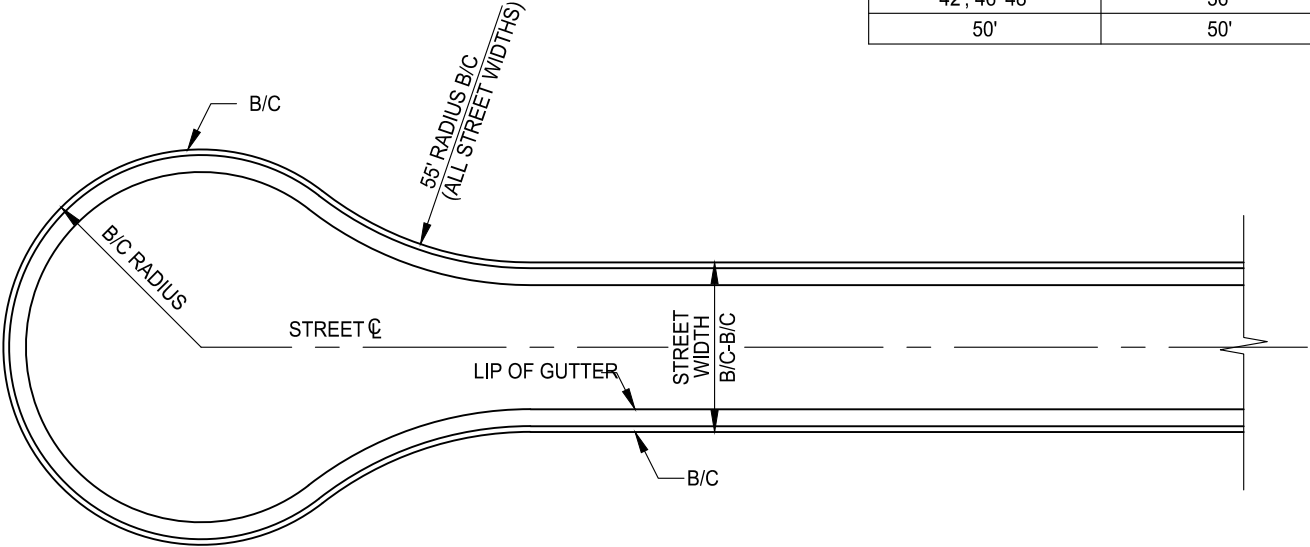
DATE



DRAWING NUMBER

ST - 22

BULB RADIUS REQUIREMENTS	
STREET R/W WIDTH	B/C RADIUS @ BULB
42', 46' 48'	36'
50'	50'



NOTES:

1. A STANDARD W14-1 ("DEAD END") SIGN MAY BE REQUIRED AT THE ENTRANCE TO THE CUL-DE-SAC (SEE SECTION 4-27).
2. NO CUL-DE-SAC SHALL EXCEED 600 FEET IN LENGTH, MEASURED AS THE DISTANCE FROM THE CENTERLINE OF THE INTERSECTING STREET TO THE CENTER OF THE CUL-DE-SAC BULB.


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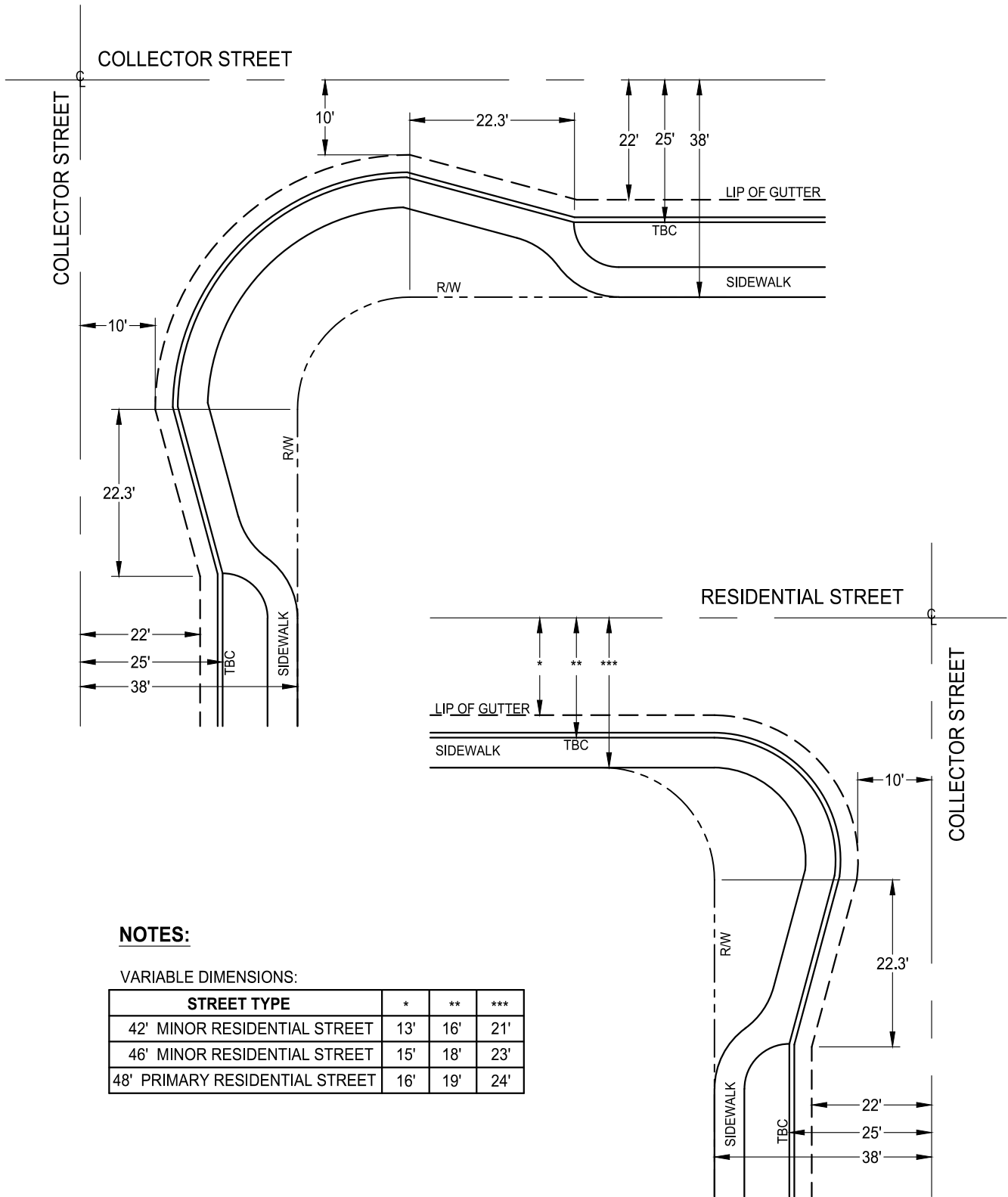
CITY OF ELK GROVE - PUBLIC WORKS

CUL-DE-SAC

APPROVED BY: *Paul Muddoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
ST - 23





NOTES:

VARIABLE DIMENSIONS:

STREET TYPE	*	**	***
42' MINOR RESIDENTIAL STREET	13'	16'	21'
46' MINOR RESIDENTIAL STREET	15'	18'	23'
48' PRIMARY RESIDENTIAL STREET	16'	19'	24'

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CITY OF ELK GROVE - PUBLIC WORKS

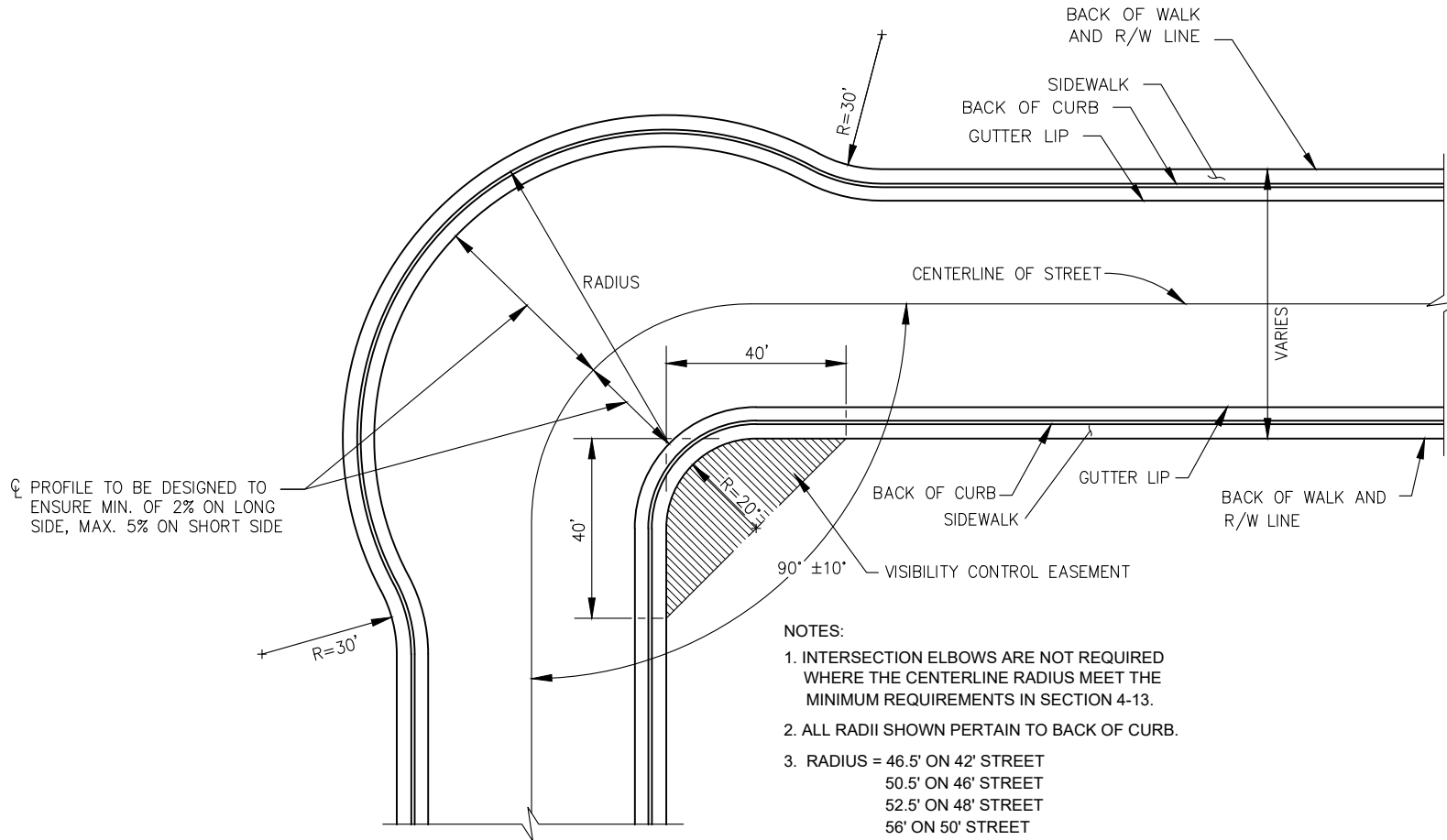
APPROVED BY:
Robert M. Muelock
CITY ENGINEER
10/24/2018
DATE

BULB-OUT DETAIL



DRAWING NUMBER

ST - 24



- NOTES:
1. INTERSECTION ELBOWS ARE NOT REQUIRED WHERE THE CENTERLINE RADIUS MEET THE MINIMUM REQUIREMENTS IN SECTION 4-13.
 2. ALL RADII SHOWN PERTAIN TO BACK OF CURB.
 3. RADIUS = 46.5' ON 42' STREET
50.5' ON 46' STREET
52.5' ON 48' STREET
56' ON 50' STREET
 4. INTERSECTION ANGLE SHALL BE $90^\circ \pm 5^\circ$.
 5. SHADED AREA SHALL HAVE VISIBILITY CONTROL EASEMENT IN ACCORDANCE WITH SECTION 4-14 AND STANDARD DRAWING ST-26 (PERMANENT BUILDINGS EXCEPTED WITHIN SETBACK LINE).

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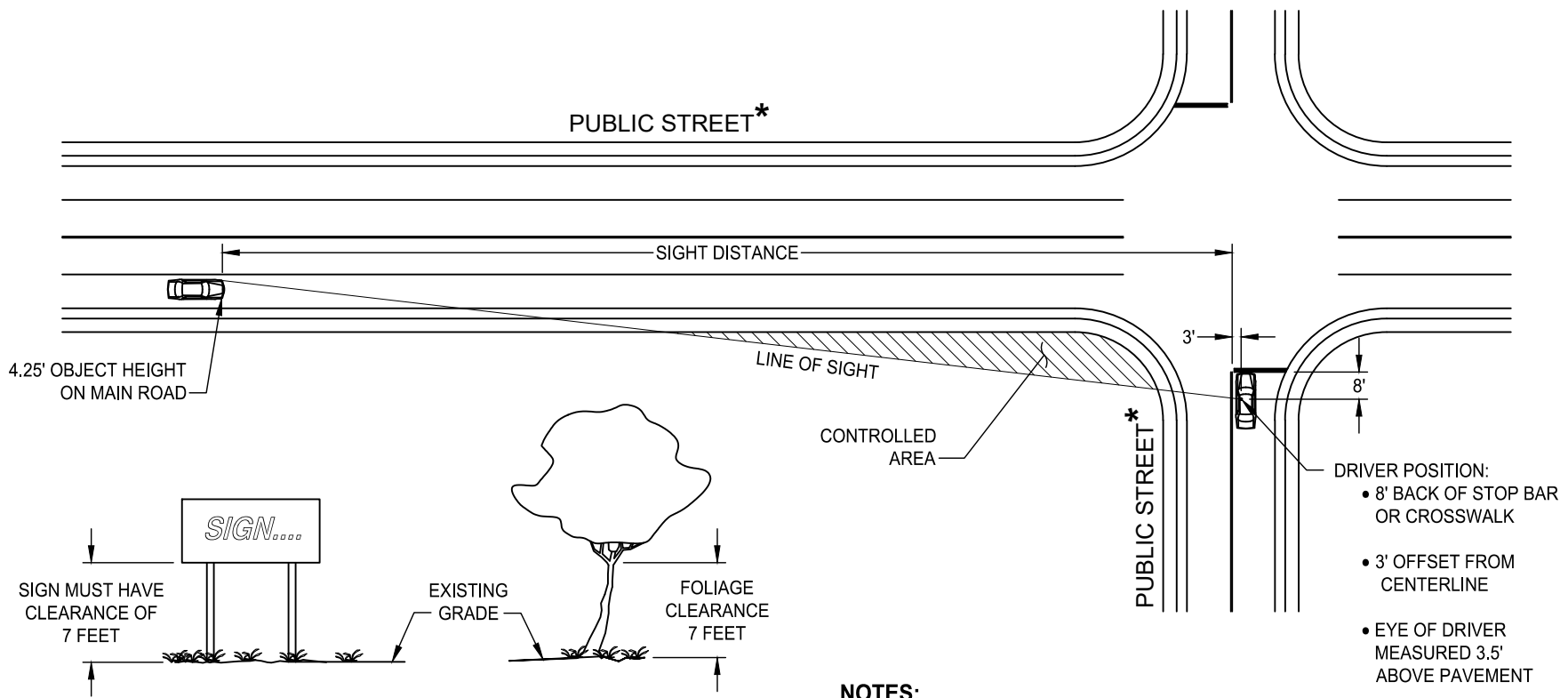
CITY OF ELK GROVE - PUBLIC WORKS

**90 DEGREE INTERSECTION
ELBOW**

APPROVED BY:
Paul Muddoch
CITY ENGINEER 10/24/2018
DATE



DRAWING NUMBER
ST - 25



NOTES:

1. SHOW LINE OF SIGHT AND SIGHT DISTANCE FOR ALL APPROACHES OF EACH INTERSECTION.
2. SIGHT DISTANCE SHALL COMPLY WITH THE CITY OF ELK GROVE IMPROVEMENT STANDARDS SECTION 4-14.

* FOR STREETS 48 FEET OR WIDER MEASURED FROM BACK OF CURB TO BACK OF CURB, OR AS REQUIRED BY THE DIRECTOR.

CLEARANCE REQUIRED WITHIN CONTROLLED AREA


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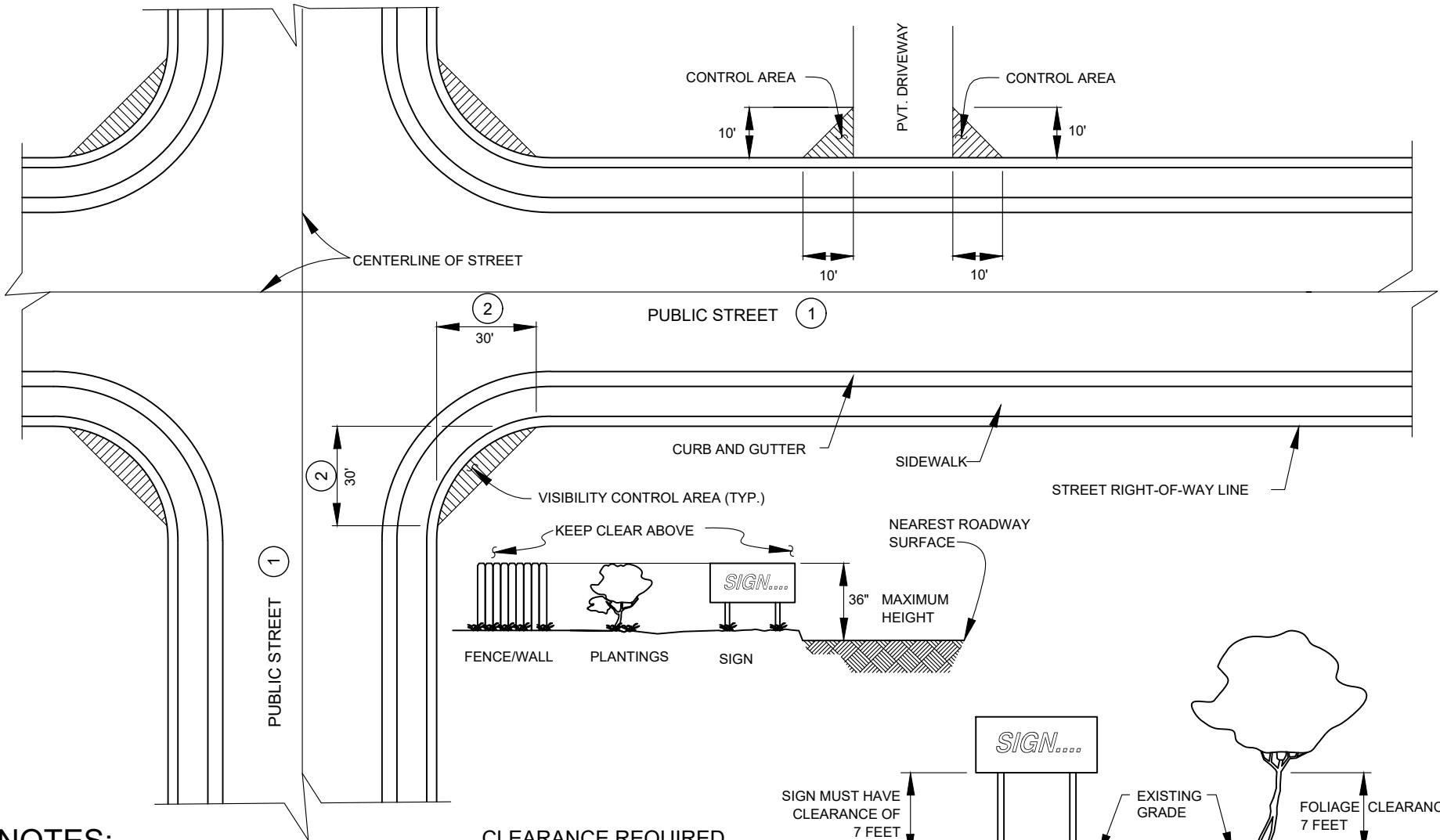
CITY OF ELK GROVE - PUBLIC WORKS

MINIMUM SIGHT DISTANCE AT INTERSECTIONS AND NON-RESIDENTIAL DRIVEWAYS

APPROVED BY: *Paul M. Muddock* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
ST - 26.1

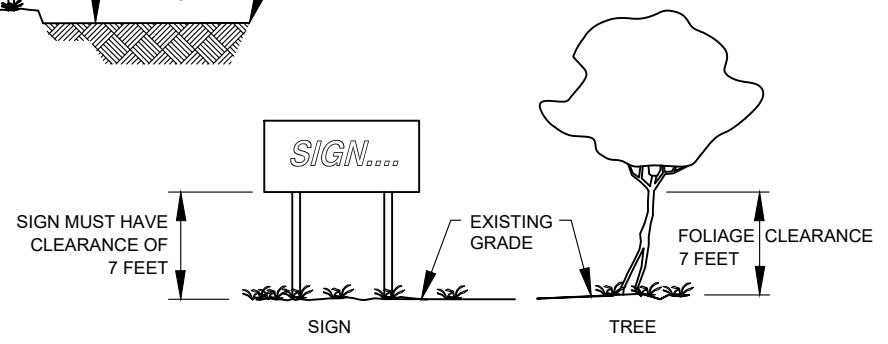




NOTES:

- ① FOR STREETS LESS THAN 48 FEET MEASURED FROM BACK OF CURB TO BACK OF CURB. VISIBILITY CONTROL AREAS MAY BE REDUCED TO A 20' X 20' TRIANGLE AT STOP OR SIGNAL CONTROLLED INTERSECTIONS.
- ②

CLEARANCE REQUIRED WITHIN CONTROLLED AREA



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CITY OF ELK GROVE - PUBLIC WORKS

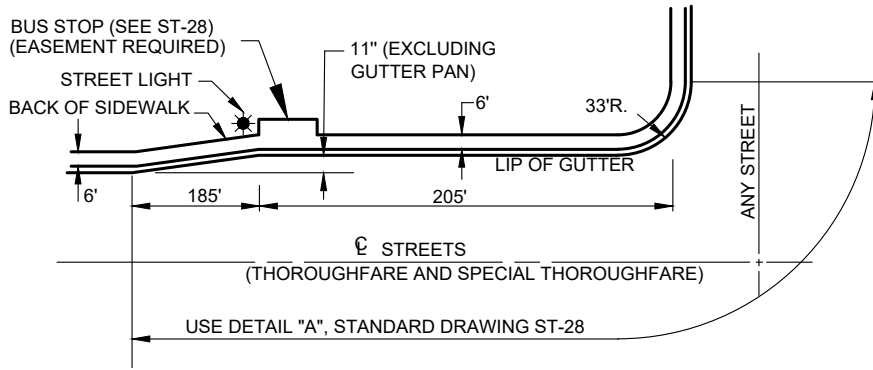
**VISIBILITY REQUIREMENTS
CITY OF ELK GROVE**

APPROVED BY:
Paul Muddoch
CITY ENGINEER

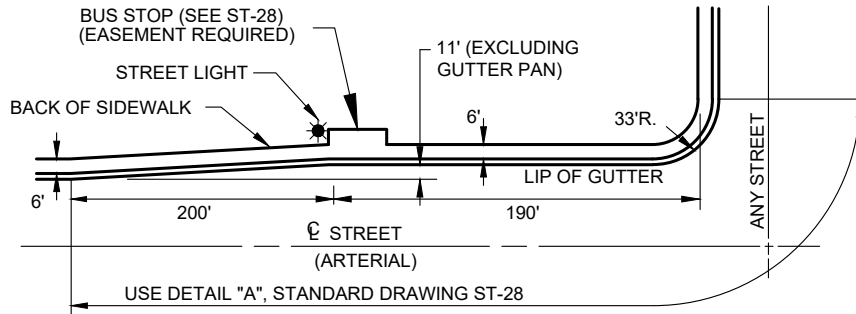
10/24/2018
DATE

DRAWING NUMBER
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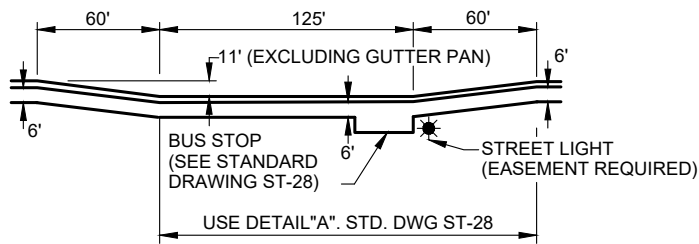




BUS TURNOUT ON THOROUGHFARE STREETS



BUS TURNOUT ON ARTERIAL STREETS



TYPICAL MID-BLOCK BUS TURNOUT

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

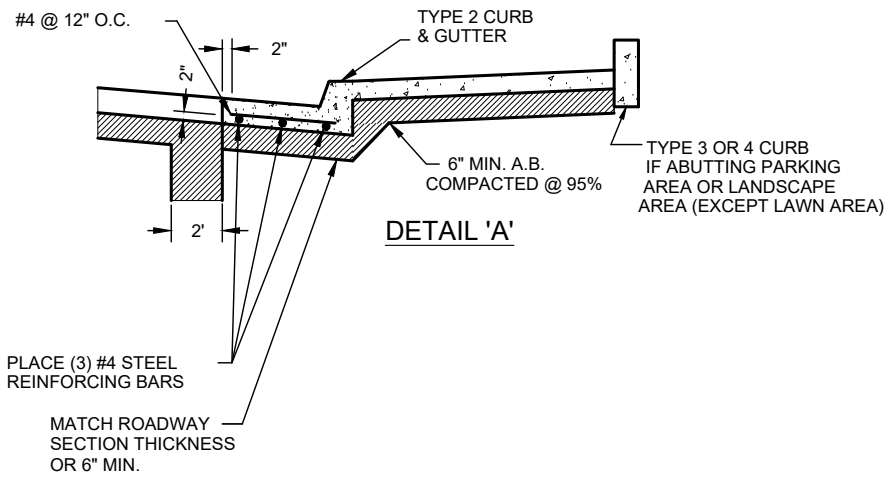
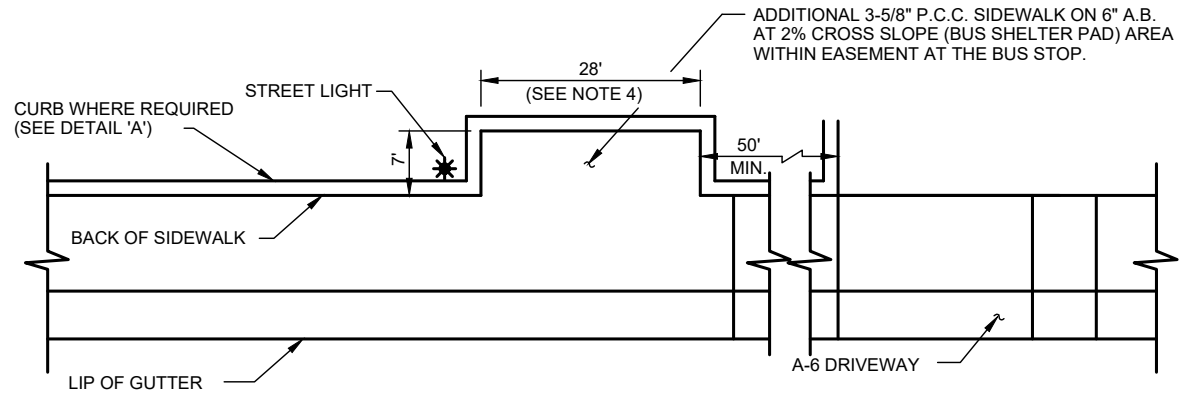
APPROVED BY:
Robert M. Muddoch
CITY ENGINEER 10/24/2018
DATE

BUS TURNOUTS



DRAWING NUMBER

ST - 27



NOTES:

1. DETAIL 'A' SECTION SHALL BE USED FOR 100 FEET EACH SIDE OF BUS STOPS WITHOUT TURNOUTS. THE REINFORCING STEEL SHALL BE CONTINUED ACROSS ANY DRIVEWAYS WITHIN THE 100 FOOT DISTANCE FROM THE BUS STOP.
2. SEE STANDARD DRAWING ST-27 FOR APPLICATIONS OF DETAIL 'A' AT BUS STOP TURNOUTS.
3. TRANSITION FROM REINFORCED TYPE 2 CURB TO ABUTTING CURB AND GUTTER SECTION IN 5' BEYOND LIMITS OF BUS STOP AREA AS SHOWN ON DWG. ST-27.
4. PAD LENGTH MAY BE 14' AT MINOR STREET INTERSECTIONS & MID. BLOCK LOCATIONS.

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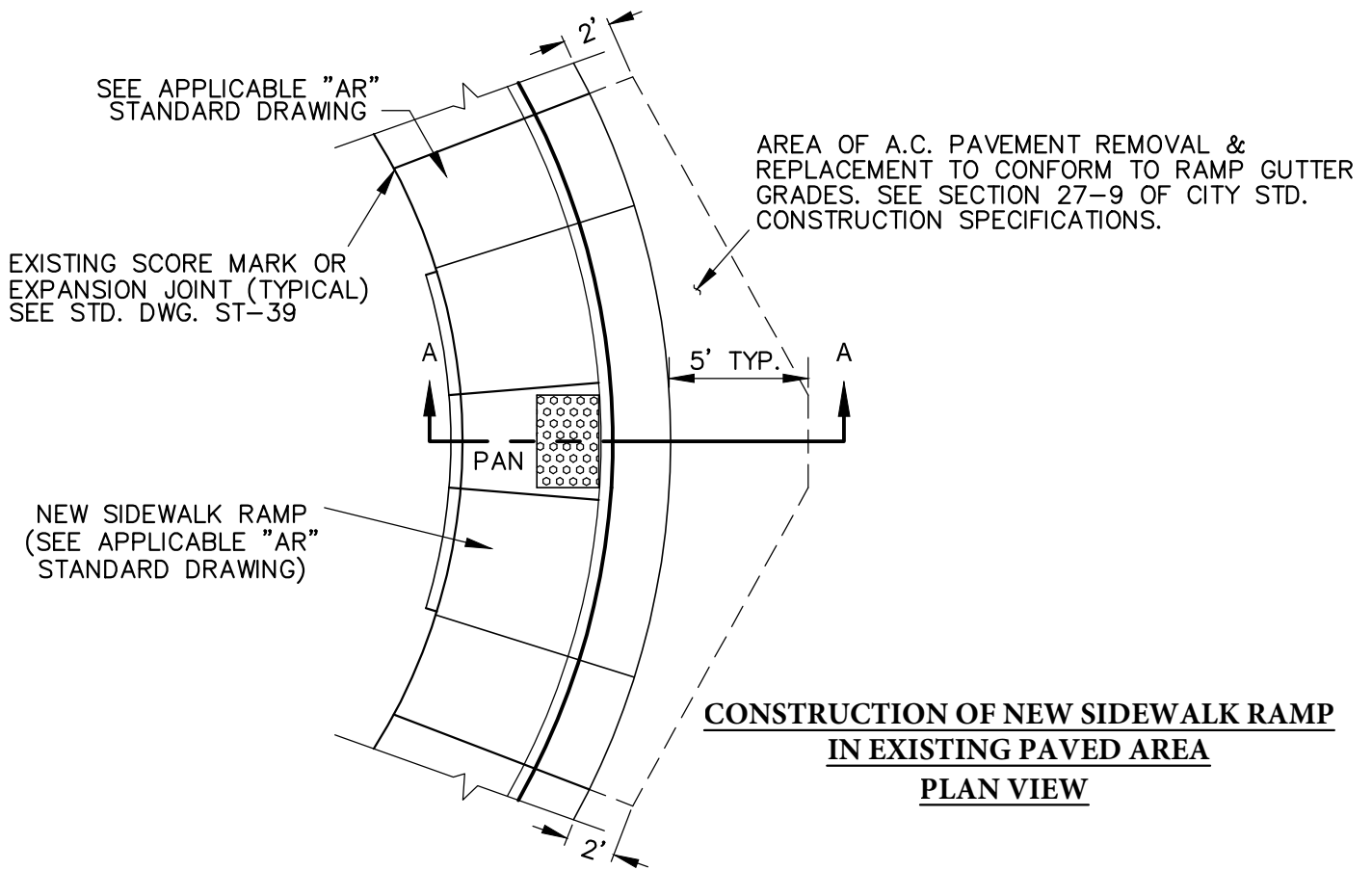
BUS STOP DETAILS

APPROVED BY:
Paul Muddoch
CITY ENGINEER

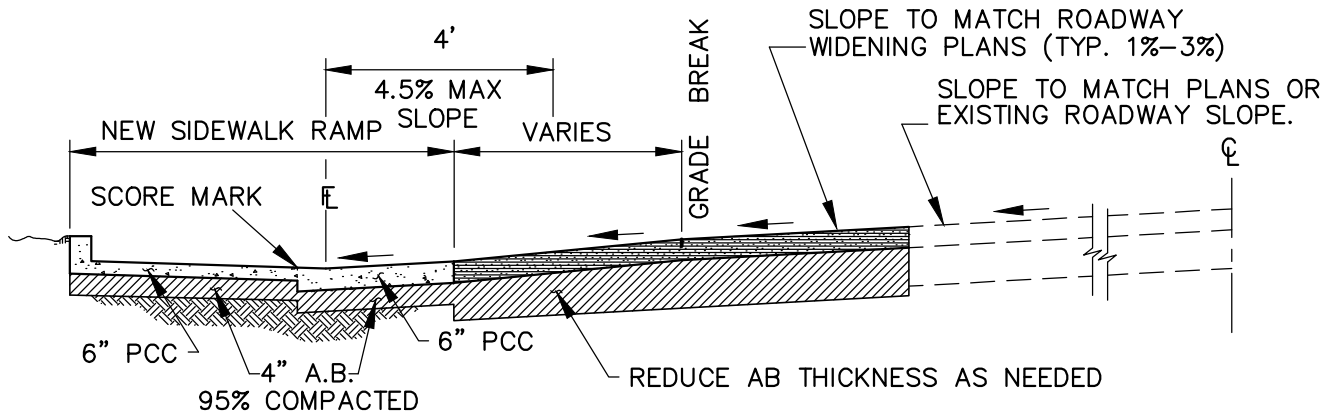
10/24/2018
DATE

DRAWING NUMBER
ST - 28





**CONSTRUCTION OF NEW SIDEWALK RAMP
IN EXISTING PAVED AREA
PLAN VIEW**



**CONSTRUCTION OF NEW SIDEWALK RAMP
WITH PAVEMENT WIDENING
SECTION A - A**


DATE: 09/22/2017		NOT TO SCALE	
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1	LM	TW	07-18-2019

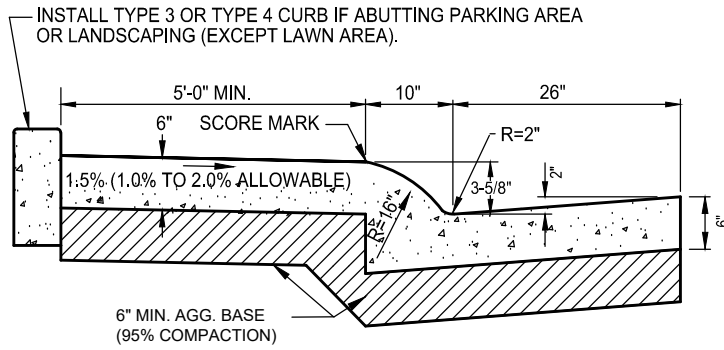
CITY OF ELK GROVE - PUBLIC WORKS

**A.C. CONFORMS TO NEW SIDEWALK
RAMP RE-CONSTRUCTION**

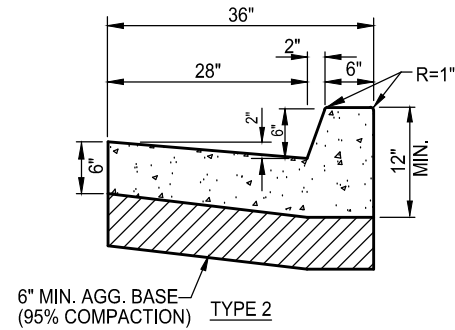
APPROVED BY:
Paul M. ... 1/16/2020
CITY ENGINEER DATE

DRAWING NUMBER
ST - 30

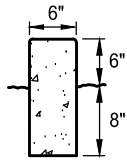




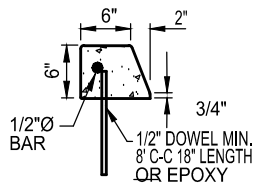
TYPE 1A & TYPICAL SIDEWALK



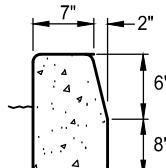
6" MIN. AGG. BASE (95% COMPACTION) TYPE 2



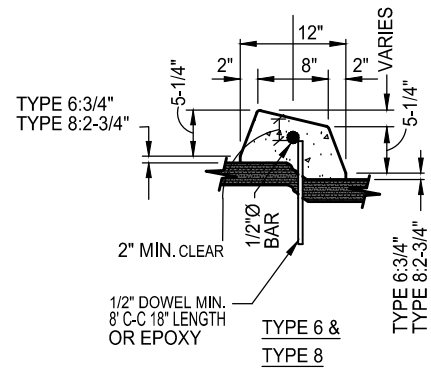
TYPE 3



TYPE 4 & 4A
(4A REQUIRES BOTH DOWELS AND EPOXY)

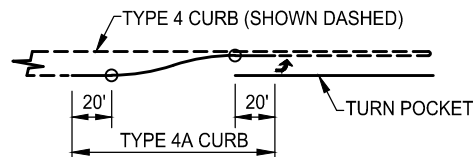


TYPE 5



TYPE 6:3/4"
TYPE 8:2-3/4"

TYPE 6 &
TYPE 8



PLAN FOR TYPICAL PLACEMENT OF TYPE 4A CURB

NOTES:
SEE SECTION 27-3.01 FOR REQUIREMENT FOR EXPANSION JOINTS, WEAKENED PLANE JOINTS AND SCORE MARKS.

1/2" RADIUS ON EXPOSED EDGES UNLESS NOTED OTHERWISE.

SEE ST-28 FOR BUS STOP DETAIL

A 1/2-INCH CONCRETE BATTER SHALL BE PLACED ON ALL CURB LIPS.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

TYPICAL CURB & GUTTER SECTIONS

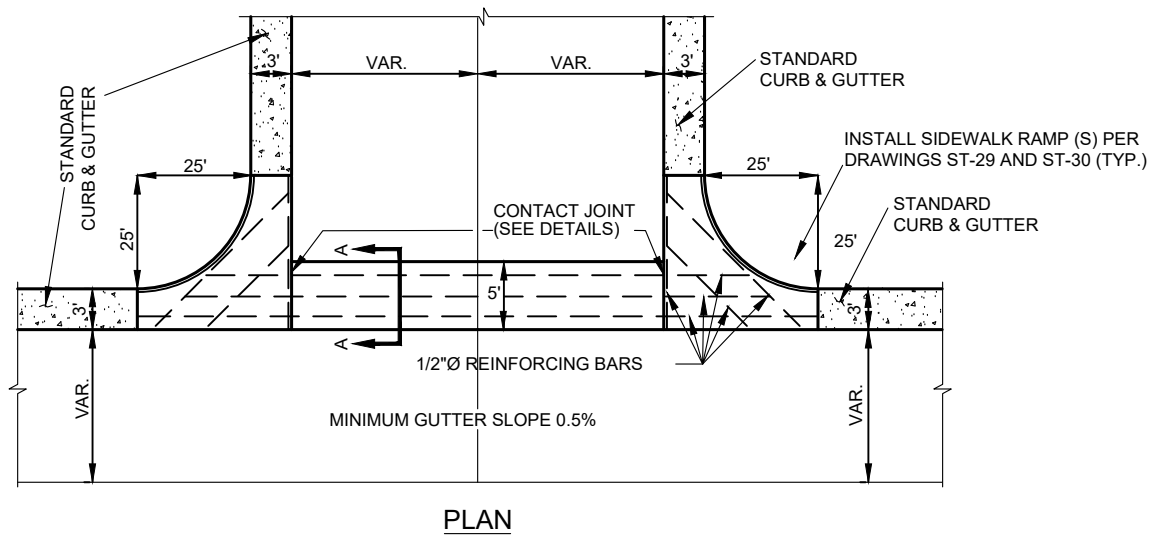
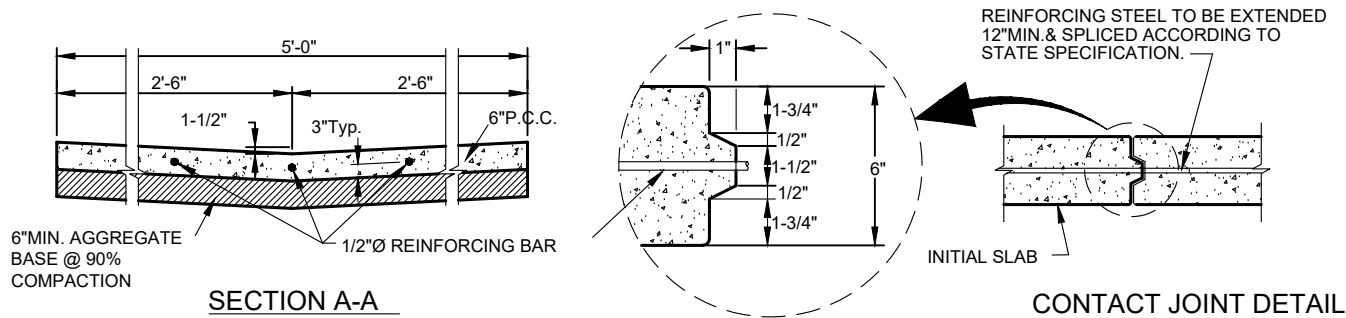
APPROVED BY:

Robert M. M... 10/24/2018
CITY ENGINEER DATE



DRAWING NUMBER

ST - 31



NOTE:
 6" MIN AGGREGATE BASE (95% RELATIVE COMPACTION)
 TO BE PLACED WITHIN LIMITS OF CROSS GUTTER.

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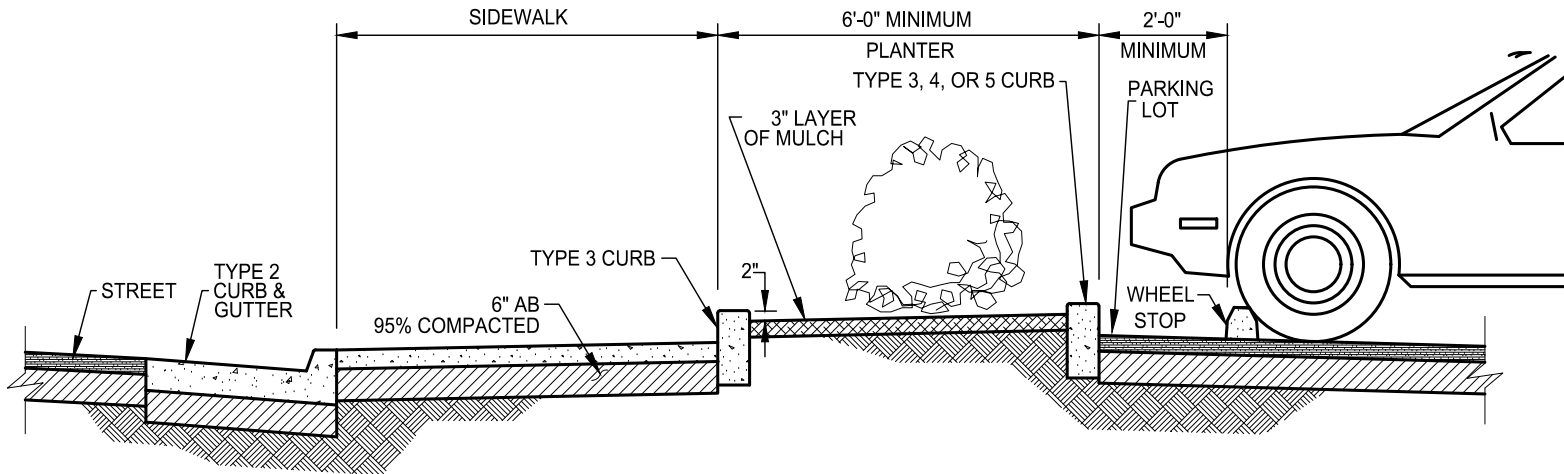
CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:
Paul M. Muddock
 CITY ENGINEER
 10/24/2018
 DATE

CROSS GUTTER



DRAWING NUMBER
ST - 32



NOTES:

1. FOR 72', 96', & 118' STREET WIDTHS AND COMMERCIAL DEVELOPMENT.
2. SEE SECTION 4-20 FOR REQUIREMENTS.
3. TYPE 3 CURB AT THE BACK OF SIDEWALK MAY BE OMITTED IF LAWN IS PLANTED TO THE BACK OF SIDEWALK.
4. SIDEWALKS SHALL BE SEPARATED ON ALL 72', 96', & 118' STREETS


DATE: 09/22/2007		NOT TO SCALE	
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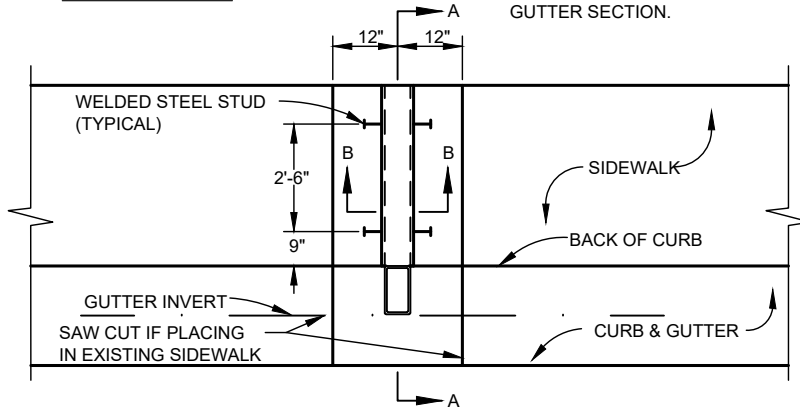
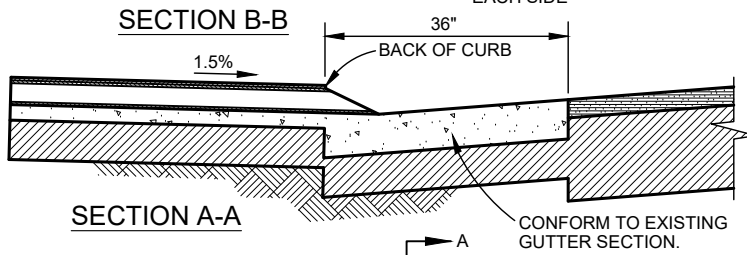
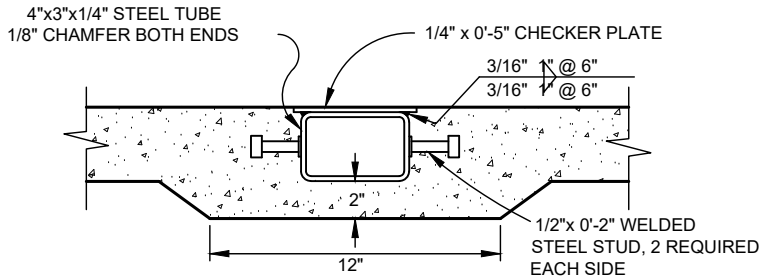
CITY OF ELK GROVE - PUBLIC WORKS

BARRIER CURB DETAIL

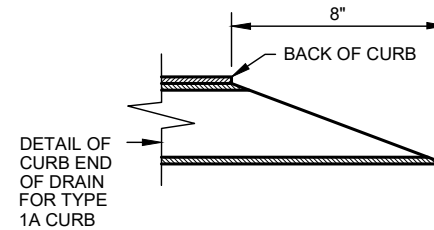
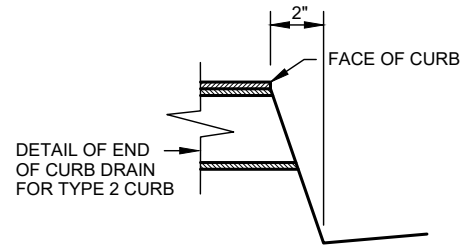
APPROVED BY: *Paul Muddoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
ST - 33





PLAN VIEW OF CURB, GUTTER & SIDEWALK



NOTE:
GALVANIZE AFTER FABRICATION

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Paul Muddoch

10/24/2018

CITY ENGINEER

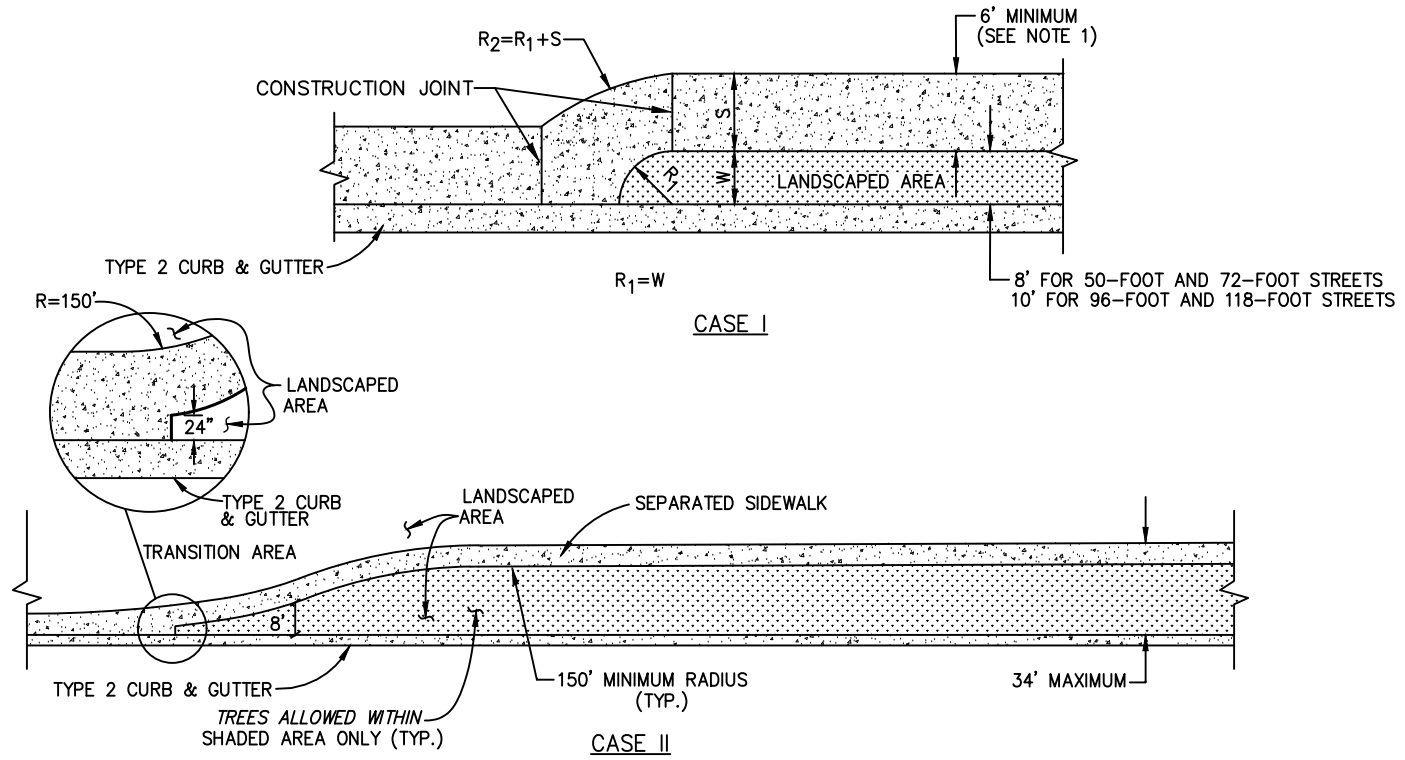
DATE

**UNDER
SIDEWALK DRAIN**



DRAWING NUMBER

ST - 34



NOTE:

1. ON THOROUGHFARES, ARTERIALS, AND WHERE 6 FOOT SIDEWALKS ARE REQUIRED BY THE IMPROVEMENT STANDARDS. 5 FOOT MINIMUM ALL OTHER LOCATIONS.
2. CROSS SLOPE OF SEPARATED SIDEWALK TO BE 1.5% (1.0% TO 2.0% ALLOWABLE). LONGITUDINAL GRADE NOT TO EXCEED 5%.
3. USE OF SEPARATED SIDEWALKS WILL REQUIRE STREET LIGHTING REVIEW IN RELATION TO LANDSCAPE PLAN, AND MAY REQUIRE ADDITIONAL SIDEWALK LIGHTING.
4. COMPACTION UNDER SEPARATED SIDEWALK AREA AT 90%, UNDER ATTACHED AREA AT 95%.

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CITY OF ELK GROVE - PUBLIC WORKS

**SEPARATED (OR DETACHED)
SIDEWALK TRANSITION**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

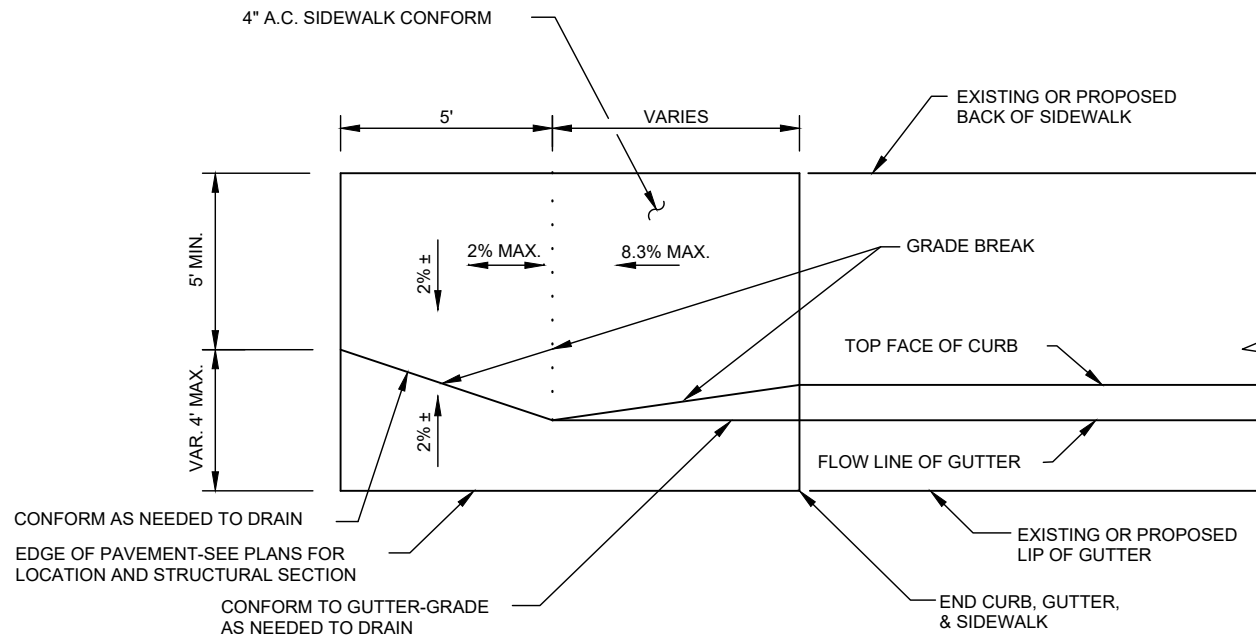
10/24/2018

DATE



DRAWING NUMBER

ST - 35



NOTE: A SIDEWALK BARRICADE SHALL BE REQUIRED IF THE END OF THE A.C. SIDEWALK CONFORM ABUTS A DRAINAGE DITCH OR ANY OTHER SURFACE THAT WOULD POSE A HAZARD TO PEDESTRIANS.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**A.C. SIDEWALK
CONFORM**

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

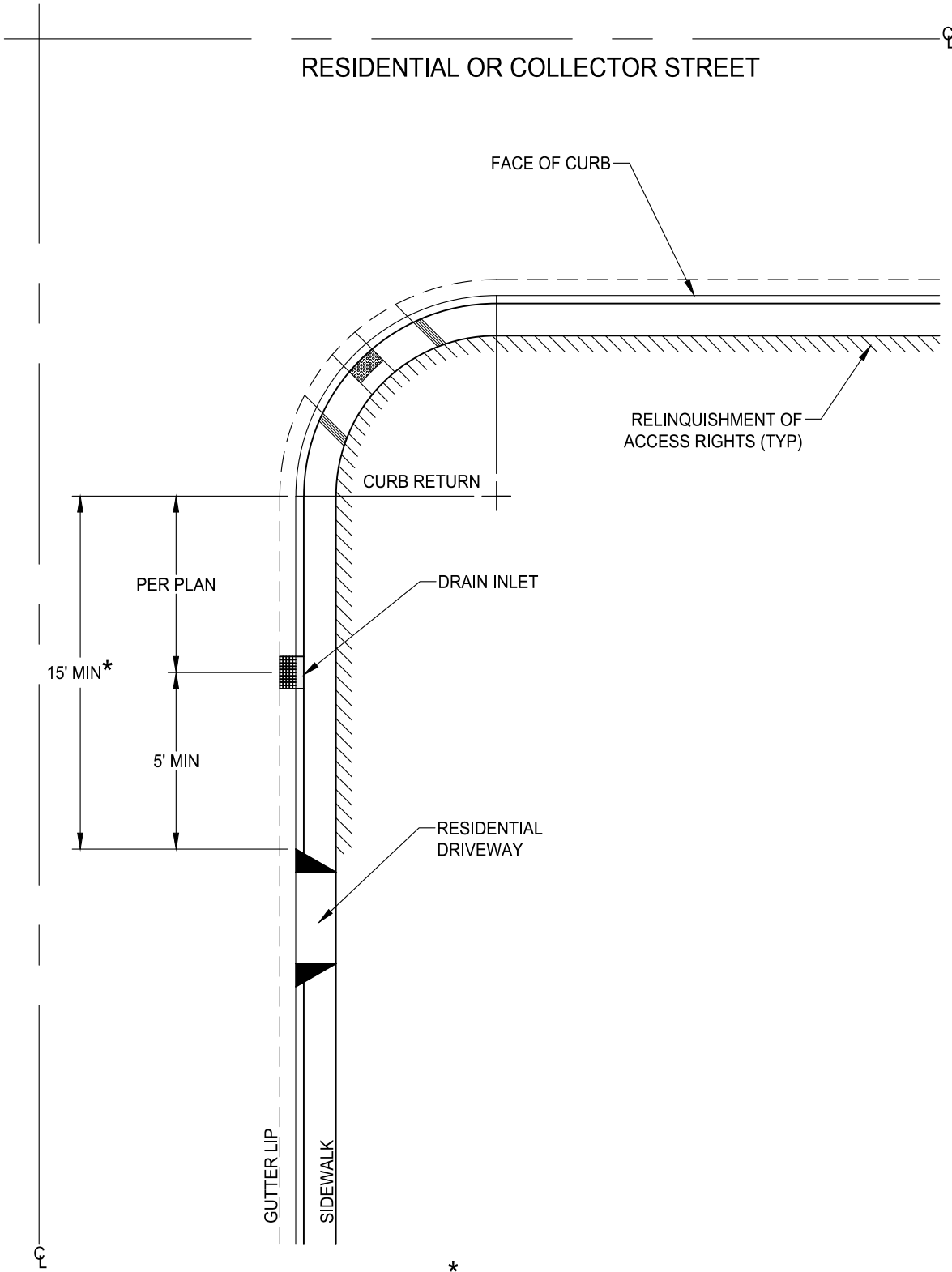
10/24/2018

DATE



DRAWING NUMBER

ST - 36



* THE 15' DIMENSION MAY BE REDUCED AS DETERMINED BY THE DIRECTOR WHERE LOTS ARE LESS THAN 56' WIDE.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

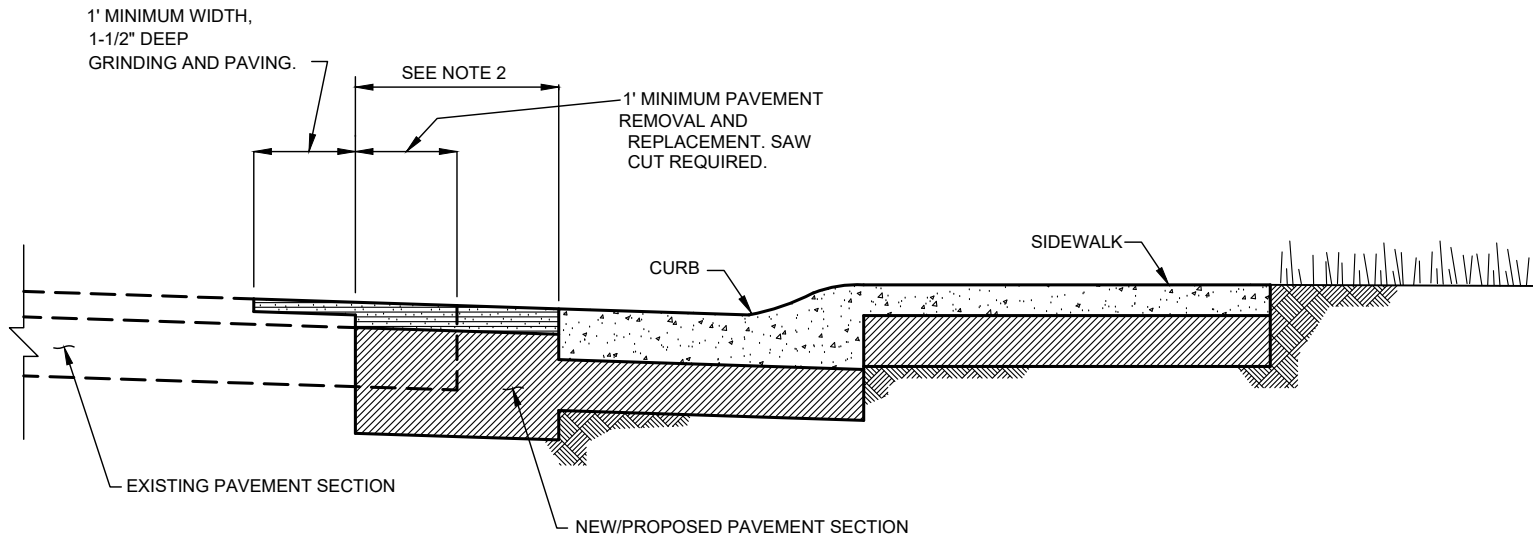
**RESIDENTIAL CORNER LOT DRIVEWAY
LOCATION**

RESIDENTIAL OR COLLECTOR STREETS

APPROVED BY: *Robert M. Muddoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
ST - 37





NOTES:

1. THIS DETAIL IS APPLICABLE TO PAVEMENT WIDENING PROJECTS AND TO PAVEMENT EXTENSION PROJECTS (WHERE NEW ROAD CONNECTS TO EXISTING PAVEMENT).
2. 2' MINIMUM DISTANCE EXCEPT WHEN INSIDE A BIKE LANE. DISTANCE SHALL BE FROM LIP OF CURB TO FULL EXTENT OF THE BIKE LANE.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

PAVEMENT WIDENING DETAIL

APPROVED BY:

Paul Muddoch

CITY ENGINEER

10/24/2018

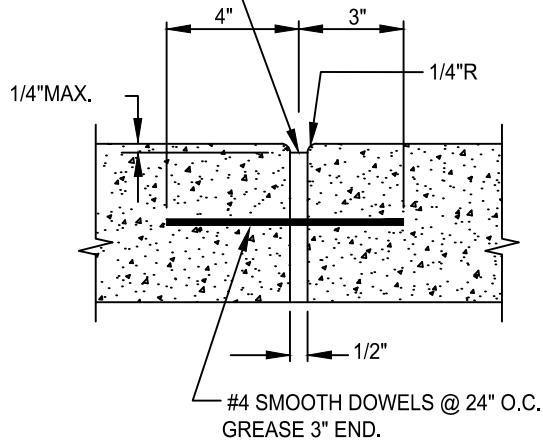
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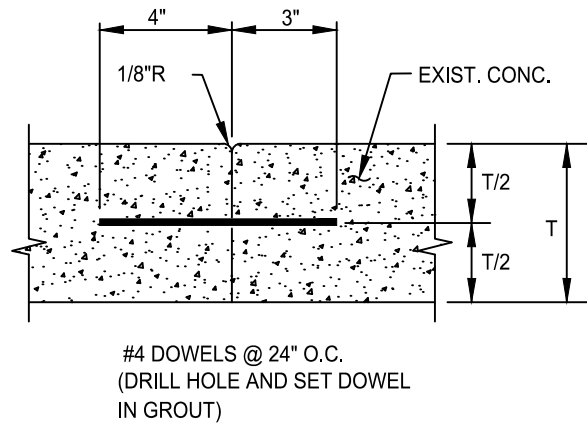
DRAWING NUMBER

ST - 38

EXPANSION JOINT
FILLER MATERIAL
(MATCH FULL
CONCRETE SECTION)

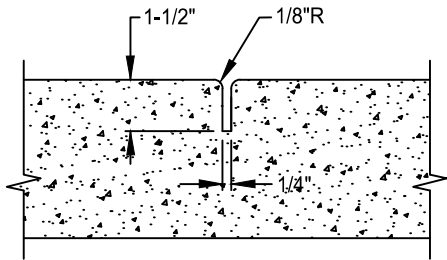


EXPANSION JOINT

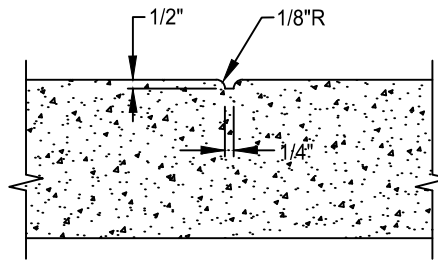


SIDEWALK CONTACT JOINT

(USE WHERE NEW CONSTRUCTION OF S/W AND
OR CURB & GUTTER ABUTS EXISTING IMPROVEMENTS.)



WEAKENED PLANE JOINT



SCORE MARK

NOTE:
JOINT SPACING PER SECTION 27-3.01

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**STANDARD CONCRETE
JOINT DETAILS**

APPROVED BY:

Robert Muddoch

CITY ENGINEER

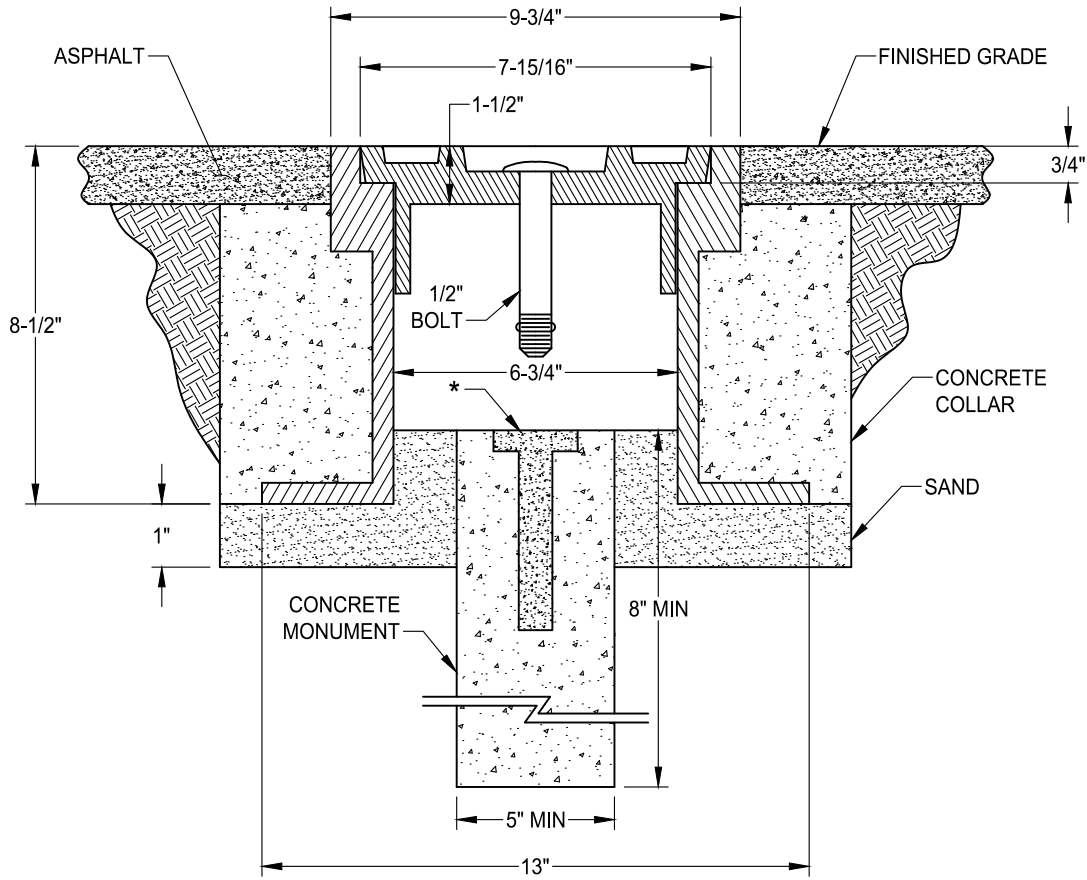
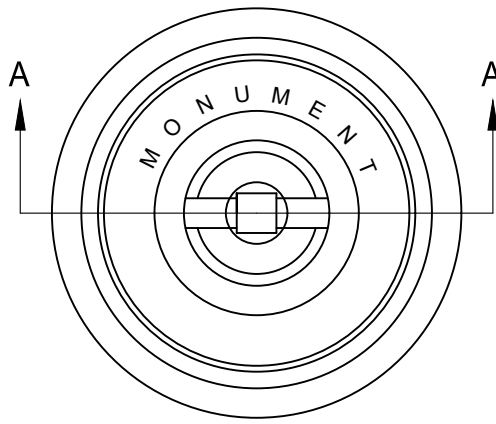
10/24/2018

DATE



DRAWING NUMBER

ST - 39



SECTION A-A

NOTES:

1. MONUMENT BOX AND COVER SHALL BE PHOENIX IRON WORKS P-2001 OR APPROVED EQUAL.
2. (*) MONUMENT MARKER SHALL BE SOLID BRASS WITH 2-1/2" DIAM TOP AND 3/4" x 2-1/2" LTZ 813-403 OR APPROVED EQUAL SET IN FRESH P.C.C. TOP OF MONUMENT SHALL BE APPROXIMATELY 6" BELOW STREET GRADE.
3. MONUMENT MAY BE FORMED BY METAL SLEEVE, WAXED CARDBOARD OR BY DRILLING THRU HOLE MADE FOR MONUMENT BOX. IF THERE IS AN OVERCUT THEN THE OVERCUT SHALL BE FILLED WITH CONCRETE TO THE SAND LEVEL.

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

STREET SURVEY MONUMENT

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

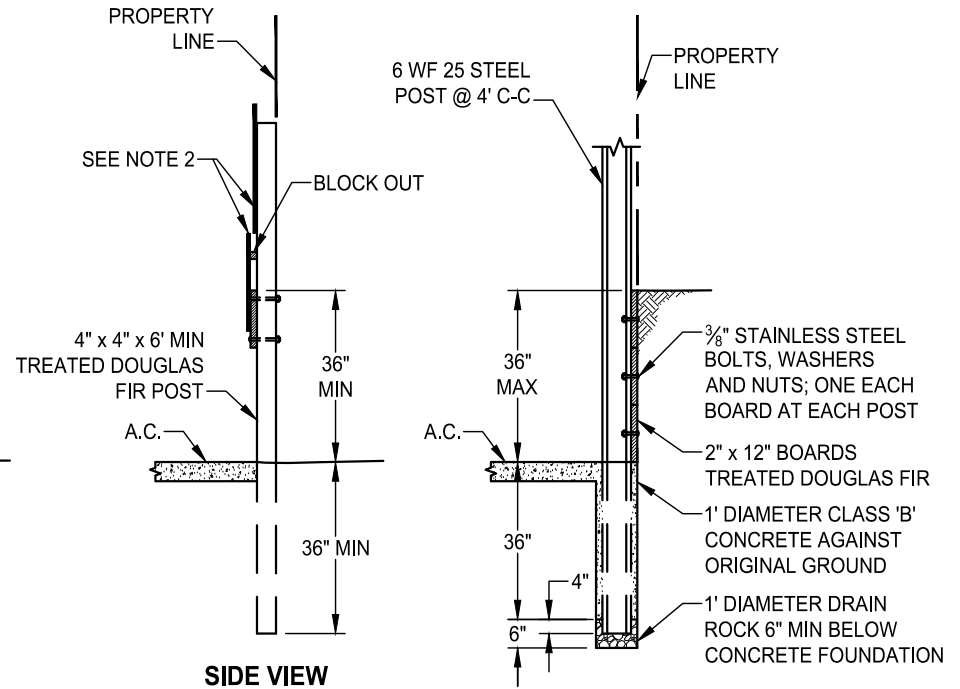
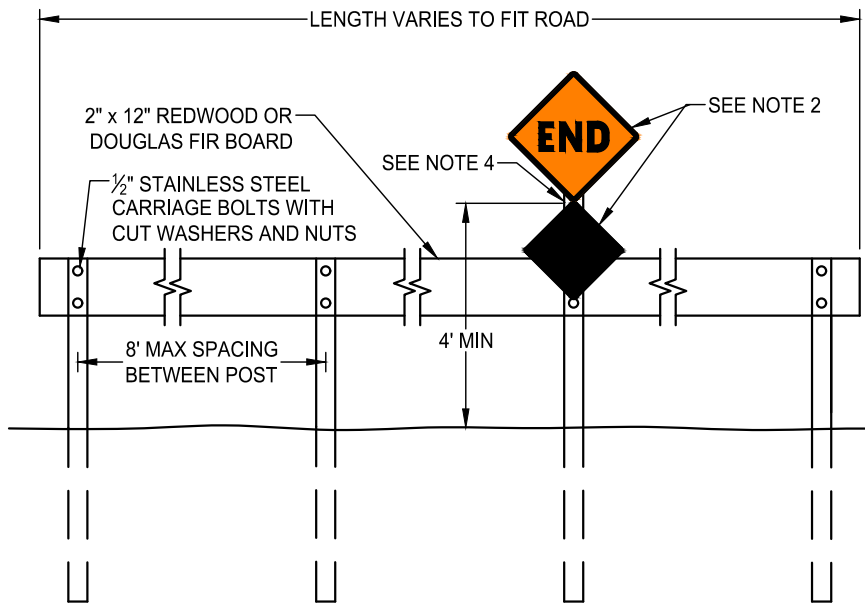
10/24/2018

DATE



DRAWING NUMBER

ST - 40



NOTES:

1. WHERE PERMISSION HAS BEE GRANTED TO CLOSE AN EXISTING PUBLIC STREET, A R11-2 "ROAD CLOSED" SIGN WILL BE REQUIRED ON THE CENTERLINE OF THE ROAD IN ADDITION TO THE W31(CA) "END" SIGN.
2. 24" x 24" W31(CA) SIGN AND 18" x 18" OM4-3 MARKER. BLOCK OUT AS NECESSARY FOR OM4-3 MARKER TOP MOUNTING BOLT (BOTTOM MOUNTING BOLT NORMALLY THROUGH BARRIER RAIL). OM4-3 MARKER TO HAVE SOLID RED REFLECTIVE BACKGROUND WITHOUT ADDED REFLECTORS.
3. ALL EXPOSED SURFACES OF BARRICADE SHALL BE PAINTED WITH TWO (2) COATS OF WHITE PAINT CONFORMING TO STATE OF CALIFORNIA STANDARD SPECIFICATIONS SECTION 91-3.
4. POST AT CENTER OR NEAREST TO CENTER ON RIGHT HAND SIDE TO BE EXTENDED TO PROVIDE MOUNTING FOR SIGNS.
5. POST SHALL BE PRESSURE TREATED PER STATE OF CALIFORNIA STANDARD SPECIFICATIONS SECTION 58-1.02.

STREET ENDING IN CUT WHERE SLOPE IS NOT OBTAINABLE

RIGHT OF WAY WIDTH	W31 (CA)		OM4-3		R11-2	
	SIZE	NO.	SIZE	NO.	SIZE	NO.
40', 42'	24"	1	18"	1	36" x 24"	1
50', 56', 60'	24"	1	18"	1	48" x 30"	1
66', 70', 74'	24"	1	18"	1	48" x 30"	1
80', 84'	24"	2	18"	2	48" x 30"	1
108', 130'	24"	3	18"	3	48" x 30"	1

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REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

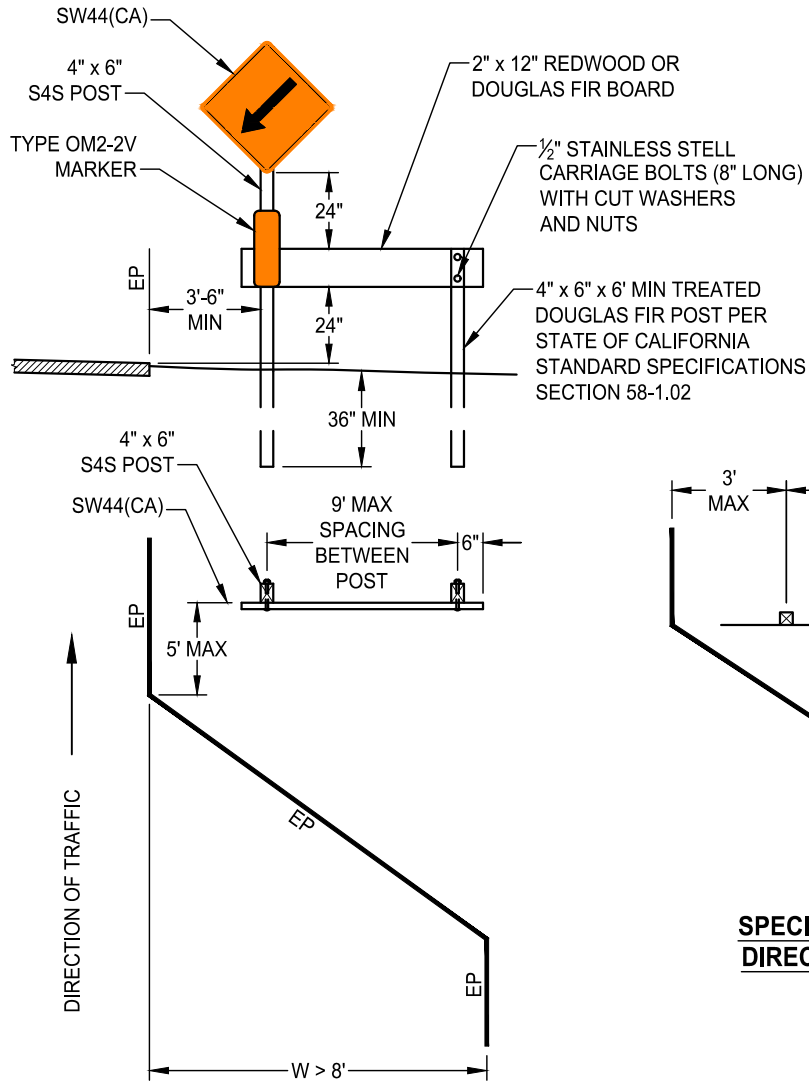
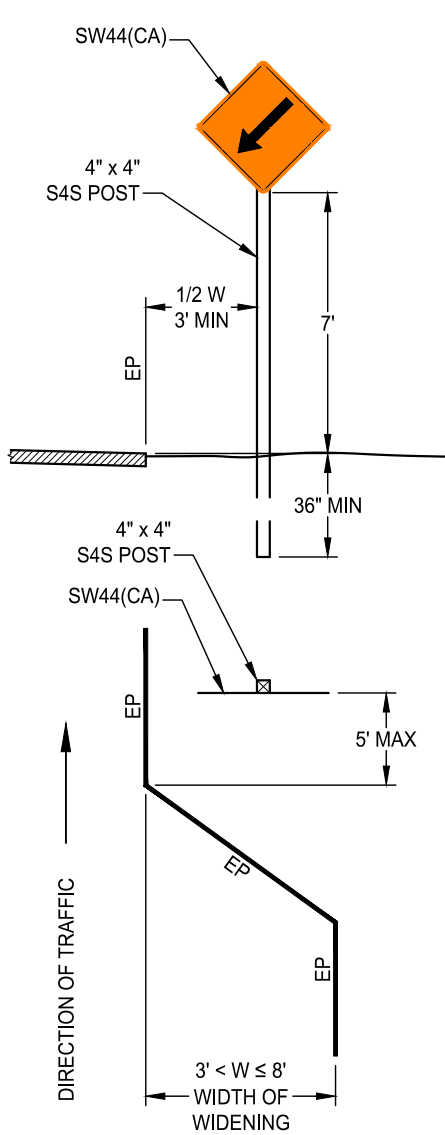
STREET CLOSURE TIMBER BARRICADE

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

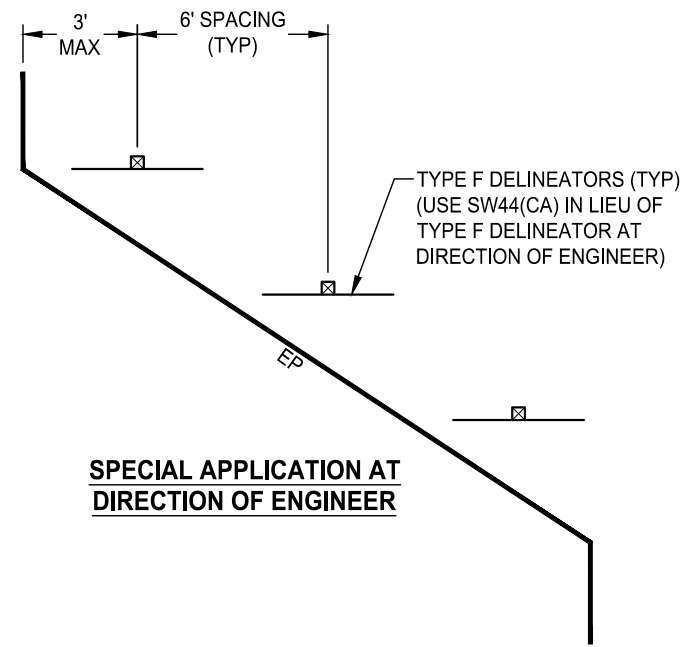
10/24/2018
DATE

DRAWING NUMBER
ST - 41





NOTE:
 ALL EXPOSED SURFACES OF BARRICADE SHALL BE PAINTED WITH TWO (2) COATS OF WHITE PAINT CONFORMING TO STATE OF CALIFORNIA STANDARD SPECIFICATIONS SECTION 91-3.



DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

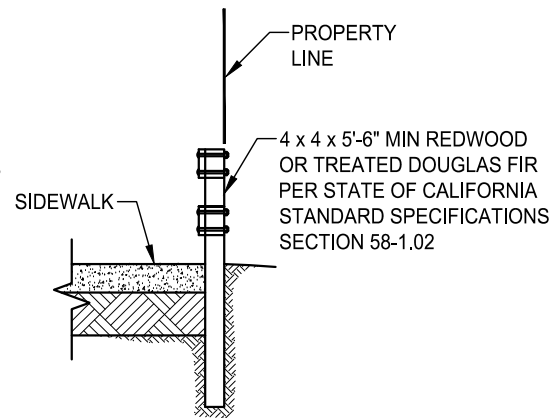
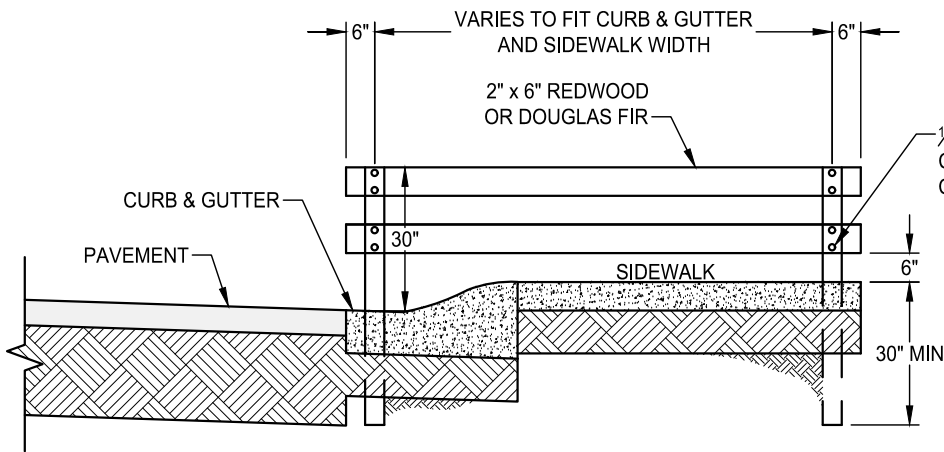
SIGNS AND BARRICADES AT ABRUPT CHANGE OF PAVEMENT WIDTH

APPROVED BY:
Robert M. Muddoch
 CITY ENGINEER

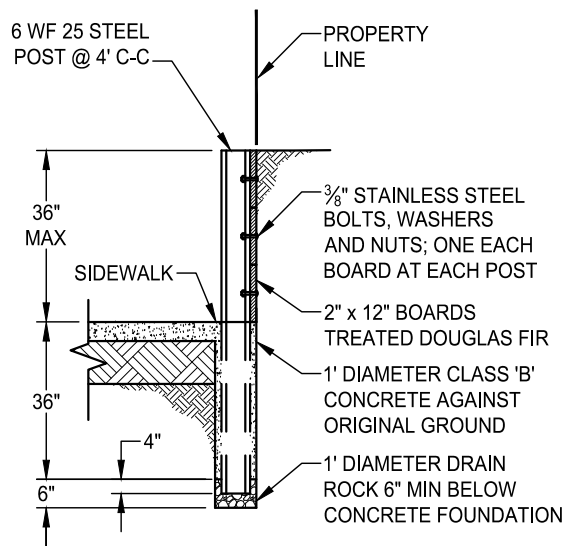
10/24/2018
 DATE

DRAWING NUMBER
ST - 42





SIDE VIEW



DETAIL FOR SIDEWALK BARRICADE WITH RETAINING WALL

NOTES:

1. SIDEWALK BARRICADES TO BE ERECTED AT EACH LOCATION WHERE SATISFACTORY PROVISION CAN NOT BE MADE FOR PEDESTRIAN TO CONTINUE BEYOND THE TERMINUS OF A SIDEWALK AND A HAZARD IS PRESENT.
2. ALL EXPOSED SURFACES OF BARRICADES SHALL BE PAINTED WITH TWO (2) COATS OF WHITE PAINT CONFORMING TO STATE OF CALIFORNIA STANDARD SPECIFICATIONS SECTION 91-3.

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

SIDEWALK BARRICADE

APPROVED BY:

Paul M. Muddoch

CITY ENGINEER

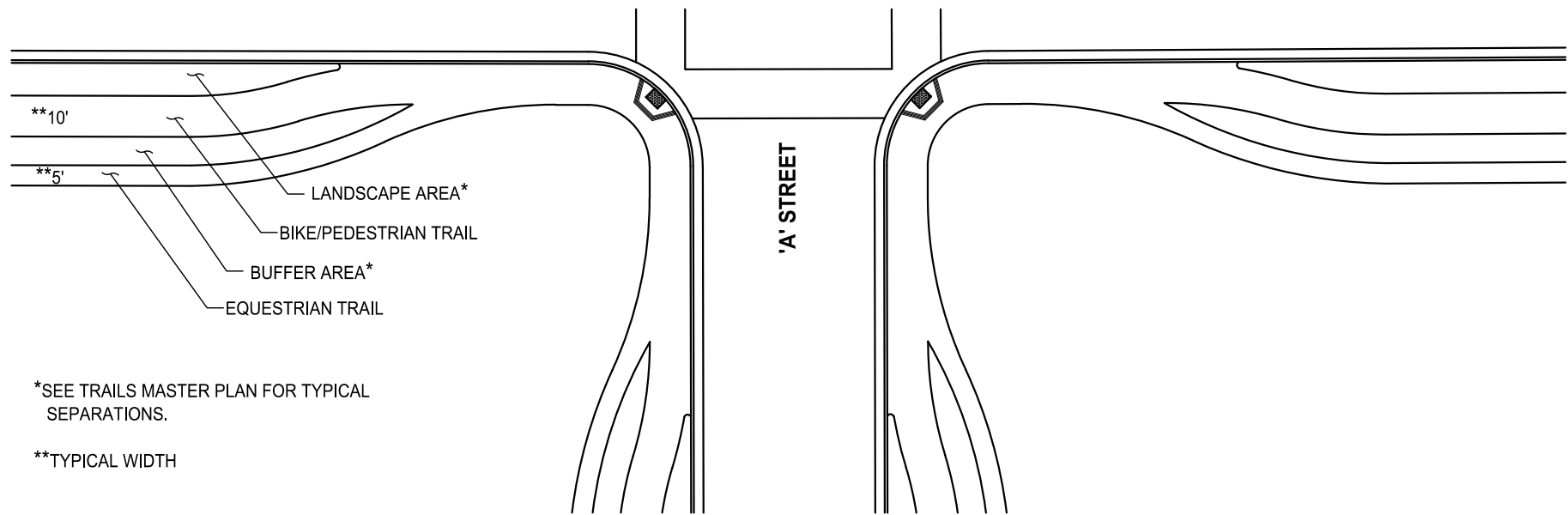
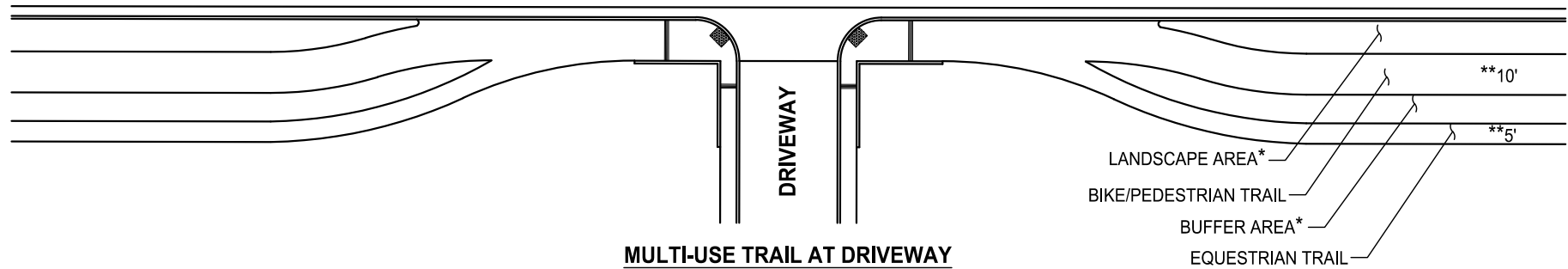
10/24/2018

DATE

DRAWING NUMBER

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*SEE TRAILS MASTER PLAN FOR TYPICAL SEPARATIONS.

**TYPICAL WIDTH

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**MULTI-USE TRAIL
CONNECTIONS AT DRIVEWAYS AND
INTERSECTIONS**

APPROVED BY:

Paul Muddoch

CITY ENGINEER

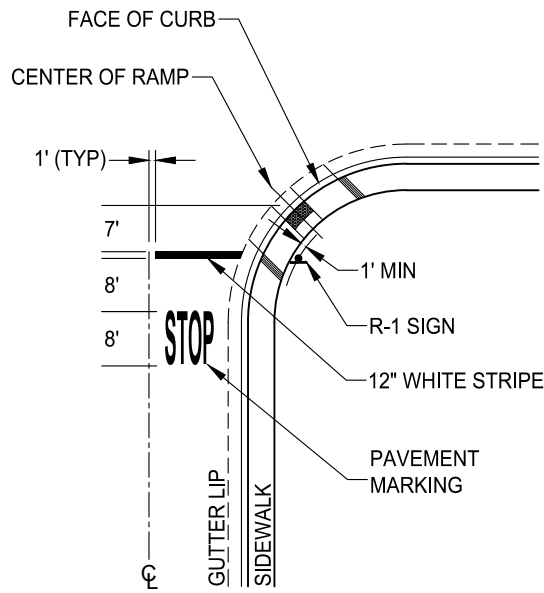
10/24/2018

DATE

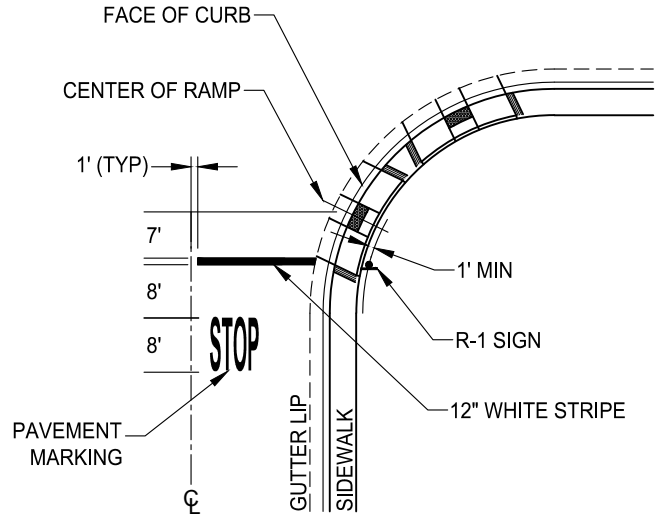


DRAWING NUMBER

ST - 44



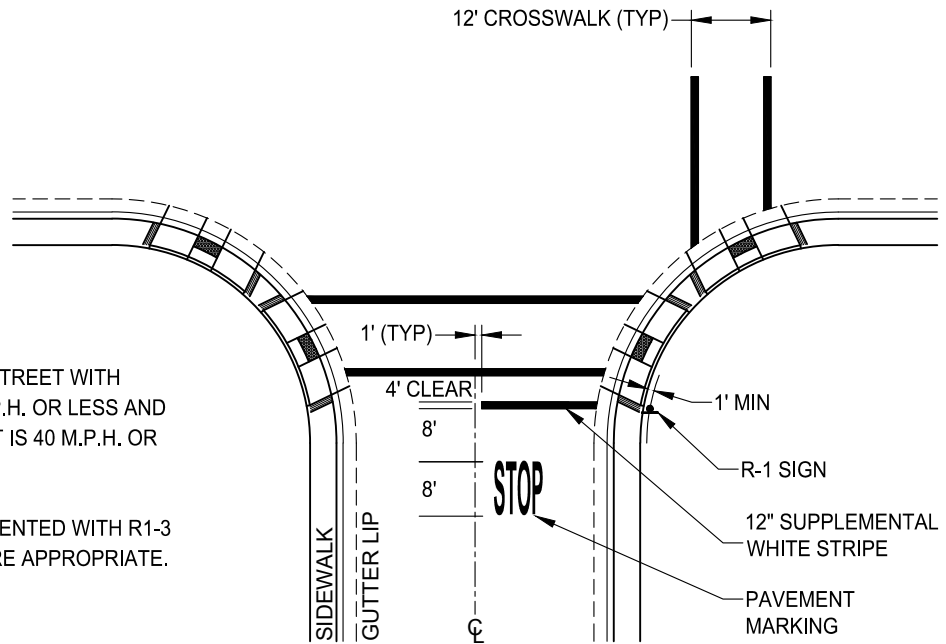
**SINGLE SIDEWALK RAMP
WITHOUT CROSSWALK**



**DUAL SIDEWALK RAMPS
WITHOUT CROSSWALK**

NOTES:

1. STOP SIGN SHALL BE 30" FOR STREET WITH POSTED SPEED LIMIT OF 35 M.P.H. OR LESS AND 36" IF THE POSTED SPEED LIMIT IS 40 M.P.H. OR GREATER.
2. STOP SIGN SHALL BE SUPPLEMENTED WITH R1-3 (3-WAY OR 4-WAY) SIGNS WHERE APPROPRIATE.



TYPICAL SIDEWALK RAMPS WITH CROSSWALK

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

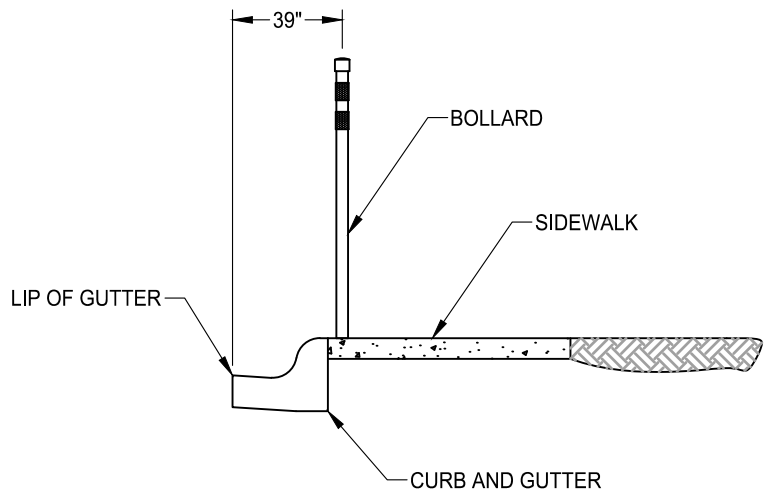
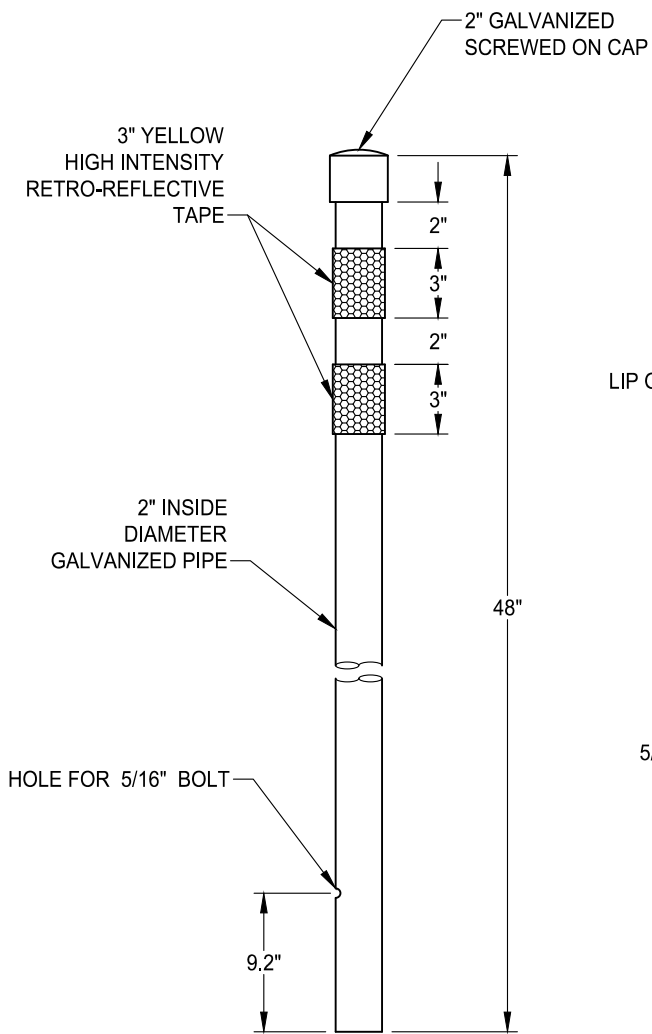
**STOP SIGN AND STOP LEGEND
LOCATION**

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER 10/24/2018
DATE

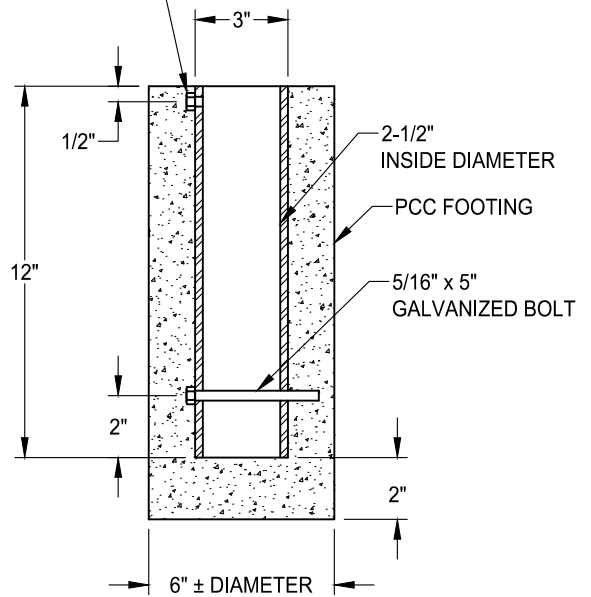


DRAWING NUMBER

T - 1



5/16" x 1" GALVANIZED BOLT
TO FACE THE STREET



BOLLARD FOUNDATION DETAIL
NOT TO SCALE

NOTE:

1. INSTALL GALVANIZED STEEL BOLLARD AS NEEDED PER ENGINEER'S DIRECTION OR AS SPECIFIED ON THE PLANS.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

10/24/2018

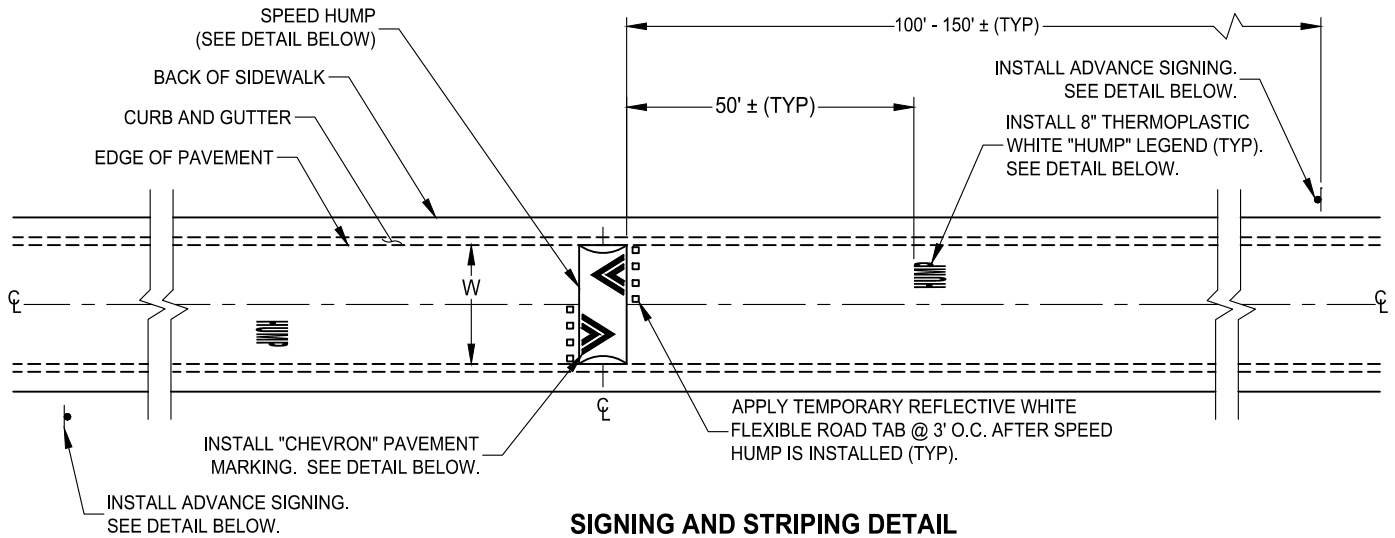
DATE

BOLLARD DETAIL

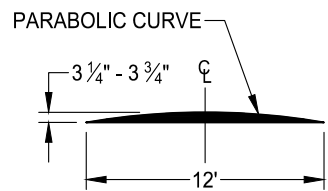


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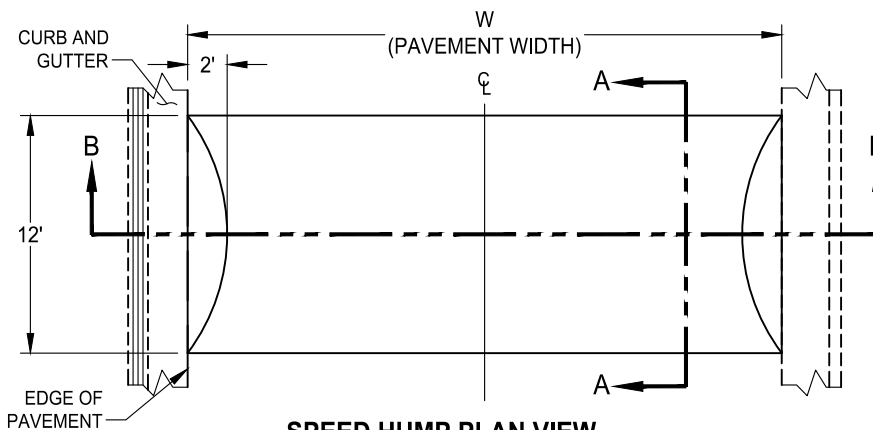
T - 2A



SIGNING AND STRIPING DETAIL
NOT TO SCALE



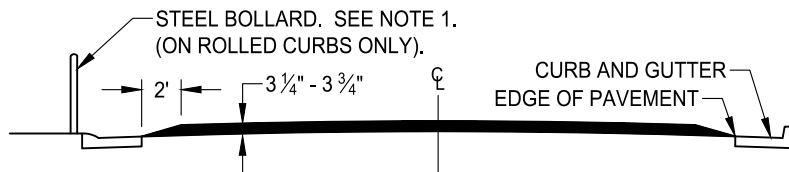
SECTION A-A
NOT TO SCALE



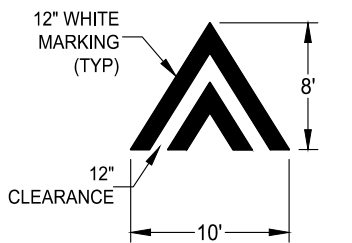
SPEED HUMP PLAN VIEW
NOT TO SCALE

NOTE:

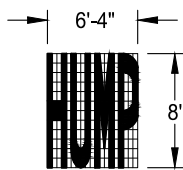
1. INSTALL GALVANIZED STEEL BOLLARD AS NEEDED PER ENGINEER'S DIRECTION OR AS SPECIFIED ON THE PLANS. SEE STANDARD DRAWING NO. T-2A FOR DETAILS.



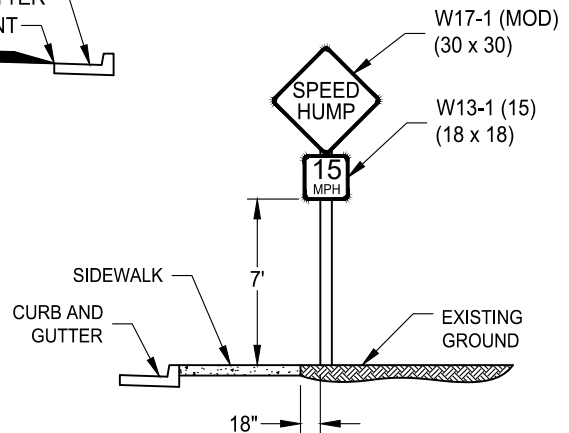
SECTION B-B
NOT TO SCALE



"CHEVRON" PAVEMENT MARKING DETAIL
NOT TO SCALE



"HUMP" PAVEMENT MARKING
NOT TO SCALE



ADVANCE SIGNING
NOT TO SCALE

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

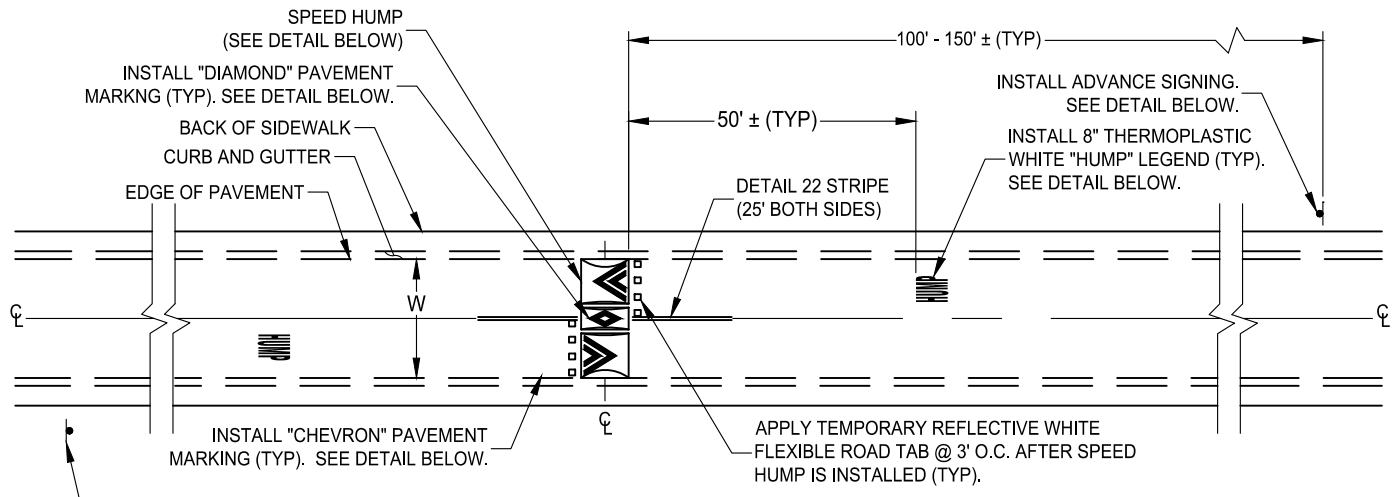
APPROVED BY:
Paul Mulock
CITY ENGINEER
10/24/2018
DATE

ASPHALT SPEED HUMP DETAIL
(W = 26' - 34')

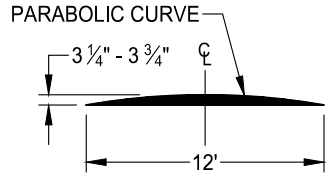


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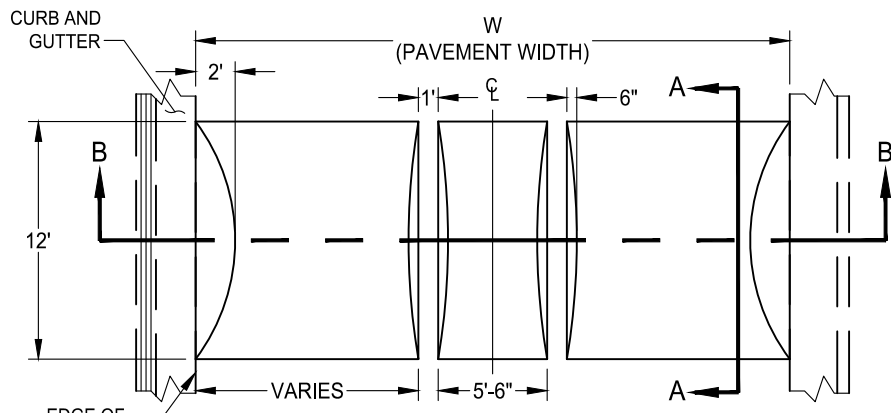
T - 2B



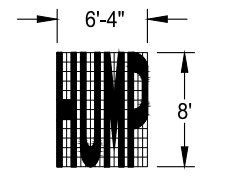
SIGNING AND STRIPING DETAIL
NOT TO SCALE



SECTION A-A
NOT TO SCALE



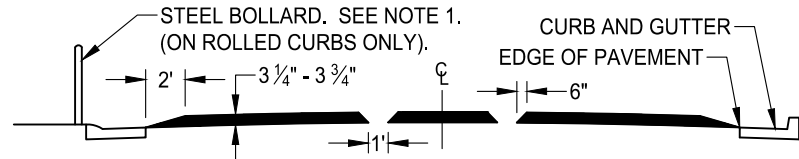
SPEED HUMP PLAN VIEW
NOT TO SCALE



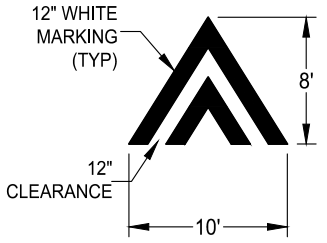
"HUMP" PAVEMENT MARKING
NOT TO SCALE

NOTE:

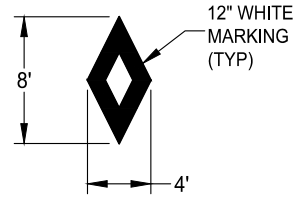
1. INSTALL GALVANIZED STEEL BOLLARD AS NEEDED PER ENGINEER'S DIRECTION OR AS SPECIFIED ON THE PLANS. SEE STANDARD DRAWING NO. T-2A FOR DETAILS.



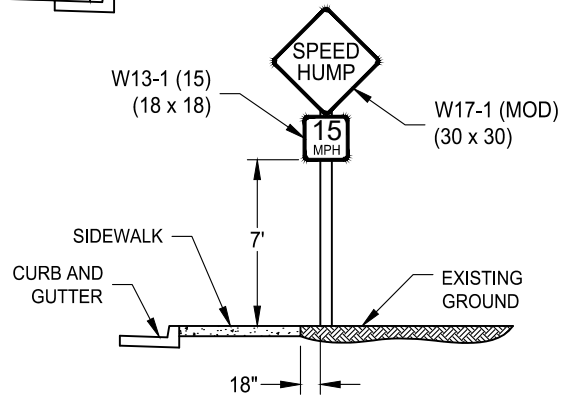
SECTION B-B
NOT TO SCALE



"CHEVRON" PAVEMENT MARKING DETAIL
NOT TO SCALE



"DIAMOND" PAVEMENT MARKING DETAIL
NOT TO SCALE



ADVANCE SIGNING
NOT TO SCALE

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

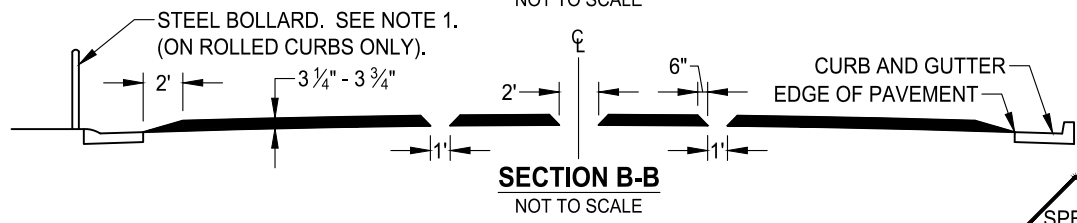
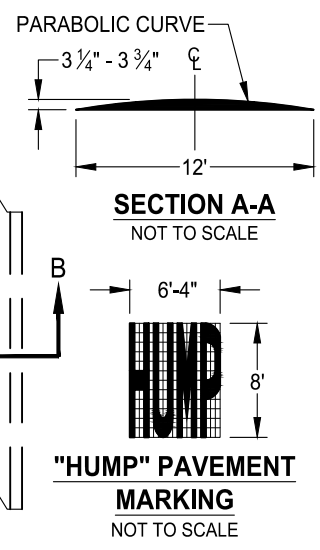
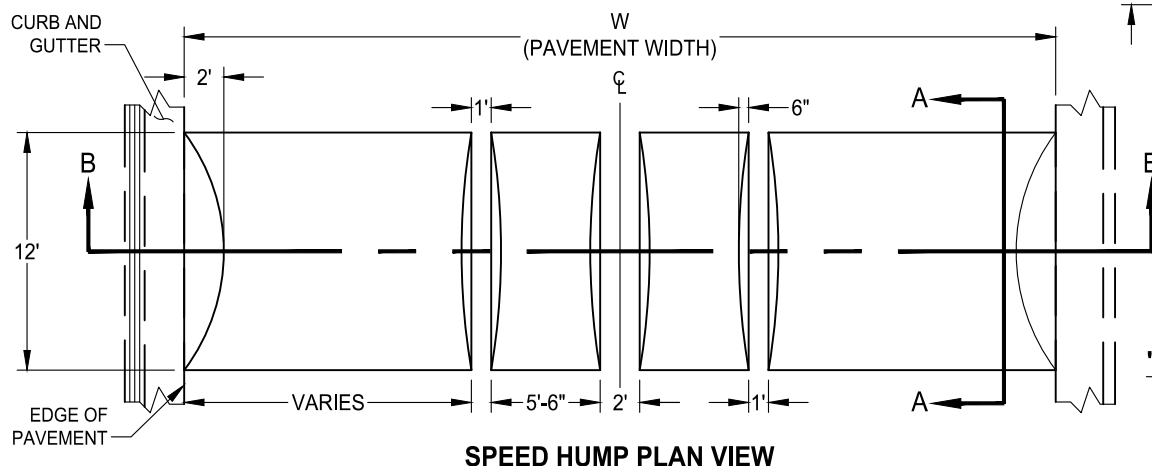
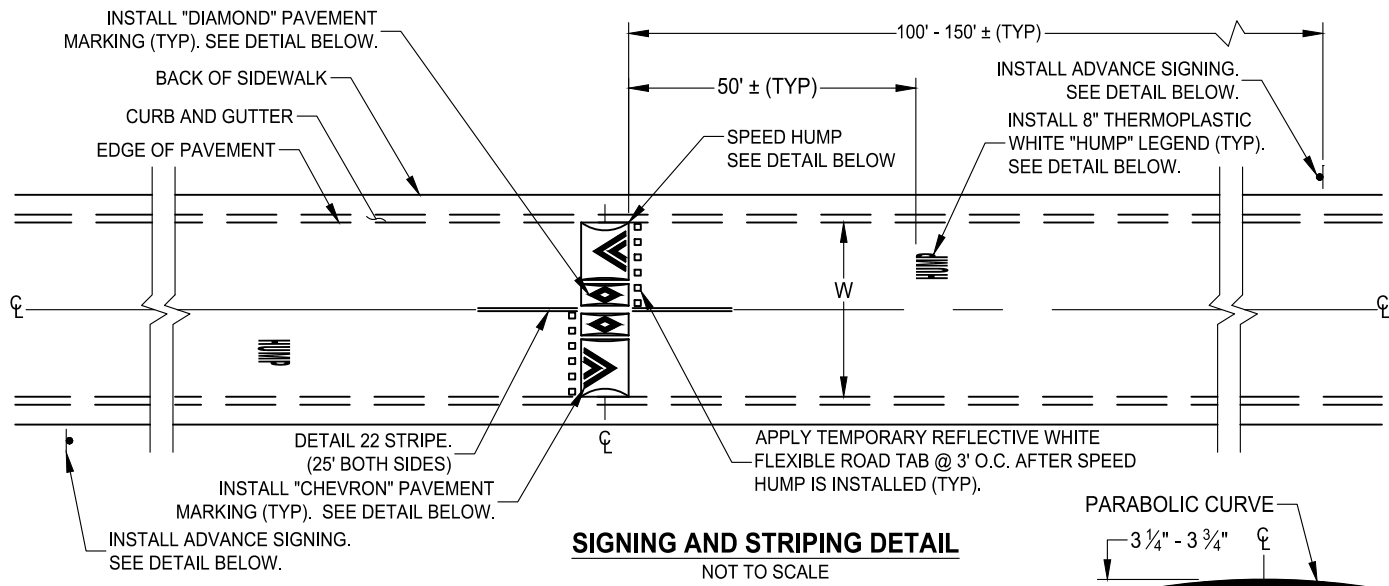
ASPHALT SPEED HUMP DETAIL (1)
(W = 26' - 34')

APPROVED BY:
Paul Mulock
CITY ENGINEER

10/24/2018
DATE

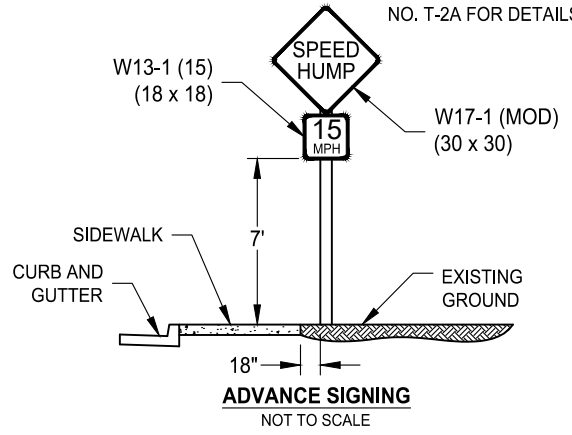
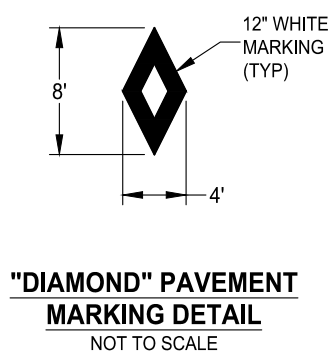
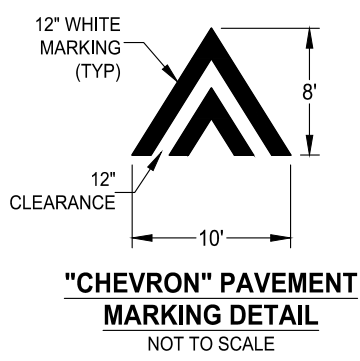
DRAWING NUMBER
T - 2C





NOTE:

1. INSTALL GALVANIZED STEEL BOLLARD AS NEEDED PER ENGINEER'S DIRECTION OR AS SPECIFIED ON THE PLANS. SEE STANDARD DRAWING NO. T-2A FOR DETAILS.



DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

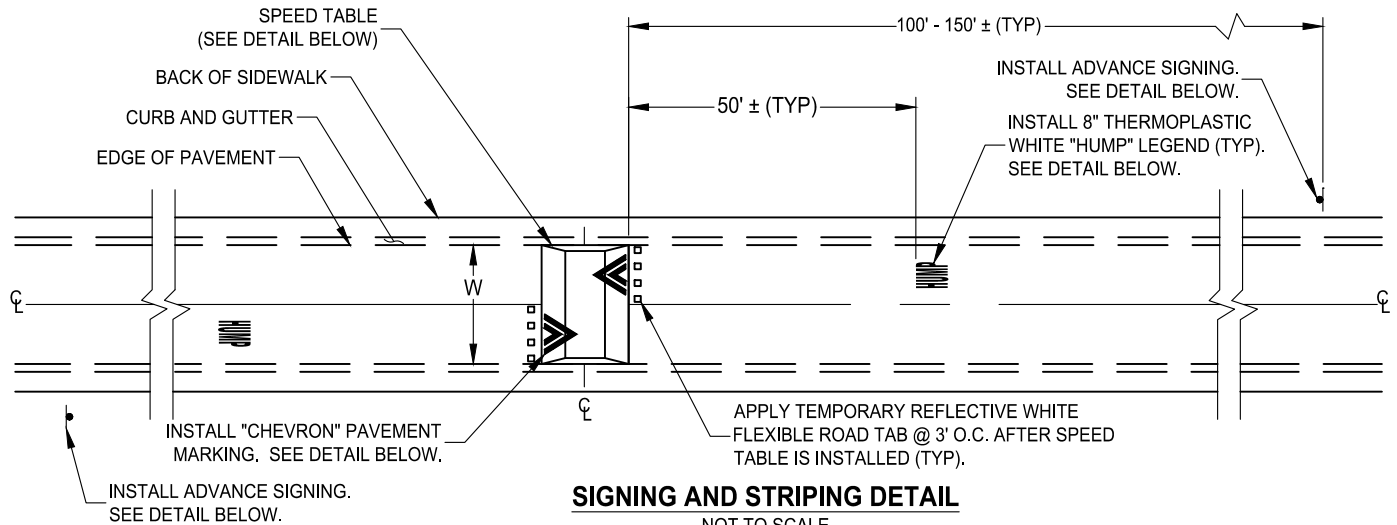
ASPHALT SPEED HUMP DETAIL (2)
(W = 36' - 44')

APPROVED BY:
Paul Mulock
CITY ENGINEER

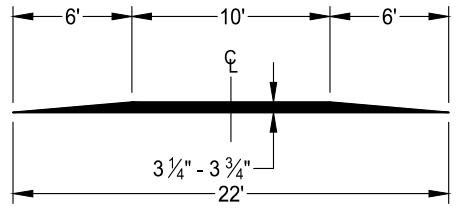
10/24/2018
DATE

DRAWING NUMBER
T - 2D

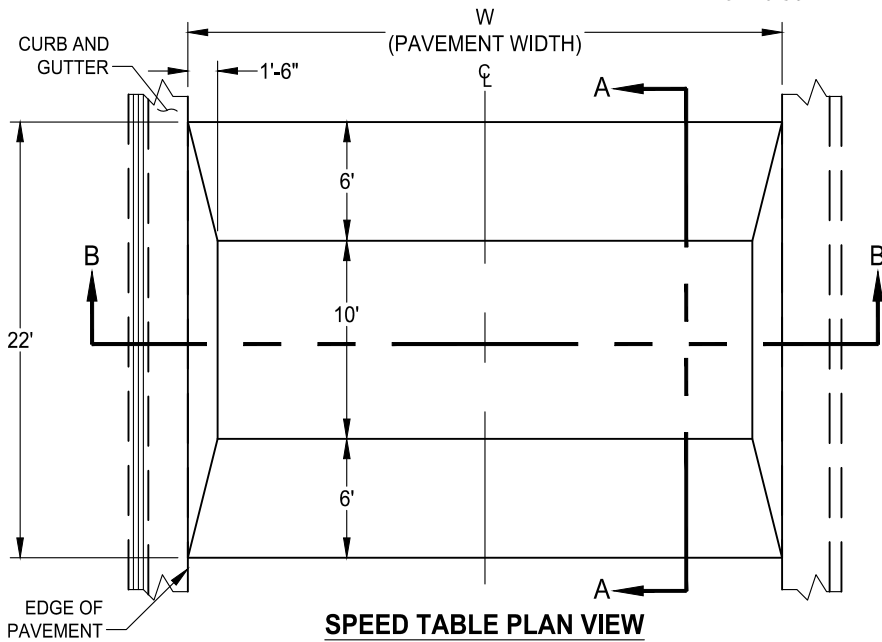




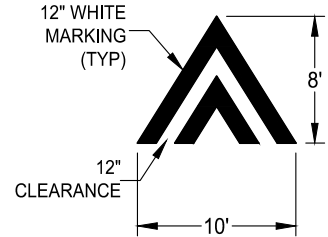
SIGNING AND STRIPING DETAIL
NOT TO SCALE



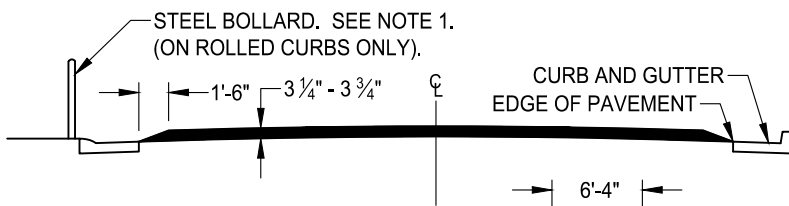
SECTION A-A
NOT TO SCALE



SPEED TABLE PLAN VIEW
NOT TO SCALE



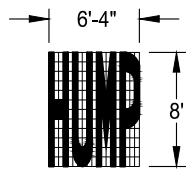
"CHEVRON" PAVEMENT MARKING DETAIL
NOT TO SCALE



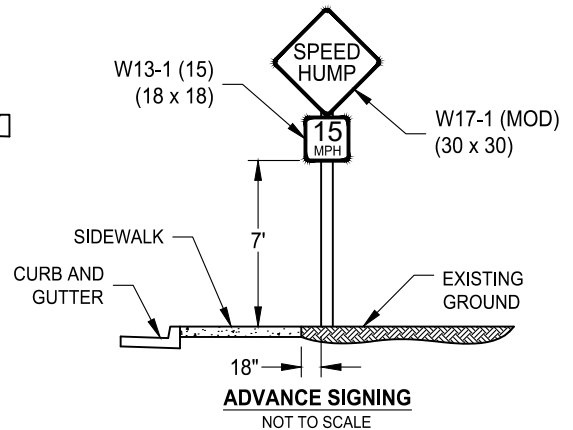
SECTION B-B
NOT TO SCALE

NOTE:

1. INSTALL GALVANIZED STEEL BOLLARD AS NEEDED PER ENGINEER'S DIRECTION OR AS SPECIFIED ON THE PLANS. SEE STANDARD DRAWING NO. T-2A FOR DETAILS.



"HUMP" PAVEMENT MARKING
NOT TO SCALE



ADVANCE SIGNING
NOT TO SCALE

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

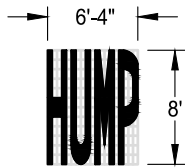
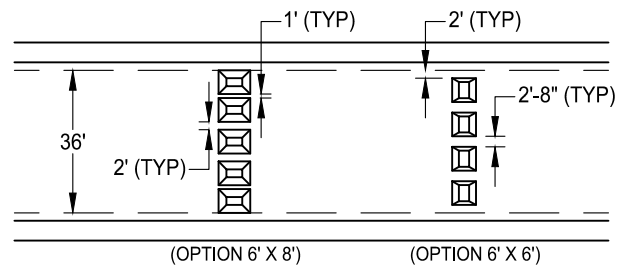
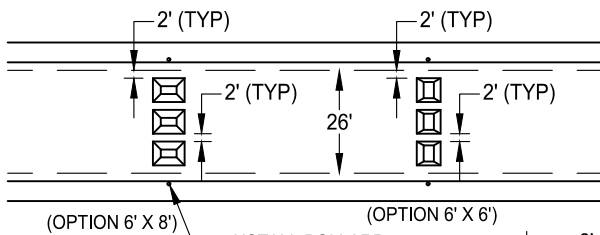
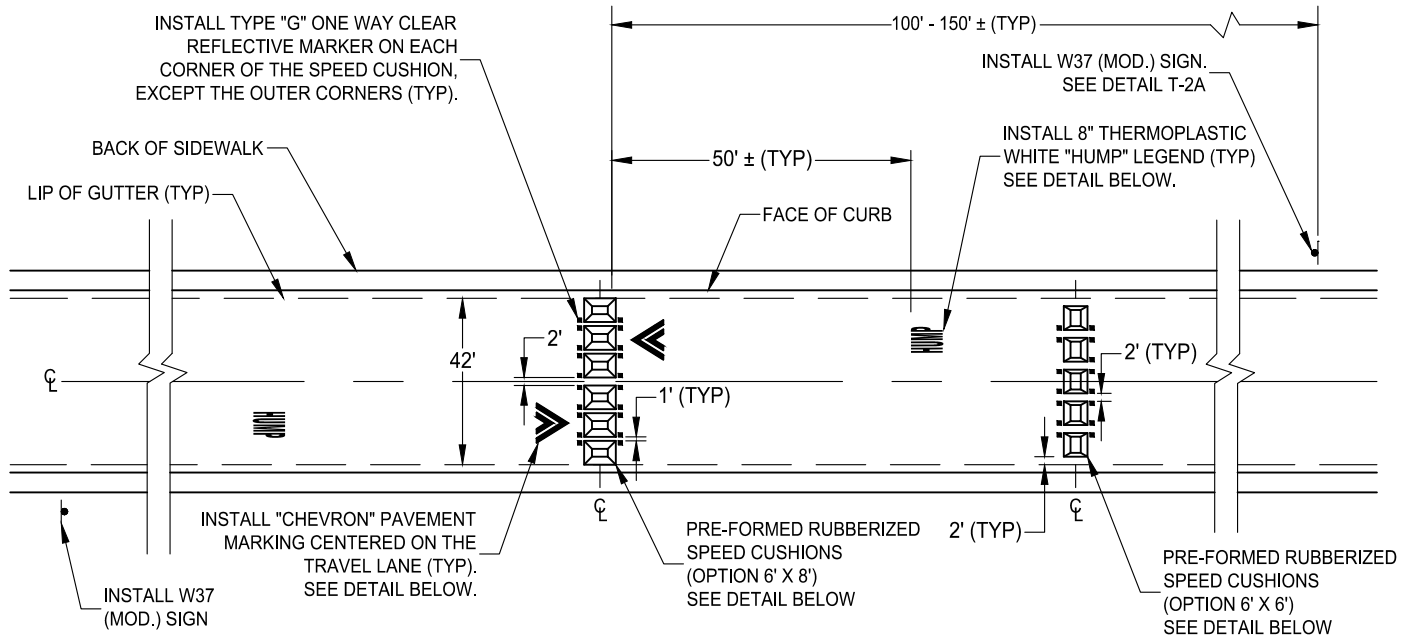
ASPHALT SPEED TABLE DETAIL
(W = 26' - 44')

APPROVED BY:
Paul Mulock
CITY ENGINEER

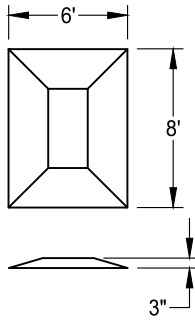
10/24/2018
DATE

DRAWING NUMBER
T - 2E

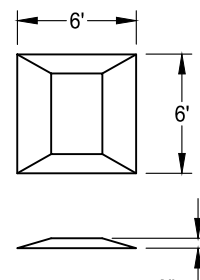




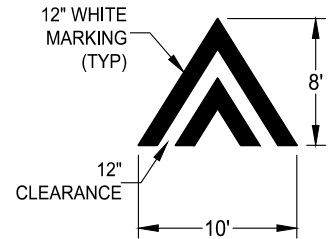
"HUMP" PAVEMENT MARKING
NOT TO SCALE



6' X 8' SPEED CUSHION DETAIL
NOT TO SCALE



6' X 6' SPEED CUSHION DETAIL
NOT TO SCALE



"CHEVRON" PAVEMENT MARKING DETAIL
NOT TO SCALE

NOTES:

1. DEVELOPER/CONTRACTOR MAY USE 6' X 6' OR 6' X 8' PRE-FORMED RUBBERIZED SPEED CUSHIONS.
2. SPEED CUSHION SHALL BE ARRANGED TO THE SATISFACTION OF THE CITY ENGINEER TO ALLOW EMERGENCY VEHICLES TO PASS WITHOUT IMPEDANCE.
3. OTHER SPEED CUSHION LAYOUTS MUST BE APPROVED BY THE CITY ENGINEER.
4. ALL SIGNING AND STRIPING SHALL APPLY TO ALL TYPES OF ROADWAY WIDTH AND EITHER SIZE OF SPEED CUSHION INSTALLATION OPTION.
5. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL SIGNING AND STRIPING AS DETERMINED BY THE CITY OF ELK GROVE FOR PUBLIC SAFETY.

SPEED CUSHION MINIMUM SPECIFICATIONS REQUIREMENTS	
RAMP GRADIENT (SIDE)	1:6
TENSILE STRENGTH	400 PSI
NUMBER OF ANCHOR BOLTS PER CUSHION	35

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

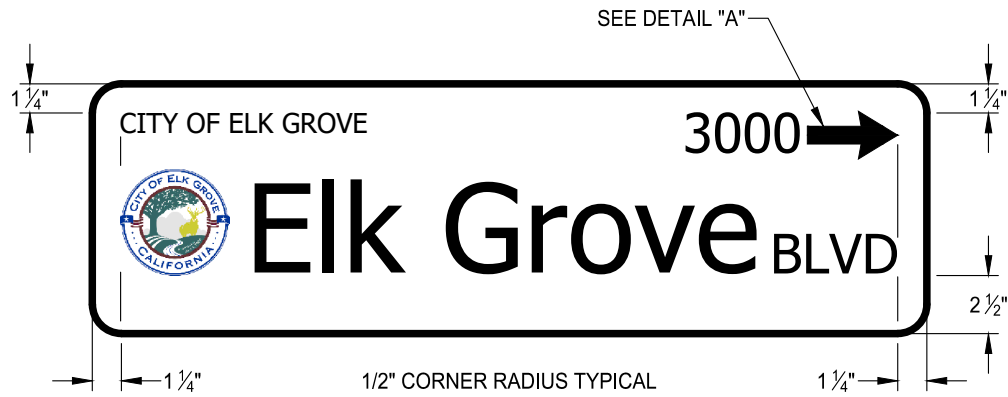
PRE-FORMED RUBBERIZED SPEED CUSHION LAYOUT AND TYPICAL SIGNING AND STRIPING (42', 36', 26' PAVED ROADWAY)

APPROVED BY:
Paul Mulock
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
T - 2





SIGN BLANKS: ALL STREET NAME SIGNS SHALL BE 10 INCHES IN HEIGHT, A MINIMUM OF 30 INCHES IN LENGTH AND A MAXIMUM OF 42 INCHES IN LENGTH. SIGN BLANKS SHALL BE 0.080 INCH THICK, ASTM B209 ALLOY 6061-T6, FLAT ALUMINUM FOR CANTILEVER MOUNTED SIGNS AND SHALL BE 0.125 INCH THICK, ASTM ALLOY 6061-T6, FLAT ALUMINUM FOR CENTER MOUNTED SIGNS.

SHEETING: REFLECTIVE SHEETING SHALL BE 3M DIAMOND GRADE OR EQUIVALENT (WHITE), OVERLAYED WITH ELECTRO CUT (EC) TRANSPARENT OVERLAY FILM (GREEN). GRAFFITI FILM SHALL BE APPLIED OVER THE ENTIRE SIGN.

STREET NAMES: STREET NAMES SHALL BE NO LONGER THAN 14 LETTERS LONG, INCLUDING SPACES AND SHALL BE USED TO DETERMINE SIGN LENGTH AS SPECIFIED ABOVE.

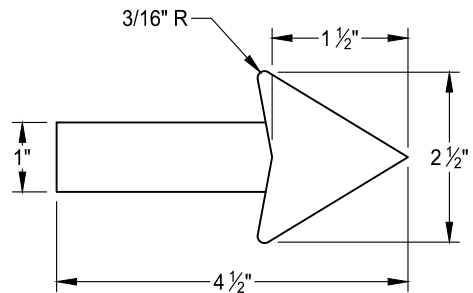
FONTS: ALL LETTERS AND NUMBERS SHALL BE HIGHWAY GOTHIC FONT. MINIMUM LETTER DIMENSIONS AS LISTED BELOW ARE TO BE USED WITH LONG STREET NAMES IN ORDER TO FIT NAMES ON SIGN BLANKS.

UPPER CASE LETTERS FOR STREET NAMES:	4 INCHES
LOWER CASE LETTERS FOR STREET NAMES:	3 INCHES
UPPER CASE LETTERS FOR STREET TYPES (I.E. BLVD, WAY, RD, ST)	2 INCHES
UPPER CASE LETTERS FOR BLOCK NUMBERS:	2 INCHES
UPPER CASE LETTERS FOR CITY OF ELK GROVE:	1 INCH

CITY SEAL: CITY SEAL SHALL BE 5 INCHES IN DIAMETER ELECTRO CUT (EC) FILM. A COPY OF THE SEAL CAN BE OBTAINED FROM THE ASSISTANT CITY CLERK.

COLORS: STREET NAME SIGN COLORS SHALL BE AS FOLLOWS:

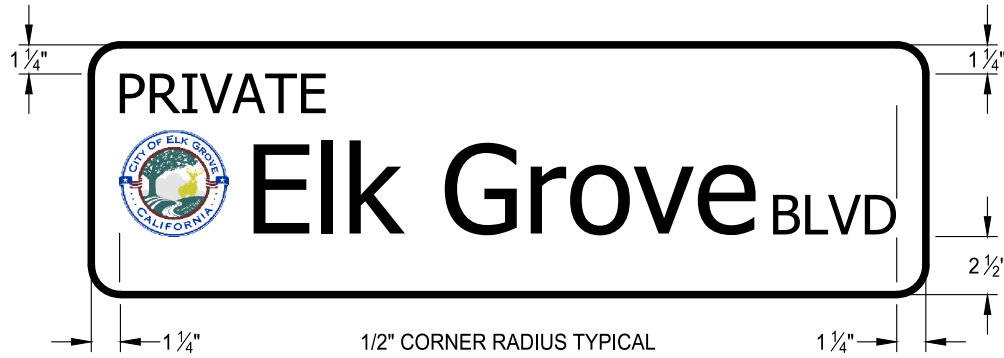
BACKGROUND:	GREEN
TEXT:	WHITE
BORDER:	WHITE
CITY SEAL:	PANTONE MATCHING SYSTEM:
	GREEN PMS 341C
	YELLOW PMS 117C
	RED PMS 209C
	BLUE PMS 287C
	COLOR OF CLOUD IS 15% OF BLUE



DETAIL "A"

LAYOUT: SIGNS SHALL BE DOUBLE FACED (FRONT AND REAR) WITH BLOCK ARROWS POINTING IN THE SAME DIRECTION (I.E. FRONT TO RIGHT AND REAR TO LEFT). LAYOUT SHALL BE AS SHOWN ABOVE.

DATE: 09/22/2017	NOT TO SCALE	CITY OF ELK GROVE - PUBLIC WORKS	APPROVED BY: CITY ENGINEER
REVISION	BY	STREET NAME SIGN	10/24/2018 DATE DRAWING NUMBER <div style="text-align: center; font-size: 24pt;">T - 3</div>



SIGN BLANKS: ALL STREET NAME SIGNS SHALL BE 10 INCHES IN HEIGHT, A MINIMUM OF 30 INCHES IN LENGTH AND A MAXIMUM OF 42 INCHES IN LENGTH. SIGN BLANKS SHALL BE 0.080 INCH THICK, ASTM B209 ALLOY 6061-T6, FLAT ALUMINUM FOR CANTILEVER MOUNTED SIGNS AND SHALL BE 0.125 INCH THICK, ASTM ALLOY 6061-T6, FLAT ALUMINUM FOR CENTER MOUNTED SIGNS.

SHEETING: REFLECTIVE SHEETING SHALL BE 3M DIAMOND GRADE OR EQUIVALENT (WHITE), OVERLAYED WITH ELECTRO CUT (EC) TRANSPARENT OVERLAY FILM (GREEN). GRAFFITI FILM SHALL BE APPLIED OVER THE ENTIRE SIGN.

STREET NAMES: STREET NAMES SHALL BE NO LONGER THAN 14 LETTERS LONG, INCLUDING SPACES AND SHALL BE USED TO DETERMINE SIGN LENGTH AS SPECIFIED ABOVE.

FONTS: ALL LETTERS AND NUMBERS SHALL BE HIGHWAY GOTHIC FONT. MINIMUM LETTER DIMENSIONS AS LISTED BELOW ARE TO BE USED WITH LONG STREET NAMES IN ORDER TO FIT NAMES ON SIGN BLANKS.

UPPER CASE LETTERS FOR STREET NAMES:	4 INCHES
LOWER CASE LETTERS FOR STREET NAMES:	3 INCHES
UPPER CASE LETTERS FOR STREET TYPES (I.E. BLVD, WAY, RD, ST)	2 INCHES

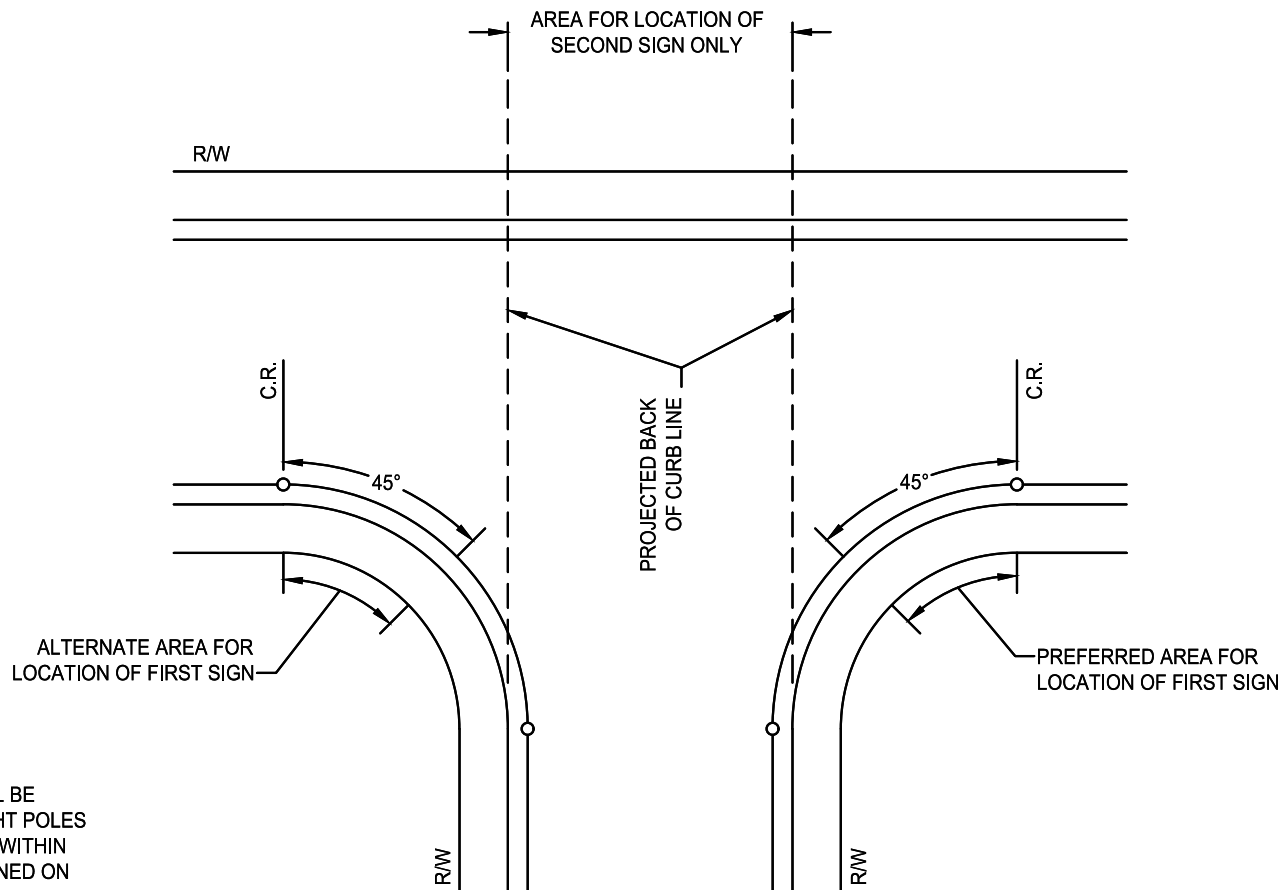
CITY SEAL: CITY SEAL SHALL BE 5 INCHES IN DIAMETER ELECTRO CUT (EC) FILM. A COPY OF THE SEAL CAN BE OBTAINED FROM THE ASSISTANT CITY CLERK.

COLORS: STREET NAME SIGN COLORS SHALL BE AS FOLLOWS:

BACKGROUND:	GREEN
TEXT:	WHITE
BORDER:	WHITE
CITY SEAL:	PANTONE MATCHING SYSTEM:
	GREEN PMS 341C
	YELLOW PMS 117C
	RED PMS 209C
	BLUE PMS 287C
	COLOR OF CLOUD IS 15% OF BLUE

LAYOUT: SIGNS SHALL BE DOUBLE FACED (FRONT AND REAR). LAYOUT SHALL BE AS SHOWN ABOVE.

DATE: 09/22/2017		NOT TO SCALE		CITY OF ELK GROVE - PUBLIC WORKS			APPROVED BY: CITY ENGINEER			
		PRIVATE STREET NAME SIGN			10/24/2018 DATE			DRAWING NUMBER T - 4		
REVISION	BY	APPROVED	DATE							



NOTES:

1. STREET NAME SIGNS SHALL BE INSTALLED ON STREET LIGHT POLES WHEN THEY ARE LOCATED WITHIN THE LOCATION LIMITS DEFINED ON THIS DETAIL.
2. THE LOCATION FOR SECOND SIGN SHALL BE USED ONLY WHEN 2 (TWO) SETS OF STREET NAME SIGNS ARE REQUIRED AS SHOWN IN STANDARD DRAWING NUMBER T-6A.
3. ALL OTHER STREET NAME SIGN REQUIREMENTS IN SECTIONS 4-25 AND 4-26 AND IN STANDARD DRAWINGS T-3, T-4, T-5B, T-6A AND T-6B OF THE CITY OF ELK GROVE IMPROVEMENT STANDARDS SHALL APPLY.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

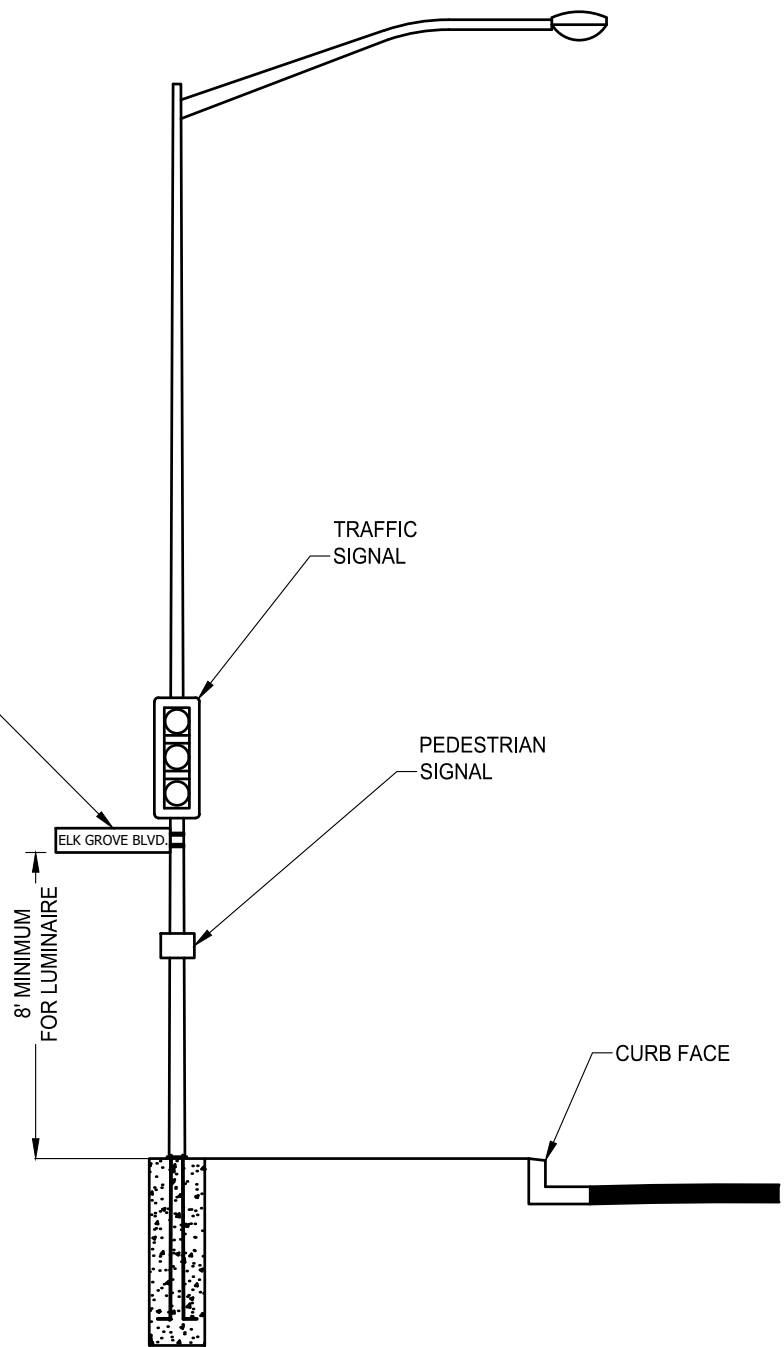
STREET NAME SIGN ON STREET LIGHT POLE PLACEMENT DETAIL

APPROVED BY: *Paul Muddoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
T - 5A



CANTILEVER SIGNS SHALL BE MOUNTED ON SIGNAL POLES AND LUMINAIRE POLES AWAY FROM THE CROSS STREET WITH 30-INCH BRACKETS, TOP AND BOTTOM, (SEE NOTE). BRACKETS SHALL BE FASTENED TO POLES WITH TWO (2) 0.750 INCH WIDE BY 0.30 INCH THICK TYPE 201 STAINLESS STEEL BANDS WITH HEAVY DUTY BUCKLE AND A MINIMUM OF TWO (2) VANDAL PROOF SCREWS SHALL AFFIX THE STREET SIGN TO THE BRACKET. THE SCREWS SHALL PASS THROUGH THE BRACKET AND SIGN. AT LOCATIONS WITH TWO (2) SIGNS, THE SIGNS SHALL EACH HAVE TWO (2) BANDS AFFIXING THE BRACKET TO THE POLE.



NOTE:

BRACKETS SHALL BE 30-INCH IN LENGTH, TOP AND BOTTOM OF SIGN, AND SHALL BE ASSEMBLED BY ATTACHING AN EXTRUDED ALUMINUM HEAD TO AN EXTENDED ALUMINUM "T" CHANNEL. THE BRACKET SHALL BE MADE FROM 6082-T6 ALUMINUM WITH "T" SECTION SHALL BE MADE FROM 6062-T6 ALUMINUM. THESE CANTILEVER ASSEMBLIES SHALL ACCOMMODATE UP TO 3/4" INCH STAINLESS STEEL BANDING THAT CAN BE DOUBLE WRAPPED FOR MOUNTING. THE CANTILEVER ARM SYSTEM SHALL ACCEPT SIGNS UP TO 0.125-INCH THICK. CANTILEVER ARMS SHALL BE ATTACHED TO BOTH THE TOP AND BOTTOM OF SIGN. CANTILEVER ARMS SHALL BE DESIGNED TO SUPPORT UP TO A SIGN AREA OF 6-SQ. FT. COLOR OF CANTILEVER ASSEMBLY AND BANDS SHALL MATCH POLE COLOR.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**STREET NAME SIGN ON
ELECTROLIERS**

APPROVED BY:

Robert M. Muddoch

CITY ENGINEER

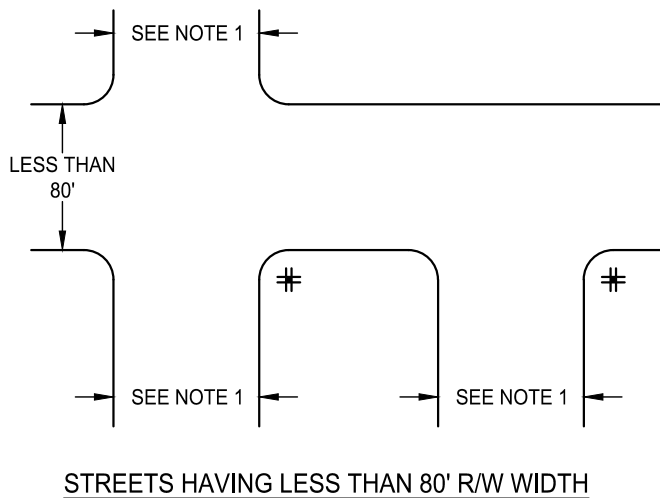
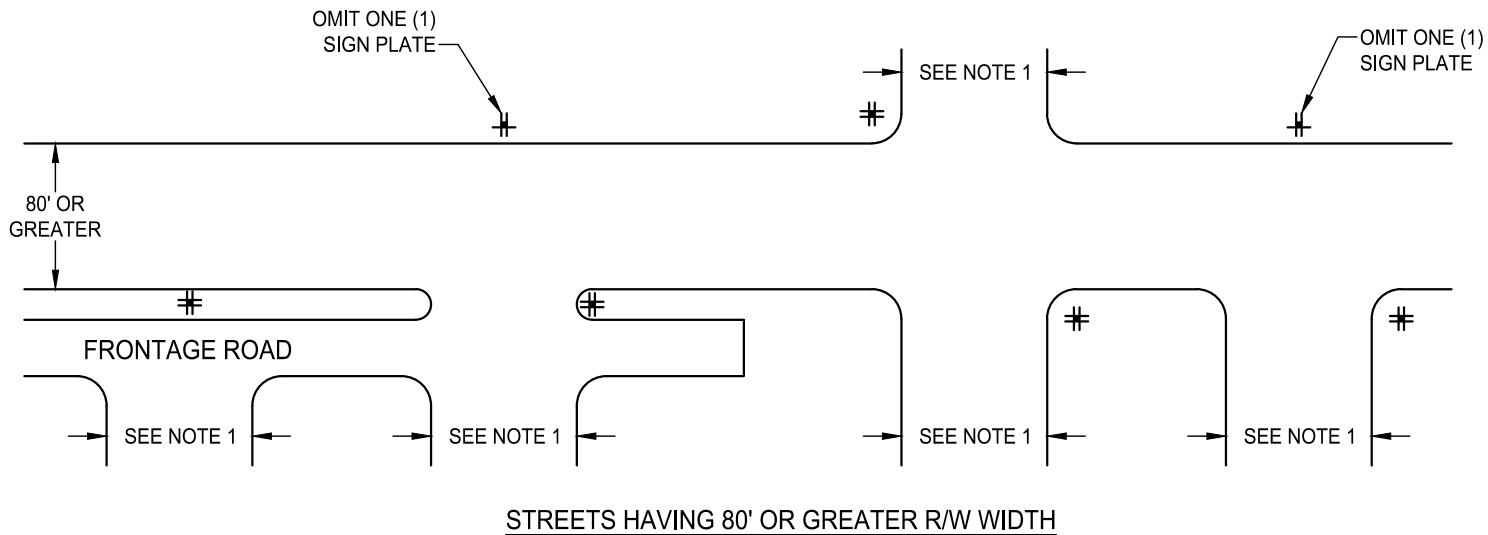
10/24/2018

DATE



DRAWING NUMBER

T - 5B



NOTE:

1. SIDE STREETS INDICATED ARE STREETS WITH R/W WIDTHS EQUAL TO OR LESS THAN R/W WIDTH FOR THROUGH STREET
2. STREET SIGNS ARE TO BE LOCATED AT MID-RETURN APPROXIMATELY 30 INCHES BEHIND THE FACE OF CURB OR 6" BEHIND ATTACHED SIDEWALKS. SEE STANDARD DRAWING T-1 WHEN COMBINED WITH A STOP SIGN.
3. SIGNS SHALL BE INSTALLED ON NORTHEAST AND SOUTHWEST CORNERS OF INTERSECTIONS. SIGNS SHALL BE INSTALLED ON STREET LIGHTING STANDARD WHEN APPROPRIATE AND AS APPROVED BY CITY.
4. CITY TO REVIEW AND APPROVE SIGN LOCATIONS PRIOR TO INSTALLATION.
5. SEE STANDARD DRAWINGS T-1, T-3, T-4, T-5 AND T-6B.

LEGEND:

- # STANDARD STREET NAME SIGN INSTALLATION. FOUR (4) SIGN PLATES ON POST OR ON STREET LIGHT POLE.
- ⦿ THREE (3) SIGN PLATES ON POST OR ON STREET LIGHT POLE.


DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

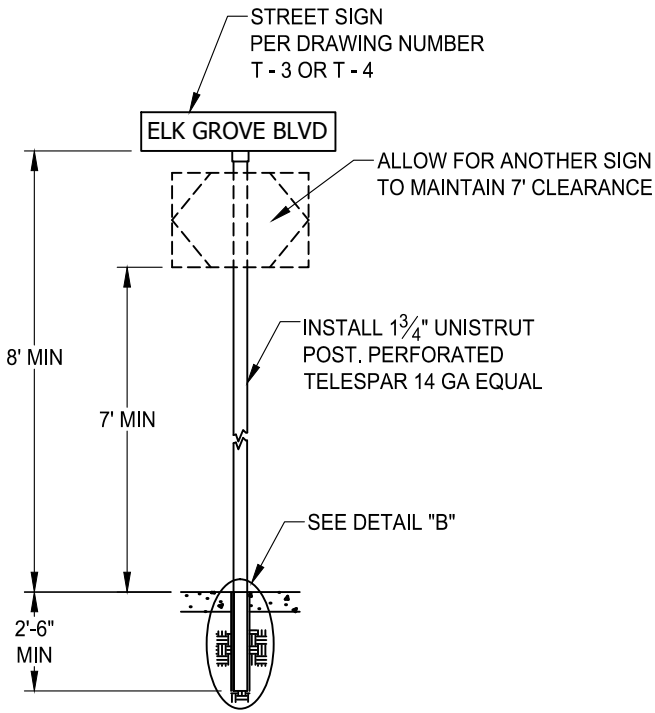
CITY OF ELK GROVE - PUBLIC WORKS

**STREET NAME SIGN GENERAL
LOCATION**

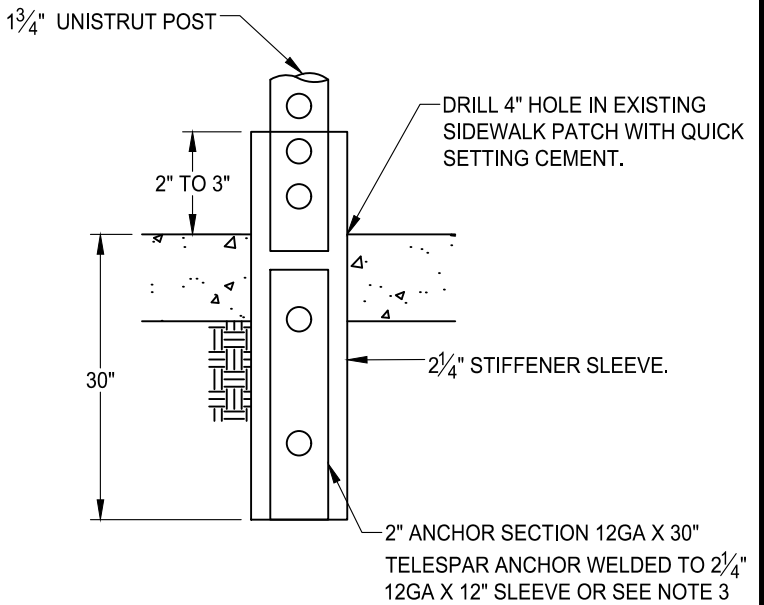
APPROVED BY:
Paul Muddoch 10/24/2018
CITY ENGINEER DATE

DRAWING NUMBER
T - 6A





DETAIL "A"



DETAIL "B" 1 3/4" UNISTRUT POST

NOTES:

1. BOTTOM OF LOWEST STREET SIGN TO BE MOUNTED EIGHT (8) FEET ABOVE THE GROUND OR SIDEWALK PER DETAIL "A" SHOWN ON THIS SHEET EXCEPT, WHEN STOP SIGN IS MOUNTED ON SAME POST AS A STREET SIGN, BOTTOM OF STOP SIGN SHALL BE MOUNTED SEVEN (7) FEET ABOVE THE GROUND OR SIDEWALK AND STREET NAME SIGN TO BE MOUNTED DIRECTLY ABOVE THE STOP SIGN. IN NO CASE SHALL THE BOTTOM OF THE LOWEST SIGN BE LESS THAN SEVEN (7) FEET ABOVE THE GROUND OR SIDEWALK LEVEL.
2. WHEN INSTALLED BEFORE SIDEWALK IS CONSTRUCTED, DRIVE 2 1/4" SQUARE PIPE STIFFENER SLEEVE WITH 2" ANCHOR 30" INTO EXISTING GROUND SURFACE. SET TOP OF STIFFENER SLEEVE MINIMUM OF 2 FULL PERFORATION HOLES ABOVE ULTIMATE SIDEWALK GRADE. CAP END AND TAPE HOLES TO PREVENT CONCRETE FROM ENTERING PIPE DURING SIDEWALK CONSTRUCTION.
3. TWO (2) 3/8" DRIVE RIVETS, PERPENDICULAR TO EACH OTHER, SHALL BE USED TO INSTALL 1 3/4" PERFORATED SQUARE PIPE TO STIFFENER SLEEVE. TWO (2) 3/8" DRIVE RIVETS SHALL BE USED TO INSTALL ALL SIGNS OTHER THAN STREET NAME SIGNS TO SQUARE SIGN PIPE.
4. SQUARE PIPE TOP SIGN BRACKET SHALL BE HAWKINS, PART NUMBER V14F-(HD)SL-107(2C)-0.125 OR EQUAL. CROSSPIECE SIGN BRACKET SHALL BE 90°, HAWKINS PART NUMBER V14F-(HD)SL-105(90)-0.125 (OR EQUAL). STREET LIGHT STANDARD BRACKET SHALL BE HAWKINS, WING BRACKET, PART NO. V14F-(HD)SL-AB-0.125 OR EQUAL.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

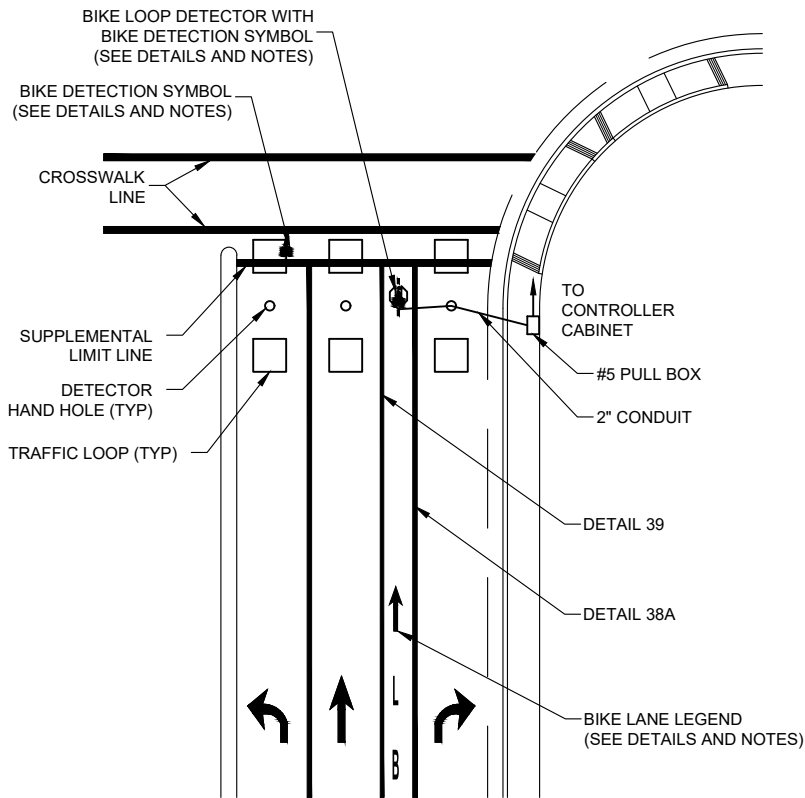
STREET SIGN LOCATION

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

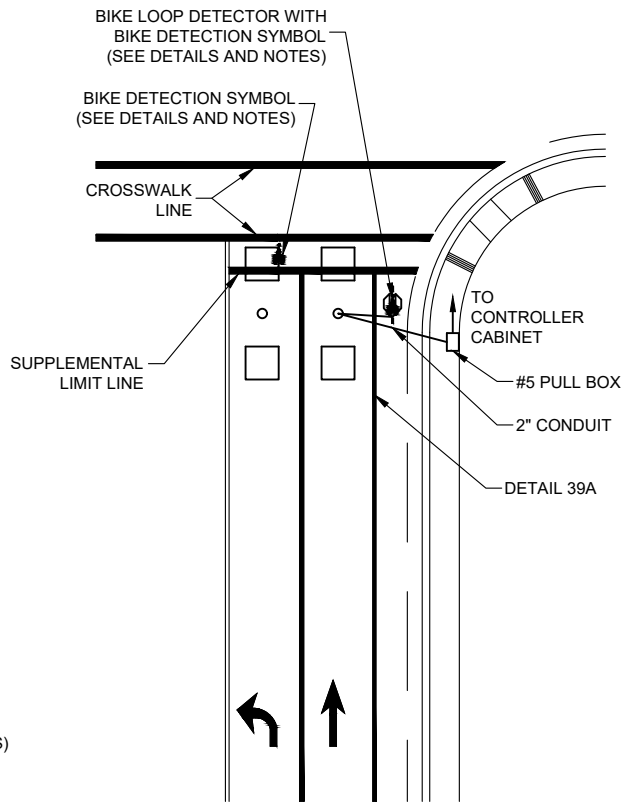
10/24/2018
DATE

DRAWING NUMBER
T - 6B

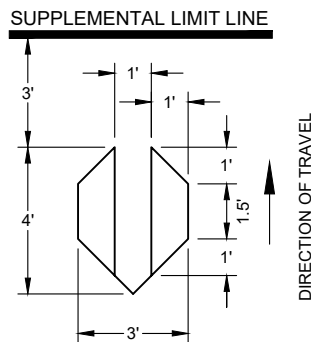




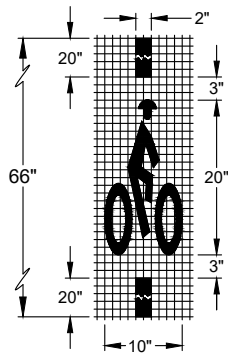
BIKE LOOP INSTALLATION AT MAJOR INTERSECTION WITH RIGHT TURN LANE



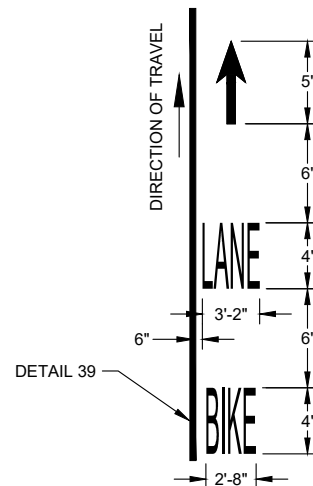
BIKE LOOP INSTALLATION ADJACENT TO CURB AND GUTTER



BIKE LOOP DETECTOR DETAIL
NOT TO SCALE



BIKE DETECTION SYMBOL DETAIL
NOT TO SCALE



BIKE LANE LEGEND DETAIL
NOT TO SCALE

NOTES:

- BIKE LOOP SHALL BE INSTALLED WITH CONDUIT, DETECTOR HANDHOLE (DH) AND DETECTOR LEAD IN CABLE (DLC) AND CONNECTED IN CONTROLLER WITH SEPARATE CHANNEL FOR OPERATION, UNLESS OTHERWISE NOTED ON THE PLANS.
- FOR BIKE LANE WITH LESS THAN 3 FEET IN WIDTH, MEASURING FROM BIKE LANE STRIPE AND LIP OF GUTTER, USE 3/4 SIZE OF BIKE LANE LEGEND.
- BIKE LANE LEGENDS, ARROWS AND BIKE DETECTION SYMBOLS SHALL BE 2 COATS WATER BASED WHITE PAINT PER SECTION 84-3.02 OF THE STATE STANDARD SPECIFICATIONS.
- BIKE DETECTION SYMBOL SHALL BE INSTALLED ON LOOP DETECTOR FOR LEFT TURN LANE, BIKE LANE AND OUTSIDE THROUGH LANE WHERE NO BIKE LANE IS PROPOSED. FOR DUAL LEFT TURN LANES, ONLY THE OUTSIDE LEFT TURN LANE SHALL BE INSTALLED WITH BIKE DETECTION SYMBOL. COORDINATE WITH SIGNAL CONTRACTOR AND CITY INSPECTOR FOR EXACT LOCATION OF DETECTION.

SEE MUTCD 2003, MUTCD 2003 CALIFORNIA SUPPLEMENT AND CALTRANS STD. PLAN A-24A AND A-24D FOR PAVEMENT MARKING, ARROW AND LEGEND.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

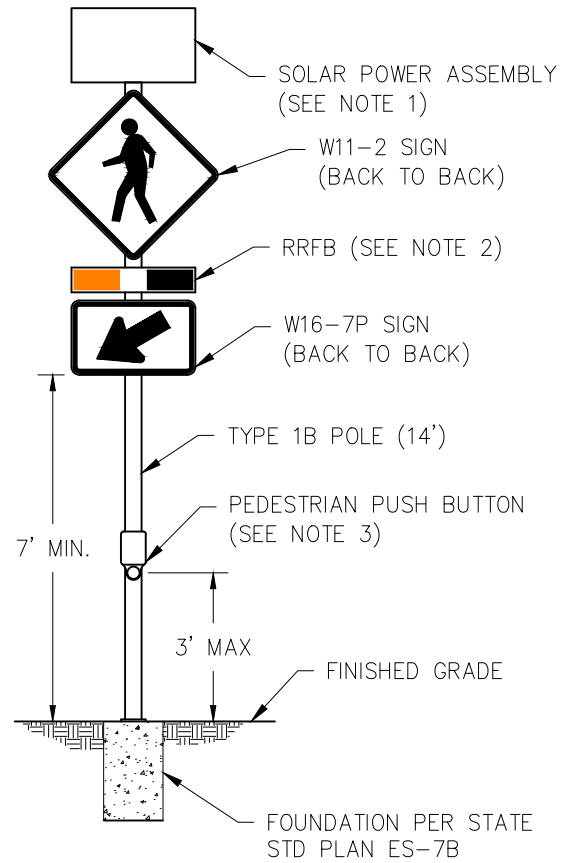
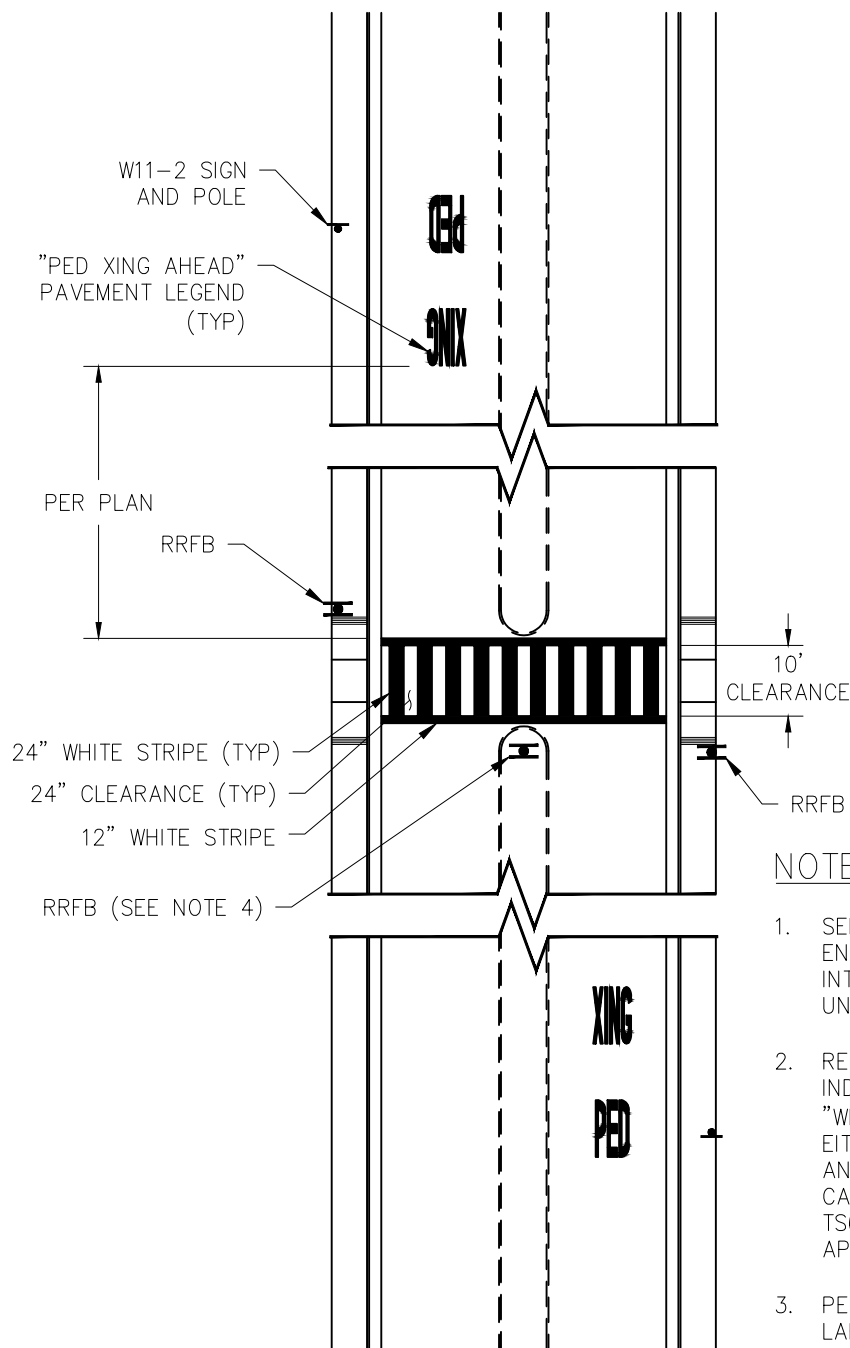
**BIKE LOOP AND BIKE LEGEND
INSTALLATION DETAIL**

APPROVED BY:
Paul Mulock
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
T - 7





RRFB DETAIL

NOTES:

1. SELF CONTAINED SOLAR ENGINE THAT HOUSES THE ENERGY MANAGEMENT SYSTEM, ON BOARD USER INTERFACE, WIRELESS COMMUNICATIONS BETWEEN UNITS, BATTERIES AND SOLAR PANEL.
2. RECTANGULAR RAPID FLASHING BEACON (RRFB) INDICATIONS SHALL FLASH IN A RAPID ALTERNATING "WIG-WAG" FLASHING SEQUENCE. RRFB SHALL BE EITHER MODEL 2180-RRFB-XL BY TAPCO TRAFFIC AND PARKING CONTROL CO. INC, MODEL R920 BY CARMANAH TECHNOLOGIES CORP., OR MODEL TS60-RRFB BY TRAFFIC SAFETY CORP., OR APPROVED EQUAL.
3. PEDESTRIAN PUSH BUTTON (PPB) SHALL BE TYPE B, LARGE A.D.A. TYPE WITH TWO-INCH DIA. BUTTON. PPB HOUSING SHALL BE EITHER DIE-CAST OR PERMANENT MOLD CAST ALUMINUM. PEDESTRIAN SIGN SHALL CONFORM TO STANDARD SIGN R10-25 OF THE CALIFORNIA MUTCD.
4. INSTALL RRFB IN THE MEDIAN ISLAND WHEN APPLICABLE.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

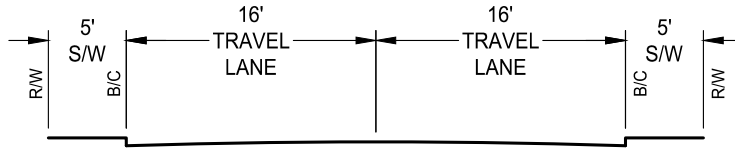
**MID-BLOCK CROSSWALK
AT UNCONTROLLED LOCATIONS**

APPROVED BY:
Robert Murdoch
CITY ENGINEER

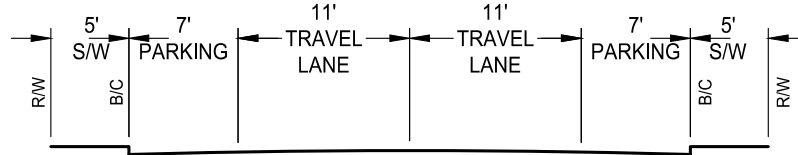
10/24/2018
DATE

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T - 8

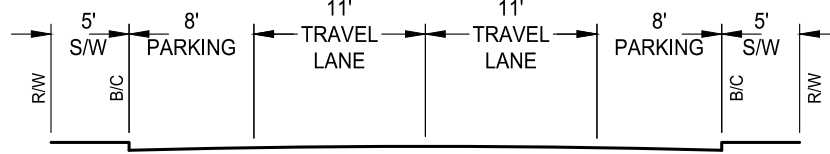




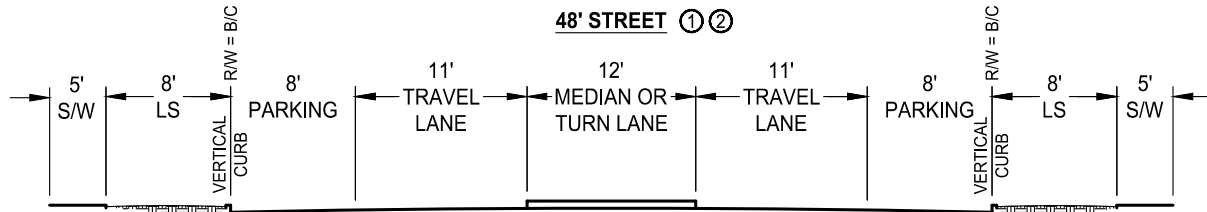
42' STREET ②



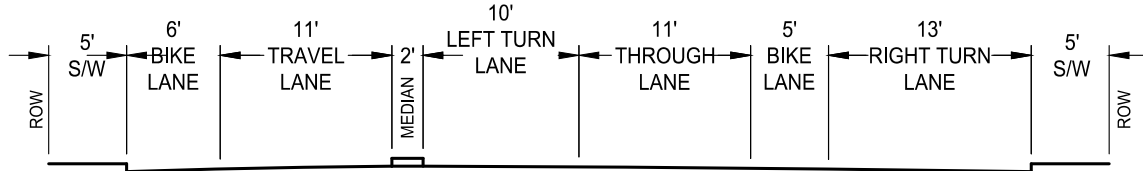
46' STREET ②



48' STREET ① ②



50' STREET ① ③ ⑤



66' EXPANDED INTERSECTION ④

AT THE DISCRETION OF PUBLIC WORKS

- ① ADJACENT TO SCHOOLS OR PARKS WIDEN THE SIDEWALK TO 8'.
IF PARKING IS NOT NEEDED, PARKING CAN BE CHANGED TO 6' BIKE LANE.
IF BIKE LANES ARE NEEDED, ADD 12'.
- ② 8' OF LANDSCAPING SEPARATING THE STREET FROM THE SIDEWALK MAY BE ADDED.
- ③ IF PARKING IS NOT NEEDED, IT MAY BE REMOVED. MINIMUM RIGHT-OF WAY SHALL BE 40 FEET.
ADJACENT TO SCHOOLS OR PARKS WIDEN THE SIDEWALK TO 8'.
IF PARKING IS NOT NEEDED, PARKING CAN BE CHANGED TO 6' BIKE LANE.
- ④ IF BIKE LANES ARE NOT NEEDED, REDUCE BY 11'.
- ⑤ LANDSCAPING AND SIDEWALK SHALL BE DEDICATED BY FEE TITLE OR LANDSCAPE/PEDESTRIAN EASEMENT AS APPROVED BY THE DIRECTOR.

MINOR DEVIATION MAY BE APPROVED BY THE DIRECTOR.

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

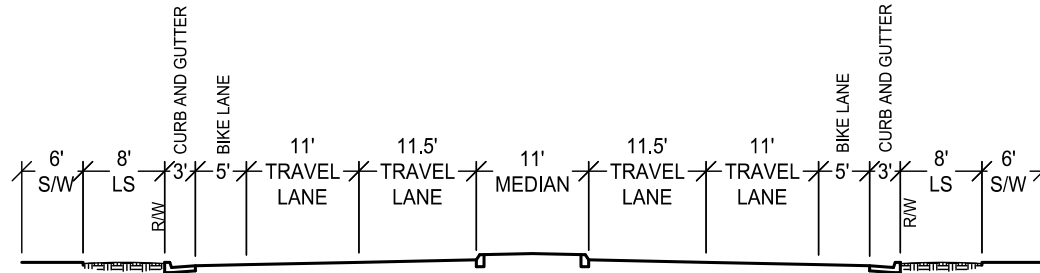
TYPICAL STREET CROSS SECTIONS

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER

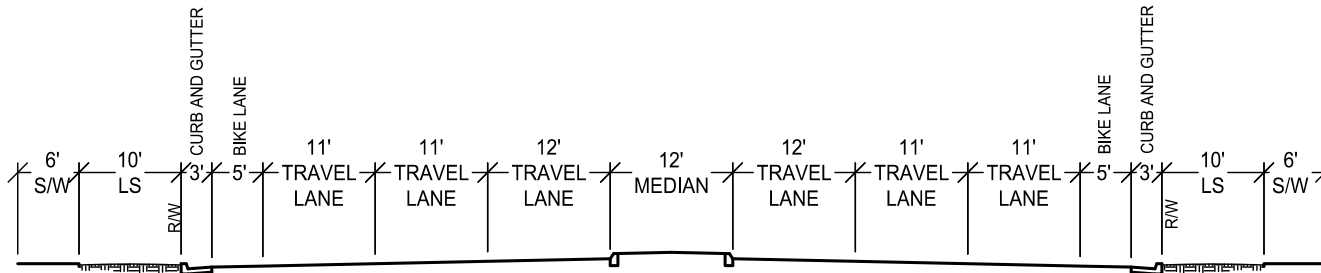
10/24/2018
DATE

DRAWING NUMBER
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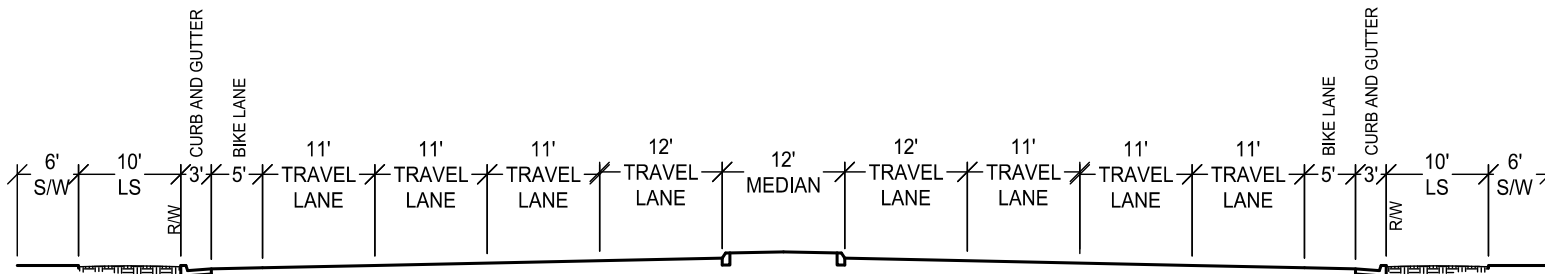




72' STREET



96' STREET



118' STREET

AT THE DISCRETION OF PUBLIC WORKS

- ① ADJACENT TO SCHOOLS OR PARKS WIDEN THE SIDEWALK TO 8'.
- ② LANDSCAPING AND SIDEWALK SHALL BE DEDICATED BY FEE TITLE OR LANDSCAPE/PEDESTRIAN EASEMENT AS APPROVED BY THE DIRECTOR.

MINOR DEVIATION MAY BE APPROVED BY THE DIRECTOR.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**TYPICAL STREET CROSS SECTIONS
72', 96' AND 118'**

APPROVED BY:

Paul M. Muddock

CITY ENGINEER

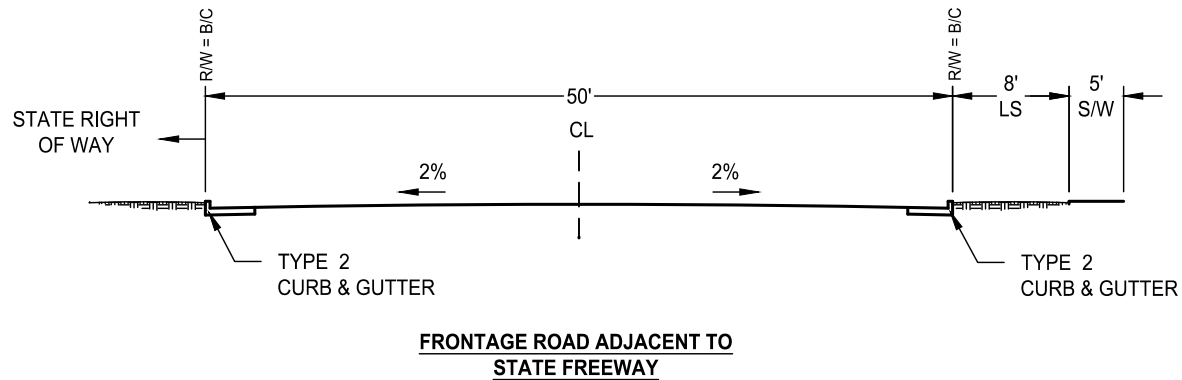
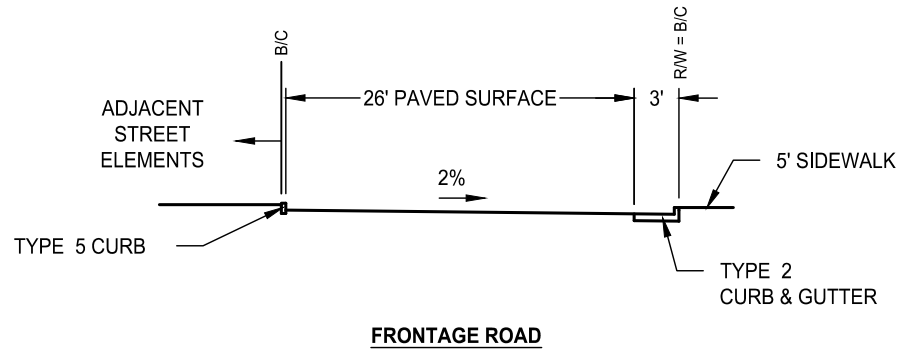
10/24/2018

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T - 9B



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CITY OF ELK GROVE - PUBLIC WORKS

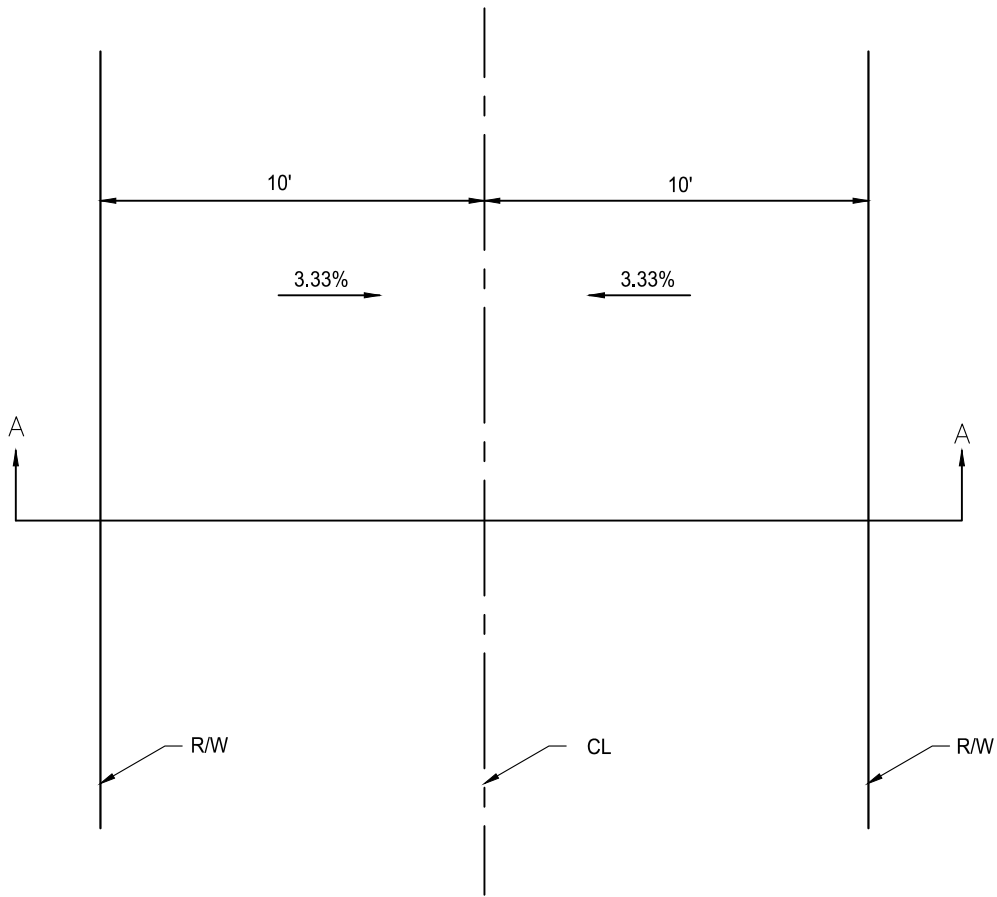
**TYPICAL STREET CROSS SECTIONS
FRONTAGE ROAD**

APPROVED BY:
Paul Murbach
CITY ENGINEER

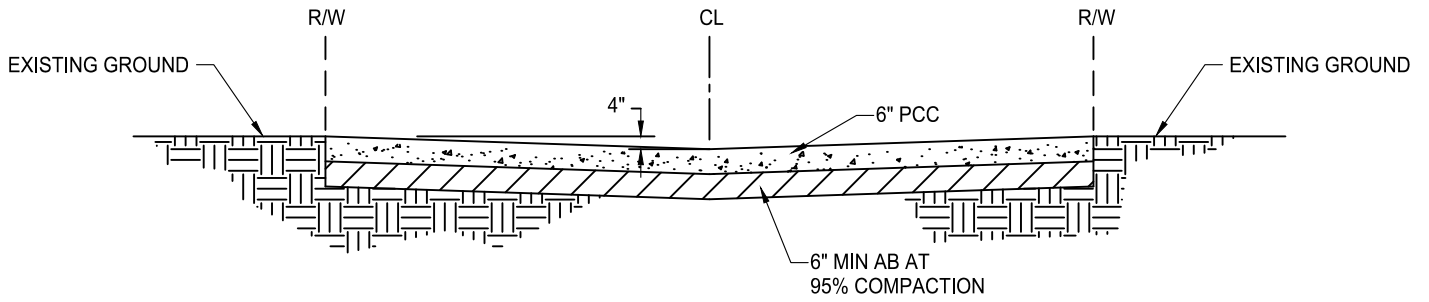
10/24/2018
DATE

DRAWING NUMBER
T - 9C





PLAN



SECTION A-A


NOTES:

- OTHER STRUCTURAL SECTIONS MAY BE USED WITH SPECIFIC APPROVAL OF THE DIRECTOR (SEE SECTION 4-6A)

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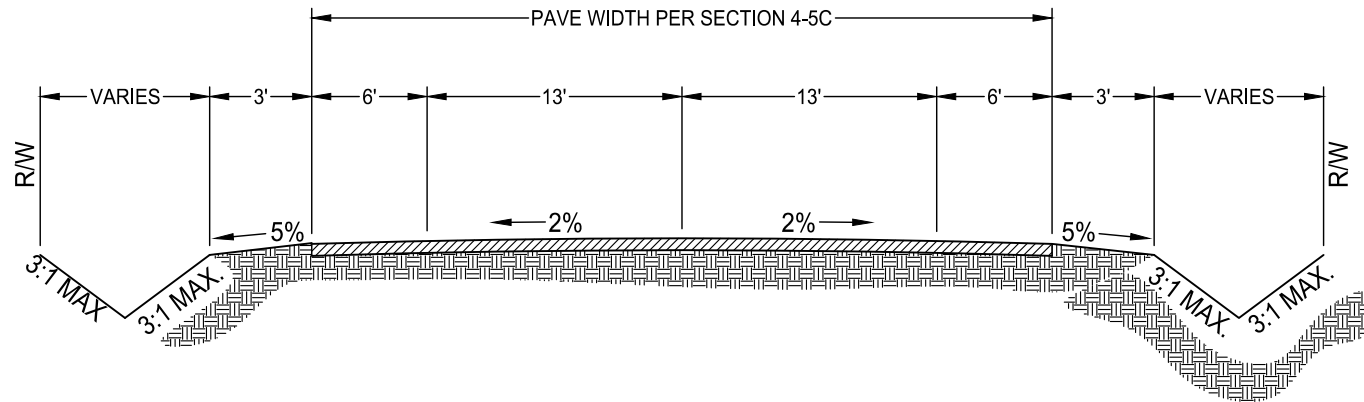
CITY OF ELK GROVE - PUBLIC WORKS

**20-FOOT STREET
(PRIVATE ALLEY)**

APPROVED BY:

 CITY ENGINEER 10/24/2018
DATE



DRAWING NUMBER
T - 9D




DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

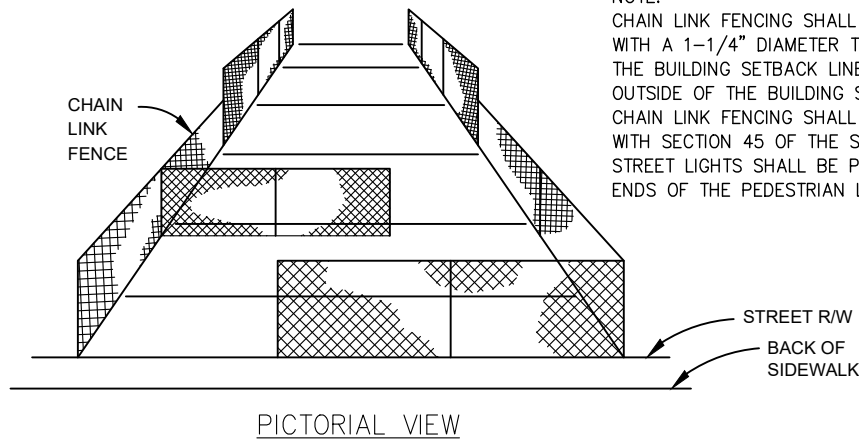
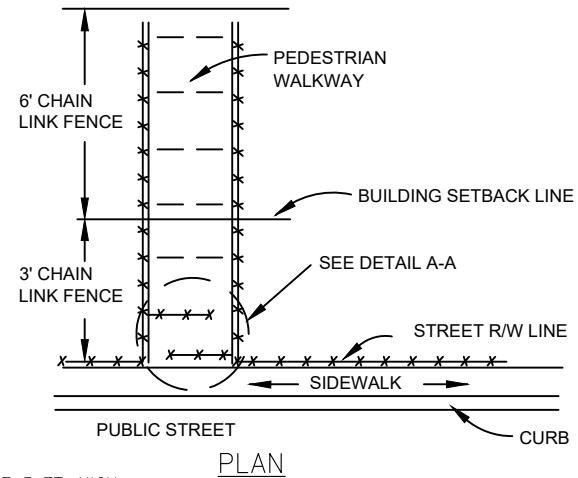
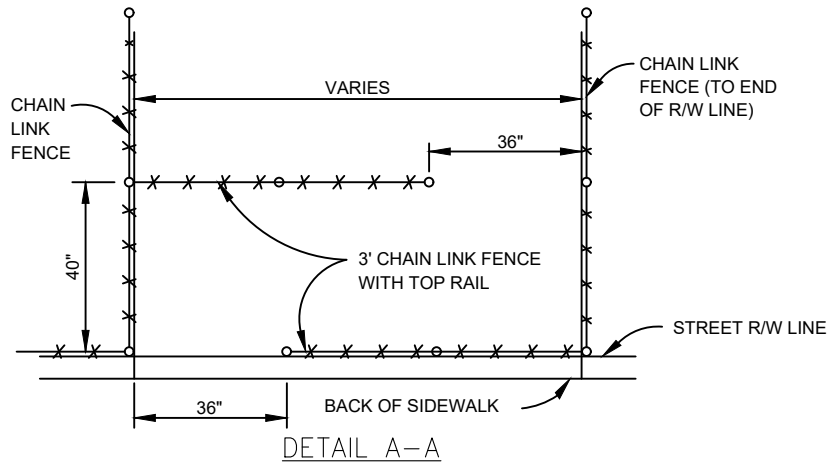
CITY OF ELK GROVE - PUBLIC WORKS

CLASS C STREET CROSS SECTION

APPROVED BY: *Paul Mudoch* 10/24/2018
 CITY ENGINEER DATE

DRAWING NUMBER
T - 10





NOTE:
 CHAIN LINK FENCING SHALL BE 3 FT. HIGH WITH A 1-1/4" DIAMETER TOP RAIL WITHIN THE BUILDING SETBACK LINE AND 6 FT. HIGH OUTSIDE OF THE BUILDING SETBACK LINE. CHAIN LINK FENCING SHALL BE IN ACCORDANCE WITH SECTION 45 OF THE STANDARD SPECIFICATIONS. STREET LIGHTS SHALL BE PLACED AT BOTH ENDS OF THE PEDESTRIAN LANE.

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

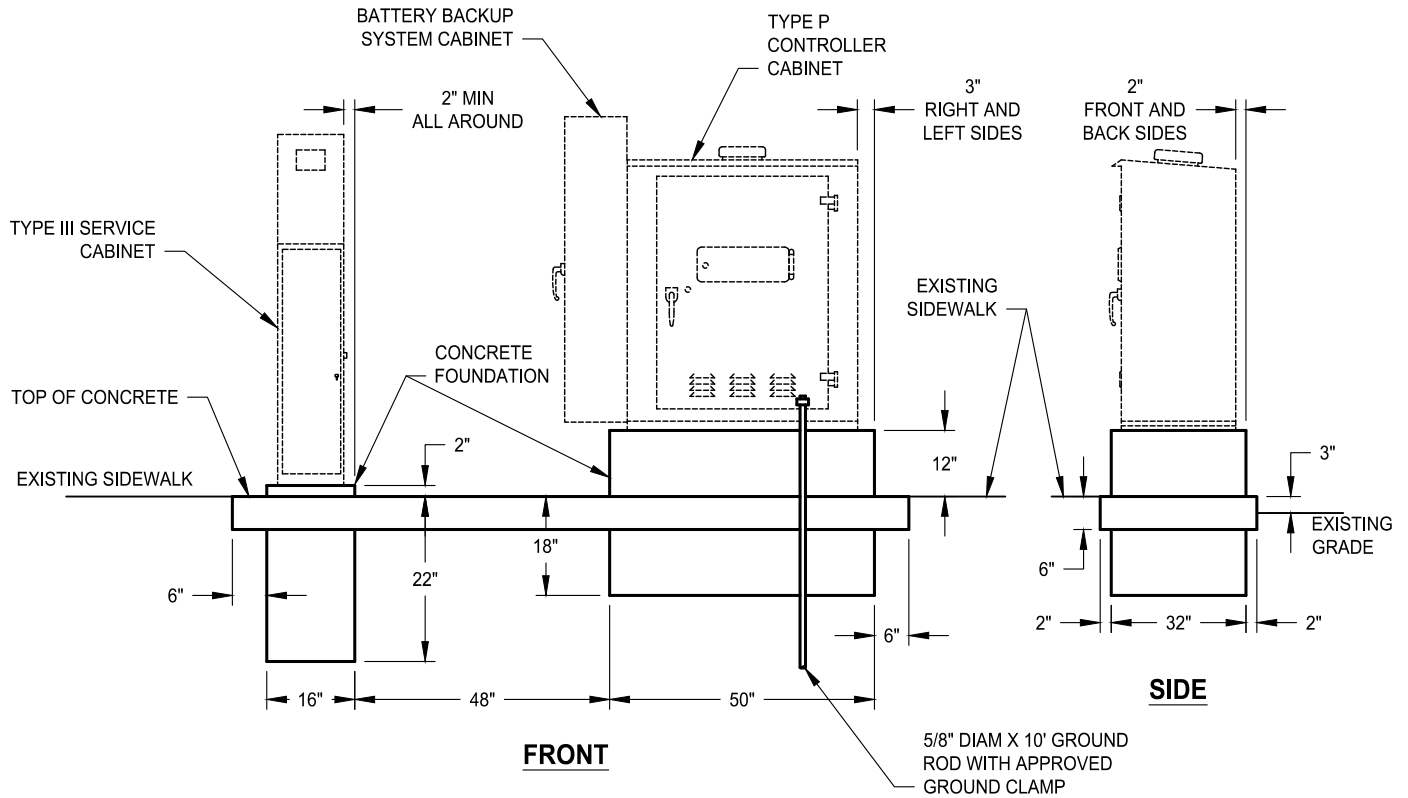
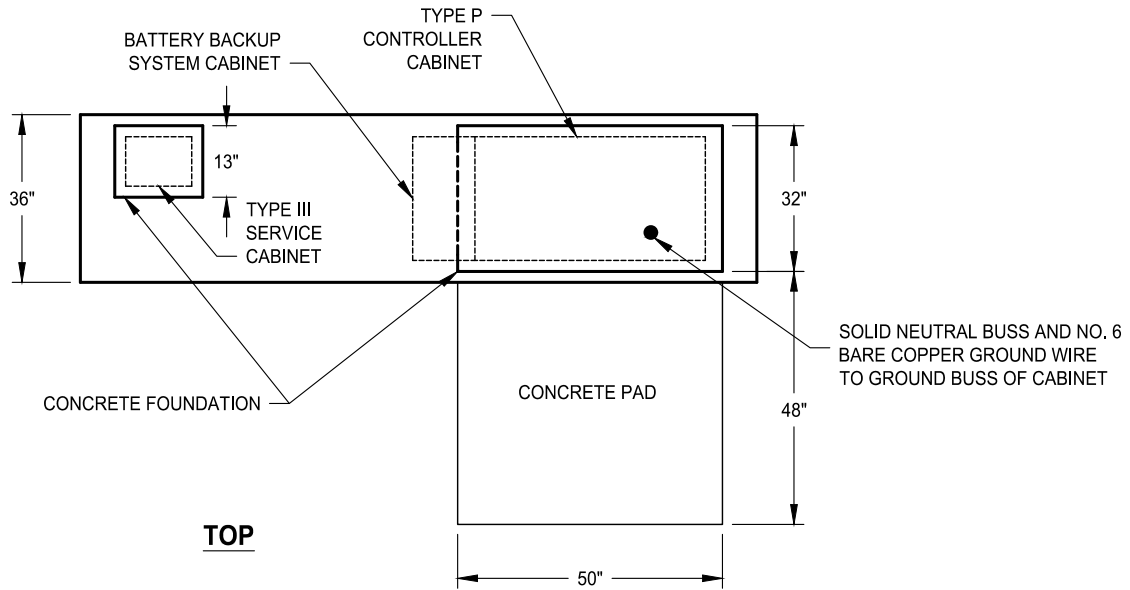
CITY OF ELK GROVE - PUBLIC WORKS

**PEDESTRIAN LANE
 WITH
 BIKE BARRIER**

APPROVED BY:
Paul Muddoch
 CITY ENGINEER 10/24/2018
 DATE



DRAWING NUMBER
T - 11



NOTES:

1. SEE STATE STANDARD PLAN ES-2D AND ES-3C FOR STANDARD ANCHOR BOLT PATTERNS AND SIZES.
2. IN UNPAVED AREAS, A RAISED PORTLAND CEMENT PAD SHALL BE CONSTRUCTED IN FRONT OF THE FRONT DOOR OF THE CONTROLLER CABINET (50" W x 48" D x 4" THICK).
3. FRONT DOOR OF THE CONTROLLER CABINET SHALL FACE NORTH OR EAST, WHENEVER FEASIBLE. THE FINAL LOCATION OF THE CONTROLLER CABINET AND SERVICE CABINET SHALL BE APPROVED BY THE CITY ENGINEER.

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CITY OF ELK GROVE - PUBLIC WORKS

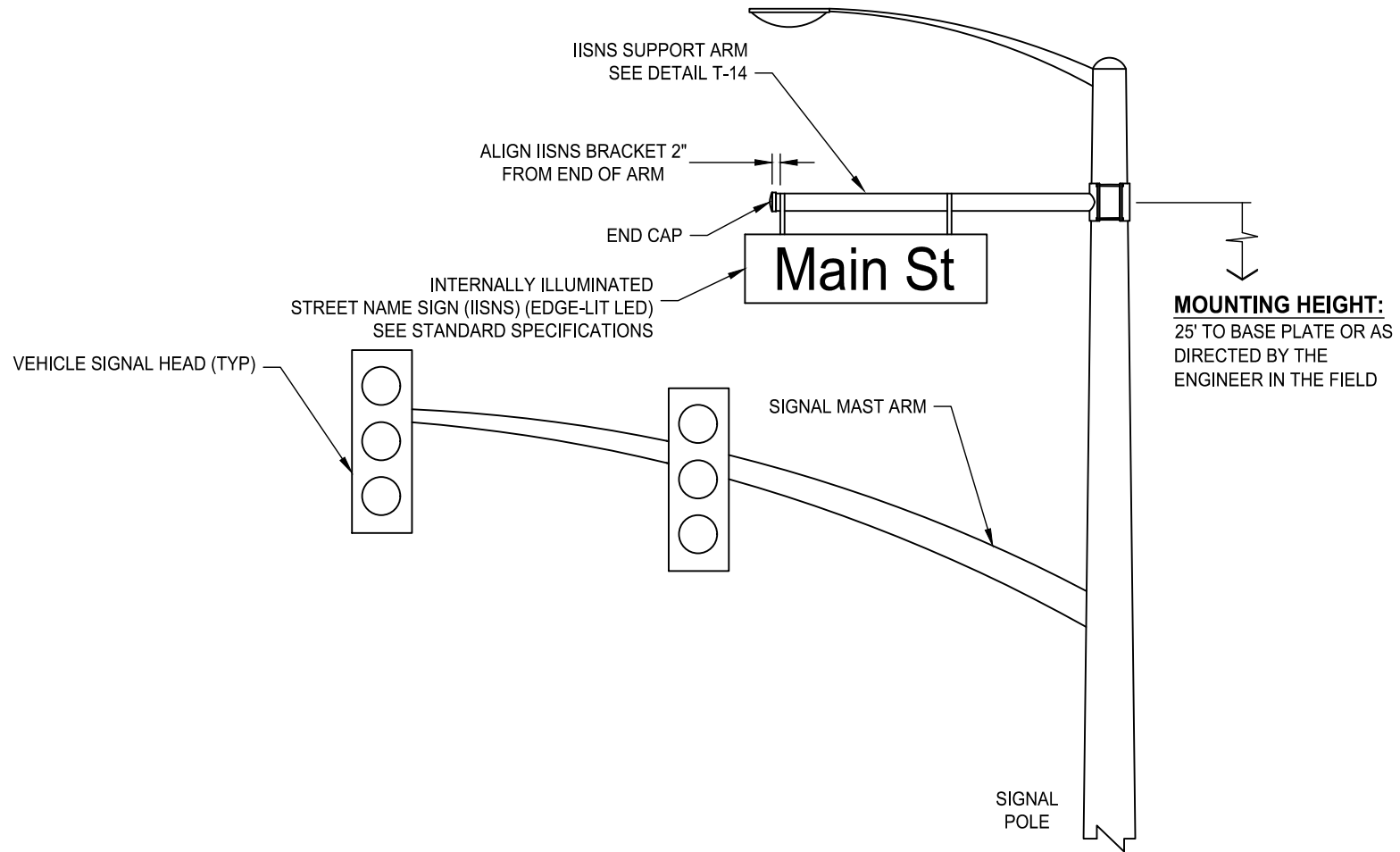
**CONCRETE FOUNDATION FOR
TYPE P CONTROLLER CABINET
AND TYPE III SERVICE CABINET**

APPROVED BY:
Robert M. ...
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
T - 12





MOUNTING HEIGHT:
25' TO BASE PLATE OR AS
DIRECTED BY THE
ENGINEER IN THE FIELD

DATE: 09/22/2007		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

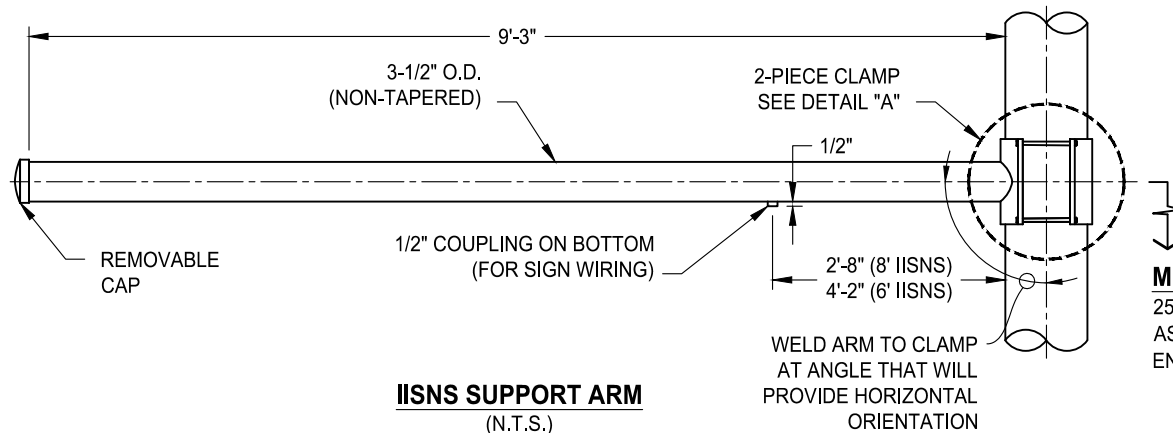
**(EDGE-LIT LED) INTERNALLY
ILLUMINATED STREET NAME SIGN**

APPROVED BY:
Paul Muddoch
CITY ENGINEER

10/24/2018
DATE

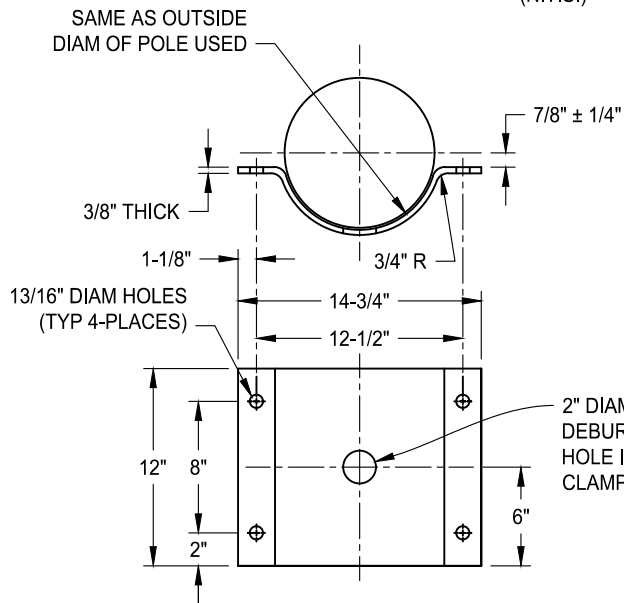
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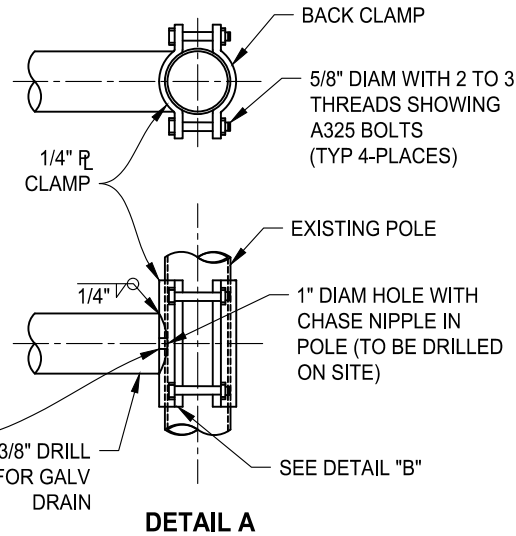


MOUNTING HEIGHT:
25' TO BASE PLATE OR
AS DIRECTED BY THE
ENGINEER IN THE FIELD

IISNS SUPPORT ARM
(N.T.S.)



DETAIL B



DETAIL A

CLAMP DETAILS
(N.T.S.)

GENERAL NOTES

MATERIAL SPECIFICATIONS	
SHAFT	STEEL OF 48,000 PSI MINIMUM YIELD AFTER FABRICATION
CLAMP PLATE	ASTM A-572 GR. 50 STEEL
MANUFACTURING PROCESS	
LONGITUDINAL WELDS	ALL WELDS SHALL CONFORM TO AWS D1.1 WELD SPECIFICATION
FINISH COATING	
STRUCTURE	HOT DIP GALVANIZED PER ASTM A-123
HARDWARE	HOT DIP GALVANIZED PER ASTM A-153
DESIGN CRITERIA	
STRUCTURE, HARDWARE, AND WELDING	IN ACCORDANCE WITH THE "SPECIFICATIONS FOR STRUCTURAL SUPPORTS OF HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", AASHTO 1994

DATE: 09/22/2007		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

IISNS SUPPORT ARM
TYPICAL CLAMP DETAIL

APPROVED BY:

Robert M. ...

CITY ENGINEER

10/24/2018

DATE

DRAWING NUMBER



T - 14

CONDUIT SIZING

CONDUCTOR	EQUIVALENT NUMBER OF #14 A.W.G. CONDUCTORS FOR USE IN CONDUIT SIZING
#12 CONDUCTOR	1.2
#10 CONDUCTOR	1.5
#8 CONDUCTOR	2.3
#6 CONDUCTOR	3
#4 CONDUCTOR	4
#2 CONDUCTOR	5.3
#0 CONDUCTOR	11.5
INTERCONNECT CABLE	18
DETECTOR LEAD-IN CABLE	2.5
EMERGENCY VEHICLE DETECTOR CABLE	2

CONDUIT SIZE	1"	1.5"	2"	2.5"	3"	3.5"	4"
MAXIMUM NUMBER OF #14 A.W.G. CONDUCTORS	8	19	31	44	69	91	113

NOTE: MINIMUM SIZE FOR NEW CONDUITS IS 1.5".

SERVICE WIRE MAXIMUM LENGTHS
FOR TRAFFIC SIGNALS

WIRE SIZE	LENGTH
#0	576'
#2	360'
#4	224'

CIRCUIT BREAKER SIZING

CONDUCTOR SIZE A.W.G.	MAXIMUM CIRCUIT BREAKER AMPERAGE
#2	100
#4	80
#6	50
#8	40
#10	30

NOTE

THE BREAKER SIZE SHALL BE DETERMINED BY THE LOAD REQUIREMENTS. MINIMUM BREAKER SIZE IS 30 AMPS.

DATE: 09/22/2017		NOT TO SCALE	
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CITY OF ELK GROVE - PUBLIC WORKS

**CONDUIT, SERVICE WIRE
AND BREAKER SIZING**

APPROVED BY:

Robert Murdoch

CITY ENGINEER

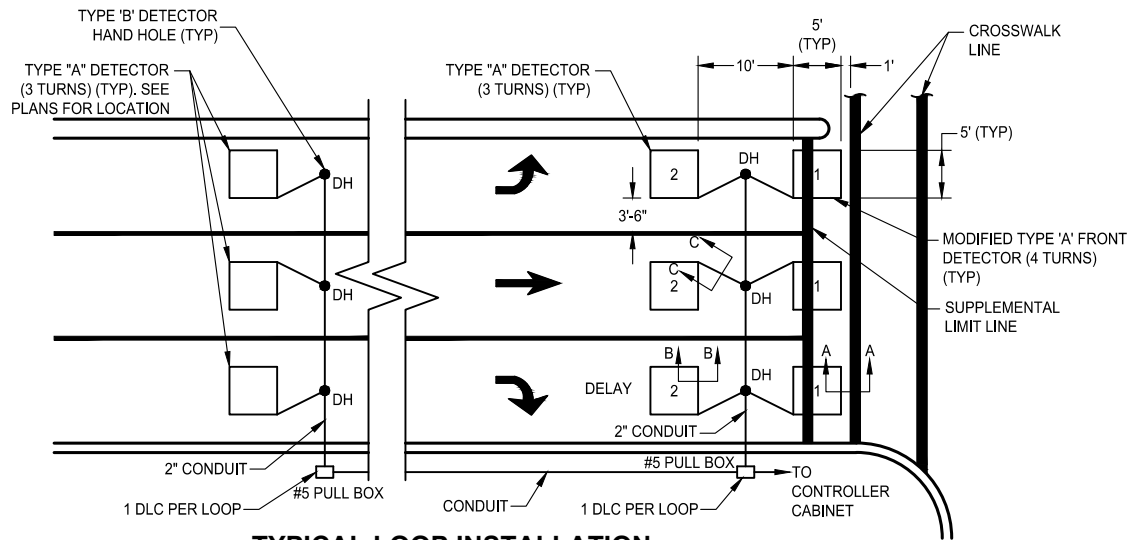
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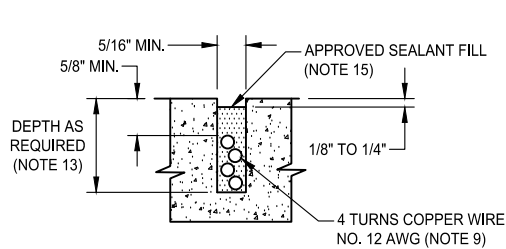


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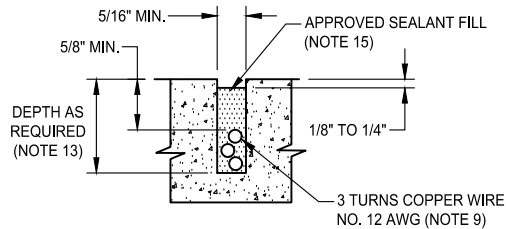
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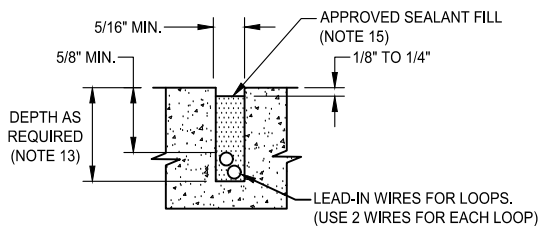
TYPICAL LOOP INSTALLATION



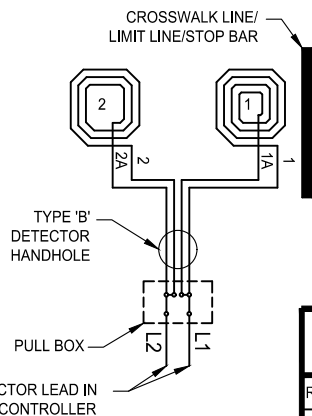
SECTION A-A



SECTION B-B



SECTION C-C



LOOP WINDING AND CONNECTION PATTERNS

LOOP INSTALLATION PROCEDURE

1. ALL LOOP WORK SHALL CONFORM TO THE LATEST VERSION OF SECTION 49-5 "DETECTOR" OF THE CITY OF ELK GROVE STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD DRAWINGS.
2. SEE CURRENT STATE STANDARD PLANS ES-5 SERIES FOR ADDITIONAL DETAILS.
3. THE PLACEMENT OF LOOPS SHALL BE CENTERED IN EACH LANE, WITH THE EXCEPTION OF: LEFT TURN LANE LESS THAN 11' WIDE, THE SEPARATION DISTANCE BETWEEN THE RIGHT EDGE OF EACH LOOP AND THE LANE ON THE RIGHT (THRU LANE) SHOULD BE 3'-6".
4. NEW OR REPLACEMENT LOOP SHALL BE MARKED ON PAVEMENT AND THEIR LOCATION APPROVED BY THE ENGINEER, PRIOR TO PAVEMENT CUTTING.
5. LOOP INSTALLATION SHALL INCLUDE NEW CONDUIT, DETECTOR HANDHOLE (DH) AND DETECTOR LEAD IN CABLE (DLC), UNLESS OTHERWISE NOTED ON THE PLANS.
6. EACH DETECTOR LOOP IN EACH TRAVEL LANE SHALL BE INSTALLED WITH ITS OWN DETECTOR LEAD IN CABLE AND CONNECTED IN CONTROLLER WITH SEPARATE DETECTOR CHANNEL FOR OPERATION, UNLESS OTHERWISE NOTED ON THE PLANS.
7. DETECTOR LEAD IN CABLES SHALL BE CONTINUOUS WITHOUT SPLICES BETWEEN LOOP TERMINATION PULL BOX AND CONTROLLER.
8. LOOP INSTALLATION 250' OR MORE FROM STOP BAR SHALL HAVE 4 TURNS.
9. DETECTOR LOOP CONDUCTOR SHALL BE TYPE RHW-USE NEOPRENE-JACKETED OR TYPE USE CROSSLINKED POLYPROPYLENE INSULATED NO. 12 STRANDED COPPER WIRE. CONDUCTOR INSULATION THICKNESS SHALL BE FORTY (40) MILS MINIMUM.
10. DISTANCE BETWEEN SIDE OF LOOP AND LEAD-IN SAW CUT SHALL BE 1'-0" MINIMUM.
11. LOOPS AND LEAD-IN CUTS SHALL BE LOCATED A MINIMUM OF 2 FEET FROM THE NEAREST EDGE OF MANHOLE COVER OR VALVE BOX.
12. WIDTH OF SAW CUTS SHALL BE 1/4" WIDER THAN THICKNESS OF THE CONDUCTOR.
13. DEPTH OF SAW CUTS SHALL BE SUCH THAT THE MINIMUM SEALANT COVER SHALL BE 1/2" WITH AN ADDITIONAL 1/8" TO 1/4" GAP BETWEEN TOP OF SEALANT AND SURFACE OF PAVEMENT.
14. TEST EACH LOOP CIRCUIT AT CONTROLLER CABINET (OR, IF THESE ARE NOT INSTALLED, TEST AT TERMINATION PULL BOX) BEFORE FILLING SLOTS. PERFORM A RESISTANCE TEST BETWEEN EACH CIRCUIT AND GROUND. INSULATION RESISTANCE SHALL NOT BE LESS THAN 100 MEGA OHMS. TEST EACH LOOP CIRCUIT FOR CONTINUITY. LOOP CIRCUIT RESISTANCE SHALL NOT EXCEED 0.5 OHMS PLUS 0.35 OHMS PER 100 FEET OF LEAD-IN CABLE.
15. SEALANT FOR LOOP DETECTORS SHALL BE 3M 5000 OR APPROVED EQUAL ELASTOMERIC SEALANT.
16. CONDUIT BETWEEN DETECTOR HANDHOLE AND PULL BOX SHALL BE INSTALLED 30" MINIMUM BELOW ROADSIDE DITCH OR SWALE.
17. DETECTOR HANDHOLE (DH) SHALL BE TYPE B (SEE STD DWG T - 17).
18. ANY DAMAGE TO EXISTING LOOPS, DETECTOR HANDHOLE, CONDUIT AND DETECTOR LEAD IN CABLE SHALL BE REPLACED PER THE REQUIREMENTS SET FORTH IN THIS DETAIL.

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REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

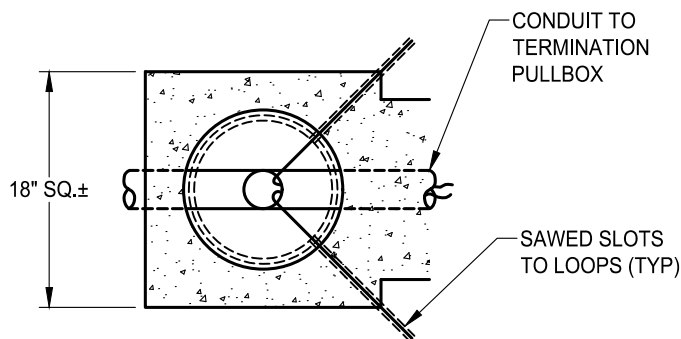
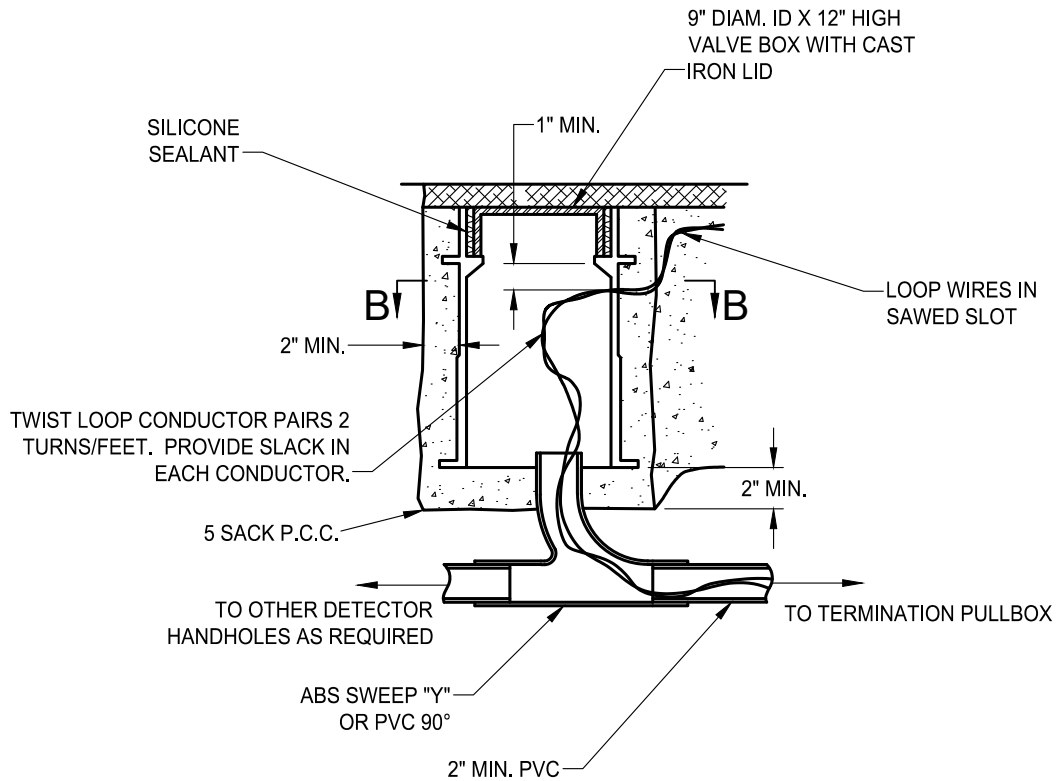
TYPICAL DETECTOR LOOP LAYOUTS

APPROVED BY:
Robert M. Muddoch
CITY ENGINEER
10/24/2018
DATE



DRAWING NUMBER

T - 16



SECTION B-B

INSTALLATION REQUIREMENTS:

- 18" SQ.± P.C.C. ENCASUREMENT OUTLINE SHALL BE SAW CUT TO A MINIMUM DEPTH OF 3", EXCEPT WHERE AC OVERLAY IS TO BE PLACED.
- THE PRECAST VALVE BOX WITH CAST IRON LID SHALL BE FABRICATED OF CALCIUM CARBONATE AND POLYESTER RESINS WITH FIBERGLASS REINFORCING AND DESIGNED FOR HEAVY TRAFFIC LOADS.
- CAST IRON LID SHALL BE MARKED "DETECTOR" AND SHALL BE SECURED IN PLACE BY APPLYING SILICONE SEALANT. VALVE BOX LOCATION SHALL BE AS SHOWN ON THE PLANS.
- THE EXCAVATION AROUND THE HANDHOLE SHALL BE BACKFILLED WITH 5 SACK P.C.C.
- THE HANDHOLE SHALL BE PROTECTED WITH COLD PATCH OR OTHER SUITABLE PROTECTION UNTIL PERMANENT A.C. BACKFILL IS PLACED.
- THE CEMENT USED TO JOIN THE ABS SWEEP "Y" TO THE PVC CONDUIT SHALL BE CAPABLE OF PROVIDING SOLVENT TYPE WELD BETWEEN THE TWO MATERIALS.

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CITY OF ELK GROVE - PUBLIC WORKS

APPROVED BY:
Robert M. ...
CITY ENGINEER
10/24/2018
DATE

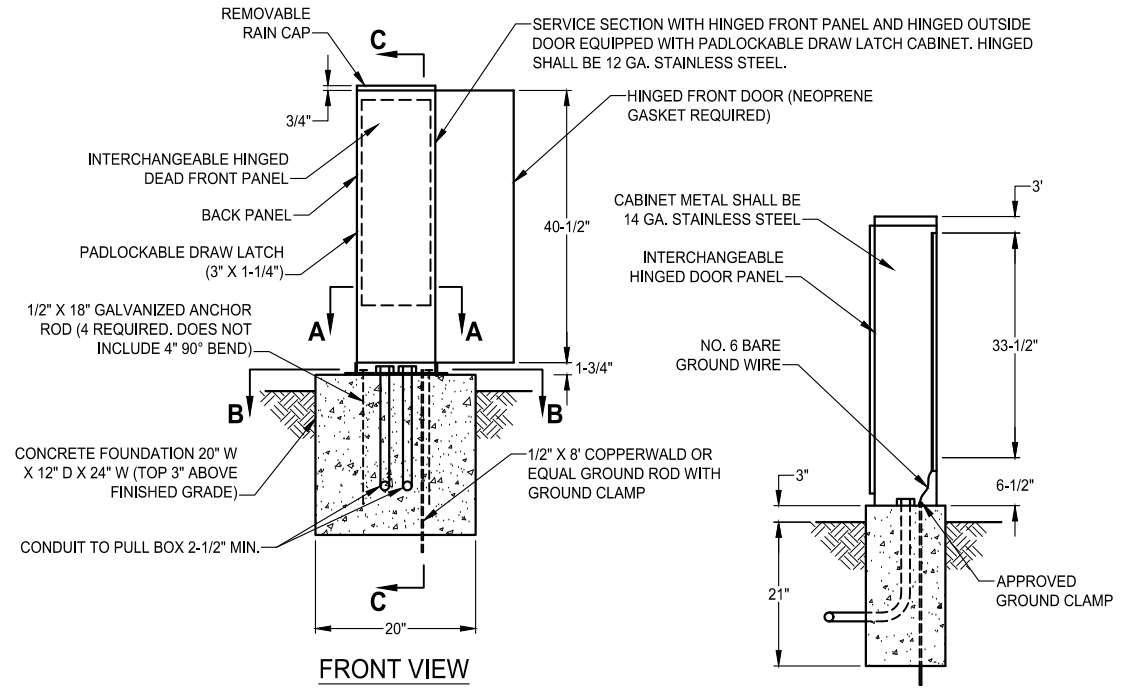
TYPE "B" DETECTOR HANDHOLE DETAIL



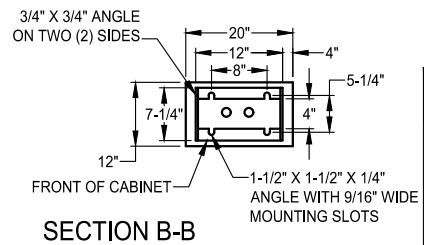
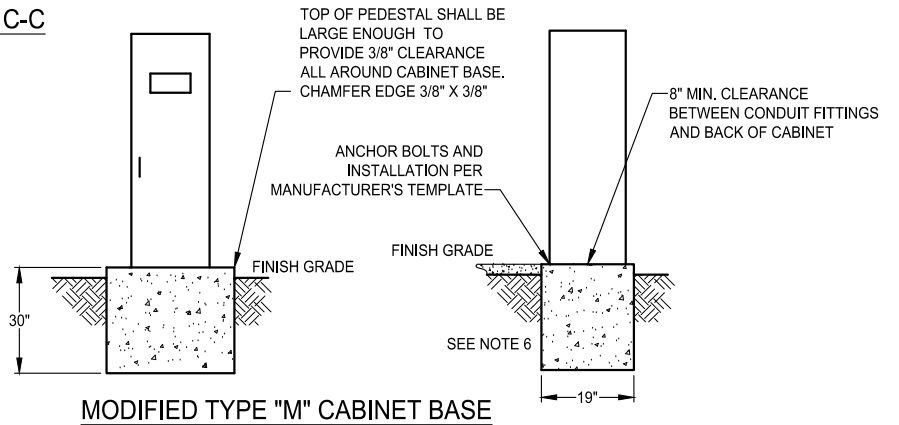
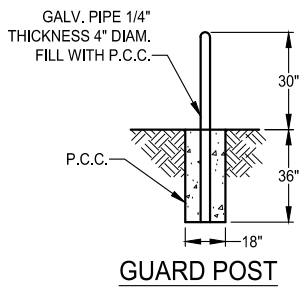
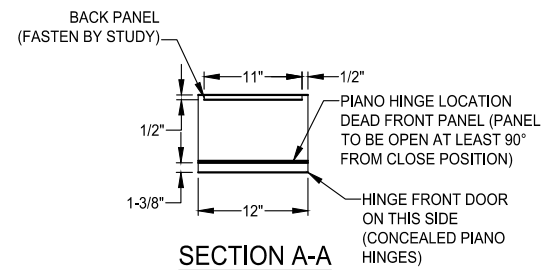
DRAWING NUMBER
T - 17

GENERAL INSTALLATION NOTES - ALL CABINETS

1. ALL CABINET DIMENSIONS ARE NOMINAL
2. FOUNDATION SHALL BE LOCATED AS SHOWN ON PLANS. WHERE INSTALLED IN SIDEWALK PLACE AT BACK OF WALK AND PROVIDE 48" MINIMUM CLEARANCE BETWEEN FACE OF CURB AND FRONT OF CABINET.
3. ONE ANCHOR BOLT SHALL BE BONDED TO CONDUIT OR GROUND WIRE.
4. SERVICE CAN, CONTROLLER CABINET, AND TERMINAL CABINET (IF NECESSARY) SHALL BE ON A COMMON FOUNDATION WITH 6" SPACING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE SERVICE CAN SHALL BE TO THE LEFT OF THE CONTROLLER CABINET SO AS TO NOT BE BLOCKED BY CONTROLLER CABINET DOOR WHEN FULLY OPEN.
5. APPROVED WATERPROOF SEAL TO BE APPLIED TO BASE OF CABINETS AND CONCRETE FOUNDATION.
6. IN UNIMPROVED AREAS A RAISED P.C.C. PAD OF 36" X 30" X 4" SHALL BE PLACED IN FRONT OF EACH CABINET.
7. IN ALL UNPAVED AREAS TOP OF FOUNDATION FOR CABINETS SHALL BE 6" ABOVE SURROUNDING GRADE. IN PAVED AREAS TOP OF FOUNDATION SHALL BE 3" ABOVE PAVED AREA.
8. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.
9. ALL CONDUITS SHALL BE BOUNDED TOGETHER IN THE CABINET.
10. LOCATIONS SHOWN FOR EQUIPMENT ARE TYPICAL ONLY.
11. A 1/2" DIAMETER DRAIN HOLE SHALL BE FORMED IN THE CABINET BASE. ALL CABINETS SHALL BE LEVELED SO THAT THE CABINET DOOR WILL OPEN AND CLOSE EASILY.



TRAFFIC SIGNAL INTERCONNECT TERMINAL CABINET OR PEDESTRIAN SIGNAL CONTROLLER CABINET



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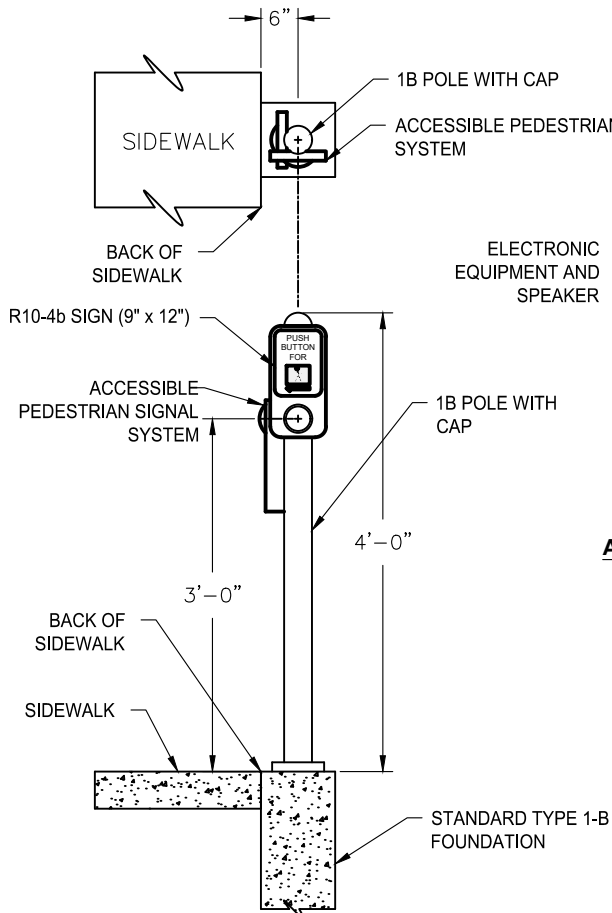
CITY OF ELK GROVE - PUBLIC WORKS

INTERCONNECT TERMINAL CABINET AND PEDESTRIAN SIGNAL CONTROLLER CABINET DETAILS

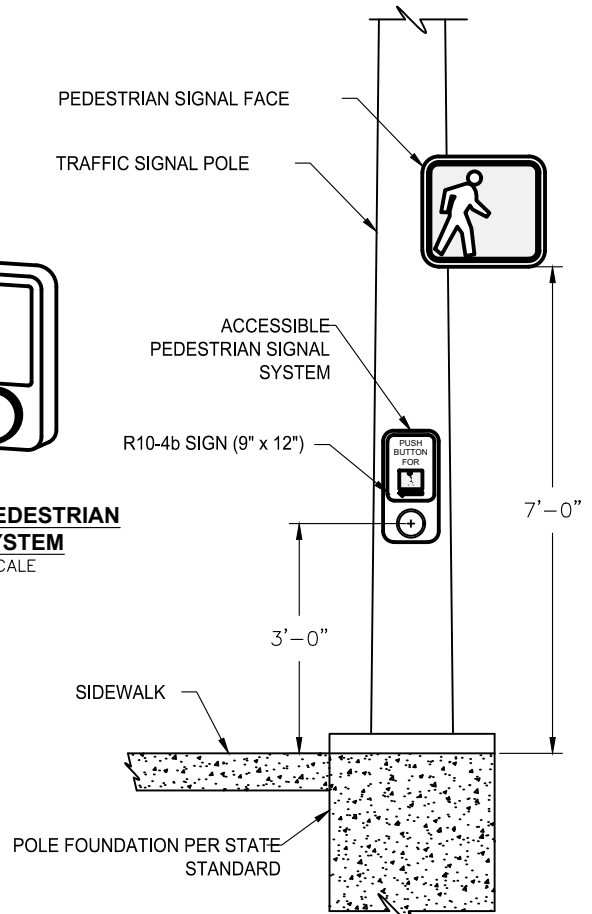
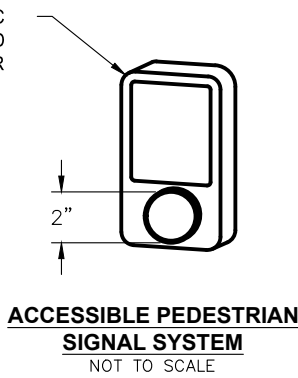
APPROVED BY:
Robert M. ...
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
T - 18



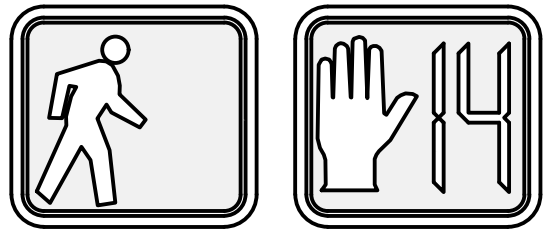
ACCESSIBLE PEDESTRIAN SIGNAL POLE
NOT TO SCALE



COMBINED TRAFFIC SIGNAL AND ACCESSIBLE PEDESTRIAN SIGNAL POLE
NOT TO SCALE

NOTES:

1. ACCESSIBLE PEDESTRIAN SIGNAL SYSTEM SHALL BE POLARA'S NAVIGATOR 2-WIRE SYSTEM OR APPROVED EQUIVALENT.
2. PEDESTRIAN SIGNS SHALL BE METAL AND SHALL CONFORM TO STANDARD SIGN NO. R10-4b (9" x 12") OF THE CALIFORNIA MUTCD.
3. PEDESTRIAN PUSH BUTTON HOUSING SHALL BE EITHER DIE-CAST OR PERMANENT MOLD CAST ALUMINUM.
4. ALL PEDESTRIAN SIGNAL HEADS SHALL BE THE "COUNTDOWN" VARIETY.
5. PEDESTRIAN HEADS SIGNAL DISPLAY SHALL BE ONE OF THE FOLLOWING:
 - DIALIGHT 430-6479-001XC
 - GE PS7-CFF1-VLA OR PS7-CFF1-27A
 - LEOTEK TSL-PED-16-CIL-P1
 THE DISPLAY SHALL INCLUDE SOLID (FILLED IN) "WALKING PERSON" AND "RAISED HAND" SYMBOLS.



PEDESTRIAN SIGNAL FACE
SYMBOL TYPE
NOT TO SCALE

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE


CITY OF ELK GROVE - PUBLIC WORKS

ACCESSIBLE PEDESTRIAN SIGNAL SYSTEM

APPROVED BY:
Robert M. ...
CITY ENGINEER

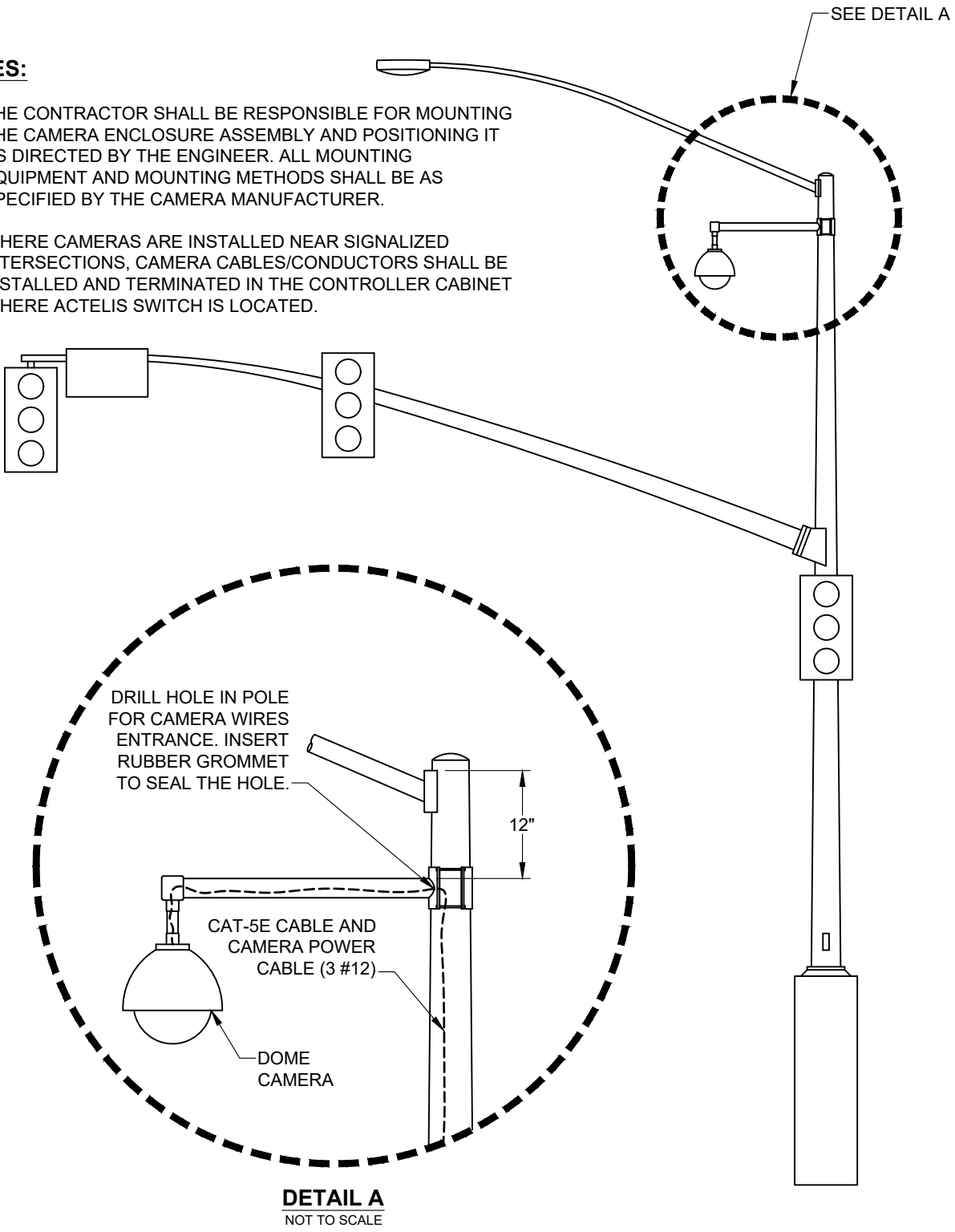
10/24/2018
DATE

DRAWING NUMBER
T - 19



NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE CAMERA ENCLOSURE ASSEMBLY AND POSITIONING IT AS DIRECTED BY THE ENGINEER. ALL MOUNTING EQUIPMENT AND MOUNTING METHODS SHALL BE AS SPECIFIED BY THE CAMERA MANUFACTURER.
2. WHERE CAMERAS ARE INSTALLED NEAR SIGNALIZED INTERSECTIONS, CAMERA CABLES/CONDUCTORS SHALL BE INSTALLED AND TERMINATED IN THE CONTROLLER CABINET WHERE ACTELIS SWITCH IS LOCATED.



DETAIL A
NOT TO SCALE

DATE: 09/22/2017		NOT TO SCALE	
REVISION	BY	APPROVED	DATE

CITY OF ELK GROVE - PUBLIC WORKS

**CCTV IP DOME CAMERA
(SIGNAL POLE MOUNTED)**

APPROVED BY:
Robert M. ...
CITY ENGINEER

10/24/2018
DATE

DRAWING NUMBER
T - 20

