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MONOLITHIC TYPE "A" CURB, GUTTER & SIDEWALK PER STD. PLAN NO. 105 (TYP)

TYPE "B" CURB

2% 2% 2% 2% 2% 2% 2%

MEDIAN TREATMENT TO BE IDENTIFIED ON PLAN

STRUCTURAL SECTION TO BE DETERMINED IN ACCORDANCE WITH 'R' VALUE TESTING. (TYP)

MAJOR ARTERIAL - 123' R.O.W.

MAJOR COLLECTOR - 83' R.O.W.

NOTES

1. WHEN BICYCLE LAINES ARE REQUIRED WITHIN VEHICULAR WAY, ADD 10' TO CURB TO CURB WIDTH AND R/W. (ALLOWS TWO 5' WIDE BIKE LANES.)

2. SIDEWALK WIDTH VARIES, DEPENDING UPON COMMERCIAL/RESIDENTIAL.

Scale  NOT TO SCALE

MAJOR STREET SECTIONS

Drawn By  B.C.  Checked By  M.Z.

Approved By

CITY ENGINEER  RCE 31870  6/09/87

No.  Rev.  By

1  REVISED  W.D. WOOD

101

Sht. 1 of 1
MONOLITHIC TYPE 'A' CURB, GUTTER & SIDEWALK PER STD. PLAN NO. 105 (TYP)

结构段落根据 "R" 值测定（典型）

NEIGHBORHOOD COLLECTOR - 59' R.O.W.

LOCAL STREET - 55' R.O.W.

NOTES
1. WHEN BICYCLE LANES ARE REQUIRED WITHIN VEHICULAR WAY, ADD 8' TO CURB TO CURB WIDTH AND R/W. (Allows two 4' wide bike lanes.)
2. SIDEWALK WIDTH VARIES, DEPENDING UPON COMMERCIAL/RESIDENTIAL.

Scale: NOT TO SCALE

MINOR STREET SECTIONS

Drawn By: B.C. Checked By: MZ

Approved By: CITY ENGINEER RCE 31870

6/09/87 DATE

Page: 1 of 1
MAY BE MODIFIED DEPENDING ON GARAGE CAPACITY & LENGTH OF DRIVEWAY.

COMMON DRIVEWAY
(1 UNIT)

12'

SEE ALTERNATIVES BELOW

DRIVEWAY WIDTHS THAT ARE LESS THAN 19' REQUIRE A USE PERMIT.

COMMON DRIVEWAY
(2-4 UNITS)

16-20'

SEE ALTERNATIVES BELOW

COMMON DRIVEWAY
(5-10 UNITS)

20'

SEE ALTERNATIVES BELOW

COMMON DRIVEWAY
(11-20 UNITS)

24'

SEE ALTERNATIVES BELOW

NOTES

1. COMMON DRIVEWAYS ARE TO BE USED PRIMARILY FOR ENTRANCES TO PARKING AREAS FROM A PUBLIC OR PRIVATE STREET. THEY ARE NOT A SUBSTITUTE FOR A STREET WHICH FUNCTIONS AS A CIRCULATION ELEMENT TO A DEVELOPMENT.

2. NO PARKING ALLOWED ON DRIVEWAY.

3. TWO WAY TRAVEL LANES - NO ONE WAY LOOPS.

ALTERNATIVES

1. CONCRETE CURB
2. A.C. DIKE
3. WOOD - FORM BOARD (RESIDENTIAL ONLY)
DANVILLE
STANDARD PLAN

PARKING BOTH SIDES

28'(32) *

6' 16' 6'
P  V  P

20'

V

NO PARKING

* MAY BE REQUIRED BY THE FIRE DEPT. DEPENDING ON LENGTH OF STREET.

PARKING ONE SIDE

22'

6' 16'
P  V

ONE WAY LOOP
(1 to 15 UNITS)

PARKING BOTH SIDES

40'

8' 12' 12' 8'
P  V  V  P

PARKING ONE SIDE

28'

14' 14'
V  V

LEGEND

P = PARKING
V = VEHICLES
C = CENTER LINE

COLLECTOR STREETS
(81 to 300 UNITS, & COMMERCIAL)

Scale NOT TO SCALE

WIDTH ALTERNATIVES
PARKING & VEHICULAR LANES
RESIDENTIAL (PUBLIC/PRIVATE STREETS)

Drawn By  B.C.  Checked By  M Z

Approved By

CITY ENGINEER RCE 31870

Sht. 1 of 2

No.  Rev.  By

104a

6/09/87
DANVILLE
STANDARD PLAN

PARKING BOTH SIDES

2 WAY TRAFFIC
PARKING BOTH SIDES
PRIVATE STREET ONLY

PARKING ONE SIDE

NO PARKING
* PRIVATE STREET ONLY

LEGEND
P = PARKING
V = VEHICLES
Q = CENTER LINE

CUL-DE-SAC, LANE, PLACE, MINOR STS.
(1 to 80 UNITS)

Scale NOT TO SCALE

WIDTH ALTERNATIVES
PACKING & VEHICULAR LANES
RESIDENTIAL (PUBLIC/PRIVATE STREETS)

Drawn By B.C. Checked By MZ

Approved By CITY ENGINEER RCE 31870

6/109/87

104b
Sh. 2 of 2

No. Rev. By
1. CONCRETE TO BE CLASS "B"  
2. CURBS SHALL BE BACKFILLED (COMPACTED) PRIOR TO FINISH SUBGRADE.
3. THE RELATIVE COMPACTION OF MATERIAL BELOW ALL CURB, GUTTER & SIDEWALK SHALL NOT BE LESS THAN 90%.

**TYPE A**

- 6" CLASS 2 AGGREGATE BASE OR SUBBASE
- BACK OF CURB FOR NON-MONOLITHIC POUR

**TYPE B**

- 3" AB
- ALTERNATE CURB CONST. LINES
- 6" OR 8" AS SPECIFIED

**TYPE C**

- PLACE DOWELS IN 1" DIA. DRILLED HOLE FILLED WITH 1:1 SAND CEMENT GROUT
- #4 x 8" DOWELS @ 4" O.C.

---

**Scale** | **NOT TO SCALE**
---|---

**Drawn By** | **B.C.** | **Checked By** | **M Z**

**Approved By**

**CITY ENGINEER** | **RCE 31870** | **DATE**  
6/09/87 | **105**

**Sht. 1 of 1**
0.5' DIKE - MODIFIED SECTION

ASPHALT CONCRETE DIKES
TYPICAL DRIVEWAY
(GUTTER NOT SHOWN)

3" CLASS 2 AGGREGATE BASE OR SUBBASE UNLESS NOTED OTHERWISE.

POINT A TO BE ON A 2% SLOPE FROM TOP OF CURB UNLESS OTHERWISE APPROVED.

SECTION

NOTE
I. ALL CONCRETE TO BE CLASS B.

Scale NOT TO SCALE

TYPICAL DRIVEWAY

Drawn By B.C. Checked By MZ

Approved By

CITY ENGINEER RCE 31870

DATE 6/09/87

No. Rev. By

107

Sht. 1 of 1
NOTES
1. FINISH-ALL EDGES, CORNERS AND ENDS SHALL HAVE 1/2" RADIUS.
2. SCORING-EVENLY SPACED BOTH WAYS, FULL 1/4" DEEP, EVEN AND STRAIGHT.
3. ALL CONCRETE FLATWORK FOR CURB RAMPS MIN. 4" THICK.
4. THE RAMP SHALL HAVE A 12" WIDE BORDER WITH 1/4" GROOVES APPROX. 3/4" O.C.
5. RAMP SHALL BE GROOVED IN A HERRINGBONE PATTERN WITH 1/4" GROOVE APPROXIMATELY 11/2" O.C. GROOVES SHOULD BE ALIGNED PARALLEL TO CROSSWALK STRIPES TO DIRECT BLIND PEDESTRIANS INTO APPROPRIATE CROSSWALK.
6. LOCATE RAMP IN MIDDLE OF RETURN OR AS DIRECTED BY THE CITY ENGINEER.
7. THE RELATIVE COMPACTION OF MATERIAL BELOW ALL CURB, GUTTER & SIDEWALK SHALL NOT BE LESS THAN 90%.
8. SPECIAL SITUATIONS SHALL BE SUBJECT TO APPROVAL BY THE CITY ENGINEER.
SIDEWALK DRAIN FOR SEPARATED SIDEWALK

SIDEWALK DRAIN FOR MONOLITHIC CURB AND SIDEWALK

NOTES
1. SIDEWALK DRAIN SHALL BE INSTALLED AT WEAKENED PLANE JOINTS.
2. SIDEWALK DRAIN SHALL BE INSTALLED ON THE LOW SIDE OF THE DRIVEWAY OR LOT WHERE APPLICABLE.
NOTE:
1. DOWELS TO BE PLACED AT A
   30° ANGLE TO THE PERPENDICULAR.

TYPICAL DOWEL INSTALLATION

SECTION A-A

CLASS 2 AGGREGATE BASE TO BE
PLACED WHEN NEW SIDEWALK
CONSTRUCTED ADJACENT TO
EXISTING CURB.

REPLACEMENT OF
ONE SQUARE

REPLACEMENT OF TWO
OR MORE SQUARES

1/2" x 12" REINF STEEL BAR GROUTED INTO
3/4" HOLE DRILLED INTO EXISTING
SIDEWALK.

1/2" x 12" REINF STEEL
BAR GROUTED INTO
3/4" DRILLED HOLE

EXISTING CURB

EXISTING CURB

1/2" x 12" REINF. BAR GROUTED INTO
3/4" HOLE DRILLED INTO
EXISTING SIDEWALK

Scale NOT TO SCALE

Drawn By B.C. Checked By M.Z.

CITY ENGINEER RCE 31870

SHEET

SHEET
PLAN SHOWING LOCATION OF DIVERTERS
TO BE INSTALLED ON STREETS WHERE SLOPE EQUALS OR EXCEEDS 5%

2" x 2" x 3" ROUGH REDWOOD STAKES - USE 3 STAKES WHERE DISTANCE FROM BACK OF CURB TO TOP OF CUT OR TOE OF SLOPE IS GREATER THAN 6'.

2" x 8" ROUGH REDWOOD PLANK LENGTH AS REQUIRED.

BACK OF CURB

SLOPE 1/4" PER FT. 3" ABOVE GROUND

3 10d GALVANIZED NAILS

ELEVATION

BACK-OF-CURB FLOW DIVERTER
NOTE

1. VALLEY GUTTERS TO BE USED ONLY WHERE SPECIFICALLY APPROVED.

PLAN

SECTION A - A

AGGREGATE BASE CL 2
THICKNESS VARIES (6" MIN)

SUBGRADE

6' MIN. (VARIIES PER PLAN)

3" CLEAR

#4 @ 24" BOTH WAYS

3" TYP

Extend reinforcing steel through entire apron area
STREET BARRICADE

W31 SIGN, 30" x 30" WITH YELLOW REFLECTIVE SHEETING AND BLACK LETTERS

1 TYPE "K" REFLECTOR EACH SPAN

3/8" x 4" GALVANIZED CARRIAGE BOLTS WITH WASHER & HEX NUT (TYP.) PEEN AFTER ASSEMBLY

ROAD WIDTH W | NO. POSTS
---|---
36' | 2' 0" | 3
40' | 3' 0" | 4
64' | 5' 0" | 5

NOTES
1. POSTS & METAL BEAM GUARD RAILING TO BE TREATED WITH PRESERVATIVE AND MARKED IN ACCORDANCE WITH SECTION 83 OF THE CURRENT CALTRANS STANDARD SPECIFICATIONS.

Drawn By B.C. Checked By M.Z.

Approved By CITY ENGINEER RCE 31870

DATE 6/09/87

Scale NOT TO SCALE
NOTES
1. ASPHALT OR CONCRETE STREETS SHALL BE OVERCUT ONE FOOT GREATER ON EACH SIDE THAN THE TRENCH WIDTH. (FIGURE 1)
2. REMOVE TO PROPER DEPTH, INSTALL UTILITY AND BACKFILL.
3. CONTRACTOR MAY BE REQUIRED TO PLACE SAND BEDDING MATERIAL ON THE TRENCH FLOOR DEPENDING ON SOIL CONDITION AND TYPE OF PIPE USED.
4. COMPACTION—THE RELATIVE COMPACTION OF ALL TRENCH BACKFILL AS FOLLOWS:
   AB/ASB = 95%  NATIVE = 90%
5. NO JETTING IS ALLOWED UNDER ANY PAVED ROADWAY OR WITHIN A DISTANCE OF FOUR FT. FROM THE EDGE OF EXISTING PAVEMENT. BACKFILL SHALL BE COMPACTED BY IMPACT, VIBRATION OR ANY COMBINATION OF THESE. JETTING WILL BE ALLOWED ONLY WHEN MORE THAN FOUR FT. FROM THE PAVEMENT & WHEN THE BACKFILL AND TRENCH ARE SUITABLE FOR JETTING AND SHALL BE SUPPLEMENTED WITH MECHANICAL COMPACTION IN FOUR FT. MAXIMUM LAYERS.

FIGURE 1
D = 18" OR GREATER

FIGURE 2
D = LESS THAN 18"

FIGURE 3
SELECT NATIVE MATERIAL BACKFILL

NON PAVEMENT AREAS
NOTES

1. SURVEY MARKER TO BE "LIETZ" #8134-08 OR 8134-18 OR APPROVED EQUAL.

2. FRAME TO BE "MONROE" CASTING #9279 OR APPROVED EQUAL.

3. COVER TO BE "MONROE" CASTING MARKED "MONUMENT" #9277M OR APPROVED EQUAL.

4. WHERE OVERLAY IS REQUIRED USE RISER RING "MONROE" CASTING #9278 OR APPROVED EQUAL.

1/8" CYLINDRICAL OR CONICAL PAPER CONE
TYPICAL STREET INTERSECTION

STREET

CURB

RIGHT OF WAY

AREA IN WHICH NO STRUCTURE OR VEGETATION IS TO BE HIGHER THAN 2-1/2' ABOVE TOP OF CURB OR 3' ABOVE THE EDGE OF PAVEMENT EXCEPT TREE TRUNK HAVING NO LIMBS OR VEGETATION LESS THAN 8' ABOVE THE EDGE OF PAVEMENT AS REQUIRED BY ORDINANCE CODE, CHAPTER 82-18.
STOP SIGNS SHALL BE HAWKINS & HAWKINS HR-1-3 (S-F) 30" x 30" OR APPROVED EQUAL.

2. STREET-SIDE EDGE OF SIGN SHALL BE NOT LESS THAN 24" FROM FACE OF CURB.

3. ALL PAVEMENT MARKINGS TO BE REFLECTIVE PAINT OR THERMOPLASTIC AS SPECIFIED.

4. FOR POLE TYPE & INSTALLATION DETAIL, SEE CC 3051.
LOCATION AT 4.5' MONOLITHIC SIDEWALK

FACE OF CURB

FACE OF CURB

LOCATION IN 10' SIDEWALK OR 10' PLANTER STRIP

NOTES
1. STREET SIGNS SHALL BE PLACED ON THE WIDER STREET UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

2. 2 SIGNS @ 4 WAY INTERSECTION, AND ONE AT "T" INTERSECTION.

3. INSTALL ON STOP SIGN POLE WHERE AVAILABLE.

4. FOR POLE TYPE & INSTALLATION DETAIL SEE CC 3051.

* AT THE RETURN CLOSEST TO APPROACHING TRAFFIC.
NOTES
1. FOR FOUR WAY INTERSECTIONS - TWO STREET NAME SIGNS.
2. FOR "T" INTERSECTIONS - ONE STREET NAME SIGN.
3. SIGNS SHOULD BE INSTALLED AT ECR'S, BCR'S, & LOT LINES WHERE POSSIBLE.

LEGEND
• TRAFFIC SIGN
+ STREET NAME SIGN
1 PREFERRED LOCATION
2 ALTERNATE LOCATION

TYPICAL SUBDIVISION SIGNING PLAN

Scale NOT TO SCALE

Drawn By B.C. Checked By MZ

Approved By CITY ENGINEER RCE 31870 DATE

No. Rev. By

Sh. 1 of 1
LOCATION AT 45'1 MONOLITHIC SIDEWALK

FACE OF CURB

FACE OF CURB

LOCATION IN 10' SIDEWALK OR 10' PLANTER STRIP

FIRE HYDRANT AT MID BLOCK

24" (TYP)

6" TYP.

NOTE

- BLUE REFLECTIVE MARKER (HAWKINS V16C-DB OR EQUAL)
DANVILLE
STANDARD PLAN

MT. DIABLO RD.
EL CERRO BLVD.

2" STANDARD GALV. PIPE PAINT WIO63

16" SQUARE FORMED TOP TROMELED, TOOLED & FINISHED TO MATCH SIDEWALK.

CONCRETE FOOTING MAY BE ROUND OR SQUARE

SIDEWALK

27"

7 - 0" Min
8 - 6" Max.

3 1/2"

A. 5/8" x 15" CADMIUM PLATED CARRIAGE BOLT.
B. CAST ALUMINUM TOP & CROSS SADDLE (ZUMAR PART SN9-1) OR SIMILAR.
C. CAST ALUMINUM POST CAP, FOR 2" PIPE, WITH THREE 3/8" ALLEN HEAD SET SCREWS. (ZUMAR PART SN9-2) OR SIMILAR.
D. CANTILEVER ARM BRACKET, FOR ELECTOLIER, ATTACHED WITH TWO 3/4" STAINLESS STEEL BANDS (ZUMAR PART Z1-KC-500) OR SIMILAR.
E. SIGN BLANKS (ANODIZED ALUMINUM EXTRUSION OF 6063-T4 ALLOY), 1" x 6" or 9" VARIOUS LENGTHS.

EL CERRO BLVD

OLDTOWN AREA: 6" TALL SIGNS. BLACK LETTERS, ALL CAPS. ON WHITE BACKGROUND.
RESIDENTIAL (OTHER THAN OLDTOWN): 6" SIGN. BLAIR-HOUSE GREEN LETTERS ON WHITE BACKGROUND. ALL CAPS, LENGTH VARIES.
ARTERIALS: 9" TALL SIGNS. BLAIR-HOUSE GREEN LETTERS ON WHITE BACKGROUND. ALL CAPS, LENGTH VARIES.

THE FORMULATION OF BLAIR-HOUSE GREEN:
a. THREE (3) QUARTS Kem-Lustral Dark Green, #F6561
b. ONE (1) QUART Kem-Lustral Gloss Black, #F6581
c. EIGHT (8) OUNCES Black Tint.

STREET NAME SIGN DETAIL

Scale NOT TO SCALE

Drawn By K.D

Checked By

No. Rev. By

Approved By RCE 27127 5/9/89

CITY ENGINEER RCE 31870 DATE 121

1 of 1
NOTES:
1. MINIMUM $\Delta = 60^\circ$; MAX. $\Delta = 100^\circ$
2. MINIMUM CURB LONGITUDINAL SLOPE = 0.5%.
3. CROWN LINE LIES MIDWAY BETWEEN OUTSIDE AND INSIDE RETURNS, ALONG THE LINE RADIAL TO INSIDE RETURN.
4. CROWN LINE ELEVATION TO BE SHOWN ON PLANS.

SECTION A-A
MAXIMUM AND MINIMUM CROSS SLOPES

TYPICAL KNUCKLE DETAIL

Scale NOT TO SCALE

Drawn By RS  Checked By

Approved By
CITY ENGINEER RCE 3870 DATE 4-5-71

122
NOTE: POLE PLACEMENT LOCATION PER OLD TOWN BEAUTIFICATION PLAN. PAINT PER TOWN STD. DRWG. NO. 125.

NOTE: WEIGHT FIGURE FOR MODEL C15/24 INCLUDES DOUBLE LUMINAIRE ASSEMBLY

<table>
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<tr>
<th>POLE TYPE</th>
<th>A HEIGHT</th>
<th>B BASE WIDTH</th>
<th>C</th>
<th>WEIGHT</th>
<th>D DIA. OF OPENING</th>
<th>E</th>
<th>BOLT CIRCLE</th>
<th>F</th>
<th>POLE ASSEMBLY</th>
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<tr>
<td>C12-20</td>
<td>12'-0&quot;</td>
<td>22&quot;</td>
<td>20&quot;</td>
<td>321 LBS</td>
<td>12&quot; DIA.</td>
<td>10.63&quot;</td>
<td>15&quot; DIA.</td>
<td>10.63&quot;</td>
<td>SINGLE</td>
</tr>
<tr>
<td>C15/24</td>
<td>14'-6&quot;</td>
<td>22&quot;</td>
<td>24&quot;</td>
<td>475 LBS</td>
<td>14&quot; DIA.</td>
<td>12&quot;</td>
<td>17&quot; DIA.</td>
<td>12&quot;</td>
<td>DOUBLE</td>
</tr>
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</table>

ANTIQUE POLES

Scale NOT TO SCALE

Drawn By RS

Checked By MS

Approved By

CITY ENGINEER RCE 3870

DATE 4/24/94

123
DATA CHART

C12-20

A) 36" DIA.
B) 34" DIA.
C) 32" DIA.
D) 30" DIA.
E) 3/4" CHAMFER
F) 35" DIA. BOLT CIR.

C15/14

A) 36" DIA.
B) 34" DIA.
C) 32" DIA.
D) 30" DIA.
E) -
F) 37" DIA. BOLT CIR.

NOTES:
A. IN UNDEVELOPED AREAS,
   CONSTRUCT A 2' x 2' CONC.
   PAD (4' thick). IF ROUND
   FOOTING IS POURED, STOP
   AT THE ELEVATION OF
   BOTTOM OF THE SIDEWALK.
B. BOLT PATTERN TO SUIT
   POLE BASE.

ELECTROLIER BASE FOR STREET LIGHTS

Scale

NOT TO SCALE

Drawn By

R.S.

Checked By

M.S.

Approved By

CITY ENGINEER RCE 31870

124
FIXTURE - McGraw Edison Co. # UTR 3292-120RV-BK, 120V, 100W HPS, PRISMATIC CLEAR ACRYLIC LENS, BLACK PAINT FINISH WITH PHOTO CELL, (OR EQUIVALENT). TO BE PAINTED TO MATCH POLE. REMOVEABLE CUP CAP

LIGHT POLE & FIXTURES SHALL BE PAINTED WITH 2 COATS, "WILLIAMSBURG" — BLAIR HOUSE GREEN, SHERWIN WILLIAMS (MARTIN - SENOUR), HIGH GLOSS POLANE H.S. NO. F63HGXG1240-8127
NOTE: EXTERIOR CATALYST V66V29 MUST BE USED.

TAPERED POLE - 10 GAUGE, DIAMETER VAR. 6" TO 3 7/8" O.D

POLE SPECIFICATIONS:
MATERIALS — SHAFT - ASTM - A-570 GR. C STEEL
BASE - ASTM - A-283 GR. D STEEL

3" x 5" HAND HOLE
STEEL BASE COVER

NOTE: POLE PLACEMENT LOCATION PER OLD TOWN BEAUTIFICATION PLAN

CITY ENGINEER RCE31870 DATE
WASHINGTON Casing

WASHINGTON-118 REFRACTIVE GLOBE
W/REFLECTOR & HOUSESIDE SHIELD
AND FINIAL, TYPICAL FOR CIR-20 &
C15/24, TYPE POLES.
MANUFACTURER: SPRING CITY
ELECTRICAL MFG. CO.

LUMINAIRE SPECS.
VOLTAGE: 120
DISTRIBUTION: ASYMMETRIC — TYPE III
WATTAGE: CIR-20 = HPS/70
C15/24 = HPS/100
LAMP: HIGH PRESSURE SODIUM
WEIGHT: 60 LBS.

Scale: NOT TO SCALE

Drawn By: RS  Checked By: WLS
Approved By: ELK
CITY ENGINEER RCE31870

126
NOTES

1. Construction joints are optional where shown. Other locations are subject to the approval of the City Engineer. Key dimensions: 3 4" x 2 1/2".

2. When dimension "H" exceeds 6', use Manhole with a Type "A" inlet opening on top.

3. Inlet and outlet pipes shall not intersect a box through a corner. If the pipe is too large or if the skew angle is too great to permit the opening to be made in a single wall, use a Manhole base with a Type "A" inlet opening on top.

4. Construction joints shown are permitted when top portion of inlet is to be constructed monolithically with curb and sidewalk, in which case the following shall apply:
   a. Concrete above construction joint shall be Class B (5 sacks per cu. yd.)
   b. Concrete below construction joint shall be Class A (6 sacks per cu. yd.)
   c. Construction joint shall be located at pavement subgrade.

When inlet is constructed as a single unit, all concrete shall be Class A.

Drawn By: B.C. Checked By: MZ

Approved By: City Engineer RCE 31870

Date: 6/09/87

Scale: Not to Scale

201b

Sh. 2 of 2
DANVILLE
STANDARD PLAN

WEAKENED PLANE JOINT

GALVANIZED STEEL GRATE FRAMES AND GRATES
SEE CC.3010

1/2"

WEAKENED PLANE JOINT

ONE 3" Ø WEEPHOLE ON EACH SIDE & FRONT OF INLET.

OPTIONAL CONSTRUCTION JOINTS
SEE NOTE 4 ON SHT. 2 OF 2

PLACE ONE CUBIC FOOT OF FILTER MATERIAL, IN A BURLAP BAG, BEHIND EACH WEEPHOLE.

SLOPE 2" PER FOOT TO OUTLET

OUTLET

FLOW LINE GRADE

6' 5"

7' 5"

6' 5"

4" MIN.

SECTION A-A

WEAKENED PLANE JOINT

WEAKENED PLANE JOINT

SCOREMARK

APRON

WEAKENED PLANE JOINT OR CONSTRUCTION JOINT.

WEAKENED PLANE JOINT

WEAKENED PLANE JOINT

STANDARD TYPE A CURB OR MATCH EXISTING. SEE STAND. PLAN NO. 105

DIMENSION "A" SEE TABLE ON SHT. 2 OF 2

PLAN
GRATE NOT SHOWN

Scale NOT TO SCALE

Drawn By B.C. Checked By MZ

Approved By
CITY ENGINEER RCE 31870 DATE

202a

Sh. 1 of 2
SECTION B-B
GRATE NOT SHOWN

NOTES
1. CONSTRUCTION JOINTS ARE OPTIONAL WHERE SHOWN. OTHER LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER. KEY DIMENSIONS - 3' x 2 1/2'.
2. CLEARANCE SHALL BE 1 1/2" FOR ALL REINFORCING STEEL.
3. THE TWO GRATE FRAMES SHALL BE SECURELY CLAMPED TO THE BEAM DURING THE PLACEMENT OF CONCRETE.
4. CONSTRUCTION JOINTS SHOWN ARE PERMITTED WHEN TOP PORTION OF INLET IS TO BE CONSTRUCTED MONOLITHICALLY WITH CURB AND SIDEWALK, IN WHICH CASE THE FOLLOWING SHALL APPLY:
   a. CONCRETE ABOVE CONSTRUCTION JOINT SHALL BE CLASS B (5 SACKS PER CY YD.)
   b. CONCRETE BELOW CONSTRUCTION JOINT SHALL BE CLASS A (6 SACKS PER CY YD.)
   c. CONSTRUCTION JOINT SHALL BE LOCATED AT PAVEMENT SUBGRADE.
   WHEN INLET IS CONSTRUCTED AS A SINGLE UNIT, ALL CONCRETE SHALL BE CLASS A.

When Curb Grade Upstream is 5% or Greater, Depress Upstream Edge of Grate Frames to 10".

DETAIL FOR STEEP CURB SLOPE

DIMENSIONS

<table>
<thead>
<tr>
<th>UPTAKE CURBGRADE</th>
<th>&quot;A&quot; UPTAKE</th>
<th>&quot;A&quot; DOWNSTREAM</th>
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<tr>
<td>0% AND LESS</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1%</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2%</td>
<td>2</td>
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<tr>
<td>3%</td>
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<tr>
<td>4%</td>
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<tr>
<td>5% AND GREATER</td>
<td>5</td>
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Scale NOT TO SCALE

TYPE "B" INLET

Drawn By B.C. Checked By MZ

Approved By

CITY ENGINEER RCE 31870

6/09/87

DATE

202b

Sht. 2 of 2
TWO #4 x 2'-8" ACROSS SIDE OPENINGS

GALVANIZED STEEL COVERPLATE AND COVERPLATE FRAME
SEE NOTE 6 ON SHT. 2 OF 2.
(SEE CC 3010)

#4 BARS ACROSS OPENINGS AS REQUIRED FOR 6" VERTICAL CLEARANCE. (MAX)

SLOPE 2" PER FOOT TO OUTLET

SECTION A-A

FRONT OPENING
SIDE OPENING

ROUND TO 4" RADIUS WHEN USED AS CURB OPENING

PLAN

COVERPLATE NOT SHOWN

TYPE "C" INLET
TWO #4x3'-8" ACROSS FRONT OPENINGS.

SECTION B-B

SET FRAME LEVEL, OR SLOPE AS REQUIRED TO MATCH SLOPE OF ISLAND PAVING.

REMOVE FRONT 3 DOWELS AT OPENING

USE STANDARD FRAME AND COVERPLATE SEE NOTE 6.

NOTES:
1. CONSTRUCTION JOINTS ARE OPTIONAL WHERE SHOWN OTHER LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER. KEY DIMENSIONS - 3/4" x 2'-1/2".
2. CLEARANCE SHALL BE 1'-1/2" FOR ALL REINFORCING STEEL.
3. INLET AND OUTLET PIPES SHALL NOT INTERCEPT A BOX THROUGH A CORNER, IF THE PIPE IS TOO LARGE OR THE SKEW ANGLE IS TOO GREAT TO PERMIT THE OPENING TO BE MADE IN A SINGLE WALL, USE A MANHOLE BASE WITH A TYPE "C" INLET OPENING ON TOP.
4. WHEN DIMENSION "H" EXCEEDS 4', USE A MANHOLE WITH A TYPE "C" INLET OPENING ON TOP.
5. LOCATION AND SIZE OF OPENINGS TO BE AS SHOWN ON PLANS OR AS OTHERWISE DETERMINED BY ENGINEER.
6. ALL INLETS SHALL BE CONSTRUCTED WITH GRATE UNLESS THE INLET IS TO BE IN PEDESTRIAN AREA, THEN A COVER SHALL BE USED.
7. PRECAST INLET, CONFORMING TO SANTA ROSA CAST PRODUCTS CO. DRAWING NO. B466C3, OR EQUIVALENT, CAN BE SUBSTITUTED FOR CAST-IN-PLACE INLET.

SECTION B-B CURB OPENING MODIFICATION

WHEN INLET IS PRECAST, USE 56" DIA. PRECAST TRANSITION SLAB, SANTA ROSA CAST PRODUCTS CO. DWG. NO. B466C3 OR EQUIVALENT

5'-6" SQUARE SECTION OF TYPE "C" OPENING ON PRECAST MANHOLE BARNEL.

#4 AT 12" EACH WAY

ALL DIMENSIONS ABOVE THIS LINE ARE IDENTICAL TO A TYPE "C" STANDARD INLET.

#4 X 18" DOWELS @ 12"

SECTION OF TYPE "C" OPENING ON MANHOLE BASE

ALL DIMENSIONS ABOVE THIS LINE ARE IDENTICAL TO A TYPE "C" STANDARD INLET.

Scale NOT TO SCALE

Drawn By B.C. Checked By M Z

Approved By CITY ENGINEER RCE 31870

No. Rev. By
1 09/12

DATE 6/09/87

203b Sh. 2 of 2
CONCRETE BLOCK, 4'-6" SQUARE, SIDES PARALLEL TO OR AT RIGHT ANGLES TO EDGE OF PAVEMENT. FORM VERTICAL EDGES AT TOP. CLASS "B" CONCRETE.

NOTES:
1. ALL REINFORCED CONCRETE SHALL BE CLASS "B".
2. ALL CONCRETE JOINTS SHALL BE CLEANED, WETTED, AND MORTARED PRIOR TO SETTING NEXT SECTION. JOINTS SHALL THEN BE PATCHED, TROWELED, AND BRUSHED SMOOTH.
3. TYPE I MANHOLE BASES ARE FOR USE WITH PIPES TO 24" IN DIAMETER AND WHERE THERE IS SUFFICIENT COVER TO USE MINIMUM LENGTH MANHOLE BARREL, ECCENTRIC CONE, AND COVER FRAME.
   TYPE II MANHOLE BASES STANDARD PLAN NO.206 ARE FOR USE WITH PIPES TO 48" IN DIAMETER. TYPE III MANHOLE BASES STANDARD PLAN NO.206 ARE FOR USE WITH PIPES TO 60" IN DIAMETER. MANHOLE BASES FOR PIPES LARGER THAN 60" IN DIAMETER SHALL REQUIRE A SPECIAL DESIGN.
4. USE OF EXTENSION RINGS IS LIMITED BY 18" MANHOLE THROAT LENGTH.
5. FRAME AND EXTENSION RINGS MUST BE SECURED BY PAVEMENT OR CONCRETE BLOCK.
6. MANHOLE COVER FRAME SHALL BE ADJUSTED TO CONFORM TO GRADE AND CROSS-SLOPE OF PAVEMENT.
7. FOR DETAILS OF MANHOLE FRAME AND COVER, SEE STANDARD PLAN NO.207
MORTAR GAP BETWEEN PRECAST MANHOLE 8 9" WALL AT 4 CORNER OPENINGS. 5" MIN. OVERLAP

PLAN

PRECAST MANHOLE SECTION. WHERE THERE IS NOT SUFFICIENT CLEARANCE BETWEEN THE TOP OF THE MANHOLE BASE AND FINISH GRADE FOR PRECAST SECTION, USE TOP SLAB.

FORM RECESS FOR MANHOLE BARREL

9" TYPICAL WALL

SLOPE TO DRAIN WITH MORTAR

CONSTRUCTION JOINT OPTIONAL WHERE CAST-IN-PLACE PIPE IS USED.

CLASS "B" CONCRETE

DIAMETER OF LARGEST PIPE + 1'-6" MIN.

#4@ 12" EACH WAY 2" CL. INSIDE FACE

BOTTOM SLAB TO BE IN PLACE PRIOR TO CONSTRUCTION OF PIPE WHERE CAST-IN-PLACE PIPE IS USED.

SECTION A-A

Scale NOT TO SCALE

Drawn By B.C. Checked By MZ

Approved By CITY ENGINEER RCE 31870

6/09/87 DATE

205a

Sht. 1 of 2
1. ALL REINFORCED CONCRETE SHALL BE CLASS "A".
2. CONSTRUCTION JOINTS ARE OPTIONAL WHERE SHOWN, OTHER LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER. KEY DIMENSIONS ARE 3½" x 3½".
3. INLET AND OUTLET PIPES SHALL NOT INTERCEPT A MANHOLE BASE THROUGH A CORNER. IF THE SKEW ANGLE IS TOO GREAT TO PERMIT THE OPENING TO BE MADE IN A SINGLE WALL, USE A TYPE "III" MANHOLE BASE (STANDARD PLAN 206).
4. TYPE "I" MANHOLE BASES (STANDARD PLAN 204) ARE FOR USE WITH PIPES TO 24" IN DIAMETER AND WHERE THERE IS SUFFICIENT COVER TO USE A MINIMUM LENGTH MANHOLE BARREL, ECCENTRIC CONE, AND COVER FRAME. TYPE "II" MANHOLE BASES ARE FOR PIPES TO 42" IN DIAMETER. TYPE "III" MANHOLE BASES ARE FOR USE WITH PIPES TO 60" IN DIAMETER. MANHOLE BASES FOR PIPES LARGER THAN 60" IN DIAMETER SHALL REQUIRE A SPECIAL DESIGN.
5. FOR DETAILS OF PRECAST MANHOLE, SEE STANDARD PLAN 204.
6. FOR DETAILS OF MANHOLE FRAME AND COVER, SEE STANDARD PLAN 207.

SECTION B-B
TOP SLAB

2' - 0" DIA.

 frame & cover

concrete pad
4' - 6" square

ground surface

asphalt concrete

#4 @ 12' each way. 2" cl.

#4 x 3' - 6" 8 total
PRECAST MANHOLE SECTION. WHERE THERE IS NOT SUFFICIENT CLEARANCE BETWEEN THE TOP OF THE MANHOLE BASE AND FINISH GRADE FOR A PRECAST SECTION AND MANHOLE COVER FRAME, USE A TOP SLAB.

FORM RECESSION FOR MANHOLE BARREL
#6 @ 12" EACH WAY 2" CL.

10" TYPICAL WALL

#4 @ 12" EA. WAY 2" CL.

BOTTOM SLAB TO BE IN PLACE PRIOR TO

SLOPE TO DRAIN WITH MORTAR

#6 @ 6" EACH WAY 2" CL.

CHAMFER

CLASS "B" CONCRETE

#4 HOOPS AROUND ALL INLET AND OUTLET PIPES

DIA. OF LARGEST PIPE + 1'-8" MIN.
SPECIAL APPLICATIONS OF TYPE "III" MANHOLE BASES

WHEN UNUSUAL CIRCUMSTANCES, SUCH AS EXCESSIVE SKEW OR PARALLEL PIPES, PREVENT THE USE OF A NORMAL TYPE "III" MANHOLE BASE, THE WALLS MAY BE LENGTHENED OR RELOCATED TO ACCOMMODATE THE PIPES, PROVIDING THE FOLLOWING CRITERIA ARE MET:

1. THE INSIDE DIMENSIONS OF THE BASE SHALL BE SUCH THAT A FOUR FOOT DIAMETER CIRCLE WILL LAY FLAT ON THE FLOOR, AS SHOWN.
2. THE MAXIMUM DISTANCE BETWEEN ANY TWO INSIDE CORNERS SHALL BE 10'-0", AS SHOWN.
3. REINFORCEMENT AND FLOOR, WALL, AND TOP THICKNESS SHALL REMAIN THE SAME AS FOR A NORMAL TYPE "III" MANHOLE BASE.
4. NO PIPE SHALL EXCEED 60" INSIDE DIAMETER.

IF ANY ONE OF THESE CRITERIA CANNOT BE MET, A SPECIAL DESIGN WILL BE REQUIRED.
NOTES:

1. ALL REINFORCED CONCRETE SHALL BE CLASS "A".
2. CONSTRUCTION JOINTS ARE OPTIONAL WHERE SHOWN. OTHER LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER. KEY DIMENSIONS ARE 1 1/2" x 3 1/2".
3. INLET AND OUTLET PIPES SHALL NOT INTERCEPT A MANHOLE BASE THROUGH A CORNER. IF THE SKEW ANGLE IS TOO GREAT TO PERMIT THE OPENING TO BE MADE IN A SINGLE WALL, THE WALL MAY BE LENGTHENED OR RELOCATED AS EXPLAINED ON SHT. 2 OF 3.
4. TYPE "I" MANHOLE BASES STANDARD PLAN 204 ARE FOR USE WITH PIPES TO 24" IN DIAMETER AND WHERE THERE IS SUFFICIENT COVER TO USE A MINIMUM LENGTH MANHOLE BARREL, ECCENTRIC CONE, AND COVER FRAME. TYPE "II" MANHOLE BASES ARE FOR PIPES TO 42" IN DIAMETER. TYPE "III" MANHOLE BASES ARE FOR PIPES TO 60" IN DIAMETER. MANHOLE BASES FOR PIPES LARGER THAN 60" IN DIAMETER SHALL REQUIRE A SPECIAL DESIGN.
5. FOR DETAILS OF PRECAST MANHOLE, SEE STANDARD PLAN 204.
6. FOR DETAILS OF MANHOLE FRAME AND COVER, SEE STANDARD PLAN 207.
NOTES

I. MANHOLE FRAME AND COVER SHALL BE
PHOENIX IRON WORKS (OAKLAND) MODEL P-1090 OR
PINKERTON FOUNDRY (LODI) MODEL A-640 OR
APPROVED EQUAL.

1/32" MACHINED SURFACES
COVER
FRAME

1/32" RECESS TO RECEIVE SET SCREW
EXTENSION RING
VARIIES 1-1/2" TO 4"
FRAME

1/32" RECESS TO RECEIVE SET SCREW
AT 1/3 POINTS

26-1/4"
25-5/16"
24"
31-1/2"
1-1/2"
4-1/2"
9/16"
SEE NOTES AND HEADWALL DATA ON SHEET 3 OF 3.

Scale NOT TO SCALE

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<th>Rev.</th>
<th>By</th>
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Drawn By B.C
Checked By M.Z

Approved By
CITY ENGINEER RCE 31876

DATE 6/09/87

208a
Sht. 1 of 3
TYPE "L" HEADWALL

SEE NOTES AND HEADWALL DATA ON SHEET 3 OF 3.
## DANVILLE

### STANDARD PLAN

### TYPE "A" HEADWALL DATA

<table>
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<tr>
<th>D</th>
<th>H</th>
<th>SINGLE</th>
<th>DOUBLE</th>
<th>VERT. BARS</th>
<th>L</th>
<th>VERT. BARS</th>
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<td>12&quot;</td>
<td>2'-8&quot;</td>
<td>5'-0&quot;</td>
<td>4</td>
<td>7'-0&quot;</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>15&quot;</td>
<td>2'-11&quot;</td>
<td>6'-0&quot;</td>
<td>6</td>
<td>8'-6&quot;</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>18&quot;</td>
<td>3'-2&quot;</td>
<td>7'-0&quot;</td>
<td>6</td>
<td>9'-6&quot;</td>
<td>8</td>
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<td>21&quot;</td>
<td>3'-5&quot;</td>
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<td>10'-6&quot;</td>
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<td>24&quot;</td>
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<td>8'-6&quot;</td>
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<td>11'-6&quot;</td>
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<tr>
<td>27&quot;</td>
<td>3'-11&quot;</td>
<td>9'-6&quot;</td>
<td>6</td>
<td>13'-0&quot;</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>30&quot;</td>
<td>4'-2&quot;</td>
<td>10'-0&quot;</td>
<td>8</td>
<td>14'-0&quot;</td>
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<td></td>
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<tr>
<td>33&quot;</td>
<td>4'-5&quot;</td>
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<td>15'-0&quot;</td>
<td>9</td>
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<td>36&quot;</td>
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<td>16'-6&quot;</td>
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<tr>
<td>39&quot;</td>
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<td>17'-6&quot;</td>
<td>9</td>
<td></td>
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<tr>
<td>42&quot;</td>
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<td>13'-6&quot;</td>
<td>8</td>
<td>18'-6&quot;</td>
<td>9</td>
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<tr>
<td>45&quot;</td>
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<td>14'-6&quot;</td>
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<td>20'-0&quot;</td>
<td>12</td>
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<tr>
<td>48&quot;</td>
<td>5'-8&quot;</td>
<td>15'-0&quot;</td>
<td>10</td>
<td>21'-0&quot;</td>
<td>12</td>
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### TYPE "L" HEADWALL DATA

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<th>L/2</th>
<th>VERT. BARS</th>
<th>VERT. BARS</th>
<th>VERT. BARS</th>
<th>VERT. BARS</th>
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<tbody>
<tr>
<td>2'-0&quot;</td>
<td>3'-5&quot;</td>
<td>4'-5&quot;</td>
<td>6'-5&quot;</td>
<td>7'-11&quot;</td>
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<td>3'-0&quot;</td>
<td>3'-4&quot;</td>
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<td>6'-4&quot;</td>
<td>7'-10&quot;</td>
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### NOTES:

1. ON HEADWALLS CONSTRUCTED AT A SKEW ANGLE TO THE PIPE $\xi$, THE DIMENSION "L" SHALL BE INCREASED BY AN AMOUNT EQUAL TO THE INCREASE IN THE HORIZONTAL DIAMETER OF THE OPENING DUE TO THE SKEW ANGLE. QUANTITIES GIVEN IN TABLES ABOVE DO NOT ALLOW FOR INCREASES DUE TO SKEW.

2. ALL REINFORCED CONCRETE SHALL BE CLASS "A".

3. CONSTRUCTION JOINTS ARE OPTIONAL WHERE SHOWN. OTHER LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER. KEY DIMENSIONS ARE $1\frac{1}{2}\times 3\frac{1}{2}$.

4. ALL REINFORCING STEEL SHALL BE NO. 4 BARS.

---

**Scale** NOT TO SCALE

**Drawn By** B.C. **Checked By** M.Z.

**Type "A" & "L" HEADWALL DATA**

**Approved By**

CITY ENGINEER RCE 31870 **DATE** 6/09/87

**No. Rev. By**

**208c**

**Sht. 3 of 3**
NOTES

1. REINFORCED CONCRETE, CLASS B, WITH NO.4 BARS @ 18" EACH MAY BE SUBSTITUTED FOR GROUTED ROCK RIPRAP. (12" THICK).

2. GROUTED AND LOOSE ROCK RIPRAP SHALL CONFORM TO THE COUNTY ORDINANCE SPECIFICATIONS.

3. FOR PIPES WITH FLAPGATES SEE C.C.C.F.C.D. DWG B-55.

4. FILTER MATERIAL SHALL CONFORM TO THE COUNTY ORDINANCE SPECIFICATIONS.
HYDROLOGY AND HYDRAULICS CRITERIA SUMMARY

1. The overall watershed shall be broken down into smaller areas which contribute to local points of concentration. The boundaries shall be established based upon local topographic boundaries such as ridges, streets, existing drainage systems, etc, using good engineering practice.

2. Use Contra Costa County Flood Control Drawing B-166 to determine the average seasonal rainfall for the whole watershed in inches.

3. Select storm frequency based on size of watershed, such as, 10-year for an area less than one square mile, 25-year for an area larger than one but less than four square miles, and 50-year for an area larger than four square miles.

4. Select storm duration: use 3-hour storm if there is no detention basin involved.

5. Determine initial time of concentration. Initial time of concentration Tc will seldom be less than 3 minutes or more than 20 minutes.

a. Undeveloped Watersheds

\[
Tc = \frac{2 \ln L}{3 \sqrt{n}}
\]

\[
L = \text{Length in feet (max. 400 feet)}
\]
\[
S = \text{Slope in decimal form}
\]
\[
n = \text{Retardance coefficient}
\]
\[
Tc = \text{Time of concentration (min.)}
\]

Retardance Coefficient (n)

<table>
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<th>Surface</th>
<th>(n)</th>
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<tr>
<td>Smooth impervious</td>
<td>0.02</td>
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<tr>
<td>Smooth bare packed soil</td>
<td>0.10</td>
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<tr>
<td>Poor grass cultivated row crops</td>
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<tr>
<td>Moderately rough bare surface</td>
<td>0.20</td>
</tr>
<tr>
<td>Pasture or average grass</td>
<td>0.40</td>
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<tr>
<td>Deciduous timberland</td>
<td>0.60</td>
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<tr>
<td>Conifer timberland, decidous</td>
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<tr>
<td>Timberland with deep forest</td>
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<tr>
<td>Litter or dense grass</td>
<td>0.80</td>
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HYDROLOGY AND HYDRAULIC CRITERIA SUMMARY

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Approved By

CITY ENGINEER RCE 31870

DATE

210

1 of 2
b. Developed watersheds

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Runoff Coefficient (C)</th>
<th>Time of Concentration (min.) (Roof to gutter)</th>
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<tbody>
<tr>
<td>R-6</td>
<td>0.50 - 0.70</td>
<td>3 - 5</td>
</tr>
<tr>
<td>R-10</td>
<td>0.45 - 0.60</td>
<td>5 - 7</td>
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<td>R-20</td>
<td>0.40 - 0.50</td>
<td>6 - 8</td>
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<tr>
<td>R-40</td>
<td>0.35 - 0.45</td>
<td>8 - 10</td>
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<td>Apartments</td>
<td>0.60 - 0.80</td>
<td>3 - 10</td>
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<td>Business</td>
<td>0.70 - 0.95</td>
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<tr>
<td>Industrial</td>
<td>0.60 - 0.90</td>
<td>3 - 10</td>
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<tr>
<td>Open</td>
<td>0.20 - 0.40</td>
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<tr>
<td>Streets</td>
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<td>Asphalt</td>
<td>0.75 - 0.95</td>
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<tr>
<td>Concrete</td>
<td>0.80 - 0.95</td>
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<tr>
<td>Drive walks</td>
<td>0.80 - 0.95</td>
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</tr>
<tr>
<td>Roofs</td>
<td>0.75 - 0.95</td>
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</table>

6. a. For areas up to 200 acres use the Rational Method to determine the peak flow rate Q

\[
Q = CIA \\
Q = \text{Flow rate (cubic feet per second)} \\
C = \text{Runoff coefficient} \\
I = \text{Intensity (inches/hours)} \\
A = \text{Area (Acres)}
\]

\[
Tc = \text{Roof to gutter + overland flow} \\
(\text{overland flow not to exceed 400 feet.})
\]

* For sloped area use modified runoff coefficient C' (see page 210b). The modified runoff coefficient (C') will never exceed 0.80 when calculations are based on land use. When calculations are based on type of surface the basic runoff coefficient (C) shall be determined in accordance with sound engineering practice, and will often exceed 0.80.

b. For areas larger than 200 acres use the unit hydrograph method.

7. Use Contra Costa County Flood Control drawings B-158 to B-162 for Intensities (I).

8. All hydrology calculation using the Rational Method shall be entered in the format shown on sheet 210a. All hydrology and hydraulic calculations shall be accompanied by a detailed hydrology map showing all relevant information. (Same information shown on sheet 210A.)

9. The Town uses Mannings' equation to calculate friction losses, and the pressure-momentum method and energy equations to calculate major junction or section losses.

10. The elevation of the HGL shall be at least 1.25 feet below the top of any inlet grate or manhole.
<table>
<thead>
<tr>
<th>PT OF CONC.</th>
<th>AREA DESG.</th>
<th>Δ A</th>
<th>C</th>
<th>Δ AC</th>
<th>∑ A</th>
<th>Δ AC</th>
<th>∑ AC</th>
<th>TIME OF CONC.</th>
<th>RAINFALL INTENSITY (in. / hr.)</th>
<th>RUNOFF</th>
<th>DESIGN</th>
<th>MINIMUM CURB DATA</th>
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</tbody>
</table>

REFERENCES: ___________________

INITIAL Tc: ___________________

DRAINAGE STUDY OF: ___________________

ROOF TO GUTTER: ___________________

BY: ___________________

DATE: ___________________

SHEET NO. OF: ___________________

AREA OF TRACT: ___________________

NO. OF LOTS: ___________________

INCIDENT | ACCUMULATED | RUNOFF |
<table>
<thead>
<tr>
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<tbody>
<tr>
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Q = C x A

FLOW DEPTH

CONDUIT SIZE

SLOPE

LENGTH

TIME IN SECT.

MIN. TC

ELEV.

MIN. IN.

TC RIM

CTG
**RUNOFF FACTOR SLOPE AND INTENSITY ADJUSTMENT CHART PG 2 OF 3**

C = Initial Runoff Factor
C+Cs = Runoff Factor + Slope Adjustment
C' = Design Runoff Factor

To determine C' begin with the initial runoff factor C in the upper left of the chart. Draw a line to the right until you meet a ground slope greater than the average ground slope of the incremental drainage area. Next draw a line down until you reach a rainfall intensity greater than your design intensity. Next draw a line to the left to find your design runoff factor C'.

<table>
<thead>
<tr>
<th>BEGIN</th>
<th>C + Cs</th>
</tr>
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<tbody>
<tr>
<td>.200</td>
<td>31 33 35 37 39 41 43 45</td>
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<tr>
<td>.300</td>
<td>17 19 21 23 25 27 29 32 34 36 39 41 44 45</td>
</tr>
<tr>
<td>.400</td>
<td>7 9 11 13 15 17 20 22 25 27 30 33 36 39 42 45</td>
</tr>
<tr>
<td>.500</td>
<td>6 9 11</td>
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<td>7</td>
</tr>
<tr>
<td>.700</td>
<td>7</td>
</tr>
<tr>
<td>.800</td>
<td>8</td>
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**Scale NOT TO SCALE**

**RUNOFF FACTOR ADJUSTMENT**

<table>
<thead>
<tr>
<th>No. Rev. By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawn By K.O. Checked By P.K.</td>
</tr>
</tbody>
</table>

**Approved By**

CITY ENGINEER RCE 31870 DATE 3-13-59

210b 2 of 3
To determine $C'$ begin with the initial runoff factor $C$ in the upper left of the chart. Draw a line to the right until you meet a ground slope greater than the average ground slope of the incremental drainage area. Next draw a line down until you reach a rainfall intensity greater than your design intensity. Next draw a line to the left to find your design runoff factor $C'$.

<table>
<thead>
<tr>
<th>$C$</th>
<th>$C + Cs$</th>
<th>$C'$</th>
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</thead>
<tbody>
<tr>
<td>.60</td>
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<td>.62</td>
</tr>
<tr>
<td>.62</td>
<td>.63</td>
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<td>.78</td>
</tr>
<tr>
<td>.78</td>
<td>.79</td>
<td>.80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$C$</th>
<th>$C + Cs$</th>
<th>$C'$</th>
</tr>
</thead>
<tbody>
<tr>
<td>.20</td>
<td>45</td>
<td></td>
</tr>
<tr>
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<td>27</td>
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<tr>
<td>.80</td>
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<table>
<thead>
<tr>
<th>$C$</th>
<th>$C + Cs$</th>
<th>$C'$</th>
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</thead>
<tbody>
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<td>.78</td>
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<td>.80</td>
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Scale: NOT TO SCALE

RUNOFF FACTOR ADJUSTMENT

Drawn By: K.D. Checked By: PK

Approved By: City Engineer RCE 31870 DATE 3-13-69

210b 3 of 3
## LEGEND

<table>
<thead>
<tr>
<th>PROPOSED</th>
<th>EXISTING</th>
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<tbody>
<tr>
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<tr>
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<tr>
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<td>O</td>
<td>Sanitary Manhole</td>
</tr>
<tr>
<td></td>
<td>O</td>
<td>Storm Manhole</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>Standard Inlet</td>
</tr>
<tr>
<td></td>
<td>W</td>
<td>Gas Line</td>
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<tr>
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<td>T</td>
<td>Water Line</td>
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<td>TV</td>
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<td>O</td>
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<tr>
<td></td>
<td></td>
<td>Utility Pole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electroliner</td>
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</tbody>
</table>

---

**Scale** NOT TO SCALE

**DRAFTING SYMBOLS**

**Drawn By**  
**Checked By**  

**Approved By**  
CITY ENGINEER  
DATE
OUTLINE OF EXTREME LIMITS OF MAILBOX INSTALLATION. TYPE & ARTISTIC TREATMENT VARY. CONSTRUCT IN GROUPS OF 2 OR MORE WITH BOX OPENING FACING STREET.

MAILBOX LOCATION
(MONOLITHIC CURB & SIDEWALK)

HEIGHT AS REQUIRED BY POSTAL REGULATIONS (3' MIN.)

DIMENSION "A" AS REQUIRED BY POSTAL REGULATIONS, BUT MUST NOT BE LESS THAN 6".

HEIGHT AS REQUIRED BY POSTAL REGULATIONS (3' MIN.)

SINGLE WOOD OR STEEL POST.

MAILBOX LOCATION
(OPEN PARKWAY AREA)

NOTES
1. ENCROACHMENT PERMIT IS REQUIRED IF MAILBOX IS TO BE INSTALLED IN EXISTING SIDEWALK, OR IF INSTALLATION REQUIRES MODIFICATION OF DIMENSIONS SHOWN ON THIS PLAN, WHICH ARE BASED ON A STANDARD RESIDENTIAL MAILBOX.
2. MAILBOX STANDARD SHALL NOT BE INSTALLED WITHIN 3FT. OF THE EDGE OF A STREET STORM DRAIN INLET.
3. SEE STANDARD PLAN 103 & 105 FOR SIDEWALK & CURB DETAILS.

No. Rev. By

Drawn By B.C. Checked By M.Z.

Approved By

CITY ENGINEER RCE 31870

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Sht. 1 of 1