STANDARD DRAWINGS

FOR

PUBLIC IMPROVEMENTS

County of San Mateo
Department Of Public Works

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Redwood City, California 94063-1665
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http://publicworks.smcgov.org

Rev. 02/2022
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<td>CUL DE SAC OR MINOR ROAD – 5 TO 10 PARCELS</td>
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COUNTY ROAD STANDARDS

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<td></td>
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STANDARD DRAWINGS
FOR
PUBLIC IMPROVEMENT

COUNTY ROAD STANDARDS
GENERAL NOTES:

1. GENERAL ROAD STANDARDS ARE STANDARDS FOR USE IN AREAS WHERE COMMUNITY ROAD STANDARDS HAVE NOT BEEN ADOPTED. THE PROPOSED USERS OF THESE GENERAL STANDARDS SHOULD CONTACT THE DEPARTMENT OF PUBLIC WORKS PRIOR TO APPLYING THESE STANDARDS.

2. GENERAL PURPOSE: THESE STANDARD DRAWINGS ARE INTENDED TO BE USED AS DEPICTED IN THE DESIGN OF CONSTRUCTION PROJECTS LOCATED WITHIN COUNTY OF SAN MATEO RIGHT-OF-WAY AND/OR PROPERTY. THE STANDARD DRAWINGS HAVE BEEN REVIEWED AND STAMPED BY THE DIRECTOR OF PUBLIC WORKS AND HAVE BEEN BACKED BY ENGINEERING ANALYSIS, BUT IT IS THE RESPONSIBILITY OF THE PROJECT’S ENGINEER OF RECORD TO VERIFY THAT THE STANDARD DRAWINGS ARE BEING USED AS ORIGINALLY INTENDED.

3. THESE STANDARD DRAWINGS DO NOT INCLUDE DETAILS, SPECIFICATIONS OR GUIDANCE RELATED TO GREEN INFRASTRUCTURE FACILITIES WITHIN THE RIGHT-OF-WAY SUCH AS PERVIOUS PAVEMENT SYSTEMS OR STORMWATER CURB EXTENSIONS. TYPICAL DETAILS FOR GREEN INFRASTRUCTURE FACILITIES AND RELATED COMPONENTS ARE PROVIDED IN A SEPARATE SET OF DETAILS THAT ARE AVAILABLE FROM THE WHERE PUBLIC WORKS STANDARD DRAWINGS MAY REQUIRE MODIFICATION IF THE RIGHT-OF-WAY PROJECT INCLUDES GREEN INFRASTRUCTURE, REFERENCES TO THE TYPICAL GREEN INFRASTRUCTURE DETAILS HAVE BEEN ADDED. IF ADDITIONAL MODIFICATIONS TO STANDARD DRAWINGS ARE NECESSARY TO ACCOMMODATE GREEN INFRASTRUCTURE, APPROVALS OF THESE PROPOSED MODIFICATIONS SHOULD BE REVIEWED BY THE COUNTY ON A PROJECT TO PROJECT BASIS.
URBAN RESIDENTIAL ONE-WAY LOOP STREET
(CURBS AND GUTTER—BOTH SIDES, SIDEWALK—ONE SIDE)

NOTES:

1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. ADD 5’ BIKE LANES WHERE REQUIRED BY DEPARTMENT OF PUBLIC WORKS.

3. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.

4. STRUCTURAL SECTION AS DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.5’ CLASS 2 AGGREGATE BASE AND 0.2’ ASPHALT CONCRETE.

* SEE A—4, NOTE 3.
NOTES:
1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER.

*[3. STRUCTURAL SECTION AS DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.5’ CLASS 2 AGGREGATE BASE AND 0.2’ ASPHALT CONCRETE.]

*[SEE A-4, NOTE 3.*]
URBAN RESIDENTIAL COLLECTOR
OR
MINOR COMMERCIAL STREET
(R-2, R-3, P, H-1, O, & C-1 ZONING)

NOTES:

1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. ADD 5' BIKE LANE WHERE REQUIRED BY DEPARTMENT OF PUBLIC WORKS.

3. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER.

4. STRUCTURAL SECTION AS DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.5' CLASS 2 AGGREGATE BASE AND 0.2' ASPHALT CONCRETE.

5. FOR MINOR COMMERCIAL, COMMERCIAL & INDUSTRIAL STREETS – STRUCTURAL SECTION AS DETERMINED BY SOILS ENGINEER AND APPROVED BY DEPARTMENT OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.65' CLASS 2 AGGREGATE BASE & 0.25' ASPHALT CONCRETE.

* SEE A-4, NOTE 3.
**ARTERIAL, COMMERCIAL AND INDUSTRIAL STREET**

(C-2, M-1, & M-2 ZONING)

**NOTES:**

1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. ADD 5’ BIKE LANES WHERE REQUIRED BY DEPARTMENT OF PUBLIC WORKS.

3. ROADWAY CUT AND FILL SLOPE TO BE NO STEEPER THAN 1.5 (HORIZONTAL) TO 1 (VERTICAL) UNLESS OTHERWISE DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY DEPARTMENT OF PUBLIC WORKS.

4. FOR MINOR COMMERCIAL, COMMERCIAL & INDUSTRIAL STREETS – STRUCTURAL SECTION AS DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY DEPARTMENT OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.65’ CLASS 2 AGGREGATE BASE & 0.25’ ASPHALT CONCRETE.

5. ADD MEDIAN AND OR TURNING LANES (4’-14’) WHERE REQUIRED BY DEPARTMENT OF PUBLIC WORKS.
TWO LEVEL URBAN RESIDENTIAL STREET

NOTES:

1. CROSS SLOPE SHALL BE 2% FROM CURB, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. ADD 5’ BIKE LANE WHERE REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS.

* 3. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.

4. STRUCTURAL SECTION AS DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.5’ CLASS 2 AGGREGATE BASE AND 0.2’ ASPHALT CONCRETE.

* SEE A–4, NOTE 3.
PROPERTY OWNERS WILL ONLY BE ISSUED ENCROACHMENT PERMITS FOR PARKING WITHIN THE R/W IN FRONT OF THEIR OWN LOT.

NOTE: OTHER IMPROVEMENTS MAY EXIST THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF SPECIFIC STANDARDS.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>SLOPE 0–2%</th>
<th>2–7%</th>
<th>7–14%</th>
<th>14%+</th>
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<tr>
<td>UNDISTURBED GROUND</td>
<td>NO</td>
<td>YES*</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>COMPACTED EARTH</td>
<td>NO</td>
<td>YES*</td>
<td>NO</td>
<td>NO</td>
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<tr>
<td>CEMENTED EARTH</td>
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<td>YES</td>
<td>NO</td>
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<tr>
<td>COMPACTED GRAVEL SURFACE</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>COMPACTED GRAVEL &amp; OIL</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>ASPHALT</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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MONTARA / MOSS BEACH/SEAL COVE/
PRINCETON/MIRAMAR ROAD STANDARDS

ADOPTED: OCT. 1994
**EL GRANADA ROAD STANDARD**

**INTERSECTION DETAIL**

- **NOTE:** Other improvements may exist that were constructed prior to adoption of specific standards.

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**NOTE:**
- EL GRANADA RESIDENTS CAN ALSO CHOOSE TO USE MONTARA/MOSS BEACH/SEAL COVE/PRINCETON/MIRAMAR STANDARDS ON A PROJECT-BY-PROJECT BASIS.

**SCALE:** NONE  
**DATE:** 2-2022  
**REVISED:** 2-2022

**COUNTY OF SAN MATEO DEPARTMENT OF PUBLIC WORKS**

**DRAWN BY:** A.Z.  
**CHECKED BY:** K.L.  
**APPROVED BY:** A.M.S.  

**R/W**

**MINIMUM IMPROVEMENT**

**LIMIT OF IMPROVEMENTS**

**ROAD CENTERLINE**

**GUTTER**

**Curb**

**concrete curb**

**PARKING LANE**

**TRAVEL WAY**

**PARKING LANE**

**TRAVEL WAY**

**PARKING LANE**

**PARKING LANE**

**OBSTRUCTION DETAIL**

- **TREE HAVING MINIMUM 38" CIRCUMFERENCE (12" DIAMETER) MEASURED 4-1/2 FEET ABOVE GROUND**

**A-6C**

**ADOPTED:** OCT. 1994
NOTE:
OTHER IMPROVEMENTS MAY EXIST THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF SPECIFIC STANDARDS.

CLIPPER RIDGE ROAD STANDARD

A–6D
NOTES:

1. OTHER IMPROVEMENTS MAY EXIST THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF SPECIFIC STANDARDS.

2. OPTIONAL ADDITIONAL IMPROVEMENTS MAY BE INSTALLED AFTER OBTAINING AN ENCROACHMENT PERMIT. THE COST OF OPTIONAL IMPROVEMENTS WILL BE AT THE SOLE EXPENSE OF APPLICANT.

3. AN 18’ OR 22’ ROADWAY IMPROVEMENT MAY BE BUILT, DEPENDING ON RESULTS OF A SURVEY OF THE PROPERTY OWNERS CONDUCTED BY THE PUBLIC WORKS DEPARTMENT.

SEQUOIA TRACT ROAD STANDARD

A—6F
COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

SEE NOTE 3
SEE NOTE 1

1-1/2"

CLASS 3 CONC.

6” CLASS 2 AGGREGATE BASE (MIN.)

NOTES:
1. REINFORCEMENT SHALL CONSIST OF 6” x 6” - #10/#10 WELDED WIRE FABRIC.
2. CONCRETE VALLEY GUTTER SHALL BE INSTALLED PRIOR TO PAVING, UNLESS ENGINEER APPROVES OTHERWISE.
3. PLACE 1/2” DIAMETER x 18” LONG DOWELS, AT EXPANSION JOINTS, AS SHOWN.
4. PLACE 1/4” THICK EXPANSION JOINTS FULL WIDTH 20’ ON CENTER.
5. SUB-BASE MATERIALS WITHIN 30” OF SUBGRADE SHALL BE COMPACTED TO 95% R.C.
6. PLACE 1/4” DEEP SCORE FULL WIDTH 20’ ON CENTER, BETWEEN EXPANSION JOINTS.

CONCRETE VALLEY GUTTER

TRAVEL WAY

TRAVEL WAY

CONCRETE VALLEY GUTTER

UNPAVED SHOULDER

ROAD STRUCTURAL SECTION WITH ASPHALT CONCRETE SURFACING

A. OTHER IMPROVEMENTS MAY EXIST THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF SPECIFIC STANDARDS.

B. OPTIONAL ADDITIONAL IMPROVEMENTS MAY BE INSTALLED AFTER OBTAINING AN ENCROACHMENT PERMIT. THE COST OF OPTIONAL IMPROVEMENTS WILL BE AT THE SOLE EXPENSE OF APPLICANT.

C. AN 18’ OR 22’ ROADWAY IMPROVEMENT MAY BE BUILT, DEPENDING ON RESULTS OF A SURVEY OF THE PROPERTY OWNERS CONDUCTED BY THE PUBLIC WORKS DEPARTMENT.

WEST MENLO PARK ROAD STANDARD

A-6H

ADOPTED: JAN. 2003
NOTES:


2. A FEW ROADS HAVE OTHER IMPROVEMENTS, SUCH AS CURB & GUTTER, THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF THIS STANDARD.

MENLO OAKS ROAD STANDARD
NOTES:

1. ON FEBRUARY 8, 2000, THE BOARD OF SUPERVISORS ADOPTED RESOLUTION NUMBER 63403 ADOPTING THE CURRENT WIDTH OF THE EXISTING ROADS AS THE STANDARD FOR THE DEVONSHIRE AREA AND DETERMINING THAT FUTURE IMPROVEMENTS WILL CONSIST SOLELY OF MAINTAINING THE EXISTING ROADS.

2. A FEW ROADS HAVE OTHER IMPROVEMENTS, SUCH AS CURB & GUTTER, THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF THIS STANDARD.

DEVONSHIRE ROAD STANDARD

A–6M
RURAL ONE WAY ROAD
AND LOOP STREET SECTION

NOTES:

1. CROSS SLOPE SHALL BE 2% FROM FACE OF BERM UNLESS DIRECTED OTHERWISE BY DIRECTOR OF PUBLIC WORKS.

* 2. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY SOILS ENGINEER.

3. STRUCTURAL SECTION AS DETERMINED BY THE SOILS ENGINEER AND APPROVED BY THE DIRECTOR OF PUBLIC WORKS WITH MINIMUM ALLOWABLE SECTION 0.5’ CLASS 2 AGGREGATE BASE & 0.2’ ASPHALT CONCRETE.

* SEE A–4, NOTE 3.
CUL-DE-SAC OR MINOR ROAD - 5 TO 10 PARCELS
EACH 5 TO 40 ACRES

CUL-DE-SAC OR MINOR ROAD - 5 TO 10 PARCELS
EACH 20,000 SQ. FT. TO 5 ACRES

NOTES:
1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.
2. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.
3. ADD 5' BIKE LANE WHERE REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS.
4. STRUCTURAL SECTION AS DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM REQUIRED SECTION 0.5' CLASS 2 AGGREGATE BASE AND 0.2' ASPHALT CONCRETE.

* SEE A-4, NOTE 3.
RURAL COLLECTOR ROAD

NOTES:
1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.
2. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.
3. ADD 5' BIKE LANE WHERE REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS.
4. STRUCTURAL SECTION AS DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM REQUIRED SECTION 0.5' CLASS 2 AGGREGATE BASE AND 0.2' ASPHALT CONCRETE.

* SEE A–4, NOTE 3.
RURAL MAJOR COLLECTOR ROAD

NOTES:

1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. ADD 5’ BIKE LANE WHERE REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS.

3. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.

4. STRUCTURAL SECTION AS DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WITH MINIMUM REQUIRED SECTION 0.5’ CLASS 2 AGGREGATE BASE AND 0.2’ ASPHALT CONCRETE.

5. CONSTRUCT AC DIKE WHERE SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

* SEE A-4, NOTE 3.
**NOTES:**

1. PRIVATE ROAD TO BE USED ON MINOR SUBDIVISIONS ONLY AND SHALL BE SURFACED WITH 0.5' CLASS 2 AGGREGATE BASE ROCK OR EQUIVALENT, COMPACTED TO 95% WITH A PENETRATION COAT OF LIQUID ASPHALT.

2. PRIVATE ROAD STANDARDS MAY BE UTILIZED ON RURAL MINOR SUBDIVISION CONTAINING 10 OR LESS PARCELS.

3. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

* 4. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.

* SEE A-4, NOTE 3.
RURAL PRIVATE ACCESS ROAD SERVING MINOR DIVISION
WITHIN 500 FEET OF PUBLIC ROAD

RURAL PRIVATE ACCESS ROAD SERVING MINOR DIVISION MORE THAN 500 FEET FROM A PUBLIC ROAD

NOTES:

1. PRIVATE ROAD TO BE USED ON MINOR SUBDIVISIONS ONLY AND SHALL BE SURFACED WITH 0.5' CLASS 2 AGGREGATE BASE ROCK OR EQUIVALENT, COMPACTED TO 95% WITH A PENETRATION COAT OF LIQUID ASPHALT.

2. PRIVATE ACCESS ROADS TO BE USED ON MINOR SUBDIVISIONS ONLY AS INTERIM ACCESS.

3. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

4. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY GEOTECHNICAL ENGINEER.

* SEE A-4, NOTE 3.
URBAN PRIVATE STREET

NOTES:

1. CROSS SLOPE SHALL BE 2% CROWNED FROM CENTERLINE, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2. A.C. DIKE WHERE NEEDED TO CONTROL STORM RUNOFF.

3. ROADWAY CUT AND FILL SLOPE TO BE DETERMINED BY SOILS ENGINEER.

4. STRUCTURAL SECTION AS DETERMINED BY GEOTECHNICAL ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. (MINIMUM ALLOWABLE 0.2' ASPHALT CONCRETE OVER 0.5' CLASS 2 AGGREGATE BASE).

5. PRIVATE STREET TO BE USED ON EITHER MAJOR OR MINOR SUBDIVISIONS TO SERVE ULTIMATELY FOUR OR LESS LOTS OR PARCELS.

* SEE A-4, NOTE 3.
TABLE A

<table>
<thead>
<tr>
<th>Curb Type</th>
<th>Normal Curb Height</th>
<th>Curb Batter</th>
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<tbody>
<tr>
<td>A1-6</td>
<td>6&quot;</td>
<td>1 1/2&quot;</td>
<td>12 1/2&quot;</td>
</tr>
<tr>
<td>A1-8</td>
<td>8&quot;</td>
<td>2&quot;</td>
<td>12</td>
</tr>
<tr>
<td>B</td>
<td>6&quot;</td>
<td>4&quot;</td>
<td>10</td>
</tr>
<tr>
<td>Dike</td>
<td>6&quot;</td>
<td>3&quot;</td>
<td>11</td>
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</tbody>
</table>

BATTER (SEE ANCHOR DETAIL) FOR CURB BATTER AND HEIGHT, SEE TABLE A

FACE ANGLE (SEE ANCHOR DETAIL) FOR CURB BATTER AND HEIGHT, SEE TABLE A

VARIABLE GUTTER FLOWLINE DEPRESSION

SECTION A-A

TYPE GO INLET

TABLE B. CATCH BASIN QUANTITY

<table>
<thead>
<tr>
<th></th>
<th>H=3'-0&quot; TO 8'-0&quot; (T=6&quot;)</th>
<th>H=8'-1&quot; TO 20'-0&quot; (T=8&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H=3'-0&quot; (CY)</td>
<td>H=8'-1&quot; (CY)</td>
</tr>
<tr>
<td></td>
<td>ADDITIONAL PCC PER FT (CY)</td>
<td>ADDITIONAL PCC PER FT (CY)</td>
</tr>
<tr>
<td>GO</td>
<td>1.26</td>
<td>4.90</td>
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<tr>
<td></td>
<td>0.245</td>
<td>0.506</td>
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TABLE B BASED ON 8" FLOOR SLAB, NO DEDUCTION FOR PIPE OPENINGS, AND CURB TYPE GIVING HIGHEST QUANTITY OF CONCRETE. NO DEDUCTIONS OR ADJUSTMENTS ARE TO BE MADE TO THESE QUANTITIES BECAUSE OF PIPE OPENINGS, DIFFERENT FLOOR ALTERNATIVES OR DIFFERENT CURB TYPE.
NOTE:
1. EXPANSION JOINT FILLER MUST COMPLY WITH ASTM D1751. NO FOAM OR OTHER MATERIALS. FILLER MUST BE ¼" TO ½" MAX THICKNESS.

APRON DETAILS

B-1A
PLAN

CATCH BASIN QUANTITY TABLE

<table>
<thead>
<tr>
<th>TYPE</th>
<th>H=3'-0&quot; TO 8'-0&quot; (T=6&quot;)</th>
<th>H=8'-1&quot; TO 20'-0&quot; (T=8&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H=3'-0&quot; (CY)</td>
<td>ADDITIONAL PCC PER FT (CY)</td>
</tr>
<tr>
<td>GOL-7</td>
<td>2.48</td>
<td>0.313</td>
</tr>
<tr>
<td>GOL-10</td>
<td>3.41</td>
<td>0.313</td>
</tr>
</tbody>
</table>

TABLE BASED ON 8" FLOOR SLAB, NO DEDUCTION FOR PIPE OPENINGS, 7" CURB OPENINGS, & CURB TYPE GIVING HIGHEST QUANTITY OF CONCRETE. NO DEDUCTIONS OR ADJUSTMENTS ARE TO BE MADE TO THESE QUANTITIES BECAUSE OF PIPE OPENINGS, DIFFERENT CURB TYPES OR DIFFERENT HEIGHT OF CURB OPENINGS.
TYPE GOL INLET

QUANTITY OF PCC FOR APRONS (CUBIC YARD)

<table>
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<tr>
<th>INLET</th>
<th>ON GRADE</th>
</tr>
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<tbody>
<tr>
<td>GOL-7</td>
<td>0.4839</td>
</tr>
<tr>
<td>GOL-10</td>
<td>0.6228</td>
</tr>
</tbody>
</table>

NOTE:
1. EXPANSION JOINT FILLER MUST COMPLY WITH ASTM D1751. NO FOAM OR OTHER MATERIALS. FILLER MUST BE ¼” TO ½” MAX THICKNESS.

APRON DETAILS
GENERAL NOTES:

1. "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed at the curb face.

2. For "T" wall thickness see Table.

3. Height of curb opening will vary with the type of curb and the depth of the local depression.

4. Wall reinforcing not required when H = 8' or less and the unsupported width or length = 7' or less. Walls exceeding these limits shall be reinforced with #4 bars @ 18" +/- centers placed 1-1/2" clear to inside of box unless otherwise shown.

5. When shown on the project plans, place a #6 protection bar horizontally across the entire length of the opening and bend back 4" into the inlet wall on each side.

6. Curb supports shall be evenly spaced and minimal in number such that maximum span of unsupported curb is 7'.

7. Except for inlets used as junction boxes, basin floor shall have a minimum slope of 4:1 from all directions toward outlet pipe and shall have a wood trowel finish.

8. Galvanizing: See standard specification or special provisions.

9. See standard plan D78 for depression details not shown.

10. Complete joint penetration butt welds may be substituted for the fillet welds on all anchors.

11. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.

12. Cast-in-place or precast alternative is optional with contractor. See standard specifications.

STORM DRAINAGE INLETS
COUNTY OF SAN MATEO DEPARTMENT OF PUBLIC WORKS

REDWOOD CITY, CALIFORNIA

DRAWN BY: A.Z.
CHECKED BY: K.L.
APPROVED BY: A.M.S.

SCALE: NONE
DATE: 2–2022
REVISED: 2–2022

1'-11\% for type 24 grate
1'-5\% for type 18 grate

1\% for type 24 grate
1'-8\% for type 24 grate
1'-3" for type 18 grate

BEARING BARS

TYP 3\%6"

\%6" ± \ø CROSS BARS

OUTSIDE BEARING BAR AND EVERY THIRD INTERNAL BEARING BAR

\%6" 3\%4"

2\%2" x 3\%8" END BARS

\%6" \ø END BARS

\%8" END BARS

SECTION A-A

PLAN

TYPE 24-12X GRATE
(WELDED STEEL)

MISC IRON AND STEEL FINAL PAY WEIGHT FOR DRAINAGE INLETS

<table>
<thead>
<tr>
<th>INLET TYPE</th>
<th>GRATE TYPE</th>
<th>NO. GRATES</th>
<th>WEIGHT LBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GO, GOL</td>
<td>24-12X</td>
<td>1</td>
<td>239</td>
</tr>
</tbody>
</table>

NOTES:
1. ALL STEEL TO BE HOT DIP GALVANIZED AFTER ALL WELDING IS COMPLETE.
2. BEARING BARS TO BE 3\%2" x 3\%8" BARS ON 1\%8" CENTERS.
3. 12 BARS FOR TYPE 24 GRATE – 9 BARS FOR TYPE 18 GRATES.
COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

DRAWN BY: A.Z.
CHECKED BY: K.L.
APPROVED BY: A.M.S.

SCALE: NONE
DATE: 2-2022
REVISED: 2-2022

PLAN

NOTE: REBAR NOT SHOWN.

SECTION B-B

MATCH EXIST PAVEMENT OR GROUND SURFACE

INLET FRAME & GRATE

#4 @ 12” HORIZONTAL BARS

#4 @ 10” VERTICAL BARS

CONNECTING PIPE
S=0.005 (MIN.)

CLASS 2 CONCRETE

SECTION A-A

TRAFFIC INLET

B-5
DROP INLET W/ END OPENING

4 - 5/8" GALVANIZED ANCHOR BOLTS
(SEE DETAIL B-8)

DROP INLET W/ SIDE OPENING

DROP INLET DETAIL

B-7
1/4" THICK STEEL "DIAMOND" PLATE (OR APPROVED EQUAL). HOT DIPPED GALVANIZED AFTER FABRICATION.

2" X 1" SLOTTED HOLE (2 REQ'D)

5/8" BOLT HOLE (4 REQ'D)

COVER PLATE DETAIL

HEX NUT

CUT STEEL WASHER

STEEL COVER PLATE (SEE DETAIL ABOVE)

5/8" DIA. GALVANIZED ANCHOR BOLT

DROP INLET DETAIL
COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

DRAWN BY:  A.Z.
CHECKED BY:  K.L.
APPROVED BY:  A.M.S.

SCALE:  NONE
DATE:  2-2022
REVISED:  2-2022

NOTE:
w - VARIES WITH PIPE SIZE (SEE TABLE 1)

TABLE 1

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>w</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>22&quot;</td>
</tr>
<tr>
<td>18</td>
<td>21&quot;</td>
</tr>
<tr>
<td>21</td>
<td>20&quot;</td>
</tr>
<tr>
<td>24</td>
<td>19&quot;</td>
</tr>
<tr>
<td>27</td>
<td>18&quot;</td>
</tr>
</tbody>
</table>

SHAPE & TROWEL CHANNEL

PLAN

PIPE SIZE W

PHOENIX IRON WORKS
P1016 TYPE "A"
COVER OR EQUAL

GRADE RINGS
12" MAX

PRECAST ECCENTRIC CONE SECT.

PRECAST PIPE SHAFT CONCENTRIC WITH BASE

SECTION A-A

SECTION B-B

STANDARD STORM DRAIN MANHOLE

B-10
STANDARD STORM DRAIN MANHOLE

SHALLOW COVER

B-11
PHOENIX IRON WORKS P1016 FRAME WITH TYPE "A" COVER OR APPROVED EQUAL

8" MIN. CONC. SLAB (CLASS 3) & AS DIRECTED BY THE ENGINEER

#3 @ 6" O.C.

#3 SPIRAL REBAR CONFORMING TO ASTM A615-40

6" MIN

SECTION

CLASS 2 CONC SQUARE OR ROUND BASE (OPTIONAL)

PIPE O.D.

60"

10"

48"

PRECAST MANHOLE SECTION AVAILABLE IN LENGTHS 12", 15", 18", 24" AND 30"

GROUND SURFACE

REDWOOD CITY CALIFORNIA

IN PAVEMENT OUTSIDE PAVEMENT

2" AC

10" 10"

5" 5"

24" 6"

60" 60"

NOTES:

1. ALL PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN STRICT ACCORDANCE WITH THE LATEST PROVISIONS OF A.S.T.M. DESIGNATION C-478.

2. ALL 48" PRECAST SECTIONS SHALL HAVE 5" THICK WALLS.

3. MANHOLE BASE TO BE POURED ON UNDISTURBED EARTH OR ON 95% COMPACTED SOIL.

4. MANHOLE CASTING TO BE SET TO GRADE PRIOR TO PLACING 2" AC.

PLAN

STORM DRAIN MANHOLE-SHALLOW COVER (H ≤ 42") (FOR PIPES 42" I.D. OR LESS)

B-12
NOTES:
1. ALL PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN STRICT ACCORDANCE WITH THE LATEST REVISIONS OF A.S.T.M. DESIGNATION C-478.

2. MANHOLE BASE TO BE Poured ON UNDISTURBED EARTH OR ON 95% COMPACTED SOIL.

3. 1:3 GROUT MIX OR RAM-NEK JOINT COMPOUND TO BE USED IN ALL JOINTS.

4. MANHOLE CASTING TO BE SET TO GRADE PRIOR TO PLACING 2" ASPHALT CONCRETE.

5. ALL SLAB REINFORCING BARS TO BE #4.

6. #2 BARS BENT UP AND SPACED 6" O.C. AROUND 24" OPENING. HORIZONTAL LEG TO FAN OUT AT EQUAL SPACE TO 2" CLEARANCE AT EDGE OF SLAB.

STANDARD FLAT TOP STORM DRAIN MANHOLE
(H ≤ 42", PIPES 42" ID OR LESS)

B-13
STANDARD STORM DRAIN MANHOLE
(FOR PIPES I.D. 45" TO 60")
O.D. = OUTSIDE DIAMETER

EXISTING SURFACE

MIN. 30" COVER

MIN. 6" MIN

STRUCTURAL SECTION
REPLACE IN KIND
(MIN. 2" AC, 6" CL 2 AB)

MIN. 6" MIN

STRUCTURAL BACKFILL MATERIAL
95% COMPACTATION

O.D./4 ≥ 4"

BACKFILL MATERIAL
90% COMPACTATION

MIN. 30" COVER

MIN. 12"

STRUCTURAL BACKFILL MATERIAL
95% COMPACTATION

O.D./4 ≥ 4"

TYPE A (IN ROADWAY)

TYPE B (OUTSIDE ROADWAY)

THERE SHALL BE A MINIMUM OF TWO AND ONE-HALF FEET (30 INCHES) OF COVER OVER ALL PIPES AND CONDUITS UNLESS OTHERWISE APPROVED BY COUNTY ROAD INSPECTOR.

STRUCTURE BACKFILL MATERIAL – MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>100</td>
</tr>
<tr>
<td>NO.4</td>
<td>35-100</td>
</tr>
<tr>
<td>NO.30</td>
<td>20-100</td>
</tr>
</tbody>
</table>

BACKFILL MATERIAL – MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES IN GREATEST DIMENSION, VEGETABLE MATTER, OR OTHER UNSATISFACTORY MATERIAL.

* IN AREAS OF CEMENT TREATED BASES, THE REPLACEMENT MATERIAL SHALL CONSIST OF A MINIMUM OF 3" OF ASPHALT CONCRETE (TYPE B) OVER A MINIMUM OF 8" OF PORTLAND CEMENT CONCRETE (CLASS 3).

FOR TRENCH BACKFILL REQUIREMENTS FOR SANITARY SEWER PIPE, SEE STANDARD DRAWINGS C6 AND C7.

** ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE.

STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR STORM DRAIN PIPES

B–15
O.D. = OUTSIDE DIAMETER

STRUCTURAL SECTION – REPLACE IN KIND (MIN. 2" AC, 6" CL 2 AB)

2" AC = ASPHALT CONCRETE WITH 1/2" MAX AGGREGATE

6" AB = CLASS 2 AGGREGATE BASE

12" MIN. (TYP)

EXISTING SURFACE

STRUCTURE BACKFILL COMPACTED TO 95% RELATIVE COMPACTION OF FULL DEPTH AC

CLASS 2 CONCRETE

STRUCTURE BACKFILL COMPACTED TO 95% RELATIVE COMPACTION

6" MIN. O.D. 6" MIN.

6" MIN. O.D. / 2 MIN.

6" MIN. O.D. / 4 ≥ 4"

*ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE. PAVING JOINTS WITHIN THE BICYCLE LANE ARE NOT ALLOWED.

**95% RELATIVE COMPACTION = 95% OF MAXIMUM DENSITY USING EITHER THE STANDARD PROCTOR OR THE MODIFIED PROCTOR TEST METHODS.

PIPE CAP DETAIL

B-16
SANITARY SEWER STANDARDS
NOTES:
1. ALL STEEL TO BE 3" CLEAR.
2. LAY PIPE THRU MANHOLE WHEN POSSIBLE.
3. MANHOLE SHELF SHALL BE MORTARED TO A SLOPE OF 1:6.
4. THERE SHALL BE NO STEPS IN THE MANHOLE.
5. PREFORMED PLASTIC SEALING GASKET SHALL BE "RAM-NEK" OR APPROVED EQUAL.
6. IN THE EVENT PVC OR ABS PIPES ARE APPROVED, STANDARD WATER STOPS SHALL BE INCORPORATED INTO THE MANHOLE BASE.
7. OTHER APPLICABLE DETAIL: C-2.
8. MANHOLE THROAT LOCATION TO BE OPPOSITE THE LARGEST SHELF AREA OR AS DIRECTED BY THE ENGINEER.

SECTION A-A

SANITARY SEWER MANHOLE DETAIL
GENERAL NOTE:
FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.

* ALL MATERIALS USED SHALL CONFORM TO ASTM SPEC.
A-159-70T-G3000 OR U.S. GOVT. SPEC. QQ1-653

** MANHOLE STRAP TO BE USED IN OFF ROAD AREA WHERE
SPECIFIED BY THE ENGINEER
** U-BOLTS, NUT & STRAP SHALL BE HOT DIP GALVANIZED
AFTER FABRICATION

SECTION A-A
SANITARY SEWER MANHOLE
COVER, FRAME AND STRAP
DETAIL

SECTION B-B
SANITARY SEWER
FLUSHING INLET
COVER
COUNTY OF SAN MATEO DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY, CALIFORNIA

CLEANOUT BOX TO BE INSTALLED WITHIN 5' OF PROPERTY LINE, AND REMAIN 5' CLEAR OF ANY OBSTRUCTIONS.

WYE & RISER TO BE THE SAME PIPE MATERIAL AS THE DISTRICT MAINTAINED PORTION OF THE LATERAL, EXCEPT THAT THE UPPER MOST 3 FEET OF A VCP RISER SHALL BE CAST IRON.

BRASS CLEANOUT PLUG (ALL PIPE TYPES)

CHRISTY CONCRETE TYPE B3 METER BOX WITH DIO LID, OR BROOKS PRODUCTS NO. 3 STANDARD METER BOX BODY WITH LIGHT CONCRETE COVER, OR EQUAL.

BANDED RUBBER COUPLING

45° WYE BRANCH

TO SEWER MAIN DISTRICT MAINTAINED
TO BUILDING PROPERTY OWNER MAINTAINED

TYPICAL CLEANOUT DETAIL

DIMENSIONAL SKETCH

LID DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>L</th>
<th>W</th>
<th>T</th>
<th>APPROX WT. (LBS.)</th>
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<tr>
<td>CHRISTY DIO</td>
<td>14 1/2&quot;</td>
<td>8 11/16&quot;</td>
<td>11/16&quot;</td>
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<tr>
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<td>14 1/2&quot;</td>
<td>8 3/4&quot;</td>
<td>1&quot;</td>
<td>13</td>
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</tbody>
</table>

* PROVIDE STEEL TRAFFIC COVER FOR BOX WHEN INSTALLED IN LOCATION SUBJECT TO VEHICULAR LOADING

BOX DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>APPROX WT. (LBS.)</th>
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</thead>
<tbody>
<tr>
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<td>19&quot;</td>
<td>14 13/16&quot;</td>
<td>16 1/4&quot;</td>
<td>13 1/4&quot;</td>
<td>9&quot;</td>
<td>9 7/8&quot;</td>
<td>1&quot;</td>
<td>12&quot;</td>
<td>10 15/16&quot;</td>
<td>59</td>
</tr>
<tr>
<td>BROOKS #3</td>
<td>19 1/8&quot;</td>
<td>13 1/2&quot;</td>
<td>16&quot;</td>
<td>13 1/4&quot;</td>
<td>7 5/8&quot;</td>
<td>9 1/2&quot;</td>
<td>1&quot;</td>
<td>11&quot;</td>
<td>N.A.</td>
<td>68</td>
</tr>
</tbody>
</table>

TYPICAL SEWER CLEANOUT BOX

C–3A
**ALTERNATE CLEANOUT DETAIL**

*NOTE: ALTERNATE CLEANOUT TO BE USED ONLY WHEN PERMITTED BY UTILITY MANAGER.*
FLUSHING INLET WITH LATERAL STUB

NOTES:
1. FOR P.V.C. PIPE, LARGE 90° MANUFACTURED SWEEPS MAY BE USED IF R=36” OR GREATER.
2. MINIMUM STRUCTURAL SECTIONS SHOWN. SEE STANDARD STREET SECTION DETAILS.

FLUSHING INLET
SANITARY SEWER FLUSHING INLET DETAIL
C-4
COUNTY OF SAN MATEO DEPARTMENT OF PUBLIC WORKS

DRAWN BY: A.Z.
CHECKED BY: K.L.
APPROVED BY: A.M.S.

REDWOOD CITY, CALIFORNIA

SCALE: NONE
DATE: 2–2022
REVIS: 2–2022

VARIIES
1/16 BENDS AS REQUIRED, UNLESS OTHERWISE STIPULATED BY DISTRICT
BUILDING LATERAL

SEWER MAIN

ON NEW CONSTRUCTION—LATERAL TO BE PLACED 5’ ABOVE LOWER LOT LINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE WYE LATERAL AND PROPERTY LINE CLEANOUT SHALL BE OF THE SAME MATERIAL.

LOWER LOT LINE IN RELATION TO SEWER FLOW

4” WYE BRANCH; WHERE NO WYE HAS BEEN PROVIDED IN EXISTING SEWER, CONNECTION MAY BE MADE THROUGH SADDLE FOR MAIN 8 IN. AND LARGER (SEE DETAIL BELOW).

NOTES:
(1) SEE DETAILS C–3A AND C–3B FOR SAN MATEO COUNTY STANDARD CLEANOUT DETAIL.
(2) BEDDING AND BACKFILL MATERIAL SEE DETAILS C–6 (TYPE A OR B) OR C–7.

PLAN

STREET SURFACE

PROPERTY LINE

PIPE ENTRY 45’ MIN.
MIN. SLOPE 2%

1/16 BENDS AS REQUIRED, UNLESS OTHERWISE STIPULATED BY DISTRICT

ALTERNATIVE FOR DEEP SEWERS WITH SEWER DISTRICT APPROVAL.

PROFILE

STOPPER OR PLUG (IF BUILDING LATERAL IS NOT CONNECTED AT THE SAME TIME)

THE LATERAL SHALL BE LOWER WHERE NECESSARY TO SERVE EXISTING PLUMBING OR LOW LOTS OR WHEN DIRECTED BY THE ENGINEER.

LATERAL SIZES

A 4” LATERAL CAN BE USED FOR A SINGLE FAMILY RESIDENCE OR A SFR WITH A SECOND UNIT. A MINIMUM 6” LATERAL SHALL BE USED FOR ALL OTHER DEVELOPMENTS.

METHOD OF ATTACHING LATERAL TO EXISTING SEWER WHERE NO WYE HAS BEEN PROVIDED

1/16 BENDS AS REQUIRED

1. EXISTING MAIN < 8”: FOR MEANS BY WHICH CONNECTION IS TO BE MADE TO MAIN LINE SEE DETAIL C–8.
2. EXISTING MAIN 10”–18”: CONNECTION BY MEANS OF AN APPROVED SADDLE “TEE.”
3. EXISTING MAIN > 18”: CONNECTION SHALL BE AT A MANHOLE UNLESS OTHERWISE APPROVED BY THE SEWER DISTRICT.

SEWER LATERAL DETAIL

C–5
**NOTES:**

1. **STRUCTURE BACKFILL MATERIAL...MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:**
   
<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>35–100</td>
</tr>
<tr>
<td>No. 200</td>
<td>20–100</td>
</tr>
</tbody>
</table>

2. **BACKFILL MATERIAL... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.**

3. **ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LAKES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE, WHICHEVER IS WIDER. PAVING JOINTS WITHIN BICYCLE LANE ARE NOT ALLOWED.**

4. **FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).**
NOTES:
1. SAND....MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:
   | SIEVE SIZE | % PASSING SIEVE |
   | No. 4       | 100              |
   | No. 200     | 0–5              |

2. STRUCTURE BACKFILL MATERIAL....MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:
   | SIEVE SIZE | % PASSING SIEVE |
   | 3"          | 100              |
   | No. 4       | 35–100           |
   | No. 200     | 20–100           |

3. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

4. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE. PAVING JOINTS WITHIN BICYCLE LANE ARE NOT ALLOWED.

5. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

STANDARD TRENCH BACKFILL AND BEDDING DETAIL
FOR PVC SEWER PIPE
**TYPE A (IN ROADWAY OR SIDEWALK)**

**NOTES:**
1. SAND...MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:
   - **SIEVE SIZE**
     - **% PASSING SIEVE**
     - No. 4
     - 100
     - No. 200
     - 0–5

2. STRUCTURE BACKFILL MATERIAL...MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE
   GRADATION BY WEIGHT AS FOLLOWS:
   - **SIEVE SIZE**
     - **% PASSING SIEVE**
     - 3
     - 100
     - No. 4
     - 35–100
     - No. 200
     - 20–100

3. BACKFILL MATERIAL...MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES
   GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

4. IF PERMEABLE BACKFILL USED IN PIPE ZONE, NON–WOVEN FILTER FABRIC SHALL BE PLACED AS SHOWN
   PRIOR TO BACKFILLING ABOVE PIPE ZONE. FILTER FABRIC JOINTS SHALL BE LAPPED 6" LONGITUDENLALLY.

5. FOR INSTALLATIONS UNDER SIDEWALK SAWCUTS SHALL OCCUR AT SCORE MARKS OR CONSTRUCTION JOINTS.
   WHERE SERVICE LINE IS LOCATED WITHIN 6" OF SCORE LINE OR JOINTS, 2 SECTIONS OF SIDEWALK SHALL BE
   SAWCUT AND REPLACED IN KIND.

6. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANE, THE WIDTH OF THE
   STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE.
   PAVING JOINTS WITHIN BICYCLE LANE ARE NOT ALLOWED.

7. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF
   PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN
   TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO
   BE 17 LBS/SY (±1).

**STANDARD TRENCH BACKFILL AND BEDDING DETAIL**

**FOR WEST BAY SANITARY SEWER INSTALLATIONS**

C–7.WB
NOTE: THE NEWLY INSTALLED WYE SHALL BE OF THE SAME MATERIAL AS THE EXISTING MAIN.

PLAN
VITRIFIED CLAY PIPE (VCP)

NOTE: HORIZONTAL PIPE ENTRY ANGLE WILL BE 90° INSTEAD OF 45° (SEE LATERAL DETAIL, PLAN VIEW). VERTICAL PIPE ENTRY ANGLE SHALL BE 45° MINIMUM (SEE LATERAL DETAIL, PROFILE VIEW).

PLAN
DUCTILE IRON PIPE (DIP)

NOTE: ALL PVC, PIPE AND FITTINGS SHALL BE SDR 35 AND SHALL HAVE RUBBER GASKETED JOINTS. SOLVENT WELDED JOINTS SHALL NOT BE ALLOWED

PLAN
POLYVINYL CHLORIDE (PVC) PIPE

LATERAL CONNECTION INSTALLATION DETAIL ON EXISTING PIPE

NOTE: LATERAL CONNECTION INSTALLATION ON NEWLY INSTALLED PIPE WILL BE AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.
OVERFLOW AND BACKFLOW DEVICE DETAIL
NOTICE:
CALL SANITARY DISTRICT (650–363–4765 OR 650–363–4100) BEFORE MAKING ANY SEWER REPAIRS. ALL REPAIRS MUST BE DONE IN THE PRESENCE OF A DISTRICT INSPECTOR.

PROCEDURE:
2. TRIM SEWER PIPE TO A CLEAN CUT UNDAMAGED END, A MINIMUM OF 18" INTO TRENCH WALL. CUT PIECE OF NEW DUCTILE IRON PIPE (D.I.P.) OF EQUAL DIAMETER TO FIT SPACE BETWEEN TRIMMED ENDS WITH A MAXIMUM CLEARANCE OF 1/4 INCH AT EACH END. ALIGN PIPES AT UPSTREAM END AND SLIDE COUPLING DOWNSTREAM, CENTERING IT OVER THE JOINT. TIGHTEN COUPLING BANDS. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4"X4" PAD OF 35–45 DUOMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.
3. CONCRETE ENCASEMENT SHALL BE REQUIRED IN THE EVENT THE ADJACENT SOIL IS DISTURBED. LIMITS SHALL BE DETERMINED BY THE DISTRICT.

PROCEDURE:
2. REPAIR SHALL BE MADE AS SHOWN ABOVE WHEN CLEARANCE BETWEEN SEWER PIPE AND UTILITY PIPE IS 6" OR MORE. REPAIR MAY BE MADE WITH THE SAME TYPE OF PIPE AS THE EXISTING SEWER. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35–45 DUOMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.
3. IF EXISTING SEWER PIPE IS PVC OR ABS, USE MANUFACTURED COUPLINGS AND NOT BANDED RUBBER COUPLINGS.
4. CONCRETE ENCASEMENT SHALL BE REQUIRED IN THE EVENT THE ADJACENT SOIL IS DISTURBED. LIMITS SHALL BE DETERMINED BY THE DISTRICT.

VITRIFIED CLAY AND DUCTILE IRON SEWER PIPES
PIPE CROSSING REPAIR DETAIL
NOTICE:
CALL SANITARY DISTRICT (650–363–4765 OR 650–363–4100) BEFORE MAKING ANY SEWER REPAIRS. ALL REPAIRS MUST BE DONE IN THE PRESENCE OF A DISTRICT INSPECTOR.

SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK
BACKFILL MATERIAL (SEE NOTE 1),
FILL ENTIRE EXCAVATION OUTSIDE
TRENCH AREA MIN. 18" EACH SIDE
OF SEWER LINE

18" MIN.

1/4" MAX.
CLEAR

4"X4" RUBBER PAD
35–45 DURO. FIT
SNUGLY BETWEEN
PIPES WHEN 1" OR
LESS CLEAR

SAME PVC PIPE AS
EXISTING SEWER

NEW UTILITY PIPE

* D.I. = DUCTILE IRON

REPAIR
NOTES:
1. BACKFILL MATERIAL SHALL BE SAND AS SPECIFIED IN STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR P.V.C.
SEWER PIPE (G–7) OR OTHER MATERIAL APPROVED EQUAL BY THE SEWER DIVISION.
2. THE USE OF BANDED RUBBER COUPLINGS IS PROHIBITED.

PROCEDURE:
2. TRIM SEWER MAIN/LATERAL TO A CLEAN–CUT, UNDAMAGED END, A MINIMUM OF 18" INTO TRENCH WALL. INSTALL NEW PVC PIPE WITH MANUFACTURED CLOSURE COUPLINGS (IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS).
3. WHEN OUTSIDE DIAMETER OF THE CROSSING PIPES ARE
WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4"
PAD OF 35–45 DUOMETER RUBBER PLACED SNUGLY
BETWEEN THE PIPES.

POLYVINYL CHLORIDE (PVC) SEWER PIPE
PIPE CROSSING REPAIR DETAIL
C–11
NOTES:
1. LONGITUDINAL TRENCH SLAB REINFORCING: #4 BARS AT 10" O.C. TRANSVERSE TRENCH SLAB REINFORCING: 1-#4 EVERY 20" OF SLAB LENGTH.

2. CONCRETE CAPS SHALL NOT BE USED OVER PLASTIC PIPE.

REINFORCED CONCRETE CAP
(NON-PLASTIC PIPE ONLY)

NOTES:
1. LONGITUDINAL REINFORCING: 4-#4 BARS AS SHOWN.
   STIRRUP REINFORCING: 1-#4 BAR EVERY 24" OF CONCRETE ENCASAMENT LENGTH.

2. PLASTIC PIPE SHALL NOT BE ENCASED.

CONCRETE ENCASEMENT
(NON-PLASTIC PIPE ONLY)
SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS

GENERAL NOTES

1. ALL REFERENCES TO "DISTRICT" IN THESE GENERAL NOTES SHALL MEAN THE APPROPRIATE COUNTY SEWER OR SANITATION DISTRICT.

2. THE APPROVAL OF THESE PLANS BY THE DISTRICT SHALL BE INTERPRETED TO MEAN THAT THE SANITARY SEWER DESIGN SHOWN ON THESE PLANS MEETS THE DISTRICT’S STANDARDS. THE DISTRICT’S APPROVAL IN NO WAY GUARANTEES ANY OTHER ASPECT OF THIS PLAN OR ITS ACCURACY RELATIVE TO ACTUAL FIELD CONDITIONS.

3. THE CONTRACTOR SHALL CONTACT THE DISTRICT AT 650–363–4765 OR 650–363–4100 TWO (2) WORKING DAYS IN ADVANCE OF BEGINNING ANY SANITARY SEWER WORK. THE CONTRACTOR SHALL THEREAFTER KEEP THE INSPECTOR FOR THE DISTRICT INFORMED OF HIS SCHEDULE FOR SANITARY SEWER WORK.

4. ALL SANITARY SEWER WORK CONSTRUCTED WITHOUT INSPECTION BY THE DISTRICT SHALL BE REMOVED AND RECONSTRUCTED WITH INSPECTION.

5. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT FORTY-EIGHT (48) HOURS IN ADVANCE OF BEGINNING ANY WORK.

6. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES BEFORE BEGINNING ANY EXCAVATING.

7. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE COUNTY OR CITY BEFORE BEGINNING ANY SANITARY SEWER WORK.

8. UPON THE COMPLETION OF CONSTRUCTION A COMPLETE SET OF REPRODUCIBLE "AS-CONSTRUCTED" PLANS SHALL BE PROVIDED TO THE DISTRICT.

9. SANITARY SEWER SERVICE SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL USE WHATEVER MEANS ARE NECESSARY (E.G. PUMPS, ETC.) TO MAINTAIN THIS SERVICE DURING CONSTRUCTION.

10. PRIOR TO COMMENCING ANY SANITARY SEWER WORK IN OFF-SITE EASEMENTS THE CONTRACTOR SHALL PROVIDE THE DISTRICT WITH ADEQUATE EVIDENCE THAT ALL AFFECTED PROPERTY OWNERS (AND TENANTS WHERE APPLICABLE) WERE NOTIFIED WELL IN ADVANCE OF THE DATE WORK IN THESE EASEMENTS WAS TO BEGIN AND THAT THEY HAVE UPDATED THAT NOTICE IN A TIMELY MANNER WHEN THOSE DATES HAVE CHANGED.
SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS

PIPE AND FITTINGS

POLYVINYL CHLORIDE PIPE (PVC)

1. ALL PIPE AND FITTINGS SHALL CONFORM TO ASTM SPECIFICATIONS D3034, SDR 35.

2. ALL JOINTS SHALL BE A BELL AND SPIGOT ASSEMBLY WITH ELASTOMERIC SEALING GASKETS. SEALING GASKETS SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATION D1869. SOLVENT CEMENT JOINTS ARE NOT PERMITTED.

3. ALL PIPE ENTERING OR LEAVING A CONCRETE STRUCTURE SHALL HAVE A RUBBER WATERSTOP GASKET ATTACHED TO IT. THE WATERSTOP GASKET SHALL CONFORM TO THE PIPE MANUFACTURER’S SPECIFICATIONS. THE WATERSTOP GASKET SHALL BE SEATED FIRMLY AROUND THE PIPE EXTERIOR AND BE CAST INTO THE CONCRETE STRUCTURE.

4. ALL PIPE JOINTS SHALL BE MADE USING MANUFACTURED PVC COUPLINGS. BAND TYPE COMPRESSION COUPLINGS ARE NOT PERMITTED.

DUCTILE IRON PIPE (DIP)

1. ALL PIPE SHALL BE THICKNESS CLASS 50 (FOUR INCH PIPE SHALL BE THICKNESS CLASS 51) IN ACCORDANCE WITH ANSI SPECIFICATIONS A21.51. FITTINGS SHALL BE IN ACCORDANCE WITH ANSI SPECIFICATION A21.10.

2. JOINTS SHALL BE PUSH–ON TYPE OR MECHANICAL JOINT TYPE IN ACCORDANCE WITH ANSI SPECIFICATION A21.11. RUBBER GASKETS FOR PUSH–ON JOINTS SHALL BE IN ACCORDANCE WITH ANSI SPECIFICATIONS HEREIN.

3. PIPE AND FITTINGS SHALL HAVE A BITUMINOUS COATING OUTSIDE IN ACCORDANCE WITH ASTM SPECIFICATION A746–86, UNLESS OTHERWISE SPECIFIED HEREIN.

4. PIPE AND FITTINGS SHALL HAVE A 1/16” (ONE–SIXTEENTH INCH) CEMENT–MORTAR LINING WITH AN ASPHALTIC SEAL COAT.

VITRIFIED CLAY PIPE (VCP)

1. PIPE AND FITTINGS SHALL BE EXTRA STRENGTH, UNGLAZED, BELL AND SPIGOT, CONFORMING TO THE LATEST REVISION OF ASTM SPECIFICATION C700.

2. JOINTS SHALL BE A BELL AND SPIGOT ASSEMBLY WITH FACTORY INSTALLED FLEXIBLE COMPRESSION TYPE GASKETS MADE OF PLASTICIZED POLYVINYL OR POLYURETHANE CONFORMING TO THE LATEST REVISION OF ASTM SPECIFICATIONS C425. BAND TYPE COUPLINGS ARE NOT ALLOW.
SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS

TESTING REQUIREMENTS

1. ALL REFERENCES TO "DISTRICT" IN THESE TESTING REQUIREMENTS SHALL MEAN THE APPROPRIATE COUNTY SEWER OR SANITATION DISTRICT.

2. ALL REQUIRED CLEANING AND TESTING OF SANITARY SEWER MAINS AND LATERALS SHALL BE PERFORMED IN THE PRESENCE OF A REPRESENTATIVE OF THE DISTRICT.

3. ALL SANITARY SEWER MAINS BEING CONSTRUCTED SHALL BE CLEANED BY MEANS OF A HIGH SPEED JET RODDER PRIOR TO TESTING. VCP AND DIP SHALL BE TESTED FOR OBSTRUCTION BY BALL ROLLING.

4. ALL SANITARY SEWER MAINS BEING CONSTRUCTED SHALL PASS A LOW PRESSURE AIR TEST. EACH SECTION OF MAIN SHALL BE TESTED BETWEEN SUCCESSIVE MANHOLES. THE LOW PRESSURE AIR TEST SHALL BE CONDUCTED IN THE FOLLOWING MANNER.

A COMPRESSED AIR SUPPLY SHALL BE ATTACHED TO AN AIR FITTING ON THE MAIN AND THE AIR PRESSURE WITHIN THE LINE INCREASED TO FOUR (4) POUNDS PER SQUARE INCH. (PSI). AFTER THE AIR SUPPLY IS SECURELY TURNED OFF OR DISCONNECTED, THERE SHALL BE A TWO (2) MINUTE WAITING PERIOD BEFORE THE ACTUAL TEST PERIOD BEGINS TO ALLOW STABILIZATION OF AIR WITHIN THE MAIN.

IN NO CASE SHALL THE AIR PRESSURE WITHIN THE LINE BE LESS THAN 3.5 PSI AT THE BEGINNING OF THE TEST PERIOD. REFER TO THE CHART WHICH FOLLOWS FOR THE LENGTH OF THE TEST PERIOD. THE MINIMUM LENGTH OF TEST IS TWO (2) MINUTES. THE ALLOWABLE AIR PRESSURE LOSS DURING THE TEST PERIOD SHALL BE 1.0 PSI. A WRITTEN RECORD OF THE TEST SHALL BE SUBMITTED TO THE DISTRICT BY THE CONTRACTOR.

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE (Inches)</th>
<th>LENGTH OF LINE (feet)</th>
<th>LENGTH OF TEST (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>ALL</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0 – 300</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>300 – 370</td>
<td>2 1/2</td>
</tr>
<tr>
<td>6</td>
<td>370 AND GREATER</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>0 – 170</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>170 – 210</td>
<td>2 1/2</td>
</tr>
<tr>
<td>8</td>
<td>210 – 250</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>250 – 290</td>
<td>3 1/2</td>
</tr>
<tr>
<td>8</td>
<td>290 AND GREATER</td>
<td>3 3/4</td>
</tr>
<tr>
<td>10</td>
<td>0 – 110</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>110 – 165</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>165 – 215</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>215 AND GREATER</td>
<td>4 3/4</td>
</tr>
</tbody>
</table>
SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS

TESTING REQUIREMENTS

5. A TELEVISION INSPECTION SHALL BE MADE OF ALL SANITARY SEWER MAINS BEING
   CONSTRUCTED. IMMEDIATELY PRIOR TO TELEVISIONING THE SEWER, AN AMOUNT OF WATER
   ACCEPTABLE TO THE DISTRICT'S REPRESENTATIVE SHALL BE INTRODUCED INTO THE SEWER
   MAIN BEING INSPECTED.

   A VIDEO TAPE IN VHS FORMAT AT SP, OR EQUIVALENT, SPEED SHALL BE MADE OF THE
   INSPECTION AND DELIVERED ALONG WITH A TYPED LOG OF THE INSPECTION TO THE
   DISTRICT (SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS) FOR REVIEW AND
   ACCEPTANCE.

   SUBMITTED VIDEO TAPES SHALL INCLUDE A CONTINUOUS ON-SCREEN DISPLAY WHICH
   SEGMENT (REACH) OF THE LINE BEING VIEWED, AND A READOUT, IN FEET, SHOWING THE
   DISTANCE TO THE ENTRY POINT.

   If, in the opinion of the District, the submitted video tapes are of poor quality,
   the District may reject the video tapes and require the video inspection to be
   repeated and new video tapes submitted to the District for review and
   acceptance. All video tapes shall become the property of the District.

6. DEFLECTION TESTING OF POLYVINYL CHLORIDE (PVC) SEWER MAINS SHALL BE PERFORMED
   AFTER THE PLACEMENT OF ALL TRENCH BACKFILL. PIPE DEFLECTION SHALL BE TESTED BY
   PULLING BY HAND A GO/NO-GO MANDREL THROUGH THE INSTALLED SECTIONS OF SEWER
   MAIN.

   THE MANDREL USED SHALL HAVE A MINIMUM LENGTH EQUAL TO ITS DIAMETER. THE
   MANDREL SHALL BE CONSTRUCTED WITH A MINIMUM OF NINE (9) RIBS FABRICATED
   PARALLEL TO ITS LONGITUDINAL AXIS. BOTH THE DESIGN OF THE MANDREL AND THE
   FABRICATED MANDREL ITSELF SHALL BE INSPECTED AND APPROVED BY THE DISTRICT WELL
   IN ADVANCE OF THE DEFLECTION TEST.

   THE MANDREL DIAMETER SHALL BE 95% OF THE PIPE’S AVERAGE INSIDE DIAMETER AS
   DEFINED BY ASTM SPECIFICATION D3034, AND AS DETAILED IN THE FOLLOWING TABLE:

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE (inches)</th>
<th>AVERAGE INSIDE DIAMETER (inches)</th>
<th>MINIMUM MANDREL DIAMETER (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5.893</td>
<td>5.598</td>
</tr>
<tr>
<td>8</td>
<td>7.891</td>
<td>7.497</td>
</tr>
<tr>
<td>10</td>
<td>9.864</td>
<td>9.371</td>
</tr>
</tbody>
</table>

NOTE: AVERAGE INSIDE DIAMETER = AVERAGE OUTSIDE DIAMETER – 2(1.06)T; WHERE
T = MINIMUM WALL THICKNESS AS DEFINED BY ASTM SPECIFICATION D3034.
STANDARD DRAWINGS
FOR
PUBLIC IMPROVEMENT

STANDARD STRUCTURES
NOTES:
1. WHERE POSSIBLE, 22 FT. DISTANCES OR MULTIPLES OF 22 FT. DISTANCES SHOULD BE OBTAINED BETWEEN CURB OPENINGS. CONSTRUCT MONOLITHIC CURB, GUTTER, DRIVEWAY AND APRON. WHERE DRIVEWAYS OF SEPARATE RESIDENTIAL DWELLINGS ARE CONSTRUCTED ADJACENT TO ONE ANOTHER, DOUBLE THE DIMENSIONS SHOWN ABOVE. USE NO. 4 SMOOTH REINFORCING BAR DowELS AS SHOWN ON STANDARD CURB, GUTTER AND SIDEWALK DETAIL D-3.

2. EXISTING DRIVEWAYS MAY BE REPLACED AT EXISTING LOCATIONS, HOWEVER NEW OR NEWLY LOCATED DRIVEWAY MUST BE OFFSET A MIN OF 20 FT FROM THE END OF RETURN.

3. EXPANSION JOINT FELT, NO FOAM OR OTHER MATERIAL. FELT 1/4" – 1/2" MAX. THICKNESS.

STANDARD STRUCTURES

DRIVEWAY WIDTHS AND CURB OPENINGS

FOR SINGLE FAMILY RESIDENTIAL DWELLINGS
COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS
REDWOOD CITY
CALIFORNIA

SECTION

DRIVEWAY

CURB
SLOPE 1/4" TO 12"
CURB
5'-6"
VARIES TO PROPERTY LINE

6" CLASS 3 CONC.
6" CLASS 2 AB

PLAN

CURB
GUTTER
2'-6"

CURB
10'
OPENING

GUTTER

SINGLE DRIVEWAY CURB OPENING WIDTH--13 FT.MIN. -17 FT.MAX.
DOUBLE DRIVEWAY CURB OPENING WIDTH--21 FT.MIN. -25 FT.MAX.

ELEVATION

NOTES:
1. WHERE POSSIBLE, 22 FT. DISTANCES OR MULTIPLES OF 22 FT. DISTANCES SHOULD BE OBTAINED BETWEEN CURB OPENINGS. CONSTRUCT MONOLITHIC CURB, GUTTER, DRIVEWAY AND APRON, WHERE DRIVEWAYS OF SEPARATE RESIDENTIAL DWELLINGS ARE CONSTRUCTED ADJACENT TO ONE ANOTHER, DOUBLE THE DIMENSIONS SHOWN ABOVE. USE NO. 4 SMOOTH REINFORCING BAR DOWELS AS SHOWN ON STANDARD CURB, GUTTER AND SIDEWALK DETAIL D-3.

2. EXISTING DRIVEWAYS MAY BE REPLACED AT EXISTING LOCATIONS, HOWEVER NEW OR NEWLY LOCATED DRIVEWAY MUST BE OFFSET A MIN OF 20 FT FROM THE END OF RETURN.

3. EXPANSION JOINT FELT, NO FOAM OR OTHER MATERIAL. FELT 1/4" - 1/2" MAX. THICKNESS.

STANDARD STRUCTURES
DRIVEWAY WIDTHS AND CURB OPENINGS
FOR SINGLE FAMILY RESIDENTIAL DWELLINGS

D-1A
SPECIAL FEATURES

NOTE:
SEE D-3 FOR DOWEL DETAILS.

SECTION
DRIVEWAY

- Driveway width: 35 ft. max.
- Driveway width: 40 ft. max.
- Driveway curb opening width: 40 ft. max.
- Driveway curb opening width: 45 ft. max.

PLAN

STANDARD STRUCTURES

DRIVEWAY WIDTHS AND CURB OPENINGS
FOR COMMERCIAL AND INDUSTRIAL HWY. FRONTAGE

D-2
SECTION

DRIVEWAY

SIDewalk 5'-0" MIN.

CURB

EXPANSION JOINT

2'-6"

OPENING

CURB 10'

CURB

GUTTER

20" MIN.

CLEARANCE

① DRIVEWAY WIDTH - 35 FT. MAX.

② DRIVEWAY WIDTH - 40 FT. MAX.

PLAN

SIDEWALK

DRIVEWAY

SIDEWALK

CURB

STREET

JOINT

ELEVATION

NOTES:
① SPEED LIMIT OF 35 MPH OR LESS ALONG FRONTAGE STREET
② SPEED LIMIT OF 40 MPH OR MORE ALONG FRONTAGE STREET
③ CONSTRUCT MONOLITHIC CURB, GUTTER, DRIVEWAY AND APRON
④ USE NO.4 REINFORCING BAR DOWELS AS SHOWN ON STANDARD CURB, GUTTER & SIDEWALK DETAIL
⑤ FOR MORE THAN ONE DRIVEWAY
  A 23 FT. OR MULTIPLES OF 23 FT. BETWEEN CURB OPENINGS
  B TOTAL DRIVEWAY WIDTH—FRONTAGE
     70% OF FRONTAGE  100 FT. OR LESS
     60% OF FRONTAGE  MORE THAN 100 FT.
⑥ EXISTING DRIVEWAYS MAY BE REPLACED AT EXISTING LOCATIONS, HOWEVER NEW OR NEWLY LOCATED DRIVEWAY MUST BE OFFSET A MIN OF 20 FT FROM THE END OF return AT INTERSECTION.

STANDARD STRUCTURES

DRIVEWAY WIDTHS AND CURB OPENINGS

FOR COMMERCIAL AND INDUSTRIAL HWY. FRONTAGE

D-2A
Notes:
1. Obstructions such as poles, hydrants, street signs, utility boxes, street lights, etc., shall be located behind the sidewalk, unless otherwise specifically authorized by the Director of Public Works. A clear zone along the curb and sidewalk 18 inches in width (measured from the face of the curb) shall be kept clear and open from all obstructions. In addition, an area 3 feet in width along the sidewalk, exclusive of the curb width, shall be kept clear and open from all obstructions in compliance with the State building code (part 2, Title 24, C.A.C.).
2. For sidewalk across driveways, see standard driveway details.

Typical Sections
1. All concrete to be Class 3 concrete.
2. Minimum sidewalk thickness = 4 inches PCC.
3. Place 1/2" diameter x 18" long dowels at expansion joints as shown.
4. Place 1/2" thick felt expansion joints full width 20' on center.
5. Construct monolithic curb, gutter and sidewalk unless otherwise specifically authorized by the Director of Public Works.
6. Sub-base materials within 30" of subgrade shall be compacted to 95%.

Concrete Curb, Gutter, and Sidewalk Details
0.17’ MIN. ASPHALT CONCRETE PATH

8’ MIN.

5’ MIN.

0.42’ MIN.

1’

0.29’

PAVEMENT WIDTH VARIES

0.5’

0.5’

0.33’ CLASS 2 AGGREGATE BASE AT 95% COMPACTION

AC DIKE, 3/8” MAX AGGREGATE

A.C. DIKE AND PATH DETAIL

D–3A
COUNTY OF SAN MATEO DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY, CALIFORNIA

NOTES:
1. REINFORCEMENT SHALL CONSIST OF 6" x 6" – #10/#10 WELDED WIRE FABRIC.
2. CONCRETE ROLLED GUTTER SHALL BE INSTALLED PRIOR TO PAVING, UNLESS ENGINEER APPROVES OTHERWISE.
3. PLACE 1/2" DIAMETER x 18" LONG DOWELS, AT EXPANSION JOINTS, AS SHOWN.
4. PLACE 1/4" THICK EXPANSION JOINTS FULL WIDTH 20’ ON CENTER.
5. SUB-BASE MATERIALS WITHIN 30” OF SUBGRADE SHALL BE COMPACTED TO 95% R.C.
6. PLACE 1/4” DEEP SCORE FULL WIDTH 10’ ON CENTER, BETWEEN EXPANSION JOINTS.
7. SEE D–3 FOR DOWELING DETAIL.

2’ CONCRETE ROLLED GUTTER

NOTES:
1. OTHER IMPROVEMENTS MAY EXIST THAT WERE CONSTRUCTED PRIOR TO ADOPTION OF SPECIFIC STANDARDS.
2. OPTIONAL ADDITIONAL IMPROVEMENTS MAY BE INSTALLED AFTER OBTAINING AN ENCROACHMENT PERMIT.
   THE COST OF OPTIONAL IMPROVEMENTS WILL BE AT THE SOLE EXPENSE OF APPLICANT.

ROLLED CURB ROAD STANDARD
D–3B
NOTE:
1. Score sidewalk area with 1/4" scoring on basis of 2.5 squares.

ACCESS RAMP ON CURB RETURN

ACCESS RAMP ON TANGENT

SIDEWALK ACCESS RAMP
FOR SIDEWALKS LESS THAN 6’ WIDE

(SHEET 1 OF 3)

D-4A
SIDEWALK ACCESS RAMP
FOR SIDEWALKS LESS THAN 6' WIDE
(SHEET 2 OF 3)
GENERAL NOTES

1. CURB RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND 3'-0" DEPTH OF THE RAMP. DETECTABLE WARNING SURFACES SHALL CONFORM TO THE REQUIREMENTS IN THE STANDARD SPECIFICATIONS. DARK GRAY TRUNCATED DOMES TO BE USED AS DETECTABLE WARNING SURFACES UNLESS NOTED OTHERWISE. YELLOW TRUNCATED DOMES TO BE USED AT SCHOOL INTERSECTIONS AND WITHIN CALTRANS R.O.W.

2. TRANSITIONS FROM RAMPS TO WALKS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.

3. INSTALL SLIP DOWELS 18" O.C. AT EXPANSION JOINTS.

4. MINIMUM WIDTH OF RAMP, NOT INCLUDING RETAINING CURB, SHALL BE 4 FEET.

5. THE SURFACE OF RAMP SHALL HAVE A TRANSVERSE BROOMED SURFACE TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK EXCEPT WHEN LOCATED IN CENTER OF CURB RETURN.

6. BACKFILL MATERIAL TO BE PLACED FLUSH WITH TOP OF CURB.

7. CONSTRUCT MONOLITHIC CURB, CUTTER, AND SIDEWALK.

8. SUB-BASE MATERIAL WITHIN 2.5' OF SUBGRADE SHALL BE COMPACTED TO 95%.

9. RECONSTRUCT SIDEWALK TO NEAREST SCORE LINE AND INSTALL EXPANSION JOINT.

10. UTILITY PULL BOXES, MANHOLES, VAULTS AND ALL OTHER UTILITY FACILITIES WITHIN THE BOUNDARIES OF THE CURB RAMP WILL BE RELOCATED BY OTHERS PRIOR TO, OR IN CONJUNCTION WITH, CURB RAMP CONSTRUCTION.

11. REFERENCE COUNTY DETAIL D–3.

SIDEWALK ACCESS RAMP
FOR SIDEWALKS LESS THAN 6' WIDE
(SHEET 3 OF 3)

D–4C
VALLEY GUTTER INTERSECTION PLAN

NOTES:
1. OMIT GUTTER AROUND RETURN. SLOPE ALL PARTS OF APRON FROM CURB TO NEAREST FLOW LINE WITHIN LIMITS OF VALLEY GUTTER.
2. APRON TO BE 8" MIN. THICK CLASS 3 P.C.C. OVER MIN. 6" COMPACTED CLASS 2 A.B.
3. REINFORCEMENT SHALL CONSIST OF 6"x6"-#10/#10 WELDED WIRE FABRIC.
4. APRONS SHALL BE POURED MONOLITHIC WITH ADJACENT CURB AND GUTTER.
5. CONCRETE VALLEY GUTTER AND APRONS SHALL BE INSTALLED PRIOR TO PAVING.
6. PLACE 1/2" DIAMETER X 18" LONG SLIP DOWELS, AT EXPANSION JOINTS, AS SHOWN.
7. PLACE 1/4" THICK EXPANSION JOINTS FULL WIDTH 20' ON CENTER. DEEP SCORE AT 10' INTERVALS BETWEEN EXPANSION JOINTS.
8. WIDTH OF VALLEY GUTTER SHALL BE AS DETERMINED BY DPW.
CONNECT TO EXIST. UNDERDRAIN (SIZE VARIES) AS APPROVED BY DEPARTMENT OF PUBLIC WORKS

SLOPE DRAIN TO PROVIDE DRAINAGE TO STREET

2' WIDE REINFORCING MESH (6" x 6" x 10)

3" MIN. ID PVC PIPE SCHEDULE 40

BACK OF CURB

FACE OF CURB

GUTTER

PLATE

4" CONCRETE

TOP OF CURB

2' WIDE REINFORCING MESH — 6" x 6" x 10 (OR AS APPROVED)

3" MIN. ID PVC PIPE — SCHEDULE 40.
SEE NOTE 1.

CONCRETE SECTION UNDER DRAIN (UNDER SIDEWALK ONLY)

4" CLASS 2 AGGREGATE BASE

SECTION A-A

NOTE:
1. EDGE OF PIPES SHALL HAVE A 6" MIN. CLEARANCE FOR MULTIPLE PIPES.

DRAINAGE UNDER SIDEWALK

D–6
When existing standard curb, gutter and/or sidewalk do not exist, the driveway elevation at the future property line shall be equal to the existing centerline elevation unless future street grades have been established by the county.

** Greater slopes may cause vehicles to "bottom out"
SIGN COLOR SHALL BE WHITE LETTERING ON GREEN BACKGROUND WITH 1/2" WHITE BORDER. STREET NAME SIGNS SHALL MEET CA MUTCD LATEST REVISION GUIDELINES FOR RETROREFLECTIVITY LEVELS. USE PRISMATIC SHEETING TYPE III OR HIGHER. SIGN LENGTH SHALL BE 18" MINIMUM AND 30" MAXIMUM, UNLESS DIRECTED OTHERWISE BY DEPARTMENT OF PUBLIC WORKS.

2" I. D. GALVANIZED IRON PIPE

6"

CONCRETE (CLASS 2)

CROWN

STREET NAME SIGNS LETTERING SIZE:

SPEED LIMIT: 25 MPH OR LESS ----------- 4"
SPEED LIMIT: 40 MPH OR LESS ----------- 6"
SPEED LIMIT: MORE THAN 40 MPH--------- 8"
SUPPLEMENTARY LETTER (ST, AVE, ETC.) ---- 3"

NOTE: LOWER CASE LETTERS SHALL BE 3/4 OF SIZE SHOWN ABOVE.

H = TOTAL HEIGHT OF POLES

EMBEDMENT DEPTH FOR POLES SHALL NOT BE LESS THAN H/6 OR 2 FEET, WHICHEVER IS GREATER.
COUNTY OF SAN MATEO DEPARTMENT OF
PUBLIC WORKS
REDDWOOD CITY
CALIFORNIA

DRAWN BY: A.Z.
CHECKED BY: K.L.
APPROVED BY: A.M.S.

SCALE: NONE
DATE: 2-2022
REVISED: 2-2022

1" X 6" X 1'-6" WOOD PLATFORM (TYPICAL) OR SIZE OF BASE OF EXISTING MAIL BOX

BRACKET (2) SEE DETAIL

4" X 4" X 4'-0"
WOOD POST OR 2"
I.D. GALVANIZED STEEL PIPE

CURB & GUTTER
ROADWAY

Sidakowalk

FACE OF CURB
FACE OF MAIL BOX

7-1/2"
6"
3"
3/16"
1/16"

1/6" DIA-5 HOLES

FOR STEEL PIPE AND PLATFORM
FOR WOOD POST AND PLATFORM

BRACKET DETAILS

NOTES:
1. ALL WOOD TO BE REDWOOD, CONSTRUCTION HEART GRADE, S4S
2. ALL METAL TO BE GALVANIZED STEEL.

MAIL BOX LOCATION AND CONSTRUCTION DETAILS
NOTES:

1. MONUMENT FRAME & COVER SHALL BE PHOENIX IRON WORKS P-2001-A WITH MONUMENT COVER OR APPROVED EQUAL.

2. BRASS MARKER FURNISHED BY COUNTY, (CONCRETE SHALL BE PACKED TIGHTLY AROUND STEM OF BRASS MARKER).

3. 6" & 10" DIA. CYLINDERS TO BE FURNISHED BY CONTRACTOR.

4. CONCRETE SHALL BE CLASS 2 (RODDED OR VIBRATED).

5. MONUMENT CASTING SHALL BE HELD SECURELY IN PLACE (TO FINISH LINE & GRADE) PRIOR TO POURING THE UPPER 4-1/2 INCHES OF CONCRETE. (SUGGESTED METHOD - WIRE THE CASTING TO A 2" X 4" TIMBER 3 FEET LONG).

6. MONUMENT CASTINGS SHALL BE INSTALLED AFTER THE FINAL SURFACE COURSE HAS BEEN COMPLETED.

* FURNISHED BY PROJECT ENGINEER ON NON-COUNTY PROJECT.

1/4" WEAKENED PLANE JOINT OF 30 LBS. FELT PAPER OR APPROVED EQUAL

6" DIA. CYLINDER (SEE NOTE 3)

SECTION A-A

STANDARD STRUCTURES
MONUMENT, FRAME AND COVER
D-10
TYPICAL PARKING BAY (P-1)

( NOT FOR USE IN MONTARA/MOSS BEACH )

<table>
<thead>
<tr>
<th>AREA OF SIDEWALK FROM END OF PARKING BAY TO END OF PARKING BAY (SEE NOTE 1) (FT²)</th>
<th>AREA OF CURB FROM END OF PARKING BAY TO END OF PARKING BAY (FT²)</th>
<th>AREA OF AC FROM END OF PARKING BAY TO END OF PARKING BAY (FT²)</th>
<th>AREA OF VALLEY GUTTER FROM END OF PARKING BAY TO END OF PARKING BAY (FT²)</th>
<th>LENGTH OF CURB FROM END OF PARKING BAY TO END OF PARKING BAY (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>122.226+4L</td>
<td>15.278+0.5L</td>
<td>52.206+7L</td>
<td>67.57+3L</td>
<td>30.5564+L</td>
</tr>
</tbody>
</table>

NOTES:
1. AREA OF SIDEWALK APPROXIMATION FOR 4’ WALKWAY ONLY.
2. "L" MUST BE IN FEET
**TYPICAL PARKING BAY (P-2)**

(At Street Intersection)

(Not for use in Montara/Moss Beach)

<table>
<thead>
<tr>
<th>Area of Sidewalk From End of Parking Bay to End of Parking Bay (See Note 1) (FT²)</th>
<th>Area of Curb From End of Parking Bay to End of Parking Bay (FT²)</th>
<th>Area of AC From End of Parking Bay to End of Parking Bay (FT²)</th>
<th>Area of Valley Gutter From End of Parking Bay to End of Parking Bay (FT²)</th>
<th>Length of Curb From End of Parking Bay to End of Parking Bay (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>131.922+4L</td>
<td>16.49+0.5L</td>
<td>59.506+7L</td>
<td>76.592+3L</td>
<td>32.9804+L</td>
</tr>
</tbody>
</table>

**Notes:**
1. Area of Sidewalk Approximation for 4' Walkway Only.
2. "L" Must Be in Feet
NOTES:

1. SAND.... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>100</td>
</tr>
<tr>
<td>No. 200</td>
<td>0–5</td>
</tr>
</tbody>
</table>

2. STRUCTURE BACKFILL MATERIAL.... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
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</thead>
<tbody>
<tr>
<td>3”</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>35–100</td>
</tr>
<tr>
<td>No. 200</td>
<td>20–100</td>
</tr>
</tbody>
</table>

3. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

4. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE, WHICHEVER IS WIDER. PAVING JOINTS WITHIN BICYCLE LANES ARE NOT ALLOWED.

5. IF PERMEABLE BACKFILL USED IN PIPE ZONE, NON–WOVEN FILTER FABRIC SHALL BE PLACED AS SHOWN PRIOR TO BACKFILLING ABOVE PIPE ZONE. FILTER FABRIC JOINTS SHALL BE LAPPED 6” LONGITUDINALLY.

6. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

STANDARD TRENCH BACKFILL AND BEDDING DETAIL
FOR GAS, CABLE, FIBER OPTICS INSTALLATIONS

D–13
NOTES:

1. AC WATER BAR MUST BE ROLLED AND COMPACTED WITH A HAND-HELD ROLLER.

2. APPLY ASPHALTIC EMULSION (TYPE SS1) ON EXISTING AC PAVEMENT PRIOR TO INSTALLING AC WATER BAR. ASPHALTIC EMULSION MUST BE APPLIED ON A CLEANED SURFACE.

SECTION A-A

AC WATER BAR DETAIL

D–14
STANDARD DRAWINGS
FOR
PUBLIC IMPROVEMENT

COUNTY LIGHTING STANDARDS
COUNTY LIGHTING STANDARD

Sheet 1 of 4

E-1A
COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS
REDWOOD CITY
CALIFORNIA

DRAWN BY:  A.Z.
CHECKED BY:  K.L.
APPROVED BY:  A.M.S.

SCALE:  NONE
DATE:  2-2022
REVISED:  2-2022

1/2"-13 NC HEAVY
SQ. NUT OR EQUIV.
TAPPED BAR WELDED
TO INSIDE OF POLE

POLE BASE COVER
BASE PLATE
MIN. 1"

FUSE SPLICE
CONNECTOR
4" X 6-1/2"
HANDHOLE

ABOVE GROUND
2'-6"

FINAL PAVEMENT SURFACE

BETWEEN GROUND
6'-3" MIN

1-1/2" MIN. CONDUIT

2' DIA. CONCRETE FOOTING

FIVE #4 REINFORCING BARS WIRED
TO ANCHOR BOLTS

4 ASTM A 307 ANCHOR BOLTS 1"DIA. X 36"
X 4" WITH HEX NUT, LEVELING NUT AND 2
WASHERS FOR EACH BOLT

15' #6 SOLID BARE COPPER GROUND
CABLE ATTACHED TO POLE

COVER CABLE WITH EARTH

STREET LIGHT FOUNDATION
(ELEVATED)

COUNTY LIGHTING STANDARD
Sheet 2 of 4

E-1B
GENERAL NOTES:

1. LIGHTING STANDARD SHALL BE CALTRANS TYPE 15 AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

2. LIGHTING STANDARD SHALL BE IN PLACE AND TRULY PLUMBED BEFORE PLACING DRY PACK.

3. FOUR ASTM A-307 ANCHOR BOLTS ARE REQUIRED FOR EACH POLE. PROVIDE A HEX NUT, LEVELING NUT AND TWO WASHERS FOR EACH BOLT.

4. LUMINAIRES ARMS SHALL BE ROUND, TAPERED STEEL TUBES.

5. LUMINAIRES SHALL BE LOW PRESSURE SODIUM VAPOR AMERICAN ELECTRIC OR APPROVED EQUAL AND AS SPECIFIED IN THE SPECIAL PROVISIONS OF THE CONTRACT SPECIFICATIONS.

6. ALL LUMINAIRES SHALL BE PROVIDED WITH INDIVIDUAL TYPE IV FISHER PIERCE 105/285V OR APPROVED EQUAL PHOTO-ELECTRIC OUTDOOR LIGHTING CONTROLS, DUAL VOLTAGE 120V-240V INTEGRAL BALLASTS, AND PHILIPS LOW PRESSURE SODIUM VAPOR LAMPS AS SPECIFIED IN THE SPECIAL PROVISIONS OF THE SPECIFICATIONS.

7. LUMINAIRES SHALL BE WIRED TO A "MULTIPLE CIRCUIT".

8. EACH STREET LIGHT STANDARD SHALL BE INSTALLED WITH A CALTRANS NO. 3-1/2 STREET LIGHT PULL BOX, AND A SPLICED-FUSED CONNECTOR.

9. BONDING OF STREET LIGHT STANDARDS SHALL BE BY MEANS OF A BONDING WIRE OR BRAID ATTACHED TO ALL ANCHOR BOLTS.

10. STREET LIGHT FOUNDATION CONCRETE SHALL BE CLASS "2" AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

11. LUMINAIRES WIRING SHALL BE TWO #10 SOLID WIRES (THHN) FROM LUMINAIRES THRU THE SPLICED-FUSED CONNECTOR TO THE STREET LIGHT PULL BOX.

12. THE REFRACCTOR OR LENS FOR ALL LUMINAIRES SHALL BE MOULDED PRISMATIC POLYCARBONATE PLASTIC.
STANDARD DRAWINGS
FOR
PUBLIC IMPROVEMENT

COUNTY WATER STANDARDS
THE FOLLOWING WATER STANDARDS

ARE APPLICABLE ONLY TO THE FOLLOWING:

EAST PALO ALTO COUNTY WATERWORKS DISTRICT

COUNTY SERVICE AREA NO. 7
(LA HONDA)

COUNTY SERVICE AREA NO. 11
(PESCADERO)

FOR STANDARDS APPLICABLE TO OTHER AREAS,

PLEASE CONTACT THE APPROPRIATE JURISDICTION.
### Standard Service Connection

#### Table of Items and Descriptions:

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>MANUFACTURER &amp; No. AND/OR DESCRIPTION</th>
<th>3/4&quot; SERVICE</th>
<th>SERVICES OVER 3/4&quot;</th>
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<tbody>
<tr>
<td>1</td>
<td>SADDLE</td>
<td>DOUBLE STRAP SADDLE</td>
<td>SEE STANDARD SADDLE REQUIREMENTS</td>
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<tr>
<td>2</td>
<td>CORP STOP</td>
<td>MUELLER H – 15000</td>
<td>3/4&quot;</td>
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<tr>
<td>3</td>
<td>SERVICE PIPE</td>
<td>TYPE K SOFT COPPER</td>
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<tr>
<td>4</td>
<td>1/4 BEND</td>
<td>MUELLER H – 15530</td>
<td>3/4&quot;</td>
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<tr>
<td>5</td>
<td>CURB STOP</td>
<td>MUELLER H – 10257</td>
<td>3/4&quot;</td>
<td>AS DETERMINED BY DISTRICT</td>
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<tr>
<td>6</td>
<td>METER</td>
<td>BY DISTRICT</td>
<td>3/4&quot; x 5/8&quot;</td>
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<tr>
<td>7</td>
<td>BOX</td>
<td>CHRISTY (BOX : LID)</td>
<td>B-9 : B-9D</td>
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#### Notes:
1. Items shaded installed by water district.
2. Face of meter to be no more than 12 inches below lid.
3. Connect to main location wire, where existing.
<table>
<thead>
<tr>
<th>MAIN</th>
<th>TAP SIZE</th>
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<tbody>
<tr>
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<tr>
<td></td>
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<td>D.I. PIPE</td>
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<td>10&quot;</td>
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<tr>
<td></td>
<td>12&quot;</td>
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</tbody>
</table>

X – TAP NOT PERMITTED WITHOUT SPECIAL PERMISSION FROM THE DISTRICT ENGINEER – USE NECESSARY FITTINGS.

D – DOUBLE STRAP SADDLE REQUIRED.

ALL SERVICE SADDLES TO BE OF BRONZE WITH BRONZE STRAPS AND NEOPRENE GASKETS: SMITH BLAIR INC., MUELLER CO., OR APPROVED EQUAL. STAINLESS STEEL MAY BE USED WHEN BRONZE IS UNAVAILABLE.

SADDLES SHALL BE PROPERLY Sized FOR KIND AND SIZE OF PIPE ACCORDING TO THE MANUFACTURER’S INSTRUCTIONS.
1. RESILIENT SEAT GATE VALVE: MUELLER A2370 WITH "O"-RING SEALS AND NON-RISING STEM (CCW TO OPEN), OR EQUAL.

2. VALVE BOX: CHRISTY G5, SET 2" ABOVE GRADE IN NON-TRAFFIC AREAS.

3. C.I. COVER, INSCRIBED "WATER"

4. CONCRETE SETTING COLLAR IN PAVED AREAS (CLASS 3)

5. 6" PVC, C900, CL 200 (UNLESS SPECIFIED OTHERWISE BY THE DISTRICT ENGINEER) (LENGTH AS NECESSARY).

6. ALL BOLTS AND NUTS USED SHALL BE STAINLESS STEEL.

7. BLUE #10 LOCATION WIRE (WIRE TO EXTEND 1 FOOT ABOVE TOP OF VALVE BOX).

STANDARD GATE VALVE ASSEMBLY
1. WATER PIPE MAIN (EXISTING)
2. TAPPING SLEEVE— MUeller H—619, OR EQUAL
3. TAPPING VALVE—MUeller H—687 OR EQUAL. SIZE SAME AS LATERAL.
4. LATERAL, PVC C900, CL—200 (OR AS SPECIFIED BY DISTRICT ENGINEER)
5. VALVE BOX, CHRISTY G—5, SET 2” ABOVE GRADE IN NON—TRAFFIC AREAS
6. C.I. COVER, INSCRIBED "WATER"
7. CONCRETE SETTING COLLAR IN PAVED AREAS (CLASS—3)
8. 6” PVC PIPE C900 (LENGTH AS NECESSARY)
9. BLUE #10 LOCATION WIRE (WIRE TO EXTEND 1 FOOT ABOVE TOP OF VALVE BOX)
10. STANDARD WATER MAIN THRUST BLOCK (SEE W—11)

NOTES:
1. ALL BOLTS AND NUTS USED SHALL BE STAINLESS STEEL.
2. LOCATION WIRE TO BE CONNECTED TO MAIN LINE WIRE, WHERE EXISTING.

STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY
NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED EARTH.
2. PROVIDE MINIMUM 3 CUBIC FEET OF DRAIN ROCK AROUND DRAIN OUTLETS AT FIRE HYDRANTS.
3. ALL BOLTS & NUTS USED SHALL BE STAINLESS STEEL.
4. LOCATION WIRE TO BE CONNECTED TO MAIN LINE WIRE.
5. SEE STANDARD GATE VALVE ASSEMBLY (W-3).

STANDARD FIRE HYDRANT ASSEMBLY
LOCATION OF FIRE HYDRANT

WITH SIDEWALK

NO SIDEWALK

NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED EARTH.
2. PROVIDE MINIMUM 3 CUBIC FEET OF DRAIN ROCK AROUND DRAIN OUTLETS AT FIRE HYDRANTS.
3. ALL BOLTS & NUTS USED SHALL BE STAINLESS STEEL.
4. LOCATION WIRE TO BE CONNECTED TO MAIN LINE WIRE.

TAPPING SLEEVE, VALVE, AND FIRE HYDRANT ASSEMBLY
1. MECHANICAL JOINT TAP CAP WITH ACCESSORIES (C 110). (ALL BOLTS AND NUTS USED SHALL BE STAINLESS STEEL)

2. 2” BRASS NIPPLE 6” LONG

3. 2” MUELLER VALVE NO. H 10915

4. 2” BRASS PIPE AND FITTINGS

5. A. IN NON–TRAFFIC AREAS, USE: CHRISTY NO. B30 METER BOX WITH B30–61D STEEL LID
   B. IN TRAFFIC AREAS, USE: CHRISTY B1730 BOX WITH B1730–51JH STEEL LID

6. 2–1/2” FIRE HOSE ADAPTER AND CAP

7. 6” PVC PIPE (LENGTH AS NECESSARY)

8. BLUE # 10 LOCATION WIRE (WIRE TO EXTEND 1 FOOT ABOVE TOP OF VALVE BOX)

STANDARD 2” BLOW-OFF ASSEMBLY

W–7
REMARKS:
1. WATER PIPE
2. 2 LAYERS OF 6 MIL PLASTIC FILM, PLACED BETWEEN THE END CAP AND THRUST BLOCKING
3. STANDARD WATER MAIN THRUST BLOCKING (SEE W-11 )
4. BLUE # 10 LOCATION WIRE
5. END CAP, ROCKWELL # 482 OR EQUAL

NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED EARTH.
2. LOCATION WIRE TO BE CONNECTED TO MAIN LINE WIRE.
3. ALL BOLTS AND NUTS USED SHALL BE STAINLESS STEEL.

DEAD ENDING WATER MAINS
### Standard Fire Detector Check Assembly Detail

<table>
<thead>
<tr>
<th>ITEM</th>
<th>6&quot; CHECK</th>
<th>8&quot; CHECK</th>
<th>10&quot; CHECK</th>
<th>&gt; 10&quot; CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MAIN</td>
<td>AT LEAST 6&quot;</td>
<td>AT LEAST 6&quot;</td>
<td>AT LEAST 10&quot;</td>
<td>CONSULT DISTRICT FOR APPROVAL</td>
</tr>
<tr>
<td>2. TAPPING SLEEVE</td>
<td>MUeller H-619, OR EQUAL (SEE W-4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. TAPPING VALVE</td>
<td>MUeller A-687, OR EQUAL. SIZE EQUAL TO CHECK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PVC</td>
<td>C900 CL200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. FLANGED COUPLING ADAPTER</td>
<td>ROCKWELL TYPE 912, OR EQUAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. DETECTOR CHECK VALVE</td>
<td>MUeller A-2130-6, OR EQUAL, WITH METER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 6&quot; CLASS 2 CONCRETE BASE</td>
<td>L=36&quot; W=12&quot;</td>
<td>L=38&quot; W=12&quot;</td>
<td>L42&quot; W=18&quot;</td>
<td></td>
</tr>
<tr>
<td>8. DRAIN ROCK PAD</td>
<td>1-1/2&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. FIRE LINE</td>
<td>6&quot;</td>
<td>8&quot;</td>
<td>10&quot;</td>
<td></td>
</tr>
<tr>
<td>10. EXTENSIONS</td>
<td>2-CRISTY B40X10</td>
<td>2-CRISTY B48X10</td>
<td>2-CRISTY B52X10</td>
<td></td>
</tr>
<tr>
<td>11. VALVE</td>
<td>MUeller A2370, RESILIENT WEDGE SERIES OR EQUAL. SIZE EQUAL TO CHECK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. VAULT</td>
<td>CHRISTY B40</td>
<td>CHRISTY B48</td>
<td>CHRISTY B52</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. CENTER METER UNDER READING LID ON COVER.
2. ALL BOLTS AND NUTS SHALL BE STAINLESS STEEL.
3. CONNECT TO MAIN LOCATION WIRE, WHERE EXISTING.
4. FACE OF METER TO BE NO MORE THAN 12 INCHES BELOW LID.
NOTES:

1. SAND... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>100</td>
</tr>
<tr>
<td>No. 200</td>
<td>0–5</td>
</tr>
</tbody>
</table>

2. STRUCTURE BACKFILL MATERIAL... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3”</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>35–100</td>
</tr>
<tr>
<td>No. 200</td>
<td>20–100</td>
</tr>
</tbody>
</table>

3. BACKFILL MATERIAL... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

4. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE, WHICHEVER IS WIDER. PAVING JOINTS WITHIN BICYCLE LANES ARE NOT ALLOWED.

5. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

STANDARD TRENCH BACKFILL AND BEDDING DETAIL
FOR WATER LINE INSTALLATIONS

W–10
TYPE A (IN ROADWAY OR SHOULDER)

NOTES:
1. SAND... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4</td>
<td>100</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-5</td>
</tr>
</tbody>
</table>

2. STRUCTURE BACKFILL MATERIAL... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>% PASSING SIEVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>35-100</td>
</tr>
<tr>
<td>No. 200</td>
<td>20-100</td>
</tr>
</tbody>
</table>

3. BACKFILL MATERIAL... MATERIAL FROM EXCAVATION FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

4. IF PERMEABLE BACKFILL USED IN PIPE ZONE, NON-WOVEN FILTER FABRIC SHALL BE PLACED AS SHOWN PRIOR TO BACKFILLING ABOVE PIPE ZONE. FILTER FABRIC JOINTS SHALL BE LAPPED 6" LONGITUDINALLY.

5. FOR INSTALLATIONS UNDER SIDEWALK SAWCUTS SHALL OCCUR AT SCORE MARKS OR CONSTRUCTION JOINTS WHERE SERVICE LINE IS LOCATED WITHIN 6" OF SCREE LINE OR JOINTS, 2 SECTIONS OF SIDEWALK SHALL BE SAWCUT AND REPLACED IN KIND.

6. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE, WHICHEVER IS WIDER. PAVING JOINTS WITHIN BICYCLE LANES ARE NOT ALLOWED.

7. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

STANDARD TRENCH BACKFILL AND BEDDING DETAIL
FOR REDWOOD CITY WATER LINE INSTALLATIONS

W–10R
CASE A

CONCRETE POUR AGAINST UNDISTURBED MATERIAL: BACK AND BOTTOM

3" MIN.

CASE B

3" MIN.

CASE C

CASE D

(LARGEST MAIN GOVERNS)

CASE E

CASE F

NOTES:
1. CASE "A" IS TYPICAL FOR ALL.
2. ALL BLOCKS TO BE KEPT CLEAR OF LUGS.
3. UNSUPPORTED SURFACES TO BE FORMED.
4. ARROWS ON CASE "A", "C" & "E" INDICATE MAINS WHICH DETERMINE BEARING AREA.
5. BASED ON 150 P.S.I. PRESSURE, 1,000 P.S.F. SOIL BEARING.
6. CONCRETE SHALL BE CLASS B PER STANDARD SPECIFICATIONS.

REQUIRED BEARING AREAS – SQ. FT.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E₁</th>
<th>E₂</th>
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<td>2</td>
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<td>3</td>
<td>3</td>
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<td>2</td>
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</tr>
<tr>
<td>6&quot;</td>
<td>5</td>
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<td>24</td>
<td>24</td>
<td>17</td>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>

STANDARD WATER MAIN THRUST BLOCK

W—11
WARPPING OF LINE NOT PERMITTED. USE NECESSARY FITTINGS.

ALL BENDS

AROUND OBSTRUCTIONS

REDUCER

THRUST BLOCK TO BE PLACED TO CARRY FORCE OF LARGER PIPE.

Tee or Cross

UNDER OBSTRUCTIONS

(SUMMARY ANS L disturbed TO BE APPROVED BY DISTRICT ENGINEER)

SAND BACKFILL

NOTE: IF FLANGED FITTINGS ARE SPECIFIED, USE STAINLESS STEEL BOLTS AND NUTS.

STANDARD PIPE INSTALLATION DETAILS

W-12
NOTES:
1. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO EXPOSE AND VERIFY THE ELEVATIONS AND GRADIENTS OF THE PIPE. LOCATION OF EXISTING JOINTS, THRUST BLOCKS, AND ANY OTHER DIMENSION NECESSARY FOR THE PREPARATION, FABRICATION AND INSTALLATION OF THE DOUBLE OFFSET.
2. FABRICATION AND INSTALLATION OF THE DOUBLE OFFSET SHALL BE IN ACCORDANCE WITH APPLICABLE AMERICAN WATERWORKS ASSOCIATION (AWWA) STANDARDS AND THESE SPECIAL DETAILS.
3. CEMENT MORTAR LINING (CML) AS PER AWWA C205–85.
4. CEMENT MORTAR COATED (CMC) AS PER AWWA C205–85. USE 14 GAUGE WIRE REINFORCING, SPIRALLY WOUND AND EMBEDDED IN CENTER OF COATING.
5. USE ASTM A-234, GRADE B, WELDING FITTINGS, TO BE SAME SCHEDULE AS STEEL CYLINDER.
6. STEEL COUPLINGS AND FITTINGS USED FOR CONNECTIONS SHALL BE FUSION BONDED, EPOXY COATED, PER AWWA C213–85.

STANDARD FABRICATED DOUBLE OFFSET DETAIL