STORM DRAIN SECTION

All Storm Drains shall be constructed in accordance with the City of Morgan Hill Standard Details and designed in accordance with the City of Morgan Hill Design Standards, the Standard Specifications, State of California, Department of Transportation, Caltrans (CSS), and the Santa Clara Valley Water District (SCVWD). Materials shall conform to the American Society for Testing and Materials (ASTM), and the American National Standards Institute (ANSI), except as modified herein.

Main line storm drains shall be Class 3 R.C.P., or C.M.P. (upon approval of the City Engineer), and have no less than 30” cover from finished grade. Laterals shall be Class 3 R.C.P. (15” min.), and have no less than 24” cover from finished grade.

All R.C.P. shall be Class 3, bell and spigot, rubber gasketed, push on pipe. Tongue and groove, mortared joint pipe will not be allowed. Class 4 or Class 5 R.C.P. may be required when loading conditions vary.

After all backfill, testing and pavement restoration has been completed, the contractor shall clean and flush all storm drain mains, laterals, inlets and manholes, prior to acceptance.

TESTING (If required by the City Engineer)

If the City suspects any damage or breaks in the line, the storm drain may be subject to television inspection and/or required to pass a leakage test. The contractor shall furnish all labor, equipment, and materials needed to perform the test. A televised inspection may be required within the one year warranty period at the contractor’s expense. All defects discovered in this inspection shall be corrected by the contractor at his expense.

If the City requires a leakage test on said line, the test shall be a hydrostatic water test in accordance with CSS Section 65–1.08.

TYPES OF STORM DRAIN MAIN

REINFORCED CONCRETE PIPE (R.C.P.)

Reinforced Concrete Pipe (15” Min.), shall be in conformance with ASTM C 76 Class 3 and CSS Section 65, bell and spigot ends with rubber gasket joints.

CORRUGATED METAL PIPE (C.M.P.)

Corrugated Metal Pipe shall be in accordance with CSS Section 66 and used only upon City Engineer approval.

CAST–IN–PLACE–PIPE (C.I.P.P.)

Cast–In–Place–Pipe (concrete) shall be in accordance with CSS Section 63 and used only upon City Engineer approval.
MANHOLES

Manhole bases shall be cast in place. Precast bases may be used if approved by the City Engineer. Manholes shall be waterproofed by grouting and/or painting the interior with sodium silicate or other approved waterproofing.

INLETS

Unreinforced inlets shall be cast in place with class "A" concrete. Pre-cast inlet structures may be used subject to approval of the City Engineer. All fabricated steel shall be hot dipped galvanized after fabrication.

WORK IN DRAINAGE DISTRICT RIGHT OF WAY

All rip-rap structures, cut off walls, out fall structures, inlet structures, etc., shall be done in accordance with all applicable standards of the Santa Clara Valley Water District (SCVWD). An encroachment permit must be obtained from SCVWD prior to commencement of any work.

Contractor must provide a Letter of Acceptance, or a copy of a signed—off encroachment permit from SCVWD prior to the acceptance of the entire project.

Permits from other state and local agencies may be required.
STORM DRAIN MANHOLE
PIPE SIZES 15” TO 42”

NOTE:
1. PRECAST CONCRETE PIPE SECTIONS, ADJUSTMENT RINGS AND TAPERED SECTIONS SHALL CONFORM TO CLASS II REINFORCED CONCRETE PIPE (ASTM C 478).
2. ALL JOINTS SHALL JOINED WITH "RAMECK" AND BE SMOOTHLY FINISHED WITH WATER PROOF MORTAR.
3. THE USE OF MORE THAN 12" OF ADJUSTING RINGS TO CONFORM TO GRADE SHALL NOT BE PERMITTED.
4. CONCENTRIC MANHOLES MAY BE USED WHEN A UTILITY CONFLICT OCCURS OR WHEN APPROVED BY THE CITY ENGINEER.
5. ALL INCOMING LINES TO BE SET TO MATCH CROWNS WITH OTHER PIPES IN MANHOLE, OR AS DIRECTED BY THE CITY ENGINEER.
STORM DRAIN MANHOLE
PIPE SIZES 48" TO 72"

REDUCER DIMENSIONS

<table>
<thead>
<tr>
<th>PIPE DIA.</th>
<th>REDUCER DIA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>48&quot;</td>
<td>48&quot; x 48&quot;</td>
</tr>
<tr>
<td>54&quot;</td>
<td>60&quot; x 48&quot;</td>
</tr>
<tr>
<td>60&quot;</td>
<td>60&quot; x 48&quot;</td>
</tr>
<tr>
<td>66&quot;</td>
<td>72&quot; x 48&quot;</td>
</tr>
<tr>
<td>72&quot;</td>
<td>72&quot; x 48&quot;</td>
</tr>
</tbody>
</table>

WALL THICKNESS (A)

<table>
<thead>
<tr>
<th>PIPE DIA. (D)</th>
<th>MIN (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>48&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>54&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>60&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>66&quot;</td>
<td>11&quot;</td>
</tr>
<tr>
<td>72&quot;</td>
<td>11&quot;</td>
</tr>
</tbody>
</table>
CONSTRUCT 12"X24" OPENING TO ALLOW DRAINAGE FROM DITCH, INSTALL SAFETY REBAR AT OPENING, 2-#4 O.C.

CONCRETE V-DITCH (OR GRADED SWALE, IF APPROVED)

EDGE OF PAVEMENT

1/4" GALVANIZED STEEL PLATE

6"

48"

31"

12" MIN

3/4"X6" ANCHOR BOLTS

6"

36"

12"X24" OPENING

HORIZONTAL & VERTICAL RE-BARS EXPOSED AT OPENING FOR USE AS SAFETY BARS.

CONSTRUCT REBAR HOOP AT PIPE OPENING & TIE TO VERTICALS AND HORIZONTALS.

#4 RE-BARS @ 12" O.C.

2"

SECTION A-A

NOTES:
1. COAT INSIDE OF STRUCTURE WITH MORTAR
2. INVERT OF PIPE SHALL BE 2" ABOVE BOTTOM OF INLET TO ACT AS A SEDIMENT COLLECTION BASIN.
STANDARD FRAME AND GRATE (SEE DETAIL SD-6)

PLAN

SECTION A-A

NOTES:
1. LARGER SIZE INLETS MAY BE REQUIRED AS INDIVIDUAL PROJECT DESIGN DICTATES.
2. DIMENSIONS SHALL BE SAME AS CURB INLET (SD-5), IF DROP INLET IS TO BE USED AS A FUTURE CURB INLET.
NOTES

1. PRECAST CONCRETE CATCH BASINS MAY BE USED UPON APPROVAL OF THE CITY ENGINEER.

2. C.B. WALLS WILL BE POURED TO AN ELEVATION NOT LESS THAN 24" BELOW TOP OF CURB. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FRAME IN AND POUR THE REMAINDER MONOLITHICALLY WITH THE CURB AND GUTTER.

3. GRATE TO BE PLACED AFTER CONCRETE CURES.

4. 2" DIAMETER WEEP HOLE CONSTRUCTED AT SUBGRADE LEVEL IN EACH WALL. COVER WEEP HOLE WITH GEOTEXTILE FABRIC DURING SUB-GRADE PREPARATION, AND MORTAR AFTER FINISH PAVING.

5. WHEN CURB & GUTTER IS POURED SEPARATELY FROM REMAINING INLET (MANUALLY OR BY MACHINE), THE CONCRETE CONTRACTOR SHALL INSERT 3ea #4X12" REBAR AT EACH CONSTRUCTION JOINT AS SHOWN.
NOTES:
1. HOOD SHALL BE CAST IRON AND BE EQUAL TO PHOENIX IRON WORKS P-6002 OR SAN JOSE FOUNDRY'S "LARGE".
2. WEIGHT OF HOOD = 185 LBS (MIN).
3. CASTING SHALL BE GIVEN A HOT ASPHALT DIP.

NOTES:
1. FRAME AND GRATE SHALL BE EQUAL TO PHOENIX IRON WORKS P-6301 OR METALFAB M-1001.
2. MATERIAL TO BE HOT DIP GALVANIZED AFTER FABRICATION.
SECTION A-A

SECTION B-B

NOTES:

1. FOR PRE-CAST BASE HEIGHT, ORDER AS REQUIRED PER PLANS, EXCLUDING HOOD DIMENSION.

2. PRE-CAST BASE SHOWN IS FOR USE WITH SPECIAL HOOD AND GALLERY. PRE-CAST BASES USED WITH SD-5 CURB INLET ARE NOT ALLOWED.

3. BASE SHALL BE "SANTA ROSA" CAST PRODUCTS 1L, OR APPROVED EQUAL.

4. APPLICATION: COMBINATION PRE-CAST HOOD (SD-8), PRE-CAST BASE, AND FIBERGLASS GALLERY (SD-9), SHALL ONLY BE USED UPON CITY ENGINEER APPROVAL.
PRE-CAST CONCRETE ACCESS
COVER 26 3/4" DIA. X 2" THICK
WITH 10 GA. GALV. STEEL
LID RING

4"X4", 6-6 W.W.F.
REINFORCING

NOSING ANGLE
3 1/2"X2 1/2"X1/4"

HOLE FOR OPTIONAL
3/4" DIA. GUARD ROD

NORMAL GUTTER
FLOW LINE

24" (INTERIOR)

ISOMETRIC

GUTTER RADIUS

CURB INLET

DETAIL

OPTIONAL FIBERGLASS
GUTTER RADIUS FORM

FIELD POUR CONCRETE

PRECAST OR CAST IN
PLACE BASE
(SEE DETAIL SD-7)

TYPICAL SECTION

36"

10 GA. GALV. STEEL FRAME RING
SLOPE 1/4"/FT.

6"

24" DIA.

FIBERGLASS

LINE OF OPTIONAL GUTTER
RADIUS FORM

LINE OF BLOCKOUT
TO ACCEPT GALLERY
(SEE DETAIL SD-9)

NOTES:
1. HOOD SHOWN IS FOR USE WITH 7' OR 12' GALLERY AND SPECIAL
BASE ONLY. HOOD WITHOUT GALLERY OR BASE WILL NOT BE ALLOWED.

2. HOOD SHALL BE "SANTA ROSA CAST PRODUCTS MODEL 3AJ", OR
APPROVED EQUAL.

3. APPLICATION: COMBINATION PRE-CAST HOOD, FIBERGLASS GALLERY (SD-9),
AND PRE-CAST BASE (SD-7), SHALL ONLY BE USED UPON CITY ENGINEER APPROVAL.
NOTES:
1. GALLERY SHOWN IS FOR USE WITH SPECIAL HOOD AND BASE. USE OF THIS GALLERY WITH SD-5 IS NOT PERMITTED.
2. GALLERY SHALL BE "SANTA ROSA CAST PRODUCTS 6Y OR 12Y (IF REQUIRED), OR APPROVED EQUAL.
3. COMBINATION PRE-CAST HOOD (SD-8), BASE (SD-7) AND FIBERGLASS GALLERY SHALL ONLY BE USED UPON CITY ENGINEER APPROVAL.

SECTION A-A (TYP)

PLAN VIEW

TEMPORARY SUPPORTS REMOVE AFTER INSTALLATION
CURB INLET ANGLE NOSING

FRONT VIEW

3/4" DIA., X 16" ANCHOR BOLT
NOTES

1. IT SHALL BE THE PROPERTY OWNER'S RESPONSIBILITY TO MAINTAIN THIS DRAINAGE STRUCTURE.
2. MULTIPLE DRAINLINES MAY BE INSTALLED PROVIDED THAT THERE IS A MINIMUM OF 6" BETWEEN ANY DRAIN LINES, AND DRAIN LINES SHALL NOT BE INSTALLED WITHIN 6" OF ANY EXPANSION AND/OR CONTROL JOINTS.
3. THIS DRAINAGE STRUCTURE SHALL ONLY BE INSTALLED WITHIN THE PROPERTY FRONTAGE OF THE SUBJECT PROPERTY ONLY.
4. PROPERTY OWNER SHALL OBTAIN AN ENCROACHMENT PERMIT TO INSTALL THIS DRAINAGE STRUCTURE.
5. IN CASES WHERE SIDEWALK DOES NOT EXIST, CONCRETE SHALL BE PLACED OVER PIPE(S) AT A MINIMUM THICKNESS OF 2 1/2" (AS SHOWN).