UNIFORM CONSTRUCTION STANDARDS

ALL CITIES AND COUNTY OF MARIN

ADOPTED JULY, 2018

__________________________  6/27/18
RAUL ROJAS,
DIRECTOR OF PUBLIC WORKS
DATE
BOARD OF SUPERVISORS OF THE COUNTY OF MARIN

RESOLUTION NO. 70-16

RESOLUTION ADOPTING THE "UNIFORM CONSTRUCTION STANDARDS" OF THE CITIES OF MARIN AND COUNTY OF MARIN

WHEREAS, an organization comprised of the City Engineers of the Cities of Marin County and a representative of the Marin County Department of Public Works has formed an organization called The Marin Public Works Association; and

WHEREAS, It is in the interest of all of Marin County to use Uniform Construction Standards in the construction of roadway and subdivision improvements; and

WHEREAS, the Marin County Public Works Association has prepared a set of Uniform Construction Standards.

NOW, THEREFORE, BE IT RESOLVED, that the Marin County Board of Supervisors adopt the "Uniform Construction Standards" of the Cities of Marin and County of Marin.

BE IT FURTHER RESOLVED, that the Director of Public Works may make additions, deletions and revisions to said Uniform Construction Standards in order to maintain said Uniform Construction Standards updated and in conformance with any additions, revisions and deletions approved by the Marin County Public Works Association.

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of the County of Marin, State of California, held on the 20th day of January, 1970, by the following vote:

AYES: SUPERVISORS William A. Gnoss, Louis H. Baar, Peter R. Arrigoni, Michael Wornum, John P. McInnis

NOES: None

ABSENT: None

ATTEST: [Signature]

CHAIRMAN OF THE BOARD OF SUPERVISORS [Signature]
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1. EXISTING CONCRETE SHALL BE REMOVED AT EXPANSION OR WEAKENED PLANE JOINTS OR AT SAWCUTS AS FIELD MARKED BY AGENCY ENGINEER. SAWCUTS MUST GO ENTIRELY THROUGH CONCRETE.

2. FOR NEW DEVELOPMENT, NO UTILITY BOXES OR POLES WILL BE PERMITTED IN THE SIDEWALK AREA WITHOUT THE PRIOR WRITTEN APPROVAL OF THE AGENCY ENGINEER.

3. WHERE UNDERCUT SUBGRADE OR UNSUITABLE SUBGRADE MATERIAL IS ENCOUNTERED, THE AGENCY ENGINEER MAY REQUIRE REMEDIAL WORK TO BE DONE, INCLUDING OVER EXCAVATION AND BACKFILLING WITH CRUSHED ROCK AND, WHEN DIRECTED BY THE ENGINEER, PLACING GEOTEXTILE FABRIC BENEATH THE NEW CONCRETE SECTION.

4. SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% RELATIVE COMPACCTION IN THE TOP SIX INCHES.

5. NEW WORK SHALL MATCH EXISTING AS CLOSELY AS POSSIBLE IN FINISH, SCORING AND COLOR. FOR NEW INSTALLATIONS PLACED ADJACENT TO EXISTING, 2LB. DAVIS BLACK #8084 (OR EQUIVALENT) PER CU. YD. CONCRETE SHALL BE ADDED TO MIX.

6. EXCEPT WHERE SPECIFIED OTHERWISE HEREIN, NO ADMIXTURES SHALL BE USED WITHOUT THE PERMISSION OF THE AGENCY ENGINEER.

7. FORMS SHALL MEET GRADE AND FORM FACES SHALL NOT VARY FROM THE DIMENSIONS SHOWN BY MORE THAN 1/2 INCH.

8. NO CONCRETE SHALL BE PLACED UNTIL THE AGENCY ENGINEER HAS INSPECTED AND APPROVED FORMS AND SUBGRADE/BASE.

9. SUBGRADE/BASE SHALL BE THOROUGHLY WETTED IMMEDIATELY PRIOR TO PLACING CONCRETE.

10. CONCRETE SHALL BE A MINIMUM CLASS B (5 SACK MIX) WITH 1 INCH MAXIMUM AGGREGATE FROM AN APPROVED MIXING PLANT. NO BAGGED MIX IS PERMITTED.

11. CONCRETE SHALL HAVE A SLUMP OF NOT MORE THAN FOUR INCHES.

12. FOR SIDEWALKS AND DRIVEWAY APPROACHES, 1/4 INCH DEEP SCORE LINES SHALL BE PLACED AT FOUR FEET ON CENTER OR AS DIRECTED BY THE AGENCY ENGINEER.

13. WEAKENED PLANE JOINTS AT LEAST 3/4" DEEP SHALL BE PLACED AT A MINIMUM 16 FEET ON CENTER EXCEPT FOR SIDEWALKS AND DRIVEWAY APPROACHES WHICH SHALL BE A MINIMUM 5 FEET ON CENTER.

14. 3/8 INCH THICK EXPANSION JOINTS SHALL BE PLACED ON BOTH SIDES OF DRIVEWAY APPROACHES, AT CURB AND SIDEWALK RETURN POINTS, DRAINAGE STRUCTURES AND OTHER LOCATIONS AS SHOWN ON THE PLANS.

15. ALL EXPOSED EDGES SHALL BE ROUNDED WITH 1/2 INCH RADIUS TOOL.

16. ALL FLAT SURFACES SHALL BE LIGHT BROOM FINISHED UNLESS OTHERWISE SPECIFIED BY AGENCY ENGINEER.

17. CURBS, SIDEWALKS AND DRIVEWAY APPROACHES SHALL HAVE FORMS REMOVED AND BE BACKFILLED WITHIN SEVEN DAYS AFTER POURING.

18. THE DESIGNATED DIMENSIONS AND SLOPES MAY BE MODIFIED TO ACCOMMODATE EXISTING ADJACENT FACILITIES SUBJECT TO THE APPROVAL OF THE AGENCY ENGINEER.
TYPE "A" CURB
* 3% MAX. AT CURB RAMPS

TYPE "C" CURB

TYPE "E" CURB

TYPE "F" CURB

TYPE "B" SIDEWALK
POURED SEPARATE FROM CURB

NOTES:
1. SEE DRAWING NO. 100 FOR GENERAL REQUIREMENTS.
2. ※ 8" CURB HEIGHT UNLESS 6" HEIGHT APPROVED BY AGENCY ENGINEER.

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN
CURB, GUTTER
AND SIDEWALK
DETAILS

MARCH 2018
DWG. NO. 105
REV. DATE BY
NOTE:
1. SEE DWG. NO. 100 REGARDING CONCRETE REQUIREMENTS.
2. ASPHALT CONCRETE SHALL BE HELD 1/4" HIGH AT EDGE OF CONCRETE.
APRON OFFSET SIDEWALK

R/W LINE VARIES

SIDEWALK

2% MIN.

4' MIN.

30' MAX
12' MIN

Sidewalk

2% MIN.

2% MAX.

2% MIN.

SIDEWALK

PLAN

PROJECTED TOP
OF CURB

3/4"

1:10

2% MAX (1:50)

4' MIN.

4' MIN.

R/W (VARIES)

SECTION A—A

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN

OFFSET
SIDEWALK
AT DRIVeway

MARCH
2018

DWC. NO.
120

REV. DATE BY
20' MIN. AND 32' MAX.
HIGH VOLUME DRIVEWAY
(24' MIN. DESIRABLE)

SIDEWALK

4'

DRIVEWAY TRANSITION PCC OR AC CONSTRUCTION

2% MAX.

SIDEWALK

8'

FLOW LINE

WEAKENED PLANE JOINTS

APPROACH & GUTTER SECTION TO BE 8" THICK P.C.C.
WIDTH VARIES: 28" TO 40" MAX.

NOTES:
1. SEE DRAWING NO. 100 FOR GENERAL NOTES.
2. ONLY TO BE USED WHEN AUTHORIZED BY AGENCY ENGINEER.
1. SEE DRAWING NO. 100 FOR GENERAL NOTES.

2. THIS DRIVEWAY STANDARD MAY ONLY BE USED WHERE ANY EXISTING SIDEWALKS (OR PATHWAYS) ARE LOCATED MORE THAN 48" FROM BACK OF CURB (OR EDGE OF PAVEMENT).
NOTE:

1. SUBJECT TO APPROVAL OF AGENCY ENGINEER, INDICATED
   DRIVEWAY CONFIGURATION MAY BE MODIFIED TO BETTER
   ACCOMMODATE TOPOGRAPHIC CONSTRAINTS.

2. CULVERT SHALL BE A MINIMUM 15 INCH DIAMETER AND BE
   PLACED IN LINE WITH ROADSIDE DITCH.

3. FOR CMP* OR HDPE* CULVERTS, A HEADWALL IS REQUIRED AT
   EACH END. FOR RCP* CULVERTS, HEADWALLS ARE
   RECOMMENDED BUT NOT REQUIRED.

4. MINIMUM 1 FOOT COVER IS REQUIRED FOR CMP*, HDPE* OR
   CLASS III RCP CULVERT. MINIMUM 6 INCH COVER IS REQUIRED
   FOR CLASS IV RCP CULVERT.

5. RADIUS MAY BE SMALLER THAN 20' IF REQUIRED TO MEET
   FIELD CONDITIONS AND APPROVED BY AGENCY ENGINEER.

*CMP – CORRUGATED METAL PIPE
*HDPE – HIGH DENSITY POLYETHYLENE PIPE
*RCP – REINFORCED CONCRETE PIPE
NOTES:
1. REFERENCE LINE IS FROM FACE OF DEPRESSED CURB OR EDGE OF PAVEMENT WHERE NO CURB EXISTS.
2. FOR MAXIMUM GRADE BREAKS, SEE CHART.
3. MAXIMUM GRADIENT MEASURED ALONG THE DRIVEWAY CENTERLINE SHOULD NOT BE STEEPER THAN 18% AND SHALL NOT BE STEEPER THAN 25%.
4. SEE DWG. NOS. 110, 115, 120, 125, 130 AND 135 FOR DRIVEWAY RAMP DETAILS.
5. IF PAVEMENT CROSS SLOPE EXCEEDS 4%, A MODIFIED DRIVEWAY PROFILE SHALL BE USED WITH THE SLOPE OF THE DRIVEWAY RAMP REDUCED SUCH THAT THE DIFFERENCE IN SLOPE OF THE DRIVEWAY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE ROADWAY 5' FROM GUTTER LINE SHALL NOT EXCEED 15%. REDUCE DRIVEWAY RAMP SLOPE, NOT THE GUTTER SLOPE. OTHER DIMENSIONS SHALL BE MODIFIED AS APPROVED BY THE AGENCY ENGINEER.
6. THE GRADE AT 5 SHALL BE A MINIMUM OF 0.5' ABOVE REFERENCE LINE.
7. SPECIAL ENGINEERING DESIGNS MAY BE REQUIRED FOR UNIQUE SITUATIONS.
8. THE GEOMETRIC LAYOUT OF A PROPOSED DRIVEWAY SHALL BE REVIEWED AND APPROVED BY THE AGENCY ENGINEER PRIOR TO CONSTRUCTION.
NOTE:
1. CONCRETE SHALL BE CLASS "B" (5 SACK MIX).
2. PLASTIC PIPE IS NOT ALLOWED.
3. WHERE UNDERDRAINS ARE INSTALLED AT LOCATIONS WHERE CURB, GUTTER AND SIDEWALK IS EXISTING, REMOVE 20" OF CURB AND 1 SQUARE OF SIDEWALK BETWEEN SAW-CUTS. REPLACE CURB AS SHOWN IN SECTION A-A ABOVE.
4. NO CONCRETE SHALL BE PLACED PRIOR TO FORM INSPECTION BY THE AGENCY ENGINEER.
5. ALL CONCRETE SHALL BE BROOM FINISHED.
6. IF REQUIRED BY AGENCY ENGINEER FOR HEAVY FLOWS.
NOTES:

1. CONCRETE FOR FOOTING TO BE CLASS "A" (6 SACK 3000 PSI) WITH 3/4" AGGREGATE AND 4 INCH MAX. SLUMP.
2. FILL ALL CELLS WITH 7 SACK CONCRETE WITH 3/8" AGGREGATE OR 3:1 MORTAR.
3. DOWELS SHALL BE SAME IN SIZE AND SPACING AS V-BARS. THEY SHALL PROJECT 40 BAR DIAMETERS, 24 INCH MIN. INTO THE CELLS AND EXTEND TO THE TOE OF FOOTING. LAPPING BARS SHALL BE TIED.
4. WALLS SHALL NOT BE BACKFILLED UNTIL 7 DAYS AFTER CELLS ARE FILLED.
5. WALLS OVER 100' LONG SHALL HAVE VERTICAL EXPANSION JOINTS. WALLS OVER 50' LONG SHALL HAVE VERTICAL CONTRACTION JOINTS. SEE AGENCY ENGINEER FOR DETAILS.
6. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND STEEL HAVE BEEN INSPECTED AND APPROVED BY THE AGENCY ENGINEER.
7. BLOCKS SHALL BE GRADE N OR BETTER (f'c=1,500 PSI).
8. NO FRONT FACE WEEP HOLES ALLOWED IF SIDEWALK OR PAVEMENT SLOPES AWAY FROM WALL.
9. SUBJECT TO THE APPROVAL OF AGENCY ENGINEER, DESIGN FOR DRAINAGE CONVEYANCE BEHIND WALL MAY BE MODIFIED TO UTILIZE PREFABRICATED DRAINAGE DEVICES.
10. CEMENT MORTAR MUST MEET A MINIMUM COMPRSSIVE STRENGTH OF 1,800 PSI IN 28 DAYS. THE USE OF PLASTIC CEMENT IS NOT PERMITTED FOR MORTAR.
11. MATERIALS FOR BRICKS SHALL BE CEMENT BLOCK CONSTRUCTION.
CROSS SECTION

(No Scale)

H A B T V-BARS X-BARS
FT.-IN. IN. FT.-IN. IN. 3"-4" 8" 2'-4" 9" NO. 3 AT 32" NO. 3 AT 24"
4'-0" 10" 2'-9" 9" NO. 4 AT 32" NO. 3 AT 24"

ELEVATION

(No Scale)

NOTES:
1. CONCRETE FOR FOOTING TO BE CLASS "A" (6 SACK 3000 PSI) WITH 3/4" AGGREGATE AND 4 INCH MAX. SLUMP.
2. FILL ALL CELLS WITH 7 SACK CONCRETE WITH 3/8" AGGREGATE OR 3:1 MORTAR.
3. DOWELS SHALL BE SAME IN SIZE AND SPACING AS V-BARS. THEY SHALL PROJECT 40 BAR DIAMETERS, 24" MIN., INTO THE CELLS AND EXTEND TO THE TOE OF FOOTING.
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6. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND STEEL HAVE BEEN INSPECTED AND APPROVED BY THE AGENCY ENGINEER.
7. BLOCKS SHALL BE GRADE N OR BETTER (f'm=1,500 PSI).
8. NO FRONT FACE WEEP HOLES ALLOWED IF SIDEWALK OR PAVEMENT SLOPES AWAY FROM WALL.
9. SUBJECT TO THE APPROVAL OF AGENCY ENGINEER. DESIGN FOR DRAINAGE CONVEYANCE BEHIND WALL MAY BE MODIFIED TO UTILIZE PREFABRICATED DRAINAGE DEVICES.
GENERAL NOTES:

1. LUMBER SHALL BE ROUGH DOUGLAS FIR No. 1 PRESSURE TREATED, AS APPROVED BY THE ENGINEER.

2. PRESSURE TREATMENT SHALL MEET THE FOLLOWING: 0.40 pcf ACQ & CCA–C, 0.41 pcf CBA–A, 0.21 pcf CA–B.

3. NAILS/METAL FASTENERS SHALL BE HIGH QUALITY CLASS G–185 HOT DIPPED GALVANIZED (ASTM A153 OR A653), 304 OR 316 STAINLESS STEEL, OR OTHER ACCEPTABLE CORROSION RESISTANT MATERIAL.

4. ALL CUTS, HOLES AND INJURIES (SUCH AS ABRASIONS AND NAIL HOLES) SHALL BE FIELD TREATED WITH APPLICATIONS OF PRESERVATIVES IN ACCORDANCE WITH AWPA STANDARD M4.

5. CONCRETE FOR POST SUPPORT SHALL BE CLASS C (4 SACK MIX) WITH 1" MAX. AGGREGATE.

6. ALL SIZES AND DEPTHS ARE MINIMUM.
TOP OF SOLDIER PILES SHALL BE SAWCUT LEVEL WITH TOP OF LAGGING.

2"x4" REDWOOD CAP
CONSTRUCT BLOCKING AS NECESSARY TO HOLD LAGGING IN PLACE.

CONFORM WITH ROTARY GRINDER TO MATCH EX. PAVEMENT.
PAVEMENT REPAIR PER UCS DWG. 380.

SOLDIER PILE SECTION AND LENGTH VARIES. EMBEDMENT DEPTH PER STRUCTURAL DESIGN.

ROW

REPLANT SLOPE TO MATCH EXISTING

11 MAX.

MAINTAIN 6" FREEBOARD AS SHOWN; SLOPE TO CATCH BASINS.
BLANKET TO EXTEND TO TOE OF SLOPE.
CONSTRUCT 12" THICK SOIL CAP, COMPACT TO 90% RELATIVE COMPACTION (ASTM D-1557)
NO WORK OUTSIDE RIGHT OF WAY.
COMPACT APPROVED SOIL BACKFILL TO 90% RELATIVE COMPACTION (ASTM D-1557)
SLOPE PERFORATED PIPE (OPTIONAL) AT 2% MINIMUM SLOPE TO NEW DISCHARGE SYSTEM.

CONCRETE FILLED PIER, PER DESIGN BY PROFESSIONAL ENGINEER.

12" WIDE DRAIN BLANKET THAT SHALL DRAIN INTO PERFORATED, 4" SCHEDULE 40 PVC PIPE.
DRAIN BLANKET TO CONSIST OF GEOTEXTILE FABRIC AROUND 3/4" CRUSHED ROCK.
DAYLIGHT PIPE AT BOTTOM OF SLOPE.

SECTION
SCALE: N.T.S.

LAGGING TABLE:
FOR 3' DEPTH & LESS USE 2"x12" PRESSURE TREATED DOUGLAS FIR (PTDF).
FOR 3' TO 4' DEPTH USE 3"x12" PRESSURE TREATED DOUGLAS FIR (PTFD).
PRESSURE TREATMENT SHALL MEET THE FOLLOWING: 0.40 pcf ACQ & CCA-C,
0.41 pcf CBA-A, 0.21 pcf CA-B.

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<td>4'</td>
<td>5'</td>
<td>W5 x 16</td>
<td>3&quot; x 12&quot;</td>
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NOTE:
The AGENCY ENGINEER MAY MODIFY THE ABOVE SCHEDULE.

CORROSION PROTECTION:
ALL I-BEAMS SHALL BE COATED WITH COAL TAR EPOXY OR APPROVED EQUAL PER MFG. SPECIFICATIONS.

PER CALTRANS SPEC. 19-3.03 (E) (3)
PLACE AND COMPACT BACKFILL BEHIND THE LAGGING AT LEAST 5 FEET ABOVE THE LEVEL OF GROUND ANCHORS BEFORE DRILLING FOR THE ANCHORS. PLACE AND COMPACT THE REMAINING BACKFILL BEHIND THE LAGGING AFTER THE ANCHORS ARE DRILLED, STRESSED, AND GROUTED.
NOTE:
1. ALL WOOD SHALL BE PRESSURE TREATED DOUGLAS FIR (PTDF) (NO.1 GRADE).
   POSTS — 0.40 pcf ACQ & CCA-C, 0.41 pcf CBA-A, 0.21 pcf CA-B
   BOARDS — 0.25 pcf ACQ & CCA-C, 0.20 pcf CBA-A, 0.10 pcf CA-B
2. ALL EXPOSED SURFACES SHALL BE PAINTED WITH 1 PRIME COAT AND 2 COATS OF EXTERIOR WHITE WHERE REQUIRED BY LOCAL AGENCY.
3. ALL POSTS SHALL BE SET PLUMB IN CLASS "C" (4 SACK) CONCRETE.
4. BOARDS AND POST TOPS SHALL BE LEVEL.
5. ALL FASTENERS SHALL BE 304 OR 316 STAINLESS STEEL, CLASS G-185 HOT-DIPPED GALVANIZED (ASTM A153 OR A653) OR POLYESTER-COATED.
NOTES:
1. SEE DRAWING NO. 175 FOR GENERAL NOTES AND STANDARD BARRICADE.
2. NAILS SHALL BE 16d.
3. HINGE AND HASP BOLTS SHALL BE THRU BOLTS, ¼"
4. SEE TYPE A BARRICADE (DRAWING NO. 175) FOR PRESSURE TREATMENT AND FASTENER REQUIREMENTS.
1. POSTS AND RAILS SHALL BE ROUGH DOUGLAS FIR NO. 1, PRESSURE TREATED, OR REDWOOD NO.1, OR BETTER.

2. SEE TYPE A BARRICADE (DRAWING NO. 175) FOR POST BASE REQUIREMENTS.

3. SEE TYPE A BARRICADE (DRAWING NO. 175) FOR PRESSURE TREATMENT AND FASTENER REQUIREMENTS.

4. ALL BOLTS SHALL BE TORCHED OR BALLPEENED TO REDUCE VANDALISM.
CURB RAMPS: CURB RAMPS SHALL COMPLY WITH CALTRANS STANDARD PLANS A88A AND A88B, BUT MAY BE MODIFIED BY THE AGENCY ENGINEER TO FIT FIELD CONDITIONS. THE LATEST UPDATED PLANS MAY BE DOWNLOADED FROM THE COUNTY UCS WEBSITE:

HTTP://WWW.CO.MARIN.CA.US/STANDARDS.CFM

OR FROM THE CALTRANS WEBSITE:

HTTP://WWW.DOT.CA.GOV/HQ/ESC/0E/PROJECT_PLANS/HTM/06_PLANS_DISCLAIM_US.HTM.

PEDESTRIAN PATH–OF–TRAVEL: A SAFE AND ACCESSIBLE PEDESTRIAN PATH–OF–TRAVEL SHALL BE MAINTAINED AT ALL TIMES BY THE CONTRACTOR DURING CONSTRUCTION. WHERE NECESSARY, TEMPORARY PATH OF TRAVEL IMPROVEMENTS MAY INCLUDE, BUT IS NOT LIMITED TO, TEMPORARY CURB RAMPS, PROTECTED WALKWAYS WHEN PEDESTRIANS ARE DIRECTED INTO THE VEHICLE TRAVEL WAY, AND SIGNAGE TO REDIRECT PEDESTRIAN TRAFFIC. ALL TEMPORARY MEASURES SHALL BE COMPLIANT WITH STATE AND FEDERAL DISABLED ACCESS REQUIREMENTS, INCLUDING THE AMERICANS WITH DISABILITIES ACT AND THE CALIFORNIA BUILDING CODE, TITLE 24. PEDESTRIAN PATH OF TRAVEL DETOURS SHALL NOT CREATE SIGHT DISTANCE CONSTRAINTS FOR MOTORISTS. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL TEMPORARY PEDESTRIAN PATH IMPROVEMENTS. THE CONTRACTOR SHALL SUBMIT PROPOSED TEMPORARY PEDESTRIAN PATH OF TRAVEL FOR APPROVAL PRIOR TO CONSTRUCTION.

FOR EXAMPLES OF MAINTAINING SAFE AND ACCESSIBLE PEDESTRIAN ACCESS THROUGH CONSTRUCTION SITES, SEE THE COUNTY UCS WEBSITE:

HTTP://WWW.CO.MARIN.CA.US/DEPTS/PW/MAIN/INDEX/PED_ACCESS.HTM

OTHER EXAMPLES MAY BE FOUND AT:

HTTP://WWW.SFGOV.ORG/SITE/MOD_PAGE.ASP?ID=42353
HTTP://SAFETY.FHWA.DOT.GOV/WZ/DOCS/WZPEDEST.PDF
HTTP://WWW.ACCESS–BOARD.GOV/PROWAC/COMMREPT/PART3–03.HTM
CATCH BASIN, TURNING STRUCTURE, MANHOLE AND DROP INLET NOTES

1. CONCRETE SHALL BE CLASS "A" (6 SACK MIX) UNLESS OTHERWISE NOTED. STRUCTURE TOPS CAST WITH ADJACENT CURB/SIDEWALK MAY BE CLASS "B" CONCRETE.

2. BASE SHALL BE PLACED AGAINST UNDISTURBED EARTH, SIDES MAY BE FORMED OR PLACED AGAINST UNDISTURBED EARTH.


4. EXPANSION JOINTS SHALL BE PLACED THROUGH CURB AND SIDEWALK AT BOTH SIDES OF CATCH BASINS AND SHALL BE LIMIT OF PAYMENT FOR CURB AND GUTTER. UNIT PRICES FOR DRAINAGE STRUCTURES SHALL INCLUDE CURB, GUTTER AND SIDEWALK POURED WITH DRAINAGE STRUCTURE.

5. NO CONCRETE SHALL BE PLACED PRIOR TO FORM AND STEEL APPROVAL BY THE AGENCY ENGINEER.

6. SEE DRAWING NO. 215 FOR STEP (AS REQUIRED BY AGENCY ENGINEER) AND MANHOLE CASTING DETAIL.

7. SEE DRAWING NO. 220 FOR CATCH BASIN GRATE DETAIL.

8. WALL THICKNESS, REINFORCING, AND STEP (AS REQUIRED BY AGENCY ENGINEER) REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TABLE BELOW, UNLESS OTHERWISE INDICATED BY THE PROJECT PLANS OR DIRECTED BY THE AGENCY ENGINEER.

9. PLACE 2” WEEPHOLES AS REQUIRED BY THE AGENCY ENGINEER.

10. EQUIVALENT PRECAST STRUCTURES MAY BE SUBSTITUTED AS APPROVED BY THE AGENCY ENGINEER.

11. WALL THICKNESS SHALL NOT EXCEED 10” ON ANY STRUCTURE.

12. PRECAST INLETS AND MANHOLES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS AND BE DESIGNED TO WITHSTAND H–20 LOADING.

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>WALL THICKNESS (SEE NOTE #11)</th>
<th>WALL REINFORCEMENT</th>
<th>STEPS REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 3’</td>
<td>6”</td>
<td>NO. 4 AT 12” BOTH WAYS</td>
<td>NO</td>
</tr>
<tr>
<td>LESS THAN 3’</td>
<td>8”</td>
<td>NO OUTSIDE ROADWAY. NO. 4 AT 12” BOTH WAYS WITHIN OR ADJACENT TO ROAD.</td>
<td>NO</td>
</tr>
<tr>
<td>3’ TO 8’</td>
<td>6”</td>
<td>NO. 4 AT 12” BOTH WAYS</td>
<td>AS REQUIRED BY THE AGENCY ENGINEER</td>
</tr>
<tr>
<td>OVER 8’</td>
<td>8”</td>
<td>NO. 4 AT 12” BOTH WAYS</td>
<td>AS REQUIRED BY THE AGENCY ENGINEER</td>
</tr>
</tbody>
</table>

UNIFORM STANDARDS
ALL CITIES AND COUNTY OF MARIN

NOTES FOR CATCH BASIN, MANHOLE, DROP INLET & TURNING STRUCTURE

MARCH 2018
DWG. NO. 200
NOTES:

1. BASE SHALL BE CLASS "B" (5 SACK) CONCRETE PLACED AGAINST UNDISTURBED EARTH.

2. CONDUIT SHALL BE LAID THROUGH MANHOLE WHENEVER POSSIBLE.

3. CONCRETE CHANNELS SHALL BE BRUSH FINISHED.

4. PRECAST BARREL AND ECCENTRIC CONE SHALL CONFORM TO ASTM SPECIFICATION C-478 EXCEPT THAT TYPE II CEMENT SHALL BE USED.

5. MORTAR JOINTS SHALL BE 2 PARTS SAND TO 1 PART CEMENT.

6. MANHOLE FRAME MAY BE ADJUSTED EITHER BEFORE OR AFTER PAVING, BUT THE FINAL GRADE OF THE FRAME MUST MATCH THAT OF THE PAVING WITHIN 1/4".

7. WHERE FRAME IS SET AFTER PAVING, EXPOSED CONCRETE SURFACES WILL NOT BE ALLOWED EXCEPT AS PERMITTED BY AGENCY ENGINEER IN WRITING.

8. COLLAR SHALL BE CLASS "B" (5 SACK) CONCRETE.

9. NO CONCRETE SHALL BE PLACED PRIOR TO FORM INSPECTION BY THE AGENCY ENGINEER.
8 - NO. 4 BARS PLACED SYMMETRICALLY ABOUT OPENING
NO. 4 BARS PLACED AT 6” O.C.

PIPE O.D. (TYP.)

HOLD CONCRETE DOWN 2” AND PAVE WITH ASPHALT CONCRETE (SEE NOTE 7)

MAXIMUM, 2 – 3” GRADE RINGS

8”

SECTION

INSTALL STEPS (PER DWG. NO. 215) AS REQUIRED BY AGENCY ENGINEER.

H=6”, MINIMUM ABOVE TOP OF PIPE

3” CLR. 3” CLR.

NO. 4 BARS AT 12” O.C. BOTH WAYS AT SIDES AND BOTTOM

NOTE:

1. BASE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE SHALL BE CLASS "A" (6 SACK) EXCEPT COLLAR MAY BE CLASS "B" (5 SACK).
3. CONCRETE CHANNELS SHALL BE BRUSH FINISHED AND STEEL INSPECTION PER AGENCY ENGINEER.
4. CONCRETE FRAME SHALL BE PLACED PRIOR TO FORM DETAIL.
5. MANHOLE FRAME MAY BE ADJUSTED EITHER BEFORE OR AFTER PAVING, BUT THE FINAL GRADE OF THE FRAME MUST MATCH THAT OF THE PAVEMENT WITHIN 1/4”.
6. WHERE FRAME IS SET AFTER PAVING, EXPOSED CONCRETE SURFACES WILL NOT BE ALLOWED UNLESS PERMITTED BY AGENCY ENGINEER IN WRITING.

UNIFORM STANDARDS
ALL CITIES AND COUNTY OF MARIN

TYPE "B" MANHOLE
(21” THROUGH 72” DIA. PIPE)

MARCH 2018

DWG. NO.

REV. DATE BY

210
**STEP DETAIL**

- **STEEL REINFORCED POLYPROPYLENE PLASTIC**

**TOP OF MANHOLE**

**PRECAST WALL**
- STEPS SHALL BE CAST INTO WALL AT FACTORY

**CAST IN PLACE WALL**

- STEPS SPACED AT 12" O.C.
- FIRST STEP TO BE 12" ABOVE BOTTOM

**EPOXY IN PLACE**

- 6"
- 3"

**MANHOLE FRAME AND COVER**

**INSTALLED IN SIDEWALK**
- PHOENIX P-1067
- SOUTH BAY FOUNDRY SBF-1967
- OR APPROVED EQUAL

**NON-SIDEWALK INSTALLATIONS**
- PHOENIX P-1067; P-1090; P-1005
- SOUTH BAY FOUNDRY SBF-1900-REG; SBF-1905
- OR APPROVED EQUAL

**NOTE:**

INSTALLATION OF STEPS SHALL BE AS REQUIRED BY AGENCY ENGINEER. WHERE INSTALLED, STEPS SHALL BE STEEL REINFORCED POLYPROPYLENE PLASTIC. CENTRAL PRECAST CONCRETE CO. DWG. No. PS2-PF OR EQUIVALENT. STEPS TO BE CAST IN PLACE OR PRESS FITTED INTO PROVIDED HOLES AS PER MANUFACTURER. INSTALL STEPS WITH LOWEST RUNG 1'-0" ABOVE THE FLOOR AND HIGHEST RUNG NOT MORE THAN 6" BELOW TOP OF MANHOLE. THE SPACING BETWEEN STEPS SHALL NOT EXCEED 1'-0" AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE WALL. PLACE STEPS IN THE WALL WITHOUT A PIPE OPENING. NO STEPS REQUIRED WHERE HEIGHT FROM BOTTOM TO TOP OF MANHOLE IS LESS THAN 30".

---

**UNIFORM STANDARDS**

- ALL CITIES AND COUNTY OF MARIN

**STEP & MANHOLE CASTING DETAIL**

(WHERE REQUIRED BY AGENCY ENGINEER)
SECTION A - A

NOTES:
1. ALL STEEL SHALL BE STRUCTURAL GRADE.
2. ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
3. TOP AND BOTTOM SURFACES OF GRATE SHALL BE GROUND FLUSH AFTER WELDING.
4. FOR 40" GRATE USE STATE STD. GRATE TYPE 24-9 OR 24-12.
5. FOR GRATES IN A PEDESTRIAN PATH OF TRAVEL, GRATE OPENINGS SHALL BE 4" PERPENDICULAR TO THE WALKING DIRECTION.
NOTE:
1. SEE DWG. NO. 200 FOR GENERAL NOTES.
2. TOP SHALL BE CAST IN PLACE.
3. ADJACENT SIDEWALK SHALL BE POURED MONOLITHIC WITH TOP.

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN

TYPE ”A”
CATCH BASIN

MARCH
2018

REV. DATE BY

DWG. NO. 225
NOTE:
1. SEE DWG. NO. 200 FOR GENERAL NOTES.
2. TOP SHALL BE CAST IN PLACE.
3. ADJACENT SIDEWALK SHALL BE Poured MONOLITHIC WITH TOP.

* 8" WALL FOR DEPTHS GREATER THAN 8'

#4 BARS @ 12" O.C. HORIZ. & VERT. (TYP)

INSTALL STEPS (PER DWG. NO. 215) AS REQUIRED BY AGENCY ENGINEER.

SLOPE 2% (1:50)

4" RADIUS

2" CLEAR SIDES & TOP

DEPTH VARIES

NORMAL GUTTER LINE

SECTION

GUTTER ELEVATION

PLAN

9'-0"

(B'0" FOR 4' TO 6' DEPTH)

TRANSITION

TRANSITION

DEPRESSED GUTTER

DEPRESS

DEPRESS

4" RADIUS ON CORNERS

2 - NO. 4 BARS X 8"

NO. 4 BARS AT 6" O.C. BOTH WAYS

NO. 4 TRIM BARS AROUND MANHOLE

BACK OF CURB

BACK OF ADJACENT SIDEWALK

2 - NO. 4 BARS ALL AROUND TOP

36" FOR 3' TO 6' DEPTH

48" OR

SIDEWALK MANHOLE, FRAME AND COVER

MC County Standards (County UCS2018 Updated County Standards UCS 230.dwg

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN

TYPE "B"
CATCH BASIN

MARCH 2018

REV. DATE BY

230
Section A-A

1. See drawing no. 200 for general notes.
2. For structure > 8' deep, wall thickness = 8".
3. For catch basins from 3'-0" to 6'-0" deep the inside dimension may be 3'-0" by 3'-1". Dimensions for these are shown in italics.

Section B-B

Uniform Standards
All Cities and County of Marin

Type "D" Catch Basin

MARCH 2018

DWG. NO. 240

REV. DATE BY
FOR FRAME AND GRATE, SEE DWG. NO. 220

EXPANSION JOINTS AT BOTH ENDS

NOTE: SEE DRAWING NO. 200 FOR GENERAL NOTES

UNIFORM STANDARDS
ALL CITIES AND COUNTY OF MARIN

TYPE "E" CATCH BASIN

#5 BARS x 7'

#4 @ 12" O.C. HORIZ. & VERT. (TYP)

SECTION A-A
NOTES:
1. SEE DRAWING NO. 200 FOR GENERAL NOTES.
2. FOR STRUCTURES > 8’ DEEP, WALL THICKNESS = 8”
3. FOR CATCH BASINS FROM 3’-0” TO 6’-0” DEEP THE INSIDE DIMENSION MAY BE
   4’-0” BY 3’-1”. DIMENSIONS FOR THESE ARE SHOWN ITALICS.

UNIFORM STANDARDS
ALL CITIES AND
COUNTRY OF MARIN

TYPE ”F”
CATCH BASIN

MARCH 2018
DWG. NO.
250

1  4/16/10  SAS
REV.  DATE  BY
PLAN SECTION

PROFILE SECTION

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>L</th>
<th>W</th>
<th>COVER(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 3'</td>
<td>24&quot;</td>
<td>24&quot;</td>
<td>1–36&quot;x36&quot;</td>
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<tr>
<td>3' TO 6'</td>
<td>36&quot;</td>
<td>36&quot;</td>
<td>2–24&quot;x48&quot;</td>
</tr>
<tr>
<td>OVER 6'</td>
<td>36&quot;</td>
<td>48&quot;</td>
<td>2–30&quot;x48&quot;</td>
</tr>
</tbody>
</table>

NOTES:

1. LENGTHS AND WIDTHS WILL VARY AS NECESSARY TO ACCOMMODATE SIZE AND ANGLES OF CONNECTING PIPES.

2. SEE DRAWING NO. 200 FOR GENERAL NOTES, WALL THICKNESS (T), REINFORCING AND STEP REQUIREMENTS.

3. SIDE ENTRY CONFIGURATION MAY BE MODIFIED TO ACCOMMODATE FIELD CONDITIONS WITH THE APPROVAL OF THE AGENCY ENGINEER.
36"/48" D.I. WITH STD. FRAME & GRATE *

24" D.I. WITH STD. FRAME & GRATE *

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>INSIDE DIMENSION</th>
<th>FRAME SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 3'</td>
<td>24&quot; X 24&quot; OR</td>
<td>24 1/2&quot; X 30&quot; OR</td>
</tr>
<tr>
<td></td>
<td>24&quot; X 36&quot;</td>
<td>24 1/2&quot; X 41&quot;</td>
</tr>
<tr>
<td>5' TO 6'</td>
<td>36&quot; X 36&quot;</td>
<td>24 1/2&quot; X 41&quot;</td>
</tr>
<tr>
<td>OVER 6'</td>
<td>36&quot; X 48&quot;</td>
<td>24 1/2&quot; X 41&quot;</td>
</tr>
</tbody>
</table>

* REFER TO PLAN FOR SIZE.

NOTE: SEE DRAWING NO. 200 FOR GENERAL NOTES, WALL THICKNESS (T), REINFORCING AND STEP REQUIREMENTS.
PIPE PARALLEL TO CURB
SCALE: 1/2"=1'-0"

PIPE CROSSING UNDER CURB
SCALE: 1/2"=1'-0"

VERTICAL STEEL TABLE

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>STEEL</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>48&quot; AND SMALLER</td>
<td>#4</td>
<td>8&quot;</td>
</tr>
<tr>
<td>48&quot; TO 66&quot;</td>
<td>#4</td>
<td>6&quot;</td>
</tr>
<tr>
<td>72&quot;</td>
<td>#4</td>
<td>5&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. FOR CATCH BASIN DETAILS, SEE UNIFORM CONSTRUCTION STANDARDS DRAWING NOS. 200 THROUGH 255. MAY ALSO BE USED WITH INLETS, PER DRAWING NOS. 260 AND 265.
2. THIS DETAIL MAY BE USED AS AN ALTERNATE WHERE PIPE DIAMETER EXCEEDS DIMENSION OF CATCH BASIN.
3. USE WHERE PIPE DIA. TO STD. CATCH BASIN RATIO IS <3:1, OTHERWISE USE MANHOLE.
**ELEV. DOUBLE HEADWALL**

- **NO. 4 BARS**
  - L
  - 18" MAX SPACING

**ELEV. SINGLE HEADWALL**

- **NO. 4 BARS**
  - L
  - 18" MAX SPACING

**ELEV. "L" HEADWALL**

- **NO. 4 BARS**
  - 2'-0" TYP.
  - 1" CHAMFER

**SECTION B-B**

- **W VARIABLE OR AS SHOWN ON PLANS**
  - 1" CHAMFER

**SECTION A-A**

- **Pipe Dia "D"**
  - Single
  - Double
  - L
  - \( \frac{L}{2} \)

<table>
<thead>
<tr>
<th>Dia (&quot;D&quot;)</th>
<th>Single</th>
<th>Double</th>
<th>L</th>
<th>( \frac{L}{2} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;</td>
<td>6'-0&quot;</td>
<td>2'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15&quot;</td>
<td>7'-0&quot;</td>
<td>2'-6&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18&quot;</td>
<td>8'-0&quot;</td>
<td>2'-9&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24&quot;</td>
<td>10'-0&quot;</td>
<td>3'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30&quot;</td>
<td>12'-9&quot;</td>
<td>4'-6&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36&quot;</td>
<td>15'-0&quot;</td>
<td>5'-3&quot;</td>
<td></td>
<td></td>
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<tr>
<td>42&quot;</td>
<td>17'-3&quot;</td>
<td>6'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48&quot;</td>
<td>20'-0&quot;</td>
<td>7'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54&quot;</td>
<td>22'-3&quot;</td>
<td>7'-9&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**

1. CONCRETE SHALL BE CLASS "A" (6 SACK MIX) UNLESS OTHERWISE NOTED.
2. FINISH ON EXPOSED SURFACES SHALL BE CLASS 1 FINISH PER SECTION 51 OF THE STATE STANDARD SPECIFICATIONS.
3. NO CONCRETE SHALL BE PLACED PRIOR TO FORM AND STEEL INSPECTION BY THE AGENCY ENGINEER.

**UNIFORM STANDARDS**

ALL CITIES AND COUNTY OF MARIN

**TYPE "A" HEADWALL**

| MARCH 2018 | DWG. NO. | 275 | REV. | DATE | BY |
SLOPE BACKFILL AT 2:1.
BACKFILL TO BE KEPT 4" BELOW TOP OF WALL

REINFORCE WALLS AND BASE WITH NO. 4 BARS AT 8" O.C. BOTH WAYS

BEVEL ALL EXPOSED EDGES

ROUND ENTRANCE CORNERS, R=3"

NOTE: WHERE USED AS INLET STRUCTURE INVERT OF STRUCTURE SHALL MATCH INVERT OF PIPE.

USE DIMENSIONS BELOW UNLESS OTHERWISE SHOWN ON PLANS

<table>
<thead>
<tr>
<th>D</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot; OR LESS</td>
<td>6&quot;</td>
<td>12&quot;</td>
<td>36&quot;</td>
<td>D + 1&quot;</td>
<td>C + E</td>
</tr>
<tr>
<td>21&quot; TO 36&quot;</td>
<td>8&quot;</td>
<td>18&quot;</td>
<td>50&quot;</td>
<td>D + 1&quot;</td>
<td>C + E</td>
</tr>
<tr>
<td>39&quot; TO 72&quot;</td>
<td>10&quot;</td>
<td>18&quot;</td>
<td>72&quot;</td>
<td>D + 1&quot;</td>
<td>C + E</td>
</tr>
</tbody>
</table>

NOTES:
1. CONCRETE SHALL BE CLASS "A" (6 SACK MIX) UNLESS OTHERWISE NOTED.
2. FINISH ON EXPOSED SURFACES SHALL CONFORM TO CLASS 1 FINISH PER SECTION 51 OF THE STATE STANDARD SPECIFICATIONS.
3. NO CONCRETE SHALL BE PLACED PRIOR TO FORM AND STEEL INSPECTION BY THE AGENCY ENGINEER.
SPACE = 1/2 DIAMETER OF PIPE BEING PROTECTED

CONCRETE SLAB WITH #4 @ 18" BOTH WAYS

PLAN

H P S D B
3' OR LESS 2" 2 1/2" 12" 12"
OVER 3' 4" 5" 18" 18"

NOTES:
1. L, AND W, SHALL BE 3 TIMES THE DIAMETER OF PIPE BEING PROTECTED UNLESS OTHERWISE SHOWN ON PLANS.
2. H, SHALL BE 2 TIMES THE DIAMETER OF THE PIPE BEING PROTECTED UNLESS OTHERWISE SHOWN ON PLANS.
3. PIPE SHALL BE STANDARD WEIGHT, CONCRETE SHALL BE CLASS "B" (5 SACK).
NOTES:
1. ALL SECTIONS SHALL BE AT LEAST 4" THICK.
2. CONCRETE SHALL BE CLASS "B" (5 SACK).
3. BOTH SIDES OF THE DITCH SHALL BE FORMED WITH 2" X 4" LUMBER, AS SHOWN UNLESS OMITTED BY THE AGENCY ENGINEER.
4. CONCRETE FINISH SHALL CONFORM TO ORDINARY SURFACE FINISH PER SECTION 51 OF THE STATE STANDARD SPECIFICATIONS.
5. DITCH SIDES SHALL BE BACKFILLED AND COMPACTED IMMEDIATELY AFTER THE REMOVAL OF SIDE FORMS.
6. NO CONCRETE SHALL BE PLACED PRIOR TO FORM INSPECTION BY THE AGENCY ENGINEER.
7. ON FILLED GROUND, NO DITCH IS TO BE CONSTRUCTED UNTIL CERTIFICATION OF COMPACTION IS PROVIDED TO THE AGENCY BY THE GEOTECHNICAL ENGINEER.
8. NO EXPANSION JOINTS SHALL BE REQUIRED.
MOUND BACKFILL (MIN. 90% RELATIVE COMPACTION)
COMPACTED BACKFILL PER DWG. NOS. 330, 340 & 350 (TRENCH DETAILS)

FINISHED GRADE
WRAPPED IN APPROVED GEOTEXTILE FABRIC
OVER LAP 6"

3/4" CRUSHED ROCK UNLESS OTHERWISE SPECIFIED.
PERFORATED PIPE. SIZE TO BE SPECIFIED (4" MIN.). PIPE SHALL BE PLACED WITH PERFORATIONS DOWN. WRAPPED IN APPROVED GEOTEXTILE FABRIC.

BASE OF COLLAR TO BE PLACED ON UNDISTURBED EARTH
MORTAR INTERIOR FOR SMOOTH FINISH
6" CONCRETE COLLAR ALL AROUND
FLOW LINE
CORE DRILLED

CLOSE GAP WITH FORM TO KEEP CONCRETE OUT OF PIPE
TRIM WITH #4 BARS ALL AROUND
6" THICK ALL AROUND

CONCRETE COLLAR

NOTES:
1. PERFORATED PIPE SHALL BE SCH. 40 PVC, HDPE, OR APPROVED EQUAL.
2. ALL CONCRETE SHALL BE CLASS "B" (5 SACK MIX) UNLESS OTHERWISE NOTED.
C.I. MONUMENT RING AND COVER, PHOENIX P–2001–E, OR ARTMARK APC–51, OR BROOKS 10–1/4” TRAFFIC BOX, OR AMERICAN BRASS AND IRON FOUNDRY MONUMENT COVER OR FORNI CORPORATION "IRONSIDE" TYPE "A" BOX & LID OR APPROVED EQUAL.

NOTE: IF RING & COVER SET AFTER PAVING, EXPOSED CONC. WILL NOT BE ALLOWED, EXCEPT AS PERMITTED BY AGENCY ENGINEER IN WRITING.

THE WORD "MONUMENT" SHALL BE CLEARLY STAMPED ON ALL COVERS.

STREET MONUMENT

PIPE MONUMENT

2" DIA. NO. ASSIGNED BY AGENCY ENGINEER

PUNCH MARK

L.S. OR C.E. NO.

SOKKIA NO. 8134–03, SURVEYOR’S SERVICE CO. NO. 286, OR EQUAL

DETAIL "A"

NOTES:

1. MONUMENTS SHALL BE SET AT THE LOCATIONS DESIGNATED ON THE PLANS AND ON THE FINAL MAP.

2. STREET MONUMENTS SHALL BE USED IN ALL PAVED AREAS AND OTHER LOCATIONS AS SHOWN ON THE PLANS. IRON PIPE MONUMENTS SHALL BE USED AT ALL OTHER LOCATIONS IN THE PUBLIC RIGHT OF WAY.

3. NO CONCRETE SHALL BE PLACED PRIOR TO EXCAVATION INSPECTION BY THE AGENCY ENGINEER.

4. MONUMENTS SET ON SUBDIVISION BOUNDARIES SHALL BE 3/4” DIAMETER GALVANIZED IRON PIPE 24” LONG FILLED WITH MORTAR.
CASE 3  WHERE BOTH STREETS HAVE ADJACENT SIDEWALK – INSTALL STREET SIGN IN SAME LOCATION AS SHOWN IN CASE 2.

CASE 4  WHERE MAJOR STREET HAS NO SIDEWALK – STREET SIGN TO BE PLACED AT THE RETURN POINT ON THE MAJOR STREET 1'-6" BEHIND THE FACE OF CURB.

CASE 5  WHERE THERE IS NO CURB AND GUTTER – LOCATE STREET SIGN WHERE DIRECTED BY THE AGENCY ENGINEER.

NOTES:
1. THE NUMBER OF STREET SIGNS PER INTERSECTION WILL BE AS SHOWN ON THE PLANS OR DETERMINED BY THE AGENCY ENGINEER.
FOR NEW PAVEMENT SECTION MATCH EXISTING OR SEE TABLE A ON DWG. NO. 380, WHICHER IS GREATER

GRIND 2" T-CUT
AC PLUG PER DWG. NO. 380

INTERMEDIATE BACKFILL
CLASS II AB - 90% RELATIVE COMPACTION
OR
CONTROLLED DENSITY FILL (IF ALLOWED BY AGENCY ENGINEER)
OR
SELECT NATIVE (IF ALLOWED BY AGENCY ENGINEER) 90% RELATIVE COMPACTION

INITIAL BACKFILL & BEDDING
¾" CRUSHED ROCK
OR
CONTROLLED DENSITY FILL (IF REQUIRED BY UTILITY)
OR
SAND (IF REQUIRED BY UTILITY)

TRENCH WIDTH
SEE TABLE BELOW

NOTE: IF ROADWAY HAS EXISTING AC OVER CONCRETE, TRENCH RESTORATION SHALL BE DETERMINED BY THE AGENCY ENGINEER.

TYPE 1
ASPHALT CONCRETE PAVED STREETS

<table>
<thead>
<tr>
<th>CONDUIT SIZE</th>
<th>LESS THAN 6&quot;</th>
<th>6&quot; TO 24&quot;</th>
<th>OVER 24&quot; TO 60&quot;</th>
<th>OVER 60&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRENCH WIDTH</td>
<td>O.D. + 12&quot;</td>
<td>O.D. + 24&quot;</td>
<td>O.D. + 24&quot;</td>
<td>O.D. + 24&quot;</td>
</tr>
</tbody>
</table>

FOR PIPES WITH MORE THAN 36" OF COVER, THE AGENCY ENGINEER MAY ALLOW A REDUCED TRENCH WIDTH INCLUDING A CHANGE TO A SELF-COMPACTING ENGINEERED TYPE OF INITIAL BACKFILL MATERIAL.

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN
TRENCH DETAILS
SHEET 1 OF 3

MARCH 2018
DWG. NO. 330
REV. DATE BY
**Type 2**

Concrete Paved Streets

**Intermediate Backfill**
(See Type 1 Trench Detail on DWG. No. 330)

**Replace Existing AC or Concrete**
Match Existing Type and Thickness

Driveways, Walkways or Sidewalk Areas
UNPAVED AREAS

**Mound Backfill**

12" Class II AB 95% Relative Compaction
(If required by agency engineer)

Intermediate Backfill
(See Type 1 Trench Detail on DWG. No. 330)

**Note:** For trenches in unpaved shoulders, top 12" shall be Class II AB 95% relative compaction.

**Type 3**

Areas other than streets in the public right of way

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**Uniform Standards**
All Cities and County of Marin

**Standard Trench Backfill & Resurfacing**

Sheet 2 of 3

MARCH 2018

DWG. NO. 340

REV. DATE BY
MATERIAL AND COMPACTION REQUIREMENT FOR TRENCH BACKFILL

1. INTERMEDIATE BACKFILL SHALL BE CLASS II AGGREGATE BASE. SUITABLE NATIVE OR IMPORTED GRANULAR MATERIAL MAY BE USED IF ALLOWED BY AGENCY ENGINEER. RELATIVE COMPACTION SHALL BE AT LEAST 90%.

2. CLASS II AGGREGATE BASE SHALL CONFORM TO THE STATE STANDARD SPECIFICATIONS. MINIMUM RELATIVE COMPACTION SHALL BE 95%. IF PAVEMENT HAVING A STRUCTURAL SECTION GREATER THAN 15” IS CUT, ADDITIONAL BASE MATERIAL MAY BE REQUIRED BY THE AGENCY ENGINEER. BASE SHALL BE PLACED AND COMPACTED PRIOR TO PLACING OF TEMPORARY PAVING.

3. TESTING OF MATERIALS AND PERFORMANCE SHALL BE IN CONFORMANCE WITH THE METHODS STATED IN THE LATEST EDITION OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, EXCEPT THAT RELATIVE COMPACTION MAY BE TESTED BY AASHTO METHOD T180, ASTM D-1557, OR TEST METHOD CALIF. 231 (NUCLEAR DENSITOMETER).

4. PLACE AC IN 3” MAX, LIFTS, EXCEPT FINAL LIFT SHALL BE 2 1/2” MAX. ADDITIONAL THICKNESS AND LIFTS OF ASPHALT CONCRETE MAY BE REQUIRED TO MATCH EXISTING STRUCTURAL SECTION ON MAJOR ROADS, OR PER LOCAL JURISDICTION REQUIREMENTS.

5. "JETTING" OF BACKFILL MATERIAL IS NOT PERMITTED.

6. THE USE OF PEA GRAVEL (OR SIMILAR ROUNDED AGGREGATE), IS NOT PERMITTED.

7. THE USE OF CONTROLLED DENSITY FILL (CDF) SHALL BE APPROVED BY THE AGENCY ENGINEER PRIOR TO PLACEMENT.

8. TRENCH EDGES SHALL BE TRIMMED TO A NEAT LINE AS REQUIRED BY THE AGENCY ENGINEER. TRIMMING SHALL BE BY ROTARY GRINDER. TRENCH LINES SHALL HAVE THE LEAST AMOUNT OF JOGS AND REMAIN LINEAR AS MUCH AS POSSIBLE. REFERENCE DRAWING NO. 360, 370 & 380.

9. THE SURFACE COURSE OF TRENCH RESTORATION SHALL EXTEND TO THE LIP OF GUTTER IF THE EDGE OF TRENCH IS WITHIN 4’ OF THE LIP OF GUTTER, AND TO THE EDGE OF PAVEMENT IF THE EDGE OF TRENCH IS WITHIN 4’ OF AN UNPAVED SHOULDER.

10. CONTRACTOR MUST SHORE ALL TRENCHES IN CONFORMANCE WITH OSHA AND STATE SAFETY STANDARDS.

11. ALL HOT MIX ASPHALT (HMA) MATERIAL, METHODS AND TOLERANCES SHALL BE IN COMPLIANCE WITH THE CURRENT EDITION OF THE CALTRANS STANDARD SPECIFICATIONS.
NOTES:

1. FOR TRENCH REPAIRS IN THE VEHICLE TRAVEL LANE(S), THE RESTORATION SHALL BE EXTENDED TO THE LANE LINE OR CENTER OF LANE WHICHEVER IS CLOSER, IN ACCORDANCE WITH MINIMUM T-CUT DIMENSIONS SHOWN ON DRAWING 330.

2. IF THE LIMITS OF RESTORATION ENTER A STRIPED AND/OR SIGNED BIKE LANE, THE RESTORATION SHALL BE EXTENDED TO COVER THE ENTIRE BIKE LANE WIDTH.

3. IF THE LIMITS OF EXCAVATION ARE WITHIN 4 FT OF THE GUTTER LIP OR EDGE OF PAVEMENT, THE RESTORATION SHALL BE EXTENDED TO THE GUTTER LIP OR EDGE OF PAVEMENT.
RESTITUTION OF ASPHALT REQUIREMENTS

1. EXISTING PAVEMENTS SHALL BE REMOVED TO CLEAN, STRAIGHT LINES PARALLEL AND PERPENDICULAR TO THE FLOW OF TRAFFIC. DO NOT CONSTRUCT FINAL RESTORATION PATCHES WITH ANGLED SIDES AND IRREGULAR SHAPES.

2. IF A PROPOSED CUT IS WITHIN 10 FT OF AN EXISTING PATCH ORIGINALLY PERFORMED BY THE SAME AGENCY, EXTEND THE FINAL RESTORATION TO THE EXISTING PATCH (FOR BELL HOLE OR TRENCH NO GREATER THAN 10 FT LONGITUDINAL).

3. IF A NEW PATCH IS DONE WITHIN AN EXISTING PATCH, THE BOUNDARIES OF THE FINAL RESTORATION FOR THE PATCHES SHALL COINCIDE.


5. LIMITS OF FINAL PAVEMENT RESTORATION TO STOP AT ONE OF THE FOLLOWING LOCATIONS: CENTER OF LANE, TRAVEL LANE LINE, BIKE LANE LINE, ISLAND CURB/GUTTER, EDGE OF ROADWAY PAVEMENT CURB/GUTTER. NO PAVING JOINTS SHALL BE ALLOWED IN A VEHICULAR WHEEL PATH.

6. STEEL PLATES USED FOR BRIDGING SHALL EXTEND A MINIMUM OF 1 FT BEYOND THE EDGE OF TRENCH. PLATES SHALL HAVE NONSKID ABRASIVE SURFACE PER CALTRANS SPECIFICATIONS 75–1.03F, AND COUNTER-SINKING MAY BE REQUIRED WHEN DEEMED NECESSARY BY AGENCY ENGINEER.

7. CUTBACK SHALL NOT BE USED EXCEPT WHEN PRE-APPROVED BY THE AGENCY ENGINEER OR WHEN TRIMMING TRENCH PLATES.

8. ROADWAY RESTORATION WIDTH, BEYOND THE TRENCH EDGES, VARIES FROM 0”–24”. DURING THE PERMIT PROCESS, THE AGENCY WILL REVIEW GEOTECHNICAL AND HISTORICAL INFORMATION OF THE TRENCHING LOCATION, AS PRESENTED BY THE UTILITY OWNER, AND CONSIDER EXISTING PAVEMENT CONDITION, SUITABLE SUBGRADE AND THE PROPOSED SCOPE OF WORK TO DETERMINE RESTORATION WIDTH. THE PERMITTING AGENCY RESERVES THE RIGHT TO ADJUST THE RESTORATION WIDTH DUE TO FIELD OBSERVATIONS DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO, OBSERVING BREAKOUT, UNDERMINING OF ADJACENT PAVEMENT, UNSTABLE WALLS OF TRENCH, DAMAGE TO SURROUNDING UNDISTURBED PAVEMENT, AND/OR PAVEMENT OR SUBGRADE DAMAGE FROM CONTRACTOR OPERATIONS.

Table A

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Traffic Index**</th>
<th>Min. AC*** (TOTAL)</th>
<th>Final Surface AC, Min.</th>
<th>Pavement Repair Structural Section</th>
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<td>Assumes R Value = 10*</td>
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</table>

NOTES: *Unless applicant provides actual R-Value test results and pavement section design **Or as approved by City/County Engineer based on actual traffic loading ***Minimum AC thickness shall match existing or as shown in Table A, whichever is greater

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN

RESTORATION OF ASPHALT
SHEET 3 OF 3

MARCH 2018 380

REV. DATE BY