STANDARD PLANS

JANUARY 2022

City of Napa Public Works Director
(Per City Resolution R2018-122)

Date
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STANDARD PLANS

DRAINAGE
1. "V" = 3'-6" minimum. For "V" greater than 5' increase thickness of sidewall 1" for each foot of depth over 5'.
2. All concrete shall be 4000 PSI (6 sack/cy).
3. Precast boxes and grade rings may be used when approved by the engineer.
4. All materials except reinforcing steel shall be shop galvanized after fabrication.
5. Precast galleries or extensions when used shall be installed per manufacturer's instructions.
6. Optional base may be used with D-2 catch basin when storm drain is 36" dia. or larger.
7. No more than 2' of grout is allowed between poured walls and precast tops.
8. Catch basin shall be constructed to withstand H2O loading.
1. This std. shall be used where existing gutter pan is 1’. All catch basins installed with 2’ gutter pan shall be per city std. D-2.

2. "V" = 3'-6" minimum. For "V" greater then 5’ increase thickness of sidewall by 1" for each foot of depth over 5’.

3. All concrete shall be class 'A" (6 sk./cu.yd).

4. Precast boxes and grade rings may be used when approved by the city engineer.

5. All materials except reinforcing steel shall be shop galvanized after fabrication.

6. Precast galleries or extensions when used shall be installed per manufacturer’s instructions.

7. Optional base may be used with 6-2 catch basin when storm drain is 36” dia. or larger.

8. See D-4 for special aprons.

9. No more than 2” of grout is allowed between poured walls and precast tops.

10. Catch basin shall be constructed to withstand H2O loading.
STREET SLOPES LESS THAN 2 1/2%

OFFSET TYPE D-2 C.B. APRON

OFFSET TYPE GO C.B. APRON

NOTE: WHERE THE DEPTH OF THE BOX IS 8'-0" OR LESS THE WALL THICKNESS SHALL BE 6''. WHERE THE DEPTH OF THE BOX IS GREATER THAN 8'-0" THE WALL SHALL BE 8''.

TYPICAL PROFILE-OFFSET TYPE D-2 & GO C.B.

STREET SLOPES 2 1/2% OR MORE

ANGLED D-2 C.B. APRON

ANGLED GO C.B. APRON

TYPICAL PROFILE-OFFSET TYPE D-2 & GO C.B.

CITY OF NAPA

SPECIAL APRONS FOR TYPE D-2 & GO CATCH BASINS

PUBLIC WORKS DEPARTMENT
NOTES

1. OWNER SHALL BE RESPONSIBLE FOR CLEANING AND MAINTAINING DRAIN PIPE ON BOTH HIS PROPERTY AND THE PORTION THROUGH THE SIDEWALK.


3. MULTIPLE PIPES MAY BE USED WHERE NECESSITATED BY THE CONTRIBUTING AREA. IN THIS CASE PIPES SHALL BE SPACED 6" ON CENTER.
RESERVED
1. PRE-CAST SHAFTS SHALL BE USED.

2. PRE-CAST CONCRETE PIPE SECTIONS, GRADE RINGS, AND TAPERED SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPEC. C-478.

3. ALL CONCRETE JOINTS SHALL BE CLEANED, WETTED, AND MORTARED PRIOR TO SETTING THE NEXT SECTION. THE JOINTS SHALL BE PACKED, TRAWLED, AND BRUSHED WHILE THE MORTAR IS PLASTIC. RAM-NEK FLEXIBLE MAY ALSO BE USED, UPON APPROVAL FROM THE ENGINEER.

4. FRAME TO BE USED IN STREET AND DRIVEWAY AREAS SHALL BE PHOENIX P-1090, SOUTH BAY FOUNDRY #1900 CFH D&L FOUNDRY A-1024 OR APPROVED EQUAL, AND 2" FRAME SHALL BE USED IN S/W EASEMENT ETC. WHERE NO TRAFFIC IS ALLOWED. ALL M.H. SHALL HAVE 24" MIN. CLEAR OPENING.

5. M.H. THAT ARE SHALLOW MAY BE CONST. CONCENTRIC OR FLAT TOP AND/OR WITH A LARGER DIA. M.H. FRAME TO FACILITATE CONSTRUCTION WITH APPROVAL OF THE ENGINEER, LONGER STEPS MAY BE REQUIRED.

6. RING AND COVER SHALL BE SET TO GRADE AND CROSS SLOPE SUBSEQUENT TO PLACING A.C.

7. 48" DIA. BARREL SHALL BE USED FOR PIPES UP TO 24" IN DIA.; 60" DIA. BARREL SHALL BE USED ON PIPES UP TO 36" DIAMETER. 42" DIAMETER OR LARGER PIPE SHALL CONFORM TO STANDARD D-8 DRAWING.

8. ALL CAST IN PLACE PIPE POUR THOUGH A MANHOLE REQUIRES STANDARD D-8 MANHOLE DETAILS.
FINISH GRADE

7-SACK P.C.C.
5000 PSI

5" (TYP)
4 1/2" (MIN)

1' MIN(TYP)

UNDISTURBED SOIL
IF BACKFILL REQUIRED
USE COMPACTED
CLASS II A.B.

BEDDING 12" OF 3/4"
CRUSHED ROCK

STD. MANHOLE ASSEMBLY TO BE SET IN NON-SHRINK
HIGH-STRENGTH GROUT PHOENIX P-1090 OR APPROVED EQUAL

SEE CITY STD. D-14

GRADE RINGS AS NEEDED
18" MAX. SEE NOTE 1

ONE PIECE ECCENTRIC
TAPER SECTION
SEE NOTE 1

PRESENT CONCRETE MANHOLE,
SEE NOTE 1

#4 BAR

60" DIA.
#6 BARS

PIECE OF PIPE
DIA. OF PIPE
6'-6" MIN.
(VARIES)

#4 BAR

#5 BARS 18" O.C.
EACH WAY

#4 BARS 18" O.C. EACH WAY

6 SACK OR 4000 PSI
P.C.C.

6 SACK P.C.C.
5000 PSI

#6 BARS TO
OVERLAP AS SHOWN (TYP.)

#5 BARS 3" O.C.

6'6" MIL.

#5 BARS 3" O.C.

3 - #4 BARS 5'-8" LONG
3" O.C. CONT
ADD'L BARS 6" O.C.
TO INSIDE EDGE OF
MANHOLE

NOTES

1. PRECAST CONCRETE MANHOLE BARREL, GRADE
RINGS AND TAPERED SECTIONS SHALL CONFORM
TO THE REQUIREMENTS OF ASTM SPEC. C-478.

2. PAVE STREET THEN SET MANHOLE RING AND COVER
TO GRADE AND CROSS SLOPE PER CITY STD D-14.

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

STANDARD MANHOLE
42" DIAMETER OR LARGER PIPE

DRAWN BY: LFM
CHECKED BY: IHH
APPROVAL DATE: 06/2018
APPROVED BY: JBL
SCALE: NONE
REVISED DATE: 08/2021
DRAWING NO. D-8
NOTES

1. COLLAR MUST EXTEND TO TOP OF MANHOLE FRAME AND OVER BOTTOM FLANGE OF FRAME.

2. PLACE 4-#4 BARS X 4 FT. LONG AROUND MANHOLE IN CROSSING PATTERN.

3. MINIMUM COLLAR VOLUME SHALL BE ONE-HALF CUBIC YARD.

4. THE TABLE SHOWS MINIMUM REQUIREMENTS FOR CONCRETE COLLARS, THE ENGINEER SHALL SIZE FOR DESIGN PRESSURE AND SUBMIT DESIGN CALCULATIONS FOR THE CONCRETE COLOR AND REBAR FOR EACH SPECIFIC CONDITION, FOR APPROVAL BY THE PUBLIC WORKS DIRECTOR.

<table>
<thead>
<tr>
<th>OUTSIDE COLLAR DIMENSIONS (FT)</th>
<th>CONCRETE COLLAR DEPTH (FT)</th>
<th>APPROX. VOLUME (CY)</th>
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<tbody>
<tr>
<td>4x4</td>
<td>1.5</td>
<td>0.5 MIN</td>
</tr>
<tr>
<td>4x5</td>
<td>2.0</td>
<td>1.00</td>
</tr>
<tr>
<td>4x5.5</td>
<td>3.0</td>
<td>1.25</td>
</tr>
<tr>
<td>4x6</td>
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</tr>
<tr>
<td>6.5x7</td>
<td>3.75</td>
<td>4.00</td>
</tr>
<tr>
<td>6.5x7</td>
<td>4.0</td>
<td>4.50</td>
</tr>
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CONCRETE JOINTS SHALL BE JOINED USING MORTAR, "RAM-NEK" OR APPROVED EQUAL.

STORM DRAIN PRESSURE MANHOLES-CONCRETE COLLARS

CITY OF NAPA
PUBLIC WORKS DEPARTMENT
NOTES

1. WHERE THE TRENCH PARALLELS CURB AND THE NEAREST TRENCH LINE IS LESS THAN 3 FEET FROM THE GUTTER LIP, ALL EXISTING ASPHALT CONCRETE SHALL BE REPLACED TO THE GUTTER LIP.

2. 3 SACK SLURRY PCC BACKFILL COMPLYING WITH LATEST CALTRANS STANDARD SPECIFICATION IS REQUIRED FOR SHALLOW TRENCHES AND HIGH TRAFFIC AREAS.

3. REFER TO CITY STD. S-12 FOR ADDITIONAL REQUIREMENTS.
RCP STORM DRAIN

PCC

HEADWALL

8" CLR

INSTALL 4"X4"X1/4" GALVANIZED ANGLE

6" MIN.

IF PERPENDICULAR WINGWALL IS AVAILABLE SIDE BARS MAY BE DELETED IF CENTER BARS EXTEND TO WALL

TRASH RACK SHALL BE WELDED USING 2" SCHEDULE 80 PIPE, BARS, AND ANGLES AS SHOWN, AND SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

ENSURE THAT CONCRETE HAS REACHED FULL DESIGN STRENGTH (28 DAYS MIN. CURED) BEFORE DRILLING HOLES OR INSTALLING ANCHORS

SEE DETAIL BELOW

CLEAN AND PAINT ALL EXPOSED AREAS ABOVE RADIUS WITH 2 COATS GRAY GALVANIZED PAINT

SMOOTH RADIUS GALVANIZED FROM THIS POINT DOWN

6" MIN.

RCP STORM DRAIN

PCC HEADWALL

INSTALL 4"X4"X1/4" GALV. ANGLE

6" MIN.

6" MIN. BETWEEN BOLT AND TOP OF WALL

3/4" DIA. BOLT WITH 1 1/2" DIA. WASHER EACH SIDE, 12" O.C.

USE NYLOCK FASTENERS, APPROVED CONCRETE ANCHOR OR APPROVED EQUAL

NOTES:
1. STEEL TO BE ASTM DESIGNATION A-36
2. ALL FILLET WELDS TO BE 1/4" "
3. FOR PIPES LARGER THAN 60"Ø, TRASH RACK SHALL BE ENGINEERED

DRAWN BY:
CHECKED BY:
APPROVED BY:
APPROVAL DATE:
REVISED DATE:
DRAWING NO.

LFM
IHH
JBL
06/2018
08/2021
D-13

CITY OF NAPA
PUBLIC WORKS DEPARTMENT

STORM DRAIN INLET
TRASH RACK
STANDARD PLANS

STORMWATER QUALITY
DESIGN NOTES
1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SEE CITY STD. SWQ-140.

3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SIE). SEE CITY STD. SWQ-120.

4. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB, WALL, AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

5. IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM CITY STD. SWQ-131.

6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. [VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION]

7. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

8. PLANTING DESIGN AND IRRIGATION PER BASMAA POST-CONSTRUCTION MANUAL - PLANT MATRIX APPENDIX F.

9. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL - PLANT MATRIX APPENDIX F.

10. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES
1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.

2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.

3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.

4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
DESIGN NOTES
1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SEE CITY STD. SWQ-140.

3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SIE). SEE CITY STD. SWQ-120.

4. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB, WALL, AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

5. IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM CITY STD. SWQ-131.

6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. (VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION)

7. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

8. PLANTING DESIGN AND IRRIGATION PER BASMAA POST-CONSTRUCTION MANUAL - PLANT MATRIX APPENDIX F.

9. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL - PLANT MATRIX APPENDIX F.

10. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES
1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.

2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.

3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.

4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
**DESIGN NOTES**

1. Additional design guidance provided in bioretention facility figure 4.1 & 4.2 of BASMAA post-construction manual.

2. Overflow structure required for in-line systems without overflow bypass, per city std. SWQ-140.

3. Provide spot elevations at inlets on civil plans (FE, OE, GIE, SE), see city std. SWQ-121 and SWQ-122.


5. Edge condition will vary for new and retrofit projects. Curb and sidewalk details may be modified for project by civil and geotechnical engineers and approved by public works department.

6. If Caltrans class 2 permeable is not available, substitute class 3 permeable with an overlying 3" deep layer of 3/4" (No. 4) open-graded aggregate. (Verify with city of Napa construction division)


8. Planting design and irrigation per BASMAA post-construction manual appendix F - plant matrix.


10. Locate energy dissipation cobble only as specified in inlet details - avoid decorative use.

**CONSTRUCTION NOTES**

1. Scarify subgrade before installing bioretention area aggregate and BSM.

2. Facility excavation to allow for specified soil and mulch depths to achieve finished elevations on civil plans.

3. Compact each 6" lift of BSM with landscape roller or by lightly wetting. If wetting, allow to dry overnight before planting.

4. Do not work within bioretention area during rain or under wet conditions.

5. Keep heavy machinery outside bioretention area limits.
1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, CITY STD. SWQ-140.

3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE CITY STD. SWQ-121.

4. MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE CITY STD. SWQ-130 AND SWQ-131.

5. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLAYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. (VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION)

7. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

8. PLANTING DESIGN AND IRRIGATION PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F - PLANT MATRIX.

9. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F - PLANT MATRIX.

10. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.
EXISTING SUBGRADE DESIGN NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, CITY STD. SWQ-140.

3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE CITY STD. SWQ-120.

4. EDGE CONDITION WILL VARY FOR PARKING LOT PROJECTS. SEE PARKING LOT EDGE OPTIONS DETAILS SWQ-114. CURB AND FLUSH EDGE DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

5. IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM DETAIL SWQ-131.

6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. (VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION)

7. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

8. PLANTING DESIGN AND IRRIGATION PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F-PLANT MATRIX.

9. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F-PLANT MATRIX.

10. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS-AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.

2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.

3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.

4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.

PARKING LOT BIORETENTION FACILITY
(FLAT/PLANTER, WITHOUT UNDERDRAIN)
DESIGN NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, PER CITY STD. SWQ-140.

3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE CITY STD. SWQ-121.

4. MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE CITY STD. SWQ-130 AND SWQ-131.

5. EDGE CONDITION WILL VARY FOR PARKING LOT PROJECTS. SEE PARKING LOT EDGE OPTIONS DETAILS, SWQ-114. CURB AND FLUSH EDGE DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. (VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION)

7. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

8. PLANTING DESIGN AND IRRIGATION PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F-PLANT MATRIX.

9. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F-PLANT MATRIX.

10. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.

2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.

3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.

4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
CONSTRUCTION NOTES

1. Finish all exposed concrete surfaces.

DESIGN NOTES

1. Special design consideration or structural review may be required for longer planter wall spans. Steel reinforcement or additional concrete check dams may be needed for stability.

2. Edge condition will vary for new and retrofit projects. Curb, gutter, and wall details may be modified by civil and geotechnical engineers and approved by public works department. Note that 24" gutter provides greater curb stability, but may not match City of Napa gutter standards.

3. Concrete and expansion joints shall meet the requirements of the municipality.
DESIGN NOTES
1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER SWALE EDGE SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.

2. WHEN SIDEWALK DRAINS TO PLANTER, PROVIDE 4" - 6" WIDE NOTCH OPENINGS, 1" BELOW SIDEWALK, SLOPED TO FACILITY, PER BIORETENTION PLANTER DETAILS. SPACE OPENINGS TO CONVEY FLOWS. PROVIDE MINIMUM 2" COVER BETWEEN DRAINAGE NOTCH OPENING AND DOWELS.

3. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE CITY OF NAPA.

CONSTRUCTION NOTES
1. FINISH ALL EXPOSED CONCRETE SURFACES.
DESIGN NOTES
1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER FACILITY EDGE SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.

3. FINISHED ELEVATION REVEAL - WHERE SIDEWALK CONVEYS SHEET FLOW TO FACILITY, A 1"-2" REVEAL SHOULD BE MAINTAINED BETWEEN SIDEWALK AND FACILITY FINISHED GRADE TO AVOID MULCH OR PLANT BUILDUP FROM BLOCKING FLOWS.

4. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE CITY OF NAPA.

CONSTRUCTION NOTES
1. FINISH ALL EXPOSED CONCRETE SURFACES.
DESIGN NOTES
1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER FACILITY EDGE SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.

2. EDGE CONDITION WILL VARY FOR PROJECTS. CURB DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

3. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE CITY OF NAPA.

4. FINISHED ELEVATION REVEAL AT SIDEWALK - WHERE SIDEWALK CONVEYS SHEET FLOW TO FACILITY, A 1”-2” REVEAL SHOULD BE MAINTAINED BETWEEN SIDEWALK AND FACILITY FINISHED GRADE TO AVOID MULCH OR PLANT BUILDUP FROM BLOCKING FLOWS AND REDUCE DROP AT PEDESTRIAN INTERFACE.

CONSTRUCTION NOTES
1. FINISH ALL EXPOSED CONCRETE SURFACES.
DESIGN NOTES

1. WHEEL STOPS MAY BE USED ON NON-FLUSH DESIGNS TO KEEP CARS FROM OVERHANGING BIORETENTION FACILITY.

2. VEHICLE OVERHANG CAN BE USED TO REDUCE IMPERVIOUS PAVEMENT AREA.

3. WHERE VEHICLE OVERHANG IS UTILIZED SELECT LOW GROWING PLANTS THAT WILL TOLERATE SHADING.
DESIGN NOTES
1. FOR USE WITH STORMWATER FACILITIES WITH FLAT BOTTOMS.
2. PROVIDE SPOT ELEVATIONS ON PLANS (FE, OE, GIE, IE). SEE CITY STD. SWQ-100.
3. CURB AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.
4. CURB HEIGHT MAY BE REDUCED TO 4-INCHES WHERE ADJACENT TO A SIDEWALK. SEE CITY STD. SWQ-110 AND SWQ-111.

CONSTRUCTION NOTES
1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.
BIORETENTION DESIGN NOTES

1.FOR USE WITH STORMWATER FACILITIES WITH SIDE SLOPES.

2. PROVIDE SPOT ELEVATIONS ON PLANS (FE, OE, GIE, IE). SEE CITY STD SWQ-100.

3. CURB AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

4. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.

5. CURB HEIGHT MAY BE REDUCED TO 4-INCHES WHERE ADJACENT TO A SIDEWALK. SEE CITY STD. SWQ-110 AND SWQ-111.

CONSTRUCTION NOTES

1. AFTER CONSTRUCTION, PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.
BIORETENTION DESIGN NOTES
1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES OR FLAT BOTTOMS.


3. DROP FROM INLET TO AGGREGATE PAD WILL BE GREATER FOR PLANTERS.

3. CURB AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

4. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.

CONSTRUCTION NOTES
1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.
BIORETENTION DESIGN NOTES

1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES OR FLAT BOTTOMS.


3. REFER TO CITY OF NAPA STANDARD DRAWINGS AND MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER.

4. IF SLOPED SIDES, WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.

5. BASE MATERIAL FOR CURB, GUTTER, AND SIDEWALK PER CITY OF NAPA STANDARDS.

CONSTRUCTION NOTES

1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.
**STREET**

**CURB CUT INLET FOR PLANTERS, CITY STD. SWQ-120**

2 - #4 BARS 24' LONG

**STORMWATER FACILITY**

**6" DEPTH OF 3" - 6" ROUNDED, WASHED COBBLE SPLASH PAD**

PER CITY STD. SWQ-122

**6" PLANTER WALL**

**SIDEWALK OR PARKING EGRESS**

**ENCLOSED STEEL BOX**

**FLOW**

**VARIES**

**INLET PAN ELEVATION (IPE)**

**WALL PER FACILITY DESIGN**

**COBBLE SPLASH PAD**

**FINISHED ELEVATION (FE)**

**STORMWATER FACILITY FLAT BOTTOM OR SLOPE SIDED**

**SECTION A-A**

**SECTION B-B**

**CONSTRUCTION NOTES**

1. AFTER CONSTRUCTION PLACE GRAVEL BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.

2. GALVANIZED STEEL TO BE 1/4" THICK.

3. ALL CONCRETE SHALL BE CLASS "A" (6 SACK PER CUBIC YARD).

4. GALVANIZED STEEL BOX TO BE DESIGNED PER CITY STD. D-5B.

**BIORETENTION DESIGN NOTES**

1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES OR FLAT BOTTOMS.


3. REFER TO CITY OF NAPA STANDARD DRAWINGS AND MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER.

4. IF SLOPED SIDES, WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.

5. BASE MATERIAL FOR CURB, GUTTER, AND SIDEWALK PER CITY OF NAPA STANDARDS.
**BIORETENTION DESIGN NOTES**

1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES.

2. BEST SUITED FOR FACILITIES WITH $< \text{OF} \leq 2\%$ LONGITUDINAL SLOPE.

3. PROVIDE ELEVATIONS AND STATIONING AND/OR DIMENSIONING FOR CHECK DAMS.

4. SPACE CHECK DAMS TO MAXIMIZE PONDING ACROSS ENTIRE CELL.

5. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK.

**CONSTRUCTION NOTES**

1. DO NOT WORK DURING RAIN OR UNDER WET CONDITIONS.

2. KEEP ALL HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
BIORETENTION DESIGN NOTES
1. FOR USE WITH BIORETENTION PLANTERS OR SLOPED SIDED SWALES/RAIN GARDENS.
2. FOR CHECK DAMS LONGER THAN 12' SPECIFY REBAR OVERLAP LENGTH.
3. SPACE CHECK DAMS TO MAXIMIZE PONDING ACROSS CELLS.
4. PROVIDE ELEVATIONS AND STATIONING AND/OR DIMENSIONING FOR CHECK DAMS.
5. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK.
6. SHOW PLANTER WALL EMBEDDED IN EXISTING SUBGRADE OR DRAINROCK.

CONSTRUCTION NOTES
1. EMBED #3 REBAR 3" INTO CURB AND PLANTER WALL.
2. DO NOT WORK DURING RAIN OR UNDER WET CONDITIONS.
3. KEEP ALL HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
**DESIGN NOTES**

1. PROVIDE GRATE OVERFLOW ELEVATION ON PLANS.

2. TO INCORPORATE FLEXIBILITY INTO DESIGN OVERFLOW ELEVATION OR CORRECT ELEVATION OF AN EXISTING STRUCTURE, INSTALL OVERFLOW COLLAR, PER CITY STD. SWQ-141.

**CONSTRUCTION NOTES**

1. DO NOT ADJUST OVERFLOW GRATE ELEVATION, CONSTRUCT AS SHOWN ON PLANS.
DESIGN NOTES

1. MAY BE USED IN CONJUNCTION WITH OVERFLOW STRUCTURES TO ALLOW FOR FIELD ADJUSTMENT OF OVERFLOW ELEVATION, OR AS RETROFIT TO CORRECT EXISTING STRUCTURE THAT DOES NOT ALLOW PONDING TO OCCUR.

2. PROVIDE COLLAR OVERFLOW ELEVATION (COE) ON PLANS.

CONSTRUCTION NOTES

1. CENTER COLLAR ON OVERFLOW GRATE.

OVERFLOW STRUCTURE COLLAR
TRIM LINER TO TOP EDGE OF FLAT BAR. SILICONE SEAL TOP EDGE OF FLAT BAR. TOP OF LINER TO BE 3" BELOW SOIL LEVEL.

STORMWATER FACILITY
2" x 1/4" HIT ANCHOR 12" O.C.

1/8" MIN ALUMINUM FLAT BAR, 2' WIDTH

HDPE OR PVC 30 MIL LINER

DEPTH OF LINER PER CIVIL/GEOTECHNICAL ENGINEER

TRIM LINER TO TOP EDGE OF FLAT BAR. SILICONE SEAL TOP EDGE OF FLAT BAR. TOP OF LINER TO BE 3" BELOW SOIL LEVEL.
<table>
<thead>
<tr>
<th>Plant Categories</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasses and Grass-like Plants</td>
<td>Grass refer to those species that are monocotyledonous plants with slender-leaved herbage.</td>
</tr>
<tr>
<td>Herbaceous Perennials and Groundcovers</td>
<td>Herbaceous refers to those species with soft upper growth rather than woody growth. Some species will die back to the roots at the end of the growing season and grow again at the start of the next season. This list only includes those that are perennial, i.e. live for several years.</td>
</tr>
<tr>
<td>Shrubs</td>
<td>Shrub is a horticultural distinction that refers to those species of woody plants which are distinguished from trees by their multiple stems and lower height. A large number of plants can be either shrubs or trees, depending on the growing conditions they experience.</td>
</tr>
<tr>
<td>Small Tree</td>
<td>Small trees refers to those species of woody plants with one main trunk and a distinct and elevated head with a maximum size of 25' tall and wide.</td>
</tr>
<tr>
<td>Tree</td>
<td>Tree refers to those species of woody plants with one main trunk and a rather distinct and elevated head with a size greater than 25' tall or wide.</td>
</tr>
</tbody>
</table>

### Water Preference

#### Water Preference-Low/Moderate/High
We have provided recommendations for irrigation. All plants should be watered with more frequency during the first two years after planting. After this establishment period, Low water use plants will only need supplemental irrigation at the hottest and driest sites. Plants with Moderate irrigation needs will be best with occasional supplemental water (once per week to once per month) and plants with High irrigation needs will be best with more frequent watering especially during periods of drought in the cooler seasons.

#### Water Preference-Summer Irrigation
Plants with a check in this column will not withstand a long period of summer drought without irrigation. Plants with an 'ok' in this column are tolerant of, but do not require, frequent summer irrigation. Plants with nothing in this column may not tolerate summer irrigation after establishment.

### Stress Tolerance

#### Tolerates Heat
A check in the heat column indicates that the plant will tolerate hot sites. It should not be confused with a plants preference for sun. Absence of the check indicates it should only be used in areas close to the Bay or other cool sites.

#### Tolerates Coast
The coast column indicates plants that perform well within 1,000 feet of the ocean or bay. Most of these plants tolerate some amount of salt air, fog, and wind.

#### Tolerates Wind
A check in the wind column means that the plant will tolerate winds of ten miles per hour or more.

#### Zone 1
Plants that tolerate Zone 1 are common riparian, wetland and bog plants capable of surviving in saturated soils for long durations throughout the year. Most of these plants are not drought tolerant and require some water throughout the growing season.

#### Zone 2
Plants that tolerate Zone 2 are common in riparian/upland transition areas, moist woodlands, and seasonal wetlands. They are capable of surviving in saturated soils for shorter durations especially in the winter or spring. Many of these plants tolerate summer drought but could benefit from some year-round moisture.

### High Performers

#### Best for irrigated sites
These plants have been used successfully in irrigated bioretention areas in the Bay Area.

#### Best for non-irrigated sites
These plants have been used successfully in non-irrigated bioretention areas in the Bay Area. Temporary irrigation for establishment is highly recommended.

### Origin

#### CA Native
Indicates native or cultivar of California native. Cultivars offer habitat benefits to native wildlife and are adapted to the local climate but have reduced genetic diversity.
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Light Preference</th>
<th>Size (ft)</th>
<th>Watering</th>
<th>Tolerance</th>
<th>Best for non-native invaded sites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Agrostis gigantea</em></td>
<td>Giant rye</td>
<td>Full sun</td>
<td>1-2</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
</tr>
<tr>
<td><em>Artemisia absinthium</em></td>
<td>Wormwood</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
</tr>
<tr>
<td><em>Calamintha nepeta</em></td>
<td>Catmint</td>
<td>Partial shade</td>
<td>1-3</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
</tr>
<tr>
<td><em>Carex elata</em></td>
<td>Northern sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
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<tr>
<td><em>Carex bromoides</em></td>
<td>Marsh grass</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
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<td><em>Carex lasiocarpa</em></td>
<td>Korean sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
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<td><em>Carex geyeri</em></td>
<td>Bluejoint sedge</td>
<td>Full sun</td>
<td>2-4</td>
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<td><em>Carex viridis</em></td>
<td>Green sedge</td>
<td>Full sun</td>
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<tr>
<td><em>Carex stricta</em></td>
<td>Sharp sedge</td>
<td>Full sun</td>
<td>2-4</td>
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<td>Moderate</td>
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<td><em>Carex hystrix</em></td>
<td>Sedge</td>
<td>Full sun</td>
<td>2-4</td>
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<td><em>Carex curvula</em></td>
<td>Bent sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
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<td><em>Carex pendula</em></td>
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<td><em>Carex rostrata</em></td>
<td>Long beaked sedge</td>
<td>Full sun</td>
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<td><em>Carex oligosperma</em></td>
<td>Narrow leaved sedge</td>
<td>Full sun</td>
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<td><em>Carex capillaris</em></td>
<td>Hair grass</td>
<td>Full sun</td>
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<td><em>Carex radiata</em></td>
<td>Needle sedge</td>
<td>Full sun</td>
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<td>Good for soilless, native soil, or those invaded by native species.</td>
</tr>
<tr>
<td><em>Carex rostrata</em></td>
<td>Long beaked sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
</tr>
<tr>
<td><em>Carex oligosperma</em></td>
<td>Narrow leaved sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
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<tr>
<td><em>Carex capillaris</em></td>
<td>Hair grass</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
<td>Good for soilless, native soil, or those invaded by native species.</td>
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<tr>
<td><em>Carex radiata</em></td>
<td>Needle sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
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</tr>
<tr>
<td><em>Carex viridula</em></td>
<td>Pearl sedge</td>
<td>Full sun</td>
<td>2-4</td>
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<td>Moderate</td>
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</tr>
<tr>
<td><em>Carex hystrix</em></td>
<td>Sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
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</tr>
<tr>
<td><em>Carex curvula</em></td>
<td>Bent sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
<td>Good</td>
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</tr>
<tr>
<td><em>Carex pendula</em></td>
<td>Beaked sedge</td>
<td>Full sun</td>
<td>2-4</td>
<td>High</td>
<td>Moderate</td>
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<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Percent</td>
<td>Species Code</td>
<td>Seed Source</td>
<td>Seed Type</td>
<td>Seed Rate</td>
<td>Direct Seeding</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>---------</td>
<td>--------------</td>
<td>-------------</td>
<td>-----------</td>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>Abies concolor</td>
<td>Incense Cedar</td>
<td>20</td>
<td>1234567</td>
<td>89</td>
<td>100</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>Acer saccharum</td>
<td>Sugar Maple</td>
<td>30</td>
<td>78901234</td>
<td>567</td>
<td>120</td>
<td>15</td>
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<tr>
<td>Betula papyrifera</td>
<td>Paper Birch</td>
<td>25</td>
<td>45678901</td>
<td>234</td>
<td>110</td>
<td>12</td>
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</tr>
<tr>
<td>Cornus sericea</td>
<td>Red Osier Dogwood</td>
<td>15</td>
<td>34567890</td>
<td>123</td>
<td>90</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>Fraxinus americana</td>
<td>Red Maple</td>
<td>10</td>
<td>01234567</td>
<td>345</td>
<td>80</td>
<td>7</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NOTES:**
- Seed rates are expressed in kg/ha.
- Direct seeding is preferred for areas with good soil conditions.
- Transplanting is necessary for areas with poor soil conditions or for specific species.
- Germination rates are based on local conditions and may vary.
- Establishment rates are for complete plant establishment within the first year.
- Percentage values are approximate and may vary with location and environmental factors.
Varying slope and ponding levels: Varying slope and ponding levels: This bioretention planting area has sloped edges. Plants in the bottom area will be inundated during storms (Zone A). Those planted on the sideslopes are above the level of ponding, but will experience seasonally wet conditions (Zone B).

Uniform surface grade: This stormwater planter has a flat bottom with consistent depth of ponding across the structure. All of the plants selected for this design must be tolerant of periodic inundation (Zone A).
**DESIGN NOTES**

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, CITY STD. SWQ-140.

3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE,OE, GIE, SIE). SEE CITY STD. SWQ-120.

4. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB, WALL, AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY THE PUBLIC WORKS DEPARTMENT.

5. PROVIDE CAPPED, THREADED PVC CLEANOUT FOR UNDERDRAIN, 4" MIN. DIA. WITH SWEEP BEND.

6. IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM PER CITY STD. SWQ-131.

7. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. [VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION]

8. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

9. PLANT SELECTION PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F - PLANT MATRIX.

10. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F - PLANT MATRIX.

11. LOCATE ENERGY DISSIPATION COBBLE PADS AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

**CONSTRUCTION NOTES**

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.

2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.

3. INSTALL UNDERDRAIN WITH HOLES FACING DOWN. UNDERDRAIN DISCHARGE ELEVATION SHALL BE NEAR TOP OF AGGREGATE LAYER. UNDERDRAIN SLOPE MAY BE FLAT.

4. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, LET DRY OVERNIGHT BEFORE PLANTING.

5. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

6. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
EXISTING SUBGRADE DESIGN NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION FACILITY FIGURE 4.1 & 4.2 OF THE BASMAA POST-CONSTRUCTION MANUAL.

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7. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER BASMAA POST-CONSTRUCTION MANUAL.

8. PLANTING DESIGN AND IRRIGATION PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F-PLANT MATRIX.

9. MULCH (OPTIONAL) PER BASMAA POST-CONSTRUCTION MANUAL APPENDIX F-PLANT MATRIX.

10. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS-AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.

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2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, CITY STD. SWQ-140.


4. MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE CITY STD. SWQ-130 AND SWQ-131.

5. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" [NO. 4] OPEN-GRADED AGGREGATE. (VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION)

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2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT AN OVERFLOW BYPASS, CITY STD. SWQ-140.
3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE CITY STD. SWQ-121.
4. MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE CITY STD. SWQ-130 AND SWQ-131.
5. EDGE CONDITION WILL VARY FOR NEW/RETROFIT, CITY STD. SWQ-111, SWQ-112 AND SWQ-113.
6. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE. (VERIFY WITH CITY OF NAPA CONSTRUCTION DIVISION)
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EXISTING SUBGRADE

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3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE CITY STD. SWQ-120.

4. EDGE CONDITION WILL VARY FOR PARKING LOT PROJECTS. SEE PARKING LOT EDGE OPTIONS DETAIL SWQ-114. CURB AND FLUSH EDGE DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS AND APPROVED BY PUBLIC WORKS DEPARTMENT.

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5. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

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5. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.

6. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
MANHOLE COVERS WITH "NO DUMPING - DRAINS TO RIVER" SIGNAGE MAY SUBSTITUTE ADDITIONAL MARKINGS. STORM DRAIN COVERS SHALL BE FROM OLDCASTLE PRECAST MODEL: CIN-COVER.

EACH STORM DRAIN WITHIN THE CITY LIMITS NEEDS TO BE MARKED WITH A "NO DUMPING - DRAINS TO RIVER" MARKER. CONTRACTOR IS TO PURCHASE THESE MARKERS FROM THE PUBLIC WORKS DEPARTMENT LOCATED AT 1600 FIRST STREET.
STANDARD PLANS

STREETS
NOTES

1. ALL CURBS ON PRIVATE STREETS AND PARKING LOTS SHALL BE PER CITY STANDARDS.
2. ALL CONCRETE SHALL BE 4000 PSI (6 SACKS PER CUBIC YARD), 3/4" AGGREGATE.
3. CONCRETE SHALL BE BRUSH FINISHED PARALLEL TO FACE OF CURB.
4. ALL CURBS SHALL BE BACKFILLED BEFORE STREET IS ROCKED & PAVED.
5. CLASS 2 AGGREGATE BASEROCK, SUBGRADE & FILL MATERIAL IF ANY SHALL HAVE A MINIMUM OF 95% RELATIVE COMPACTION UNDER CURB & GUTTER.
6. ON STRAIGHT RUN OF STD. CURB & GUTTER, 1/2" EXPANSION JOINTS SHALL BE INSTALLED AT 40' ON CENTER, & WEAK PLANE JOINTS SHALL BE INSTALLED MIDWAY BETWEEN EXPANSION JOINTS.
7. FOR EXPANSION JOINTS & WEAK PLANE JOINTS AT CURB RETURNS SEE CITY STD. S-8 & S-9. FOR EXPANSION JOINTS & WEAK PLANE JOINTS AT CATCH BASINS SEE CITY STD. D-2, D-2A, D-4A.
8. SUBGRADE AND CLASS 2 AGGREGATE BASE SHALL EXTEND TO ONE FOOT BEHIND CURB AND GUTTER.
9. EXTRUDED CURB AND GUTTER SHALL HAVE WEAK PLANE JOINTS AT 12' ON CENTER.
10. UTILITY IDENTIFICATION MARKINGS ("S" FOR SANITARY SEWER AND "W" FOR WATER UTILITIES) SHALL BE STAMPED WHERE UNDERLYING UTILITIES ARE IDENTIFIED. MARKINGS SHALL BE 1/4" DEEP, 3" HIGH PLACED ON TOP OF CURB AND FACE OF CURB.
NOTES

1. THIS STD. TO BE USED WHERE EXISTING GUTTER IS 12”. ALL NEW CURB AND GUTTER SHALL BE PER CITY STD. S-1.

2. ALL CURBS ON PRIVATE STREETS AND PARKING LOTS SHALL BE PER CITY STANDARDS.

3. ALL CONCRETE SHALL BE 4000 PSI (6 SACKS PER CUBIC YARD), 3/4” AGGREGATE.

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8. FOR EXPANSION JOINTS & WEAK PLANE JOINTS AT CURB RETURNS SEE CITY STD. S-8 & S-9. FOR EXPANSION JOINTS & WEAK PLANE JOINTS AT CATCH BASINS SEE CITY STD. D-2, D-2A, AND D-4A.

9. SUBGRADE AND CLASS 2 AGGREGATE BASE SHALL EXTEND TO ONE FOOT BEHIND CURB AND GUTTER.

10. EXTRUDED CURB AND GUTTER SHALL HAVE WEAK PLANE JOINTS AT 12’ ON CENTER.

11. UTILITY IDENTIFICATION MARKINGS (“S” FOR SANITARY SEWER AND “W” FOR WATER UTILITIES) SHALL BE STAMPED WHERE UNDERLYING UTILITIES ARE IDENTIFIED. MARKINGS SHALL BE 1/8” DEEP, 3” HIGH PLACE ON TOP OF CURB AND FACE OF CURB.
NOTES
1. ALL CURBS INSTALLED ON PRIVATE PROPERTY SHALL BE TO CITY STDS.
2. ALL CONCRETE SHALL BE 4000 PSI (6 SACKS PER CUBIC YARD), 3/4" AGGREGATE.
3. CONCRETE SHALL BE BRUSH FINISHED PARALLEL TO FACE OF CURB.
4. ALL CURBS SHALL BE BACKFILLED BEFORE STREET IS ROCKED AND PAVED.
5. CLASS 2 AGGREGATE BASE, SUBGRADE AND FILL MATERIAL SHALL HAVE A MINIMUM OF 95% COMPACTION UNDER CURB.
6. ON STRAIGHT RUN OF CURB AND GUTTER, 1/2" EXPANSION JOINTS SHALL BE INSTALLED ON 40' ON CENTER, & WEAK PLANE JOINTS SHALL BE INSTALLED AT 10' ON CENTER.
7. FOR EXPANSION JOINTS & WEAK PLANE JOINTS AT CURB RETURNS SEE CITY STD. S-8 & S-9. FOR EXPANSION JOINTS & WEAK PLANE JOINTS AT CATCH BASINS SEE CITY STD. D-2, D-2A, AND D-4A. NOT APPLICABLE TO B-3 CURB.
8. SUBGRADE AND CLASS 2 AGGREGATE BASE SHALL EXTEND TO ONE FOOT BEHIND CURB AND GUTTER.
9. EXTRUDED CURB AND GUTTER SHALL HAVE WEAK PLANE JOINTS AT 12' ON CENTER.
CITY OF NAPA

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

CURB TRANSITIONS

DRAWN BY: LFM
CHECKED BY: IHH
APPROVAL DATE: 06/2018
APPROVED BY: JBL
SCALE: NONE
REVISED DATE: 08/2021

PLAN VIEW
ROLLED CURB TRANSITION TO STRAIGHT CURB AND 2' GUTTER

PLAN VIEW
ROLLED CURB TRANSITION TO 2' GUTTER AT CURB RETURN

PLAN VIEW
1' GUTTER TRANSITION TO STRAIGHT CURB AND 2' GUTTER
1. All concrete to be 4000 PSI (6 sacks per cubic yard), 3/4" aggregate.
2. New Class II aggregate base required for all construction.
3. All sidewalks shall be 4" thick. Sidewalks shall be 6" thick at driveways.
4. On standard sidewalks, 1/2" expansion joints shall be installed at 40' on center and weak plane joints shall be installed midway between expansion joints. On curb adjacent sidewalks, expansion joints and weak plane joints shall be aligned with the expansion joints in the curb and gutter.
5. Transverse score lines shall be installed at 4' intervals on residential sidewalk and at 5' intervals on commercial sidewalk. For 5.5' adjacent sidewalk, score lines shall be installed at 5' intervals.
6. For all utility boxes, weak plane joints shall be installed on both sides of the box. Weak plane joints shall extend the entire width of the sidewalk, or as directed by the engineer.
7. Compaction tests are required on native subgrade and Class II AB for all construction.
8. For adjacent sidewalk and business or commercial sidewalks, street tree wells shall be field located by the engineer prior to pouring sidewalk.
9. All sidewalks shall maintain a 4' A.D.A. path of travel without obstructions.
10. Sidewalks adjacent to existing curb shall be dowelled per detail S-4B.
NOTES

1. WIDEN SIDEWALK AROUND FIRE HYDRANT AS REQUIRED TO PROVIDE MINIMUM 4' CLEAR PATH ALONG PEDESTRIAN ROUTE OF TRAVEL.

2. RIGHT OF WAY WIDENING TO BE DEDICATED AS REQUIRED TO CONTAIN WIDENED SIDEWALK ENTIRELY WITHIN CITY RIGHT OF WAY.

3. SEE CITY STDS. S-1, S-4, S-5, S-8, AND W-8 FOR ADDITIONAL INFORMATION.
SIDEWALK CONNECTION

SAWCUT AND INSTALL 1/2" EXPANSION JOINT WITH JOINT FILLER

NEW SW

EX SW

DRL HOLE 6" DEEP INTO EX SW FOR #4 REBAR (TYP)

6" OF #4 SLIP DOWEL CENTERED IN NEW SIDEWALK (TYP)

SIDEWALK, CURB AND GUTTER CONNECTION

EX CURB

DRL HOLE 4" DEEP INTO EX CURB FOR #4 REBAR (TYP)

DRL HOLE 6" DEEP INTO EX CURB FOR #4 REBAR (TYP)

SAWCUT AND INSTALL 1/2" EXPANSION JOINT WITH JOINT FILLER

NEW SW

NEW CURB

6" OF #4 SLIP DOWEL CENTERED 3" BELOW SURFACE IN NEW SIDEWALK (TYP)

NOTES

1. FOR ALL CURB AND GUTTER CONNECTIONS, ADJUST CURB FACE HEIGHT AS NECESSARY TO MATCH EXISTING CURB
NOTES

1. EXISTING CURB, GUTTER AND SIDEWALK SHALL BE CUT AT THE FIRST SCORE LINE BEYOND THE NEW DRIVEWAY LOCATION WITH AN ABRASIVE TYPE SAW TO A MINIMUM DEPTH OF 1½". THE OLD CURB, GUTTER AND SIDEWALK SHALL BE ENTIRELY REMOVED AND REPLACED WITH 4000 PSI (6 SACKS PER CY) CONCRETE AS SHOWN.

2. 1/2" EXPANSION JOINT MATERIAL SHALL BE PLACED ALONG EACH SIDE OF ALL NEW DRIVEWAY APPROACHES. WHERE SIDEWALKS, CURBS AND GUTTERS ARE EXISTING COLD JOINTS OR SLIP DOWELS MAY BE SUBSTITUTED.

3. A TRANSVERSE WEAK PLANE JOINT SHALL BE INSTALLED ON THE CENTERLINE OF ALL DRIVEWAYS. THE LONGITUDINAL LINE, AS SHOWN, SHALL BE A WEAK PLANE JOINT 4' FROM BACK OF SIDEWALK. SCORE LINES SHALL BE PLACED ONLY IN THIS 4' SIDEWALK AREA.

4. NEW DRIVEWAY APPROACHES SHALL NOT ENCROACH WITHIN 10' OF CURB RETURNS. MINIMUM LENGTH OF FULL HEIGHT CURB BETWEEN COMMERCIAL APPROACHES SHALL BE 20 FEET.

5. ABANDONED DRIVEWAY APPROACHES SHALL BE REMOVED AND REPLACED WITH STANDARD CURB AND GUTTER.

6. WHERE EXISTING FACILITIES ARE NON-CONFORMING, APPROACHES MAY BE MODIFIED AS DIRECTED BY THE CITY ENGINEER.

7. INSTALL 1/2" EXPANSION JOINT WHEN CONCRETE IS TO BE INSTALLED BEHIND DRIVEWAY APPROACH.

8. RAMP LENGTH CAN VARY (1.5' MINIMUM) AS REQUIRED TO SATISFY A.D.A. REQUIREMENTS FOR CURB ADJACENT SIDEWALK UPON APPROVAL BY THE CITY ENGINEER. SEE STANDARD DRAWING S-5A.
NOTES

1. EXISTING CURB, GUTTER AND SIDEWALK SHALL BE CUT AT THE FIRST SCORE LINE BEYOND THE NEW DRIVEWAY LOCATION WITH AN ABRASIVE TYPE SAW TO A MINIMUM DEPTH OF 1 1/2". THE OLD CURB, GUTTER AND SIDEWALK SHALL BE ENTIRELY REMOVED AND REPLACED WITH 4000 PSI (6 SACKS PER CY) CONCRETE AS SHOWN.

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NOTES

1. EXISTING CURB, GUTTER AND SIDEWALK SHALL BE CUT AT THE FIRST SCORE LINE BEYOND THE NEW DRIVEWAY LOCATION WITH AN ABRASIVE TYPE SAW TO A MINIMUM DEPTH OF 1½”. THE OLD CURB, GUTTER AND SIDEWALK SHALL BE ENTIRELY REMOVED AND REPLACED WITH 4000 PSI (6 SACKS PER CY) CONCRETE AS SHOWN.

2. 1/2” EXPANSION JOINT MATERIAL SHALL BE PLACED ALONG EACH SIDE OF ALL NEW DRIVEWAY APPROACHES. WHERE SIDEWALKS, CURBS AND GUTTERS ARE EXISTING COLD JOINTS OR SLIP DOWELS MAY BE SUBSTITUTED.

3. A TRANSVERSE WEAK PLANE JOINT SHALL BE INSTALLED ON THE CENTERLINE OF ALL DRIVEWAYS. THE LONGITUDINAL LINE, AS SHOWN, SHALL BE A WEAK PLANE JOINT 4’ FROM BACK OF SIDEWALK. SCORE LINES SHALL BE PLACED ONLY IN THIS 4’ SIDEWALK AREA.

4. ABANDONED DRIVEWAY APPROACHES SHALL BE REMOVED AND REPLACED WITH STANDARD CURB AND GUTTER.

5. WHERE EXISTING FACILITIES ARE NON-CONFORMING, APPROACHES MAY BE MODIFIED AS DIRECTED BY THE CITY ENGINEER.

6. INSTALL 1/2’ EXPANSION JOINT WHEN CONCRETE IS TO BE INSTALLED BEHIND DRIVEWAY APPROACH.
NOTES

1. MEDIAN CURBS SHALL BE A1-6 PER CITY STD. S-2.
2. MEDIAN SURFACING IS TO BE SHOWN ON THE PLANS & SPECIFICATIONS.
3. BIKE LANE - SEE FUTURE BIKEWAY MAP FIGURE 3-5 IN THE GENERAL PLAN FOR BIKE LANE LOCATIONS. IF BIKE LANES ARE NOT REQUIRED, THE RIGHT OF WAY WIDTH MAY BE REDUCED ACCORDINGLY.
4. BIKE ROUTES - SEE FUTURE BIKEWAY MAP FIGURE 3-5 IN THE GENERAL PLAN FOR CLASS 3 (BIKE ROUTE) LOCATIONS. STREETS DESIGNATED AS CLASS 3 BIKE ROUTES SHALL HAVE 14' WIDE OUTSIDE TRAVEL LANES.
5. SEE CITY STD. S-4 FOR SIDEWALK (SW) AND LANDSCAPE (LS) AREA STANDARDS.
6. SEE GENERAL PLAN; CHAPTER 3: TRANSPORTATION, Table 3-3 "CLASSIFICATION OF FUTURE ROADWAY SYSTEM" TO IDENTIFY THOSE STREETS THAT ARE CLASSIFIED AS COLLECTORS AND ARTERIALS.
NOTES

1. BIKE LANES - SEE FUTURE BIKEWAY MAP FIGURE 3-5 IN THE GENERAL PLAN FOR BIKE LANE LOCATIONS. IF BIKE LANES ARE NOT REQUIRED, THE RIGHT OF WAY WIDTH MAY BE REDUCED ACCORDINGLY.

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4. SEE GENERAL PLAN; CHAPTER 3: TRANSPORTATION, TABLE 3-3 "CLASSIFICATION OF FUTURE ROADWAY SYSTEM" TO IDENTIFY THOSE STREETS THAT ARE CLASSIFIED AS COLLECTORS AND ARTERIALS.
NOTES

1. TYPE "A" COLLECTORS SERVE RESIDENTIAL, MIXED USE PROJECTS AND COMMERCIAL PROJECTS. TYPE "B" COLLECTORS SERVE CORPORATE PARK AND INDUSTRIAL PROJECTS.

2. BIKE Lanes - SEE FUTURE BIKEWAY MAP FIGURE 3-5 IN THE GENERAL PLAN FOR BIKE LANE LOCATIONS. IF BIKE Lanes ARE NOT REQUIRED, THE RIGHT OF WAY WIDTH MAY BE REDUCED ACCORDINGLY.

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5. SEE GENERAL PLAN; CHAPTER 3: TRANSPORTATION, TABLE 3-3 "CLASSIFICATION OF FUTURE ROADWAY SYSTEM" TO IDENTIFY THOSE STREETS THAT ARE CLASSIFIED AS COLLECTORS AND ARTERIALS.
NOTES

1. SEE CITY STD. S-4 FOR SIDEWALK (SW) AND LANDSCAPE (LS) AREA STANDARDS.

2. TYPE A LOCAL STREETS ARE TYPICALLY DOUBLE LOADED SERVING RESIDENCES ON BOTH SIDES OF THE STREET.

3. TYPE B LOCAL STREETS ARE TYPICALLY SINGLE LOADED WITH RESIDENCES ON THE PARKING SIDE OF THE STREET.

4. TYPE C LOCAL STREETS ARE TYPICALLY USED FOR THE NON-LOADED (NO RESIDENCES OR DRIVEWAYS FRONTING THE STREET) PORTIONS ON THE STREET THAT CONNECT OR LEAD TO DEVELOPED PORTIONS OF THE SITE.

5. STREET CROSS SECTIONS MAY BE WIDER THAN INDICATED AS NECESSARY TO CONFORM TO THE SIGHT DISTANCE AND VISIBILITY STANDARDS, PARKING REQUIREMENTS, VEHICLE BACKUP AND TURNAROUND MOVEMENTS, AND FIRE DEPARTMENT TURNING MOVEMENTS. COMPLIANCE WITH ACCESS REQUIREMENTS IS TO BE DEMONSTRATED BY PLOTTING THE PARKING SPACE LOCATIONS AND THE APPROPRIATE AASHTO VEHICLE TURNING TEMPLATES ON THE IMPROVEMENT PLANS FOR ALL STREET CROSS SECTIONS.

6. STREET DESIGNS SHALL ALSO CONFORM TO THE REQUIREMENTS LISTED IN MUNICIPAL CODE SECTION 17.52.36 "PEDESTRIAN FRIENDLY STREETS."

CITY OF NAPA

STREET STANDARD
LOCAL STREETS

PUBLIC WORKS DEPARTMENT

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NOTES

1. SEE CITY STD. S-4 FOR SIDEWALK (SW) AND LANDSCAPE (LS) AREA STANDARDS.

2. PLANTER STRIPS ARE REQUIRED BETWEEN THE SIDEWALK AND THE CURB, EXCEPT CURB ADJACENT SIDEWALKS MAY BE USED WHEN APPROVED BY THE CITY ENGINEER TO AVOID SIGNIFICANT ENVIRONMENTAL IMPACTS RELATED TO HILLSIDE STREET GRADING AND/OR THE REMOVAL OF SIGNIFICANT TREES.

3. STREET CROSS SECTIONS MAY BE WIDER THAN INDICATED AS NECESSARY TO CONFORM TO THE SIGHT DISTANCE AND VISIBILITY STANDARDS, PARKING REQUIREMENTS, VEHICLE BACKUP AND TURNAROUND MOVEMENTS, AND FIRE DEPARTMENT TURNING MOVEMENTS. COMPLIANCE WITH ACCESS REQUIREMENTS IS TO BE DEMONSTRATED BY PLOTTING THE PARKING SPACE LOCATION AND THE APPROPRIATE AASHTO VEHICLE TURNING TEMPLATES ON THE IMPROVEMENT PLANS FOR ALL STREET CROSS SECTIONS.

4. STREET DESIGNS SHALL ALSO CONFORM TO THE REQUIREMENTS LISTED IN MUNICIPAL CODE SECTION 17.52.36 PEDESTRIAN FRIENDLY STREETS.

5. HILLSIDE SURFACE IMMEDIATELY BEYOND CURB AND GUTTER, SIDEWALK OR LANDSCAPING TO BE LESS THAN 2% GRADE. GRADE REQUIREMENTS SHALL OCCUR OVER A MINIMUM OF 1' PAST SIDEWALK/LANDSCAPING AND A MINIMUM OF 1.5' PAST CURB AND GUTTER.
NOTES

1. LOCAL RURAL STREETS MAY BE USED FOR RESIDENTIAL PROJECTS WHEN FRONTING LOT SIZES ARE 20,000 SF OR GREATER.

2. GENERALLY CURB AND GUTTER IS REQUIRED TO CONTROL STREET SIDE DRAINAGE, BUT ALTERNATE METHODS MAY BE CONSIDERED ON A CASE BY CASE BASIS AS APPROPRIATE TO ACCOMMODATE AND PROVIDE FOR WATER QUALITY MEASURES (BEST MANAGEMENT PRACTICES FOR STORM WATER POLLUTION PREVENTION) AS REVIEWED AND APPROVED BY THE CITY ENGINEER.

3. STREET DESIGNS SHALL ALSO CONFORM TO THE REQUIREMENTS LISTED IN MUNICIPAL CODE SECTION 17.52.36 PEDESTRIAN FRIENDLY STREETS.
NOTES

* On private streets and curb radius may be reduced to 35' when at least one 8' wide parallel parking bay is provided outside the 35' radius area, along the front of each lot per Spec 3.04.01

1. Generally the standard cul-de-sac bulb dimensions shown are required for all residential turnarounds. However, alternate turnaround designs will be allowed as indicated in the section titled "Fire Department Access" of the City of Napa Street Standard Specifications.
NOTE:

* ON PRIVATE STREETS AND CURB RADIUS MAY BE REDUCED TO 35’ WHEN AT LEAST ONE 8’ WIDE PARALLEL PARKING BAY IS PROVIDED OUTSIDE THE 35’ RADIUS AREA, ALONG THE FRONT OF EACH LOT PER SPEC 3.04.01

1. WHEN A STANDARD TURNAROUND IS REQUIRED (AND THAT TURNAROUND WILL SERVE FUTURE DEVELOPMENT ACROSS THE STREET ON AN ABUTTING PARCEL) A PARTIAL CUL-DE-SAC DESIGNED IN ACCORDANCE WITH EITHER STANDARD DETAIL S-7C (FIRE ENGINE) OR CITY STD. S-7D (FIRE LADDER TRUCK) WILL BE ALLOWED AS AN INTERIM SOLUTION WHEN APPROVED BY THE FIRE CHIEF.

2. SEE CITY STD. S-7A FOR ADDITIONAL DESIGN PARAMETERS.

CITY OF NAPA

PARTIAL RESIDENTIAL CUL-DE-SAC
WITH ABUTTING FUTURE DEVELOPMENT - FIRE ENGINE

PUBLIC WORKS DEPARTMENT

DRAWN BY: LFM
APPROVAL DATE: 06/2018
SCALE: NONE
REVISED DATE: 08/2021

APPROVED BY: JBL
DRAWING NO. S-7C

CHECKED BY: IHH
* ON PRIVATE STREETS AND CURB RADIUS MAY BE REDUCED TO 35' WHEN AT LEAST ONE 8' WIDE PARALLEL PARKING BAY IS PROVIDED OUTSIDE THE 35' RADIUS AREA, ALONG THE FRONT OF EACH LOT PER SPEC 3.04.01

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2. SEE CITY STD. S-7A FOR ADDITIONAL DESIGN PARAMETERS.
NOTES:

1. PLACE TRANSVERSE SCORE LINES AT 4' INTERVALS ON FACE OF CURB, RADIAL TO THE RADIUS POINT.

2. IN ADDITION TO THE REQUIREMENTS SHOWN ON THIS DRAWING, CURB RAMPS SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT CALTRANS STANDARD A88A (SEE CITY STD. S-9).

3. WHERE EXISTING FACILITIES ARE NONCONFORMING OR RIGHT-OF-WAY LIMITATIONS EXIST, RAMPS MAY BE MODIFIED AS APPROVED BY THE CITY ENGINEER.

4. NEW CLASS II AB REQUIRED FOR ALL CONSTRUCTION.

5. ALL CONCRETE SHALL BE 4000 PSI (6 SACKS PER CUBIC YARD), 3/4" AGGREGATE.
CALTRANS STANDARD PLAN A88A
CURB RAMP DETAILS

DETAIL A
TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1

DETAIL B
TYPICAL ONE-RAMP CORNER INSTALLATION
See Notes 1 and 3
1. All unsupported pavement structural section edges shall include edge protection per this detail.
2. All concrete shall be 4000 PSI (6 sacks per cubic yard), 3/4” max aggregate.
3. Concrete shall be brush finished parallel to face of curb.
4. All curbs shall be backfilled before street is rocked and paved.
5. Class 2 aggregate base, subgrade and fill material, if any, shall have a minimum of 95% relative compaction under curbs.
6. On straight run of curb, 1/2 inch expansion joints shall be installed on 40 foot C.C. and weak plane joints installed midway between expansion joints.
7. Subgrade shall extend under all shoulder backing and to one foot behind flush curb.
NOTES

1. ALL CONCRETE SHALL BE 4000 PSI (6 SACKS PER CUBIC YARD), 3/4" AGGREGATE.

2. CONCRETE SHALL BE BRUSH FINISHED PARALLEL TO FACE OF CURB.

3. SEE CITY STD S-4B, CONCRETE CONNECTION DETAIL.
NOTES

ORDINATES, IN DECIMAL PARTS OF A FOOT, ESTABLISH THE DISTANCE OF THE PAVEMENT SURFACE OF THE TRANSVERSE STREET BELOW THE NORMAL STREET GRADE, FROM STA. 0+00 TO 0+25.

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1. ALL TRENCH CUTS SHALL BE CUT TO A NEAT LINE WITH A CONCRETE SAW.

2. ALL TRENCH CUTS SHALL BE “T-CUT” ONE FOOT WIDER THAN THE TRENCH EXCAVATION. T-CUT SHALL BE INCLUDE FULL DEPTH AC.

3. THE EXISTING ASPHALT SHALL BE REMOVED AND REPLACED BETWEEN THE EDGE OF THE TRENCH AND THE EXISTING CURB AND GUTTER IF LESS THAN THREE FEET OF ASPHALT REMAINS.

4. VERIFY BEDDING BACKFILL MATERIAL REQUIREMENTS WITH EACH UTILITY OWNER’S SPECIFICATIONS AND STANDARDS. FOR STORM DRAINS, BED AND BACKFILL ONE FOOT OVER THE CROWN OF THE PIPE WITH 3/4” CLEAN CRUSHED ROCK, SEE CITY STD. D-12 FOR ADDITIONAL REQUIREMENTS. FOR WATER LINE REQUIREMENTS, SEE CITY STD. W-13A.

5. IN ALL PAVED AREAS, BOTH PRIVATE AND PUBLIC, TRENCHES SHALL BE BACKFILLED FULL DEPTH WITH CLASS II AGGREGATE BASEROCK COMPACTED TO 95% RELATIVE COMPACTION. RECYCLED AGGREGATE BASEROCK MAY BE USED. THE PROJECT GEOTECHNICAL ENGINEER SHALL TAKE SUFFICIENT TESTS TO ASSURE THAT ALL COMPACTION REQUIREMENTS ARE MET.

6. IN UNPAVED AREAS, NATIVE MATERIAL COMPACTED TO 90% MAY BE USED FOR TRENCH BACKFILL.

7. NO JETTING OF BACKFILL MATERIAL IS ALLOWED.

8. ANY ADJACENT PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE CUT INTO A NEAT LINE AND REMOVED PRIOR TO PAVING, AS MARKED BY CITY INSPECTOR/ENGINEER.

9. ALL TRENCHES IN PAVED AREAS SHALL HAVE TEMPORARY CUTBACK INSTALLED OR BE PLATED AT THE END OF EACH WORKING DAY.

10. ALL TRENCHES SHALL BE PAVED WITH HOT MIX ASPHALT WITHIN SEVEN DAYS.

11. TRENCH PAVING SHALL BE MINIMUM OF FIVE INCHES OF ASPHALT OR MATCH THE EXISTING PAVEMENT SECTION WHICHEVER IS GREATER, AND INSTALLED IN 2 LIFTS.

12. ALL VERTICAL EDGES SHALL BE TACK COATED USING SS-1 OR RS-1 EMULSIFIED OIL. TRENCH JOINT SHALL BE TACK COATED AND SANDED WITHIN 3 DAYS OF PAVING.
NOTES

1. SURVEYOR OR ENGINEER SETTING THE MONUMENT SHALL INDICATE EXACT POINT BY MAKING A CROSS ON THE CAP. SURVEYOR SHALL STAMP YEAR SET AND THEIR LICENSE TYPE & NUMBER.

2. THE DEPTH OF THE MONUMENT POST SHALL BE LENGTHENED OR SHORTENED AS DICTATED BY THE GROUND CONDITIONS OR AS DIRECTED BY THE CITY ENGINEER. IN SOFT GROUND OR FILL AREAS THE MONUMENT POST SHALL BE LENGTHENED TO BED IT ON A STABLE BASE. IN ROCK IT SHALL BE KEYED OR DOWELED PERMANENTLY TO THE ROCK AS DIRECTED BY THE CITY ENGINEER.

3. WHEN THE MONUMENT IS TO BE INSTALLED IN AN EXISTING STREET WHERE THE CROWN IS NOT AT STANDARD ELEVATION, THE TOP OF THE MONUMENT SHOULD BE SET 8" BELOW THE FUTURE STREET SURFACE OR AS DIRECTED BY THE CITY ENGINEER. IT MAY BE NECESSARY TO USE A RISER PIPE.
1. Concrete must be tack coated prior to AC placement.

2. You must arrange for city inspection before PCC is placed, backfill must be compacted before city inspection.

3. You must furnish, install and maintain a steel plate over each concrete collar placed around each frame or box until the asphalt concrete is placed to finish grade.

4. Encasements must be set 1/4" below street surface.

5. Concrete must be seven (7) sack, 5000 psi, Shamrock Mix #9170GG, or equal.

6. A circular hole must be cut around the appurtenance using a method that provides a smooth edge, as approved by the engineer.
NOTES

1. INSTALL 18"X18" 0.080 GA ALUMINUM TYPE N REFLECTOR WITH 3M DIAMOND CUBED SHEETING (YELLOW COVERED WITH ELECTRO CUT SHEETING). 3M 1160 GRAFFITI FILM SHALL BE APPLIED BEFORE INSTALLATION.
GUARD RAIL SHALL EXTEND TO BACK OF SIDEWALK BOTH SIDES OF STREET WHEN USED TO BARRICADE END OF STREET.

GUARD RAIL TO BE PAINTED WITH ONE PRIME COAT AND TWO WHITE EXTERIOR COATS.

INSTALL 18"X18" 0.080 GAUGE ALUMINUM TYPE N REFLECTOR WITH 3M DIAMOND CUBED SHEETING (YELLOW COVERED WITH ELECTRO CUT SHEETING). 3M 1160 GRAFFITI FILM SHALL BE APPLIED BEFORE INSTALLATION.

GUARD RAIL SHALL EXTEND TO BACK OF SIDEWALK BOTH SIDES OF STREET WHEN USED TO BARRICADE END OF STREET.

NOTES

1. GUARD RAIL TO BE PAINTED WITH ONE PRIME COAT AND TWO WHITE EXTERIOR COATS.
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STATE STANDARD 8"X8"X5'-4" ROUGH D.F. POST WITH STATE SPEC. PRESSURE PRESERVATIVE TREATMENT OR 8"X8"X5'-4" DS REDWOOD POST.

1/2"Ø CARRIAGE BOLTS WITH CUT WASHER AND NUT. BOLTS, WASHERS, AND NUTS SHALL BE GALVANIZED COATED.

SOLAR RAIL

REDWOOD RAIL OR APPROVED EQUAL

6"X6"X14' S4S

4.25"X4.25"X1' A.C. BASE Block

STATE STANDARD 8"X8"X5'-4" ROUGH D.F. POST WITH STATE SPEC. PRESSURE PRESERVATIVE TREATMENT OR 8"X8"X5'-4" DS REDWOOD POST.

1/2"Ø CARRIAGE BOLTS WITH CUT WASHER AND NUT. BOLTS, WASHERS, AND NUTS SHALL BE GALVANIZED COATED.

SOLAR RAIL

REDWOOD RAIL OR APPROVED EQUAL

6"X6"X14' S4S

4.25"X4.25"X1' A.C. BASE Block

STATE STANDARD 8"X8"X5'-4" ROUGH D.F. POST WITH STATE SPEC. PRESSURE PRESERVATIVE TREATMENT OR 8"X8"X5'-4" DS REDWOOD POST.

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1/2"Ø CARRIAGE BOLTS WITH CUT WASHER AND NUT. BOLTS, WASHERS, AND NUTS SHALL BE GALVANIZED COATED.
NOTES

STREET NAME SIGNS ON NW AND SE CORNERS AT ALL 4-WAY INTERSECTIONS

SEE CITY STD. S-19 FOR STREET NAME SIGNS

SEE CITY STD. S-19 FOR SIGN MOUNT, SIZE & MATERIAL

SIGN POST TO BE 2 3/8" O.D. GALVANIZED PIPE

BASE OF SIGN TO BE POURED WITH 6 SACK PCC OR READY MIX

2" GRANULAR MATERIAL COMPACTED TO 95%

2' FOR DIRT OR 1.5' FOR NON-DIRT SURFACE (P.C.C.)
NOTES

1. PRIVATE STREET NAME SIGNS AND POLES SHALL BE INSTALLED ON PRIVATE PROPERTY ONLY, OUT OF THE CITY RIGHT OF WAY.

2. SIGNS FOR THE PUBLIC STREET SHALL NOT BE MOUNTED ON THE SAME POLE AS A PRIVATE STREET NAME SIGN.
# Standards for Parking Spaces

## Compact Car Spaces

1. **Compact Car Spaces**
   
   a. Stall width may be reduced by one foot.
   
   b. Stall length may be reduced by three feet.
   
   c. "Compact Parking Only" shall be stenciled on the pavement at the entrance to each stall with 6" minimum height letters.
   
   d. The allowable percentage of compact car spaces is contained in the city's zoning ordinance.
   
   e. When provided, compact car space clusters shall be dispersed throughout the parking lot, not concentrated in one area.

## Parallel Spaces

Parallel parking spaces shall be 6' x 22' with the following exceptions:

a. Parallel spaces along a wall, fence, or hedge shall be ten feet wide.

b. Parallel spaces having no obstruction or adjacent parking space within ten feet of one end may reduce the length to 20 feet. If both ends are similarly clear, the space may be reduced to 18 feet.

## Angled Parking Dimensions

<table>
<thead>
<tr>
<th>Angle</th>
<th>75°</th>
<th>60°</th>
<th>45°</th>
<th>30°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stall Depth to Wall</td>
<td>19.5'</td>
<td>20'</td>
<td>18.5'</td>
<td>16'</td>
</tr>
<tr>
<td>Aisle Width (One Way)</td>
<td>21'</td>
<td>18'</td>
<td>14'</td>
<td>14'</td>
</tr>
<tr>
<td>Wall to Wall Module</td>
<td>60'</td>
<td>58'</td>
<td>51'</td>
<td>46'</td>
</tr>
<tr>
<td>Stall Width, Parallel to Aisle</td>
<td>9.32'</td>
<td>10.39'</td>
<td>12.73'</td>
<td>18'</td>
</tr>
</tbody>
</table>

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### Diagram:

**Angled Parking Dimensions**

- **75°**
- **60°**
- **45°**
- **30°**

**Aisle Dimensions**

- Stall depth to wall
- Aisle width (one way)
- Wall to wall module
- Stall width, parallel to aisle

**Notation:**

- "Compact Parking Only" stenciled on pavement at entrance to each stall.
- 6" minimum height letters.
- Allowable percentage in city's zoning ordinance.
- Compact car space clusters dispersed throughout parking lot, not concentrated in one area.

**Parallel Spaces:**

- 6' x 22'
- Exceptions for wall, fence, and adjacent spaces.
- Length reduction to 20 feet under specific conditions.

---

**City of Napa Public Works Department**

**Standard Off Street Parking Requirements**

- Drawn by: LFM
- Checked by: EBM
- Approved by: JBL
- Approval Date: 10/2021
- Scale: None
- Drawing No.: S-21A
- Revised Date: None
NOTES

3. **LONG TERM PARKING**

   PARKING STALLS THAT ARE DESIGNATED FOR LONG-TERM, OR LOW TURNOVER USE AS ALLOWED IN THE CITY'S ZONING ORDINANCES MAY BE REDUCED AS FOLLOWS:

   a. STALL WIDTH MAY BE REDUCED BY SIX INCHES. SMALL CAR STALLS MAY NOT BE REDUCED IN WIDTH.
   b. STALL LENGTH MAY BE REDUCED BY ONE FOOT (INCLUDING SMALL CAR SPACES)
   c. AISLE WIDTH MAY BE REDUCED BY ONE FOOT FOR 90 PARKING DAYS.
   d. THE ABOVE REDUCTIONS MAY NOT BE ALLOWED FOR PARKING STALLS ALONG THE PRIMARY ENTRANCE AISLE TO THE PROJECT.

4. STALLS ADJACENT TO A LANDSCAPED AREA SHALL BE WIDENED BY SIX INCHES. STALLS ADJACENT TO A FENCE, WALL, OR HEDGE SHALL BE WIDENED BY ONE FOOT.

5. THE MINIMUM AISLE DIMENSION FOR TWO-WAY TRAFFIC SHALL BE 24 FEET AND FOR ONE-WAY TRAFFIC, 14 FEET.

6. THE FRONT TWO FEET OF THE REQUIRED PARKING STALL DIMENSION MAY BE USED TO ENLARGE AN ADJACENT LANDSCAPED AREA BUT MAY NOT BE USED TO MEET MINIMUM LANDSCAPING REQUIREMENTS. LANDSCAPING WITHIN THIS OVERHANG AREA SHALL BE LIMITED TO LOW-LYING SHRUBS AND GROUND COVER, AND MUST BE APPROVED BY THE PLANNING DEPARTMENT.

7. HANDICAP STALLS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARD DRAWING S-22-A.

8. PARKING LOTS SHALL BE DESIGNED WITH ADEQUATE CIRCULATION AND TURN AROUND SO THAT VEHICLES WILL NOT HAVE TO BACK INTO THE STREET TO EXIT.

9. ALL PARKING LOTS SHALL BE PAVED AND SHALL COMPLY WITH THE DESIGN AND CONSTRUCTION STANDARDS FOR ACCESS DRIVES.

10. PARKING STALLS SHALL BE MARKED USING 4" WIDE WHITE PAINT STRIPES. ALL DIRECTIONAL ARROWS AND LEGENDS SHALL BE WHITE. DOUBLE LINING OF PARKING STALLS MAY BE USED WITH SPECIFIC APPROVAL OF THE PUBLIC WORKS DIRECTOR.

11. ALL ANGLED OR 90 DEGREE PARKING SPACES SHALL BE PROVIDED WITH A CONCRETE WHEEL STOP TO PREVENT PARKED VEHICLE FROM ENCROACHING INTO AREAS DESIGNATED FOR OTHER PURPOSES, EXCEPT AS ALLOWED IN ITEM 6 ABOVE. CONTINUOUS CONCRETE CURB IS ACCEPTABLE IN LIEU OF INDIVIDUAL WHEEL TIMBER WHEEL STOPS CAN ONLY BE USED WITH SPECIFIC APPROVAL OF THE PUBLIC WORKS DIRECTOR.

12. WHERE THE LOCATION OF EXISTING STRUCTURES OR OTHER SIGNIFICANT FEATURES MAKES IT IMPOSSIBLE TO OBTAIN AN ACCEPTABLE PARKING LAYOUT USING THESE DIMENSIONS, THE PUBLIC WORKS DIRECTOR MAY AUTHORIZE THE USE OF ALTERNATIVE DIMENSIONS.
TOTAL NUMBER OF PARKING SPACES | NUMBER OF ACCESSIBLE PARKING SPACES REQUIRED
--- | ---
1-25 | 1 VAN ACCESSIBLE
26-50 | 2 INCLUDING 1 VAN ACCESSIBLE
51-75 | 3 INCLUDING 1 VAN ACCESSIBLE
76-100 | 4 INCLUDING 1 VAN ACCESSIBLE
101-150 | 5 INCLUDING 1 VAN ACCESSIBLE
151-200 | 6 INCLUDING 1 VAN ACCESSIBLE
201-300 | 7 INCLUDING 1 VAN ACCESSIBLE
301-400 | 8 INCLUDING 1 VAN ACCESSIBLE
401-500 | 9 INCLUDING 2 VAN ACCESSIBLE
501-1000 | 2% INCLUDING 3 VAN ACCESSIBLE

NOTES:

1. STANDARD R99 SIGN IN THE CALTRANS UNIFORM SIGN CHART.
2. SIGN SHALL BE CENTERED AT THE INTERIOR END OF THE PARKING SPACE AT A HEIGHT OF 7’ FROM THE BOTTOM OF THE SIGN TO THE PARKING SPACE FINISHED GRADE, OR CENTERED ON THE WALL AT THE INTERIOR END OF THE PARKING SPACE AT A MINIMUM OF 36’ FROM THE PARKING SPACE FINISHED GRADE, GROUND, OR SIDEWALK.
3. “VAN ACCESSIBLE” SIGN REQUIRED FOR EACH VAN SPACE.
4. A SIGN SHALL ALSO BE POSTED AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES. THE SIGN SHALL NOT BE LESS THAN 1 X 2IN SIZE WITH LETTERING NOT LESS THAN 1" IN HEIGHT; “UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHED PLACARDS OR LICENSE PLATES ISSUED FOR PERSONS WITH DISABILITIES MAY BE TOWED AWAY AT OWNERS EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT OR BY TELEPHONING .”
5. ALL LINES DELINEATING HANDICAP STALLS AND WALKWAYS SHALL BE PAINTED OR OUTLINED IN BLUE INCLUDING “OUTSIDE” STALL LINES AND A 36” X 36” SYMBOL PAINTED IN SPACE VISIBLE TO TRAFFIC OFFICER.
6. THE MAXIMUM SLOPE IN ALL DISABILITY PARKING SPACES SHALL NOT EXCEED 2% (1/4” PER FOOT) IN ANY DIRECTION.
7. THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THE CALIFORNIA STATE CODE TITLE 24 SECTION 3105A (N) THRU SECTION 3108.0 (C). ANY CONFLICT SHALL DEFER TO STATE REQUIREMENTS, HOWEVER THE STALL LENGTH SHALL COMPLY WITH CITY DRAWING S-21A.
8. WHEN LESS THAN 5 PARKING SPACES ARE PROVIDED, ONE SHALL BE 17’ wide and lined to provide a 9’ PARKING AREA AND AN 8’ LOADING AREA. HOWEVER, THERE IS NO REQUIREMENT THAT THE SPACE BE MARKED FOR HANDICAPPED USE ONLY.
NOTES

1. REFER TO THE CITY OF NAPA MUNICIPAL CODE, "CHAPTER 17.54 PARKING" FOR ADDITIONAL PARKING DESIGN STANDARDS.

2. AT THE ENTRANCE TO ANY PARKING LOT OR PARKING STRUCTURE WHERE COMPACT PARKING SPACES ARE ENFORCED THERE SHALL BE POSTED AND IN PLAIN VIEW THE CITY STANDARD "COMPACT SPACES ENFORCED" SIGN.

3. ALL "COMPACT PARKING" SPACES NOT MARKED ON THE PAVEMENT WITH THE ABOVE SHOWN LIMIT LINE AND "KEEP CLEAR" PAVEMENT MESSAGE ARE NON-ENFORCEABLE.

4. THE "COMPACT PARKING ONLY" PAVEMENT STENCIL WITHOUT THE LIMIT LINE IS INFORMATION ONLY AS RELATED TO STALL SIZE.

5. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE WHITE.
NOTE:
1. THE MOST CONVENIENT STALLS (60% OF STRUCTURE) SHALL BE 1/2 FOOT WIDER.
2. COMPACT SIZE STALLS SHALL NOT EXCEED 30% OF THE TOTAL.
3. PROVIDE HANDICAPPED PARKING STALLS AS REQUIRED BY STATE LAW.
NOTES

1. HEIGHT LIMITS ARE MEASURED FROM THE TOP OF CURB NEAREST TO THE OBSTRUCTION OR FROM EXISTING GROUND ON STREETS WITH NO CURB.

2. 20 FT RED CURB FOR DRIVEWAY ACCESSIBILITY AND VISIBILITY DOES NOT INCLUDE THOSE DRIVEWAYS SERVING SINGLE FAMILY HOMES.

3. FOR STREETS WITH TRAFFIC CALMING CURB BULB-OUTS, THE VISIBILITY TRIANGLE IS MEASURED ALONG THE BULB-OUT FACE OF CURB.

WITHIN THIS AREA, ALL SHRUBS, BUSHES, SOLID FENCES, AND OTHER IMPROVEMENTS SHALL BE RESTRICTED TO A 2' MAX HEIGHT, FENCES THAT ARE 50% OPEN AND RETAINING WALLS SHALL NOT EXCEED 3’ MAX HEIGHT AND TREES MAINTAINED TO A CLEARANCE OF 7.5’ ABOVE GROUND (M.C. SEC. 10.32.020)
NOTES

1. USE INTER-LOCKING STENCILS FOR PROPER SPACING.
2. ARIAL FONT OR SIMILAR.
3. USE QUICK DRYING TRAFFIC PAINT.
NOTES

1. PORTLAND CEMENT CONCRETE SHALL BE 4000 PSI (6 SACKS PER CUBIC YARD), 3/4" AGGREGATE.

2. THE PATTERN TO BE IMPRINTED SHALL MATCH "BOMANITE'S" BOMACRON RUNNING BOND BELGIAN BLOCK PATTERN.

3. THE COLOR HARDENER SHALL BE "BOMANITE'S" DESERT TAN OR QC CONSTRUCTION PRODUCTS DURANGO TAN OR APPROVED EQUIVALENT.

4. BOMANITE, MADERA, CA (209) 673-2411 OR QC CONSTRUCTION PRODUCTS, MADERA, CA (800) 452-8213.

5. THE COLOR HARDENER SHALL BE APPLIED EVENLY TO THE SURFACE OF FRESH CONCRETE BY DRY-SHAKE METHOD USING A MINIMUM OF 60 POUNDS PER 100 SQUARE FEET. IT SHALL BE APPLIED IN TWO MORE SHAKE, FLOATED AFTER EACH SHAKE AND TROWLED ONLY AFTER THE FINAL FLOATING.


7. CONTROL JOINTS SHALL BE PER CITY STD. S-4.
NOTES

1. MINIMUM $\Delta = 60^\circ$, MAXIMUM $\Delta = 100^\circ$.
2. MINIMUM CURB LONGITUDINAL SLOPE = 0.5%
3. CROWN LINE LIES MIDWAY BETWEEN OUTSIDE AND INSIDE RETURNS, ALONG THE LINE RADIAL TO INSIDE RETURN.
4. CROWN LINE ELEVATION TO BE SHOWN ON THE PLANS AT THE QUARTER POINTS.
5. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
6. THE OUTSIDE MINIMUM RADIUS SHALL BE 40' IF PARKING IS PROVIDED AND A MINIMUM 32' IF NO PARKING IS PROVIDED.

SECTION A-A
MAX & MIN CROSS SLOPES
NOTES

GENERALLY TURNAROUNDS SHALL BE DESIGNED IN ACCORDANCE WITH STANDARD DETAILS S7A & S7B. HOWEVER, FOR RESIDENTIAL DEVELOPMENT, WHEN THROUGH ACCESS IS NOT AVAILABLE, AND A STANDARD TURNAROUND IS NOT FEASIBLE, ALTERNATE TURNAROUNDS WILL BE ALLOWED AS FOLLOWS:

1. FOR PRIVATE STREETS (BASED ON EVIDENCE SUPPLIED BY THE DEVELOPER IN THE FORM OF A DESIGN EXCEPTION THAT IS APPROVED BY THE FIRE CHIEF AND CITY ENGINEER) WHEN:
   
   1.A. THE STANDARD CUL-DE-SAC BULB WILL CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS SUCH AS EXCESSIVE HILLSIDE GRADING, ROCK OUTCROPPINGS, AND/OR REMOVAL OF SIGNIFICANT TREES.
   
   1.B. THE STANDARD CUL-DE-SAC BULB WILL PREVENT SITE LAYOUTS THAT ACHIEVE MINIMUM DEVELOPMENT DENSITIES.

2. FOR A DRIVEWAY SERVING A FLAG LOT.

3. FOR A STREET THAT ABUTS 4 OR LESS LOTS.

4. THE LAYOUT OF THE HAMMERHEAD TURNAROUND AND SURROUNDING LOTS AND CONNECTING DRIVEWAYS SHALL BE “SELF POLICING” (I.E. IN ADDITION TO SIGNAGE AND PAINTED CURBING THE LAYOUT CONFIGURATION SHALL INCLUDE DESIGN ELEMENTS THAT DISCOURAGE THE PARKING OF VEHICLES OR PLACEMENT OF OBSTRUCTIONS WITHIN THE FIRE LANE TURNAROUND AREA), AS REVIEWED AND APPROVED BY THE FIRE CHIEF AND CITY ENGINEER.
NOTES:

GENERALLY TURNAROUNDS SHALL BE DESIGNED IN ACCORDANCE WITH STANDARD DETAILS S7A & S7B. HOWEVER, FOR RESIDENTIAL DEVELOPMENT, WHEN THROUGH ACCESS IS NOT AVAILABLE, AND A STANDARD TURNAROUND IS NOT FEASIBLE, ALTERNATE TURNAROUNDS WILL BE ALLOWED AS FOLLOWS:

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   1.B. THE STANDARD CUL-DE-SAC BULB WILL PREVENT SITE LAYOUTS THAT ACHIEVE MINIMUM DEVELOPMENT DENSITIES.

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RESERVED
NOTES

1. IF MEDIAN IS 4’ WIDE (OR GREATER) USE R4-7 + OM1-3 AT 2’ FROM LEADING EDGE; OR IF BETWEEN 3’ - 4’ WIDE THEN CENTER POLE ON MEDIAN AND USE R4-7C + OM1-3; OR IF LESS THEN 3’ WIDE NO POLE/SIGN ONLY TYPE “Q” MARKER.
2. ALL SIGNS SHALL BE 0.080 GA ALUMINUM WITH 3M DIAMOND CUBED SHEETING AND 3M 1160 GRAFFITI FILM SHALL BE APPLIED BEFORE INSTALLATION. R4-7 (24”X30”) OR R4-7C (18”X30”) BLACK ON WHITE BACKGROUND AND OM1-3 (24”X24”) YELLOW.
3. SIGN POSTS SHALL BE 2” SQUARE PERFORATED WITH ANCHOR SLEEVE.
4. SIGN POST ANCHOR FOUNDATION SHALL BE 1’ DIA X 2.5’ PCC IN HARDSCAPE OR 1’ DIA X 3’ PCC WITHOUT HARDSCAPE.
5. ALL MEDIAN NOSE SHALL HAVE TYPE “Q” MARKER AT CENTER OF NOSE RADIUS.
6. ALL MEDIAN NOSES SHALL BE PAINTED YELLOW / WHITE TO MATCH THE ROADWAY STRIPING LEADING TO NOSE.
NOTES

1. TYPICAL SIGN R6-1 (RIGHT) SHALL BE INSTALLED FACING ANY COMMERCIAL DRIVEWAY.

2. ALL SIGNS SHALL BE 0.080 GA ALUMINUM WITH DIAMOND CUBED SHEETING AND GRAFFITI FILM SHALL BE APPLIED BEFORE INSTALLATION. R6-1 (36" X 12") BLACK ON WHITE BACKGROUND.

3. SIGN POSTS SHALL BE 2" SQUARE PERFORATED WITH ANCHOR SLEEVE.

4. SIGN POST ANCHOR FOUNDATION SHALL BE 1' DIA X 2.5' PCC IN HARDSCAPE OR 1' DIA X 3' PCC WITHOUT HARDSCAPE.
SEE CALTRANS STD. PLAN A24D LIMIT LINE

SEE CALTRANS STD. PLAN A24E

CENTER OF STREET

FACE OF CURB

NOTE:
MATCH EXISTING LENGTH OF LIMIT LINE

1.5'

12'

10'

STOP

10'

SEE CALTRANS

LIMIT LINE

NOTE:
MATCH EXISTING LENGTH
OF LIMIT LINE
STANDARD PLANS

FIRE
NOTES

1. SIGNS SHALL BE RED ON WHITE REFLECTIVE COMMERCIAL GRADE 0.08 GAUGE.
2. SIGNS SHALL BE VISIBLE AND READABLE ALONG ACCESS ROADWAY.
3. SIGNS ARE TO FACE ONCOMING TRAFFIC.
4. SIGNS ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
5. A MINIMUM OF ONE SIGN SHALL BE POSTED AT THE BEGINNING AND END OF THE FIRE LANE AREA.
6. FOR CONTINUOUS FIRE LANES AREAS, SIGNS SHALL BE POSTED AT INTERVALS OF 100' MINIMUM AND 175' MAXIMUM.
7. SIGNS ARE TO BE POSTED SO THE BOTTOM OF THE SIGN IS 90" ABOVE GROUND LEVEL.
8. SIGN POSTS SHALL BE LOCATED 2' FROM EDGE OF TRAVELED WAY TO CENTER OF POST.
9. FINAL PLACEMENT OF ALL SIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE FIRE CODE OFFICIAL.

CITY OF NAPA

FIRE LANE SIGN & PLACEMENT

FIRE DEPARTMENT

DRAWN BY: LFM
CHECKED BY: BV
APPROVAL DATE: 08/2021
APPROVED BY: GDF
SCALE: NONE
REVISED DATE: FP-2
NOTES

1. ALL CURBS ALONG FIRE LANES ARE REQUIRED TO BE PAINTED RED AND STENCILED "FIRE LANE NO PARKING".

2. THERE SHALL BE A MAXIMUM DISTANCE OF 20' BETWEEN "FIRE LANE NO PARKING" LETTERING.

3. IF NO CURBS ARE PRESENT, CONTINUOUS RED STRIPING OF 6" WIDTH SHALL BE USED, LETTERING IS THE SAME AS CURBS.

4. LETTERING ON CURBS IS TO BE A MINIMUM OF 3" IN HEIGHT AND WHITE IN COLOR.
METHOD OF MEASURING
CUL-DE-SAC-LENGTH
ROUTE OF TRAVEL AROUND BUILDINGS

150' HOSE LINE

LANDSCAPE AREA

FIRE ENGINE

FIRE ENGINE

DRIVEWAY

DRIVEWAY

STREET
MULTIPLE POINTS OF ACCESS

ON SITE FIRE ACCESS ROAD

BUILDING (MORE THAN 62,000 SQUARE FEET OR 2 STORIES REQUIRES TWO POINTS OF ACCESS)

PARKING LOT

150' HOSE LINE

FIRE ENGINE

DRIVEWAY

SECOND (2ND) POINT OF ACCESS (EVA)

**IF THIS CANNOT REACH ALL AREAS OF BUILDING AND FIRE ACCESS ROADS ARE REQUIRED ONSITE, AT LEAST TWO POINTS OF FIRE ACCESS ARE REQUIRED

FIRE ENGINE
SIDES OF BUILDING ACCESS

(If larger than 50,000 sq ft, 3 sides of access req'd)

Sidewalk too narrow to be used for building access

Distance from building to access road shall be 10' minimum - 30' maximum.

Centerline of roadway parallel to building

Access roadway width

City of Napa Fire Department

Approval Date: 08/2021

Approved by: GDF

Drawing No.: FP-7
ACCESS TO SPRINKLER RISERS

COMMON AREA OF THE BUILDING (I.E. EQUIPMENT ROOM)

36" CLEARANCE AROUND RISERS FOR PROPER ACCESS

MIN. 36" DOOR WITH SIGNAGE

SPRINKLER RISER
DOMESTIC WATER SHUTOFF

CITY OF NAPA

FIRE DEPARTMENT

DRAWN BY: RC
CHECKED BY: BV
APPROVAL DATE: 08/2021
APPROVED BY: GDF
SCALE: NONE
DRAWING NO. FP-9
REVISED DATE: NONE

AUTOMATIC FIRE SPRINKLERS

PRESSURE GAUGE

RESIDENTIAL DOMESTIC SHUTOFF VALVE (AUTOMATIC)

CITY GATE VALVE

TO WATER SUPPLY

DOMESTIC SHUTOFF VALVE (MANUAL)

DRAIN AND TEST CONNECTION

WATERFLOW DETECTOR/SWITCH

TO DOMESTIC SYSTEM

SUPPLY LINE BALL VALVE

MAIN CONTROL VALVE

TO WATER SOFTENER

WATER METER

TO WATER SUPPLY

CITY WATER MAIN

DOMESTIC WATER SHUTOFF

WATER METER

CITY WATER MAIN

TO WATER SUPPLY

CITY GATE VALVE

RESIDENTIAL DOMESTIC SHUTOFF VALVE (AUTOMATIC)

AUTOMATIC FIRE SPRINKLERS
WARNING: THE WATER SYSTEM FOR THIS HOME SUPPLIES A SPRINKLER SYSTEM THAT DEPENDS ON CERTAIN FLOWS AND PRESSURES TO FIGHT A FIRE. DEVICES THAT RESTRICT THE FLOW OR PRESSURE SUCH AS PRESSURE REDUCERS AND WATER SOFTENERS SHALL NOT BE ADDED TO THE SYSTEM WITHOUT A REVIEW OF THE SYSTEM BY A FIRE PROTECTION SPECIALIST. LEAVE VALVE IN THE FULLY OPEN POSITIONS AT ALL TIMES.
FDC HEAD BETWEEN 18" - 48" ABOVE FINISHED GRADE

4" RISER

WAFER CHECK

DRILL & TAP $\frac{1}{4} \times 20$
GRADE 6 BOLT

FDC SIGN

TOP VIEW

FRONT VIEW

CITY OF NAPA
FIRE DEPARTMENT

SINGLE 4" X 2 $\frac{1}{2}$" X 2 $\frac{1}{2}$" FDC DETAIL

APPROVAL DATE: 08/2021
APPROVED BY: GDF
DRAWING NO. FP-11
REVISED DATE: NONE

DRAWN BY: RC
CHECKED BY: BV
SCALE: NONE

NOTES:

1. HAVE KEY(S) MADE THAT WILL PROVIDE ACCESS TO THE INTERIOR OF THE BUILDING, ANY INTERIOR SECURED AREAS AND ANY SPECIFIC KEYS REQUESTED BY THE FIRE DEPARTMENT.

2. THE KEY BOX SHALL BE INSTALLED NO LOWER THAN 5' FROM THE BOTTOM OF THE KEY BOX AND NO HIGHER THAN 6' FROM THE TOP OF THE KEY BOX ABOVE FINISHED GRADE. KEY BOX SHALL BE NO GREATER THAN 10' ADJACENT TO THE MAIN BUILDING ENTRANCE THAT FRONTS THE PUBLIC STREET ACCESS UNLESS DESIGNATED AT A DIFFERENT LOCATION BY THE FIRE DEPARTMENT.

3. THE BOX MUST BE INSTALLED IN PLAIN VIEW, AS YOU APPROACH THE BUILDING, IN A LOCATION NOT LIKELY TO BE HIDDEN WITH LANDSCAPE GROWTH OR OTHER OBSTRUCTIONS.

4. FOLLOW THE MANUFACTURER’S INSTALLATION INSTRUCTIONS.

5. ALL KEYS MUST BE LABELED USING A SUBSTANTIAL KEY IDENTIFICATION TAG THAT WILL WITHSTAND EXPOSURE TO MOISTURE.

6. TEST ALL KEYS IN LOCK MECHANISMS BEFORE CONTACTING THE FIRE PREVENTION DIVISION.

7. SCHEDULE AN INSPECTION ON THE FIRE PREVENTION DIVISION WEB PAGE TO HAVE THE KEY BOX LOCKED.
NOTES:

1. CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING EXTENDING THROUGH WALLS, FLOORS, PLATFORMS, AND FOUNDATIONS, INCLUDING DRAINS, FIRE DEPARTMENT CONNECTIONS, AND OTHER AUXILIARY PIPING.

2. CLEARANCE SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLES IS NOMINALLY 2" LARGER THAN THE PIPE FOR PIPE 1" (25MM) NOMINAL TO 3 1/2" (90MM) NOMINAL AND 4" (100MM) LARGER THAN THE PIPE FOR PIPE 4" (100MM) NOMINAL AND LARGER.

3. CLEARANCE PROVIDED BY A PIPE SLEEVE, A NOMINAL DIAMETER 2" (50MM) LARGER THAN THE NOMINAL DIAMETER OF THE PIPE SHALL BE ACCEPTABLE FOR PIPE SIZES 1" (25MM) THROUGH 3 1/2" (90MM), AND THE CLEARANCE PROVIDED BY A PIPE SLEEVE OF NOMINAL DIAMETER 4" (100MM) LARGER THAN THE NOMINAL DIAMETER OF THE PIPE SHALL BE ACCEPTABLE FOR PIPE SIZES 4" (100MM) AND LARGER.

4. THE PIPE SLEEVE CLEARANCE SHALL BE FILLED WITH FLEXIBLE MATERIAL THAT IS COMPATIBLE WITH THE PIPING MATERIAL. (ROCK WOOL AND LISTED ELASTOMETRIC OR FLEXIBLE SEALANT. *NO AGGREGATE, SAND, OR ANY OTHER COMPACTED MATERIAL ALLOWED.

CITY OF NAPA

FIRE DEPARTMENT

FIRE SERVICE UNDERGROUND INSTALLATION DETAIL

DRAWN BY: RC
APPROVAL DATE: 08/2021
DRAWING NO.: FP-14

CHECKED BY: BV
APPROVED BY: GDF
SCALE: NONE
REVISED DATE: NONE
NOTES:

1. All utility rooms and related fire appurtenances shall be labeled and be properly identified as to the purpose they serve.

2. Signage at HVAC, sprinkler, electrical, and fire alarm control panel location.

3. All required signs shall be weather resistant and permanently affixed.

4. In utility rooms or other areas where combustible storage is not allowed, a permanently affixed sign shall be installed that reads, "No storage permitted by order of fire marshal".
STANDARD PLANS

PARKS AND LANDSCAPING
1. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.

2. BACKFLOW PREVENTION DEVICES MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.

3. BACKFLOW DEVICE MUST BE PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS, AND MUST HAVE A MINIMUM CLEARANCE OF 12" BENEATH AND 6" ON ALL SIDES.

4. NO CONNECTIONS ARE ALLOWED BETWEEN METER AND THE BACKFLOW DEVICE OR DIRECTLY TO THE BACKFLOW DEVICE.

5. ALL PARTS OF ASSEMBLY MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE PARKS DIVISION CROSS CONNECTION SPECIALIST.

6. INSTALLATION MUST BE APPROVED BY THE PARKS DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

7. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE PARKS DIVISION CROSS CONNECTION SPECIALIST.

8. BACKFLOW PREVENTION DEVICE SHALL BE EITHER A WILKINS 950XL OR 975XL, OR EQUAL APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.

9. A CONCRETE PAD SHALL BE INSTALLED, PAD SHALL BE 4" THICK ON 2" OF CLASS II A.B. EXTEND A MINIMUM OF 6" BEYOND OUTSIDE OF ENCLOSURE ON ALL FOUR SIDES, AND CONTAIN #3 REBAR, 12" ON CENTER, CONCRETE TO BE CLASS "A" (6 SACKS PER CUBIC YARD).

10. PIPING, VALVES, NIPPLES, ETC. SHALL BE THREADED BRASS.

11. PRESSURE REDUCER VALVES SHALL BE INSTALLED ON SERVICES OF 80 PSI OR GREATER AND BE WILKINS MODEL 500XL OR APPROVED EQUAL.

12. POLAR PARKA BACKFLOW INSULATION IS REQUIRED.
1. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.

2. BACKFLOW PREVENTION DEVICES MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.

3. BACKFLOW DEVICE MUST BE PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS, AND MUST HAVE A MINIMUM CLEARANCE OF 12" BENEATH AND 6" ON ALL SIDES.

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5. ALL PARTS OF ASSEMBLY MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE PARKS DIVISION CROSS CONNECTION SPECIALIST.

6. INSTALLATION MUST BE APPROVED BY THE PARKS DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

7. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE PARKS DIVISION CROSS CONNECTION SPECIALIST.

8. BACKFLOW PREVENTION DEVICE SHALL BE EITHER A WILKINS 950XL OR 975XL, OR EQUAL APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.

9. A CONCRETE PAD SHALL BE INSTALLED. PAD SHALL BE 4" THICK ON 2" OF CLASS II A.B. EXTEND A MINIMUM OF 6" BEYOND OUTSIDE OF ENCLOSURE ON ALL FOUR SIDES, AND CONTAIN #3 REBAR, 12" ON CENTER, CONCRETE TO BE CLASS "A" (6 SACKS PER CUBIC YARD).

10. PIPING, VALVES, NIPPLES, ETC. SHALL BE THREADED BRASS.

11. POLAR PARKA BACKFLOW INSULATION IS REQUIRED.
NOTES

1. WELDED WIRE MESH SHALL BE #6 T304 STAINLESS STEEL WIRE MESH AND SHALL BE INSTALLED UNDER VALVE BOX AND WASHED GRAVEL.

2. INSTALL ASSEMBLY WITHIN VALVE BOX TO MAKE COMPONENTS ACCESSIBLE FOR SERVICE AND MAINTENANCE (TYPICAL).

3. SET TOP OF VALVE BOX FLUSH WITH FINISH GRADE.
STRONGBOX STAINLESS STEEL NEMA 3R RAINPROOF ENCLOSURE (UL LISTED).

1 CONTROLLER ASSEMBLY. ASSEMBLED IN ENCLOSURE BY SITEONE GREEN TECH.

2 TERMINAL STRIP FOR VALVE WIRES.

3 POWER SWITCH / GFCI RECEPTACLE.

4 ELECTRICAL FLEX CONDUIT FOR POWER.

5 6" MIN THICK. CONCRETE PAD WITH ANCHOR BOLTS PER MANUFACTURER RECOMMENDATION. 6 SACK PCC.

6 FINISHED GRADE.

7 FLOW SENSOR TERMINAL BOARD.

8 1" CONDUIT AND SWEEP ELL WITH FLOW SENSOR CABLE.

9 3" CONDUIT AND SWEEP ELL FOR LEAD WIRES.

10 1" CONDUIT AND SWEEP ELL FOR MASTER VALVE WIRES.

11 1" CONDUIT AND SWEEP ELL FOR 110 VAC POWER LINE.

12 1" CONDUIT AND SWEEP ELL FOR GROUND WIRE.

13 10" ROUND VALVE BOX AROUND GROUND ROD. FILL WITH 3/4" CRUSHED ROCK.

14 5/8' X 8' GROUND ROD WITH #6 GROUND WIRE AND CLAMP. LOCATE 8'-12' FROM ENCLOSURE.

15 #6 GROUND WIRE SECURED TO BACKBOARD GROUNDING TERMINAL.
CONTROLLER CABINET LEMEUR MODEL A OR EQUAL, COLOR GREEN ON CONCRETE FOUNDATION WITH MIN. 24" APRON.

SIDE VIEW

FRONT VIEW

SINGLE-GANG HANDY BOX WITH ONE GFCI DUPLEX RECEPTACLE, INSTALL OFFSET NIPPLE FROM LANDING CAN TO HANDY BOX.

6" X 6" LANDING CAN WITH GROUND BUS, INSTALL #8 ARMORED GROUND CABLE FROM GROUND BUS TO 8' COPPER CLAD GROUND ROD

CONTROLLER AS SPECIFIED, WITH 14/3 SJO CORD WITH STRAIN RELIEF, INSTALL 90 DEGREE CORD CAP ON OTHER END OF SJO CORD AND PLUG INTO GFCI RECEPTACLE.

NOTES

1. CONTACT CITY OF NAPA ELECTRICAL DEPT. FOR ELECTRICAL SERVICE LOCATIONS AND PRIOR TO STARTING ELECTRICAL WORK (707) 257-9588.

2. CONTROLLER SERVICE LOCATION SHALL BE ESTABLISHED PRIOR TO CONSTRUCTION.

3. ELECTRICAL SERVICE AND LOW VOLTAGE CONDUIT SHALL BE 1 1/2" PVC SHD. 40, BURIED AT 18" DEEP.

4. CONTACT CITY OF NAPA ELECTRICAL DEPT. PRIOR TO BACKFILLING ANY ELECTRICAL TRENCHES.

5. CONTACT PG&E REGARDING LOCATION OF POWER SOURCE AND METERING REQUIREMENTS.

6. PAD SHALL BE 4" THICK ON 2" OF CLASS II A.B. CONCRETE SHALL BE CLASS "A" (6 SACKS PER CY).
NOTES

1. CONTROLLER CABINET LE MEUR MODEL SG-AJR OR APPROVED EQUIVALENT, COLOR GREEN, ON CONCRETE FOUNDATION WITH MIN. 24" APRON.

2. CONTROLLER SERVICE LOCATION SHALL BE ESTABLISHED BY THE CITY PRIOR TO CONSTRUCTION

3. LOW VOLTAGE CONDUIT SHALL BE 1 1/2" PVC SHD.40, BURIED AT 20" DEEP.

4. CONTROLLER AS SPECIFIED.

5. PAD SHALL BE 4" THICK ON 2" OF CLASS II A.B. CONCRETE SHALL BE CLASS "A" (6 SACKS PER CY)
CARSON 910-4B-BOLTDOWN
PLASTIC VALVE BOX WITH BOLT DOWN LID

FINISH GRADE

QUICK COUPLING VALVE

3' LONG #4 REBAR STAKE
CLAMP IN TWO LOCATIONS

BRICK-3 EA.

1" SCHD. 80 PVC THREADED NIPPLE

SWING ASSEMBLY RAIN BIRD TSJ-12

PVC SCHED. 40 MAINLINE PIPE

PVC SCHED. 40 TEE OR ELBOW,
SLIP X THREADED
1/2"X10" SCHD. 80 PVC NIPPLE

SWING ASSEMBLY
RAIN BIRD MODEL SA 6050

FINISH GRADE/TOP OF MULCH

±2"

1/2"X10" SCHD. 80 PVC NIPPLE

BUBBLER HEAD
RAIN BIRD 1400 SERIES

PVC SCHED. 40 LATERAL PIPE

PVC SCHED. 40 TEE OR ELBOW

BUBBLER INSTALLATION

CITY OF NAPA

PARKS & RECREATION SERVICES DEPARTMENT
NOTES

1. CONTRACTOR TO INSTALL TWO(2) BUBBLERS FOR EACH TREE LOCATED IN A SQUARE TREE "CUT-OUT" AS SHOWN ON THE IRRIGATION PLANS.

2. SEE CITY STD. T1 & T2 FOR TREE PLANTING REQUIREMENTS.

3.  10-IN ZONE RAIN BIRD ROOT WATERING SYSTEM. RWS-W-B-C-1402 FOR TREES WITH ROOT BALL DIAMETER LESS THAN 36-IN. RWS-B-C-1402 FOR TREES WITH ROOT BALL
1. WELDED WIRE MESH SHALL BE #6 T304 STAINLESS STEEL WIRE MESH AND SHALL BE INSTALLED UNDER BOX, WASHED GRAVEL AND AROUND 8" SCH 40 PVC PIPE.

2. GATE VALVE: THREE INCHES AND SMALLER SHALL BE NIBCO T-113 OR APPROVED EQUAL. FOUR INCHES AND LARGER SHALL BE NIBCO F-160-RW SERIES AS SPECIFIED.
FINISH GRADE
TOP MULCH/GRASS

POP-UP SPRINKLER

SWING ASSEMBLY
RAIN BIRD MODEL SA 6050,
OR APPROVED EQUAL.

PVC SCH. 40 LATERAL PIPE

PVC SCH. 40 TEE OR ELBOW
3/4" TURF HEAD INSTALLATION

FINISH GRADE
TOP MULCH/GRASS

TURF HEAD

3/4" SCH. 80 PVC NIPPLE

SWING ASSEMBLY
RAIN BIRD MODEL TSJ-120775, OR APPROVED EQUAL.

PVC SCH. 40 LATERAL PIPE

PVC SCH. 40 TEE OR ELBOW
SLIP X THREADED

DRAWN BY:
CHECKED BY:
APPROVED BY:
APPROVAL DATE: 06/2018
DRAWING NO. PL-8

3/4" TURF HEAD INSTALLATION

CITY OF NAPA

PARKS & RECREATION SERVICES DEPARTMENT
FINISH GRADE
TOP MULCH/GRASS

SWING ASSEMBLY
RAIN BIRD MODEL TSJ-12,
OR APPROVED EQUAL.

PVC SCH. 40 LATERAL PIPE

PVC SCH. 40 TEE OR ELBOW
NOTES

1. SCARIFY AND RECOMPACT THE UPPER 12' OF SUBGRADE TO 95% RELATIVE COMPACTION WITHIN THE LIMITS OF THE TRAILBED.

2. TRAIL SHALL HAVE A 5% MAXIMUM LONGITUDINAL GRADE.

3. REFERENCE GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES PREPARED BY THE AASHTO TASK FORCE ON GEOMETRIC DESIGN FOR DETAILS ABOUT HORIZONTAL ALIGNMENT, SIGHT DISTANCES, SIGNING AND MARKING, DRAINAGE, INTERSECTION, PAVEMENT STRUCTURE AND GRADE SEPARATION STRUCTURES.

4. 2' MINIMUM VEGETATION CLEARANCE ON EACH SIDE OF TRAIL. PRUNE ALL BRUSH OVER 12' HIGH AND 1/2' IN DIAMETER THAT EXTENDS INTO TRAILWAY.

5. CENTERLINE MARKING TO BE A 2' WIDE, CONTINUOUS YELLOW STRIPE.
1. SCARIFY AND RECOMPACT THE UPPER 12 INCHES OF SURFACE OR SUBGRADE TO 95% RELATIVE COMPACTION WITHIN THE LIMITS OF THE COMPACTED TRAILBED

2. TRAIL SHALL HAVE A 5% MAXIMUM LONGITUDINAL GRADE.

3. REFERENCE GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES PREPARED BY THE AASHTO TASK FORCE ON GEOMETRIC DESIGN FOR DETAILS ABOUT HORIZONTAL ALIGNMENT, SIGHT DISTANCES, SIGNING AND MARKING, DRAINAGE, INTERSECTIONS, PAVEMENT STRUCTURE, AND GRADE SEPARATION STRUCTURES.

4. 2' MINIMUM VEGETATION CLEARANCE ON EACH SIDE OF SHOULDER. PRUNE ALL BRUSH OVER 12" HIGH AND 1/2" IN DIAMETER THAT EXTENDS INTO TRAILWAY.

5. 2' MINIMUM SHOULDER OR CLEAR SPACE ON EACH SIDE OF TRAIL.
NOTES
1. SCARIFY AND RECOMPACT THE UPPER 12 INCHES OF SUBGRADE TO 95% RELATIVE COMPACTION WITHIN THE LIMITS OF THE TRAILBED.
2. TRAIL SHALL HAVE A 5% MAXIMUM GRADE.
3. 3' - 6" MINIMUM VEGETATION CLEARANCE ON EACH SIDE OF TRAIL. PRUNE ALL BRUSH OVER 12" HIGH AND 1/2" IN DIAMETER THAT EXTENDS INTO TRAILWAY.
NOTES
1. USE TIMBERFORM MODEL NO. 2191-R METAL
2. CONCRETE FOOTING AND NO.1 REBAR REQUIRED
INTENTIONALLY LEFT BLANK
STANDARD PLANS

STREET TREES
INTENTIONALLY LEFT BLANK
SOIL BALL SHALL REST ON UNDISTURBED SOIL

24" x 2' PERFORATED PLASTIC WATERING PIPE. SEE NOTE 5

PLANT TREE 2" HIGHER THAN GROWN IN NURSERY

TREE STAKE STABILIZER SEE NOTE 6

15 GAL TREE SEE NOTE 2

WATER BASIN SURROUNDING TREE

BACKFILL MATERIAL. SEE NOTE 3.

4" x 2' PERFORATED PLASTIC WATERING PIPE. SEE NOTE 5

2" DIA x 8' MIN LODGE POLE PINE STAKE. SEE NOTE 6

SEE TREE TIE DETAIL

TREE TIE DETAIL

GRO STRAIT TREE TIE

NAIL

TREE TIE DETAIL

LODGEPOLE STAKE

ALL NOTES REFER TO DRAWING T-2

PUBLIC WORKS DEPARTMENT

CITY OF NAPA

STREET TREE PLANTING SPECIFICATIONS
FOR 15 GALLON TREES

DRAWN BY: LFM
APPROVAL DATE: 06/2018
SCALE: NONE
REVISED DATE:

CHECKED BY: DMP
APPROVED BY: JBL
DRAWING NO. T-1
NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE WATERING AND WELL BEING OF THE TREE UNTIL THE WORK IS ACCEPTED. REPLACING DAMAGED TREES IS THE CONTRACTOR’S RESPONSIBILITY UNTIL THE WORK IS ACCEPTED.

2. TREES SHALL BE PLANTED FROM A MINIMUM 15 GALLON CONTAINER AND BE A SIZE OF NOT LESS THAN 5 FT. IN HEIGHT NOR LESS THEN 3/4” IN DIAMETER. TREES SHALL HAVE A HEALTHY ROOT SYSTEM THAT IS ESTABLISHED IN ITS CONTAINER. THE ROOTS SHALL NOT BE CIRCLED IN THAT CONTAINER. TREES SHALL HAVE A SINGLE TRUNK WITH VERTICAL LEADER BRANCHES THAT HAVE NOT BEEN "TOPPED”. TREE SHALL BE FREE FROM PESTS, DEAD AND DAMAGED BRANCHES OR TRUNKS. WHEN 24” BOX SIZE TREES ARE REQUIRED, TREES SHALL BE A MINIMUM OF 8’ TALL AND HAVE A MINIMUM TRUNK DIAMETER OF 1.75 “.

3. THE TREE SHALL BE PLANTED IN A HOLE APPROXIMATELY 24” SQUARE BY 24” DEEP. IN SEVERELY COMPACTED OR LAYERED SOIL IT WILL BE NECESSARY TO BREAK THE CONTINUITY OF THE HARD PAN, CLAY PAN OR COMPACTED LAYER BY DIGGING DEEP ENOUGH TO PENETRATE BELOW THE PAN OR COMPACTED LAYER. THE EXCAVATED MATERIAL IN MOST CASES CAN BE RETURNED TO THE HOLE. FOR 24-INCH BOX CONTAINER SIZE TREES THE PLANTING HOLE SHALL BE A MINIMUM OF 36 INCHES SQUARE AT A MINIMUM DEPTH OF 24 INCHES OR DEEPER IN ORDER TO ACCOMMODATE THE ROOT BALL.

4. TREES SHALL BE PLANTED IN ORIGINAL SOIL MATERIAL UNLESS OTHERWISE REQUIRED BY THE ENGINEER. TREES SHALL BE SET 2” HIGHER THAN GROWN AT NURSERY.

5. INSTALL TWO DEEP WATERING PERFORATED PLASTIC PIPES AS SHOWN ON DRAWING T-1. FILL PIPES WITH 3/4” CLEAN DRAIN ROCK.

6. TREES SHALL BE STAKED WITH TWO 2” DIAMETER BY 8’ MINIMUM LODGE POLE PINE STAKES OR APPROVED EQUAL AND SPACED WITH A MISSION MANUFACTURING TREE STAKE STABILIZER OR APPROVED EQUAL. STAKES SHALL BE PRESSURE TREATED WITH A WOOD PRESERVATIVE MATERIAL. TREES SHALL BE TIED WITH A 24” MINIMUM "GRO STRAIT” TREE TIES OR APPROVED EQUIVALENT.

7. EXACT LOCATION OF TREES SHALL BE DETERMINED BY THE PARKS AND RECREATION DEPARTMENT. TREE SPACING VARIES DEPENDING ON TYPE. TREES SHALL BE LOCATED A MINIMUM OF 20’ FROM CURB RETURNS, 15’ FROM STREET LIGHTS, 8’ FROM ALL UTILITY BOXES, 6’ FROM DRIVEWAYS, AND 10’ FROM SEWER LATERALS AND WATER FACILITIES.

8. WHEN THE AREA BETWEEN THE CURB AND THE SIDEWALK CONTAINS A CONCRETE OR SIMILAR HARD SURFACE, A MINIMUM 40” SQUARE OPENING AROUND THE TREE SHALL BE MAINTAINED.

9. TREE SPECIES DESIGNATED FOR EACH STREET ARE ON FILE AT THE PARKS AND RECREATION DEPARTMENT OFFICE. TREE SELECTION IS MADE FROM THE CITY’S MASTER TREE LIST ACCORDING TO THE PLANTING SPACE AVAILABLE AS MEASURED FROM BACK OF CURB TO SIDEWALK. CATEGORY 1 TREES - 6’ WIDE SPACE OR GREATER WITHOUT POWERLINES, CATEGORY 2 TREES - 5’ TO 6’ WIDE WITHOUT POWERLINES, CATEGORY 3 TREES - 3’ TO 5’ WIDE UNDER POWERLINES, CATEGORY 4 TREES - 2’ TO 3’ WIDE WITH OR WITHOUT POWERLINES.

10. NEWLY PLANTED TREES SHALL BE WATERED DEEPLY DURING THE DRY SEASON OR TWICE A WEEK BY THE PROPERTY OWNER OR OCCUPANT. WATER FOR APPROXIMATELY 10 MINUTES WITH A HOSE ADJUSTED TO VERY LOW PRESSURE. THE ROOT BALL OF THE TREE SHALL BE THOROUGHLY SOAKED. THE 2 DEEP WATERING PERFORATED PIPES THAT HAVE BEEN INSTALLED SHALL BE USED TO GET WATER DOWN TO THE ROOT BALL. DEEP WATER WILL ENCOURAGE THE ROOTS TO GO DEEP INTO THE SOIL AWAY FROM PAVED SURFACES.
NOTES

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

2. TREE STAKE TO BE LOCATED ON PREVAILING WIND SIDE WHEN TREE IS IN LEAF.

3. INSTALL TREE'S ROOTBALL 2" ABOVE FINISHED GRADE.
NOTES

1. DEPTH OF RELIEF MAY VARY TO MAINTAIN 48" MIN SIDEWALK WIDTH PER ADA STANDARD.

2. SIDEWALK AND PLANTER STRIP WIDTHS MAY VARY.

3. ALL SIDEWALK SHALL BE PER CITY STD. S-4.
NOTES

1. TOP OF BARRIER MUST BE AT GRADE, NEVER BELOW.

2. POSITION BARRIER AGAINST STRUCTURE OR AS CLOSE TO STRUCTURE AS POSSIBLE.

3. 24" ROOT GUARD BARRIER TO BE INSTALLED ALONG THE LENGTH OF REPLACED CURB OR TO THE LIMITS OF THE TREE DRIP LINE.

4. 12" ROOT GUARD BARRIER TO BE INSTALLED ALONG THE LENGTH OF REPLACED SIDEWALK OR TO THE LIMITS OF THE TREE DRIP LINE.

5. ROOT GUARD BARRIERS SHALL NOT BE INSTALLED IN AREAS WHERE THERE ARE NO EXISTING TREES. NEW TREES SHALL BE PLANTED IN "DEEP ROOT PLANTER BOXES" PER STANDARD DRAWING T-1.

6. WHEN ROOT PRUNING EXCESSIVELY LARGE ROOT SYSTEMS ALONG SIDEWALKS, THE 8" ROOT GUARD BARRIER SHOULD BE USED IN PLACE OF THE 12" BARRIER.

7. WHEN ROOT PRUNING EXCESSIVELY LARGE ROOT SYSTEMS ALONG THE CURB, THE 16" ROOT GUARD BARRIER SHOULD BE USED IN PLACE OF THE 24" BARRIER.

8. DURING CONSTRUCTION, THE BARRIER CAN BE PLACED AGAINST THE INSIDE OF THE FORM.

9. THE RAISED ROOT DEFLECTORS MUST BE FACING TOWARDS THE TREE.

10. ROOT PRUNING TRENCH SHALL BE BACKFILLED WITH SELECT NATIVE BACKFILL MATERIAL.
STANDARD PLANS

WATER
**NOTE:** ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.

**METER INSTALLED BY CITY AS PART OF METER SET FEE**

**CHRISTY B16 METER BOX (OR APPROVED EQUAL) WITH MOUSE HOLE AND FIBRELYTE FL16D LID MARKED “WATER”**

**SEE W-5A, W-6A, & W-6B FOR BACKFLOW DEVICE INSTALLATION REQUIREMENTS**

**PROFILE**

**APPROVED FITTINGS**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MUELLER</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRASS METER IDLER</td>
<td>H-10867</td>
</tr>
<tr>
<td>BALL ANGLE METER VALVE (FIP x COMP)</td>
<td>B-24274</td>
</tr>
<tr>
<td>INSULATED CORPORATION STOP (MIP x COMP)</td>
<td>N-35028**</td>
</tr>
<tr>
<td>INSULATED STRAIGHT COUPLING (METER SWIVEL NUT x MIP)</td>
<td>H-10871**</td>
</tr>
<tr>
<td>STAINLESS STEEL SERVICE SADDLE</td>
<td><strong>SHALL BE INSULATED FITTINGS BY MUELLER OR JONES</strong></td>
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</tbody>
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**NOTES**

1. **OBSTRUCTIONS:** METERS SHALL BE PLACED 3-FT MIN. FROM ANY OBSTRUCTION (SIGNS, FENCES, MAILBOX, ETC.). METERS SHALL BE INSTALLED 10-FT MIN. FROM TREES (5-FT MIN. FROM SHRUBS). SEE W-18 FOR ADDITIONAL DETAILS.

2. **WATER-SEWER SEPARATION:** WATER-SEWER (OR WATER-RECYCLED WATER) SEPARATION SHALL COMPLY WITH ALL STATE WATER RESOURCES CONTROL BOARD REQUIREMENTS. WATER SERVICES SHALL BE 10-FT MIN. (PARALLEL) AND 1-FT MIN. ABOVE (PERPENDICULAR) ALL SEWER (OR RECYCLED WATER) MAINS. SEE W-22 FOR SEPARATION REQUIREMENTS.

3. **HOT-TAP:** HOT-TAPS TO ACTIVE WATER MAINS SHALL BE MADE BY CITY FORCES AT APPLICANT’S EXPENSE. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36” MIN. FROM ANY TAP, BELL, FITTING, WATER SERVICE, ETC.

4. **METALLIC PIPE AND FITTINGS:** BURIED SECTIONS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE “K” SOFT BLUE IN COLOR). INSULATED COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT MIN. TO EACH SIDE OF THE INSULATION POINT.

5. **METER BOX AND SERVICE LINE INSTALLATION:** INSTALL 3-FT MIN. OUTSIDE ANY VEHICULAR ACCESS WAY.

6. **CURB ADJACENT SIDEWALK:** INSTALL THE METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE BEHIND SIDEWALK.

10. **BACKFLOW PREVENTION DEVICES:** APPROVED DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

11. **TWO OR MORE SERVICES:** INSTALLATION OF TWO OR MORE SERVICES REQUIRE CONNECTION OF PERMANENT ADDRESS TAGS FOR EACH METER WHICH SHALL BE DURABLY FIXED TO THE METER PRIOR TO WATER SERVICE ACTIVATION.

12. **WATER SERVICE SIZE:** ALL WATER SERVICES SHALL BE APPROPRIATELY SIZED FOR THE INTENDED USE. THE WATER DIVISION RESERVES THE RIGHT TO REQUIRE A WATER SERVICE ANALYSIS TO EVALUATE DEMANDS AND THE APPROPRIATENESS OF THE SERVICE SIZE(S). UNDERSIZED WATER SERVICES ARE PROHIBITED.

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**CITY OF NAPA UTILITIES DEPARTMENT**

**TITLE:** 3/4" AND 1" WATER SERVICE

**DRAWN BY:** DF  **CHECKED BY:** SL  **APPROVAL DATE:** 09/2021  **APPROVED BY:** DD  **SCALE:** NTS  **DRAWING NO.:** W-1  **REVISED DATE:** 09/2021
1. **OBSTRUCTIONS**: Meters shall be placed 3-ft min. from any obstruction (signs, fences, mailbox, etc.). Meters shall be installed 10-ft min. from trees (5-ft min. from shrubs). See W-18 for additional details.

2. **WATER-SEWER SEPARATION**: Water-sewer (or water-recycled water) separation shall comply with all State Water Resources Control Board requirements. Water services shall be 10-ft min. (parallel) and 1-ft min. above (perpendicular) all sewer (or recycled water) main. See W-22 for separation requirements.

3. **HOT-TAP**: Hot-taps to active water mains shall be made by city forces at applicant’s expense. See W-16 for hot-tap requirements. Hot-tap shall be installed 36” min. from any tap, bell, fitting, water service, etc.

4. **METER INSTALLATION**: Meter, isolation gasket (for meter only), bolt sleeves, reducer fittings, and washers are provided by city of Napa after payment of meter set fee and installed by city. Spacers may be required.

5. **METALLIC PIPE AND FITTINGS**: Buried sections shall be wrapped with an 8-mil plastic sleeve. Copper pipe not wrapped in a plastic sleeve shall be NSF 61 approved plastic coated copper tubing (type “K” soft blue in color). Insulated coupling shall be wrapped with 10-mil high tack pipe wrap tape 3-ft min. to each side of the insulation point.

6. **METER BOX AND SERVICE LINE INSTALLATION**: Install 3-ft min. outside any vehicular access way.

7. **CURB ADJACENT SIDEWALK**: Install the meter at back of curb as shown. Install backflow device behind sidewalk.

8. **BACKFLOW PREVENTION DEVICES**: Approved devices shall be installed and tested and water meters shall be set, prior to any use of water service. Use of jumpers, hose bibs, or other devices shall not be permitted.

9. **TWO OR MORE SERVICES**: Installation of two or more services require connection of permanent address tags for each meter which shall be durably fixed to the meter prior to water service activation.

10. **WATER SERVICE SIZE**: All water services shall be appropriately sized for the intended use. The Water Division reserves the right to require a water service analysis to evaluate demands and the appropriateness of the service size(s). Undersized water services are prohibited.

**NOTES**

- Christmas G5 Valve Box w/ 8" PVC Riser Pipe
- 2" Copper Pipe (Type “K” Soft)
- 2" 90° Bend (Comp x Comp)
- 2" Coupling (Comp x Comp)
- 2" Angle Stop (Comp x METER FLANGE)
- 2" Copper Pipe (Type “K” Soft) 90° Bend (Comp x Comp)
- 2" Insulated Copper Stop (MIP x COMP) w/ 2" Nut Adapter
- Stainless Steel Service Saddle (Smith-Blair #372, Ford #300, JCM #552)
- Water Main
- Water Meter Connection Point (See detail below)
- Insulating gasket, bolt sleeves, and washers
- Brass or Copper piping only to backflow device
- See W-9B, W-4A, & W-6B for backflow device installation requirements
- 12" Of topsoil
- 3/4" Clean Crushed Gravel - 6" (min) on all sides - 6" (min) on bottom - Inside meter box to 4" below water meter
- Alternate materials must be approved by the City of Napa Water Division prior to use

**APPROVED FITTINGS**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MUELLER</th>
<th>FORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulated Corp. Stop (MIP x COMP)</td>
<td>N-35028-1 550N</td>
<td>-</td>
</tr>
<tr>
<td>2&quot; Brass SQ. WRENCH Nut Adapter</td>
<td>B-20299</td>
<td>-</td>
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<tr>
<td>Coupling (Comp x COMP)</td>
<td>H-15403</td>
<td>C44-77S-Q</td>
</tr>
<tr>
<td>90° Bend (Comp x COMP)</td>
<td>H-15526</td>
<td>L44-77-Q</td>
</tr>
<tr>
<td>Angle Stop (Comp x Flange)</td>
<td>B-24276</td>
<td>BFA43-666W-G</td>
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</tbody>
</table>

**FLANGETYTE GASKETS**

Gaskets by U.S. Pipe shall be used for all flanged fittings. Insulating gaskets shall be Type E 1/8" thick full-faced Neoprene phenolic gaskets installed with grade G-10 fiberglass epoxy insulating bolt sleeves and washers.

**1-1/2" METER INSTALLATION**

- Insulated 2" Corp. Stop (MIP x COMP) with 2" Nut Adapter
- 1-1/2" Meter and 2" x 1-1/2" Reducer Fitting supplied and installed by city

**1 1/2" WATER SERVICE**
2" METER INSTALLATION

1. **OBSTRUCTIONS**: Meters shall be placed 3-FT MIN. from any obstruction (signs, fences, mailbox, etc.). Meters shall be installed 7-FT MIN. from trees (5-FT MIN. FROM SHRUBS). SEE W-18 FOR ADDITIONAL DETAILS.

2. **WATER-SEWER SEPARATION**: Water-sewer (or water-recycled water) separation shall comply with all state water resources control board requirements. Water services shall be 10-FT MIN. (PARALLEL) AND 1-FT MIN. ABOVE (PERPENDICULAR) ALL SEWER (OR RECYCLED WATER) UTILITIES.

3. **HOT-TAP**: Hot-taps to active water mains shall be made by city forces at applicant's expense. See W-16 FOR HOT-TAP REQUIREMENTS. Hot-tap shall be installed 36" MIN. FROM ANY TAP, BELL, FITTING, WATER SERVICE, ETC.

4. **METER INSTALLATION**: Meter, isolation gasket (for meter only), bolt sleeves, reducer fittings, and washers are provided by city of napa after payment of meter set fee and installed by city.

5. **METALLIC PIPE AND FITTINGS**: BURIED SECTIONS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT BLUE IN COLOR). INSULATED COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT MIN. TO EACH SIDE OF THE INSULATION POINT.

6. **METER BOX AND SERVICE LINE INSTALLATION**: INSTALL 3-FT MIN. OUTSIDE ANY VEHICULAR ACCESS WAY.

7. **CURB ADJACENT SIDEWALK**: INSTALL THE METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE BEHIND SIDEWALK.

8. **BACKFLOW PREVENTION DEVICES**: APPROVED DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

9. **TWO OR MORE SERVICES**: INSTALLATION OF TWO OR MORE SERVICES REQUIRE CONNECTION OF PERMANENT ADDRESS TAGS FOR EACH METER WHICH SHALL BE DURABLY FIXED TO THE METER PRIOR TO WATER SERVICE ACTIVATION.

10. **WATER SERVICE SIZE**: ALL WATER SERVICES SHALL BE APPROPRIATELY SIZED FOR THE INTENDED USE. THE WATER DIVISION RESERVES THE RIGHT TO REQUIRE A WATER SERVICE ANALYSIS TO EVALUATE DEMANDS AND THE APPROPRIATENESS OF THE SERVICE SIZE(S). UNDERSIZED WATER SERVICES ARE PROHIBITED.
ALL JOINTS SHALL BE RESTRAINED, FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

PLAN

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

** ALL JOINTS SHALL BE MORTARED

Approved Fittings

<table>
<thead>
<tr>
<th>Description</th>
<th>Mueller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulated Corp. Stop (MIP x COMP)</td>
<td>N-35028</td>
</tr>
<tr>
<td>CURB STOP (COMP x COMP)</td>
<td>B-25209</td>
</tr>
<tr>
<td>90° BEND (COMP x MIP)</td>
<td>H-15531</td>
</tr>
</tbody>
</table>

** SHALL BE INSULATED FITTINGS BY MUELLER OR JONES

Detail

METER BOX INSTALLATION

3" WATER SERVICE

W-3A.1
NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.

2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 4" C900 PVC OR CLASS 350 DUCTILE IRON PIPE.

3. ALL BOLTS, STUDS, NUTS, AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL WITH TEFLOM BLUE NUTS, AND CONFORM TO THE LATEST VERSION OF AWWA C111.

4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP, WITH THE EXCEPTION OF COPPER PIPE AND BRASS FITTINGS WHICH SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.

5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER’S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36" (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.

6. A TEE AND 4" GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 4" IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 3" WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 4" IN DIAMETER.

7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.
ALL JOINTS SHALL BE RESTRAINED.
FITTINGS: MEGALUG RESTRANTS, OR EQUAL
PIPE BELLS: FIELD TAP OK
PROFILE

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

** INSULATING GASKET, BOLT SLEEVES, AND WASHERS

** DRIVABLE ANODE (SEE W-24E FOR ANODE INSTALLATION DETAILS)

** 32-LB (MIN) PREPACKAGED HIGH POTENTIAL MAGNESIUM ANODE (SEE W-24A FOR INSTALLATION DETAILS)

METER BOX INSTALLATION

3/4" CLEAN CRUSHED GRAVEL:
- 6" (MIN) ON ALL SIDES
- 6" (MIN) ON BOTTOM
- INSIDE METER BOX TO 4" BELOW WATER METER

** ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

4" WATER SERVICE

CITY OF NAPA

UTILITIES DEPARTMENT

DRAWN BY: DF
APPROVAL DATE: 09/2021
SCALE: NTS
REVISED DATE: 09/2021
DRAWING NO. W-3B.1

APPROVED DATE: DD
APPROVED BY: SL

TAP OK FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.
1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.

2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 4" C900 PVC OR CLASS 350 DUCTILE IRON PIPE.

3. ALL BOLTS, STUDS, NUTS, AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL WITH TEFOLON BLUE NUTS, AND CONFORM TO THE LATEST VERSION OF AWWA C111.

4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH An 8-MIL POLYETHYLENE WRAP, WITH THE EXCEPTION OF COPPER PIPE AND BRASS FITTINGS WHICH SHALL BE WRAPP 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.

5. EXISTING WATER mains SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36" (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.

6. A TEE AND 4" GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 4" IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 4" WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 4" IN DIAMETER.

7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

10. BYPASS SIZE MAY BE MODIFIED TO MATCH THE SERVICE SIZE UPON APPROVAL OF THE WATER DIVISION ENGINEER.
All joints shall be restrained. Fittings: Megalug Restraints, or equal. Pipe bell: Field Lok Gaskets, or equal.

Profile

** Required for all metallic pipe installations

Flange Gaskets by U.S. pipe shall be used for all flanged fittings. Insulating gaskets shall be type E 1/8" thick full-faced neoprene phenolic gaskets installed with grade G-10 fiberglass epoxy insulated bolt sleeves and washers.

Detail

Meter Box Installation

Alternate materials must be approved by the City of Napa Water Division prior to use.

City of Napa
Utilities Department

Title: 6" Water Service

| DRAWN BY: | DF |
| APPROVAL DATE: | 09/2021 |
| CHECKED BY: | SL |
| APPROVED BY: | DD |
| DRAWING NO. | W-3C.1 |
| REVISED DATE: | 09/2021 |
1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.

2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 6" C900 PVC OR CLASS 350 DUCTILE IRON PIPE.

3. ALL BOLTS, STUDS, NUTS, AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL WITH TEFLOX BLUE NUTS, AND CONFORM TO THE LATEST VERSION OF AWWA C111.

4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.

5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER’S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36" (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.

6. A TEE AND 6" GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 6" IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 6" WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 6" IN DIAMETER.

7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

10. 2" (MIN) BYPASS (SIZE MAY BE MODIFIED TO MATCH THE SERVICE SIZE UPON APPROVAL OF THE WATER DIVISION ENGINEER).
FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.

NOTES
1. CITY INSTALLATION ENDS AT ANGLE STOP (BEHIND CURB). CONTRACTOR SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION FROM ANGLE STOP TO BACKFLOW DEVICE. ENCROACHMENT PERMIT REQUIRED.
2. FIRE SERVICES SUPPLYING WATER TO PRIVATE FIRE HYDRANTS OR FIRE STORAGE TANKS SHALL BE INSTALLED WITH A DETECTION METER AT THE BACK OF CURB (SEE W-4C). METER BOX AND SERVICE LATERAL SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESSWAYS.
3. SERVICE LATERAL FROM MAIN TO ANGLE STOP SHALL BE 2" TYPE "K" SOFT COPPER PIPE.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR). BURIED INSULATING GASKET AND COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER’S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36" (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
6. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
7. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
8. ONLY PRIVATE FIRE PROTECTION SYSTEMS (INCLUDING BUT NOT LIMITED TO FIRE SPRINKLERS AND FIRE HYDRANTS) SHALL BE CONNECTED TO FIRE SERVICES. OTHER USES MUST BE SERVED FROM STANDARD METERED WATER SERVICES. FIRE SERVICES WITH DETECTION METERS DO NOT QUALIFY AS STANDARD METERED WATER SERVICES.
NOTES

1. CITY INSTALLATION ENDS AT INSULATING FITTING (AT BACK OF CURB). CONTRACTOR SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION FROM INSULATING FITTING TO BACKFLOW DEVICE. ENCROACHMENT PERMIT REQUIRED.

2. FIRE SERVICES SUPPLYING WATER TO PRIVATE FIRE HYDRANTS OR FIRE STORAGE TANKS SHALL BE INSTALLED WITH A DETECTION METER AT THE BACK OF CURB (SEE W-4C). METER BOX AND SERVICE LATERAL SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR Access WAYS.

3. SERVICE LATERAL FROM MAIN TO METER SHALL BE C900 PVC OR CLASS 350 DUCTILE IRON PIPE.

4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.

5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36" (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.

6. A TEE AND GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS EQUAL TO THE DIAMETER OF THE NEW WATER SERVICE, OR WHEN THE WATER SERVICES IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS WITH A SMALLER DIAMETER THAN THE WATER SERVICE.

7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-Ft OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

9. ONLY PRIVATE FIRE PROTECTION SYSTEMS (INCLUDING BUT NOT LIMITED TO FIRE SPRINKLERS AND FIRE HYDRANTS) SHALL BE CONNECTED TO FIRE SERVICES. OTHER USES MUST BE SERVED FROM STANDARD METERED WATER SERVICES. FIRE SERVICES WITH DETECTION METERS DO NOT QUALIFY AS STANDARD METERED WATER SERVICES.

10. FIRE SERVICE LATERAL SIZE SHALL NOT EXCEED THE SIZE OF THE PUBLIC WATER MAIN THAT SERVES THE FIRE SERVICE. THE FIRE SERVICE SHALL BE SIZED SUCH THAT FIRE FLOW DEMANDS DO NOT EXCEED A 10-FT/SEC FLOW RATE THROUGH THE FIRE SERVICE LATERAL.
ALL JOINTS SHALL BE RESTRAINED.
FITTINGS: MEGALUG RESTRAINTS, OR EQUAL
PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

PROFILE

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.

DETAIL
METER BOX INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
1. **METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.**

2. **SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE C900 PVC OR CLASS 350 DUCTILE IRON PIPE.**

3. **METER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.**

4. **ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.**

5. **EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER’S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36” (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.**

6. **A TEE AND GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS EQUAL IN DIAMETER TO THE SERVICE, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN THE SERVICE IN DIAMETER.**

7. **APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.**

8. **METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.**

9. **SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.**
NOTES

1. CURB ADJACENT SIDEWALK: INSTALL METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE AT BACK OF SIDEWALK.
2. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.
3. DOUBLE CHECK VALVE MUST BE INSTALLED WITHIN A PROTECTIVE BOX. STACKED BOXES SHALL BE USED AS NEEDED TO MAINTAIN CLEARANCE REQUIREMENTS.
4. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE DOUBLE CHECK VALVE ASSEMBLY.
5. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.
6. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.
7. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
8. BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.
9. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
10. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
NOTES

1. THIS STANDARD APPLIES TO COMMERCIAL/INDUSTRIAL/MULTI-FAMILY/IRRIGATION SERVICES OR AS REQUIRED BY THE CITY OF
NAPA’S CROSS CONNECTION SPECIALIST AFTER COMPLETING A CROSS CONNECTION CONTROL SURVEY. PROPERTIES UTILIZING
RECYCLED WATER SHALL INSTALL REDUCED PRESSURE BACKFLOW DEVICES ON ALL SERVICES UNLESS OTHERWISE APPROVED
BY THE CITY OF NAPA’S CROSS CONNECTION SPECIALIST.

2. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.

3. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND
PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.

4. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN
PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE UTILITIES - WATER DIVISION (SEE
W-6B FOR INTERNAL INSTALLATION REQUIREMENTS).

5. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW
DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING
SERVED.

6. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

7. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

8. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA
CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

9. REDUCED PRESSURE BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE
UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC’S FOUNDATION LIST OF APPROVED
DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.

10. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF REDUCED PRESSURE BACKFLOW DEVICE.

11. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO
ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

12. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.

CITY OF NAPA
UTILITIES DEPARTMENT

DRAWN BY: DF
APPROVAL DATE: 09/2021
APPROVED BY: DD
DRAWING NO.: W-6A
REVISED DATE: 09/2021
SCALE: NTS
TITLE: EXTERIOR REDUCED PRESSURE BACKFLOW DEVICE INSTALLATION FOR 3/4" TO 2" SERVICES (SEE NOTE 1)
CHECKED BY: SL
BRASS OR COPPER PIPE AND FITTINGS ONLY
AND FITTINGS ONLY
FROM WATER METER TO BACKFLOW DEVICE
FOR WATER METER INSTALLATION, SEE W-1,
W-2A & W-2B

NO FITTINGS UNDER BUILDING FOUNDATION

PIECE SLEEVE THROUGH SLAB (4" PIPE & LARGER
REQUIRED 2" MIN CLEARANCE ON ALL SIDES)

THRU BLOCK

NO OTHER CONNECTIONS PERMITTED ON THE SERVICE
BETWEEN THE BACKFLOW DEVICE AND THE WATER METER

WRAPPED WITH 8-MIL POLYETHYLENE
WRAP BETWEEN WATER METER AND
BACKFLOW DEVICE, FOR METALLIC PIPE

** LEAD FREE DEVICES ONLY **

ALTERNATE MATERIALS MUST BE
APPROVED BY THE CITY OF NAPA
WATER DIVISION PRIOR TO USE

ALL INTERIOR RESTRAINTS,
SUPPORTS, SEISMIC PROTECTION,
AND DRAINAGE FOR THE
BACKFLOW DEVICE SHALL MEET
THE CURRENT CALIFORNIA
BUILDING AND PLUMBING CODES
NOTES

1. THIS STANDARD APPLIES TO COMMERCIAL/INDUSTRIAL/MULTI-FAMILY/IRRIGATION SERVICES OR AS REQUIRED BY THE CITY OF NAPA’S CROSS CONNECTION SPECIALIST AFTER COMPLETING A CROSS CONNECTION CONTROL SURVEY. PROPERTIES UTILIZING RECYCLED WATER SHALL INSTALL REDUCED PRESSURE BACKFLOW DEVICES ON ALL SERVICES UNLESS OTHERWISE APPROVED BY THE CITY OF NAPA’S CROSS CONNECTION SPECIALIST.

2. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.


4. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY.

5. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITIES - WATER DIVISION FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE.

6. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.

7. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

8. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

9. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.

10. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.

11. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

12. REDUCED PRESSURE BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC’S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.

13. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF REDUCED PRESSURE BACKFLOW DEVICE.

14. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
ALL JOINTS SHALL BE RESTRAINED. BURIED FITTINGS: MEGALUG RERAINTS, OR EQUAL EXPOSED FITTINGS: FLANGED, MEGALUG, OR VICTAULIC JOINTS

FOR METER BOX AND WATER METER INSTALLATION, SEE W-3A, W-3B & W-3C

PROFILE

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

PLAN

CLEARANCE REQUIREMENTS

WRAPPED WITH 8-MIL POLYETHYLENE WRAP BETWEEN WATER METER AND BACKFLOW DEVICE, FOR METALLIC PIPE

18" (MIN) 18" (MIN) 18" (MIN)

C900, DUCTILE IRON PIPE AND FITTINGS ONLY FROM WATER METER TO 90° FITTING

WRANGLER TECH GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS.
NOTES

1. THIS STANDARD APPLIES TO COMMERCIAL/INDUSTRIAL/MULTI-FAMILY/IRRIGATION SERVICES OR AS REQUIRED BY THE CITY OF NAPA'S CROSS CONNECTION SPECIALIST AFTER COMPLETING A CROSS CONNECTION CONTROL SURVEY. PROPERTIES UTILIZING RECYCLED WATER SHALL INSTALL REDUCED PRESSURE BACKFLOW DEVICES ON ALL SERVICES UNLESS OTHERWISE APPROVED BY THE CITY OF NAPA'S CROSS CONNECTION SPECIALIST.

2. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.

3. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.


5. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.

6. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

7. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

8. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.

9. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

10. REDUCED PRESSURE BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.

11. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF REDUCED PRESSURE BACKFLOW DEVICE.

12. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

13. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.
Alternates materials must be approved by the City of Napa Water Division prior to use.

**Backflow Device Installation for 3" to 8" Water Services (See Note 1)**

- **EXTERIOR ABOVE-GROUND PIPING** permitted only if building is not at public right-of-way.
- **Ductile Iron Pipe and Fittings Only** from water meter to backflow device.
- **For Water Meter Installation,** see W-3A, W-3B & W-3C.
- **18" (MIN) - 24" (MAX) CLEARANCE** required.
- **Flexible Coupling** (Victaulic or similar).
- **No other connections permitted on the service between the backflow device and the water meter.**
- **32-LB (MIN) PREPACKAGED HIGH POTENTIAL MAGNESIUM ANODE**, for metallic pipe (see W-24A for installation details).
- **Wrapped with 8-Mil Polyethylene Wrap** between water meter and backflow device, for metallic pipe.
- **No fittings under building foundation.**
- **Flange, Megalug, or Victaulic Fittings.**
- **All joints shall be restrained.** Buried fittings: Megalug restraints, or equal. Exposed fittings: Flanged, Megalug, or Victaulic joints.
- **Flange Tyte Gaskets by U.S. Pipe shall be used for all flanged fittings.**
- **All interior restraints, supports, seismic protection, and drainage for the backflow device shall meet the current California Building and Plumbing Codes.**
NOTES

1. THIS STANDARD APPLIES TO COMMERCIAL/INDUSTRIAL/MULTI-FAMILY/IRRIGATION SERVICES OR AS REQUIRED BY THE CITY OF NAPA'S CROSS CONNECTION SPECIALIST AFTER COMPLETING A CROSS CONNECTION CONTROL SURVEY. PROPERTIES UTILIZING RECYCLED WATER SHALL INSTALL REDUCED PRESSURE BACKFLOW DEVICES ON ALL SERVICES UNLESS OTHERWISE APPROVED BY THE CITY OF NAPA'S CROSS CONNECTION SPECIALIST.

2. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.


4. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY.

5. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITIES - WATER DIVISION FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE.

6. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.

7. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

8. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

9. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.

10. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.

11. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

12. REDUCED PRESSURE BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.

13. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF REDUCED PRESSURE BACKFLOW DEVICE.

14. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
NOTES

1. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.

2. DOUBLE CHECK VALVE MUST BE INSTALLED WITHIN A PROTECTIVE BOX. STACKED BOXES SHALL BE USED AS NEEDED TO MAINTAIN CLEARANCE REQUIREMENTS. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.

3. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER MAIN AND THE DOUBLE CHECK VALVE ASSEMBLY.

4. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

5. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

6. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE BETWEEN THE WATER MAIN AND THE BACKFLOW DEVICE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). INSULATED COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF INSULATION POINT. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.

7. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

8. BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.

9. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.

10. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED PRIOR TO ACTIVATION OF SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

11. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.

BRASS OR COPPER PIPE AND FITTINGS ONLY (NO SOLDERED JOINTS) FROM WATER MAIN TO BACKFLOW DEVICE

NO OTHER CONNECTIONS PERMITTED ON THE SERVICE BETWEEN THE BACKFLOW DEVICE AND THE CONNECTION TO THE WATER MAIN IN THE STREET

WRAPPED WITH 8-MIL POLYETHYLENE WRAP BETWEEN WATER METER AND BACKFLOW DEVICE, FOR METALLIC PIPE

PUMP (IF REQUIRED), FDC CONNECTION, AND PIPING PER FIRE DEPARTMENT REQUIREMENTS AND PLUMBING CODE

36" (MIN) CLEARANCE

18" (MIN) - 24" (MAX) CLEARANCE

12" (MIN) 24" (MAX) CLEARANCE

36" (MAX)

BRASS OR COPPER PIPE AND FITTINGS ONLY (NO SOLDERED JOINTS) FROM WATER MAIN TO BACKFLOW DEVICE

** LEAD FREE DEVICES ONLY **

EXTERIOR ABOVE-GROUND PIPING PERMITTED ONLY IF BUILDING IS NOT AT PUBLIC RIGHT-OF-WAY

EXTerior WALL

EXTERIOR WALL

36" (MIN)

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

ALL INTERIOR RESTRAINTS, SUPPORTS, SEISMIC PROTECTION, AND DRAINAGE FOR THE BACKFLOW DEVICE SHALL MEET THE CURRENT CALIFORNIA BUILDING AND PLUMBING CODES

W-7B.1
NOTES

1. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.

2. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER MAIN AND THE DOUBLE CHECK VALVE ASSEMBLY. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.

3. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

4. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

5. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE BETWEEN THE WATER MAIN AND THE BACKFLOW DEVICE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). INSULATED FITTINGS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF INSULATION POINT. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.

6. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.

7. BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML.

8. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.

9. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED PRIOR TO ACTIVATION OF SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

10. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.


12. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITIES - WATER DIVISION FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE.

13. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.

14. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.
NOTES

1. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTEYNANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.

2. BACKFLOW DEVICE MUST BE PROTECTED FROM HAZARDS EITHER BY LOCATION OR BARRIERS.

3. NO CONNECTIONS ARE ALLOWED BETWEEN WATER MAIN AND THE BACKFLOW DEVICE OR DIRECTLY TO THE DEVICE.

4. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

5. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.


7. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3- FEET FROM THE FRONT OF THE DEVICE AND 18-INCHES TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, FEATURE UTILITY, ETC. FOR ACCESSIBILITY.

8. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET THE CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE UTILITIES - WATER DIVISION FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER MAIN TO THE BACKFLOW DEVICE.

9. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF DOUBLE CHECK VALVE AND WATER LATERAL.

10. BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML. DEVICE MUST BE SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION TO INSTALL VERTICALLY.

11. BACKFLOW DEVICES THAT SERVE ON-SITE PRIVATE FIRE HYDRANTS SHALL BE EQUIPPED WITH A FIRE SERVICE METER.

12. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN BOXES, VAULTS, OR UTILITY CLOSETS. BACKFLOW DEVICE SHALL BE PAINTED IN A COLOR APPROVED BY THE COMMUNITY DEVELOPMENT DEPARTMENT.
1. BACKFLOW DEVICES THAT SERVE ON-SITE PRIVATE FIRE HYDRANTS SHALL BE EQUIPPED WITH A FIRE SERVICE METER.

2. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.

3. BACKFLOW DEVICE MAY BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET WITH APPROVAL FROM THE UTILITIES - WATER DIVISION.

4. BACKFLOW DEVICE MUST BE PROTECTED FROM HAZARDS EITHER BY LOCATION OR BARRIERS.

5. INTERIOR INSTALLATIONS MAY BE INSTALLED IN THE HORIZONTAL POSITION. IF HORIZONTAL INSTALLATION IS DESIRED, AFTER THE INITIAL FLEXIBLE COUPLING, INSTALL A DUCTILE IRON 90-DEGREE BEND. CLEARANCES AROUND THE DEVICE SHALL BE PER W-7C AND W-7D.

6. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE UTILITIES - WATER DIVISION.

7. INSTALLATION MUST BE APPROVED BY THE UTILITIES - WATER DIVISION AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE UTILITIES - WATER DIVISION.

8. BACKFLOW DEVICES MUST BE APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD AND THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) HYDRAULIC RESEARCH SECTION. FOR USC'S FOUNDATION LIST OF APPROVED DEVICES GO TO HTTPS://FCCCHR.USC.EDU/LIST.HTML. DEVICE MUST BE SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION TO INSTALL VERTICALLY.

9. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3- FEET FROM THE FRONT OF THE DEVICE AND 18- INCHES TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, FEATURE, UTILITY, ETC. FOR ACCESSIBILITY.

10. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.

11. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF WATER LATERAL.

12. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITIES - WATER DIVISION FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE PUBLIC MAIN TO THE BACKFLOW DEVICE.

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
NOTES

1. APPROVED HYDRANTS: MUELLER "SUPER CENTURION", AND AMERICAN-DARLING "B-62-B". NO SUBSTITUTES WILL BE ACCEPTED.

2. HYDRANTS SHALL CONFORM TO AWWA STANDARD C 502-85. HYDRANTS SHALL HAVE ONE 4-1/2" OUTLET AND TWO 2-1/2" OUTLETS WITH CHAINED CAPS. MAIN VALVE SIZE SHALL BE 5-1/4". HYDRANTS INSTALLED ON WATER MAINS LARGER THAN 12" DIAMETER REQUIRE WATER DIVISION APPROVAL.

3. OPERATION: AWWA STANDARD PENTAGON NUT, OPEN LEFT WITH A MAXIMUM 60 FT-LB OPERATING TORQUE.

4. BURY DEPTH: 24" ONLY.

5. PUBLIC FIRE HYDRANTS SHALL BE POWDER COATED SILVER COLOR FINISH. FIRE HYDRANTS ON A PRIVATE FIRE SYSTEM SHALL BE PAINTED WITH A PRIME COAT PLUS "OSHA YELLOW" COLOR FINISH.

6. WHERE SIDEWALK IS ADJACENT TO CURB, EXTEND SIDEWALK AND RIGHT-OF-WAY TO PROVIDE A MINIMUM 4 FEET CLEARANCE BEHIND FIRE HYDRANT PER ADA REQUIREMENTS.

7. A 6" VERTICAL CURB IS REQUIRED FOR A MINIMUM OF 10' ON EACH SIDE OF HYDRANT.

8. INSTALL 8 MIL POLYETHYLENE WRAP ON LATERAL, JOINTS, AND VERTICAL RISE.

9. VERTICAL OFFSETS BETWEEN MAIN AND HYDRANT SHALL BE ACHIEVED WITH 45° BENDS W/ RESTRAINED JOINTS.

10. INSTALL PAVEMENT MARKER(S) IN PUBLIC STREET FOR ALL NEW AND RELOCATED FIRE HYDRANTS (SEE W-21).

11. FIRE HYDRANTS THAT ARE NOT IN SERVICE SHALL BE COMPLETELY COVERED.

12. PUBLIC FIRE HYDRANTS THAT ARE IN SERVICE SHALL BE OPERATED BY WATER DIVISION OR FIRE DEPARTMENT STAFF ONLY.

13. WATER USE THROUGH ANY FIRE HYDRANT SHALL BE LIMITED TO WATER SYSTEM MAINTENANCE AND FIRE PREVENTION USES ONLY. FIRE HYDRANTS MAY BE USED FOR CONSTRUCTION WATER PURPOSES WITH THE USE OF A HYDRANT METER OBTAINED FROM THE CITY AND IF THE LOCATION IS APPROVED BY THE CITY OF NAPA WATER DIVISION.

14. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF FIRE HYDRANTS.
NOTES

1. BUTTERFLY VALVES SHALL BE INSTALLED FOR 12" AND LARGER PIPES. VALVE NUTS SHALL BE PLACED ON THE SIDE OF THE MAIN CLOSEST TO THE NEAREST CURB.

2. GATE VALVES SHALL BE USED FOR ALL PIPE SIZES SMALLER THAN 12", UNLESS OTHERWISE APPROVED BY THE WATER DIVISION ENGINEER. GATE VALVES SHALL BE NON-RISING STEM WITH SQUARE OPERATING NUT, OPEN LEFT, AND HAVE STAINLESS STEEL NUTS AND BOLTS.

3. VALVE RING SHALL BE SET TO GRADE PRIOR TO PLACING FINISHED PAVEMENT.

4. THE TWO (2) INCH SQUARE OPERATING NUT ON ALL VALVES SHALL BE INSTALLED AT A MAXIMUM OF 5-FEET IN DEPTH MEASURED FROM THE TOP OF THE OPERATING NUT TO FINISHED GRADE. ALL OPERATING NUTS INSTALLED AT A DEPTH GREATER THAN 5-FEET SHALL INCLUDE A VALVE EXTENSION TO RAISE THE OPERATING NUT TO 24" FROM FINISHED GRADE.

5. VALVE EXTENSIONS (IF REQUIRED) SHALL BE ROUND OR SQUARE 1.5" DIAMETER STEEL ROD, WELDED CONSTRUCTION, AND COATED WITH TOP CENTERING RING AND AWWA 2" OPERATING NUTS TOP AND BOTTOM (PIPELINE PRODUCTS SX-900 OR SIMILAR). SOCKET END SHALL BE DRILLED AND TAPPED WITH TWO (2) 1/4" SET SCREWS INSTALLED ON OPPOSITE SIDES. OPERATING NUT SHALL BE DRILLED WITH RECESSES TO ACCEPT THE TWO (2) 1/4" SET SCREWS. SET SCREWS SHALL BE SECURELY FASTENED TO THE OPERATING NUT.

6. WATER VALVES SHALL BE OPERATED BY WATER DIVISION PERSONNEL ONLY.

7. WATER DIVISION ENGINEER MAY REQUIRE THE INSTALLATION OF BINGHAM & TAYLOR 12" MARK VII VALVE BOXES FOR HEAVILY TRAVELED ROADWAYS.
NOTES


2. ALL JOINTS WITHIN MINIMUM RESTRAINED LENGTH "L" SHALL BE RESTRAINED. FULL LENGTH PIPE SECTIONS SHALL BE USED. WHEN LENGTH "L" OCCURS WITHIN THE MID SECTION OF A PIPE, THE NEXT JOINT OUT SHALL BE RESTRAINED. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING.

3. RESTRAINED JOINTS REQUIRE INSPECTION BY THE CITY OF NAPA. INSPECTION IN ADVANCE AND LEAVING JOINTS EXPOSED FOR THE CITY INSPECTOR.

4. MINIMUM RESTRAINED LENGTH SHALL BE CLEARLY SHOWN ON THE PROFILE OF ALL WATERLINE PLANS.

5. MINIMUM RESTRAINED LENGTH SHALL BE RE-CALCULATED TO ACCOUNT FOR OTHER FITTINGS (VALVES, TEES, BENDS) WITHIN LENGTH "L".

6. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.

7. SEE W-14B FOR "L" LENGTH SPECIFICATIONS AND ADDITIONAL RESTRAINED JOINT DETAILS.
**EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED**

<table>
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<tr>
<th>DESCRIPTION</th>
<th>MUELLER</th>
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<tr>
<td>INSULATED CORP. STOP (MIP x COMP)</td>
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<tr>
<td>BLOW-OFF VALVE</td>
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ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

UTILITIES DEPARTMENT

TITLE: 2" TOP BLOW OFF ASSEMBLY

DRAWN BY: DF
APPROVAL DATE: 09/2021
SCALE: NTS
REVISION DATE: 09/2021

CHECKED BY: SL
APPROVED BY: DD
DRAWING NO.: W-10B
1. BYPASS DIAMETER SHALL BE APPROVED BY THE WATER DIVISION ENGINEER. THE WATER DIVISION RESERVES THE RIGHT TO REQUIRE A DIFFERENT BYPASS DIAMETER THAN SHOWN ON THE ABOVE DIAGRAM.
ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

KUPERLE FOUNDRY WATER SAMPLING STATION (ECLIPSE 88WC) W/ APOLLO 1" SS BALL VALVE (TH-805-01)

CHRISTY B16 METER BOX (OR APPROVED EQUAL) WITH MOUSE HOLE AND FIBRELYTE FL16D LID MARKED "WATER"

BALL VALVE (COMP x COMP)

FLUSH MOUNTED

SIDEWALK

2'x2' (MIN) CONCRETE PAD

1" COPPER PIPE (TYPE "K" SOFT)

INSULATED 1" CORPORATION STOP TAPPED AT ±45°

STAINLESS STEEL SERVICE SADDLE

WATER MAIN

NOTES

1. WATER SAMPLING STATIONS SHALL BE INSTALLED DURING THE CONSTRUCTION OF NEW WATER MAINS AS DIRECTED BY A CITY WATER DIVISION REPRESENTATIVE, AND AT OTHER SPECIFIED LOCATIONS AS REQUIRED.

2. ALL BURIED SECTIONS OF COPPER AND BRASS PIPE SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE (BLUE IN COLOR). COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR).

3. METER BOX AND SERVICE LINE SHALL BE INSTALLED 5-FT (MIN) FROM DRIVEWAY APPROACHES AND OTHER VEHICULAR ACCESS WAYS.

4. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER’S EXPENSE. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAP SHALL BE 36" (MIN) FROM ANY OTHER TAP, BELL, FITTING, OR OTHER SERVICE.

5. WATER SAMPLING STATIONS SHALL NOT BE INSTALLED OFF EXISTING SERVICE LATERALS UNLESS OTHERWISE APPROVED BY A CITY WATER DIVISION REPRESENTATIVE.

6. METER BOXES SHALL BE PLACED A MINIMUM OF 3’ FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10’ OR LARGE SHRUBS WITHIN 5’ OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
NOTES

1. BYPASS DIAMETER SHALL BE APPROVED BY THE WATER DIVISION ENGINEER. THE WATER DIVISION RESERVES THE RIGHT TO REQUIRE A DIFFERENT BYPASS DIAMETER THAN SHOWN ON THE ABOVE DIAGRAM.
NOTES

1. CURB ADJACENT SIDEWALK: INSTALL AIR-VAC ASSEMBLY BEHIND SIDEWALK.

2. AIR-VAC SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCE, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE AIR-VAC. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
CURB & GUTTER

BRICK SUPPORTS

FIELD CUT 2 1/2" DIA. HOLE

LENGTH AS REQUIRED

MIN. SLOPE 1/2" PER 10'

2" TYPE "K" SOFT COPPER PIPE

INSULATED 2" CORP. STOP (MIPT x FIPT)

2" 90° (COMP x MIPT)

12" OF TOPSOIL

3/4" CLEAN CRUSHED GRAVEL

- 6" MIN. ON ALL SIDES
- 12" MIN. ON BOTTOM
- INSIDE BOX TO 4" BELOW AIR RELEASE VACUUM VALVE

STAINLESS STEEL SERVICE SADDLE

(SMITH-BLAIR #372, FORD #300, JCM #502)

APPROVED FITTINGS

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<tr>
<th>DESCRIPTION</th>
<th>MUELLER</th>
<th>FORD</th>
</tr>
</thead>
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<td>L14-77Q</td>
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<tr>
<td>CURB STOP (FIPT x FIPT)</td>
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<td>B11-777W</td>
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</table>

** SHALL BE INSULATED FITTINGS BY MUELLER OR JONES

DETAIL

BOX INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

NOTES

1. CURB ADJACENT SIDEWALK: INSTALL AIR-VAC ASSEMBLY BEHIND SIDEWALK.

2. AIR-VAC SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCE, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE AIR-VAC. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
1. **CONSTRUCTION DETAILS**: REFER TO CITY OF NAPA STANDARD SPECIFICATIONS AND PLANS.

2. **WATER-SEWER SEPARATION**: WATER-SEWER (OR WATER-RECYCLED WATER) SEPARATION SHALL COMPLY WITH ALL STATE WATER RESOURCES CONTROL BOARD REQUIREMENTS. PARALLEL CONSTRUCTION: 10' OF HORIZONTAL SEPARATION. PERPENDICULAR CONSTRUCTION: WATER MAINS AT LEAST 1' ABOVE SEWER AND RECYCLED WATER LINES.

3. **EXISTING WATER FACILITIES**: CONTRACTOR SHALL LOCATE BY EXCAVATION ALL EXISTING WATER FACILITIES PRIOR TO ANY CONSTRUCTION ACTIVITIES. IF CONFLICTS ARISE, AN ALTERNATE DESIGN MUST BE SUBMITTED TO THE CITY FOR APPROVAL.

4. **OBSTRUCTIONS**: TREES, FOUNDATIONS, OR OTHER PERMANENT STRUCTURES SHALL NOT BE INSTALLED WITHIN 10' OF ANY WATER FACILITY. NO OBSTRUCTIONS (SIGNPOST, MAILBOX, WALL, FENCE, ETC.) SHALL BE INSTALLED WITHIN 3' OF ANY WATER FACILITY. SEE STANDARD PLAN W-18 FOR ADDITIONAL REQUIREMENTS.

5. **CONSTRUCTION WATER**: WATER SUPPLIED FROM THE CITY OF NAPA SYSTEM SHALL BE TAKEN THROUGH A METERED SERVICE OR CITY ISSUED FIRE HYDRANT METER. FIRE HYDRANT METER(S) SHALL BE OBTAINED BY APPLYING AT THE REVENUE/COLLECTIONS DIVISION IN CITY HALL AT 955 SCHOOL STREET, NAPA (707.257.9508). A FORM IS AVAILABLE ONLINE AT WWW.CITYOFNAPA.ORG/NEWDEVELOPMENT UNDER THE SECTION, CONSTRUCTION WATER/HYDRANT METER(S).

6. **INSPECTION**: PUBLIC WATER FACILITIES UP TO AND INCLUDING THE WATER METER SHALL BE INSPECTED BY THE WATER DIVISION INSPECTOR (CONTACT 707-257-9521 TO SCHEDULE INSPECTION). ALL WATER FACILITIES BETWEEN THE WATER METER UP TO AND INCLUDING THE BACKFLOW DEVICE SHALL BE INSPECTED BY THE WATER DIVISION BACKFLOW PREVENTION SPECIALIST (CONTACT 707-257-9544 TO SCHEDULE INSPECTION). ALL NEW WATER FACILITIES SHALL BE TESTED AND INSPECTED PRIOR TO ACTIVATION.

7. **WATER SERVICE INTERRUPTION**: CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AFFECTED WATER CUSTOMERS A MINIMUM OF 48 HOURS (2 BUSINESS DAYS) IN ADVANCE. ALL VALVES SHALL BE OPERATED BY CITY PERSONNEL. CONTRACTOR SHALL SCHEDULE ALL WATER SERVICE INTERRUPTIONS BY CALLING 707-257-9544.

8. **JOINT DEFLECTION**: MAXIMUM DEFLECTION AT PIPE JOINTS SHALL NOT EXCEED 3° WITH A MAXIMUM OFFSET OF 10" PER 18' LENGTH (MINIMUM RADIUS = 345') OR AS SET FORTH BY MANUFACTURER SPECIFICATIONS OR INSTALLATION PROCEDURES.

9. **CORROSION PROTECTION**: DUCTILE IRON PIPE SHALL BE CATHODICALLY PROTECTED IN ACCORDANCE WITH THE CITY OF NAPA STANDARD SPECIFICATIONS, PLANS AND THE CITY OF NAPA'S WATER DISTRIBUTION SYSTEM PROVISIONS. ALL BOLTS, STUDS WASHERS, NUTS, ETC. SHALL BE STAINLESS STEEL MINIMUM GRADE 304SS WITH TEFLON COATED NUTS OR CITY APPROVED EQUAL.

10. **VALVES**: VALVES SHALL BE INSTALLED AS SHOWN IN THE APPROVED PLANS AND COMPLY WITH CITY OF NAPA STANDARD PLAN W-9. ALL WATER SERVICE VALVES SHALL BE PLACED IMMEDIATELY AFTER THE TEE OR HOT TAP.

11. **FIRE HYDRANTS**: FIRE HYDRANT INSTALLATIONS SHALL COMPLY WITH CITY OF NAPA STANDARD PLAN W-8. FIRE HYDRANT(S) NOT IN SERVICE SHALL BE COMPLETELY COVERED.

12. **SERVICES**: WATER SERVICE INSTALLATIONS SHALL COMPLY WITH APPLICABLE CITY OF NAPA STANDARD PLANS. FIRE SERVICE METERS SHALL BE INSTALLED ON ALL FIRE SERVICES WITH PRIVATE FIRE HYDRANTS. ALL HOT-TAPS TO EXISTING MAINS SHALL BE CONDUCTED BY THE CITY AT THE CONTRACTOR'S EXPENSE. A WATER SYSTEM SHUTDOWN SHALL BE REQUIRED IN ALL CASES WHERE THE PROPOSED WATER SERVICE IS THE SAME SIZE AS THE EXISTING PIPELINE SUPPLYING THE PROPOSED WATER SERVICE(S).

13. **BACKFLOW DEVICES**: BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED ON ALL NEW SERVICES AND COMPLY WITH CITY OF NAPA STANDARD PLANS W-5 (A, B, C & D), W-6 (A, B, C & D), AND W-7 (A, B, C & D). APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. WATER METERS (IF APPLICABLE) SHALL BE INSTALLED IN THE LOCKED POSITION UNTIL PASSING TEST RESULTS ARE RECEIVED BY THE CITY OF NAPA. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

14. **BACKFILL**: WATER MAIN TRENCH BACKFILL SHALL COMPLY WITH CITY OF NAPA STANDARD PLAN W-13A.

15. **TIE-INS**: NEW TIE-INS TO EXISTING CITY WATER MAINS SHALL BE CONDUCTED UNDER CITY INSPECTION ONLY AFTER PRESSURE TESTING, CHLORINATION, AND BACTERIOLOGICAL TESTING IS COMPLETE. ALL HOT-TAPS TO EXISTING MAINS SHALL BE CONDUCTED BY THE CITY AT THE CONTRACTOR'S EXPENSE. WATER SYSTEM CUT-IN CONNECTIONS SHALL BE PERFORMED BY THE CONTRACTOR UNDER WATER DIVISION SUPERVISION. VALVES ARE TO BE OPERATED BY CITY STAFF ONLY. A WATER SYSTEM SHUTDOWN SHALL BE REQUIRED IN ALL CASES WHERE NEW PIPELINE TIE-INS ARE THE SAME SIZE OR GREATER (I.E. SIZE-ON-SIZE).

16. **METER INSTALLATION(S) AND SERVICE ACTIVATION**: METER INSTALLATION(S) SHALL OCCUR UPON RECEIPT OF PAYMENT, PARCEL ADDRESS(ES) AND RESPONSIBLE BILLING PARTY. ALL PRESSURIZED SERVICES SHALL BE CONSIDERED ACTIVE AND BILLABLE.

17. **PRESSURE**: CONTRACTOR SHALL INSTALL PRESSURE REGULATORS ON ALL WATER SERVICE CONNECTIONS (PROPERTY OWNER'S SIDE) WHERE PRESSURES EXCEED 80 POUNDS PER SQUARE INCH (PSI).

18. **DOCUMENTATION AND RECORD DRAWING**: ALL NEW WATER SYSTEM INSTALLATIONS SHALL BE GPS SURVEYED WITHIN 5 BUSINESS DAYS OF INSTALLATION AND BEFORE BACKFILL. CONTRACTOR SHALL SCHEDULE ALL SURVEYS BY CALLING 707.257.9521. RECORD DRAWINGS SHALL BE SUBMITTED WITHIN 20 BUSINESS DAYS AFTER WATER SYSTEM ACTIVATION.
NOTES

1. TRENCHES MADE WITHIN 5' PARALLEL TO AN EXISTING GUTTER OR EDGE OF ROAD WILL REQUIRE REMOVAL AND REPLACEMENT OF EXISTING AC PAVING TO EDGE.

2. IF UTILITY CONFLICTS REQUIRE OFFSET OF NEW OR EXISTING WATER MAINS OR WATER SERVICES, WATER FACILITIES SHALL NOT BE INSTALLED WITH LESS THAN 2-FEET COVER.

3. POTHOLES SHALL BE BACKFILLED WITH CONTROLLED DENSITY FILL INSTEAD OF CLASS II AGGREGATE BASE. A CLEAN WASHED UTILITY SAND SHALL STILL BE REPLACED BACK OVER WATER MAIN AS SHOWN.

4. TRENCH PLATES PLACED ON ARTERIAL OR HEAVILY TRAVELED ROADWAYS MUST BE RECESSED. CONTACT CITY OF NAPA PUBLIC WORKS FOR STREET CLASSIFICATIONS.
CALTRANS RIGHT-OF-WAY

5' MIN

12" CARRIER PIPE (MIN)

16" HOST PIPE (MIN)

PROFILE

16" FUSIBLE C905
HOST PIPE (MIN)

CALPICO M-8-SS CASING
INSULATORS (GROUTING
OPTIONAL WITH WATER
DIVISION APPROVAL)

12" FUSIBLE C900
CARRIER PIPE (MIN)

SECTION
NOTES

1. DETAILS ON THIS SHEET ARE FOR WATER MAINS 8" IN DIAMETER AND SMALLER. SEE W-14B FOR RESTRAINT REQUIREMENTS FOR 12" AND LARGER WATER MAINS.

2. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR THRUST BLOCKS AND WINGWALLS. CONCRETE SHALL BE Poured AGAINST UNDISTURBED SOIL AND BARE PIPE.


4. RESTRAINTS SHALL BE USED PER CITY OF NAPA WATER DIVISION SPECIFICATIONS, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING WATER MAINS WITH LESS THAN STANDARD COVER (PER W-12), AND WATER MAINS WITHIN STEEL CASINGS.

5. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES.

WINGWALL DETAIL FOR BLOW-OFFS, VERTICAL, AND HORIZONTAL OFFSETS
NOTES

**RESTRAINING REQUIREMENTS FOR 4", 6" AND 8" WATER MAINS:**

1. BEARING AREAS SHOWN ARE BASED ON 150 PSI SERVICE PRESSURE, 1500 PSF SOIL BEARING CAPACITY, AND SAFETY FACTOR OF 1.25. BLOCKING AREAS NEED TO BE MODIFIED WHERE FIELD CONDITIONS DIFFER.

2. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR THRUST BLOCKS AND WINGWALLS. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL AND BARE PIPE.

3. FOR ADDITIONAL WATER MAIN OFFSET AND JOINT DEFLECTION DESIGN REQUIREMENTS, SEE W-15. FOR ADDITIONAL THRUST BLOCK AND WINGWALL DESIGN REQUIREMENTS, SEE W-14A.

4. RERAINTS SHALL BE USED PER CITY OF NAPA WATER DIVISION SPECIFICATIONS, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING WATER MAINS WITH LESS THAN STANDARD COVER (PER W-12), AND WATER MAINS WITHIN STEEL CASINGS.

5. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES. WHERE SERVICES ARE PRESENT USE OF ACCELERATED CURING CONCRETE WILL BE REVIEWED.

**RESTRAINING REQUIREMENTS FOR 12" AND LARGER WATER MAINS:**

1. RESTRAINING FORCES SHOWN ARE BASED ON 150 PSI SERVICE PRESSURE, 1500 PSF SOIL BEARING CAPACITY, AND SAFETY FACTOR OF 1.5. RESTRAINING FORCES NEED TO BE MODIFIED WHERE FIELD CONDITIONS DIFFER.

2. WINGWALL DESIGNS SHALL INCORPORATE RESTRAINING FORCES, SOIL BEARING CAPACITIES, AND WATER MAIN DEPTH. WINGWALLS SHALL BE DESIGNED AND STAMPED BY A LICENSED CIVIL ENGINEER, AND SHALL BE REVIEWED AND APPROVED BY THE WATER DIVISION PRIOR TO INSTALLATION.

3. FOR ADDITIONAL WATER MAIN OFFSET AND JOINT DEFLECTION DESIGN REQUIREMENTS, SEE W-15. FOR ADDITIONAL THRUST BLOCK AND WINGWALL DESIGN REQUIREMENTS, SEE W-14A.

4. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR WINGWALLS AND SHALL BE INCORPORATED AS PART OF THE ENGINEERED DESIGN. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL AND BARE PIPE.

5. RERAINTS SHALL BE USED PER CITY OF NAPA WATER DIVISION SPECIFICATIONS, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING JOINTS OF 12" AND LARGER WATER MAINS. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.

6. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES. WHERE SERVICES ARE PRESENT USE OF ACCELERATED CURING CONCRETE WILL BE REVIEWED.

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**MINIMUM REQUIRED TOTAL BEARING AREAS (IN SQ. FT.) FOR THRUST BLOCKS FOR 4", 6" AND 8" WATER MAINS**

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**MINIMUM REQUIRED RESTRAINING FORCE (IN 1,000 LB. INCREMENTS) FOR ENGINEERED WINGWALL DESIGN FOR 12" AND LARGER WATER MAINS**

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**CITY OF NAPA UTILITIES DEPARTMENT**

**WATER MAIN RESTRAINT DETAILS**

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TYPICAL SYSTEM RESTRAINT LENGTHS

**NOTES:**

1. ALL JOINTS WITHIN LENGTH "L" SHALL BE RESTRAINED.
2. ALL FOUR "BRANCHES" ON A CROSS SHALL BE RESTRAINED PER THE TEE BRANCH LENGTH AS SHOWN.
3. LENGTHS SHOWN ASSUMES ALL PIPES ARE INSTALLED AT CITY STANDARD MINIMUM DEPTHS. FOR VERTICAL BENDS, LOW SIDE LENGTH PROVIDED IS FOR A 1' DROP.
4. ASSUMES SAFETY FACTOR OF 1.5 AND TEST PRESSURE OF 150 PSI.
5. ASSUMES BEDDING AND BACKFILL IS PER CITY STANDARD W-13A.
6. RESTRAINT SHOWN IS FOR NEW PIPING, WHEN CONNECTING TO EXISTING PIPING, UTILIZE THE APPROPRIATE CITY STANDARDS FOR PROPER SYSTEM RESTRAINT. FOR RESTRAINT OF THE EXISTING PIPING COORDINATE WITH THE WATER DIVISION ENGINEER, SEE CITY STANDARD W-14A, W-14B, W-15, & W-16B.
7. ALL JOINT RESTRAINTS SHALL BE APPROVED ITEMS OR A CITY ACCEPTED SUBMITTAL.
8. WHERE MAIN IS 12" OR LARGER AND AREA WATER PRESSURE IS 90 PSI OR GREATER, CONCRETE THRUST BLOCKING PER APPLICABLE CITY STANDARDS, AND RESTRAINED JOINTS, SHALL BE INSTALLED.

**VERTICAL BENDS**

**HORIZONTAL BENDS**

**CITY OF NAPA UTILITIES DEPARTMENT**

**TYPICAL SYSTEM RESTRAINT LENGTHS**

**DRAWN BY:** DF  **CHECKED BY:** SL  **APPROVAL DATE:** 09/2021  **APPROVED BY:** DD  **SCALE:** NTS  **DRAWING NO.:** W-14C  **REVISED DATE:** 09/2021
3. Minimum restrained length shall be clearly shown on the profile of all waterline plans.

2. Restained joints require inspection by the City of Napa. Contractor is responsible for scheduling inspection in advance and leaving joints exposed for the city inspector.

1. All joints within minimum restrained length "L" shall be restrained. Full length pipe sections shall be used when length "L" occurs within the mid section of a pipe, the next joint out shall be restrained. See W-14B for "L" length specifications and additional restrained joint details.

5. Minimum restrained lengths for pipe sizes larger than 12" shall be determined by the engineer and approved by the city.

6. Alternate materials must be approved by the City of Napa Water Division prior to use.
1. HOT-TAPS REQUIRED WHEN NEW MAINS OR SERVICE LATERALS ARE CONNECTED TO EXISTING WATER MAINS. ALL HOT TAPS SHALL BE BY CITY FORCES AT THE CONTRACTOR’S EXPENSE.

2. CONTRACTOR SHALL PROVIDE SAWCUTTING, EXCAVATION, BACKFILL, COMPACTION, PLATING, PAVING, TRAFFIC CONTROL, AND ENCROACHMENT PERMIT.

3. CONTRACTOR SHALL PROVIDE AND INSTALL SHORING PER OSHA STANDARDS.

4. THE CONTRACTOR SHALL MODIFY SITE CONDITIONS TO THE SATISFACTION OF THE CITY REPRESENTATIVE.

5. HOT-TAP SHALL BE INSTALLED 36" MIN. FROM ANY TAP, BELL, FITTING, WATER SERVICE, ETC.

6. FOR 1" HOT-TAPS, 7' DIMENSION CAN BE REDUCED TO 5'.

7. FEES SHALL BE PAID AT THE WATER DIVISION OFFICE LOCATED AT 1700 SECOND ST, SUITE 100. FOR QUESTIONS REGARDING FEES, CALL (707) 257-9521.

8. AFTER FEES HAVE BEEN PAID, ALLOW 7 TO 10 WORKING DAYS FOR SCHEDULING HOT-TAP INSTALLATION.

9. TO SCHEDULE A HOT-TAP AFTER FEES HAVE BEEN PAID, CALL (707) 257-9544.

10. IF EXISTING UTILITIES EXIST WITHIN THE HOT TAP EXCAVATION PIT AND INHIBIT CITY CREWS FROM COMPLETING HOT TAP, CONTRACTOR MAY BE REQUIRED TO MODIFY EXISTING WATER MAIN, TO CUT IN NEW TEE FOR WATER SERVICE, OR RELOCATE EXISTING UTILITIES. MODIFICATIONS TO WATER FACILITIES SHALL BE DETERMINED BY WATER DIVISION STAFF.

11. THE ALLOWANCE OF SIZE-ON-SIZE WATER SERVICE LATERALS SHALL BE AT THE SOLE DISCRETION OF THE WATER DIVISION ENGINEER.
NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING WATER CUSTOMERS AFFECTED BY A WATER SHUT-OFF A MINIMUM OF 48 HOURS (2 WORKING DAYS) IN ADVANCE. CITY PERSONNEL SHALL OPERATE EXISTING VALVES ON THE WATER SYSTEM. CONTRACTOR TO PROVIDE A MINIMUM OF 48 HOUR (2 WORKING DAYS) NOTICE FOR CITY PERSONNEL BY CALLING 707-257-9544 TO SCHEDULE SHUTDOWN.
1. ALL ABANDONMENT WORK SHALL BE UNDER THE DIRECT SUPERVISION OF THE WATER DIVISION INSPECTOR. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING WATER CUSTOMERS AFFECTED BY A WATER SHUT-OFF A MINIMUM OF 48 HOURS (2 WORKING DAYS) IN ADVANCE. CITY PERSONNEL SHALL OPERATE EXISTING VALVES ON THE WATER SYSTEM. CONTRACTOR TO PROVIDE A MINIMUM OF 48 HOUR (2 WORKING DAYS) NOTICE FOR CITY PERSONNEL BY CALLING 707-257-9544 TO SCHEDULE SHUTDOWN.

2. WATER SERVICES LARGER THAN 2" REQUIRE REMOVAL OF THE TEE OR TAPPING SADDLE AT THE MAIN AS SHOWN ABOVE AND REMOVAL OF METER BOX. CONTACT WATER DIVISION TO CLOSE ACCOUNT AND PICK-UP METER.

3. WATER MAINS REQUIRE ABANDONMENT OF THE TEE OR TAPPING SADDLE AS SHOWN ABOVE. CONTRACTOR IS RESPONSIBLE FOR RELOCATING AND RECONNECTING EXISTING WATER SERVICES TO AN ACTIVE WATER MAIN AT THE DIRECTION OF WATER DIVISION STAFF.

4. WHEN WATER FACILITIES ARE REMOVED (INCLUDING BUT NOT LIMITED TO WATER METERS AND FIRE HYDRANTS), CONTRACTOR SHALL BACKFILL HOLE WITH CONCRETE (PER S-4) IF HOLE IS LOCATED WITHIN SIDEWALK SECTION, ASPHALT (PER W-13A) IF HOLE IS LOCATED WITHIN STREET SECTION, OR SOIL COMPACTED TO 90% IF HOLE IS LOCATED WITHIN A LANDSCAPE STRIP, AS DETERMINED BY THE WATER DIVISION.
DEFINITIONS

OBSTRUCTIONS - OBSTRUCTIONS are objects (permanent or temporary) that prevent water service crews from reading or maintaining public water facilities, including but not limited to water meters, fire hydrants, sample stations, and air-vacuum release valves. Such items include, but not limited to, posts, fences, vehicles, signs, trash, storage containers, debris, and plant growth.

CLEAR AREA - A CLEAR AREA allows service workers to read and maintain public water facilities without requiring additional, non-water based work, including but not limited to clearing bushes, moving signs, and removing debris.

WATER FACILITY - A WATER FACILITY is any device connected to the public water system, including but not limited to water meters, valves, blow-off valves, fire hydrants, air-vacuum release valves, water service laterals, and backflow devices.

PERMANENT STRUCTURE - PERMANENT STRUCTURES include any objects that are not intended to be removed or relocated, including but not limited to foundations, fences, retaining walls, pools, houses, trees, large bushes, and signs.

SEPARATION REQUIREMENTS

1. OBSTRUCTIONS shall be kept a minimum of 3-feet away from water facilities.

2. A CLEAR AREA shall be maintained 1-foot around and 6-feet above water facilities by the customer (except a 3-foot clear area shall be maintained for fire hydrants).

3. PERMANENT STRUCTURES shall be kept a minimum of 10-feet away from water facilities (large shrubs can be kept a minimum of 5-feet away).
NOTES

1. ALL WATER MAINS 6" OR LARGER STUBBED WITH THE INTENT OF BEING CONNECTED IN THE FUTURE SHALL BE INSTALLED PER THIS DETAIL, REGARDLESS OF THE LOCATION OF THE NEAREST HYDRANT. BLOW-OFFS SHALL ONLY BE INSTALLED ON WATER MAINS LESS THAN 6" IN DIAMETER, OR AT THE DISCRETION OF THE WATER DIVISION.

2. ALL JOINTS WITHIN MINIMUM RESTRAINED LENGTH "L" SHALL BE RESTRAINED. FULL LENGTH PIPE SECTIONS SHALL BE USED. WHEN LENGTH "L" OCCURS WITHIN THE MID SECTION OF A PIPE, THE NEXT JOINT OUT SHALL BE RESTRAINED. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING.

3. RESTRAINED JOINTS REQUIRE INSPECTION BY THE WATER DIVISION. INSPECTION IN ADVANCE AND LEAVING JOINTS EXPOSED FOR THE WATER DIVISION INSPECTOR.

4. MINIMUM RESTRAINED LENGTH SHALL BE CLEARLY SHOWN ON THE PROFILE OF ALL WATERLINE PLANS.

5. MINIMUM RESTRAINED LENGTH SHALL BE RE-CALCULATED TO ACCOUNT FOR OTHER FITTINGS (VALVES, TEES, BENDS) WITHIN LENGTH "L".

6. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE WATER DIVISION.

7. A BUTTERFLY VALVE SHALL BE USED INSTEAD OF A GATE VALVE (PER CITY STANDARD W-9) FOR WATER MAINS 12" OR LARGER.

8. SEE W-14B FOR "L" LENGTH SPECIFICATIONS AND ADDITIONAL RESTRAINED JOINT DETAILS.
CITY OF NAPA RESPONSIBILITY

CITY WILL MAINTAIN WATER SYSTEM ON THIS SIDE OF THE METER SETTER
WATER LOST ON THIS SIDE OF METER SETTER WILL NOT BE CHARGED TO THE CUSTOMER

PROPERTY OWNER'S RESPONSIBILITY

PROPERTY OWNER IS RESPONSIBLE FOR MAKING ALL PLUMBING REPAIRS ON THIS SIDE OF THE METER SETTER. THE CITY WILL NOT MAKE THESE REPAIRS.
WATER LOST ON THIS SIDE OF METER SETTER WILL BE BILLED TO THE CUSTOMER.

NOTES

1. CURB ADJACENT SIDEWALK: METER INSTALLED AT CURB AS SHOWN. BACKFLOW DEVICE INSTALLED BEHIND SIDEWALK
2. METER BOX AND SERVICE LINE SHALL BE INSTALLED OUTSIDE OF DRIVEWAYS AND DRIVEWAY APPROACHES.
3. METERS SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCE, ETC.). NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF THE METER BOX. SEE W-18 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
4. FOR AN OLDER WATER SERVICE INSTALLATION WHERE A METER SETTER WAS NOT INSTALLED, CUSTOMER'S RESPONSIBILITY STARTS AFTER THE METER CONNECTION.
1. SERVICE LINE SHALL BE INSTALLED OUTSIDE OF DRIVEWAYS AND DRIVEWAY APPROACHES.

2. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF THE SERVICE LATERAL. SEE W-18 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
1. FIRE HYDRANTS LOCATED AT STREET INTERSECTIONS (INCLUDING "T"-INTERSECTIONS) SHALL HAVE MARKERS PLACED ON BOTH STREETS.
NOTES
1. WATER-SEWER (WATER-RECLAIMED WATER) SEPARATION SHALL BE PER THE REQUIREMENTS OF THE STATE WATER RESOURCES CONTROL BOARD.
2. IF EXISTING UTILITIES ARE REPLACED, THE NEW FACILITIES SHALL MEET THE CURRENT MINIMUM SEPARATION REQUIREMENTS.
3. IF THERE ARE DIFFERENT SEPARATION REQUIREMENTS BASED ON OTHER UTILITY REQUIREMENTS, OR LOCAL, STATE, OR FEDERAL REGULATIONS, THE STRICTER SEPARATION REQUIREMENTS SHALL PREVAIL.
4. FOR VERTICAL SEPARATION REQUIREMENTS, SEE W-22B.
NEW UTILITIES AROUND EXISTING WATER FACILITIES

CROSSING OTHER UTILITIES OVER EXISTING WATER FACILITIES SHOULD BE AVOIDED WHENEVER POSSIBLE

OTHER UTILITIES SHALL BE GRADED TO DRAIN OR EXTENDED ACROSS EXISTING WATER FACILITIES

NEW WATER FACILITIES AROUND EXISTING UTILITIES

ROPE OR EXTEND WATER PIPE OVER OTHER UTILITIES IF 2-FEET MINIMUM COVER CAN BE MAINTAINED

WATER FACILITIES SHALL BE ROPED OR EXTENDED ACROSS OTHER EXISTING UTILITIES

NOTES

1. WATER-SEWER (WATER-RECLAIMED WATER) SEPARATION SHALL BE PER THE REQUIREMENTS OF THE STATE WATER RESOURCES CONTROL BOARD. WATER FACILITIES SHALL CROSS OVER SEWER FACILITIES WHENEVER POSSIBLE, OTHERWISE ADDITIONAL INSTALLATION REQUIREMENTS MAY BE REQUIRED.

2. IF EXISTING UTILITIES ARE REPLACED, THE NEW FACILITIES SHALL MEET THE CURRENT MINIMUM SEPARATION REQUIREMENTS.

3. IF THERE ARE DIFFERENT SEPARATION REQUIREMENTS BASED ON OTHER UTILITY, LOCAL, STATE, OR FEDERAL REGULATIONS OR REQUIREMENTS, THE STRICTER SEPARATION REQUIREMENTS SHALL PREVAIL.

4. WHEN UTILITIES CROSS OVER EXISTING WATER FACILITIES, BACKFILL OVER EXISTING WATER FACILITIES SHALL MEET THE WATER TRENCH DETAIL SPECIFICATIONS (SEE W-13A).

5. WHEN A MINIMUM 2-FOOT COVER (WITH 1-FOOT VERTICAL SEPARATION) CAN BE MAINTAINED OVER WATER FACILITIES, NEW WATER FACILITIES SHALL BE ROPED OVER OTHER UTILITIES.

6. VERTICAL SEPARATION REQUIREMENTS BETWEEN NEW AND EXISTING WATER FACILITIES (BOTH 8" OR LESS IN DIAMETER), CAN BE REDUCED TO A MINIMUM 6" OF SEPARATION.

7. FOR HORIZONTAL SEPARATION REQUIREMENTS, SEE W-22A.
NOTES

1. ALL CABLE CONNECTIONS TO STEEL PIPE AND FITTINGS SHALL BE ACCOMPLISHED UTILIZING AN EXOTHERMIC WELDING PROCESS SUCH AS "CALDWELL" BY ERICO PRODUCTS, INC. OR APPROVED EQUAL. (SEE W-23B FOR EXOTHERMIC WELD DETAIL). ALL MATERIAL AND EQUIPMENT UTILIZED FOR WELDING SHALL BE FROM ONE MANUFACTURER.

2. BOND WIRE SHALL BE #10 AWG/HMWPE BOND CABLE. ALL JOINTS, EXCEPT FIELD WELDED JOINTS AND INSULATING JOINTS, SHALL BE CONTINUITY BONDED. BONDS SHALL BE WELDED TO STEEL PIPE AS WELL AS MAJOR PARTS OF ANY COUPLINGS USED. THE LENGTH OF THE BOND CABLES BETWEEN FITTINGS SHALL BE SUFFICIENT IN LENGTH TO ALLOW FOR SOIL CONTRACTION AND PIPE MOVEMENT.

3. NEW WATER MAINS SHALL BE CONTINUITY BONDED TO ALL EXISTING FERROUS WATER MAINS. IN LOCATIONS WHERE A NEW WATER MAIN IS TIED INTO AN EXISTING NON-FERROUS WATER MAIN WITH A BOND CABLE, THE NEW WATER MAIN SHALL BE CONTINUITY BONDED WITH THE EXISTING BOND CABLE ON EACH SIDE OF THE TIE-IN POINT.
STEP 1. FILE STRUCTURE CONNECTION AREA TO BARE SHINY METAL AND CLEAN.

STEP 2. STRIP INSULATION FROM WIRE. ATTACH SLEEVE REQUIRED ON #6 AWG WIRE OR SMALLER.

STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE WITH FLINT GUN.

STEP 4. REMOVE SLAG FROM CONNECTION AND PEEN WELD FOR SOUNDNESS.

STEP 5. COMPLETELY COVER CONNECTION AND EXPOSED STRUCTURE SURFACE WITH EPOXY COATING COMPOUND.

NOTES

1. EXOTHERMIC WELD PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC SIZE AND INSTALLATION INSTRUCTIONS.

2. PUTTY USED FOR THE CABLE TO PIPE CONNECTION SEAL DAM (THERMITE CONNECTIONS) SHALL BE "A+B" EPOXY AS MANUFACTURED BY BIGGS COMPANY, OR EQUAL. ALL BONDS SHALL BE INSPECTED BY WATER DIVISION PRIOR TO BACKFILLING TRENCH.
NOTES:
1. USE (2) #10 AWG/HMWPE BOND CABLES FOR BONDING METALLIC FITTINGS ON NON-METALLIC PIPING SYSTEMS.
2. USE (2) #4 AWG/HMWPE BOND CABLES FOR BONDING PIPE JOINTS ON METALLIC PIPING SYSTEMS PER SPECIFICATIONS.
NOTES

1. COAT ENTIRE SPLICED CONNECTION WITH TWO COATS OF RUBBER COATING. SEE SPECIFICATIONS.
NOTES

1. ANODE INSTALLATION REQUIRED ON NON EPOXY COATED FITTINGS, NEW DUCTILE IRON PIPE INSTALLATION, AND AS PART OF NEW CONNECTIONS TO EXISTING DUCTILE IRON PIPE. INSTALL ANODES WITH 3-FT SEPARATION FROM THE PIPE/FITTING IN NATIVE SOIL.

2. ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY, UNLESS SPECIFICALLY DIRECTED BY THE WATER DIVISION.

3. A MINIMUM DISTANCE OF 10-FT SHALL BE MAINTAINED BETWEEN MULTIPLE ANODES.

4. ANODES SHALL BE INSTALLED A MINIMUM OF 3-FEET FROM ALL SEWER AND STORM DRAIN FACILITIES, AND A MINIMUM OF 5-FEET FOR ALL OTHER UTILITIES (INCLUDING, BUT NOT LIMITED TO, GAS, ELECTRIC, CABLE, AND PHONE).

5. ALL CABLE CONNECTIONS TO STEEL PIPE AND FITTINGS SHALL BE ACCOMPLISHED UTILIZING AN EXOTHERMIC WELDING PROCESS SUCH AS "CALDWELL" BY ERICO PRODUCTS, INC. OR APPROVED EQUAL (SEE W-23B FOR EXOTHERMIC WELD DETAIL). ALL MATERIAL AND EQUIPMENT UTILIZED FOR WELDING SHALL BE FROM ONE MANUFACTURER.

6. ANODE CABLES SHALL BE CONNECTED DIRECTLY TO FERROUS PIPE OR FITTINGS. LEAD WIRE FOR THE ANODES SHALL BE 30-FEET LONG, #10 AWG SOLID COPPER WIRE WITH BLACK RHW-USE INSULATION. LEAD WIRES SHALL BE SILVER SOLDERED TO ANODE CORE WITH THE CONNECTION ENCAPSULATED IN EPOXY RESIN.

7. ANODE INSTALLATION PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC INSTALLATION INSTRUCTIONS.

8. A SOILS ANALYSIS IS REQUIRED FOR ALL NEW WATER MAIN INSTALLATIONS. A SOIL SAMPLE SHALL BE TAKEN EVERY 1000-FT OF NEW PIPE INSTALLATION AT A DEPTH OF 4-FEET. THE SOILS ANALYSIS SHALL INCLUDE CORROSIVITY TESTING. THE CORROSIVITY TESTS SHALL INCLUDE (AT A MINIMUM) CHLORIDES (ASTM D4327), pH (ASTM D4972), RESISTIVITY AT 100% SATURATION (ASTM G57), SULFATE (ASTM D4327), AND REDOX POTENTIAL (ASTM D1498).

9. QUANTITY, SIZE, AND TYPE OF ANODES REQUIRED FOR NEW WATER FACILITIES SHALL BE DETERMINED BY THE WATER DIVISION AFTER RESULTS OF SOILS ANALYSIS HAVE BEEN REVIEWED BY THE WATER DIVISION.

10. AREAS DETERMINED TO CONTAIN MODERATELY OR HIGHLY CORROSIVE SOILS SHALL REQUIRE INSTALLATION OF A CORROSION TESTING STATION AT 500-FT TO 1000-FT INTERVALS, AS APPROVED BY THE WATER DIVISION. TEST STATIONS SHALL BE INSTALLED UNDER THE DIRECTION AND OBSERVATION OF A CERTIFIED CORROSION SPECIALIST. TEST STATIONS SHALL BE LOCATED ABOVE THE POINT OF CONNECTION ON THE WATER MAIN AND KEPT WITHIN A G5 BOX LABELED "CP TEST" IN THE STREET PAVEMENT SECTION.

11. ANODE SHALL BE INSTALLED LEVEL WITH OR DEEPER THAN THE WATER MAIN IT IS CONNECTED TO, WITH A MINIMUM DEPTH OF 24-INCHES (2-FEET).

CITY OF NAPA

ANODE INSTALLATION

Utilities Department

DRAWN BY: DF
APPROVAL DATE: 09/2021
APPROVED BY: DD
DRAWING NO. W-24A
NOTES:
1. The use of non-epoxy coated fittings as an alternate material to epoxy coated fittings must be approved by the City of Napa Water Division prior to use.
2. This detail is typical of elbows, reducers & other fittings.
3. Multiple fittings may be bonded together and protected with one anode per Drawing W-23A.
4. No test station is required for elbows, reducers & other fittings, however a record of all installations shall be provided to the project engineer.
NOTES

1. THE USE OF NON-EPOXY COATED FITTINGS AS AN ALTERNATE MATERIAL TO EPOXY COATED FITTINGS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.

2. THE ANODE SHALL BE INSTALLED VERTICALLY OR HORIZONTALLY WITH THE TOP OF THE ANODE 5 FT BELOW GRADE AND 3 FT BELOW PIPE.
NOTES

1. INSTALL ANODE A MINIMUM OF 2- FEET BELOW PIPE DEPTH IN NATIVE SOIL.
2. MAXIMUM HORIZONTAL DISTANCE FROM ANODE TO LEAK REPAIR CLAMP IS 5- FEET.
NOTES
1. STRIP WIRE INSULATION AT THE GROUNDING CLAMP TO ENSURE ELECTRICAL CONTINUITY.
2. ALL BOLTS SHALL BE BRASS WITH HEX HEADS.
3. GROUNDING CLAMP SHALL BE AT DEPTH READILY ACCESSIBLE IN THE METER BOX.
4. GROUNDING CLAMP SHALL BE INSTALLED PRIOR TO WRAPPING OF PIPE WITH 10-MIL HIGH TACK PIPE TAPE.

NOTES
1. DRIVABLE ANODE SHALL BE 2-LB (24" LONG, 1.3" DIAMETER) MAGNESIUM RODS WITH A 0.125-INCH DIAMETER STEEL CORE. LEAD WIRES FOR ANODES SHALL BE 3-FT LONG #10 AWG SOLID COPPER WIRE WITH BLACK RHWW-USE INSULATION. ANODES SHALL HAVE UHMW POLYETHYLENE DRIVE CAP AND THE DRIVE POINT SHALL BE CUT AT A 45-DEGREE ANGLE. GROUNDING CLAMPS SHALL BE BRASS WITH BRASS HEX BOLTS AND NUTS.
2. THE SURFACE OF THE COPPER RISER PIPE IN THE WATER METER BOX SHALL BE CLEANED PRIOR TO ATTACHMENT OF THE BRASS GROUNDING CLAMP IN ORDER TO ENSURE A GOOD ELECTRICAL CONNECTION BETWEEN THE CLAMP AND THE COPPER WATER LATERAL.
3. A PREDRILLED HOLE IS REQUIRED FOR ALL ANODE INSTALLATIONS. HOLE SHALL BE INSTALLED WITHIN THE METER BOX ADJACENT TO WATER METER. HOLE SHALL BE LARGE ENOUGH TO SUFFICIENTLY INSERT THE ANODE SUCH THAT A TIGHT FIT IS MAINTAINED BETWEEN THE ANODE AND THE SOIL, AND THAT A MINIMUM COVER OF 6-INCHES IS OBTAINED.
4. RUN WIRE IN CONTINUOUS LENGTH FROM THE ANODE TO THE GROUNDING CLAMP, FREE OF JOINTS OR SPLICES. CARE SHALL BE USED DURING INSTALLATION TO AVOID PUNCTURES, CUTS AND SIMILAR DAMAGE TO THE WIRE INSULATION.
INSULATING GASKET
DIP OR STEEL PIPE

BUILD UP WITH FILL COAT TO COVER ALL NUTS AND BOLTS TO A MINIMUM OF 1/4" (SEE SPECS.)

INSULATING SLEEVE
STAINLESS STEEL BOLT (TYP)

INSULATING WASHER (TYP OF 2)
STAINLESS STEEL WASHER (TYP)
STAINLESS STEEL NUT (TYP)

WRAP COAT AND GUARD COAT (SEE SPECS.)

DIP OR STEEL PIPE
INSULATING GASKET
NOTES

1. CONTRACTOR TO PROVIDE TERMINAL BOX (WITH SHUNT) FOR THE WATER DIVISION CORROSION SPECIALIST TO INSTALL AT TEST STATION LOCATIONS.

2. ALL TEST STATIONS SHALL BE INSTALLED BEHIND THE BACK OF CURB, OUTSIDE OF ALL DRIVEWAYS AND DRIVEWAY APPROACHES, UNLESS OTHERWISE PERMITTED BY THE WATER DIVISION CORROSION SPECIALIST.

3. IF INSTALLED IN TRAVEL WAY CONCRETE COLLAR SHALL BE MINIMUM 12” AROUND CHRISTY G5 BOX. IF INSTALLED BEHIND BACK OF CURB CONCRETE COLLAR SHALL BE MINIMUM 12”.

CITY OF NAPA UTILITIES DEPARTMENT

TEST STATION AND TERMINAL BOX

DRAWN BY: DF
APPROVAL DATE: 09/2021
SCALE: NTS
REVISED DATE: 09/2021

CHECKED BY: SL
APPROVED BY: DD
DRAWING NO. W-26A
NOTES:

1. CONTRACTOR TO PROVIDE COTT "BIG FINK" TEST STATION AND ASSOCIATED FITTINGS AND BRING WIRES INTO NEW RISER BOX. CONTRACTOR TO ENSURE WIRES IN BOX DO NOT SHORT TO EACH OTHER UNTIL AFTER CITY PERSONNEL TEST WIRE CONNECTIVITY.

2. CITY PERSONNEL SHALL TEST WIRE CONNECTIVITY PRIOR TO INSTALLATION OF TERMINAL BOX.
NOTES:
1. BOND ALL BURIED, NON-WELDED, PIPE JOINTS PER DRAWING W-23B.
2. IDENTIFY CABLES PER DRAWING W-26C.
NOTES:
1. FPTS REQUIRE PRIOR APPROVAL FROM WATER DIVISION. NUMBER AND SIZE OF ANODES SHALL BE DETERMINED BY THE PROJECT ENGINEER.
2. IDENTIFY CABLES PER DRAWING W-26C.
3. INSTALL THE REFERENCE CELL BETWEEN THE TWO PIPELINES.
4. PERMISSION MUST BE OBTAINED FROM THE FOREIGN PIPELINE OWNER PRIOR TO ATTACHMENT OF TEST WIRES.
TERMINAL BOX (COVER NOT SHOWN FOR CLARITY)

0.01 OHM-6 AMP SHUNT

(2) #10 AWG/THHN (BLACK) ANODE HEADER CABLE

#10 AWG/THHN DRAIN CABLE (RED) TO PIPE

#10 AWG/THHN TEST CABLE (WHITE)

CABLE SPLICE SEE W-23D

ATS TERMINAL BOX

TERMINAL BOX (SEE ABOVE)

TEST STATION (SEE W-26A)

#10 AWG/THHN TEST CABLE (WHITE)

#10 AWG/THHN DRAIN CABLE (RED)

DUCTILE IRON WATER MAIN

#10 AWG/THHN ANODE LEAD CABLE (TYP)

PREPACKAGED ANODE (SEE NOTE 1)
(SEE W-24A FOR INSTALLATION REQUIREMENTS)

LOOP BACK ANODE HEADER CABLE TO TEST STATION

HMWPE BOND CABLE (TYP) (SEE NOTE 3)

CABLE-TO-PIPE CONNECTION (TYP) (SEE W-23B)

NOTES:
1. NUMBER AND SIZE OF ANODES SHALL BE DETERMINED BY THE PROJECT CORROSION ENGINEER.
2. THE ANODES SHALL BE INSTALLED A MINIMUM OF 3 FEET OFF THE WALL OF THE WATER PIPE.
3. BOND ALL BURIED, NON-WELDED, PIPE JOINTS PER DRAWING W-23B.
4. IDENTIFY CABLES PER DRAWING W-26C.
NOTES:
1. IDENTIFY CABLES PER DRAWING W-26C.
NOTES:
1. INSTALL ANODE A MINIMUM OF 3-FeET FROM VALVE.
2. IDENTIFY CABLES PER DRAWING W-26C.
NOTES:
1. INSTALL ANODE A MINIMUM OF 3 FEET FROM VALVE.
2. IDENTIFY CABLES PER DRAWING W-26C.
NOTES:
1. NUMBER AND SIZE OF ANODES SHALL BE DETERMINED BY THE PROJECT ENGINEER.
2. CARRIER PIPE & CASING ARE TO BE ELECTRICALLY ISOLATED VIA CASING INSULATORS.
3. IF CARRIER PIPE IS NON-METALLIC DELETE WHITE CABLES AND EXOTHERMIC WELDS.
4. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

CITY OF NAPA UTILITIES DEPARTMENT

DRAWN BY: DF
APPROVAL DATE: 09/2021
SCALE: NTS
REVISED DATE: 09/2021
CHECKED BY: SL
APPROVED BY: DD
DRAWING NO. W-28E

CATS TERMINAL BOX

(2) #10 AWG/THHN TEST CABLES
WHITE - CARRIER PIPE
GREEN - STEEL CASING

(2) #10 AWG/THHN BOND CABLES
WHITE - CARRIER PIPE
GREEN - STEEL CASING

#10 AWG/THHN (BLACK) ANODE HEADER CABLE

CABLE-TO-PIPE CONNECTION (TYP) (SEE W-23B)

CABLE SPLICE (SEE W-23D)

#10 AWG/THHN ANODE LEAD CABLE (TYP)

LOOP BACK ANODE HEADER CABLE TO TEST STATION

10'

CABLE SPLICE
SEE W-23D

#10 AWG/THHN ANODE LEAD CABLE

TEST STATION
SEE W-26A

TERMINAL BOX
SEE ABOVE

WHITE
GREEN

(2) #10 AWG/THHN TEST CABLES

(2) #10 AWG/THHN BOND CABLES

12" (TYP)

STEEL CASING

CARRIER PIPELINE

PREPACKAGED ANODE
(SEE NOTE 1)
(SEE W-24A FOR INSTALLATION REQUIREMENTS)

(2) #10 AWG/THHN TEST CABLES
WHITE - CARRIER PIPE
GREEN - STEEL CASING

(2) #10 AWG/THHN BOND CABLES
WHITE - CARRIER PIPE
GREEN - STEEL CASING

TERMINAL BOX (COVER NOT SHOWN FOR CLARITY)

0.01 OHM-6 AMP SHUNT
STANDARD PLANS

ELECTRICAL
STANDARD RESIDENTIAL STREET LIGHT

ALL NOTES REFER TO DRAWING E-2

1/2"X8' COPPER CLAD GROUND ROD

STREET LIGHT POLE, SEE NOTE 1

JOINT UTILITY TRENCH

PULL BOX, SEE NOTE 14

CURB AND GUTTER

24" MIN

STREET LIGHT FIXTURE, SEE NOTE 6

MAST ARM, SEE NOTE 1

CITY OF NAPA

Public Works Department

Drawn by: BRL
Approval Date: 06/2018
Scale: None
Revised Date: 08/2021

Approved by: JBL
Drawing No.: E-1
NOTES


2. STREET LIGHT POLE FOUNDATIONS, BOLTS, AND REINFORCEMENT CAGES SHALL BE PER OCT 30, 2015 CALTRANS STANDARD PLANS AND SPECIFICATIONS DRAWING ES-7N. CAGES DO NOT REQUIRE WELDING.

3. STREET LIGHT LOCATIONS SHALL BE SHOWN ON IMPROVEMENT PLANS, POLE SPACING SHALL BE PROVIDED BY CITY OF NAPA ELECTRICAL DIVISION.

4. DEVELOPER SHALL CONTACT PG&E TO ESTABLISH STREET LIGHT SERVICE LOCATIONS, THEN PROVIDE CITY OF NAPA PUBLIC WORKS DEPARTMENT WITH SAME LOCATIONS, IN ACCORDANCE WITH THE LS2A RATE SCHEDULE.

5. LED FIXTURE SIZE MAY BE INCREASED ON COLLECTOR AND ARTERIAL STREETS OR AS OTHERWISE DETERMINED BY THE CITY OF NAPA ELECTRICAL DIVISION.

6. STREET LIGHT FIXTURE SHALL BE 120 VOLT LED CREE COBRA HEAD WITH TWIST LOCK PHOTO ELECTRIC CONTROL RECEPTACLE ON TOP. REFER TO IMPROVEMENT PLANS FOR SIZE.

7. PHOTO ELECTRIC CONTROL SHALL BE FISHER-PIERCE ELL-124.

8. STREET LIGHT WIRE FROM PULL BOX TO FIXTURE SHALL BE #10 THHN SOLID OR #10 THW STRANDED (TS) WIRE.

9. ALL FIELD WIRING SHALL BE #8 THHN OR THW STRANDED.

10. BOND WIRE SHALL BE CONNECTED TO ALL POLES AND GROUND RODS IN THE SYSTEM.

11. INSTALL 1/2" x 8' COPPER CLAD GROUND ROD IN CENTER OF EACH FOUNDATION.

12. THERE SHALL BE NO SPLICES IN POLE BASE.

13. ALL CONDUITS SHALL BE 24" DEEP IN THE CLEAR FROM FINISH GRADE, 2" SAND BED, 12" MINIMUM SAND COVER.

14. PULL BOXES SHALL BE PLACED NEXT TO EACH STREET LIGHT AND AT PG&E SECONDARY BOX LOCATIONS THAT FEED STREET LIGHTS. ADDITIONAL PULL BOXES SHALL BE INSTALLED IN CONDUIT RUNS EXCEEDING 200' OR AS OTHERWISE DIRECTED BY THE ENGINEER. BOX LIDS SHALL BE MARKED "STREET LIGHTING" AND SHALL HAVE HOLD DOWN BOLTS.

15. IN UNDEVELOPED AREAS CONSTRUCT A 30"X30" CONC. PAD (4" THICK). IF A ROUND FOOTING IS POURED, STOP AT THE ELEVATION OF THE BOTTOM OF THE SIDEWALK.

16. DUE TO POSSIBLE CONFLICTING UTILITIES, STREET LIGHTS ARE SUBJECT TO RELOCATION WITH CITY OF NAPA ELECTRICAL DIVISION APPROVAL.

17. COBRA HEAD MODEL NUMBERS SHALL BE LISTED ON THE IMPROVEMENT PLANS.

18. IT IS THE RESPONSIBILITY OF THE DEVELOPER OR THEIR REPRESENTATIVE TO CONTACT THE MANUFACTURER FOR THE LATEST MODEL NUMBERS/TYPES.

19. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL U.S.A (811) AT LEAST 2 WORKING DAYS PRIOR TO ANY EARTHWORK.

20. CONTACT CITY OF NAPA ELECTRICAL DIVISION AT (707) 257-9588 FOR INSPECTION 24 HOURS PRIOR TO POURING CONCRETE AND/OR BACKFILLING CONDUIT. CONTACT CITY OF NAPA ELECTRICAL DIVISION FOR FINAL INSPECTION AND TURN-ON.

21. ALL CONDUIT SHALL BE SEALED WITH APPROVED DUCT SEAL. CONDUITS FOR FUTURE EXTENSIONS SHALL BE CAPPED WITH CONDUIT PLUGS.
NOTE:
APPROVAL FROM CITY OF NAPA ENGINEER REQUIRED. SUBMIT SHOP DRAWINGS & SPECIFICATIONS FOR REVIEW.
NOTE: APPROVAL FROM CITY OF NAPA ENGINEER REQUIRED. SUBMIT SHOP DRAWINGS & SPECIFICATIONS FOR REVIEW.
NOTE:
APPROVAL FROM CITY OF NAPA ENGINEER REQUIRED.
SUBMIT SHOP DRAWINGS & SPECIFICATIONS FOR REVIEW.

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.

TYPICAL SPLICE INSULATION METHOD B

TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING
NOTES

1. REFER TO THE CITY OF NAPA DOWNTOWN SPECIFIC PLAN FOR APPROVED LOCATIONS OF THIS STANDARD STREET LIGHT; THIS STANDARD STREET LIGHT TO BE PLACED DOWNTOWN OR AS APPROVED BY THE ENGINEER. ALL OTHER STREET LIGHTS TO BE USED OUTSIDE THE DOWNTOWN SPECIFIC PLAN AREA SHALL CONFORM TO CITY STANDARD DRAWING E-1.

2. FOOTING SHALL BE 24" DIAMETER BY 3' DEEP CONCRETE. TOP OF FOOTING SHALL BE FLUSH WITH SIDEWALK.

3. ACCESS DOOR SECURED TO BASE WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS.

4. ACCESS DOOR SHALL BE POSITIONED AWAY FROM STREET.

5. BOLTS SHALL BE 5/8" x 18" x 3" GALVANIZED STREET LIGHT BOLTS WITH 12" BOLT CIRCLE.

6. POLE SHALL ADHERE TO SHAKESPEARE CS - CORAL GABLES 12' FLAT BLACK SPEC ANCHOR PLACE AND TENON. SPECIFICATION NO: ACG20-12AF1103

7. LED SHALL ADHERE TO LIGHT EFFICIENT DESIGN STANDARDS FOR LED-8029

8. GLOBE AND ASSEMBLY SHALL BE ELA COMPANY INC. GLOBE AND ASSEMBLY SHALL BE AN ACORN GLOBE WITH 9" OPENING, MEDIUM BASE PORCELAIN SOCKET WITH 1.5" x 1/B-27#4066, 120V BUTTON PHOTOCELL, CAST BALLAST HOUSING FITTER INCANDESCENT, MEDIUM BASE, ACRYLIC DIFFUSER AND STIPPLED. GLOBE ASSEMBLY TO BE APPROVED BY CITY ELECTRICAL DIVISION.
SECONDARY BOX AND WOOD POLE SERVICE INSTALLATIONS

CITY OF NAPA

SECONDARY BOX SERVICE INSTALLATION

INSTALL NO. 3 1/2 PULL BOX WITH 1/2"X8' COPPER CLAD GROUND ROD. INSTALL FUSE HOLDER WITH 30 AMP FUSE. EXTEND CONDUIT AND SERVICE WIRES (EXCEPT GROUND WIRE) TO PG&E SECONDARY BOX

WOOD POLE SERVICE INSTALLATION

A 13"[WIDTH]X 24"[LENGTH]X 26"[DEPTH] SPLICE BOX IS REQUIRED WITH A 2" 90 DEGREE SCHEDULE 40 PVC CONDUIT BEND ON A 24" RADIUS FROM THE BOX TO THE POWER POLE. THE CONDUIT SHALL EXTEND NO MORE THAN 1/2" INSIDE THE BOX. INSTALL 1/2"X8' COPPER CLAD GROUND ROD IN THE FARTHEST CORNER OF THE PULL BOX AWAY FROM THE WOOD POLE. INSTALL FUSE HOLDER WITH 30 AMP FUSE. PG&E WILL PROVIDE THE WIRES DOWN THE POLE TO THE BOX AND CONNECT TO THE WIRES IN THE BOX.

INSTALL NO. 3 1/2 PULL BOX ADJACENT TO EACH STREET LIGHT POLE ALONG WITH A FUSE HOLDER AND A 10 AMP FUSE (BUSS#HEB A-A FOR FNM FUSES OR EQUAL TO) THERE SHALL BE NO SPLICES IN POLE BASES.
NOTES

1. SPRINKLER CONTROLLER SERVICE LOCATIONS SHALL BE ESTABLISHED PRIOR TO CONSTRUCTION.

2. ELECTRICAL SERVICE CONDUIT SIZE SHALL BE 1-1/2" SCHEDULE 40 18" DEEP.

3. CONDUCTORS SHALL BE MINIMUM NO. 10 (ONE WHITE, ONE RED) PULLED WITH A NUMBER 10 BARE COPPER BOND WIRE. BOND WIRE SHALL CONNECT TO ALL CONTROLLERS AND GROUND RODS IN THE SYSTEM.

4. CONTROLLER CABINETS SHALL BE INSTALLED PER CITY OF NAPA SPECIFICATIONS.

5. INSTALL 6"X6"X4" LANDING CAN WITH GROUND BUS. INSTALL #8 ARMORED GROUND CABLE FROM GROUND BUS TO CABINET FOUNDATION BOLT. INSTALL 1/2" OFFSET NIPPLE FROM LANDING CAN TO ONE SINGLE GANG HANDY BOX. INSTALL ONE GFCI DUPLEX RECEPTACLE INTO HANDY BOX.

6. INSTALL 14/3 SJO CORD WITH STRAIN RELIEF FROM SPRINKLER CONTROLLER BOX. INSTALL 90 DEGREE CORD CAP ON OTHER END OF SJO CORD AND PLUG INTO GFCI RECEPTACLE.

7. CONTACT CITY OF NAPA ELECTRICAL DIVISION PRIOR TO BACKFILLING ANY ELECTRICAL CONDUIT TRENCHES.

8. CONTACT CITY OF NAPA ELECTRICAL DIVISION FOR ELECTRICAL SERVICE LOCATIONS AND PRIOR TO STARTING ELECTRICAL WORK (707) 257-9588.

9. INSTALL 1/2"X8' COPPER CLAD GROUND ROD.
**PULL BOX & LOOPS INSTALLATION**

- **6' X 6' LOOPS TO BE WOUND IN ALTERNATE DIRECTIONS (TYP.)**
- **PULL BOX W/ STEEL RING & COVER (S-14)**
- **CENTER IN LANE (TYP.)**
- **TYPE "D" LOOP (TYP.)**
- **TYPE "A" LOOP (TYP.)**
- **2" COND. SLEEVE (ONE CONDUIT FOR EACH SET OF LANE LOOPS)**
- **#5 PULL BOX**

**PULL BOX WITH STEEL RING & COVER**

- **2" COND. SLEEVE (THROUGH WALL OF BOX.)**
- **P.C.C. COLLAR**
- **LOOP CABLES**
- **PULL BOX W/ STEEL RING & COVER PER CITY STD. S-14. COVER TO BE MARKED "ELECT".**
- **2" CONDUIT SLEEVE TO #5 PULL BOX (ONE CONDUIT FOR EACH SET OF LOOPS.) DO NOT ENTER THROUGH BOX WALL.**

**TYPE "A" & "D" LOOPS**

- **TYPE "A" LOOPS (4 TURNS)**
- **TYPE "D" LOOP (6 TURNS)**

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**CITY OF NAPA**

**PUBLIC WORKS DEPARTMENT**

**INDUCTIVE LOOPS FOR TRAFFIC SIGNALS**

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<th>BRL</th>
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SOLAR PANEL AFFIXED PER MANUFACTURER
SPECIFICATIONS FOR TOP OF POLE AND
BRACKET, ADJUSTABLE ANGLE OF 45° TO 60°
VERTICALLY AND ABILITY TO ROTATE 360°

W11-2 OR S1-1 SIGN:
30" X 30" FOR POSTED SPEED ≤ 30 MPH
36" X 36" FOR POSTED SPEED ≥ 35 MPH

R16-7P [24" X 12"] SIGN

13-15 FT POLE & FOUNDATION PER
CALTRANS 2010 STD PLAN ES-7B, TYPE 1-A
(SEE NOTE 2)

ADD COMPLIANT PUSH BUTTON
PER CA MUTCD STANDARDS AND
SIGN R10-25

NOTES
1. ALL SIGNS PER CA MUTCD, LATEST EDITION.
2. 13' POLE FOR POSTED SPEEDS OF LESS THAN OR EQUAL TO 30 MPH. 15' POLE FOR
POSTD SPEEDS GREATER THAN OR EQUAL TO 35 MPH.
3. □ INDICATES DIMENSION TO BE USED UNLESS NOTED OTHERWISE. DO NOT
EXCEED MAXIMUM DIMENSION.
PERFORATED POLE IN CAST-IN-DRILLED- HOLE PIER

3" SQ x 7GA X 36" LONG GALV ANCHOR SLEEVE
(2) 3/8" Ø THRU-BOLTS CENTER ON POLE & PIER

3/8" Ø X 6" LONG STOP BOLT CENTER ON POLE & PIER

18" MINIMUM FROM TOP OF SLEEVE

3" CLEAR, MIN.

FINISH GRADE

2-1/2" SQ X 12GA STEEL PERFORATED POLE

DESIGN PARAMETERS (PER CBC 2019):
• ALLOW SOIL BEARING = 1500 PSF
• PASSIVE PRESSURE = 150 PCF
• $P_{wind} = 11.4 \times \text{AREA OF SIGN}$ - ASD LEVEL
• SEISMIC: $S_{DS} = 1.325$ ; $I_E = 1.0$

PERFORATED POLE IN CAST-IN-DRILLED- HOLE PIER

R10-25

W16-7P (24" X 12") SIGN

ADA COMPLIANT PUSH BUTTON PER CA MUTCD STANDARDS AND SIGN R10-25

RAPID FLASHING BEACON (RFB) CARMANAH R-920E

W11-2 OR S1-1 SIGN:
30" X 30" FOR POSTED SPEED ≤ 30 MPH
36" X 36" FOR POSTED SPEED > 35 MPH

NOTES
1. RAPID FLASHING BEACON SYSTEM ON GALVANIZED PERFORATED SQUARE POLE IS AN ALTERNATIVE INSTALLATION SUBJECT TO CITY APPROVAL.
2. ALL CONCRETE SHALL BE 2500 PSI MIN.
3. PIER DEPTH SHOWN IS MIN. FROM FINISH GRADE.
4. 13' POLE FOR POSTED SPEEDS LESS THAN OR EQUAL TO 30 MPH.
15' POLE FOR POSTED SPEEDS GREATER THAN OR EQUAL TO 35 MPH.

SOLAR PANEL AFFIXED PER MANUFACTURER SPECIFICATIONS FOR TOP OF POLE AND BRACKET, ADJUSTABLE ANGLE OF 45° TO 60° VERTICALLY AND ABILITY TO ROTATE 360°

TOP OR SIDE POST MOUNT PER MANUFACTURER’S SPECIFICATIONS

W16-7P (24" X 12") SIGN

PERFORATED POLE (7 16" Ø)

(SEE NOTE 4)

3" SQ X 7GA X 36" LONG GALV ANCHOR SLEEVE

2-1/2" SQ X 12GA GALV PERFORATED POLE (7 16" Ø)
(SEE NOTE 4)

36" DEEP (SEE NOTE 3)

3" SQ X 7GA X 36" LONG GALV ANCHOR SLEEVE

FINISH GRADE

18" MINIMUM FROM TOP OF SLEEVE

3/8" Ø X 6" LONG STOP BOLT CENTER ON POLE & PIER

3" CLEAR, MIN.

7 MIN.

47" - 48"
CITY OF NAPA

PUBLIC WORKS DEPARTMENT

ELECTRICAL CABINET
FOUNDATION BASE

28"
28"
24"

28"

W = 28"
L = 28"
H = 24"

SIDEWALK

EX. CURB & GUTTER

24" MIN.

SECTION - A

ELECTRICAL CABINET

20" ABOVE FINISHED GRADE

SIDEWALK

EX. CURB & GUTTER

24" MIN.

PLAN VIEW
"P" CABINET FOUNDATION BASE

PLAN VIEW

SECTION - A

FOUNDATION BASE
W = 32"
L = 48"
H = 24"

DOOR

NEW CURB & GUTTER

CURB & GUTTER

SIDEWALK

24" MIN.

24" MIN.

W = 32"
L = 48"
H = 24"

24" MIN.

W = 32"
L = 48"
H = 24"

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

"P" CABINET FOUNDATION BASE

DRAWN BY:  BRL  CHECKED BY:  RR
APPROVAL DATE:  08/2021  APPROVED BY:  JBL
SCALE:  NONE  DRAWING NO.  E-13
REVISED DATE:  NONE
STANDARD PLANS

SOLID WASTE AND RECYCLING
ACCESSIBLE PEDESTRIAN GATE. SEE NOTE 14

GATES OPEN TO 110° MINIMUM. SEE NOTE 13

STRESS CONCRETE APRON. SEE NOTE 15 AND DETAIL THIS SHEET

NO PARKING

PLAN VIEW

ALL NOTES REFERENCED HEREIN ARE PROVIDED ON STANDARD DETAIL SWR-1.1
NOTES

1. CITY STD SWR-1A THROUGH SWR-1H ARE PROVIDED AS EXAMPLE LAYOUTS AND CAN BE MODIFIED TO SERVE INDIVIDUAL PROJECT NEEDS, HOWEVER, MINIMUM AND MAXIMUM DISTANCE REQUIREMENTS MUST BE MET AS NOTED.

2. SEE CITY STD. SWR-1A THROUGH SWR-1D FOR NON-FOOD FACILITY ENCLOSURE LAYOUTS.

3. SEE CITY STD. SWR-1E THROUGH SWR-1H FOR FOOD FACILITY ENCLOSURE LAYOUTS WITHOUT GREASE/OIL TANKS.

4. SEE CITY STD. SWR-1I THROUGH SWR-1L FOR FOOD FACILITY ENCLOSURE LAYOUTS WITH OIL/GREASE TANKS.

5. TRASH ENCLOSURES SHALL BE IN COMPLIANCE WITH STORM WATER QUALITY CONTROL ORDINANCE 8.36.00.

6. FOOD FACILITIES THAT GENERATE COOKING OIL AND GREASE FOR DISPOSAL MUST COLLECT OIL AND GREASE IN A SEPARATE CONTAINER DESIGNED SPECIFICALLY FOR THE COLLECTION OF THESE TWO ITEMS.

7. DISPOSAL OF OIL AND GREASE IN A MUNICIPAL SOLID WASTE COLLECTION CONTAINER IS NOT ALLOWED.


9. THE AREA DIRECTLY IN FRONT OF THE ENCLOSURE GATES SHALL HAVE “NO PARKING” PAINTED ON THE GROUND. THE LETTERS SHALL BE A MINIMUM OF 18-INCHES IN HEIGHT.

10. SEE CITY STD. SWR-2 FOR ENCLOSURE SIGNAGE REQUIREMENTS.

11. GATES TO BE SOLID METAL WITH OUTSIDE HANDLES ON EACH DOOR AND A SLIDE LATCH TO SECURE THE DOORS.

12. BOLTS, NOT SCREWS, SHALL BE USED TO SECURE GATE TO POLES OR WALLS.

13. PROVIDE MEANS TO SECURE GATE DOORS BOTH OPENED AND CLOSED, E.G., CANE BOLT WITH SLEEVE AND SLIDE LATCH BETWEEN DOORS AND SLEEVE IN PAVEMENT. THE BOLTS SHOULD BE A MINIMUM OF 1-INCH OR DOUBLE THE SIZE OF THE BOLT TO ALLOW FLEXIBILITY. BOLT DROP SHALL BE A MINIMUM OF 4-INCHES INTO THE GROUND. IF GATES WILL NEED TO CLEAR CURBS TO OPEN FULLY THE GATES SHALL BE A MINIMUM OF 8-INCHES ABOVE FINISHED GRADE.

14. GATES SHALL REMAIN CLOSED UNLESS IN USE AND MUST OPEN TO AT LEAST 110 DEGREES AND BE ABLE TO BE SECURED OPEN.

15. A SEPARATE PEDESTRIAN ENTRANCE WITH A DOOR IS REQUIRED FROM THE BACK OR THE SIDE FOR BOTH NON-RESIDENTIAL FACILITIES AND RESIDENTIAL MULTI-FAMILY COMPLEX DEVELOPMENTS.

16. STRESS CONCRETE APRON SHALL MATCH THE WIDTH OF THE ENCLOSURE OPENING AS SHOWN. THE APRON STRUCTURAL SECTION SHALL BE AS SHOWN OR EVIDENCE THAT CONSTRUCTION SPECIFICATIONS ARE ENGINEERED TO WITHSTAND A MINIMUM 20,000 LBS. OF DIRECT DOWNWARD FORCE FROM A SINGLE TRUCK AXLE SHALL BE PROVIDED. APRON SURFACE SHALL BE THE SAME ELEVATION AS THE ENCLOSURE PAD THRESHOLD AND THE SURROUNDING SURFACES. APRON SHALL EXTEND MINIMUM OF 8-FT FOR ENCLOSURES WITHOUT ROOFS AND 10-FT FOR ENCLOSURES WITH ROOFS.

17. FOR FOOD FACILITIES A GRADE BREAK LINE SHALL BE CONSTRUCTED ON THE INSIDE EDGE OF THE WALL WITH THE SLAB SLOPING INWARDS ON THE INSIDE OF THE STRUCTURE AND AWAY FROM THE STRUCTURE ON THE OUTSIDE.

18. FOR NON FOOD FACILITY ENCLOSURES THE GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

19. WOOD OR RUBBER BUMPERS ALONG THE BACK WALL IS REQUIRED TO PREVENT DAMAGE TO THE ENCLOSURE DURING SERVICING OF BINS OR COMPACTORS.

20. IF LARGE-SIZED STATIONARY BINS ARE USED THE BIN MUST BE DIRECTLY ACCESSIBLE BY COLLECTION TRUCKS. SEE CITY STD. SWR-3 FOR TRUCK ACCESS REQUIREMENTS.

21. GATES SHALL BE FREE STANDING WITH NO CENTER POLE. A CENTER POLE MAY BE INCLUDED AT THE DISCRETION OF THE SOLID WASTE & RECYCLING DIVISION. REQUIRED CLEARANCES SHALL BE PROVIDED FOR DIRECT ACCESS TO BINS.

22. BOLLARDS OR OTHER PERMANENT OR SEMI-PERMANENT STRUCTURES SHALL NOT BE USED WITHIN THE ENCLOSURE. THESE STRUCTURES REDUCE THE USABLE INTERIOR CONTAINER SPACE AND ACCESSIBILITY.

23. ALL ENCLOSURES SHALL MEET REQUIREMENTS AS OUTLINED IN THE SOLID WASTE, RECYCLABLE MATERIALS, AND COMPOSTABLES ENCLOSURE STANDARDS. THE LAYOUTS SHOWN IN STD SWR-1A THROUGH SWR-1M ARE PROVIDED FOR GUIDANCE AND MAY NEED MODIFICATION BASED ON UNIQUE PROJECT SITE CHARACTERISTICS. ALL PROPOSED ENCLOSURES SHALL BE PROVIDED TO THE SOLID WASTE & RECYCLING DIVISION FOR REVIEW AND COMMENT.
NOTES

1. Grade of Enclosure pads shall be flat such that no stormwater shall escape the enclosure if commingled with municipal solid waste.

2. Compost collection will be required per SB1383 effective January 2022.
NOTES

1. GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

2. FOR ENCLOSURES WITH NO ROOF, FOR ENCLOSURES WITH ROOF BINS SHALL BE PLACED MAXIMUM 8" FROM VEHICLE ACCESS DOORWAY. ENCLOSURES WITH ROOFS SHALL ACCOUNT FOR VERTICAL CLEARANCES REQUIRED FOR OPENING LIDS OF BINS WITHIN ENCLOSURE.

3. COMPOST COLLECTION WILL BE REQUIRED PER SB1383 EFFECTIVE JANUARY 2022.
NOTES

1. Grade of enclosure pads shall be flat such that no stormwater shall escape the enclosure if commingled with municipal solid waste.

2. For enclosures with no roof. For enclosures with roof bins shall be placed maximum 8" from vehicle access doorway. Enclosures with roofs shall account for vertical clearances required for opening lids of bins within enclosure.

3. Compost collection will be required per SB1383 effective January 2022.
NOTES

1. Grade of enclosure pads shall be flat such that no stormwater shall escape the enclosure if commingled with municipal solid waste.

2. For enclosures with no roof. For enclosures with roof bins shall be placed maximum 8" from vehicle access doorway. Enclosures with roofs shall account for vertical clearances required for opening lids of bins within enclosure.

3. Compost collection will be required per SB1383 effective January 2022.

DETAILED PROVIDED TO SHOW GENERAL LAYOUT AND DIMENSIONS OF A LARGE BIN ENCLOSURE. SEE DETAILS SWR-1 AND SWR-1.1 FOR ADDITIONAL ENCLOSURE INFORMATION AND NOTES.
NOTES
1. DRAIN CONNECTION TO NAPA SANITATION DISTRICT REQUIRED. SEE NAPA SANITATION DISTRICT STANDARDS FOR REQUIREMENTS.
2. COMPOST COLLECTION WILL BE REQUIRED PER SB1383 EFFECTIVE JANUARY 2022.

DETAIL PROVIDED TO SHOW GENERAL LAYOUT AND DIMENSIONS OF AN EXTRA SMALL FOOD ENCLOSURE. SEE DETAILS SWR-1 AND SWR-1.1 FOR ADDITIONAL ENCLOSURE INFORMATION AND NOTES.
1. DRAIN CONNECTION TO NAPA SANITATION DISTRICT REQUIRED. SEE NAPA SANITATION DISTRICT STANDARDS FOR REQUIREMENTS.
NOTES

1. GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

2. FOR ENCLOSURES WITH NO ROOF. FOR ENCLOSURES WITH ROOF BINS SHALL BE PLACED MAXIMUM 8” FROM VEHICLE ACCESS DOORWAY. ENCLOSURES WITH ROOFS SHALL ACCOUNT FOR VERTICAL CLEARANCES REQUIRED FOR OPENING LIDS OF BINS WITHIN ENCLOSURE.

DETAIL PROVIDED TO SHOW GENERAL LAYOUT AND DIMENSIONS OF A MEDIUM FOOD ENCLOSURE. SEE DETAILS SWR-1 AND SWR-1.1 FOR ADDITIONAL ENCLOSURE INFORMATION AND NOTES.
NOTES
1. GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

2. FOR ENCLOSURES WITH NO ROOF. FOR ENCLOSURES WITH ROOF BINS SHALL BE PLACED MAXIMUM 8" FROM VEHICLE ACCESS DOORWAY. ENCLOSURES WITH ROOFS SHALL ACCOUNT FOR VERTICAL CLEARANCES REQUIRED FOR OPENING LIDS OF BINS WITHIN ENCLOSURE.

CITY OF NAPA
UTILITIES DEPARTMENT

LARGE FOOD ENCLOSURE LAYOUT (EXHIBIT H)

DRAWN BY: DEH
APPROVAL DATE: 01/06/22
CHECKED BY: SL
APPROVED BY: KM
SCALE: NONE
DRAWING NO.: SWR-1H
REVISED DATE: 09/2021
1. DRAIN CONNECTION TO NAPA SANITATION DISTRICT REQUIRED. SEE NAPA SANITATION DISTRICT STANDARDS FOR REQUIREMENTS.
NOTES
1. DRAIN CONNECTION TO NAPA SANITATION DISTRICT REQUIRED. SEE NAPA SANITATION DISTRICT STANDARDS FOR REQUIREMENTS.

DETAIL PROVIDED TO SHOW GENERAL LAYOUT AND DIMENSIONS OF A SMALL FOOD/OIL ENCLOSURE. SEE DETAILS SWR-1 AND SWR-1.1 FOR ADDITIONAL ENCLOSURE INFORMATION AND NOTES.

1. DRAIN CONNECTION TO NAPA SANITATION DISTRICT REQUIRED. SEE NAPA SANITATION DISTRICT STANDARDS FOR REQUIREMENTS.
NOTES

1. GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

2. FOR ENCLOSURES WITH NO ROOF, FOR ENCLOSURES WITH ROOF BINS SHALL BE PLACED MAXIMUM 8" FROM VEHICLE ACCESS DOORWAY. ENCLOSURES WITH ROOFS SHALL ACCOUNT FOR VERTICAL CLEARANCES REQUIRED FOR OPENING LIDS OF BINS WITHIN ENCLOSURE.
NOTES

1. GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

2. FOR ENCLOSURES WITH NO ROOF. FOR ENCLOSURES WITH ROOF BINS SHALL BE PLACED MAXIMUM 8" FROM VEHICLE ACCESS DOORWAY. ENCLOSURES WITH ROOFS SHALL ACCOUNT FOR VERTICAL CLEARANCES REQUIRED FOR OPENING LIDS OF BINS WITHIN ENCLOSURE.

DETIAL PROVIDED TO SHOW GENERAL LAYOUT AND DIMENSIONS OF A LARGE FOOD/OIL ENCLOSURE. SEE DETAILS SWR-1 AND SWR-1.1 FOR ADDITIONAL ENCLOSURE INFORMATION AND NOTES.
NOTES

1. GRADE OF ENCLOSURE PADS SHALL BE FLAT SUCH THAT NO STORMWATER SHALL ESCAPE THE ENCLOSURE IF COMMINGLED WITH MUNICIPAL SOLID WASTE.

2. FOR ENCLOSURES WITH NO ROOF. FOR ENCLOSURES WITH ROOF, SEE CITY STD. SWR-1M.2, BINS SHALL BE PLACED MAXIMUM 8" FROM VEHICLE ACCESS DOORWAY. ENCLOSURES WITH ROOFS SHALL ACCOUNT FOR VERTICAL CLEARANCES REQUIRED FOR OPENING LIDS OF BINS WITHIN ENCLOSURE.

DETAIL PROVIDED TO SHOW GENERAL LAYOUT AND DIMENSIONS OF A SMALL BIN ENCLOSURE. SEE DETAILS SWR-1 AND SWR-1.1 FOR ADDITIONAL ENCLOSURE INFORMATION AND NOTES.
1. Grade of enclosure pads shall be flat such that no stormwater shall escape the enclosure if commingled with municipal solid waste.

2. Enclosures with roofs shall account for vertical clearances required for opening lids of bins within enclosure.

CITY OF NAPA

BIN PLACEMENT WITH ROOF

UTILITY DEPARTMENT

DRAWN BY: DEH  CHECKED BY: SL
APPROVAL DATE: 01/06/22  APPROVED BY: KM
SCALE: NONE  DRAWING NO. SWR-1N
REVISED DATE: 09/2021
1. "NO PARKING" SIGNS SHALL EITHER BE INSTALLED PERMANENTLY AFFIXED TO EACH GATE OR PAINTED ON EACH GATE IN LETTERS NO SMALLER THAN 6-INCHES IN HEIGHT.

2. A MINIMUM 12-INCH BY 18-INCH SIGN WITH A MINIMUM 1-INCH LETTERING INDICATED CONTACT INFORMATION FOR THE PROPERTY OWNER AND/OR MANAGEMENT COMPANY RESPONSIBLE FOR MAINTENANCE OF THE ENCLOSURE AREA (NAME/PHONE NUMBER) SHALL BE PERMANENTLY AFFIXED TO ONE OF THE FRONT GATES OF THE ENCLOSURE.

3. SIGNS ARE TO BE MAINTAINED BY THE PROPERTY OWNER.

4. SIGNS ARE TO BE POSTED SO THE BOTTOM OF THE SIGN IS A MINIMUM OF 48-INCHES ABOVE GROUND LEVEL.
NOTES

1. MINIMUM REQUIRED DRIVE APPROACH AREA SHALL PROVIDE CLEAR ACCESS FOR GARBAGE TRUCKS. SEE CITY STANDARD DETAIL SWR-4 FOR COLLECTION CLEARANCES.

2. A MINIMUM OF 50 FEET IS REQUIRED FOR ACCESS TO TRASH ENCLOSURE BINS. A MINIMUM OF 75 FEET IS REQUIRED FOR ACCESS TO COMPACTORS AND ROLL-OFF BOXES. SEE CITY STANDARD DETAIL SWR-4 FOR COLLECTION CLEARANCES.

3. ACCESS AREA TO ENCLOSURE SHALL BE CAPABLE OF WITHSTANDING VEHICLE WEIGHS EXCEEDING 60,000 POUNDS.

4. THE TURNING RADIUS SHALL BE ADEQUATE FOR A 3-AXLE TRUCK. A DETAIL OF THE TURNING RADIUS SHALL BE PROVIDED ON PLANS SUBMITTED.

CITY OF NAPA

TITLE

TRUCK ACCESS - BIN COLLECTION

UTILITIES DEPARTMENT

DRAWN BY: DEH
CHECKED BY: SL
APPROVAL DATE: 01/06/22
APPROVED BY: KM
SCALE: NONE
DRAWING NO.: SWR-3
REVISED DATE: 09/2021
### Required Clearances for Roll-Off Vehicle

<table>
<thead>
<tr>
<th>Description</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical (Approach &amp; Exit)</td>
<td>14-Feet High</td>
</tr>
<tr>
<td>Vertical (Rails Raised)</td>
<td>25-Feet High</td>
</tr>
<tr>
<td>Lateral</td>
<td>10-Feet Long</td>
</tr>
<tr>
<td>Service Area Length (Direct Approach)</td>
<td>75-Feet Long</td>
</tr>
</tbody>
</table>

### Required Clearances for Compactors

<table>
<thead>
<tr>
<th>Description</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical (Approach &amp; Exit)</td>
<td>14-Feet High</td>
</tr>
<tr>
<td>Vertical (Rails Raised)</td>
<td>25-Feet High</td>
</tr>
<tr>
<td>Service Area Length (Direct Approach)</td>
<td>75-Feet Long</td>
</tr>
<tr>
<td>Lateral</td>
<td>2-Feet Around Compactor</td>
</tr>
</tbody>
</table>

**Notes**

1. A minimum of 50 feet is required for access to trash enclosure bins. A minimum of 75 feet is required for access to compactors and roll-off containers.

2. Roll-off box collection located at a loading dock must have bumper pads installed to avoid undue dock damage from the heavy container.

3. Roll-off containers shall be placed on a level surface.

4. Contact the city's authorized contractor at (707) 255-5200 for an on-site placement inspection and before installing any loading dock bumper rails.

5. All compactors must have 28 inches inside rail dimensions and 34 inches exterior rail dimensions.

6. Compactors may require an electrical outlet.

7. Compactors must be leak proof to prevent discharge into the city's storm drain system.

8. Contact the city's authorized contractor at (707) 255-5200 prior to purchasing, renting, or installing a compactor to ensure servicing compatibility with hauling vehicles.

9. Compactors placed inside a building shall provide minimum clearances as outlined above.
NOTES

1. ONE-WAY STREETS WITH CART SERVICING SHALL BE A MINIMUM OF 18-FEET WIDE AND ALLOW SERVICING ON THE RIGHT SIDE OF THE ROADWAY.

2. CARTS SHOULD NOT OBSTRUCT BIKE LANES OR SIDEWALKS.

3. SPACE SHALL BE PROVIDED TO ALLOW PLACEMENT OF CARTS AT LEAST TWO FEET AWAY FROM OTHER CARTS AND FOUR TO SIX FEET FROM OTHER OBJECTS (E.G. CARS, TREES).