<table>
<thead>
<tr>
<th>Rev Date</th>
<th>Item(s) Changed</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/11/2007</td>
<td>Update/Format EMWD Guidelines for Water System Plans</td>
<td>All pages</td>
</tr>
<tr>
<td>6/11/2007</td>
<td>Water Standard Drawings Table of Contents</td>
<td>TOC</td>
</tr>
<tr>
<td>7/31/2007</td>
<td>Water Standard Drawings Table of Contents</td>
<td>TOC</td>
</tr>
<tr>
<td>7/31/2007</td>
<td>Added Drawing A540 Emergency Shower &amp; Eyewash</td>
<td>A-540</td>
</tr>
<tr>
<td>9/27/2007</td>
<td>Added Authorization Form</td>
<td>18</td>
</tr>
<tr>
<td>12/18/2007</td>
<td>Water Standard Drawings Table of Contents</td>
<td>TOC</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-660</td>
<td>B-660</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-661</td>
<td>B-661</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-662</td>
<td>B-662</td>
</tr>
<tr>
<td>9/16/2008</td>
<td>Update Water Legend</td>
<td>11</td>
</tr>
<tr>
<td>9/17/2008</td>
<td>Added P # 29 Potable Sampling Station (PSS)</td>
<td>10</td>
</tr>
<tr>
<td>4/14/2010</td>
<td>Drawing Revision from B-575-3 to B-575-4</td>
<td>B-575</td>
</tr>
<tr>
<td>4/14/2010</td>
<td>Drawing Revision from B-591-7 to B-591-8</td>
<td>B-591</td>
</tr>
<tr>
<td>4/19/2010</td>
<td>Added “or 811” on Section O, item No. 3</td>
<td>All pages</td>
</tr>
<tr>
<td>4/20/2010</td>
<td>Section 02718 - Installation of Water Pipeline</td>
<td>All pages</td>
</tr>
<tr>
<td>4/20/2010</td>
<td>Section 15057 - Ductile Iron Water Pipe and Fittings</td>
<td>All pages</td>
</tr>
<tr>
<td>4/20/2010</td>
<td>Section 15061 - Steel Cylinder Water Pipe</td>
<td>All pages</td>
</tr>
<tr>
<td>4/20/2010</td>
<td>Section 15081 - Gaskets</td>
<td>All pages</td>
</tr>
<tr>
<td>4/20/2010</td>
<td>Section 15089 - Nuts and Bolts</td>
<td>All pages</td>
</tr>
<tr>
<td>6/30/2010</td>
<td>Water Guidelines Update</td>
<td>1 &amp; 9</td>
</tr>
<tr>
<td>6/30/2010</td>
<td>A-Title Block</td>
<td>12</td>
</tr>
<tr>
<td>7/26/2010</td>
<td>Drawing Revision B-590</td>
<td>B-590</td>
</tr>
<tr>
<td>7/26/2010</td>
<td>Drawing Revision B-590A</td>
<td>B-590A</td>
</tr>
<tr>
<td>7/26/2010</td>
<td>Drawing Revision B-591A</td>
<td>B-591A</td>
</tr>
<tr>
<td>2/24/2011</td>
<td>Update Water Legend</td>
<td>11</td>
</tr>
<tr>
<td>3/22/2011</td>
<td>Drawing Revision from B-568-3 to B-568-4</td>
<td>B-568</td>
</tr>
<tr>
<td>3/22/2011</td>
<td>Added B-965</td>
<td>B-965</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-965</td>
<td>B-965</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-935</td>
<td>B-935</td>
</tr>
<tr>
<td>10/11/2011</td>
<td>Update to EMWD Guidelines for Water System Plans</td>
<td>All pages</td>
</tr>
<tr>
<td>12/27/2011</td>
<td>Added B-966</td>
<td>B-966</td>
</tr>
<tr>
<td>12/27/2011</td>
<td>Added B-967</td>
<td>B-967</td>
</tr>
<tr>
<td>12/27/2011</td>
<td>Added B-968</td>
<td>B-968</td>
</tr>
<tr>
<td>3/1/2012</td>
<td>Added A-496</td>
<td>A-496</td>
</tr>
<tr>
<td>3/1/2012</td>
<td>Added B-666</td>
<td>B-666</td>
</tr>
<tr>
<td>5/1/2012</td>
<td>Drawing Revision B-590A</td>
<td>B-590A</td>
</tr>
<tr>
<td>10/23/2014</td>
<td>Drawing Revision B-591</td>
<td>B-591</td>
</tr>
<tr>
<td>5/1/2012</td>
<td>Drawing Revision B-591A</td>
<td>B-591A</td>
</tr>
<tr>
<td>5/1/2012</td>
<td>Drawing Revision B-965</td>
<td>B-965</td>
</tr>
<tr>
<td>6/25/2012</td>
<td>Added B-976 - Replaced A-496</td>
<td>A-496 B-976</td>
</tr>
<tr>
<td>12/18/2012</td>
<td>Drawing Revision B-977</td>
<td>B-977</td>
</tr>
<tr>
<td>10/5/2012</td>
<td>Added B-978</td>
<td>B-978</td>
</tr>
<tr>
<td>12/18/2012</td>
<td>Drawing Revision B-979</td>
<td>B-979</td>
</tr>
<tr>
<td>10/5/2012</td>
<td>Added B-984</td>
<td>B-984</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-367</td>
<td>B-367</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-598</td>
<td>B-598</td>
</tr>
<tr>
<td>10/23/2014</td>
<td>Drawing Revision B-590A</td>
<td>B-590A</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-590</td>
<td>B-590</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Revision</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>10/31/2013</td>
<td>Potable Water Sample Station</td>
<td>B-935</td>
</tr>
<tr>
<td>12/19/2013</td>
<td>1&quot; Copper Tubing Service Connection</td>
<td>B-590A</td>
</tr>
<tr>
<td>3/5/2014</td>
<td>Reduced Pressure Backflow Preventer Assy for 3/4&quot; - 2&quot;</td>
<td>B-597A</td>
</tr>
<tr>
<td>3/5/2014</td>
<td>Reduced Pressure Backflow Preventer Assy for 2 1/2&quot; - 3&quot;</td>
<td>B-597B</td>
</tr>
<tr>
<td>3/5/2014</td>
<td>Reduced Pressure Backflow Preventer Assy for 4&quot; - 10&quot;</td>
<td>B-597C</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-342</td>
<td>B-342</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-344</td>
<td>B-344</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-342A</td>
<td>B-342A</td>
</tr>
<tr>
<td>3/3/2015</td>
<td>EMWD Facility Monument Sign</td>
<td>B-987</td>
</tr>
<tr>
<td>3/26/2019</td>
<td>Drawing Revision B-657</td>
<td>B-657</td>
</tr>
<tr>
<td>5/27/2015</td>
<td>Drawing Revision B-590</td>
<td>B-590</td>
</tr>
<tr>
<td>5/27/2015</td>
<td>Drawing Revision B-590A</td>
<td>B-590A</td>
</tr>
<tr>
<td>5/27/2015</td>
<td>Drawing Revision B-591</td>
<td>B-591</td>
</tr>
<tr>
<td>5/27/2015</td>
<td>Drawing Revision B-633</td>
<td>B-633</td>
</tr>
<tr>
<td>5/27/2015</td>
<td>Drawing Revision B-987</td>
<td>B-987</td>
</tr>
<tr>
<td>5/27/2015</td>
<td>Drawing Revision B-993</td>
<td>B-993</td>
</tr>
<tr>
<td>6/12/2015</td>
<td>Drawing Revision B-342</td>
<td>B-342</td>
</tr>
<tr>
<td>6/12/2015</td>
<td>Drawing Revision B-345</td>
<td>B-345</td>
</tr>
<tr>
<td>6/29/2015</td>
<td>Drawing Revision B-636</td>
<td>B-636</td>
</tr>
<tr>
<td>6/29/2015</td>
<td>Drawing Revision B-635</td>
<td>B-635</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-668</td>
<td>B-668</td>
</tr>
<tr>
<td>6/29/2015</td>
<td>Drawing Revision B-634</td>
<td>B-634</td>
</tr>
<tr>
<td>6/29/2015</td>
<td>Removed A-492</td>
<td>A-492</td>
</tr>
<tr>
<td>1/13/2016</td>
<td>Removed B-591A</td>
<td>B-591A</td>
</tr>
<tr>
<td>1/13/2016</td>
<td>Drawing Revision B-597B</td>
<td>B-597B</td>
</tr>
<tr>
<td>9/7/2016</td>
<td>Drawing Revision B-342</td>
<td>B-342</td>
</tr>
<tr>
<td>9/7/2016</td>
<td>Drawing Revision B-344A</td>
<td>B-344A</td>
</tr>
<tr>
<td>1/17/2017</td>
<td>Drawing Revision B-342A</td>
<td>B-342A</td>
</tr>
<tr>
<td>1/17/2017</td>
<td>Drawing Revision B-344</td>
<td>B-344</td>
</tr>
<tr>
<td>1/17/2017</td>
<td>Drawing Revision B-590</td>
<td>B-590</td>
</tr>
<tr>
<td>1/17/2017</td>
<td>Drawing Revision B-590A</td>
<td>B-590A</td>
</tr>
<tr>
<td>8/14/2017</td>
<td>Drawing Revision B-591</td>
<td>B-591</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-994</td>
<td>B-994</td>
</tr>
<tr>
<td>6/9/2017</td>
<td>Drawing Revision B-657</td>
<td>B-657</td>
</tr>
<tr>
<td>12/8/2017</td>
<td>Drawing Revision B-408</td>
<td>B-408</td>
</tr>
<tr>
<td>5/6/2019</td>
<td>Update Water Legend</td>
<td>11</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-638</td>
<td>B-638</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-658</td>
<td>B-658</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-659</td>
<td>B-659</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-663</td>
<td>B-663</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-665</td>
<td>B-665</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-934</td>
<td>B-934</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-987</td>
<td>B-987</td>
</tr>
<tr>
<td>6/19/2019</td>
<td>Drawing Revision B-656</td>
<td>B-656</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-575</td>
<td>B-575</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-271</td>
<td>B-271</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-533</td>
<td>B-533</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-577</td>
<td>B-577</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-288</td>
<td>B-288</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-597A</td>
<td>B-597A</td>
</tr>
<tr>
<td>9/14/2020</td>
<td>Drawing Revision B-304</td>
<td>B-304</td>
</tr>
<tr>
<td>9/17/2020</td>
<td>Drawing Revision B-976</td>
<td>B-976</td>
</tr>
<tr>
<td>9/17/2020</td>
<td>Drawing Revision B-966</td>
<td>B-966</td>
</tr>
<tr>
<td>9/17/2020</td>
<td>Drawing Revision B-597B</td>
<td>B-597B</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Revision</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------</td>
<td>----------</td>
</tr>
<tr>
<td>9/17/2020</td>
<td>Drawing Revision B-967</td>
<td>B-967</td>
</tr>
<tr>
<td>9/17/2020</td>
<td>Drawing Revision B-597C</td>
<td>B-597C</td>
</tr>
<tr>
<td>9/17/2020</td>
<td>Drawing Revision B-968</td>
<td>B-968</td>
</tr>
<tr>
<td>9/30/2020</td>
<td>Drawing Revision B-933</td>
<td>B-933</td>
</tr>
</tbody>
</table>
EMWD GUIDELINES FOR WATER SYSTEM PLANS

This plan checklist is a general guide to assist Consulting Engineers in the design and drafting of water plans. Contact our Engineering Department concerning any exceptions; in order to prevent unnecessary plan revisions. Please note that if both water and sewer are required, both are to be delineated on one set of 24" x 36" drawings. Engineers to provide:

1. Approved plan of service summary spreadsheet.
2. Print of record map; (2 sets). Note: If landbase is on a computer system, refer to specification for digital submission of plans.
3. Street improvement plans and grading plan (prints - 1 set each).
4. Conditions of approval, including fire flow requirements (1 copy).
5. Water improvement plans – prepared by registered engineer (2 sets).
6. A corrosion report prepared by a corrosion engineer that includes specific recommendations for protection of metallic pipes (if applicable).
7. Copy of index map sheet with initial submittal.
8. 11" x 17" copy of index map sheet with submittal of final mylars.
9. Cover letter signed with plan check list by registered civil engineer. (See pages 16 & 17).
10. Plan check fee deposit.
11. Authorization for overtime forms if applicable (See page 18).

A. Title or Cover Sheet

1. Index map that shows water system and sewer system, if any. (See example on page 15). Do not show storm drain facilities as part of the index map. Index map can be shown on sheet 2 if it will not fit on title sheet.
   a. Piping system; size and type.
   b. Line valves and air valves.
   c. Fire hydrants, blow-offs, ITC stations and fittings, etc.
   d. Existing water lines with corresponding EMWD drawing number; shown dashed.
e. Water lines dashed and shown “proposed per Tract No.________”
Planned or constructed by other projects but not yet accepted by
EMWD.

f. Sheet number references to plan-profile drawing.
g. Services schematically showing approximate location on lot frontage
and to which line it is connected.
h. Tie to existing Cross Street with distance.
i. All notes specifying work to be done by EMWD at developer’s
expense.

(Do not show storm drain facilities as part of the index map).

2. General Notes and Requirements – County/City required notes only. (Do
not include notes that conflict with EMWD required notes).

4. EMWD Notes (only) – See attached pages 7 through 9.
5. Water Certification (tracts only) – See attached page 10.
9. Estimated of Quantities; items such as pipe, valves, air valves, fire
hydrants, blow-offs and water services, etc. (on sheet with index map).
10. EMWD Approval Block (water and sewer, if applicable) – See page 12.
11. Project Vicinity Map (on sheet with index map).
12. List of Implementing Facilities (on sheet with index map).
13. Pressure Zone (on sheet with index map).
14. Minimum letter height is 0.08” (all sheets).
15. Valves, hydrants, etc. should be a large enough scale so as to be clear
& obvious.

B. Water Plan and Profile Pipeline

1. Plan and Profile Example – See attached pages 13 and 14.
2. Stationing shall correspond with street centerline.
3. Pipe size – diameter in inches.
4. Pipe type – i.e., CML&C, DI, PVC C-900 with class of pipe, etc.
5. Pipe location – 7’ off the curb face in the street on the south or west side of the street.
6. Pipe depth – 4’ cover over the top of the pipe, drawn to scale in profile.
7. Pipe slopes and C.G. (center grade) elevations, and stationing at all grade breaks to be shown in profile in decimal format (ex: s=0.0040). Show top and bottom of pipe in profile for sizes 16” and larger.
8. Show weld limits on CML&C steel pipe and restrained joint limits on PVC and Ductile Iron pipe by dimensions and stations in profile view at appropriate design locations.
9. Minimum 10’ horizontal clearance required between water and sewer mains (edge to edge).
10. Water pipeline crossings over sewer mains must have 1’ of vertical clearance between bottom of water and top of sewer main. When there is no alternative except for sewer to go over water, special conditions will be required per California Department of Health Services.
11. Scale and North Arrow:
   All sheets to have same scale: Horizontal @ 1” = 40’ to have Vertical @ 1” = 4 ft.; Horizontal @ 1” = 50’ to have Vertical @ 1” = 40’; exceptions must have EMWD approval prior to submission of plans for review. Vertical scale 1” = 8 is not acceptable. North arrow pointing down is not acceptable.
12. Storm drain to be profiled, dashed and labeled.

C. **Valves**
1. RSGV valves must be used throughout the system.
2. Show Valve symbols in plan view only.

D. **Fire Hydrants** – Show proper fire hydrant symbol in plan only. Show stationing and standard drawing number for each hydrant on plan only. For commercial and industrial projects, super fire hydrants must include James Jones Hydrant Check Valve.

E. **Blow-offs**
1. Use a blow-off at the end of all lines that will not be extended in the future where no fire hydrant exists (such as cul-de-sacs).
2. A blow-off is required between two valves along a pipe length where no fire hydrant exists.
3. Use Temporary Blow-off B-561 for steel pipe and B-568 for PVC and ductile iron pipe at ends of lines that will be extended in the future.

F. **Air Valves** – An air valve is required at high points in the water line wherever pipe grade changes from an “uphill” slope to a “downhill” slope. Show an air valve symbol in plan. Station air valve in plan and profile with standard drawing number; 1” AV for pipe sizes 8” thru 12”; 2” AV for pipe sizes larger than 12” thru 30”; pipe sizes above 30” must be calculated.

G. **Fittings** – Call out all tees in plan view; specify size, type and stationing. Fittings for horizontal angle points to be called out in plan view. Fittings for vertical grade breaks to be called out in profile view.

H. **Restrained System** – When required, anchorage shall be provide by means of double pass, full welds of all steel pipe joints, restraint fittings for plastic (PVC) pipe or ductile iron pipe. The use of concrete anchorage in lieu of restrained joints will not be allowed.

I. **Utility Crossings** – Show caution note designating type, size and stationing of the utility line wherever it crosses a water main. In note, also include top or bottom elevation of utility line and water main at minimum vertical crossing point. Where a minimum crossing separation is obtained, label on profile between utilities “CDF per EMWD specs”.

J. **Connection of a Proposed Steel Water Line to an Existing Steel Water Line** that has been in the ground longer than one year, requires an insulating test connection shown as ITC per EMWD standard B-660.

K. **Water Service** – Show symbol on plans and station any meter that is not to be installed as typical. Alternative is to designate as “field-located”. Show service on “Index Map”.

L. **Pad Elevation** – Show the pad elevation of each lot on plan view.

M. **Easements** – Waterlines in easements are allowed only upon prior approval by District, prior to plan submittal. Provide easement description and plats where required. Minimum width is 30’ for 8” and smaller; 40’ minimum for 12” and larger with water in center of easement. Show and label easements on index map and plan view of improvement plans. For commercial and industrial projects, easements must be recorded before approval of plans.

N. **Index to Commonly Referenced Water Standard Drawings**
   - A-492 Valve Cap and Riser
   - A-530 Anchor Block (Vertical Bend Only)
   - A-540 Emergency shower & Eyewash
   - B-255 Installation of Vertical Gate Valves (Steel Pipe 14” & Larger; ACP, PVC & DI Pipe 4” & Larger)
B-271 Saddle Outlets – ¾ to 36”
B-286B Trench Backfill
B-288 Steel Flanges, 4” to 54”
B-304 Butt Strap Details
B-342 1 1/2” Multi-Jet Meter Service Connection – 1 ½” Copper
B-342A 1 1/2” Copper Service Connection
B-344 2” Copper Service Connection with Meter
B-344A 2” Copper Service Connection
B-351 6” x 1-2 ½” Blow Off Installation (Steel Pipe)
B-356 6” x 2-1/2” & 1-4” Fire Hydrant Installation (Steel Pipe)
B-357 6” x 1-2 ½” Blow-off Installation for ACP, PVC & DI Pipe
B-362 6” x 1-2 ½” & 1-4” Fire Hydrant Installation for ACP, PVC & DI Pipe.
B-367 2” Air Valve Installation
B-387 6” x 1-2 ½ & 1-4” Fire Hydrant Installation (City of Hemet Steel Pipe)
B-388 6” x 1-2 1/2” & 1-4” Fire Hydrant Installation (City of Hemet – ACP, PVC & DI Pipe)
B-407 Thrust Block Installation for Hub-End Pipe
B-408 Water Pipe Installation and concrete Cap Detail for ACP, PVC & DI Pipe
B-414 Water Pipeline End Plug Installation for AC Pipe
B-516 6” x 2-2 ½” x 1-4” Fire Hydrant Installation (Steel Pipe)
B-517 6” x 2-2 ½” x 1-4” Fire Hydrant Installation for ACP, PVC & DI Pipe
B-533 Telemetry Wire & Terminal
B-561 4” x 1-2 ½” Blow-Off Temporary End Installation (Steel Pipe)
B-566 6” x 2-2 ½” x 1-4” Fire Hydrant Installation (City of Hemet, ACP, PVC & DI Pipe)
B-567 6” x 2-2 ½” x 1-4” Fire Hydrant Installation (City of Hemet – Steel Pipe)
B-568 6” x 1 - 2 1/2” Blow Off Temporary End Installation for ACP, PVC & DI Pipe
B-575 Steel Pipe Casing Water Pipeline
B-577  Installation of Butterfly Valves
B-580  1" Air Valve Cover Assembly
B-590A 5/8" Service Connection, 1" Copper Tubing
B-591  1" Meter Service Connection, 1" Copper Tubing
B-591A 1" Service Connection, 1" Copper Tubing
B-597A Reduced Pressure Backflow Preventer Assy for 3/4" - 2"
B-597B Reduced Pressure Backflow Preventer Assy for 2 1/2" - 3"
B-597C Reduced Pressure Backflow Preventer Assy for 4" - 10"
B-598  1" Air Valve Installation, 1" Copper Tubing
B-633  3" Meter Installation
B-634  4" Meter Installation
B-635  6" Meter Installation
B-636  8" Meter Installation
B-638  Steel Cylinder Pipe - Field Joint Details Welded & Bonded Rubber Gasket
B-645  6" x 1 - 2 1/2" & 1 - 4" Fire Hydrant Installation (City of San Jacinto, ACP, PVC & DI Pipe)
B-650  6" x 2 - 2 1/2" x 1 - 4" Fire Hydrant Installation (City of San Jacinto, ACP, PVC & DI Pipe)
B-651  6" x 2 1/2" x 1 - 4" Fire Hydrant Installation (City of San Jacinto, Steel Pipe)
B-653  6" x 1 - 4" Blow-Off Installation - Saddle Tangent Outlet - Steel Pipe
B-654  10" x 12" Detector Meter with 6" Compound Bypass
B-656  Locator Wire Installation
B-657  4", 6", 8" or 10" Double Check Detector Assembly & Reduced Pressure Detector Assembly
B-658  Service Connections 1" through 4" on Water Appurtenance Lateral or Watermain 16" or Larger
B-659  Air Test Details
B-660  Test Stations: Insulated Joint and Insulated Joint at Valve
B-661  Thermite Weld Details
B-662  Test Stations: Line Current, Basic & Pipe with Casing
B-663  Standard Restraint Tee, Dead End, Bend for PVC C-900 & C-905
B-665  Guard and Marker Posts
B-932  4" & 6" Pressure Regulator above Ground Installation
B-933  8" Pressure Regulator above Ground Installation
B-934  Recessed Trench Plate Detail
B-935  Potable Water Sample Station Lateral or Watermain 16" or Larger
B-965  1" Residential Meter Service Connection 1" Copper Tubing
B-966  Double Check Backflow Preventer Assy for sizes 3/4" - 2"
B-967  Double Check Backflow Preventer Assy for sizes 2 1/2" - 3"
B-968  Double Check Backflow Preventer Assy for sizes 4" - 10"

O.  **Notifications**

Engineer shall include the following notes:

At least 48 hours prior to commencing construction, Contractor shall notify:

1. Eastern Municipal Water District.
   Field Engineering Department, (951) 928-3777, ext 4291

2. Permit Agency (Engineer to select agency).
   a. Riverside County Road Department
      (951) 955-6885
   b. City of Hemet – (951) 765-2360
   c. City of San Jacinto – (951) 654-7337
   d. City of Moreno Valley – (951) 413-3350
   e. City of Temecula – (951) 694-6400
   f. City of Perris – (951) 943-5003
   g. City of Murrieta – (951) 698-1040

3. Underground Service Alert (USA) – 1(800) 227-2600 or 811

4. All other affected agencies that are not members of USA. (Engineer to provide names and phone numbers of agencies).

P.  **EMWD Water Notes**

Use only those notes and standards determined appropriate by EMWD.

Detailed Requirements:
(List on waterline layout for subdivision improvements and on front sheet of the construction plans where they are not the same).

1. Water pipeline and appurtenant construction shall be in accordance with EMWD standards and specifications.

2. Prior to construction of pipeline, contractor shall expose existing water system and verify its existing elevation and location.

3. Where sewers have been constructed by agencies other than EMWD, contractor shall verify sewer lateral locations prior to excavation for water pipeline. In the event sewer laterals are found to be at a depth less than in accordance with EMWD sewer standards, (for City of Hemet, refer to City of Hemet Std. No. 201) water pipeline contractor shall adjust water pipeline depth as directed by the Engineer to cross over the sewer lateral if possible, to provide 36” minimum cover to finish road grade; otherwise, cross under the lateral, which requires special construction.

4. All service connections shall be 1” services x 5/8” meters, unless otherwise noted; and shall be located as shown on the plans and adjusted as necessary to miss driveways. Water service assemblies shall be installed in accordance with Std. Dwg. B-590A, type “A”, “B” or C” (select appropriate). (Engineer shall list other sizes and drawings when appropriate). Adjoining lot meter boxes shall be placed together at property line.

5. Air valve assemblies shall be installed in accordance with Std. Dwg. B-598 (Select appropriate Type “A”, “B”, “C” or “D”).

6. Water system profile elevations are to centerline (center grade) of pipe.

7. Approved Reduction Pressure Backflow Prevention Device (B-597 A, B, C) required for all industrial, commercial, apartment complexes and landscape services.

8. Install locator wire over water main per Std. Dwg. B-656.

Add for CML&C Pipe Systems:

9. Blow-off Assemblies shall be installed in accordance with Std. Dwg. B-351.

10. Temporary Blow-off Assemblies shall be installed in accordance with St. Dwg. B-561.

11. Fire hydrant Assemblies shall be installed in accordance with Std. Dwg’s.

12. All steel cylinder pipes shall be bonded at rubber gasket joints in accordance with Std. Dwg. B-638.

13. All designated pipeline welds shall be full weld double passes at each pipe joint within designated weld length limits.
14. Shop drawings for CML&C shall be submitted and approved by EMWD prior to fabrication.

15. All CML&C Steel pipe shall be Class 150 except where noted otherwise. Pipe shall conform to AWWA specifications.

16. Add appropriate notes for corrosion protection per corrosion report.

Add for all PVC and DI Pipe Systems:

17. Fire Hydrant Assemblies shall be installed in accordance with Std. Dwg’s. B-362, B-388, B-517, B-645 and B-650. (Select appropriate standards and color code).

18. Blow–off Assemblies shall be installed in accordance with Std. Dwg. B-357.


Add for PVC Pipe Systems:

20. All PVC pipe through 12 inch shall be type C-900, DR 18, except where noted otherwise. Pipe shall conform to AWWA specifications. 18” and larger should be C-905, Class 235.

21. Fittings for PVC pipe shall be Ductile or Gray iron. Fittings shall be flanged, bolted mechanical joints, or push-on joints, and shall be cement mortar lined and tar (seal) coated per EMWD standards and specifications.

22. All ductile or gray iron fittings shall be polyethylene encased at the time of installation per EMWD standards and specifications.

23. A Joint Restraint Device shall be used on all main line pipe joints within specified limits and all joints or water appurtenance laterals off main line, per EMWD Std. Dwg. B-663.

Add for Ductile Iron Pipe Systems:

24. Ductile iron pipe shall be tar (seal) coated and cement mortar lined with bolted mechanical or push-on joints.

25. All ductile or gray iron pipe and fittings shall be encased at the time of installation with polyethylene encasement in accordance with ANSI/AWWA C105.

26. Add appropriate notes for corrosion protection per corrosion report.
27. Joint Restraint Devices shall be used on all main line pipe joints within
specified limits and all joints of water appurtenance laterals off main line,
per EMWD standards and specifications.

Add for AC Pipe;

28. Removal of ACP pipe and appurtenances shall be done by contractor
licensed to handle hazardous material. Disposal shall be in accordance
with State and Federal Law.

Add for Potable Sampling Station;

29. Potable sampling station (PSS) shall be installed in accordance with
STD. DWG. B-935.

Q. **Water Certification**

I certify that the design of the water system in Tract No.________ is in
accordance with the water system expansion plans of the Eastern Municipal
Water District, and that the water service, storage and distribution system will
be adequate to provide water to such tract. This certification does not
constitute a guarantee that it will supply water to such tract at any specific
quantities, flows or pressure for fire protection or any other purpose.

**EASTERN MUNICIPAL WATER DISTRICT**

By; ______________________________

Civil Engineer of Subdivision Date:

R. **Time Limitations**

The time limit on drawing(s) approval shall be six (6) months from the date on
the certification. If construction has not commenced within stated time,
EMWD requires drawing(s) to be reviewed by the Developer/Design Engineer
and resubmitted to EMWD for possible changes in Master Planned sizing and
changes in specifications and standards.
TEMPENDOFWATERLINE

HOT TAP EXISTING __ " W/L WITH ___ x ___ " SERVICE CLAMP WITH ___ CORP.
STOP BY EMWD AT DEVELOPER'S EXPENSE.

IF EXIST. W/L IS STEEL

HOT TAP EXISTING __ " W/L WITH ___ x ___ " SADDLE OUTLET
CONNECTION WITH ___ FxF R.S.G.V. BY EMWD AT DEVELOPER'S EXPENSE. INSTALL ___ FxH ADAPTER, RESTRAIN (P.V.C. OR D.I.) OR WELD JOINTS (STEEL) AS REQUIRED.

IF EXIST. W/L IS A.C.P. D.I.P. OR P.V.C.

HOT TAP EXISTING __ " W/L WITH ___ x ___ " TAPPING SLEEVE
WITH ___ FxR.S.G.V. BY EMWD AT DEVELOPER'S EXPENSE. INSTALL ___ FxH ADAPTER, RESTRAIN (P.V.C. OR D.I.) OR WELD JOINTS (STEEL) AS REQUIRED.

NOTE: NO FxH ADAPTER REQUIRED IF NEW LINE IS STEEL
NOTE: PLEASE MAKE BLOCKS LARGE ENOUGH THAT THE APPROPRIATE INFORMATION WILL FIT WHEN FILLED IN

<table>
<thead>
<tr>
<th>COUNTY (CITY) OF &quot;X&quot;</th>
<th>I.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S.A.</td>
</tr>
<tr>
<td></td>
<td>W.O.</td>
</tr>
<tr>
<td>TRACT NO. &quot;X&quot;</td>
<td>C.O.</td>
</tr>
<tr>
<td>SEWER, WATER, RECYCLED WATER PLAN AND PROFILE</td>
<td>COORD.</td>
</tr>
<tr>
<td>TITLE SHEET (OR)</td>
<td>SHT. OF</td>
</tr>
<tr>
<td>INDEX MAP (OR)</td>
<td></td>
</tr>
<tr>
<td>&quot;STREET NAME&quot;</td>
<td>D -</td>
</tr>
</tbody>
</table>

TITLE BLOCK

WATER / SEWER / RECYCLED WATER / Approved by:
EASTERN MUNICIPAL WATER DISTRICT

<table>
<thead>
<tr>
<th>CIVIL ENGINEER OF SUBDIVISIONS</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROVALS</td>
<td>INITIAL</td>
</tr>
<tr>
<td>PROJECT ENG.</td>
<td></td>
</tr>
</tbody>
</table>

APPROVAL BLOCK
Date: ___________________

Eastern Municipal Water District
P.O. Box 8300
2270 Trumble Road
Perris, CA  92572-8300

Attention: Engineering Department

Subject: Initial Water and Sewer Plans Submittal

I certify that the water and/or sewer plans prepared on __________________ are being submitted for plan check using the Eastern Municipal Water District water and sewer guidelines and the attached checklist. The plans are complete and meet EMWD criteria.

<table>
<thead>
<tr>
<th>We are providing you with the following:</th>
<th>Yes</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 sets of the water and/or sewer plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of grading plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of street plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 print of the record map</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of conditions of approval, including fire flow requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sincerely,

__________________________,  Registered Civil Engineer
Plan Check Checklist

Title Sheet

☐ Water/Sewer Notes
☐ Time Limitation
☐ Notifications
☐ Certification
☐ Engineer's Stamp & Signature
☐ Typical Lot

Index Map

☐ Scale, North Arrow, Sheet Ref.
☐ Vicinity Map
☐ Implementing Facilities
☐ Quantities
☐ Legend
☐ Street Names, Lot Numbers
☐ Services, Laterals, Appurtenances
☐ Backwater Valves/Prs. Regulator Check
☐ Distance to Existing Cross Street
☐ Water & Sewer Facilities
☐ Force Account 'Work'
☐ Pressure Zone

Plan & Profile
(Water & Sewer)

☐ Scale, North Arrow, Sheet Ref.
(No 1" = 8' vertical scale allowed.)
☐ Utility Crossing Data
☐ Curve Data, Bearings, Tables
☐ Existing/Future Utility Reference

☐ Easements, ROW Info. Offsets
☐ Stationing, Matchlines, CL Equations
☐ Pipe Slopes
☐ Notation, Labeling, Pipe Types
☐ Services/Laterals
☐ EMWD Symbology
☐ Existing Finish Surface
☐ Force Account 'Work'

Water

☐ Valving
☐ Air Valves, Blow-offs, Fire Hydrants
☐ Joint Restained Limits (on profile)
☐ Grade Breaks/Deflection Angles
☐ Backflow Devices (if required)
☐ High Deflection Coupling (if required)

Sewer

☐ Manhole Spacing
☐ Manhole Inverts (match soffits), Rim El.
☐ Manhole Numbering
☐ Lateral Clearances
☐ Special Bedding
☐ Backwater Valves (BW)
☐ Cut-to-Fill Note

Project: _______________________
Date: _______________________
Engineer: _____________________
EASTERN MUNICIPAL WATER DISTRICT

OVERTIME AUTHORIZATION FORM
DEVELOPMENT PROJECT

Date: ________________

I authorize EMWD’s project engineer to work overtime to complete:

☐ Plan of Service  ☐ Plan Check

For the following project: ________________________________

I understand that this authorization doesn’t mean that my project will be moved ahead of other projects already assigned to the project engineer or that the Plan Check process will be completed in a specific amount of time.

________________________
Developer’s Representative
Name:
Title:
Company:

cc: Finance Dept
Attachments
GENERAL NOTES:

1. ALL WATER MAIN LARGER THAN 12" GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE CML&C AND WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE WILL BE PVC PER CASE I OR CML&C PER CASE II, UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE 20 FEET MINIMUM WITH NO JOINTS CENTERED ALONG THE PIPELINE OR STRUCTURE IT CROSSES. THE WATER MAIN MUST BE EXTENDED FROM EACH SIDE OF THE PIPELINE OR STRUCTURE A MINIMUM OF FIVE FEET (5') HORIZONTAL CLEARANCE FROM THE EDGE OF THE PIPELINE OR STRUCTURE TOWARD THE BENDS.

3. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST HAVE CONTROL DENSITY FILL (CDF) BETWEEN THE WATER MAIN AND THE PIPELINE OR STRUCTURE IT CROSSES.

4. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST HAVE A MINIMUM OF ONE FOOT VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PIPELINE OR STRUCTURE IT CROSSES. A VERTICAL SEPARATION LESS THAN ONE FOOT WILL REQUIRE EMWD ENGINEER'S APPROVAL.

5. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE SHALL USE 45 DEGREE BENDS, UNLESS OTHERWISE APPROVED BY EMWD.

6. ALL PVC WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE C900 CLASS 200.

FOR CML&C PIPE, PROVIDE CTS STATION PER EMWD STD DWG B-660, B-661, & B-662 OR AS REQUIRED PER CORROSION REPORT RECOMMENDATION.

8. FOR CML&C PIPE, PROVIDE CORROSION REPORT RECOMMENDATION FROM A LICENSED CORROSION ENGINEER OR NACE CERTIFIED SPECIALIST.

9. ALL CML&C PIPE SHALL BE MANUFACTURED PER EMWD STANDARD SPECIFICATION 15059 AND 15061.

10. ALL CROSSINGS INVOLVING NON-POTABLE WATER SHALL ADHERE TO THE LATEST DEPARTMENT OF HEALTH SERVICES GUIDANCE MEMO: GUIDANCE CRITERIA FOR THE SEPARATION OF WATER MAINS AND NON-POTABLE PIPELINES.

11. ALL METALLIC FITTINGS AND PARTS SHALL BE COATED WITH WAX TAPE PER AWWA C-217 OR AS PER CORROSION REPORT RECOMMENDATION.
CASE I:

1. ALL WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE SHALL BE PVC C-900 CL-200 FOR CROSSINGS EXTENDING LESS THAN 20 FT AND SATISFIES GENERAL NOTE NO.2, UNLESS OTHERWISE APPROVED BY EMWD.

2. JOINT RESTRAINTS SHALL BE EBAA IRON 2000 SERIES OR APPROVED EQUAL.

CASE II:

1. ALL WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE THAT DOES NOT MEET THE CRITERIA FOR PVC PIPELINE WITH NO JOINTS UNDERNEATH THE PIPELINE INCLUDING THE 5 FOOT MINIMUM CLEARANCE PER CASE I SHALL USE CML&C CL.150 0.25" THICK, UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL JOINTS SHALL BE FULL WELD DOUBLE PASS.
CASE III:

1. ALL WATER MAIN CROSSINGS EXTENDING LESS THAN A HUNDRED FEET (100 FT) FROM CENTER LINE TO CENTER LINE OF PIPELINE(S) OR STRUCTURE(S) SHALL REMAIN UNDERNEATH PIPELINE(S) OR STRUCTURE(S), UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL PVC JOINTS MUST BE RESTRAINED WITH EBAA IRON 2000 SERIES OR APPROVED EQUAL.

3. ALL CML&C JOINTS MUST BE FULL WELD DOUBLE PASS.

CASE IV:

1. PVC C-900 CL200 12" AND SMALLER MAY BE USED FOR MULTIPLE CROSSINGS AS LONG AS IT MEETS THE 5 FOOT MINIMUM CLEARANCE PER GENERAL NOTE NO. 2, UNLESS OTHERWISE APPROVED BY EMWD.
EMWD GUIDELINES FOR WATER SYSTEM PLANS

This plan checklist is a general guide to assist Consulting Engineers in the design and drafting of water plans. Contact our Engineering Department concerning any exceptions; in order to prevent unnecessary plan revisions. Please note that if both water and sewer are required, both are to be delineated on one set of 24" x 36" drawings. Engineers to provide:

1. Approved plan of service summary spreadsheet.
2. Print of record map; (2 sets). Note: If landbase is on a computer system, refer to specification for digital submission of plans.
3. Street improvement plans and grading plan (prints - 1 set each).
4. Conditions of approval, including fire flow requirements (1 copy).
5. Water improvement plans – prepared by registered engineer (2 sets).
6. A corrosion report prepared by a corrosion engineer that includes specific recommendations for protection of metallic pipes (if applicable).
7. Copy of index map sheet with initial submittal.
8. 11" x 17" copy of index map sheet with submittal of final mylars.
9. Cover letter signed with plan check list by registered civil engineer. (See pages 16 & 17).
10. Plan check fee deposit.
11. Authorization for overtime forms if applicable (See page 18).

A. Title or Cover Sheet

1. Index map that shows water system and sewer system, if any. (See example on page 15). Do not show storm drain facilities as part of the index map. Index map can be shown on sheet 2 if it will not fit on title sheet.
   a. Piping system; size and type.
   b. Line valves and air valves.
   c. Fire hydrants, blow-offs, ITC stations and fittings, etc.
   d. Existing water lines with corresponding EMWD drawing number; shown dashed.
e. Water lines dashed and shown “proposed per Tract No.______”
   Planned or constructed by other projects but not yet accepted by
   EMWD.

f. Sheet number references to plan-profile drawing.

g. Services schematically showing approximate location on lot frontage
   and to which line it is connected.

h. Tie to existing Cross Street with distance.
i. All notes specifying work to be done by EMWD at developer’s
   expense.

(Do not show storm drain facilities as part of the index map).

2. General Notes and Requirements – County/City required notes only. (Do
   not include notes that conflict with EMWD required notes).


4. EMWD Notes (only) – See attached pages 7 through 9.

5. Water Certification (tracts only) – See attached page 10.


9. Estimated of Quantities; items such as pipe, valves, air valves, fire
   hydrants, blow-offs and water services, etc. (on sheet with index map).

10. EMWD Approval Block (water and sewer, if applicable) – See page 12.

11. Project Vicinity Map (on sheet with index map).

12. List of Implementing Facilities (on sheet with index map).

13. Pressure Zone (on sheet with index map).

14. Minimum letter height is 0.08” (all sheets).

15. Valves, hydrants, etc. should be a large enough scale so as to be clear
    & obvious.

B. Water Plan and Profile Pipeline

1. Plan and Profile Example – See attached pages 13 and 14.

2. Stationing shall correspond with street centerline.

3. Pipe size – diameter in inches.
4. Pipe type – i.e., CML&C, DI, PVC C-900 with class of pipe, etc.
5. Pipe location – 7’ off the curb face in the street on the south or west side of the street.
6. Pipe depth – 4’ cover over the top of the pipe, drawn to scale in profile.
7. Pipe slopes and C.G. (center grade) elevations, and stationing at all grade breaks to be shown in profile in decimal format (ex: s=0.0040). Show top and bottom of pipe in profile for sizes 16” and larger.
8. Show weld limits on CML&C steel pipe and restrained joint limits on PVC and Ductile Iron pipe by dimensions and stations in profile view at appropriate design locations.
9. Minimum 10’ horizontal clearance required between water and sewer mains (edge to edge).
10. Water pipeline crossings over sewer mains must have 1’ of vertical clearance between bottom of water and top of sewer main. When there is no alternative except for sewer to go over water, special conditions will be required per California Department of Health Services.
11. Scale and North Arrow:
   All sheets to have same scale: Horizontal @ 1” = 40’ to have Vertical @ 1” = 4 ft.; Horizontal @ 1” = 50’ to have Vertical @ 1” = 40’; exceptions must have EMWD approval prior to submission of plans for review. Vertical scale 1” = 8 is not acceptable. North arrow pointing down is not acceptable.
12. Storm drain to be profiled, dashed and labeled.

C. **Valves**
   1. RSGV valves must be used throughout the system.
   2. Show Valve symbols in plan view only.

D. **Fire Hydrants** – Show proper fire hydrant symbol in plan only. Show stationing and standard drawing number for each hydrant on plan only. For commercial and industrial projects, super fire hydrants must include James Jones Hydrant Check Valve.

E. **Blow-offs**
   1. Use a blow-off at the end of all lines that will not be extended in the future where no fire hydrant exists (such as cul-de-sacs).
   2. A blow-off is required between two valves along a pipe length where no fire hydrant exists.
3. Use Temporary Blow-off B-561 for steel pipe and B-568 for PVC and ductile iron pipe at ends of lines that will be extended in the future.

F. **Air Valves** – An air valve is required at high points in the water line wherever pipe grade changes from an "uphill" slope to a "downhill" slope. Show an air valve symbol in plan. Station air valve in plan and profile with standard drawing number: 1" AV for pipe sizes 8" thru 12"; 2" AV for pipe sizes larger than 12" thru 30"; pipe sizes above 30" must be calculated.

G. **Fittings** – Call out all tees in plan view; specify size, type and stationing. Fittings for horizontal angle points to be called out in plan view. Fittings for vertical grade breaks to be called out in profile view.

H. **Restrained System** – When required, anchorage shall be provide by means of double pass, full welds of all steel pipe joints, restraint fittings for plastic (PVC) pipe or ductile iron pipe. The use of concrete anchorage in lieu of restrained joints will not be allowed.

I. **Utility Crossings** – Show caution note designating type, size and stationing of the utility line wherever it crosses a water main. In note, also include top or bottom elevation of utility line and water main at minimum vertical crossing point. Where a minimum crossing separation is obtained, label on profile between utilities “CDF per EMWD specs”.

J. **Connection of a Proposed Steel Water Line to an Existing Steel Water Line** that has been in the ground longer than one year, requires an insulating test connection shown as ITC per EMWD standard B-660.

K. **Water Service** – Show symbol on plans and station any meter that is not to be installed as typical. Alternative is to designate as "field-located". Show service on "Index Map".

L. **Pad Elevation** – Show the pad elevation of each lot on plan view.

M. **Easements** – Waterlines in easements are allowed only upon prior approval by District, prior to plan submittal. Provide easement description and plats where required. Minimum width is 30’ for 8” and smaller; 40’ minimum for 12” and larger with water in center of easement. Show and label easements on index map and plan view of improvement plans. For commercial and industrial projects, easements must be recorded before approval of plans.

N. **Index to Commonly Referenced Water Standard Drawings**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A-492</td>
<td>Valve Cap and Riser</td>
</tr>
<tr>
<td>A-530</td>
<td>Anchor Block (Vertical Bend Only)</td>
</tr>
<tr>
<td>A-540</td>
<td>Emergency shower &amp; Eyewash</td>
</tr>
<tr>
<td>B-255</td>
<td>Installation of Vertical Gate Valves (Steel Pipe 14&quot; &amp; Larger; ACP, PVC &amp; DI Pipe 4&quot; &amp; Larger)</td>
</tr>
</tbody>
</table>
B-271  Saddle Outlets – ¼ to 36"
B-286B  Trench Backfill
B-288  Steel Flanges, 4" to 54"
B-304  Butt Strap Details
B-342  1 1/2" Multi-Jet Meter Service Connection – 1 ½" Copper
B-342A  1 1/2" Copper Service Connection
B-344  2" Copper Service Connection with Meter
B-344A  2" Copper Service Connection
B-351  6" x 1-2 ½" Blow Off Installation (Steel Pipe)
B-356  6" x 2-1/2" & 1-4" Fire Hydrant Installation (Steel Pipe)
B-357  6" x 1-2 ½" Blow-off Installation for ACP, PVC & DI Pipe
B-362  6" x 1-2 ½" & 1-4" Fire Hydrant Installation for ACP, PVC & DI Pipe.
B-367  2" Air Valve Installation
B-387  6" x 1-2 ½ & 1-4" Fire Hydrant Installation (City of Hemet Steel Pipe)
B-388  6" x 1-2 1/2" & 1-4" Fire Hydrant Installation (City of Hemet – ACP, PVC & DI Pipe)
B-407  Thrust Block Installation for Hub-End Pipe
B-408  Water Pipe Installation and concrete Cap Detail for ACP, PVC & DI Pipe
B-414  Water Pipeline End Plug Installation for AC Pipe
B-516  6" x 2-2 ½" x 1-4" Fire Hydrant Installation (Steel Pipe)
B-517  6" x 2-2 ½" x 1-4" Fire Hydrant Installation for ACP, PVC & DI Pipe
B-533  Telemetry Wire & Terminal
B-561  4" x 1-2 ½" Blow-Off Temporary End Installation (Steel Pipe)
B-566  6" x 2-2 ½" x 1-4" Fire Hydrant Installation (City of Hemet, ACP, PVC & DI Pipe)
B-567  6" x 2-2 ½" x 1-4" Fire Hydrant Installation (City of Hemet – Steel Pipe)
B-568  6" x 1 - 2 1/2" Blow Off Temporary End Installation for ACP, PVC & DI Pipe
B-575  Steel Pipe Casing Water Pipeline
Installation of Butterfly Valves

1" Air Valve Cover Assembly

5/8" Meter Service Connection, 1" Copper Tubing

5/8" Service Connection, 1" Copper Tubing

1" Meter Service Connection, 1" Copper Tubing

1" Service Connection, 1" Copper Tubing

Backflow Prevention Assembly Installation Diagram

1" Air Valve Installation, 1" Copper Tubing

3" Meter Installation

4" Meter Installation

6" Meter Installation

8" Meter Installation

Steel Cylinder Pipe - Field Joint Details Welded & Bonded Rubber Gasket

6" x 1 - 2 1/2" & 1 - 4" Fire Hydrant Installation (City of San Jacinto, ACP, PVC & DI Pipe)

6" x 2 - 2 1/2" x 1 - 4" Fire Hydrant Installation (City of San Jacinto, ACP, PVC & DI Pipe)

6" x 2 1/2" x 1 - 4" Fire Hydrant Installation (City of San Jacinto, Steel Pipe)

6" x 1 - 4" Blow-Off Installation - Saddle Tangent Outlet - Steel Pipe

10" x 12" Detector Meter with 6" Compound Bypass

Locator Wire Installation

4", 6", 8" or 10" Double Check Detector Assembly & Reduced Pressure Detector Assembly

Service Connections 1" through 4" on Water Appurtenance Lateral or Watermain 16" or Larger

Air Test Details

Test Stations: Insulated Joint and Insulated Joint at Valve

Thermite Weld Details

Test Stations: Line Current, Basic & Pipe with Casing

Standard Restraint Tee, Dead End, Bend for PVC C-900 & C-905

Guard and Marker Posts
B-932 4" & 6" Pressure Regulator above Ground Installation
B-933 8" Pressure Regulator above Ground Installation
B-934 Recessed Trench Plate Detail
B-935 Potable Water Sample Station Lateral or Watermain 16" or Larger

O. **Notifications**

Engineer shall include the following notes:

At least 48 hours prior to commencing construction, Contractor shall notify:

1. **Eastern Municipal Water District.**
   
   Field Engineering Department, (951) 928-3777, ext 4830

2. **Permit Agency (Engineer to select agency).**
   
   a. Riverside County Road Department
      (951) 955-6885
   
   b. City of Hemet – (951) 765-2360
   
   c. City of San Jacinto – (951) 654-7337
   
   d. City of Moreno Valley – (951) 413-3350
   
   e. City of Temecula – (951) 694-6400
   
   f. City of Perris – (951) 943-5003
   
   g. City of Murrieta – (951) 698-1040

3. **Underground Service Alert (USA) – 1(800) 227-2600 or 811**

4. **All other affected agencies that are not members of USA. (Engineer to provide names and phone numbers of agencies).**

P. **EMWD Water Notes**

Use only those notes and standards determined appropriate by EMWD.

**Detailed Requirements:**

(List on waterline layout for subdivision improvement and on front sheet of the construction plans where they are not the same).

1. Water pipeline and appurtenant construction shall be in accordance with EMWD standards and specifications.)
2. Prior to construction of pipeline, contractor shall expose existing water system and verify its existing elevation and location.

3. Where sewers have been constructed by agencies other that EMWD, contractor shall verify sewer lateral locations prior to excavation for water pipeline. In the event sewer laterals are found to be at a depth less than in accordance with EMWD sewer standards, (for City of Hemet, refer to City of Hemet Std. No. 201) water pipeline contractor shall adjust water pipeline depth as directed by the Engineer to cross over the sewer lateral if possible, to provide 36” minimum cover to finish road grade; otherwise, cross under the lateral, which requires special construction.

4. All service connections shall be 1” services x 5/8” meters, unless otherwise noted; and shall be located as shown on the plans and adjusted as necessary to miss driveways. Water service assemblies shall be installed in accordance with Std. Dwg. B-590, type “A”, “B” or “C” (select appropriate). (Engineer shall list other sizes and drawings when appropriate). Adjoining lot meter boxes shall be placed together at property line.

5. Air valve assemblies shall be installed in accordance with Std. Dwg. B-598 (Select appropriate Type “A”, “B”, “C” or “D”).

6. Water system profile elevations are to centerline (center grade) of pipe.

7. Approved Reduction Pressure Backflow Prevention Device (B-597) required for all industrial, commercial, apartment complexes and landscape services.

8. Install locator wire over water main per Std. Dwg. B-656.

Add for CML&C Pipe Systems:

9. Blow-off Assemblies shall be installed in accordance with Std. Dwg. B-351.

10. Temporary Blow-off Assemblies shall be installed in accordance with St. Dwg. B-561.

11. Fire hydrant Assemblies shall be installed in accordance with Std. Dwg’s.

12. All steel cylinder pipes shall be bonded at rubber gasket joints in accordance with Std. Dwg. B-638.

13. All designated pipeline welds shall be full weld double passes at each pipe joint within designated weld length limits.

14. Shop drawings for CML&C shall be submitted and approved by EMWD prior to fabrication.

15. All CML&C Steel pipe shall be Class 150 except where noted otherwise. Pipe shall conform to AWWA specifications.
16. Add appropriate notes for corrosion protection per corrosion report.

Add for all PVC and DI Pipe Systems:

17. Fire Hydrant Assemblies shall be installed in accordance with Std. Dwg’s. B-362, B-388, B-517, B-645 and B-650. (Select appropriate standards and color code).

18. Blow-off Assemblies shall be installed in accordance with Std. Dwg. B-357.


Add for PVC Pipe Systems:

20. All PVC pipe through 12 inch shall be type C-900, DR 18, except where noted otherwise. Pipe shall conform to AWWA specifications. 18” and larger should be C-905, Class 235.

21. Fittings for PVC pipe shall be Ductile or Gray iron. Fittings shall be flanged, bolted mechanical joints, or push-on joints, and shall be cement mortar lined and tar (seal) coated per EMWD standards and specifications.

22. All ductile or gray iron fittings shall be polyethylene encased at the time of installation per EMWD standards and specifications.

23. A Joint Restraint Device shall be used on all main line pipe joints within specified limits and all joints or water appurtenance laterals off main line, per EMWD Std. Dwg. B-663.

Add for Ductile Iron Pipe Systems:

24. Ductile iron pipe shall be tar (seal) coated and cement mortar lined with bolted mechanical or push-on joints.

25. All ductile or gray iron pipe and fittings shall be encased at the time of installation with polyethylene encasement in accordance with ANSI/AWWA C105.

26. Add appropriate notes for corrosion protection per corrosion report.

27. Joint Restraint Devices shall be used on all main line pipe joints within specified limits and all joints of water appurtenance laterals off main line, per EMWD standards and specifications.

Add for AC Pipe;
28. Removal of ACP pipe and appurtenances shall be done by contractor licensed to handle hazardous material. Disposal shall be in accordance with State and Federal Law.

Add for Potable Sampling Station;

29. Potable sampling station (PSS) shall be installed in accordance with STD. DWG. B-935.

Q. Water Certification

I certify that the design of the water system in Tract No.__________ is in accordance with the water system expansion plans of the Eastern Municipal Water District, and that the water service, storage and distribution system will be adequate to provide water to such tract. This certification does not constitute a guarantee that it will supply water to such tract at any specific quantities, flows or pressure for fire protection or any other purpose.

EASTERN MUNICIPAL WATER DISTRICT

By; ________________________________

Civil Engineer of Subdivision Date:

R. Time Limitations

The time limit on drawing(s) approval shall be six (6) months from the date on the certification. If construction has not commenced within stated time, EMWD requires drawing(s) to be reviewed by the Developer/Design Engineer and resubmitted to EMWD for possible changes in Master Planned sizing and changes in specifications and standards.
TYPICAL LOT EXAMPLE

TYPICAL LOT
N.T.S.

NOTE: PLEASE MAKE BLOCKS LARGE ENOUGH THAT THE APPROPRIATE INFORMATION WILL FIT WHEN FILLED IN

<table>
<thead>
<tr>
<th>COUNTY (CITY) OF &quot;X&quot;</th>
<th>I.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S.A.</td>
</tr>
<tr>
<td></td>
<td>W.O.</td>
</tr>
<tr>
<td></td>
<td>C.O.</td>
</tr>
<tr>
<td></td>
<td>COORD.</td>
</tr>
<tr>
<td>TITLE SHEET (OR)</td>
<td>SHT. OF</td>
</tr>
<tr>
<td>INDEX MAP (OR)</td>
<td></td>
</tr>
<tr>
<td>&quot;STREET NAME&quot;</td>
<td>D -</td>
</tr>
</tbody>
</table>

TITL E BLOCK

WATER / SEWER / RECYCLED WATER / APPROVED BY:
EASTERN MUNICIPAL WATER DISTRICT

CIVIL ENGINEER OF SUBDIVISIONS

APPROVALS

APPROVAL BLOCK

A-Title Block.dgn 6/30/2010 2:44:10 PM
EXAMPLE OF INDEX MAP
WITH CALL OUTS AND SYMBOLS LEGIBLE

OP. 12" WATER
PER D-13116

MENIFEE LAKES
GOLF COURSE
MAINTENANCE
BUILDING
Date: ____________________

Eastern Municipal Water District
P.O. Box 8300
2270 Trumble Road
Perris, CA  92572-8300

Attention: Engineering Department

Subject: Initial Water and Sewer Plans Submittal

I certify that the water and/or sewer plans prepared on __________________ are being submitted for plan check using the Eastern Municipal Water District water and sewer guidelines and the attached checklist. The plans are complete and meet EMWD criteria.

<table>
<thead>
<tr>
<th>We are providing you with the following:</th>
<th>Yes</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 sets of the water and/or sewer plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of grading plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of street plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 print of the record map</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of conditions of approval, including fire flow requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sincerely,

_________________________________________________
, Registered Civil Engineer
Plan Check Checklist

Title Sheet
☐ Water/Sewer Notes
☐ Time Limitation
☐ Notifications
☐ Certification
☐ Engineer’s Stamp & Signature
☐ Typical Lot

Index Map
☐ Scale, North Arrow, Sheet Ref.
☐ Vicinity Map
☐ Implementing Facilities
☐ Quantities
☐ Legend
☐ Street Names, Lot Numbers
☐ Services, Laterals, Appurtenances
☐ Backwater Valves/Prs. Regulator Check
☐ Distance to Existing Cross Street
☐ Water & Sewer Facilities
☐ Force Account ‘Work’
☐ Pressure Zone

Plan & Profile
(Water & Sewer)
☐ Scale, North Arrow, Sheet Ref.
(No 1” = 8’ vertical scale allowed.)
☐ Utility Crossing Data
☐ Curve Data, Bearings, Tables
☐ Existing/Future Utility Reference

☐ Easements, ROW Info. Offsets
☐ Stationing, Matchlines, CL Equations
☐ Pipe Slopes
☐ Notation, Labeling, Pipe Types
☐ Services/Laterals
☐ EMWD Symbology
☐ Existing Finish Surface
☐ Force Account ‘Work’

Water
☐ Valving
☐ Air Valves, Blow-offs, Fire Hydrants
☐ Joint Restrainted Limits (on profile)
☐ Grade Breaks/Deflection Angles
☐ Backflow Devices (if required)
☐ High Deflection Coupling (if required)

Sewer
☐ Manhole Spacing
☐ Manhole Inverts (match soffits), Rim El.
☐ Manhole Numbering
☐ Lateral Clearances
☐ Special Bedding
☐ Backwater Valves (BW)
☐ Cut-to-Fill Note

Project: _____________________________
Date: _____________________________
Engineer: ___________________________
EASTERN MUNICIPAL WATER DISTRICT

OVERTIME AUTHORIZATION FORM
DEVELOPMENT PROJECT

Date: ________________

I authorize EMWD’s project engineer to work overtime to complete:

☐ Plan of Service  ☐ Plan Check

For the following project: ________________________________

I understand that this authorization doesn’t mean that my project will be moved ahead of other projects already assigned to the project engineer or that the Plan Check process will be completed in a specific amount of time.

________________________________________
Developer’s Representative
Name:
Title:
Company:

cc: Finance Dept
Attachments
GENERAL NOTES:

1. ALL WATER MAIN LARGER THAN 12\" GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE CML&C AND WATER MAIN 12\" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE WILL BE PVC PER CASE I OR CML&C PER CASE II, UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE 20 FEET MINIMUM WITH NO JOINTS CENTERED ALONG THE PIPELINE OR STRUCTURE IT CROSSES. THE WATER MAIN MUST BE EXTENDED FROM EACH SIDE OF THE PIPELINE OR STRUCTURE A MINIMUM OF FIVE FEET (5') HORIZONTAL CLEARANCE FROM THE EDGE OF THE PIPELINE OR STRUCTURE TOWARD THE BENDS.

3. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST HAVE CONTROL DENSITY FILL (CDF) BETWEEN THE WATER MAIN AND THE PIPELINE OR STRUCTURE IT CROSSES.

4. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST HAVE A MINIMUM OF ONE FOOT VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PIPELINE OR STRUCTURE IT CROSSES. A VERTICAL SEPARATION LESS THAN ONE FOOT WILL REQUIRE EMWD ENGINEER'S APPROVAL.

5. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE SHALL USE 45 DEGREE BENDS, UNLESS OTHERWISE APPROVED BY EMWD.

6. ALL PVC WATER MAIN 12\" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE C900 CLASS 200.

FOR CML&C PIPE, PROVIDE CTS STATION PER EMWD STD DWG B-660, B-661, & B-662 OR AS REQUIRED PER CORROSION REPORT RECOMMENDATION.

8. FOR CML&C PIPE, PROVIDE CORROSION REPORT RECOMMENDATION FROM A LICENSED CORROSION ENGINEER OR NACE CERTIFIED SPECIALIST.

9. ALL CML&C PIPE SHALL BE MANUFACTURED PER EMWD STANDARD SPECIFICATION 15059 AND 15061.

10. ALL CROSSINGS INVOLVING NON-POTABLE WATER SHALL ADHERE TO THE LATEST DEPARTMENT OF HEALTH SERVICES GUIDANCE MEMO: GUIDANCE CRITERIA FOR THE SEPARATION OF WATER MAINS AND NON-POTABLE PIPELINES.

11. ALL METALLIC FITTINGS AND PARTS SHALL BE COATED WITH WAX TAPE PER AWWA C-217 OR AS PER CORROSION REPORT RECOMMENDATION.
CASE I:

1. ALL WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE SHALL BE PVC C-900 CL-200 FOR CROSSINGS EXTENDING LESS THAN 20 FT AND SATISFIES GENERAL NOTE NO.2, UNLESS OTHERWISE APPROVED BY EMWD.

2. JOINT RESTRAINTS SHALL BE EBAA IRON 2000 SERIES OR APPROVED EQUAL.

CASE II:

1. ALL WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE THAT DOES NOT MEET THE CRITERIA FOR PVC PIPELINE WITH NO JOINTS UNDERNEATH THE PIPELINE INCLUDING THE 5 FOOT MINIMUM CLEARANCE PER CASE I SHALL USE CML&C CL.150 0.25" THICK, UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL JOINTS SHALL BE FULL WELD DOUBLE PASS.
CASE III:

1. ALL WATER MAIN CROSSINGS EXTENDING LESS THAN A HUNDRED FEET (100 FT) FROM CENTER LINE TO CENTER LINE OF PIPELINE(S) OR STRUCTURE(S) SHALL REMAIN UNDERNEATH PIPELINE(S) OR STRUCTURE(S), UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL PVC JOINTS MUST BE RESTRAINED WITH EBAA IRON 2000 SERIES OR APPROVED EQUAL.

3. ALL CML&C JOINTS MUST BE FULL WELD DOUBLE PASS.

CASE IV:

1. PVC C-900 CL200 12" AND SMALLER MAY BE USED FOR MULTIPLE CROSSINGS AS LONG AS IT MEETS THE 5 FOOT MINIMUM CLEARANCE PER GENERAL NOTE NO. 2, UNLESS OTHERWISE APPROVED BY EMWD.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/31/2013</td>
<td>Potable Water Sample Station</td>
<td>B-935</td>
</tr>
<tr>
<td>12/19/2013</td>
<td>1&quot; Copper Tubing Service Connection</td>
<td>B-590A</td>
</tr>
<tr>
<td>3/5/2014</td>
<td>Reduced Pressure Backflow Preventer Assy for 3/4&quot; - 2&quot;</td>
<td>B-597A</td>
</tr>
<tr>
<td>3/5/2014</td>
<td>Reduced Pressure Backflow Preventer Assy for 2 1/2&quot; - 3&quot;</td>
<td>B-597B</td>
</tr>
<tr>
<td>3/5/2014</td>
<td>Reduced Pressure Backflow Preventer Assy for 4&quot; - 10&quot;</td>
<td>B-597C</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-342</td>
<td>B-342</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-344</td>
<td>B-344</td>
</tr>
<tr>
<td>10/30/2014</td>
<td>Drawing Revision B-342A</td>
<td>B-342A</td>
</tr>
</tbody>
</table>
EMWD GUIDELINES FOR WATER SYSTEM PLANS

This plan checklist is a general guide to assist Consulting Engineers in the design and drafting of water plans. Contact our Engineering Department concerning any exceptions; in order to prevent unnecessary plan revisions. Please note that if both water and sewer are required, both are to be delineated on one set of 24" x 36" drawings. Engineers to provide:

1. Approved plan of service summary spreadsheet.
2. Print of record map; (2 sets). Note: If landbase is on a computer system, refer to specification for digital submission of plans.
3. Street improvement plans and grading plan (prints - 1 set each).
4. Conditions of approval, including fire flow requirements (1 copy).
5. Water improvement plans – prepared by registered engineer (2 sets).
6. A corrosion report prepared by a corrosion engineer that includes specific recommendations for protection of metallic pipes (if applicable).
7. Copy of index map sheet with initial submittal.
8. 11" x 17" copy of index map sheet with submittal of final mylars.
9. Cover letter signed with plan check list by registered civil engineer. (See pages 16 & 17).
10. Plan check fee deposit.
11. Authorization for overtime forms if applicable (See page 18).

A. Title or Cover Sheet

1. Index map that shows water system and sewer system, if any. (See example on page 15). Do not show storm drain facilities as part of the index map. Index map can be shown on sheet 2 if it will not fit on title sheet.
   a. Piping system; size and type.
   b. Line valves and air valves.
   c. Fire hydrants, blow-offs, ITC stations and fittings, etc.
   d. Existing water lines with corresponding EMWD drawing number; shown dashed.
e. Water lines dashed and shown “proposed per Tract No. _____”
   Planned or constructed by other projects but not yet accepted by
   EMWD.

f. Sheet number references to plan-profile drawing.

g. Services schematically showing approximate location on lot frontage
   and to which line it is connected.

h. Tie to existing Cross Street with distance.

i. All notes specifying work to be done by EMWD at developer's
   expense.

(Do not show storm drain facilities as part of the index map).

2. General Notes and Requirements – County/City required notes only. (Do
   not include notes that conflict with EMWD required notes).


4. EMWD Notes (only) – See attached pages 7 through 9.

5. Water Certification (tracts only) – See attached page 10.


9. Estimated of Quantities; items such as pipe, valves, air valves, fire
   hydrants, blow-offs and water services, etc. (on sheet with index map).

10. EMWD Approval Block (water and sewer, if applicable) – See page 12.

11. Project Vicinity Map (on sheet with index map).

12. List of Implementing Facilities (on sheet with index map).

13. Pressure Zone (on sheet with index map).

14. Minimum letter height is 0.08” (all sheets).

15. Valves, hydrants, etc. should be a large enough scale so as to be clear
   & obvious.

B. **Water Plan and Profile Pipeline**

   1. Plan and Profile Example – See attached pages 13 and 14.
   2. Stationing shall correspond with street centerline.
   3. Pipe size – diameter in inches.
4. Pipe type – i.e., CML&C, DI, PVC C-900 with class of pipe, etc.

5. Pipe location – 7' off the curb face in the street on the south or west side of the street.

6. Pipe depth – 4' cover over the top of the pipe, drawn to scale in profile.

7. Pipe slopes and C.G. (center grade) elevations, and stationing at all grade breaks to be shown in profile in decimal format (ex: s=0.0040). Show top and bottom of pipe in profile for sizes 16" and larger.

8. Show weld limits on CML&C steel pipe and restrained joint limits on PVC and Ductile Iron pipe by dimensions and stations in profile view at appropriate design locations.

9. Minimum 10’ horizontal clearance required between water and sewer mains (edge to edge).

10. Water pipeline crossings over sewer mains must have 1' of vertical clearance between bottom of water and top of sewer main. When there is no alternative except for sewer to go over water, special conditions will be required per California Department of Health Services.

11. Scale and North Arrow:
   All sheets to have same scale: Horizontal @ 1" = 40' to have Vertical @ 1" = 4 ft.; Horizontal @ 1" = 50' to have Vertical @ 1" = 40'; exceptions must have EMWD approval prior to submission of plans for review. Vertical scale 1" = 8 is not acceptable. North arrow pointing down is not acceptable.

12. Storm drain to be profiled, dashed and labeled.

C. **Valves**
   1. RSGV valves must be used throughout the system.

   2. Show Valve symbols in plan view only.

D. **Fire Hydrants** – Show proper fire hydrant symbol in plan only. Show stationing and standard drawing number for each hydrant on plan only. For commercial and industrial projects, super fire hydrants must include James Jones Hydrant Check Valve.

E. **Blow-offs**
   1. Use a blow-off at the end of all lines that will not be extended in the future where no fire hydrant exists (such as cul-de-sacs).

   2. A blow-off is required between two valves along a pipe length where no fire hydrant exists.
3. Use Temporary Blow-off B-561 for steel pipe and B-568 for PVC and ductile iron pipe at ends of lines that will be extended in the future.

F. **Air Valves** – An air valve is required at high points in the water line wherever pipe grade changes from an “uphill” slope to a “downhill” slope. Show an air valve symbol in plan. Station air valve in plan and profile with standard drawing number: 1” AV for pipe sizes 8” thru 12”; 2” AV for pipe sizes larger than 12” thru 30”; pipe sizes above 30” must be calculated.

G. **Fittings** – Call out all tees in plan view; specify size, type and stationing. Fittings for horizontal angle points to be called out in plan view. Fittings for vertical grade breaks to be called out in profile view.

H. **Restraint System** – When required, anchorage shall be provide by means of double pass, full welds of all steel pipe joints, restraint fittings for plastic (PVC) pipe or ductile iron pipe. The use of concrete anchorage in lieu of restrained joints will not be allowed.

I. **Utility Crossings** – Show caution note designating type, size and stationing of the utility line wherever it crosses a water main. In note, also include top or bottom elevation of utility line and water main at minimum vertical crossing point. Where a minimum crossing separation is obtained, label on profile between utilities “CDF per EMWD specs”.

J. **Connection of a Proposed Steel Water Line to an Existing Steel Water Line** that has been in the ground longer than one year, requires an insulating test connection shown as ITC per EMWD standard B-660.

K. **Water Service** – Show symbol on plans and station any meter that is not to be installed as typical. Alternative is to designate as “field-located”. Show service on “Index Map”.

L. **Pad Elevation** – Show the pad elevation of each lot on plan view.

M. **Easements** – Waterlines in easements are allowed only upon prior approval by District, prior to plan submittal. Provide easement description and plats where required. Minimum width is 30’ for 8” and smaller; 40’ minimum for 12” and larger with water in center of easement. Show and label easements on index map and plan view of improvement plans. For commercial and industrial projects, easements must be recorded before approval of plans.

N. **Index to Commonly Referenced Water Standard Drawings**

<table>
<thead>
<tr>
<th>A-492</th>
<th>Valve Cap and Riser</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-530</td>
<td>Anchor Block (Vertical Bend Only)</td>
</tr>
<tr>
<td>A-540</td>
<td>Emergency shower &amp; Eyewash</td>
</tr>
<tr>
<td>B-255</td>
<td>Installation of Vertical Gate Valves (Steel Pipe 14” &amp; Larger; ACP, PVC &amp; DI Pipe 4” &amp; Larger)</td>
</tr>
</tbody>
</table>
B-271  Saddle Outlets – ⅜ to 36”
B-286B  Trench Backfill
B-288  Steel Flanges, 4” to 54”
B-304  Butt Strap Details
B-342  1 1/2” Multi-Jet Meter Service Connection – 1 ½” Copper
B-342A  1 1/2” Copper Service Connection
B-344  2” Copper Service Connection with Meter
B-344A  2” Copper Service Connection
B-351  6” x 1-2 ½” Blow Off Installation (Steel Pipe)
B-356  6” x 2-1/2” & 1-4” Fire Hydrant Installation (Steel Pipe)
B-357  6” x 1-2 ½” Blow-off Installation for ACP, PVC & DI Pipe
B-362  6” x 1-2 ½” & 1-4” Fire Hydrant Installation for ACP, PVC & DI Pipe.
B-367  2” Air Valve Installation
B-387  6” x 1-2 ½ & 1-4” Fire Hydrant Installation (City of Hemet Steel Pipe)
B-388  6” x 1-2 1/2” & 1-4” Fire Hydrant Installation (City of Hemet – ACP, PVC & DI Pipe)
B-407  Thrust Block Installation for Hub-End Pipe
B-408  Water Pipe Installation and concrete Cap Detail for ACP, PVC & DI Pipe
B-414  Water Pipeline End Plug Installation for AC Pipe
B-516  6” x 2-2 ½” x 1-4” Fire Hydrant Installation (Steel Pipe)
B-517  6” x 2-2 ½” x 1-4” Fire Hydrant Installation for ACP, PVC & DI Pipe
B-533  Telemetry Wire & Terminal
B-561  4” x 1-2 ½” Blow-Off Temporary End Installation (Steel Pipe)
B-566  6” x 2-2 ½” x 1-4” Fire Hydrant Installation (City of Hemet, ACP, PVC & DI Pipe)
B-567  6” x 2-2 ½” x 1-4” Fire Hydrant Installation (City of Hemet – Steel Pipe)
B-568  6” x 1 - 2 1/2” Blow Off Temporary End Installation for ACP, PVC & DI Pipe
B-575  Steel Pipe Casing Water Pipeline
B-577  Installation of Butterfly Valves
B-580  1" Air Valve Cover Assembly
B-590  5/8" Meter Service Connection, 1" Copper Tubing
B-590A 5/8" Service Connection, 1" Copper Tubing
B-591  1" Meter Service Connection, 1" Copper Tubing
B-591A 1" Service Connection, 1" Copper Tubing
B-597  Backflow Prevention Assembly Installation Diagram
B-598  1" Air Valve Installation, 1" Copper Tubing
B-633  3" Meter Installation
B-634  4" Meter Installation
B-635  6" Meter Installation
B-636  8" Meter Installation
B-638  Steel Cylinder Pipe - Field Joint Details Welded & Bonded Rubber Gasket
B-645  6" x 1 - 2 1/2" & 1 - 4" Fire Hydrant Installation (City of San Jacinto, ACP, PVC & DI Pipe)
B-650  6" x 2 - 2 1/2" x 1 - 4" Fire Hydrant Installation (City of San Jacinto, ACP, PVC & DI Pipe)
B-651  6" x 2 1/2" x 1 - 4" Fire Hydrant Installation (City of San Jacinto, Steel Pipe)
B-653  6" x 1 - 4" Blow-Off Installation - Saddle Tangent Outlet - Steel Pipe
B-654  10" x 12" Detector Meter with 6" Compound Bypass
B-656  Locator Wire Installation
B-657  4", 6", 8" or 10" Double Check Detector Assembly & Reduced Pressure Detector Assembly
B-658  Service Connections 1" through 4" on Water Appurtenance Lateral or Watermain 16" or Larger
B-659  Air Test Details
B-660  Test Stations: Insulated Joint and Insulated Joint at Valve
B-661  Thermite Weld Details
B-662  Test Stations: Line Current, Basic & Pipe with Casing
B-663  Standard Restraint Tee, Dead End, Bend for PVC C-900 & C-905
B-665  Guard and Marker Posts
O. **Notifications**

Engineer shall include the following notes:

At least 48 hours prior to commencing construction, Contractor shall notify:

1. Eastern Municipal Water District.
   
   Field Engineering Department, (951) 928-3777, ext 4830

2. Permit Agency (Engineer to select agency).
   
   a. Riverside County Road Department
      (951) 955-6885
   
   b. City of Hemet – (951) 765-2360
   
   c. City of San Jacinto – (951) 654-7337
   
   d. City of Moreno Valley – (951) 413-3350
   
   e. City of Temecula – (951) 694-6400
   
   f. City of Perris – (951) 943-5003
   
   g. City of Murrieta – (951) 698-1040

3. Underground Service Alert (USA) – 1(800) 227-2600 or 811

4. All other affected agencies that are not members of USA. (Engineer to provide names and phone numbers of agencies).

P. **EMWD Water Notes**

Use only those notes and standards determined appropriate by EMWD.

**Detailed Requirements:**

(List on waterline layout for subdivision improvements and on front sheet of the construction plans where they are not the same).

1. Water pipeline and appurtenant construction shall be in accordance with EMWD standards and specifications.)
2. Prior to construction of pipeline, contractor shall expose existing water system and verify its existing elevation and location.

3. Where sewers have been constructed by agencies other that EMWD, contractor shall verify sewer lateral locations prior to excavation for water pipeline. In the event sewer laterals are found to be at a depth less than in accordance with EMWD sewer standards, (for City of Hemet, refer to City of Hemet Std. No. 201) water pipeline contractor shall adjust water pipeline depth as directed by the Engineer to cross over the sewer lateral if possible, to provide 36" minimum cover to finish road grade; otherwise, cross under the lateral, which requires special construction.

4. All service connections shall be 1" services x 5/8" meters, unless otherwise noted; and shall be located as shown on the plans and adjusted as necessary to miss driveways. Water service assemblies shall be installed in accordance with Std. Dwg. B-590, type "A", "B" or "C" (select appropriate). (Engineer shall list other sizes and drawings when appropriate). Adjoining lot meter boxes shall be placed together at property line.

5. Air valve assemblies shall be installed in accordance with Std. Dwg. B-598 (Select appropriate Type "A", "B", "C" or "D").

6. Water system profile elevations are to centerline (center grade) of pipe.

7. Approved Reduction Pressure Backflow Prevention Device (B-597) required for all industrial, commercial, apartment complexes and landscape services.

8. Install locator wire over water main per Std. Dwg. B-656.

Add for CML&C Pipe Systems:

9. Blow-off Assemblies shall be installed in accordance with Std. Dwg. B-351.

10. Temporary Blow-off Assemblies shall be installed in accordance with St. Dwg. B-561.

11. Fire hydrant Assemblies shall be installed in accordance with Std. Dwg's.

12. All steel cylinder pipes shall be bonded at rubber gasket joints in accordance with Std. Dwg. B-638.

13. All designated pipeline welds shall be full weld double passes at each pipe joint within designated weld length limits.

14. Shop drawings for CML&C shall be submitted and approved by EMWD prior to fabrication.

15. All CML&C Steel pipe shall be Class 150 except where noted otherwise. Pipe shall conform to AWWA specifications.
16. Add appropriate notes for corrosion protection per corrosion report.

Add for all PVC and DI Pipe Systems:

17. Fire Hydrant Assemblies shall be installed in accordance with Std. Dwg's. B-362, B-388, B-517, B-645 and B-650. (Select appropriate standards and color code).

18. Blow-off Assemblies shall be installed in accordance with Std. Dwg. B-357.


Add for PVC Pipe Systems:

20. All PVC pipe through 12 inch shall be type C-900, DR 18, except where noted otherwise. Pipe shall conform to AWWA specifications. 18” and larger should be C-905, Class 235.

21. Fittings for PVC pipe shall be Ductile or Gray iron. Fittings shall be flanged, bolted mechanical joints, or push-on joints, and shall be cement mortar lined and tar (seal) coated per EMWD standards and specifications.

22. All ductile or gray iron fittings shall be polyethylene encased at the time of installation per EMWD standards and specifications.

23. A Joint Restraint Device shall be used on all main line pipe joints within specified limits and all joints or water appurtenance laterals off main line, per EMWD Std. Dwg. B-663.

Add for Ductile Iron Pipe Systems:

24. Ductile iron pipe shall be tar (seal) coated and cement mortar lined with bolted mechanical or push-on joints.

25. All ductile or gray iron pipe and fittings shall be encased at the time of installation with polyethylene encasement in accordance with ANSI/AWWA C105.

26. Add appropriate notes for corrosion protection per corrosion report.

27. Joint Restraint Devices shall be used on all main line pipe joints within specified limits and all joints of water appurtenance laterals off main line, per EMWD standards and specifications.

Add for AC Pipe;
28. Removal of ACP pipe and appurtenances shall be done by contractor licensed to handle hazardous material. Disposal shall be in accordance with State and Federal Law.

Add for Potable Sampling Station;

29. Potable sampling station (PSS) shall be installed in accordance with STD. DWG. B-935.

Q. **Water Certification**

I certify that the design of the water system in Tract No.__________ is in accordance with the water system expansion plans of the Eastern Municipal Water District, and that the water service, storage and distribution system will be adequate to provide water to such tract. This certification does not constitute a guarantee that it will supply water to such tract at any specific quantities, flows or pressure for fire protection or any other purpose.

**EASTERN MUNICIPAL WATER DISTRICT**

By; ____________________________

Civil Engineer of Subdivision Date:

R. **Time Limitations**

The time limit on drawing(s) approval shall be six (6) months from the date on the certification. If construction has not commenced within stated time, EMWD requires drawing(s) to be reviewed by the Developer/Design Engineer and resubmitted to EMWD for possible changes in Master Planned sizing and changes in specifications and standards.
NOTE: PLEASE MAKE BLOCKS LARGE ENOUGH THAT THE APPROPRIATE INFORMATION WILL FIT WHEN FILLED IN

<table>
<thead>
<tr>
<th>COUNTY (CITY) OF &quot;X&quot;</th>
<th>I.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S.A.</td>
</tr>
<tr>
<td>TRACT NO. &quot;X&quot;</td>
<td>W.O.</td>
</tr>
<tr>
<td>SEWER, WATER, RECYCLED WATER PLAN AND PROFILE</td>
<td>C.O.</td>
</tr>
<tr>
<td>TITLE SHEET (OR)</td>
<td>COORD.</td>
</tr>
<tr>
<td>INDEX MAP (OR)</td>
<td>SHT. OF</td>
</tr>
<tr>
<td>&quot;STREET NAME&quot;</td>
<td>D -</td>
</tr>
</tbody>
</table>

TITLE BLOCK

WATER / SEWER / RECYCLED WATER / APPROVED BY:
EASTERN MUNICIPAL WATER DISTRICT

CIVIL ENGINEER OF SUBDIVISIONS

<table>
<thead>
<tr>
<th>APPROVALS</th>
<th>PROJECT ENG.</th>
</tr>
</thead>
</table>

APPROVAL BLOCK

12
STAGECOACH DR.

EXIST M.H. NO. 12 (SD-112345)
INSTALL NEW INLET INTO
EXISTING MANHOLE

MATCHLINE

SEE SHEET 4
EXAMPLE OF INDEX MAP
WITH CALL OUTS AND SYMBOLS LEGIBLE

OPER. 12" WATER
PER D-13118

MENIFEE LAKES
GOLF COURSE
MAINTENANCE
BUILDING
Date: ______________________

Eastern Municipal Water District
P.O. Box 8300
2270 Trumble Road
Perris, CA  92572-8300

Attention: Engineering Department

Subject: Initial Water and Sewer Plans Submittal

I certify that the water and/or sewer plans prepared on _________________ are being submitted for plan check using the Eastern Municipal Water District water and sewer guidelines and the attached checklist. The plans are complete and meet EMWD criteria.

<table>
<thead>
<tr>
<th>We are providing you with the following:</th>
<th>Yes</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 sets of the water and/or sewer plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of grading plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of street plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 print of the record map</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 set of conditions of approval, including fire flow requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sincerely,

__________________________, Registered Civil Engineer
Plan Check Checklist

Title Sheet
- Water/Sewer Notes
- Time Limitation
- Notifications
- Certification
- Engineer's Stamp & Signature
- Typical Lot

Index Map
- Scale, North Arrow, Sheet Ref.
- Vicinity Map
- Implementing Facilities
- Quantities
- Legend
- Street Names, Lot Numbers
- Services, Laterals, Appurtenances
- Backwater Valves/Prs. Regulator Check
- Distance to Existing Cross Street
- Water & Sewer Facilities
- Force Account 'Work'
- Pressure Zone

Plan & Profile
(Water & Sewer)
- Scale, North Arrow, Sheet Ref.
  (No 1" = 8' vertical scale allowed.)
- Utility Crossing Data
- Curve Data, Bearings, Tables
- Existing/Future Utility Reference
- Easements, ROW Info. Offsets
- Stationing, Matchlines, CL Equations
- Pipe Slopes
- Notation, Labeling, Pipe Types
- Services/Laterals
- EMWD Symbology
- Existing Finish Surface
- Force Account 'Work'

Water
- Valving
- Air Valves, Blow-offs, Fire Hydrants
- Joint Restrained Limits (on profile)
- Grade Breaks/Deflection Angles
- Backflow Devices (if required)
- High Deflection Coupling (if required)

Sewer
- Manhole Spacing
- Manhole Inverts (match soffits), Rim El.
- Manhole Numbering
- Lateral Clearances
- Special Bedding
- Backwater Valves (BW)
- Cut-to-Fill Note

Project: ____________________________
Date: ____________________________
Engineer: ____________________________
EASTERN MUNICIPAL WATER DISTRICT

OVERTIME AUTHORIZATION FORM
DEVELOPMENT PROJECT

Date: ________________

I authorize EMWD's project engineer to work overtime to complete:

☐ Plan of Service  ☐ Plan Check

For the following project: ________________________________

I understand that this authorization doesn’t mean that my project will be moved ahead of other projects already assigned to the project engineer or that the Plan Check process will be completed in a specific amount of time.

___________________________________________
Developer's Representative
Name:
Title:
Company:

c: Finance Dept
Attachments
GENERAL NOTES:

1. ALL WATER MAIN LARGER THAN 12" GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE CML&C AND WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE WILL BE PVC PER CASE I OR CML&C PER CASE II, UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE 20 FEET MINIMUM WITH NO JOINTS CENTERED ALONG THE PIPELINE OR STRUCTURE IT CROSSES. THE WATER MAIN MUST BE EXTENDED FROM EACH SIDE OF THE PIPELINE OR STRUCTURE A MINIMUM OF FIVE FEET (5') HORIZONTAL CLEARANCE FROM THE EDGE OF THE PIPELINE OR STRUCTURE TOWARD THE BENDS.

3. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST HAVE CONTROL DENSITY FILL (CDF) BETWEEN THE WATER MAIN AND THE PIPELINE OR STRUCTURE IT CROSSES.

4. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE MUST HAVE A MINIMUM OF ONE FOOT VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PIPELINE OR STRUCTURE IT CROSSES. A VERTICAL SEPARATION LESS THAN ONE FOOT WILL REQUIRE EMWD ENGINEER'S APPROVAL.

5. ALL WATER MAIN GOING UNDERNEATH PIPELINE OR STRUCTURE SHALL USE 45 DEGREE BENDS, UNLESS OTHERWISE APPROVED BY EMWD.

6. ALL PVC WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE MUST BE C900 CLASS 200.

FOR CML&C PIPE, PROVIDE CTS STATION PER EMWD STD DWG B-660, B-661, & B-662 OR AS REQUIRED PER CORROSION REPORT RECOMMENDATION.

8. FOR CML&C PIPE, PROVIDE CORROSION REPORT RECOMMENDATION FROM A LICENSED CORROSION ENGINEER OR NACE CERTIFIED SPECIALIST.

9. ALL CML&C PIPE SHALL BE MANUFACTURED PER EMWD STANDARD SPECIFICATION 15059 AND 15061.

10. ALL CROSSINGS INVOLVING NON-POTABLE WATER SHALL ADHERE TO THE LATEST DEPARTMENT OF HEALTH SERVICES GUIDANCE MEMO: GUIDANCE CRITERIA FOR THE SEPARATION OF WATER MAINS AND NON-POTABLE PIPELINES.

11. ALL METALLIC FITTINGS AND PARTS SHALL BE COATED WITH WAX TAPE PER AWWA C-217 OR AS PER CORROSION REPORT RECOMMENDATION.
CASE I:

1. ALL WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE SHALL BE PVC C-900 CL-200 FOR CROSSINGS EXTENDING LESS THAN 20 FT AND SATISFIES GENERAL NOTE NO.2, UNLESS OTHERWISE APPROVED BY EMWD.

2. JOINT RESTRANTS SHALL BE EBAA IRON 2000 SERIES OR APPROVED EQUAL.

CASE II:

1. ALL WATER MAIN 12" AND SMALLER GOING UNDERNEATH PIPELINE OR STRUCTURE THAT DOES NOT MEET THE CRITERIA FOR PVC PIPELINE WITH NO JOINTS UNDERNEATH THE PIPELINE INCLUDING THE 5 FOOT MINIMUM CLEARANCE PER CASE I SHALL USE CML&C CL.150 0.25" THICK, UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL JOINTS SHALL BE FULL WELD DOUBLE PASS.
CASE III:

1. ALL WATER MAIN CROSSINGS EXTENDING LESS THAN A HUNDRED FEET (100 FT) FROM CENTER LINE TO CENTER LINE OF PIPELINE(S) OR STRUCTURE(S) SHALL REMAIN UNDERNEATH PIPELINE(S) OR STRUCTURE(S), UNLESS OTHERWISE APPROVED BY EMWD.

2. ALL PVC JOINTS MUST BE RESTRAINED WITH EBAA IRON 2000 SERIES OR APPROVED EQUAL.

3. ALL CML&C JOINTS MUST BE FULL WELD DOUBLE PASS.

CASE IV:

1. PVC C-900 CL200 12" AND SMALLER MAY BE USED FOR MULTIPLE CROSSINGS AS LONG AS IT MEETS THE 5 FOOT MINIMUM CLEARANCE PER GENERAL NOTE NO. 2, UNLESS OTHERWISE APPROVED BY EMWD.