



January 7, 2019

Attention: IRWD Construction Manual Holders

Subject: IRWD Construction Manual 2019

This letter provides notice of revisions made to the Irvine Ranch Water District (IRWD) Construction Manual. IRWD made minor modifications to all of the Standard Drawings and substantive changes to several Standard Drawings and General Technical Specifications.

Holders of the IRWD's Construction Manual (Standard Drawings and General Technical Specifications) should completely replace the 2017 Construction Manual with the 2019 Construction Manual.

The latest Standard Drawings and General Technical Specifications can be accessed by going to <http://www.irwd.com>, clicking "Engineering" under the "Doing Business" tab. At the "Engineering" page, the "Construction Manual" link can be selected. You can also select or type in the address below:

Construction Manual:

<http://www.irwd.com/images/pdf/doing-business/engineering/IRWDConstructionManualJan2019.pdf>

Numerous minor changes to the Standard Drawings are included in the Construction Manual Update. Substantive changes include the following:

W-1 – 1" Copper Service

- Add note: "Meter shall not be located within any concrete surface."
- Add note: "Meter shall not be located within any path of travel, including but not limited to, access roads, sidewalks, trails, or driveway approaches."
- Add new note: "Gasket between customer service insulating ball valve and IRWD-maintained meter shall be owned and maintained by customer."
- Add IRWD / Customer ownership delineation.
- Delete "Sidewalk or landscape" callout.
- Add the following requirements under Item 4 – Customer Service Insulating Ball Valve:
"1. Located on customer side of meter. 2. Installed per IRWD specifications. 3. Purchased from IRWD. 4. Owned and maintained by customer."

W-2 – 2" Copper Service

- Add note: "Meter shall not be located within any concrete surface."

- Add note: “Meter shall not be located within any path of travel, including but not limited to, access roads, sidewalks, trails, or driveway approaches.”
- Add new note: “Gasket between customer service insulating ball valve and IRWD-maintained meter shall be owned and maintained by customer.”
- Add IRWD / Customer ownership delineation.
- Delete “Sidewalk or landscape” callout.
- Add the following requirements under Item 4 – Customer Service Insulating Ball Valve: “1. Located on customer side of meter. 2. Installed per IRWD specifications. 3. Purchased from IRWD. 4. Owned and maintained by customer.”

W-3 – 1” or 2” Service Connection for PVC

- Sheet 1: visual update.
- Sheet 1: delete “brass” from Item 1 description.
- Sheet 1: delete “2 each side – type 31 stainless steel saddle bolts and nuts” and replace with “2 bolts each side for 8” dia. pipe and smaller, 1 bolt each side for 10” and 12” dia. pipe.” in Item 4.
- Sheet 4: visual update.
- Sheet 5: visual update.

W-4 – 1” or 2” Service Manifold

- Add note: “When mainline is oriented at a 90 degree angle, an end of line flush-out shall be required per IRWD Std. Dwg. W-13.”

W-5 – Meter Assembly

- Correct text cut-off for Items 30 and 31.
- Increase setback from 24” min. to 36” min. and update note 4 to reflect 36”.
- Delete access hatch note on Sheets 1, 2, 3 and 4.
- Sheet 4: relocate Item 28 in Section B-B to other side of vault.

W-6 – Double Check Backflow Assembly

- Add “or path of travel” to Note 3 on Sheets 1 and 2.
- Sheet 2: add “a D.I. MJ x FL valve setter may be provided in lieu of thrust block, subject to approval by District” to Item 9.

W-7 – Reduced Pressure Backflow Assembly

- Sheet 1: delete “unless a variance is obtained from IRWD prior to installation” from Note 6.
- Add “or path of travel” to Note 3 on Sheets 2 and 3
- Sheet 1: update IRWD / Customer ownership requirements.
- Sheet 3: add “a D.I. MJ x FL valve setter may be provided in lieu of thrust block, subject to approval by District” to Item 9.

W-8 – Fire Hydrant

- Add Item 2 (a dedicated concrete pad) to condition 1 (when placed in the sidewalk).

W-9 – Recycled Water Wharf Head Hydrant

- Add stainless steel break-away bolts to Item 10.

W-10 – Water Sample Station

- Add “or path of travel” to Note 5.

W-11 – 1” or 2” Air Release and Vacuum Relief

- Add pipe spool to provide adequate space for butterfly valves (6” min.).
- Add “brass” to lever handle and “AWWA” to valve to all sheets.
- Sheets 1 and 2: update Item 9 to 1” or 2” service “connection”.
- Sheets 3 and 4: provide 6” pipe spool after butterfly valve.

W-14 – Blowoff/Bottom Drain Assembly

- Delete “for main lines less than 24” in dia., valve shall be installed 12” from outlet flange as shown above” from Note 2.
- Adjust 12” leader to extend to flange instead of valve can as shown
- Remove reference to vault option (16” lateral size no longer provided).
- Update material descriptions to reflect range of lateral and riser sizes.

W-15 – Pressure Regulating Station

- Update drawing to show 24” separation from face of curb as described in Note 3.
- Add “min.” to the 3” PRV size in the table.
- Changes to conduits on Sheets 4, 5, 6, and 7.

W-16 – Thrust Block

- Sheet 1: Label horizontal table.
- Sheet 1: Add “block” to vertical bend anchor table.
- Sheets 1 and 2: delete 16” and 18” pipe size options, thrust for this size pipe and larger shall be accounted for by the engineer of record.
- Sheet 3: add Note 11: “For pipelines larger than 12” in dia., the engineer shall calculate thrust block size based on project specific soil conditions and shall submit the calculations to the District for approval.”
- Sheet 3: add Note 12: “Mechanical thrust restraints shall be provided in lieu of thrust or anchor blocks if the bearing face of the thrust or anchor block may be disturbed at any point after construction or during construction of other facilities.”
- Sheet 3: add Note 13: “Where mechanical thrust restraints are provided, the engineer shall calculate the required length of restraint along the pipeline alignment and shall submit the calculations to the District for approval.”
- Sheet 3: add Note 14: “Ductile iron pipe joint fittings shall be mechanically restrained at all vertical bends. Vertical bend anchor blocks shall only be provided where approved by District.”

W-18 – Water and Sewer Separation Standards

- Delete drawing and defer to DDW standards only.

W-20 – Mortar Lined and Coated Steel Pipe Joints

- Sheet 1: revise Item 5 from 2" x 2" W.W.M. to 2" x 4" W.W.M.
- Sheet 1: delete handhole Note 4.
- Sheet 2: revise Item 2 from 2" x 2" W.W.M. to 2" x 4" W.W.M.

W-21 – Steel Casing for Water Pipe

- Revise Item 5 to 30" in dia. and larger casings.

W-22 – Valve Box

- Delete "lid cover" and replace with "box" in Note 3.
- Provide butterfly valve operator position orientation schematic.
- Add Note 7: "Valve and valve box shall not be located within a sidewalk under any condition."
- Add Note 8: "Street rehabilitation and/or asphalt overlay projects shall not interrupt the service function of any valves and emergency access shall be maintained at all times. Valves that are paved over during construction shall be raised to grade no later than three days after they were paved over."

W-23 – Valve Stem Extension

- Revise note 2 to terminate extension 48" from surface, instead of 36".

S-1 – Manhole

- Sheet 2: add to note 10: "Manholes shall not be located within concrete driveway aprons" and delete "without prior written approval."
- Sheet 2: add Note 16: "Street rehabilitation and/or asphalt overlay projects shall not interrupt the service function of any sewer manholes and emergency access shall be maintained at all times. Manholes that are paved over during construction shall be raised to grade no later than three days after they were paved over."

S-2 – Drop Manhole

- Delete drawing, no longer used.

S-3 – Sewer Lateral

- Add max slope = 10% to min slope text
- Revise Note 1 to read: "... nor less than 6" for multiple family residential or parks. Commercial, industrial, apartment and hotel buildings require a min. 8" dia. lateral connection.
- Add new Note 6: "Cleanout shall not be installed within sidewalks, walkways, concrete surface areas, or any path of travel".

S-4 – Cut-in WYE Connection

- Delete "per IRWD Std. Spec. Section 02715" from Item 1.

S-7 – Steel Casing for Sewer Pipe

- Revise Item 5 to 30" in dia. and larger casings.

CP-5 – Cathodic Protection Rectifier and Shunt Panel

- Update Myers Power Pedestal product to MEUG46IX-M100-316.

CP-6 – Test Box, Wiring and Identification Tags

- Include changes from December 2017 revision, primarily revising “CPTTEST” to CPTS.

G-4 – Retaining Wall

- Add new Note 1.B: “See Std. Dwg. W-15 for specific PRV station clearance requirements”.
- Add “the outermost edge of any” IRWD appurtenance to Note 1.A.

G-6 – Vault Sumps

- Revise the type 2 sump box dimensions to 18” x 18” from 12” x 12”.

Numerous changes were made to the General Technical Specifications. A track changes version of the updated specifications is available upon request. A list of the update sections are shown in the table below.

Construction Manual		
Specification No.	Description	Revision Date
02201	Earthwork and Grading	1/9/2019
02315	Jacked Casing	1/9/2019
02316	Open Trench Casing	1/9/2019
02578	Pavement Removal and Replacement	1/9/2019
02715	PVC Pipe and Fittings for Gravity Sewers	1/9/2019
03300	Concrete	1/9/2019
03345	Concrete Finishing, Curing, and Waterproofing	1/9/2019
03461	Precast Concrete Manholes and Bases	1/9/2019
03462	Precast Concrete Vaults and Meter Boxes	1/9/2019
05120	Structural Steel and Miscellaneous Metalwork	1/9/2019
09900	Painting and Coating	1/9/2019
15042	Hydrostatic Testing and Pressure Pipelines	1/9/2019
15043	Leakage and Infiltration Testing	1/9/2019
15056	Ductile-Iron Pipe and Fittings	1/9/2019
15076	Cement-Mortar Lined and Coated Steel Pipe	1/9/2019
15100	Manual Valves	1/9/2019
15151	Facilities Identification	1/9/2019
15162	Flexible Pipe Couplings and Expansion Joints	1/9/2019
16155	Low-Voltage Motor Control	1/9/2019
16443	Low-Voltage Switchboards	1/9/2019
17300	PLC’s and Programmable Operator Interfaces	1/9/2019
17350	Telemetry and Control Systems – Communications Equipment	1/9/2019

If you have questions or suggestions for revisions to either the Standard Drawings or the General Technical Specifications, please contact Joe McGehee, Chairman of the Standard Drawings Committee, at (949) 453-5542 or McGehee@irwd.com and Jacob Moeder, Chairman of the General Technical Specifications Committee, at (949) 453-5554 or Moeder@irwd.com.

Sincerely,

A handwritten signature in blue ink that reads "Kevin L. Burton". The signature is written in a cursive style with a large initial 'K' and a stylized 'B'.

Kevin L. Burton, P.E.

Executive Director of Engineering and Water Quality