



January 13, 2021

Attention: IRWD Construction Manual Holders

Subject: IRWD Construction Manual 2021

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

Holders of IRWD's Construction Manual (Standard Drawings and General Technical Specifications) should completely replace the 2019 Construction Manual with the 2021 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:

<https://www.irwd.com/images/pdf/doing-business/engineering/2021/IRWDConstructionManualJan2021.pdf>

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

All Drawings

- Revise signature block to reference Kevin Burton's updated title.

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

- Sheet 5: Correct misspelling in Item 1.

W-5 – Meter Assembly

- Sheet 1: Revise Note 6 to read: "Meters, flange insulating kits, nuts, bolts, and washers provided by IRWD."
- Sheet 1: Add Note 7: "See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination."
- Sheet 1: Add "See Note 7" to Item 23.

- Sheet 1: Add Item 32: 3M DBI-Sala wall mounted sleeve davit base, model #8518348. See IRWD Std. Dwg. W-15 Sheet 3 of 15.
- Sheet 2: Show 2% slope on Section A-A and Section B-B.
- Sheet 2: Revise Note 3 to read: “Meters, flange insulating kits, nuts, bolts, and washers provided by IRWD.”
- Sheet 2: Add Note 4: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 2: Add “See Note 4” to Item 23.
- Sheet 2: Add Item 36: 3M DBI-Sala wall mounted sleeve davit base, model #8518348. See IRWD Std. Dwg. W-15 Sheet 3 of 15.
- Sheet 3: Revise Note 6 to read: “Meters, flange insulating kits, nuts, bolts, and washers provided by IRWD.”
- Sheet 3: Add Note 7: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 3: Add “See Note 7” to Item 27.
- Sheet 3: Add Item 30: 3M DBI-Sala wall mounted sleeve davit base, model #8518348. See IRWD Std. Dwg. W-15 Sheet 3 of 15.
- Sheet 4: Show 2% slope on Section A-A and Section B-B.
- Sheet 4: Revise Note 3 to read: “Meters, flange insulating kits, nuts, bolts, and washers provided by IRWD.”
- Sheet 4: Add Note 4: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 4: Add “See Note 4” to Item 31.
- Sheet 1: Add Item 36: 3M DBI-Sala wall mounted sleeve davit base, model #8518348. See IRWD Std. Dwg. W-15 Sheet 3 of 15.

W-6 – Double Check Backflow Assembly

- Sheet 1: Add Note 7: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 1: Add “See Note 7” in Elevation and Plan View.
- Sheet 1: Replace “Test” with “3/4” in Note 5.
- Sheet 1: Remove extra DI spool not identified.
- Sheet 2: Add “For devices 4” and larger, omit reducing spools” to Item 12.
- Sheet 2: Revise 18” max / 12” min dimension to 24” max / 18” min.
- Sheet 2: Add Note 7: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 2: Add “See Note 7” in Elevation and Plan View.
- Sheet 2: Replace “Test” with “3/4” in Note 5.
- Sheet 2: Remove extra DI spool not identified.

W-7 – Reduced Pressure Backflow Assembly

- Sheet 1: Revise 12” min dimension to 6” min / 12” max.

- Sheet 2: Add Note 7: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 2: Add “See Note 7” in Elevation and Plan View.
- Sheet 2: Replace “Test” with “3/4” in Note 5.
- Sheet 2: Remove extra DI spool not identified.
- Sheet 3: Add Note 7: “See IRWD Std. Dwg. W-12 for temporary flush-out required to conduct hydrostatic testing and chlorination.”
- Sheet 3: Add “See Note 7” in Elevation and Plan View.
- Sheet 3: Replace “Test” with “3/4” in Note 5.
- Sheet 3: Revise 18” max / 12” min dimension to 24” max / 18” min.
- Sheet 3: Remove extra DI spool not identified.

W-8 – Fire Hydrant

- Replace “Stainless steel” with “CAD-plated” in Item 10.

W-9 – Recycled Water Wharf Head Hydrant

- Replace “Stainless steel” with “CAD-plated” in Item 10.
- Visual update: show Item 3 as P.O. x F.E. elbow.

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

- Sheet 1: Add “circumferentially” to Item 18.
- Sheet 1: Replace “valve” with “ball corp” in Note 5.
- Sheet 1: Add “per IRWD Std. Spec. Section 02223” to Note 6.
- Sheet 1: Delete “(ARI)” in the Title box and replace with “(PVC Pipe)”.
- Sheet 2: Add “circumferentially” to Item 23.
- Sheet 2: Replace “valve” with “ball corp” in Note 5.
- Sheet 2: Add “per IRWD Std. Spec. Section 02223” to Note 6.
- Sheet 2: Delete “(APCO AND VALMATIC)” in the Title box and replace with “(PVC Pipe)”.
- Sheet 3: Add “circumferentially” to Item 21.
- Sheet 3: Add “butterfly” in Note 5.
- Sheet 3: Add “per IRWD Std. Spec. Section 02223” to Note 6.
- Sheet 4: Update dimension in Case 3 to reference center of A/V enclosure.
- Sheet 4: Replace “Warning” with “Identification” in Item 27.
- Sheet 4: Add “circumferentially” to Item 27.
- Sheet 4: Add “butterfly” in Note 5.
- Sheet 4: Add “per IRWD Std. Spec. Section 02223” to Note 6.
- Sheet 4: Add “Pipe” in Title box.

W-12 – Temporary Flush-out Assembly

- Sheet 1: Visual update to show testing condition required for W-5, W-6, and W-7 installations. Piping now terminates above-grade and is intended to be temporary. If above-grade piping is not viable, then flush-out shall be constructed as a permanent installation.
- Sheet 1: Update table to remove 4” and 6” main line reference since it is covered on Sheet 2. Remove main line references larger than 30” since a temporary flush-out that large should not be left above-grade and a permanent installation should be utilized instead.
- Sheet 1: Delete Note 1 since steel would not be used on a temporary condition for smaller diameter pipe.
- Sheet 1: Add “circumferentially” to Item 13.
- Sheet 1: Revise Item 5 to show “F.E. x P.O.”
- Sheet 1: Add “for Main Lines 8” and Larger” to title box.
- Sheet 2: Visual update to show testing condition required for W-5, W-6, and W-7 installations. Piping now terminates above-grade and is intended to be temporary. If above-grade piping is not viable, then flush-out shall be constructed as a permanent installation.
- Sheet 2: Add “circumferentially” to Item 8.
- Sheet 2: Add “for Main Lines 6” and Smaller” to title box.

W-13 – Flush-out Assembly

- Sheet 1: Delete Item 2.
- Sheet 1: Identify F.E. x P.O. adapter (replaces Item 2).
- Sheet 1: Show lateral and riser piping the same size, update table to identify lateral and riser piping and add “Lateral” to Item 4 and “Riser” to Item 6.
- Sheet 1: Add “circumferentially” to Item 17.
- Sheet 1: Add “for Main Lines 8” and Larger” to title box.
- Sheet 1: Add Note 6: For temporary installations required for testing and filling main lines, omit gate valve, zinc anodes, and substitute 30” manhole frame and cover for 2” meter box per IRWD Std. Spec. Section 03462. Meter box shall be left 2” above finished grade.
- Sheet 2: Add “circumferentially” to Item 12.
- Sheet 2: Add “for Main Lines 6” and Smaller” to title box.

W-15 – Pressure Regulating Station

- Sheet 1: Add Item 27: 3M DBI-Sala wall mounted sleeve davit base, model #8518348. See IRWD Std. Dwg. W-15 Sheet 3 of 15.
- Sheet 1: Revise Items 22 and 23 to read W-15 (Sheet 4 of 15) instead of W-15 (Sheet 3 of 15).
- Sheet 2: Show 2% slope on Section A-A.
- Sheet 2: Delete ladder from Section B-B since it is not in the plan view of the section cut.

- Sheet 2: Delete Item 9 and replace with: 3M DBI-Sala wall mounted sleeve davit base, model #8518348. See IRWD Std. Dwg. W-15 Sheet 3 of 15.
- Sheet 2: Revise Items 10 and 11 to read W-15 (Sheet 4 of 15) instead of W-15 (Sheet 3 of 15).
- Sheet 3: Add new sheet 3 with wall mounted davit sleeve details and renumber existing sheet 3 to sheet 4.
- Sheet 4: Renumber existing sheet 4 to sheet 5.
- Sheet 4: Update sheet references to match new sheet 3 addition.
- Sheet 5: Renumber existing sheet 5 to sheet 6.
- Sheet 5: Update sheet references to match new sheet 3 addition.
- Sheet 6: Renumber existing sheet 6 to sheet 7.
- Sheet 6: Update sheet references to match new sheet 3 addition.
- Sheet 7: Renumber existing sheet 7 to sheet 8.
- Sheet 7: Update sheet references to match new sheet 3 addition.
- Sheet 8: Renumber existing sheet 8 to sheet 9.
- Sheet 9: Renumber existing sheet 9 to sheet 10.
- Sheet 9: Update sheet references to match new sheet 3 addition.
- Sheet 10: Renumber existing sheet 10 to sheet 11.
- Sheet 11: Renumber existing sheet 11 to sheet 12.
- Sheet 12: Renumber existing sheet 12 to sheet 13.
- Sheet 13: Renumber existing sheet 13 to sheet 14.
- Sheet 14: Renumber existing sheet 14 to sheet 15.
- Sheet 15: Delete sheet, information is provided on Sheets 3 and 6.

W-16 – Thrust Block

- Sheet 3: Add Note 15: “Concrete shall be mixed through a ready-mix or a batch type mixer. Refer IRWD Std. Spec. Section 03300 for additional requirements.”

W-20 – Mortar Lined and Coated Steel Pipe Joints

- Sheet 1: Revise “2” x 4”” in Item 5 to “2” x 2””.
- Sheet 2: Revise “2” x 4”” in Item 2 to “2” x 2””.

W-21 – Steel Casing for Water Pipe

- Visual update to show pipe restraints in profile and cross-section views. Show two wires to casing and two wires to metallic pipe to coincide with CP-3.
- Revise minimum casing sizes to accommodate OD of pipe restraints in steel casing schedule.
- Add “(omit 2 wires for non-metallic pipe)” to Item 9.

W-22 – Valve Box

- Revise callout 11 to read “10” on the Riser Piping Opening for Tracer Wire detail.

S-7 – Steel Casing for Sewer Pipe

- Visual update to show pipe restraints in profile and cross-section views. Show two wires to casing and two wires to metallic pipe to coincide with CP-3.
- Delete VCP data in steel casing schedule since this pipe material is not permitted to be jacked through a casing.
- Add “(omit 2 wires for non-metallic pipe)” to Item 3.

CP-3 – Casing Test Station

- Visual update to show one side of the casing and delete “4 wires (typ.)”.

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 is shown in the table below.

Construction Manual		
Specification No.	Description	Revision Date
02315	Jacked Casing	1/2/2021
02316	Open Trench Casing	1/2/2021
02578	Pavement Removal and Replacement	1/2/2021
02701	Installation of Gravity Sewer Pipelines	1/2/2021
02710	Vitrified Clay Pipe for Gravity Sewers	1/2/2021
02715	PVC Pipe and Fittings for Gravity Sewers	1/2/2021
03461	Precast Concrete Manholes and Bases	1/2/2021
05120	Structural Steel and Miscellaneous Metalwork	1/2/2021
09900	Painting and Coatings	1/2/2021
15041	Chlorination of Water Mains, Wells and Reservoirs	1/2/2021
15051	Installation of Pressures Pipelines	1/2/2021
15053	Carbon Steel Pipe and Fittings	1/2/2021
15056	Ductile-Iron Pipe and Fittings	1/2/2021
15057	Copper Pipe and Fittings	1/2/2021
15089	Combination Air Release and Vacuum Relief Valves	1/2/2021
15100	Manual Valves	1/2/2021
15139	Hydrants	1/2/2021
15162	Flexible Pipe Couplings and Expansion Joints	1/2/2021
16010	General Electrical Requirements	1/2/2021

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 'B'.

Kevin L. Burton, P.E.

Executive Director of Technical Services