## Pioneer Irrigation District - Standard Construction Notes

The following standard construction notes shall be included on plans for PID facilities. Note sections not applicable to a particular project maybe omitted.

IRRIGATION (PIONEER IRRIGATION DISTRICT – PID)

General

1. All work shall be in accordance with PID’s Standards and Standard Drawings, and current Idaho Standards for Public Works Construction.
2. The Contractor shall notify a designated PID observer 72 hours prior to commencing any site work.
3. A construction schedule shall be provided to PID at the pre-construction meeting.
4. All construction/installation within PID’s easements shall be completed between November 1st and March 1st of the following year.
5. PID reserves the right to postpone or halt construction on a project if the March 1st deadline is not achievable, or the integrity of the PID facility could be jeopardized by adverse construction techniques or conditions.
6. Existing PID facilities shall remain fully operational during realignment project construction. No abandonment of existing facilities and no connections to existing facilities shall be made until PID is satisfied with the replacement facilities.
7. All Contractors working on or installing irrigation facilities shall be licensed as Public Works Contractors in the State of Idaho for the type of irrigation construction involved.
8. The Contractor’s surveyor shall verify the existing flowline, top of bank, and toe of slope match the approved plans both horizontally and vertically. If discrepancies are found, construction may not commence until the improvement drawings have been revised and reviewed and approved by PID.
9. No dewatering discharge from construction sites shall be permitted into any PID irrigation delivery facility.

Pipe Installation

1. PID reserves the right to reject pipe of questionable quality due to age or exposure to sunlight or other adverse conditions.
2. Concrete pipe labeled non-air tested shall not be installed in PID delivery facilities.
3. Piping shall be laid with uniform slope and alignment between structures with the bell end upstream.
4. Pipe bedding shall be Class A-1 with public road right-of-way. Pipe bedding Class A-2 may be used outside public road right-of-way. Pipe bedding and trench backfill material shall conform to ISPWC Standard Drawing SD-302.
5. Trench backfill above that required to protect the pipe shall be placed in two (2) lifts and compacted sufficiently to preclude settlement. Mechanical compaction and/or water settling shall be used to compact backfill. Topsoil shall then be placed, compacted and graded.

Concrete Structures

1. Provide bentonite cut off walls at pipe ends and headwalls. Bentonite cutoff walls shall be 2-feet thick and keyed into native soil to 1-foot above the water surface elevation. Bentonite backfill shall be 50% bentonite with 50% fine grained native materials.
2. Irrigation boxes shall be cast in place reinforced concrete.
3. The outside diameter (O.D.) of all pipes shall be a minimum of 6-inches clear from the nearest inside corner of the concrete structure.
4. Pipes shall be installed flush with the inside concrete wall.
5. Structures shall be constructed with 6-inch sumps.
6. Waterstop shall be installed at all cold joints. Waterstop in floor/wall cold joints shall be 6-inch wide ribbed centerbulb PVC waterstop or a hydrophilic strip bentonite based waterstop Cetco RX102 for walls up to 6-inch thick and Cetco RX 101 for walls 8- inches and larger.
7. Rubber Pipe gaskets shall be placed around all pipe penetrations prior to concrete placement.
8. All joints shall be watertight.
9. backfill shall be compacted to 95% of standard proctor as determined by ASHTO T99 Method A. Soil backfill material shall meet the requirements of ISPWC Section 203 –Subsoil Types S3 or S4. Material shall be placed and compacted in 6-inch lifts.
10. Bolts for necessary check rails to attach gates shall be cast in place or shall not be installed via drilling and Redhead or expandable bolts or lags until the recommended cure period for the concrete mix design.
11. Check structures shall include rough cut check boards to the check height required.
12. Waterman C-10 canal gates or approved equal shall be used. Gates shall be installed in accordance with manufacturer’s requirements. Canal gate wheel height shall be a minimum of 2-7/8 inches above structure and a maximum of 12 inches above structure. Slide gates are not acceptable.
13. Structure lids in rights-of-way or ingress and egress easements shall be HS-25 wheel load rated. Structure lids outside of rights-of-way and ingress/egress easements shall be designed to withstand a 300 lb. point load with a maximum allowable deflection of ½ inch at center span and in accordance with the International Building Code.
14. Lids shall be expanded metal and provide access to control structures inside the box via hinged access ports. Lids shall be bolted in place with a minimum of 4 (four) bolts with the access port to allow unobstructed access to the downstream side of the structure without bolt removal. Lids shall have a chain ring near canal gates to secure gates with a chain. Bolts and chain rings shall be cast in place. Alternative methods of installing bolts, such as drilling, placement of Redhead or expandable bolts, may be allowed on a case by case basis, to be determined by PID. Alternative methods shall not be performed on concrete structures prior to the completed cure period for the concrete mix design. Canal gates shall be accessible without opening lid. All lids shall have a locking mechanism approved by PID. See PID Standard Drawing No. P-1210.

Inspection & Testing

1. All pipe shall be visually inspected by PID personnel and/or its engineer after all utility installation is complete and before any asphalt is placed. Any defects found during inspection shall be corrected and reinspected.
2. Unless waived by PID, the developer/landowner shall have all pipes smaller than 36 inches in diameter CCTV inspected. PID’s engineer shall be notified prior to the CCTV inspection and may choose to observe said inspection. Two DVDs and reports of the CCTV inspection shall be provided to PID’s engineer for review prior to final acceptance.
3. Unless waived by PID, PVC and gasketed RCP pipe shall be tested in accordance with ISPWC 501.3.4 after all utility installation is completed and before any asphalt is placed.
4. All trenches shall be left open for observation. Compaction testing shall be in accordance with ISPWC 306.3.3. Compaction testing is required for all gravity piping, including that to be located under private parking lots or private access roads.
5. PID’s engineer is required to observe all compaction testing, pressure testing, structures and trenches. A minimum of 48-hours advance notice to PID’s engineer is required.

Surface Restoration

1. The pavement shall be cut to provide clean, solid, vertical joints. Pavement cuts shall be made a minimum of twelve (12) inches away from any disturbed subbase. Whenever possible, cut lines shall be parallel to or at right angles to the street centerline.
2. Immediately before applying the tack coat, the surface to be treated shall be swept clean of all loose material, dirt, excess dust or other objectionable material. Tack coat application is prohibited when the surface is appreciably damp or when weather conditions are unsuitable.
3. Asphalt concrete used in conjunction with a project shall be furnished and placed in accordance with the current edition of the *ISPWC*.

Concrete Liner

1. Concrete liners shall be a minimum of 4-inches thick.
2. The concrete mix shall have a final minimum strength of 3,000 psi. Reinforcing fibers shall be added to the concrete mix at a minimum rate of 1.5 pounds per cubic yard of concrete. The individual fibers shall be 1/2 inch to 3/4 inch in length and shall be blended into the concrete mix according to the manufacturer’s specifications.
3. Control joints shall be 1/4” wide perpendicular to the centerline of the concrete lining, at a depth equal to one-third of the lining thickness with a uniform spacing not to exceed 12 feet.
4. Construction joints shall be the butt type, formed square with the lining surface and at right angles to the PID facility. Control and construction joints shall have smooth finishes.
5. AquaLastic®, AquaSeal™, or an approved equal shall be applied to all expansion joints to a minimum of 1 foot above high-water elevation. Areas to be coated or sealed shall be sandblasted and cleaned in accordance with manufacturer’s recommendations prior to applying coating.
6. Waterstop at cold joints and waterproofing products such as AquaLastic®, AquaSeal™, Xypex®, or approved equivalents may be required to seal the concrete liner as determined by the PID Board on a case-by-case basis.
7. Polypropylene coated manhole steps shall be installed in the concrete liner to create exit areas. Manhole steps shall be firmly embedded and shall withstand ASTM C-497 pullout testing. Steps shall be aligned vertically and spaced 12-inches vertically on center. Manhole steps shall be placed no greater than 16 inches from bottom of liner and no greater than 24 inches from top of liner.