

## **Section 36 - Standard Details**

A. Introduction – Standard Details have been developed to provide uniformity throughout HRSD. These details can be provided in electronic format. The FIRM must review all the Standard Details and select the ones that are appropriate for any given project. The FIRM must develop other details as required to incorporate into Bid Documents.

B. Listing of Standard Details – These standard details are available in AutoCAD format upon request. These listed Standard Details are included as PDF files in this manual.

1. Series 100: Miscellaneous

100	Standard Cover Sheet
101	Exterior Bollard Detail
102	Bollard Location Detail
103	Load Test Hinged Bank Box
104A/B	Flush Mount Groundwater Monitoring Well
105	Recovery Sheet Template

2. Series 200: Collection Systems and Appurtenances

200A/B	Precast Concrete Manhole with Extended Monolithic Base
201	Precast Concrete Shallow Manhole with Extended Base
202A/B	Sanitary Sewer Straddle Manhole
203	Connection into Existing Manholes
204	Manhole Invert Shaping
205	Precast Concrete or Brick Manhole Inside Gravity Drop Connection to Existing Manhole
206	Precast Concrete Outside Drop Manhole
207	Precast Concrete or Brick Manhole Inside Force Main Drop Connection to Existing Manhole
208	Precast Concrete Sanitary Sewer Manhole Adjustment
209	Manhole Insert
226	Service Lateral and Gravity Main Connection to Existing Stub-out
227	Standard Manhole Frame and Cover
228	Manhole Frame and Cover – Watertight
229A/B	Sanitary Sewer Lateral Installation
230	Sanitary Sewer Service Connection for New or Existing Gravity Mains
231	Sanitary Service Lateral Deactivation
232	Alternate Service Lateral Connection to Existing Gravity Sewer Main
233	Permanent Sewer Lateral Deactivation at HRSD Manhole
251	Sanitary Sewer Service Clean Out Frame and Cover (Non-Traffic Rated)
252	Sanitary Sewer Service Clean Out Frame and Cover (Traffic Rated)
276	Vacuum Air Intake Valve
277	Lateral Connection to Existing Vacuum Valve Pit
278	Vacuum System Division Valve

3. Series 300: Interceptors and Appurtenances
  - 300 Connection to Existing HRSD Valve (No Potential for Additional Development)
  - 301 Connection to Existing HRSD Valve (Additional Development is Possible)
  - 302 Connection to Existing HRSD Valve (Additional Development is Imminent)
  - 303 New Wet Taps (No Potential for Additional Development)
  - 304 New Wet Taps (Additional Development is Possible)
  - 305 New Wet Taps (Additional Development is Imminent)
  - 306A 2" Private Force Main Connection to Existing 2" HRSD Force Main Stub
  - 306B Valve Vault for 2" HRSD Valve
  - 306C Vault Lid for 2" HRSD Valve
  - 307 Lawnes Point Private Connection Detail
  - 308 Private Force Main to HRSD Asset
  - 309 New Grinder Pit Connection to Existing HRSD Force Main
  - 326 Horizontal Gate Valve
  - 327 Vertical Gate Valve
  - 328 Valve Box and Riser for Mainline Valve
  - 329 Valve Box and Riser for Bypass Valves
  - 330 Valve Riser Adjustment
  - 331A/B Roadside Ditch – Valve Box
  - 332 Tracer Wire Locator Box
  - 351 Manual Air Vent
  - 352A/B Air Release Valve Box Adjustment
  - 353 Roadside Ditch – Air Vent
  - 354 Air Vent Frame and Cover
  - 355 Standard Air Vent Detail for Future Automatic Air Release Valves
  - 376 Tapping Saddle for Cast Iron, Ductile Iron, Reinforced Concrete and PVC Pipes
  - 377 Tapping Saddle for Concrete Cylinder Pipe
  - 378A/B Steel Casing Detail
  - 379 Ductile Iron MJ Spigot to Concrete Transition Adaptor (Male)
  - 380 Ductile Iron MJ Spigot to Concrete Transition Adaptor (Female)
  - 381 Pressure Sensor Installation
  - 382 Concrete Cylinder Pipe Line-Stop Detail
  - 383 Ductile / Cast Iron Line Stop Detail
  
4. Series 400: Pump Stations and PRS
  - 400A/B Small Communities Sample Design Detail – Submersible Pump Station
  - 401A/B Underground Storage Tank
  - 402A/B Underground Fuel Tank
  
5. Series 500: Cathodic Protection for Pipes
  - 500A/B Cathodic Protection Test Station and Terminal Board Wiring
  - 501 Cathodic Protection Isolation Detail

- 502 Anode Test Station
  - 503 Monitoring Test Station
  - 504 Monitoring Test Station (with Riser)
  - 505 Isolation Flange Test Station
  - 506 Isolation Flange Test Station (with Riser)
  - 507 Anode Header Cable Splice – Wye Type
  - 508A Typical Thermite Weld Procedures on Bonding Plate
  - 508B Typical Royston Handy Cap IP™ Installation
  - 509 Isolating Flange Kit
  - 510 Typical Bonding Plate
  - 511 Copper Wire to Pipe Pin Brazing Procedures
  - 521 Ductile Iron Pipe Galvanic System AC Ground Mat
  - 522 Ductile Iron Pipe Galvanic System Insulating Corporation
  - 523 Ductile Iron Pipe Galvanic System Main Bonding
6. Series 600: Cathodic Protection for Buildings
- 600 Installation of Discrete Galvanic Anodes
  - 601 Installation of Distributed Galvanic Anodes
  - 602 Distributed Galvanic Anodes at Top of Wall
  - 603 Installation of Drilled-in Galvanic Anodes
  - 604 Conductive Mortar Bridge for use with High Resistivity Repair Mortars
  - 605 Typical Galvanic Anode Layout
  - 606 Typical Galvanic Anode Connections
  - 626 Removal of Unsound Concrete Typical Section
  - 627 Concrete Rebuild Typical Section
  - 628 Concrete Rebuild to Provide Minimum Cover Typical Section
  - 629 Removal of Unsound Concrete Typical Corner Section
  - 630 Concrete Rebuild Typical Corner Section
  - 631 Reinforcing Section Loss Table
  - 632 Lap Splice – Option 1
  - 633 Lap Splice Lengths – Option 1
  - 634 Mechanical Splice – Option 2 Typical Removal Section
  - 635 Mechanical Splice – Option 2 Typical Rebuild Section
  - 636 Weld Splice – Option 3
  - 637 Weld Splice Details A – Option 3
  - 638 Weld Splice Details B – Option 3
  - 639 Supplemental Reinforcement Requirements
  - 640 Adhesive Grouted Dowel Layout
  - 641 Typical Concrete Rebuild Section at Embed Plate
  - 642 Shallow Depth (2” Max) Concrete Rebuild Horizontal
  - 643 Shallow Depth (2” Max) Concrete Rebuild Vertical
  - 644 Partial Depth Core Hole Concrete Rebuild
  - 645 Full Depth Core Hole Concrete Rebuild
  - 646A/B Typical Spall Repair with Exposed Reinforcing Steel
  - 651 Typical Sealant Details

- 7. Series 700: Electrical and Instrumentation Details
  - 700 Wet Well Pump Wiring Electrical Backboard Detail
  - 701A/B Antenna Installation Detail
  - 702A/B Intrinsic Safety Panel
  - 703 Temporary Pump Enclosure Detail
  - 704 Actuator Vault Electrical Backboard Detail
  - 705 Instrument Vault Electrical Plan
  - 706 Actuator Vault Electrical Plan
  - 707A/B Wet Well Instrumentation Installation Detail