

CITY OF MERIDIAN,  
ADA COUNTY, IDAHO

2013

SUPPLEMENTAL  
SPECIFICATIONS  
AND DRAWINGS

TO THE

IDAHO STANDARDS FOR  
PUBLIC WORKS  
CONSTRUCTION

Amended June 2014

PUBLIC WORKS DEPARTMENT  
33 EAST BROADWAY AVENUE, SUITE 200  
MERIDIAN, ID 83642

## **PREFACE**

These Specifications and Drawings are intended to supplement the current edition of the Idaho Standards for Public Works Construction (ISPWC). In instances where the ISPWC does not clearly provide for additional requirement(s) of the City of Meridian, these specifications shall be used.

All construction within the City of Meridian, or within the jurisdiction of the City of Meridian, shall be in accordance with the ISPWC and these Supplemental Specifications and Standard Drawings; the approved Construction Plans; the City of Meridian Construction Stormwater Management Program (CSWMP) manual; all pertinent construction documents; all applicable State, Federal, County and local district regulations and Specifications; and in compliance with the City of Meridian Subdivision Ordinance. The more stringent of any of these standards shall be the controlling standards or specifications. The City of Meridian recognizes that the ISPWC and these Supplemental Specifications may not cover all situations that might be encountered; however, this does not release the Contractor from properly constructing the work.

Any supplemental specification that the City Engineer or a designated representative deems necessary for the proper construction of any work shall be prepared and issued to the Contractor prior to commencing construction.

**CITY OF MERIDIAN, IDAHO**

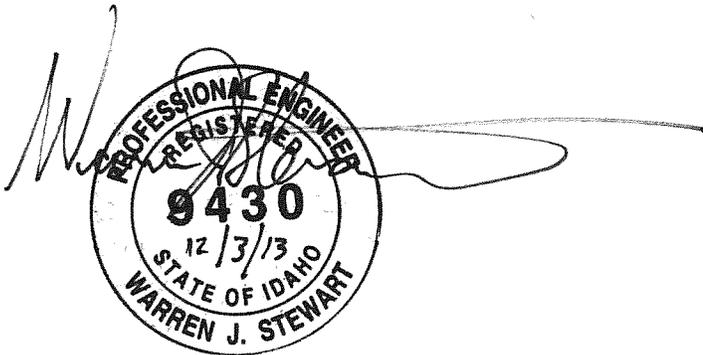
**SUPPLEMENTAL SPECIFICATIONS AND DRAWINGS TO THE  
IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION**

These Supplemental Specifications and Drawings were prepared for, and apply to typical Public Works Construction conditions only. The need may arise to alter them to meet a specific design condition. If this occurs, all alterations, substitutions or variances shall be approved in writing by the City Engineer or designated representative.

In the event an error or omission is discovered in these Supplemental Specifications and Drawings, whether through an oversight or a change in technology, the finder shall notify the City Engineer in writing so that the proper steps may be taken to make corrections.

It is further understood that the City of Meridian or its authorized agents are not responsible for errors or omissions.

By: Warren Stewart, P.E.  
City Engineer



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**The Division 100 General Conditions apply where the City of Meridian has an agreement or a contract with a contractor to perform construction-related activities. These general conditions and the general requirements (contained in the agreement or contract) govern all work to be completed in the contract documents. These general conditions do not apply to contractors working for or under contract with an owner or agency other than the City of Meridian.**

## **GENERAL CONDITIONS**

### **ARTICLE 1 - DEFINITIONS AND TERMINOLOGY**

#### **1.01 DEFINED TERMS**

- A.3. Application for Payment: The form acceptable to Engineer/Owner which is to be used by the Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
- A.52. Final Acceptance: The owner's acceptance of a project upon certification by the Design Engineer that it is complete and in accordance with the contract requirements; Final Acceptance is confirmed by receipt of a Letter of Final Acceptance from the Owner.
- A.53 Partial Final Acceptance: When a specified part of the work has progressed to the point where, in the opinion of the Engineer, that portion of the work is fully complete and ready for its intended use, the Engineer, or his designated representative, may issue a Partial Final Acceptance for that portion of the work that is fully complete.

### **ARTICLE 2 - PRELIMINARY MATTERS**

#### **2.01 DELIVERY OF BONDS AND EVIDENCE OF INSURANCE**

- A. Evidence of Insurance: Prior to execution of the contract and before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.
- B. Contractor shall furnish Bonds and Evidence of Insurance, as described above, to Owner within 14 days after the Notice of Award. If said Bond and Evidence of Insurance are not provided to Owner within 14 days, Owner may rescind Notice of Award.

2.02 COPIES OF DOCUMENTS

- A. Owner shall furnish to Contractor up to three (3) printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED

- A. The Contract Times will commence to run on the day indicated in the Notice to Proceed.

2.04 STARTING THE WORK

- A. Contractor shall start to perform the Work on the day indicated in the Notice to Proceed. No work shall be done at the Site prior to the date indicated in the Notice to Proceed.

2.05 BEFORE STARTING CONSTRUCTION

- A. *Preliminary Schedules:* Within 10 days after Notice to Proceed Date, Contractor shall submit to Engineer for timely review:

**ARTICLE 5 - BONDS AND INSURANCE**

5.01 PERFORMANCE, PAYMENT, AND OTHER BONDS

- A. *Contractor* shall furnish performance and payment bonds, each in an amount of 100% of the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until two (2) years after the date when final acceptance is issued by the City of Meridian or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

5.02 LICENSED SURETIES AND INSURERS

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions. Surety and insurance companies from which the bonds and insurance for this Project are purchased shall have a Best's rating of no less than A-, in addition to the other requirements specified herein.

**ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES**

6.19 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE

- A. The CONTRACTOR warrants and guarantees that all work performed shall be free from all defects due to faulty materials and/or workmanship for a period of two (2) years from the date of the City of Meridian final acceptance letter.

**ARTICLE 13 - TESTS AND INSPECTIONS: CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

13.03.G INSPECTIONS

The Contractor is responsible for materials and workmanship to be in accordance with the ISPWC, these Supplemental Specifications and Drawings and the approved construction plans whether or not City personnel are on-site to verify same.

The Contractor shall not perform work outside of the standard workday, Monday through Friday, legal holidays excepted, 8:00 A.M. to 5:00 P.M. unless written arrangements are made with the assigned Public Works Inspector. Inspections required outside of the standard workday shall be scheduled with the assigned Public Works Inspector a minimum of seventy-two (72) hours in advance, and the Contractor shall pay a fee of one-and one-half (1-1/2) times the inspector's wage, including benefits, and City vehicle costs.

13.07 CORRECTIONS PERIOD

- A. If within two (2) years after the date of Final Acceptance (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
1. repair such defective land or areas; or
  2. correct such defective Work; or
  3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Final Acceptance of all the Work, the correction period

for that item may start to run from an earlier date if so provided in a partial final acceptance letter.

- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work May be extended (upon written agreement) for an additional period of two (2) years after such correction or removal and replacement has been satisfactorily completed.

## **ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION**

### 14.02 PROGRESS PAYMENTS

- C. *Payment Becomes Due:*
  - 1. Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

### 14.04 SUBSTANTIAL COMPLETION

- B. Promptly after Contractor's notification, Owner/Engineer and Contractor shall make an inspection of the Work to determine the status of completion. If Owner/Engineer does not consider the Work substantially complete, Owner/Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Owner/Engineer considers the Work substantially complete, Owner/Engineer will execute and deliver to Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected).
- D. At the time of delivery of the certificate of Substantial Completion, Owner/Engineer will agree in writing as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove their property and complete or correct items on the tentative list.

14.05 PARTIAL UTILIZATION

- A. Prior to Final Acceptance of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

●● END OF SECTION ●●

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**SECTION 205**

**DEWATERING**

**PART 3 WORKMANSHIP**

**3.2 CONSTRUCTION REQUIREMENTS**

- A. Dewater and dispose of water in accordance with applicable ordinances, State water quality standards, and agreements and in such a manner that it does not cause injury to public or private property, or to cause a nuisance or a menace to the general public. Water will not be discharged to offsite drainage facilities without prior written approval from operator of the facility. The discharge of storm water, surface water, groundwater, or subsurface drainage water to the sanitary sewer is prohibited.

●● END OF SECTION ●●

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**SECTION 308**

**BORING AND JACKING**

**PART 2 MATERIALS**

2.2 STEEL CASING PIPE

- E. Casing pipe length shall conform to City of Meridian Standard Drawing SW1 "Casing Length Requirements."

2.4 CARRIER PIPE SKIDS

- A. Calpico spacers shall be used except where an equivalent has been pre-approved by the City Engineer.

2.6 ANNULAR SPACE BACKFILL

- A. Backfill the void between the carrier pipe and the casing with clean sand free of deleterious material, low strength foaming concrete grout with a compressive strength of 140 psi and a foam volume of 20.3 ft<sup>3</sup>/yd<sup>3</sup>, or other material as approved by the City Engineer. Annular space backfill may be deleted with the written approval of the City Engineer. Seal each pipe end annular space with 3/8" neoprene water tight seal with stainless seal bands. Refer to City of Meridian Standard Drawings SW1 and SW2.

**PART 3 WORKMANSHIP**

3.1 GENERAL REQUIREMENTS

- A. Bore or jack, as necessary, at the locations indicated in the Contract Documents and staked in the field for the installation of pipelines, services, utilities and ancillary items. Verify location and depth of all utilities.

●● END OF SECTION ●●

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**SECTION 309**

**HORIZONTAL DIRECTIONAL DRILLING**

**PART 3 WORKMANSHIP**

**3.5 HORIZONTAL DIRECTIONAL DRILLING OPERATION**

- A. Accurately survey the entire drill path with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. Using a magnetic guidance system survey, drill path for any surface geo-magnetic variations or anomalies. Verify location and depth of all utilities.

●● END OF SECTION ●●

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**SECTION 310**

**PIPE CASING AND SLEEVING**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Pipe casing and sleeving requirements for pipe installation.
- B. Annular space backfill requirements for casing or sleeving pipe installation.

1.2 RELATED SECTIONS

- A. Section 205 – Dewatering.
- B. Section 301 – Trench Excavation
- C. Section 306 – Trench Backfill
- D. Section 1103 – Construction Traffic Control

1.3 REFERENCES

- A. ASTM A 252: Standard Specifications for Welded and Seamless Steel Pipe Piles.
- B. Manual on Uniform Traffic Control Devices, Latest Edition.

1.4 SUBMITTALS

- A. Submit shop drawings of trench safety system for informational purposes only if excavation is over 4 feet deep.
- B. Submit a traffic control plan of the operation will disrupt the normal flow of traffic in the work area, per Section 1103 – Construction Traffic Control.
- C. Submit a dewatering plan if surface or groundwater are encountered, per Section 205, Dewatering.

1.5 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the work are as indicated in the Contract Documents.
- B. Notify City Engineer if installation conditions such as soils or alignment to not match those contemplated in the Contract Documents. Allow one working day for Design Engineer to modify the design, if necessary, unless otherwise specified.

1.6 PROJECT RECORD DOCUMENTS

- A. Accurately record actual location of the carrier pipe and encountered utilities in relation to existing permanent benchmarks.
- B. Provide copy of record documents to Owner prior to issuance of substantial completion.

**PART 2 MATERIALS**

2.1 GENERAL REQUIREMENTS

- A. Construction materials and equipment used for the work to meet all requirements of the Contract Documents.
- B. Use, handle and store material in such a manner as to preserve quality and fitness for the work.
- C. Immediately remove materials from the site of work that do not conform to the requirements of the Contract Documents as determined by the City Engineer or designee.

2.2 STEEL CASING PIPE -- Under Irrigation ditches, pipe, canals, roadways, or railroads.

- A. Conform to ASTM A252 with 3/8-inch minimum wall thickness.
- B. Diameter a minimum of 2 inches larger than the outside bell diameter of the carrier pipe.
- C. Casing to meet all superimposed loads, soil type conditions and other conditions presented in the project.
- D. Furnish pipe of sufficient thickness to withstand the forces exerted by the insertion operations.

- E. Casing pipe length shall conform to City of Meridian Standard Drawing SW1 “Casing Length Requirements.”

2.3 PVC PIPE SLEEVING – Refer to City of Meridian Standard Drawing SW2

- A. PVC water class pipe DR25 or equal.
- B. Diameter a minimum of 2 inches larger than the outside bell diameter of the carrier pipe.
- C. Casing to meet all superimposed loads, soil type conditions and other conditions presented in the project.
- D. Furnish pipe of sufficient thickness to withstand the forces exerted by the insertion operations.

2.4 ANNULAR SPACE BACKFILL WHEN CARRIER PIPES ARE INSTALLED

- A. Backfill for the void between the carrier pipe and the casing with clean sand free of deleterious material, low strength foaming concrete grout with a compressive strength of 140 psi and a foam volume of 20.3 ft<sup>3</sup>/yd<sup>3</sup>, or other material as approved by the City Engineer. When PVC sleeve is used, and no ground water is anticipated the annular space backfill may be deleted with written approval of the City Engineer. Seal each pipe end of the annular space with 3/8” neoprene water tight seal with stainless seal bands. Refer to City of Meridian Standard Drawings SW1 and SW2.

**PART 3 WORKMANSHIP**

3.1 GENERAL REQUIREMENTS

3.2 CONSTRUCTION SAFETY

- A. Meet or exceed OSHA requirements at all times for all annular space backfill activities.

3.3 ANNULAR SPACE BACKFILL

- A. Prevent floating or displacement of the carrier pipe and do not induce pressures that will collapse or distort the carrier pipe.

**PART 4 MEASUREMENT AND PAYMENT**

- 4.1 Annular Space Backfill to be measured accordance with the following methods outlined below and identified in the Bid Schedule. Payment includes full

DIVISION 300  
TRENCHING

compensation for providing all materials, labor, tools and equipment necessary to complete the work including annular space backfill material, excavation, backfill, labor, dewatering, miscellaneous material, surface restoration and all incidental work required. If not separately indicated in the Bid Schedule, annular space backfill will be paid for as a part of the other Bid Items.

- A. Pipe Casing and Sleeving: By the linear foot measured on a horizontal basis through the centerline of the carrier pipe for the size of carrier pipe indicated.
  - 1. Bid Schedule Payment Reference: 310.4.1.A.1
  - 2. Bid Schedule Description: Pipe Casing and Sleeving \_\_\_\_\_ (diameter)...linear foot (LF)
  
- B. Pipe Casing and Sleeving: On a lump sum basis for the location indicated.
  - 1. Bid Schedule Payment Reference: 310.4.1.B.1
  - 2. Bid Schedule Description: Pipe Casing and Sleeving \_\_\_\_\_ (diameter), STA\_\_\_\_\_ to STA\_\_\_\_\_ lump sum (LS)

●● END OF SECTION ●●

**SECTION 401**

**WATER PIPE AND FITTINGS**

**PART 2 MATERIALS**

2.2 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. PVC Pressure Pipe sizes 4 inch through 12 inch: ANSI/AWWA C 900

1. DR18

C. PVC Pressure Pipe sizes 14 inch through 36 inch: ANSI/AWWA C 905

1. DR25

2.10 LOCATING WIRE

A. Type: (No. 12 AWG) copper with blue insulation.

B. Splicing: Approved waterproof wire connectors and method to include strain relief.

2.13 LOCATION TAPE

A. 3 inch wide detectible blue tape marked appropriately for potable water.

**PART 3 WORKMANSHIP**

3.2 PIPE INSTALLATION

J. Prepare pipe joint using specified gasket and manufacturer's recommended lubricant. Lubricant must be NSF approved.

O. Locating wire must be securely fastened to the pipe every ten feet using duct tape. Ensure that locating wire remains in place during and after backfilling operations are complete.

R. For hot taps, tapping saddle shall be air tested to maintain 100 psi for 5 minutes.

3.6 PRESSURE TESTING

A. Perform testing in the presence of the City Engineer or the City's authorized Resident Project Representative.

3.7 LOCATING WIRE

- C. Locating wire must be tested by the CONTRACTOR in the presence of the City Engineer or the City's authorized Resident Project Representative

3.8 PIPE MARKERS

- A. Install service line markers per City of Meridian Standard Drawing SW3.
- B. Extend marker 4 feet above the ground surface. The exposed length of marker shall be painted florescent blue.
- C. Where a concrete sidewalk is constructed across the service line from main to meter can, sidewalk shall be marked with a stamped 4 inch high "W" at the location of the meter lid.

3.9 FLUSHING AND DISINFECTION

- B. Disinfection of Water Pipes.
  - 3. Methods of chlorination used are to be pre-approved by the City Engineer.
    - a. Tablet or Granule Method.
      - 5) Placement When Using Tablets: During construction, place 5g calcium hypochlorite tablets in each section of pipe and also place one tablet in each hydrant, hydrant branch and other appurtenance. Attach tablets to the inside of the pipe using an approved adhesive. The City of Meridian does not allow Permatex No. 2 as an adhesive for chlorine tablets. Assure no adhesive is on the tablet except on the broad side attached to the surface of the pipe. Attach all the tablets at the inside tip of the main, with approximately equal numbers of tablets at each end of a given pipe length. If the tablets are attached before the pipe section is placed in the trench, mark their position on the section so it can be readily determined that the pipe is installed with the tablets at the top.
      - 7) Filling Procedure: When granule or tablet installation has been completed, fill the main with clean water at a velocity not exceeding 1 fps. Take precautions to assure that air pockets are eliminated.

Leave this water in the pipe for at least 24 hours. If the water temperature is less than 41°F, leave the water in the pipe for at least 48 hours. Position valve so that the chlorine solution in the main being treated will not flow into water mains in active service. Check for presence of at least 10 mg/l chlorine residual at each sampling point after the 24-hour period and document.

d. Swabbing

- 1) Swabbing may be used for minor disinfection, however, methods, materials, and equipment must be preapproved and witnessed by the City's authorized Resident Project Representative.

C. Final Flushing.

3. Heavily chlorinated water (above normal system residuals) shall be flushed through a dechlorinator such as a Romac Dechlorinator (378-032) or other commercial device capable of dechlorinating the disinfection water concentration and flow encountered.

3.12 WATER MAIN HOT TAPPING REQUIREMENTS FOR CONTRACTORS

- A. Hot taps shall be performed only by contractors approved by the City of Meridian Public Works Department. They must also possess a valid Public Works Contractor's License for utility installation.
  1. A listing of approved hot tapping contractors is available on the City of Meridian website [www.meridiancity.org](http://www.meridiancity.org) in the Public Works Engineering Division Section, or by calling the Public Works Department, Engineering Division directly.
  2. Requirements for contractors interested in becoming approved for hot tapping is also available on the website, or by calling the Public Works Department, Engineering Division directly.
- B. Hot taps will only be performed according to the Transmate TapMate Pipe Drilling Machine manual. The manual will be on-site during hot taps.
- C. The contractor shall furnish all tools and materials required for a complete installation including testing.
- D. The tapping saddle shall be air tested to 100 psi in the presence of the City Engineer or the City's authorized Resident Project Representative.

3.13 LOCATION TAPE

- A. Place location tape 18"-24" above pipe.

●● END OF SECTION ●●

**SECTION 402**

**HYDRAULIC VALVES**

**PART 1 GENERAL**

1.4 SUBMITTALS

- D. Submit no-lead brass certification for all components in contact with potable water to comply with the Safe Drinking Water Act.

**PART 2 MATERIALS**

2.2 RESILIENT SEATED GATE VALVES

- A. Resilient Seated Gate Valves for Water Supply Service: ANSI/AWWA C 509/C 515.
  - 7. Resilient seated gate valves shall be manufactured by Waterous, Clow, Mueller or approved equal.
  - 8. Nuts and bolts bonnet and upper seal kit shall be stainless steel.

2.5 BLOW-OFF ASSEMBLY

- A. Refer to City of Meridian Standard Drawings W12 and W13.

2.7 VALVE BOXES

- A. Locking lids are required on valve boxes located within Section-Line roads, Mid Section-Line roads and any road that has a posted speed limit of 35 MPH or greater. All other lids may be non-locking.
- D. Cover: Cast iron stamped "Water". All gate valves shall be fitted with a standard adjustable valve box and lid as manufactured by Tyler, No. 6855, or approved equal.
- E. Detail: City of Meridian Standard Drawing W11.
- F. Debris caps such as SW Services part number DC 456, or approved equal, shall be provided.
- G. If top of valve nut is more than 5 feet below ground surface, then valve nut extensions shall be provided in order to meet the 5 foot standard.

**PART 3      WORKMANSHIP**

3.2      INSTALLATION

- B.      Install valves plumb and vertical. Set valve box centered and plumb over wrench nut and flush with ground or street surface. Install box per City of Meridian Standard Drawing W11.
  
- G.      When valve boxes are located in undeveloped land, they shall be marked with a blue fiberglass utility marker projecting at least 48 inches out of the ground with approved City water identification graphic.

●● END OF SECTION ●●

**SECTION 403**

**HYDRANTS**

**PART 2 MATERIALS**

2.2 FIRE HYDRANT

A. Dry Barrel Fire Hydrants: ANSI/AWWA C 502.

2. Nozzle Configuration

- a. One 4-1/2 inch diameter National Standard Thread pumper nozzle.
- b. Two 2-1/2 inch diameter National Standard Thread fire hose nozzles.
- c. The valve operator shall open left (counterclockwise) and be so indicated on the top casting.
- d. Manufacturer shall be Waterous, Mueller, Clow, or approved equal.

8. Distance from top of hydrant shoe flange to bottom of hydrant flange shall not exceed 6 feet.

2.3 COLOR

A. Hydrants shall be furnished with two layers of factory-applied red polyurethane epoxy, Alkyd, or epoxy base coat. Acrylic top coat shall be Kelly Moore Paint Company, No. 5780-562 or approved equal.

2.5 PIPE AND FITTINGS

A. Conform to Section 401 – Water Pipe and Fittings, with end connections per City of Meridian Standard Drawing W7 – Fire Hydrant Detail.

**PART 3 WORKMANSHIP**

3.2 INSTALLATION

B. Set hydrants to the established grade with center of nozzles at least 18 inches above the ground level. See City of Meridian Standard Drawing W7.

H. See also City of Meridian Standard Drawings W8 and W9.

●● END OF SECTION ●●

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**SECTION 404**

**WATER SERVICE LINE AND METERS**

**PART 2 MATERIALS**

2.2 SERVICE PIPE

B. Seamless Copper Water Tube not allowed in City of Meridian.

Delete 1. and 2.

D. Polybutylene (PB) Water Service pipe not allowed in City of Meridian.

2.3 WATER METER

A. Cold Water Meters

1. Product: In accordance with the Contract Documents.

2. See City of Meridian Standard Drawings W1 through W4 and  
ISPWC SD-402

2.4 APPURTENANCES

A. Service Saddles.

1. In accordance with City of Meridian Standard Drawing W1.

Delete 2.

B. Corporation Stops.

1. In accordance with City of Meridian Standard Drawing W1.

Delete 2 and 3.

D. Meter Setters.

1. In accordance with City of Meridian Standard Drawing W1.

Delete 2. – 5.

F. Locating Wire

1. Type: (No. 12 AWG) copper with blue insulation.

G. Meter Box (Vault).

1. For  $\frac{3}{4}$  inch (single and dual) and 1 inch single services:
  - a. See City of Meridian Standard Drawing W1.Delete b.

Note: All meter boxes shall be slotted so as to not transmit shock or bear on the water service connection pipe.

H. Meter Box Cover.

1. Configuration: Flush mounted with a flush mounted lid and locking device on the lid with a standard pentagon bolt. Recessed area around hole for transmitters. Diameter – 4”, depth, 0.75”.
4. Product: In accordance with City of Meridian Standard Drawing W1.

2.5 HEALTH REQUIREMENTS

- A. Submit no-lead brass certification for all components in contact with potable water comply with the Safe Drinking Water Act.

**PART 3 WORKMANSHIP**

3.1 EXAMINATIONS

- C. Maintain at least 36 inches of cover from the corporation stop to the curb stop.

3.2 INSTALLATION

- C. Install pipe, fittings, meter boxes in accordance with the manufacturer’s recommendations and City of Meridian Standard Drawings W1 through W6.
- M. Install meter boxes on bedding sand on top of firm, undisturbed earth. They shall not transmit shock or bear on the water service pipe.

- N. Where a concrete sidewalk is constructed across the service line, the service line locations shall be marked with a stamped 4 inch high "W".
- O. See also City of Meridian Standard Drawing W10.

**PART 4 MEASUREMENT AND PAYMENT**

- 4.1 Use the following unit price as designated on the Bid Schedule. If required and not listed in the Bid Schedule, the following Bid Items are to be considered incidental to other Bid Items.
  - A. Water Service Connection: Per each as specified. Includes excavation, bedding, backfill, service tap and saddle, corporation stop, service pipe, fittings, meter box and all appurtenances not itemized in the Bid Schedule.
    - 1. Bid Schedule Payment Reference: 404.4.1.A.1.
    - 2. Bid Schedule Description: Recycled Water Service Connection,  
\_\_\_\_\_ size \_\_\_\_\_ each (EA).

●● END OF SECTION ●●

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**SECTION 501**

**GRAVITY SEWERS**

**PART 2 MATERIALS**

2.1 PIPE SIZE , TYPE AND STRENGTH

- D. Only concrete or polyvinyl chloride sewer pipe shall be used for sewer line construction unless otherwise approved by the City Engineer.

**PART 3 WORKMANSHIP**

3.2 PIPE INSTALLATION

- U. No pipe length used shall be less than 5 feet.
- V. When cover over a sewer pipe is less than three (3) feet from the top of pipe to subgrade, or top of pipe to natural ground, Class 200 water pressure pipe, ASTM D2241, SDR21, shall be used for the lateral and service line pipes upon approval by the City Engineer. Fittings such as saddle outlets, wyes & tees, shall be compatible in construction with the lateral pipe.
- W. Cover from top of pipe to finished grade shall not be less than 3'.

3.3 PLUGS AND PIPE MARKERS

- B. Furnish and install pipe markers at main line stub-outs (only when approved by Public Works and when approved wye type cleanouts are not used) per City of Meridian Standard Drawings SW3 and S1.

3.4 TESTING

- C. Air Pressure Testing
  - 3. Preliminary and Final Testing:
    - b. Final Testing
      - 1) Air testing of any sewer pipe with three feet or less bury, from top of pipe to subgrade, shall be done after all road base gravel is installed and compacted.
      - 2) A sewer pipe line that has been installed, passed the initial air test, but for other reasons not finally

accepted by the City of Meridian, will, if it remains unused for several months, be subjected to another air pressure and CCTV inspection.

- 3) If other utility excavation occurs in the area above and/or adjacent to the sewer line, an additional air test will be required on any installed sewer line, even if a final inspection has been done previously.

D. Hydrostatic Exfiltration Testing

3. Preliminary and Final Testing

b. Final Testing

- 1) Exfiltration testing of any sewer pipe with three feet or less bury, from top of pipe to subgrade, shall be done after all road base gravel is installed and compacted.
- 2) A sewer pipe line that has been installed, passed the initial exfiltration test, but for other reasons not finally accepted by the City of Meridian, will, if it remains unused for an extended period of time, be subjected to another exfiltration test and CCTV inspection.
- 3) If other utility excavation occurs in the area above and/or adjacent to the sewer line, an additional exfiltration test will be required on any installed sewer line, even if a final inspection has been done previously.

E. Large Diameter Pipeline Testing – Alternative to Hydrostatic Method

1. Upon approval of the Inspector, conduct low pressure air testing on pipes 27” through 60” per UNI-BELL Specification UNI-B-6-98.

H. Closed Circuit Television (CCTV) Inspection

2. CCTV Inspections are required to be performed by a third-party testing firm. CCTV sewer line inspection to be performed by firms that are suitably equipped experienced, qualified and staffed for sewer line CCTV inspection. If requested, provide a calibration video showing various water depths for the size of pipe being

videoed. Calibration video must be onsite during CCTV process. Also, if requested, provide an acceptable method of measuring the depth of standing water at potential problem locations, other than the calibration tapes. A camera-mounted water depth gauge may be used upon pre-authorization of the Engineer.

12. CCTV inspections are required to be presented in a national standard coding method that meets the NASSCO Pipeline Assessment & Certification Program (PACP) standard inspection. The individual that is authorized to submit the PACP CCTV inspection must also be PACP Certified. The individual that is authorized to submit the PACP CCTV inspection must also be PACP Certified.
13. Eighteen (18) months after final acceptance of the sewer line(s), the contractor will perform a CCTV inspection.
14. Should there be evidence of inconsistencies as compared to the original installation, which, in the opinion of the City Engineer, warrant replacement or repair, the contractor shall correct those defects as required under the contractor's two-(2) year warranty until the necessary replacement or repair is accepted by the City of Meridian Public Works Department.
  - a. After the necessary corrections have been made by the contractor, they will be verified by an additional CCTV inspection performed by the contractor at their expense.
  - b. The cost of the initial, 18 month and all subsequent CCTV inspections beyond the 18-month CCTV inspection shall be paid for by the contractor.

●● END OF SECTION ●●

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**SECTION 502  
MANHOLES**

**PART 2 MATERIALS**

2.2 MANHOLES

- A. Precast Manholes: ASTM C 478 for all components except as modified herein and as shown in the ISPWC Standard Drawings.
  - 1. ISPWC Drawing SD-502 shall be modified to allow a cone to be used on manholes of 54" to 60" diameters.
- D. Revise ISPWC Details SD-501 through SD-502A to use the following manhole diameters for pipe diameters installed:

PIPE DIAMETER	SEWER DEPTH	REQUIRED MANHOLE DIAMETER
8"-18"	<=18'	48"
8"-18"	>18'	60"
>18"	ANY DEPTH	60"

Note: 72" manholes shall be used when called out on the plans or in the contract documents.

- E. See City of Meridian Lift Station design guidelines for requirements of manholes receiving lift station discharges.

**PART 3 WORKMANSHIP**

3.7 MANHOLE BARREL AND CONE CONSTRUCTION

- G. Cones shall be eccentric for manholes with an overall depth (from invert to finished rim elevation) greater than 4 feet. The vertical wall shall be placed on the upstream side and rotated forty-five (45) degrees.
- H. Cones shall be concentric for manholes less than 4 feet.

3.13 PLACEMENT OF CONCRETE COLLARS

- E. Manholes constructed in unpaved areas require the standard concrete collar to be extended to a minimum of 4-inches below the bottom of the grade ring(s).

3.14 CONSTRUCTION OF DROP MANHOLES

DIVISION 500  
SEWER

- A. Drop manholes are not allowed in the City of Meridian sewer system without the written approval of the City Engineer.
- B. When drop manholes are allowed, they shall be lined with Sprayroq Protective Lining Systems or approved equivalent and constructed with a “Reliner” type inside drop bowl or approved equivalent.
- C. Drop manholes are not allowed inside residential developments.

●● END OF SECTION ●●

**SECTION 503**

**CLEAN-OUTS**

**PART 2 MATERIALS**

**2.5 CLEANOUTS**

- A. Wye Type Cleanout materials shall be as described per Section 503, Part 2 of the ISPWC and as shown on SD-506. T-Type cleanout materials shall be as described per Section 503, Part 2 of the ISPWC and as shown on City of Meridian Standard Drawing S1.
- B. Wye Type or T-Type cleanouts may be used at points where the sewer line is terminated but shall be continued to subsequent phases of a subdivision or other projects in the near future.
  - 1. The maximum distance from a manhole to a proposed cleanout is 150 feet.
  - 2. No services shall be connected to a sewer line terminating in a cleanout.

●● END OF SECTION ●●

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**SECTION 504**

**SEWER SERVICES**

**PART 2 MATERIALS**

2.2 PIPE AND FITTINGS

F. Service Saddle Connections:

1. Saddles: Romac "CB" to be used on services deeper than ten feet. Romac "CB", Saddle by NDS, or approved substitution by the City Engineer to be used on services less than ten feet deep.

**PART 3 WORKMANSHIP**

3.3 CONNECTION TO MAIN

A. Connections for new main pipelines or pipeline replacement.

10. Sewer service connections must be perpendicular to the sewer main unless otherwise approved by the City Engineer.

3.6 INSTALLATION OF SERVICE LINE MARKERS

A. Install service line markers per City of Meridian Standard Drawing SW3.

- G. Where a concrete sidewalk is constructed across the service line the service line locations shall be marked in the concrete sidewalk with a 4 inch high stamped "S".

●● END OF SECTION ●●

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**SECTION 508**

**SLIPLINING**

**PART 3 WORKMANSHIP**

3.8 TESTING

- A. Air testing of repairs is required and shall be conducted per Section 501 of the ISPWC and as modified in Section 501 of these City of Meridian Supplemental Specifications. Deflection testing will not be required except as provided in paragraph B.
- B. City Engineer reserves right to require deflection testing of slipline if CCTV inspection and or visual inspection indicates possibility of faulty workmanship. The cost of testing will be the responsibility of the Contractor. If retesting is required, the Contractor will be responsible for testing costs including all labor required to witness additional tests.

●● END OF SECTION ●●

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**SECTION 510**

**PIPE BURSTING**

**PART 1 GENERAL**

1.4 SUBMITTALS

- A. Submit the following information for City Engineer's approval prior to work:
  - 1. Qualifications of the Pipe Bursting Contractor: Note that any qualification requirements specified will have to go through a pre-qualification process prior to bidding under the 2005 public bidding statutes. (I.C. 67-28)
  - b. Name(s) and 3 year work history of all supervisory personnel to be directly involved with pipe bursting project.

**PART 3 EXECUTION**

3.5 PRE PIPE BURSTING OPERATIONS

- C. Cleaning and CCTV
  - 2. Provide CCTV of the existing line per Section 501.3.H and verify location of services.

3.8 FIELD QUALITY CONTROL

- A. Testing
  - 1. General
    - a. Air testing of repairs is required and shall be conducted per Section 501 of the ISPWC and as modified in Section 501 of these City of Meridian Supplemental Specifications. Deflection testing will not be required.
- B. Inspection
  - 1. After main line pipe passes and service lines and manholes are connected, perform a post-installation CCTV inspection of the installed replacement pipe in accordance with Section 501.3.H unless otherwise stated in the contract documents.

●● END OF SECTION ●●

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DIVISION 600  
CULVERT, STORM DRAINS, AND GRAVITY IRRIGATION

NO ALTERATIONS TO THIS DIVISION

DIVISION 600  
CULVERT, STORM DRAINS, AND GRAVITY IRRIGATION

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NO ALTERATIONS TO THIS DIVISION

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NO ALTERATIONS TO THIS DIVISION

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**PRESSURE IRRIGATION**

**SECTION 904**

**PART 1 GENERAL**

- 1.1 The City does not exercise authority over operation or maintenance of pressurized irrigation (PI) systems for subdivisions unless the system is to be maintained and operated by a Homeowners or Business Owners Association.
- 1.2 The City has adopted, in general, the Standard Specifications and Drawings prepared by the applicable Irrigation District that the system will be built in. These requirements must be adhered to whether or not the system is to be maintained and operated by that Irrigation District.
- 1.3 Any requirement or specification not covered by the appropriate Irrigation District Standard Specifications and Drawings shall conform to Division 900, Pressure Irrigation, of the most current edition of the ISPWC and these Supplemental Specifications.
- 1.4 The City will monitor the type of materials used and the installation thereof.

**PART 2 ADMINISTRATIVE REQUIREMENTS**

- 2.1 If the developer proposes that the PI system will not be owned, maintained and operated by an irrigation district, the plans submitted to Meridian Public Works for approval shall be accompanied by design documentation that is stamped and signed by a Professional Engineer licensed in the State of Idaho.
- 2.2 If the PI system will be owned by a Homeowner or Business Owner Association, the Covenants, Conditions and Restrictions (CCR's) must specifically list the Association's responsibilities regarding operation and maintenance of the system.
  - A. If a year-around source of water is not provided for the PI system, the developer must provide a backup water source for periods before and after the normal irrigation season (approximately April 15 to October 15). If the developer proposes to install a single point connection to the City of Meridian domestic water system, an approved backflow prevention device must be installed. No cross-connection of the PI system and the domestic water system on individual lots is allowed within any subdivision.
- 2.3 Plan approval shall not be given until a satisfactory O&M Manual is approved by the Public Works Department.

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**SECTION 1001**

**CONSTRUCTION SITE MANAGEMENT**

**PART 1 GENERAL**

1.3 REFERENCES

- A. The City of Meridian Construction Storm Water Management Program For Public Works Construction Projects Policy Manual (CSWMP).
- B. Section 8000, *Drainage and Stormwater Management* of the Ada County Highway District Development Policy Manual, adopted February 14, 1996.
- C. *Catalog of Storm Water Best Management Practices*, published by the Idaho Department of Environmental Quality.

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**SECTION 1008**

**CITY OF MERIDIAN STORMWATER MANAGEMENT PROGRAM**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. The City of Meridian reviews, inspects and approves storm water management plans and erosion sediment control plans where the City is classified as an owner or operator by the Environmental Protection Agency's National Pollutant Discharge Elimination System Permit Program.
- B. The City has adopted, in general, the standards and requirements of The City of Meridian Construction Storm Water Management Program For Public Works Construction Projects Policy Manual (CSWMP); Section 8000, *Drainage and Stormwater Management*, of the Ada County Highway District Development Policy Manual adopted on February 14, 1996; and the *Catalog of Storm Water Best Management Practices*, 1997 and subsequent revisions, as prepared by State of Idaho Department of Environmental Quality.

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**GENERAL INFORMATION**

These specifications are for street lighting that is to be dedicated to the public and maintained by the City of Meridian. Such installations require a street lighting electrical permit to be opened prior to beginning work; street lighting shall not be included in a building general electrical permit.

Conduit and foundation reinforcement must be inspected prior to backfill and pouring of concrete. Contact City of Meridian at **887-2211** for inspections, 48 hour notice required. The City will not authorize Idaho Power to connect street lighting until the electrical permit is final and any other requirements are met.

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**SECTION 1101**

**TRAFFIC SIGNALS AND APPURTENANCES**

**PART 1 GENERAL**

1.4 SUBMITTALS

- E. Submit warranty for all supplied material and workmanship for a period of two years from final acceptance. The warranty must state that the products supplied were free of defects and suitable for the uses set forth in the specifications.

●● END OF SECTION ●●

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**SECTION 1102**  
**STREET LIGHTING**

**PART 1 GENERAL**

1.4 SUBMITTALS

- D. Submit warranty for all supplied materials and workmanship for a period of two years from final acceptance. The warranty must state that the products supplied were free of defects and suitable for the uses set forth in the Specifications.

**PART 2 MATERIALS**

2.2 JUNCTION BOXES

- A. Junction boxes located in sidewalks or areas subject to vehicular traffic shall be high density reinforced precast concrete or fibrelyte type N09 or approved equal with reinforced concrete bolt-down lid marked "ELECTRICAL" or "STREET LIGHTING."

2.3 CONDUCTOR

- B. Overhead connection of street lights is not allowed except in unusual circumstances approved by the City Engineer.

2.5 CONDUIT

- A. Above ground conduit runs are not allowed in City of Meridian installations.

2.8 MAST ARMS FOR WOOD POLES

- A. Wood poles are not allowed in City of Meridian installations.

2.9 WOOD POLES

- A. Wood poles are not allowed in City of Meridian installations.

2.10 METAL POLES

- B. Poles for Type 1 street lights shall be high strength low alloy steel meeting ASTM 572 Gr 50 or higher with galvanized coating meeting ASTM

A123.Poles shall conform to City of Meridian Standard Drawing T1. In cases of conflict with overhead wiring, a davit style version of Type 1 street light poles may be approved as shown in City of Meridian Standard Drawing T4. Poles shall be supplied with a two-piece steel full base cover.

1. Approved Type 1 Pole Manufacturers:

Northwest Signal Supply  
KW  
Valmont

2. Approved Davit Pole Manufacturers:

Valmont

Poles for Type 2 lights shall be 4 inches square, non-tapered, with 11 gauge steel and coated with dark bronze corrosion resistant polyester powder coating. Mounting holes for fixture shall be pre-drilled for any unused holes plugged. Mounting height shall be 25 feet. Poles shall be supplied with a two-piece steel full base cover painted to match pole. See City of Meridian Standard Drawing T2 for additional details.

3. Approved Type 2 Pole Manufacturers:

Lithonia Lighting  
KW

- C. Pole installation to be with concrete base per paragraph 2.14 and City of Meridian Standard Drawing T2.
- F. Poles shall be labeled with assigned pole numbers shown on the plans. Labels shall have 2" tall white numbers/letters on black background. Labels shall be affixed to poles approximately 5-6' above grade, on the street side of the pole, with the labels placed vertically so that the first number of the pole ID is at the top.

## 2.12 HISTORICAL POLES

- A. Historical poles used in the City of Meridian's downtown urban renewal area shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B179-95a or ASTM B26-95. The castings shall be formed true to the pattern with complete detail. All hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dipped galvanized. Poles shall be:

1. Black in color
  2. Model Holophane CP12F5/18-CA/BK, see City of Meridian Standard Drawing T7.
  3. Designed to accept Holophane head, model ARU 085QL MT B G3 S or approved equal
  4. Installed with Holophane cast aluminum banner arms BA24H/1/BO or BA24H/1.5/BO, or approved equal, at the request of City
  5. Installed with Holophane weatherproof receptacle with GRCI, part no. FG-SXXH, or approved equal, at request of City. Receptacle cover shall meet the requirements of the NEC for outdoor and “in-use” type.
- B. Pole installation to be with concrete base per paragraph 2.14 and per City of Meridian Standard Drawing T2.

#### 2.14 CONCRETE POLE BASES

- D. Base dimensions and construction shall conform to City of Meridian Standard Drawing T2.
- E. All street light foundations shall be located such that no existing conduit, pipe or other underground utility facility conflicts with the entire volume of the pole foundation. If a conflict with an existing street light conduit or an existing traffic signal conduit exists, the Contractor shall relocate the existing conduit out of the area of conflict. If a potential conflict with any underground utility facility other than street light or traffic signal conduit exists, the Contractor shall bring the potential conflict to the attention of the City. Conformance with these provisions as required to complete the Work, including relocation of existing street light and/or traffic signal conduits, shall be considered incidental to and included in the payment for street light installation and no additional compensation will be made.

#### 2.15 PREFABRICATED BASES

- A. Prefabricated bases are not allowed in City of Meridian installations.

#### 2.16 SERVICE PEDESTAL

- A. External construction shall be 1/8” thick steel and hot dipped galvanized per ASTM A312. Internal parts shall be constructed of 14 gauge cold

rolled steel. Construction shall be fully welded. All fasteners, latches and hardware shall be stainless steel with no exposed nuts, bolt, screw, or other fasteners exposed on the exterior. Cabinets have 2,000 lb street rated padlock hasps welded to the cabinet and door. Outer doors have closed-cell Neoprene flange. See City of Meridian Standard Drawing T5.

Delete paragraph C.

- M. Provide and install one Masterlock padlock on each padlock hasp – model shall be 1KA; contact Meridian Public Works for the master key number. All keys must be given to the Meridian Public Works Department electrical inspector before the electrical permit will be finalized.
- N. All service pedestals shall be equipped with photo control – as a result, any lighting connected to a service pedestal shall not have individual photo controls located on the luminaires.

## 2.17 LIGHT FIXTURES

- A. Light fixtures wattages shall be 250 watt HPS for Type 1 lights, 100 watt HPS for Type 2 lights, and 85 induction watt for downtown historical lights, unless otherwise directed by the City Engineer.

Delete paragraph C.

- D. Fixtures to have I.E.S. full cutoff distribution reflector.
- E. Tempered glass flat lens with internal refractor I.E.S. type III Medium distribution. Other types may be approved depending on the roadway geometrics.
- F. Approved fixture/luminaire types are as follows:
  - 1. Type 1 lights shall be cobra head type luminaires with die-cast aluminum housing equipped with a power door and powder coated grey. Lamp access shall be with a single tool-less latch. Lens shall seal with a tubular silicone gasket. Lamp shall be high pressure sodium with mogul base; lamp wattage shall be shown with a NEMA wattage label on the outside of the fixture.

\*No photo control or photo control receptacle shall be provided if the system will be connected to a metered service pedestal that will contain photo control.

Approved manufacturers:

General Electric  
Lithonia Lighting  
American Electric Lighting

2. Type 2 lights shall be shoe box type luminaires with die-cast aluminum housing of 0.12” nominal wall thickness and dark bronze polyester coated finish. Fixture shall mount with a 4” aluminum arm. Lens shall have a one piece tubular silicone gasket. Lamp shall be medium base high pressure sodium. Fixture shall be controlled by a twist lock NEMA photocell.

Approved manufacturers:

Lithonia Lighting or approved equal

3. Historical luminaires used in the City of Meridian’s downtown urban renewal area shall be Holophane Arlington model, or approved equal, with 85 watt induction lamp, photocell, spike finial, and in the color black. Fixture shall be designed to attach to pole described in section 2.12, paragraph A3.

#### 2.18 SPLICE BOXES

- A. When a splice is required use SEC Model 0791-0 Splice Kit, Polaris SSB 2/0, or approved equal – wire nuts shall not be used on the hot or neutral wires.

### **PART 3 WORKMANSHIP**

#### 3.1 EXAMINATIONS

- A. Verify the pole excavation location and depth matches the approved plans and specifications, prior to installation of the pole. See City of Meridian Improvement Standard Drawing 2G.

#### 3.2 JUNCTION BOX INSTALLATION

- A. Install as required by City of Meridian Standard Drawing T3 and to locations as shown on the plans. Junction box spacing shall never exceed 250 feet along straight conduit runs, and shall be installed at any sharp bends, wire splices, or where conduit junctions occur.

- B. Install the junction box on a 6" thick bed of compacted crushed aggregate base material that extends 4 inches beyond the exterior of the box sides.
- D. Junction boxes shall not be installed in driveways or roadways.

### 3.3 WIRE OR CONDUCTORS

- A. Splices in junction boxes shall use SEC Model 0791-0 Splice Kit – wire nuts shall not be used.
- E. Overhead connection of street lights are not be allowed.
- F. See City of Meridian Standard Drawing T3 for wiring details and allowed system voltages.

### 3.6 DISCONNECT BOXES

- A. Disconnect boxes are not allowed in City of Meridian installations.

### 3.7 GROUNDING

- A. Attach pole ground to rebar cage by means of NEC code approved grounding connector. See City of Meridian Standard Drawing T3.

### 3.8 CONCRETE POLE BASES

- A. Base installation and dimensions shall conform to City of Meridian Standard Drawing T2.

### 3.9 POLE INSTALLATION

- B. Pole installations shall conform to City of Meridian Standard Drawing T2 and T3.
- C. Historical poles to be installed in accordance with standard drawings supplied by governing agency. Pole installations shall conform to City of Meridian Standard Drawings T2 and T3.
- D. All poles shall be installed under the power company required clearances shown on Standard Drawing SD-1122 and under the requirements of the City Of Meridian Improvement Standard Drawing 2G.
- G. Direct burial poles are not allowed in City of Meridian installations.

3.11 SERVICE PEDESTAL

- A. Due to the metering requirements of Idaho Power, metered service pedestals are required for all Type 1 (including Davit pole) street lighting systems. Service pedestals and associated wiring shall be installed per City of Meridian Standard Drawings T5 and T6.

●● END OF SECTION ●●

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**DIVISION 1200**

**Recycled Water**

Section 1201 – Recycled Water Pipe and Fittings

Section 1202 – Hydraulic Valves

Section 1204 – Recycled Water Service Line and Meters

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**SECTION 1201**

**RECYCLED WATER PIPE AND FITTINGS**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Recycled water transmission and distribution pipe and fitting materials, installation and testing.
- B. Thrust blocks and pipe anchors.

1.2 RELATED SECTIONS

- C. Section 301 – Trench Excavation.
- D. Section 304 – Trench Foundation Stabilization.
- E. Section 305 – Pipe Bedding.
- F. Section 306 – Trench Backfill.
- G. Section 402 – Hydraulic Valves.
- H. Section 404 – Water Service Line and Meters.
- I. Section 405 – Non-Potable Water Line Separation.
- J. Section 505 – Pressure Sewers.
- J. Section 703 - Cast-in-Place Concrete.

1.3 REFERENCES

- A. ANSI/AWWA C 104: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings, for Water.
- B. ANSI/AWWA C 105: Polyethylene Encasement for Ductile Iron Pipe Systems.
- C. ANSI/AWWA C 110: Ductile Iron and Gray-Iron Fittings 3 inch through 48 inches for Water and Other Liquids.
- D. ANSI/AWWA C 111: Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

- E. ANSI/AWWA C 115: Flanged Ductile Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
- F. ANSI/AWWA C 151: Ductile Iron Pipe, Centrifugally Cast for Water.
- G. ANSI/AWWA C 153: Ductile Iron Compact Fittings, 3 inch through 24 inch and 54 inch through 64 inch for Water Service.
- H. ANSI/AWWA C 213: Fusion–Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines.
- I. ANSI/AWWA C 550: Protective Interior Coatings for Valves and Hydrants.
- J. ANSI/AWWA C 600: Installation of Ductile-Iron Water Mains and Their Appurtenances.
- K. ANSI/AWWA C 605: Installation of Polyvinyl Chloride Pressure Pipe and Fittings.
- L. ANSI/AWWA C 900: Polyvinyl Chloride (PVC) Pressure Pipe 4 inch through 12 inch for Water Distribution.
- M. ANSI/AWWA C 905: Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14 inch through 36 inch.
- N. ANSI/AWWA C 906: PE Pressure Pipe for Water Distribution.
- O. ANSI/AWWA C 907: Polyvinyl Chloride (PVC) Pressure Fittings for Water, 4 inch through 8 inch.
- P. ANSI B 16.3: Malleable Iron Threaded Fittings.
- Q. ASTM A 53: Specification for Pipe, Steel, Black and Hot Dipped, Zinc Coated (Galvanized), Welded and Seamless.
- R. ASTM D 1248: Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable.
- S. ASTM F 1674: Standard Test Method for Joint Restraint Products for Use with PVC Pipe.
- T. ASTM D 2774: Standard Practice for Underground Installation of Thermoplastic Pressure Piping.
- U. ASTM D 3261: Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.

- V. ASTM F 477: Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- W. ASTM F 2164: Field Leak Testing of Polyethylene (PE) Pressure Piping Systems using Hydrostatic Pressure.
- X. ASTM D 1784: Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
- Y. ASTM D 1785: Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
- Z. IDAPA 58.01.17 Recycled Water Rules

#### 1.4 SUBMITTALS

- A. Submit shop drawings for materials to be installed under this section.
- B. Submit manufacturer's certification that pipe and fittings meet or exceed specified requirements including all requested test results and material identifications.
- C. Submit manufacturer's installation instructions and maintain copy at the jobsite.

#### 1.5 PROJECT RECORD DOCUMENTS

- A. Accurately record actual location of constructed pipelines and other encountered utilities in relation to existing permanent benchmarks.
- B. Provide copy of record documents to Owner prior to issuance of substantial completion.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Handle and store pipe per manufacturer's recommendations and in a manner which prevents shock, damage or excessive exposure to sunlight and weather.
- B. Protect gasket material from damage, sunlight and contamination.

### **PART 2 MATERIALS**

#### 2.1 PIPE AND FITTINGS SIZE, TYPE AND STRENGTH

- A. Comply with pipe and fitting size, type and strength classification

indicated in the Contract Documents.

- B. If type and strength classifications are not indicated in the Contract Documents, contact the Engineer.
- C. Notify the Engineer if installation conditions such as trench width, depth, soils, and bedding conditions do not match those contemplated by the Contract Documents.

## 2.2 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

- A. PVC Pressure Pipe Sizes 4 inch through 12 inch for Water Distribution: ANSI/AWWA C 900.
  - 1. Pressure Class: DR18, Minimum.
  - 2. Outside Diameter Basis: Cast iron (CI) pipe equivalent.
  - 3. Joints: Bell and spigot end with ASTM F 477-02 elastomeric gaskets.
  - 4. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.
  - 5. Markings: Pipe shall be stamped every ten (10) feet “Caution: Recycled Water - Do Not Drink” or equivalent signage in both Spanish and English.
- B. PVC Pressure Pipe 14 inch through 36 inch for Water Transmission: ANSI/AWWA C 905
  - 1. Pressure Class: DR25, Minimum.
  - 2. Outside Diameter Basis: Cast iron (CI) pipe equivalent.
  - 3. Joints: Bell and spigot end with ASTM F 477-02 elastomeric gaskets.
  - 4. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.
  - 5. Markings: Pipe shall be stamped every ten (10) feet “Caution: Recycled Water - Do Not Drink” or equivalent signage in both Spanish and English.
- C. Pipe Fittings: (type as specified in Contract Documents):
  - 1. Ductile Iron Compact Fittings 3 inch through 24 inch: ANSI/AWWA C 153

- a. Pressure Class: 350 psi.
  - b. Petroleum Asphaltic Outside Coating: 1.0 mil minimum thickness.
  - c. Color: Fittings shall be purple in color Pantone 512, 522 or equivalent.
  - d. Exterior Coating: Fittings shall be coated with epoxy paint.
2. Ductile or Gray Iron Fittings: ANSI/AWWA C 110
- a. Pressure Class: 4 inch to 24 inch = 350 psi, and 30 inch to 36 inch = 250 psi.
  - b. Petroleum Asphaltic Outside Coating: 1.0 mil minimum thickness.
  - c. Color: Fittings shall be purple in color Pantone 512, 522 or equivalent.
  - d. Exterior Coating: Fittings shall be coated with epoxy paint.
3. PVC Fittings 4 inch through 8 inch: ANSI/AWWA C 907.
- a. Pressure Class: 150 psi.
- D. Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings: ANSI/AWWA C 111.

### 2.3 DUCTILE IRON PIPE AND FITTINGS

- A. Ductile Iron Pipe, 4 inch through 64 inch, Centrifugally Cast, for recycled water: ANSI/AWWA C 151
1. Thickness Class: As indicated in the Contract Documents.
  2. Lining: Cement mortar.
  3. Joints: Bell-and-Spigot unless otherwise noted in the Contract Documents.
- B. Flanged Ductile Iron Pipe with Ductile Iron or Gray Iron Threaded Flanges: ANSI/AWWA C 115
1. Pressure Class: 250 psi.

2. Lining: Cement mortar.
- C. Ductile Iron Compact Fittings Using Mechanical or Flanged joints, 4 inch through 24 inch: ANSI/AWWA C 153
1. Pressure Class: 350 psi.
  2. Lining: Cement mortar.
- D. Ductile Iron or Gray Iron Fittings Using Mechanical or Flanged joints, 4 inch through 24 inches: ANSI/AWWA C 110
1. Pressure Class for Mechanical Ductile Iron Joints: 350 psi.
  2. Pressure Class for Flanged Ductile Iron Joints: 250 psi.
  3. Pressure Class for all Gray Iron Joints: 250 psi.
  4. Lining: Cement mortar.
- E. Ductile Iron or Gray Iron Fittings Using Mechanical or Flanged joints, 30 inches through 48 inches: ANSI/AWWA C 110
1. Pressure Class for all Material and Joint Types: 250 psi.
  2. Lining: Cement mortar.
- F. Rubber Gasket Joints Ductile Iron Pressure Pipe and Fittings: ANSI/AWWA C 111
- G. Outside Coating for Pipe and Fittings: ANSI/AWWA C 110
1. Petroleum Asphaltic Outside Coating: 1.0 mil minimum thickness.
  2. Color: Pipe to be purple in color, Pantone 512, 522, or equivalent.
  3. Markings: Pipe shall be stamped every ten (10) feet “Caution: Recycled Water – Do not Drink” or equivalent signage in both Spanish and English.

#### 2.4 CEMENT MORTAR LINING

- A. Cement Mortar Lining for Ductile-Iron Pipe and Fittings for Water: ANSI-AWWA C 104
1. Thickness: Standard, single thickness.

2. Seal Coat: Yes.

## 2.5 POLYETHYLENE PIPE AND FITTINGS

- A. PE Pressure Pipe and Fittings for Recycled Water Distribution: ANSI/AWWA C 906.
  1. Standard PE Designation: PE 3406.
  2. Outside Diameter Base: Steel pipe (IPS).
  3. Dimension Ratio: As indicated in the Contract Documents.
  4. Fittings: PE 3406, thermal butt-fusion welded per ASTM D 3261.
  5. Pipe and fitting shall be purple in color Pantone 512, 522 or equivalent.

## 2.6 COUPLINGS

- A. Couplings: Smith-Blair OMNI 441 coupling system, or approved substitution. Couplings shall be lined and coated with a minimum thickness of 0.012” of fusion-bonded epoxy, or approved substitution. Coating must comply with ASTM C213 and AWWA C550.
- B. Flanged Coupling Adapters: Smith-Blair 912, or approved substitution. Couplings shall be lined and coated with a minimum thickness of 0.012” of fusion-bonded epoxy, or approved substitution. Coating must comply with ASTM C 213 and AWWA C 550.
- C. HDPE Couplings: Electrofusion couplings to solid wall HDPE and flange by flange elsewhere or as directed by the Engineer.

## 2.7 POLYETHYLENE ENCASEMENT

- A. Polyethylene Encasement for Ductile Iron Pipe Systems: ANSI/AWWA C105
  1. Material: ASTM D 1248 tubular high density cross laminated film.
  2. Class: C, Pantone 512, 522 or approved equivalent.

## 2.8 THRUST BLOCKS

- A. Concrete: Per Section 703 – Cast-in-Place Concrete. Minimum compressive strength of 2500 psi.

- B. Placement: Per this section and Standard Drawing SD-403 – Thrust Block and Anchor Details.

## 2.9 MECHANICAL RESTRAINT

- A. Type: Standard mechanical joint restraint gland, restraint devices for MJ fittings and appurtenances to conform to ANSI/AWWA C111/A21.11 or ANSI/AWWA C153/A21.53.
- B. Product: EBAA iron series 2000 PV (PVC Pipe) or EBAA Iron Series 1100 Megalug (Ductile Iron Pipe) or approved substitution, and to meet requirements of ASTM F 1674. An identification number consisting of year/day/plant/shift to be cast into each gland body from which to trace test results.
- C. Application: Approved for above-grade installation. Belowground installation as an alternative to thrust blocks is to be only upon approval of the Engineer and the Idaho Department of Environmental Quality based on service and installation conditions.

## 2.10 LOCATING WIRE

1. Type: (No. 12 AWG) copper with purple insulation.
2. Splicing: Approved waterproof wire connectors and method to include strain relief.

## 2.11 PIPE ANCHORS

- A. Concrete and Rebar: per Section 703 – Cast-in-Place Concrete and Standard Drawing SD-510 – Pipe Anchors.

## 2.12 HEALTH REQUIREMENTS

- A. When using Class A recycled water the public and personnel at the area of use must be notified that the water is recycled water and is not safe for drinking or human contact. Signs shall be posted and must state “Caution: Recycled Water - Do Not Drink”, or equivalent signage both in English and Spanish.

## 2.13 LOCATION TAPE

- A. 3 inch wide detectable purple tape marked appropriately for recycled water.

## **PART 3 WORKMANSHIP**

### 3.1 EXAMINATIONS

- A. Verify trench excavations are to required alignment and grade and pipe location meets Section 405 – Non-Potable Water Line Separation.
- B. Verify that trench conditions and shoring, sheeting, and bracing protect workers and meet the requirements of OSHA and other State and Federal Requirements.
- C. Verify that excavation will allow a minimum pipe cover of 48 inches, unless otherwise indicated in the Contract Documents.
- D. Examine pipe and fittings for defects or damage.
- E. Verify all pipe, fittings, aggregate, and all materials delivered to the site meet the requirements of these Contract Documents.
- F. Verify utility locations, existing piping locations and structures where connections are to be made prior to beginning work. Notify the Engineer if field conditions are different from the Contract Documents. Allow 4 hours for the Engineer to modify the design, if necessary, unless otherwise specified.
- G. Notify all affected businesses and residences of all water system shutdowns or interruptions 48 hours in advance.

### 3.2 PIPE INSTALLATION

- A. Prepare trench bottom as required by Section 301 – Trench Excavation.
- B. If excavation enters an area of petroleum or other contamination, stop work and notify the Engineer for verification of piping and gasket material usage. In such areas, use pipe and joint materials not subject to permeation by organic compounds. Use non-permeable materials for all portions of the system affected by organic contamination endangering water mains, services, and hydrant leads.
- C. Do not lay pipe unless groundwater is 1 foot below the pipe invert and a foundation has been provided in accordance with Section 304 – Trench Foundation Stabilization.
- D. Provide pipe bedding and initial backfill as required by Section 305 – Pipe Bedding.
- E. Install pipe in accordance with the manufacturer's recommendations.
- F. Use standard lengths of pipe unless otherwise required for installation of

tees, fittings, or valves.

- G. Utilize proper tools for cutting and beveling pipe ends and joining pipe. Use manufacturer's recommended tools designed for this task.
- H. Move pipe carefully and prevent damage to pipe and manufactured ends while lowering pipe into trench.
- I. Prevent foreign material including debris, tools, clothing, and dirt from entering the pipe. Remove dirt and other foreign material from pipe.
- J. Prepare pipe joint using specified gasket and manufacturer's recommended lubricant.
- K. Mark, or verify that pipe ends are marked, to indicate insertion stop position (home). Ensure that pipe is inserted into bell to this mark. Push spigot into bell using methods recommended by the manufacturer. Protect the end of the pipe during "homing" and do not use excessive force that may result in over-assembled joints, dislodged gaskets, or damaged ends. If full entry is not achieved, disassemble and clean the joint and reassemble.
- L. Provide sufficient restraint for the pipe to ensure that joints are held in place while bedding and initial backfill are placed.
- M. When pipe installation is not in progress, block and plug the open end of the pipe to prevent creep, uplift or floating and entrance of water or other material into the pipe.
- N. Ensure pipe is installed to lines and grades indicated in the Contract Documents.
- O. Place locating wire directly above pipe. Ensure that locating wire is taped in place and remains directly above pipe during and after backfill has been placed.
- P. Install anchors and supports as indicated in the Contract Documents
- Q. Backfill trench as required by Section 306 – Trench Backfill.

### 3.3 POLYETHYLENE ENCASEMENT

- A. Secure polyethylene encasement around pipe per ANSI/AWWA C 105 Method A.
- B. Cut tube to a length 24 inches longer than the pipe section and wrap around pipe in accordion fashion.

- C. After placement in trench and jointing, secure overlapping tubing. Provide 24 inches of overlap at each joint. Repair any cuts or tears with tape or patch secured in place.

### 3.4 THRUST BLOCKS

- A. Place thrust blocks at each angled fitting, tee, cross, reducer, cap, plug and valve in accordance with Standard Drawing SD-403 – Thrust Block and Anchor Details.
- B. Provide bearing area against undisturbed earth.
- C. Place thrust blocks such that fitting or valve can be removed at a later date without damage to the pipeline, valve or fitting.
- D. Place 6 mil polyethylene between thrust block and fitting.
- E. Place concrete so no concrete touches the nuts and bolts of the fitting or valve, and the nuts and bolts can be removed and replaced without removing any concrete.
- F. Thrust block bearing areas as listed on Standard Drawing SD-403 – Thrust Block and Anchor Details. For test pressures greater than 150 psi or soil bearing pressures less than 2,000 psi, increase thrust block bearing areas as directed by the Engineer.

### 3.5 PIPE ANCHORS

- A. Place pipe anchors on all pipe installed on slopes of 20% or greater measured along the centerline of pipe. Install per Standard Drawing SD-510 - Pipe Anchors.
- B. Provide bearing area against undisturbed earth.

### 3.6 PRESSURE TESTING

- A. Perform testing in the presence of the City Engineer or the City's authorized Resident Project Representative
- B. Assure that trench is properly backfilled and thrust blocking has cured to a degree that will allow pressure testing without damage, or pipe/fitting movement.
- C. Gradually fill pipe with water. For pipe working pressures less than or equal to 100 psi, sustain a test pressure of 150 psi. For pipe working pressures greater than 100 psi, sustain a test pressure at least 1.5 times the

working pressure or as determined by the Engineer.

- D. Expel all air.
- E. Verify that, in a two-hour test, the pipe does not leak in excess of the allowable leakage as defined by the following formula in which  $Q$  is the allowable leakage in gallons/hour.

$$Q = \frac{LD\sqrt{P}}{148,000}$$

Where:

- $Q$  = allowable leakage in gallons per hour
- $L$  = length of pipe section being tested, in feet
- $D$  = nominal diameter of the pipe, in inches
- $P$  = average test pressure during the hydrostatic test, in pounds per square inch (gauge)

- F. Pressure test HDPE pipe per ASTM F 2164-02 Field Leak Testing of Polyethylene (PE) Pressure Piping Systems using Hydrostatic Pressure.

### 3.7 LOCATING WIRE

- A. Place locating wire at the crown of the pipe and adhere with duct tape or equivalent every 10 (ten) linear feet.
- B. CONTRACTOR must test for and ensure continuity in the presence of the City Engineer or the City's authorized Resident Project Representative.

### 3.8 PIPE MARKERS

- A. Furnish and install service line markers at stub-outs per City of Meridian Standard Drawing SW3.
- B. Provide Engineer with 2 working days notice to allow measurement of the vertical and horizontal location of pipe ends before the pipeline is covered.
  - 3. Extend marker 4 feet above the ground surface. The exposed length of marker shall be painted florescent purple.
  - 4. Where a concrete sidewalk is constructed across the service line from main to meter can, sidewalk shall be marked with a stamped 4 inch high "RW" at the location of the meter lid.

### 3.9 CONNECTIONS TO EXISTING MAINS

- A. Expose existing main and verify line size and type of pipe.

- B. Furnish and install necessary fittings to make connection.
- C. Maximum allowable pipe gap at couplings is 1/2 inch.

3.10 ABANDONMENT OF EXISTING MAINS

- A. Expose main to be abandoned and verify line size and type of pipe.
- B. Cut out existing fitting that connects abandoned main to pipe that is to remain in service.
- C. Replace fitting with section of new pipe and required couplings.

3.11 LOCATION TAPE

- A. Place location tape 18"-24" above pipe.

**PART 4 MEASUREMENT AND PAYMENT**

- 4.1 Use either the first or both of the following unit prices as designated on the Bid Schedule. If required and not listed in the Bid Schedule, the following Bid Items are to be considered incidental to other Bid Items.

- A. Recycled Water Main Pipe – Size \_\_\_\_\_ - Type \_\_\_\_\_ :  
By the linear foot for the type and size of pipe measured along the horizontal centerline of the pipe through all fittings and valves. Includes pipe, (if not included as a separate Bid Item), fittings, connections, thrust blocks, restraint, cleaning, testing, excavation, bedding, backfill and all appurtenances not itemized in the Bid Schedule.

- 1. Bid Schedule Payment Reference: 1201.4.1.A.1.
- 2. Bid Schedule Description: Recycled Water Main Pipe – Size \_\_\_\_\_ - Type \_\_\_\_\_... linear foot (LF).

- B. Recycled Water Main Fitting – Size \_\_\_\_\_ - Type \_\_\_\_\_ : Per each for the type, size and material of the fitting. Includes fittings, connections, thrust blocks, restraint, cleaning, testing, excavation, bedding, backfill and all appurtenances not itemized in the Bid Schedule.

- 1. Bid Schedule Payment Reference: 1201.4.1.B.1.
- 2. Bid Schedule Description: Recycled Water Main Fitting – Size \_\_\_\_\_ - Type \_\_\_\_\_... each (EA).

●● END OF SECTION ●●

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**SECTION 1202**

**HYDRAULIC VALVES**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Recycled Water Valves.
- B. Valve Boxes.

1.2 RELATED SECTIONS

- A. Section 401 – Water Pipe and Fittings.
- B. Section 403 – Hydrants.  
Section 404 – Service Line and Meters.
- C. Section 703 – Cast-in-Place Concrete.

1.3 REFERENCES

- A. ANSI/AWWA C 509 – Resilient Seated Gate Valves for Water Supply Service.
- B. ANSI/AWWA C 512 – Air Release, Air/Vacuum and Combination Air Valves for Waterworks Service.
- C. ANSI/AWWA C 550 – Protective Epoxy Interior Coatings for Valves and Hydrants.
- D. IDAPA 58.01.17 – Recycled Water Rules.

1.4 SUBMITTALS

- A. Submit shop drawings for materials to be installed or furnished under this section.
- B. Submit manufacturer's certification that valves and appurtenances meet or exceed specified requirements.
- C. Submit manufacturers' installation instructions and maintain copy at the job site.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with manufacturer's recommendations.

1.6 OPERATION AND MAINTENANCE MANUALS

- A. Provide operation and maintenance manuals with all valves.

1.7 PROJECT RECORD DOCUMENTS

- A. Accurately record actual location of constructed valves and other encountered utilities in relation to existing permanent benchmarks.
- B. Provide copy of record documents to Owner prior to issuance of substantial completion.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Handle and store valves per manufacturer's recommendation and in a manner, which prevents shock, damage or excessive exposure to sunlight and weather.
- B. Protect valve gasket and seal materials from damage, sunlight and contamination.

**PART 2 MATERIALS**

2.1 VALVE SIZE, TYPE AND STRENGTH

- A. Comply with valve size, type, fitting type and strength classification indicated in the Contract Documents.
- B. If type and strength classifications are not indicated in the Contract Documents, notify the Engineer.
- C. Notify the Engineer if installation conditions do not match those contemplated by the Contract Documents.

2.2 RESILIENT SEATED GATE VALVES

- A. Resilient Seated Gate Valves for Recycled Water Supply Service: ANSI/AWWA C 509.
  - 1. Body Type: Flanged or mechanical joint.

2. Stem: Non-rising.
3. Actuator: 2-inch square wrench nut opening counterclockwise.
4. Stem Seal: O-ring.
5. Interior and Exterior Coating: Required. Exterior coating shall be purple in color, Pantone 512, 522 or equivalent.
6. Type of Installation: Buried.

### 2.3 AIR RELEASE, AIR VACUUM AND COMBINATION AIR VALVES

- A. Air Release/Air Vacuum and Combination Air Valves for Waterworks Service: ANSI/AWWA C 512.
  1. Valve Size, Type, Working Pressure, Inlet and Outlet Configuration: As indicated in the Contract Documents and consistent with pipe system.
  2. Body and Cover: Ductile iron.
  3. Interior and Exterior Coating: Required.
  4. Standard Detail: Refer to Standard Drawing SD-408-Air Release/Vacuum Valve.
  5. Color: Valve to be purple in color, Pantone 512, 522 or equivalent.

### 2.4 BLOW-OFF ASSEMBLY

- A. Refer to City of Meridian Standard Drawings W-12 and W-13 – 2” Blow-off Assembly Detail.

### 2.5 PROTECTIVE EPOXY COATINGS FOR VALVES

- A. Protective Epoxy Interior Coatings for Valves and Hydrants: ANSI/AWWA C 550.
  1. Color: Valve to be purple in color, Pantone 512, 522 or equivalent.

### 2.6 VALVE BOXES

- A. Size: Minimum 5-1/4 inch inside diameter.
- B. Material: Cast iron.

- C. Adjustment: Adjustable with sufficient length for bury.
- D. Cover: Cast iron stamped "Recycled Water," locking style.
  - 1. Color: Valve to be purple in color, Pantone 512, 522 or equivalent.
- E. Detail: City of Meridian Standard Drawing RW-1- Valve Box and Lid Detail.

## 2.7 THRUST BLOCKS

- A. Concrete: Per Section 703 – Cast-in-Place Concrete.
- B. Placement: Per Standard Drawing SD-403 – Thrust Block and Anchor Details.

## **PART 3 WORKMANSHIP**

### 3.1 EXAMINATION

- A. Verify that excavations are to required grade.
- B. Verify that trench conditions and shoring, sheeting, and bracing protect workers and meet the requirements of OSHA and other State and Federal requirements.
- D. Examine valves and appurtenances for defects or damage.
- C. Verify valves and appurtenances delivered to the site meet the requirements of the Contract Documents.
- D. Verify utility locations, existing piping locations and structures where connections are to be made prior to beginning work. Notify the Engineer if field conditions are different from the Contract Documents. Allow 4 hours for the Engineer to modify the design, if necessary, unless otherwise specified.

### 3.2 INSTALLATION

- A. Install valves and appurtenances in accordance with manufacturer's recommendations and the City of Meridian Standard Drawings.
- B. Install valves plumb and vertical. Set valve box centered and plumb over wrench nut and flush with ground or street surface. Install box per City of Meridian Standard Drawing RW-1 – Valve Box and Lid Detail.

- C. Install all valves so a watertight seal is provided at joints.
- D. Install valve appurtenances as required in the Contract Documents.
- E. Install all valves so weight and torque forces are supported by the valve and thrust block and not adjacent piping.
- F. Install thrust blocks under buried valves per Section 401 – Water Pipe.

### 3.3 DEMONSTRATION

- A. Demonstrate valve operation, adjustments and maintenance.
- B. Demonstrate valve functions within specified requirements.

## **PART 4 MEASUREMENT AND PAYMENT**

4.1 Use the following unit price as designated on the Bid Schedule. If required and not listed in the Bid Schedule, the following Bid Items are to be considered incidental to other Bid Items.

- A. Valve – Size \_\_\_\_\_ - Type \_\_\_\_\_ : Per each for the type and size of valve specified. Includes valve, fittings, valve boxes, connections, actuators, concrete collar and all appurtenances not itemized in the Bid Schedule.
  - 1. Bid Schedule Payment Reference: 1202.4.1.A.1.
  - 2. Bid Schedule Description: Valve – Size \_\_\_\_\_ - Type \_\_\_\_\_ each (EA).
- B. Blow-off – Type \_\_\_\_\_ : Per each for the type of blow-off specified. Includes corporation stop or valve (as required), fittings, valve boxes, connections, concrete collar and all appurtenances not itemized in the Bid Schedule.
  - 1. Bid Schedule Payment Reference: 1202.4.1.B.1.
  - 2. Bid Schedule Description: Blow-off – \_\_\_\_\_ - Type \_\_\_\_\_ each (EA).

●● END OF SECTION ●●

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**SECTION 1204**

**RECYCLED WATER SERVICE LINE AND METERS**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Service Pipe.
- B. Recycled Water Meters.
- C. Appurtenances.

1.2 RELATED SECTIONS

- A. Section 301 – Trench Excavation.
- B. Section 304 – Trench Foundation Stabilization.
- C. Section 306 – Trench Backfill.
- D. Section 1201 – Water Pipe and Fittings.
- E. Section 1202 – Hydraulic Valves.
- F. Section 405 – Non-Potable Water Line Separation.

1.3 REFERENCES

- A. ANSI/AWWA C 800: Underground Service Line Valves and Fittings.
- B. ANSI/AWWA C900: Polyvinyl Chloride (PVC) Pressure Pipe, 4 inch through 12 inch for Recycled Water Service.
- C. ANSI/AWWA C 901: Polyethylene (PE) Pressure Pipe and Tubing,  $\frac{3}{4}$  inch to 2 inch for Recycled Water Service.
- D. IDAPA 58.01.17 - Recycled Water Rules

1.4 SUBMITTALS

- A. Submit shop drawings and product data for materials to be installed or furnished under this section.
- B. Submit manufacturer's certification that service pipe and meters meet or

exceed specified requirements.

- C. Submit manufacturers' installation instructions and maintain copy at the jobsite.

#### 1.5 PROJECT RECORD DOCUMENTS

- A. Accurately record actual location of water services and meters in relation to existing benchmarks.
- B. Provide copy of record documents to owner prior to issuance of substantial completion.

#### 1.6 DELIVERY, STORAGE AND HANDLING

- A. Handle and store pipe and meters per manufacturer's recommendations and in a manner which prevents shock, damage or excessive exposure to sunlight and weather.
- B. Protect gasket material from damage, sunlight and contamination.

#### 1.7 METER WARRANTY AND OPERATION AND MAINTENANCE MANUAL

- A. Main Case: Manufacturing workmanship defect guarantee for the life of the unit.
- B. Registers and Metering Components: Free from manufacturing defects for a period of 10 years, nonprorated.
- C. Provide an operation and maintenance manual for each type of meter supplied.

## **PART 2 MATERIALS**

#### 2.1 PIPE AND FITTINGS SIZE, TYPE AND STRENGTH

- A. Comply with pipe and fitting size, type and strength classification indicated in the Contract Documents.
- B. If type and strength classifications are not indicated in the Contract Documents, use polyethylene pipe.
- C. Notify the Engineer if installation conditions such as trench width, depth, soils, and bedding conditions do not match those contemplated by the Contract Documents.

## 2.2 SERVICE PIPE

- A. Polyethylene (PE) Pressure Pipe for Recycled Water Service:  
ANSI/AWWA C 901.
1. Pressure Class: 200 psi.
  2. Outside Dimension Ratio: DR 7.
  3. Dimension Basis: Iron Pipe Size (IPS).
  4. Standard PE Code Designation: PE 3408 per ASTM D 3350.
  5. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.
- B. Polyvinyl Chloride (PVC) Pipe for Recycled Water Distribution:  
ANSI/AWWA C 900
1. Pressure Class: 200 psi.
  2. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.

## 2.3 RECYCLED WATER METER

- A. Cold Recycled Water Meters – Turbo Meter: ANSI/AWWA C 700.
1. Product: In accordance with the Contract Documents.
  2. Exterior Coating: Required. Exterior coating shall be purple in color, Pantone 512, 522 or equivalent.

## 2.4 APPURTENANCES

- A. Service Saddles.
1. 1” taps or less: Ford FS101, Romac 101S, or approved substitution. Iron saddle bodies shall be lined and coated with a minimum thickness of 0.012” of fusionbonded epoxy, or approved substitution. Coating must comply with ASTM C213 and AWWA C550.
  2. Larger than 1” taps: Ford FS202, Romac 202S, or approved substitution. Iron saddle bodies shall be lined and coated with a minimum thickness of 0.012” of fusionbonded epoxy, or approved substitution. Coating must comply with ASTM C213 and AWWA

C550.

3. Color: Saddles to be purple in color, Pantone 512, 522 or equivalent.

B. Corporation Stops.

1. Type: Refer to City of Meridian Standard Drawing W-1.
2. Product: Ballcorp style O.D., or approved substitution, for IPS PE pipe. Refer to City of Meridian Standard Drawing W-1.
3. Color: Corporation stops to be purple in color, Pantone 512, 522 or equivalent.

C. Couplings.

1. Type: Compression couplings for polyethylene pipe, or approved substitution.
2. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.

D. Meter Setters.

1. Type: Copper with integral pack joints on both ends.
2. Fittings: Iron pipe size for polyethylene pipe.
3. Bracing: Brace pipe eye on the cross brace.
4. Valving: Integral dual check valve on outlet.
5. Product: Ford VHH92 series, or approved substitution.
6. Exterior Coating: Required. Exterior coating shall be purple in color, Pantone 512, 522 or equivalent.

E. Fittings.

1. All brass or copper with iron pipe threads.
2. Exterior Coating: Required. Exterior coating shall be purple in color, Pantone 512, 522 or equivalent.

D. Locating Wire.

1. Type: (No. 12 AWG) copper with purple insulation.
2. Splicing: Approved waterproof wire connectors and method to include strain relief.

E. Meter Box.

1. For  $\frac{3}{4}$  inch to 1 inch service:
  - a. Size: 36 inch depth and 20 inch diameter.
  - b. Product: Midstates Plastics, Inc., with thermal pack insulating pad and locating shelf or approved substitution.
  - c. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.
  - d. Refer to City of Meridian Standard Drawing W1.

Note: All meter boxes shall be slotted so as to not transmit shock or bear on the water service connection pipe.

2. For  $1\frac{1}{2}$  inch to 2 inch service:
  - a. Type: 30 inch x 44 inch C.M.P with grade rings per Standard Drawing SD402 – Water Service Connection (1- $\frac{1}{2}$  – 2”)
  - b. Color: Pipe to be purple in color, Pantone 512, 522 or equivalent.

H. Meter Box Cover.

1. Configuration: Flush mounted with a flush mounted lid and locking device on the lid with a standard pentagon bolt.
2. Material: Cast iron.
3. Size: Lid and frame shall be traffic rated and sized to match water meter box.
4. Product: D & L Supply B5020 (in traffic area) or Ford type X43 (in nontraffic areas) or approved substitution.
5. Color: Meter box cover to be purple in color, Pantone 512, 522 or

equivalent.

## 2.5 HEALTH REQUIREMENTS

- A. When using Class A recycled water the public and personnel at the area of use must be notified that the water is recycled water and is not safe for drinking or human contact. Signs shall be posted and must state “Caution: Recycled Water - Do Not Drink”, or equivalent signage both in English and Spanish.

## **PART 3 WORKMANSHIP**

### 3.1 EXAMINATIONS

- A. Verify that excavations are to required alignment and grade per Section 301 Trench Excavation and Standard Drawings SD306 Utility Trench, and that installation meets Section 405 – Non-Potable Water Line Separation.
- B. Verify that trench conditions and shoring, sheeting, and bracing protect workers and meet the requirements of OSHA and other State and Federal requirements.
- C. Verify that trench depth will allow a minimum of 48 inches cover over service lines.
- D. Examine service pipe, fittings, meters and appurtenances for defects or damage.
- E. Verify service pipe, fittings, meters, and materials delivered to the site meet the requirements of the Contract Documents.
- F. Verify utility locations, existing piping locations and structures where connections are to be made prior to beginning work. Notify the Engineer if field conditions are different from the Contract Documents. Allow 4 hours for the Engineer to modify the design, if necessary, unless otherwise specified.

### 3.2 INSTALLATION

- A. Coordinate with property owners prior to connection, at least 48 hours in advance. Disruption of service shall not exceed 4 hours in duration.
- B. Install service lines and recycled water meters in the locations indicated on the Contract Documents.

DIVISION 1200  
RECYCLED WATER

- C. Install pipe, fittings, meters, and meter boxes in accordance with the manufacturer's recommendations and City of Meridian Standard Drawing W1 and ISPWC Standard Drawing SD402 – Water Service Connection
- D. Install service lines under paved concrete surfaces by pulling or boring the new service line in place from the new recycled water main to the meter. If, according to the Engineer, pulling or boring is not attainable, install service lines by trenching.
- E. Prepare trench bottom as required by Section 301 – Trench Excavation.
- F. Do not lay pipe unless groundwater is 1 foot below the pipe invert and a foundation has been provided in accordance with Section 304 – Trench Foundation Stabilization.
- G. Provide pipe bedding and initial backfill as required by Section 306 – Trench Backfill.
- H. Utilize proper tools for cutting and beveling pipe ends and installing fittings.
- I. Clean and prepare pipe and fittings.
- J. Assure that no dirt or other foreign material is allowed in pipe.
- K. Assure that continuity is maintained in locating wire for both open cut and "pulled" service lines.

**PART 4 MEASUREMENT AND PAYMENT**

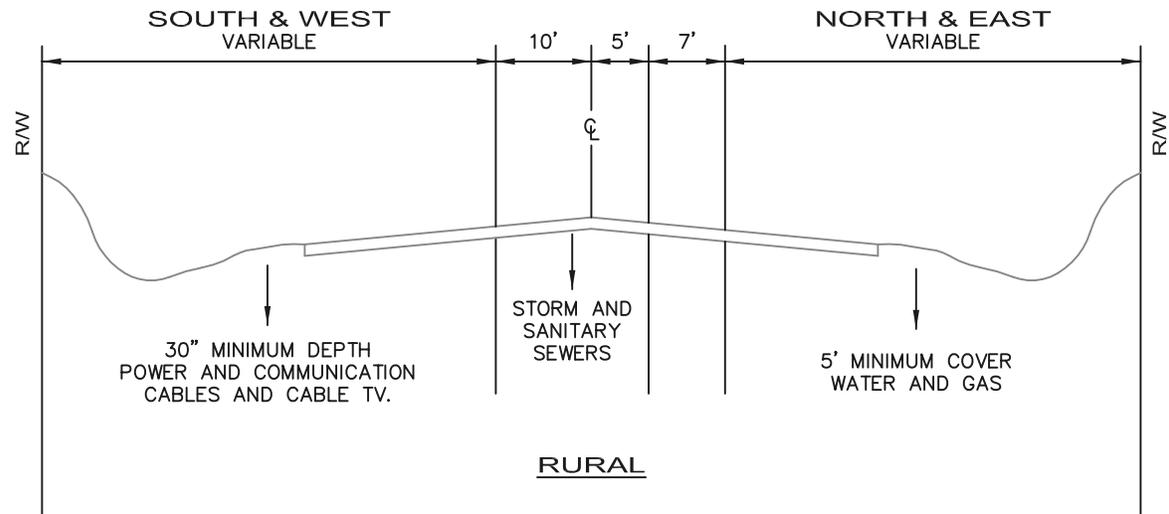
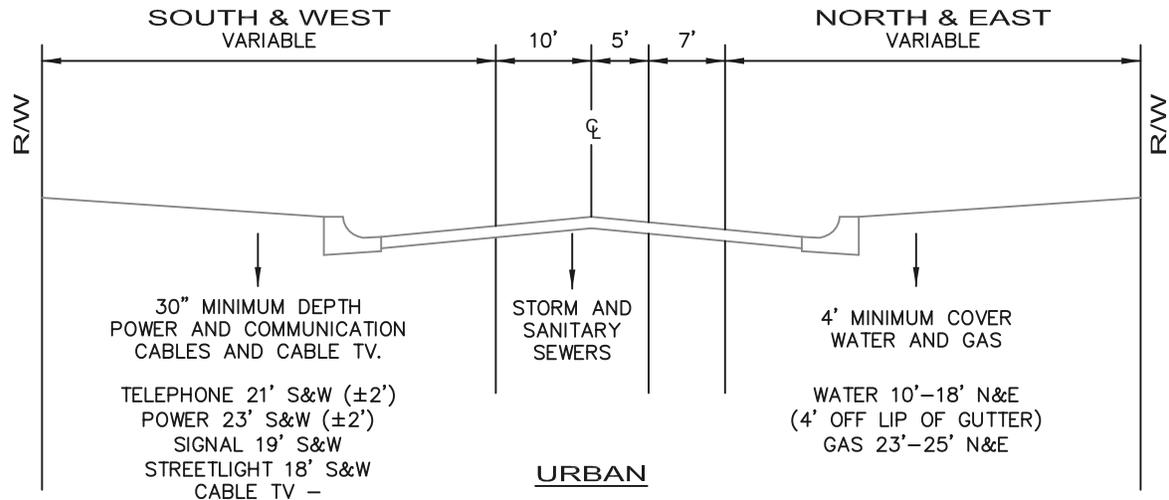
- 4.1 Use the following unit price as designated on the Bid Schedule. If required and not listed in the Bid Schedule, the following Bid Items are to be considered incidental to other Bid Items.
  - A. Recycled Water Service Connection: Per each as specified. Includes excavation, bedding, backfill, service tap and saddle, corporation stop, service pipe, fittings, meter box and all appurtenances not itemized in the Bid Schedule.
    - 1. Bid Schedule Payment Reference: 1204.4.1.A.1.
    - 2. Bid Schedule Description: Recycled Water Service Connection, \_\_\_\_\_ size \_\_\_\_\_ each (EA).

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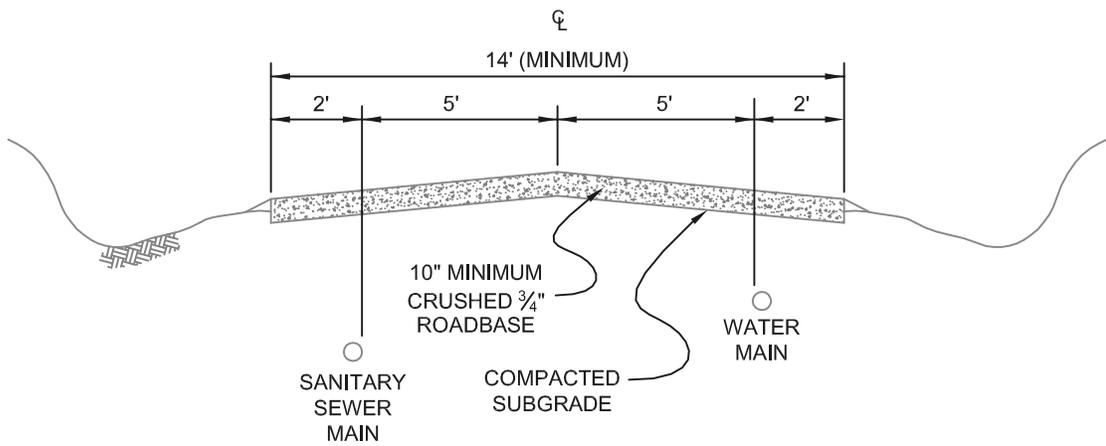
NO ALTERATIONS TO THIS DIVISION

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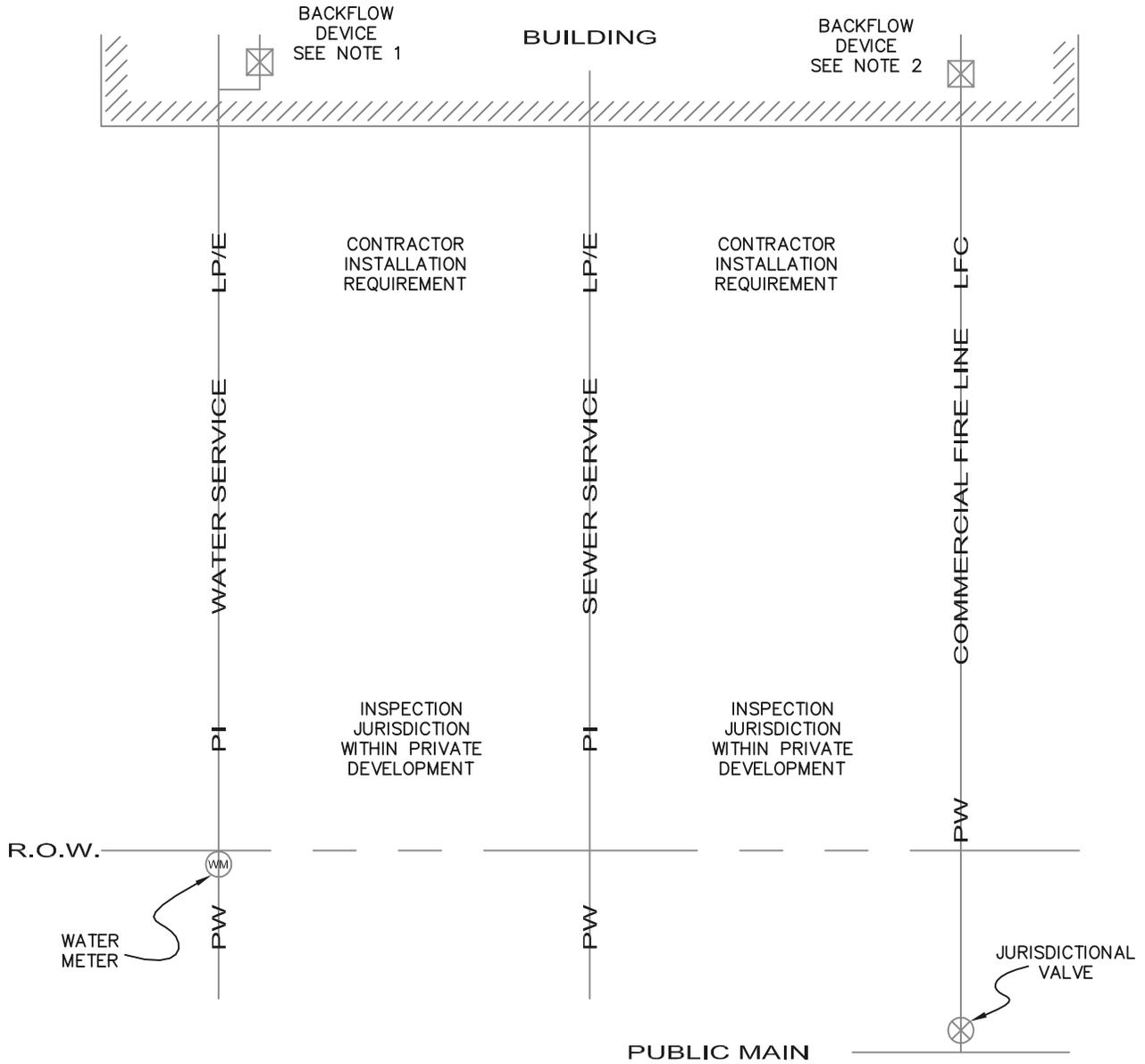
### GENERAL NOTES

1. THE CITY OF MERIDIAN REQUIRES WATER MAINS TO BE PLACED 4' OFF OF LIP OF CURB.
2. THIS LOCATION STANDARD SHALL BE USED IN ALL UNDERGROUND CONSTRUCTION UNLESS EXISTING CONDITIONS DO NOT PERMIT.
3. WRITTEN PERMISSION FROM ANY UTILITY IS REQUIRED IF THEIR CORRIDOR IS INFRINGED UPON.
4. PRESSURIZED IRRIGATION MUST BE OUTSIDE PUBLIC R/W EXCEPT FOR CROSSINGS WHICH MUST BE INSTALLED AT A MAXIMUM DEPTH OF 2'-6" IN AN AWWA C-900 PIPE SLEEVE. THE PUBLIC WORKS DEPARTMENT MUST INSPECT ALL CROSSINGS PRIOR TO BACKFILL.



**NOTE**

ALL GRAVELED ROADWAYS SHALL  
BE CENTERED OVER THE UTILITIES.



**NOTES**

1. IF A RESIDENTIAL FIRE SPRINKLER SYSTEM IS TO BE INSTALLED, THE PLUMBING INSPECTOR WILL INSPECT THE INSTALLATION THROUGH THE BACKFLOW DEVICE. THE FIRE INSPECTOR WILL INSPECT THE SYSTEM BEYOND THE BACKFLOW DEVICE.
2. THE PUBLIC WORKS INSPECTOR WILL INSPECT THE INSTALLATION OF COMMERCIAL FIRE LINES, AND OVERSEE THE BACTERIOLOGICAL SAMPLES TO THE BACKFLOW DEVICE. THE FIRE INSPECTOR WILL OVERSEE THE PRESSURE TESTING OF THE FIRE LINE TO THE JURISDICTIONAL VALVE.

**LEGEND**

INSPECTION JURISDICTION

PW PUBLIC WORKS  
 PI PLUMBING INSPECTOR

INSTALLATION REQUIREMENT

LFC LICENSED FIRE CONTRACTOR  
 LP/E LICENSED PLUMBER OR EXCAVATOR

4'

# CITY OF MERIDIAN UTILITY PROJECT

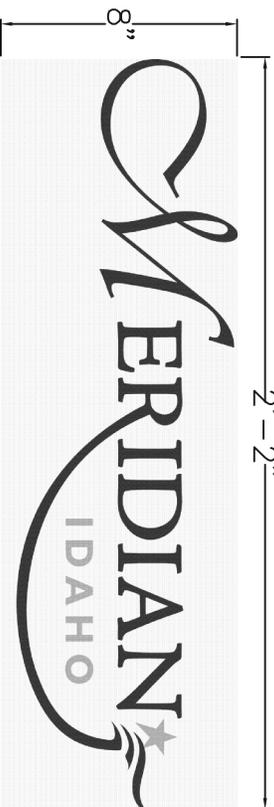
2" LETTERING

1" LETTERING

PINE TRUNK SEWER CONNECTOR

IMPROVING THE QUALITY OF LIFE FOR ALL OUR RESIDENTS

2'-2"



8"

GENERAL CONTRACTOR: INSERT CONTRACTOR HERE  
PROJECT MANAGER: JOHN DOE  
CONSULTANT: ABC ENGINEERS  
ESTIMATED COMPLETION: SUMMER 2012

.60" LETTERING

FOR PROJECT INFORMATION CALL (208) 898-5500  
[www.meridiancity.org](http://www.meridiancity.org)

3'

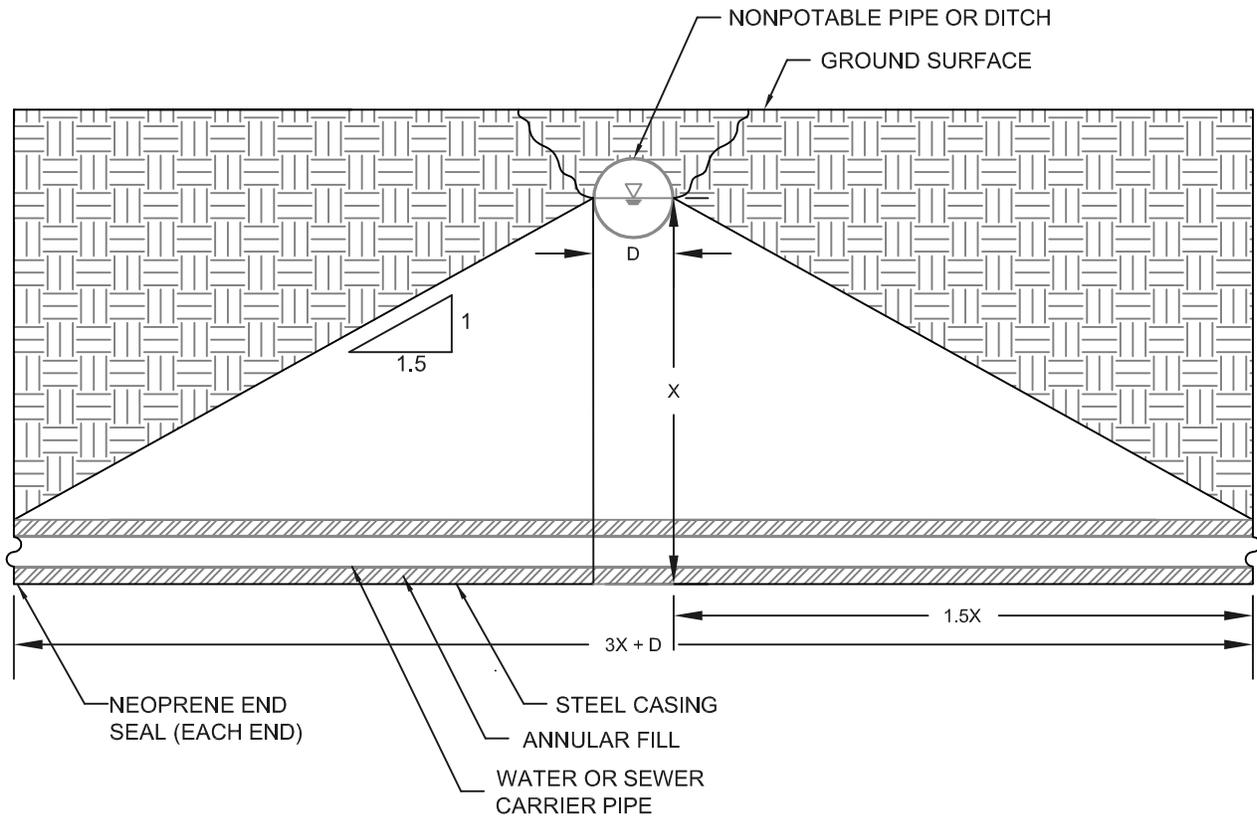
1'-3"

CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
SPECIFICATIONS  
TO THE IDAHO STANDARDS FOR  
PUBLIC WORKS CONSTRUCTION

CAPITAL PROJECT  
INFORMATIONAL SIGN

STANDARD DRAWING NO.

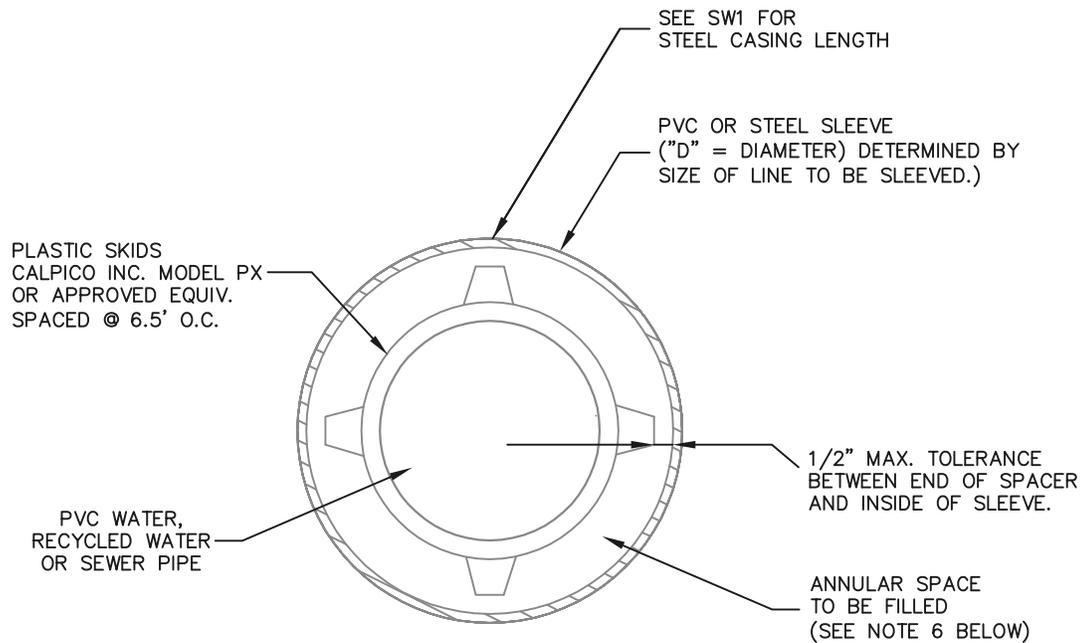
G4



**NOTES**

1. CASING LENGTH SHALL BE AT LEAST 3X+D IN LENGTH, WHERE X IS THE DISTANCE FROM THE CENTER OF THE NONPOTABLE PIPELINE OR DITCH TO THE REQUIRED BOTTOM OF THE CASING AND D IS THE DIAMETER OF THE IRRIGATION PIPELINE. (MINIMUM CASING LENGTH SHALL BE 20')
2. CASING SHALL BE CENTERED UNDER IRRIGATION PIPELINE
3. ANNULAR SPACE SHALL BE FILLED PER ISPWC AND CITY SUPPLEMENTAL SPECIFICATIONS

REVISION DATE: 7/14



### NOTES

1. VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO CONSTRUCTION.
2. PIPE SLEEVE/CASING ASSEMBLY SHALL BE INSPECTED BY MERIDIAN PUBLIC WORKS DEPARTMENT PRIOR TO INSTALLATION IN THE TRENCH .
3. WATER-TIGHT BOOTS SHALL BE INSTALLED ON EACH END OF THE PIPE SLEEVE/CASING.
4. BELL RESTRAINTS ARE REQUIRED ON ALL WATER, RECYCLED WATER AND PRESSURE SEWER PIPING PLACED WITHIN THE PIPE SLEEVE/CASING.
5. IN EMERGENCY SITUATIONS AND WITH WRITTEN APPROVAL OF THE CITY ENGINEER OR THE INSPECTOR AS THE ENGINEER'S REPRESENTATIVE, REDWOOD SKIDS MAY BE USED PER ISPWC SD-307, SECTION A-A.
6. THE ANNULAR SPACE BETWEEN THE CARRIER PIPE AND CASING PIPE SHALL BE FILLED IN ACCORDANCE WITH SECTIONS 308, 309 AND 310. AN EXCEPTION MAY BE ALLOWED IF THE SLEEVE IS FOR NONPOTABLE SEPARATION REQUIREMENTS OR SLEEVING IS LESS THAN 10 FEET DEEP AND NO GROUNDWATER IS ANTICIPATED. ALL EXCEPTIONS MUST BE APPROVED IN WRITING BY THE CITY ENGINEER.

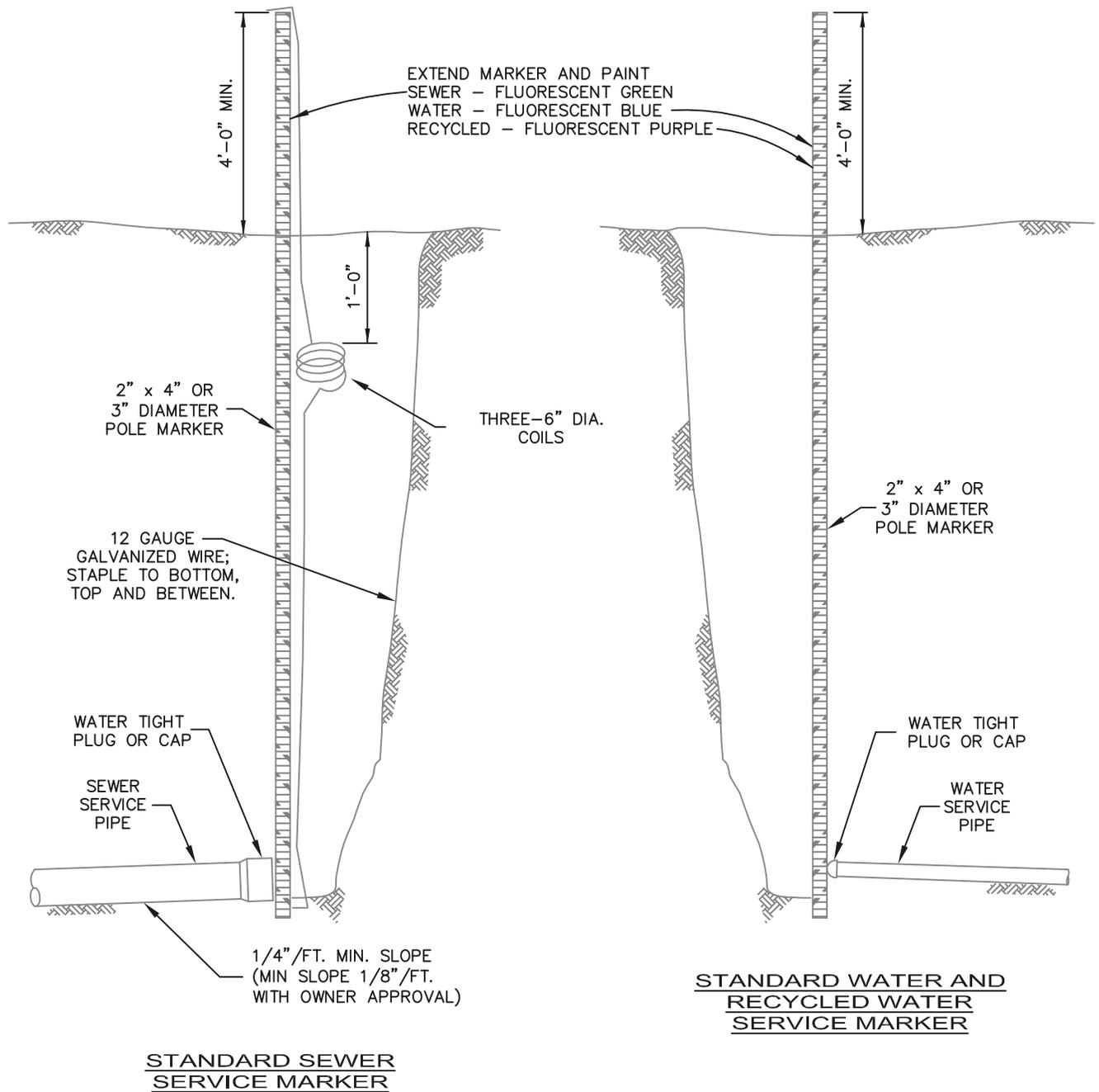
REVISION DATE: 7/14

CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
SPECIFICATIONS  
TO THE IDAHO STANDARDS FOR  
PUBLIC WORKS CONSTRUCTION

## PIPE SLEEVE / CASING

STANDARD DRAWING NO.

# SW2



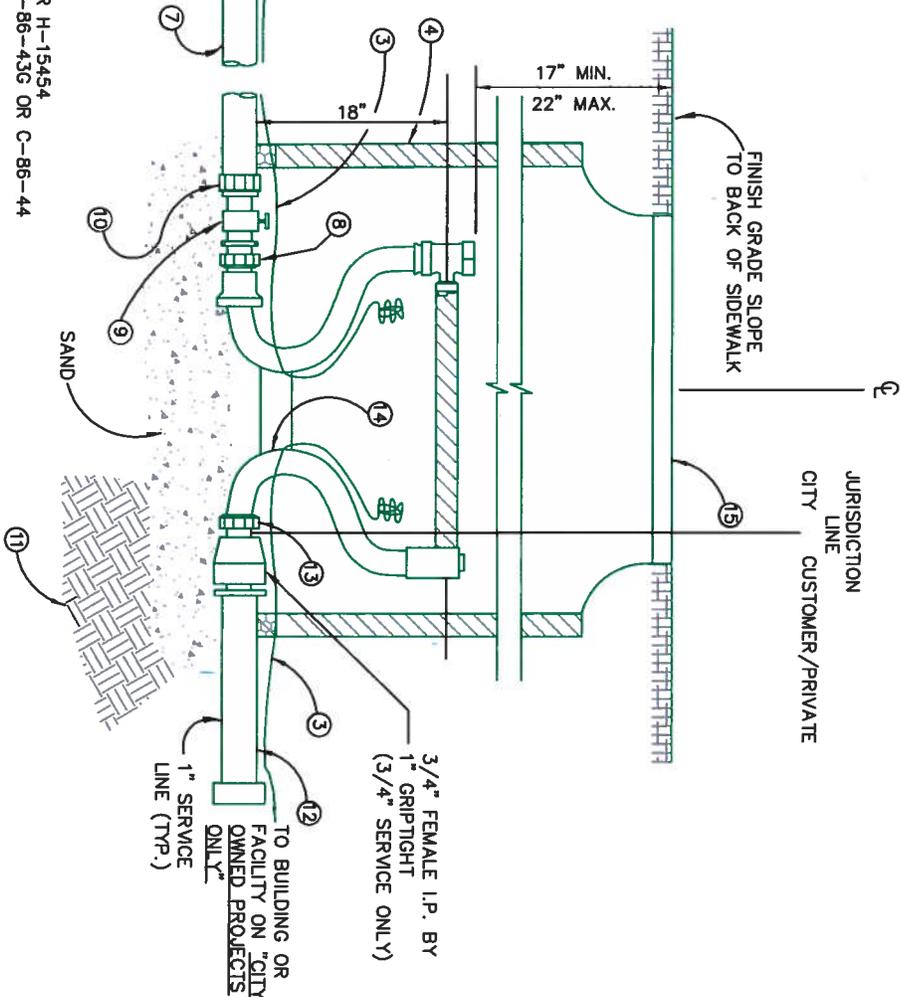
**NOTES**

1. NO GALVANIZED PIPE OR YELLOW BRASS FITTINGS SHALL BE USED. THE CITY OF MERIDIAN REQUIRES THAT ALL WATER METERS AND WATERWORKS BRASS BE ANSI/NSF 61 CERTIFIED AND MEET EPA NO LEAD REQUIREMENTS.
2. SERVICE PIPE SHALL BE ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE PIPE CONFORMING TO ASTM D 2239, SDR 7, CLASS 200, IRON PIPE SIZE.
3. SADDLE COUPLERS SHALL BE USED FOR CONNECTION OF ALL SERVICE LINES TO PVC MAIN. ALL SERVICE SADDLES SHALL CONSIST OF A STAINLESS STEEL BAND AND MUELLER THREADS TYPE CC.
4. SINGLE SERVICE SHALL HAVE 1" CURB STOP. DOUBLE SERVICES SHALL HAVE 3/4" CURB STOPS.
5. NO SERVICE CONNECTION SHALL BE MADE WITHIN EIGHTEEN (18") INCHES OF THE PIPE ENDS. MULTIPLE CONNECTIONS MADE ON THE SAME JOINT OF PIPE SHALL BE STAGGERED ON THE CIRCUMFERENCE AND SEPARATED BY A MINIMUM OF EIGHTEEN (18") INCHES.
6. SEE STANDARD DRAWING W5 FOR ELEVATION SET OF METER VAULT LID.
7. METER VAULTS LOCATED IN CONCRETE DRIVEWAYS SHALL BE CENTERED IN A 4' X 4' SQUARE OF CONCRETE, SEPARATED FROM THE REST OF THE DRIVEWAY CONCRETE BY EXPANSION JOINT MATERIAL.
8. METER VAULTS VEHICULAR TRAFFIC AREAS (INCLUDING DRIVEWAYS) SHALL USE 30"Ø CMP FOR A VAULT WITH GRADE RINGS AND MANHOLE RING AND COVER PER ISPPWC SD402. THE COVER SHALL HAVE A RECESSED HOLE FOR METER TRANSMITTER SUCH AS EAST JORDAN IROWORKS COVER 24D5C3 OR APPROVED EQUAL. OTHER METER VAULTS SHALL BE 20"Ø PVC WITH COVERS SUCH AS FORD X43L APPROVED/EQUAL COVER WITH 2" TRANSMITTER HOLE.
9. FINDER WIRE SHALL BE TAPED TO SERVICE LINES AT 5' MAX SPACING. TAPE TO SERVICE NOT MORE THAN 6" FROM ANGLE STOP (WITH 10 MIL WATERPROOF TAPE.)
10. FINDER WIRE TO EXTEND TO FACILITY ON "CITY OWNED PROJECTS" FROM METER.

**LEGEND**

- ① BALL CORPORATION STOPS (1") APPROVED: FORD B-1001-4G MUELLER B-25000
- ② CORPORATION STOP ADAPTOR MUELLER H-15454 OR APPROVED EQUAL
- ③ NO. 12 COPPER FINDER WIRE WITH BLUE INSULATION
- ④ 20" DIA. X 36" POLYETHYLENE VAULT; NOTCH FOR SERVICE LINES.
- ⑤ SERVICE SADDLE EPOXY COATED FACING WITH STAINLESS STEEL BAND AND HARDWARE
- ⑥ WATER MAIN
- ⑦ 1" SERVICE LINE, (TYPICAL). NO SPLICING ALLOWED.
- ⑧ MALE SWIVEL END.
- ⑨ FULL OPENING BALL VALVE APPROVED: 1" (FOR 1" SERV.) MUELLER B-20283 FORD B11-444 3/4" (FOR 3/4" SERV.) MUELLER B-20283 FORD B11-333

- ⑩ CURB STOP ADAPTOR MUELLER H-15454 APPROVED: FORD C-86-43G OR C-86-44
- ⑪ FIRM UNDISTURBED EARTH
- ⑫ EXTEND 10' FROM METER VAULT (SEE STD. DWG. W3) AND PROVIDE TEMPORARY PLUG (THREADED IN HIGH GROUNDWATER AREAS).
- ⑬ DOUBLE PURPOSE COUPLING (JURISDICTION LINE) APPROVED: FORD VBHC93-18W-1133 WITH OPTIONAL "BLC" BOLTED CLAMP OPTION
- ⑭ 3/4" METER SETTER WITH LOCKABLE KEY VALVE MUELLER MB 24046AF18 FORD VBHC93-18W-1133 WITH OPTIONAL "BLC" BOLTED CLAMP OPTION
- ⑮ 1" METER SETTER WITH LOCKABLE KEY VALVE APPROVED: MUELLER MB 24046AF18 FORD VBHC94-18W-1133 WITH OPTIONAL "BLC" BOLTED CLAMP OPTION

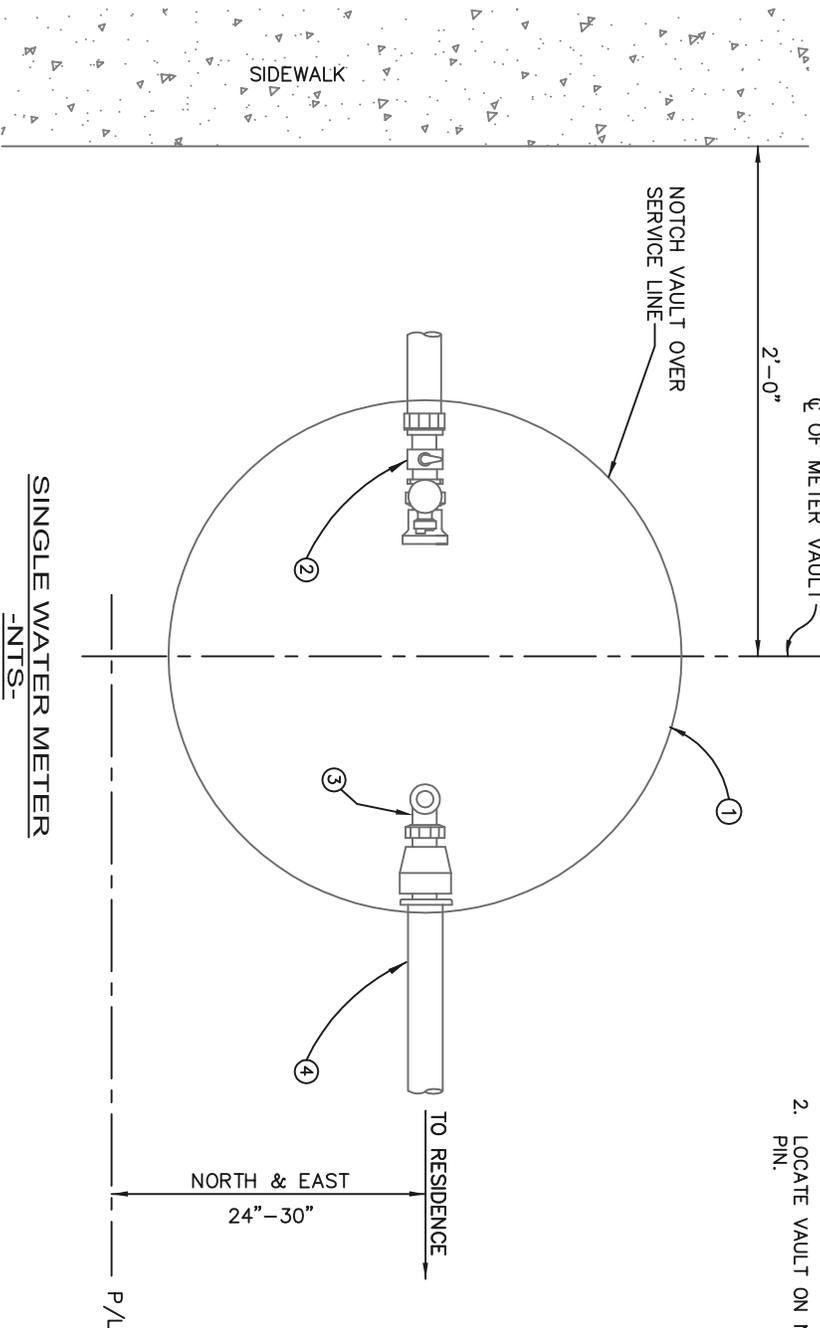


CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
SPECIFICATIONS  
TO THE IDAHO STANDARDS FOR  
PUBLIC WORKS CONSTRUCTION

**3/4" SINGLE, 3/4" DOUBLE  
OR 1" SINGLE**

**WATER SERVICE CONNECTION**

STANDARD DRAWING NO. **W1**



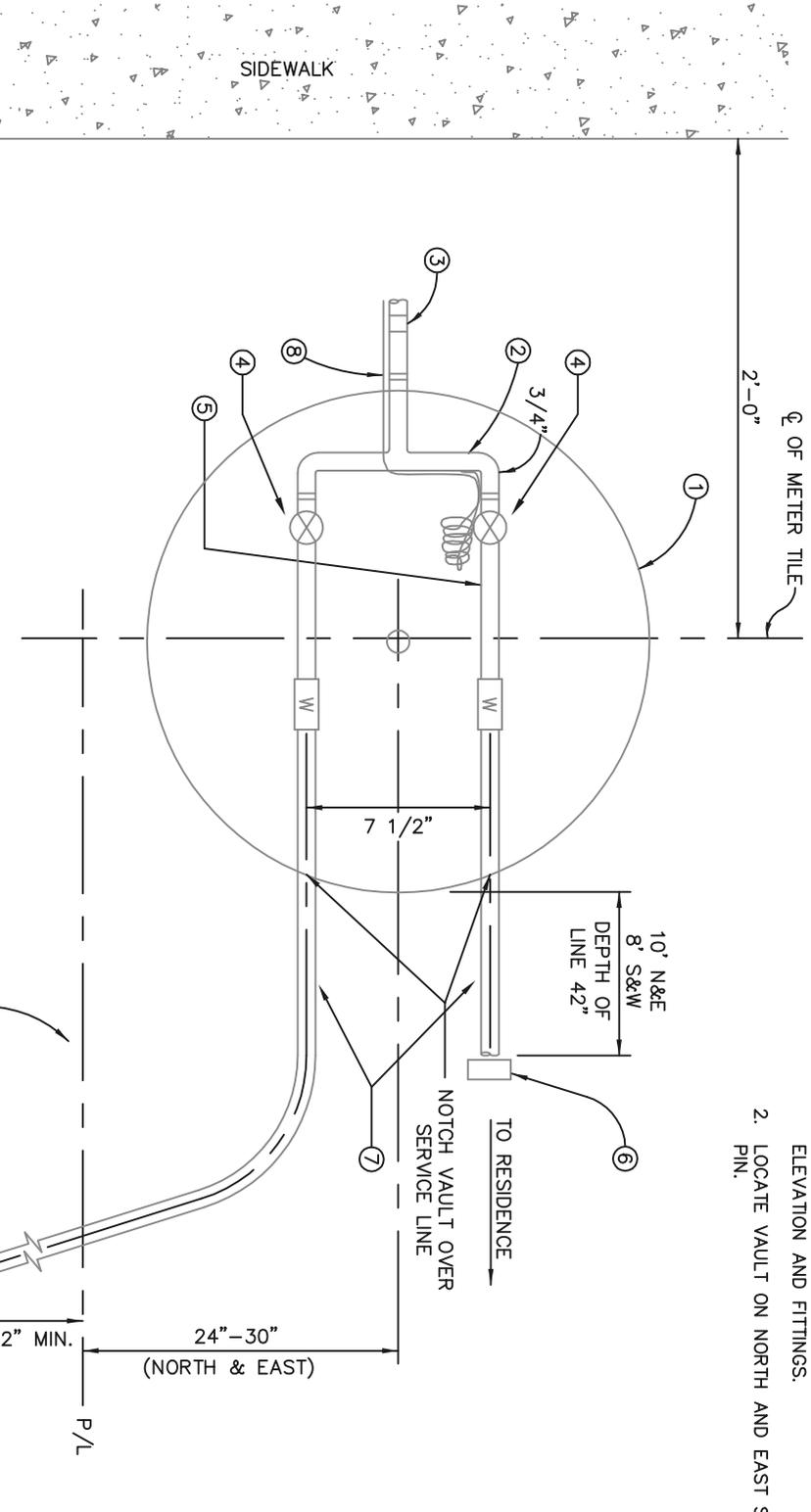
- NOTES**
1. SEE STANDARD DRAWING W1 FOR METER SETTER ELEVATION AND FITTINGS.
  2. LOCATE VAULT ON NORTH AND EAST SIDE OF PROPERTY PIN.

- LEGEND**
- ① METER VAULT; NOTCH FOR SERVICE LINE(S).
  - ② BALL VALVE
  - ③ METER SETTER
  - ④ 1"  $\phi$  POLYETHYLENE PIPE, I.P.S. CLASS 200

CITY OF MERIDIAN  
 2013 SUPPLEMENTAL  
 SPECIFICATIONS  
 TO THE IDAHO STANDARDS FOR  
 PUBLIC WORKS CONSTRUCTION

3/4" AND 1" SINGLE  
 WATER SERVICE  
 CONNECTION

STANDARD DRAWING NO.  
**W2**

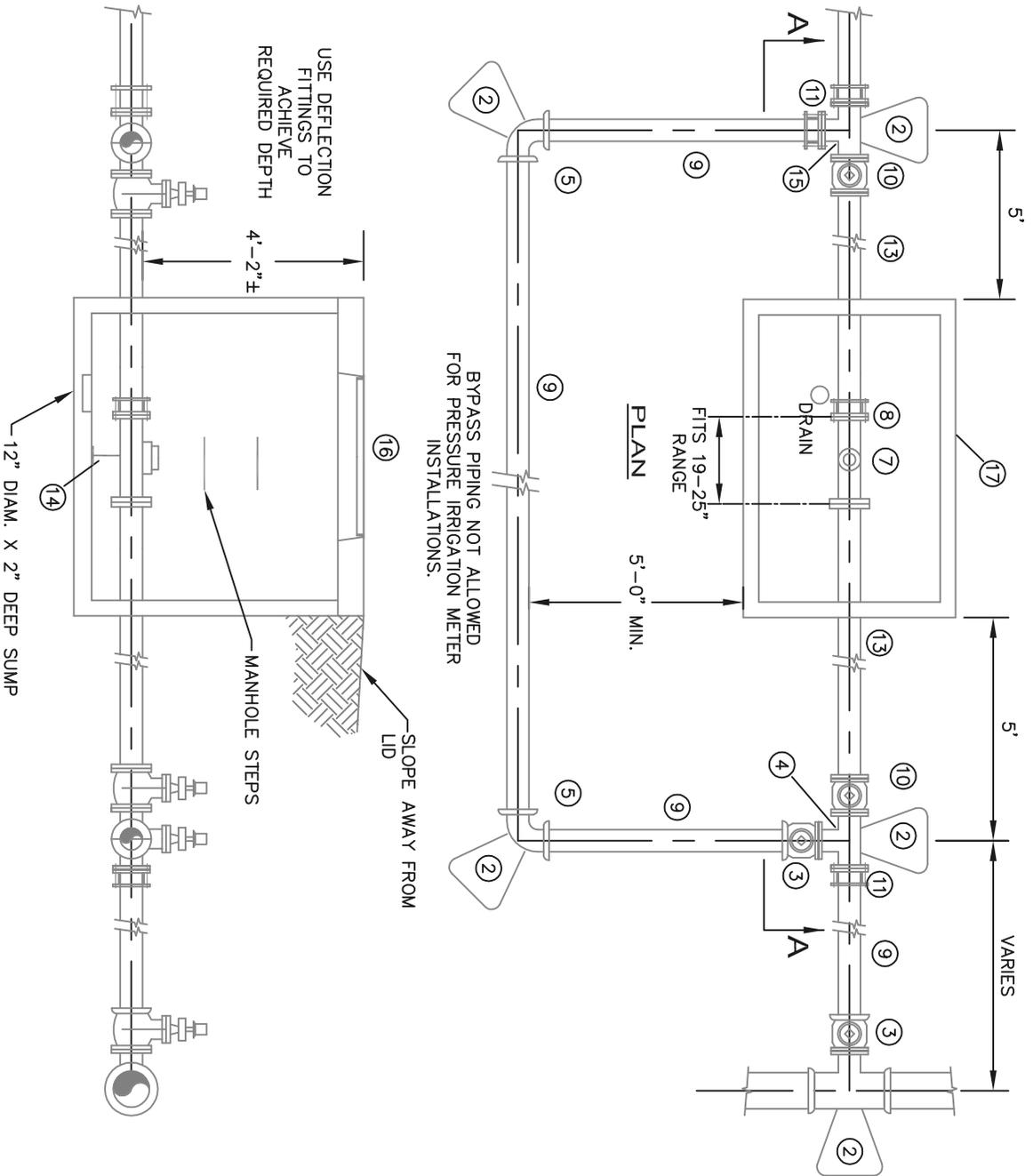


- NOTES**
1. SEE STANDARD DRAWING W1 FOR METER SETTER ELEVATION AND FITTINGS.
  2. LOCATE VAULT ON NORTH AND EAST SIDE OF PROPERTY PIN.

**DOUBLE WATER METER  
BRANCH FITTING AND LOCATION  
-NTS-**

- LEGEND**
- 1 METER VAULT NOTCH FOR SERVICE LINE(S).
  - 2 BRANCH FITTING (FORD U68-43 OR MUELLER H15364)
  - 3 1" FEMALE x I.P. "QUICK JOINT" FEMALE ADAPTOR (MUELLER H-1545)
  - 4 3/4" BALL VALVE X 2
  - 5 METER SETTER X 2
  - 6 SERVICE MARKER, 2 x 4 OR 3" DIAMETER WOODEN POLE TOP 4' PAINTED FLUORESCENT BLUE.
  - 7 1" Ø POLYETHYLENE PIPE, I.P.S. CLASS 200
  - 8 NO. 12 COPPER FINDER WIRE WITH BLUE INSULATION.

CITY OF MERIDIAN 2013 SUPPLEMENTAL SPECIFICATIONS TO THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION	<b>3/4" DOUBLE WATER SERVICE CONNECTION</b>	STANDARD DRAWING NO. <b>W/3</b>
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**LEGEND**

- ① MAIN SIZE MJ x 4" FLG TEE, OR STAINLESS STEEL TAPPING SADDLE
  - ② CONC. THRUST BLOCK
  - ③ 4" FLG x MJ GATE VALVE
  - ④ 4" FLG TEE
  - ⑤ 4" MJ 90° BEND
  - ⑥ NOT USED
  - ⑦ 4" METER PROVIDED & INSTALLED BY CITY
  - ⑧ 4" FLANGE COUPLING ADAPTER WITH 6" OF ADJUSTMENT
  - ⑨ C-900
  - ⑩ 4" FLG GATE VALVE
  - ⑪ 4" FLG x MJ ADAPTOR
  - ⑫ NOT USED
  - ⑬ D.I.P. FLG x FLG SPOOL
  - ⑭ SUPPORT STAND w/ S.S. ANCHOR BOLTS
  - ⑮ 4" FLG x FLG x MJ TEE
  - ⑯ FOR INSTALLATION OUTSIDE TRAFFIC AREAS; 33" x 33" (NOMINAL) SINGLE-LEAF HATCH DOOR. HATCH & FRAME TO BE HOT-DIP GALVANIZED, AASHTO HS-20 RATED, SPRING-ASSISTED OPEN AND CLOSE, RECESSED LIFT HANDLE, BOLT DOWN (3/8" PENTAHEAD) AND LOCKABLE.
- FOR INSTALLATION IN TRAFFIC AREAS; USE COVERS PER ISPMC SD402
- ⑰ 5'-6" L x 3'-6" W, INSIDE, PRECAST CONCRETE VAULT w/ HS-25 LOADING RATED LID

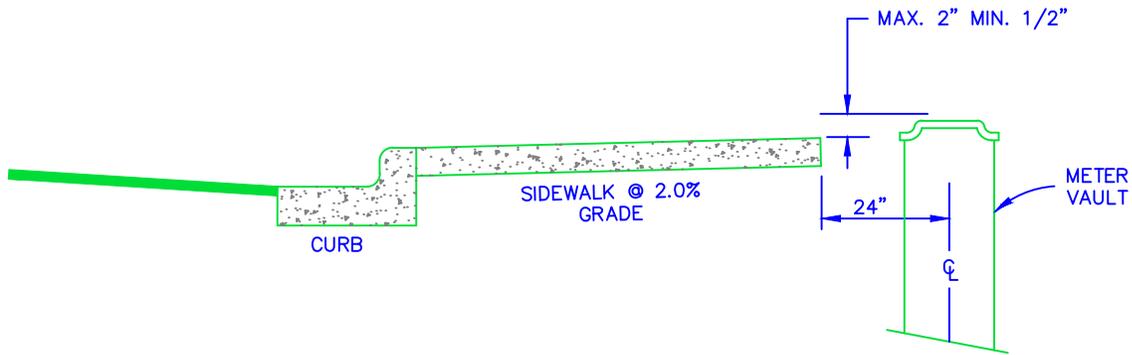
**SECTION A-A**

CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
SPECIFICATIONS  
TO THE IDAHO STANDARDS FOR  
PUBLIC WORKS CONSTRUCTION

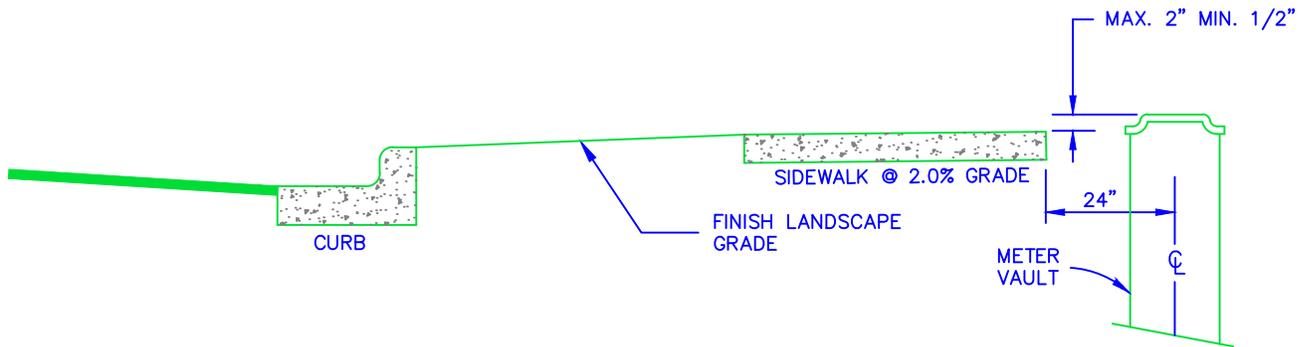
**4" WATER  
SERVICE CONNECTION**

STANDARD DRAWING NO.

**W4**



ELEVATION SET OF METER VAULT LID ATTACHED SIDEWALK

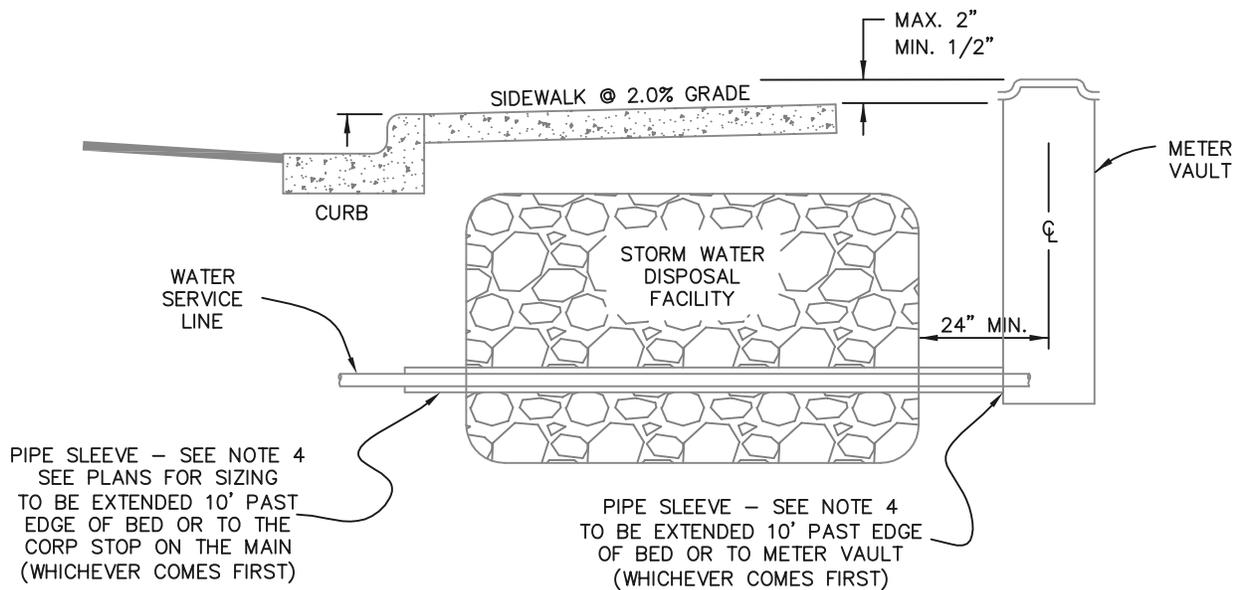


- DIMENSIONS ARE FROM FINISH GRADE OR TOP OF LANDSCAPING TO TOP OF METER LID.

ELEVATION SET OF METER VAULT LID DETACHED SIDEWALK

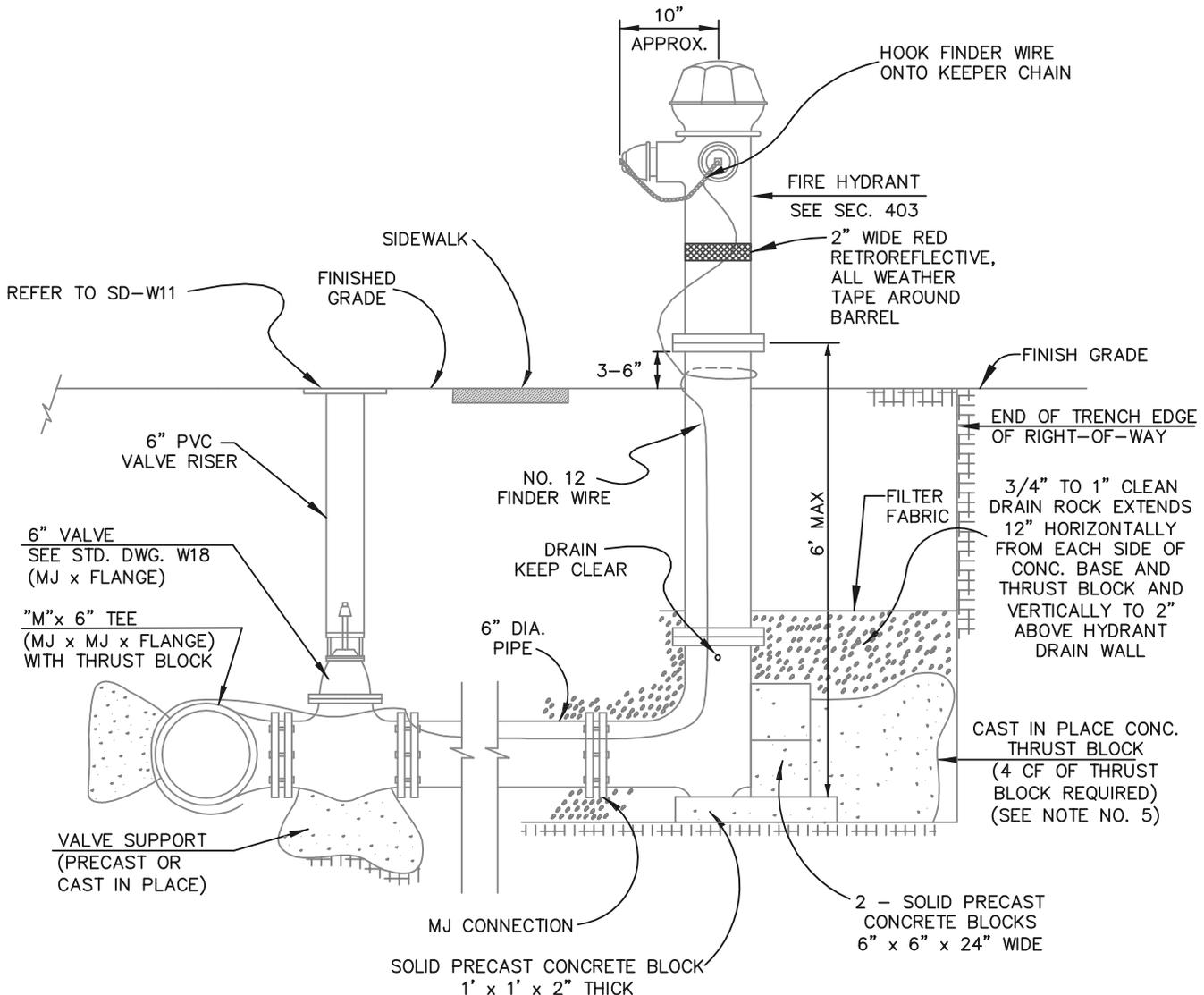
NOTES

1. IN THE ABSENCE OF A SIDEWALK, THE FOLLOWING DIMENSIONAL STANDARDS SHALL BE APPLIED:
  - THE METER LID SHALL BE A MINIMUM OF 1/2" ABOVE FINISHED GRADE OR TOP OF LANDSCAPING (MAX. = 1").
  - IN THE ABSENCE OF A SIDEWALK, THE C/L OF THE METER SHALL BE 24 INCHES FROM BACK OF CURB.
2. NO LARGE LANDSCAPING OR FACILITIES SHALL BE PERMITTED WITHIN A 5' RADIUS OF WATER METER.



### NOTES

1. IN THE ABSENCE OF A SIDEWALK, THE FOLLOWING DIMENSIONAL STANDARDS SHALL BE APPLIED:
  - THE METER LID SHALL BE A MINIMUM OF 1/2" ABOVE FINISHED GRADE OR TOP OF LANDSCAPING (MAX. = 1").
  - THE C/L OF THE METER SHALL BE 24 INCHES FROM BACK OF CURB.
2. NO LARGE LANDSCAPING OR FACILITIES SHALL BE PERMITTED WITHIN A 5' RADIUS OF WATER METER.
3. THE PIPE MATERIAL USED FOR SLEEVING MUST BE IMPERVIOUS TO CONTAMINATION FROM PETROLEUM PRODUCTS AND MUST BE APPROVED BY THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY.
4. SEAL ENDS OF PIPE SLEEVE WITH EXPANDING POLYURETHANE FOAM.



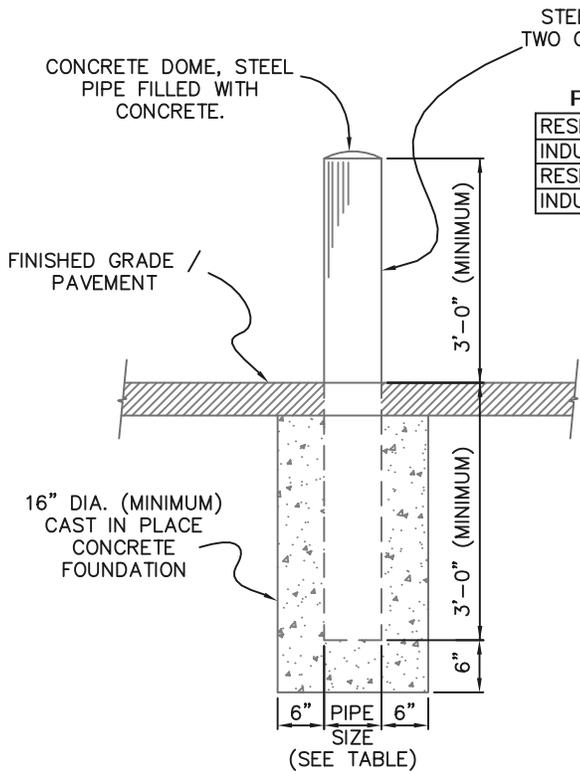
**NOTES**

1. HYDRANTS THAT ARE TO BE RELOCATED AS CALLED FOR ON THE PLAN VIEW SHALL BE REINSTALLED IN ACCORDANCE WITH THIS DETAIL.
2. ALL AUXILIARY VALVES SHALL BE LOCATED AT THE TEE ON THE WATER MAIN AS SHOWN ON THIS DETAIL UNLESS OTHERWISE SPECIFIED.
3. WHERE EXISTING FITTINGS ARE NOT COMPATIBLE WITH NEW MAIN CONSTRUCTION, SUITABLE ADAPTORS OR NEW FITTINGS SHALL BE USED UPON APPROVAL BY MERIDIAN PUBLIC WORKS.
4. ALL ANCHORS AND BLOCKING TO BEAR AGAINST UNDISTURBED SOIL.
5. IF WATER SERVICE TO HYDRANT IS TO COMMENCE PRIOR TO SETTING OF CONCRETE THRUST BLOCKING, A COMBINATION OF CONCRETE AND UNI-FLANGE SERIES 1300 JOINT RESTRAINT SHALL BE USED.
6. PLACE LOCATOR WIRE ALONG TOP OF PIPE. SECURE FINDER WIRE UNDER (MJ) BOLT. TAPE TO PIPE EVERY 10'.
7. ALL 4 1/2" OUTLETS TO BE POINTED TOWARDS PRIMARY STREET OR ACCESS ROAD.
8. ALL FIRE HYDRANTS SHALL HAVE A MINIMUM OF 5' RADIUS FROM MATURE LANDSCAPING OR OTHER FIXED VERTICAL OBJECTS.
9. FIRE HYDRANTS SHALL BE PLACED A MINIMUM OF 18" ABOVE FINISH GRADE TO THE CENTER OF THE 4 1/2" OUTLETS.
10. HYDRANTS SHALL NOT BE PLACED WITHIN 10 FEET OF DRAINAGE SWALES.
11. HYDRANTS TO BE INSTALLED LEVEL & PLUMB.

CITY OF MERIDIAN  
 2013 SUPPLEMENTAL  
 SPECIFICATIONS  
 TO THE IDAHO STANDARDS FOR  
 PUBLIC WORKS CONSTRUCTION

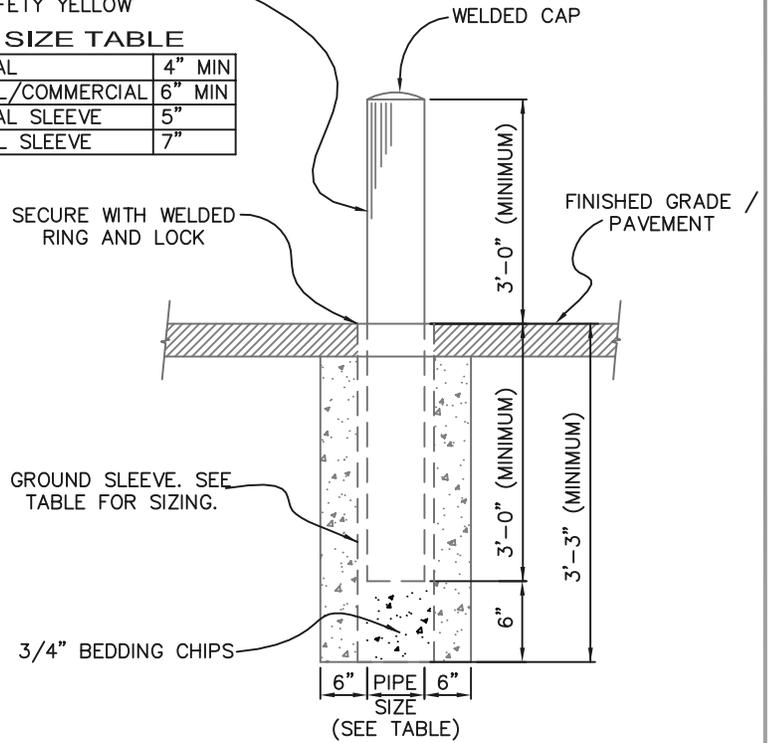
**FIRE HYDRANT DETAIL**

STANDARD DRAWING NO.  
**W7**



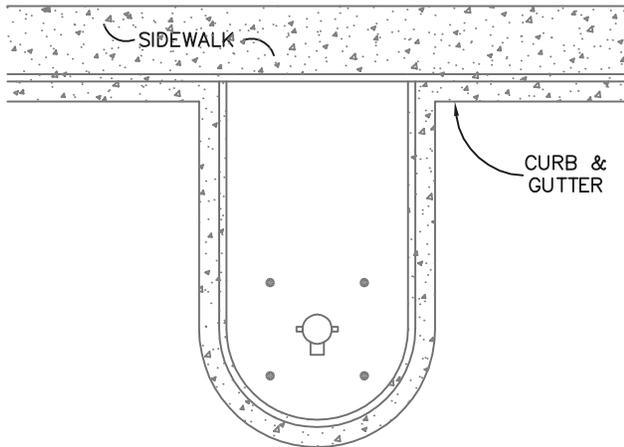
STEEL PIPE BOLLARD PAINTED TWO COATS OF EXTERIOR ENAMEL 'SAFETY YELLOW'

PIPE SIZE TABLE	
RESIDENTIAL	4" MIN
INDUSTRIAL/COMMERCIAL	6" MIN
RESIDENTIAL SLEEVE	5"
INDUSTRIAL SLEEVE	7"

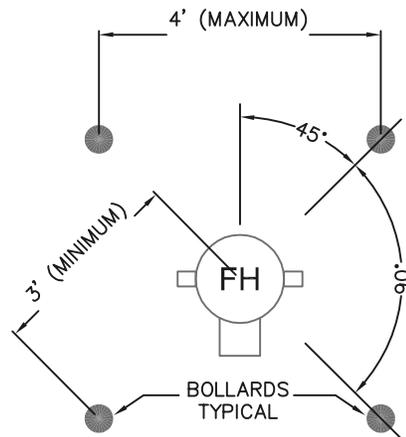


**PERMANENT BOLLARD INSTALLATION SECTION VIEW**

**REMOVABLE BOLLARD INSTALLATION SECTION VIEW**



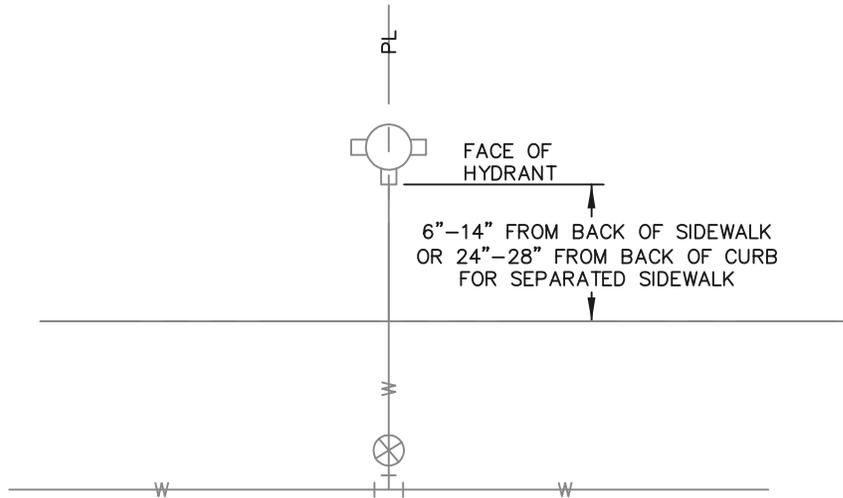
**TYPICAL BOLLARD INSTALLATION IN COMMERCIAL PARKING AREA**



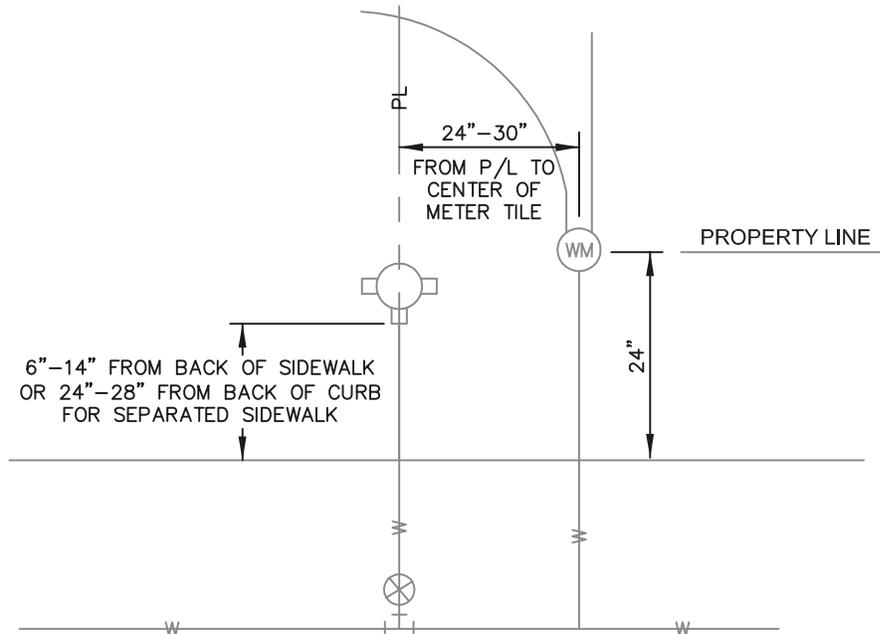
**HYDRANT/ BOLLARD SPACING PLAN VIEW**

**NOTES**

1. BOLLARDS SHALL MEET ALL REQUIREMENTS OF SECTION 312 (VEHICLE IMPACT PROTECTION) OF THE INTERNATIONAL FIRE CODE (CURRENTLY ADOPTED EDITION).
2. VERIFY LOCATION OF UNDERGROUND UTILITIES BEFORE EXCAVATING FOR CONCRETE BOLLARD FOUNDATION.
3. BOLLARDS SHALL BE PAINTED 'SAFETY' YELLOW.



**FIRE HYDRANT INSTALLED  
NO WATER SERVICE**

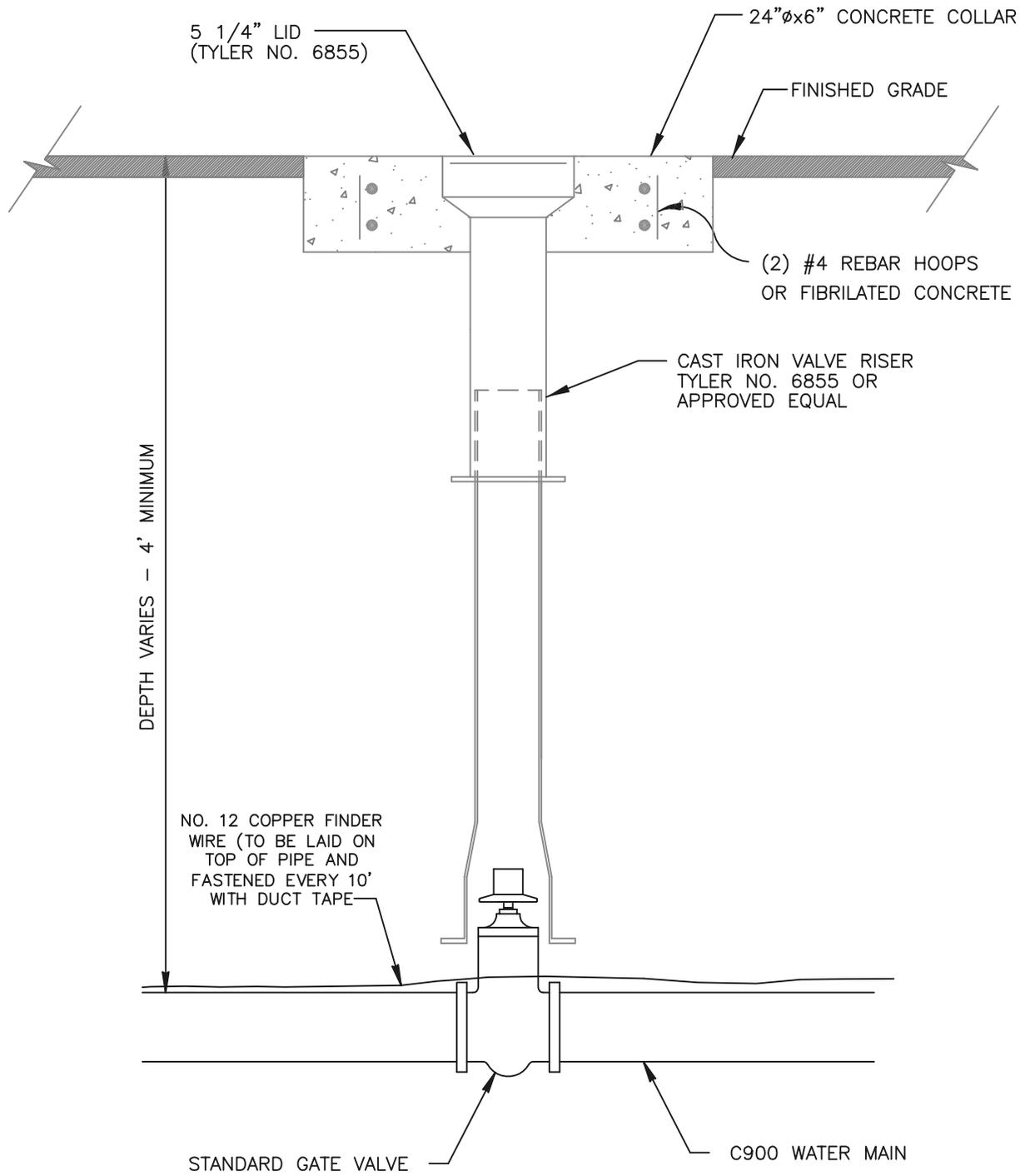


**FIRE HYDRANT & WATER SERVICE  
INSTALLED - SAME LOT**

**GENERAL NOTES**

1. SEE CITY OF MERIDIAN STANDARD DRAWING W5 FOR ELEVATION SET OF METER VAULTS.
2. HYDRANTS SHALL NOT BE INSTALLED WITHIN 10 FEET OF DRAINAGE SWALES.
3. FIRE HYDRANTS SHALL HAVE A MINIMUM OF 5' RADIUS CLEARING FROM MATURE LANDSCAPING OR OTHER FIXED VERTICAL OBJECTS.
4. NO LARGE LANDSCAPING SHALL BE PERMITTED WITHIN A 5' RADIUS OF FIRE HYDRANT OR WATER METER.
5. FENCES MAY NOT BE CONSTRUCTED WITHIN A 5' RADIUS OF FIRE HYDRANT.



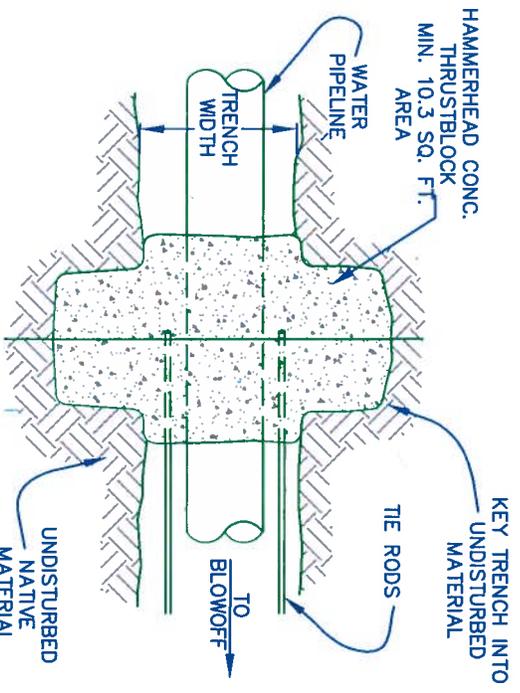
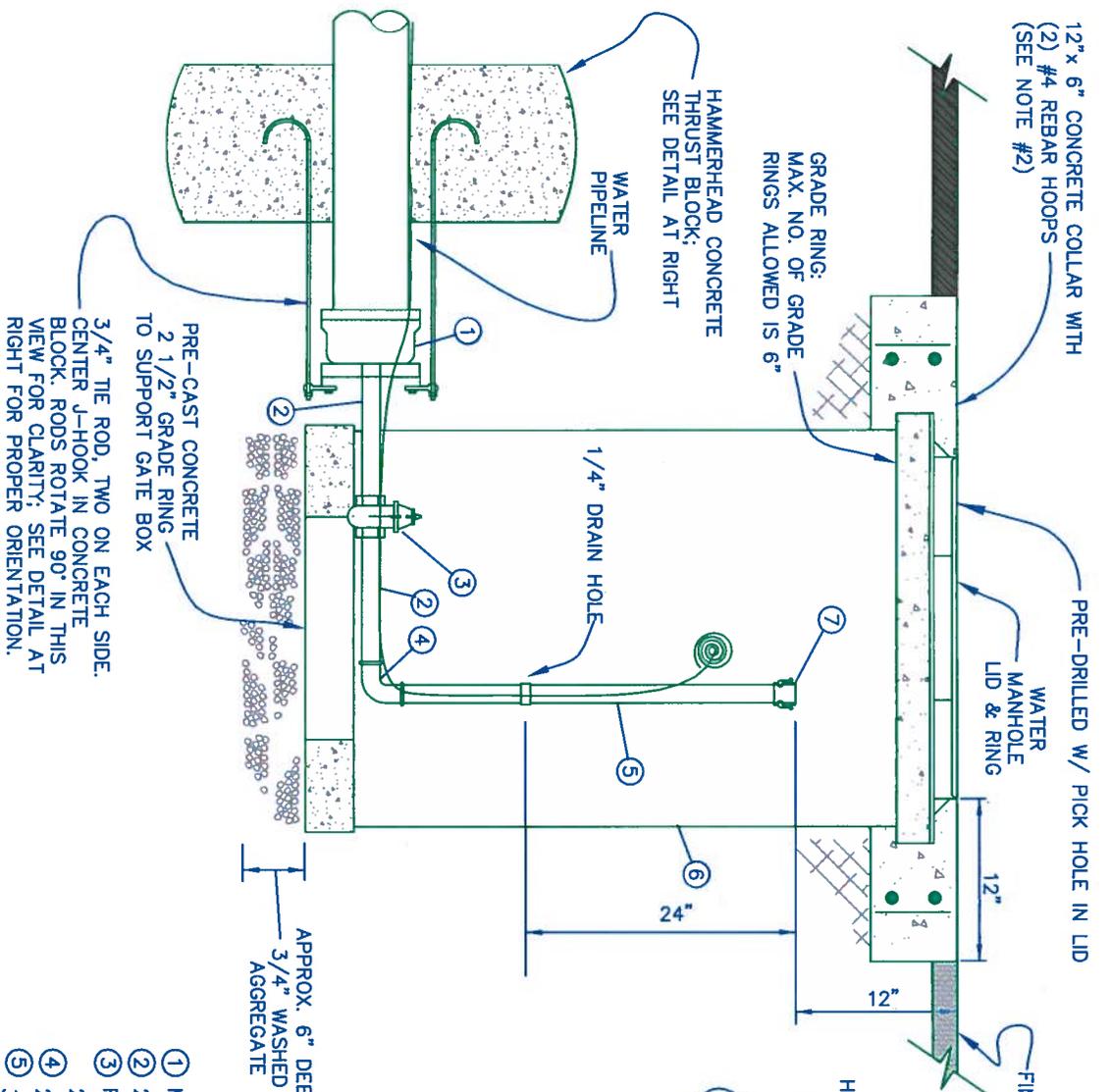


CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
SPECIFICATIONS  
TO THE IDAHO STANDARDS FOR  
PUBLIC WORKS CONSTRUCTION

## VALVE BOX & LID DETAIL

STANDARD DRAWING NO.

# W11



APPROX. 6" DEEP  
3/4" WASHED  
AGGREGATE

**LEGEND**

- ① MAIN SIZE MJ CAP W/ 2" I.P. PIPE THREAD OUTLET
- ② 2" x 6" GALVANIZED THREADED NIPPLE
- ③ RESILIENT WEDGE GATE VALVE
- ④ 2" GALVANIZED - 90° THREADED ELBOW
- ⑤ 2" GALV. PIPE
- ⑥ 30" DIAM. CMP
- ⑦ 2" THREADED FIP x ALUM. KAM-LOC QUICK COUPLING MALE

**NOTES**

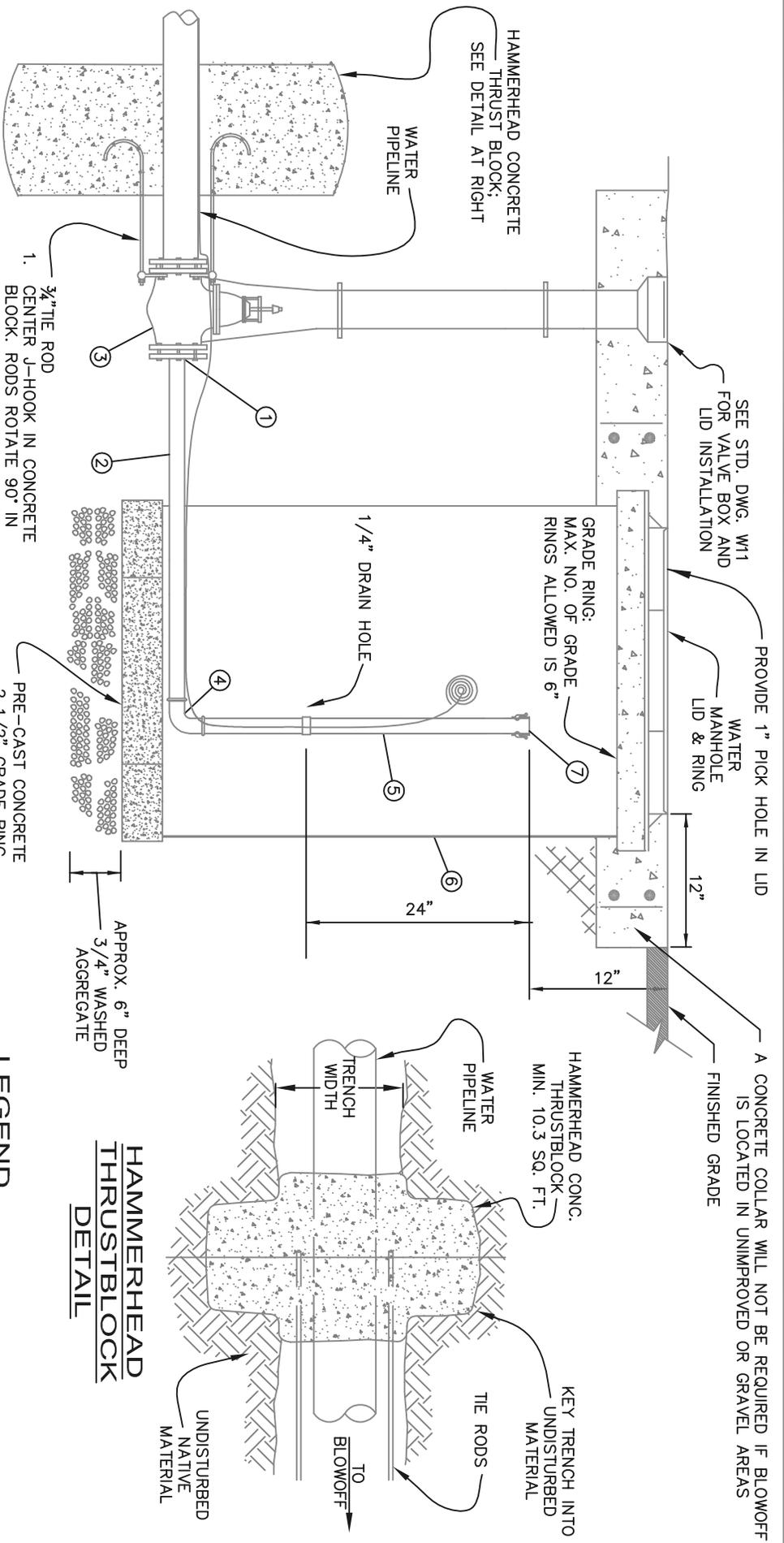
1. WHEN CONSTRUCTING A BLOW-OFF FOR TEMPORARY USE A 3 FOOT LENGTH OF WATER PIPE SHALL BE INSTALLED INTO THE BELL END OF THE LAST LENGTH OF MAIN.
2. FRIBILLATED POLYPROPYLENE FIBER (ADDED PER MANUFACTURER'S RECOMMENDATIONS) MAY BE USED IN LIEU OF #4 REBAR IN CONCRETE COLLARS.

CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
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TO THE IDAHO STANDARDS FOR  
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**2" BLOWOFF ASSEMBLY**

STANDARD DRAWING NO.

**W12**



1. 3/4" TIE ROD CENTER J-HOOK IN CONCRETE BLOCK. RODS ROTATE 90° IN THIS VIEW FOR CLARITY; SEE DETAIL AT RIGHT FOR PROPER ORIENTATION
2. 4"-8" ..... TWO REQUIRED
3. 10"-12" ..... FOUR REQUIRED
4. 14"-16" ..... SIX REQUIRED
5. 18"-LARGER... 8 REQUIRED

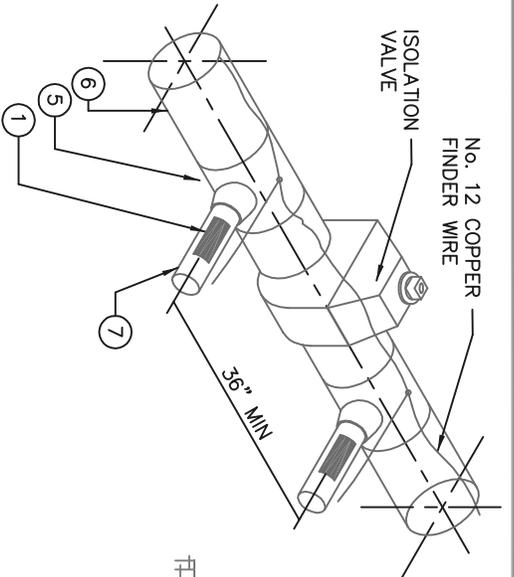
**HAMMERHEAD THRUST BLOCK DETAIL**

- APPROX. 6" DEEP  
3/4" WASHED AGGREGATE
- LEGEND**
- ① MAIN SIZE M J TAPPED PLUG W/ 2" IRON PIPE THREAD OUTLET
  - ② 3' x 2" GALVANIZED THREADED NIPPLE
  - ③ MAIN SIZE GATE VALVE (MJ)
  - ④ 2" GALVANIZED - 90° THREADED ELBOW
  - ⑤ 2" GALV. PIPE
  - ⑥ 30" DIAM. CMP
  - ⑦ 2" THREADED FIP x ALUM. KAM-LOC QUICK COUPLING MALE ADAPTOR (NO CAP)

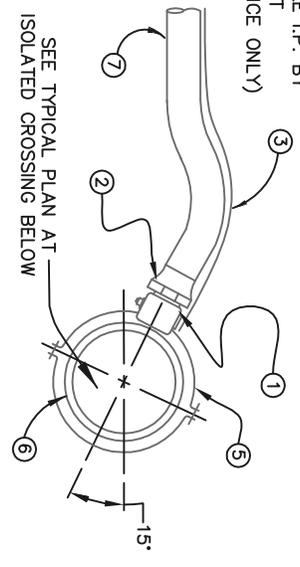
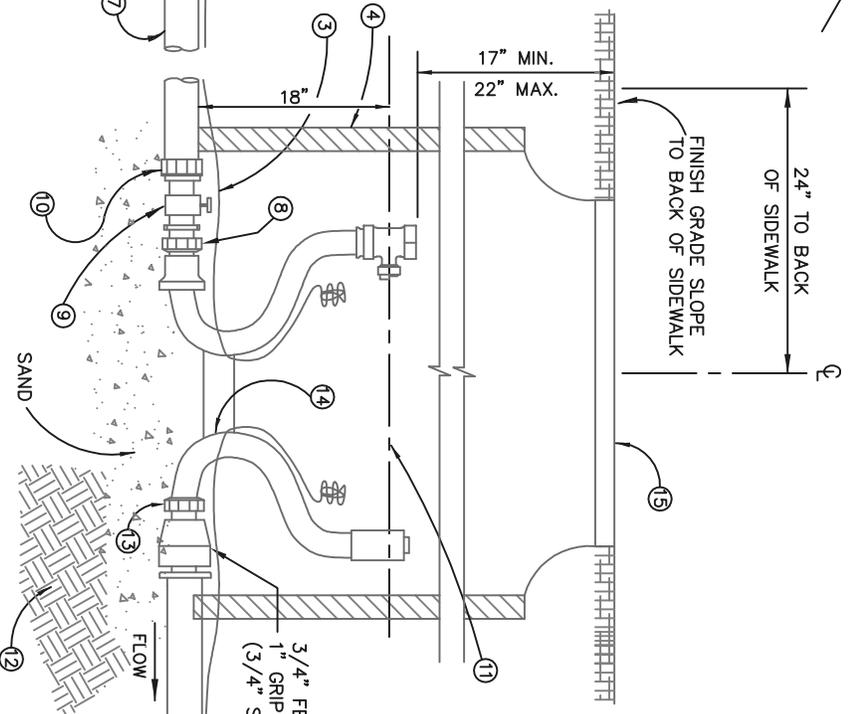
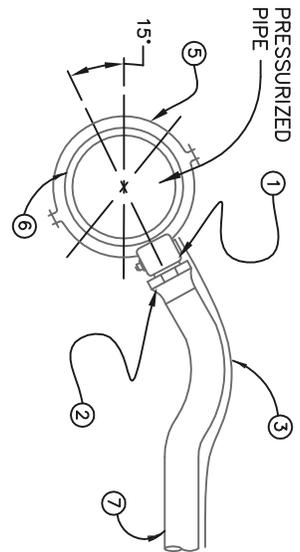
**NOTES**

1. FRIBILLATED POLYPROPYLENE FIBER (ADDED PER MANUFACTURER'S RECOMMENDATIONS) MAY BE USED IN LIEU OF #4 REBAR IN CONCRETE COLLARS.

CITY OF MERIDIAN 2013 SUPPLEMENTAL SPECIFICATIONS TO THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION	<b>2" BLOWOFF ASSEMBLY          (FUTURE WATERMAIN EXTENSION)</b>	STANDARD DRAWING NO. <h1 style="margin: 0;">W13</h1>
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**ISOMETRIC VIEW OF TAP CONNECTION**

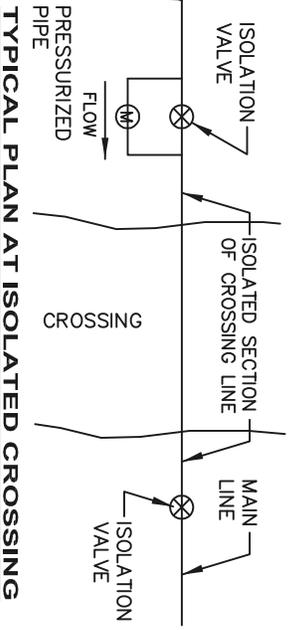


**LEGEND**

- ① BALL CORPORATION STOPS (1") APPROVED: MUELLER B-1001-4G FORD B-25000
- ② CORPORATION STOP ADAPTOR MUELLER H-15454 OR APPROVED EQUAL
- ③ NO. 12 COPPER FINDER WIRE (BLUE).
- ④ 20" DIA. X 36" PVC TILE; NOTCH FOR SERVICE LINES.
- ⑤ SERVICE SADDLE EPOXY COATED FACING WITH STAINLESS STEEL BAND AND HARDWARE
- ⑥ WATER MAIN
- ⑦ 1" LINE, TYPICAL
- ⑧ MALE SWIVEL END.
- ⑨ FULL OPENING BALL VALVE APPROVED: 1" (FOR 1X SERV.) MUELLER B-20283 FORD B11-444 3/4" (FOR 2X SERV.) MUELLER B-20283 FORD B11-333

- ⑩ CURB STOP ADAPTOR APPROVED: MUELLER H-15454 FORD B11444
- ⑪ FUTURE METER INSTALLED BY MERIDIAN WATER DEPT.
- ⑫ FIRM UNDISTURBED EARTH
- ⑬ DOUBLE PURPOSE COUPLING
- ⑭ 3/4" METER SETTER WITH LOCKABLE KEY VALVE APPROVED: MUELLER MB 24046A/F18 FORD VBHC93-18W-1133 WITH OPTIONAL BLC BOLTED CLAMP OPTION
- ⑮ LOCKING LID APPROVED

- NOTES**
1. NO GALVANIZED PIPE OR YELLOW BRASS FITTINGS SHALL BE USED. THE CITY OF MERIDIAN REQUIRES THAT ALL WATER METERS AND WATERWORKS BRASS BE ANSI/NSF 61 CERTIFIED.
  2. ONE-INCH PIPE SHALL BE ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE PIPE CONFORMING TO ASTM D 2239, SDR 7, CLASS 200, IRON PIPE SIZE.
  3. SADDLE COUPLERS SHALL BE USED FOR CONNECTION OF ALL METERING LINES TO PVC MAIN. ALL SERVICE SADDLES SHALL CONSIST OF A STAINLESS STEEL BAND AND MUELLER THREADS TYPE CC.
  4. SINGLE METER SHALL HAVE 1" CURB STOP.
  5. SEE STANDARD DRAWING W5 FOR ELEVATION SET OF METER TILE LID.
  6. METER VAULTS LOCATED IN VEHICULAR TRAFFIC AREAS SHALL BE 30" Ø CMP. OTHER METER VAULTS SHALL BE 20" Ø PVC. SEE SECTION 404 OF THE CITY OF MERIDIAN SUPPLEMENTAL SPECIFICATIONS TO THE ISPW.
  7. WHEN METERING STATION IS USED FOR RECLAIMED WATER, ALL ABOVE GROUND APPURTANANCES SHALL BE COLORED PURPLE, PANTONE 512, 522 OR EQUAL.

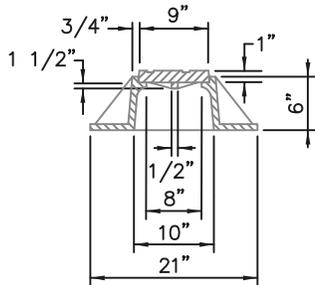
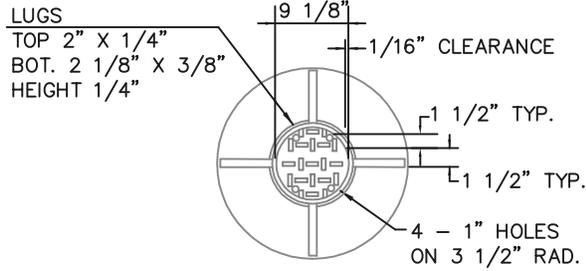


**TYPICAL PLAN AT ISOLATED CROSSING**

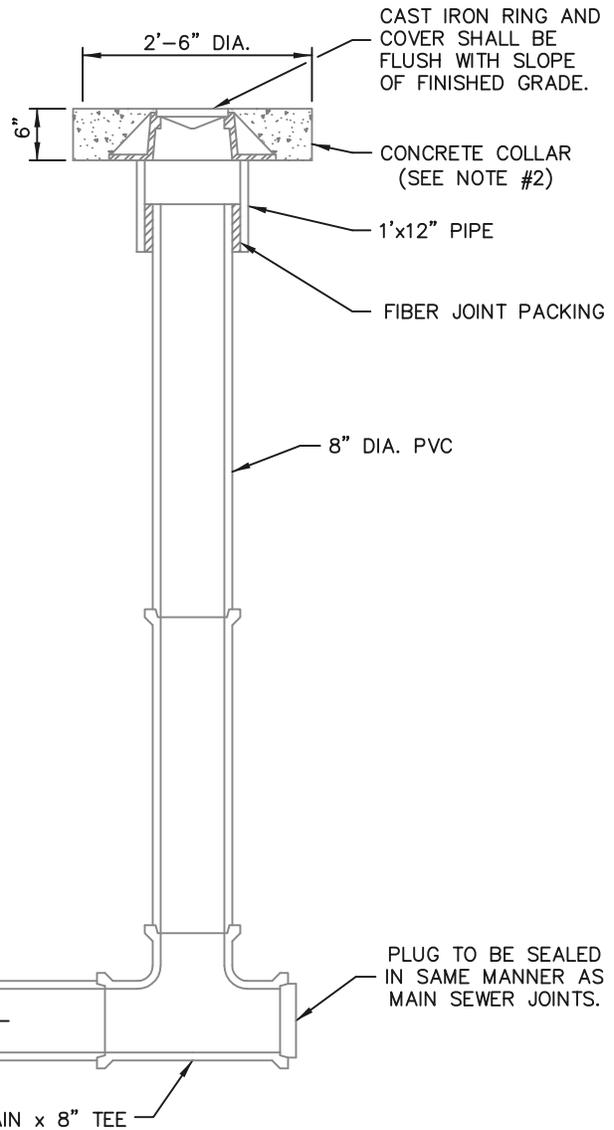
CITY OF MERIDIAN  
2013 SUPPLEMENTAL  
SPECIFICATIONS  
TO THE IDAHO STANDARDS FOR  
PUBLIC WORKS CONSTRUCTION

3/4" LEAK DETECTION  
METERING STATION  
"CROSSINGS"

STANDARD DRAWING NO.  
**W14**

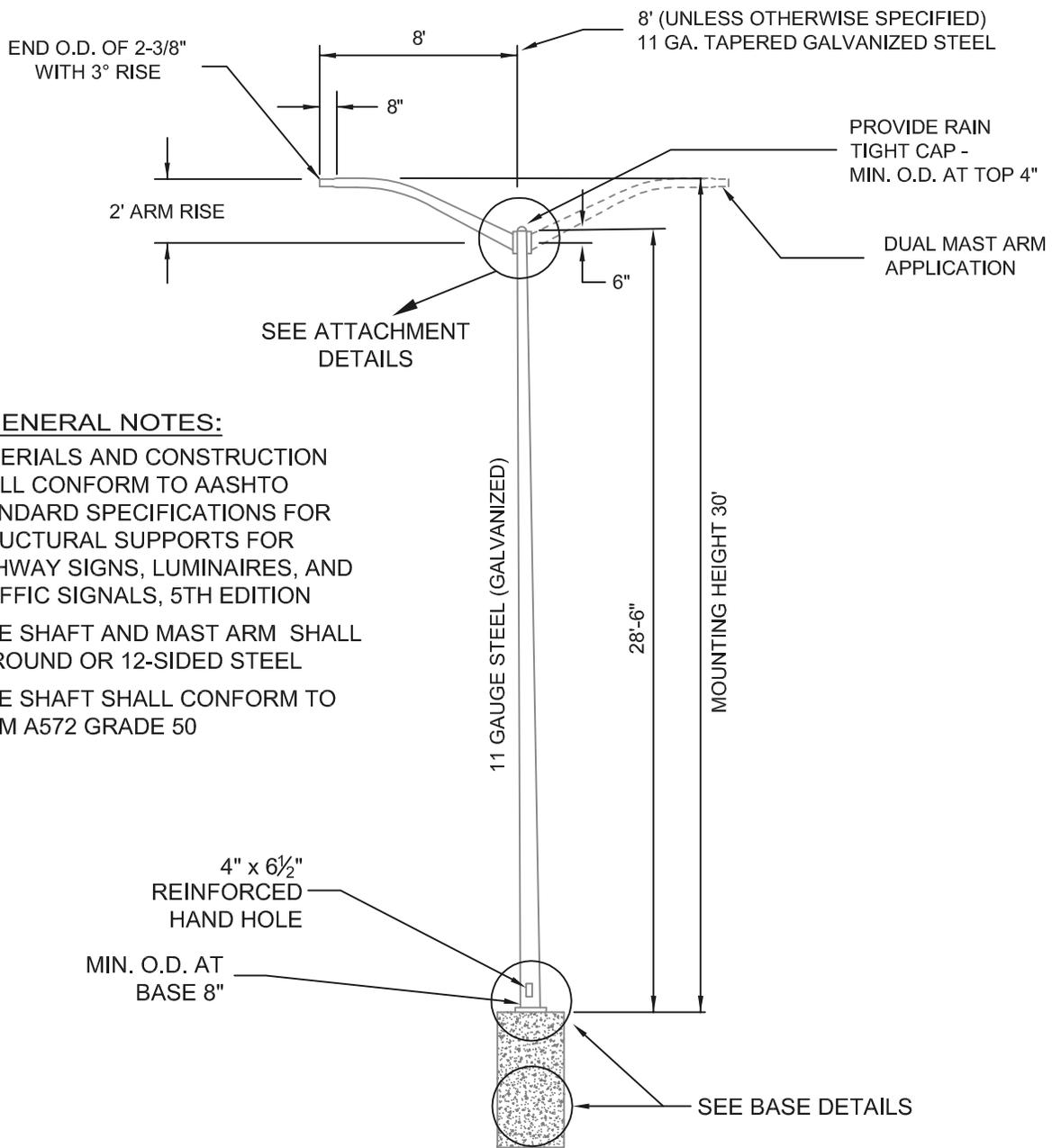


**CAST IRON  
RING & COVER**



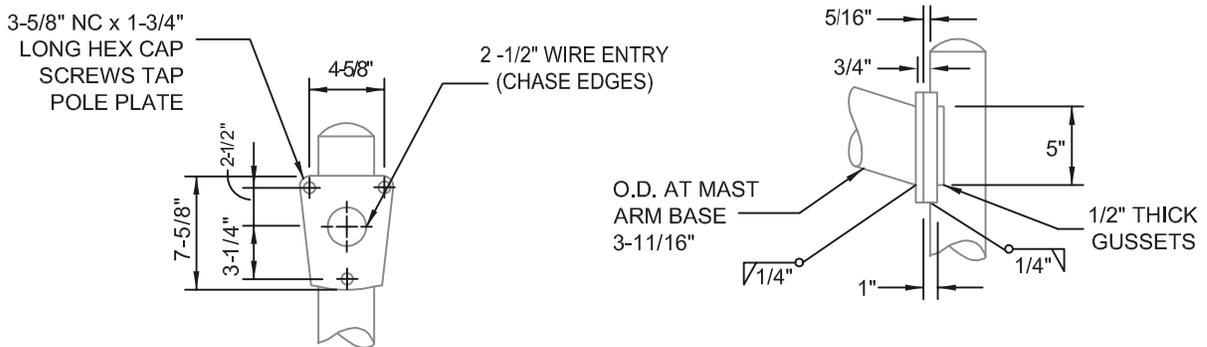
**NOTES**

1. CLEANOUT LIDS MUST BE LABELED WITH THE WORD "SEWER".
2. FRIBILLATED POLYPROPYLENE FIBER (ADDED PER MANUFACTURER'S RECOMMENDATIONS) MAY BE USED IN LIEU OF #4 REBAR IN CONCRETE COLLARS.
3. THE MAXIMUM DISTANCE FROM A MANHOLE TO A PROPOSED CLEANOUT IS 150 FEET.
4. NO SERVICES WILL BE CONNECTED TO THE SEWER LINE TERMINATING IN A CLEANOUT.



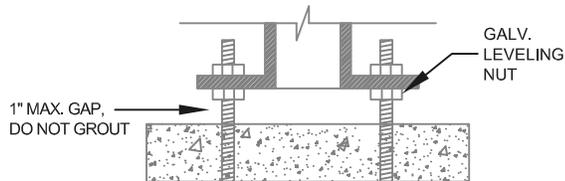
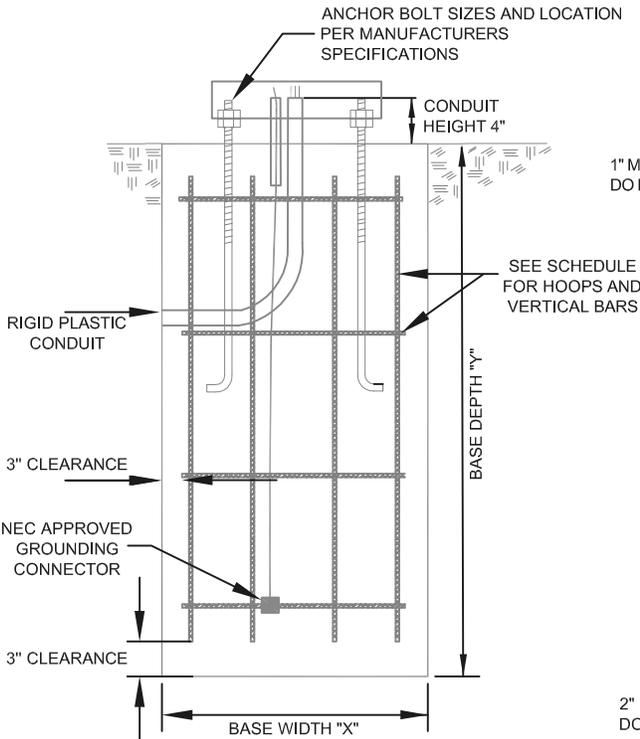
**GENERAL NOTES:**

1. MATERIALS AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 5TH EDITION
2. POLE SHAFT AND MAST ARM SHALL BE ROUND OR 12-SIDED STEEL
3. POLE SHAFT SHALL CONFORM TO ASTM A572 GRADE 50

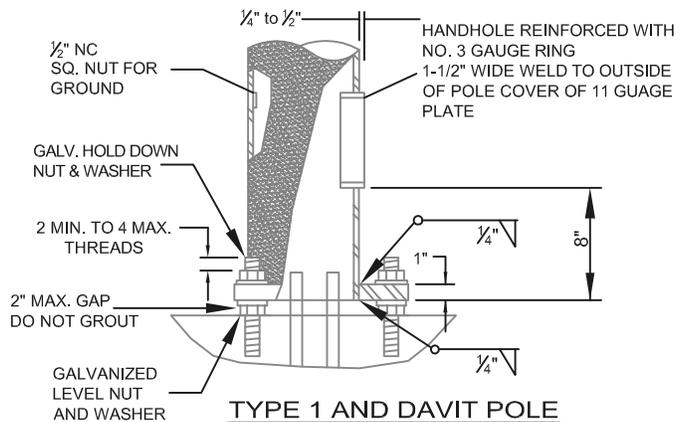


**ATTACHMENT DETAILS**

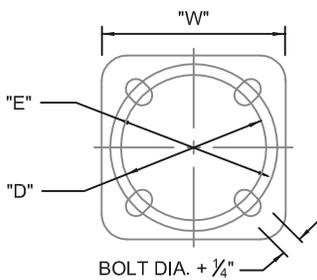
POLE TYPE	X	Y	D	E	W	HOOPS			RODS		
						NO.	SIZE	LIN. FT	NO.	SIZE	LIN. FT
TYPE 1 - SINGLE MAST ARM	24"	60"	10½"	11"	11½"	4	#4	21'	8	#5	36'
TYPE 1 - DUAL MAST ARM	30"	84"	10½"	11"	11½"	6	#4	41'	8	#6	52'
DAVIT	24"	72"	10½"	11"	11½"	5	#4	31'-4"	8	#5	44'
TYPE 2	24"	60"	8"	9"	8"	4	#4	21'	6	#4	27'
HISTORICAL	24"	60"	12"	13"	N/A	4	#4	21'	6	#4	27'



**TYPE 2 AND HISTORICAL POLE BASE DETAIL**



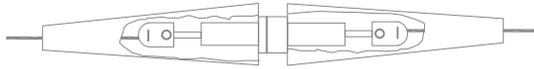
**TYPE 1 AND DAVIT POLE BASE DETAIL**



**BASEPLATE AND BOLT PATTERN DETAIL**

**GENERAL NOTES:**

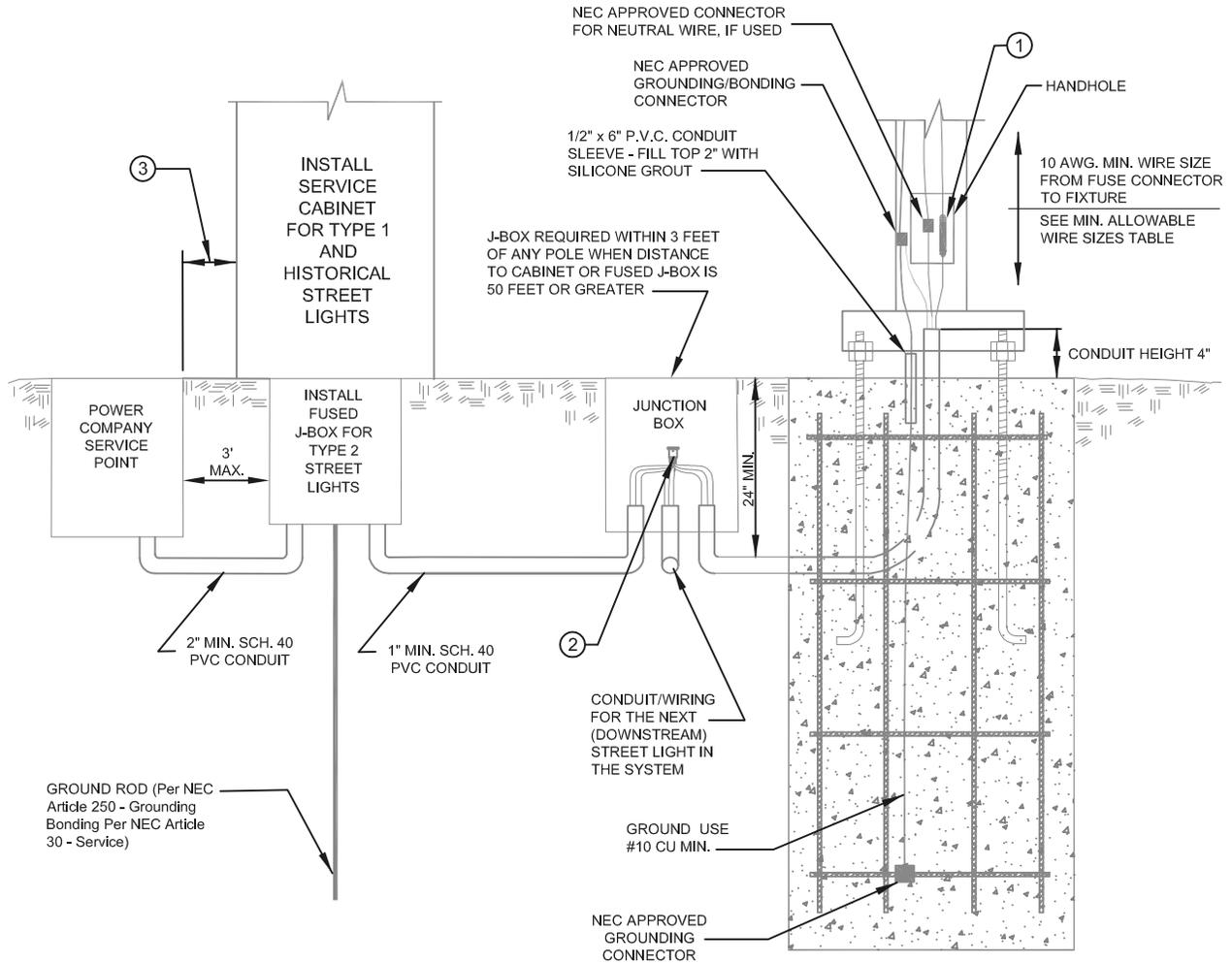
1. CONCRETE FOR FOUNDATIONS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
2. ALL REBAR REINFORCEMENT SHALL HAVE 3" CLEARANCE FROM OUTSIDE OF CONCRETE FOUNDATION.
3. HOOP SHALL HAVE A 6" LAP LENGTH MINIMUM
4. BREAKAWAY BOLTS ARE REQUIRED WHEN ON STATE HIGHWAYS, SEE ITD STANDARD DRAWING I-7-C.
5. TYPE 1, TYPE 2 AND DAVIT POLE TO BE PROVIDED WITH METAL, 2-PIECE BASE COVER TO MATCH POLE FINISH
6. ALL CONDUIT ELBOWS USED IN CONCRETE BASES SHALL BE RPC
7. STEEL CONDUIT SHALL BE USED TO EXTEND ELBOWS BEYOND FOUNDATION
8. SPARE STUBOUTS SHALL BE TERMINATED WITH A STEEL COUPLING AND PLASTIC PUSH PLUG AT BOTH ENDS



FUSED "IN-LINE" TYPE WIRE CONNECTOR  
MODEL SEC 1791-SF OR APPROVED EQUAL

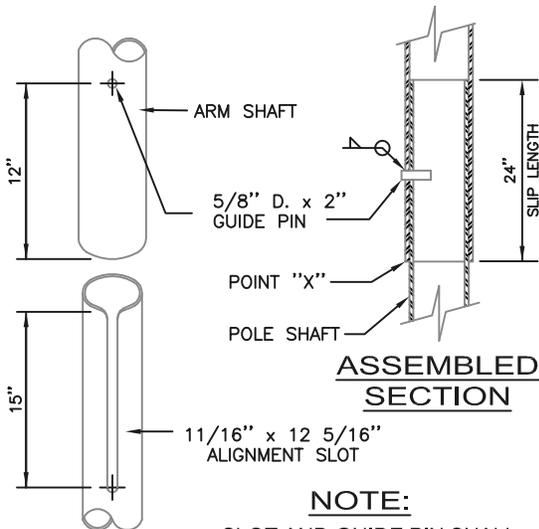
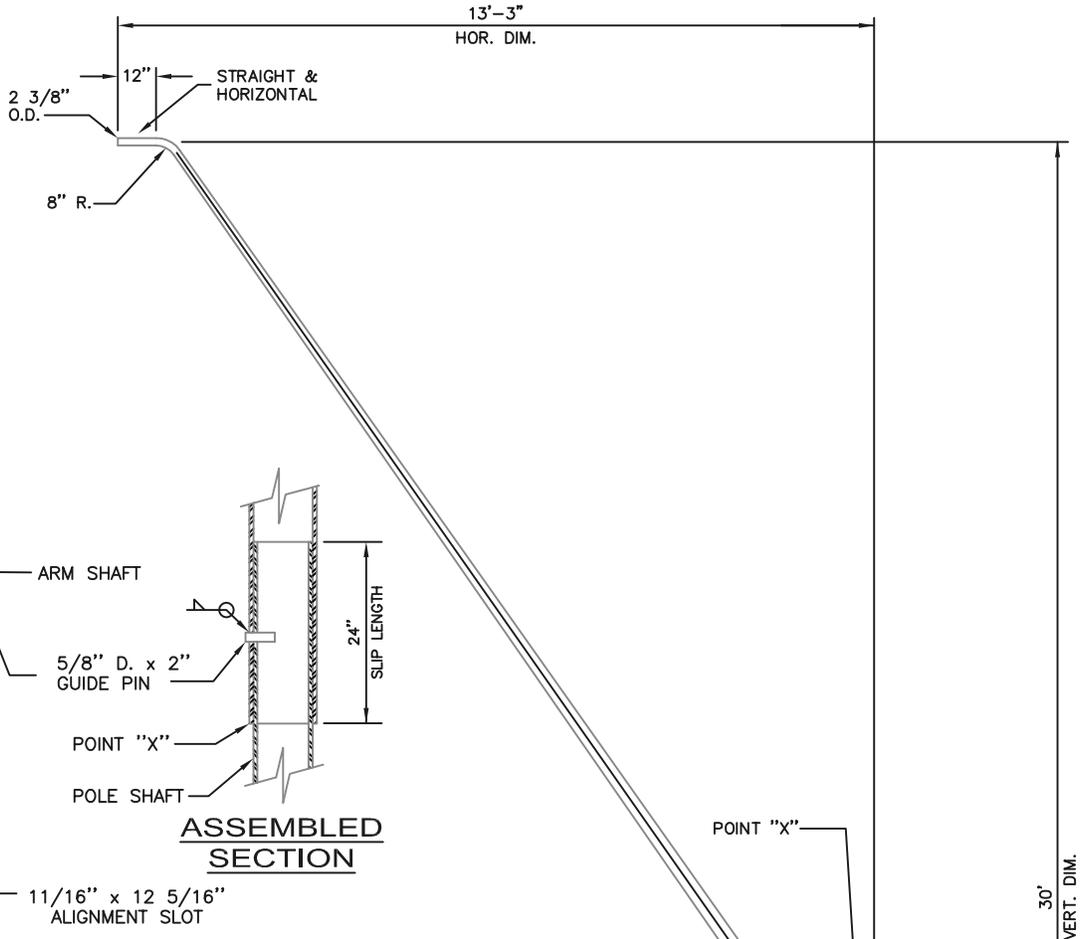
MINIMUM ALLOWABLE WIRE SIZES (AWG)*					
TYPE 1 COBRAHEAD		TYPE 2 - SHOEBOX		HISTORICAL	
VOLTAGE	AWG (MIN)	VOLTAGE	AWG (MIN)	VOLTAGE	AWG (MIN)
120	4	120	6	120	10
208	8	208	NOT ALLOWED	208	10
240	10	240	NOT ALLOWED	240	10
277	NOT ALLOWED	277	NOT ALLOWED	277	NOT ALLOWED
480	NOT ALLOWED	480	NOT ALLOWED	480	NOT ALLOWED
* MAX. RUN LENGTH - 2500'		* MAX. RUN LENGTH - 1500'		* MAX. RUN LENGTH - 1000'	

\* MAX. RUN LENGTHS FROM SERVICE POINT TO FARTHEST STREET LIGHT BEING SERVED BY THE SYSTEM SHALL NOT EXCEED SPECIFIED DISTANCE



**LEGEND**

- ① EACH PHASE CONDUCTOR SHALL BE FUSED AT EVERY POLE AND SERVICE JUNCTION BOX BY MEANS OF IN-LINE CONNECTORS. USE ONLY FAST ACTING FUSES RATED 100K RMS AMPS, 600 VAC
- ② WHEN A SPLICE IS REQUIRED USE SEC MODEL 0791-0 SPLICE KIT, POLARIS SSB 2/0, OR APPROVED EQUAL AN 18" MINIMUM SLACK LOOP IS REQUIRED IN ALL JUNCTION BOXES
- ③ IF DISTANCE FROM POWER COMPANY SERVICE POINT TO SERVICE CABINET IS GREATER THAN 10 FEET, A FUSED J-BOX SHALL BE INSTALLED WITHIN 10 FEET OF POWER COMPANY SERVICE POINT. DISTANCE FROM POWER COMPANY SERVICE POINT TO SERVICE CABINET SHALL NOT EXCEED 150 FEET.



**USLIP JOINT MAST  
UARM ATTACHMENT**

**NOTE:**

SLOT AND GUIDE PIN SHALL BE POSITIONED ON THE TOP SIDE OF THE POLE AND ARM.

**GENERAL NOTES:**

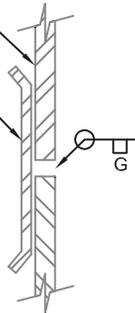
1. MATERIALS AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 5TH EDITION
2. POLE SHAFT SHALL CONFORM TO ASTM A572 GRADE 50, 55, 60, OR 65
3. PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD

THICKNESS OF FILLER RING (IF NEEDED) TO MATCH DIFFERENCE IN TAPERED TUBE THICKNESS x 1 1/2" WIDE

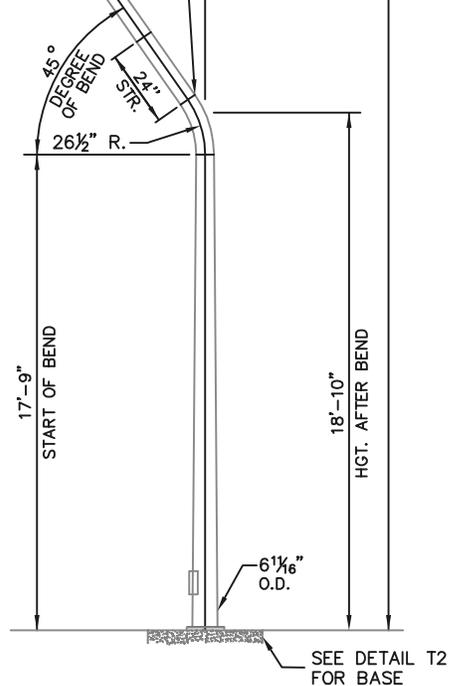
.135" THK. (10 GAUGE) x 3" WIDE BACK-UP RING

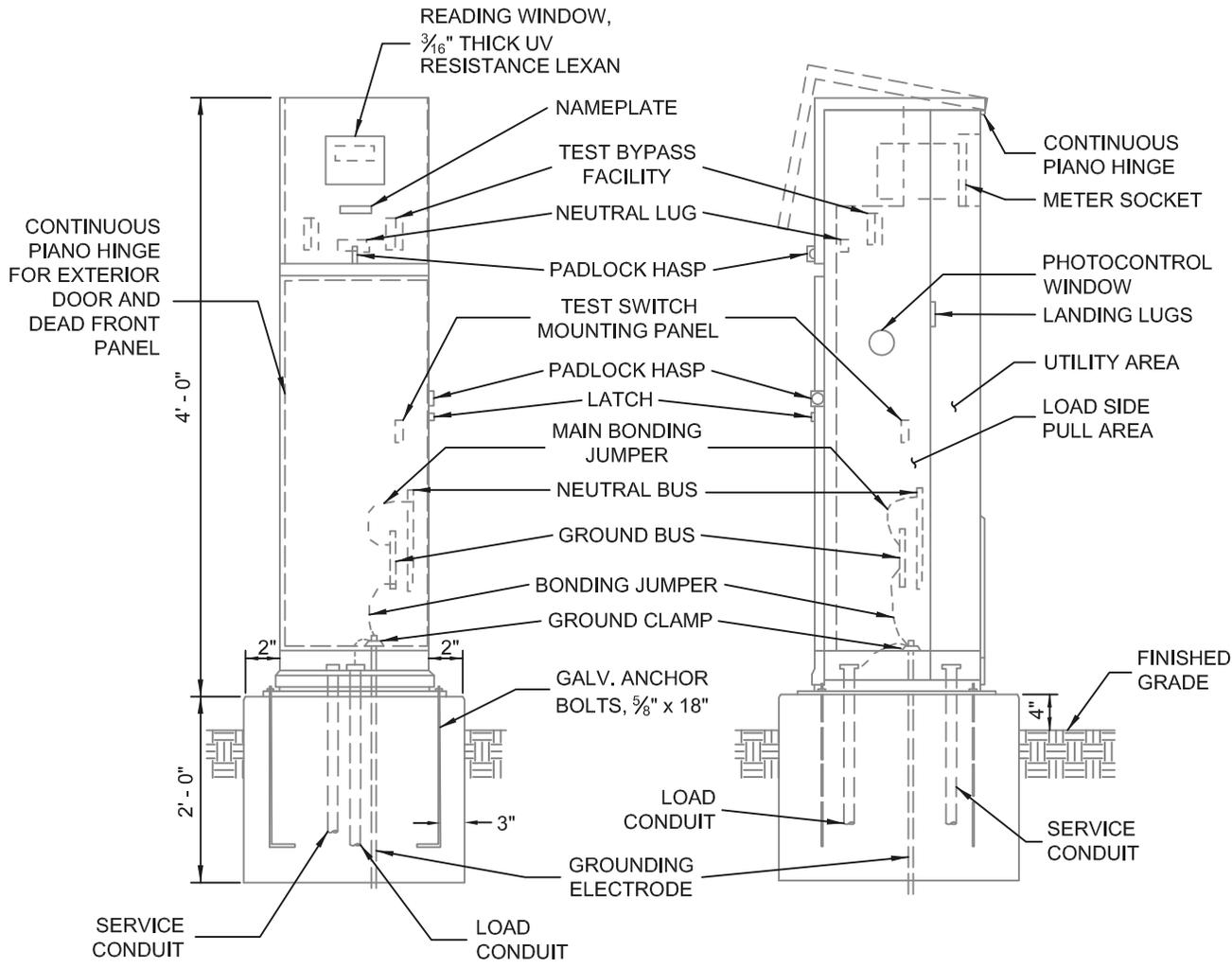
**NOTES:**

1. ALL BUTT WELDS TO BE GROUND FLUSH
2. LONGITUDINAL: BUTT WELD BY THE SUBMERGED ARC PROCESS
3. CIRCUMFERENTIAL: BUTT WELD WITH PERMANENT BACK-UP RING



**SPlice DETAIL**



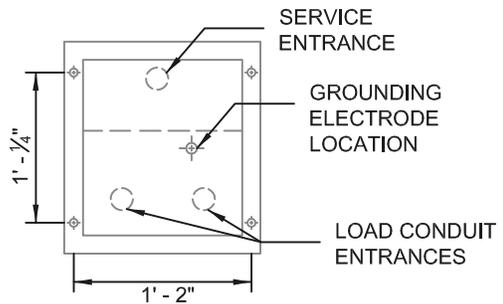


**FRONT VIEW**

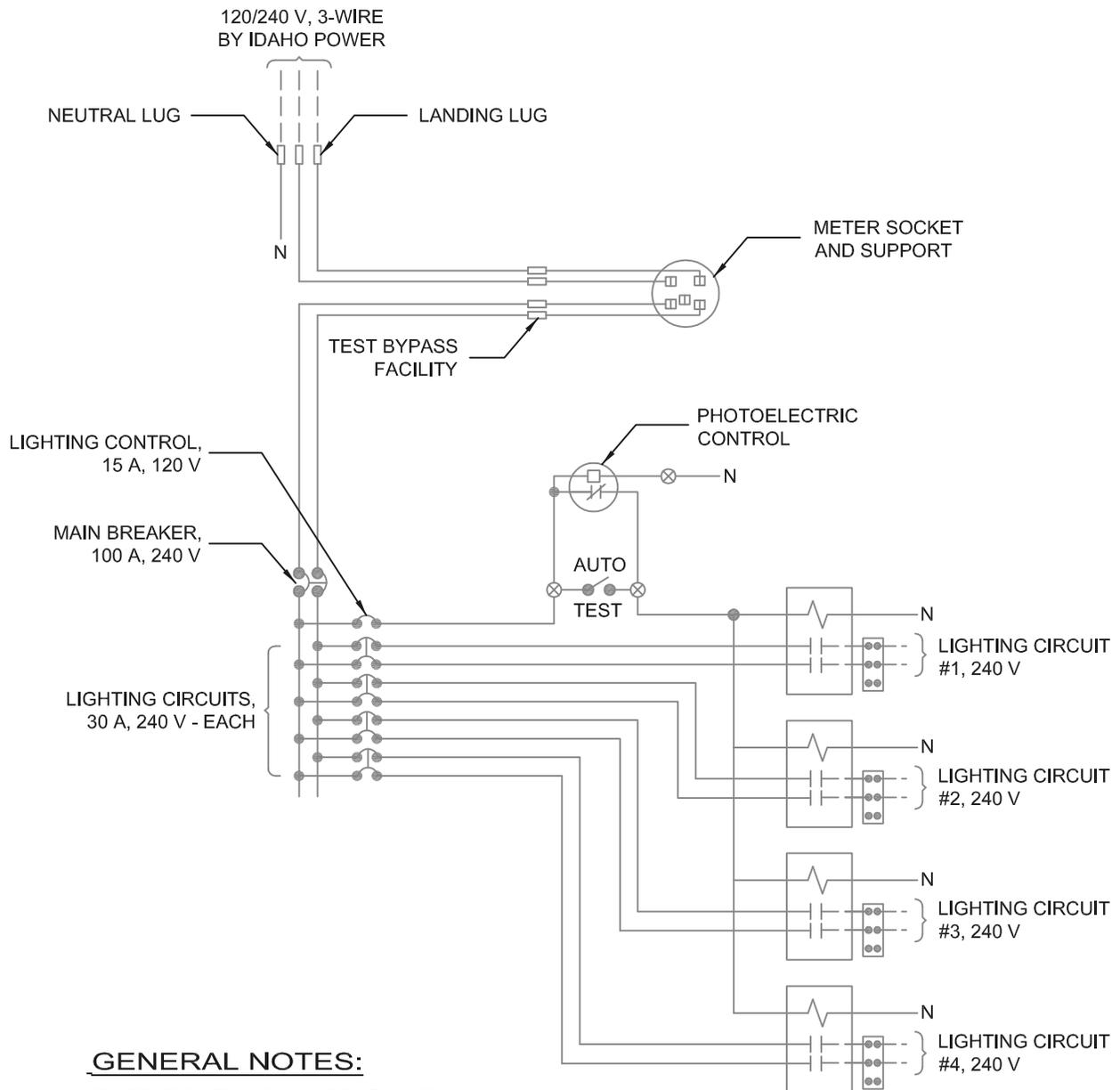
**SIDE VIEW**

**GENERAL NOTES:**

1. MASTER-KEYED PADLOCKS SHALL BE SUPPLIED WITH CABINETS, CONTACT CITY FOR PADLOCK TYPE.
2. AN ADDITIONAL GROUNDING ELECTRODE SHALL BE DRIVEN 6' FROM CABINET AND WIRED TO GROUND BUS. ADDITIONAL ELECTRODE SHALL BE HOUSED IN A JUNCTION BOX.
3. NO SHRUBS OR TREES SHALL BE PLANTED WITHIN 10' OF CABINET.

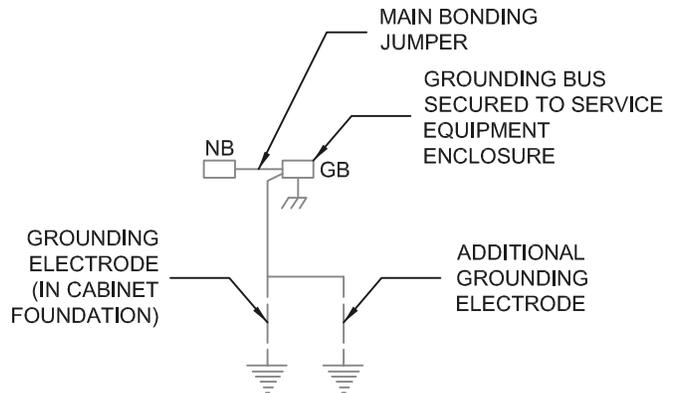


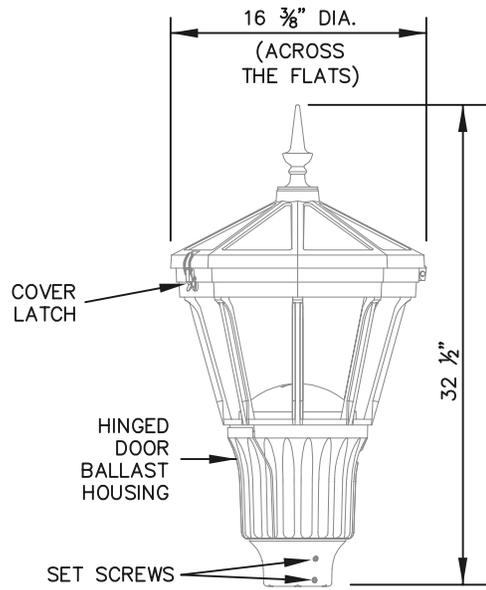
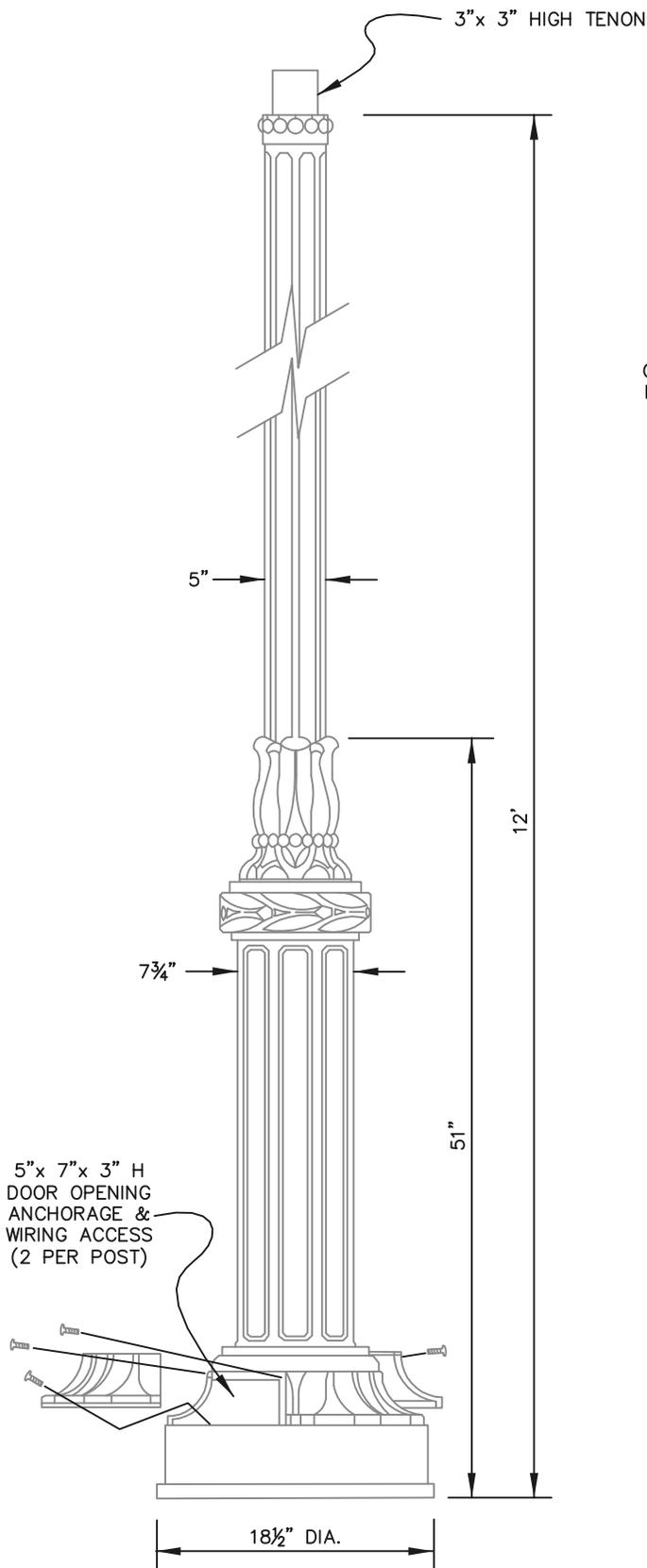
**BASE FOR SERVICE CABINET**



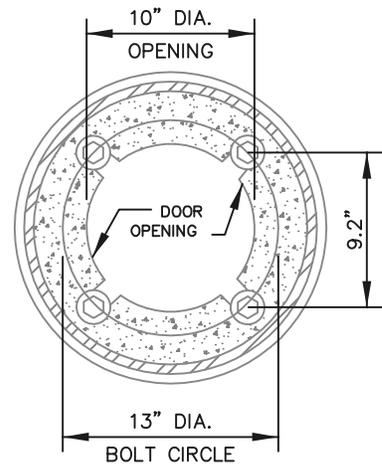
**GENERAL NOTES:**

1. AUTO TEST SWITCH SHALL BE 15 A, 120 V
2. PHOTOELECTRIC CONTROL UNIT SHALL INCLUDE PHOTOCONTROL, A SEPARATOR CONTACTOR, AND A TEST SWITCH
3. NEUTRAL LUG AND NEUTRAL BUS SHALL BE INSULATED FROM THE SERVICE EQUIPMENT ENCLOSURE
4. THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS
5. 2-POLE BREAKERS SHALL BE GANG OPERATED
6. PRESSURE TYPE TERMINALS SHALL BE SUPPLIED AFTER CONTACTORS

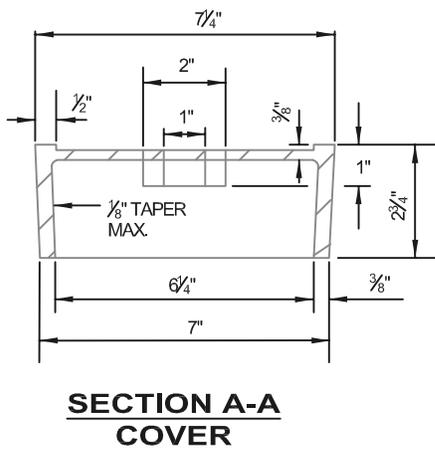
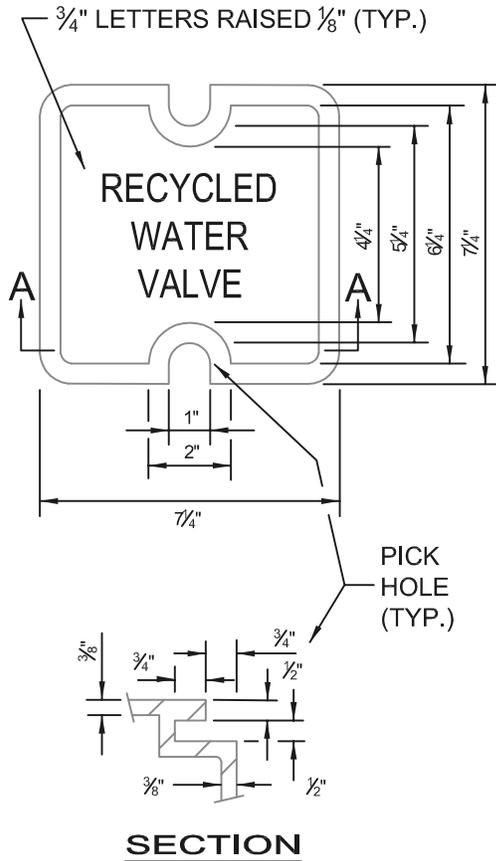




**FIXTURE**



**BOLT PATTERN**



- GENERAL NOTES:**
1. ALL MATERIALS SHALL BE CAST IRON PER ASTM A-48, CLASS 30 B.
  2. SURFACES OF COVER AND BOX WHICH COME INTO CONTACT WITH EACH OTHER MUST BE SMOOTH AND FREE OF ALL CASTING RIDGES TO ENSURE PROPER FIT.
  3. VALVE BOX SHALL HAVE A ROUND BOTTOM TO ACCOMMODATE RISER PIPE. TOP OF VALVE BOX SHALL BE SQUARE. VALVE BOX SHALL BE INSTALLED WITH A REINFORCED CONCRETE COLLAR PER ISPWC.
  4. VALVE RISER SHALL 6 INCH PVC COLORED PANTONE 512, 522 OR EQUAL AND NOTCHED AT BOTTOM TO ALLOW FINDER WIRE TO PASS THROUGH.
  5. LOCKING DEBRIS CAP COLORED PANTONE 512, 522 OR EQUAL SHALL BE INSTALLED IN THE ROUND RISER SECTION. SEE SPECIFICATIONS FOR ACCEPTABLE MODELS.
  6. COIL FINDER WIRE IN VALVE BOX WITH ENOUGH SLACK TO EXTEND WIRE AT LEAST 6" ABOVE FINISHED GRADE. REFER TO THE CITY OF MERIDIAN SUPPLEMENTAL SPECIFICATIONS FOR FINDER WIRE REQUIREMENTS.

