

CITY OF HIAWATHA SUPPLEMENTAL SPECIFICATIONS TO SUDAS STANDARD DESIGN AND SPECIFICATIONS MANUAL

These Supplementary Specifications amend or supplement the Statewide Urban Design and Standards (SUDAS) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Specifications will have the meanings indicated in SUDAS.

DIVISION 1 – General Provisions and Covenants

Section 1010 - Definitions

1.03 Definitions and Terms

Add the following:

“SCHEDULE. A plan of procedure with reference to the sequence of and time allotted for each item or operation necessary for project, which is to be provided by the Contractor. The schedule shall clearly show start and end dates for major items and/or stages along with the critical path of the bid items and non-critical items. Upon submittal, the schedule shall become the property of the City of Hiawatha. The City has the right to utilize the schedule as the City sees fit, including but not limited to, posting it on social media, website, and/or newsletters. The schedule at a minimum shall include, but is not limited to: Project name, Prime Contractor and contact information, Critical Path, noncritical items, starting and ending dates of major milestones and/or bid items broken down into at least weekly scope, holidays.

Controlling Item of Work. The unique activity of a contract that will determine the duration of the construction period or if a working day is charged. The character of this work may change during the project. It is the work that could be in progress at any time that would have the greatest influence on the duration of the project. It could also have the biggest influence on safety and providing the least impact to the public (Section 1070 2.01 C) i.e. pouring back an intersection to provide access. It shall be as determined by the Engineer.”

Section 1040 - Scope of Work

1.09 Changed Site Conditions

B. Compensation

Add the following:

“3. Under no circumstances will payment for down time be made by the City of Hiawatha as project field issues are being resolved. The City of Hiawatha will take all necessary action to resolve issues in a timely manner.”

1.10 Disputed Claims for Extra Compensation

A. Basis of Claim for Extra Compensation

Add the following: “6. Under no circumstances will payment for down time be made by the City of Hiawatha as project field issues are being resolved. The City of Hiawatha will take all necessary action to resolve issues in a timely manner.”

1.11 Delays Caused by the Jurisdiction

Add the following paragraph: “Under no circumstances will payment for down time be made by the City of Hiawatha as project field issues are being resolved. The City of Hiawatha will take all necessary action to resolve issues in a timely manner.”

Section 1050- Control of Work

1.10 Line and Grade Stakes

Add item D. as follows: “D. On privately contracted projects, the Owner shall hire a Licensed Surveyor per Section 11010 for all survey work.”

Section 1070 Legal Relations and Responsibility to the Public

1.03 Permits and Licenses

Delete item 1.03 and replace with the following:

“The Contractor shall procure all necessary permits for the construction of the work and for temporary excavations, obstruction, enclosures, and street openings arising from the construction and completion of the work described in the contract documents. The cost for all required Jurisdictional permits shall be paid by the Contractor unless otherwise provided in the contract documents. The Contractor shall be responsible for all violations of the law for any cause in connection with the construction of the work or caused by the obstruction of roads, streets, Highways, or sidewalks and shall give all requisite notices to the Jurisdiction or other public authorities in connection therewith.”

2.06 Traffic Control

B. Closing Streets to Traffic

Delete Item B.3 and Replace with the following: “3. The Contractor shall not remove, relocate, or reset any permanent Jurisdictional traffic control devices unless authorized to do so by the Engineer or contract documents. If a sign must be removed or relocated for any phase of construction, the Contractor shall notify the Engineer of the necessity of removal. The Contractor shall arrange for the removal, relocation, or resetting of temporary or permanent traffic control devices by the Contractor per the MUTCD latest edition to allow the work to proceed. This shall be included in the Traffic Control Item if there is one. If there is not an item, then it is incidental to other items in the contract.”

Section 1080 – Prosecution and Progress

1.03 Work Progress and Schedule

Add the following:

“D. The contractor shall submit a schedule two (2) weeks prior to the preconstruction meeting/conference or the meeting will be rescheduled until an acceptable schedule has been provided. The schedule is subject to the Engineers approval. If the contractor varies from the approved project schedule and/or sequence, as submitted to and

approved by the Engineer, a revised schedule shall be submitted, by the contractor, for approval by the Engineer. If public notification has been made prior to the submittal of the revised and approved schedule and the public needs to be renotified, the contractor shall pay for the renotification to the public including, but not limited to mailings, website and social media posts.”

“E. As long as work exists on the project, the Contractor shall remain on the project. If issues exist with a portion of the project which is beyond the Contractor’s control (i.e. obstructions or utility issues), the City has the option to revise the Contract Phasing and direct the Contractor to work on other “unaffected” Phases or areas of the project as shown within the Contract Documents, at no additional cost to the City. The City may provide additional working days to the Contractor based upon relocation efforts and scheduling justification as determined by the Engineer.”

1.04 Preconstruction Conference

Delete this paragraph and replace with the following: “A preconstruction conference shall be scheduled upon receipt of the work progress schedule from the Contractor. The Contractor and intended subcontractors shall attend and participate in this conference. The Engineer will invite representatives of railroads, utilities and others having responsibilities or interests in the work.”

1.07 Work on Sundays or Legal Holidays

Add the following:

“C. the following are holidays observed by the City of Hiawatha, in which no work will be allowed except as allowed below:

- New Year’s Day
- President’s Day
- Good Friday
- Memorial Day (including weekend)
- Independence Day
- Labor Day (including weekend)
- Thanksgiving Day
- Day After Thanksgiving
- Christmas Eve Day
- Christmas Day
- New Year’s Eve Day”

“D. Allowing work on Saturdays and/or City of Hiawatha Holidays is contingent on City of Hiawatha Inspector and/or Engineer availability, except for contracts specifying mandatory six-day work weeks. A written request to the Engineer must be received by noon the Thursday prior to the Saturday or 48 hours prior to the Holiday in which work requiring inspection is to be performed. Work not requiring inspection may be performed with the permission of the City of Hiawatha. Working day charges will apply to Holidays (including holiday weekends as noted above) in which work is allowed to commence. Overtime inspection charges will be charged at the discretion of the City of

Hiawatha as determined by the Engineer for days that the City allows work to be done. Cancellation of the scheduled work may result in the Contractor being charged for Inspectors time as determined by the Engineer with a minimum charge of 3 hours.

1.12 Liquidated Damages

Add the following:

“D. Once work within a phase/project has begun, the Contractor shall work continuously within that phase/project until all work within that phase/project has been completed. If work is not completed and the contractor removes their “normal” size crew and/or equipment from the phase/project without written authorization from the Engineer for more than five (5) consecutive working/calendar days, the Contractor will be considered to be “absent” from the project and will be charged a working/calendar day and immediately assessed the liquidated damage rate for each working day that the Contractor’s “normal” size crew and equipment are not working on the project.

“Normal” size crew and equipment is as determined by the Engineer and the controlling operation. The Contractor will be notified within two (2) consecutive working days of being absent from the phase/project that this clause will go into effect after three (3) additional consecutive working days of being absent from the phase/project. Liquidated damages may be assessed at the time of monthly pay applications that cover any period during which the Contractor had unauthorized absences or work stoppages or on any subsequent pay application.

This paragraph 1.12D applies only to a situation in which the Contractor is absent from a phase/project for five (5) consecutive working/calendar days, and does not change, modify, or replace any other liquidated damage provisions found elsewhere in this contract.”

“E. If vehicular access is restricted to a property identified on the plans as having ADA restrictions and the Contractor stops work as outlined in “D” above, the liquidated damages will accrue for each property AND for each working/calendar day that each property with ADA restrictions does not have vehicular access as determined by the Engineer.”

Section 1090 – Measurement and Payment

1.04 Payment for Change Orders

Add the following:

“B.4 Time and Materials: By the Time and Material method. The contractor shall submit a Rate Sheet detailing labor and equipment hourly costs at the beginning of the project or no later than prior to commencing the extra work. The Contractor and Engineer/Inspector shall document the duration of the labor and equipment used and shall formalize this documentation by joint signature daily. The Contractor shall provide an invoice of the materials utilized for the extra work (if applicable).”

1.05 Progress Payments

Add the following:

“D. Stored Materials: On contracts for which the contract sum is \$10,000 or greater, payments may be allowed based on value of processed or fabricated materials. Payment

may be authorized for up to 100% of the invoice price for materials delivered and stored at the project site, or up to 90% of the invoice price for materials reserved for the project and stored elsewhere in a manner of storage that is satisfactory to the Engineer. Payment for stockpiled materials will not exceed 80% of the authorized amount of the associated bid item. Contractor is responsible for damages and material losses until the material is incorporated into the work and the work is accepted.”

“E. Schedule: The progress payment shall be withheld if the schedule provided by the Contractor is out of date by more than two (2) weeks and a revised schedule has not been provided and/or received and approved by the Engineer. An out-of-date schedule may be due to delays which could include, but not limited to rain, utility work, or the Contractor or subcontractors being absent from the project.”

DIVISION 2 - Earthwork

Section 2010- Earthwork, Subgrade and Subbase

1.08 Measurement and Payment

D. Topsoil

1. On-site Topsoil, 2. Compost-amended Topsoil, 3. Off-Site Topsoil

Delete measurement and payment for each item and replace with the following:

a. Measurement: Measurement will be the plan quantity in cubic yards without final field measurement. Adjustments may be made to the plan quantities if agreed to by both the Engineer and Contractor.

b. Payment: Payment will be at the unit price per cubic yard.

c. Includes: Work includes but is not limited to, stripping, excavating, furnishing, hauling, placing and incorporating materials. Overhaul will not be paid. “

F. Payment

2. Payment.

Replace “existing embankments or following proof rolling operations.” **with** “embankments constructed as apart of the project or once the grade has been approved following a successful proof rolling test.”

M. Compaction Testing:

Delete item 1 and item 2 and **replace** with the following:

“1. The Contractor will be responsible for compaction testing unless otherwise specified in the contract documents.

2. Testing shall be performed by an independent testing laboratory hired by the Contractor. Payment will be incidental to related bid items. “

3.01 Clearing and Grubbing

D. Disposal

Remove and Replace with the following: “Dispose of material from clearing and grubbing according to Iowa Administrative Code 567-23.2 and must meet local ordinances. Burning is not allowed within the City of Hiawatha City Limits unless

authorized by the City Engineer and City Fire Chief. If burning is not allowed, proceed as follows:"

3.04 Embankment Construction

C. Depositing Embankment Material

1. Add the following:

"No embankments shall be built on frozen earth."

3.06 Subgrade Preparation

A. Uniform Composition

Add the following: "A disk or plow shall be used for turning soil for drying. If conditions do not allow enough space for a disk or plow, the material shall be opened up for drying via other methods, proposed by the Contractor, with the approval of the Engineer."

3.09 FIELD QUALITY CONTROL

B. Moisture Content and Density

1. Replace with the following:

"Ensure that moisture content fall within a range of optimum moisture of -1% to +4% of optimum moisture."

DIVISION 3 - Trench and Trenchless Excavation

Section 3010 Trench Excavation and Backfill

2.01 Materials Excavated from a Trench

C. Add the following:

"No additional compensation will be made for minor adjustments to elevations due to field conditions."

3.05 Pipe Bedding and Backfill

E. Final Trench Backfill

E.3.a

Remove and Replace with the following:

"Compact to at least 98% of Standard Proctor Density within right-of-way."

E.4.c

Remove and Replace with the following:

Replace the moisture range of optimum moisture with "-1% to +4% of optimum moisture."

DIVISION 4 - Sewers and Drains

Section 4010 Sanitary Sewers

2.01 Sanitary Sewer (Gravity Mains)

A. Solid Wall Polyvinyl Chloride Pipe (PVC) 8 inch to 15 inch:

Delete item 1 and replace with the following: "Comply with ASTM D 3034, SDR 26"

Delete item 2.b

Delete the following items:

- B. Solid Wall Polyvinyl Chloride Pipe (PVC) 18 inch to 27 inch
- C. Corrugated Polyvinyl Pipe (PVC) 8 inch to 36 inch
- D. Closed Profile Polyvinyl Pipe (PVC) 21 inch to 36 inch.
- I. Double Walled Polypropylene Pipe 12 inch to 30 inch.
- J. Triple Walled Polypropylene Pipe 30 inch to 36 inch.

2.01 B. Solid Wall Polyvinyl Chloride Pipe (PVC) 18 inch to 27 inch.

Delete Items 1 and 2 and replace with the following: “1. Comply with ASTM D 3034, SDR 26. 2. Pipe stiffness per ASTM D 2412, 115 psi. “

Add Item 2.01 K. as follows:

“2.01 K. Polyvinyl Chloride Pipe (PVC) 8 inch to 24 inch

- 1. Comply with AWWA C900.
- 2. Minimum wall thickness: DR 18.
- 3. Joint type: Certa-Lok ® or approved equal.”

2.02 Sanitary Sewer Force Mains

B. Polyvinyl Chloride Pipe (PVC): Comply with the requirements in Section 2.01 K. for PVC pipe. Provide restrained joints where specified.

Add the following:

“F. Sanitary sewer Gravity Main, Trenchless

A: Material shall be SDR-18 CERTA-LOK® Pipe or approved equal”

3.06 Sanitary Sewer Service Stubs

Remove and Replace Item B with the following:

“All service connections to sewer mains shall be with factory wyes”.

Section 4020 Storm Sewers

1.08 Measurement and Payment

A. Storm Sewer

1.c. Add the following: “For those storm sewers lines along the back of curb or under the Street the granular backfill shall be filled to the bottom of the granular subbase.”

2.01 Storm Sewers Products

F. High Density Polyethylene Pipe (HDPE)

Remove paragraph 2 in its entirety

3.06 Aprons

Remove and Replace Item E with the following:

“Install apron guard on upstream apron for 15” pipe or larger. Do not install apron guard on downstream apron.”

Section 4030 Pipe Culverts

1.08 Measurement and Payment

A. Pipe Culverts

1.C Add the following:

“For those pipe culverts under streets or along the back of curb, the granular backfill shall be filled to the bottom of the granular subbase.”

2.01 Pipe Culverts

B. Entrance Pipe Culverts.

Delete the following items:

5. Corrugated Metal Pipe (CMP)
6. Spiral Rib Pipe
7. Coated Corrugated Metal Pipe
8. Corrugated Metal Arch Pipe

3.02 Aprons

E. Replace “Install apron guard where specified.” **with** “Install apron guard on upstream apron for 15” pipe or larger. Do not install apron guard on downstream apron.”

Section 4040 Subdrains and Footing Drain Collectors

2.02 Type 1 Subdrains (Longitudinal Subdrain)

D. Corrugated Polyethylene Tubing and Fittings (Corrugated PE). Delete this item.

2.06 Subdrain or Footing Drain Cleanouts

B. Type B Cleanouts

Delete Item 2. Polyvinyl Chloride

Add the following:

“C: Nyloplast Cleanout. Install per manufacturer specifications. Includes casting. Ductile iron frame (28.50) and solid grate (24.75) or approved equal. Inlet and outlet shall match subdrain size. Nyloplast shall be used unless otherwise specified in the contract documents.”

Section 4060 Cleaning, Inspection and Testing of Sewers

3.01 Cleaning: Add the following to item A: “A root saw or other approved means may be used to remove roots. Use of a flail-type device to trim protruding services or remove roots is prohibited. “

3.02 Video Inspection

A. General

A.1. Add the following:

“All costs for televising shall be borne by the contractor.”

A.2 Remove and replace with the following:

“Notify the Engineer or Engineering Technician the day prior to inspection so the Engineer may be present during the inspection. Personnel shall be present at the time of televising.”

A.4 Add the following:

“Re-televising after any corrective action shall be at the contractor’s expense.”

B. Inspection Reporting:

Add the following:

“3. Contractor shall provide all videos and reports in a timely manner to the Engineer on a flash drive or agreed upon electronic manner.”

ADD New Section 4910 Pipe Bursting - See City of Cedar Rapids Supplemental Specification
https://cms8.revize.com/revize/cedarrapids/4910_Pipe%20Bursting_2024.pdf

DIVISION 5 - Water Mains and Appurtenances

Section 5010 Pipe and Fittings

1.08 Measurement and Payment

Item C.2.a, Add the following:

“Hiawatha Water Department will use the Tyler Union Water Works Catalog, January 2019, for fitting weight for payment measurement regardless of the approved fitting brand’s actual weight. <https://www.tylerunion.com/upl/downloads/library/tyler-union-waterworks-catalog.pdf>”

2.01 Water Mains

B. Ductile Iron Pipe (DIP)

1. Minimum Thickness Class Add the following:

“c. Ductile Iron Pipe shall be manufactured in accordance with the latest revision of ANSI/AWWA C151/A21.51. The raw material for ductile iron shall have an average minimum recycled content consisting of 90% scrap iron and steel. Each pipe shall be subjected to a hydrostatic pressure of at least 500 psi at the point of manufacture.

d. All ductile iron pipe shall be supplied by manufacturers in good standing with the Ductile Iron Pipe Research Association (DIPRA).

e. All ductile iron pipe shall be manufactured domestically with manufacturing facilities residing in the US.

f. Allowed US pipe manufacturers are American, McWane and US Pipe.”

2.02 Bolts for Water Main and Fittings

A. Tee-bolts and Hexagonal Nuts for Mechanical Joints

Add the following to subparagraph 1.:

“Corten Steel tee-bolts with fluorocarbon coating or department approved alternative high-strength, low-alloy steel manufactured according to AWWA C111.”

B. Other Bolts and Nuts

Remove and Replace with the following:

“1. Stainless Steel or Corten Steel with Fluorocarbon coating”

2.03 Fittings

C. Pipe Coupling

Add the following:

“5. Fittings allowed for oversized pipe are:

- a. Romac Alpha XL restrained joint
- b. Krausz Hymax Grip
- c. MJ solid DI sleeve, AWWA C153, Class 350. Tyler Union, Clow, US Pipe
- d. Stainless Steel repair clamps with stainless steel bolts and nuts. Ford FS1, Romac SS1, Sith Blair 261 and TPS Quick Cam”

2.05 Pipeline Accessories

A. Polyethylene Wrap

Add the following:

“3 Use polyethylene wrap on all fittings in buried service.”

B. Tracer System

a.1 Solid Single Copper Conductor

Add the following:

“All Wire shall be Blue”

1.a.1.c Insulation Thickness

Remove and Replace as follows:

“Insulation thickness: 0.045 inches, minimum.”

1.a.2 Bimetallic Copper Clad Steel Conductor

Add the following:

“For Boring use only or as approved by Engineer.”

Add the following:

3. Wire Connectors allowed:

- IDEAL 66R twist wire nut with silicone-based sealant
- Burndy KS15 copper split bolt
- All connectors will be wrapped with Tapecoat T-tape” and inspected prior to burying

5. Tracer Wire Station

Add the following:

“D. Contractor shall install stainless steel strap on fire hydrants which is obtained from Hiawatha Water Department.

2.07 Water Service Pipe and Appurtenances

B. Materials

2. DIP

Add the following:

“All fire sprinkler risers and domestic riser pipes shall be DIP. Riser Pipes shall be secured with ¾” stainless steel ready rod with stainless steel nuts and washers.”

3. PVC Pipe

Remove and Replace with the following:

“C900 with wall thickness of DR 18”

5. Polyethylene Pipe

Remove and Replace with the following:

“Pipe must be DR9 ASTM2737 with minimum of 250 psi rating, copper tubing size with tube stiffeners and compression fittings.”

“Copper Tube Size (CTS) pipe allowed on 1 ¼”, 1 ½”, and 2” water service lines”

“Private service lines shall have separate tracer wire starting at tap on water main with ground rod with bronze ground rod clamp with stainless steel bolts wrapped with Tapecoat T-Tape. (PRIVATE SERVICE LINE WIRE SHALL NOT CONNECT TO PUBLIC WATERMAIN TRACER WIRE) Tracer wire shall run the length of the service line where service line ends at water meter unless otherwise specified.

“Compression fittings allowed on 1 ¼”, 1 ½”, and 2” CTS water service lines

- a. AY McDonald – Q-series compression or Cambridge multiple Ranger multiple OD coupling
- b. Mueller – 110 compression connection for CTS OD tubing”

C. Corporations, Stops, and Stop Boxes

Add the following:

“Corporation Stop Allowed

- a. Mueller H-15000 or B-25008N
- b. AY McDonald 74701 or 74701BQ
- c. Ford F1000-G-NL

Curb Stop Allowed

- a. Mueller H-25204N or 300 B-25209N
- b. AY McDonald 76100 or 76100Q
- c. Ford B44-333-Q-NL

Curb Box Allowed

- a. Mueller H-10334

- b. AY McDonald 5607
- c. Ford EM2-60-56

All curb boxes shall have a stainless steel valve operator extension rod, ½-inch in diameter x 42 inches long.

Stop Box Lids

- a. Stop box lids shall have center pentagon access with bolt on bottom of lid to attach locate wire to for plastic water service lines.
 - i. AY McDonald 5607TW
- b. Curb box lid “W” or “Water” label on lid
 - i. AY McDonald 5601 used with all copper services.”

2.09 Casing Pipe

Add the following:

“A. Polyethylene film: 8 mil thickness; black pigmentation; wrap DI pipe as recommended by manufacturer; ANSI A21.5; Clow Corporation F-192, or equal; use for corrosion protection on all iron pipe, fittings, and valves.

- 1. Use flat tube with and polyethylene overlap recommended by manufacturer for various pipe diameters.
- 2. Use 2”x8 mil polyethylene adhesive tape with paper backing.

B. Steel casing pipe (S): smooth wall welded steel pipe, ASTM A139; minimum wall thickness: 0.3125”; use for casing pipe where shown on plans.

- 1. Coat outside of pipe with asphalt liquid, Iowa Paint Mfg. Co. No 31, or equal.
- 2. Welded joints in conformance with Code of Arc and Gas Welding on Building Construction by AWS.
- 3. Bevel or space ends of pipe to ensure penetration of weld for full thickness of pipe.

3.01 Pipe Installation

A. General

Subparagraph 8, Delete the following:

“and when specified in the contract documents”

Add the following:

“12. Minimum pipe bury depth is 5’-6”.

13. When water main run ends with a valve, restrain the last two full lengths of pipe with a flange/mega lug assembly with stainless threaded rod and nuts and wrapped in plastic. Item is incidental to main installation. See Exhibit D.”

3.05 Tracer System Installation

Remove and Replace paragraph F with the following:

“Bring two wires to the surface at each fire hydrant location and terminate with a stainless steel locator strap installed by Hiawatha Water Department (comply with [Figure 5010.102](#))

3.09 Water Service Stub

Add the following:

“D. Marion Water Department to install all taps up to 2 inches in diameter. Contact department for material costs and inspection fees if applicable.

E. Water main to be in service and all tests passed prior to ordering taps 48 hours in advance.

F. Lot pins to be placed prior to making taps.

G. Taps larger than 2” in diameter shall be made the contractor with approved materials per Marion specifications”

H. Install blue painted steel tee fence posts by all water service curb boxes”

3.09 Water Service Stub

Add the following:

“D. Coordination

1. Water main to be in service and all tests passed prior to ordering taps.
2. Lot pins to be placed prior to making taps.
3. Call at least 24 hours ahead for taps and inspections.
4. All taps made by the Contractor

E. Install blue painted steel tee fence posts by all water service curb boxes.

F. Acceptable service saddles service connections, Brass

1. AY McDonald 3855
2. Ford 202BS (for PVC pipe only)
3. Smith Blair 325
4. Tyler Union MJ C153 Tapped Tee (2” tap)
5. Clow MJ Class 350 Tapped Tee (2” tap)

G. All services shall be of one continuous piece from water main to curb stop and from curb stop to meter. Any deviance must be approved by the Water Superintendent. If coupling is approved, one of the following shall be used:

1. AY McDonald 747758Q
2. Mueller 110H-15403N
3. Ford C44-44-Q
4. Universal Cambridge Coupler”

Section 5020 Pipe and Fittings

1.08 Measurement and Payment

E. Fire Hydrant Assembly

“Stainless steel locator strap paid separately to the Hiawatha Water Department”

1.08 Measurement and Payment

F. Valve Box Adjustment, Minor

Add the following:

"Valve box adjustment extensions will be incidental"

2.01 Valves**B. Gate Valves****1. Standards**

Delete: "AWWA C515"

Add the following:

- "4. Operating nut to be attached to valve stem by bolt or nut type connection
- 5. Valve stem shall be brass and removable without removing valve bonnet
- 6. Finish: in accordance with ANSI/AWWA C509. Fusion bonded epoxy per AWWA C550, interior and exterior
- 7. Valves allowed:
 - a. Clow
 - b. Kennedy
 - c. Mueller
 - d. U.S. Pipe"
- 8. Install blue painted steel tee fence posts by all valve boxes

C. Butterfly Valves**Add the following:**

"Butterfly ANSI/AWWA C504, Class 150B or Class 250B Open counterclockwise to be used on 16" and larger water mains.

Clow, DeZurik, Gav 800 series, Kennedy, M&H, Mueller, Pratt , Valve Matic"

D. Tapping Valve Assemblies**1. Tapping Valve:**

Delete "AWWA C515"

Add the following:

- "8. Tapping valve shall have alignment lip to mate with tapping saddle
- 9. Tapping sleeve shall be made of:
 - a. Minimum 18-8 stainless steel
 - b. Gasket- nitrile NSF-61 approved
 - c. Flange shall be 18-8 stainless steel type (304) with ANSI class 150# drilling pattern
 - 1. Per AWWA C207 class "D"
 - d. Flange shall be machined with a recess MSS SP-60 to accept tapping valves
 - e. Nuts, bolts and washers shall be 304 stainless steel
 - f. Nuts and bolts shall be coated to prevent galling
 - g. Test port shall be ¾" welded stainless steel with IPS stainless steel pipe plug
 - h. Tapping sleeves shall follow ASTM A380-06 and ASTM A967-05 for cleaning, de- scaling and passivation treatment

- i. Acceptable tapping saddles are Mueller H-304SS, Smith-Blair 665, Triple Tap series TS, Ford FAST. Ductile Iron tapping sleeve American flow control – series 2800, Kennedy, Mueller H615, Tyler/Union
- 10. Tapping sleeve shall be tested prior to tapping, in accordance with department rules.
- 11. Sleeve and valve shall be supported by 4"x8"x16" solid block
- 12. Acceptable tapping valves ANSI/AWWA C509, C515 Open Counterclockwise include Clow F2640, Kennedy 8950SS, Mueller T-2361, US Pipe A-USPO-16, American Flow Control 2500 Series"

2.02 Fire Hydrant Assembly

B. Manufacturers

Add the following:

"AWWA C502 Open counterclockwise 5 ¼" pumper nozzle to 5" Storz connection.
Approved manufacturers include Mueller Super Centurion 250, Clow Medallion F2545, Waterous Pacer WWB67-250

See detail – Fire Hydrant Exhibit A&B – Type II.

If needed, Hiawatha Water Department will raise fire hydrant and bill the contractor.
Contractor shall adjust valve boxes to final grade."

2.03 Appurtenances

A. Flushing Device (Blowoff)

Add the following:

"See Exhibit C – Blow off Detail"

B. Valve Box

2. Manufacturer

Add the following:

"Approved manufacturers (slip type):

- a. Tyler Union series 6855 and item 666A, Tyler Union #69 A riser
- b. Sigma Corp VB-4621 and VB-4622, riser ring VB 2601-2608, 2615 and 2625

Approved manufacturers (non-paved areas):

- a. Tyler Union series 6850 and 666S, Tyler Union #69 riser
- b. Sigma Corp VB-2611 and VB 2612 riser ring VB 2601-2608, 2615 and 2625"

3.03 Fire Hydrant

Delete the following:

"Paragraph A - Figure 5020.201"

"Paragraph F in its entirety"

Add the following:

"Paragraph A – Exhibits A & B"

***See Appendix for City of Hiawatha Appendix for Approved Manufacturers and Materials list for water main and water service lines**

DIVISION 6 -Structures for Sanitary and Storm Sewers**Section 6010 Structures for Sanitary and Storm Sewers****1.08 Measurement and Payment****D. Casting Extension Rings****Remove and Replace with the following:**

- “1. Measurement: Each casting extension ring will **NOT** be counted.
- 2. Payment: Payment will be incidental to each structure and shall be included in cost of such structure. No additional payment will be made.”

2.03 Cast-in-place**B. Reinforcement****Add the following:**

“All reinforcement steel shall be epoxy coated when structures are cast-in-place, unless otherwise indicated on the plans.”

2.05 Precast Riser Joints**B. Joint Sealant****Remove the following items:**

- b. Bituminous Jointing Material
- c. Butyl Sealant Wrap, unless pre-approved by Engineer.

2.08 Pipe Connections**Add the following:**

“E. Connection to sanitary sewer manhole shall be A-Lock or approved equal”

2.10 Castings (Ring, Cover, Grate, and Extensions)**Remove the following**

“C. Composite”

E. Casting Types**1. Manholes****Add the following:**

“When bolted covers are specified, bolted covers shall use a removable/replaceable nut system. East Jordan Iron Works 1045Z or approved equal.”

2. Intakes**Remove and Replace Subparagraph b. with the following:**

“b. Castings shall include the message “DUMP NO WASTE, DRAINS TO RIVER” with a “fish” symbol.”

Detail SW-301

Remove: “Flexible Pipe Connection (typ)”

Add: “A-Lok or approved equal by Engineer (typ)”

Detail SW-512**Remove:** "SW-604 Type 3, 4 or 5 Casting"**Add:** "SW-604 Type 3 Casting"**DIVISION 7 - Streets and Related Work****Section 7010 Portland Cement Concrete Pavement****1.05 Delivery, Storage, Handling, and Salvaging****Add the following item:**

"E. Ready- Mix Concrete Ready-mix concrete may be used only if the producer is approved per the IDOT Ready Mix Concrete Producer Program. Verification of approval will be required. "

1.07 Special Requirements.**Add the following:**

"A. Contractor shall provide a minimum of 24-hour advance notice (excluding weekends and holidays) to the Engineer for pavement pours.

B. Contractor shall notify Engineer of pavement joint sawing operations which must be performed during the Hiawatha Noise Ordinance period of 10:00 pm -7:00 am.

H. When placing PCC, the Contractor shall protect adjacent fixtures from concrete splatter or direct contact with concrete. Fixtures shall include but are not limited to light poles, light pole bases, controller cabinets, hand holes, buildings, manhole lids, water valve lids and fire hydrants.

I. Pavement less than 15 years old shall be removed to full panel joint lines or as designated by the Engineer."

1.08 Measurement and Payment**A. PCC Pavement****Delete item 3. and replace with the following:**

"Unit price includes, but is not limited to, final trimming of subgrade or subbase, integral curb, bars and reinforcement, joints and sealing, surface curing, safety fencing, concrete for rigid headers, boxouts for fixtures, and pavement smoothness testing."

B. Air Content Deficiency**Remove part 2 (two) Payment, and replace with the following:**

"All concrete which has an air content deficiency according to Section 7010, 3.08, shall be removed and replaced as determined by the Engineer, at no cost to the Owner."

C. Pavement Smoothness Deficiency**Remove Section in its entirety****D. Pavement Thickness Deficiency****Add the following:**

“The concrete shall be removed and replaced at the Engineer’s discretion if it does not meet pavement thickness, at no cost to the Owner.”

I. PCC Pavement Samples and Testing

Remove 1, 2 & 3 and replace with:

“1. Maturity testing is incidental to pavement items and no separate payment will be made for these tests. Pavement smoothness shall be required on all nonlocally classified streets or if specified by contract documents and shall be incidental to pavement items and no separate payment will be made for testing or corrective actions required. Pavement thickness cores will be required if yields do not check per section D and is incidental to the pavement items. Certified plant inspection, if specified in the construction documents, is also incidental to the pavement items.”

a. Pavement Construction

J. Bar and Reinforcement Placement

Add the following:

“3.02 E. Utility Crossing Reinforcement: Reinforcement shall be required at all storm sewer crossings and all sanitary sewer crossings that have less than 5 feet of cover between the top of the pipe and the bottom of the proposed pavement or as specified on the contract documents. Reinforcement shall be #5 epoxy coated bars, 15 foot long at 18” on center. Tied chairs supports and anchors shall be used. Bars shall be set and supported before paving. Overlaps will not be measured for payment. If there is no contract bid item, this shall be incidental to other items.”

3.04 Pavement Protection.

A. Weather Conditions

Add the following:

“B. When cold weather protection is required it shall be paid per Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction Section 2301.05 Part K. Heating Water for Concrete Mix shall be the customary amount charge for heating, and separately identified on the invoice, with a maximum of \$5.00 per cubic yard if ordered by the Engineer and under the same conditions of 2301.05 Part K. If Contractor elects to do work with Engineer direction, no payment will be made for cold weather protection.”

B. Night Conditions

Add the following:

“Night work, if approved by the Engineer, shall meet the following requirements: The Contractor shall meet the requirements of Iowa DOT Specification 2550, including but not limited to submitting a Lighting Plan, Light Meter, and providing the minimum lighting intensity of 5 foot candles over the entire work area. Work performed without meeting these requirements will be rejected and the cost borne by the Contractor. The additional costs of night work shall be the responsibility of the Contractor.”

C. Protection from Traffic

“4. Minimum Cure Time: Regardless of maturity method of TTF value achieve, no PCC pavement shall have loadings applied to it, including but not limited to a paving machine, other than saw and sealing trucks until a minimum of 72 hours after pavement of a continuous pour was placed.”

3.07 Quality Control

A. Testing

Add the following:

“Certified Plant Inspection will only be required if specified in contract documents. Approved Sources, Field Tests and Maturity tests shall be completed.”

D. Pavement Thickness

Add the following:

“5. Yield will be checked per field measurements and cores will only be required if yield is not met or deficiencies are determined and/or suspected by the Engineer.”

Detail PV-103

Modify as follows:

“Thickness of boxout shall be 10 inches minimum”

“Joint between boxout and mainline shall be KT-2 or BT-3”

“Secure tie reinforcement bars to pavement dowels”

“#5 epoxy coated bar 5’ long in diamond and square pattern, to fit boxout size. For Circular Boxouts, use #5 epoxy coated hoop bars (variable length). All bars to be placed at mid slab.”

“Boxouts shall be 6’ by 6’ or a 6’ DIA Circle.”

Section 7030 Sidewalks, Shared Use Paths, and Driveways

1.08 Measurement and Payment

Delete Item 1.08 F Brick Sidewalk in its entirety.

2.01 Portland Cement Concrete

Delete Item A and replace with the following: “Class C concrete with materials complying with Section 7010. Use coarse aggregate of Class 2 durability or better.”

2.03 Brick Pavers Delete this item in its entirety.

3.04 PCC Sidewalks, Shared Use Paths, and Driveways

F. Jointing

2. Transverse Contraction Joints:

a. Shared Use Paths

Add the following:

“3) Provide a ½” expansion joint every 75’ or nearest joint.”

b. Sidewalks and Driveways:

Add the Following:

"4) Provide a 1/2" expansion joint every 75' and or at nearest joint and on all four edges between the sidewalk through the driveway and the driveway. If property is 75' or less, expansion joints may be provided at the property lines only."

K. Isolation Joints:**Remove and Replace paragraph b with the following:**

"b. For a sidewalk constructed with a driveway, install an isolation joint on all sides of the sidewalk through the driveway."

Add the following:

"e. Isolation joints shall be sealed, including joints that butt against the back of curb."

Add the following:

"G. Pedestrian Facility Compliance and Acceptance:

Contractor is responsible for constructing all new pedestrian facilities in accordance with the plans, specifications and applicable standards. Pedestrian facilities include, but are not limited to, sidewalk, shared use paths, pedestrian ramps and sidewalks."

L. Joint Sealing:**Remove and Replace paragraph b with the following:**

"All expansion and isolation joints shall be sealed. Trim preformed joint material to ½ inch below the concrete surface. Ensure the joint is clean and dry. Install joint sealant per manufacturer's recommendations."

Detail 7030.101 Concrete Driveway, Type A

Driveway and curb opening widths for new pavement shall conform to the requirements listed in the City's General Supplemental to SUDAS Design Manual.

Detail 7030.207 Curb Ramp for Class B or C Sidewalk**Add the following to the detail:**

"6. If distance between the two intersection sidewalks at the back of curb is less than 5', pave area between flares with 6" Min PCC."

Section 7040 Pavement Rehabilitation**1.07 Special Requirements****Add the following:**

"When placing PCC, the Contractor shall protect adjacent fixtures from concrete splatter or direct contact with concrete. Fixtures shall include but are not limited to light poles, light pole bases, controller cabinets, hand holes, buildings, manhole lids, water valve lids and fire hydrants."

"Pavement less than 15 years old shall be removed to full panel joint lines or as designated by the Engineer."

3.11 Core Hole Cutting and Replacement**C. Pavement Core Replacement****Remove and Replace paragraph 2 with the following:**

“For PCC pavement, install rebar pins and place low slump concrete to match elevation of existing pavement. Concrete material to be approved in Iowa DOT MAPLE under Concrete Repair, Rapid Set Patch Material.”

Add the following:

“4. PCC Pavement less than 15 years old shall be removed to full panel joint lines or as designated by the Engineer. Replacement shall meet the requirements of Full Depth Patches.”

Section 7092 Crack and Seat Existing PCC Pavement**1.08 Measurement and Payment:****A. Crack and Seat of PCC Pavement:****Remove and Replace with the following:**

- “1. Measurement: Measurement will be in square yards for area cracked and seated. Curb and gutter sections separated from pavement by full depth saw cuts will not be included.
- 2. Payment: Payment will be made at the unit price per square yard of roadway cracked and seated.
- 3. Includes: Unit price includes, but is not limited to, notifying adjacent properties, providing traffic control and no parking signs; vibration monitoring if specified; cracking and seating of the designated PCC pavement to the specified pattern; watering to verify crack pattern; protecting existing fixtures; cleaning of the slab prior to overlay; full depth saw cutting at limits as described on plans; removal and disposal of debris; furnishing and application of water as necessary; final project site cleanup.”

DIVISION 9 - Site Work and Landscaping**Section 9010 Seeding****1.08 Measurement and Payment****E. Warranty****Remove and Replace Item 2 with the following:**

“2. Payment: Payment shall be incidental to seeding item(s) and shall be included on all projects.”

3.10 Acceptance and Warranty**B. Warranty:****Remove and Replace Item 1 with the following:**

“1. Required on all projects and incidental to other items.”

Section 9030 Plant Material and Planting**2.06 Tree Protection**

Remove and Replace with the following:

"Install a 3-4" diameter tube (corrugated or vinyl plastic), specifically manufactured for tree trunk protection, having qualities to resist insect infestation and to allow free air flow to trunk tissues, or similar material approved by the Engineer."

3.06 Planting**Remove and Replace Item 4b with the following:**

"After plant placement, cut and remove all of the wire, burlap and twine from root ball."

3.07 Watering**Add the following to Item B:**

"Double the watering frequency during extreme heat and dry summer periods."

DIVISION 10 - Demolition**Section 10,010 Demolition of Building Structures****1.07 Special Requirements****Add item C.1 as follows:**

"C.1. Notify Linn County Public Health Department prior to plugging abandoned wells."

Add item C.2 as follows:

"C.2. Notify Linn County Public Health Department of septic tank abandonment for inspection and recording."

3.02 Utility Disconnections**Remove and Replace Paragraph A with the following:**

"Sanitary Sewer: Prior to the demolition of any building or structures, the branch sanitary sewer or sewers serving the building shall be cut off at the Right-of-Way or as directed by the Engineer, and shall be tightly and permanently sealed with a plug of mortar. The plugs shall be subject to the approval of the Engineer prior to backfilling. The contractor shall keep a temporary plug, either friction-type or a cap in the sewer line, to prevent storm water and debris from washing into the line prior to the construction of the final plug. Disconnection and plugging of sanitary services shall be per Section 4010,3.08. Notify Engineer for inspection prior to placing backfill material."

Remove and Replace Paragraph B with the following:

"Water Service: Water Service shall be disconnected by the Contractor at the main prior to the demolition. The location of water mains, where known, will be provided by the local jurisdiction. The Contractor may be required to schedule excavations in certain streets in accordance with the requirements of the local jurisdictions. Methods of work on mains and services will be subject to prior approval and inspection by the Water Superintendent. The disconnection shall be subject to approval by the Water Superintendent prior to backfilling. Those water services controlled by a corporation cock valve on the main shall be disconnected at the main by closing the cock valve and disconnecting the service lines. A cap or corporation nut shall be put on the corporation

cock valve. Those water services controlled by gate valves shall be disconnected as near as practical to the main by closing the valve, replacing the stem package, disconnecting the first joint away from the valve and installing a cast iron plug designed to fit the type of joint found. A concrete thrust block shall be poured against the plug in such a manner that it will bear against undisturbed earth. Care shall be taken in forming this thrust block so that the plug could be removed if desired for a future connection.”

Remove and Replace Paragraph C with the following:

“Storm Sewer: Prior to demotion of any building or structure, roof rains or area drains connected to the storm sewer system shall be cut off at the back of curb and that portion of the branch sewer shall be permanently sealed with a plug of mortar no less than one foot thick. The plug shall be subject to approval by the Engineer prior to backfilling.”

DIVISION 11 Miscellaneous

Section 11,010 Construction Survey

1.03 Submittals

Add the following:

“4. After award of the contract and prior to the preconstruction meeting, the Contractor shall locate and examine the survey control points noted in the contract documents.

The Contractor shall provide a signed statement to the Engineer regarding the sufficiency of the control points for construction survey.

After award of the contract and prior to the preconstruction meeting, the Contractor shall locate and determine conditions where new construction will match existing features and determine the location and elevation of said features. The Contractor shall provide a signed statement to the Engineer regarding the accuracy and sufficiency of locations and elevations of existing features as noted in the contract documents for use in construction survey.

Failure to provide these statements may result in delays in the commencement of construction. The Contractor will have no claim for damages or extension of time for these delays. “

1.07 Special Requirements

Add the following:

“E. For usage of electronic files refer to Division 1, Section 1040 1.05.

F. The Jurisdiction shall not be required to provide electronic AutoCAD files or electronic files including but not limited to surfaces. The contractor shall perform the work via the survey stakes provided by the Jurisdiction. At the discretion of the Engineer, a limited electronic file may be provided given the contractor signs the Electronic Media Release.”

1.08 Measurement and Payment

A. Construction Survey:

Remove and Replace subparagraph 3 with the following:

“Lump sum price includes, but is not limited to, the costs of resetting project control points, re-staking, and any additional staking requested beyond the requirements of this section. Also includes verification of control points and existing feature locations and elevations and submittals per Section 11,010, 1.03.”

3.04 Disturbed Monuments

Remove and Replace with the following:

“Replace land corners, property corners, permanent reference markers, and benchmarks specified in the contracts documents, or if disturbed during construction by a Licensed Surveyor in the State of Iowa at the cost of the contractor and is incidental to other bid items.”

Appendix A

Hiawatha Water Department Standard Specification for Water Main Improvements

Approved Manufacturers and Materials List for water main and water service lines

A.01 – Corporation Stop

1. AY McDonald NL Ball Style 74701BQ is preferred
 - a. 74701B and 74701B-33 are acceptable
2. Mueller 300 Ball Style B-25008N is preferred
 - a. 25000N and P-25008N are acceptable
3. Ford Ballcorp F1000-G NL is preferred
 - a. F600NL and F1000-4 NL are acceptable

A.02 – Curb Stop

1. AY McDonald NL Ball Style 76100Q is preferred
 - a. 76100 and 76100-22 are acceptable
2. Mueller 300 Ball Style B-25209N is preferred
 - a. B-25204N and P-25209N are acceptable
3. Ford Ball Style B44-433-Q-NL is preferred
 - a. F600NL and F1000-4 NL are acceptable

A.03 – Curb Box

1. AY McDonald 5601 with Stainless Steel valve rod and Erie Pattern lid – to be used on Copper Services only
2. AY McDonald 5601 with Stainless Steel valve rod and 5607TW lid – to be used on all services that require a tracer wire (i.e. non-metallic)
3. AY McDonald curb boxes are preferred
 - a. Mueller H-10314 and Ford EM2-60-56 are acceptable

A.04 – Service Saddles (tapping)

1. Smith Blair Model 317
2. Romac 202N
3. Ductile Iron MJ Tapped Tee (2-inch services)

A.05 – Meter Valves

1. All valves must be No Lead.
2. AY McDonald Ball Style Model 6100 W's and 4602 W's with lock wings are preferred.
 - a. Ford Ball meter valves straight and angled with padlock wings are acceptable.
 - b. Mueller 300 Ball meter valves straight and angled with lock wing are acceptable.

A.06 – Water Service

1. Copper pipe: Conforms to ASTM B88. Wall thickness: K Type
2. Plastic pipe: Conforms to ASTM D2737. Wall thickness SDR9 CTS

- a. Plastic Tubing or Pipe must have a Stainless Steel Liner used with all compression type fittings.
 - b. All plastic service lines must have tracer wire installed with each service from the water main into the water meter.
3. Ductile Iron Pipe: Class 52 per ANSI/AWWA C151/A21.51
4. Polyvinyl Chloride Pipe: Conform to ANSI/AWWA C900, C905 DR18

Appendix B

Hiawatha Water Department Accepted Products for Water Distribution

PVC Water Pipe: AWWA C-900, C905 Pressure Class 150, DR19

- JM Eagle AWWA C90 DR18 4"-12" and DR14 16" and up
- CertainTeed Certa-Lok C900/RJIB for directional bored piping
- North American Pipe Corporation

Ductile Iron Water Pipe: ANSI/AWWA-A21.51/C151

- American, Clow, Griffin, McWane, US Pipe

Fittings: Ductile Iron Standard, ANSI/AWWA-A21.10C110, 350 psi

Ductile Iron Compact, AWWA C153, 350 psi

- Clow, US Pipe, Tyler/Union, Romac (ALPHA Restrained Joint), Sigma

Tapping Sleeve: Full Body Ductile Iron with Stainless Steel and/or NSS Cor-Blue Nuts and Bolts

- American Flow Control – Series 2800, Kennedy, Mueller – H615, Tyler/Union 25-U

Tapping Sleeve: Stainless Steel with 304 Stainless Steel Flange

- Ford FAST, Mueller H-304SS, Romac SST, Smith Blair 665

Mechanical Joint Restraint Device: With NSS Cor-Blue Nuts & Bolts

- EBAA 1100, EBAA 2200PV, Tyler/Union TUFGRIP 1000 & 1000S, TURFGrip 1500, TUFGRIP 2000 & 2000S

Valve: Resilient Seated Gate Valve, ANSI/AWWA C509, C515, Open Counter-Clockwise

- Clow 2640 & 2639, Kennedy 8571SS, Mueller 2300 Series, US Pipe A-USPO-20, Mueller 2300 series Aqua-Grip System, American Flow Control 2500 Series

Tapping Valve: ANSI/AWWA C509, C515 Open Counterclockwise

- Clow F-2640, Kennedy 8950 SS, Mueller T-2361, US Pipe A-USPO-16, American Flow Control 2500 Series

Butterfly Valve (16" and larger): ANSI/AWWA C504, Class 150B or Class 250B, Open Counterclockwise

- Clow, DeZurik, GAV 800 Series, Kennedy, M&H, Mueller, Pratt, Valve-Matic

Valve Box (Slip Type): for areas where valve is located in pavement

- Tyler Union - Series 6850 & 666S, Tyler Union #69-A Riser, Sigma Corp VB-4621 & VB-4622, Riser ring VB-2601-2608, 2615 and 2625

Valve Box (Screw Type): for all non-paved areas

- Tyler Union - Series 6850 & 666S; #69 Riser, Sigma Corp VB-2611 & VB-2612 Riser ring VB-2601-2608, 2615 and 2625

Fire Hydrant: AWWA C502, Open Counterclockwise, 5 ¼", Pumper nozzle to 5" Storz Connection. **See Hydrant Characteristics**

- Mueller Super Centurion 250, Clow Medallion F-2545, Waterous Pacer WB67-250

Stainless Steel Repair Clamp: With Stainless Steel Nuts & Bolts

- Ford FS1, Romac SS1, Smith-Blair 261, TPS Quick Cam

Sleeve Type Coupling: With Stainless Steel Nuts & Bolts, MJ Solid Ductile Iron Sleeve, AWWA C153

- Tyler Union, Clow, US Pipe, Romac Alpha Wide Range Restraint Coupling

Tracer Wire Terminal: Stainless Steel Hydrant Strap

- Straps can be obtained from the Water Department

Tracer Wire: Blue in Color

- Copperhead, Kris Tech, Approved Equal

Tracer Wire Connect: Blue in Color

- Copperhead Industries Snake Bite Corrosion Proof Wire Connector #SCB-01, Ideal 30-160

Service Saddle / Service Connection*: ANSI/AWWA C800 with double Stainless Steel Bands

- Brass: AY McDonald 3855, Ford 2020 BS (for PVC pipe only), Smith Blair 325
- *Tyler Union MJ C152 Tapped Tee (2" tap); Clow MJ Class 350 Tapped Tee (2" tap)

Corporation Valve: ANSI/AWWA C800, Compression Ball Valve

- AY McDonald 74701BQ, Mueller B-25008N, Ford F1000-G-NL

Curb Valve: ANSI/AWWA C800, Compression Ball Type Connection, for CTS OD Tubing (both ends)

- AY McDonald 76100Q, Mueller 300 B-25209N, Ford B44-333-Q-NL

Curb Box: ANSI/AWWA C800, Arch Patten, 5-foot Length (telescope 1-foot), Slide Style. With 42" Stainless Steel Rod & Cotter Pin

- AY McDonald 5601, 5603 with 5660 SS, Mueller H-10314, Ford EM2-60-56

Curb Box Lid: "W" or "WATER" label on lid

- AY McDonald 5601 used with all Copper Services
- AY McDonald 560TW used with all non-metallic Services that require tracer wires or Equal

Straight 3-part Coupling: ANSI/AWWA C800

- AY McDonald 74758Q, Mueller 110 H-15403N, Ford C44-44-Q, Universal Cambridge Coupler

Meter Valve: ANSI/AWWA C700

- AY McDonald Ball Style Model 76100WW and 74602WW, with locking wings are preferred
- Ford and Mueller Ball style meter valves with lock wings may be used

Water Service Material:

- Copper Pipe: Conforms to ASTM B88 Wall Thickness: K type
- Plastic Pipe: Conforms to ASTM D2737, Wall thickness SDR9 CTS
 - Plastic tubing/pipe must have stainless steel liner/stiffeners used with all compression type fittings
 - Plastic tubing/pipe service line shall be installed with approved compression style fittings
 - All Plastic (non-metallic) services must have tracer wire installed with each service from the main to the meter
- Ductile Iron Pipe: Class 52 per ANSI/AWWA C151.A21.51
- Polyvinyl Chloride (PVC): Conform to ANSI/AWWA C900,905 DR18

Fire Hydrant Characteristics: AWWA Standard C502

Main Valve Size:	5 ¼"
Inlet Connection:	6" MJ
Direction to open:	Left (counter clockwise)
Pumper Nozzle Size:	5" Storz Connection
Pumper Nozzle Thread:	5.7659" Diameter NST
Hose Nozzle Number/Size:	2 each 2 ½"
Hose Nozzle Thread:	3.0686" OD Male, NST 7 ½ tpi
Operating Nut Size:	1 ¼" pentagon
Bury Depth:	6'-0" (Six feet)

Remarks: Word "OPEN" and arrow to be cast on top. Two coats of fire hydrant red paint. Dry top design with provisions for lubricating operating mechanism. Bronze seat/seating ring. Weather cap for operating nut.

FIGURES – Specifications Manual

Division 4- Sewers and Drains

HI 4040.231 Subdrains (delete 4040.231)

Division 5- Water Mains and Appurtenances

Figure 9.1 Typical Pavement Utility Section

Water Service Detail

Water Service Layout Details 1 & 2

Water Main Clearance Detail

DIVISION 6 – Structures for Storm and Sanitary Sewer

HI 6010.990 Sanitary Manhole Over Existing Sewer – Alternative Method

HI 6010.991 Sanitary Sewer Connection to Existing Manhole

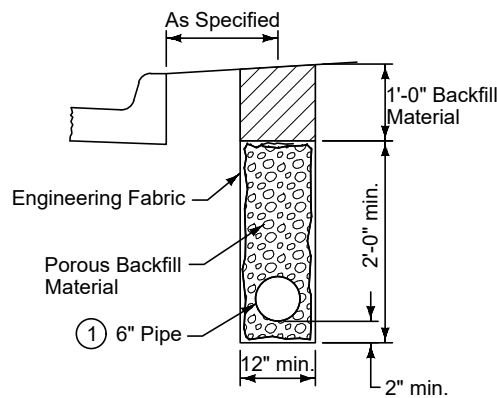
HI 6010.992 Internal Drop Connection for Sanitary Sewer Manhole

HI 6010.993 Internal Service Drop

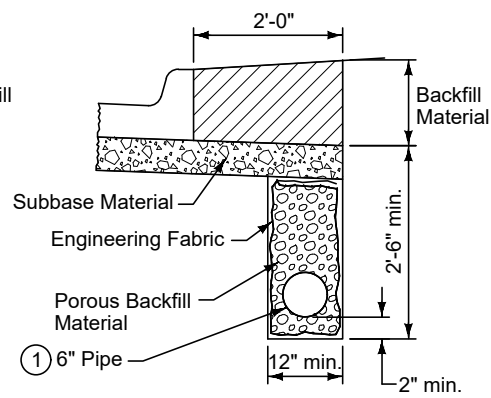
End of Section

Adopted October 15, 2025

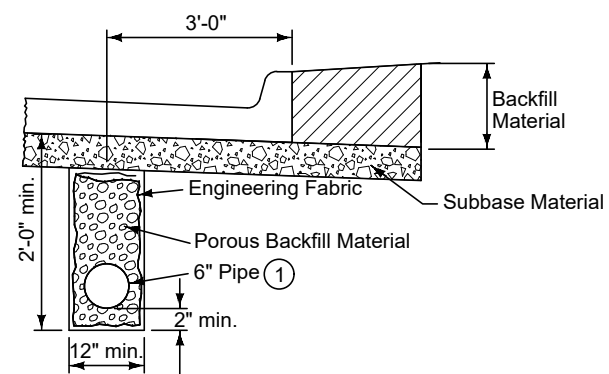
City of Hiawatha Resolution #25-216



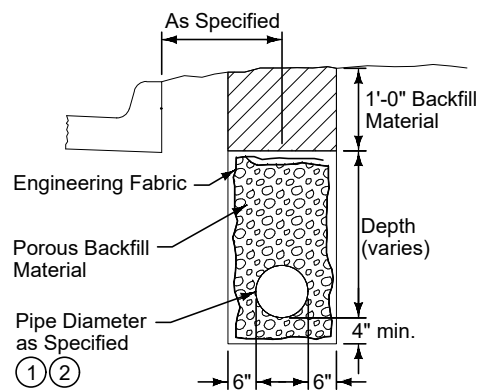
CASE A
TYPE 1



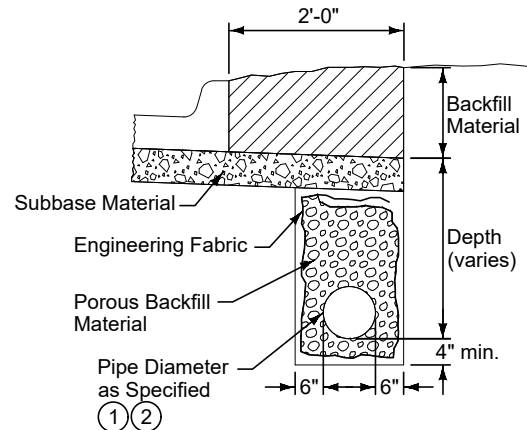
CASE B
TYPE 1



CASE C
TYPE 1



CASE D
TYPE 2



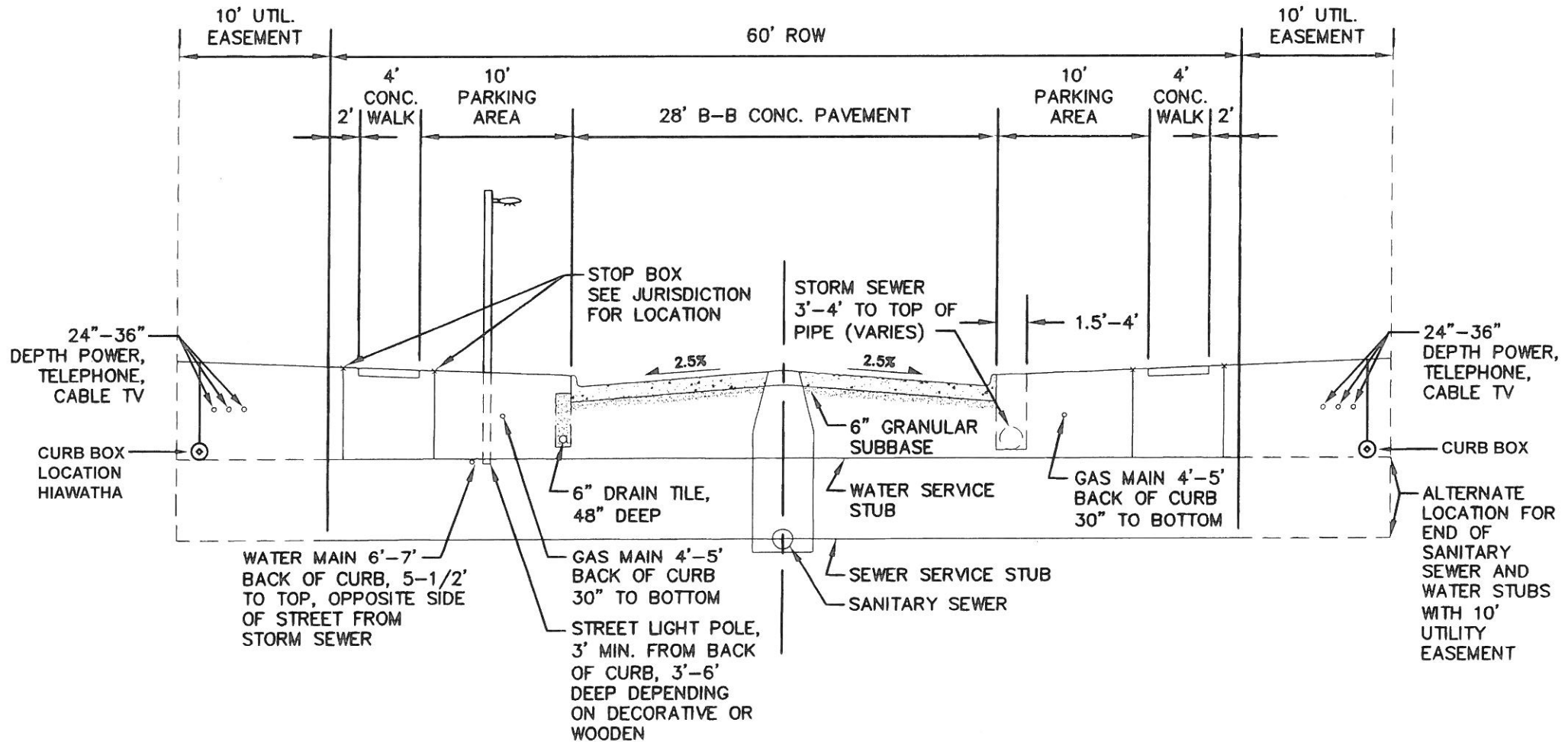
CASE E
TYPE 2

Type 1 installation is for longitudinal subdrain only. Type 2 installation is for combination subdrain/footing drain collectors.

- ① Place perforations down for all installations.
- ② When concrete pipe is specified, wrap pipe joints with engineering fabric. Do not apply joint sealant. Comply with Figure 4020.211

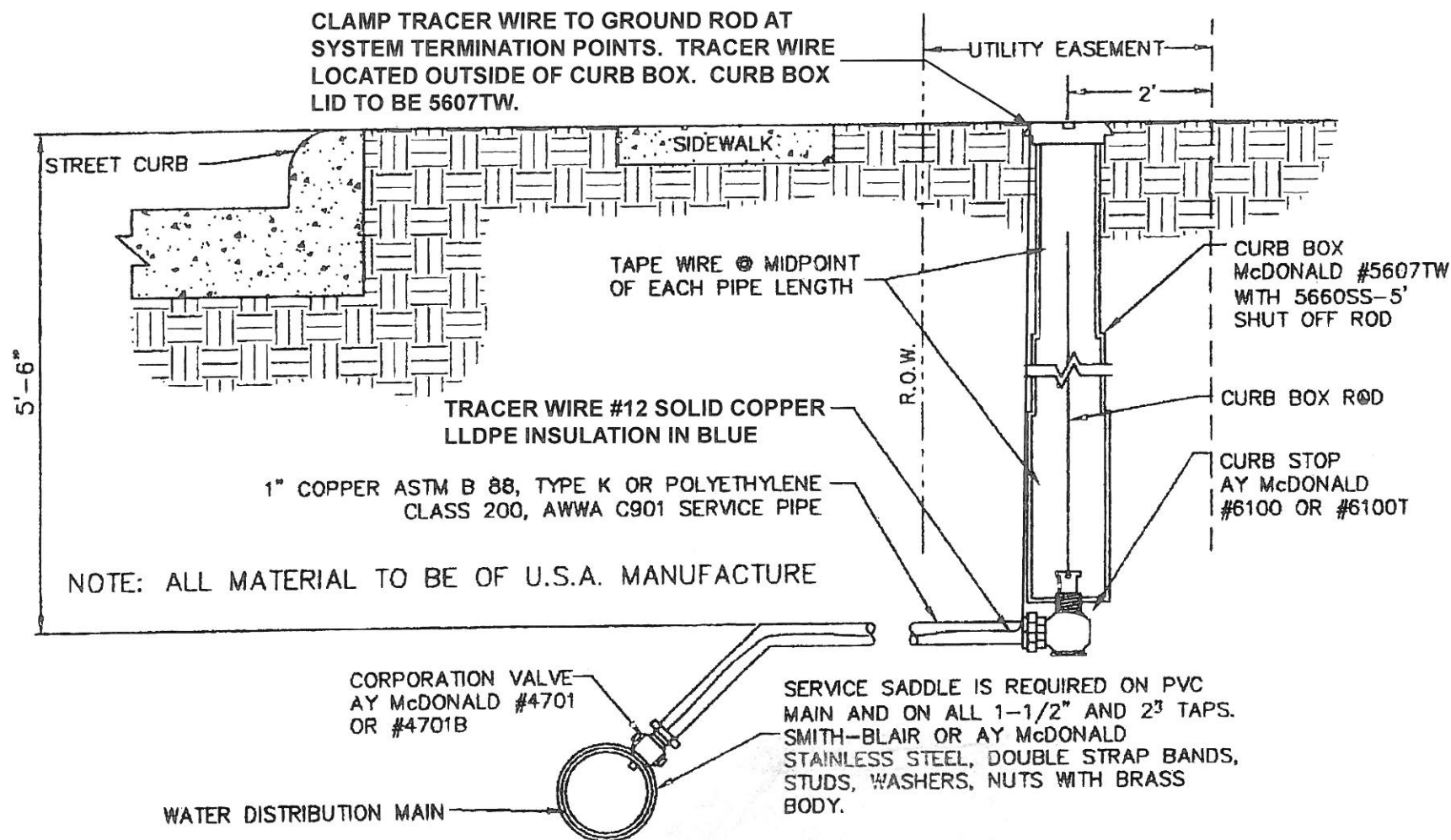
 Hiawatha!™	REVISION	
	New	01.20.21
	HI 4040.231	
	SHEET 1 of 1	
Hiawatha General Supplemental Specifications to SUDAS		
SUBDRAINS		

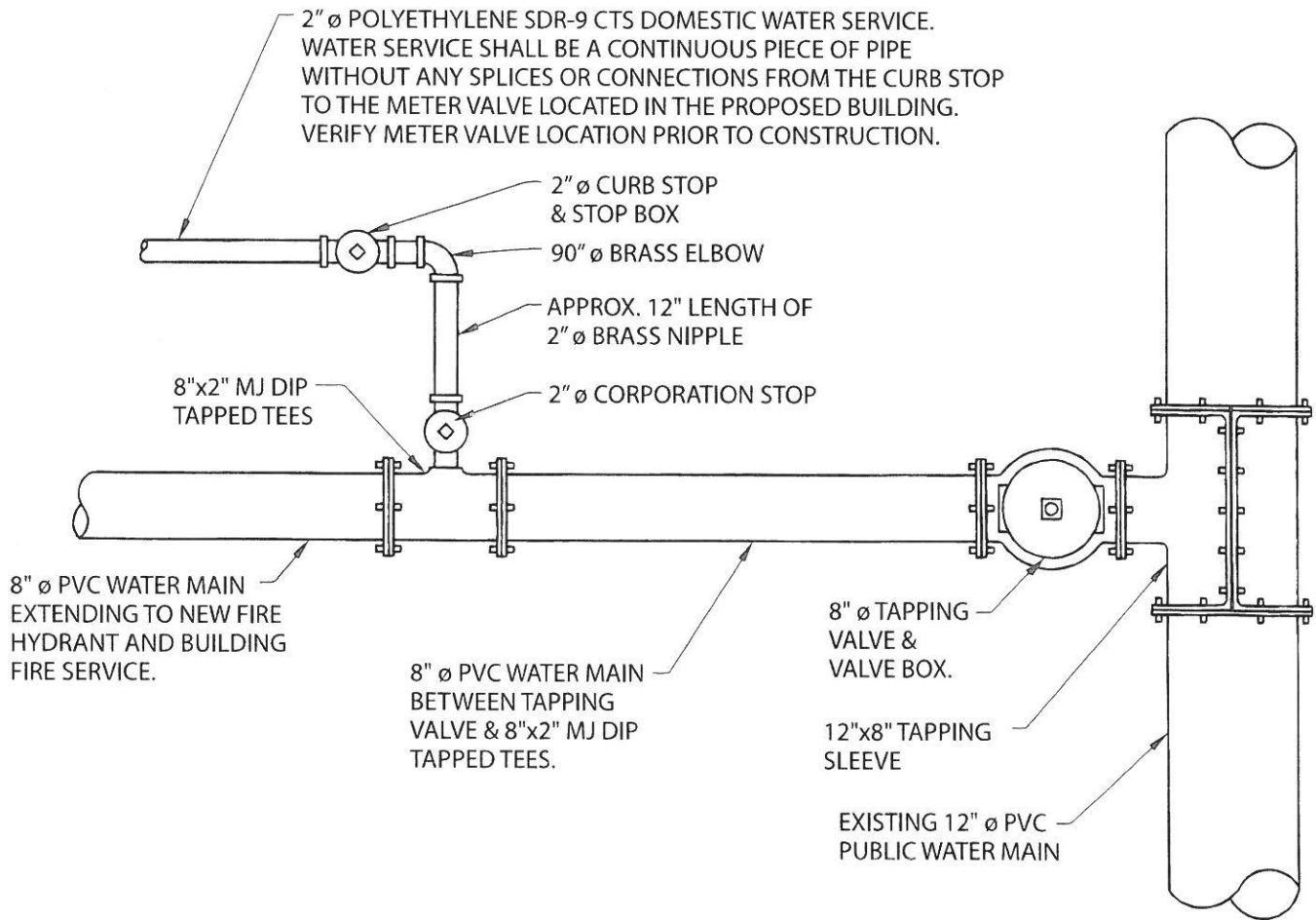
FIGURE 9.1 TYPICAL PAVEMENT/UTILITY SECTION
LOCAL RESIDENTIAL STREET



WATER SERVICE DETAIL

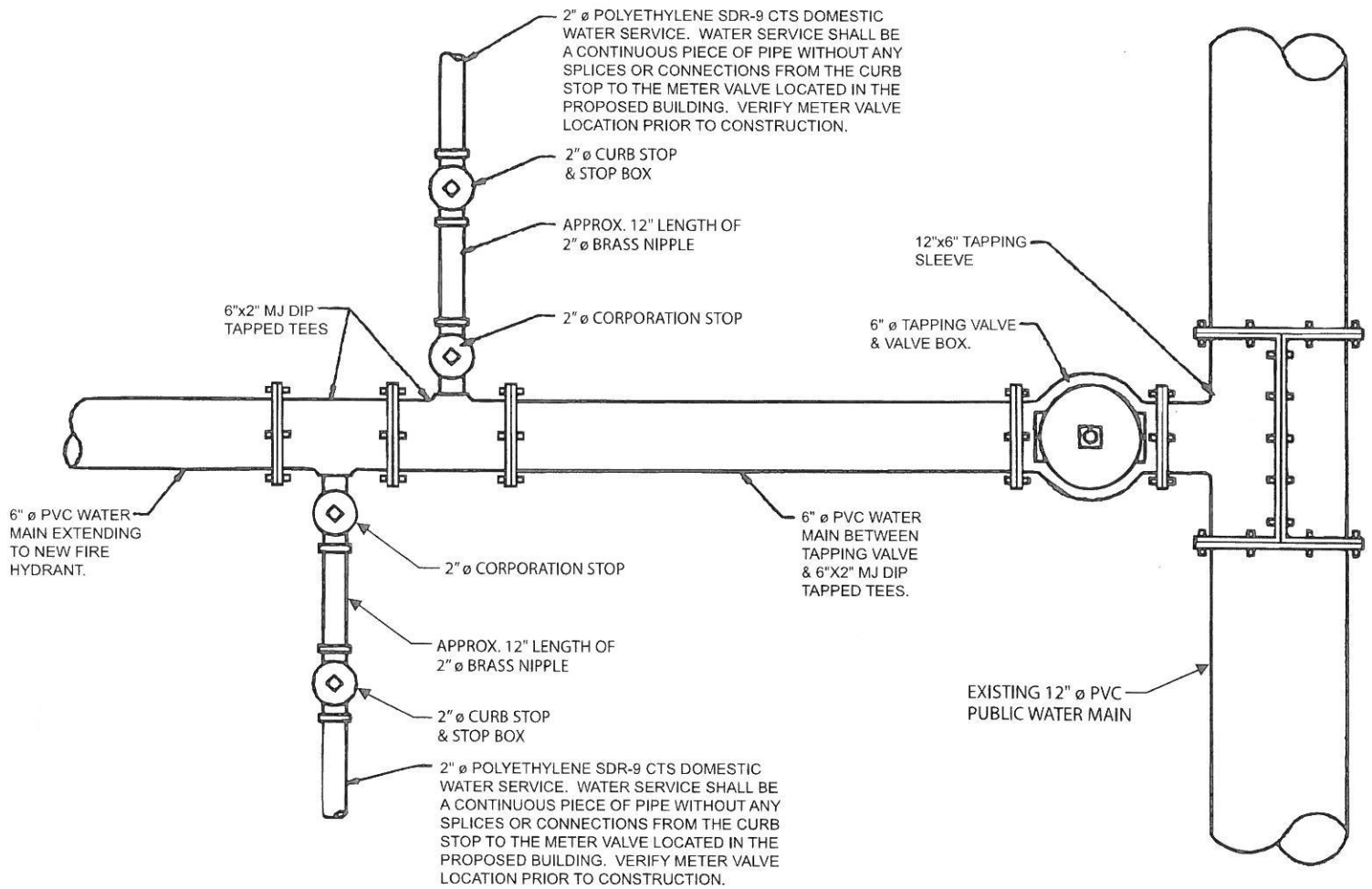
N.T.S.





1 WATER SERVICE LAYOUT DETAIL

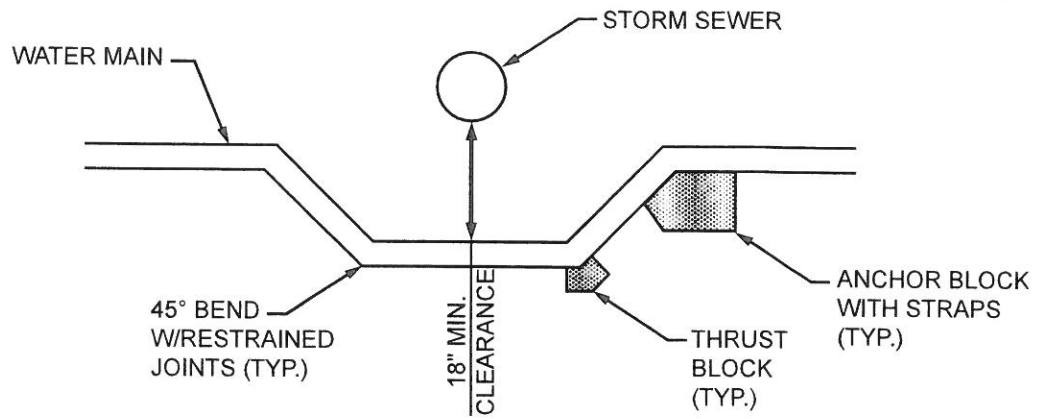
COMMERCIAL

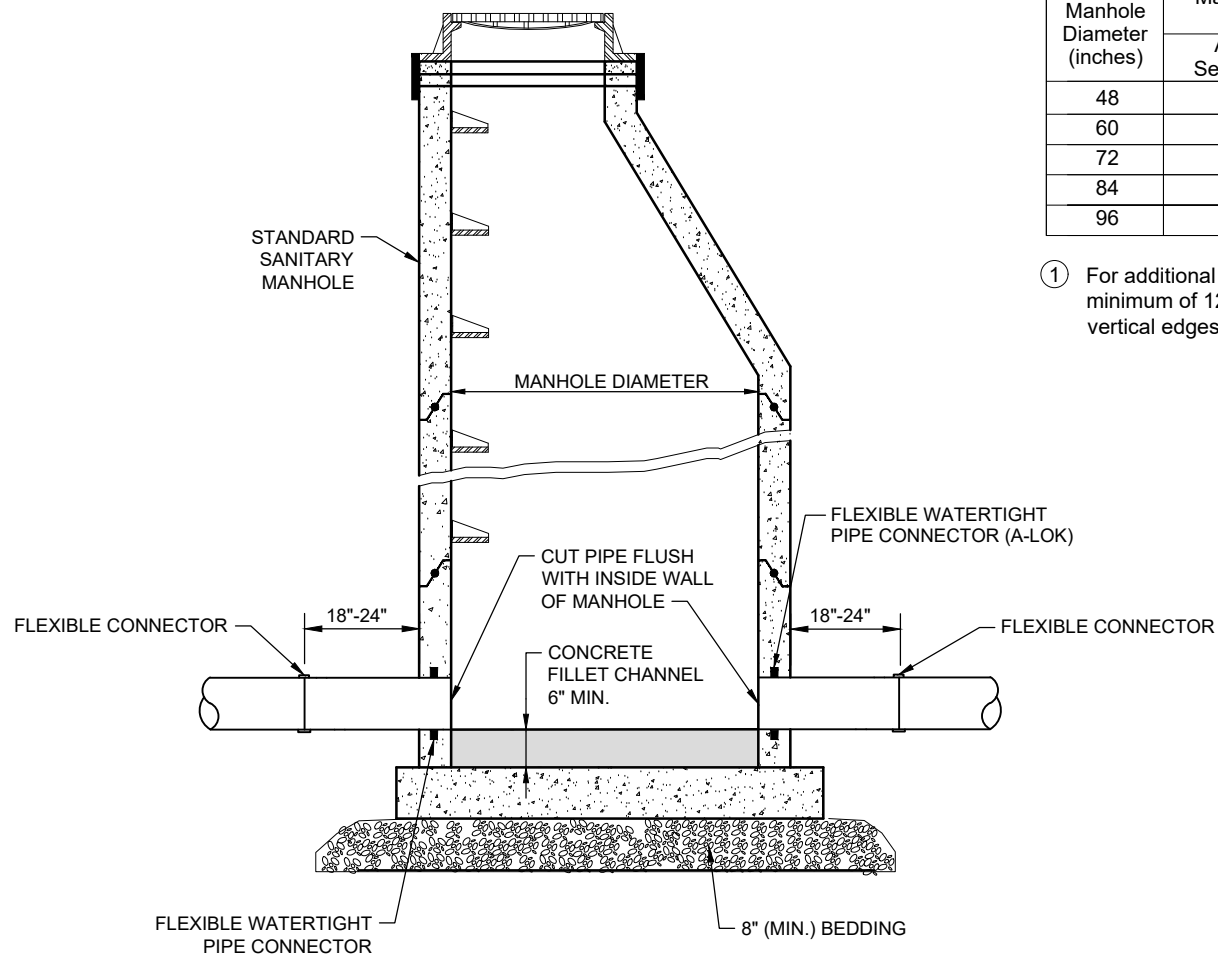


2 **WATER SERVICE LAYOUT DETAIL** COMMERCIAL

WATER MAIN CLEARANCE DETAIL

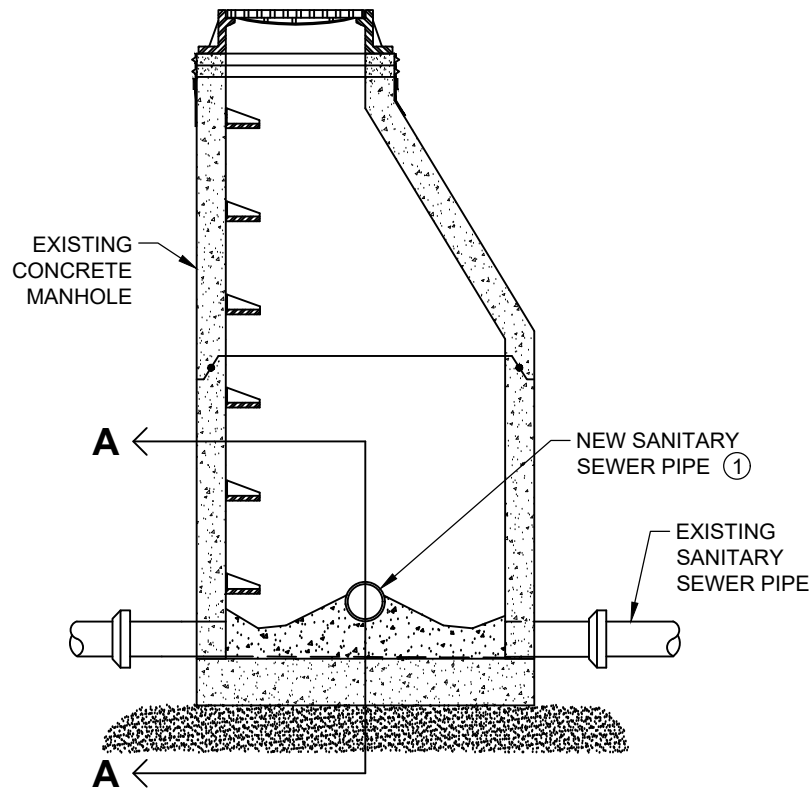
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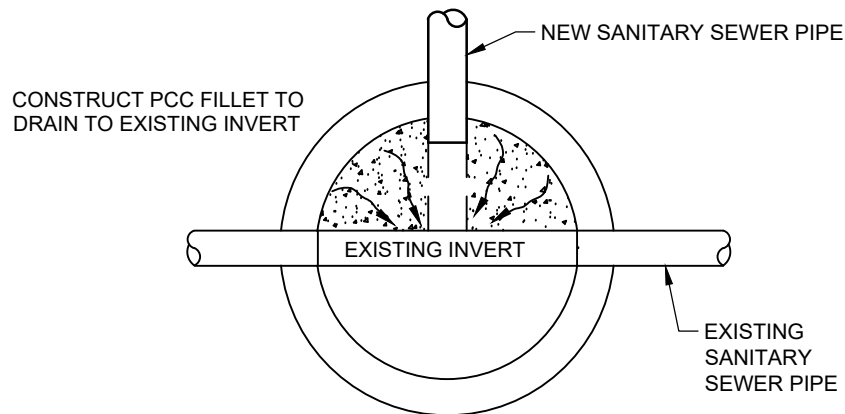


Manhole Diameter (inches)	Maximum Pipe Diameter (inches) for 2 Pipes ^①	
	At 180° Separation	At 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

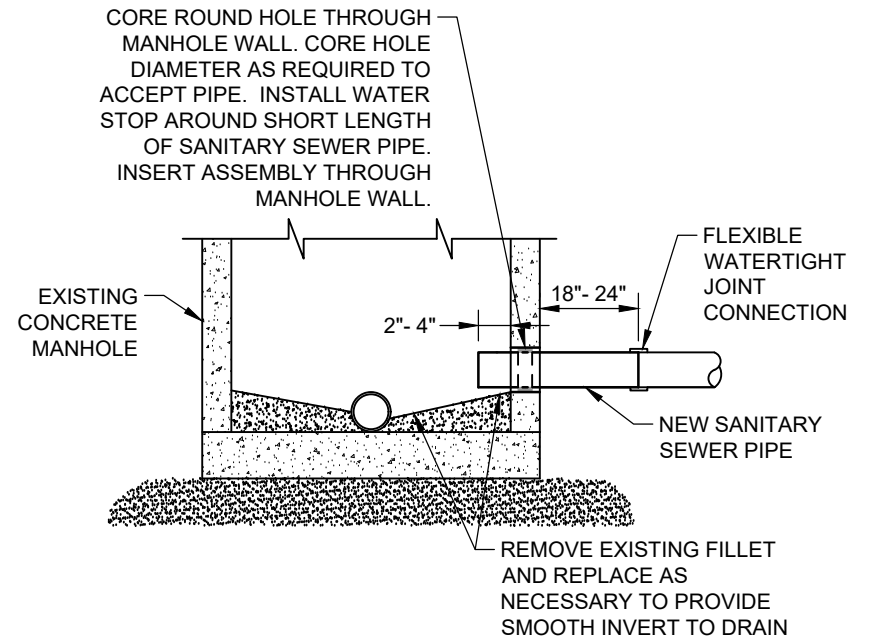
- ① For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.



ELEVATION



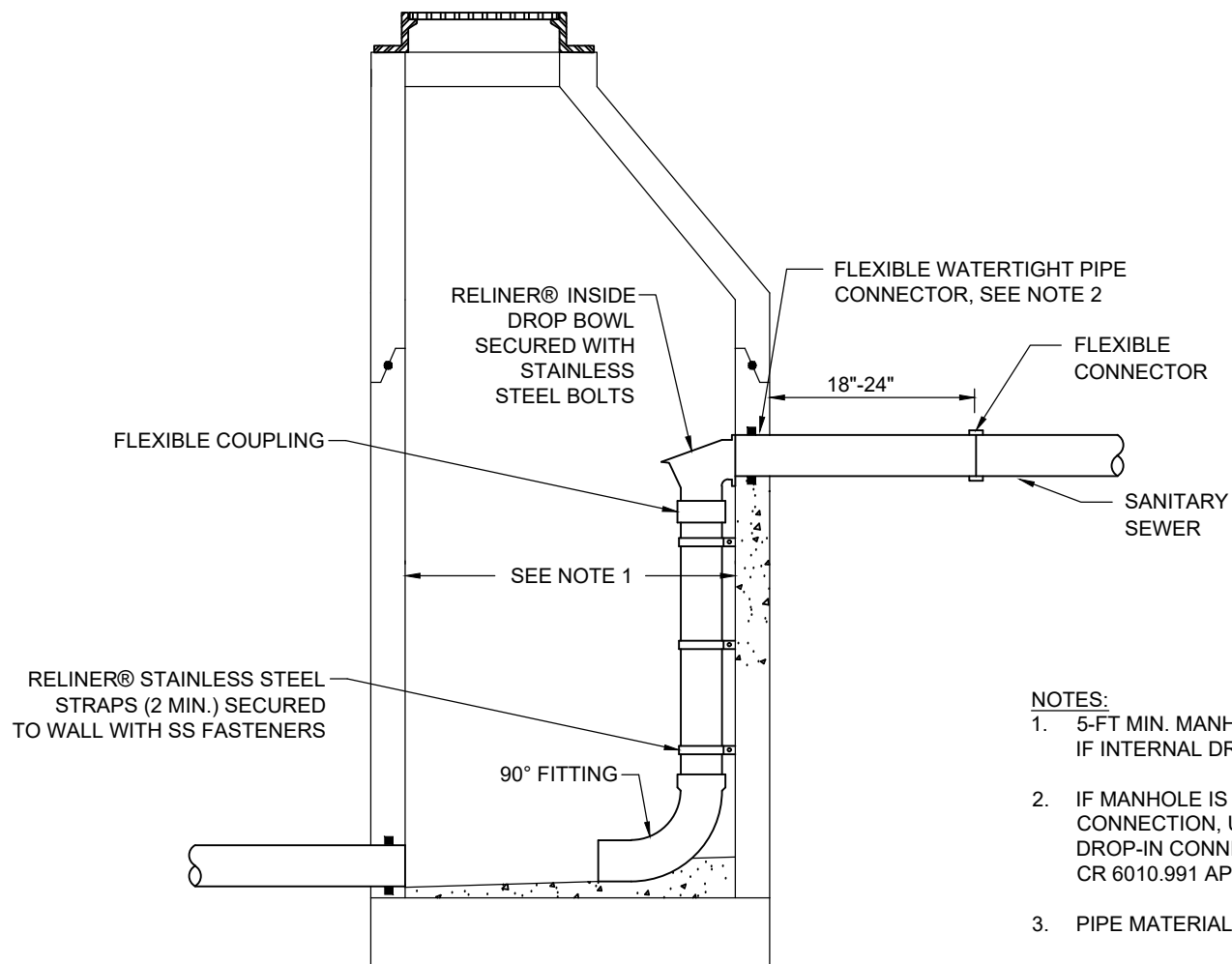
PLAN



SECTION A-A

- ① MAINTAIN A MINIMUM OF 12 INCHES OF CONCRETE BETWEEN VERTICAL EDGES OF PIPE OPENINGS.

	REVISION	
	New	01.20.21
	HI 6010.991	
	SHEET 1 of 1	
Hiawat□a General Supplemental Specifications to SUDAS		
SANITARY SEWER CONNECTION TO EXISTING MANHOLE		



NOTES:

1. 5-FT MIN. MANHOLE DIAMETER REQUIRED IF INTERNAL DROP INSTALLED.
2. IF MANHOLE IS BUILT NEW WITH DROP-IN CONNECTION, USE A-LOK CONNECTOR, IF DROP-IN CONNECTION IS RETRO-FITTED, CR 6010.991 APPLIES.
3. PIPE MATERIAL PER SUDAS SECTION 4010.

 Hiawatha! ™	REVISION	
	New	01.20.21
	HI 6010.992	
	SHEET 1 of 1	
Hiawat□a General Supplemental Specifications to SUDAS		
INTERNAL DROP CONNECTION FOR SANITARY SEWER MANHOLE		

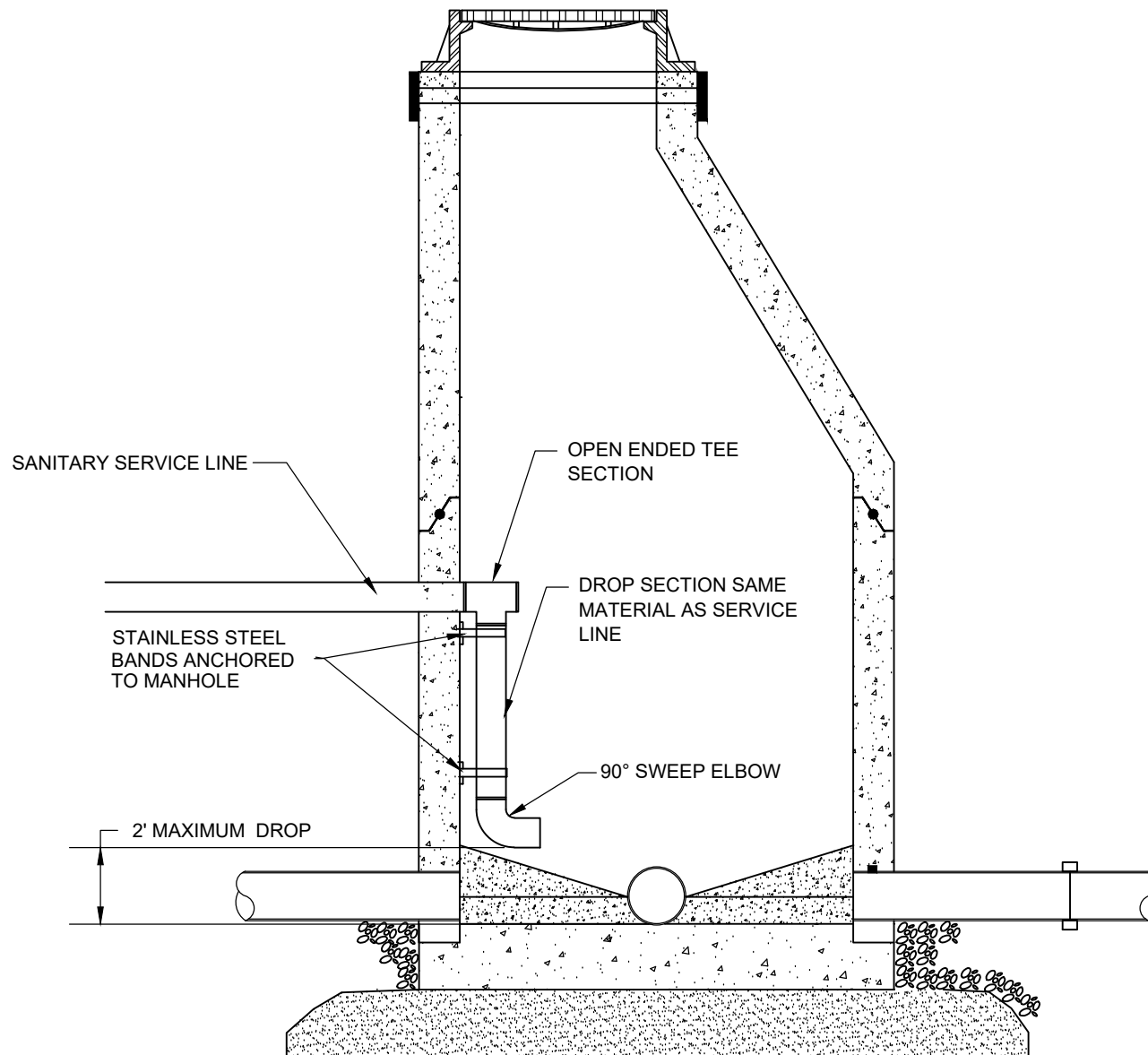


FIGURE HI 6010.993 SHEET 1 OF 1

	REVISION	
	New	01.20.21
	HI 6010.993	
	SHEET 1 of 1	
Hiawat□a General Supplemental Specifications to SUDAS		
INTERNAL SANITARY SERVICE DROP		