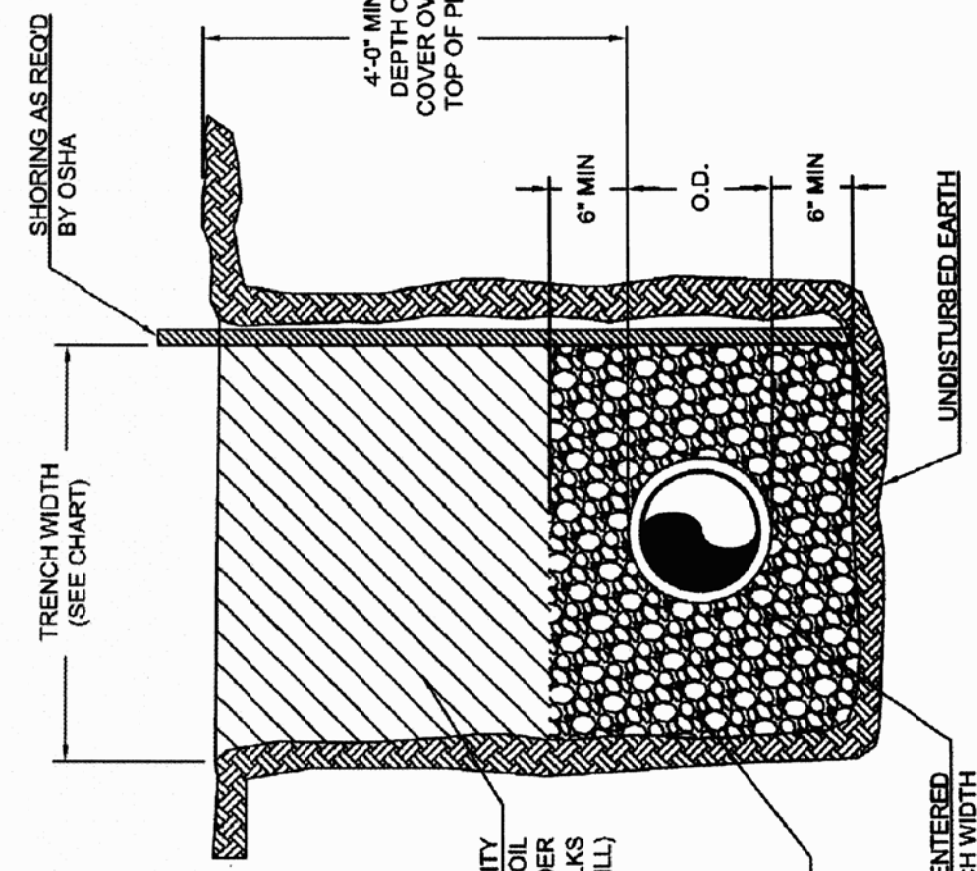


### WATER STANDARD DETAIL

Pipe Nominal Size (Inches)	Minimum Trench Width (feet)	Maximum Trench Width (feet)
48	7.00	10.00
54	8.00	10.50
60	9.00	11.00
64	9.75	11.50
66	9.75	11.50
72	10.50	12.00
78	10.50	12.50
84	11.00	13.00
90	11.50	13.50



#### BEDDING & TRENCHING DETAILS - STEEL PIPE

APPROVED BY: *[Signature]* DATE: 8/1/14 W-04  
 DATE: 06/13/14 DATE: 11/03/14  
 ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

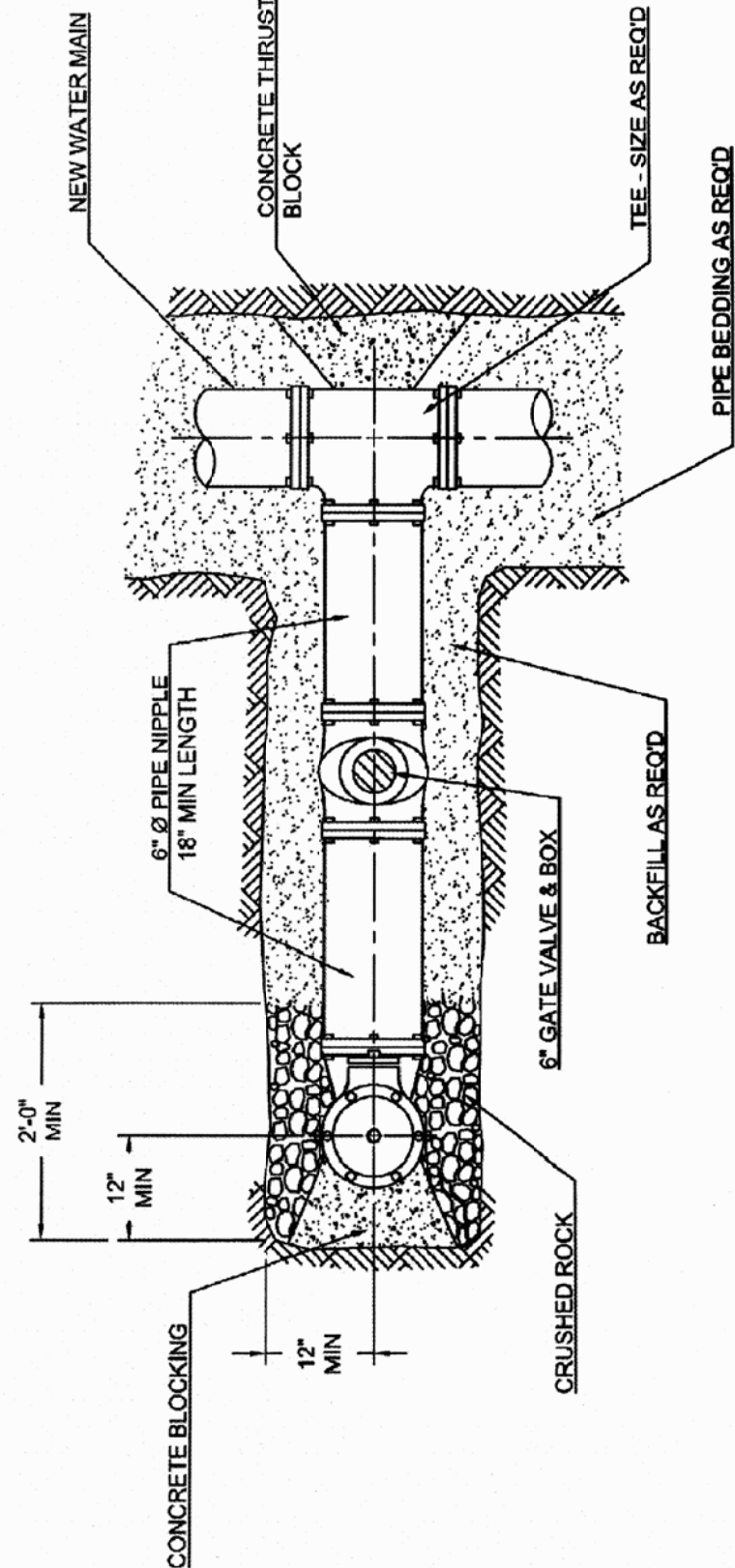
#### WATER STANDARD DETAIL INDEX

DRAWING NUMBER	ISSUED DATE	DESCRIPTION
W-01	6/13/14	BEDDING & TRENCHING DETAILS - PVC PIPE
W-02	6/13/14	BEDDING & TRENCHING DETAILS - DIP < 12"
W-03	6/13/14	BEDDING & TRENCHING DETAILS - STEEL PIPE
W-04	6/13/14	FIRE HYDRANT INSTALLATION ON NEW MAIN - PAGE 1 OF 2
W-05	6/13/14	FIRE HYDRANT INSTALLATION ON EXISTING MAIN - PAGE 2 OF 2
W-06	6/13/14	FIRE HYDRANT INSTALLATION ON EXISTING MAIN - PAGE 2 OF 2
W-07	10/09/14	FIRE HYDRANT NOZZLES THREAD DETAILS
W-08	6/13/14	CAST IRON VALVE BOX LID & EXTENSION - PAGE 1 OF 2
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W-10	6/13/14	WATER MANHOLE COVER
W-11	6/13/14	PVC PIPE TRACER WIRE INSTALLATION
W-12	6/13/14	GUARD POST INSTALLATION
W-13	6/13/14	REVERSE TAP INSTALLATION
W-14	6/13/14	PIPE BENDING AND CASING INSTALLATION - PAGE 1 OF 2
W-15	6/13/14	PIPE BENDING AND CASING INSTALLATION - PAGE 2 OF 2
W-16	6/13/14	SINGLE LONG SERVICE REPLACEMENT
W-17	6/13/14	SINGLE LONG SERVICE NEW INSTALLATION
W-18	6/13/14	METER BOX FOR GRASSY AREAS - PAGE 1 OF 2
W-19	6/13/14	METER BOX FOR PAVED AREAS - 1'-12" TO 2'
W-20	6/13/14	METER BOX FOR PAVED AREAS - 5'8" TO 11'
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W-22	6/13/14	METER BOX LID FOR PAVED AREAS - PAGE 2 OF 2
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W-29	6/13/14	FIRE FLOW METER VAULT INSTALLATION - PAGE 2 OF 5
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W-31	6/13/14	FIRE FLOW METER VAULT INSTALLATION - PAGE 4 OF 5
W-32	6/13/14	FIRE FLOW METER VAULT INSTALLATION - PAGE 5 OF 5
W-33	6/13/14	HORIZONTAL THRUST BLOCK - BENDS - PAGE 1 OF 2
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W-35	6/13/14	HORIZONTAL THRUST BLOCK - TEES - PAGE 1 OF 2
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W-37	6/13/14	VERTICAL THRUST BLOCK - BENDS - PAGE 1 OF 2
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W-44	6/13/14	VERTICAL THRUST BLOCK - BENDS - PAGE 2 OF 2
W-45	6/13/14	VERTICAL THRUST BLOCK - BENDS - PAGE 2 OF 2
W-46	6/13/14	VERTICAL THRUST BLOCK - BENDS - PAGE 2 OF 2
W-47	6/13/14	VERTICAL THRUST BLOCK - BENDS - PAGE 2 OF 2

STEEL PIPE ≥ 48"

NOTE:  
 1. EMBEDMENT MATERIAL TO BE FREE FROM REFUSE, ORGANIC MATERIAL, COBBLES, BOULDERS, LARGE ROCKS OR STONES.

### WATER STANDARD DETAIL

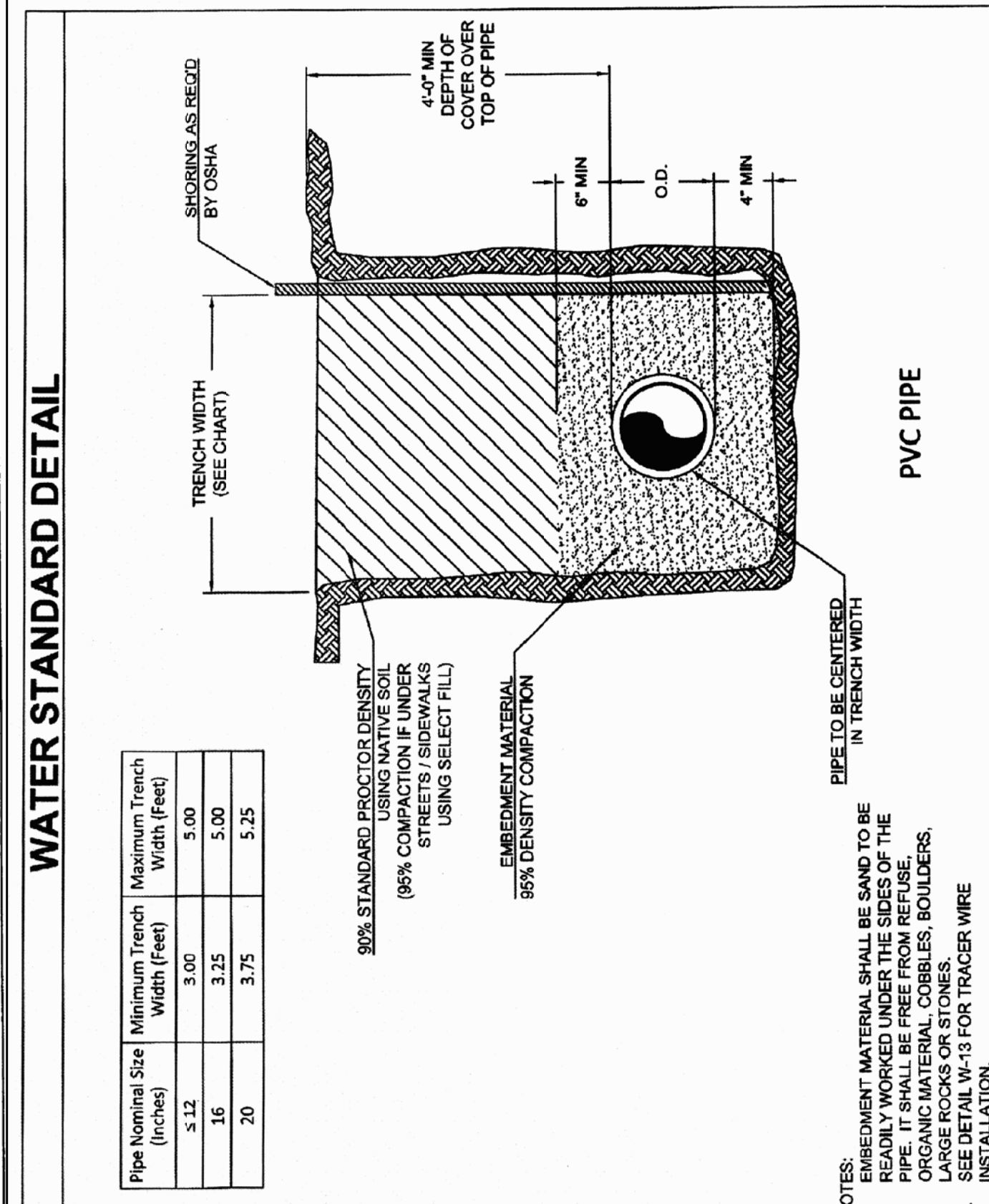


#### FIRE HYDRANT INSTALLATION ON NEW MAIN

APPROVED BY: *[Signature]* DATE: 8/1/14 W-05  
 DATE: 06/13/14 DATE: 11/03/14  
 ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

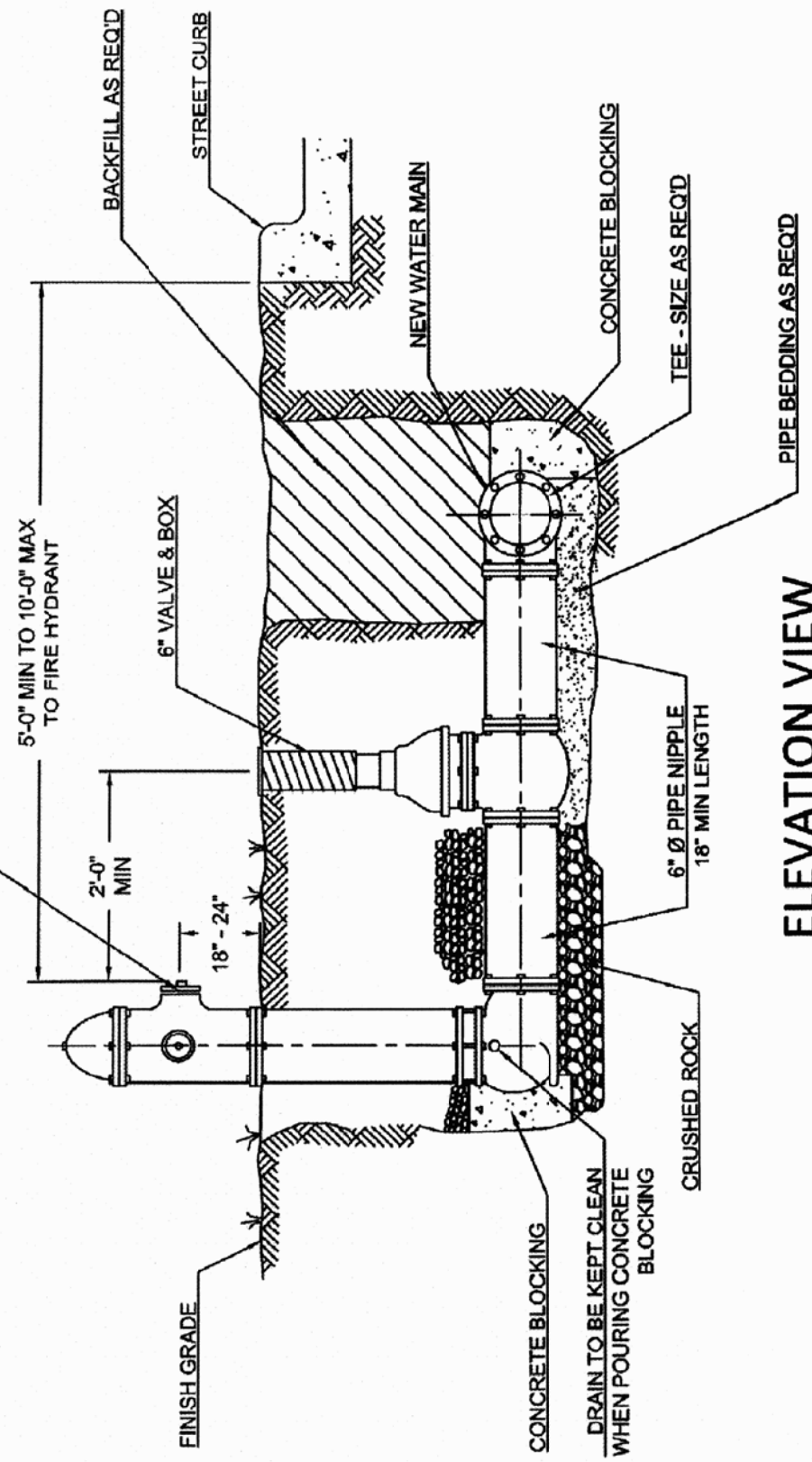
#### BEDDING & TRENCHING DETAILS - PVC PIPE

Pipe Nominal Size (Inches)	Minimum Trench Width (feet)	Maximum Trench Width (feet)
12	3.00	5.00
16	3.25	5.00
20	3.75	5.25



NOTE:  
 1. EMBEDMENT MATERIAL SHALL BE SAND TO BE READY WORKED UNDER THE FEET OF THE INSTALLER. IT SHALL BE FREE FROM REFUSE, ORGANIC MATERIAL, COBBLES, BOULDERS, LARGE ROCKS OR STONES.  
 2. SEE DETAIL W-3 FOR TRACER WIRE INSTALLATION.

### WATER STANDARD DETAIL

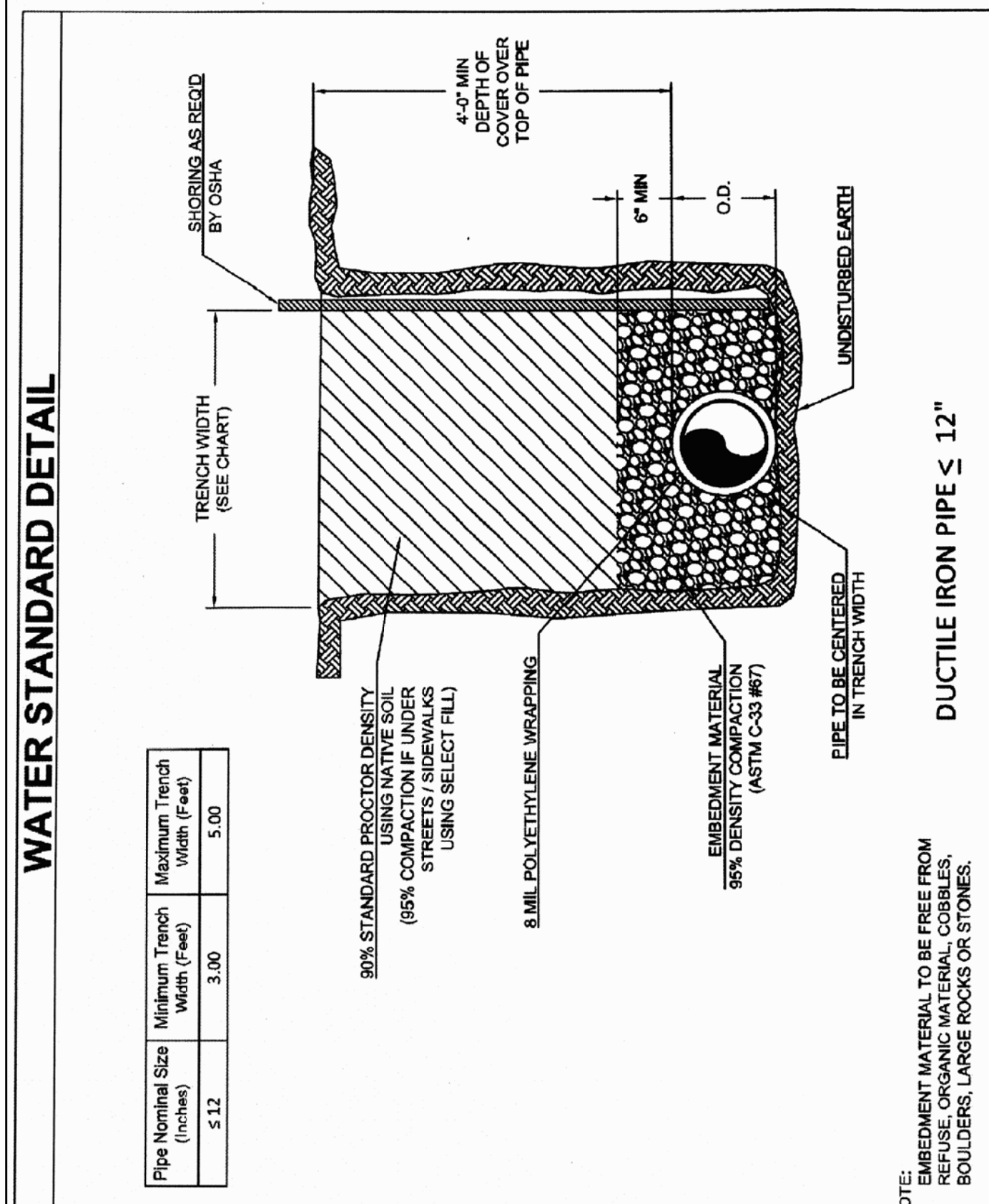


#### FIRE HYDRANT INSTALLATION ON NEW MAIN

APPROVED BY: *[Signature]* DATE: 8/1/14 W-06  
 DATE: 06/13/14 DATE: 11/03/14  
 ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

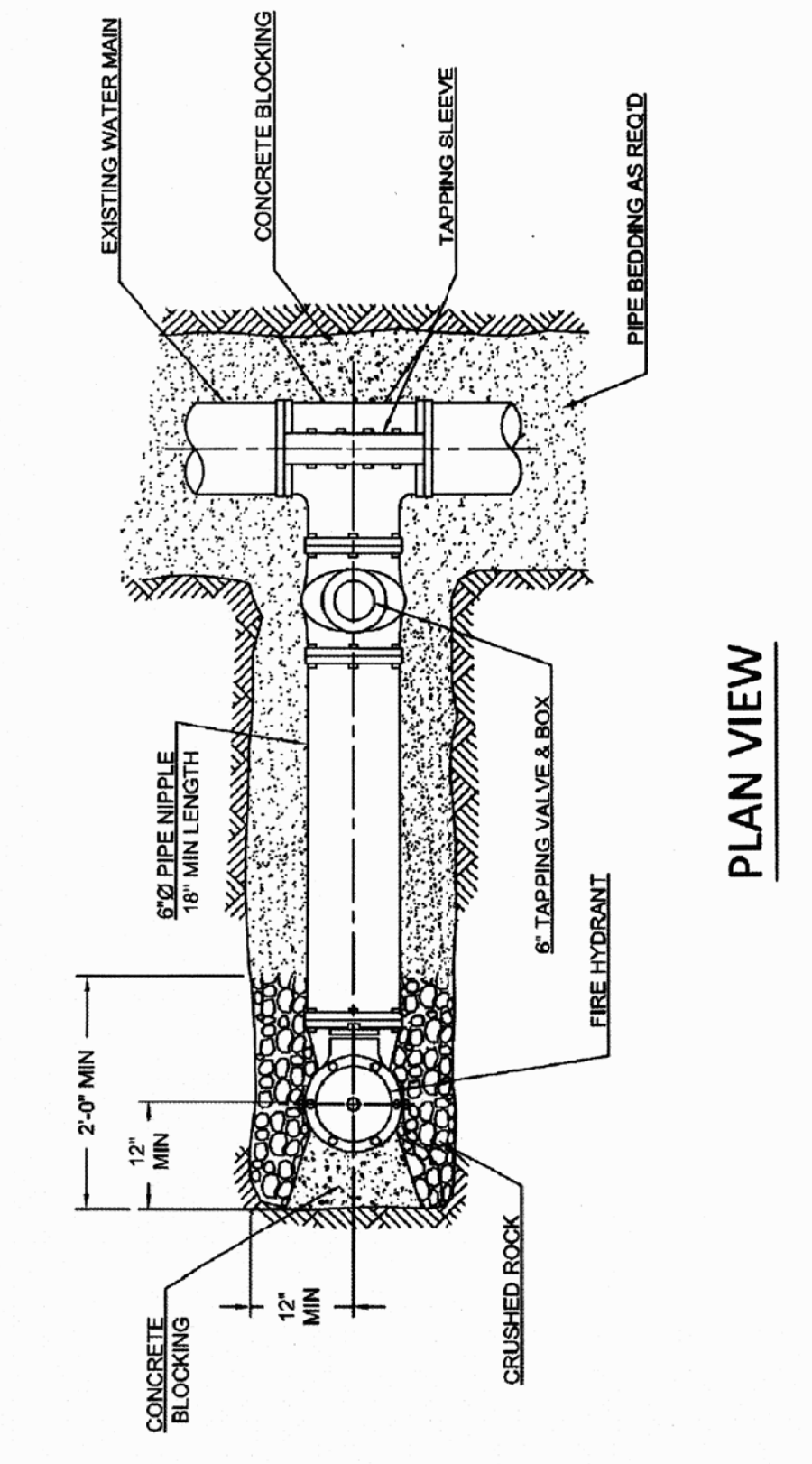
#### BEDDING & TRENCHING DETAILS - DIP ≤ 12"

Pipe Nominal Size (Inches)	Minimum Trench Width (feet)	Maximum Trench Width (feet)
12	3.00	5.00



NOTE:  
 1. EMBEDMENT MATERIAL TO BE FREE FROM REFUSE, ORGANIC MATERIAL, COBBLES, BOULDERS, LARGE ROCKS OR STONES.

### WATER STANDARD DETAIL

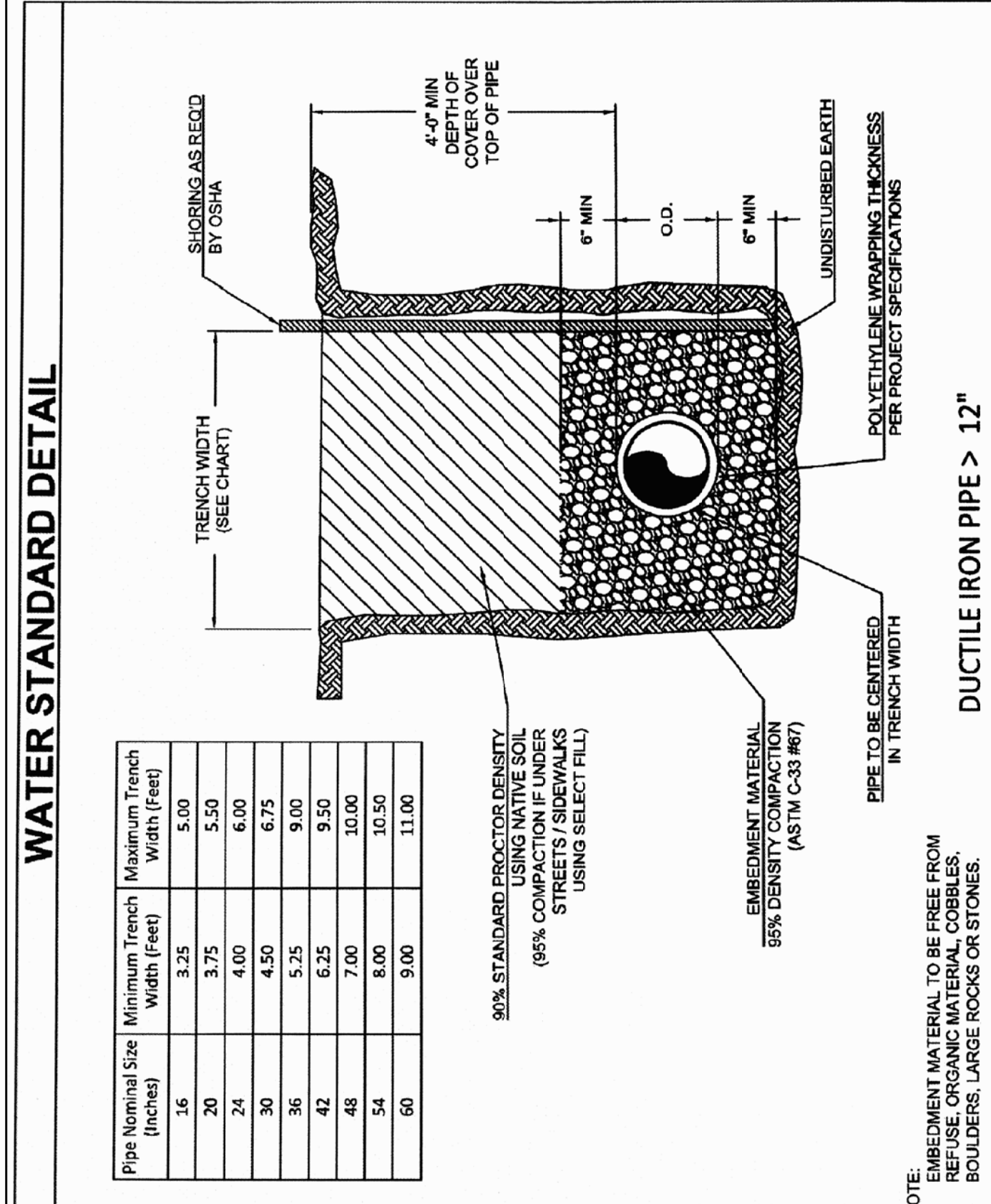


#### FIRE HYDRANT INSTALLATION ON EXISTING MAIN

APPROVED BY: *[Signature]* DATE: 8/1/14 W-07  
 DATE: 06/13/14 DATE: 11/03/14  
 ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

#### BEDDING & TRENCHING DETAILS - DIP > 12"

Pipe Nominal Size (Inches)	Minimum Trench Width (feet)	Maximum Trench Width (feet)
16	3.25	5.00
20	3.75	6.00
24	4.00	6.00
30	4.50	6.75
36	5.25	9.00
42	6.25	9.50
48	7.00	10.00
54	8.00	10.50
60	9.00	11.00



NOTE:  
 1. EMBEDMENT MATERIAL TO BE FREE FROM REFUSE, ORGANIC MATERIAL, COBBLES, BOULDERS, LARGE ROCKS OR STONES.



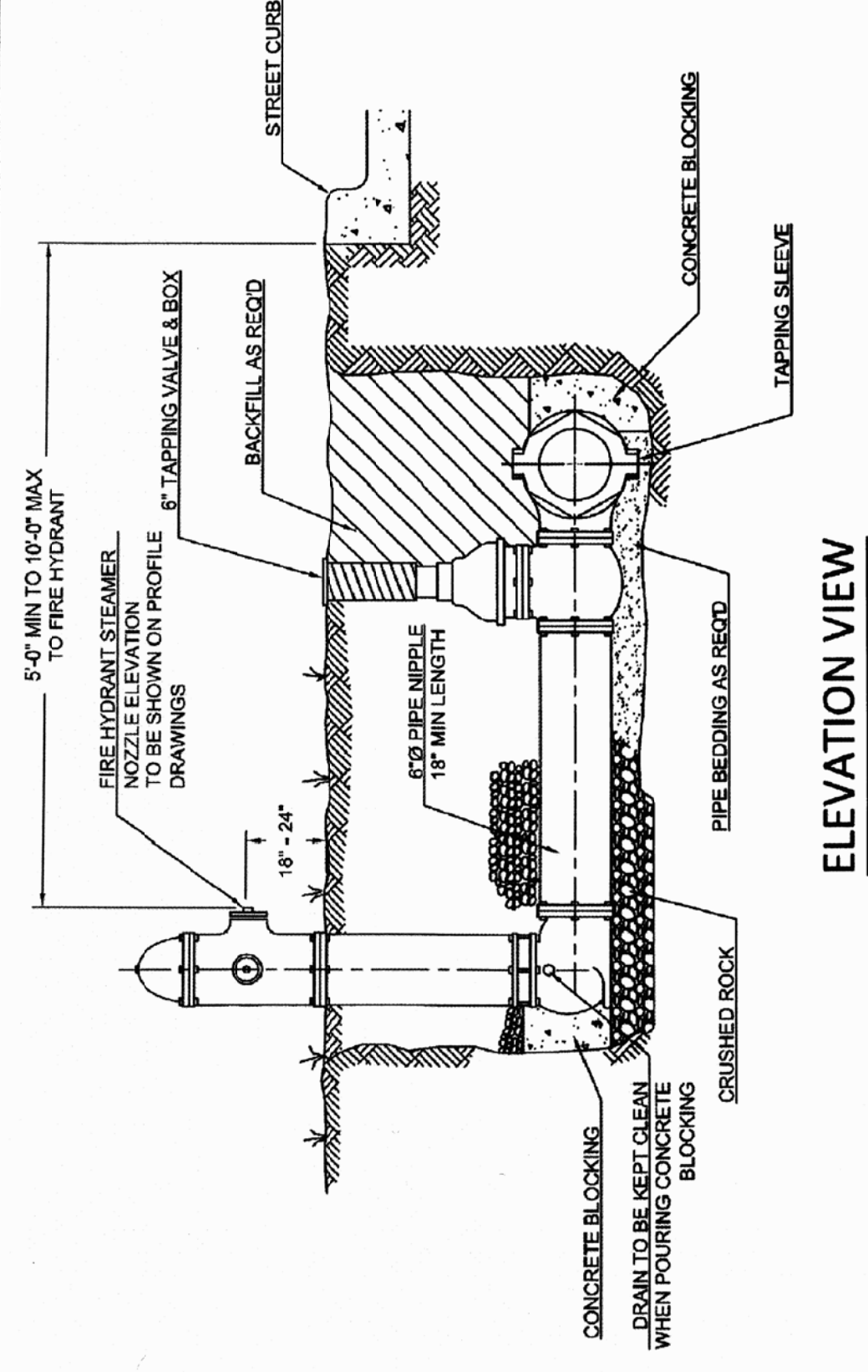
NO.	DATE	DESCRIPTION
1	11/07/14	STD DRAWING W-00 MODIFIED

DATE: 11/07/14  
 DRAWN BY: JDS  
 CHECKED BY: MWS/EJW

SCALE:  
 AS SHOWN

SHEET NUMBER  
**W-STD-01**

### WATER STANDARD DETAIL



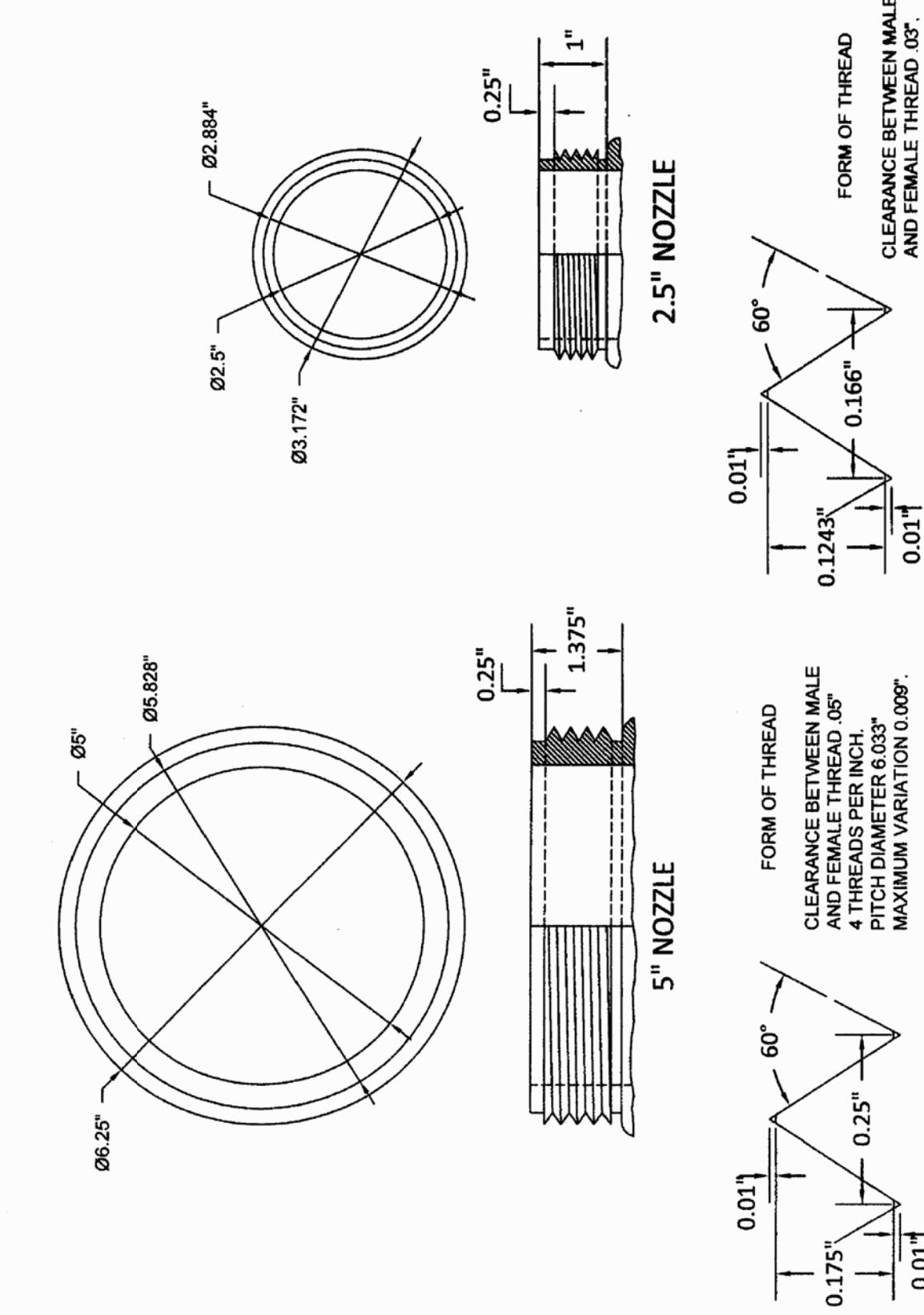
ELEVATION VIEW

NOTES:  
 1. HYDRANT COLOR IS AS FOLLOWS:  
 (a) "INTERNATIONAL ORANGE" (SW 4081) FOR PUBLIC  
 (b) "SAFETY RED" (SW 4082) FOR PRIVATE  
 SEE DETAIL W-43 & W-44 FOR THRUST BLOCK SIZING.  
 2. ALL VALVES & VALVE BOXES ARE TO BE INSTALLED OUTSIDE  
 EXISTING OR PROPOSED ADA RAMPS.

FIRE HYDRANT INSTALLATION ON EXISTING MAIN 2 OF 2

06/13/14 APPROVED BY: DATE: 8/7/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-08

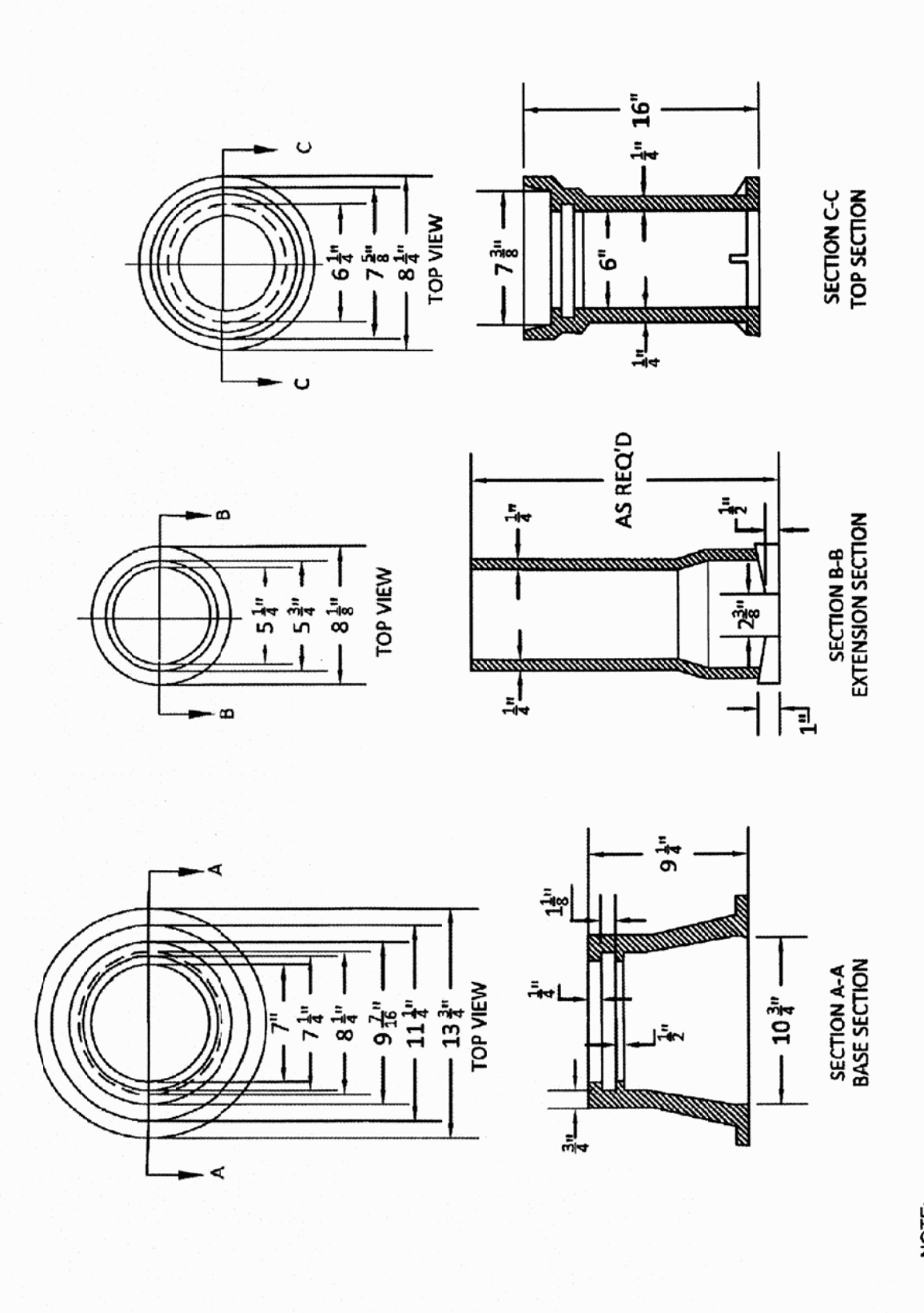
### WATER STANDARD DETAIL



FIRE HYDRANT NOZZLES THREAD DETAILS

10/30/14 APPROVED BY: DATE: 10/30/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-09

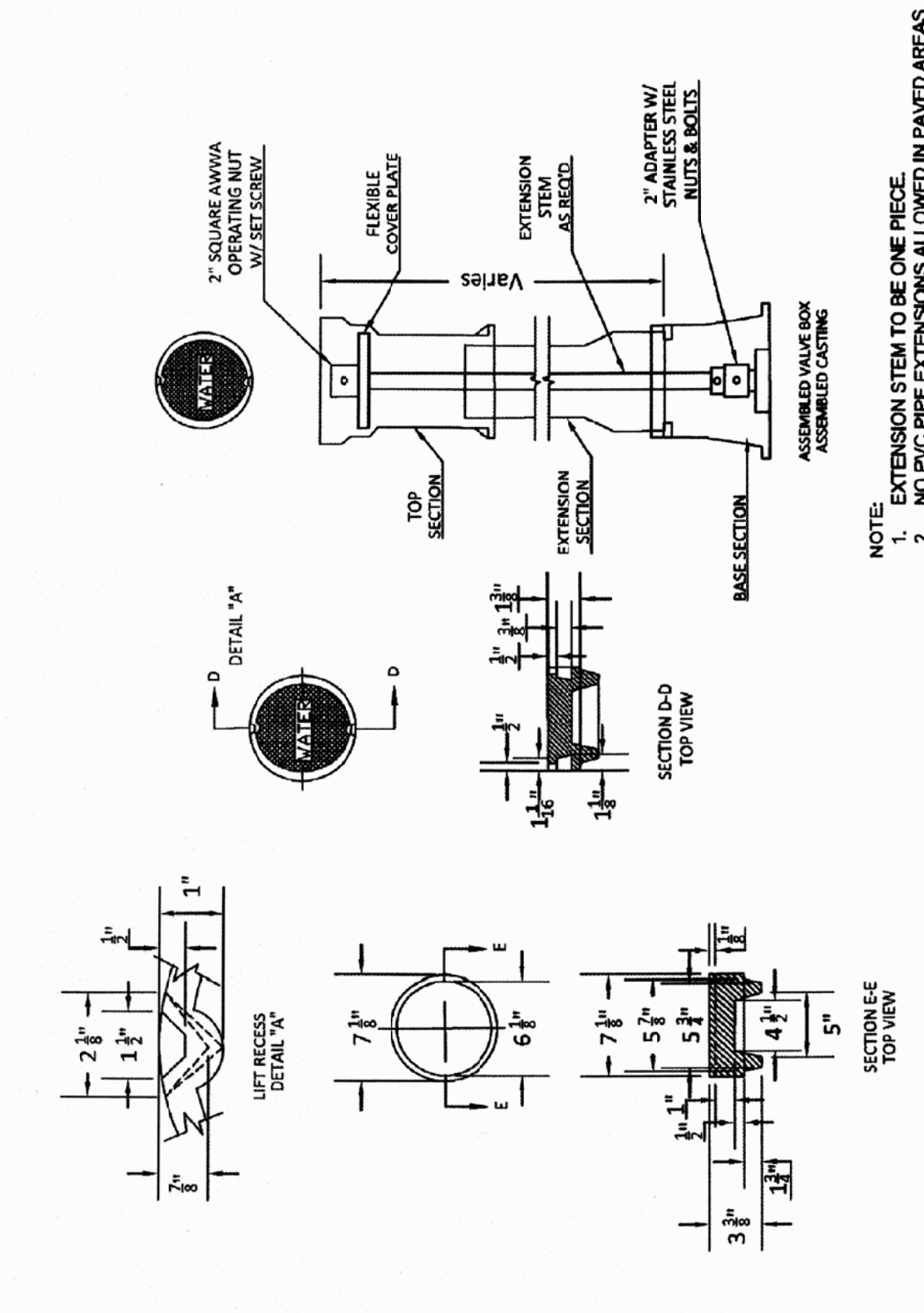
### WATER STANDARD DETAIL



CAST IRON VALVE BOX, LID & EXTENSION 1 OF 2

06/13/14 APPROVED BY: DATE: 8/1/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-10

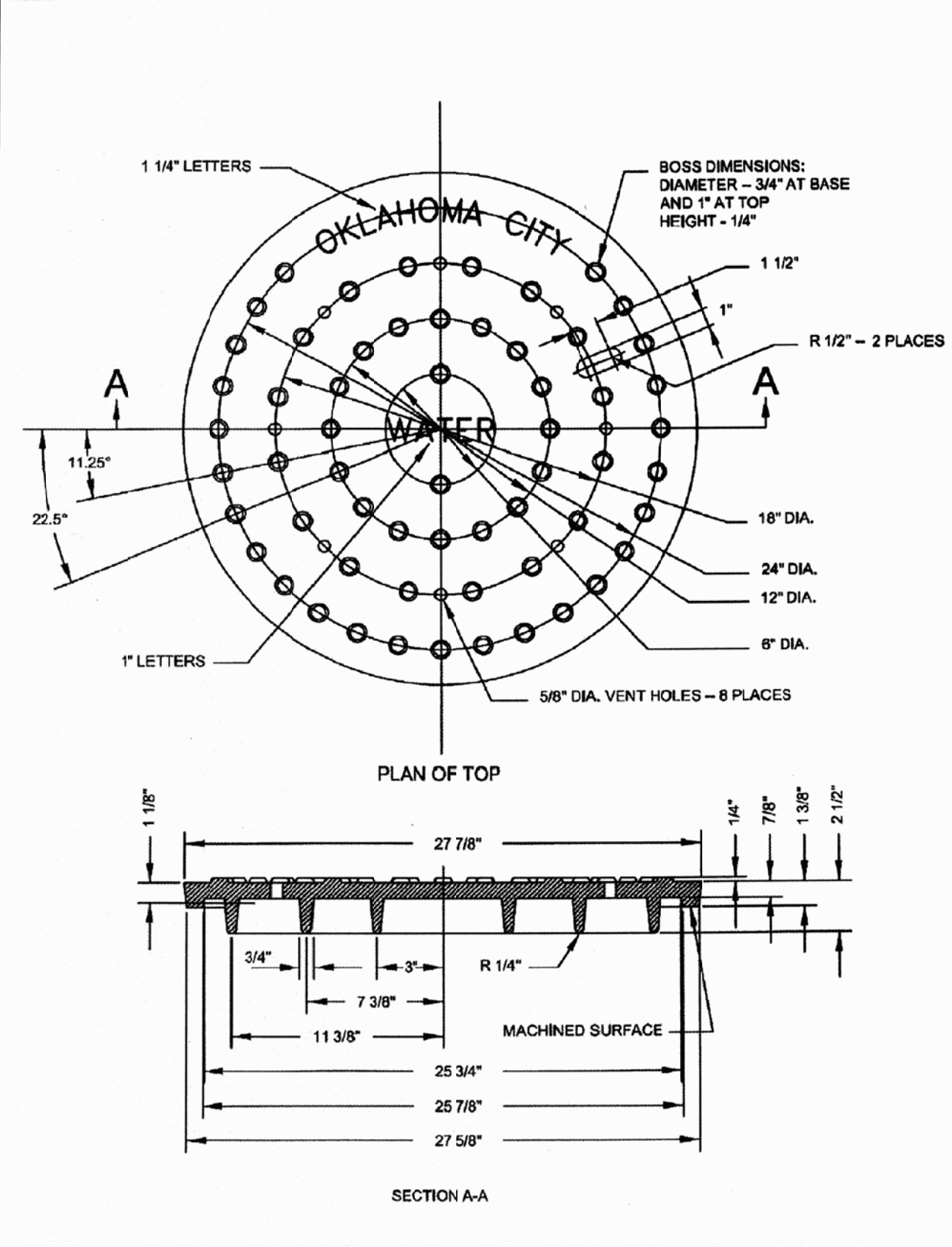
### WATER STANDARD DETAIL



CAST IRON VALVE BOX, LID & EXTENSION 2 OF 2

06/13/14 APPROVED BY: DATE: 8/7/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-11

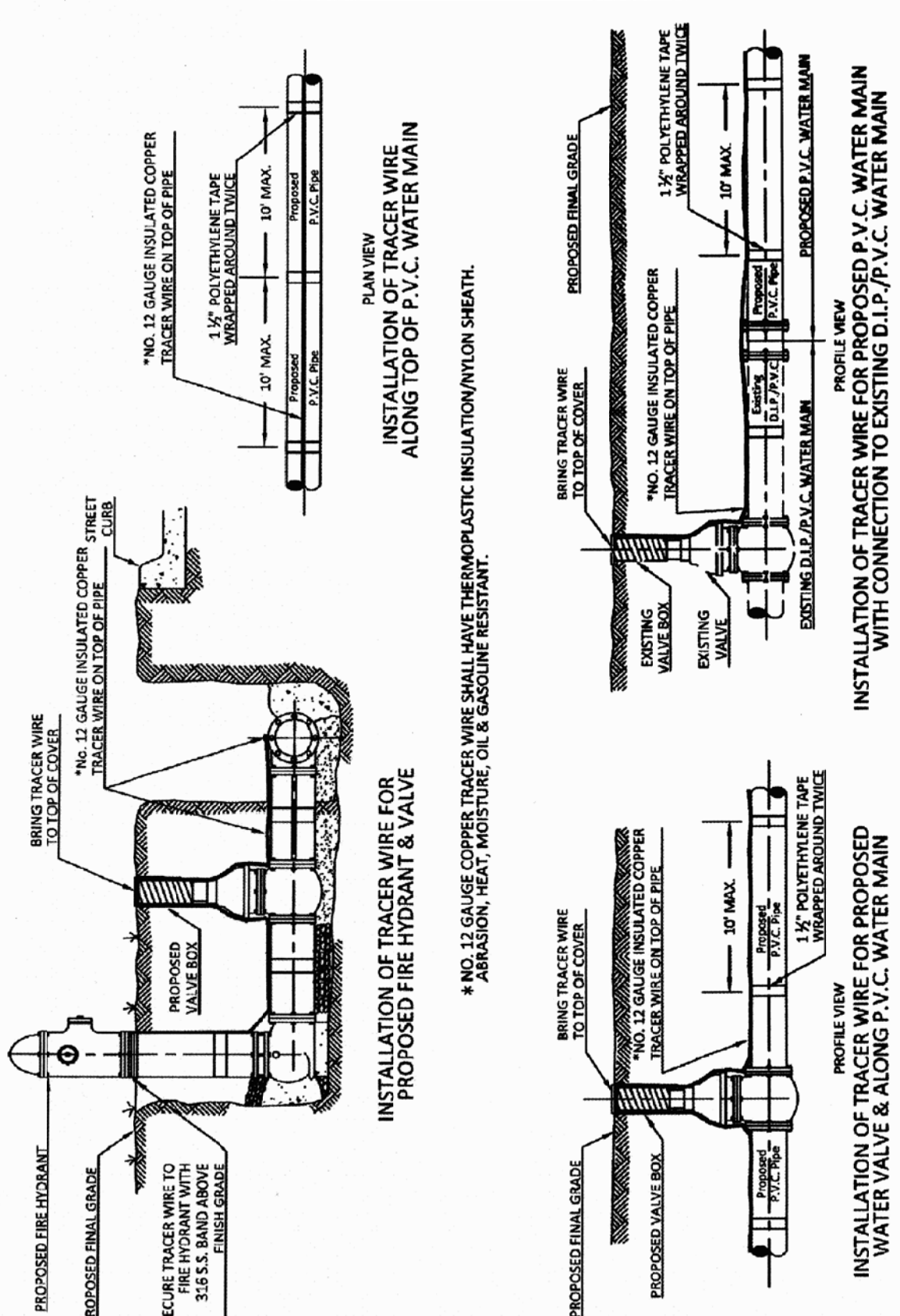
### WATER STANDARD DETAIL



WATER MANHOLE COVER

06/13/14 APPROVED BY: DATE: 8/7/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-12

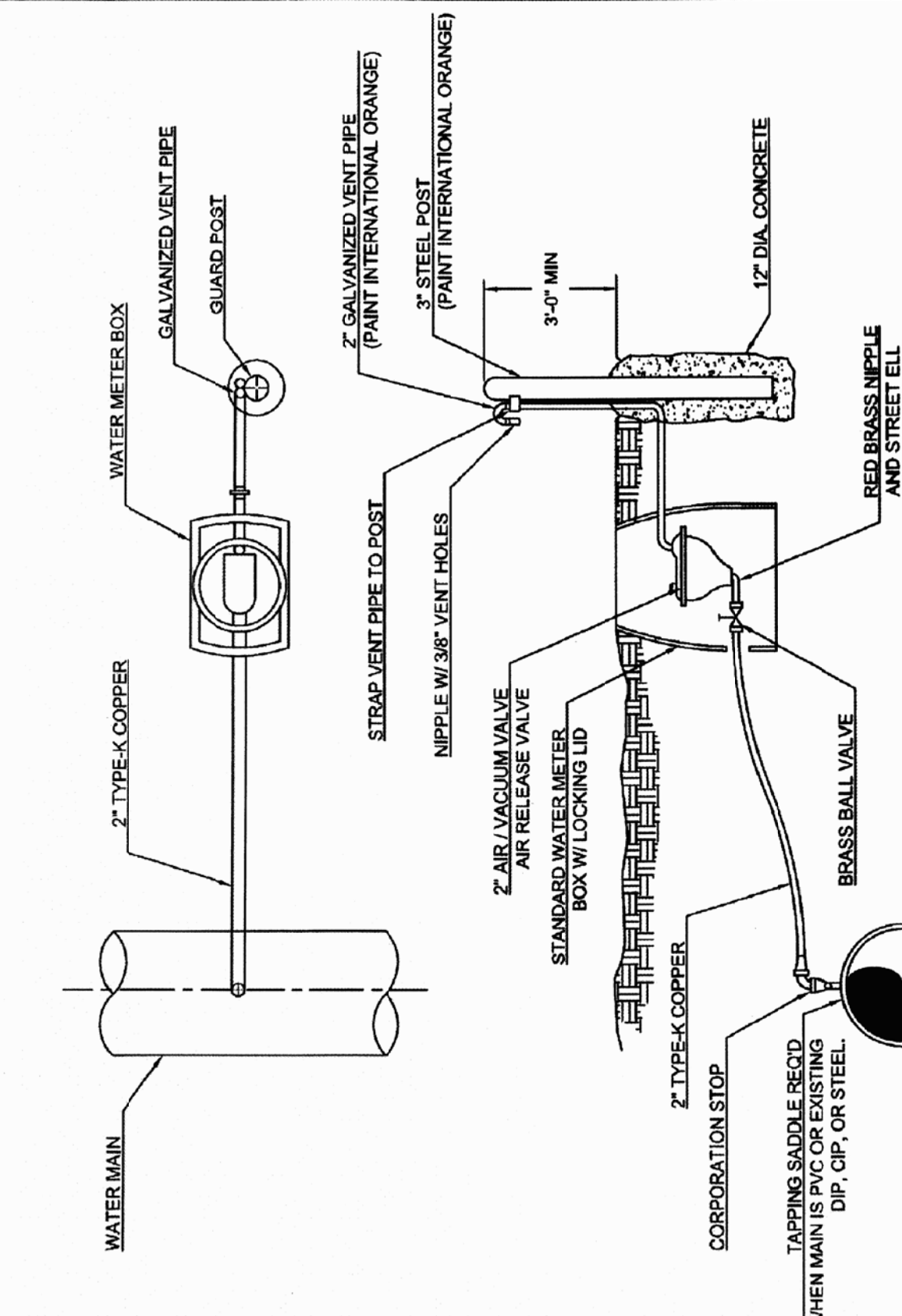
### WATER STANDARD DETAIL



PVC PIPE TRACER WIRE INSTALLATION

06/13/14 APPROVED BY: DATE: 8/7/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-13

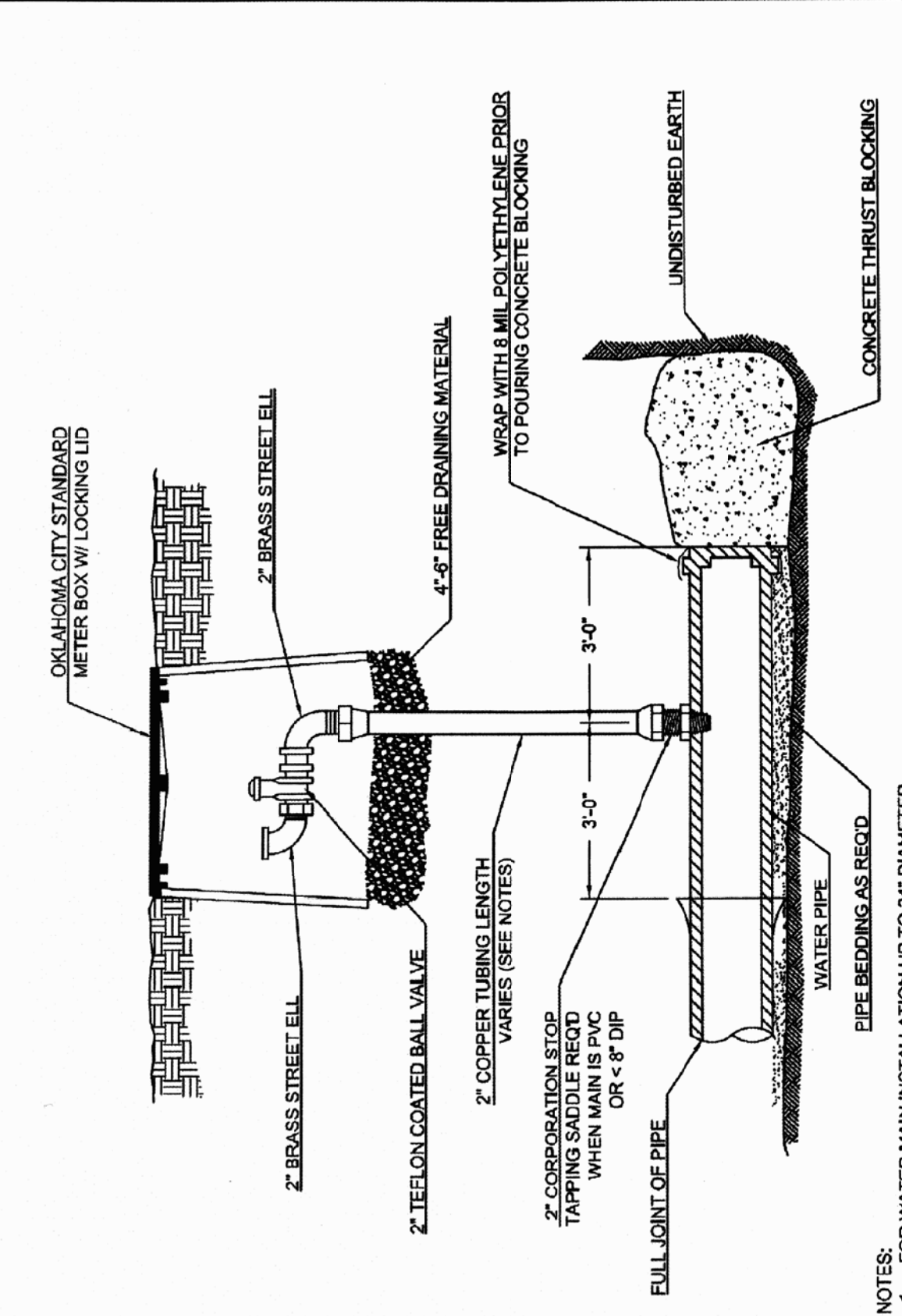
### WATER STANDARD DETAIL



2\"/>

06/13/14 APPROVED BY: DATE: 8/7/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-14

### WATER STANDARD DETAIL



2\"/>

06/13/14 APPROVED BY: DATE: 8/7/14  
 DATE: ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR  
 OKLAHOMA CITY UTILITIES DEPARTMENT W-15

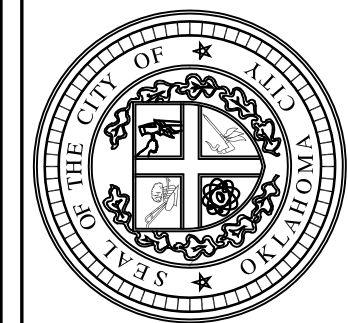
NO.	DATE	DESCRIPTION
1	11/07/14	STD DRAWING W-09 MODIFIED

## WATER STANDARD DETAILS

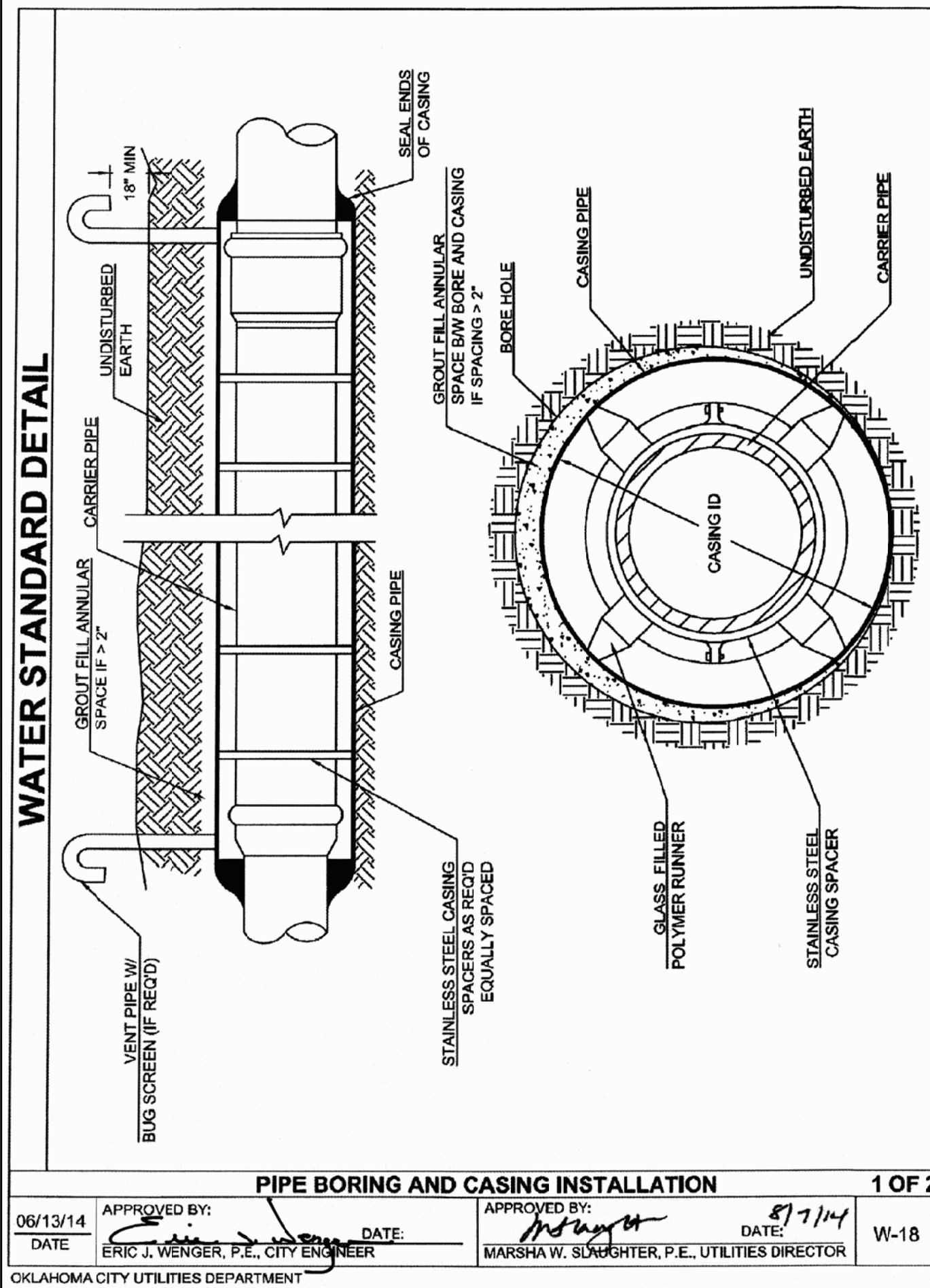
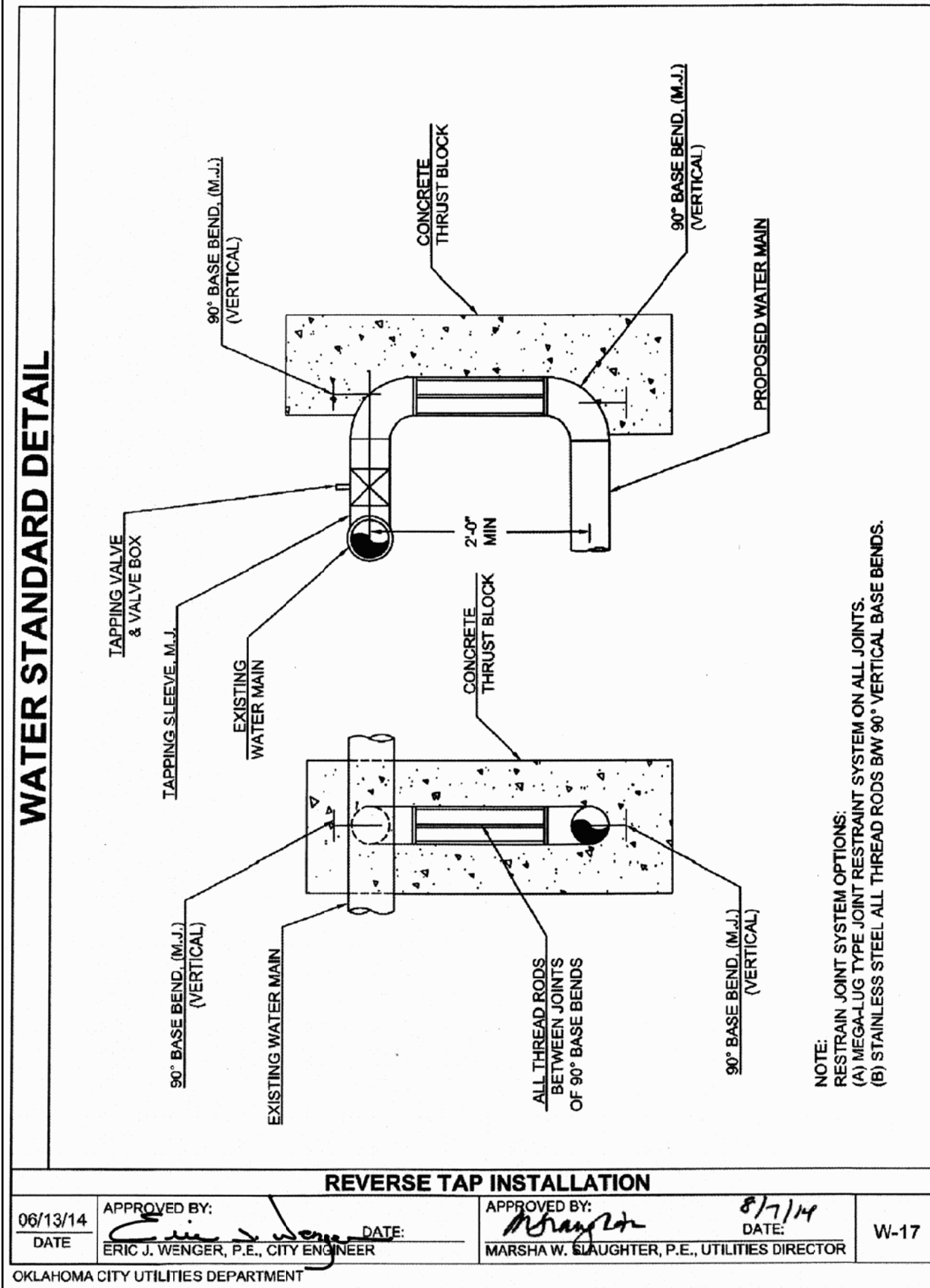
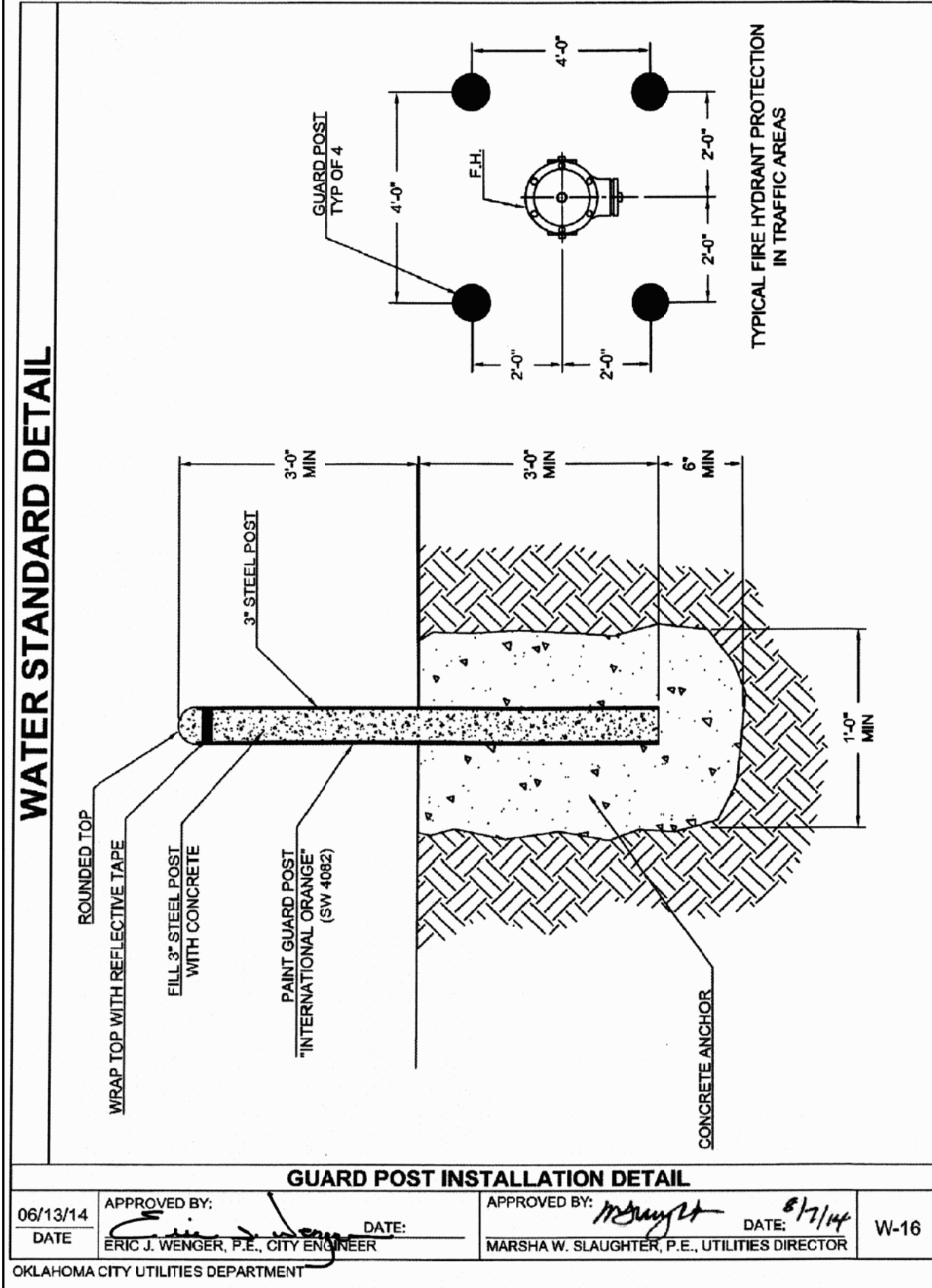
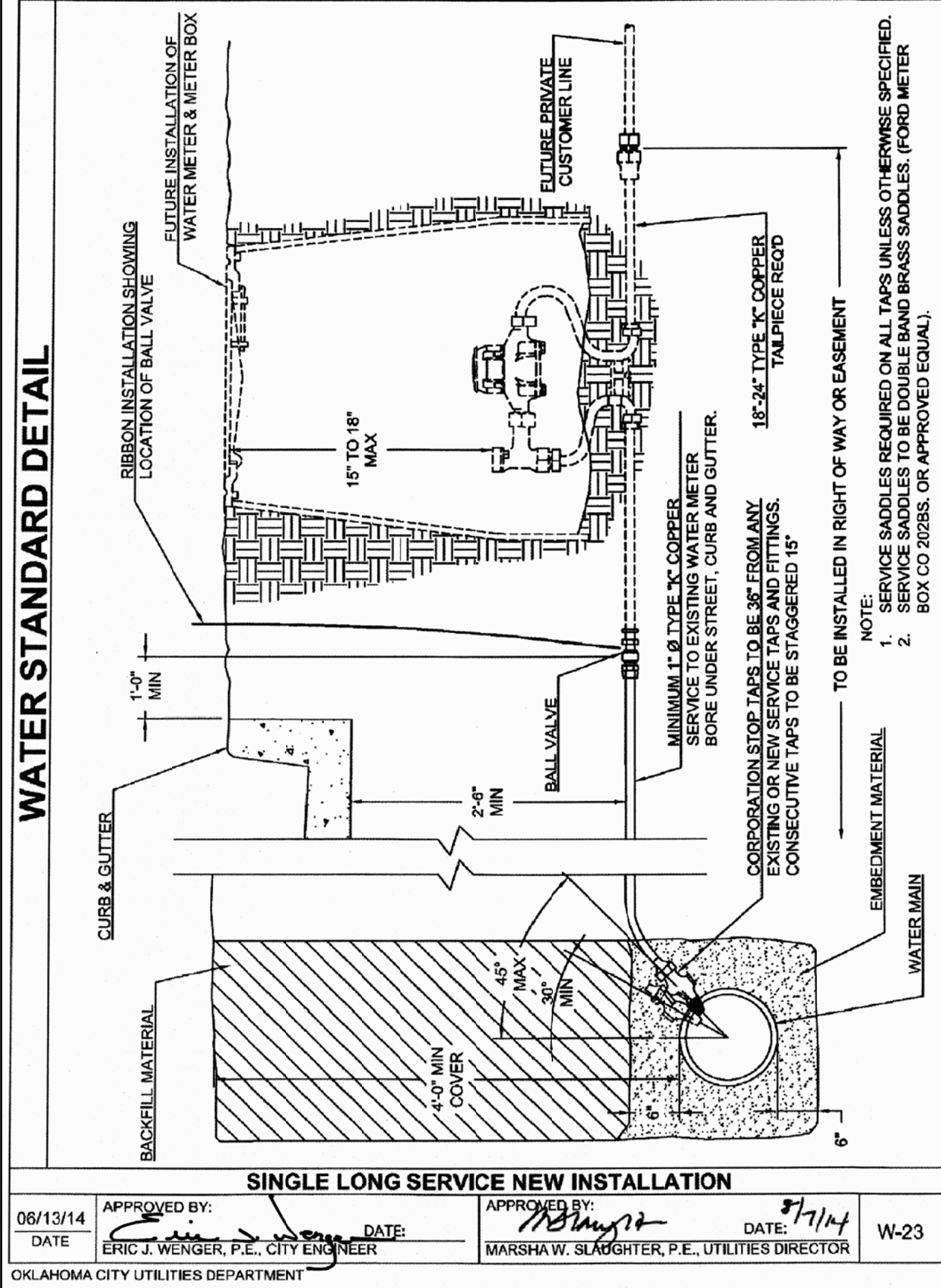
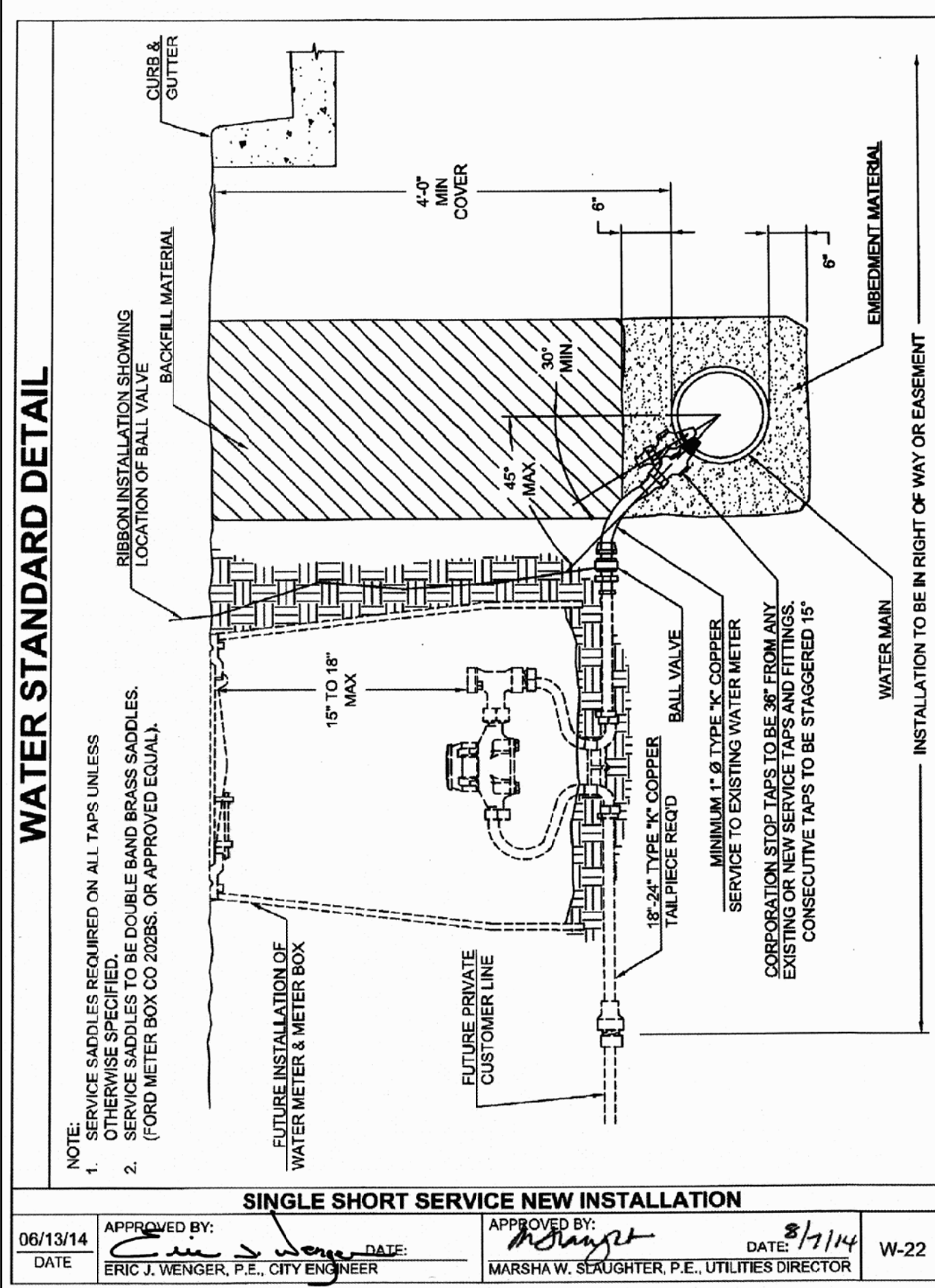
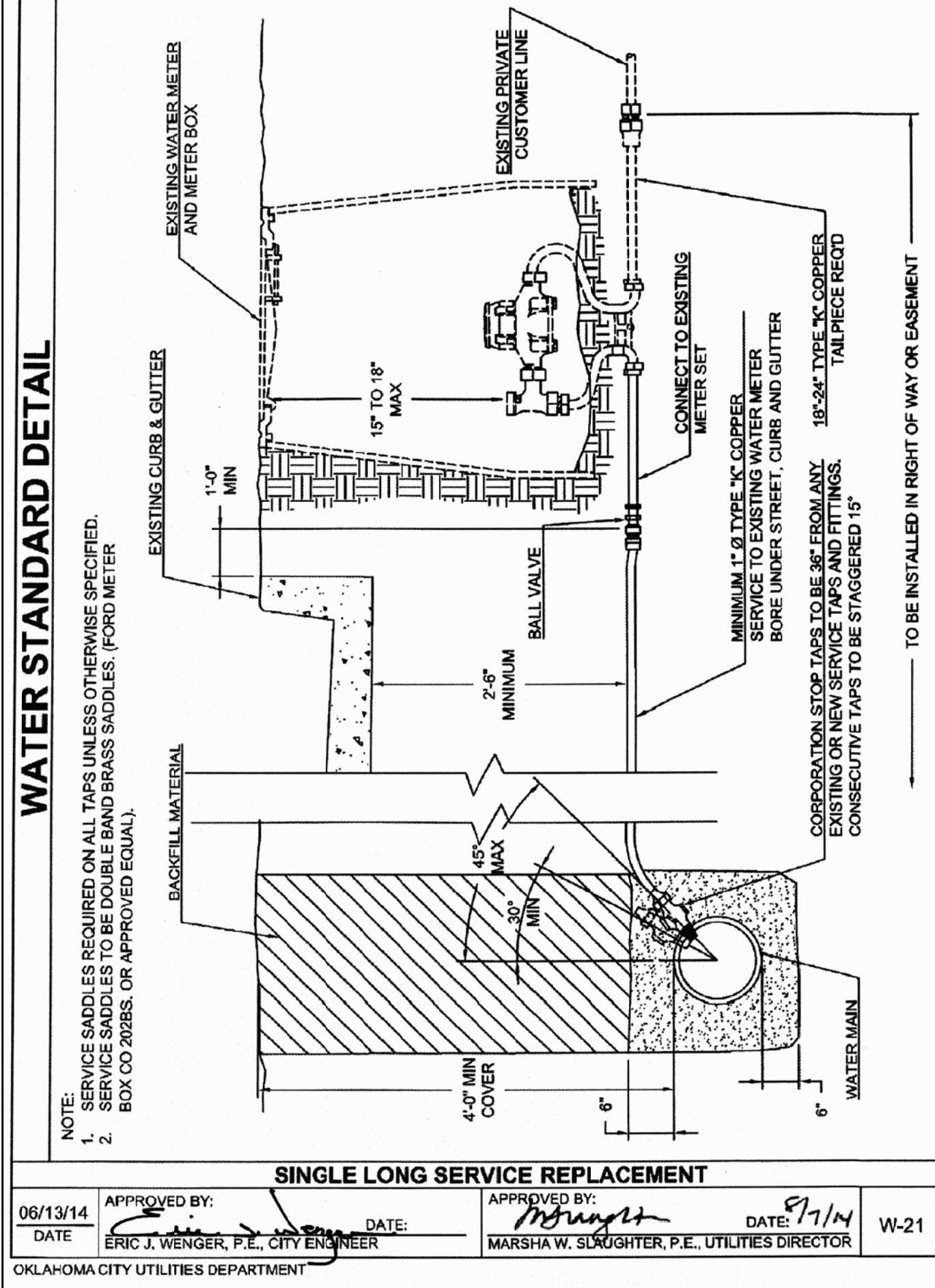
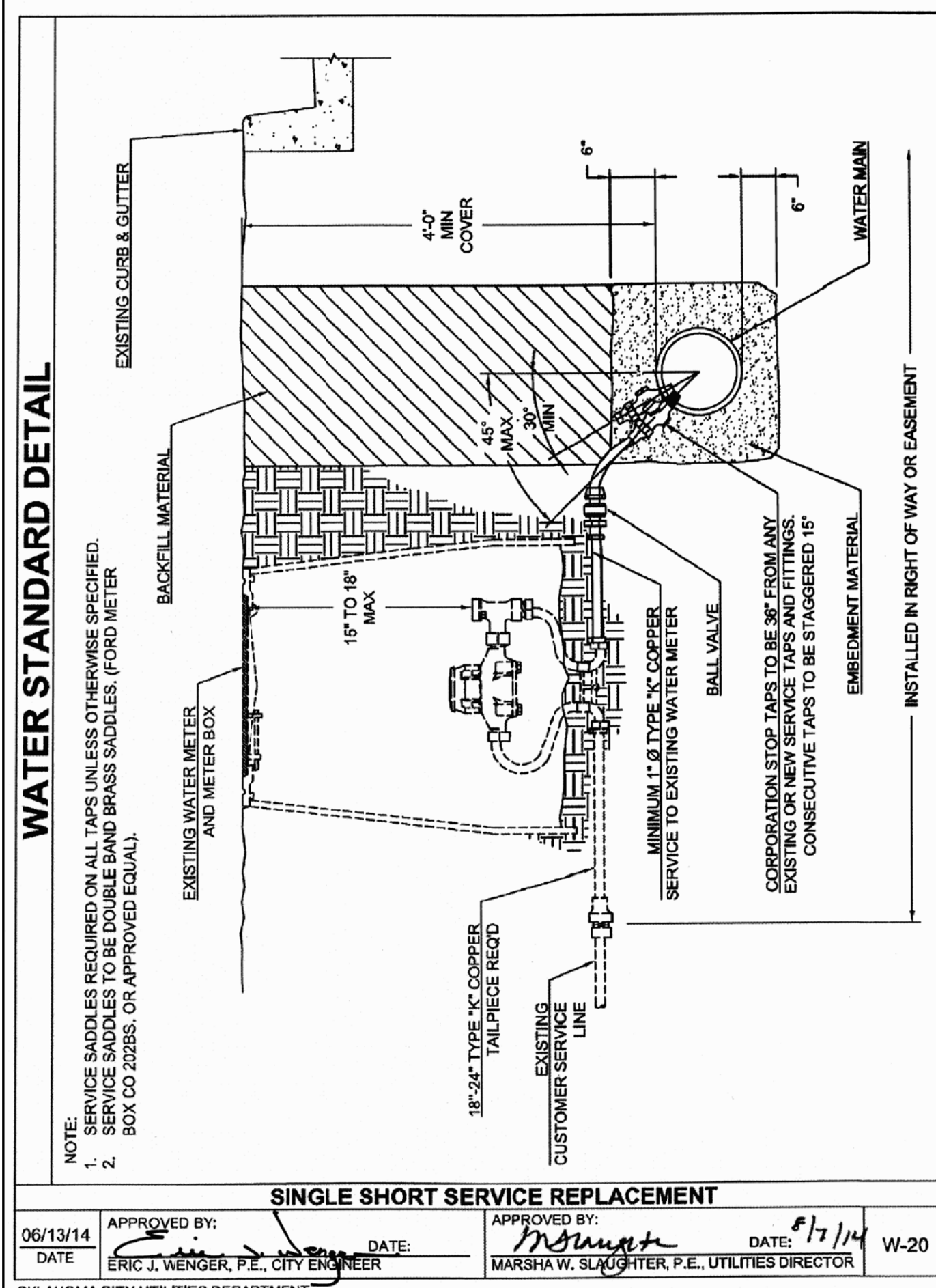
DATE: 11/07/14  
 DRAWN BY: JDS  
 CHECKED BY: MWS/EJW

SCALE:  
 AS SHOWN

SHEET NUMBER  
 W-STD-02



PLOTTED: Tuesday, August 26, 2014 10:19:03 AM  
 FILE PATH: Z:\STANDARD DETAILS & WATER METER SPECIFICATIONS\UPDATED STANDARD DETAILS 2014\WATERFINAL SHEETS\WAT-STD-DET-2014-SIGNED.DWG



### WATER STANDARD DETAIL

**NOTE:**  
 SEALED CASING ENDS - NEOPRENE RUBBER END SEALS SECURED WITH 316 STAINLESS STEEL BANDING REQUIRED.  
 PLUGGED PIPE ENDS - BOTH ENDS OF THE CASING PIPE SHALL BE PLUGGED WITH A NON-SHRINK GROUT OR CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. PLUGS SHALL BE A MINIMUM LENGTH OF 18\"

**TABLE 1**  
**RECOMMENDED CASING SIZING**

PIPE NOMINAL DIAMETER (INCHES)	SUGGESTED CARRIER PIPE DIAMETER (INCHES)	SUGGESTED CASING PIPE INSIDE DIAMETER (INCHES)
4	8 TO 10	20
6	10 TO 12	24
8	14 TO 16	30
10	16 TO 18	36
12	18 TO 20	42
15	20 TO 22	48
18	24 TO 26	60

**TABLE 2**  
**CASING PIPE THICKNESS**

Outside Diameter (Inches)	Under Highway		Under Railroad	
	Minimum Wall Thickness (Inches)	Maximum Cover (Feet)	Minimum Wall Thickness (Inches)	Maximum Cover (Feet)
≤ 12	0.1880	30	0.2500	30
15	0.2500	30	0.3125	30
18	0.2500	30	0.3125	30
20	0.2500	30	0.3750	30
24	0.2500	30	0.4375	30
30	0.3750	30	0.5000	30
36	0.3750	30	0.5625	30
42	0.3750	25	0.5625	30
48	0.4380	25	0.6250	25

**TABLE 3**  
**STEEL CASING PIPE SHALL HAVE THE FOLLOWING MINIMUM DIAMETERS: SEE TABLE 1**

**CASING PIPE THICKNESS - STEEL CASING PIPE SHALL HAVE THE FOLLOWING MINIMUM THICKNESSES: IN INCHES, FOR THE INDICATED MAXIMUM DEPTH OF COVER, IN FEET: SEE TABLE 2**

**CASING MATERIAL - STEEL CASING PIPE SHALL CONFORM WITH ASTM A-139. STANDARD SPECIFICATION FOR ELECTRIC-FUSION (ARC) - WELDED STEEL PIPE FOR OTHER THAN PRESSURE SERVICE SHALL BE NEW, SMOOTH WALL, LARSEN STEEL GRADE WITH A MINIMUM TENSILE STRENGTH AND MINIMUM THIRTY-FIVE THOUSAND (35,000 PSI) POUNDS PER SQUARE INCH YIELD STRENGTH**

**PIPE BORING AND CASING INSTALLATION**

APPROVED BY: *[Signature]* DATE: 8/7/14  
 ERIC J. WENGER, P.E., CITY ENGINEER MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

The City of  
**Oklahoma City**  
 Utilities Department  
 Engineering Division

NO.	DATE	DESCRIPTION

**WATER STANDARD DETAILS**

DATE: 08/07/14  
 DRAWN BY: JDS  
 CHECKED BY: MWS/EJW

SCALE:  
 AS SHOWN

SHEET NUMBER  
**W-STD-03**

### WATER STANDARD DETAIL

**1 1/2" TO 2" METER BOX 21" X 34" GRASS AND PAVED AREAS**

APPROVED BY: [Signature] DATE: 6/4/15  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 6/4/15  
 W-28

**TYPICAL SPECIFICATIONS:**  
 THE METER BOX SHALL BE HIGH-DENSITY POLYETHYLENE OF ONE-PIECE MOLDED CONSTRUCTION WITHOUT A FOAMING AGENT FOR DURABILITY AND IMPACT STRENGTH AND SHALL HAVE A SINGLE WALL DESIGN. THE METER BOX SHALL BE ABLE TO WITHSTAND AN H-20 LOADING IN NON DELIBERATE OR INCIDENTAL TRAFFIC AREAS. THE METER BOX SHALL BE BLACK TO PREVENT UV DEGRADATION. THE BOX SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO HAVE AN INTEGRAL FLANGE TYPE LID AS SPECIFIED ON THE DRAWING. THE BOX SHALL HAVE REMOVABLE PRE-CUT PIPE ENTRY AREAS LOCATED ON THE CENTER OF EACH END (SHORT SIDE) OF THE BOX FOR SINGLE METER INSTALLATIONS. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO BE SECURELY STACKABLE. THE BOX SHALL WEIGH NO MORE THAN 24 LBS FOR 12" HEIGHT AND 55 LBS FOR 18" HEIGHT FOR SAFETY AND EASE OF HANDLING, TRANSPORT AND INSTALLATION. ALL DIMENSIONS ARE MINIMUM PRODUCTION MEASUREMENTS AND SHALL BE IN ACCORDANCE WITH THE ABOVE DRAWING (S) FOR THE APPROPRIATE SIZE METER. COVER SHALL BE ANTI-FLOAT BLACK REBAR MOLDED POLYMER LID WITH A SINGLE WALL DESIGN AND A MINIMUM WALL THICKNESS AS SPECIFIED. THE LID WEIGHT SHALL BE A MINIMUM OF 37 LBS. THE LID SHALL NOT HAVE A FOAMING PLASTIC OR BLOWING AGENT THAT CREATES AIR POCKETS. LID SHALL CONTAIN A MOLDED KEY HOLE DESIGN AND SECURITY BRASS LOCK. LID SHALL HAVE AN INTEGRAL MOLDED SLIDE MOUNT FOR AMR DEVICE THAT SHALL BE MOLDED AS A ONE PIECE UNIT AS SPECIFIED IN THE ABOVE DRAWING. THE LID SHALL CONTAIN THE TREAD PATTERN AS ILLUSTRATED WITH DIMENSION PER TREAD OF 0.188" X 0.938" X 0.150" DEEP. LID SHALL CONTAIN THE NAME OF THE MANUFACTURER AND PART NUMBER. THE METER BOX SHALL AND LID BE MANUFACTURED BY DFW PLASTICS, INC. OR APPROVED EQUIVALENT.

### WATER STANDARD DETAIL

**5/8" TO 1" METER BOX FOR GRASSY AREAS**

APPROVED BY: [Signature] DATE: 6/4/15  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 6/4/15  
 W-24

**TYPICAL SPECIFICATIONS:**  
 THE METER BOX SHALL BE HIGH-DENSITY POLYETHYLENE OF ONE-PIECE MOLDED CONSTRUCTION WITHOUT A FOAMING AGENT FOR DURABILITY AND IMPACT STRENGTH AND SHALL HAVE A SINGLE WALL DESIGN. THE METER BOX SHALL BE ABLE TO WITHSTAND AN H-20 LOADING IN NON DELIBERATE OR INCIDENTAL TRAFFIC AREAS. THE METER BOX SHALL BE BLACK TO PREVENT UV DEGRADATION. THE BOX SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO HAVE AN INTEGRAL FLANGE TYPE LID AS SPECIFIED ON THE DRAWING. THE BOX SHALL HAVE REMOVABLE PRE-CUT PIPE ENTRY AREAS LOCATED ON THE CENTER OF EACH END (SHORT SIDE) OF THE BOX FOR SINGLE METER INSTALLATIONS. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO BE SECURELY STACKABLE. THE BOX SHALL WEIGH NO MORE THAN 13 LBS. ALL DIMENSIONS ARE PRODUCTION MEASUREMENTS AND SHALL BE IN ACCORDANCE WITH THE ABOVE DRAWING. COVER SHALL BE ANTI-FLOAT BLACK REBAR MOLDED POLYMER LID WITH A SINGLE WALL DESIGN AND A MINIMUM WALL THICKNESS AS SPECIFIED. THE LID WEIGHT SHALL BE A MINIMUM OF 8 LBS. THE LID SHALL NOT HAVE A FOAMING PLASTIC OR BLOWING AGENT THAT CREATES AIR POCKETS. LIDS SHALL CONTAIN A MOLDED KEY HOLE DESIGN AND SECURITY BRASS LOCK. LID SHALL HAVE AN INTEGRAL MOLDED SLIDE MOUNT FOR AMR DEVICE THAT SHALL BE MOLDED AS ONE PIECE. THE LID SHALL CONTAIN THE TREAD PATTERN AS ILLUSTRATED WITH DIMENSION PER TREAD OF 0.188" X 0.938" X 0.150" DEEP. LID SHALL CONTAIN THE NAME OF THE MANUFACTURER AND PART NUMBER. THE METER BOX AND LID SHALL BE MANUFACTURED BY DFW PLASTICS, INC. OR APPROVED EQUIVALENT.

### WATER STANDARD DETAIL

**METER RELOCATION FOR STREET RESURFACING, SIDEWALKS, & ADA RAMPS**

APPROVED BY: [Signature] DATE: 6/11/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 6/11/14  
 W-29

**NOTES:**

- METER FALLS BETWEEN CURB AND PROPOSED SIDEWALK.
- NO ACTION REQUIRED.
- METER FALLS PARTIALLY WITHIN PROPOSED SIDEWALK OR WHEN THE OUTSIDE OF THE METER LID IS WITHIN OR ON THE SIDEWALK EDGE.
- EXISTING SERVICE LINE AND INSTALL BALL VALVE 1'-0" BACK OF CURB.
- CUT EXISTING SERVICE LINE AND RELOCATE METER WITH NEW TILE BEHIND SIDEWALK.
- RECONNECT NEW SERVICE LINE TO CUSTOMER'S EXISTING SERVICE LINE WITHIN CITY RIGHT OF WAY OR EASEMENT.
- METER FALLS WITHIN THE CENTER AREA OF PROPOSED SIDEWALK OR ADA RAMP. NOT WITHIN 6" OF SIDEWALK EDGE.
- REPLACE EXISTING METER TILE WITH APPROVED TRAFFIC RATED TILE.
- REPLACE EXISTING METER TILE WITH APPROVED TRAFFIC RATED TILE.
- NO RELOCATION REQUIRED.

DOMESTIC METER RELOCATION REQUIREMENTS APPLY TO BOTH LONG AND SHORT SERVICES. MOUNT SERVICE LINE LOCATION WITHOUT THE BALL VALVE INSTALLATION REQUIREMENT. MAIN TO THE METER LOCATION WITHOUT THE BALL VALVE INSTALLATION REQUIREMENT.

### WATER STANDARD DETAIL

**1 1/2" TO 2" METER BOX FOR SPECIAL APPLICATION IN PAVED AREA**

APPROVED BY: [Signature] DATE: 6/4/15  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 6/4/15  
 W-25

**TYPICAL SPECIFICATIONS:**  
 THE METER BOX SHALL BE HIGH-DENSITY POLYETHYLENE OF ONE-PIECE MOLDED CONSTRUCTION WITHOUT A FOAMING AGENT FOR DURABILITY AND IMPACT STRENGTH AND SHALL HAVE A SINGLE WALL DESIGN. THE METER BOX SHALL BE ABLE TO WITHSTAND AN H-20 LOADING IN NON DELIBERATE OR INCIDENTAL TRAFFIC AREAS. THE METER BOX SHALL BE BLACK TO PREVENT UV DEGRADATION. THE BOX SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO HAVE AN INTEGRAL FLANGE TYPE LID AS SPECIFIED ON THE DRAWING. THE BOX SHALL HAVE REMOVABLE PRE-CUT PIPE ENTRY AREAS LOCATED ON THE CENTER OF EACH END (SHORT SIDE) OF THE BOX FOR SINGLE METER INSTALLATIONS. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO BE SECURELY STACKABLE. THE BOX SHALL WEIGH NO MORE THAN 14 LBS FOR 12" HEIGHT AND 17 LBS FOR 18" HEIGHT FOR SAFETY AND EASE OF HANDLING, TRANSPORT AND INSTALLATION. ALL DIMENSIONS ARE MINIMUM PRODUCTION MEASUREMENTS AND SHALL BE IN ACCORDANCE WITH THE ABOVE DRAWING (S) FOR THE APPROPRIATE SIZE METER. COVER SHALL BE ANTI-FLOAT BLACK REBAR MOLDED POLYMER LID OR BLACK OVERLAY WITH A 0.25" DIAMOND PLATE WITH A SINGLE WALL DESIGN AND A MINIMUM WALL DESIGN AND MINIMUM THICKNESS AS SPECIFIED. THE LID WEIGHT SHALL BE A MINIMUM OF 40 LBS. THE LID SHALL NOT HAVE A FOAMING PLASTIC OR BLOWING AGENT THAT CREATES AIR POCKETS. LID SHALL CONTAIN A MOLDED KEY HOLE DESIGN AND SECURITY BRASS LOCK. LID SHALL HAVE AN INTEGRAL MOLDED SLIDE MOUNT FOR AMR DEVICE THAT SHALL BE MOLDED AS A ONE PIECE UNIT AS SPECIFIED IN THE ABOVE DRAWING. THE LID SHALL CONTAIN THE TREAD PATTERN AS ILLUSTRATED WITH DIMENSION PER TREAD OF 0.188" X 0.938" X 0.150" DEEP. LID SHALL CONTAIN THE NAME OF THE MANUFACTURER AND PART NUMBER. THE METER BOX AND LID SHALL BE MANUFACTURED BY DFW PLASTICS, INC. OR APPROVED EQUIVALENT.

### WATER STANDARD DETAIL

**WATER METER VAULT INSTALLATION**

APPROVED BY: [Signature] DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 8/1/14  
 W-30

**NOTES:**

- INSTALLATION OF FLANGED COUPLING AND STRAINER REQUIRED ON 3" BY-PASS METERS AND LARGER.
- ALL DUCTILE IRON JOINTS INSIDE THE VAULT SHALL BE FLANGED.
- PROVIDE STRAIGHT PIPE UPSTREAM AND DOWNSTREAM OF METER/STRAINER IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- HATCH COVER TO BE HALLIDAY OR EQUAL WITH SAFETY FALL GRATING.
- FOR WALL AND FLOOR STEEL REINFORCEMENT REQUIREMENTS, SEE METER VAULT SHEET W-35.

Meter Size	By-Pass Size	A	B
3"	2"	12'-2"	7'-10"
4"	2"	13'-8"	7'-10"
6"	3"	16'-4"	8'-2"

### WATER STANDARD DETAIL

**5/8" TO 1" METER BOX 14" X 20" GRASS AND PAVED AREAS**

APPROVED BY: [Signature] DATE: 6/4/15  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 6/4/15  
 W-26

**TYPICAL SPECIFICATIONS:**  
 THE METER BOX SHALL BE HIGH-DENSITY POLYETHYLENE OF ONE-PIECE MOLDED CONSTRUCTION WITHOUT A FOAMING AGENT FOR DURABILITY AND IMPACT STRENGTH AND SHALL HAVE A SINGLE WALL DESIGN. THE METER BOX SHALL BE ABLE TO WITHSTAND AN H-20 LOADING IN NON DELIBERATE OR INCIDENTAL TRAFFIC AREAS. THE METER BOX SHALL BE BLACK TO PREVENT UV DEGRADATION. THE BOX SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO HAVE AN INTEGRAL FLANGE TYPE LID AS SPECIFIED ON THE DRAWING. THE BOX SHALL HAVE REMOVABLE PRE-CUT PIPE ENTRY AREAS LOCATED ON THE CENTER OF EACH END (SHORT SIDE) OF THE BOX FOR SINGLE METER INSTALLATIONS. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO BE SECURELY STACKABLE. THE BOX SHALL WEIGH NO MORE THAN 14 LBS FOR 12" HEIGHT AND 17 LBS FOR 18" HEIGHT FOR SAFETY AND EASE OF HANDLING, TRANSPORT AND INSTALLATION. ALL DIMENSIONS ARE MINIMUM PRODUCTION MEASUREMENTS AND SHALL BE IN ACCORDANCE WITH THE ABOVE DRAWING (S) FOR THE APPROPRIATE SIZE METER. COVER SHALL BE ANTI-FLOAT BLACK REBAR MOLDED POLYMER LID WITH A SINGLE WALL DESIGN AND A MINIMUM WALL THICKNESS AS SPECIFIED. THE LID WEIGHT SHALL BE A MINIMUM OF 13 LBS. THE LID SHALL NOT HAVE A FOAMING PLASTIC OR BLOWING AGENT THAT CREATES AIR POCKETS. LID SHALL CONTAIN A MOLDED KEY HOLE DESIGN AND SECURITY BRASS LOCK. LID SHALL HAVE AN INTEGRAL MOLDED SLIDE MOUNT FOR AMR DEVICE THAT SHALL BE MOLDED AS A ONE PIECE UNIT AS SPECIFIED IN THE ABOVE DRAWING. THE LID SHALL CONTAIN THE TREAD PATTERN AS ILLUSTRATED WITH DIMENSION PER TREAD OF 0.188" X 0.938" X 0.150" DEEP. LID SHALL CONTAIN THE NAME OF THE MANUFACTURER AND PART NUMBER. THE METER BOX AND LID SHALL BE MANUFACTURED BY DFW PLASTICS, INC. OR APPROVED EQUIVALENT.

### WATER STANDARD DETAIL

**WATER METER VAULT INSTALLATION**

APPROVED BY: [Signature] DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 8/1/14  
 W-30

**NOTES:**

- INSTALLATION OF FLANGED COUPLING AND STRAINER REQUIRED ON 3" BY-PASS METERS AND LARGER.
- ALL DUCTILE IRON JOINTS INSIDE THE VAULT SHALL BE FLANGED.
- PROVIDE STRAIGHT PIPE UPSTREAM AND DOWNSTREAM OF METER/STRAINER IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- HATCH COVER TO BE HALLIDAY OR EQUAL WITH SAFETY FALL GRATING.
- FOR WALL AND FLOOR STEEL REINFORCEMENT REQUIREMENTS, SEE METER VAULT SHEET W-35.

Meter Size	By-Pass Size	A	B
3"	2"	12'-2"	7'-10"
4"	2"	13'-8"	7'-10"
6"	3"	16'-4"	8'-2"

### WATER STANDARD DETAIL

**1 1/2" TO 2" METER BOX 17" X 26" GRASS AND PAVED AREAS**

APPROVED BY: [Signature] DATE: 6/4/15  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 WASHINGTON W. SCHAFFNER, P.E., UTILITIES DIRECTOR

DATE: 6/4/15  
 W-27

**TYPICAL SPECIFICATIONS:**  
 THE METER BOX SHALL BE HIGH-DENSITY POLYETHYLENE OF ONE-PIECE MOLDED CONSTRUCTION WITHOUT A FOAMING AGENT FOR DURABILITY AND IMPACT STRENGTH AND SHALL HAVE A SINGLE WALL DESIGN. THE METER BOX SHALL BE ABLE TO WITHSTAND AN H-20 LOADING IN NON DELIBERATE OR INCIDENTAL TRAFFIC AREAS. THE METER BOX SHALL BE BLACK TO PREVENT UV DEGRADATION. THE BOX SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO HAVE AN INTEGRAL FLANGE TYPE LID AS SPECIFIED ON THE DRAWING. THE BOX SHALL HAVE REMOVABLE PRE-CUT PIPE ENTRY AREAS LOCATED ON THE CENTER OF EACH END (SHORT SIDE) OF THE BOX FOR SINGLE METER INSTALLATIONS. THE BOX SHALL BE DESIGNED IN SUCH A WAY AS TO BE SECURELY STACKABLE. THE BOX SHALL WEIGH NO MORE THAN 20 LBS FOR 12" HEIGHT AND 27 LBS FOR 18" HEIGHT FOR SAFETY AND EASE OF HANDLING, TRANSPORT AND INSTALLATION. ALL DIMENSIONS ARE MINIMUM PRODUCTION MEASUREMENTS AND SHALL BE IN ACCORDANCE WITH THE ABOVE DRAWING (S) FOR THE APPROPRIATE SIZE METER. COVER SHALL BE ANTI-FLOAT BLACK REBAR MOLDED POLYMER LID WITH A SINGLE WALL DESIGN AND A MINIMUM WALL THICKNESS AS SPECIFIED. THE LID WEIGHT SHALL BE A MINIMUM OF 21 LBS. THE LID SHALL NOT HAVE A FOAMING PLASTIC OR BLOWING AGENT THAT CREATES AIR POCKETS. LID SHALL CONTAIN A MOLDED KEY HOLE DESIGN AND SECURITY BRASS LOCK. LID SHALL HAVE AN INTEGRAL MOLDED SLIDE MOUNT FOR AMR DEVICE THAT SHALL BE MOLDED AS A ONE PIECE UNIT AS SPECIFIED IN THE ABOVE DRAWING. THE LID SHALL CONTAIN THE TREAD PATTERN AS ILLUSTRATED WITH DIMENSION PER TREAD OF 0.188" X 0.938" X 0.150" DEEP. LID SHALL CONTAIN THE NAME OF THE MANUFACTURER AND PART NUMBER. THE METER BOX AND LID SHALL BE MANUFACTURED BY DFW PLASTICS, INC. OR APPROVED EQUIVALENT.

**W-STD-04**

SHEET NUMBER

SCALE: AS SHOWN

DATE: 06/05/15

DRAWN BY: BRP

CHECKED BY: WMS/SLW

## WATER STANDARD DETAILS

NO.	DATE	DESCRIPTION
1	6/4/2015	METER BOX DETAILS REVISED

**The City of Oklahoma City**  
 Utilities Department  
 Engineering Division

### WATER STANDARD DETAIL

Meter Size	By-Pass Size	A	B	C	D	E	F	G	Door Size
3"	2"	12'-2"	7'-10"	3'-0"	2'-6"	6'-9"	3'-6"	2'-0"	HIR-24-36
4"	2"	13'-8"	7'-10"	3'-0"	2'-6"	7'-0"	3'-6"	2'-0"	HIR-24-36

**WATER METER VAULT INSTALLATION 3 OF 6**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

**WATER METER VAULT INSTALLATION 4 OF 6**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

**WATER METER VAULT INSTALLATION 5 OF 6**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

Reinforcing Schedule for Concrete Vaults

Meter By-Pass Size	Design No.	Depth (feet)	Vertical Bars		Horizontal Bars		Top Bars	
			Size	Spacing	Size	Spacing	Size	Spacing
3"	1	5	#6	10	#4	12	#4	12
	2	6	#6	10	#4	12	#4	12
	3	7	#6	10	#4	12	#4	12
	4	8	#6	10	#4	12	#4	12
4"	5	5	#6	10	#4	12	#4	12
	6	6	#6	10	#4	12	#4	12
	7	7	#6	10	#4	12	#4	12
	8	8	#6	10	#4	12	#4	12
6"	9	6	#6	10	#4	12	#4	12
	10	7	#6	10	#4	12	#4	12
	11	8	#6	10	#4	12	#4	12
	12	9	#6	10	#4	12	#4	12

**WATER METER VAULT INSTALLATION 6 OF 6**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

Meter Size	By-Pass Size	A	B
6"	4"	15'-6"	9'-6"
8"	4"	17'-0"	11'-0"
10"	6"	20'-0"	13'-6"
12"	8"	22'-0"	15'-6"

**FIRE FLOW METER VAULT INSTALLATION 1 OF 5**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

**FIRE FLOW METER VAULT INSTALLATION 2 OF 5**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

**FIRE FLOW METER VAULT INSTALLATION 3 OF 5**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

### WATER STANDARD DETAIL

Meter Size	By-Pass Size	A	B	C	D	E	F	G	Door Size - I	Door Size - II
6"	4"	15'-6"	9'-6"	2'-8"	2'-8"	4'-9"	3'-0"	6'-0"	HIR-36-42	HIR-36-42
8"	4"	17'-0"	11'-0"	2'-8"	2'-8"	6'-0"	3'-0"	7'-6"	HIR-36-36	HIR-36-42
10"	6"	20'-0"	13'-6"	2'-8"	2'-8"	8'-0"	3'-0"	10'-0"	HIR-36-36	HIR-36-42
12"	8"	22'-0"	15'-6"	2'-8"	2'-8"	9'-0"	3'-0"	12'-0"	HIR-36-36	HIR-36-42

**FIRE FLOW METER VAULT INSTALLATION 4 OF 5**

APPROVED BY: *[Signature]* DATE: 8/1/14  
 ERIC J. WENGER, P.E., CITY ENGINEER  
 MARSHA W. SLAUGHTER, P.E., UTILITIES DIRECTOR

**The City of Oklahoma City**  
 Utilities Department  
 Engineering Division

NO.	DATE	DESCRIPTION

**WATER STANDARD DETAILS**

DATE: 08/07/14  
 DRAWN BY: JDS  
 CHECKED BY: MWS/EJW

SCALE: AS SHOWN

SHEET NUMBER: **W-STD-05**

