SECTION IV

WATER
DETAILS

SECTION IV- WATER DETAILS

TABLE OF CONTENTS

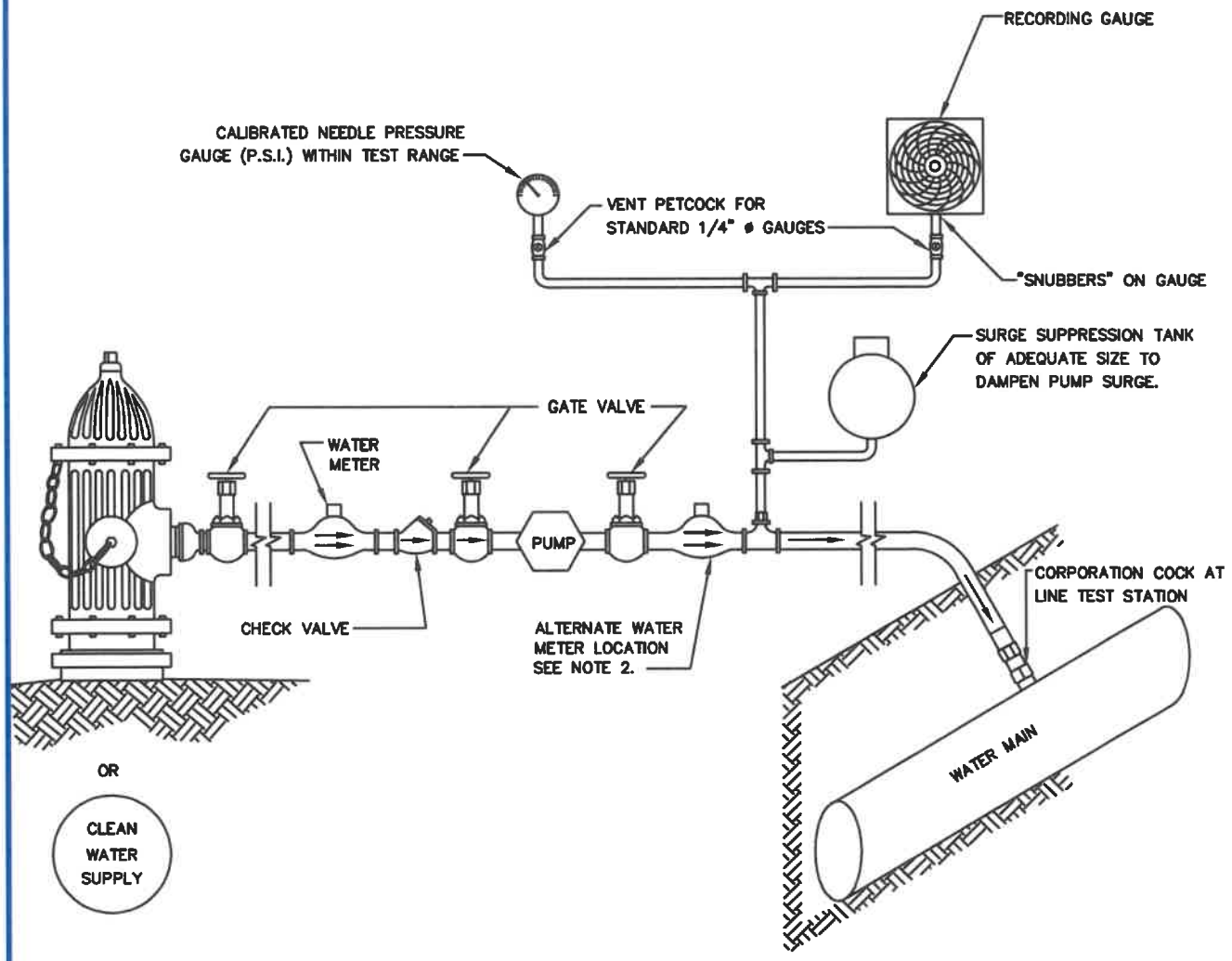
TITLE	NUMBER
Method of Testing Water Mains	W/1.0
2-inch Air Valve in Manhole for 24-inch Diameter and Smaller Pipelines	W/2.0
Vent Box for Extended Air Release Pipe	W/2.0a
Vent Box for Air/Vacuum Valve Vault On 30-inch Diameter and Larger Pipes	W/2.0b
Shallow Type 2-inch Air Valve in Manhole For 24-inch Diameters and Smaller Pipelines	W/2.0c
Shallow Type 2-inch Air Valve in Manhole For 24-inch Diameters and Smaller Pipelines	W/2.0d
Adjustable Valve Box Round Head Sliding Type	W/2.1
Extension Stems and Valve Boxes for Deep Valve Settings	W/2.2
16-inch, 20-inch, 24-inch, 30-inch and 36-inch Horizontal Valve Installations	W/2.4
16-inch, 20-inch, 24-inch, 30-inch and 36-inch Horizontal Valve Installations	W/2.4a
Cast in Place Concrete Vault for 16-inch, 20-inch and 24-inch Horizontal Valves	W/2.5
Cast in Place Concrete Vault for 30-inch and 36-inch Horizontal Valves	W/2.5a
16-inch and 20-inch Vertical Valves Installation	W/2.6
Cast in Place Concrete Vault for 16-inch and 20-inch Vertical Valves	W/2.7
Polyethylene Encasement at Concrete Interface	W/2.8
Type "A" Blowoff for Water Mains 16-inch to 30-inch	W/3.0
Endwall Detail for Type "B" Blowoff	W/3.01
Type "A" Blowoff for Water Mains 36-inch and Larger	W/3.02
Type "B" Blowoff for Water Mains 36-inch and Larger	W/3.03
Type "B" Blowoff Profiles for Water Mains 16-inch and Larger	W/3.04
Piping Support at Welded-on Connection	W/3.05
Welded-on Connection for Blowoffs on Mains 36-inch and Larger	W/3.06

Blow-off Connection in Non-Traffic Areas for 4-inch and 6-inch Water Mains	W/3.07
Blow-off Connection in Traffic Areas for 4-inch and 6-inch Water Mains	W/3.08
Pressure Reducing Valve Vault Type “1” Layout	W/4.2
Pressure Reducing Valve Vault Type “2” Layout	W/4.3
Type “1” and “2” Pressure Reducing Valve Vault Piping Layout	W/4.4
Pressure Relief Valve Vault	W/4.5
Endwall for Pressure Relief Valve Piping	W/4.6
Duel Pressure Relief Valve Vault	W/4.7
Pressure Relief Valve Vault Piping Plan	W/4.8
4-inch, 6-inch and 8-inch F.M. Meter Vault	W/5.0
4-inch, 6-inch, 8-inch, and 10-inch F.M. Meter Vault Piping Layout	W/5.0a
4-inch FM Meter with Check Valve Vault	W/5.0b
6-inch and 8-inch FM Meter with Check Valve Vault	W/5.0c
4-inch, 6-inch and 8-inch F.M. Meter with Check Valve in Vault Piping Layout	W/5.0d
Remote Reading Device	W/5.0e
Fire Hose Connection for FM Meter, Ultrasonic Meter and Detector Check Vault Layouts	W/5.0f
10-inch F.M. Meter Vault	W/5.0g
Fire Hose Connection in Traffic Areas for FM Meter, Ultrasonic Meter and Detector Check Vault Layouts	W/5.0h
10-inch FM Meter Vault with Check Valve Vault	W/5.0i
Fire Hose Connection in Traffic Areas for FM Meter, Ultrasonic and Detector Check Precast Vault Layout	W/5.0j
3-inch, 4-inch and 6-inch Compound Meter Vault	W/5.1
3-inch, 4-inch and 6-inch Compound Meter Vault Piping Layout	W/5.1a
Cast in Place Concrete Top Slab Reinforcing Details	W/5.2
Cast in Place Concrete Top Slab Reinforcing Details	W/5.21

Cast in Place Concrete Top Slab for Type "1" Layout Pressure Reducing Valve Vaults	W/5.22
Cast in Place Concrete Top Slab for duel pressure relief and Type "2" Layout Pressure Reducing Valve Vaults	W/5.23
Cast in Place Concrete Top Slab for Ultrasonic Meter, FM Meter and Detector Check Vaults	W/5.24
Cast in Place Concrete Top Slab for Ultrasonic Meter and FM meter with Check Valve Vault	W/5.25
Cast in Place Concrete Top Slab for 10-inch FM Meter with Check Valve Vault	W/5.26
Cast in Place Concrete Vault	W/5.3
Cast in Place Concrete Vault Notes	W/5.4
Top Slab Details for Vaults	W/5.5
3/4-inch Meter Setting for 1-inch Service	W/5.6
1-inch Meter Setting for 1-1/2-inch Service	W/5.7
1-1/2-inch Meter Settings for 2-inch Service	W/5.8
2-inch Meter Settings for 4-inch Service	W/5.9
2-inch Meter Settings for Existing 2-inch Meter Replacement	W/5.9a
1-inch, 1-1/2-inch and 2-inch Water House Connections for Inside Meters	W/5.10
1-inch, 1-1/2-inch and 2-inch Water House Connections for Inside Meters, Rural Type Paving Section	W/5.11
4-inch thru 12-inch Ductile Iron Water Connection	W/5.12
Location of Outside Meters for 1-inch, 1-1/2-inch & 2-inch Water House Connections Closed Paving Section	W/5.13
1-inch, 1-1/2-inch and 2-inch Water House Connections and Outside Meter Locations Rural Paving Sections	W/5.14
Double 3/4-inch Meter Setting	W/5.15
Double 1-inch Meter Setting	W/5.15a
Existing Outside Meter Temporary Water Service for Water Main Replacement	W/5.16
Existing Inside Meter Setting Temporary Water Service for Water Main Replacement	W.5.16a

Ductile Iron Pipe Load Chart	W/6.0
Polyvinyl Chloride (PVC) Pipe (AWWA C900/905) Load Chart	W/6.1
1-inch and Smaller Inside Water Meter Setting	W/7.1
1-1/2-inch Inside Water Meter Setting When Meter Room Is Not Adjacent to Exterior Building Walls	W/7.2a
1-1/2-inch Inside Water Meter Setting When Meter Room Is Adjacent to Exterior Building Walls	W/7.2b
2-inch Inside Water Meter Setting When Meter Room Is Not Adjacent to Exterior Building Walls	W/7.3a
2-inch Inside Water Meter Setting When Meter Room Is Adjacent to Exterior Building Walls	W/7.3b
3-inch, 4-inch and 6-inch Indoor Compound Meter When Meter Room Is Adjacent to Exterior Building Walls	W/7.4
3-inch, 4-inch and 6-inch Indoor Compound Meter When Meter Room Is Not Adjacent to Exterior Building Walls	W/7.5
4-inch, 6-inch and 8-inch Indoor FM Meter When Meter Room Is Adjacent to Exterior Building Walls	W/7.6
4-inch, 6-inch and 8-inch Indoor FM Meter When Meter Room Is Not Adjacent to Exterior Building Walls	W/7.7
Fire Hydrant Setting Closed Paving Section	W/8.0
Fire Hydrant Setting Open Paving Section	W/8.1
Continuity Test Station for AWWA C900 PVC Pipe	W/9.0
Continuity Test Station for AWWA C900 PVC Pipe at Fire Hydrant	W/9.1
Air/Vacuum Valve Vault On 30-inch Diameter and Larger Pipes	W/10.0
Details for Air/Vacuum Valve Vault on 30-inch Diameter and Larger Pipes	W/10.1
Air/Vacuum Valve Vault On 30-inch Diameter and Larger Pipes	W/10.2
Entry Port Vault for 36-inch to 48-inch Diameter Pipes	W/10.3
Blind Flange Details for Entry Port Vaults	W/10.4
Air/Vacuum Valve Vault and Entry Port Vault for 36-inch to 48-inch Diameter Pipes	W/10.5

Concrete Vault for Entry Ports	W/10.6
Cast In Place Concrete Top Slab Reinforcing for Air/Vacuum Valve Vault and Entry Port Vaults	W/10.7
Pipe Closure Joint Detail Using MJ Solid Sleeves	W/11.0
Pipe Closure Joint Detail For Exist. ACP Water Mains	W/11.1
Connecting to Existing PCCP Water Main using Ductile Iron Tee	W/13.0
Connecting to Existing PCCP Water Main for 2” and smaller Water Connections	W/13.1
4-inch, 6-inch and 8-inch Ultrasonic Meter Vault	W/14.0
10-inch Ultrasonic Meter Vault	W/14.0a
4-inch, 6-inch, 8-inch and 10-inch Ultrasonic Meter Vault Piping Layout	W/14.0b
4-inch Ultrasonic Meter and Check Valve Vault	W/14.1a
6-inch and 8-inch Ultrasonic Meter with Check Valve Vault	W/14.1b
10-inch Ultrasonic Meter with Check Valve Vault	W/14.1c



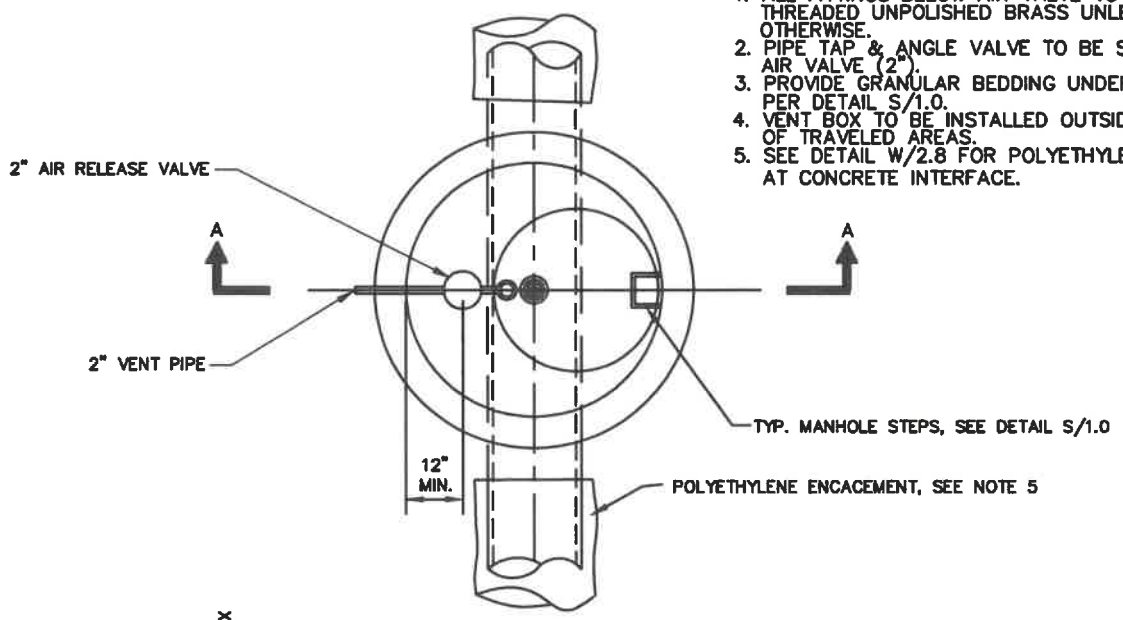
NOTES:

1. ALL LINES, FITTINGS AND TEST APPURTENANCES SHALL BE CAPABLE OF WITHSTANDING MAXIMUM TEST PRESSURE.
2. WHEN TEST PRESSURE IS LESS THAN PRESSURE RANGE OF METER, INSTALL METER AT ALTERNATE LOCATION SHOWN.
3. PROVIDE ADEQUATE PROTECTION TO ALL LINES, FITTINGS AND TEST APPURTENANCES WHEN TESTING DURING FREEZING WEATHER.
4. PUMP MUST BE CAPABLE OF APPLYING PRESSURE WITHIN TEST RANGE (PROVIDE FOR PRESSURE RELIEF ON PUMP).
5. ELEVATION OF TEST GAUGES MUST BE KNOWN

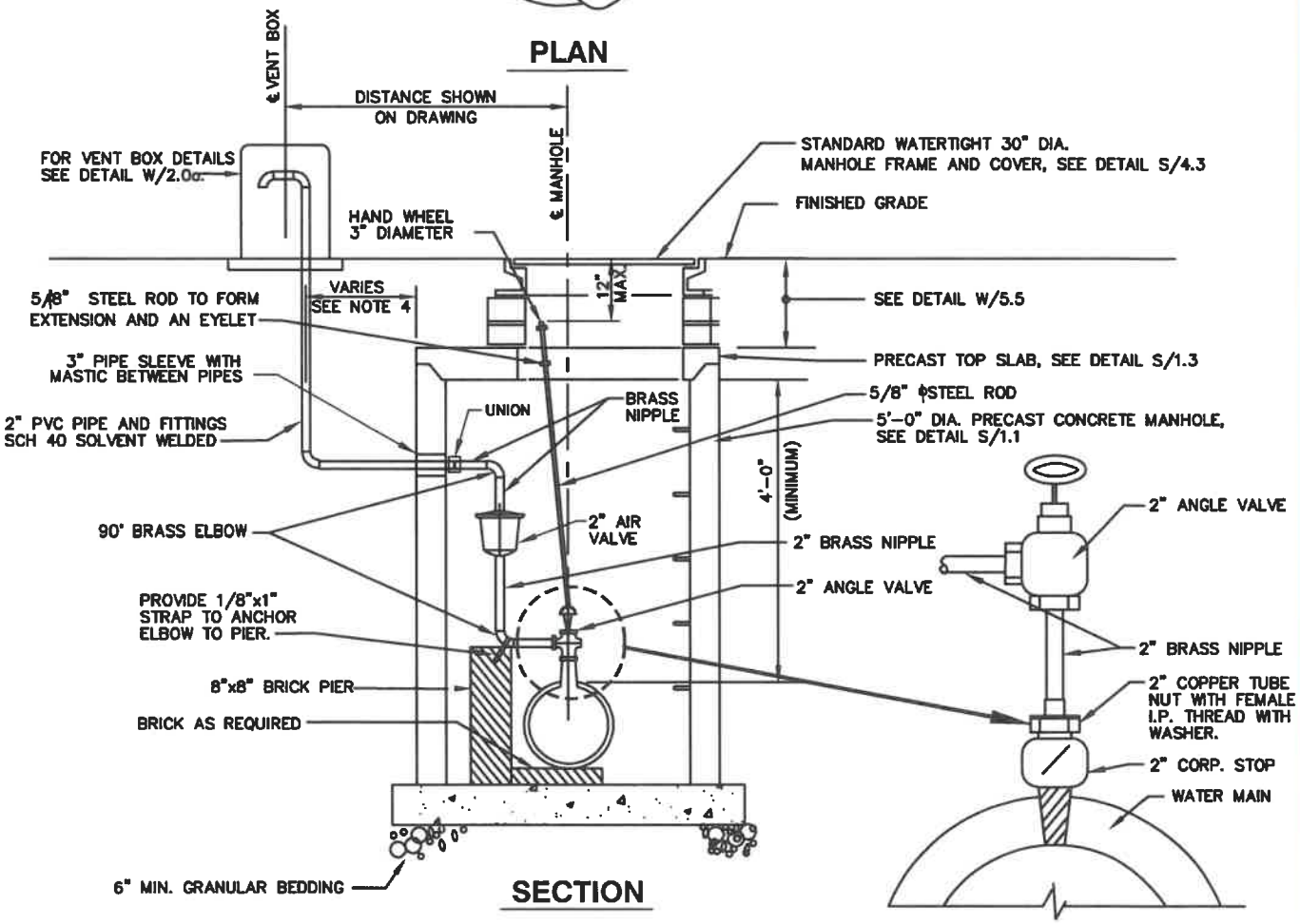
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL METHOD OF TESTING WATER MAINS	W 1.0

NOTES:

1. ALL FITTINGS BELOW AIR VALVE TO BE HEAVY DUTY THREADED UNPOLISHED BRASS UNLESS NOTED OTHERWISE.
2. PIPE TAP & ANGLE VALVE TO BE SAME SIZE AS AIR VALVE (2").
3. PROVIDE GRANULAR BEDDING UNDER MANHOLE PER DETAIL S/1.0.
4. VENT BOX TO BE INSTALLED OUTSIDE OF TRAVELED AREAS.
5. SEE DETAIL W/2.8 FOR POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE.

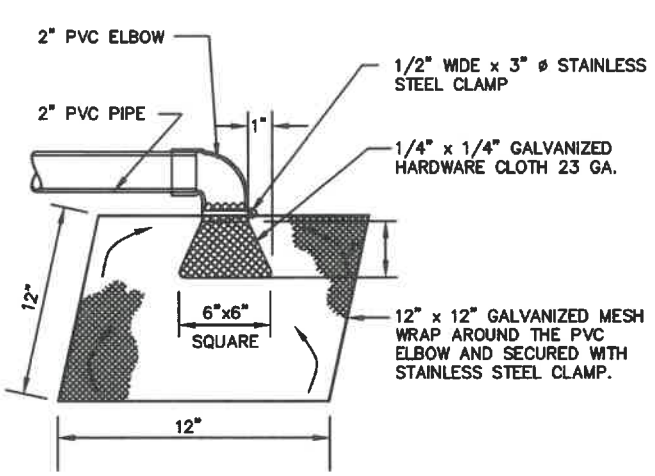


PLAN

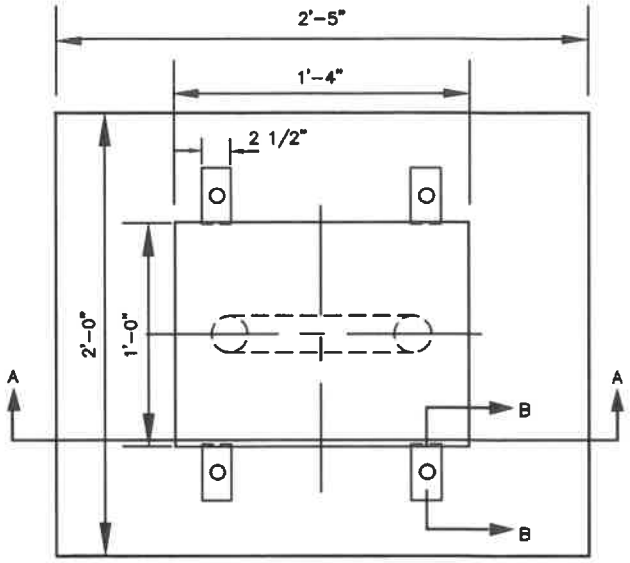


SECTION

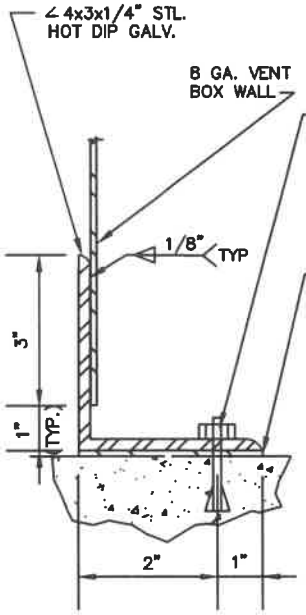
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL 2-INCH AIR VALVE IN MANHOLE FOR 24-INCH DIAMETER AND SMALLER PIPELINES	W 2.0



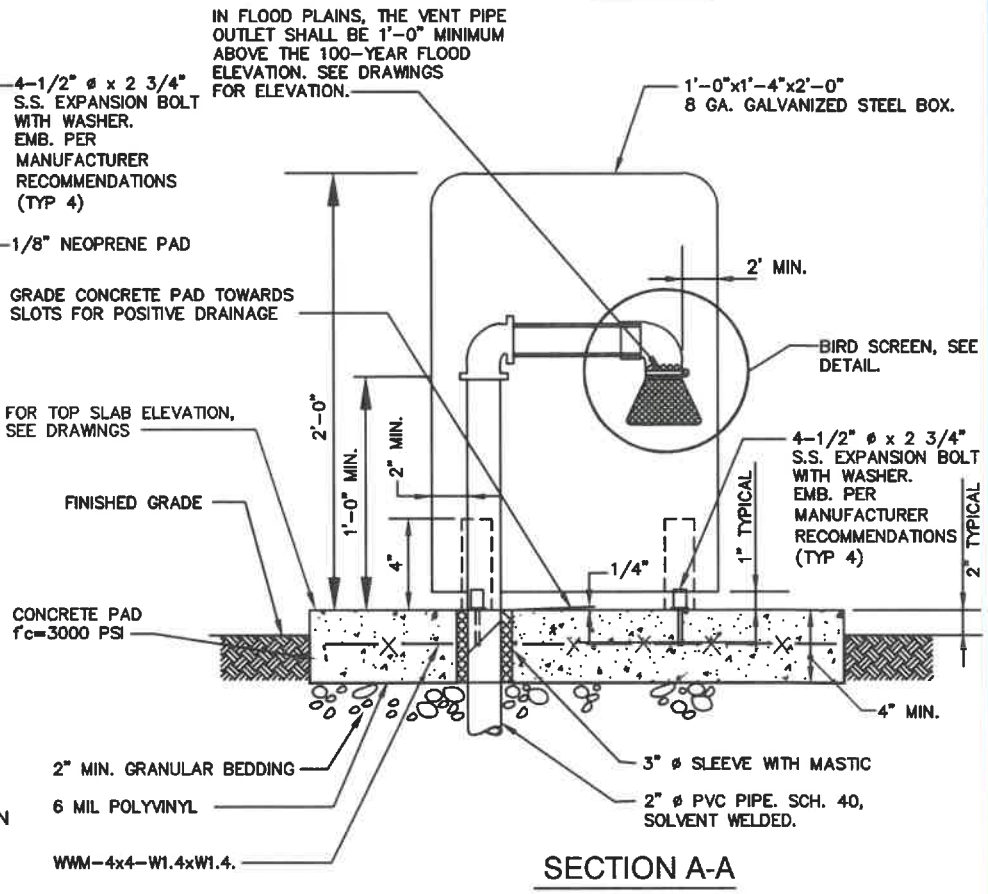
BIRD SCREEN DETAIL



PLAN



SECTION B-B

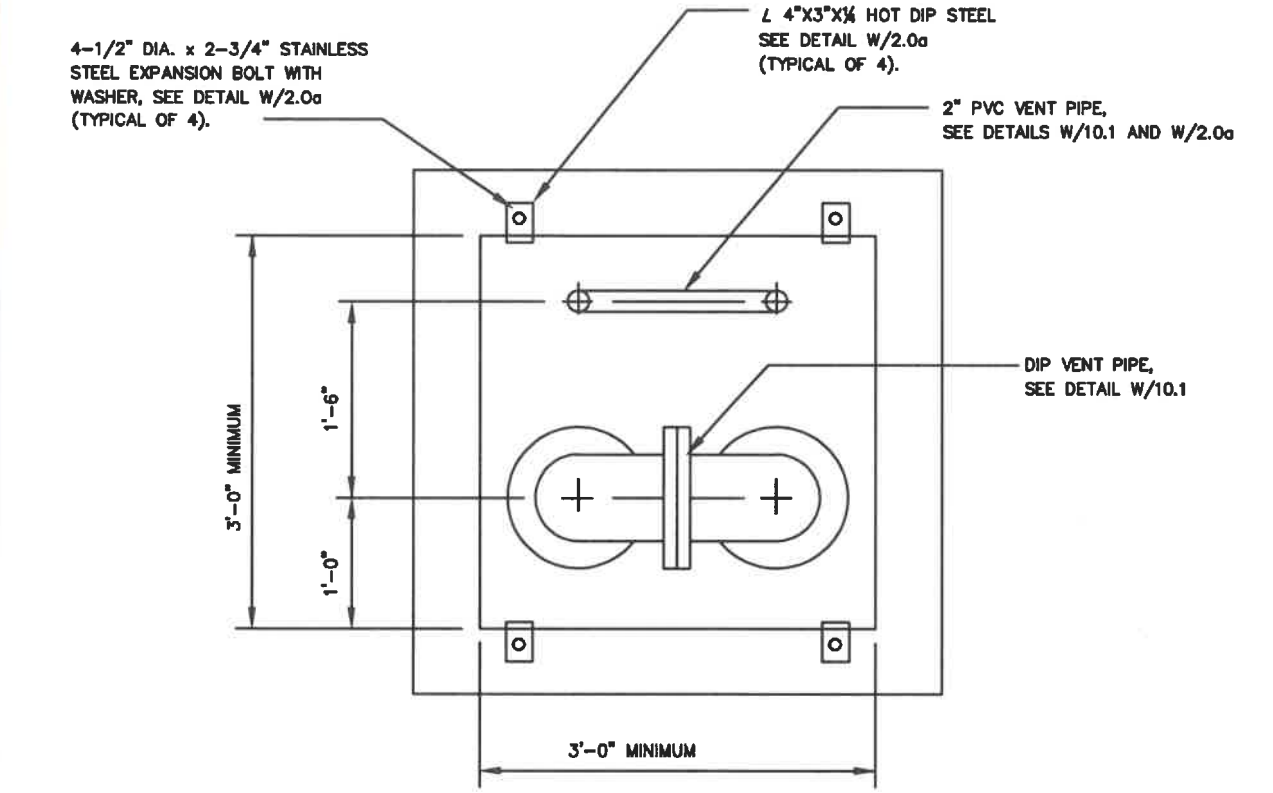


SECTION A-A

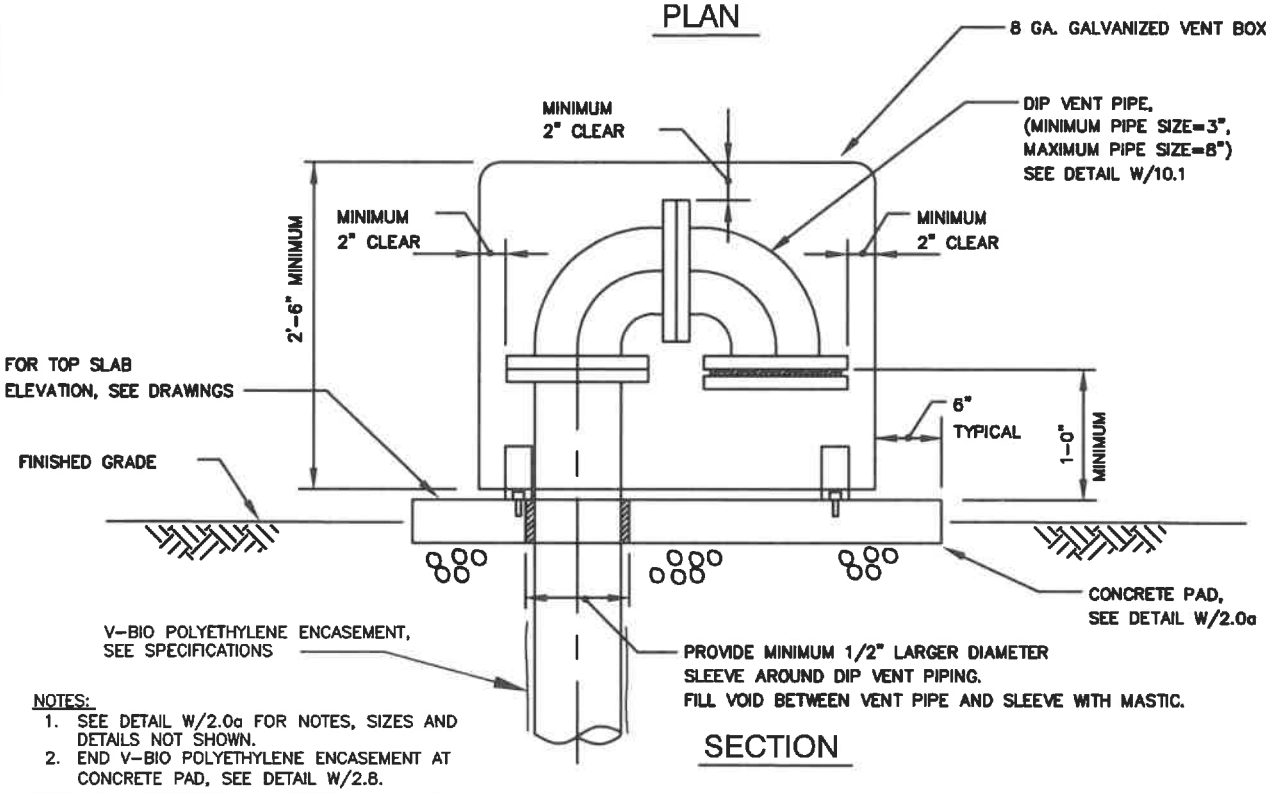
NOTES:

1. ALL METAL FABRICATION SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION.
2. ALL WELDED JOINTS SHALL BE CONTINUOUS COMPLETE PENETRATION WELDS UNLESS OTHERWISE NOTED.
3. THE BOX ASSEMBLY SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL VENT BOX FOR EXTENDED AIR RELEASE PIPE	W 2.0a



PLAN



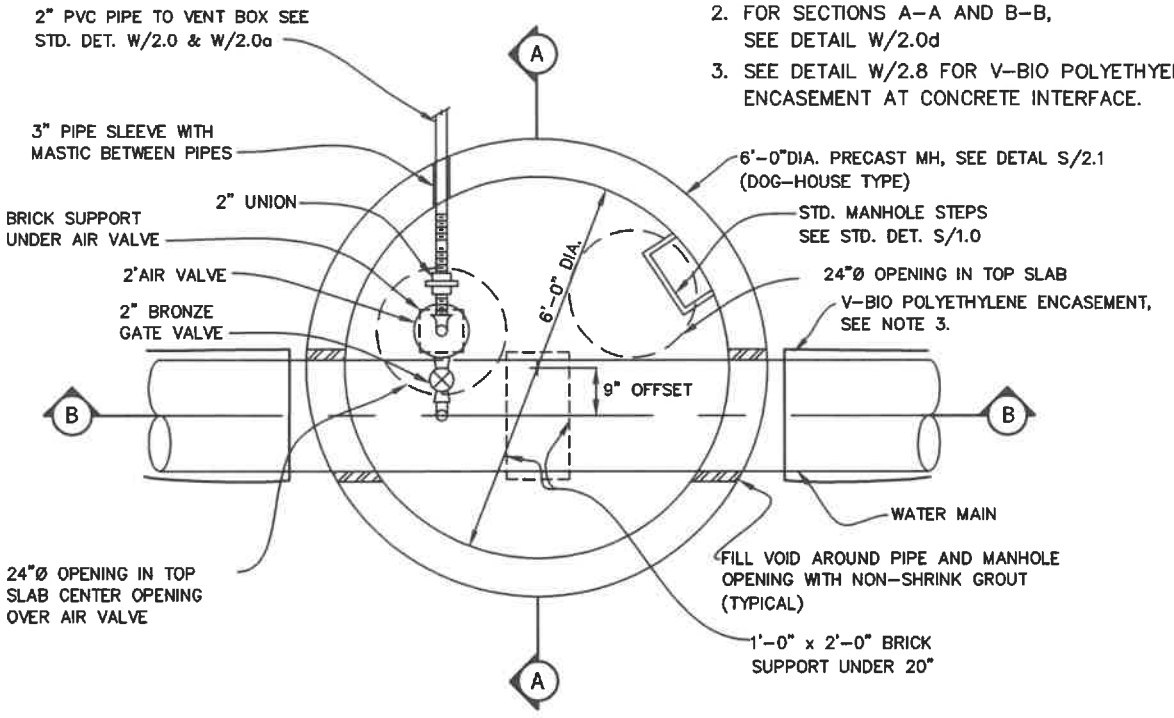
SECTION

NOTES:
1. SEE DETAIL W/2.0a FOR NOTES, SIZES AND DETAILS NOT SHOWN.
2. END V-BIO POLYETHYLENE ENCASEMENT AT CONCRETE PAD, SEE DETAIL W/2.8.

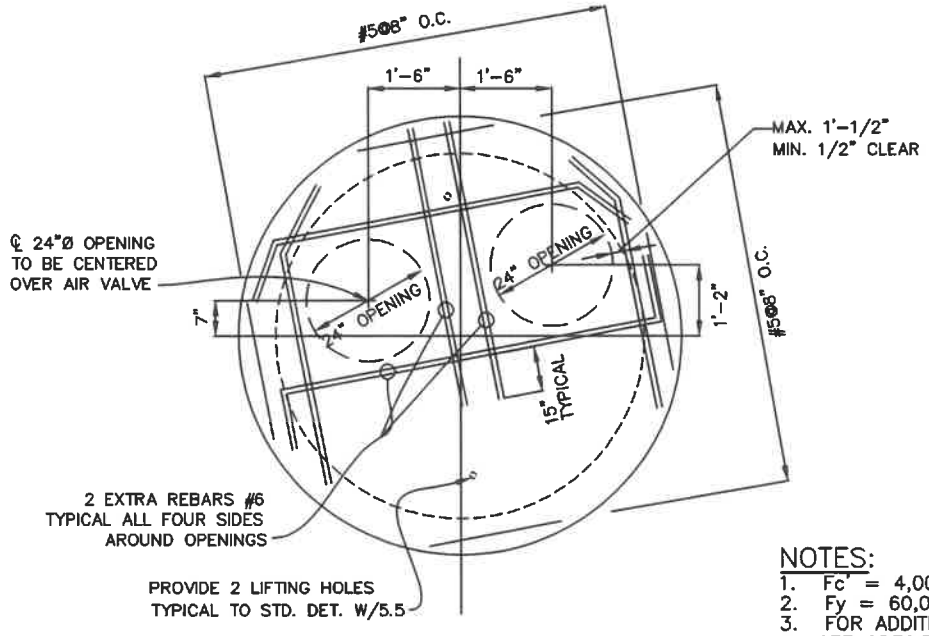
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Harman Chief Engineer	STANDARD DETAIL VENT BOX FOR AIR/VACUUM VALVE VAULT ON 30-INCH DIAMETER AND LARGER PIPES	W 2.0b

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE STD DETAILS W/2.0 AND W/2.0a
2. FOR SECTIONS A–A AND B–B, SEE DETAIL W/2.0d
3. SEE DETAIL W/2.8 FOR V–BIO POLYETHYENE ENCASEMENT AT CONCRETE INTERFACE.



AIR VALVE MANHOLE - PLAN

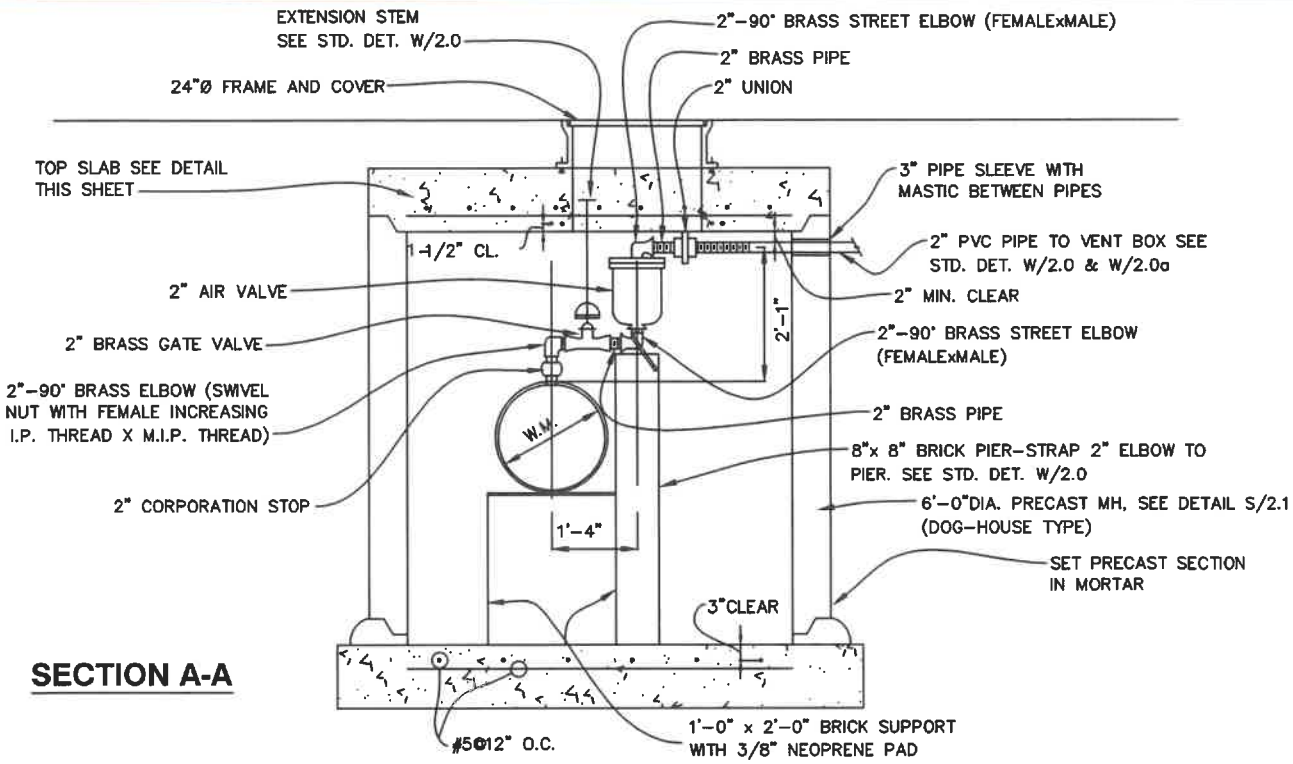


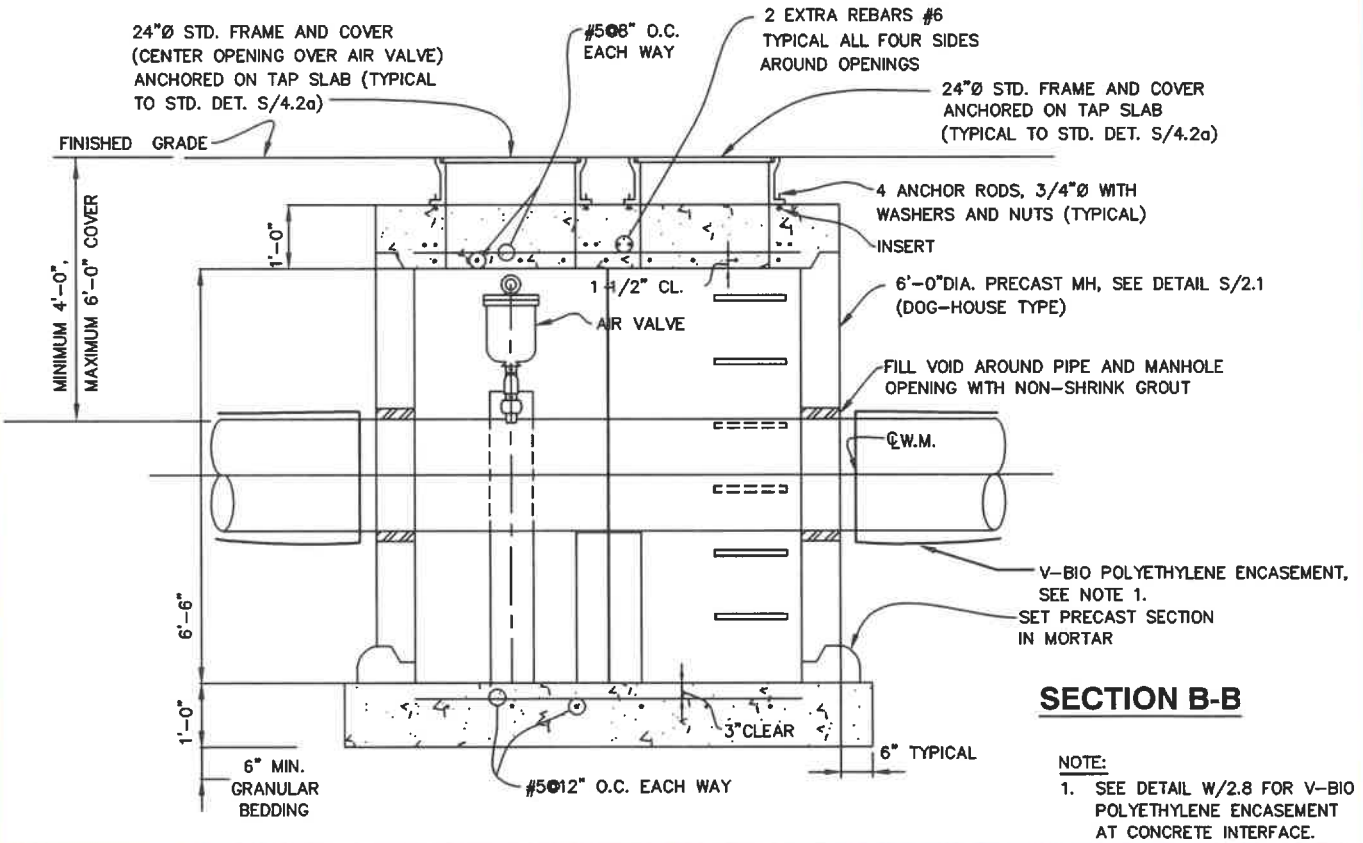
TOP SLAB - PLAN

NOTES:

1. Fc' = 4,000PSI @ 28 DAY
2. Fy = 60,000 PSI
3. FOR ADDITIONAL INFORMATION SEE SPECIFICATION SECTION 03300

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL SHALLOW TYPE 2-INCH AIR VALVE IN MANHOLE FOR 24-INCH DIAMETER AND SMALLER PIPELINES	W 2.0c

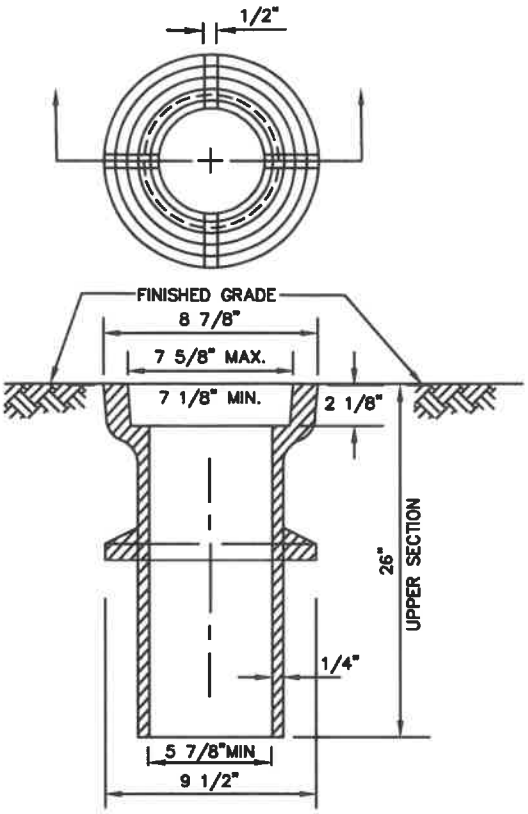


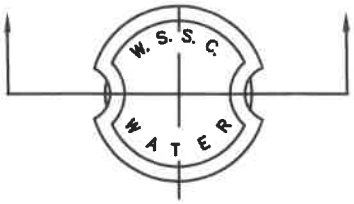


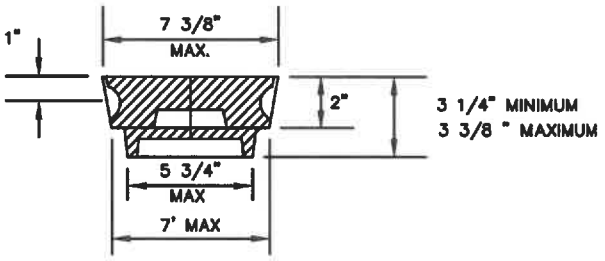
SECTION B-B

NOTE:
1. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE.

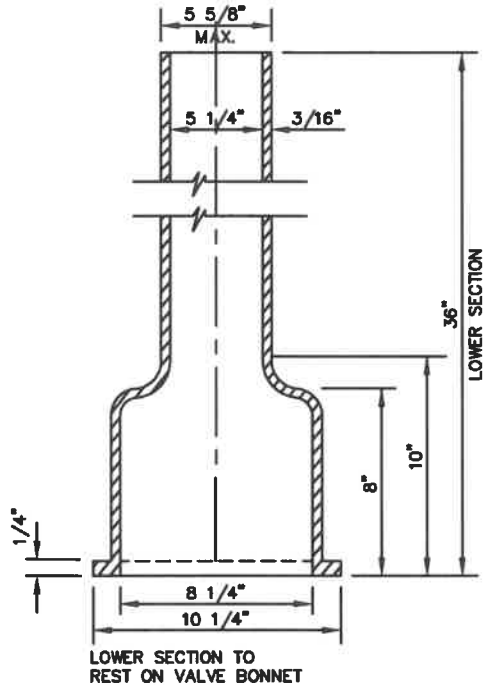
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL SHALLOW TYPE 2-INCH AIR VALVE IN MANHOLE FOR 24-INCH DIAMETER AND SMALLER PIPELINES	W 2.0d







COVER



UPPER AND LOWER VALVE BOX SECTION

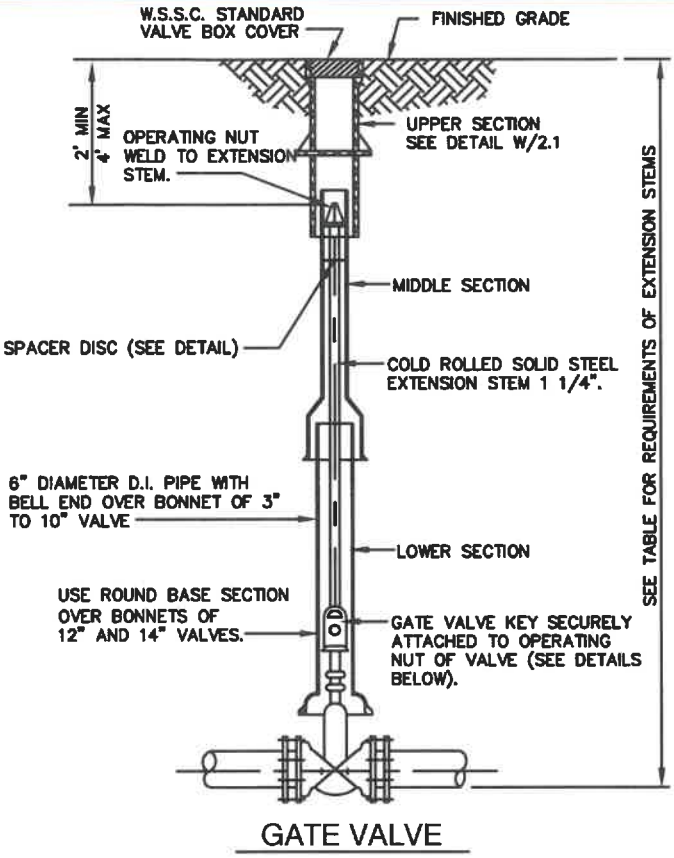
NOTE:

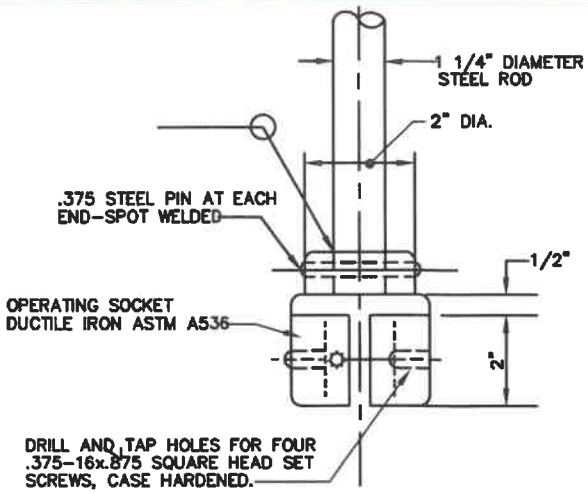
ALL SECTIONS SHOWN TO BE GRAY.
IRON CASTINGS, CLASS NO. 25 ASTM A-48

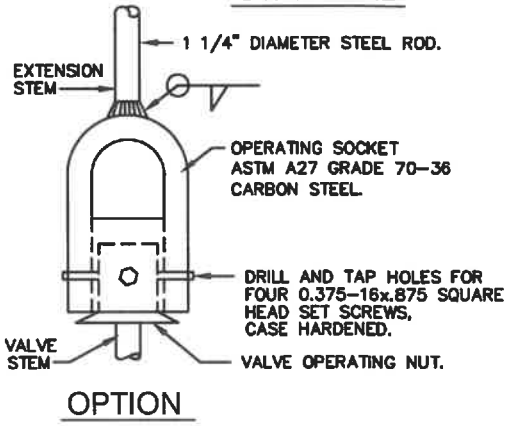
WEIGHTS:

LID – 15 LBS.
TOP SECTION – 52 LBS.
BOTTOM SECTION – 48 LBS
TOTAL – 115
MINUS WEIGHT TOLERANCE 5%

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL ADJUSTABLE VALVE BOX ROUND HEAD SLIDING TYPE	W 2.1

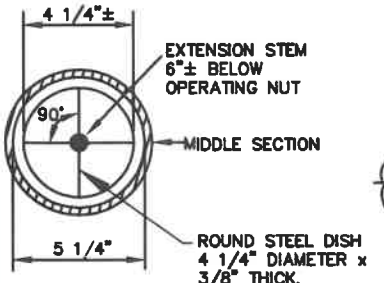


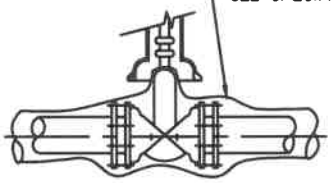


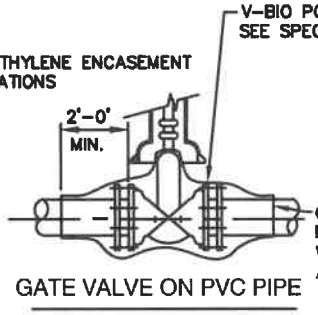


WHEN EXTENSION STEMS ARE REQUIRED

SIZE OF WATER MAIN	DISTANCE FROM FINISHED GRADE TO INVERT OF WATER MAIN EXCEEDS
4" W	5.3'
6" W	5.7'
8" W	6.1'
10" W	6.5'
12" W	6.9'
16" W	7.5'



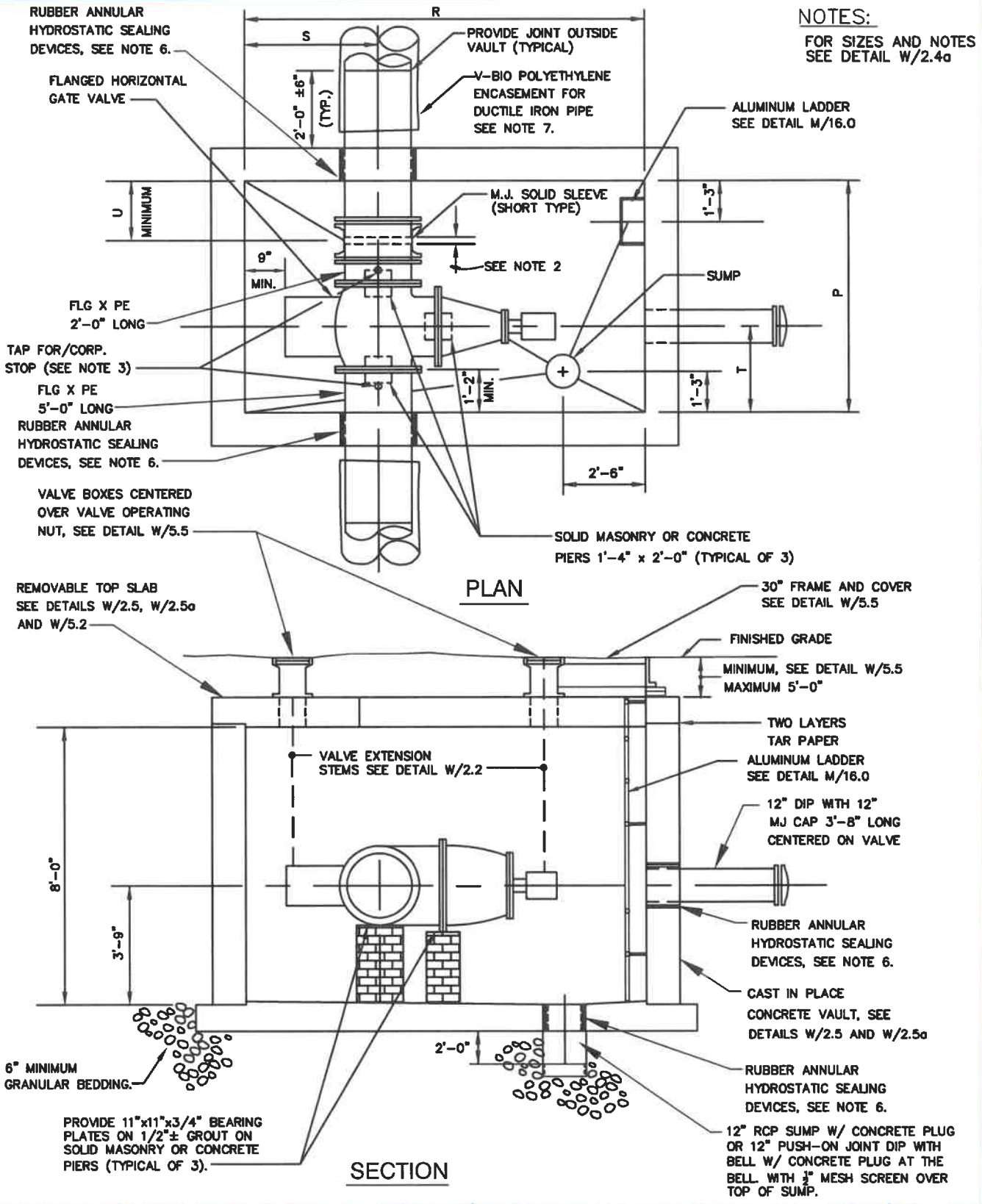




NOTES:

1. EXTENSION TO BE SECURELY WELDED TO GATE VALVE KEY. STEM MATERIAL COMPOSITION SHALL COMPLY WITH ASTM A108.
2. LENGTH OF STEM TO BE SUCH THAT OPERATING NUT WILL BE LOCATED AS INDICATED ABOVE.
3. WELD STEEL DISH 4-1/4" DIAMETER x3/8" THICK TO EXTENSION STEM TO INSURE OPERATING NUT IS CENTERED WITHIN VALVE BOX.
4. COAT EXTENSION STEM WITH FIELD APPLIED COATING, SPECIFICATIONS.
5. USE THIS DETAIL WHEN DISTANCE FROM TOP OF OPERATING NUT OF VALVE TO INVERT OF WATER MAIN EXCEEDS THE DIMENSIONS SHOWN ON TABLE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL EXTENSION STEMS AND VALVE BOXES FOR DEEP VALVE SETTINGS	W 2.2



NOTES:

FOR SIZES AND NOTES SEE DETAIL W/2.4a

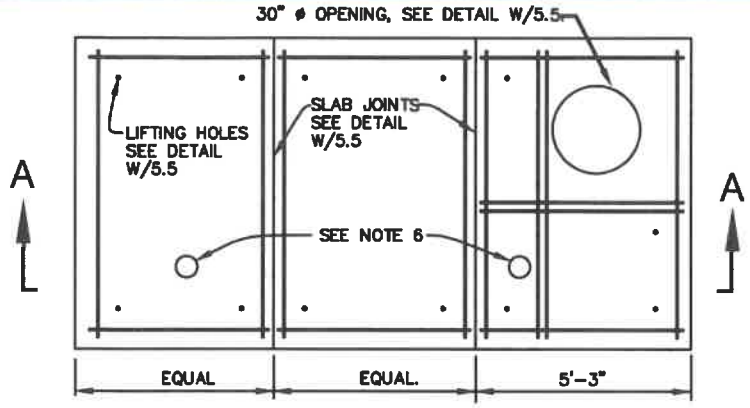
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 16-INCH, 20-INCH, 24-INCH, 30-INCH AND 36-INCH HORIZONTAL VALVE INSTALLATIONS	W 2.4

PIPE SIZE	VALVE SIZE	R	S	P	T	U (MIN.)
16"	16"	11'-0"	3'-6"	7'-0"	2'-4"	1'-5"
20"	20"	11'-0"	3'-6"	7'-0"	2'-4"	1'-5"
24"	24"	12'-0"	4'-0"	7'-0"	2'-4"	1'-5"
30"	30"	14'-0"	4'-6"	8'-6"	2'-7"	2'-0"
36"	36"	16'-0"	5'-0"	8'-6"	2'-7"	2'-0"

NOTES:

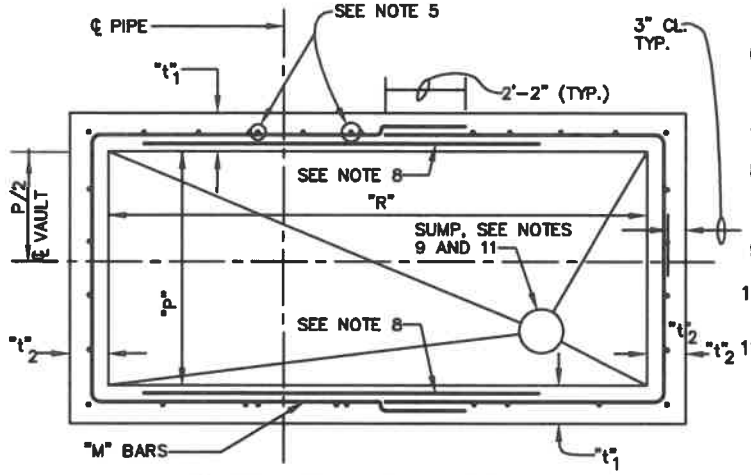
1. THIS VALVE VAULT IS NOT FOR ELECTRICALLY OPERATED VALVES.
2. PROVIDE SHORT TYPE MJ SOLID SLEEVE WITH WEDGE ACTION RESTRAINED JOINTS, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
3. TAP SIZES FOR CORPORATION STOPS: 1-1/2" FOR 16" AND 20" DIAMETER PIPE, 2" FOR 24" DIAMETER PIPE AND LARGER.
4. FOR STRUCTURAL DETAILS SEE DETAILS W/2.5 AND W/2.5a.
5. PROVIDE FLANGE BOLT END PROTECTION FOR ALL FLANGED JOINTS IN VAULTS, SEE SPECIFICATIONS.
6. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS. PROVIDE PIPE OPENING LARGE ENOUGH TO ALLOW FLANGE OR BELL JOINT TO PASS THROUGH.
7. SEE DETAIL W/2.8 FOR POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 16-INCH, 20-INCH, 24-INCH, 30-INCH AND 36-INCH HORIZONTAL VALVE INSTALLATIONS	W 2.4a

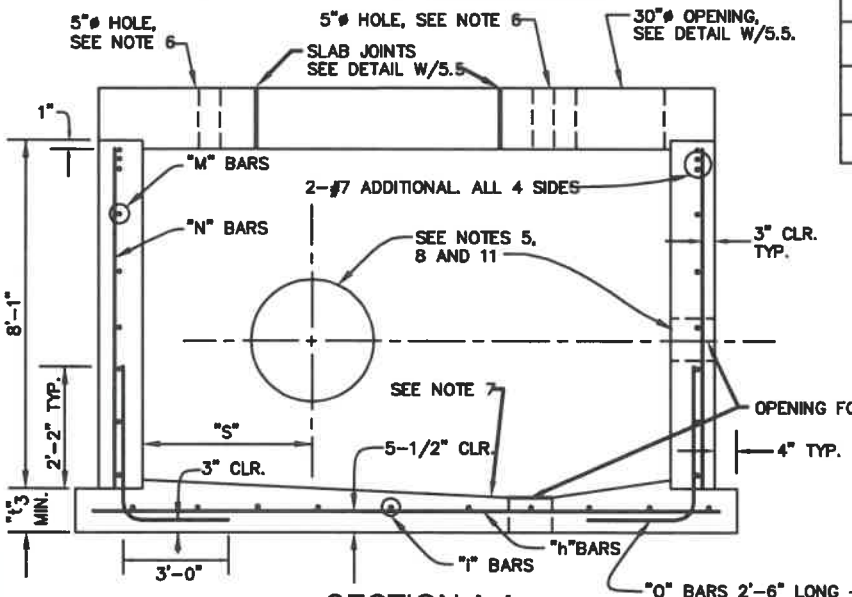


SEE DETAIL W/5.2 FOR TOP SLAB THICKNESS AND REINFORCEMENT

TOP SLAB-PLAN



PLAN-TOP SLAB REMOVED



SECTION A-A

CAST IN PLACE CONCRETE VAULT NOTES

1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. VAULTS ARE DESIGNED FOR THE FOLLOWING CONDITIONS
   A. H20 LOADING & 1'-0" COVER + IMPACT (WATER TABLE 4'-0" BELOW FINISHED GRADE)
   B. 5'-0" COVER & 2'-0" SURCHARGE. (WATER TABLE 4'-0" BELOW FINISHED GRADE)
4. PRECAST VAULT.
   A. CONTRACTOR MAY USE PRECAST VAULTS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
   B. MONOLITHICALLY CASE WALLS AND BASE SLAB.
   C. IF THE BOTTOM SLAB IS NOT SLOPED, PROVIDE MINIMUM 1" THICK CEMENT MORTAR WEARING COURSE SLOP TO SUMP @ 1/4"/LF.
5. PROVIDE ADDITIONAL "N" BARS 6'-0" LONG EACH SIDE OF ALL PIPES PASSING THROUGH WALLS.
6. PROVIDE 5" ø HOLE IN TOP SLAB CENTERED OVER VALVE OPERATING NUTS. PROVIDE VALVE BOXES PER DETAIL W/5.5.
7. SLOPE BASE OF VAULT TO DRAIN @ 1/4"LF.
8. PROVIDE ADDITIONAL. "M" BARS x 6'-0" LONG TOP & BOTTOM OF ALL PIPES PASSING THRU WALL.
9. FOR SUMP SEE DETAILS W/2.4 AND W/2.4a.
10. FOR PIPING AND VALVE CONFIGURATION AND ADDITIONAL DETAILS, SEE DETAILS W/2.4 AND W/2.4a.
11. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, PROVIDE PIPE OPENING LARGE ENOUGH TO ALLOW FLANGE OR BELL JOINT TO PASS THROUGH.

VALVE SIZE	t_1	t_2	t_3	"P"	"R"	"S"
16"	8"	8"	8"	7'-0"	11'-0"	3'-6"
20"	8"	8"	8"	7'-0"	11'-0"	3'-6"
24"	8"	8"	8"	7'-0"	12'-0"	4'-0"

REINFORCING BAR SIZES

VALVE SIZE	"h"	"i"	"M"	"N"	"O"
16"	#4@12"	#4@12"	#5@12"	#5@8"	#6@8"
20"	#4@12"	#4@12"	#5@12"	#5@8"	#6@8"
24"	#4@12"	#4@12"	#5@12"	#5@8"	#6@8"

WASHINGTON SUBURBAN SANITARY COMMISSION

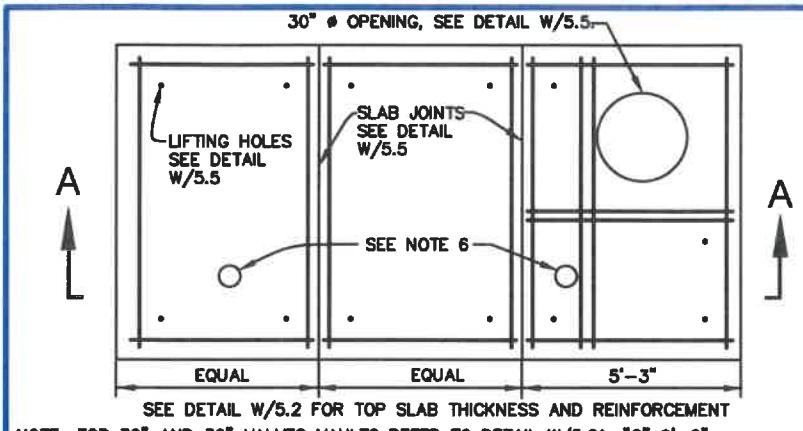
APPROVED: 7-26-21

Mike Harmon
Chief Engineer

STANDARD DETAIL

CAST IN PLACE CONCRETE VAULT FOR 16-INCH, 20-INCH, AND 24-INCH HORIZONTAL VALVES

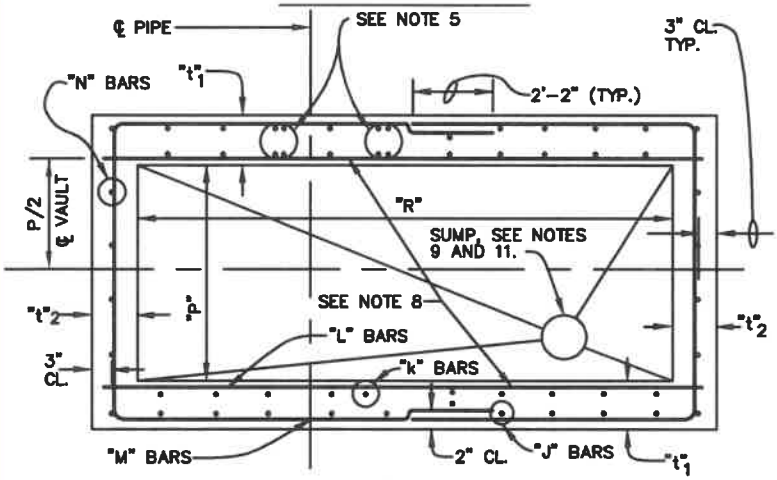
W / 2.5



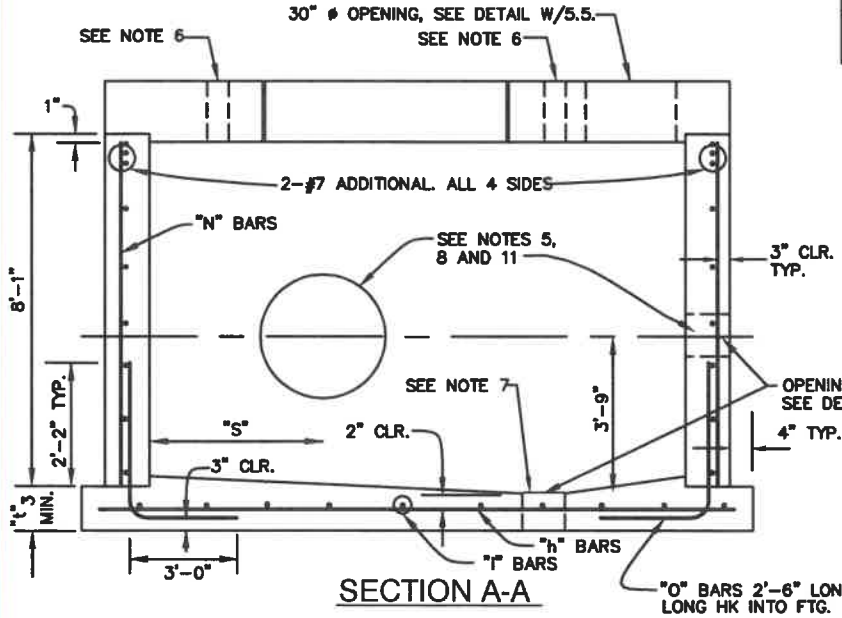
SEE DETAIL W/5.2 FOR TOP SLAB THICKNESS AND REINFORCEMENT

NOTE: FOR 30" AND 36" VALVES VAULTS REFER TO DETAIL W/5.21, "Q" 9'-0", THICKNESS AND REINFORCING

TOP SLAB-PLAN



PLAN-TOP SLAB REMOVED



SECTION A-A

CAST IN PLACE CONCRETE VAULT NOTES

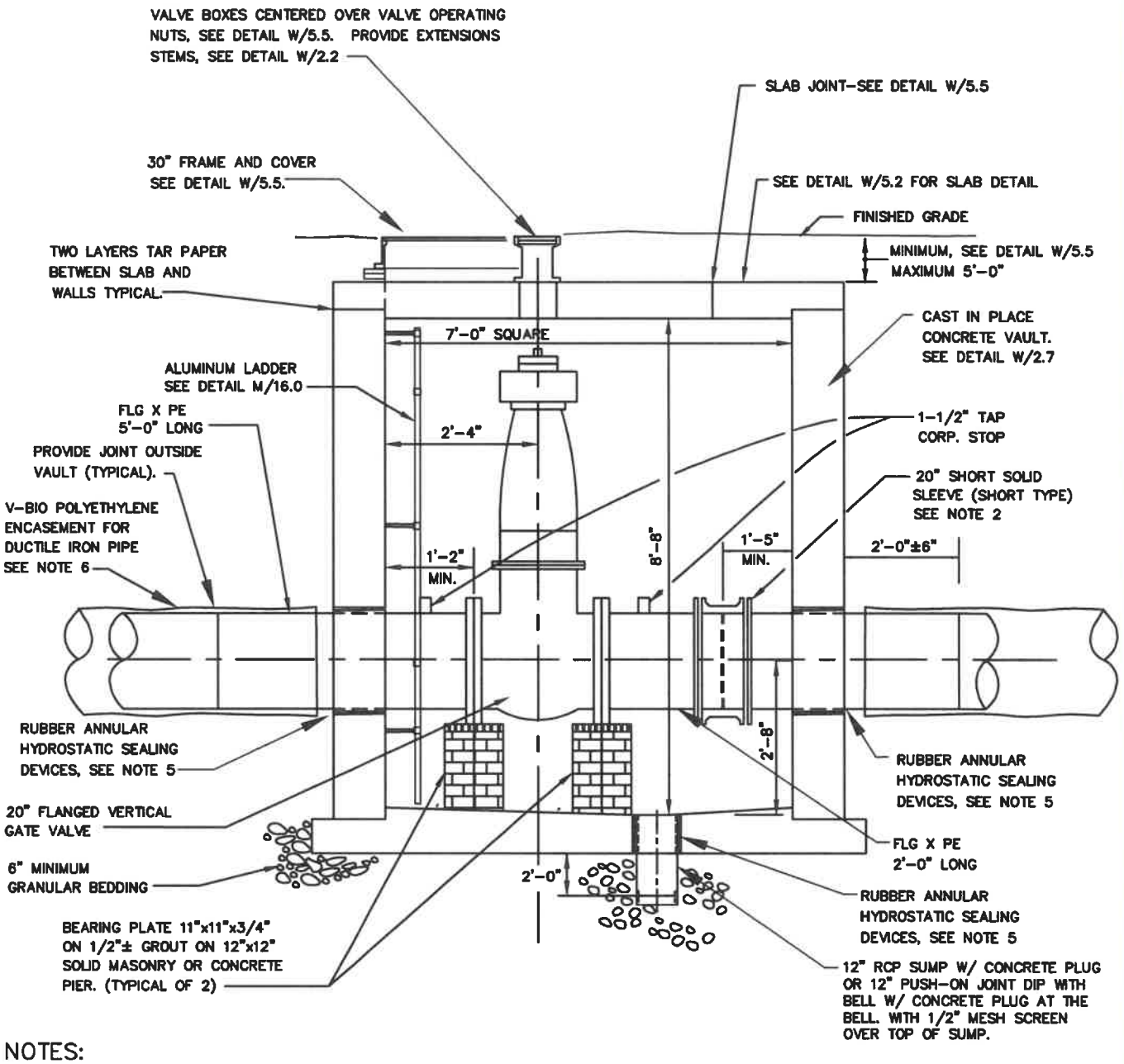
1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. VAULTS ARE DESIGNED FOR THE FOLLOWING CONDITIONS
   A. H20 LOADING & 1'-0" COVER + IMPACT (WATER TABLE 4'-0" BELOW FINISHED GRADE)
   B. 5'-0" COVER & 2'-0" SURCHARGE. (WATER TABLE 4'-0" BELOW FINISHED GRADE)
4. PRECAST VAULT.
   A. CONTRACTOR MAY USE PRECAST VAULTS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
   B. MONOLITHICALLY CASE WALLS AND BASE SLAB.
   C. IF THE BOTTOM SLAB IS NOT SLOPED, PROVIDE MINIMUM 1" THICK CEMENT MORTAR WEARING COURSE SLOP TO SUMP @ 1/4"/LF.
5. PROVIDE ADDITIONAL "N" BARS 6'-0" LONG EACH SIDE OF ALL PIPES PASSING THROUGH WALLS.
6. PROVIDE 5" ø HOLE IN TOP SLAB CENTERED OVER VALVE OPERATING NUTS. PROVIDE VALVE BOXES PER DETAIL W/5.5.
7. SLOPE BASE OF VAULT TO DRAIN @ 1/4"LF.
8. PROVIDE ADDITIONAL. "M" BARS x 6'-0" LONG TOP & BOTTOM OF ALL PIPES PASSING THRU WALL.
9. FOR SUMP SEE DETAILS W/2.4 AND W/2.4a.
10. FOR PIPING AND VALVE CONFIGURATION AND ADDITIONAL DETAILS, SEE DETAILS W/2.4 AND W/2.4a.
11. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, PROVIDE PIPE OPENING LARGE ENOUGH TO ALLOW FLANGE OR BELL JOINT TO PASS THROUGH.

VALVE SIZE	t_1	t_2	t_3	"P"	"R"	"S"
30"	10"	8"	8"	8'-6"	14'-0"	4'-6"
36"	12"	8"	8"	8'-6"	16'-0"	5'-0"

REINFORCING BAR SIZES				
VALVE SIZE	"h"	"I"	"J"	"K"
30"	#4@12"	#5@5"	#5@7"	#4@12"
36"	#4@12"	#5@5"	#5@8"	#4@10"

REINFORCING BAR SIZES				
VALVE SIZE	"L"	"M"	"N"	"O"
30"	#4@10"	#5@7"	#5@7"	#5@7"
36"	#4@12"	#5@8"	#5@8"	#5@8"

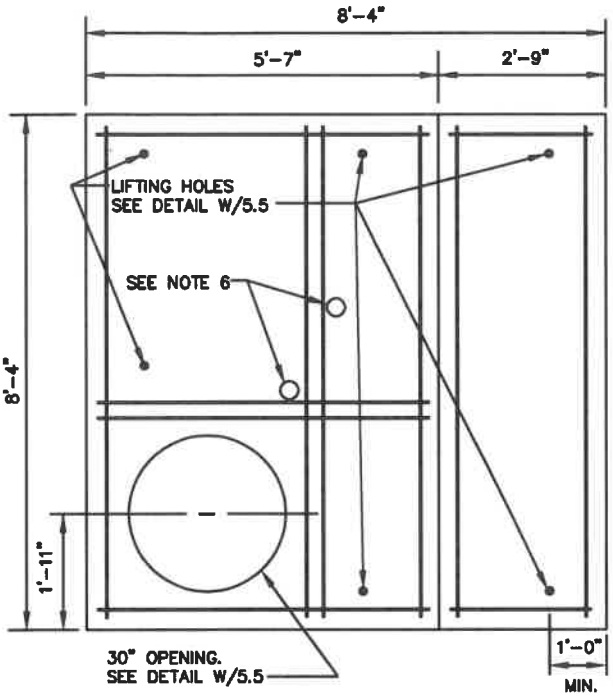
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE VAULT FOR 30-INCH AND 36-INCH HORIZONTAL VALVES	W 2.5a



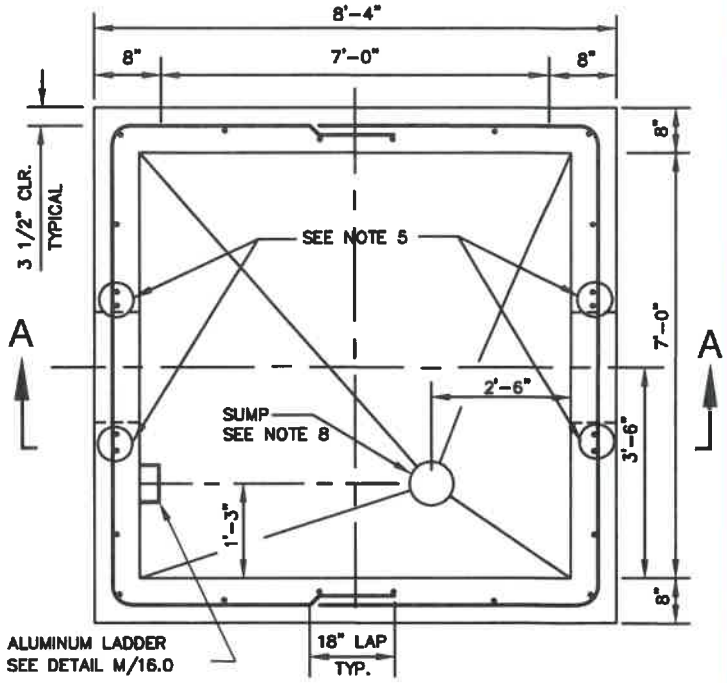
NOTES:

1. THIS VALVE VAULT IS NOT FOR ELECTRICALLY OPERATED VALVES.
2. PROVIDE SHORT TYPE MJ SOLID SLEEVE WITH WEDGE ACTION RESTRAINED JOINTS, SEE SPECIFICATIONS. TOLERANCE BETWEEN SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
3. PROVIDE FLANGE BOLT END PROTECTION FOR ALL FLANGED JOINTS IN VAULTS, SEE SPECIFICATIONS.
4. FOR STRUCTURAL DETAILS SEE DETAIL W/2.7.
5. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS PROVIDE PIPE OPENING LARGE ENOUGH TO ALLOW FLANGE OR BELL JOINT TO PASS THROUGH.
6. SEE DETAIL W/2.8 FOR POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE.

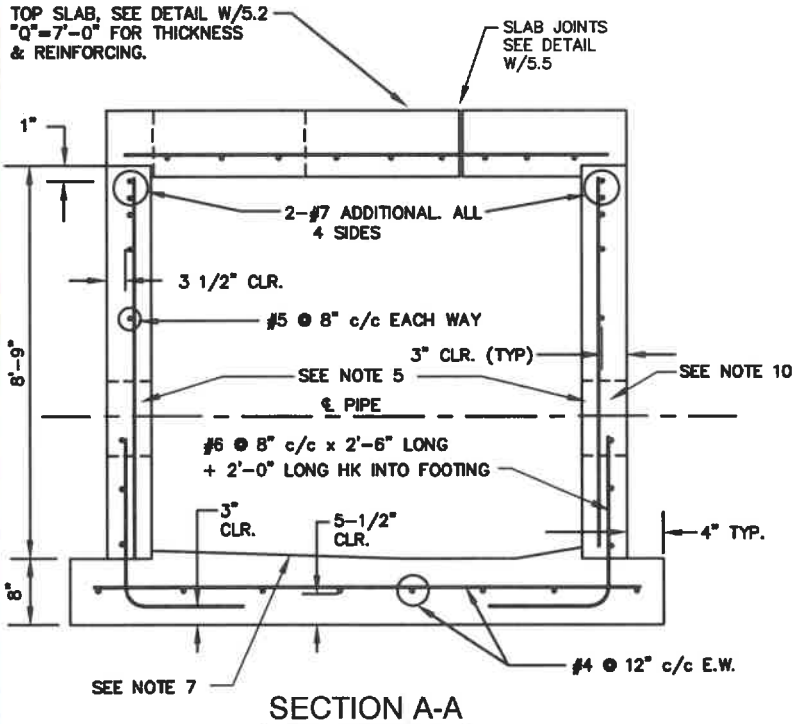
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hoornstra Chief Engineer	STANDARD DETAIL 16-INCH AND 20-INCH VERTICAL VALVES INSTALLATION	W 2.6



PLAN-TOP SLAB



PLAN-TOP SLAB REMOVED

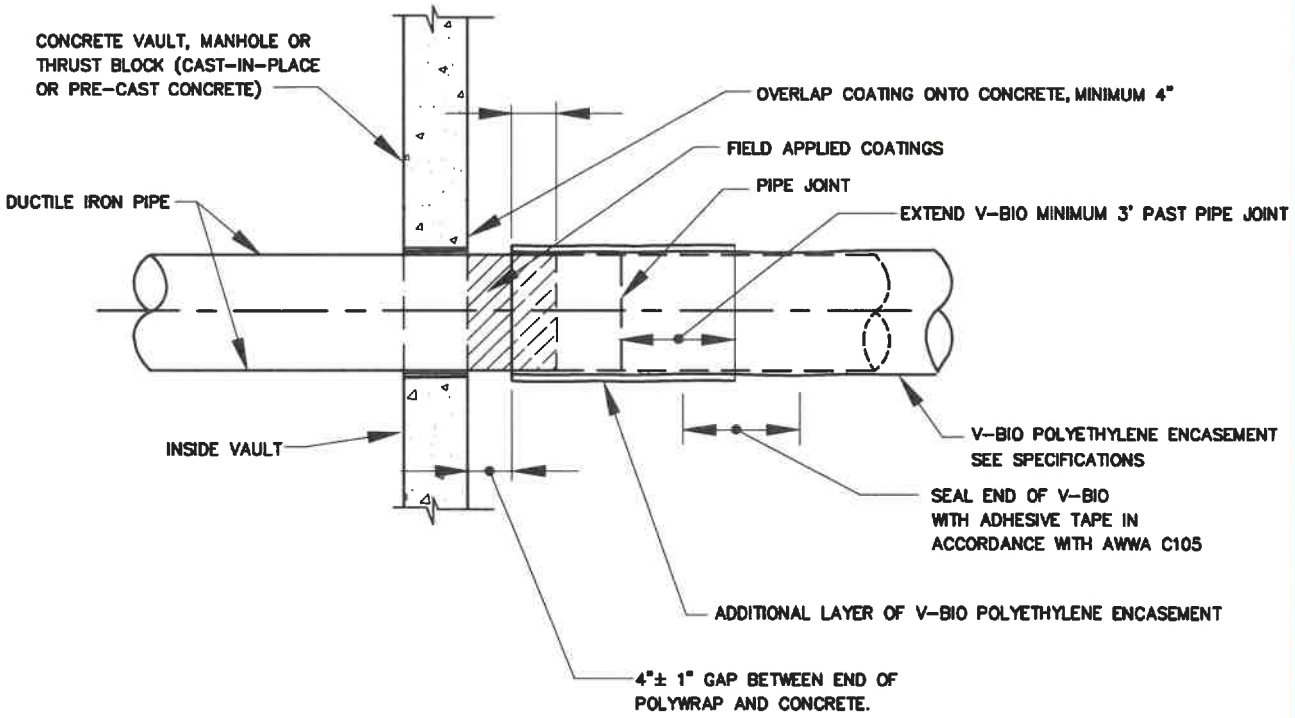


SECTION A-A

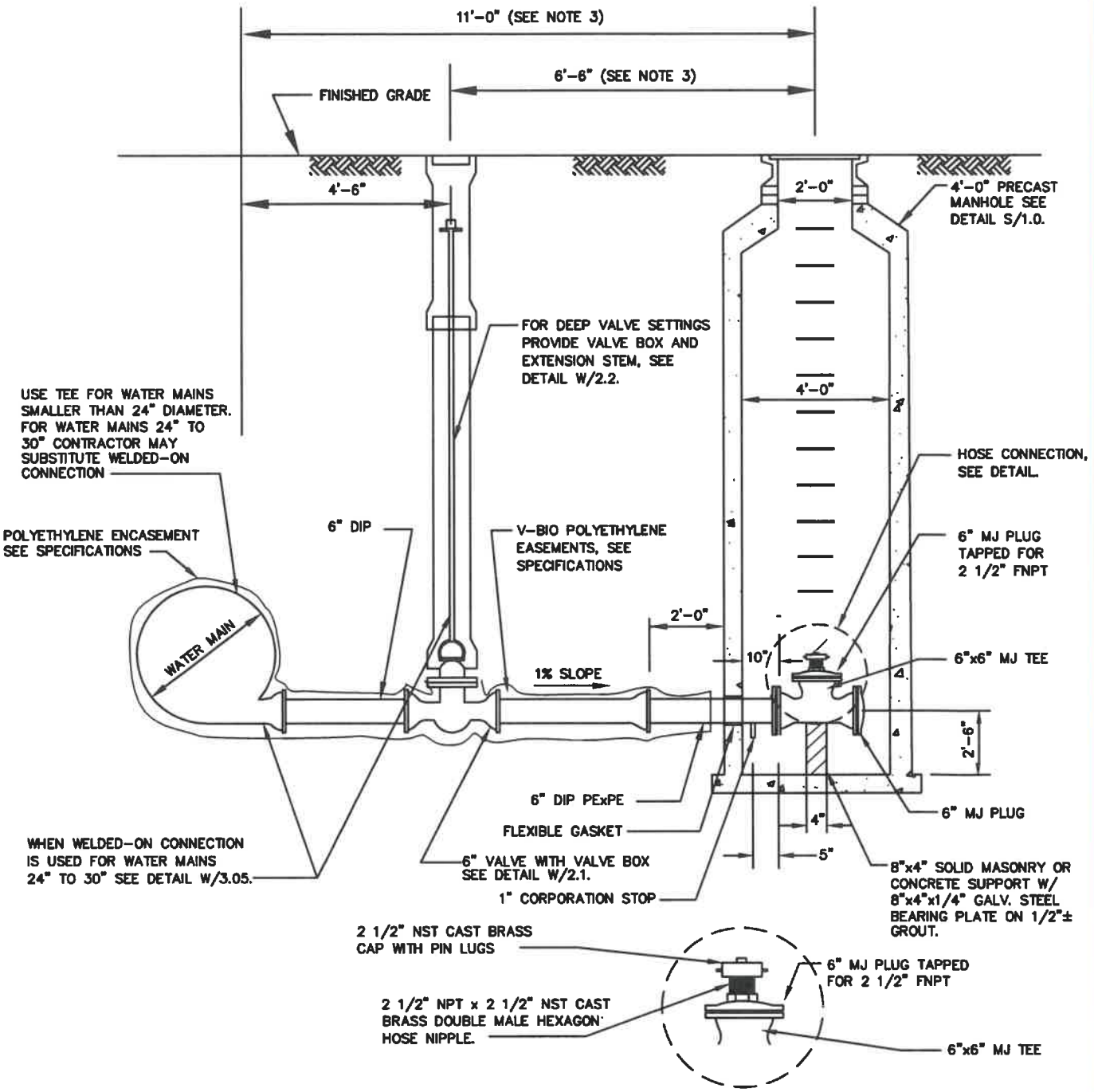
CAST IN PLACE CONCRETE VAULT NOTES

1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. VAULTS ARE DESIGNED FOR THE FOLLOWING CONDITIONS
   A. H20 LOADING & 1'-0" COVER + IMPACT (WATER TABLE 4'-0" BELOW FINISHED GRADE)
   B. 5'-0" COVER & 2'-0" SURCHARGE. (WATER TABLE 4'-0" BELOW FINISHED GRADE)
4. PRECAST VAULT.
   A. CONTRACTOR MAY USE PRECAST VAULTS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
   B. MONOLITHICALLY CASE WALLS AND BASE SLAB.
   C. IF THE BOTTOM SLAB IS NOT SLOPED, PROVIDE MINIMUM 1" THICK CEMENT MORTAR WEARING COURSE SLOP TO SUMP @ 1/4"/LF.
5. PROVIDE ADDITIONAL #5 BAR 5'-0" LONG ON ALL SIDES OF ALL PIPES PASSING THROUGH WALLS.
6. PROVIDE 5" ø HOLE IN TOP SLAB CENTERED OVER VALVE OPERATING NUTS. PROVIDE VALVE BOXES PER DETAIL W/5.5.
7. SLOPE BASE OF VAULT TO DRAIN @ 1/4"LF.
8. FOR SUMP SEE DETAIL W/2.6.
9. FOR PIPING AND VALVE CONFIGURATION AND ADDITIONAL DETAILS, SEE DETAIL W/2.6
10. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmen Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE VAULT FOR 16-INCH AND 20-INCH VERTICAL VALVES	W 2.7



WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Harmuch Chief Engineer	STANDARD DETAIL V-BIO POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE	W / 2.8

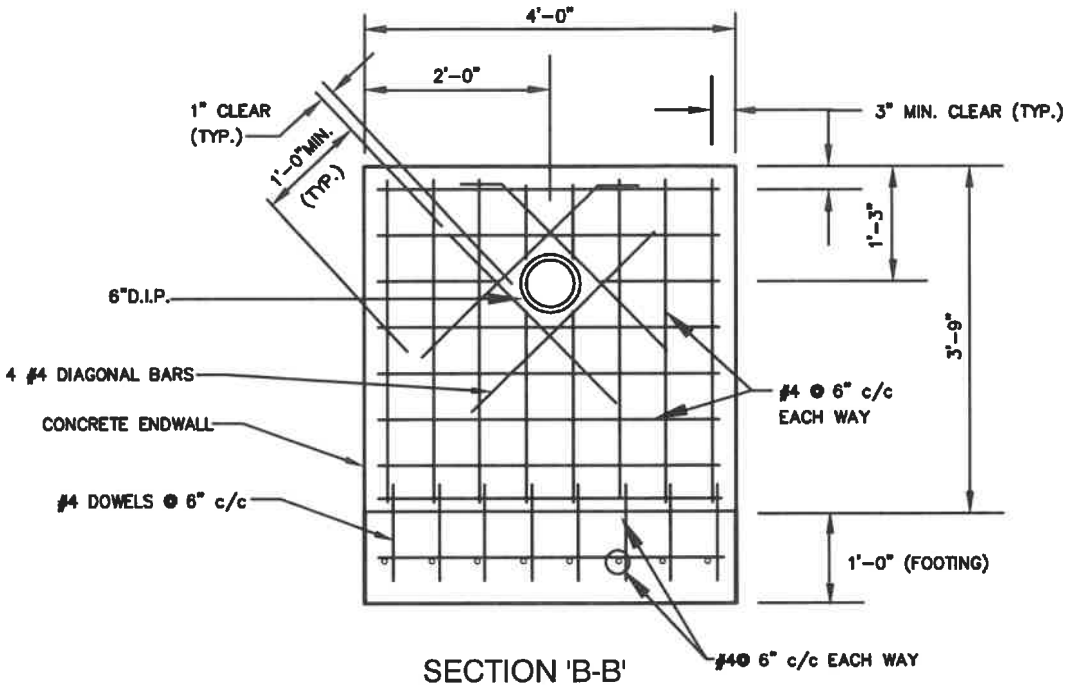


HOSE CONNECTION DETAIL

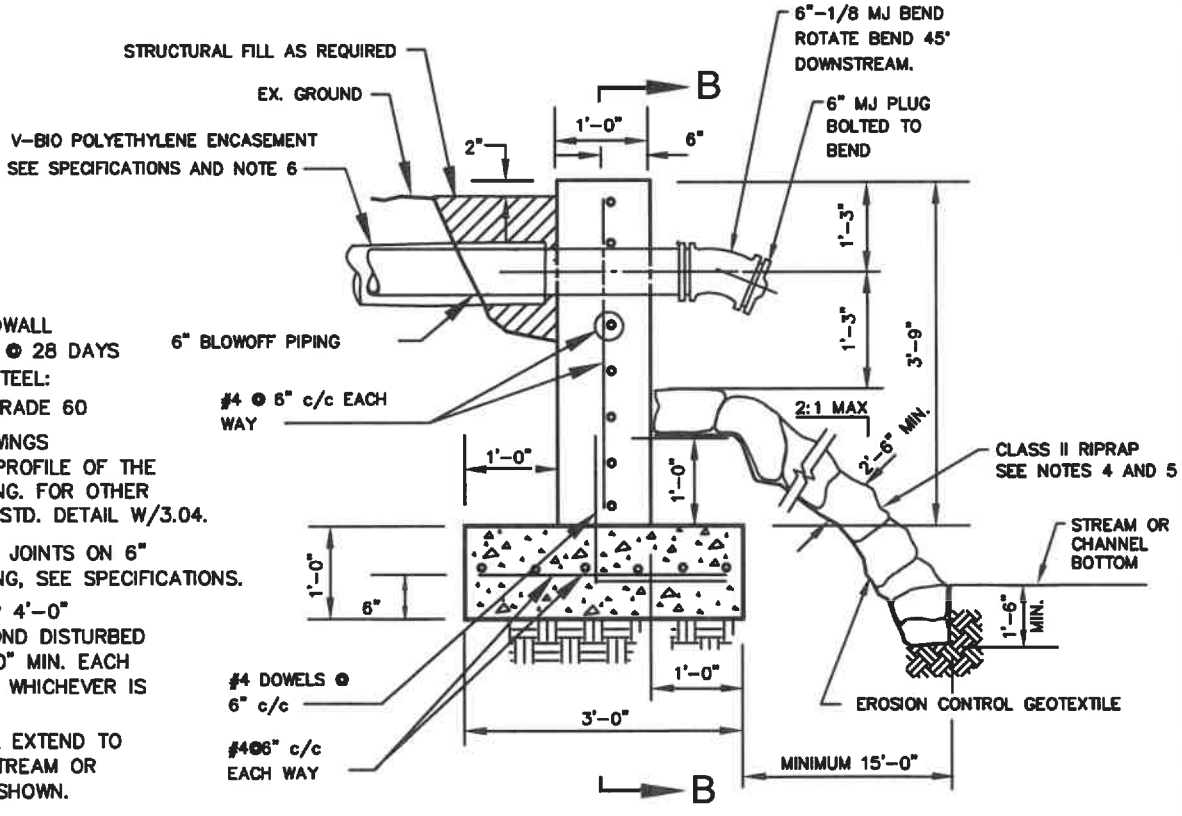
NOTES:

1. RESTRAIN ALL JOINTS ON 6" BLOWOFF PIPING, SEE SPECIFICATIONS.
2. SET VALVE BOX AND MANHOLE RIM TO FINISHED GRADE OR AS SHOWN ON THE DRAWINGS.
3. MANHOLE SHALL BE LOCATED AS SHOWN UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
4. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT MANHOLE INTERFACE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL TYPE "A" BLOWOFF FOR WATER MAINS 16-INCH TO 30-INCH	W 3.0



SECTION 'B-B'

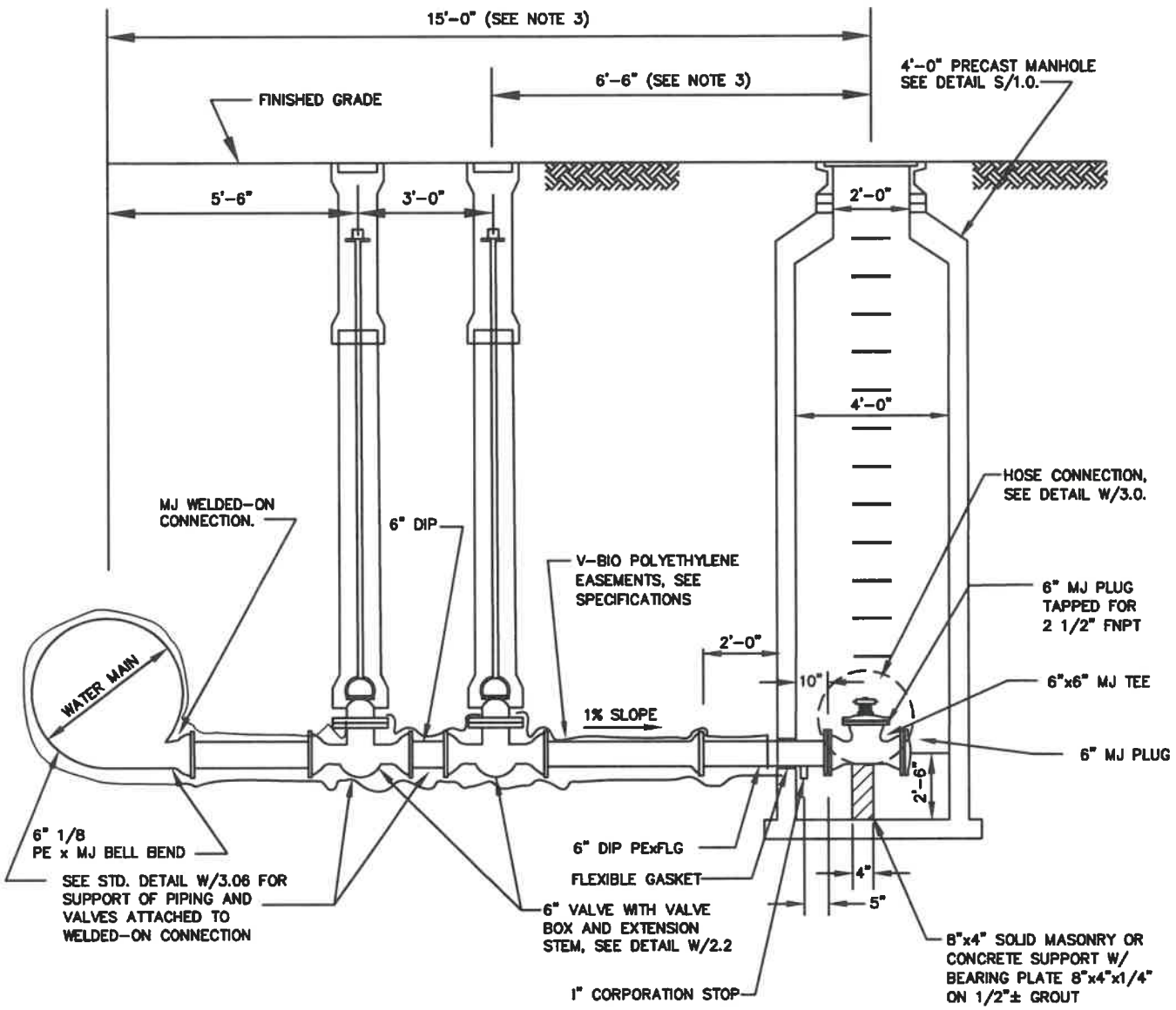


ELEVATION

NOTES:

1. CONCRETE ENDWALL F'c 4,000 PSI @ 28 DAYS REINFORCED STEEL: ASTM A615, GRADE 60
2. SEE THE DRAWINGS FOR ACTUAL PROFILE OF THE BLOWOFF PIPING. FOR OTHER DETAILS, SEE STD. DETAIL W/3.04.
3. RESTRAIN ALL JOINTS ON 6" BLOWOFF PIPING, SEE SPECIFICATIONS.
4. PLACE RIPRAP 4'-0" MINIMUM BEYOND DISTURBED AREA OR 6'-0" MIN. EACH SIDE OF PIPE, WHICHEVER IS GREATER.
5. RIPRAP SHALL EXTEND TO BOTTOM OF STREAM OR CHANNEL AS SHOWN.
6. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT END WALL INTERFACE.

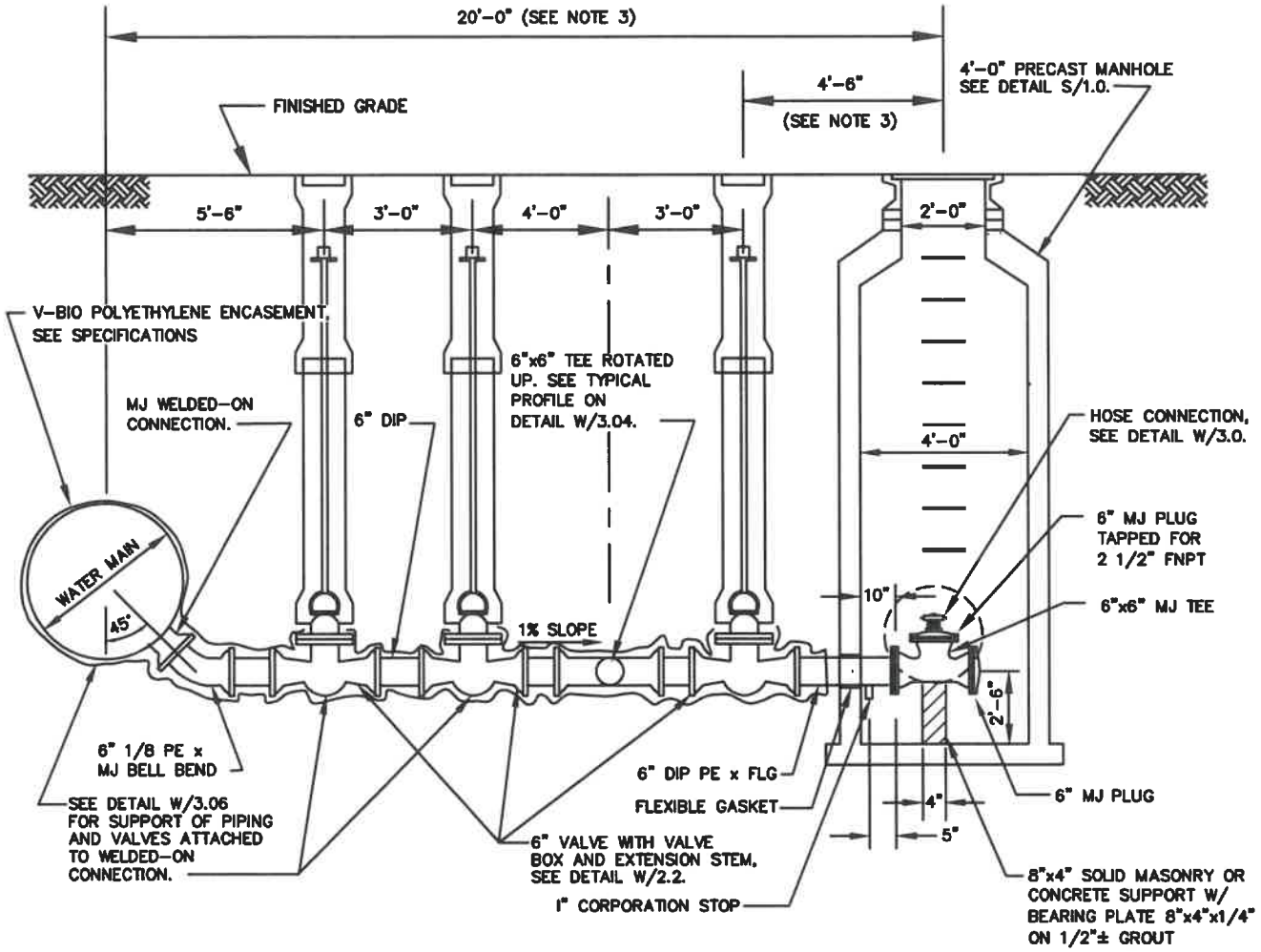
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL ENDWALL FOR TYPE "B" BLOWOFF	W 3.01



NOTES:

1. RESTRAIN ALL JOINTS ON 6" BLOWOFF PIPING, SEE SPECIFICATIONS
2. SET VALVE BOX AND MANHOLE RIM TO FINISHED GRADE OR AS SHOWN ON THE DRAWINGS.
3. MANHOLE SHALL BE LOCATED AS SHOWN UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
4. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT MANHOLE INTERFACE.

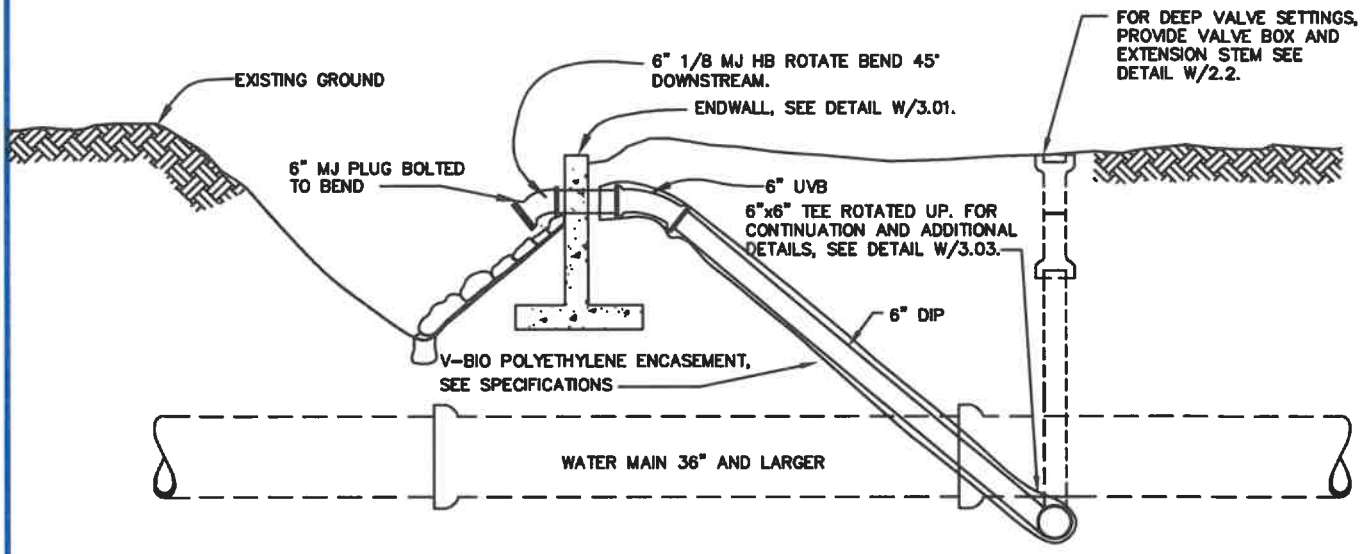
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Hannum Chief Engineer	STANDARD DETAIL TYPE "A" BLOWOFF FOR WATER MAINS 36-INCH AND LARGER	W 3.02



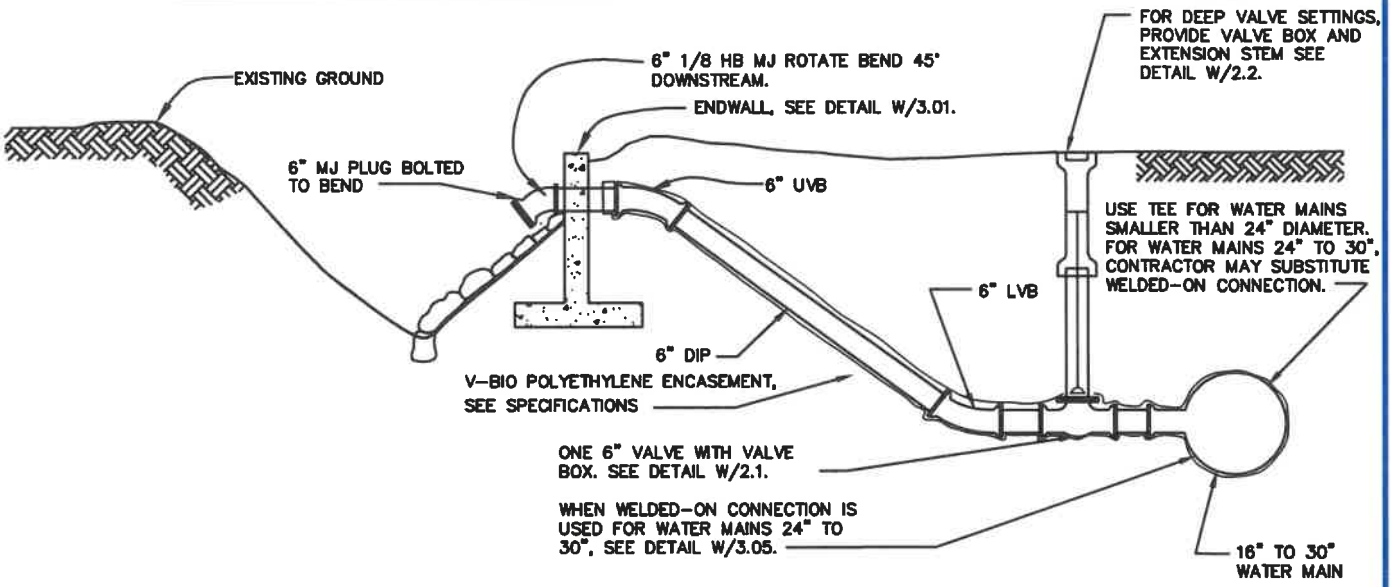
NOTES:

1. RESTRAIN ALL JOINTS ON 6" BLOWOFF PIPING, SEE SPECIFICATIONS.
2. SET VALVE BOX AND MANHOLE RIM TO FINISHED GRADE OR AS SHOWN ON THE DRAWINGS.
3. MANHOLE SHALL BE LOCATED AS SHOWN UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
4. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT MANHOLE INTERFACE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 5-26-21 Mike Harmuth Chief Engineer	STANDARD DETAIL TYPE "B" BLOWOFF FOR WATER MAINS 36-INCH AND LARGER	W 3.03



TYPICAL PROFILE FOR TYPE "B" BLOWOFF FOR MAINS 36" AND LARGER

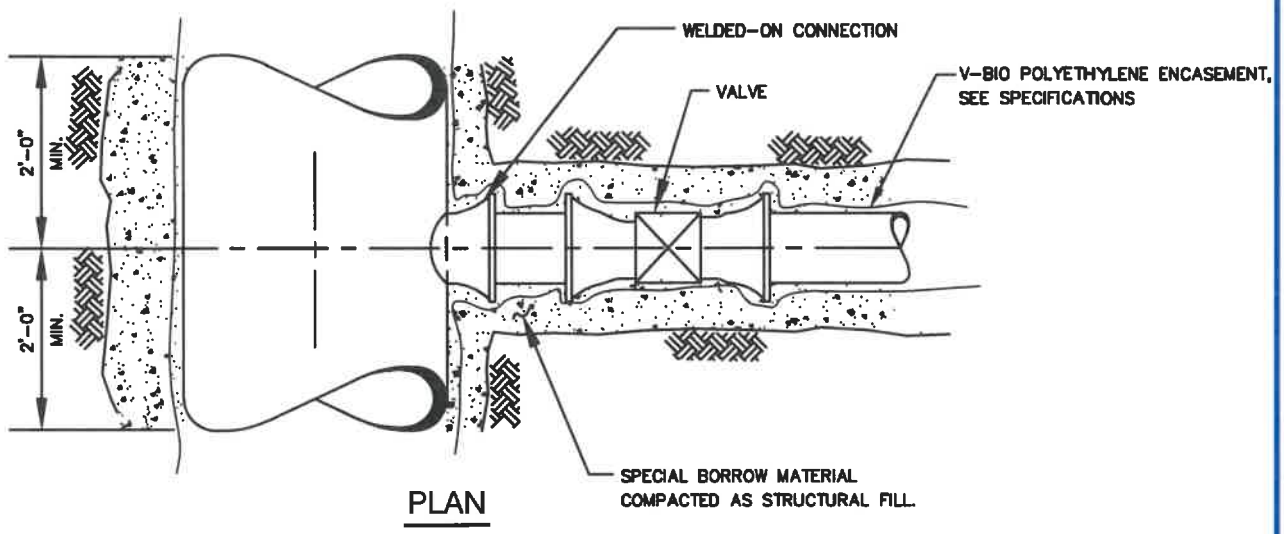


TYPICAL PROFILE FOR TYPE "B" BLOWOFF FOR MAINS 16" TO 30"

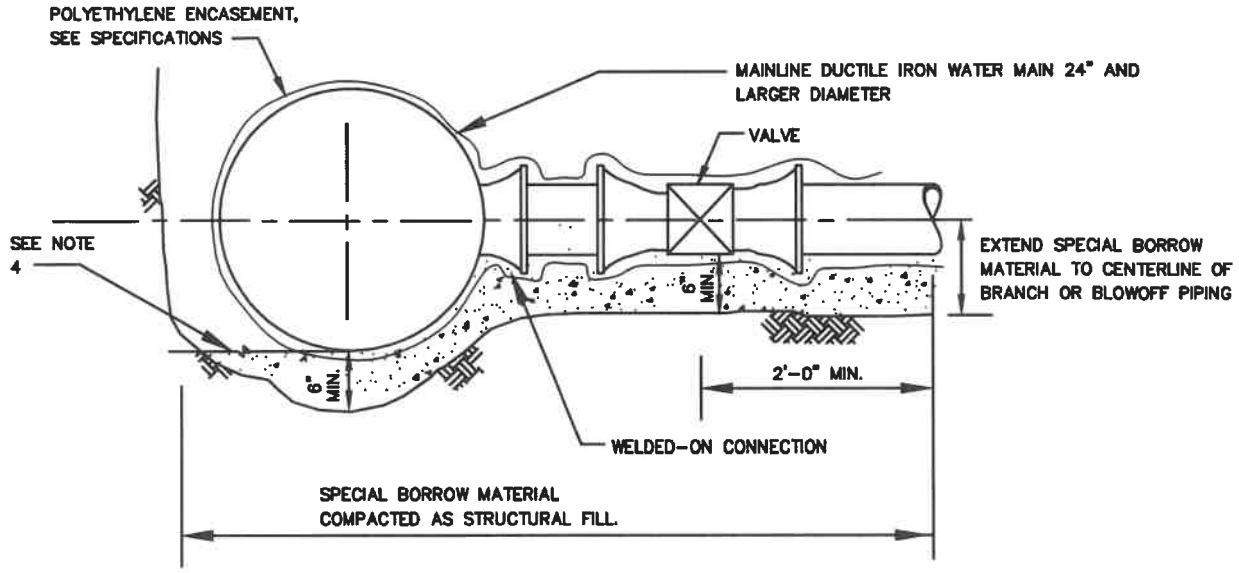
NOTES:

1. THESE ARE TYPICAL PROFILES ONLY. FOR ACTUAL ELEVATIONS AND LOCATIONS OF FITTINGS, SEE DRAWINGS.
2. RESTRAIN ALL JOINTS ON 6" BLOWOFF PIPING, SEE SPECIFICATIONS.
3. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT ENDWALL INTERFACE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Michael Harmon Chief Engineer	STANDARD DETAIL TYPE "B" BLOWOFF PROFILES FOR WATER MAINS 16-INCH AND LARGER	W 3.04



PLAN

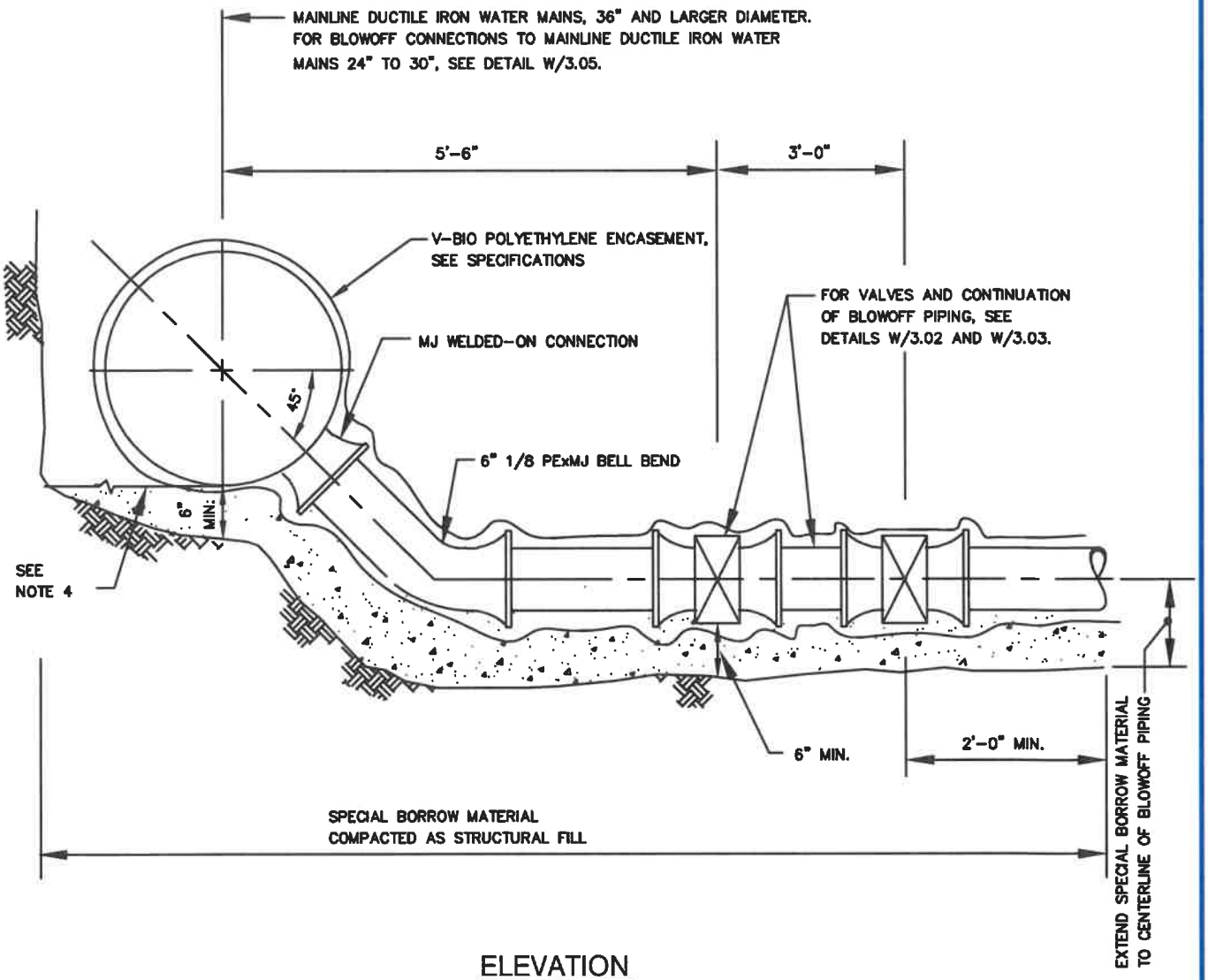


ELEVATION

NOTES:

1. THIS DETAIL SHALL BE USED WHEN WELDED-ON CONNECTIONS ARE PROVIDED FOR WATER MAIN BRANCH CONNECTIONS ON DUCTILE IRON WATER MAINS 24" AND LARGER AND FOR BLOWOFF CONNECTIONS TO WATER MAINS 24" TO 30" INSTALLED ACCORDING TO DETAILS W/3.0 AND W/3.04.
2. DO NOT ATTACH PIPE OR FITTINGS TO THE WELDED-ON CONNECTION UNTIL MAINLINE PIPE WITH THE CONNECTION IS SUPPORTED IN PLACE.
3. SUPPORT ALL PIPING ATTACHED TO THE WELDED-ON CONNECTION IMMEDIATELY AFTER INSTALLATION TO MINIMIZE LOAD TRANSMISSION TO THE CONNECTION.
4. FOR PIPE EMBEDMENT REQUIREMENTS FOR MAINLINE PIPE, SEE DETAIL M/8.1a AND M/8.1b.
5. RESTRAIN VALVE TO THE WELDED-ON CONNECTION, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL PIPING SUPPORT AT WELDED-ON CONNECTION	W 3.05

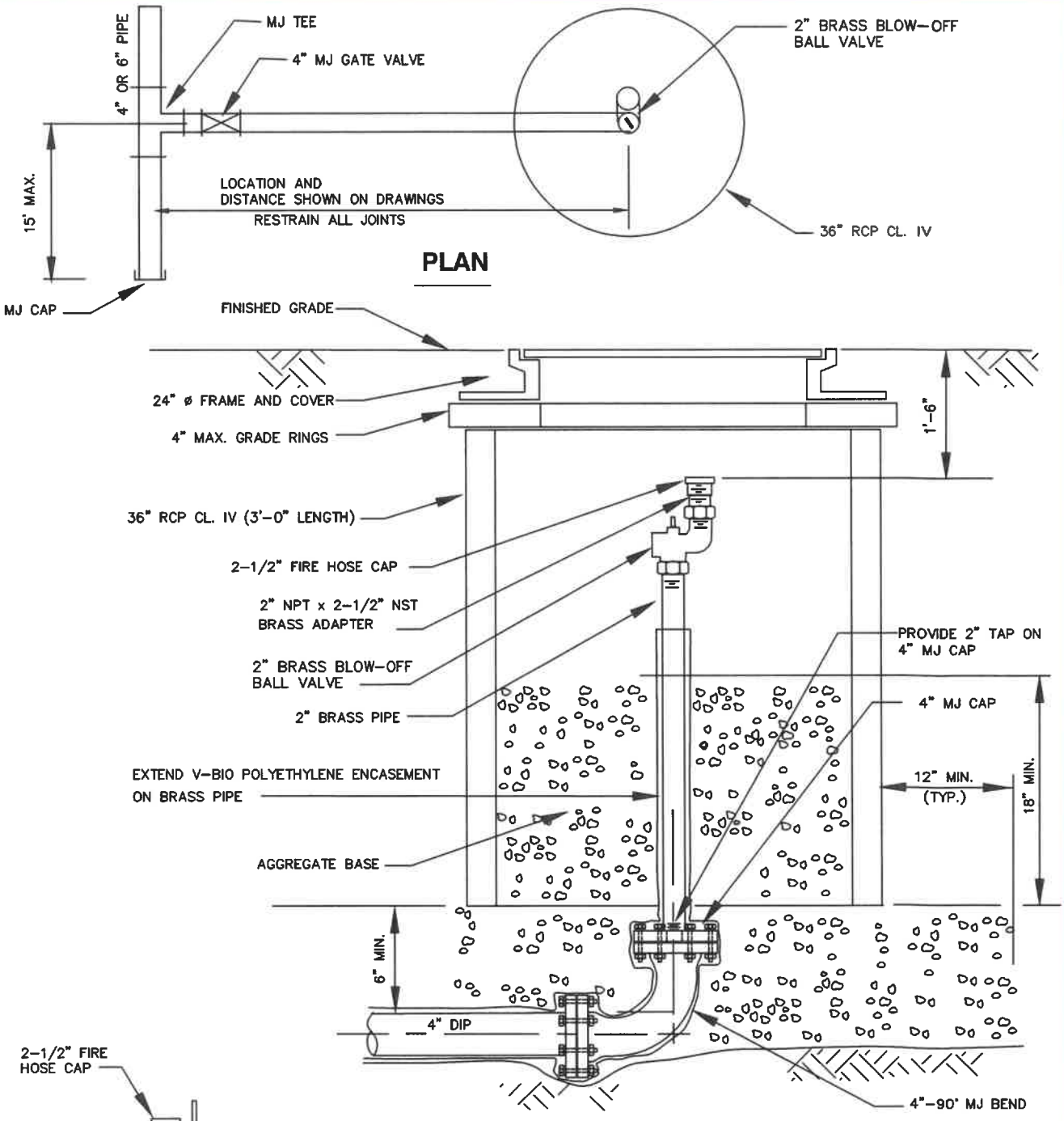


ELEVATION

NOTES:

1. DO NOT ATTACH PIPE OR FITTINGS TO THE WELDED-ON CONNECTION UNTIL MAINLINE PIPE WITH THE CONNECTION IS SUPPORTED IN PLACE.
2. SUPPORT ALL PIPING ATTACHED TO THE WELDED-ON CONNECTION IMMEDIATELY AFTER INSTALLATION TO MINIMIZE LOAD TRANSMISSION TO THE CONNECTION.
3. RESTRAIN ALL JOINTS ON BLOWOFF PIPING, SEE SPECIFICATIONS.
4. FOR PIPE EMBEDMENT REQUIREMENTS FOR MAINLINE PIPE, SEE DETAIL M/8.1a AND M/8.1b.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL WELDED-ON CONNECTION FOR BLOWOFFS ON MAINS 36-INCH AND LARGER	W 3.06

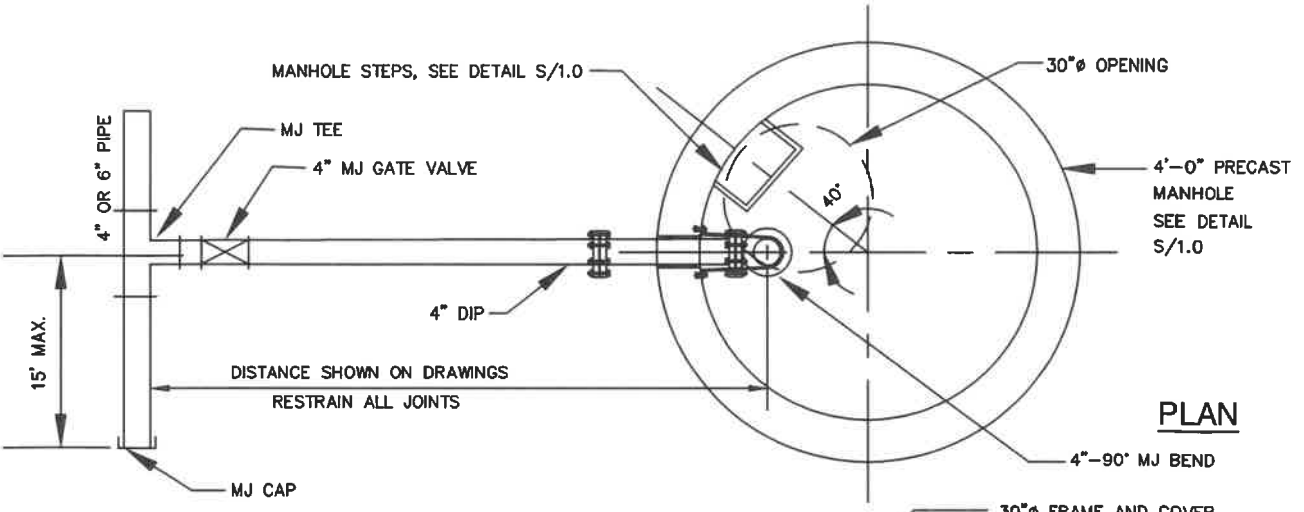


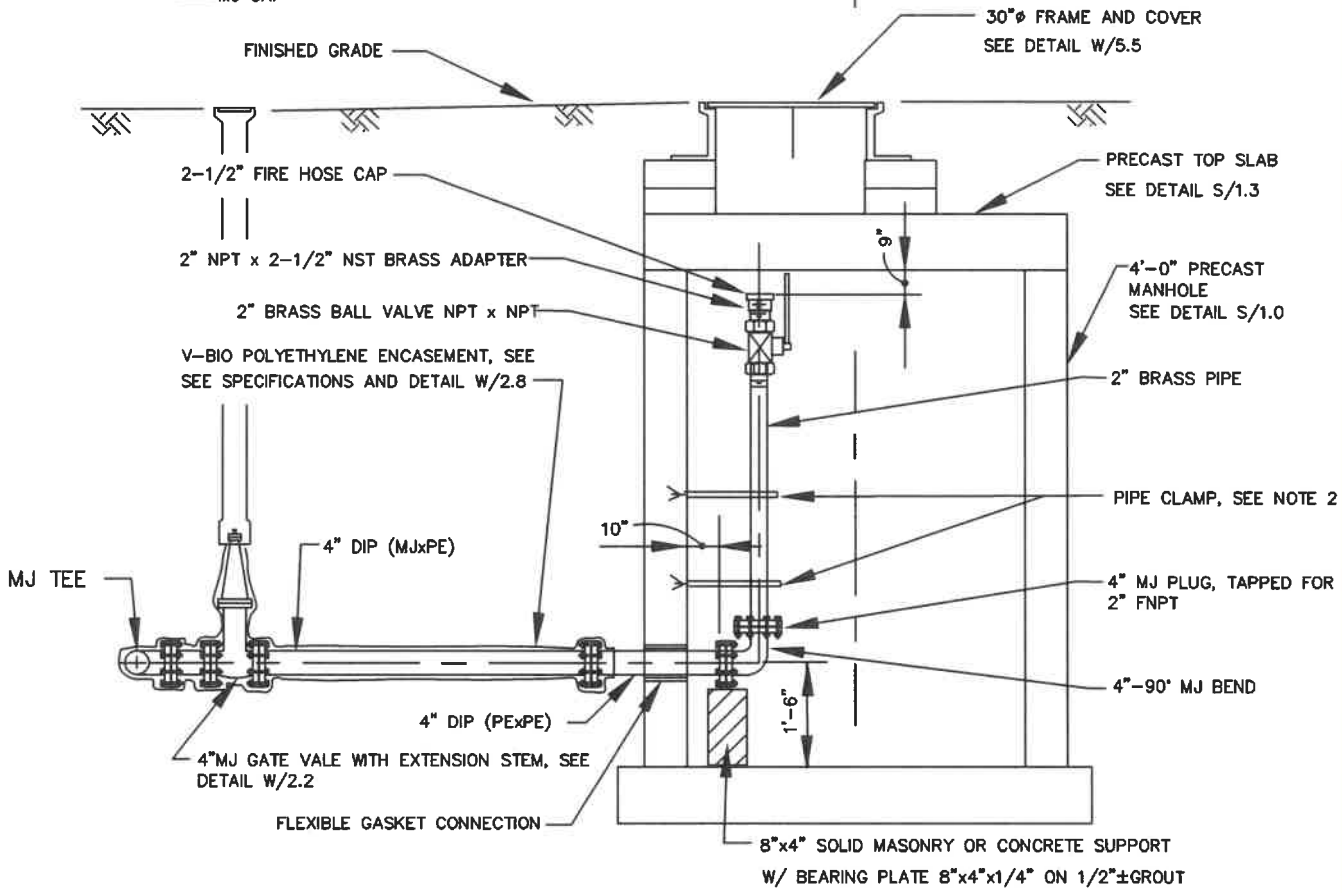
ALTERNATE BLOW-OFF VALVE

NOTES:

1. BLOW-OFF SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Harmon Chief Engineer	STANDARD DETAIL BLOW-OFF CONNECTION IN NON-TRAFFIC AREAS FOR 4-INCH AND 6-INCH WATER MAINS	W 3.07



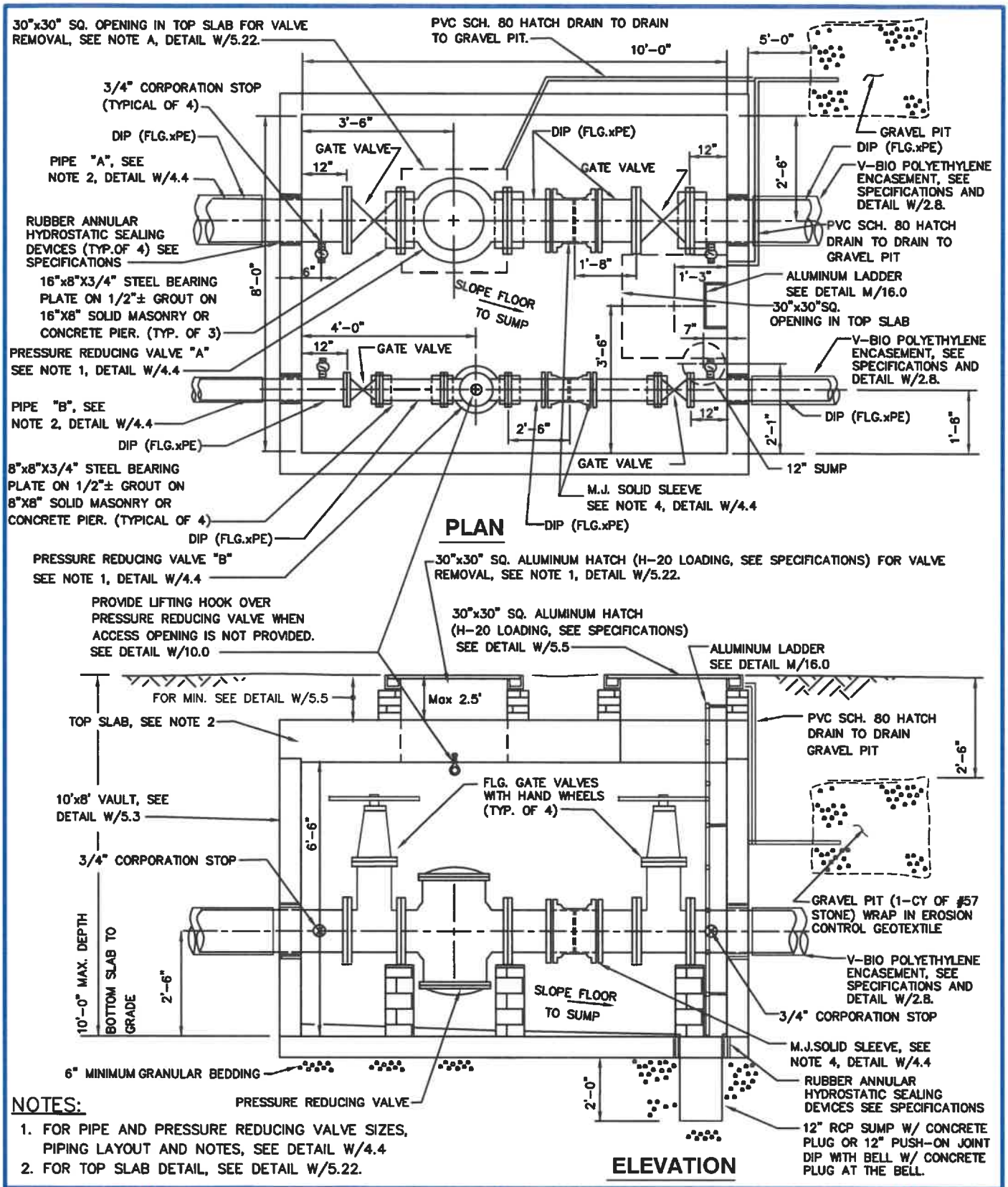


ELEVATION

NOTES:

1. BLOW-OFF SETTINGS FOR TRAFFIC AREAS
2. 1-1/2" WIDE, 11 GAUGE STAINLESS STEEL ADJUSTABLE CLAMPING BRACKET AT 2 FEET MAX. SPACING. ANCHORED WITH 3/8" STAINLESS STEEL EXPANSION BOLTS.

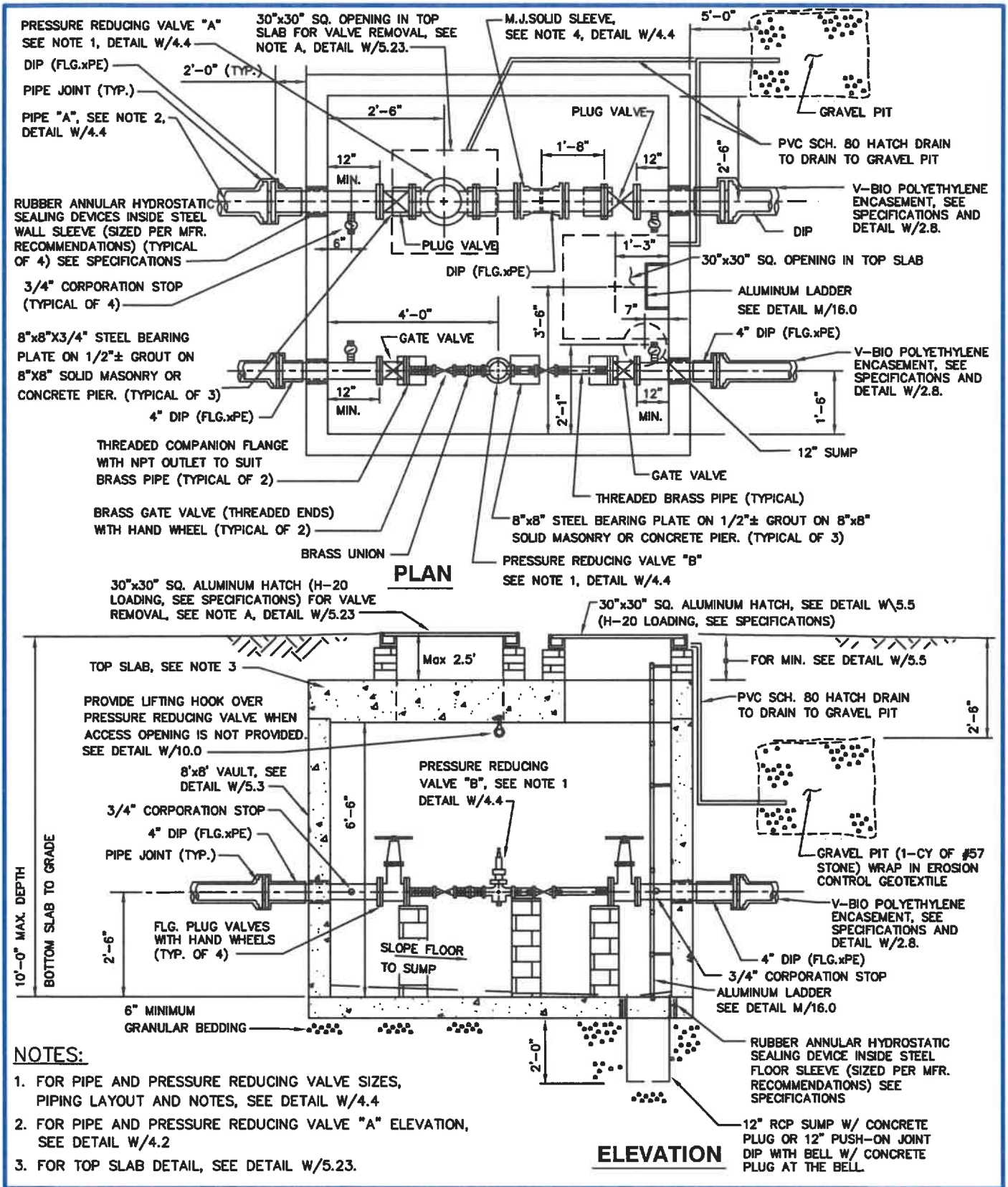
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmuth Chief Engineer	STANDARD DETAIL BLOW-OFF CONNECTION IN TRAFFIC AREAS FOR 4-INCH AND 6-INCH WATER MAINS	W 3.08



NOTES:

1. FOR PIPE AND PRESSURE REDUCING VALVE SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/4.4
2. FOR TOP SLAB DETAIL, SEE DETAIL W/5.22.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Hammer Chief Engineer	STANDARD DETAIL PRESSURE REDUCING VALVE VAULT TYPE "1" LAYOUT	W 4.2



NOTES:

1. FOR PIPE AND PRESSURE REDUCING VALVE SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/4.4
2. FOR PIPE AND PRESSURE REDUCING VALVE "A" ELEVATION, SEE DETAIL W/4.2
3. FOR TOP SLAB DETAIL, SEE DETAIL W/5.23.

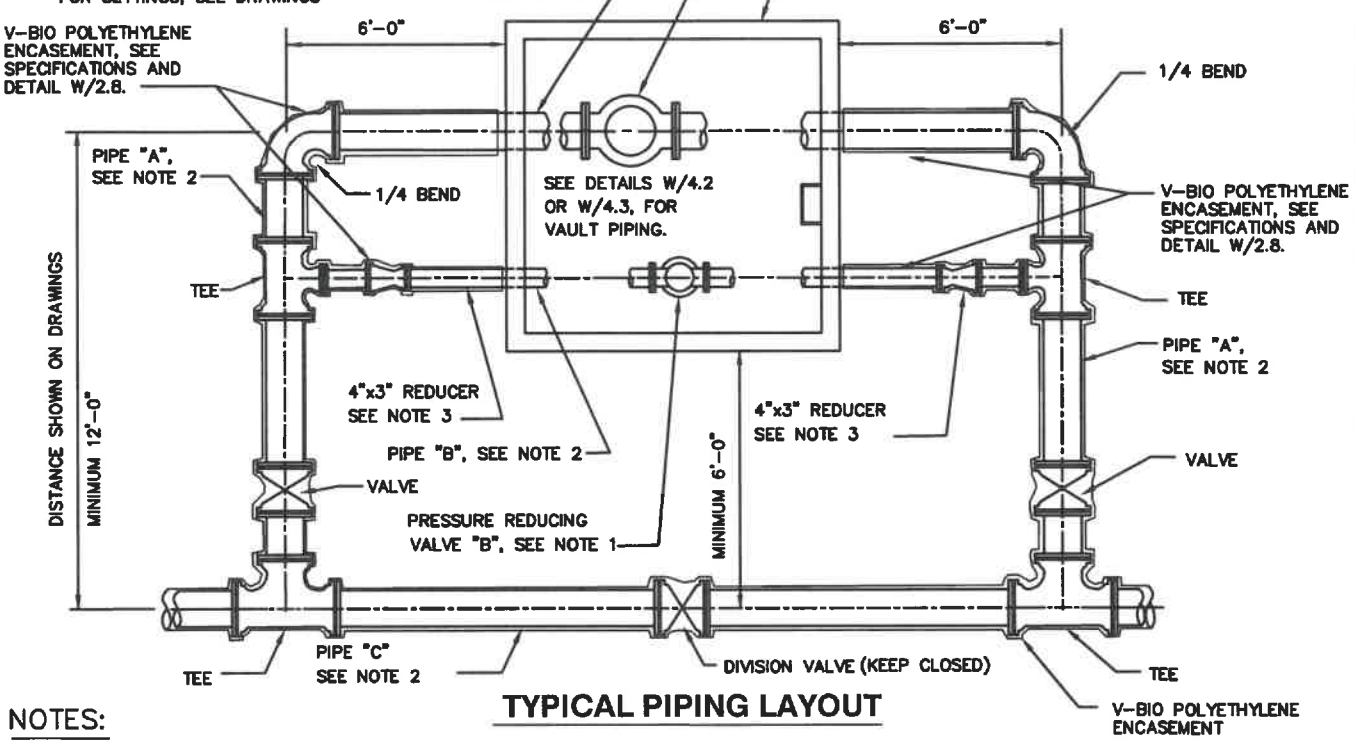
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL PRESSURE REDUCING VALVE VAULT TYPE "2" LAYOUT	W 4.3

LOW PRESSURE SIDE SETTINGS		
"A" PRV ___ PSI	___ LHG	
"B" PRV ___ PSI	___ HHG	
INVERT ELEVATION ___		

FOR SETTINGS, SEE DRAWINGS

HIGH PRESSURE SIDE RANGE		
LOW ___ PSI	___ LHG	
HIGH ___ PSI	___ HHG	

FOR SETTINGS, SEE DRAWINGS

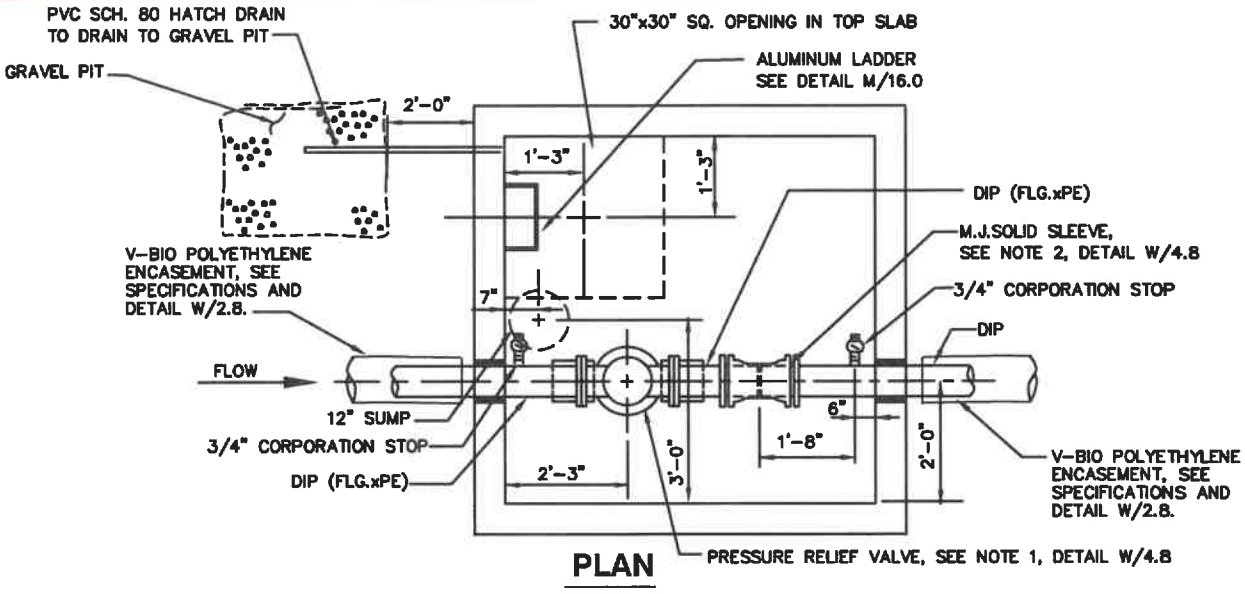


TYPICAL PIPING LAYOUT

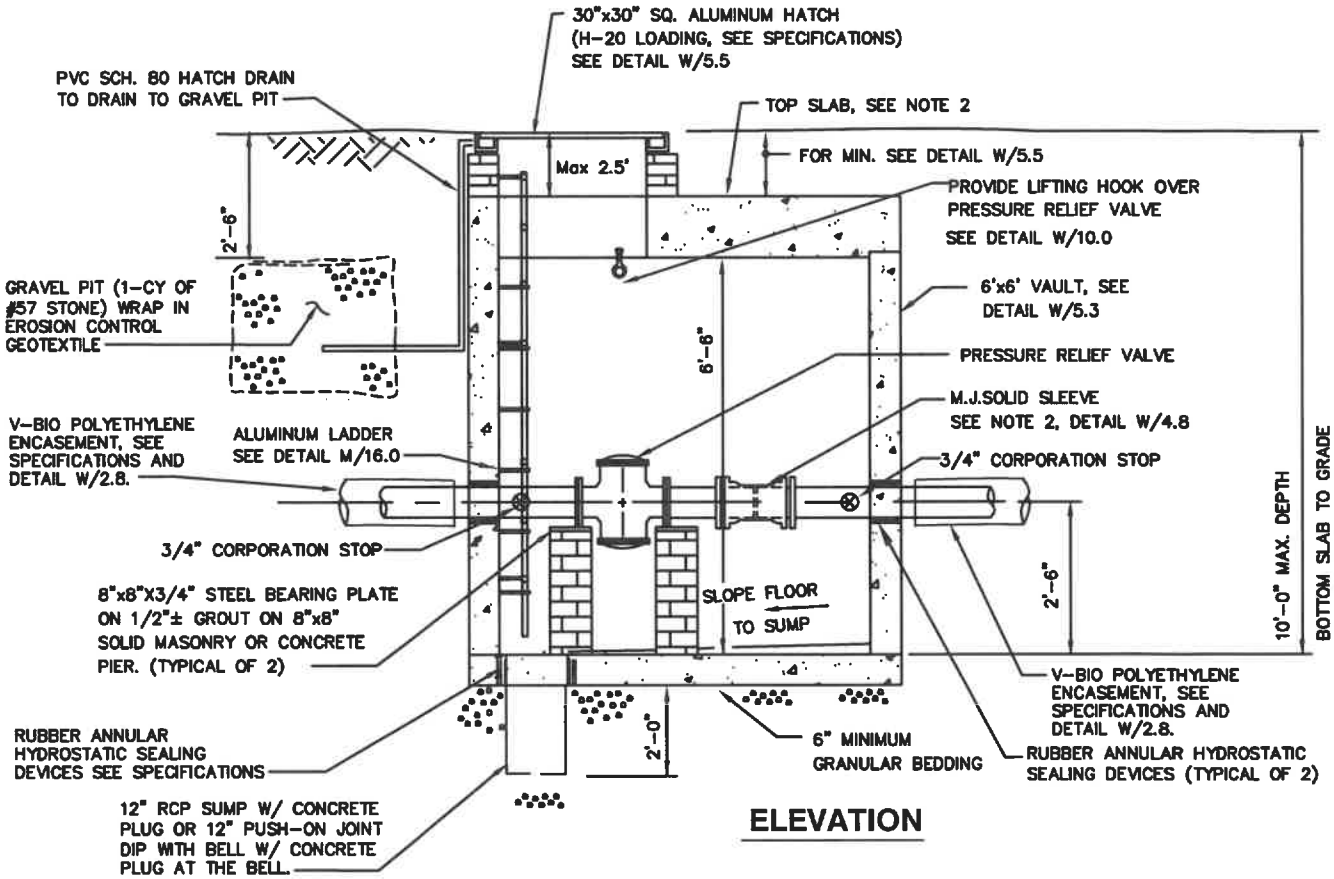
NOTES:

1. PRESSURE REDUCING VALVE "A", AS SHOWN ON DETAIL W/4.2: MAXIMUM DIA. 12", MINIMUM DIA. 4".
   PRESSURE REDUCING VALVE "A", AS SHOWN ON DETAIL W/4.3: MAXIMUM DIA. 6", MINIMUM DIA. 4".
   PRESSURE REDUCING VALVE "B", AS SHOWN ON DETAIL W/4.2: MAXIMUM DIA. 6", MINIMUM DIA. 3".
   PRESSURE REDUCING VALVE "B", AS SHOWN ON DETAIL W/4.3: SMALLER THAN 3" DIA.
2. PIPE "A" SHALL BE SAME SIZE AS PRESSURE REDUCING VALVE "A", UNLESS NOTED ON DRAWINGS.
   PIPE "B" SHALL BE SAME SIZE AS PRESSURE REDUCING VALVE "B", MINIMUM SIZE SHALL BE 4"DIA, EXCEPT 3" PRV SHALL HAVE 4"x3" REDUCER
   PIPE "C", SEE DRAWINGS.
3. PROVIDE 4"x3" REDUCER FOR 3" PRESSURE REDUCING VALVE.
   SEE DETAIL W/4.3 FOR SMALLER THAN 3" PRESSURE REDUCING VALVES.
4. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATION.
   TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
5. ONLY DUCTILE IRON PIPE AND FITTINGS, SEE DRAWINGS FOR SIZES.
6. RESTRAIN ALL JOINTS ON PIPE "A" FROM TEE TO TEE AND PIPE "B" WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATION.
7. PROVIDE EXTENSION STEMS AND VALVE BOXES FOR ALL BURIED VALVES, SEE DETAIL W/2.2.
8. THIS VALVE VAULT IS NOT FOR ELECTRICALLY CONTROLLED OR OPERATED VALVES.
9. STANDARD PRESSURE REDUCING VAULT IS BASED ON THE ASSUMPTIONS AND LIMITATIONS.
   IF THESE CONDITIONS ARE NOT MET, SPECIAL DESIGN IS REQUIRED.
   a). ELEVATION OF GROUNDWATER TABLE IS ASSUMED TO BE 2'-0" BELOW BOTTOM SLAB ELEVATION.
   b). LOCATION OF THE VAULT IS ASSUMED TO BE LOCATED OUTSIDE THE ROAD RIGHT OF WAY.
10. V-BIO POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 AT CONCRETE INTERFACE.
11. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR ALL PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.
12. DO NOT LOCATE VAULT IN PAVED AREAS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 3-26-21 Chief Engineer	STANDARD DETAIL TYPE 1 AND 2 PRESSURE REDUCING VALVE VAULT PIPING LAYOUT	W 4.4



PLAN

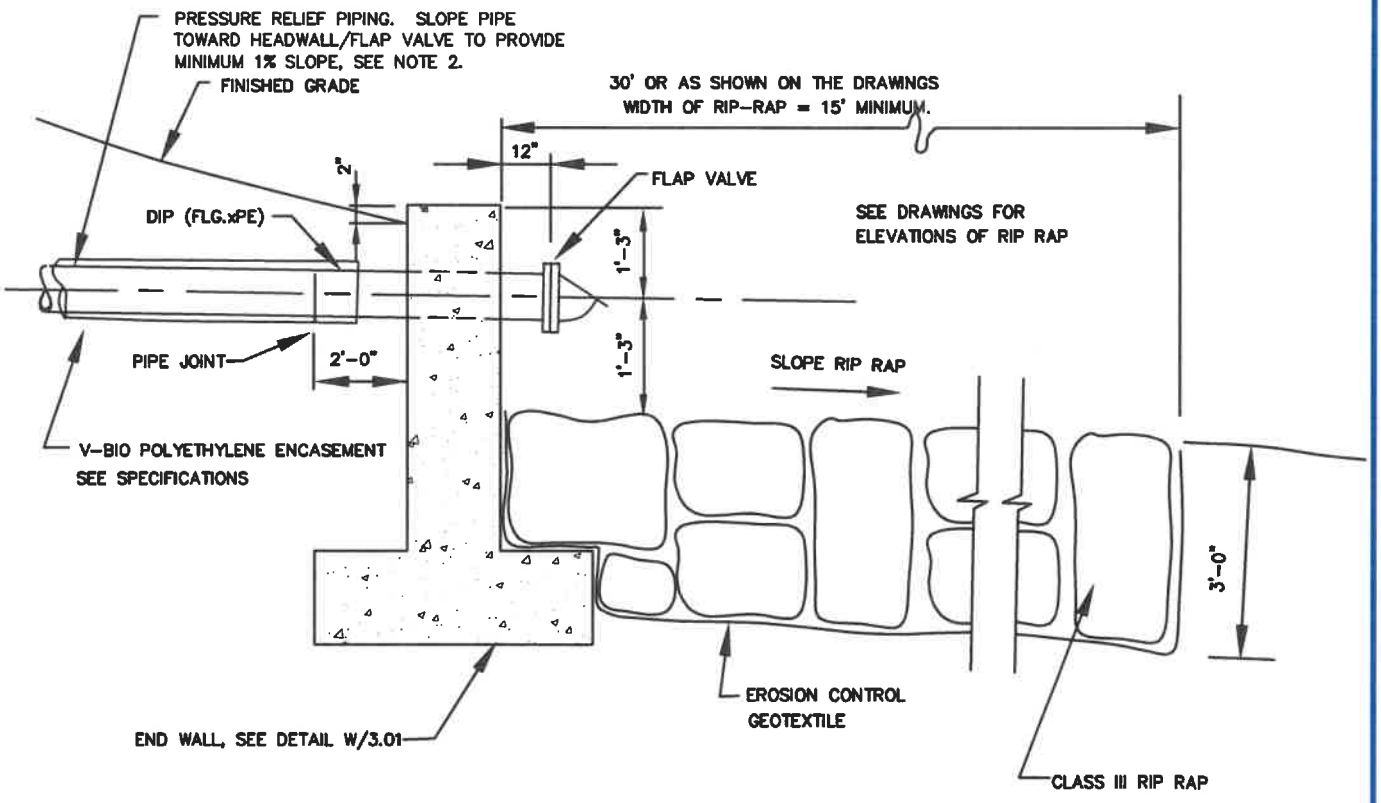


ELEVATION

NOTES:

1. FOR PIPE AND PRESSURE RELIEF VALVE SIZES, PIPING LAYOUT AND NOTES, SEE DETAILS W/4.8.
2. ONE PIECE TOP SLAB SIMILAR TO DETAIL W/5.2.
4. V-BIO POLYETHYLENE EASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 AT CONCRETE INTERFACE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Chief Engineer	STANDARD DETAIL PRESSURE RELIEF VALVE VAULT	W 4.5

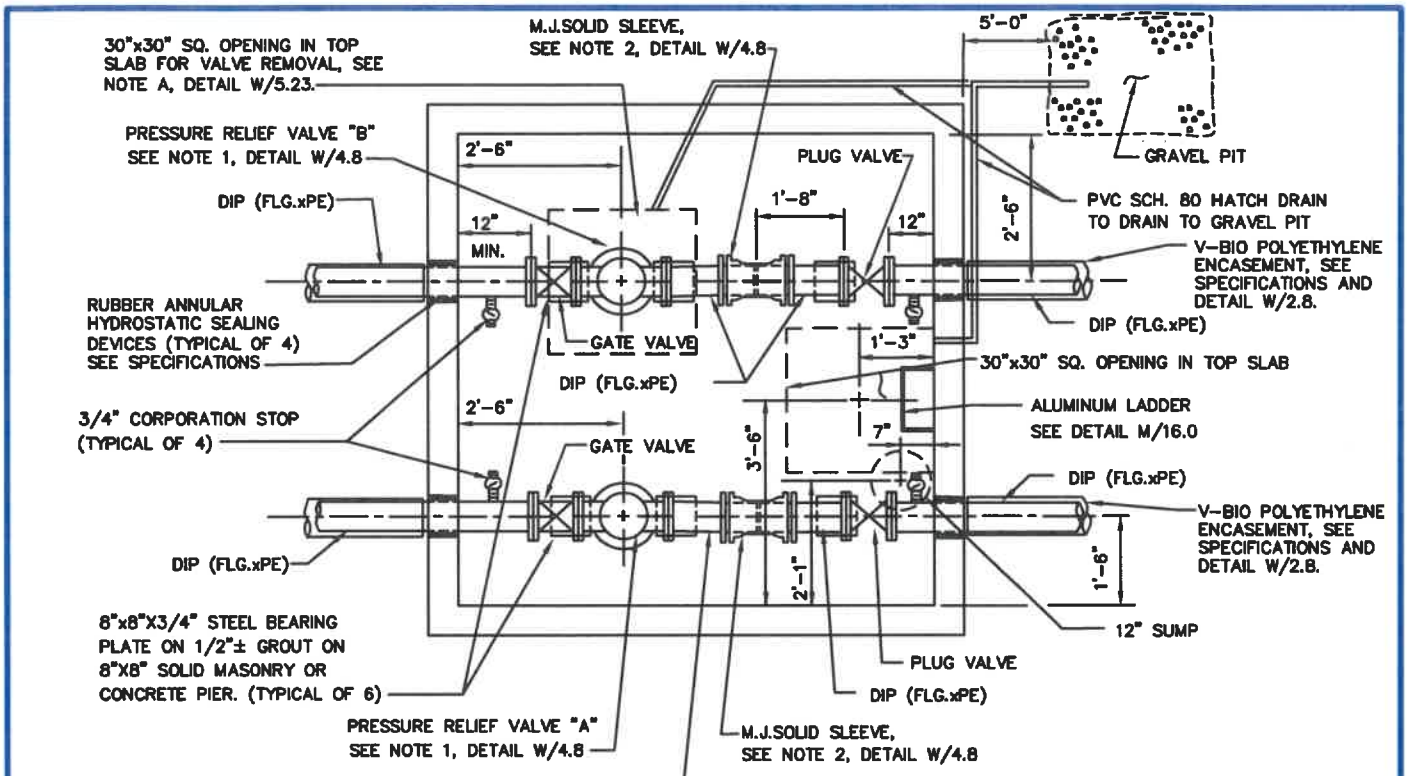


ELEVATION

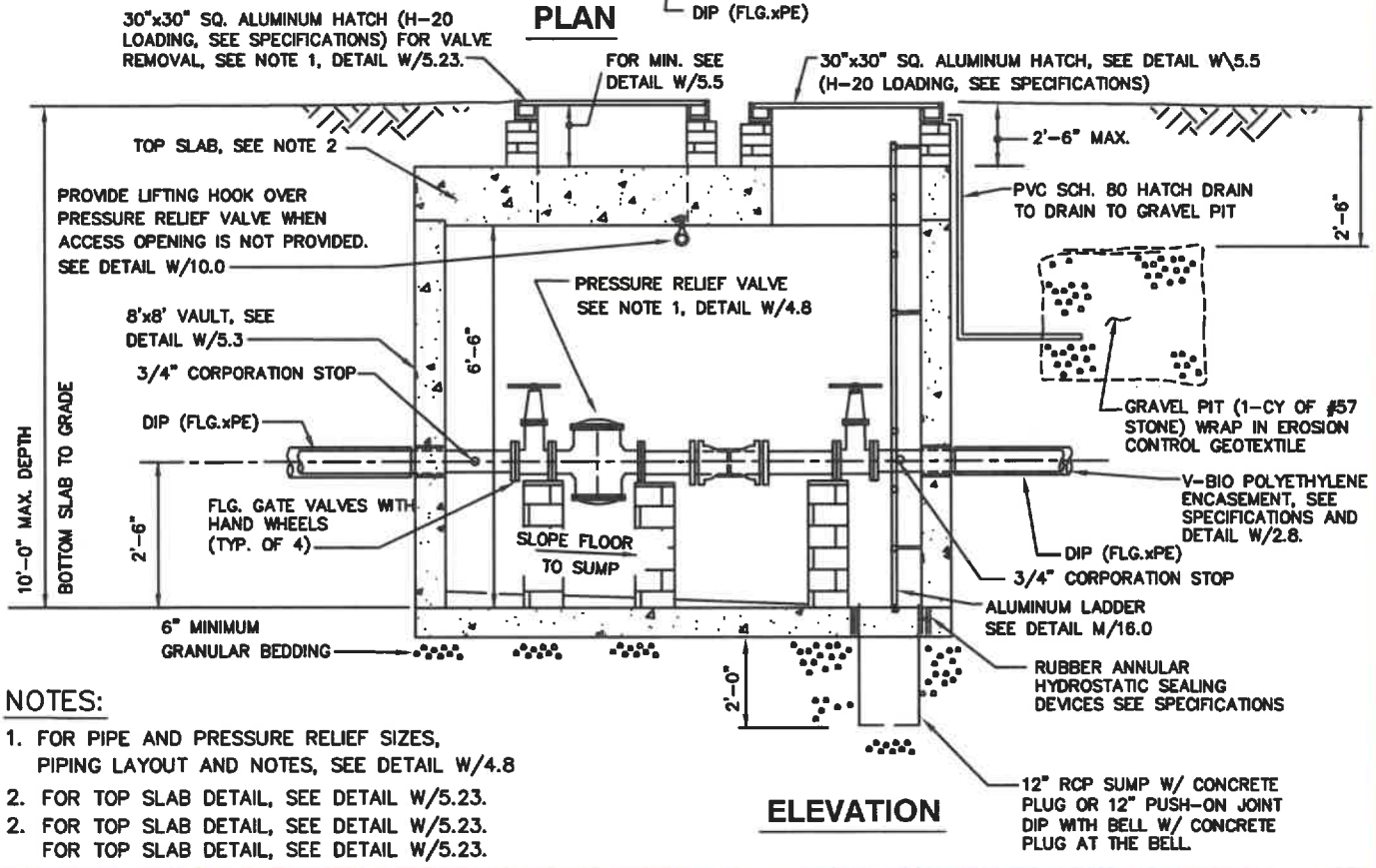
NOTES

1. RESTRAIN ALL JOINTS ON PRESSURE RELIEF PIPING, SEE DETAIL W/4.8 NOTE 4.
2. SEE DRAWINGS FOR PROFILE OF PRESSURE RELIEF PIPING. PROVIDE CONTINUOUS POSITIVE DRAINAGE AT 1.0% SLOPE MINIMUM TOWARD HEADWALL/FLAP VALVE FOR ANY PORTION OF PRESSURE RELIEF PIPING HAVING LESS THAN 4' OF COVER.
3. ONLY DUCTILE IRON PIPE AND FITTINGS.
4. V-BIO POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 AT CONCRETE INTERFACE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL ENDWALL FOR PRESSURE RELIEF VALVE PIPING	W 4.6



PLAN

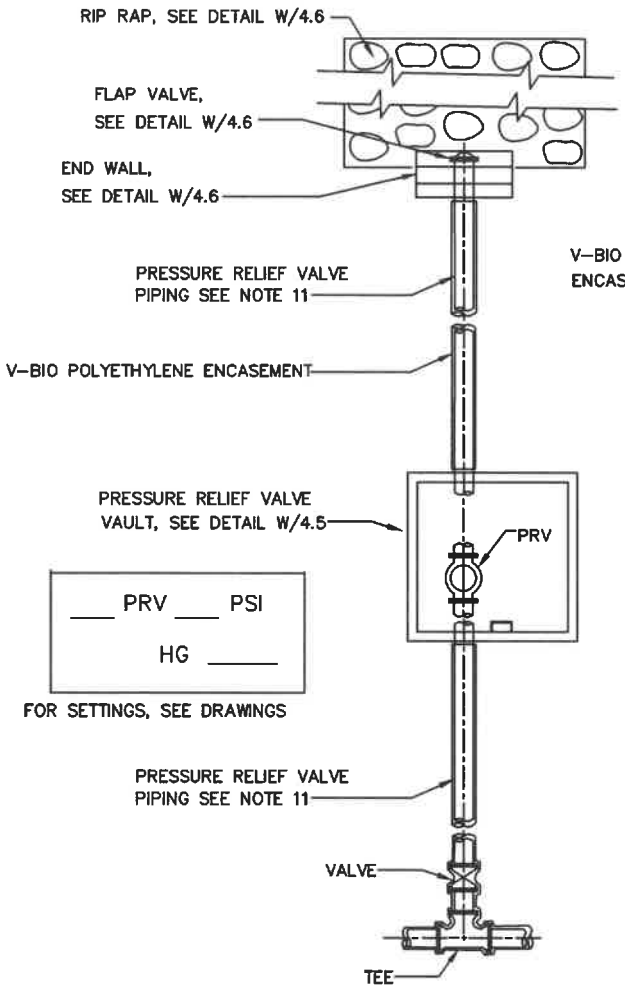


ELEVATION

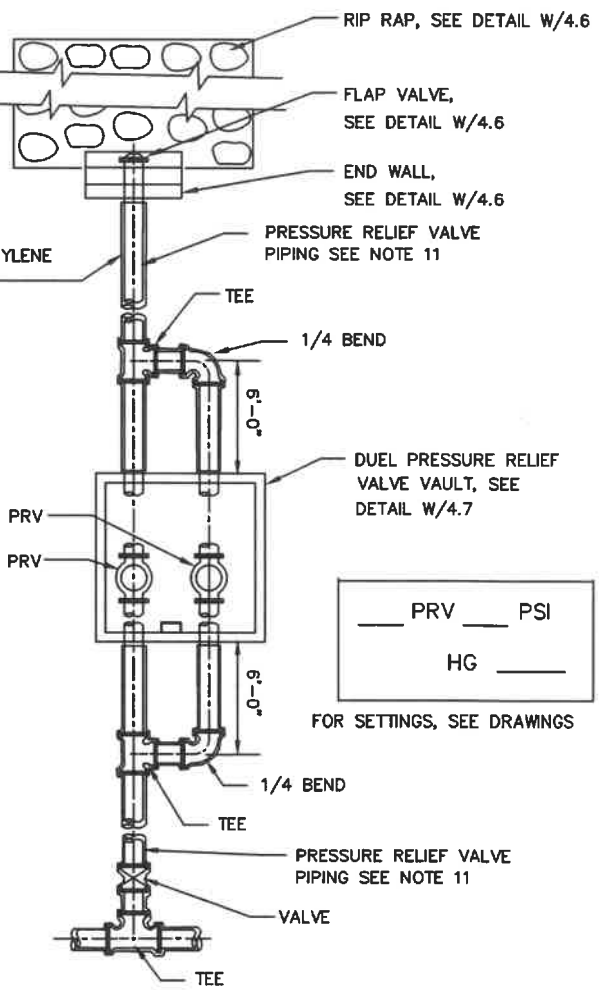
NOTES:

1. FOR PIPE AND PRESSURE RELIEF SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/4.8
2. FOR TOP SLAB DETAIL, SEE DETAIL W/5.23.
2. FOR TOP SLAB DETAIL, SEE DETAIL W/5.23. FOR TOP SLAB DETAIL, SEE DETAIL W/5.23.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL DUEL PRESSURE RELIEF VALVE VAULT	W 4.7



TYPICAL PIPING LAYOUT FOR DETAIL W/4.5

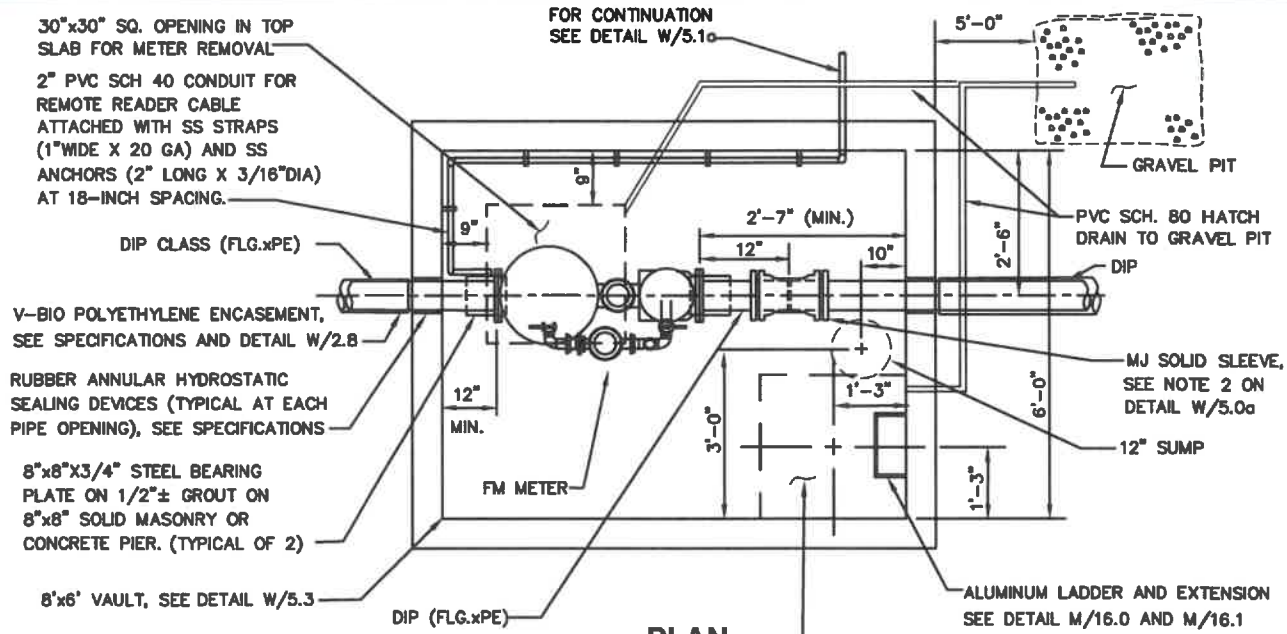


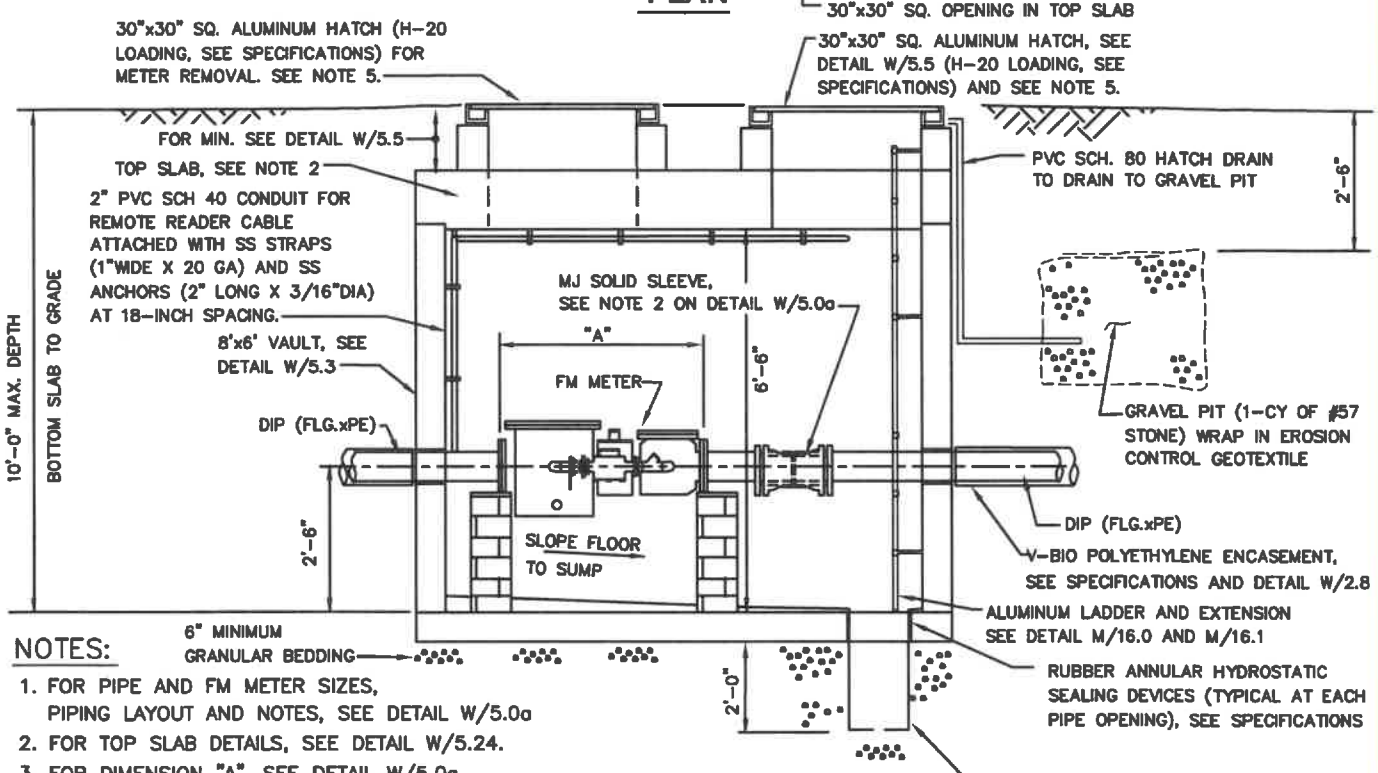
TYPICAL PIPING LAYOUT FOR DETAIL W/4.7

NOTES:

1. SIZE OF PRESSURE RELIEF VALVE AND PIPING SHALL BE 6" OR SMALLER, SEE DRAWINGS.
2. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
3. ONLY DUCTILE IRON PIPE AND FITTINGS.
4. RESTRAIN ALL JOINTS, SEE SPECIFICATIONS AND BLOCK ALL FITTINGS.
5. PROVIDE EXTENSION STEMS AND VALVE BOXES FOR ALL BURIED VALVES, SEE DETAIL W/2.2.
6. THIS VALVE VAULT IS NOT FOR ELECTRICALLY CONTROLLED OR OPERATED VALVES.
7. STANDARD PRESSURE RELIEF VAULT IS BASED ON THE ASSUMPTIONS AND LIMITATIONS. IF THESE CONDITIONS ARE NOT MET, SPECIAL DESIGN IS REQUIRED.
   a). ELEVATION OF GROUND WATER IS ASSUMED TO BE 2'-0" BELOW BOTTOM SLAB ELEVATION.
   b). LOCATION OF VAULT IS ASSUMED TO BE LOCATED OUTSIDE THE ROAD RIGHT OF WAY.
8. PROVIDE LIFTING HOOKS OVER PRESSURE RELIEF VALVE WHEN HATCH IS NOT PROVIDED OVER THE PRESSURE RELIEF VALVE.
9. V-BIO POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 AT CONCRETE INTERFACE.
10. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR ALL PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.
11. SEE DRAWINGS FOR PLAN AND PROFILE OF PRESSURE RELIEF PIPING.
12. DO NOT LOCATE VAULT IN PAVED AREA.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanson Chief Engineer	STANDARD DETAIL PRESSURE RELIEF VALVE VAULT PIPING PLAN	W 4.8

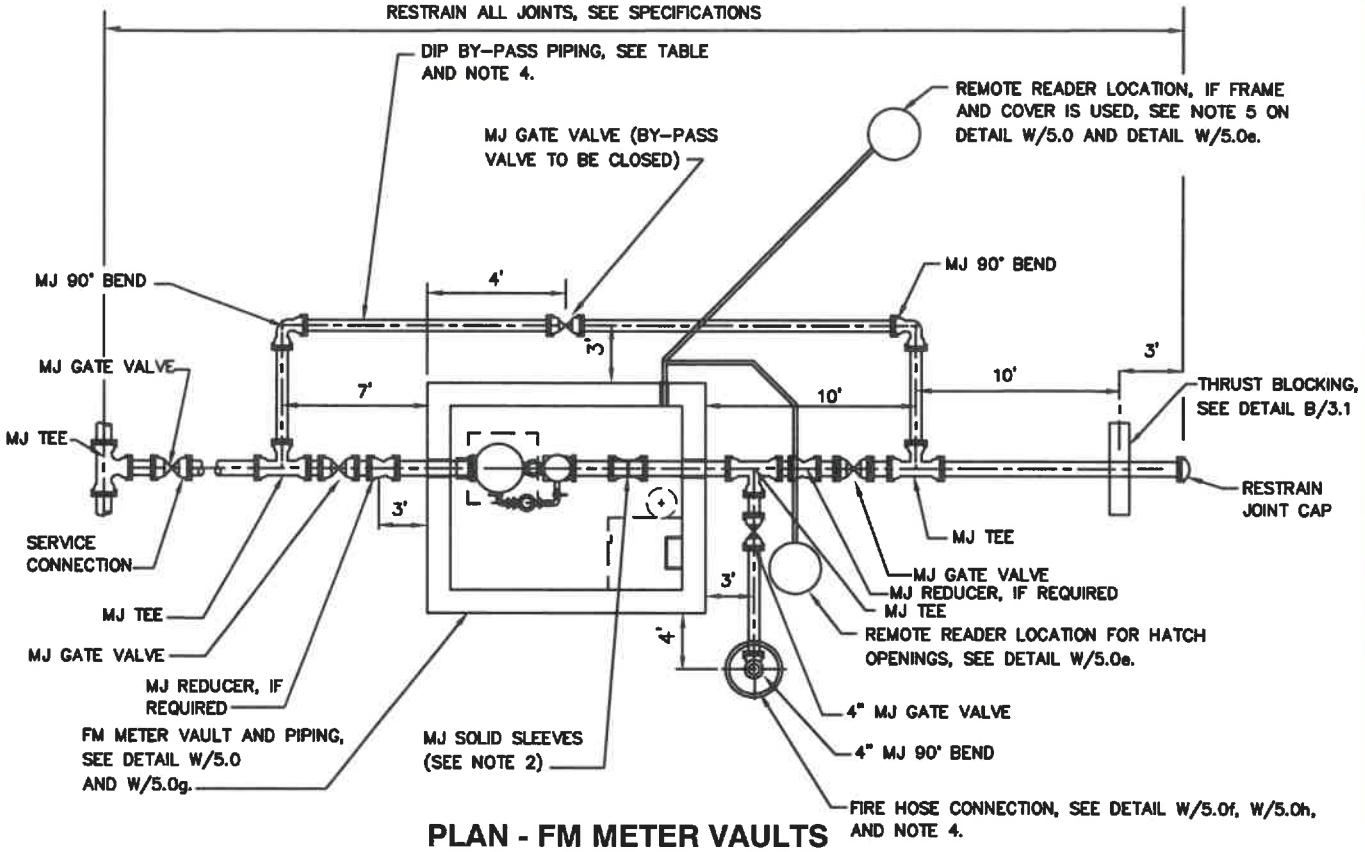




NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/5.0a
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.24.
3. FOR DIMENSION "A", SEE DETAIL W/5.0a.
4. FOR LOCATION OF BY-PASS PIPING, SEE DETAIL W/5.0a.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE, FOR LOCATION SEE W/5.0a.
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmicz Chief Engineer	STANDARD DETAIL 4-INCH, 6-INCH AND 8-INCH F.M. METER VAULT	W 5.0



PLAN - FM METER VAULTS TYPICAL PIPING LAYOUT

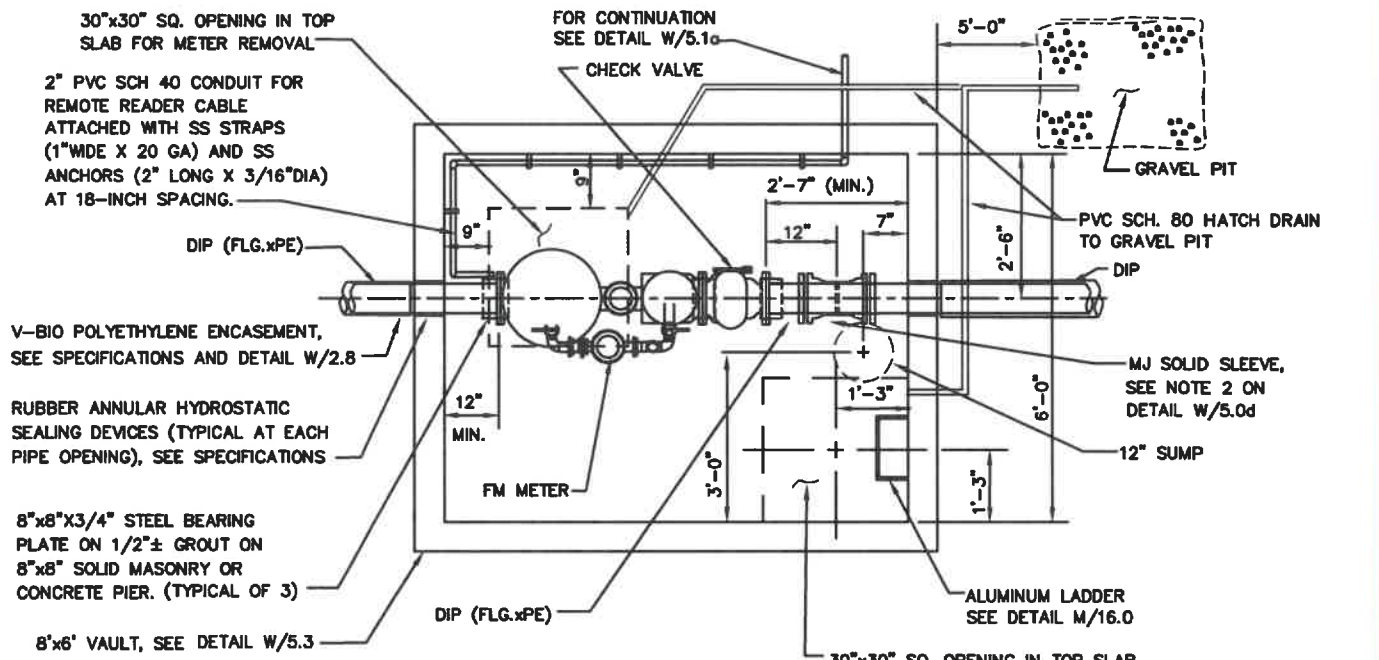
NOTES:

1. FOR FM METER VAULT AND PIPING DETAILS, SEE DETAIL W/5.0. AND W/5.0g
2. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
3. ONLY DUCTILE IRON PIPE AND FITTINGS, EXCEPT AS NOTED. SEE DRAWINGS FOR SIZES.
4. RESTRAIN ALL JOINTS ON BY-PASS PIPING FROM TEE TO TEE WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATION. RESTRAIN ALL JOINTS ON FIRE HOSE CONNECTION WITH WEDGE ACTION RESTRAINER GLANDS.
5. PROVIDE EXTENSION STEMS AND VALVE BOXES FOR ALL BURIED VALVES, SEE DETAIL W/2.2.
6. V-BIO POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 FOR CONCRETE INTERFACE.
7. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR ALL PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.
8. WHEN 12" FM METERS ARE REQUIRED, USE 10" FM, SEE W/5.0i. SERVICE PIPING AND BY-PASS SHALL BE 12"DIA.

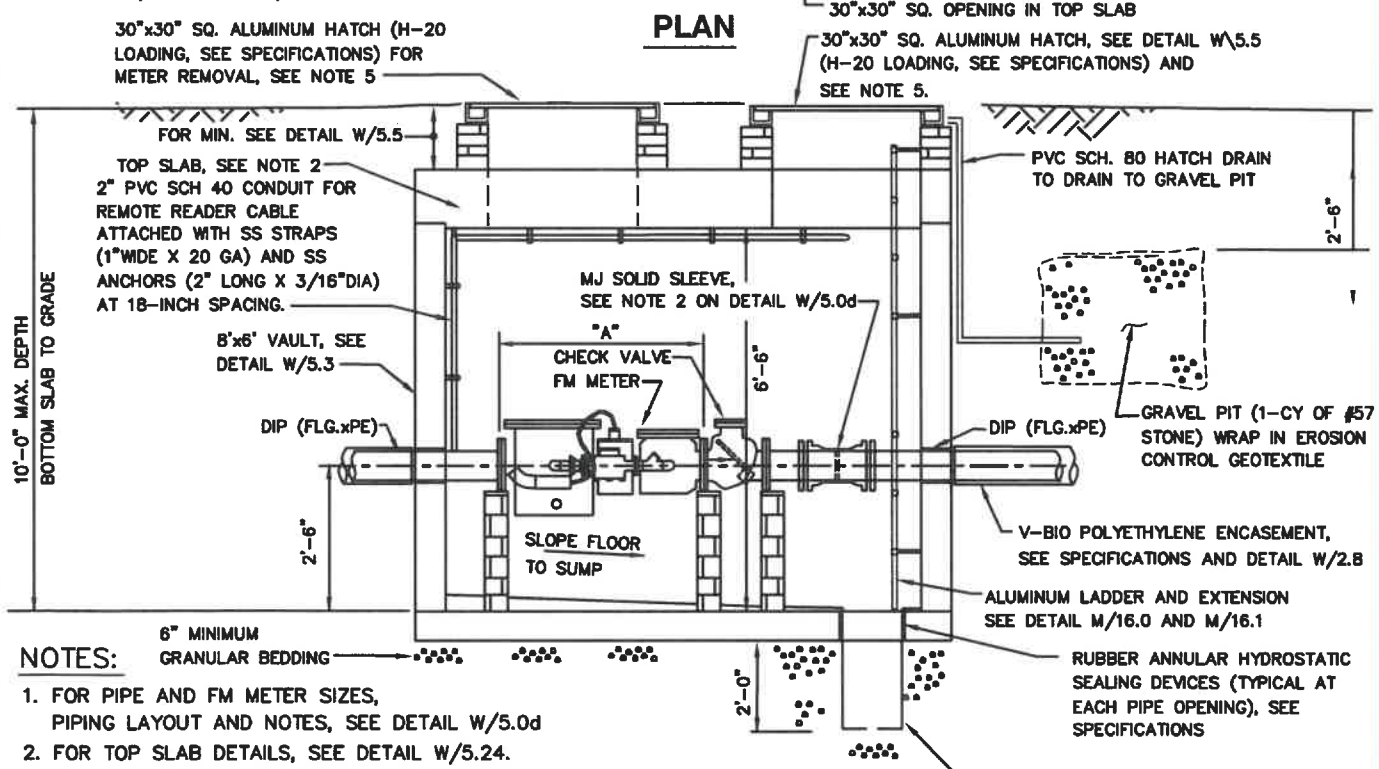
BY-PASS PIPE SIZE	
FM METER SIZE	BY-PASS PIPE SIZE
4"	4"
6"	6"
8"	8"
10"	10"

"A" DIMENSION (SEE DETAIL W/5.0)	
FM METER SIZE	"A" (LENGTH OF METER)
4"	33"
6"	45"
8"	53"
10"	68"

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Chief Engineer	STANDARD DETAIL 4-INCH, 6-INCH,8-INCH AND 10-INCH F.M. METER VAULT PIPING LAYOUT	W 5.0a



PLAN

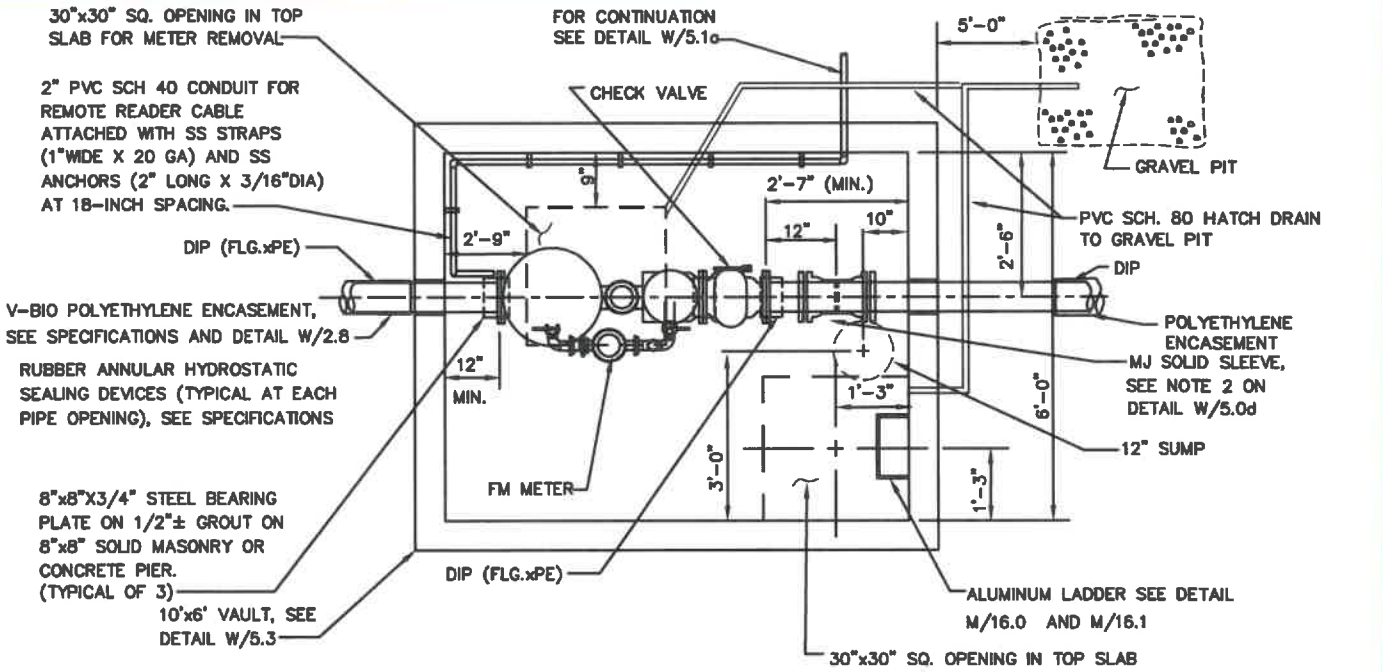


ELEVATION

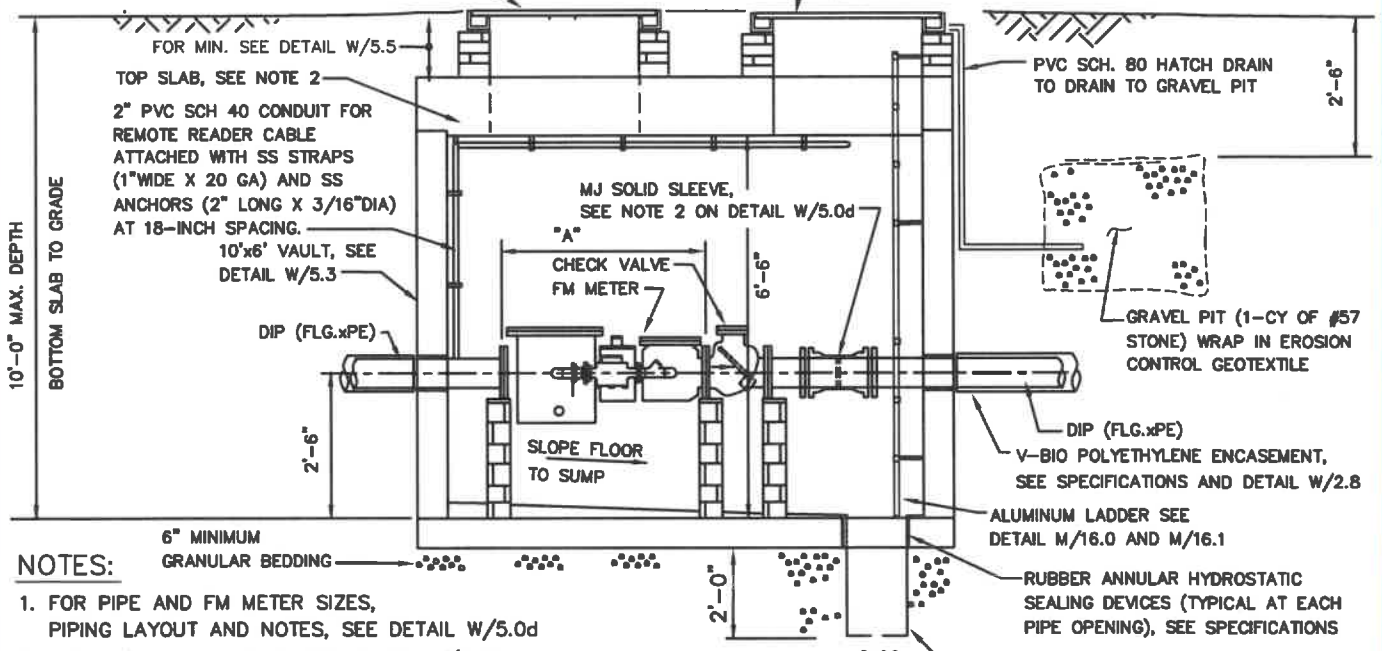
NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/5.0d
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.24.
3. FOR DIMENSION "A", SEE DETAIL W/5.0d.
4. FOR LOCATION OF BY-PASS PIPING SEE DETAIL 5.0d.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE, FOR LOCATION SEE DETAIL W/5.0a.
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 4-INCH FM METER WITH CHECK VALVE VAULT	W 5.0b



PLAN



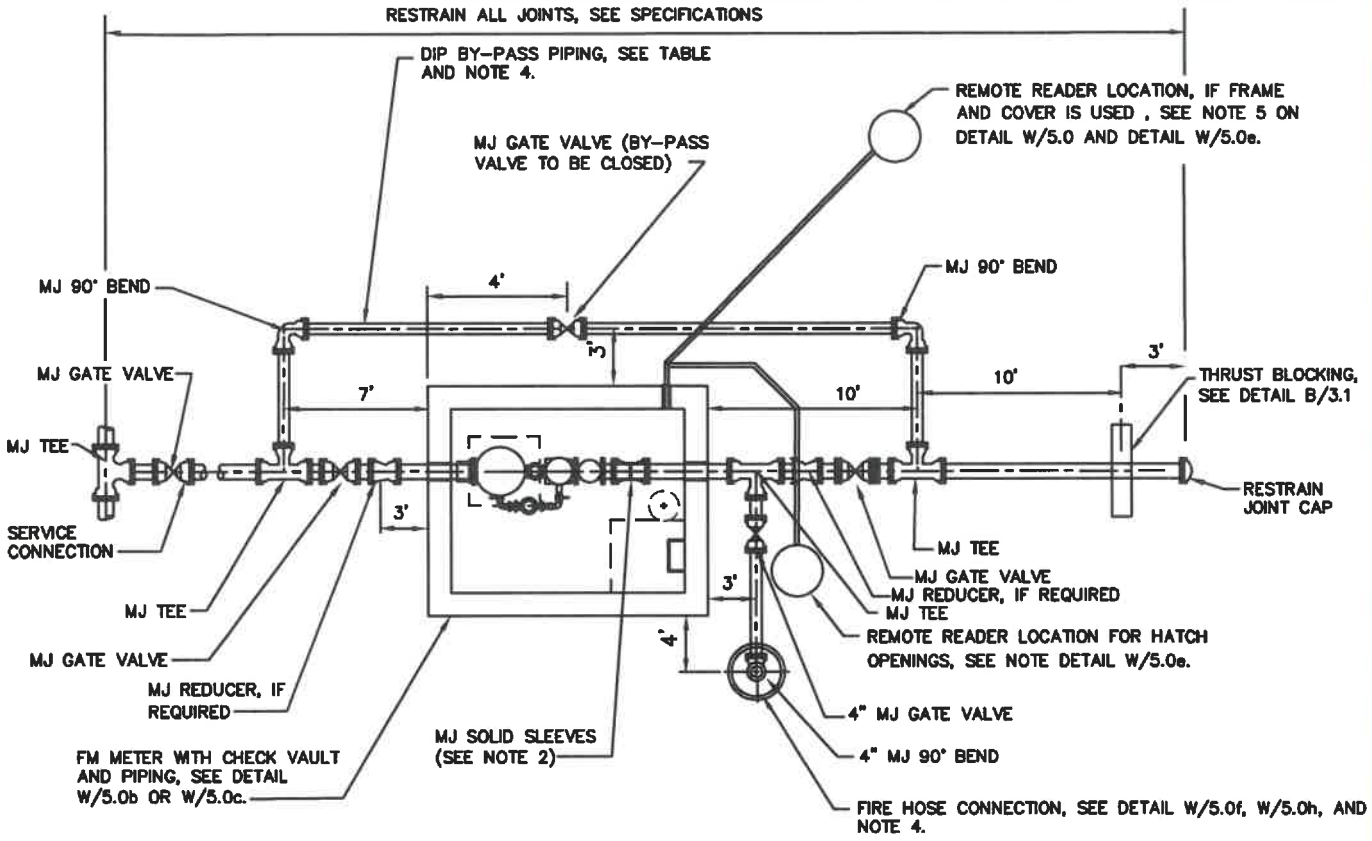
ELEVATION

12" RCP SUMP W/ CONCRETE PLUG OR 12" PUSH-ON JOINT DIP WITH BELL W/ CONCRETE PLUG AT THE BELL.

NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/5.0d
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.25.
3. FOR DIMENSION "A", SEE DETAIL W/5.0d.
4. FOR LOCATION OF BY-PASS PIPING FOR 6" AND 8", SEE DETAIL W/5.0d.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE FOR LOCATION SEE W/5.0a.
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanmer Chief Engineer	STANDARD DETAIL 6-INCH AND 8-INCH FM METER WITH CHECK VALVE VAULT	W 5.0c



PLAN - FM METER WITH CHECK VALVE IN VAULT
TYPICAL PIPING LAYOUT

NOTES:

1. FOR FM METER WITH CHECK VALVE VAULT AND PIPING DETAILS, SEE DETAIL W/5.0b and w/5.0c.
2. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
3. ONLY DUCTILE IRON PIPE AND FITTINGS, EXCEPT AS NOTED. SEE DRAWINGS FOR SIZES.
4. RESTRAIN ALL JOINTS ON BY-PASS PIPING FROM TEE TO TEE WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS. RESTRAIN ALL JOINTS ON FIRE HOSE CONNECTION PIPING WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS.
5. PROVIDE EXTENSION STEMS AND VALVE BOXES FOR ALL BURIED VALVES, SEE DETAIL W/2.2.
6. V-BIO POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 FOR CONCRETE INTERFACE.
7. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR ALL PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.

BY-PASS PIPE SIZE	
FM METER SIZE	BY-PASS PIPE SIZE
4"	4"
6"	6"
8"	8"

"A" DIMENSION (SEE DETAIL W/5.0b OR W/5.0c)	
FM METER SIZE	"A" (LENGTH OF METER)
4"	33"
6"	45"
8"	53"

WASHINGTON SUBURBAN SANITARY COMMISSION

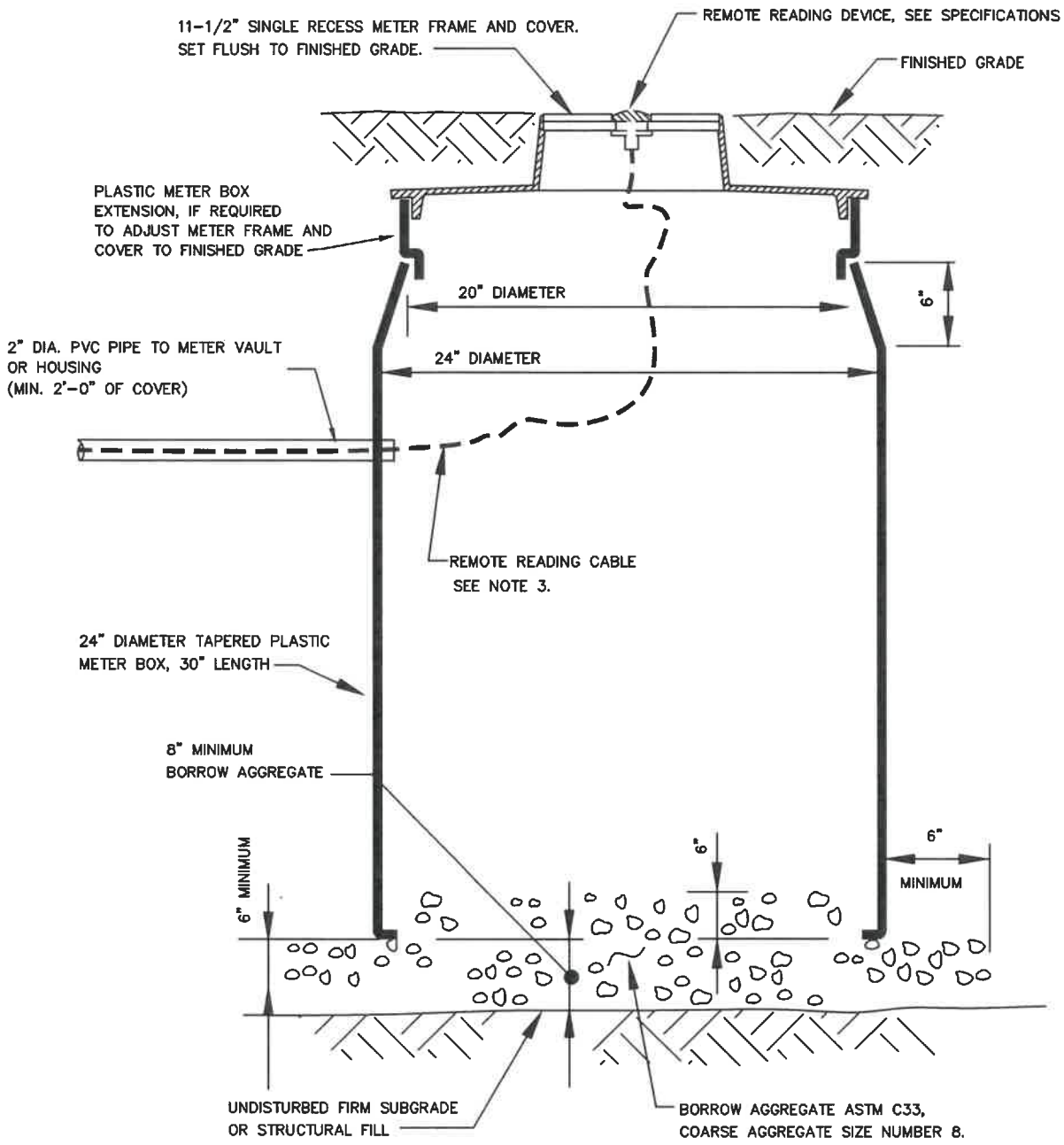
APPROVED: 2-26-21

Mike Harman
Chief Engineer

STANDARD DETAIL

4-INCH, 6-INCH AND 8-INCH F.M. METER WITH CHECK VALVE IN VAULT PIPING LAYOUT

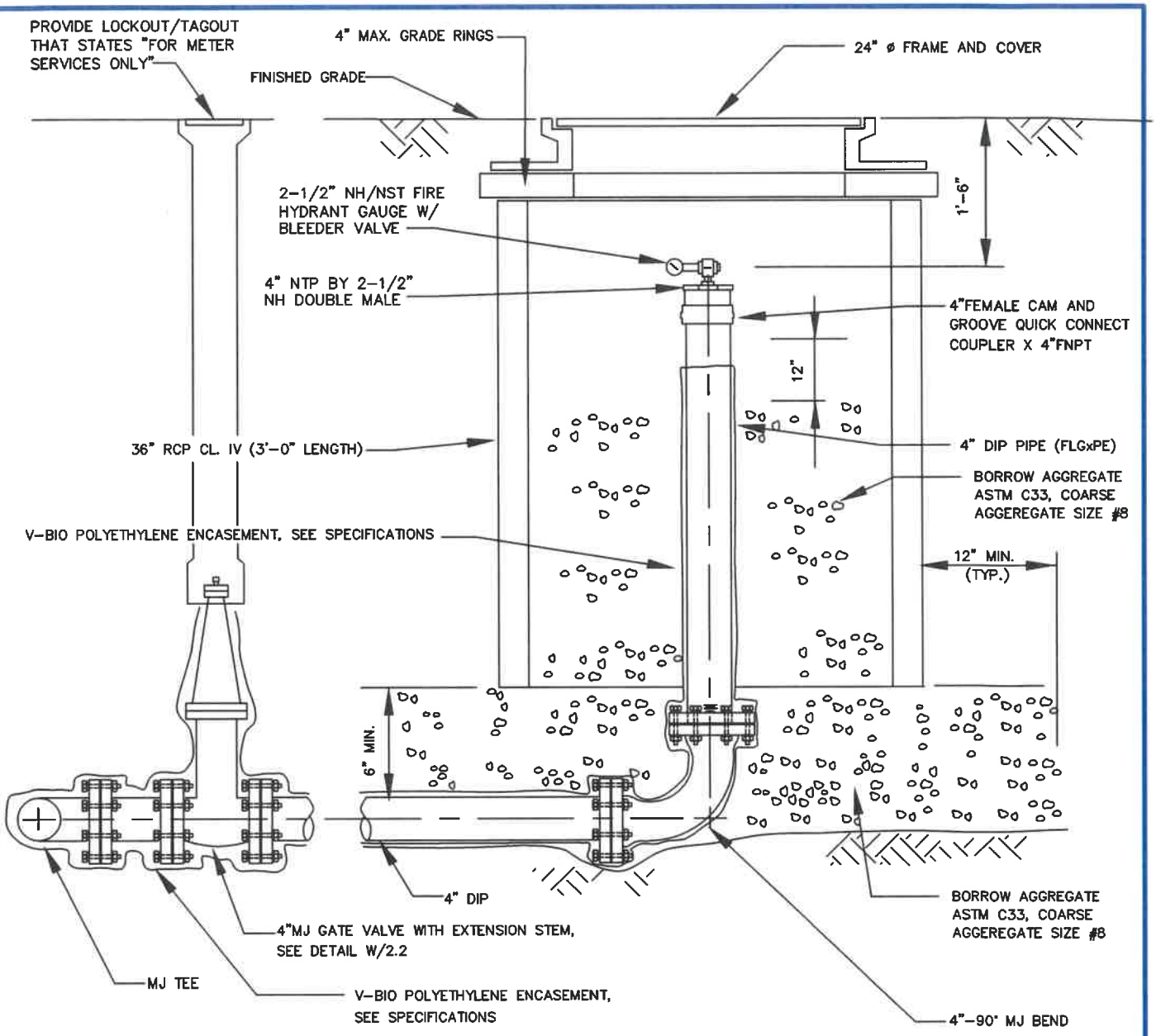
W / 5.0d



NOTES:

1. REMOTE READING DEVICE IS FOR USE WITH METERS LOCATED IN TRAFFIC AREAS.
2. THIS DEVICE MUST BE LOCATED IN NON-TRAFFIC AREAS. DO NOT LOCATE IN SIDEWALK OR DRIVEWAY.
3. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
4. REMOTE READING CABLE WITHOUT SPLICES THROUGH CONDUIT PIPING.
5. WHEN TWO REMOTE READING DEVICES ARE REQUIRED, USE 11-1/2" DOUBLE RECESS METER FRAME AND COVER.

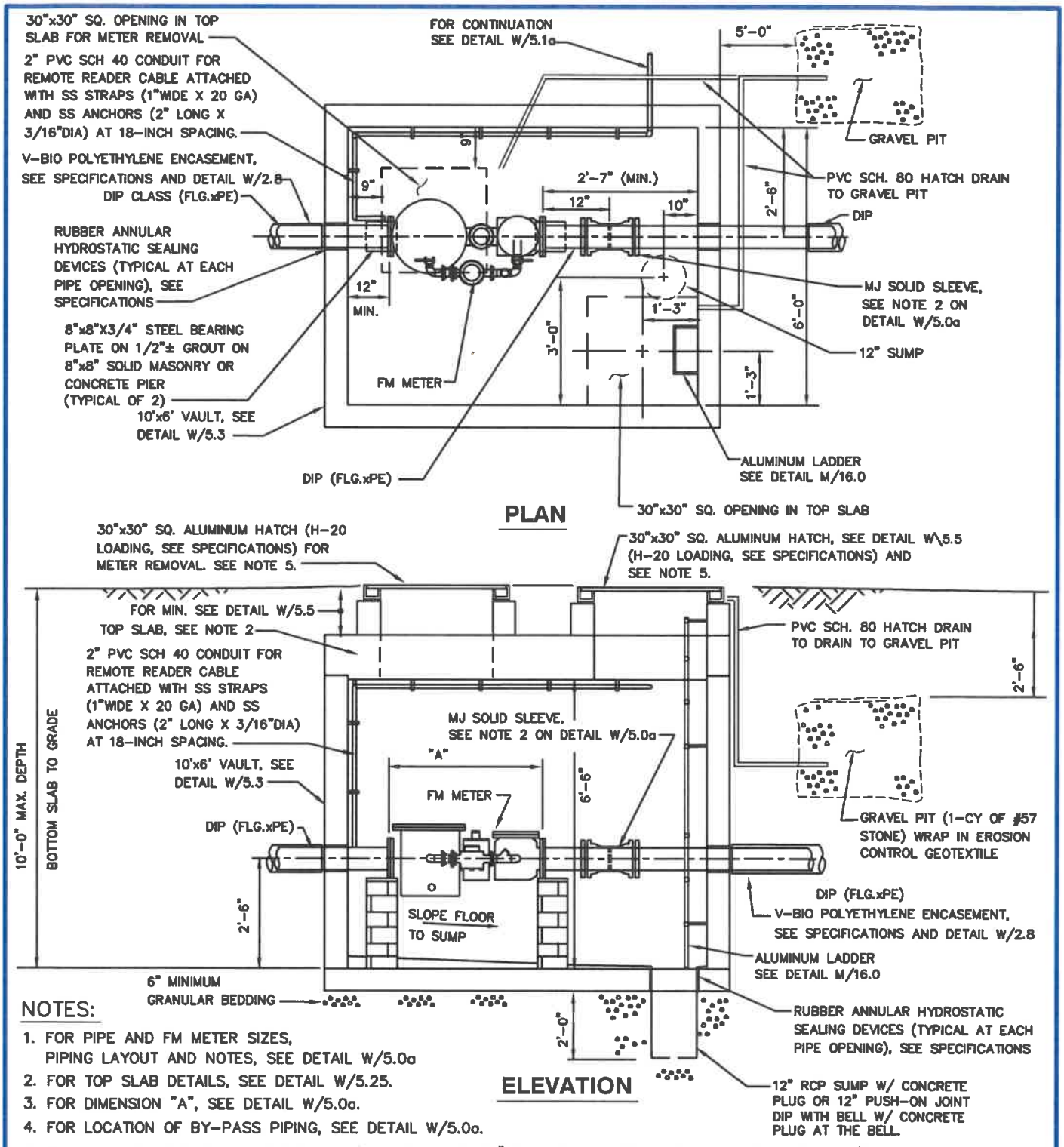
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Harmon Chief Engineer	STANDARD DETAIL REMOTE READING DEVICE	W 5.0e



NOTES:

1. FIRE HYDRANT HOSE CONNECTION SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. QUICK-DISCONNECT CAM AND GROOVE FITTINGS SHALL BE BRASS RATED AT 150 PSI AND IN ACCORDANCE WITH US MILITARY SPECIFICATIONS MIL-C-27487/US FEDERAL STANDARD A-A-59326.
4. RESTRAIN ALL JOINTS FROM MJ TEE TO 4" COMPANION FLANGED WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS

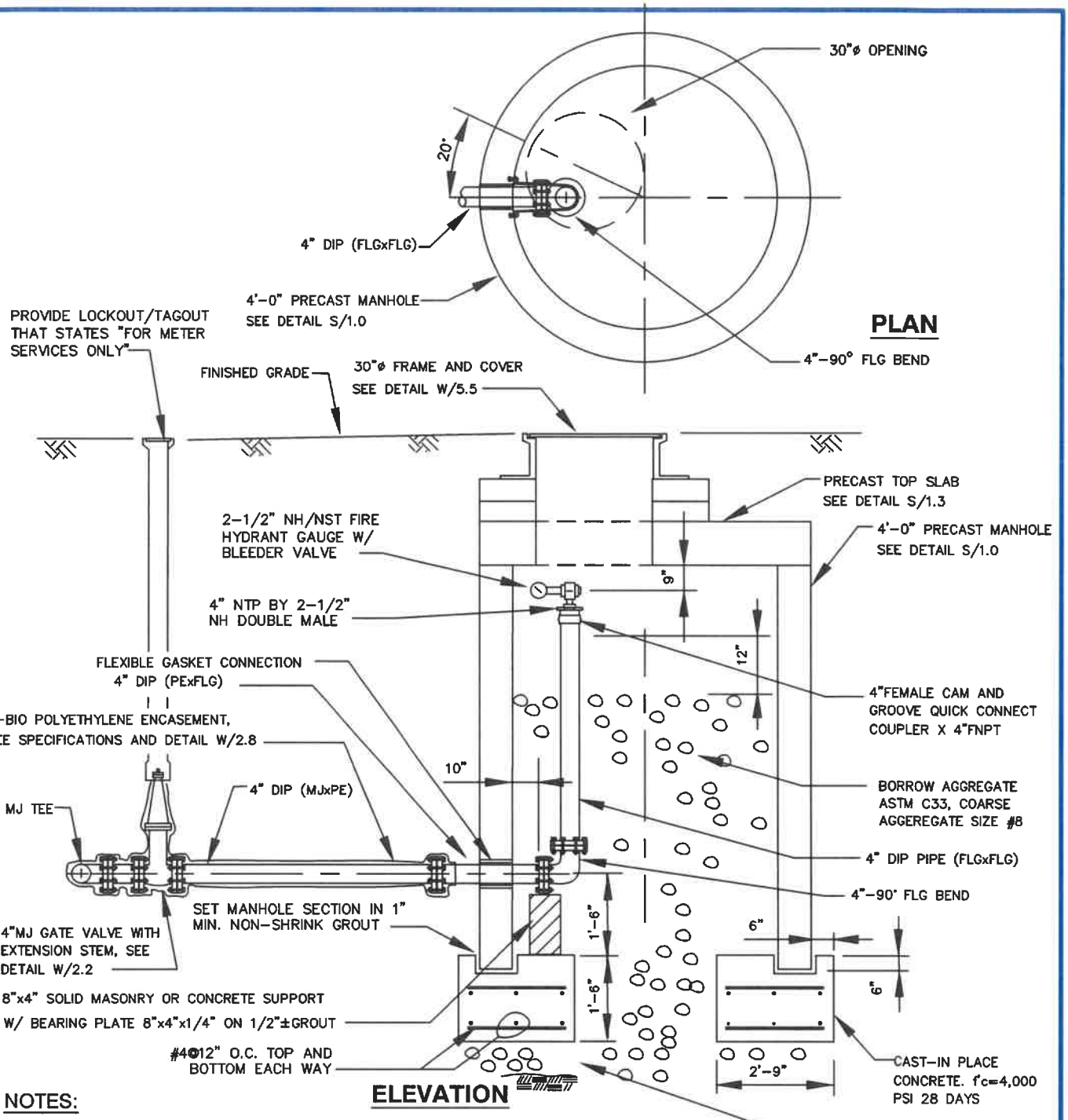
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmer Chief Engineer	STANDARD DETAIL FIRE HOSE CONNECTION FOR FM METER, ULTRASONIC METER, AND DETECTOR CHECK VAULT LAYOUTS	W 5.0f



NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/5.0a
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.25.
3. FOR DIMENSION "A", SEE DETAIL W/5.0a.
4. FOR LOCATION OF BY-PASS PIPING, SEE DETAIL W/5.0a.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND SEE DETAIL W/5.0e.
6. FOR 12" DIP, USE 10" FM METER WITH 12" SERVICE CONNECTION AND 12" BY-PASS PIPING.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

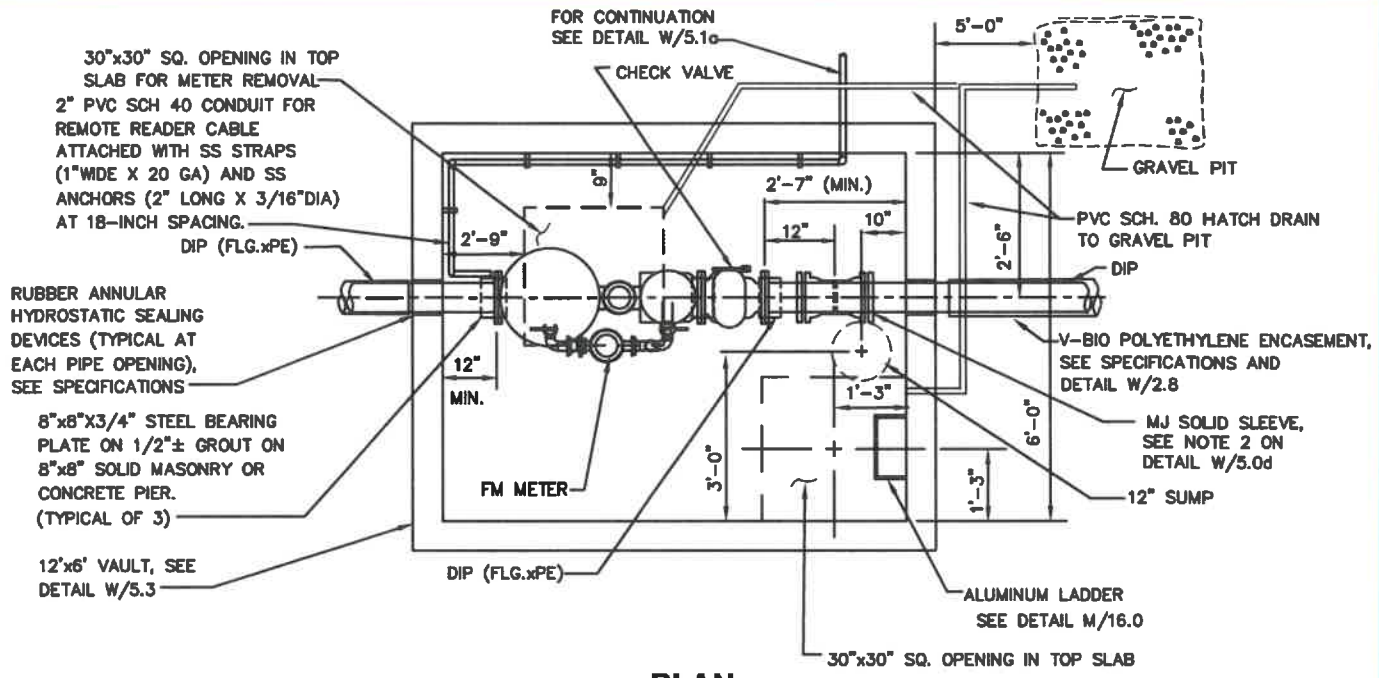
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmen Chief Engineer	STANDARD DETAIL 10-INCH F.M. METER VAULT	W 5.0g



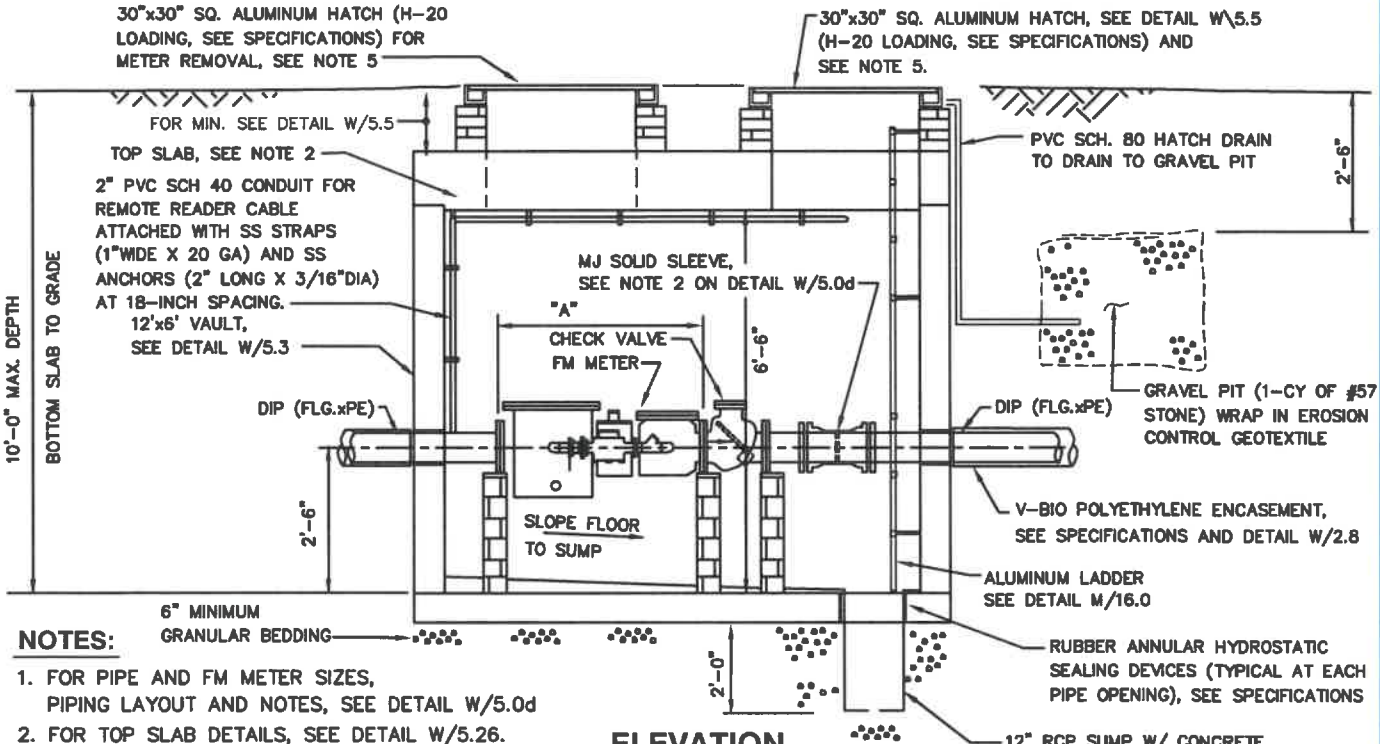
NOTES:

1. FIRE HYDRANT HOSE CONNECTION SETTING FOR TRAFFIC AREAS ONLY.
2. QUICK-DISCONNECT CAM AND GROOVE FITTINGS SHALL BE BRASS RATED AT 150 PSI AND IN ACCORDANCE WITH US MILITARY SPECIFICATIONS MIL-C-27487/US FEDERAL STANDARD A-A-59326.
3. RESTRAIN ALL JOINTS FROM MJ TEE TO 4"-90 FLANGED BEND WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS.
4. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Harmen Chief Engineer	STANDARD DETAIL FIRE HOSE CONNECTION IN TRAFFIC AREAS FOR FM METER ULTRASONIC AND DETECTOR CHECK VAULT LAYOUTS	W 5.0h



PLAN

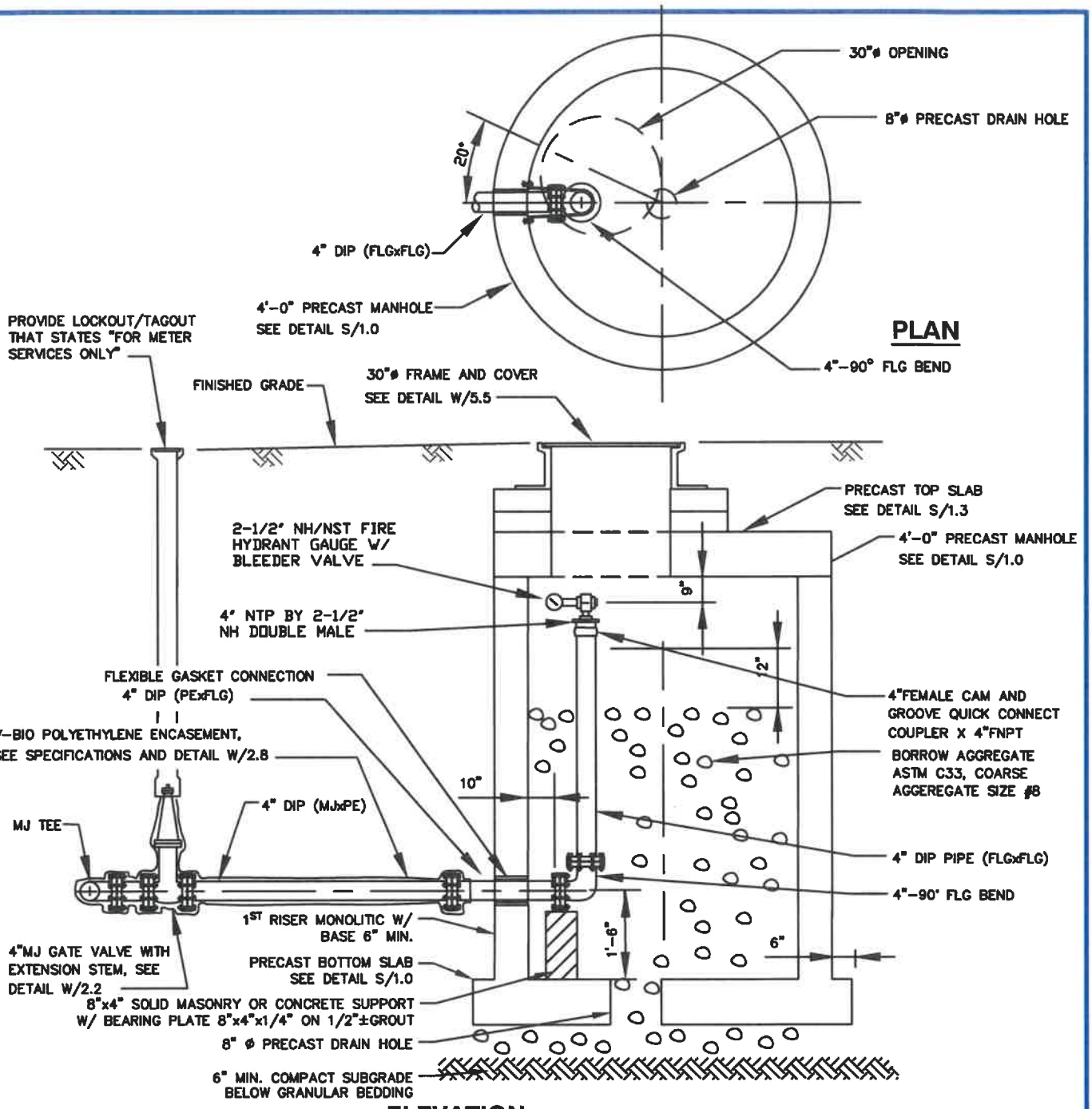


ELEVATION

NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/5.0d
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.26.
3. FOR DIMENSION "A", SEE DETAIL W/5.0d.
4. FOR LOCATION OF BY-PASS PIPING FOR 10" FM METER SEE DETAIL W/5.0d.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER, SEE DETAIL W/5.0e.
6. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
7. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

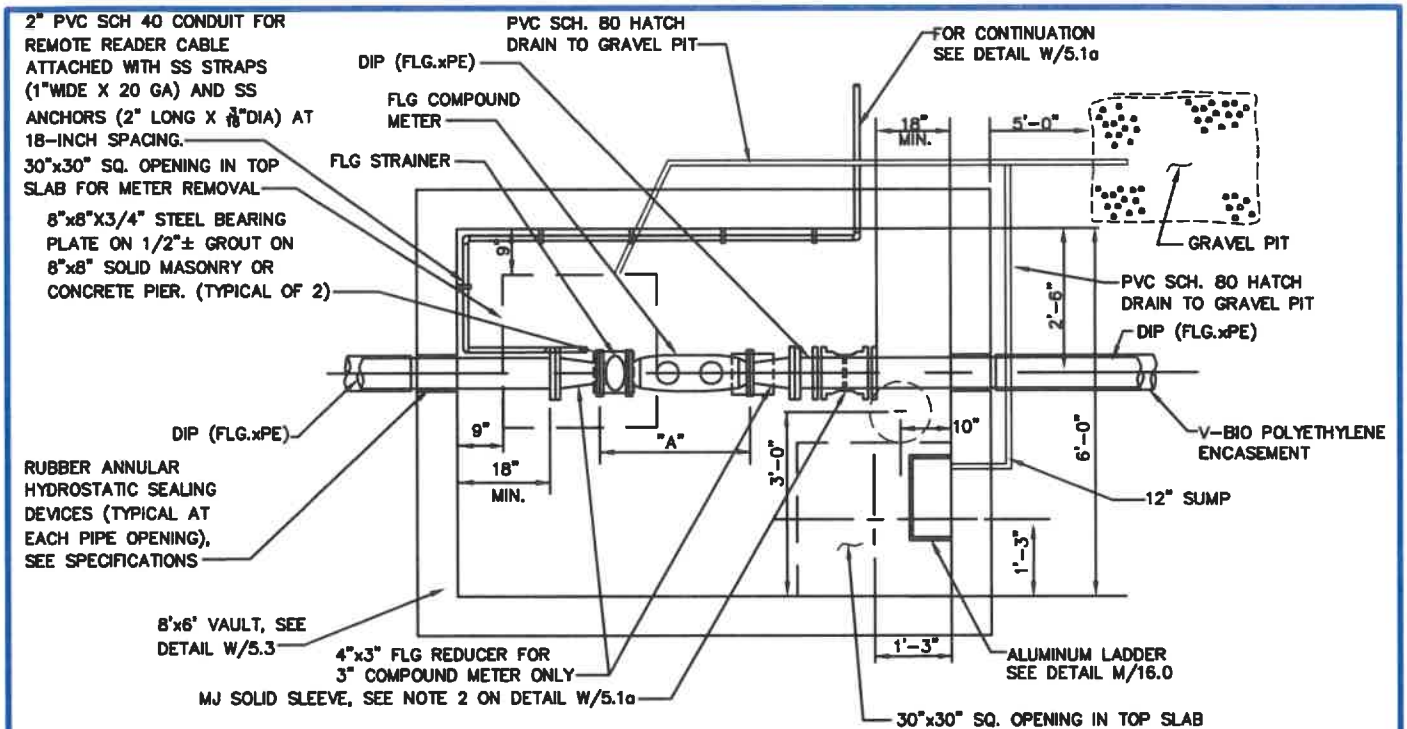
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL 10-INCH FM METER WITH CHECK VALVE VAULT	W / 5.0i



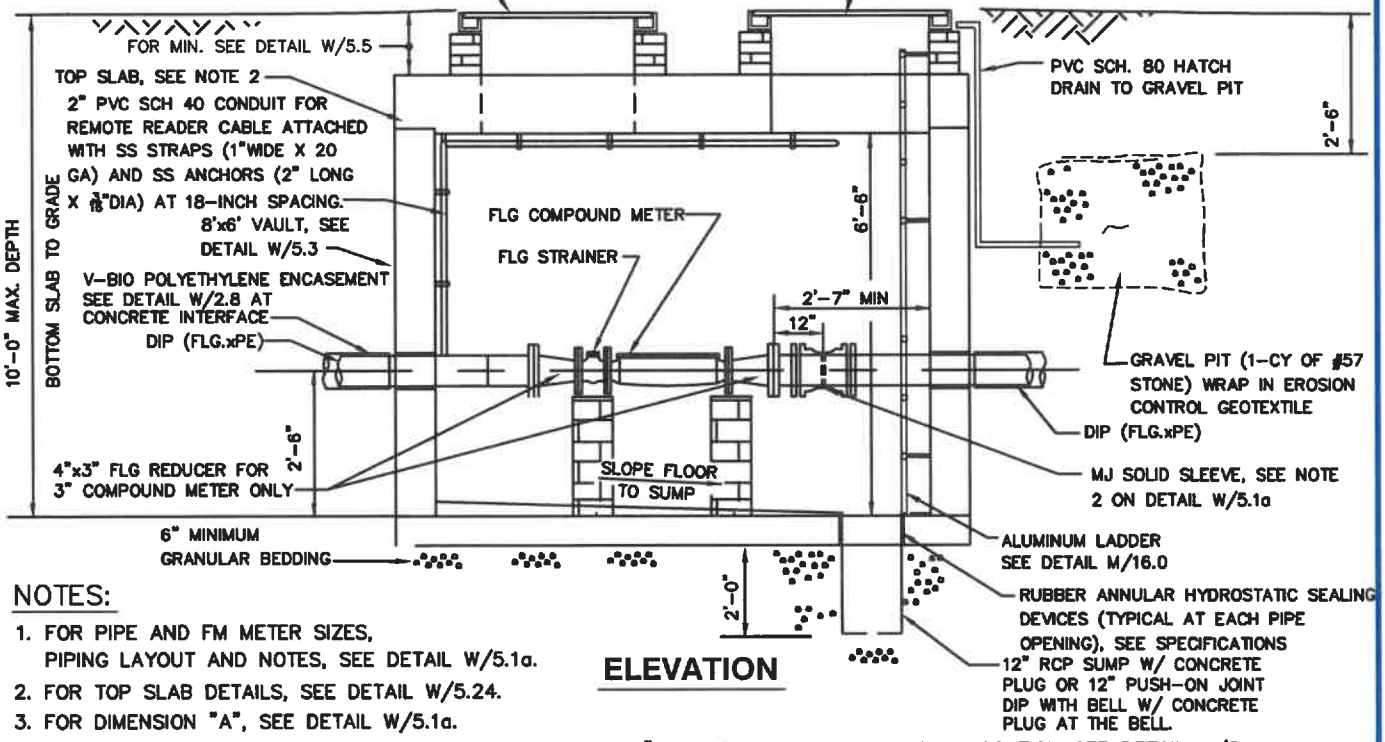
NOTES:

1. FIRE HYDRANT HOSE CONNECTION SETTING FOR TRAFFIC AREAS ONLY.
2. QUICK-DISCONNECT CAM AND GROOVE FITTINGS SHALL BE BRASS RATED AT 150 PSI AND IN ACCORDANCE WITH US MILITARY SPECIFICATIONS MIL-C-27487/US FEDERAL STANDARD A-A-59326.
3. RESTRAIN ALL JOINTS FROM MJ TEE TO 4"-90 FLANGED BEND WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS.
4. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Hoornaert Chief Engineer	STANDARD DETAIL FIRE HOSE CONNECTION IN TRAFFIC AREAS FOR FM METER ULTRASONIC AND DETECTOR CHECK PRECAST VAULT LAYOUTS	W 5.0j



PLAN

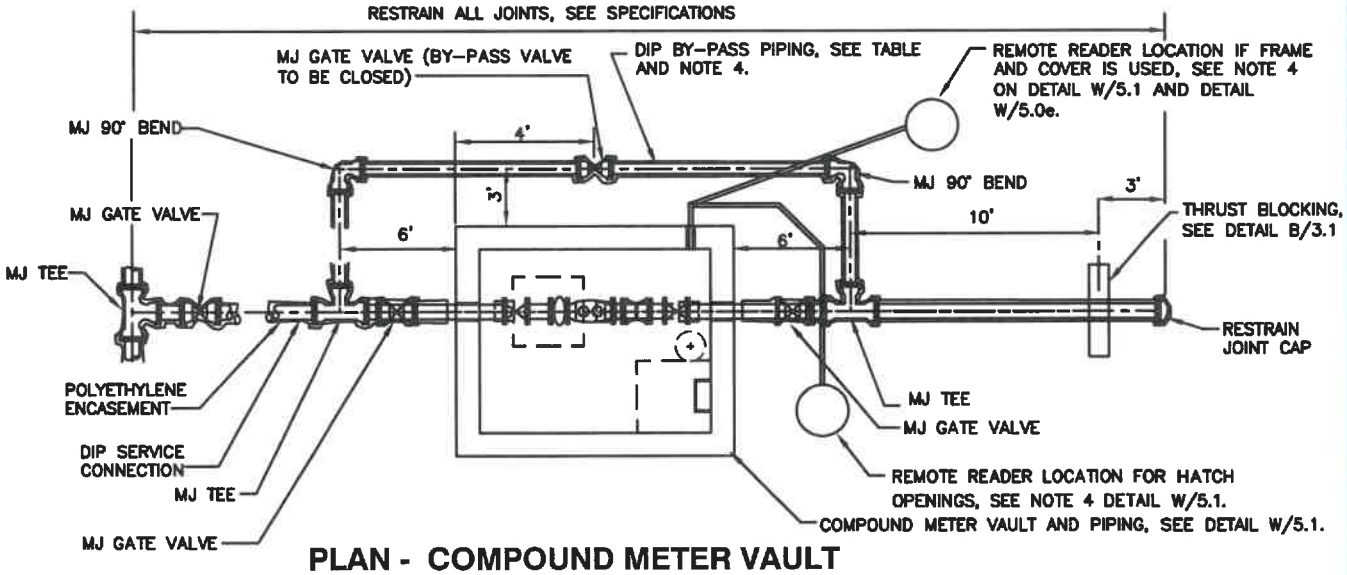


ELEVATION

NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/5.1a.
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.24.
3. FOR DIMENSION "A", SEE DETAIL W/5.1a.
4. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER FOR LOCATION SEE DETAIL W/5.1a.
5. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
6. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 3-INCH, 4-INCH, AND 6-INCH COMPOUND METER VAULT	W 5.1



PLAN - COMPOUND METER VAULT TYPICAL PIPING LAYOUT

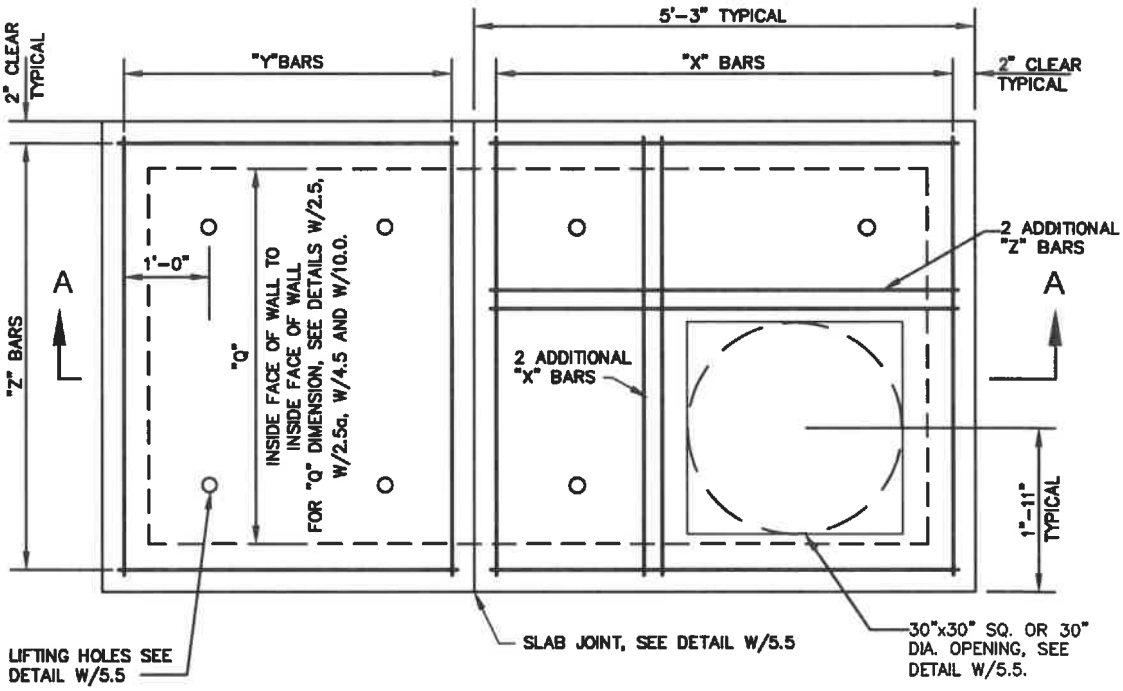
NOTES:

1. FOR COMPOUND METER VAULT AND PIPING DETAILS, SEE DETAIL W/5.1.
2. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.
3. ONLY DUCTILE IRON PIPE AND FITTINGS, EXCEPT AS NOTED. SEE DRAWINGS FOR SIZES.
4. RESTRAIN ALL JOINTS DIP BY-PASS PIPING, FROM TEE TO TEE WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATIONS.
5. PROVIDE EXTENSION STEMS AND VALVE BOXES FOR ALL BURIED VALVES, SEE DETAIL W/2.2.
6. V-BIO POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 AT CONCRETE INTERFACE.
7. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR ALL PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.

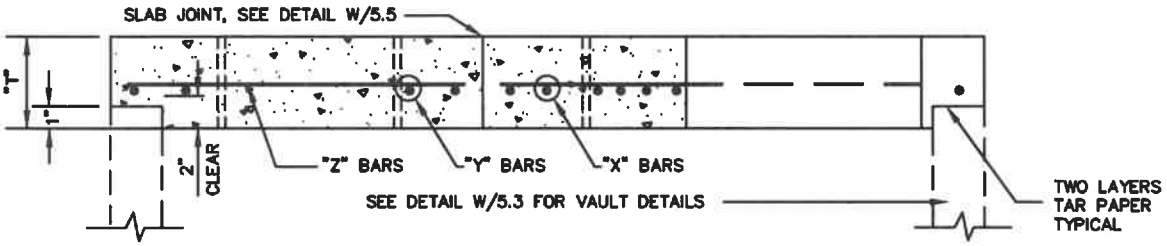
BY-PASS PIPE SIZE	
COMPOUND METER SIZE	BY-PASS PIPE SIZE
3"	2"
4"	2"
6"	4"

"A" DIMENSION (SEE DETAIL W/5.1, W/5.1a AND W/5.1b)	
COMPOUND METER SIZE	"A" (LENGTH OF METER AND STRAINER)
3"	24"
4"	29"
6"	36.5"

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanmer Chief Engineer	STANDARD DETAIL 3-INCH, 4-INCH AND 6-INCH COMPOUND METER VAULT PIPING LAYOUT	W / 5.1a



PLAN VIEW: TOP SLAB FOR CAST IN PLACE VAULTS



SECTION A-A

NOTE:

1. FOR CAST IN PLACE CONCRETE TOP SLAB THICKNESS AND REINFORCING, SEE DETAIL W/5.21.
2. FOR ADDITIONAL NOTES, SEE DETAIL W/5.21.

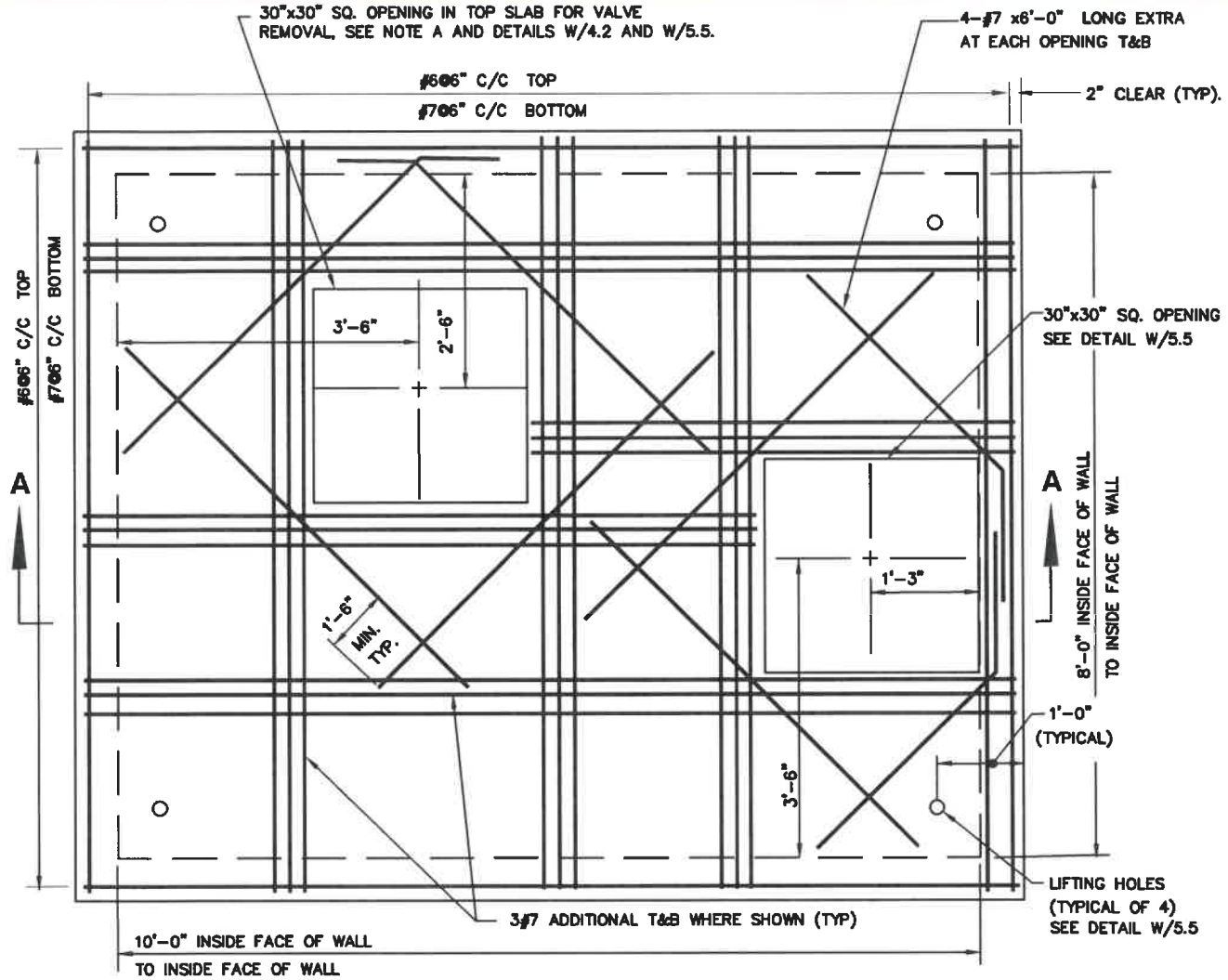
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB REINFORCING DETAILS	W 5.2

CAST IN PLACE CONCRETE TOP SLAB THICKNESS AND REINFORCING				
"Q" SEE DETAIL W/5.2	"T" SEE DETAIL W/5.2	"X" BARS SEE DETAIL W/5.2	"Y" BARS SEE DETAIL W/5.2	"Z" BARS SEE DETAIL W/5.2
4'–0"	8"	#7 @ 8" C/C	#5 @ 6" C/C	#5 @ 6" C/C
5'–0"	9"	#7 @ 7" C/C	#5 @ 6" C/C	#6 @ 6" C/C
6'–0"	10"	#7 @ 7" C/C	#5 @ 6" C/C	#6 @ 6" C/C
7'–0"	11"	#7 @ 7" C/C	#5 @ 6" C/C	#6 @ 6" C/C
8'–0"	12"	#7 @ 7" C/C	#5 @ 6" C/C	#6 @ 6" C/C
9'–0"	13"	#7 @ 7" C/C	#5 @ 6" C/C	#6 @ 6" C/C
10'–0"	14"	#7 @ 6" C/C	#6 @ 8" C/C	#6 @ 6" C/C

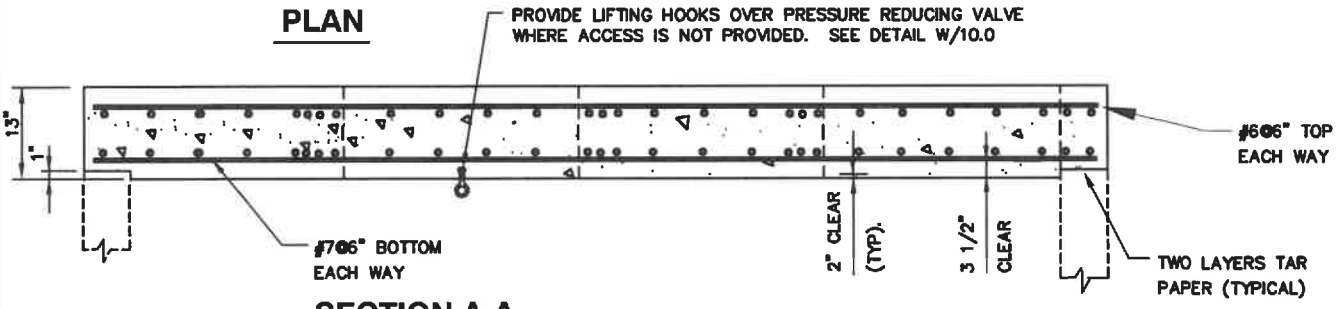
CAST IN PLACE CONCRETE TOP SLAB NOTES

1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. TOP SLABS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   A. H20 LOADING & 1'–0" COVER + IMPACT (WATER TABLE 4'–0" BELOW FINISHED GRADE)
   B. 5'–0" COVER & 2'–0" SURCHARGE. (WATER TABLE 4'–0" BELOW FINISHED GRADE)
4. CONTRACTOR MAY USE PRECAST TOP SLABS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS..
5. PROVIDE 5" ø HOLE IN TOP SLAB CENTERED OVER VALVE OPERATING NUTS, SEE DETAIL W/5.5.
6. FOR ADDITIONAL INFORMATION, SEE DETAILS W/2.4, W/4.5 AND W/10.0.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB REINFORCING DETAILS	W 5.21



PLAN



SECTION A-A

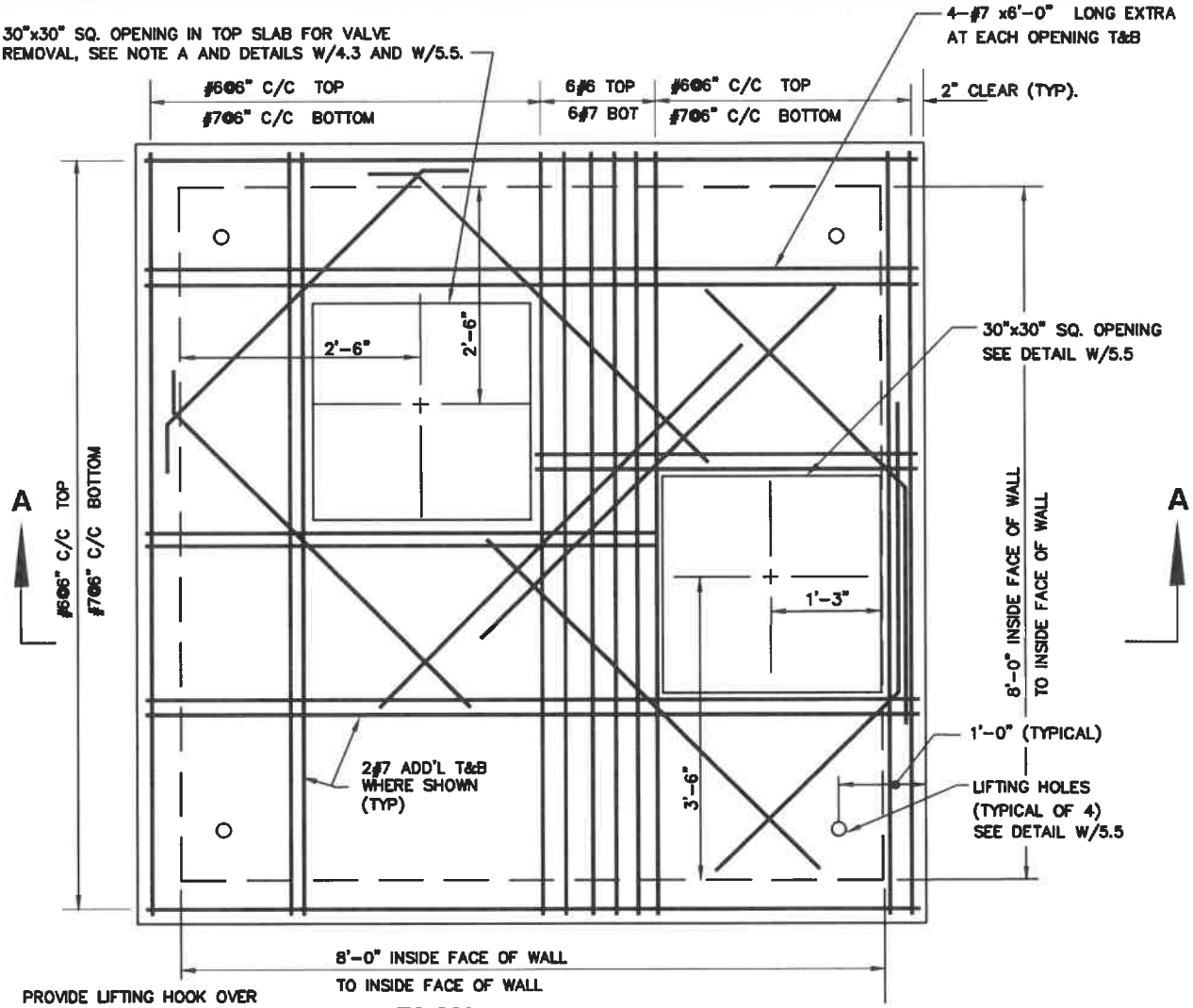
VALVE REMOVAL OPENING NOTES:

A. FOR 4" VALVE NO OPENINGS ARE REQUIRED. PROVIDE 1 PIECE TOP SLAB REINFORCED AS PER DETAIL W/5.2

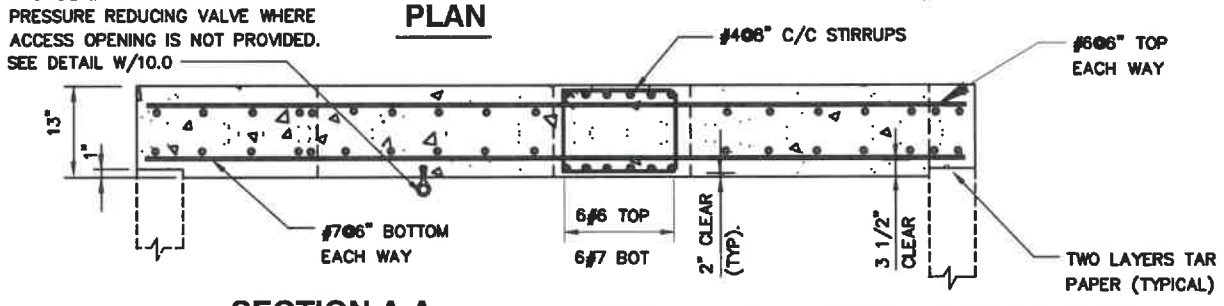
CAST IN PLACE CONCRETE TOP SLAB NOTES

1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. TOP SLABS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   a). H20LL + 0% IMPACT+ 3.5' MAXIMUM EARTH COVER
   b). H20LL + 30% IMPACT+ 1' EARTH COVER
4. CONTRACTOR MAY USE PRECAST TOP SLABS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
5. FOR ADDITIONAL INFORMATION, SEE DETAIL W/4.2.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Harrison Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB FOR TYPE "1" LAYOUT PRESSURE REDUCING VALVE VAULTS	W 5.22



PLAN



SECTION A-A

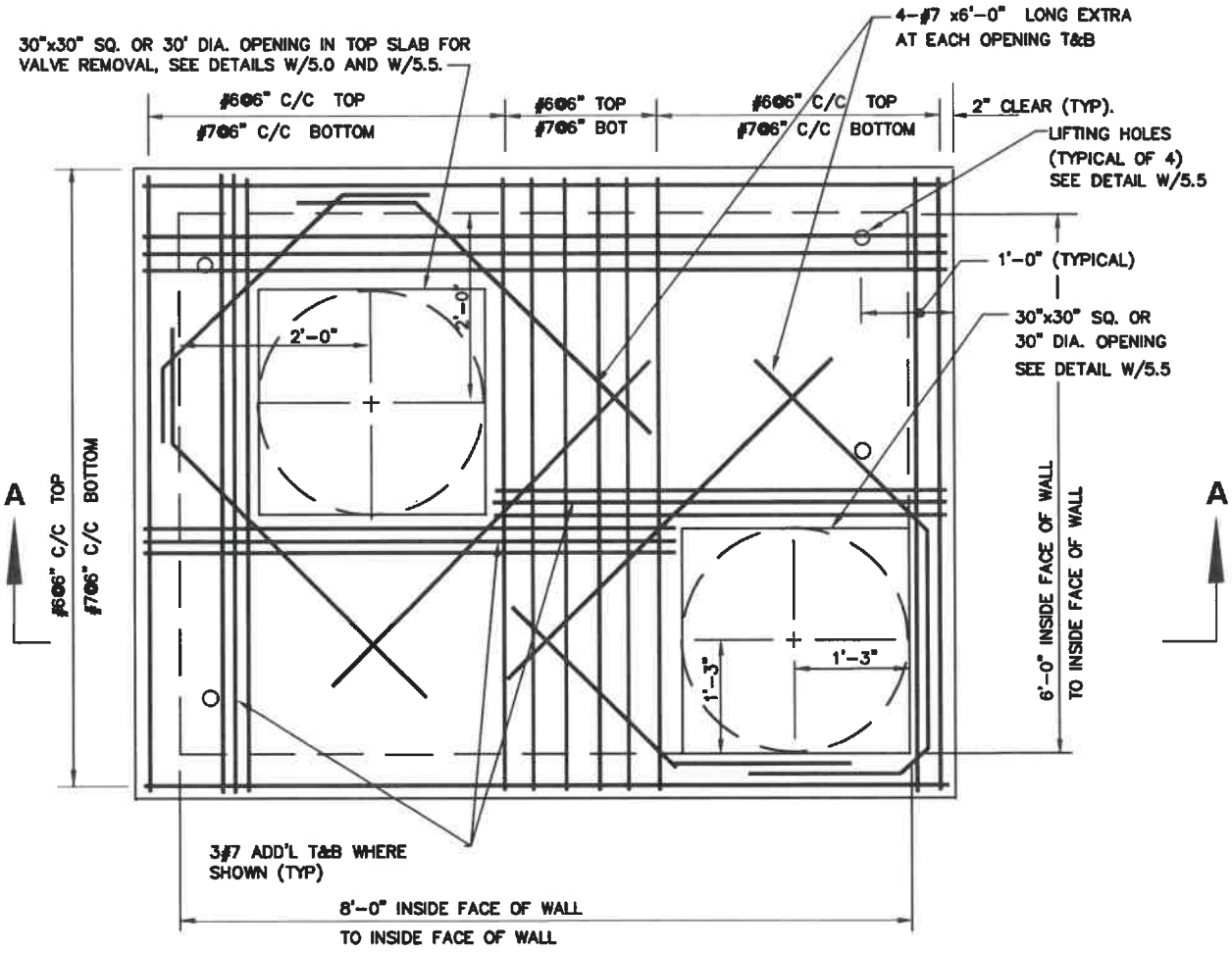
VALVE REMOVAL OPENING NOTES:

A. FOR 4" VALVE NO OPENINGS ARE REQUIRED. PROVIDE 1 PIECE TOP SLAB REINFORCED AS PER DETAIL W/5.2

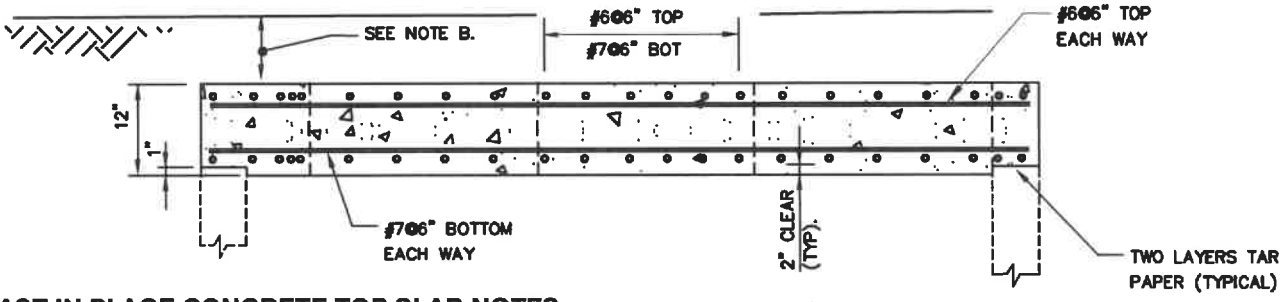
CAST IN PLACE CONCRETE TOP SLAB NOTES

1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. TOP SLABS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   a). H20LL + 0% IMPACT+ 3.5' MAXIMUM EARTH COVER
   b). H20LL + 30% IMPACT+ 1' EARTH COVER
4. CONTRACTOR MAY USE PRECAST TOP SLABS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
5. FOR ADDITIONAL INFORMATION, SEE DETAILS W/4.3 AND W/4.7.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Hoover Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB FOR DUEL PRESSURE RELIEF AND TYPE "2" LAYOUT PRESSURE REDUCING VALVE VAULTS	W 5.23



PLAN



SECTION A-A

CAST IN PLACE CONCRETE TOP SLAB NOTES:

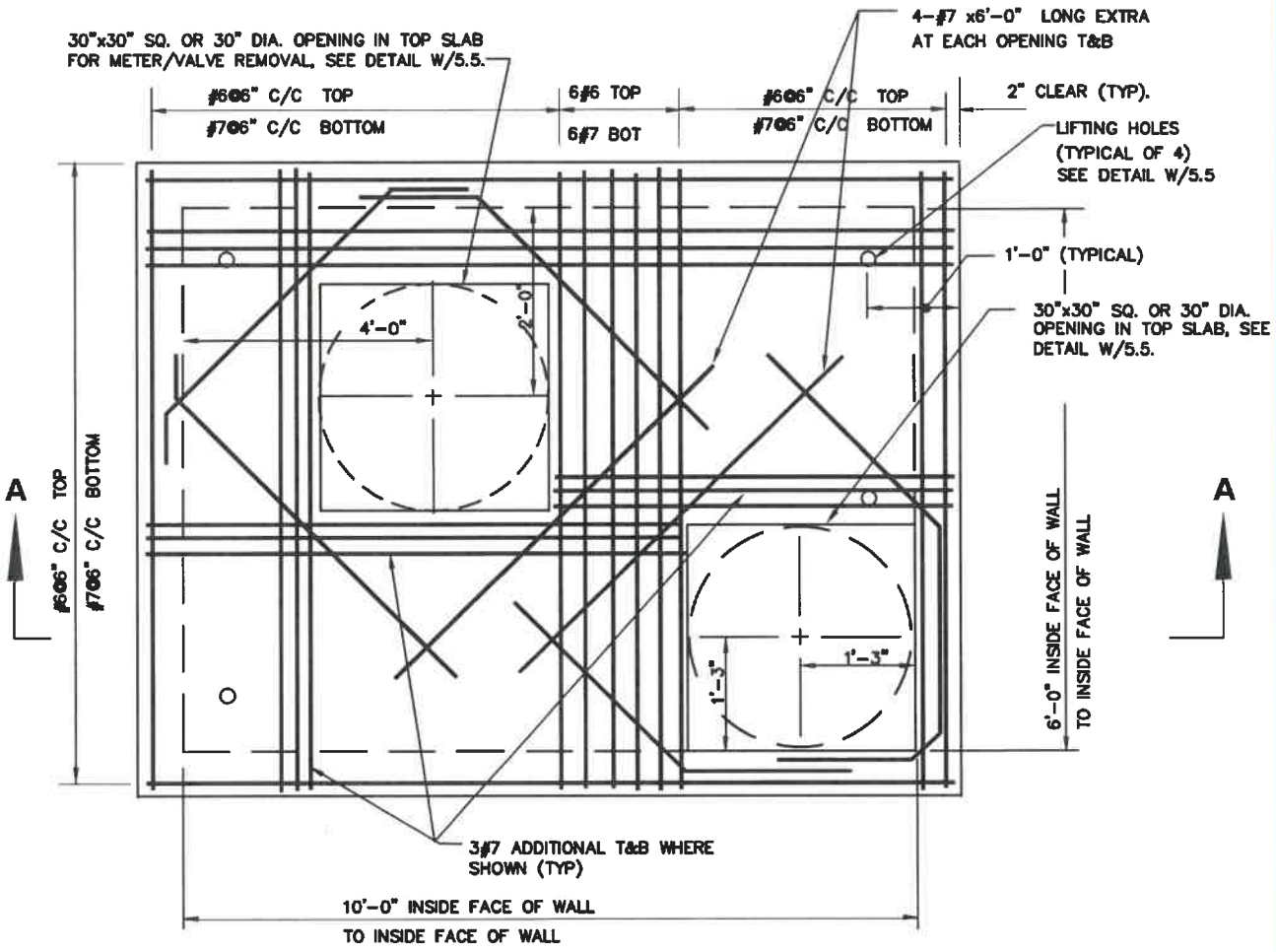
1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. TOP SLABS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   a). H20LL + 0% IMPACT+ 3.5' MAXIMUM EARTH COVER
   b). H20LL + 30% IMPACT+ 1' EARTH COVER
4. CONTRACTOR MAY USE PRECAST TOP SLABS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.

NOTE:

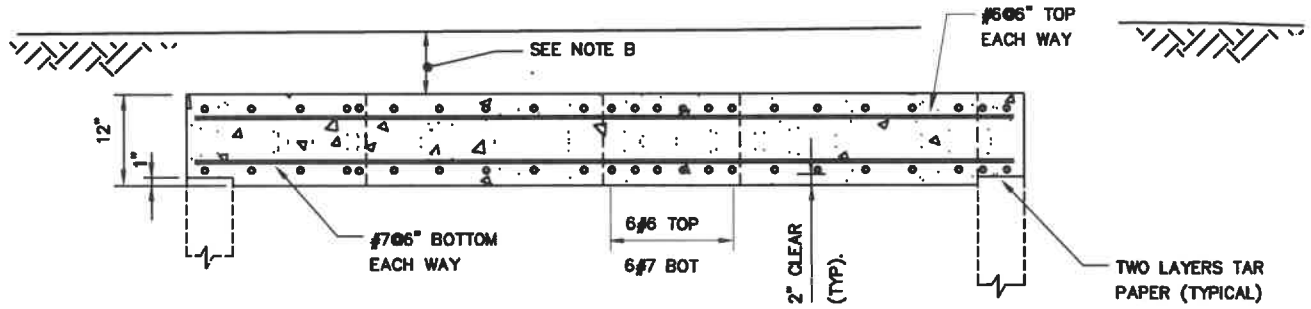
A. FOR DETAILS OF FM METERS SEE DETAILS W/5.0, W/5.0b, DETECTOR CHECK VALVE SEE W/12.0 AND ULTRASONIC METER SEE W/14.0.

B. 2'-6" MAXIMUM COVER OVER TOP SLAB, FOR MINIMUM COVER, SEE DETAIL W/5.5

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB FOR FM METER COMPOUND, ULTRASONIC METER AND DETECTOR CHECK VAULTS	W 5.24



PLAN



SECTION A-A

CAST IN PLACE CONCRETE TOP SLAB NOTES:

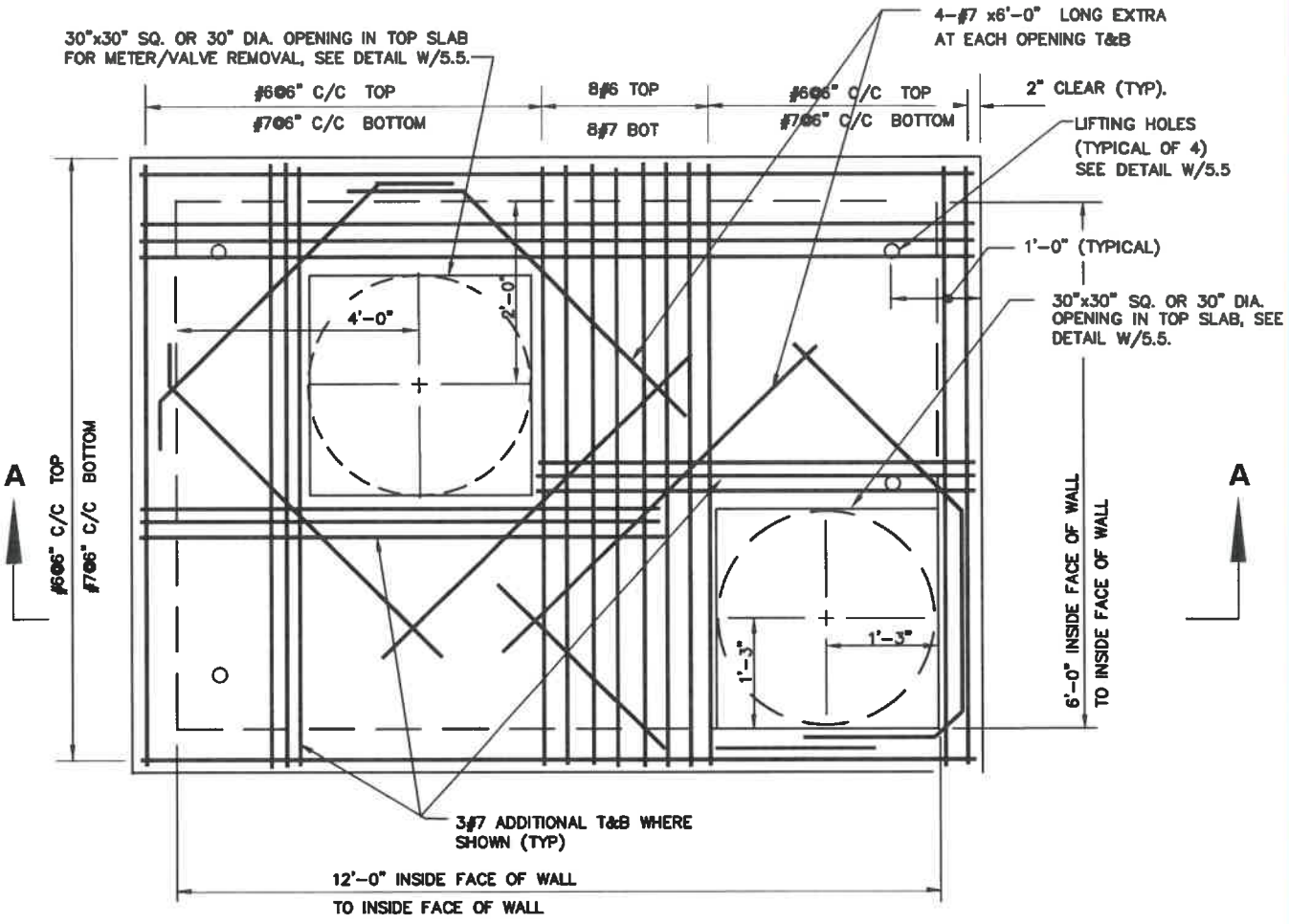
1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. TOP SLABS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   a). H20LL + 0% IMPACT+ 3.5' MAXIMUM EARTH COVER
   b). H20LL + 30% IMPACT+ 1' EARTH COVER
4. CONTRACTOR MAY USE PRECAST TOP SLABS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.

NOTE:

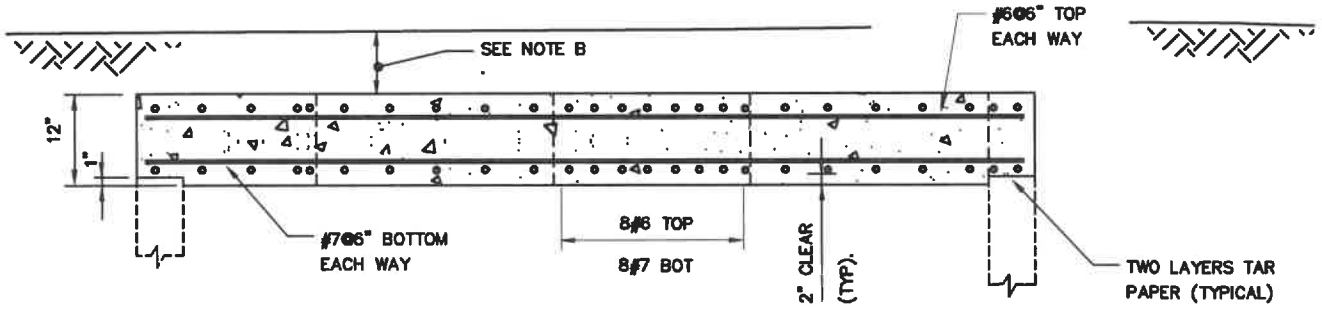
A. FOR DETAILS OF COMPOUND METERS SEE DETAIL W/5.1. FOR 10" FM METERS SEE DETAIL W/5.0g AND 6" & 8" FM METER WITH CHECK VALVE, SEE W/5.0c.AND 10" ULTRASONIC METER, SEE W/14.0a.

B. 2'-6" MAXIMUM COVER OVER TOP SLAB, FOR MINIMUM COVER, SEE DETAIL W/5.5.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanmer Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB FOR ULTRASONIC METER AND FM METER W/ CHECK VALVE VAULT	W 5.25



PLAN



SECTION A-A

CAST IN PLACE CONCRETE TOP SLAB NOTES:

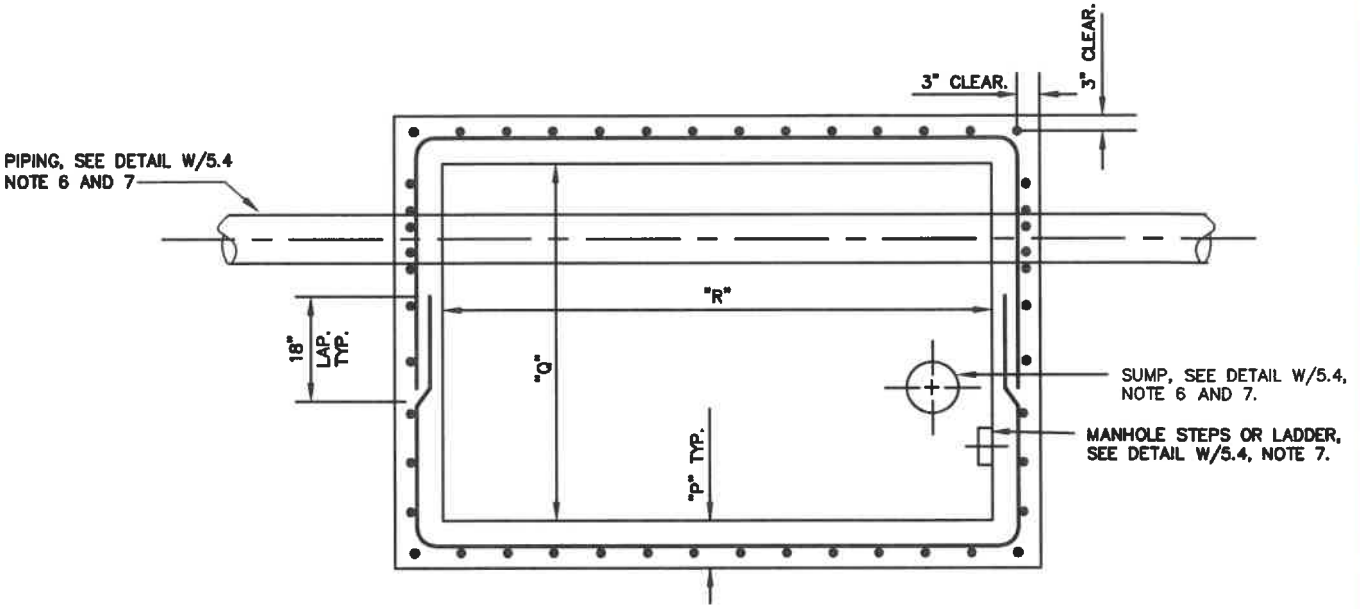
1. f'c =4000 PSI. @ 28 DAYS
2. fy= 60,000 PSI.
3. TOP SLABS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   a). H20LL + 0% IMPACT+ 3.5' MAXIMUM EARTH COVER
   b). H20LL + 30% IMPACT+ 1' EARTH COVER
4. CONTRACTOR MAY USE PRECAST TOP SLABS, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.

NOTE:

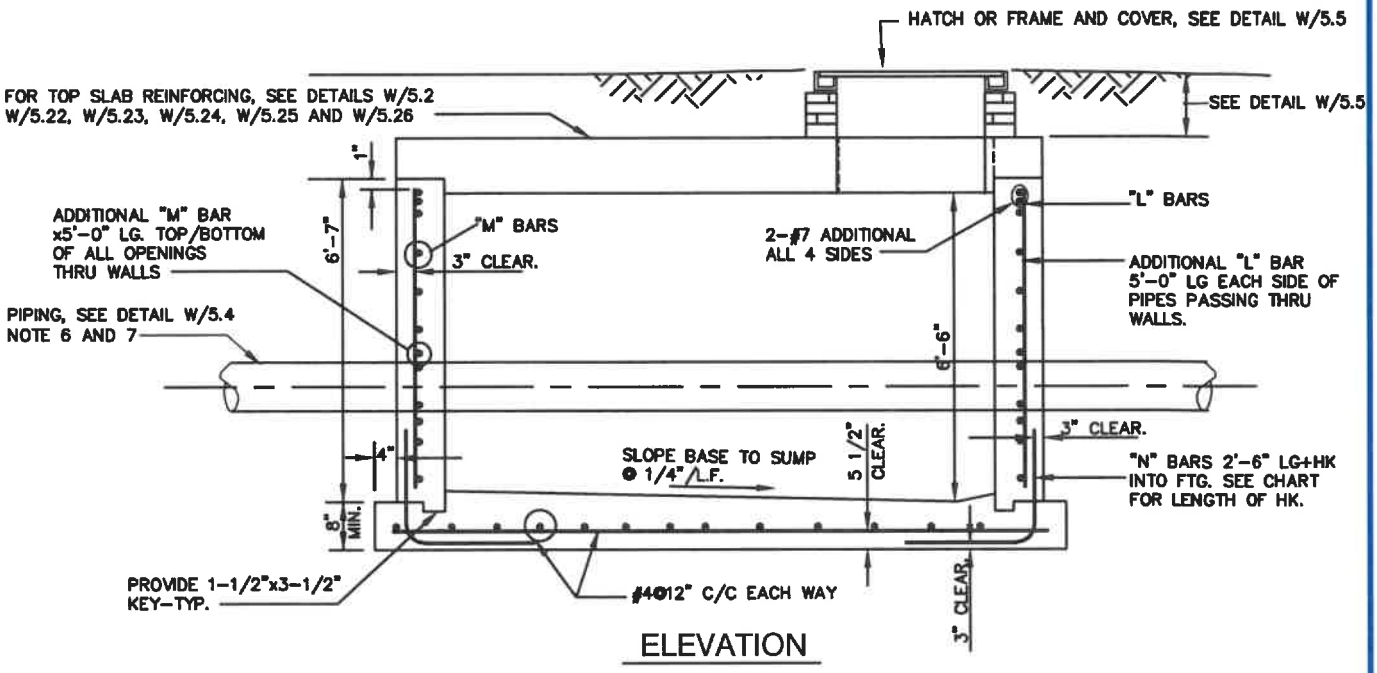
A. FOR DETAIL OF 10-INCH FM METER WITH CHECK VALVE SEE DETAIL W/5.01.

B. 2'-6" MAXIMUM COVER OVER TOP SLAB, FOR MINIMUM COVER, SEE DETAIL W/5.5

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanmer Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE TOP SLAB FOR 10-INCH FM METER WITH CHECK VALVE VAULT	W 5.26



PLAN OF VAULT-TOP SLAB REMOVED



ELEVATION

NOTE:

1. FOR ADDITIONAL NOTES AND REINFORCING, SEE DETAIL W/5.4.

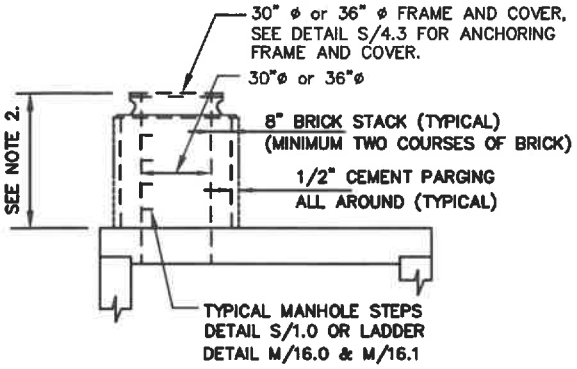
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE VAULT	W 5.3

"P"	"Q"	"R"	"L"	"M"	"N"
8"	6'-0"	6'-0"	#4@12"	#4@12"	#5@12"+2'-0" HK
8"	6'-0"	8'-0"	#4@12"	#4@12"	#5@12"+3'-0" HK
8"	6'-0"	10'-0"	#4@10"	#4@12"	#5@12"+3'-0" HK
8"	6'-0"	12'-0"	#4@10"	#4@12"	#5@12"+3'-0" HK
8"	8'-0"	8'-0"	#4@10"	#4@12"	#5@10"+3'-0" HK
8"	8'-0"	10'-0"	#4@8"	#4@12"	#5@8"+3'-0" HK
8"	8'-0"	12'-0"	#4@6"	#4@12"	#5@6"+4'-0" HK

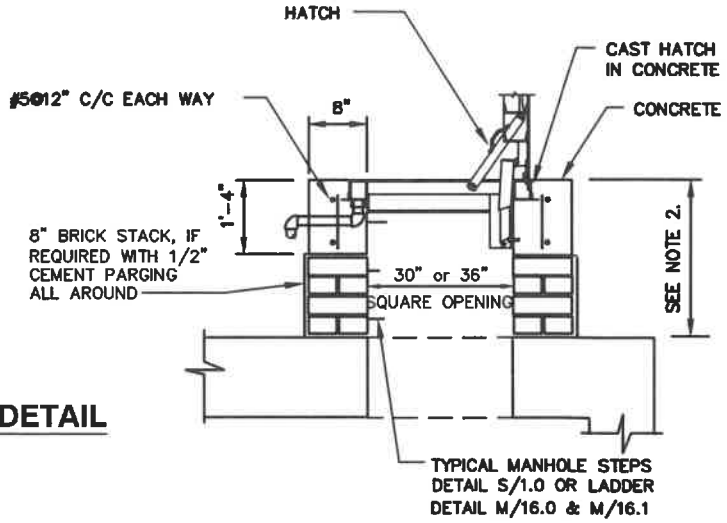
NOTES:

1. FOR VAULT DETAILS SEE DETAIL W/5.3.
2. f'c = 4,000PSI @ 28 DAYS.
3. f'y = 60,000PSI.
4. VAULTS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   a. H20 LOADING AND 1'-0" COVER PLUS IMPACT (WATER TABLE 4'-0" BELOW FINISHED GRADE)
   b. 5'-0" COVER PLUS 2'-0" SURCHARGE (WATER TABLE 4'-0" BELOW FINISHED GRADE)
5. CONTRACTOR MAY USE PRECAST VAULTS SEE THE FOLLOWING:
   a. SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
   b. PRECAST VAULTS SHALL BE ONE PIECE UNIT FOR WALLS AND BOTTOM SLAB.
6. PROVIDE RUBBER ANNUAL HYDROSTATIC SEALING FOR ALL PIPES THROUGH WALLS AND BOTTOM SLABS CONNECTIONS, SEE SPECIFICATIONS.
7. FOR PIPING LAYOUTS AND OTHER REQUIREMENTS SEE DETAILS W/4.2, W/4.3, W/4.5, W/5.0, W/5.0b, W/5.0c, W/5.1, W/5.1a, W/10.0, W/12.0, W/14.0 AND W/14.0a.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Hoover Chief Engineer	STANDARD DETAIL CAST IN PLACE CONCRETE VAULTS NOTES	W 5.4



MANHOLE FRAME AND COVER STACK DETAIL

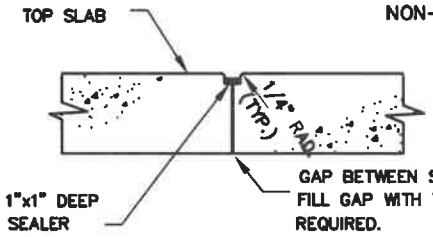


NOTE:

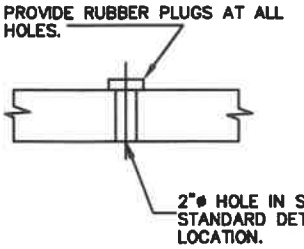
1. DO NOT USE HATCHES WHERE VAULTS ARE LOCATED IN A STREET OR OTHER LOCATIONS SUBJECTED TO TRAFFIC
2. FOR MAXIMUM COVER OVER TOP SLAB SEE DETAILS W/2.4, W/2.4a, W/2.6, W/5.21, W/5.22, W/5.23, W/5.24, W/5.25 AND W/10.7.
3. FOR MINIMUM COVER OVER TOP SLAB. HATCHES 1'-4" MINIMUM AND FRAME AND COVERS 1'-3" MINIMUM.

HATCH STACK DETAIL

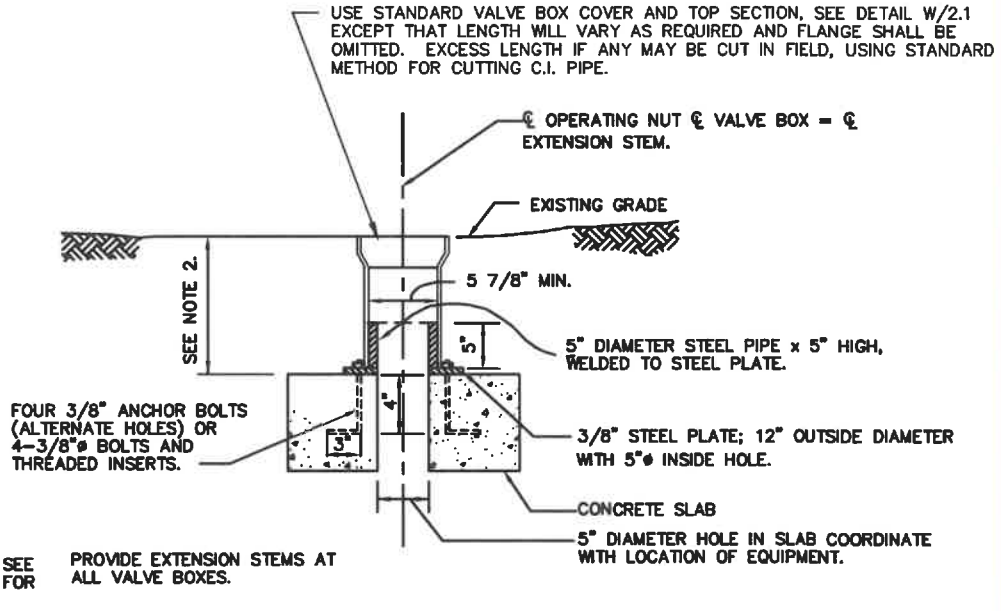
NON-TRAFFIC LOCATION ONLY



SLAB JOINT DETAIL

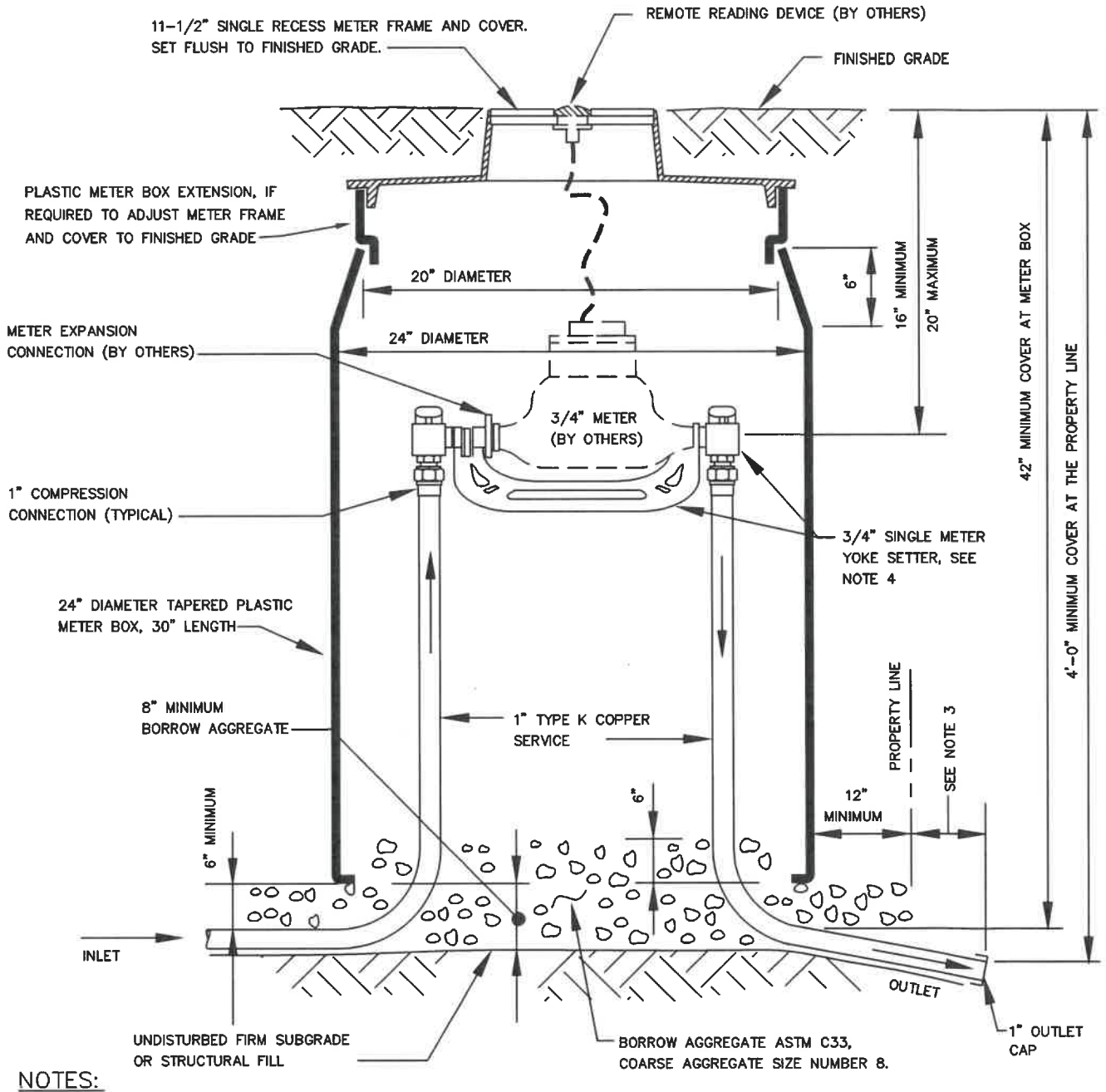


LIFTING HOLE DETAIL



VALVE BOX SLAB OPENING

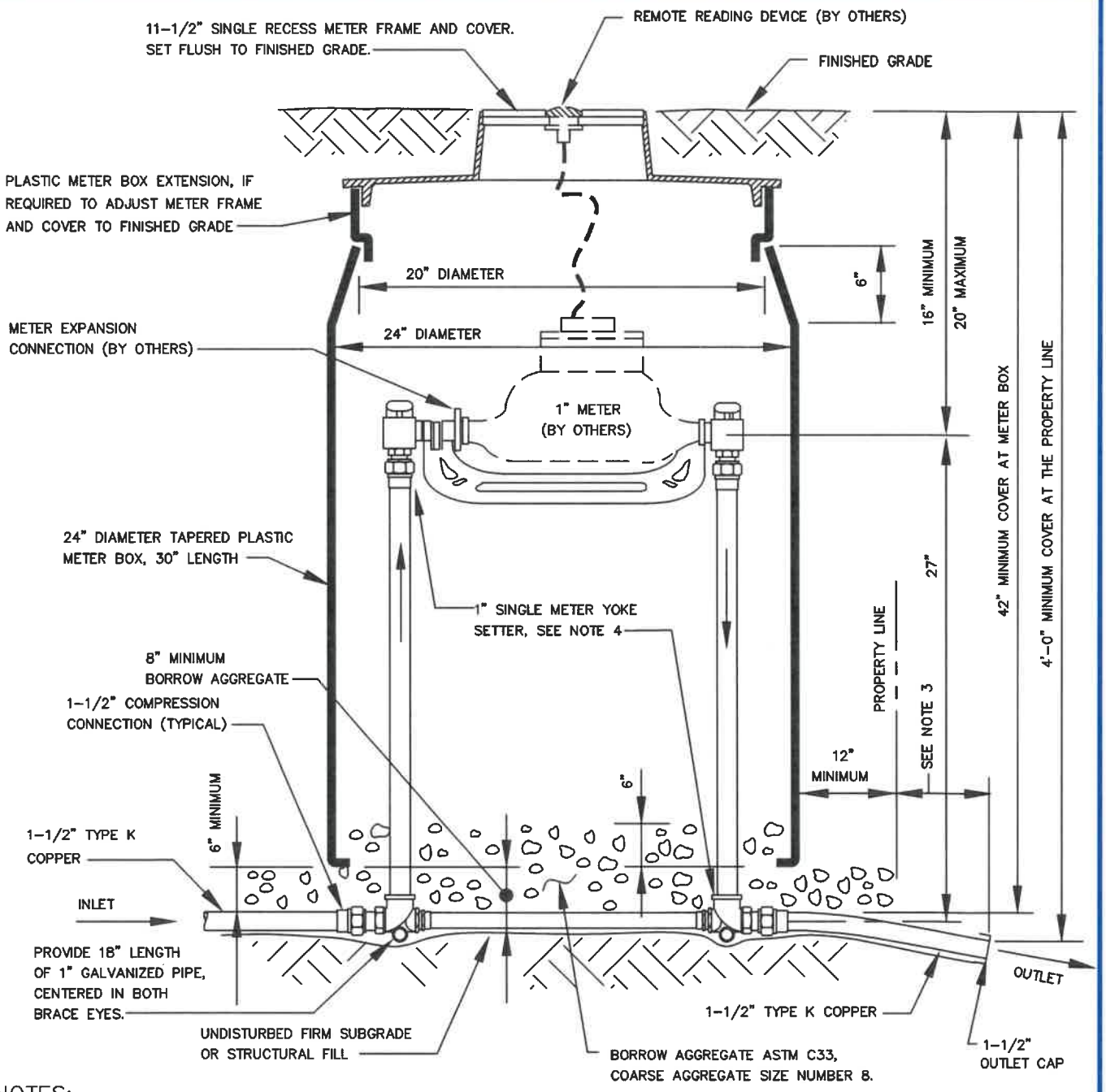
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL TOP SLAB DETAILS FOR VAULTS	W 5.5



NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. EXTEND COPPER SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX AS SHOWN OR PROPERTY LINE, WHICHEVER IS GREATER.
4. 3/4" SINGLE METER YOKE SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING TWO ANGLE BALL VALVES AND YOKE.
5. FOR REPLACEMENT OF EXISTING WATER HOUSE CONNECTION ONLY.

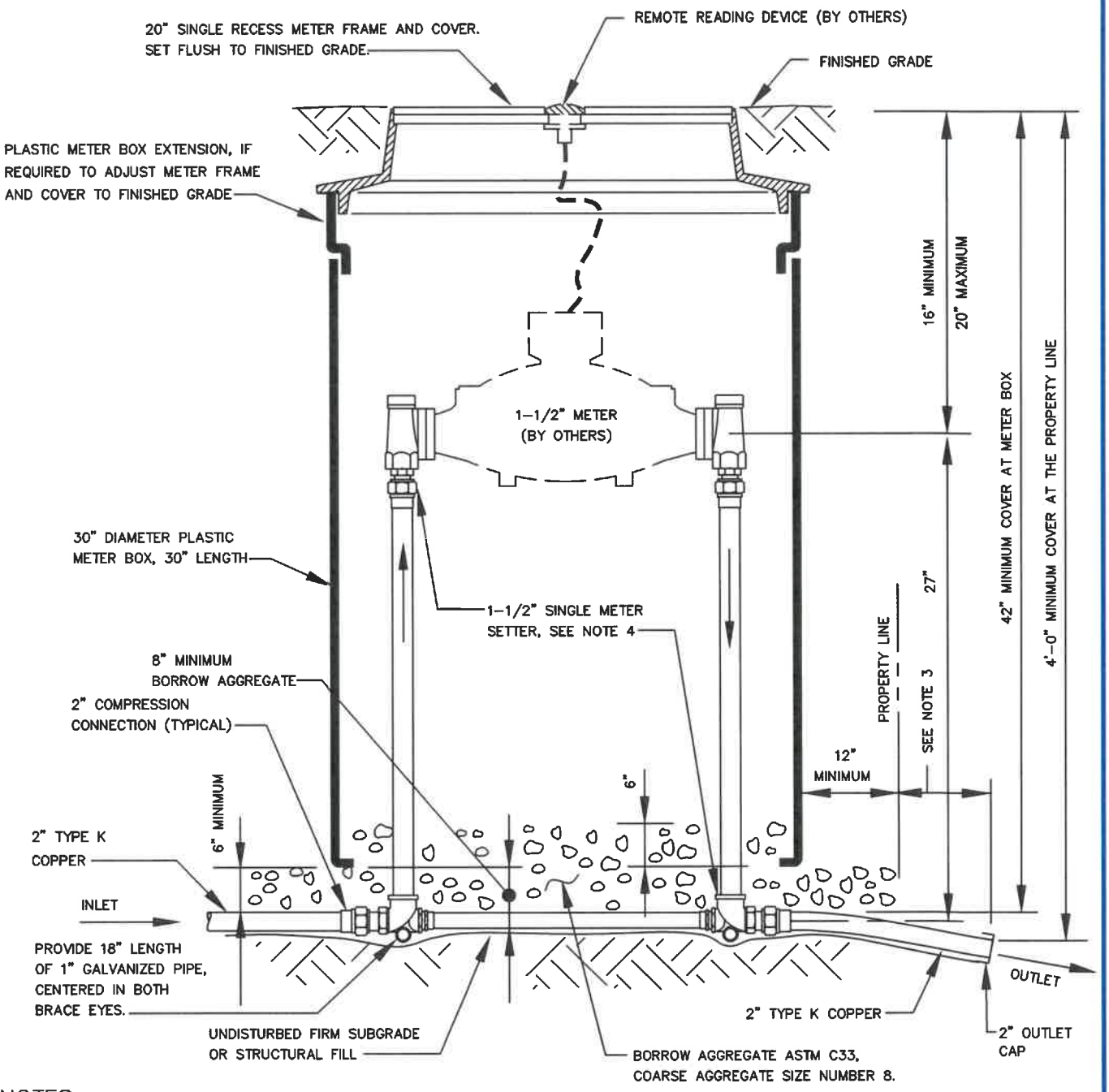
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 3/4-INCH METER SETTING FOR 1-INCH SERVICE	W 5.6



NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. EXTEND COPPER SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX OR PROPERTY LINE, WHICHEVER IS GREATER.
4. 1" SINGLE METER YOKE SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING TWO ANGLE BALL VALVES, YOKE, BENDS AND COMPRESSION CONNECTIONS.

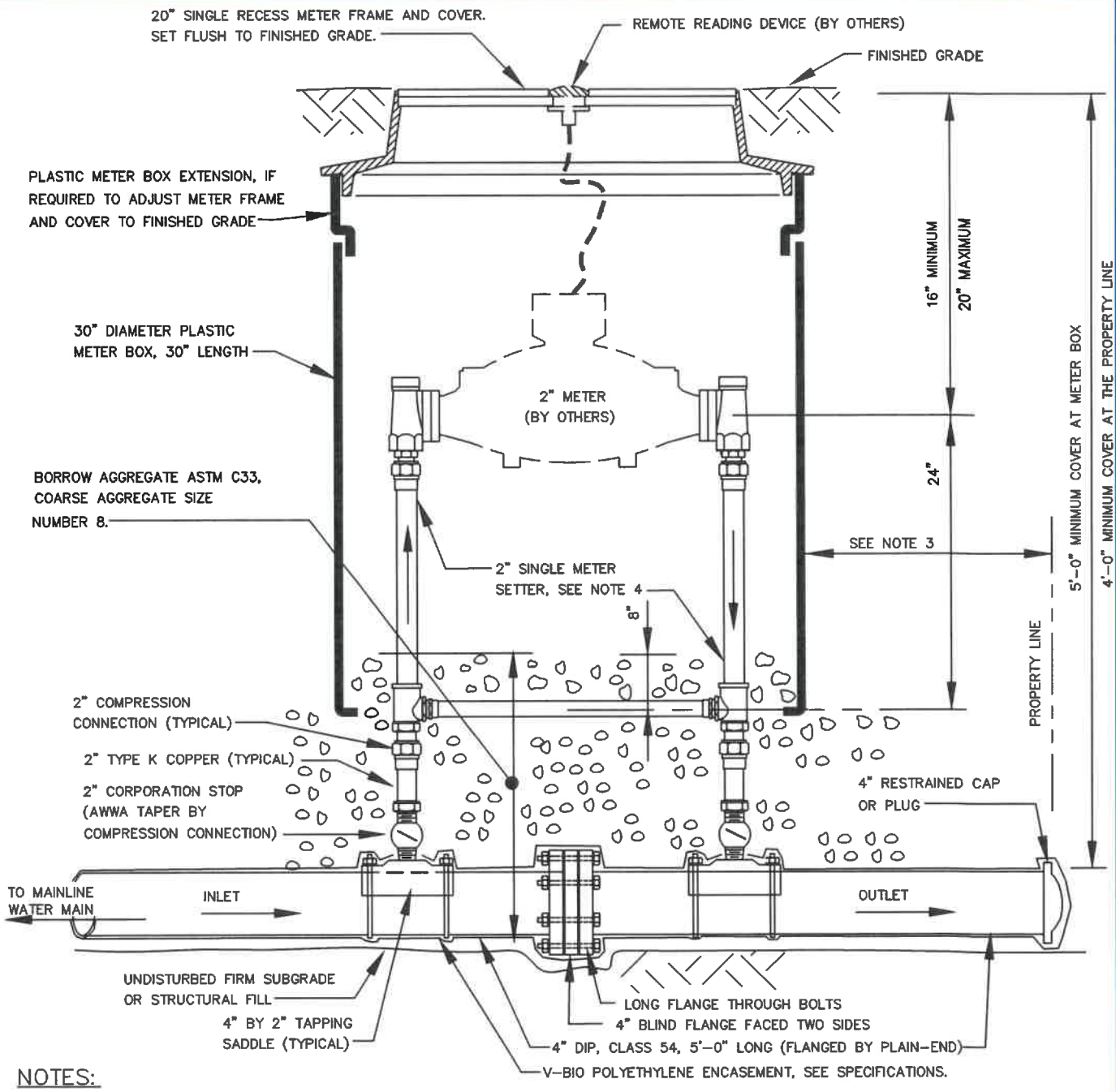
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 1-INCH METER SETTING FOR 1-1/2-INCH SERVICE	W 5.7



NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. EXTEND COPPER SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX OR PROPERTY LINE, WHICHEVER IS GREATER.
4. 1-1/2" SINGLE METER SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING TWO ANGLE BALL VALVES, BENDS AND COMPRESSION CONNECTIONS.

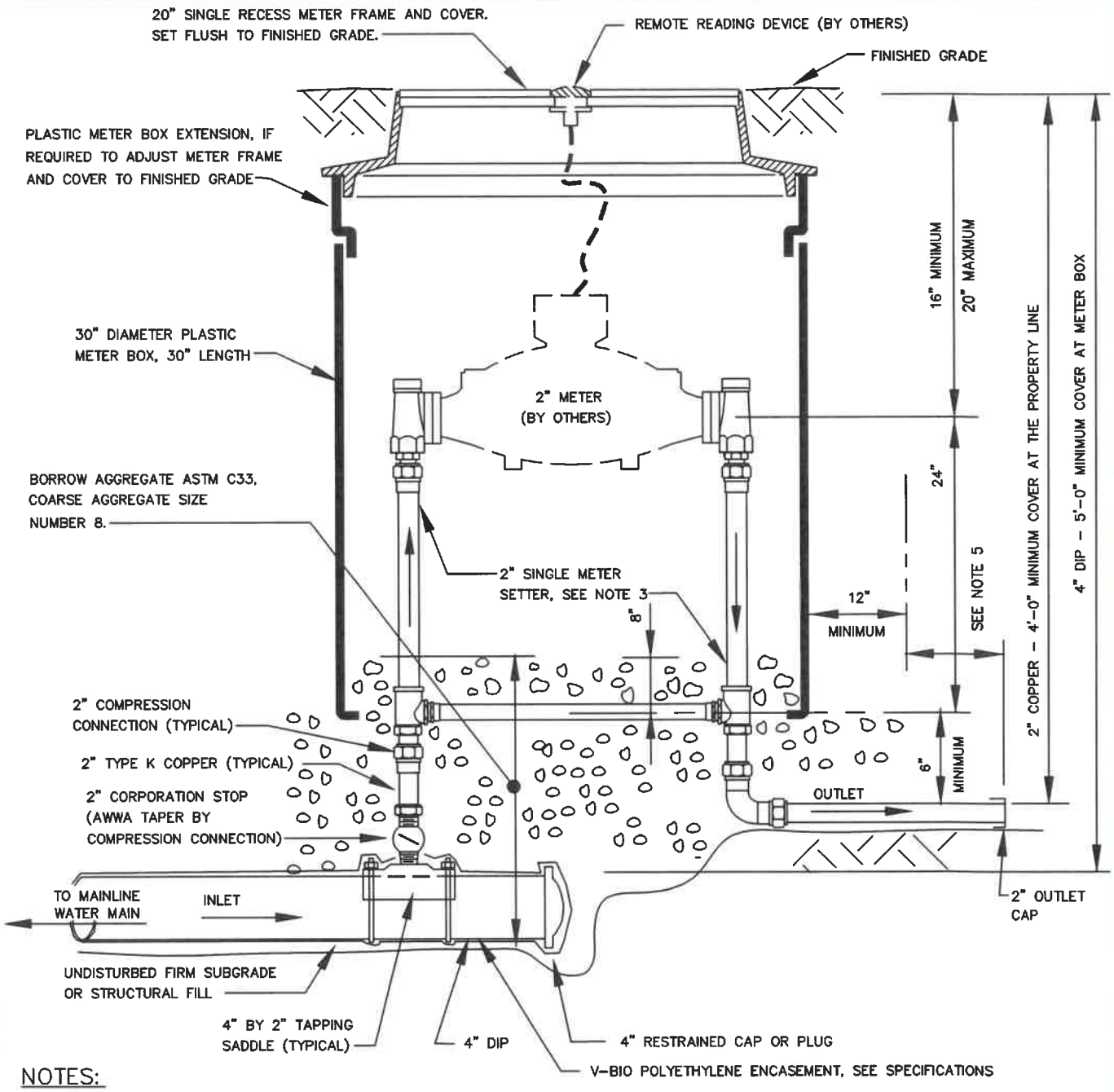
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 1-1/2-INCH METER SETTING FOR 2-INCH SERVICE	W 5.8



NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. EXTEND DUCTILE IRON SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX OR PROPERTY LINE, WHICHEVER IS GREATER.
4. 2" SINGLE METER SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING TWO ANGLE BALL VALVES, FITTINGS AND COMPRESSION CONNECTIONS.
5. RESTRAIN ALL PIPE JOINTS ON 4" DUCTILE IRON SERVICE, FROM THE MAINLINE WATER MAIN TO THE PLUG OR CAP.
6. V-BIO REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

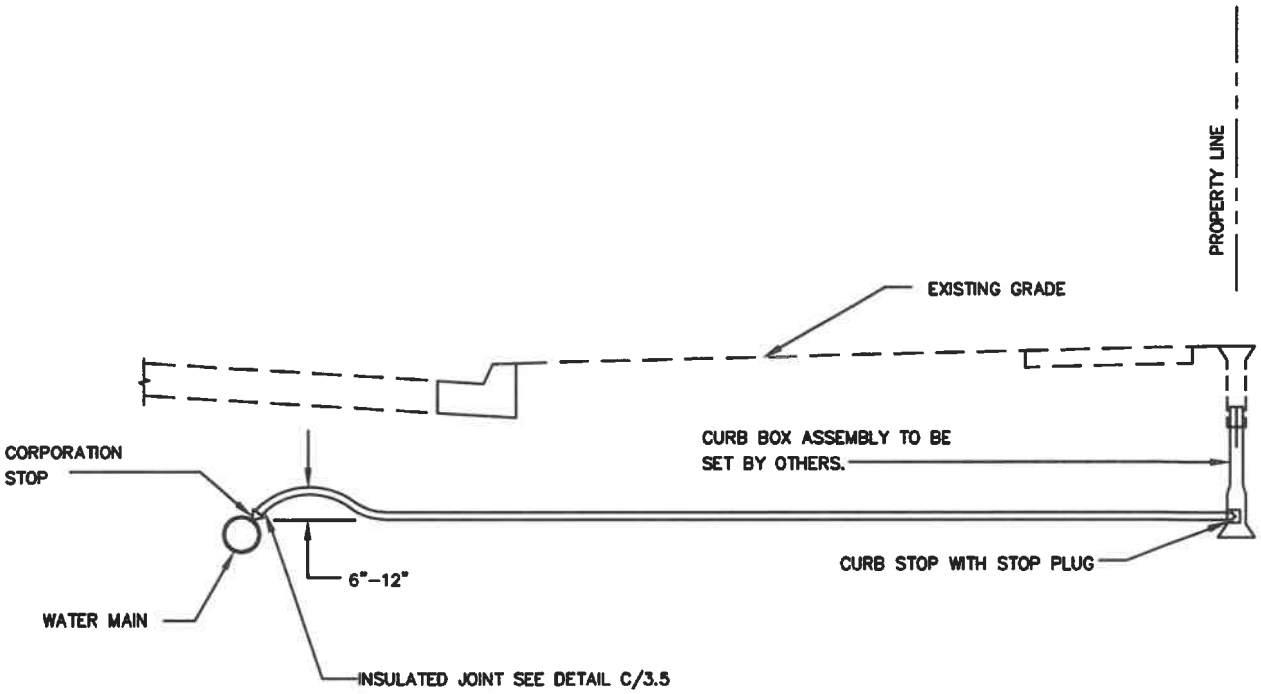
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 2-INCH METER SETTING FOR 4-INCH SERVICE	W 5.9



NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. 2" SINGLE METER SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING TWO ANGLE BALL VALVES, FITTINGS AND COMPRESSION CONNECTIONS.
4. RESTRAIN ALL PIPE JOINTS ON 4" DUCTILE IRON SERVICE, FROM THE MAINLINE WATER MAIN TO THE 4" RESTRAINED CAP OR PLUG
5. EXTEND COPPER SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX OR PROPERTY LINE, WHICHEVER IS GREATER.
6. V-BIO REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

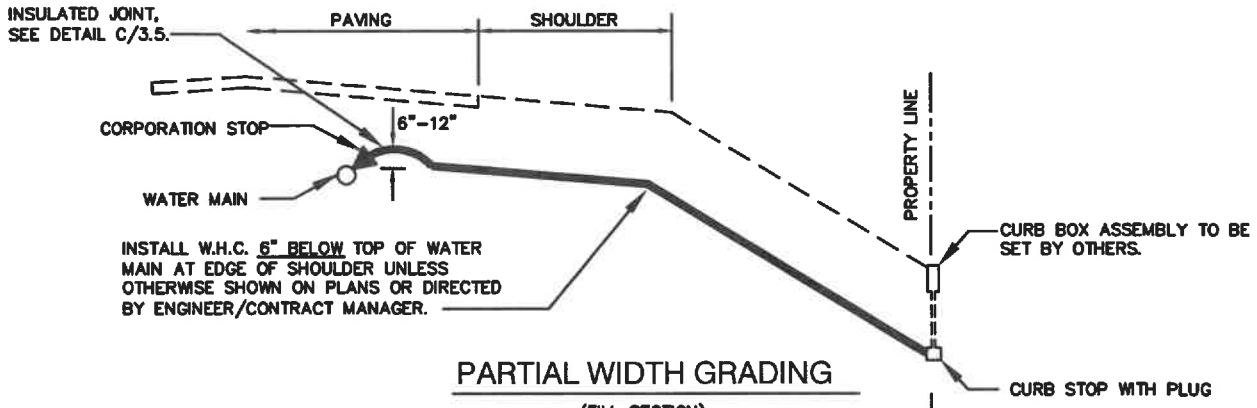
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 2-INCH METER SETTING FOR EXISTING 2-INCH METER REPLACEMENT	W 5.9a



NOTES:

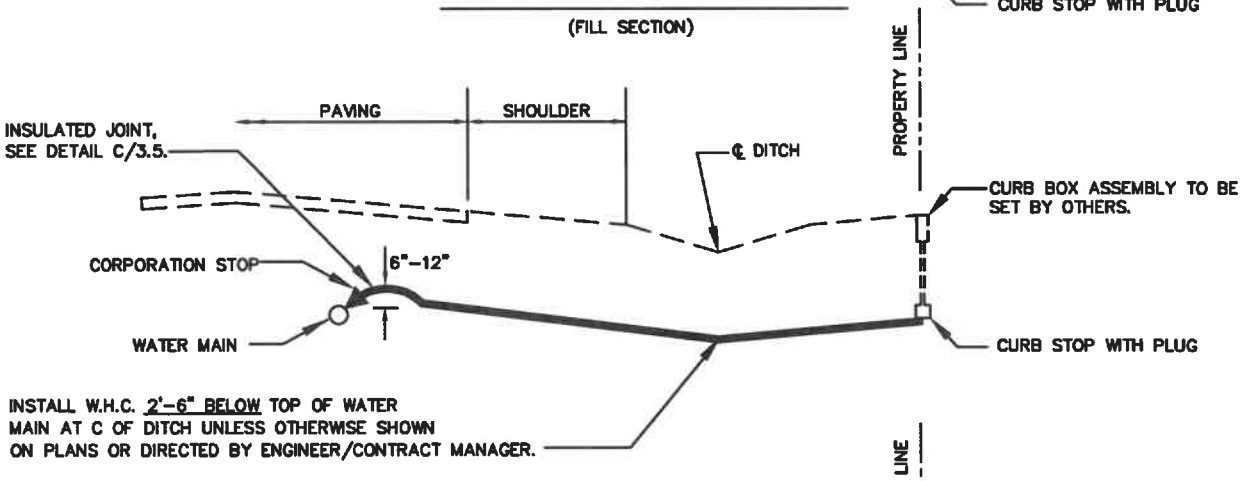
1. INSTALL W.H.C. 3'–6" MINIMUM BELOW FINISHED GRADE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
2. WHEN W.H.C. AND S.H.C. ARE INSTALLED IN SAME TRENCH, SEE DETAIL M/18.0.
3. END OF W.H.C. AT THE PROPERTY LINE. PROVIDE 4'–0" COVER OVER END OF W.H.C., UNLESS OTHER DIRECTED BY THE ENGINEER/CONTRACT MANAGER.
4. CORPORATION STOP TO BE LEFT OPEN AND CURB STOP TO STAY CLOSED.
5. AN APPROVED BENDING TOOL REQUIRED FOR MAKING BENDS IN ALL SIZES OF TYPE "K" COPPER PIPE.
6. FOR CONNECTIONS TO NEW WATER PIPE, V–BIO POLYETHYLENE ENCASEMENT REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 1-INCH, 1-1/2-INCH AND 2-INCH WATER HOUSE CONNECTIONS FOR INSIDE METERS	W 5.10

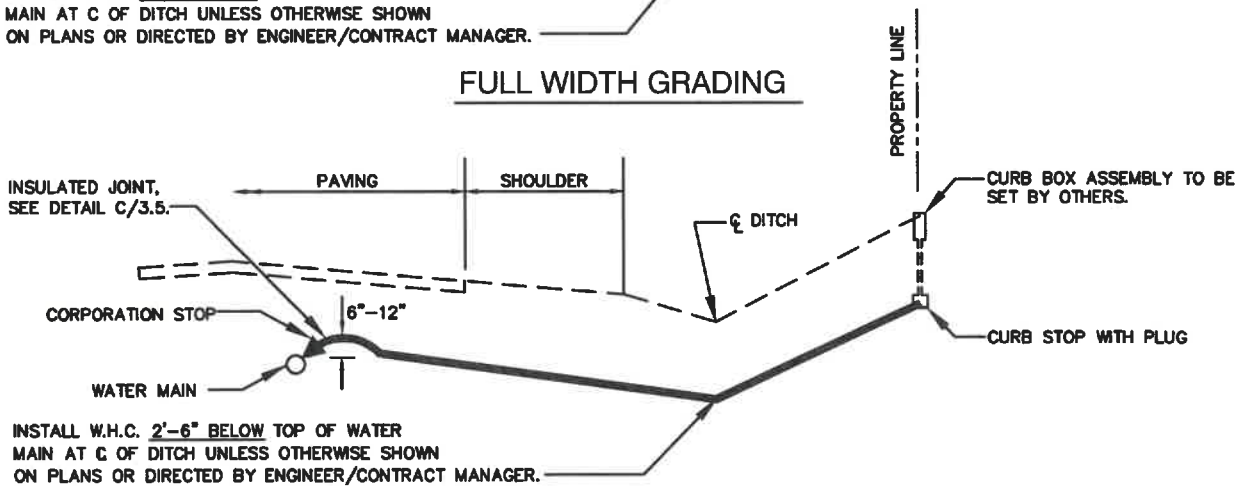


PARTIAL WIDTH GRADING

(FILL SECTION)



FULL WIDTH GRADING



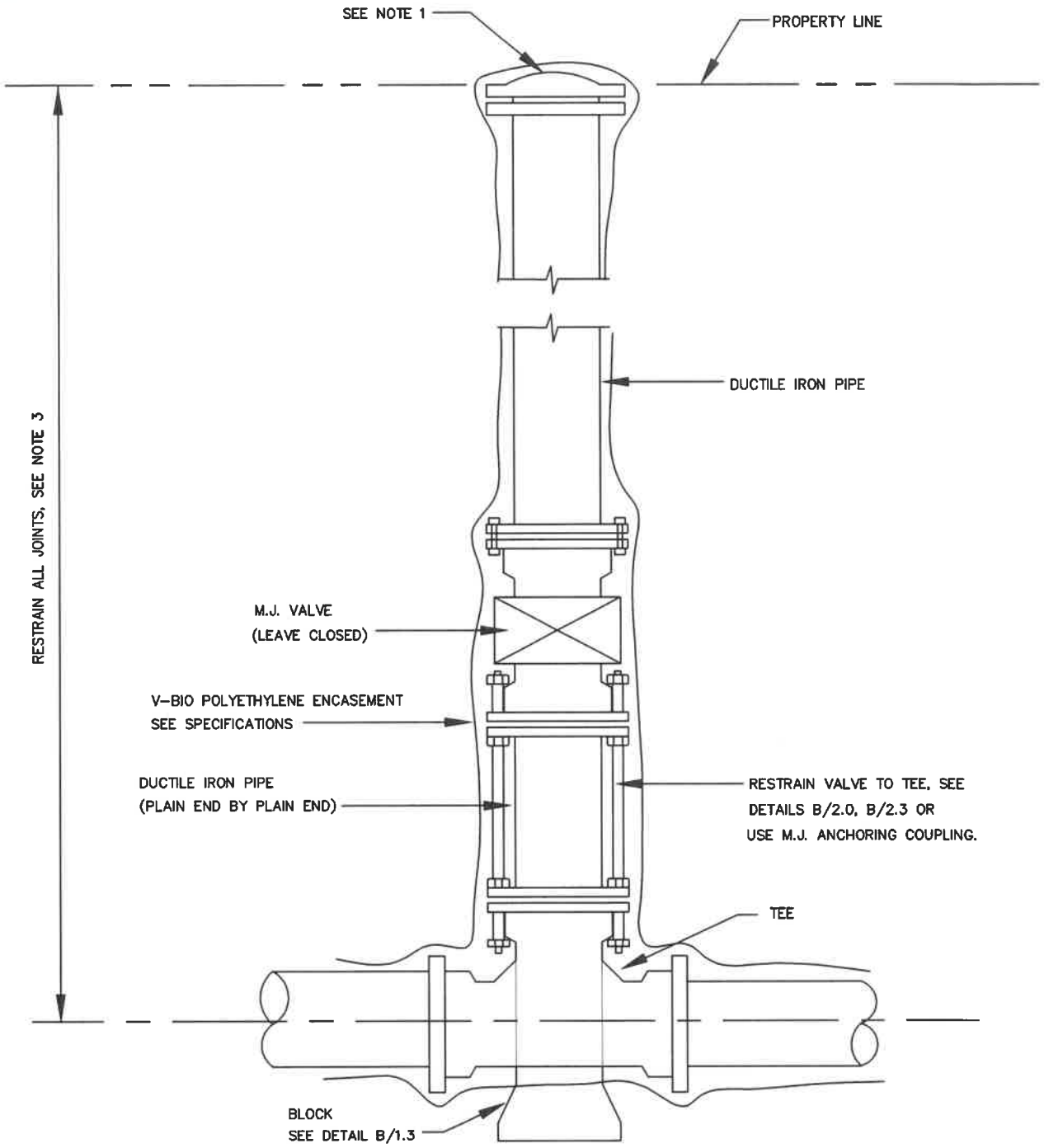
PARTIAL WIDTH GRADING

(CUT SECTION)

NOTES:

1. INSTALL W.H.C. 3'–6" MINIMUM BELOW FINISHED GRADE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
2. WHEN W.H.C. AND S.H.C. ARE INSTALLED IN SAME TRENCH, SEE DETAIL M/18.0.
3. END OF W.H.C. AT THE PROPERTY LINE. PROVIDE 4'–0" COVER OVER END ON W.H.C., UNLESS OTHER DIRECTED BY THE ENGINEER/CONTRACT MANAGER.
4. CORPORATION STOP TO BE LEFT OPEN AND CURB STOP TO STAY CLOSED.
5. AN APPROVED BENDING TOOL REQUIRED FOR MAKING BENDS IN ALL SIZES OF TYPE "K" COPPER PIPE.
6. FOR CONNECTIONS TO NEW WATER PIPE, V–BIO POLYETHYLENE ENCASEMENT IS REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

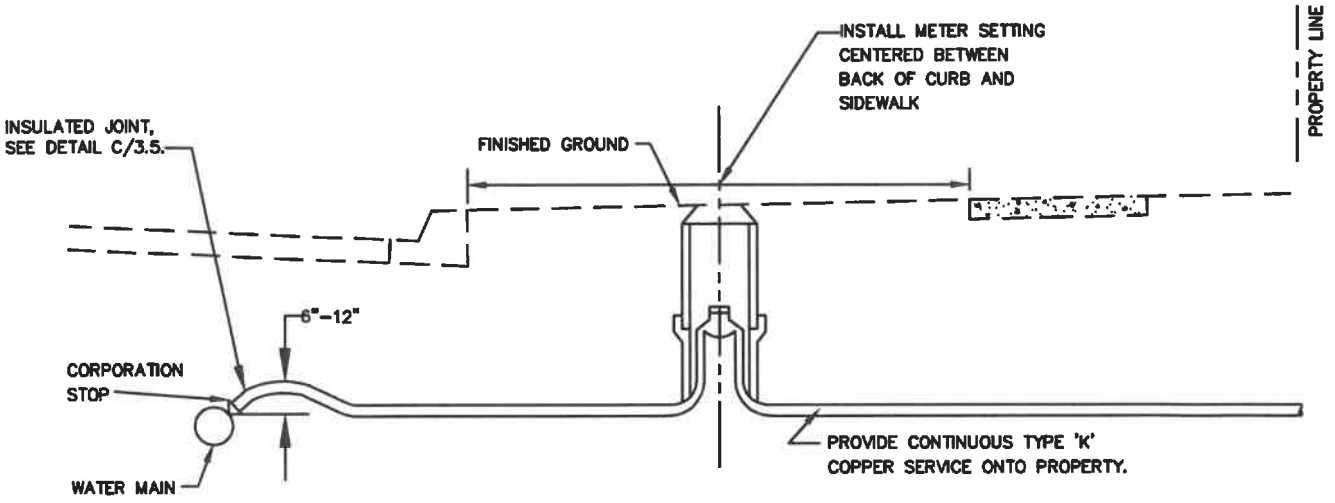
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 1-INCH, 1-1/2-INCH AND 2-INCH WATER HOUSE CONNECTIONS FOR INSIDE METERS RURAL TYPE PAVING SECTION	W 5.11



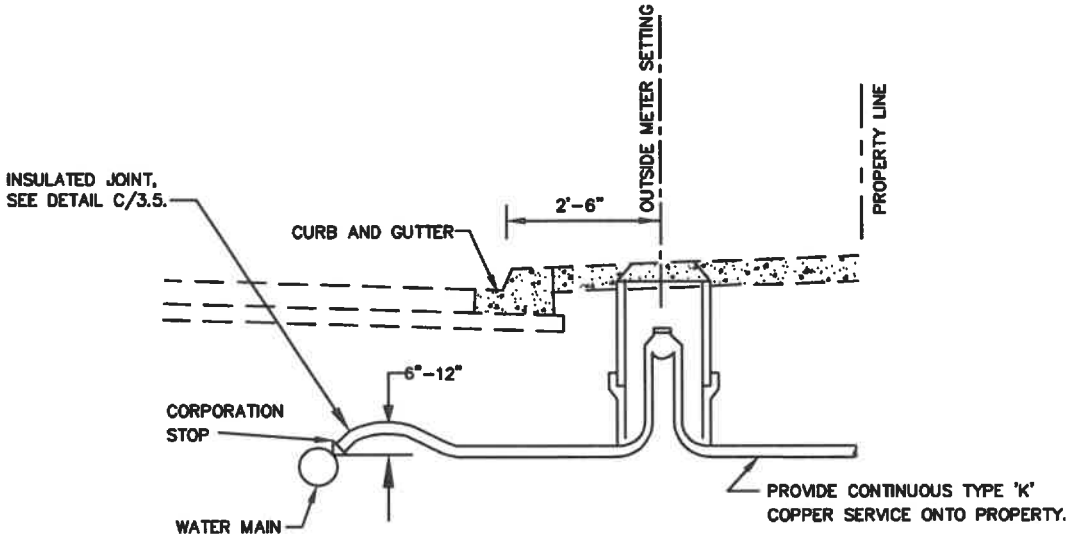
NOTES:

1. FOR INSIDE METER SETTINGS, TERMINATE WATER HOUSE CONNECTION WITH A MJ CAP. FOR OUTSIDE METER SETTINGS, SEE DETAILS W/5.0a, W/5.0d, W/5.1c, W/5.9, W/5.9a AND W/12.0a.
2. LAY SERVICE LEVEL UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. RESTRAIN ALL JOINTS ON WATER HOUSE CONNECTION.
4. IF BENDS ARE INSTALLED ON WATER HOUSE CONNECTION PROVIDE BLOCKING. SEE DETAILS B/1.0 AND B/1.8

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 4-INCH THRU 12-INCH DUCTILE IRON WATER HOUSE CONNECTION	W 5.12



PROFILE - GRASS AREA BEHIND CURB

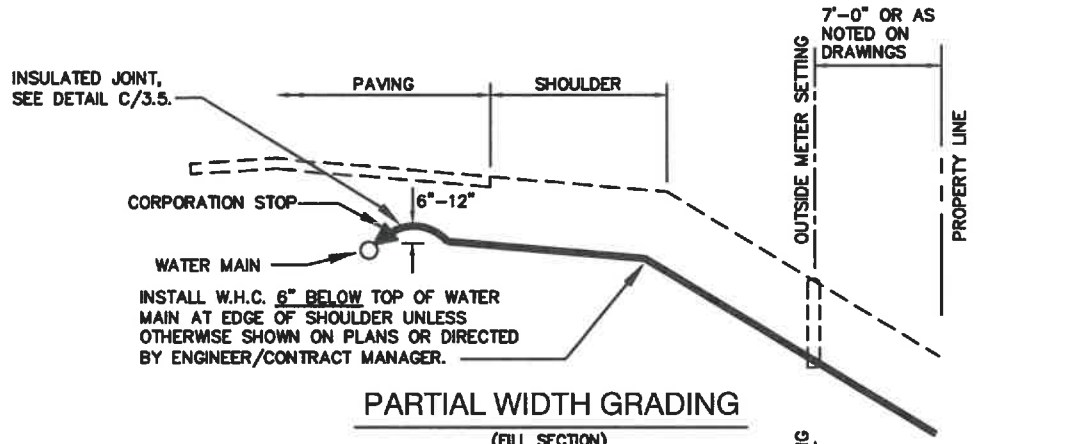


PROFILE - SIDEWALK BEHIND CURB

NOTES:

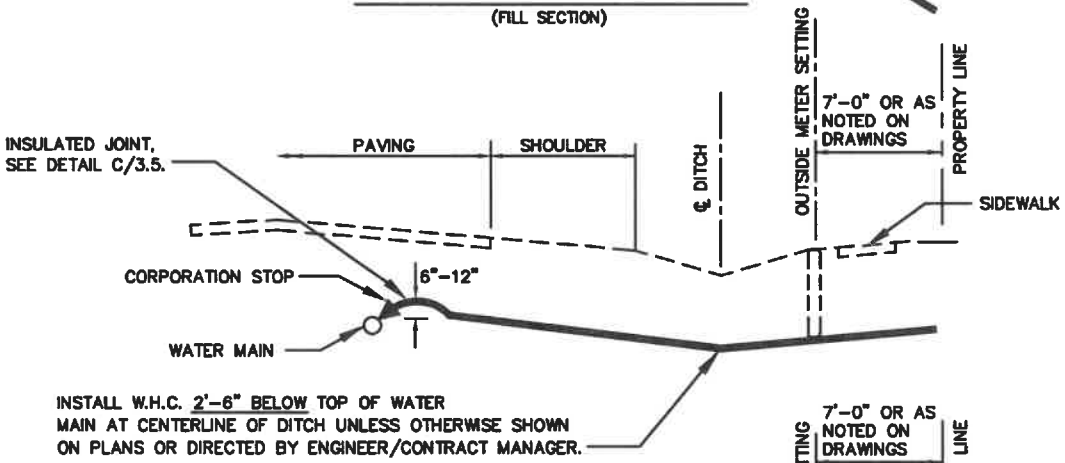
1. INSTALL W.H.C. 3'-6" MINIMUM BELOW FINISHED GRADE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
2. WHEN W.H.C. AND S.H.C. ARE INSTALLED IN SAME TRENCH, SEE DETAIL M/18.0.
3. END OF W.H.C. AT THE PROPERTY LINE. PROVIDE 4'-0" COVER OVER END ON W.H.C., UNLESS OTHER DIRECTED BY THE ENGINEER/CONTRACT MANAGER.
4. CORPORATION STOP TO BE LEFT OPEN AND CURB STOP TO STAY CLOSED.
5. AN APPROVED BENDING TOOL REQUIRED FOR MAKING BENDS IN ALL SIZES OF TYPE "K" COPPER PIPE.
6. FOR CONNECTIONS TO NEW WATER PIPE, V-BIO POLYETHYLENE ENCASEMENT IS REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL LOCATION OF OUTSIDE METERS FOR 1-INCH, 1 1/2-INCH AND 2-INCH WATER HOUSE CONNECTIONS CLOSED PAVING SECTION	W 5.13

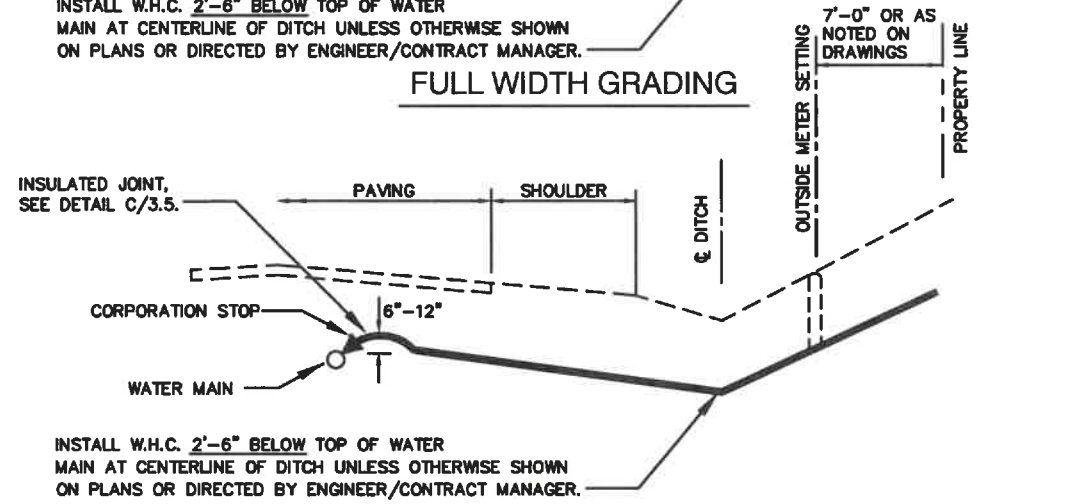


PARTIAL WIDTH GRADING

(FILL SECTION)



FULL WIDTH GRADING



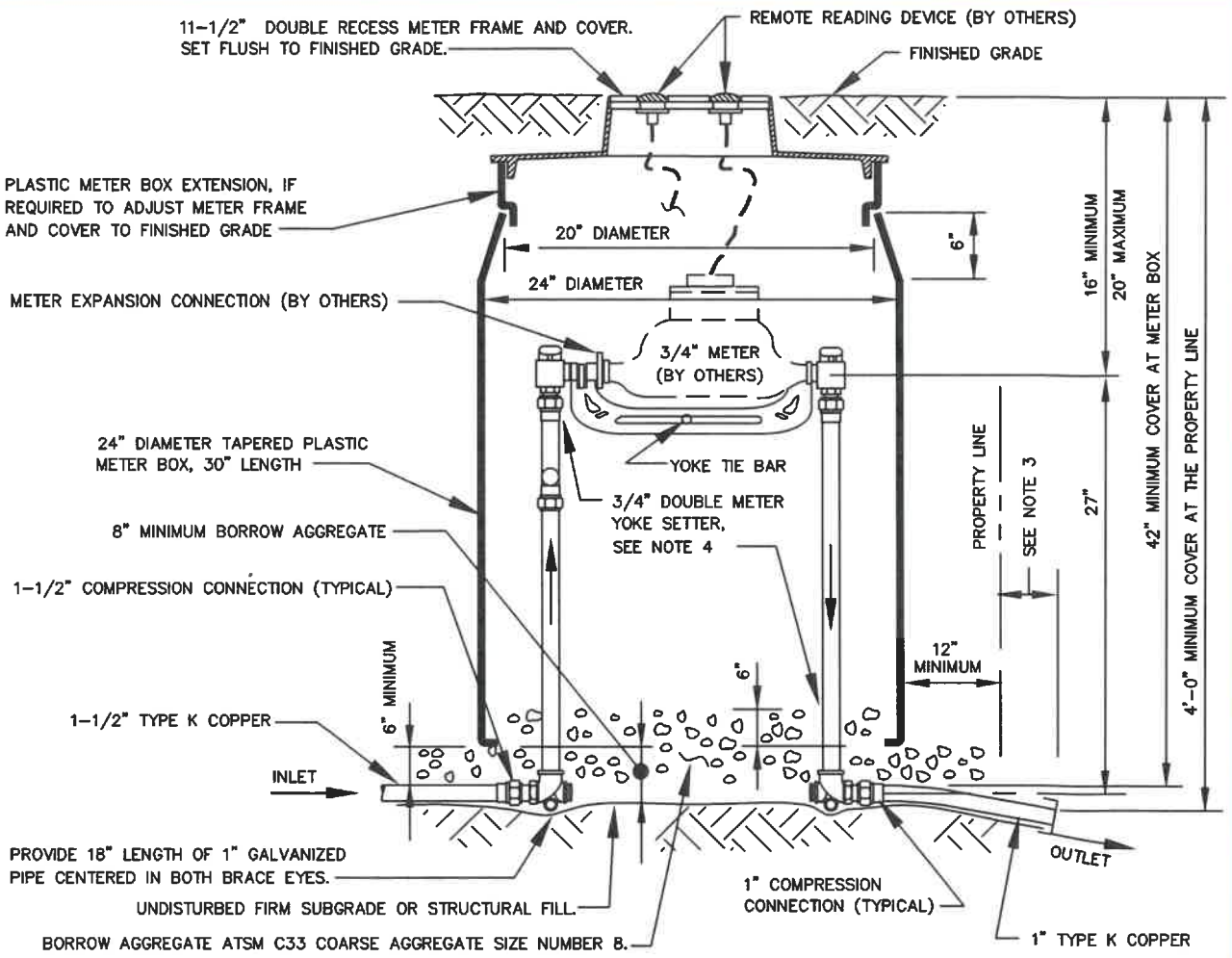
PARTIAL WIDTH GRADING

(CUT SECTION)

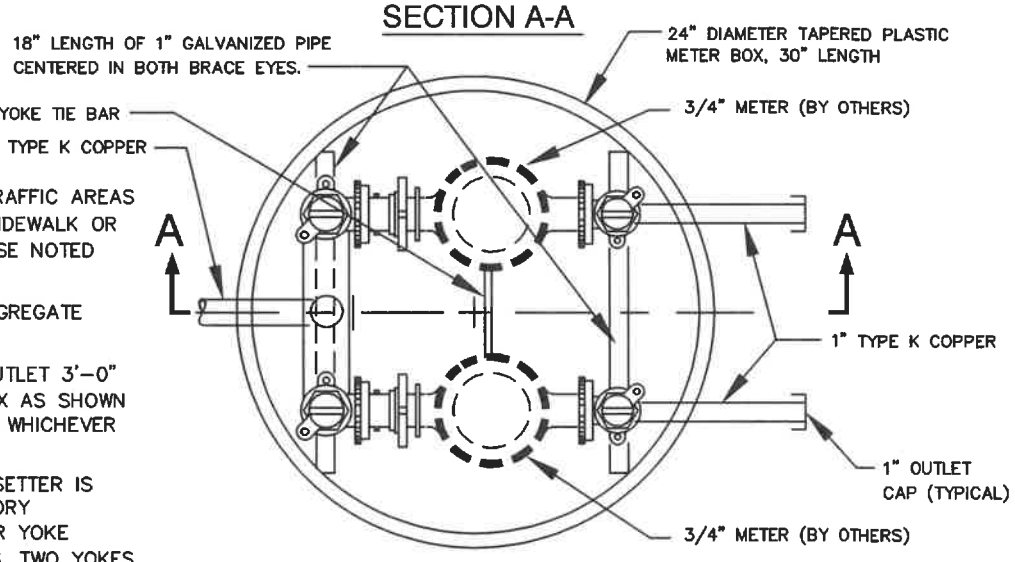
NOTES:

1. INSTALL W.H.C. 3'-6" MINIMUM BELOW FINISHED GRADE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
2. WHEN W.H.C. AND S.H.C. ARE INSTALLED IN SAME TRENCH, SEE DETAIL M/18.0.
3. END OF W.H.C. AT THE PROPERTY LINE. PROVIDE 4'-0" COVER OVER END ON W.H.C., UNLESS OTHER DIRECTED BY THE ENGINEER/CONTRACT MANAGER.
4. CORPORATION STOP TO BE LEFT OPEN AND CURB STOP TO STAY CLOSED.
5. AN APPROVED BENDING TOOL REQUIRED FOR MAKING BENDS IN ALL SIZES OF TYPE "K" COPPER PIPE.
6. FOR CONNECTIONS TO NEW WATER PIPE, V-BIO POLYETHYLENE ENCASEMENT IS REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 1-INCH, 1-1/2-INCH AND 2-INCH WATER HOUSE CONNECTIONS AND OUTSIDE METER LOCATIONS RURAL PAVING SECTIONS	W 5.14



SECTION A-A

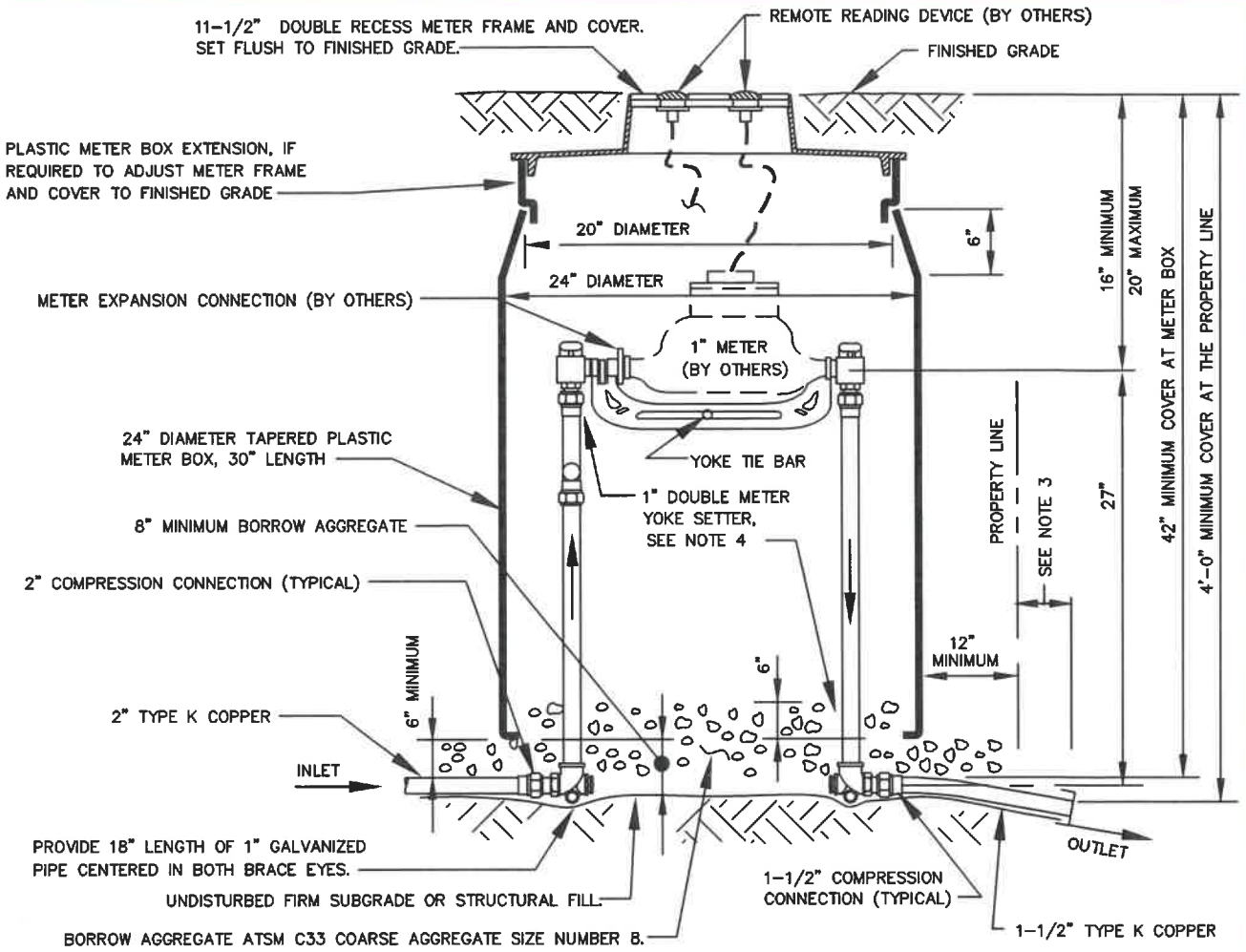


PLAN

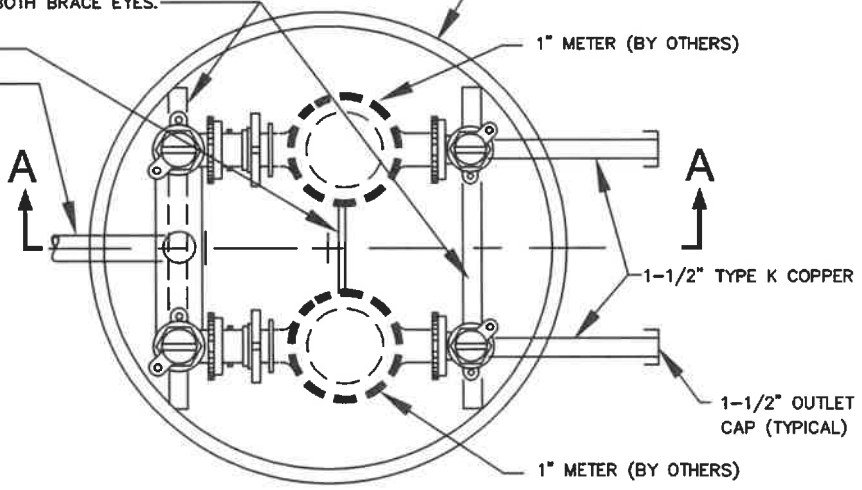
NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. EXTEND COPPER SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX AS SHOWN OR TO THE PROPERTY LINE, WHICHEVER IS GREATER.
4. 3/4" DOUBLE METER YOKE SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING FOUR YOKE ANGLE BALL VALVES, BENDS, TWO YOKES AND COMPRESSION COUPLINGS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL DOUBLE 3/4-INCH METER SETTING	W 5.15



SECTION A-A

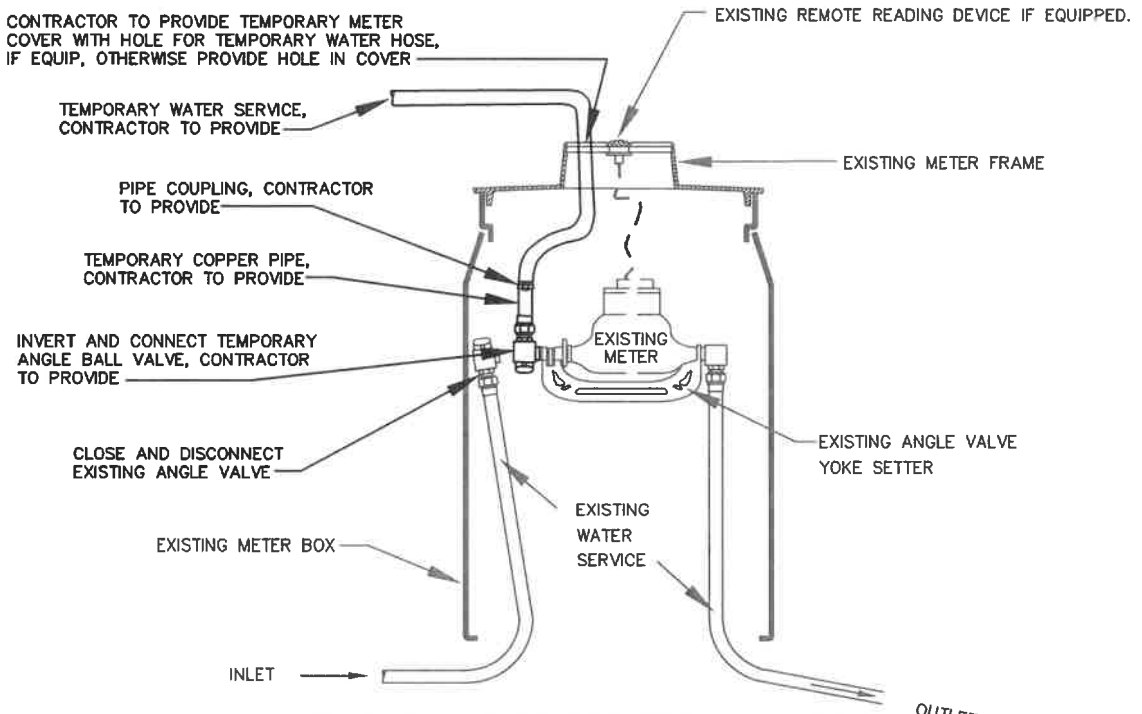


PLAN

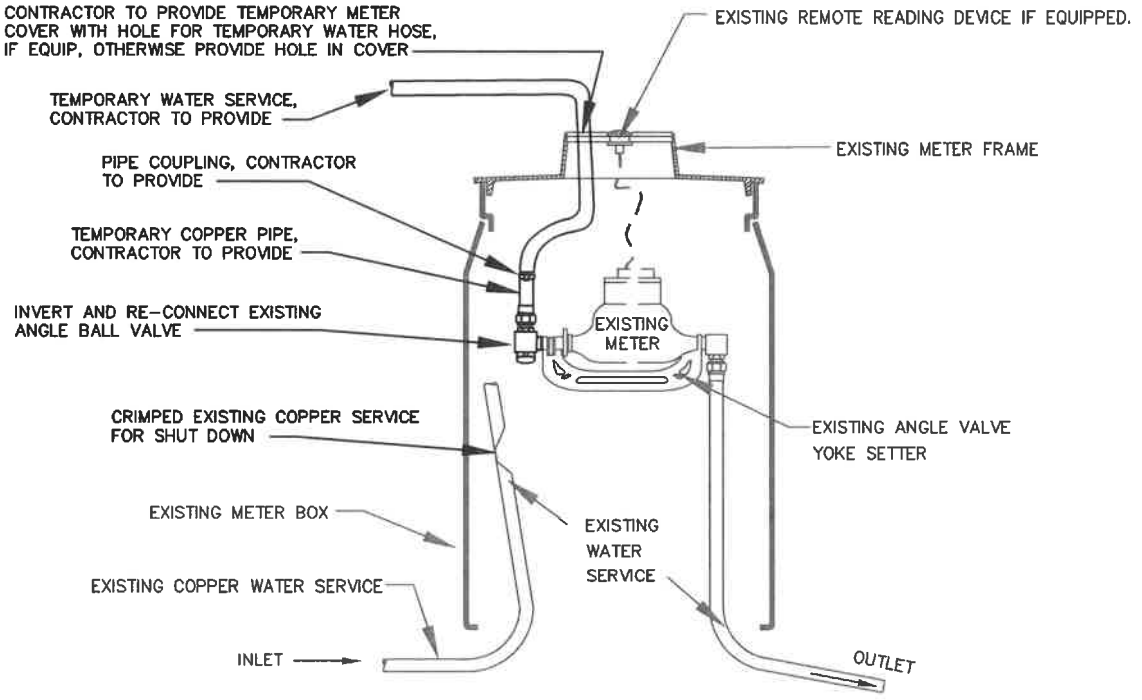
NOTES:

1. METER SETTING FOR NON-TRAFFIC AREAS ONLY, DO NOT LOCATE IN SIDEWALK OR DRIVEWAY, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. COMPACT BACKFILL AND AGGREGATE BASE AS STRUCTURAL FILL.
3. EXTEND COPPER SERVICE OUTLET 3'-0" MINIMUM BEYOND METER BOX AS SHOWN OR TO THE PROPERTY LINE, WHICHEVER IS GREATER.
4. 1" DOUBLE METER YOKE SETTER IS COMPLETE ONE-PIECE FACTORY ASSEMBLED, INCLUDING FOUR YOKE ANGLE BALL VALVES, BENDS, TWO YOKES AND COMPRESSION COUPLINGS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL DOUBLE 1-INCH METER SETTING	W 5.15a

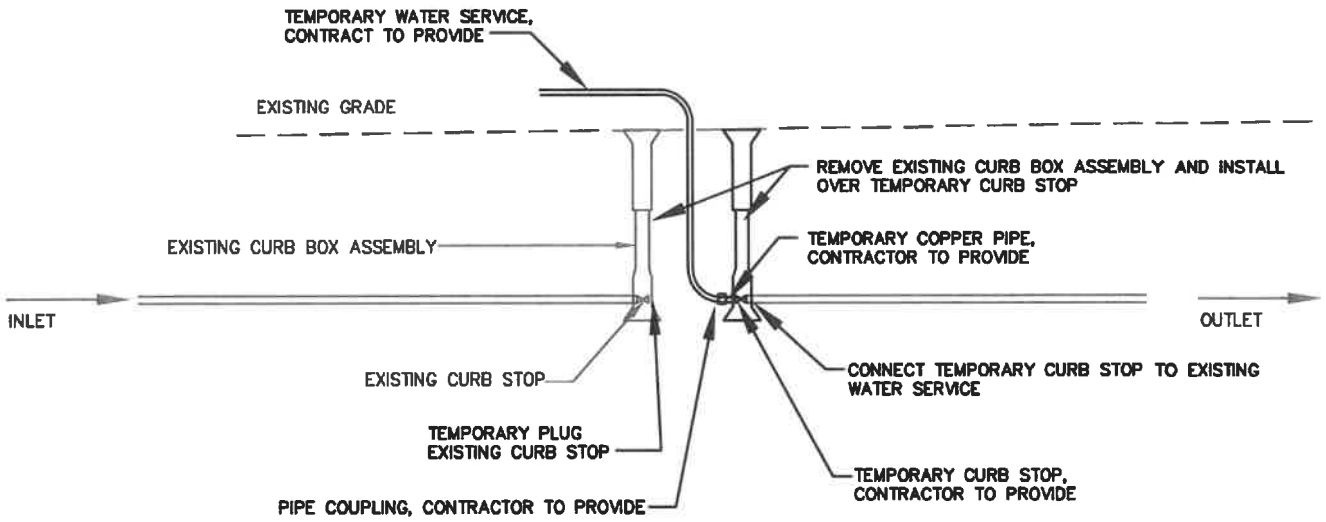


TEMPORARY WATER SERVICE FOR OUTSIDE METER SETTING



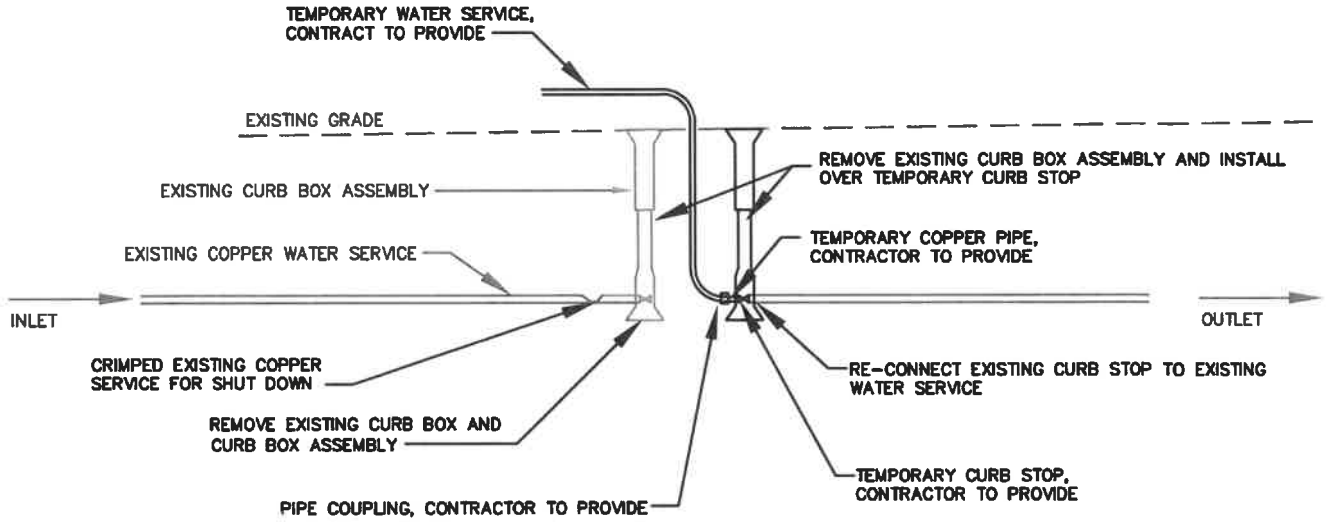
OPTION FOR TEMPORARY WATER SERVICE FOR OUTSIDE METER SETTING

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmuny Chief Engineer	STANDARD DETAIL EXISTING OUTSIDE METER TEMPORARY WATER SERVICE FOR WATER MAIN REPLACEMENT	W 5.16



TEMPORARY WATER SERVICE

FOR INSIDE METER SETTING



OPTION FOR TEMPORARY WATER

SERVICE FOR INSIDE METER SETTING

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL EXISTING INSIDE METER SETTING TEMPORARY WATER SERVICE FOR WATER MAIN REPLACEMENT	W 5.16a

PIPE SIZE IN INCHES	CLASS OF PIPE	MAX. DEPTH TO INVERT
3	54	100'
4	54	100'
6	52	100'
8	54	80'
	55	98'
	56	100'
10	54	57'
	55	67'
	56	81'
12	54	46'
	55	55'
	56	65'
14	54	37'
	55	44'
	56	53'
16	54	31'
	55	36'
	56	42'
18	54	26'
	55	31'
	56	36'

PIPE SIZE IN INCHES	CLASS OF PIPE	MAX. DEPTH TO INVERT
20	54	23'
	55	27'
	56	31'
24	54	20'
	55	22'
	56	26'
30	54	26'
	55	29'
	56	33'
36	54	28'
	55	31'
	56	34'
42	54	27'
	55	31'
	56	34'
48	54	28'
	55	32'
	56	35'
54	54	29'
	55	32'
	56	36'

CRITERIA:

DESIGN PROCEDURE SAME AS ANSI A21.50 (AWWA C150).

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL DUCTILE IRON PIPE LOAD CHART	W 6.0

W60

12–INCH AND SMALLER	
	PVC AWWA C900 DIMENSION RATIO (DR)
	DR 14
MAXIMUM COVER OVER PIPE USING GENERAL TRENCH BACKFILL	25'
MAXIMUM COVER OVER PIPE USING BORROW AGGREGATE MATERIAL (AS NOTED ON THE DRAWINGS)	40'

16–INCH PIPE		
	PVC AWWA C900 DIMENSION RATIO (DR)	
	DR 14	DR 18
MAXIMUM COVER OVER PIPE USING GENERAL TRENCH BACKFILL	25'	10'
MAXIMUM COVER OVER PIPE USING BORROW AGGREGATE MATERIAL (AS NOTED ON THE DRAWINGS)	40'	22'

LARGER THAN 16–INCH PIPE	
	PVC AWWA C900 DIMENSION RATIO (DR)
	DR 18
MAXIMUM COVER OVER PIPE USING GENERAL TRENCH BACKFILL	10'
MAXIMUM COVER OVER PIPE USING BORROW AGGREGATE MATERIAL (AS NOTED ON THE DRAWINGS)	22'

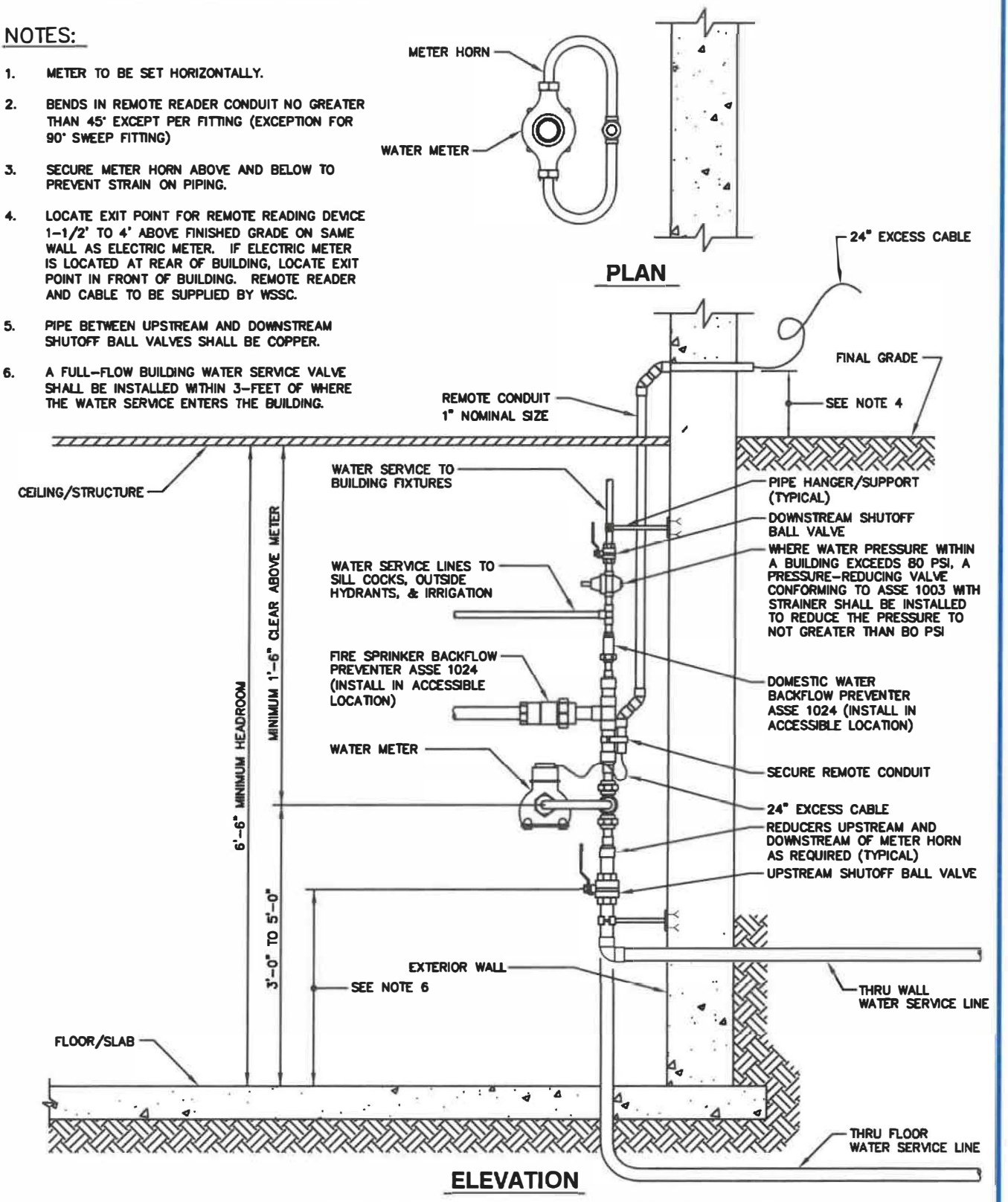
NOTE

1. FOR ADDITIONAL INFORMATION, SEE DETAIL M/8.1a AND SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 10/26/21 Chief Engineer	STANDARD DETAIL POLYVINYL CHLORIDE (PVC) PIPE (AWWA C900) LOAD CHART	W 6.1

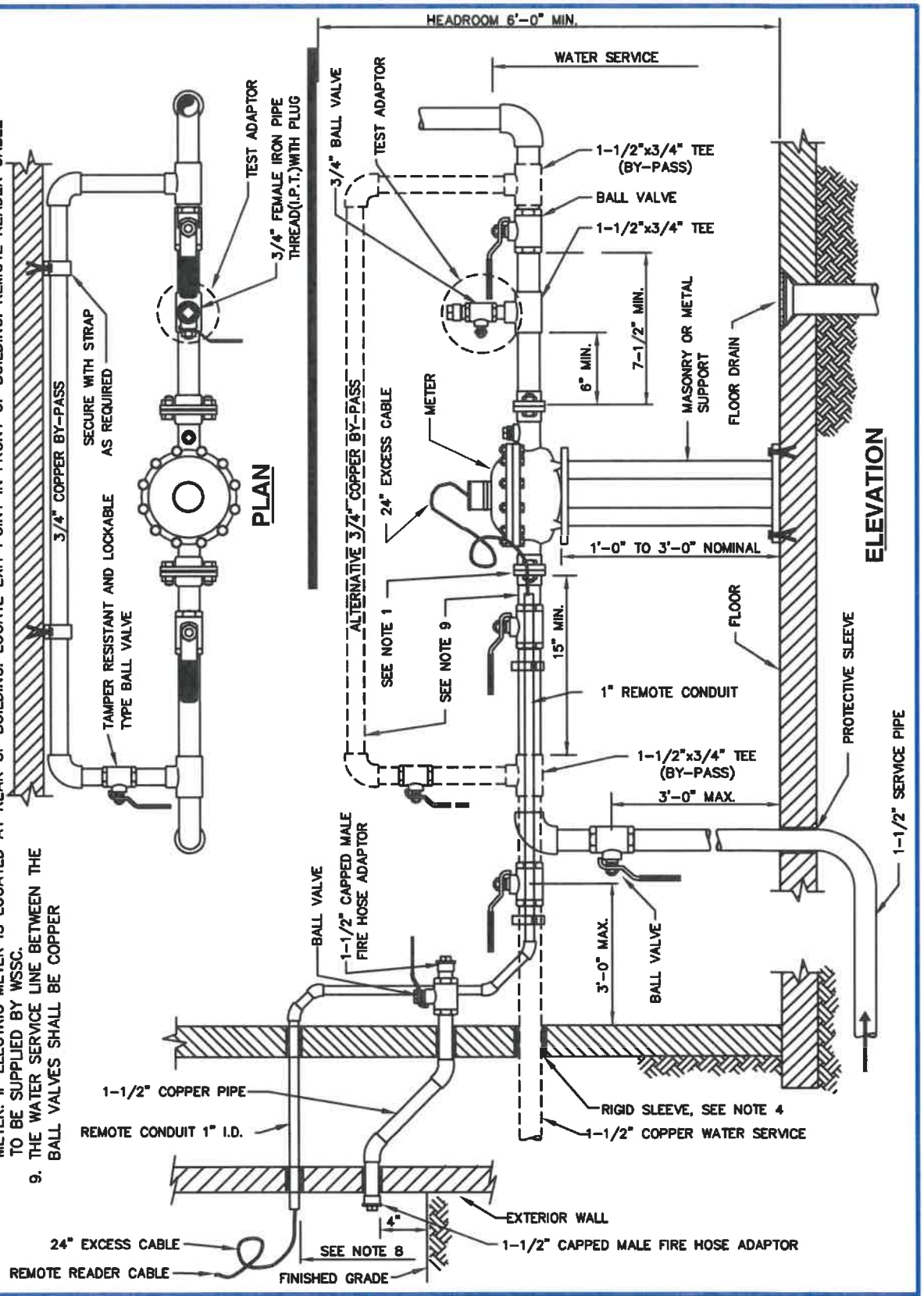
NOTES:

1. METER TO BE SET HORIZONTALLY.
2. BENDS IN REMOTE READER CONDUIT NO GREATER THAN 45° EXCEPT PER FITTING (EXCEPTION FOR 90° SWEEP FITTING)
3. SECURE METER HORN ABOVE AND BELOW TO PREVENT STRAIN ON PIPING.
4. LOCATE EXIT POINT FOR REMOTE READING DEVICE 1-1/2' TO 4' ABOVE FINISHED GRADE ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING, LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER AND CABLE TO BE SUPPLIED BY WSSC.
5. PIPE BETWEEN UPSTREAM AND DOWNSTREAM SHUTOFF BALL VALVES SHALL BE COPPER.
6. A FULL-FLOW BUILDING WATER SERVICE VALVE SHALL BE INSTALLED WITHIN 3-FEET OF WHERE THE WATER SERVICE ENTERS THE BUILDING.



WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 10/26/21 Mike Harmer Chief Engineer	STANDARD DETAIL 1-INCH AND SMALLER INSIDE WATER METER SETTING	W 7.1

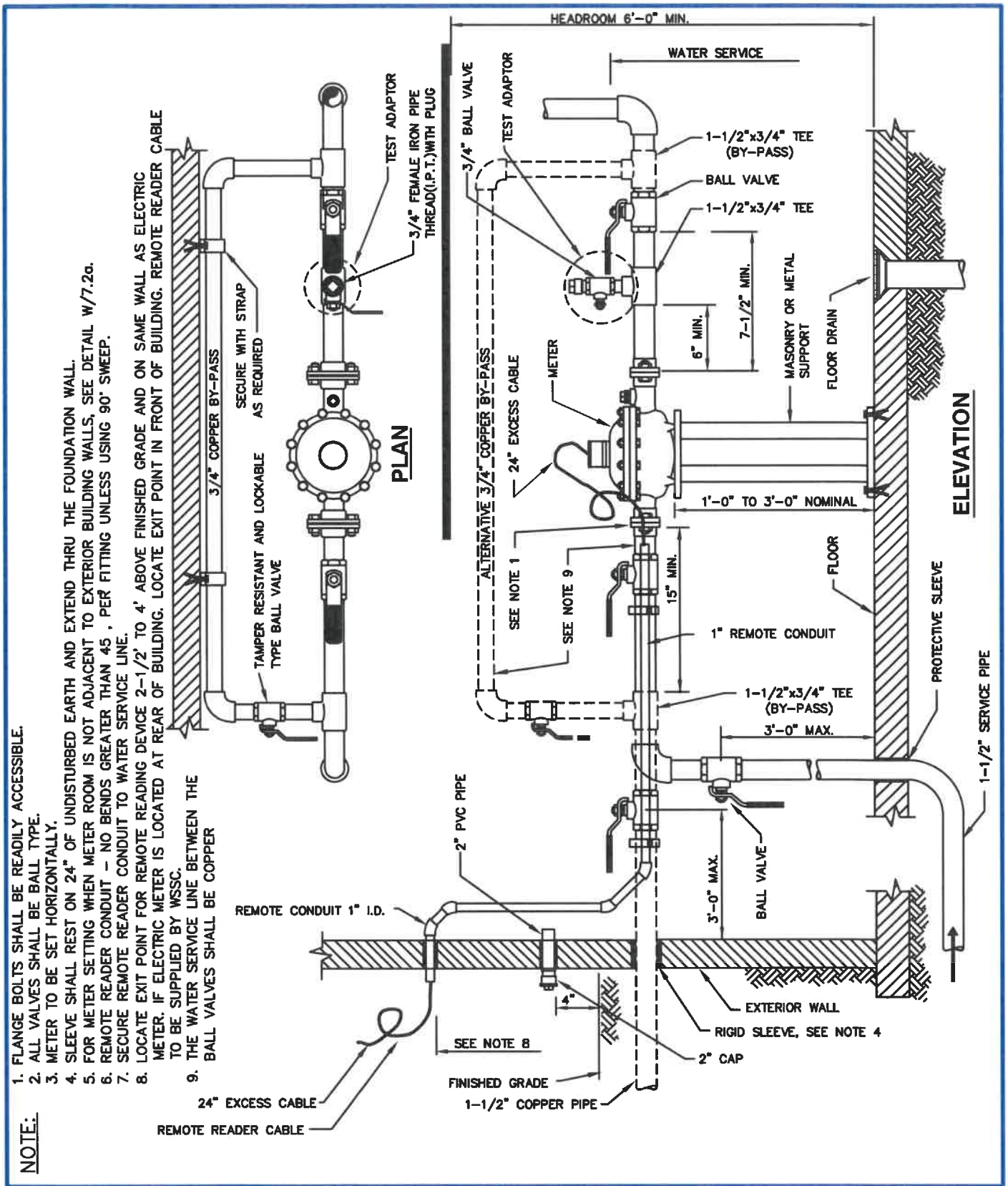
W71



NOTE:

1. FLANGE BOLTS SHALL BE READILY ACCESSIBLE.
2. ALL VALVES SHALL BE BALL TYPE.
3. METER TO BE SET HORIZONTALLY.
4. SLEEVE SHALL REST ON 24" OF UNDISTURBED EARTH AND EXTEND THRU THE FOUNDATION WALL.
5. FOR METER SETTING WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.2b.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 , PER FITTING UNLESS USING 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. THE WATER SERVICE LINE BETWEEN THE BALL VALVES SHALL BE COPPER

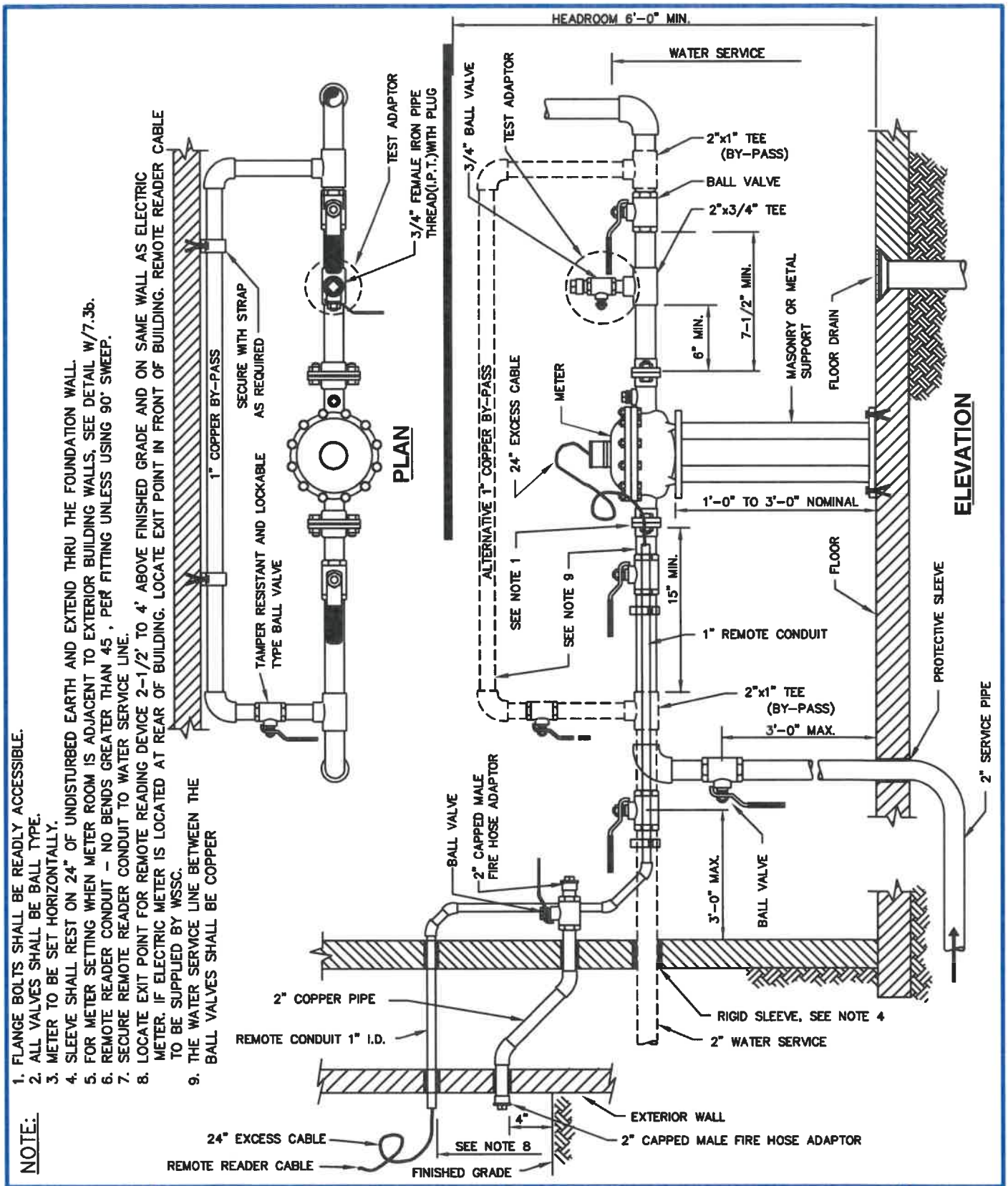
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Harmen Chief Engineer	STANDARD DETAIL 1-1/2-INCH INSIDE WATER METER SETTING WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS	W 7.2a



NOTE:

1. FLANGE BOLTS SHALL BE READILY ACCESSIBLE.
2. ALL VALVES SHALL BE BALL TYPE.
3. METER TO BE SET HORIZONTALLY.
4. SLEEVE SHALL REST ON 24" OF UNDISTURBED EARTH AND EXTEND THRU THE FOUNDATION WALL.
5. FOR METER SETTING WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.2a.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 , PER FITTING UNLESS USING 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING, LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. THE WATER SERVICE LINE BETWEEN THE BALL VALVES SHALL BE COPPER

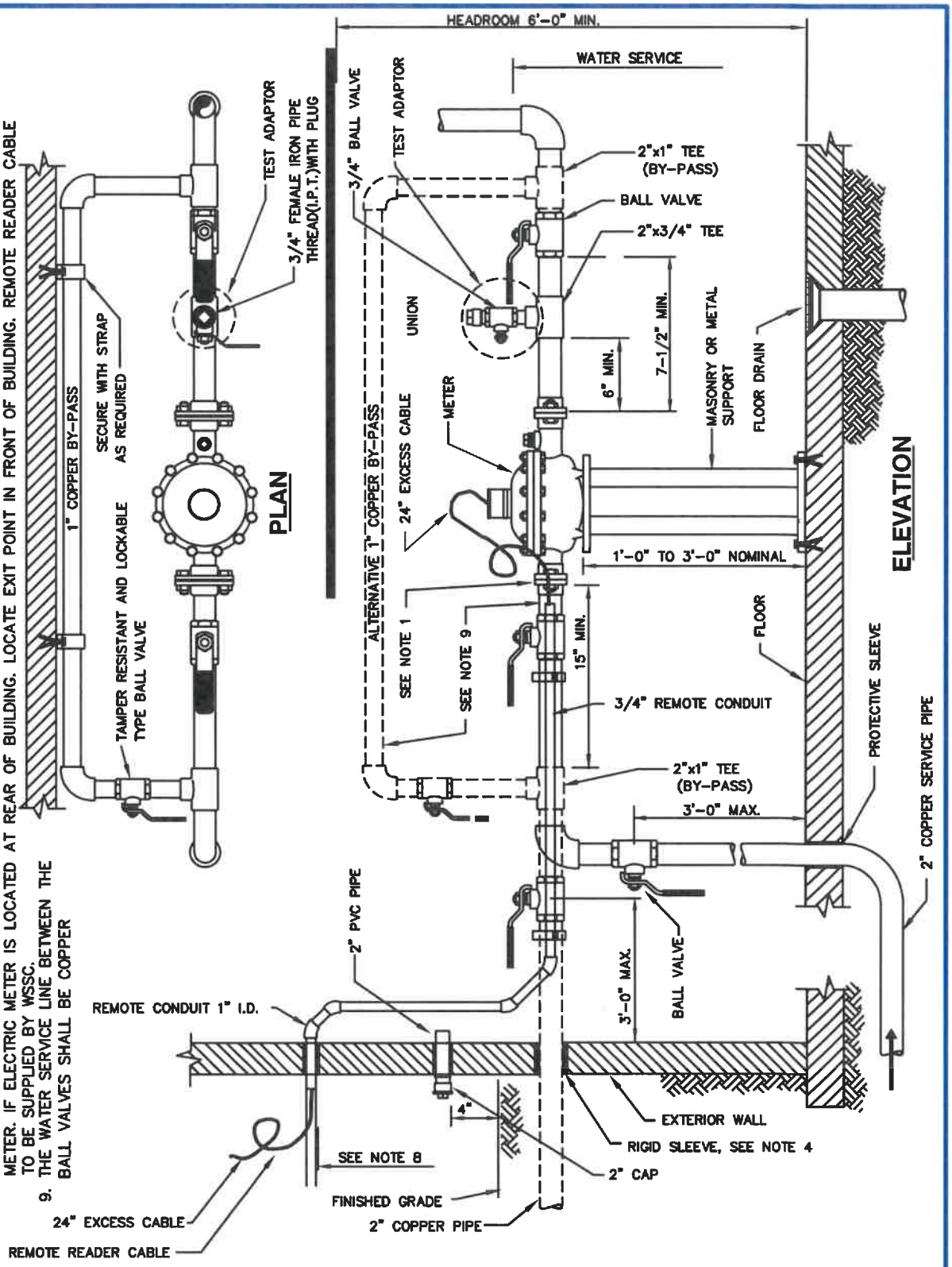
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 2-26-21 Mike Hoffman Chief Engineer	STANDARD DETAIL 1-1/2-INCH INSIDE WATER METER SETTING WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS	W 7.2b



NOTE:

1. FLANGE BOLTS SHALL BE READLY ACCESSIBLE.
2. ALL VALVES SHALL BE BALL TYPE.
3. METER TO BE SET HORIZONTALLY.
4. SLEEVE SHALL REST ON 24" OF UNDISTURBED EARTH AND EXTEND THRU THE FOUNDATION WALL.
5. FOR METER SETTING WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.3b.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 , PER FITTING UNLESS USING 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. THE WATER SERVICE LINE BETWEEN THE BALL VALVES SHALL BE COPPER

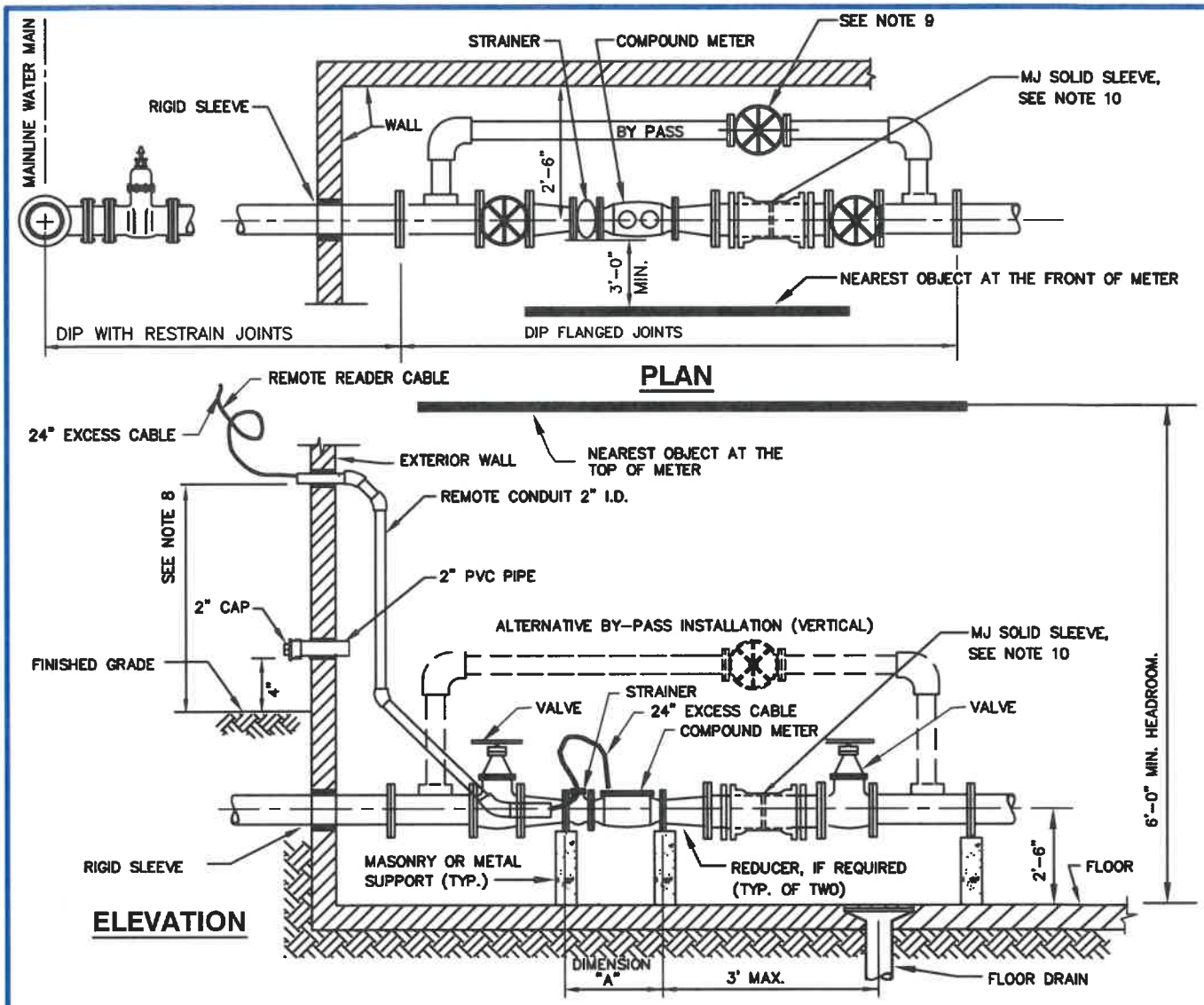
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Harman Chief Engineer	STANDARD DETAIL 2-INCH INSIDE WATER METER SETTING WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS	W 7.3a



NOTE:

1. FLANGE BOLTS SHALL BE READLY ACCESSIBLE.
2. ALL VALVES SHALL BE BALL TYPE.
3. METER TO BE SET HORIZONTALLY.
4. SLEEVE SHALL REST ON 24" OF UNDISTURBED EARTH AND EXTEND THRU THE FOUNDATION WALL.
5. FOR METER SETTING WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.3a.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 , PER FITTING UNLESS USING 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. THE WATER SERVICE LINE BETWEEN THE BALL VALVES SHALL BE COPPER

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 2-INCH INSIDE WATER METER SETTING WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS	W 7.3b

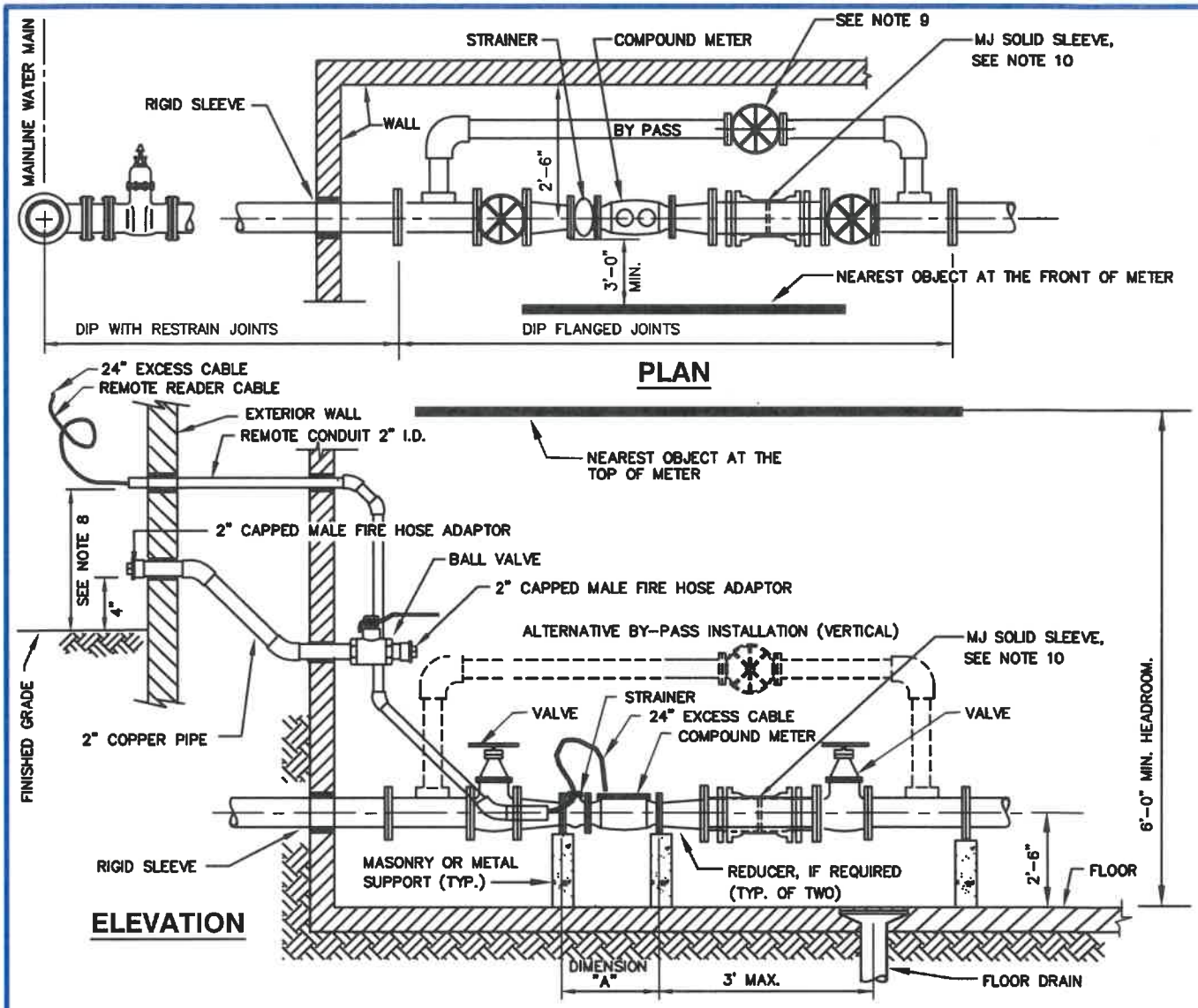


COMPOUND METER SIZE	BY-PASS PIPE SIZE	DIMENSION "A" (LENGTH OF METER AND STRAINER)
3"	2"	24"
4"	2"	29"
6"	4"	36.5"

NOTE:

1. FLANGE BOLTS SHALL BE READILY ACCESSIBLE.
2. METER TO BE SET HORIZONTALLY.
3. FOR METER SETTING WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.5
4. TURBULENCE COMPENSATOR MINIMUM 5 PIPE DIAMETERS INLET AND OUTLET.
5. METER NOT TO BE SET WITHIN 10' OF ELECTRICAL DISTRIBUTION EQUIPMENT.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 PER FITTING UNLESS USING A 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. TAMPER RESISTANT AND LOCKABLE TYPE BALL VALVE WHEN 2" AND SMALLER, OTHERWISE THE VALVE SHALL BE SEALED "CLOSED" WITH SECURITY WIRE BY WSSC.
10. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanmer Chief Engineer	STANDARD DETAIL 3-INCH, 4-INCH AND 6-INCH INDOOR COMPOUND METER WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS	W 7.4

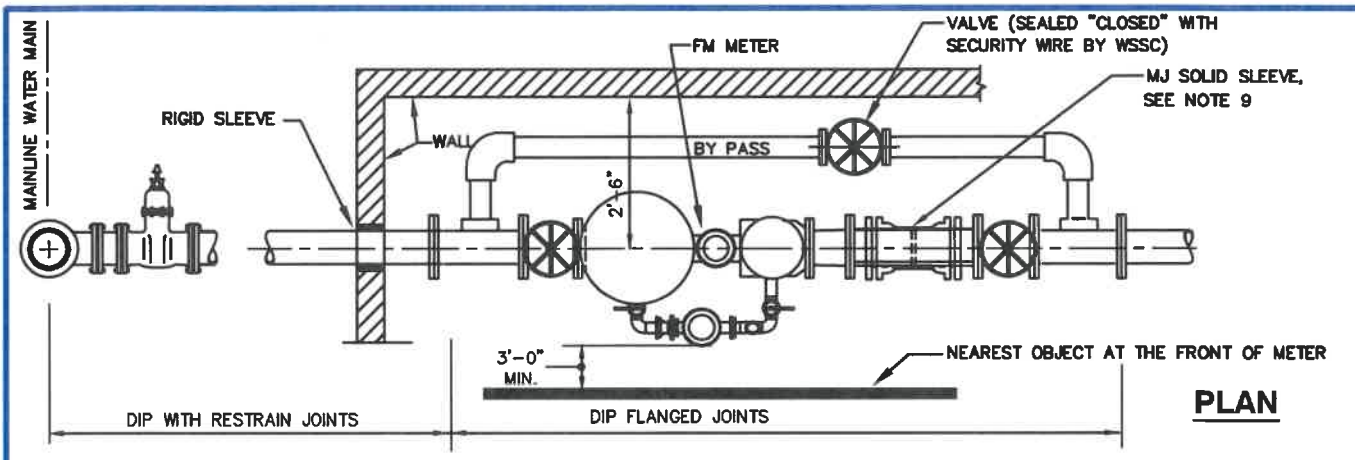


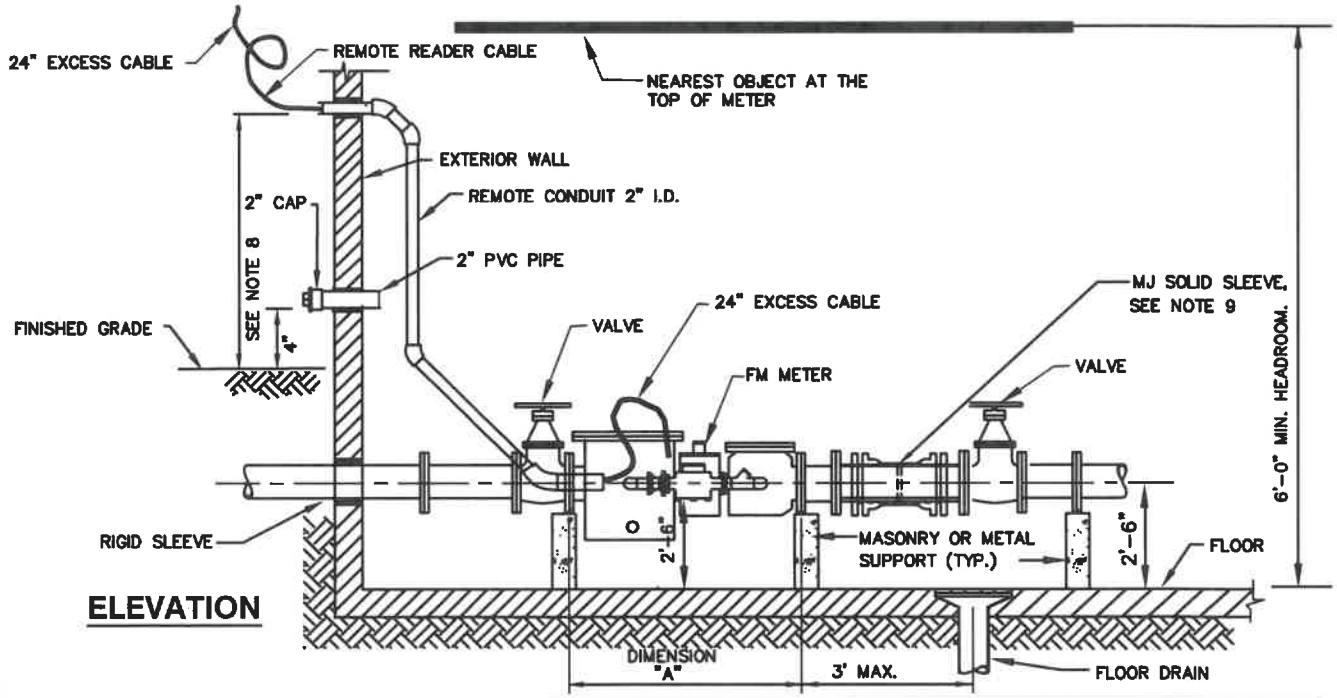
COMPOUND METER SIZE	BY-PASS PIPE SIZE	DIMENSION "A" (LENGTH OF METER AND STRAINER)
3"	2"	24"
4"	2"	29"
6"	4"	36.5"

NOTE:

1. FLANGE BOLTS SHALL BE READLY ACCESSIBLE.
2. METER TO BE SET HORIZONTALLY.
3. FOR METER SETTING WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.4
4. TURBULENCE COMPENSATOR MINIMUM 5 PIPE DIAMETERS INLET AND OUTLET.
5. METER NOT TO BE SET WITHIN 10' OF ELECTRICAL DISTRIBUTION EQUIPMENT.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 , PER FITTING UNLESS USING A 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. TAMPER RESISTANT AND LOCKABLE TYPE BALL VALVE WHEN 2" AND SMALLER, OTHERWISE THE VALVE SHALL BE SEALED "CLOSED" WITH SECURITY WIRE BY WSSC.
10. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 3-INCH, 4-INCH AND 6-INCH INDOOR COMPOUND METER WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS	W 7.5



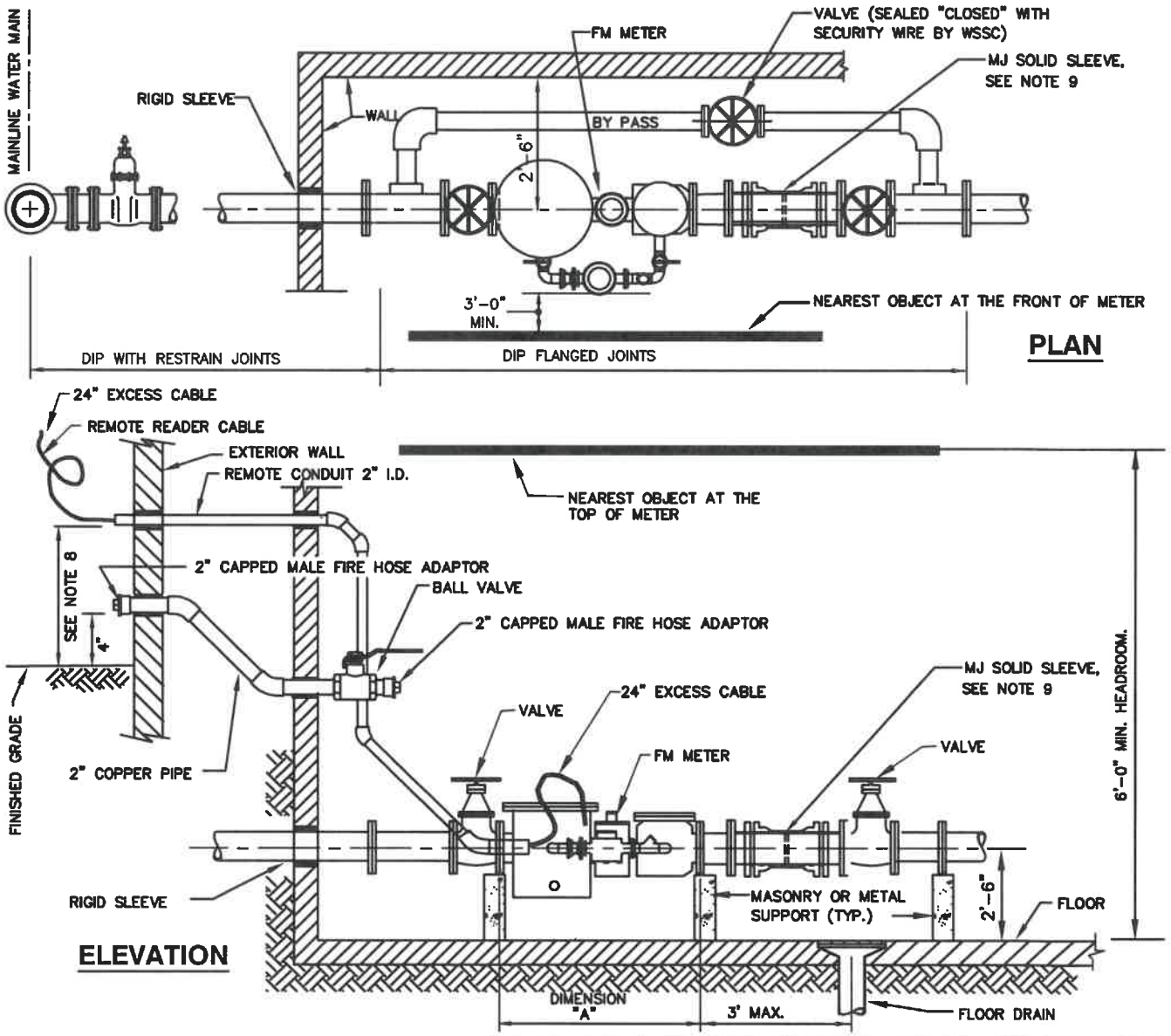


FM METER SIZE	BY-PASS PIPE SIZE	DIMENSION "A" (LENGTH OF METER)
4"	4"	33"
6"	6"	45"
8"	8"	53"

NOTE:

1. FLANGE BOLTS SHALL BE READLY ACCESSIBLE.
2. METER TO BE SET HORIZONTALLY.
3. FOR METER SETTING WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.7
4. TURBULENCE COMPENSATOR MINIMUM 5 PIPE DIAMETERS INLET AND OUTLET.
5. METER NOT TO BE SET WITHIN 10' OF ELECTRICAL DISTRIBUTION EQUIPMENT.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 PER FITTING UNLESS USING 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmer Chief Engineer	STANDARD DETAIL 4-INCH, 6-INCH AND 8-INCH INDOOR FM METER WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS	W 7.6



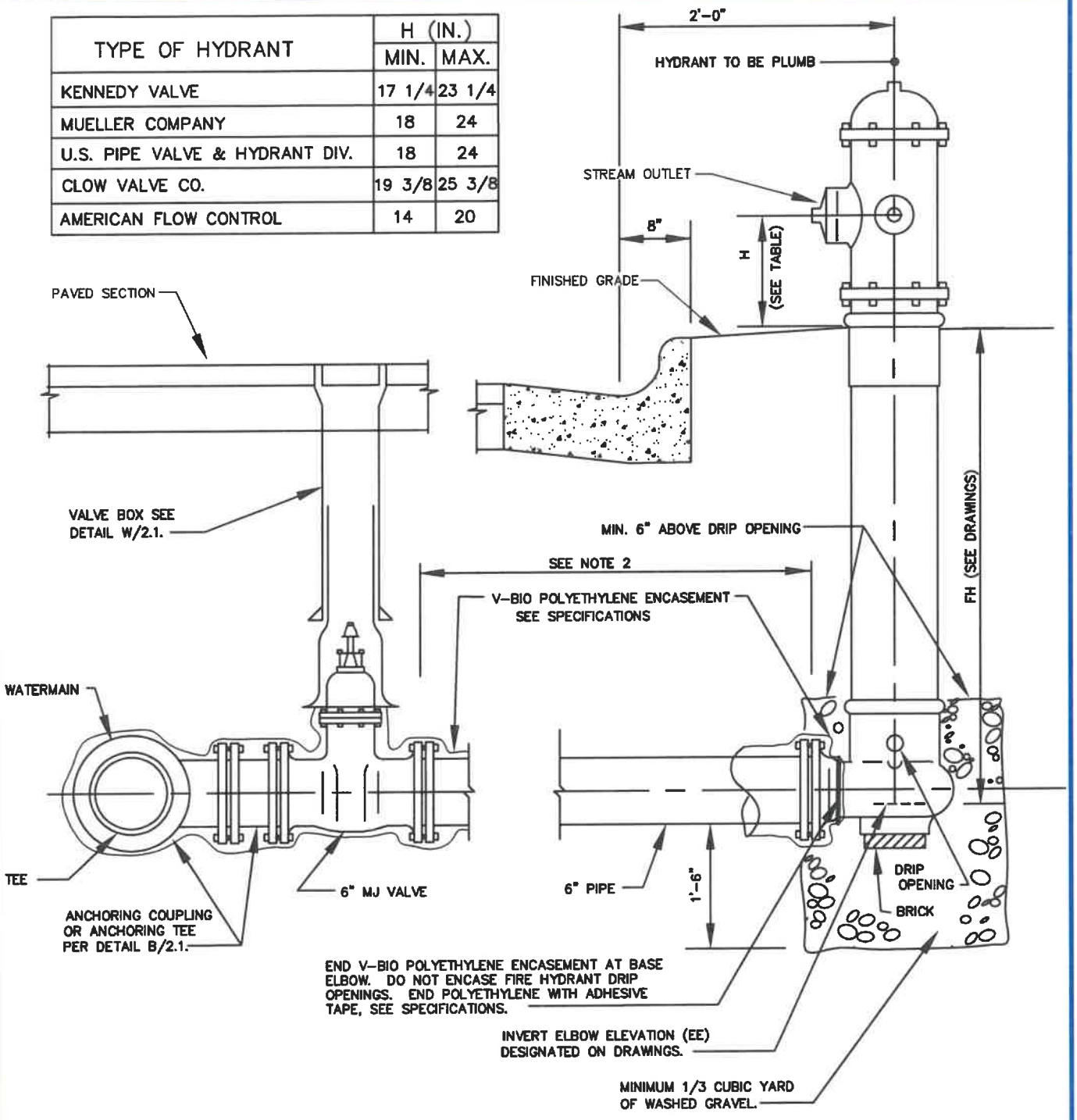
FM METER SIZE	BY–PASS PIPE SIZE	DIMENSION "A" (LENGTH OF METER)
4"	4"	33"
6"	6"	45"
8"	8"	53"

NOTE:

1. FLANGE BOLTS SHALL BE READLY ACCESSIBLE.
2. METER TO BE SET HORIZONTALLY.
3. FOR METER SETTING WHEN METER ROOM IS ADJACENT TO EXTERIOR BUILDING WALLS, SEE DETAIL W/7.6
4. TURBULENCE COMPENSATOR MINIMUM 5 PIPE DIAMETERS INLET AND OUTLET.
5. METER NOT TO BE SET WITHIN 10' OF ELECTRICAL DISTRIBUTION EQUIPMENT.
6. REMOTE READER CONDUIT – NO BENDS GREATER THAN 45 PER FITTING UNLESS USING 90° SWEEP.
7. SECURE REMOTE READER CONDUIT TO WATER SERVICE LINE.
8. LOCATE EXIT POINT FOR REMOTE READING DEVICE 2-1/2' TO 4' ABOVE FINISHED GRADE AND ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING. LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER CABLE TO BE SUPPLIED BY WSSC.
9. PROVIDE M.J. SOLID SLEEVE WHERE SHOWN WITH WEDGE ACTION RESTRAINER GLAND, SEE SPECIFICATIONS. TOLERANCE BETWEEN PIPE ENDS SHALL NOT EXCEED 1/2". DO NOT USE PIPE SPACERS, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 4-INCH, 6-INCH AND 8-INCH INDOOR FM METER WHEN METER ROOM IS NOT ADJACENT TO EXTERIOR BUILDING WALLS	W 7.7

TYPE OF HYDRANT	H (IN.)	
	MIN.	MAX.
KENNEDY VALVE	17 1/4	23 1/4
MUELLER COMPANY	18	24
U.S. PIPE VALVE & HYDRANT DIV.	18	24
CLOW VALVE CO.	19 3/8	25 3/8
AMERICAN FLOW CONTROL	14	20

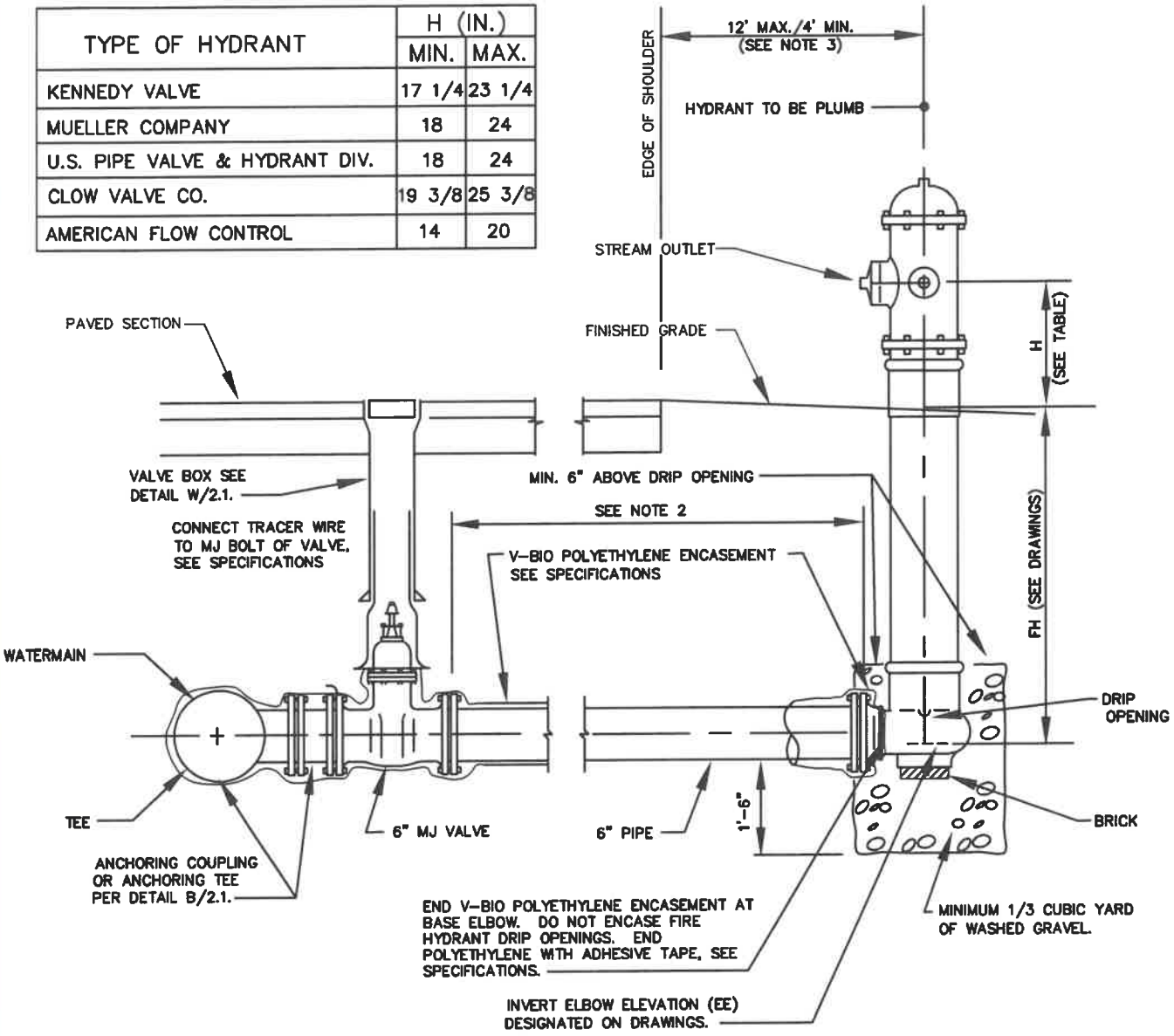


NOTES:

1. DO NOT BLOCK FIRE HYDRANT OR FIRE HYDRANT TEE.
2. FOR RESTRAINING VALVE TO FIRE HYDRANT, SEE DETAIL B/2.1.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 10/26/21 Chief Engineer	STANDARD DETAIL FIRE HYDRANT SETTING CLOSED PAVING SECTION	W 8.0

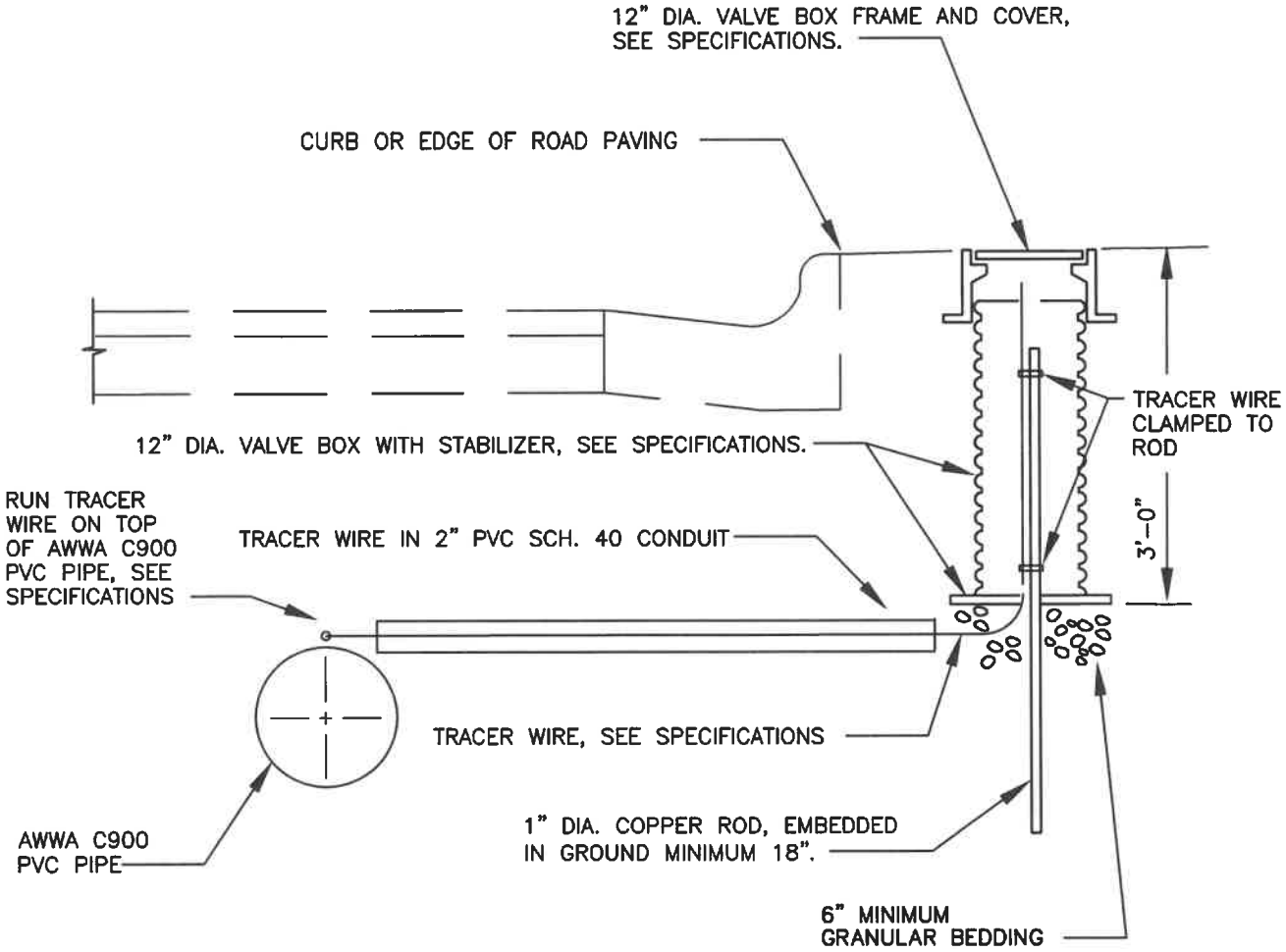
TYPE OF HYDRANT	H (IN.)	
	MIN.	MAX.
KENNEDY VALVE	17 1/4	23 1/4
MUELLER COMPANY	18	24
U.S. PIPE VALVE & HYDRANT DIV.	18	24
CLOW VALVE CO.	19 3/8	25 3/8
AMERICAN FLOW CONTROL	14	20



NOTES:

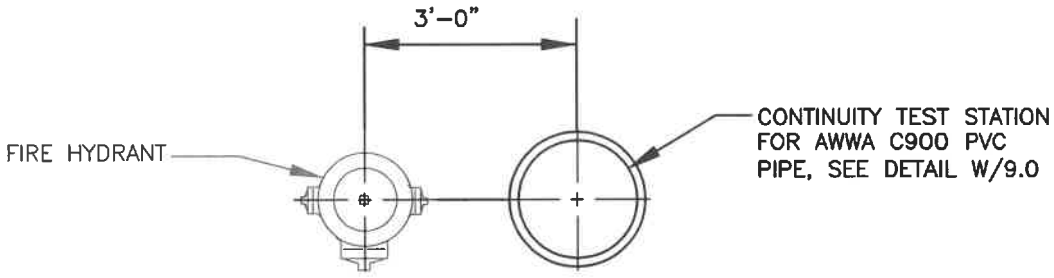
1. DO NOT BLOCK FIRE HYDRANT OR FIRE HYDRANT TEE.
2. FOR RESTRAINING VALVE TO FIRE HYDRANT, SEE DETAIL B/2.1.
3. PLACE FIRE HYDRANT PER COUNTY/JURISDICTIONAL REQUIREMENTS BUT NOT LESS THAN (4) FEET NOR MORE THAN TWELVE (12) FEET BEYOND THE LIMIT OF STABILIZED SHOULDER OR PAVEMENT AS SHOWN ON THE DRAWINGS.
4. FOR A LIST OF APPROVED TRAFFIC-MODEL FIRE HYDRANTS SEE SECTION 02510 OF THE STANDARD SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 10/26/21 Mike Harman Chief Engineer	STANDARD DETAIL FIRE HYDRANT SETTING OPEN PAVING SECTION	W 8.1

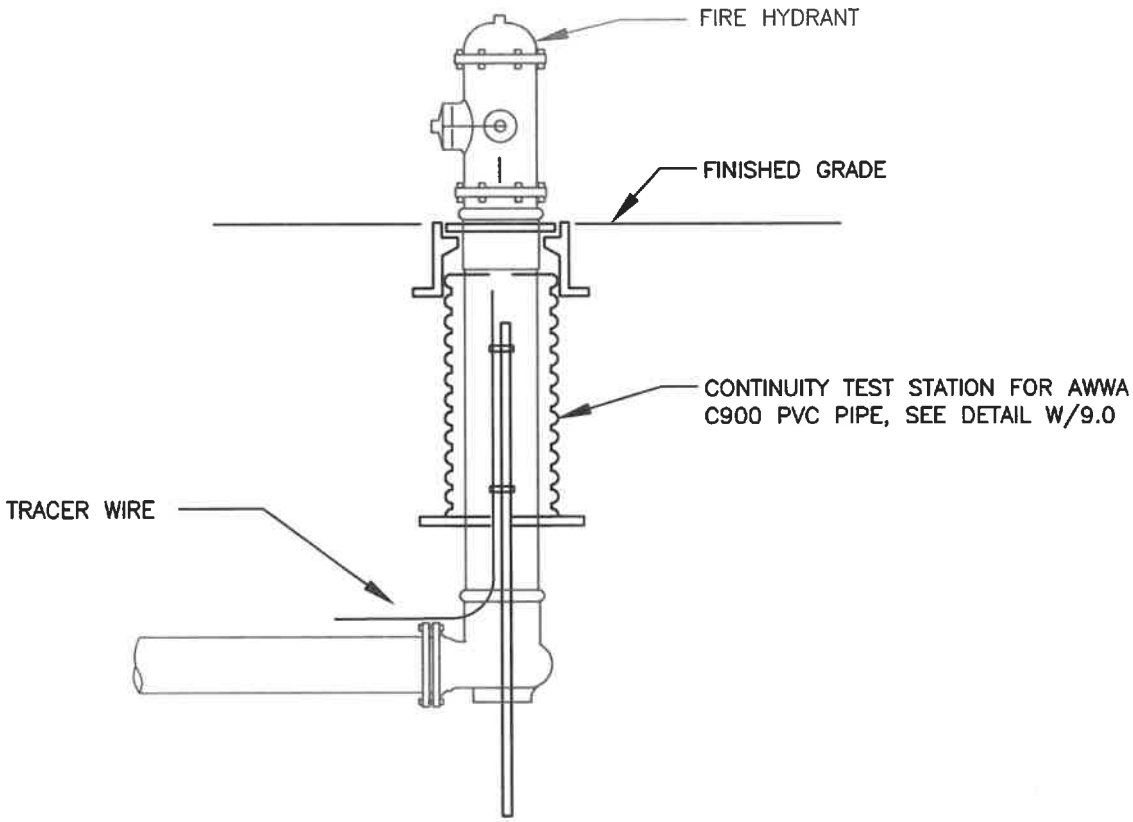


NOTE:
1. INSTALL TRACER WIRE IN 2" PVC SCH. 40 PVC WHEN NOT INSTALLED ON TOP OF PIPELINE.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CONTINUITY TEST STATION FOR AWWA C900 PVC PIPE	W 9.0

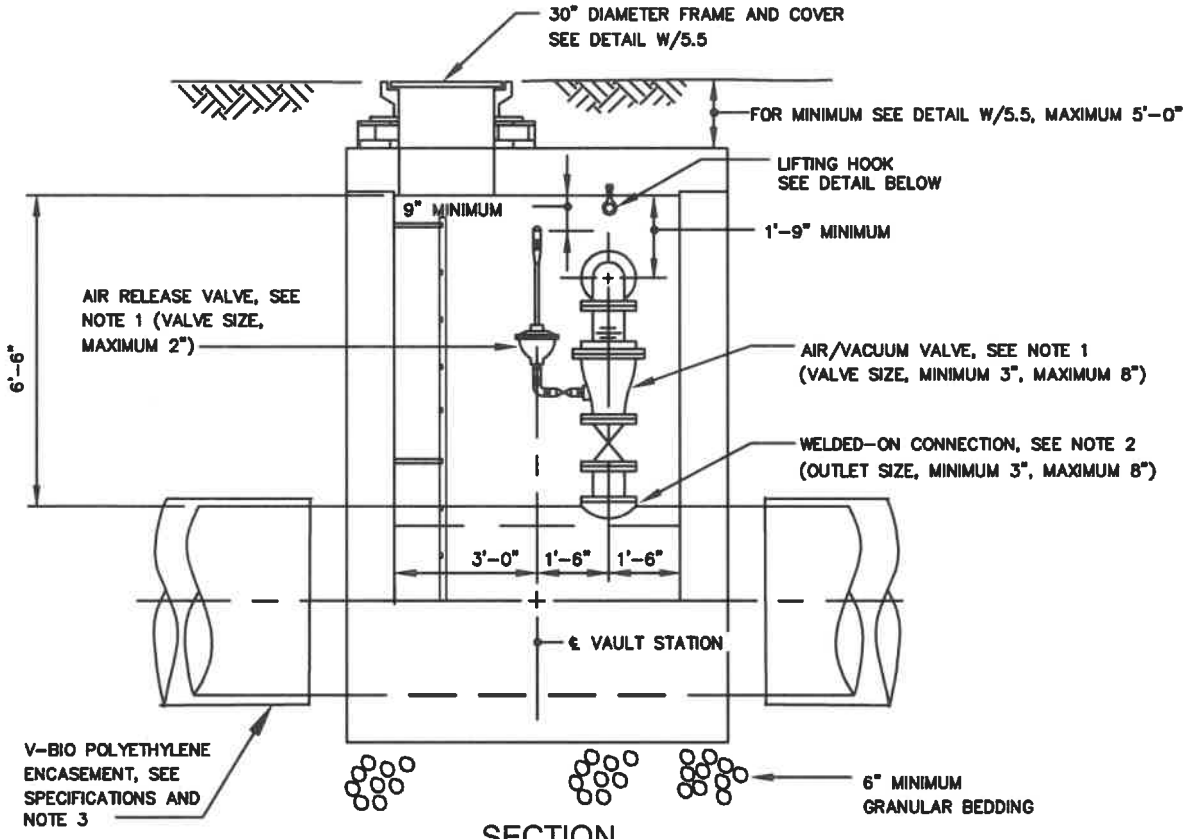


PLAN

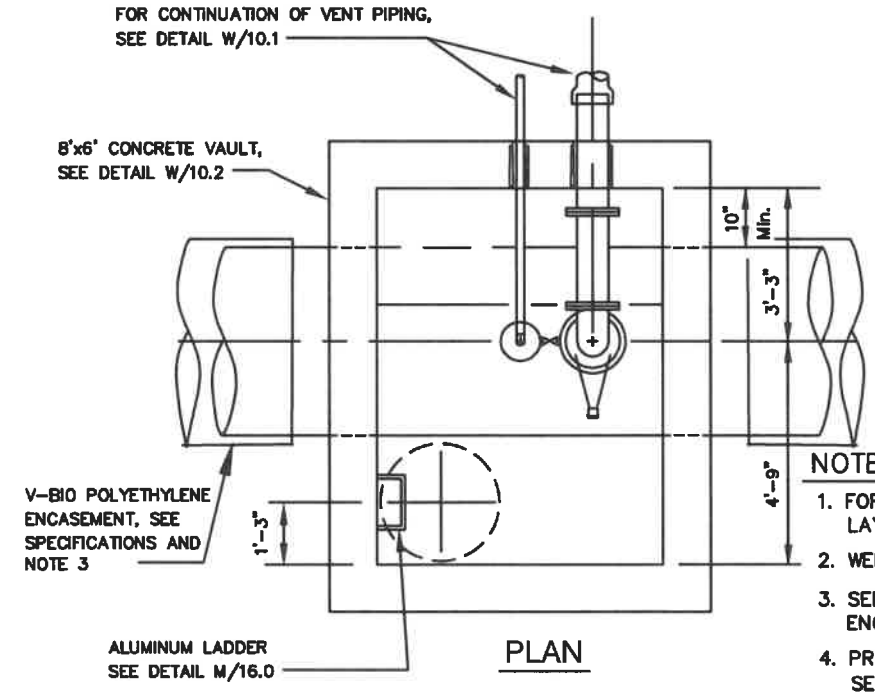


ELEVATION

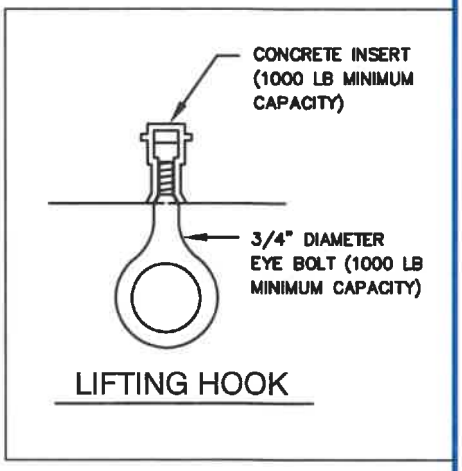
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hanmen Chief Engineer	STANDARD DETAIL CONTINITY TEST STATION FOR AWWA C900 PVC PIPE AT FIRE HYDRANT LOCATION	W 9.1



SECTION



PLAN

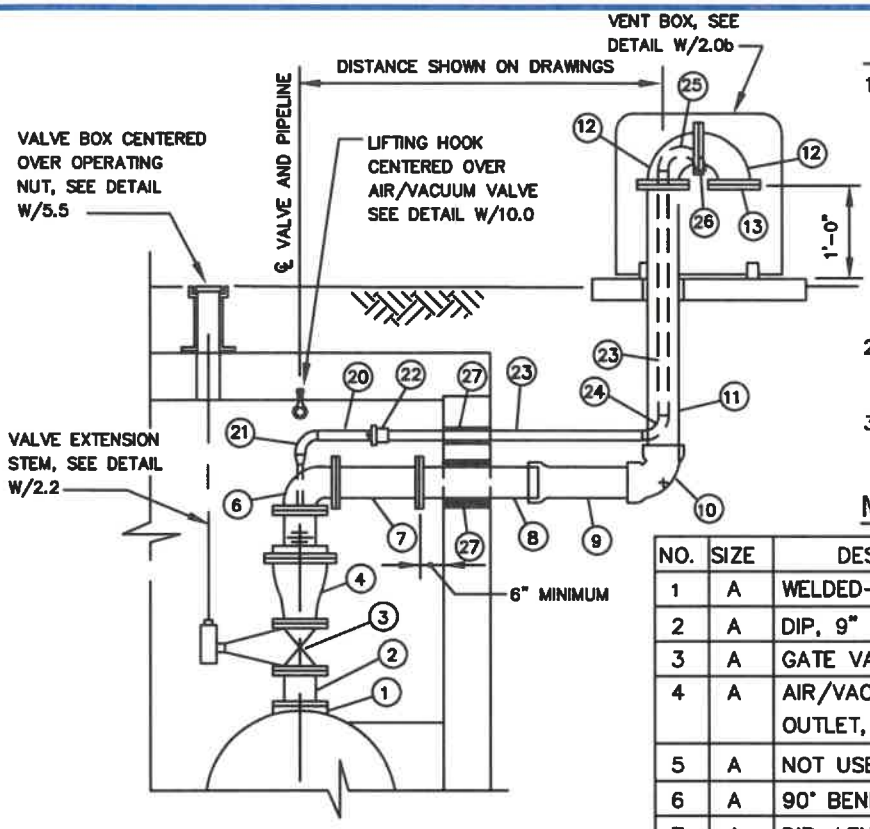


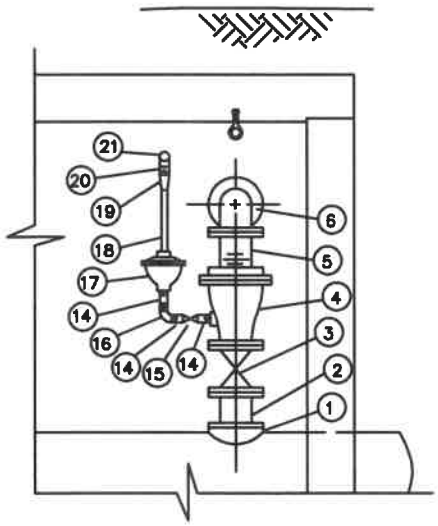
LIFTING HOOK

NOTES:

1. FOR VALVE AND PIPING SIZES AND LAYOUT, SEE DETAIL W/10.1
2. WELDED-ON CONNECTION, DETAIL W/10.1
3. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE.
4. PROVIDE RUBBER ANNUAL HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmen Chief Engineer	STANDARD DETAIL AIR/VACUUM VALVE VAULT ON 30-INCH DIAMETER AND LARGER PIPES	W 10.0





NOTES:

1. SEE DRAWING FOR:
   a. VALVE "A"
      MODEL NUMBER AND TYPE OF FLANGE (ANSI B16.1, CLASS 125 OR CLASS 250) FOR AIR/VACUUM VALVES
   b. VALVE "B"
      MODEL NUMBER, OUTLET AND ORIFICE SIZES FOR AIR RELEASE VALVES.
   c. MATERIAL LIST SIZES "A" AND "B"
      (SIZE"A", MINIMUM 3", MAXIMUM 8")
      (SIZE"B", MAXIMUM 2")
2. SEE SPECIFICATIONS FOR WELDED-ON CONNECTIONS (BOSSES OR OUTLETS) (OUTLET SIZE, MINIMUM 3", MAXIMUM 8")
3. MATERIAL LIST NUMBER 2 (9" DIP,FLGxFLG) IS REQUIRED ONLY FOR WELDED-ON BOSSES.

MATERIAL LIST

NO.	SIZE	DESCRIPTION	JOINT
1	A	WELDED-ON CONNECTION, SEE NOTE 2	FLG
2	A	DIP, 9" LONG, SEE NOTE 3	FLGxFLG
3	A	GATE VALVE WITH BEVEL GEARING	FLG
4	A	AIR/VACUUM VALVE WITH FLANGE OUTLET, SEE NOTE 1.a	FLG
5	A	NOT USED	
6	A	90° BEND	FLG
7	A	DIP, LENGTH VARIES	FLGxFLG
8	A	DIP, LENGTH VARIES	FLGxPE
9	A	DIP	BELLxPE
10	A	90° BEND	BELL
11	A	DIP, LENGTH VARIES	FLGxPE
12	A	90° BEND	FLG
13	–	½" SQ.-12GA. STAINLESS STEEL BIRD SCREEN WITH FLANGE	–
14	B	BRASS NIPPLE	NPT
15	B	BRASS GATE VALVE WITH HAND WHEEL	NPT
16	B	90° BRASS ELBOW	NPT
17	B	PRESSURE AIR RELEASE VALVE, SEE NOTE 1.b	NPT
18	½"	BRASS PIPE	NPT
19	2"x½"	BRASS REDUCER	NPT
20	2"	BRASS NIPPLE	NPT
21	2"	90° BRASS ELBOW	NPT
22	2"	UNION, BRASSxPVC	NPT
23	2"	PVC PIPE, SCH 40, SOLVENT WELDED	–
24	2"	PVC 90° BEND, SOLVENT WELDED	–
25	2"	PVC 180° BEND, SOLVENT WELDED	–
26	–	BIRD SCREEN, SEE DETAIL W/2.0b	–
27	–	RUBBER ANNUAL HYDROSTATIC SEALING DEVICE, SEE SPECIFICATIONS	–

WASHINGTON SUBURBAN SANITARY COMMISSION

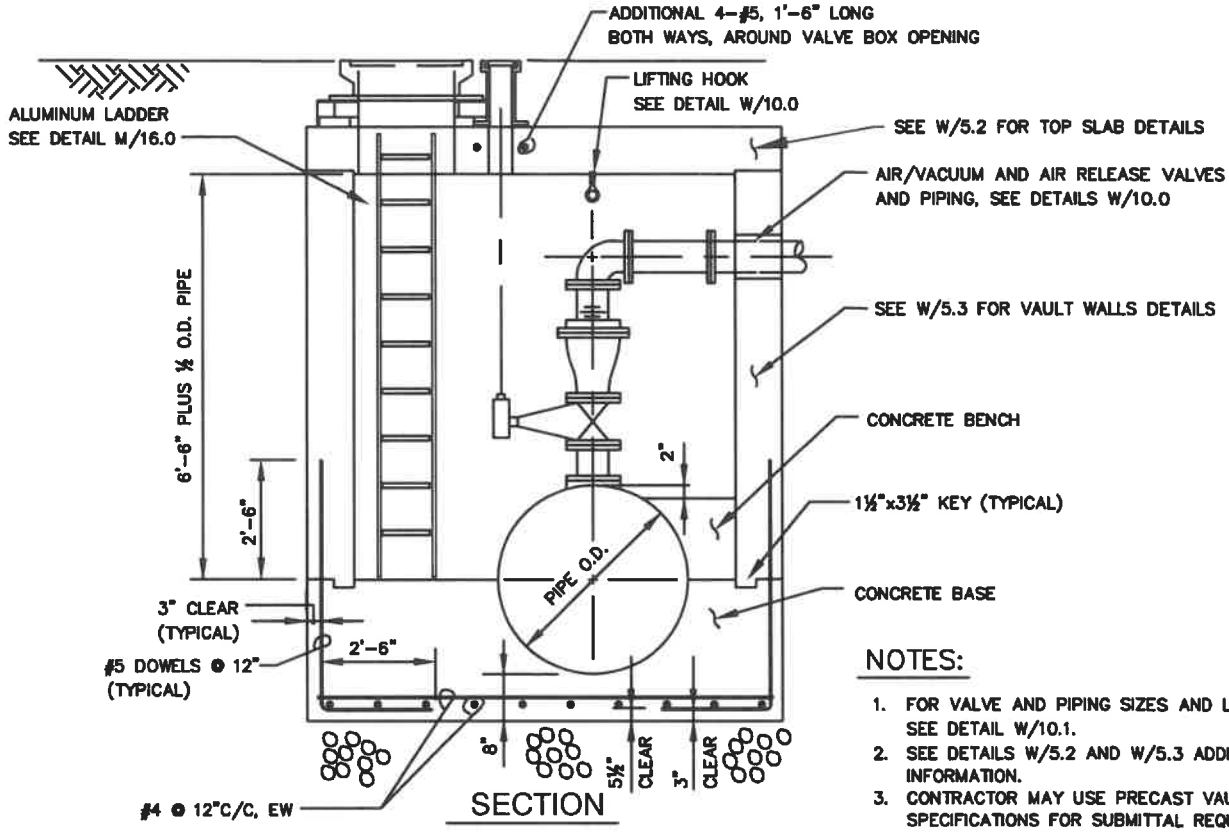
APPROVED: 7-26-21

Chief Engineer

STANDARD DETAIL

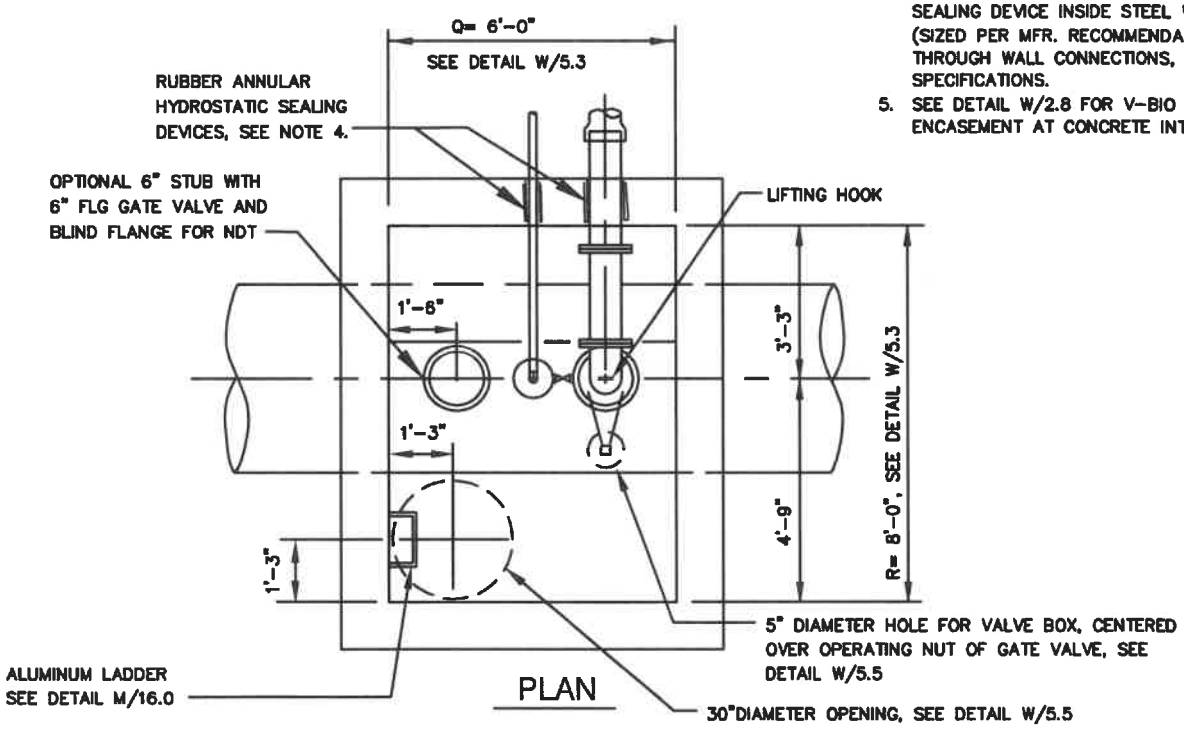
DETAILS FOR AIR/VACUUM VALVE VAULT ON 30-INCH DIAMETER AND LARGER PIPES

W
10.1



NOTES:

1. FOR VALVE AND PIPING SIZES AND LAYOUT, SEE DETAIL W/10.1.
2. SEE DETAILS W/5.2 AND W/5.3 ADDITIONAL INFORMATION.
3. CONTRACTOR MAY USE PRECAST VAULT. SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
4. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICE INSIDE STEEL WALL SLEEVE (SIZED PER MFR. RECOMMENDATIONS) FOR PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.
5. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT AT CONCRETE INTERFACE.



WASHINGTON SUBURBAN SANITARY COMMISSION

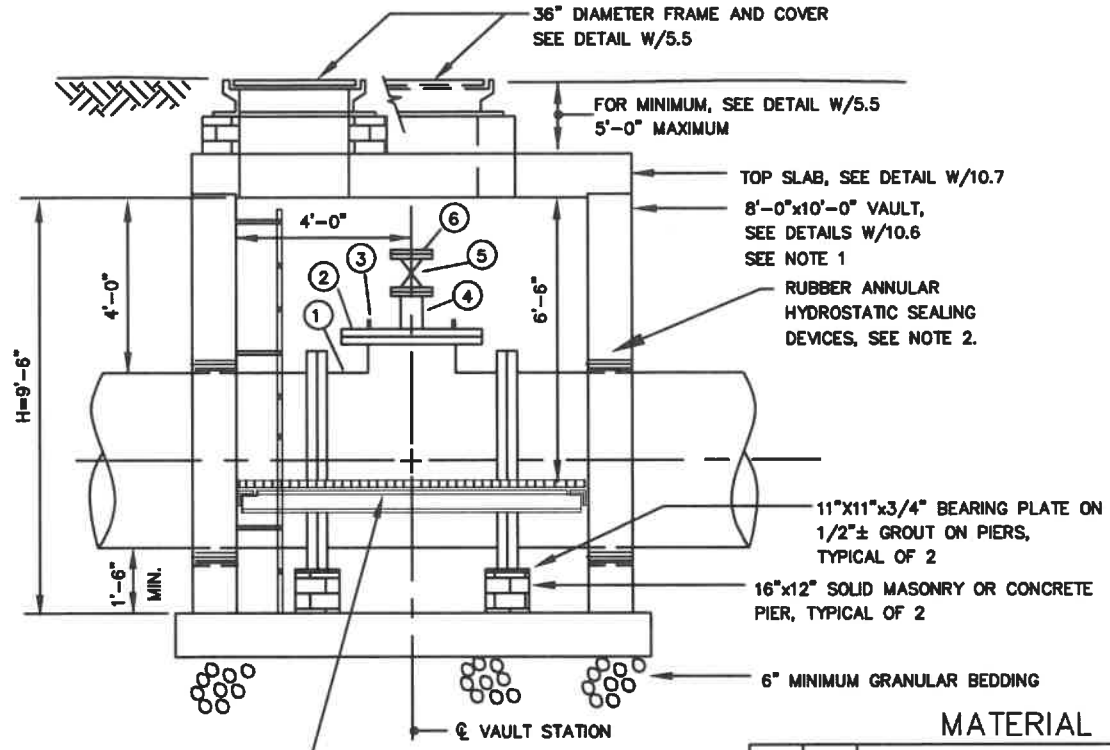
APPROVED: 7-26-21

Chief Engineer

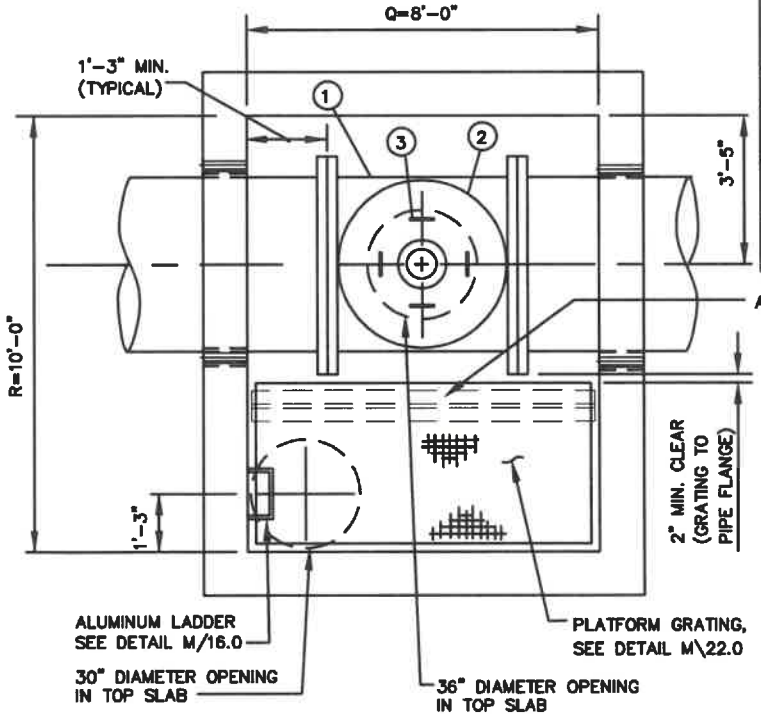
STANDARD DETAIL

AIR/VACUUM VALVE VAULT ON 30" DIAMETER AND LARGER PIPES

W
10.2



SECTION



PLAN

MATERIAL LIST

NO.	SIZE	DESCRIPTION	JOINT
1	–	TEE (36" OUTLET)	FLG
2	36"	STEEL BLIND FLANGE, AWWA C207, CLASS E WITH 6" OUTLET PIPE SEE DETAIL W/10.4	FLG
3	–	LIFTING HOOKS, SEE DETAIL W/10.4	–
4	6"	STEEL PIPE SCHEDULE 40, SEE DETAIL W/10.4	FLG
5	6"	GATE VALVE WITH HANDWHEEL CLASS 125	FLG
6	6"	STEEL BLIND FLANGE, AWWA C207, CLASS E	FLG

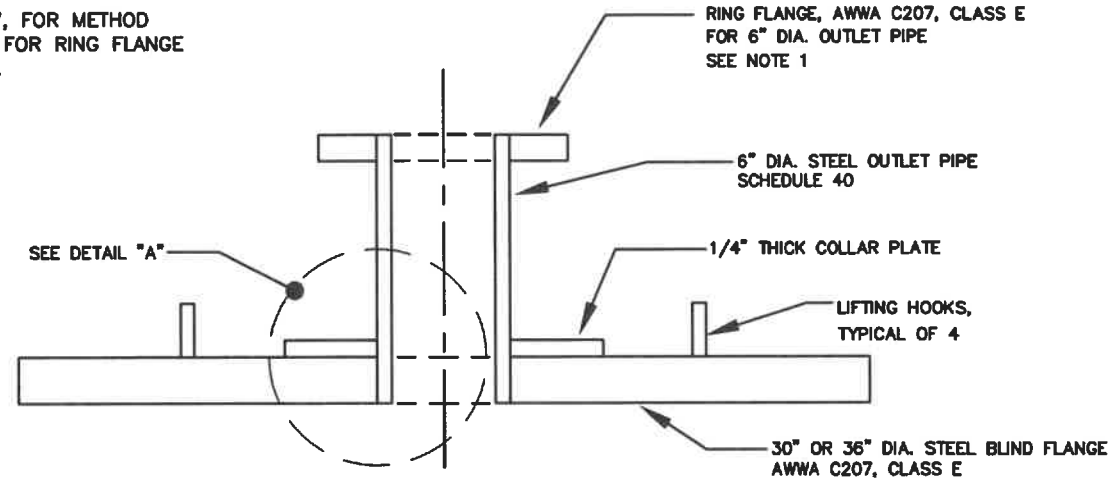
NOTE:

1. CONTRACTOR MAY USE PRECAST VAULT. SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
2. PROVIDE RUBBER ANNUAL HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.
3. SEE DETAIL W/2.8 FOR V-BIO POLYETHYLENE ENCASEMENT.

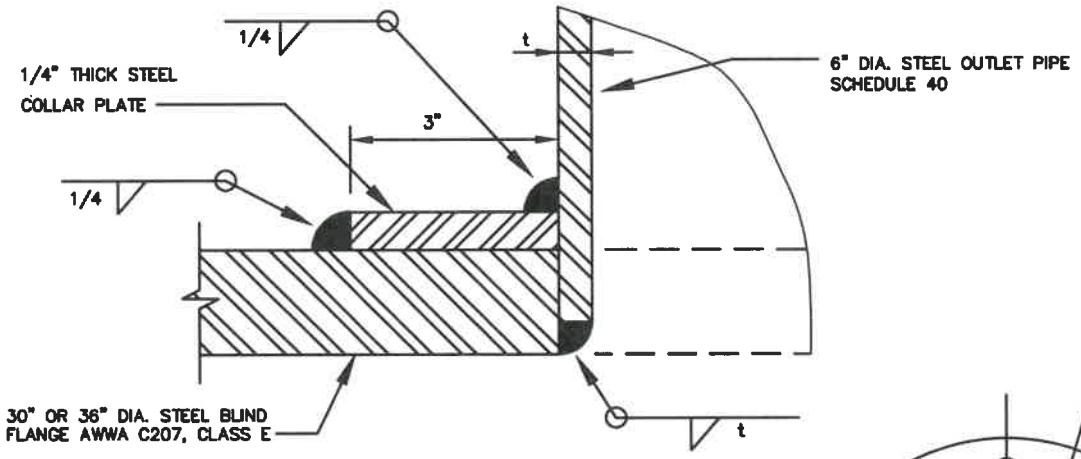
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL ENTRY PORT VAULT FOR 36" TO 48" DIAMETER PIPES	W 10.3

NOTE:

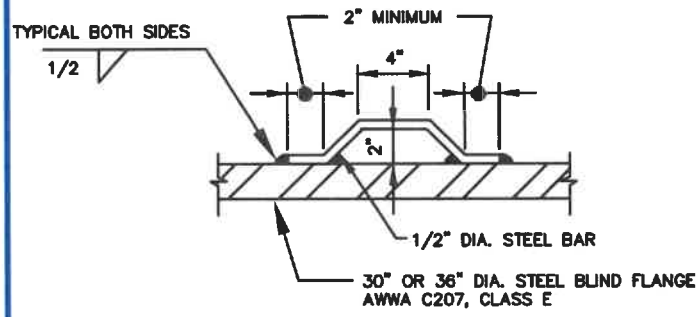
1. SEE AWWA C207, FOR METHOD OF ATTACHMENT FOR RING FLANGE TO OUTLET PIPE.



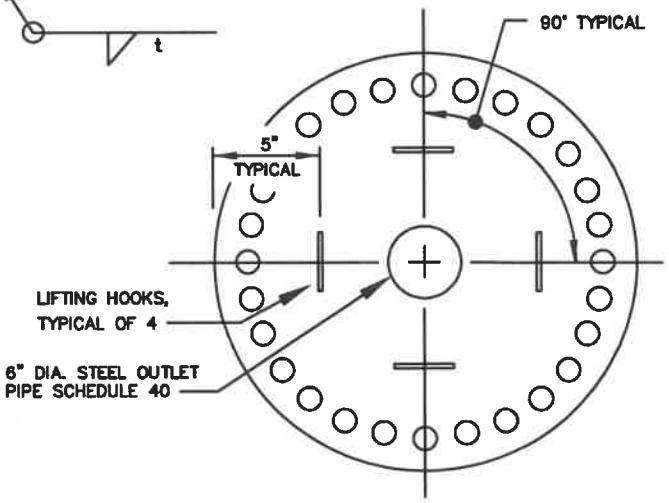
DETAIL OF 30"/36" ENTRY PORT BLIND FLANGE WITH 6" OUTLET



DETAIL "A"

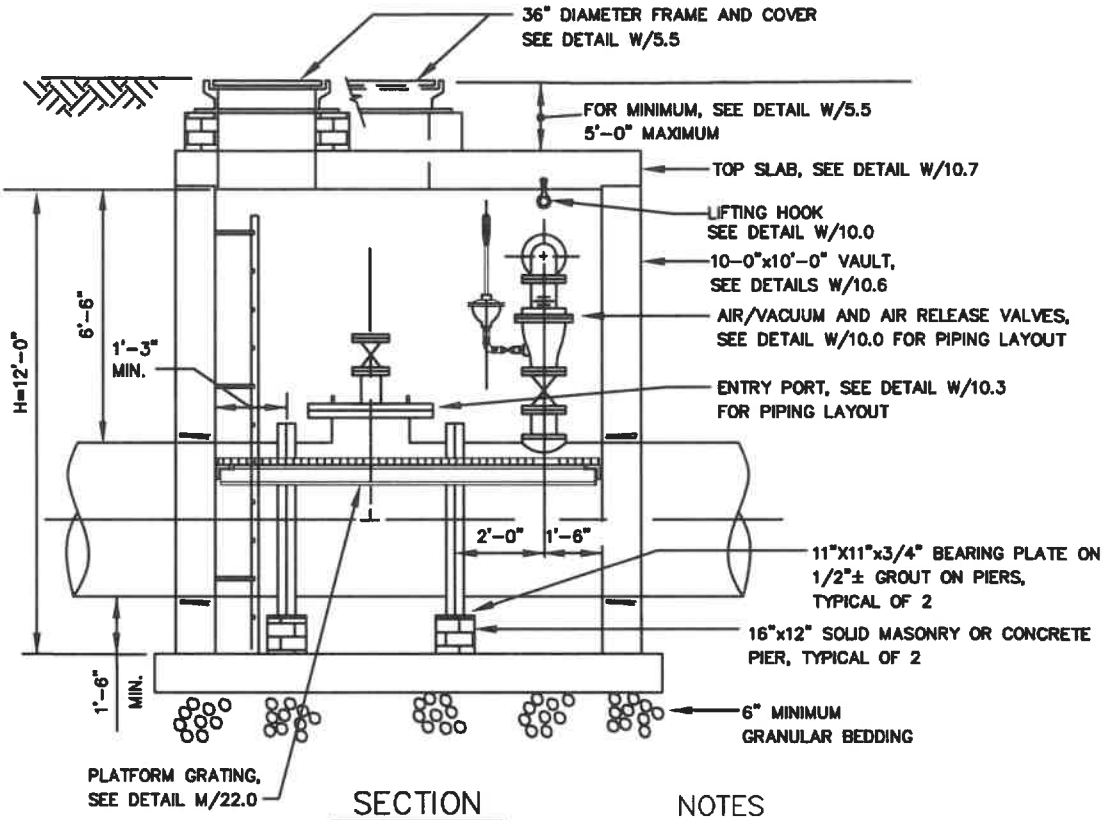


LIFTING HOOK DETAIL



LIFTING HOOK LOCATION DETAIL

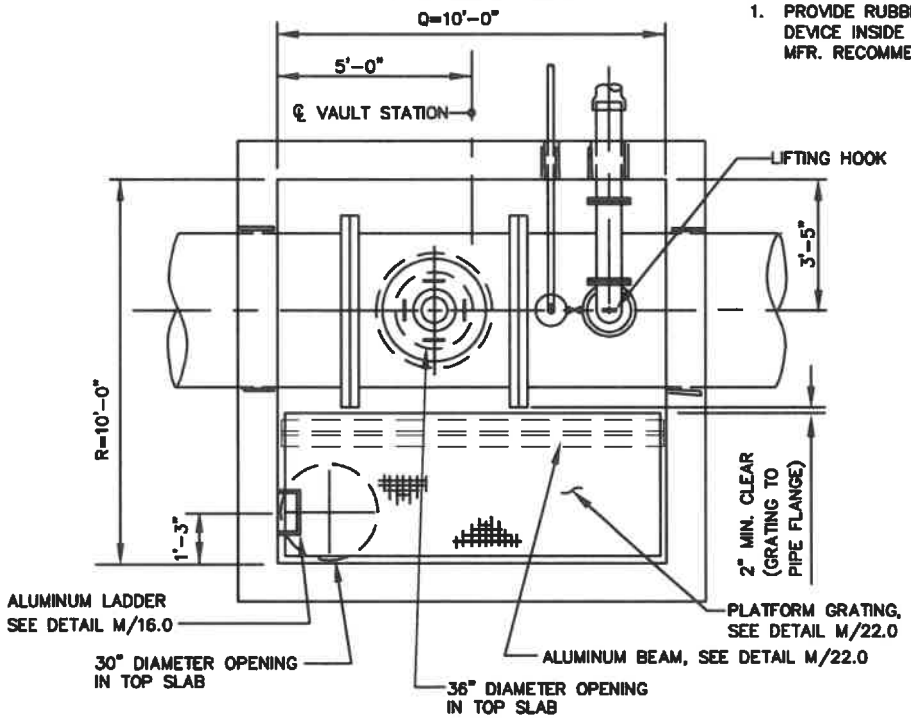
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harman Chief Engineer	STANDARD DETAIL BLIND FLANGE DETAILS FOR ENTRY PORT VAULTS	W 10.4



SECTION

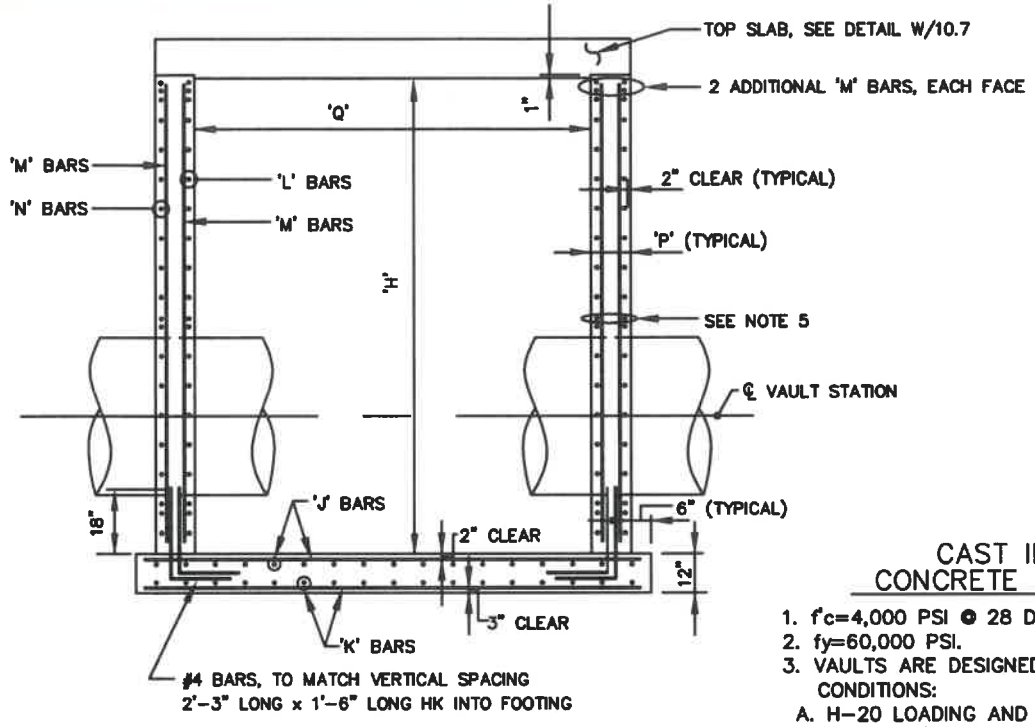
NOTES

1. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICE INSIDE STEEL WALL SLEEVE (SIZED PER MFR. RECOMMENDATIONS) SEE SPECIFICATIONS.



PLAN

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL AIR/VACUUM VALVE VAULT AND ENTRY PORT VAULT FOR 36" TO 48" DIAMETER PIPES	W 10.5

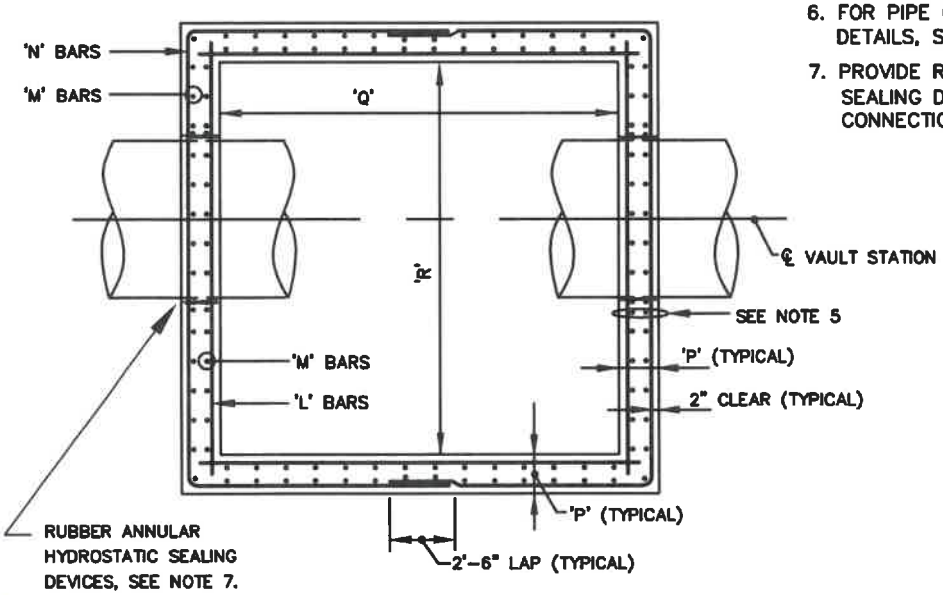


SECTION

H	Q	R	P	J	K	L	M	N
9'-6"	8'-0"	10'-0"	10"	#4@9"	#5@12"	#6@8"	#4@10"	#5@10"
12'-0"	10'-0"	10'-0"	12"	#4@10"	#5@10"	#6@7"	#4@9"	#5@7"

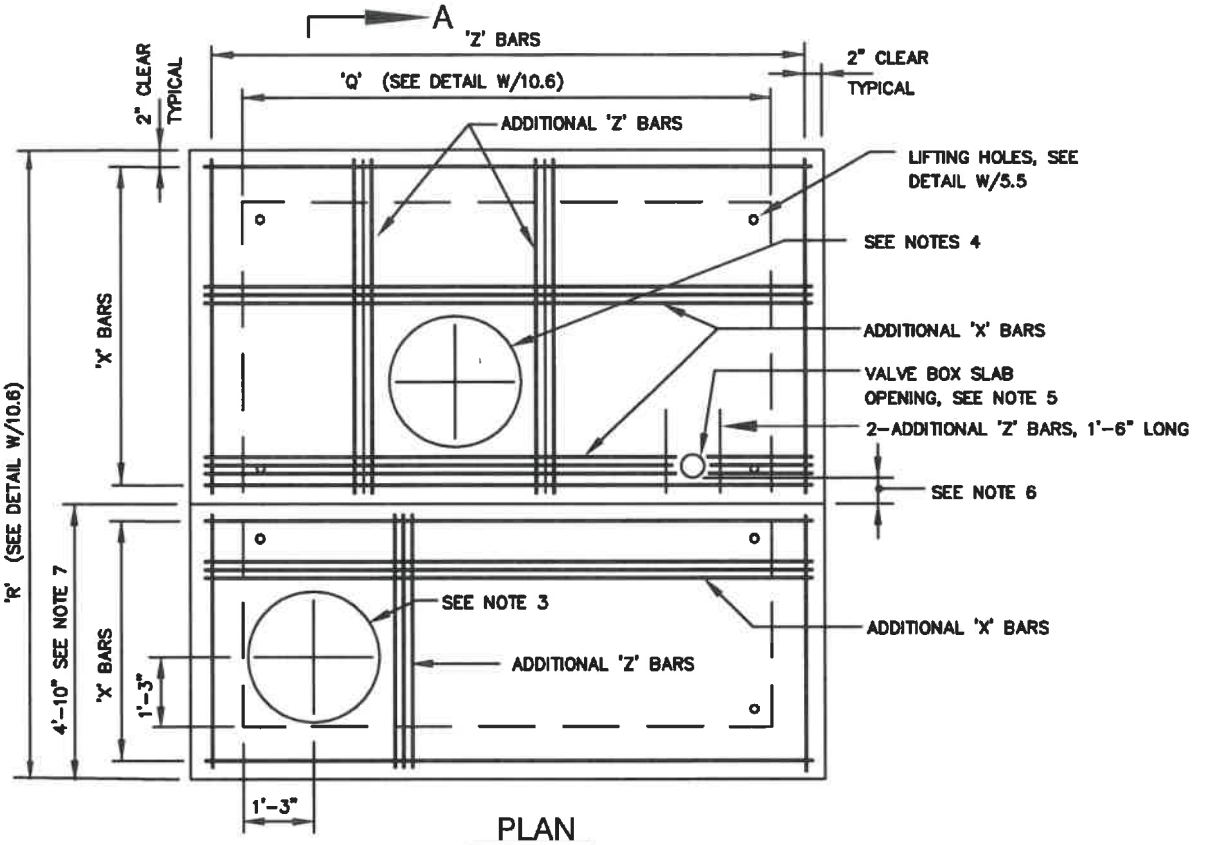
CAST IN PLACE CONCRETE VAULT NOTES:

1. f'c=4,000 PSI @ 28 DAYS.
2. fy=60,000 PSI.
3. VAULTS ARE DESIGNED FOR THE FOLLOWING CONDITIONS:
   A. H-20 LOADING AND 1'-0" COVER PLUS IMPACT. (WATER TABLE 4'-0" BELOW FINISHED GRADE)
   B. 5'-0" COVER AND 2'-0" SURCHARGE. (WATER TABLE 4'-0" BELOW FINISHED GRADE)
4. CONTRACTOR MAY USE PRECAST VAULT. SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
5. PROVIDE REQUIRED ADDITIONAL 'L', 'M' AND 'N' BARS AROUND ALL PIPE PENETRATIONS.
6. FOR PIPE CONFIGURATION AND ADDITIONAL DETAILS, SEE DETAILS W/10.3 AND W/10.5.
7. PROVIDE RUBBER ANNUAL HYDROSTATIC SEALING DEVICES FOR PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.



PLAN

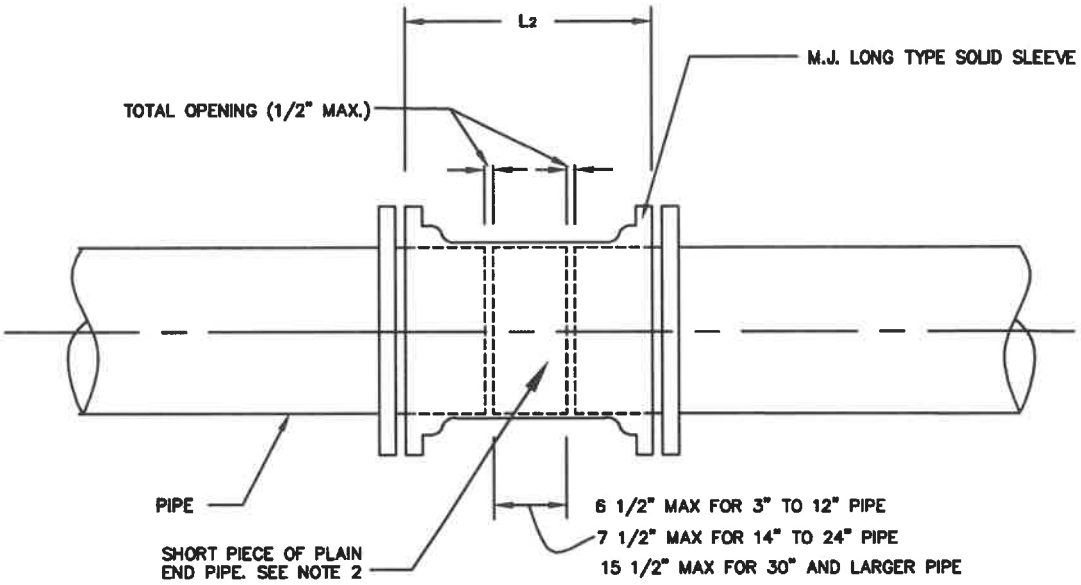
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CONCRETE VAULT FOR ENTRY PORTS	W 10.6



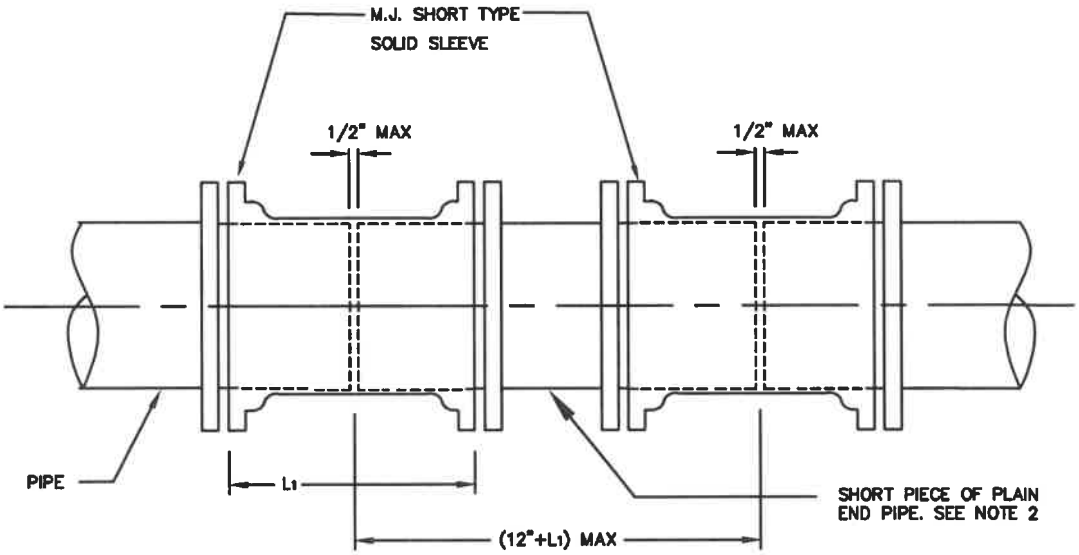
NOTES:

1. FOR CAST IN PLACE CONCRETE TOP SLAB THICKNESS AND REINFORCING, SEE DETAIL W/5.21.
2. FOR JOINT, LIFTING HOLES AND FRAME AND COVER DETAIL, SEE W/5.5.
3. PROVIDE 30" OR 36" OPENING IN TOP SLAB FOR NDT OPTION, SEE DETAIL W/5.5.
4. PROVIDE 30" OPENING IN TOP SLAB, CENTERED OVER ENTRY PORT TEE, SEE DETAIL W/5.5.
5. FOR AIR/VACUUM AND ENTRY PORT VAULTS, ONLY, CENTER 5" DIAMETER OPENING OVER OPERATING NUT OF VALVE FOR AIR/VACUUM VALVE. SEE DETAIL W/5.5.
6. PROVIDE MINIMUM 4" CLEAR, BETWEEN 5" DIAMETER OPENING AND SLAB JOINT.
7. IF MINIMUM 4" CLEAR, AS SPECIFIED IN NOTE 6, CAN NOT BE MET, THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS FOR TOP SLAB DESIGN.
8. CONTRACTOR MAY USE PRECAST TOP SLAB, SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CAST IN PLACE TOP SLAB REINFORCING FOR AIR/VACUUM VALVE VAULT AND ENTRY PORT VAULTS	W 10.7



MECHANICAL JOINT SOLID SLEEVE (LONG TYPE)

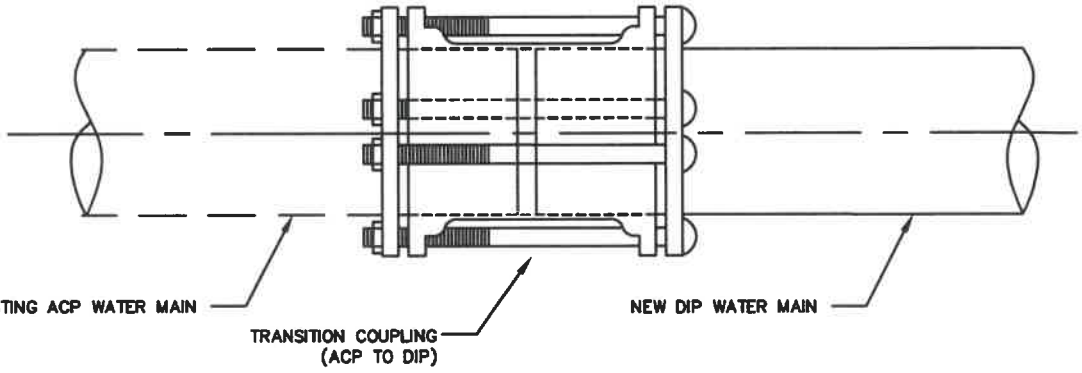


MECHANICAL JOINT TWO SOLID SLEEVES (SHORT TYPE)

NOTES:

1. FOR L_1 & L_2 DIMENSIONS, SEE AWWA C110 AND C153 FOR MECHANICAL JOINT SLEEVES (L_2 FOR LONG TYPE AND L_1 FOR SHORT TYPE).
2. TO BE CUT FROM THE SAME TYPE AND SIZE OF PIPE BEING SLEEVED.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL PIPE CLOSURE JOINT DETAIL USING MJ SOLID SLEEVES	W 11.0

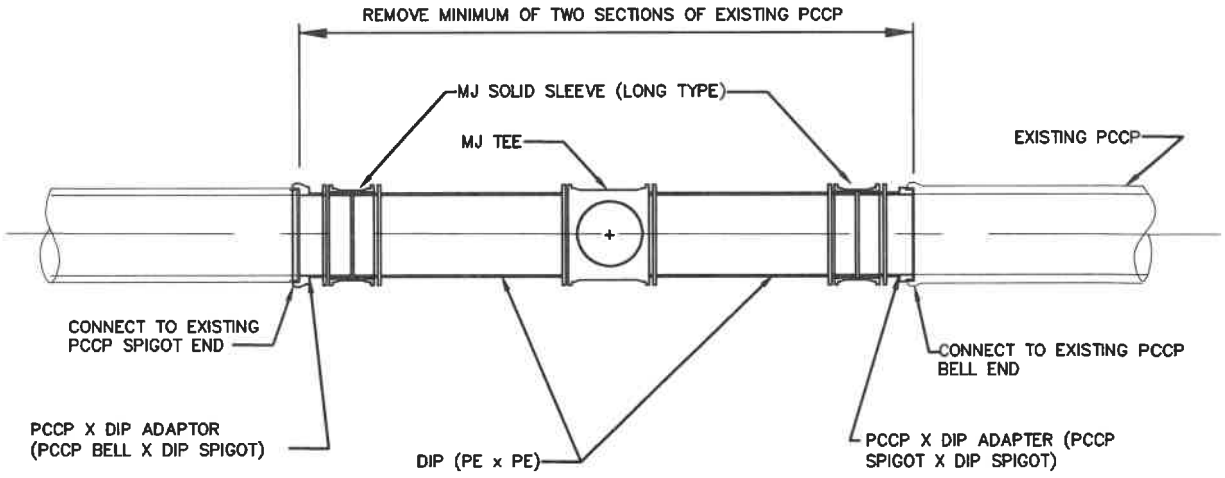


NOTES:

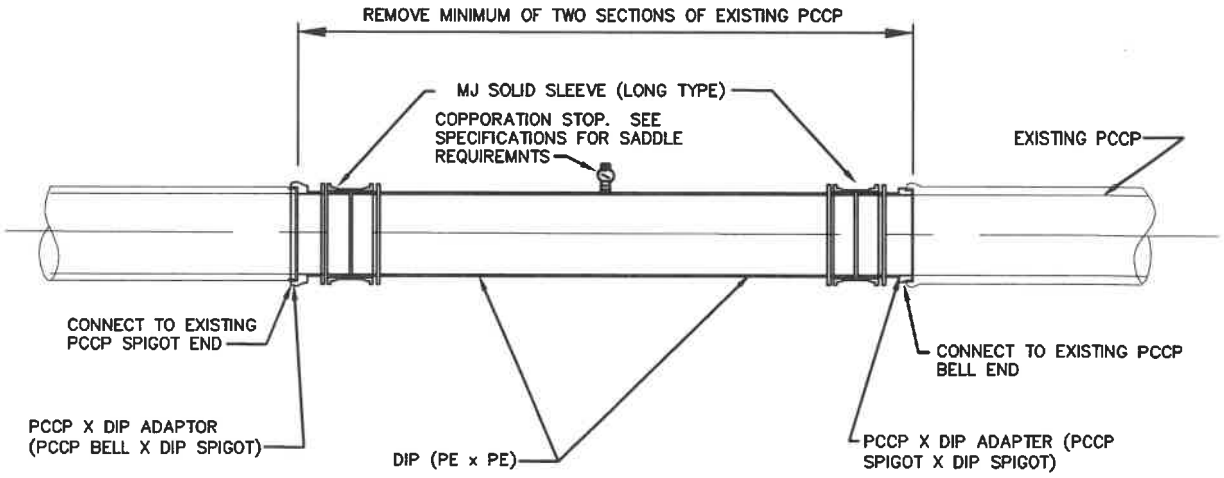
1. LOCATE END OF EXISTING ACP WATER MAIN. VERIFY OD OF EXISTING ACP WATER MAIN, WITH OD TOLERANCES OF COUPLING MANUFACTURER BEFORE REMOVING EXISTING WATER MAIN TO BE REPLACED.

2. TO BE CUT FROM THE SAME TYPE AND SIZE OF PIPE BEING SLEEVED.

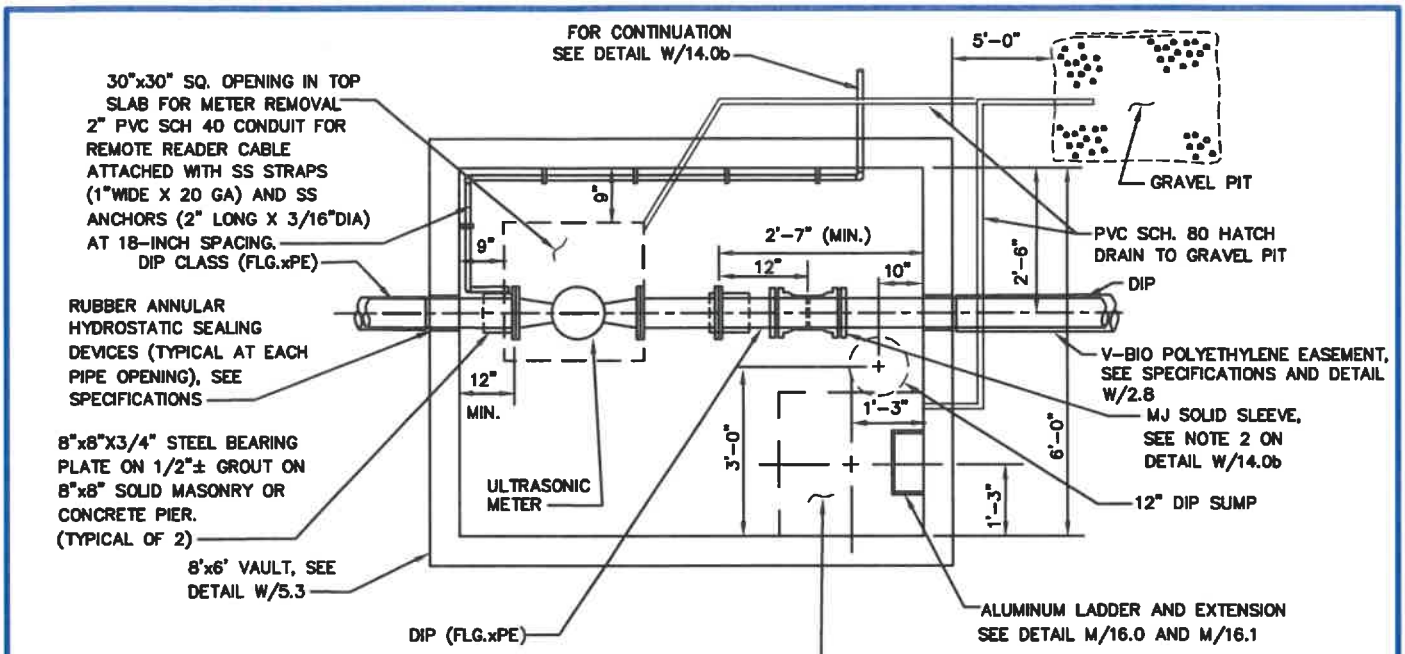
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL PIPE CLOSURE JOINT DETAIL FOR EXIST. ACP WATER MAINS	W 11.1



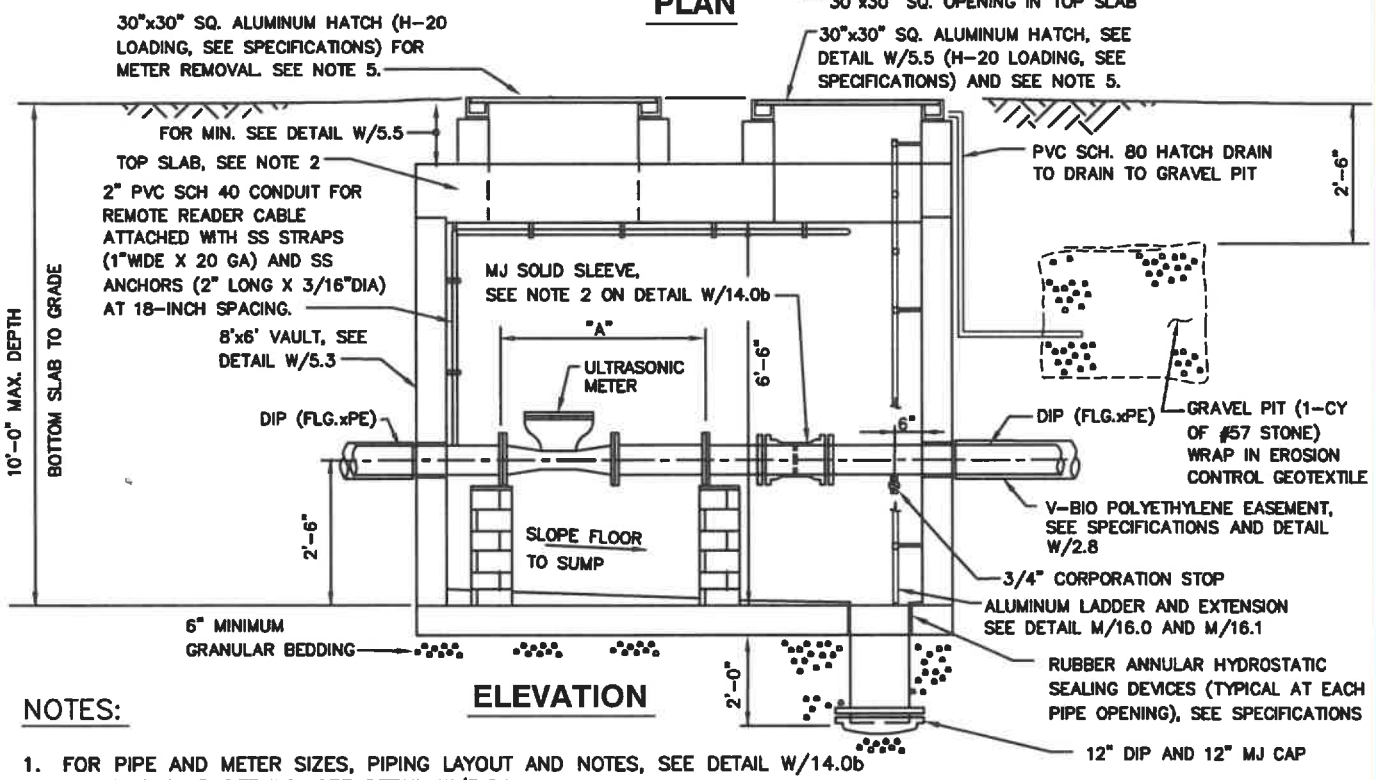
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmer Chief Engineer	STANDARD DETAIL CONNECTING TO EXISTING PCCP WATER MAINS USING DUCTILE IRON TEE	W 13.0



WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL CONNECTING TO EXISTING PCCP WATER MAINS FOR 2" AND SMALLER WATER SERVICE	W 13.1



PLAN

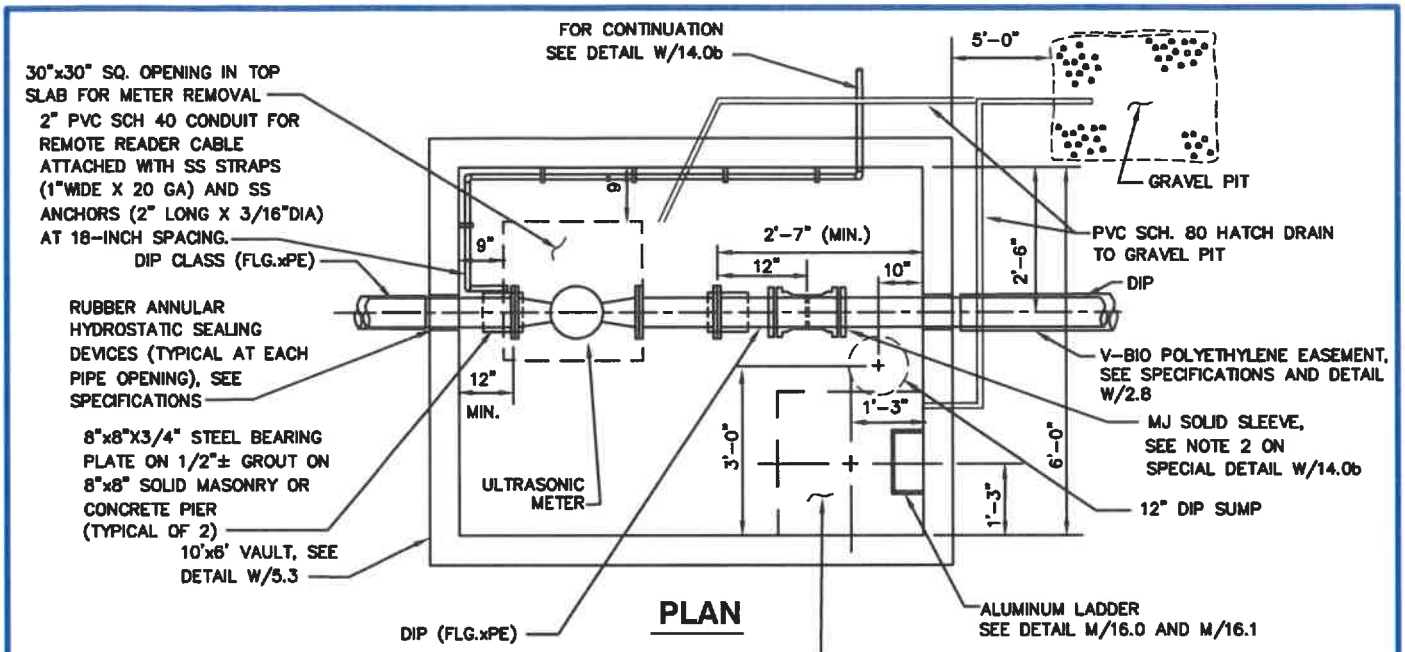


ELEVATION

NOTES:

1. FOR PIPE AND METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/14.0b
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.24.
3. FOR DIMENSION "A", SEE DETAIL W/14.0b.
4. FOR LOCATION OF BY-PASS PIPING, SEE DETAIL W/14.0b.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE, FOR LOCATION SEE W/14.0b.
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° PER FITTING UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

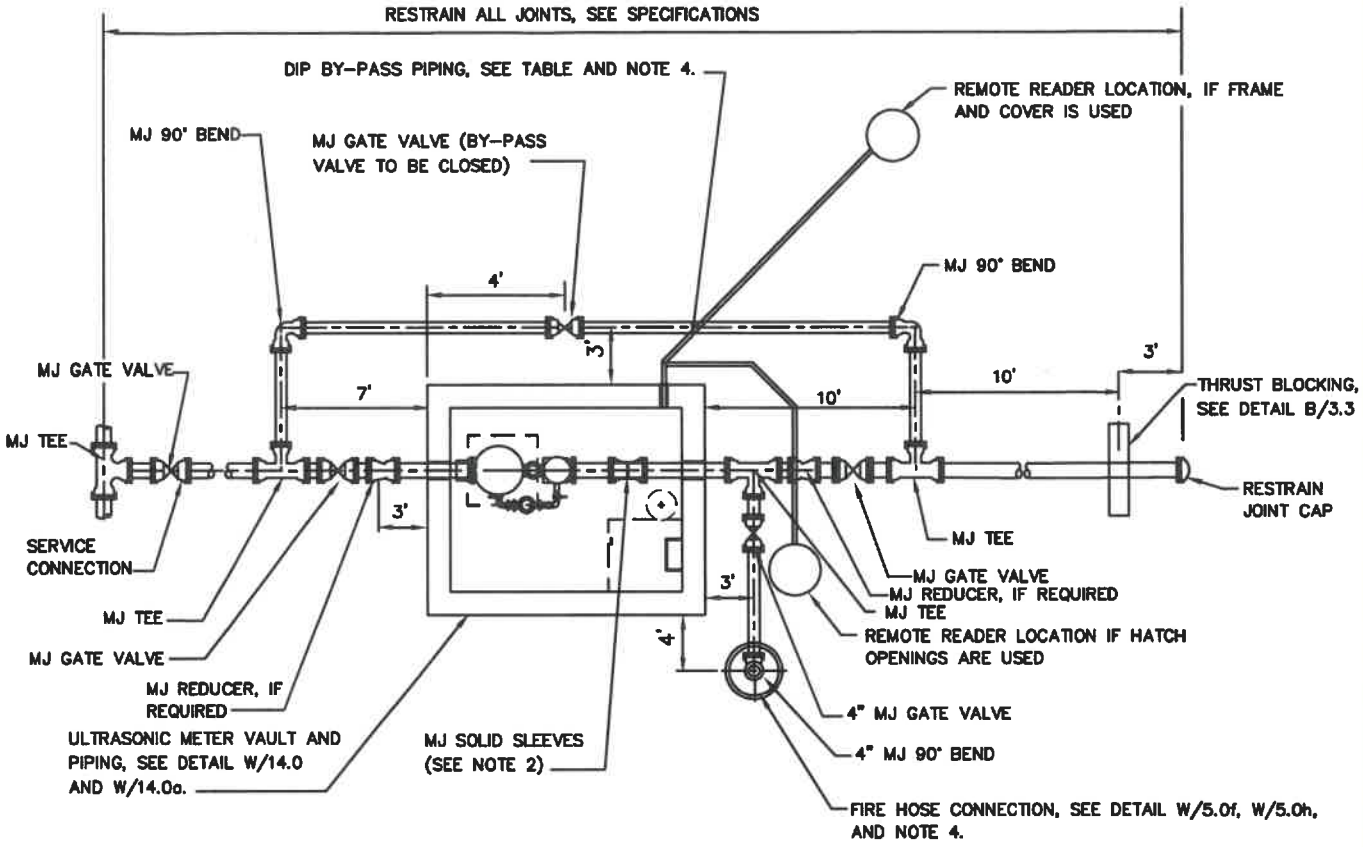
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmon Chief Engineer	STANDARD DETAIL 4-INCH, 6-INCH, 8-INCH AND 10-INCH ULTRASONIC METER VAULT	W 14.0



NOTES:

1. FOR PIPE AND ULTRASONIC METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/14.0b.
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.25.
3. FOR DIMENSION "A", SEE DETAIL W/14.0b.
4. FOR LOCATION OF BY-PASS PIPING, SEE DETAIL W/14.0b.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND SEE DETAIL W/14.0b.
6. FOR 12" DIP, USE 10" ULTRASONIC METER WITH 12" SERVICE CONNECTION AND 12" BY-PASS PIPING.
7. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
8. BENDS IN REMOTE READER NOT TO EXCEED 45° PER FITTING UNLESS USING A 90° SWEEP.
9. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mitch Harmer Chief Engineer	STANDARD DETAIL 10-INCH ULTRASONIC METER VAULT	W 14.0a



PLAN - ULTRASONIC METER VAULTS
TYPICAL PIPING LAYOUT

NOTES:

1. FOR ULTRASONIC METER VAULT AND PIPING DETAILS, SEE DETAIL W/14.0 AND W/14.0a
2. ONLY DUCTILE IRON PIPE AND FITTINGS, EXCEPT AS NOTED. SEE DRAWINGS FOR SIZES.
3. RESTRAIN ALL JOINTS ON BY-PASS PIPING FROM TEE TO TEE WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATION. RESTRAIN ALL JOINTS ON FIRE HOSE CONNECTION WITH WEDGE ACTION RESTRAINER GLANDS, SEE SPECIFICATION.
4. PROVIDE EXTENSION STEMS AND VALVE BOXES FOR ALL BURIED VALVES, SEE DETAIL W/2.2.
5. POLYETHYLENE ENCASEMENT FOR ALL DUCTILE IRON PIPE AND FITTINGS. SEE DETAIL W/2.8 FOR CONCRETE INTERFACE.
6. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICES FOR ALL PIPE THROUGH WALL CONNECTIONS, SEE SPECIFICATIONS.
7. WHEN 12" ULTRASONIC METERS ARE REQUIRED, USE 10" ULTRASONIC, SEE BELOW. SERVICE PIPING AND BY-PASS SHALL BE 12"DIA.

BY-PASS PIPE SIZE	
METER SIZE	BY-PASS PIPE SIZE
4"	4"
6"	6"
8"	8"
10"	10"

"A" DIMENSION (SEE DETAIL W/14.0 and W/14.0a)	
METER SIZE	"A" (LENGTH OF METER)
4"	33"
6"	45"
8"	53"
10"	68"

WASHINGTON SUBURBAN SANITARY COMMISSION

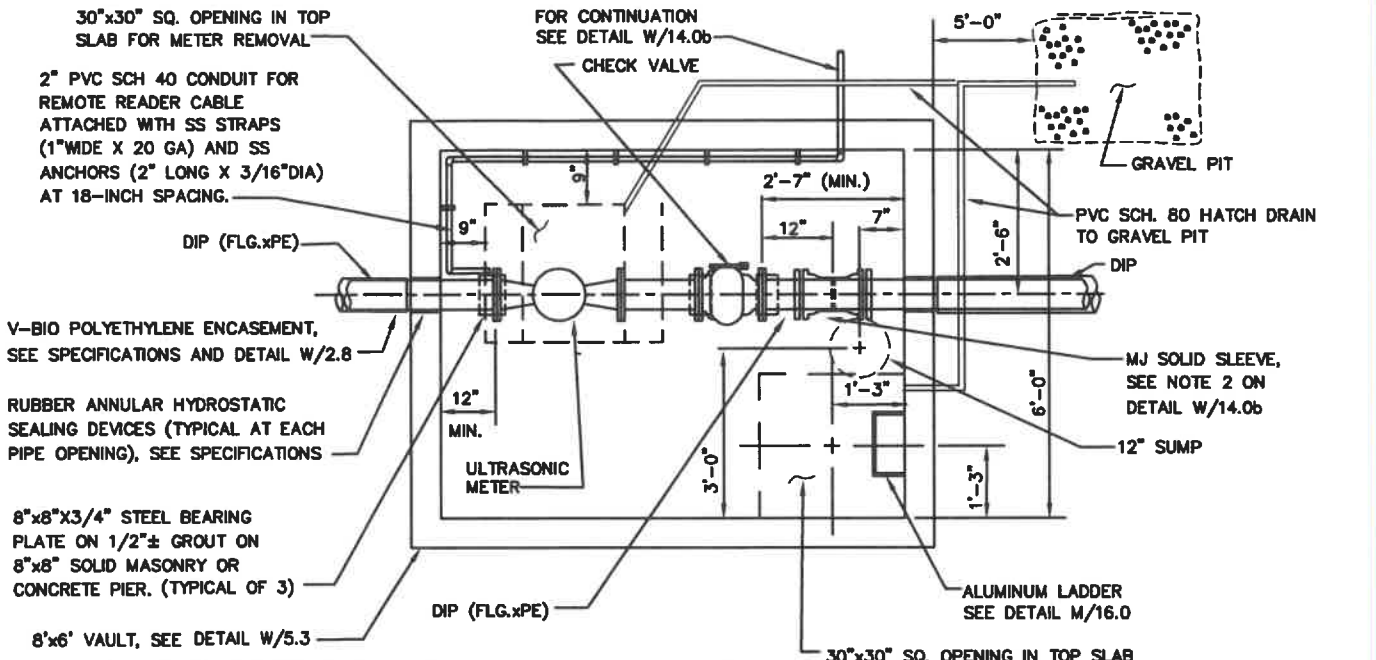
APPROVED: 7-26-21

Mike Harmen
Chief Engineer

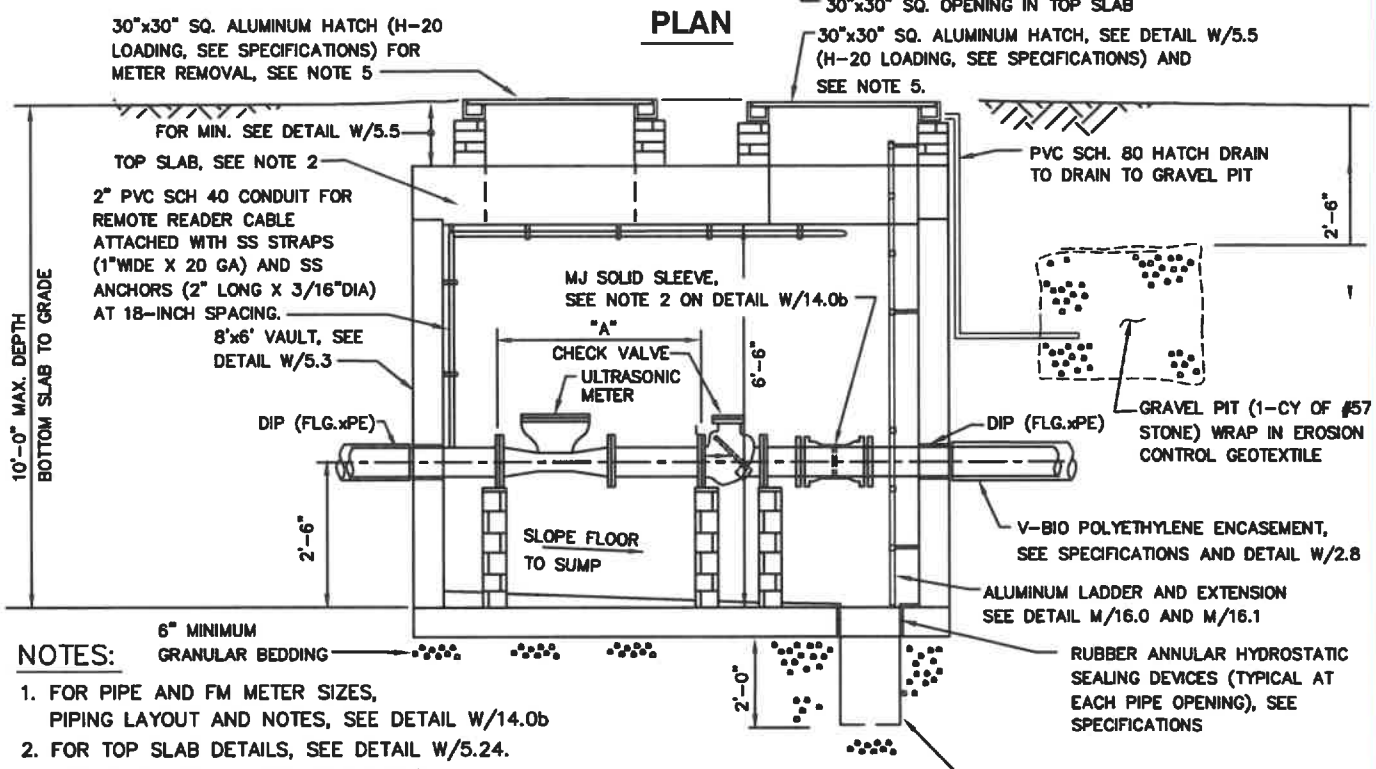
STANDARD DETAIL

4-INCH, 6-INCH AND 8-INCH ULTRASONIC METER VAULT PIPING LAYOUT

W
14.0b



PLAN

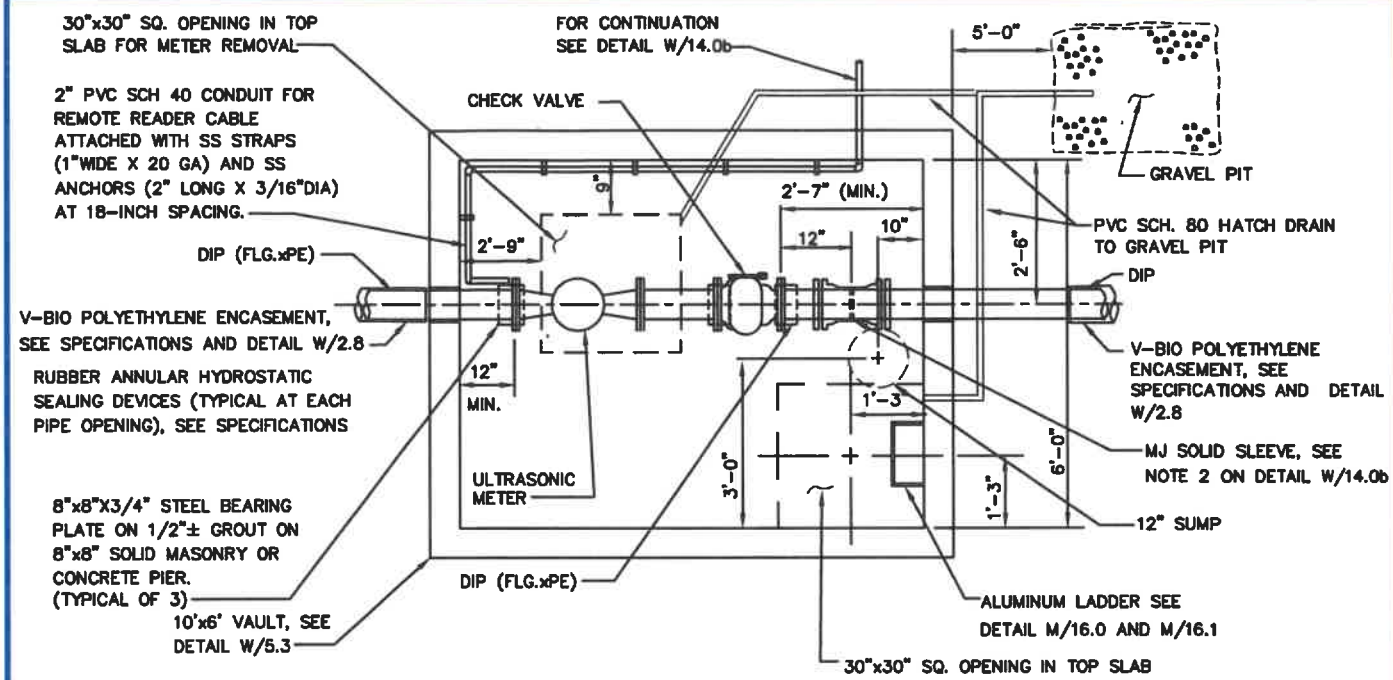


ELEVATION

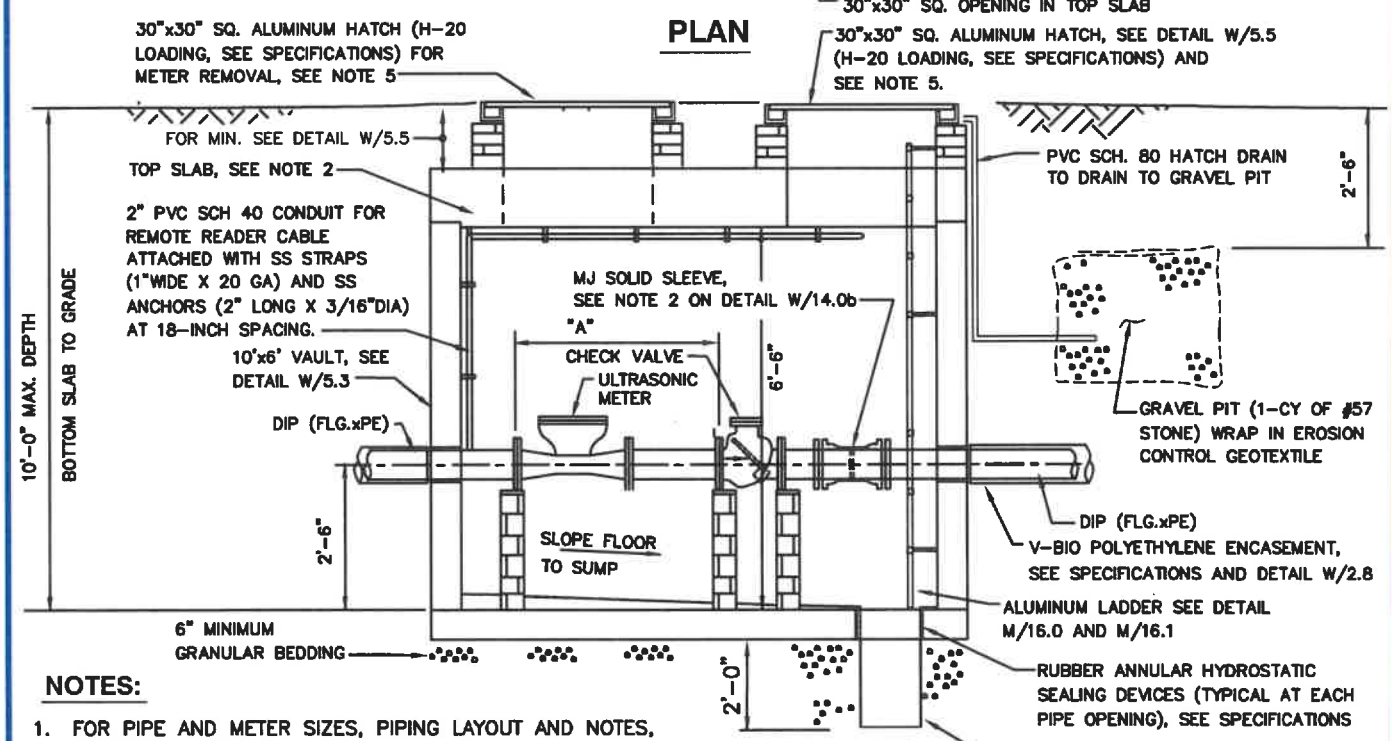
NOTES:

1. FOR PIPE AND FM METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/14.0b
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.24.
3. FOR DIMENSION "A", SEE DETAIL W/14.0b
4. FOR LOCATION OF BY-PASS PIPING SEE DETAIL W/14.0b
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE, FOR LOCATION SEE DETAIL W/14.0b
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Harmen Chief Engineer	STANDARD DETAIL 4-INCH ULTRASONIC METER WITH CHECK VALVE VAULT	W 14.1a



PLAN

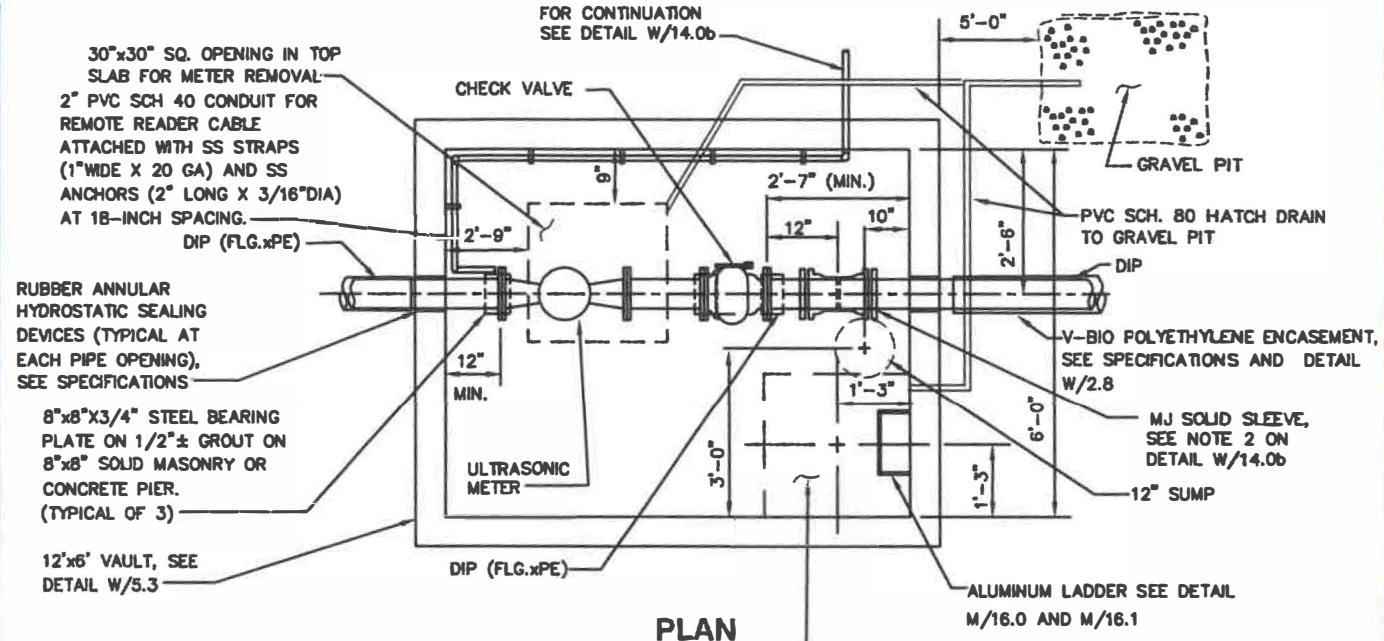


ELEVATION

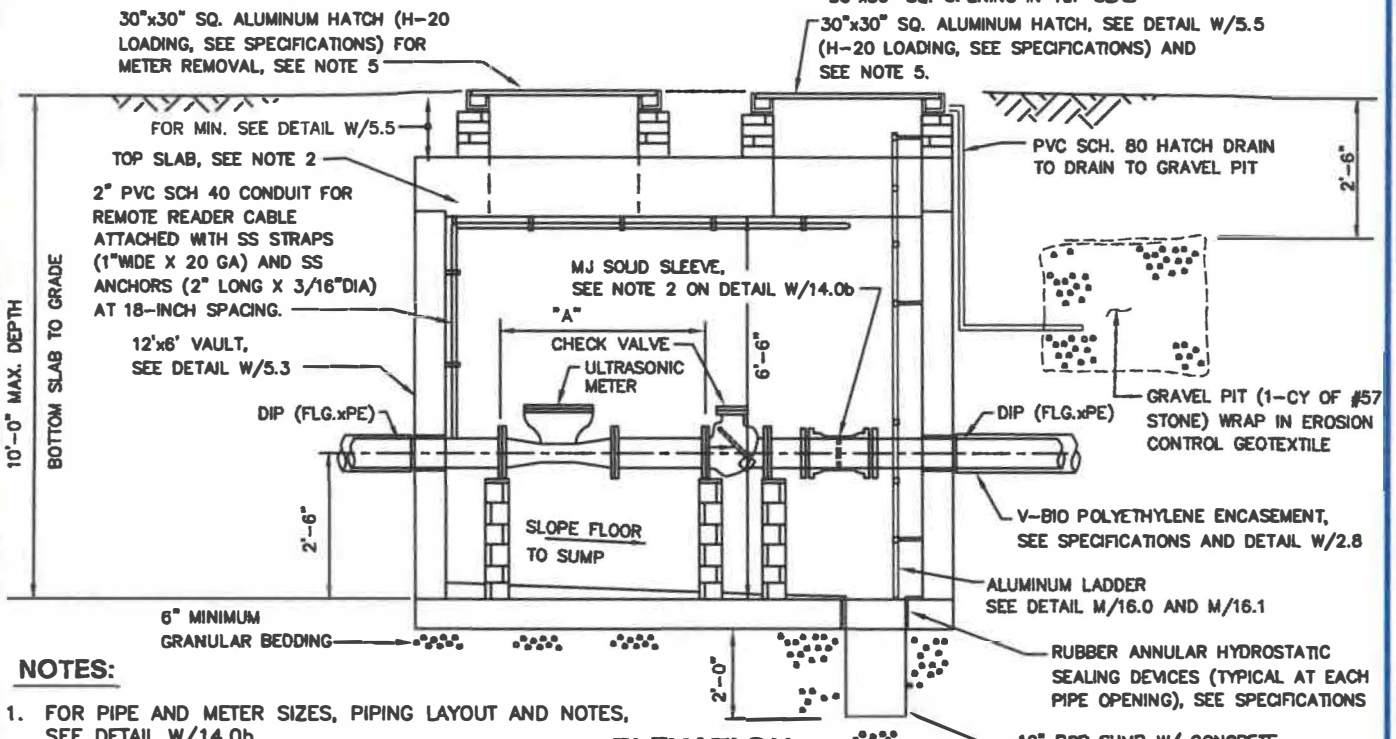
NOTES:

1. FOR PIPE AND METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/14.0b
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.25.
3. FOR DIMENSION "A", SEE DETAIL W/14.0b.
4. FOR LOCATION OF BY-PASS PIPING, SEE DETAIL W/14.0b.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE, FOR LOCATION SEE W/14.0b.
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° PER FITTING UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Mike Hartman Chief Engineer	STANDARD DETAIL 6-INCH AND 8-INCH ULTRASONIC METER WITH CHECK VALVE VAULT	W 14.1b



PLAN



ELEVATION

NOTES:

1. FOR PIPE AND METER SIZES, PIPING LAYOUT AND NOTES, SEE DETAIL W/14.0b
2. FOR TOP SLAB DETAILS, SEE DETAIL W/5.26.
3. FOR DIMENSION "A", SEE DETAIL W/14.0b.
4. FOR LOCATION OF BY-PASS PIPING, SEE DETAIL W/14.0b.
5. IF VAULT LOCATION IS LOCATED IN TRAFFIC AREA, USE 30" DIA. FRAME AND COVER AND REMOTE READING DEVICE, FOR LOCATION SEE W/14.0b.
6. FOR REMOTE READING DEVICE, SEE DETAIL W/5.0e.
7. BENDS IN REMOTE READER CONDUIT NOT TO EXCEED 45° PER FITTING UNLESS USING A 90° SWEEP.
8. CONTRACTOR SHALL INSTALL REMOTE READER HOUSING, ALL CONDUIT AND WIRING. METER SERVICES SHALL INSTALL THE REMOTE READING DEVICE AND PERFORM FINAL WIRING TO THE METER.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 10-INCH ULTRASONIC METER WITH CHECK VALVE VAULT	W 14.1c