



CITY OF SOUTH GATE

STANDARD DRAWINGS

FOR

WATER AND SEWER SYSTEMS

2021 EDITION



Prepared By:
Public Works Department

PREFACE

THESE "**STANDARD DRAWINGS FOR WATER AND SEWER CONSTRUCTION - 2021 EDITION**" (STANDARD DRAWINGS) HAVE BEEN PREPARED AND ADOPTED BY THE CITY OF SOUTH GATE, PUBLIC WORKS DEPARTMENT.

THESE STANDARD DRAWINGS SHALL BE USED AS GUIDES FOR PREPARING CONSTRUCTION PLANS AND FOR CONSTRUCTION OF THE DETAILED ITEMS. THEY WILL BE USED ON PUBLIC WORKS CONTRACTS, MAINTENANCE AND REPAIRS, AND ANY CONSTRUCTION IN PUBLIC RIGHT-OF-WAY OR ON PRIVATE PROPERTY WHERE PERMITS ARE REQUIRED. THEY ARE FOR USE IN CONCERT WITH THE **LATEST EDITION OF THE "GREENBOOK - STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"**.

IT SHALL BE THE ENGINEER'S OR CONTRACTOR'S RESPONSIBILITY TO POSSESS COPIES OF THE STANDARD PLANS.

"PERMITTEES" WILL BE REQUIRED TO OBTAIN CURRENT "STANDARD DRAWINGS" PRIOR TO ISSUANCE OF ANY PERMIT. ALL CONTRACTORS ARE REQUIRED TO CONSTRUCT IN ACCORDANCE WITH CURRENT "STANDARD DRAWINGS".

THE ELECTRONIC COPY OF THE STANDARD DRAWINGS IS AVAILABLE FOR DOWNLOAD FROM THE CITY'S WEBSITE:

<http://www.cityofsouthgate.org/225/Public-Works>

UPDATES TO THE STANDARD DRAWINGS WILL BE POSTED TO THIS WEBSITE AS THEY ARE ADOPTED BY THE CITY OF SOUTH GATE.

USERS OF THE STANDARD DRAWINGS ARE ENCOURAGED TO SUBMIT CORRECTIONS AND PROPOSED CHANGES TO THE STANDARDS DRAWINGS TO PUBLIC WORKS DEPARTMENT, STANDARDS AND CONTRACT DOCUMENTS SECTION AT pwengineering@sogate.org.



Arturo Cervantes, P.E.
Assistant City Manager/Director of Public Works

TABLE
OF
CONTENTS

GENERAL

GEN - 1	ABBREVIATIONS AND SYMBOLS
GEN - 2	LEGEND

WATER SYSTEM

WD - 1	¾ AND 1-INCH WATER SERVICE INSTALLATION
WD - 2	1½ AND 2-INCH WATER SERVICE INSTALLATION
WD - 3	¾ AND 1-INCH GROUPED DOMESTIC SERVICE CONNECTION
WD - 4	MANIFOLD ASSEMBLY FOR 2-INCH AND LARGER SERVICES
WD - 5	¾ AND 1-INCH METER BOX
WD - 6	¾ AND 1-INCH METER BOX LID
WD - 7	1½ AND 2-INCH METER BOX
WD - 8	1½ AND 2-INCH METER BOX LID
WD - 9	ANTENNA MOUNT DETAILS FOR ¾-INCH -2-INCH METER BOX LID
WD - 10	3-INCH AND LARGER METER SERVICE INSTALLATION
WD - 11	ABOVE GROUND METER ASSEMBLY WITH REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
WD - 12	¾ - 2 INCH HOT TAPS FOR CEMENT MORTAR LINED STEEL PIPE
WD - 13	HOT TAPPING SLEEVE AND GATE VALVE FOR DUCTILE IRON PIPE
WD - 14	WELDED TAPPING SLEEVE AND GATE VALVE FOR STEEL CYLINDER PIPE
WD - 15	VALVE ANCHOR
WD - 16	STANDARD VALVE CAN INSTALLATION
WD - 17	CUT-IN VALVE
WD - 18	CUT-IN TEE
WD - 19	RESIDENTIAL FIRE HYDRANT INSTALLATION
WD - 20	COMMERCIAL/INDUSTRIAL/INSTITUTIONAL FIRE HYDRANT INSTALLATION
WD - 21	RECYCLED WATER WHARF HEAD HYDRANT
WD - 22	FIRE HYDRANT SETBACK DETAIL
WD - 23	FIRE AND DOMESTIC COMBINATION METER AND BACKFLOW ASSEMBLY
WD - 24	METER PROTECTION FOR RESIDENTIAL FIRE SPRINKLER SYSTEM
WD - 25	¾ THROUGH 2-INCH REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
WD - 26	DOUBLE CHECK BACKFLOW ASSEMBLY
WD - 27	REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY
WD - 28	DOUBLE CHECK BACKFLOW ASSEMBLY (N-PATTERN)
WD - 29	REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (N-PATTERN)
WD - 30	1-INCH COMBINATION AIR RELEASE AND VACUUM VALVE
WD - 31	2-INCH COMBINATION AIR RELEASE AND VACUUM VALVE
WD - 32	AIR RELEASE AND VACUUM VALVE ENCLOSURE SETBACK DETAIL
WD - 33	DEAD-END BLOW-OFF
WD - 34	4 AND 6-INCH BLOW-OFF INSTALLATION
WD - 35	STANDARD THRUST BLOCK

WATER SYSTEM (CONTINUED)

WD - 36	PIPELINE BACKFILL
WD - 37	PIPELINE SEPARATION REQUIREMENT
WD - 38	UTILITY UNDER CROSSING
WD - 39	UTILITY OVER CROSSING
WD - 40	CEMENT MORTAR LINED AND COATED STEEL PIPE JOINT DETAILS
WD - 41	CEMENT MORTAR LINED AND COATED STEEL PIPE CLOSURE AND HANDHOLE DETAILS
WD - 42	STEEL CASING PIPE
WD - 43	ADJUSTABLE PIPE SUPPORT (INSIDE)
WD - 44	ADJUSTABLE PIPE SUPPORT (OUTSIDE)
WD - 45	CUTTING AND PLUGGING ABANDONED WATER, RECYCLED WATER, AND SEWER MAIN
WD - 46	PROTECTION POST INSTALLATION

SEWER SYSTEM

SD - 1	STANDARD MANHOLE
SD - 2	SHALLOW MANHOLE
SD - 3	DROP MANHOLE
SD - 4	SEWER MANHOLE BASE
SD - 5	MANHOLE COATING AND LINING
SD - 6	EXISTING MANHOLE ABANDONMENT
SD - 7	24" MANHOLE FRAME AND COVER HEAVY DUTY
SD - 8	24" MANHOLE FRAME AND COVER LIGHT DUTY
SD - 9	36" MANHOLE FRAME AND COVER HEAVY DUTY
SD - 10	MANHOLE PIPE CONNECTORS
SD - 11	HOUSE CONNECTION (SEWER LATERAL)
SD - 12	CUT-IN WYE CONNECTION
SD - 13	SADDLE CONNECTION
SD - 14	PIPE BEDDING AND TRENCH BACKFILL FOR SEWERS
SD - 15	CONCRETE ENCASEMENT
SD - 16	CONCRETE BACKFILL
SD - 17	CONCRETE ANCHOR
SD - 18	CONCRETE PROTECTION FOR EXISTING SEWER PIPE
SD - 19	CONCRETE SUPPORT FOR UNDERCUT SEWER PIPE
SD - 20	HOUSE CONNECTION SEWER REPAIR
SD - 21	PIPE BEDDING AND TRENCH BACKFILL FOR SEWER IN GROUNDWATER
SD - 22	SEWER LATERAL CLEANOUT
SD - 23	SEWER MAIN CLEANOUT
SD - 24	CLEANOUT SEWER FORCE MAIN
SD - 25	4" BACKWATER DEVICE
SD - 26	BACKWATER DEVICE FOR HOUSE CONNECTIONS
SD - 27	GREASE INTERCEPTOR WITH 24" SAMPLE BOX

ABBREVIATIONS
AND
SYMBOLS

ABBREVIATIONS AND SYMBOLS

ABS	Acrylonitrile – butadiene – styrene
AC	Asphalt Concrete
ACI	American Concrete Institute
ACP	Asbestos Cement Pipe
ADA	Americans with Disabilities Act
ADAS	Americans with Disabilities Act Standards
AGG	Aggregates
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Work Association
CAL/OSHA	California Occupational Safety and Health Administration
CalTrans	California Department of Transportation
CATV	Cable/TV
CC	Calcium Chloride
C/C	Center to Center
CCF	One Hundred Cubic Feet
CF	Cubic Foot
CFS	Cubic Feet per second
CL	Center Line
CLR	Clear
CMLCP	Cement mortar lined coated steel pipe
CONC	Concrete
CSP	Corrugated steel pipe
CTB	Cement treated base
CV	Check valve
CY	Cubic Yard
D	Diameter or Load of Pipe
DCDA	Double Check Detector Assembly
DI	Ductile Iron
DIA	Diameter
Dist.	Distance or Distribution Main
DWG	Drawing
EA.	Each



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**ABBREVIATIONS
AND SYMBOLS**

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GEN-1
SHEET 1 OF 3

ABBREVIATIONS AND SYMBOLS

ELEV	Elevation
EX	Existing
FG	Finished grade
FIP	Female Iron Pipe
FL	Flow line
FLG	Flanged
GA	Gauge
GALV	Galvanized
H	High or height
HEX	Hexagonal
HORIZ	Horizontal
HT	Height
ID	Inside diameter or Identification Joint
JT	Joint
LAP	Overlap
LOL	Layout line
MAX	Maximum
MJ	Mechanical Joint
MIN	Minimum
NRS	Non-Rising Stem
OC	On center
OD	Outside diameter
PC	Point of curvature
PCC	Portland cement concrete
PCC	Point of compound curvature
PCF	Pounds per cubic foot
PCR	Point of curb return
PL	Property line or Place
PO	Push on
PPB	Pedestrian Push Button
PSI	Pound per square inch
PVC	Polyvinyl Chloride
PWD	Public Works Department
R	Radius



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GEN-1
SHEET 2 OF 3

ABBREVIATIONS AND SYMBOLS

RCV	Remote Control Valve
R/W	Right-of-way
REINF	Reinforced or reinforcement
RPDA	Reduced Pressure Detector Assembly
RWGV	Resilient Wedge Gate Valve
RW	Recycled water
S	Slope or second
SCRW	Steel cylinder rod wrapped
SD	Storm drain
SE	Sand Equivalent
SI	International System of Units (Metric)
Sqft	Square foot
STD NO.	Standard Drawing Number
STR	Straight
TOT	Total
TYP	Typical
USC	Univ. of Southern California
VERT	Vertical
W	Water, Wider or width
W/	With
WWF	Welded wire fabric
#	Pounds
@	At
%	Percent
ft. or FT	Feet
'	Feet
"	Inches
1	Number
/	Per or (between words)
o	Degree
(*)	See comments
⊕	Center Line



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GEN-1
SHEET 3 OF 3

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
PROPOSED WATER MAIN		TRAFFIC SIGNAL	
ABANDONED WATER MAIN		STREET LIGHT	
IRRIGATION		FIRE ALARM	
RECLAIMED WATER		CATV	
OIL LINE		FIBER OPTIC CABLE	
PROPOSED SEWER MAIN			
PROPOSED SEWER MANHOLE			
CLEAN-OUT			
DEAD END			
STUB			
CONCRETE ENCASEMENT			
CUT OFF WALL			
SEWER LATERAL			
FORCEMAIN			
PROPERTY LINE			
EDGE OF PAVEMENT			
EXISTING SEWER LATERAL			
EXISTING WATER LATERAL			
EXISTING GAS LINE. "HP" INDICATES HIGH PRESSURE.			
EXISTING ELECTRIC CONDUIT /CABLE; "OH" INDICATES OVERHEAD			
EXISTING TELEPHONE CONDUIT(S)			
EXISTING TELEVISION CONDUIT(S)			
EXISTING WATER MAIN			
EXISTING SEWER MAIN			
EXISTING STORM DRAIN			



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LEGEND

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GEN-2

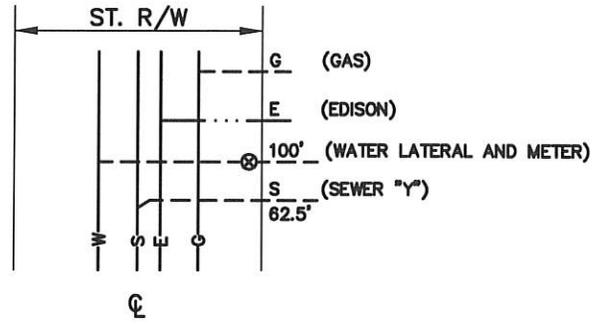
SHEET 1 OF 2

SYMBOLS

UTILITY SERVICE SYMBOLS AND LATERALS

- TEE 
- CROSS 
- BEND 
- REDUCER 
- OFFSET BEND 
- OVER 
- MANHOLE  MH
- FIRE HYDRANT 
- GATE VALVE 
- LIGHT STANDARD 
- TELEPHONE POLE OR POWER POLE 
- TELEPHONE VAULT 
- EDISON VAULT 
- POWER POLE GUY WIRE 
- SIGN  Sign
- STREET LIGHT 
- EXISTING FENCE 
- TRAFFIC SIGNAL  TS

  } DRAW TO SCALE



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LEGEND

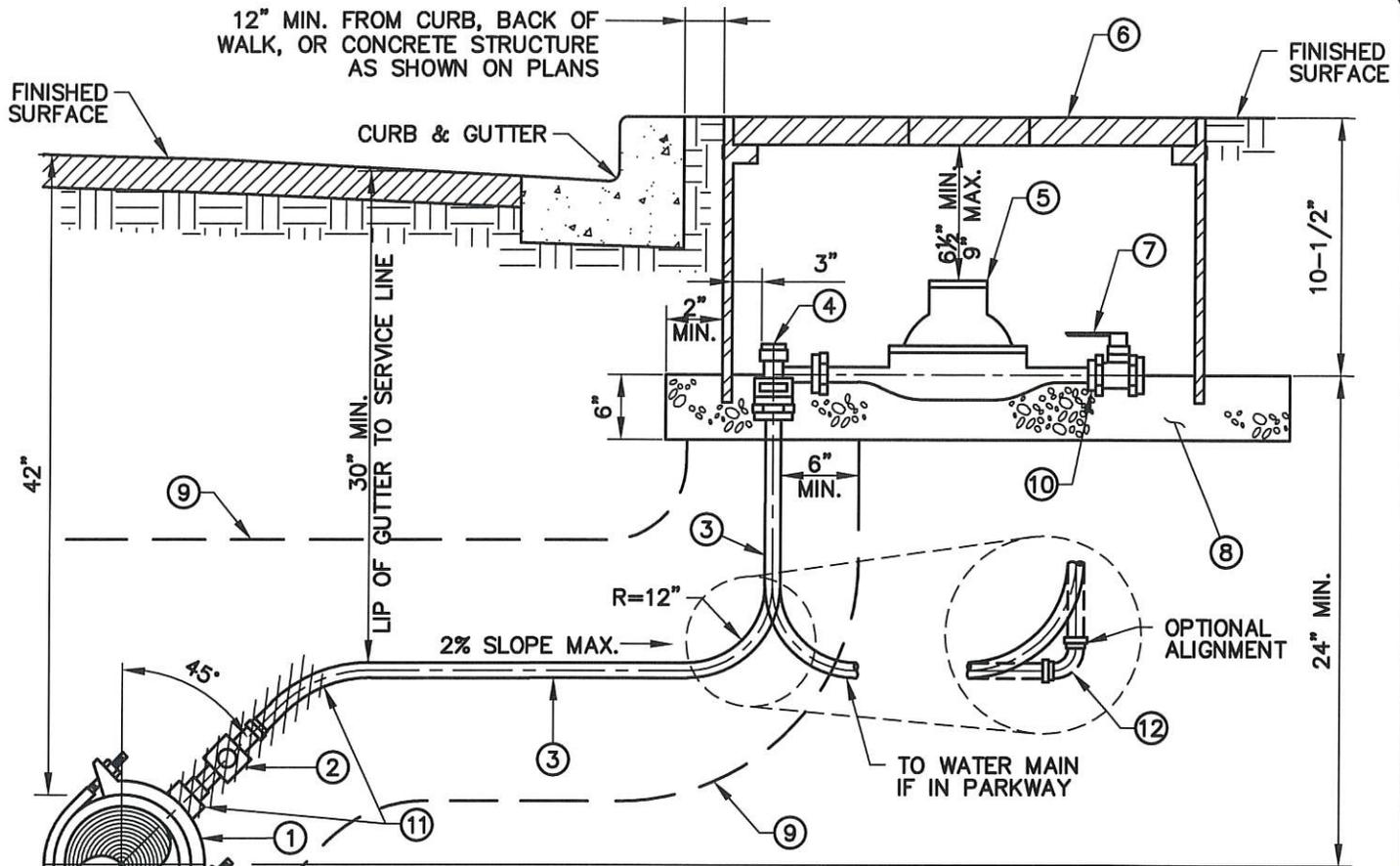
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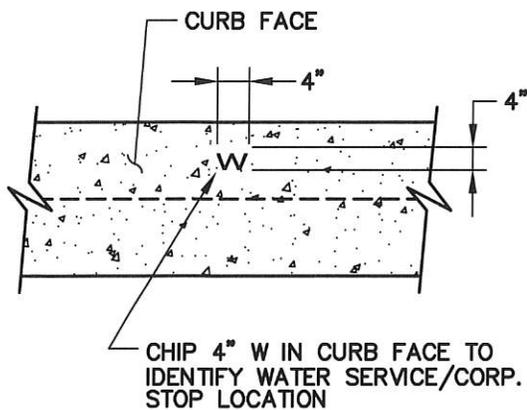
STD. NO.
GEN-2
SHEET 2 OF 2

WATER
SYSTEM



NOTES:

1. NO WATER METER BOXES SHALL BE INSTALLED IN DRIVEWAYS OR SIDEWALKS UNLESS APPROVED AND SHOWN ON THE PLANS. METER BOXES SHALL BE SET TO PREVENT WATER RUNOFF INTO THE BOX.
2. NO SERVICES CLOSER THAN 24 INCHES TO PIPE BELL.
3. TAPS SHALL BE MADE AT LEAST 24 INCHES FROM ANY OTHER TAP OR COUPLING.
4. INSTALL CORP. STOP WITH KEY ON THE SIDE IN OPEN POSITION.
5. SERVICE SADDLE AND CORP. STOP SHALL BE IPS (AWWA) THREAD.
6. A TRAFFIC LOAD RATING COVER SHALL BE USED IN AREAS WITHOUT CURB, IN AREAS WITH ROLLED CURB, OR WHERE THE METER IS LOCATED WITHIN 5 FEET OF THE BCR, ECR, OR A DRIVEWAY APPROACH.
7. CORP. STOP, FITTINGS, AND SERVICE LINE WITHIN 3 FEET OF SERVICE SADDLE SHALL BE COATED WITH 20 MIL MIN. PIPE WRAP TAPE PER ITEM 11 ON SHEET 2.
8. FLATTENING COPPER PIPE TO MAKE THE RADIUS IS NOT ALLOWED.



CITY OF SOUTH GATE
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3/4 AND 1-INCH WATER SERVICE INSTALLATION

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STD. NO.
WD-1
SHEET 1 OF 2

ITEM	DESCRIPTION	SPECIFICATION
①	SERVICE SADDLE	STRAP TO BE DOUBLE STRAP S.S.
②	1" BRONZE BALL VALVE INSULATED CORP. STOP	I.P. X C.T.S. COMPRESSION
③	COPPER TUBING	1" TYPE K, SOFT (ONE PIECE ONLY, NO SPLICES)
④	1" ANGLE METER STOP (BALL VALVE)	1" C.T.S. COMPRESSION X METER SWIVEL NUT AND LOCKWING W/ 1/8" THICK CLOTH INSERTED IN GASKET
⑤	WATER METER AND TRANSMITTER	3/4" OR 1" (SUPPLIED BY CITY)
⑥	WATER METER BOX AND LID	15 1/2" X 25" X 12" METER BOX, H2O LOADING
⑦	BRONZE BALL VALVE	1" I.P. X C.T.S. COMPRESSION
⑧	WATER METER BOX PAD	CRUSHED ROCK AS SHOWN
⑨	TRENCH WITH SAND ENVELOPE	IMPORTED WITH SE > 30, 12" MIN. & 24" MAX. TRENCH WIDTH
⑩	METER ADAPTOR OR BALL VALVE COUPLING	METER NUT X 1" I.P.S.
⑪	TAPE WRAP A DISTANCE OF 3 FEET FROM & INCLUDING INSULATED CORP. STOP	20 MIL MIN.
⑫	90° COPPER ELBOW (OPTIONAL)	1" C.T.S.

NOTES:

1. ALL MATERIALS SHALL MEET ANSI/AWWA C800, NSF 61, AND NSF 372 STANDARDS.
2. ITEMS 7 AND 10 MAY BE A COMBINATION METER COUPLING AND BALL VALVE ASSEMBLY WITH HANDLE.



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**3/4 AND 1-INCH WATER
SERVICE INSTALLATION**

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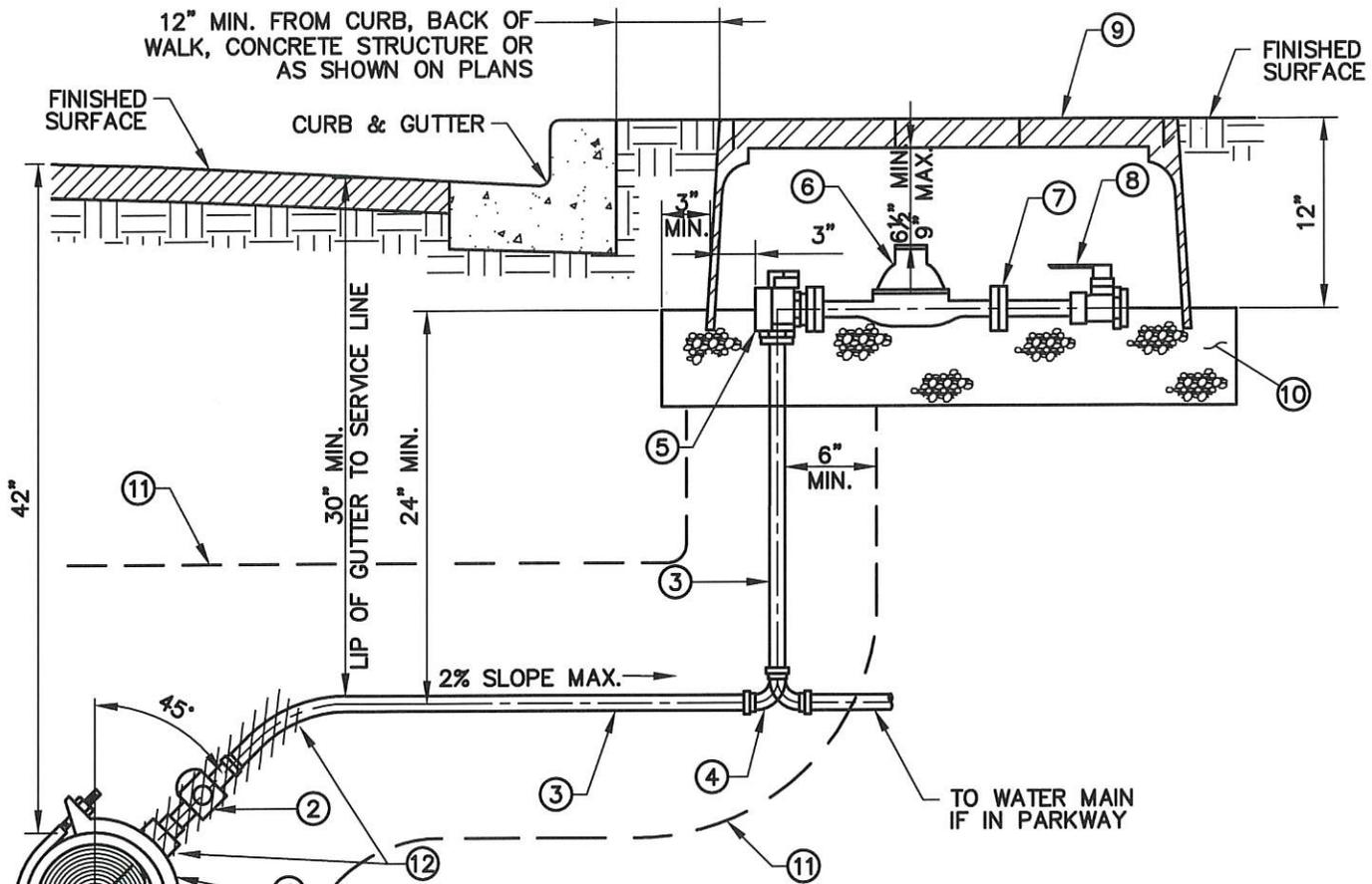
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STD. NO.

WD-1

SHEET 2 OF 2



NOTES:

1. NO WATER METER BOXES SHALL BE INSTALLED IN DRIVEWAYS OR SIDEWALKS UNLESS APPROVED AND SHOWN ON THE PLANS. METER BOXES SHALL BE SET TO PREVENT WATER RUNOFF INTO THE BOX.
2. NO SERVICES CLOSER THAN 24 INCHES TO PIPE BELL.
3. TAPS SHALL BE MADE AT LEAST 24 INCHES FROM ANY OTHER TAP OR COUPLING.
4. INSTALL CORP. STOP WITH KEY ON THE SIDE IN OPEN POSITION.
5. SERVICE SADDLE AND CORP. STOP SHALL BE IPS (AWWA) THREAD.
6. A TRAFFIC LOAD RATING COVER SHALL BE USED IN AREAS WITHOUT CURB, IN AREAS WITH ROLLED CURB, OR WHERE THE METER IS LOCATED WITHIN 5 FEET OF THE BCR, ECR, OR A DRIVEWAY APPROACH.
7. CORP. STOP, FITTINGS, AND SERVICE LINE WITHIN 3 FEET OF SERVICE SADDLE SHALL BE COATED WITH 20 MIL MIN. PIPE WRAP TAPE PER ITEM 12 ON SHEET 2.
8. FLATTENING COPPER PIPE TO MAKE THE RADIUS IS NOT ALLOWED.

D.I. PIPE

TO WATER MAIN
IF IN PARKWAY

CURB FACE

4"

CHIP 4" W IN CURB FACE TO IDENTIFY WATER SERVICE/CORP. STOP LOCATION



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1 1/2 AND 2-INCH WATER SERVICE INSTALLATION

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8/20/24
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STD. NO.

WD-2

SHEET 1 OF 2

ITEM	DESCRIPTION	SPECIFICATION
①	SERVICE SADDLE	STRAP TO BE DOUBLE STRAP S.S.
②	2" BRONZE BALL VALVE INSULATED CORP. STOP	2" I.P. X C.T.S. COMPRESSION
③	COPPER TUBING	2" TYPE K, SOFT (ONE PIECE ONLY, NO BENDS, UNLESS COMPRESSION ELBOW IS USED)
④	90° COPPER ELBOW	2" C.T.S.
⑤	2" ANGLE METER STOP (BALL VALVE)	2" C.T.S. COMPRESSION X METER SWIVEL NUT AND LOCKWING W/ 1/8" THICK, CLOTH REINFORCED NEOPRENE INSERTED IN GASKET
⑥	WATER METER AND TRANSMITTER	1 1/2" OR 2" FLG (SUPPLIED BY CITY)
⑦	BRONZE WATER METER FLANGE, SLOT DRILLED	2" F.I.P. THREADS W/ 1/8" THICK CLOTH INSERT DROP IN GASKET
⑧	BRONZE BALL VALVE	2" F.I.P. X F.I.P.
⑨	WATER METER BOX AND LID	19" X 32" X 12" METER BOX, H2O LOADING
⑩	WATER METER BOX PAD	CRUSHED ROCK AS SHOWN
⑪	TRENCH WITH SAND ENVELOPE	IMPORTED WITH SE > 30, 12" MIN. & 24" MAX. TRENCH WIDTH
⑫	TAPE WRAP A DISTANCE OF 3 FEET FROM & INCLUDING INSULATED CORP. STOP	20 MIL MIN.

NOTES:

1. ALL MATERIALS SHALL MEET ANSI/AWWA C800, NSF 61, AND NSF 372 STANDARDS.
2. ITEMS 7 AND 8 MAY BE A COMBINATION SLOT DRILLED METER FLANGE AND VALVE ASSEMBLY WITH HANDLE.



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**1 1/2 AND 2-INCH WATER
SERVICE INSTALLATION**

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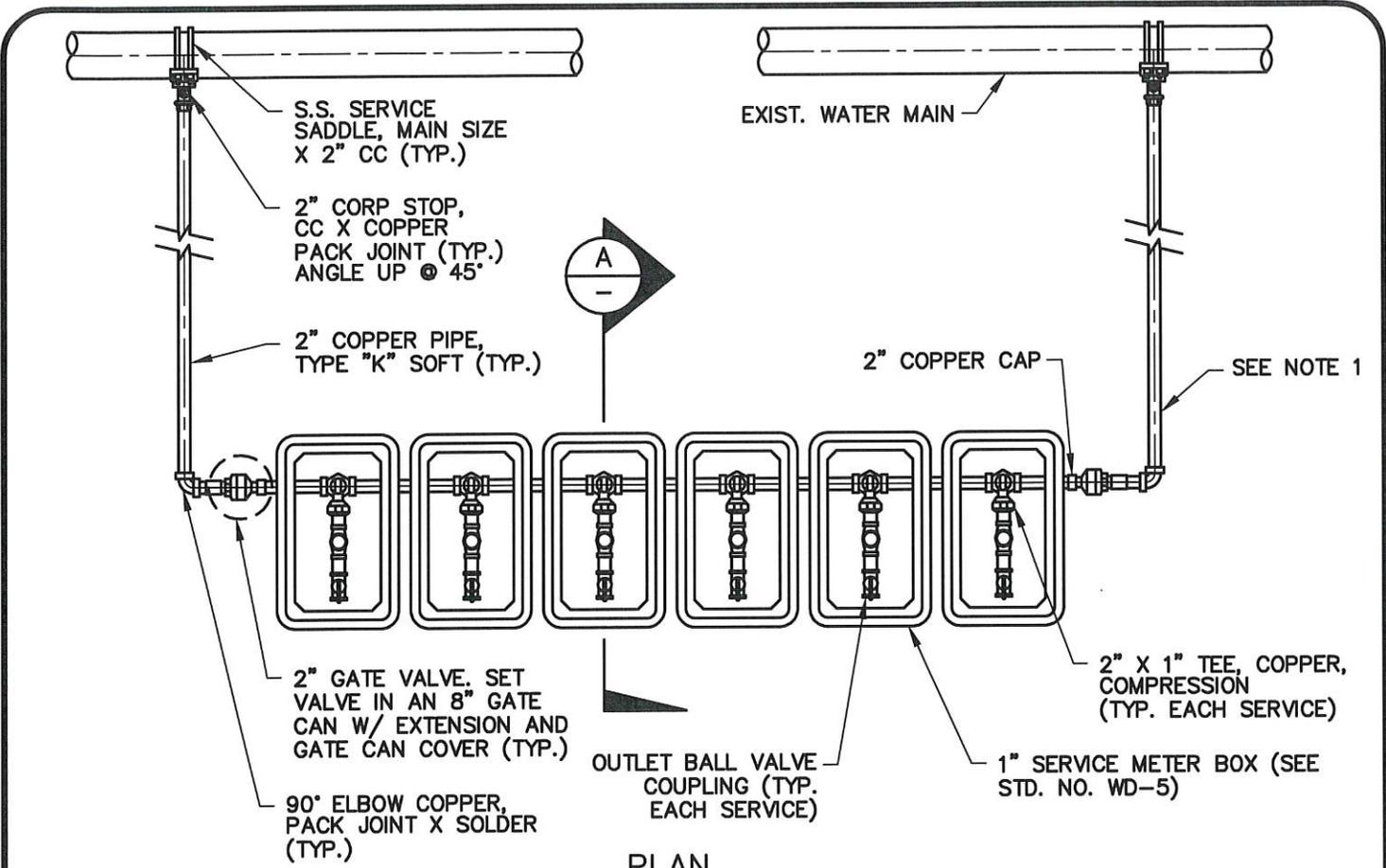
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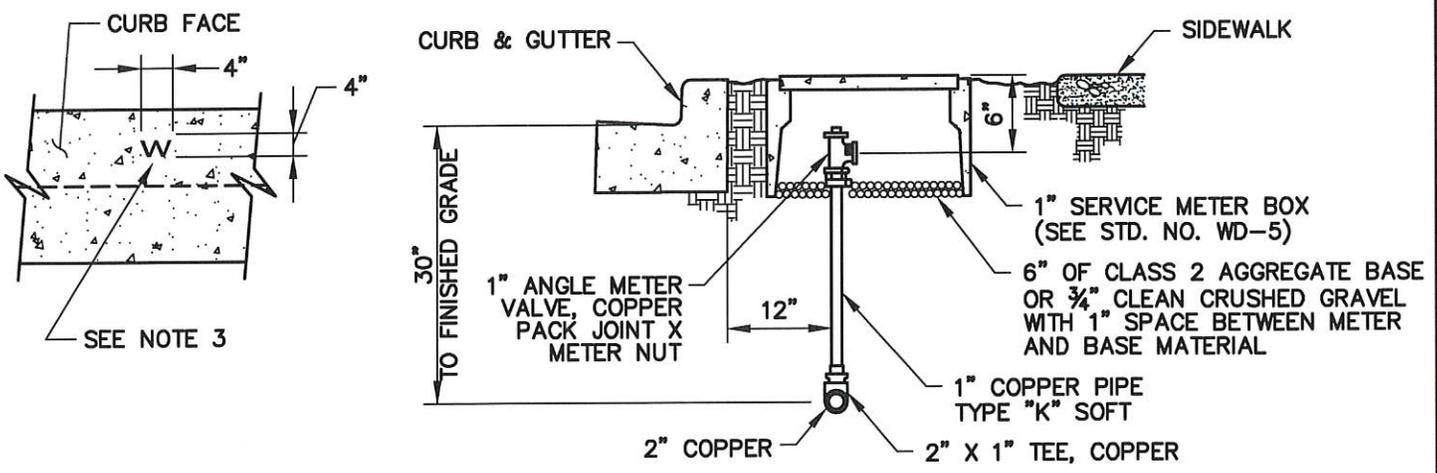
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WD-2

SHEET 2 OF 2



PLAN



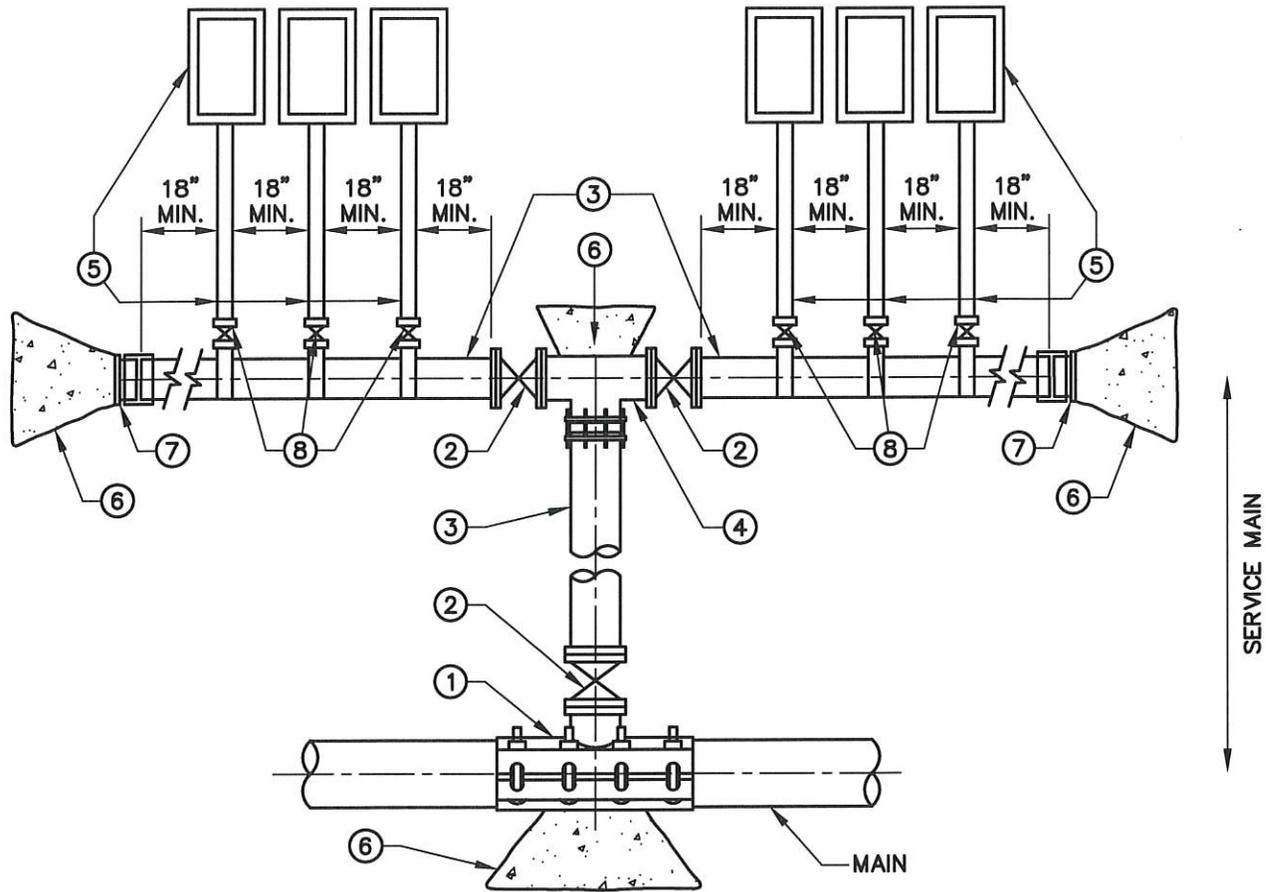
SECTION A

NOTES:

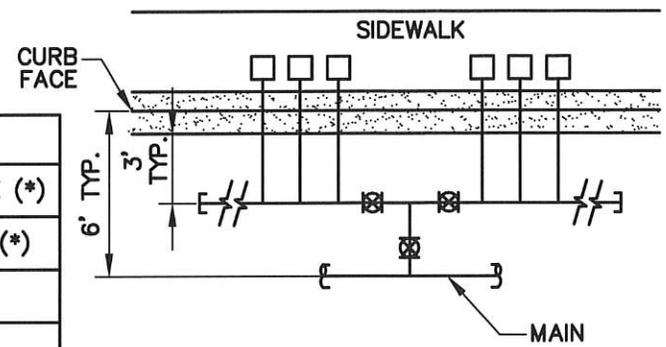
1. TWO-WAY FEED SHALL BE PROVIDED WHERE FOUR OR MORE SERVICES ARE TO BE INSTALLED. A MAXIMUM OF TEN SERVICES MAY BE INSTALLED ON ONE BATTERY.
2. SEE STD. NO. WD-1 FOR METER DETAILS.
3. CHIP 4" W IN CURB FACE TO IDENTIFY WATER SERVICE/CORP. STOP LOCATION.



<p>CITY OF SOUTH GATE DEPARTMENT OF PUBLIC WORKS</p>	<p>3/4 AND 1-INCH GROUPED DOMESTIC SERVICE CONNECTION</p>							
<p>APPROVED <i>[Signature]</i></p> <p>DIRECTOR OF PUBLIC WORKS</p>	<p>8/26/21</p> <p>DATE</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">REVISION</td> <td style="width: 50%;">STD. NO.</td> </tr> <tr> <td> </td> <td style="text-align: center;">WD-3</td> </tr> <tr> <td> </td> <td style="text-align: center;">SHEET <u>1</u> OF <u>1</u></td> </tr> </table>	REVISION	STD. NO.		WD-3		SHEET <u>1</u> OF <u>1</u>
REVISION	STD. NO.							
	WD-3							
	SHEET <u>1</u> OF <u>1</u>							



PLAN



ITEM	DESCRIPTION
①	HOT TAP or FLG TEE - SEE STD. NO. WD-13 / D.I. TEE (*)
②	FLG X FLG OR MJ X FLG RESILIENT WEDGE GATE VALVE (*)
③	D.I. PIPE CLASS 52 (*)
④	D.I. TEE, FLG X FLG X MJ (SHORT BODY MAY BE USED)
⑤	SERVICE INSTALLATION - SEE STD. NO. WD-2
⑥	THRUST BLOCK - SEE STD. NO. WD-35
⑦	D.I. END CAP (*)
⑧	SIZE BALL VALVE CORP. STOP - SEE STD. NO. WD-2

***NOTE:**
SERVICE LINE SIZE TO BE DETERMINED



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**MANIFOLD ASSEMBLY FOR
2-INCH AND LARGER SERVICES**

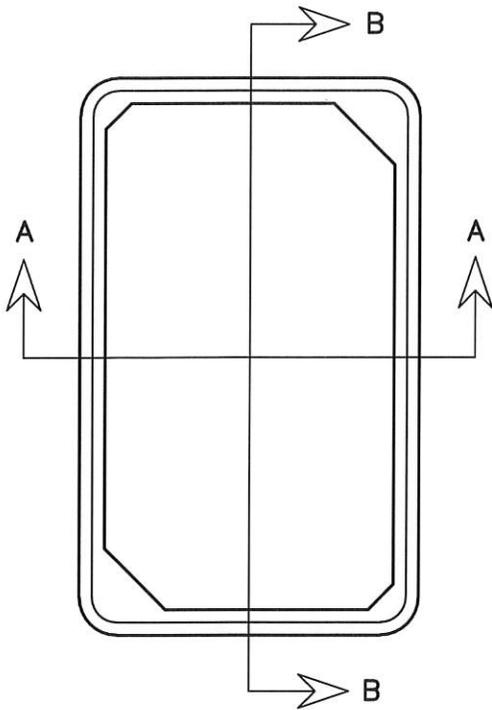
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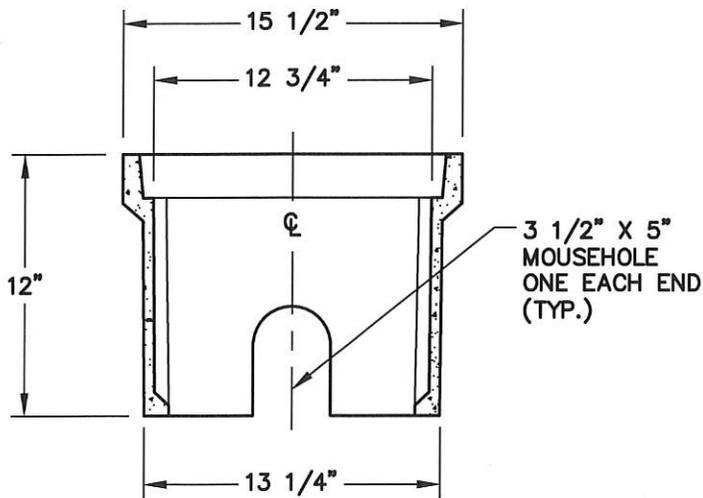
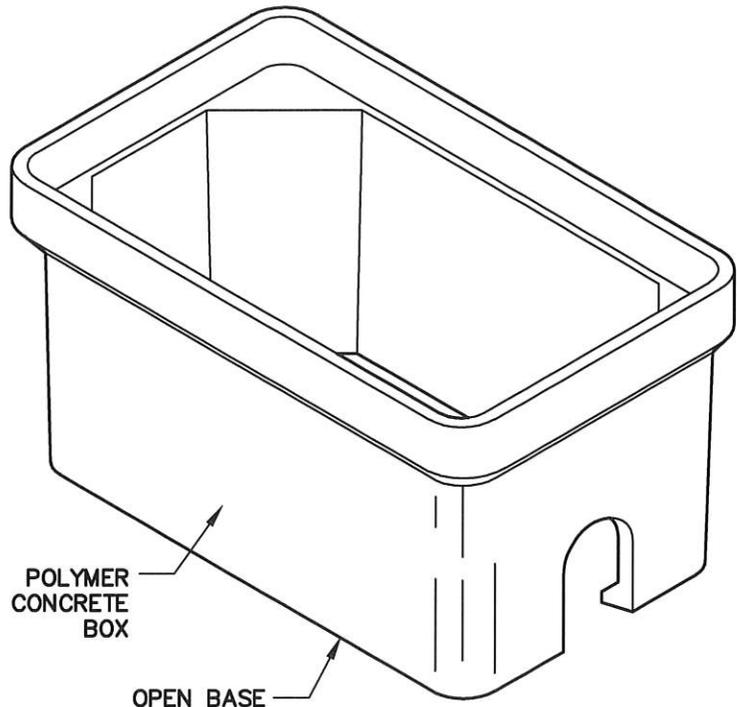
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STD. NO.
WD-4
SHEET 1 OF 1

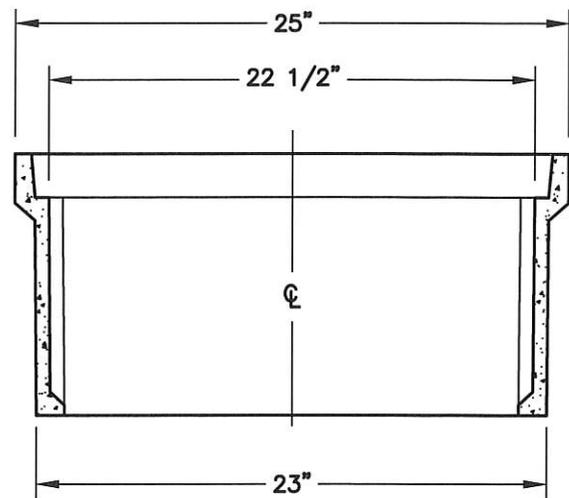
20,800# LOAD RATED



TOP VIEW



SECTION A-A



SECTION B-B



CITY OF SOUTH GATE
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3/4 AND 1-INCH METER BOX

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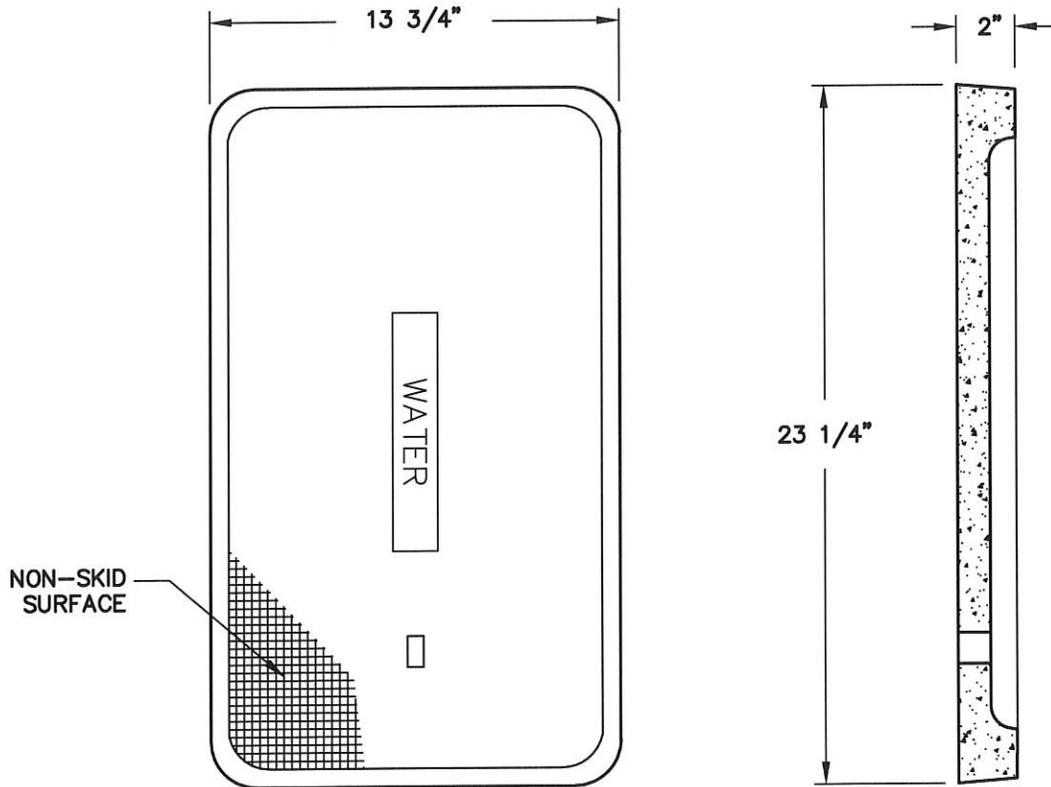
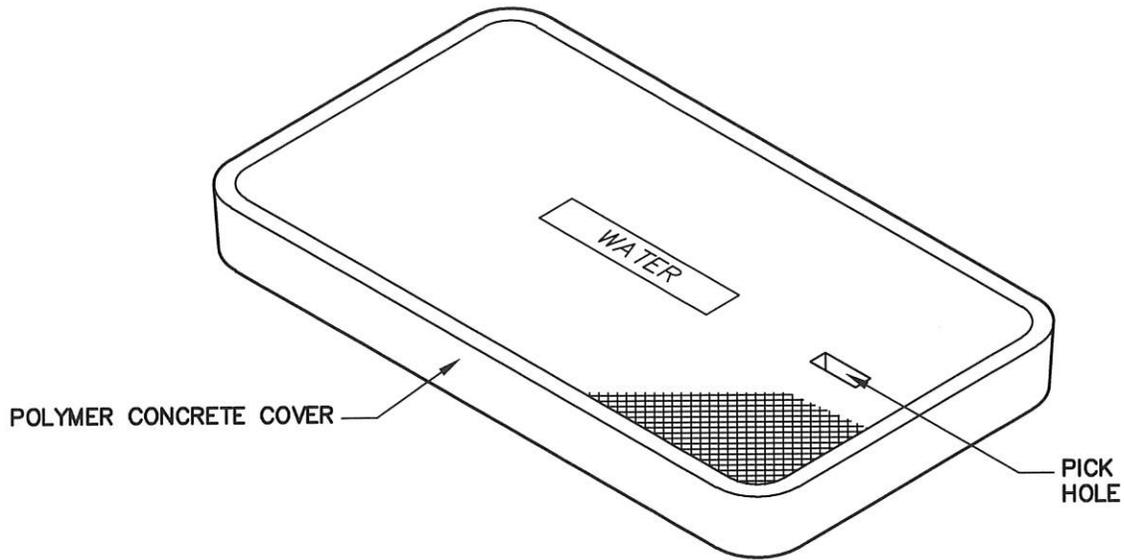
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WD-5

SHEET 1 OF 1



CITY OF SOUTH GATE
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3/4 AND 1-INCH METER BOX LID

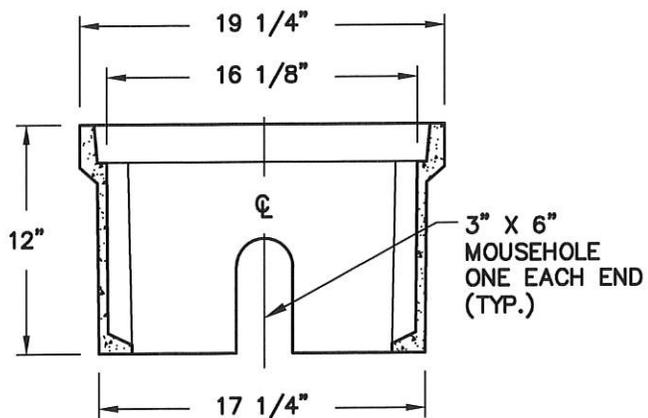
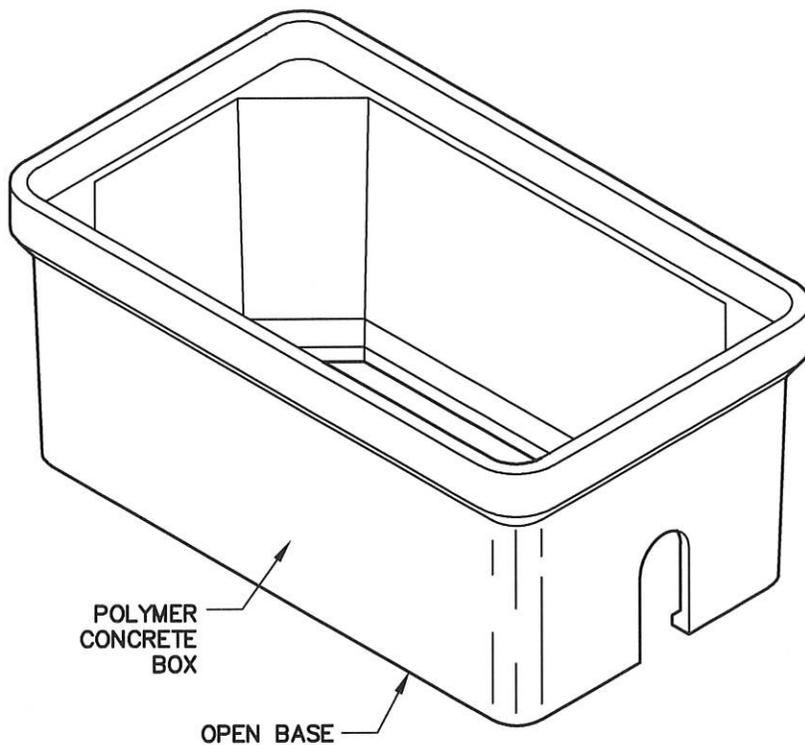
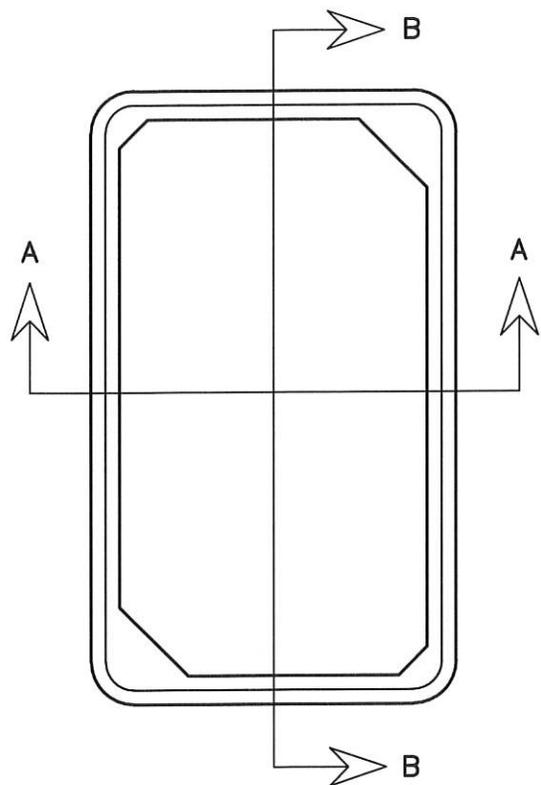
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DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

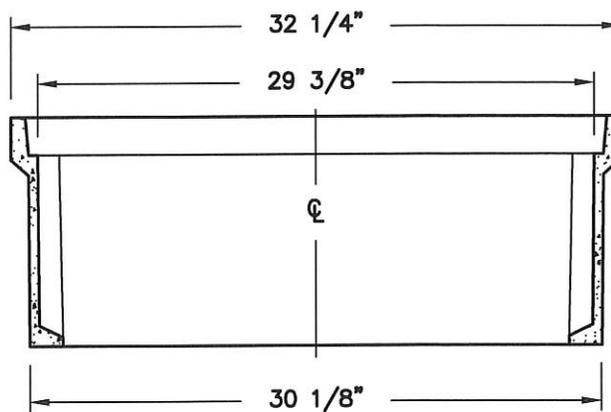
REVISION	

STD. NO.
WD-6
SHEET 1 OF 1

20,800# LOAD RATED



SECTION A-A



SECTION B-B



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

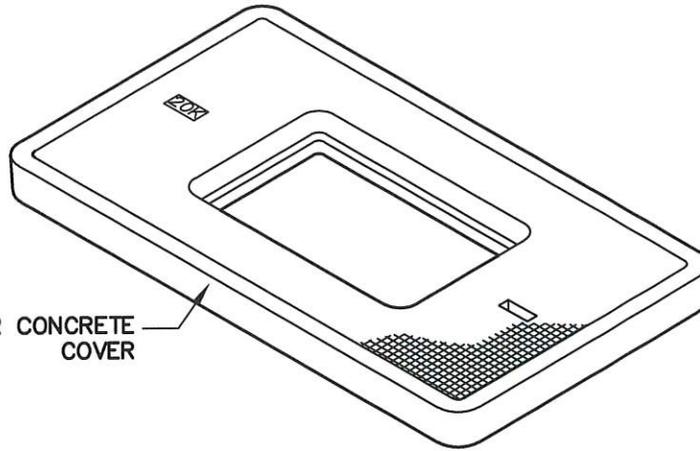
1 1/2 AND 2-INCH METER BOX

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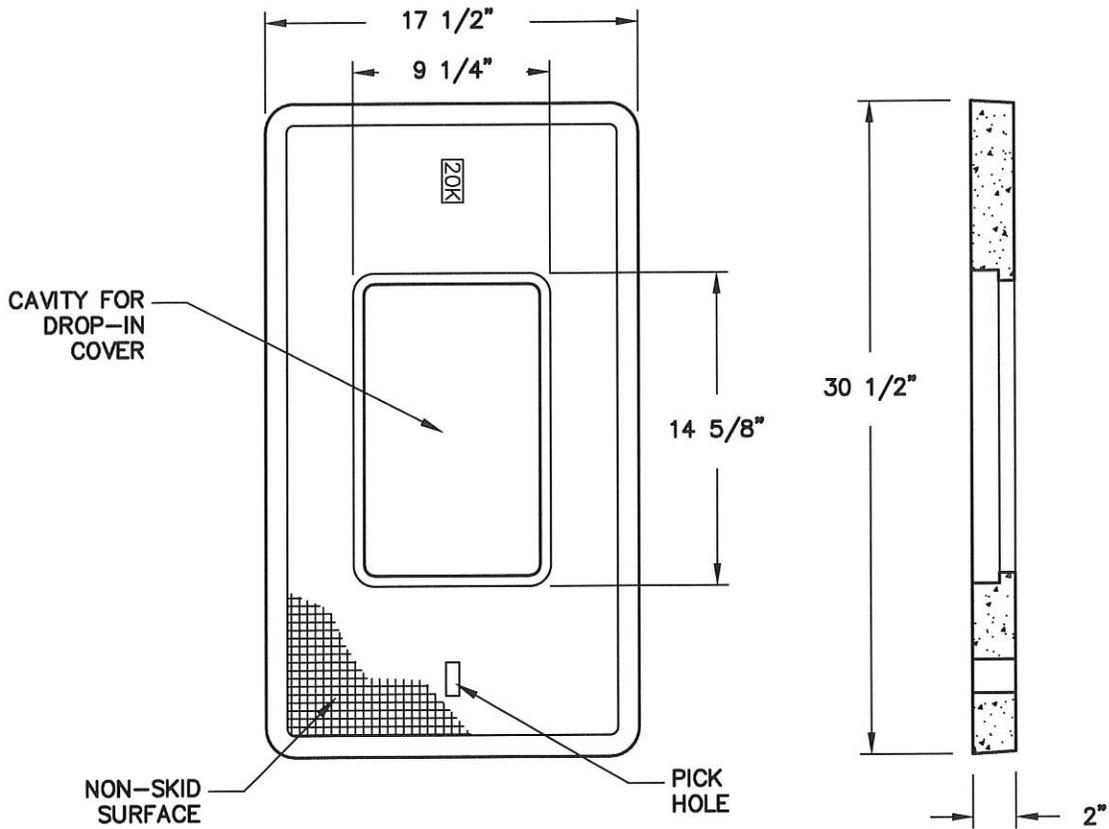
8/26/21
DATE

REVISION	

STD. NO.
WD-7
SHEET 1 OF 1



POLYMER CONCRETE COVER



(ACCEPTS DROP-IN READ LID)



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DEPARTMENT OF PUBLIC WORKS

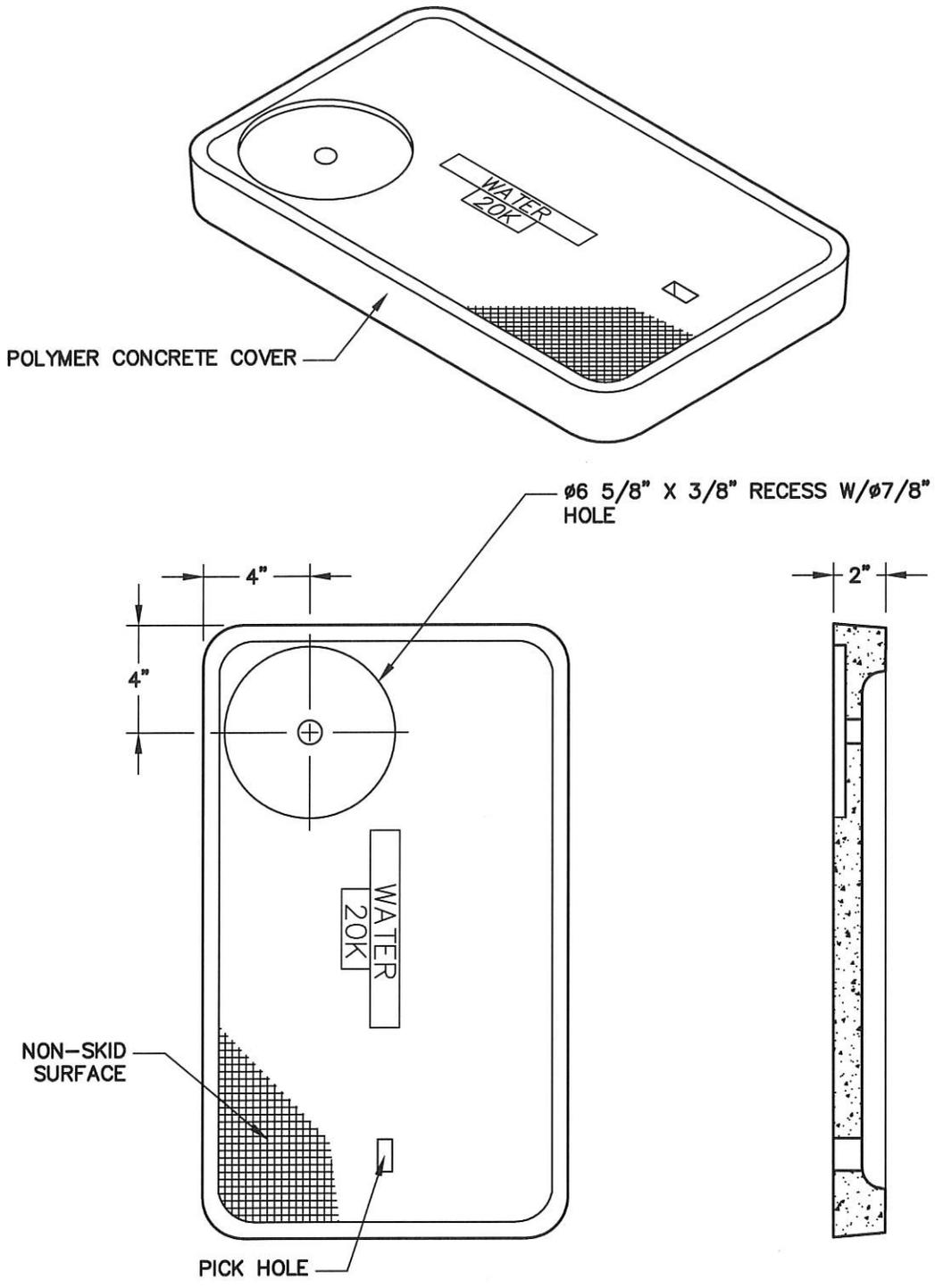
**1 1/2 AND 2-INCH
METER BOX LID**

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8/26/21
DATE

REVISION	

STD. NO.
WD-8
SHEET 1 OF 1



CITY OF SOUTH GATE
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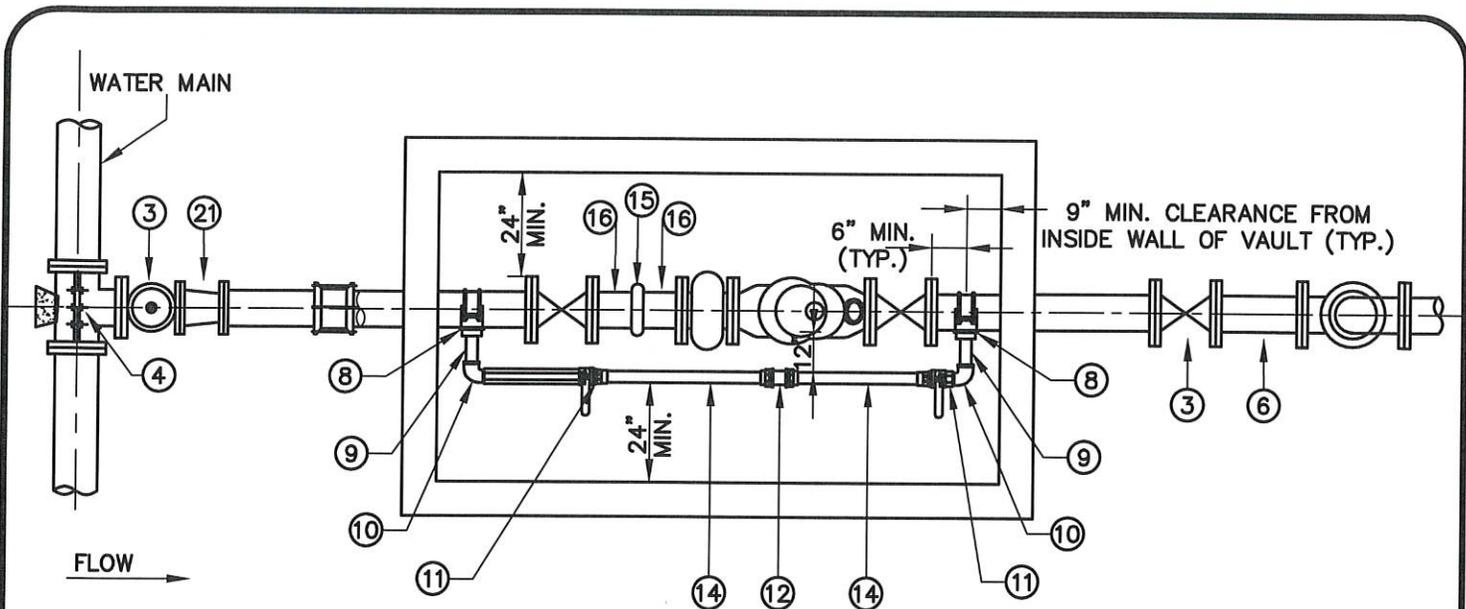
**ANTENNA MOUNT DETAIL FOR
3/4 - 2-INCH METER BOX LID**

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DIRECTOR OF PUBLIC WORKS

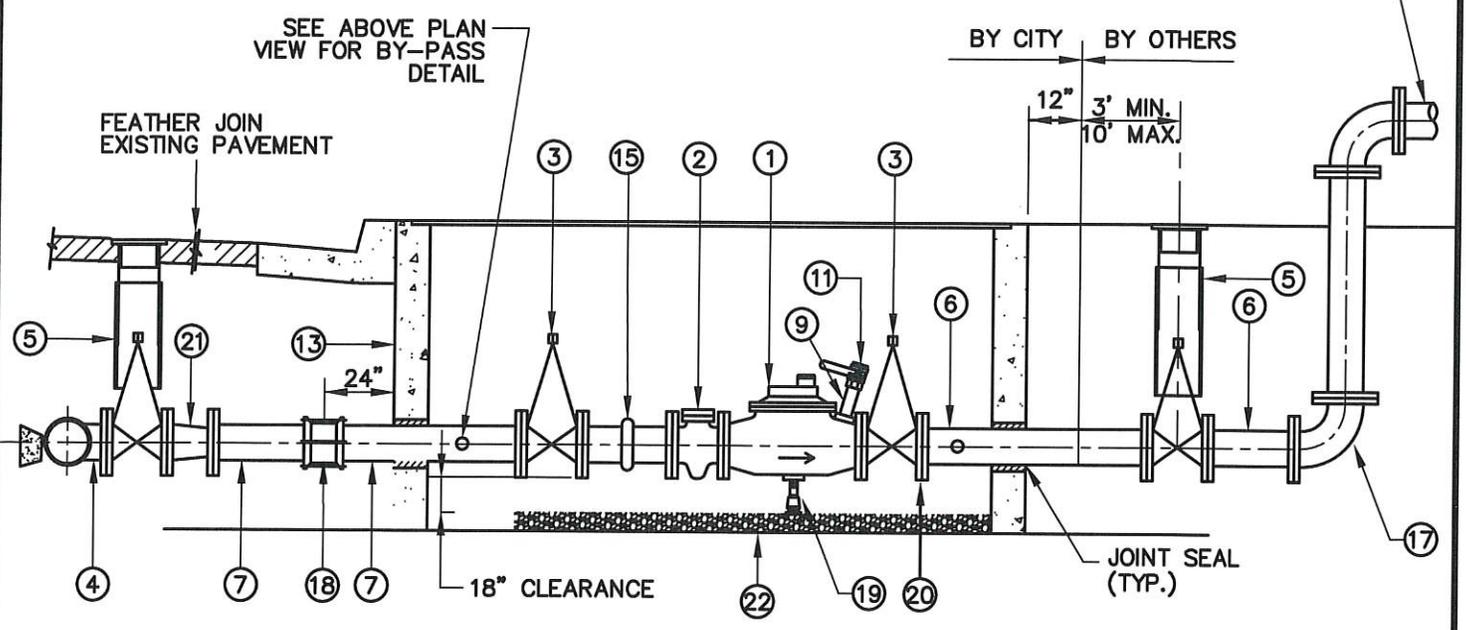
8/26/21
DATE

REVISION	

STD. NO.
WD-9
SHEET 1 OF 1



BACKFLOW PREVENTER PER STD. NO. WD-27, WD-29 BY OTHERS



ELEVATION



CITY OF SOUTH GATE DEPARTMENT OF PUBLIC WORKS		3-INCH AND LARGER WATER METER SERVICE INSTALLATION	
APPROVED  DIRECTOR OF PUBLIC WORKS	DATE 8/26/21	REVISION 	STD. NO. WD-10 SHEET <u>1</u> OF <u>6</u>

ITEM	DESCRIPTION
①	TURBINE METER WITH TEST PORT AND TRANSMITTER
②	BRONZE STRAINER
③	GATE VALVE, FLG W/2" OPERATING NUT
④	TAPPING SLEEVE AND GATE VALVE PER STD. NO. WD-13. USE FLG TEE FOR NEW CONSTRUCTION
⑤	GATE VALVE CAN ASSEMBLY PER STD. NO. WD-16
⑥	DUCTILE IRON PIPE, FLG X FLG
⑦	DUCTILE IRON PIPE, FLG X P.E. (CUT TO FIT)
⑧	STAINLESS STEEL SERVICE SADDLE FOR DI PIPE, W/2" FEMALE I.P. THREADS
⑨	2" BRASS NIPPLE, 6" LONG (2" MIP X FIP CORP. STOP)
⑩	2" STREET ELL, BRASS
⑪	2" FULL PORT BALL VALVE, BRASS BODY
⑫	COMPRESSION COUPLING BRASS
⑬	PRECAST CONCRETE VAULT WITH SPRING ASSISTED HINGED DIAMOND PLATE STEEL COVER WITH ANTENNA MOUNT AND RECESSED LOCKING HASP. PROVIDE 6" X 12" HINGED READING LID INSTALLED OVER METER REGISTER.
⑭	2" COPPER PIPE
⑮	GROOVED END COUPLING
⑯	DUCTILE IRON PIPE SPOOL, FLG X GROOVE END
⑰	DUCTILE IRON 90° BEND, FLG
⑱	FLEX COUPLING ADAPTOR
⑲	PIPE SUPPORT PER STD. NO. WD-43
⑳	BOLT FLANGE INSULATING COUPLING
㉑	SIZE X 3" REDUCER (FOR 3" SERVICE ONLY)
㉒	MIN. 6" DEEP GRAVEL BED

NOTES:

1. ALL GATE VALVES SHALL BE RESILIENT WEDGE, NON-RISING STEM, FUSION EPOXY LINED AND COATED.
2. CONCRETE VAULT SHALL BE SIZED TO HOUSE METER INSTALLATION WITH MINIMUM CLEARANCES SHOWN IN SHEET 1.
3. VAULT COVER SHALL CONFORM TO H10 PARKWAY LOADING AND H20 IN TRAFFIC AREAS.
4. TORSION ASSISTED VAULT LIDS TO BE PROVIDED WITH ANTENNA MOUNT.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**3-INCH AND LARGER WATER
METER SERVICE INSTALLATION**

APPROVED

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8/26/21

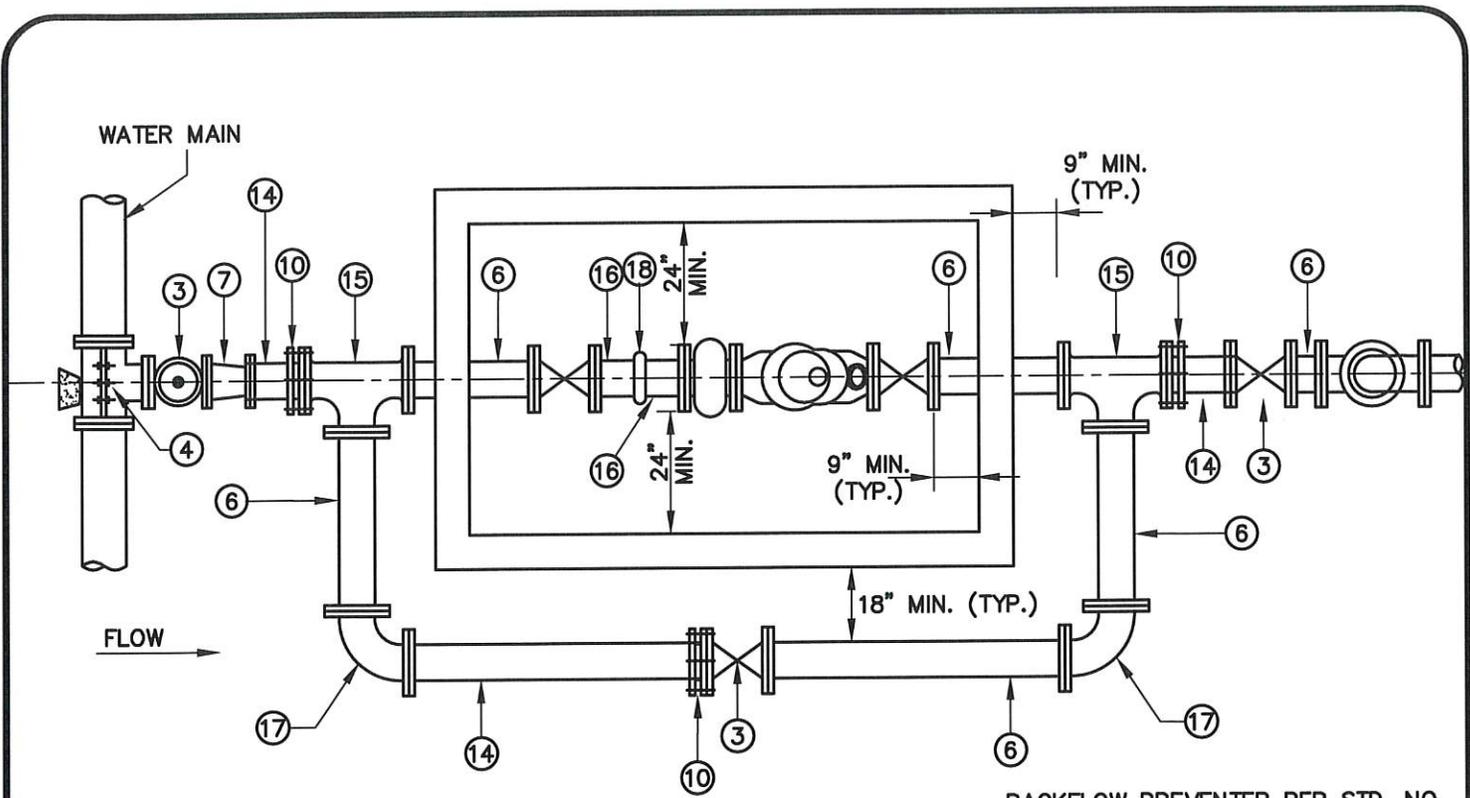
DATE

REVISION

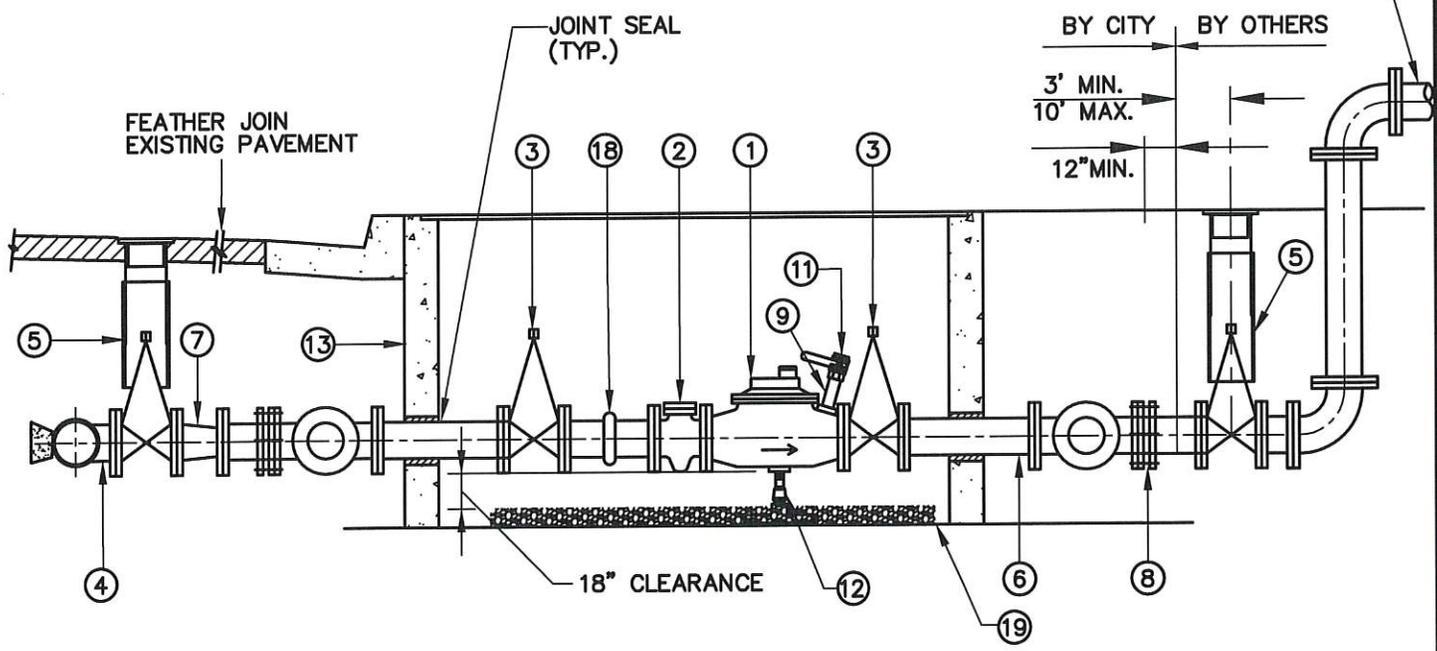
STD. NO.

WD-10

SHEET 2 OF 6



BACKFLOW PREVENTER PER STD. NO. WD-27, WD-29 BY OTHERS



ELEVATION



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

3-INCH AND LARGER WATER METER SERVICE INSTALLATION

APPROVED 
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
WD-10
SHEET 3 OF 6

ITEM	DESCRIPTION
①	TURBINE METER WITH TEST PORT AND TRANSMITTER
②	BRONZE STRAINER
③	GATE VALVE, FLG W/2" OPERATING NUT
④	TAPPING SLEEVE AND GATE VALVE PER STD. NO. WD-13. USE FLG TEE FOR NEW CONSTRUCTION
⑤	GATE VALVE CAN ASSEMBLY PER STD. NO. WD-16
⑥	DUCTILE IRON PIPE, FLG X FLG
⑦	SIZE X 3" REDUCER (FOR 3" SERVICE ONLY)
⑧	BOLT FLANGE INSULATING COUPLING
⑨	2" BRASS NIPPLE, 6" LONG (2" MIP X FIP CORP. STOP)
⑩	FLANGE COUPLING ADAPTOR
⑪	2" FULL PORT BALL VALVE, BRASS BODY
⑫	PIPE SUPPORT PER STD. NO. WD-43
⑬	PRECAST CONCRETE VAULT WITH SPRING ASSISTED HINGED DIAMOND PLATE STEEL COVER WITH ANTENNA MOUNT AND RECESSED LOCKING HASP. PROVIDE 6" X 12" HINGED READING LID INSTALLED OVER METER REGISTER.
⑭	DUCTILE IRON PIPE SPOOL, FLG X P.E. (CUT TO FIT)
⑮	DUCTILE IRON TEE, FLG
⑯	DUCTILE IRON PIPE SPOOL, FLG X GROOVE END
⑰	DUCTILE IRON 90° BEND, FLG
⑱	GROOVED END COUPLING
⑲	MIN. 6" DEEP GRAVEL BED

NOTES:

- ALL GATE VALVES SHALL BE RESILIENT WEDGE, NON-RISING STEM, FUSION EPOXY LINED AND COATED.
- CONCRETE VAULT SHALL BE SIZED TO HOUSE METER INSTALLATION WITH MINIMUM CLEARANCES SHOWN IN SHEET 3.
- VAULT COVER SHALL CONFORM TO H10 PARKWAY LOADING AND H20 IN TRAFFIC AREAS.
- TORSION ASSISTED VAULT LIDS TO BE PROVIDED WITH ANTENNA MOUNT.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**3-INCH AND LARGER WATER
METER SERVICE INSTALLATION**

APPROVED

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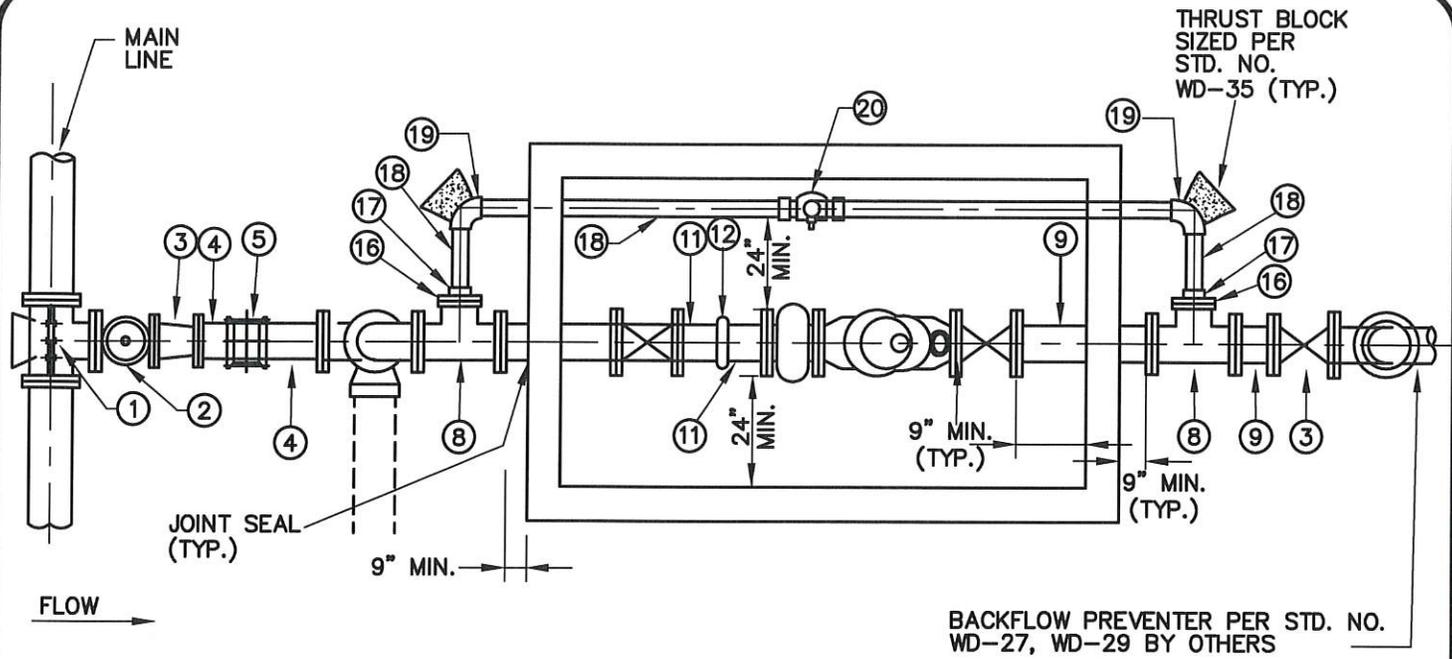
8/26/21
DATE

REVISION

STD. NO.

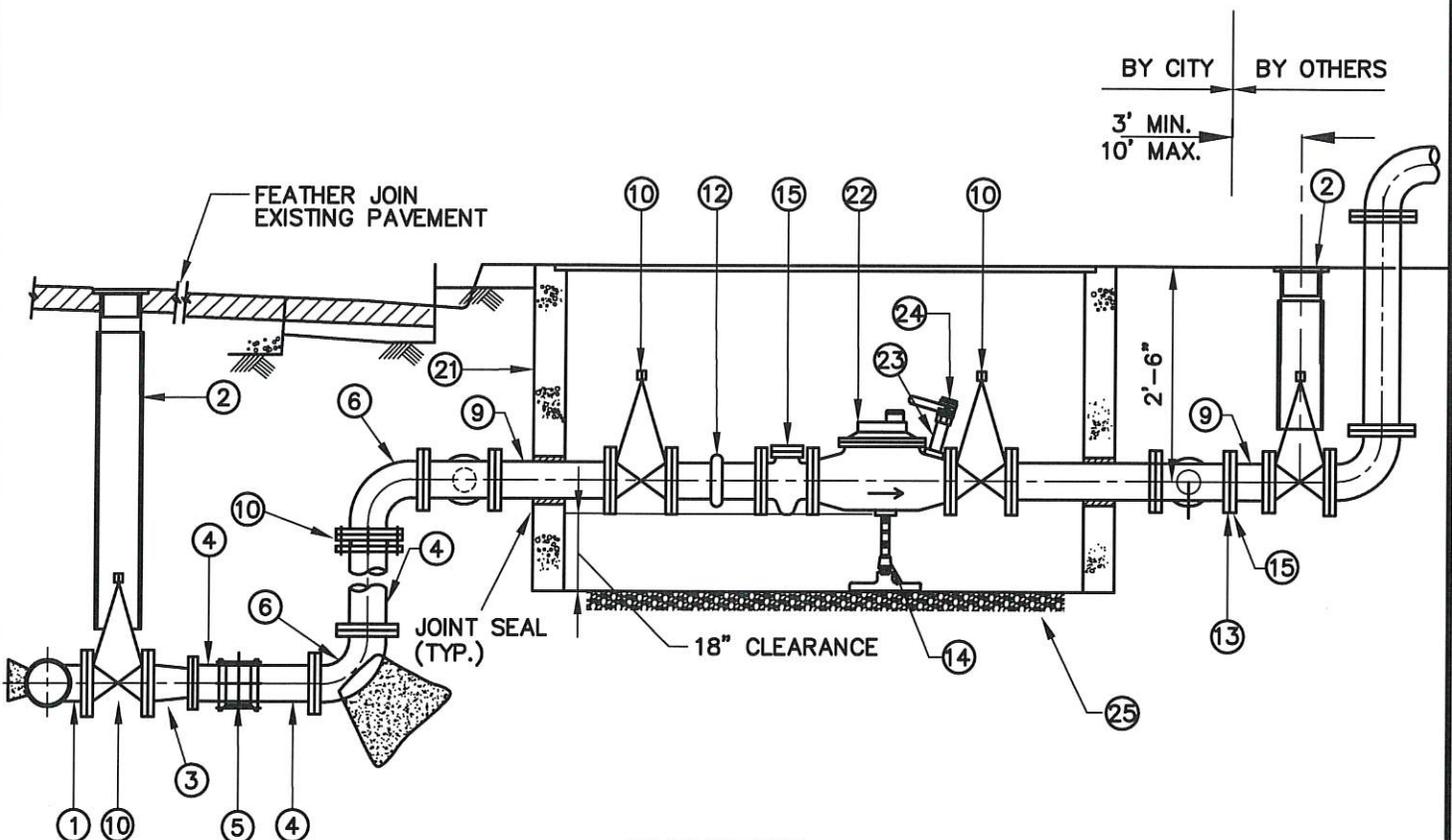
WD-10

SHEET 4 OF 6



BACKFLOW PREVENTER PER STD. NO. WD-27, WD-29 BY OTHERS

BY CITY	BY OTHERS
3' MIN.	
10' MAX.	



ELEVATION



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**3-INCH AND LARGER WATER
METER SERVICE INSTALLATION**

APPROVED 
DIRECTOR OF PUBLIC WORKS

8/20/21
DATE

REVISION

STD. NO.
WD-10
SHEET 5 OF 6

ITEM	DESCRIPTION
①	TAPPING SLEEVE AND GATE VALVE PER STD. NO. WD-13. USE FLG TEE FOR NEW CONSTRUCTION
②	GATE VALVE CAN ASSEMBLY PER STD. NO. WD-16
③	SIZE X 3" REDUCER (FOR 3" SERVICE ONLY)
④	DUCTILE IRON PIPE SPOOL, FLG X P.E. (CUT TO FIT)
⑤	FLEXIBLE COUPLING
⑥	DUCTILE IRON 90° ELL FLG X FLG
⑦	FLEX COUPLING ADAPTOR
⑧	DUCTILE IRON TEE, FLG
⑨	DUCTILE IRON FLG X FLG SPOOL
⑩	RW GATE VALVE FLG X FLG W/NRS STEM
⑪	FLG X GROOVED-END DUCTILE IRON SPOOL, 4" MIN. LENGTH
⑫	GROOVED-END COUPLING
⑬	BOLT FLANGE INSULATING COUPLING
⑭	PIPE SUPPORT PER STD. NO. WD-43
⑮	BRONZE STRAINER
⑯	METER SIZE BRONZE COMPANION FLANGED WITH THREADED 2" OUTLET
⑰	BRASS ADAPTER - MIP X COMPRESSION
⑱	2" COPPER BYPASS
⑲	BRASS COMPRESSION 90° ELBOW
⑳	BRONZE BALL VALVE WITH LOCKING WING - FIP X FIP
㉑	PRECAST CONCRETE VAULT WITH SPRING ASSISTED HINGED DIAMOND PLATE STEEL COVER WITH ANTENNA MOUNT AND RECESSED LOCKING HASP. PROVIDE 6" X 12" HINGED READING LID INSTALLED OVER METER REGISTER.
㉒	TURBINE METER WITH TEST PORT AND TRANSMITTER
㉓	2" BRASS NIPPLE, 6" LONG (2" MIP X FIP CORP. STOP)
㉔	2" FULL PORT BALL VALVE, BRASS BODY
㉕	MIN. 6" DEEP GRAVEL BED

NOTES:

1. ALL GATE VALVES SHALL BE RESILIENT WEDGE, NON-RISING STEM, FUSION EPOXY LINED AND COATED.
2. CONCRETE VAULT SHALL BE SIZED TO HOUSE METER INSTALLATION WITH MINIMUM CLEARANCES SHOWN IN SHEET 5.
3. VAULT COVER SHALL CONFORM TO H10 PARKWAY LOADING AND H20 IN TRAFFIC AREAS.
4. TORSION ASSISTED VAULT LIDS TO BE PROVIDED WITH ANTENNA MOUNT.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**3-INCH AND LARGER WATER
METER SERVICE INSTALLATION**

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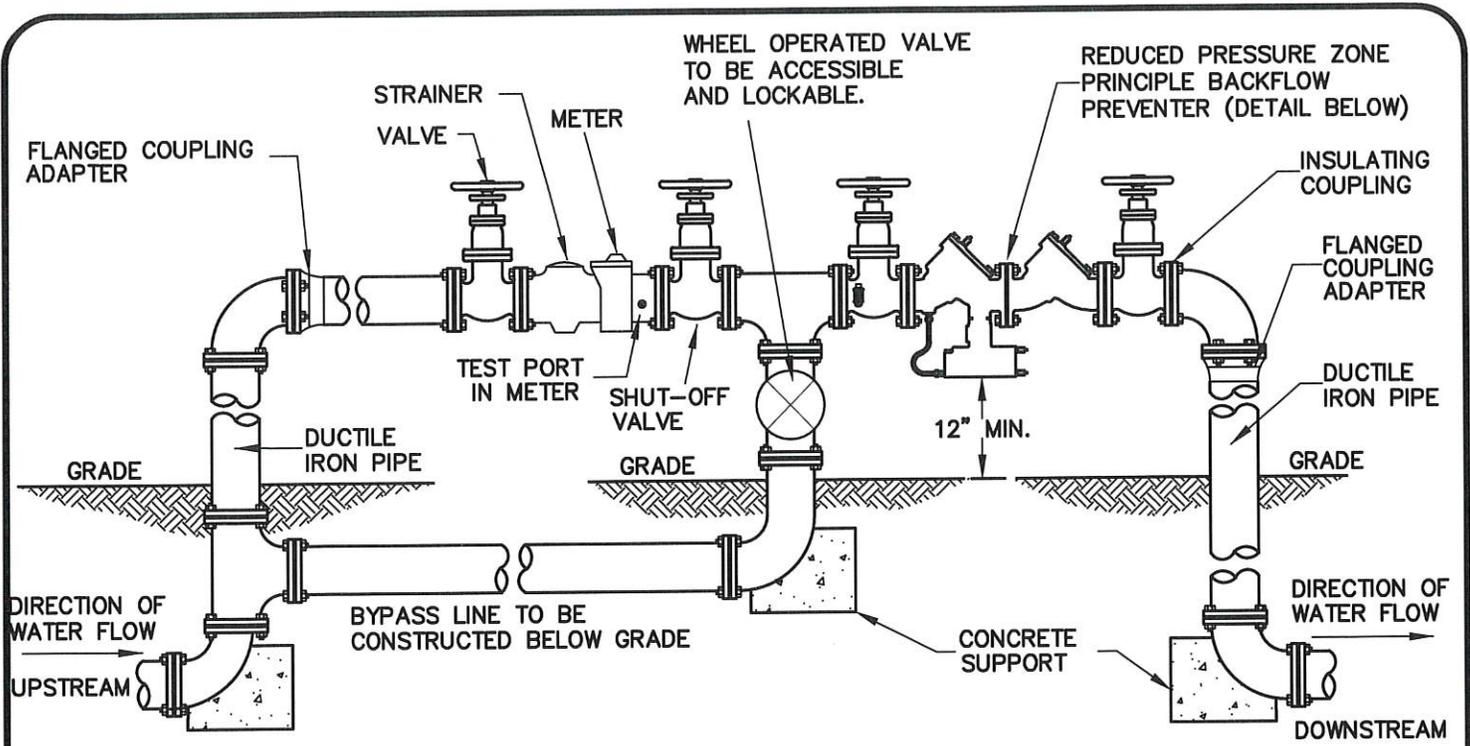
DIRECTOR OF PUBLIC WORKS



DATE

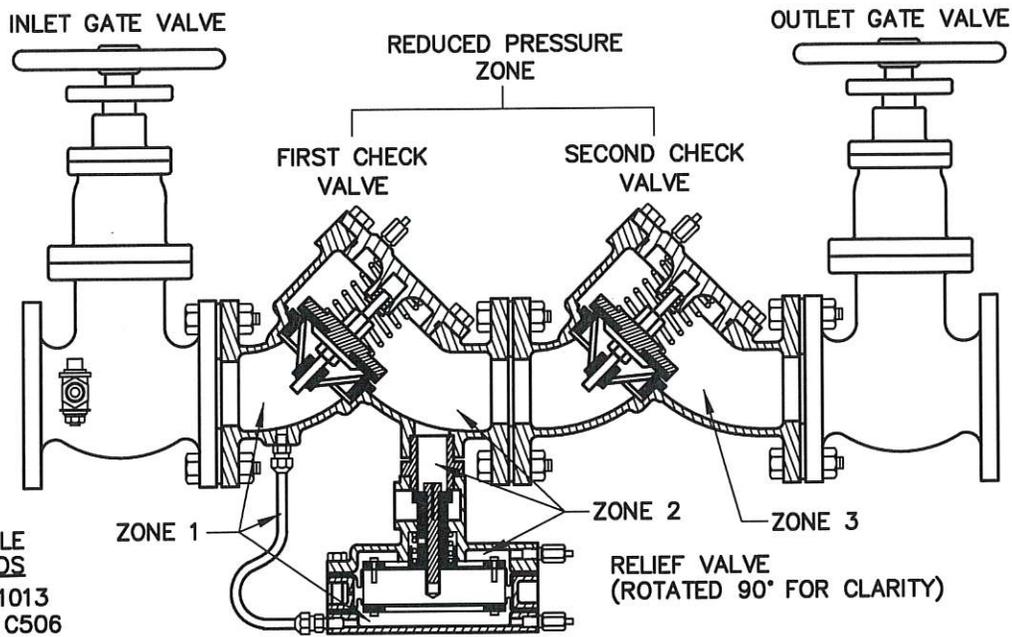
REVISION	

STD. NO.
WD-10
SHEET 6 OF 6



NOTES:

1. ALL DOMESTIC METERS NEED WATER DIVISION APPROVAL.
2. IRRIGATION METERS TO BE APPROVED TURBINE METERS.
3. METERS TO BE INSTALLED ABOVE GROUND.



APPLICABLE STANDARDS
 A.S.S.E. 1013
 A.W.W.A. C506
 FCCCHR of USC



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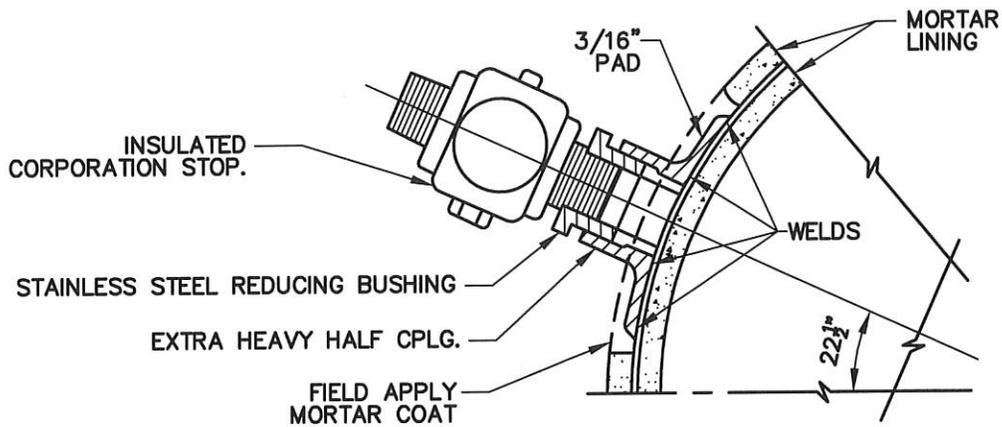
**ABOVE GROUND METER ASSEMBLY
 WITH REDUCED PRESSURE
 BACKFLOW PREVENTION ASSEMBLY**

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8/26/21
 DATE

REVISION	

STD. NO.
WD-11
 SHEET 1 OF 1



NOTES:

1. THE CEMENT LINED FLANGED NOZZLE IS CUSTOM FABRICATED TO FIT O.D. OF INSIDE STEEL CYLINDER AND CAN BE USED WHEN THE ENCLOSED STEEL CYLINDER PIPE IS 12 OR 10 GAUGE OR MORE IN THICKNESS.
2. THE CONNECTION CONSISTS OF A CEMENT LINED FLANGED NOZZLE (LINING 1/2" OR MORE) WITH CURVED PAD (TO FIT AGAINST STEEL LINER).
3. AFTER CONCRETE HAS BEEN ALL CHIPPED OFF (JUST LARGE ENOUGH FOR PAD) THE NOZZLE IS WELDED TO LINE FIRST, THEN PAD IS WELDED TO THE NOZZLE AND PIPE TO PREVENT FLUID FROM GETTING BETWEEN THE PAD AND THE PIPE. BOLT ON VALVE, COVER ALL EXPOSED AREAS WITH CEMENT AND COMPLETE TAP-IN.
4. TAPE WRAP 3 FEET INCLUDING INSULATED CORP. STOP/OUTLET.



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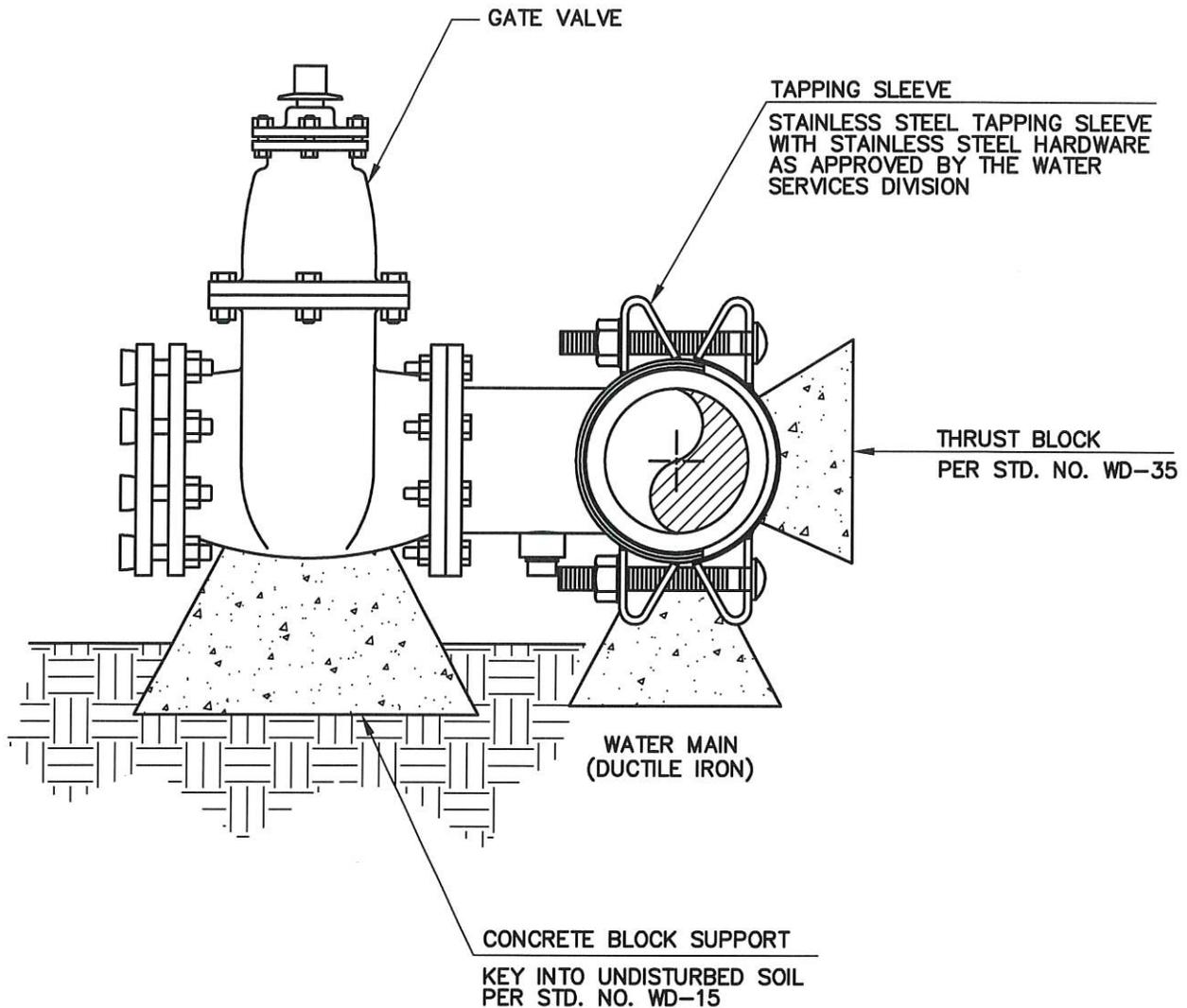
**3/4 - 2-INCH HOT TAPS FOR
CEMENT MORTAR LINED
STEEL PIPE**

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8/26/21
DATE

REVISION	

STD. NO.
WD-12
SHEET 1 OF 1



NOTES:

1. TAPPING CUTTER SHALL BE MAXIMUM ALLOWABLE DIAMETER CONSISTENT WITH NOMINAL GATE VALVE SIZE.
2. GATE VALVE SHALL BE RESILIENT WEDGE EPOXY LINED AND COATED TYPE, FLG x M.J., NON-RISING STEM.
3. WRAP EXTERIOR OF VALVE AND ACTUATOR WITH 8 MIL POLYETHYLENE SHEETING AND TAPE.
4. VALVE CAN SHALL BE PER STD. NO. WD-16.



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DEPARTMENT OF PUBLIC WORKS

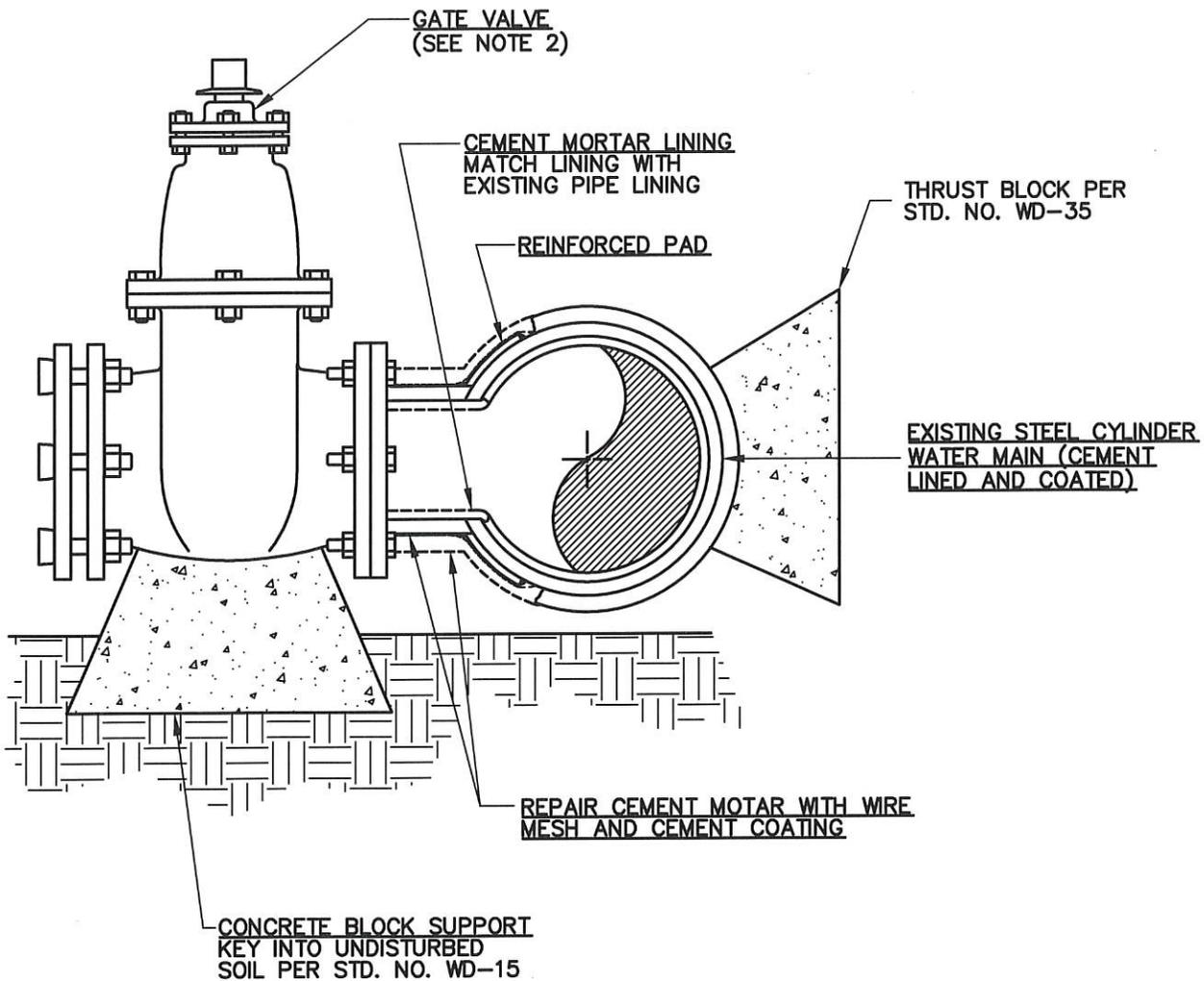
**HOT TAPPING SLEEVE AND
GATE VALVE FOR DUCTILE
IRON PIPE**

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8/26/21
DATE

REVISION	

STD. NO.
WD-13
SHEET 1 OF 1



NOTES:

1. CEMENT LINED FLANGED NOZZLE WITH REINFORCING PAD. (CERTIFIED WELDER REQUIRED).
2. GATE VALVES SHALL BE RESILIENT WEDGE EPOXY LINED AND COATED TYPE, NRS FLG x M.J., OR FLG x PUSH-ON.
3. TAPPING CUTTER SHALL BE MAXIMUM ALLOWABLE DIAMETER CONSISTENT WITH NOMINAL GATE VALVE SIZE.
4. MAKE TAP A MINIMUM OF 3' CLEAR OF ANY PIPE JOINT.
5. WRAP EXTERIOR OF VALVE AND ACTUATOR WITH 8 MIL POLYETHYLENE SHEETING AND TAPE.
6. VALVE CAN SHALL BE PER STD. NO. WD-16.



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DEPARTMENT OF PUBLIC WORKS

**WELDED TAPPING SLEEVE
AND GATE VALVE FOR STEEL
CYLINDER PIPE**

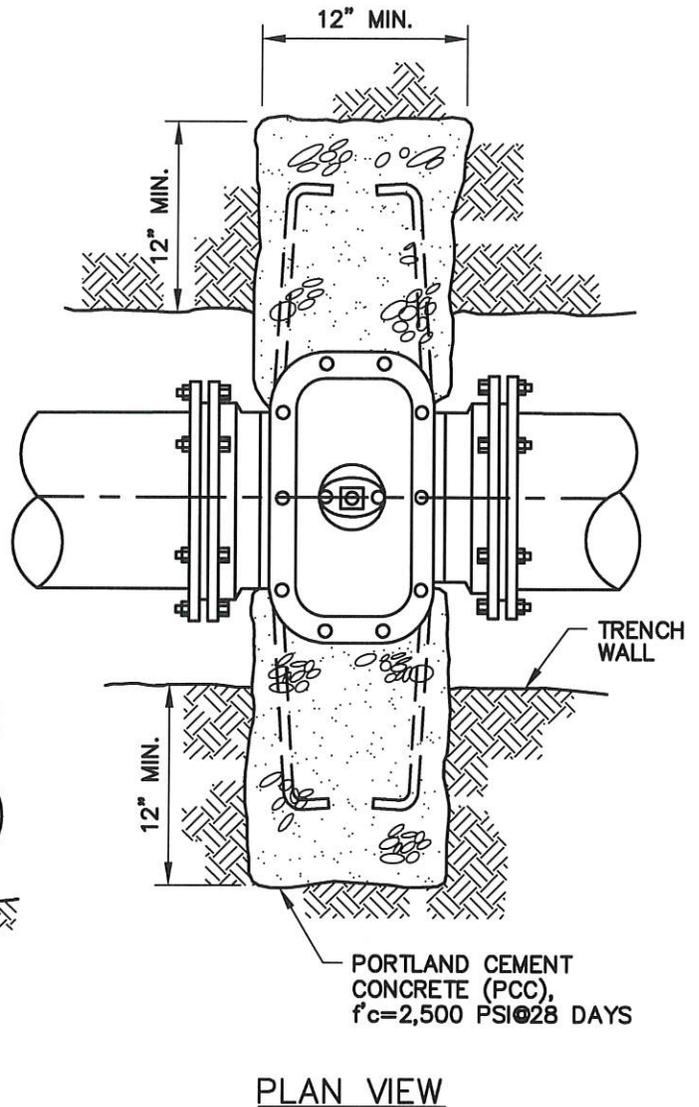
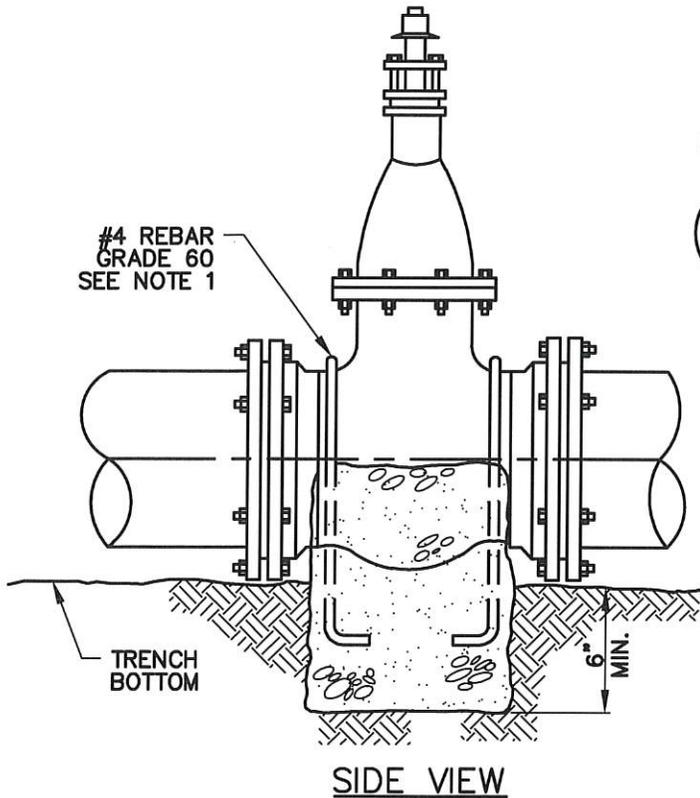
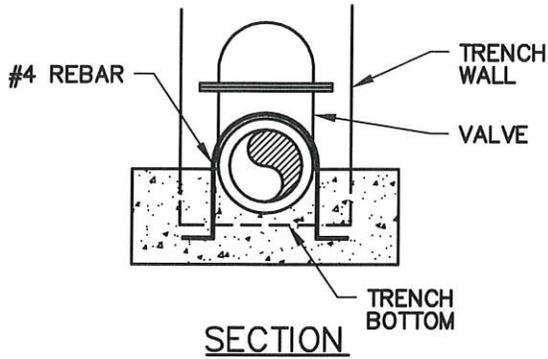
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8/26/21
DATE

REVISION	

STD. NO.
WD-14
SHEET 1 OF 1



NOTES:

1. ALL ANCHOR RODS ARE TO BE COVERED WITH 80 MILS OF BITUMASTIC COMPOUND.
2. THE ANCHOR BLOCK SHALL BE KEYED NO LESS THAN 12 INCHES INTO UNDISTURBED SOIL OF THE TRENCH WALL AND NO LESS THAN 6 INCHES INTO THE TRENCH BOTTOM.
3. ANCHOR BLOCK REQUIRED ONLY WHEN VALVE IS NOT FLANGED TO A TEE OR CROSS.
4. CONCRETE SHALL BE 2,500 PSI MINIMUM WITH 3-INCHES MINIMUM COVER REBAR. NO CONCRETE SHALL BE POURED ON VALVE OR JOINT.
5. WRAP EXTERIOR OF VALVE, ACTUATOR, AND REBAR WITH 8 MIL POLYETHYLENE SHEETING AND TAPE.
6. VALVE CAN SHALL BE PER STD. NO. WD-16.



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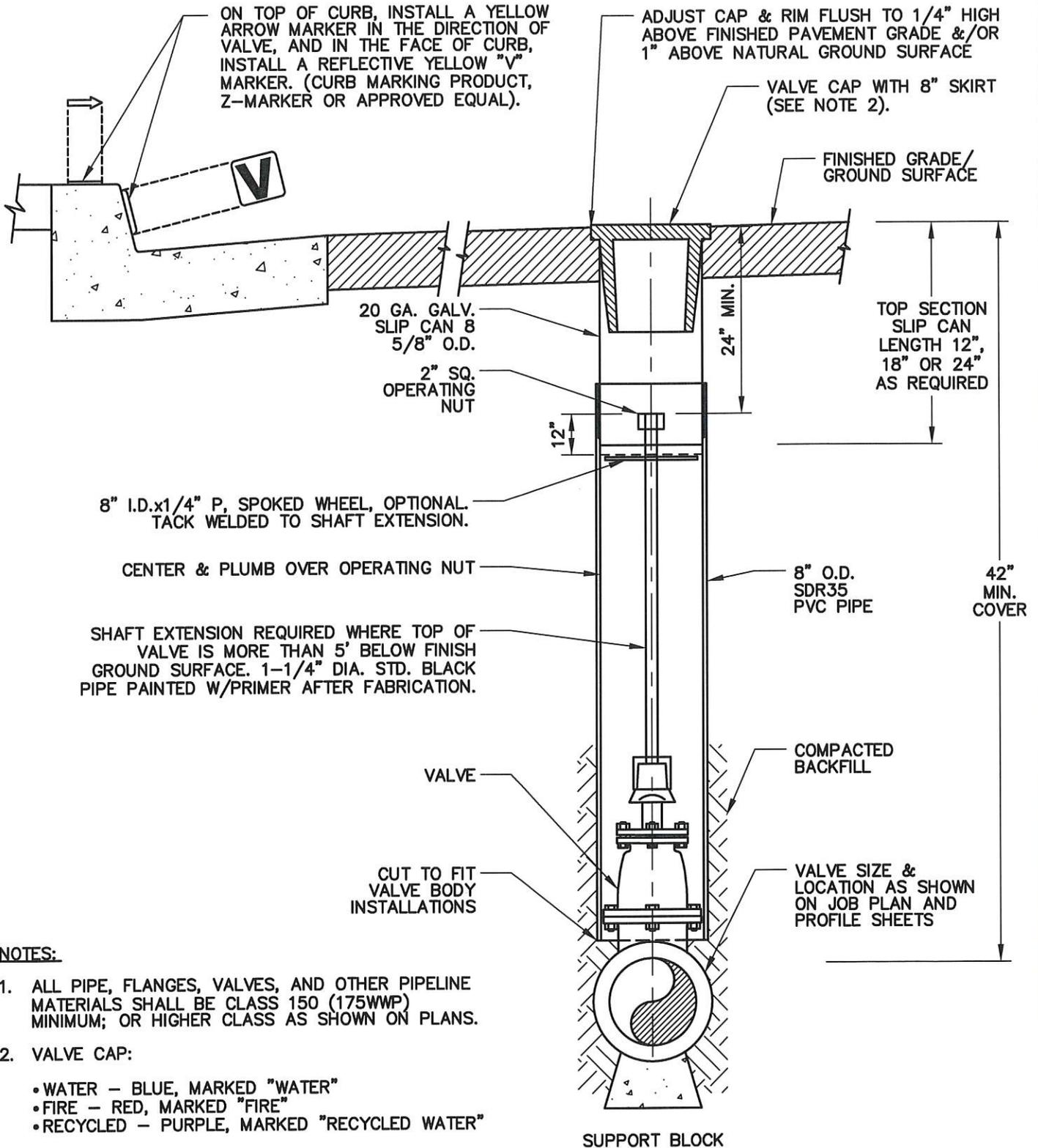
VALVE ANCHOR

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8/26/21
DATE

REVISION

STD. NO.
WD-15
SHEET 1 OF 1



NOTES:

1. ALL PIPE, FLANGES, VALVES, AND OTHER PIPELINE MATERIALS SHALL BE CLASS 150 (175WWP) MINIMUM; OR HIGHER CLASS AS SHOWN ON PLANS.
2. VALVE CAP:
 - WATER – BLUE, MARKED "WATER"
 - FIRE – RED, MARKED "FIRE"
 - RECYCLED – PURPLE, MARKED "RECYCLED WATER"



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**STANDARD VALVE
CAN INSTALLATION**

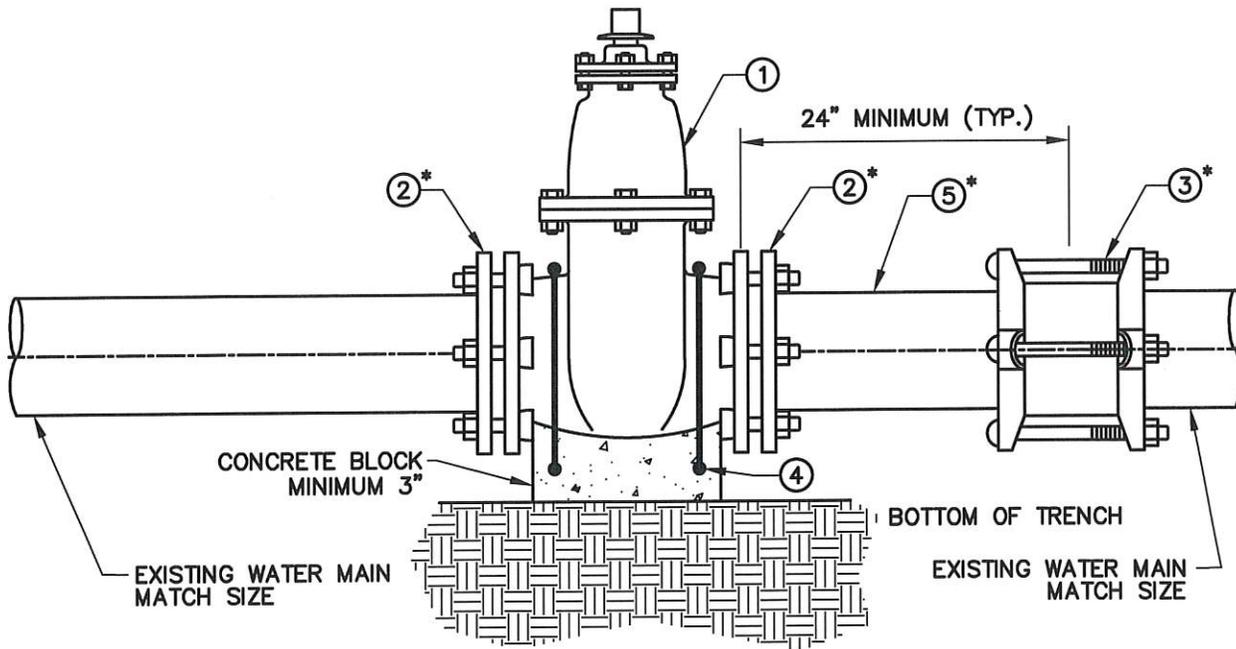
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DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
WD-16
SHEET 1 OF 1

12-INCH AND UNDER



* OPTIONAL BASED ON THE SITE CONDITIONS

ITEM	DESCRIPTION
①	FLG x FLG RESILIENT WEDGE GATE VALVE, NON-RISING STEM
②	FLG x M.J. RESTRAINT JOINT
③	FLEXIBLE COUPLING
④	INSTALL THRUST BLOCK AND VALVE RESTRAINTS PER STD. NO. WD-15
⑤	D.I.P. FLG x P.E.



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CUT-IN VALVE

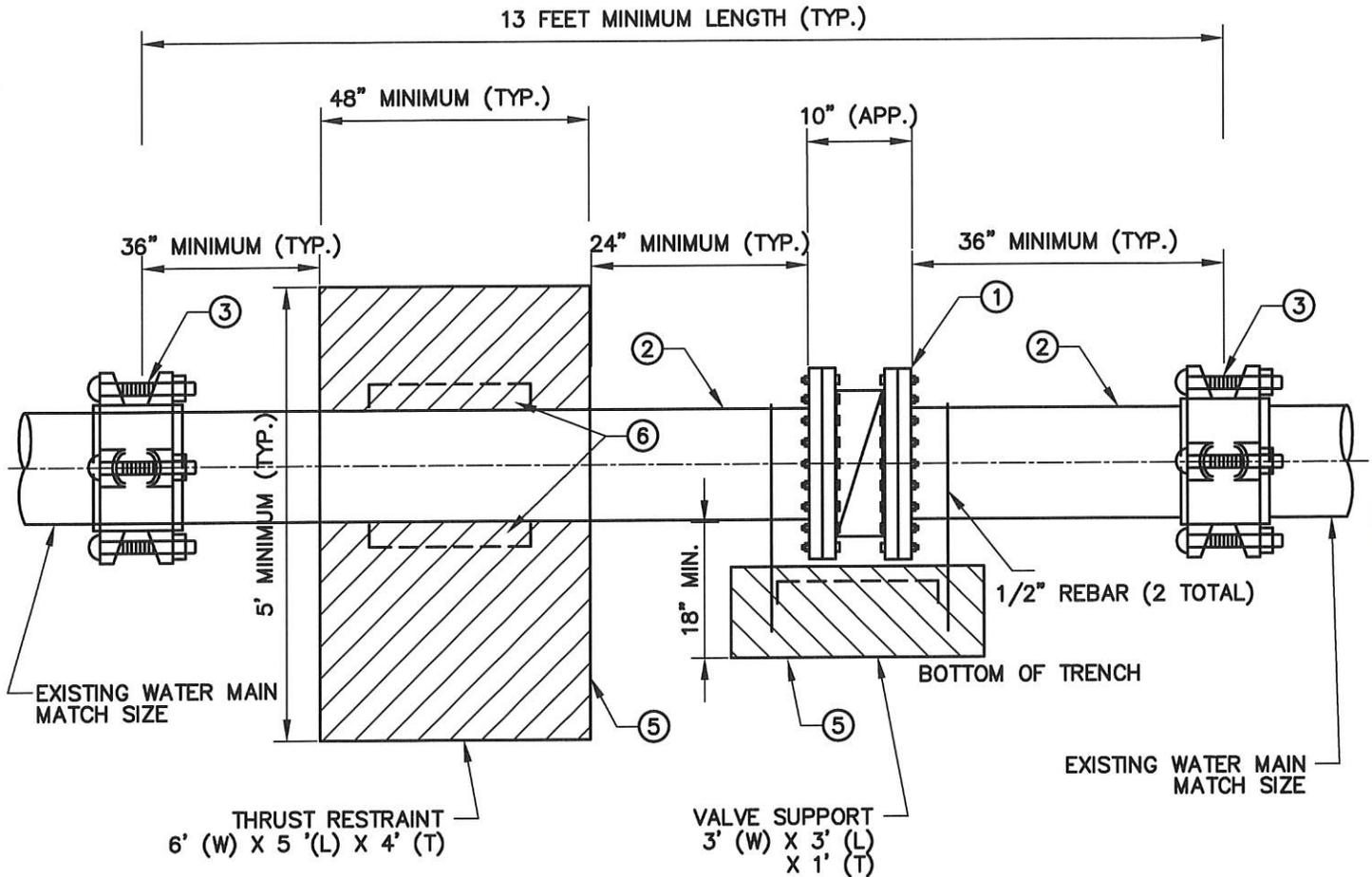
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8/26/21
DATE

REVISION

STD. NO.
WD-17
SHEET 1 OF 3

18-INCH AND 20-INCH



ITEM	DESCRIPTION
①	FLG X FLG BUTTERFLY VALVE
②	FLG X PL CMLCSP/DUCTILE IRON SPOOL
③	FLEXIBLE COUPLING
④	INSTALL THRUST BLOCK AND VALVE RESTRAINTS
⑤	#4 REBAR MIN 2 FT. ALL AROUND W/2 1/2" SUPPORT REBARS
⑥	6" X 2 FEET WELDED PLATES OR CONCRETE ANCHORS (FOUR TOTAL)



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

CUT-IN VALVE

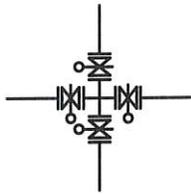
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DIRECTOR OF PUBLIC WORKS

8/21/26
DATE

REVISION	

STD. NO.
WD-17
SHEET 2 OF 3

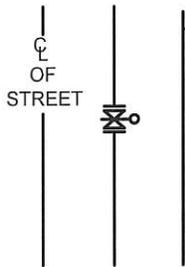
18-INCH AND 20-INCH



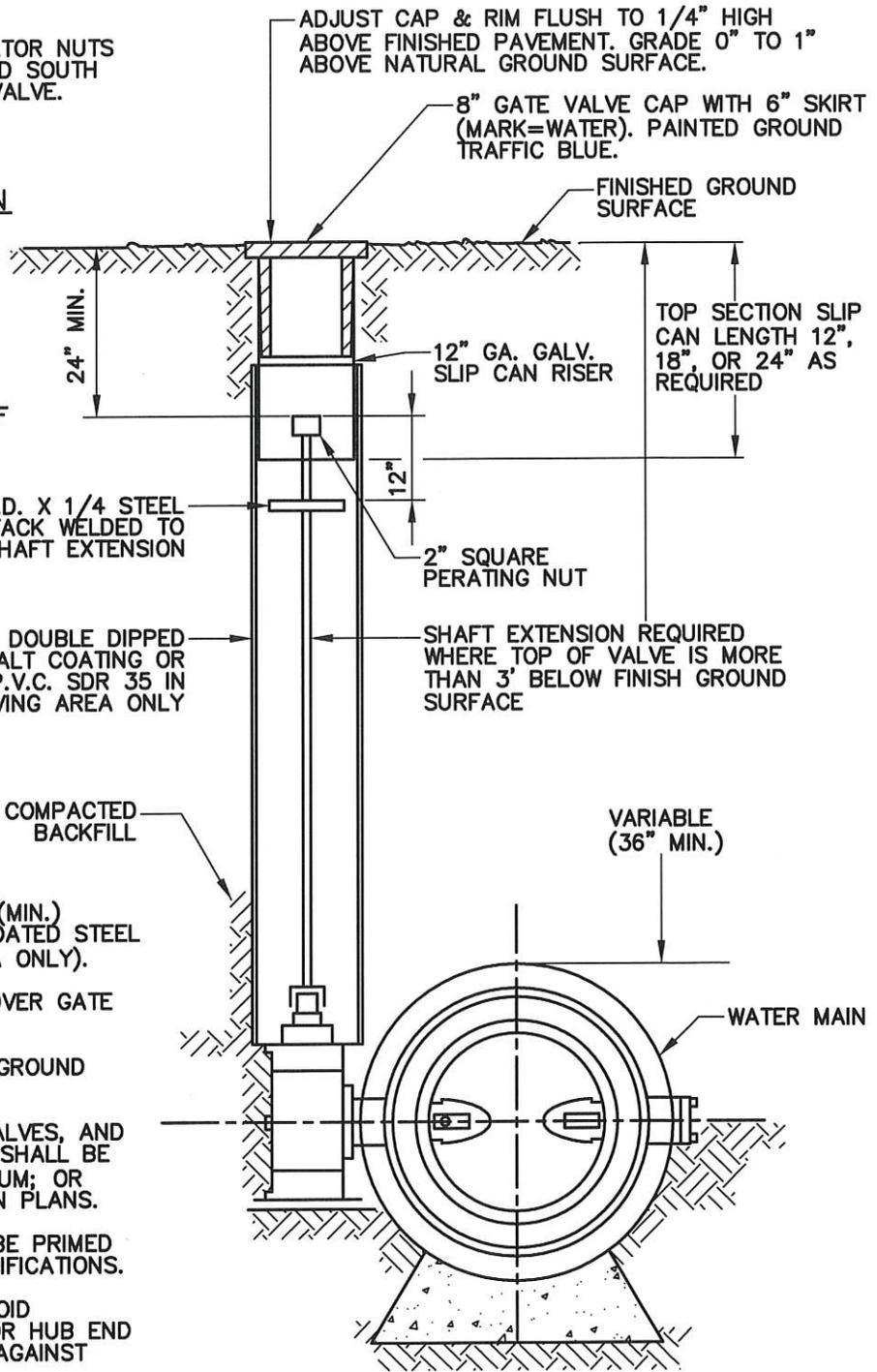
VALVE OPERATOR NUTS TO BE PLACED SOUTH & WEST OF VALVE.

INTERSECTION INSTALLATION
PLAN VIEW

VALVE OPERATOR NUTS TO BE PLACED TOWARD CURB.



LINE INSTALLATION



NOTES:

1. VALVE RISER TO BE 12 GA. (MIN.) DOUBLE-DIPPED ASPHALT COATED STEEL PIPE. (P.V.C. IN PAVED AREA ONLY).
2. CENTER AND PLUMB RISER OVER GATE VALVE OPERATION NUT.
3. VALVE CAP TO BE PAINTED GROUND TRAFFIC BLUE.
4. ALL PIPE, FLANGES, GATE VALVES, AND OTHER PIPELINE MATERIALS, SHALL BE CLASS 150 (175 WWP) MINIMUM; OR HIGHER CLASS AS SHOWN ON PLANS.
5. ALL STEEL FLANGES SHALL BE PRIMED AND COATED PER STD. SPECIFICATIONS.
6. CONCRETE SUPPORTS TO AVOID INTERFERENCE WITH BOLTS OR HUB END CONNECTIONS AND POURED AGAINST UNDISTURBED EARTH.



CITY OF SOUTH GATE
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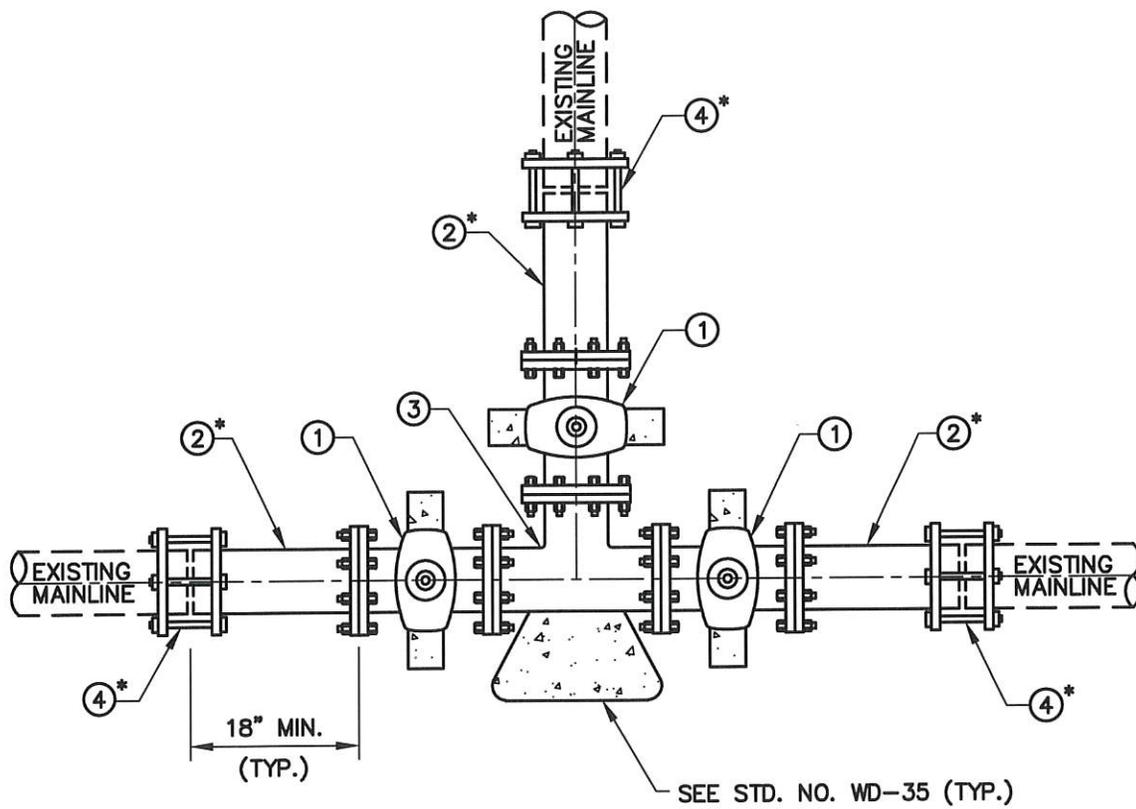
CUT-IN VALVE

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8/26/24
DATE

REVISION

STD. NO.
WD-17
SHEET 3 OF 3



* OPTIONAL BASED ON THE SITE CONDITIONS

NOTES:

1. ALL PIPE MATERIALS SHALL BE DUCTILE IRON.
2. INSTALL THRUST BLOCKS AND RESTRAINTS PER STD. NO. WD-35.
3. WRAP ALL FITTINGS IN 8 MIL PIPEWRAP PLASTIC.

ITEM	DESCRIPTION
①	FLG x FLG (OR FLG x M.J.) RESILIENT WEDGE GATE VALVE, NON-RISING STEM
②	D.I.P. FLG x P.E.
③	FLG x FLG TEE
④	FLEXIBLE COUPLING PER POTABLE WATER MATERIAL GUIDELINES. FOR SAME SIZE O.D., USE DUCTILE IRON M.J. SLEEVE OR FLG x M.J. ADAPTER.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

CUT-IN TEE

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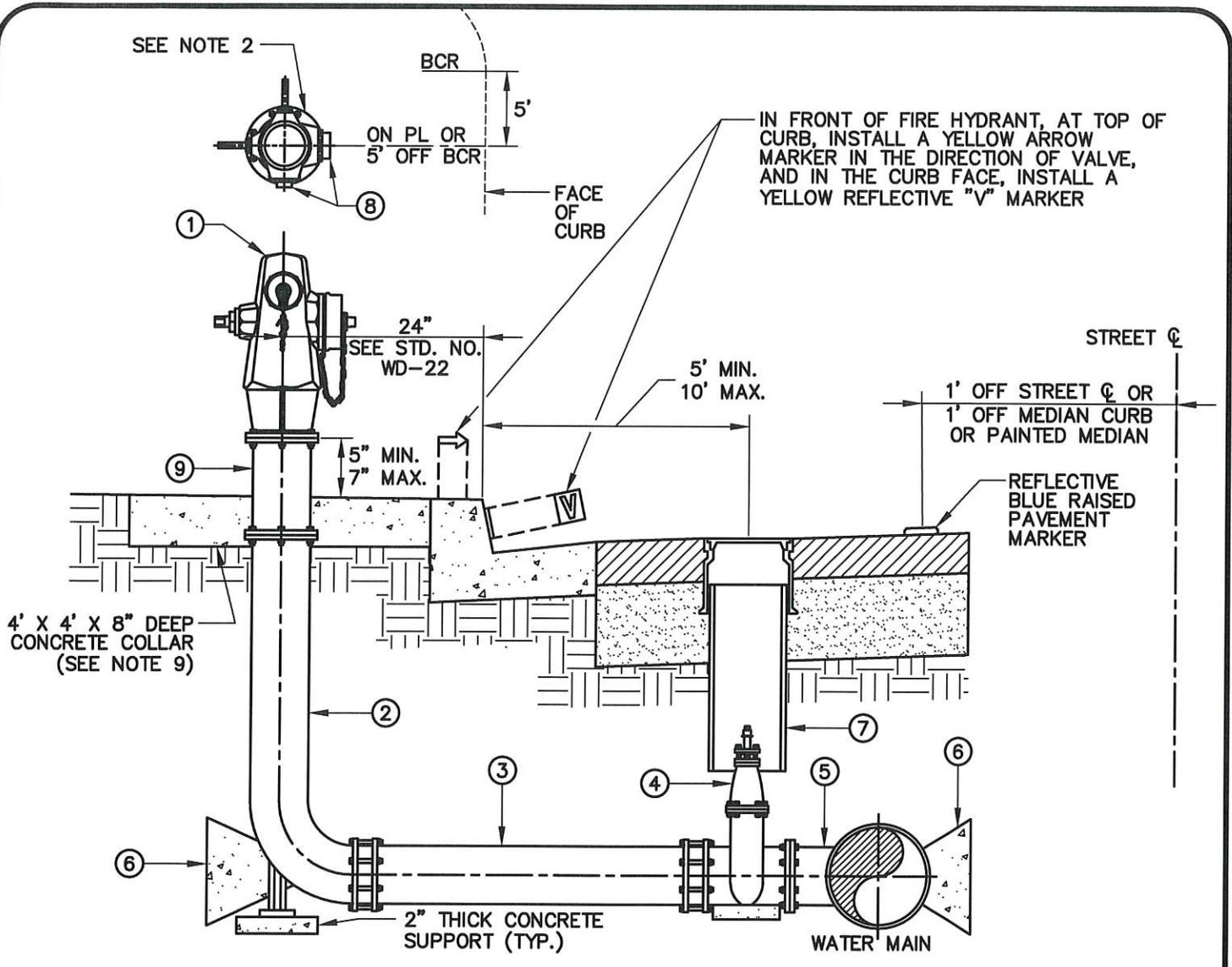
DIRECTOR OF PUBLIC WORKS

8/26/21

DATE

REVISION	

STD. NO.
WD-18
SHEET 1 OF 1



ITEM	DESCRIPTION
①	WET BARREL FIRE HYDRANT, (1) 2-1/2" AND (1) 4" OUTLETS: 1-1/2" PENTAGON OPERATING NUT; 6 BOLT PATTERN
②	FIRE HYDRANT BURY ELL, IN 24", 36", 42", & 48" LENGTHS AS NEEDED; 6 BOLT PATTERN (MJ X FLG)
③	6" AWWA D.I. PIPE CLASS 52
④	6" RESILIENT WEDGE GATE VALVE, MJ X FLG NON-RISING STEM
⑤	TEE OR TAPPING SLEEVE, TAPPING TO BE PER STD. NOS. WD-13 AND WD-14
⑥	THRUST BLOCK PER STD. NO. WD-35
⑦	GATE VALVE CAN ASSEMBLY PER STD. NO. WD-16
⑧	(1) 4" AND (1) 2-1/2" METAL PROTECTOR CAPS AND CHAIN
⑨	6" X 12", 18", & 24" CI BREAK-AWAY SPOOL, 3-1/2" LONG BREAK-AWAY BOLTS ON TOP FLANGE AND SOLID BOLTS ON BOTTOM FLANGE. INSTALL NUT ON TOP ON ALL FLANGED JOINTS



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

RESIDENTIAL FIRE HYDRANT INSTALLATION

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8/24/21
DATE

REVISION

STD. NO.
WD-19
SHEET 1 OF 2

NOTES:

1. PROVIDE 24" X 36" EXPANSION JOINT AROUND FIRE HYDRANT FOR NEW SIDEWALK CONSTRUCTION.
2. FIRE HYDRANT SHALL BE LOCATED A MINIMUM OF 5' FROM BCR, ECR, OR DRIVEWAY APPROACH.
3. 4-INCH OUTLET TO BE FACING STREET, PERPENDICULAR TO CURB.
4. DISTANCE TO BE 5'-3" WHEN 4-FOOT SIDEWALK IS ADJACENT TO CURB. FOR MORE DETAIL, REFER TO STD. NO. WD-22.
5. FOR ALL CASES, THE LOCATION OF FIRE HYDRANT SHALL MEET ADA REQUIREMENT THAT A MINIMUM 48-INCH CLEARANCE SHALL BE MAINTAINED FROM ANY OBSTRUCTION IN THE WALKWAY.
6. FIRE HYDRANT PAINT COLOR SHALL BE APPROVED BY THE ENGINEER.
7. CONTRACTOR SHALL USE ADDITIONAL RESTRAINED BEND(S) NECESSARY TO AVOID OTHER EXISTING OR PROPOSED UTILITIES WHEN REQUIRED.
8. FOR ROLLED CURBS, THE DISTANCE FROM THE EDGE OF PAVEMENT TO THE FIRE HYDRANT SHALL BE AS DIRECTED BY THE WATER DIVISION.
9. CONCRETE COLLAR TO BE USED ON FIRE HYDRANTS WHERE THERE IS NO CONCRETE SIDEWALK. IF GATE VALVE IS WITHIN 4', THEN EXTEND COLLAR TO A MAXIMUM OF 4' TO INCLUDE THE GATE VALVE AND INSTALL VALVE CAN PER STD. NO. WD-16.



CITY OF SOUTH GATE
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**RESIDENTIAL FIRE HYDRANT
INSTALLATION**

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8/26/21

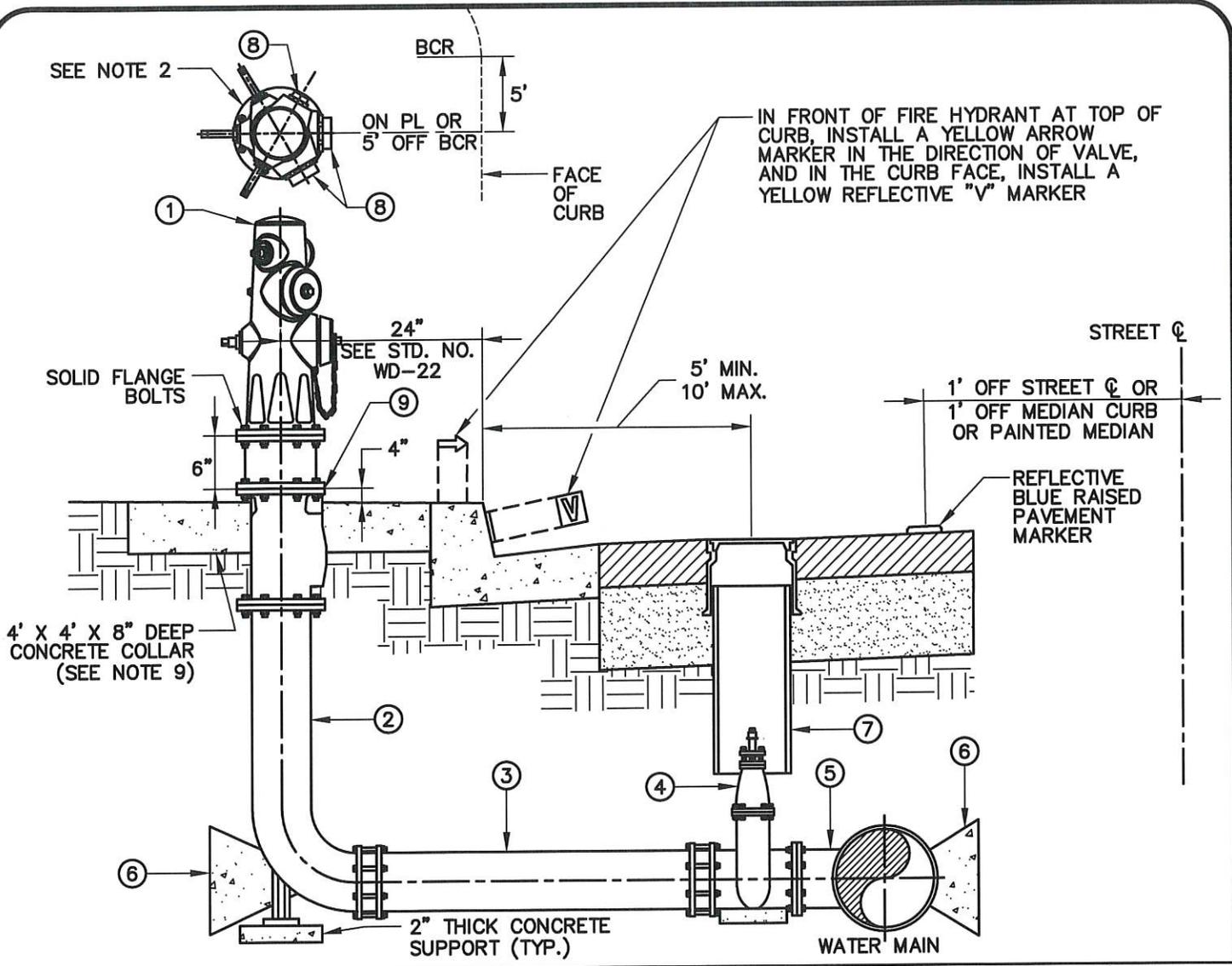
DATE

REVISION

STD. NO.

WD-19

SHEET 2 OF 2



NOTES:

1. PROVIDE 24" X 36" EXPANSION JOINT AROUND FIRE HYDRANT FOR NEW SIDEWALK CONSTRUCTION.
2. FIRE HYDRANT SHALL BE LOCATED A MINIMUM OF 5' FROM BCR, ECR, OR DRIVEWAY APPROACH.
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7. CONTRACTOR SHALL USE ADDITIONAL RESTRAINED BEND(S) NECESSARY TO AVOID OTHER EXISTING OR PROPOSED UTILITIES WHEN REQUIRED.
8. FOR ROLLED CURBS, THE DISTANCE FROM THE EDGE OF PAVEMENT TO THE FIRE HYDRANT SHALL BE AS DIRECTED BY THE WATER DIVISION.
9. CONCRETE COLLAR TO BE USED ON FIRE HYDRANTS WHERE THERE IS NO CONCRETE SIDEWALK. IF GATE VALVE IS WITHIN 4', THEN EXTEND COLLAR TO A MAXIMUM OF 4' TO INCLUDE THE GATE VALVE AND INSTALL VALVE CAN PER STD. NO. WD-16.



CITY OF SOUTH GATE
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**COMMERCIAL/
INDUSTRIAL/INSTITUTIONAL FIRE
HYDRANT INSTALLATION**

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8/26/21

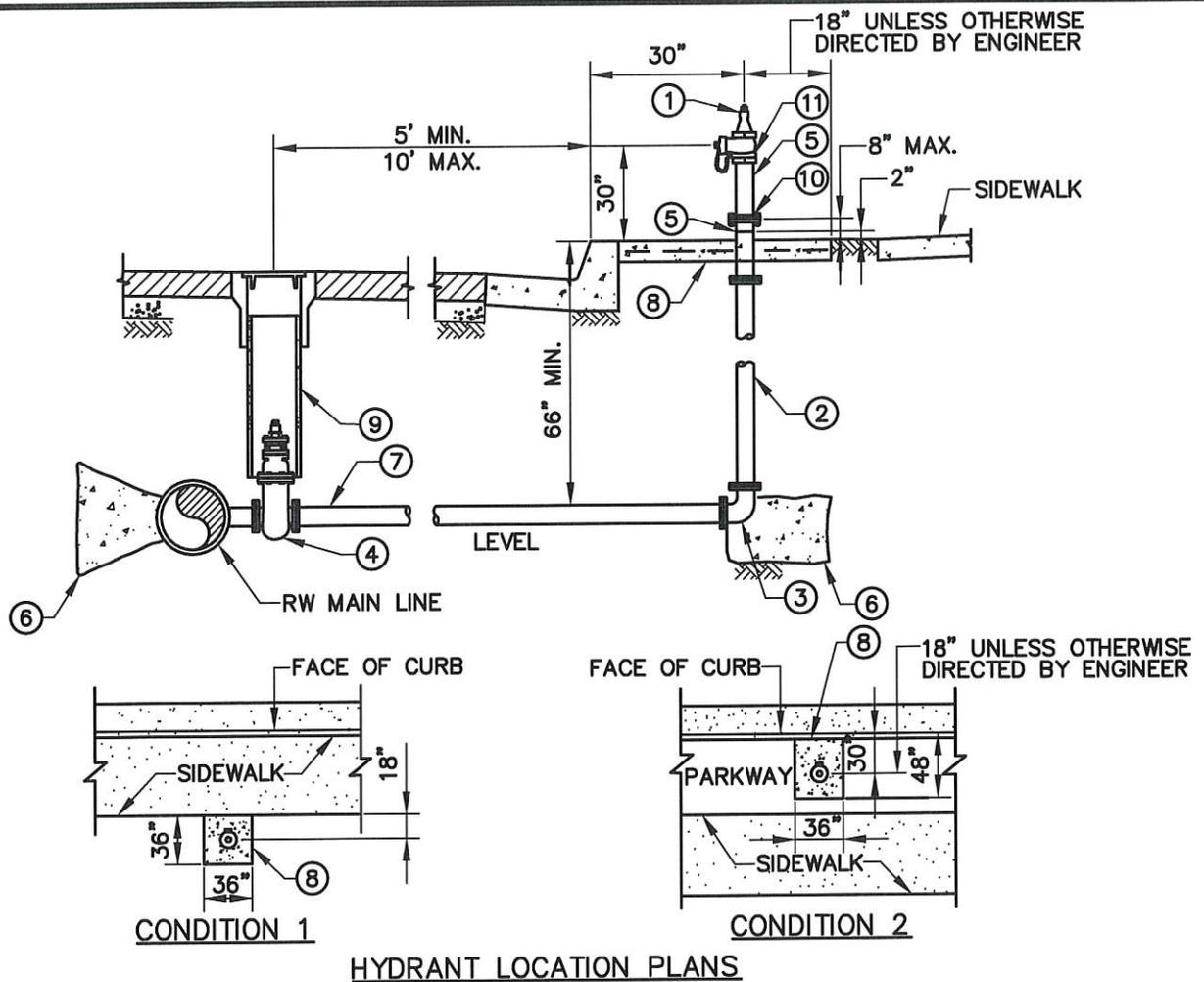
DATE

REVISION

STD. NO.

WD-20

SHEET 2 OF 2



HYDRANT LOCATION PLANS

ITEM	DESCRIPTION
①	3" F.I.P. X 2-1/2" NST FIRE HOSE OUTLET RECYCLED WATER WHARF HEAD STYLE HYDRANT WITH 2-1/2" HOSE OUTLET, PAINTED PURPLE
②	4" D.I.P. SPOOL, FLG X FLG
③	4" D.I.P., 90 DEGREE BEND, FLG X M.J. OR FLG X FLG
④	4" FLG X M.J. VALVE
⑤	4" D.I.P. SPOOL, PAINTED PURPLE
⑥	THRUST BLOCK PER STD. NO. WD-35
⑦	4" D.I.P. WHERE REQUIRED
⑧	CONSTRUCT 48" X 36" X 6" THICK OR 36" X 36" X 6" THICK CONCRETE PAD REINFORCED WITH W.W.F. 1.6 X 1.6, SEE HYDRANT LOCATION PLANS ON THIS SHEET FOR APPLICABLE CONDITION
⑨	VALVE BOX PER STD. NO. WD-16. VALVE COVER PAINTED PURPLE, WITH "RECLAIMED WATER" CASTING
⑩	4" DUCTILE IRON COMPANION FLANGES, THREADED, WITH BREAK-AWAY BOLTS
⑪	4" FLG X 3" F.I.P. DUCTILE IRON COMPANION FLANGE AND 3" CLOSE NIPPLE PIPE



CITY OF SOUTH GATE
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**RECYCLED WATER WHARF
HEAD HYDRANT**

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8/26/24
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STD. NO.

WD-21

SHEET 1 OF 2

NOTES:

1. RECYCLED WATER WHARF HEAD TYPE HYDRANTS FOR PERMANENT USE SHALL BE CONSTRUCTED ON THE MAIN LINE ONLY IN SELECT LOCATIONS AS APPROVED BY THE ENGINEER.
2. RECYCLED WATER WHARF HEAD TYPE HYDRANTS SHALL BE PAINTED PURPLE.
3. LOCATE 2-1/2" HOSE OUTLET PERPENDICULAR TO THE CURB LINE.
4. AT NO POINT SHALL ANY PART OF THE HYDRANT BE CLOSER THAN 36" AWAY FROM ANY STRUCTURE, LANDSCAPING, OR PATH OF TRAVEL.
5. FILL BREAK-AWAY BOLTS WITH SILICONE SEALANT.



CITY OF SOUTH GATE
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**RECYCLED WATER WHARF
HEAD HYDRANT**

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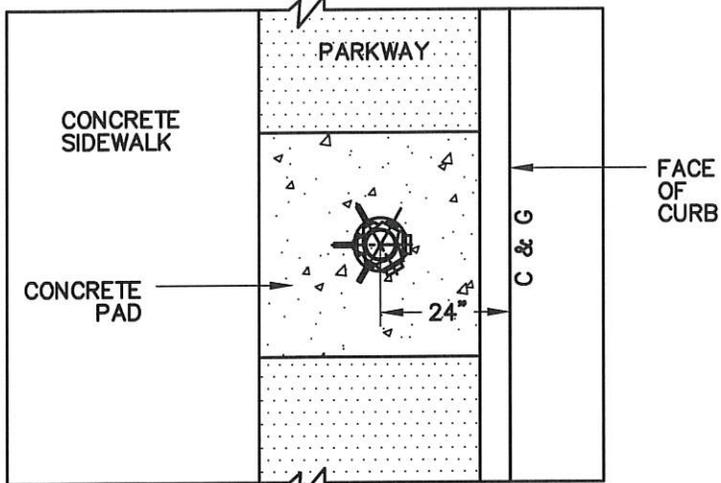
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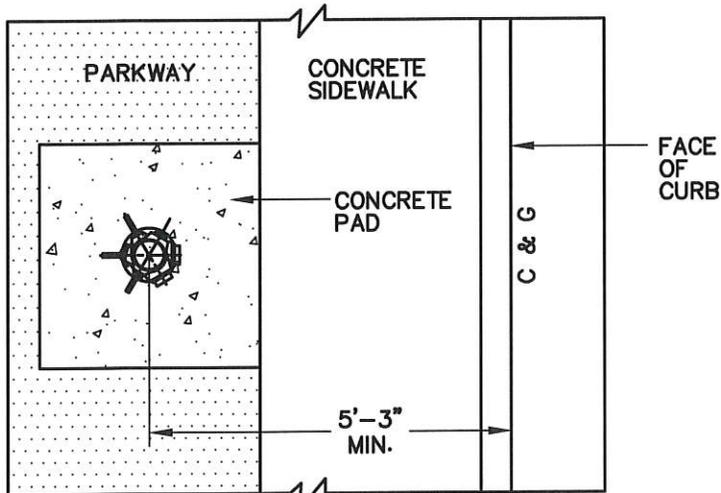
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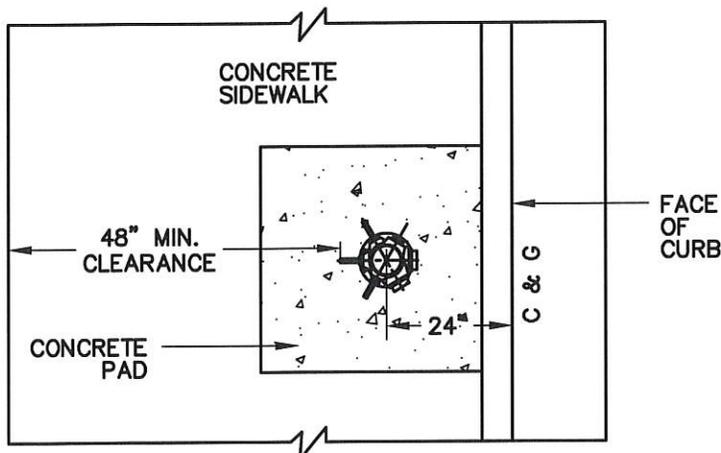
SHEET 2 OF 2



DETACHED SIDEWALK



4' WIDE ATTACHED SIDEWALK



6' OR WIDER SIDEWALK

NOTE:

FOR ALL CASES, THE LOCATION OF FIRE HYDRANT SHALL MEET ADA REQUIREMENTS THAT A MINIMUM 48-INCH CLEARANCE SHALL BE MAINTAINED FROM ANY OBSTRUCTION IN THE WALKWAY.



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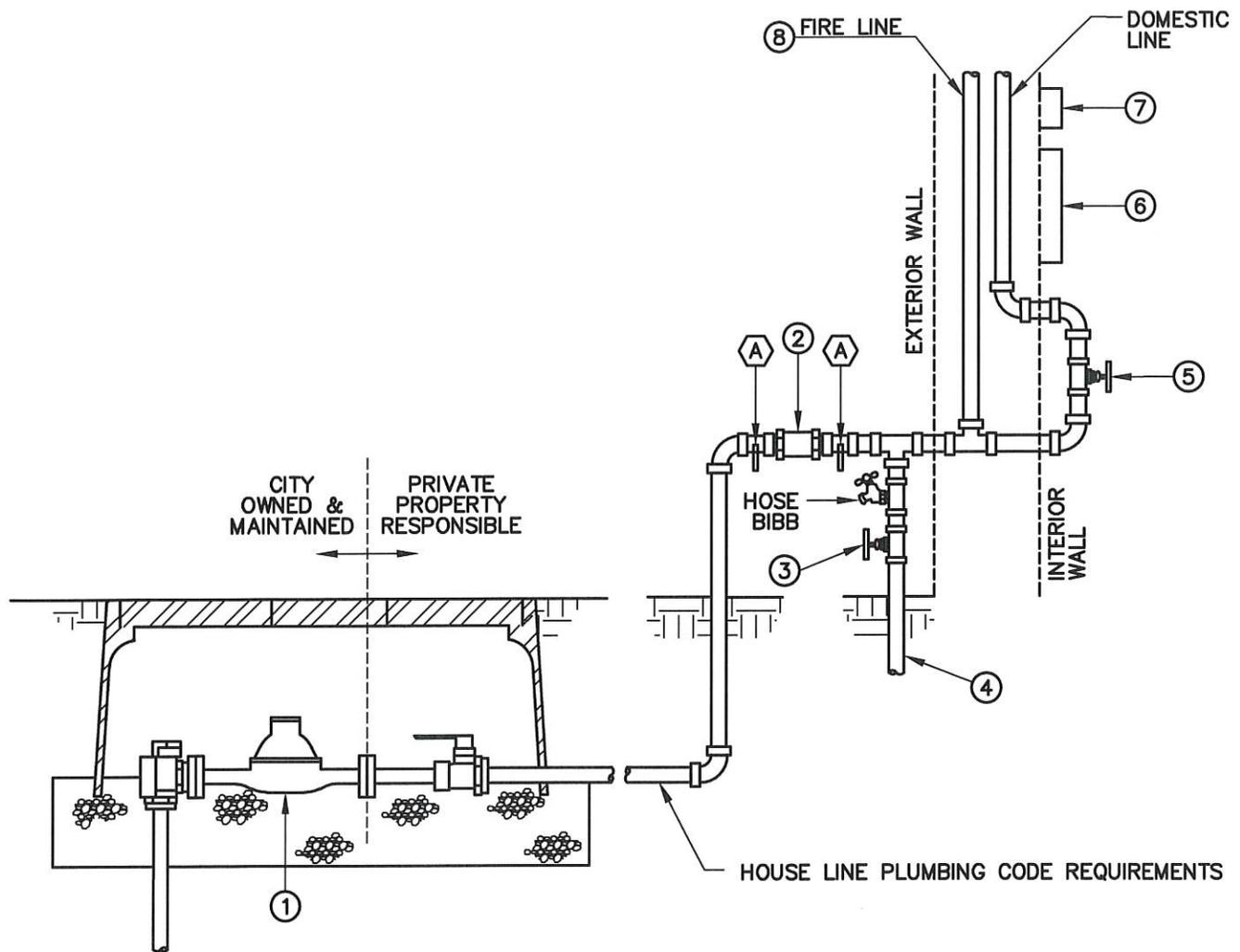
**FIRE HYDRANT SETBACK
DETAIL**

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REVISION	

STD. NO.
WD-22
SHEET 1 OF 1



NO.	SIZE AND DESCRIPTION
①	RESIDENTIAL FIRE METER: MINIMUM 1" FOR RESIDENTIAL FIRE SERVICE
②	DOUBLE CHECK VALVE BACK FLOW ASSEMBLY, U.S.C. APPROVED
③	IRRIGATION SHUT OFF VALVE
④	IRRIGATION LINE
⑤	PRIVATE PROPERTY SHUTOFF
⑥	ACCESS PANEL WITH FIRE DEPT. SIGNAGE
⑦	FIRE SPRINKLER SPARE HEAD BOX
⑧	APPROVED FIRE SPRINKLER SYSTEM

NOTES:

1. FOR WATER SERVICE AND METER DETAILS, SEE STANDARD PLANS.

(A) REMOVE AND STORE BACK FLOW ASSEMBLY SHUT OFF VALVE HANDLES IN FIRE SPRINKLER SPARE HEAD BOX.



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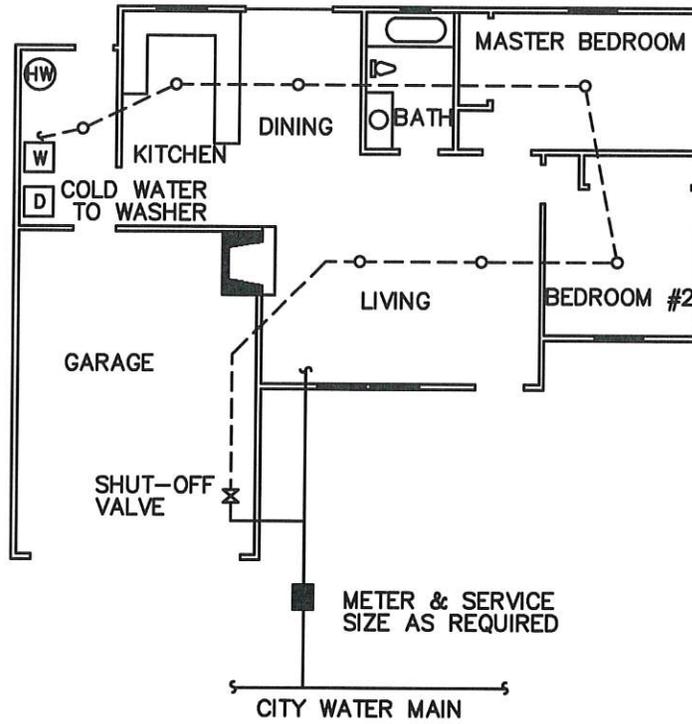
**FIRE AND DOMESTIC
COMBINATION METER AND
BACKFLOW ASSEMBLY**

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DIRECTOR OF PUBLIC WORKS

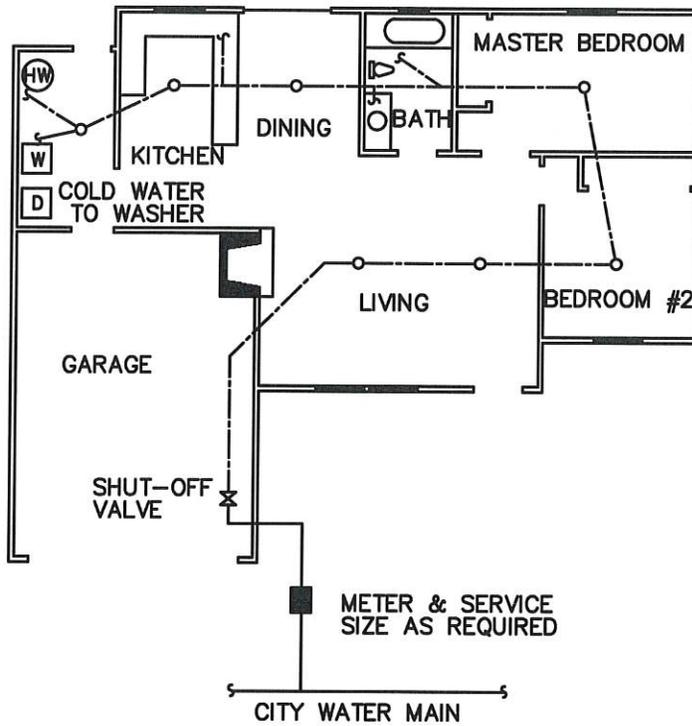
8/26/21
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REVISION

STD. NO.
WD-23
SHEET 1 OF 1



METHOD - 1



METHOD - 2

NOTES:

NFPA 13D COMPLIANCE IS REQUIRED.



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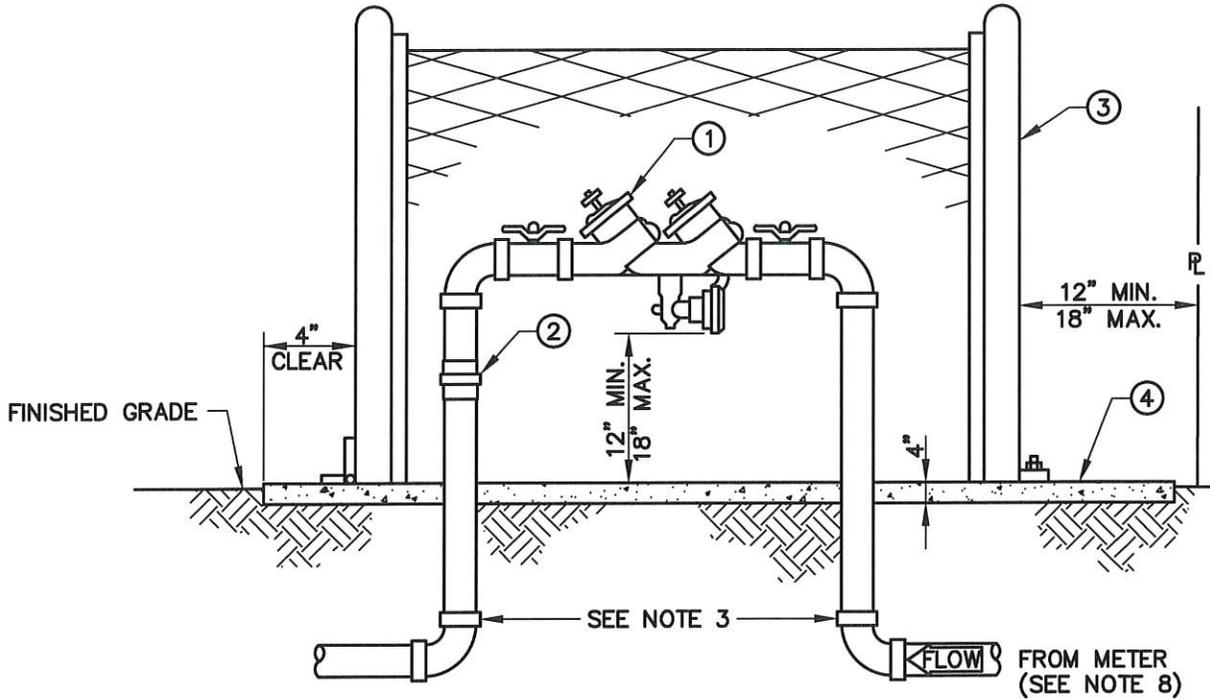
**METER PROTECTION FOR
RESIDENTIAL FIRE
SPRINKLER SYSTEM**

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8/26/21
DATE

REVISION	

STD. NO.
WD-24
SHEET 1 OF 1



LIST OF MATERIALS

ITEM	DESCRIPTION
①	APPROVED REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY.
②	BRASS UNION REQUIRED IF THREADED FITTINGS (ELBOWS) ARE USED.
③	BACKFLOW PREVENTION ASSEMBLY ENCLOSURE PER MANUFACTURER'S RECOMMENDATIONS (SEE NOTES 1 AND 2). MUST BE HINGED, LOCKABLE, ROUNDED TUBULAR SHAPE.
④	CONCRETE PAD, CLASS 520-C-2500, MUST BE CONSTRUCTED TO ENSURE 4" CLEARANCE AROUND THE BACKFLOW ENCLOSURE.

NOTES:

- SEE SPECIFICATIONS FOR APPROVED BACKFLOW ASSEMBLIES, BACKFLOW ENCLOSURES, TESTING REQUIREMENTS, PLACEMENT OF BACKFLOW ASSEMBLIES AND OTHER REQUIREMENTS.
- PROPOSED LOCATION OF THE BACKFLOW DEVICE, PROTECTIVE ENCLOSURE AND ALL PARTS MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- ALL FITTINGS AND PIPE SHALL BE BRASS OR COPPER WITH EITHER IPT OR SOLDERED CONNECTIONS, RESPECTIVELY. NO PVC UNDER ENCLOSURE CONCRETE SLAB - COPPER ONLY. INLET AND OUTLET PIPE SHALL BE COPPER.
- A WYE STRAINER OR HOSE BIBB IS NOT ALLOWED TO BE INSTALLED ON BACKFLOW ASSEMBLY PIPING.
- A PRESSURE REDUCER, IF REQUIRED, IS ONLY PERMITTED AT THE BUILDING AND NOT ON THE BACKFLOW ASSEMBLY.
- THERE SHALL BE NO CONNECTIONS BETWEEN THE METER AND THE BACKFLOW ASSEMBLY.
- FINAL PLACEMENT OF THE BACKFLOW PREVENTION ENCLOSURE MUST BE AT LEAST 12" BEHIND THE PUBLIC RIGHT-OF-WAY.
- IF A NEW METER IS INSTALLED, PIPE SHALL BE COPPER FROM METER TO BACKFLOW. IF THERE IS EXISTING PIPING TO THE METER, IT MAY REMAIN PER PLUMBING CODE.



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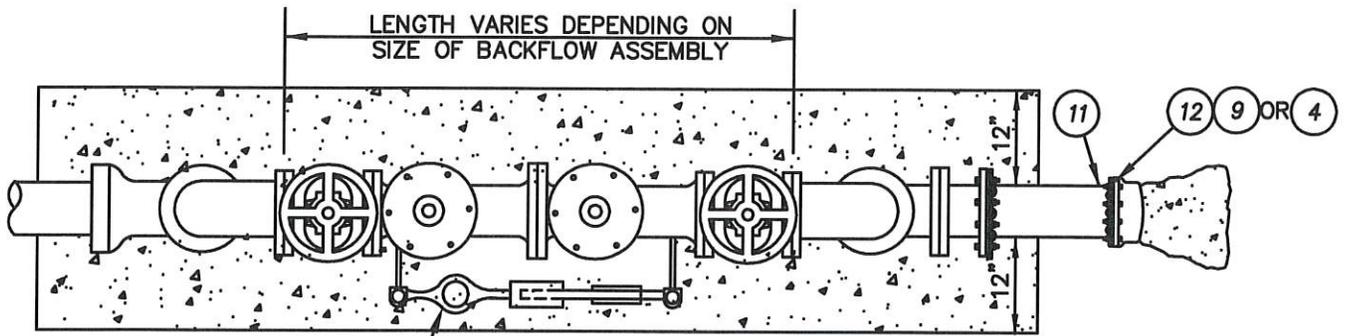
3/4 THROUGH 2-INCH REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY

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8/26/21
DATE

REVISION

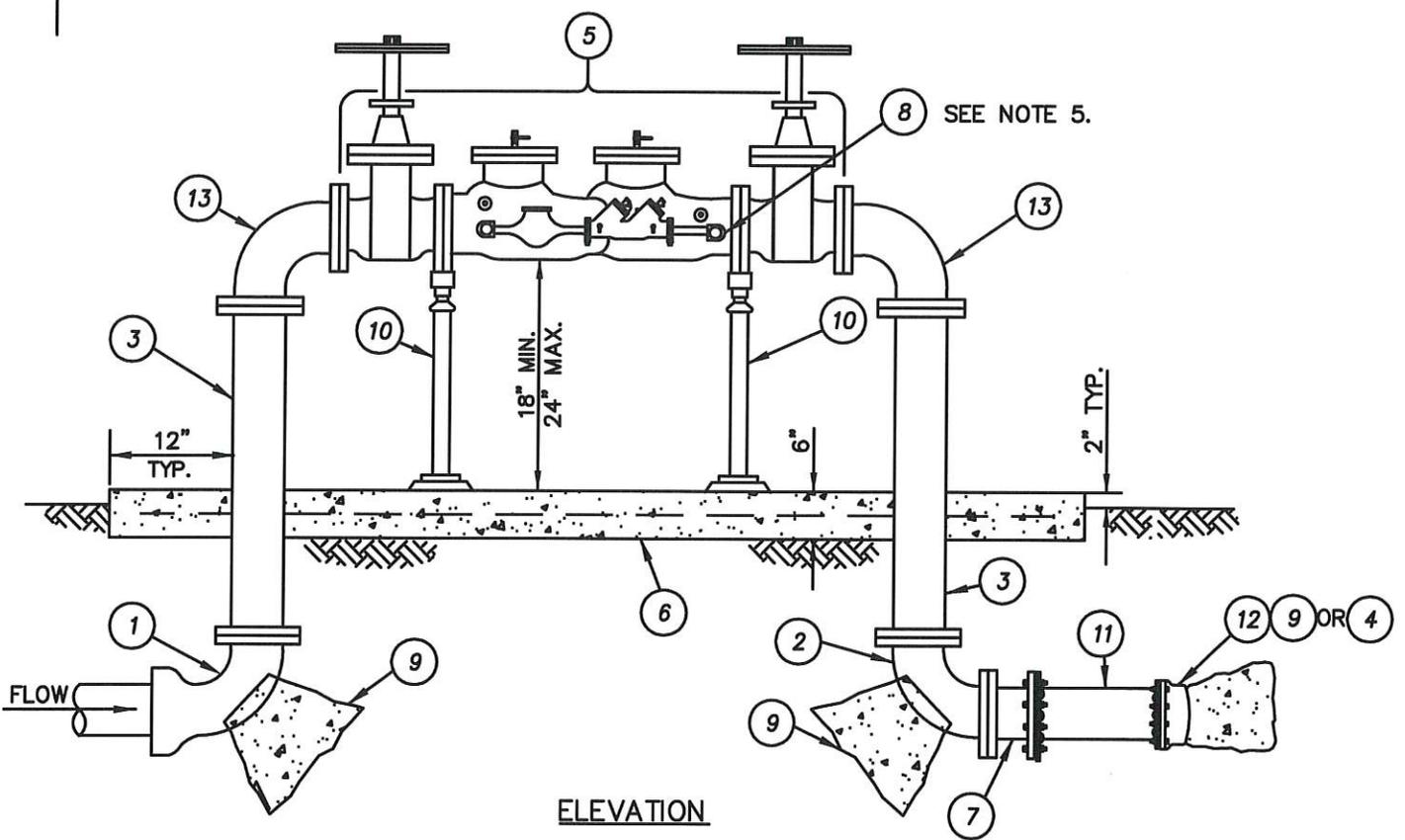
STD. NO.
WD-25
SHEET 1 OF 1



8 SEE NOTE 5.

PLAN

CUSTOMER MAINTAINED PIPING



ELEVATION



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**DOUBLE CHECK
BACKFLOW ASSEMBLY**

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8/26/21
DATE

REVISION	

STD. NO.
WD-26
SHEET 1 OF 2

ITEM	DESCRIPTION
①	DUCTILE IRON 90° BEND FLG x MJ
②	DUCTILE IRON 90° BEND FLG x FLG
③	DUCTILE IRON SPOOL FLG x FLG LENGTH AS REQUIRED
④	TRANSITION COUPLING (BY OTHERS, FOR ON-SITE CONNECTION WHEN ON-SITE PIPING EXISTS)
⑤	APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY WITH RISING STEM RESILIENT WEDGE GATE VALVES
⑥	6" THICK P.C.C. SLAB, REINFORCE WITH W.W.F. 1.6 X 1.6
⑦	FLG X MJ ADAPTER WITH RETAINER GLAND
⑧	FACTORY INSTALLED BY-PASS METER ASSEMBLY CONSISTING OF APPROVED POSITIVE DISPLACEMENT METER, REDUCED PRESSURE PRINCIPLE DEVICE AND ASSOCIATED PIPING. METER TO BE USED FOR FIRE SYSTEMS ONLY
⑨	THRUST BLOCK PER STD. NO. W-35
⑩	PIPE SUPPORT PER STD. NO WD-43
⑪	DUCTILE IRON PIPE PE X FLG
⑫	END CAP (IF REQUIRED)
⑬	DUCTILE IRON 90° BEND FLG X FLG. FOR 3" DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY USE 4"x3" DUCTILE IRON 90° REDUCING BEND FLG x FLG

NOTES:

1. NOTIFY CITY PRIOR TO INSTALLATION OF BACKFLOW DEVICE.
2. BACKFLOW ASSEMBLY SHALL BE A MINIMUM OF 36" FROM ANY STRUCTURE, CURB OR SIDE WALK.
3. LOCATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE ENGINEER.
4. PLACE BRASS PLUGS IN ALL TEST VALVE OUTLETS.
5. BY-PASS METER TO BE USED FOR FIRE SYSTEMS ONLY. DO NOT INSTALL BY-PASS METERS WHERE SUPPLY TO DEVICE IS ALREADY METERED.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**DOUBLE CHECK
BACKFLOW ASSEMBLY**

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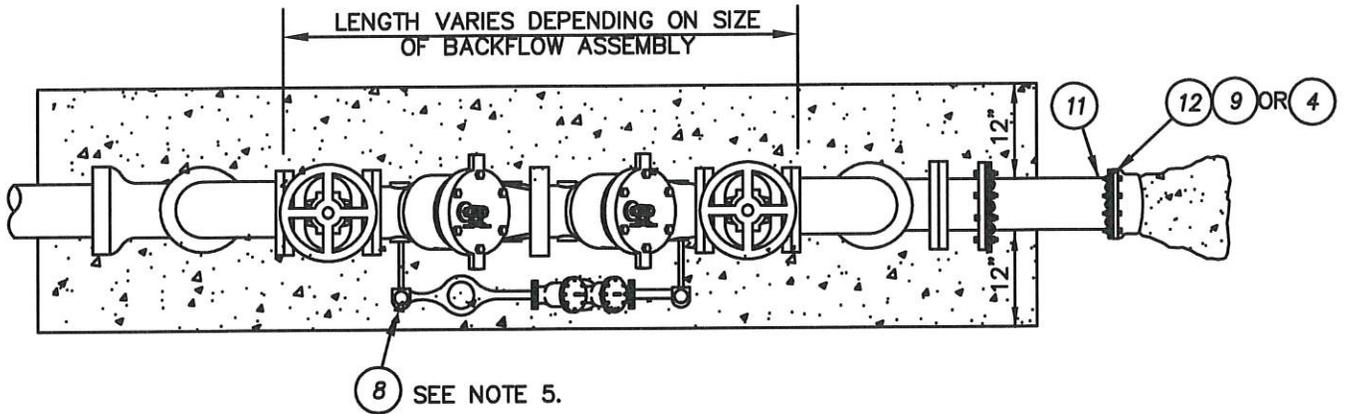
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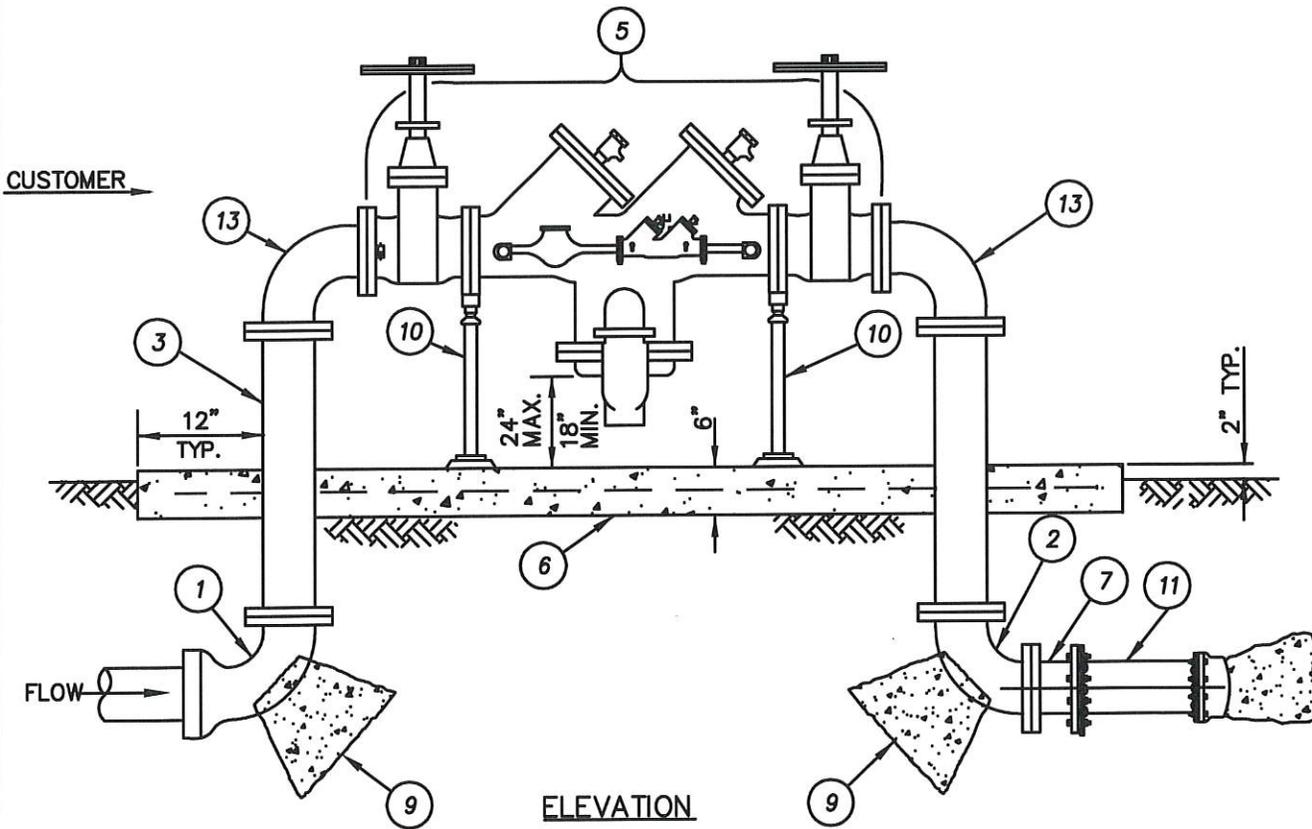
STD. NO.

WD-26

SHEET 2 OF 2



PLAN



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

REDUCED PRESSURE
PRINCIPLE
BACKFLOW ASSEMBLY

APPROVED *Atl*
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
WD-27
SHEET 1 OF 2

ITEM	DESCRIPTION
①	DUCTILE IRON 90° BEND FLG x MJ
②	DUCTILE IRON 90° BEND FLG x FLG
③	DUCTILE IRON SPOOL FLG x FLG LENGTH AS REQUIRED
④	TRANSITION COUPLING (BY OTHERS, FOR ON-SITE CONNECTION WHEN ON-SITE PIPING EXISTS)
⑤	APPROVED REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY WITH RISING STEM RESILIENT WEDGE GATE VALVES
⑥	6" THICK P.C.C. SLAB, REINFORCE WITH W.W.F. 1.6 X 1.6
⑦	FLG X MJ ADAPTER WITH RETAINER GLAND
⑧	FACTORY INSTALLED BY-PASS METER ASSEMBLY CONSISTING OF APPROVED POSITIVE DISPLACEMENT METER, REDUCED PRESSURE PRINCIPLE DEVICE AND ASSOCIATED PIPING. METER TO BE USED FOR FIRE SYSTEMS ONLY
⑨	THRUST BLOCK PER STD. NO. W-35
⑩	PIPE SUPPORT PER STD. NO WD-43
⑪	DUCTILE IRON PIPE PE X FLG
⑫	END CAP (IF REQUIRED)
⑬	DUCTILE IRON 90° BEND FLG X FLG. FOR 3" REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY USE 4"x3" DUCTILE IRON 90° REDUCING BEND FLG x FLG

NOTES:

1. NOTIFY CITY PRIOR TO INSTALLATION OF BACKFLOW DEVICE.
2. BACKFLOW ASSEMBLY SHALL BE A MINIMUM OF 36" FROM ANY STRUCTURE, CURB OR SIDE WALK.
3. LOCATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE ENGINEER.
4. PLACE BRASS PLUGS IN ALL TEST VALVE OUTLETS.
5. BY-PASS METER TO BE USED FOR FIRE SYSTEMS ONLY. DO NOT INSTALL BY-PASS METERS WHERE SUPPLY TO DEVICE IS ALREADY METERED.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**REDUCED PRESSURE
PRINCIPLE
BACKFLOW ASSEMBLY**

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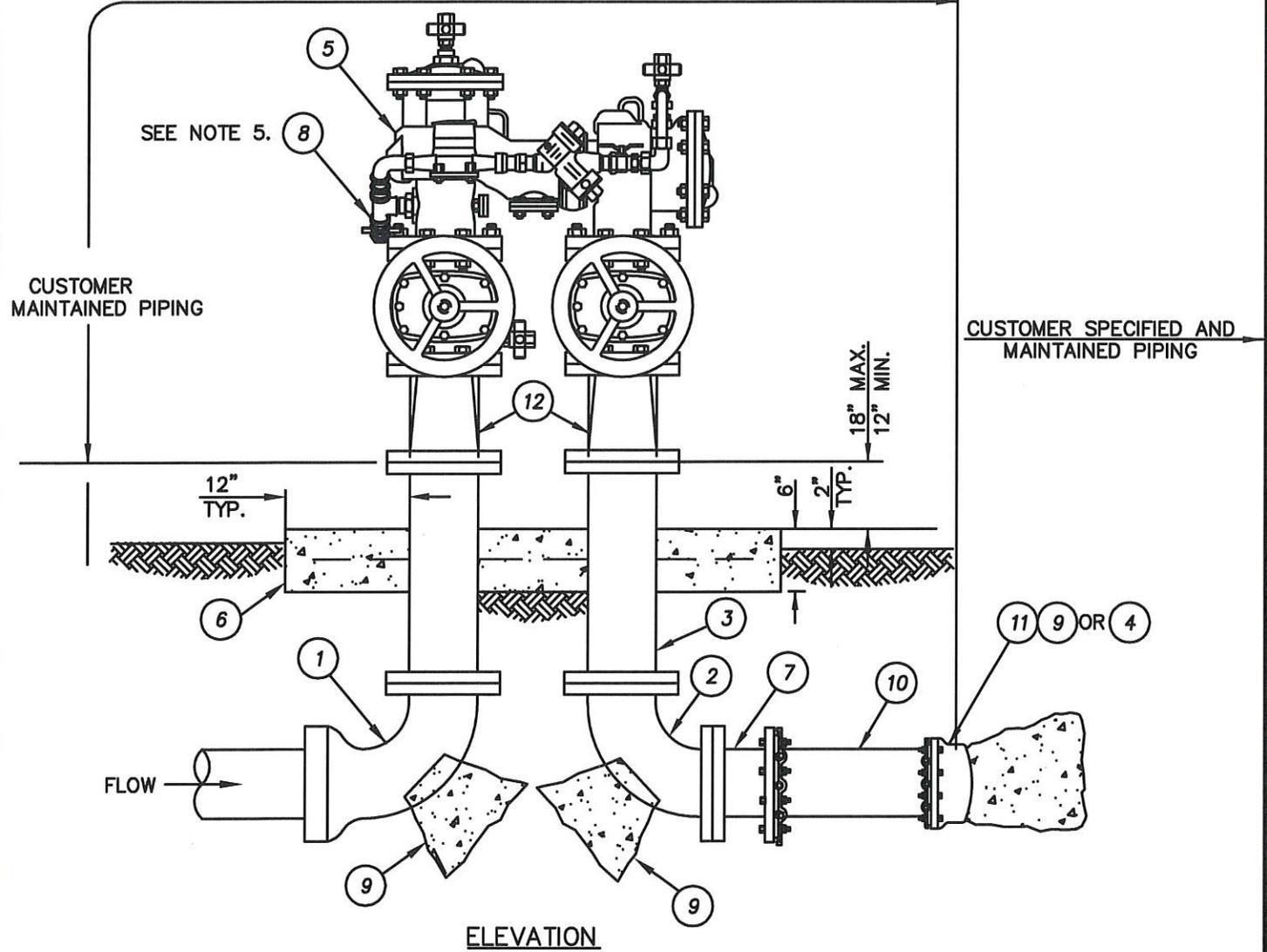
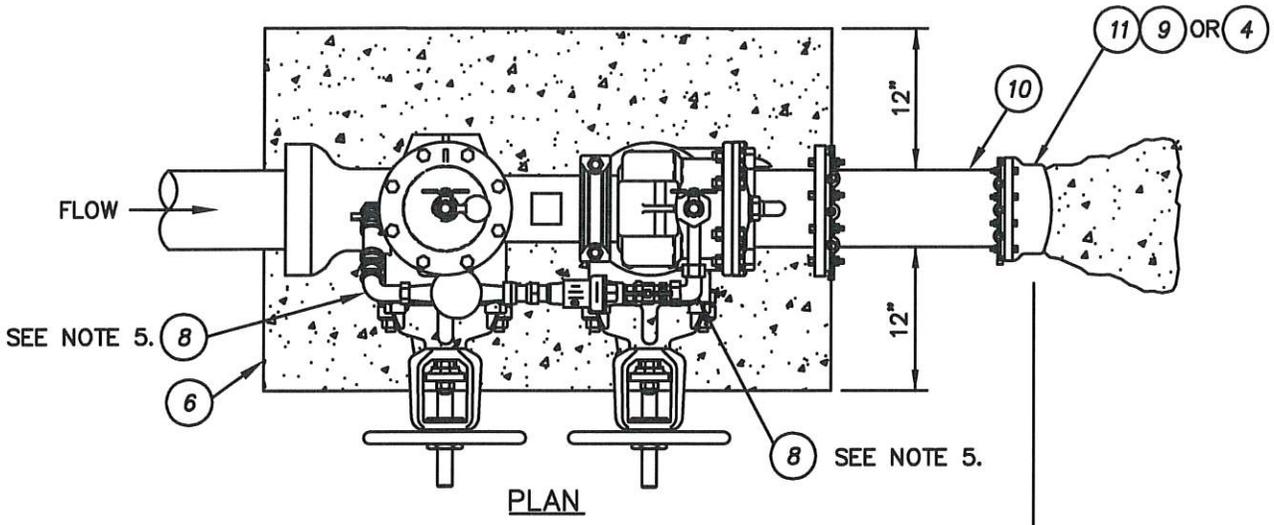
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REVISION

STD. NO.

WD-27

SHEET 2 OF 2



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**DOUBLE CHECK
BACKFLOW ASSEMBLY
(N-PATTERN)**

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8/26/21
DATE

REVISION	

STD. NO.
WD-28
SHEET 1 OF 2

ITEM	DESCRIPTION
①	DUCTILE IRON 90° BEND FLG x MJ
②	DUCTILE IRON 90° BEND FLG x FLG
③	DUCTILE IRON SPOOL FLG x FLG LENGTH AS REQUIRED
④	TRANSITION COUPLING (BY OTHERS, FOR ON-SITE CONNECTION WHEN ON-SITE PIPING EXISTS)
⑤	APPROVED N-PATTERN REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY WITH RISING STEM RESILIENT WEDGE GATE VALVES
⑥	6" THICK P.C.C. SLAB, REINFORCE WITH W.W.F. 1.6 X 1.6
⑦	FLG X MJ ADAPTER WITH RETAINER GLAND
⑧	FACTORY INSTALLED BY-PASS METER ASSEMBLY CONSISTING OF APPROVED POSITIVE DISPLACEMENT METER, REDUCED PRESSURE PRINCIPLE DEVICE AND ASSOCIATED PIPING. METER TO BE USED FOR FIRE SYSTEMS ONLY
⑨	THRUST BLOCK PER STD. NO. W-35
⑩	DUCTILE IRON PIPE SECTION, 24" LONG
⑪	END CAP (IF REQUIRED)
⑫	4" DUCTILE IRON SPOOL F.E. X F.E. OR 4"x3" D.I. REDUCER F.E. x F.E. FOR 3" DOUBLE CHECK BACKFLOW ASSEMBLY

NOTES:

1. NOTIFY CITY PRIOR TO INSTALLATION OF BACKFLOW DEVICE.
2. BACKFLOW ASSEMBLY SHALL BE A MINIMUM OF 36" FROM ANY STRUCTURE, CURB OR SIDE WALK.
3. LOCATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE ENGINEER.
4. PLACE BRASS PLUGS IN ALL TEST VALVE OUTLETS.
5. BY-PASS METER TO BE USED FOR FIRE SYSTEMS ONLY. DO NOT INSTALL BY-PASS METERS WHERE SUPPLY TO DEVICE IS ALREADY METERED.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**DOUBLE CHECK
BACKFLOW ASSEMBLY
(N-PATTERN)**

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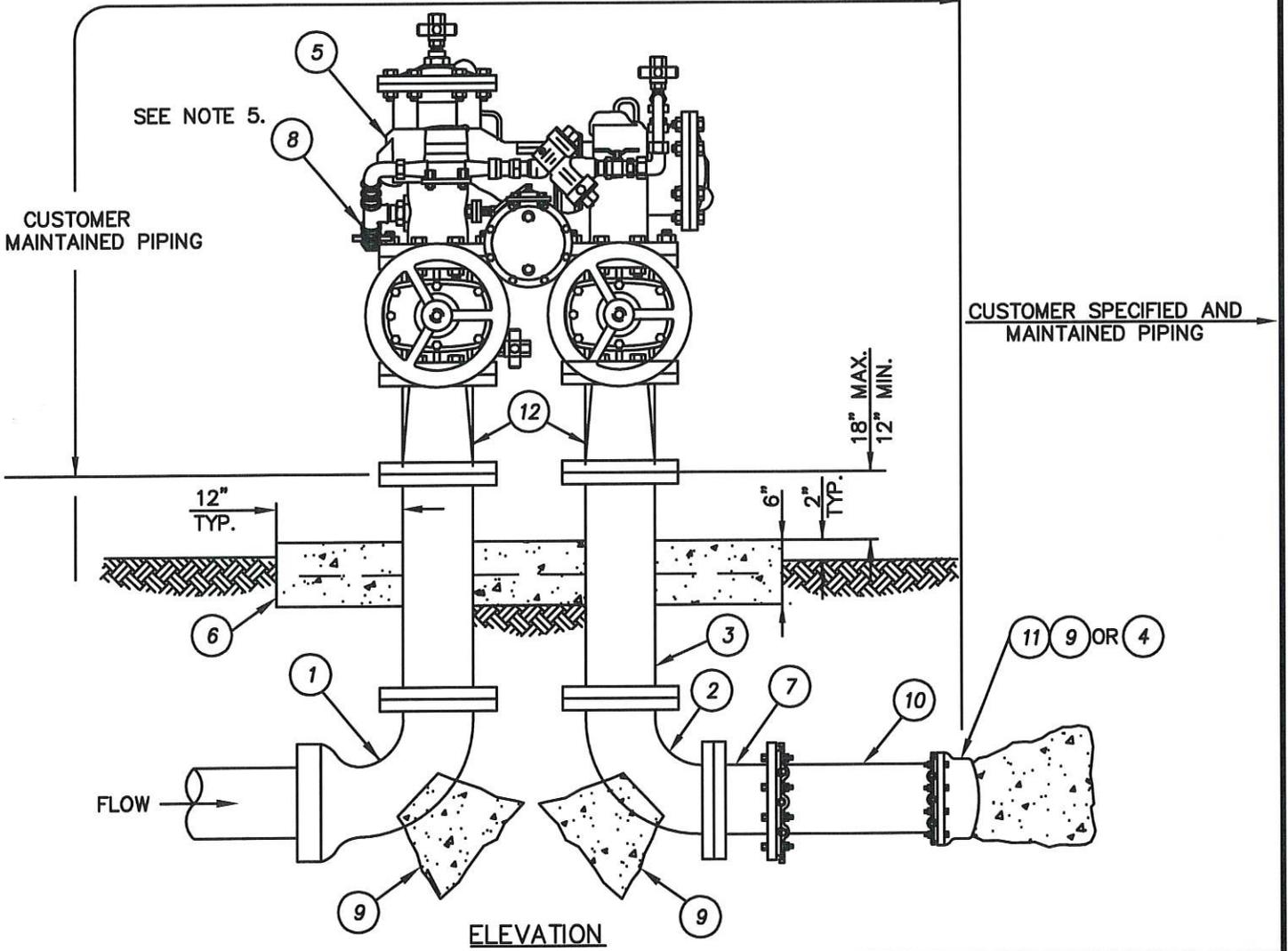
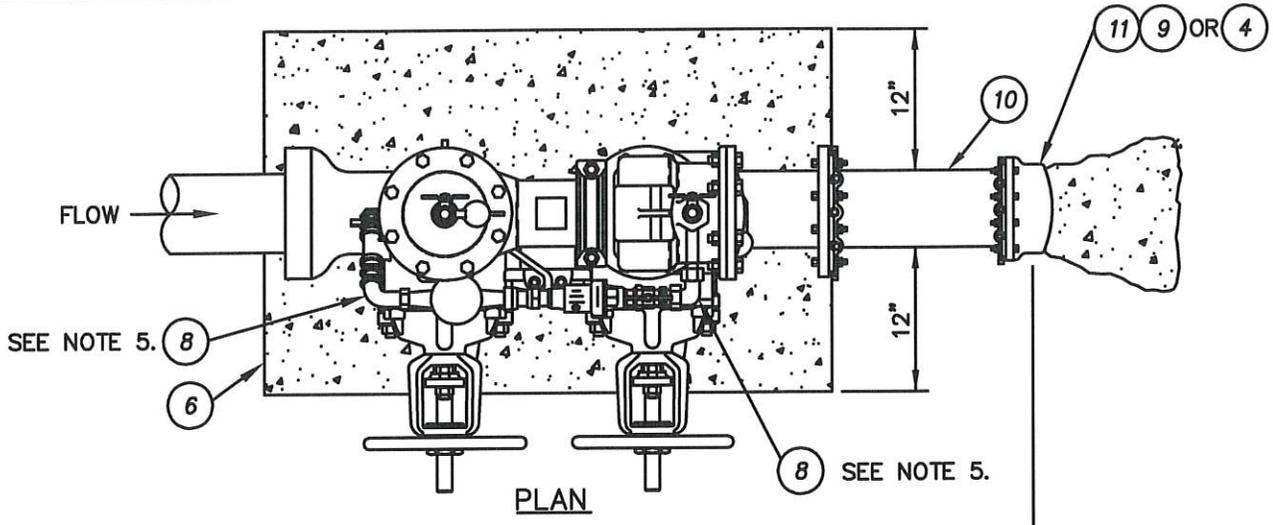
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REVISION

STD. NO.

WD-28

SHEET 2 OF 2



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**REDUCED PRESSURE
PRINCIPLE BACKFLOW
ASSEMBLY (N-PATTERN)**

APPROVED *ATK*
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
WD-29
SHEET 1 OF 2

ITEM	DESCRIPTION
①	DUCTILE IRON 90° BEND FLG x MJ
②	DUCTILE IRON 90° BEND FLG x FLG
③	DUCTILE IRON SPOOL FLG x FLG LENGTH AS REQUIRED
④	TRANSITION COUPLING (BY OTHERS, FOR ON-SITE CONNECTION WHEN ON-SITE PIPING EXISTS)
⑤	APPROVED N-PATTERN REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY WITH RISING STEM RESILIENT WEDGE GATE VALVES
⑥	6" THICK P.C.C. SLAB, REINFORCE WITH W.W.F. 1.6 X 1.6
⑦	FLG X MJ ADAPTER WITH RETAINER GLAND
⑧	FACTORY INSTALLED BY-PASS METER ASSEMBLY CONSISTING OF APPROVED POSITIVE DISPLACEMENT METER, REDUCED PRESSURE PRINCIPLE DEVICE AND ASSOCIATED PIPING. METER TO BE USED FOR FIRE SYSTEMS ONLY
⑨	THRUST BLOCK PER STD. NO. W-35
⑩	DUCTILE IRON PIPE SECTION, 24" LONG
⑪	END CAP (IF REQUIRED)
⑫	4" DUCTILE IRON SPOOL F.E. X F.E. OR 4"x3" D.I. REDUCER F.E. x F.E. FOR 3" DOUBLE CHECK BACKFLOW ASSEMBLY

NOTES:

1. NOTIFY CITY PRIOR TO INSTALLATION OF BACKFLOW DEVICE.
2. BACKFLOW ASSEMBLY SHALL BE A MINIMUM OF 36" FROM ANY STRUCTURE, CURB OR SIDE WALK.
3. LOCATION OF BACKFLOW ASSEMBLY SHALL BE APPROVED BY THE ENGINEER.
4. PLACE BRASS PLUGS IN ALL TEST VALVE OUTLETS.
5. BY-PASS METER TO BE USED FOR FIRE SYSTEMS ONLY. DO NOT INSTALL BY-PASS METERS WHERE SUPPLY TO DEVICE IS ALREADY METERED.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**REDUCED PRESSURE
PRINCIPLE BACKFLOW
ASSEMBLY (N-PATTERN)**

APPROVED

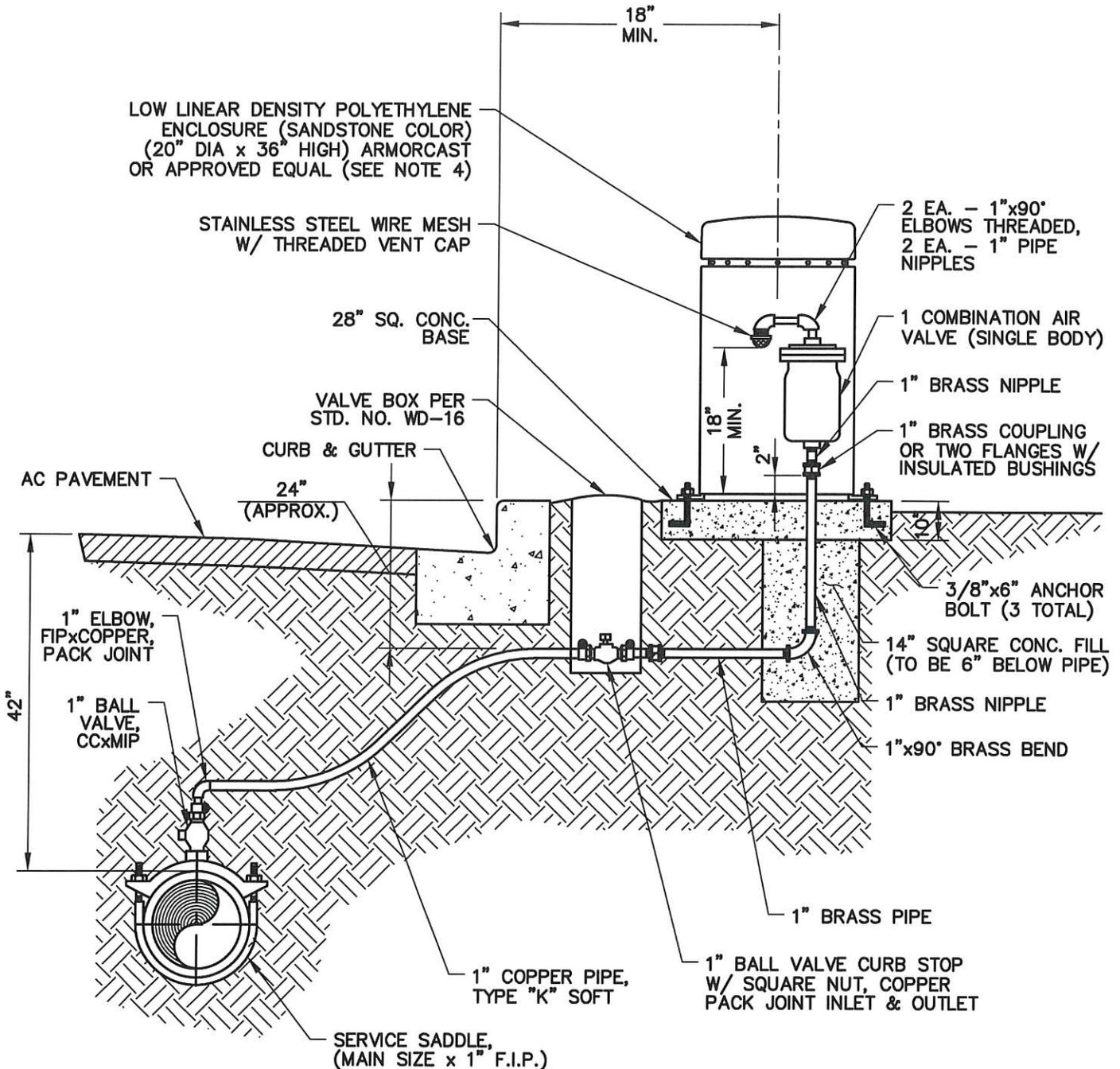

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8/26/21

DATE

REVISION	

STD. NO.
WD-29
SHEET 2 OF 2



NOTES:

1. MAINTAIN POSITIVE SLOPE FROM MAIN TO AIR RELEASE VALVE.
2. SLIP-ON OR COPPER FITTINGS WITH SILVER SOLDER BRAZING SHALL BE USED IN LIEU OF COPPER PACK JOINTS.
3. AIR VALVE ASSEMBLY SHALL BE LOCATED PER STD. NO. WD-32.
4. AS AN ALTERNATIVE, THE ENCLOSURE CAN BE 12" DIA. x 24" HIGH.



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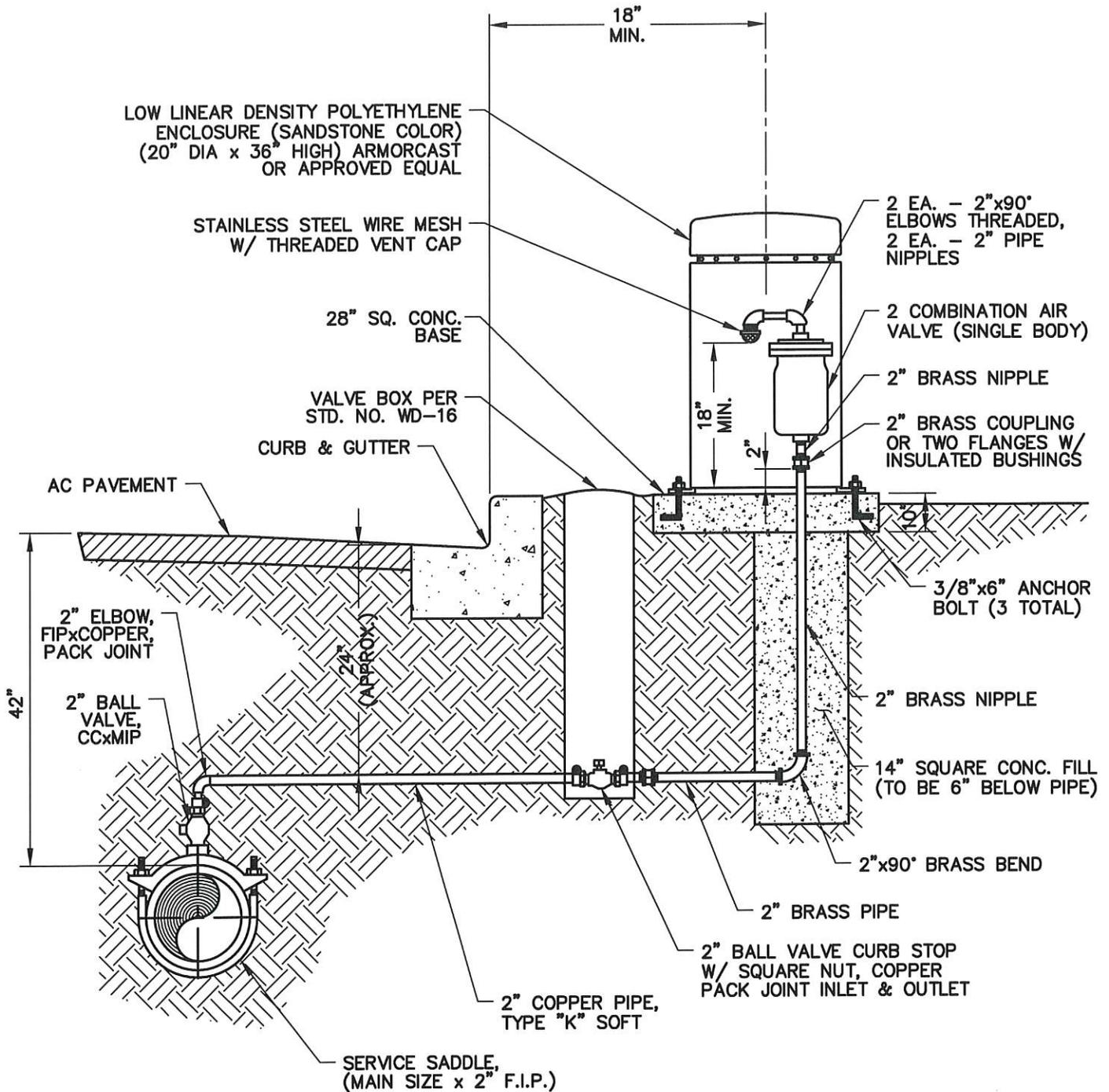
**1-INCH COMBINATION AIR
RELEASE AND VACUUM VALVE**

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STD. NO.
WD-30
SHEET 1 OF 1



NOTES:

1. MAINTAIN POSITIVE SLOPE FROM MAIN TO AIR RELEASE VALVE.
2. SLIP-ON OR COPPER FITTINGS WITH SILVER SOLDER BRAZING SHALL BE USED IN LIEU OF COPPER PACK JOINTS.
3. AIR VALVE ASSEMBLY SHALL BE LOCATED PER STD. NO. WD-32.



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**2-INCH COMBINATION AIR
RELEASE AND VACUUM VALVE**

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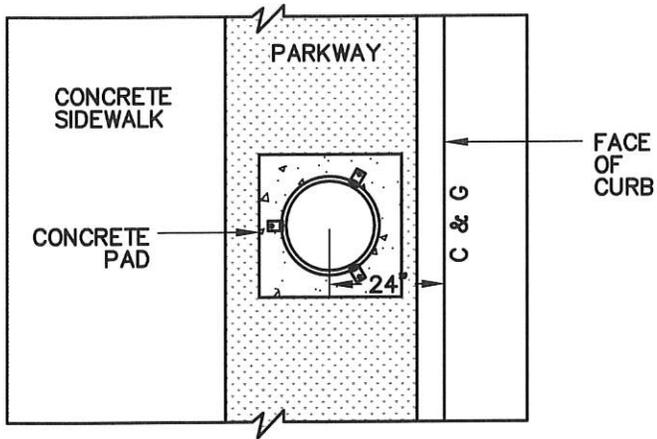
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STD. NO.

WD-31

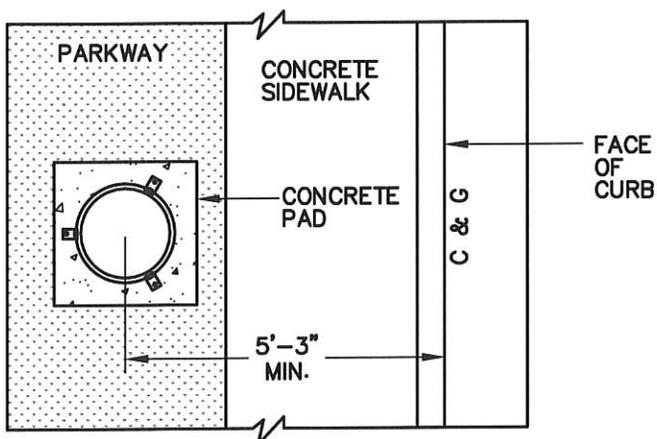
SHEET 1 OF 1



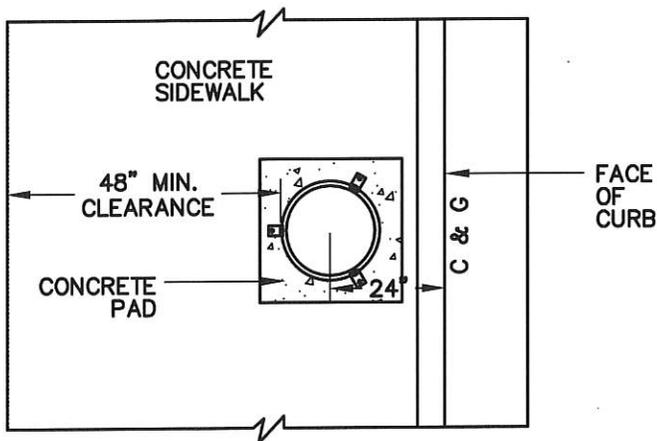
DETACHED SIDEWALK

NOTE:

FOR ALL CASES, THE LOCATION OF AIR RELEASE AND VACUUM RELIEF ENCLOSURE SHALL MEET ADA REQUIREMENTS THAT A MINIMUM 48" CLEARANCE SHALL BE MAINTAINED FROM ANY OBSTRUCTION IN THE WALKWAY.



4' WIDE ATTACHED SIDEWALK



6' OR WIDER SIDEWALK



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**AIR RELEASE AND VACUUM
VALVE ENCLOSURE
SETBACK DETAIL**

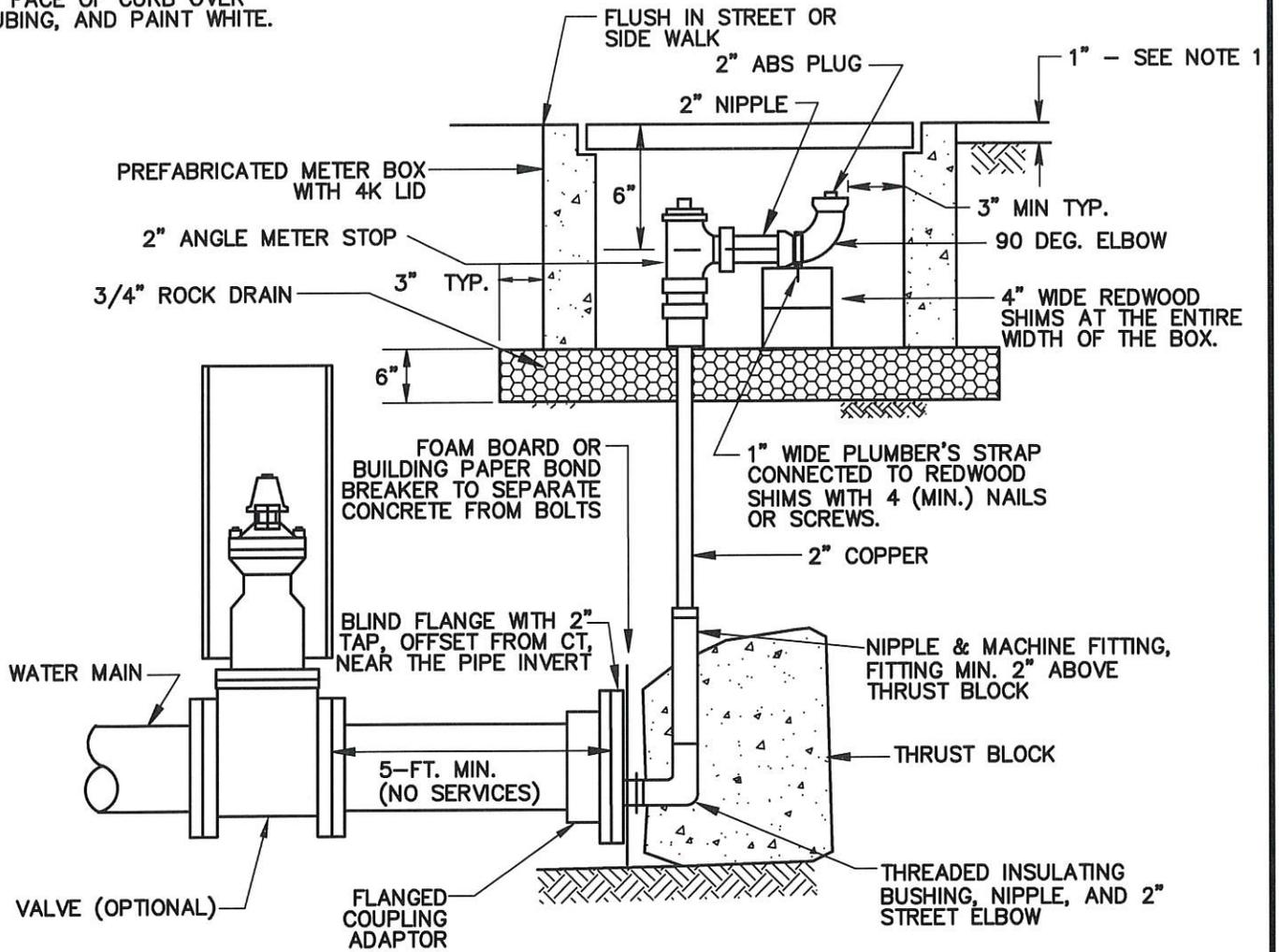
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REVISION	

STD. NO.
WD-32
SHEET 1 OF 1

WHEN TUBING CROSSES CURB,
CHIP OR STAMP 3" HIGH "BO"
IN FACE OF CURB OVER
TUBING, AND PAINT WHITE.



NOTES:

1. LOCATE METER BOX 1" ABOVE GRADE IN UNIMPROVED AREAS.
2. ALL PARTS TO BE BRASS OR BRONZE, EXCEPT 2" ABS PLUG.



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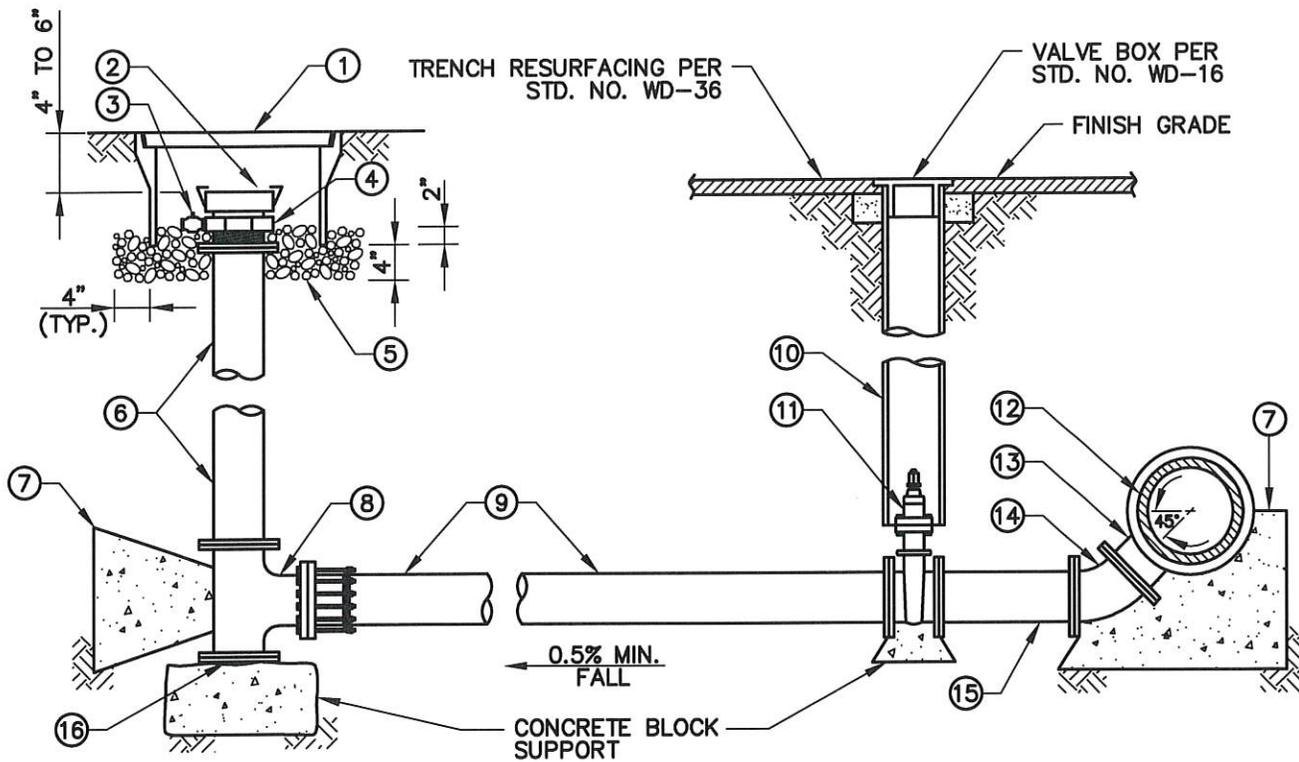
DEAD-END BLOW-OFF

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STD. NO.
WD-33
SHEET 1 OF 1



NOTES:

1. SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB OR FINISH GRADE.
2. BLOW-OFF ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN SPECIFICATIONS.
3. CAM & GROOVE ADAPTER SHALL BE DRILLED AND TAPPED AS REQUIRED FOR THE PRESSURE PET COCK.

ITEM NO.	SIZE AND DESCRIPTION	ITEM NO.	SIZE AND DESCRIPTION
①	24" MH FRAME & COVER MARKED "WATER"	⑨	USE DUCTILE IRON PIPE
②	4" OR 6" CAM & GROOVE ADAPTER x MIPT WITH LOCKING DUST CAP, SEE NOTE 3	⑩	VALVE WELL FRAME AND COVER (SEE STD. NO. WD-16)
③	1/4" PRESSURE PET COCK	⑪	4" OR 6" FLG x MJ/FLG RWGV
④	4" OR 6" FLANGED COMPANION x FIPT	⑫	WATER MAIN
⑤	3/8" ROCK 4" TO 6" DEEP	⑬	SIZE x 4" OR 6" MJ/FLG x FLG TEE
⑥	4" OR 6" FLG DI PIPE x REQUIRED LENGTH (MAXIMUM OF 2 SPOOLS)	⑭	4" OR 6" FLANGED 45° BEND
⑦	CONCRETE THRUST BLOCK (SEE STD. NO. WD-35)	⑮	4" OR 6" x 24" FLG DI SPOOL
⑧	4" OR 6" FLG x FLG OR FLG X MJ TEE	⑯	4" OR 6" DI BLIND FLANGE



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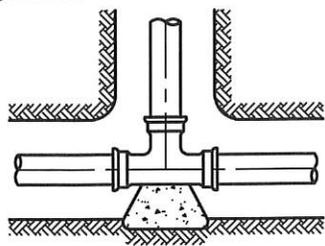
**4 AND 6-INCH BLOW-OFF
INSTALLATION**

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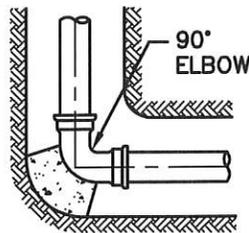
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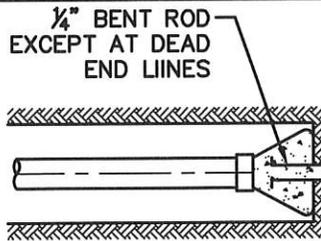
STD. NO.
WD-34
SHEET 1 OF 1



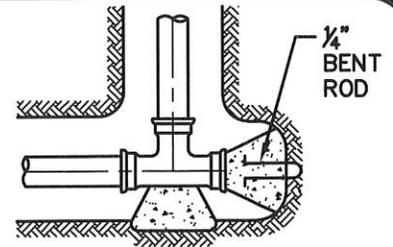
CONDITION A



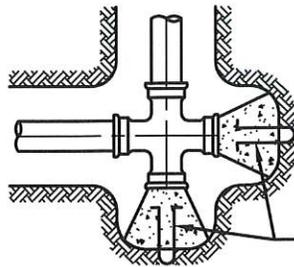
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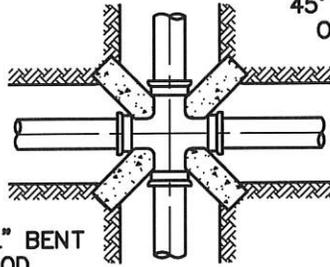
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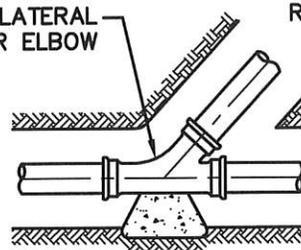
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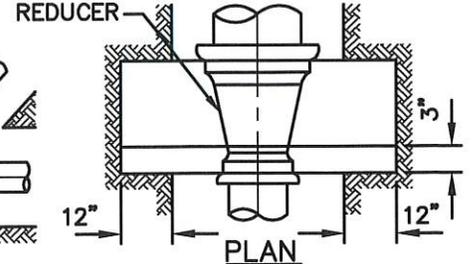
CONDITION E



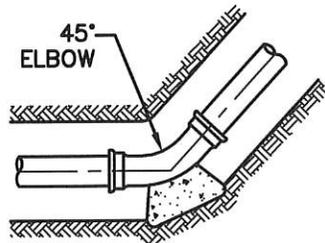
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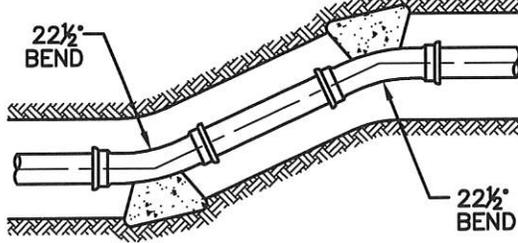
CONDITION G



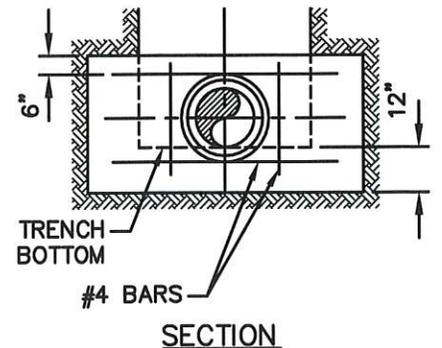
CONDITION J



CONDITION H



CONDITION I



**SECTION
CONDITION J**

NOTES:

1. ALL BURIED BOLTS SHALL BE COATED WITH "BITUMASTIC NO. 50" OR APPROVED EQUAL.
2. THRUST BLOCK AREAS BASED ON 225 PSI PRESSURE AND 2,000 PSF ALLOWABLE SOIL PRESSURE WITH 2 1/2 FEET OF COVER MINIMUM. ADDITIONAL BEARING AREA REQUIRED FOR SPECIAL CONDITIONS SHALL BE APPROVED BY THE ENGINEER.
3. THRUST BLOCK BEARING FACES SHALL BE PLACED AGAINST UNDISTURBED SOIL, APPROVED COMPACTED BACKFILL OR CLASS 100-E-100 SLURRY.
4. THRUST BLOCKS SHALL BE 560-C-3250 CONCRETE, UNLESS SPECIFIED OTHERWISE.
 - A. INSTALL 1/4" BENT ROD HANDLES.
 - B. USE CARDBOARD SEPARATORS BETWEEN BLOCKS, IF NEEDED.

THRUST BLOCK BEARING AREA IN SQUARE FEET

PIPE SIZE	DESCRIPTION									
	A	B	C	D	E	F	G	H	I	J
4"	3.1	4.3	3.1	2 @ 3.1	2 @ 3.1	4 @ 1.2	2.3	2.3	2 @ 1.2	8.0
6"	6.3	8.9	6.3	2 @ 6.3	2 @ 6.3	4 @ 2.5	4.8	4.8	2 @ 2.5	9.0
8"	10.9	15.4	10.9	2 @ 10.9	2 @ 10.9	4 @ 4.2	8.3	8.3	2 @ 4.2	10.1
10"	16.3	28.1	16.3	2 @ 16.3	2 @ 16.3	4 @ 6.4	12.5	12.5	2 @ 6.4	11.3
12"	23.1	32.7	23.1	2 @ 23.1	2 @ 23.1	4 @ 9.0	17.7	17.7	2 @ 9.0	12.5
14"	31.0	43.9	31.0	2 @ 31.0	2 @ 31.0	4 @ 12.1	23.8	23.8	2 @ 12.1	13.8
16"	40.1	56.7	40.1	2 @ 40.1	2 @ 40.1	4 @ 15.7	30.7	30.7	2 @ 15.7	15.1



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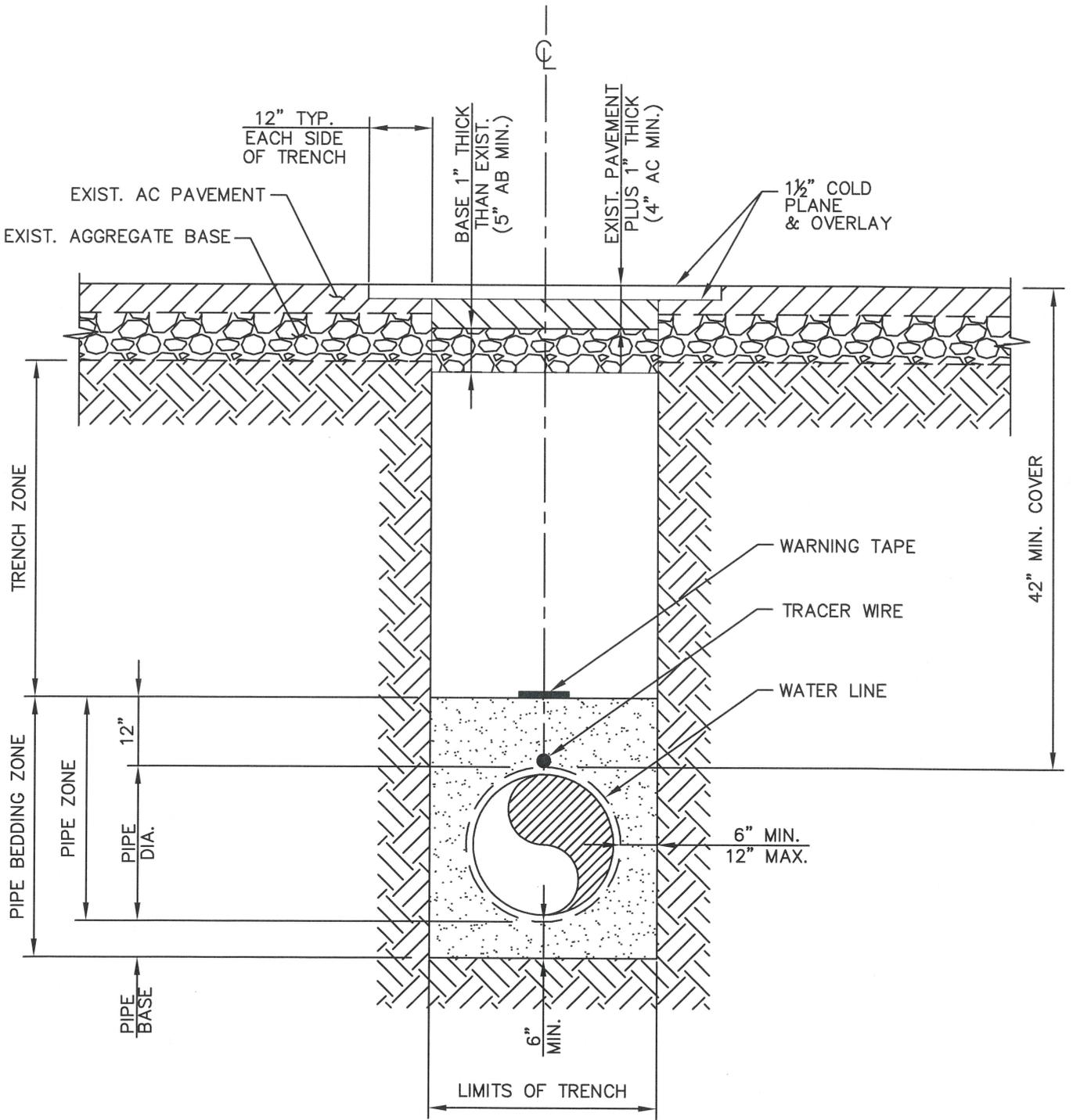
STANDARD THRUST BLOCK

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STD. NO.
WD-35
SHEET 1 OF 1



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PIPELINE BACKFILL

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1	2/18/26

STD. NO.
WD-36
 SHEET 1 OF 2

NOTES:

1. RELATIVE COMPACTION IN PIPE TRENCHES SHALL BE AS FOLLOWS:
 - A. PIPE BASE AND PIPE ZONE: PIPE BASE AND PIPE ZONE—90% RELATIVE COMPACTION.
 - B. TRENCH ZONE – NOT BENEATH PAVING: BACKFILL IN TRENCH ZONE NOT BENEATH PAVING—90% RELATIVE COMPACTION.
 - C. TRENCH ZONE – PAVED AREAS: BACKFILL IN TRENCH ZONE IN PAVED AREAS—90% RELATIVE COMPACTION.
 - D. STREET ZONE: TOP 18 INCHES OF TRENCH. BACKFILL IN STREET ZONE IN PAVED AREAS—95% RELATIVE COMPACTION.
 - E. FOUNDATION STABILIZATION: ROCK REFILL MATERIAL FOR FOUNDATION STABILIZATION—90% RELATIVE DENSITY.
 - F. OVEREXCAVATION: ROCK REFILL FOR OVEREXCAVATION—90% RELATIVE DENSITY.
 - G. COMPACTION TESTS: PERFORM COMPACTION TESTS AT RANDOM DEPTHS AND AT 200-FOOT INTERVALS, AND AS DIRECTED BY ENGINEER.
2. CLEAR SPACE SHALL BE BETWEEN 6 INCHES AND 8 INCHES FOR PIPE DIAMETER 10 INCHES AND UNDER. FOR PIPE DIAMETER 12 INCHES AND GREATER, CLEAR SPACE SHALL BE 12 INCHES.
3. NO SACK SLURRY IS PERMITTED IN SOUTH GATE, CONTRACTOR TO USE SAND, CLEAN NATIVE SOIL OR CMB AT 95% COMPACTION.



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PIPELINE BACKFILL

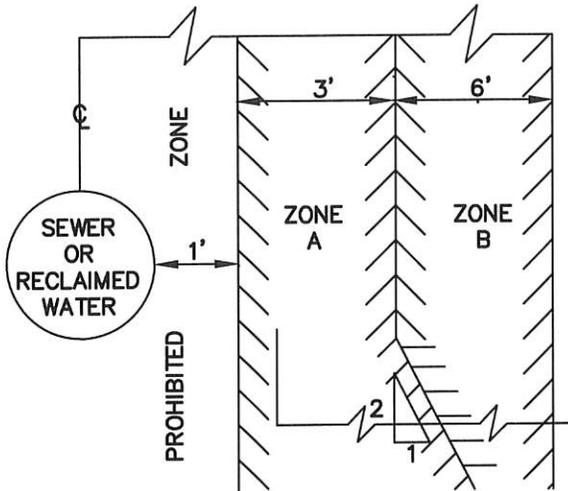
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DATE

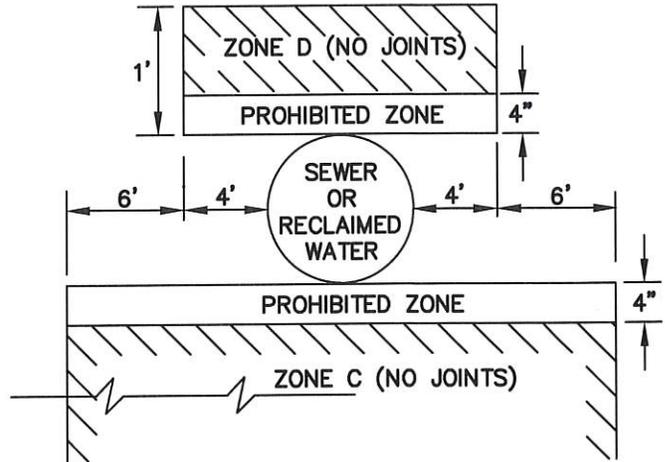
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1	2/18/26

STD. NO.
WD-36
SHEET 2 OF 2

NEW POTABLE WATER LINE



PARALLEL CONSTRUCTION



PERPENDICULAR CROSSING

IF ANY WATER LINE IS TO BE CONSTRUCTED WITHIN ANY OF THE ABOVE INDICATED ZONES, SPECIAL CONSTRUCTION SHALL BE REQUIRED AS DESCRIBED BELOW.

ZONE DOMESTIC WATER (SEE GENERAL NOTE 3)

- A. DO NOT LOCATE ANY PARALLEL DOMESTIC WATER LINE IN THIS AREA A WITHOUT STATE AND LOCAL HEALTH DEPARTMENT APPROVAL.
- B. USE D.I.P., WELDED CML & C STEEL OR CLASS 200 P.V.C. – AWWA C900.
- C. USE D.I.P., WELDED CML & C STEEL OR CLASS 200 P.V.C. – AWWA C900.
- D. USE D.I.P., WELDED CML & C STEEL OR CLASS 200 P.V.C. – AWWA C900.



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PIPELINE SEPARATION REQUIREMENTS

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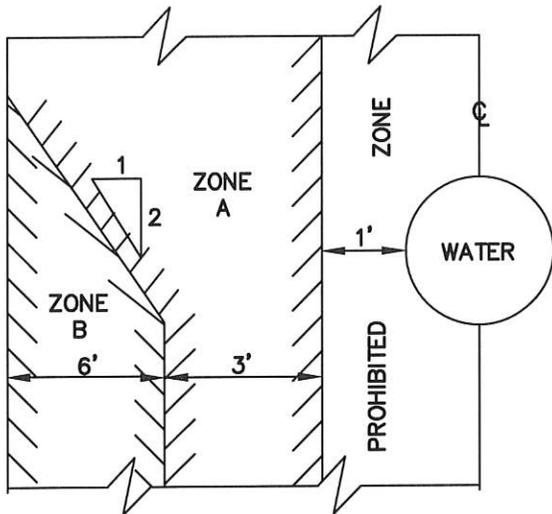


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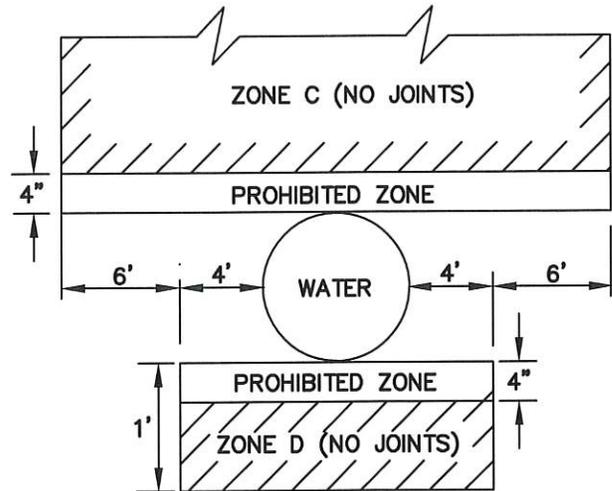
REVISION

STD. NO.
WD-37
SHEET 1 OF 3

NEW SEWER & RECYCLED WATER LINES



PARALLEL CONSTRUCTION



PERPENDICULAR CROSSING

IF ANY SEWER OR RECLAIMED WATER PIPELINES ARE TO BE CONSTRUCTED WITHIN ANY OF THE ABOVE INDICATED ZONES, SPECIAL CONSTRUCTION SHALL BE REQUIRED AS DESCRIBED BELOW.

ZONE	SEWER	RECYCLED WATER
A.	DO NOT LOCATE ANY PARALLEL SEWER OR RECLAIMED WATER LINES IN THIS AREA WITHOUT A STATE AND LOCAL HEALTH DEPARTMENT APPROVAL.	
B.	USE V.C.P., CLASS 200 PVC OR D.I.P. WITH COMPRESSION JOINTS.	USE D.I.P., WELDED CML & C STEEL OR CLASS 200 P.V.C. - AWWA C900
C.	USE D.I.P. WITH MECHANICAL JOINTS OR CLASS 200 P.V.C. - AWWA C900	USE D.I.P., WELDED CML & C STEEL OR CLASS 200 P.V.C. - AWWA C900
D.	USE D.I.P. OR CLASS 200 P.V.C. -	USE D.I.P., WELDED CML & C STEEL OR



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PIPELINE SEPARATION REQUIREMENTS

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DATE

REVISION	

STD. NO.
WD-37
SHEET 2 OF 3

BASIC SEPARATION STANDARDS

1. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN DOMESTIC WATER AND RECLAIMED WATER LINES AND SEWER LINES SHALL BE AT LEAST 10 FEET, OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
2. PERPENDICULAR CONSTRUCTION (CROSSING): WATER LINES SHALL BE AT LEAST ONE FOOT ABOVE SEWER AND RECLAIMED WATER LINES WHERE THESE LINES MUST CROSS.
3. SPECIAL PROVISIONS: WHERE THE BASIC SEPARATION STANDARDS CANNOT BE ATTAINED ALTERNATIVE CONSTRUCTION CRITERIA ARE SHOWN BELOW:

GENERAL NOTES:

1. NO PIPE JOINTS SHALL BE PERMITTED WITHIN ZONE D. IT IS THE INTENT OF THESE REQUIREMENTS NO JOINTS SHALL OCCUR WITHIN ZONE C. IF THAT CANNOT BE ACCOMPLISHED, THE NEW LINE SHALL BE ENCASED FOR THE FULL LENGTH OF ZONE C.
2. SEWER FORCE MAINS SHALL NOT BE PERMITTED IN ZONES A THROUGH D.
3. THE MATERIALS OF NEW LINE'S AT CROSSINGS SHALL BE CONSISTENT WITH OTHER NEW MATERIALS I.E, STEEL ON A STEEL LINE.
4. THESE CONSTRUCTION CRITERIA APPLY TO HOUSE SEWER LATERALS THAT CROSS ABOVE A WATER MAIN, BUT NOT TO THOSE THAT CROSS BELOW A WATER LINE.



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**PIPELINE SEPARATION
REQUIREMENTS**

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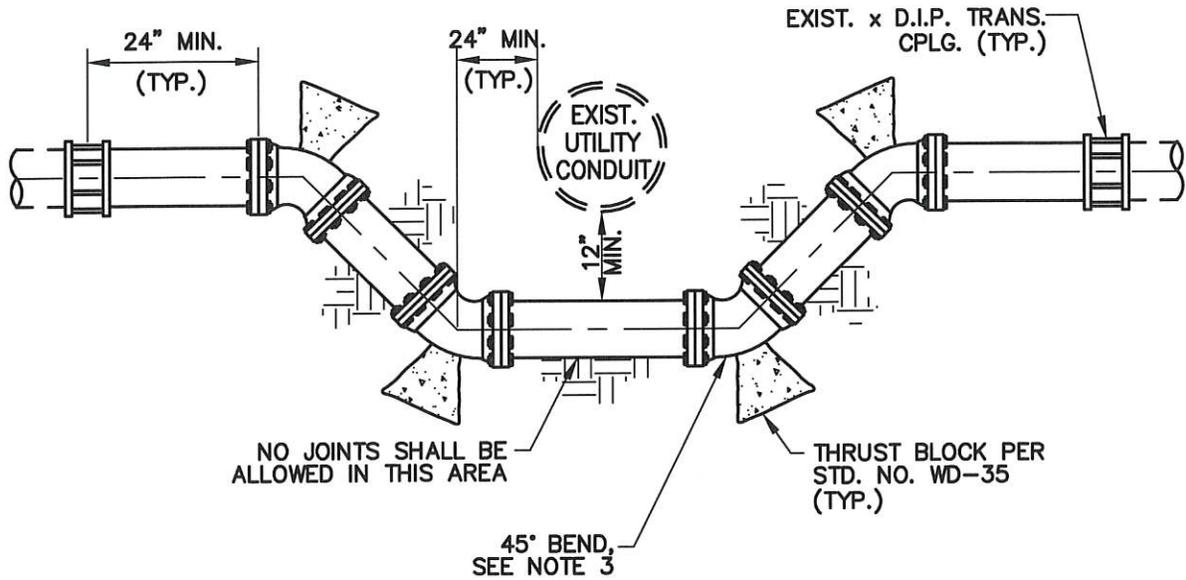
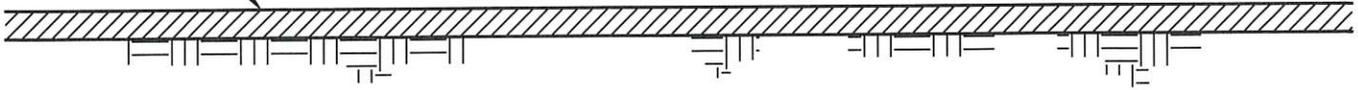
REVISION

STD. NO.

WD-37

SHEET 3 OF 3

A.C. PAVEMENT



NOTES:

1. ALL PIPE JOINTS AT 90° BENDS SHALL BE RESTRAINED. FLANGED JOINTS MAY BE USED WHERE CONDITIONS WARRANT.
2. INSTALLATION SHALL BE ENCASED IN A POLYETHYLENE WRAP PER AWWA STANDARD C105.
3. ALL PIPE JOINTS SHALL BE RESTRAINED.
4. TRENCH BACKFILL AND BEDDING SHALL BE AS SHOWN ON STD. NO. WD-36.



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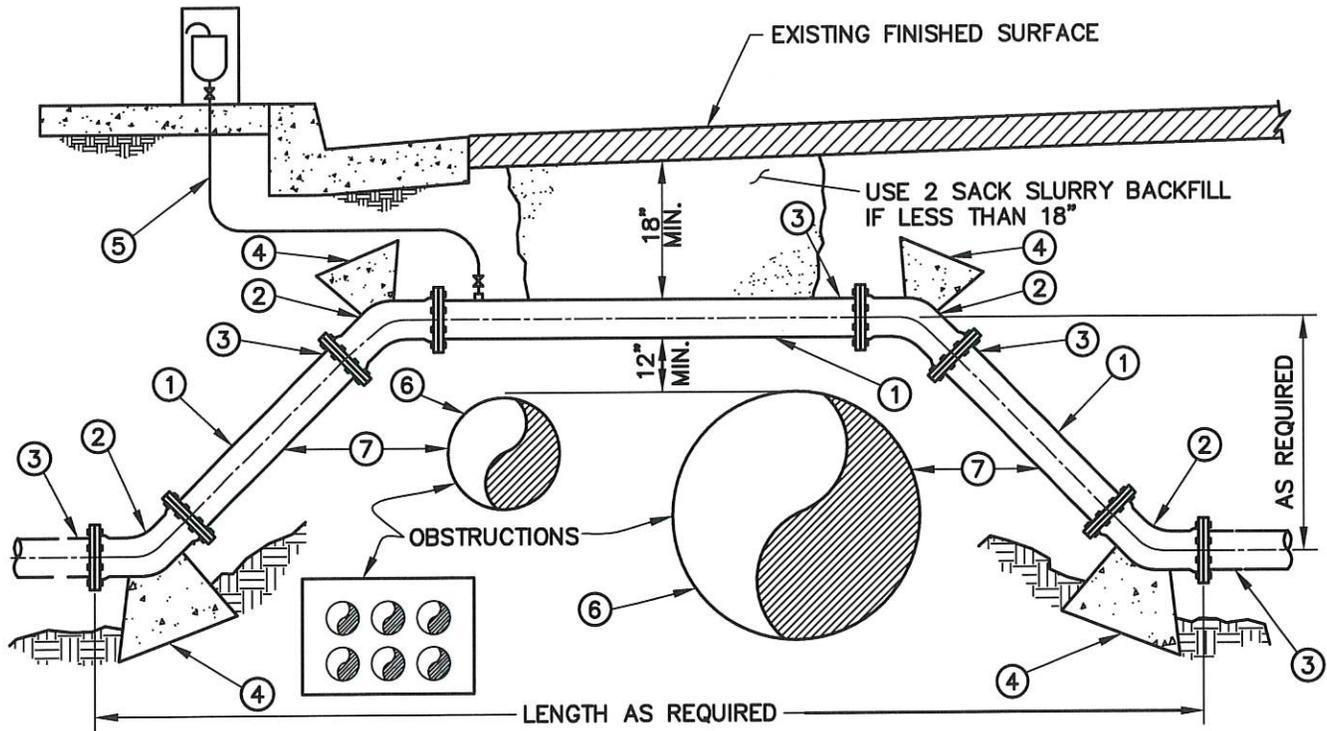
UTILITY UNDER CROSSING

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REVISION	

STD. NO.
WD-38
SHEET 1 OF 1



CONSTRUCTION NOTES:

- ① DUCTILE IRON FLANGED SPOOL (LENGTH AS REQUIRED).
- ② 45° DUCTILE IRON FLANGED BEND.
- ③ MJ x FLG ADAPTOR (IF REQUIRED).
- ④ THRUST BLOCK PER STD. NO. WD-35.
- ⑤ 1" AIR RELEASE ASSEMBLY PER STD. NO. WD-30 (INSTALL ON HIGH END), IF REQUIRED.
- ⑥ SEE STD. NO. WD-37 IF OBSTRUCTIONS ARE SEWER OR STORM DRAIN MAINS.
- ⑦ SEPARATION REQUIREMENT PER STD. NO. WD-37.

NOTE: COAT ALL EXPOSED BOLTS WITH 3M EC-244 COATING OR APPROVED EQUAL.



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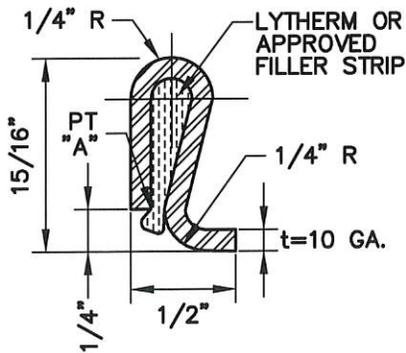
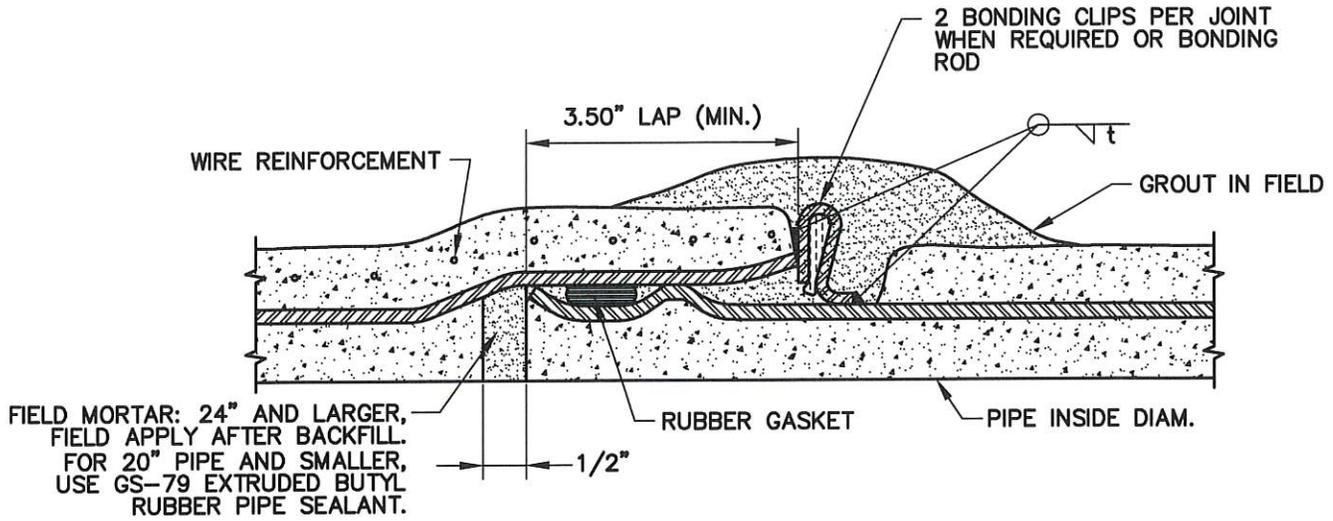
UTILITY OVER CROSSING

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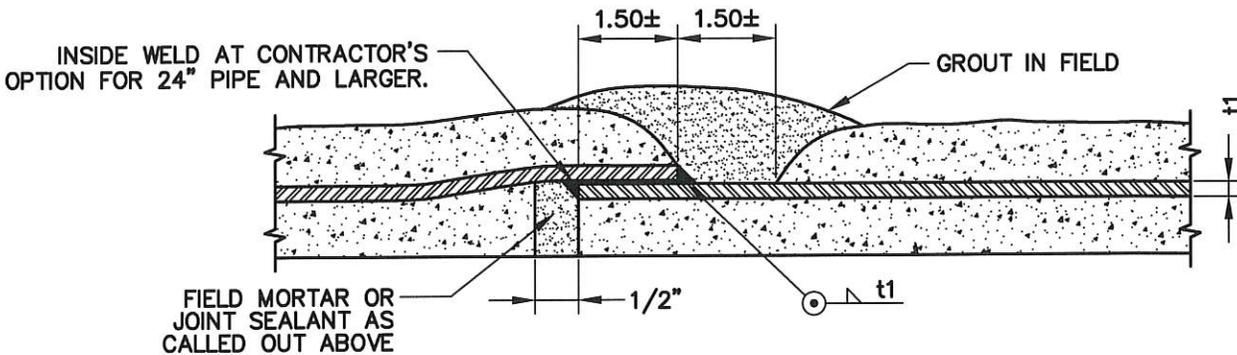
STD. NO.
WD-39
SHEET 1 OF 1



BONDING CLIP NOTES

1. BONDING CLIPS SHALL BE LOCATED AT THE SPRING LINE OF THE PIPE.
2. BONDING CLIPS SHALL BE MADE OF ASTM A366 STEEL WITH A CUT LENGTH OF 2-1/2-INCHES AND WIDTH OF 1-1/4-INCH.
3. LYTHERM FILLER STRIP SHALL BE 1-INCH X 1-1/2-INCH WIDE TO OVERLAP SIDES OF CLIP CONTRACTOR SHALL CRIMP BONDING CLIP OVER FILLER AT PT. "A" TO COMPRESS FILLER.

BELL AND SPIGOT RUBBER GASKET JOINT



LAP WELD SLIP JOINT

NOTE:

1. SEE SPECIFICATIONS FOR STEEL PIPE SHELL THICKNESS, MORTAR LINING AND COATING THICKNESS, AND INSTALLATION REQUIREMENTS.



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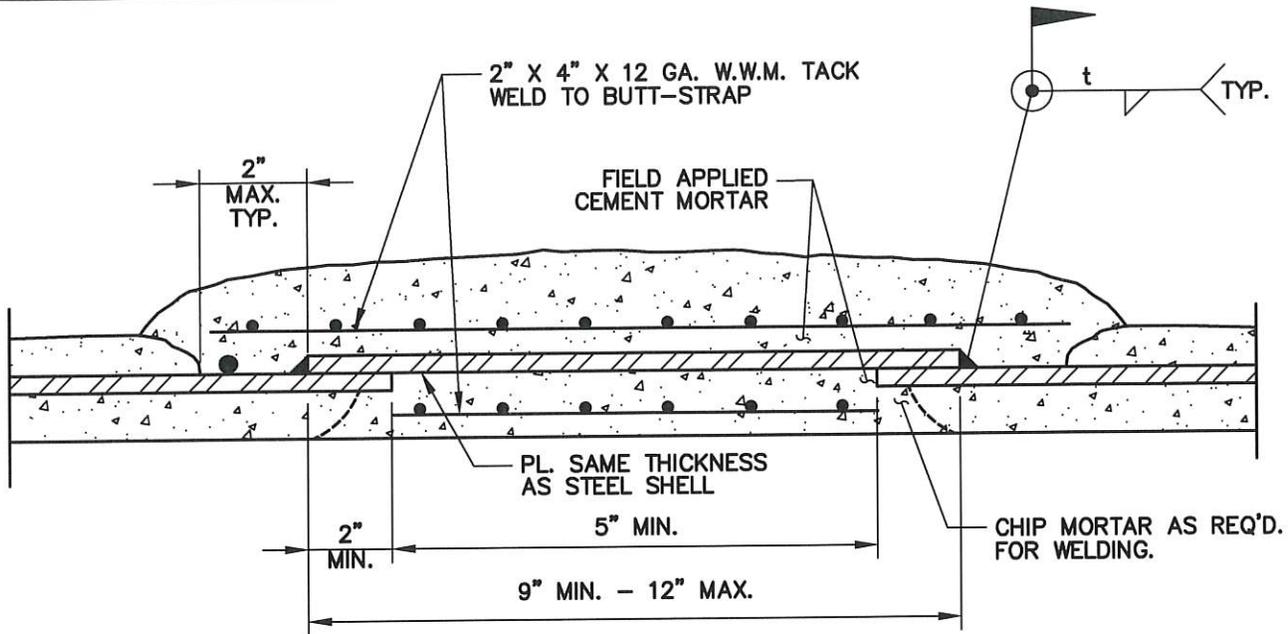
**CEMENT MORTAR LINED
AND COATED STEEL PIPE
JOINT DETAILS**

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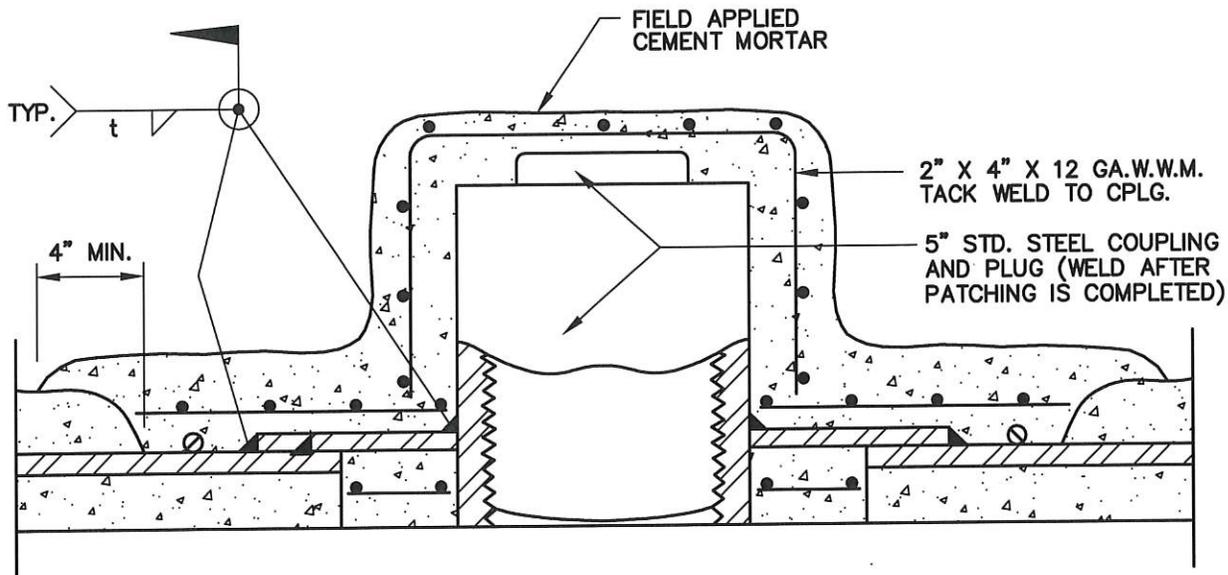
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REVISION	

STD. NO.
WD-40
SHEET 1 OF 1



BUTTSTRAP CLOSURE



**TYPICAL HANDHOLE
(REQUIRED ON PIPE SMALLER THAN 24" DIAMETER)**

NOTE:

1. SEE SPECIFICATIONS FOR STEEL PIPE SHELL THICKNESS, MORTAR LINING AND COATING THICKNESS, AND INSTALLATION REQUIREMENTS.



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**CEMENT MORTAR LINED AND
COATED STEEL PIPE CLOSURE
AND HANDHOLE DETAILS**

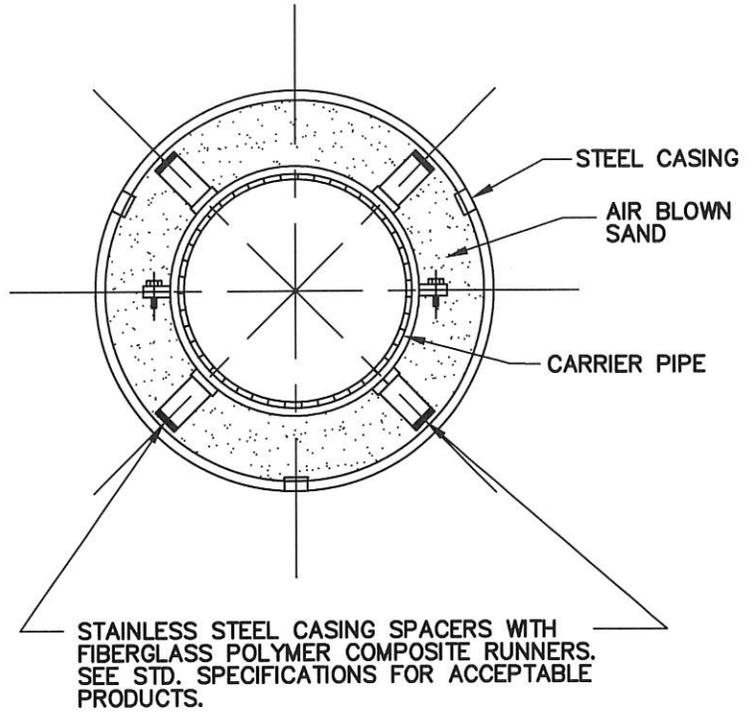
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STD. NO.
WD-41
SHEET 1 OF 1

STEEL CASING SCHEDULE		
NOMINAL CARRIER PIPE SIZE	MINIMUM CASING SIZE	MIN. WALL THICK.
4"	12" O.D.	1/4"
6"	14" O.D.	1/4"
8"	16" O.D.	5/16"
10"	18" O.D.	5/16"
12"	20" O.D.	3/8"
16"	24" O.D.	3/8"
18"	30" O.D.	1/2"
24"	42" O.D.	1/2"
36"	51" O.D.	1/2"



NOTES:

- CASING SHALL BE INSTALLED BY THE BORE, JACK AND/OR TUNNEL METHOD.
- SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN SCHEDULE. FOR LONG BORES OR SPECIAL SITUATIONS, GREATER WALL THICKNESS THAN SHOWN IN THE SCHEDULE MAY BE REQUIRED.
- ALL STEEL CASING PIPE FIELD JOINTS SHALL BE WELDED FULL-CIRCUMFERENCE.
- CARRIER PIPE SHALL BE PRESSURE TESTED PRIOR TO FILLING CASING.
- EACH END OF CASING SHALL BE SEALED WITH APPROVED RUBBER CASING END SEALS.
- CONTRACTOR SHALL FURNISH ALL NECESSARY THRUST RESTRAINT DEVICES.
- BACKFILL FOR CASING IN OPEN CUT TRENCH SHALL BE IN ACCORDANCE WITH STD. NO. WD-36.
- BACKFILL ANNULAR SPACE WITH AIR BLOWN SAND.
- PROVIDE GROUT CONNECTIONS PER STD. SPECIFICATIONS.



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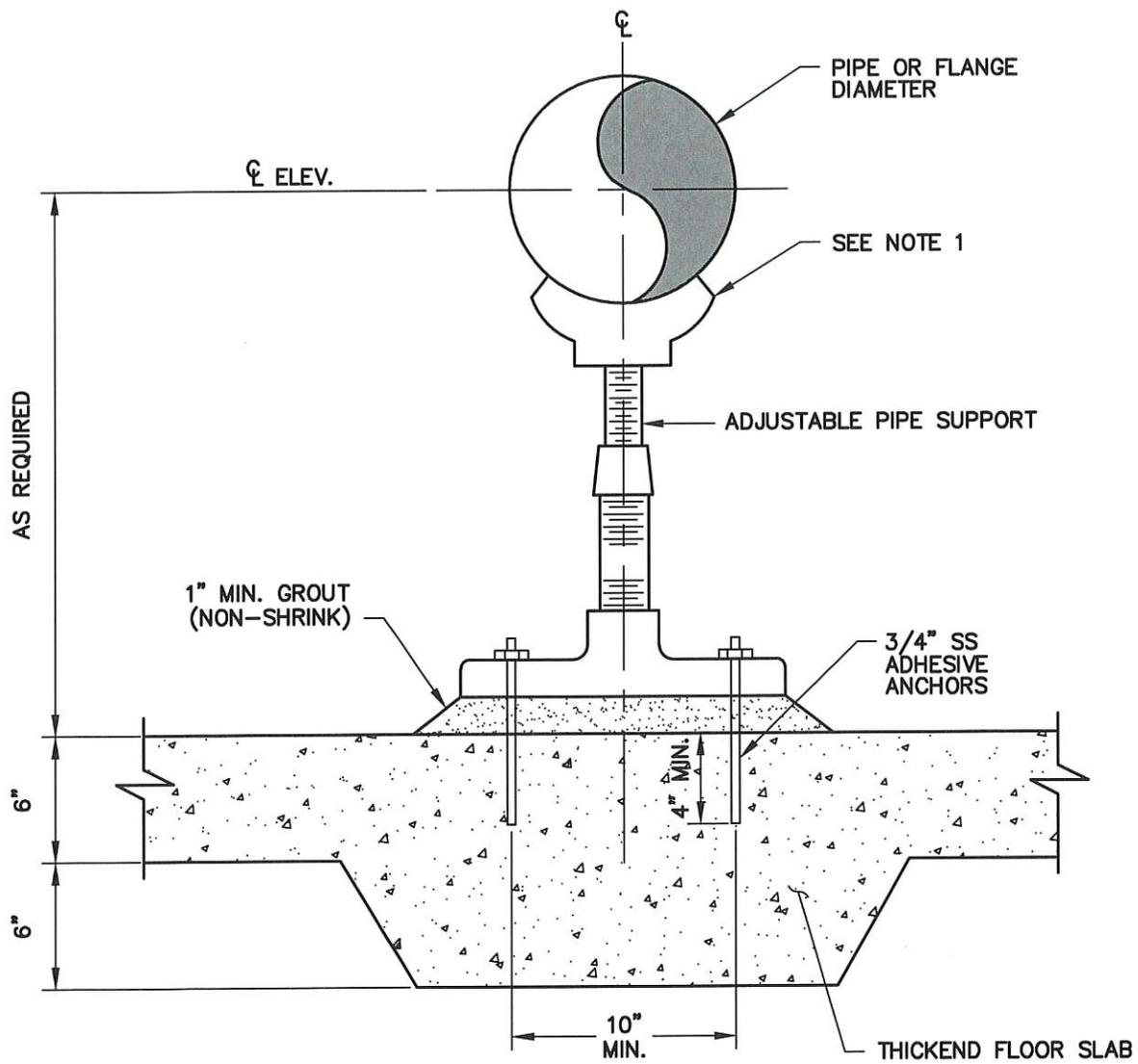
STEEL CASING PIPE

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STD. NO.
WD-42
SHEET 1 OF 1



NOTE:

1. PIPE SUPPORT MAY BE BOLT-MOUNTED TO FLANGED JOINTS.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

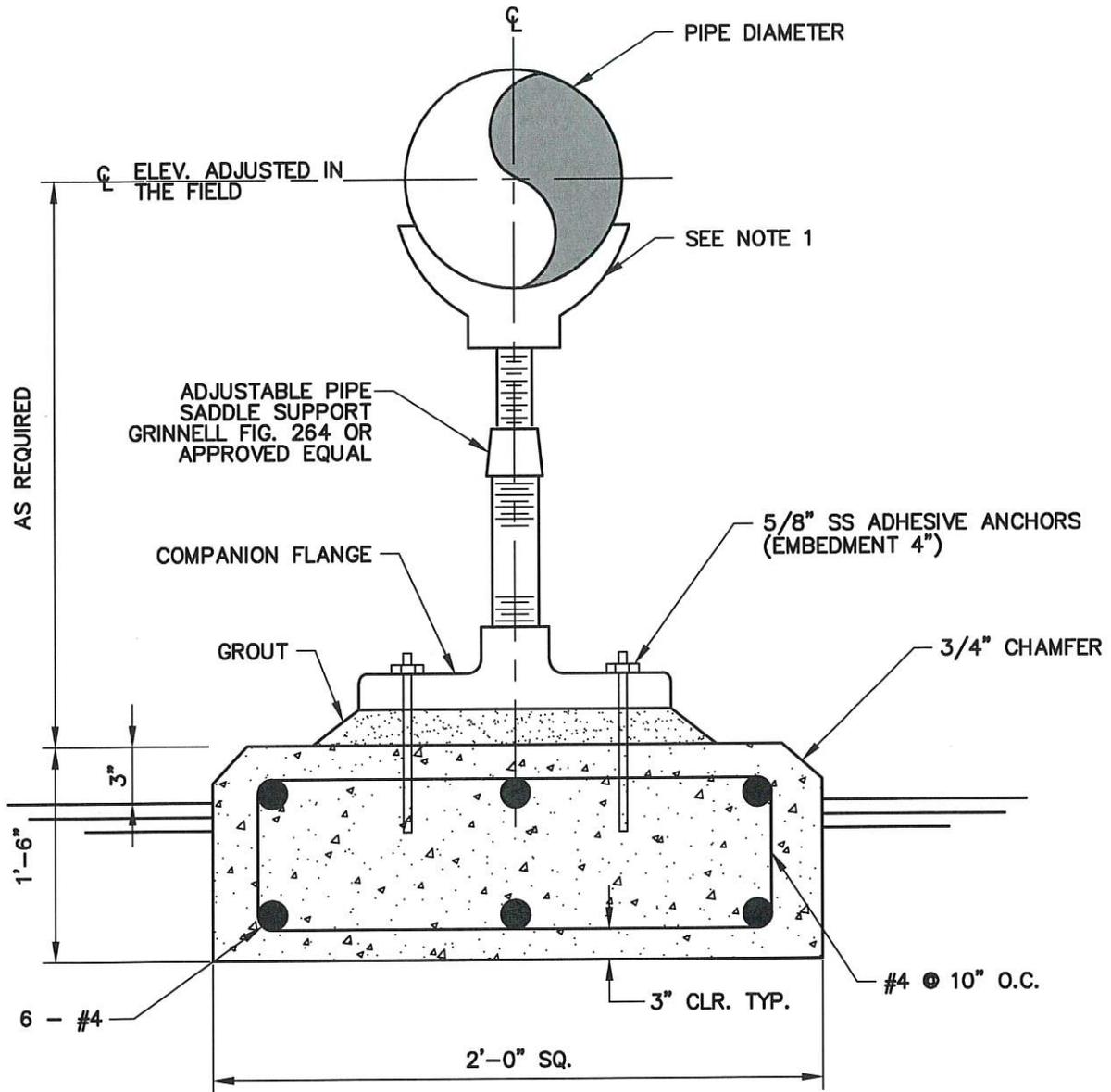
**ADJUSTABLE PIPE SUPPORT
(INSIDE)**

APPROVED
[Signature]
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
WD-43
SHEET 1 OF 1



NOTE:

1. PIPE SUPPORT MAY BE BOLT-MOUNTED TO FLANGED JOINTS.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

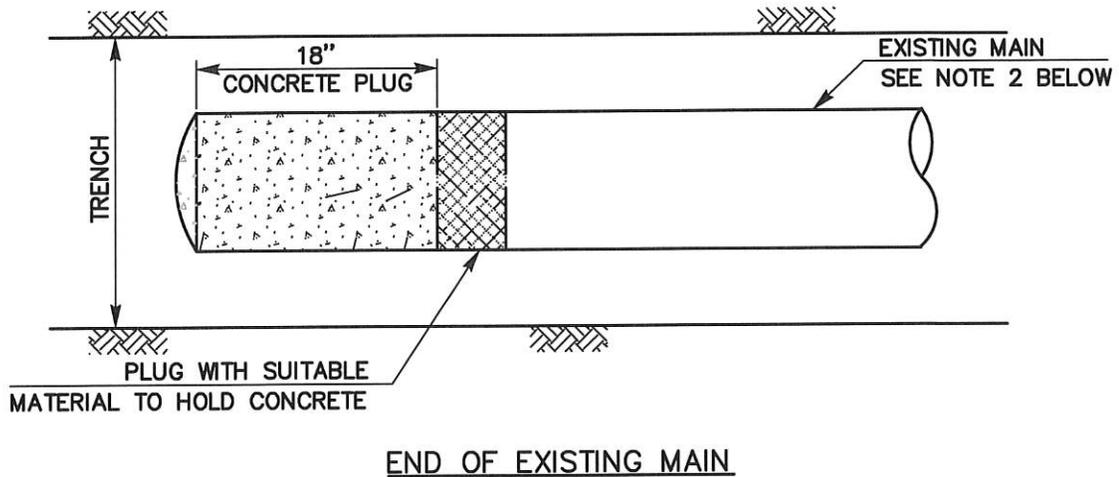
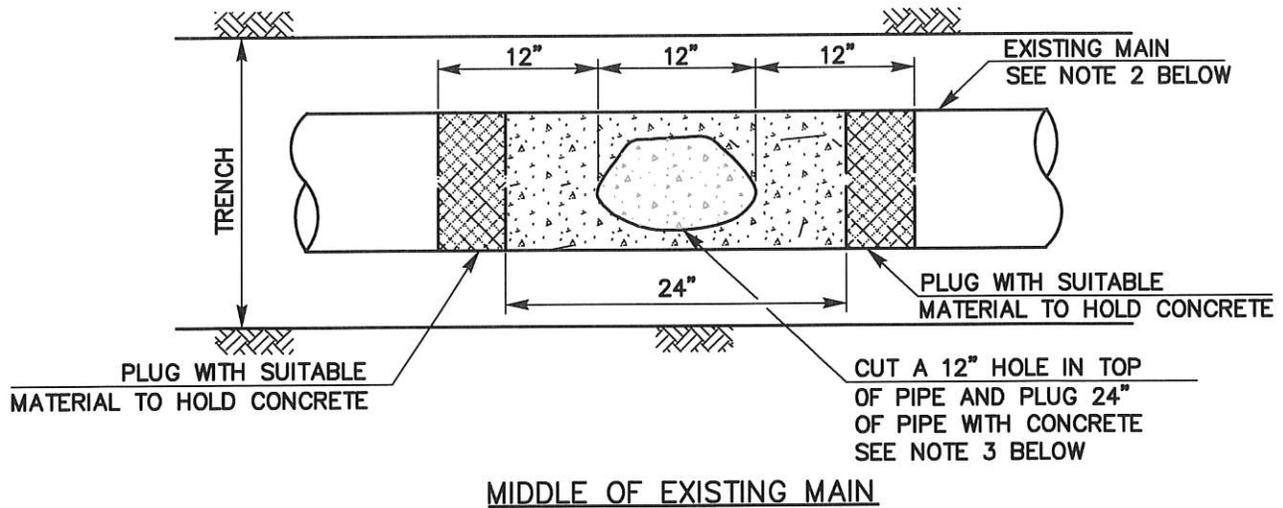
**ADJUSTABLE PIPE SUPPORT
(OUTSIDE)**

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AKT
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8/26/21
DATE

REVISION	

STD. NO.
WD-44
SHEET 1 OF 1



NOTES:

1. WATER AND RECYCLED WATER MAINS AND SEWER LATERALS 4" DIAMETER AND SMALLER SHALL HAVE A SHORT SECTION OF PIPE REMOVED AND PIPE ENDS ENCASED IN CONCRETE.
2. EXISTING MAIN TO BE PLUGGED WITH CONCRETE OR PRESSURE GROUTED AT INTERVALS OF ABOUT 200' OR AS DIRECTED BY THE ENGINEER.
3. EXISTING MAINS 12" AND LARGER REQUIRE THE ENTIRE LENGTH OF THE PIPE TO BE FILLED BY PRESSURE GROUTING OR BY BLOWN SAND.
4. EXISTING VALVES SHALL BE TURNED TO THE CLOSED POSITION. REMOVE GATE WELL AND REPLACE WITH COMPACTED BACKFILL.
5. FOR ABANDONMENT OF MANHOLES SEE SD-6.
6. PRIOR AGENCY APPROVAL REQUIRED FOR CUTTING AND PLUGGING.



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**CUTTING AND PLUGGING
ABANDONED WATER, RECYCLED
WATER, AND SEWER MAINS**

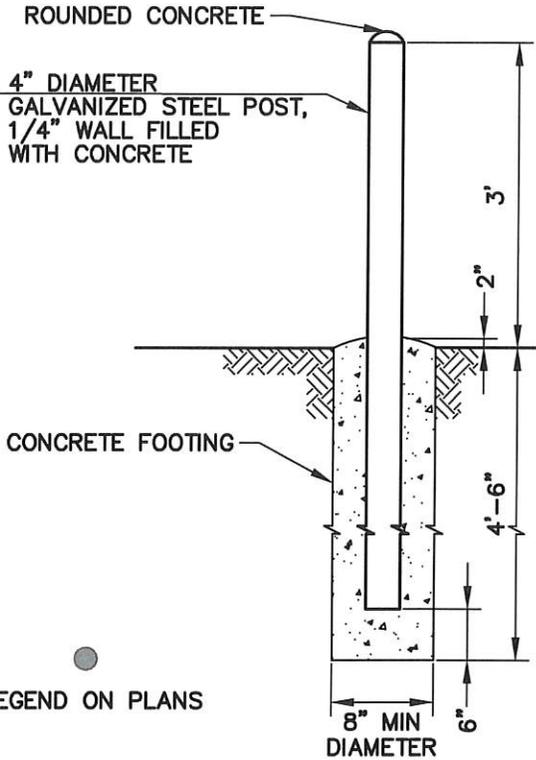
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DIRECTOR OF PUBLIC WORKS

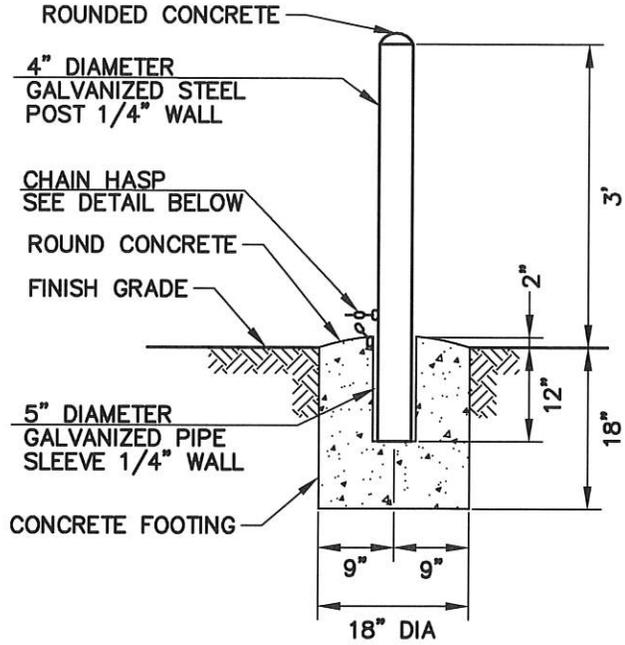
8/26/21
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REVISION	

STD. NO.
WD-45
SHEET 1 OF 1

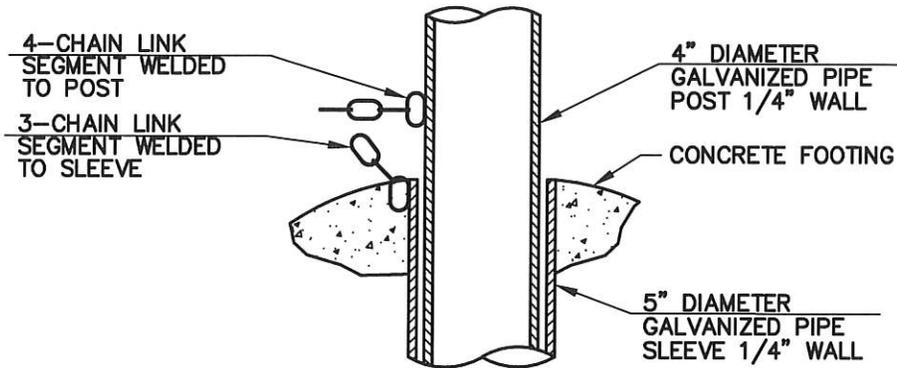


**PROTECTION POST
TYPE "A"**



**DEMOUNTABLE PROTECTION POST
TYPE "B"**

©
LEGEND ON PLANS



CHAIN HASP DETAIL

NOTES:

1. TYPE "A" AND TYPE "B" PROTECTION POSTS SHALL BE INSTALLED WHERE INDICATED ON THE APPROVED PLANS OR AS DIRECTED BY THE ENGINEER. CITY OF SOUTH GATE REQUIREMENTS DICTATE IN AREAS OF CITY EQUIPMENT.
2. CHAIN TO BE 1/4" PROOF COIL CHAIN GALVANIZED STEEL. WELD 4-LINK SEGMENT TO POST AND 3-LINK SEGMENT TO SLEEVE.
3. TYPE "A" AND TYPE "B" PROTECTION POSTS SHALL BE COATED USING SAFETY YELLOW IN ACCORDANCE WITH CITY'S STANDARDS.
4. PAINT COLOR SHALL BE APPROVED BY ENGINEER.



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**PROTECTION POST
INSTALLATION**

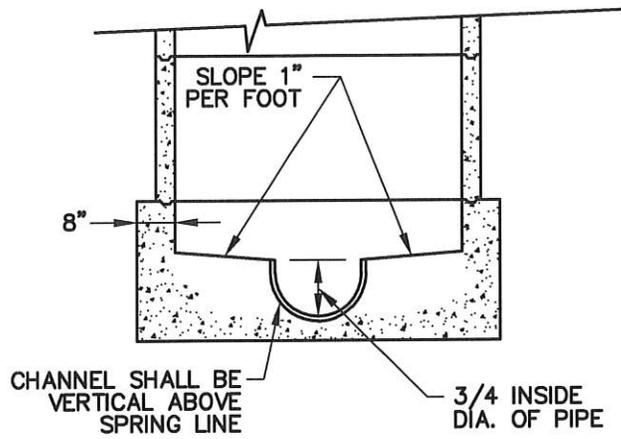
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A. K. J.
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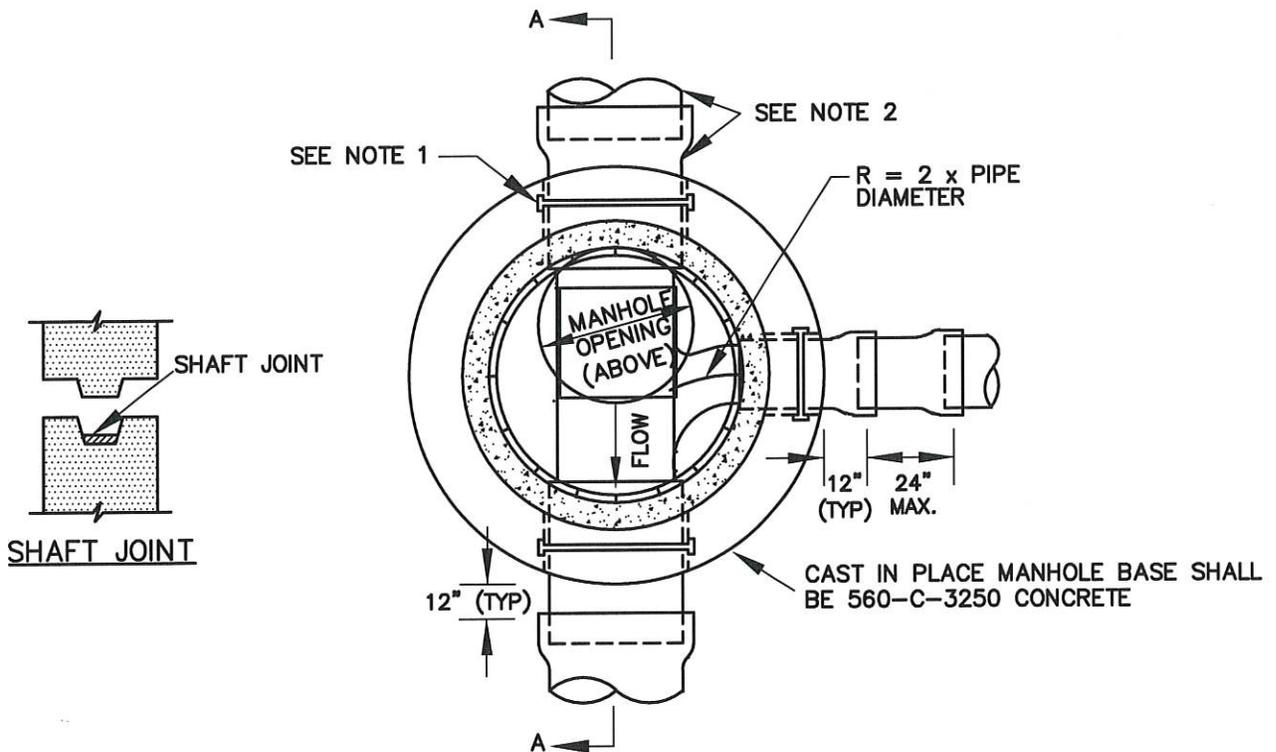
REVISION

STD. NO.
WD-46
SHEET 1 OF 1

SEWER
SYSTEM



SECTION B-B



MANHOLE BASE WITH PIPE CONNECTION

NOTES:

1. FOR PVC SEWER PIPE, USE CONCRETE MANHOLE ADAPTER. FOR VCP SEWER PIPE, USE WATER TIGHT FLEXIBLE MANHOLE CONNECTOR.
2. USE SAME MATERIAL AS IN SEWER MAIN (TYP.).



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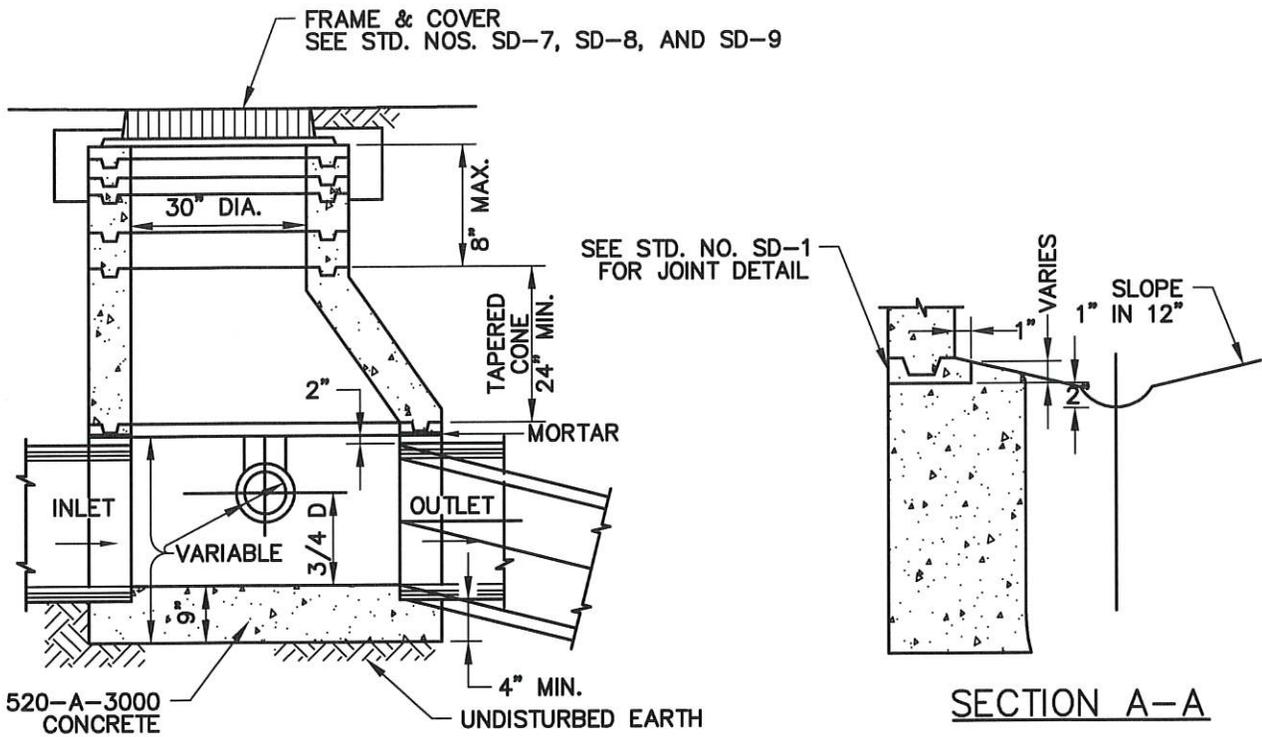
STANDARD MANHOLE

APPROVED *[Signature]*
DIRECTOR OF PUBLIC WORKS

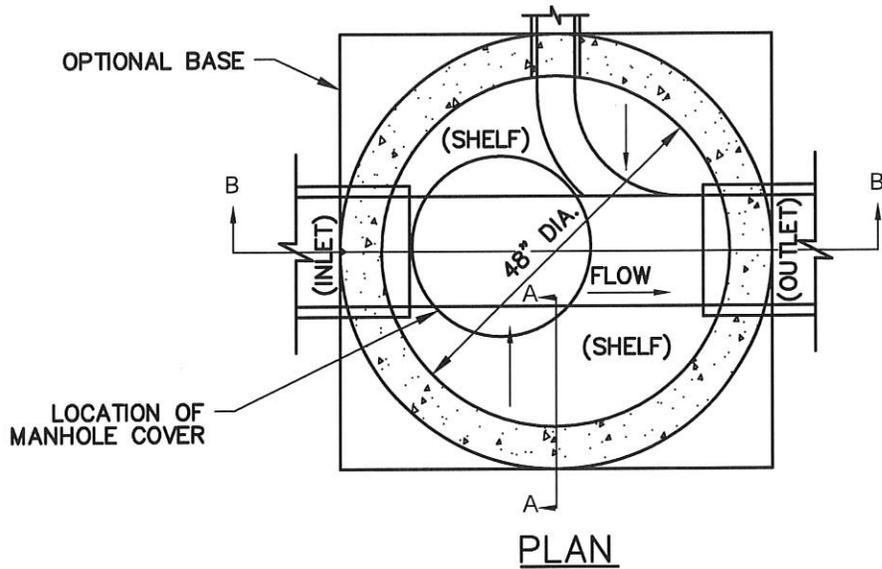
8/26/24
DATE

REVISION	

STD. NO.
SD-1
SHEET 2 OF 2



SECTION B-B



NOTES:

1. EXCEPT AS INDICATED HEREON OR ON THE PROJECT PLANS, MANHOLES SHALL CONFORM TO STD. NO. SD-1 PRECAST CONCRETE MANHOLE.
2. IN UNPAVED TRAFFIC AREAS FORM A CONCRETE COLLAR 10" WIDE AND 10" DEEP AROUND MANHOLE FRAME.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

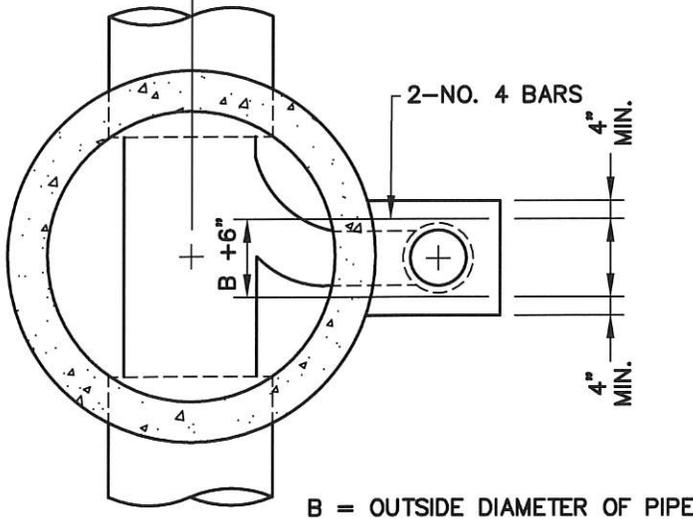
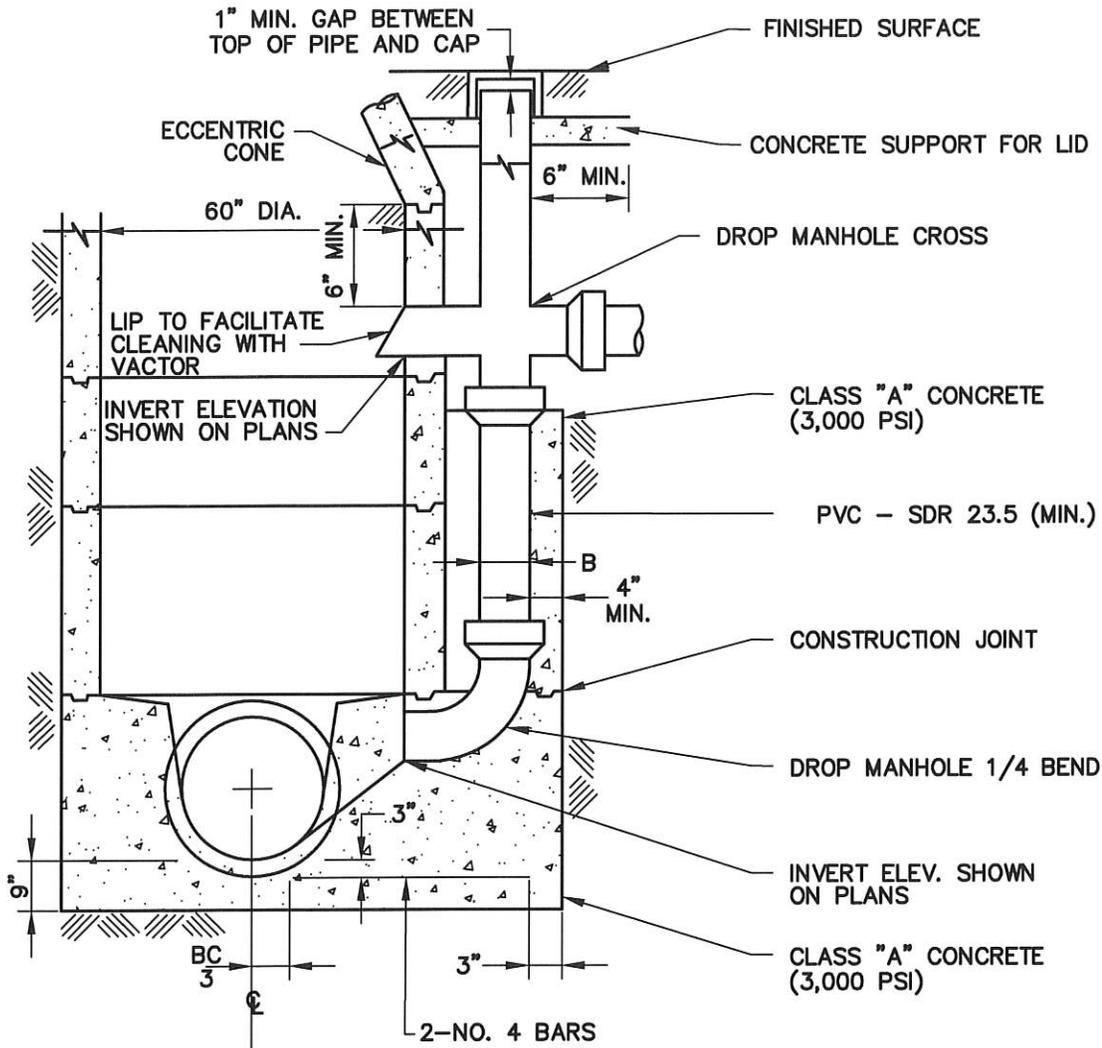
SHALLOW MANHOLE

APPROVED *[Signature]*
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8/26/21
DATE

REVISION	

STD. NO.
SD-2
SHEET 1 OF 1



NOTES:

1. FOUNDATION FOR DROP SECTION SHALL BE POURED MONOLITHICALLY WITH MANHOLE BASE.
2. ALL APPLICABLE PROVISIONS OF STD. NO. SD-1 STANDARD MANHOLE SHALL APPLY TO DROP MANHOLE.
3. THIS CONFIGURATION IS ALLOWED ONLY FOR A NEW SEWER CONNECTION TO AN EXISTING MANHOLE, SO THAT THE SLOPE OF THE NEW SEWER PIPE DOES NOT EXCEED 5%.
4. EXISTING MANHOLE MUST BE COMPLETELY LINED OR COATED.
5. WEIGHT OF CLEAN-OUT LID MUST NOT BE SUPPORTED BY THE PIPE.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

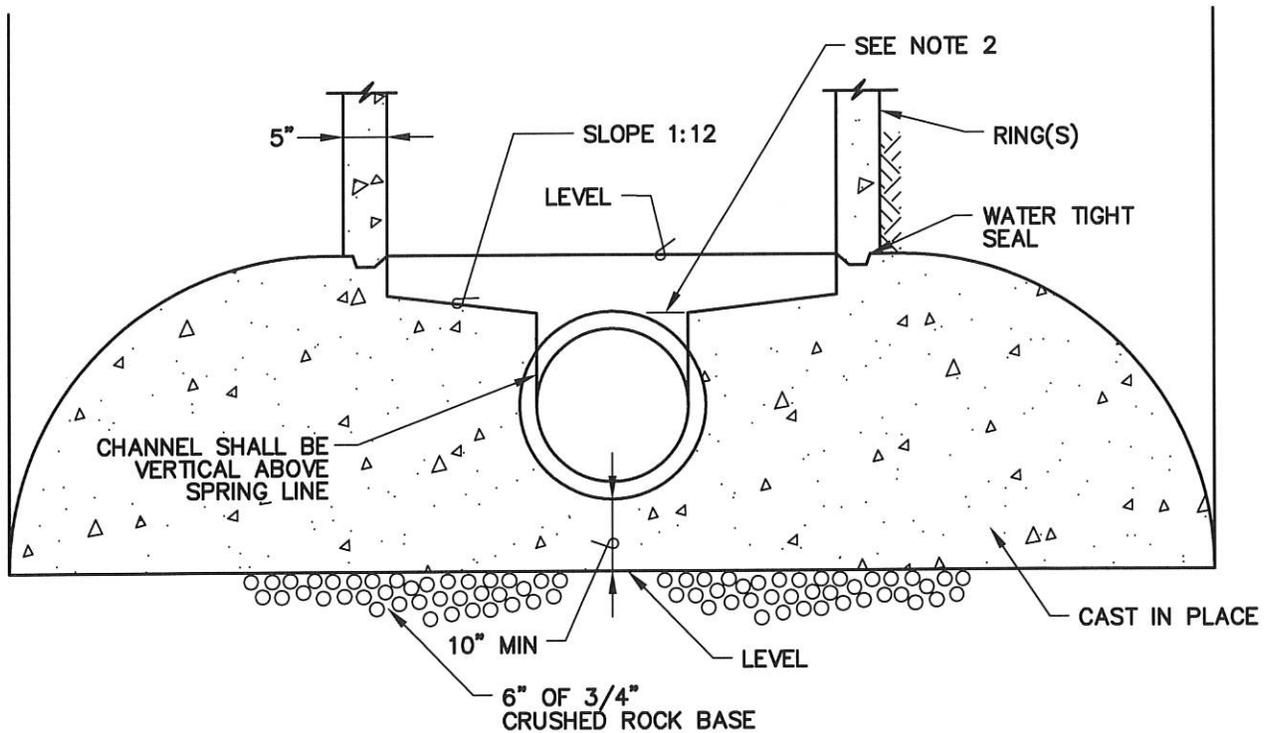
DROP MANHOLE

APPROVED *AKT*
DIRECTOR OF PUBLIC WORKS

8/26/24
DATE

REVISION	

STD. NO.
SD-3
SHEET 1 OF 1



NOTES:

1. MANHOLE BASE SHALL BE COATED PER STD. NO. SD-5.
2. LOWEST POINT ON SHELF SHALL BE EVEN WITH TOP OF PIPE.
3. CAST IN PLACE MANHOLE BASES CAST WITH 560-C-3250 SHALL BE CURED A MINIMUM OF THREE DAYS PRIOR TO STACKING MANHOLE. BASES CAST WITH 660-CW-4000 (WITHOUT CALCIUM CHLORIDE (CC)) OR WITH 560-C-3250 TREATED WITH A MINIMUM OF 2% CC SOLUTION IN ACCORDANCE WITH 201-1 SHALL BE CURED A MINIMUM OF 24 HOURS. THESE CURING REQUIREMENTS APPLY TO MANHOLES WITH A MAXIMUM HEIGHT OF 25'. SHORTER CURING TIMES, DEEPER INSTALLATIONS, AND ALTERNATE CONCRETE MIX DESIGNS REQUIRE ENGINEER'S PRIOR APPROVAL.
4. CONCRETE SPECIFIED BY ALTERNATE CLASS OR OTHERWISE CONTAINING FLY ASH IS NOT ALLOWED FOR USE IN CAST IN PLACE MANHOLES.
5. CONCRETE MIX DESIGNS CONTAINING ACCELERATING ADMIXTURES OTHER THAN CC REQUIRE A BREAK HISTORY AND ENGINEER'S APPROVAL.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

SEWER MANHOLE BASE

APPROVED
ART

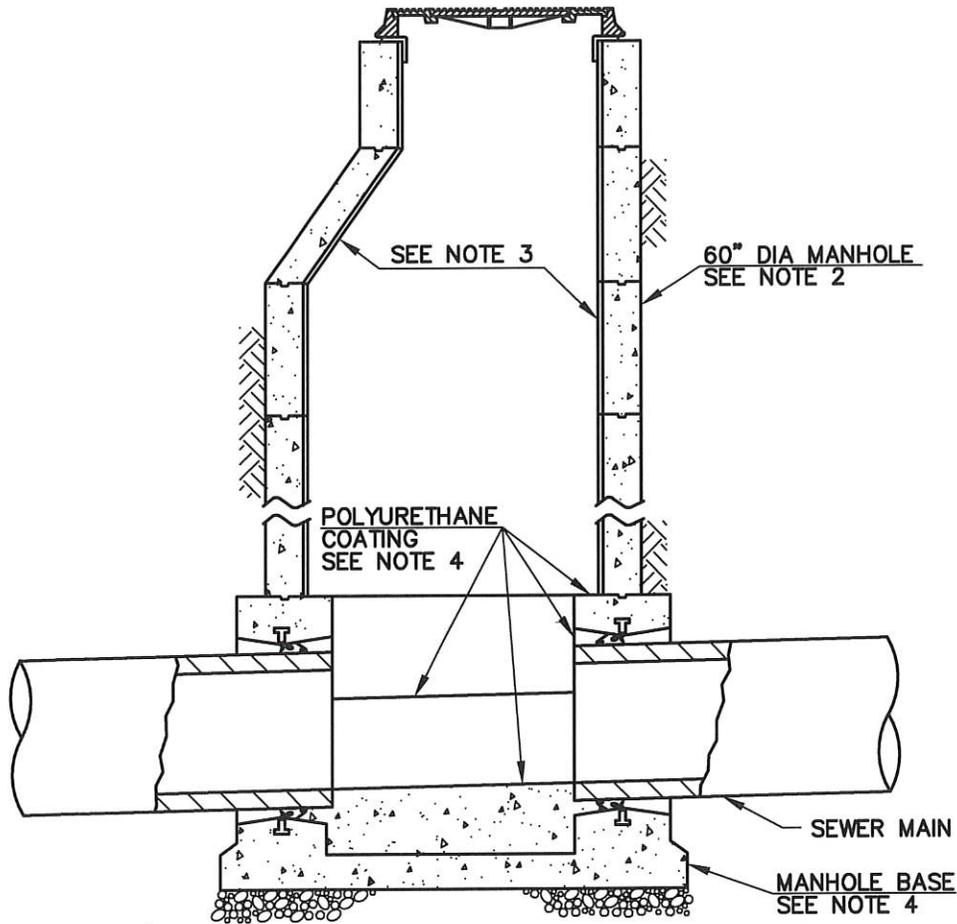
DIRECTOR OF PUBLIC WORKS

8/26/21

DATE

REVISION	

STD. NO.
SD-4
SHEET 1 OF 1



NOTES:

1. REFER TO SPECIFICATIONS WHERE APPLICABLE.
2. MANHOLES FOR SEWER MAINS SHALL BE COATED AND LINED.
3. MANHOLE SHAFT AND CONE SECTIONS, AND GRADE RINGS SHALL BE PVC LINED OR EPOXY/POLYURETHANE COATED. INTERIOR COATING AND LINING TYPES SHALL BE APPROVED BY THE ENGINEER. APPLY NON-SKID COATING ON TOTAL SHELF AREA.
4. ELASTOMERIC POLYURETHANE COATING SHALL BE APPLIED TO THE INTERIOR OF MANHOLE BASES.
5. MATERIALS SHALL BE SELECTED FROM THE CITY'S APPROVED MATERIALS LIST.



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

**MANHOLE COATING
AND LINING**

APPROVED
AHS

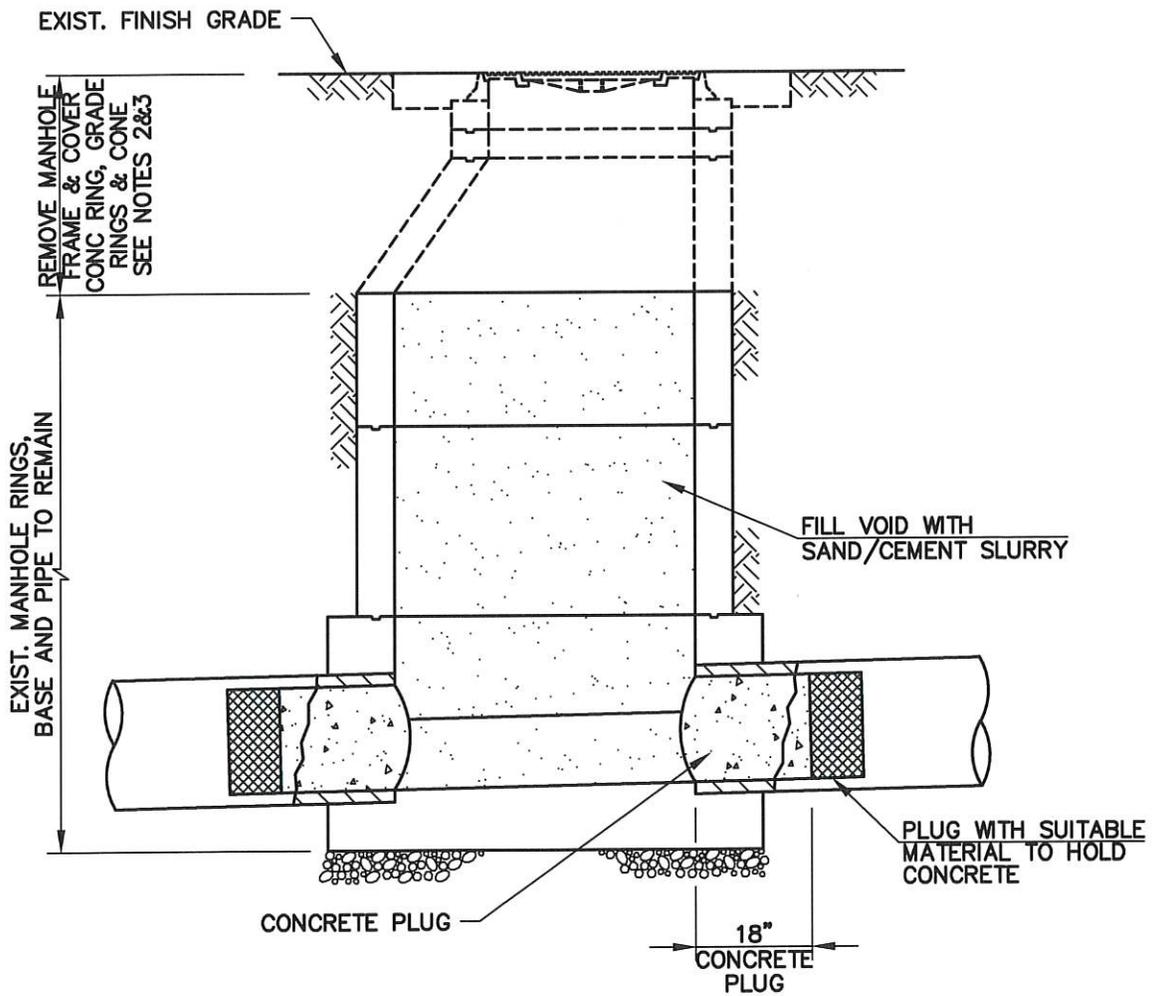
DIRECTOR OF PUBLIC WORKS

8/26/21

DATE

REVISION	

STD. NO.
SD-5
SHEET 1 OF 1



NOTES:

1. REFER TO SPECIFICATIONS WHERE APPLICABLE.
2. ALL SALVAGED MATERIAL BECOMES PROPERTY OF CITY OF SOUTH GATE.
3. BACKFILL PER CITY'S REQUIREMENT.
4. FOR CUTTING & PLUGGING ABANDONED SEWER MAINS, SEE STD. NO. WD-45.

LEGEND ON PLANS



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

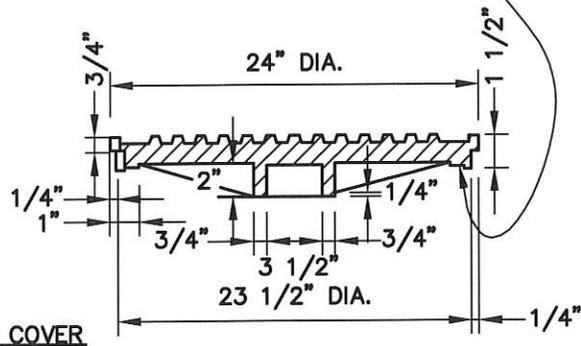
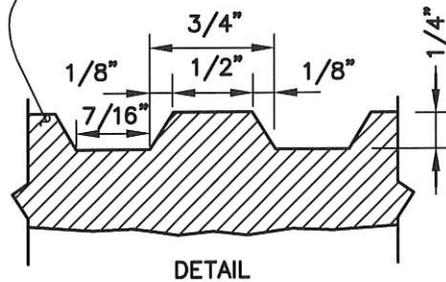
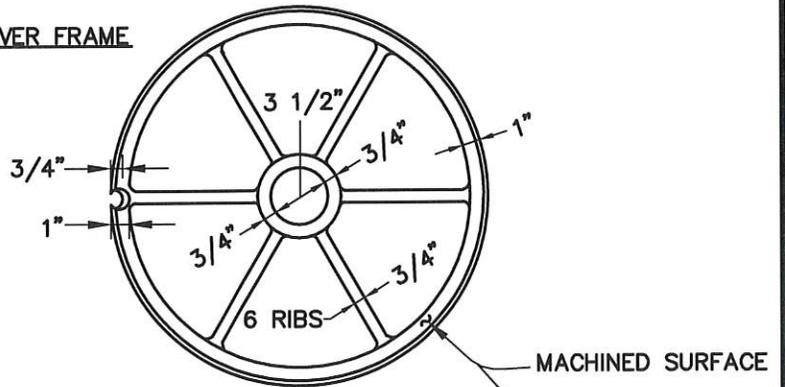
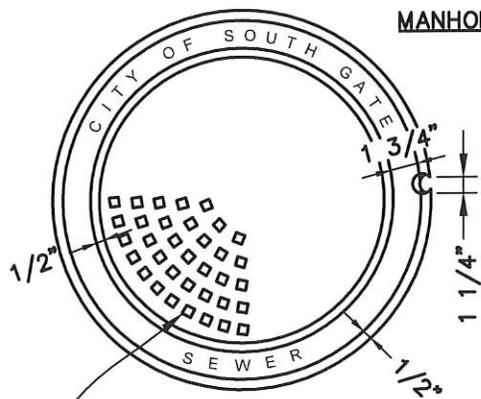
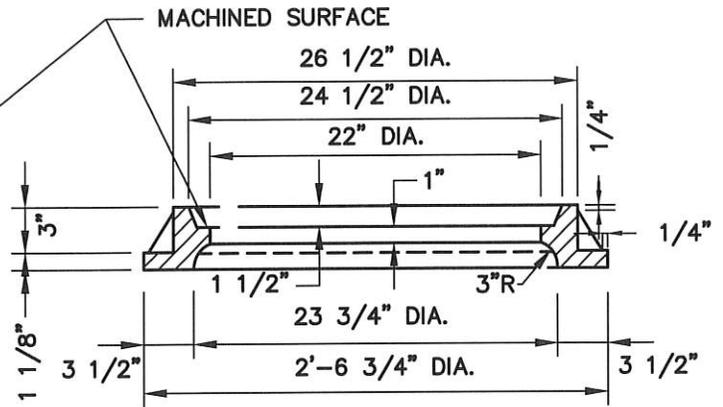
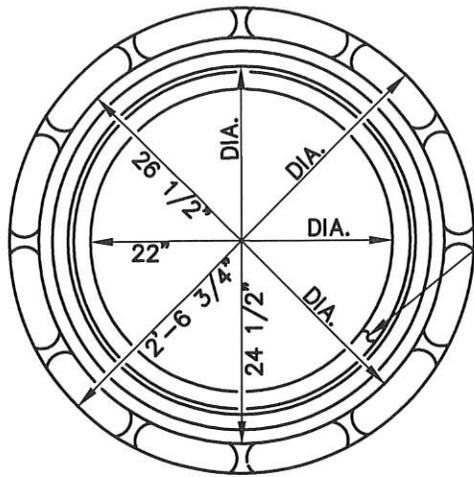
**EXISTING MANHOLE
ABANDONMENT**

APPROVED
[Signature]
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
SD-6
SHEET 1 OF 1



NOTES:

1. FRAME AND COVER SHALL BE CAST IRON. CAST IRON SHALL CONFORM TO ASTM 48, CLASS 35B.
2. WEIGHTS: FRAME 166 LBS - 193 LBS.
COVER 147 LBS - 171 LBS.
3. MACHINE ALL MATCHING SURFACES AND SEATS OF FRAME AND COVER TO PREVENT ROCKING.
4. IMPORTED FRAMES AND COVERS SHALL HAVE THE COUNTRY OF ORIGIN MARKED IN COMPLIANCE WITH FEDERAL REGULATIONS.

FOR	MARK
SEWER PROJECTS	SEWER
STORM DRAIN PROJECTS	STORM DRAIN
WATER PROJECTS	WATER



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

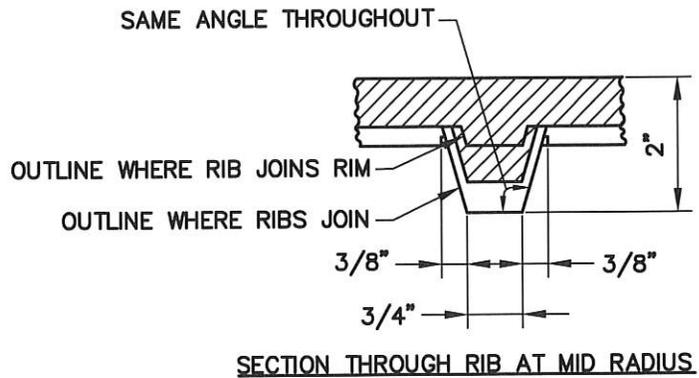
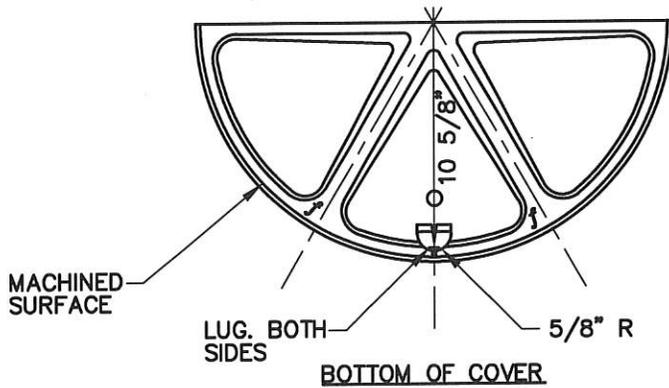
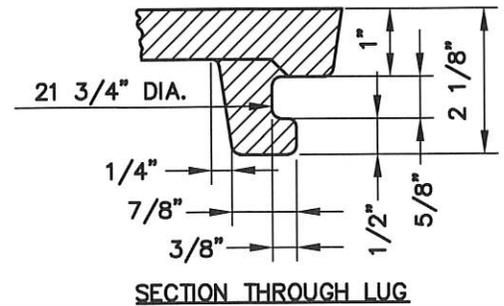
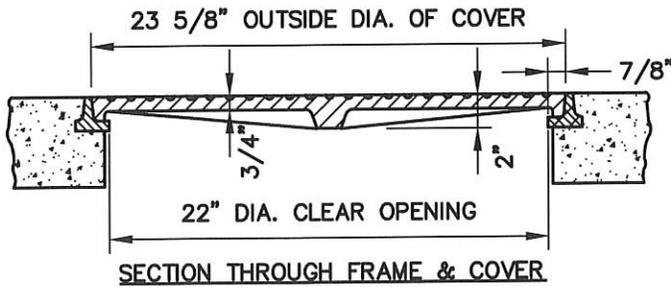
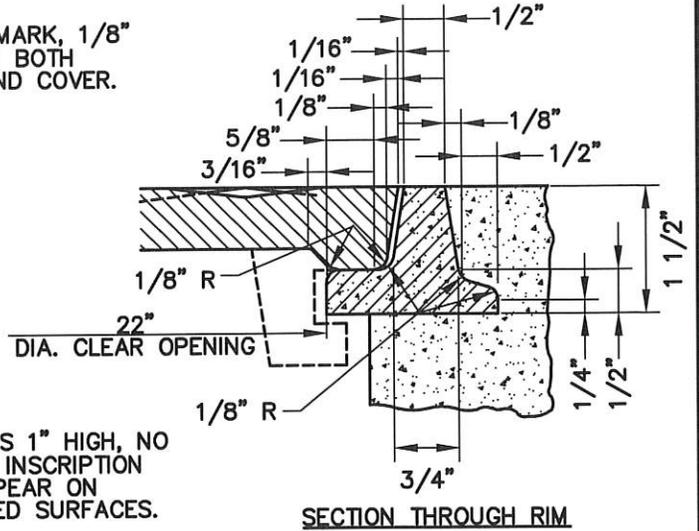
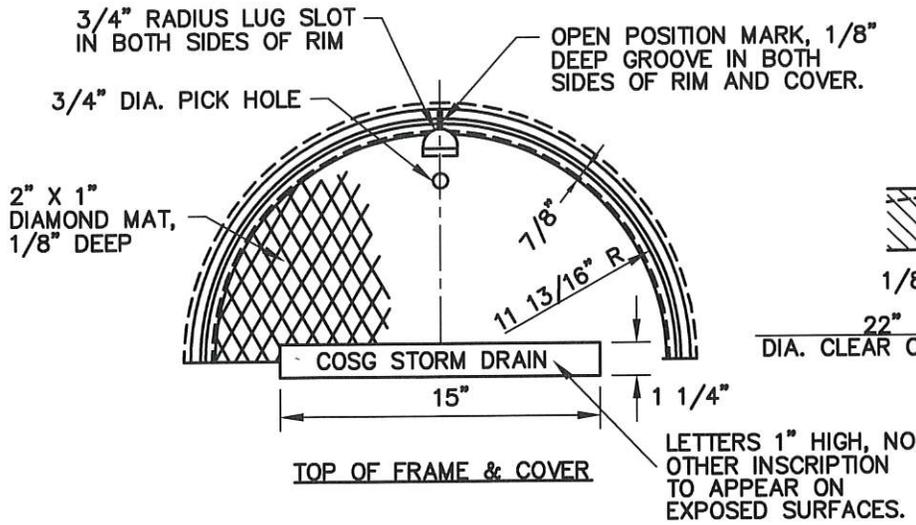
24" MANHOLE FRAME AND COVER HEAVY DUTY

APPROVED 
DIRECTOR OF PUBLIC WORKS


DATE

REVISION

STD. NO.
SD-7
SHEET 1 OF 1



NOTES:

1. FRAME AND COVER SHALL BE CAST IRON. CAST IRON SHALL CONFORM TO ASTM 48, CLASS 30.
2. FRAME AND COVER FOR USE IN NON-TRAFFIC AREA ONLY.
3. WEIGHTS: FRAME 29 LBS - 33 LBS.
COVER 95 LBS - 110 LBS.
4. IMPORTED FRAMES AND COVERS SHALL HAVE THE COUNTRY OF ORIGIN MARKED IN COMPLIANCE WITH FEDERAL REGULATIONS.

FOR	MARK
SEWER PROJECTS	SEWER
STORM DRAIN PROJECTS	STORM DRAIN
WATER PROJECTS	WATER



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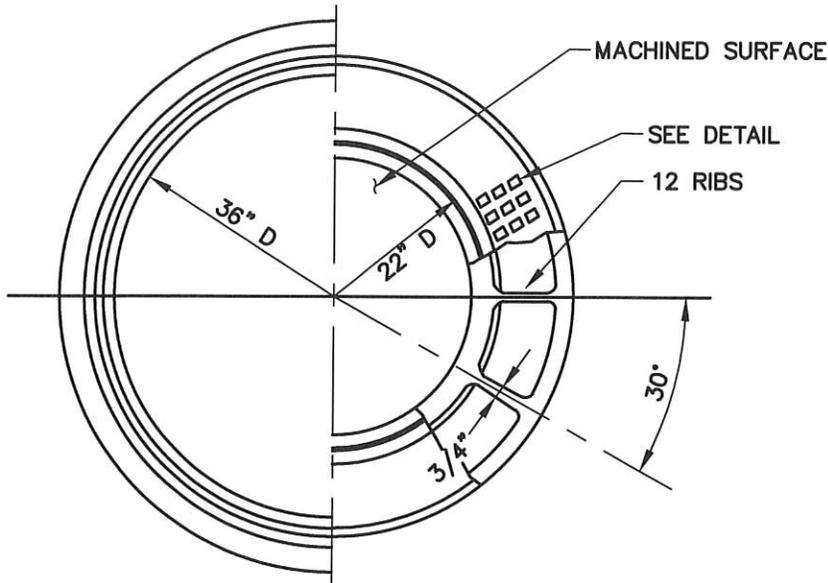
24" MANHOLE FRAME AND COVER LIGHT DUTY

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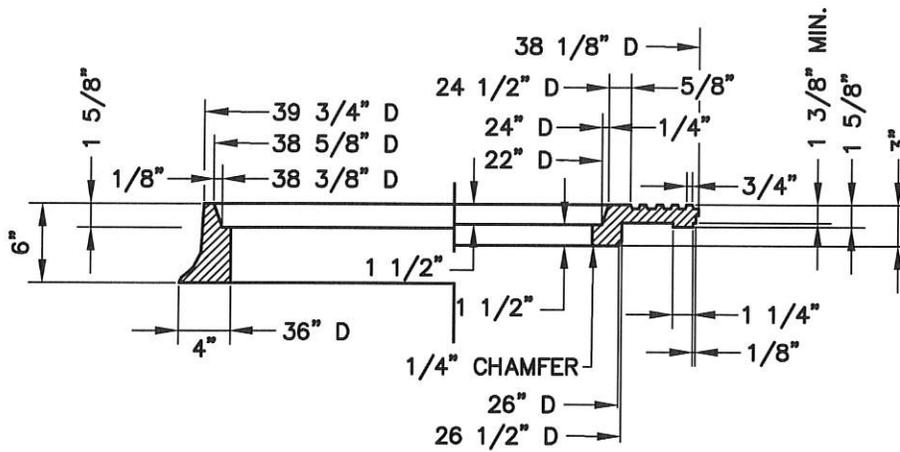
8/26/21
DATE

REVISION

STD. NO.
SD-8
SHEET 1 OF 1



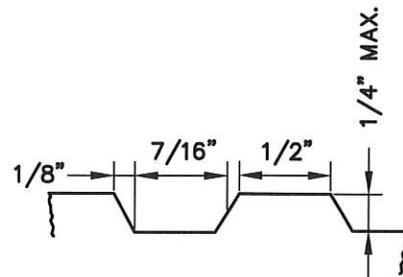
HALF PLAN FRAME & COVER



HALF SECTION FRAME & COVER

NOTES:

1. FRAME AND COVER SHALL BE CAST IRON. CAST IRON SHALL CONFORM TO ASTM 48, CLASS 35B.
2. WEIGHTS: FRAME 314 LBS - 363 LBS.
 OUTER COVER 285 LBS - 330 LBS.
 INNER COVER 147 LBS - 171 LBS.
3. MACHINE ALL MATCHING SURFACES AND SEATS OF FRAME AND COVER TO PREVENT ROCKING.
4. IMPORTED FRAMES AND COVERS SHALL HAVE THE COUNTRY OF ORIGIN MARKED IN COMPLIANCE WITH FEDERAL REGULATIONS.



DETAIL



CITY OF SOUTH GATE
 DEPARTMENT OF PUBLIC WORKS

**36" MANHOLE FRAME AND
 TWO CONCENTRIC COVERS
 HEAVY DUTY**

APPROVED *A. H. J.*

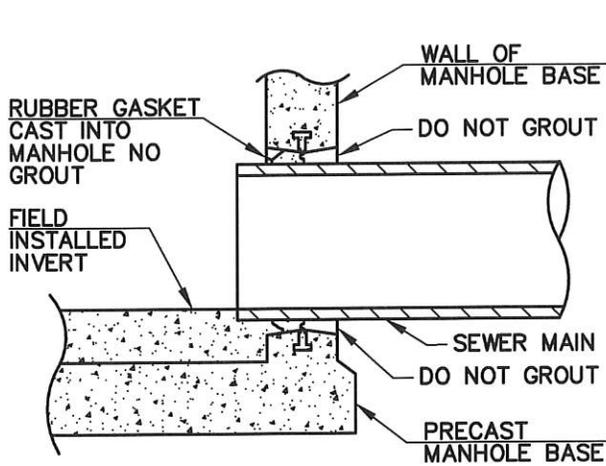
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8/26/21

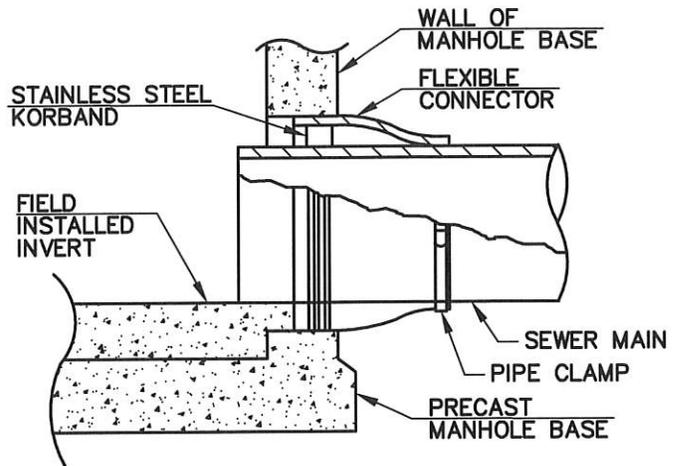
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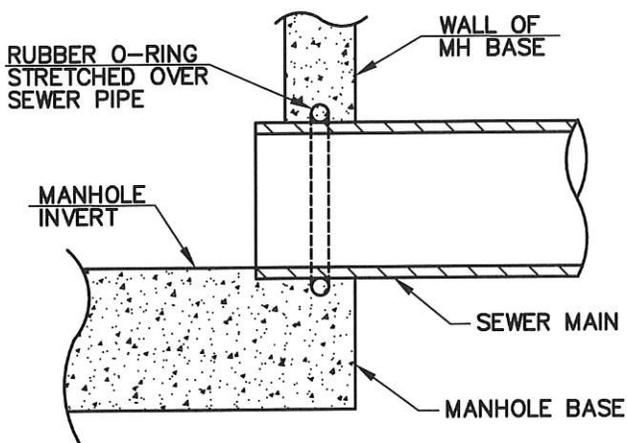
STD. NO.
SD-9
 SHEET 1 OF 1



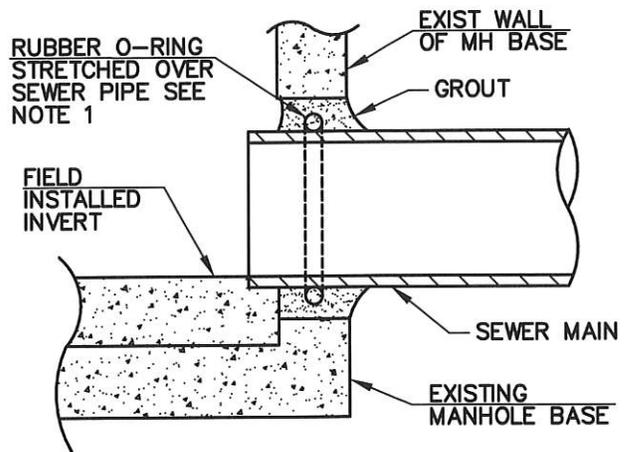
PRECAST MANHOLE BASE TYPE 'A'



PRECAST MANHOLE BASE TYPE 'B'



CAST IN PLACE MANHOLE BASE



BREAKING INTO EXIST MANHOLE BASE

NOTES:

1. A RUBBER O-RING OR A FLEXIBLE CONNECTOR (AS SHOWN IN PRECAST MANHOLE BASE TYPE 'B') SHALL BE USED WHEN BREAKING INTO EXISTING MANHOLE.
2. FOR MANHOLE COATING AND LINING, SEE STD. NO. SD-5.



CITY OF SOUTH GATE
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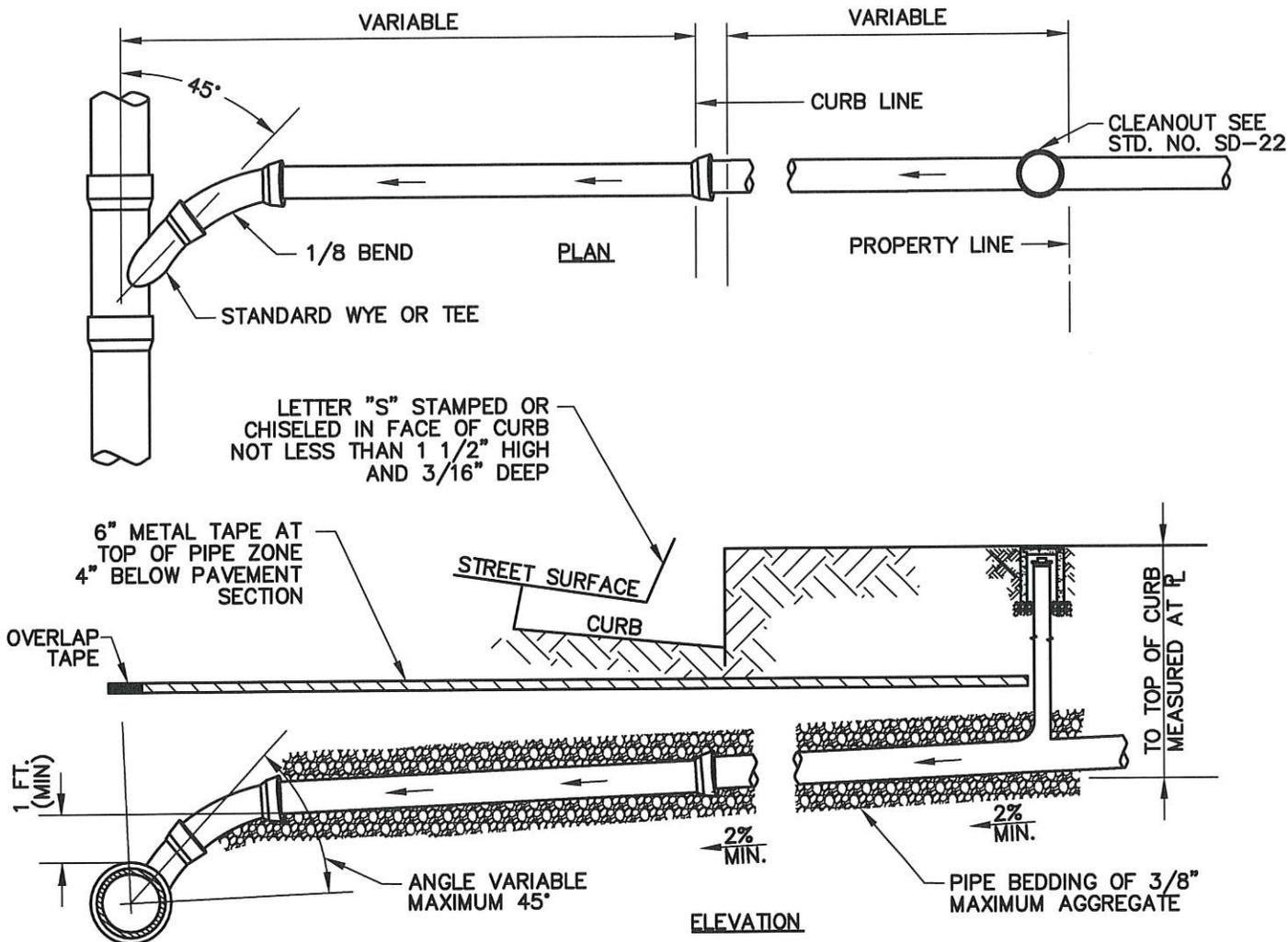
MANHOLE PIPE CONNECTORS

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DATE

REVISION

STD. NO.
SD-10
SHEET 1 OF 1



LETTER "S" STAMPED OR CHISELED IN FACE OF CURB NOT LESS THAN 1 1/2" HIGH AND 3/16" DEEP

6" METAL TAPE AT TOP OF PIPE ZONE 4" BELOW PAVEMENT SECTION

OVERLAP TAPE

STREET SURFACE
CURB

TO TOP OF CURB MEASURED AT R

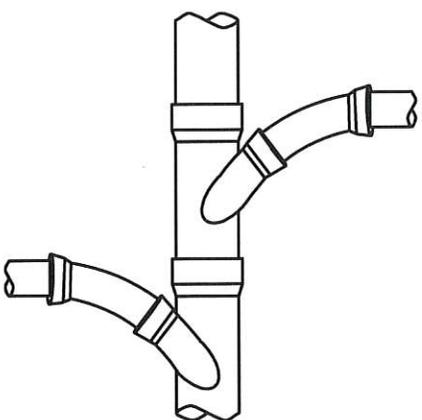
1 FT. (MIN.)

ANGLE VARIABLE MAXIMUM 45°

2% MIN.

PIPE BEDDING OF 3/8" MAXIMUM AGGREGATE

ELEVATION



NOTES:

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.
2. ALL JOINTS ON SEWER LATERAL PIPE SHALL BE VCP COMPRESSION TYPE.
3. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS SHOWN OTHERWISE ON PLANS.
4. DO NOT TAP HOLE AND INSERT LATERAL PIPE DIRECTLY INTO MAIN. ALL CONNECTIONS SHALL BE MADE USING A SADDLE OR WYE CUT IN.
5. SEWER LATERAL SHALL HAVE 6" METAL TAPE WITH GREEN LETTERING INDICATING "SEWER" INSTALLED ABOVE THE ALIGNMENT OF THE NON-METALLIC PIPE FROM SEWER MAIN TO PROPERTY LINE.

DETAIL SHOWING THE MANNER OF CONNECTING OPPOSITE LATERALS TO A SEWER MAIN. TWO CONNECTIONS SHALL NOT BE MADE IN THE SAME LENGTH OF PIPE.

LEGEND ON PLANS

②



CITY OF SOUTH GATE
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**HOUSE CONNECTION
(SEWER LATERAL)**

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8/26/21
DATE

REVISION

STD. NO.
SD-11
SHEET 1 OF 1

BAND SEAL COUPLING FOR WYE OR TEE CONNECTION TO SEWER LATERAL

FACTORY MADE WYE OR TEE FITTING

← FLOW

BAND SEAL COUPLING FOR WYE OR TEE CONNECTION TO SEWER MAIN

SEWER MAIN TO BE MACHINE CUT FOR WYE OR TEE CONNECTION

FACTORY MADE WYE OR TEE CONNECTION

NOTES:

1. IN NO CASE SHALL CONNECTION BE MADE DIRECTLY ON TOP OF SEWER MAIN.
2. NO MORE THAN ONE CUT-IN WYE WILL BE ALLOWED FOR EACH LENGTH OF EXISTING VCP SEWER MAIN.
3. FOR SEWER LATERAL INSTALLATION, SEE STD. NO. SD-11.
4. FOR TRENCH BACKFILL, SEE STD. NOS. SD-14, SD-15, AND SD-16.
5. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.



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CUT-IN WYE CONNECTION

APPROVED *Atk*

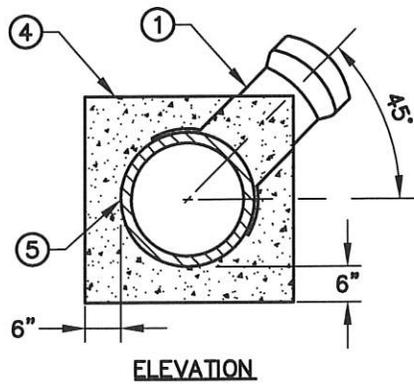
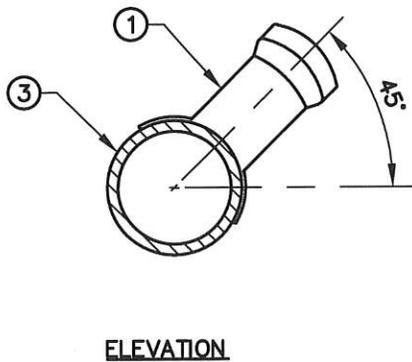
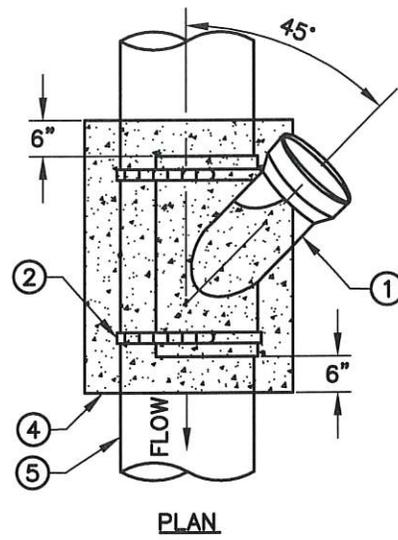
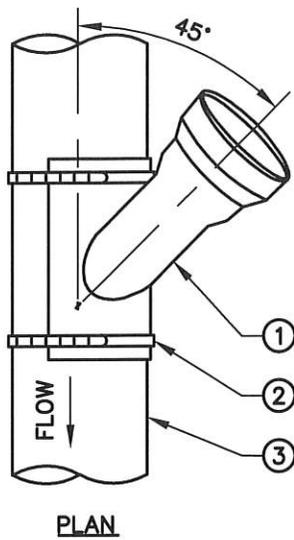
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REVISION	

STD. NO.
SD-12
SHEET 1 OF 1



**CUT-IN WYE CONNECTION
FOR EXISTING PVC PIPE
TYPE A**

**CUT-IN WYE CONNECTION
FOR EXISTING VCP PIPE
TYPE B**

NOTES:

1. IN NO CASE SHALL CONNECTION BE MADE DIRECTLY ON TOP OF SEWER MAIN.
2. NO MORE THAN ONE CUT-IN WYE WILL BE ALLOWED FOR EACH LENGTH OF EXISTING VCP SEWER MAIN.
3. FOR SEWER LATERAL INSTALLATION, SEE STD. NO. SD-11.
4. FOR TRENCH BACKFILL, SEE STD. NOS. SD-14, SD-15, AND SD-16.
5. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

ITEM	SIZE AND DESCRIPTION	ITEM	SIZE AND DESCRIPTION
①	45° SADDLE WYE WITH GASKET	④	CONCRETE ENCASEMENT
②	STAINLESS STEEL HOSE CLAMPS (2-EACH)	⑤	EXISTING VCP SEWER MAIN
③	EXISTING PVC SEWER MAIN		



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

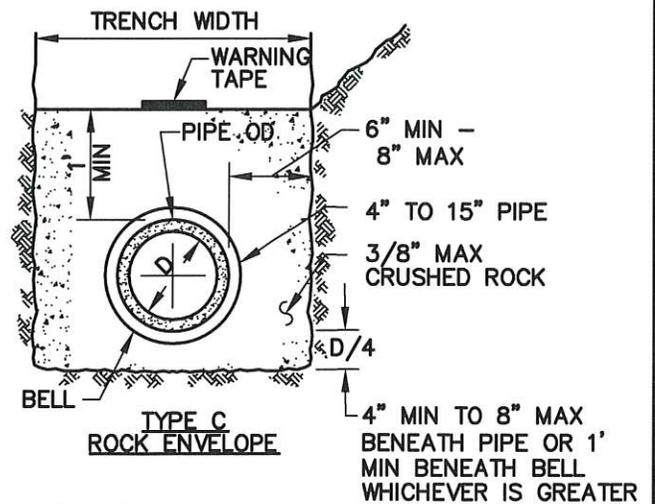
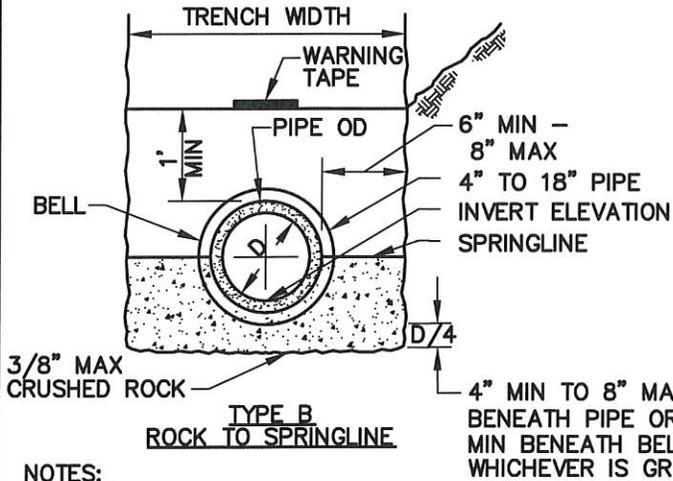
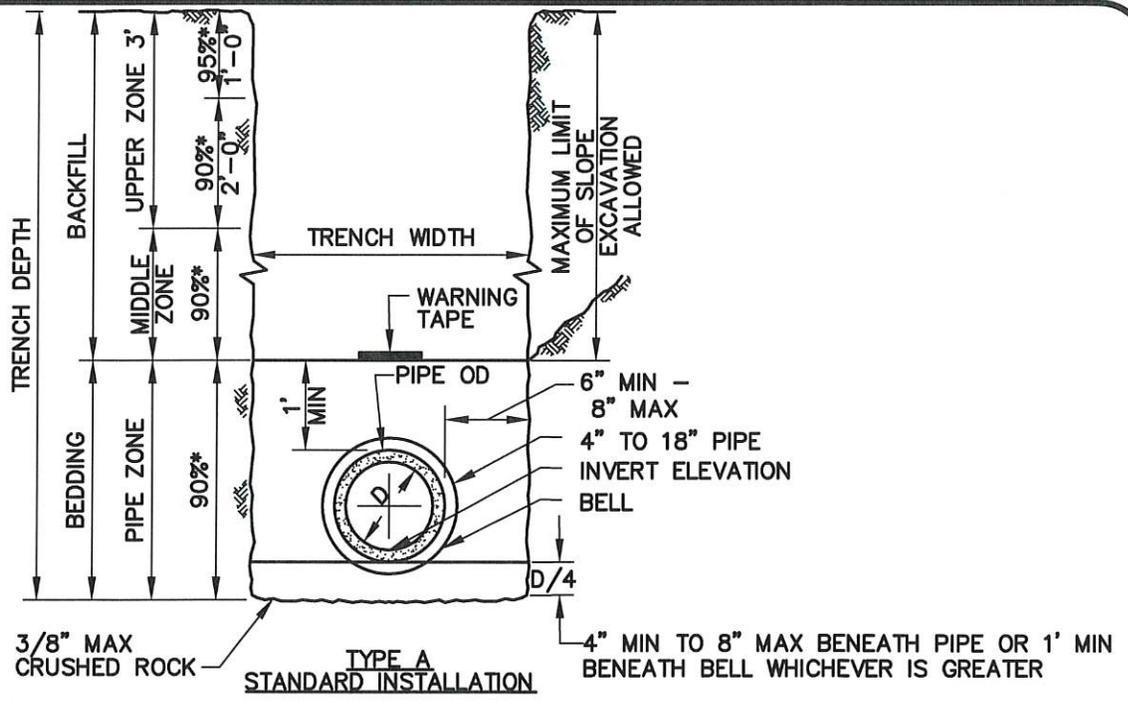
SADDLE CONNECTION

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AHT
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8/26/21
DATE

REVISION

STD. NO.
SD-13
SHEET 1 OF 1



NOTES:

1. FOR TRENCH RESURFACING IN IMPROVED STREETS, SEE STD. NO. WD-36.
2. (*) INDICATES MINIMUM RELATIVE COMPACTION.
3. UNLESS INDICATED OTHERWISE IN DRAWINGS OR SPECIFICATIONS, MINIMUM DEPTH OF COVER FROM THE TOP OF PIPE TO FINISH GRADE FOR SEWER MAIN SHALL BE 5'. FOR SHALLOWER DEPTH, SPECIAL DESIGN IS REQUIRED.
4. SEE TYPE A INSTALLATION FOR DETAILS NOT SHOWN FOR TYPES B AND C.
5. FOR PIPE SIZE ENCASEMENT LARGER THAN 15", MAXIMUM SIDE WALL CLEARANCE SHALL BE 12" OR AS SHOWN ON THE PLANS.
6. 6" METAL WARNING TAPE SHALL BE INSTALLED ABOVE PIPE 4" BELOW TRENCH CAP AND 12" BELOW FINISH GRADE IN UNIMPROVED STREETS.
7. 1' SAND CUSHION OR A 6" MINIMUM SAND CUSHION WITH 1" NEOPRENE PAD SHALL BE PLACED FOR CROSSING UTILITIES WHEN VERTICAL CLEARANCE IS 1' OR LESS. THE NEOPRENE PAD SHALL BE PLACED ON THE MOST FRAGILE UTILITY.



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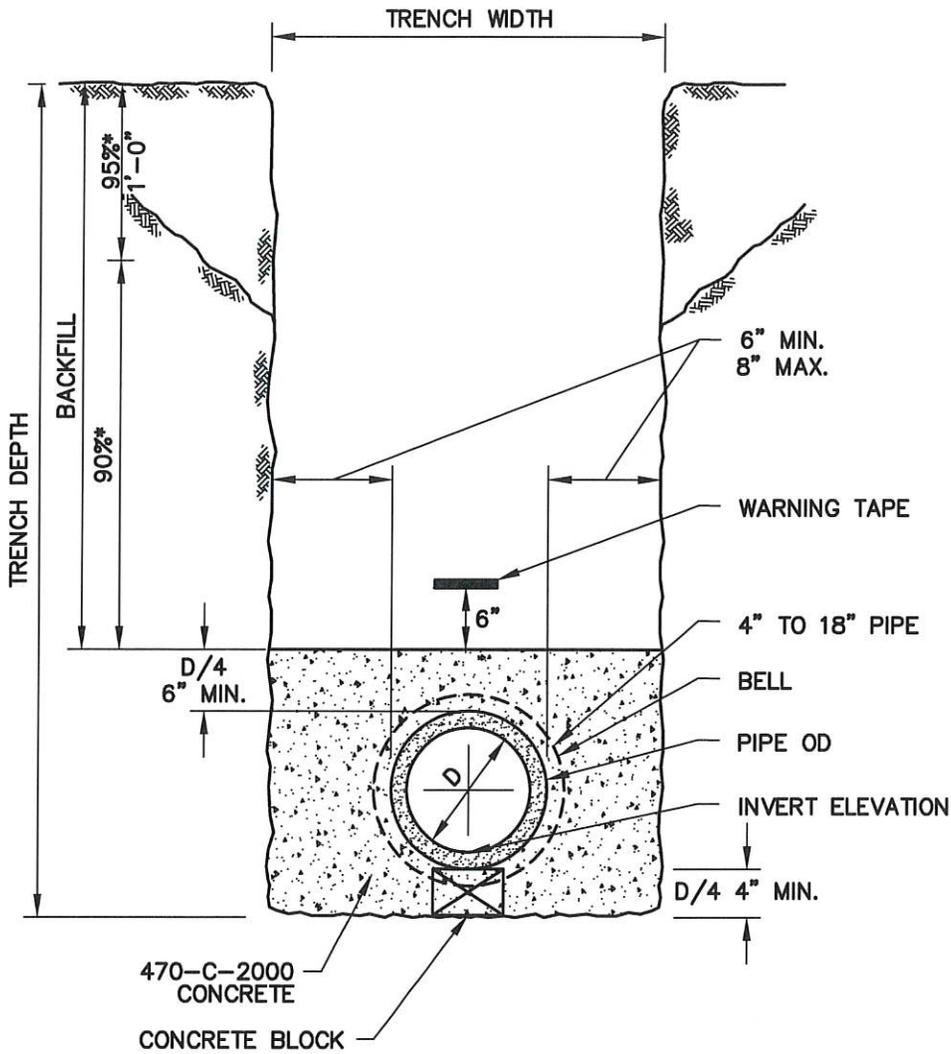
PIPE BEDDING AND TRENCH BACKFILL FOR SEWERS

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STD. NO.
SD-14
SHEET 1 OF 1

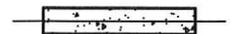


SECTION

NOTES:

1. ENCASE PIPE TO THE NEAREST FLEXIBLE JOINT OR AS REQUIRED BY THE ENGINEER.
2. FOR TRENCH RESURFACING IN IMPROVED STREETS, SEE STD. NO. WD-36.
3. CONCRETE ENCASEMENT SHALL BE USED FOR RIGID PIPE ONLY.
4. 6" METAL TAPE SHALL BE INSTALLED ABOVE PIPE, 4" BELOW PAVEMENT SECTION.
5. (*) INDICATES MINIMUM RELATIVE COMPACTION.

LEGEND ON PLANS



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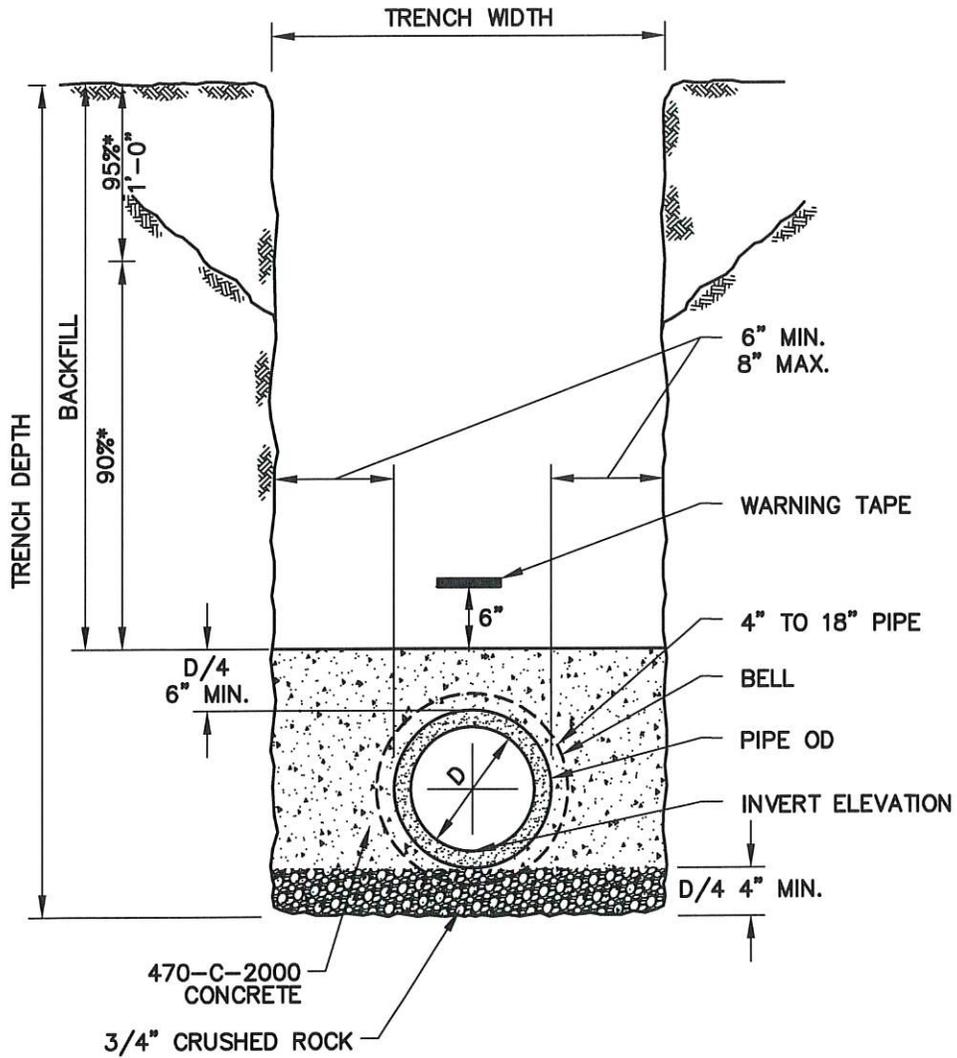
CONCRETE ENCASEMENT

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DATE

REVISION	

STD. NO.
SD-15
SHEET 1 OF 1

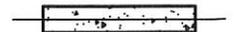


SECTION

NOTES:

1. FOR TRENCHING IN IMPROVED STREETS, SEE STD. NO. WD-36.
2. CONCRETE BACKFILL FOR PVC PIPE CAN BE USED ABOVE THE PIPE BEDDING ZONE.
3. 6" METAL TAPE SHALL BE INSTALLED ABOVE PIPE, 4" BELOW PAVEMENT SECTION.
4. (*) INDICATES MINIMUM RELATIVE COMPACTION.

LEGEND ON PLANS



CITY OF SOUTH GATE
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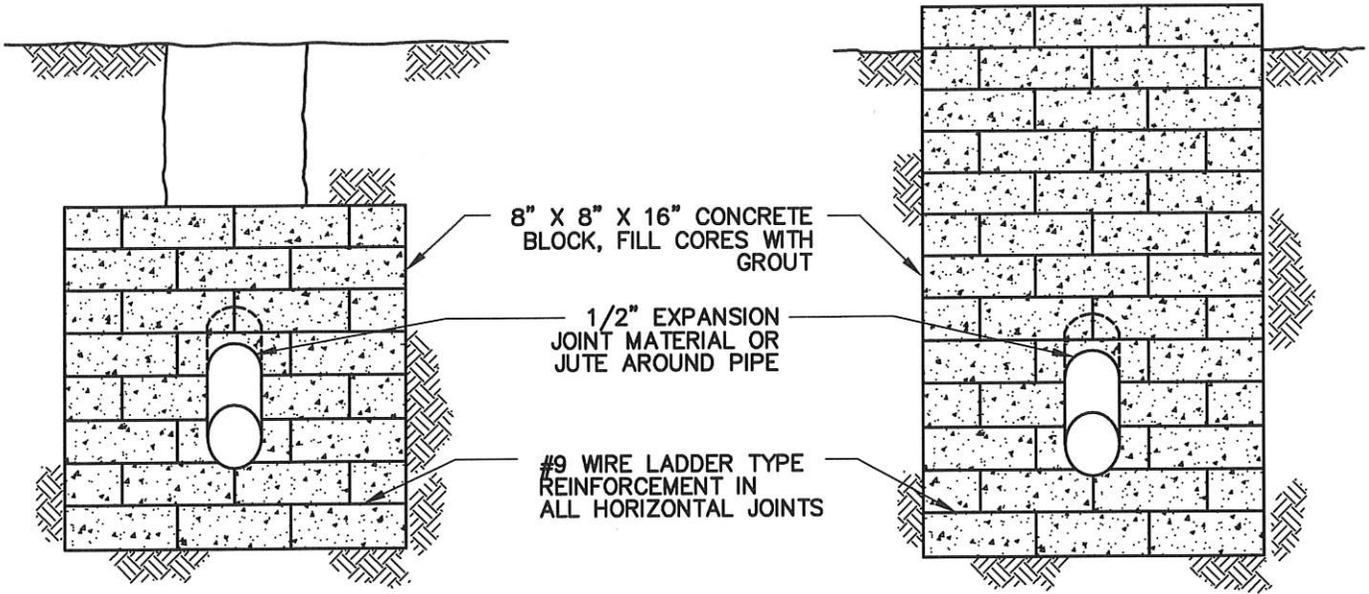
CONCRETE BACKFILL

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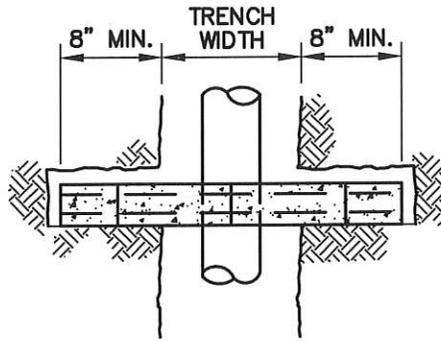
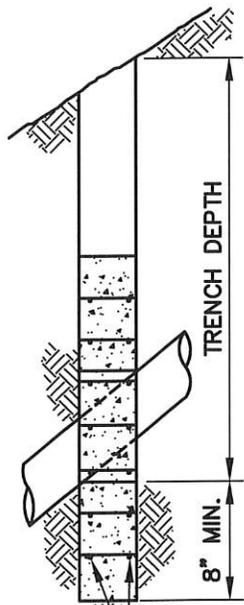
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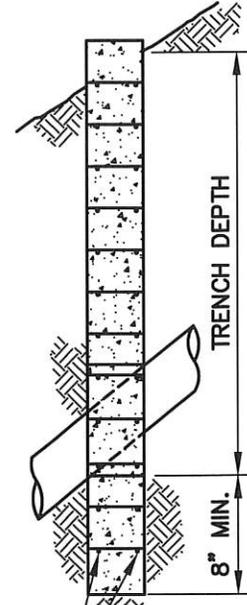
STD. NO.
SD-16
SHEET 1 OF 1



FRONT ELEVATION



PLAN



#9 WIRE LADDER TYPE REINFORCEMENT IN ALL HORIZONTAL JOINTS

#9 WIRE LADDER TYPE REINFORCEMENT IN ALL HORIZONTAL JOINTS

SIDE ELEVATION

SIDE ELEVATION

NOTE:

1. PIPE PROTECTION MAY BE REQUIRED IF REQUIRED BY THE ENGINEER.

LEGEND ON PLANS



CITY OF SOUTH GATE
DEPARTMENT OF PUBLIC WORKS

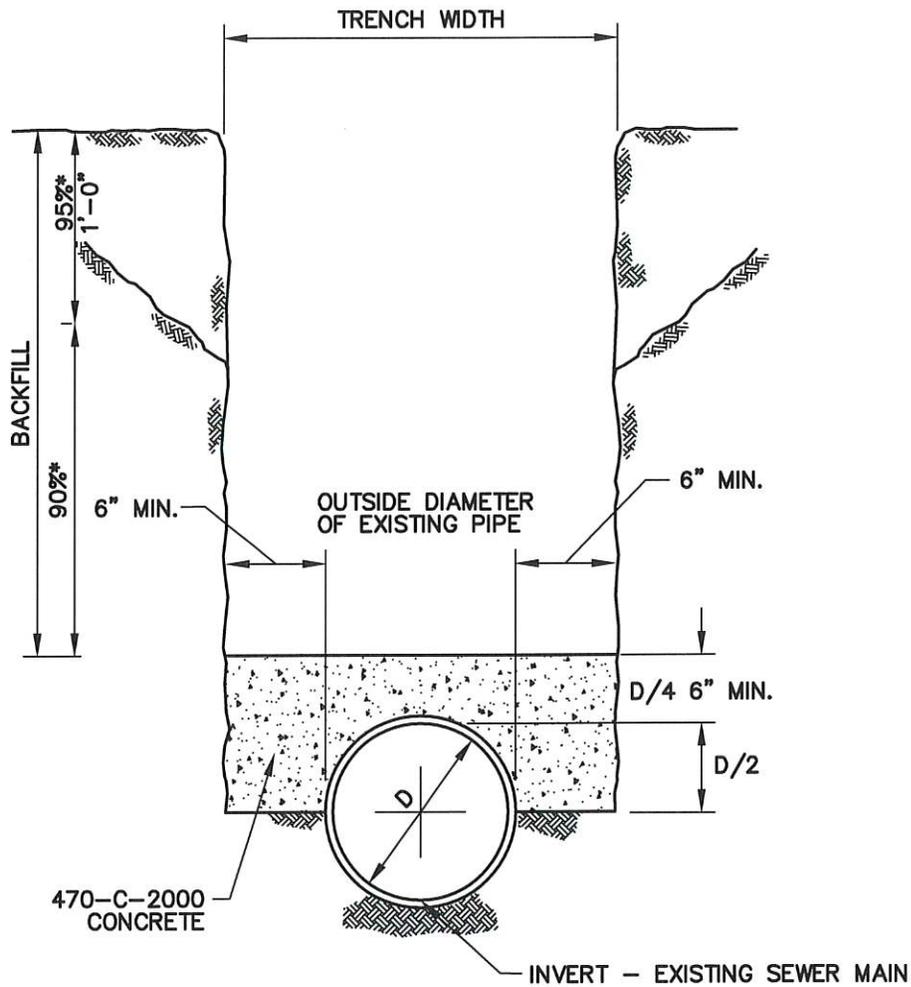
CONCRETE ANCHOR

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DIRECTOR OF PUBLIC WORKS

8/26/24
DATE

REVISION	

STD. NO.
SD-17
SHEET 1 OF 1



SECTION

NOTES:

1. FOR EXISTING PVC PIPE, IT SHALL BE COVERED WITH TAR PAPER, POLYURETHANE BAGGIE OR RUBBER MAT PRIOR TO POURING CONCRETE.
2. 6" METAL TAPE SHALL BE INSTALLED ABOVE PIPE, 4" BELOW PAVEMENT SECTION.
3. (*) INDICATES MINIMUM RELATIVE COMPACTION.



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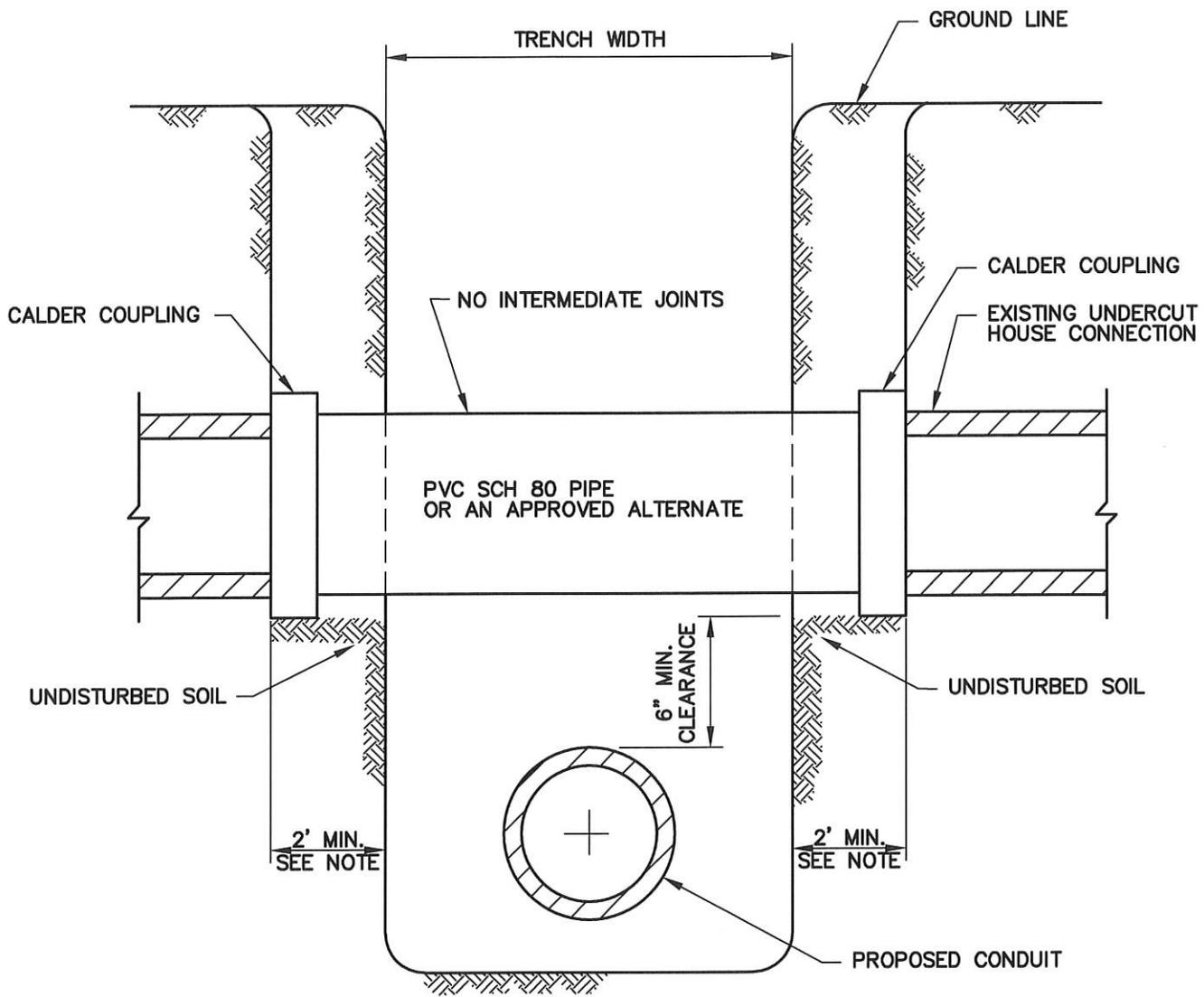
**CONCRETE PROTECTION
FOR EXISTING SEWER PIPE**

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[Signature]
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
SD-18
SHEET 1 OF 1



SECTION

NOTE:

1. FOR WATER LINE CONSTRUCTION, PIPE REPAIR SHALL EXTEND TO FIRST JOINT BEYOND 2' AT BOTH SIDES OF TRENCH OR TO A DISTANCE OF 4', WHICHEVER IS LESS.



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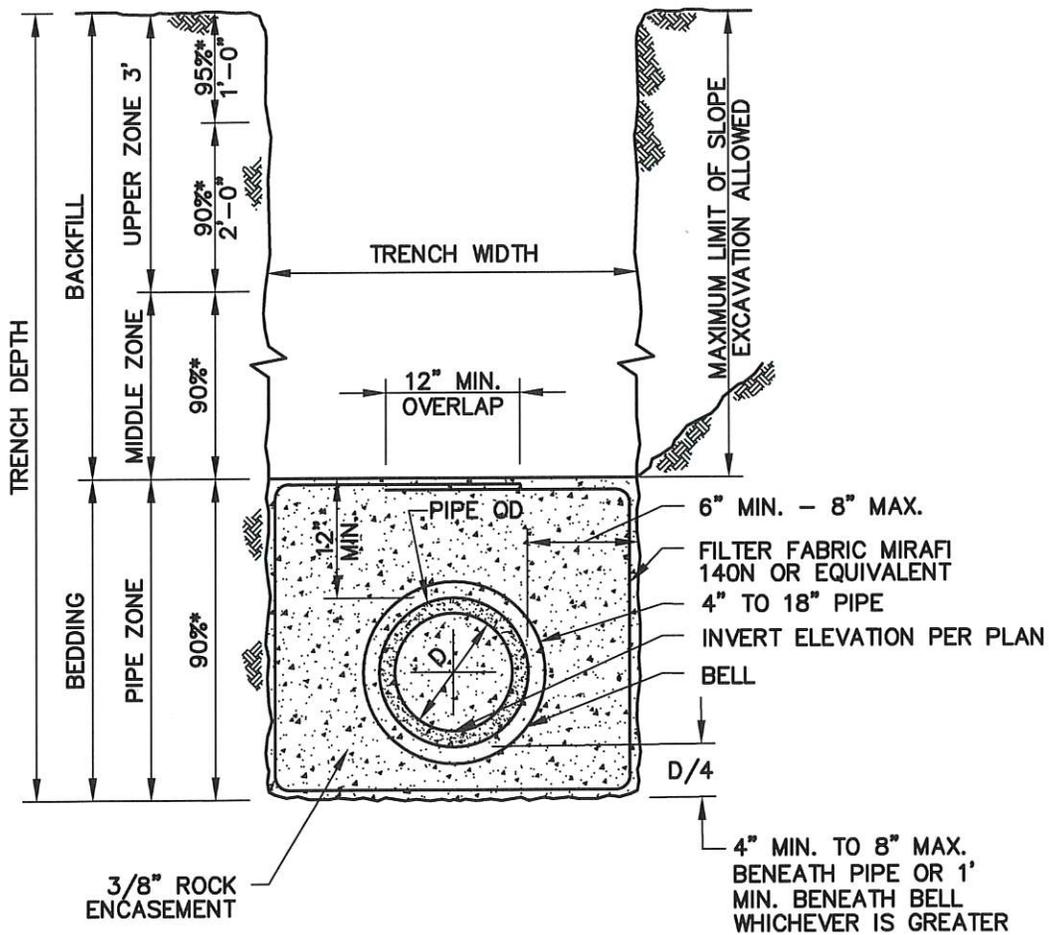
**HOUSE CONNECTION
SEWER REPAIR**

APPROVED
[Signature]
DIRECTOR OF PUBLIC WORKS

8/26/21
DATE

REVISION	

STD. NO.
SD-20
SHEET 1 OF 1



NOTES:

1. FOR TRENCH RESURFACING IN IMPROVED STREETS, SEE STD. NO. WD-36.
2. (*) INDICATES MINIMUM RELATIVE COMPACTION.
3. UNLESS INDICATED OTHERWISE IN DRAWINGS OR SPECIFICATIONS, MINIMUM DEPTH OF COVER FROM THE TOP OF PIPE TO FINISH GRADE FOR SEWER MAIN SHALL BE 5'. FOR SHALLOWER DEPTH, SPECIAL DESIGN IS REQUIRED.
4. INSTALL WARNING/IDENTIFICATION TAPE PER STD. NO. SD-14.
5. 1' SAND CUSHION OR A 6" MIN. SAND CUSHION WITH 1" NEOPRENE PAD SHALL BE PLACED FOR ALL CROSSING UTILITIES WHEN VERTICAL CLEARANCE IS 1' OR LESS. THE NEOPRENE PAD SHALL BE PLACED ON THE MOST FRAGILE UTILITY.



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**PIPE BEDDING AND TRENCH
BACKFILL FOR SEWER IN
GROUNDWATER**

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DATE

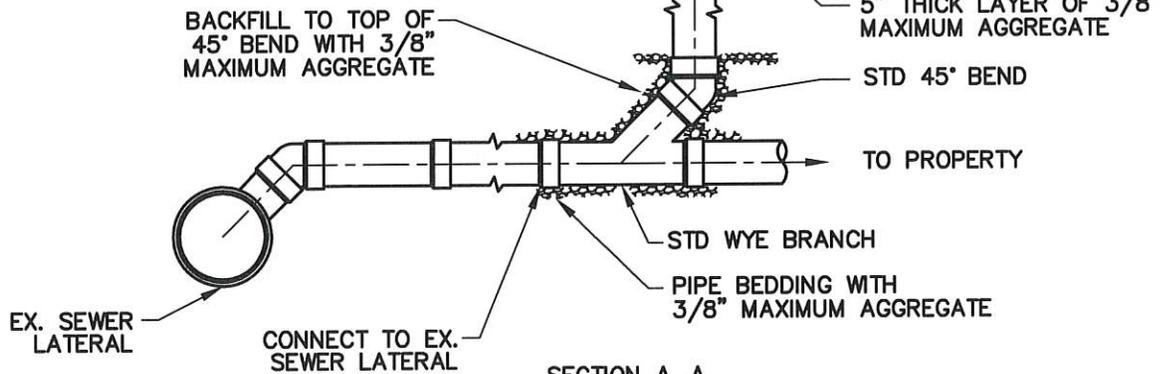
REVISION

STD. NO.
SD-21
SHEET 1 OF 1

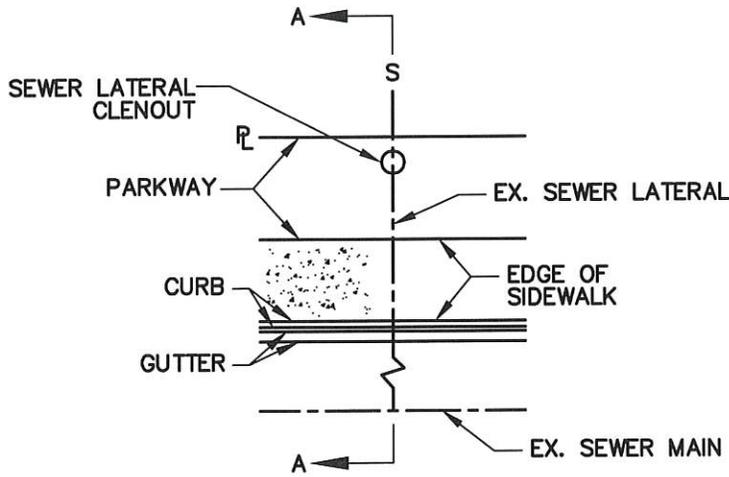
APPROVED MIN. 6" ID CONCRETE ROUND ENCLOSURE WITH CONCRETE COVER MARKED "SEWER"

CITY MAINTAINED | P/L RW OR EDGE OF EASEMENT | PRIVATELY MAINTAINED

MATCH THE EXISTING SURFACE



SECTION A-A



PLAN

NOTES:

1. RISER AND CLEANOUT PLUG SHALL BE SAME DIAMETER AS SEWER LATERAL.
2. CLEANOUT SHALL BE LOCATED WITHIN CITY RIGHT OF WAY, BEHIND THE SIDEWALK.



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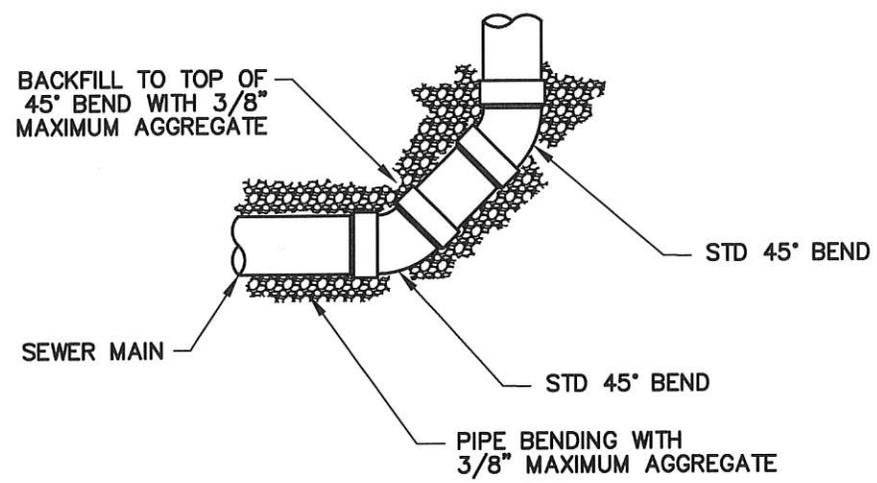
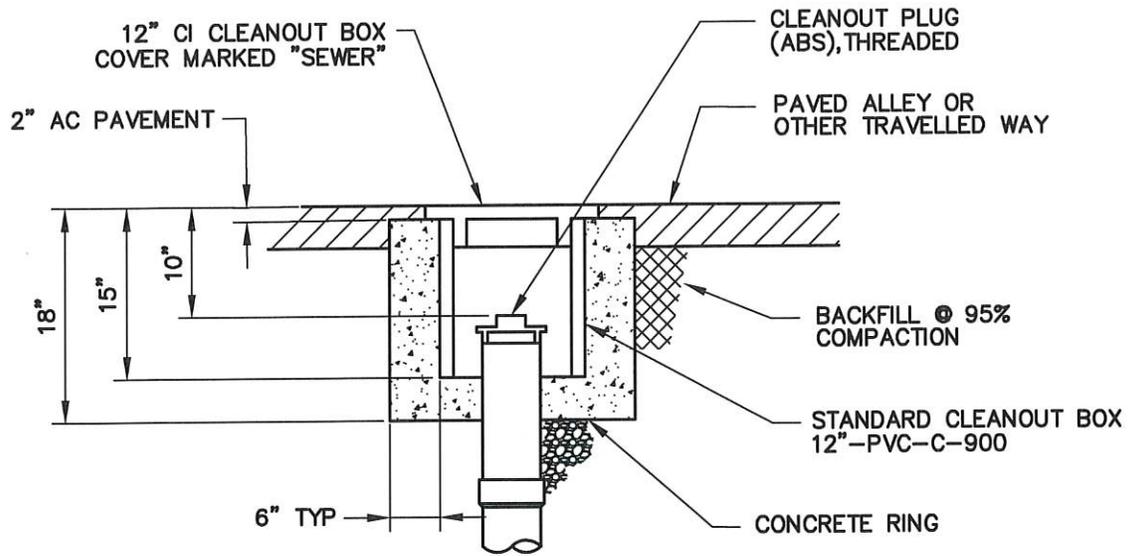
SEWER LATERAL
CLEANOUT

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8/26/21
DATE

REVISION	

STD. NO.
SD-22
SHEET 1 OF 1



NOTES:

1. CLEANOUTS TO BE INSTALLED AT THE END OF MAINS WHERE INDICATED ON THE PLANS.
2. CLEANOUT PIPE TO BE SAME SIZE AND MATERIAL AS SEWER (MAX. DIA. 8").
3. BACKFILL TO TOP OF 45° BEND WITH 3/8" CRUSHED ROCK.
4. LATERALS SHALL BE SELECTED FROM THE CITY'S APPROVED MATERIAL LIST.



LEGEND ON PLANS



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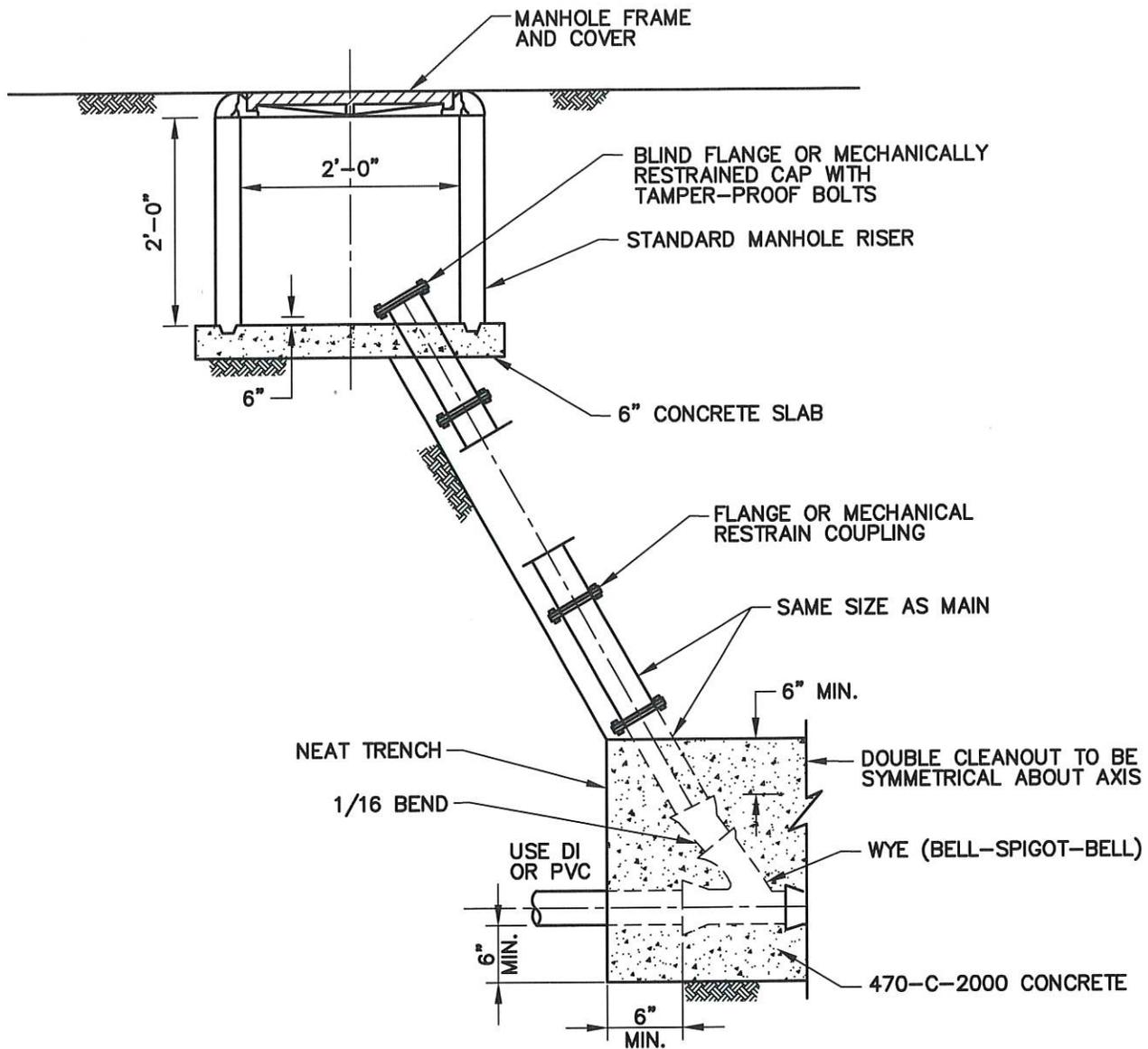
SEWER MAIN CLEANOUT

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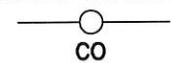

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STD. NO.
SD-23
SHEET 1 OF 1



LEGEND ON PLANS



NOTES:

1. CONCRETE SLAB SHALL BE 560-C-3250.
2. USE HEAVY DUTY MANHOLE FRAME AND COVER, STD. NO. SD-7, IN AREAS SUBJECT TO VEHICULAR TRAFFIC. USE LIGHT DUTY MANHOLE FRAME AND COVER, STD. NO. SD-8, IN ALL OTHER LOCATIONS.
3. MINIMUM PIPE PRESSURE CLASS 200.



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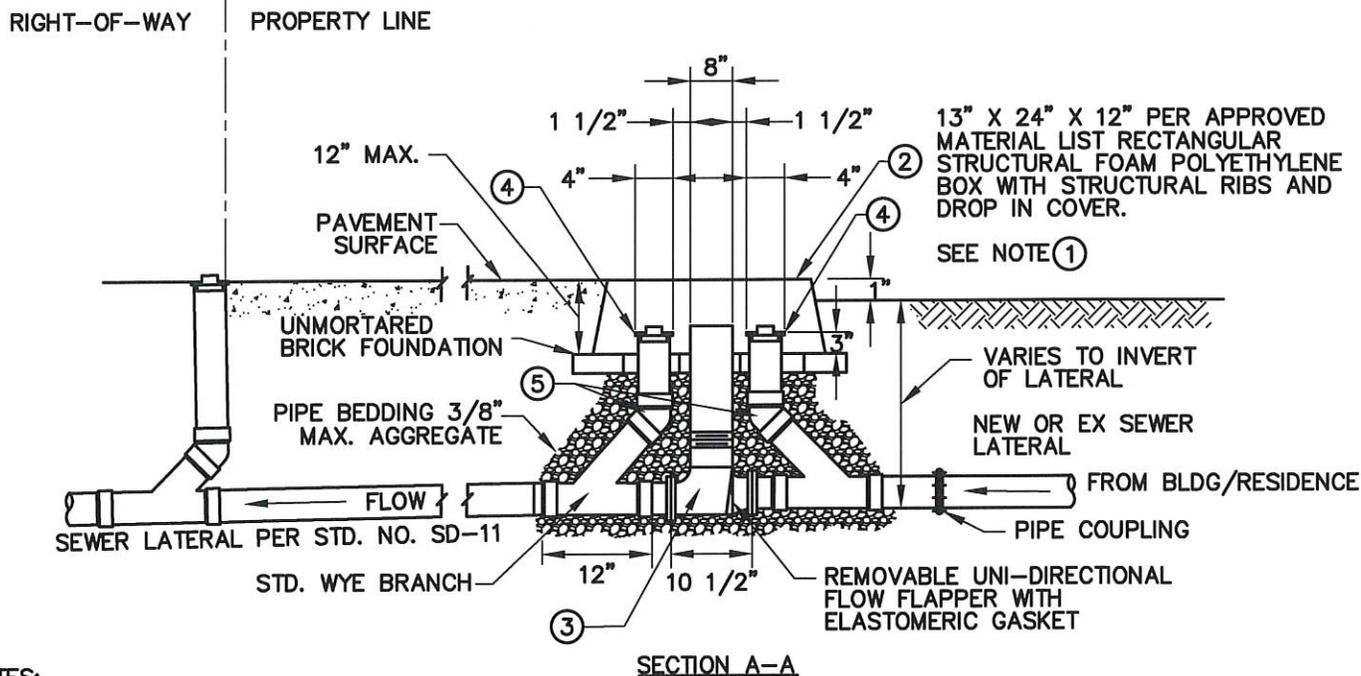
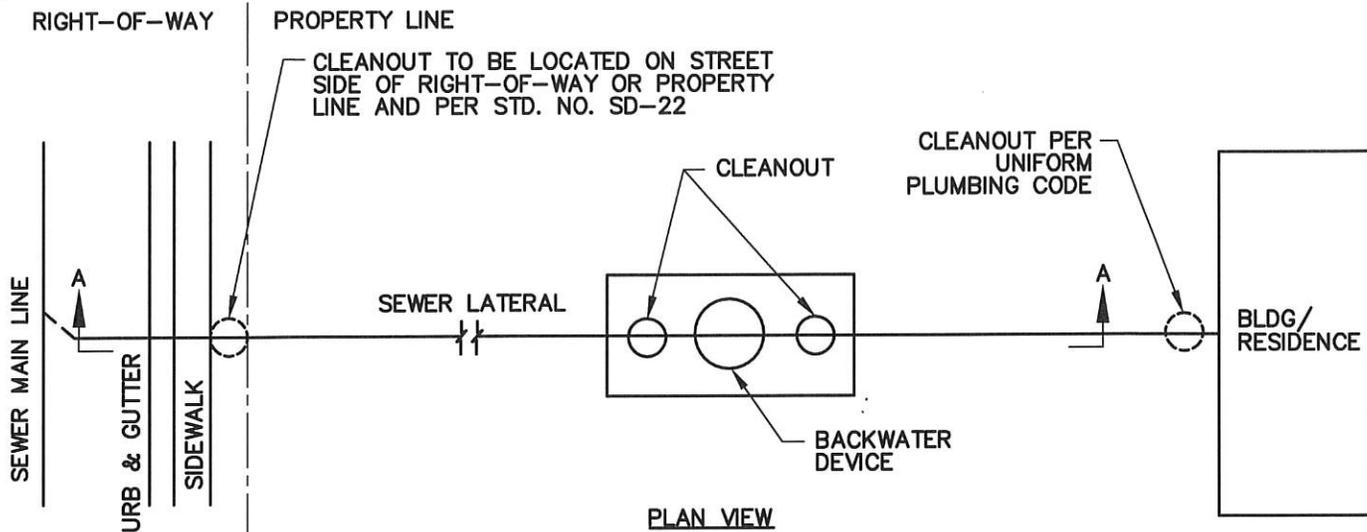
CLEANOUT - SEWER FORCE MAIN

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8/26/21
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REVISION	

STD. NO.
SD-24
SHEET 1 OF 1



NOTES:

- ① WHEN BACKWATER DEVICE IS INSTALLED IN THE DRIVEWAY, SEE SHEET 2.
- ② INSTALL VALVE BOX SO THAT IT IS FLUSH WITH PAVEMENT SURFACE OR 1" ABOVE FINISH GRADE (SOIL SURFACE).
- ③ PVC BACKWATER DEVICE AND ATTACHED PARTS SHALL BE PER THE CALIFORNIA PLUMBING CODE (CPC).
- ④ CLEANOUT PLUG (ABS) THREADED.
- ⑤ STANDARD 45° BEND.
- ⑥ THE BACKWATER DEVICE SHALL BE LOCATED AS CLOSE TO THE STRUCTURE AS REASONABLY POSSIBLE TO MINIMIZE THE DEPTH OF THE BACKWATER DEVICE.



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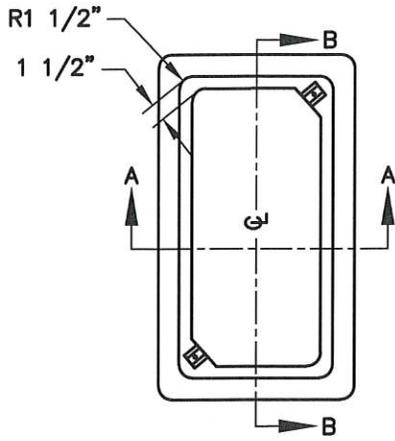
4" BACKWATER DEVICE

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DIRECTOR OF PUBLIC WORKS

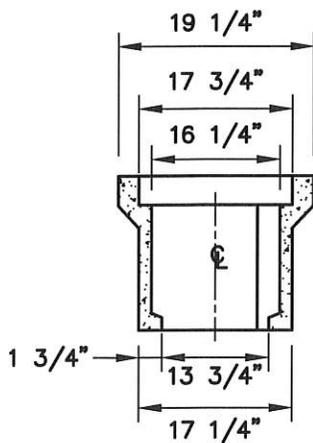
8/26/21
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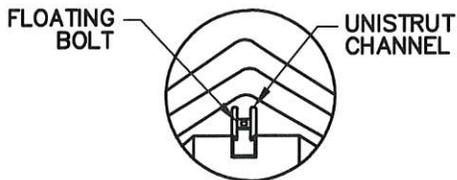
STD. NO.
SD-25
SHEET 1 OF 2



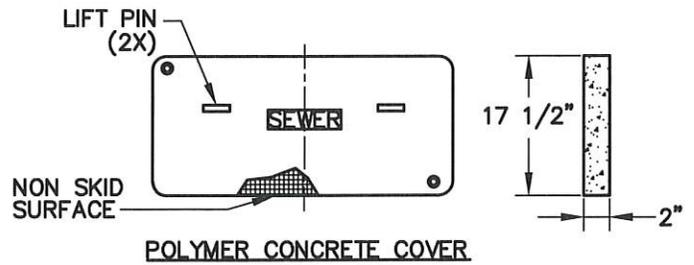
TOP VIEW



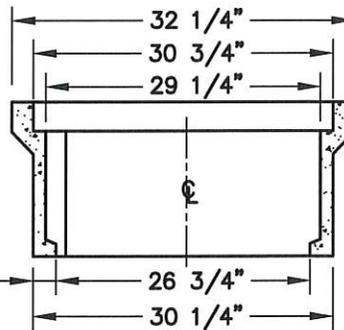
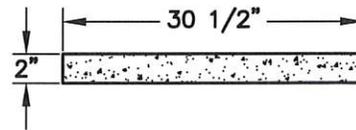
SECTION A-A



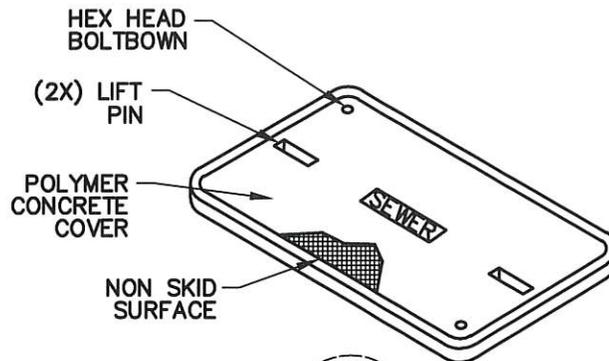
DETAIL -A



POLYMER CONCRETE COVER



SECTION B-B



CONCRETE BOX

NOTE:

1. THE BOX & COVER IS 10K LOAD RATED.



CITY OF SOUTH GATE
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4" BACKWATER DEVICE

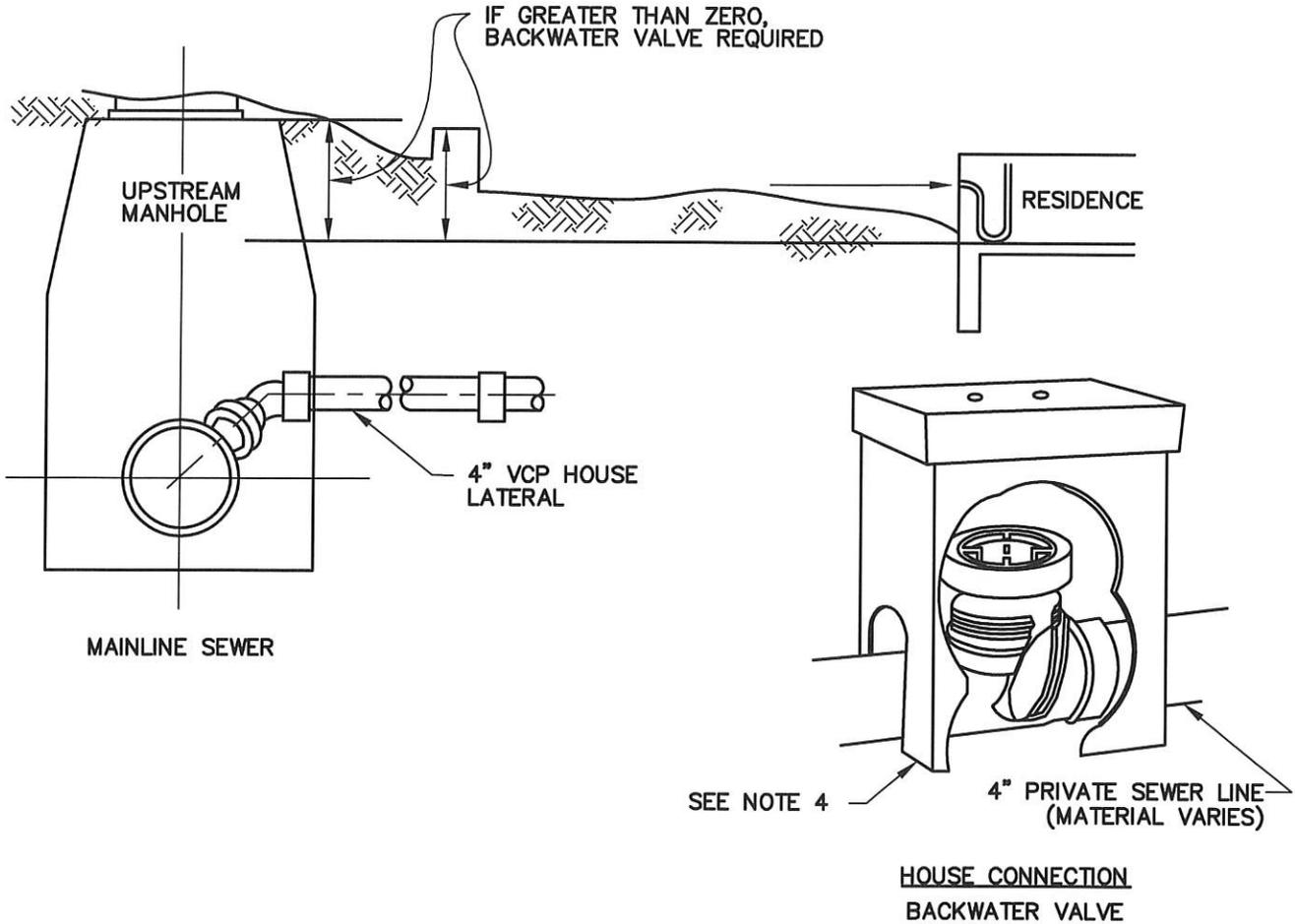
APPROVED *[Signature]*
DIRECTOR OF PUBLIC WORKS

8/26/24
DATE

REVISION

STD. NO.
SD-25
SHEET 2 OF 2

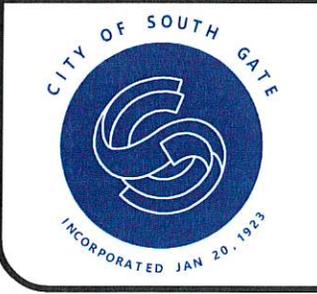
ALTHOUGH REQUIRED BY THE CITY, THIS UNIT IS TO BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.



NOTES:

1. THE BACKWATER VALVE INSTALLATION SHALL BE INSTALLED WHERE: (A) PLUMBING FIXTURE LEVELS ARE BELOW THE ELEVATION OF THE CURB AT THE POINT WHERE THE BUILDING SEWER CROSSES UNDER THE CURB OR (B) PLUMBING FIXTURES LEVELS ARE BELOW THE ELEVATION OF THE UPSTREAM MANHOLE RIM UNLESS WAIVED IN WRITING BY THE CITY OF SOUTH GATE.
2. THE RECOMMENDED OUTLET ELEVATION IS ONE FOOT BELOW THE FLOOR ELEVATION, BUT UNDER NO CIRCUMSTANCES SHALL THIS ELEVATION BE LESS THAN 4".
3. CAUTION SHALL BE EXERCISED IN LOCATING THE HOOD TO AVOID DAMAGE TO INSTALLATION FROM SURFACE IMPACT.
4. BACKWATER OVERFLOW VALVE MANUFACTURER TO BE SAME AS CURRENTLY APPROVED BY THE CITY OF SOUTH GATE.

- ① BACKWATER VALVE
 - ② 4" COUPLING*
 - ③ 4" PIPE*
 - ④ 4" 1/8 BEND AND WYE (PLAIN ENDS)*
- *MATERIAL VARIES



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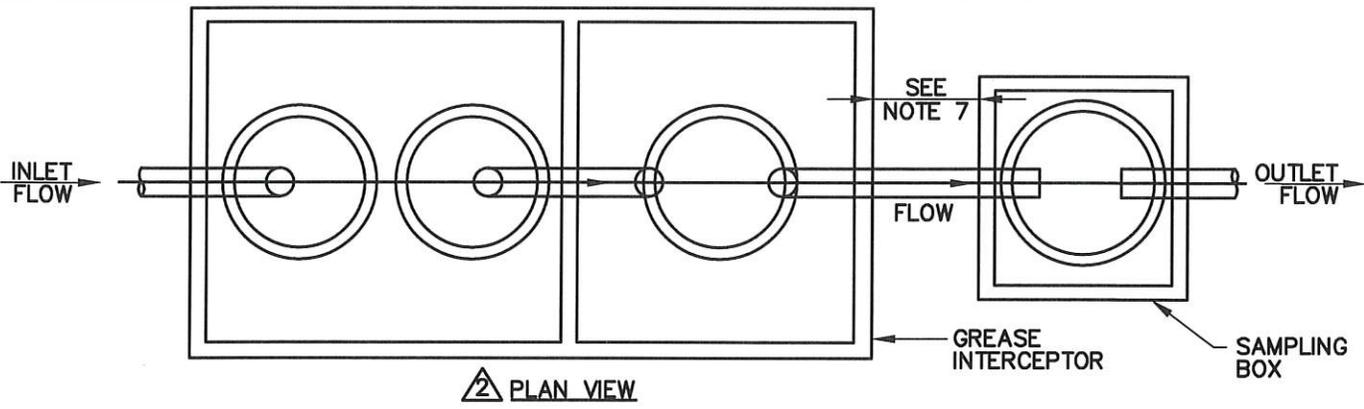
BACKWATER DEVICE FOR HOUSE CONNECTIONS

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DIRECTOR OF PUBLIC WORKS

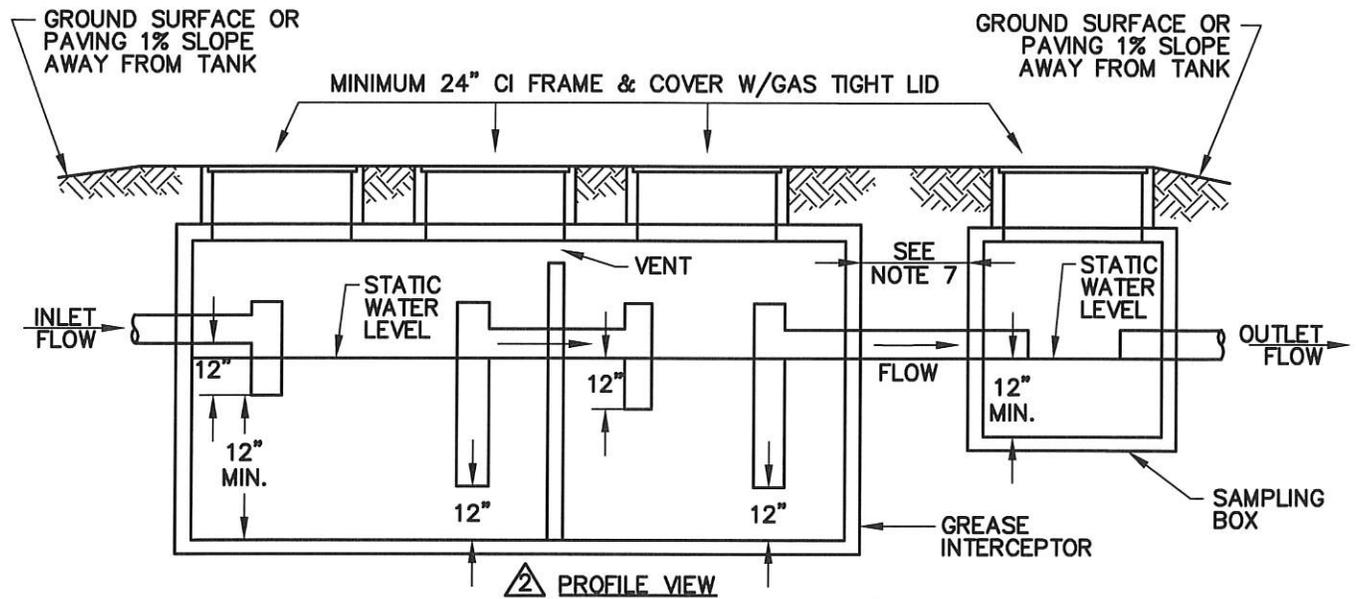
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REVISION	

STD. NO.
SD-26
SHEET 1 OF 1



2 PLAN VIEW



2 PROFILE VIEW

NOTES:

1. STRUCTURE SHALL BE INSTALLED TO ALLOW ACCESS FOR MAINTENANCE OR INSPECTION AT ALL TIMES.
2. WHERE SUBJECT TO VEHICLE LOADING, DESIGN ADEQUACY SHALL BE SUBSTANTIATED AND STRUCTURE SHALL BE PLACED ON SUITABLE BASE OF COMPACTED SOIL OR UNDISTURBED EARTH.
3. ALL SURFACE WATER MUST DRAIN AWAY FROM THE SAMPLING BOX AND INTERCEPTOR TO EXCLUDE RAIN WATER FROM THE SEWER SYSTEM.
4. FLOW TO THE SAMPLING BOX AND/OR INTERCEPTOR SHALL EXCLUDE ALL SANITARY SEWAGE AND SURFACE DRAINAGE.
5. EACH INSTALLATION IS SUBJECT TO REVIEW BY THE CITY OF SOUTH GATE FOR ADEQUATE CAPACITY PRIOR TO CONSTRUCTION.
6. INSPECTION COVERS SHALL BE BROUGHT TO GRADE TO PERMIT VISUAL INSPECTION OF INTERNAL FITTINGS, WITH RISERS AS REQUIRED.
7. SAMPLING BOX SHALL BE A MINIMUM OF 24" ID. SAMPLING BOX MAY BE ATTACHED OR AT A VARIABLE DISTANCE FORM THE INTERCEPTOR AS APPROVED BY THE CITY OF SOUTH GATE SOURCE CONTROL DIVISION.
8. MINIMUM CAPACITY OF INTERCEPTOR IS 750 GALLONS.
9. INTERCEPTORS REQUIRING MORE THAN 6 FEET OF GRADE RINGS MUST HAVE APPROVAL BEFORE INSTALLATION.



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**GREASE INTERCEPTOR
WITH 24" SAMPLE BOX**

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8/26/24
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REVISION	

STD. NO.
SD-27
SHEET 1 OF 1