

STANDARD DETAILS
GOOCHLAND COUNTY, VIRGINIA
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GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

CARRIER PIPE DIAMETER	CASING PIPE		
	CASING PIPE DIAMETER	MINIMUM WALL THICKNESS	
		CRITERIA WITHIN RAILROAD RIGHT OF WAY	CRITERIA WITHIN VDOT RIGHT OF WAY
		STEEL WITHOUT COATING	STEEL
6"	16"	0.281"	0.313"
8"	20"	0.344"	0.313"
10"	20"	0.344"	0.313"
12"	24"	0.375"	0.313"
15"	24"	0.375"	0.313"
* 16"	30"	0.469"	0.375"
18"	30"	0.469"	0.375"
20"	30"	0.469"	0.375"
21"	30"	0.469"	0.375"
24"	36"	0.532"	0.375"
30"	42"	0.625"	0.500"
33"	42"	0.625"	0.500"
36"	48"	0.688"	0.500"
42"	54"	0.781"	0.500"

STEEL CASING PIPE SHALL BE ASTM 1-139, GRADE B.

NOTES:

1. SLOPES THROUGH BORES SHALL NOT BE BASED ON MINIMUM GRADE UNLESS IT IS THE ONLY SLOPE AVAILABLE.
 2. INCREASING THICKNESS OF CASING MUST BE CONSIDERED WHERE BORE LENGTHS EXCEED 125'.
 3. WHEN USING STEEL CASING, A MINIMUM OF .500" THICKNESS IS REQUIRED WHERE GROUND COVER OVER PIPE EXCEED 15'.
 4. CONTRACTOR SHALL MAKE AN EFFORT TO BORE IN THE APPROPRIATE DIRECTION BASED ON EXISTING SOIL CONDITIONS. ENGINEER MUST SHOW LOCATION AND SIZE OF BORE PIT; AND LOCATION AND SIZE OF PERMANENT AND CONSTRUCTION EASEMENT.
 5. WHERE RESTRAINING DEVICES ARE REQUIRED FOR THE CARRIER PIPE, THE CASING PIPE SHALL BE INCREASED AS NECESSARY.
 6. MINIMUM CASING DIAMETER SHALL PROVIDE A MINIMUM CLEARANCE OF 4" ALL AROUND JOINT RESTRAINTS HARDWARE.
- * WHERE PIPE IS RESTRAINED, APPROVED RESTRAINED JOINT PIPE MAY BE USED IN A 24" CASING PIPE TO AVOID HAVING TO INSTALL A 30" CASING PIPE.

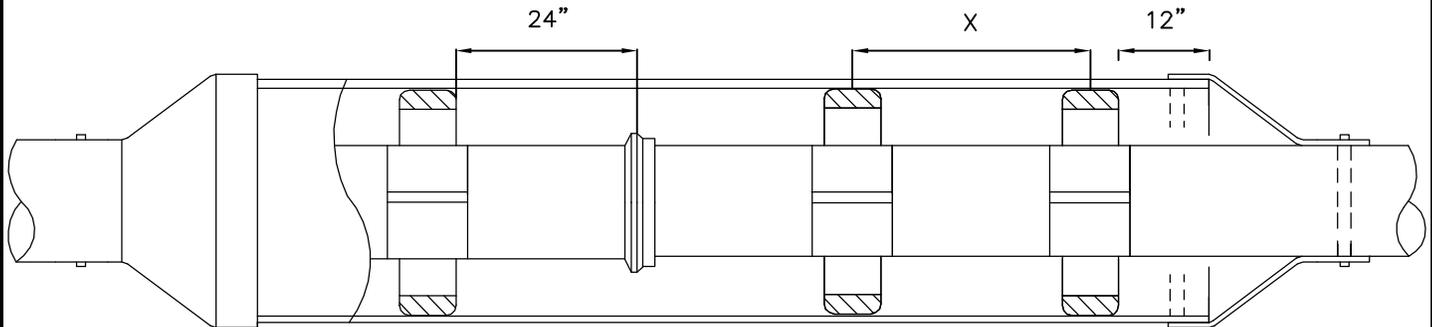
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CASING PIPE REQUIREMENTS

DRWG. NO.
CAS-1

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NOTES:

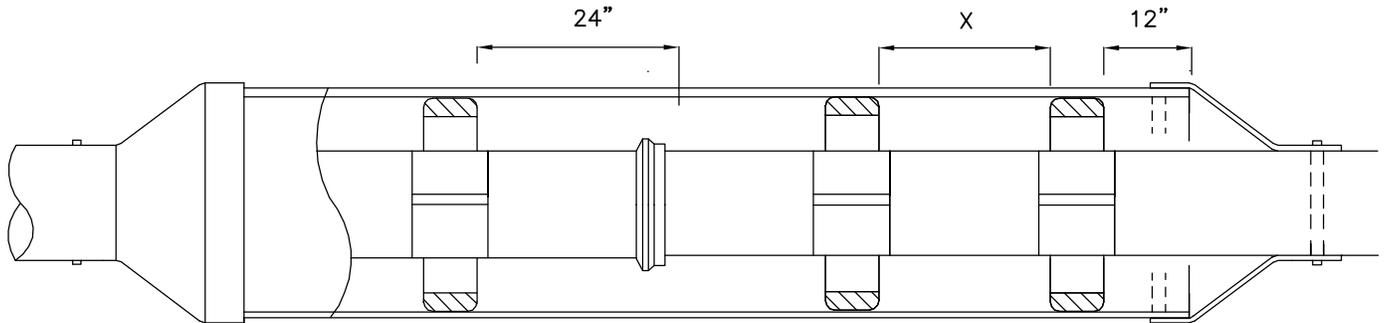
1. CASING SPACERS FOR GRAVITY SEWER LINES SHALL BE OFFSET TO COMPENSATE FOR ANY DIFFERENCE IN THE REQUIRED SLOPE OF THE CARRIER PIPE AND SLOPE OF THE CASING PIPE IF CASING PIPE DOES NOT HAVE THE SAME SLOPE OF THE REQUIRED CARRIER PIPE SLOPE.
2. THREE CASING SPACERS SHALL BE ATTACHED TO EACH JOINT OF CARRIER PIPE WITH ONE AT THE CENTER AND ONE NOT MORE THAN 24" FROM EACH END.
3. ONE CASING SPACER SHALL BE LOCATED NOT MORE THAN 12" FROM EACH END OF THE PIPE CASING.
4. CARRIER PIPE SHALL BE POSITIONED AND RESTRAINED WITHIN CASING TO COMPLY WITH GRADE REQUIREMENTS BY AN APPROVED STAINLESS STEEL CASING SPACER.
5. LINES TO BE ENCASED UNDER STATE ROADS/RAILROADS WILL COMPLY WITH COUNTY AND ANY APPLICABLE VDOT/AMERICAN RAILROAD ENGINEERING SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
6. WHEN INSTALLING CARRIER PIPE, CONTRACTOR SHALL PUSH SO THAT PIPE JOINTS ARE ALWAYS BEING COMPRESSED.
7. STEEL CASING PIPE SHALL BE ASTM-139, GRADE B. WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI.
8. CARRIER PIPE WITHIN CASING FOR SANITARY SEWER INSTALLATION SHALL BE DUCTILE IRON (CLASS 52) AND IS TO BE USED FROM MANHOLE TO MANHOLE.
9. CASING SHALL BE SEALED BY USE OF WRAPAROUND END SEALS.

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CASING DETAIL FOR GRAVITY SEWER LINES

DRWG. NO. CAS-2

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NOTES:

1. CARRIER PIPE SHALL BE CENTERED WITHIN CASING BY AN APPROVED STAINLESS STEEL CASING SPACER.
2. CASING PIPE SHALL BE SEALED BY USE OF WRAPAROUND END SEALS.
3. THREE CASING SPACERS SHALL BE ATTACHED TO EACH JOINT OF CARRIER PIPE WITH ONE AT THE CENTER AND ONE NOT MORE THAN 24" FROM EACH END.
4. ONE CASING SPACER SHALL BE LOCATED NOT MORE THAN 12" FROM EACH END OF CASING PIPE.
5. VALVES OR OTHER CONTROL/MAINTENANCE EQUIPMENT ATTACHED TO WATERLINE/SEWER FORCE MAINS SHALL BE LOCATED A MINIMUM FOUR PIPE LENGTHS FROM THE END OF THE CASING, OR AS APPROVED BY THE COUNTY.
6. LINES TO BE ENCASED UNDER STATE ROADS/RAILROADS WILL COMPLY WITH COUNTY AND ANY APPLICABLE VDOT/AMERICAN RAILROAD ENGINEERING SPECIFICATIONS WHICHEVER IS MORE STRINGENT.
7. WHEN INSTALLING CARRIER PIPE, CONTRACTOR SHALL PUSH SO THAT PIPE JOINTS ARE ALWAYS BEING COMPRESSED.
8. STEEL CASING PIPE SHALL BE ASTM-139, GRADE B WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI.
9. ALL WATERLINES IN CASING SHALL BE A MINIMUM CLASS 52 DUCTILE IRON WITH M.J. BELLS AND AN APPROVED MECHANICAL JOINT RESTRAINT DEVICE AT EACH M.J. CONNECTION. ALL JOINTS FOR A DISTANCE OF THREE FULL PIPE LENGTHS OUTSIDE EACH END OF CASING SHALL BE M.J. DUCTILE IRON WITH RESTRAINED JOINTS. AS AN ALTERNATIVE, APPROVED RESTRAINED JOINT PIPE MAY BE USED.

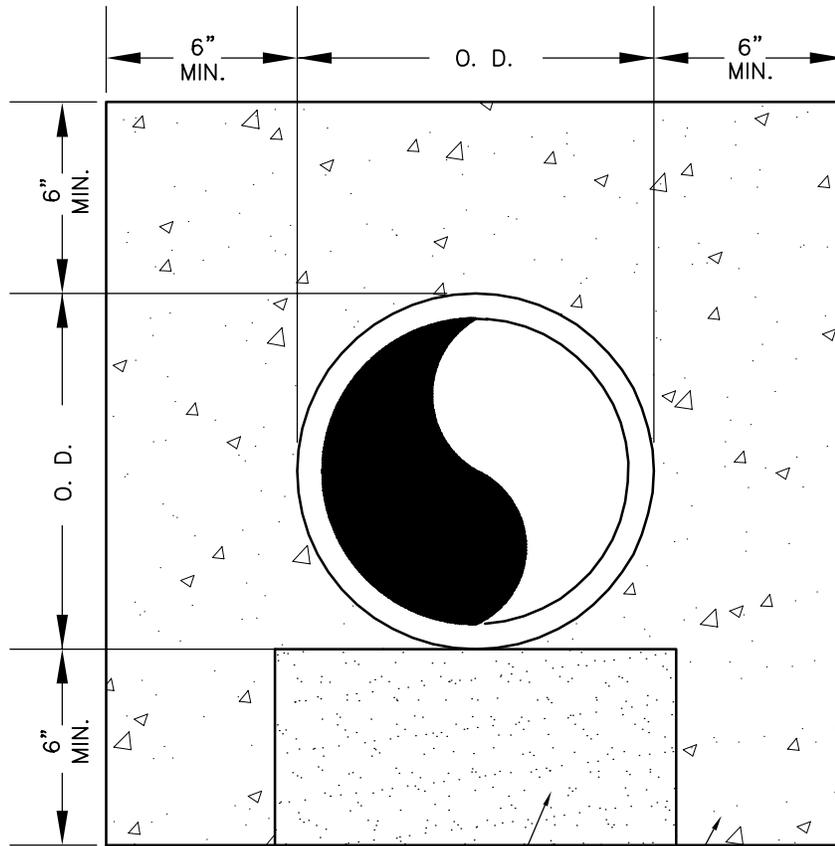
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CASING DETAIL FOR WATER LINES & SEWER FORCE
MAINS

DRWG. NO.
CAS-3

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DEPARTMENT OF PUBLIC UTILITIES



SOLID CONCRETE BLOCK SUPPORT
(MINIMUM OF ONE PER PIPE LENGTH)

3000# CONCRETE

NOTES:

1. ALL CONCRETE ENCASEMENTS MUST BE FORMED AND INSPECTED BY DPU INSPECTOR PRIOR TO PLACING CONCRETE AND BACKFILLING.
2. AT STREAM CROSSINGS, ENCASEMENT SHALL EXTEND A MINIMUM OF TEN FEET (10') ON EITHER SIDE OF THE CROSSING.

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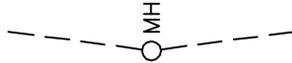
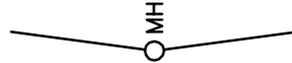
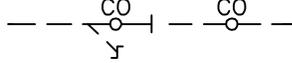
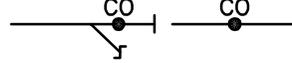
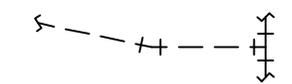
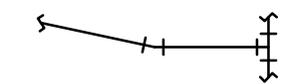
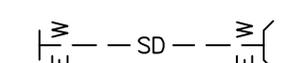
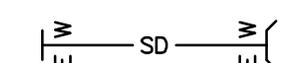
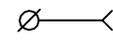
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PIPE ENCASEMENT DETAIL

DRWG. NO.

CAS-4

GOOCHLAND COUNTY
DEPARTMENT OF UTILITIES

DESCRIPTION OF UTILITY	SYMBOL FOR EXISTING	SYMBOL FOR PROPOSED
SANITARY SEWER	- - - - SAN - - - -	———— SAN ————
MANHOLE		
CLEANOUT		
SEWAGE FORCE MAIN	- - - - FM - - - -	———— FM ————
WATER MAIN OR SERVICE LINE	- - - - W - - - -	———— W ————
VALVE	- - - - ⊗ - - - -	———— ⊗ ————
VALVE (ALTERNATIVE TO THE ABOVE)	- - - - ✕ - - - -	———— ✕ ————
METER	- - - - ○ ^M - - - -	———— ○ ^M ————
FIRE HYDRANT	- - - - ⊙ FH	———— ● FH
REDUCER	- - - - ▷ - - - -	———— ▷ ————
PIPE FITTINGS & REACTION BLOCKING		
PIPE END CAP OR PLUG	- - - - ⊔ > - - - -	———— ⊔ > ————
GAS MAIN OR SERVICE LINE	- - - - G - - - -	———— G ————
STORM DRAIN WITH ENDWALLS		
POWER LINE	- - - - P - - - -	———— P ————
TELEPHONE LINE	- - - - T - - - -	———— T ————
CABLE TV LINE	- - - - CTV - - - -	———— CTV ————
UNDERGROUND LINE	- - - - U/G - - - -	———— U/G ————
OVERHEAD LINE	- - - - O/H - - - -	———— O/H ————
UTILITY POLE WITH GUY & ANCHOR		

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STANDARD SYMBOLS FOR UTILITY DRAWINGS

DRWG. NO.
DES-1

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

		PIPE SIZE (IN.)													
		8	10	12	15	18	21	24	27	30	33	36	42	48	
MANHOLE SIZE (IN.)	48														
		8	46	48	51	55	60	63	67						
		10		51	53	58	62	65	70						
		12			55	60	65	67	72						
		15				65	69	72	77						
		18					74	77	82						
		21						79	84						
	24							89							
	60	12	40	42	44	48	52	54	58	60	63	65			
		15	44	46		52	56	58	61	63	67	69			
		18	48	50			59	61	65	67	71	73			
		21	50	52				63	67	69	73	75			
		24	54	56					71	73	77	79			
		27	56	58						75	79	81			
		30	60	61							83	84			
	33	61	63								86				
	72	15	37	38	40	43	46	48	51	53	56	58	61		
		18	40	42	43		49	51	54	56	59	61	64		
		21	42	43	45			53	56	58	61	62	66		
		24	45	46	48				59	61	64	66	69		
		27	37	38	40					53	56	58	61		
		30	50	51	53						69	70	74		
		33	51	53	54							72	75		
	84	18	34	36	37	40	42	44	47	48	51	52	55	59	63
21		36	37	38	41		45	48	49	52	53	56	60	64	
24		38	40	41	44			51	52	55	56	59	63	67	
27		40	41	43	45				53	56	58	60	64	68	
30		43	44	45	48					59	60	63	67	71	
33		44	45	47	49						62	64	68	73	
36		47	48	49	52							67	71	75	
42	51	52	53	56								75	79		
48	55	56	58	60									83		
96		54	48	49	50	53	55	56	59	60	62	64	66	69	73

MINIMUM ANGLE DERIVED BY:

$$\frac{\left(\frac{H_1}{2} + \frac{H_2}{2} + 7\right)}{\pi * MH \text{ DIAM}} * 360$$

Where H = Hole sizes for DIP per hole sizing chart on MAN 1-2

NOTES:

1. MINIMUM ANGLES ARE BASED ON KOR-N-SEAL STAINLESS STEEL WEDGE CONNECTOR HOLE SIZES FOR DUCTILE IRON OUTSIDE DIAMETERS
2. FOR PIPES OTHER THAN DI, THE ANGLE SHALL BE CALCULATED BASED UPON KOR-N-SEAL HOLE SIZING CHART
3. SEE MAN-1 SHEET 2 FOR KOR-N-SEAL HOLE SIZING CHART

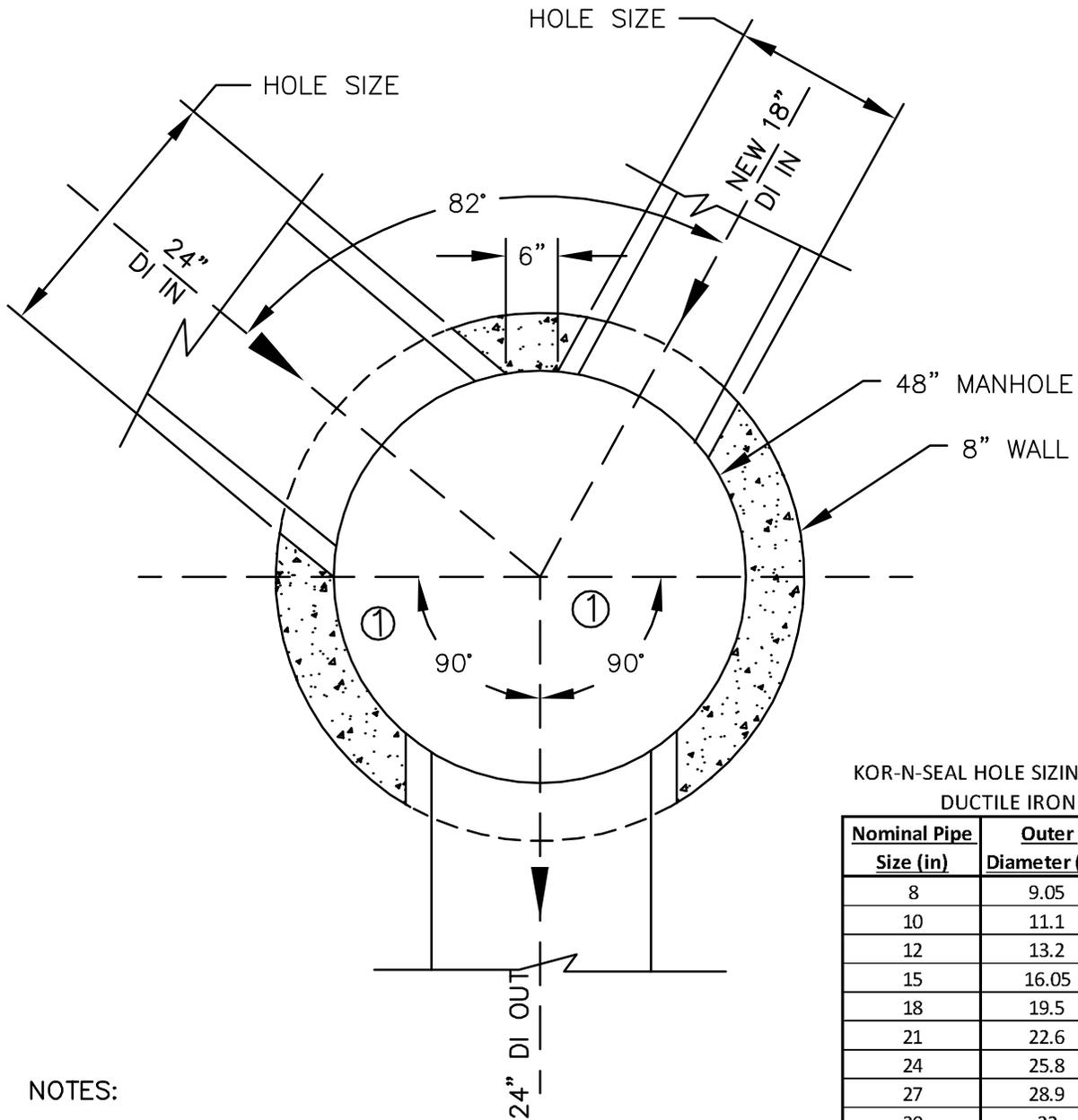
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MANHOLE MINIMUM ANGLE TABLE

DRWG. NO.
MAN-1
SHEET 1 OF 2

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



KOR-N-SEAL HOLE SIZING CHART FOR
DUCTILE IRON PIPE

Nominal Pipe Size (in)	Outer Diameter (in)	Hole Size (in)
8	9.05	12.2
10	11.1	14.2
12	13.2	16.15
15	16.05	20.1
18	19.5	24.1
21	22.6	26.2
24	25.8	30.2
27	28.9	32.2
30	32	36.2
33	35.2	38.2
36	38.3	42.2
42	44.45	48.2
48	50.8	54.2

NOTES:

1. MINIMUM ANGLE BETWEEN INFLUENT AND EFFLUENT PIPES IS 90°, EXCEPT BY SPECIAL DESIGN.

EXAMPLE: 48" MANHOLE, EXISTING 24" DI IN, EXISTING 24" DI OUT, NEW 18" DI IN, ALL CONCRETE. MAN-1 TABLE INDICATES A MINIMUM ANGLE OF 82° BETWEEN THE EXISTING 24" (IN) AND THE NEW 18" DI (IN), RESULTING IN APPROXIMATE 6" OF INTERIOR MANHOLE WALL REMAINING BETWEEN THE 2 PIPES.

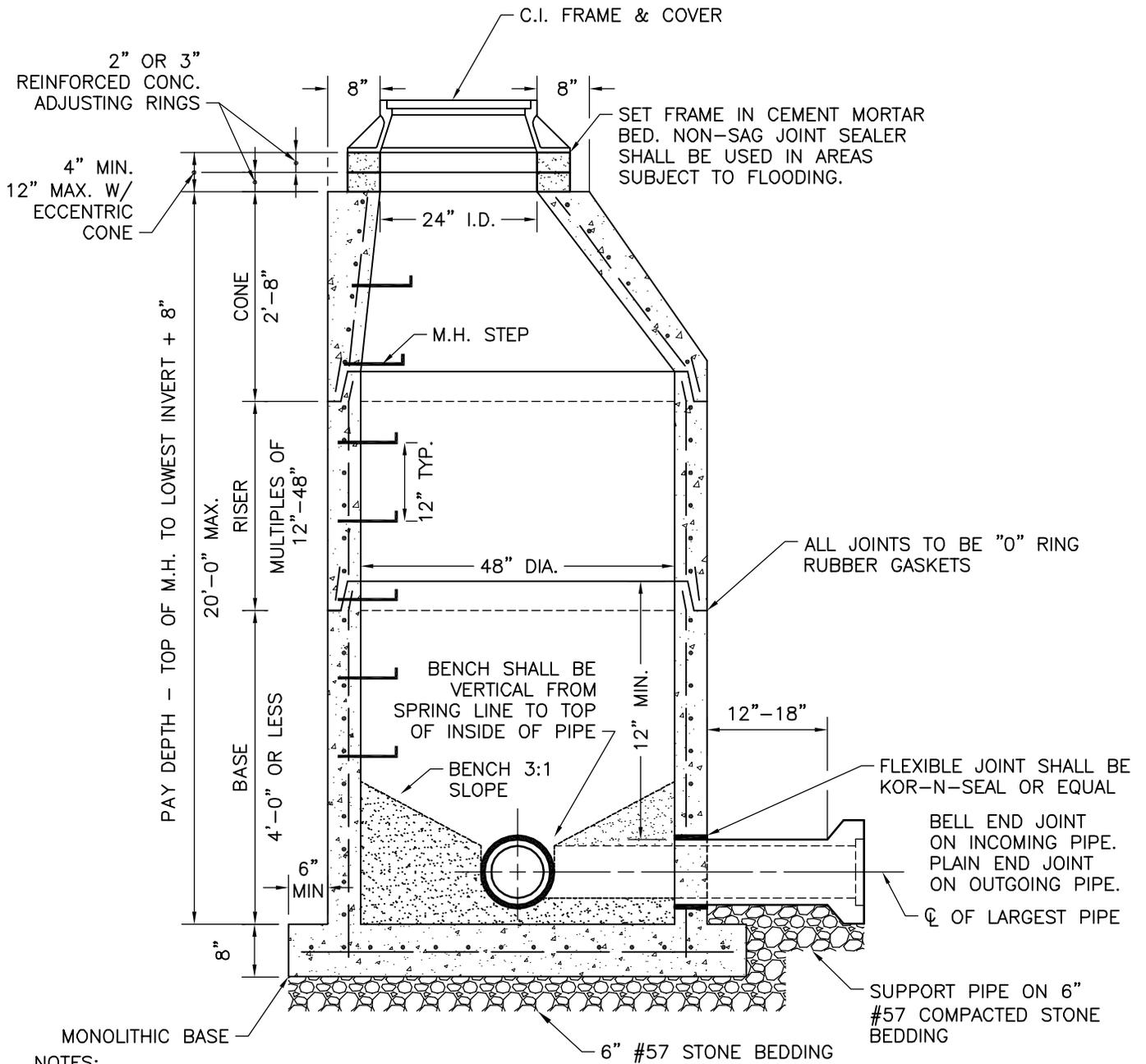
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MANHOLE SIZING

DRWG. NO.
MAN - 1
SHEET 2 OF 2

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NOTES:

1. BENCH MAY BE CONC. OR BRICK AND MORTAR.
2. WHERE STUBS OR KNOCKOUTS ARE PROVIDED FOR FUTURE CONNECTION BENCH SHALL BE FORMED.
3. DO NOT PLACE STEPS ON DOWNSTREAM SIDE OF MANHOLE.
4. SEE DRWG. NO. MAN-1 FOR MANHOLE SIZING TABLE.
5. 24" MAXIMUM PIPE SIZE.
6. MANHOLE CONSTRUCTION SHALL CONFORM TO ASTM SPEC. C-478.
7. INLET PIPE SHALL BE 0.10 MINIMUM ABOVE OUTLET PIPE UNLESS INDICATED GREATER ON DRAWING.

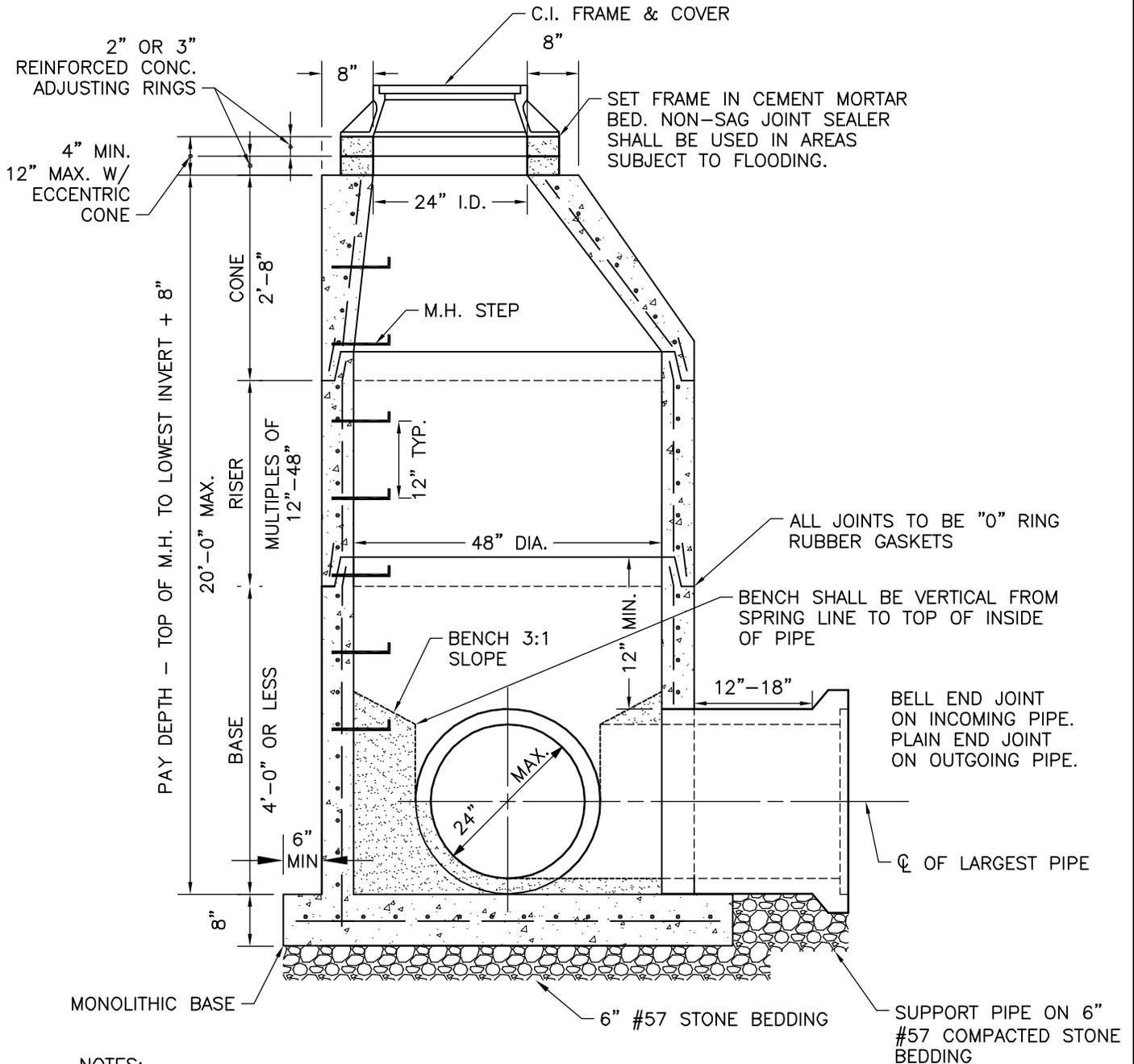
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4' INSIDE DIAMETER
STANDARD PRECAST CONCRETE MANHOLE

DRWG. NO.
MAN-2

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DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. BENCH MAY BE CONC. OR BRICK AND MORTAR.
2. WHERE STUBS OR KNOCKOUTS ARE PROVIDED FOR FUTURE CONNECTION BENCH SHALL BE FORMED.
3. DO NOT PLACE STEPS ON DOWNSTREAM SIDE OF MANHOLE.
4. SEE DRWG. NO. MAN-1 FOR MANHOLE SIZING TABLE.
5. 24" MAXIMUM PIPE SIZE.
6. MANHOLE CONSTRUCTION SHALL CONFORM TO ASTM SPEC. C-478.
7. INLET PIPE SHALL BE 0.10 MINIMUM ABOVE OUTLET PIPE UNLESS INDICATED GREATER ON DRAWING.

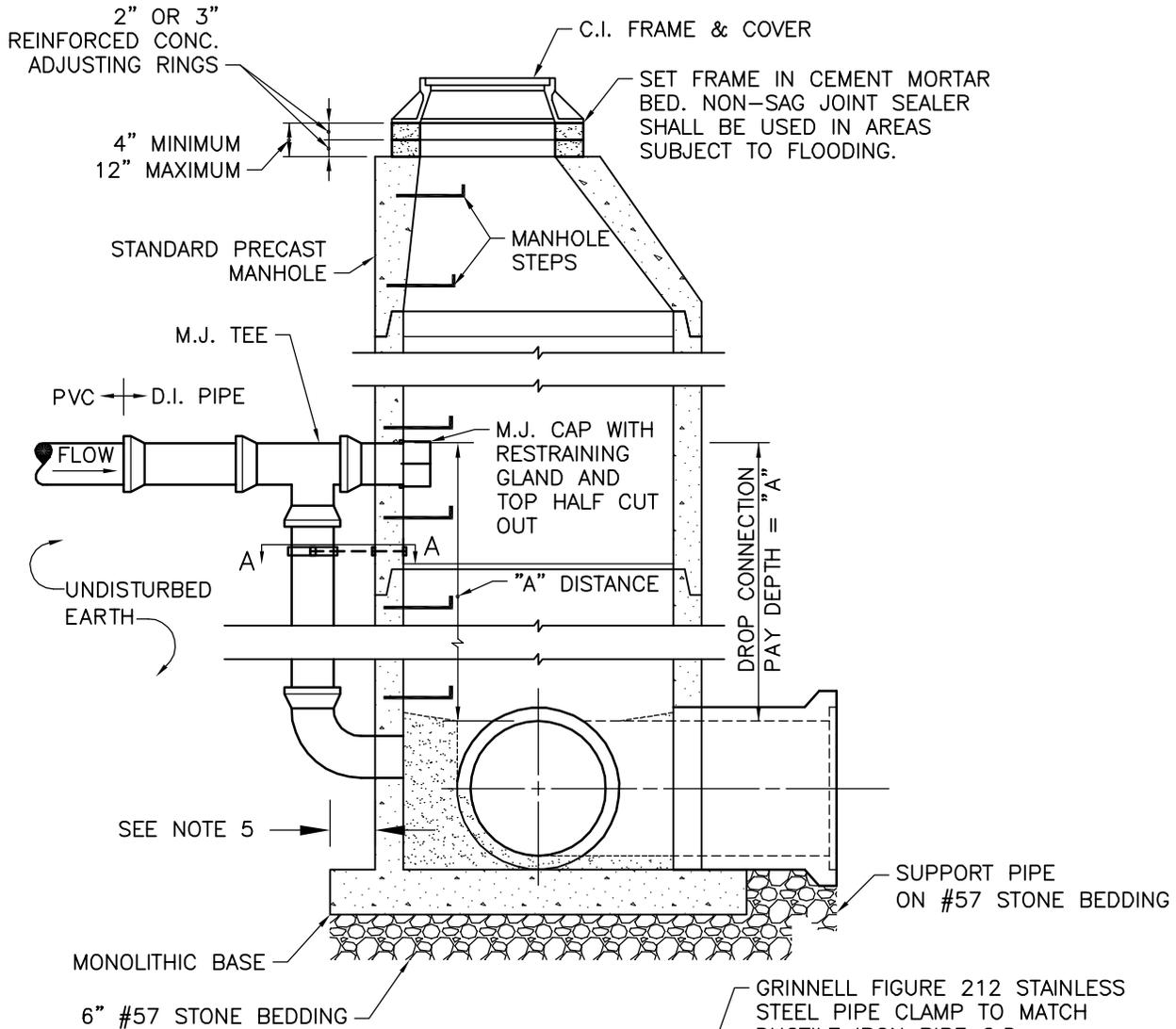
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STANDARD PRECAST CONCRETE MANHOLE
SEWERS 18", 21" AND 24"

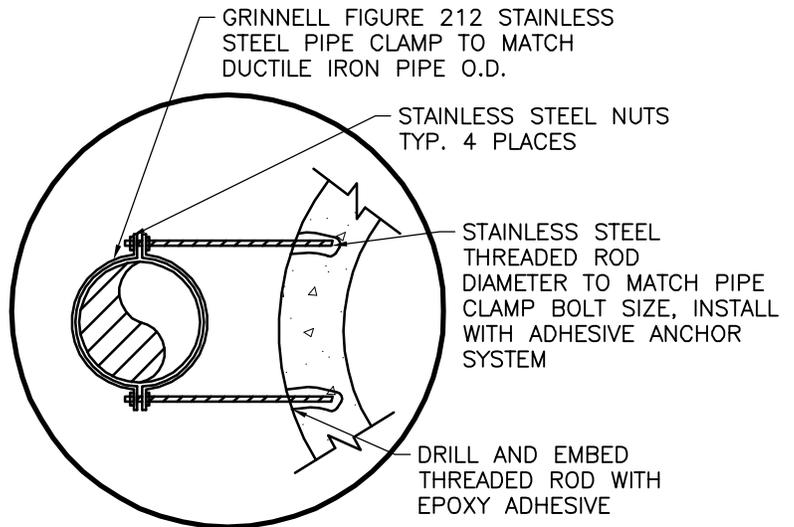
DRWG. NO.
MAN-3

GOOCHLAND COUNTY
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NOTES:

1. WHERE "A" DISTANCE IS GREATER THAN 2'-6" USE STANDARD DROP CONNECTION.
2. ALL DROP PIPE SHALL BE DUCTILE IRON.
3. PAY DEPTH - TOP OF M.H. TO LOWEST INVERT + 8".
4. INLET PIPE SHALL BE 0.10 MINIMUM ABOVE OUTLET PIPE UNLESS INDICATED GREATER ON DRAWING.
5. DIMENSION IN INCHES = MANHOLE INSIDE DIAMETER IN FEET PLUS 2 INCHES
6. INSIDE TOP OF DROP PIPE SHALL BE EVEN WITH INSIDE TOP OF OUTLET PIPE



SECTION A-A

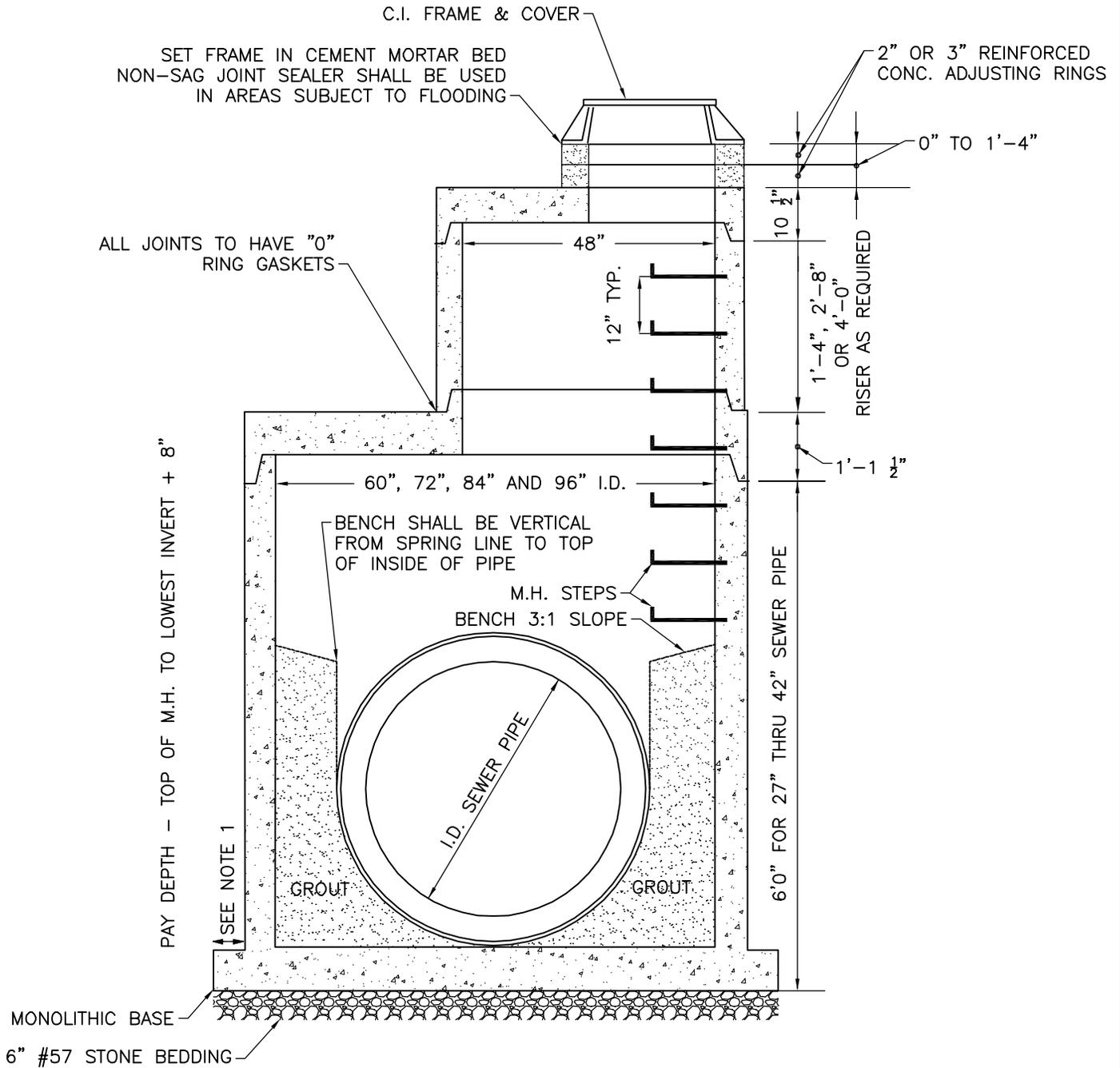
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OUTSIDE DROP CONNECTION

DRWG. NO.
MAN-4

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. DIMENSION (IN INCHES) = MANHOLE INSIDE DIAMETER IN FEET PLUS 2 INCHES
2. MANHOLE CONSTRUCTION SHALL CONFORM TO ASTM SPEC. C-478.
3. WHERE STUBS OR KNOCKOUTS ARE PROVIDED FOR FUTURE CONNECTIONS BENCH SHALL BE SO FORMED.
4. SEE DRWG. NO. MAN-1 FOR MANHOLE SIZING TABLE.

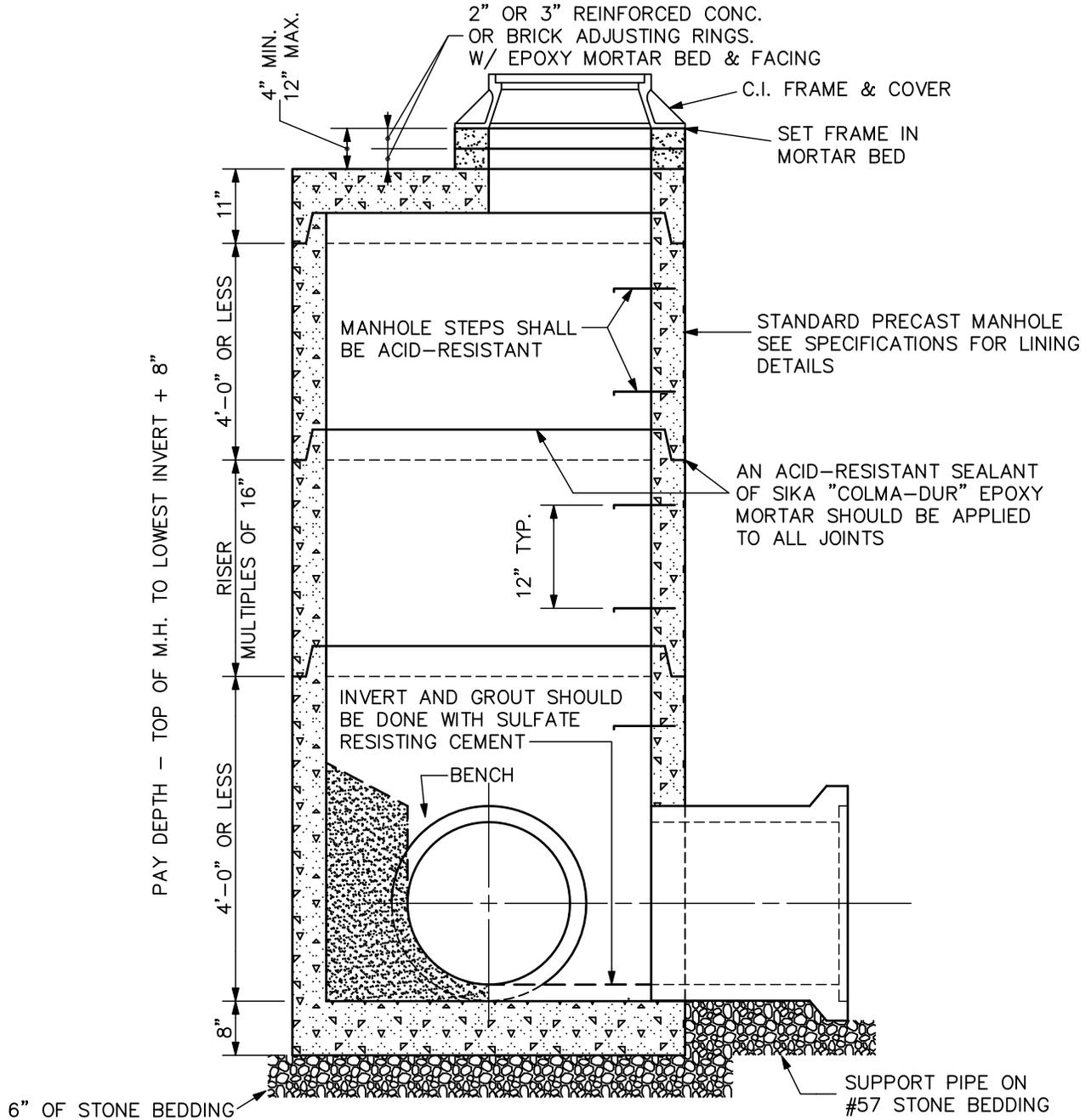
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60", 72", 84", AND 96" I.D. MANHOLE - 2

DRWG. NO.
MAN-6

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTE: ACID-RESISTANT MANHOLES SHALL BE USED WITHIN 1200 FT. DOWNSTREAM OF FORCE MAIN DISCHARGE. LINING SHALL BE IN ACCORDANCE WITH WRITTEN SPECIFICATIONS. JOINTS TO BE PACKED AND BRUSHED WITH SIKA "COLMA -DUR" EPOXY MORTAR. WHERE STUBS OR KNOCK-OUTS ARE PROVIDED FOR FUTURE CONNECTIONS BENCH SHALL BE SO FORMED. SEE DRWG. NO. MAN-1 FOR MANHOLE SIZING TABLE

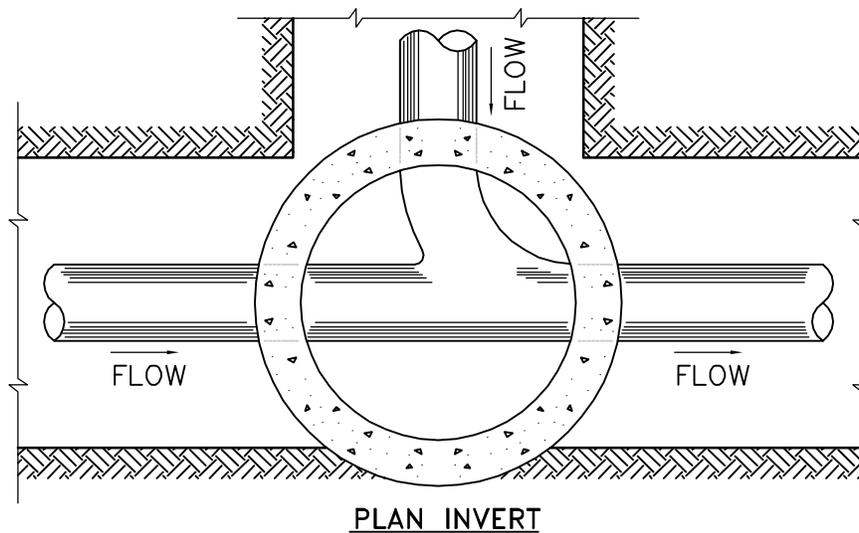
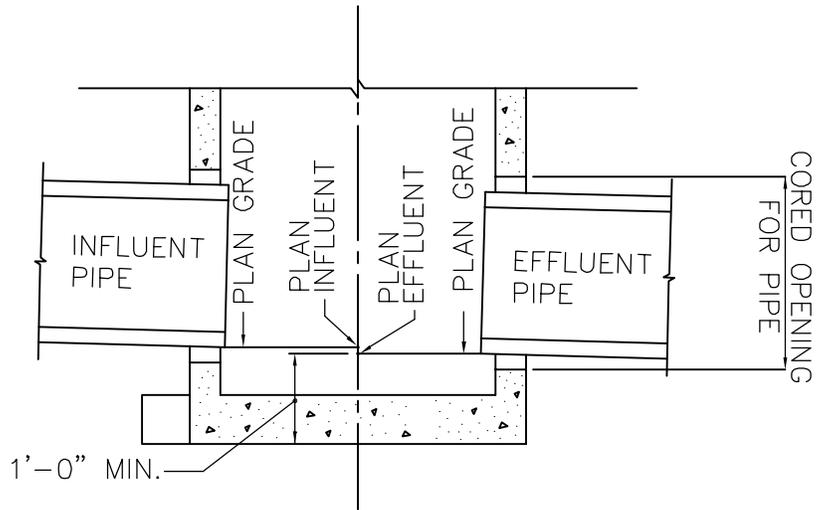
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SPECIAL ACID - RESISTANT LINING
ALL MANHOLES

DRWG. NO.
MAN-8

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. THE EFFLUENT ELEVATION SHOWN AT A MANHOLE IS ESTABLISHED FROM THE INFLUENT ELEVATION OF THE MANHOLE IMMEDIATELY DOWNSTREAM BASED UPON PIPE SLOPE. ELEVATIONS SHOWN APPLY AT THE CENTERLINE OF MANHOLES AND ARE BASED ON THE HORIZONTAL DISTANCE, C.L. TO C.L. OF M.H., USING PERCENT OF GRADE INDICATED.
2. PIPE OPENINGS SHALL BE LOCATED TO BE CONCENTRIC WITH THE PIPE AT THE SPECIFIED INVERT
3. PIPE OPEN DIAMETER BE AS RECOMMENDED BY BOOT MANUFACTURER FOR THE PIPE OUTSIDE DIAMETER.
4. MINIMUM INVERT DROP SHALL BE 0.10 INCH UNLESS SPECIFIED OTHERWISE ON PLANS.

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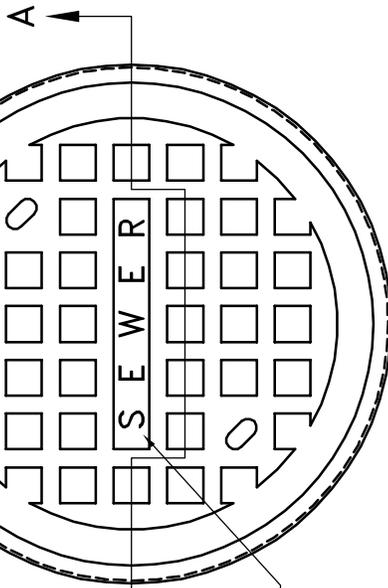
STANDARD INVERT DETAILS

DRWG. NO.
MAN-9

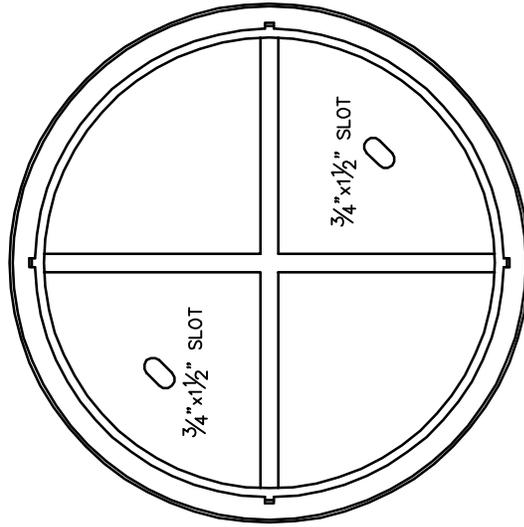
GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

FRAME AND COVER
SHALL BE CAST IRON
ASTM A-48 CLASS 30

NOTE:
MANHOLE COVER SHALL BE
PROVIDED WITH A CLEAR
OPENING OF 2'-0"

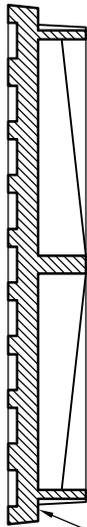


TOP



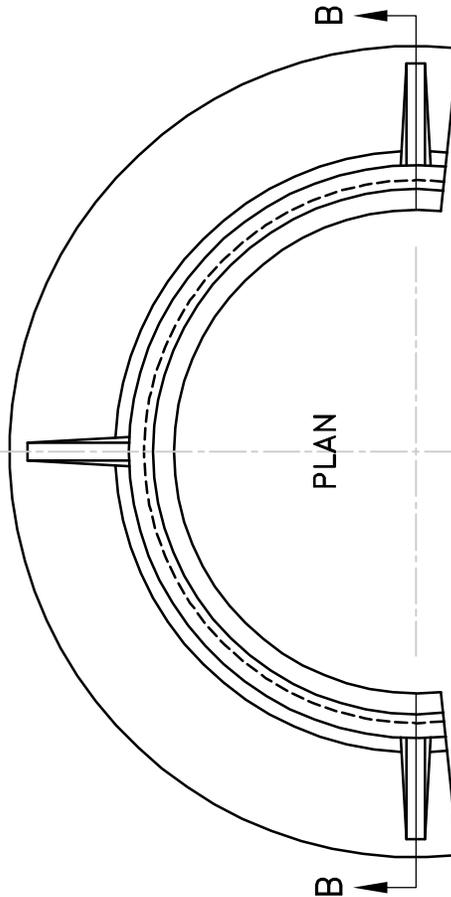
BOTTOM

THE LETTERS "SEWER" ARE TO BE
CAST IN THE DEPRESSION IN THE
TOP OF THE COVER, 1" WIDE AND
RAISED 3/8" HIGH AS SHOWN.



SECTION A-A

MACHINE



PLAN



SECTION B-B

MACHINE

MACHINE

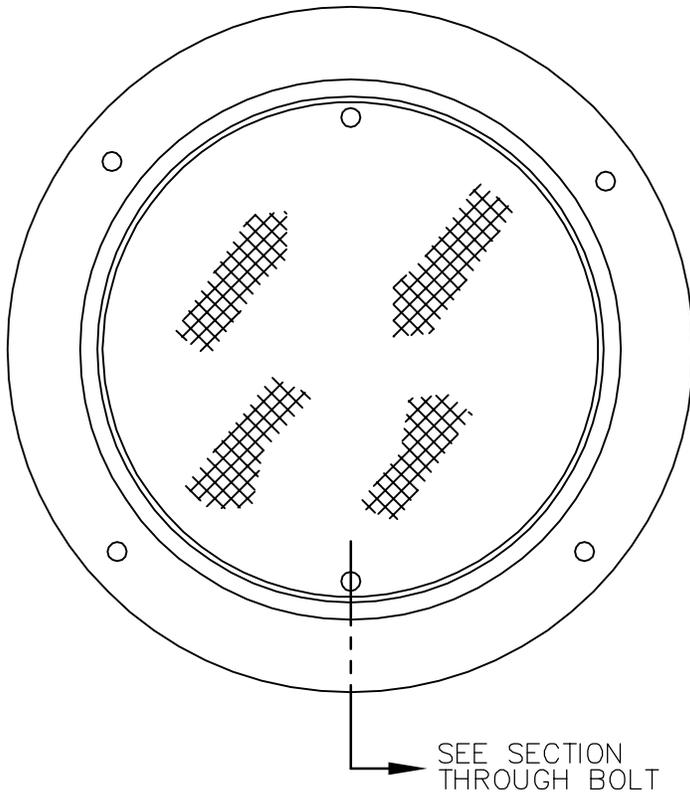
DATE:
OCT. 2014

REVISION:
OCT. 2014

STANDARD MANHOLE FRAME & COVER

DRWG. NO.
MAN-10

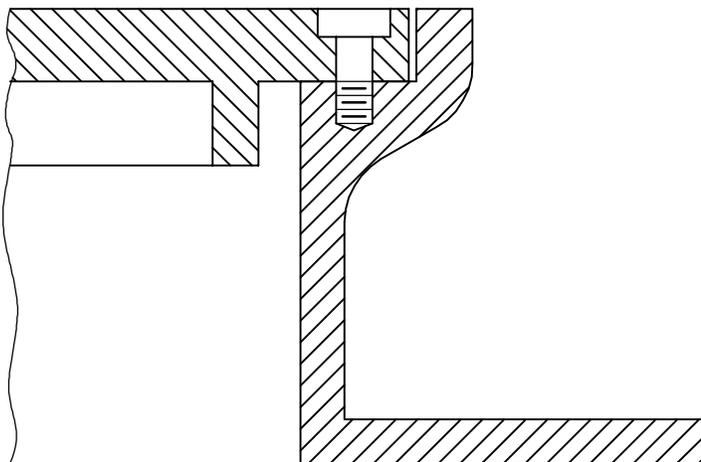
GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



COVER & FRAME

NOTES:

1. MANHOLE FRAME AND COVER SHALL BE SIMILAR TO CAPITOL FOUNDRY NO. MH1-S/VP, TYPE 1.
2. ALL HORIZONTAL BEARING AND VERTICAL DIAMETER SURFACES SHALL BE MACHINED.
3. 3. FRAME SHALL BE SET IN 1/4" BED OF NON-SAG COLMA JOINT SEALER AND BOLTED TO THE MANHOLE CONE SECTION WITH 4 - 3/4" ANCHOR BOLTS & NUTS HOT DIPPED GALVANIZED.
4. VANDALPROOF MANHOLE COVERS SHALL BE USED IN EASEMENTS NOT IN FLOOD PLAIN AND WHERE SHOWN ON THE PLANS.



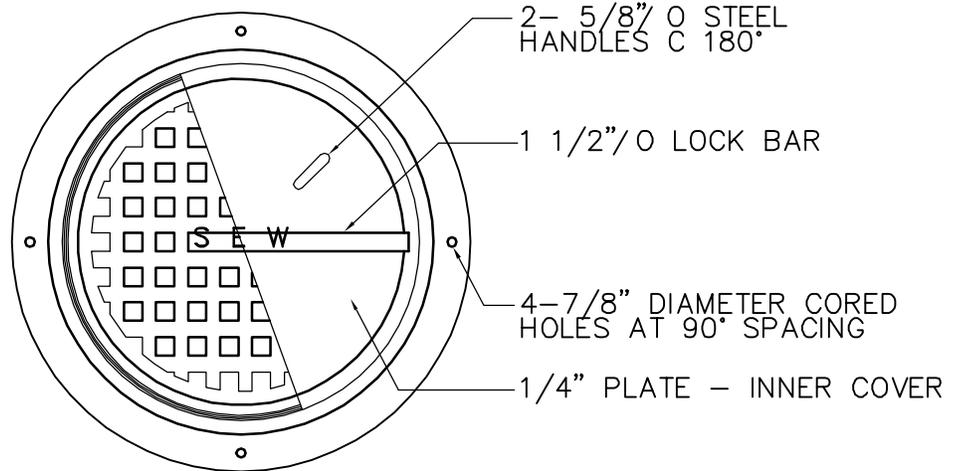
SECTION THROUGH BOLT

DATE: OCT. 2014
REVISION: OCT. 2014

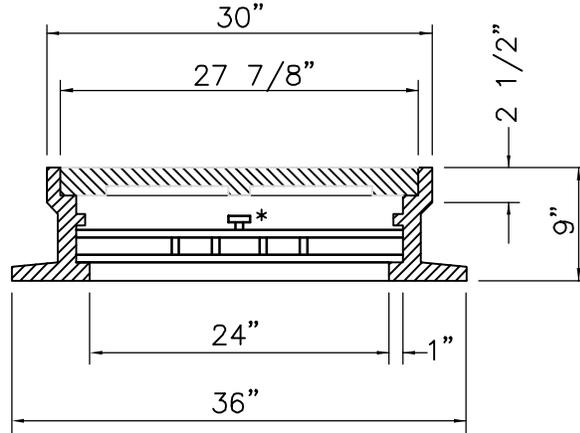
STANDARD VANDALPROOF
MANHOLE FRAME & COVER

DRWG. NO. MAN-11

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



RECESSED PICK HOLE SHALL NOT EXTEND CLEAR THRU COVER



* BRONZE OR BRASS HEX. HEAD BOLT WITH 5/8" SHANK.

STEEL INNER LOCK HANDLES & LOCK BAR

1/4" X 1" CONTINUOUS NEOPRENE GASKET BETWEEN INNER COVER & FRAME

MIN. WEIGHTS:

FRAME	295 LBS.
COVER	230 LBS.
INNER COVER	46 LBS.
TOTAL	571 LBS.

NOTES:

1. FRAME SHALL BE SET IN 1/4" BED OF NON-SAG COLMA JOINT SEALER & BOLTED TO THE MANHOLE CONE SECTION WITH 4-3/4" ANCHOR BOLTS. THE ANCHOR BOLTS AND NUTS SHALL BE HOT DIPPED GALVANIZED.
2. SEATING SURFACES BETWEEN FRAME & COVER SHALL BE MACHINED.
3. WATERTIGHT MANHOLE COVERS SHALL BE USED IN EASEMENTS SUBJECT TO FLOODING & WHERE SHOWN ON THE PLANS.
4. FRAME & COVERS SHALL BE SIMILAR TO CAPITOL FOUNDRY NO. MH1-S/WT TYPE 1.
5. COVER SHALL HAVE LETTERING AS SHOWN ON DRAWING NO. MAN-10.

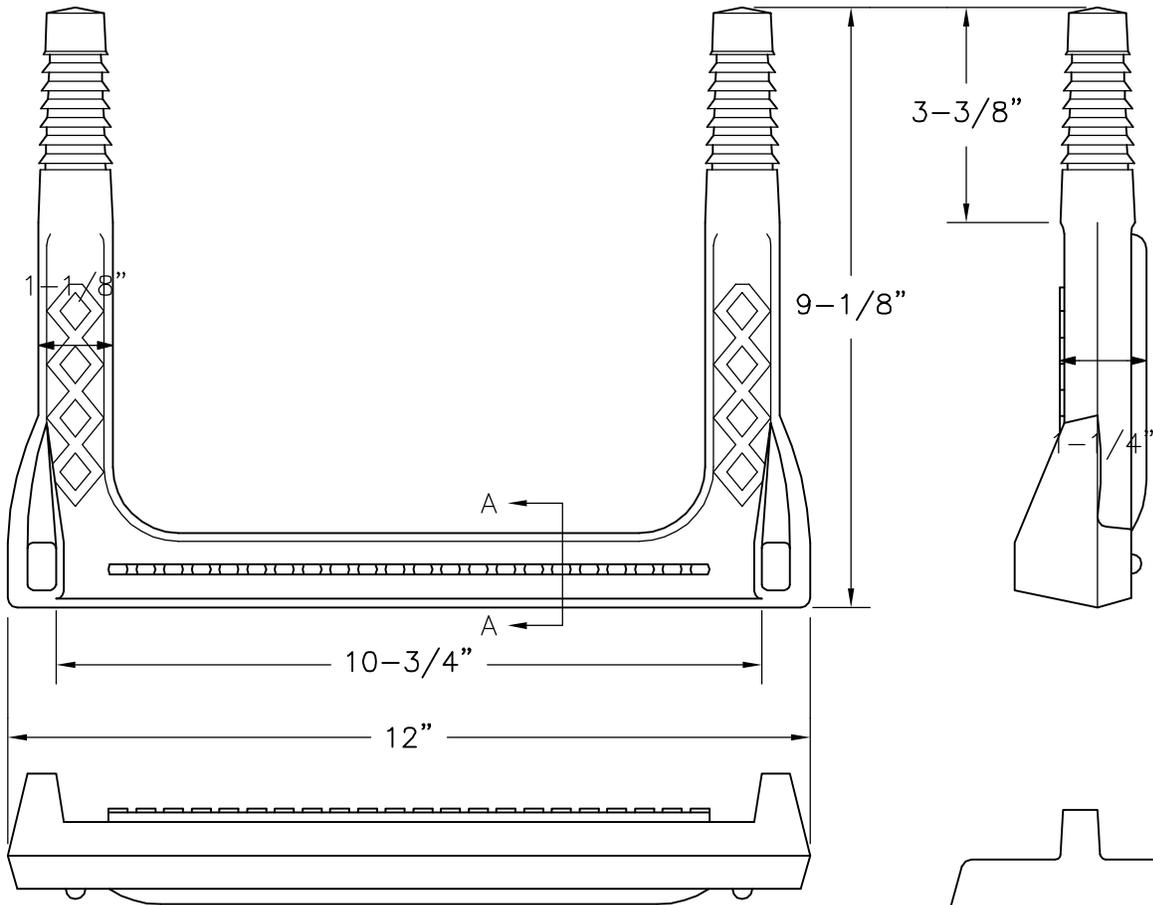
DATE:
OCT. 2014

REVISION:
OCT. 2014

CAST IRON
WATERTIGHT MANHOLE FRAME & COVER

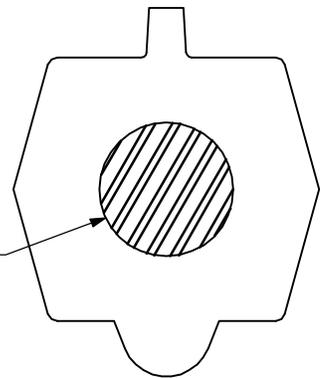
DRWG. NO.
MAN-12

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

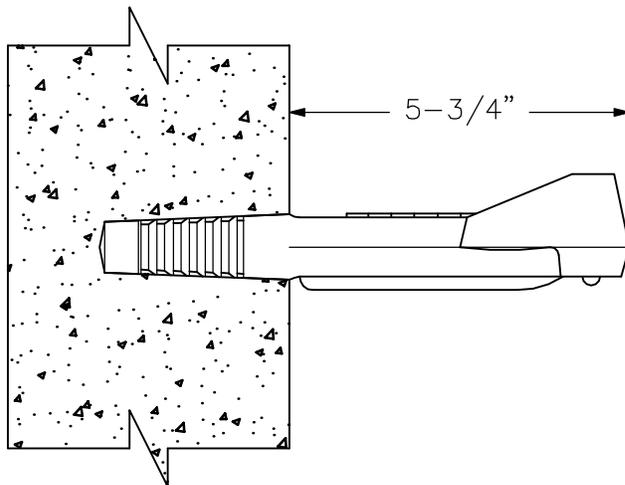


Copolymer Polypropylene Plastic

1/2" GRADE 60 STEEL REINFORCEMENT



SECTION-A



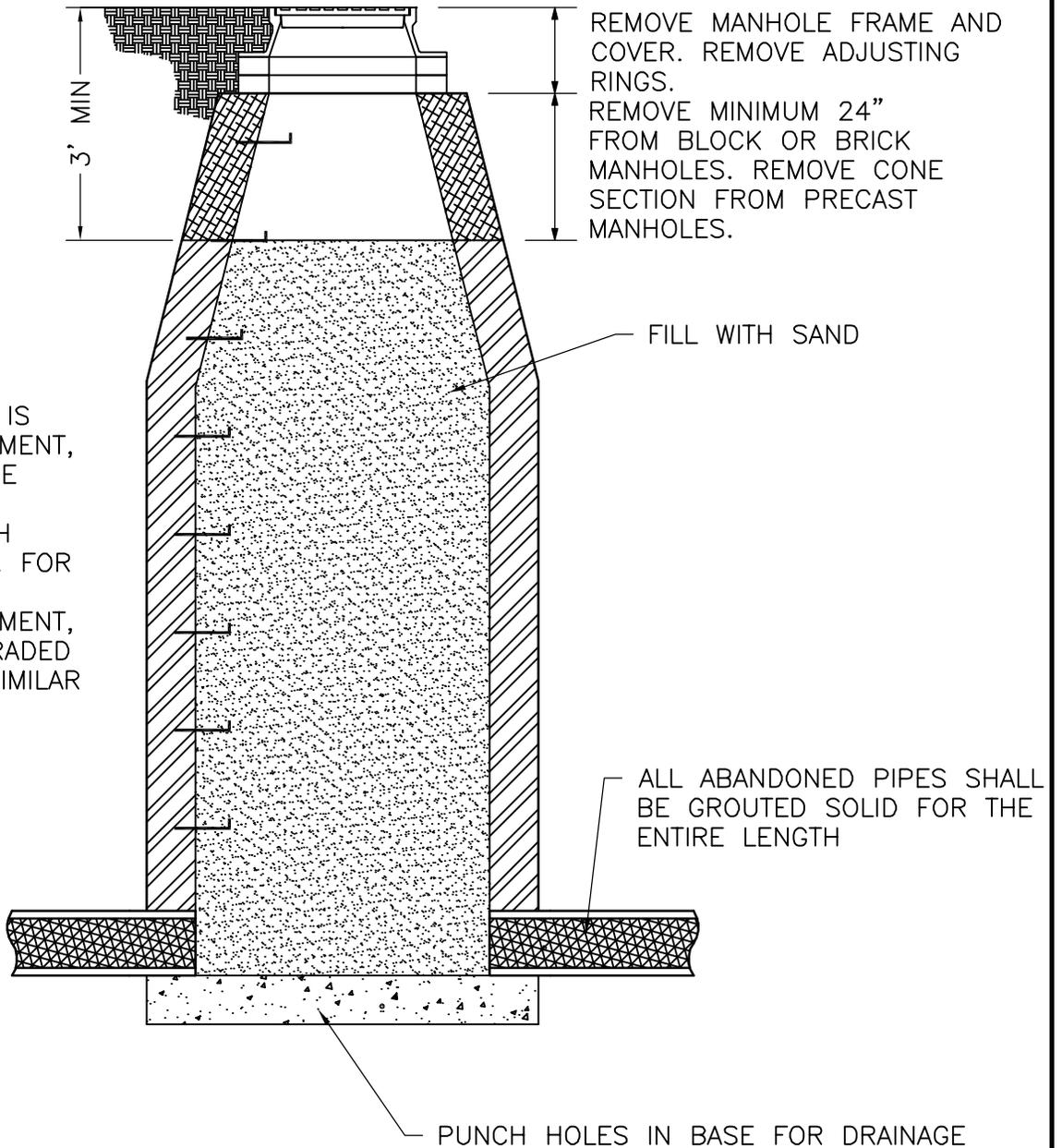
DATE:
OCT. 2014

REVISION:
OCT. 2014

STANDARD MANHOLE STEP

DRWG. NO.
MAN-13

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



WHERE MANHOLE IS LOCATED IN PAVEMENT, PAVEMENT WILL BE RESTORED IN ACCORDANCE WITH VDOT STANDARDS. FOR MANHOLES NOT LOCATED IN PAVEMENT, AREA WILL BE GRADED AND RESTORED SIMILAR TO SURROUNDING CONDITIONS.

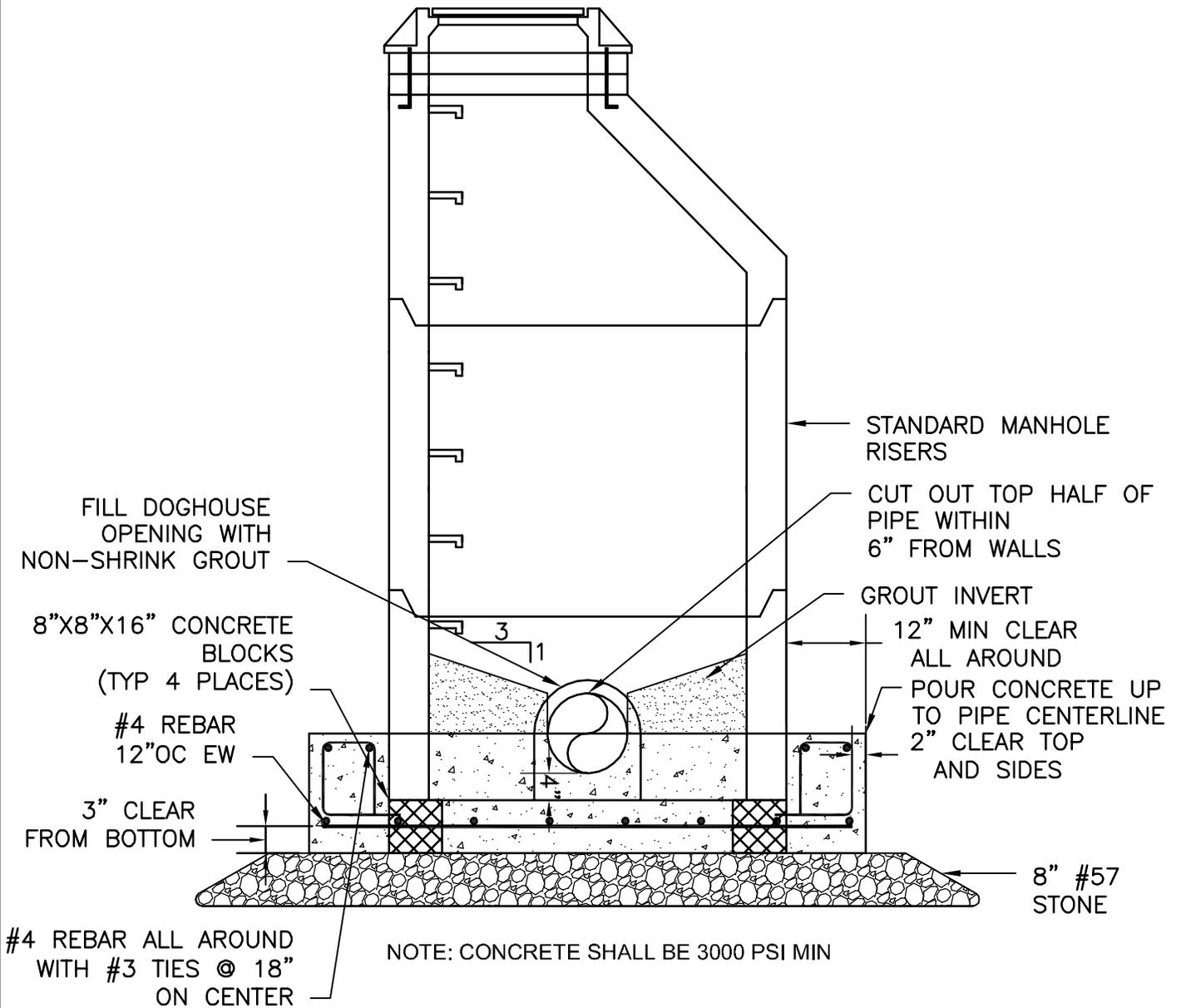
DATE:
OCT 2014

REVISION:
OCT 2014

ABANDONMENT OF MANHOLES

DRWG. NO.
MAN-14

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



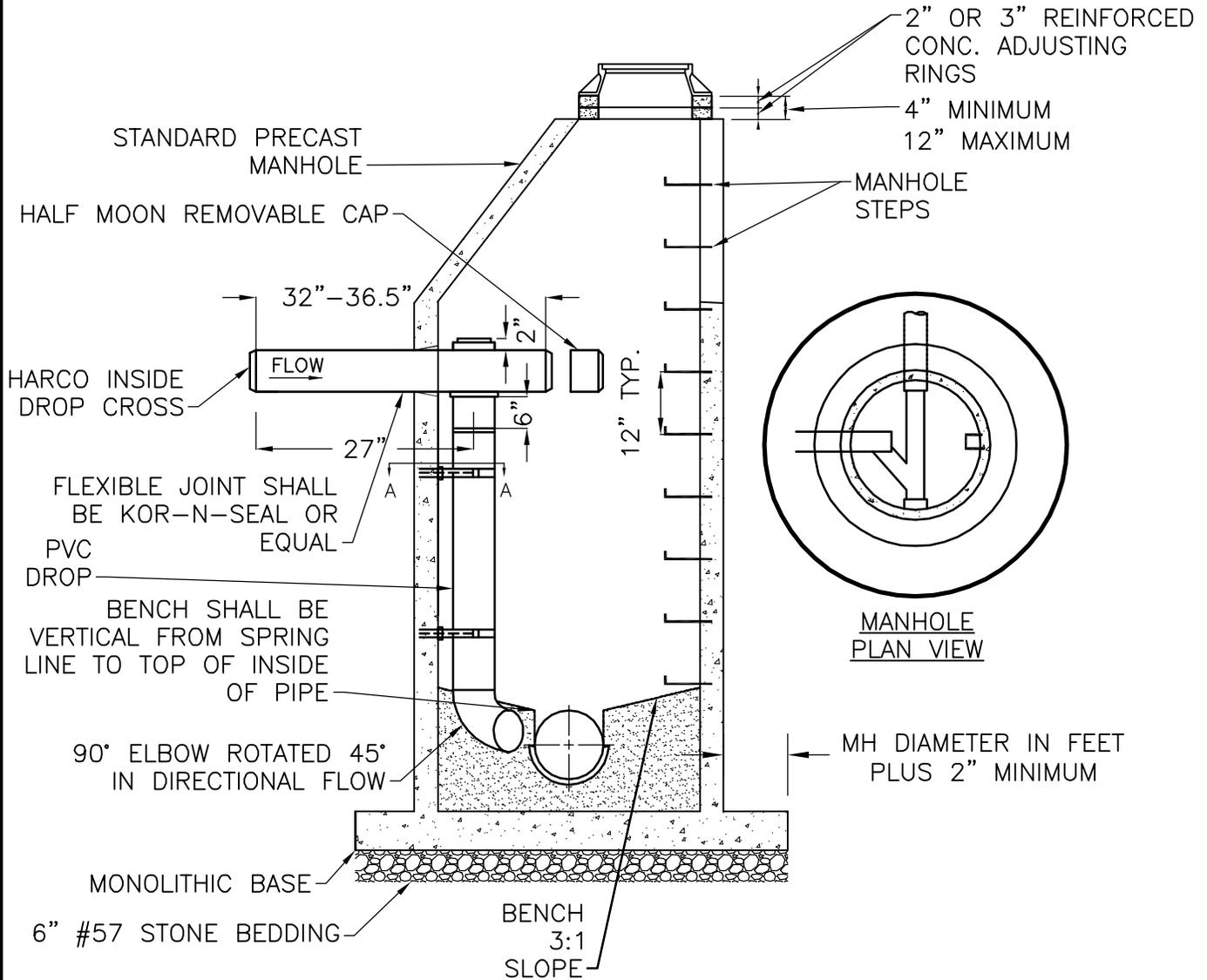
DATE:
OCT. 2014

REVISION:
OCT. 2014

DOGHOUSE MANHOLE

DRWG. NO.
MAN-15

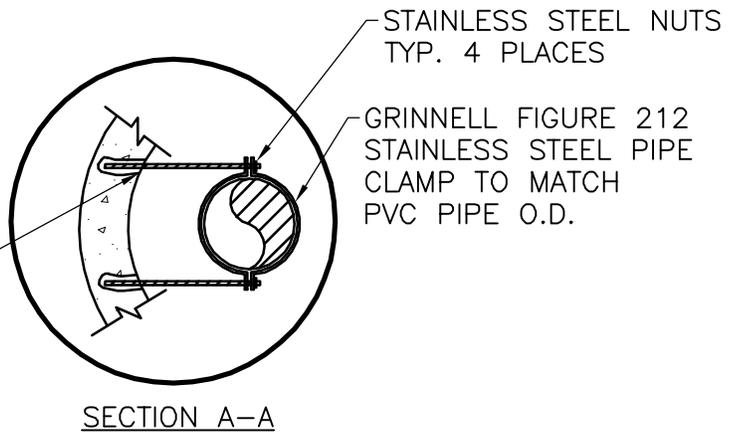
GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. PAY DEPTH - TOP OF M.H. TO LOWEST INVERT + 8".

DRILL AND EMBED STAINLESS STEEL THREADED ROD WITH EPOXY ADHESIVE. ROD SIZE TO MATCH GRINNELL FIGURE 212 BOLT SIZE



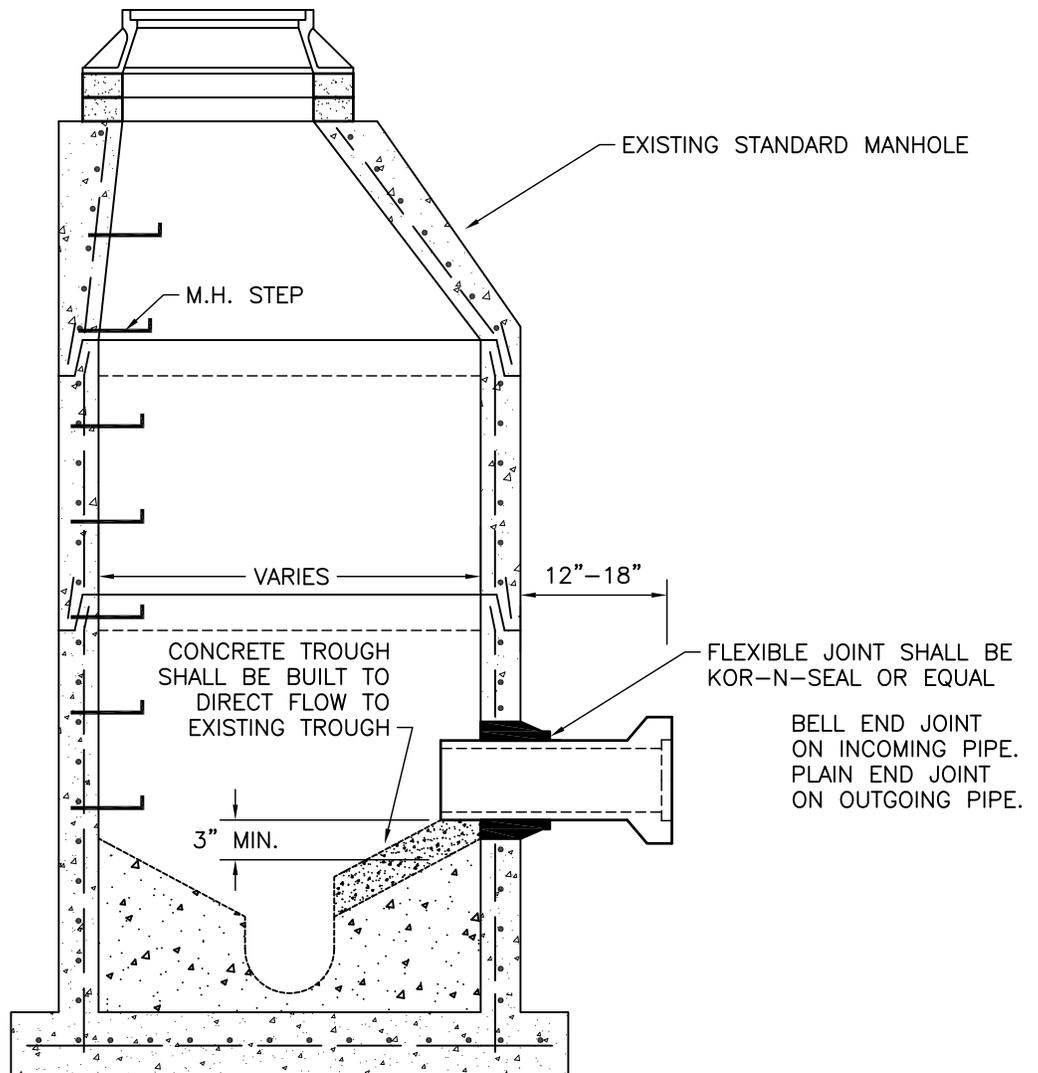
DATE:
OCT. 2014

REVISION:
OCT. 2014

PVC STANDARD INSIDE DROP CONNECTION

DRWG. NO.
MAN-16

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. KOR-N-SEAL FLEXIBLE CONNECTOR, OR EQUAL, SHALL BE INSTALLED PER MANUFACTURER'S STANDARDS.
2. INVERT ELEVATION OF THE INFLUENT LINE SHALL BE NO MORE THAN 30 INCHES ABOVE THE MANHOLE INVERT.
3. EXISTING MANHOLE SHALL NOT BE CORED AT ANY EXISTING RISER JOINT.

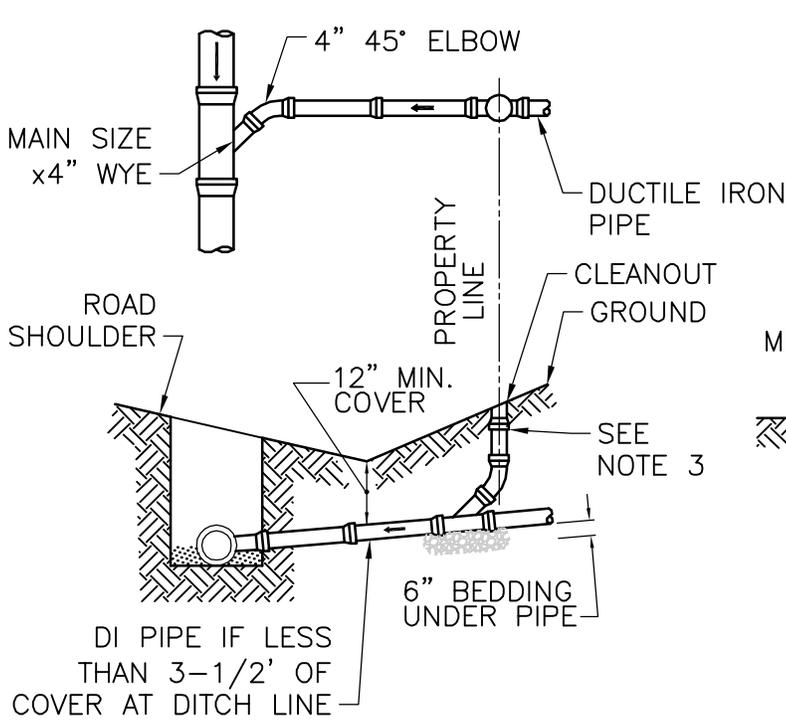
DATE:
NOV. 2015

REVISION:
NOV. 2015

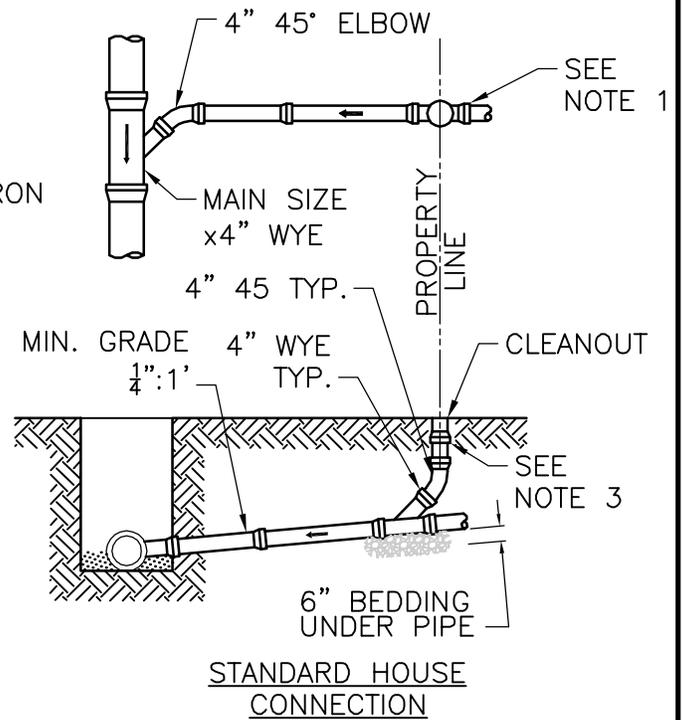
NEW SEWER LINE CONNECTION TO EXISTING MANHOLE

DRWG. NO.
MAN-17

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



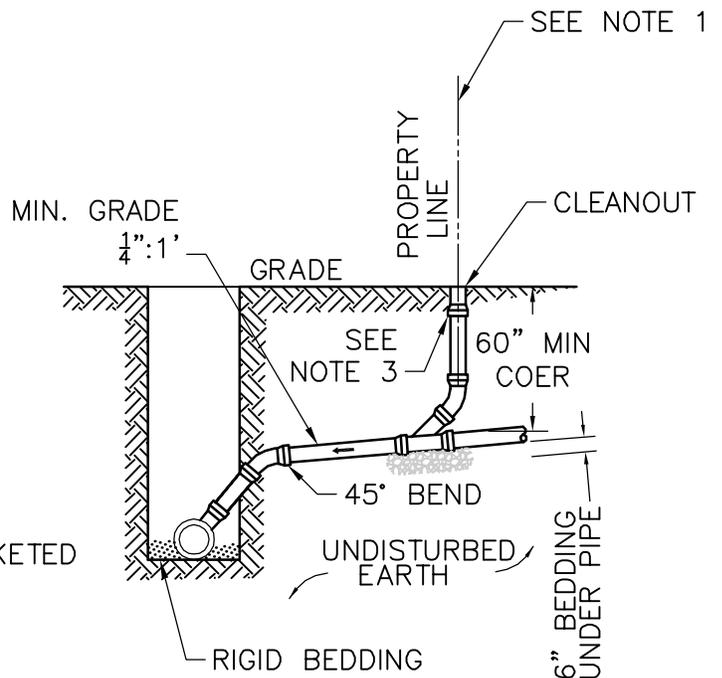
DITCH CROSSING



STANDARD HOUSE CONNECTION

SITE INSPECTION PORT (S.I.P.) NOTES

1. CLEANOUT SHALL BE INSTALLED ON PROPERTY LINE ON ALL HOUSE CONNECTIONS.
2. MATERIAL SHALL BE SDR-26 PVC, SCHEDULE 40 PVC/ABS, OR D.I.
3. CAST IRON BODY ADAPTOR WITH A GASKETED BELL AND SOUTHERN CODE (RECESSED) TYPE BRASS PLUG.



BRANCH CONNECTION WITH 45° BEND

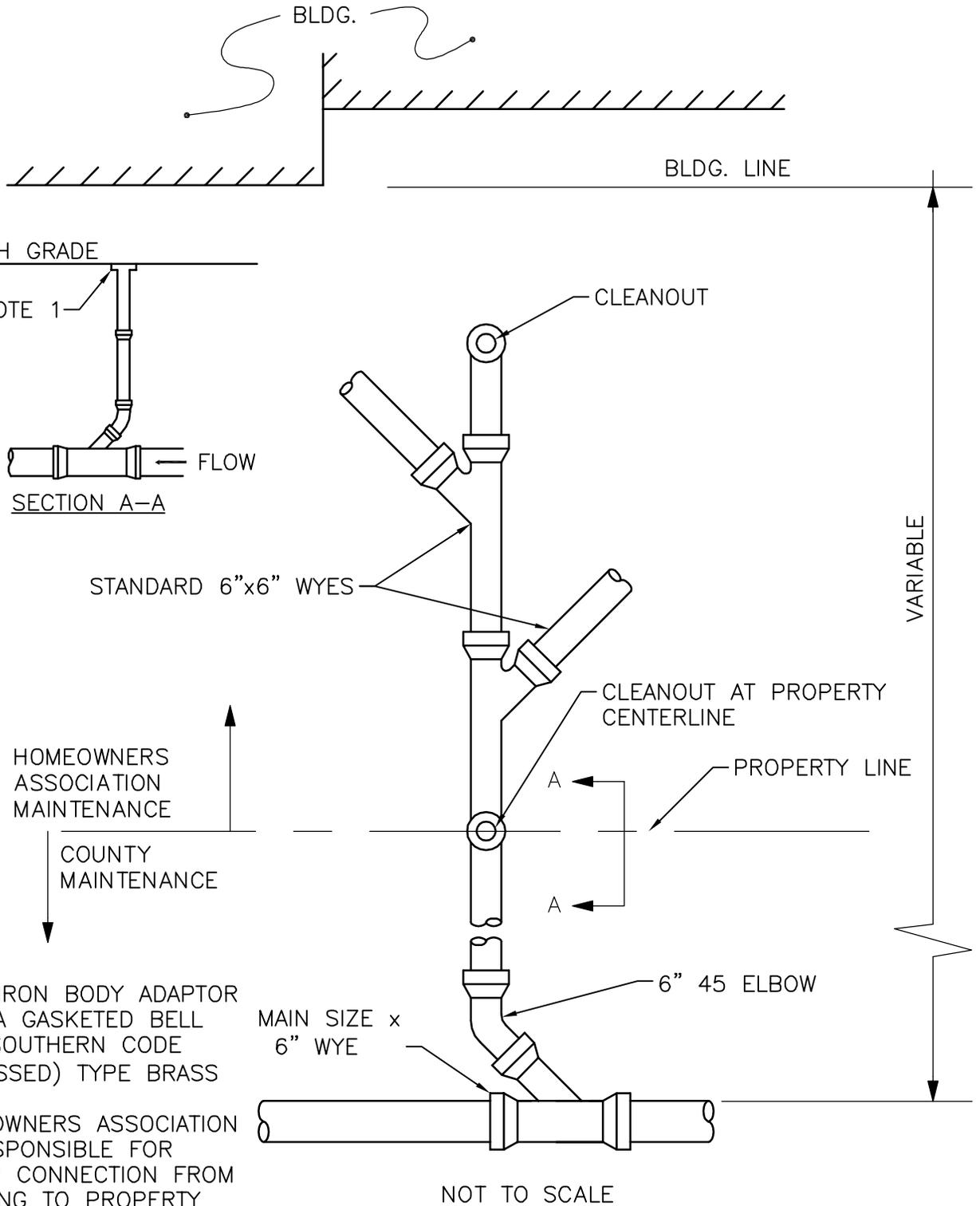
DATE:
OCT. 2014

REVISION:
OCT. 2014

HOUSE CONNECTION DETAILS

DRWG. NO.
SEW-1

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

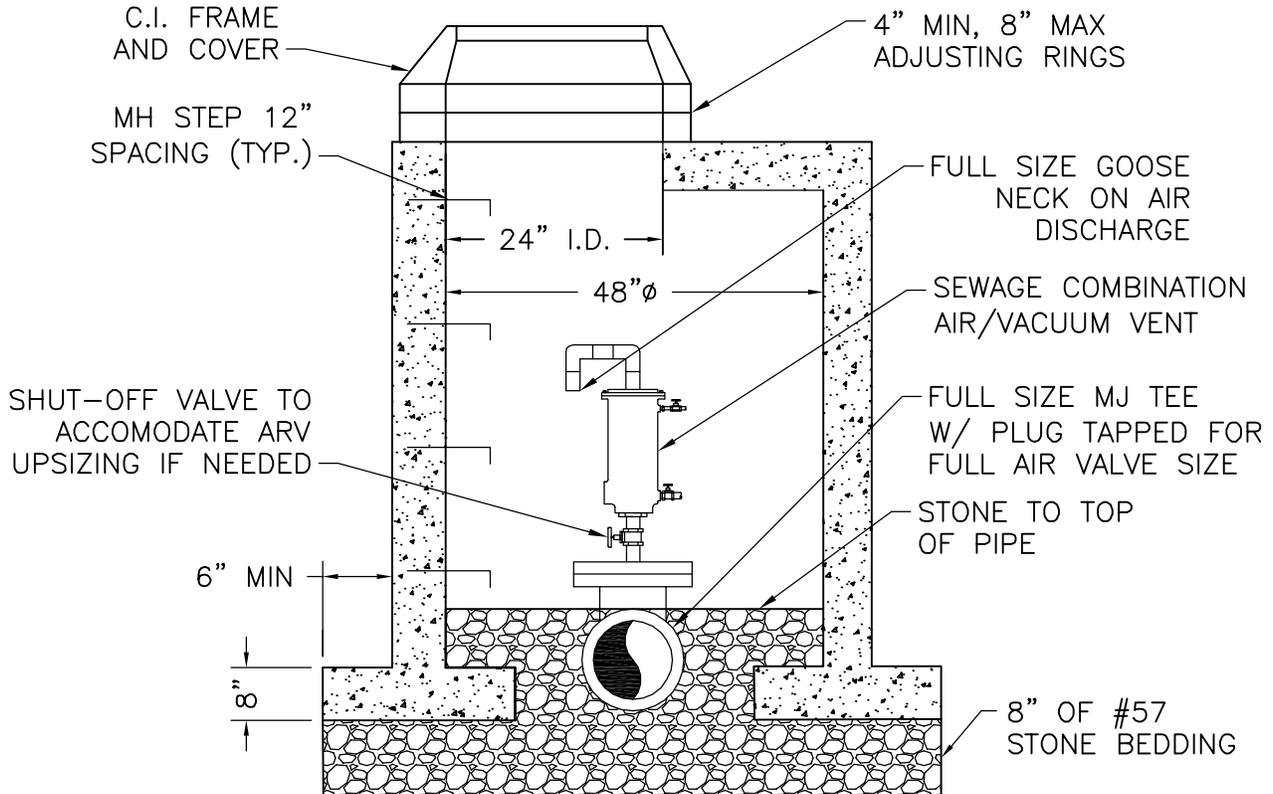
1. CAST IRON BODY ADAPTOR WITH A GASKETED BELL AND SOUTHERN CODE (RECESSED) TYPE BRASS PLUG.
2. HOMEOWNERS ASSOCIATION IS RESPONSIBLE FOR SEWER CONNECTION FROM BUILDING TO PROPERTY LINE IN ACCORDANCE WITH PLUMBING CODE.

DATE:	OCT. 2014
REVISION:	OCT. 2014

STANDARD CONDOMINIUM
DUAL CONNECTION DETAIL

DRWG. NO.
SEW-2

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. STONE BEDDING SHALL EXTEND TO THE OUTER BOUNDARY OF ALL UNDISTURBED AREAS SURROUNDING THE MANHOLE.
2. M.J. TEE SHALL HAVE RESTRAINED JOINTS ON EACH END.
3. INSTALL FULL PIPE LENGTH ON EACH SIDE OF TEE.

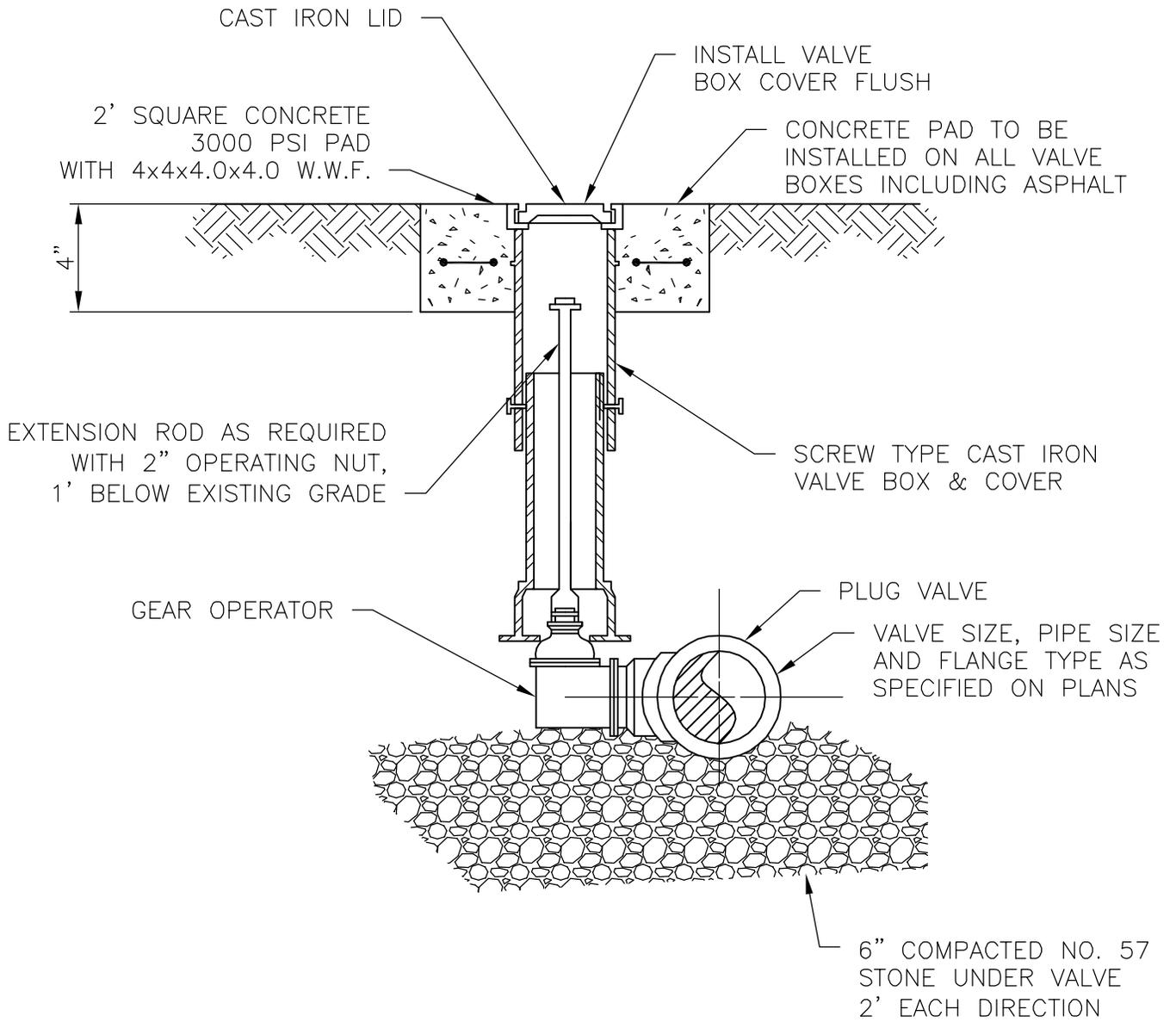
DATE:
OCT. 2014

REVISION:
OCT. 2014

SEWAGE COMBINATION AIR/VACUUM
VENT & MANHOLE

DRWG. NO.
SEW-3

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



DATE:
OCT. 2014

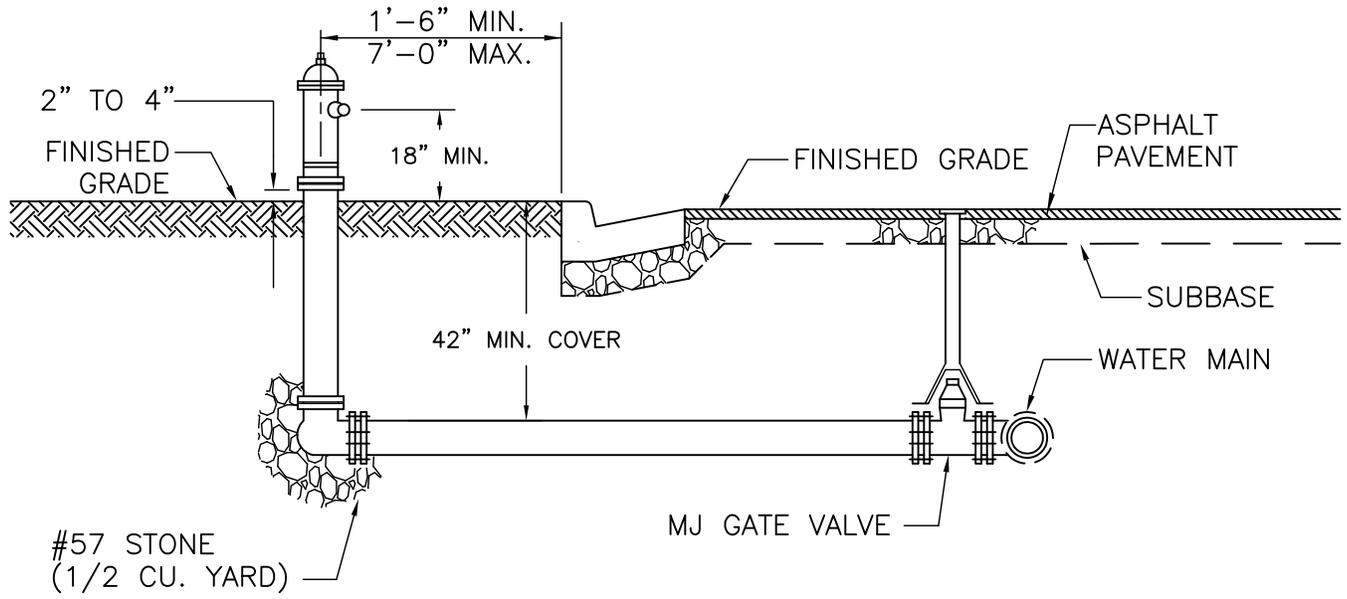
REVISION:
OCT. 2014

PLUG VALVE DETAIL

DRWG. NO.

SEW-4

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

1. USE RETAINER GLANDS ON GATE VALVE, ALL FITTINGS, AND FIRE HYDRANT.
2. DUCTILE IRON PIPE IS REQUIRED FOR ALL PIPING FROM FIRE HYDRANT TO WATER MAIN.
3. HYDRANTS SHALL BE LOCATED A MINIMUM DISTANCE OF 50' FROM ALL STRUCTURES.
4. KEEP WEEP HOLES CLEAN TO ALLOW PROPER DRAINAGE.
5. WEEP HOLES ARE NOT PERMITTED IN AREAS SUBJECT TO SURFACE FLOODING, PONDING, OR A HIGH GROUNDWATER TABLE.
6. ON ROADS WITHOUT CURB AND GUTTER, VALVE SHOULD BE IN SHOULDER OF ROAD BETWEEN PAVEMENT AND DITCH. MINIMUM COVER AT DITCH MUST BE 3'6"

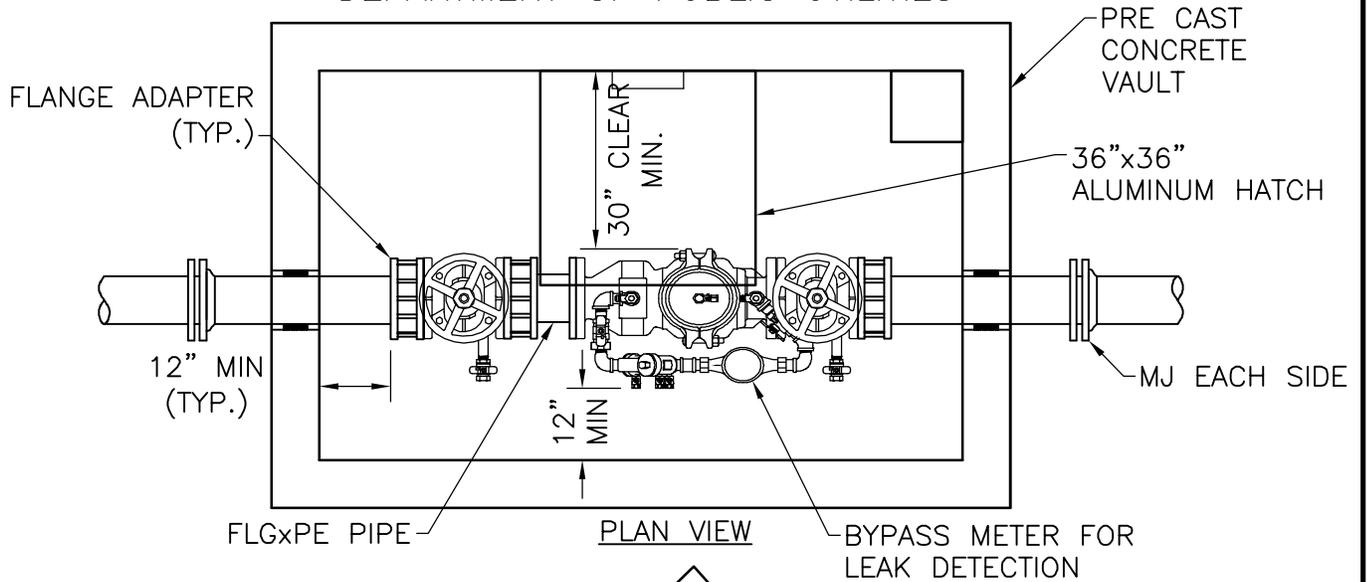
DATE:
OCT. 2014

REVISION:
OCT. 2014

TYPICAL FIRE HYDRANT DETAIL

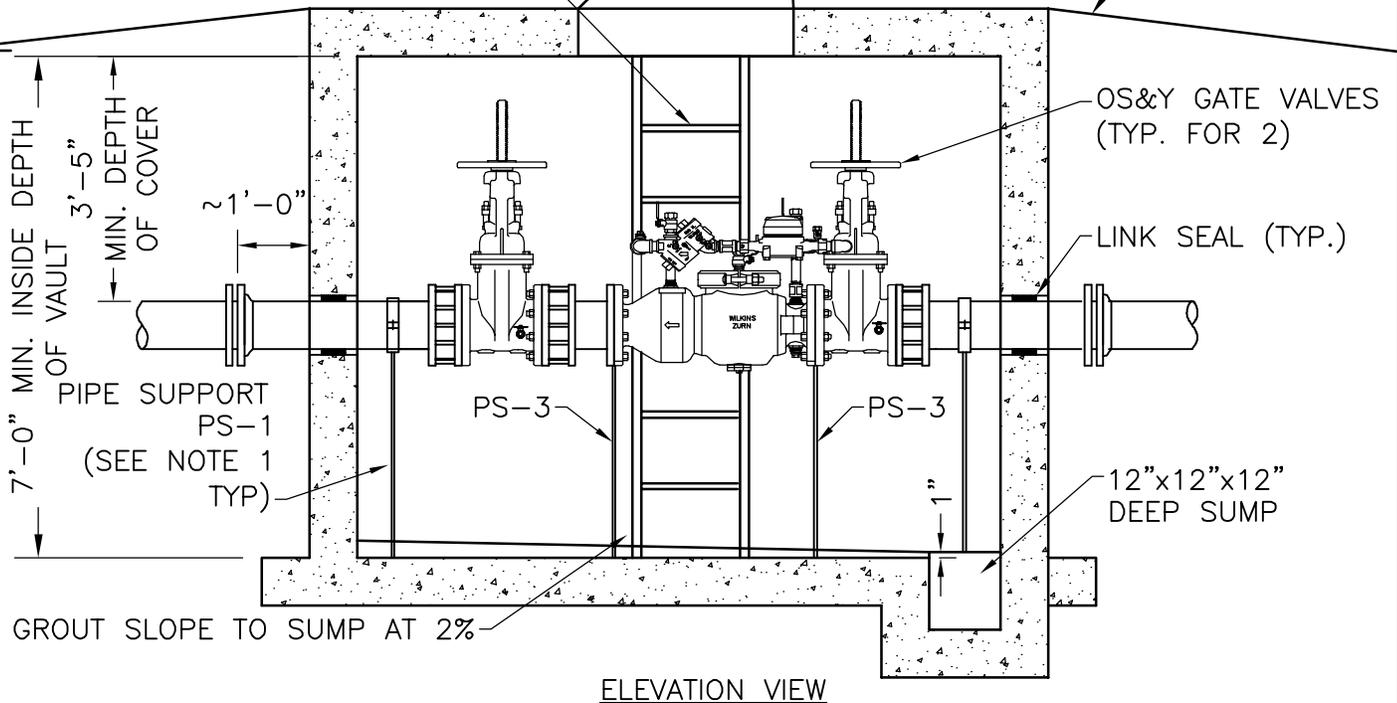
DRWG. NO.
FIR-1

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



ALUMINUM LADDER
WITH SAFETY
HAND RAIL

SLOPE AWAY
FROM VAULT



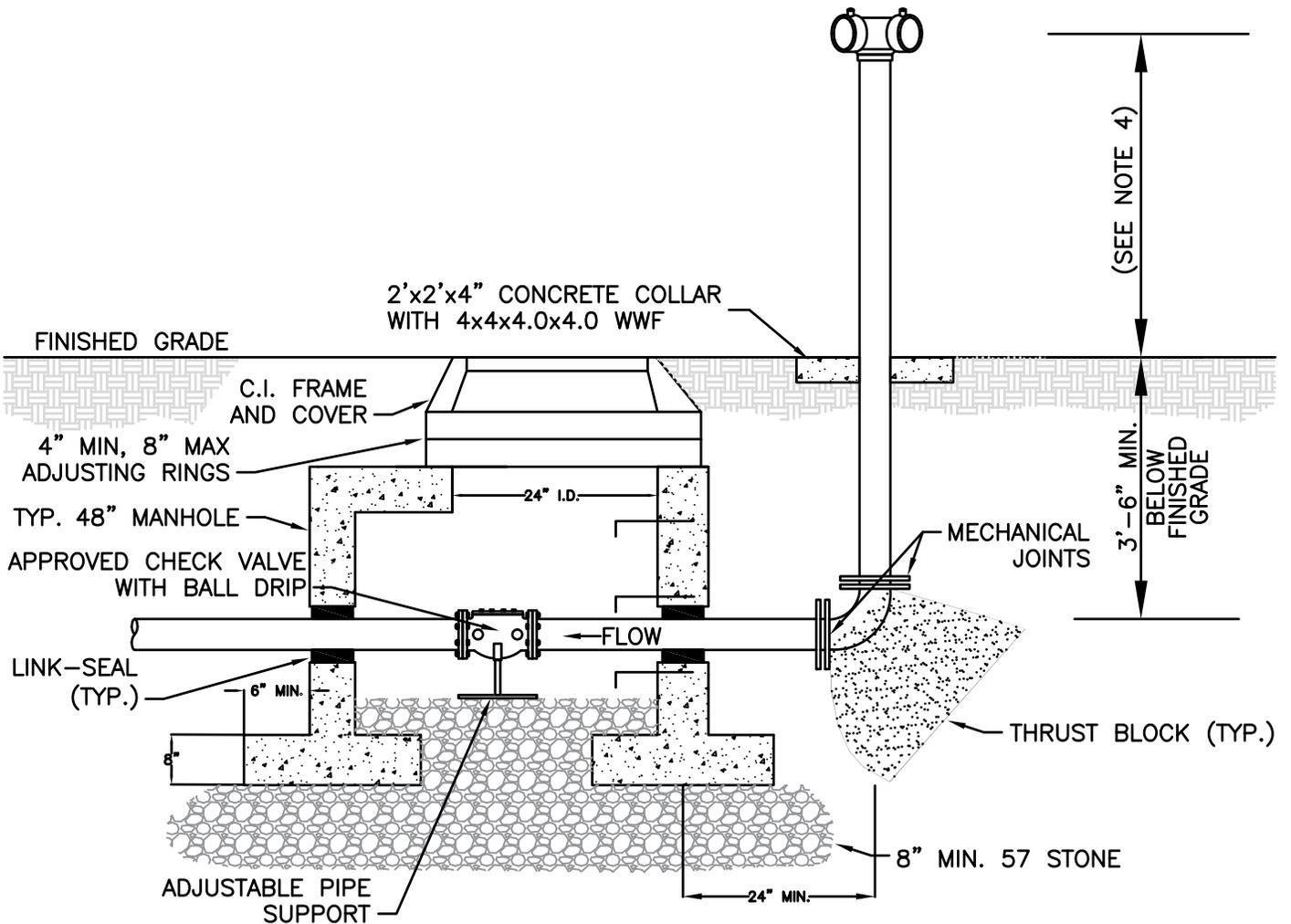
- NOTES:
1. PIPE SUPPORTS TO BE ANCHORED TO VAULT FLOOR NOT GROUT WITH STAINLESS STEEL ADHESIVE ANCHORS
 2. PIPE SUPPORTS TO BE IN ACCORDANCE WITH STANDARD DETAILS

DATE:
OCT. 2014
REVISION:
OCT. 2014

DOUBLE CHECK VALVE ASSEMBLY
FOR FIRE SERVICE

DRWG. NO.
FIR-2

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

- 1.) ALL MATERIALS AND RELEVANT DIMENSIONS MUST BE IN CONFORMANCE WITH THE MOST RECENT NFPA STANDARDS AND SPECIFICATIONS. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE GOOCHLAND COUNTY DEPARTMENT OF BUILDING INSPECTIONS PRIOR TO ALL FDC INSTALLATIONS.
- 2.) STONE BEDDING SHALL EXTEND TO THE OUTER BOUNDARY OF ALL UNDISTURBED AREAS SURROUNDING THE MANHOLE FOR FOUNDATION STABILITY AND DRAINAGE.
- 3.) ALL M.J. FITTINGS SHALL BE RESTRAINED ON EACH END.
- 4.) THE HEIGHT OF STANDPIPE SHALL BE IN CONFORMANCE WITH THE MOST CURRENT NFPA STANDARDS.
- 5.) ALL THREADS SHALL BE NATIONAL STANDARD.

DATE:

MAY 2015

REVISION:

STANDARD YARD FDC INSTALLATION

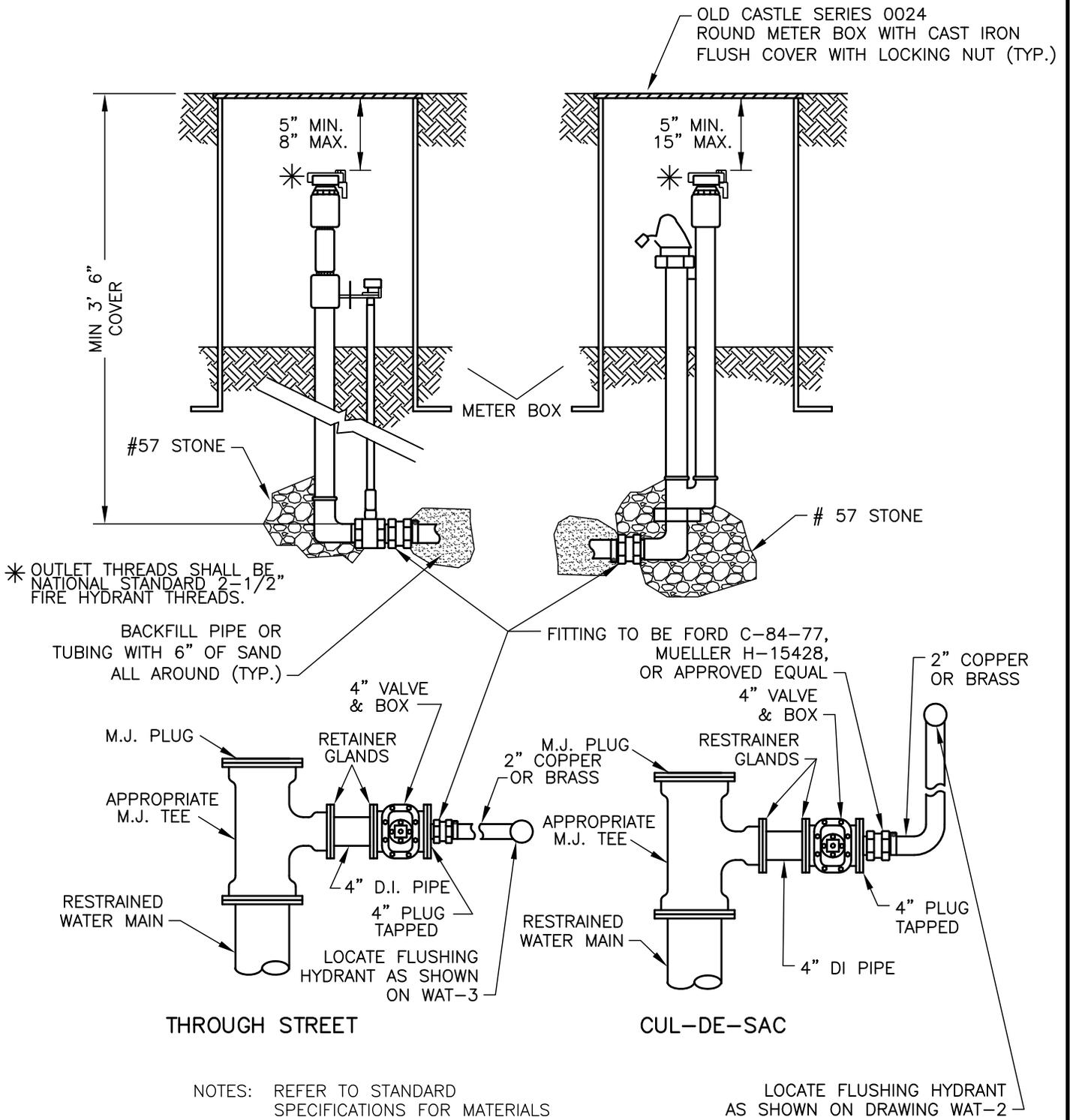
DRWG. NO.

FIR-3

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

2" AQUARIUS "ONE-O-ONE" HH

MAINGUARD MODEL # 78

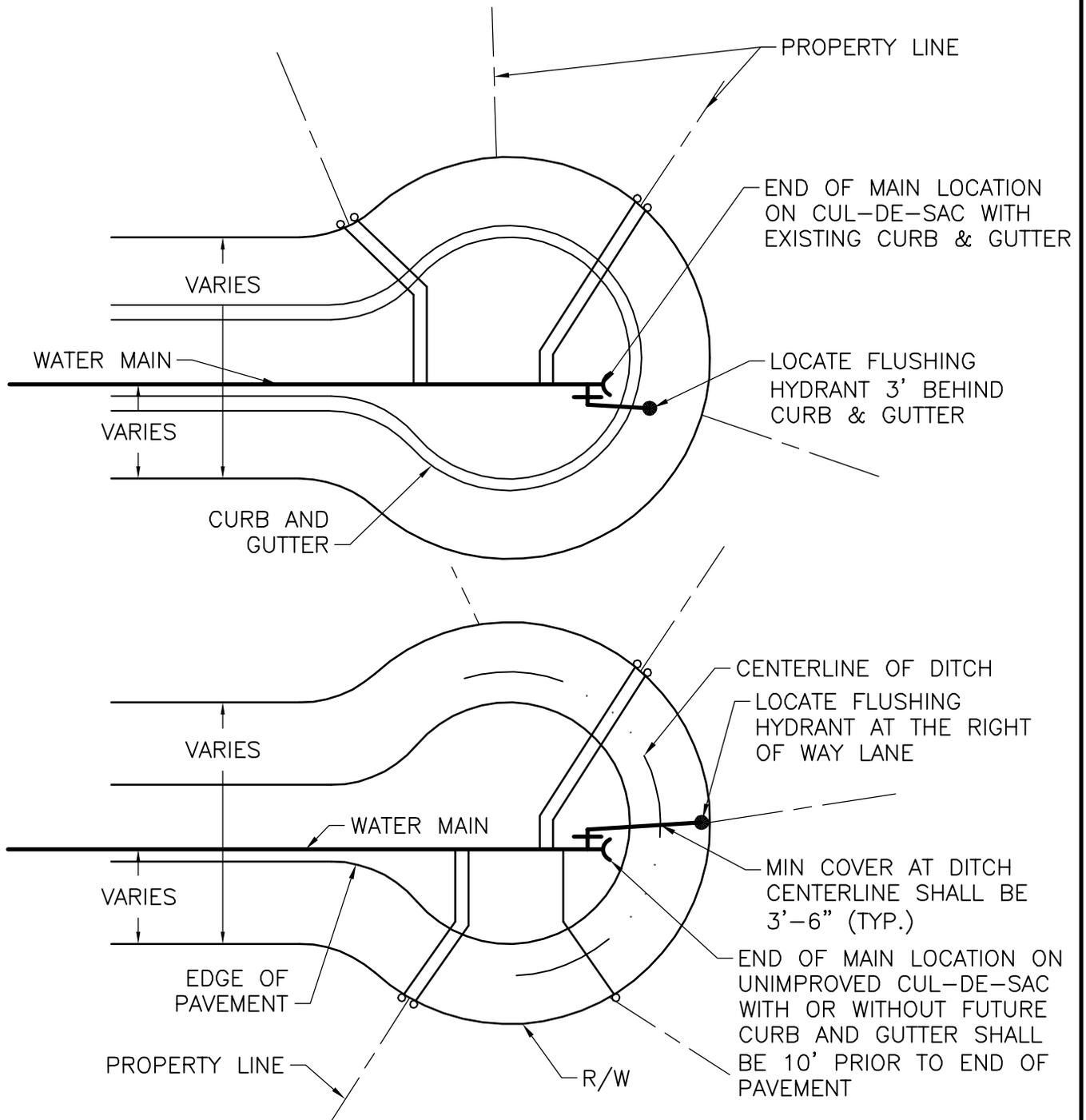


DATE:	OCT. 2014
REVISION:	SEP. 2015

FLUSHING HYDRANT

DRWG. NO.	WAT-1
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GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



* IF THERE IS A DITCH BEYOND THE EDGE OF PAVEMENT, FLUSHING HYDRANT IS TO BE PLACED BETWEEN THE DITCH AND RIGHT OF WAY LINE ON LEVEL GROUND. IF THIS IS NOT POSSIBLE, CONSULT THE UTILITY CONSTRUCTION INSPECTOR.

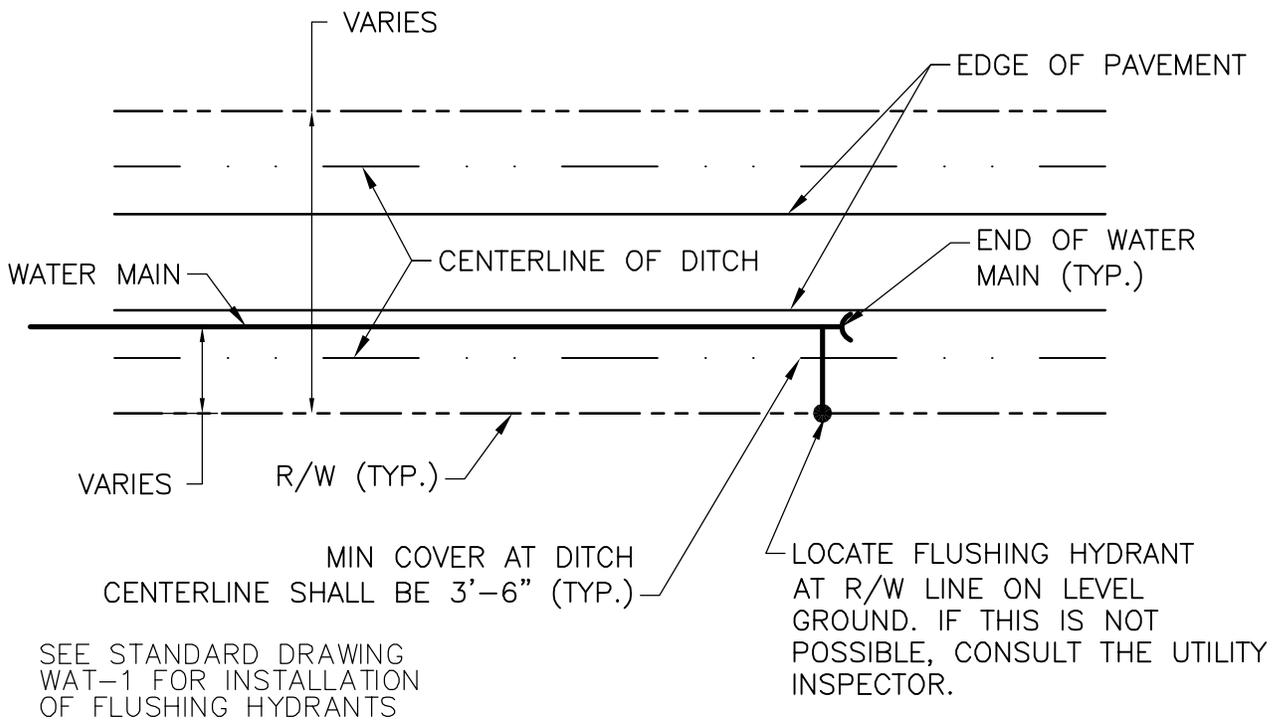
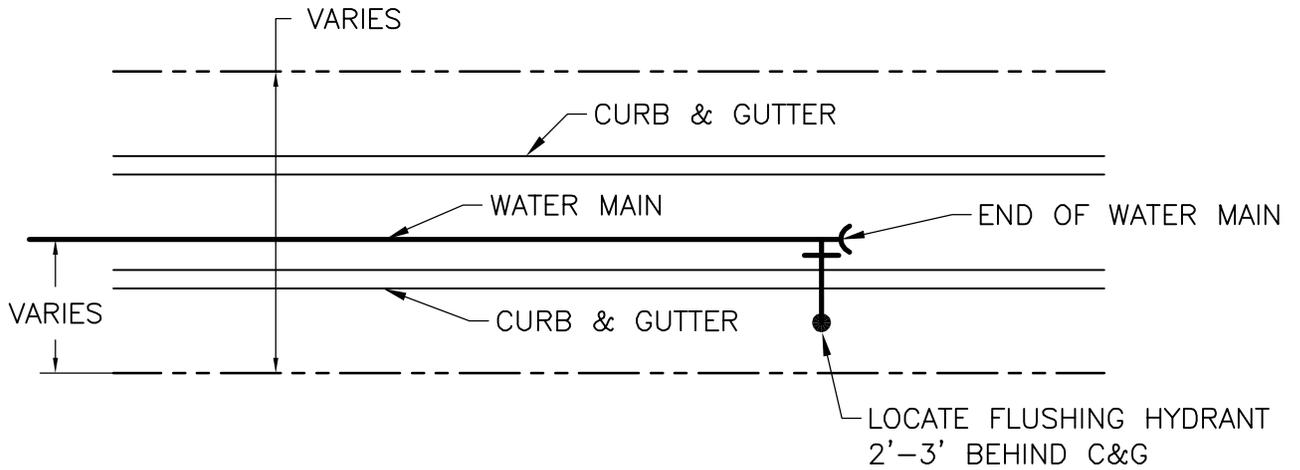
SEE STANDARD DRAWING
WAT-1 FOR INSTALLATION
OF FLUSHING HYDRANTS

DATE:
OCT. 2014
REVISION:
OCT. 2014

TYPICAL FLUSHING HYDRANT LOCATION
ON CUL-DE-SAC

DRWG. NO.
WAT-2

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



DATE:
OCT. 2014

REVISION:
OCT. 2014

TYPICAL FLUSHING HYDRANT LOCATION
ON THROUGH STREET

DRWG. NO.
WAT-3

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

CAST IRON COVER TO
BE LABELED "WATER"

2'x2'x4" CONCRETE
COLLAR WITH
4x4x4.0x4.0 WWF

FINISHED GRADE

BASE MATERIAL

SUB-BASE

TOP SECTION

NOTES: SCREW-TYPE ADJUSTABLE
VALVE BOX SHALL BE
CAST IRON.

VERTICAL ADJUSTMENT MADE
BY SCREWING TOP SECTION
AND/OR REPLACEMENT OF
CENTER SECTION.

ROD EXTENSION TO 1'
BELOW GRADE. PIN TO
VALVE OPERATING NUT

CENTER SECTION

BOTTOM SECTION

BASE SECTION

GATE
VALVE

SOLID CONCRETE
BLOCK

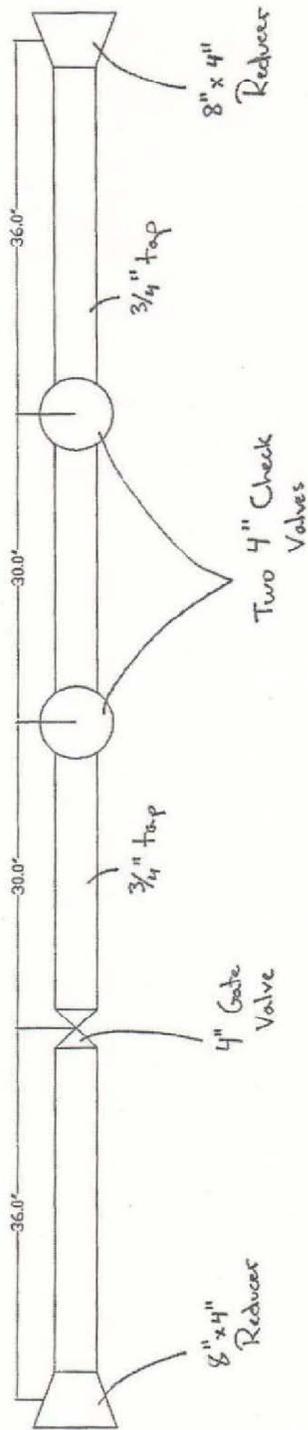
DATE:
OCT. 2014

REVISION:
OCT. 2014

UNDERGROUND MECHANICAL JOINT
GATE VALVE DETAIL

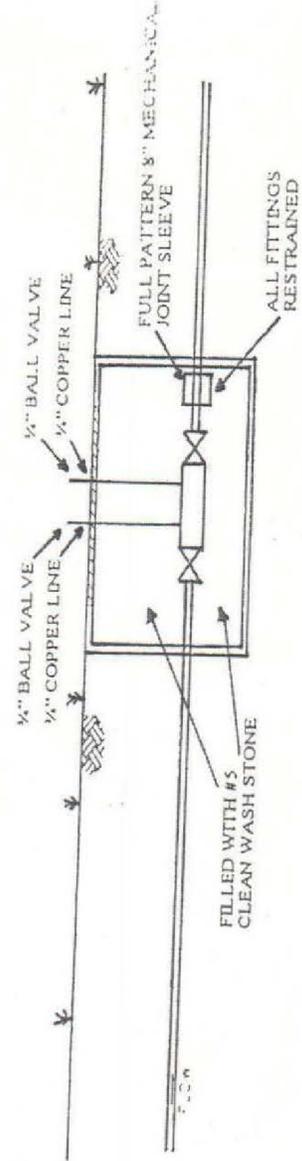
DRWG. NO.
WAT-4

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



Note:

1. Contractor to use 8 in full pattern mechanical joint sleeves to connect temporary flushing apparatus to new waterline. The flushing sleeves will be left in place during the tie in.
2. The above double check valve is shown to be in one piece
3. This type connection must be used on any line over 100 feet.

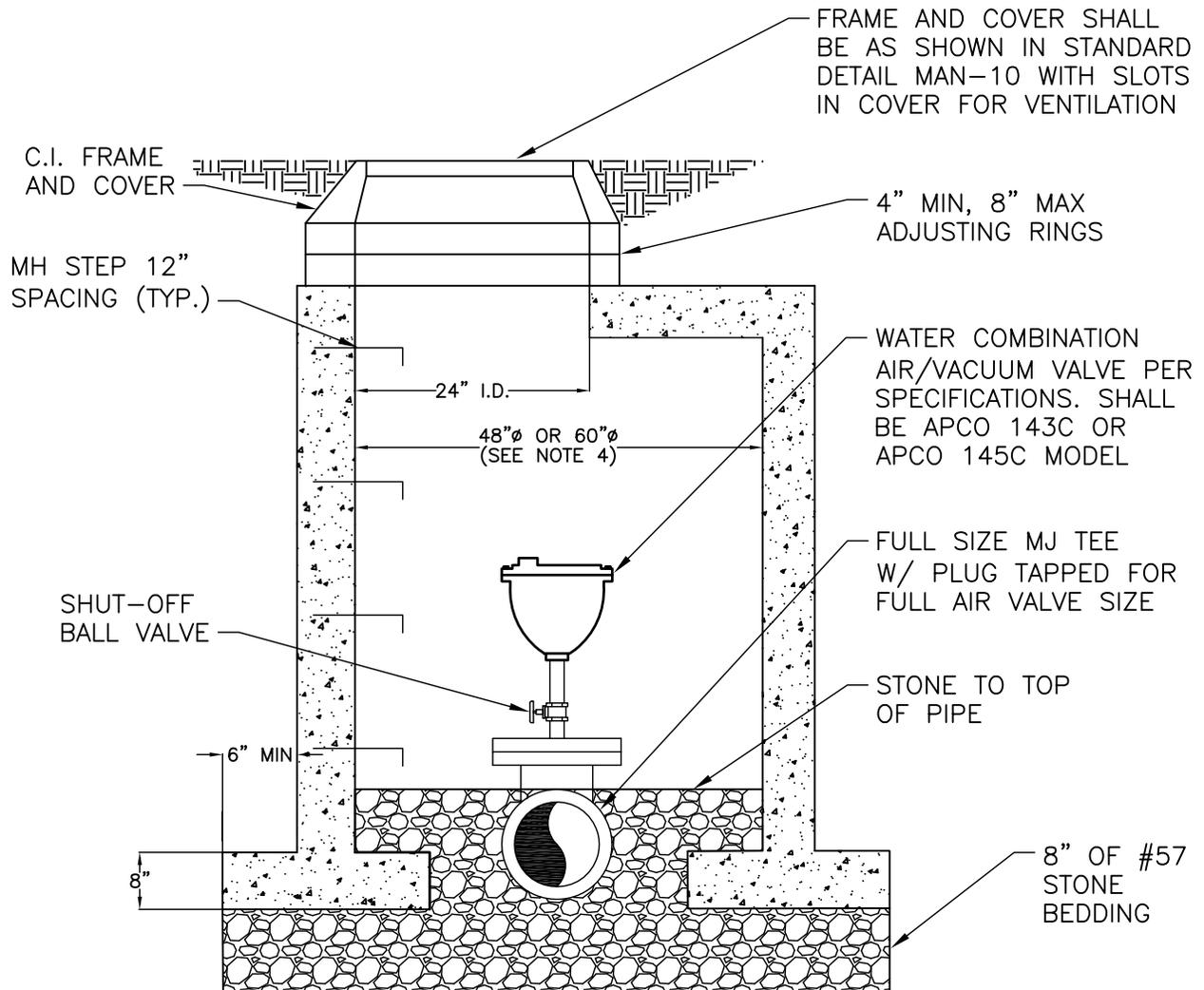


DATE:
OCT. 2014
REVISION:
OCT. 2014

TEMPORARY DOUBLE CHECK VALVE
FLUSHING APPARATUS

DRWG. NO.
WAT-5

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

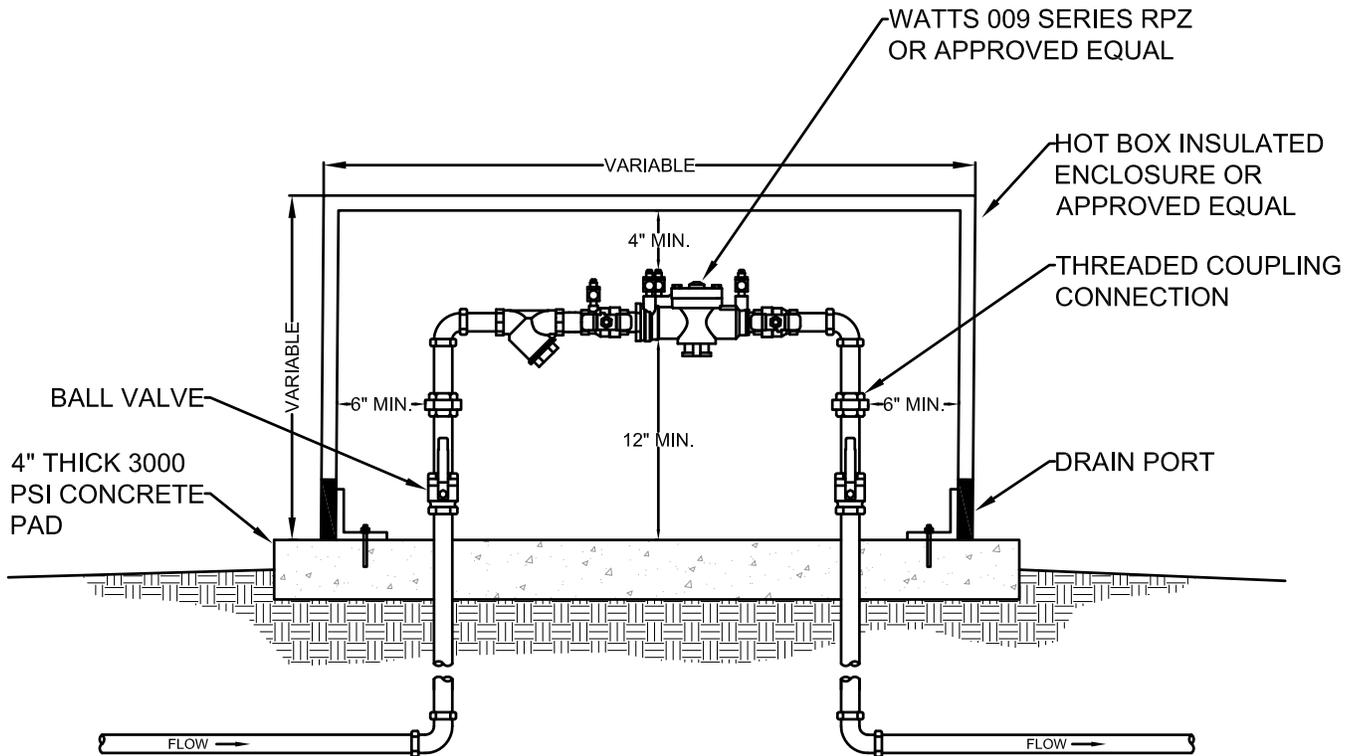
1. STONE BEDDING SHALL EXTEND TO THE OUTER BOUNDARY OF ALL UNDISTURBED AREAS SURROUNDING THE MANHOLE.
2. M.J. TEE SHALL HAVE RESTRAINED JOINTS ON EACH END.
3. INSTALL FULL PIPE LENGTH ON EACH SIDE OF TEE.
4. 48" DIAMETER MANHOLES MAY BE USED FOR 12" AND SMALLER WATER MAINS. 60" DIAMETER MANHOLES SHALL BE USED FOR ANY WATER MAIN LARGER THAN 12".
5. GOOCHLAND RESERVES THE RIGHT TO REQUIRE COMBO VALVES TO PIPE SIZES SMALLER THAN 8 INCHES IF NEEDED.

DATE:
MAY 2015
REVISION:

STANDARD COMBINATION AIR/VACUUM VALVE &
MANHOLE FOR 8"-24" WATER MAINS

DRWG. NO.
WAT-6

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

- 1.) ALL ASPECTS OF THE BACKFLOW PREVENTER ASSEMBLY SHALL COMPLY WITH GOOCHLAND COUNTY STANDARDS AND SPECIFICATIONS ALONG WITH THE VIRGINIA DEPARTMENT OF HEALTH SPECIFICATIONS FOR CROSS CONNECTIONS AND BACKFLOW PREVENTION DEVICES.
- 2.) ADEQUATE POSITIVE DRAINAGE AWAY FROM THE ENCLOSURE SHALL BE PROVIDED.
- 3.) CONCRETE FLOOR ELEVATION SHALL BE APPROXIMATELY 2 INCHES ABOVE FINAL GRADE.
- 4.) BACKFLOW PREVENTER ASSEMBLY SHALL NOT BE LOCATED IN ANY AREA PRONE TO PONDING OR FLOODING.

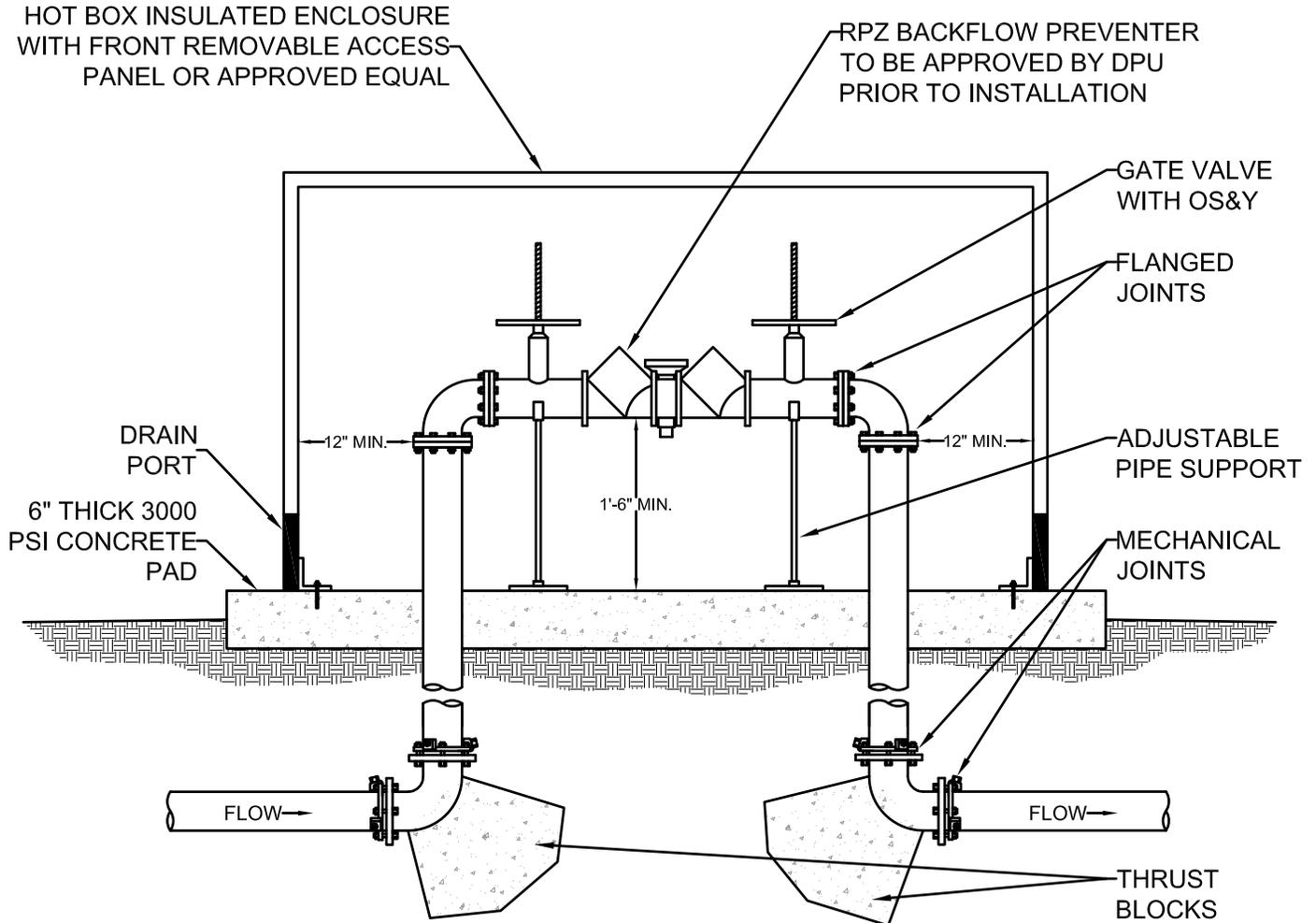
DATE:
JUNE 2015

REVISION:

1" TO 2" RESIDENTIAL/COMMERCIAL OUTDOOR
RPZ BACKFLOW PREVENTER ASSEMBLY

DRWG. NO.
WAT-7

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

- 1.) ALL ASPECTS OF THE BACKFLOW PREVENTER ASSEMBLY SHALL COMPLY WITH GOOCHLAND COUNTY STANDARDS AND SPECIFICATIONS ALONG WITH THE VIRGINIA DEPARTMENT OF HEALTH SPECIFICATIONS FOR CROSS CONNECTIONS AND BACKFLOW PREVENTION DEVICES.
- 2.) ADEQUATE POSITIVE DRAINAGE AWAY FROM THE ENCLOSURE SHALL BE PROVIDED.
- 3.) CONCRETE FLOOR ELEVATION SHALL BE APPROXIMATELY 2 INCHES ABOVE FINAL GRADE.
- 4.) BACKFLOW PREVENTER ASSEMBLY SHALL NOT BE LOCATED IN ANY AREA PRONE TO PONDING OR FLOODING.
- 5.) ALL BACKFLOW PREVENTER ASSEMBLY PIPING SHALL BE PRESSURE CLASS 350 DUCTILE IRON PIPE.

DATE:
JUNE 2015

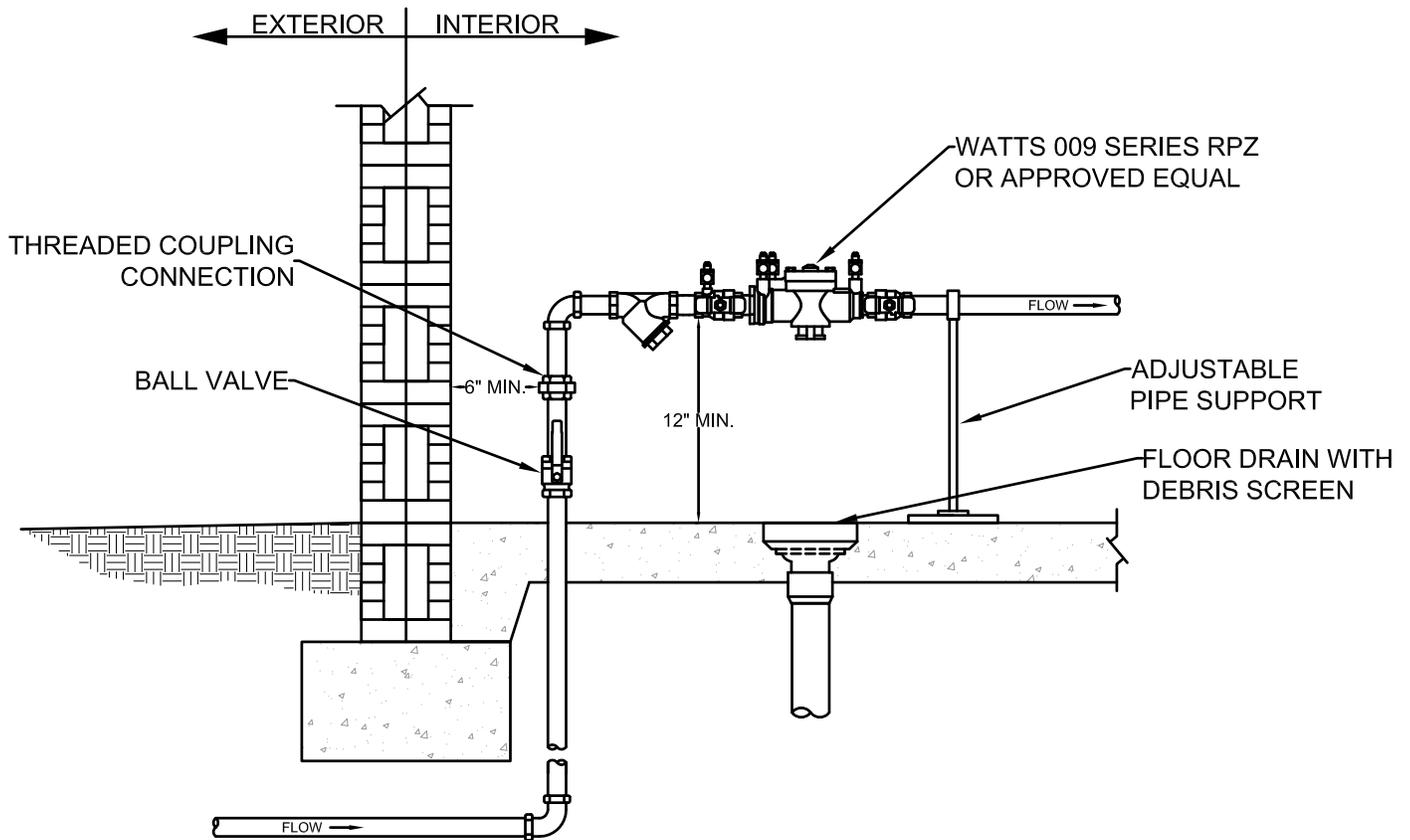
REVISION:

2- $\frac{1}{2}$ " TO 10" COMMERCIAL OUTDOOR RPZ
BACKFLOW PREVENTER ASSEMBLY

DRWG. NO.

WAT-8

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

- 1.) ALL ASPECTS OF THE BACKFLOW PREVENTER ASSEMBLY SHALL COMPLY WITH GOOCHLAND COUNTY STANDARDS AND SPECIFICATIONS, THE VIRGINIA DEPARTMENT OF HEALTH SPECIFICATIONS FOR CROSS CONNECTIONS AND BACKFLOW PREVENTION DEVICES, AND THE VIRGINIA STATE PLUMBING CODE.
- 2.) PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.

DATE:
JUNE 2015

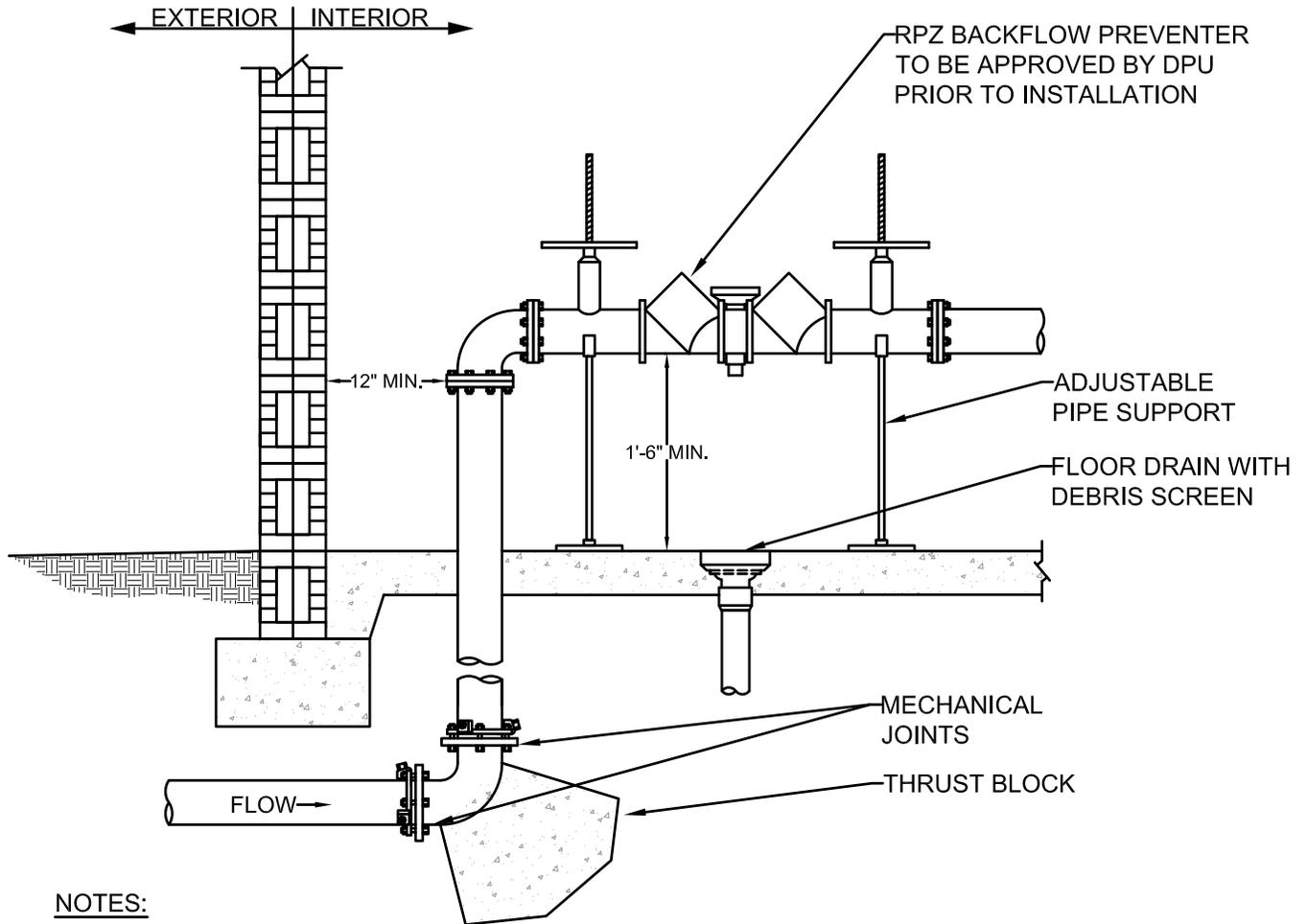
REVISION:

1" TO 2" RESIDENTIAL/COMMERCIAL INDOOR RPZ
BACKFLOW PREVENTER ASSEMBLY

DRWG. NO.

WAT-9

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



NOTES:

- 1.) ALL ASPECTS OF THE BACKFLOW PREVENTER ASSEMBLY SHALL COMPLY WITH GOOCHLAND COUNTY STANDARDS AND SPECIFICATIONS, THE VIRGINIA DEPARTMENT OF HEALTH SPECIFICATIONS FOR CROSS CONNECTIONS AND BACKFLOW PREVENTION DEVICES, AND THE VIRGINIA STATE PLUMBING CODE.
- 2.) PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.

DATE:
JUNE 2015

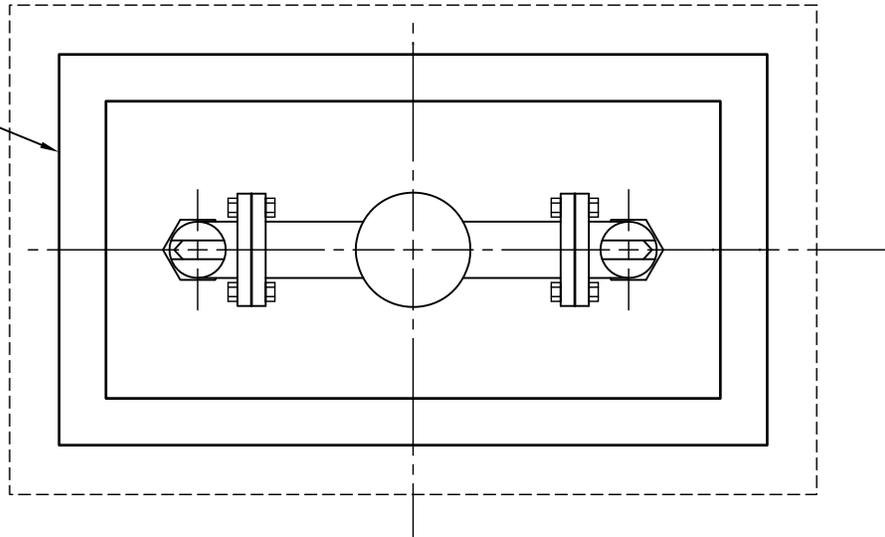
REVISION:

2- $\frac{1}{2}$ " TO 10" COMMERCIAL INDOOR RPZ
BACKFLOW PREVENTER ASSEMBLY

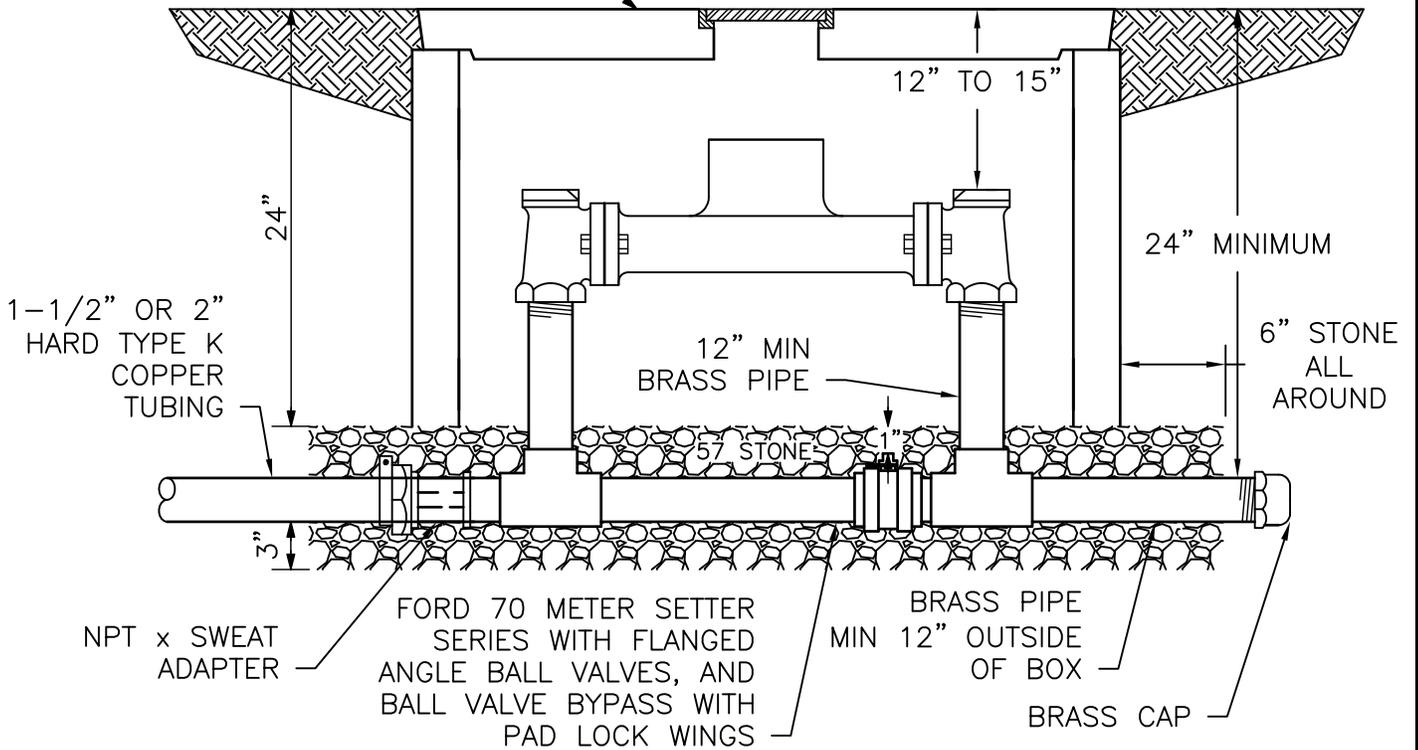
DRWG. NO.
WAT-10

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

SEE MET-4 FOR
REQUIRED METER
BOX SPECIFICATIONS



TOP TO BE FLUSH
WITH FINAL GRADE



DATE:
OCT. 2014

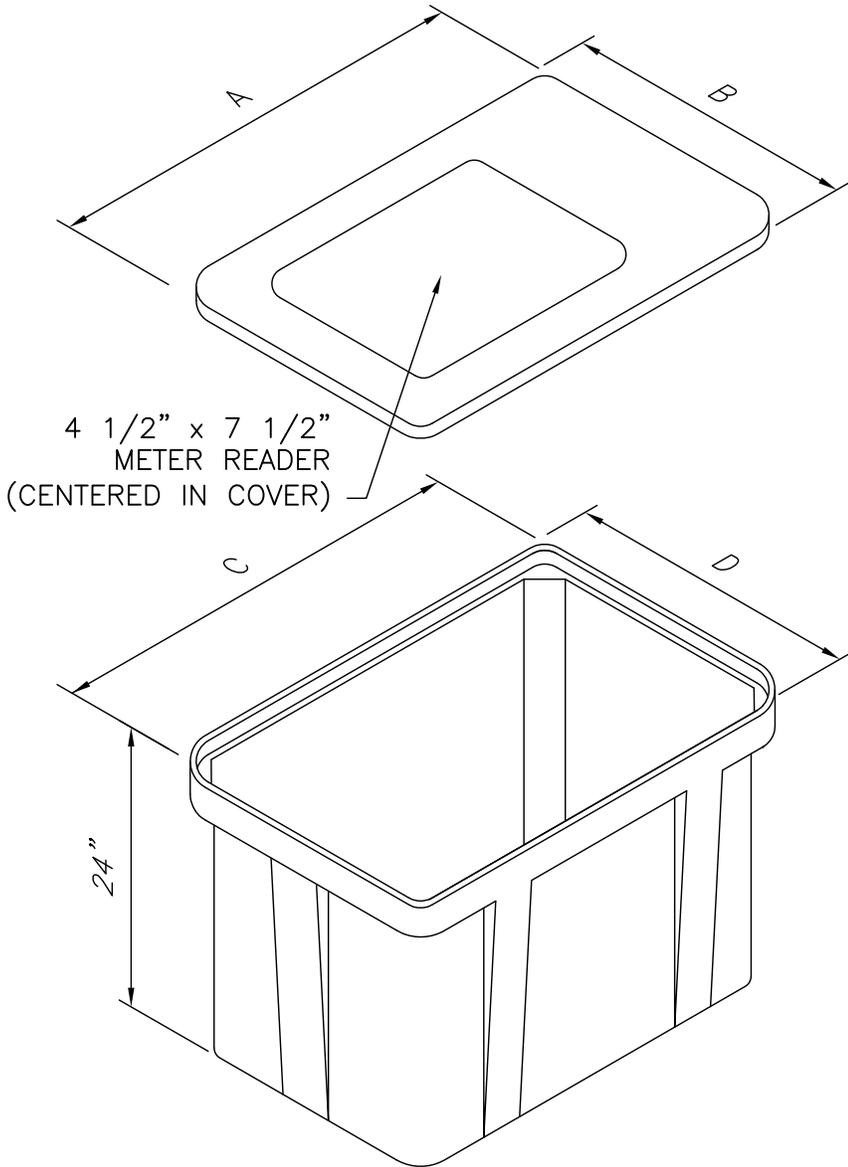
REVISION:
OCT. 2014

1-1/2" OR 2" METER SETTINGS

DRWG. NO.

MET-2

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



Meter Box Dimensions		
Meter Size	5/8" X 3/4"	1"
Box Model No.	1015	1118
DIM A	15.375"	18"
DIM B	10.125"	11.25"
DIM C	17.75"	20.5"
DIM D	13"	13.75"

NOTES:

1. ALL METER BOXES SHALL BE OLDCASTLE HEAVYWALL MODEL BC WITH DUCTILE IRON COVERS AND SHALL ONLY BE PLACED IN NON-DELIBERATE TRAFFIC LOCATIONS.
2. ANY METER BOX LOCATED WITHIN A PAVED DRIVE LOCATION SHALL BE A HEAVY-DUTY RATED OLDCASTLE H-SERIES MODEL 1118 POLYMER CONCRETE BOX, REGARDLESS OF METER SIZE.
3. METER BOX COVERS SHALL BE FLUSH MOUNTED DUCTILE IRON WITH HINGED METER READER DOOR.
4. METER BOXES SHALL HAVE A MINIMUM VERTICAL LOAD RATING OF 15,000 LBS AND HAVE A MINIMUM 1" ANTI-SETTLING FLANGE ON BOTTOM OF THE BOX.

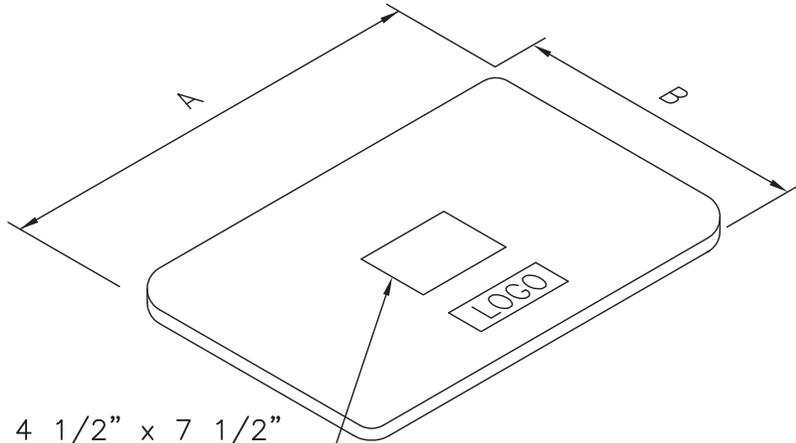
DATE:
OCT. 2014

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STANDARD WATER METER BOX FOR
5/8" x 3/4", & 1" SERVICES

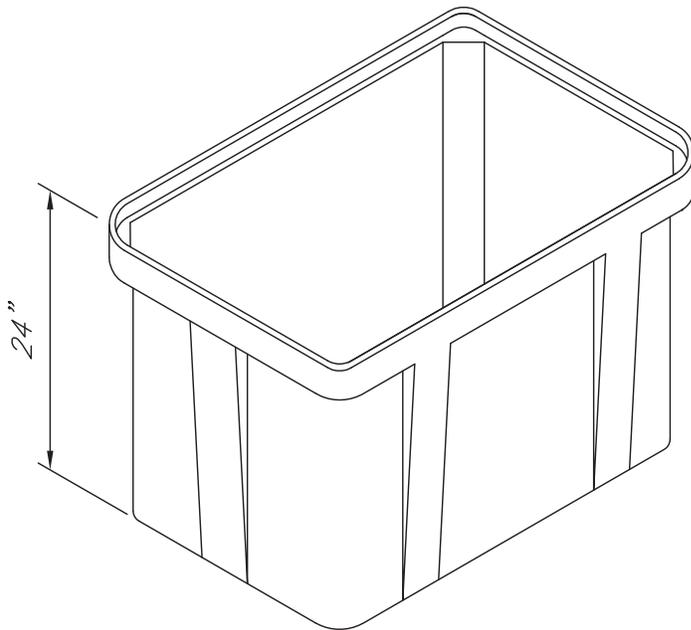
DRWG. NO.
MET-3

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



4 1/2" x 7 1/2"
HINGED METER READER
(CENTERED IN COVER)

Meter Box Dimensions		
Meter Size	1-1/2"	2"
Box Model No.	H Series	H Series
DIM A	36"	48"
DIM B	24"	30"



NOTES:

1. ALL METER BOXES SHALL BE OLDCASTLE SERIES H POLYMER CONCRETE.
2. ALL METER BOX COVERS SHALL BE OLDCASTLE SERIES H POLYMER CONCRETE WITH FLUSH MOUNT DUCTILE IRON HINGED METER READER DOOR.
3. ALL NON-DELIBERATE TRAFFIC WATER METER BOXES & METER BOX COVERS MUST COMPLY WITH ALL TEST PROVISIONS OF THE LATEST EDITION OF ANSI/SCTE 77 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY" AND MUST MEET THE TIER 22 APPLICATION. MARKINGS SHOWING THE TIER 22 RATING MUST BE LABELED OR STENCILED ON THE INSIDE AND OUTSIDE OF THE BOX.
4. ALL NON-DELIBERATE TRAFFIC WATER METER BOXES AND COVERS MUST BE TESTED AND CERTIFIED, MEETING ALL TEST PROVISIONS OF THE LATEST EDITION OF ANSI/SCTE 77.

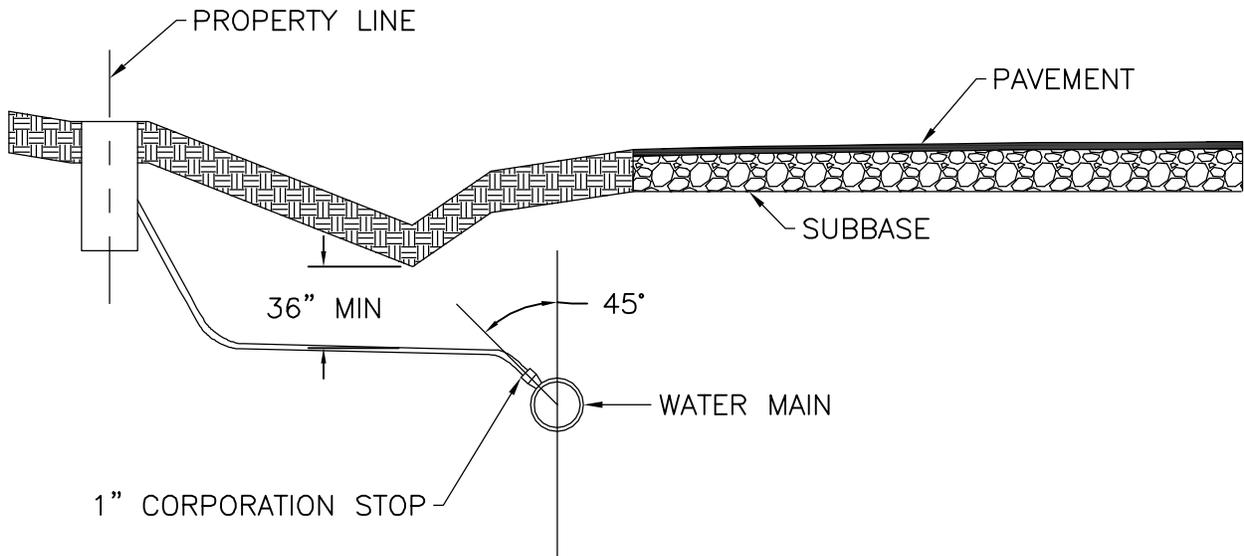
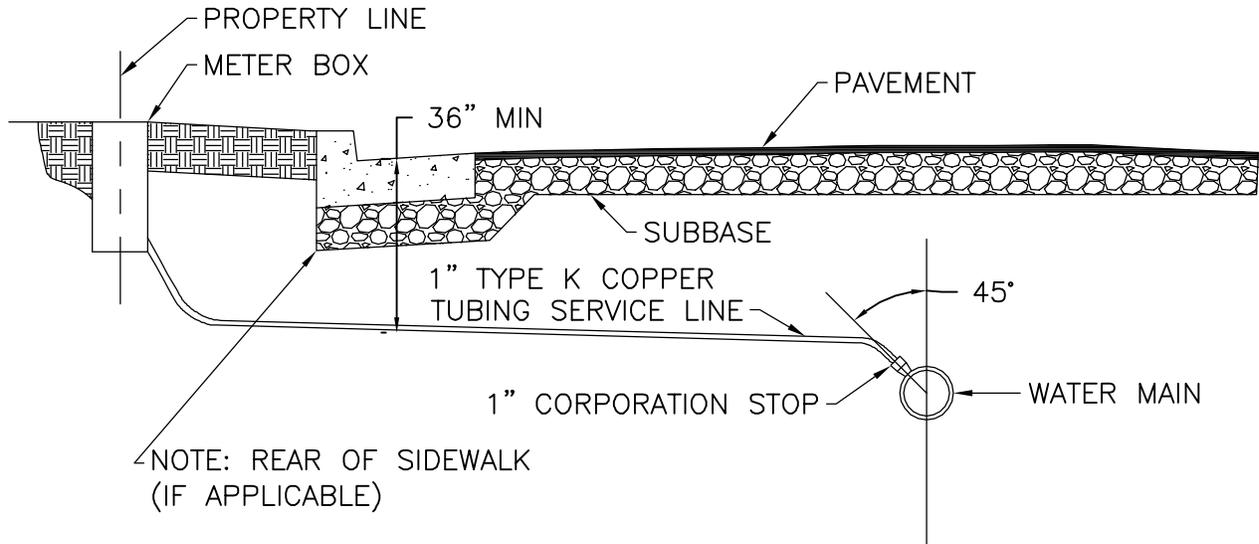
DATE:
OCT. 2014

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STANDARD WATER METER BOX FOR
1-1/2" & 2" SERVICES

DRWG. NO.
MET-4

GOOCHLAND COUNTY
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NOTE: BACKFILL SERVICE LINE WITH 6" SAND ALL AROUND

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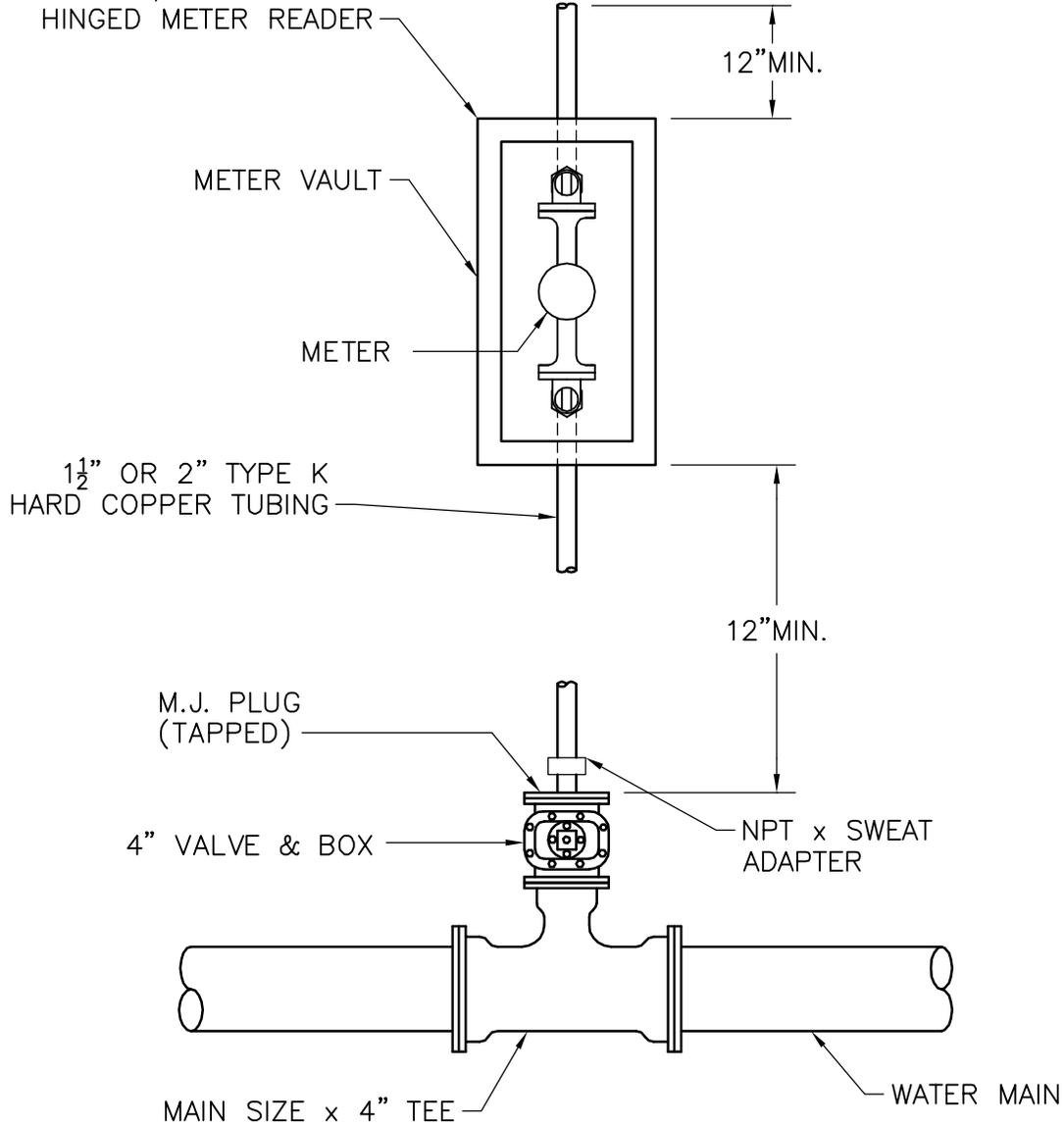
REVISION:
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5/8" X 3/4", & 1"
METER INSTALLATION DETAILS

DRWG. NO.
MET-5

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

OLD CASTLE METER BOX
MODEL 1730-24 WITH HEAVY
DUTY LID, DUCTILE IRON
HINGED METER READER



PLAN VIEW

NOTE: SEE DWG MET-2 AND MET-4 FOR METER BOX AND METER
SETTING DETAILS

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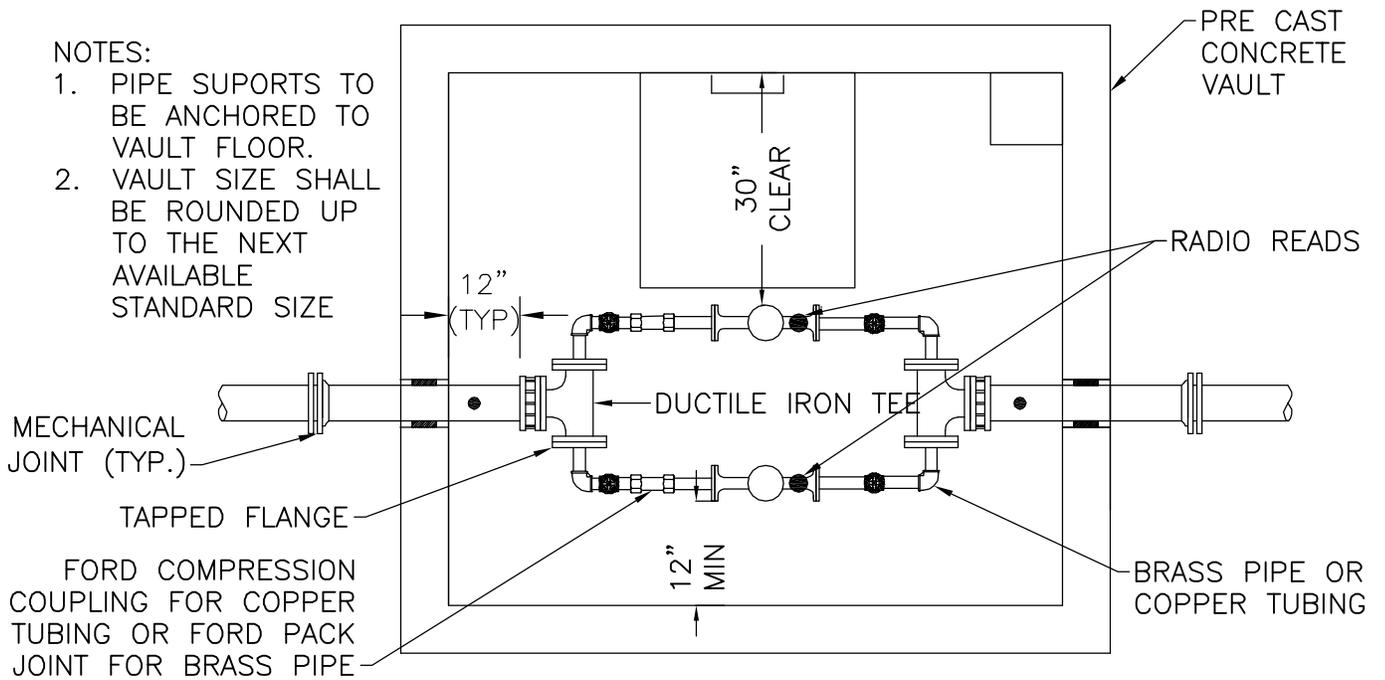
STANDARD WATER SERVICE CONNECTION FOR
COMMERCIAL AND MULTI-FAMILY PROPERTIES
WITH 1 1/2" OR 2" METERS

DRWG. NO.
MET-6

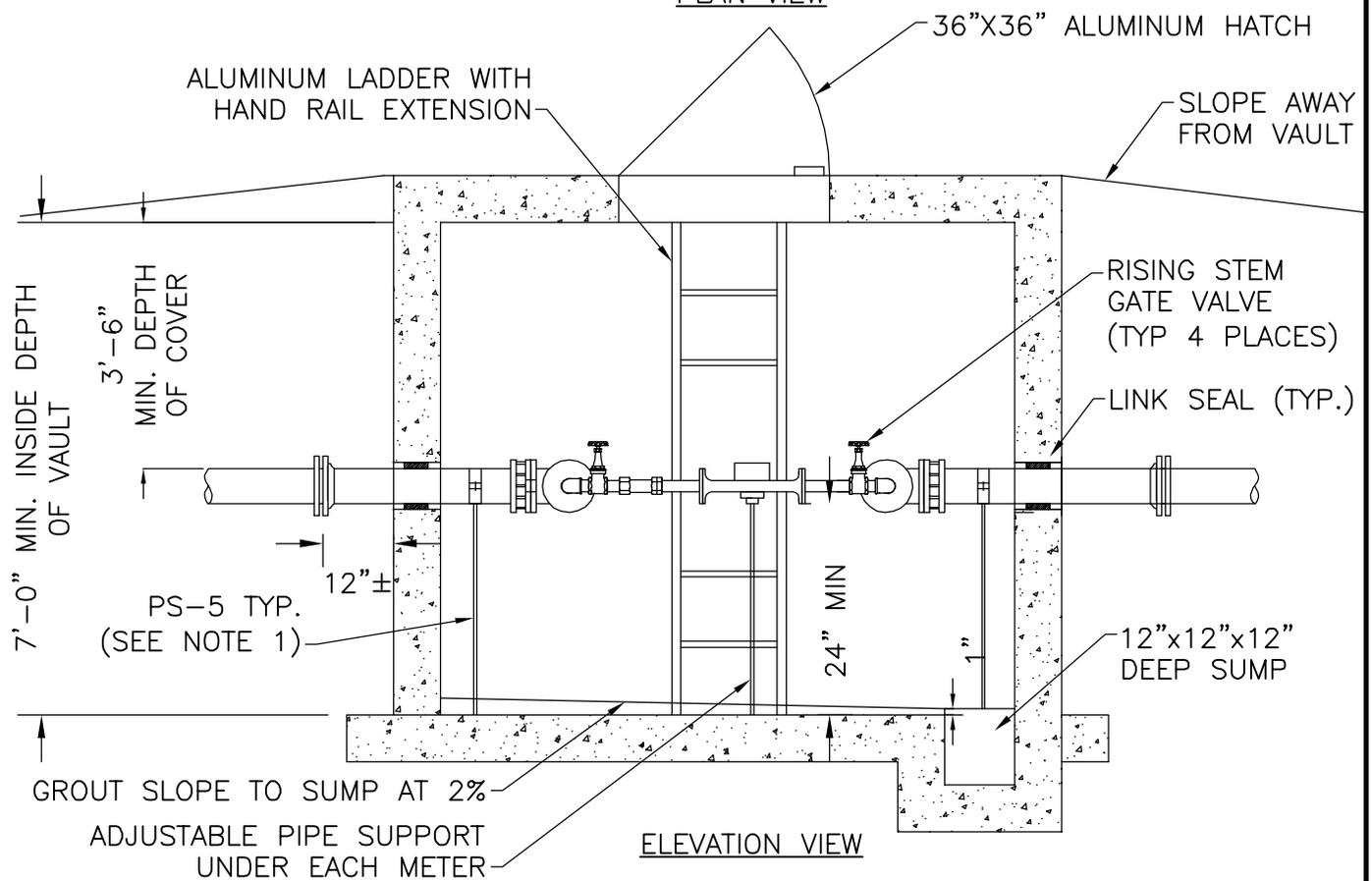
GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

NOTES:

1. PIPE SUPPORTS TO BE ANCHORED TO VAULT FLOOR.
2. VAULT SIZE SHALL BE ROUNDED UP TO THE NEXT AVAILABLE STANDARD SIZE



PLAN VIEW



ELEVATION VIEW

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OCT. 2014
REVISION:
OCT. 2014

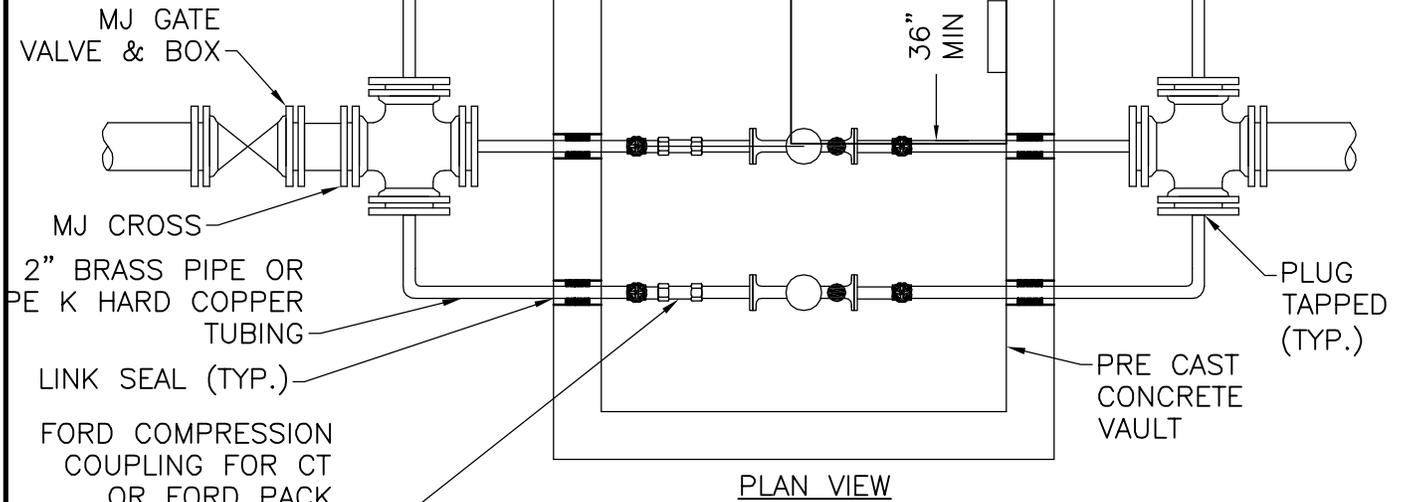
DUAL 2" METER SETTING

DRWG. NO.
MET-7

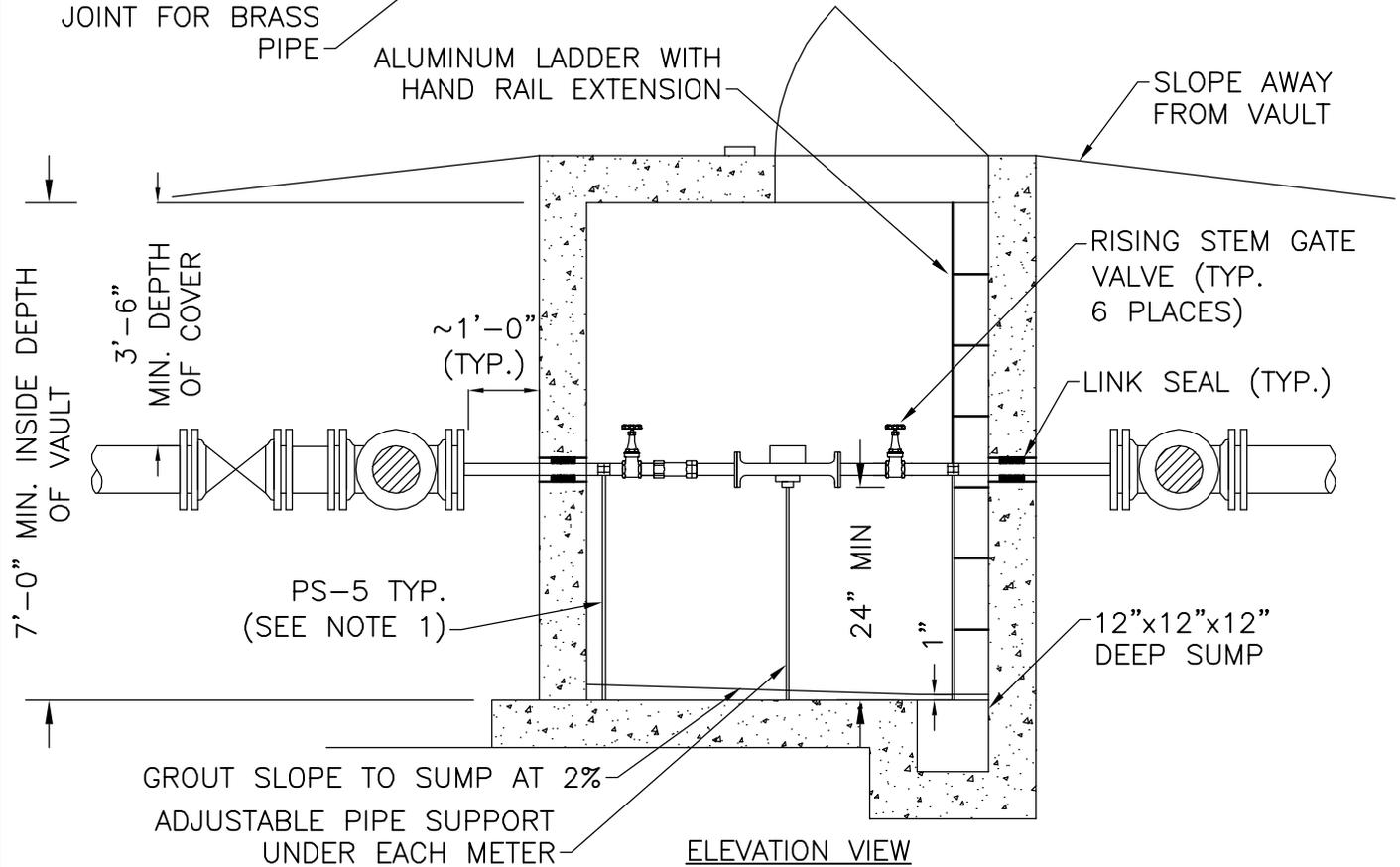
GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

NOTE:

1. PIPE SUPPORTS TO BE ANCHORED TO VAULT FLOOR
2. VAULT SIZE SHALL BE ROUNDED UP TO NEXT AVAILABLE STANDARD SIZE



PLAN VIEW



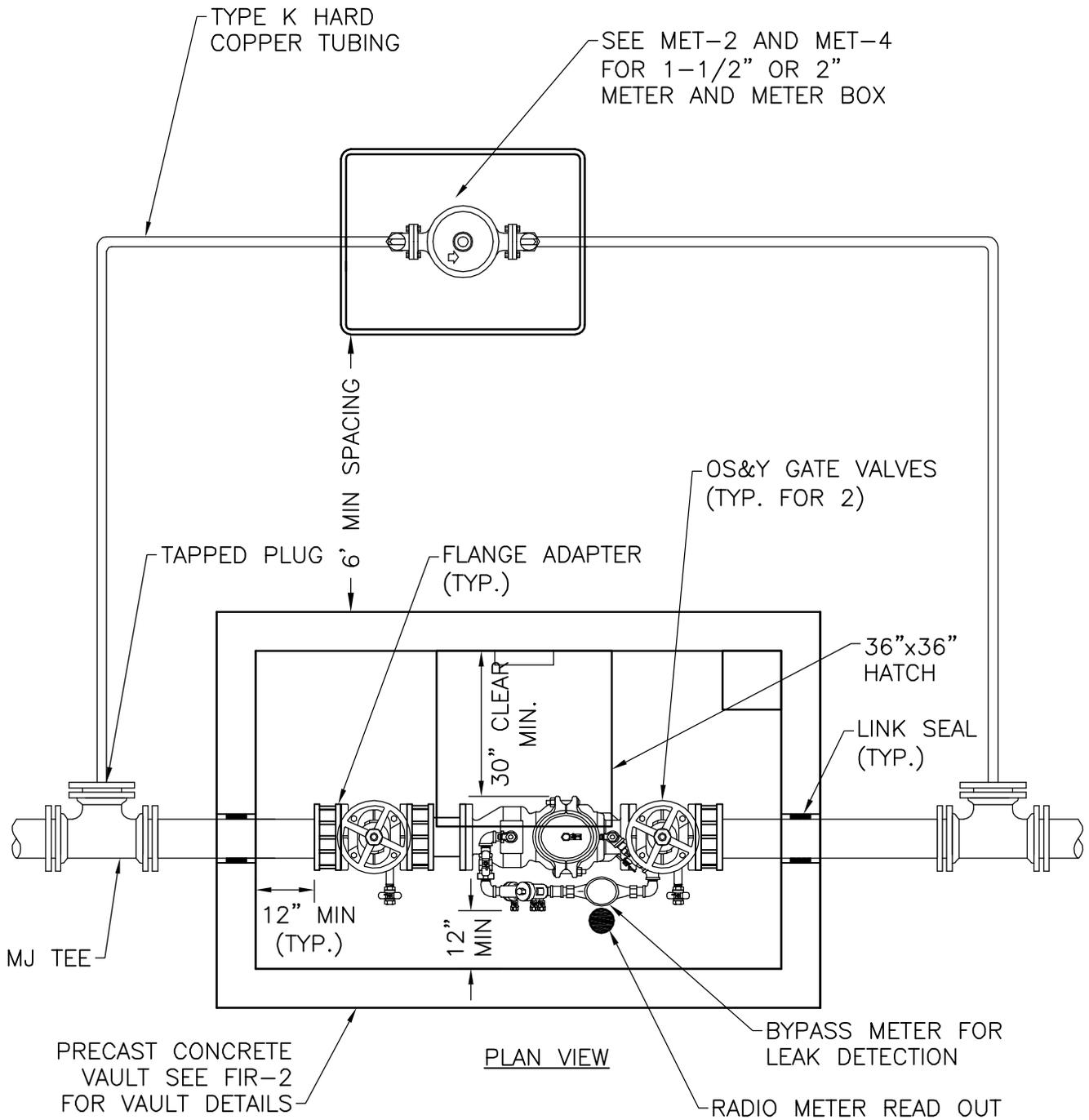
ELEVATION VIEW

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TRIPLE 2" METER SETTING

DRWG. NO.	MET-8
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GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



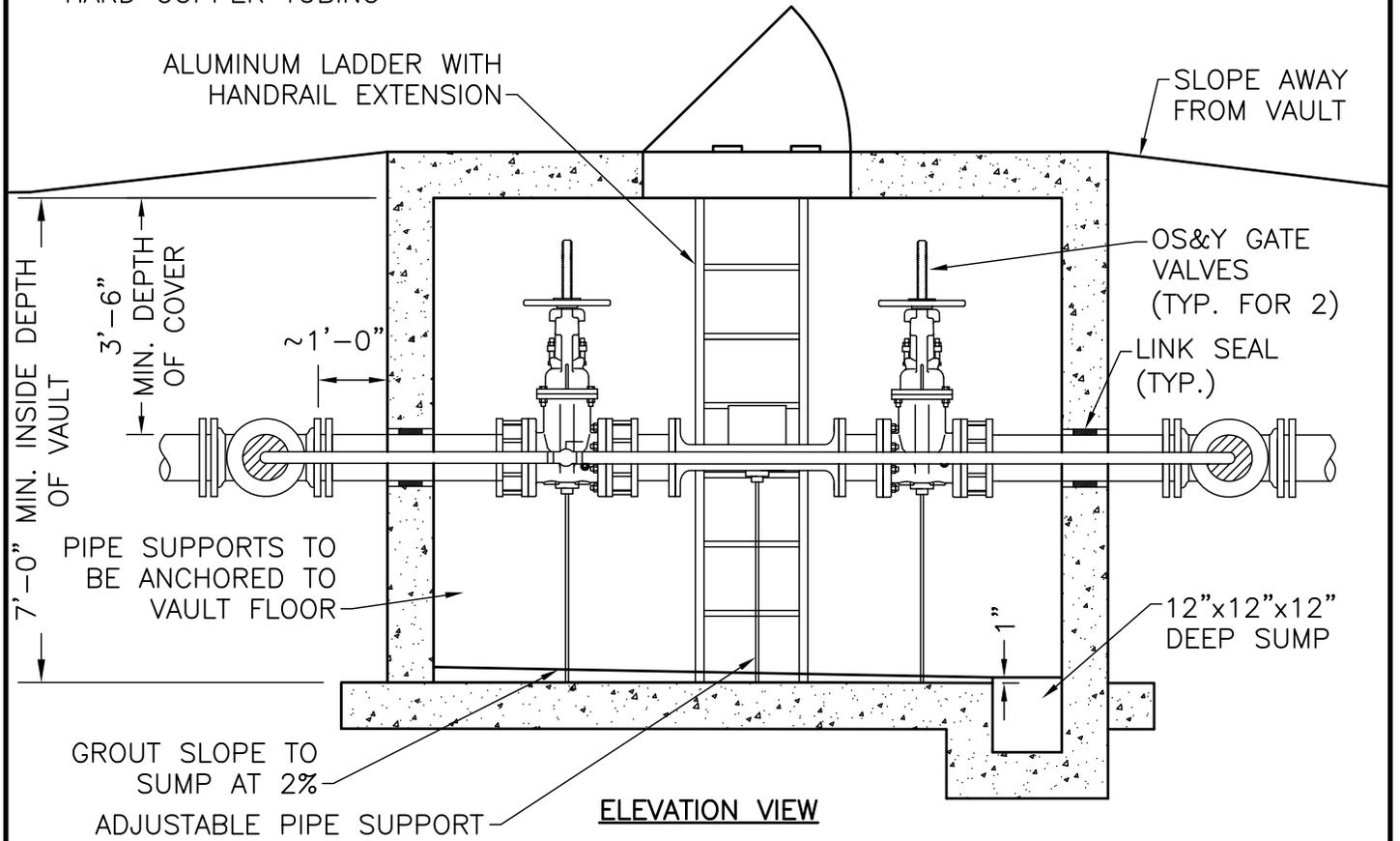
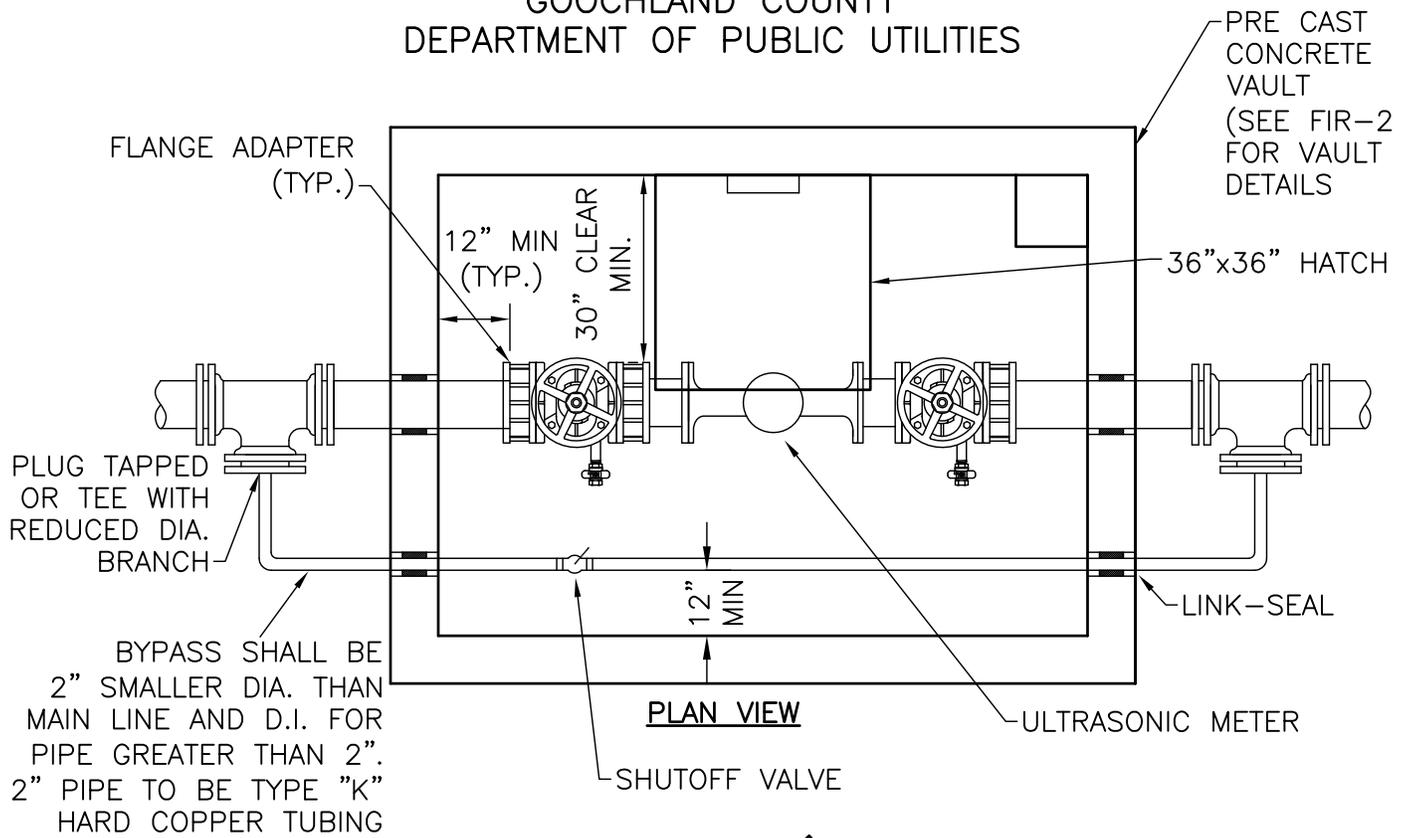
DATE:
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1-1/2" OR 2" METER AND
DOUBLE CHECK VALVE ASSEMBLY

DRWG. NO.
MET-9

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



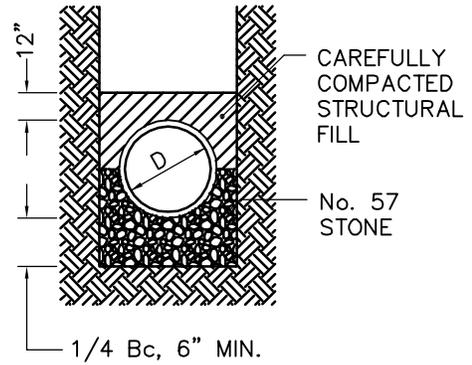
DATE:
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REVISION:
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4" THROUGH 10" ULTRASONIC METER SETTING

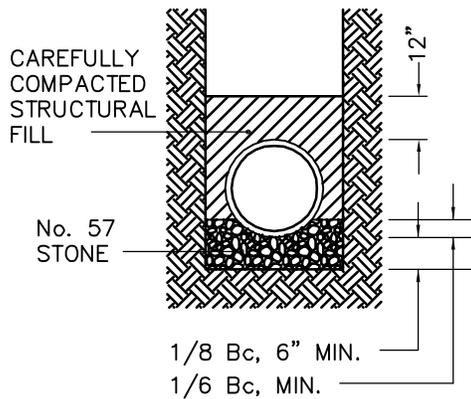
DRWG. NO.
MET-10

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

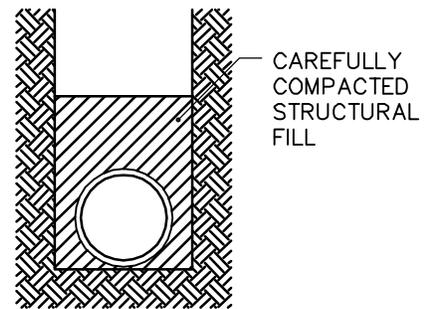


CLASS "B"
LOAD FACTOR = 1.9

Bc = O.D. OF PIPE
D = I.D. OF PIPE



CLASS "C"
LOAD FACTOR = 1.5



CLASS "C-1"
LOAD FACTOR = 1.5

NOTE: IN ROCK TRENCH, EXCAVATE AT LEAST 6" BELOW THE BELL OF THE PIPE.

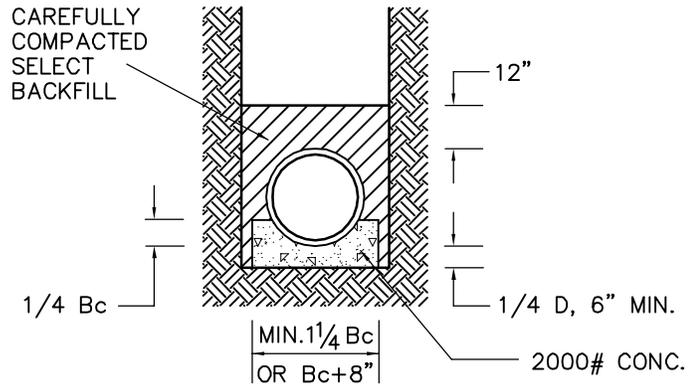
NOTE: CLASS "C-1" BEDDING TO BE USED ONLY FOR DUCTILE IRON PRESSURE LINES.

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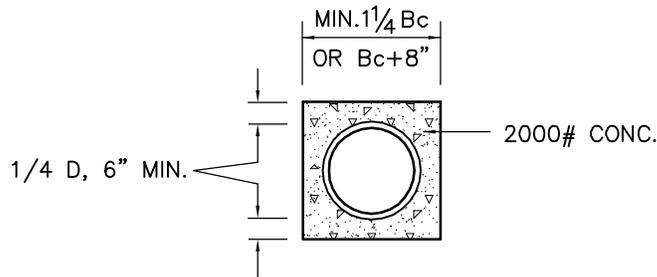
TRENCH BEDDING - 1

DRWG. NO.
TR-1

GOOCHLAND COUNTY
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CLASS "A"
CONCRETE CRADLE
LOAD FACTOR = 2.8



CONCRETE ENCASEMENT
LOAD FACTOR = 4.5

Bc = O.D. OF PIPE
D = I.D. OF PIPE

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OCT. 2014

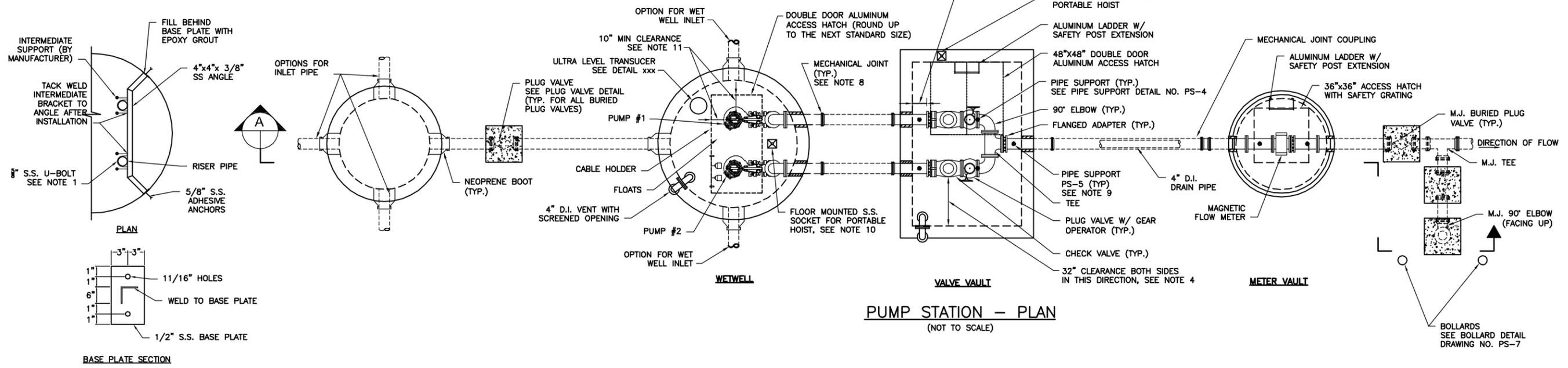
REVISION:
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TRENCH BEDDING - 2

DRWG. NO.
TR-2

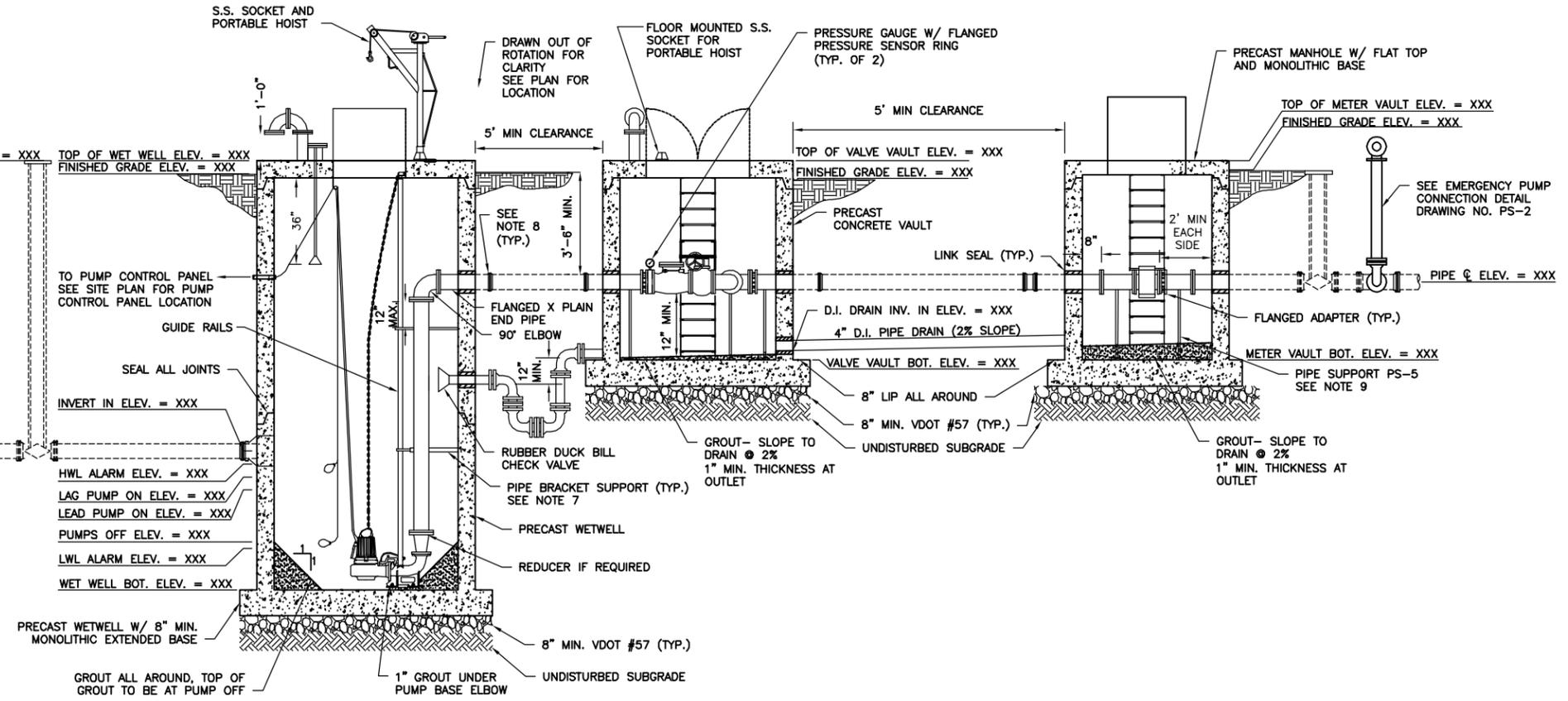
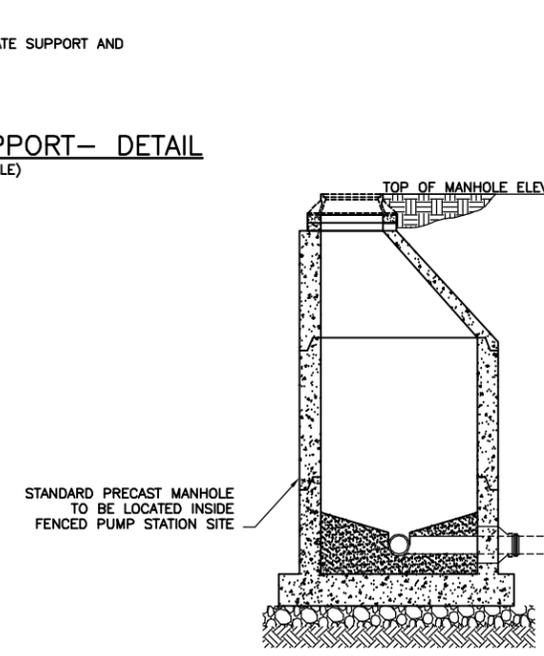
GOOCHLAND COUNTY
DEPARTMENT OF UTILITIES

DRWG. NO.
PS-1



NOTE:
1. U-BOLT TO GO THROUGH INTERMEDIATE SUPPORT AND ANGLE IRON WITH DOUBLE NUTS.

PIPE BRACKET SUPPORT- DETAIL
(NOT TO SCALE)



- NOTES:
- PUMP STATION LAYOUT IS GENERIC AND IS TO DEPICT THE GENERAL ARRANGEMENT AND THE MINIMUM EQUIPMENT REQUIRED.
 - PIPE AND VALVE SIZES WILL DEPEND ON DESIGN REQUIREMENTS.
 - MINIMUM PUMP, VALVE, AND PIPING SIZE IS 4 INCHES.
 - MINIMUM DIMENSIONS FOR THE VALVE VAULT AND THE METER VAULT ARE DETERMINED BY CLEARANCES INDICATED ON THE DRAWINGS. ROUND UP SIZES TO THE NEXT STANDARD SIZE.
 - ALL PIPING INSIDE THE PUMP STATION FENCE AREA SHALL BE DUCTILE IRON WITH RESTRAINED JOINTS.
 - SEE PUMP STATION SPECIFICATIONS FOR DESIGN REQUIREMENTS.
 - INSTALL ONE PIPE BRACKET SUPPORT AT 90° ELBOW. INSTALL ADDITIONAL PIPE BRACKET SUPPORTS AT MAXIMUM 10' INTERVALS EQUALLY SPACED BETWEEN TOP SUPPORT AND PUMP BASE SUPPORT. INSTALL PUMP GUIDE RAIL INTERMEDIATE SUPPORT AT EACH PIPE BRACKET SUPPORT.
 - INSTALL A RESTRAINED MECHANICAL JOINT OUTSIDE OF EACH STRUCTURE 12" FROM WALL.
 - PIPE SUPPORTS TO BE ANCHORED TO CONCRETE BASE.
 - PORTABLE HOIST SOCKET SHALL BE LOCATED TO ALLOW HOIST HOOK TO BE VERTICALLY CENTERED OVER PUMP PICK POINT.
 - ACCESS HATCH SIZE SHALL BE ROUNDED UP TO HATCH STANDARD SIZE.
 - VALVE VAULT AND METER VAULT MAY BE COMBINED INTO A SINGLE VAULT DEPENDING UPON SIZE AND SPACE AVAILABILITY AND LIMITATIONS OF THE PUMP STATION SITE.

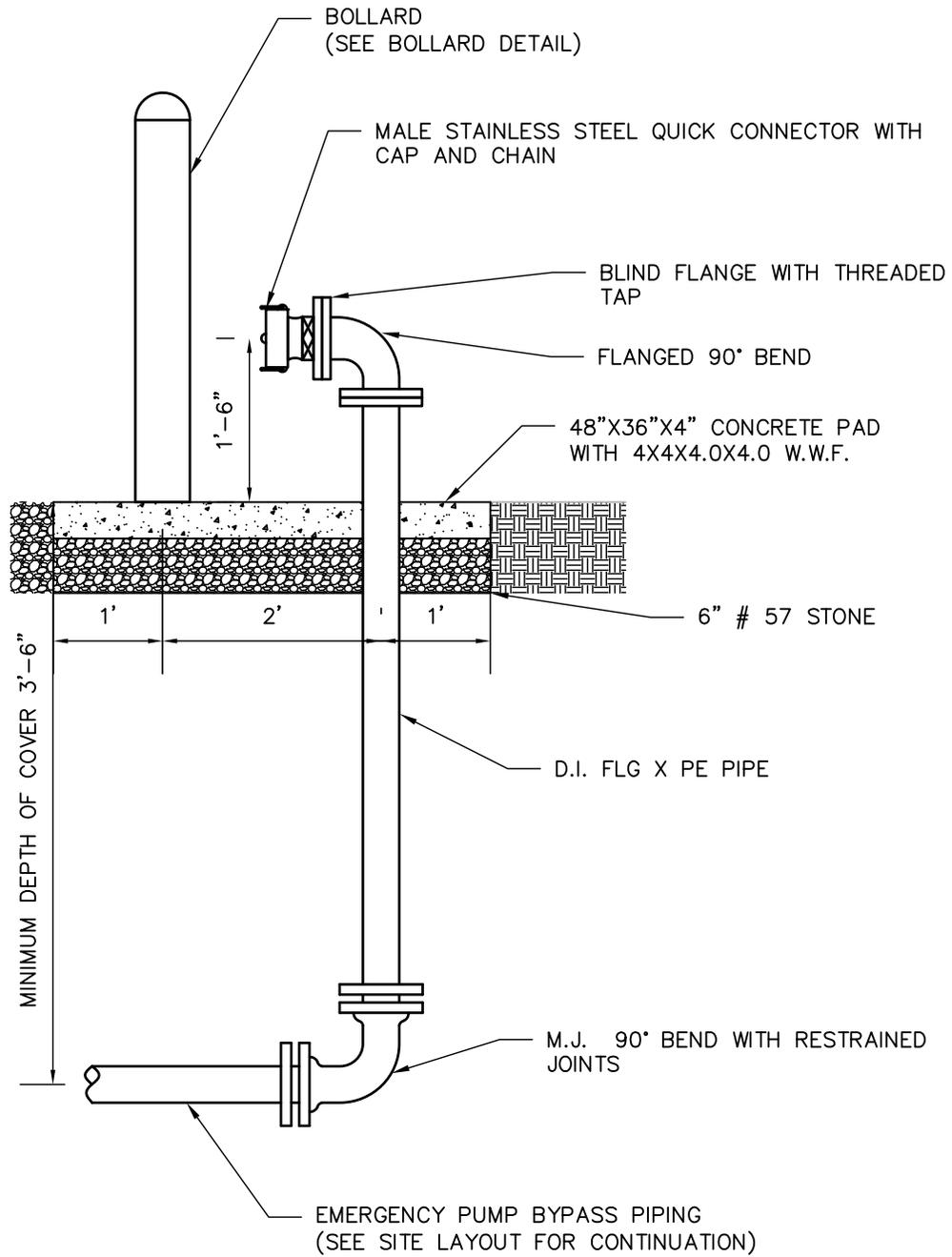
PUMP STATION - SECTION
(NOT TO SCALE)

* THIS DRAWING IS FOR PUMP STATION DESIGN GUIDANCE ONLY. EACH PUMP STATION DESIGN SHALL TAKE INTO CONSIDERATION ALL INDIVIDUAL AND UNIQUE SITE REQUIREMENTS.

STANDARD PUMP STATION

DATE: OCT. 2014
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NOTES:

1. PAINT ALL EXPOSED PIPING.
2. SEE SITE PLAN FOR PIPE SIZES.

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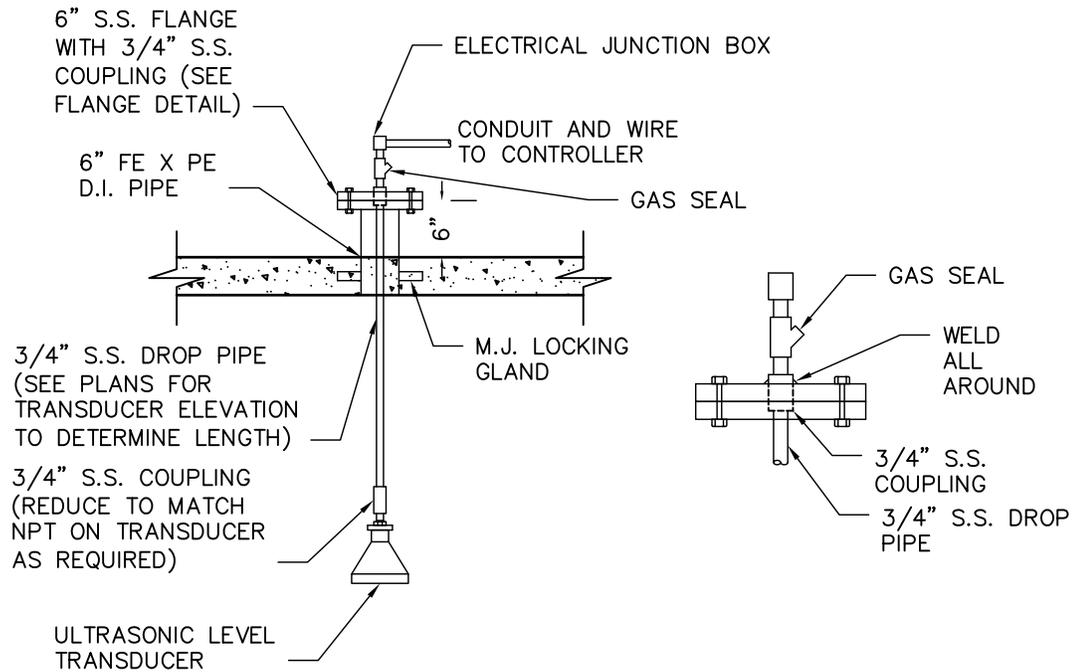
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OCT. 2014

EMERGENCY PUMP CONNECTION

DRWG. NO.

PS-2

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DEPARTMENT OF PUBLIC UTILITIES



DATE:
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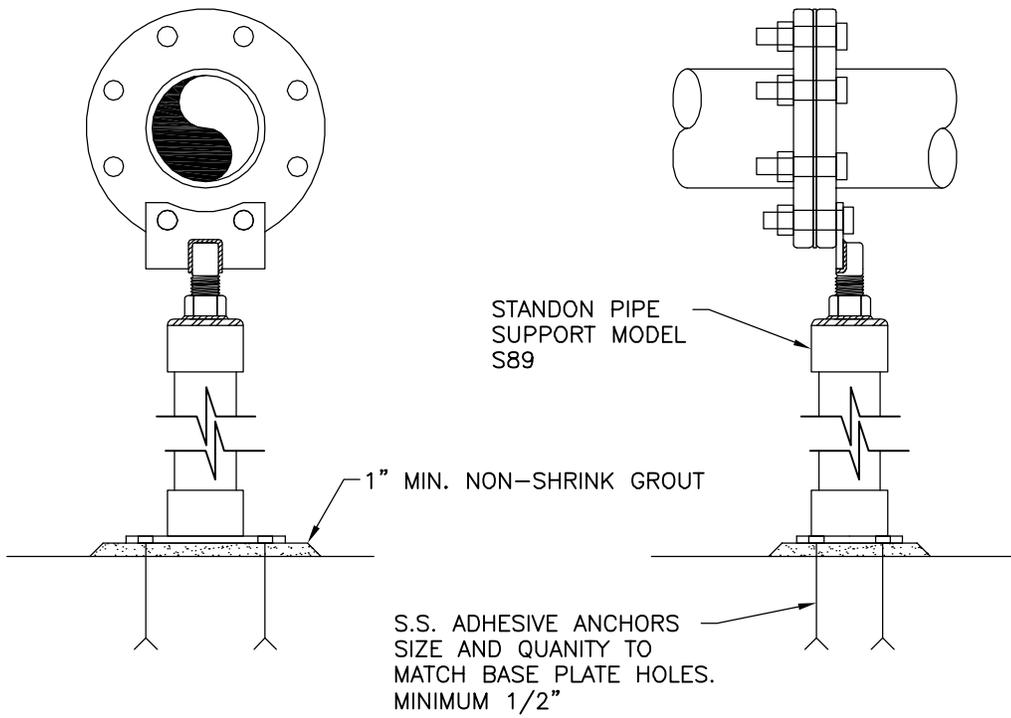
REVISION:
OCT. 2014

ULTRASONIC LEVEL SUPPORT

DRWG. NO.

PS-3

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



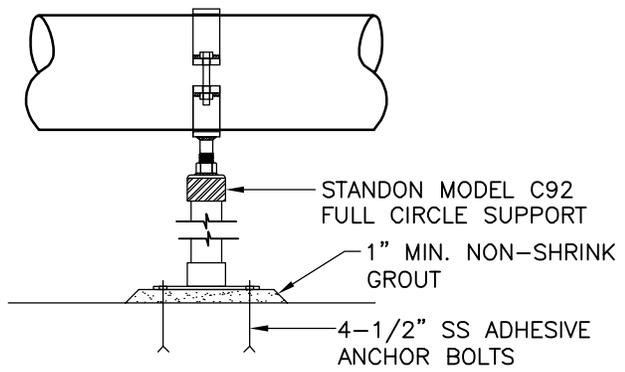
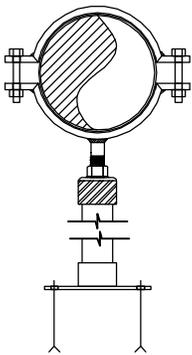
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PIPE SUPPORT - 1

DRWG. NO.
PS-4

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DEPARTMENT OF PUBLIC UTILITIES



DATE:
OCT. 2014

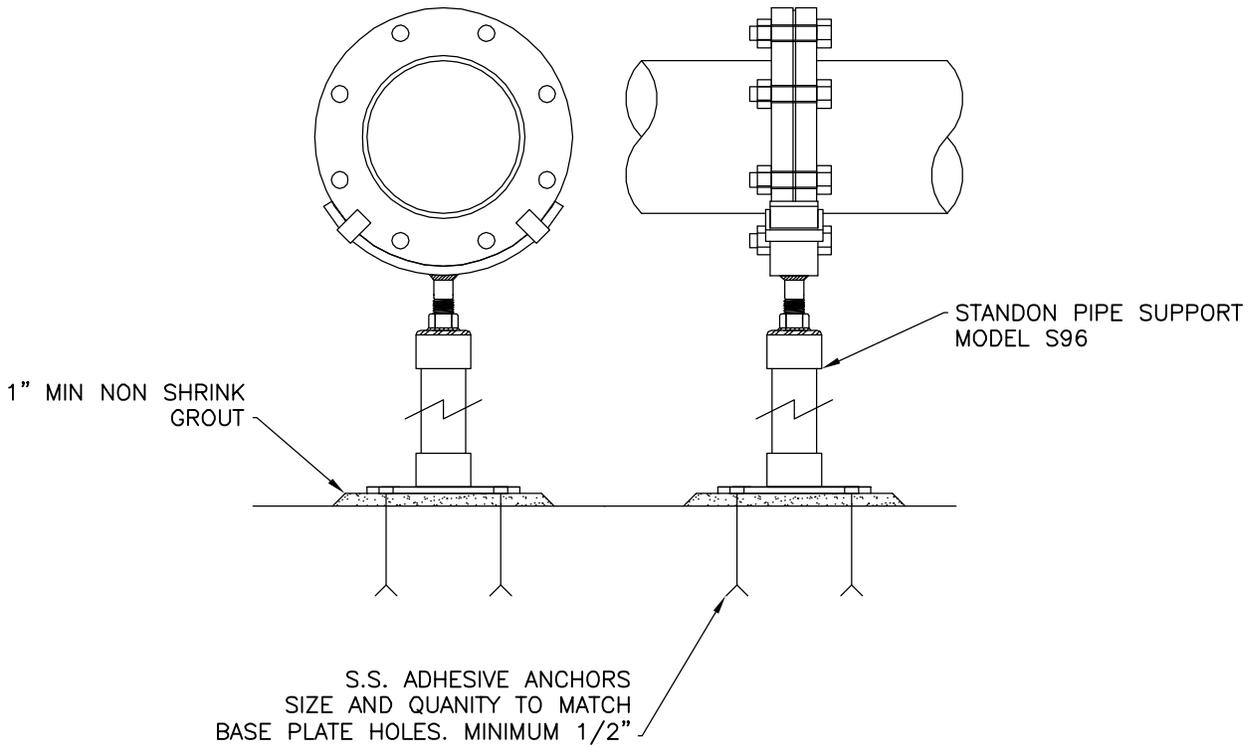
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PIPE SUPPORT - 2

DRWG. NO.

PS-5

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



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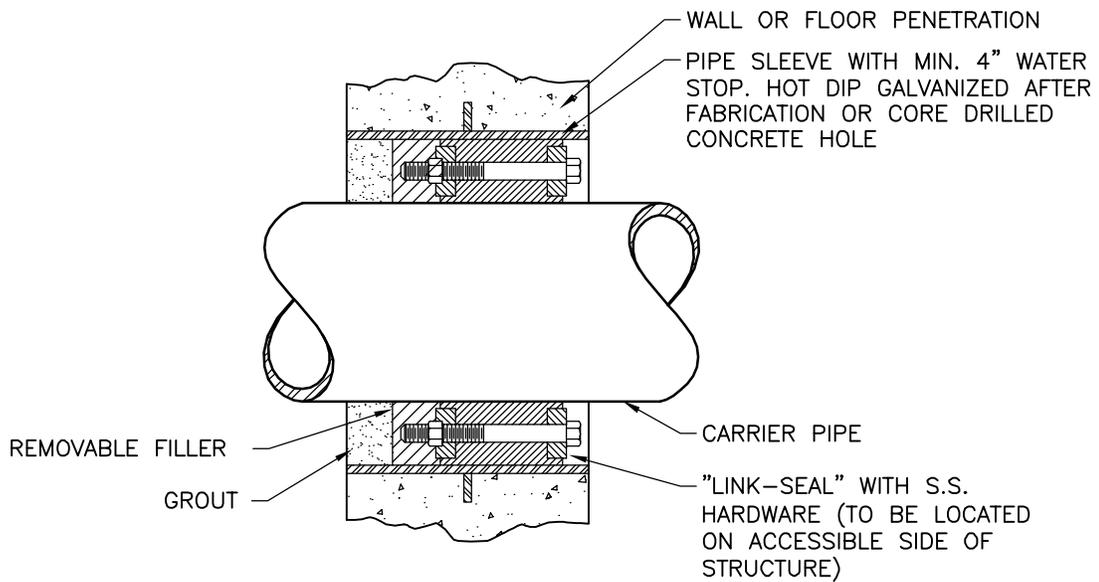
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PIPE SUPPORT - 3

DRWG. NO.

PS-6

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NOTE: HOLE SIZE AND LINK SEAL SIZE TO BE COORDINATED AS PER MANUFACTURER'S REQUIREMENTS.

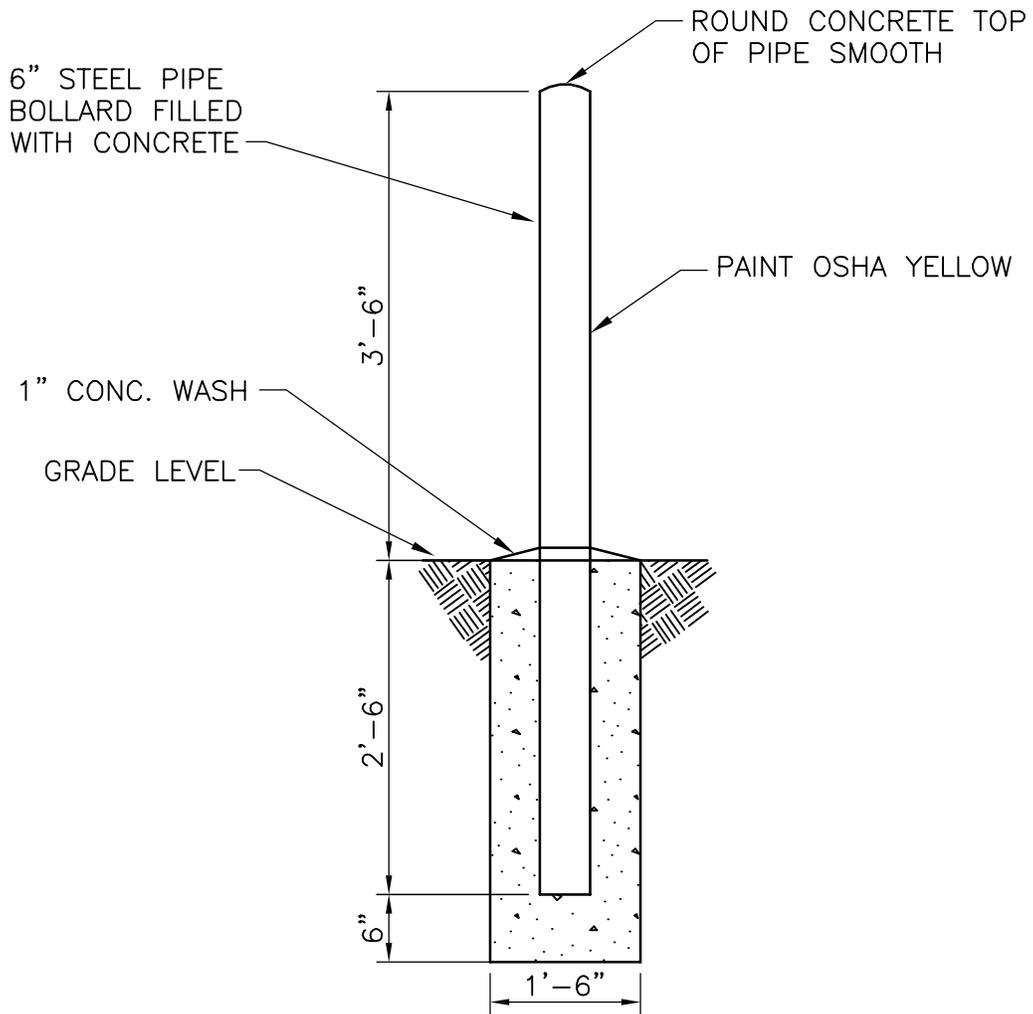
DATE:
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LINK SEAL

DRWG. NO.
PS-7

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES



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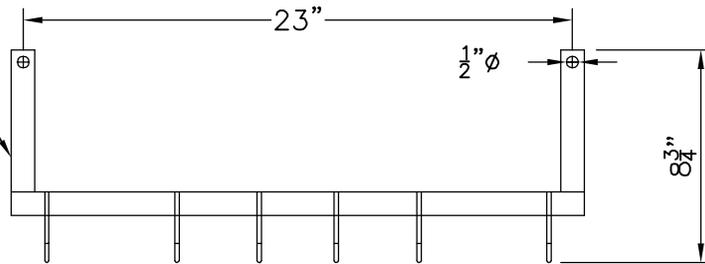
PIPE BOLLARD

DRWG. NO.

PS-8

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

$\frac{1}{4}$ " X $1\frac{1}{2}$ "
STAINLESS
STEEL



$\frac{3}{8}$ " STAINLESS STEEL
ROUND STOCK

NOTES:

1. 304 STAINLESS STEEL CONSTRUCTION
2. CONTRACTOR SHALL COORDINATE REQUIRED NUMBER OF HOOKS WITH NUMBER OF POWER CABLES AND NUMBER OF FLOATS. EACH CABLE SHALL HAVE ITS INDIVIDUAL HOOK.
3. EACH HOOK AND CABLE SHALL BE LABELED WITH A WATERPROOF TAG.

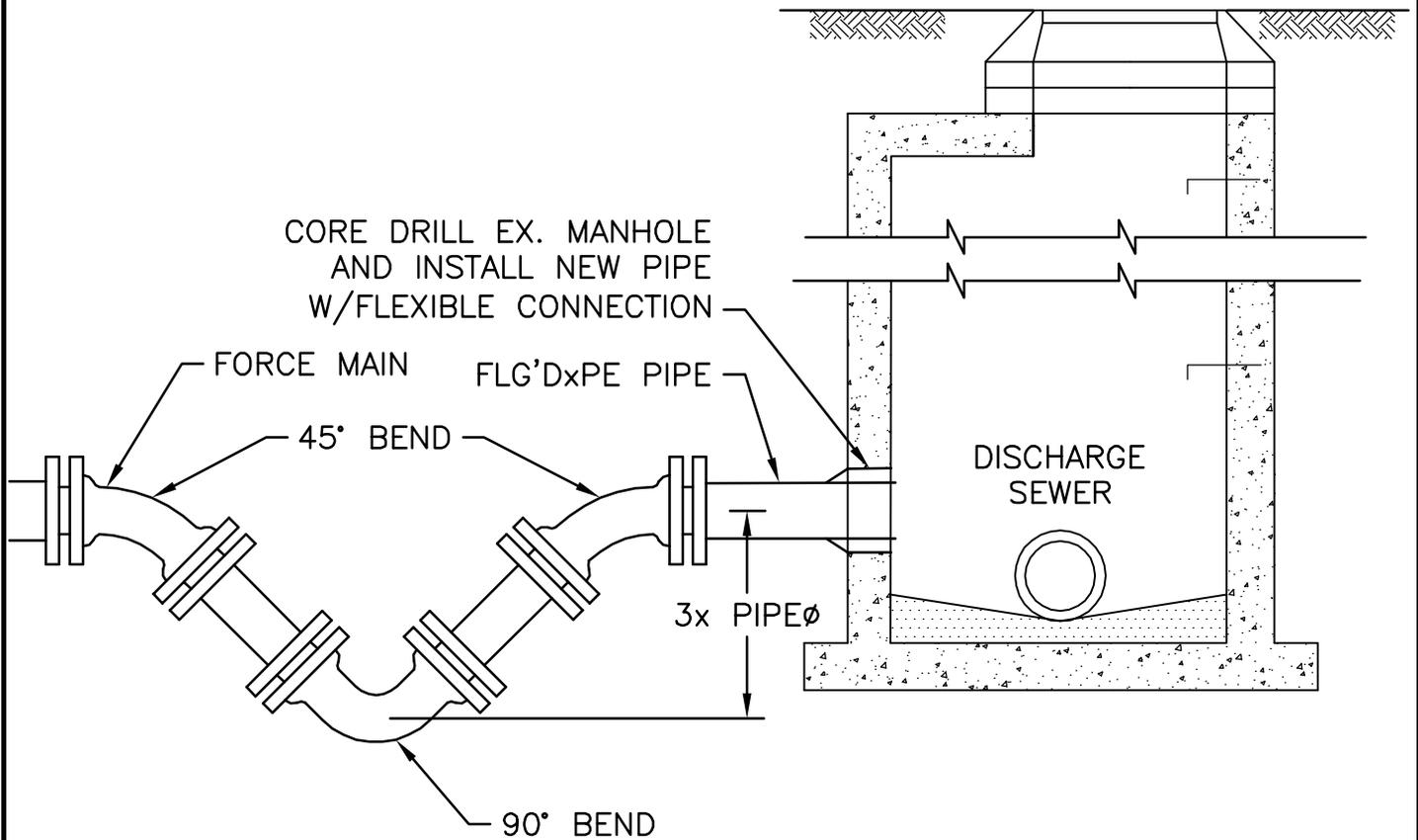
DATE:
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CABLE HOLDER

DRWG. NO.
PS-9

GOOCHLAND COUNTY
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FORCE MAIN TERMINATION
AT EXISTING MANHOLE

DRWG. NO.
PS-10