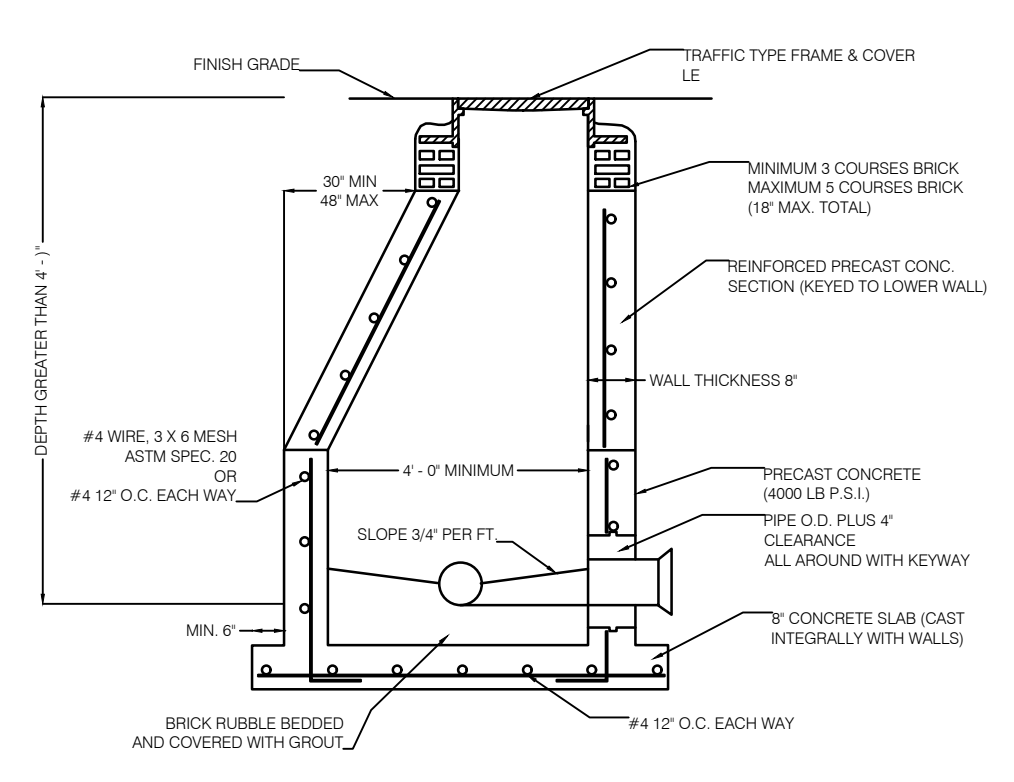
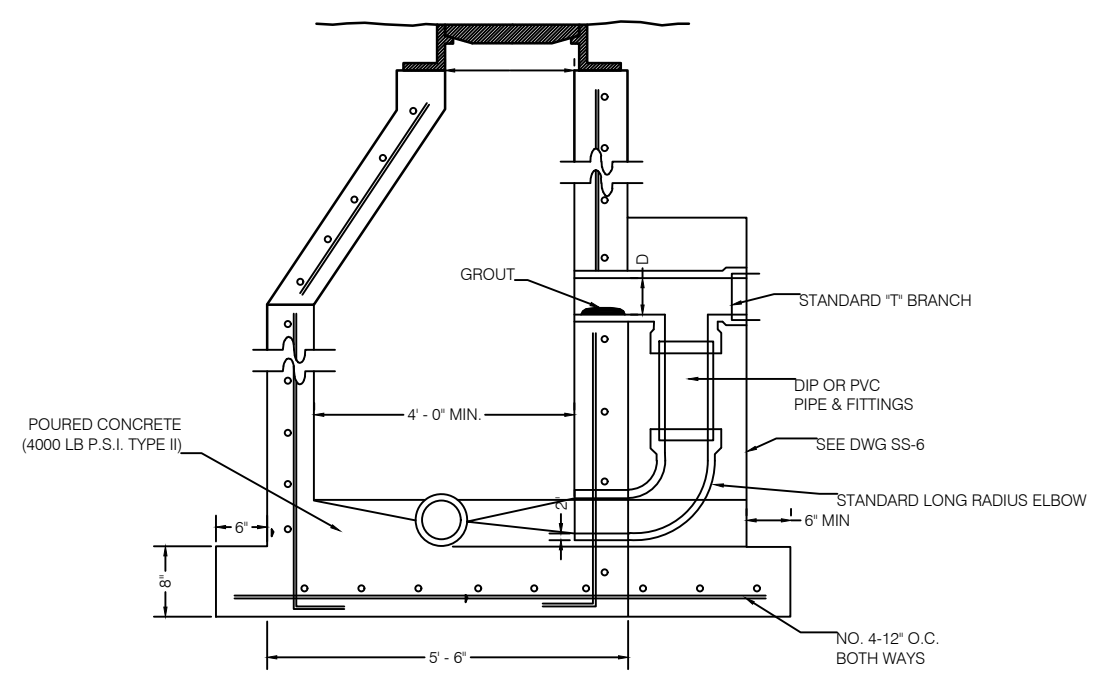


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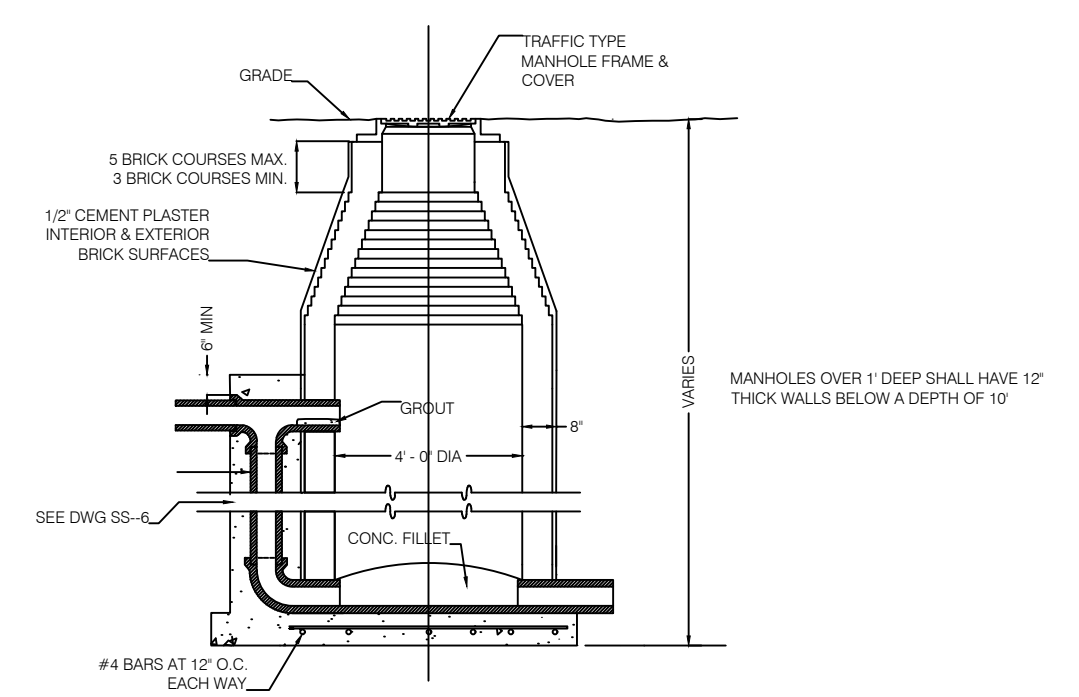
- NOTES**
- BRICK MASONRY CONSTRUCTION TO BE STUCCOED WITH 1/2" MORTAR INSIDE AND OUTSIDE.
 - THE FIRST THREE JOINTS OF PIPE AT ALL INFLUENTS AND EFFLUENTS OF EACH MANHOLE TO BE A MAXIMUM OF 2'-0" IN LENGTH TO ALLOW FOR SETTLING.
 - CONCRETE TO BE SEAL COATED WITH 16 MIL THICKNESS APPROVED COATING.
 - IF MANHOLE IS EXISTING AND MODIFIED, MANSTAY COMPOSITE LINER APPLIED PER APPROVED PRODUCTS LIST. IF MANHOLE IS NEW, NO LINER IS REQUIRED.
 - TYPE II CEMENT TO BE USED.
 - LIFT HOLES THROUGH PRECAST STRUCTURE ARE PERMITTED.
 - SEE TECHNICAL SPECIFICATIONS FOR PLACEMENT OF CONSTRUCTION JOINTS.
 - ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF, EXPANDING GROUT.
 - A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
 - BEDDING MATERIAL REQUIRED.
 - PERFORMED FLEXIBLE PLASTIC JOINT SEALER SHALL BE USED WHERE REQUIRED "RAM-NEK" AS MAFG BY K.T. SNYDER, INC. OR APPROVED EQUAL.

SD-01
C5001 **STANDARD MANHOLE PRECAST**



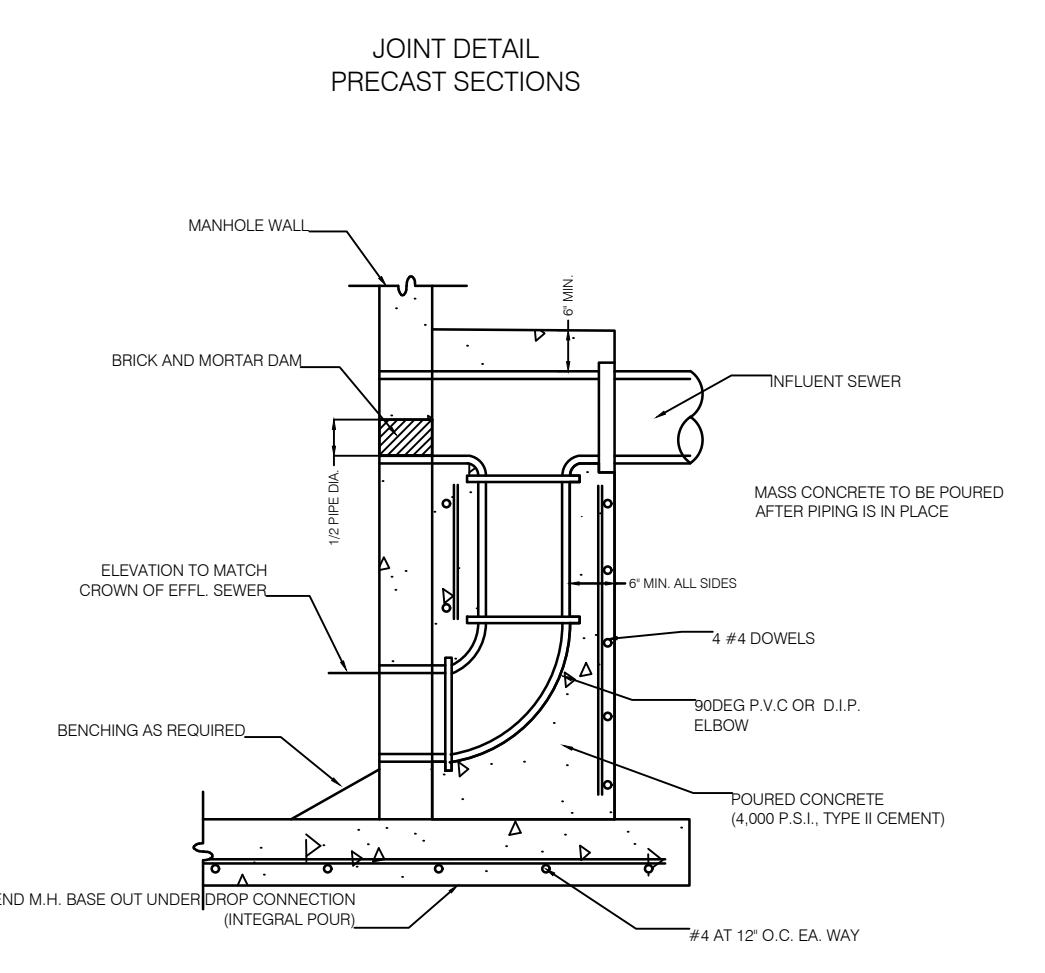
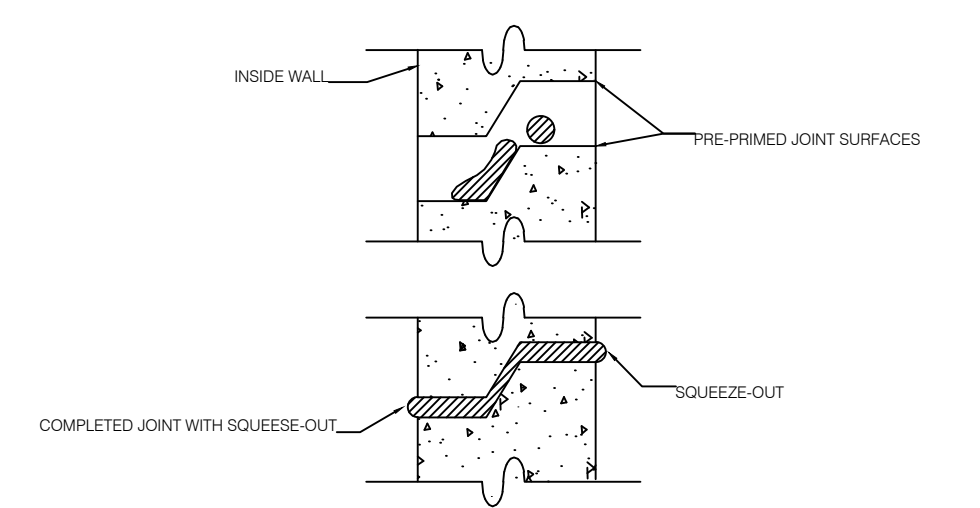
- NOTE:**
- CONCRETE ENCASUREMENT FOR DROP CONNECTION TO BE POURED INTEGRALLY WITH BOTH MANHOLE SLAB AND WALL.
 - DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO (2) FEET OR MORE ABOVE THE MAIN INVERT CHANNEL.
 - A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
 - FOR MORE DETAILS, SEE DRAWING ON STANDARD PRECAST MANHOLES.

SD-02
C5001 **DROP CONNECTION PRECAST MANHOLE**

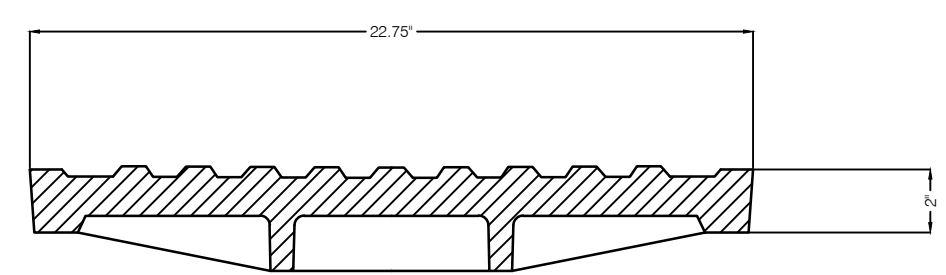


- NOTES:**
- CONCRETE FOR MANHOLE BOTTOM SHALL BE 4000 P.S.I. TYPE II
 - MANHOLE BRICK SHALL CONFORM TO ASTM SPECIFICATION DESIGNATION C32, GRADE MS.

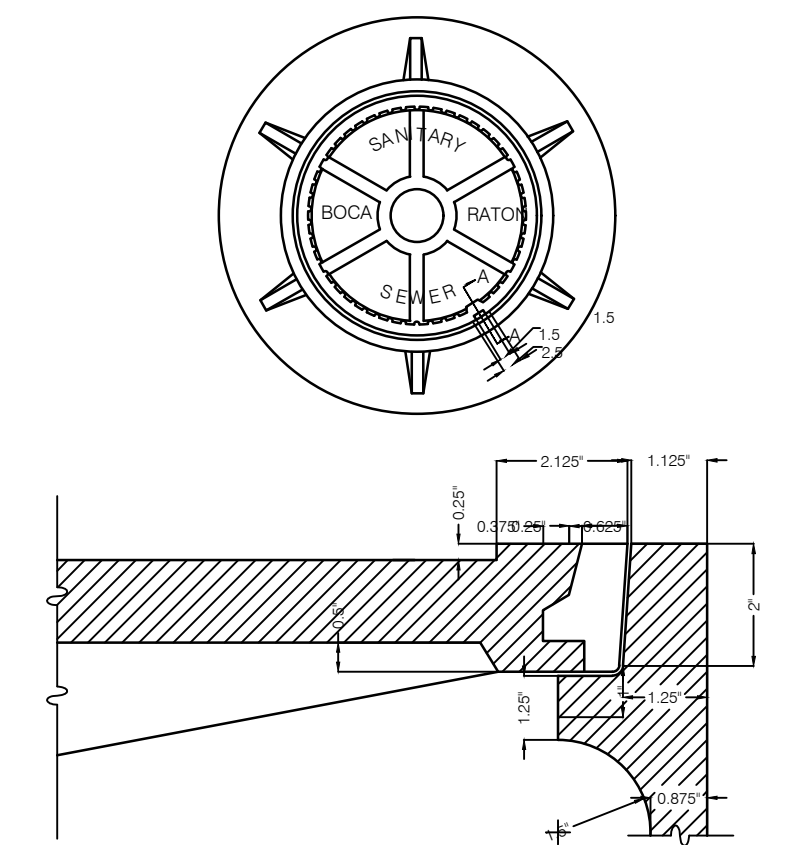
SD-03
C5001 **STANDARD DROP MANHOLE BRICK**



SD-04
C5001 **SPECIAL MANHOLE DETAILS**



COVER SECTION

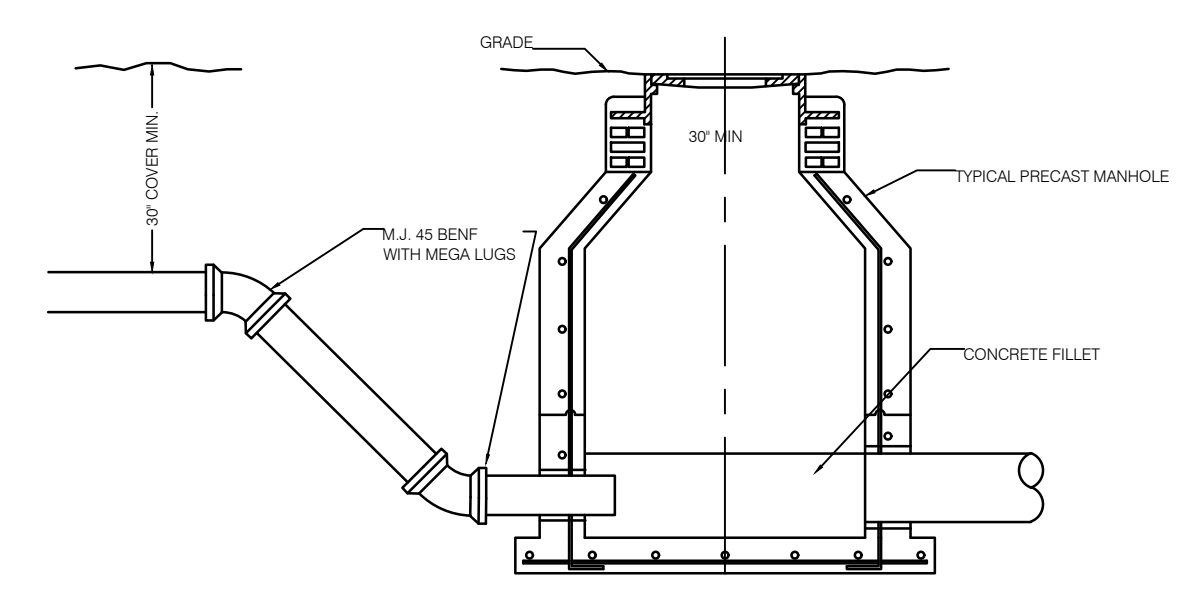


SECTION A-A

- NOTES:**
- LETTERS ON COVER TO BE ARRANGED WITH A RADIUS OF 6" TO CENTER OF LETTERS.
 - EACH LETTER TO BE 2" LONG, 3/8" DEEP, 1/4" TO 5/16" THICK, AND FLUSH WITH TOP OF BEADS.
 - BEADS TO BE 3/8" HIGH WITH A RADIUS OF 1/2" AT BOTTOM AND 3/8" AT TOP.
 - ALL BEARING SURFACES TO BE MACHINED (IRON TO IRON).
 - FRAMES AND COVERS MUST CONFORM TO A.S.T.M. DESIGNATION A48, CLASS 30.
 - MIN. WEIGHTS: COVER-140 LBS., FRAME-200 LBS.
 - FRAME AND COVER SHALL BE U.S. FOUNDRY No. 410 OR (OLD No. 32) OR EQUIVALENT.

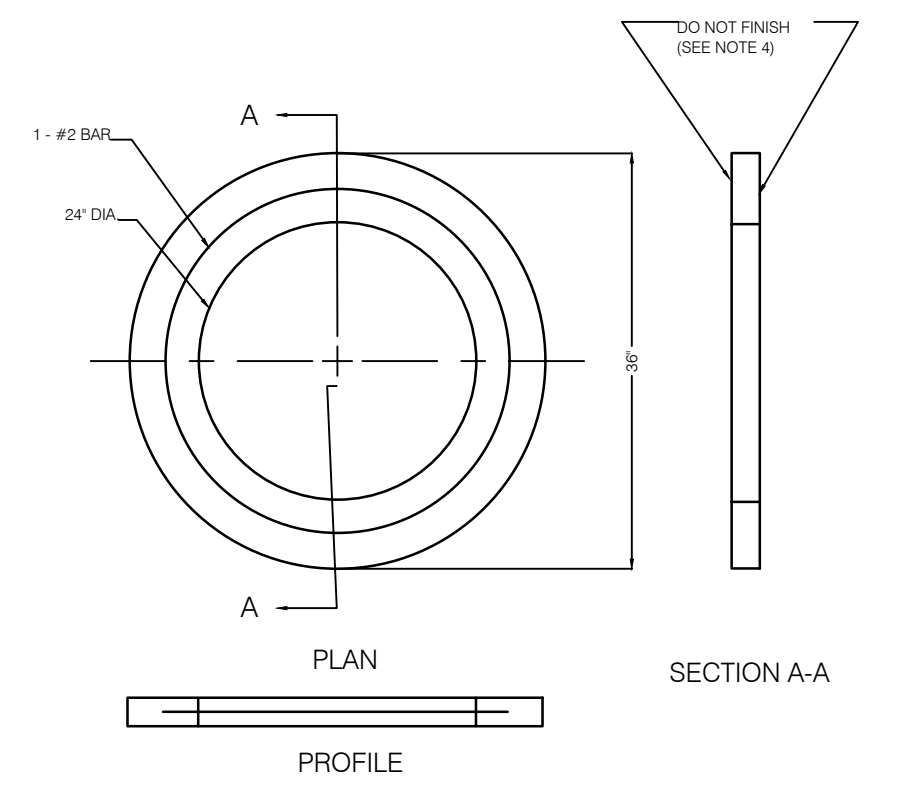
SD-05
C5001 **SANITARY SEWER MANHOLE FRAME & COVER**

SD-06
C5001 **SANITARY SEWER MANHOLE FRAME & COVER DETAIL**



- NOTE:**
- OPENING INTO EXISTING MANHOLE IS TO BE DONE BY CORING METHOD ONLY IN THE PRESENCE OF CITY INSPECTOR.

SD-07
C5001 **FORCE MAIN TIE-INTO MANHOLE**



- NOTE:**
- USE 4000 P.S.I. CONCRETE, TYPE II CEMENT
 - USE #2 REINFORCED STEEL CONCRETE, MINIMUM 10' LAP
 - THE JOINTING SURFACES OF RINGS ARE TO BE ROUGH TO ASSURE MORE PROPER BOND WITH MORTAR.

SD-08
C5001 **REINF. CONCRETE ADJ. RING FOR MANHOLES**

DWG: I:\Engineering Standards\CAD Standards\City use only\WantsS_Details.dwg
DATE: May 18, 2022 9:37am USER: Jgarcia

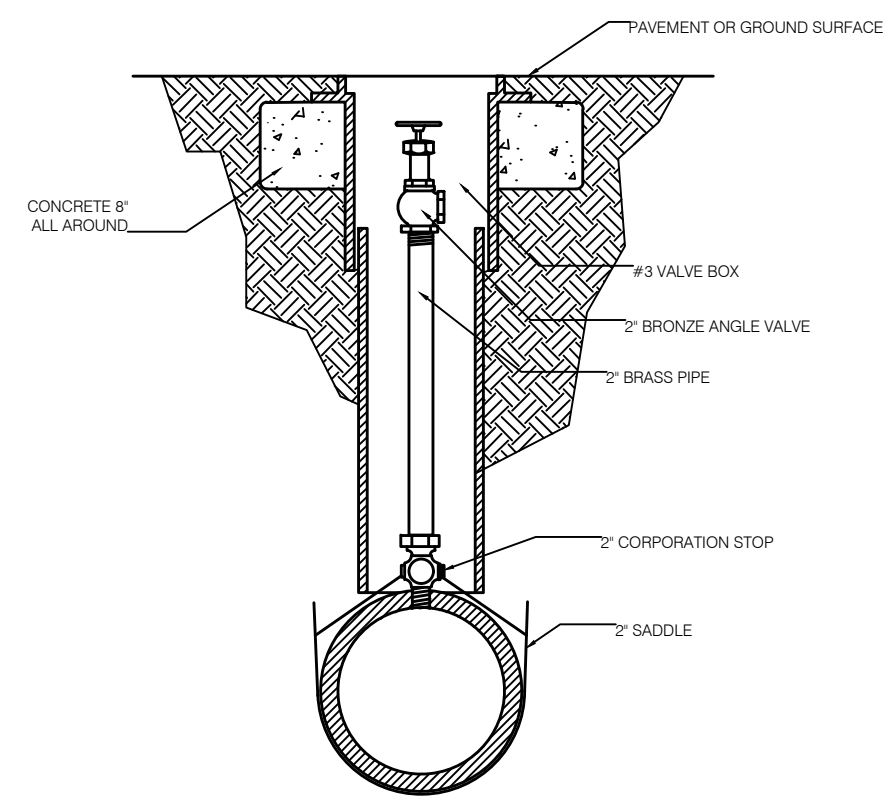
DESIGNED BY:	T. GARCIA
DRAWN BY:	T. GARCIA
CHECKED BY:	J. BARRINGTON
DATE:	
APPR.:	

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

City Of Boca Raton
UTILITY SERVICES
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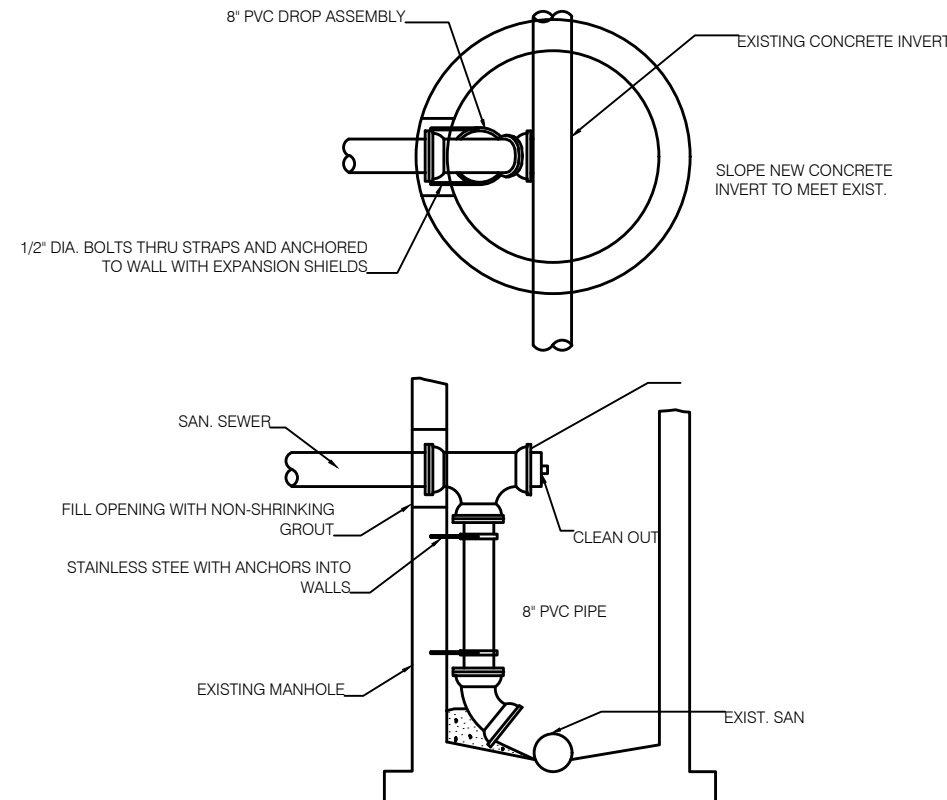
PROJECT NAME TITLE 1
PROJECT NAME TITLE 2
WATER AND SEWER STANDARD DETAILS

PROJ. NO.
DRAWING NO.
C5001
1 OF 1



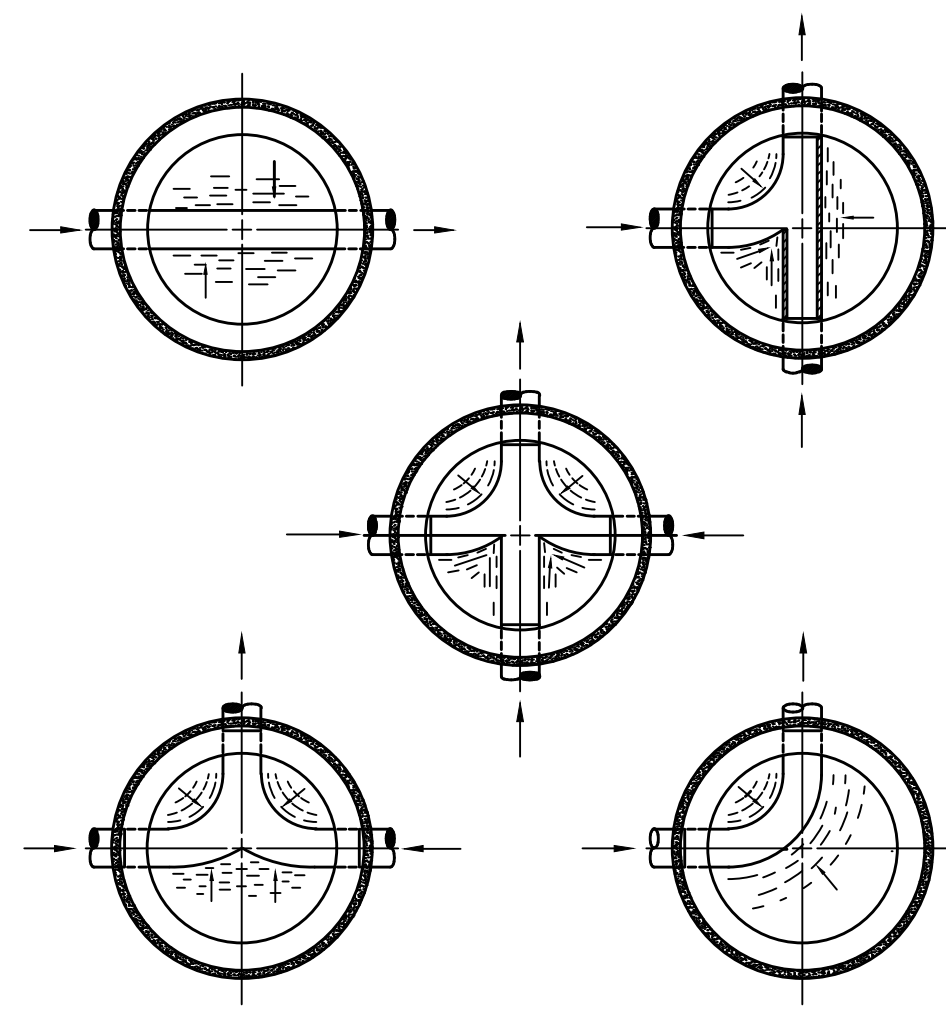
- NOTE:**
1. AIR RELEASE RISERS AND VALVE BOX RISERS SHALL BE PLACED AND MAINTAINED IN A VERTICAL POSITION.
 2. THREADS TO BE COATED AFTER INSTALLATION WITH BITUMASTIC COATING.
 3. CONCRETE COLOR IS NOT REQUIRED WHEN VALVE IS LOCATED WITH NEW PAVEMENT.

SD-09
C5002
**TYPICAL AIR RELEASE
SEWER TRANSMISSION MAIN**



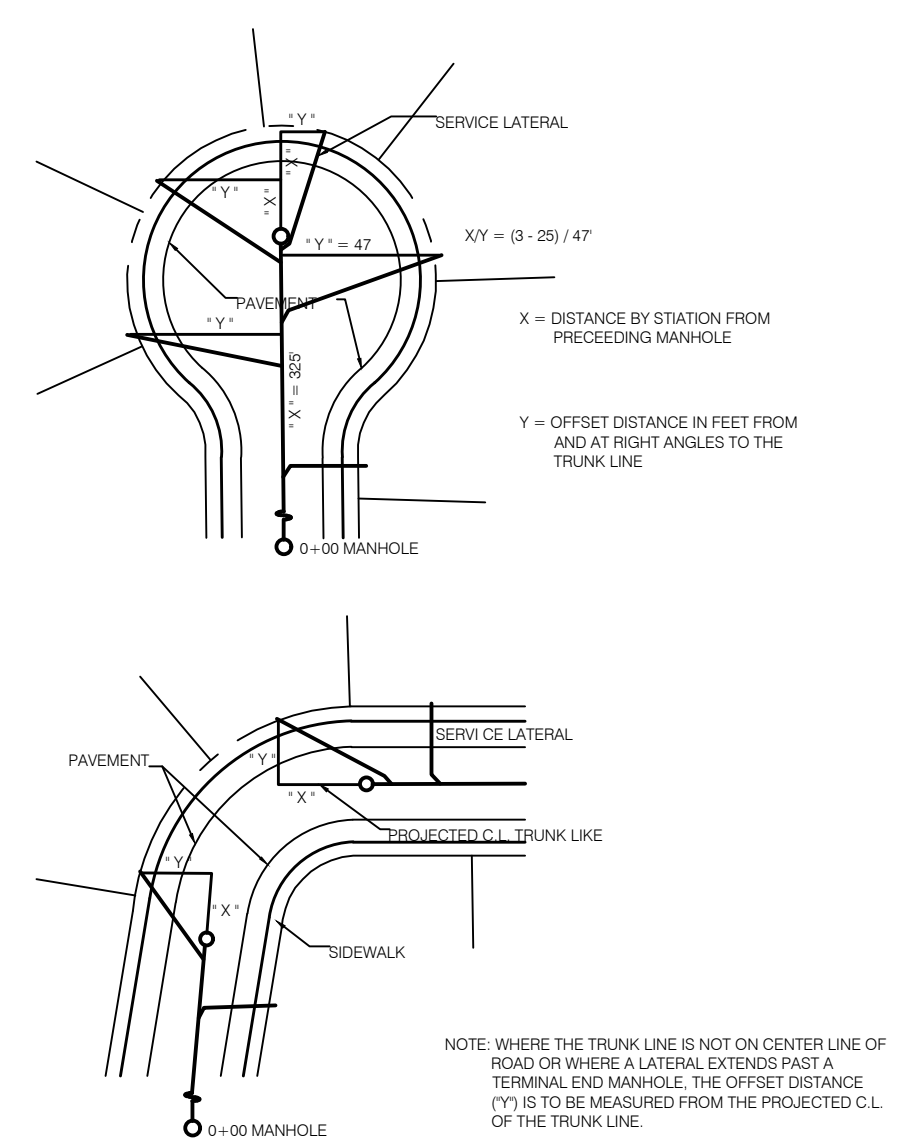
- NOTE:**
1. INSIDE DROP CONNECTION MAY BE ALLOWED WHEN OTHER ALTERNATIVES OR STANDARD CONNECTIONS ARE NOT PRACTICAL OR FEASIBLE AS DETERMINED BY THE DIRECTOR OF UTILITY SERVICES.
 2. OPENING IN EXISTING MANHOLE IS TO BE DONE BY CORING ONLY.

SD-10
C5002
**INSIDE DROP
MANHOLE DETAILS**



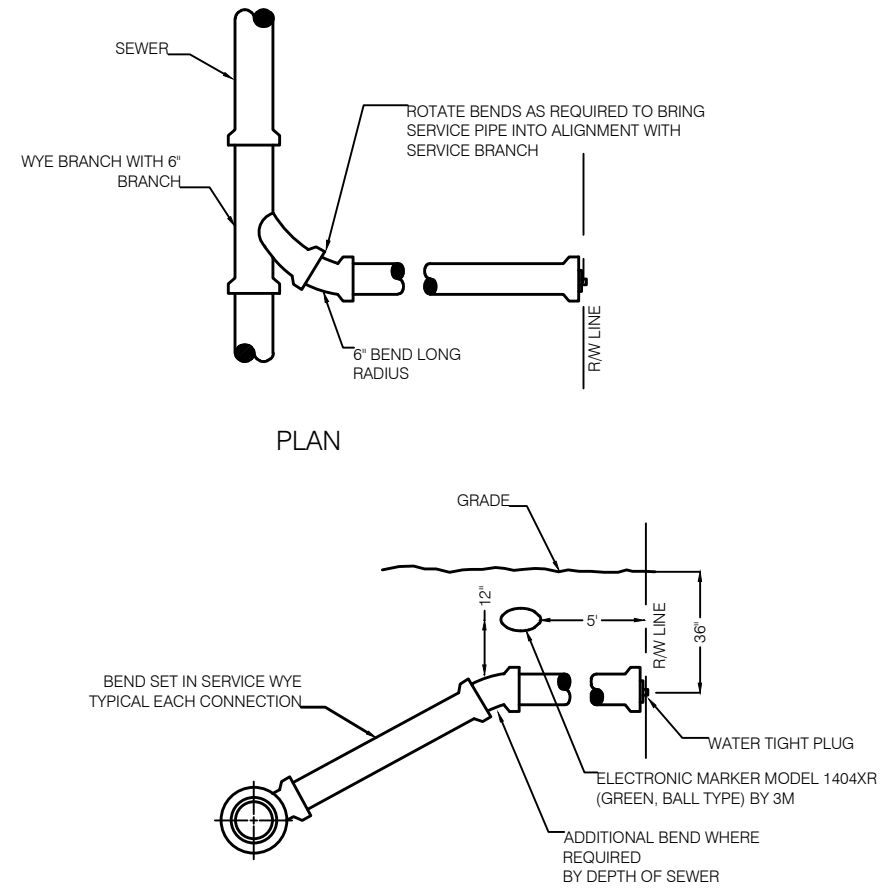
- NOTE:**
1. PROVIDE SPILLWAY FOR SMOOTH FLOW BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS

SD-11
C5002
**PLAN OF MANHOLE BOTTOM
AND FLOW CURVES**

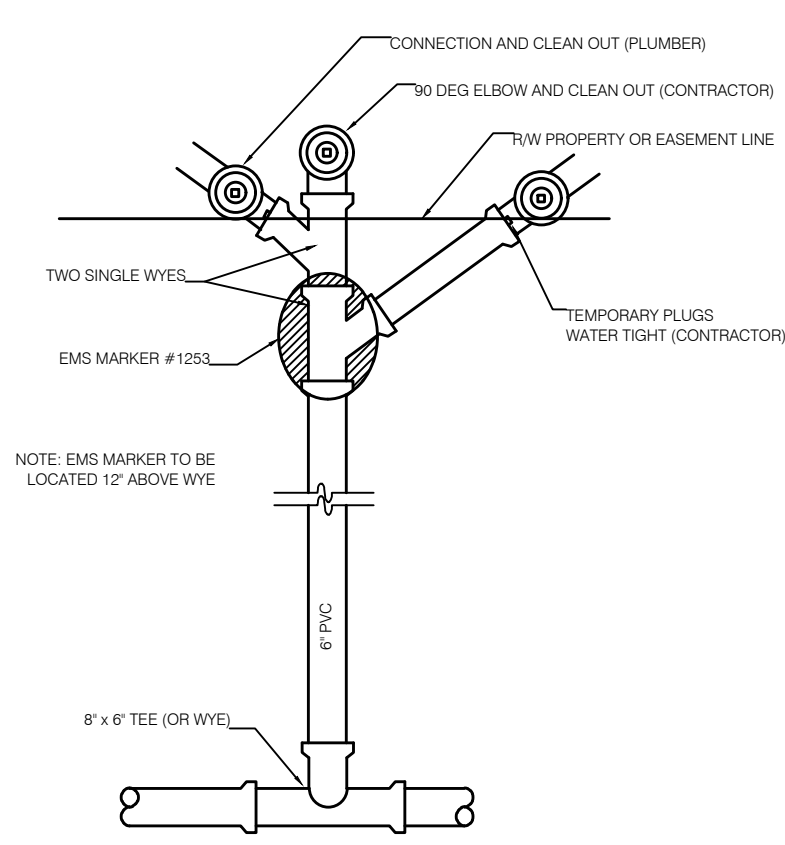


NOTE: WHERE THE TRUNK LINE IS NOT ON CENTER LINE OF ROAD OR WHERE A LATERAL EXTENDS PAST A TERMINAL END MANHOLE, THE OFFSET DISTANCE (Y) IS TO BE MEASURED FROM THE PROJECTED C.L. OF THE TRUNK LINE.

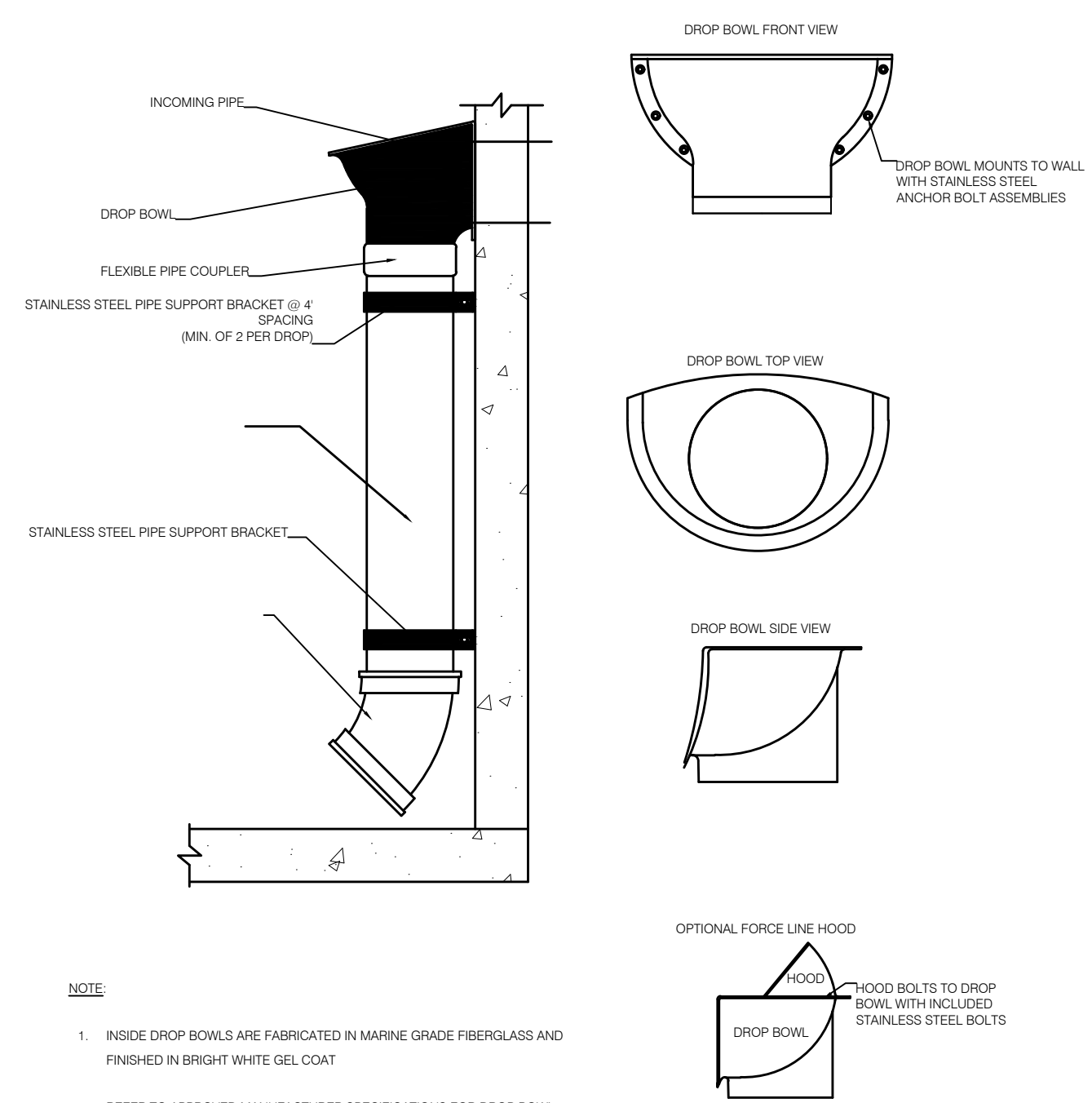
SD-12
C5002
SERVICE LATERAL LOCATION



SD-13
C5002
**TYPICAL HOUSE
SERVICE CONNECTION**

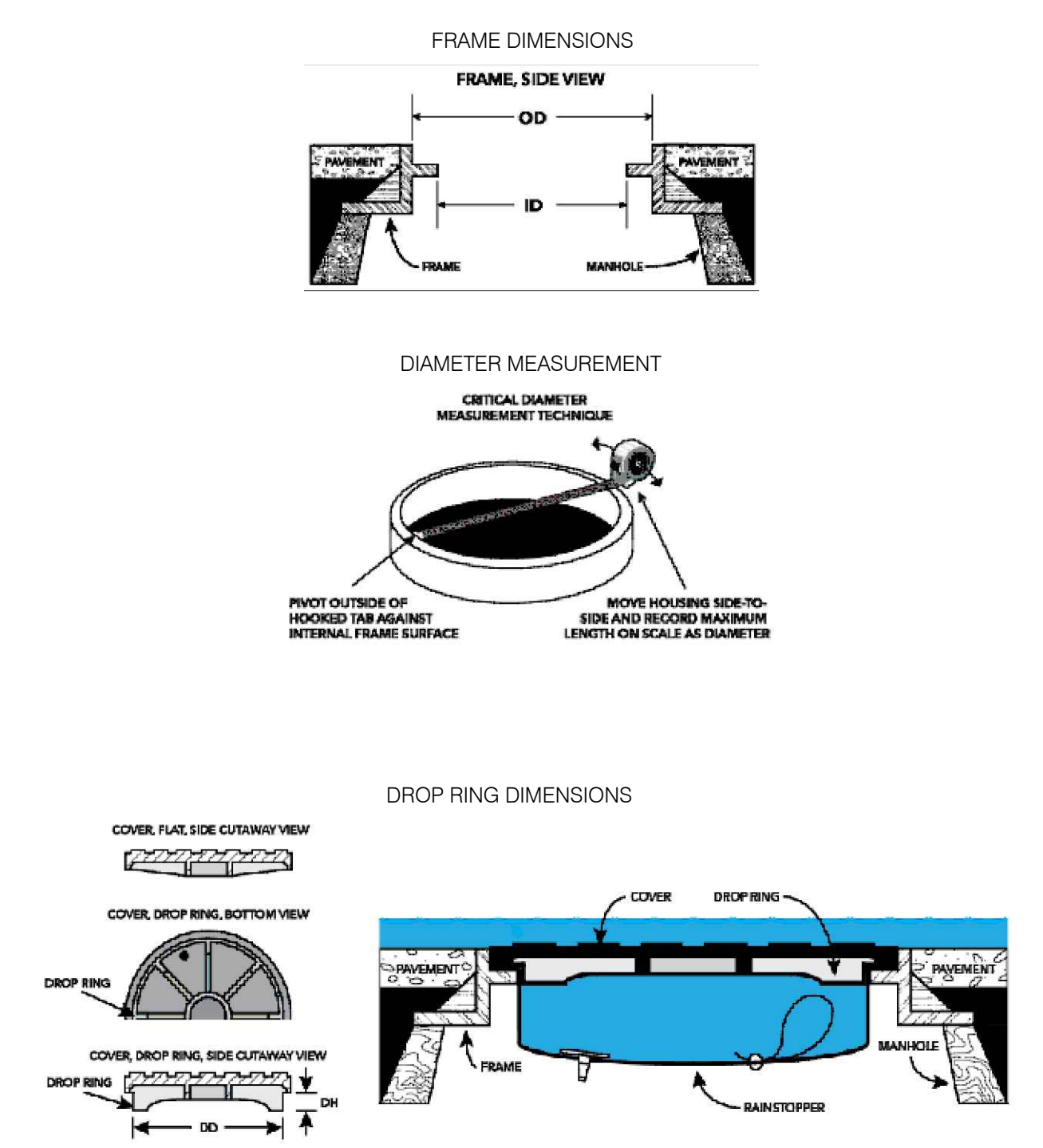


SD-14
C5002
TYPICAL DOUBLE SERVICE



- NOTE:**
1. INSIDE DROP BOWLS ARE FABRICATED IN MARINE GRADE FIBERGLASS AND FINISHED IN BRIGHT WHITE GEL COAT
 2. REFER TO APPROVED MANUFACTURER SPECIFICATIONS FOR DROP BOWL DIMENSIONS.

SD-15
C5002
**SANITARY MANHOLE INSIDE DROP BOWL
TYPICAL INSTALLATION**



SD-16
C5002
HDPE MANHOLE INSERT

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DATE: May 18, 2022 9:38am USER: Jgarcia

DESIGNED BY:	T.GARCIA
DRAWN BY:	T.GARCIA
CHECKED BY:	J. BARRINGTON
DATE:	
APPR:	

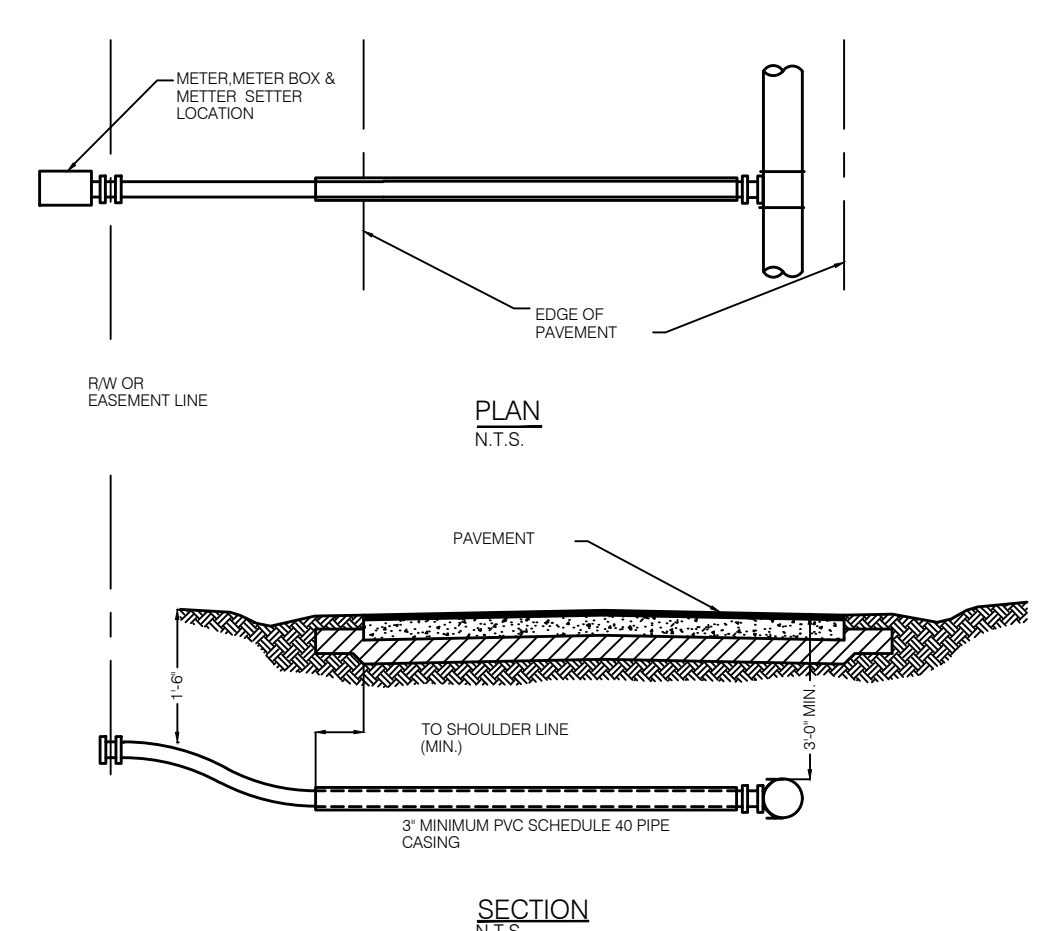
LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" SCALE ACCORDINGLY)

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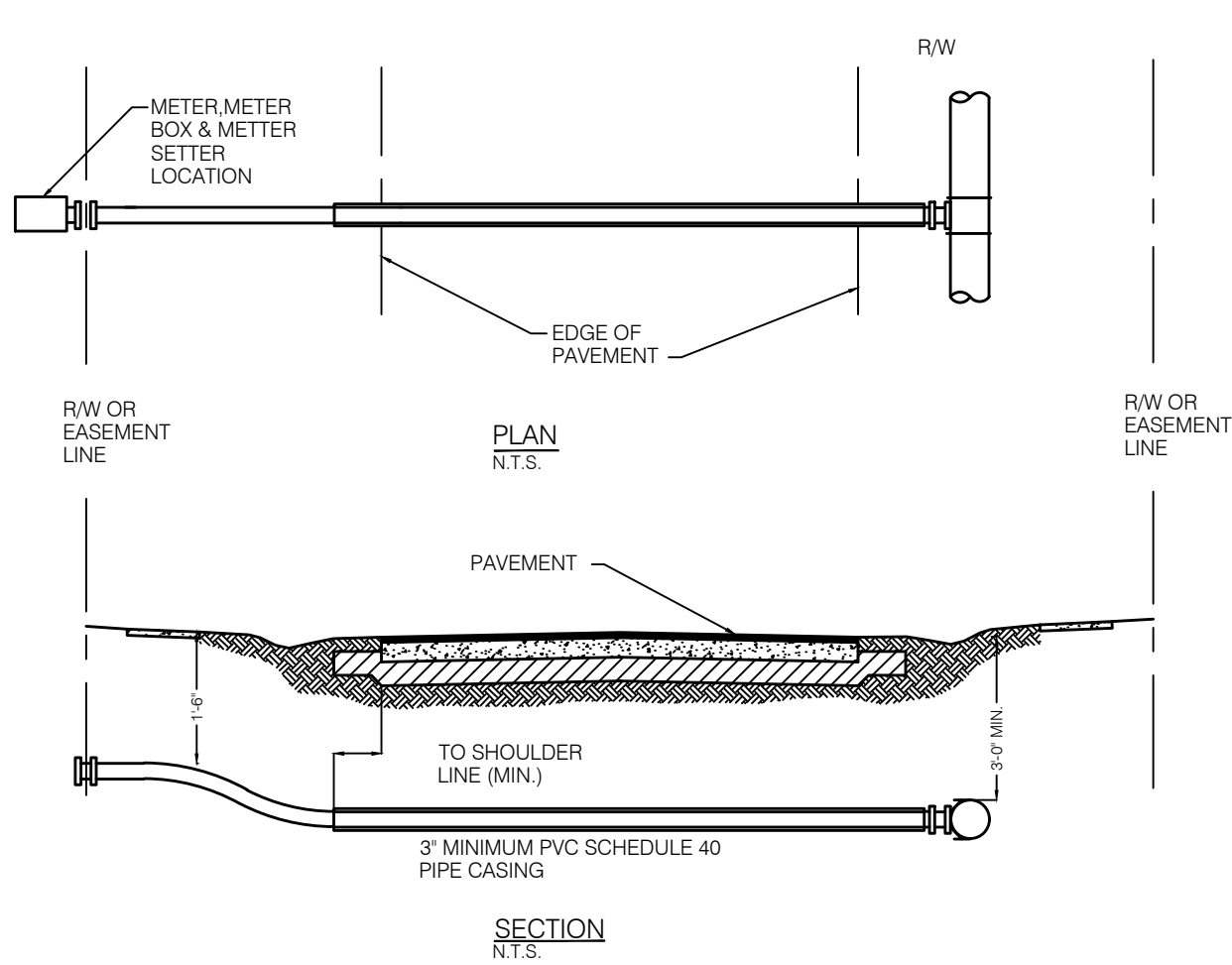
PROJECT NAME TITLE 1
PROJECT NAME TITLE 2
**WATER AND SEWER
STANDARD DETAILS**

PROJ. NO.
DRAWING NO.
C5002

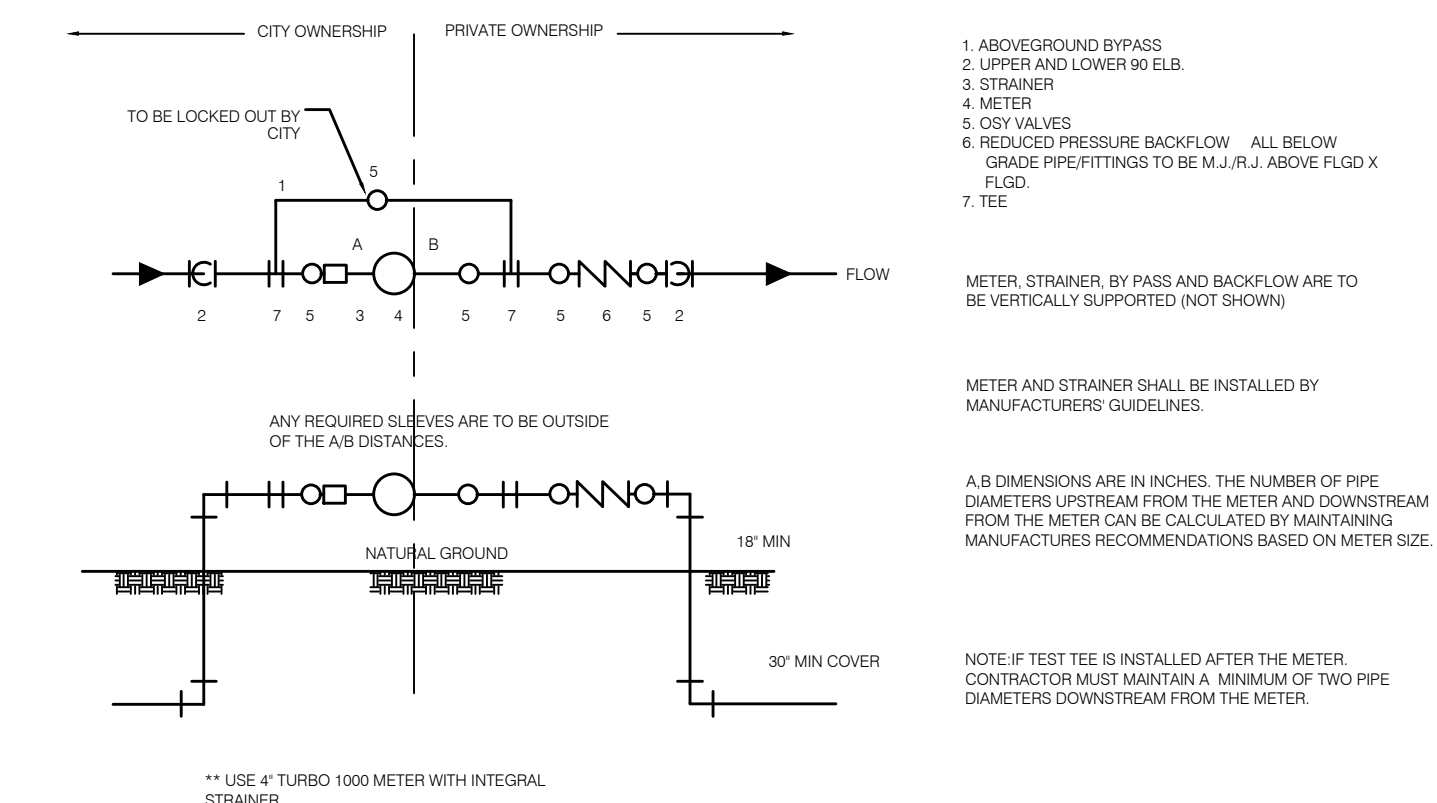
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SD-17
C5003
WATER CASING LOCATION MAIN UNDER PAVEMENT

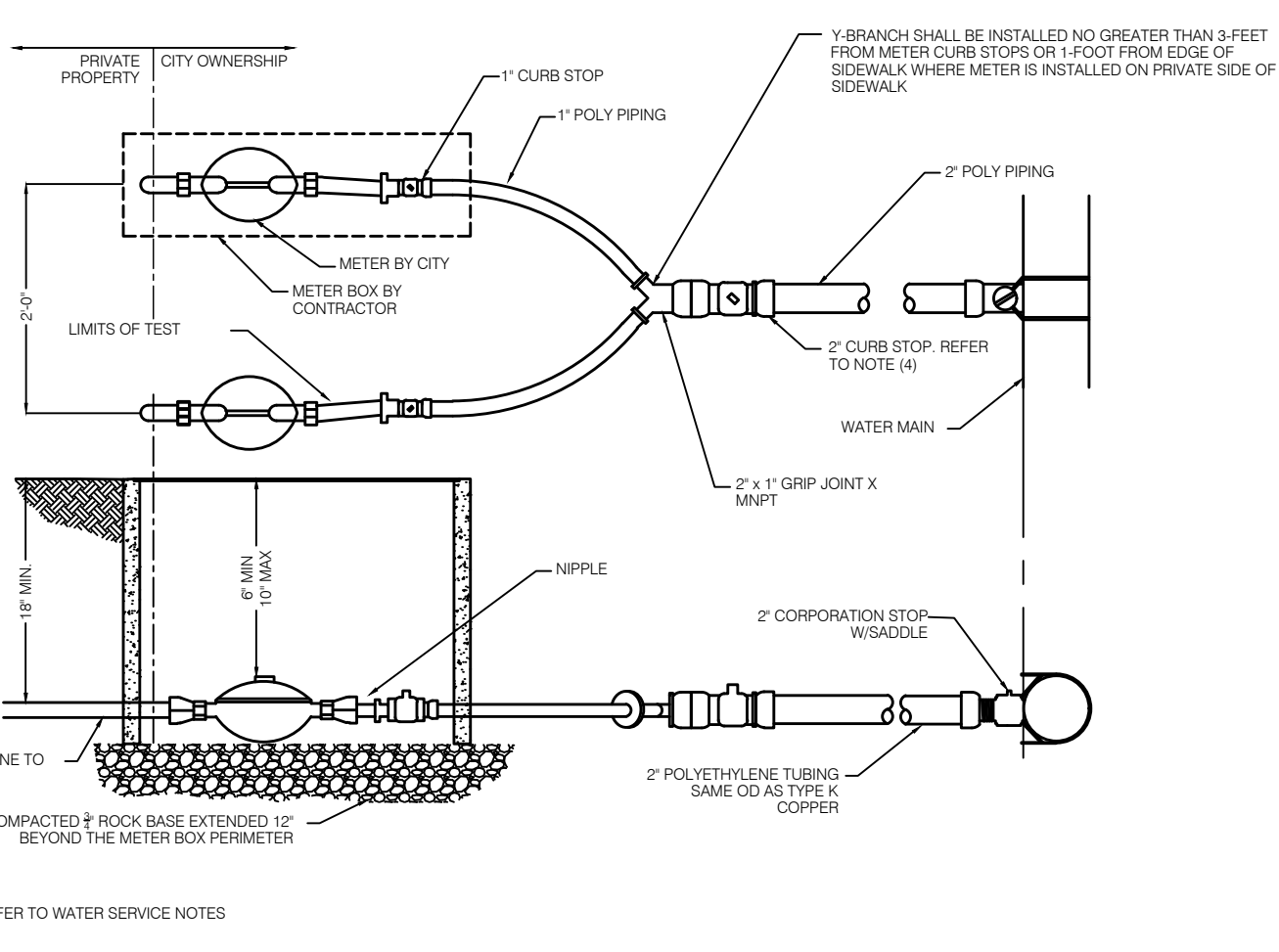


SD-18
C5003
WATER CASING LOCATION MAIN OUT SIDE PAVEMENT

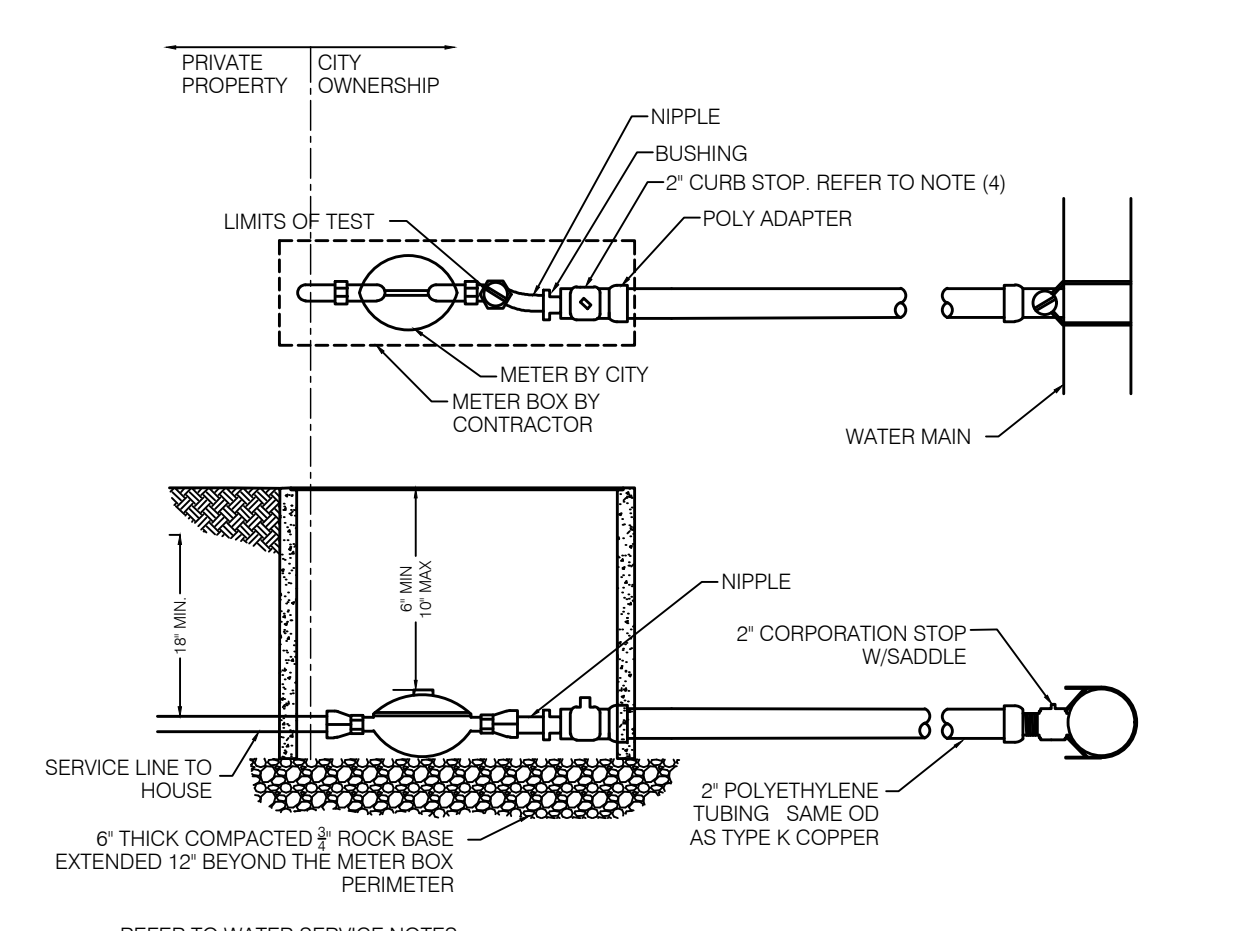


SD-19
C5003
POTABLE WATER ABOVE GROUND METER INSTALLATION

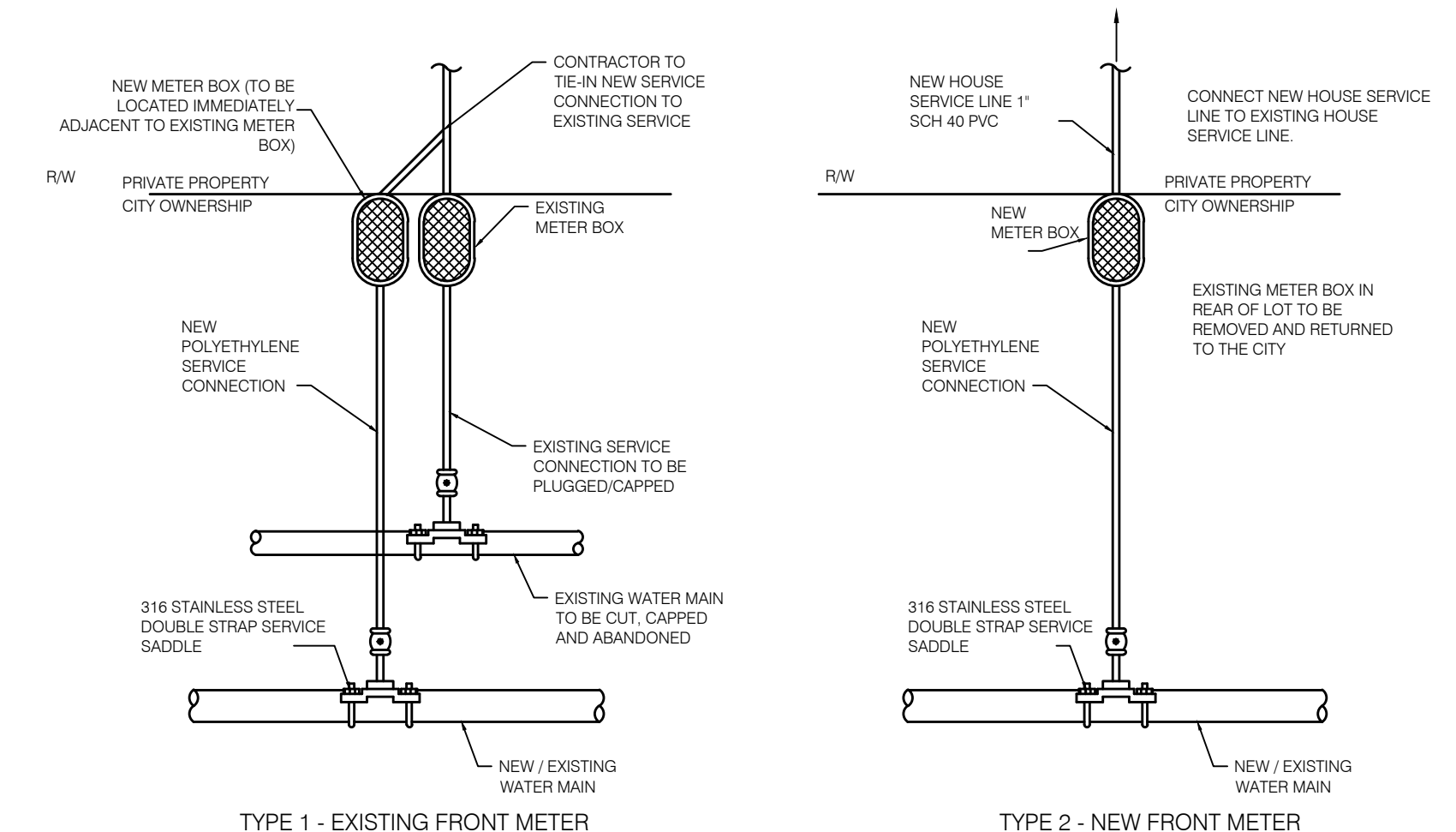
METER SIZE	SIZE OF SPOOL PIECE BETWEEN CITY VALVE AND METER FLANGE	
	A	B
4"	11"	8"
6"	30"	12"
8"	47"	16"



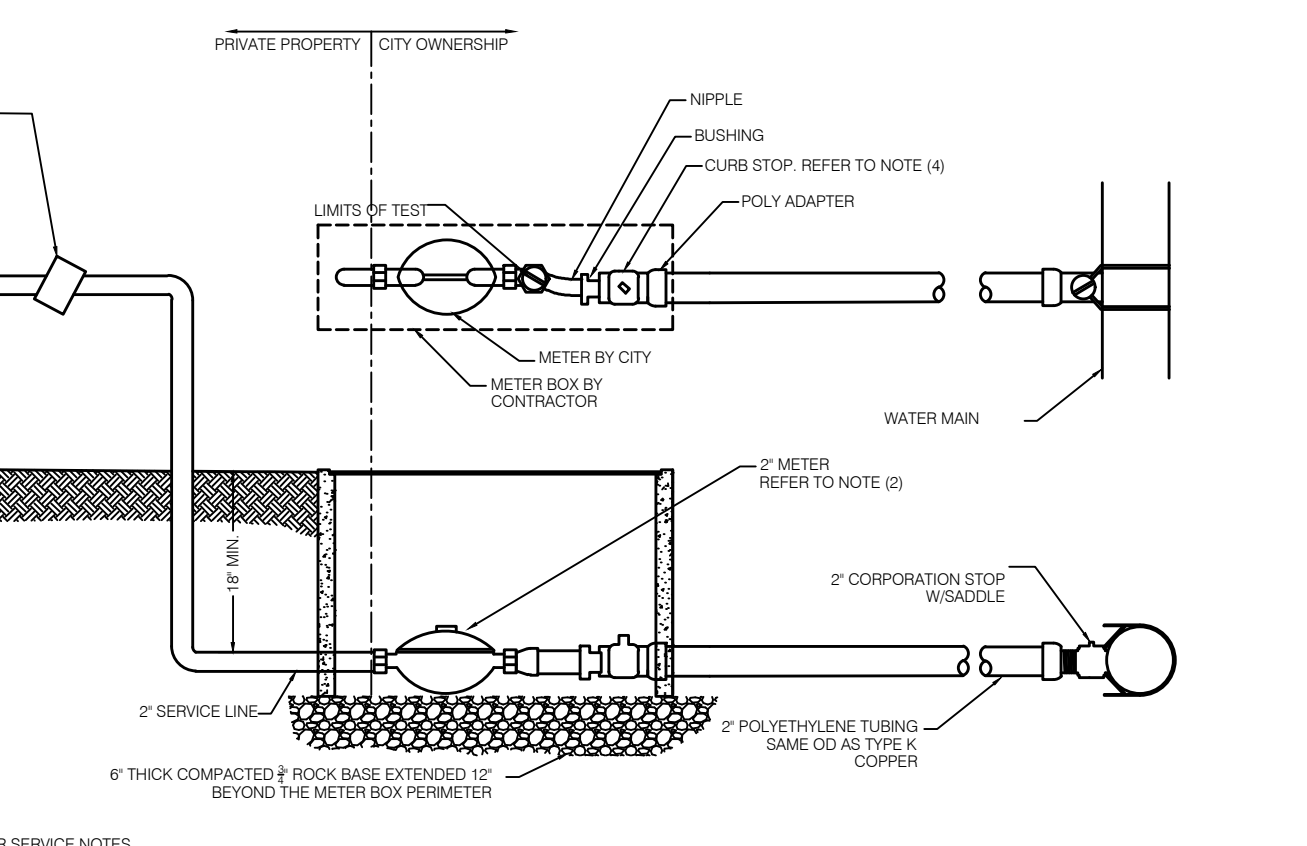
SD-20
C5003
DOUBLE WATER SERVICE LINE FOR 1" OR 1-1/2" METER (RESIDENTIAL ONLY)



SD-21
C5003
SINGLE WATER SERVICE LINE FOR 1" OR 1-1/2" METER (RESIDENTIAL ONLY)



SD-24
C5003
SERVICE CONNECTION TYPES



SD-22
C5003
SINGLE WATER SERVICE LINE FOR 1", 1-1/2", & 2" METER (NON RESIDENTIAL)

- WATER SERVICE GENERAL NOTES**
- ALL FITTINGS TO BE LEAD-FREE BRASS AND APPROVED FOR USE WITH POTABLE WATER SYSTEMS (NSF-61 CERTIFIED). FITTINGS, VALVES AND SERVICE PIPING SHALL MATCH METER SIZE FOR 1-1/2" AND 2" METERS.
 - METER SETTERS SHALL BE USED WHEN CONNECTING EXISTING SERVICES WITH METER SETTERS INSTALLED OR UPON PERMISSION OF CITY TO MAINTAIN MIN. 6" AND MAX. 10" CLEARANCE BETWEEN THE TOP OF THE METER REGISTER AND THE UNDERSIDE OF THE METER BOX LID. IF CURB STOP VALVES CANNOT BE INSTALLED WITHIN METER BOX WHEN METER SETTER IS REQUIRED, VALVES SHALL BE INSTALLED WITHIN 2- FEET UPSTREAM OF THE METER BOX.
 - IN ACCORDANCE WITH THE CITY'S CROSS-CONNECTION CONTROL & BACKFLOW PREVENTION POLICY FOR PREMISES WHERE THERE IS AN AUXILIARY OR RECLAIMED WATER SYSTEM, THE INSTALLATION OF AN APPROPRIATE AND APPROVED BACKFLOW PROTECTION DEVICE IS REQUIRED. WHEN METER SETTER IS REQUIRED PER NOTE 2, REPLACEABLE DUAL-CHECK VALVE SHALL BE INTEGRAL TO METER SETTER PROVIDED BY THE MANUFACTURER. FOR NON-RESIDENTIAL SERVICES, AN APPROVED BACKFLOW DEVICE IS REQUIRED IN ACCORDANCE WITH THE CITY'S CROSS CONNECTION CONTROL & BACKFLOW PREVENTION POLICY.
 - CURB STOPS VALVE CLOSEST TO METERS MUST BE INSTALLED WITHIN THE METER BOX.

SD-23
C5003
WATER SERVICE GENERAL NOTES

DWG: I:\Engineering Standards\CAD Standards\City use only\WardS_Details.dwg
DATE: May 18, 2022 9:38am USER: JGarcia

DESIGNED BY:	T.GARCIA		
DRAWN BY:	T.GARCIA		
CHECKED BY:	J.BARRINGTON		
MARK	DESCRIPTION	DATE	APPR.

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UTILITY SERVICES
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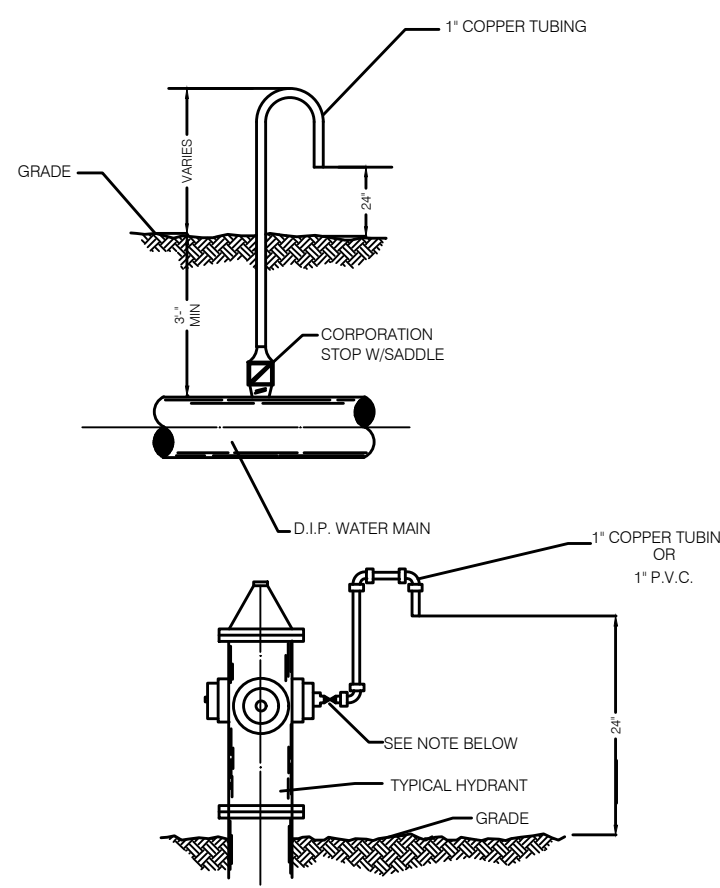
PROJECT NAME TITLE 1
PROJECT NAME TITLE 2
WATER AND SEWER
STANDARD DETAILS

PROJ. NO.
DRAWING NO.
C5003
3 OF 4

MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED
(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE	PIPE SIZE															
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	72"	84"	96"
90° HORIZ. BEND	14	20	25	30	35	45	54	62	68	78	84	96	112	124	135	
45° HORIZ. BEND	6	8	11	13	15	19	22	26	31	36	41	46	51	56		
22.5° HORIZ. BEND	3	4	5	6	7	9	11	12	14	16	18	21	24	27		
11.25° HORIZ. BEND	1	2	3	3	4	4	5	6	7	8	10	11	12	13		
90° VERT. OFFSET	UPPER BEND	29	41	53	64	74	95	115	134	214	246	276	304			
	LOWER BEND	7	10	13	16	19	25	30	35	57	66	74	83			
45° VERT. OFFSET	UPPER BEND	12	19	24	29	34	39	48	56	89	102	114	126			
	LOWER BEND	3	4	6	7	8	10	12	15	23	27	31	34			
22.5° VERT. OFFSET	UPPER BEND	6	9	12	14	17	19	23	27	43	49	55	60			
	LOWER BEND	1	2	4	4	4	5	6	7	11	13	15	16			
11.25° VERT. OFFSET	UPPER BEND	3	4	6	7	8	9	11	13	21	24	27	30			
	LOWER BEND	1	1	1	2	2	2	3	3	5	6	7	8			
FLUSH (HEAD END)	32	45	59	70	83	107	129	151	214	246	276	304				
IN-LINE VALVE	4" x 4"	23	45	45	45	55	65	80	110	125	140	155				
	6" x 6"	21	35	-	-	-	-	-	-	-	-	-	-			
	8" x 8"	18	34	47	-	-	-	-	-	-	-	-	-			
	10" x 10"	16	32	46	58	-	-	-	-	-	-	-	-			
	12" x 12"	13	30	44	57	69	-	-	-	-	-	-	-			
	16" x 16"	7	26	41	55	67	90	-	-	-	-	-	-			
	20" x 20"	1	21	36	52	65	88	109	-	-	-	-	-			
	24" x 24"	1	16	34	49	62	86	108	129	-	-	-	-			
	30" x 30"	1	8	26	44	58	83	108	127	208	-	-	-			
	36" x 36"	1	1	22	39	54	80	103	124	206	240	-	-			
REDUCER (LARGER PIPE RESTRAINT)	42" x 48"	1	1	15	33	49	77	100	122	205	239	270				
	48" x 60"	1	1	7	27	44	73	97	120	200	238	269	298			
	6" x 8"	23	-	-	-	-	-	-	-	-	-	-	-			
	8" x 10"	38	25	-	-	-	-	-	-	-	-	-	-			
	10" x 12"	57	43	24	-	-	-	-	-	-	-	-	-			
	12" x 16"	72	60	44	41	-	-	-	-	-	-	-	-			
	16" x 20"	99	90	76	75	45	-	-	-	-	-	-	-			
	20" x 24"	123	116	107	105	81	45	-	-	-	-	-	-			
	24" x 30"	146	140	132	131	111	82	45	-	-	-	-	-			
	30" x 36"	209	204	197	196	177	153	116	75	-	-	-	-			
200psi	36" x 42"	243	236	233	226	217	196	169	135	74	-	-				
	42" x 48"	273	270	265	259	252	234	211	183	133	72	-				
	48" x 60"	301	298	294	289	283	266	249	226	183	131	71	-			
	60" x 72"	-	-	-	-	-	-	-	-	-	-	-	-			

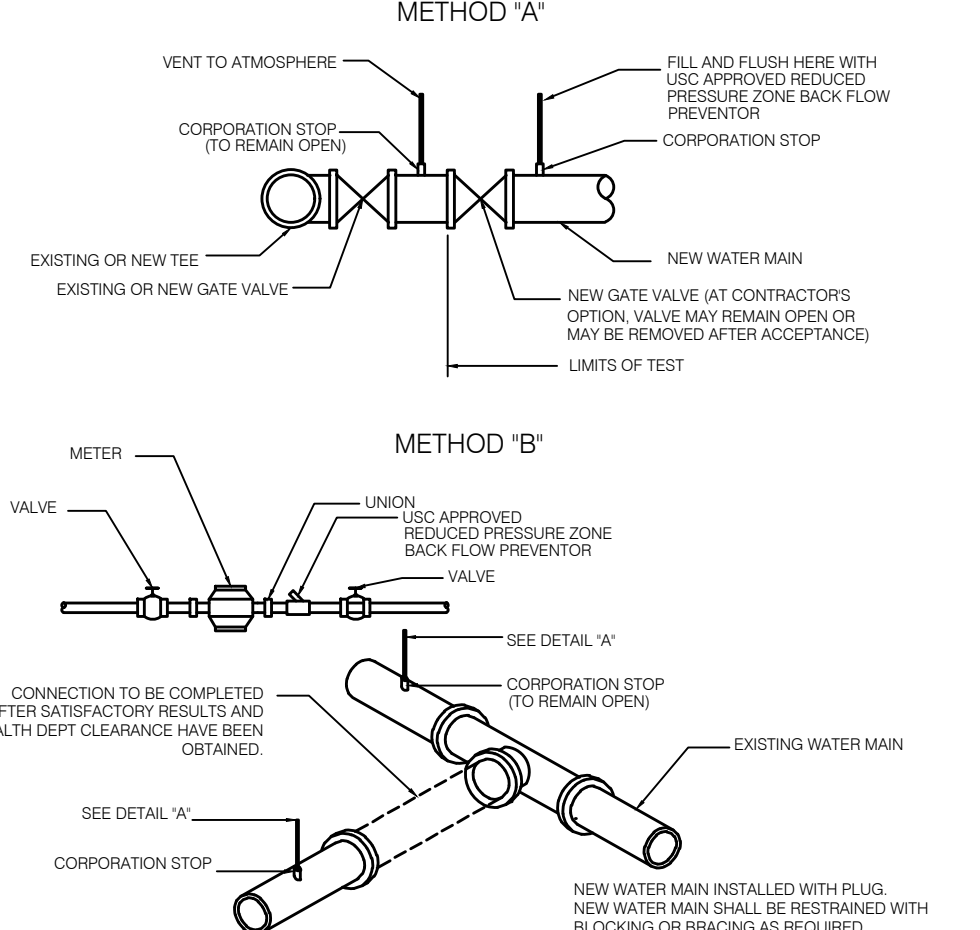
NOTES:
1. THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPE: SAND TEST PRESSURE: 150 PSI (2000 PSI) DEPTH OF BURIAL: 3' VERTICAL OFFSET: 3'
TRENCH TYPE: TRENCH SAFETY FACTOR: 1.5
2. THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
4. RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.
5. MULTIPLY PIPE LENGTH BY 1.6 FOR POLYETHYLENE GLASSIFIED PIPE.
6. RESTRAINED PIPE LENGTHS EQUAL TO AN "IN-LINE VALVE" CONDITION ARE REQUIRED AT EACH END OF A TRANSITION FROM HDPE PIPE TO OTHER PIPE MATERIALS.



NOTES:
1. SAMPLE POINTS COMING FROM HYDRANTS TO INCLUDE A SMALL VALVE WITH A REMOVABLE HANDLE.
2. LABEL AND NUMBER LABEL AND NUMBER ALL SAMPLE POINTS PER PLAN SHEETS.
3. SAMPLING POINTS ON WATER MAINS: A CORPORATION STOP SHALL BE INSTALLED WITH A PIECE OF 1\"/>

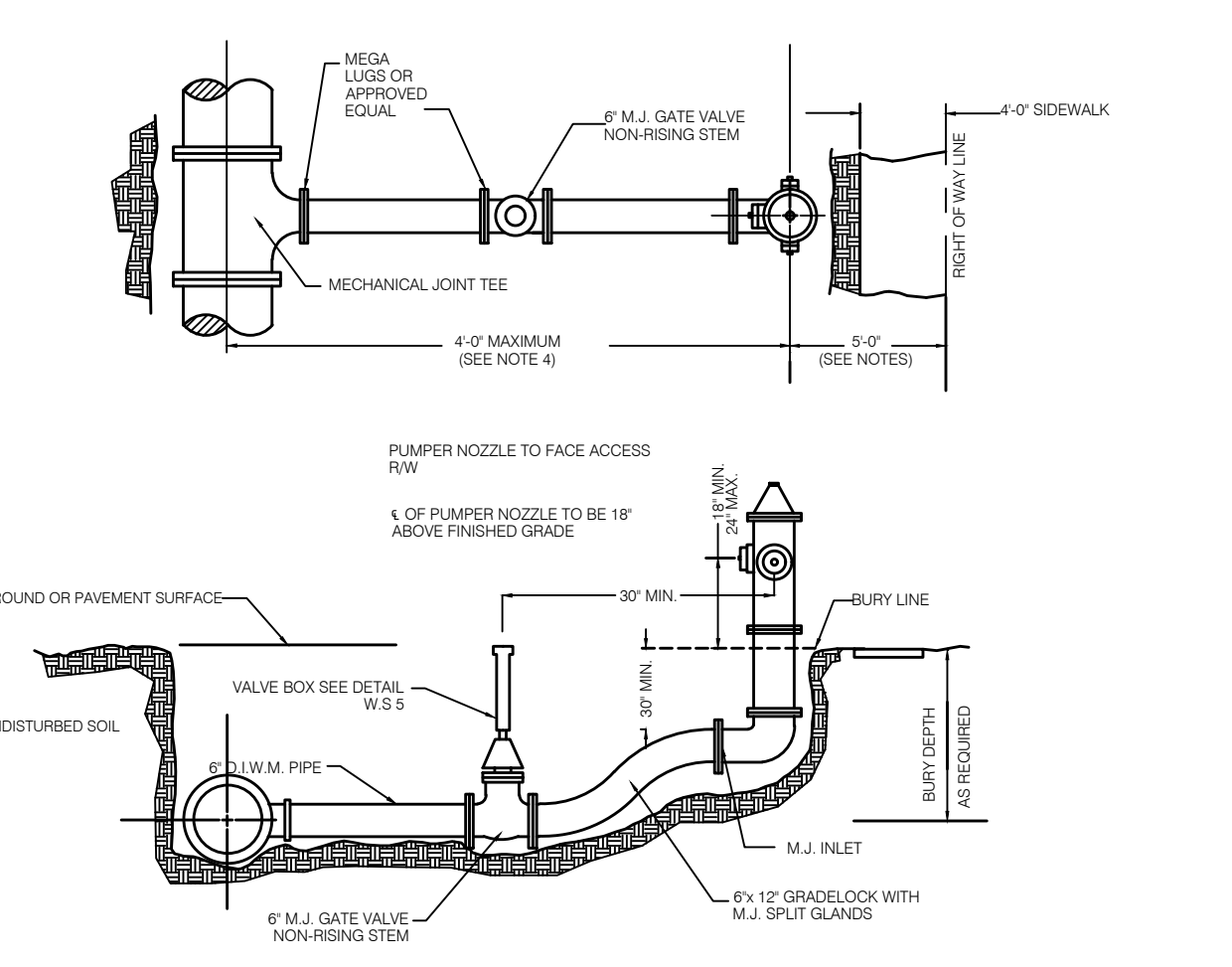
SD-26 C5004 MECHANICAL THRUST RESTRAINT MINIMUM PIPE LENGTHS

SD-26 C5004 SAMPLING POINT DETAILS



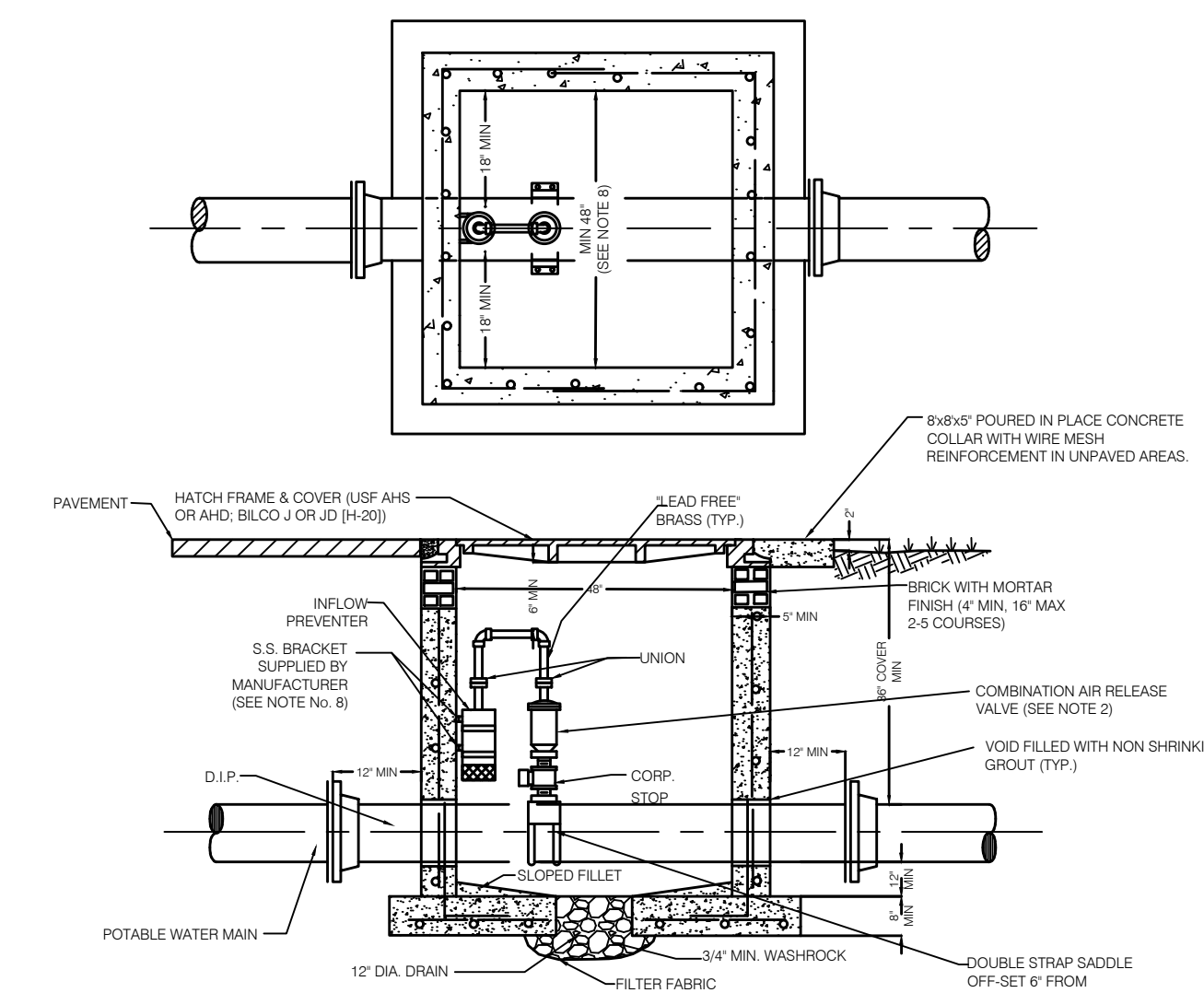
1. REMOVE TEMPORARY CONNECTION OF CORPORATION STOP ON EXISTING MAIN AFTER FILLING AND FLUSHING OF NEW LINE.
2. DO NOT REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON NEW MAIN UNTIL TESTING HAS BEEN COMPLETED.

SD-27 C5004 FILLING AND FLUSHING CONNECTION



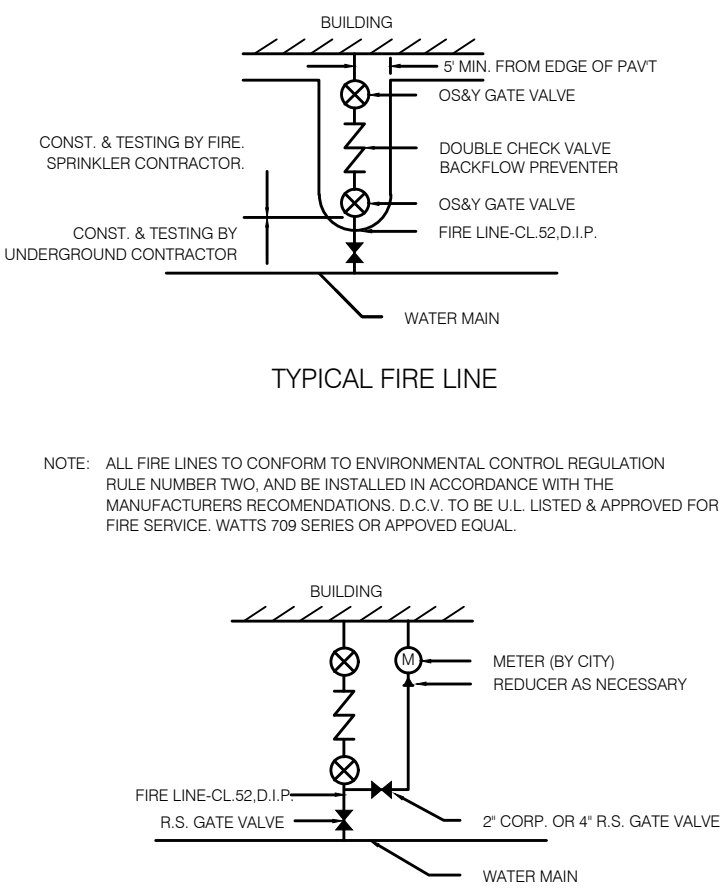
1. HYDRANT SHALL BE INSTALLED PLUMB AND TRUE.
2. ALL ABOVE GRADE PORTIONS OF THE HYDRANT SHALL BE PAINTED SILVER.
3. HYDRANT IS TO BE LOCATED PER NFPA 1141-8.1.4 LATEST EDITION.
4. IF THE SIDEWALK WIDTH IS GREATER THAN 4' IN 50' WIDE RIGHT-OF-WAY, THEN THE HYDRANT MUST BE INSTALLED IN A SPECIAL EASEMENT IN BACK OF THE SIDEWALK.
5. CLEARANCES OF SEVEN AND ONE HALF FEET (7'-6") IN FRONT OF AND TO THE SIDES OF THE HYDRANT, WITH A FOUR FEET (4') CLEARANCE TO THE REAR OF THE HYDRANT ARE REQUIRED.
6. BURIED HYDRANT HARDWARE (NUTS & BOLTS) SHALL BE STAINLESS STEEL (TYPE 304 OR BETTER).
7. NO CONNECTION (TEE OR TAP) IS ALLOWED BETWEEN THE HYDRANT CONTROL VALVE AND THE HYDRANT.

SD-28 C5004 TYPICAL FIRE HYDRANT INSTALLATION



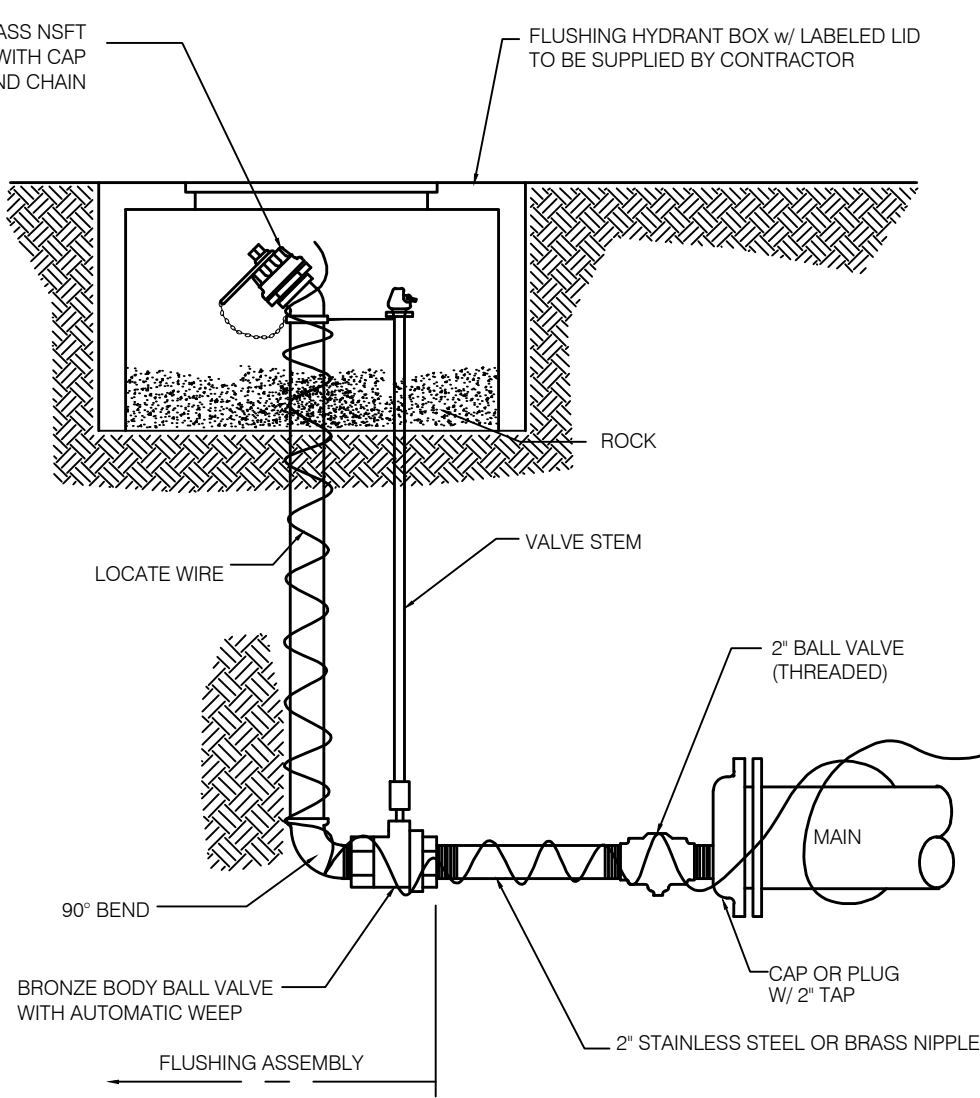
NOTES:
1. COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED ALTHOUGH A 1\"/>

SD-29 C5004 POTABLE WATER MAIN UNDERGROUND AIR RELEASE VALVE AND VAULT



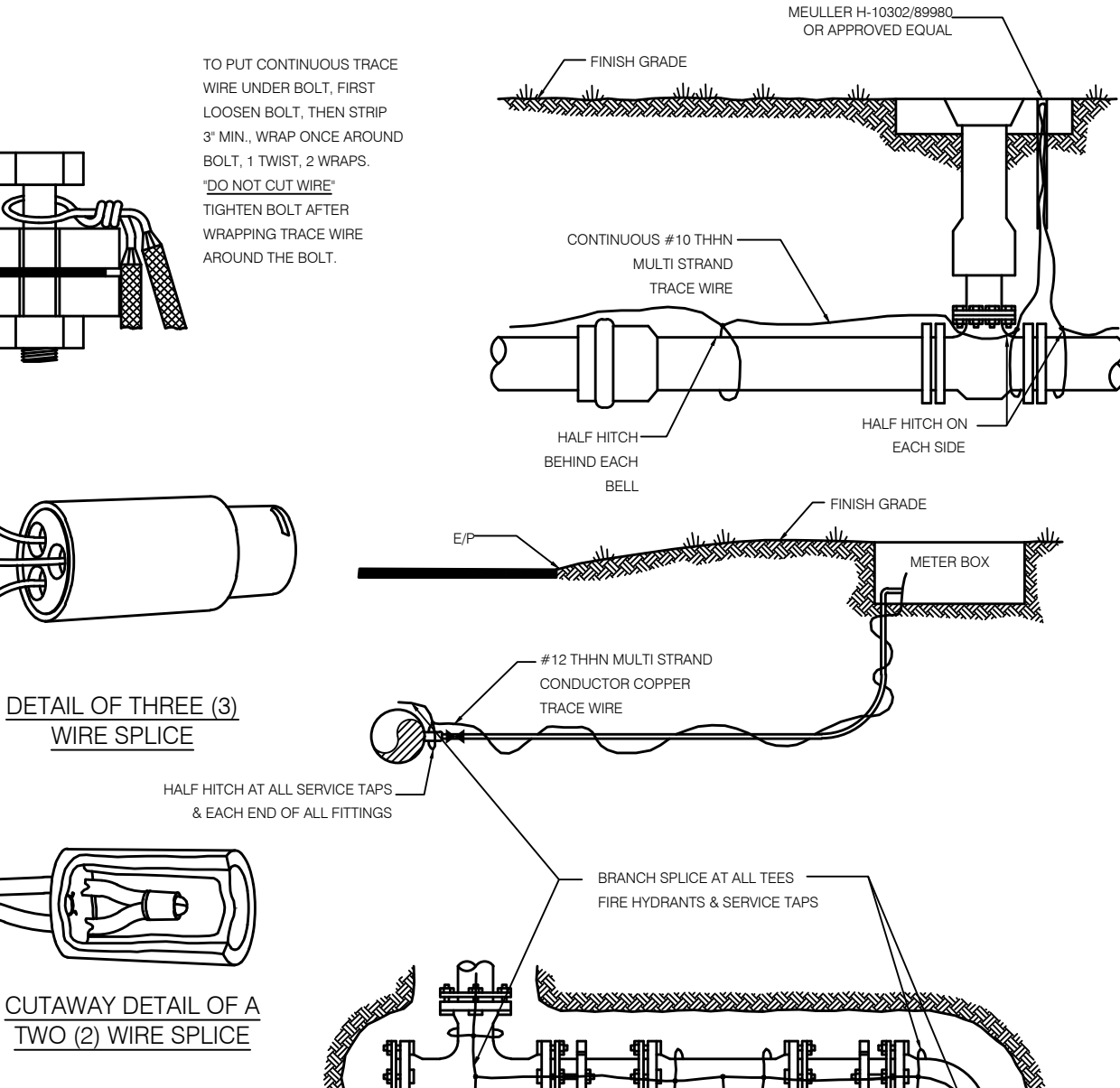
NOTE: ALL FIRE LINES TO CONFORM TO ENVIRONMENTAL CONTROL REGULATION RULE NUMBER TWO, AND BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. D.C.V. TO BE U.L. LISTED & APPROVED FOR FIRE SERVICE. WATTS 709 SERIES OR APPROVED EQUAL.

SD-30 C5004 FIRE LINES



NOTES:
1. MAIN TO BE RESTRAINED PER CITY OF BOCA RATON SPECIFICATIONS.

SD-31 C5004 POTABLE WATER FLUSHING HYDRANT



NOTES:
1. TRACE WIRE IS REQUIRED ON ALL PIPE AS NOTED BY UTILITIES ENGINEER AND SHOWN IN STANDARD DETAILS.
2. INCLUDE ALL COST OF MATERIAL & LABOR IN PRICE OF PIPE.
3. CONTRACTOR IS RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.

SD-32 C5004 TRACE WIRE DETAIL

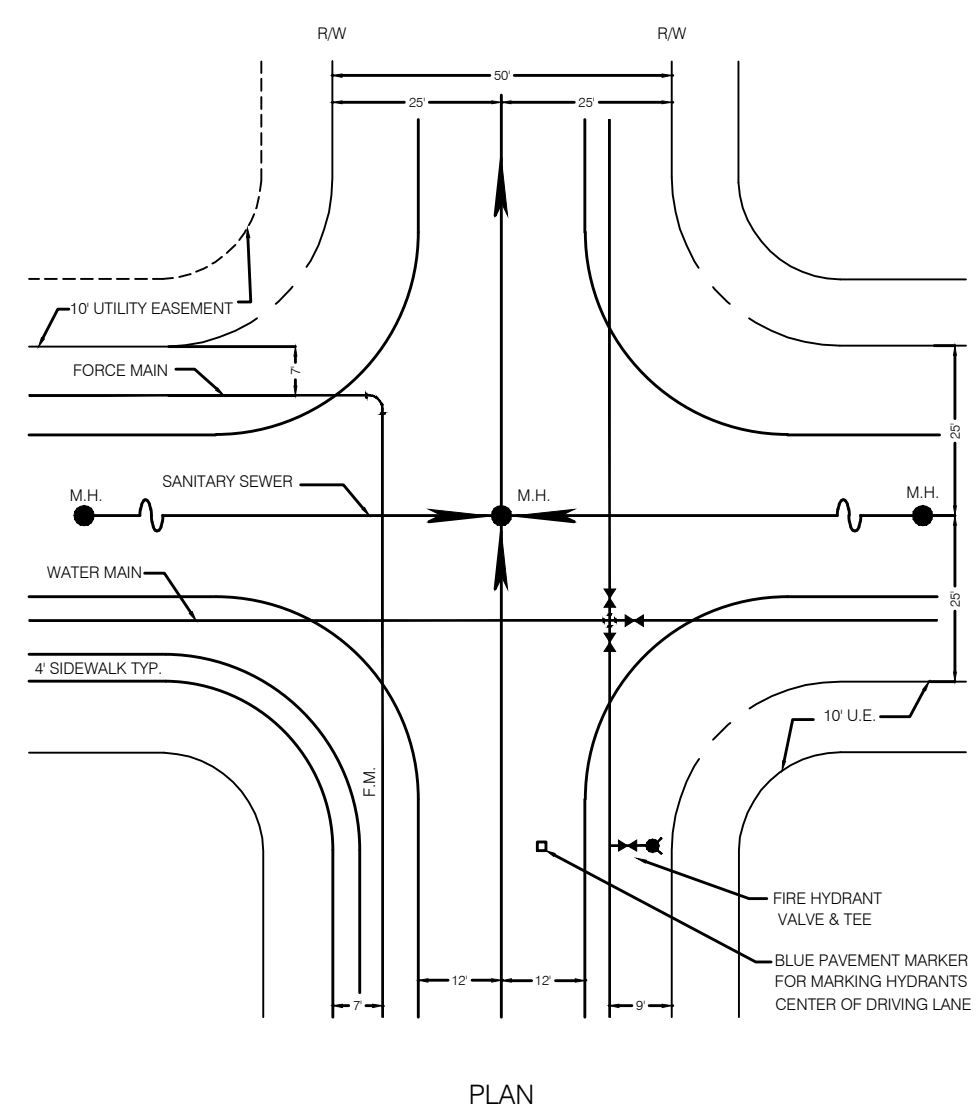
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DATE: May 18, 2022 9:38am USER: Jgarcia

DESIGNED BY: T.GARCIA	DATE:	APPR.:
DRAWN BY: T.GARCIA		
CHECKED BY: J. BARRINGTON		
LINE IS 2 INCHES AT FULL SIZE (IF NOT 2\"/>		

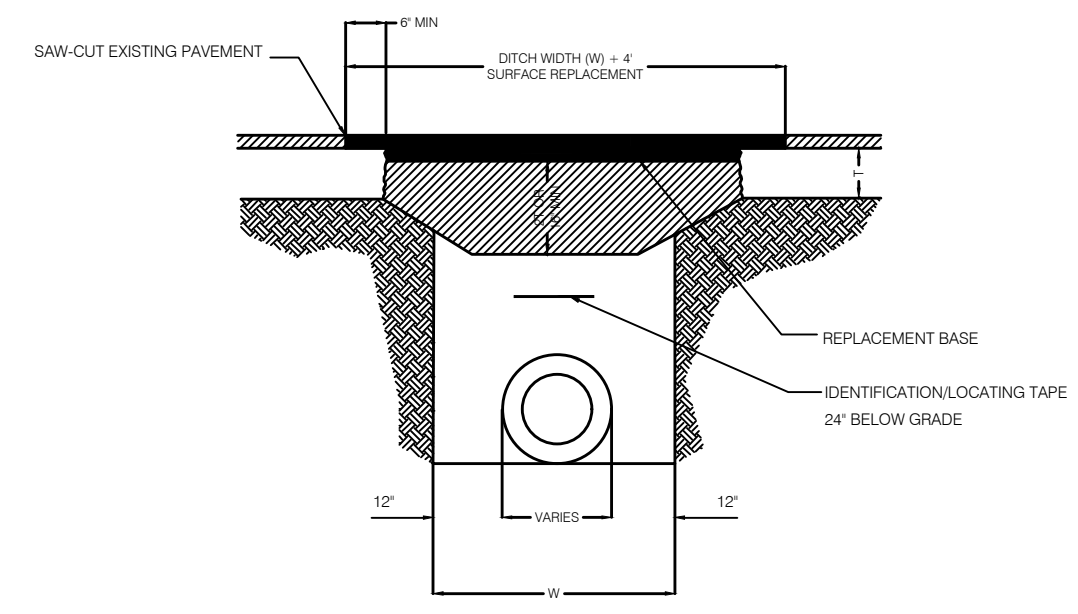
City Of Boca Raton
UTILITY SERVICES
1401 Glades Road, Boca Raton Florida 33431

PROJECT NAME TITLE 1
PROJECT NAME TITLE 2
WATER AND SEWER STANDARD DETAILS
PROJ. NO. C5004
DRAWING NO. 4 OF 5

A
B
C
D
E
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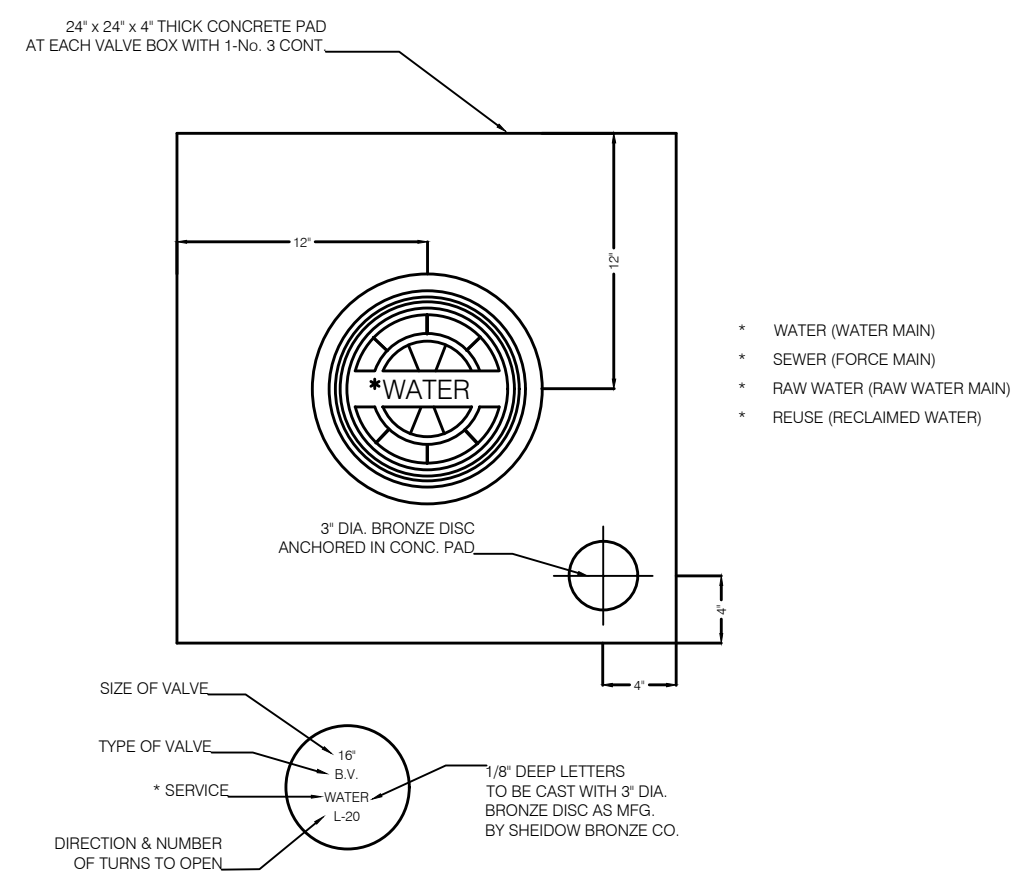


SD-33
C5005
UTILITY LOCATION
50' RIGHT OF WAY



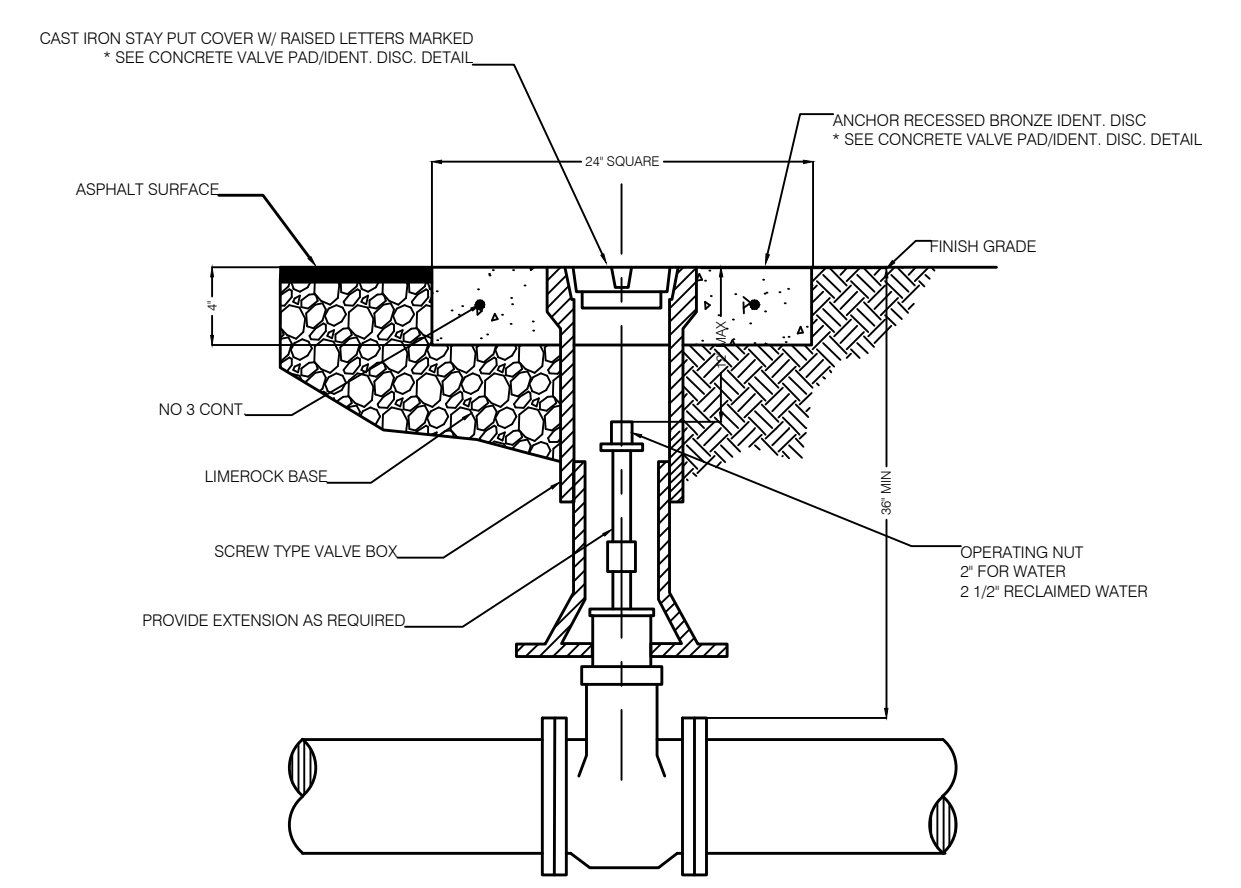
1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE, (2") OR 16" MIN. WHICHEVER IS GREATER
2. BASE MATERIAL SHALL BE PLACED IN TWO OR THREE LIFTS AND EACH LIFT COMPACTED TO 98% MAXIMUM DENSITY PER AASHTO T-180 (MAX. LIFT THICKNESS - 8")
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWS AND BUTT-JOINTED.
4. ALL DISTURBED PAVEMENT MARKINGS SHALL BE RESTORED IN ACCORDANCE WITH CITY STANDARDS.
5. SURFACE SURFACE MATERIAL SHALL BE FDOT TYPE S-II ASPHALTIC CONC. (MIN. THICKNESS 2") TWO 1" LIFTS
6. ANY PAVT. CUTS SHALL BE COLD PATCHED AT END OF EACH WORKING DAY TO FACILITATE UNHINDERED TRAFFIC FLOW.
7. PIPE SHALL BE PLACED IN A DRY TRENCH
8. CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE.

SD-34
C5005
ROADWAY
PAVEMENT RESTORATION

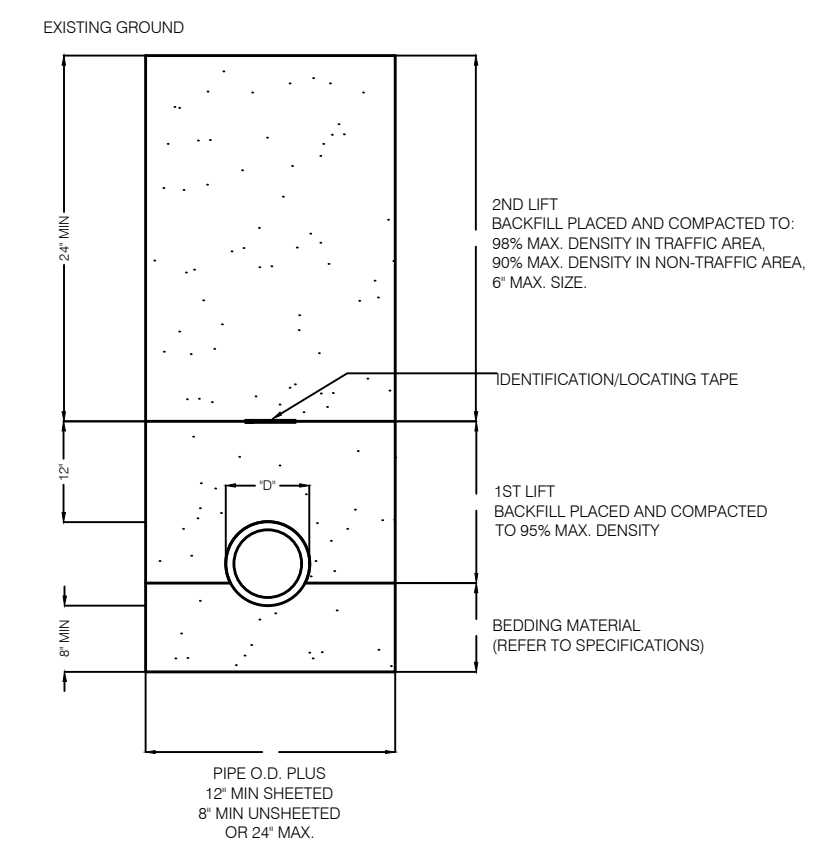


- * WATER (WATER MAIN)
- * SEWER (FORCE MAIN)
- * RAW WATER (RAW WATER MAIN)
- * REUSE (RECLAIMED WATER)

SD-35
C5005
CONCRETE VALVE PAD
IDENTIFICATION DISC

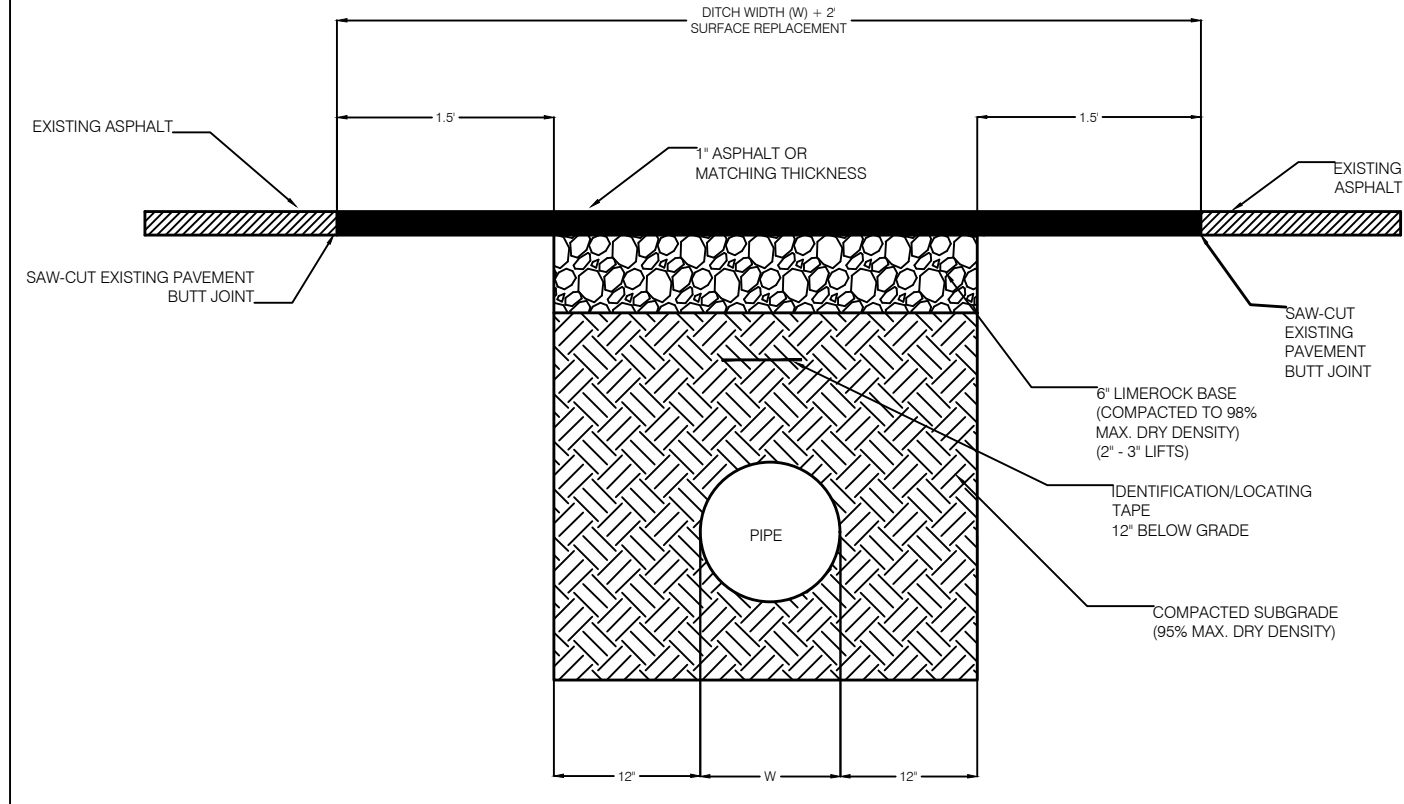


SD-36
C5005
VALVE AND BOX DETAIL



- NOTES
1. FOR EXCAVATION AND BACKFILL AROUND MANHOLES, APPURTENANCES, OR IN WATER, REFER TO PROVISIONS WITHIN THE SPECIFICATIONS.
 2. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF WASHED AND GRADED LIMEROCK (3/8"-7/8").
 3. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS
 4. REFER TO SPECIFICATIONS FOR EXCAVATION IN MUCK OR OTHER UNSUITABLE MATERIAL.

SD-37
C5005
TYPICAL
TRENCH EXCAVATION



- NOTES
1. NO OPEN CUTS PERMITTED WITHIN CITY-OWNED RIGHTS-OF-WAY WITHOUT WRITTEN PERMISSION OF THE CITY OF BOCA RATON ENGINEERING DEPARTMENT.
 2. CITY OF BOCA RATON ENGINEERING DEPARTMENT TO BE NOTIFIED FOR INSPECTION OF LIMEROCK AND SUBGRADE PRIOR TO RECONSTRUCTION OF ASPHALT.
 3. ANY CUTS GREATER THAN 36" THE CONTRACTOR MUST SUBMIT TO THE CITY OF BOCA RATON ENGINEERING DEPARTMENT A SHOP DRAWING OF HIS PROPOSED PAVEMENT REPAIR FOR APPROVAL.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC IN ACCORDANCE WITH THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL & SAFE PRACTICES.

SD-38
C5005
OPEN-CUT
DRIVEWAY REPLACEMENT

RESILIENT SEATED GATE VALVE SPECIFICATIONS

- 4" THROUGH 12" SIZE
(WATER AND FORCE MAIN)
- GATE VALVES SHALL BE RESILIENT SEATED, MANUFACTURED TO MEET OR EXCEED THE REQUIREMENTS OF AWWA C509 OF LATEST REVISION AND IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS.
- VALVES SHALL HAVE AN UNOBSTRUCTED WATERWAY EQUAL TO OR GREATER THAN THE FULL NOMINAL DIAMETER OF THE VALVE.
 - THE VALVES ARE TO BE NON-RISING STEM WITH THE STEM MADE OF CAST, FORGED OR ROLLED BRONZE SHOWN IN AWWA C509. TWO STEM SEALS SHALL BE PROVIDED AND SHALL BE OF THE O-RING TYPE, ONE ABOVE AND ONE BELOW THE THRUST COLLAR WITH LUBRICANT BETWEEN O-RING.
 - THE STEM NUT, ALSO MADE OF BRONZE, MAY BE INDEPENDENT OF THE GATE OR CAST INTEGRALLY WITH THE GATE. IF THE STEM NUT IS CAST INTEGRALLY, THE THREADS SHALL BE STRAIGHT AND TRUE WITH THE AXIS OF THE STEM TO AVOID BINDING DURING THE OPENING OR CLOSING CYCLE.
 - THE SEALING MECHANISM SHALL CONSIST OF A CAST IRON GATE HAVING A VULCANIZED SYNTHETIC RUBBER COATING OR A RUBBER SEAT MECHANICALLY RETAINED ON THE GATE. THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE WHEN INSTALLED WITH THE LINE FLOW IN EITHER DIRECTION.
 - THE VALVE BODY, BONNET AND BONNET COVER SHALL BE CAST IRON ASTM A126, CLASS B. ALL FERROUS SURFACE INSIDE SHALL HAVE A BONDED EPOXY COATING, CLASS B. ALL FERROUS SURFACE INSIDE SHALL HAVE A BONDED EPOXY COATING.
 - A 2-INCH SQUARE WRENCH NUT SHALL BE PROVIDED FOR OPERATING THE VALVE.
 - ALL VALVES ARE TO BE SUPPLIED COMPLETE AND READY FOR INSTALLATION INCLUDING, BUT NOT LIMITED TO ALL NUTS, BOLTS WINGS AND RUBBERS.
 - ALL VALVES ARE TO BE TESTED IN STRICT ACCORDANCE WITH AWWA C509.

SD-39
C5005
RESILIENT GATE VALVE
SPECIFICATIONS

STANDARD SEPARATIONS

NEW OR RELOCATED, UNDERGROUND WATER MAINS WILL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER (OR A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER) IF THE BOTTOM OF THE WATER MAIN WILL BE LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. AND A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE TREATMENT AND DISPOSAL SYSTEM."

NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY-OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE, AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBE IN PART I.C.1.W OF DEP FORM 62-555.900(7), ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN GRAVITY-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY-OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

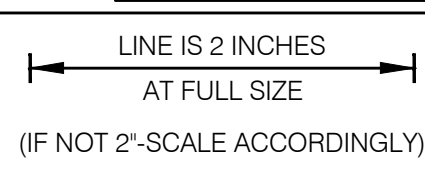
PIPE MARKINGS

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBGRAPH 62-555.202(1)(B)3, F.A.C. USING BLUE AS A PREDOMINANT COLOR. UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE. WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPES DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE. FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.

SD-40
C5005
STANDARD SEPARATIONS
& PIPE MARKING NOTES

DWG: I:\Engineering Standards\CAD Standards\City use only\WardS_Details.dwg
DATE: May 18, 2022 9:38am USER: T.garcia

DESIGNED BY:	T.GARCIA
DRAWN BY:	T. GARCIA
CHECKED BY:	J. BARRINGTON
DATE:	
APPR.	



City Of Boca Raton
UTILITY SERVICES
1401 Glades Road, Boca Raton Florida 33431

PROJECT NAME TITLE 1
PROJECT NAME TITLE 2
**WATER AND SEWER
STANDARD DETAILS**

PROJ. NO.
DRAWING NO.
C5005
5 OF 5