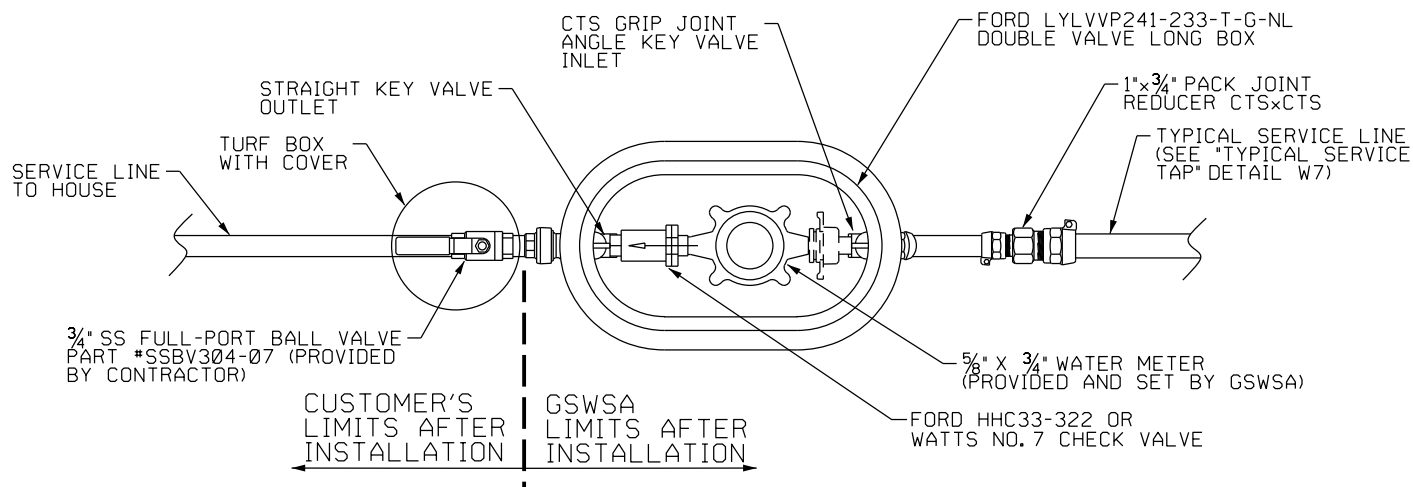
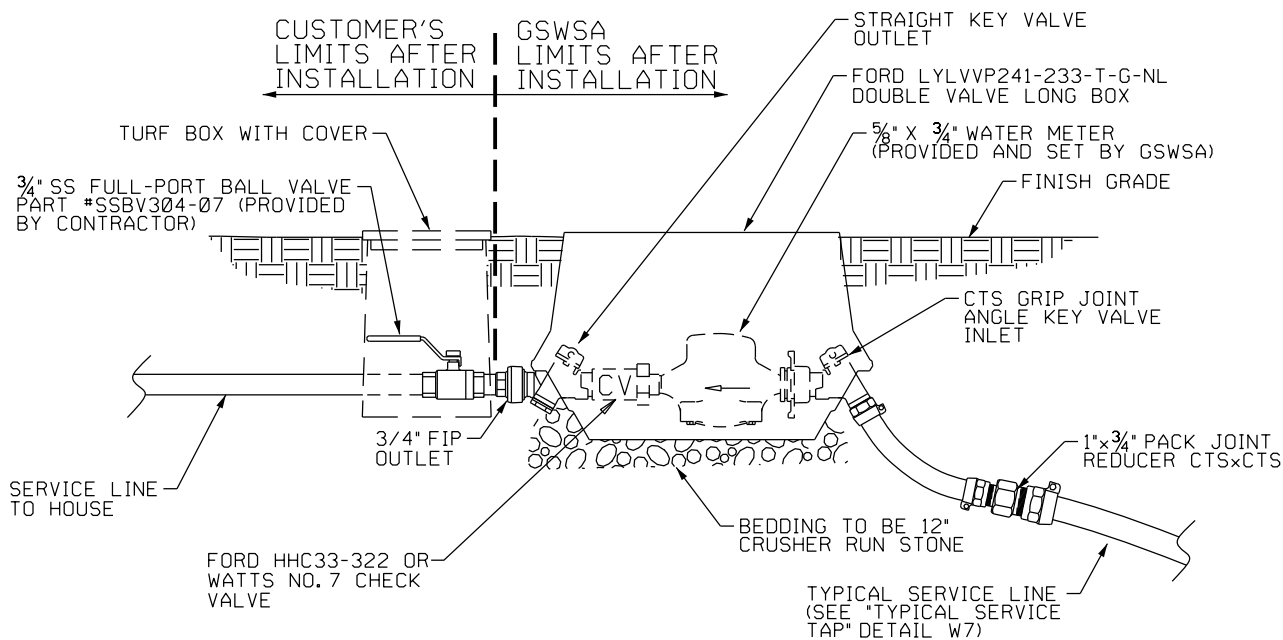




PLAN



PROFILE

TYPICAL WATER METER DETAIL (3/4" - 1")

W1

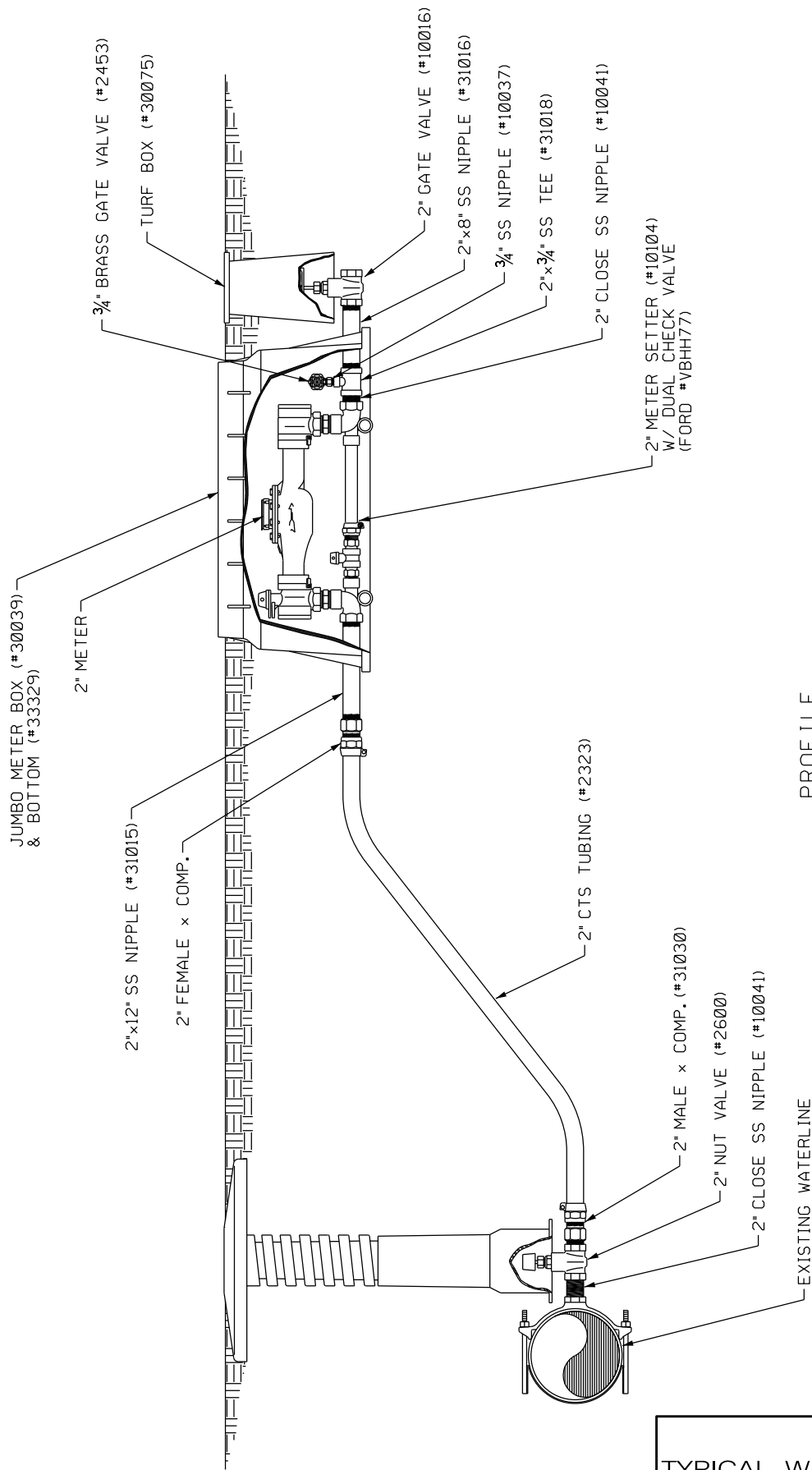
LATEST REVISION:
 10/29/2014 DRT CORRECTED METER BOX SPECIFICATIONS
 01/09/2020 DRT REVISED TITLE
 01/07/2021 DRT CHANGED METER BOX SPECIFICATIONS
 01/06/2023 DRT CHANGE CUSTOMER GATE VALVE TO BALL VALVE

TYPICAL WATER METER DETAIL (3/4" - 1")
 FOR FUTURE CUSTOMER CONNECTIONS
 (FOR GSWA RURAL & CAPITAL
 PROJECTS ONLY)

WATER ONLY
 UPDATED: 01/06/2023

W1

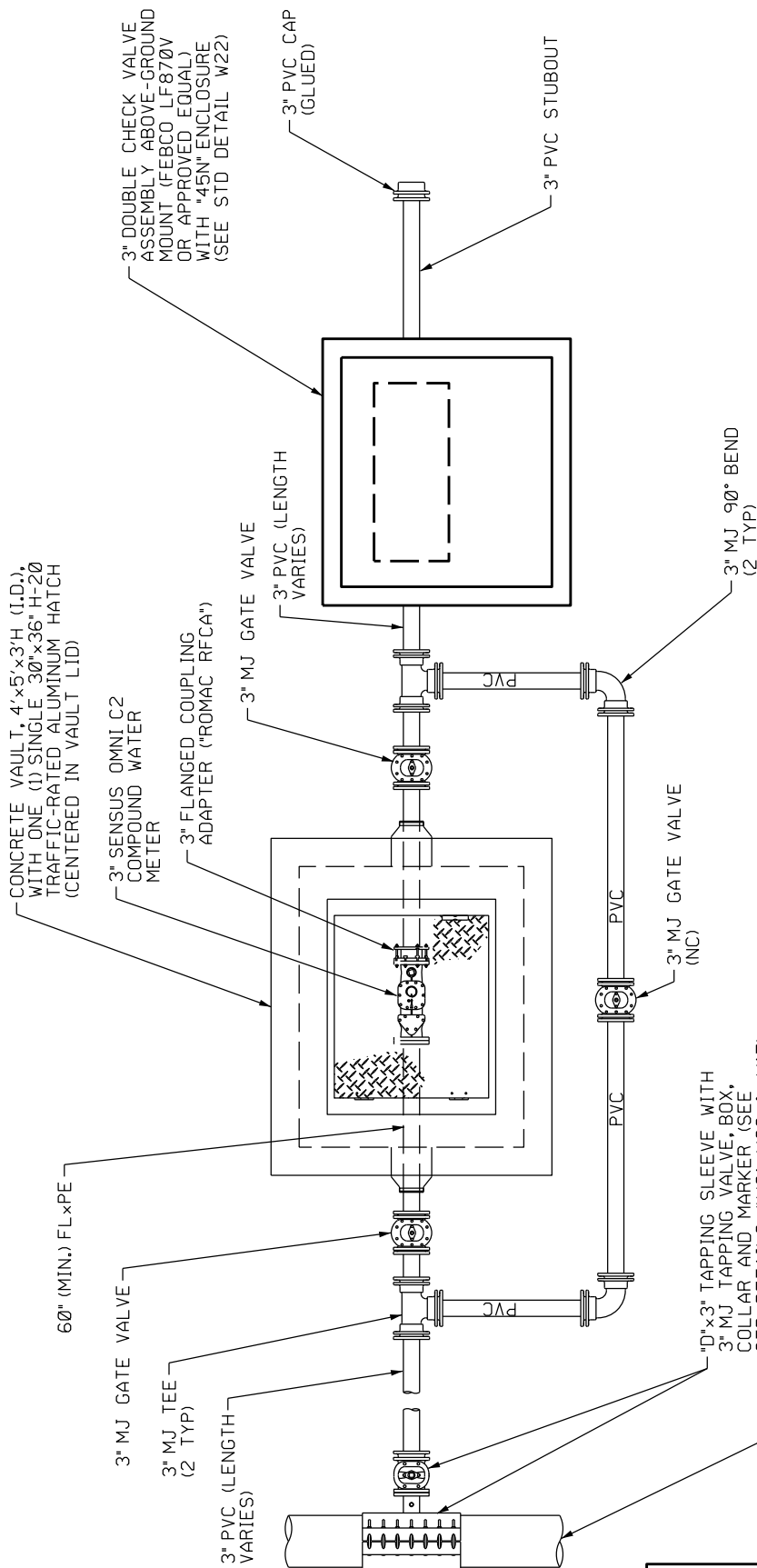
GRAND STRAND
 WATER & SEWER AUTHORITY



PROFILE

TYPICAL WATER METER DETAIL (1½" – 2")

W1-2



CONCRETE VAULT SPECIFICATIONS:

1. 4,000 PSI CONCRETE
2. WALL THICKNESS = 6" REINF. W/#4 GRADE 60 REBAR @ 9' O.C.E.W.
3. BASE SLAB THICKNESS = 6" REINF. W/#4 GRADE 60 REBAR @ 9' O.C.E.W.
4. TOP SLAB THICKNESS = 6" REINF. W/#4 GRADE 60 REBAR @ 6' O.C.E.W.
5. DRAWING SCALE = NTS
6. VAULT TO BE ABLE TO WITHSTAND OCCASIONAL VEHICULAR TRAFFIC.

PLAN

TYPICAL WATER METER DETAIL (3")

W1-3

LATEST REVISION:
08/22/2022 DRT
01/09/2020 DRT

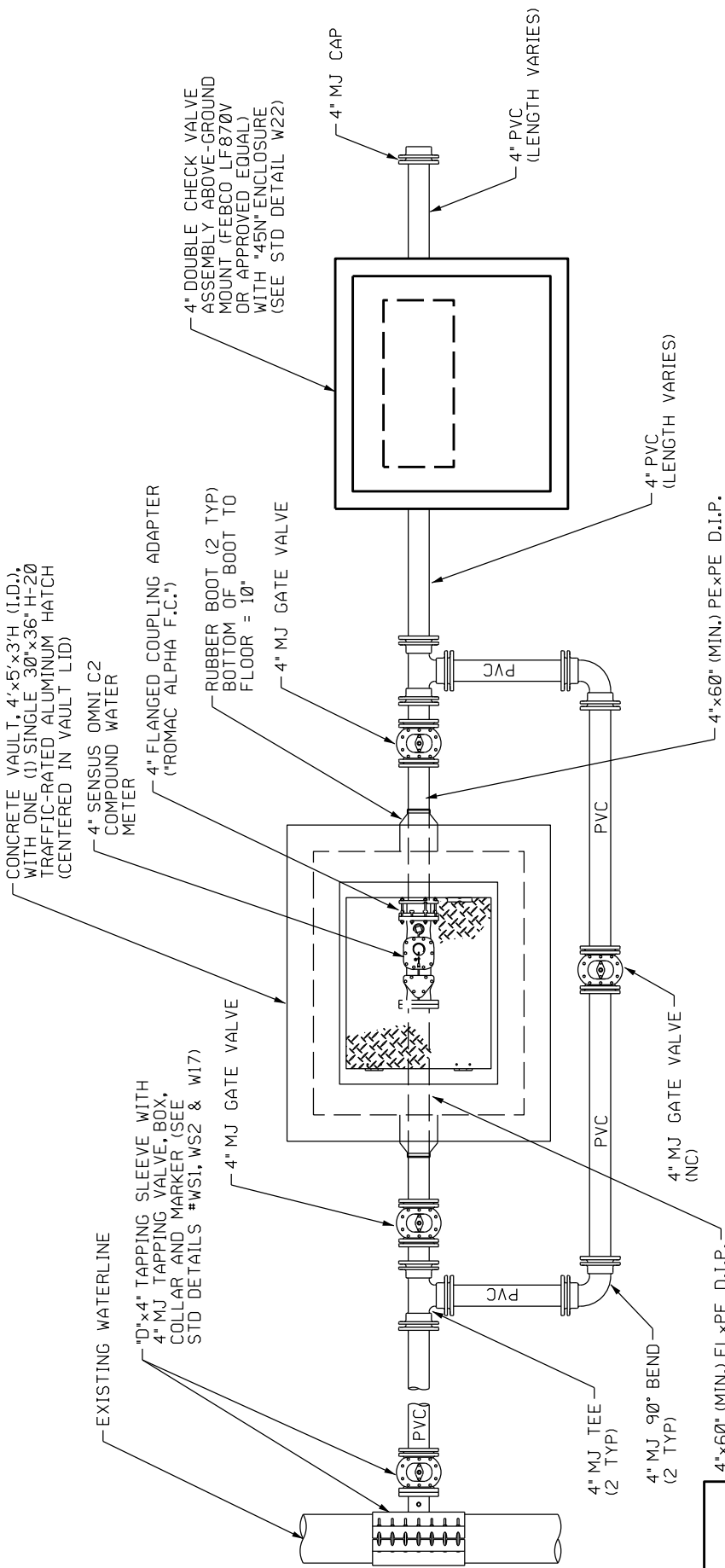
UPDATED C.V. ASSEMBLY NOTE
REVISED TITLE AND C.V. ASSEMBLY, AND
ADDED BYPASS

TYPICAL WATER METER DETAIL (3")

WATER ONLY
ADDED: 07/03/2019
UPDATED: 08/22/2022

W1-3

GRAND STRAND
WATER & SEWER AUTHORITY



GENERAL NOTES:

1. ALL FITTINGS USE RESTRAINTS.
 2. PVC PIPING TO BE C900.
- CONCRETE VAULT SPECIFICATIONS:**
1. 4,000 PSI CONCRETE
 2. WALL THICKNESS = 6" REINF. W/#4 GRADE 60 REBAR @ 9' O.C.E.W.
 3. BASE SLAB THICKNESS = 6" REINF. W/#4 GRADE 60 REBAR @ 9' O.C.E.W.
 4. TOP SLAB THICKNESS = 6" REINF. W/#4 GRADE 60 REBAR @ 6" O.C.E.W.
 5. DRAWING SCALE = NTS
 6. VAULT TO BE ABLE TO WITHSTAND OCCASIONAL VEHICULAR TRAFFIC.

PLAN

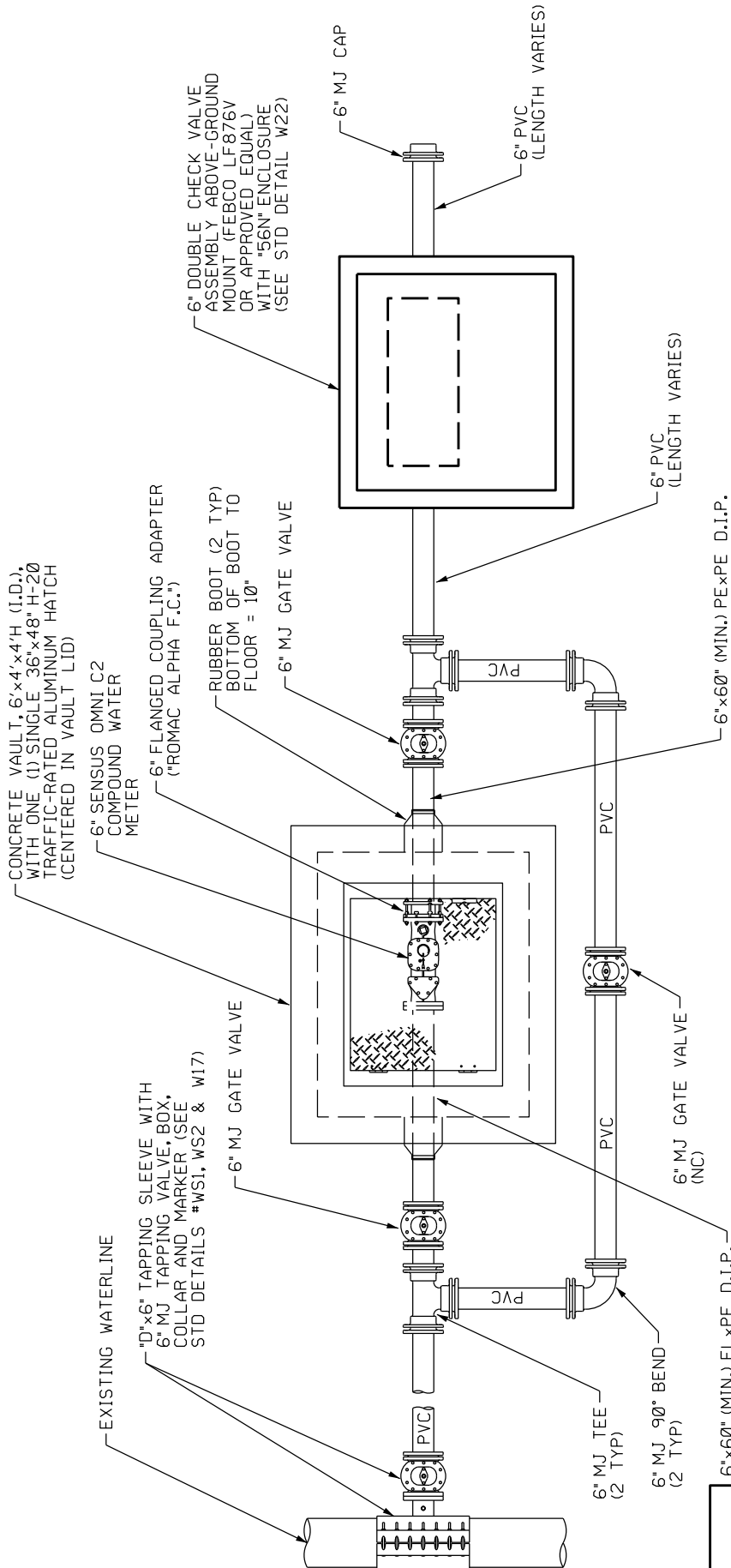
TYPICAL WATER METER DETAIL (4")

W1-4

LATEST REVISION:
 08/22/2022 DRT
 01/09/2020 DRT

UPDATED C.V. ASSEMBLY NOTE
 REVISED TITLE AND C.V. ASSEMBLY

TYPICAL WATER METER DETAIL (4")	
WATER ONLY ADDED: 07/03/2019 UPDATED: 08/22/2022	W1-4
GRAND STRAND WATER & SEWER AUTHORITY	



GENERAL NOTES:

1. ALL FITTINGS USE RESTRAINTS.
2. PVC PIPING TO BE C900.

CONCRETE VAULT SPECIFICATIONS:

1. 4,000 PSI CONCRETE
2. WALL THICKNESS = 6" REINF. W/ #4 GRADE 60 REBAR @ 9" O.C.E.W.
3. BASE SLAB THICKNESS = 6" REINF. W/ #4 GRADE 60 REBAR @ 9" O.C.E.W.
4. TOP SLAB THICKNESS = 6" REINF. W/ #4 GRADE 60 REBAR @ 6" O.C.E.W.
5. DRAWING SCALE = NTS
6. VAULT TO BE ABLE TO WITHSTAND OCCASIONAL VEHICULAR TRAFFIC.

PLAN

TYPICAL WATER METER DETAIL (6")

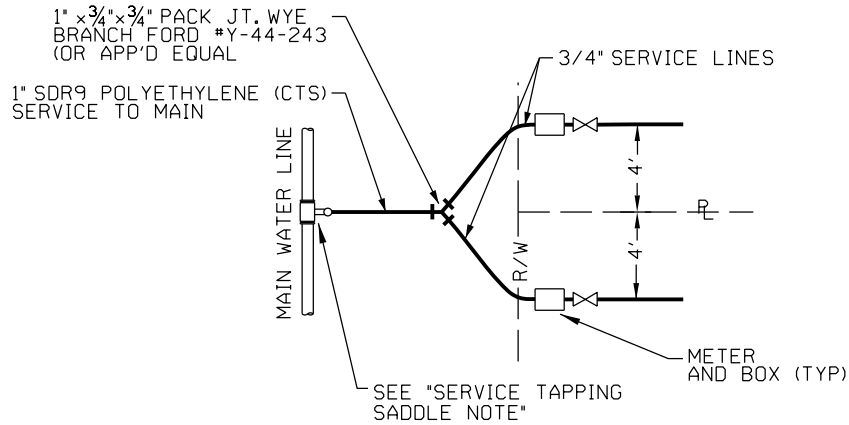
W1-5

TYPICAL WATER METER DETAIL (6")

WATER ONLY
 ADDED: 08/22/2022
 UPDATED:

W1-5

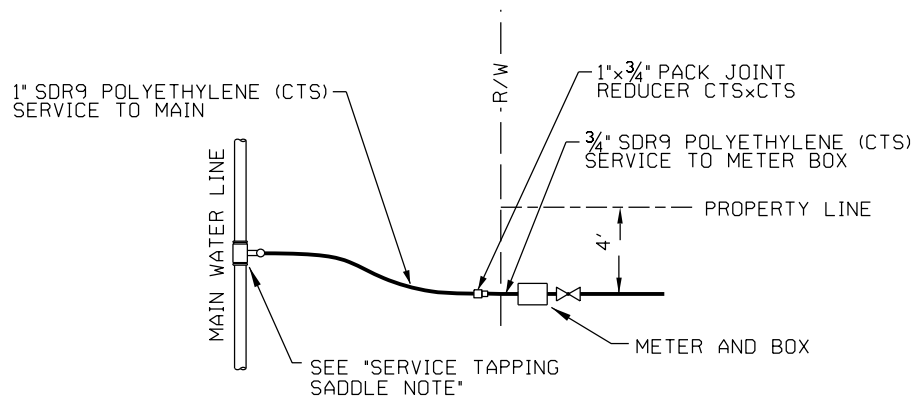
GRAND STRAND
 WATER & SEWER AUTHORITY



SERVICE TAPPING SADDLE NOTE:
SMITH-BLAIR SINGLE STRAP, NYLON-COATED WITH
WIDE SST BANDS NO. 315; OR SMITH-BLAIR DOUBLE STRAP,
NYLON-COATED WITH WIDE SST BANDS NO. 317.

PLAN

TYPICAL DOUBLE SERVICE CONNECTION



SERVICE TAPPING SADDLE NOTE:
SMITH-BLAIR SINGLE STRAP, NYLON-COATED WITH
WIDE SST BANDS NO. 315; OR SMITH-BLAIR DOUBLE STRAP,
NYLON-COATED WITH WIDE SST BANDS NO. 317.

PLAN

TYPICAL SINGLE SERVICE CONNECTION

W3

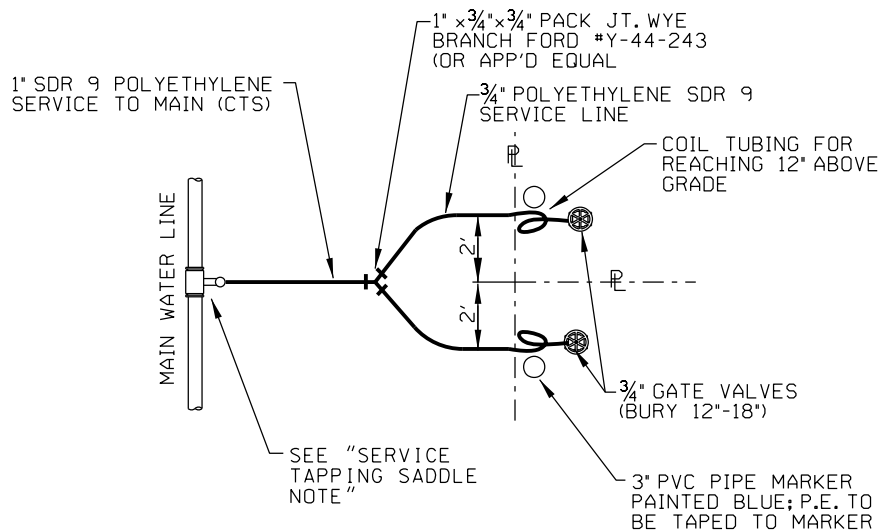
TYPICAL WATER SERVICE DETAIL
FOR FUTURE CUSTOMER CONNECTIONS
(FOR GSWA RURAL & CAPITAL
PROJECTS ONLY)

WATER ONLY
UPDATED: 06/19/09

W3

LATEST REVISION:
06/19/09 DRT CHANGED TEE TO WYE, ADDED PACK JOINT
REDUCER AND REVISED SIZES.

GRAND STRAND
WATER & SEWER AUTHORITY



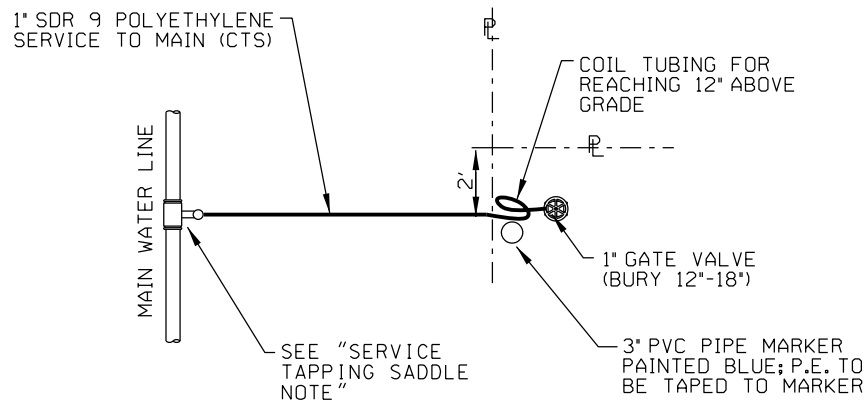
SERVICE TAPPING SADDLE NOTE:
SMITH-BLAIR SINGLE STRAP, NYLON-COATED WITH
WIDE SST BANDS NO. 315; OR SMITH-BLAIR DOUBLE STRAP,
NYLON-COATED WITH WIDE SST BANDS NO. 317.

PLAN

TYPICAL DOUBLE SERVICE CONNECTION FOR FUTURE CUSTOMER CONNECTIONS (FOR DEVELOPER PROJECTS ONLY)

W4

TYPICAL DOUBLE SERVICE CONNECTION FOR FUTURE CUSTOMER CONNECTIONS (FOR DEVELOPER PROJECTS ONLY)	
WATER ONLY UPDATED: 6/26/02	W4
GRAND STRAND WATER & SEWER AUTHORITY	



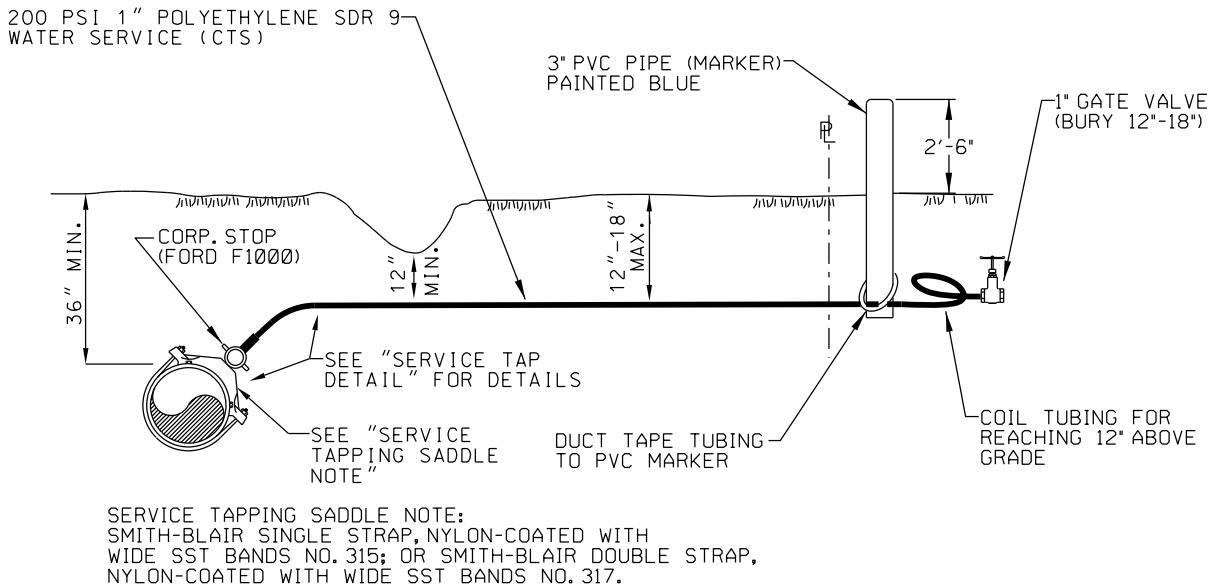
SERVICE TAPPING SADDLE NOTE:
SMITH-BLAIR SINGLE STRAP, NYLON-COATED WITH
WIDE SST BANDS NO. 315; OR SMITH-BLAIR DOUBLE STRAP,
NYLON-COATED WITH WIDE SST BANDS NO. 317.

PLAN

TYPICAL SINGLE SERVICE CONNECTION FOR FUTURE CUSTOMER CONNECTIONS (FOR DEVELOPER PROJECTS ONLY)

W5

TYPICAL SINGLE SERVICE CONNECTION FOR FUTURE CUSTOMER CONNECTIONS (FOR DEVELOPER PROJECTS ONLY)	
WATER ONLY UPDATED: 6/26/02	W5
GRAND STRAND WATER & SEWER AUTHORITY	



TYPICAL WATER SERVICE DETAIL
FOR FUTURE CUSTOMER CONNECTIONS
(FOR DEVELOPER PROJECTS ONLY)

W6

TYPICAL
WATER SERVICE DETAIL
FOR FUTURE CUSTOMER CONNECTIONS
(FOR DEVELOPER PROJECTS ONLY)

WATER ONLY
UPDATED: 6/26/02

W6

GRAND STRAND
WATER & SEWER AUTHORITY

SERVICE LINE (CTS):
TYP. 200 PSI POLYETHYLENE
SDR 9 SERVICE MAT'L. PER
AWWA STDS. COMPRESSION
FITTING USE 1" FOR SINGLE
AND DOUBLE METER SERVICES.

CORPORATION STOP
FORD F1000 W/COMPRESSION
FITTING OR APPR. EQUAL

WATER MAIN

RUBBER GASKET

45° MIN.

SEE "SERVICE
TAPPING SADDLE
NOTE"

SERVICE TAPPING SADDLE NOTE:
SMITH-BLAIR SINGLE STRAP, NYLON-COATED WITH
WIDE SST BANDS NO. 315; OR SMITH-BLAIR DOUBLE STRAP,
NYLON-COATED WITH WIDE SST BANDS NO. 317.

TYPICAL SERVICE TAP

W7

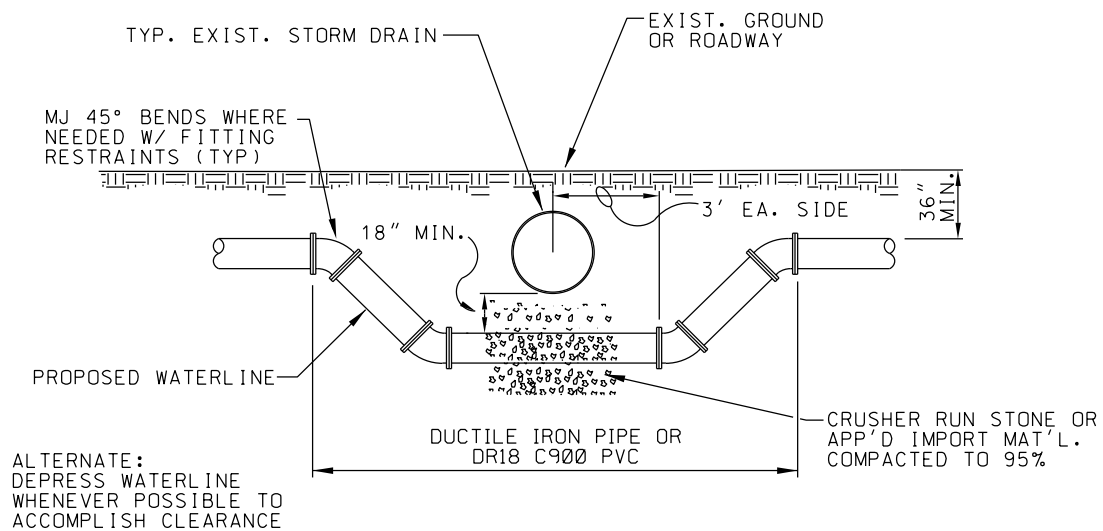
LATEST REVISION:
8/28/06 DRT CHANGED "IPS" TO "CTS" SERVICE LINE

TYPICAL SERVICE TAP

WATER ONLY
UPDATED: 08/28/06

W7

GRAND STRAND
WATER & SEWER AUTHORITY



TYPICAL STORM DRAIN CROSSING

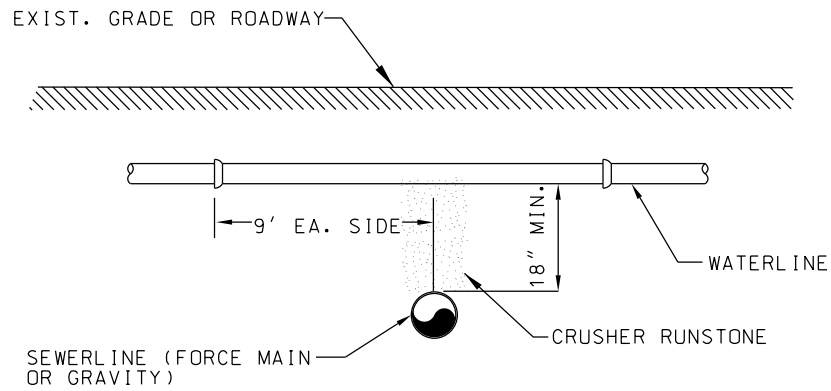
W8

TYPICAL STORM DRAIN CROSSING

WATER ONLY
UPDATED: 08/22/2022

W8

GRAND STRAND
WATER & SEWER AUTHORITY



TYPICAL SEWERLINE CROSSING

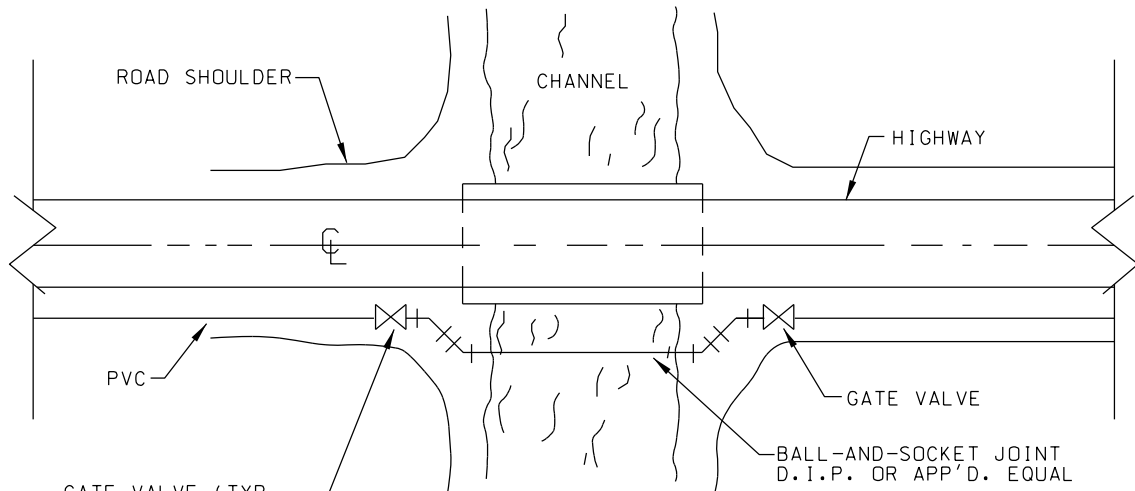
W9

TYPICAL SEWERLINE CROSSING

WATER ONLY
UPDATED: 2/16/98

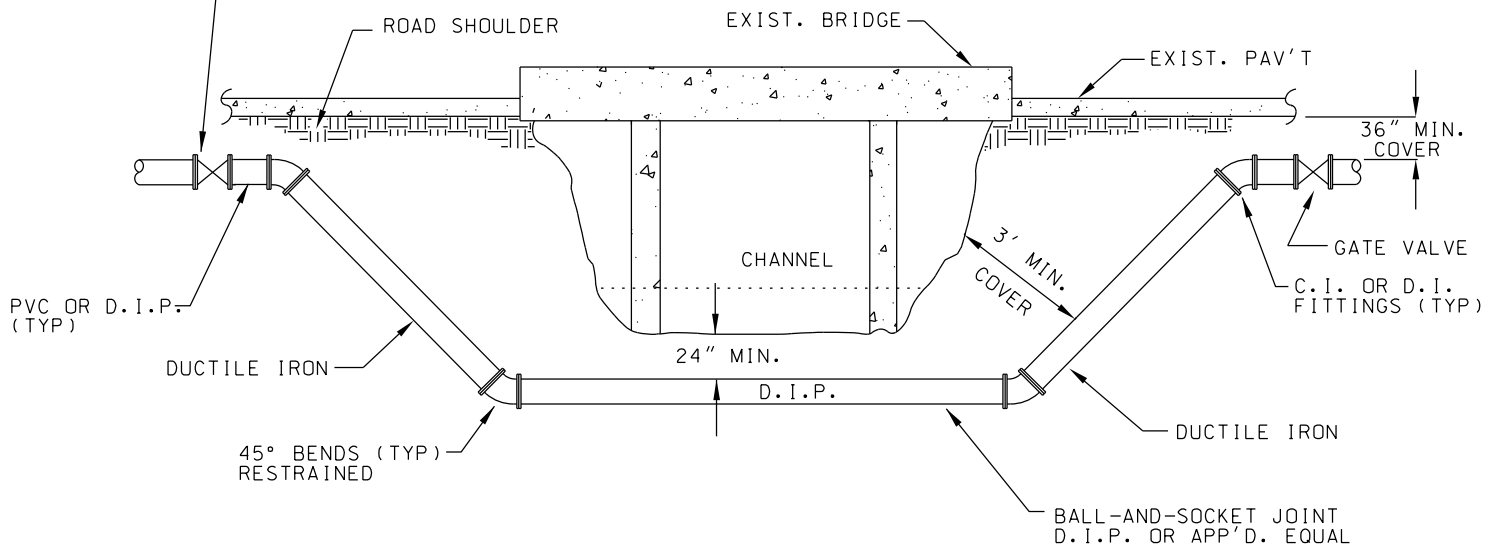
W9

GRAND STRAND
WATER & SEWER AUTHORITY



GATE VALVE (TYP.
EA. SIDE OF WATER
COURSE WIDER THAN
FIFTEEN (15) FEET

PLAN



NOTE:
PIPE TO BE INSTALLED IN SUCH
A MANNER THAT JOINTS WILL BE
ON UNDISTURBED SOIL.

PROFILE

NOTES:
1) ALL JOINTS TO BE RESTRAINED.
2) FOR CROSSING WATER COURSES
GREATER THAN FIFTEEN (15) FEET
IN WIDTH, A BLOWOFF SHALL BE
PROVIDED ON THE SIDE OPPOSITE
THE SUPPLY SERVICE IF SYSTEM
IS NOT LOOPED.

TYPICAL UNDER CHANNEL CROSSING AT BRIDGE

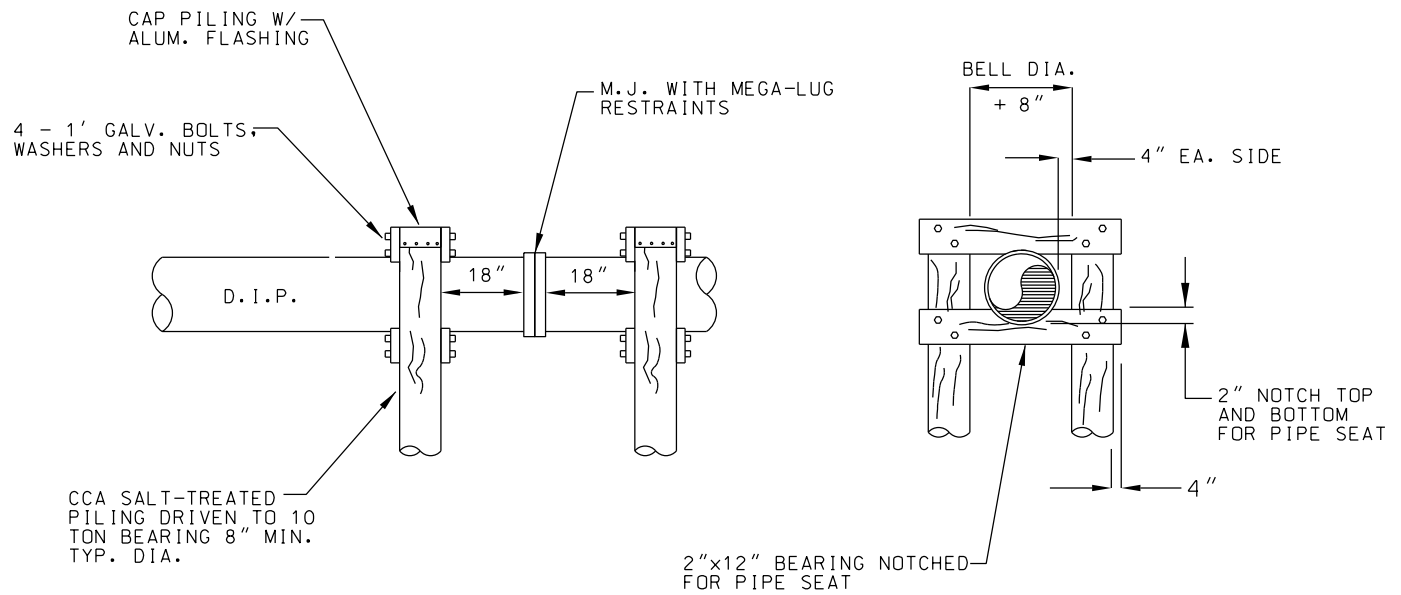
W10

TYPICAL UNDER CHANNEL CROSSING AT BRIDGE

WATER ONLY
UPDATED: 12/26/97

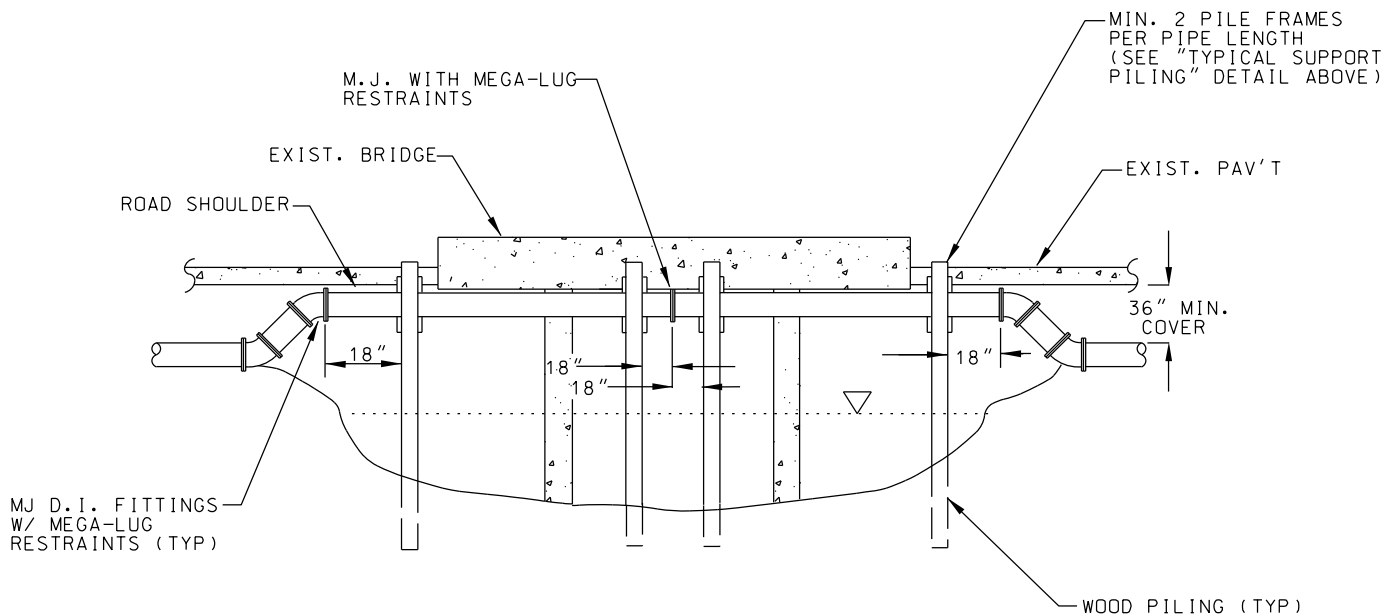
W10

GRAND STRAND
WATER & SEWER AUTHORITY



TYPICAL SUPPORT PILING

NOTE: GSWA TO APPROVE CONTRACTORS PROPOSED
LOCATION OF PILE FRAMES PRIOR TO INSTALLATION



TYPICAL ABOVE CHANNEL CROSSING AT BRIDGE

W11

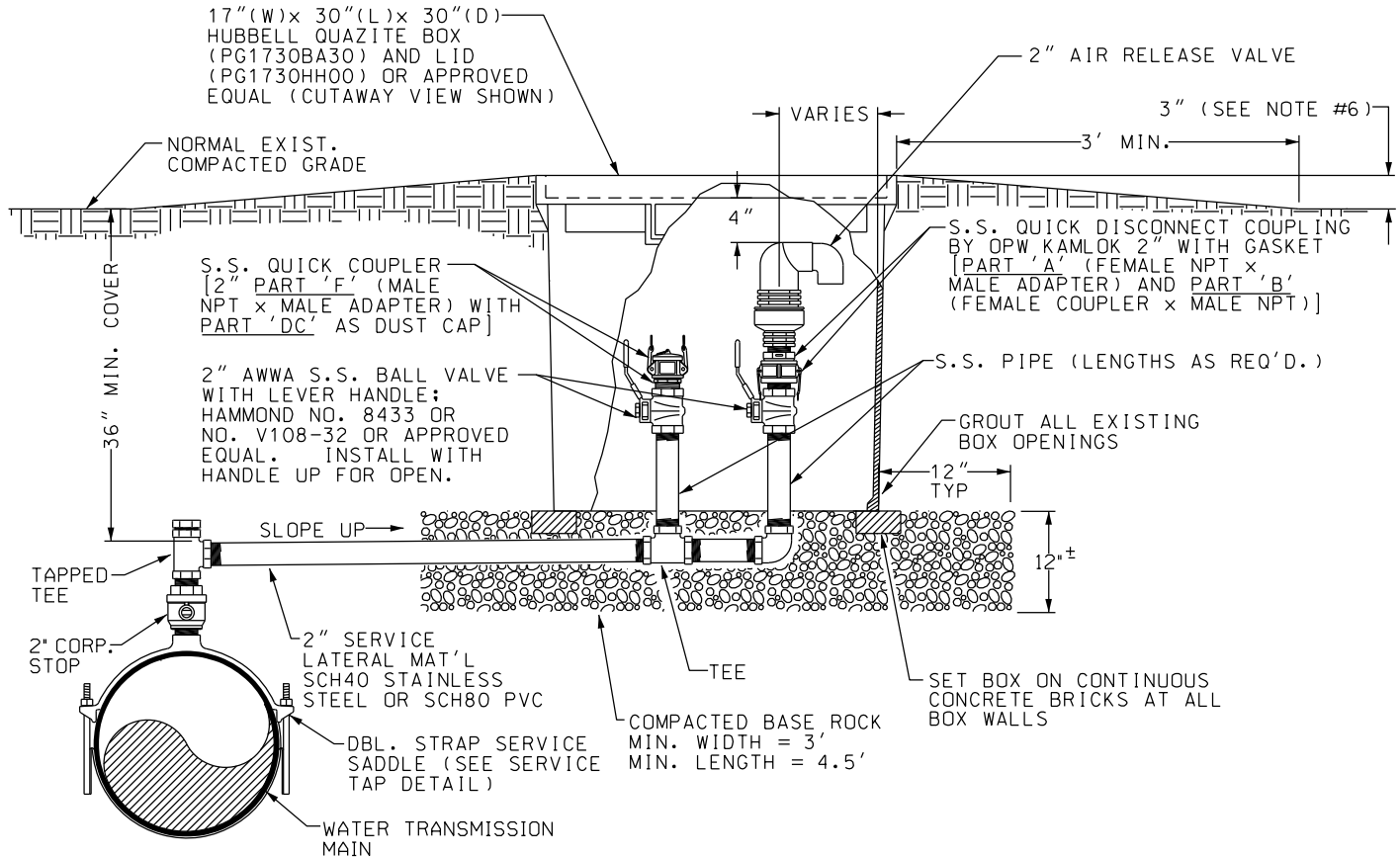
TYPICAL
ABOVE CHANNEL
CROSSING AT BRIDGE

WATER ONLY
UPDATED: 12/26/97

W11

GRAND STRAND
WATER & SEWER AUTHORITY

ENCLOSURE BOX AND LID SHALL BE
 MINIMUM "TIER 22" LOAD RATING:
 VERTICAL: 22,500 LBS (DESIGN) / 33,750 LBS (TEST)
 LATERAL: 800 LBS/SF (DESIGN) / 1,200 LBS/SF (TEST)
 (DRIVEWAY, PARKING LOT, AND OFF-ROADWAY APPLICATIONS
 SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY
 VEHICULAR TRAFFIC)



NOTES:

- 1) AIR RELEASE VALVE SHALL BE INSTALLED ON THE HIGH POINT OF WATER MAIN.
- 2) ALL MATERIALS & EQUIPMENT TO BE PER AWWA SPEC'S.
- 3) AIR RELEASE SHALL BE VALMATIC NO. 38, A.R.I. MODEL D-040.2 OR APPROVED EQUAL.
- 4) CORP. STOP, PIPING, FITTINGS, AND VALVES TO BE SAME DIAMETER AS AIR RELEASE VALVE INLET.
- 5) LIMIT OF PAY ITEMS INCLUDES SERVICE SADDLE.
- 6) ARV ASSEMBLIES INSTALLED IN ROAD RIGHTS-OF-WAY MUST BE FLUSH WITH EXISTING SHOULDER GRADE. INSTALLATIONS IN EASEMENT AREAS SHALL BE RAISED ABOVE EXISTING GRADE AS SHOWN IN DETAIL.
- 7) 2" TEE, NIPPLE & BALL VALVE TO BE STD AWWA OR APPROVED EQUAL. NIPPLES & BALL VALVES SHALL BE STAINLESS STEEL.

TYPICAL AIR RELEASE VALVE ASSEMBLY

W12

LATEST REVISION:
 07/18/08 DRT

12/02/2013 DRT

DESCRIBED PARTS 'A' & 'B' FOR A.R.V. QUICK DISCONNECT AND CHANGED PART 'A' TO PART 'F' FOR OTHER QUICK DISCONNECT. REMOVED NOTE FOR STABILITY BLOCKING INSIDE BOX. CHANGED ENCLOSURE SUPPLIER FROM STRONGWELL TO HUBBELL.
 CHANGED LID TO "HH" (TIER 22) AND ADDED NOTE FOR TIER 22 ENCLOSURE BOX AND LID.

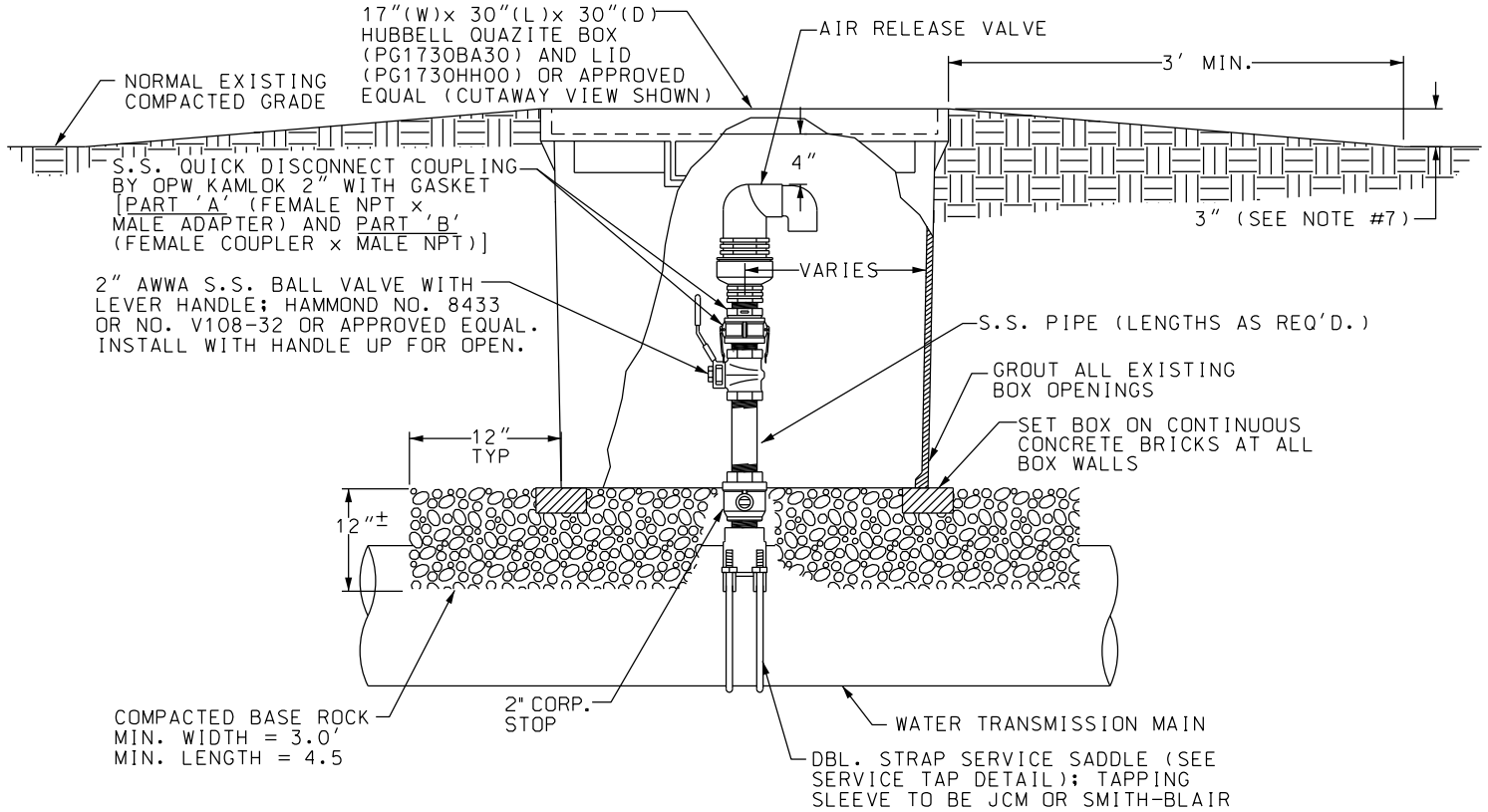
TYPICAL AIR RELEASE VALVE ASSEMBLY

WATER ONLY
 UPDATED: 12/02/2013

W12

GRAND STRAND
 WATER & SEWER AUTHORITY

ENCLOSURE BOX AND LID SHALL BE
 MINIMUM "TIER 22" LOAD RATING:
 VERTICAL: 22,500 LBS (DESIGN) / 33,750 LBS (TEST)
 LATERAL: 800 LBS/SF (DESIGN) / 1,200 LBS/SF (TEST)
 (DRIVEWAY, PARKING LOT, AND OFF-ROADWAY APPLICATIONS
 SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY
 VEHICULAR TRAFFIC)



NOTES:

- 1) AIR RELEASE VALVE SHALL BE INSTALLED ON THE HIGH POINT OF WATER MAIN.
- 2) ALL MATERIALS & EQUIPMENT TO BE PER AWWA SPEC'S.
- 3) AIR RELEASE SHALL BE A.R.I. MODEL D-040.2.
- 4) CORPORATION STOP, S.S. PIPE, FITTINGS, AND PIPING TO BE SAME DIAMETER AS AIR RELEASE VALVE INLET.
- 5) AIR RELEASE VALVES MUST BE NSF APPROVED.
- 6) LIMIT OF PAY ITEMS INCLUDES SERVICE SADDLE.
- 7) ARV ASSEMBLIES INSTALLED IN ROAD RIGHTS-OF-WAY MUST BE FLUSH WITH EXISTING SHOULDER GRADE. INSTALLATIONS IN EASEMENT AREAS SHALL BE RAISED ABOVE EXISTING GRADE AS SHOWN IN DETAIL.

TYPICAL AIR RELEASE VALVE ASSEMBLY

W13

LATEST REVISION:
 07/18/08 DRT

12/02/2013 DRT

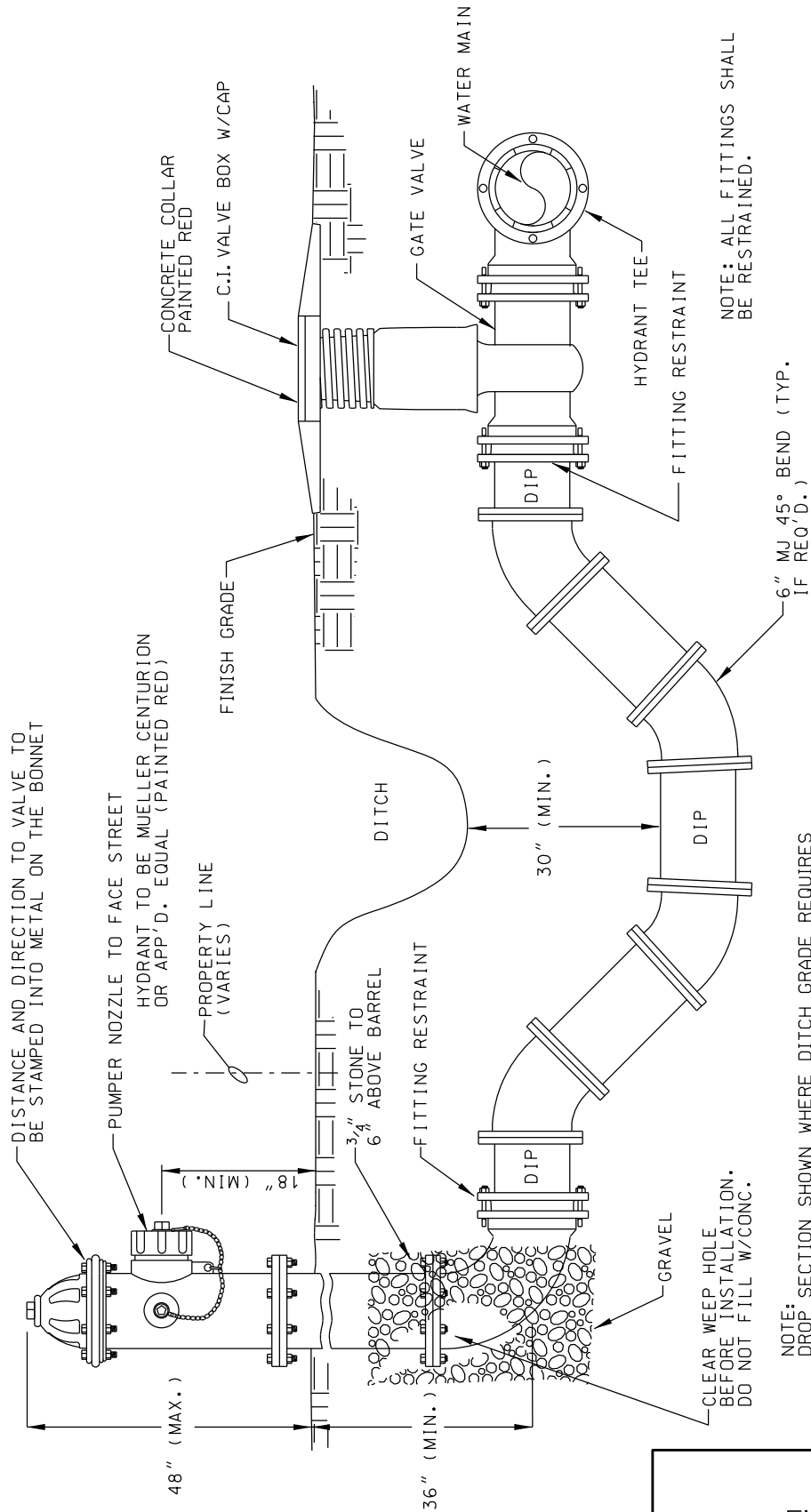
DESCRIBED PARTS 'A' & 'B' FOR QUICK DISCONNECT.
 REMOVED NOTE FOR STABILITY BLOCKING INSIDE BOX.
 CHANGED ENCLOSURE SUPPLIER FROM STRONGWELL TO HUBBELL.
 CHANGED LID TO "HH" (TIER 22) AND ADDED NOTE FOR
 TIER 22 ENCLOSURE BOX AND LID.

TYPICAL AIR RELEASE VALVE ASSEMBLY

WATER ONLY
 UPDATED: 12/02/2013

W13

GRAND STRAND
 WATER & SEWER AUTHORITY



TYPICAL FIRE HYDRANT

W14

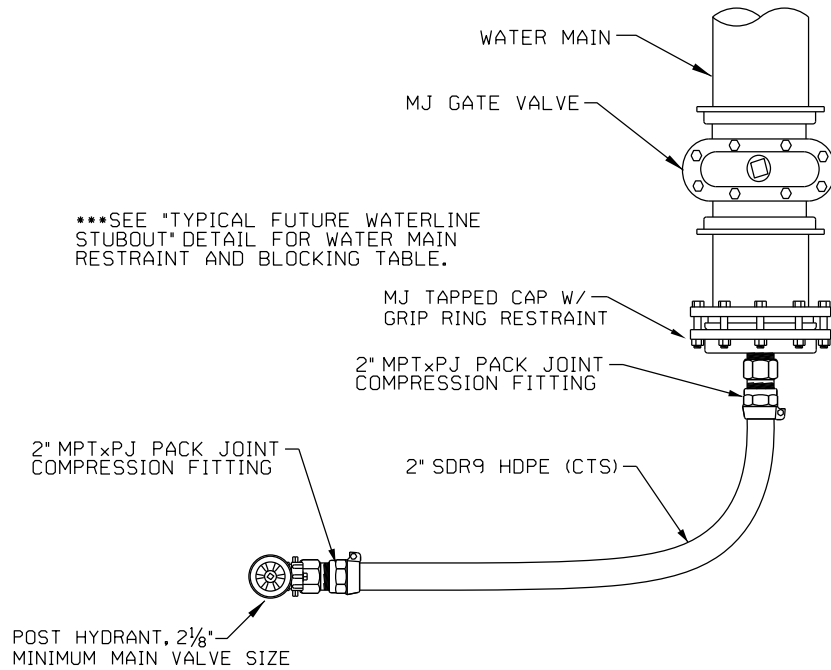
TYPICAL FIRE HYDRANT

WATER ONLY

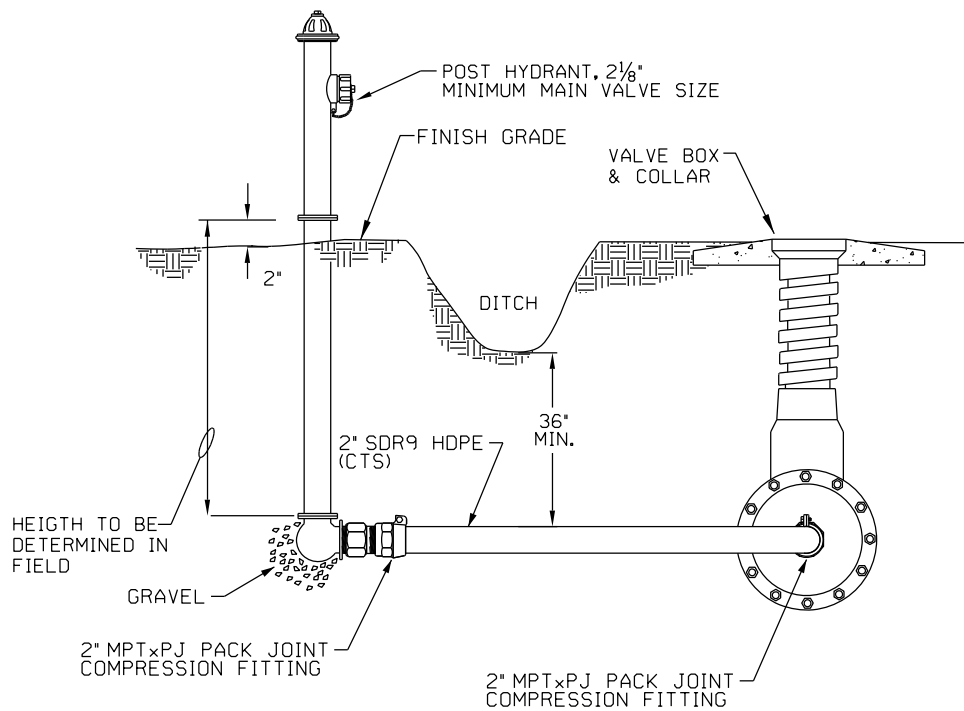
UPDATED: 8/13/01

W14

GRAND STRAND
WATER & SEWER AUTHORITY



PLAN



PROFILE

TYPICAL POST HYDRANT BLOW-OFF

W15

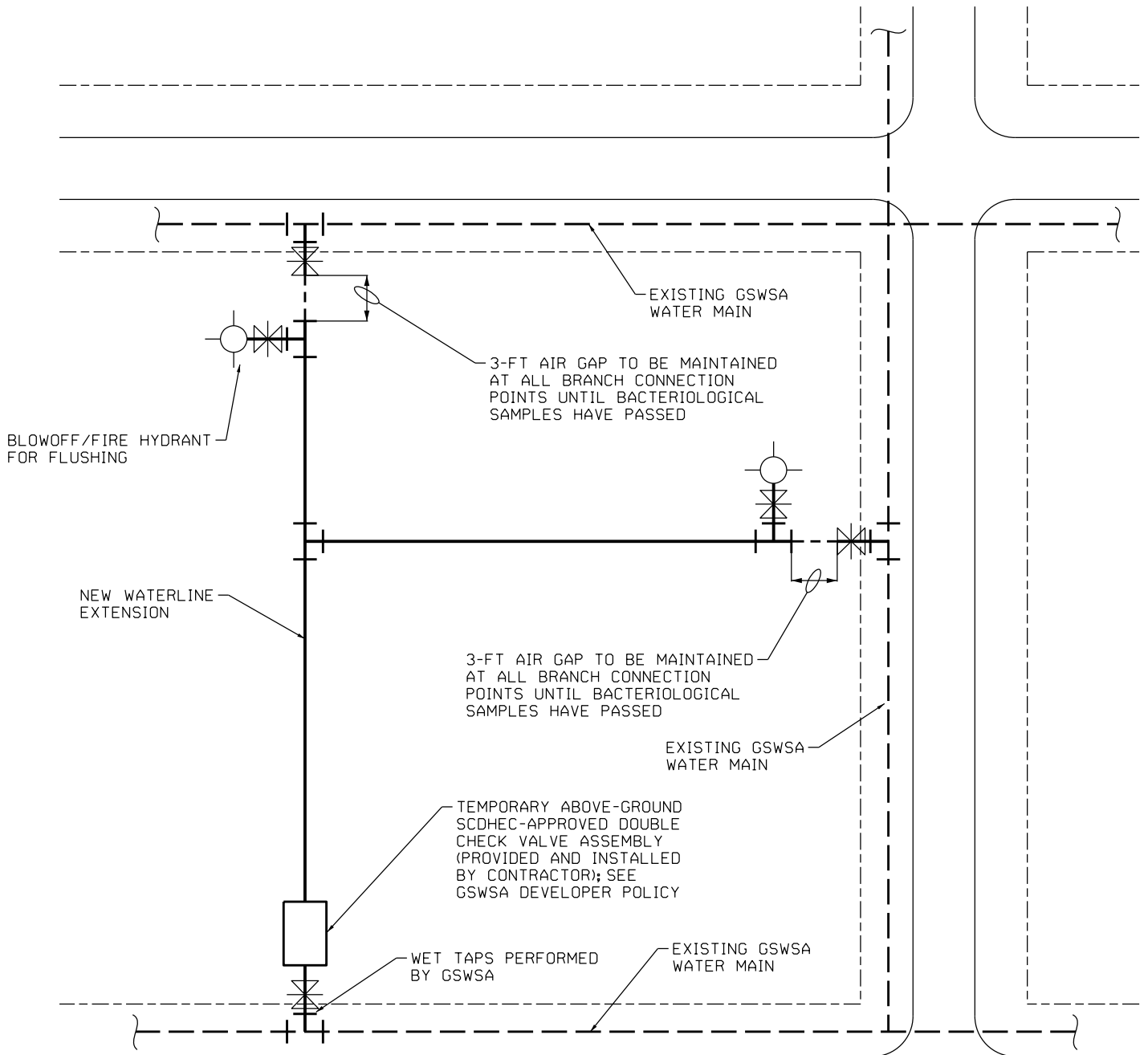
TYPICAL POST HYDRANT BLOW-OFF

WATER ONLY
UPDATED: 06/19/09

W15

GRAND STRAND
WATER & SEWER AUTHORITY

LATEST REVISION:
06/19/09 DRT CHANGED PH LEAD FROM GIP TO HDPE AND ADDED
PACK JOINT FITTINGS.



BACKFLOW PREVENTION AND AIR GAP LOCATIONS REQUIRED DURING CONSTRUCTION ACTIVITIES

W16

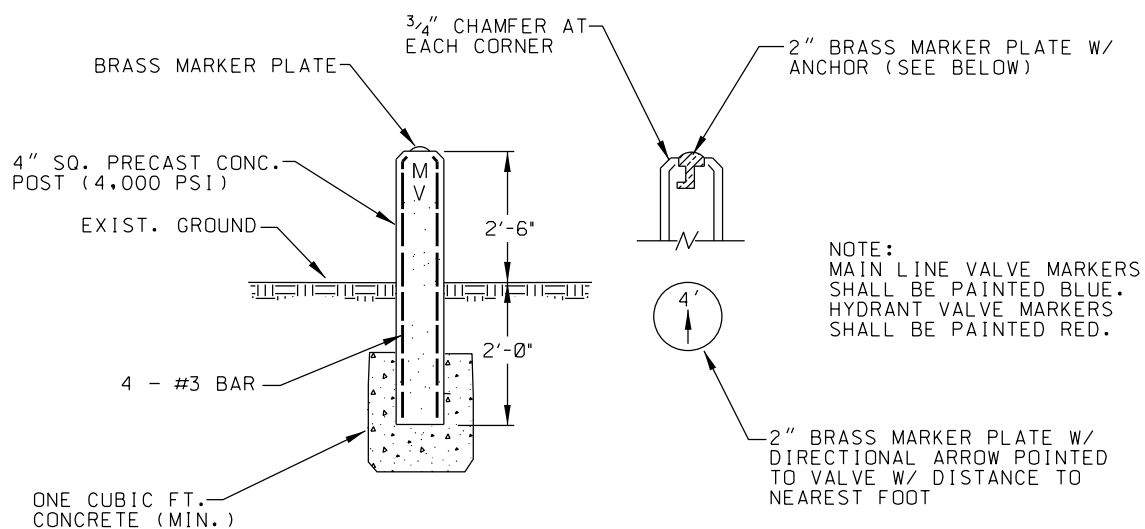
BACKFLOW PREVENTION AND AIR GAP LOCATIONS
REQUIRED DURING CONSTRUCTION ACTIVITIES

WATER ONLY

CREATED: 07/01/2024

W16

GRAND STRAND
WATER & SEWER AUTHORITY



TYPICAL CONCRETE VALVE MARKER

W17

TYPICAL
CONCRETE VALVE MARKER

WATER ONLY
UPDATED: 5/13/02

W17

GRAND STRAND
WATER & SEWER AUTHORITY

ENCLOSURE BOX AND LID SHALL BE
 MINIMUM "TIER 22" LOAD RATING:
 VERTICAL: 22,500 LBS (DESIGN) / 33,750 LBS (TEST)
 LATERAL: 800 LBS/SF (DESIGN) / 1,200 LBS/SF (TEST)
 (DRIVEWAY, PARKING LOT, AND OFF-ROADWAY APPLICATIONS
 SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY
 VEHICULAR TRAFFIC)

17"(W) x 30"(L) x 18"(D)
 HUBBELL QUAZITE BOX
 (PG1730BA18) AND LID
 (PG1730HH00) OR APPROVED
 EQUAL (CUTAWAY VIEW SHOWN)

VALVE BOX COLLAR

SHOWN PREASSEMBLED

S.S. QUICK COUPLER
 [1 1/2" PART 'F' (MALE
 NPT x MALE ADAPTER) WITH
 PART 'DC' AS DUST CAP]

GRADE

1 1/2" AWWA S.S. BALL
 VALVE WITH LEVER HANDLE;
 HAMMOND NO. 8433 OR
 NO. V108-32 OR APPROVED
 EQUAL. INSTALL WITH
 HANDLE UP FOR OPEN.

THRUST BLOCKING

VALVE BOX

1 1/2" HDPE 3408
 PIPE (INCLUDE
 FITTINGS NEEDED
 FOR CONNECTION
 TO TAPPED PLUG
 AND BLOWOFF)

SEE TABLE FOR
 RECOMMENDED SIZE

1 1/2" S.S. NIPPLE (TYP)
 OF VARIOUS LENGTHS

1 1/2" 90° BEND

ADJUST SIZE CHANGE
 AT THIS LOCATION

4" MJ GATE
 VALVE

PIPE CONFIGURATION TO BLOWOFF
 TO BE FIELD-DETERMINED (CURVE
 PIPE TO KEEP FROM CRIMPING.)

NOTE:
 THIS DETAIL IS FOR MAIN LINES 4" DIA. AND SMALLER.
 BLOWOFFS SHALL BE SIZED TO ACHIEVE 2.5 FT/SEC
 MINIMUM VELOCITY IN THE MAIN WITH A MINIMUM
 RESIDUAL PRESSURE OF 25 PSI. THE TABLE BELOW
 IS RECOMMENDED BY THE SC DHEC FOR BLOWOFF SIZING.
 USE STANDARD POST HYDRANT BLOWOFF FOR MAINS
 LARGER THAN 4' DIA..

MAIN LINE DIA.	FLOW REQUIRED	MIN. ORIFICE SIZE	RECOMMENDED PIPE SIZE	RECOMMENDED BLOWOFF SIZE
2"	25 GPM	0.75"	1 1/2"	1 1/2"
2 1/2"	40 GPM	1"	1 1/2"	1 1/2"
3"	60 GPM	1.24"	1 1/2"	1 1/2"
4"	100 GPM	1.5"	1 1/2"	1 1/2"
*6"	220 GPM	1.65"	2"	2"
*8"	400 GPM	2.21"	2 1/2"	2 1/2"

*SEE "TYPICAL POST HYDRANT BLOWOFF" (W15) FOR DETAIL.

4" MAIN
 WATERLINE

4" x 1 1/2" MJ TAPPED
 PLUG (RESTRAINED)

TYPICAL BLOWOFF ASSEMBLY

W18

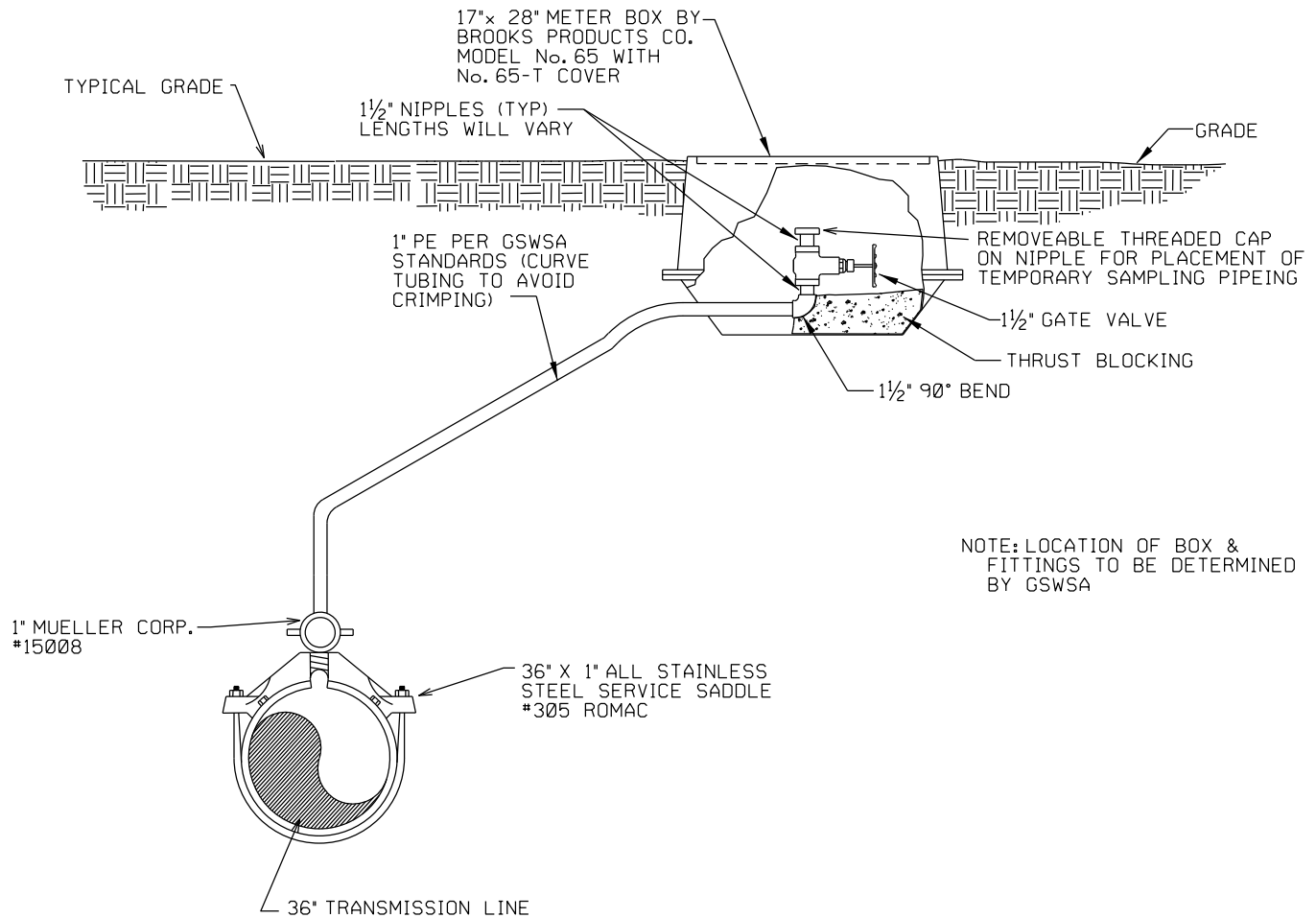
LATEST REVISION:
 7/18/08 DRT CHANGED PART 'A' TO PART 'F' FOR QUICK COUPLER.
 12/02/2013 DRT CHANGED ENCLOSURE SUPPLIER FROM STRONGWELL TO HUBBELL.
 12/02/2013 DRT ADDED NOTE FOR TIER 22 ENCLOSURE BOX AND LID.

TYPICAL BLOWOFF ASSEMBLY

WATER ONLY
 UPDATED: 12/02/2013

W18

GRAND STRAND
 WATER & SEWER AUTHORITY



TYPICAL WATER SAMPLING ASSEMBLY

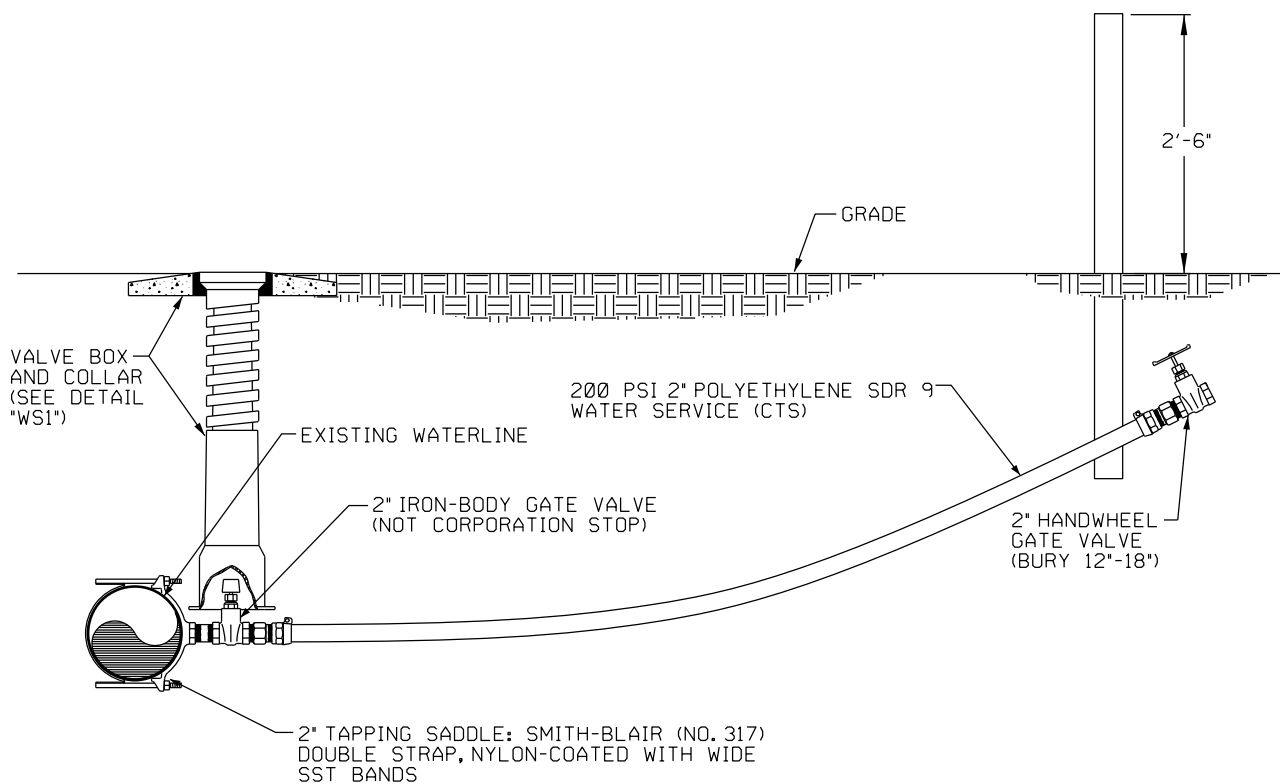
W19

TYPICAL WATER SAMPLING ASSEMBLY

WATER ONLY
UPDATED: 5/24/99

W19

GRAND STRAND
WATER & SEWER AUTHORITY



ELEVATION

TYPICAL WATER SERVICE DETAIL
FOR 1 1/2" – 2" METER SERVICES
(FOR DEVELOPER PROJECTS ONLY)

W20

LATEST REVISION:
 02/02/2010 DRT 2" HANDWHEEL G.V. TO BE BURIED RATHER
 THAN LEFT ABOVE GROUND.

TYPICAL WATER SERVICE DETAIL
 FOR 1 1/2" – 2" METER SERVICES
 (FOR DEVELOPER PROJECTS ONLY)

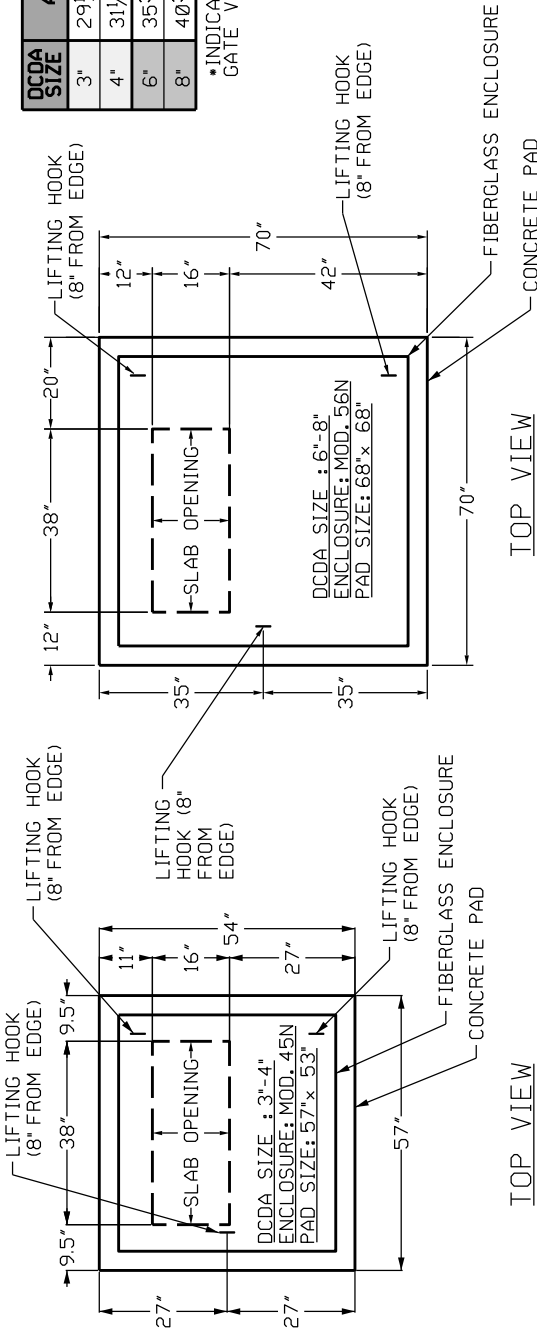
WATER ONLY
 UPDATED: 02/02/2010

W20

GRAND STRAND
 WATER & SEWER AUTHORITY

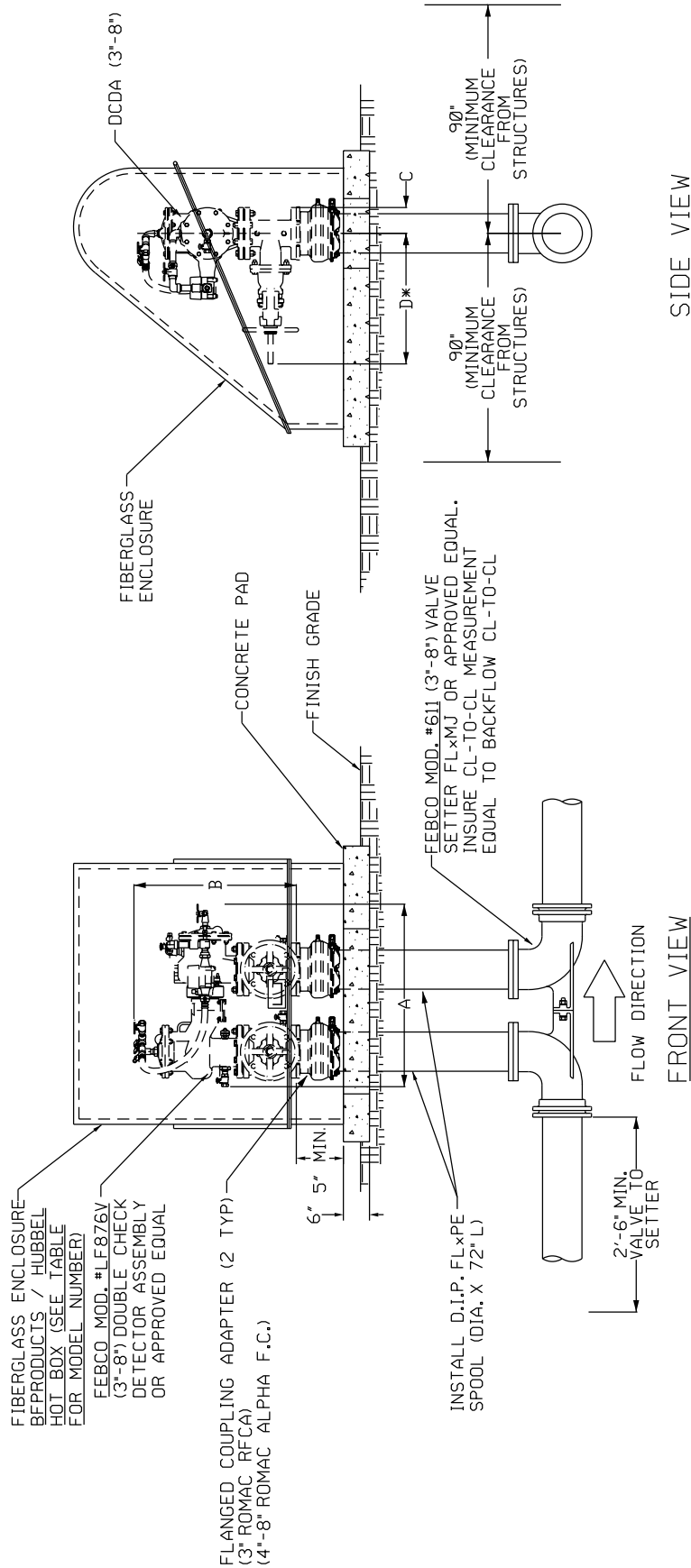
DCDA SIZE	A	B	C	D*	ENCLOSURE MODEL
3"	29 1/8"	25 3/4"	3 3/4"	22 1/4"	45N (BFPRODUCTS)
4"	31 1/8"	27 3/4"	4 1/2"	23 1/4"	LBF4500 (HUBBEL HOT BOX)
6"	35 3/4"	32 3/4"	5 1/2"	30 1/8"	56N (BFPRODUCTS)
8"	40 3/4"	36 3/4"	6 3/4"	37 3/4"	LBF6000 (HUBBEL HOT BOX)

*INDICATES NOMINAL DIMENSIONS WITH OSY GATE VALVE (FULL OPEN POSITION)



TOP VIEW

TOP VIEW



TYPICAL DOUBLE CHECK DETECTOR ASSEMBLY (3"-8") ABOVE GROUND MOUNT WITH ENCLOSURE

WATER ONLY
UPDATED: 8/27/2020

W22

GRAND STRAND
WATER & SEWER AUTHORITY

LATEST REVISION:
8/14/2017 DRT ADDED F.C.A.'S AND SPOOL LENGTHS.
8/27/2020 DRT ADDED SPEC'S FOR HUBBEL HOT BOX.