WATER DISTRIBUTION SYSTEM

571 Jennings Road
Statesville, North Carolina 28625
www.iredellwater.com

PO Box 1844
Statesville, North Carolina 28687-1844

STANDARD WATER DETAILS

May 2025

GENERAL NOTES:

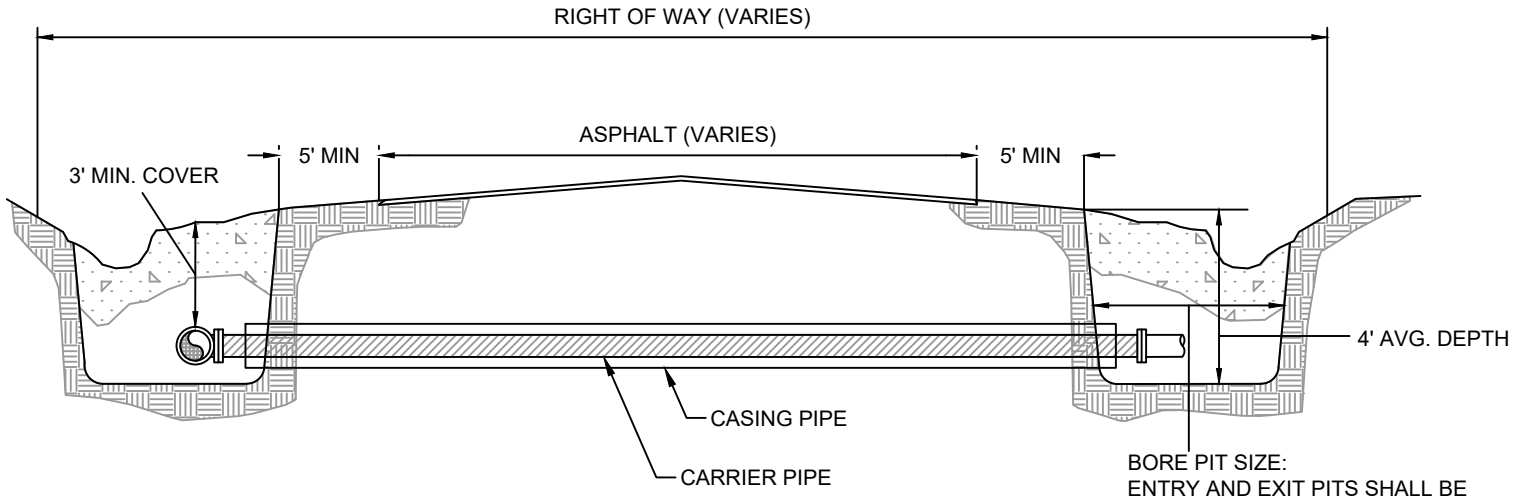
1. CONTRACTOR SHALL HAVE COMPLETE SET OF PLANS AS WELL AS ALL PERMIT APPROVALS ON THE JOB SITE AT ALL TIMES
2. CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH IREDELL WATER CORPORATION STANDARDS AND SPECIFICATIONS.
3. CONTRACTOR IS FULLY RESPONSIBLE FOR CONTACTING ALL APPROPRIATE PARTIES AND ASSURING THAT UTILITIES ARE LOCATED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CALL 811 FOR UTILITY LOCATING SERVICES 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ALL COSTS ASSOCIATED WITH ANY DAMAGE TO EXISTING UTILITIES RESULTING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT THE EXISTING UTILITIES DURING CONSTRUCTION SHALL BE BORNE SOLELY BY THE CONTRACTOR.
4. CONTRACTOR SHALL NOTIFY IREDELL WATER CORPORATION A MINIMUM OF ONE WEEK PRIOR TO INTERRUPTING WATER SERVICE TO MAKE CONNECTIONS ON TIE-INS TO EXISTING WATER SUPPLY.
5. DATE AND TIME FOR SHUTDOWN SHALL BE COORDINATED WITH AND SHALL BE AT THE DISCRETION OF IREDELL WATER CORPORATION.
6. CONTRACTOR SHALL HAVE ALL MATERIALS, TOOLS, EQUIPMENT AND SUFFICIENT PERSONNEL
   ON SITE PRIOR TO BEGINNING WORK TO MINIMIZE ANY POSSIBLE SHUTDOWN TIME.
7. WATER SERVICES MAY BE SHUTDOWN FOR A MAXIMUM OF FOUR HOURS. ALL WORK SHALL CONTINUE UNINTERRUPTED UNTIL ALL WATER SERVICE IS RESTORED.
8. EXISTING VALVES SHALL BE OPERATED AND CLOSED ONLY BY IREDELL WATER CORPORATION PERSONNEL.
9. UTILITY EASEMENTS SHALL BE A MINIMUM OF 20 FEET WIDE FOR A SINGLE UTILITY PIPELINE, AND A MINIMUM OF 30 FEET WIDE FOR PIPES DEEPER THAN 16 FEET. FOR MULTIPLE PIPES, EASEMENT SHALL PROVIDE A MINIMUM OF 10 FEET CLEARANCE ON EITHER SIDE OF EACH PIPE. EASEMENT PLATS SHALL BE RECORDED AS IREDELL WATER CORPORATION EASEMENT.
10. SHORING WILL BE ACCORDING TO OSHA TRENCHING STANDARDS PART 1926 SUBPART P, OR AS AMENDED.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OF EXISTING UTILITIES IF REQUIRED DURING INSTALLATION OF NEW WORK.ANY RELOCATION OF EXISTING UTILITIES MUST BE COORDINATED WITH THE AFFECTED UTILITY COMPANY.
12. CONTRACTOR SHALL MAKE EVERY EFFORT TO SAVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. PROPERTY IRONS, MONUMENTS, AND OTHER PERMANENT POINTS OF REFERENCE DESTROYED BY THE CONTRACTOR SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
13. CONTRACTOR SHALL CLEAR AND GRUB ALL UTILITY EASEMENTS, AS DIRECTED BY THE ENGINEER, TO INSTALL NEW WATER MAINS. ON ROADWAY RIGHT-OF-WAYS, THE CONTRACTOR SHALL ONLY REMOVE THE TREES MARKED ON THE PLANS AND SHALL MAKE EVERY EFFORT DURING CONSTRUCTION TO PROTECT THE TREES THAT WILL NOT BE REMOVED.
14. EXISTING BUILDING LOCATIONS ARE APPROXIMATE AND SHOWN FOR INFORMATION ONLY.
15. ALL DRIVEWAYS SHALL BE REPAIRED TO PRE-EXISTING CONDITIONS OR BETTER AS SOON AS CONSTRUCTION HAS PASSED.
16. CONTRACTOR SHALL REPLACE ALL DRIVEWAY PIPES AND OTHER DRAINAGE PIPES/CULVERTS THAT ARE DISTURBED WHILE INSTALLING THE WATER LINE WITH NEW PIPES/CULVERTS. IF CULVERTS NEED TO BE REMOVED AND REPLACED, THEY SHALL BE AT THE SAME INVERTS UNLESS OTHERWISE APPROVED BY THE OWNER OR ENGINEER. ALL PIPE/CULVERTS SHALL MEET THE REQUIREMENTS OF NCDOT.
17. THE CONTRACTOR SHALL SUPPORT ALL UTILITY POLES AS NECESSARY. THE CONTRACTOR SHALL COORDINATE UTILITY POLE SUPPORT WITH THE APPROPRIATE UTILITY COMPANIES.
18. CONTRACTOR SHALL RESTORE/REPLACE ALL SIGNS, MAILBOXES, ETC. ENCOUNTERED DURING CONSTRUCTION TO ORIGINAL CONDITION.
19. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THE EXISTING GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
20. ALL ROADWAY DITCHES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER AND CONFORM TO NCDOT REQUIREMENTS. ALL DITCHES SHALL BE LINED WITH STRAW AND NET MATTING UNLESS OTHERWISE NOTED.
21. THE CONTRACTOR SHALL REMOVE EXISTING FENCING AS REQUIRED TO INSTALL THE WATERLINES AND REPLACE WITH NEW FENCING OF THE SAME TYPE.
22. ALL EXCAVATED MATERIAL SHALL BE PLACED WITHIN THE LIMITS OF DISTURBANCE DURING WATERLINE INSTALLATION. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SEDIMENT AND EROSION CONTROL MEASURES TO CONTROL RUN-OFF. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF LEGALLY.
23. CONTRACTOR TO VERIFY FINAL FIRE HYDRANT LOCATIONS WITH ENGINEER. PER NCDOT, FIRE HYDRANTS MUST BE A MINIMUM OF 5' BEHIND THE DITCH LINE.
24. MINIMUM COVER OF 36" FOR WATER MAINS
25. CONTRACTOR SHALL INSTALL A COPPER TRACER WIRE AND DETECTABLE TAPE WITH PROPOSED PVC WATER MAIN AND INDIVIDUAL SERVICE LINES FOR FUTURE LOCATING.
26. ALL VALVES, HYDRANTS, AND FITTINGS SHALL BE MECHANICAL, RESTRAINED JOINTS WITH "GRIP RING" BY ROMAC INDUSTRIES, INC. WHEN INSTALLED ON PVC PIPE AND RESTRAINED WITH MEGALUG, SERIES 1100 AS MANUFACTURED BY EBBA IRON OR APPROVED EQUAL WHEN INSTALLED ON DUCTILE IRON PIPE. THIS IS IN ADDITION TO REQUIRED CONCRETE BLOCKING.
27. ALL VALVES SHALL OPEN COUNTERCLOCKWISE (LEFT) AND CLOSE CLOCKWISE (RIGHT).
28. CONTRACTOR WILL NOTIFY IREDELL WATER A MINIMUM OF 48 HOURS PRIOR TO FILLING OR FLUSHING ANY MAINS.
29. DISINFECTING SHALL TAKE PLACE IN THE PRESENCE OF THE ENGINEER.
30. THE CONTRACTOR SHALL FURNISH AND INSTALL 3 VALVES AT EACH INTERSECTION IF THE WATERMAIN CREATES OR WILL CREATE A LOOP. THE CONTRACTOR SHALL FURNISH AND INSTALL 2 VALVES AT EACH INTERSECTION OF A DEAD-END MAIN WITH NO FUTURE EXTENSIONS POSSIBLE.
31. DEVELOPER SHALL LOOP WATERMAIN IF DEVELOPMENT HAS OR IS REQUIRED TO HAVE TWO OR MORE ACCESS ROADS.

DRAWN BY:	AVT
DATE:	05/13/2024
REVISION:	

W – 1

GENERAL NOTES

IREDELL WATER CORPORATION



BORING DIAGRAM

PIPE CASING SCHEDULE

CARRIER PIPE	CASING PIPE
2"	4"
4"	8"
6"	12"
8"	16"
10"	18"
12"	20"

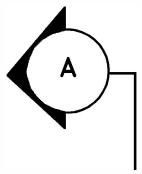
NOTE:
1. CASING PIPE JOINTS SHALL BE CONTINUOUS WELDED WITHOUT DEFLECTION
2. CARRIER PIPE SHALL BE SUPPORTED WITH SPIDERS, SIZED PER MANUFACTURER'S RECOMMENDATIONS. ENDS OF CASING PIPE SHALL BE SEALED WITH FLEXIBLE CASING SEALS
3. COMPLETED CASING PIPE INTERIOR SHALL BE SWABBED WITH LUBRICANT PRIOR TO CARRIER INSTALLATION
4. CARRIER PIPE SHALL BE PULLED THROUGH CASING PIPE.
5. ALL OPEN CUT INSTALLATIONS UNDER NCDOT, CITY MAINTAINED AND/OR PRIVATE DEVELOPMENT ROADS REQUIRE INSTALLATION OF CASING PIPE

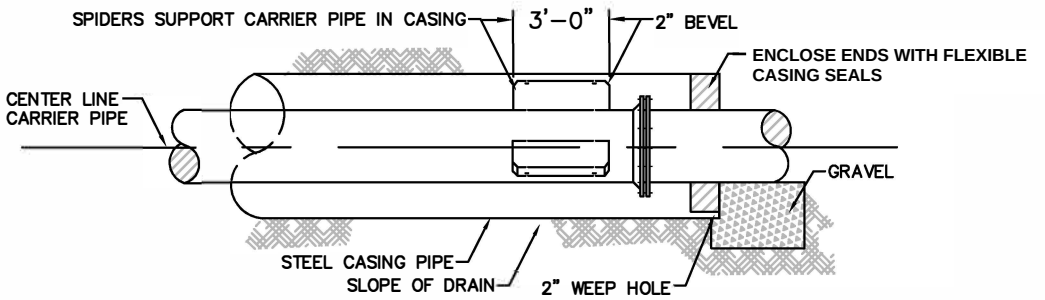
DRAWN BY:	JGA/AVT
DATE:	05/02/2022
REVISION:	05/13/2024

W-1A

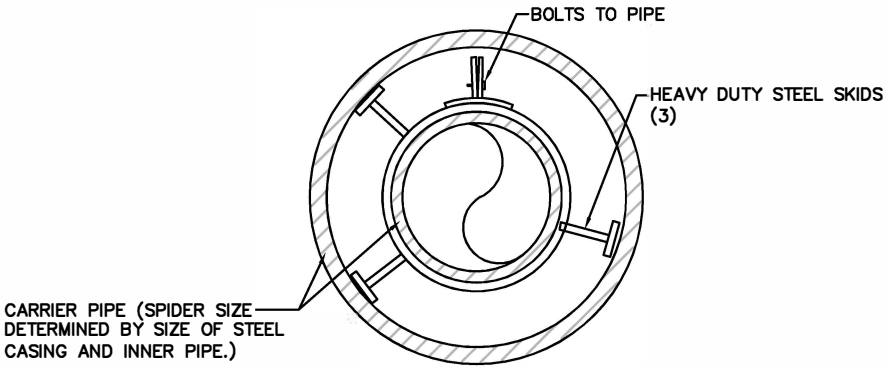
JACK AND BORE AND OPEN CUT STEEL CASING PART 1

NOT TO SCALE

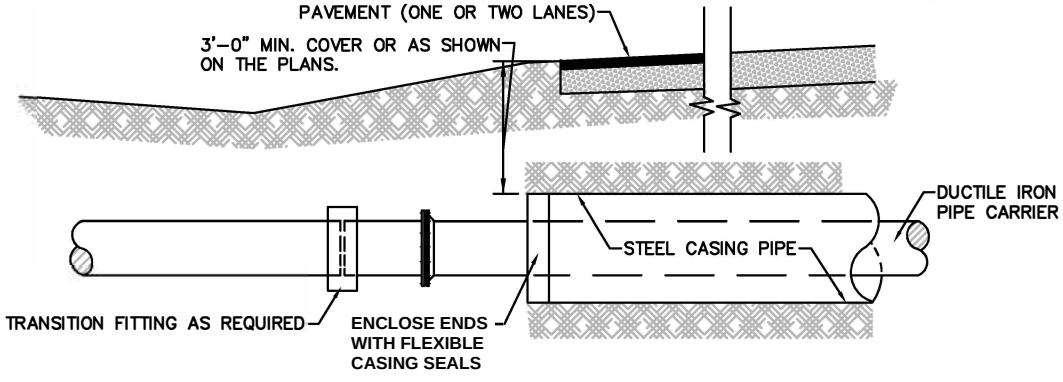




ELEVATION



SECTION "A"



PROFILE

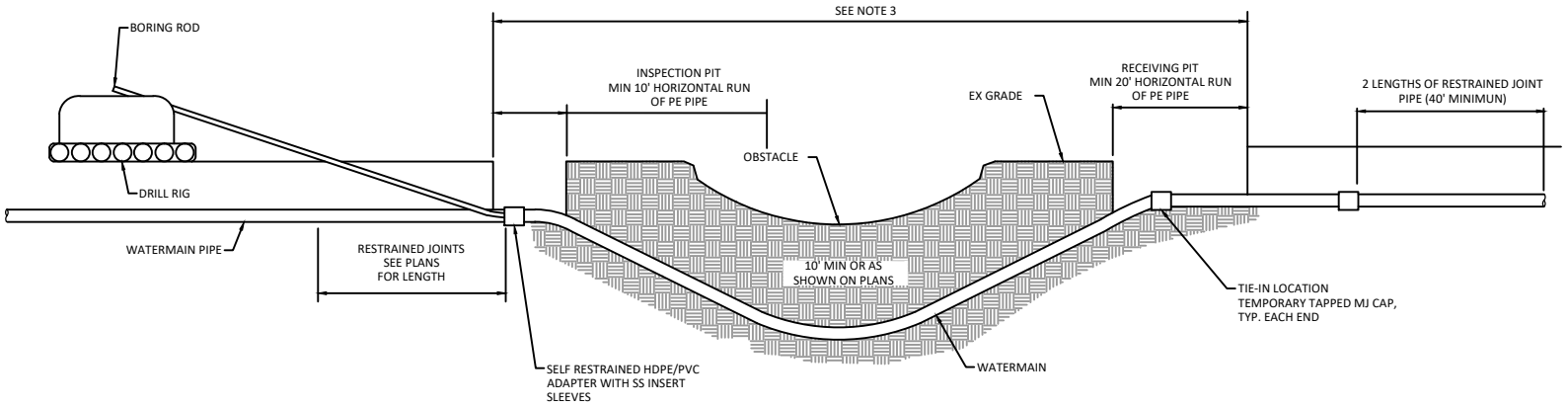
IREDELL WATER CORPORATION

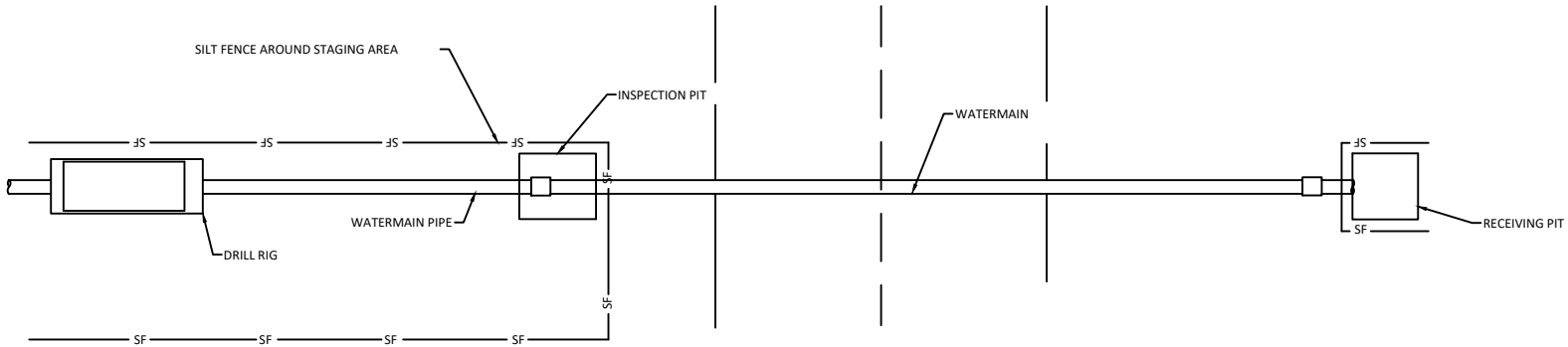
JACK AND BORE AND OPEN CUT STEEL CASING PART 2

NOT TO SCALE

DRAWN BY:	JGA
DATE:	06/13/2022
REVISION:	

W-1B





NOTES:

1. A PLAN & PROFILE SHALL BE PROVIDED FROM ENTRY TO EXIT FOR EACH DIRECTIONAL BORE SECTION BY THE BORE CONTRACTOR.
2. ALL BORE SECTIONS SHALL BE HYDROSTATICALLY TESTED PER SPECIFICATIONS UPON COMPLETION OF INSTALLATION & PRIOR TO PLACING THE PIPELINE INTO SERVICE.
3. LENGTH OF CROSSING, LOCATION OF INSPECTION PIT, NUMBER OF PIPE JOINTS, LOCATION OF BORE MACHINE, AUGER ENTRANCE LOCATION, & TIE-IN POINTS ARE TO BE APPROVED BY ENGINEER PRIOR TO START OF WORK.
4. THE BORE DEVELOPED FOR THE LEAD-IN END OF THE PIPE SHALL BE KEPT TO A MINIMUM DIAMETER FOR THE PIPE INSTALLATION. THE LEAD-IN END SHALL BE PULLED THROUGH WITHOUT THE MH FLANGE ATTACHED FOR LARGER THAN 6" PIPE INSTALLATIONS. THE MJ FLANGE FOR SAID LEAD-IN END SHALL BE INSTALLED AFTER THE PIPE INSTALLATION WITH THE USE OF A SPLIT MG FLANGE.
5. TRACERWIRE SHALL BE #12 AWG COPPER CLAD STEEL WITH A MINIMUM 1,150 LB. BREAK LOAD AND A MINIMUM 45 MIL HDPE INSULATION THICKNESS.

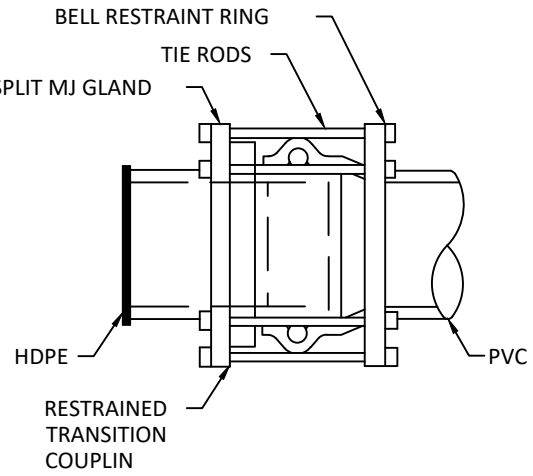
DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	05/13/2024

W-2A

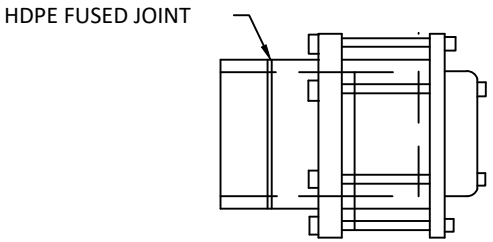
HORIZONTAL DIRECTIONAL DRILL PART 1

NOT TO SCALE

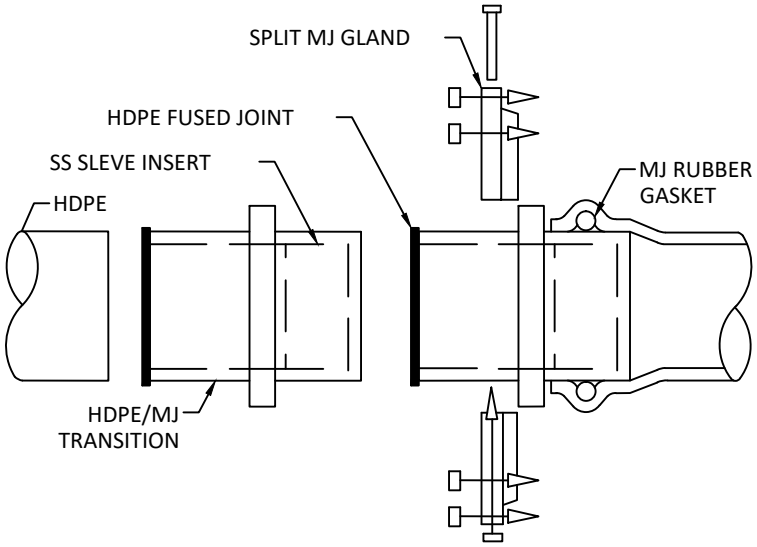
REDELL WATER CORPORATION



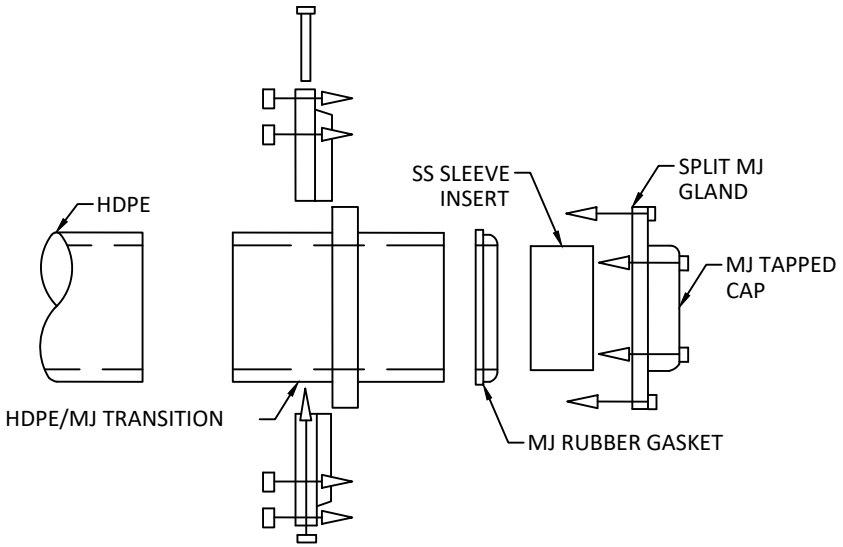
HDPE / PVC TRANSITION ASSEMBLED



HDPE / MJ TRANSITION ASSEMBLED



HDPE / PVC TRANSITION ASSEMBLY



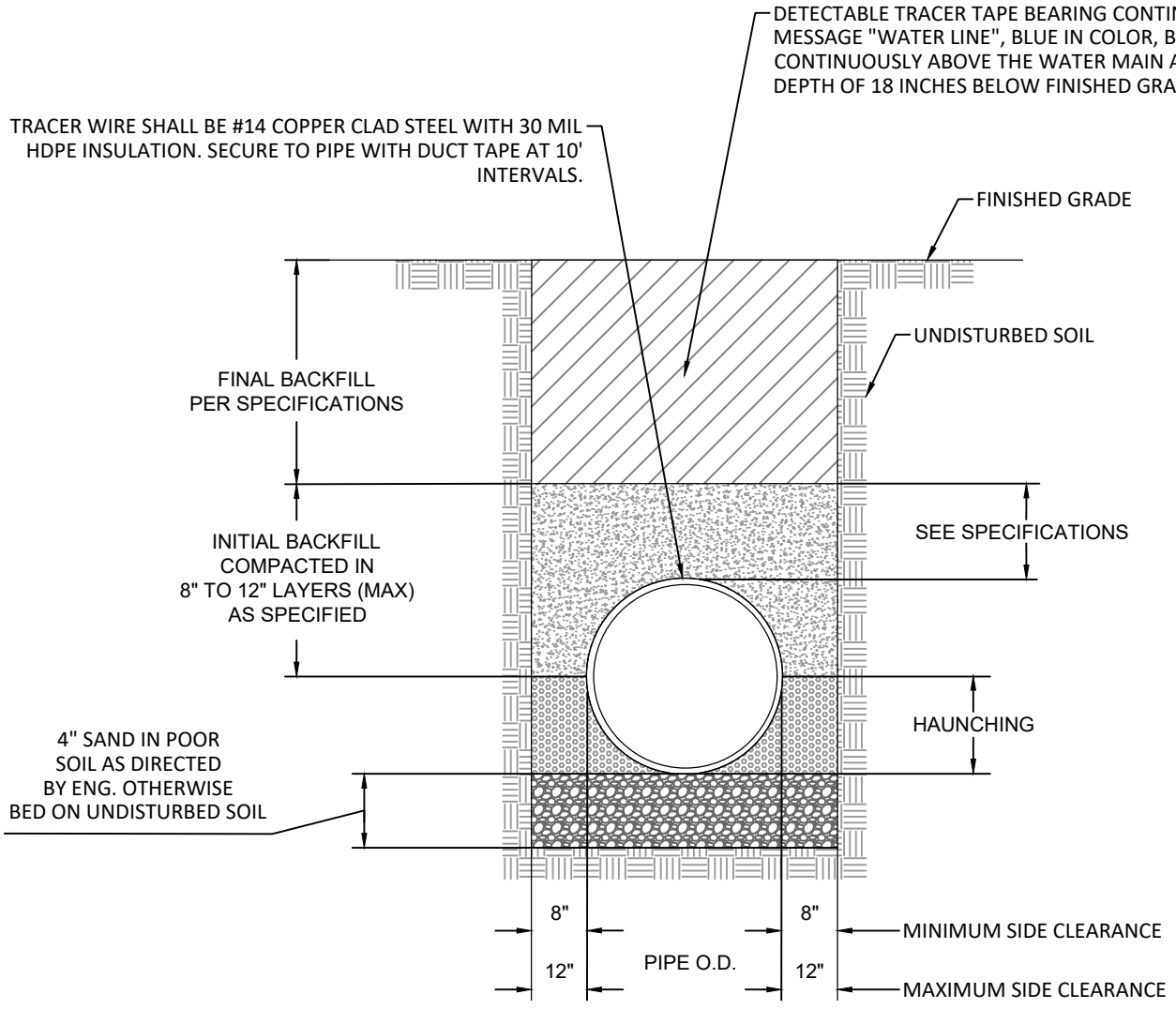
HDPE / MJ TRANSITION ASSEMBLY

DRAWN BY:	JGA	W-2B
DATE:	05/20/2022	
REVISION:	05/13/2024	

HORIZONTAL DIRECTIONAL DRILL
PART 2

NOT TO SCALE

IRBELL WATER CORPORATION



BEDDING REQUIRED FOR PVC

IREDELL WATER CORPORATION

PIPE TRENCH PART 1

NOT TO SCALE

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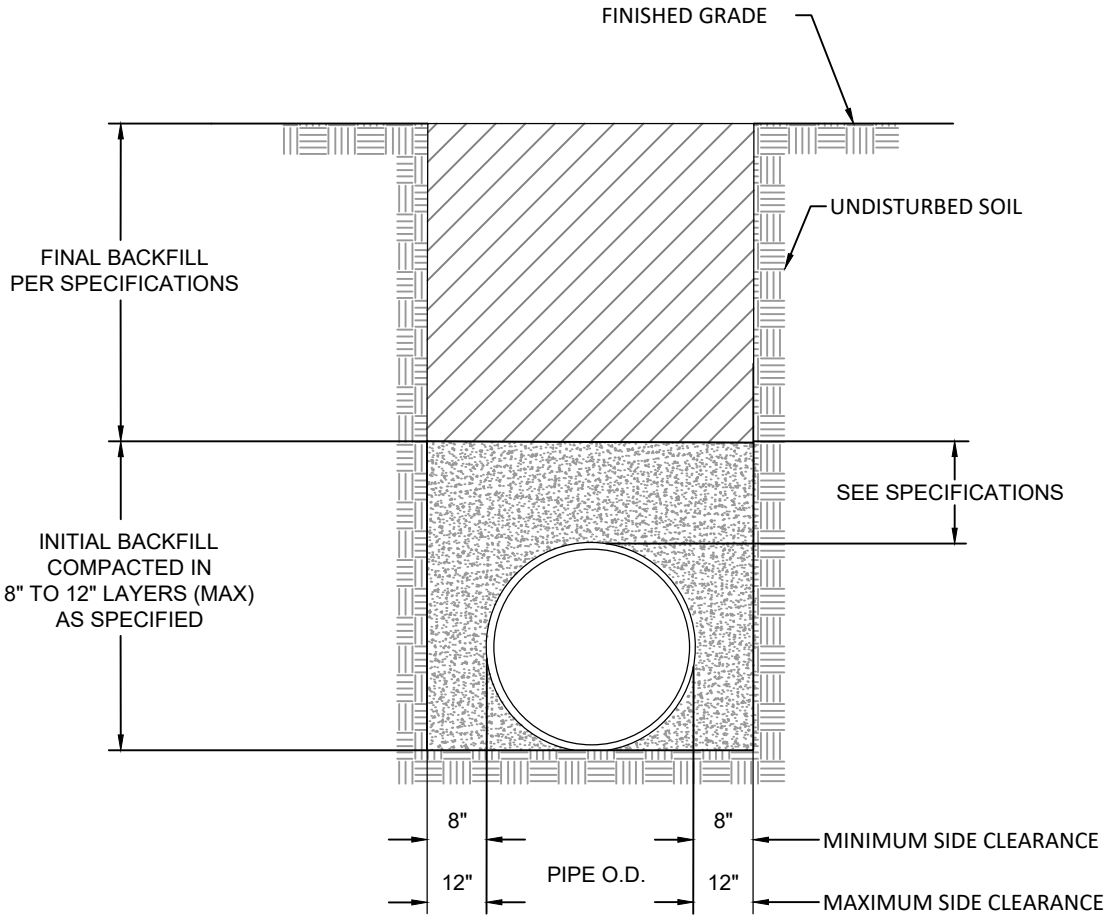
DATE:	05/20/2022
REVISION:	05/13/2024

W–3A



BEDDING REQUIRED FOR DIP

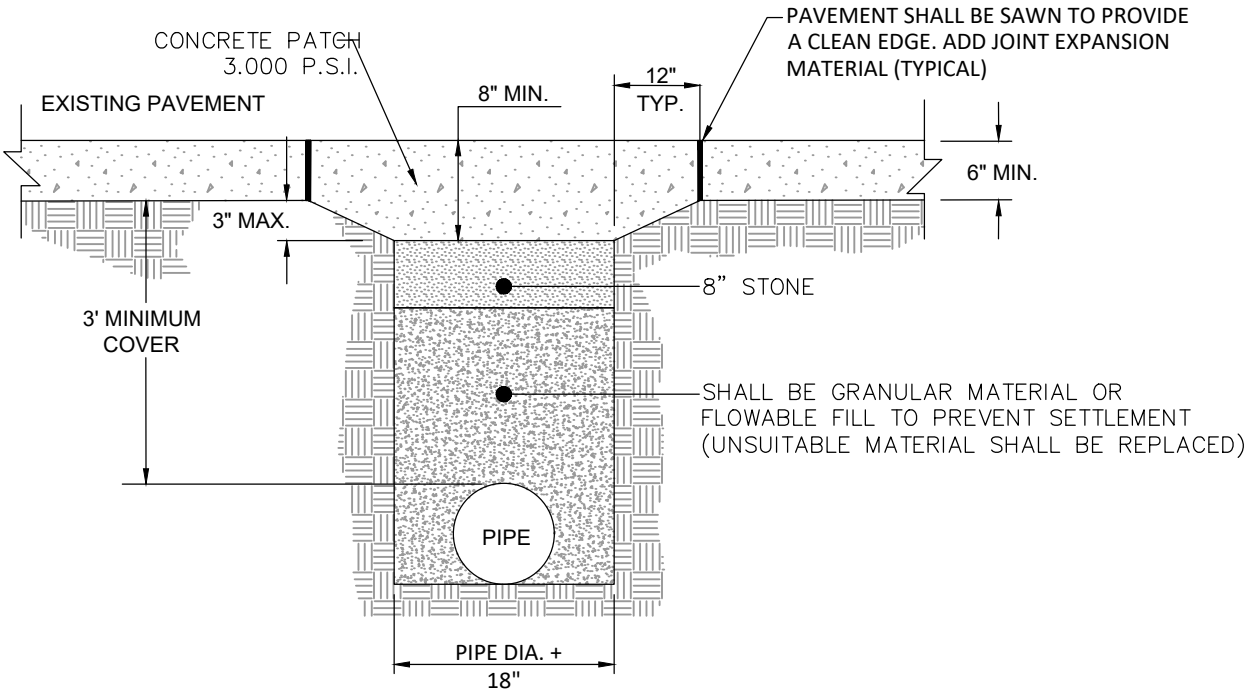
IREDELL WATER CORPORATION

PIPE TRENCH PART 2

NOT TO SCALE

DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	05/13/2024

W-3B



TRENCH AND PAVEMENT REPAIR - PRIVATE DRIVES AND ROADS

NOTES:

1. ALL TRAFIC CONTROL MUST CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND NCDOT STANDARDS.
2. ALL PAVEMENT CUTS SHALL BE REPAIRED ON THE SAME DAY. IF CONDITIONS DO NOT PERMIT A PERMANENT REPAIR WITHIN THE GIVEN TIME LIMIT, PERMISSION TO MAKE A TEMPPORARY REPAIR MUST BE OBTAINED FROM THE ENGINEER.
3. CONCRETE TRENCH CAP ON ASPHALT STREETS SHALL BE USED ONLY DURING INCLEMENT WEATHER WHEN ASPHALT PLANTS ARE NOT OPERATING.
4. IN ALL OPEN TRENCHES, BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYNG COMPACTION REQUIREMENTS BY SOILS TESTING CERTIFIED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER.
5. BACKFILL WITH A HIGH CLAY CONTENT, HIGH SHRINK-SWELL POTENTIAL, OR HIGH MOISTURE CONTENT THAT CANNOT MEET COMPACTION REQUIREMENTS SHALL BE DEEMED UNSUITABLE AND SHALL BE REPLACED WITH SUITABLE BACKFILL MATERIAL.
6. ALL PAVEMENT PATCHES SHALL PROVIDE A UNIFORM AND SMOOTH DRIVING SURFACE.

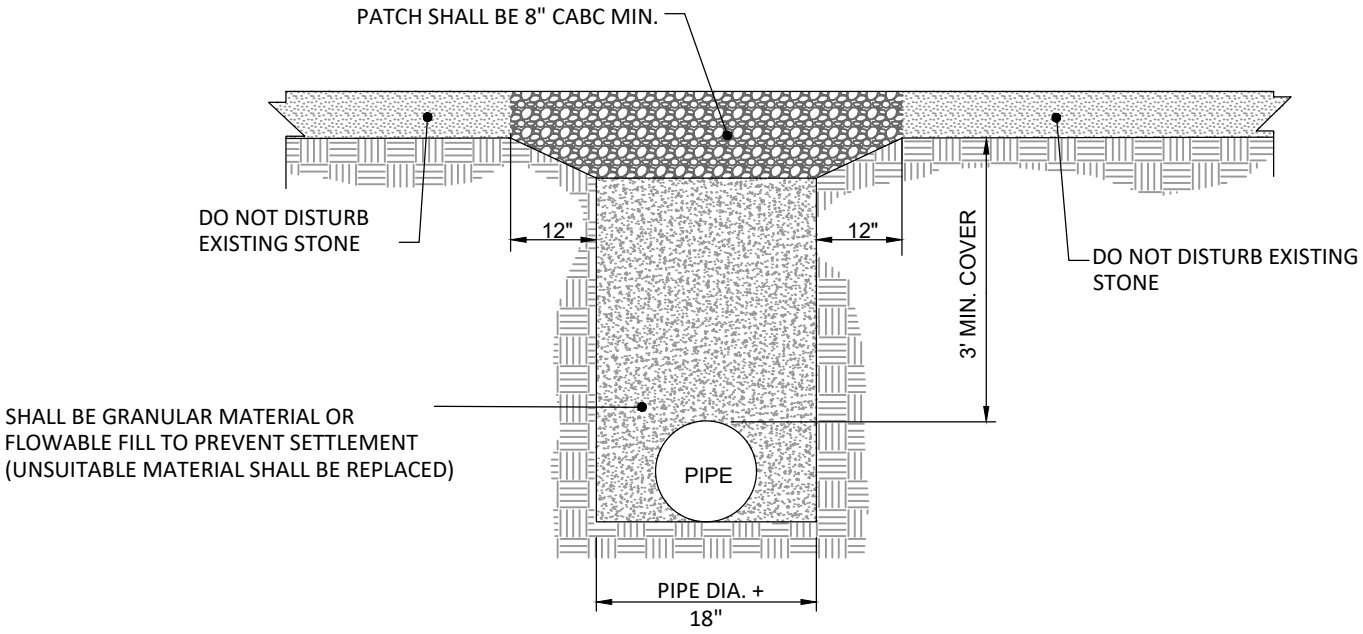
IREDELL WATER CORPORATION

TRENCH AND CONCRETE REPAIR
FOR PRIVATE DRIVES AND ROADS
PART 1

NOT TO SCALE

DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	11/22/2024

W–4A



TRENCH AND PAVEMENT REPAIR - PRIVATE DRIVES AND ROADS

NOTES:

1. ALL TRAFIC CONTROL MUST CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND NCDOT STANDARDS.
2. ALL PAVEMENT CUTS SHALL BE REPAIRED ON THE SAME DAY. IF CONDITIONS DO NOT PERMIT A PERMANENT REPAIR WITHIN THE GIVEN TIME LIMIT, PERMISSION TO MAKE A TEMPPORARY REPAIR MUST BE OBTAINED FROM THE ENGINEER.
3. CONCRETE TRENCH CAP ON ASPHALT STREETS SHALL BE USED ONLY DURING INCLEMENT WEATHER WHEN ASPHALT PLANTS ARE NOT OPERATING.
4. IN ALL OPEN TRENCHES, BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYNG COMPACTION REQUIREMENTS BY SOILS TESTING CERTIFIED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER.
5. BACKFILL WITH A HIGH CLAY CONTENT, HIGH SHRINK-SWELL POTENTIAL, OR HIGH MOISTURE CONTENT THAT CANNOT MEET COMPACTION REQUIREMENTS SHALL BE DEEMED UNSUITABLE AND SHALL BE REPLACED WITH SUITABLE BACKFILL MATERIAL.
6. ALL PAVEMENT PATCHES SHALL PROVIDE A UNIFORM AND SMOOTH DRIVING SURFACE.

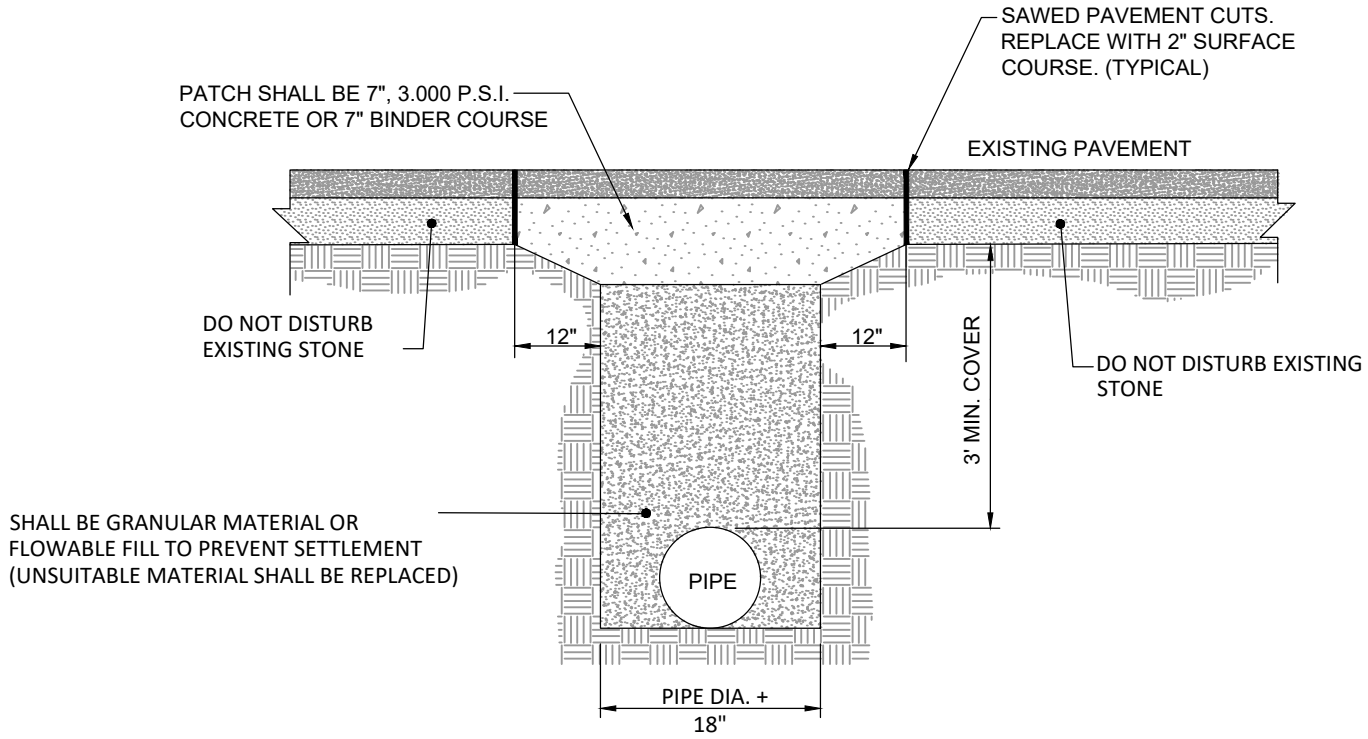
IREDELL WATER CORPORATION

TRENCH AND STONE REPAIR FOR PRIVATE DRIVES AND ROADS PART 2

NOT TO SCALE

DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	11/22/2024

W-4B



TRENCH AND PAVEMENT REPAIR - PRIVATE DRIVES AND ROADS

NOTES:

1. ALL TRAFIC CONTROL MUST CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND NCDOT STANDARDS.
2. ALL PAVEMENT CUTS SHALL BE REPAIRED ON THE SAME DAY. IF CONDITIONS DO NOT PERMIT A PERMANENT REPAIR WITHIN THE GIVEN TIME LIMIT, PERMISSION TO MAKE A TEMPPORARY REPAIR MUST BE OBTAINED FROM THE ENGINEER.
3. CONCRETE TRENCH CAP ON ASPHALT STREETS SHALL BE USED ONLY DURING INCLEMENT WEATHER WHEN ASPHALT PLANTS ARE NOT OPERATING.
4. IN ALL OPEN TRENCHES, BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYNG COMPACTION REQUIREMENTS BY SOILS TESTING CERTIFIED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER.
5. BACKFILL WITH A HIGH CLAY CONTENT, HIGH SHRINK-SWELL POTENTIAL, OR HIGH MOISTURE CONTENT THAT CANNOT MEET COMPACTION REQUIREMENTS SHALL BE DEEMED UNSUITABLE AND SHALL BE REPLACED WITH SUITABLE BACKFILL MATERIAL.
6. ALL PAVEMENT PATCHES SHALL PROVIDE A UNIFORM AND SMOOTH DRIVING SURFACE.

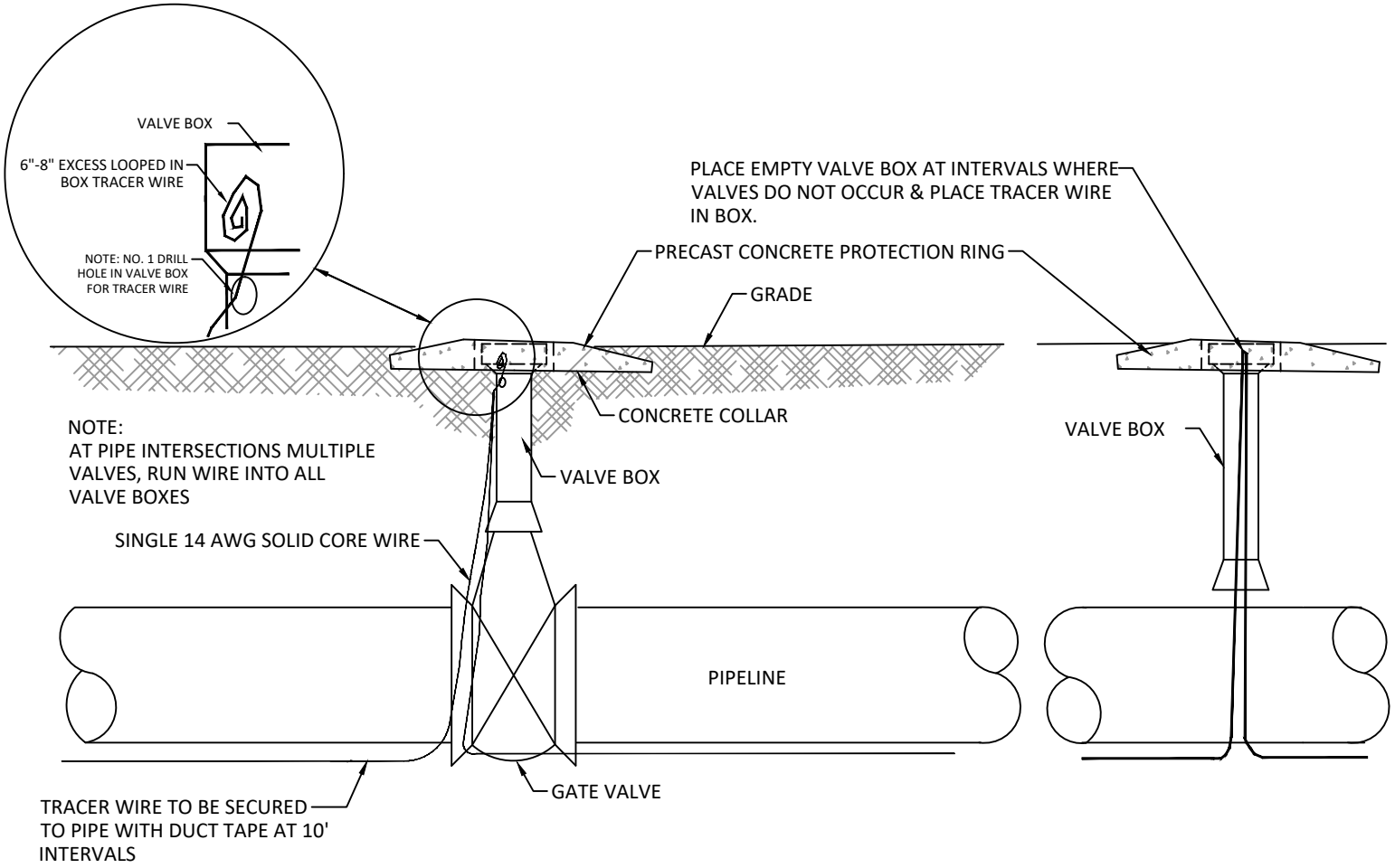
IREDELL WATER CORPORATION

TRENCH AND PAVEMENT REPAIR FOR PRIVATE DRIVES AND ROADS PART 3

NOT TO SCALE

DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	11/22/2024

W-4C



NOTES:
1. DRILL HOLE IN VALVE BOX TO INSERT TRACER WIRE, BRING UP TO INSIDE AND ROLL UP AT LEAST 6"-8" EXCESS
2. PLACE TRACER WIRE IN VALVE BOX AT 1,000" INTERVALS OR AS NOTED ON THE PLANS, TYPICAL
3. ALL NEW TRACER WIRE INSTALLATIONS SHALL BE TESTED UNDER THE DIRECTION OF THE ENGINEER AT PROJECT COMPLETION

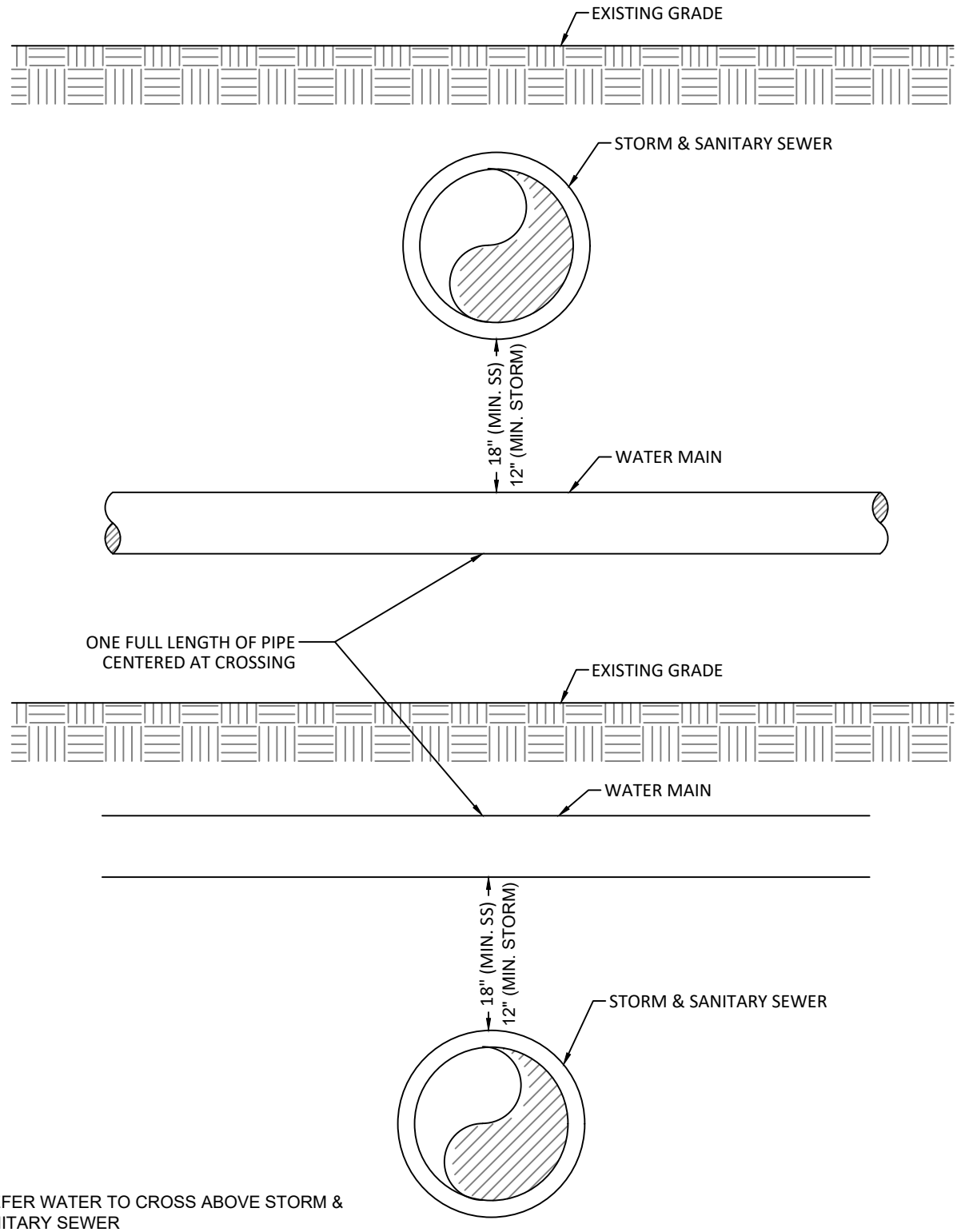
DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	11/22/2024

W-5

TRACER WIRE

NOT TO SCALE

REDELL WATER CORPORATION



NOTES:

1. PREFER WATER TO CROSS ABOVE STORM & SANITARY SEWER
2. SEPARATION PER NCDEQ PUBLIC WATER SUPPLY RULE, 15A:18C.0900

IREDELL WATER CORPORATION

STORM & SANITARY SEWER CROSSING

NOT TO SCALE

DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	11/22/2024

W–6

NO. DESCRIPTION

① WATER MAIN

② BALL CORPORATION STOP - CC (TAPER) THREAD x IPS INSTA-TITE (MUELLER H15005)

③ ENDOPURE PE ¾" TUBING (1" FOR DBL METER SERVICE)

④ METER BY IREDELL WATER CORPORATION

⑤ METER SETTER - SEE TABLE FOR SIZE NOTES

⑥ TRI - CAST 1118 METER BOX & LID (LID TO BE SOLID)

⑦ AWG #14 GAUGE COPPER TRACER WIRE (THWN) - WITH BLUE INSULATION - TERMINATE IN METER BOX WITH 24" EXCESS WIRE (COILED)

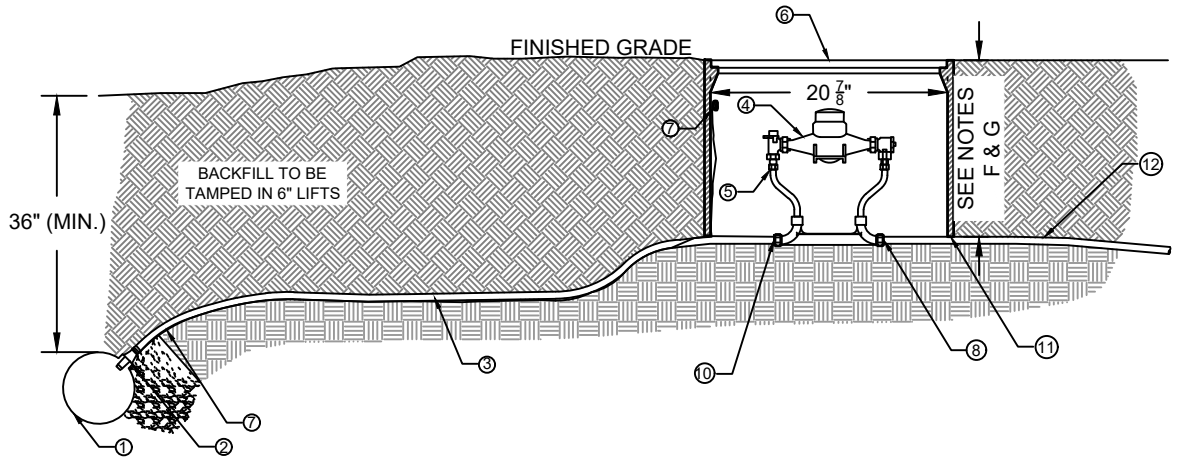
⑧ OUTLET SIDE OF SETTER MUELLER H14222N

⑨ HINGED BRONZE SADDLE CC THREADS (MUELLER S-13000 SERIES)

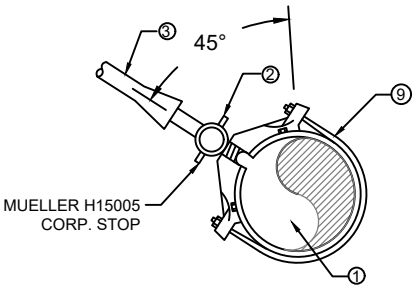
⑩ INLET SIDE OF SETTER MUELLER H14229N

⑪ SOLID CONCRETE BRICKS - DIAGONAL AT EACH CORNER

⑫ 18" - 24" BRASS NIPPLE TO CUSTOMER VALVE, PRV OR BACKFLOW DEVICE



SERVICE TAP



SERVICE SIZE	PART NAME	PART NUMBER
3 / 4"	METER SETTER	MUELLER B2404 R2 N (5 / 8" X 3 / 4" X 7")
1"	METER SETTER	MUELLER B2404 R2A N (1" X 10")

NOTE:

A. MINIMUM DISTANCE CENTER TO CENTER ON SERVICES OR TO BELLS OR SPIGOTS SHALL BE 3'-0'' AS MEASURED ALONG THE MAIN.
B. CENTER METER SETTER IN METER BOX.
C. SHOWN AS ¾'' SERVICE USE 1'' COMPONENTS FOR 1'' DOMESTIC WATER SERVICE.
D. METER BOX TO BE LOCATED AT BACK OF R/W OR UTILITY EASEMENT IF PROVIDED
E. NO TAPS OR SERVICES ALLOWED IN OR UNDER DRIVEWAYS. METER BOXES NOT ALLOWED IN CONCRETE DRIVES OR SIDEWALKS.
F. ¾" PIPE - 12" MIN TO 16" MAX DEPTH (GRADE TO TOP OF PIPE)
G. 1" PIPE - 18" MIN TO 22" MAX DEPTH (GRADE TO TOP OF PIPE)

DRAWN BY:	JGA
DATE:	05/20/2022
REVISION:	11/22/2024

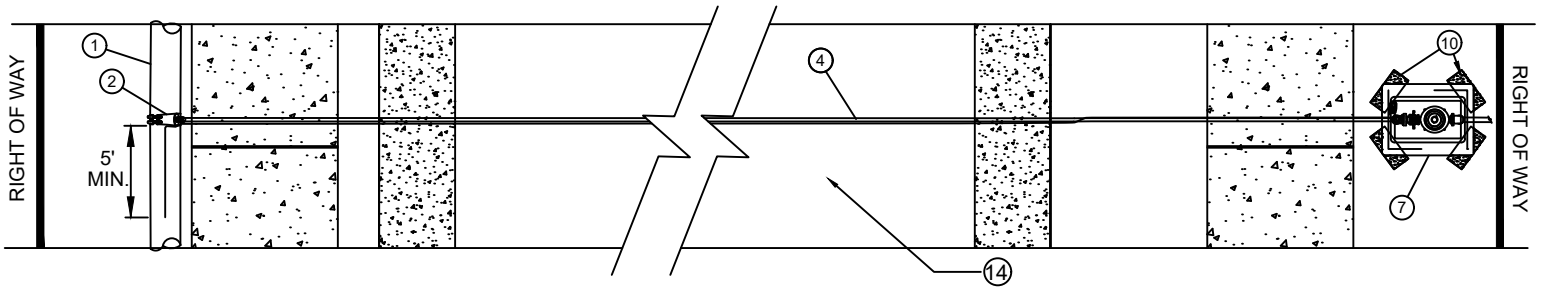
W – 7

5/8'' X 3/4'' – 1'' SHORT SIDE WATER SERVICE CONNECTION

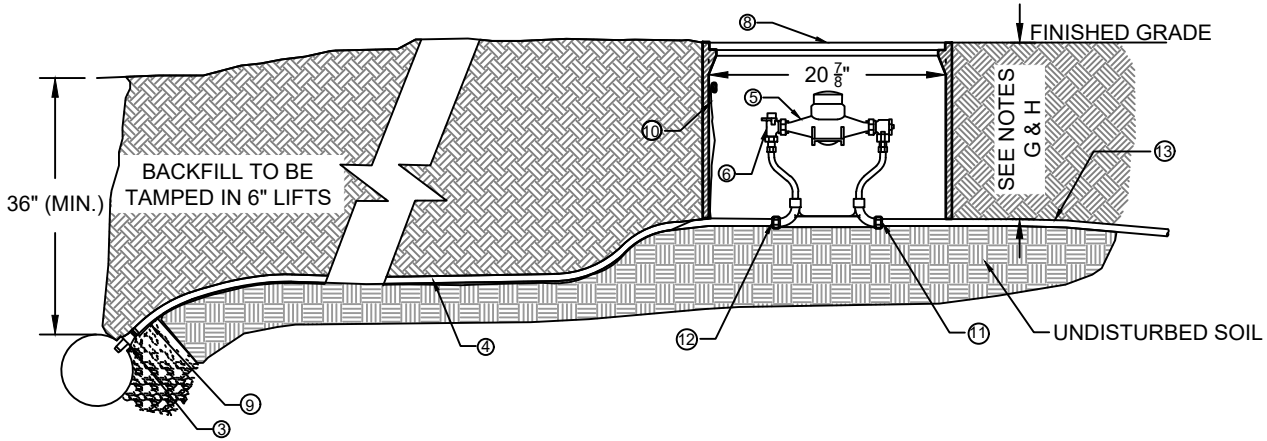
NOT TO SCALE

IREDELL WATER CORPORATION

NO.	DESCRIPTION
①	WATER MAIN
②	HINGED BRONZE SADDLE CC THREADS (MUELLER S-13000 SERIES)
③	BALL CORPORATION STOP - CC (TAPER) THREAD x IPS INSTA-TITE (MUELLER H15005)
④	ENDOPURE PE ¾" TUBING
⑤	METER BY IREDELL WATER CORPORATION
⑥	METER SETTER- SEE TABLE FOR NOTES
⑦	SHELL
⑧	TRI - CAST 1118 METER BOX & LID, LID TO BE SOLID
⑨	AWG #14 GAUGE COPPER TRACER WIRE (THIN) - WITH BLUE INSULATION - TERMINATE IN METER BOX WITH 24" EXCESS WIRE (COILED)
⑩	SOLID STANDARD CONCRETE BRICKS - DIAGONAL AT CORNERS - 4 EACH
⑪	OUTLET SIDE OF SETTER MUELLER H14222N
⑫	INLET SIDE OF SETTER MUELLER H14229N
⑬	18" - 24" BRASS NIPPLE TO CUSTOMER VALVE, PRV OR BACKFLOW DEVICE
⑭	SLEEVE UNDER ROAD, BACK OF CURB TO BACK OF CURB



1'' OR ¾'' SERVICE CONNECTION
(LONG SIDE - PLAN VIEW)



NOTE:

A. MINIMUM DISTANCE CENTER TO CENTER ON SERVICES OR TO BELLS OR SPIGOTS SHALL BE 3'-0'' AS MEASURED ALONG THE MAIN.
B. NO TAPS OR SERVICES ALLOWED IN OR UNDER DRIVEWAYS. METER BOXES NOT ALLOWED IN CONCRETE DRIVES OR SIDEWALKS.
C. CENTER SETTER IN METER BOX.
D. SHOWN AS ¾'' SERVICE USE 1'' COMPONENTS FOR 1'' DOMESTIC WATER SERVICE.
E. IREDELL WATER CORPORATION MAINTENANCE ENDS AT DUAL PURPOSE NUT OUTLET SIDE OF SETTER
F. LONG SERVICE MUST BE SLEEVED WHEN OPEN CUT-MINIMUM SR 40 PIPE
G. ¾" PIPE - 14" MIN TO 18" MAX DEPTH (GRADE TO TOP OF PIPE)
H. 1" PIPE - 18" MIN TO 22" MAX DEPTH (GRADE TO TOP OF PIPE)

SERVICE SIZE	PART NAME	PART NUMBER
3 / 4"	METER SETTER	MUELLER N 2404N (5 / 8" X 3 / 4" X 7")
1"	METER SETTER	MUELLER B2404-2A10 (1" X 10")

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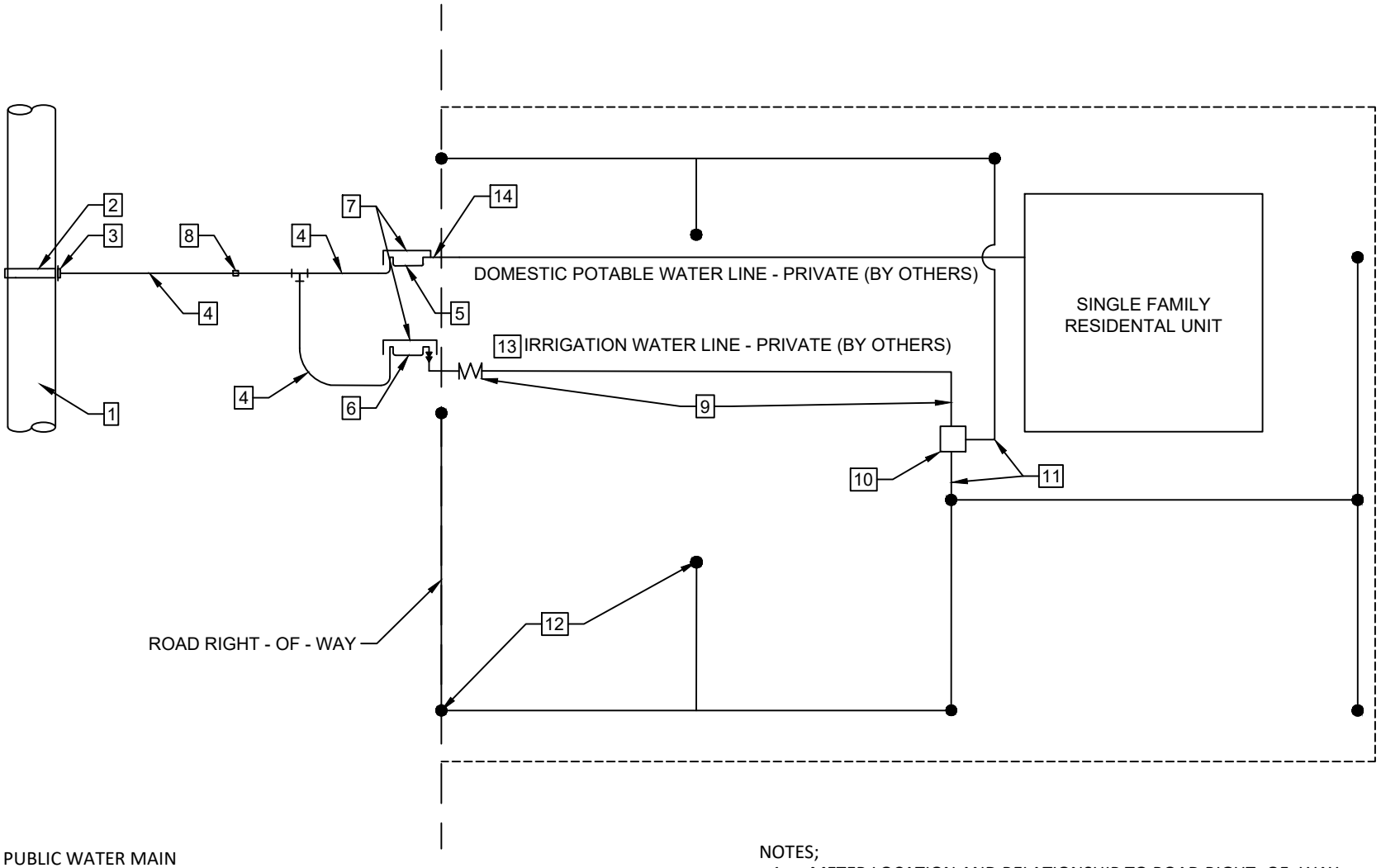
W-8

5/8'' X 3/4'' – 1'' DOMESTIC WATER LONG SIDE SERVICE CONNECTION

NOT TO SCALE

IREDELL WATER CORPORATION



1 PUBLIC WATER MAIN
2 SERVICE SADDLE
3 CORPORATION STOP
4 IPS HDPE SERVICE TUBING
5 DOMESTIC METER
6 IRRIGATION METER
7 STD. METER BOX
8 PIPE CRIMPING ON HDPE TUBING (OMIT WITH NEW CONSTRUCTION) W/ FULL CIRCLE REPAIR CLAMP
9 REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (BY OTHERS) OR PLACED AT HOUSE
10 IRRIGATION CONTROL SYSTEM
11 IRRIGATION PIPE SYSTEM
12 IRRIGATION SPRINKLER HEAD
13 BRANCHES AND/OR IRRIGATION SPRINKLER HEADS ARE NOT PERMITTED BETWEEN IRRIGATION METER 6 AND BACKFLOW ASSEMBLY 9
14 18" - 24" BRASS NIPPLE TO PRIVATE CUT-OFF VALVE

NOTES;

1. METER LOCATION AND RELATIONSHIP TO ROAD RIGHT- OF- WAY, CURB, SIDEWALK, AND DRIVEWAYS WILL VARY FROM SITE TO SITE BASED ON EXISTING CONDITIONS.
2. IREDELL WATER CORPORATION MAINTENANCE ENDS AT THE METER ASSEMBLY, AT THE LAST BRASS DUAL PURPOSE NUT.
3. DOMESTIC SERVICE SHALL BE ON THE RUN OF THE TEE AND IRRIGATION SERVICE SHALL BE ON THE BRANCH OF THE TEE AS SHOWN.
4. METER BOXES SHALL BE INSTALLED SIDE BY SIDE, WITH 2' MIN AND 3' MAX CLEARANCE
5. SERVICES SHALL BE ALL HDPE SERVICE TUBING. DO NOT MIX SERVICE TUBING MATERIALS.

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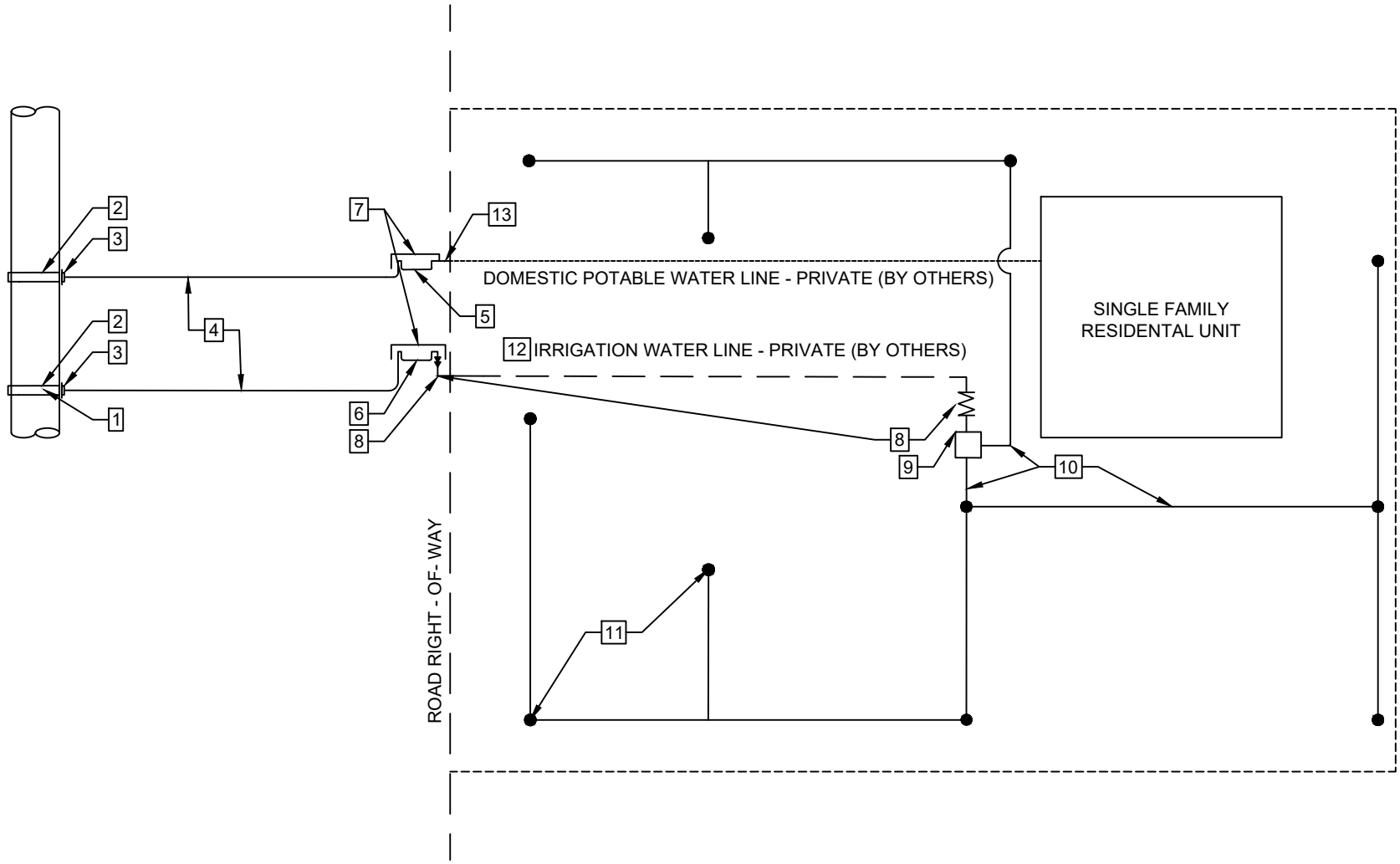
W—9

3/4'' OR 1'' DOMESTIC WATER METER SERVICE WITH SPLIT 3/4'' IRRIGATION SERVICE DUAL CHECK METER/BACKFLOW AT HOUSE

NOT TO SCALE

IREDELL WATER CORPORATION



1 PUBLIC WATER MAIN
2 SERVICE SADDLE
3 CORPORATION STOP
4 IPS HDPE SERVICE TUBING
5 METER
6 18" BRASS NIPPLE TO PRIVATE CUT-OFF VALVE
7 STD. METER BOX
8 REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (BY OTHERS) OR PLACED AT HOUSE
9 IRRIGATION CONTROL SYSTEM
10 IRRIGATION PIPE SYSTEM
11 IRRIGATION SPRINKLER HEAD
12 BRANCHES AND/OR IRRIGATION SPRINKLER HEADS ARE NOT PERMITTED BETWEEN IRRIGATION METER 6 AND BACKFLOW ASSEMBLY 8
13 18" - 24" BRASS NIPPLE TO PRIVATE CUT-OFF VALVE

NOTES:
1. METER LOCATION AND RELATIONSHIP TO ROAD RIGHT- OF- WAY, CURB, SIDEWALK, AND DRIVEWAYS WILL VARY FROM SITE TO SITE BASED ON EXISTING CONDITIONS.
2. IREDELL WATER CORPORATION MAINTENANCE ENDS AT THE METER ASSEMBLY, AT THE LAST DUAL PURPOSE BRASS FITTING.
3. METER BOXES SHALL BE INSTALLED SIDE BY SIDE, WITH 2' MIN AND 3' MAX CLEARANCE

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W-10

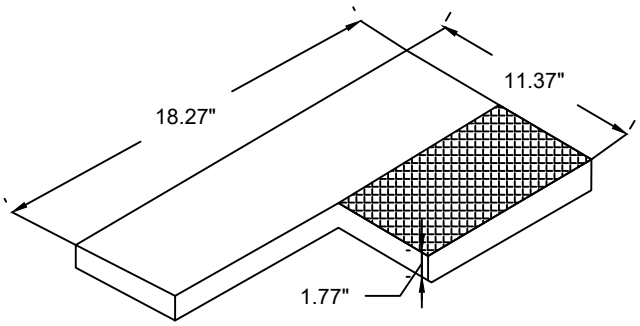
¾" OR 1' DOMESTIC WATER SERVICE WITH DEDICATED ¾" OR 1" IRRIGATION SERVICE WITH DUAL CHECK METER/BACKFLOW AT HOUSE

NOT TO SCALE

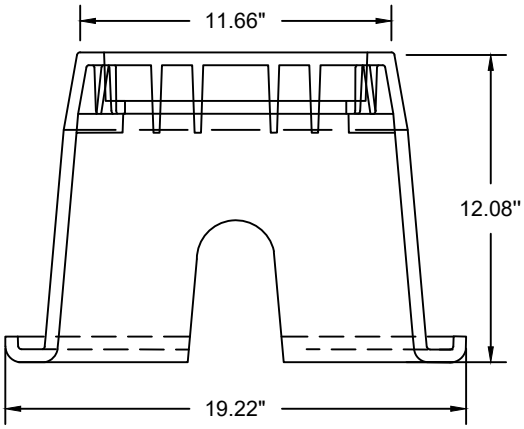
IREDELL WATER CORPORATION

NOTES:

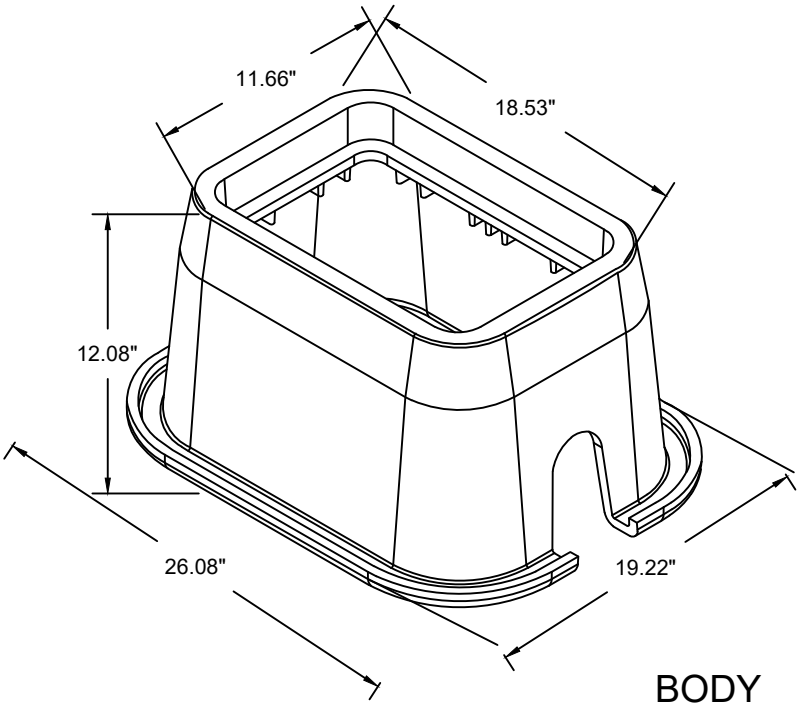
A. FOR USE IN NON-VEHICULAR TRAFFIC SITUATIONS ONLY.
B. WEIGHTS AND DIMENSIONS MAY VARY SLIGHTLY
C. ACTUAL LOAD RATING IS DETERMINED BY THE BOX AND COVER COMBINATION
D. LID & BOX MANUFACTURED BY TRICAST MASONRY SUPPLY ONLY MODEL 1118



SOLID POLYMER LID



SECTION VIEW



BODY

IREDELL WATER CORPORATION

¾" – 1" POLYMER METER BOX AND SOLID LID
TRI CAST 1118

NOT TO SCALE

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DATE:	05/13/2024
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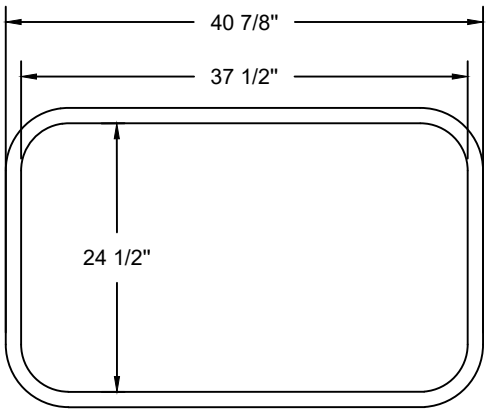
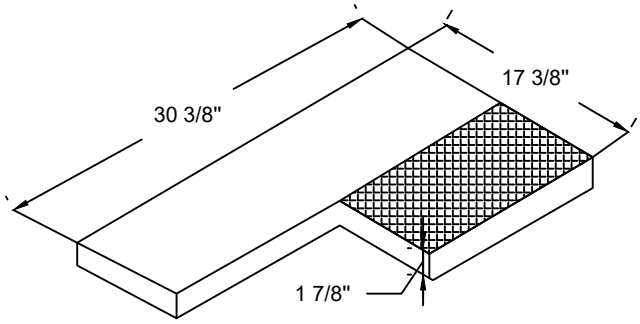
W–11

NOTES:

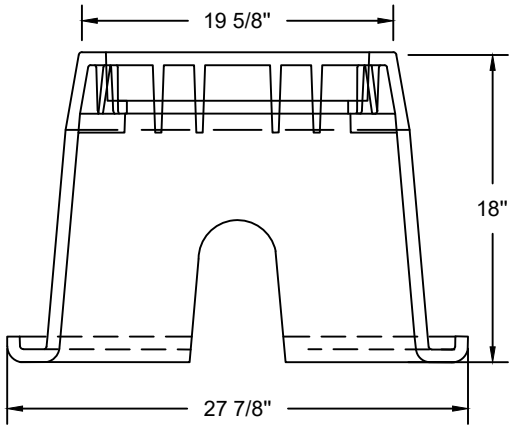
A. FOR USE IN NON-VEHICULAR TRAFFIC SITUATIONS ONLY.
B. WEIGHTS AND DIMENSIONS MAY VARY SLIGHTLY
C. ACTUAL LOAD RATING IS DETERMINED BY THE BOX AND COVER COMBINATION
D. STANDARD FASTENERS TO BE 3/8'' HEX BOLT
E. WEIGHT FOR 18'' DEPTH: 26 LBS
F. CARSON 1730 MODEL 17'' X 30'' OR OTHER EQUAL WITH PRIOR APPROVAL BY IREDELL WATER CORPORATION



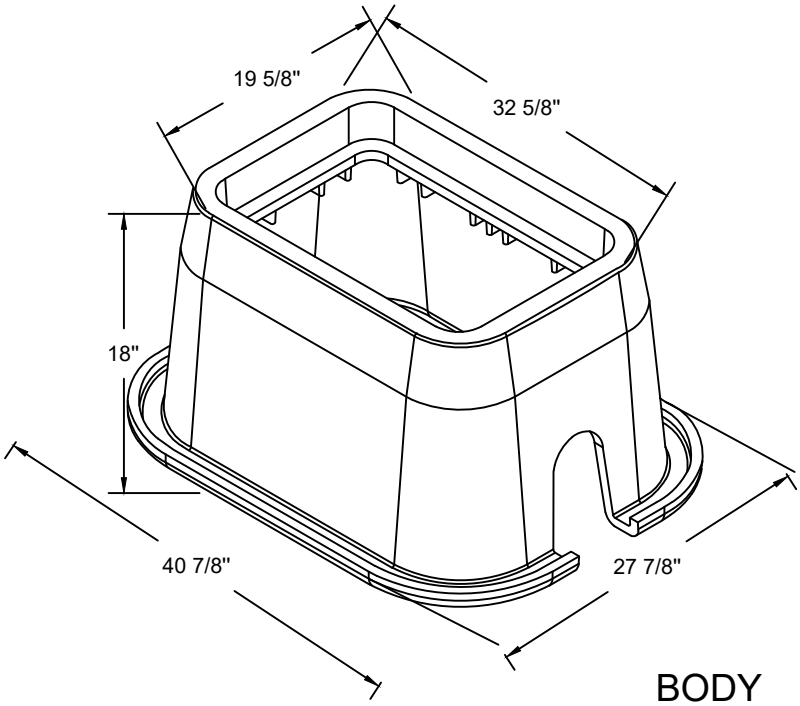
PLAN VIEW
BOTTOM DIMENSIONS SHOWN



SOLID POLYMER LID



SECTION VIEW



BODY

IREDELL WATER CORPORATION

POLYMER METER BOX AND LID
FOR 2'' WATER SERVICE

NOT TO SCALE

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DATE:	05/13/2024
REVISION:	11/22/2024

W–12

NO. DESCRIPTION

① WATER MAIN

② 2" BALL CORPORATION STOP MUELLER B25028N CORP STOP- MIP THREAD x CTS COMPRESSION

③ REHAU MUNICIPEX CTS 2"

④ 2" METER BY IREDELL WATER CORPORATION

⑤ MUELLER 105B2423-2N METER SETTER

⑥ METER BOX CARSON 1730-18 WITH SOLID POLYMER LID

⑦ AWG #14 GAUGE COPPER TRACER WIRE (THWN) - WITH BLUE INSULATION - TERMINATE IN METER BOX WITH 24" EXCESS WIRE (COILED)

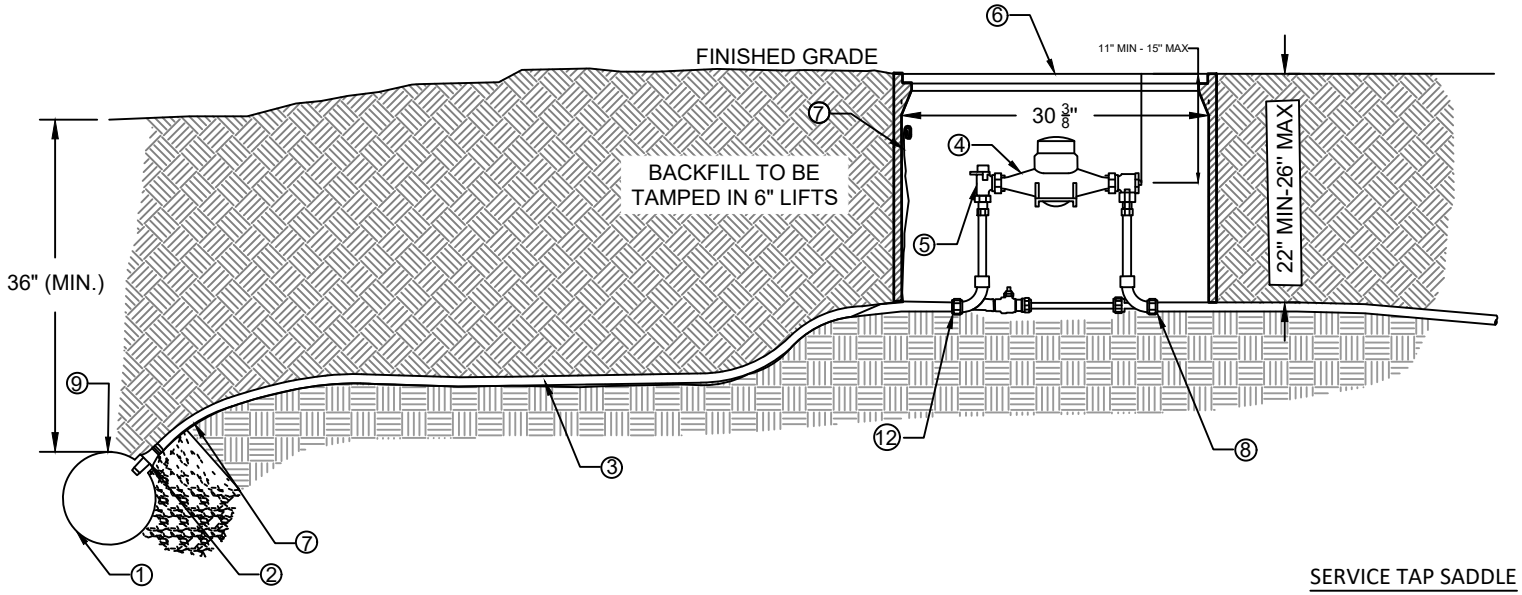
⑧ 24" TO 36" BRASS NIPPLE OR TYPE K OR L COPPER TO RPZ BACKFLOW ASSEMBLY

⑨ DOUBLE STRAP SADDLE

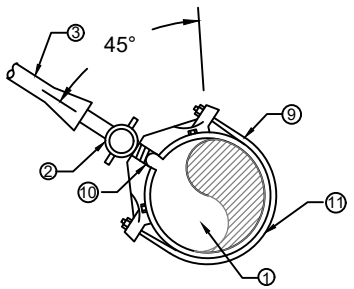
⑩ MUELLER DR2S SERVICE SADDLE FIP THREAD

⑪ STAINLESS STEEL STRAP & STUDS

⑫ 2" 110 CTS X MIP MUELLER



SERVICE TAP SADDLE



NOTE:
A. MINIMUM DISTANCE CENTER TO CENTER ON SERVICES OR TO BELLS OR SPIGOTS SHALL BE 3'-0" AS MEASURED ALONG THE MAIN.
B. SHOWN AS 2" SERVICE
C. NO TAPS OR METERS ALLOWED IN DRIVEWAYS. METERS ARE NOT TO BE PLACED IN CONCRETE, DRIVEWAYS, OR SIDEWALKS
D. METER BOX TO BE LOCATED AT BACK OF R/W OR UTILITY EASEMENT IF PROVIDED
E. USE STAINLESS STEEL INSERTS AT BOTH COMPRESSION CONNECTIONS

NOTE:
SINGLE SST STRAP SADDLE FOR WATER MAINS 1" & LESS
DOUBLE SST STRAP SADDLE FOR WATER MAINS LARGER THAN 1"

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W-13

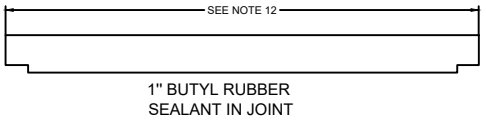
2" WATER SERVICE CONNECTION

NOT TO SCALE

IREDELL WATER CORPORATION

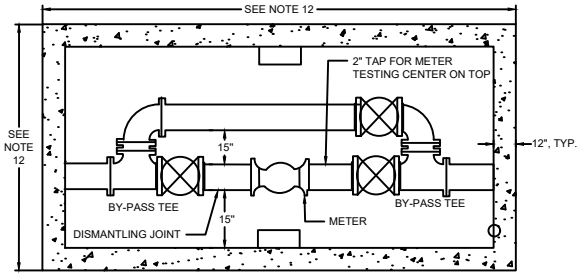
GENERAL NOTES:

1. PIPING AND FITTINGS SHALL BE DUCTILE IRON (AWWA C151) CLASS 350 AND SHALL BE RESTRAINED JOINT OR FLANGED AS INDICATED ON THE DETAIL. RESTRAINED JOINTS SHALL BE MEGA-LUG RESTRAINED OR APPROVED EQUAL.
2. ALL VAULTS SHALL BE 3800 PSI CONCRETE AND CAPABLE OF WITHSTANDING 150 PSF LOADING IN NON TRAFFIC AREAS.
3. ACCESS HATCHES SHALL BE ALUMINUM 150 PSF WITH LOCKABLE COVER DEVICE. MANUFACTURER SHALL BE BILCO, HALIDAY, OR APPROVED EQUAL. (HALLIDAY SERIES W2S model number W2S7248)
4. INSTALL VAULT AT EDGE OF RIGHT OF WAY, BEHIND ROW LINE. DO NOT PLACE IN PAVEMENT.
5. PIPING TO BE A MINIMUM OF 15'' OFF OF FLOOR AND MAINTAIN 36" OF COVER ON INLET AND OUTLET OF VAULT.
6. DEVELOPER MUST CONTACT IREDELL WATER CORPORATION TO PAY FEES AND APPROVED MATERIAL AND METER TYPE PRIOR TO SCHEDULING CONTRACTOR TO TAP MAIN AND INSTALL VAULT AND METER
7. BYPASS PIPE EQUAL TO METER SIZE.
8. LAYING LENGTH BETWEEN VALVES SHALL BE 45'' TO ALLOW FOR DISMANTLING JOINT AND TESTING PORT
9. METER VAULT TO BE INSTALLED SLIGHTLY ABOVE GRADE
10. CONTACT IREDELL WATER FOR CURRENT METER MANUFACTURER AND MODEL
11. ALL VALVES SHOULD BE RESILIENT SEAT OS&Y GATE VALVES AND HAVE A MINIMUM OF 12" CLEARANCE FROM THE TOP OF STEM TO THE TOP OF THE VAULT.
12. VAULT DESIGN SHALL MAINTAIN A MINIMUM 15" SEPARATION FROM THE EXTERIOR SURFACES OF ALL PIPES TO THE VAULT WALLS AND FLOOR, AS WELL AS BETWEEN THE MAIN AND BYPASS LINE, TO ALLOW FOR PROPER INSTALLATION AND MAINTENANCE. CONTRACTOR IS RESPONSIBLE FOR ENSURING THESE CLEARANCES ARE MET.

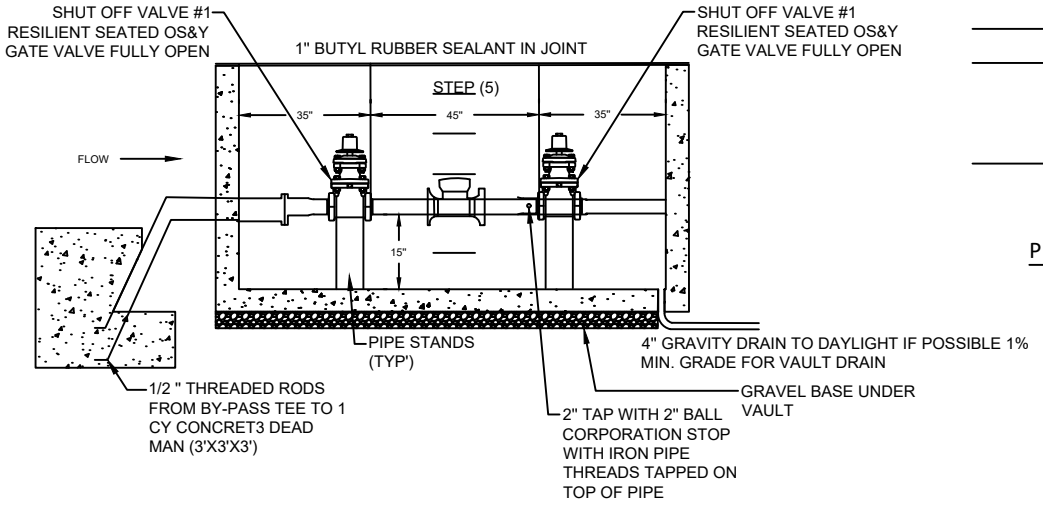


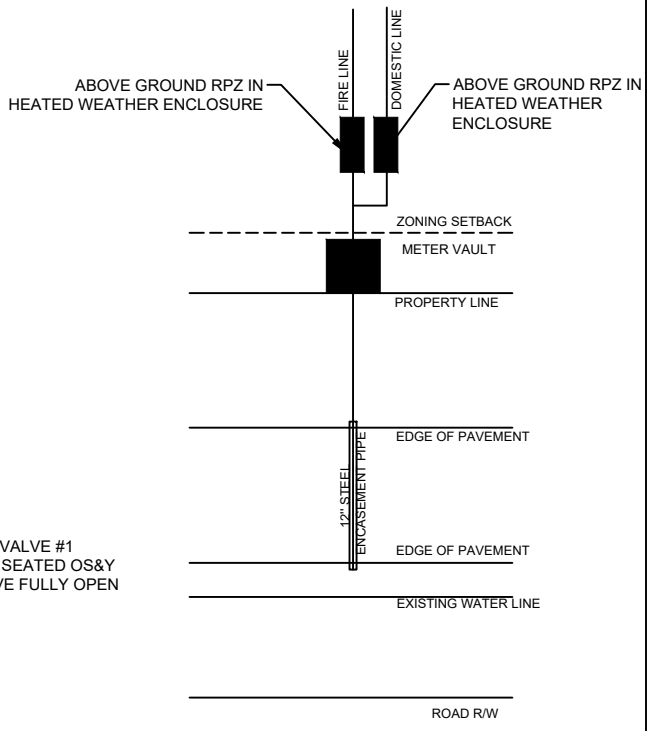
TOP TO RECEIVE RINGS/COVERS, ALUMINUM HATCHES, OR AS REQUIRED

PLAN VIEW



BASE SIDE VIEW





PLAN VIEW SCHEMATIC

INSIDE VAULT DIMENSION MINIMUMS WITH PIPE INLET OFFSET:
3-4": 54"W X 115"L X 48"H
6-8": 64"W X 115"L X 54.5" H
10": 68"W X 120"L X 70"H

IREDELL WATER CORPORATION

WATER METER & VAULT 3'' OR LARGER

NOT TO SCALE

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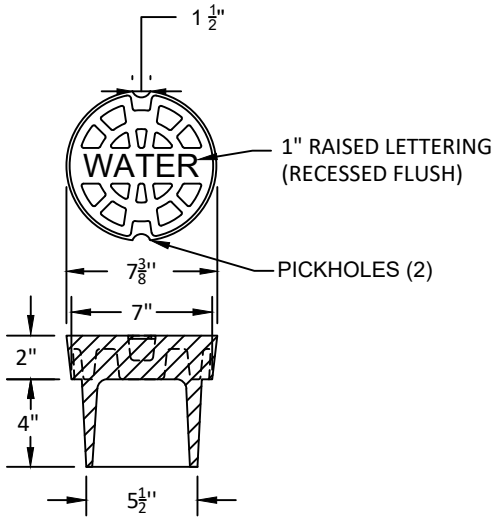
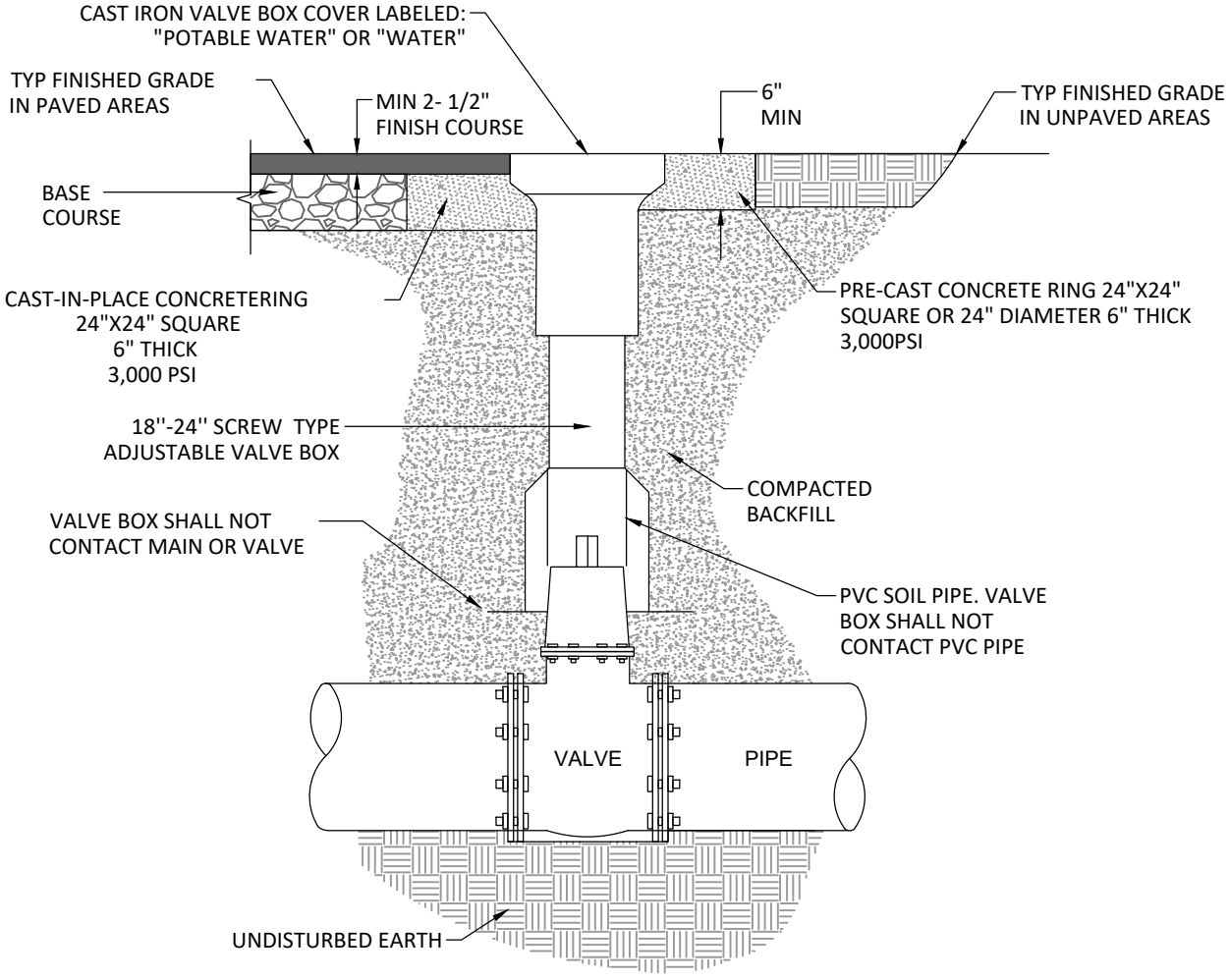
	W–14



TOP - VIEW



IREDELL WATER CORPORATION

VALVE & VALVE BOX

NOT TO SCALE

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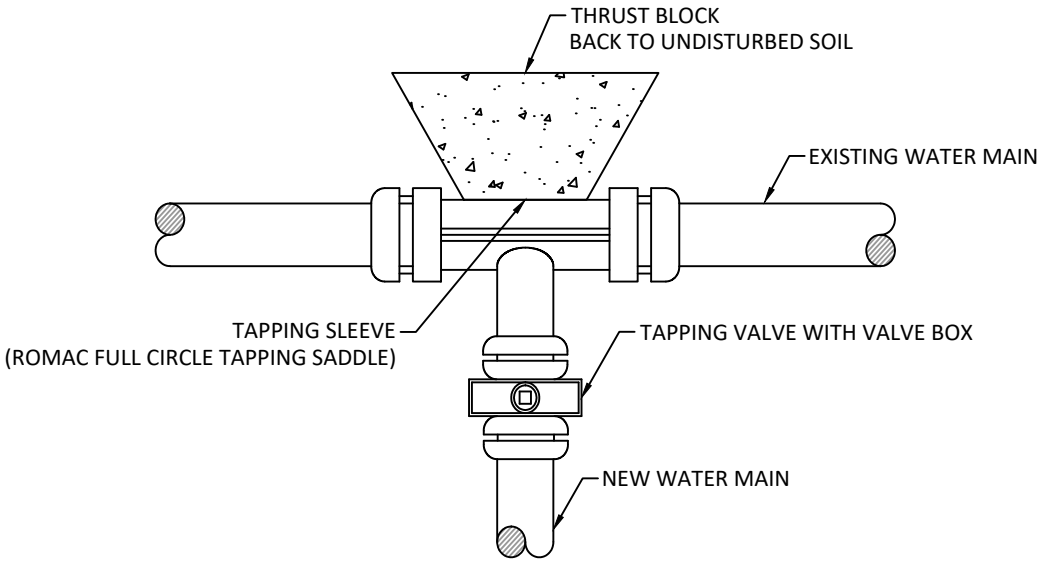
DATE:	05/20/2022
REVISION:	11/22/2024

W–15A



NOTE:

1. TAPPING SLEEVE SHALL BE STAINLESS STEEL ONLY AND MANUFACTURED BY ROMAC INDUSTRIES STAINLESS STEEL OR STAINLESS STEEL III WITH DUCTILE IRON FLANGE

IREDELL WATER CORPORATION

TAPPING SLEEVE & VALVE ASSEMBLY

NOT TO SCALE

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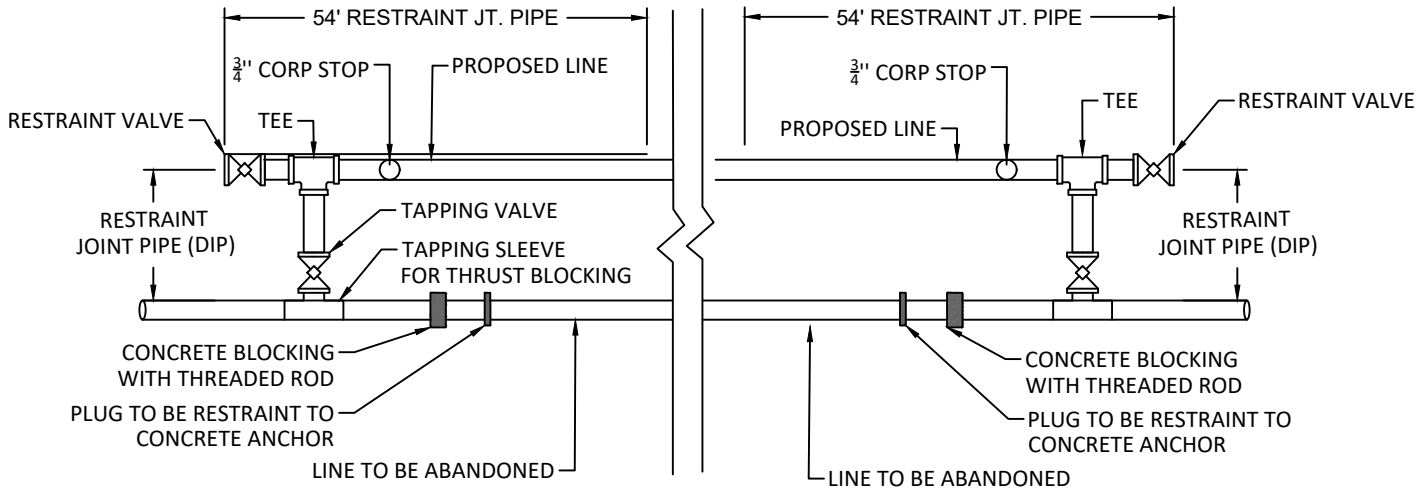
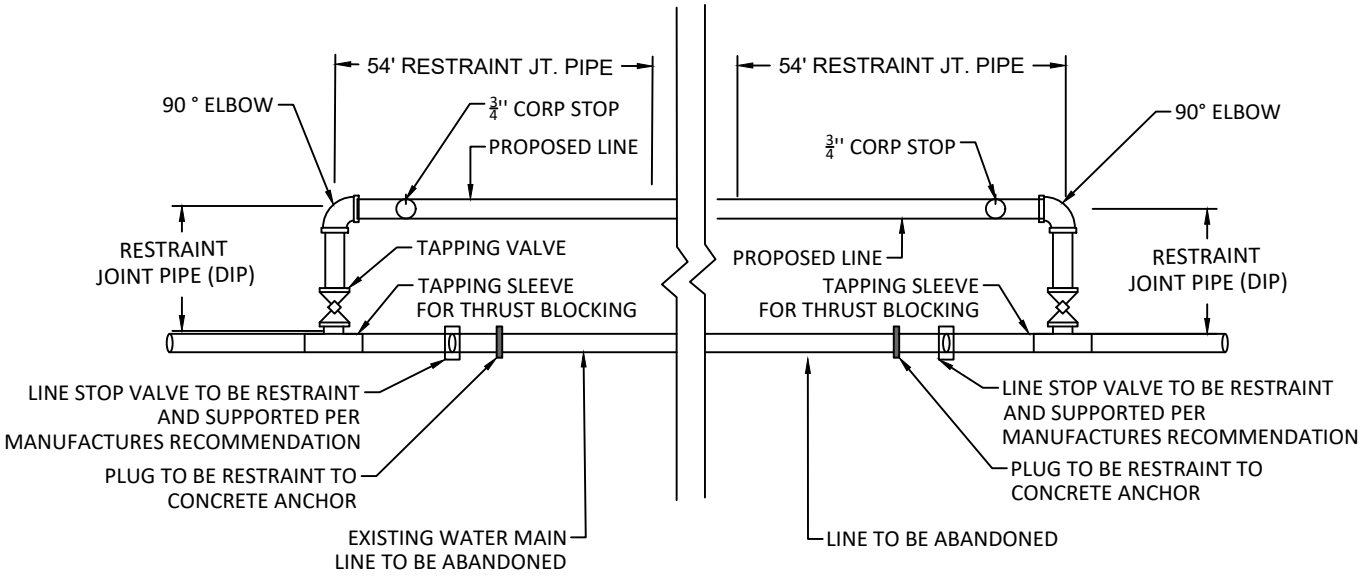
DATE:	05/20/2022
REVISION:	11/22/2024

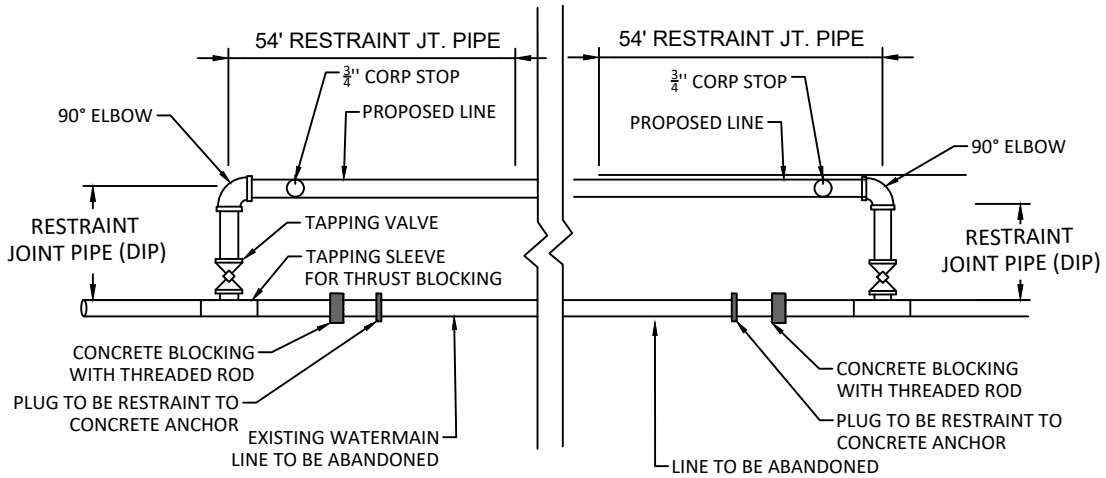
W-15B



WATERMAIN RELOCATION (WHERE NEW MAIN IS LARGER THAN EXISTING MAIN)



RELOCATION FOR LARGE WATERMAINS (6" OR GREATER)



RELOCATION FOR SMALL WATERMAINS (LESS THAN 6")

IREDELL WATER CORPORATION

WATERMAIN RELOCATION

NOT TO SCALE

DRAWN BY:	AVT
DATE:	05/13/2024
REVISION:	11/22/2024

W–16A

NO. DESCRIPTION

1. TAPPING SLEEVE WITH CONCRETE THRUST BLOCKING (REQUIRED) (A) SEE SPECIFICATIONS FOR APPROVED MODELS, (B) SIZE ON SIZE TAPPING SLEEVES SHALL BE ROMAC INDUSTRIES SST OR SST III W/DI FLANGE ONLY.
2. CUT-IN DIP TEE WITH PRIOR APPROVAL FROM IREDELL WATER CORPORATION
3. D.I.P. SHORT L 18''
4. R.M.J. DUCTILE IRON 90° BEND - ROTATE DOWN, AS APPROVED
5. DUCTILE IRON PIPE - RESTRAINED
6. R.M.J. DUCTILE IRON 90° BEND - ROTATE UP, AS APPROVED, CONCRETE THRUST BLOCKING IS REQUIRED. SEE NOTE IN CHART BELOW.
7. DUCTILE IRON PIPE - RESTRAINED - SEE CHART A
8. STEEL CASING - SEE CHART B
9. EXISTING WATER MAIN
10. EXISTING INFRASTRUCTURE THAT PREVENTS FRONT SIDE TAP - BACKSIDE TAP WILL BE PERMITTED ONLY WHERE EXISTING INFRASTRUCTURES PREVENTS FRONT SIDE TAP, AND REQUIRES APPROVAL OF THE ENGINEER.
11. STANDARD VALVE BOX ASSEMBLY
12. VALVE EXTENSION (WHEN OPERATING NUT IS GREATER THAN 4.5' DEEP)

CHART A - RESTRAINED LENGTH REQUIREMENTS

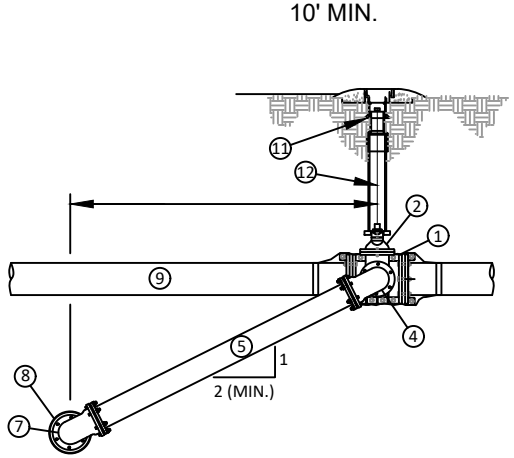
PIPE DIA. (INCHES)	TOTAL RESTRAINED LENGTH - R.L. - (FT)
3"	64' + CASING LENGTH (C.L.)
4"	77' + CASING LENGTH (C.L.)
6"	109' + CASING LENGTH (C.L.)
8"	140' + CASING LENGTH (C.L.)
10"	169' + CASING LENGTH (C.L.)
12"	196' + CASING LENGTH (C.L.)
16"	249' + CASING LENGTH (C.L.)

CHART B - ROADWAY CASING REQUIREMENTS

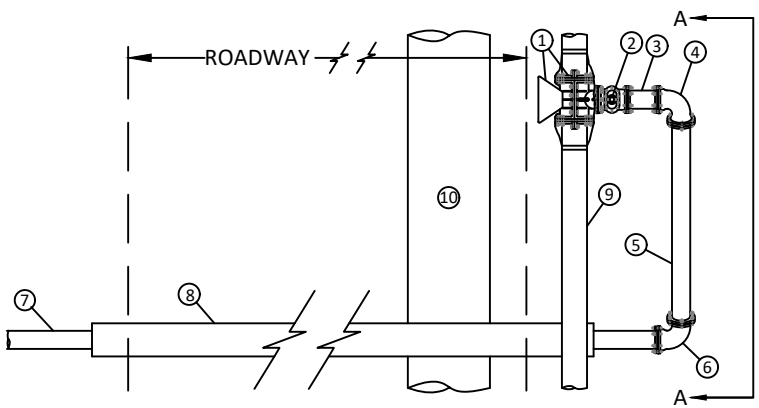
PIPE DIA. (INCHES)	CASING MIN. DIAMETER (INCHES)	CASING WALL THICKNESS - MIN. (INCHES)
3"	8"	0.250"
4"	8"	0.250"
6"	12.75"	0.250"
8"	16"	0.250"
10"	18"	0.250"
12"	20"	0.250"
16"	24"	0.250"

CONCRETE THRUST BLOCK (WRAP BEND PER 2) REQUIRED AT BOTTOM BEND 97) IF REQUIRED RESTRAINED LENGTH (R.L.) CAN NOT BE COMPLETELY INSTALLED

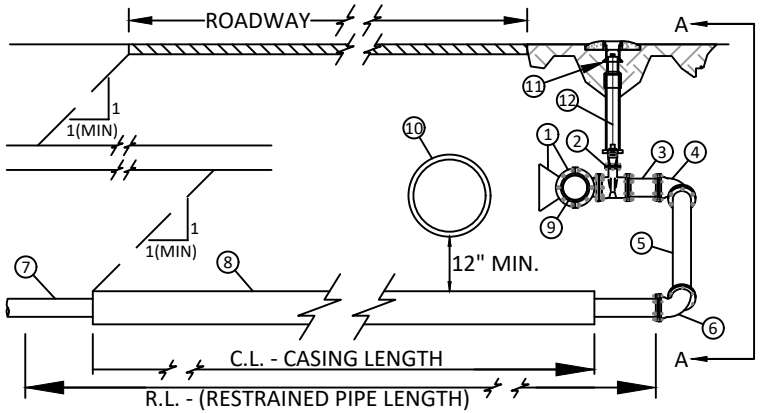
LARGER DIAMETER CASING MAY BE REQUIRED DUE TO LENGTH OF CROSSINGS AND RESTRAINED JOINT DIMENSIONS. SEE PLANS AND SPECIFICATIONS



A-A SECTION



PLAN



PROFILE

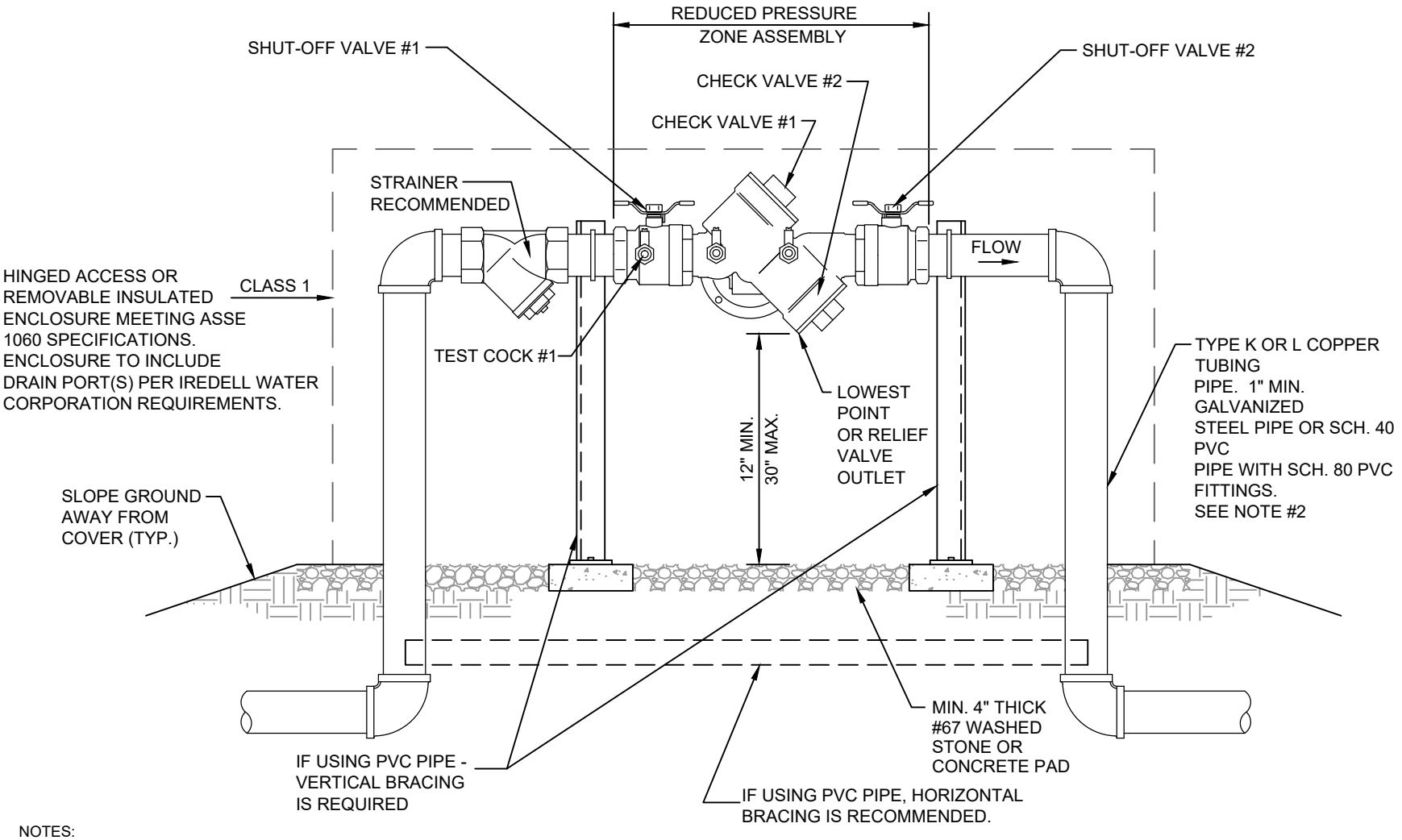
DRAWN BY:	AVT
DATE:	05/13/2024
REVISION:	11/22/2024

W-16B

BACKSIDE TAP 16'' AND SMALLER MAINS

NOT TO SCALE

IREDELL WATER CORPORATION



NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO ASSE & USC STANDARDS SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO IREDELL WATER CORPORATION APPROVED LIST OF BPA's.
2. PIPE MATERIAL AND FITTINGS SHALL BE HARD COPPER OR SCHEDULE 80 OR AS RECOMMENDED BY MANUFACTURER. IF USING PVC PIPE / FITTINGS, VERTICAL SUPPORT IS REQUIRED AND HORIZONTAL BRACING IS RECOMMENDED
3. INSULATED ENCLOSURE SHALL BE ASE CLASS 1 INSULATED ENCLOSURE - HEATED INSULATED ENCLOSURE IS RECOMMENDED. NO INSULATION SHALL BE WRAPPED AROUND BPA.
4. ALL LOCATIONS FOR BPA'S REQUIRE IREDELL WATER CORPORATION APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
5. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS IREDELL WATER CORPORATION - REQUIRED BACKFLOW PREVENTER.
6. EACH IREDELL WATER CORPORATION -REQUIRED BPA IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO IREDELL WATER CORPORATION WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO IREDELL WATER CORPORATION.
7. ALL INSTALLATIONS INTENDED FOR ADDRESSING IREDELL WATER CORPORATION REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE IREDELL WATER CORPORATION BACKFLOW INSPECTOR.
8. CONSUMER IS RESPONSIBLE FOR PROTECTING BACKFLOW ASSEMBLY FROM FREEZING

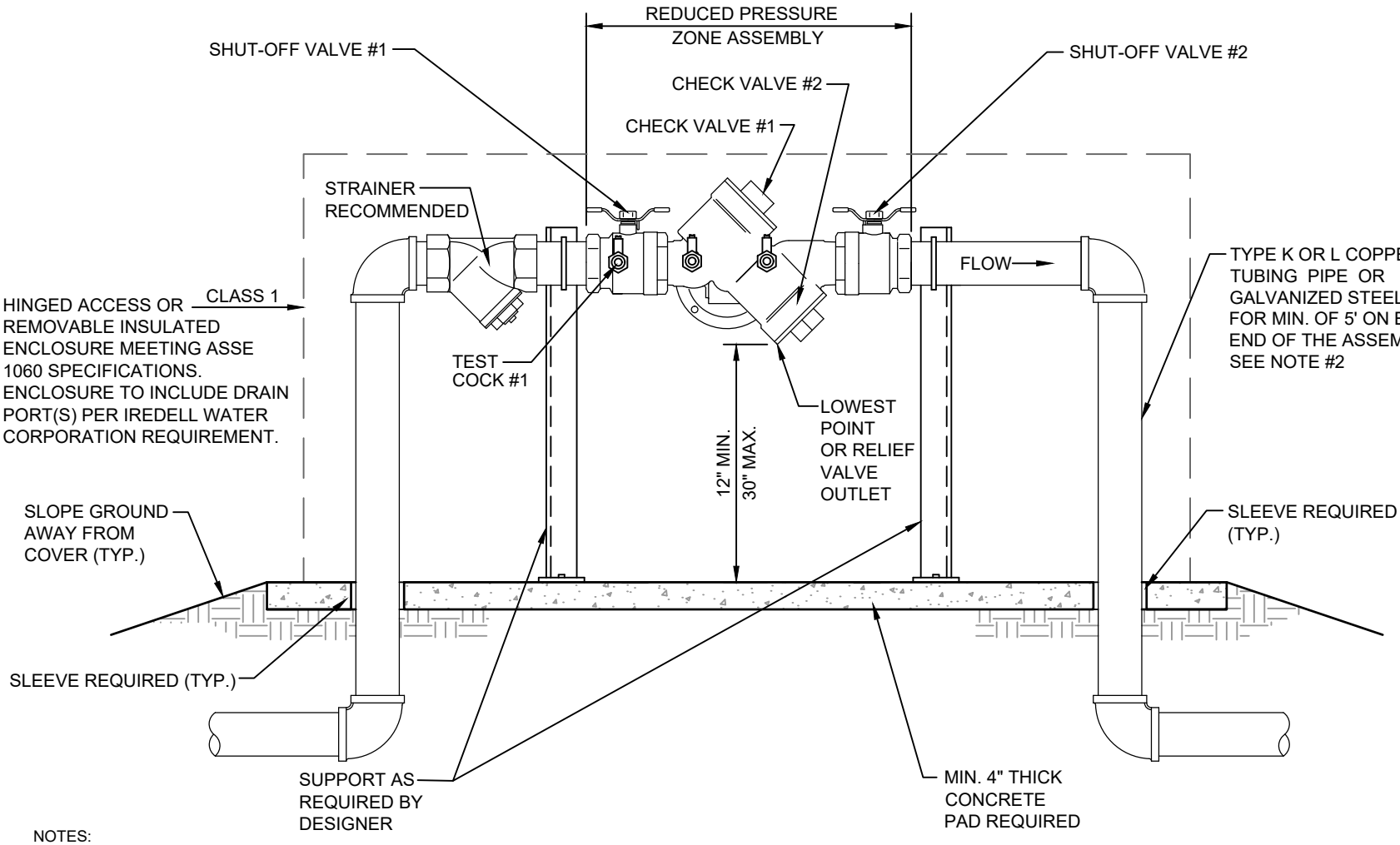
DRAWN BY:	JGA
DATE:	06/01/2022
REVISION:	11/22/2024

W-17A

REDUCED PRESSURE ZONE ASSEMBLY (RPZ) $\frac{3}{4}$" – 1" ABOVE GROUND

NOT TO SCALE

IREDELL WATER CORPORATION



NOTES:

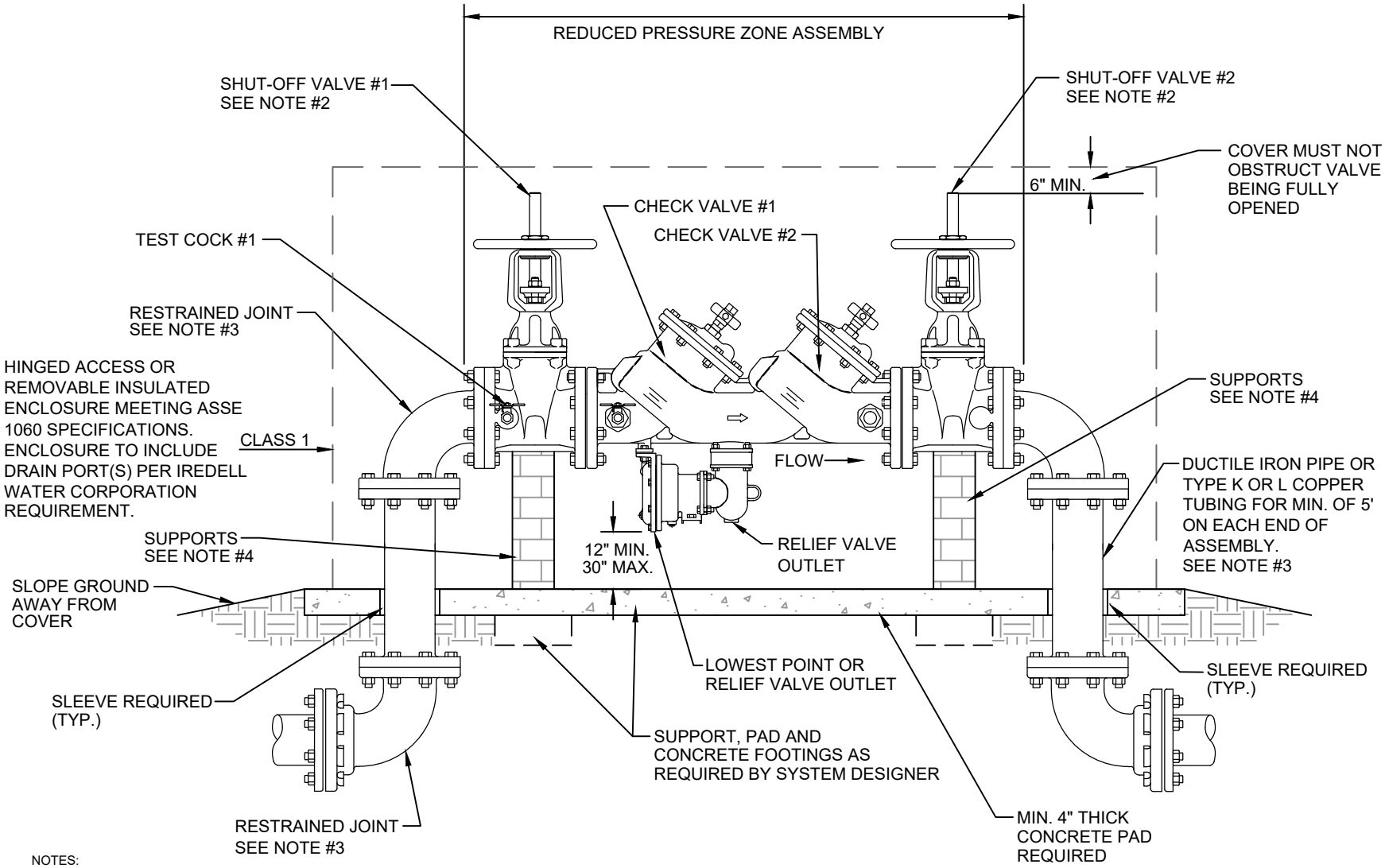
1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO ASSE & USC STANDARDS SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO IREDELL WATER CORPORATION APPROVED LIST OF BPA's.
2. PIPE MATERIAL AND FITTINGS SHALL BE HARD COPPER OR SCHEDULE 80 OR AS RECOMMENDED BY MANUFACTURER. IF USING PVC PIPE / FITTINGS, VERTICAL SUPPORT IS REQUIRED AND HORIZONTAL BRACING IS RECOMMENDED
3. INSULATED ENCLOSURE SHALL BE ASE CLASS 1 INSULATED ENCLOSURE - HEATED INSULATED ENCLOSURE IS RECOMMENDED. NO INSULATION SHALL BE WRAPPED AROUND BPA.
4. ALL LOCATIONS FOR BPA'S REQUIRE IREDELL WATER CORPORATION APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
5. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS IREDELL WATER CORPORATION - REQUIRED BACKFLOW PREVENTER.
6. EACH IREDELL WATER CORPORATION -REQUIRED BPA IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO IREDELL WATER CORPORATION WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO IREDELL WATER CORPORATION.
7. ALL INSTALLATIONS INTENDED FOR ADDRESSING IREDELL WATER CORPORATION REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE IREDELL WATER CORPORATION BACKFLOW INSPECTOR.
8. CONSUMER IS RESPONSIBLE FOR PROTECTING BACKFLOW ASSEMBLY FROM FREEZING

DRAWN BY:	JGA	W-17B
DATE:	06/01/2022	
REVISION:	11/22/2024	

REDUCED PRESSURE ZONE ASSEMBLY (RPZ) 1 1/2" – 2" ABOVE GROUND

NOT TO SCALE

IREDELL WATER CORPORATION



NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO ASSE & USC STANDARDS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED.
2. FIRE LINE SERVICES SHALL HAVE OUTSIDE STEM AND YOKE (OS & Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
3. PIPE MATERIAL AND FITTINGS SHALL BE DUCTILE IRON PIPE. ALL JOINTS SHALL BE RESTRAINED WITH MEGALUG RESTRAINTS OR APPROVED EQUAL.
4. SUPPORT OF ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE AND SHALL NOT BLOCK RELIEF VALVE ON DRAIN PORT.
5. INSULATED ENCLOSURE SHALL BE ASSE CLASS 1 HEATED INSULATED ENCLOSURE ARE REQUIRED FOR FIRE LINE SERVICES. NO INSULATION SHALL BE WRAPPED AROUND BPA.
6. ALL LOCATIONS FOR BPA'S REQUIRE IREDELL WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
7. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS IREDELL WATER CORPORATION - REQUIRED BACKFLOW PREVENTER.
8. EACH BACKFLOW ASSEMBLY - REQUIRED BPA IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO IREDELL WATER CORPORATION WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO IREDELL WATER CORPORATION.
9. ALL INSTALLATIONS INTENDED FOR ADDRESSING IREDELL WATER CORPORATION REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE IREDELL WATER CORPORATION BACKFLOW INSPECTOR.
10. CONSUMER IS RESPONSIBLE FOR PROTECTING BACKFLOW ASSEMBLY FROM FREEZING

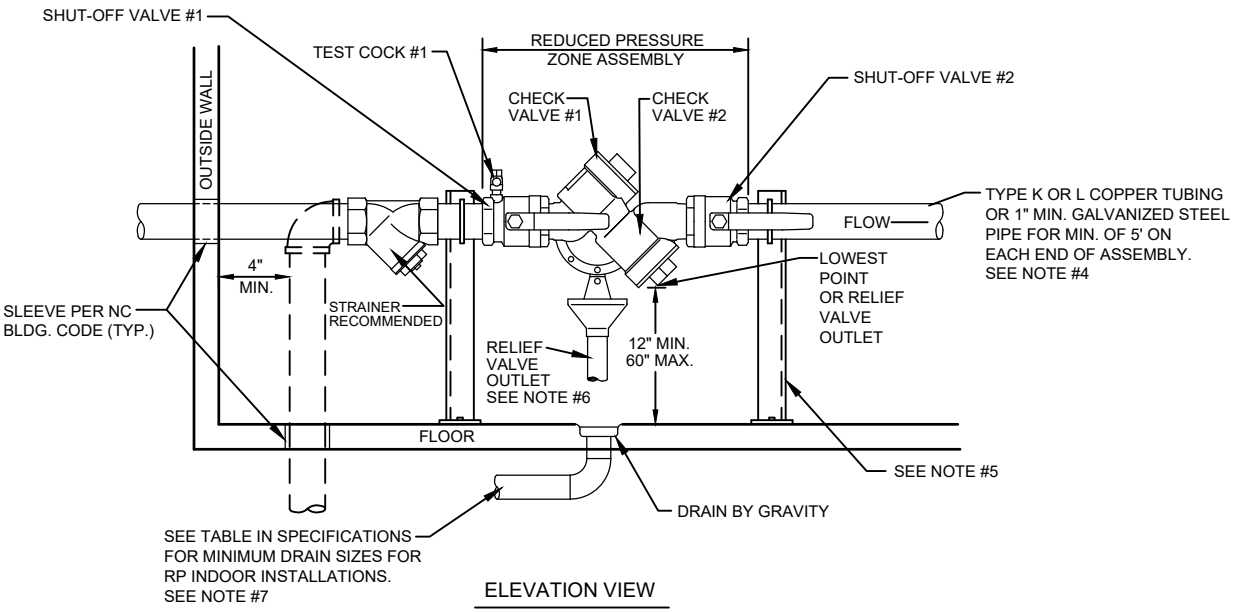
DRAWN BY:	JGA
DATE:	06/01/2022
REVISION:	11/22/2024

W-17C

REDUCED PRESSURE ZONE ASSEMBLY (RPZ) 2 ½" – 12" ABOVE GROUND

NOT TO SCALE

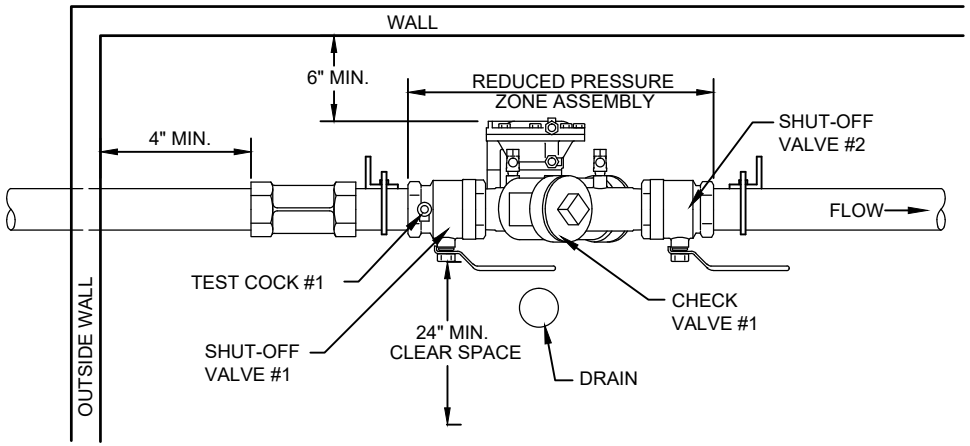
IREDELL WATER CORPORATION



ELEVATION VIEW

NOTES:

1. INDOOR INSTALLATION SHALL ONLY BE PERMITTED IN CASES WHERE ADEQUATE SPACE FOR THE BACKFLOW PREVENTION ASSEMBLY IS NOT AVAILABLE OUTSIDE. IREDELL WATER CORPORATION WILL REVIEW ON A CASE BY CASE BASIS.
2. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO ASSE & USC STANDARDS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO IREDELL WATER CORPORATION APPROVED LIST OF BPA's.
3. ASSEMBLIES SHALL BE INSTALLED UPRIGHT AND IN THE HORIZONTAL POSITION.
4. PIPE MATERIAL AND FITTINGS SHALL BE DUCTILE IRON PIPE.
5. SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER AS REQUIRED.
6. AN AIR GAP DRAIN IS RECOMMENDED TO REDUCE SPLASHING OF MINOR DISCHARGES FROM THE RELIEF VALVE DRAIN PORT.
7. INDOOR INSTALLATION OF RPZ'S SHOULD PROVIDE FOR DRAINAGE CAPABLE OF HANDLING IN EXCESS OF THE MAXIMUM DISCHARGE RATE EXPECTED BY THE BACKFLOW ASSEMBLY MANUFACTURER.
8. ALL LOCATIONS FOR BPA'S REQUIRE IREDELL WATER CORPORATION APPROVAL.
9. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS IREDELL WATER CORPORATION - REQUIRED BACKFLOW PREVENTER.
10. EACH BACKFLOW ASSEMBLY - REQUIRED BPA IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO IREDELL WATER CORPORATION WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO IREDELL WATER CORPORATION.
11. ALL INSTALLATIONS INTENDED FOR ADDRESSING IREDELL WATER CORPORATION REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE IREDELL WATER CORPORATION BACKFLOW INSPECTOR.



PLAN VIEW

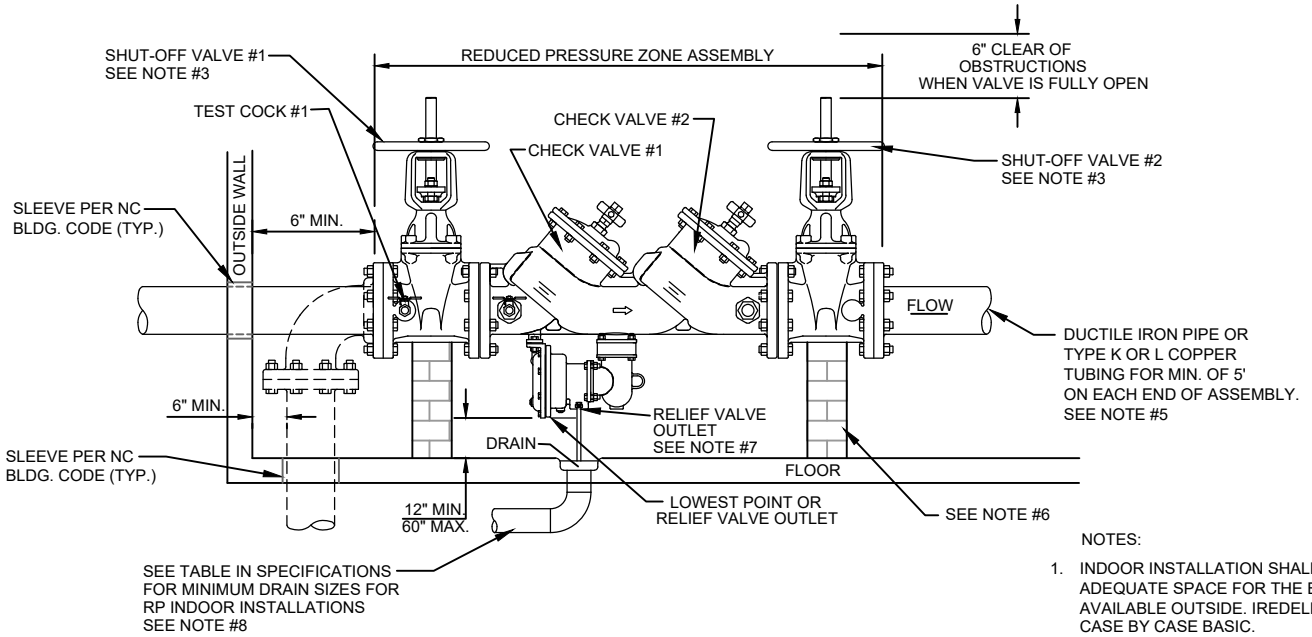
DRAWN BY:	JGA
DATE:	06/01/2022
REVISION:	11/22/2024

W-17D

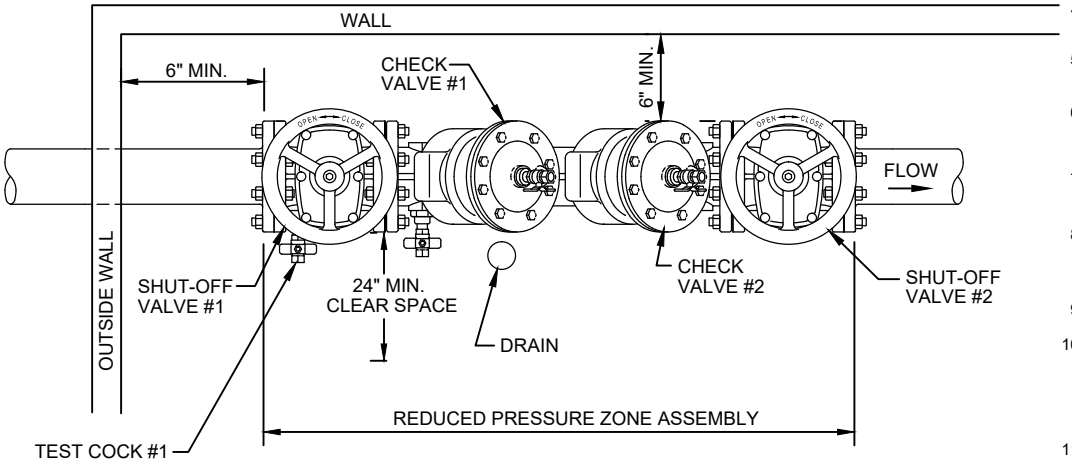
REDUCED PRESSURE ZONE ASSEMBLY (RPZ) 3/4" – 2" INDOOR

NOT TO SCALE

IREDELL WATER CORPORATION



ELEVATION VIEW



PLAN VIEW

NOTES:

1. INDOOR INSTALLATION SHALL ONLY BE PERMITTED IN CASES WHERE ADEQUATE SPACE FOR THE BACKFLOW PREVENTION ASSEMBLY IS NOT AVAILABLE OUTSIDE. IREDELL WATER CORPORATION WILL REVIEW ON A CASE BY CASE BASIC.
2. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO ASSE & USC STANDARDS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO IREDELL WATER CORPORATION APPROVED LIST OF BPA's.
3. FIRE LINE INSTALLATIONS SHALL HAVE OUTSIDE STEM AND YOKE (OS&Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
4. ASSEMBLIES SHALL BE INSTALLED UPRIGHT AND IN THE HORIZONTAL POSITION.
5. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN IREDELL WATER STANDARDS & SPECIFICATIONS.
6. SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE AND SHALL NOT BLOCK RELIEF VALVE ON DRAIN PORT.
7. AN AIR GAP DRAIN IS RECOMMENDED TO REDUCE SPLASHING OF MINOR DISCHARGES FROM THE RELIEF VALVE DRAIN PORT.
8. INDOOR INSTALLATION OF RPZ'S SHOULD PROVIDE FOR DRAINAGE CAPABLE OF HANDLING IN EXCESS OF THE MAXIMUM DISCHARGE RATE EXPECTED BY THE BACKFLOW ASSEMBLY MANUFACTURER.
9. ALL LOCATIONS FOR BPA'S REQUIRE IREDELL WATER CORPORATION APPROVAL.
10. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS IREDELL WATER CORPORATION - REQUIRED BACKFLOW PREVENTER.
11. EACH BACKFLOW ASSEMBLY - REQUIRED BPA IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO IREDELL WATER CORPORATION WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO IREDELL WATER CORPORATION.
12. ALL INSTALLATIONS INTENDED FOR ADDRESSING IREDELL WATER CORPORATION REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE IREDELL WATER CORPORATION BACKFLOW INSPECTOR.

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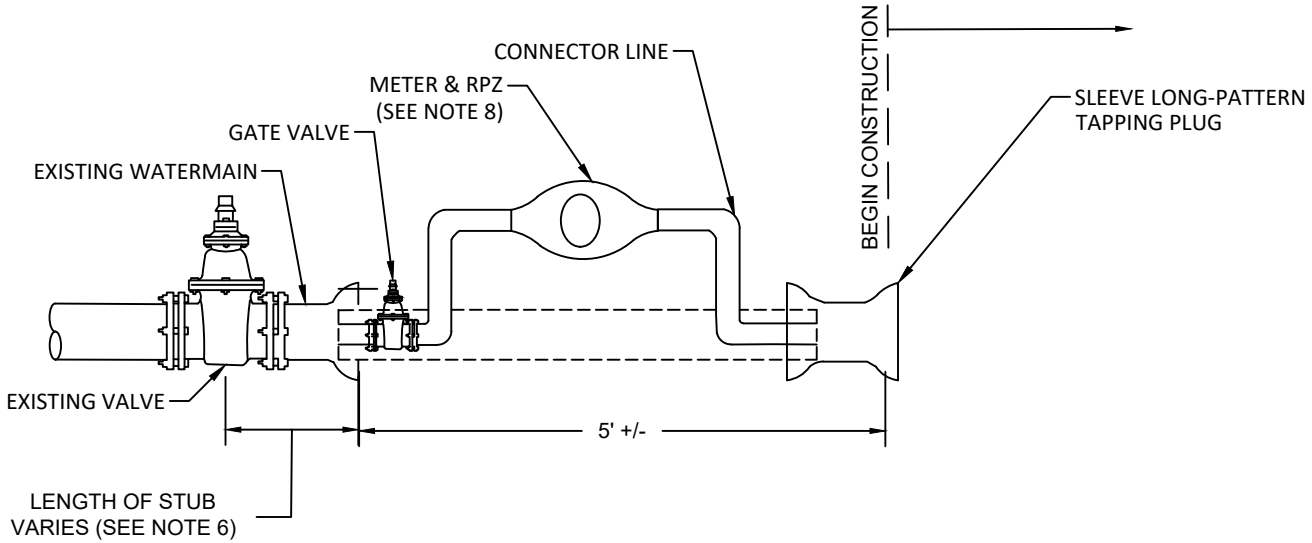
DATE:	06/01/2022
REVISION:	11/22/2024

W-17E

REDUCED PRESSURE ZONE ASSEMBLY (RPZ)
2 1/2" - 2" INDOOR

NOT TO SCALE

IREDELL WATER CORPORATION



NOTES:

1. INSTALL CONNECTOR LINE FROM EXISTING BLOW OFF ASSEMBLY TO NEW MAIN FOR FILLING, TESTING AND STERILIZING NEW MAIN
2. CONNECTOR LINE TO BE ASSEMBLED WITH RPZ AND METER BY CONTRACTOR AND TO BE OPERATED AND INDEPENDENT OF EXISTING MAIN.
3. FINAL CONNECTION TO EXISTING MAIN TO BE MADE ONLY AFTER TOTAL PROJECT IS ACCEPTED BY IREDELL WATER CORPORATION
4. VALVES ON EXISTING SYSTEM TO BE OPERATED BY IREDELL WATER CORPORATION FORCES ONLY.
5. ONLY ONE CONNECTION WILL BE ALLOWED BETWEEN THE EXITING SYSTEM AND THE NEW CONSTRUCTION UNTIL TESTING AND DISINFECTION IS COMPLETE. UNLESS PRIOR APPROVAL IS OBTAINED FROM IREDELL WATER CORPORATION
6. MAXIMUM LENGTH OF PIPE NOT TO EXCEED 100'
7. RESPONSIBILITY OF CONTRACTOR TO PROVIDE AND TEST METER FOR ACCURACY. METER ACCURACY TEST MUST BE PROVIDED TO IREDELL WATER CORPORATION WITHIN LAST 12 MONTHS OR 100,000 GALLONS
8. METER AND RPZ TO BE PROPERLY SIZED FOR FILLING AND FLUSHING OF WATER MAINS

DRAWN BY:	AVT
DATE:	05/13/2024
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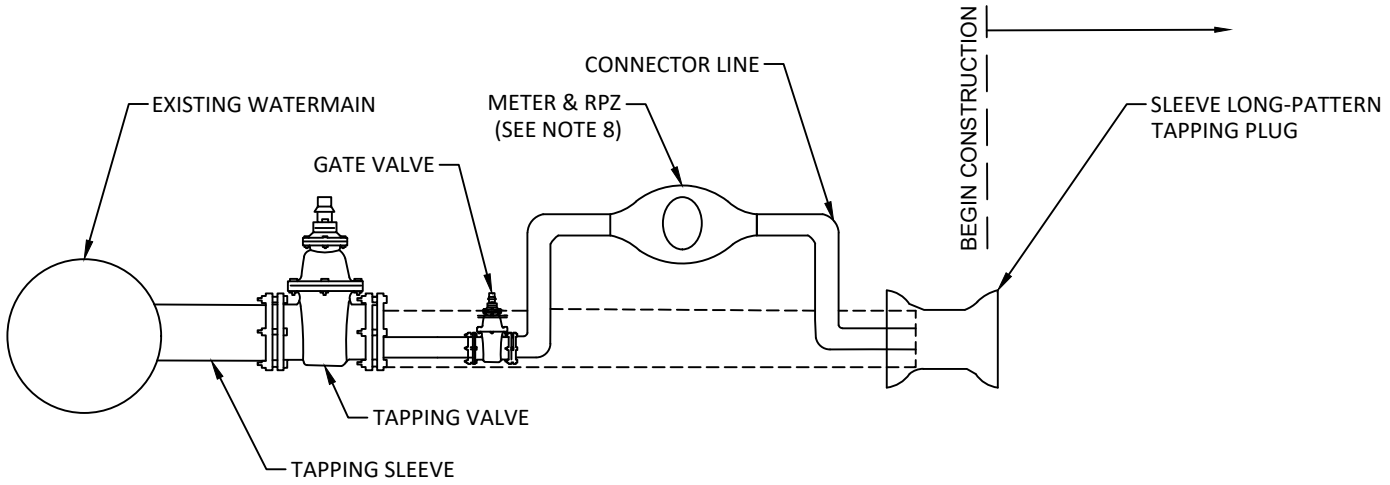
W-18

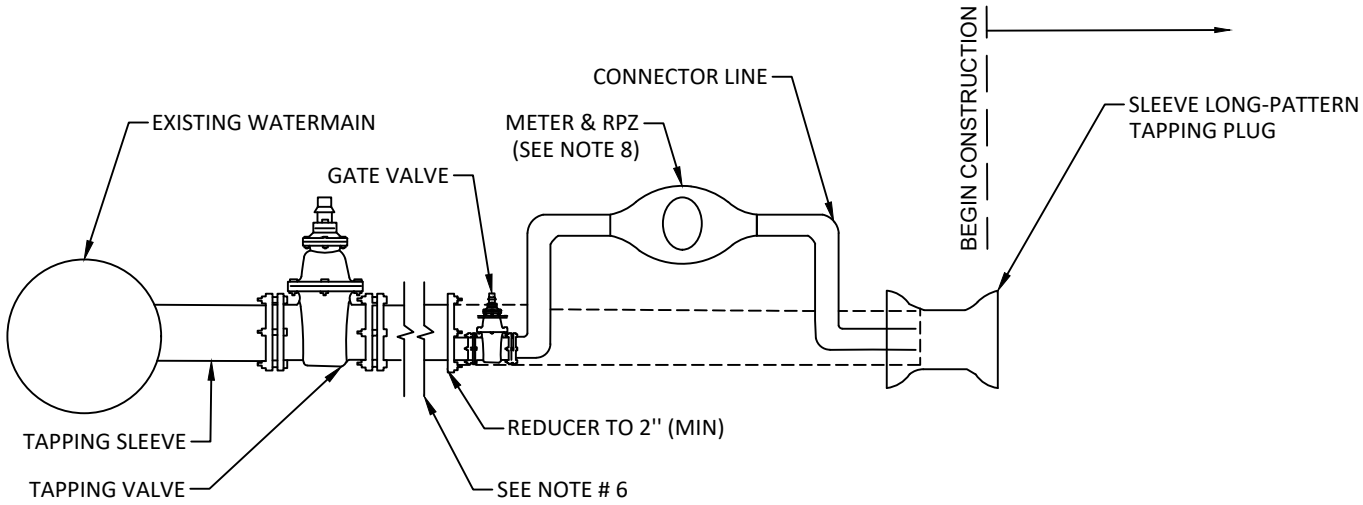
JUMPER CONNECTION FOR EXISTING WATERMAIN EXTENSION

NOT TO SCALE

IREDELL WATER CORPORATION



JUMPER CONNECTION - SHORT SIDE



JUMPER CONNECTION - LONG SIDE

NOTES:

1. INSTALL CONNECTOR LINE FROM EXISTING BLOW OFF ASSEMBLY TO NEW MAIN FOR FILLING, TESTING AND STERILIZING NEW MAIN
2. CONNECTOR LINE TO BE ASSEMBLED WITH RPZ AND METER BY CONTRACTOR AND TO BE OPERATED AND INDEPENDENT OF EXISTING MAIN.
3. FINAL CONNECTION TO EXISTING MAIN TO BE MADE ONLY AFTER TOTAL PROJECT IS ACCEPTED BY IREDELL WATER CORPORATION
4. VALVES ON EXISTING SYSTEM TO BE OPERATED BY IREDELL WATER CORPORATION FORCES ONLY.
5. ONLY ONE CONNECTION WILL BE ALLOWED BETWEEN THE EXITING SYSTEM AND THE NEW CONSTRUCTION UNTIL TESTING AND DISINFECTION IS COMPLETE. UNLESS PRIOR APPROVAL IS OBTAINED FROM IREDELL WATER CORPORATION
6. MAXIMUM LENGTH OF PIPE NOT TO EXCEED 100'
7. RESPONSIBILITY OF CONTRACTOR TO TEST METER FOR ACCURACY. METER ACCURACY TEST MUST BE PROVIDED TO IREDELL WATER CORPORATION WITHIN THE LAST 12 MONTHS OR 100,000 GALLONS
8. METER AND RPZ TO BE PROPERLY SIZED FOR FILLING AND FLUSHING OF WATER MAINS

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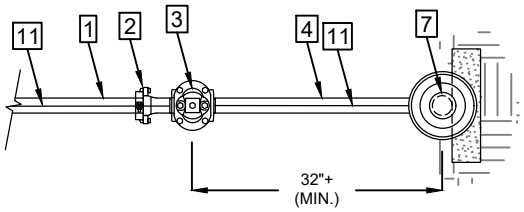
W-19A

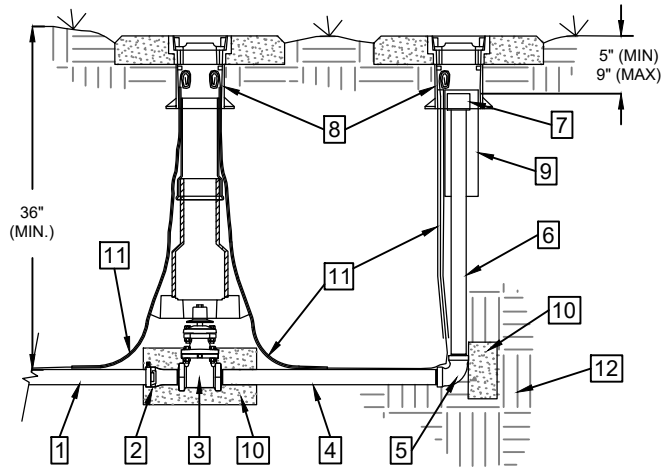
JUMPER CONNECTION - SHORT SIDE AND LONG SIDE

NOT TO SCALE

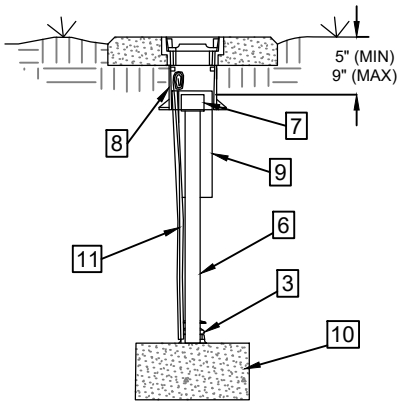
IREDELL WATER CORPORATION



PLAN VIEW



ELEVATION VIEW



END VIEW

NO. DESCRIPTION

1. 2" DR 13.5 PVC WATER MAIN (IPS)
2. 2" D.I. PC 350 ADAPTOR (BELL x MNPT) - FUSION BONDED EPOXY - HARCO OR APPROVED EQUAL WITH HARCO KNUCKLE JOINT RESTRAINT
3. 2" GATE VALVE (FNPT x FNPT)
4. 2" RED BRASS NIPPLE - SCH 40 - (MNPT x MNPT) - L=30" (MIN.)
5. 2" RED BRASS 90° BEND (FNPTxFNPT)
6. 2" RED BRASS NIPPLE - SCH 40 - (MNPT x MNPT) - LENGTH AS REQUIRED
7. 2" THREADED COUPLING (FNPT x FNPT) - PVC SCH 40 WITH 2" MNPT PLUG
8. STANDARD VALVE BOX ASSEMBLY - SEE DETAILS
9. 6" PVC PIPE, L=15", OR VALVE BOX BOTTOM SECTION
10. POURED THRUST BLOCKING
11. AWG #14 GAUGE COPPER TRACER WIRE WITH BLUE INSULATION (30MIL HDPE) - TERMINATE WITH 24" EXCESS WIRE (COILED) IN VALVE BOX (TYP.)
12. UNDISTURBED OR COMPACTED SOIL - 100% STANDARD PROCTOR

IREDELL WATER CORPORATION

2-INCH BLOWOFF ASSEMBLY

NOT TO SCALE

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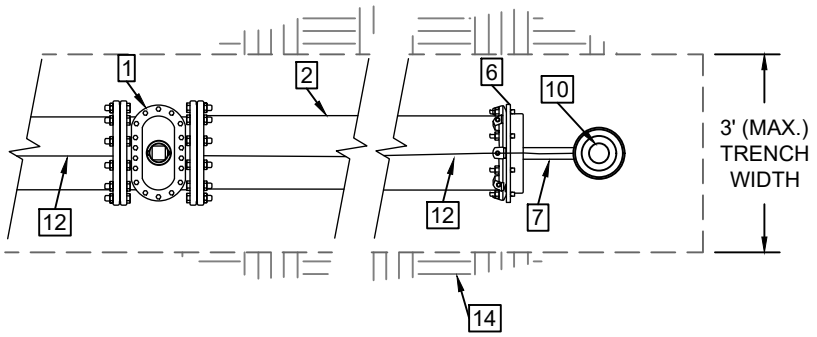
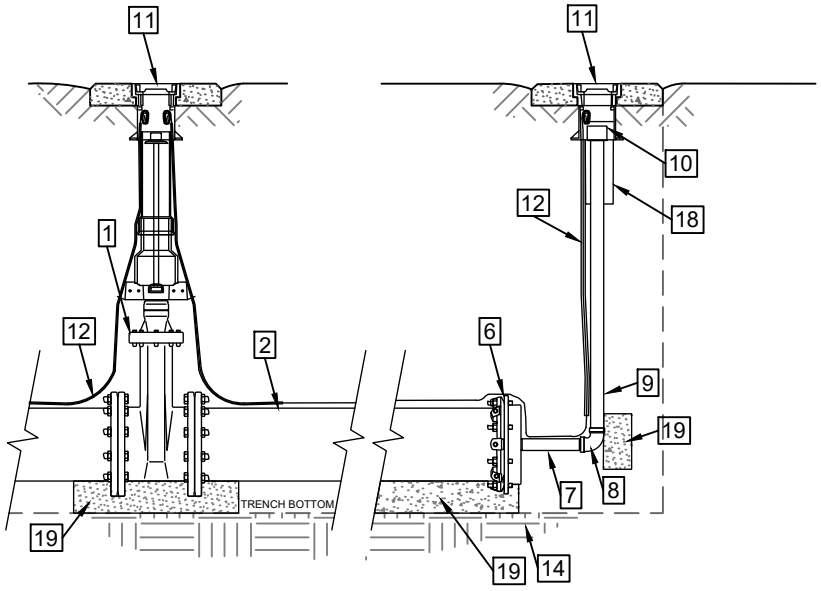
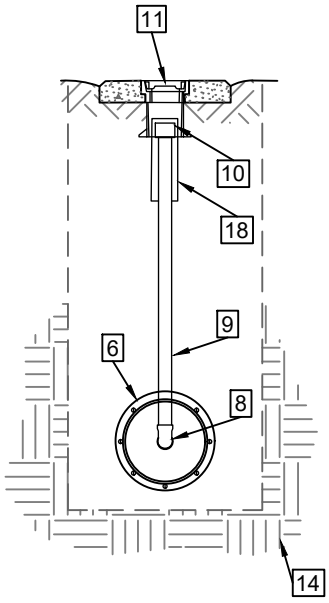


PLAN VIEW



ELEVATION VIEW



END VIEW

NO. DESCRIPTION

1. END OF LINE GATE VALVE (MJ x MJ) RESTRAINED
2. DIP - (PE x PE) - REMOVAL BELL - LENGTH = 20FT
6. MJ CAP - WITH WEDGE ACTION RESTRAINT GLAND , TAP 2" THREADED OUTLET (FNPT)
7. 2" RED BRASS NIPPLES SCH 40 (MNPT x MNPT) - LENGTH = 12 INCH
8. 2" RED BRASS 90° BEND (FNPT x FNPT)
9. 2" RED BRASS NIPPLE SCH 40 (MNPT x MNPT) - LENGTH AS REQUIRED
10. 2" GALVANIZED MALLEABLE IRON COUPLING (FNPT x FNPT)
11. STANDARD VALVE BOX ASSEMBLY - SEE DETAILS
12. AWG #14 GAUGE COPPER TRACER WIRE - WITH BLUE INSULATION (30MIL HDPE) TERMINATE WITH 24-INCH EXCESS WIRE (COILED) IN VALVE BOX (TYP.)
14. UNDISTURBED SOIL
18. 6" PVC PIPE (L=15") VALVE BOX BOTTOM SECTION
19. POURED THRUST BLOCKING

IREDELL WATER CORPORATION

3 & 4–INCH BLOWOFF ASSEMBLY

NOT TO SCALE

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DATE:	05/20/2022
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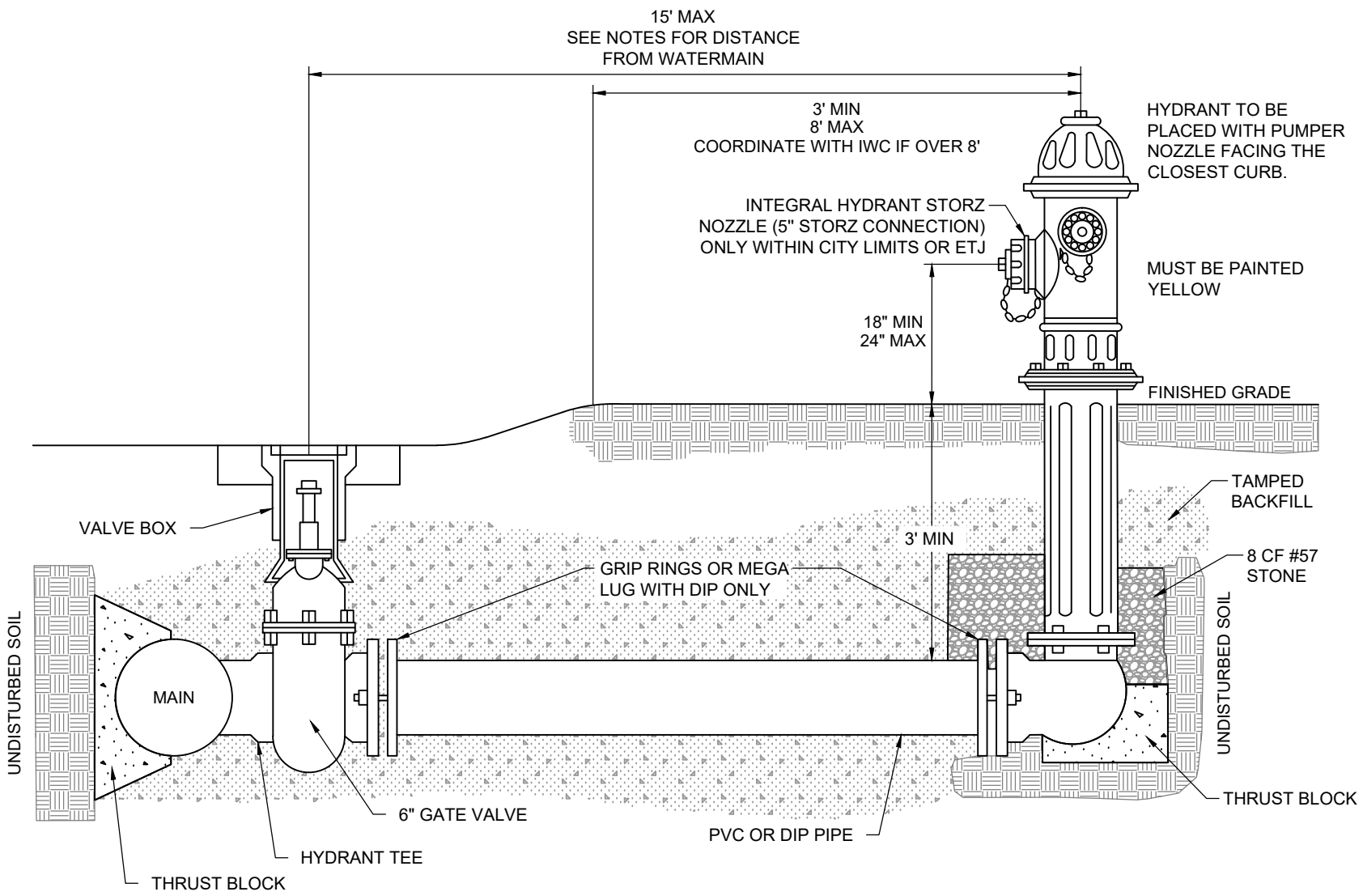
W–20A



NOTES:

1. WATERMAIN TO BE 4.5 FT FROM THE BACK OF THE CURB IF THERE ARE NO TREES IN THE PLANTING STRIPS
2. WATERMAIN TO BE 4.5 FT FROM THE EDGE OF PAVEMENT IF THERE IS NO CURB OR SIDEWALK
3. WATERMAIN TO BE 1 FT UNDER SIDEWALK IF TREE IS PLANTED IN PLANTING STRIP
4. NO HYDRANTS TO BE LOCATED IN RADIUS OF INTERSECTIONS
5. HYDRANT MUST BE 18" MINIMUM OFF CURB OR 18" MINIMUM BEHIND SIDEWALK IF BETWEEN SIDEWALK AND R/W
6. MAINTAIN 3 FT CLEARANCE AROUND HYDRANT
7. LOCATION OF HYDRANTS INSIDE CITY LIMITS MUST BE APPROVED BY CITY FIRE MARSHALL

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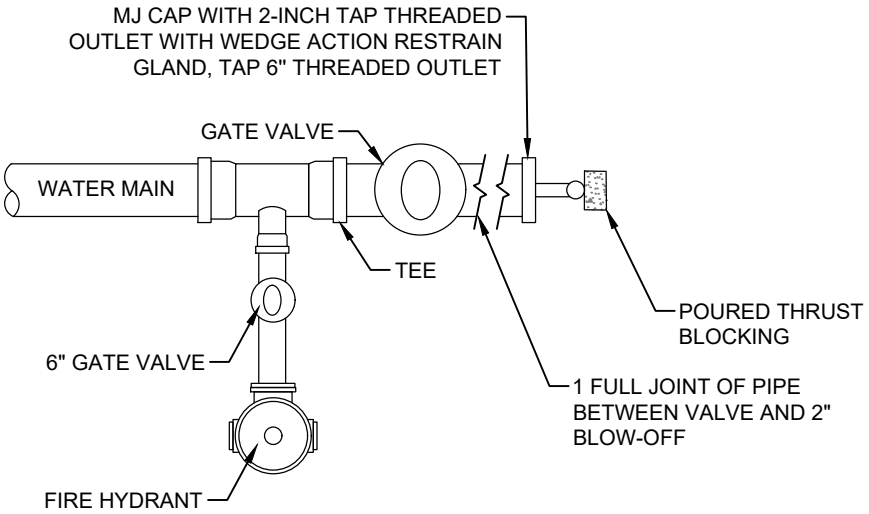
REVISION:	11/22/2024

W-20B

FIRE HYDRANT ASSEMBLY

NOT TO SCALE

REDELL WATER CORPORATION



PLAN VIEW

NOTE:

1. WATER LINES 6" OR LARGER SHALL HAVE FIRE HYDRANT AS PERMANENT BLOW OFF.
2. 6-INCH AND ABOVE WATER MAIN WITH FIRE HYDRANT BLOWOFF ASSEMBLY WITH TEE AND TWO GATE VALVES STUBBED OUT WITH PLUG AND WITH 2" TAP TO BE REMOVED FOR FUTURE EXTENSION.

IREDELL WATER CORPORATION

FIRE HYDRANT BLOWOFF ASSEMBLY

NOT TO SCALE

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DATE:	05/20/2022
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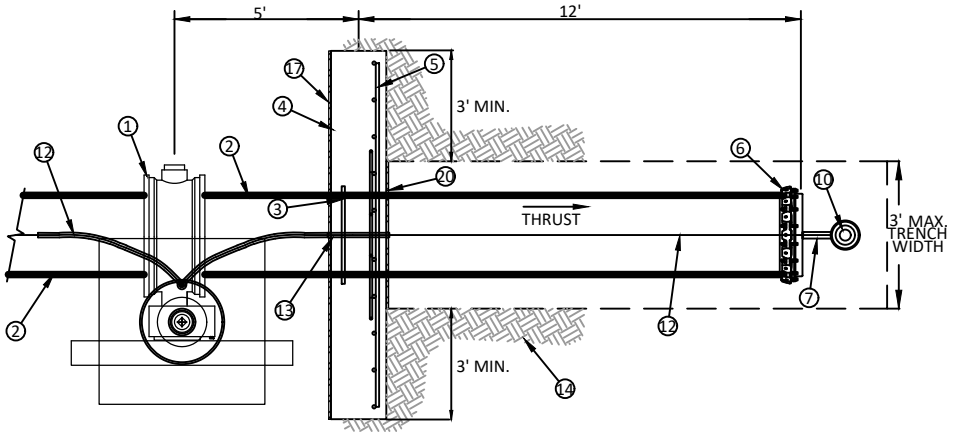
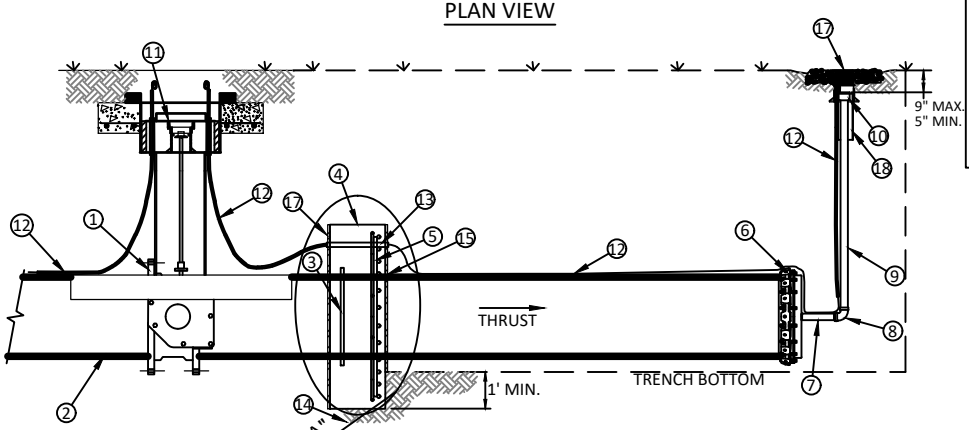
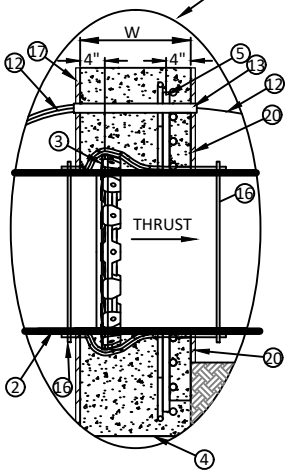
W-20C



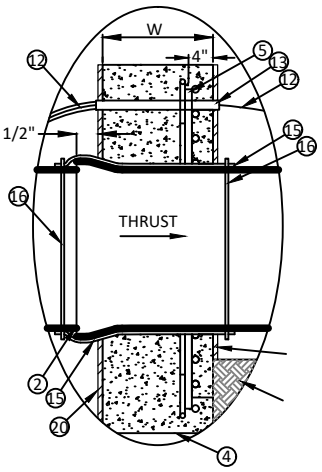
PLAN VIEW



ELEVATION VIEW



DETAIL "A"



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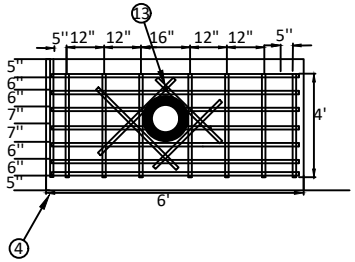

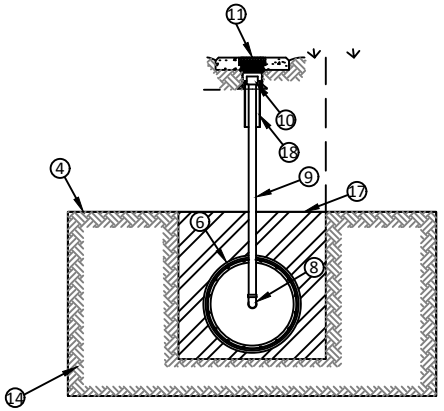

NO.	DESCRIPTION
1.	END OF LINE VALVE - BUTTERFLY OR GATE VALVE (MJ X MJ)
2.	DIP - (PE X PE) - REMOVE BELL - LENGTH = 17' - 19'
3.	WEDGE ACTION THRUST RESTRAINT GLAND
4.	CONCRETE WALL BLOCK (f'c = 3600 PSI MIN) 10' x 5' x WIDTH (W)
5.	REBARS - GRADE 60 PER ASTM A615 - SEE REBAR SHCEDULES, CUT WHEN REQUIRED
6.	MJ CAP - WITH WEDGE ACTION RESTRAINT GLAND, TAP 2'' THREADED OUTLET (FNPT)
7.	2'' RED BRASS NIPPLE SCH 40 *MNPT X MNPT) - LENGTH = 12''
8.	2'' RED BRASS 90° BEND (FNPT X FNPT)
9.	2'' RED BRASS NIPPLE SCH 40 (MNPT X MNPT) - LENGTH AS REQUIRED
10.	2'' BRASS COUPLING (FNPT X FNPT) WITH PVC MIP PLUG
11.	STANDARD VALVE BOX ASSEMBLY (16'' + VALVES) - SEE DETAIL
12.	AWG #14 GAUGE COPPER TRACER WIRE - WITH BLUE INSULATION (30 MIL HDPE) TERMINATE WITH 24'' EXCESS WIRE (COILED) IN VALVE BOX (TYP)
13.	1'' SCH 40 PVC ELECTRICAL CONDUIT - LENGTH AS REQUIRED
14.	UNDISTURBED SOIL
15.	HIGH DENSITY CROSS LAMINATED POLYTHEYLENE FILM TUBE (HDCLPE) AWWA C105 - 4 MILS EACH X 2 LAYER - 8 MILES TOTAL
16.	HDPE ADHESIVE TAPE OR HDPE ZIP LOCK TIES
17.	PLYWOOD FORM
18.	6" PVC PIPE - L = 15'' OR VALVE BOX BOTTOM SECTION

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REVISION:	11/22/2024

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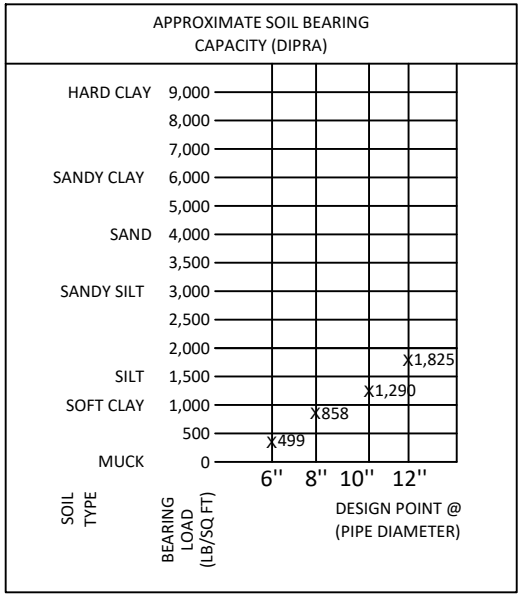
DEAD END THRUST - WALL BLOCKING AND 2'' BLOW-OFF ASSEMBLY 6'' THROUGH 12'' MAINS PART 1

NOT TO SCALE

REDELL WATER CORPORATION

APPROX. DEAD END THRUST (DIPRA) AT 200 PSI WATER PRESSURE		UNDISTURBED SOIL BEARING AREA	APPROX. SOIL PRESSURE	W (WIDTH) (MINIMUM)	CONCRETE VOLUME (APPROXIMATE)	
PIPE DIAMETER (INCHES)	TOTAL THRUST (POUNDS)	SQUARE FEET	BEARING LOAD (LB/SQ FT)	INCHES	FT^3	CY
6	7,478	15	499	10	20	0.74
8	12,866	15	858	12	24	0.89
10	19,354	15	1,290	12	24	0.89
12	27,370	15	1,825	14	28	1.04



REBAR SCHEDULE		
TYPE	LENGTH (INCHES)	NUMBER REQUIRED
VERTICAL	38	6
HORIZONTAL	62	6
HORIZONTAL	24	2
DIAGONAL	30	4

REBAR DIAMETER SCHEDULE			
PIPE DIAMETER	BAR SIZE	TOTAL REBAR LENGTH (FT)	TOTAL REBAR WEIGHT (LB)
6''	#6	64	96
8''	#7	64	131
10''	#8	64	171
12''	#9	64	218

NOTES:

A. 12 - INCH MAINS REQUIRE THIS INSTALLATION.
B. 6 - INCH MAINS THROUGH 10 - INCH MAINS REQUIRE THIS INSTALLATION WHEN SOFT SOILS ARE ENCOUNTERED, OR WHEN REQUIRED BY THE ENGINEER
C. WHEN DIRECTED BY THE ENGINEER, THE CONCRETE WALL BLOCK SIZE MY BE ADJUSTED, BASED ON THE ACTUAL SOIL CLASSIFICATION
D. FULLY RESTRAINED JOINT PIPE MAY BE USED IN LIEU OF THIS DETAIL - SEE RESTRAINED PIPE JOINT DETAIL
E. ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RESTRAINT

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DATE: 05/13/2024
REVISION: 11/22/2024

W-21B

DEAD END THRUST - WALL BLOCKING AND 2'' BLOW-OFF ASSEMBLY 6'' THROUGH 12'' MAINS PART 2

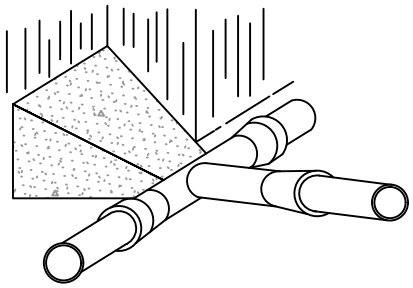
NOT TO SCALE

REDELL WATER CORPORATION

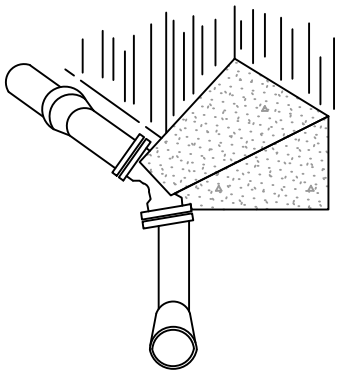
REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 150 PSI

ALL AREAS GIVEN IN SQUARE FEET

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	QUICKSAND-VERY POOR SOIL 1,000 LBS/FT²	GRAVEL/COARSE SAND 1,600 LBS/FT²	SOFT CLAY 2,000 LBS/FT²	SAND-CLEAN DRY 4,000 LBS/FT²	MODERATELY DRY CLAY 4,000 LBS/FT²	DRY CLAY-ALWAYS DRY 8,000 LBS/FT²	SAND, COMPACT FIRM 8,000 LBS/FT²	ROCK-POOR 10,000 LBS/FT²
2"									
11 1/4°	93	0.14	0.09	0.07	0.03	0.03	0.02	0.02	0.01
22 1/2°	184	0.28	0.17	0.14	0.07	0.07	0.03	0.03	0.03
45°	360	0.54	0.34	0.27	0.14	0.14	0.07	0.07	0.05
90°	666	1.00	0.62	0.50	0.25	0.25	0.12	0.12	0.10
PLUG	471	0.71	0.44	0.35	0.18	0.18	0.09	0.09	0.07
4"									
11 1/4°	369	0.55	0.35	0.28	0.14	0.14	0.07	0.07	0.06
22 1/2°	735	1.10	0.69	0.55	0.28	0.28	0.14	0.14	0.11
45°	1,442	2.16	1.35	1.08	0.54	0.54	0.27	0.27	0.22
90°	2,665	4.00	2.50	2.00	1.00	1.00	0.50	0.50	0.40
PLUG	1,884	2.83	1.77	1.41	0.71	0.71	0.35	0.35	0.28
6"									
11 1/4°	831	1.25	0.78	0.62	0.31	0.31	0.16	0.16	0.12
22 1/2°	1,654	2.48	1.55	1.24	0.62	0.62	0.31	0.31	0.25
45°	3,244	4.87	3.04	2.43	1.22	1.22	0.61	0.61	0.49
90°	5,995	9.00	5.62	4.50	2.25	2.25	1.12	1.12	0.90
PLUG	4,239	6.36	3.97	3.18	1.59	1.59	0.79	0.79	0.64
8"									
11 1/4°	1,477	2.22	1.39	1.11	0.55	0.55	0.28	0.28	0.22
22 1/2°	2,940	4.41	2.76	2.21	1.10	1.10	0.55	0.55	0.44
45°	5,768	8.66	5.41	4.33	2.16	2.16	1.08	1.08	0.87
90°	10,658	16.00	9.99	7.99	4.00	4.00	2.00	2.00	1.60
PLUG	7,536	11.31	7.07	5.65	2.83	2.83	1.41	1.41	1.13
10"									
11 1/4°	2,308	3.46	2.16	1.73	0.87	0.87	0.43	0.43	0.35
22 1/2°	4,595	6.90	4.31	3.45	1.72	1.72	0.86	0.86	0.69
45°	9,012	13.53	8.45	6.76	3.38	3.38	1.69	1.69	1.35
90°	16,653	24.99	15.61	12.49	6.25	6.25	3.12	3.12	2.50
PLUG	11,776	17.67	11.04	8.83	4.42	4.42	2.21	2.21	1.77
12"									
11 1/4°	3,016	4.52	2.82	2.63	1.14	1.14	0.56	0.56	0.46
22 1/2°	6,004	9.02	5.63	4.51	2.25	2.25	1.12	1.12	0.90
45°	11,776	17.68	11.04	8.84	4.41	4.41	2.21	2.21	1.76
90°	21,760	32.65	20.40	16.32	8.17	8.17	4.08	4.08	3.27
PLUG	15,386	23.09	14.43	11.54	5.78	5.78	2.89	2.89	2.31



TEE INTERSECTION



BEND

NOTES:
1. CONCRETE SHALL BE 3,000 PSI.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.
4. TRENCH SIDE TO BE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

IREDELL WATER CORPORATION

CONCRETE THRUST BLOCKING

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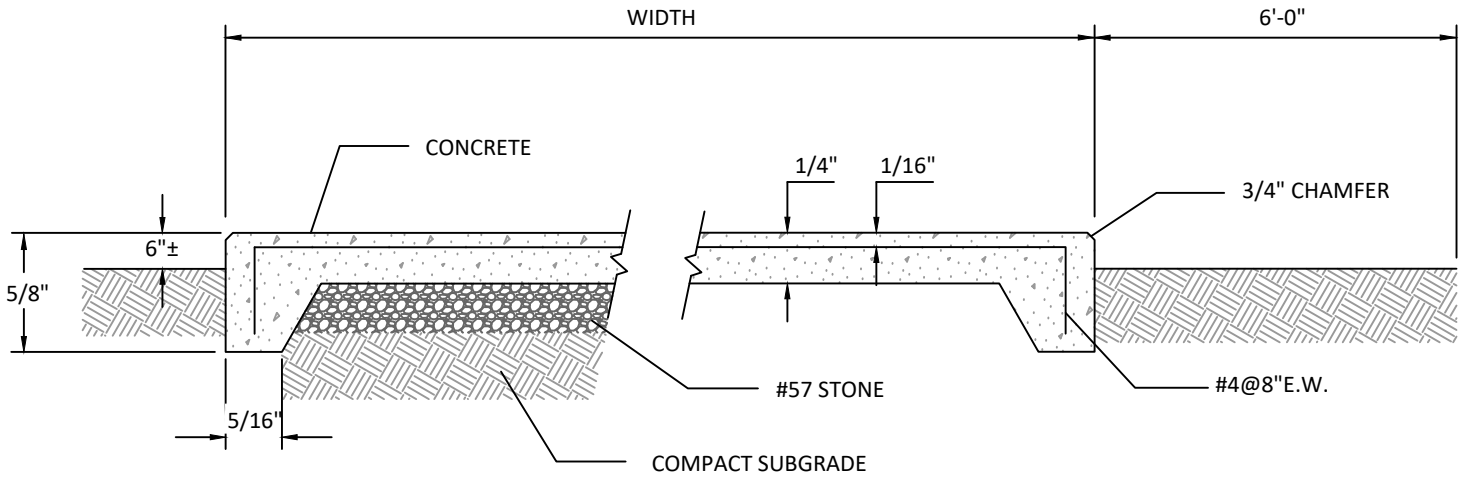

NOTE:

1. PROPANE TANK TO SIT ON CONCRETE BLOCKS

	LENGTH	WIDTH
EMERGENCY GENERATOR PAD	5'-0"	8'-0"
TRANSFORMER PAD	3'-0"	3'-0"
PROPANE TANK PAD	SEE NOTE 1	SEE NOTE 1

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CONCRETE EQUIPMENT PAD

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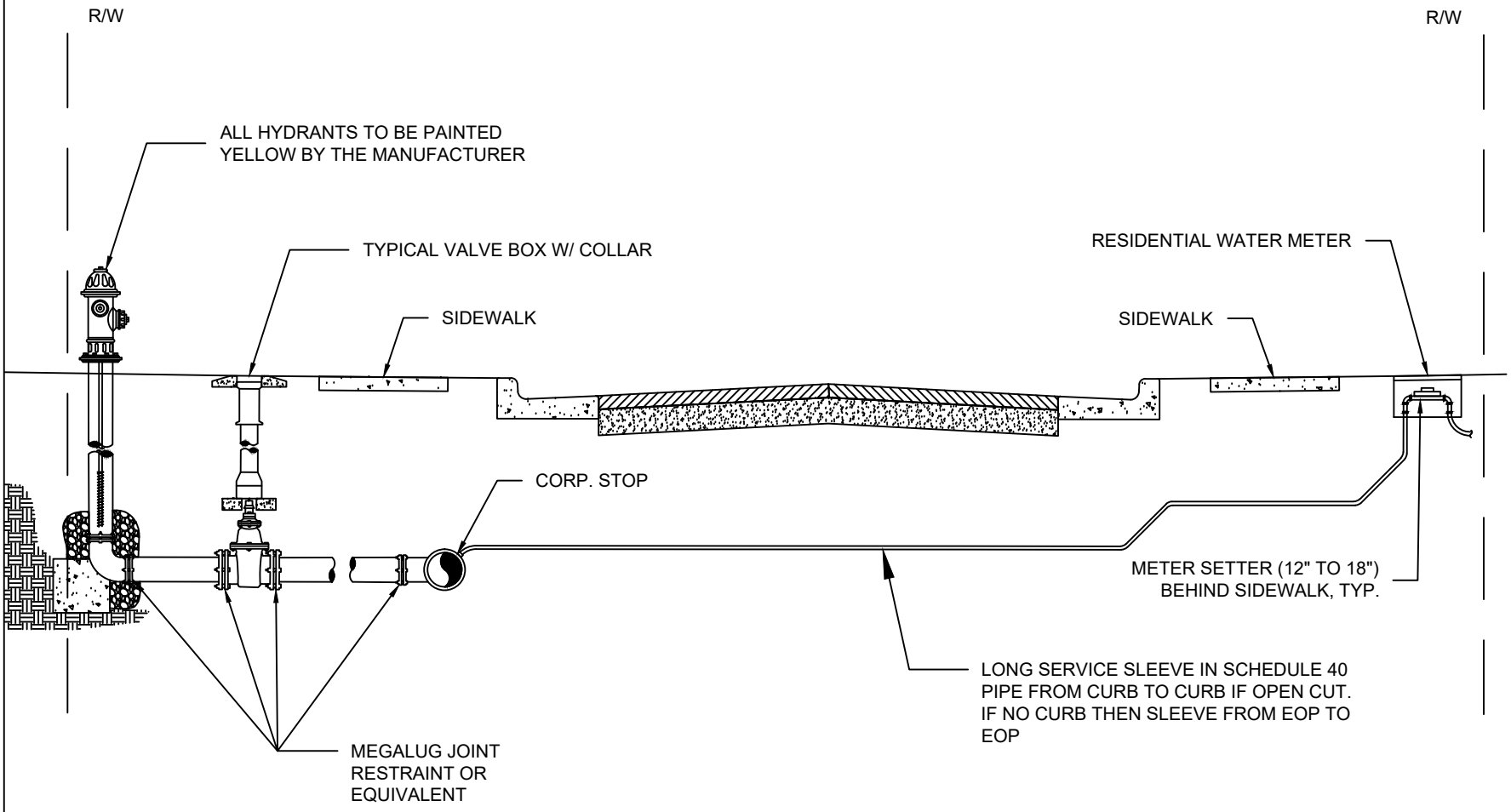

NOTES:

1. WATERMAIN TO BE 4.5 FT FROM THE BACK OF THE CURB IF THERE ARE NO TREES IN THE PLANTING STRIPS
2. WATERMAIN TO BE 4.5 FT FROM THE EDGE OF PAVEMENT IF THERE IS NO CURB OR SIDEWALK
3. WATERMAIN TO BE 1 FT UNDER SIDEWALK IF TREE IS PLANTED IN PLANTING STRIP
4. NO HYDRANTS TO BE LOCATED IN RADIUS OF INTERSECTIONS
5. HYDRANT MUST BE 18" MINIMUM OFF CURB OR 18" MINIMUM BEHIND SIDEWALK IF BETWEEN SIDEWALK AND R/W
6. MAINTAIN 3 FT CLEARANCE AROUND HYDRANT
7. LOCATION OF HYDRANTS INSIDE CITY LIMITS MUST BE APPROVED BY CITY FIRE MARSHALL

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UTILITIES IN R/W

NOT TO SCALE

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