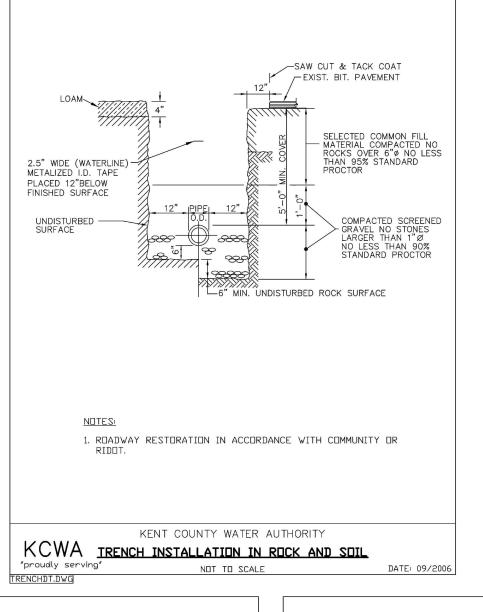
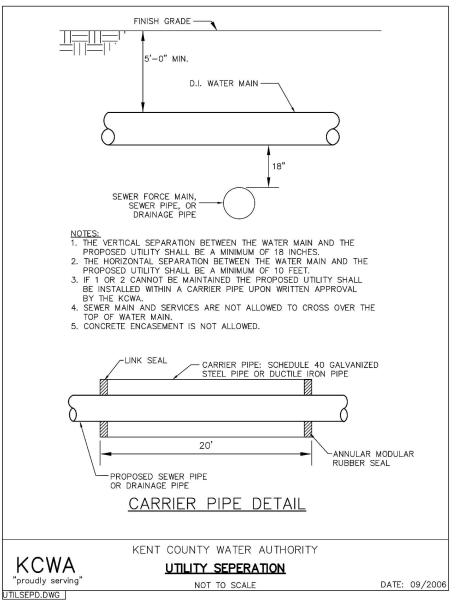
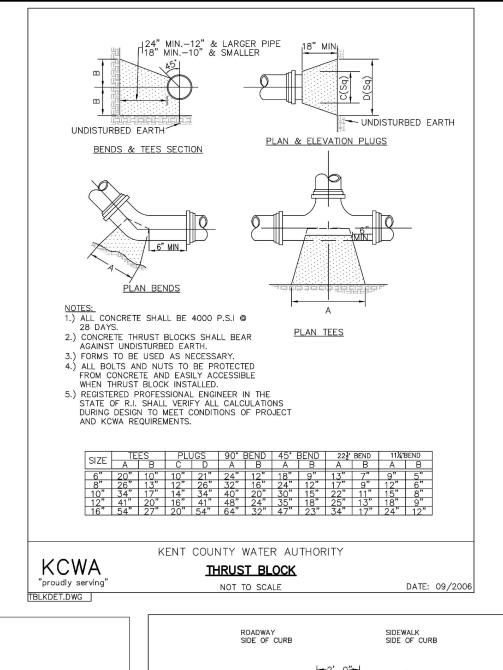
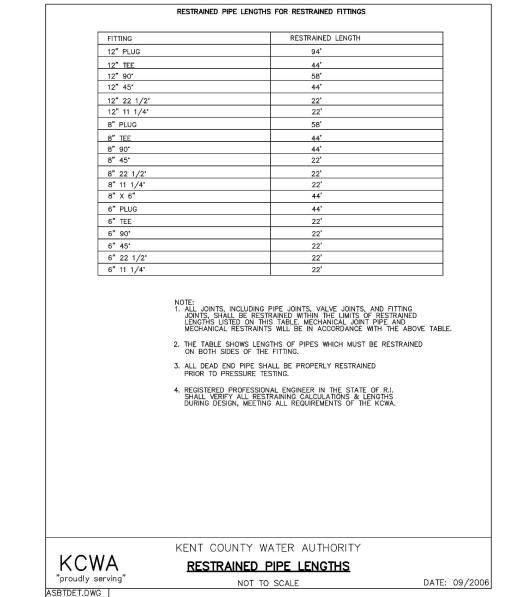


UNDISTURBED MATERIAL -EXIST. WATER MAIN JOINT WITH RESTRAINED JOINT -NEW D.I. PIPE 1.) TAPPING SLEEVE AND VALVE TO BE KENT COUNTY WATER AUTHORITY **KCWA** TAPPING SLEEVE AND VALVE proudly serving DATE: 09/2006









WATER SYSTEM NOTES

- CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL KENT COUNTY WATER AUTHORITY (KCWA) RULES, REGULATIONS, AND INSTALLATION REQUIREMENTS.
- CONTRACTOR TO COORDINATE SHUTDOWN OF EXISTING WATER MAIN WITH KCWA PRIOR
- CONSTRUCTION MATERIALS AND METHODS FOR WATER MAINS AND SERVICE CONNECTIONS HAVE BEEN STANDARDIZED BY KCWA. THE CONTRACTOR SHALL ONLY USE KCWA APPROVED MATERIALS AND METHODS. THE CONTRACTOR SHALL USE KCWA MATERIALS AND METHODS WHEN IN CONFLICT WITH DRAWINGS
- WATER MAIN PIPE: ALL DUCTILE-IRON PIPE AND APPURTENANCES SHALL BE FROM A SINGLE MANUFACTURER SOURCE. FOREIGN PIPE FITTINGS AND GASKETS ARE STRICTLY FORBIDDEN. DUCTILE IRON PIPE SHALL CONFORM TO ANSI/AWWA C151/A21.51, ANSI/AWWA C150/A21.50 CLASS 52 DOUBLE CEMENT MORTAR LINED. GASKETS SHALL CONFORM TO ANSI/AWWA C111/A21.1. ALL PIPES SHALL HAVE A BITUMINOUS OUTSIDE COATING IN ACCORDANCE WITH ANSI/AWWA C151/A21.51 AND ANSI/AWWA C153/A21.53 RESPECTIVELY. ALL PIPES SHALL BE CEMENT-MORTAR LINED AND SEAL COATED IN ACCORDANCE WITH ANSI/AWWA C104/A21.14 EXCEPT HE LINING THICKNESS SHALL BE TWICE THAT SPECIFIED. JOINTS FOR PIPE SHALI BE PUSH-ON (TYTON STYLE ONLY) OR MECHANICAL JOINT CONFORMING TO ANSI/AWWA C111. ALL MECHANICAL JOINT PIPES SHALL BE SUPPLIED WITH ACCESSORIES. RESTRAINED JOINTS SHALL BE SUITABLE FOR 150 PSI WORKING PRESSURE AND FABRICATED OF HEAVY SECTION DUCTILE IRON CASTING. GASKETS SHALL MEET THE MATERIAL REQUIREMENTS OF ANSI/AWWA AND MADE IN THE USA.

DUCTILE IRON MEETING ANSI/AWWA C151/A21.51 ANSI/AWWA C150/A21.50. SPECIAL THICKNESS CLASS 52.

DOUBLE CEMENT MORTAR MEETING ANSI/AWWA C151/A21.5. END JOINTS: PUSH ON (TYTON STYLE ONLY) - MEETING ANSI/AWWA C111/A21.51. MECHANICAL JOINT - MEETING ANSI/AWWA C111/A21.11. EXTERIOR: ANSI/AWWA C104/A21.4. INTERIOR ALL REQUIREMENTS OF EPA FOR POTABLE WATER. RUBBER MEETING ANSI/AWWA C111/A21.11.

NITRILE (IN CONTAMINATED SOIL).

. FITTINGS: DUCTILE IRON FITTINGS SHALL CONFORM TO ANDIAWWA CLOUDED TO FOREIGN FITTINGS, GASKET GLANDS AND ACCESSORIES ARE STRICTLY FORBIDDEN. DUCTILE IRON FITTINGS SHALL CONFORM TO ANSI/AWWA C153/A21.53. ALL FITTINGS SHALL HAVE A BITUMINOUS OUTSIDE COATING IN ACCORDANCE WITH ANSI/AWWA C151/A21.51 AND ANSI/AWWA C153/A21.53 RESPECTIVELY. ALL FITTINGS SHALL BE CEMENT-MORTAR LINED AND SEAL COATED IN ACCORDANCE WITH NNSI/AWWA C104/A21.14 EXCEPT THE LINING THICKNESS SHALL BE TWICE THA SPECIFIED. JOINTS FOR FITTINGS SHALL BE MECHANICAL JOINT CONFORMING TO ANSI/AWWA C111. ALL MECHANICAL JOINT FITTINGS SHALL BE SUPPLIED WITH GLANDS AND ACCESSORIES.

4 INCH TO 12 INCH DUCTILE IRON COMPACT MEETING ANSI/AWWA C153/A21.53. 16 INCH AND LARGER DUCTILE IRON MEETING ANSI/AWWA C153/A21.53 OR ANSI/AWWA C110/A21.10.

PRESSURE CLASS: PIPE FITTINGS SHALL HAVE A PRESSURE RATING OF 350 FOR 24-INCH AND SMALLER AND 250 PSI FOR 30-INCH AND LARGER. FITTINGS SHALL AT A MINIMUM HAVE THE SAME PRESSURE RATING AS THE CONNECTING PIPE.

RUBBER MEETING ANSI/AWWA C111/A21.11. NITRILE (IN CONTAMINATED

VALVES: VALVES SHALL BE CAST IRON OR DUCTILE IRON 250-PSI WORKING PRESSURE. OPERATING STEM SHALL BE PROVIDED WITH A MINIMUM OF TWO (2) O-RING STEM SEALS. BONNET AND GLAND BOLTS/WASHERS SHALL BE STAINLESS WEDGES SHALL BE FULLY ENCAPSULATED. THE INTERIOR AND EXTERIOR URFACES OF ALL CAST IRON OR DUCTILE IRON COMPONENTS SHALL BE BOND EPOXY COATED, 8 MILS MINIMUM THICKNESS. EPOXY COATING MUST BE UNDAMAGED WITH NO CHIPS OR ABRASIONS. FIELD TOUCH-UP OF INTERIOR COATING IS NOT ALLOWED. FIELD TOUCH-UP OF EXTERIOR SURFACES SHALL BE IN ACCORDANCE WITH MANUFACTURES RECOATING SPECIFICATIONS ONLY. CONTRACTORS SHALL USE SPECIAL HANDLING AND INSTALLATION PRECAUTIONS WITH THE USE OF EPOXY COATED VALVES AS NECESSARY TO ENSURE THAT NO COATING SYSTEM DAMAGE OCCURS. AT A MINIMUM FIBER SLINGS OR BELTS SHALL BE USED FOR ALL HANDLING, ALL EPOXY-COATED VALVES SHALL BE PALLETIZED AND PROPERLY SHRINK-WRAPPED UPON DELIVERY TO ASSURE COATING SYSTEM INTEGRITY IS NOT COMPROMISED. ALL EPOXY VALVES FOUND MISHANDLED AT DELIVERY OR DURING INSTALLATION SHALL BE REJECTED AND REMOVED FROM THE JOB SITE. ALL VALVES SHALL BE MANUFACTURED TO MEET OR EXCEED AWWA C509 AND ISO 9000 ALONG WITH THE DESIGN AND OPERATING CHARACTERISTICS OF THE FOLLOWING DEVICES:

RESILIENT SEAT GATE 4 INCH TO 12 INCH:

TYPE: BURIED SERVICE NON-RISING STEM.

ABOVE GRADE SERVICE OR PITS OS & Y WITH HAND WHEEL OR NON-RISING STEM

LEFT OR RIGHT, DEPENDING ON SYSTEM LOCATION

WORKING PRESSURE: OPENING:

STEM SEAL:

420 STAINLESS STEEL OR EQUAL WITH MINIMUM 60,000 PSI STAINLESS STEEL, TYPE 304 FOR ALL OF THE VALVE INTERNAL & EXTERIOR TO BE COATED WITH FUSE BONDED FASTENERS HOLIDAY FREE EPOXY COATING MINIMUM 8 MILS NOMINAL THICKNESS MEETING OR EXCEEDING AWWA C550 FULLY RUBBER ENCAPSULATED CAST IRON, DUCTILE IRON OR WEDGES: BRONZE GATE MEETING AWWA C509 OPERATING NUT 2 INCH SQUARE OPERATING NUT WITH HEXAGON STAINLESS STEEL BOLT FASTENER

MINIMUM TWO O-RING SEALS

TAPPING SLEEVE & VALVE: VALVES SHALL BE FULL BODY AND FULL PORT THE REQUIREMENTS PARAGRAPH 4.9.1.1 ABOVE. SLEEVES SHALL BE FULL PORT DUCTILE IRON OR GRADE 18-8 TYPE 304 STAINLESS STEEL DUCTILE IRON SLEEVES SHALL BE OF THE SAME MANUFACTURER AS OF THE VALVE AND BITUMINOUS COATED. ALL SLEEVES SHALL BE MANUFACTURED TO MEET OR EXCEED THE DESIGN AND OPERATING CHARACTERISTICS OF ONE OF THE FOLLOWING

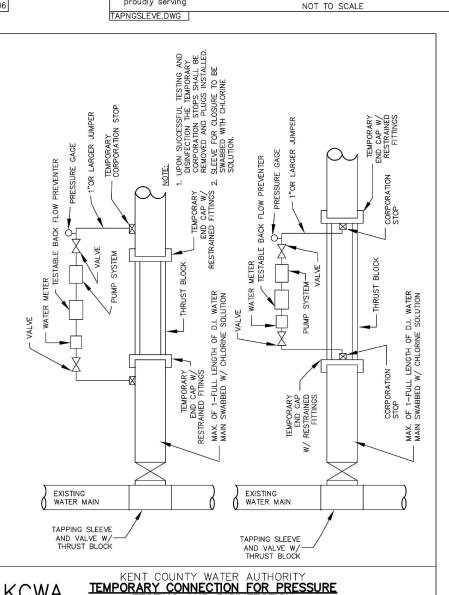
RESILIENT SEAT GATE VALVES DESIGNED SPECIFICALLY FOR TAPPING. SEAL: STAINLESS STEEL SLEEVES SHALL USE GRID PATTERN VIRGIN RUBBER ASTM 2000, FULL 360—DEGREE PIPE COVERAGE. DUCTILE IRON SLEEVES SHALL USE

MECHANICAL JOINT WITH RUBBER SEALS. MAXIMUM WORKING PRESSURE: 4-12 INCH: 250 PSI 16-24 INCH: 200 PSI

GRADE 18-8 TYPE 304 STAINLESS STEEL. SERVICE PIPE SERVICE PIPE SIZES % TO 2 INCH SHALL BE COPPER PIPE.

COPPER TUBING JOINTS SHALL COMPLY WITH NSF 61 AND CONFORM TO ONE OF

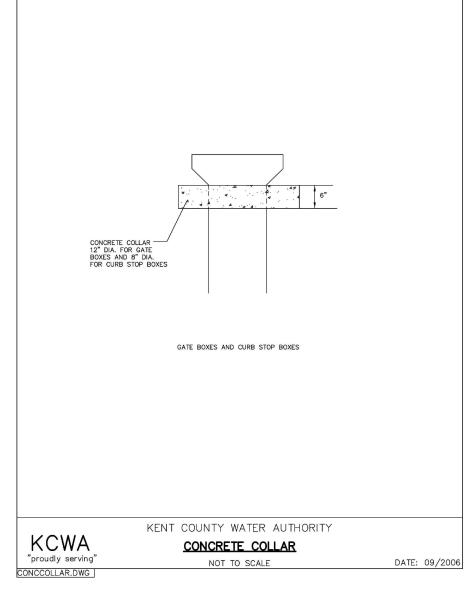
THE FOLLOWING TYPES: A. BRAZED JOINTS - ALL JOINT SURFACES SHALL BE CLEANED AND APPROVED FLUX SHALL BE APPLIED WHERE REQUIRED. THE JOINT SHALL BE BRAZED WITH A FILLER METAL CONFORMING TO AWS A5.8.

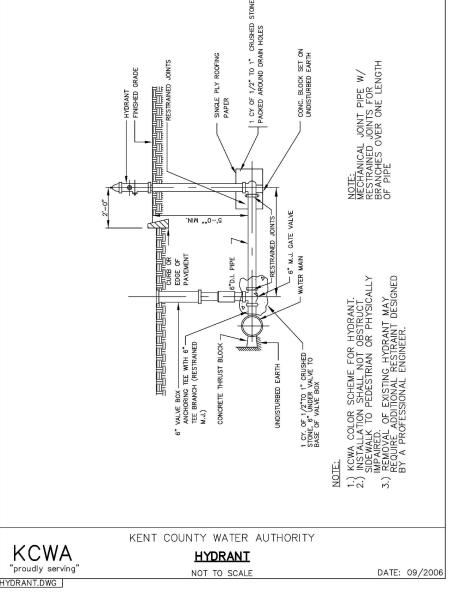


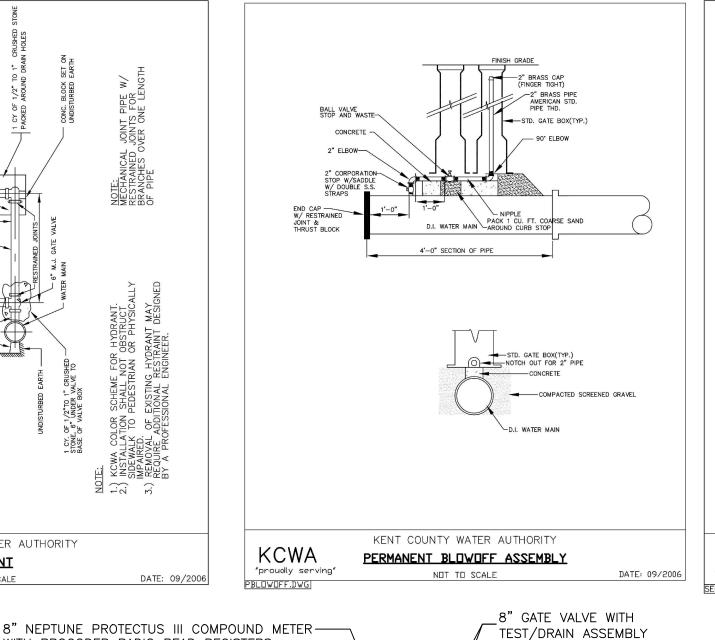
TESTING AND DISINFECTION

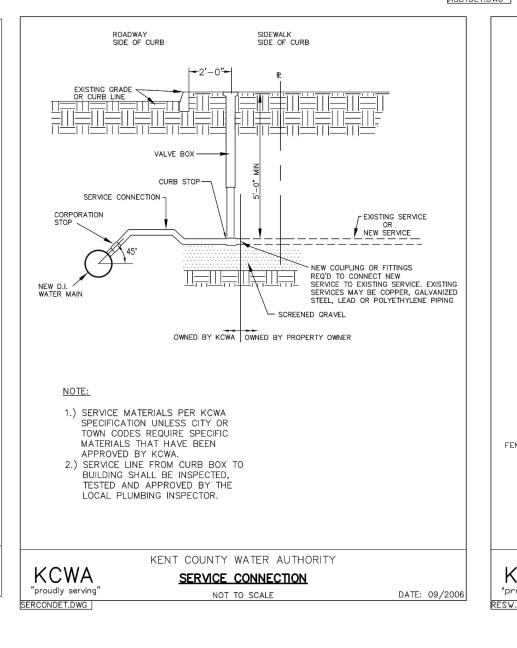
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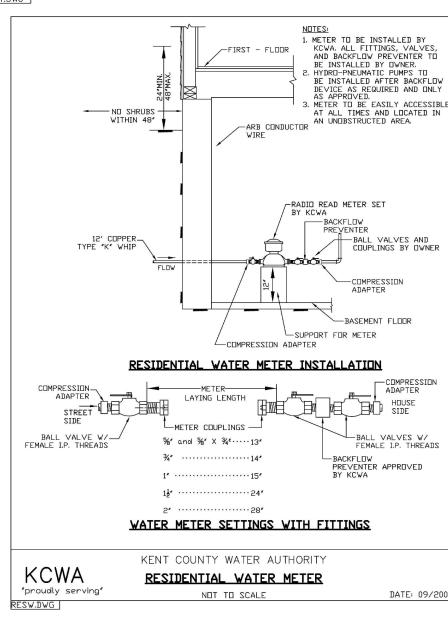
TEMPCONP.DWG

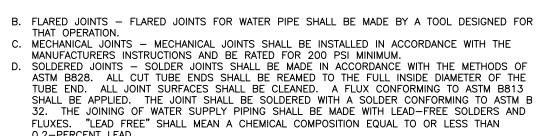












PE PIPE AND TUBING JOINTS SHALL COMPLY WITH NSF 61, BE RATED FOR A WORKING PRESSURE OF 200 PSI AND CONFORM TO ONE OF THE FOLLOWING TYPES:

A. HEAT FUSION JOINTS - JOINT SURFACES SHALL BE CLEAN AND FREE FROM MOISTURE. ALL JOINT SURFACES SHALL BE HEATED TO MELT TEMPERATURE AND JOINED. THE JOINT SHALL BE UNDISTURBED UNTIL COOL. JOINTS SHALL BE MADE IN ACCORDANCE WITH ASTM D2657.

B. MECHANICAL JOINTS - MECHANICAL JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS GENERAL - PE PIPE SHALL BE CUT SOLIARE WITH A CUTTER DESIGNED FOR PLASTIC PIPE EXCEPT WHERE JOINED BY HEAT FUSION, PIPE ENDS SHALL BE CHAMFERED TO REMOVE SHARP EDGES. KINKED PIPE SHALL NOT BE INSTALLED. THE MINIMUM PIPE BENDING RADIUS SHALL NOT BE LESS THAN 30 PIPE DIAMETERS, OR THE MINIMUM COIL RADIUS, WHICHEVER IS GREATER. PIPING SHALL NOT BE BENT BEYOND STRAIGHTENING OF THE CURVATURE OF THE COIL. BENDS SHALL NOT BE PERMITTED WITHIN 10 PIPE DIAMETERS OF ANY FITTING OR VALVE. STIFFENER INSERTS INSTALLED WITH COMPRESSION—TYPE COUPLINGS AND FITTINGS SHALL NOT EXTEND BEYOND THE CLAMP OR NUT OF THE COUPLING OR FITTING.

CORPORATION STOPS SHALL BE BALL TYPE WITH EITHER STAINLESS STEEL, SYNTHETIC COATED BRASS BALL OR NICKEL COATED BRASS BALL DESIGNED FOR POTABLE WATER SERVICE UP TO 300 PSI. BODY SHALL BE HEAVY CAST LEAD FREE 'ENVIROBRASSII' UNS ALLOY NUMBER C89520 ASTM B584-98a AND/OR AWWA C800/ASTM B-62 MEETING OR EXCEEDING THE LEAD LEACHING PERFORMANCE SPECIFICATIONS OF ANSI/NSF 61 STANDARD. ALL CORPORATION STOPS SHALL MEET OR EXCEED DESIGN STANDARDS OF AWWA C800 ALONG WITH THE FOLLOWING: TYPE = FORD OR EQUAL OPEN = OPENS LEFT END CONNECTIONS = COMPRESSION WITH NON-CORROSIVE GRIP RING MEETING ASTM

B-159-BUNA N RUBBER AND CONDUCTIVITY RING. THREADED END SHALL BE AWWA CC TAPER THREAD FOR DIRECT TAP.

CURB STOPS SHALL BE BALL TYPE WITH EITHER STAINLESS STEEL, SYNTHETIC COATED BRASS BALL OR NICKEL COATED BRASS BALL DESIGNED FOR POTABLE WATER SERVICE UP TO 300 PSI. BODY SHALL BE HEAVY CAST LEAD FREE 'ENVIROBRASSII' UNS ALLOY NUMBER C89520 ASTM B584-98a AND/OR AWWA C800/ASTM B-62 MEETING OR EXCEEDING THE LEAD LEACHING PERFORMANCE SPECIFICATIONS OF ANSI/NSF 61 STANDARD. ALL CURB STOPS SHALL MEET OR EXCEED DESIGN STANDARDS OF AWWA C800 ALONG WITH THE FOLLOWING:

OPEN = OPENS LEFT END CONNECTIONS = COMPRESSION WITH NON-CORROSIVE GRIP RING MEETING ASTM B-159-BUNA N RUBBER AND CONDUCTIVITY RING.

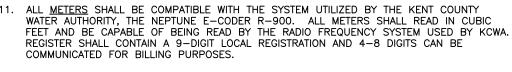
SADDLE FOR SERVICE CONNECTION TO DUCTILE IRON MAIN, IF USED, SHALL BE DUCTILE IRON OR TYPE 304 STAINLESS STEEL WITH STAINLESS STEEL BOLTS, WASHERS, NUTS AND BANDS. DUCTILE IRON COMPONENTS SHALL BE COATED WITH FUSION BONDED EPOXY MINIMUM 8 MILS THICKNESS

TYPE = FORD OR EQUAL (SADDLE ON 8" DUCTILE IRON MAIN) . BODY = DUCTILE IRON OR GRADE 18-8 TYPE 304 STAINLESS STEEL BAND = GRADE 18-8 TYPE 304 STAINLESS STEEL DOUBLE BAND. FASTENERS = 304 STAINLESS STEEL STUD, NUT & WASHERS.

GASKET = VIRGIN RUBBER ASTM 2000 <u>DUCTILE IRON COUPLINGS:</u> STRAIGHT AND TRANSITION COUPLINGS SHALL BE DUCTILE IRON MANUFACTURED TO MEET AWWA C 219 AND FITTED WITH STAINLESS STEEL BOLTS WASHERS AND

NUTS. DUCTILE IRON COMPONENTS SHALL BE COATED WITH FUSION BONDED EPOXY MINIMUM THICKNESS MEETING OR EXCEEDING AWWA C550. COUPLINGS SHALL BE MANUFACTURED TO MEET OR EXCEED THE DESIGN AND OPERATING CHARACTERISTICS OF THE

DUCTILE IRON COMPONENTS SHALL BE EPOXY COATED AWWA C 500. 304 STAINLESS STEEL STUD, NUT & WASHERS. FASTENERS: RUBBER ASTM 2000.



SERVICE BOXES (LOCATED OFF ROADWAYS) SHALL BE MANUFACTURED IN NORTH AMERICA. THEY SHALL BE HEAVY PATTERN CAST IRON, BUFFALO STYLE, SLIP ADJUSTABLE TYPE WITH HEAVY CAST IRON COVER AND BRASS BOLT FASTENER TYPE LOCK. THE WORD 'WATER' SHALL BE CAST UPON THE COVER IN HEAVY PATTERN RAISED LETTERS. COVERS SHALL BI DROP IN TYPE WITHOUT FINS SOLID RING. BOXES SHALL HAVE A BITUMINOUS INTERNAL AND EXTERNAL COATING IN ACCORDANCE WITH ANSI/AWWA C151/A21.51 AND ANSI/AWWA C153/A21.53 RESPECTIVELY. BOXES SHALL HAVE BARRELS OF NOT LESS THAN 2-1/2" IN DIAMÉTER. THE UPPER SECTION OF EACH BOX SHALL HAVE A BOTTOM FLANGE OF SUFFICIENT BEARING AREA TO PREVENT SETTLING. THE BASE OF THE LOWER SECTION SHALL BE A REINFORCED ARCH CONFIGURATION AND SIZED TO ENCLOSE THE CURB STOP BOX SECTIONS SHALL BE OF SUFFICIENT LENGTH TO PROVIDE COMPLETE COVERAGE FOR THE DEPTH OF BURY.

VALVE ROAD BOXES ALL VALVES LOCATED IN ROADWAYS (EXCEPT SWING-CHECK) SHALL BE EQUIPPED WITH A CAST IRON "BUFFALO" TYPE, ADJUSTABLE (SLIDING) VALVE ROAD BOX. THE UPPER PORTION SHALL BE 26 INCH LONG AND THE BOTTOM SECTION 48 INCH (MIN) COVERS SHALL BE 5-1/4" IN DIAMETER SOLID RING SEAT WITH THE WORD "WATER" (IN CAPS) CAST UPON IT. THE UPPER PORTION OF THE BOX SHALL BE MANUFACTURED WITH A HEAVY FLANGE HAVING SUFFICIENT BEARING AREA TO PREVENT SETTLEMENT. THE LOWER SECTION SHALL BE CONFIGURED TO ENCLOSE THE VALVE STUFFING BOX WITH AN INSIDE DIAMETER OF AT LEAST 4-1/4 INCH. THE INSTALLED BOX SHALL BE CAPABLE OF VERTICAL ADJUSTMENT OF A MINIMUM OF 6 INCH WHILE MAINTAINING AN OVERLAP OF A LEAST 4 INCH BETWEEN SECTIONS.

ALL $\underline{\mathsf{HOSE}}$ $\underline{\mathsf{BIBS}}$ PROVIDED FOR THE HOUSES SHALL BE OF THE DESIGN, WHICH INCORPORATES A BUILT-IN TAMPER PROOF VACUUM BREAKER FEATURE AS MANUFACTURED BY THE BOSE BIB MAKER. ALL HOSE BIB FIXTURES SHALL BE AMERICAN MADE. THIS REQUIREMENT IS APPLICABLE TO ALL INTERIOR AND EXTERIOR HOSE BIB APPLICATIONS. EXISTING PROPERTIES SHALL BE RETROFITTED WITH NON-REMOVABLE HOSE BIB VACUUM BREAKER ASSEMBLIES SPECIFICALLY DESIGNED TO ADAPT TO THE EXISTING HOSE BIB CONFIGURATION.

THE PROPERTY OWNER SHALL BE RESPONSIBLE TO INSTALL AN APPROPRIATE THERMAL EXPANSION DEVICE IN THE FACILITY TO COMPLY WITH CROSS CONNECTION REQUIREMENTS OF THE RHODE ISLAND PLUMBING CODE.

MINIMUM COVER OVER WATER PIPE IS 5 FEET.

17. PROVIDE WARNING TAPE OVER SERVICE AS SHOWN IN TRENCH DETAIL.

18. THE WATER MAIN AND SERVICES SHALL BE FILLED, FLUSHED, HYDROSTATICALLY PRESSURE TESTED TO 180 PSI AND CHLORINATED/DISINFECTED IN ACCORDANCE WITH KCWA RULES & REGULATIONS, AWWA C651, RHODE ISLAND DEPARTMENT OF HEALTH, AND "AWWA MANUAL OF WATER SUPPLY PRACTICE M55 - PE PIPE DESIGN AND INSTALLATION". REFER TO SECTION 3.23 'DISINFECTION/CHLORINATION' OF THE KCWA RULES AND REGULATIONS AND KCWA'S 'CUSTOMER WATER SERVICE DISINFECTION POLICY'. NOTE: MAXIMUM VELOCITY WHEN FILLING THE PE PIPE WITH WATER SHALL BE 1 FT/SEC (1 GAL/MIN FOR 1" CTS PIPE).

A MINIMUM OF TEN-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED IN THE PLACEMENT OF WATER MAINS, SERVICES OR APPURTENANCES WITHIN THE VICINITY OF SEWER FACILITIES OR VICE VERSA. WHERE WATER MAINS CROSS SEWER MAINS, THE CROWN OF THE SEWER MAIN SHALL BE AT LEAST 18-INCHES BELOW THE BOTTOM OF THE WATER MAIN. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT, HORIZONTAL SEPARATION OR IN THE CASE OF CROSSING THE EIGHTEEN-INCH, VERTICAL SEPARATION, A DEVIATION FROM THIS RESTRICTION MAY BE ALLOWED ON A CASE BY CASE BASIS WITH PRIOR APPROVAL FROM THE GENERAL MANAGER/CHIEF ENGINEER AS TO THE PROPOSED MATERIALS AND INTERVENTIONS TO BE TAKEN TO PROTECT THE WATER SYSTEM FROM THE POSSIBILITY OF CONTAMINATION. IN ALL CASES, FORCE MAIN SEWER INFRASTRUCTURE MUST BE LOCATED BELOW WATER MAINS.

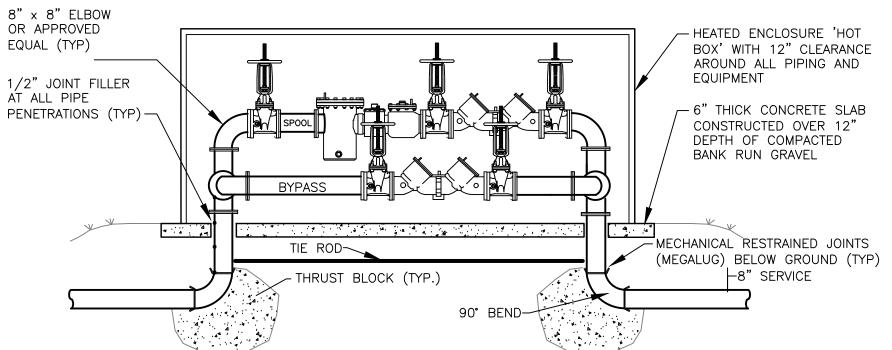
METALIZED DETECTABLE IDENTIFICATION TAPE 2" IN WIDTH OR GREATER, BLUE IN COLOR AND PRINTED WITH "CAUTION WATER LINE BURIED BELOW" SHALL BE UTILIZED OVER ALL WATER LINES AND SERVICES. SET TO A DEPTH FROM FINISHED GRADE OF NO MORE THAN 1'-0" 21. A TEMPORARY PATCH SHALL BE INSTALLED OVER THE FRESHLY BACKFILLED TRENCH IN AN

EXISTING STREET OR SIDEWALK USING HOT BITUMINOUS CONCRETE. IT SHALL BE AT LEAST 3" THICK CONSISTING OF EQUAL THICKNESS LAYERS OF MODIFIED BINDER AND TYPE I-1 WEARING COURSE. AFTER 60 DAYS, THE TEMPORARY PATCH SHALL BE REMOVED AND REPLACED WITH A PERMANENT PATCH. ALL PAVEMENT EDGES SHALL BE SAW CUT 22. AN AS-BUILT PLAN IS REQUIRED. CONTRACTOR SHALL RETAIN THE SERVICES OF A RHODE

ISLAND PROFESSIONAL LAND SURVEYOR TO INSPECT THE SERVICE AND PREPARE THE

AS-BUILT PLAN IN ACCORDANCE WITH THE KCWA RULES AND REGULATIONS.

WITH PROCODER RADIO READ REGISTERS 8" WATTS LEAD FREE REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SERIES 909 OR APPROVED EQUAL 8" NEPTUNE STRAINER— 8" GATE VALVE WITH -TEST/DRAIN ASSEMBLY 8" GATE VALVE WITH TEST/DRAIN ASSEMBLY



NOTES:

1. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL OF ENTIRE MASTER METER ENCLOSURE, ASSEMBLY AND HEATING SYSTEM. . ALL WORK AND MATERIALS SHALL BE PERFORMED IN ACCORDANCE WITH KCWA STANDARDS.

4. PROVIDE NON-CORROSIVE SUPPORTS FOR RPZ AND METER (CONCRETE OR EQUAL). 5. ALL PIPING, VALVES AND EQUIPMENT SHALL BE RATED FOR 200 PSI WORKING PRÉSSURE OR GREATER AS SPECIFIED BY KCWA. 6. ENCLOSURE SHALL BE MANUFACTURED TO PREVENT FREEZING TEMPERATURES WITHIN ENCLOSURE WHEN OUTSIDE TEMPERATURES DROP TO -20F

7. ENCLOSURE SHALL BE DESIGNED WITH 'FLIP TOPS' FOR EASY ACCESS AND MAINTENANCE. 8. ENCLOSURE SHALL BE DESIGNED WITH 'BLOW OUT PANELS' TO ACCOMMODATE RPZ FLOW RATES OF 320 GPM. 9. ENCLOSURE SHALL BE MANUFACTURED BY HOTBOX OR EQUAL.

3. INSTALL MASTER METER ENCLOSURE IN STRICT CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS.

ABOVE-GROUND WATER METER & BACKFLOW PREVENTION ENCLOSURE NOT TO SCALE

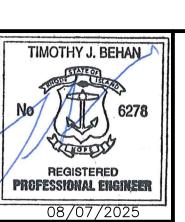
REV. 8-02/02/2023-FINAL PLAN TO TOWN REV. 9-06/02/2025-REVISED WATER SERVICE LAYOUT -REVISED SEWER PUMP AND LPFM -REVISED BUILDING FOOTPRINT (REDUCED)

APPROXIMATE

LOCATION

OF BYPASS

REV. 10-07-28-2025-WATER SERVICE REVISIONS REV. 11-08-07-2025-SHEET 7 ONLY



DATE DRWN CHKD

SMA TJB

SMA TJB

SMA TJB

1 8/13/20 SMA TJB

2 8/26/20 SMA TJB

3 10/8/20 SMA TJB

7 03/14/22 SMA TJB

8 02/02/23 SMA TJB

9 06/12/25 SMA TJB

SMA

4 01/11/21

5 02/10/21

6 04/28/21

10 07/28/25

11 08/07/2



COMMONWEALTH

OFFSHORE DEVELOPMENT, LLC

400 SOUTH COUNTY TRAIL, SUITE 207A

EXETER, RHODE ISLAND 02822

TELEPHONE: (401) 480-2502

LLC CONTACT: JOSEPH CATELLI

APPLICANT:

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420 SCRABBLETOWN ROAD, UNIT G

NORTH KINGSTOWN, RHODE ISLAND 02852

TELEPHONE: (401) 480-2502

LEGAL COUNSEL:

RESNICK & CAFFREY

SUMMIT WEST, SUITE 300

WARWICK, RHODE ISLAND 02886

TELEPHONE: (401) 827-0100

ENGINEERS & CONSULTANTS, INC. 400 SMITH STREET PROVIDENCE, RHODE ISLAND 02908 (401) 273-6600

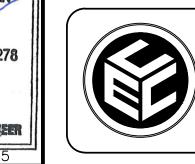
PERMIT AGENCY REVIEW PLAN THE WOODS AT RED BROOK PHASE 3

A.P. 24, LOT 125 100 APRIL COURT COVENTRY, RHODE ISLAND

CONSTRUCTION DETAILS 6

SCALE: AS NOTED SHEET NO: 20 OF 21 DRAWN BY: SMA DESIGN BY: SMA CHECKED BY: TJB DATE: JULY 2020 PROJECT NO 20004.00.:

REVISIONS



DRAWING ISSUE:

CUSTOMER APPROVAL

ONLY PLANS ISSUED FOR CONTRUCTION

SHALL BE USED FOR CONSTRUCTION

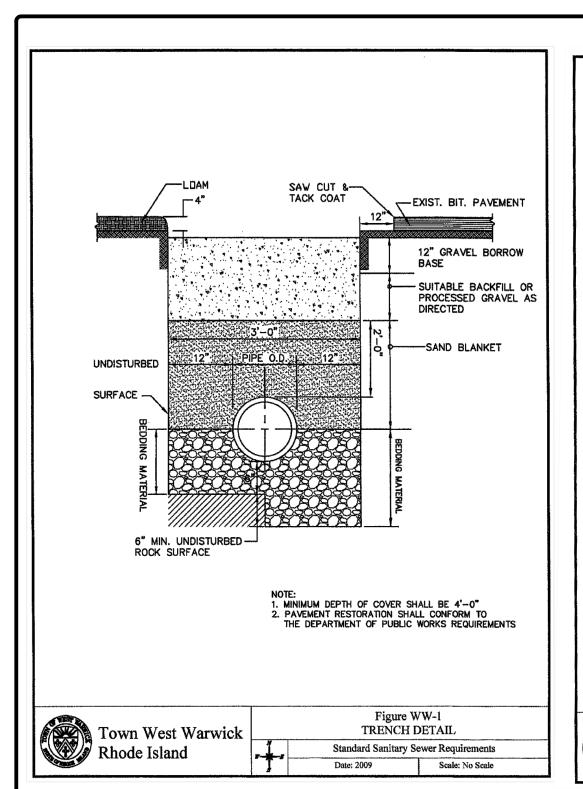
☐ CONCEPT

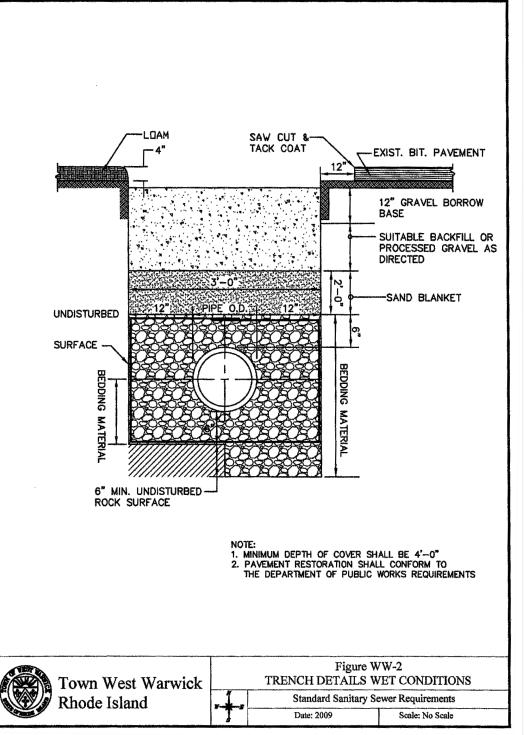
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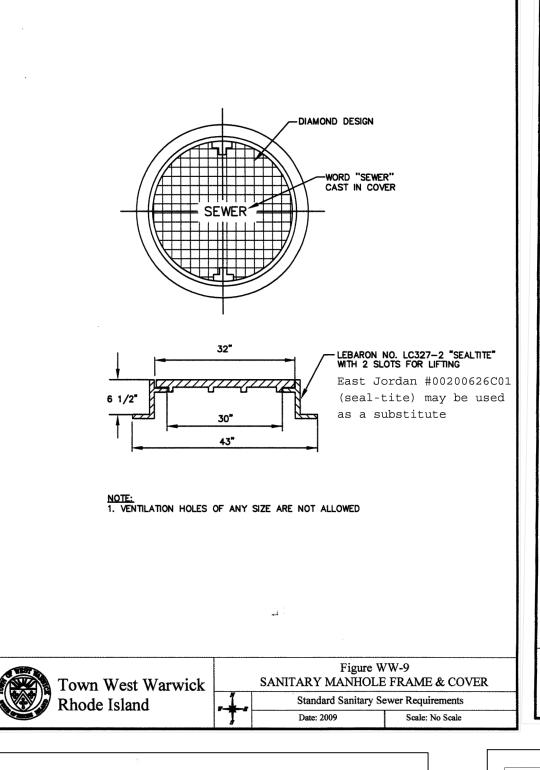
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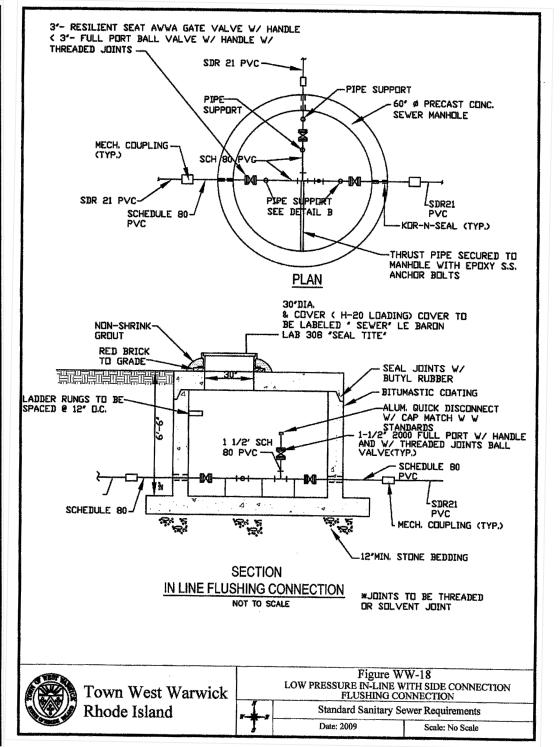
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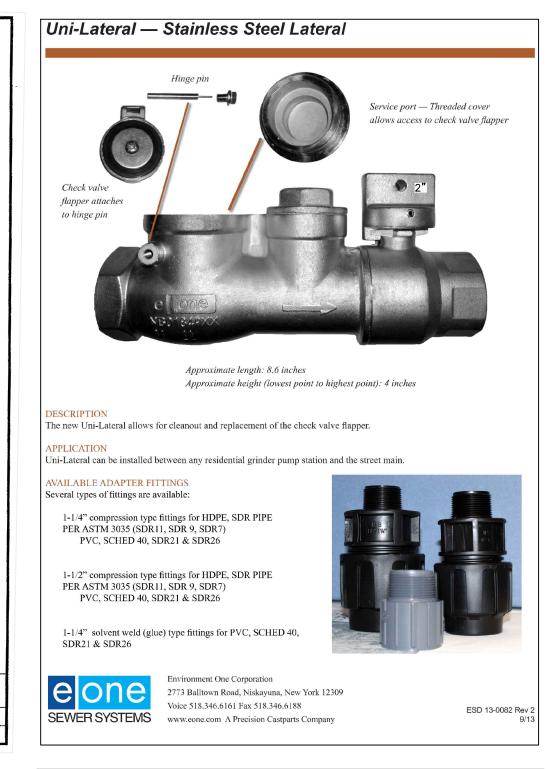
☐ CONSTRUCTION

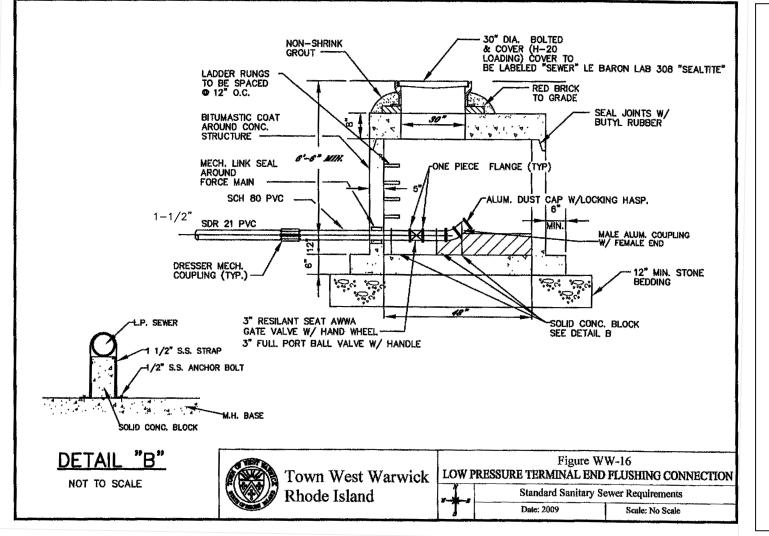




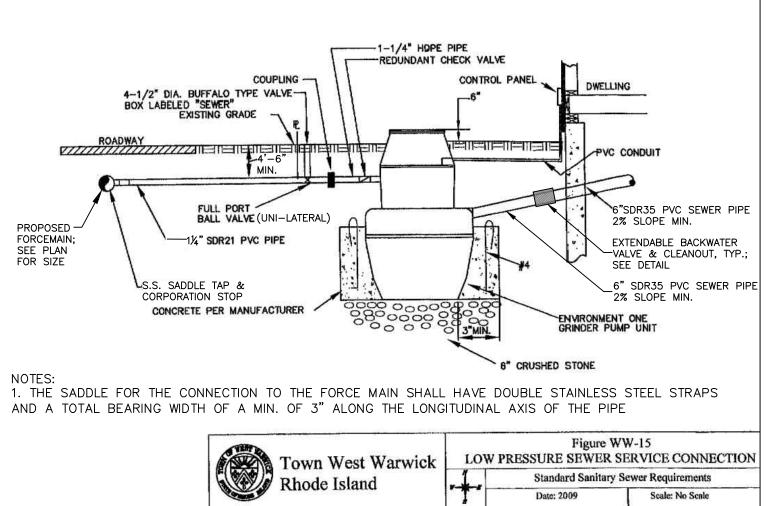


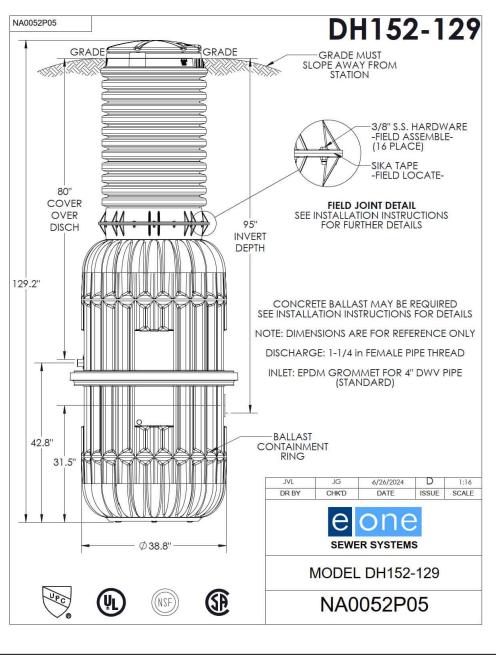


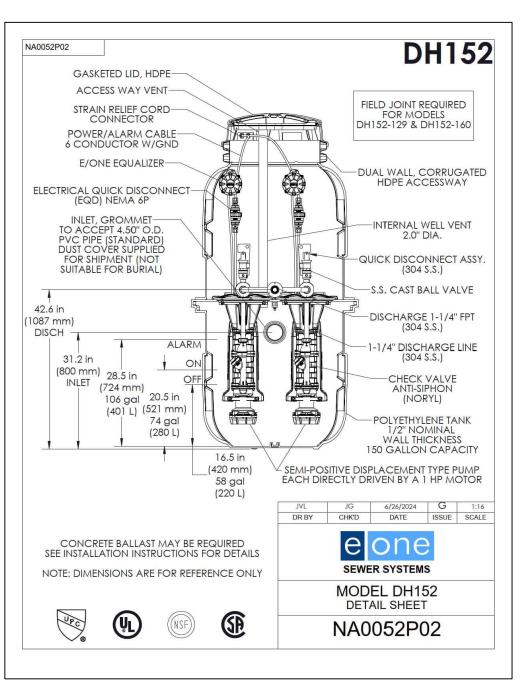




ANY WORK. THE SEWER AUTHORITY'S STANDARDS SUPERSEDE THESE DESIGN PLANS WHERE CONFLICTS EXIST.







HEAVY DUTY CAST IRON FRAME

& COVER WITH 'SEWER' CAST

ONTO COVER, PROVIDE 1" MIN.

CLEARANCE AROUND PIPE (TYP)

BUNA-N FLAPPER -NORYL HOUSING STAINLESS STEEL -1-1/4" NPT THREAD e one REDUNDANT CHECK VALV ENG MODEL: US Assembly K7 SERVICE #:

DRAWING ISSUE:

OFFSHORE DEVELOPMENT, LLC 400 SOUTH COUNTY TRAIL, SUITE 207A EXETER, RHODE ISLAND 02822 TELEPHONE: (401) 480-2502 LLC CONTACT: JOSEPH CATELLI

30" HEAVY DUTY -CAST IRON FRAME

& COVER, TOWN TO APPROVE SHO DRAWING

MALE ALUMINUM QUICK -

PVC TEE

LINK-SEAL TYPE SLEEVE W/-

stainless steel hardware

ALL PIPE PENETRATIONS

1-1/2" SCH.80 PVC TO ---

1-1/2" SDR-21 PVC TO

6" MINIMUM COMPACTED -

BUILD UP FLOOR TO 8" WITH

BRICK COARSE AND SLOPE —

TO SMOOTH SURFACE

VALVES TO BE LEVER ACTUATED.

1-1/2" SCH.80 PVC—\

PROVIDE STAINLESS STEEL VERTICAL SUPPORT FOR CLEANOUT CONNECTION AS REQUIRED.

5. COMBINATION AIR VALVE DEZURIK SERIES 440SCAV MODEL 443 OR APPROVED EQUAL.

NOTES:

1. ALL FITTINGS, VALVES AND PIPING WITHIN STRUCTURE TO BE SCH. 80 PVC.

OPEN VALVE IF AIR ACCUMULATION RECOMES A PROBLEM

7. PUMP OUT MANHOLE AS NEEDED AND DISPOSE OF WASTE PROPERLY

FULL PORT BALL VALVE (TYP.)

PROVIDE ADDITIONAL SUPPORT FOR AIR RELEASE VALVE IN ACCORDANCE WITH MANUFACTURER.

SEWER IN-LINE CLEANOUT

NOT TO SCALE

6. KEEP 2" SCH.80 PVC FULL PORT BALL VALVE PRECEDING THE AIR VALVE IN THE CLOSED POSITION

AND AIR RELEASE MANHOLE

SCH.80 PVC TRANSITION

3' OUTSIDE OF

MANHOLE (TYP)

COUPLING (TYP)

1-1/2" SDR-21 -

1-1/2" SCH.80-

CONNECT COUPLING WITH DUST CAP

TO FINISH

ADJUST TO REQUIRED GRADE WITH RED BRICK MASONRY OR PRECAST

CONCRETE GRADING

CONCRETE MANHOLE

-1" PVC AIR RELEASE

DISCHARGE: INSTALL

DISCHARGE SO THA

THERE IS A CLEAR PATH

TO THE MANHOLE FLOOR

FROM THE DISCHARGE END

- 2" SCH.80 PVC FULL

- 1-1/2" X 2" TEE

PORT BALL VALVE (TYP.

d' DIAMETER PRECAST

☐ CONCEPT ☐ CUSTOMER APPROVAL X PERMITTING ☐ CONSTRUCTION ☐ AS-BUILT

OTHER: ONLY PLANS ISSUED FOR CONTRUCTION SHALL BE USED FOR CONSTRUCTION

APPLICANT RED BROOK BUILDERS 420 SCRABBLETOWN ROAD, UNIT G NORTH KINGSTOWN, RHODE ISLAND 02852 TELEPHONE: (401) 480-2502

LEGAL COUNSEL: RESNICK & CAFFREY SUMMIT WEST, SUITE 300

WARWICK, RHODE ISLAND 02886 TELEPHONE: (401) 827-0100

COMMONWEALTH ENGINEERS & CONSULTANTS, INC.

MORTAR BED AROUND ALL 6" DEEP X 12" WIDE FRAMES (TYP) -CONCRETE PERIMETER FOOTING FOR FRAME (TYP) 12" DEEP COMPACTED GRAVEL BELOW CONCRETE (TYP) UNDISTURBED SOIL OR COMPACTED GRAVEL TO UNDISTURBED SOIL (TYP) PVC 'CLEAN CHECK' EXTENDABLE BACKWATER VALVE ASSEMBLY ■ FROM BUILDING 6" SCH40 PVC 6" SERVICE — BUILDING SERVICE

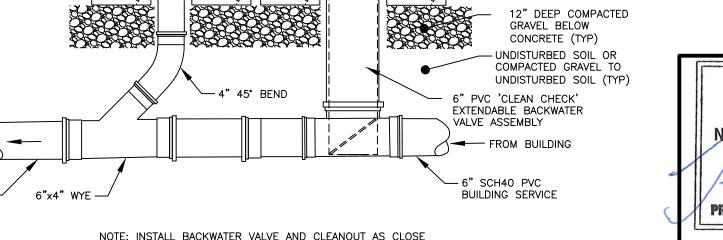
NOTE: INSTALL BACKWATER VALVE AND CLEANOUT AS CLOSE TO BUILDING AS POSSIBLE. EVERY GRAVITY BUILDING

THREADED PLUG —

EXTENDABLE BACKWATER VALVE CLEAN OUT TYPICAL

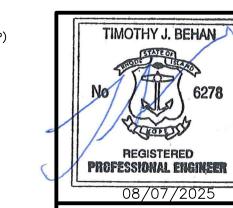
-REVISED SEWER PUMP AND LPFM -REVISED BUILDING FOOTPRINT (REDUCED)

REV. 10-07-28-2025-WATER SERVICE REVISIONS REV. 11-08-07-2025-SHEET 7 ONLY



SEWER SHALL BE EQUIPPED WITH THIS ASSEMBLY.

REV. 8-02/02/2023-FINAL PLAN TO TOWN REV. 9-06/02/2025-REVISED WATER SERVICE LAYOUT



REVISIONS

No. | DATE | DRWN | CHKD

8/13/20 SMA TJB

2 8/26/20 SMA TJB

4 01/11/21 SMA TJB

5 02/10/21 SMA TJB

03/14/22 SMA TJB

8 02/02/23 SMA TJB

9 06/12/25 SMA TJB

SMA

SMA

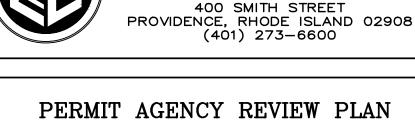
10 07/28/25

1 08/07/25

6 04/28/21 SMA TJB

TJB

3 10/8/20 SMA



THE WOODS AT RED BROOK PHASE 3 A.P. 24, LOT 125 100 APRIL COURT COVENTRY, RHODE ISLAND

CONSTRUCTION DETAILS 7

SCALE: AS NOTED SHEET NO: 21 OF 21 DRAWN BY: SMA DESIGN BY: SMA CHECKED BY: TJB PROJECT NO 20004.00.: DATE: JULY 2020

PIPE SHALL BE LAID IN THE DRY AND AT NO TIME SHALL WATER IN THE TRENCH BE PERMITTED TO FLOW INTO THE SEWER. BACKFILL FROM THE CENTERLINE OF THE PIPE TO A HEIGHT OF TWO FEET ABOVE THE PIPE SHALL BE SAND BLANKET MATERIAL PLACED EVENLY FOR THE FULL WIDTH OF THE TRENCH AND COMPACTED IN 12-INCH LAYERS. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED EVENLY WITH SUITABLE (EXCAVATED OR BORROW) BACKFILL

1. EACH CONDOMINIUM BUILDING IS TO BE EQUIPPED WITH AN INDIVIDUAL RESIDENTIAL WATER METER AND E/ONE GRINDER PUMP OR APPROVED EQUIVALENT.

PROPOSED SEWER UTILITY NOTES:

- 2. THE PROPOSED DEVELOPMENT IS TO BE SERVICED BY UNDERGROUND ELECTRIC, TELEPHONE, CABLE. (NOT SHOWN ON PLANS) UTILITIES TO BE CONNECTED TO EXISTING
- 3. THE PROPOSED LOW PRESSURE SEWER LINE IS SDR-21 PVC PIPE; SEE PLAN FOR
- 4. ALL BENDS IN THE PROPOSED LOW PRESSURE SEWER LINE SHALL HAVE RESTRAINED
- EACH CONDOMINIUM BUILDING SHALL BE PROVIDED WITH INDEPENDENT WATER AND SANITARY SEWER SERVICE CONNECTIONS.
- WATER & SANITARY SEWER SERVICE CONNECTIONS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE TOWN OF COVENTRY, KCWA AND THE WEST WARWICK SEWER AUTHORITY (WWSA), RESPECTIVELY. ALL WATER MAINS AND SERVICES SHALL BE MIN 10'

FROM SANITARY SEWER MAIN & SERVICE PIPES AND MANHOLES.

- ALL CONSTRUCTION SHALL CONFORM TO THE TOWN OF COVENTRY SEWER ORDINANCE AND ALL CONSTRUCTION MUST BE INSPECTED BY THE TOWN OF COVENTRY. NO SEWER FLOWS ARE ALLOWED UNTIL THE INSTALLED SYSTEM HAS BEEN APPROVED BY THE TOWN
- 8. DEPICTED WATER AND SANITARY SEWER SERVICE CONNECTION LOCATIONS MAY BE ADJUSTED BY CONTRACTOR DURING CONSTRUCTION, PROVIDED THAT ALL APPLICABLE CLEARANCE REQUIREMENTS OF BOTH THE TOWN OF COVENTRY, KCWA AND WWSA ARE
- 9. CONTRACTOR SHALL SUBMIT AN AS-BUILT PLAN OF THE COMPLETED SEWER SYSTEM TO THE TOWN OF COVENTRY.
- 10. MINIMUM SLOPE FOR ALL GRAVITY SEWER LINES AND BUILDING SEWERS IS 2%. 11. DETECTABLE TRACER TAPE SHALL BE INSTALLED ABOVE ALL SEWER PIPES. THE COLOR
- SHALL BE GREEN AND THE TAPE SHALL READ "BURIED SEWER LINE BELOW". 12. BUILDING SEWERS SHALL CONFORM TO THE REQUIREMENTS OF THE TOWN OF COVENTRY SEWER ORDINANCE. ALL SUCH CONNECTIONS SHALL BE MADE GAS-TIGHT AND WATERTIGHT AND VERIFIED BY PROPER TESTING. ANY DEVIATION FROM THE PRESCRIBED PROCEDURES AND MATERIALS MUST BE APPROVED BY THE DIRECTOR OF PUBLIC WORKS BEFORE INSTALLATION.
- 13. THE CONTRACTOR FOR THE BUILDING SEWER PERMIT SHALL NOTIFY THE DIRECTOR OF PUBLIC WORKS WHEN THE BUILDING SEWER IS READY FOR INSPECTION AND CONNECTION TO THE PUBLIC SEWER. THE CONNECTION AND TESTING SHALL BE MADE UNDER THE SUPERVISION OF THE DIRECTOR OF PUBLIC WORKS OR HIS/HER REPRESENTATIVE. ALL EXPENSES RELATING TO SUCH TESTING AND INSPECTION SHALL BE THE RESPONSIBILITY OF THE OWNER/APPLICANT.
- 14. THE ALARM/DISCONNECT PANEL FOR EACH LOW PRESSURE GRINDER PUMP SHALL BE EQUIPPED WITH: CIRCUIT BREAKERS, AN AUDIBLE AND VISUAL ALARM TRANSFER SWITCH AND AN EMERGENCY POWER GENERATOR RECEPTACLE.

MAINTENANCE OF SEWAGE FLOWS: THE CONTRACTOR SHALL MAINTAIN SEWAGE FLOWS ON SUBJECT SITE UNTIL ALL WORK HAS BEEN ACCEPTED BY THE SEWER AUTHORITY. SEWAGE DISCHARGES OR OVERFLOWS ARE STRICTLY PROHIBITED. SEWER TRENCH MATERIAL SPECIFICATION:

SEWER NOTES:

PROTECTION OF WATER LINES:

AS TIES TO ALL CLEANOUTS AND BENDS.

COVENTRY PUBLIC WORKS SUPERINTENDENT.

AND AN EMERGENCY POWER GENERATOR RECEPTACLE.

PLUMBING CODE, ARTICLE 10, SECTION P-1003.0.

- BEDDING MATERIAL: THE BEDDING MATERIAL SHALL BE CRUSHED STONE CONSISTING OF DURABLE CRUSHED ROCK IN DURABLE CRUSHED GRAVEL STONE, FREE FROM ICE, SNOW, SAND, CLAY, LOAM, OR OTHER DELETERIOUS MATERIAL. THE CRUSHED STONE SHALL CONFORM TO THE REQUIREMENTS OF 100% PASSING THE ONE (1) INCH SCREEN, 90-100% PASSING THE THREE-QUARTER (3/4) INCH SCREEN, 10- 50% PASSING THE ONE-HALF (1/2) INCH SCREEN, 0-20% PASSING THE THREE-EIGHTS (3/8) INCH SCREEN AND 0-5% PASSING THE NUMBER FOUR (4) SIEVE.
- SAND BLANKET: THE SAND SHALL BE FREE FROM ICE, SNOW, ROOTS, RUBBISH, AND OTHER DELETERIOUS OR ORGANIC MATTER. THE SAND BLANKET SHALL CONFORM TO 22 THE REQUIREMENTS OF 100% PASSING ONE-HALF (1/2) INCH SCREEN, 85-100% PASSING THE THREE-EIGHTS (3/8) INCH SCREEN, 60-85% PASSING THE NUMBER FOUR (#4) SIEVE, 35-60% PASSING THE NUMBER SIXTEEN (#16) SIEVE, 10-35% PASSING THE NUMBER FIFTY (#50) SIEVE AND 2-10% PASSING THE NUMBER ONE-HUNDRED

ALL CONSTRUCTION, MATERIALS, SPECIFICATIONS, AND PROCEDURES SHALL CONFORM WITH THE TOWN OF COVENTRY SEWER ORDINANCE AND THE "STANDARD SANITARY

SEWER REQUIREMENTS OF THE TOWN OF WEST WARWICK" AND ALL APPLICABLE FEDERAL, STATE AND TOWN BUILDING AND PLUMBING CODES. ANY DEVIATIONS FROM THESE

PRESCRIBED PROCEDURES AND MATERIALS SHALL BE APPROVED BY THE SUPERINTENDENT BEFORE INSTALLATION. THE CONTRACTOR SHALL REVIEW SAID STANDARD PRIOR TO

HORIZONTAL SEPARATION: SEWERS SHALL BE LAID AT A MINIMUM OF AT LEAST 10 FEET, HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER MAIN OR SERVICE.

VERTICAL SEPARATION: WHENEVER SEWERS CROSS UNDER WATER MAINS, OR SERVICES, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE

MATERIAL AND COMPACTED IN 12-INCH LAYERS. CUSHION AND BACKFILL MATERIAL SHALL BE COMPACTED TO 95% MAXIMUM DENSITY BY TAMPING AND COMPACTING IN

THE CONTRACTOR SHALL SUBMIT TO THE TOWN OF COVENTRY AN AS-BUILT DRAWING OF THE ENTIRE SEWER SYSTEM AFTER COMPLETION OF THE SERVICE CONNECTIONS

UTILIZING DISTANCES FROM PERMANENT STRUCTURES. THE DEPTH OF THE SEWER MAIN AT THE PROPERTY LINE AND AT THE DWELLING UNIT SHALL BE RECORDED AS WELL

THE ALARM/DISCONNECT PANEL FOR EACH LOW PRESSURE GRINDER PUMP SHALL BE EQUIPPED WITH: CIRCUIT BREAKERS, AN AUDIBLE AND VISUAL ALARM TRANSFER SWITCH

TOWN OF COVENTRY PUBLIC WORKS SUPERINTENDENT OR THE SEWER AUTHORITY. NO SEWER FLOWS ARE ALLOWED UNTIL AUTHORIZED BY THE TOWN OF COVENTRY SEWER

THE CONTRACTOR WILL BE REQUIRED TO PERFORM THE PIPE DEFLECTION TEST ON EACH SECTION OF PIPE INSTALLED. ALL TESTING SHALL BE WITNESSED BY THE

CONFORM WITH THE TOWN OF COVENTRY AND WEST WARWICK BUILDING INSPECTOR'S REQUIREMENTS AND THE BUILDING OFFICIALS CODE ADMINISTRATORS BASIC NATIONAL

ALL GRAVITY PIPE AND FITTINGS SHALL BE PVC SDR35 MEETING ASTM D3034 UNLESS NOTED OTHERWISE. LOW PRESSURE SEWER PIPE SHALL BE SDR21 PVC PRESSURE

ALL BUILDING SEWER CONNECTION INSTALLATIONS SHALL BE GAS AND WATER TIGHT AND VERIFIED BY PROPER TESTING. TEST MUST BE WITNESSED BY THE TOWN OF

BACKFLOW PREVENTER: ALL CONNECTIONS EXCEPT FOR THE PUMP CONNECTION ARE TO BE EQUIPPED WITH A BACKFLOW PREVENTER. BACKFLOW PREVENTERS MUST

INSPECTION: ALL SEWER LINE CONSTRUCTION SHALL BE INSPECTED BY THE TOWN OF COVENTRY SEWER AUTHORITY PRIOR TO BACKFILLING.

SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN. SEWERS SHALL ALWAYS CROSS UNDER THE WATER MAIN OR SERVICE.

<u>BACKFILL:</u> BACKFILL SHALL BE EXCAVATED MATERIALS FREE-DRAINING CLEAN GRANULAR SOIL SUITABLE FOR BACKFILL. UP TO 20 PERCENT OF BACKFILL MATERIAL MAY BE ROCK-LIKE MATERIALS NOT TO EXCEED 0.05 CUBIC FEET IN VOLUME, NOR MORE THAN 6 INCHES IN LENGTH. THE BACKFILL SHALL NOT CONTAIN ANY DEBRIS, PAVEMENT, FROZEN MATERIAL, ORGANIC MATTER, OR PEAT.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

LAYERS (ONE (1) FOOT MAXIMUM) TO ACHIEVE THE REQUIRED COMPACTION.

PIPE WITH GASKETED JOINTS AND BE FULLY RESTRAINED AGAINST PULL-OUT.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICLE TRAFFIC INCLUDING POLICE PROTECTION. ALL TEMPORARY AND VEHICULAR SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 2003 (M.U.T.C.D.) INCLUDING ALL REVISIONS.
- TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
- THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS WILL NOT BE PARKED IN THE STATE RIGHT-OF-WAY.
- 4. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE R.I.D.O.T. SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

