

FEBRUARY 2008

VACUUM SEWER PIPE

- A) ALL BURIED VACUUM MAIN LINES, BRANCH LINES AND SERVICE LATERALS SHALL BE SDR 21 PRESSURE RATED PVC PIPE, ASTM D-2241.
- B) JOINT: ASTM D-3138 USING RIEBER-STYLE ELASTOMERIC SEALS.
- C) FITTINGS: ALL PVC SCH 40 PIPE FITTINGS (FOR SOLVENT CEMENT JOINTS) SHALL BE AS PRODUCED BY SPEARS MANUFACTURING COMPANY OR APPROVED EQUAL FROM A PVC COMPOUND HAVING A CELL CLASSIFICATION OF 12454 CONFORMING TO ASTM D-1784. ALL PVC SCH 40 FITTINGS SHALL BE INJECTION MOLDED IN ACCORDANCE WITH ASTM D-2468 WITH THE EXCEPTION OF WYE FITTINGS. THE WYE FITTINGS MAY BE FABRICATED PROVIDED THAT FITTING DIMENSIONS DO NOT DEVIATE SIGNIFICANTLY FROM THOSE SHOWN ON THE STANDARD DETAILS. WYE FITTING SOCKETS SHALL BE MADE IN ACCORDANCE WITH ASTM D-2466.
- D) PRIMER: ASTM F-666; SOLVENT CEMENT: ASTM 2564. CEMENT SHALL NOT BE SAME COLOR AS PRIMER.
- E) WYE FITTINGS: 45° ELLS SHALL BE USED THROUGH OUT. A 3" - 90° ELL MAY BE ONLY USED AT THE ENTERING SIDE OF 3" VACUUM VALVE AND AT THE WYE CONNECTION TO THE VACUUM MAIN. THE FITTINGS AND VENT TYPE ELLS ARE PROHIBITED.
- VACUUM LINE DIVISION VALVES
- A) VALVES SHALL CONFORM TO AWWA C909/087, STANDARD FOR RESILIENT SEATED GATE VALVES, AS MANUFACTURED BY WATEROUS COMPANY.
- B) TWO (2) TEE KEYS SHALL BE PROVIDED FOR EACH VALVE SIZE REQUIRED.
- C) BURIED VALVES SHALL BE PROVIDED WITH VALVE BOXES AND THE OPERATING NUT SHALL BE EXTENDED TO WITHIN 9" PLUS OR MINUS 6" OF THE FINISHED GRADE. THE VALVE BOX COVER SHALL HAVE THE WORDS "SEWER" AND "OPEN" WITH A DIRECTIONAL ARROW CAST ON IT.
- D) PROVIDE CONCRETE COLLAR AROUND EACH DIVISION VALVE AND GAGE TAP.

VACUUM MAIN SPECIFICATIONS

NOTE: NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

N.T.S.

STANDARD DETAIL NO. VSN1

VACUUM SEWER LINE INSTALLATION

FEBRUARY 2008

- A) INSTALL VACUUM SEWER LINES IN ACCORDANCE WITH ENGINEERS AND AIRVAC'S GUIDELINES.
- B) VACUUM SEWER MAINS SHALL HAVE A MINIMUM COVER OF 36" UNLESS OTHERWISE NOTED.
- C) ALL VACUUM SEWERS SHALL BE Laid TO THE LINE AND GRADE WITH THE USE OF CONSTRUCTION LASER BEAM EQUIPMENT. ALL PIPE WHICH HAS BEEN DESIGNED TO SLOPE DOWNWARD SHALL BE INSTALLED TO SLOPE CONTINUOUSLY DOWNWARD. THERE SHALL BE NO ABRUPT SAGS OR BELLS IN THE LINE. THE MAXIMUM DEVIATION FROM PLANNED ELEVATIONS SHALL NOT EXCEED .005 FEET IN ANY 100 FEET OF LENGTH. THIS PLUS OR MINUS TOLERANCE APPLIES TO ALL PIPE SIZES.
- D) INSTALLATION BY THE HORIZONTAL DRILLING (HDD) METHOD IS NOT ACCEPTABLE, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. SHOULD ENGINEER APPROVE THE USE OF HDD, THE SAME INSTALLATION TOLERANCES SPECIED FOR OPEN-CUT WOULD APPLY. NO ABRUPT SAGS OR BELLS WOULD BE ALLOWED AND THE CONTRACTOR WOULD BE REQUIRED TO VERIFY SUCH THROUGH ELECTRONIC MEANS WHILE THE PIPE IS BEING INSTALLED.
- VACUUM LINE TESTING & LINE FLUSHING
- A) A TRAILER MOUNTED VACUUM PUMP (TMVP) AS MANUFACTURED BY AIRVAC IS REQUIRED FOR THE DAILY VACUUM TESTING. THE UNIT SHALL INCLUDE (1) -8" PORTABLE CHART RECORDER, 100 CHARTS, 5 PENS, (1) -0-50 MAGNETIC GAUGE KIT, TUBING AND A VALVE PIT TEST CONNECTION WITH SHUTOFF VALVE AND CAM-LOOK ADAPTOR.
- B) A TWO (2) HOUR VACUUM TIGHTNESS TEST OF ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE CONDUCTED DAILY IN ACCORDANCE WITH AIRVAC INSTRUCTIONS.
- C) A FINAL FOUR (4) HOUR VACUUM TIGHTNESS TEST OF THE COMPLETE VACUUM PIPING NETWORK, INCLUDING ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE CONDUCTED IN ACCORDANCE WITH AIRVAC INSTRUCTIONS.
- D) AFTER SUCCESSFUL FINAL FOUR (4) HOUR ACCEPTANCE TESTING, FLUSH LINES TO REMOVE DEBRIS AND FOREIGN MATERIALS THAT ACCUMULATED DURING CONSTRUCTION.

VACUUM MAIN - INSTALLATION, LINE FLUSHING & TESTING

NOTE: NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

N.T.S.

STANDARD DETAIL NO. VSN4

VALVE PITS

FEBRUARY 2008

- A) VALVE PIT TYPES: VALVE PITS SHALL BE PROVIDED IN THE FOLLOWING TYPES AND DEPTHS AS SHOWN IN THE ENGINEER'S PLANS.

ONE (1) PIECE VALVE PITS		
	DEPTH TO INVERT OF GRAVITY INLET - 4" STUB-OUT	DEPTH TO INVERT OF GRAVITY INLET - 6" STUB-OUT
AIRVAC MODEL NO. VP-9030W/T	5 FEET	3.79 ft
VP-639W/T	6-1/2 FEET	5.29 ft

- B) VALVE PIT COVERS: MODEL R5900 BY NEENAH FOUNDRY. CASTINGS SHALL MEET ASTM A-48, CLASS 30 GRAY CAST IRON. THE WORDS "AIRVAC SEWER" SHALL APPEAR ON TOP OF COVER IN 1" TALL LETTERING. COVERS FOR THE ONE-PIECE VALVE PITS SHALL HAVE A CONCEALED PICK HOLE AND ELASTOMER SEALS.
- C) FLEXIBLE CONNECTOR: AN AIRVAC FLEXIBLE CONNECTOR SHALL BE USED TO CONNECT THE VALVE PIT TO THE 3" VACUUM SERVICE LINE.
- D) ANTI-BUOYANCY COLLAR: VALVE PIT SHALL INCLUDE A FACTORY INSTALLED AIRVAC INTEGRAL POLYETHYLENE ANTI-BUOYANCY COLLAR.
- E) GROMMETS: VALVE PITS SHALL INCLUDE THE NECESSARY GROMMETS FOR THE GRAVITY LINE CONNECTIONS. ALL PIPES THAT PENETRATE THE VALVE PIT THROUGH GROMMETS SHALL BE SDR 21, SDR 26 OR SCH 40 PRESSURE RATED PVC PIPE. NO OTHER PIPE IS ACCEPTABLE.
- F) STOP-RING: THE END OF THE STUB-OUT PIPE THAT PASSES THROUGH THE VALVE PIT GROMMET SHALL BE BEVELED. A STOP RING SHALL BE USED TO ENSURE THE PIPE DOES NOT PROTRUDE MORE THAN 4" INSIDE THE COLLECTION SUMP WITH AN ALLOWABLE TOLERANCE OF ± 1/8".
- G) VALVE & CONTROLLER: INTERNAL BREATHER, TYPE F, FULL PORT 3-INCH DIAMETER.
- H) IN-SUMP BREATHER: AIRVAC IN-SUMP BREATHER.
- I) FURNISHED: VACUUM VALVES & CONTROLLERS AND THE IN-SUMP BREATHER SHALL BE FURNISHED BY THE CONTRACTOR AS PART OF THE VALVE PIT PACKAGE.
- J) INSTALLED: VACUUM VALVES & CONTROLLERS AND THE IN-SUMP BREATHER SHALL BE INSTALLED BY THE OWNER. VALVES SHALL NOT BE INSTALLED IN THE VALVE PIT UNTIL AFTER THE HOMEOWNER HAS INSTALLED THE 4" AIR-INTAKE.
- K) MANUFACTURER: VACUUM VALVE AND ACCESSORIES AS MANUFACTURED BY AIRVAC.

VALVE PIT SPECIFICATIONS

NOTE: NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

N.T.S.

STANDARD DETAIL NO. VSN2

VALVE PIT INSTALLATION

FEBRUARY 2008

- A) INSTALL VALVE PITS IN ACCORDANCE WITH AIRVAC INSTALLATION INSTRUCTIONS.
- B) CONDUCT SUMP PRESSURE TEST IN ACCORDANCE WITH AIRVAC INSTRUCTIONS.
- C) THE TOP OF ALL VALVE PITS SHALL BE FLUSH WITH THE PAVEMENT OR WHEN NOT IN THE PAVEMENT, FLUSH WITH THE FINISHED GRADE. TOP OF VALVE PITS ELEVATION SHOWN ARE REPRESENTATIVE AND MAY VARY DUE TO ACTUAL FIELD CONDITIONS.
- GRAVITY SEWER PIPE (VALVE PIT STUB-OUT PIPES)
- A) ALL VALVE PIT STUB-OUT PIPES AND GRAVITY LATERALS INSTALLED IN THE PUBLIC RIGHT-OF-WAY SHALL BE PRESSURE RATED PIPE: SDR 21, SDR 26 OR SCH 40 PVC. NON-PRESSURE RATED PIPE AND FOAM CORE PIPE IS NOT ACCEPTABLE.
- B) PIPE: SDR 21 & SDR 26: ASTM D2241; SCH 40: ASTM D1784.
- C) STUB-OUTS: STUB-OUTS SHALL BE EITHER 4" OR 6" IN DIAMETER AND SHALL BE A MINIMUM OF 6'-0" LONG OR THE LENGTH NECESSARY TO EXTEND SERVICE TO THE PROPERTY LINE. A STOP COUPLING SHALL BE SOLVENT BONDED AROUND THE GRAVITY LINE AS SHOWN IN THE STANDARD DETAILS.

VALVE PIT INSTALLATION & TESTING

NOTE: NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

N.T.S.

STANDARD DETAIL NO. VSN3

FEBRUARY 2008

FUTURE DETAIL

NOTE: NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

N.T.S.

STANDARD DETAIL NO. VSN5

VACUUM SEWER NOTES

FEBRUARY 2008

- A) THE TOP OF ALL VACUUM PITS AND VALVE BOXES SHALL BE FLUSH WITH THE PAVEMENT OR, WHEN NOT IN THE PAVEMENT FLUSH WITH THE FINISHED GRADE. TOP OF VACUUM PITS ELEVATION SHOWN ARE REPRESENTATIVE AND MAY VARY DUE TO ACTUAL FIELD CONDITIONS AND ENGINEER'S DIRECTIONS.
- B) VACUUM SEWER MAINS SHALL BE SDR 21 PVC UNLESS SPECIFIED OTHERWISE.
- C) ALL FITTINGS 4 INCHES AND GREATER SHALL BE SDR 21 AND PROVIDED WITH RIEBER TYPE GASKETS. FITTINGS FOR 3" SERVICE LATERALS SHALL BE SOLVENT WELDED SCHEDULE 40 PVC.
- D) ONLY SUITABLE MATERIALS FREE FROM EXCESSIVE MOISTURE SHALL BE USED FOR FILL OR BACKFILL. CONTRACTOR SHALL REMOVE SOIL MATERIAL TOO WET TO PERMIT PROPER COMPACTION TO SPECIFIED DENSITY, SPREAD AND ALLOWED TO AIR DRY.
- E) ROAD AND DRIVEWAY CROSSINGS SHALL BE OPEN CUT WITH SAWCUT JOINTS UNLESS OTHERWISE NOTED.
- F) DISTURBED DRIVEWAYS SHALL BE RECONSTRUCTED TO A CONDITION EQUAL TO OR BETTER THAN ITS PREVIOUS CONDITION.
- G) CONSTRUCTION WITHIN RIGHT-OF-WAY SHALL CONFORM TO UTILITY AND RIGHT-OF-WAY USE STANDARDS.
- H) UPON COMPLETION, ACCEPTANCE AND CERTIFICATION OF THE VACUUM SEWER SYSTEM, THE PROPERTY OWNER SHALL ENGAGE A LICENSED PLUMBING CONTRACTOR TO MAKE THE CONNECTION BETWEEN THE EXISTING SEPTIC TANK LATERAL AND THE NEW WASTE WATER COLLECTION SYSTEM LATERAL. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH LOCAL BUILDING DEPARTMENT OFFICIALS AND OBTAIN THE NECESSARY BUILDING PERMITS AND MEET ALL APPLICABLE BUILDING CODES. THE EXISTING SEPTIC TANK AND SYSTEM SHALL BE TAKEN OFF-LINE IN ACCORDANCE WITH HEALTH DEPARTMENT GUIDELINES.
- I) VACUUM SEWER MAINS SHALL HAVE A MINIMUM COVER OF 36" UNLESS OTHERWISE NOTED.
- J) NEW OR REPLACED UNDERGROUND FACILITIES WITHIN THE RIGHT-OF-WAY SHALL BE MADE DETECTABLE UTILIZING APPROVED INDUSTRY STANDARD TECHNIQUES.
- K) TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR THEIR DIRECTION ON WHERE TESTING IS TO BE CONDUCTED.

VACUUM SEWER NOTES - GENERAL

NOTE: NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

STANDARD DETAIL NO. VSN6

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NO.

REVISIONS

DATE

TITLE

VACUUM SEWER NOTES - 1 PIECE PITS

DO NOT USE THESE DETAILS IF WRITTEN SPECIFICATIONS EXIST NOT INTENDED TO SUPERSSEDE WRITTEN SPECIFICATIONS

SHEET NO.

SD-11