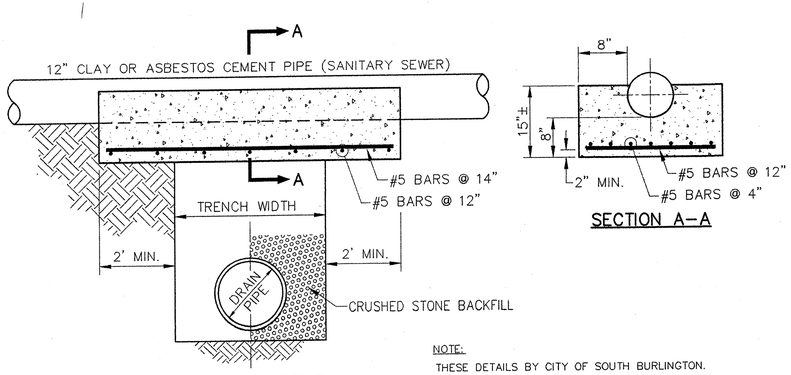
SANITARY STRUCTURE DETAILS



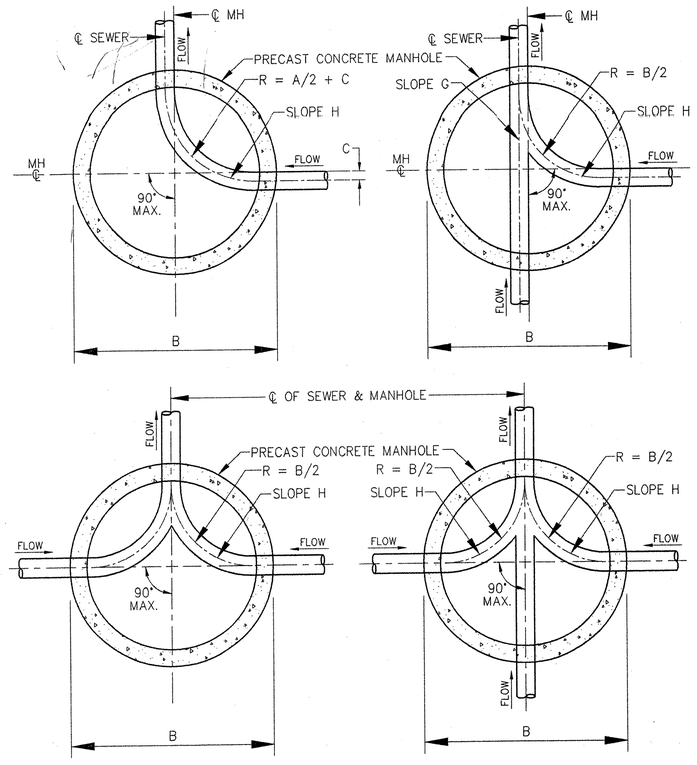
TYPICAL PROFILE

SECTION A–A

NOTE:
THESE DETAILS BY CITY OF SOUTH BURLINGTON.

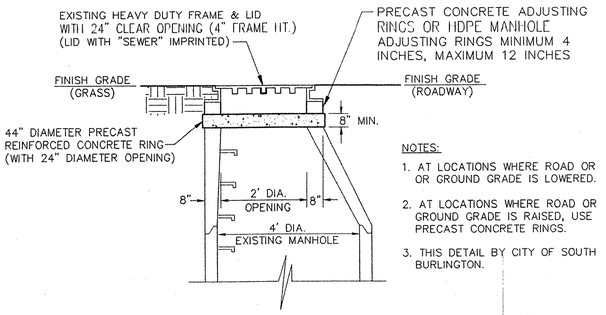
REINFORCED CONCRETE CRADLE DETAILS

N.T.S.



STANDARD MANHOLE CHANNEL DETAILS

N.T.S.

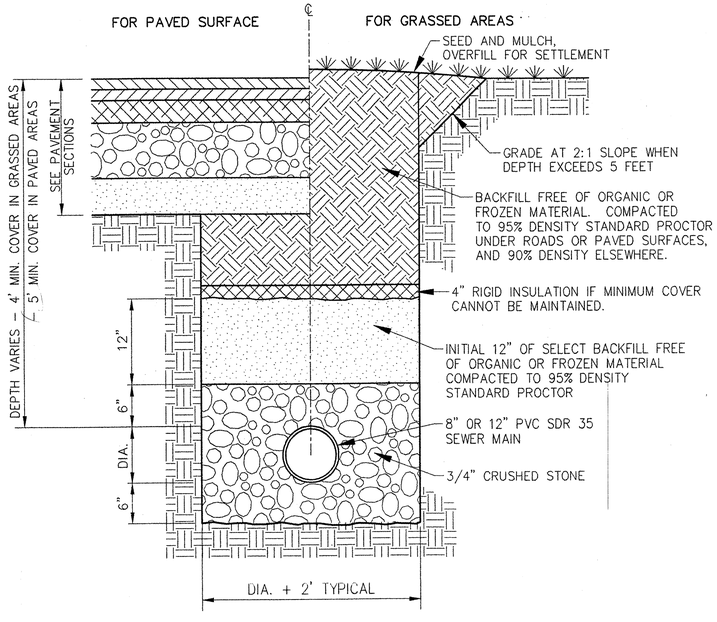


NOTES:

1. AT LOCATIONS WHERE ROAD OR OR GROUND GRADE IS LOWERED.
2. AT LOCATIONS WHERE ROAD OR GROUND GRADE IS RAISED, USE PRECAST CONCRETE RINGS.
3. THIS DETAIL BY CITY OF SOUTH BURLINGTON.

ALTERATION OF SANITARY MANHOLE

N.T.S.



SEWER PIPE BEDDING DETAIL

N.T.S.

SANITARY SEWER NOTES

A. TESTING MANHOLES

1. EACH MANHOLE SHALL BE TESTED BY MEANS OF A WATER TEST OR VACUUM TEST. IN ANY CASE, THERE SHALL BE NO VISIBLE LEAKAGE INTO THE BASE OR WALLS OF A COMPLETED MANHOLE.

2. AFTER THE MANHOLE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND THOSE EXTERIOR JOINTS WITHIN 6 FEET OF THE GROUND SURFACE SHALL BE FILLED AND POINTED WITH AN APPROVED NON–SHRINKING MORTAR. THE TEST SHALL BE MADE PRIOR TO PLACING THE SHELF AND INVERT. IF THE GROUNDWATER TABLE HAS BEEN ALLOWED TO RISE ABOVE THE BOTTOM OF THE MANHOLE, THE ENGINEER MAY DIRECT IT TO BE LOWERED FOR THE DURATION OF THE TEST. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED AND THE PLUGS BRACED TO PREVENT BLOWOUT.

3. IF THE CONTRACTOR ELECTS TO BACKFILL PRIOR TO WATER TESTING, FOR ANY REASON, IT SHALL BE AT HIS OWN RISK AND IT SHALL BE INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE REASON FOR ANY FAILURE OF THE TEST. NO ADJUSTMENT IN THE LEAKAGE ALLOWANCE WILL BE MADE FOR UNKNOWN CAUSES SUCH AS LEAKAGE OF PLUGS, ABSORPTION, ETC., I.E., IT WILL BE ASSUMED THAT ALL LOSS OF WATER DURING THE TEST IS A RESULT OF LEAKS THROUGH THE JOINTS OR THROUGH THE CONCRETE. FURTHERMORE, THE CONTRACTOR SHALL TAKE ANY STEPS NECESSARY TO ASSURE THE ENGINEER THAT THE WATER IS BELOW THE BOTTOM OF THE MANHOLE THROUGHOUT THE TEST.

4. IF THE GROUND WATER TABLE IS ABOVE THE HIGHEST JOINT OF THE MANHOLE, AND IF THERE IS NO LEAKAGE INTO THE MANHOLE AS DETERMINED BY THE ENGINEER, SUCH A TEST CAN BE USED TO EVALUATE THE WATER TIGHTNESS OF THE MANHOLE. HOWEVER, IF THE ENGINEER IS NOT SATISFIED, THE CONTRACTOR SHALL LOWER THE WATER TABLE AND CARRY OUT THE TEST AS PREVIOUSLY DESCRIBED.

5. WATER TEST: THE MANHOLE SHALL THEN BE FILLED WITH WATER TO THE TOP OF THE CONE SECTION. A PERIOD OF ONE HOUR WILL BE PERMITTED, TO ALLOW ABSORPTION. AT THE END OF THIS PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE, IF NECESSARY, AND THE MEASURING TIME OF AT LEAST 6 HOURS BEGUN. AT THE END OF THE TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE MEASURING THE VOLUME OF WATER ADDED. THIS AMOUNT SHALL BE CONVERTED TO A 24 HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24 HOUR PERIOD. REPAIRS BY APPROVED METHODS MAY BE MADE, AS DIRECTED BY THE ENGINEER, TO BRING THE LEAKAGE WITHIN ALLOWABLE RATE OF ONE GALLON PER FOOT PER DAY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNCOVER THE MANHOLE, AS NECESSARY, AND DISASSEMBLE, RECONSTRUCT OR REPLACE IT AS DIRECTED BY THE ENGINEER. THE MANHOLE SHALL THEN BE RETESTED.

6. VACUUM TEST: THE CONTRACTOR SHALL FURNSIH THE MANHOLE CONE SEAL, VACUUM PUMP, ALL NECESSARY GAUGES, HOSES, AND EQUIPMENT TO PERFORM THE TEST.

7. FILL ALL LIFTING HOLES AND EXTERIOR JOINTS WITH NON–SHRINKING MORTAR AND PLUG ALL OTHER OPENINGS ITO THE MANHOLE TO PREVENT DISPLACEMENT.

8. INSTALL AN INFLATABLE RUBBER RING THE SIZE OF THE TOP OF THE MANHOLE BY INFLATING THE RING WITH AIR, TO A PRESSURE ADEQUATE TO PREVENT LEAKAGE OF AIR BETWEEN THE RING AND THE MANHOLE WALL.

9. PUMP THE AIR OUT OF THE MANHOLE THROUGH AN OPENING IN THE TEST PLATE UNTIL A VACUUM IS CREATED INSIDE THE MANHOLE EQUAL TO 10 INCHES OF MERCURY USING AN APPROVED VACUUM GAUGE. THEN STOP THE REMOVAL OF AIR AND BEGIN THE TEST.

10. THE VACUUM CAN NOT DROP BELOW 9 INCHES OF MERCURY WITHIN A 2 MINUTE PERIOD. IF MORE THAN 1 INCH DROP OCCURS WITHIN 2 MINUTES, THE MANHOLE HAS FAILED THE TEST, AND IT SHALL BE REPAIRED OR RECONSTRUCTED AND THEN RETESTED UNTIL IT PASSES. THE 2 MINUTE TIME REQUIREMENT INCREASES BY 30 SECONDS FOR EVERY 5 FOOT INCREMENT BELOW A 10 FOOT DEPTH.

11. BACKFILL AROUND THE MANHOLE AND FORM INVERT UPON SATISFACTORY TEST RESULTS.

B. TESTING SEWERS

1. TEST THE GRAVITY SEWER BY A PRESSURIZED AIR TEST BETWEEN CONSECUTIVE MANHOLES. PLUG THE TWO ENDS OF THE PIPE AND CONNECT THE AIR CONTROL EQUIPMENT TO THE TAPPED END.

2. SUPPLY AIR SLOWLY TO THE PIPE UNTIL REACHING A CONSISTANT PRESSURE OF 4.0 PSI, THROTTLE THE AIR SUPPLY SO THAT THE PRESSURE REMAINS ABOVE 3.5 PSI FOR AT LEAST 5 MINUTES TO ALLOW TEMPURATURE STABILIZATION IN THE PIPE.

3. AFTER STABILIZATION, ADJUST PRESSURE TO 4.0 PSI AND SHUT OFF THE AIR SUPPLY. WHEN THE PRESSURE REACHES 3.5 PSI, START THE STOP WATCH AND RECORD THE TIME IT TAKES TO REACH 2.5 PSI. THE TIME REQUIRED FOR THE PIPE SIZE MUST BE AT LEAST:

4 INCH:	0.3 MINUTES PER 100 FEET
6 INCH:	0.7 MINUTES PER 100 FEET
8 INCH:	1.2 MINUTES PER 100 FEET
10 INCH:	1.5 MINUTES PER 100 FEET
12 INCH:	1.8 MINUTES PER 100 FEET

4. IF THERE IS GROUND WATER ABOVE THE SEWER LINE, THE AIR TEST PRESSURE WILL BE INCREASED BY 0.5 PSI FOR EACH FOOT OF WATER ABOVE THE INVERT OF THE PIPE.

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 1927

4/4/03

SHELBURNE – SOUTH BURLINGTON

SURVEYED BY V.S.C. INC. DATE
DRAWN BY E.A.A. INC. DATE
TRACED BY E.A.A. INC. DATE

PROJECT NH–EGC–019–4(28)
STRUCTURE DETAIL DRAWING NO. 2
SHEET NO. 63 OF 283