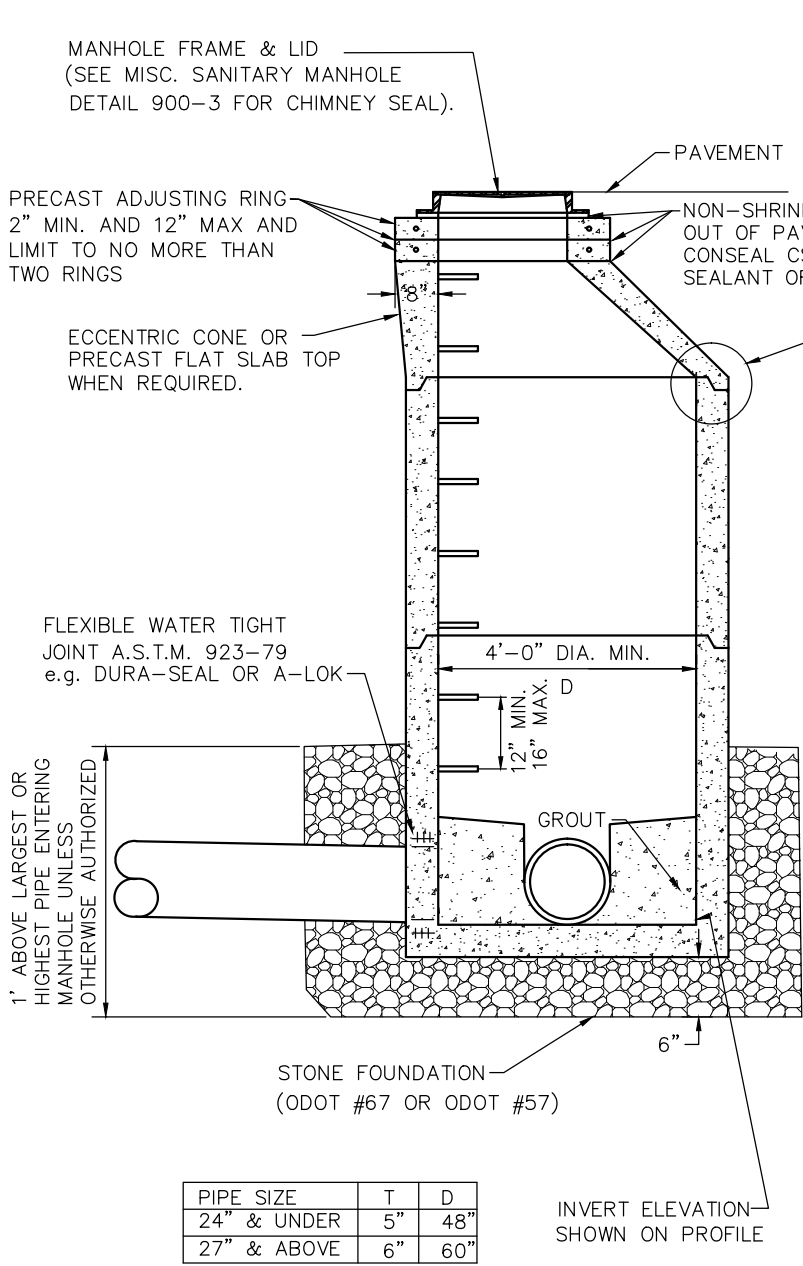




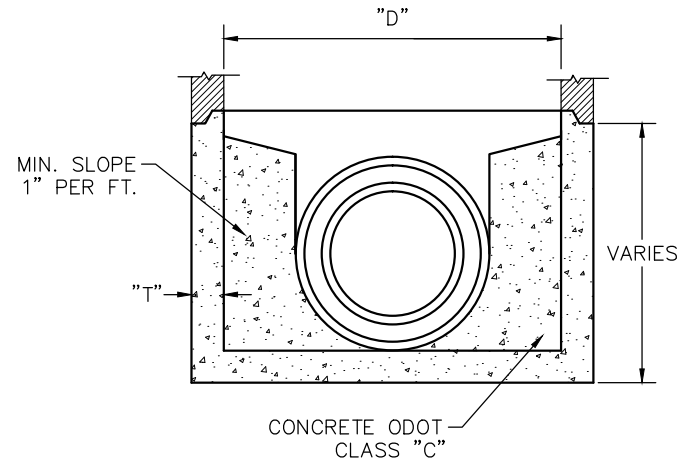
PIPE SIZE	T	D
24" & UNDER	5"	48"
27" & ABOVE	6"	60"

O-RING JOINT DETAIL
(MEETING ASTM SPEC. 443)

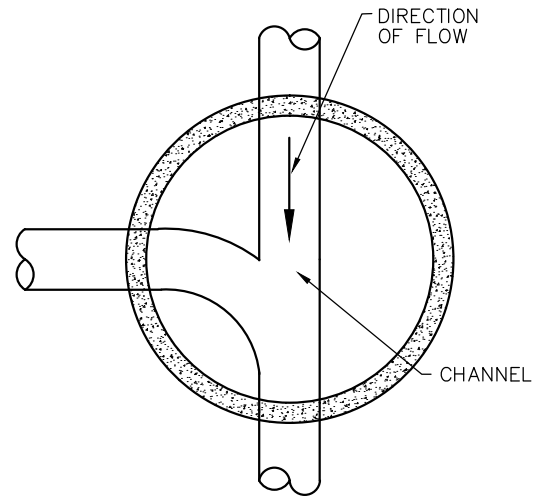
JOINTS MUST BE KEPT TO A MINIMUM

NOTES

- A.** SANITARY MANHOLE FRAMES AND COVERS SHALL BE EQUAL TO NEENAH NO. R-1767 OR EAST JORDAN IRON WORKS NO. 1600. WATERTIGHT MANHOLES SHALL BE THE EQUAL TO NEENAH NO. R-1916-D OR EAST JORDAN IRON WORKS NO. 1600-PT. NO LATERALS SHALL PROTRUDE INTO THE INTERIOR MANHOLE.
- B.** TO CONNECT INTO EXISTING MANHOLE, THE MANHOLE SHALL BE CORED AND AN A-LOK XP SERIES FLEXIBLE CONNECTOR OR EQUIVALENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. NON-SHRINK GROUT ALTERNATIVE MAY BE USED IN SPECIAL CIRCUMSTANCES WHEN PREVIOUSLY APPROVED BY VILLAGE.
- C.** MATERIALS FOR BASES, RISERS, AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENTS SHALL COMPLY WITH ASTM C-478.
- D.** MAXIMUM SANITARY MANHOLE SPACING SHALL BE 400'.
- E.** LOCATE THE CENTERLINE OF MANHOLE COVERS OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.
- F.** CONSEAL CS-102 FLEXIBLE BUTYL RESIN SEALANT OR EQUIVALENT SHALL BE 3/8" X 1" MINIMUM STRIPS UNDER GRADE RINGS AND CASTING.
- G.** CUT PIPE SHALL NOT EXTEND BEYOND THE INSIDE FACE OF THE MANHOLE WALL.
- H.** CONCRETE PLACED INSIDE THE MANHOLE SHALL NOT BE PLACED BETWEEN THE PIPE AND THE OPENING SO AS TO INTERFERE IN ANY WAY WITH THE FLEXIBILITY OF THE JOINT.



PRECAST BASE SECTION



STANDARD INVERT CHANNEL

ALL INVERTS TO BE CHanneled FOR OPTIMUM FLOW.

TYPE 3 SANITARY MANHOLE

MANHOLE FRAME & LID
(SEE MISC. SANITARY MANHOLE
DETAIL 900-4 FOR CHIMNEY SEAL).

PRECAST ADJUSTING RING
2" MIN. AND 12" MAX. AND
LIMIT TO NO MORE THAN
TWO RINGS

MANHOLE FRAME & LID

PAVEMENT

NON-SHRINK GROUT OR IF OUT OF PAVEMENT,
CONSEAL CS-102 SEALANT OR EQUIVALENT.
CONE SHALL BE ECCENTRIC

STANDARD TEE

24" MIN.

B

B

RUBBER O-RING GASKETS

6" MIN.

CONCRETE ENCASEMENT

WHEN DROPS ARE PRECAST
6" MIN. MAY BE OMITTED

PVC PIPE

SEE STANDARD DRAWING 900-1
FOR BASE SECTION DETAIL

GROUT

STANDARD 90°
SHORT ELBOW

PRECAST BASE SECTION
WITH 6" GRANULAR BACKFILL

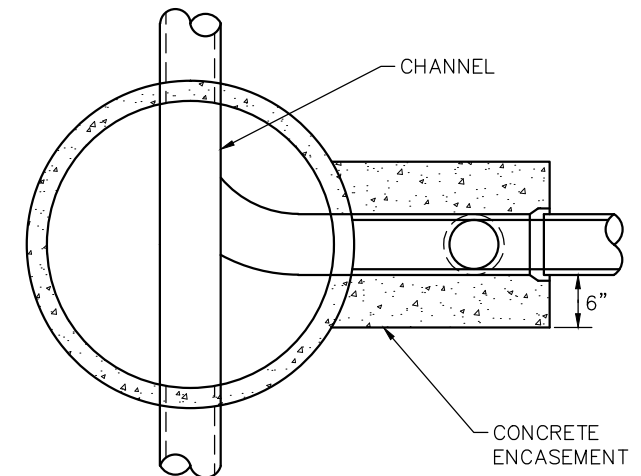
APPROXIMATELY 1'-0"

CONCRETE ODOT
CLASS "C"

1' ABOVE LARGEST OR
HIGHEST PIPE ENTERING
MANHOLE UNLESS
OTHERWISE AUTHORIZED

"A"	"B"
8", 10", & 12"	8"
15" & 18"	10"
21" & 24"	12"

DROP CONNECTION MANHOLE



SECTIONAL PLAN B-B

NOTES

A. LOCATE THE CENTERLINE OF MANHOLE CONES OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.

B. TYPE D MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN INVERT ELEVATIONS IS GREATER THAN 2'-0".

C. ALL NOTES AND ASTM REFERENCES ON THE TYPE 3 SANITARY MANHOLE APPLY ON THE TYPE D SANITARY DROP MANHOLE.

VILLAGE OF
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CHOICE
ONE ENGINEERING

TYPE D SANITARY DROP MANHOLE

REVISIONS:

DATE
APPROVED:
NOV. 2003

PAGE No.

900-2

PRECAST ADJUSTING RING —
2" MIN. AND 12" MAX. AND
LIMITED TO NO MORE THAN
TWO RINGS

- NON-SHRINK GROUT

— CONE SHALL BE ECCENTRIC

— STANDARD TEE

UNCORED AND A-LOK XP SERIES
FLEXIBLE CONNECTOR
OR EQUIVALENT

CL 53 DIP WITH FIELD
LOCK BY U.S. PIPE OR
APPROVED EQUIVALENT
FOR BELL JOINT
RESTRAINTS.

STANDARD 90°
SHORT ELBOW

- CORED AND A-LOK XP SERIES
FLEXIBLE CONNECTOR
OR EQUIVALENT

PRECAST BASE SECTION
WITH 6" GRANULAR BACKFILL

APPROXIMATELY 1'-0"

A. SANITARY DROP MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN INVERT ELEVATIONS IS GREATER THAN 2'-0".

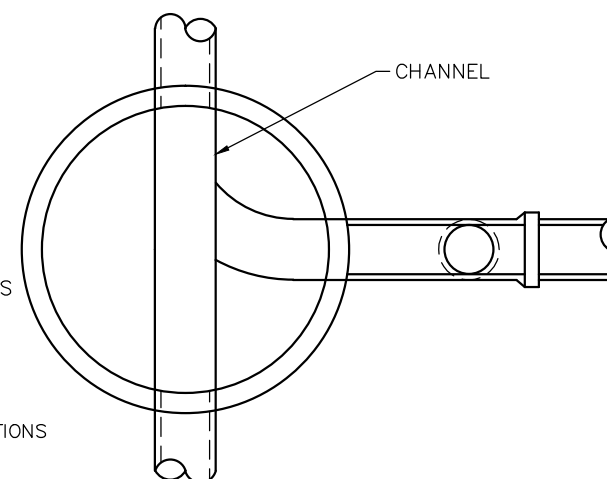
B. ALL NOTES AND ASTM REFERENCES ON THE TYPE 3 SANITARY MANHOLE SHALL APPLY ON THE SANITARY DROP ON EXISTING MANHOLE.

C. ALL NOTES AND ASTM REFERENCES ON THE TYPE D SANITARY DROP MANHOLE SHALL APPLY ON THE SANITARY DROP ON EXISTING MANHOLE.

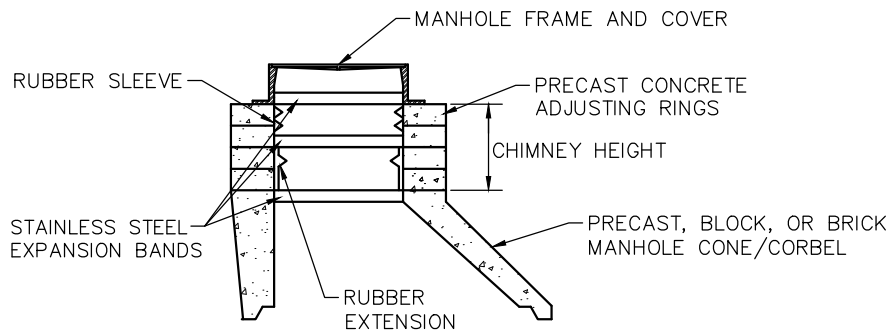
D. THE DUCTILE IRON PIPE SHALL BE ANCHORED TO THE OUTSIDE OF THE EXISTING MANHOLE.

'A'	'B'
8", 10", & 12"	8"
15" & 18"	10"
21" & 24"	12"

DROP CONNECTION MANHOLE

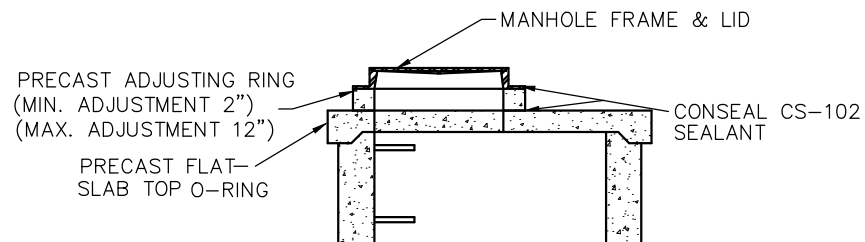


SECTION B-B

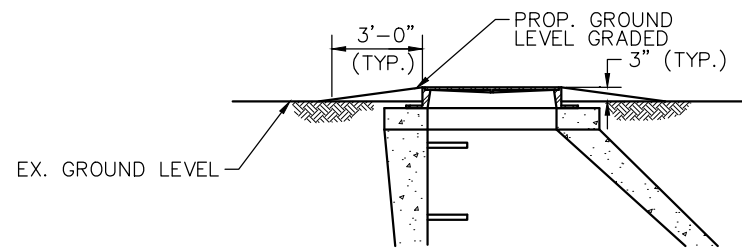


INTERNAL MANHOLE CHIMNEY SEAL

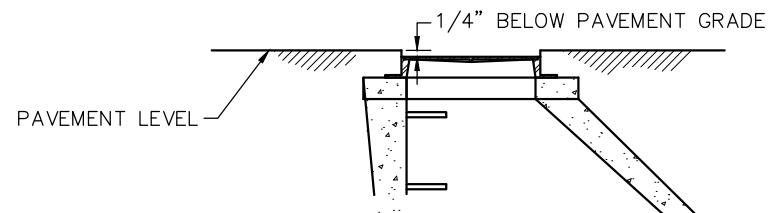
(ONLY WHEN REQUIRED BY VILLAGE)



FLAT TOP SLAB



TYPICAL OFF STREET MANHOLE GRADING



TYPICAL IN STREET MANHOLE GRADING

NOTES

- A.** MANHOLE STEPS SHALL BE SECURLY INSTALLED INTO EACH MANHOLE SECTION, BY THE MANUFACTURER, PRIOR TO DELEVRY TO THE JOB SITE
- B.** MANHOLE STEPS SHALL BE PF-1 STEP BY M.A. INDUSTRIES OR EQUILENT

VILLAGE OF
COVINGTON



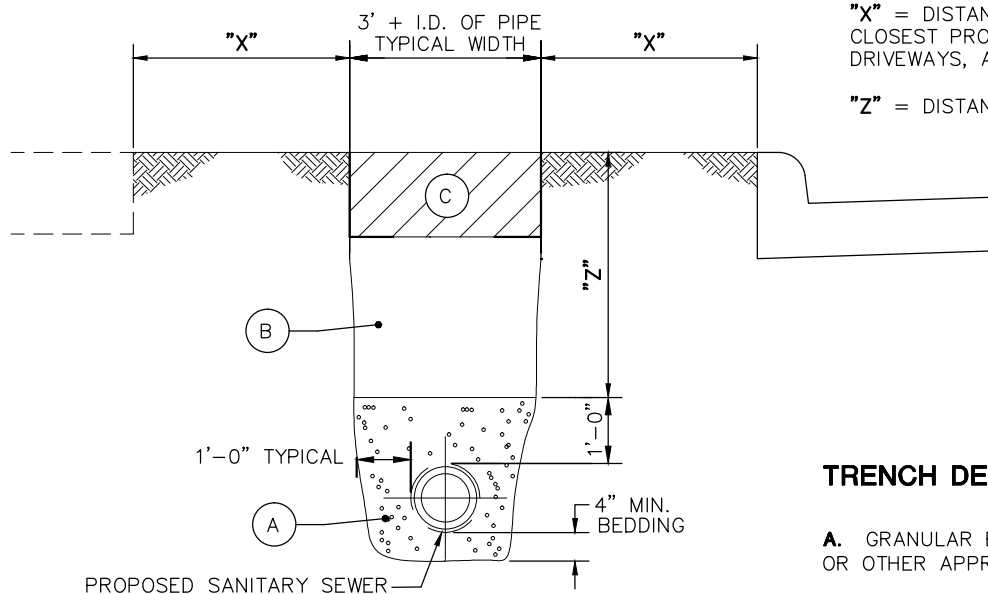
MISCELLANEOUS SANITARY MANHOLE DETAILS

REVISIONS:

DATE
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NOV. 2003

PAGE No.

900-4



SANITARY SEWER TRENCH DETAIL

"X" = DISTANCE FROM EDGE OF TRENCH TO EDGE OF CLOSEST PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREA OR WALKS.

"Z" = DISTANCE FROM TOP OF BEDDING TO FINISH SURFACE.

TRENCH DETAIL NOTES

A. GRANULAR BEDDING SHALL BE CRUSHED STONE OR GRAVEL, ODOT 603 TYPE 3 (#57 OR #67), OR OTHER APPROVED EQUIVALENT.

B. ALL TRENCHES WHERE "X" IS GREATER THAN "Z" FROM PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREA OR WALKS CAN BE COMPACTED EXISTING NATIVE MATERIAL IN 12" MAXIMUM LIFTS OR AS APPROVED BY THE VILLAGE. NO MATERIAL SHALL BE USED FOR BACK FILLING THAT CONTAINS STONES, ROCKS, ETC., GREATER THAN 4" DIAMETER.

ALL TRENCHES WHERE "Z" IS GREATER THAN "X" FROM PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREA OR WALKS SHALL BE COMPACTED WITH GRANULAR BACKFILL MATERIAL ODOT 603 TYPE 1 OR TYPE 2, IN 6" MAXIMUM LIFTS OR LOW STRENGTH MORTAR BACKFILL ODOT ITEM 613 TYPE 1 UNTIL THE TOP OF THE COMPACTED GRANULAR BACKFILL OR LOW STRENGTH MORTAR BACKFILL IS HIGH ENOUGH WHERE "X" IS GREATER THAN "Z".

A DENSITY TEST ON GRANULAR BACKFILL OF 98% OF ASTM D698 STANDARD PROCTOR CURVE MAY BE REQUIRED TO BE PERFORMED BY A COMMERCIAL TESTING LAB SATISFACTORY TO THE VILLAGE.

C. OFF-PAVEMENT AREAS SHALL BE PROVIDED WITH A MINIMUM OF 6" OF TOPSOIL OVER THE COMPACTED MATERIAL AND THEN SEEDED AND MULCHED PER ODOT ITEM 659.

IN-PAVEMENT AREAS SHALL FOLLOW TYPICAL PAVEMENT RESTORATION DETAILS SHOWN ON PAGE 300-19.

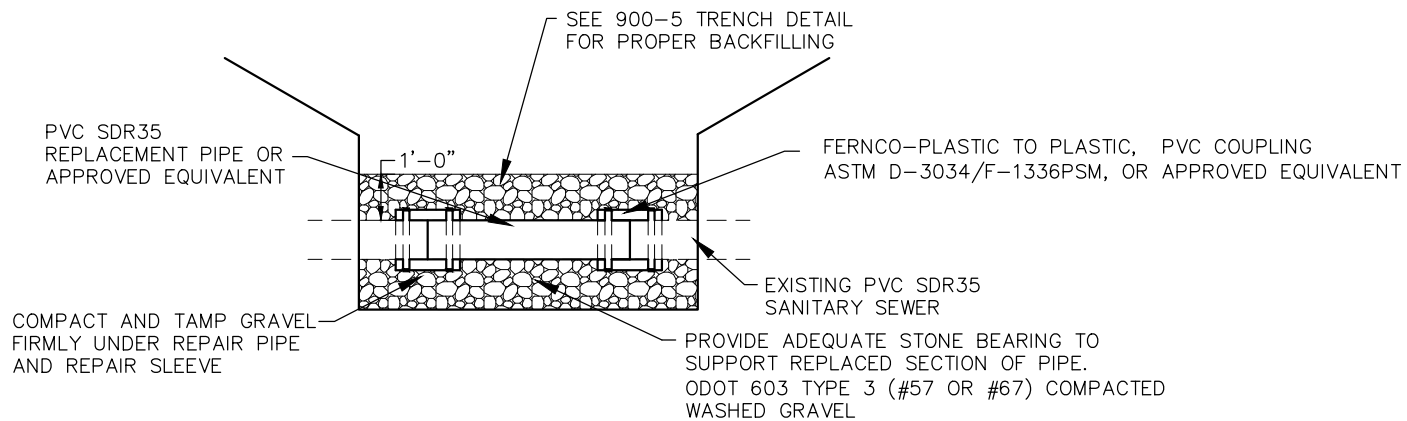
D. THE OPEN ENDS OF ALL PIPES SHALL BE PLUGGED TO THE APPROVAL OF THE VILLAGE BEFORE LEAVING THE WORK FOR THE NIGHT.

VILLAGE OF
COVINGTON

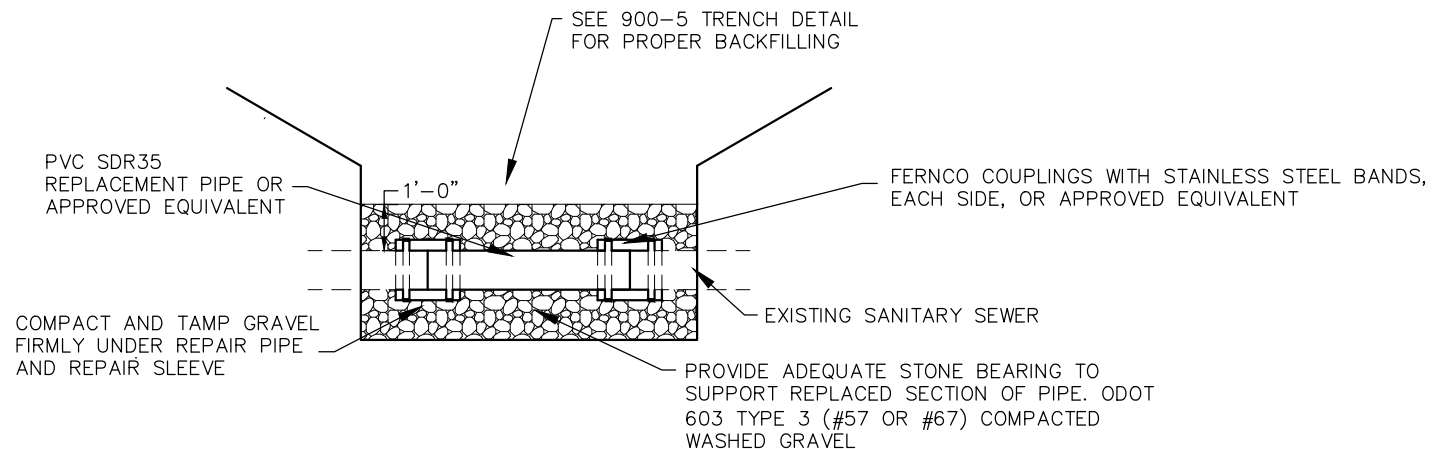


SANITARY SEWER TRENCH DETAIL

REVISIONS:	DATE
	APPROVED:
	NOV. 2003
	PAGE No.
	900-5



REPAIR OF EXISTING PVC SDR35 SANITARY SEWER



REPAIR OF EXISTING SANITARY SEWER OTHER THAN PVC

VILLAGE OF
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REPAIR OF EXISTING SANITARY SEWER PIPE DETAIL

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DATE
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NOV. 2003

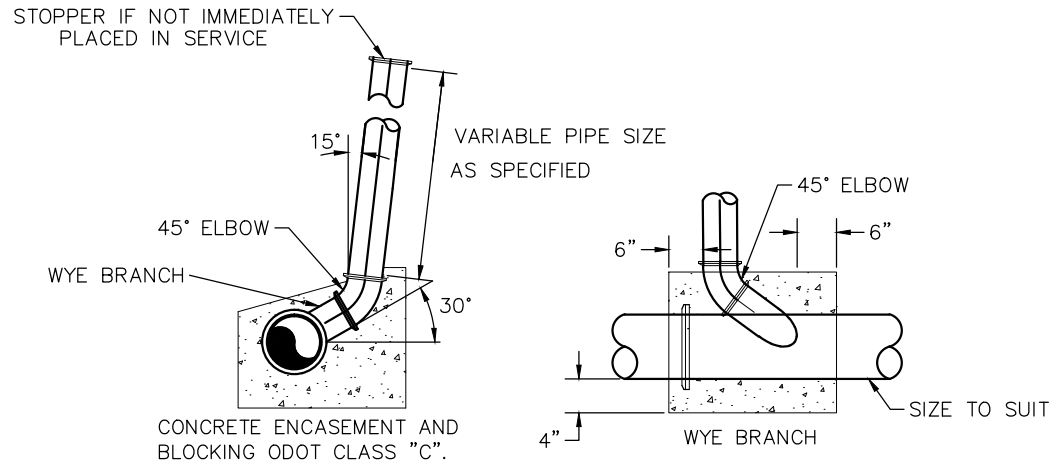
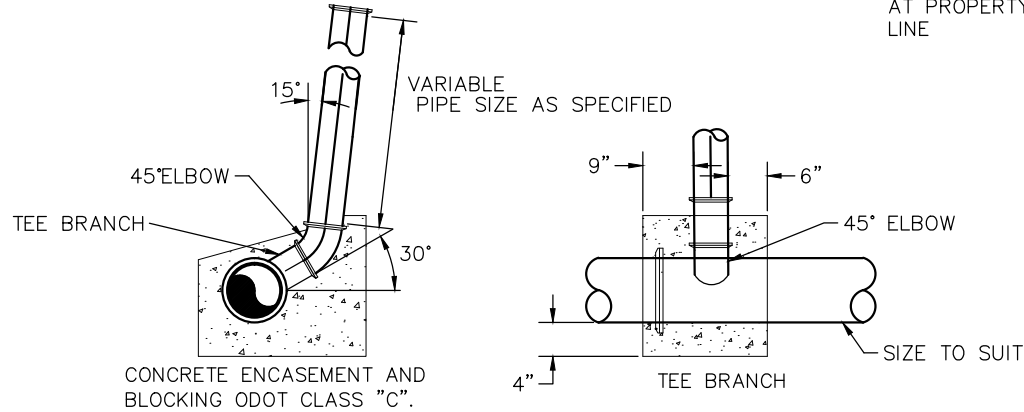
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900-6

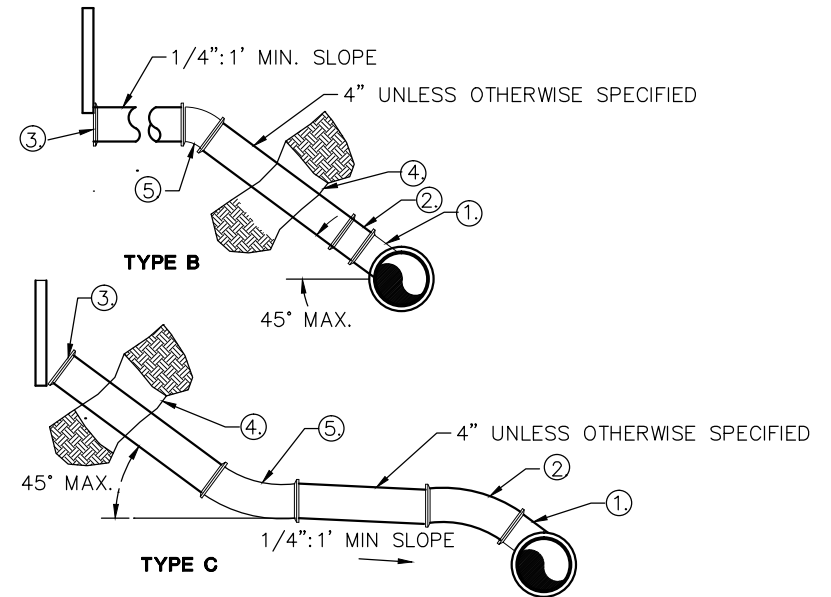
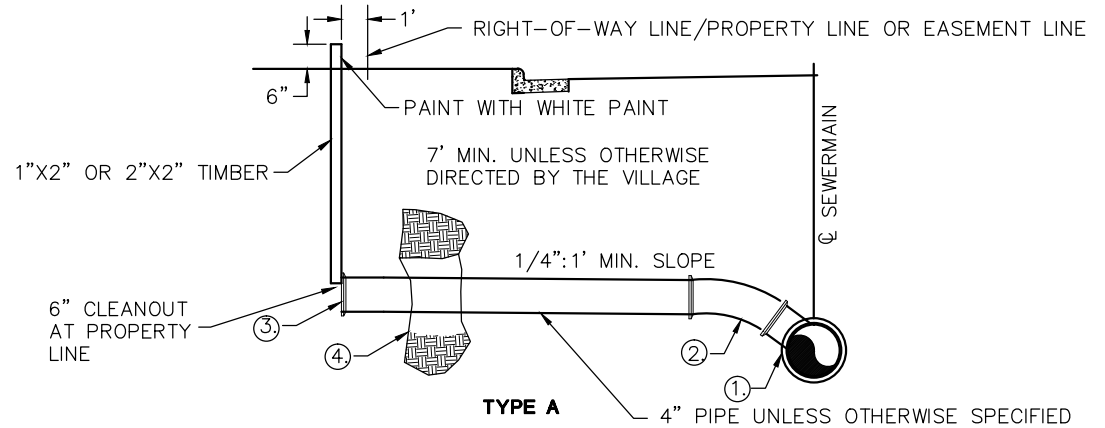


NOTES

- A.** RISER PIPE TO BE BEDDED SOLIDLY AGAINST UNDISTURBED GROUND. ALSO, TEE MAY BE SUBSTITUTED FOR WYE BRANCH IF SPECIFIED.
- B.** RISER PIPE TO BE INSTALLED SO THAT CONNECTING SERVICE SHALL HAVE A MINIMUM DEPTH OF 7' AT THE PROPERTY LINE UNLESS OTHERWISE DIRECTED BY THE VILLAGE.
- C.** CONCRETE ENCASEMENT AND BLOCKING REQUIRED IF DEPTH OF CONNECTION IS 12' OR GREATER.
- D.** EACH SANITARY LATERAL MUST BE IN SEPARATE TRENCHES.



SERVICE RISER



- ① 6" TEE OR WYE—ROTATE 45° FROM HORIZONTAL UNLESS OTHERWISE SPECIFIED.
- ② 6" 1/8 BEND OR 1/16 BEND AS NEEDED.
- ③ CAP UNLESS JOINING EXISTING SERVICE LATERAL.
- ④ BED PIPE WITH 8" GRANULAR MATERIAL AND BACKFILL WITH GRANULAR MATERIAL TO 8" ABOVE PIPE. ODOT 603 TYPE 3 #57 OR #67.
- ⑤ EXACT RECORD OF BEND LOCATIONS MUST BE MADE, AS TO DEPTH FROM SURFACE AND DISTANCE FROM CENTERLINE OF SEWER, BEFORE BACKFILL IS PLACED.

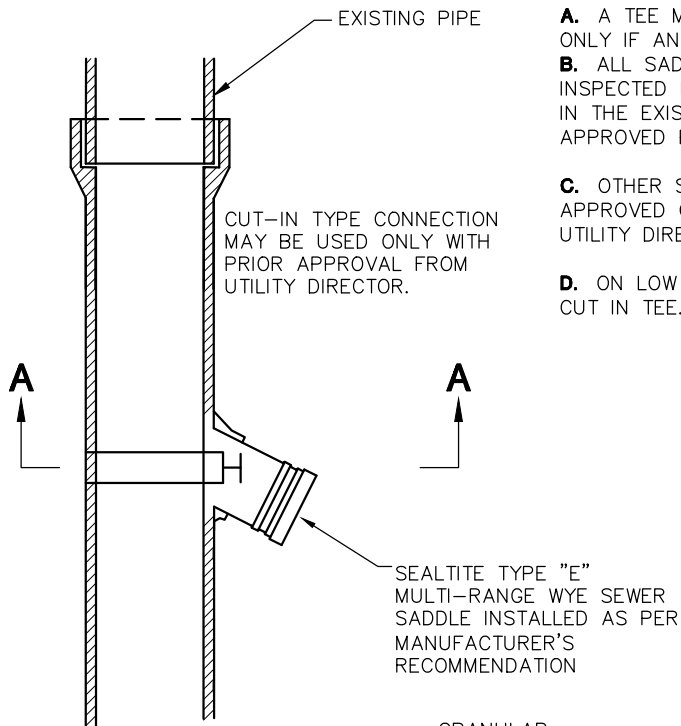
SERVICE LATERAL

VILLAGE OF
COVINGTON



SERVICE RISER AND SERVICE LATERAL

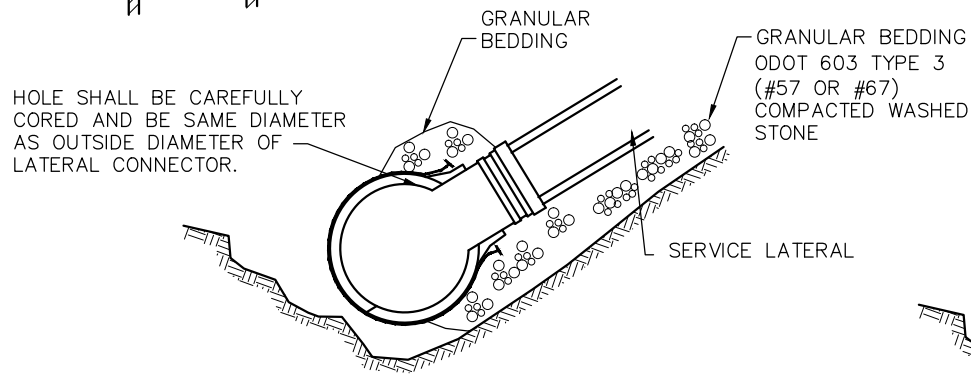
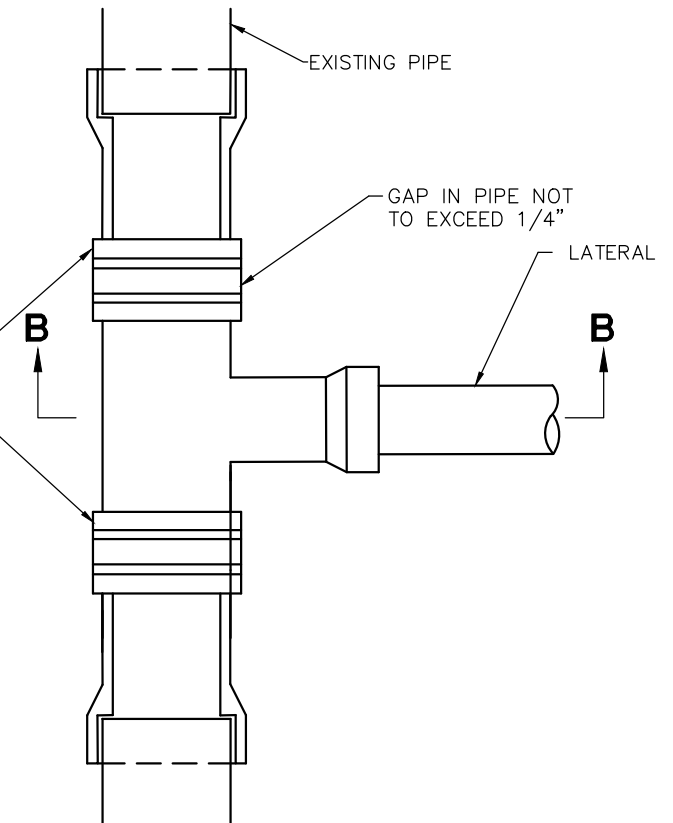
REVISIONS: DATE
APPROVED: NOV. 2003
PAGE No.
900-7



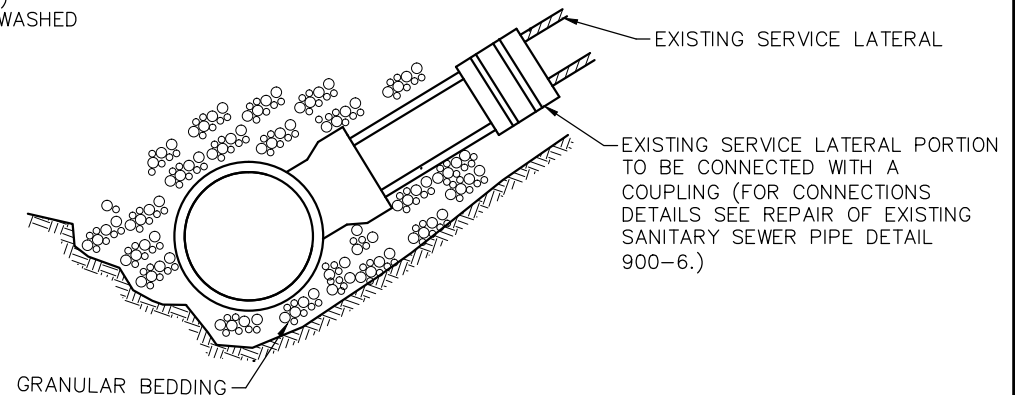
NOTES

- A.** A TEE MAY BE CUT IN OR SADDLE PLACED ONLY IF AN EXISTING LATERAL IS NOT PROVIDED.
- B.** ALL SADDLES AND CUTTING IN TEES MUST BE INSPECTED PRIOR TO COVERING, AND THE HOLE IN THE EXISTING PIPE SHALL BE INSPECTED AND APPROVED PRIOR TO INSTALLATION.
- C.** OTHER SADDLE TYPES THAT MAY BE APPROVED ON CASE-BY-CASE BASIS BY THE UTILITY DIRECTOR.
- D.** ON LOW FLOW AND PVC PIPE SDR 35 USE CUT IN TEE.

COUPLING (FOR CONNECTIONS DETAIL SEE REPAIR OF EXISTING SANITARY SEWER PIPE DETAIL 900-6).



SECTION A-A



SECTION B-B

VILLAGE OF
COVINGTON

SANITARY SEWER SADDLE DETAILS

REVISIONS:	DATE
	APPROVED:
	NOV. 2003
	PAGE No.
	900-8

TRACER WIRE NOTES

A. THE CONTRACTOR WILL FURNISH AND INSTALL TRACER WIRE, WIRE SHALL BE COPPERHEAD HS REINFORCED TRACER WIRE MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC. GREEN FOR SANITARY.

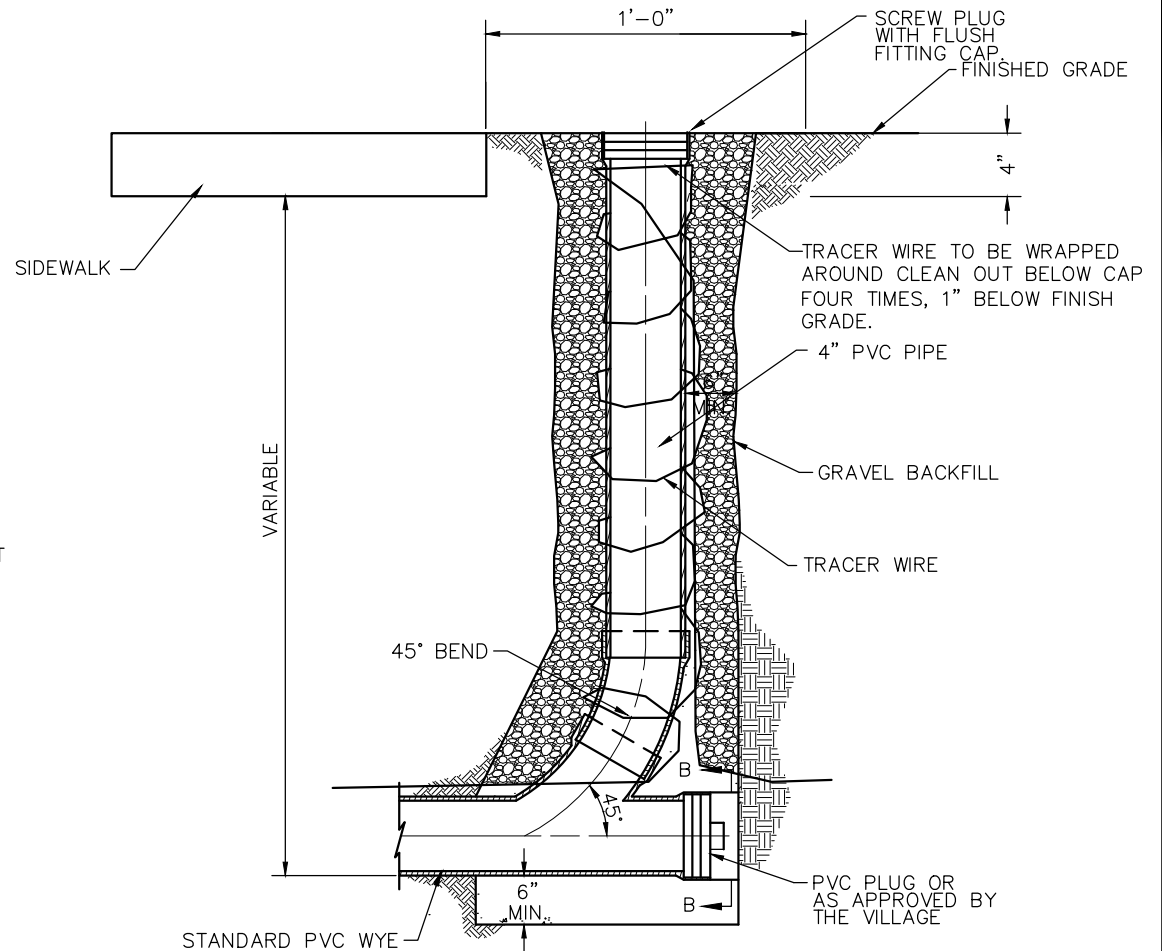
B. TRACER WIRE MUST BE RUN ON TOP OF THE SANITARY SERVICE CONTINUOUSLY WITHOUT SPLICES FOR THE FULL LENGTH OF THE SERVICE. THE TRACER WIRE SHALL BE FASTENED TO THE TOP OF THE SERVICE WITH 1 1/2" POLYETHYLENE TAPE WRAPPED AROUND TWICE AT A MAXIMUM DISTANCE OF 10'.

C. TRACER WIRE THAT MUST BE SPLICED SHALL USE SNAKEBITE TRACER WIRE CONNECTORS MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC.

D. TRACER WIRE WILL BE INSTALLED ON ALL SERVICE INSTALLATIONS AND WILL COME TO THE SURFACE AT THE CLEANOUT AND AT THE BUILDING FOUNDATION.

E. TRACER WIRE SHALL DAYLIGHT AT THE POINT OF ENTRY AT THE FOUNDATION OF THE BUILDING. TAPCON WIRE TO FOUNDATION, 6" ABOVE GROUND LEVEL.

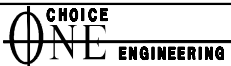
F. ALL MATERIAL, LABOR, EQUIPMENT NEEDED FOR THE INSTALLATION OF THE TRACER WIRE SHALL BE INCIDENTAL TO PIPE INSTALLATION.



CLEANOUT DETAIL

TO BE USED WHEN SANITARY LATERAL WILL BE UNDER PAVEMENT.

VILLAGE OF
COVINGTON



SANITARY SEWER CLEANOUT

REVISIONS:	DATE
	APPROVED:
	OCT. 2012
	PAGE No.
	900-9

LOW PRESSURE AIR TEST

A. AFTER BACKFILLING, THE AIR TEST SHALL BE CONDUCTED BETWEEN TWO CONSECUTIVE MANHOLES. ALL PIPE OUTLETS MUST BE PLUGGED IN THE SECTION BEING TESTED WITH SUITABLE TEST PLUGS. ONE OF THE PLUGS USED AT A MANHOLE MUST BE TAPPED AND EQUIPPED FOR AN AIR INLET CONNECTION FOR FILLING THE LINE FROM THE AIR COMPRESSOR. AIR SHALL BE SUPPLIED SLOWLY TO THE TEST SECTION UNTIL THE INTERNAL PRESSURE REACHES APPROXIMATELY 4 PSI. IF THE PIPE IS BELOW EXISTING GROUNDWATER LEVEL, THE INTERNAL PRESSURE SHALL BE INCREASED BY THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE, BUT IN NO CASE SHOULD THE INTERNAL PRESSURE EVER EXCEED 5 PSI.

B. AT LEAST 2 MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 PSI, THE AIR SUPPLY SHALL BE DISCONNECTED AND TIMING SHALL BEGIN WITH A STOP WATCH. THE STOP WATCH SHALL BE ALLOWED TO RUN UNTIL THE PRESSURE HAS DROPPED 1.0 PSI. IF THE TIME SHOWN ON THE STOP WATCH IS GREATER THAN THE SPECIFIED MINIMUM TIME, THE SECTION SHALL BE CONSIDERED TO HAVE PASSED THE TEST. TIME MAY BE INTERPOLATED FROM THE FIGURES LISTED BELOW.

PIPE DIA. (IN.)	Time for Longer Length (sec)	Specified Minimum for Length (L) Shown (min:sec)						
		100 FT.	150 FT.	200 FT.	250 FT.	300 FT.	350 FT.	400 FT.
4	0.380L	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	0.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42
8	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08
10	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49
12	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47
15	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36
18	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16
21	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48
24	13.674L	22:47	34:11	45:34	56:58	68:22	79:46	91:10

SPECIFICATION TIME FOR LENGTH (L) SHOWN (MIN:SEC)

*ALL TESTS SHALL BE WITNESSED BY A VILLAGE REPRESENTATIVE.

DEFLECTION TEST

A. DEFLECTION TESTS SHALL BE PERFORMED BY THE CONTRACTOR ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM.

B. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF DEFLECTION EXCEEDS 5%, REPLACEMENT OR CORRECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF APPROVING AGENCY.

C. THE RIGID BALL OR MANDREL USED FOR THE DEFLECTION TEST SHALL HAVE A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE DEPENDING ON WHICH IS MANUFACTURED. THE PIPE SHALL BE MEASURED IN COMPLIANCE WITH ASTM D-2122 STANDARD TEST METHOD OF DETERMINING DIMENSIONS OF THERMOPLASTIC PIPE AND FITTINGS. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.

SANITARY SEWER TV REQUIREMENTS

BEFORE THE VILLAGE ACCEPTS ANY SANITARY SEWER AND BEFORE THE FINAL PAYMENT, THE CONTRACTOR WILL SUPPLY THE VILLAGE WITH A PASSING VHS TAPE OR CD AND WRITTEN LOG OF THE ENTIRE NEW SYSTEM. THIS TAPE MUST SHOW THE LOCATION OF ALL LATERALS, THEIR CLOCK POSITIONS AND DISTANCE FROM THE MANHOLE. THE TAPE MUST ALSO SHOW A SYSTEM CLEAR OF ANY BENDS, BELLIES, LEAKS, PIPE IMPERFECTIONS, DEBRIS OR ANY CONDITIONS NOT SPECIFICALLY SHOWN ON THE PLANS. THE CONTRACTOR MUST ALSO SUPPLY A WRITTEN COPY OF ALL LATERAL LOCATIONS. ANY SEWER JETTING OR OTHER CLEANING ASSOCIATED WITH A PASSING VHS TAPE IS THE RESPONSIBILITY OF THE CONTRACTOR.

THE VILLAGE SHALL REQUIRE THE USE OF A PAN AND TILT TYPE CAMERA TO REVIEW ALL LATERAL CONNECTIONS ON SEWER MAIN REPLACEMENT PROJECTS.

THE ABOVE PROCEDURES WILL BE AT THE CONTRACTOR'S EXPENSE.

THE VILLAGE RESERVES THE RIGHT TO A FINAL TELEVISION OF THE SEWER SYSTEM AT THE VILLAGE'S EXPENSE BEFORE THE PROJECT IS FINALIZED.

MANHOLE VACUUM TEST

ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED BY THE CONTRACTOR USING THE FOLLOWING PROCEDURES FROM ASTM C-1244.

A. PREPARATION OF THE MANHOLE

1. ALL LIFT HOLES SHALL BE PLUGGED.
2. ALL PIPES ENTERING THE MANHOLE SHALL BE TEMPORARILY PLUGGED TAKING CARE TO SECURELY BRACE THE PIPES AND PLUGS TO PREVENT THEM FROM BEING DRAWN INTO THE MANHOLE.

B. PROCEDURE

1. THE FIRST HEAD SHALL BE PLACED AT THE TOP OF THE MANHOLE IN THE CASTING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. A VACUUM OF 10" OF MERCURY (4.9 PSI) SHALL BE DRAWN ON THE MANHOLE, THE VALVE ON THE VACUUM LINE OF THE TEST HEAD CLOSED, AND THE VACUUM PUMP SHUT OFF. THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9" OF MERCURY (4.4 PSI).

3. THE MANHOLE SHALL PASS IF THE TIME FOR THE VACUUM READING TO DROP FROM 10" OF MERCURY (4.9 PSI) TO 9" OF MERCURY (4.4 PSI) MEETS OR EXCEEDS THE VALUES INDICATED ON THE TABLE.

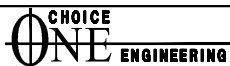
4. IF THE MANHOLE FAILS THE INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE BY AN APPROVED METHOD. THE MANHOLE SHALL THEN BE RETESTED UNTIL A SATISFACTORY TEST IS OBTAINED.

DIAMETER, INCHES

DEPTH (FT.)	TIME, SECONDS		
	48	60	72
8 OR LESS	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

MINIMUM TEST TIMES FOR VARIOUS MANHOLE DIAMETERS

VILLAGE OF
COVINGTON



SANITARY SEWER TESTING NOTES

REVISIONS:
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DATE
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NOV. 2003

PAGE No.
900-10

NOTES

- A.** NO WORK SHALL BE APPROVED OR ACCEPTED BY THE VILLAGE UNLESS 2 WORKING DAY'S NOTICE OF COMMENCING WORK IS GIVEN TO THE VILLAGE.
- B.** ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE VILLAGE.
- C.** ROOF DRAINS, FOUNDATION DRAINS, SUMP PUMPS, AND OTHER CLEAR WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
- D.** WHEN A SEWER IS TO BE EXTENDED AT THE DOWNSTREAM MANHOLE OR FIRST MANHOLE IN THE NEW LINE, IT SHALL BE PLUGGED BEFORE CONSTRUCTION BEGINS. IF THE SEWER IS SMALLER OR EQUAL TO 12" DIAMETER, IT SHALL BE PLUGGED BY PLACING A POLY-ETHYLENE BAG APPROXIMATELY 6" INTO THE SEWER PIPE AND POURING CONCRETE INTO AND AROUND THE SEWER PIPE AS DIRECTED BY THE VILLAGE. SIZES LARGER THAN 12" WILL BE PLUGGED BY OTHER APPROVED METHODS. NO PLUGS SHALL BE REMOVED UNTIL CONSTRUCTION IS COMPLETED AND SOIL IS STABILIZED AND THEN ONLY AS DIRECTED BY THE VILLAGE.
- E.** CONSTRUCTION OF SANITARY SEWERS SHALL INCLUDE THE VILLAGE DYE TESTING AS DETERMINED BY THE VILLAGE OF ALL PIPES TO BE CONNECTED TO THE NEW SEWER PRIOR TO BACKFILLING.
- F.** WHEN A CASTING OR OTHER PUBLIC PROPERTY IS ABANDONED IT REMAINS VILLAGE PROPERTY.
- G.** NEW SEWERS MUST HAVE EPA PLAN APPROVAL.

EXCAVATION AND PIPE LAYING

- A.** THE LAYING OF THE PIPE SHALL COMMENCE AT THE LOWEST POINT, WITH THE BELL END LAID UPGRADE. THE PIPE SHALL BE CENTERED IN THE TRENCH AND ALL PIPE SHALL BE LAID WITH ENDS ABUTTING AND TRUE TO LINE AND GRADE.
- B.** LASER SHALL BE USED UNLESS OTHERWISE APPROVED.

UTILITY STAKING

- A.** LASER METHOD – OFFSET AND GRADE AT EACH MANHOLE. OFFSET AND GRADE 50' AND 100' OUT FROM EACH MANHOLE UNLESS OTHERWISE APPROVED.

TESTING

- A.** BEFORE ANY SEWER LINE IS PLACED INTO SERVICE OR ACCEPTED BY THE VILLAGE, IT SHALL BE SUBJECTED TO AND PASS LOW PRESSURE AIR TEST. EACH RUN BETWEEN MANHOLES, WITH ALL SERVICE LATERALS STUBBED INTO PROPERTY LINES, SHALL BE TESTED BEFORE BEING ACCEPTED. THE CONTRACTOR OR DEVELOPER SHALL FURNISH ALL EQUIPMENT AND MATERIAL NECESSARY TO CONDUCT THIS TEST. THE TRENCH SHALL BE COMPLETELY BACKFILLED BEFORE TESTING.
- B.** SEE SANITARY TESTING NOTES.

- C.** BEFORE FINAL ACCEPTANCE BY THE VILLAGE AND BEFORE ANY SERVICE LINE IS PUT INTO USE, ALL SANITARY SEWERS AND MANHOLES SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER BY USE OF A SEWER-JET, OR EQUAL, TYPE OF EQUIPMENT.

HOUSE CONNECTIONS

- A.** NO SERVICE LINE SHALL BE ALLOWED TO CONNECT DIRECTLY INTO A MANHOLE, SUBJECT TO APPROVAL BY THE VILLAGE IN SPECIFIC CASES.
- B.** THE ENDS OF ALL SERVICE LINES OR TEES SHALL BE ACCURATELY LOCATED, MAPPED, AND GIVEN TO THE VILLAGE WITHIN 15 DAYS AFTER INSTALLATION.
- C.** BEFORE MAKING A CONNECTION TO AN EXISTING SEWER TAP OR SEWER LATERAL, THE CONTRACTOR SHALL CHECK THE EXISTING PIPE BY UTILIZING A SEWER EEL, STRAP, OR SEWER ROD TO SEE THAT THE EXISTING PIPE IS CONNECTED TO THE MAIN SEWER. IF NECESSARY, THE VILLAGE WILL PROVIDE, AT THE CONTRACTOR'S EXPENSE, A HYDRAULIC SEWER CLEANER WHICH WILL PRODUCE LARGE VOLUMES OF WATER TO CHECK THE LATERAL.
- D.** LATERALS FROM THE MAIN TO THE PROPERTY LINE SHALL BE 4" MINIMUM WITH CLEANOUT AT THE PROPERTY LINE.
- E.** A PERMIT TO OPEN INTO, ALTER, OR DISTURB ANY PUBLIC SEWER MUST BE OBTAINED.
- F.** ALL ABANDONED SEWER LATERALS SHALL BE CAPPED AT THE OWNER'S EXPENSE.

PIPE

- A.** ALL PIPE AND SPECIALS SHALL BE PVC SDR-35 UNLESS OTHERWISE APPROVED BY THE VILLAGE. MINIMUM DIAMETER OF PIPE SHALL BE 8".
- B.** DUCTILE IRON PIPE WILL BE USED IN STREAM CROSSINGS AND WHERE MAXIMUM SEPARATION CAN NOT BE MAINTAINED.
- C.** ALL JOINTS SHALL BE OF THE BELL AND SPIGOT TYPE, THE BELLS BEING FORMED INTEGRALLY WITH THE PIPE. THE BELL SHALL CONTAIN A FACTORY INSTALLED ELASTOMETRIC GASKET WHICH IS POSITIVELY RETAINED. NO SOLVENT CEMENT JOINTS WILL BE PERMITTED IN FIELD CONSTRUCTION EXCEPT AS SPECIFICALLY AUTHORIZED BY THE VILLAGE.

<u>FLEXIBLE PIPES</u>	<u>MATERIAL SPECIFICATIONS</u>	<u>JOINT SPECIFICATIONS</u>
POLYVINYL CHLORIDE	ASTM D-3034 (SDR-35) PIPE STIFFNESS = 46PSI	ELASTOMERIC GASKET ASTM D-3212
DUCTILE IRON	ANSI A-21.51 & AWWA C-151	ANSI A-21.11 & AWWA C-111

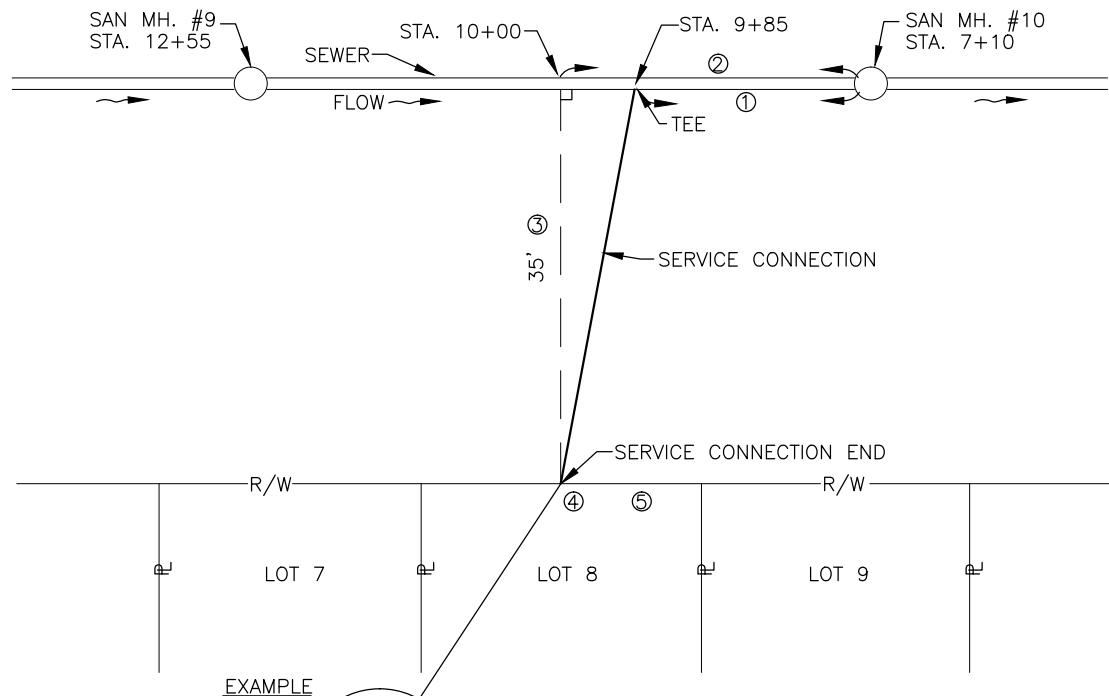
- 1.** SDR = OUTSIDE DIAMETER DIVIDED BY WALL THICKNESS.
- 2.** THE SPECIFICATIONS ABOVE SHALL BE THOSE MOST RECENTLY ADOPTED BY THE APPROPRIATE STANDARDS SETTING ORGANIZATIONS.

VILLAGE OF
COVINGTON



MISCELLANEOUS SANITARY SEWER NOTES

REVISIONS:	DATE APPROVED: NOV. 2003
	PAGE No.
	900-11



EXAMPLE

1. 275'
2. 290'
3. 35'
4. 8.9'
5. 942.9

**THE CONTRACTOR SHALL SUPPLY THE FOLLOWING
INFO TO THE SATISFACTION OF THE VILLAGE**

- ① HORIZONTAL DISTANCE OF TEE TO DOWNSTREAM MANHOLE.
- ② HORIZONTAL DISTANCE OF SERVICE CONNECTION END TO DOWNSTREAM MANHOLE ALONG SEWER.
- ③ PERPENDICULAR DISTANCE FROM SEWER TO SERVICE CONNECTION END.
- ④ DEPTH OF SERVICE CONNECTION END FLOW LINE TO ORIGINAL GROUND.
- ⑤ ELEVATION OF SERVICE CONNECTION END FLOW LINE.
- ⑥ ELEVATION OF BACK OF CURB OR SOME OTHER REFERENCE POINT ABOVE LATERAL.

VILLAGE OF
COVINGTON



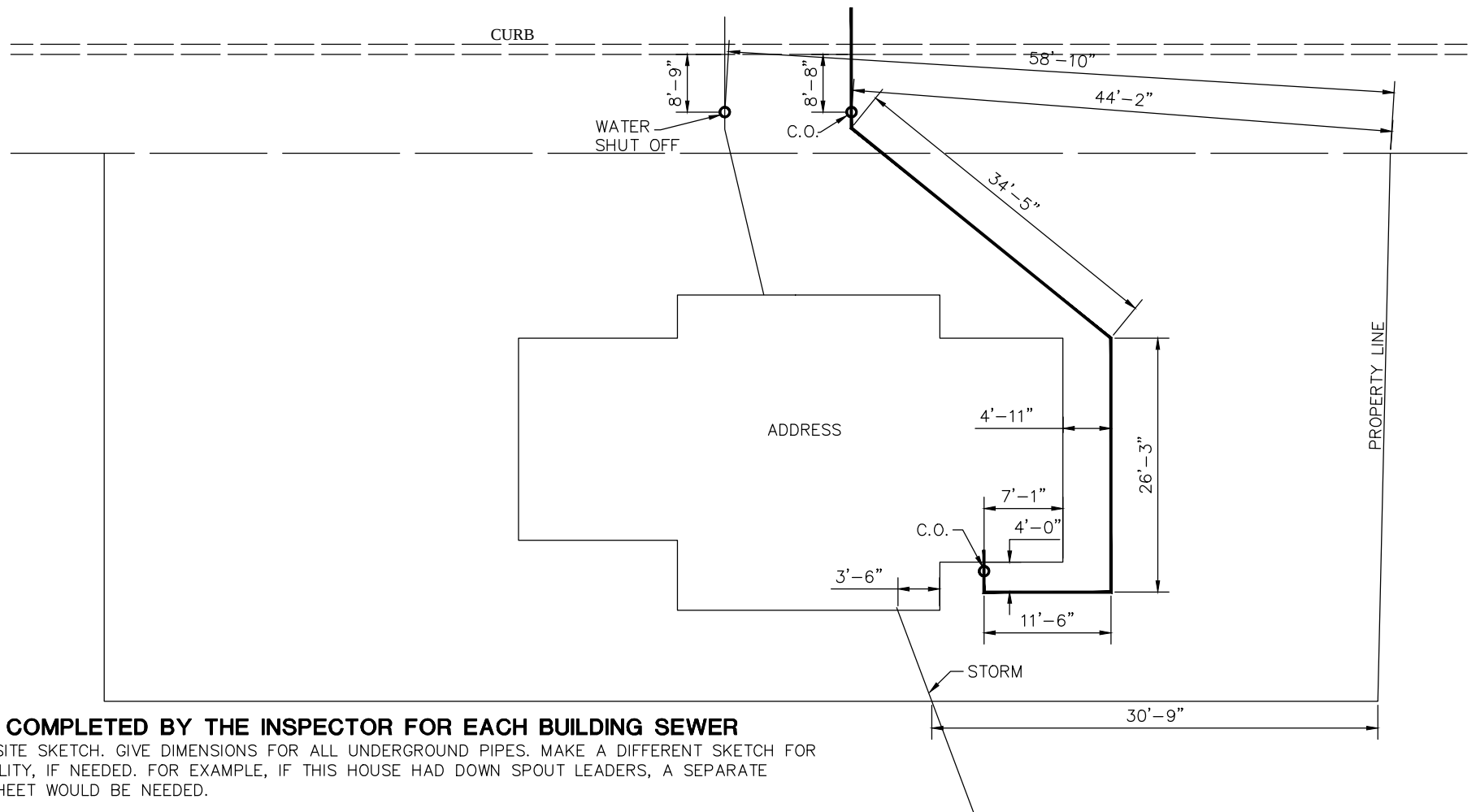
**SERVICE CONNECTION
LOCATION REFERENCE**

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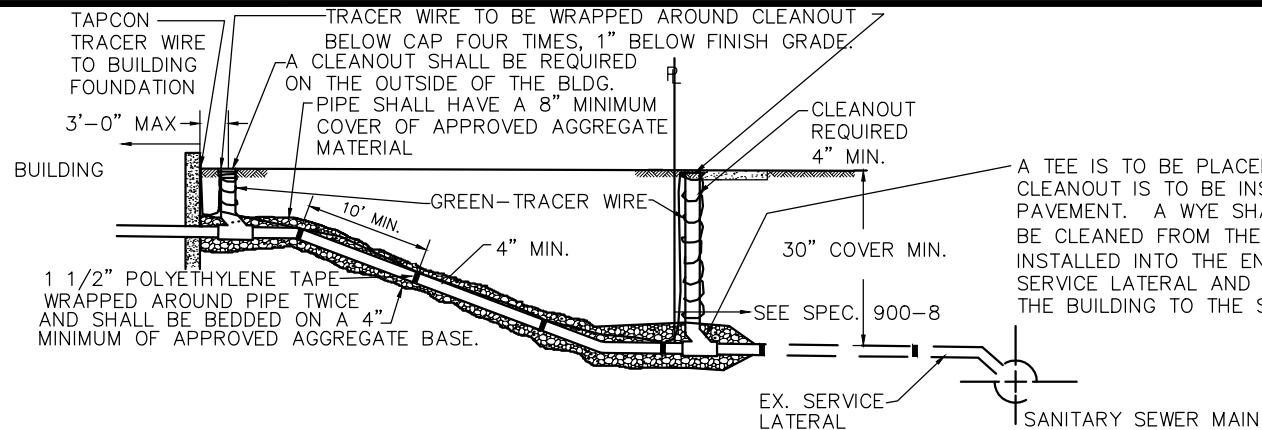
DATE
APPROVED:
NOV. 2003

PAGE No.

900-12



TO BE COMPLETED BY THE INSPECTOR FOR EACH BUILDING SEWER
 SAMPLE SITE SKETCH. GIVE DIMENSIONS FOR ALL UNDERGROUND PIPES. MAKE A DIFFERENT SKETCH FOR EACH UTILITY, IF NEEDED. FOR EXAMPLE, IF THIS HOUSE HAD DOWN SPOUT LEADERS, A SEPARATE STORM SHEET WOULD BE NEEDED.



NOTES

APPROVED AGGREGATE MATERIAL SHALL BE CRUSHED STONE OR GRAVEL, ODOT 603 TYPE 3 (67 OR 57) OR OTHER APPROVED EQUAL.

A TEE IS TO BE PLACED AT THE EXISTING SERVICE LATERAL FOR TESTING PURPOSES. A CLEANOUT IS TO BE INSTALLED AT THE PROPERTY LINE IF THE LATERAL IS UNDER THE PAVEMENT. A WYE SHALL BE INSTALLED SO THAT THE EXISTING SERVICE LATERAL CAN BE CLEANED FROM THE WYE TO THE SANITARY SEWER MAIN. (THE WYE SHALL BE INSTALLED INTO THE END OF THE EXISTING SERVICE LATERAL.) IF THERE IS NO EXISTING SERVICE LATERAL AND ONE MUST BE INSTALLED, THEN THE TEST SHALL EXTEND FROM THE BUILDING TO THE SANITARY SEWER MAIN, UNLESS OTHERWISE APPROVED.

CLEANOUTS REQUIRED
EVERY 100'

NOTES

- A.** SEPTIC TANKS, WHEN ABANDONED, SHALL BE DEWATERED AND PROPERLY FILLED WITH GRANULAR MATERIAL WITH ALL TILES BEING PLUGGED WITH CONCRETE.
- B.** ROOF DOWNSPOUTS, EXTERIOR FOUNDATION DRAINS, AREAWAY DRAINS OR OTHER SURFACE RUNOFF OR GROUNDWATER SHALL NOT BE CONNECTED TO THE SANITARY SEWER MAIN. ALSO SEE MISC. NOTE B.
- C.** ANY INDIVIDUAL OR FIRM INSTALLING SEWER CONNECTIONS SHALL BE APPROVED BY THE VILLAGE.
- D.** BEFORE BEGINNING WORK, A SEWER TAP PERMIT MUST BE OBTAINED.
- E.** WHEN THE BUILDING CONNECTION MUST ENTER INTO A PAVED PORTION OF THE STREET OR ALLEY, APPROVAL MUST BE OBTAINED BEFORE BEGINNING WORK.
- F.** WATER SERVICES SHALL BE A MINIMUM OF 10' MEASURED HORIZONTALLY FROM THE SEWER SERVICE AND SHALL BE A MINIMUM OF 18" ABOVE THE CROWN (WHENEVER POSSIBLE) OF THE SANITARY SEWER MAIN WHERE THE WATER SERVICE CROSSES THE SEWER MAIN.

PIPE

- A.** THE PIPE MATERIAL SHALL BE PVC SDR 35, SCHEDULE 40, UTILIZING PURPLE PRIMER, OR AN APPROVED EQUIVALENT.
- B.** PIPE SIZES FOR BUILDING CONNECTIONS SHALL BE 4" MINIMUM FOR SINGLE RESIDENCE AND 6" MINIMUM FOR ALL OTHER USES. THE LATERALS SHALL BE RAN TO WITHIN 3' OF THE OUTSIDE OF THE BUILDING.

INSPECTION

- A.** A TAP INSPECTION SHALL BE REQUIRED ON ALL NEW BUILDING CONNECTIONS AND ALSO ON THE REPLACEMENT OF EXISTING BUILDING CONNECTIONS.
- B.** WHEN THE BUILDING SEWER IS READY FOR INSPECTION, THE VILLAGE SHALL BE GIVEN 24 HOURS ADVANCE NOTICE. THE PIPE SHALL BE LEFT UNCOVERED UNTIL AN INSPECTION HAS BEEN MADE AND APPROVED.
- C.** ANY NEW BUILDING CONNECTION INSTALLED WITHOUT AN INSPECTION SHALL RESULT IN NO ISSUANCE OF A WATER METER FOR THE BUILDING. IF THIS OCCURS, THE ENTIRE LATERAL SHALL BE UNCOVERED SO THAT A PROPER INSPECTION CAN BE MADE.
- D.** NO TAP FEE IS REQUIRED IF AN OLD BUILDING SEWER IS TO BE REUSED. AN INSPECTION WILL BE REQUIRED. THE PUBLIC UTILITY DEPT. SHALL INSPECT THE ENTIRE BUILDING CONNECTION FROM THE CLEANOUT TO THE PROPERTY LINE CONNECTION OR TO THE MAIN SEWER, WHICHEVER IS APPLICABLE.

TESTING

- A.** THE OUTSIDE PLUMBER SHALL BE RESPONSIBLE FOR THE TESTING FROM THE CONNECTION TO THE EXISTING SERVICE LATERAL TO THE CLEANOUT.
- B.** ALL NEW BUILDING CONNECTIONS SHALL BE BY AIR WITH 5 PSI PRESSURE.
- C.** THE SEWER TEST SHALL BE FROM THE CLEANOUT TO THE PROPERTY LINE CONNECTION OR TO THE MAIN SEWER, WHICHEVER IS APPLICABLE.

- D.** WHEN A SUBSTANTIAL AMOUNT OF AN EXISTING LATERAL IS REPLACED, THE NEW PORTION OF THE LATERAL SHALL REQUIRE A TEST UNLESS OTHERWISE APPROVED.

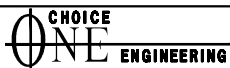
MISC.

- A.** BASEMENTS MUST HAVE A FLOOR DRAIN AND BE CONNECTED TO THE STORM SEWER (SUMP PUMP).

PIPE LAYING

- A.** THE OPEN ENDS OF ALL PIPES SHALL BE PLUGGED OR OTHERWISE CLOSED WITH A WATERTIGHT PLUG TO THE APPROVAL OF THE VILLAGE BEFORE LEAVING THE WORK SITE FOR THE NIGHT.
- B.** THE JOINING OF PIPE WITH CONCRETE SHALL NOT BE ACCEPTED.
- C.** BEFORE MAKING A CONNECTION TO AN EXISTING SEWER OR SERVICE LATERAL, THE CONTRACTOR SHALL CHECK THE EXISTING PIPE BY UTILIZING A SEWER EEL, STRAP, OR SEWER ROD TO SEE THAT THE EXISTING PIPE IS CONNECTED TO THE SANITARY SEWER MAIN.
- D.** IN THE CASE WHERE A 90° CORNER IS REQUIRED IN THE BUILDING CONNECTION LINE, 2 45° BENDS SHALL BE USED IN LIEU OF A 90° BEND. A CLEANOUT WILL BE REQUIRED.
- E.** THE BUILDING CONNECTION LINE SHALL BE LAID IN AS STRAIGHT A LINE, FROM THE BUILDING TO THE EXISTING LATERAL, AS POSSIBLE.
- F.** ALL NEW CONSTRUCTION SHALL HAVE SANITARY LATERALS INSTALLED.
- G.** DRAWINGS SHOWING LATERAL LOCATIONS SHALL BE SUBMITTED WITH A BUILDING PERMIT.
- H.** TRACER WIRE WILL BE INSTALLED ON ALL NEW PVC SANITARY SERVICE INSTALLATIONS FROM SANITARY MAIN TO BUILDING AND WILL COME TO SURFACE AT EVERY CLEANOUT. (SEE 900-9)

VILLAGE OF
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BUILDING CONNECTION DETAIL

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900-14