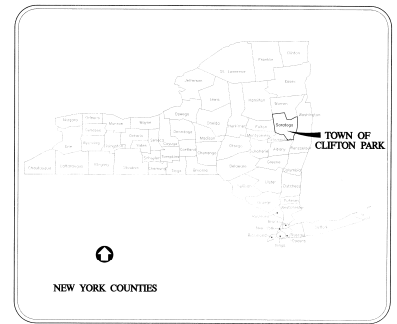


SITE LOCATION MAP
NOT TO SCALE

LONGKILL SUBDIVISION

LONGKILL ROAD

TOWN OF CLIFTON PARK, SARATOGA COUNTY



GENERAL LOCATION MAP
NOT TO SCALE

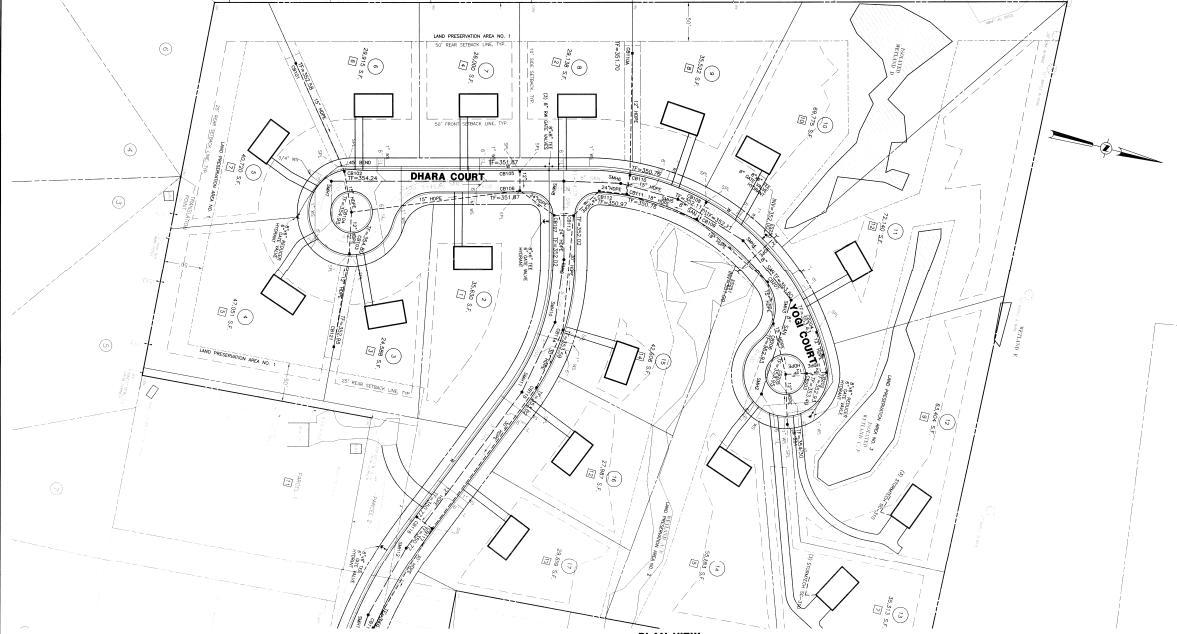


SHEET ID	SHEET NO.	TITLE
TS	1	TITLE SHEET
SP	2	SUBDIVISION PLAN
SG	3	SITE GRADING PLAN
PP1	4	PLAN / PROFILE KAIN TERRACE
PP2	5	PLAN / PROFILE DHARA COURT & YOGI COURT
PP3	6	PLAN / PROFILE OFFSITE SANITARY SEWER
ESC1	7	EROSION & SEDIMENT CONTROL PLAN
ESC2	8	EROSION & SEDIMENT CONTROL DETAILS
DET1	9	WATER DISTRIBUTION DETAILS
DET2	10	SANITARY SEWER DETAILS
DET3	11	SANITARY SEWER, TRENCHING, PIPE BEDDING AND BACKFILL DETAILS
DET4	12	STORM SEWER DETAILS
DET5	13	MISCELLANEOUS DETAILS
DET6	14	MULTI-USE PATH DETAILS
DET7	15	SANITARY SEWER BORING PLAN & DETAILS
N1	16	UTILITY NOTES
N2	17	UTILITY NOTES

NEW YORK STATE DEPARTMENT OF HEALTH
 DIVISION OF ENVIRONMENTAL HEALTH
 STATE HEALTH OFFICE
 Date: 07/24/2008
 These plans are for Longkill Subdiv
 and have been approved by [Signature]
 for the State Commissioner of Health.

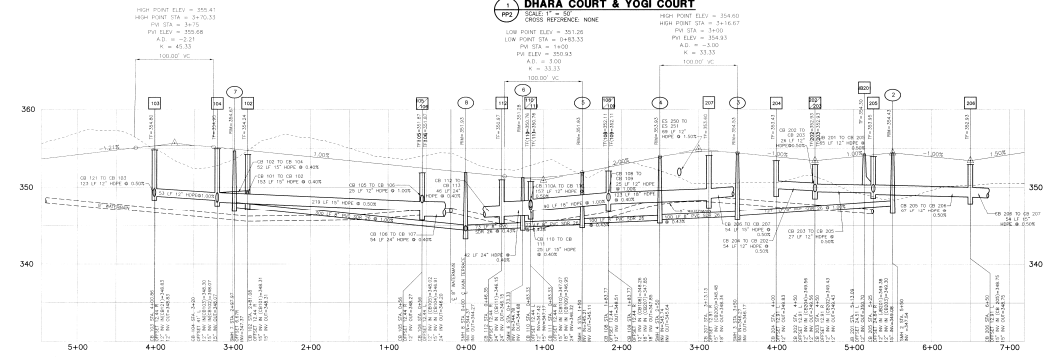
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 DIVISION OF ENVIRONMENTAL CONSERVATION
 Date: Aug 15, 2008
 The attached plans for Longkill Subdiv
 have been reviewed and approved by the State Environmental Engineer.
 This approval is based on the information provided and does not constitute a warranty of the accuracy of the information provided.
 C.T. MALE ASSOCIATES
 AUG 23 2008
 PRINTED AND ISSUED

	DATE	REVISIONS	RECORD/DESCRIPTION	DRAFTED	CHECKED	APPROVED	<p>TITLE SHEET</p> <p>LONGKILL SUBDIVISION</p> <p>TOWN OF CLIFTON PARK, SARATOGA COUNTY, NEW YORK</p> <p>C.T. MALE ASSOCIATES Engineering, Surveying, Architecture & Environmental Architecture, P.C. 30 OGDEN HILL DRIVE, SUITE 101, 12110 CLIFTON PARK, NY 12018-1104</p> <p>SCALE: 1"=200' DATE: JAN. 24, 2008</p>
	07/24/08	1	ISSUED FOR PERMITS	JWM	JWM	JWM	
	08/06/08	2	REVISION FOR TOWN COMMENTS	JWM	JWM	JWM	



PIPE MATERIAL SPECIFICATIONS
 WATER SFP - CLASS 50
 WATER SERVICE CONNECTIONS: COPPER - TYPE K
 SANITARY SEWER (GRAVITY): PVC - 80K25
 SANITARY SEWER SERVICE LATERALS: PVC - 80K30

**PLAN VIEW
 DHARA COURT & YOGI COURT**



**PROFILE
 DHARA COURT & YOGI COURT**

- LEGEND (PROPOSED)**
- PROPOSED CATCH BASIN
 - PROPOSED END SECTION
 - PROPOSED HOUSING
 - PROPOSED SANITARY MANHOLE
 - PROPOSED WATER VALVE
 - PROPOSED WATER LINE
 - PROPOSED SWASTAY LINE
 - PROPOSED GROUNDLINE
 - PROPOSED LOT NUMBER
- LEGEND (EXISTING)**
- EXISTING CATCH BASIN
 - EXISTING END SECTION
 - EXISTING HOUSING
 - EXISTING SANITARY MAN HOLE
 - EXISTING WORKMENT

NEW YORK STATE DEPARTMENT OF HEALTH
 Health Planning Division
 Health Planning Division
 Health Planning Division

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 SEWER CONSTRUCTION PERMITS
 THE SUBMITTER OF THESE PLANS SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED TO THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND TO THE OWNER THAT THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S REGULATIONS AND THE PERMITS THEREUNDER. THE SUBMITTER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PRIOR TO PLACING THE FACILITIES IN SERVICE.

DATE	REVISIONS RECORD/DESCRIPTION	DRAWN	CHECKED	APPROVED
12/22/06	ISSUED FOR REVIEW LATER DATED 12/22/06	JPM	JST	JPM
01/09/07	REVISED FOR OWNER COMMENTS	JPM	JST	JPM
02/16/07	REVISED FOR CITY PEOPLE, ENGINEER & SANITARY	JPM	JST	JPM
02/27/07	REVISED FOR CITY ENGINEER APPROVAL	JPM	JST	JPM
02/27/07	REVISED FOR CITY COMMENTS DATED 2/27/07	JPM	JST	JPM
02/27/07	REVISED FOR CITY COMMENTS DATED 2/27/07	JPM	JST	JPM
02/27/07	REVISED FOR OWNER COMMENTS VIA E-MAIL	JPM	JST	JPM

**PLAN & PROFILE
 DHARA COURT & YOGI COURT**

LONGKILL SUBDIVISION

TOWN OF CLIFTON PARK, SARATOGA COUNTY, NEW YORK

C.T. MALE ASSOCIATES
 Engineering, Planning, Architecture & Landscape Architecture, P.C.

50 COUNTRY HILL DRIVE, SUITE 101, 12110
 FISHKILL, NY 12524

DATE: JAN 24, 2008

SCALE: 1"=50'

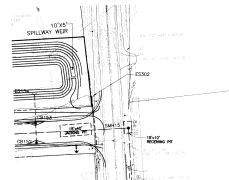
PROJ. NO. 06-1000

PP2
 SHEET 5 OF 17
 DWG. NO. 06-1336

DATE: 01/24/08
 TIME: 10:00 AM
 DRAWN: JPM
 CHECKED: JST
 APPROVED: JPM



**1 PLAN VIEW
OFFSITE SANITARY SEWER**
SCALE: HORIZ. 1" = 50'
VERT. CROSS REFERENCE: NONE



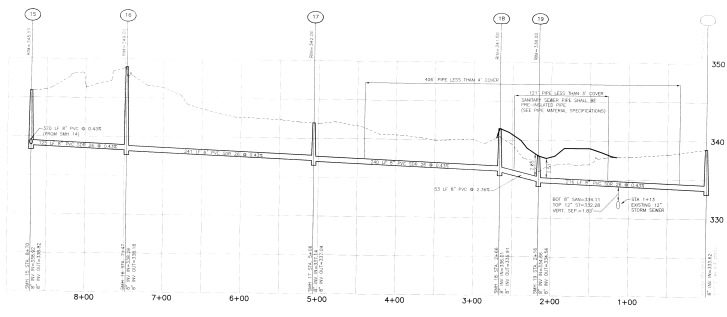
**2 LONGKILL ROAD
BORING/JACKING PLAN**
SCALE: HORIZ. 1" = 50'
VERT. CROSS REFERENCE: NONE

NOTES:

1. SUBMITTER SHALL VERIFY ALL EXISTING UTILITIES AND THE DEPT. OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED OF ANY PROPOSED BORING/JACKING OPERATIONS.
2. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AND THE DEPT. OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED OF ANY PROPOSED BORING/JACKING OPERATIONS.
3. ALL BORING/JACKING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE DEPT. OF ENVIRONMENTAL CONSERVATION REGULATIONS.

NOTES FOR TELEVISION OF SEWER MAINS:

1. PRIOR TO THE ACCEPTANCE OF WORKMANSHIP OF THE SEWER MAINS, THE OWNER OF CLUTTER PARK SEWER DEPARTMENT WILL REQUIRE TELEVISION OF ALL SEWER SEWER MAINS.
2. THE CONTRACTOR TO PROVIDE THE ENGINEER/ARCHITECT WITH A LOG OF ALL TELEVISION OPERATIONS. THE LOG SHALL INCLUDE THE DATE, TIME, LOCATION, AND RESULTS OF ALL TELEVISION OPERATIONS.
3. THE RESULTS OF THE LOG WILL BE PROVIDED TO THE OWNER FOR HIS ACCEPTANCE OF THE TELEVISION SYSTEM. THE ENGINEER/ARCHITECT WILL CONDUCT INSPECTIONS OF THE TELEVISION SYSTEM TO VERIFY THE LOCATION, DEPTH, AND CONDITION OF THE SEWER MAINS. TELEVISION OPERATIONS SHALL BE DONE AT NO ADDITIONAL COST TO OWNER.
4. THE TELEVISION OPERATIONS WILL BE PERFORMED AFTER THE DATE OF ACCEPTANCE OF THE SEWER MAINS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL TELEVISION OPERATIONS.
5. WHEN IN THE OPINION OF THE ENGINEER/ARCHITECT THE LOG QUALITY IS SUCH THAT ACCEPTANCE OF THE TELEVISION SYSTEM WILL BE DENIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL TELEVISION OPERATIONS.



**3 PROFILE
OFFSITE SANITARY SEWER**
SCALE: HORIZ. 1" = 50'
VERT. CROSS REFERENCE: NONE

- LEGEND (PROPOSED)**
- PROPOSED CATCH BASIN
 - PROPOSED HYDRANT
 - PROPOSED END SECTION
 - PROPOSED SANITARY MANHOLE
 - PROPOSED WATER VALVE
 - PROPOSED WATER LINE
 - PROPOSED SANITARY LINE
 - PROPOSED DRAINAGE LINE
 - PROPOSED LOT NUMBER
- LEGEND (EXISTING)**
- EXISTING CATCH BASIN
 - EXISTING END SECTION
 - EXISTING HYDRANT
 - EXISTING SANITARY MAN HOLE
 - EXISTING MONUMENT
- PIPE MATERIAL SPECIFICATIONS**
- WATER SUPPLY - CLASS 50
 - WATER SERVICE CONNECTIONS - CSPPR - TYPE K
 - SANITARY SEWER (GRAVITY) - PVC - 50KPS
 - SANITARY SEWER SERVICE (LATERALS) - PVC - 50KPS
 - PRE-INSULATED SANITARY SEWER (GRAVITY)
- PRE-INSULATED SANITARY SEWER PIPE SHALL BE SIZE 26 (PS 1100) PVC PIPE CONFORMING WITH ASTM D3334. INSULATION SHALL BE 1/2" THICK POLYURETHANE FOAM. THE THICKNESS OF THE INSULATION SHALL BE SUFFICIENT TO MAINTAIN THE TEMPERATURE OF THE PIPE AT 40°F ABOVE THE AMBIENT AIR TEMPERATURE. THE THICKNESS OF THE INSULATION SHALL BE SUFFICIENT TO MAINTAIN THE TEMPERATURE OF THE PIPE AT 40°F ABOVE THE AMBIENT AIR TEMPERATURE. THE THICKNESS OF THE INSULATION SHALL BE SUFFICIENT TO MAINTAIN THE TEMPERATURE OF THE PIPE AT 40°F ABOVE THE AMBIENT AIR TEMPERATURE. THE THICKNESS OF THE INSULATION SHALL BE SUFFICIENT TO MAINTAIN THE TEMPERATURE OF THE PIPE AT 40°F ABOVE THE AMBIENT AIR TEMPERATURE.



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SEWER CONSTRUCTION NOTE

THE CONSTRUCTION OF THE SANITARY SEWER SYSTEMS ON THESE PLANS SHALL BE UNDER THE SUPERVISION OF A PERSON OF QUALIFIED FORMATION PROFESSIONAL ENGINEERING IN THE STATE OF NEW YORK UNDER THE REGULATION OF THE DEPT. OF ENVIRONMENTAL CONSERVATION. THE ENGINEER SHALL BE RESPONSIBLE FOR THE COMPLETION OF CONSTRUCTION. THE ENGINEER SHALL VERIFY TO THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION THAT THE SEWER SYSTEM CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DEPARTMENT APPROVED ENGINEERING STANDARDS AND THAT THE PROJECT ENGINEER HAS RECEIVED WRITTEN APPROVAL OF SUCH CERTIFICATION FROM THE DEPARTMENT PRIOR TO COMMENCING THE PROJECT WORK.

John T. Goss
Department of Environmental Conservation
Region 1, Albany, NY
P. O. Box 245500
Albany, NY 12224

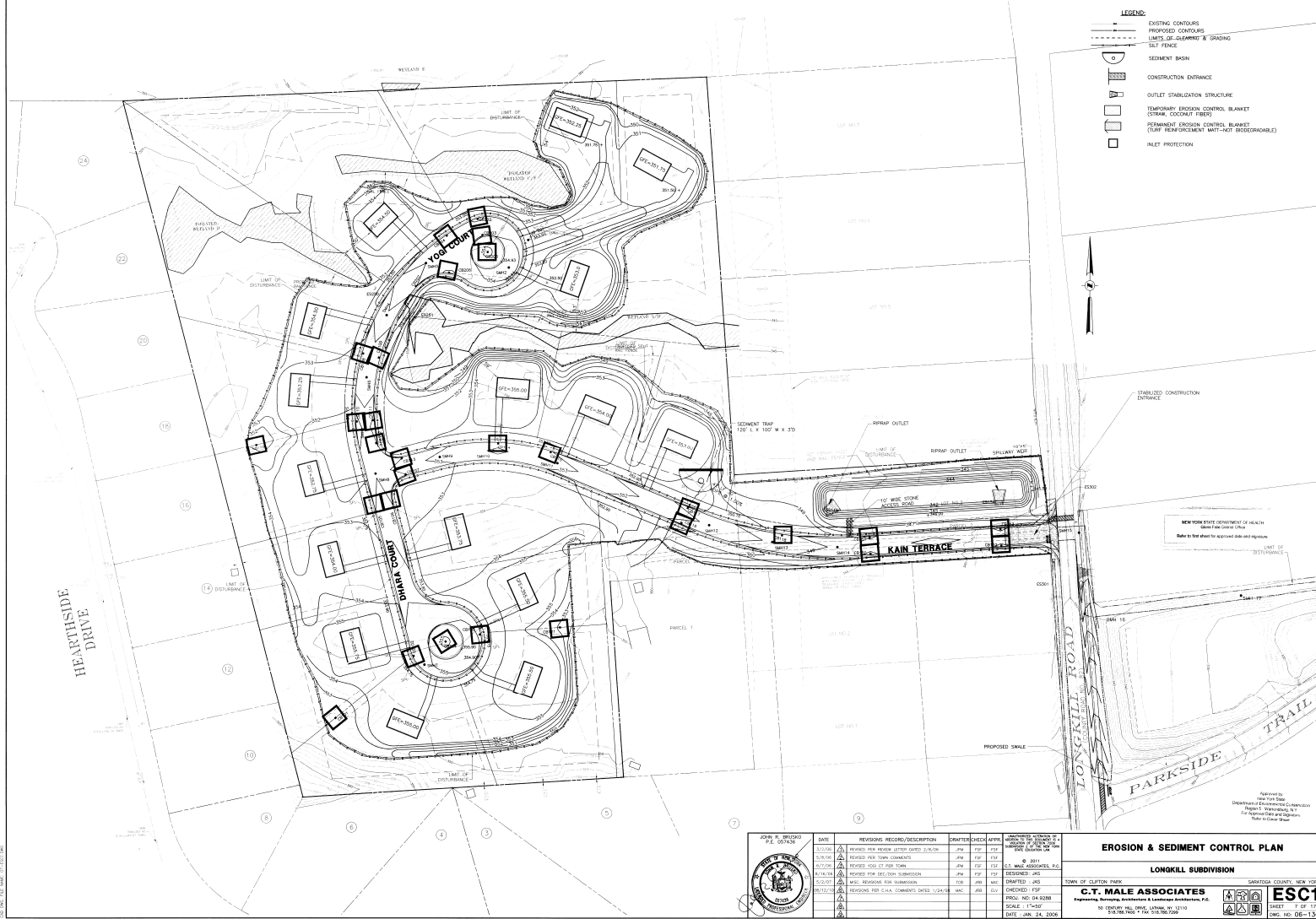
DATE	REVISIONS (REVISION DESCRIPTION)	DRAWN	CHECKED	APPROVED (REVISION NUMBER)
1/22/04	REVISED PER REVIEW LETTER DATED 2/10/04	JTM	JTM	REVISED (SCALE OF THE PLAN)
3/15/04	REVISED PER OWNER COMMENTS	JTM	JTM	REVISED (SCALE OF THE PLAN)
3/15/04	REVISED DRAINAGE CONNECTION PER OWNER	JTM	JTM	C.T. MALE ASSOCIATES, P.C.
3/15/04	REVISED DRAINAGE PER OWNER	JTM	JTM	DESIGNED: JTM
3/22/07	ADDED TELEVISION FOR INSPECTIONS	JTM	JTM	DRAWN: JTM
7/13/07	REVISIONS PER E.O.A. COMMENTS DATED 7/13/07	JTM	JTM	CHECKED: JTM
10/12/07	REVISIONS PER E.O.A. COMMENTS DATED 10/12/07	JTM	JTM	PROJ. NO. DA 8086
12/15/08	REV. ADD COMMENTS DATED 12/15/08	JTM	JTM	SCALE: 1"=50'
1/25/11	REVISED PER OWNER COMMENTS (SEE E.O.A.)	JTM	JTM	DATE: JAN. 24, 2006

**PLAN & PROFILE
OFFSITE SANITARY SEWER**

LONGKILL SUBDIVISION

C.T. MALE ASSOCIATES
Engineering, Planning, Architecture & Landscape Architecture, P.C.
100 PARKWAY HILL DRIVE, CLARKS HILL, NY 12180
518-786-7400 • FAX 518-786-7500

PP3
SHEET 4 OF 17
DEC. NO. 06-136



DATE	REVISIONS RECORD/DESCRIPTION	DRAWN	CHECKED	APPROVED
01/20/06	REVISED PER REVIEW COMMENTS 01-20-06	JMB	JMB	JMB
02/09/06	REVISED PER REVIEW COMMENTS	JMB	JMB	JMB
02/27/06	REVISED PER PER PLAN	JMB	JMB	JMB
03/16/06	REVISED PER PER PLAN	JMB	JMB	JMB
03/23/06	REVISED PER PER PLAN	JMB	JMB	JMB
03/27/06	REVISED PER CHA COMMENTS DATED 1/24/06	JMB	JMB	JMB

EROSION & SEDIMENT CONTROL PLAN

LONGKILL SUBDIVISION

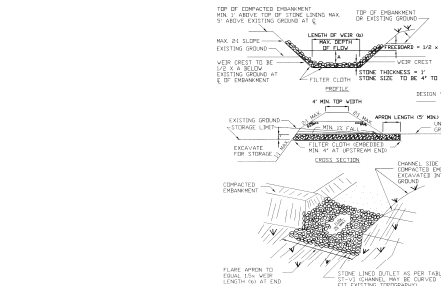
TOWN OF CLIFTON PARK SHERBORN COUNTY, NEW YORK

C.T. MALE ASSOCIATES
 Engineering, Surveying, Architecture & Landscape Architecture, P.C.
 95 CENTURY HILL DRIVE, CLIFTON, NY 12110
 518.789.7847 FAX 518.789.7097

ESC1
 SHEET 7 OF 17
 DATE: JAN. 24, 2006

GENERAL NOTES:

1. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH THIS WORK SHALL BE REQUIRED TO MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES. SMALL SIZE AND DATE A COPY OF THE CERTIFICATION, PREVIOUSLY, WHICH IS LOCATED IN THE DOCUMENTATION, TO BE MAINTAINED AT ALL TIMES BEFORE UNDERGOING ANY CONSTRUCTION ACTIVITY.
2. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THIS SHEET SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE SITE IS RESTORED TO ORIGINAL OR BETTER CONDITION. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
3. FOLLOWING THE COMPLETION OF CONSTRUCTION, SITE RESTORATION MEASURES SHALL BE MAINTAINED FOR A PERIOD OF 30 DAYS OR UNTIL THE SITE IS RESTORED TO ORIGINAL OR BETTER CONDITION. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
4. BASED ON THE BEST AVAILABLE INFORMATION, THE EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THIS SHEET SHALL BE DEEMED TO BE SUFFICIENT TO PREVENT EROSION AND SEDIMENTATION FROM OCCURRING ON THE SITE. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
5. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED AND MAINTAINED AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
6. CONSTRUCTION IS TO PROCEED IN ACCORDANCE WITH THE CONSTRUCTION PLANING BOARD'S SUPERVISION BY THE CONTRACTOR OR BY THE PLANNING BOARD. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
7. INSURE AS FEASIBLE, EXISTING VEGETATION SHALL BE PROTECTED. USE PROTECTIVE MATS AND MULCH TO PREVENT EROSION AND SEDIMENTATION. VEGETATION SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE SITE IS RESTORED TO ORIGINAL OR BETTER CONDITION.
8. TRASH CONTAINERS WILL BE PROVIDED (WITH A PORTABLE PUMP AND DISCHARGE) TO COLLECT AND REMOVE TRASH FROM THE SITE. TRASH CONTAINERS SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL THE SITE IS RESTORED TO ORIGINAL OR BETTER CONDITION.
9. INLET PROTECTION MEASURES WILL BE INSTALLED AROUND STORM DRAIN OR SEWER INLET. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
10. IN AREAS OF CONCENTRATED FLOW, SUCH AS CHANNELS, DITCHES AND ROADSIDE DITCHES, STONE CHECKS SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENTATION. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.



RIPRAP OUTLET SEDIMENT TRAP (FOR STONE LINED CHANNEL)

CHANNEL TYPE	CHANNEL SIZE	DEPTH	LENGTH
1	1.0	1.0	10.0
2	1.5	1.5	15.0
3	2.0	2.0	20.0
4	2.5	2.5	25.0
5	3.0	3.0	30.0
6	3.5	3.5	35.0
7	4.0	4.0	40.0
8	4.5	4.5	45.0
9	5.0	5.0	50.0
10	5.5	5.5	55.0
11	6.0	6.0	60.0
12	6.5	6.5	65.0
13	7.0	7.0	70.0
14	7.5	7.5	75.0
15	8.0	8.0	80.0
16	8.5	8.5	85.0
17	9.0	9.0	90.0
18	9.5	9.5	95.0
19	10.0	10.0	100.0
20	10.5	10.5	105.0

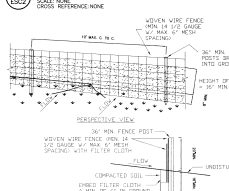
- CONSTRUCTION SPECIFICATION FOR STONE OUTLET SEDIMENT TRAP**
1. THE AREA UNDER CONSTRUCTION SHALL BE CLEARLY MARKED AND BARRIERS OF ANY VEGETATION AND SOIL SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 2. THE TRAP SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION PLAN AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, UNLESS OTHERWISE SPECIFIED.
 4. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.
 5. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.
 6. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.
 7. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.
 8. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.
 9. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.
 10. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 18" OF FILL ABOVE THE EXISTING GROUND.

- INDIVIDUAL LOT CONSTRUCTION:**
1. INSTALL SILT FENCE AROUND PERIMETER OF SITE OR IF MAINTAINING EXISTING SITE, SILT FENCE SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 2. MAINTAIN SUFFICIENT CONSTRUCTION ENTRANCE FOR EACH LOT.
 3. AFTER FINE GRADING IS COMPLETED ON LOT, SEED AND/OR MULCH WITH MULCH AND SOIL TO PREVENT SOIL EROSION WITHIN 14 DAYS OF COMPLETION WORK.
 4. TRASH CONTAINERS SHALL BE PROVIDED ON EACH LOT.
 5. TRASH CONTAINERS SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

SEEDING TRAP DESIGN:

1. CONSTRUCTION AREA CONFERENCE AREA 8.5 ACRES REQUIRED STORAGE = 3000 CUBIC FEET PER ACRE X 8.5 ACRES ACTUALLY PROVIDED = 3000 CUBIC FEET PER ACRE X 8.5 ACRES = 25500 CUBIC FEET
2. CONSTRUCTION AREA CONFERENCE AREA 2.0 ACRES REQUIRED STORAGE = 3000 CUBIC FEET PER ACRE X 2.0 ACRES ACTUALLY PROVIDED = 3000 CUBIC FEET PER ACRE X 2.0 ACRES = 6000 CUBIC FEET

INVSDEC STD) RIPRAP OUTLET SEDIMENT TRAP



- CONSTRUCTION SPECIFICATIONS**
1. STONE SIZE - USE 2" STONE OR EQUIVALENT OR RECYCLED CONCRETE EQUIVALENT
 2. LENGTH - NOT LESS THAN 20 FEET EXCEPT ON A SINGLE RECEIVING LOT WHERE 10 FEET MINIMUM LENGTH MAY APPLY
 3. THICKNESS - NOT LESS THAN 24 INCHES
 4. WIDTH - 12 INCHES TO 24 INCHES, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE CHANNELS OR DITCHES CROSS THROUGH TRAP
 5. FILTER DITCH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE
 6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE COLLECTED AND CONVEYED TO A PERMANENT WATERWAY
 7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY
 8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINAGE INTO AN APPROVED SEDIMENT TRAPPING DEVICE
 9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN

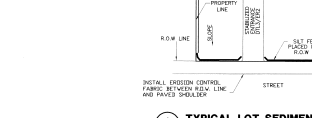
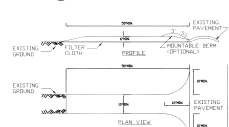
STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED TO PREVENT SOIL FROM BEING TRACKED ON TO ROADWAYS, WHERE NECESSARY.
2. PERMANENT TRAFFIC CORRIDORS SHALL BE ESTABLISHED AND ROUTES OF CONSTRUCTION SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. IF PERMANENT TRAFFIC CORRIDORS ARE NOT AVAILABLE, THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.
4. IF PERMANENT TRAFFIC CORRIDORS ARE NOT AVAILABLE, THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1. STONE SHALL BE PLACED IN A COMPACTED BED OF FINE SAND OR SILT
2. FILTER DITCH SHALL BE 12 INCHES DEEP AND 12 INCHES WIDE
3. WHEN TWO SECTIONS OF FILTER DITCH ADJOIN EACH OTHER, THEY SHALL BE COVERED WITH 12 INCHES DEEP AND 12 INCHES WIDE
4. PREPARATIONS SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD
5. MAINTENANCE SHALL BE PROVIDED AS NEEDED AND MATERIAL REMOVED WHEN TRUCKS TRAVEL ON THE TRAP

INVSDEC STD) SILT FENCE



- CONSTRUCTION SPECIFICATIONS**
1. SEDIMENT SHALL BE REMOVED AND THE TRAP RETURNED TO ITS ORIGINAL CONDITION WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION.
 2. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 3. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 4. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 5. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
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 8. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 9. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 10. THE TRAP SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

SILT FENCE NOTES:

1. SILT FENCE SHALL BE MAINTAINED ON THE CONSTRUCTION SITE THROUGHOUT THE CONSTRUCTION PERIOD.
2. SILT FENCE SHALL BE MAINTAINED ON THE CONSTRUCTION SITE THROUGHOUT THE CONSTRUCTION PERIOD.
3. SILT FENCE SHALL BE MAINTAINED ON THE CONSTRUCTION SITE THROUGHOUT THE CONSTRUCTION PERIOD.
4. SILT FENCE SHALL BE MAINTAINED ON THE CONSTRUCTION SITE THROUGHOUT THE CONSTRUCTION PERIOD.

MULCHING & SEEDING NOTES:

1. SEEDING MEASURES SHALL BE MAINTAINED AS SOON AS PRACTICAL IN AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WERE CONDUCTED.
2. SEEDING MEASURES SHALL BE MAINTAINED AS SOON AS PRACTICAL IN AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WERE CONDUCTED.
3. SEEDING MEASURES SHALL BE MAINTAINED AS SOON AS PRACTICAL IN AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WERE CONDUCTED.

COMMON NAME	SEEDING RATE (LBS./A.CRE)	SEEDING RATE (LBS./1,000 SQ. FOOT)
EMPIRE BREADSTUFF TREATOR/COMMON WHITE CLOVER*	8 LBS./ACRE	0.8 LBS./SQ. FOOT
TALL FESCUE	20 LBS./ACRE	2.0 LBS./SQ. FOOT
REDTOP OR PERENNIAL RYEGRASS	2 LBS./ACRE (REDTOP)	0.2 LBS./SQ. FOOT
	5 LBS./ACRE (RYEGRASS)	0.5 LBS./SQ. FOOT

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE OR EQUIVALENT OR RECYCLED CONCRETE EQUIVALENT
2. LENGTH - NOT LESS THAN 20 FEET EXCEPT ON A SINGLE RECEIVING LOT WHERE 10 FEET MINIMUM LENGTH MAY APPLY
3. THICKNESS - NOT LESS THAN 24 INCHES
4. WIDTH - 12 INCHES TO 24 INCHES, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE CHANNELS OR DITCHES CROSS THROUGH TRAP
5. FILTER DITCH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE COLLECTED AND CONVEYED TO A PERMANENT WATERWAY
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINAGE INTO AN APPROVED SEDIMENT TRAPPING DEVICE
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN

INVSDEC STD) STABILIZED CONSTRUCTION ENTRANCE



DATE	REVISIONS/DESCRIPTION	DRAWN	CHECK	APPROVED
01/24/04	REVISED LAYOUT AND TEXT	JAS	JAS	JAS
02/04/04	REVISED FOR PERMANENT TRAFFIC CORRIDORS	JAS	JAS	JAS
03/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
04/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
05/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
06/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
07/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
08/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
09/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
10/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
11/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS
12/04/04	REVISED FOR TRAFFIC CORRIDORS	JAS	JAS	JAS

EROSION & SEDIMENT CONTROL DETAILS

LONGKILL SUBDIVISION

TOWN OF CLIFTON PARK, SARATOGA COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, P.C.

ESC2

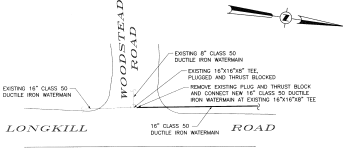
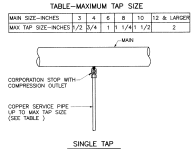
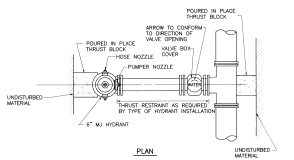
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518-784-1100 / FAX 518-784-1100

SHEET 8 OF 17
ENC. NO. DE-1306

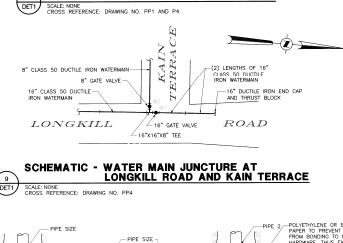
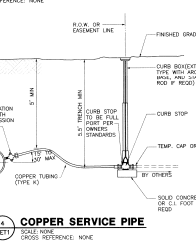
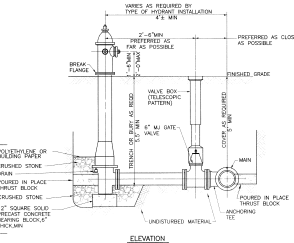


NEW YORK STATE DEPARTMENT OF HEALTH
Office of Public Health

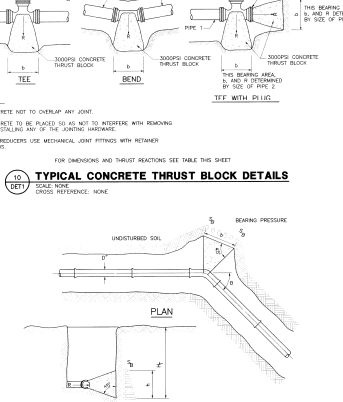
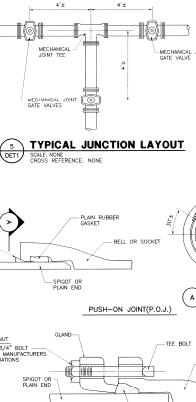
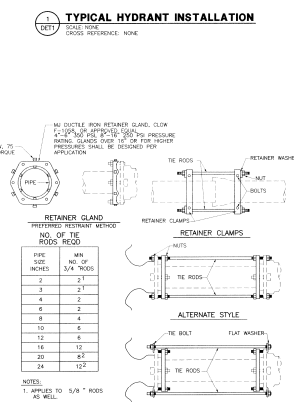
Approved by:
John P. Brisco
Professional Engineer No. 10454
State of New York



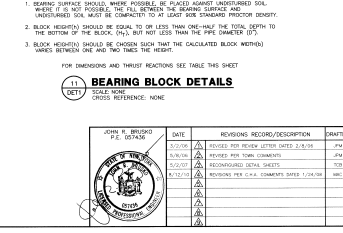
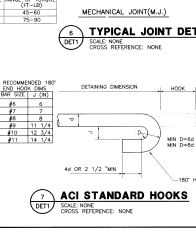
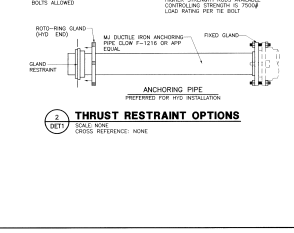
REQUIRED BEARING AREAS - (SQFT)				THRUST REACTIONS - (LB)				
PIPE SIZE	PIPE	SOIL	DEPTH	ON PIPE	ON SOIL	ON PIPE	ON SOIL	
4	2.0	2.0	1.3	0.8	0.4	4	1,810	2,558
6	4.2	5.0	2.2	1.6	0.8	6	3,728	5,286
8	7.2	10.1	5.3	2.8	1.4	8	6,433	8,977
10	10.9	15.4	8.3	4.2	2.1	10	9,877	13,685
12	15.4	21.6	11.8	6.0	3.0	12	13,905	19,353
14	20.6	29.1	15.8	8.0	4.0	14	18,300	25,601
16	26.8	37.6	20.3	10.4	5.2	16	23,779	33,288
18	33.6	47.5	25.7	13.1	6.6	18	29,865	42,335
20	41.2	58.2	31.5	16.1	8.1	20	36,844	52,044
24	58.8	82.1	45.0	22.8	11.5	24	52,779	73,619
30	90.3	126.0	69.2	35.7	17.7	30	80,425	113,228
36	126.8	182.7	98.1	52.5	25.4	36	115,228	162,811



REQUIRED BEARING AREAS - (SQFT)				THRUST REACTIONS - (LB)				
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18	33.6	47.5	25.7	13.1	6.6	18	29,865	42,335
20	41.2	58.2	31.5	16.1	8.1	20	36,844	52,044
24	58.8	82.1	45.0	22.8	11.5	24	52,779	73,619
30	90.3	126.0	69.2	35.7	17.7	30	80,425	113,228
36	126.8	182.7	98.1	52.5	25.4	36	115,228	162,811



TYPE A BLOCKING				TYPE B BLOCKING				
PIPE SIZE	PIPE	SOIL	DEPTH	ON PIPE	ON SOIL	ON PIPE	ON SOIL	
4	2.0	2.0	1.3	0.8	0.4	4	1,810	2,558
6	4.2	5.0	2.2	1.6	0.8	6	3,728	5,286
8	7.2	10.1	5.3	2.8	1.4	8	6,433	8,977
10	10.9	15.4	8.3	4.2	2.1	10	9,877	13,685
12	15.4	21.6	11.8	6.0	3.0	12	13,905	19,353
14	20.6	29.1	15.8	8.0	4.0	14	18,300	25,601
16	26.8	37.6	20.3	10.4	5.2	16	23,779	33,288
18	33.6	47.5	25.7	13.1	6.6	18	29,865	42,335
20	41.2	58.2	31.5	16.1	8.1	20	36,844	52,044
24	58.8	82.1	45.0	22.8	11.5	24	52,779	73,619
30	90.3	126.0	69.2	35.7	17.7	30	80,425	113,228
36	126.8	182.7	98.1	52.5	25.4	36	115,228	162,811



12 GRAVITY THRUST BLOCK DETAILS
SCALE: NONE
CROSS REFERENCE: NONE

NEW YORK STATE DEPARTMENT OF HEALTH
Bureau of Sanitary Engineering

Approved by:
Department of Health
Sanitary Engineering Bureau

WATER DISTRIBUTION DETAILS

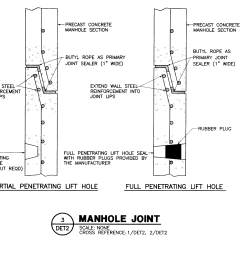
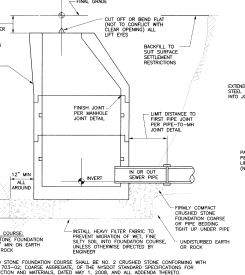
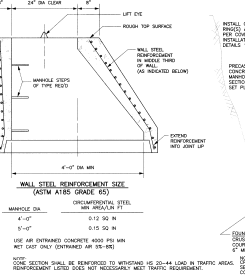
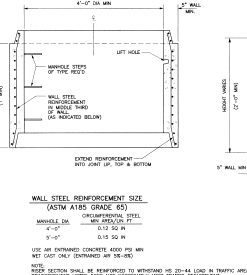
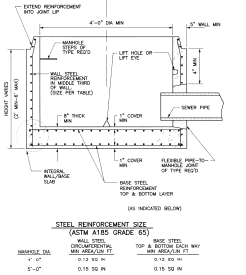
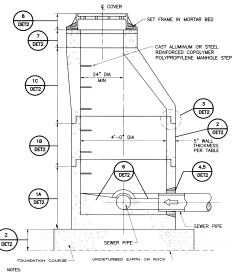
LONGKILL SUBDIVISION

SARATOGA COUNTY, NEW YORK

C.T. MALE ASSOCIATES
SARATOGA COUNTY, NEW YORK

DESIGNED: JMB
CHECKED: JMB
SCALE: NONE
DATE: JAN. 24, 2006

DET1
SHEET 6 OF 17
DATE: DEC. 02, 1992



1 PRECAST CONCRETE SANITARY MANHOLE
 CROSS REFERENCE: 1/2/3/4/5/6/7

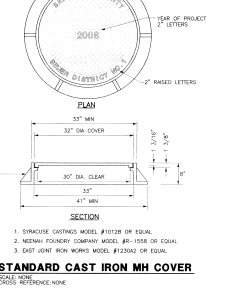
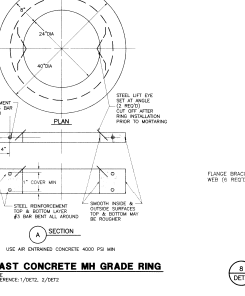
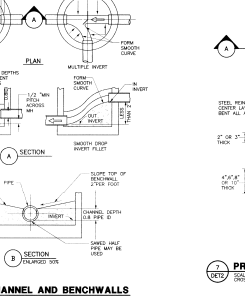
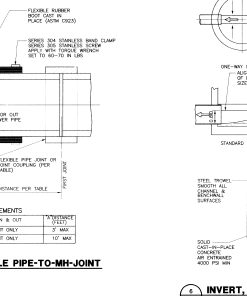
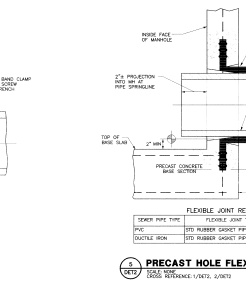
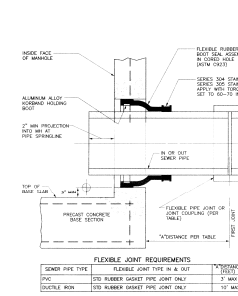
2 BASE SECTION
 CROSS REFERENCE: 1/2/3/4/5/6/7

3 WALL STEEL REINFORCEMENT SIZE (ASTM A706 GRADE 60)
 CROSS REFERENCE: 1/2/3/4/5/6/7

4 COME SECTION
 CROSS REFERENCE: 1/2/3/4/5/6/7

5 PRECAST CONCRETE SANITARY MH INSTALLATION
 CROSS REFERENCE: 1/2/3/4/5/6/7

6 MANHOLE JOINT
 CROSS REFERENCE: 1/2/3/4/5/6/7



7 FLEXIBLE JOINT REQUIREMENTS
 CROSS REFERENCE: 1/2/3/4/5/6/7

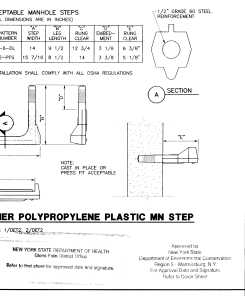
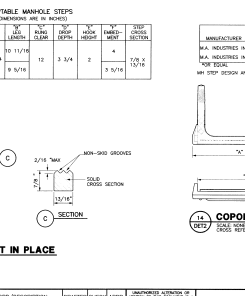
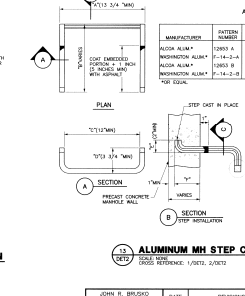
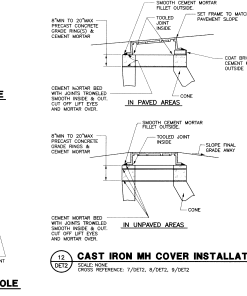
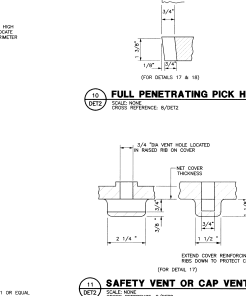
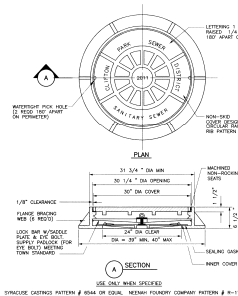
8 PRECAST HOLE FLEXIBLE PIPE-TO-MH-JOINT
 CROSS REFERENCE: 1/2/3/4/5/6/7

9 INVERT, CHANNEL AND BENCHWALLS
 CROSS REFERENCE: 1/2/3/4/5/6/7

10 ALUMINUM MH STEP CAST IN PLACE
 CROSS REFERENCE: 1/2/3/4/5/6/7

11 STANDARD CAST IRON MH COVER
 CROSS REFERENCE: 1/2/3/4/5/6/7

12 COPOLYMER POLYPROPYLENE PLASTIC MH STEP
 CROSS REFERENCE: 1/2/3/4/5/6/7



13 FULL PENETRATING PICK HOLE
 CROSS REFERENCE: 1/2/3/4/5/6/7

14 SAFETY VENT OR CAP VENT HOLE
 CROSS REFERENCE: 1/2/3/4/5/6/7

15 CAST IRON MH COVER INSTALLATION
 CROSS REFERENCE: 1/2/3/4/5/6/7

16 ACCEPTABLE MANHOLE STEPS
 CROSS REFERENCE: 1/2/3/4/5/6/7

17 ACCEPTABLE MANHOLE STEPS
 CROSS REFERENCE: 1/2/3/4/5/6/7

18 ACCEPTABLE MANHOLE STEPS
 CROSS REFERENCE: 1/2/3/4/5/6/7

19 WATER TIGHT/LOCKING CAST IRON MH FRAME AND COVER SANITARY MANHOLE
 CROSS REFERENCE: 1/2/3/4/5/6/7

DATE	REVISIONS/RECORD/DESCRIPTION	DRAWN	CHECK	APPROVED
12/10/16	ISSUED FOR PERMIT	JMB	JMB	JMB
12/10/16	REVISED FOR PERMIT	JMB	JMB	JMB
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12/10/16	REVISED FOR PERMIT	JMB	JMB	JMB
12/10/16	REVISED FOR PERMIT	JMB	JMB	JMB

SANITARY SEWER DETAILS

LONGKILL SUBDIVISION

TOWN OF CLIFTON PARK, SARATOGA COUNTY, NEW YORK

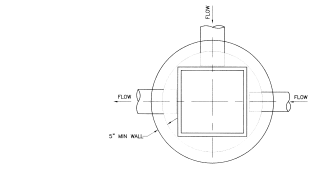
C.T. MALE ASSOCIATES
 Engineering, Architecture & Landmark Architecture, P.C.

DET2

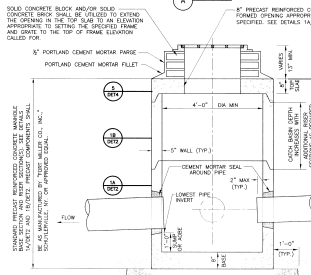
Scale: AS SHOWN
 Date: JAN. 24, 2016

GENERAL NOTES -- DRAINAGE AND SANITARY SEWER STRUCTURES

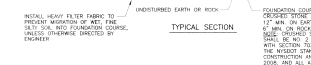
1. DRAINAGE AND SEWER STRUCTURES SHALL BE EITHER CAST-IN-PLACE OR PRECAST STRUCTURES.
2. CAST-IN-PLACE CONCRETE SHALL BE CLASS A CONCRETE AND SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 05120.000 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION FOR MATERIALS, DATED MAY 4, 2000 AND ALL ADDENDA THERETO.
3. CAST-IN-PLACE OR PRECAST STRUCTURES SHALL CONFORM WITH THE APPLICABLE PROVISIONS OF SECTION 05120.000 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION FOR MATERIALS, DATED MAY 4, 2000 AND ALL ADDENDA THERETO.
4. PRECAST STRUCTURES SHALL CONFORM WITH SECTION 710-01 PRECAST DRAINAGE STRUCTURES OF THE STANDARD SPECIFICATIONS.
5. SET PLANS FOR ELEVATIONS AND LOCATIONS OF DRAINAGE AND SEWER STRUCTURES AND THE PRECISE COORDINATES TO BE USED.
6. REINFORCEMENT FOR DRAINAGE AND SEWER STRUCTURES SHALL CONFORM WITH THE FOLLOWING SUBSECTION OF THE STANDARD SPECIFICATIONS: 710-01 WIRE FABRIC FOR CONCRETE REINFORCEMENT; 710-01.01 COLD CHAIR AND FOR CONCRETE REINFORCEMENT.
7. FORMED INVERTS AND SLABS FORMED INVERTS SHALL BE FINISHED IN ALL DRAINAGE AND SEWER WORKS. DUMPS SHALL BE PROVIDED IN ALL SUCH WORKS.
8. GRATES OTHER THAN CASTASIDE GRATES SHALL BE FINISHED TO A FINISHED GRADE OF PAVEMENT SET FRAME AND GRATE INTO SLOPE ASIDE.
9. GRATES OTHER THAN CASTASIDE GRATES SHALL BE FINISHED TO A FINISHED GRADE OF PAVEMENT SET FRAME AND GRATE INTO SLOPE ASIDE.
10. UNLESS OTHERWISE SPECIFIED, WALL THICKNESS SHALL BE 8" FOR 4' DIAMETER ROUNDS AND 12" FOR SQUARE AND RECTANGULAR STRUCTURES. WALL THICKNESS SHALL BE 4" FOR 24" SQUARE AND 30" SQUARE OPENINGS.
11. CAST-IN-PLACE OR PRECAST STRUCTURES SHALL CONFORM WITH THE APPLICABLE PROVISIONS OF SECTION 05120.000 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION FOR MATERIALS, DATED MAY 4, 2000 AND ALL ADDENDA THERETO.
12. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 710-01 PRECAST DRAINAGE STRUCTURES OF THE STANDARD SPECIFICATIONS.
13. CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 710-01.01 WIRE FABRIC FOR CONCRETE REINFORCEMENT OF THE STANDARD SPECIFICATIONS.
14. SLOPE SHALL BE IN ACCORDANCE WITH SECTION 710-01.01 WIRE FABRIC FOR CONCRETE REINFORCEMENT OF THE STANDARD SPECIFICATIONS.
15. SLOPE SHALL BE IN ACCORDANCE WITH SECTION 710-01.01 WIRE FABRIC FOR CONCRETE REINFORCEMENT OF THE STANDARD SPECIFICATIONS.
16. SLOPE SHALL BE IN ACCORDANCE WITH SECTION 710-01.01 WIRE FABRIC FOR CONCRETE REINFORCEMENT OF THE STANDARD SPECIFICATIONS.



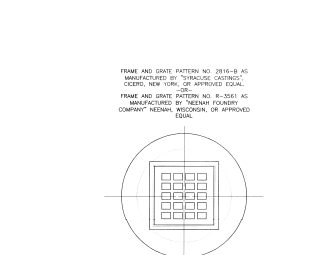
CATCH BASIN GRATE TO CURB RELATIONSHIP
SCALE: NONE
CLASS REFERENCE: 1/024, 1/024



CATCH BASIN GRATE TO SLOPE RELATIONSHIP
SCALE: NONE
CLASS REFERENCE: 1/024, 1/024, 1/024, 1/024



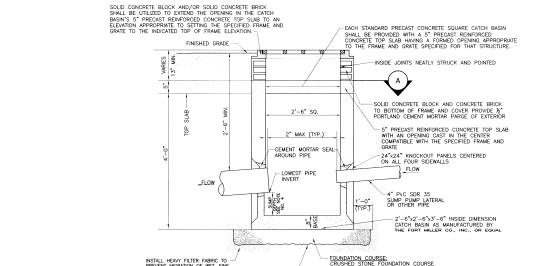
STANDARD PRECAST CONCRETE ROUND CATCH BASIN
SCALE: NONE
CLASS REFERENCE: 1/024, 1/024, 1/024, 1/024



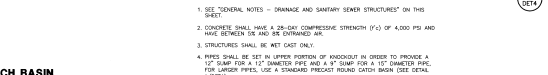
STANDARD SQUARE FRAME AND GRATE ON STANDARD PRECAST CONCRETE ROUND CATCH BASIN
SCALE: NONE
CLASS REFERENCE: 1/024, 1/024



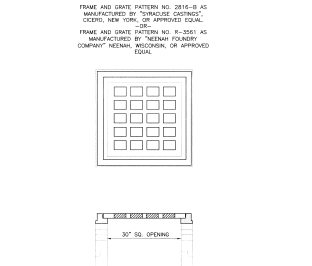
STANDARD PRECAST CONCRETE SQUARE CATCH BASIN
SCALE: NONE
CLASS REFERENCE: 1/024



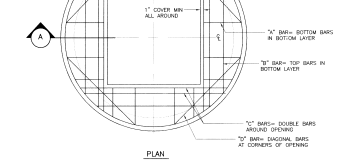
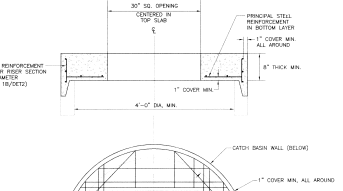
STANDARD SQUARE FRAME ON STANDARD PRECAST CONCRETE SQUARE CATCH BASIN
SCALE: NONE
CLASS REFERENCE: 1/024



STANDARD PRECAST CONCRETE SQUARE CATCH BASIN
SCALE: NONE
CLASS REFERENCE: 1/024



STANDARD SQUARE FRAME AND GRATE ON STANDARD PRECAST CONCRETE SQUARE CATCH BASIN
SCALE: NONE
CLASS REFERENCE: 1/024



PRINCIPAL STEEL REINFORCEMENT - 30" SQ. OPENING

CONDITION	TOP	BOTTOM
4' DIA. MIN. DIAMETER 60,000 PSI	#4 @ 9" OC	#4 @ 9" OC
5' DIA. MIN. DIAMETER 60,000 PSI	#5 @ 9" OC	#5 @ 9" OC

- NOTES:
1. CONCRETE SHALL BE 28-DAY COMPRESSIVE STRENGTH (F_c) SHALL BE 4,000 P.S.I.
 2. CONCRETE SHALL BE AIR ENTRAINMENT WITH 6% TO BE ENTRAINED AIR.
 3. FOR 30" SQUARE TOP SLAB BASES EXISTING 6" OR MORE UNDEVELOPED, SLAB AND BASES SHALL BE SEPARATED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

STORM SEWER DETAILS

NEW YORK STATE DEPARTMENT OF HEALTH
BUREAU OF PREVENTIVE MEDICINE
DR. JOHN J. WILSON
STATIONER
EQUIPPED BY PRECISION STATIONER
305 N. WASHINGTON ST.
PO BOX 670
COLUMBIA COUNTY, NY 12015

TOWN OF: CLIFTON PARK
COLUMBIA COUNTY, NEW YORK

C.T. MALE ASSOCIATES
REGISTERED PROFESSIONAL ENGINEER AND ARCHITECT P.E. 0211
100 N. WALL AVE., SUITE 401
CLIFTON PARK, NY 12018

PROJECT: STORM SEWER DETAILS

SHEET: 12 OF 13
DATE: JAN. 24, 2000

NO.	DATE	REVISIONS	RECORD/DESCRIPTION	DRAWN	CHECK	APPR.
	12/20/2000	1	ISSUED FOR PERMITS	J.M.	J.M.	J.M.
	01/17/2001	2	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	3	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	4	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	5	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	6	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	7	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	8	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	9	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.
	01/17/2001	10	REVISED PER CIVIL ENGINEER'S COMMENTS	J.M.	J.M.	J.M.



JOHN R. BRUNO
P.E. 021058

DATE: 01/24/2000

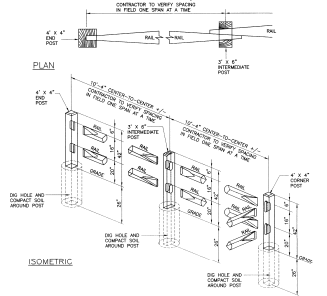
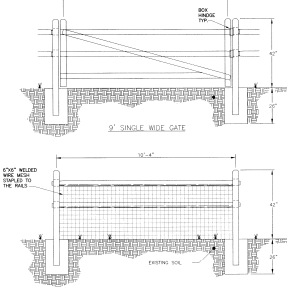
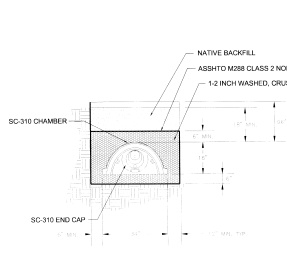
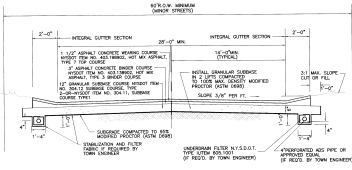
REVISIONS: 1

RECORD/DESCRIPTION: ISSUED FOR PERMITS

DRAWN: J.M.

CHECK: J.M.

APPR.: J.M.



1. THICKNESSES OF MATERIALS INDICATED ABOVE ARE CONTRACTOR THICKNESS.
2. ALL MATERIALS INDICATED ABOVE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 401.01 AND SHALL BE MANUFACTURED BY THE MANUFACTURER LISTED ON THE SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, 2008 EDITION, AND ALL ADDENDA THEREIN.
3. PROOF ROLLING OF THE SUBGRADE SHALL BE WITNESSED BY THE TOWN ENGINEER. AN UNDERSTANDING SHALL BE OBTAINED BY THE TOWN ENGINEER, TOWN SUPERVISOR, AND ALL ADDENDA THEREIN.
4. THE CONTRACTOR SHALL SUBMIT A 100-POUND SAMPLE OF THE PROVIDED SOIL TO THE TOWN ENGINEER FOR TESTING. THE TOWN ENGINEER'S APPROVAL OF THE SUBGRADE MATERIAL IS NECESSARY TO PROCEED WITH CONSTRUCTION.
5. MINIMUM COVER IN CASE OF EXISTING SHALL BE 2' 0" APPLICABLE BY THE TOWN ENGINEER.
6. ALL TECHNICAL PROVISIONS SHALL BE APPROVED AS ISSUED BY THE TOWN ENGINEER. THE CONTRACTOR SHALL PAY FOR ALL TESTS.
7. CONSTRUCTION OF ALL NEW OR EXISTING SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF SECTION 401.01 AND SHALL BE MANUFACTURED BY THE MANUFACTURER LISTED ON THE SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, 2008 EDITION, AND ALL ADDENDA THEREIN.

STORMTECH SC-310 CHAMBER SYSTEM
SCALE: NONE
SOURCE: REFERENCE NONE

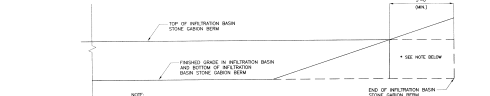
- NOTES:
1. FENCE ALIGNMENT IS INDICATED ON DWG. NO. SP-SHEET 2 OF 17, AROUND THE STORMWATER MANAGEMENT AREA.
 2. NEED TO ADD NOTES SUBJECT FOR ADDITIONAL FENCE INFORMATION.
 3. POSTS SHALL BE FABRICATED FROM LOGS/STOCK WOOD AND SHALL BE FROM POPLAR.
 4. WIRE MESH SHALL BE 4"x4" WELDED WIRE MESH STAPLE TO THE FENCE EVERY 4' USING 3" HEAVY DUTY STAPLES.

- NOTES:
1. FENCE ALIGNMENT IS INDICATED ON DWG. NO. SP-SHEET 2 OF 17, PARALLEL TO THE RETAINED BOUNDARY.
 2. THE FENCE SHALL BE A 2-RAIL SPLIT RAIL FENCE AS MANUFACTURED BY "O'DONNELL'S" 125 GALERIA DRIVE, SUITE 1703, BUFFALO, NEW YORK.
 3. POSTS SHALL BE FABRICATED FROM LOGS/STOCK WOOD AND SHALL BE FROM POPLAR HEMLOCK.
 4. POST HOLES SHALL BE 6" DIA. AT A LOCATION AND WITH SUFFICIENT THAT THE POST IS ANCHORED TO THE FENCE AND THE SOIL BEHIND IT. CONSIDERING THE POST CAN BE PROPERLY COMPACTED BY UTILIZATION OF A TAMING BAR.
 5. NO GATES WILL BE PROVIDED IN THE FENCE.

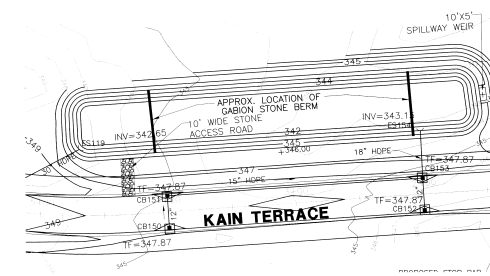
TYPICAL ROAD CROSS SECTION
SCALE: NONE
SOURCE: REFERENCE NONE



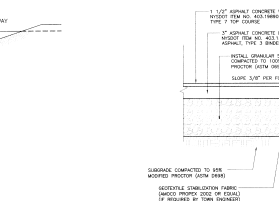
INFILTRATION BASIN CROSS SECTION
SCALE: NONE
SOURCE: REFERENCE NONE



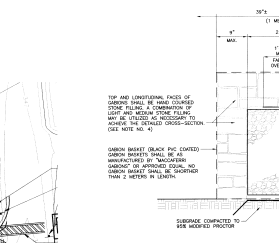
TERMINATION DETAIL OF INFILTRATION BASIN STONE GABION BERM
SCALE: NONE
SOURCE: REFERENCE NONE



INFILTRATION BASIN PLAN VIEW
SCALE: NONE
SOURCE: REFERENCE NONE

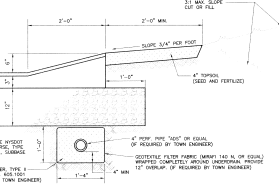


DETAIL OF INTEGRAL GUTTER SECTION (ASPHALT BERM)
SCALE: NONE
SOURCE: REFERENCE NONE

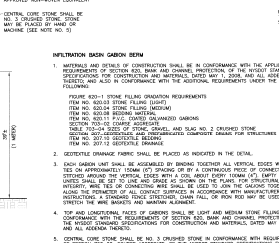


INFILTRATION BASIN STONE GABION BERM
SCALE: NONE
SOURCE: REFERENCE NONE

2-RAIL 42\"/>

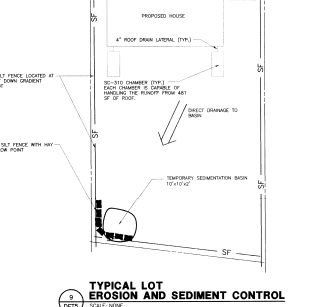
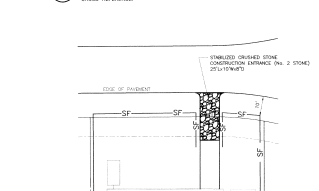


DETAIL OF INTEGRAL GUTTER SECTION (ASPHALT BERM)
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SOURCE: REFERENCE NONE



INFILTRATION BASIN STONE GABION BERM
SCALE: NONE
SOURCE: REFERENCE NONE

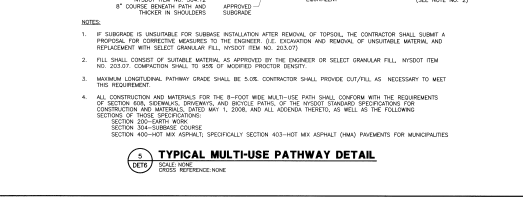
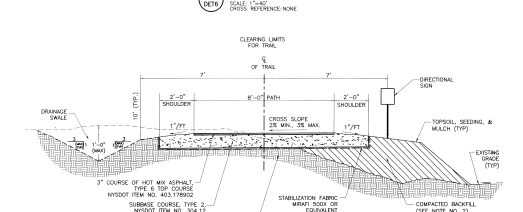
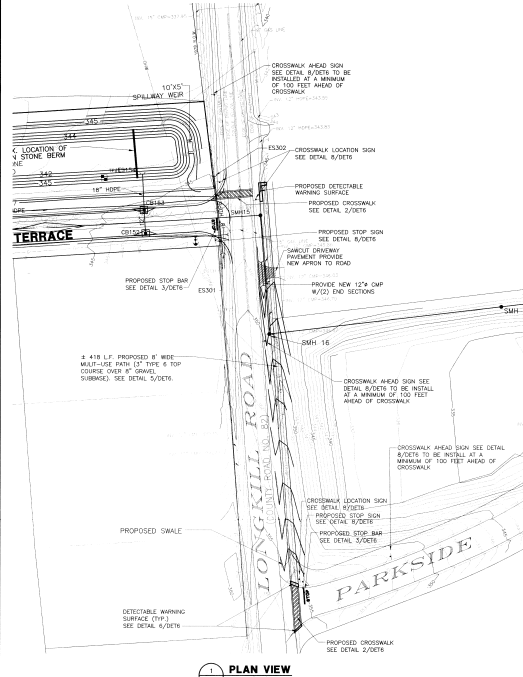
2-RAIL 42\"/>



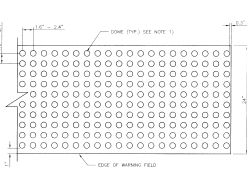
TYPICAL LOT EROSION AND SEDIMENT CONTROL
SCALE: NONE
SOURCE: REFERENCE NONE

DATE	REVISIONS/RECORD/DESCRIPTION	DRAWN	CHECK	APPROVED	APPROVED BY (TITLE)
01/15/08	DESIGNING PER C.I.A. COMMENTS DATED 1/14/08	ABC	DEF	GHI	JKL (PROJECT MANAGER)
02/10/08	DESIGNING PER C.I.A. COMMENTS DATED 2/10/08	ABC	DEF	GHI	JKL (PROJECT MANAGER)
03/05/08	DESIGNING PER C.I.A. COMMENTS DATED 3/05/08	ABC	DEF	GHI	JKL (PROJECT MANAGER)

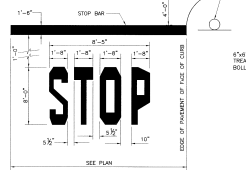
MISCELLANEOUS DETAILS	
LONKILL SUBDIVISION	
TOWN OF CLIFTON PARK, SHERBROOK COUNTY, NEW YORK	
C.T. MALE ASSOCIATES Engineering, Surveying & Landscape Architecture P.C.	
SHEET 13 OF 17 DATE: JAN. 24, 2008	



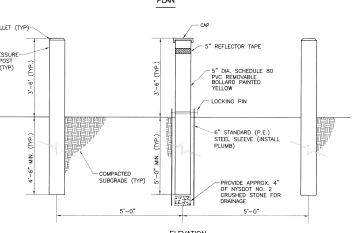
CROSSWALK PAVEMENT MARKINGS
SCALE: NONE
CROSS REFERENCE: SP



DETECTABLE WARNING SURFACE
SCALE: NONE
CROSS REFERENCE: 2/076

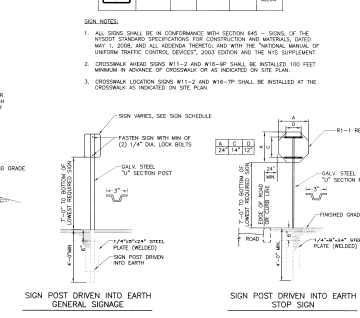


STOP BAR
SCALE: NONE
CROSS REFERENCE: 3/076



BOLLARD DETAIL
SCALE: NONE
CROSS REFERENCE: NONE

SIGN SCHEDULE					
TYPE	NUMBER	SIZE	COLOR	TEXT	INSTALLATION
STOP	SP-1	24" x 24"	RED	WHITE	SEE BELOW
AHEAD	SP-2	24" x 24"	YELLOW	BLACK	SEE BELOW
STOP BAR	SP-3	12" x 24"	YELLOW	BLACK	SEE BELOW
STOP BAR	SP-4	12" x 24"	YELLOW	BLACK	SEE BELOW



SILTATION FENCE DETAIL
SCALE: NONE
CROSS REFERENCE: NONE

SINGLE POST SIGN MOUNTING DETAILS & SIGN SCHEDULE
SCALE: NONE
CROSS REFERENCE: NONE

NOTES:
1. CROSSWALK PAVEMENT MARKINGS SHALL CONFORM TO NYSDOT STANDARD DETAIL 100-11.1, EXCEPT THE L.S.
2. NEW CROSSWALK MARKINGS SHALL BE DELINEATED WITH 1 1/2" WIDE WHITE PAINTED LINES.
3. EXISTING CROSSWALK MARKINGS THAT CONFLICT WITH NEW CROSSWALK LINES SHALL BE MASKED WITH GRAY/BLACK PAINT.
4. CROSSWALK PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH SECTION 602.4. REFLECTORIZED PAVEMENT MARKING PANELS OF THE NYSDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, AND ALL ADDENDA THEREIN, AND WITH THE NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2003 EDITION AND THE NY'S SUPPLEMENT.
5. SIGNS AND MARKINGS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 105 OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND DRIVEWAYS.
6. THESE SIGNS AND MARKINGS SHALL BE PAINTED REFLECTIVE WHITE.

NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH SECTION 602.4. REFLECTORIZED PAVEMENT MARKING PANELS OF THE NYSDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED MAY 1, 2008, AND ALL ADDENDA THEREIN, AND WITH THE NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2003 EDITION AND THE NY'S SUPPLEMENT.
2. SIGNS AND MARKINGS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 105 OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND DRIVEWAYS.
3. THESE SIGNS AND MARKINGS SHALL BE PAINTED REFLECTIVE WHITE.

SCALE: NONE
CROSS REFERENCE: NONE

SCALE: NONE
CROSS REFERENCE: NONE

DATE	REVISIONS/RECORD/DESCRIPTION	DRAWN	CHECK	APPN
10/1/07	CONCEPTUAL DESIGN SHEET	LCR	JEB	UNL
10/17/07	REVISION #10 - C.A. COMMENTS SHEET 1 (CROSS)	MC	JEB	UNL
10/18/07	REVISION #10 - C.A. COMMENTS SHEET 2 (CROSS)	MC	JEB	UNL

MULTI-USE PATH DETAILS

LONGKILK DIVISION

C.T. MALE ASSOCIATES

Engineering, Planning, Architecture & Landscape Architecture, P.C.

100 SPARTAN HILL ROAD, SUITE 100, 12119
514.785.7400 • FAX 514.784.7799

DATE: JUN 24, 2008

SCALE: AS SHOWN

SCALE: AS SHOWN

DATE: JUN 24, 2008

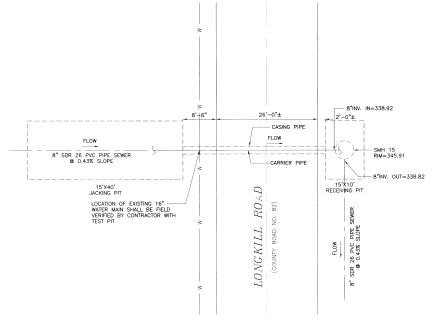
PROJECT: INVESTMENT
DATE: 10/1/07
SCALE: AS SHOWN
DATE: JUN 24, 2008

CARRIER & CASING PIPE DATA

ITEM	CARRIER PIPE	CASING PIPE
CONTENTS	NONE	CARRIER PIPE
NOMINAL OPERATING PRESSURE	8"	24"
NOMINAL SIZE OF PIPE	8"	24"
OUTSIDE DIAMETER	8.400"	24.400"
RISE DIAMETER	7.754"	23.250"
WALL THICKNESS	0.323" MIN	0.375"
RIGHT FOR FOOT	5.63 LBS	18.42 LBS
MATERIAL	PVC	STEEL
PROCESS OF MANUFACTURE	EXTRUDED	N/A
SPECIFICATION	ASTM D3034	N/A
GRADE OR CLASS	SPP 26 (PS 115)	N/A
TEST PROCEDURE	SDP 26 (PS 115)	N/A
TYPE OF JOINT	BELL AND SPIGOT	WELDED
TYPE OF COATING	NONE	NONE
DETAILS OF CORROSION PROTECTION	NONE	NONE
DETAILS OF CORROSION PROTECTION AT ENDS OF CASING	N/A	NONE WITH MINOR WORKMAN WITH DRAINAGE HOLES
METHOD OF INSTALLATION	PUSHED THRU	BORED OR JACKED

NOTES

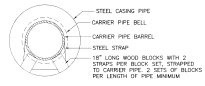
1. THE CONTRACTOR SHALL DETERMINE THE SIZE AND TYPE OF STEEL SHEET PILING IN THE JACKING AND RECEIVING PITS. CONTRACTOR SHALL PREPARE DETAILS OF THE METHOD OF INSTALLATION AND THE SHEETING AND BRACING SYSTEM DESIGNED BY A REGISTERED ENGINEER, FORWARDED TO THE SARATOGA COUNTY DEPARTMENT OF PUBLIC WORKS FOR THEIR INFORMATION AND FILE.
2. ALL WORK SHALL CONFORM TO THE CONDITIONS OF THE PERMIT WITH THE SARATOGA COUNTY DEPARTMENT OF PUBLIC WORKS.
3. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MISSOURI MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
4. UNLESS OTHERWISE ALLOWED BY THE ENGINEER, JACKING OPERATIONS SHALL BE CONTINUOUS AND WITHOUT INTERRUPTION.
5. SHEETING TO EXTEND 4' ABOVE ORIGINAL GROUND ON ALL SIDES (GAGE TRAFFIC AND 10' RETURN ON SIDES UNLESS OTHERWISE NOTED ON THE DRAWING).
6. SHEETING LEFT IN PLACE (AS DETERMINED BY THE SARATOGA COUNTY DEPARTMENT OF PUBLIC WORKS) SHALL BE FULFILLED WITH STEEL SHEETING AND APPROXIMATELY 2' OF BROOM WOOD BLOCKS TO BE SUBMITTED TO THE CONTRACTOR'S SUPERVISOR FOR APPROVAL.
7. THE CONTRACTOR SHALL PROVIDE A 4" HIGH SAFETY FENCING AROUND ALL PITS.
8. ENDS OF CASING SHALL BE SEALED WITH BULKHEADS OF BRICK AND MORTAR AND FURNISHED WITH WEEP HOLES AT LOW END (BOTH ENDS IF USED).
9. THE JACKING AND RECEIVING PITS SHALL BE BACKFILLED WITH SELECT GRANULAR FILL MATERIAL TO 1'-6" OVER THE TOP OF PIPE. THE REMAINDER OF THE SHOULDER SHALL BE SURFACE LOCATED MATERIAL.
10. UTILITIES ARE SHOWN IN THESE RELATIVE POSITIONS AND FOR INFORMATION ONLY. THEIR EXACT LOCATION SHALL BE DETERMINED PRIOR TO ANY CONSTRUCTION.
11. TEST FITS NECESSARY FOR EXISTING CONDITIONS VERIFICATION SHALL BE IDENTIFIED BEFORE ANY WORK ON THE SITE. TEST FITS TO BE LEFT OPEN DURING NIGHT PERIODS.
12. EXCAVATIONS THAT EXISTING SURFACE MATERIALS AND SUBBASES ADJACENT TO EXISTING ROADWAYS SHALL BE REPLACED WITH THE MATERIAL OF SAME THICKNESS.
13. UNLESS OTHERWISE SPECIFIED, ALL EXCAVATIONS WITHIN SARATOGA COUNTY DEPARTMENT OF PUBLIC WORKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL COMPACTED IN ACCORDANCE WITH SECTION 602 OF THE CURRENT MISSOURI STANDARD SPECIFICATIONS.



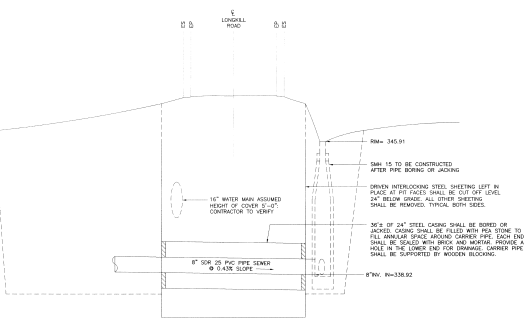
1 PLAN
SCALE: 1" = 10'
CROSS REFERENCE: NONE

NOTES

1. ALL UNDERGROUND UTILITIES ARE SHOWN IN THEIR RELATIVE POSITIONS AND ARE FOR INFORMATION ONLY. THEIR EXACT LOCATION SHALL BE DETERMINED PRIOR TO ANY CONSTRUCTION.
2. WATER MAINS IN RELATION TO SEWER MAINS IN ALL CASES WATER SHALL BE LAPPED AT LEAST 10 FEET. THE REMAINDER OF THE SHOULDER SHALL BE SURFACE LOCATED MATERIAL.
3. UTILITIES DEPARTMENTS SHALL BE NOTIFIED OF PROPOSED INSTALLATION AND SHALL BE NOTIFIED OF THE LOCATION AND THE DEPTH OF THE SEWER MAIN TO QUALITY CONTROL.
4. CONTRACTOR SHALL PROVIDE LABELS, BARRIERS, WALLS, CURBS, FENCES ETC. TO A DEPTH OF AT LEAST 18" BELOW FINISH GRADE UNLESS OTHERWISE SPECIFIED. WATER MAINS SHALL BE PROTECTED OR REPAIRED AND REPLACED EXACTLY AS THEY WERE BEFORE BEING DISTURBED. CHANGES TO THE CONTRACTOR'S EXPENSE.
5. BOLLARD, TREE AND HOUSE ALL SERVICES BEFORE PLACING EARTH AGAINST OR NEAR THE STRUCTURE. HOUSES SHALL BE PROTECTED BY BRICKWORK OR CONCRETE. BRICKWORK SHALL BE 18" HIGH AND 18" THICK. HOUSES SHALL BE PROTECTED BY BRICKWORK AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. NO WORK, STORAGE OR TRAFFIC SHALL BE PERMITTED BEYOND THE BOUNDARIES OF ANY EXCAVATION.



2 CARRIER PIPE INSTALLATION DETAIL
SCALE: AS SHOWN
CROSS REFERENCE: NONE



3 BORING PROFILE
SCALE: 1" = 12'
CROSS REFERENCE: NONE

4 AUGER STOP DETAIL
SCALE: AS SHOWN
CROSS REFERENCE: NONE

NOT REVISIONS
NO. DATE BY
1 01/10/10 J.M.

DATE	REVISIONS RECORD/DESCRIPTION	DRAWN	CHECKED	APPROVED	CONTRACTOR'S APPROVAL
01/10/10	ISSUED FOR CONSTRUCTION	J.M.	J.M.	J.M.	

SANITARY SEWER BORING PLAN & DETAILS
LONGKILL SUBDIVISION
TOWN OF CLIFTON PARK
SARATOGA COUNTY, NEW YORK
C.T. MALE ASSOCIATES
REGISTERED PROFESSIONAL ENGINEER
1000 W. 10TH STREET
SARATOGA, NY 12158
PHONE: 518.584.1111
FAX: 518.584.1111
SHEET 15 OF 17
DATE: JAN 24, 2010

DISINFECTION OF POTABLE WATER MAINS

- 1. DISINFECTION WILL BE ACCOMPLISHED AFTER PIPE HAS PASSED ANY LEAKAGE TESTS.
2. THE CLIFTON PARK WATER AUTHORITY, OWNER AND THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF PRESSURE TESTING, LEAKAGE TESTING, AND DISINFECTION.
3. DISINFECTION WILL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARD C651-05 (EXCLUDING SECTION 5) COVERING TABLET METHOD.
4. CHLORINE WATER SOLUTION IS PREPARED BY ADDING HYPOCHLORITE TO WATER IN ACCORDANCE WITH THE FOLLOWING TABLE:

CHLORINE REQUIRED TO PRODUCE 25 MG/L CONCENTRATION IN 100 FT. OF PIPE BY DIAMETER:

Table with 3 columns: PIPE SIZE (IN), 100% PERCENT CHLORINE (LBS), 1 PERCENT CHLORINE SOLUTIONS (GAL)

NOTE: 1% SOLUTIONS REQUIRE 1 POUND OF CALCIUM HYPOCHLORITE IN 8 GAL OF WATER

- 5. PRODUCT DEGRADATION MUST BE CONSIDERED IN COMPUTING QUANTITY OF SODIUM HYPOCHLORITE REQUIRED FOR THE DESIRED CONCENTRATION SINCE SODIUM HYPOCHLORITE SOLUTION STRENGTH DECREASES OVER TIME DUE TO LIGHT AND SUNSHINE.
6. CHLORINE WATER SOLUTION SHALL BE APPLIED TO WATER MAIN WITH A GASOLINE OR ELECTRICALLY POWERED CHEMICAL FEED PUMP DESIGNED FOR FEEDING CHLORINE SOLUTION. FEED LINES SHALL BE OF STEEL MATERIAL AND STRENGTH AS TO WITHSTAND SAFELY THE MAXIMUM PRESSURE THAT MAY BE CREATED BY THE FEED PUMP. ALL CONNECTIONS SHALL BE CHECKED FOR WATER TIGHTNESS BEFORE HYPOCHLORITE SOLUTION IS APPLIED TO MAIN.
7. GENERALLY THE FOLLOWING PROCEDURE SHALL BE USED TO DISINFECT NEW MAIN. HOWEVER, CONTRACTOR SHALL REVIEW THEIR PROPOSED PROCEDURES WITH ENGINEER AT LEAST 48 HOURS PRIOR TO START OF DISINFECTION. ALL DISINFECTION PROCEDURES MUST BE APPROVED BY ENGINEER BEFORE ANY WORK STARTS.
8. AFTER THE CPWA HAS TAKEN A WATER SAMPLE AND VERIFIED THE MINIMUM 25 PPM CHLORINE CONCENTRATION, THE CONTRACTOR SHALL RETAIN THE CHLORINATED WATER IN THE MAIN BY THE FOLLOWING METHOD:
9. CHLORINATED WATER SHALL REMAIN IN THE MAIN FOR A MINIMUM OF 24 HOURS.
10. IF CHLORINE RESIDUAL IS LESS THAN 10 PPM, REPEAT SYSTEM TREATMENT.
11. ANY SECTION OF PIPE, VALVES OR FITTINGS, INCLUDING TAPPING SLEEVES AND VALVES WHICH ARE INSTALLED OUTSIDE LIMITS OF SYSTEM SUBJECTED TO CHLORINATION PROCEDURES SPECIFIED ABOVE SHALL BE SHUT DOWN OR SHUT OFF WITH A 1 1/2 INCH ORITE SOLUTION PRIOR TO INSTALLATION.
12. AFTER THE CLIFTON PARK WATER AUTHORITY HAS VERIFIED A MINIMUM CHLORINE RESIDUAL OF 10 PPM, CONTRACTOR SHALL THROUGHLY FLUSH CHLORINATED WATER FROM THE MAIN BY THE FOLLOWING METHOD:
13. FLUSH MAIN WITH POTABLE WATER IN SUCH A MANNER THAT SHALL NOT ADVERSELY AFFECT THE PLANT, OR ANIMAL LIFE.
14. QUANTITY AND LOCATION OF WATER SAMPLES TO BE TAKEN SHALL BE DETERMINED BY THE CPWA.
15. WATER SAMPLES SHALL BE TAKEN BY THE CPWA IN STERILIZED BOTTLES.
16. ANALYZE WATER SAMPLES BY NYSDOH CERTIFIED LABORATORY PART 5.1 FOR PUBLIC WATER SYSTEMS.
17. IF BACTERIOLOGICAL TEST PROVES WATER QUALITY TO BE UNACCEPTABLE, REPEAT SYSTEM TREATMENT.
18. IF BACTERIOLOGICAL TEST PROVES WATER QUALITY TO BE ACCEPTABLE, REMOVE FEED LINE AND CORPORATION STOP. CORPORATION STOP WILL BE REPLACED WITH A THREADED BRASS PLUG UNLESS OTHERWISE DIRECTED BY WATER SUPERINTENDENT.
19. TWO SAMPLES TAKEN ON CONSECUTIVE DAYS AT EACH SAMPLING POINT MUST BE BACTERIOLOGICALLY SAFE BEFORE WATER MAIN IS PLACED IN SERVICE.

WATER SYSTEM REQUIREMENTS

- 1. ALL CURB STOPS SHALL BE CENTERED ON ALL LOTS AND LOCATED AT THE EDGE OF THE PUBLIC RIGHT OF WAY.
2. ALL WATER SERVICES SHALL BE 1" TYPE K COPPER.
3. THE 1/2" WATER MAIN SHALL BE CLASS 50 DRP. ALL OTHER WATER MAINS SHALL BE PC 30 DRP.
4. ALL HYDRANTS SHALL BE LOCATED A MINIMUM OF 4 FEET FROM DRIVEWAYS.
5. ALL WATER MAINS SHALL BE LOCATED A MINIMUM OF 5 FEET FROM CATCH BASINS.
6. THE CLIFTON PARK WATER AUTHORITY WILL ASSUME OWNERSHIP OF MAINS AND APPURTENANCES AFTER SUCCESSFUL COMPLETION OF ALL TESTING AND THE DELIVERY OF TEST RESULTS TO THE CPWA.
7. RECORD DRAWINGS SHOWING TIES TO CORPORATIONS, CURB BORDERS, BENDS OR OTHER CONNECTIONS MUST BE SUBMITTED TO THE CPWA IN PAPER FORM AND AS A .DWG FILE PRIOR TO ACTIVATING ANY WATER SERVICES WITHIN THE SUBDIVISION.

TESTING WATER MAINS

- 1. AFTER TRENCH HAS BEEN BACKFILLED, HYDROSTATIC ACCEPTANCE TESTS, CONSISTING OF A PRESSURE TEST AND A LEAKAGE TEST, SHALL BE PERFORMED ON ALL SECTIONS OF WATER MAINS INSTALLED. LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH PRESSURE TEST. TEST SECTION SHALL BE LIMITED TO ABOUT 200 FT. MAXIMUM UNLESS OTHERWISE APPROVED BY ENGINEER.
2. HYDROSTATIC PRESUMPTIVE TESTS MAY BE PERFORMED WHEN SYSTEM IS PARTIALLY BACKFILLED TO SIMPLY CHECK WORK, BUT ACCEPTANCE OF SYSTEM SHALL BE BASED ON HYDROSTATIC TESTS RUN ON FINISHED SYSTEM AFTER IT HAS BEEN COMPLETELY BACKFILLED. ALL HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 2.2 OF AWWA STANDARD C600-10, AS MODIFIED HEREIN.
3. HYDROSTATIC PRESUMPTIVE TESTS MAY BE PERFORMED WHEN THE SYSTEM IS PARTIALLY BACKFILLED TO SIMPLY CHECK THE WORK, BUT ACCEPTANCE OF THE SYSTEM SHALL BE BASED ON HYDROSTATIC TESTS RUN ON THE FINISHED SYSTEM AFTER IT HAS BEEN COMPLETELY BACKFILLED. ALL HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 2.2 OF AWWA STANDARD C600-10, AS MODIFIED HEREIN.
4. FOR THE PRESSURE TEST, SYSTEM SHALL BE PRESSURIZED AND MAINTAINED AT A MINIMUM OF 150 POUNDS PER SQUARE INCH OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER, BASED ON ELEVATION OF LOWEST POINT IN SECTION BEING TESTED AND CORRECTED TO ELEVATION OF GUAGE. PROVISIONS SHALL BE MADE TO RELIEVE AIR TRAPPED AT HIGH POINTS IN SYSTEM THROUGH ADJACENT HYDRANTS OR THROUGH TAPS AND CORPORATION STOPS INSTALLED FOR THIS PURPOSE BY CONTRACTOR. AFTER THIS PRESSURE HAS BEEN MAINTAINED SUCCESSFULLY WITH NO FURTHER PUMPING IS REQUIRED, FOR A PERIOD OF AT LEAST TWO HOURS, THE SECTION UNDER TEST SHALL BE CONSIDERED TO HAVE PASSED THE PRESSURE TEST.

TESTING - DUCTILE IRON PIPE

1. LEAKAGE TEST SHALL BE PERFORMED CONCURRENTLY USING A MINIMUM TEST PRESSURE OF 150 LBS/SQ. INCH BASED ON ELEVATION OF LOWEST POINT UNDER TEST OR 1.5 TIMES THE WORKING PRESSURE, BASED ON ELEVATION OF LOWEST POINT IN SECTION UNDER TEST OR 25 TIMES THE WORKING PRESSURE BASED UPON AN ELEVATION OF THE HIGHEST POINT IN SECTION UNDER TEST, WHICHEVER IS GREATER, AND ALL CORRECTED TO ELEVATION OF GUAGE. LEAKAGE TEST DURATION SHALL BE A MINIMUM OF 2 HOURS AFTER LEAKAGE RATE HAS STABILIZED.

2. MAXIMUM ALLOWABLE LEAKAGE SHALL BE AS SHOWN IN THE FOLLOWING TABLE:

Table with 3 columns: ALLOWABLE LEAKAGE (IN GALLONS) PER 1000 FT. OF PIPE LINE, AVG. TEST PRESSURE (PSI), NOMINAL PIPE DIAMETER (IN)

- * IF PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.
6. IF LEAKAGE IN SYSTEM EXCEEDS SPECIFIED AMOUNT, CONTRACTOR SHALL (AT NO ADDED COST TO THE OWNER) LOCATE, REPAIR, AND/OR REPLACE DEFECTS AND RE-TEST PIPING SYSTEM.

TESTING - HDPE PIPE

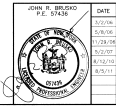
- 1. HDPE PIPE EXPANDS WHEN IT IS PRESSURIZED. THE EXPANSION PROCESS TAKES 2-3 HOURS. ONCE EQUILIBRIUM IS ESTABLISHED, THE TEST SECTION IF PRESSURIZED TO 1.5 TIMES OPERATING PRESSURE AND THE TEST PRESSURE IS HELD FOR TWO HOURS.
2. DURING THE ACTUAL TEST THE PIPE WILL CONTINUE TO EXPAND SOMEWHAT. THIS EXPANSION WILL CONTINUE TO CAUSE A PRESSURE DROP. A PRESSURE DROP DOES NOT CONVEINELY PROVE THAT THERE IS A LEAK IN THE SYSTEM.
3. CHANGES IN TEMPERATURE WILL CAUSE THE PIPE TO EXPAND AND CONTRACT THUS CHANGING THE INTERNAL PRESSURE. FOR THIS REASON, THE PIPE WILL BE TESTED FULLY BACKFILLED AND AFTER THE WATER HAS BEEN IN THE PIPE FOR OVERNIGHT, WATER SHOULD BE LEFT IN THE PIPE UNPRESSURIZED IN ORDER TO MINIMIZE TEMPERATURE CONSIDERATIONS WITH REGARD TO THE PLACEMENT OF THE WATER.
4. UNDER NO CIRCUMSTANCES SHALL THE PIPE BE HELD UNDER TEST PRESSURE FOR MORE THAN 4 HOURS. AFTER BEING PLACED UNDER TEST PRESSURE, THE PIPE SHALL BE ALLOWED TO RELAX FOR A MINIMUM OF 3 HOURS.
5. THE FOLLOWING ALLOWANCES SHOULD BE USED FOR WATER TO BE ADDED DURING THE TEST PERIOD, NOT DURING THE INITIAL EXPANSION PHASE) TO ACCOUNT FOR EXPANSION:

Table with 2 columns: ALLOWABLE EXPANSION ALLOWANCE, NOMINAL PIPE SIZE (IN) GALLONS (98.6 FT. PIPE)

- 4. IN ORDER TO CONFIRM THE LACK OF ANY LEAKAGE, ONCE THE PRESSURE TEST IS COMPLETE, THE CONTRACTOR SHALL BLEED THE PRESSURE DOWN TO THE WORKING PRESSURE AND SEAL THE PIPE WITH A PRESSURE GAUGE IN PLACE. THE PIPE SHOULD HOLD THE WORKING PRESSURE AND THE PRESSURE SHOULD ACTUALLY INCREASE SOMEWHAT OVER A PERIOD OF 2-3 HOURS.

NEW YORK STATE DEPARTMENT OF HEALTH
State Sanitary Engineer
Department of Environmental Conservation
Regional Environmental Health
For Approval Date and Signature
Date of Issue Sheet

UTILITY NOTES
LONGKILL SUBDIVISION
C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, P.C.
PROJ. NO. 04-0208
SCALE: HDS
DATE: JAN. 24, 2008



Revision table with columns: DATE, REVISIONS RECORD/DESCRIPTION, DRAWN, CHECK, APPR.



TESTING GRAVITY SEWERS

1. THE CONTRACTOR SHALL PROVIDE A POSITIVE IDENTIFICATION OF THE GROUND WATER TABLE PRIOR TO TESTING.
2. A HYDROSTATIC TEST IS REQUIRED ON THE ENTIRE SEWER SYSTEM. INFILTRATION TESTING IS THE PREFERRED METHOD OF TESTING WHEN GROUND WATER IS PRESENT AT LEAST TWO (2) FEET OVER THE TOP OF PIPE AT THE UPSTREAM MANHOLE.
3. IF, DUE TO GROUND WATER CONDITIONS, INFILTRATION TESTING IS IMPRACTICAL, THEN THE CONTRACTOR SHALL PERFORM EXFILTRATION TESTING ON THE SYSTEM. LOW PRESSURE AIR TESTING MAY BE PERFORMED IN LIEU OF INFILTRATION TESTING IN ACCORDANCE WITH THE CONDITIONS SPECIFIED.
4. THE ALLOWABLE INFILTRATION OR EXFILTRATION RATE IS 100 GALLONS PER INCH DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM. AN EXFILTRATION OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET.
5. INFILTRATION TESTS SHALL BE MONITORED BY A 2 1/2" V-NOTCH WEIR. ANY OTHER MEASURING DEVICE WILL REQUIRE PRIOR APPROVAL OF THE ENGINEER.
6. WHERE SEWERS ARE CONSTRUCTED OF PRESSURE RATED PIPE, AND INSTALLED WITH LESS THAN 5 FEET OF VERTICAL SEPARATION FROM EXISTING OR PROPOSED WATER MAINS, SEWERS SHALL BE HYDROSTATICALLY TESTED AT 100 PSI TO ASSURE WATER TIGHTNESS. HYDROSTATIC ACCEPTANCE TESTS SHALL BE CONDUCTED AS SPECIFIED FOR TESTING WATER MAINS, EXCEPT THAT TESTING MAY BE PERFORMED WITH PIPE SECTION PARTIALLY BACKFILLED.

INFILTRATION TESTING

1. THE INFILTRATION LEAKAGE TESTS SHALL BE RUN ON EACH SINGLE MANHOLE TO MANHOLE SECTION, OR REACH, INDIVIDUALLY OR ALL OTHER MANHOLE TO MANHOLE SECTIONS. A PIPELINE SECTION UNDER TEST SHALL INCLUDE ALL THE PIPE AND FITTINGS BETWEEN THE TWO MANHOLES PLUS THE UPSTREAM MANHOLE.
2. EACH MANHOLE TO MANHOLE SECTION SHALL BE REACHED OR ACCEPTED DURING OR ON THE RESULTS OF ITS OWN INDEPENDENT SECTION TEST AND NOT ON THE RESULTS OF ANY ONE TEST RUN SIMULTANEOUSLY OVER MORE THAN ONE CONSULATIVE MANHOLE TO MANHOLE SECTION. THE ONLY EXCEPTION ALLOWED SHALL BE ACCEPTING SEVERAL CONSULATIVE MANHOLES TO MANHOLE SECTIONS BASED ON ONE COMBINED INFILTRATION TEST INDICATING ZERO (0) INFILTRATION.
3. THE INFILTRATION TEST SHALL BE MADE BY INSTALLING THE FLOW MEASURING DEVICE IN THE DOWNSTREAM MANHOLE OF THE SECTION BEING TESTED. THE TEST DURATION SHALL BE 24 HOURS, OR FOR A SHORTER PERIOD, PROVIDED A STABLE SEWAGE FLOW CONDITION HAS BEEN ACHIEVED IN THE TEST PERIOD, AND THE RESULTS PROJECTED TO A 24 HOUR PERIOD.

EXFILTRATION TESTING

1. THE EXFILTRATION TESTS SHALL BE RUN ON EACH SINGLE MANHOLE TO MANHOLE SECTION, OR REACH, INDIVIDUALLY OR ALL OTHER MANHOLE TO MANHOLE SECTIONS. A PIPELINE SECTION UNDER TEST SHALL INCLUDE ALL THE PIPE AND FITTINGS BETWEEN THE TWO MANHOLES PLUS THE UPSTREAM MANHOLE.
2. THE EXFILTRATION TESTS SHALL BE MADE BY MEASURING THE DROPPING WATER ELEVATION IN THE UPSTREAM MANHOLE 24 HOURS AFTER THE INITIAL WATER LEVEL IS RECORDED. THE INITIAL WATER LEVEL IN THE UPSTREAM MANHOLE SHALL BE 1/8" TO 1/4" HIGHER THAN EITHER THE TOP OF THE PIPE OR THE GROUND WATER ELEVATION AT THE UPSTREAM MANHOLE. ANY MANHOLE TO MANHOLE SECTION UNDERGOING AN EXFILTRATION TEST MUST HAVE THE NEXT ADJACENT SECTION, BOTH UPSTREAM AND DOWNSTREAM, DRY AND NOT UNDER TEST. THIS PROCEDURE MANHOLES HYDROSTATIC PRESSURE PLACED ON STOPPERS, PLUGS, AND END CAPS.

LOW PRESSURE AIR TESTING

1. LOW PRESSURE AIR TESTING MAY BE ALLOWED IN LIEU OF INFILTRATION TESTS ONLY, WHEN SO ALLOWED, THE TEST SHALL BE PERFORMED UNDER THE DIRECTION OF THE ENGINEER ACCORDING TO ASTM C672. A PROOF OF THE ASTM DOCUMENT TITLE IS SPECIFIC FOR VITRIFIED CLAY PIPE, 4 TO 12 INCHES IN DIAMETER. THE SAME GENERAL PROCEDURE MAY BE USED FOR ANY OTHER PIPE MATERIAL, AND IS NOT LIMITED TO A MAXIMUM DIAMETER OF 12 INCHES.
2. AN AIR TEST SHALL NOT BE RUN UNTIL THE SECTION OF LINE TO BE TESTED HAS BEEN CLEANED OF ALL FOREIGN MATERIAL. BY FLEETING AND HAS BEEN VISUALLY INSPECTED AND APPROVED BY THE ENGINEER. CERTAIN PIPE MATERIALS PRODUCE MORE CONSISTENT RESULTS WHEN THE INTERIOR OF THE PIPE IS TESTED PRIOR TO TESTING.
3. LOW PRESSURE AIR TESTING MUST BE DONE IN SINGLE MANHOLES TO MANHOLE SECTIONS OR REACHES, AFTER THEY HAVE BEEN COMPLETELY BACKFILLED. A MANHOLE SECTION UNDER TEST SHALL INCLUDE ALL THE PIPE AND FITTINGS BETWEEN THE MANHOLES. MANHOLES WILL NOT BE AIR TESTED, BUT SHALL BE EXFILTRATION TESTED, INDIVIDUALLY OR ANY PIPELINE SECTION. THE SECTION OF LINE TO BE TESTED SHALL BE SEALED AT BOTH MANHOLES BY PLUGS OR STOPPERS. ONE OF THESE PLUGS OR STOPPERS MUST BE EQUIPPED TO SEAL THE LINE WITH AIR FROM A COMPRESSOR OR PUMP AND ALLOW IT TO BLEED OFF WHEN THE TEST IS ENDED. THERE MUST ALSO BE A PRESSURE GAUGE INDEPENDENT OF ANY ON THE COMPRESSOR OR PUMP WHICH REMAINS CONNECTED TO THE TEST SECTION AND IS CAPABLE OF MEASURING ITS INTERNAL AIR PRESSURE WHEN IT IS ISOLATED FROM THE AIR SUPPLY.

THE TEST SECTION SHALL THEN BE SLOWLY FILLED WITH AIR UP TO A MAXIMUM PRESSURE OF FOUR (4) PSIG GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER THAT MAY BE SCOURING THE PIPE. THE PRESSURE SHALL THEN BE THROTTLED DOWN TO AND MAINTAINED AT THREE AND ONE-HALF (3 1/2) PSIG GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER FOR A MINIMUM OF TWO (2) MINUTES TO ALLOW THE TEMPERATURE OF THE WARMER ENTERING AIR TO EQUALIZE WITH THAT OF THE COOLER PIPE WALLS. DURING THIS TIME ALL KNOWN AIR CONNECTIONS AND AIR PLUGS OR STOPPERS SHALL BE CHECKED FOR LEAKAGE WITH A LIQUID SOAP SOLUTION. IF ANY LEAKS ARE FOUND, OR IF THE PRESSURE CANNOT BE MAINTAINED FOR ANY REASON, THE AIR SHOULD BE BLEED OFF AND THE NECESSARY ADJUSTMENTS OR REPAIRS MADE. WHEN THE LEAKAGE HAS BEEN STOPPED THE TEST SHALL BE STARTED AGAIN FROM THE BEGINNING, AS DESCRIBED ABOVE. PRIOR TO THE TEST, THE CONTRACTOR SHALL INSURE THAT ALL STOPPERS, PLUGS, AND END CAPS, PARTICULARLY AT THE ENDS OF BEING SURVEYED, ARE CORRECTLY INSTALLED AND ADEQUATELY BRACED TO WITHSTAND THE AIR PRESSURE EQUAL THROUGHOUT THE SECTION UNDER TEST.

WHEN THE INTERNAL AIR PRESSURE HAS BEEN MAINTAINED AT THREE AND ONE-HALF (3 1/2) PSIG GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER FOR A MINIMUM OF TWO (2) MINUTES TO ALLOW THE AIR TEMPERATURE INSIDE THE PIPE TO STABILIZE, THE AIR SUPPLY SHALL BE PHYSICALLY DISCONNECTED LEAVING THE PRESSURIZED SYSTEM SEALED. THE INDEPENDENT PRESSURE GAUGE SHALL THEN BE OBSERVED FOR AN INDICATION OF PRESSURE LOSS. IF A LOSS IS INDICATED, THE TIME IT TAKES FOR THE PRESSURE TO DROP ONE (1) PSIG FROM 2.5 PSIG TO 1.5 PSIG GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER SHALL BE MEASURED WITH A STOP WATCH.

4. THE LOW PRESSURE AIR TEST IS A COMPARISON OF THE MEASURED TIME NECESSARY FOR THE ONE (1) PSIG PRESSURE DROP TO OCCUR, IF AT ALL, WITH THE MINIMUM ALLOWABLE TIME FOR THAT PRESSURE DROP TO OCCUR DETERMINED BY THE METHODS INDICATED IN ASTM C672. IF THE TIME REQUIRED FOR THE ONE (1) PSIG PRESSURE DROP TO OCCUR IS MORE THAN THE MINIMUM ALLOWABLE, OR IF THE ONE (1) PSIG PRESSURE DROP DOES NOT OCCUR WITHIN THAT ALLOWABLE TIME, THEN THE PIPE SECTION UNDER TEST IS FREE FROM ANY SIGNIFICANT LEAKS AND IS ACCEPTABLE. IF NO PRESSURE DROP OCCURS, THEN THE SECTION IS LEAKAGE FREE AND IS ACCEPTABLE. IF THE ONE (1) PSIG PRESSURE DROP OCCURS FASTER THAN THE ALLOWABLE TIME, THE SECTION IS UNACCEPTABLE.
5. WHERE AIR TESTING IS TO BE USED FOR LINE ACCEPTANCE, CORROBORATIVE HYDROSTATIC TESTING SHALL BE PERFORMED ON SEWER INSTALLATIONS OF THE SAME PIPE SIZE, MATERIAL AND CONDITIONS OF INSTALLATION. SEWER SECTIONS WHICH INDICATE THE RATE OF AIR LOSS PER UNIT OF SURFACE AREA WHICH MOST NEARLY APPROXIMATE THE RATE FOR PIPELINE ACCEPTANCE SHOULD BE SELECTED FOR THE CORROBORATIVE TESTS. AT LEAST THREE SECTIONS ARE TO BE SO TESTED. THE PURPOSE OF THESE CORROBORATIVE TESTS IS TO PERMIT A REASONABLE ASSUMPTION THAT, IF THESE THREE TEST SECTIONS MEET THE HYDROSTATIC TEST, THE BALANCE OF THE PROJECT ALSO MEETS OR EXCEEDS THESE REQUIREMENTS. IF THE AIR TEST IS NOT SUPPORTED BY ACCEPTABLE CORROBORATIVE HYDROSTATIC TESTS, COMPLETE HYDROSTATIC TESTING OF THE SEWER LINES SHALL BE REQUIRED AS THE BASIS FOR FINAL PIPELINE ACCEPTANCE.
6. MANHOLES WHICH CAN NOT BE PROPERLY AIR TESTED, SHOULD BE VISUALLY INSPECTED AND LEAKAGE TESTED USING INTERNAL OR EXTERNAL HYDROSTATIC PRESSURE. LEAKAGE TESTING TO COMPLY WITH APPLICABLE MUNICIPAL REQUIREMENTS.

TESTING IN SERVICE LINES

- IN AREAS WHERE CONVENTIONAL TESTING IS IMPRACTICAL, I.E. AREAS DESIGNATED BY ENGINEER WHERE EXISTING SEWERAGE ARE FED INTO THE NEW LINE IMMEDIATELY, AND ANY BACKFLOW COULD RESULT IN HEALTH PROBLEMS) NO LINES SHALL BE BACKFILLED UNTIL EACH PIPE SECTION AND CONNECTION IS INSPECTED AND APPROVED.
- TEST RESULTS
- A. IF THE ALLOWABLE RATE OF INFILTRATION, EXFILTRATION, OR AIR LEAKAGE IS EXCEEDED ON TEST, THE CONTRACTOR SHALL LOCATE THE POINTS OF EXCESSIVE LEAKAGE AND SHALL PROMPTLY CORRECT, REPAIR, AND BRIDGE THE SYSTEM UP TO THE STANDARDS. THE COSTS OF ALL SUCH REPAIRS AND CORRECTIVE MEASURES, INCLUDING THE COSTS OF REPEAT TESTS, SHALL BE BORNE BY THE CONTRACTOR. THE SEWER LINE SECTION (INCLUDING MANHOLES AND BULKHEAD SERVICES) UNDER TEST SHALL NOT BE ACCEPTED UNTIL THESE TEST CRITERIA ARE MET.

TESTING SEWAGE FORCE MAINS

1. THE COMPLETED SEWAGE FORCE MAINS INCLUDING VALVES, FITTINGS, CONNECTIONS TO PUMPS AND OTHER PIPING SYSTEMS SHALL BE TESTED FOR LEAKAGE, AND THE SUCCESSFUL TEST SHALL BE ONE CRITERION FOR PAYMENT TO CONTRACTOR.
2. THE TESTS WILL BE CONDUCTED AS DIRECTED BY THE ENGINEER ARCHITECT, BUT THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR, EQUIPMENT, WATER AND MATERIALS NECESSARY FOR CONDUCTING THE TESTS AS SPECIFIED.
3. THE SYSTEM SHALL BE PRESSURIZED TO 1.5 TIMES THE PIPE WORKING PRESSURE OR 100 PSI, WHICHEVER IS GREATER, AT THE POINT OF TESTING. AFTER THIS PRESSURE, NO PSI, HAS BEEN MAINTAINED SUCCESSFULLY FOR ONE HOUR, THE LEAKAGE TEST SHALL BE PERFORMED FOR A PERIOD OF NO LESS THAN 1 HOURS. HYDROSTATIC TESTS SHALL BE PERFORMED, AND SUCCESSFUL TEST RESULTS DERIVED IN ACCORDANCE WITH ASTM C608 SECTION 4 AND THE ALLOWABLE LEAKAGE TABLE WITHIN THIS SECTION. IF THE LEAKAGE IN THE SYSTEM EXCEEDS THE SPECIFIED AMOUNT, THE CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, MAKE ANY REPAIRS OR REPLACEMENTS NECESSARY TO REDUCE THE LEAKAGE TO THE REQUIRED LIMITS AND RETEST THE SYSTEM.
4. THE MAXIMUM ALLOWABLE LEAKAGE PER HOUR AT THE SPECIFIED TEST PRESSURE SHALL BE AS SHOWN IN THE FOLLOWING TABLE:

ALLOWABLE LEAKAGE PER 100 FT (30.5 M) OF PIPELINE*

GAUGING PER HOUR	NOMINAL PIPE DIAMETER - INCHES
AVG. TEST PRESSURE	
PSI (BAR)	1 1/4 (1.2)
400 (27)	0.20 (0.24)
400 (27)	0.19 (0.23)
300 (21)	0.18 (0.21)
255 (19)	0.16 (0.19)
225 (16)	0.14 (0.17)
200 (14)	0.13 (0.16)
175 (12)	0.12 (0.15)
150 (10)	0.11 (0.14)
125 (9)	0.10 (0.13)
100 (7)	0.09 (0.11)

AVG. TEST PRESSURE	PSI (BAR)	1 1/4 (1.2)	2 (2.1)	3 (3.4)	4 (4.6)	6 (6.8)	8 (8.1)	10 (11)	12 (13)	14 (15)	16 (18)
400 (27)	0.20 (0.24)	0.40 (0.48)	0.64 (0.76)	0.96 (1.12)	1.28 (1.50)	1.92 (2.25)	2.56 (3.00)	3.20 (3.84)	3.84 (4.56)	4.48 (5.28)	5.12 (5.94)
300 (21)	0.18 (0.21)	0.36 (0.42)	0.54 (0.62)	0.72 (0.84)	1.08 (1.26)	1.44 (1.68)	1.92 (2.25)	2.40 (2.88)	2.88 (3.42)	3.36 (3.96)	3.84 (4.56)
255 (19)	0.16 (0.19)	0.32 (0.38)	0.48 (0.56)	0.64 (0.76)	0.96 (1.12)	1.28 (1.50)	1.60 (1.86)	1.92 (2.25)	2.24 (2.64)	2.56 (3.00)	2.88 (3.42)
225 (16)	0.14 (0.17)	0.28 (0.34)	0.42 (0.50)	0.56 (0.66)	0.84 (0.99)	1.12 (1.30)	1.44 (1.68)	1.76 (2.07)	2.08 (2.44)	2.40 (2.88)	2.72 (3.24)
200 (14)	0.13 (0.16)	0.26 (0.31)	0.39 (0.46)	0.52 (0.61)	0.70 (0.81)	0.93 (1.09)	1.20 (1.40)	1.47 (1.74)	1.74 (2.07)	2.01 (2.37)	2.28 (2.72)
175 (12)	0.12 (0.15)	0.24 (0.29)	0.36 (0.42)	0.48 (0.56)	0.64 (0.76)	0.86 (1.01)	1.12 (1.30)	1.38 (1.62)	1.64 (1.92)	1.90 (2.25)	2.16 (2.56)
150 (10)	0.11 (0.14)	0.22 (0.27)	0.33 (0.39)	0.44 (0.52)	0.58 (0.68)	0.77 (0.91)	1.00 (1.17)	1.23 (1.44)	1.46 (1.71)	1.69 (1.99)	1.92 (2.25)
125 (9)	0.10 (0.13)	0.20 (0.24)	0.30 (0.36)	0.40 (0.48)	0.53 (0.62)	0.70 (0.81)	0.90 (1.05)	1.10 (1.29)	1.30 (1.53)	1.50 (1.76)	1.70 (1.99)
100 (7)	0.09 (0.11)	0.18 (0.22)	0.27 (0.32)	0.36 (0.42)	0.48 (0.56)	0.64 (0.76)	0.84 (0.99)	1.04 (1.21)	1.24 (1.44)	1.44 (1.68)	1.64 (1.92)

DEFLECTION TESTING SEWER PIPE

1. WHERE FEASIBLE PIPE IS USED, THE CONTRACTOR SHALL TEST ALL MAINLINE PIPE FOR THE MAXIMUM ALLOWABLE DEFLECTION OF FIVE (5%) PERCENT OF THE OUTSIDE DIAMETER.
2. DEFLECTION TESTS SHALL BE PERFORMED USING A BARR MANHOLE TYPE "NO-NO-GO" 5 GALLON GAUGE OF THE PROPER SIZE ACCORDING TO THE FOLLOWING TABLE.

PIPE SIZE (INCHES) OR (MM)	BASE INSIDE DIA. (INCHES)	REQUIRED DEFLECTION DIA. (INCHES)
6"	5.75"	5.62"
8"	7.50"	7.25"
10"	9.50"	9.00"
12"	11.36"	10.79"

3. DEFLECTION TESTING OF ANY PIPE SECTION SHALL BE DONE NO SOONER THAN 6 MONTHS AFTER THE DATE OF INSTALLATION OF THE PIPE SECTION UNLESS WRITTEN ACCEPTANCE IS PROVIDED BY THE ENGINEER.
4. APPROXIMATELY 10% OF THE RUNS BETWEEN MANHOLES OR AN MINIMUM 4 RUNS SHALL BE TESTED. THE LOCATION OF EACH RUN SHALL BE APPROVED BY THE MUNICIPALITY.
5. SUCCESSFUL PASSAGE OF THE PROPER SIZE MANHOLE THROUGH ALL TEST RUNS WILL END THE TESTING PROCEDURE.
6. FAILURE IN ANY ONE OF THE TEST SECTION WILL BE CAUSE FOR ALL RUNS TO BE DEFLECTION TESTED.
7. SECTIONS EXCEEDING THE DEFLECTION LIMITS SHALL BE CORRECTED BY RELAYING OR OTHER REMEDIES APPROVED BY THE ENGINEER.
8. DEFLECTION TESTING SHALL BE IN ADDITION TO OTHER TESTS REQUIRED.

NEW YORK STATE DEPARTMENT OF HEALTH
New York State Office
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DATE	REVISIONS RECORD/DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE	REVISIONS RECORD/DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
11/27/08	REVISED PER REVIEW LETTER DATED 11/26/08	JPM	JPM	JPM	11/27/08	REVISED PER TOWN COMMENTS	JPM	JPM	JPM	11/27/08
12/17/08	REVISED PER SUBMISSION	JCM	JCM	JCM	12/17/08	REVISED PER COMMENTS DATED 12/17/08	JCM	JCM	JCM	12/17/08

UTILITY NOTES

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