

SITE SPECIFIC NOTES

- A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED AT THE SITE WITH THE OWNER OR DEVELOPER AND A REPRESENTATIVE FROM THE DUTCHESS COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION OF THE WELL AND SEWAGE DISPOSAL SYSTEM TO DISCUSS APPROVED ARRANGEMENTS FOR WATER SUPPLY AND SEWAGE DISPOSAL.
- THE HOUSE LOCATION SHALL MEET ALL MIN. REQUIREMENTS AS SET FORTH BY THE TOWN OF BEEKMAN ZONING ORDINANCE. THE TOWN ZONING OFFICE SHALL BE CONSULTED TO INSURE CONFORMITY WITH ALL APPLICABLE ZONING REQUIREMENTS PRIOR TO CONSTRUCTION.
- LONG TERM MAINTENANCE PROVIDED ON SEWAGE AND EROSION CONTROL PLAN AND SWEEP SHALL BE PROVIDED BY A SEPARATE DRAINAGE DISTRICT AS ESTABLISHED BY THE TOWN OF BEEKMAN.
- COL-DE-SAC NOTES:
 - A FINISHED GRADE ELEVATION TO BE GRADED FLUSH WITH CATCH BASIN.
 - THE SURFACE OF THE INNER COL-DE-SAC SHALL BE 4" MIN. RIP RAP OR AS REQUIRED BY THE TOWN ENGINEER/HIGHWAY DEPARTMENT.
- THE DEVELOPER/CONTRACTOR SHALL NOTIFY THE HIGHWAY DEPARTMENT AT LEAST FOUR WEEKS IN ADVANCE OF ANY PLANS TO PAVE THE INTERIOR ROADWAY, TO ALLOW FOR NECESSARY COORDINATION OF THESE EFFORTS.
- INSTALL FOOTING DRAINS AS SHOWN OR AS PROVIDED BY THE TOWN OF BEEKMAN BUILDING DEPARTMENT.
- THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL UTILITIES IN/AROUND THE AREA OF DISTURBANCE. ALL UTILITIES SHALL BE FIELD MARKED AS REQUIRED.
- ALL EASEMENTS SHALL BE STAKED AND FLAGGED TO ASSURE THAT THE WIRE UTILITIES CONSTRUCTION DOES NOT INTERFERE WITH OTHER SUBDIVISION INFRASTRUCTURE, ESPECIALLY TRANSFORMER LOCATIONS AND JUNCTION BOXES.
- ANY DISTURBANCE TO THE STREAM BUFFER REQUIRES A SPECIAL PERMIT FROM THE TOWN OF BEEKMAN PLANNING BOARD.
- LOT #1 HAS THE REMAINS OF A FORMER DAM. THE DAM REMAINS ARE NOT REGISTERED WITH THE NYSDEC. THE DAM DOES NOT POND UPWARD WATER.
- THE ROAD IS PROPOSED TO BE DEDICATED TO THE TOWN OF BEEKMAN.
- UPON AN EXTENSION OF THE ROAD TO THE ADJOINING PARCEL, THE EDGES OF THE COL-DE-SAC WOULD BE REMOVED.
- THE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE "TOWN OF BEEKMAN ZONING LAW, LAND SUBDIVISION REGULATIONS".
- PROPOSED DRIVEWAYS SHALL CONFORM TO § 156-59(d), DRIVEWAYS OF THE CODE OF THE TOWN OF BEEKMAN.
- A PROPOSED PLOT PLAN TO BE SUBMITTED AT THE TIME OF THE BUILDING PERMIT DETAILING THE PROPOSED LANDSCAPING FOR THE LOT ALONG WITH ARCHITECTURAL ELEVATIONS.
- THE PROJECT HAS BEEN APPROVED AS A CONSERVATION SUBDIVISION. TWO (2) OF THE LOTS SHALL BE SUBJECT TO "MODERATE" PRICING.
- THE PROJECT LIES WITHIN AN AQUIFER OVERLAY ZONE.
- UPON THE DEVELOPMENT OF THE PARCEL, LOCATED AT THE END OF THE COL-DE-SAC, THE "WINGS" OF THE COL DE SAC SHALL BE REMOVED AND DRIVEWAYS FOR LOT 1 & 2 EXTENDED.
- DRIVEWAYS

- IN ALL RESIDENTIAL DISTRICTS, ALL DRIVEWAYS, INCLUDING SHARED DRIVEWAYS AND PRIVATE ROADS, SHALL BE DESIGNED, CONSTRUCTED AND MAINTAINED TO AVOID THE RESIDENTIAL DWELLINGS IN A MANNER THAT AVOIDS BOTH ADVERSE IMPACT UPON THE INTERSECTING PUBLIC OR PRIVATE STREET OR ROADWAY FROM EITHER STORMWATER OR EROSION AND PROVIDES REASONABLE ACCESS TO SUCH RESIDENTIAL DWELLINGS FOR ROUTINE OR EMERGENCY ACCESS. FOR REASONS OF TRAFFIC AND PEDESTRIAN SAFETY, BOTH ON AND OFF THE STREET, AS WELL AS TO PROVIDE FOR POSSIBLE FUTURE ROAD WIDENING OR OTHER IMPROVEMENTS, ALL NEW DRIVEWAYS AND SIDEWALK CROSSINGS ENTERING ONTO ANY STREET, WHETHER PRIVATE, SHARED OR PUBLIC, SHALL COMPLY WITH ALL REQUIREMENTS OF THIS CHAPTER AND SHALL BE SUBJECT TO THE APPROVAL OF THE TOWN OF BEEKMAN CODE ENFORCEMENT OFFICER, TOWN OF BEEKMAN HIGHWAY SUPERINTENDENT, DUTCHESS COUNTY DEPARTMENT OF PUBLIC WORKS OR NEW YORK STATE DEPARTMENT OF TRANSPORTATION, WHICHEVER IS APPLICABLE. WHERE SUCH DRIVEWAYS ARE PART OF A USE SUBJECT TO SPECIAL USE PERMIT, SUBDIVISION OR SITE PLAN APPROVAL, THEY SHALL BE SUBJECT TO PLANNING BOARD APPROVAL. THE PLANNING BOARD, CODE ENFORCEMENT OFFICER AND/OR HIGHWAY SUPERINTENDENT MAY SEEK THE OPINION OF THE TOWN OF BEEKMAN FIRE COMMISSIONERS IN REVIEWING AND APPROVING ANY DRIVEWAYS IN EXCESS OF THE STANDARDS LISTED HEREIN.
- NO DRIVEWAY CENTER LINE SHALL INTERSECT A STREET LINE LESS THAN 70 FEET FROM THE INTERSECTION OF ANY TWO STREET LINES.
- SHARED DRIVEWAYS MAY BE PERMITTED BY THE PLANNING BOARD TO SERVE UP TO THREE RESIDENCES, PROVIDED THAT EACH LOT SERVED BY SUCH A DRIVEWAY HAS SUFFICIENT, PHYSICALLY ACCESSIBLE ROAD FRONTAGE TO ALLOW CONSTRUCTION OF A SEPARATE DRIVEWAY FOR EACH RESIDENCE, AND SUBJECT TO THE FOLLOWING REQUIREMENTS:
 - THE SHARED DRIVEWAY SHALL BE PAVED AND MEET THE REQUIREMENTS FOR ALIGNMENT, WIDTH, CROSS SECTION AND DRAINAGE AS DEEMED ACCEPTABLE BY THE PLANNING BOARD.
 - THE SHARED DRIVEWAY SHALL BE INCLUDED IN AN EASEMENT AREA DESCRIBED BY BEARING AND DISTANCE. APPROPRIATE EASEMENT AND MAINTENANCE AGREEMENTS SHALL BE FILED WITH THE DUTCHESS COUNTY CLERK FOR SAID SHARED DRIVEWAYS.
 - THE PLANNING BOARD MAY REQUIRE A BOND OR EQUIVALENT SURETY COVERING THE COST OF CONSTRUCTION FOR SHARED DRIVEWAYS AND APPURTENANCES.
 - PLANS ARE TO BE SUBMITTED DEMONSTRATING WHAT WOULD BE NEEDED TO CONSTRUCT THE ADDITIONAL DRIVEWAYS.
 - IN THE CASE OF RESIDENTIAL UNITS, DRIVEWAYS SHALL EXTEND TO PROVIDE ACCESS TO THE INTERIOR OF THE DWELLING.

- FOR DRIVEWAYS LESS THAN 200 FEET, THE MAXIMUM GRADE FOR ANY NEW DRIVEWAY, OR PORTION THEREOF, ACCESSORY TO A SINGLE-FAMILY DWELLING AND CONNECTING ITS OFF-STREET PARKING AREA TO A STREET SHALL NOT EXCEED 10% AS MEASURED BETWEEN ANY TWO-FOOT CONTOUR INTERVAL.
- FOR DRIVEWAYS IN EXCESS OF 200 FEET, THE MAXIMUM GRADE FOR THE FIRST 200 FEET SHALL NOT EXCEED 10% WITHIN THE REMAINING PORTION OF THE DRIVEWAY. THE PLANNING BOARD MAY APPROVE A GRADE UP TO 15% WITH THE MINIMUM REQUIREMENT THAT A PLAN BE SUBMITTED DEMONSTRATING WHAT WOULD BE NECESSARY TO REDUCE THE GRADE TO 10% THE BOARD SHALL SEEK THE OPINION OF THE HIGHWAY SUPERINTENDENT AND FIRE COMMISSIONERS IN SUCH CASES.
- IF A PORTION OF ANY DRIVEWAY HAS A GRADE THAT EXCEEDS 10%, A PARKING AREA FOR TWO VEHICLES THAT IT IS WHOLLY CONTAINED OUTSIDE OF THE TRAVEL WAY SHALL BE REQUIRED, AT THE DISCRETION OF THE CODE ENFORCEMENT OFFICER AND THE HIGHWAY SUPERINTENDENT, AT THE POINT OF THE EXCESSIVE GRADE OCCURRENCE.
- THE MAXIMUM GRADE FOR NEW DRIVEWAYS, OF ANY LENGTH, ACCESSORY TO USES OTHER THAN SINGLE-FAMILY DWELLINGS AND CONNECTING THE REQUIRED OFF-STREET PARKING AREA TO THE STREET SHALL NOT EXCEED 10%.
- NOTWITHSTANDING THE MAXIMUM PERMITTED GRADES SPECIFIED ABOVE, NO DRIVEWAY SHALL HAVE A GRADE IN EXCESS OF 3% WITHIN 25 FEET OF THE ROADWAY EDGE AND WITHIN 25 FEET OF THE DWELLING.
- ALL DRIVEWAYS SHALL BE CONSTRUCTED TO AS TO BE IN COMPLIANCE WITH THE FOLLOWING REQUIREMENTS:
 - A MINIMUM OF 14 FEET OF UNOBSTRUCTED VERTICAL CLEARANCE.
 - SHALL BE DESIGNED WITH SUFFICIENT BASE TO SUPPORT EMERGENCY VEHICLES.
 - SHALL BE SURFACED TO PROVIDE ALL-WEATHER DRIVING CAPABILITY.
 - ANY DRIVEWAY WHERE SECTIONS OF THE DRIVEWAY HAVE GRADES IN EXCESS OF 4% SHALL BE PAVED OVER ITS ENTIRE LENGTH.
 - SHALL HAVE A MINIMUM DRIVEWAY WIDTH OF 12 FEET AND UNOBSTRUCTED TRAVEL-WAY WIDTH OF 15 FEET.
 - AT THE ROADWAY EDGE, SHALL HAVE AN ASPHALT DRIVEWAY APPROX 15 FEET WIDE BY 10 FEET DEEP THREE-INCH MINIMUM OVER EIGHT INCHES OF WELL-COMPACTED R.O.B. GRAVEL), WITH AN EXTENDED UNOBSTRUCTED TRAVEL-WAY WIDTH ALONG THIS APRON OF 20 FEET.
 - MAY BE REQUIRED TO HAVE A NEGATIVE GRADE NEAR THE ROADWAY TO CONTROL STORM DRAINAGE AS REQUIRED BY THE HIGHWAY SUPERINTENDENT OR TOWN ENGINEER.
 - DRIVEWAY CURVE RADIUS WILL BE DETERMINED AT TIME OF CONSTRUCTION DEPENDENT UPON SITE CONDITIONS.
 - SHALL HAVE AN OPERATING AREA (ASAP) WITHIN 25 FEET OF THE DWELLING OR STRUCTURE WITH A MAXIMUM GRADE OF 5% REQUIRED DRIVEWAY CLEARANCE AND SUFFICIENT BASE TO SUPPORT EMERGENCY VEHICLES.
 - GATES, UTILITY BOXES, DRIVEWAY POSTS, STONE WALLS, RETENTION WALLS, PILARS OR OTHER OBSTRUCTIONS SHALL CONFORM TO THE UNOBSTRUCTED WITH REQUIREMENT AND HAVE A MINIMUM SETBACK FROM THE ROADWAY EDGE OF 25 FEET. SECURITY GATES SHALL BE EQUIPPED WITH AN APPROPRIATE KNOW DEVICE, AS APPROVED BY THE BEEKMAN FIRE DISTRICT.
 - CLEAR VISIBILITY SHALL BE PROVIDED AND MAINTAINED IN BOTH DIRECTIONS AT ALL EXIT POINTS SO THAT THE DRIVER OF AN AUTOMOBILE STOPPED ON THE PLATFORM PORTION OF ANY NEW DRIVEWAY WILL HAVE AN UNOBSTRUCTED VIEW OF THE HIGHWAY FOR A DISTANCE COMMENSURATE WITH THE SPEED AND VOLUME OF TRAFFIC ON SUCH HIGHWAY AND SO THAT THERE IS A SIMILAR VIEW OF THE AUTOMOBILE IN THE DRIVEWAY.

- DRIVEWAYS GREATER THAN 500 FEET IN LENGTH:
 - SHALL HAVE AN EMERGENCY VEHICLE PULL-OFF (EVPD), WITH THE MINIMUM REQUIREMENTS THE AREA MEETS THE REQUIRED DRIVEWAY CLEARANCE AND BASE REQUIREMENTS.
 - DRIVEWAYS EXCEEDING 500 FEET WILL REQUIRE ADDITIONAL EMERGENCY VEHICLE PULL-OFFS AT A MAXIMUM OF EVERY 500 FEET AS MEASURED FROM THE DWELLING.
 - DEPENDENT ON THE NATURE OF THE DRIVEWAY AND TYPE OF STRUCTURES IT SERVES, ADDITIONAL ADAS AND EVPDS MAY BE REQUIRED AT THE TIME OF REVIEW OF CONSTRUCTION.
 - WITH THE PASSAGE OF THIS SUBSECTION, ALL PRESENT DRIVEWAYS SHOULD MINIMALLY COMPLY WITH THE VERTICAL CLEARANCE OF 14 FEET AND, WHERE PRACTICAL, COMPLY WITH THE TRAVEL WIDTH OF 15 FEET. ALL PRESENT GATES AND CHAINS SHALL BE EQUIPPED WITH A KNOW DEVICE AS APPROVED BY THE FIRE DISTRICT.

PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, A CENTER-LINE PROFILE OF THE PROPOSED DRIVEWAY, PREPARED BY A LICENSED SURVEYOR, MAY BE REQUIRED BY THE HIGHWAY SUPERINTENDENT OR CODE ENFORCEMENT OFFICER.

DRIVEWAYS ARE SUBJECT TO ON-SITE INSPECTION AND FINAL DETERMINATION BY THE CODE ENFORCEMENT OFFICER AND THE HIGHWAY SUPERINTENDENT AT THE TIME OF CONSTRUCTION, WITH CONSULTATION PROVIDED BY THE BEEKMAN FIRE DISTRICT, TOWN ENGINEER, AND/OR BUILDING INSPECTOR AS NEEDED. BEFORE THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO), AN AS-BUILT PLOT OF THE DRIVEWAY, SHOWING GRADE PROFILES, PREPARED IN A FORMAT ACCEPTABLE TO THE HIGHWAY SUPERINTENDENT, MUST BE REQUIRED.

OWNER & APPLICANT
JSM UPSTATE PROPERTIES INC
 C.O JOHN MASIMILLO
 208 PLEASANT PLAINS AVE
 STATEN ISLAND NY 10309

OWNER'S CONSENT
 THE UNDERSIGNED OWNER OF THIS PROPERTY HEREOF STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREOF.

OWNER: _____ DATE: _____

SURVEY CERTIFICATION
 I HEREBY CERTIFY THAT THIS BOUNDARY SURVEY WAS PREPARED BY ME AND WAS MADE FROM AN ACTUAL FIELD SURVEY COMPLETED IN JANUARY 11, 2012 TOPOGRAPHICAL SURVEY DATUM AS PER USGS.

ZARECKI & ASSOCIATES, LLC SEAL

TOWN OF BEEKMAN PLANNING BOARD
 APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20____, BY _____
 CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK

USE OF EXISTING FEDERAL WETLANDS AS PERFORMED BY MICHAEL NOWAKI ON WEDNESDAY, OCTOBER 28, 2010. FIELD SURVEY LOCATED ON OCTOBER 31, 2010 AND NOVEMBER 10, 2010 BY ZARECKI AND ASSOCIATES.

AS NOTED: BJS
 DATE: 01-01-17
 CHECKED BY: BJS

RECOMMENDED FOR APPROVAL

DUTCHESS COUNTY DEPARTMENT OF HEALTH
 Poughkeepsie, N.Y.
 THIS IS TO CERTIFY THAT THE PROPOSED ARRANGEMENTS FOR WATER SUPPLY AND SEWAGE DISPOSAL
**RESIDENTIAL SUBDIVISION
 TO BE KNOWN AS
 ALAINA ESTATES
 IN THE TOWN OF BEEKMAN
 WERE APPROVED ON _____**

IN ACCORDANCE WITH PLANS ON FILE IN THE OFFICE OF THE DUTCHESS COUNTY DEPARTMENT OF HEALTH, CONSENT IS HEREBY GIVEN TO THE FILING OF THE MAP ON WHICH THIS ENDORSEMENT APPEARS IN THE OFFICE OF THE COUNTY CLERK OF DUTCHESS COUNTY IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE II TITLE 2 OF THE NEW YORK STATE PUBLIC HEALTH LAW AND ARTICLE 17 TITLE 15 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW, AND ARTICLE II OF THE DUTCHESS COUNTY SANITARY CODE.

SUPERVISING PUBLIC HEALTH ENGINEER

PARCEL INFORMATION:
 1) PARCEL LIES WITHIN THE AQUIFER OVERLAY DISTRICT (A-0). SINGLE FAMILY DETACHED RESIDENTIAL DEVELOPMENT IS A PERMITTED USE WITHIN THE (A-0) DISTRICT) - §155-12D.
 2) THE PROJECT MAINTAINS CERTAIN SLOPES. EXISTING SLOPES ARE DEFINED IN THE TOWN OF BEEKMAN ZONING CODE AS FOLLOWS:
 MODERATELY STEEP - 15% TO 25%
 VERY STEEP - 25% TO 33%
 EXTREMELY STEEP - 33% OR GREATER
 THERE ARE NO EXTREME SLOPES ON THE PROPERTY.
 3) THE PARCEL MAINTAINS WETLANDS AND WATER BODIES AS DEFINED BY CHAPTER 155-52 OF THE TOWN OF BEEKMAN ZONING ORDINANCE. A NYSDEC WETLANDS RESIDES ON THE ADJOINING PARCEL (ACROSS CR-7). A FEDERAL WETLAND RESIDES AT THE SOUTHWEST CORNER OF THE PARCEL. A 100' BUFFER IS PROVIDED AROUND THE NYSDEC WETLAND. A 75' BUFFER IS PROVIDED AROUND THE PERIMETER OF THE FEDERAL WETLAND. A 50' BUFFER IS ALSO PROVIDED FROM THE EDGE OF THE EXISTING UNNAMED (C1) STREAM WHICH BISECTS THE PARCEL.

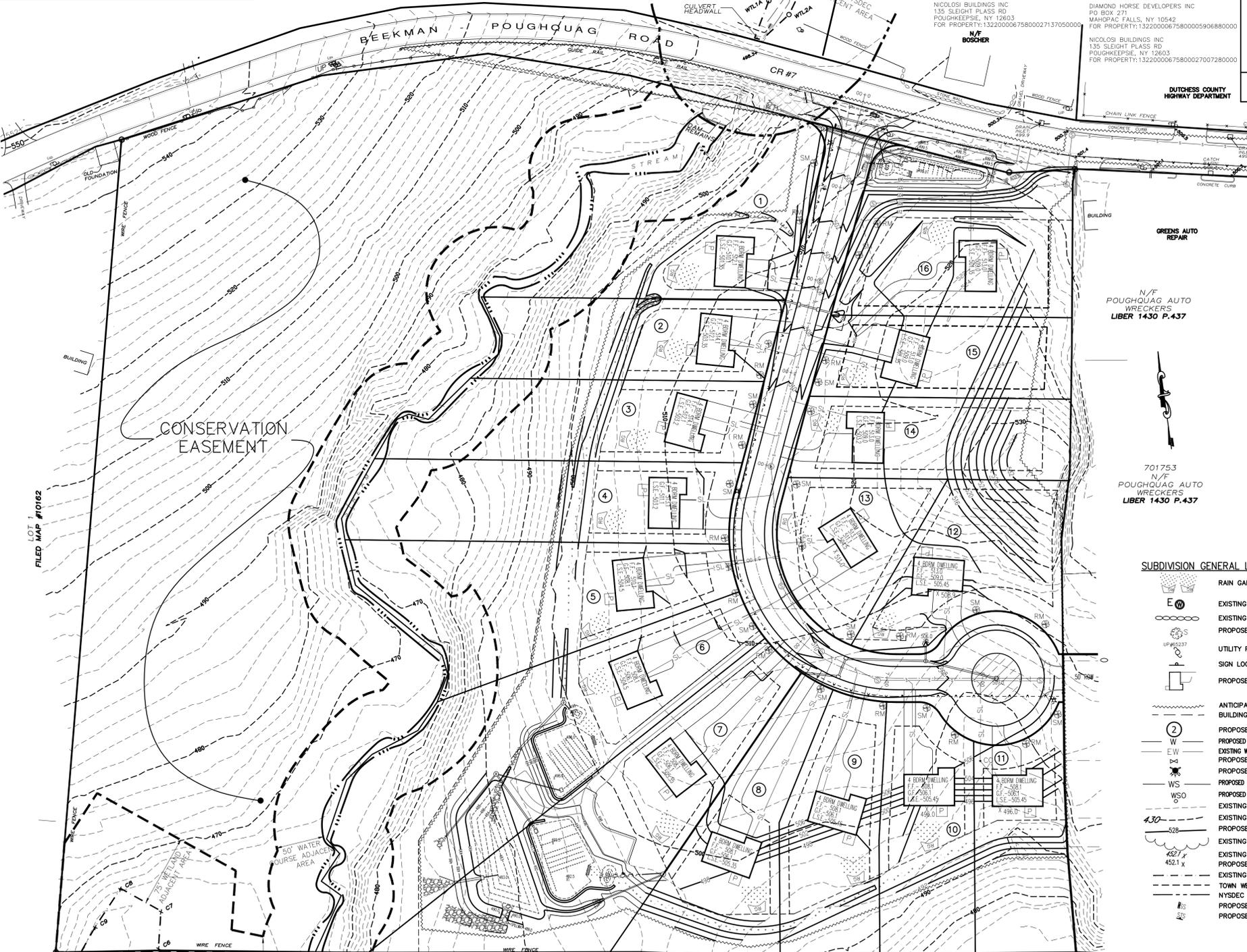
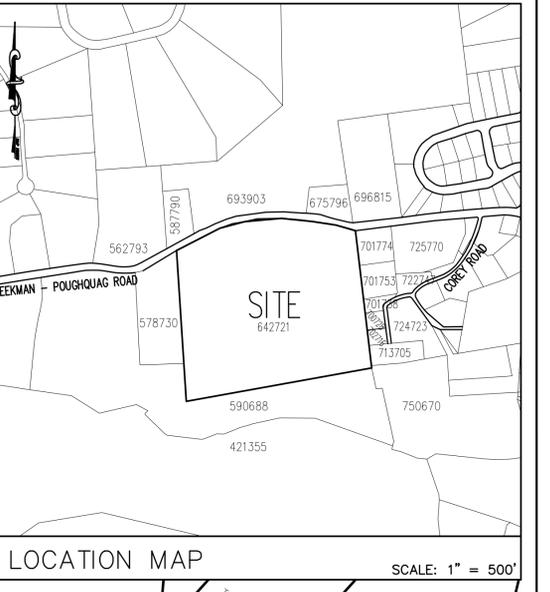
NYSDEC WETLANDS (AS FLAGGED BY HEATHER GIERLOFF FROM NYSDEC) ON SEPTEMBER 28, 2012

ROW AND SIGHT LINE DISTURBANCE WITHIN THE 100' NYSDEC ADJACENT AREA = 0.13 AC., 5,700 S.F. (CROSS HATCH AREA)

PARCEL(S) INFORMATION	
TAX GRID PARCEL NUMBER(S):	132200-6758-00-642721
ZONING DISTRICT:	R-45 (RESIDENTIAL 45,000 SF. MIN.)
TOPO DATUM (REFERENCE):	1985 (U.S.G.S. NAD 1929)
TOTAL AREA	20.82 AC. +/-
# OF PARCELS (PRIOR TO SUBDIVISION):	1
# OF PARCELS (AFTER SUBDIVISION):	16
PROPOSED SEWER	CENTRAL WATER
PROPOSED WATER	CENTRAL SEWER

ADJOINING PARCEL LIST PER DC GIS SYSTEM

- | | |
|--|--|
| KEVIN P. RYAN
244 BEEKMAN-POUGHQUAG RD
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800005787300000 | COUNTY OF DUTCHESS DEPT HWYS
22 MARKET ST
POUGHKEEPSIE, NY 12601
FOR PROPERTY: 132200006758000056968150000 |
| NICOLOSI BUILDINGS INC
135 SLEIGHT PLASS RD
POUGHKEEPSIE, NY 12603
FOR PROPERTY: 1322000067580002724720000 | GREEN'S AUTO REPAIR INC
PO BOX 757
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800027017530000 |
| JSM UPSTATE PROPERTIES INC
208 PLEASANT PLAINS AVE
STATEN ISLAND, NY 10309
FOR PROPERTY: 13220000675800006427210000 | BEEKMAN FIRE DISTRICT
PO BOX 400
POUGHQUAG, NY 12570
FOR PROPERTY: 1322000067580002725770000 |
| BRIAN ECK
11450 CANYON VIEW CIR
CUPERTINO, CA 95014
FOR PROPERTY: 13220000675800027506700000 | ARSENIO PAEZ
289 BEEKMAN POUGHQUAG RD
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800004213550000 |
| FOUR SEASONS DELI & 454 VIOLET AVE
POUGHKEEPSIE, NY 12601
FOR PROPERTY: 13220000675800027017380000 | SUSAN L. KASKEL
5 SUGAR LN
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800002413550000 |
| DALTON FARM HOMEOWNERS
1961 ROUTE 6
CARMEL, NY 10512
FOR PROPERTY: 13220000675800026939030000 | FRANCES RODRIGUEZ
65 TOWN VIEW DR
WAPPINGERS FALLS, NY 12590
FOR PROPERTY: 13220000675800005677990000 |
| KATHERINE E. BUCKLEY
OF COREY RD
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800027227470000 | GREEN'S AUTO REPAIR INC
PO BOX 542
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800027017740000 |
| NICOLOSI BUILDINGS INC
135 SLEIGHT PLASS RD
POUGHKEEPSIE, NY 12603
FOR PROPERTY: 1322000067580002702160000 | CARYN FELLOWS
241 BEEKMAN POUGHQUAG RD
POUGHQUAG, NY 12570
FOR PROPERTY: 13220000675800005627930000 |
| NICOLOSI BUILDINGS INC
135 SLEIGHT PLASS RD
POUGHKEEPSIE, NY 12603
FOR PROPERTY: 13220000675800027137050000 | DIAMOND HORSE DEVELOPERS INC
PO BOX 271
MAHAROD FALLS, NY 10542
FOR PROPERTY: 13220000675800005096880000 |
| | NICOLOSI BUILDINGS INC
135 SLEIGHT PLASS RD
POUGHKEEPSIE, NY 12603
FOR PROPERTY: 13220000675800027007280000 |



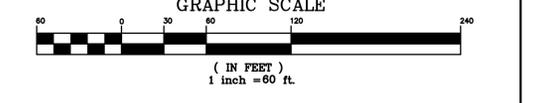
NYSDEC FRESHWATER WETLAND BOUNDARY VALIDATION
 THE FRESHWATER WETLAND BOUNDARY AS REPRESENTED ON THESE PLANS ACCURATELY DEPICTS THE LIMITS OF FRESHWATER WETLAND V3-37 AS DELINEATED BY HEATHER GIERLOFF AUGUST 2012.

Heather Gierloff
 D.E.C. STAFF

DATE: 09/28/2012

BRIAN J. STOKOSKA
 SURVEYOR/ENGINEER

WETLAND BOUNDARY DELINEATION AS VALIDATED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REMAIN VALID FOR TEN (10) YEARS UNLESS EXISTING DEEDS, ACTIVITIES, AREA HYDROLOGY, OR LAND USE PRACTICES CHANGE (E.G. AGRICULTURE TO RESIDENTIAL). AFTER TEN YEARS THE BOUNDARY MUST BE REVALIDATED BY D.E.C. STAFF. REVALIDATION MAY INCLUDE NEW DELINEATION AND SURVEYING. WETLAND BOUNDARY DELINEATION AND SURVEYING SHALL BE PERFORMED BY A LICENSED PROFESSIONAL SURVEYOR OR ENGINEER. ANY PROPOSED CONSTRUCTION, GRADING, FILLING, EXCAVATING, CLEARING OR OTHER REGULATED ACTIVITIES IN THE FRESHWATER WETLAND OF HEATHER GIERLOFF SHALL BE SUBJECT TO A PERMIT FROM THE NYS DEC. A PERMIT FROM THE NYS DEC. DEPARTMENT OF ENVIRONMENTAL CONSERVATION UNDER ARTICLE 24 OF THE ENVIRONMENTAL CONSERVATION LAW (FRESHWATER WETLANDS ACT) PRIOR TO COMMENCEMENT OF WORK.



IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

Mark A. Day, PE
Revised: _____
Page No: 2018.249
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Consulting Engineers
 3 Van Wyck Lane Suite 2
 Wappingers Falls, New York
 (845)-223-3202

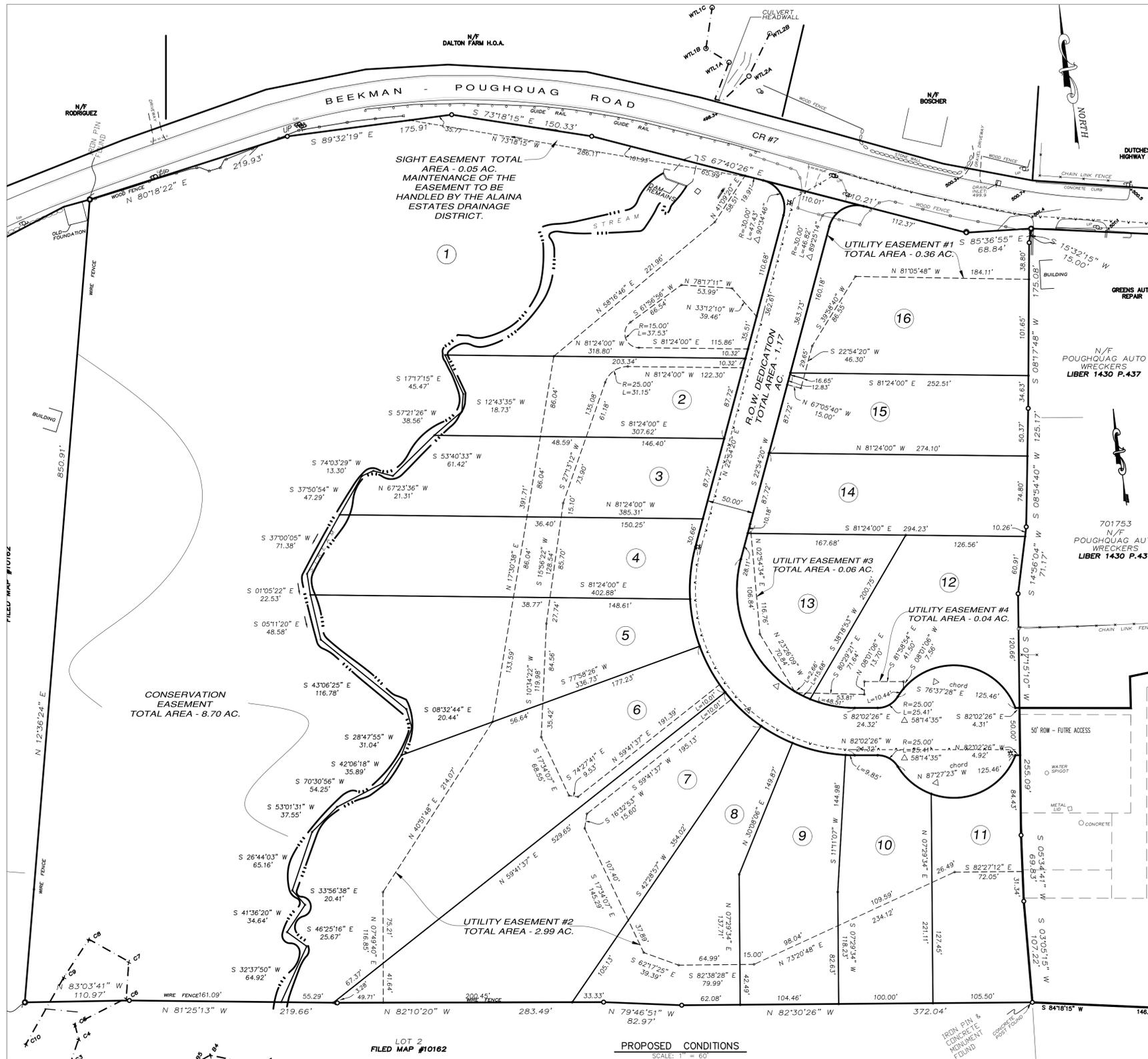
ALAINA ESTATES
 TOWN OF BEEKMAN
 DUTCHESS COUNTY, NEW YORK
SUBDIVISION PLAN

SCALE: AS NOTED	DRAWN BY: BJS	CHECKED BY: BJS	DATE: 01-01-17	1 of 12
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STREET TREE PLANTING SCHEDULE

SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	BALL SIZE	REMARKS
RM	RED MAPLE	ACER RUBRUM	3"	32"	NURSERY GROWN, PLANT IN SPRING OF YEAR
SM	SUGAR MAPLE	ACER SACCHARUM	3"	32"	NURSERY GROWN, PLANT IN SPRING OF YEAR

C=CALIPER



DUTCHESS COUNTY DEPARTMENT OF HEALTH - STANDARD NOTES

1. THE DESIGN, CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THIS PLAN AND GENERALLY ACCEPTED STANDARDS IN EFFECT AT THE TIME OF CONSTRUCTION WHICH INCLUDE:
 - "APPENDIX 75-A, WASTE TREATMENT - INDIVIDUAL HOUSEHOLD SYSTEMS", NEW YORK STATE SANITARY CODE.
 - "WASTE TREATMENT HANDBOOK, INDIVIDUAL HOUSEHOLD SYSTEMS", NEW YORK STATE DEPARTMENT OF HEALTH.
 - "RURAL WATER SUPPLY", NEW YORK STATE DEPARTMENT OF HEALTH.
 - "PLANNING THE SUBDIVISION AS PART OF THE TOTAL ENVIRONMENT", NEW YORK STATE DEPARTMENT OF HEALTH.
 - NEW YORK STATE DEPARTMENT OF HEALTH AND DUTCHESS COUNTY DEPARTMENT OF HEALTH POLICES, PROCEDURES AND STANDARDS.
 - DUTCHESS COUNTY DEPARTMENT OF HEALTH SANITARY CODE, ARTICLE XI AND ARTICLE XIX.
 - DUTCHESS COUNTY DEPARTMENT OF HEALTH APPROVAL LETTER.
2. THIS PLAN IS APPROVED AS MEETING THE APPROPRIATE AND APPLIED TECHNICAL STANDARDS, GUIDELINES, POLICIES AND PROCEDURES FOR ARRANGEMENTS OF SEWAGE DISPOSAL AND TREATMENT AND WATER SUPPLY FACILITIES; AND, AS A CONDITION OF THIS APPROVAL, A CONSTRUCTION INSPECTION BY A REPRESENTATIVE OF THE D.C.D.H. OR PROFESSIONAL ENGINEER SHALL BE CONDUCTED TO DETERMINE THAT CONSTRUCTION AT THE TIME OF INSPECTION WAS COMPLETED IN GENERAL CONFORMANCE WITH THE APPROVED PLANS AND ANY AMENDMENT THEREOF.
3. APPROVAL OF ANY PLANS OR AMENDMENT HERETO SHALL BE VALID FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF APPROVAL. FOLLOWING THE EXPIRATION OF SAID APPROVAL, THE PLANS SHALL BE RE-SUBMITTED TO THE COMMISSIONER OF HEALTH FOR CONSIDERATION FOR RE-APPROVAL. RE-SUBMISSION OR REVISED SUBMISSION OF PLANS AND/OR ASSOCIATED DOCUMENTS SHALL BE SUBJECT TO COMPLIANCE WITH THE TECHNICAL STANDARDS, GUIDELINES, POLICES, AND PROCEDURES IN EFFECT AT THE TIME OF THE RE-SUBMISSION.
4. ALL WELLS AND SEWAGE DISPOSAL SYSTEMS EXISTING OR APPROVED WITHIN 200' OF THE PROPOSED CENTRAL WATER AND SDS ARE SHOWN ON THIS PLAN ALONG WITH ANY OTHER ENVIRONMENTAL HAZARDS IN THE AREA THAT MAY AFFECT THE DESIGN AND FUNCTIONAL ABILITY OF THE SDS AND CENTRAL WATER SYSTEM.
5. ALL SERVICE LINES ON THIS PLAN ARE ACCESSIBLE FOR INSTALLATION AND PLACEMENT.
6. THERE SHALL BE NO FURTHER SUBDIVISION OF ANY PARCEL AS SHOWN ON THIS PLAN WITHOUT THE APPROVAL OF THE TOWN PLANNING BOARD AND THE DUTCHESS COUNTY HEALTH DEPARTMENT. ANY MODIFICATIONS OR DEVIATIONS FROM THIS PLAN MUST BE APPROVED BY THE TOWN PLANNING BOARD AND/OR THE DUTCHESS COUNTY HEALTH DEPARTMENT.
7. THE APPROVED PLANS AND ANY AMENDMENTS THEREOF, SHALL BE FILED WITHIN ONE (ONE) YEAR AFTER THE APPROVAL THEREOF, IN THE OFFICE OF THE CLERK OF THE COUNTY OF DUTCHESS AND THAT A COPY OF EACH APPROVED PLAN AND APPROVED AMENDMENT THEREOF, CERTIFIED BY THE CLERK OF THE COUNTY OF DUTCHESS AS HAVING BEEN FILED, INDICATING THE DATE OF SUCH FILING, SHALL BE FILED BY THE OWNER OF THE PROPERTY IN THE OFFICE OF THIS DEPARTMENT WITHIN 30 DAYS OF THE FILING IN THE OFFICE OF THE CLERK OF THE COUNTY OF DUTCHESS.
8. THE PURCHASER OF A LOT SHALL BE FURNISHED WITH A LEGIBLE REPRODUCTION OF THE APPROVED PLAN SHOWING THE PROPOSED ARRANGEMENTS FOR WATER SUPPLY AND SEWAGE DISPOSAL FACILITIES IN ACCORDANCE WITH THE PLANS APPROVED BY THE DUTCHESS COUNTY HEALTH DEPARTMENT.
9. THE DUTCHESS COUNTY DEPARTMENT OF HEALTH SHALL BE NOTIFIED OF THE INSTALLATION OF THE SEWAGE DISPOSAL SYSTEMS PRIOR TO COVERING OF THE TRENCHES, IN ORDER THAT AN INSPECTION CAN BE MADE. AN INSPECTION SHALL ALSO BE REQUIRED OF EACH AND EVERY LOT AS NOTED ON THE APPROVED PLANS RELATIVE TO THE LOCATION OF THE SEWAGE DISPOSAL SYSTEM AND THE WATER SUPPLY SYSTEM PRIOR TO EXCAVATION AND CONSTRUCTION.
10. THE EXISTING SEWAGE DISPOSAL SYSTEM(S) AND/OR EXISTING WATER SUPPLY(ES) (IF ANY) AS SHOWN ON THE APPROVED PLAN WERE INSTALLED PRIOR TO THE APPROVAL DATE FROM THE DUTCHESS COUNTY DEPARTMENT OF HEALTH.
11. THIS APPROVAL SHALL BE VALID FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF THE APPROVAL OF THE PLANS AS SHOWN ON THIS CERTIFICATE. REQUESTS FOR EXTENSIONS PAST THIS PERIOD ARE TO BE MADE IN WRITING TO THE DEPARTMENT OF HEALTH AT LEAST SIX (6) MONTHS PRIOR TO EXPIRATION.
12. SEWAGE DISPOSAL SYSTEMS ARE TO BE STAKED OUT IN THE FIELD PRIOR TO EXCAVATION.
13. NO CELLAR, ROOF OR FOOTING DRAINS SHALL BE DISCHARGED INTO THE SEWAGE DISPOSAL SYSTEM.
14. ANY MODIFICATIONS OR DEVIATIONS FROM THIS PLAN MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO THE CONSTRUCTION OF THE SDS.
15. NO FOOTING OR ROOF DRAINS SHALL BE DISCHARGED INTO THE SEWAGE TREATMENT SYSTEM OR WITHIN 25 FEET OF ANY WELL.
16. THERE SHALL BE NO VEHICULAR TRAFFIC OVER THE SEWAGE DISPOSAL SYSTEM PRIOR TO CONSTRUCTION, THE AREA OF THE SYSTEM SHALL BE STAKED OUT AND FENCED OFF.
17. SEWAGE DISPOSAL SYSTEMS SHALL NOT BE INSTALLED IN WET OR FROZEN SOIL.
18. ALL REQUIRED EROSION & SEDIMENT CONTROL AND STORM WATER POLLUTION PREVENTION WATER QUALITY & QUANTITY CONTROL STRUCTURES, PERMANENT AND TEMPORARY, ARE SHOWN ON THE PLANS.
19. THE D.C.D.H. SHALL BE NOTIFIED PRIOR TO THE BACKFILLING OF ANY COMPLETED SDS SO THAT A FINAL INSPECTION MAY BE PERFORMED.
20. THE D.C.D.H. SHALL BE NOTIFIED SIXTY DAYS PRIOR TO ANY CHANGE IN USE, USE CHANGES MAY REQUIRE REAPPROVAL BY THE D.C.D.H.

TOWN OF BEEKMAN NOTES

1. A BUILDING PERMIT WILL NOT BE ISSUED UNTIL A PLOT PLAN SHOWING SATISFACTORY ARRANGEMENTS FOR SOIL EROSION AND SILTATION CONTROL IS SUBMITTED AND ACCEPTED BY THE BUILDING INSPECTOR AND SUCH ARRANGEMENTS ARE IMPLEMENTED TO THE SATISFACTION OF THE TOWN.
2. ALL SINGLE ACCESS DRIVEWAYS ARE TO BE A MINIMUM 12' WIDE.
3. ALL DRIVEWAYS MUST BE PAVED.
4. THE TOWN OF BEEKMAN WILL NOT ACCEPT OWNERSHIP OF THE ROAD NOR ANY EASEMENT TO ANY DRAINAGE FACILITIES OUTSIDE THE TOWN RIGHT OF WAY UNTIL AS BUILT PLANS PREPARED BY A LICENSED LAND SURVEYOR AND WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE FROM A PROFESSIONAL ENGINEER HAVE BEEN PROVIDED TO THE TOWN OF BEEKMAN. NOTE THE RESPONSIBILITY FOR THE MAINTENANCE OF EACH STORMWATER FACILITY OUTSIDE OF THE TOWN OF BEEKMAN RIGHT OF WAY RESTS WITH THE LANDOWNER AND NOT THE TOWN OF BEEKMAN. EACH STORMWATER FACILITY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF SAID STORMWATER FACILITY AND ALL ASSOCIATED DRAINAGE STRUCTURES ON SAID FACILITY OWNERS PROPERTY IN ACCORDANCE WITH THE MAINTENANCE AGREEMENT APPROVED BY THE TOWN OF BEEKMAN TOWN BOARD PER 155-79 OF THE TOWN OF BEEKMAN CODE.
5. ROAD CONSTRUCTION NOTE: DURING THE COURSE OF CONSTRUCTION, AN ANTI TRACKING DEVICE SHALL BE UTILIZED UNTIL SUCH TIME THAT THE ROAD IS SATISFACTORY STABILIZED.
6. FOOTING AND LEADER DRAINS ARE TO BE TIED DIRECTLY TO THE DRAINAGE INFRASTRUCTURE WHEN PRACTICALLY DICTATES. THIS EFFORT SHALL BE COORDINATED WITH THE TOWN HIGHWAY SUPERINTENDENT AND/OR TOWN ENGINEER.
7. THERE SHALL BE NO FURTHER SUBDIVISION OF ANY LOTS WITHOUT THE APPROVAL OF THE TOWN OF BEEKMAN PLANNING BOARD.
8. THE STORMWATER MANAGEMENT REPORT IS AN INTEGRAL PART OF THE PROJECT APPROVAL.
9. PLANS PREPARED BY M. GILLESPIE & ASSOCIATES, CONSULTING ENGINEERING, P.L.L.C.
10. ANY DRIVEWAYS GREATER THAN 100 FEET MUST BE 12 FEET WIDE OR HAVE TWENTY-FOOT LONG FILL-OFFS EVERY 100 FEET.
11. ALL STREET TREES TO BE PLANTED OUTSIDE OF TOWN RIGHT OF WAY AT A 75' ON CENTER SPACING. EACH LOT SHALL HAVE AT LEAST 2 STREET TREES.

STANDARD NOTES FOR WATER SYSTEMS

THE DESIGN, CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THIS PLAN AND GENERALLY ACCEPTED STANDARDS IN EFFECT AT THE TIME OF CONSTRUCTION WHICH INCLUDE:

- "RECOMMENDED STANDARDS FOR WATER WORKS (TEN STATES)", "RURAL WATER SUPPLY", NEW YORK STATE DEPARTMENT OF HEALTH.
- "NEW YORK STATE DEPARTMENT OF HEALTH AND DUTCHESS COUNTY DEPARTMENT OF HEALTH POLICES, PROCEDURES AND STANDARDS."
- DUTCHESS COUNTY DEPARTMENT OF HEALTH SANITARY CODE, ARTICLE XI AND ARTICLE V.
- DUTCHESS COUNTY DEPARTMENT OF HEALTH APPROVAL LETTER.

THIS PLAN IS APPROVED AS MEETING THE APPROPRIATE AND APPLIED TECHNICAL STANDARDS, GUIDELINES, POLICES AND PROCEDURES FOR ARRANGEMENTS OF SEWAGE DISPOSAL AND TREATMENT AND WATER SUPPLY FACILITIES.

UPON COMPLETION OF THE FACILITIES, THE FINISHED WORKS SHALL BE INSPECTED, TESTED AND CERTIFIED COMPLETE TO THE DUTCHESS COUNTY HEALTH DEPARTMENT BY THE NEW YORK STATE LICENSED PROFESSIONAL ENGINEER SUPERVISING CONSTRUCTION NO PART OF THE FACILITIES SHALL BE PLACED INTO SERVICE UNTIL ACCEPTED BY THE DUTCHESS COUNTY HEALTH DEPARTMENT.

APPROVAL OF ANY PLANS OR AMENDMENT HERETO SHALL BE VALID FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF APPROVAL. FOLLOWING THE EXPIRATION OF SAID APPROVAL, THE PLANS SHALL BE RE-SUBMITTED TO THE COMMISSIONER OF HEALTH FOR CONSIDERATION FOR RE-APPROVAL. RE-SUBMISSION OR REVISED SUBMISSION OF PLANS AND/OR ASSOCIATED DOCUMENTS SHALL BE SUBJECT TO COMPLIANCE WITH THE TECHNICAL STANDARDS, GUIDELINES, POLICES, & PROCEDURES IN EFFECT AT THE TIME OF THE RE-SUBMISSION.

ADDITIONAL NOTE FOR WATER DISTRIBUTION SYSTEM

ALL SERVICE LINES ARE TO BE OCCUPIED AND THE RESPONSIBILITY OF THE HOMEOWNER UP TO THE WATER SHUTOFF VALVE. THE WATER COMPANY SHALL BE RESPONSIBLE FOR ALL VALVES AND PIPES WHICH ARE NOT ON THE HOMEOWNER'S PROPERTY.

ADDITIONAL NOTES FOR RESIDENTIAL PROJECTS WITH CENTRAL WATER UTILITIES

NO BUILDINGS ARE TO BE OCCUPIED AND THE NEW WATER SYSTEM SHALL NOT BE PLACED INTO SERVICE UNTIL A "COMPLETED WORKS APPROVAL" IS ISSUED UNDER SECTION 5-1.22(4) OF PART 5 OF THE NEW YORK STATE SANITARY CODE (10NYCRR5).

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

OWNER & APPLICANT
JSM UPSTATE PROPERTIES INC
 C.O JOHN MASIMILLO
 208 PLEASANT PLAINS AVE
 STATEN ISLAND NY 10309

OWNER'S CONSENT
 THE UNDERSIGNED OWNER OF THIS PROPERTY HEREOF STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREOF.

TOWN OF BEEKMAN PLANNING BOARD
 APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.
 SIGNED THIS _____ DAY OF _____, 20____, BY _____
 CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK

Mark A. Day, PE
 OCTOBER 1, 2018
 2018.249
 License No. 069646

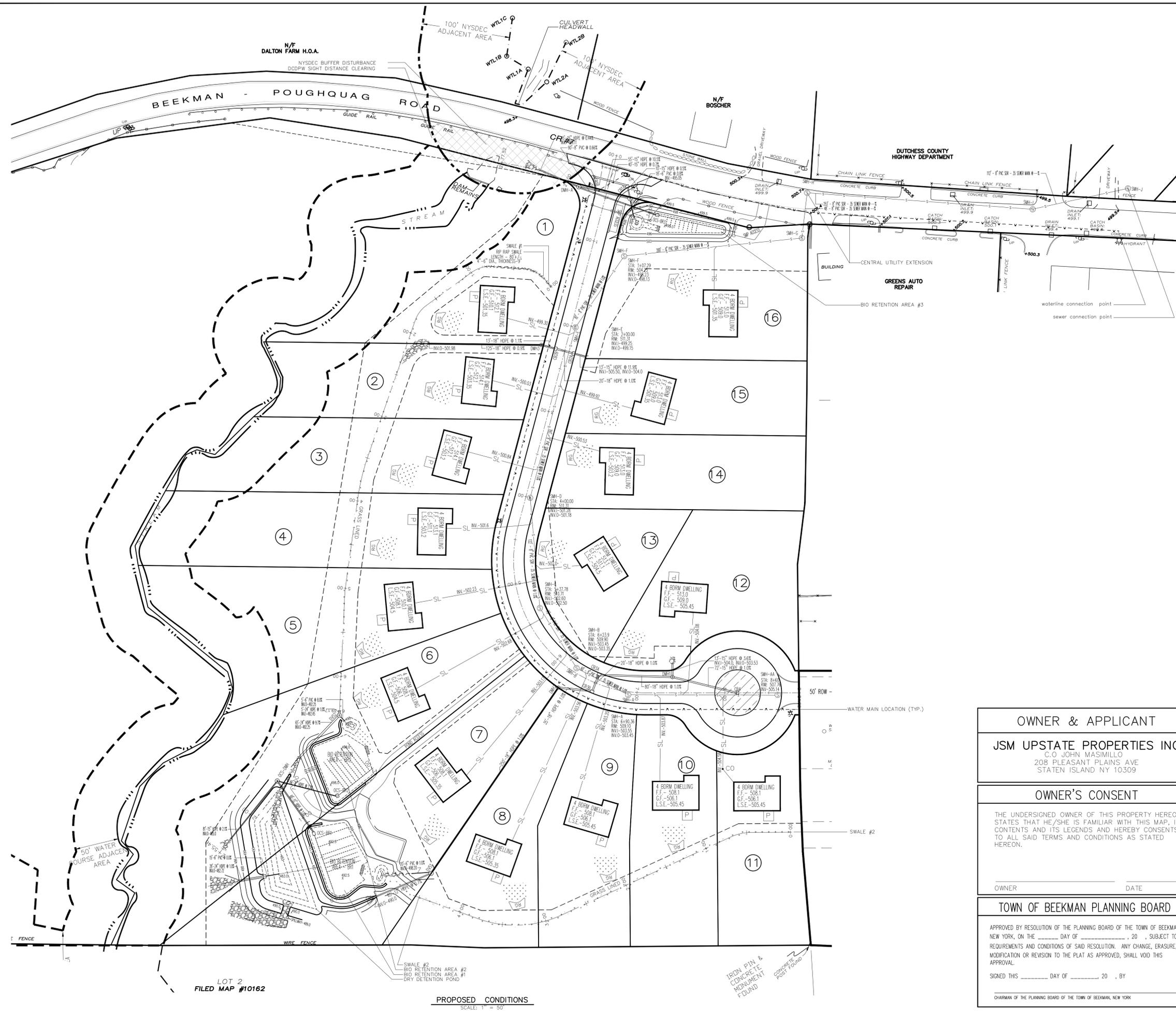
M.A. DAY Engineering, PC
Consulting Engineers
 3 Van Wyck
 Lane Suite 2
 Wappingers Falls, New York
 (845)-223-3202

ALAINA ESTATES
 TOWN OF BEEKMAN
 DUTCHESS COUNTY, NEW YORK
SUBDIVISION PLAT
 AS NOTED
 BJS
 01-01-17
 2 of 12

SURVEY CERTIFICATION
 I HEREBY CERTIFY THAT THIS BOUNDARY SURVEY WAS PREPARED BY ME AND WAS MADE FROM AN ACTUAL FIELD SURVEY COMPLETED IN JANUARY 11, 2012 TOPOGRAPHICAL SURVEY DATUM AS PER USGS.
 ZARECKI & ASSOCIATES, LLC
 SEAL

BULK REQUIREMENTS	MIN. REQUIRED	LOT #1	LOT #2	LOT #3	LOT #4	LOT #5	LOT #6	LOT #7	LOT #8	LOT #9	LOT #10	LOT #11	LOT #12	LOT #13	LOT #14	LOT #15	LOT #16
MINIMUM LOT AREA	45,000 SF	379,176	25,397	29,932	33,754	41,157	65,637	50,556	27,422	25,182	24,436	22,480	27,258	19,680	24,154	22,381	37,468
MINIMUM STREET FRONTAGE	100'	232'	450'	101'	104'	122'	158'	160'	101'	206'	410'	165'	370'	630'	109'	156'	202'
MIN. WIDTH	150'	193'	182'	202'	155'	177'	214'	171'	186'	289'	357'	158'	258'	154'	151'	153'	205'
MINIMUM FRONT YARD (FROM COUNTY/STATE HIGHWAY)	50'	64.4'	60'	123'	122'	71'	53'	54'	132'	206'	53'	63'	55'	67'	88'	54'	61'
MINIMUM REAR YARD	35'	138.1'	132'	43'	30'	48'	26'	26'	22'	47'	90'	149'	50'	32'	37'	43'	29'
MINIMUM SIDE YARD	20'	25.3'	64'	85'	189'	128'	102'	181'	145'	80'	40'	53'	113'	314'	258'	226'	177'
MAXIMUM BUILDING HEIGHT	2 1/2 STORES/35'																
MAXIMUM BUILDING COVERAGE (% LOT AREA)	10%	0.4	7.1	6.0	5.0	4.3	2.7	3.5	6.5	7.1	7.3	8.0	6.0	9.1	7.4	8.0	4.8
MAX. IMPERVIOUS & BLDG. COVERAGE (% LOT AREA)	15%	0.8	11.8	10.7	9.0	8.7	6.0	7.9	14.3	14.4	13.9	13.3	10.2	14.4	13.6	14.5	10.6

* THE DEVELOPMENT ACTION HAS BEEN AS A CONSERVATION SUBDIVISION WITH REDUCED SETBACKS.



LOT 2
FILED MAP #10162

PROPOSED CONDITIONS
SCALE: 1" = 50'

OWNER & APPLICANT
JSM UPSTATE PROPERTIES INC
C/O JOHN MASIMILLO
208 PLEASANT PLAINS AVE
STATEN ISLAND NY 10309

OWNER'S CONSENT
THE UNDERSIGNED OWNER OF THIS PROPERTY HEREON STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.
OWNER _____ DATE _____

TOWN OF BEEKMAN PLANNING BOARD
APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.
SIGNED THIS _____ DAY OF _____, 20____, BY _____
CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

Mark A. Day, PE	
Revision	OCTOBER 1, 2018
Project No.	2018:249
License No.	069646

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Consulting Engineers
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

ALAINA ESTATES		
TOWN OF BEEKMAN DUTCHESS COUNTY, NEW YORK		
50 SCALE PLAN		
SCALE	AS NOTED	DRAWN BY
DATE	01-01-17	BJS
DESIGNED BY	BJS	DRAWING NO.
		3 of 12

DISTURBED AREA SOIL RESTORATION REQUIREMENTS

Type of Soil Disturbance	Soil Restoration Requirement	Comments/Examples
No soil disturbance	Restoration not permitted	Preservation of Natural Features
Minimal soil disturbance	Restoration not required	Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	ISO A-AB ISO C-AD Apply 6 inches of topsoil ISO A-AB ISO C-AD	Protect area from any ongoing construction activities
Areas of cut or fill	Apply full Soil Restoration (i.e. topsoil and compost)	Apply full Soil Restoration**
Heavy traffic areas on site (especially in areas 5-25 feet around buildings but not within 2 feet perimeter around foundation walls)	Apply full Soil Restoration (i.e. topsoil and compost)	Keep construction equipment from crossing these areas. To protect newly installed practices from any ongoing construction activities, a single phase operation fence area.
Areas where Erosion and Sedimentation practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.	Keep construction equipment from crossing these areas. To protect newly installed practices from any ongoing construction activities, a single phase operation fence area.
Redevelopment projects	Soil Restoration is required on redevelopment projects. In areas where existing impervious area will be converted to pervious area.	Soil Restoration is required on redevelopment projects. In areas where existing impervious area will be converted to pervious area.



Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.

Maintenance

A simple maintenance agreement should identify where Soil Restoration is applied, where newly restored areas are to be cleared, who the responsible parties are to ensure that routine vegetation improvements are made (i.e., thinning, invasive plant removal, etc.). Soil compost amendments within a filter strip or grass channel should be located in public right of way, or within a dedicated stormwater or drainage easement.

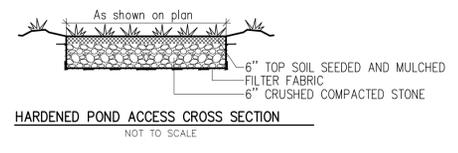
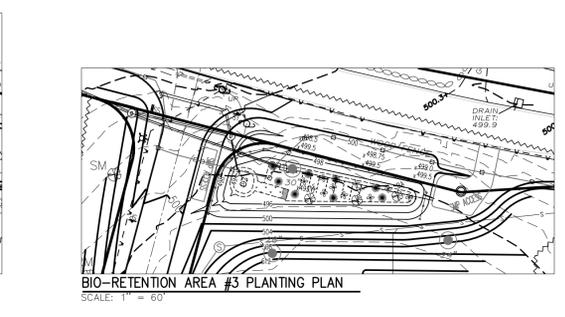
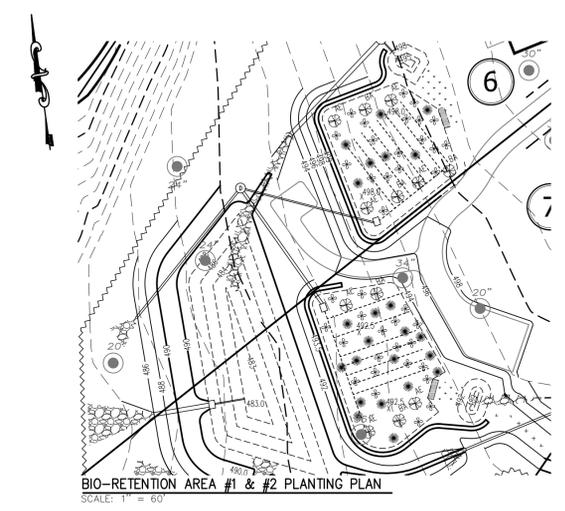
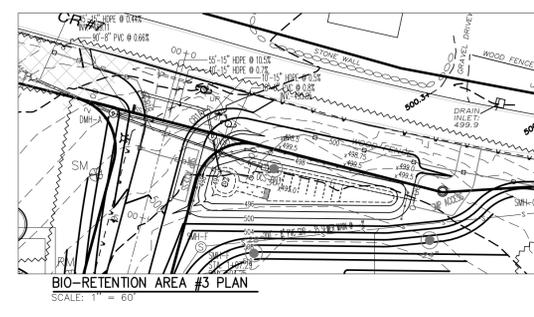
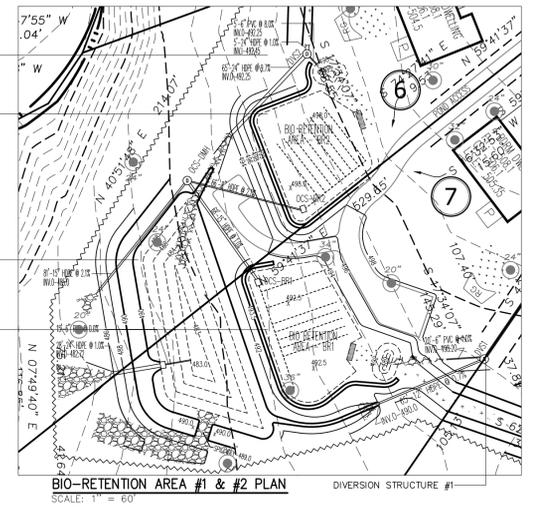
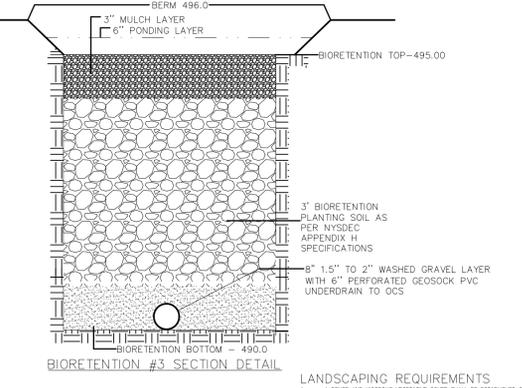
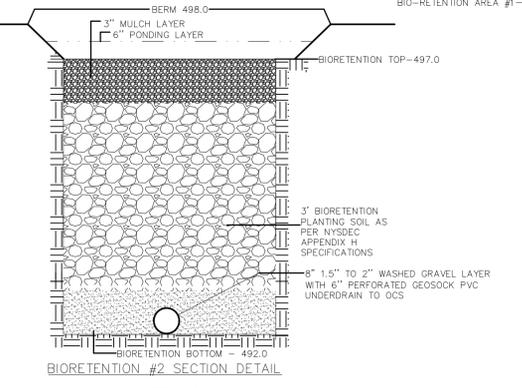
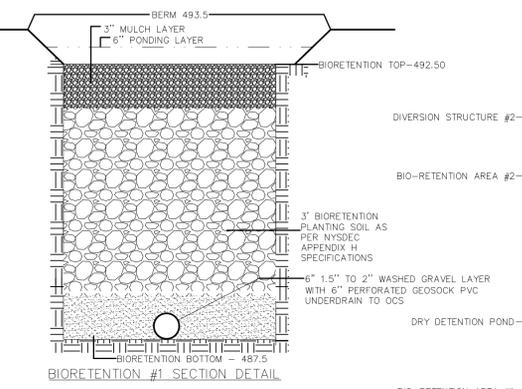
First year maintenance operations include:

- Initial inspections for the first six months (once after each storm greater than half-inch)
- Water every three days for first month, and then provide a half inch of water per week during first year. Irrigation plan may be adjusted according to the rain event.
- Fertilization may be needed in the fall after the first growing season to increase plant vigor

Ongoing Maintenance:

- Two points help ensure lasting results of decompaction:
 - Planting the appropriate ground cover with deep roots to maintain the soil structure
 - Keeping the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths. (Sometimes it may be necessary to de-thatch the turf every few years)

*Aeration includes the use of machines such as tractor-drawn implements with coirnet making a narrow slit in the soil, and/or with many applications of aerators in the soil, or pumps which function like a mini-subsoiler.
** For "Deep Tilling and De-compaction, DEC 2008"



SWALE NOTES:

VEGETATIVE REQUIREMENTS

- STRIP VEGETATION, SOIL AND DEBRIS FROM SWALE BY HAND WHERE POSSIBLE
- AMEND SOIL AS NEEDED WITH FERTILIZER AND LIME
- PROVIDE 4 INCHES OF TOPSOIL
- REMOVE ALL STONES AND DEBRIS THAT MAY HINDER FLOW AND MAINTENANCE
- APPLY RECOMMENDED SEED MIXES (OR SOD) PER TABLE 5.9
- ROLL OR CULTI-PACK SEEDS AND MULCH SEED BED. ANCHOR MULCHING AS NEEDED.
- WATER AS NEEDED

MIXTURES	TABLE 5.9 RATE PER ACRE POUNDS	RATE PER 1,000 SQUARE FEET (POUNDS)
A. PERENNIAL RYEGRASS TALL FESCUE OR SMOOTH BROMEGRASS RED TOP	30 20 2	0.68 0.45 0.05
B. KENTUCKY BLUEGRASS CREEPING RED FESCUE PERENNIAL RYEGRASS	25 20 10	0.60 0.50 0.20

MAINTENANCE REQUIREMENTS

- FERTILIZE AND LIME AS NEEDED TO MAINTAIN DENSE VEGETATION.
- MOW AS REQUIRED DURING THE GROWING SEASON TO MAINTAIN GRASS HEIGHTS AT 4 INCHES TO 6 INCHES.
- REMOVE ANY SEDIMENT OR DEBRIS BUILDUP BY HAND IF POSSIBLE IN THE BOTTOM OF THE CHANNEL WHEN THE DEPTH REACHES 2 INCHES.
- INSPECT FOR POOLS OF STANDING WATER. REGRADE TO RESTORE DESIGN GRADE AND REVEGETATE.
- REPAIR RILLS IN CHANNEL BOTTOM WITH COMPACTED TOPSOIL, ANCHORED WITH MESH OR FILTER FABRIC, SEED AND MULCH.
- REMOVE ANY SEDIMENT OR DEBRIS BUILDUP BY HAND IF POSSIBLE IN THE BOTTOM OF THE CHANNEL WHEN THE DEPTH REACHES 2 INCHES.
- INSPECT FOR POOLS OF STANDING WATER. REGRADE TO RESTORE DESIGN GRADE AND REVEGETATE.
- REPAIR RILLS IN CHANNEL BOTTOM WITH COMPACTED TOPSOIL, ANCHORED WITH MESH OR FILTER FABRIC, SEED AND MULCH.
- USE OF HEAVY EQUIPMENT FOR MOWING AND REMOVING PLANTS/DEBRIS SHOULD BE AVOIDED TO MINIMIZE SOIL COMPACTION. DISTURBED AREAS SHOULD BE STABILIZED WITH SEED AND MULCH, OR REVETMENT, AS NECESSARY.

NYSDEC STORMWATER DESIGN MANUAL APPENDIX H.2 BIORETENTION PLANTING SOIL BED CHARACTERISTICS

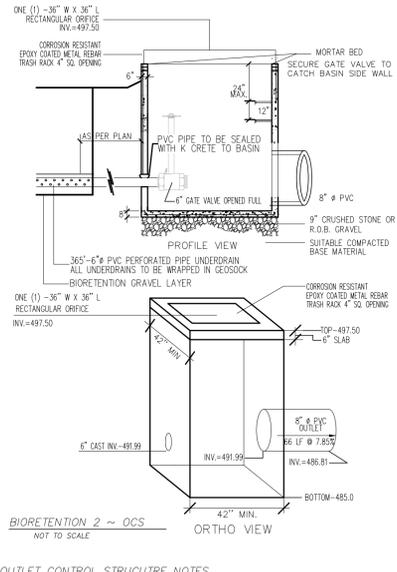
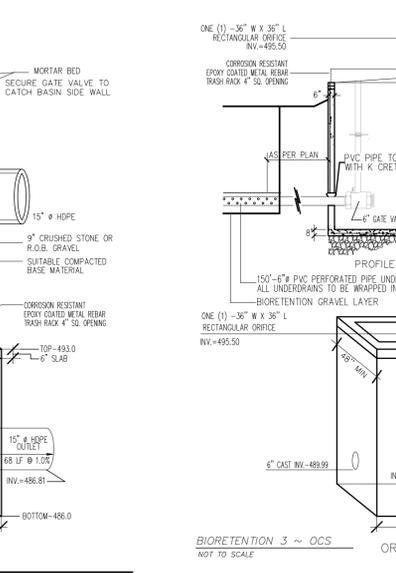
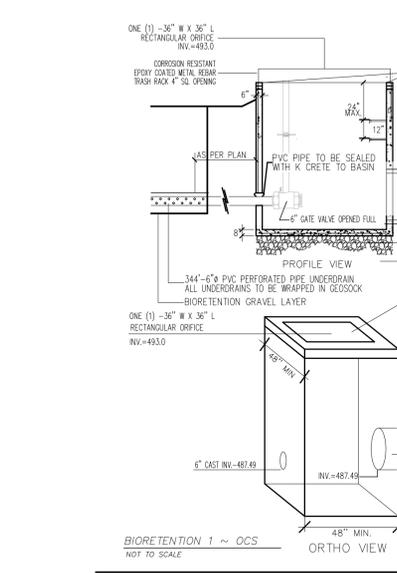
THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ADSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, THE SOILS MUST BALANCE SOIL CHEMISTRY AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME. SOILS SHOULD FALL WITHIN THE SM, OR ML CLASSIFICATIONS OF THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS, PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18", LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE H.2.

MULCH LAYER

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOID SURFACE SEALING WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICRO-ENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINER SEDIMENTS WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRETREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE, SHREDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (SHROUDED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.



LANDSCAPING REQUIREMENTS

- A DENSE AND NOXIOUS VEGETATIVE COVER SHALL BE ESTABLISHED OVER THE CONTRIBUTING PERVIOUS DRAINAGE AREAS BEFORE RUNOFF CAN BE ACCEPTED INTO THE FACILITY.

MAINTENANCE REQUIREMENTS

- A LEGALLY BINDING AND ENFORCEABLE MAINTENANCE AGREEMENT SHALL BE EXECUTED BETWEEN THE FACILITY OWNER AND THE LOCAL REVIEW AUTHORITY TO ENSURE THE FOLLOWING:
 - SEDIMENT SHALL BE CLEANED OUT OF THE SEDIMENTATION CHAMBER WHEN IT ACCUMULATES TO A DEPTH OF MORE THAN SIX INCHES. VEGETATION WITHIN THE SEDIMENTATION CHAMBER SHALL BE LIMITED TO A HEIGHT OF 18 INCHES. THE SEDIMENT CHAMBER OUTLET DEVICES SHALL BE CLEANED/REPAIRED WHEN DRAINDOWN TIMES EXCEED 36 HOURS. TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.
 - SEDIMENT SHALL BE REMOVED FROM THE FILTER BED WHEN THE ACCUMULATION EXCEEDS ONE INCH. WHEN THE FILTERING CAPACITY OF THE FILTER CHAMBERS SUBSTANTIALLY (I.E., WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 48 HOURS), THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH MATERIAL. THE REMOVED SEDIMENTS SHALL BE DISPOSED IN AN ACCEPTABLE MANNER (I.E., LANDFILL).
 - A STONE DROP (PEA GRAVEL BARRIAGE) OF AT LEAST SIX INCHES SHALL BE PROVIDED AT THE MEET OF BIORETENTION FACILITIES. AREAS DEVOID OF MULCH SHALL BE RE-MULCHED ON AN ANNUAL BASIS. DEAD OR DISEASED PLANT MATERIAL SHALL BE REPLACED.
 - INVESTIGATE PERIODIC MULCHING FREQUENCY - ANNUAL MULCHING IS REQUIRED. REMOVAL AND REPLACEMENT OF DEAD AND DISEASED VEGETATION. TREATMENT OF DISEASED TREES. WATERING SCHEDULE AT PER INITIAL INSTALLATION ONCE PER DAY FOR 14 DAYS IS REQUIRED. REPAIR AND REPLACEMENT OF STAKING AND WIRES.
 - MINORITY - A 2 YEAR WARRANTY PERIOD IS REQUIRED AFTER PLANTING HAS BEEN COMPLETED TO THE SATISFACTION OF THE TOWN ENGINEER. AN ISS SURVIVAL RATE IS REQUIRED. THE PLANTS SHALL BE IN A HEALTHY CONDITION AT THE END OF THE WARRANTY PERIOD.

Table H.2 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0%
Magnesium	35 lbs. per acre, minimum
Phosphorus (P2O5)	75 lbs. per acre, minimum
Potassium (K2O)	85 lbs. per acre, minimum
Soluble salts	< 400 ppm
Clay	10 to 25%
Silt	30 to 55%
Sand	35 to 60%

BIORETENTION PLANTING SCHEDULE

SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE BALL SIZE OR CONTAINER	REMARKS
AE	AMERICAN ELM	ULMUS AMERICANA	2" C 32"	NURSERY GROWN, PLANT IN SPRING OF YEAR
BA	BLACK ASH	FRAXINUS NIGRA	2" C 32"	NURSERY GROWN, PLANT IN SPRING OF YEAR
	BUTTONBUSH	CEPAHLANTHUS OCCIDENTALIS	24" CONTAINER	NURSERY GROWN, PLANT IN SPRING OF YEAR
	ELDERBERRY	SAMBUCUS CANADENSIS	1 GALLON CONTAINER	NURSERY GROWN, PLANT IN SPRING OF YEAR
	Speckled Alder	ALNUS RUGOSA	24" CONTAINER	NURSERY GROWN, PLANT IN SPRING OF YEAR

OUTLET CONTROL STRUCTURE NOTES

CONSTRUCTION NOTES

- LADDER RUNGS TO CONFORM TO NYSDEC SPEC. 725-02.01.
- ALL PIPES SHALL BE FIRMLY PARALLEL IN PLACE, BOTH INSIDE & OUTSIDE.
- BASE & RISER SECTIONS SHALL BE PRECAST & MONOLITHICALLY POURED.
- INSIDE DIMENSIONS SHALL REMAIN CONSTANT FROM TOP TO BOTTOM AND SHALL MATCH THE FRAME OPENING OF THE GRATE.
- SHALL CONFORM TO ASTM C-478 SPECIFICATION CURRENT EDITION AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
- PROVIDE PROPER LIP AND/OR ANCHORING IN CASES OF HIGH GROUND WATER TO PREVENT FLOTTATION.
- TRASH RACK TO HAVE A MIN. 4" SQUARE OPENING. BARS TO BE EPOXY COATED AND CORROSION RESISTANT.
- PVC INLETS SHALL BE FITTED WITH A DOWN TURNED ELBOW WITH A SCREEN.
- ALL GATE VALVES PROVIDED BY AGRI-DRAIN OR EQUIVALENT.
- ALL TRASH RACKS SHALL BE HINGED TO HAVE THE ABILITY TO BE OPENED.
- ALL GATE VALVES TO BE ACCESSIBLE FROM TOP OF DRAINAGE STRUCTURE.

OWNER & APPLICANT

JSM UPSTATE PROPERTIES INC
C.O JOHN MASIMILLO
208 PLEASANT PLAINS AVE
STATEN ISLAND NY 10309

OWNER'S CONSENT

THE UNDERSIGNED OWNER OF THIS PROPERTY HEREOF STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREOF.

OWNER _____ DATE _____

TOWN OF BEEKMAN PLANNING BOARD

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20____, BY _____

CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK

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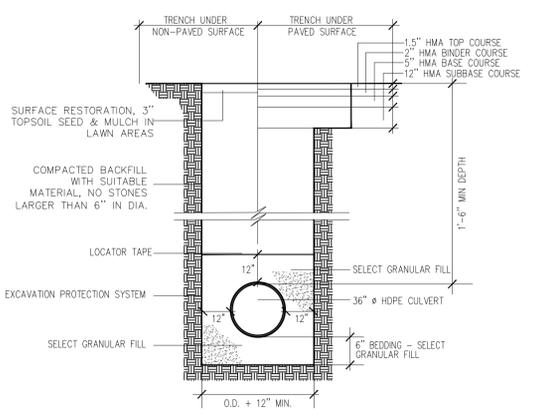
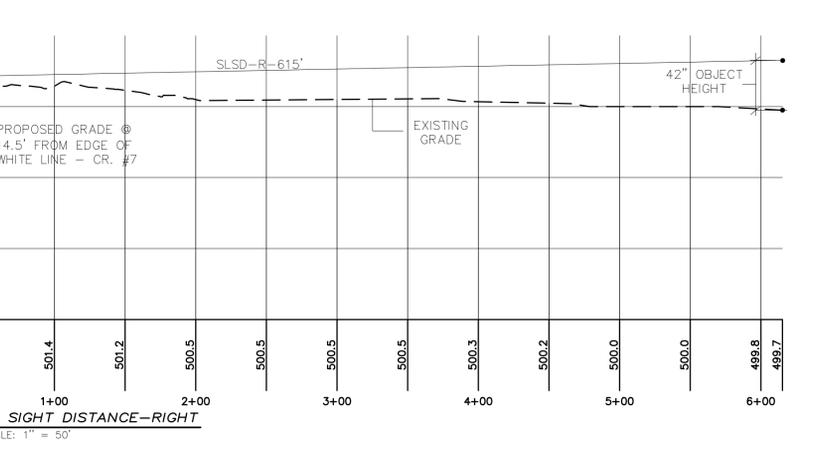
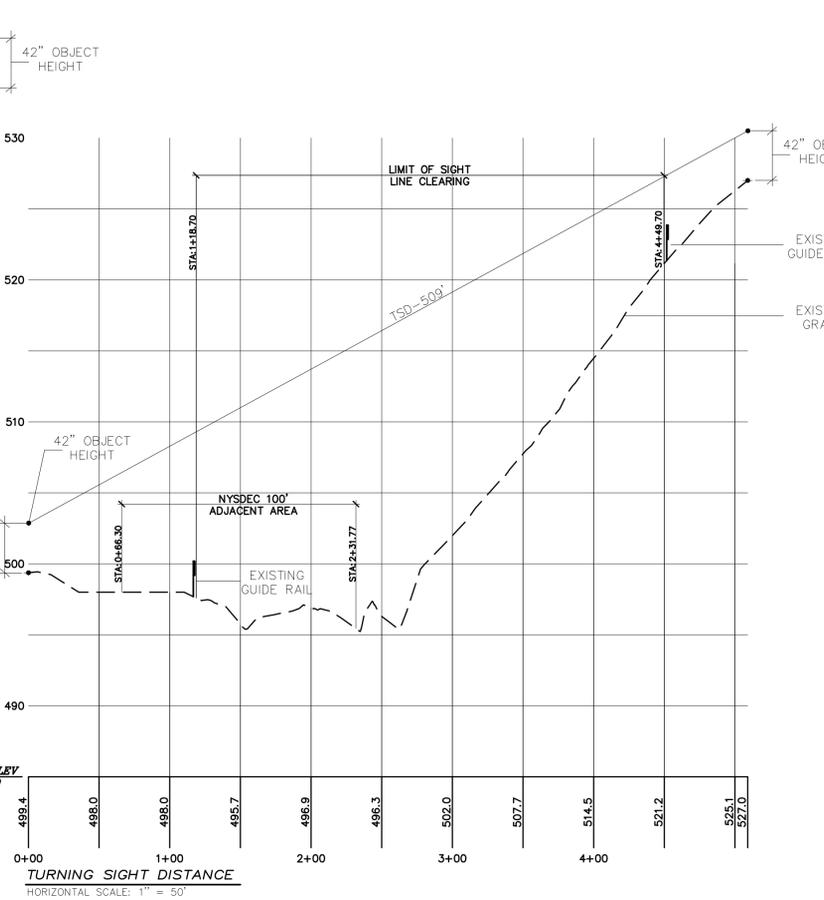
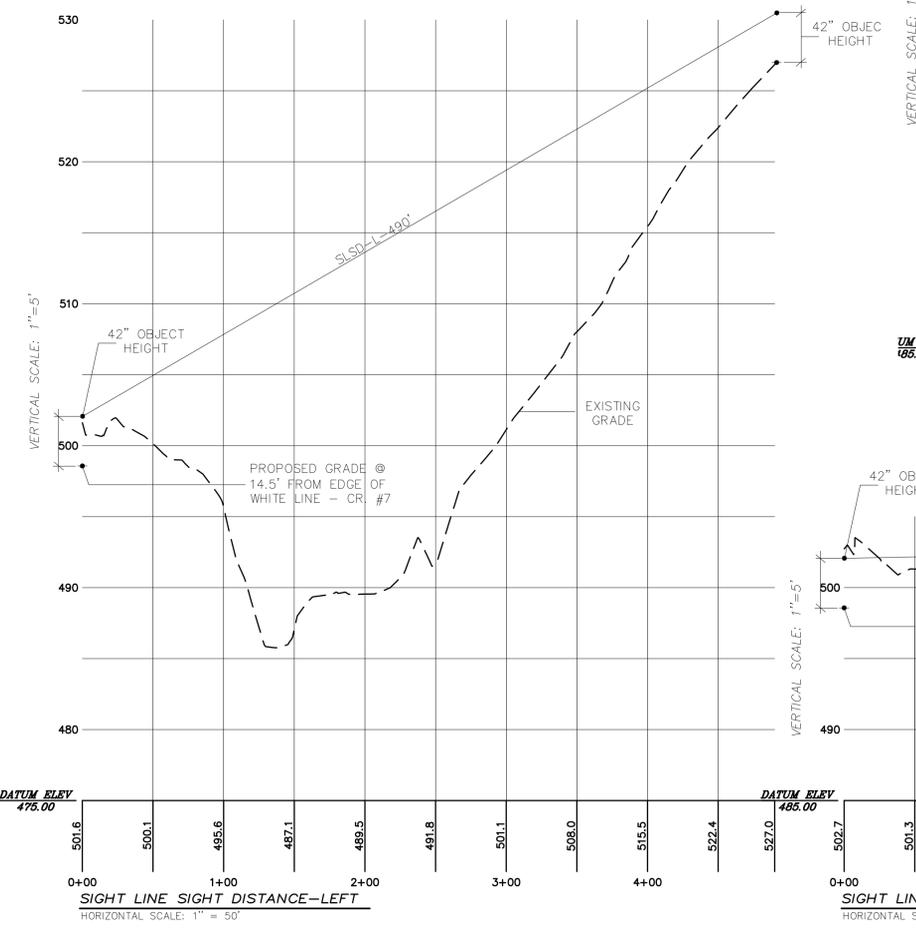
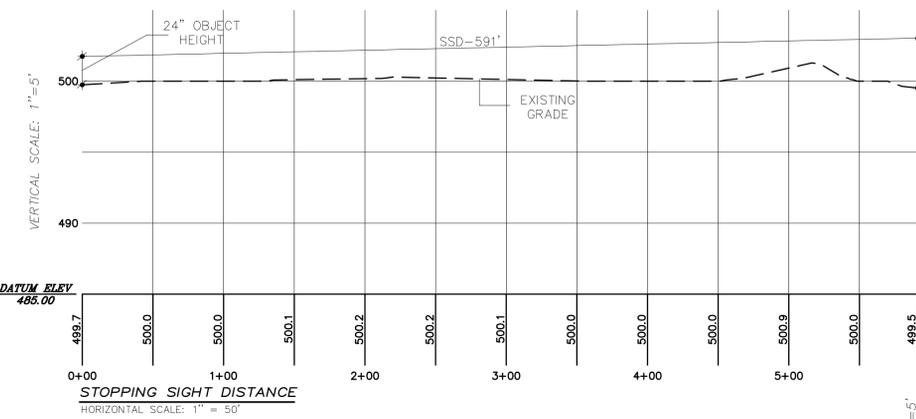
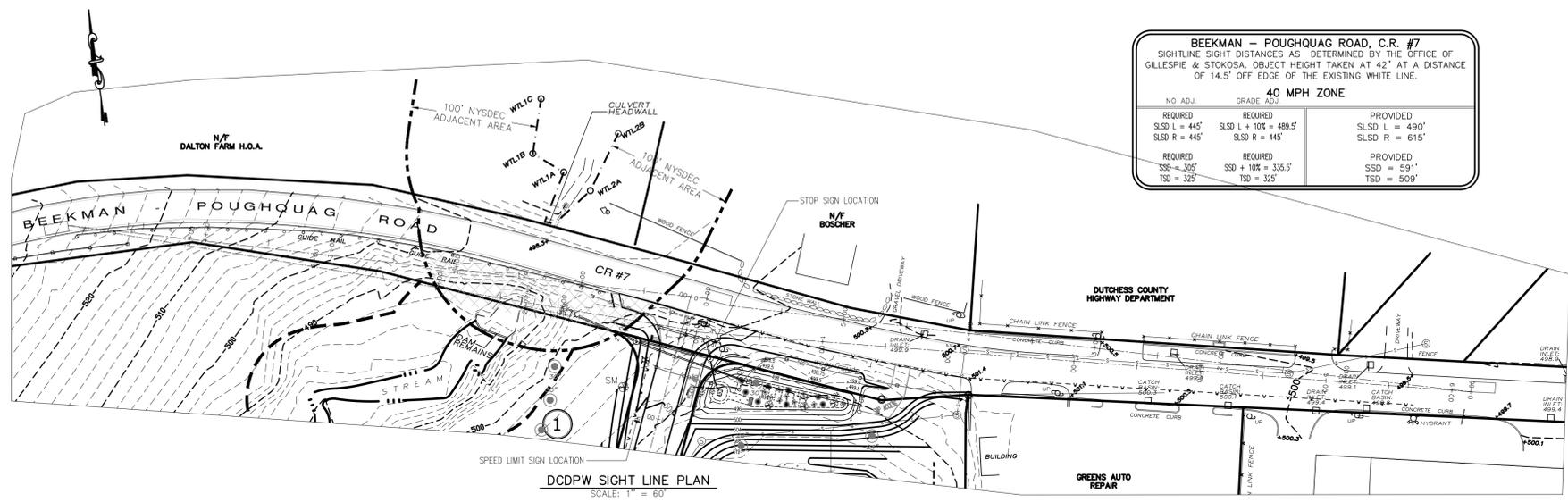
Marked by	Mark A. Day, PE
Revision	OCTOBER 1, 2018
Project No.	2018.249
License No.	069646

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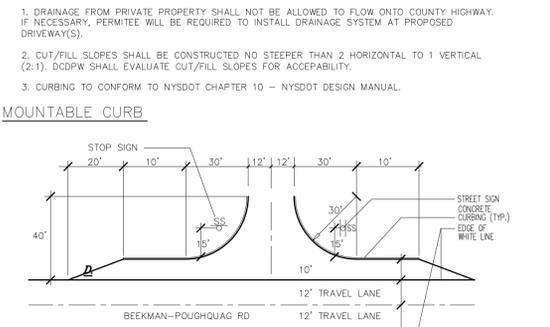
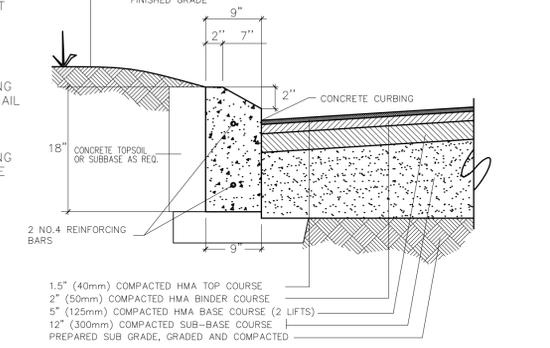
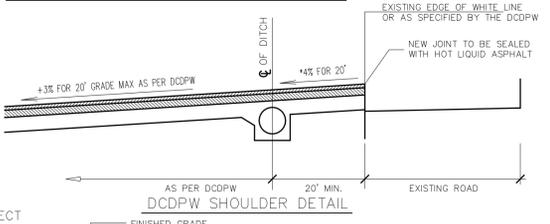
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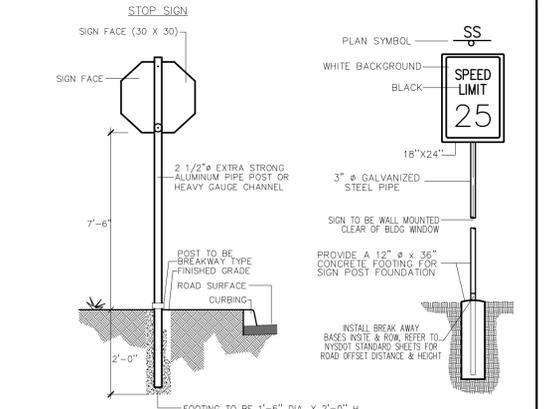
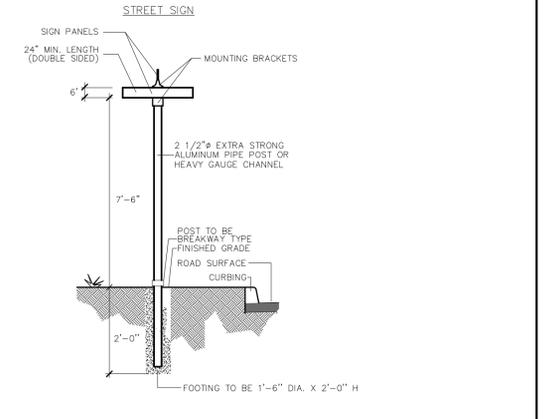
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DATE	01-01-17	DRAWN BY	BJS	CHECKED BY	5 of 12



NOTES:
THE DEAD SAND SHALL BE INSTALLED AND COMPACTED IN 6" LIFTS.
THE RUN-OF-TRENCH SHALL BE FREE FROM ORGANICS, STONES OVER 3" IN DIAMETER, FROZEN SOILS OR OTHER DELETERIOUS MATERIAL.



ENTRANCE SCHEMATIC
D.C.D.P.W. SHOULDER, CURB ENTRANCE SCHEMATIC DETAIL NOT TO SCALE



- RIGHT OF WAY SIGN DETAILS
- ALL ASSEMBLY HARDWARE TO BE CAST ALUMINUM WITH ALUMINUM BOLTS.
 - SIGN SHALL CONFORM TO PARAMETERS AS OUTLINED IN 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NYS SUPPLEMENT.
 - SIGN BASE SUPPORT SHALL NOT PROTRUDE FROM THE GROUND GREATER THAN 4". ALL SIGN SUPPORTS TO CONFORM TO NYS DOT BREAKAWAY STANDARDS.
 - THE MIN. LETTER HEIGHT IS 6" FOR THE INITIAL UPPERCASE LETTER, 4.5" FOR THE LOWER-CASE LETTERS.
 - ROAD SIGNS TO BE REVIEWED BY THE DCDPW.

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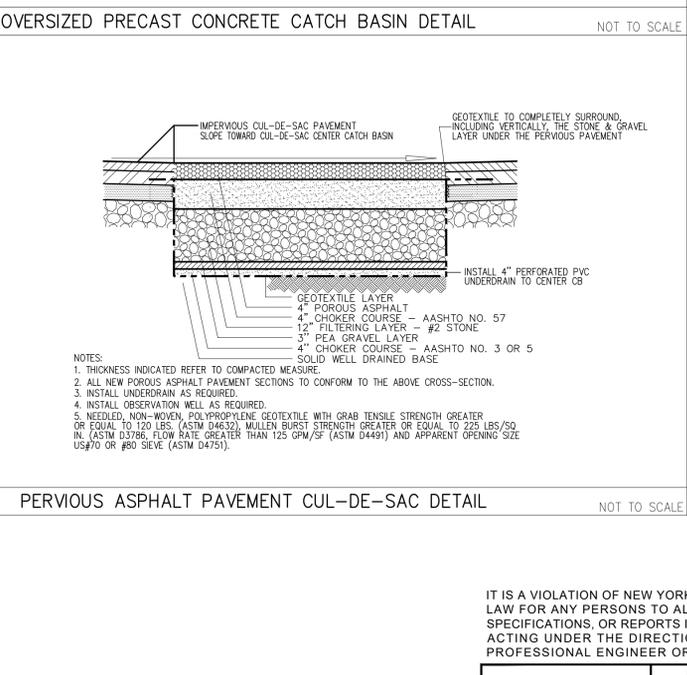
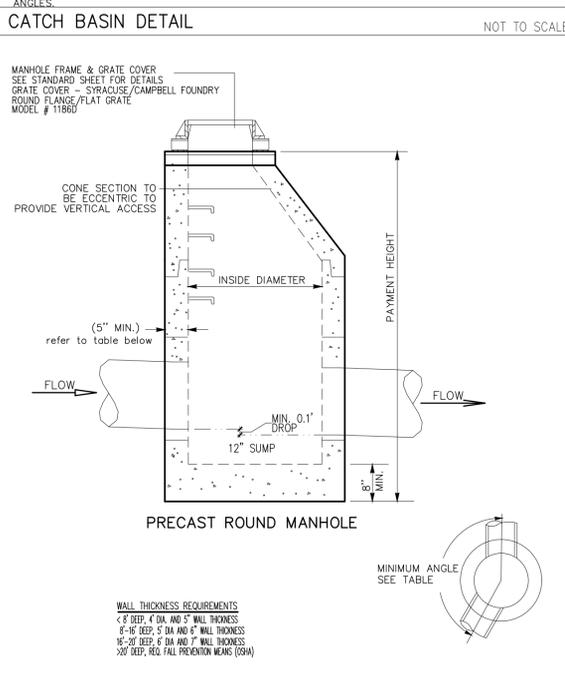
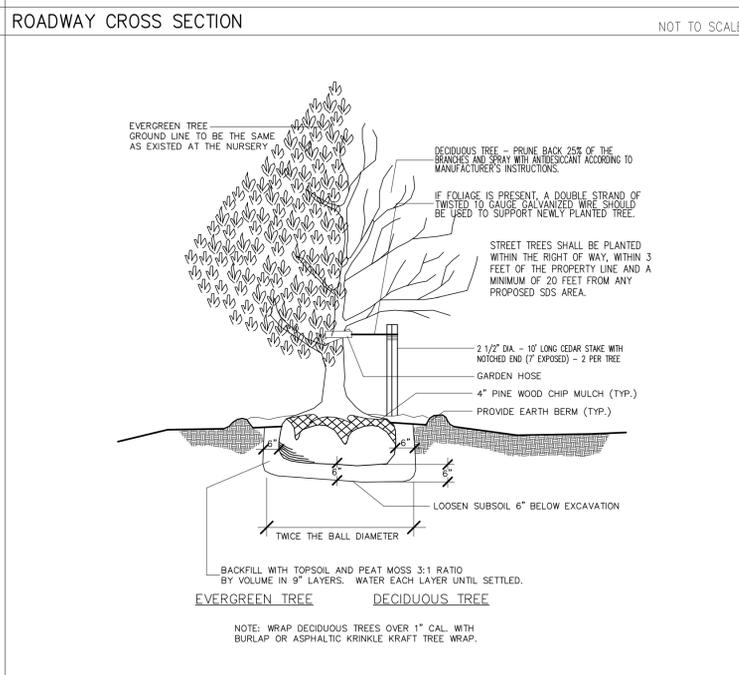
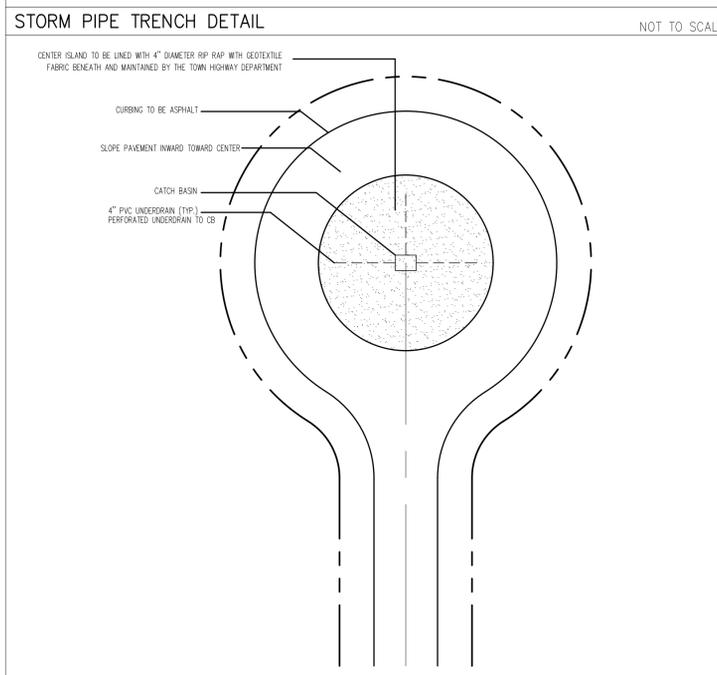
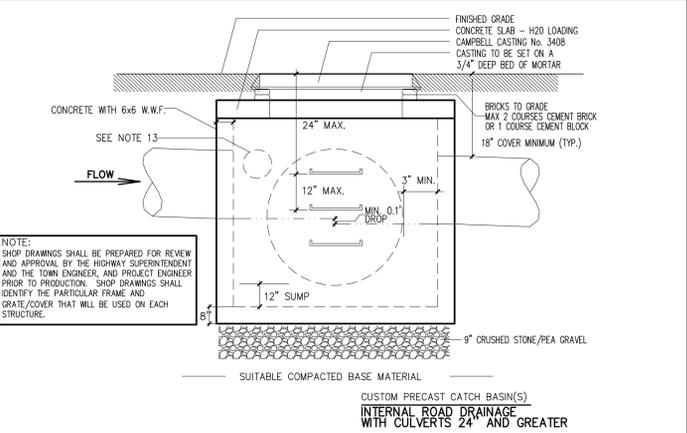
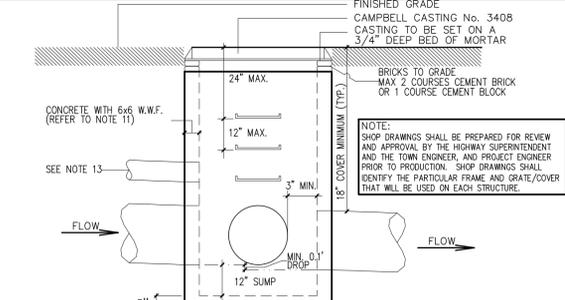
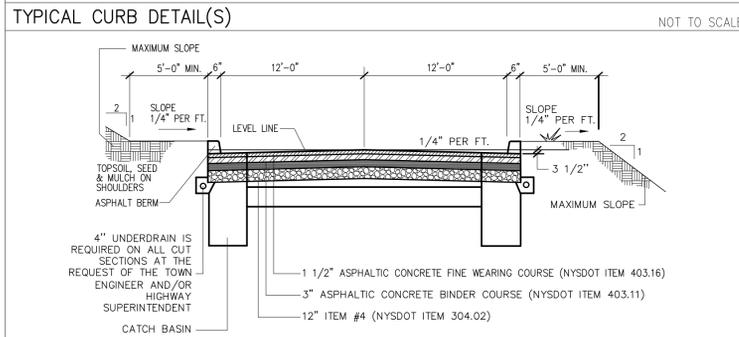
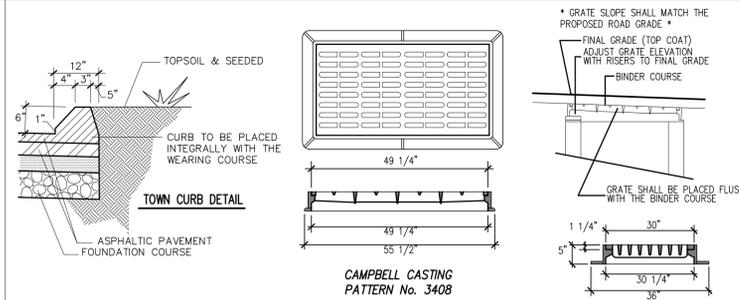
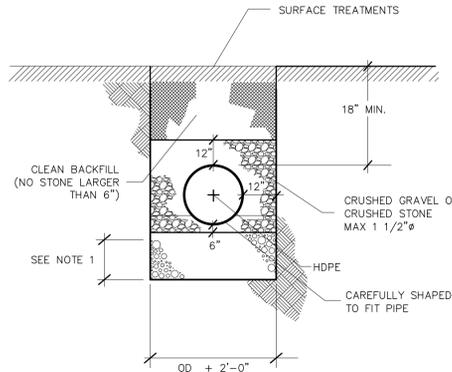
M.A. DAY Engineering, PC
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3 Van Wyck Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
ALAINA ESTATES
TOWN OF BEEKMAN
DUTCHESS COUNTY, NEW YORK

DRAWING
CONSTRUCTION DETAILS

SCALE	AS NOTED	DRAWN BY	BJS	CHECKED BY	BJS	DATE	01-01-17	6 of 12
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GRASS LINED SWALE DETAIL

NOT TO SCALE

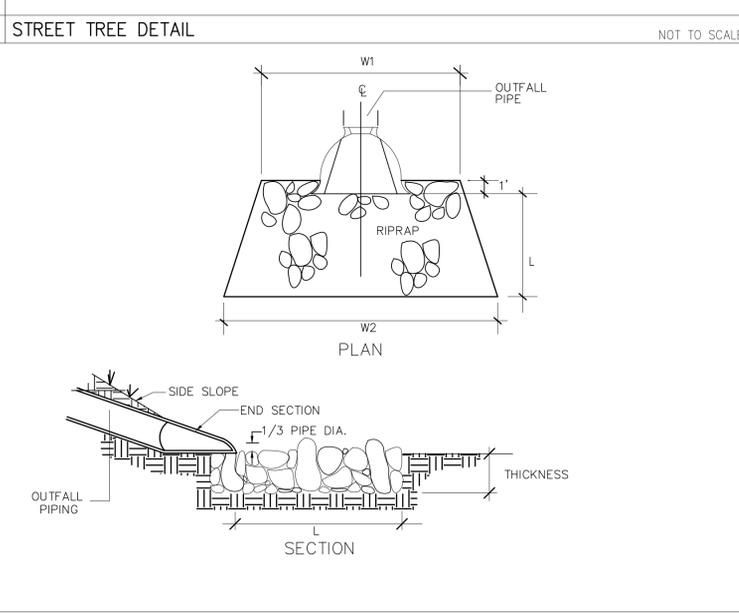
SWALE	(FEET)	(FEET)	(FEET)	(FEET)	SLOPE	LINING
SWALE 1	1.25	3	4.0	3	0.5	GRASS
SWALE 2	1.5	3	2.5	3	0.5X	GRASS

OUTLET(S)	PIPE DIA	W1	W2	L	DEPTH	Dmax	D50
DMH3	18"	4.5'	7.5'	6.0'	9"	6"	4"
OCS-DMH	15"	3.75'	7.25'	6.0'	9"	6"	4"
DVS1	12"	3.0'	7.0'	6.0'	9"	6"	4"
DVS2	24"	6.0'	13.0'	11'	14"	9"	6"
DVS3	12"	3.0'	7.0'	6.0'	9"	6"	4"
DRY DET.	24"	6.0'	13'	11.0'	14"	9"	6"
WVQ 6" PVC (ALL)	6"	3.0'	7.0'	6.0'	9"	6"	4"

*EXTEND RIP RAP TO TOP OF BERM

RIPRAP OUTFALL SIZING REQUIREMENTS

NOT TO SCALE



SELECTION TABLES FOR ALTERNATE ROUND DRAINAGE STRUCTURES

CONCRETE OR POLYETHYLENE PIPES	48"	60"	72"	84"	96"
ROP H.E. RISE X SPAN					
12"	84	63	50	41	35
15"	84	78	56	46	39
18"	104	78	62	51	43
21"	115	85	68	56	48
24"	127	93	74	61	52
27"	141	102	81	67	57
30"	157	111	87	72	61
19" X 30"	157	112	88	73	62
34"	121	95	78	66	58
22" X 34"	125	97	80	68	60
36"	133	102	84	71	63
24" X 36"	140	106	87	74	66
27" X 42"	156	115	94	79	70
42"	164	119	96	81	72
29" X 45"	130	104	87	74	66
48"	140	110	92	80	71
32" X 49"	145	113	94	82	73
34" X 53"	166	123	101	88	77
54"	175	126	104	91	80
60"	147	117			

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Mark A. Day, PE

Revised: **OCTOBER 1, 2018**

Project No: **2018.249**

License No. **069646**

M.A. DAY Engineering, PC
Consulting Engineers

3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202

ALAINA ESTATES
 TOWN OF BEEKMAN DUTCHESS COUNTY, NEW YORK

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CHECKED BY: BJS

7 of 12

DISINFECTING WATER MAINS – AWWA C651-05 OR LATEST EDITION

SECTION 4.2 BASIC DISINFECTION PROCEDURE

4.2.1 INSPECTING MATERIALS TO BE USED TO ENSURE THEIR INTEGRITY.

4.2.2 PREVENTING CONTAMINATING MATERIALS FROM ENTERING THE WATER MAIN DURING STORAGE, CONSTRUCTION, OR REPAIR AND PREVENTING POTENTIAL CONTAMINATION AT THE CONSTRUCTION SITE.

4.2.3 CLEANING, BY FLUSHING OR OTHER MEANS, THOSE MATERIALS THAT MAY HAVE ENTERED THE WATER MAIN.

4.2.4 CHLORINATING ANY RESIDUAL CONTAMINATION THAT MAY REMAIN, AND FLUSHING THE CHLORINATED WATER FROM THE MAIN.

4.2.5 PREVENTING ANY EXISTING CONTAMINATION FROM BACK-FLOW CAUSED BY HYDROSTATIC PRESSURE TEST AND DISINFECTION PROCEDURES.

4.2.6 DOCUMENTING THAT AN ADEQUATE LEVEL OF CHLORINE CONTACTED EACH PIPE TO PROVIDE DISINFECTION.

4.2.7 DETERMINING THE BACTERIOLOGICAL QUALITY BY LABORATORY TEST AFTER DISINFECTION.

4.2.8 FINAL CONNECTION OF THE APPROVED NEW WATER MAIN TO THE ACTIVE DISTRIBUTION SYSTEM.

SECTION 4.3 PREVENTIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION

4.3.1 GENERAL, HEAVY PARTICULATES GENERALLY CONTAIN BACTERIA AND PREVENT EVEN VERY HIGH CHLORINE CONCENTRATIONS FROM CONTACTING AND KILLING THESE ORGANISMS. THEREFORE, THE PROCEDURES OF THIS SECTION MUST BE OBSERVED TO ASSURE THAT A WATER MAIN AND ITS APPURTENANCES HAVE BEEN THOROUGHLY CLEANED FOR THE FINAL DISINFECTION BY CHLORINATION. ALSO, ANY CONNECTION OF A NEW WATER MAIN TO THE ACTIVE DISTRIBUTION SYSTEM SHALL BE CONSIDERED SATISFACTORY BACTERIOLOGICAL SAMPLES MAY CONSTITUTE A CROSS-CONNECTION. THEREFORE, THE NEW MAIN MUST BE ISOLATED UNTIL BACTERIOLOGICAL TESTS DESCRIBED IN SEC. 5 OF THIS STANDARD ARE SATISFACTORILY COMPLETED.

4.3.2 KEEPING PIPE CLEAN AND DRY AND THE INTERIORS OF FITTINGS, FITTINGS, AND VALVES SHALL BE PROTECTED FROM CONTAMINATION.

4.3.2.1 OPENINGS IN THE PIPELINE SHALL BE CLOSED WITH WATER-TIGHT PLUGS WHEN PIPE LAYING IS STOPPED AT THE CLOSE OF THE DAY'S WORK OR FOR OTHER REASONS, SUCH AS REST BREAKS OR MEAL PERIODS. RODENT-PROOF PLUGS MAY BE USED WHEN WATER-TIGHT PLUGS ARE NOT PRACTICABLE AND WHEN THOROUGH CLEANING WILL BE PERFORMED BY FLUSHING OR OTHER MEANS.

4.3.2.2 STRINGING PIPE, PIPE DELIVERED FOR CONSTRUCTION SHALL BE STRINGING TO MAINTAIN THE ENTRANCE OF FOREIGN MATERIAL.

4.3.2.3 DELAYS IN PLACEMENT OF DELIVERED PIPE INVITES CONTAMINATION, THE MORE CLOSELY THE RATE OF DELIVERY IS CORRELATED TO THE RATE OF PIPE LAYING, THE LOWER THE RISK OF CONTAMINATION.

4.3.2.4 JOINTS, JOINTS OF PIPE IN THE TRENCH SHALL BE COMPLETED BEFORE WORK IS STOPPED. IF WATER ACCUMULATES IN THE TRENCH, THE PLUGS SHALL REMAIN IN PLACE UNTIL THE TRENCH IS FREE OF STANDING WATER AND MUD THAT MAY ENTER THE PIPE.

4.3.4 PACKING MATERIALS, VARIOUS OR PROTECTIVE MATERIAL SHALL CONSIST OF MOLDED OR TUBULAR RUBBER RINGS, ROPE OF TREATED PAPER, OR OTHER APPROVED MATERIALS. MATERIALS SUCH AS LUTE OR HEMP SHALL NOT BE USED. PACKING MATERIAL SHALL BE HANDLED IN A MANNER THAT AVOIDS CONTAMINATION. IF ASBESTOS ROPE IS USED, ASBESTOS SHALL BE PREVENTED FROM ENTERING INTO THE WATER-CARRYING PORTION OF THE PIPE.

4.3.5 SEALING MATERIALS, NOT CONTAMINATED MATERIAL OR ANY MATERIAL CAPABLE OF SUPPORTING GROWTH OF MICROORGANISMS SHOULD BE USED FOR SEALING JOINTS. SEALING MATERIAL, OR GASKETS SHALL BE HANDLED IN A MANNER THAT AVOIDS CONTAMINATION. THE LUBRICANT USED IN THE INSTALLATION OF SEALING GASKETS SHALL BE SUITABLE FOR USE IN POTABLE WATER AND SHALL NOT CONTRIBUTE ODORS. IT MUST BE DELIVERED TO THE JOB IN CLOSED CONTAINERS AND SHALL BE KEPT CLEAN AND APPLIED WITH DEDICATED, CLEAN APPLICATION DEVICES.

4.3.6 CLEANING AND SWABBING, IF OBTAINING THE INTERIOR PIPE SURFACE SWABBED WITH 1 TO 5 PERCENT HYPOCHLORITE DISINFECTING SOLUTION, IF, IN THE OPINION OF THE PURCHASER, THE PURCHASER DEEMES IT NECESSARY TO CLEAN THE INTERIOR OF THE PIPE. THE PIPE SHALL BE CLEANED USING MECHANICAL MEANS, SUCH AS A HYDRAULICALLY PROPELLED FLOW PIG (OR OTHER SUITABLE DEVICE ACCEPTABLE TO THE PURCHASER) IN CONJUNCTION WITH THE APPLICATION OF A 1 PERCENT HYPOCHLORITE DISINFECTING SOLUTION. THE CLEANING METHOD USED SHALL NOT FORCE MUD OR DEBRIS INTO THE INTERIOR PIPE-JOINT SPACES AND SHALL BE ACCEPTABLE TO THE PURCHASER.

4.3.7 MET-TO-MET CONSTRUCTION, IF IT IS NOT POSSIBLE TO KEEP THE PIPE AND FITTINGS DRY DURING INSTALLATION, THE WATER THAT MAY ENTER THE PIPE-JOINT SPACES SHALL CONTAIN AN AVAILABLE CHLORINE CONCENTRATION OF 25 MG/L. THIS MAY BE ACCOMPLISHED BY ADDING CALCIUM HYPOCHLORITE GRANULES OR TABLETS TO EACH LENGTH OF PIPE BEFORE IT IS LOWERED INTO A WET TRENCH OR BY TREATING THE TRENCH WATER WITH HYPOCHLORITE TABLETS.

4.3.8 FLOODING BY STORM OR ACCIDENT DURING CONSTRUCTION, IF THE MAIN IS FLOODED DURING CONSTRUCTION, IT SHALL BE CLEARED OF THE FLOODWATER BY DRAINING AND FLUSHING WITH POTABLE WATER UNTIL THE MAIN IS CLEARED OF THE FLOODWATER. THE MAIN SHALL THEN BE FILLED WITH A CHLORINATED POTABLE WATER THAT AT THE END OF A 24-HR HOLDING PERIOD, WILL HAVE A FREE CHLORINE RESIDUAL OF NOT LESS THAN 25 MG/L. THE CHLORINATED WATER MAY THEN BE DRAINED OR FLUSHED FROM THE MAIN. AFTER CONSTRUCTION IS COMPLETED, THE MAIN SHALL BE DISINFECTED USING THE CONTINUOUS-FEED OR SLUG METHOD.

SECTION 4.4 METHODS OF CHLORINATION

4.4.1 GENERAL, THREE METHODS OF CHLORINATION ARE EXPLAINED IN THIS SECTION: TABLE, CONTINUOUS FEED, AND SLUG. INFORMATION IN THE FOREWORD IS HELPFUL IN DETERMINING THE APPROPRIATE METHOD. THE TABLE METHOD GIVES AN AVERAGE CHLORINE DOSE OF APPROXIMATELY 25 MG/L. THE CONTINUOUS-FEED METHOD GIVES A 24-HR CHLORINE RESIDUAL OF NOT LESS THAN 25 MG/L AND THE SLUG METHOD PROVIDES A 5-HR CHLORINE DOSE OF NOT LESS THAN 50 MG/L. FREE CHLORINE IN THIS APPLICATION, THE CONTINUOUS-FEED AND SLUG METHOD HAS BEEN DESCRIBED BELOW.

4.4.1.1 PREFLUSHING OF SOURCE WATER, THE SOURCE OF POTABLE WATER USED FOR DISINFECTION TESTING SHALL BE FLUSHED PRIOR TO ITS USE TO ENSURE THAT CONTAMINANTS OR DEBRIS ARE NOT INTRODUCED INTO THE NEW PIPE. ADEQUATE DRAINAGE MUST BE PROVIDED DURING FLUSHING. DRAINAGE SHOULD TAKE PLACE AWAY FROM THE CONSTRUCTION AREA. DURING THE CONTACT PERIOD, IT IS RECOMMENDED THAT THE VALVE ISOLATING THE NEW MAIN FROM THIS SYSTEM (IF APPLICABLE) BE TAGGED TO PREVENT UNINTENTIONAL RELEASE OF THE ELEVATED CHLORINE RESIDUAL WATER INTO THE SYSTEM.

4.4.2 PLACING OF CALCIUM HYPOCHLORITE GRANULES DURING CONSTRUCTION, CALCIUM HYPOCHLORITE GRANULES SHALL BE PLACED AT THE UPSTREAM END OF THE FIRST SECTION OF PIPE, AT THE UPSTREAM END OF EACH BRANCH MAIN, AND AT 500 FT INTERVALS, THE QUANTITY OF GRANULES SHALL BE AS SHOWN IN TABLE 1.

4.4.2.1 THIS PROCEDURE MUST NOT BE USED ON SOLVENT-WELDED PLASTIC OR ON SCREWED-JOINT STEEL PIPE BECAUSE OF THE DANGER OF FIRE OR EXPLOSION FROM THE REACTION OF THE JOINT COMPOUNDS WITH THE CALCIUM HYPOCHLORITE.

TABLE 1 OUNCES OF CALCIUM HYPOCHLORITE GRANULES TO BE PLACED AT BEGINNING OF MAIN AND AT EACH 500 FT INTERVAL.

PIPE DIAMETER (IN)	CALCIUM HYPOCHLORITE GRANULES (OZ.)
4"	3.8
6"	5.7
8"	7.6
10"	10.5
12"	15.1
14 AND LARGER	0.72 X D ² X 1.51

WHERE D IS THE INSIDE PIPE DIAMETER IN FEET D = D/12

4.4.3 CONTINUOUS FEED METHOD, THE CONTINUOUS-FEED METHOD CONSISTS OF PLACING CALCIUM HYPOCHLORITE GRANULES IN THE MAIN DURING CONSTRUCTION (OPTIONAL), COMPLETELY FILLING THE MAIN TO REMOVE AIR POCKETS, FLUSHING THE COMPLETED MAIN TO REMOVE PARTICULATES, AND FILLING THE MAIN WITH POTABLE WATER. THE POTABLE WATER SHALL BE CHLORINATED SO THAT AFTER A 24-HR HOLDING PERIOD IN THE MAIN THERE WILL BE A FREE CHLORINE RESIDUAL OF NOT LESS THAN 50 MG/L. 25 MG/L CHLORINE RESIDUAL IS REQUIRED AT THE END OF 24 HOURS.

4.4.3.1 PLACING OF CALCIUM HYPOCHLORITE GRANULES, AT THE OPTION OF THE PURCHASER, CALCIUM HYPOCHLORITE GRANULES SHALL BE PLACED IN PIPE SECTIONS AS SPECIFIED IN SECTION 4.4.2.1. (SEE ABOVE) THE PURPOSE OF THIS PROCEDURE IS TO PROVIDE A STRONG CHLORINE CONCENTRATION IN THE FIRST FLOW OF FLUSHING WATER THAT FLOWS DOWN THE MAIN. IN PARTICULAR, THIS PROCEDURE IS RECOMMENDED WHEN THE TYPE OF PIPE IS SUCH THAT THIS FIRST FLOW OF WATER WILL FLOW INTO ANNULAR SPACES AT JOINTS.

4.4.3.2 PRELIMINARY FLUSHING, BEFORE THE MAIN IS CHLORINATED, IT SHALL BE FILLED TO ELIMINATE AIR POCKETS AND FLUSHED TO REMOVE PARTICULATES. THE FLUSHING VELOCITY IN THE MAIN SHALL NOT BE LESS THAN 2.5 FT/SEC (0.76 M/SEC) UNLESS THE PURCHASER DETERMINES THAT CONDITIONS DO NOT PERMIT THE REQUIRED FLOW TO BE DISCHARGED TO WASTE.

TABLE 3 REQUIRED FLOW AND OPENINGS TO FLUSH PIPELINES (AS PER ASTM F726 KP4) RESIDUAL PRESSURE IN MAIN

PIPE DIAMETER (INCHES)	FLOW REQUIRED TO PRODUCE 2.5 FT/SEC (APPROX.)	SIZE OF TAP 1" 1.5" 2.0"	NUMBER OF 2.5" HYDRANT OUTLETS
4"	100	1	1
6"	400	1	1
8"	600	2	2
10"	900	3	2
12"	1,600	5	2

TABLE 3 SHOWS THE RATES OF FLOW REQUIRED TO PRODUCE A VELOCITY OF 2.5 FT/SEC (0.76 M/SEC) IN COMMONLY USED SIZES OF PIPE. NOTE: DRAT FLUSHING IS NO SUBSTITUTE FOR PREVENTIVE MEASURES DURING CONSTRUCTION. CERTAIN CONTAMINANTS, SUCH AS CEMENT DEBRIS, RESIST FLUSHING AT ANY FEASIBLE VELOCITY AND PIGGING OF THE MAIN WILL BE REQUIRED. FOR 24-IN. (600-MM) OR LARGER DIAMETER MAINS, AN ACCEPTABLE ALTERNATIVE TO FLUSHING IS TO BROOM-SWEEP THE MAIN, CAREFULLY REMOVING SWEEPINGS PRIOR TO CHLORINATING THE MAIN.

4.4.3.3 PROCEDURE FOR CHLORINATING THE MAIN

1. WATER SUPPLIED FROM A TEMPORARY, BACKFLOW-PROTECTED CONNECTION TO THE EXISTING DISTRIBUTION SYSTEM OR OTHER APPROVED SUPPLY SOURCE SHALL FLOW AT A CONSTANT, MEASURED RATE INTO THE NEWLY INSTALLED WATER MAIN. IN THE ABSENCE OF A METER, THE RATE MAY BE APPROXIMATED USING A PITOT GAUGE IN THE DISCHARGE, MEASURING THE TIME TO FILL A CONTAINER OF KNOWN VOLUME, OR MEASURING THE TRAJECTORY OF THE DISCHARGE AND USING THE FORMULA SHOWN IN FIGURE 2. THE MAIN SHOULD UNDERGO HYDROSTATIC TESTING PRIOR TO DISINFECTION.

2. AT A POINT NOT MORE THAN 10 FT (3 M) DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN, WATER ENTERING THE NEW MAIN SHALL RECEIVE A DOSE OF CHLORINE FED AT A CONSTANT RATE SUCH THAT THE WATER WILL HAVE NOT LESS THAN 25 MG/L FREE CHLORINE AT THE END OF A 24-HR HOLDING PERIOD. TO ENSURE THAT THIS CONCENTRATION IS ACHIEVED, THE SLOW RATE OF FLOW IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN THE CURRENT EDITION OF STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER OR AWWA MANUAL M 12, OR USING APPROPRIATE CHLORINE TEST KITS (SEE APPENDIX A).

TABLE 4 GIVES THE AMOUNT OF CHLORINE REQUIRED FOR EACH 100 FT (30.5 M) OF PIPE OF VARIOUS DIAMETERS. SOLUTIONS OF 1 PERCENT CHLORINE MAY BE PREPARED WITH SODIUM HYPOCHLORITE OR CALCIUM HYPOCHLORITE. THE LATTER SOLUTION REQUIRES 1 LB (454 G) OF CALCIUM HYPOCHLORITE IN 5 GAL (30.3 L) OF WATER.

3. AS AN OPTIONAL PROCEDURE, IF REQUIRED BY THE PURCHASER, WATER USED TO FILL THE NEW MAIN DURING THE APPLICATION OF CHLORINE SHALL BE SUPPLIED THROUGH A TEMPORARY CONNECTION. THIS TEMPORARY CONNECTION SHALL BE INSTALLED WITH AN APPROPRIATE CONTROL DEVICE, CONSISTENT WITH THE METHOD OF HAZARD OR BACKFLOW PROTECTION OF THE ACTIVE DISTRIBUTION SYSTEM (SEE FIGURE 1). CHLORINE APPLICATION SHALL NOT CEASE UNTIL THE ENTIRE MAIN IS FILLED WITH HEAVILY CHLORINATED WATER. THE CHLORINATED WATER SHALL BE RETAINED IN THE MAIN FOR AT LEAST 24 HR, DURING WHICH TIME VALVES AND HYDRANTS IN THE TREATED SECTION SHALL BE OPERATED TO DISINFECT DISINFECTION OF THE APPURTENANCES. AT THE END OF THIS 24-HR PERIOD, THE TREATED WATER IN ALL PORTIONS OF THE MAIN SHALL HAVE A RESIDUAL OF NOT LESS THAN 100 MG/L OF FREE CHLORINE.

4. DIRECT-FEED CHLORINATORS, WHICH OPERATE SOLID GAS PRESSURE IN THE CHLORINE CYLINDER, SHALL NOT BE USED FOR THE APPLICATION OF LIQUID CHLORINE. THE DANGER OF USING DIRECT-FEED CHLORINATORS IS THAT WATER PRESSURE IN THE MAIN CAN EXCEED GAS PRESSURE IN THE CHLORINE CYLINDER. THIS ALLOWS A BACKFLOW OF WATER INTO THE CYLINDER, RESULTING IN SEVERE CYLINDER CORROSION AND THE ESCAPE OF CHLORINE GAS. THE PREFERRED EQUIPMENT FOR APPLYING LIQUID CHLORINE IS A SOLUTION-FEED, VACUUM-OPERATED CHLORINATOR AND A BOOSTER PUMP. THE VACUUM-OPERATED CHLORINATOR MAKES THE CHLORINE GAS IN SOLUTION WATER. THE BOOSTER PUMP INJECTS THE CHLORINE-GAS SOLUTION INTO THE MAIN TO DILUTE IT. HYPOCHLORITE SOLUTION MAY BE APPLIED TO THE WATER MAIN WITH A GASOLINE OR ELECTRICALLY POWERED CHEMICAL-FEED PUMP DESIGNED FOR FEEDING CHLORINE SOLUTIONS. FEED LINES SHALL BE CAPABLE OF MATERIAL, CAPABLE OF WITHSTANDING THE CORROSION CAUSED BY THE CONCENTRATED CHLORINE SOLUTIONS AND THE MAXIMUM PRESSURES THAT MAY BE CREATED BY THE PUMPS. ALL CONNECTIONS SHALL BE CHECKED FOR TIGHTNESS BEFORE THE SOLUTION IS APPLIED TO THE MAIN.

4.4.4 SLUG METHOD, THE SLUG METHOD CONSISTS OF PLACING CALCIUM HYPOCHLORITE GRANULES IN THE MAIN DURING CONSTRUCTION; COMPLETELY FILLING THE MAIN TO ELIMINATE AIR POCKETS; FLUSHING THE MAIN TO REMOVE PARTICULATES; AND SLOWLY FLOWING THROUGH THE MAIN A SLUG OF WATER FOLLOWS THROUGH THE MAIN. THE SLOW RATE OF FLOW ENSURES THAT ALL PARTS OF THE MAIN AND ITS APPURTENANCES WILL BE EXPOSED TO THE HIGHLY CHLORINATED WATER FOR A PERIOD OF NOT LESS THAN 3 HR.

4.4.4.1 PLACING CALCIUM HYPOCHLORITE GRANULES, SAME AS SEC. 4.4.3.1.

4.4.4.2 PRELIMINARY FLUSHING, SAME AS SEC. 4.4.3.2.

4.4.4.3 PROCEDURE FOR CHLORINATING THE MAIN

1. WATER SUPPLIED FROM A TEMPORARY, BACKFLOW-PROTECTED CONNECTION TO THE EXISTING DISTRIBUTION SYSTEM OR OTHER APPROVED SUPPLY SOURCE SHALL FLOW AT A CONSTANT, MEASURED RATE INTO THE NEWLY INSTALLED WATER MAIN. IN THE ABSENCE OF A METER, THE RATE MAY BE APPROXIMATED USING A PITOT GAUGE IN THE DISCHARGE, MEASURING THE TIME TO FILL A CONTAINER OF KNOWN VOLUME, OR MEASURING THE TRAJECTORY OF THE DISCHARGE AND USING THE FORMULA SHOWN IN FIGURE 2. THE MAIN SHOULD UNDERGO HYDROSTATIC TESTING PRIOR TO DISINFECTION.

2. AT A POINT NOT MORE THAN 10 FT (3 M), DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN, WATER ENTERING THE NEW MAIN SHALL RECEIVE A DOSE OF CHLORINE FED AT A CONSTANT RATE SUCH THAT THE WATER WILL HAVE NOT LESS THAN 100 MG/L FREE CHLORINE. TO ENSURE THAT THIS CONCENTRATION IS ACHIEVED, THE CHLORINE CONCENTRATION SHOULD BE MEASURED AT REGULAR INTERVALS. THE CHLORINE SHOULD BE APPLIED CONTINUOUSLY AND FOR A SUFFICIENT PERIOD TO DEVELOP A SOLID COLUMN OF CHLORINE OR SLUG OF CHLORINATED WATER THAT WILL, AS IT MOVES THROUGH THE MAIN, EXPOSE ALL INTERIOR SURFACES TO A CONCENTRATION OF APPROXIMATELY 100 MG/L FOR AT LEAST 3 HR.

3. THE FREE CHLORINE RESIDUAL SHALL BE MEASURED IN ELSE SLUG AS IT MOVES THROUGH THE MAIN. IF AT ANY TIME IT DROP BELOW 50 MG/L, THE FLOW SHALL BE STOPPED AND EQUIPMENT SHALL BE RELOCATED AT THE HEAD OF THE SLUG; AND, AS FLOW RESUMES, CHLORINE SHALL BE APPLIED TO RESTORE THE FREE CHLORINE IN THE SLUG TO NOT LESS THAN 100 MG/L.

4. AS THE CHLORINATED WATER FLOWS PAST FITTINGS AND VALVES, RELATED VALVES AND HYDRANTS SHALL BE OPERATED SO AS TO DISINFECT APPURTENANCES AND PIPE BRANCHES.

SECTION 4.5 WATER SERVICE TRENCH

4.5.1 CLEARING THE MAIN OF HEAVILY CHLORINATED WATER, AFTER THE APPLICABLE RETENTION PERIOD, HEAVILY CHLORINATED WATER SHOULD NOT REMAIN IN PROLONGED CONTACT WITH PIPE IN ORDER TO PREVENT DAMAGE TO THE PIPE LINING OR TO PREVENT CORROSION DAMAGE TO THE PIPE ITSELF, THE HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE MAIN FITTINGS, VALVES, AND BRANCHES UNTIL CHLORINE MEASUREMENTS SHOW THAT THE CONCENTRATION IN THE WATER LEAVING THE MAIN IS NOT ACCEPTABLE FOR DOMESTIC USE.

4.5.2 DISPOSING OF HEAVILY CHLORINATED WATER, THE ENVIRONMENT TO WHICH THE CHLORINATED WATER IS TO BE DISCHARGED SHALL BE INSPECTED. IF THERE IS ANY POSSIBILITY THAT THE CHLORINATED DISCHARGE WILL CAUSE DAMAGE TO THE ENVIRONMENT, A NEUTRALIZING CHEMICAL SHALL BE APPLIED TO THE WATER TO BE ADDED TO THOROUGHLY NEUTRALIZE THE RESIDUAL CHLORINE (SEE APPROVED LIST FOR NEUTRALIZING CHEMICALS). WHERE NECESSARY, FEDERAL, STATE, LOCAL, OR PROVISIONAL REGULATORY AGENCIES SHOULD BE CONTACTED TO DETERMINE SPECIAL PROVISIONS FOR THE DISPOSAL OF HEAVILY CHLORINATED WATER.

THE MAIN SHALL BE FLUSHED UNTIL SUCH TIME THAT THE CHLORINE RESIDUAL DROPS TO NO LESS THAN 0.3 MG/L.

SECTION 4.6 DISINFECTION PROCEDURES WHEN DURING OR REPAIRING EXISTING MAINS

THE FOLLOWING PROCEDURES APPLY PRIMARILY WHEN EXISTING MAINS ARE BEING COMPLETED. THE EXISTING MAIN MAY BE RETURNED TO SERVICE PRIOR TO THE COMPLETION OF BACTERIOLOGICAL TESTING IN ORDER TO MINIMIZE THE TIME CUSTOMERS ARE WITHOUT WATER LEAKS OR BREAKS THAT ARE REPAIRED WITH CLAMPING DEVICES WHILE THE MAINS REMAIN FULL OF PRESSURIZED WATER MAY PRESENT LITTLE DANGER OF CONTAMINATION AND THEREFORE MAY NOT REQUIRE DISINFECTION.

4.6.1 BENCH TREATMENT, WHEN AN EXISTING MAIN IS OPENED, EITHER BY ACCIDENT OR DESIGN, THE EXCAVATION WILL LIKELY BE MET AND MAY BE BAILY CONTAMINATED FROM NEARBY SEWERS. LIBERAL QUANTITIES OF HYPOCHLORITE APPLIED TO OPEN TRENCH AREAS WILL LESSEN THE DANGER FROM THIS POLLUTION. TABLES HAVE THE ADVANTAGE IN THIS SITUATION, BECAUSE THEY DISOLVE SLOWLY AND CONTINUE TO RELEASE HYPOCHLORITE AS WATER IS PUMPED FROM THE EXCAVATION.

4.6.2 SWABBING WITH HYPOCHLORITE SOLUTION, THE INTERIOR OF PIPE AND FITTINGS (PARTICULARLY COUPLINGS AND SLEEVES) USED IN REPAIRS SHALL BE SWABBED OR SPRAIDED WITH A 1 PERCENT HYPOCHLORITE SOLUTION BEFORE THEY ARE INSTALLED.

4.6.3 FLUSHING, THOROUGH FLUSHING IS THE MOST PRACTICAL MEANS OF REMOVING CONTAMINATION INTRODUCED DURING REPAIRS. IF A VALVE AND HYDRANT LOCATIONS PERMIT, FLUSHING TOWARD THE WORK LOCATION FROM BOTH DIRECTIONS IS RECOMMENDED. FLUSHING SHALL BE STARTED AS SOON AS THE REPAIRS ARE COMPLETED AND SHALL BE CONTINUED UNTIL DISCHARGED WATER IS CLEANED.

4.6.4 SLUG CHLORINATION, WHEN PRACTICAL, IN ADDITION TO THE PROCEDURES PREVIOUSLY DESCRIBED, THE SECTION OF THE MAIN IN WHICH THE BREAK IS LOCATED SHALL BE ISOLATED. ALL SERVICE CONNECTIONS THAT OFF, AND ARE RECONNECTED DURING AND CHLORINATED AS DESCRIBED IN SEC. 4.4.4. THE DOSE MAY BE INCREASED TO AS MUCH AS 30 MG/L, AND THE CONTACT TIME SHOULD BE AS LONG AS IS PRACTICABLE. AFTER CHLORINATION, FLUSHING SHALL BE RESUMED AND CONTINUED UNTIL DISCHARGED WATER IS CLEANED AND THE CHLORINE CONCENTRATION IN THE WATER LEAVING THE MAIN IS HIGHER THAN THE PREVIOUS WATER IN THE DISTRIBUTION SYSTEM OR THAT WHICH IS ACCEPTABLE FOR DOMESTIC USE.

4.6.5 BACTERIOLOGICAL SAMPLES, BACTERIOLOGICAL SAMPLES FOLLOWING PROCEDURES AS 5.1.1 SHALL BE TAKEN AFTER REPAIRS ARE COMPLETED TO PROVIDE A RECORD FOR DETERMINING THE PROCEDURE'S EFFECTIVENESS. IF THE DIRECTION OF FLOW IS UNKNOWN, THEN SAMPLES SHALL BE TAKEN ON EACH SIDE OF THE MAIN BREAK. IF POSITIVE BACTERIOLOGICAL SAMPLES ARE RECEIVED, THEN THE DISTRIBUTION SHALL BE EVALUATED BY THE PURCHASER WHO CAN DETERMINE CORRECTIVE ACTION. ONLY SAMPLES SHALL BE CONTAINED UNTIL THE DIRECTION OF FLOW IS KNOWN. NEGATIVE SAMPLES ARE REQUIRED.

SECTION 4.8 SPECIAL PROCEDURES FOR CALKED TAPPING SLEEVES

BEFORE A TAPPING SLEEVE IS INSTALLED, THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE THOROUGHLY CLEANED, AND THE INTERIOR SURFACE OF THE SLEEVE SHALL BE LIGHTLY SMOOED WITH CLEAN HYPOCHLORITE POWDER. TAPPING SLEEVES ARE USED TO AVOID SHUTTING DOWN THE MAIN AFTER THE TAP IS MADE, IT IS POSSIBLE TO DAMPEN THE SHOCKING WITHOUT SHUTTING DOWN THE MAIN AND REMOVING THE SLEEVE. THE SPACE BETWEEN THE TAPPING SLEEVE AND THE TAPPED PIPE IS APPROXIMATELY 0.5 IN. (13 MM) SUCH AS TO ALLOW AS 100 MG/L OF CALCIUM HYPOCHLORITE POWDER WILL PROVIDE A CHLORINE CONCENTRATION OF MORE THAN 50 MG/L.

SEC. 5 BACTERIOLOGICAL TESTS

5.1.1 STRINGING CONDUIT WITH FINAL FLUSHING AND BEFORE THE NEW MAIN IS CONNECTED TO THE DISTRIBUTION SYSTEM, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES, TAKEN AT LEAST 24 HR APART, SHALL BE COLLECTED FROM THE NEW MAIN. (NOTE: THE PIPE, THE WATER LOADED INTO THE PIPE, AND ANY DEBRIS DERT A CHLORINE DANGOR THAT CAN INTERFERE WITH DIRECTION) AT LEAST TWO SETS OF SAMPLES SHALL BE COLLECTED FROM THE NEW WATER MAIN, ONE SET FROM THE END OF THE LINE AND AT THE PRESENCE OF ONE SET FROM BEHIND/BELOW/BEFORE. SAMPLES SHALL BE TESTED FOR BACTERIOLOGICAL (CHEMICAL AND PHYSICAL) QUALITY IN ACCORDANCE WITH STANDARD METHODS. FOR THE EXAMINATION OF WATER AND WASTEWATER, AND SHALL SHOW THE ABSENCE OF COLIFORM ORGANISMS; AND, IF REQUIRED, THE ABSENCE OF A CHLORINE RESIDUAL. TYPICAL, PH, AND A STANDARD HYDROPHOBIC PLATE COUNT (PFC) TEST MAY BE REQUIRED AT THE OPTION OF THE PURCHASER. NEW MATERIALS DOES NOT TYPICALLY CONTAIN COLIFORMS BUT DOES TYPICALLY CONTAIN PFC BACTERIA.

5.1.2 SPECIAL CONDITIONS, IF BENCH TREATMENT HAS BEEN USED IN THE MAIN DURING CONSTRUCTION, OR IF, IN THE OPINION OF THE PURCHASER, EXCESSIVE QUANTITIES OF OIL OR DEBRIS HAVE ENTERED THE NEW MAIN, BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT INTERVALS OF APPROXIMATELY 200 FT (61 M), AND THE LOCATION SHALL BE IDENTIFIED. SAMPLES SHALL BE TAKEN AT WATER THAT HAS STOOD IN THE NEW MAIN FOR AT LEAST 16 HR AFTER FINAL FLUSHING HAS BEEN COMPLETED.

5.1.3 SAMPLING PROCEDURES, SAMPLES FOR BACTERIOLOGICAL ANALYSIS SHALL BE COLLECTED IN STERILE BOTTLES TREATED WITH SODIUM HYDROXIDE, AS REQUIRED BY STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER. NO OIL OR OTHER HYDROPHOBIC SUBSTANCE SHOULD BE USED IN THE COLLECTION OF SAMPLES. (NOTE: FOR PIPE REPAIRS, IF NO OTHER SAMPLING POINT IS AVAILABLE, WELL-FLUSHED FIRE HYDRANTS MAY BE USED WITH THE UNDERSTANDING THAT THEY DO NOT REPRESENT OPTIMUM SAMPLING CONDITIONS.) A SUGGESTED COMBINATION METHOD AND SAMPLING TAP USED FOR MAINS UP TO AND INCLUDING 8-IN. (203-MM DIAMETER) IS SHOWN IN FIGURE 2. THESE SHALL BE TAKEN AT THE TRENCH OR TO THE TRENCH FOR SAMPLING. THE SAMPLING POINT MUST BE ISOLATED AND DISCONNECTED AND FLUSHED PRIOR TO SAMPLING. A CORPORATION COOK MAY BE INSTALLED IN THE MAIN WITH A COPPER-TYPE COUPLER ASSEMBLY. AFTER SAMPLES HAVE BEEN COLLECTED, THE GOOSENECK ASSEMBLY MAY BE REMOVED AND RETAINED FOR FUTURE USE.

5.1.4 SAMPLE RESULTS, IF SAMPLE RESULTS FROM THE LAB INDICATE A MEASURED HPC GREATER THAN 500 COLON-FORMING UNITS (CFU) PER ML, FLUSHING SHOULD BE RESUMED AND ANOTHER CHLORINE FEED AND SET OF SAMPLES SHOULD BE TAKEN UNTIL NO COLIFORMS ARE PRESENT AND THE HPC IS LESS THAN 500 CFU/ML.

5.1.5 RECORD OF COMPLIANCE, THE RECORD OF COMPLIANCE SHALL BE THE BACTERIOLOGICAL TEST RESULTS CERTIFYING THAT THE WATER SAMPLED FROM THE NEW MAINS WAS FREE OF COLIFORM BACTERIA CONTAMINATION AND IS EQUAL TO OR BETTER THAN THE BACTERIOLOGICAL WATER QUALITY IN THE DISTRIBUTION SYSTEM.

SECTION 4.7 DISINFECTION

IF THE INITIAL DISINFECTION FAILS TO PRODUCE SATISFACTORY BACTERIOLOGICAL RESULTS OR IF OTHER WATER QUALITY IS AFFECTED, THE NEW MAIN MAY BE REFILLED AND SHALL BE RESAMPLED. IF CHECK SAMPLES ALSO FAIL TO PRODUCE ACCEPTABLE RESULTS, THE MAIN SHALL BE RECHLORINATED BY THE CONTINUOUS-FEED OR SLUG METHOD UNTIL SATISFACTORY RESULTS ARE OBTAINED THAT DEFINE TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES TAKEN 24 HR APART.

NOTE: HIGH RESIDUALS IN THE EXISTING SYSTEM, RESULTING FROM FLUSHING OR MAIN, MAY OCCUR SEVERAL DAYS THAT THIS ACCUMULATED IN THE EXISTING MAINS, WHEN CHECK SAMPLES ARE TAKEN, IT IS ADVISABLE TO SAMPLE WATER ENTERING THE NEW MAIN TO DETERMINE THE SOURCE OF TURBIDITY.

TABLE 1 OUNCES OF CALCIUM HYPOCHLORITE GRANULES TO BE PLACED AT BEGINNING OF MAIN AND AT EACH 500 FT INTERVAL.

PIPE DIAMETER (IN)	CALCIUM HYPOCHLORITE GRANULES (OZ.)
4"	3.8
6"	5.7
8"	7.6
10"	10.5
12"	15.1
14 AND LARGER	0.72 X D ² X 1.51

WHERE D IS THE INSIDE PIPE DIAMETER IN FEET D = D/12

4.4.3 CONTINUOUS FEED METHOD, THE CONTINUOUS-FEED METHOD CONSISTS OF PLACING CALCIUM HYPOCHLORITE GRANULES IN THE MAIN DURING CONSTRUCTION (OPTIONAL), COMPLETELY FILLING THE MAIN TO REMOVE AIR POCKETS, FLUSHING THE COMPLETED MAIN TO REMOVE PARTICULATES, AND FILLING THE MAIN WITH POTABLE WATER. THE POTABLE WATER SHALL BE CHLORINATED SO THAT AFTER A 24-HR HOLDING PERIOD IN THE MAIN THERE WILL BE A FREE CHLORINE RESIDUAL OF NOT LESS THAN 50 MG/L. 25 MG/L CHLORINE RESIDUAL IS REQUIRED AT THE END OF 24 HOURS.

4.4.3.1 PLACING OF CALCIUM HYPOCHLORITE GRANULES, AT THE OPTION OF THE PURCHASER, CALCIUM HYPOCHLORITE GRANULES SHALL BE PLACED IN PIPE SECTIONS AS SPECIFIED IN SECTION 4.4.2.1. (SEE ABOVE) THE PURPOSE OF THIS PROCEDURE IS TO PROVIDE A STRONG CHLORINE CONCENTRATION IN THE FIRST FLOW OF FLUSHING WATER THAT FLOWS DOWN THE MAIN. IN PARTICULAR, THIS PROCEDURE IS RECOMMENDED WHEN THE TYPE OF PIPE IS SUCH THAT THIS FIRST FLOW OF WATER WILL FLOW INTO ANNULAR SPACES AT JOINTS.

4.4.3.2 PRELIMINARY FLUSHING, BEFORE THE MAIN IS CHLORINATED, IT SHALL BE FILLED TO ELIMINATE AIR POCKETS AND FLUSHED TO REMOVE PARTICULATES. THE FLUSHING VELOCITY IN THE MAIN SHALL NOT BE LESS THAN 2.5 FT/SEC (0.76 M/SEC) UNLESS THE PURCHASER DETERMINES THAT CONDITIONS DO NOT PERMIT THE REQUIRED FLOW TO BE DISCHARGED TO WASTE.

TABLE 3 REQUIRED FLOW AND OPENINGS TO FLUSH PIPELINES (AS PER ASTM F726 KP4) RESIDUAL PRESSURE IN MAIN

PIPE DIAMETER (INCHES)	FLOW REQUIRED TO PRODUCE 2.5 FT/SEC (APPROX.)	SIZE OF TAP 1" 1.5" 2.0"	NUMBER OF 2.5" HYDRANT OUTLETS
4"	100	1	1
6"	400	1	1
8"	600	2	2
10"	900	3	2
12"	1,600	5	2

TABLE 3 SHOWS THE RATES OF FLOW REQUIRED TO PRODUCE A VELOCITY OF 2.5 FT/SEC (0.76 M/SEC) IN COMMONLY USED SIZES OF PIPE. NOTE: DRAT FLUSHING IS NO SUBSTITUTE FOR PREVENTIVE MEASURES DURING CONSTRUCTION. CERTAIN CONTAMINANTS, SUCH AS CEMENT DEBRIS, RESIST FLUSHING AT ANY FEASIBLE VELOCITY AND PIGGING OF THE MAIN WILL BE REQUIRED. FOR 24-IN. (600-MM) OR LARGER DIAMETER MAINS, AN ACCEPTABLE ALTERNATIVE TO FLUSHING IS TO BROOM-SWEEP THE MAIN, CAREFULLY REMOVING SWEEPINGS PRIOR TO CHLORINATING THE MAIN.

4.4.3.3 PROCEDURE FOR CHLORINATING THE MAIN

1. WATER SUPPLIED FROM A TEMPORARY, BACKFLOW-PROTECTED CONNECTION TO THE EXISTING DISTRIBUTION SYSTEM OR OTHER APPROVED SUPPLY SOURCE SHALL FLOW AT A CONSTANT, MEASURED RATE INTO THE NEWLY INSTALLED WATER MAIN. IN THE ABSENCE OF A METER, THE RATE MAY BE APPROXIMATED USING A PITOT GAUGE IN THE DISCHARGE, MEASURING THE TIME TO FILL A CONTAINER OF KNOWN VOLUME, OR MEASURING THE TRAJECTORY OF THE DISCHARGE AND USING THE FORMULA SHOWN IN FIGURE 2. THE MAIN SHOULD UNDERGO HYDROSTATIC TESTING PRIOR TO DISINFECTION.

2. AT A POINT NOT MORE THAN 10 FT (3 M) DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN, WATER ENTERING THE NEW MAIN SHALL RECEIVE A DOSE OF CHLORINE FED AT A CONSTANT RATE SUCH THAT THE WATER WILL HAVE NOT LESS THAN 25 MG/L FREE CHLORINE AT THE END OF A 24-HR HOLDING PERIOD. TO ENSURE THAT THIS CONCENTRATION IS ACHIEVED, THE SLOW RATE OF FLOW IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN THE CURRENT EDITION OF STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER OR AWWA MANUAL M 12, OR USING APPROPRIATE CHLORINE TEST KITS (SEE APPENDIX A).

TABLE 4 GIVES THE AMOUNT OF CHLORINE REQUIRED FOR EACH 100 FT (30.5 M) OF PIPE OF VARIOUS DIAMETERS. SOLUTIONS OF 1 PERCENT CHLORINE MAY BE PREPARED WITH SODIUM HYPOCHLORITE OR CALCIUM HYPOCHLORITE. THE LATTER SOLUTION REQUIRES 1 LB (454 G) OF CALCIUM HYPOCHLORITE IN 5 GAL (30.3 L) OF WATER.

3. AS AN OPTIONAL PROCEDURE, IF REQUIRED BY THE PURCHASER, WATER USED TO FILL THE NEW MAIN DURING THE APPLICATION OF CHLORINE SHALL BE SUPPLIED THROUGH A TEMPORARY CONNECTION. THIS TEMPORARY CONNECTION SHALL BE INSTALLED WITH AN APPROPRIATE CONTROL DEVICE, CONSISTENT WITH THE METHOD OF HAZARD OR BACKFLOW PROTECTION OF THE ACTIVE DISTRIBUTION SYSTEM (SEE FIGURE 1). CHLORINE APPLICATION SHALL NOT CEASE UNTIL THE ENTIRE MAIN IS FILLED WITH HEAVILY CHLORINATED WATER. THE CHLORINATED WATER SHALL BE RETAINED IN THE MAIN FOR AT LEAST 24 HR, DURING WHICH TIME VALVES AND HYDRANTS IN THE TREATED SECTION SHALL BE OPERATED TO DISINFECT DISINFECTION OF THE APPURTENANCES. AT THE END OF THIS 24-HR PERIOD, THE TREATED WATER IN ALL PORTIONS OF THE MAIN SHALL HAVE A RESIDUAL OF NOT LESS THAN 100 MG/L OF FREE CHLORINE.

4. DIRECT-FEED CHLORINATORS, WHICH OPERATE SOLID GAS PRESSURE IN THE CHLORINE CYLINDER, SHALL NOT BE USED FOR THE APPLICATION OF LIQUID CHLORINE. THE DANGER OF USING DIRECT-FEED CHLORINATORS IS THAT WATER PRESSURE IN THE MAIN CAN EXCEED GAS PRESSURE IN THE CHLORINE CYLINDER. THIS ALLOWS A BACKFLOW OF WATER INTO THE CYLINDER, RESULTING IN SEVERE CYLINDER CORROSION AND THE ESCAPE OF CHLORINE GAS. THE PREFERRED EQUIPMENT FOR APPLYING LIQUID CHLORINE IS A SOLUTION-FEED, VACUUM-OPERATED CHLORINATOR AND A BOOSTER PUMP. THE VACUUM-OPERATED CHLORINATOR MAKES THE CHLORINE GAS IN SOLUTION WATER. THE BOOSTER PUMP INJECTS THE CHLORINE-GAS SOLUTION INTO THE MAIN TO DILUTE IT. HYPOCHLORITE SOLUTION MAY BE APPLIED TO THE WATER MAIN WITH A GASOLINE OR ELECTRICALLY POWERED CHEMICAL-FEED PUMP DESIGNED FOR FEEDING CHLORINE SOLUTIONS. FEED LINES SHALL BE CAPABLE OF MATERIAL, CAPABLE OF WITHSTANDING THE CORROSION CAUSED BY THE CONCENTRATED CHLORINE SOLUTIONS AND THE MAXIMUM PRESSURES THAT MAY BE CREATED BY THE PUMPS. ALL CONNECTIONS SHALL BE CHECKED FOR TIGHTNESS BEFORE THE SOLUTION IS APPLIED TO THE MAIN.

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4.4.4.1 PLACING CALCIUM HYPOCHLORITE GRANULES, SAME AS SEC. 4.4.3.1.

4.4.4.2 PRELIMINARY FLUSHING, SAME AS SEC. 4.4.3.2.

4.4.4.3 PROCEDURE FOR CHLORINATING THE MAIN

1. WATER SUPPLIED FROM A TEMPORARY, BACKFLOW-PROTECTED CONNECTION TO THE EXISTING DISTRIBUTION SYSTEM OR OTHER APPROVED SUPPLY SOURCE SHALL FLOW AT A CONSTANT, MEASURED RATE INTO THE NEWLY INSTALLED WATER MAIN. IN THE ABSENCE OF A METER, THE RATE MAY BE APPROXIMATED USING A PITOT GAUGE IN THE DISCHARGE, MEASURING THE TIME TO FILL A CONTAINER OF KNOWN VOLUME, OR MEASURING THE TRAJECTORY OF THE DISCHARGE AND USING THE FORMULA SHOWN IN FIGURE 2. THE MAIN SHOULD UNDERGO HYDROSTATIC TESTING PRIOR TO DISINFECTION.

2. AT A POINT NOT MORE THAN 10 FT (3 M), DOWNSTREAM FROM THE BEGINNING OF THE NEW MAIN, WATER ENTERING THE NEW MAIN SHALL RECEIVE A DOSE OF CHLORINE FED AT A CONSTANT RATE SUCH THAT THE WATER WILL HAVE NOT LESS THAN 100 MG/L FREE CHLORINE. TO ENSURE THAT THIS CONCENTRATION IS ACHIEVED, THE CHLORINE CONCENTRATION SHOULD BE MEASURED AT REGULAR INTERVALS. THE CHLORINE SHOULD BE APPLIED CONTINUOUSLY AND FOR A SUFFICIENT PERIOD TO DEVELOP A SOLID COLUMN OF CHLORINE OR SLUG OF CHLORINATED WATER THAT WILL, AS IT MOVES THROUGH THE MAIN, EXPOSE ALL INTERIOR SURFACES TO A CONCENTRATION OF APPROXIMATELY 100 MG/L FOR AT LEAST 3 HR.

3. THE FREE CHLORINE RESIDUAL SHALL BE MEASURED IN ELSE SLUG AS IT MOVES THROUGH THE MAIN. IF AT ANY TIME IT DROP BELOW 50 MG/L, THE FLOW SHALL BE STOPPED AND EQUIPMENT SHALL BE RELOCATED AT THE HEAD OF THE SLUG; AND, AS FLOW RESUMES, CHLORINE SHALL BE APPLIED TO RESTORE THE FREE CHLORINE IN THE SLUG TO NOT LESS THAN 100 MG/L.

4. AS THE CHLORINATED WATER FLOWS PAST FITTINGS AND VALVES, RELATED VALVES AND HYDRANTS SHALL BE OPERATED SO AS TO DISINFECT APPURTENANCES AND PIPE BRANCHES.

SECTION 4.8 SPECIAL PROCEDURES FOR CALKED TAPPING SLEEVES

BEFORE A TAPPING SLEEVE IS INSTALLED, THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE THOROUGHLY CLEANED, AND THE INTERIOR SURFACE OF THE SLEEVE SHALL BE LIGHTLY SMOOED WITH CLEAN HYPOCHLORITE POWDER. TAPPING SLEEVES ARE USED TO AVOID SHUTTING DOWN THE MAIN AFTER THE TAP IS MADE, IT IS POSSIBLE TO DAMPEN THE SHOCKING WITHOUT SHUTTING DOWN THE MAIN AND REMOVING THE SLEEVE. THE SPACE BETWEEN THE TAPPING SLEEVE AND THE TAPPED PIPE IS APPROXIMATELY 0.5 IN. (13 MM) SUCH AS TO ALLOW AS 100 MG/L OF CALCIUM HYPOCHLORITE POWDER WILL PROVIDE A CHLORINE CONCENTRATION OF MORE THAN 50 MG/L.

SEC. 5 BACTERIOLOGICAL TESTS

5.1.1 STRINGING CONDUIT WITH FINAL FLUSHING AND BEFORE THE NEW MAIN IS CONNECTED TO THE DISTRIBUTION SYSTEM, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES, TAKEN AT LEAST 24 HR APART, SHALL BE COLLECTED FROM THE NEW MAIN. (NOTE: THE PIPE, THE WATER LOADED INTO THE PIPE, AND ANY DEBRIS DERT A CHLORINE DANGOR THAT CAN INTERFERE WITH DIRECTION) AT LEAST TWO SETS OF SAMPLES SHALL BE COLLECTED FROM THE NEW WATER MAIN, ONE SET FROM THE END OF THE LINE AND AT THE PRESENCE OF ONE SET FROM BEHIND/BELOW/BEFORE. SAMPLES SHALL BE TESTED FOR BACTERIOLOGICAL (CHEMICAL AND PHYSICAL) QUALITY IN ACCORDANCE WITH STANDARD METHODS. FOR THE EXAMINATION OF WATER AND WASTEWATER, AND SHALL SHOW THE ABSENCE OF COLIFORM ORGANISMS; AND, IF REQUIRED, THE ABSENCE OF A CHLORINE RESIDUAL. TYPICAL, PH, AND A STANDARD HYDROPHOBIC PLATE COUNT (PFC) TEST MAY BE REQUIRED AT THE OPTION OF THE PURCHASER. NEW MATERIALS DOES NOT TYPICALLY CONTAIN COLIFORMS BUT DOES TYPICALLY CONTAIN PFC BACTERIA.

5.1.2 SPECIAL CONDITIONS, IF BENCH TREATMENT HAS BEEN USED IN THE MAIN DURING CONSTRUCTION, OR IF, IN THE OPINION OF THE PURCHASER, EXCESSIVE QUANTITIES OF OIL OR DEBRIS HAVE ENTERED THE NEW MAIN, BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT INTERVALS OF APPROXIMATELY 200 FT (61 M), AND THE LOCATION SHALL BE IDENTIFIED. SAMPLES SHALL BE TAKEN AT WATER THAT HAS STOOD IN THE NEW MAIN FOR AT LEAST 16 HR AFTER FINAL FLUSHING HAS BEEN COMPLETED.

5.1.3 SAMPLING PROCEDURES, SAMPLES FOR BACTERIOLOGICAL ANALYSIS SHALL BE COLLECTED IN STERILE BOTTLES TREATED WITH SODIUM HYDROXIDE, AS REQUIRED BY STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER. NO OIL OR OTHER HYDROPHOBIC SUBSTANCE SHOULD BE USED IN THE COLLECTION OF SAMPLES. (NOTE: FOR PIPE REPAIRS, IF NO OTHER SAMPLING POINT IS AVAILABLE, WELL-FLUSHED FIRE HYDRANTS MAY BE USED WITH THE UNDERSTANDING THAT THEY DO NOT REPRESENT OPTIMUM SAMPLING CONDITIONS.) A SUGGESTED COMBINATION METHOD AND SAMPLING TAP USED FOR MAINS UP TO AND INCLUDING 8-IN. (203-MM DIAMETER) IS SHOWN IN FIGURE 2. THESE SHALL BE TAKEN AT THE TRENCH OR TO THE TRENCH FOR SAMPLING. THE SAMPLING POINT MUST BE ISOLATED AND DISCONNECTED AND FLUSHED PRIOR TO SAMPLING. A CORPORATION COOK MAY BE INSTALLED IN THE MAIN WITH A COPPER-TYPE COUPLER ASSEMBLY. AFTER SAMPLES HAVE BEEN COLLECTED, THE GOOSENECK ASSEMBLY MAY BE REMOVED AND RETAINED FOR FUTURE USE.

5.1.4 SAMPLE RESULTS, IF SAMPLE RESULTS FROM THE LAB INDICATE A MEASURED HPC GREATER THAN 500 COLON-FORMING UNITS (CFU) PER ML, FLUSHING SHOULD BE RESUMED AND ANOTHER CHLORINE FEED AND SET OF SAMPLES SHOULD BE TAKEN UNTIL NO COLIFORMS ARE PRESENT AND THE HPC IS LESS THAN 500 CFU/ML.

5.1.5 RECORD OF COMPLIANCE, THE RECORD OF COMPLIANCE SHALL BE THE BACTERIOLOGICAL TEST RESULTS CERTIFYING THAT THE WATER SAMPLED FROM THE NEW MAINS WAS FREE OF COLIFORM BACTERIA CONTAMINATION AND IS EQUAL TO OR BETTER THAN THE BACTERIOLOGICAL WATER QUALITY IN THE DISTRIBUTION SYSTEM.

SECTION 4.7 DISINFECTION

IF THE INITIAL DISINFECTION FAILS TO PRODUCE SATISFACTORY BACTERIOLOGICAL RESULTS OR IF OTHER WATER QUALITY IS AFFECTED, THE NEW MAIN MAY BE REFILLED AND SHALL BE RESAMPLED. IF CHECK SAMPLES ALSO FAIL TO PRODUCE ACCEPTABLE RESULTS, THE MAIN SHALL BE RECHLORINATED BY THE CONTINUOUS-FEED OR SLUG METHOD UNTIL SATISFACTORY RESULTS ARE OBTAINED THAT

CONSTRUCTION SEQUENCE

THE APPLICANT PROPOSES TO DISTURB MORE THAN 5.0 AC. AT ONE TIME WITH PERMISSION FROM THE TOWN OF BEEKMAN

PHASE II (APPROXIMATE AREA OF DISTURBANCE 6.75 ACRES) --

1. SITE GRADING
1. ROUGH GRADE SITE
1. INSTALL REQUIRED DRAINAGE PIPING
1. INSTALL WATER MAIN / SEWER EXTENSION
1. INSTALL BRING SITE TO FINISHED GRADE STABILIZED EXPOSED AREAS
1. AS FILL IS ADDED TO THE SITE DIVERSION SWALES SHALL BE ADJUSTED ACCORDINGLY TO DIRECT RUNOFF TO SEDIMENT TRAP
1. TEMPORARILY STABILIZE THE SITE SHOULDERS WHILE UTILITY INSTALLATION (ELECTRIC AND FIBER) IS BEING PERFORMED VIA

A DISTURBANCE PLAN SHALL CONSISTENTLY BE UPDATED (INCLUDED IN BI- WEEKLY INSPECTION REPORTS) AS SITE DISTURBANCE CHANGES.

BIORETENTION AREAS SHALL NOT BE INSTALLED UNTIL THE CONTRIBUTING DRAINAGE AREA IS STABILIZED TO THE SATISFACTION OF THE TOWN/PROJECT ENGINEER.

CHECK DAMS CAN BE REMOVED ONCE THE CONTRIBUTING DRAINAGE AREA IS STABILIZED TO THE SATISFACTION OF THE TOWN/PROJECT ENGINEER.

REFER TO EROSION CONTROL MAINTENANCE SCHEDULE FOR FURTHER INFORMATION
EROSION AND SEDIMENT CONTROL PLAN SUBJECT TO ANY IN FIELD MODIFICATIONS REQUIRED BY THE TOWN OF BEEKMAN INSPECTORS, NYSDEC, AND PROJECT ENGINEER. A DISTURBANCE PLAN SHALL CONSISTENTLY BE UPDATED (INCLUDED IN BI-WEEKLY INSPECTION REPORTS) AS SITE DISTURBANCE CHANGES.

1. VEGETATE DISTURBED AREAS NOT TO BE SUBJECT TO CONSTRUCTION WITHIN 14 DAYS.
- UPON INSTALLATION OF ROAD-SUBBASE AND STABILIZATION OF ALL DISTURBED AREAS, SILT FENCING, TEMPORARY SWALES, CHECK DAMS, AND INLET PROTECTION ASSOCIATED WITH THIS PHASE MAY BE REMOVED UNLESS OTHER WISE NOTED BY FIELD INSPECTIONS BY THE TOWN ENGINEER AND PROJECT ENGINEER.

PHASE III (APPROXIMATE AREA OF DISTURBANCE 6.75 ACRES) --

1. CONSTRUCT INDIVIDUAL DRIVEWAY(S) AND HOUSE SITE(S).
- INSTALL SILT FENCING ON DOWN HILL PORTION OF GRADING
- CLEAR AND ROUGH GRADE FOR DRIVEWAY AND HOUSE AS REQUIRED
- CHECK STABILIZED ENTRANCE TO INSURE PROPER FUNCTION
- STABILIZE ADJACENT BARE AREAS WITH VEGETATION

2. FOLLOW INDIVIDUAL LOT CONSTRUCTION GENERAL NOTE.
3. CONSTRUCT HOME AS PER BUILDING PLOT PLAN

4. SEEDING AND MULCHING SHOULD BE CONDUCTED SO THAT NO AREA GREATER THAN 2 ACRES IS LEFT EXPOSED FOR MORE THAN 14 DAYS AFTER REGULAR CONSTRUCTION IS COMPLETED IN THAT AREA.

5. REMOVE SILT FENCING EROSION CONTROL FOR THE INDIVIDUAL LOT ONCE THE AREA HAS BEEN STABILIZED AS REQUIRED.

BIORETENTION AREAS SHALL NOT BE INSTALLED UNTIL THE CONTRIBUTING DRAINAGE AREA IS STABILIZED TO THE SATISFACTION OF THE TOWN/PROJECT ENGINEER.

CHECK DAMS CAN BE REMOVED ONCE THE CONTRIBUTING DRAINAGE AREA IS STABILIZED TO THE SATISFACTION OF THE TOWN/PROJECT ENGINEER.

REFER TO EROSION CONTROL MAINTENANCE SCHEDULE FOR FURTHER INFORMATION
EROSION AND SEDIMENT CONTROL PLAN SUBJECT TO ANY IN FIELD MODIFICATIONS REQUIRED BY THE TOWN OF BEEKMAN INSPECTORS, NYSDEC, AND PROJECT ENGINEER.

1. VEGETATE DISTURBED AREAS NOT TO BE SUBJECT TO CONSTRUCTION WITHIN 14 DAYS.
- UPON INSTALLATION OF ROAD-SUBBASE AND STABILIZATION OF ALL DISTURBED AREAS, SILT FENCING, TEMPORARY SWALES, CHECK DAMS, AND INLET PROTECTION ASSOCIATED WITH THIS PHASE MAY BE REMOVED UNLESS OTHER WISE NOTED BY FIELD INSPECTIONS BY THE TOWN ENGINEER AND PROJECT ENGINEER.

EROSION CONTROL IMPLEMENTATION SCHEDULE (ALL PHASES):

EROSION/SEDIMENT CONTROL	PLACEMENT
SILT FENCE	PRIOR TO ANY SITE DISTURBANCE/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
STABILIZED CONSTRUCTION ENTRANCE	PRIOR TO ANY GRADING OF THE SITE/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
SEDIMENT TRAP	PRIOR TO ANY GRADING OF THE ROAD/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
SILT FENCE (ADDITIONAL)	INSTALL AS REQUIRED DURING RD CONSTRUCTION/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
CHECK DAM	AS REQUIRED AS PER CONSTRUCTION SEQUENCE
CATCH BASIN PROTECTION	DURING ROUGH GRADING OF ROAD/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
RIPRAP OUTLET/OVERFLOW	AS REQUIRED AS PER CONSTRUCTION SEQUENCE
POND VEGETATION ESTABLISHMENT	AS REQUIRED AS PER CONSTRUCTION SEQUENCE
	- REFER TO CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION

CONSTRUCTION EROSION CONTROL MAINTENANCE SCHEDULE (ALL PHASES):

STRUCTURE	INSPECTION	MAINTENANCE REQUIRED	STRUCTURE TYPE
SILT FENCE	WEEKLY	REPAIR, REPLACE	TEMPORARY
STABILIZED CONSTRUCTION ENTRANCE	DAILY	REPAIR, REPLACE	TEMPORARY
LITTER	DAILY	PICK UP	---
CHECK DAM	WEEKLY	REPAIR	TEMPORARY
DUST	DAILY	SPRAYING, SWEEPING	---
RIPRAP OUTLET/OVERFLOW	WEEKLY	REPAIR	PERMANENT
VEGETATION ESTABLISHMENT	WEEKLY	WATERING, SEEDING	PERMANENT
SEDIMENT TRAP	WEEKLY	REPAIR, DEEPEN	TEMPORARY
SITE DISTURBANCE PLAN UPDATE	WEEKLY	UPDATE DISTURBANCE AREA	---
			- REFER TO CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION

SWPPP PLAN CERTIFICATION

I, BRIAN J. STOKOSA, P.E. HEREBY CERTIFY THAT THE DESIGN OF ALL STORMWATER MANAGEMENT PRACTICES DETAIL ON THIS PLAN SET MEET THE MINIMUM REQUIREMENTS SET FORTH IN THE GP 0-15-002 PERMIT.

SWPPP PLAN PREPARER: BRIAN J. STOKOSA, P.E. NYSPE #083970

SWPPP PLAN PREPARER SIGNATURE: _____ DATE: _____

SWPPP PLAN ONSITE REQUIREMENTS

EACH CONTRACTOR AND SUBCONTRACTOR IDENTIFIED IN THE SWPPP WHO WILL BE INVOLVED IN SOIL DISTURBANCE AND/OR STORMWATER MANAGEMENT PRACTICE INSTALLATION SHALL SIGN AND DATE A COPY OF THE FOLLOWING CERTIFICATION STATEMENT BEFORE UNDERTAKING ANY LAND DEVELOPMENT ACTIVITY:

"I HEREBY CERTIFY THAT I UNDERSTAND AND AGREE TO COMPLY WITH THE TERMS AND CONDITIONS OF THE SWPPP AND AGREE TO IMPLEMENT ANY CORRECTIVE ACTIONS IDENTIFIED BY THE QUALIFIED INSPECTOR DURING A SITE INSPECTION. I ALSO UNDERSTAND THAT THE OWNER OR OPERATOR MUST COMPLY WITH THE TERMS AND CONDITIONS OF THE MOST CURRENT VERSION OF THE NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM ("SPDES") GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES AND THAT IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS. FURTHERMORE, I UNDERSTAND THAT CERTIFYING FALSE, INCORRECT OR INACCURATE INFORMATION IS A VIOLATION OF THE REFERENCED PERMIT AND THE LAWS OF THE STATE OF NEW YORK AND COULD SUBJECT ME TO CRIMINAL, CIVIL AND/OR ADMINISTRATIVE PROCEEDINGS."

SITE CONSTRUCTION CONTRACTOR: _____

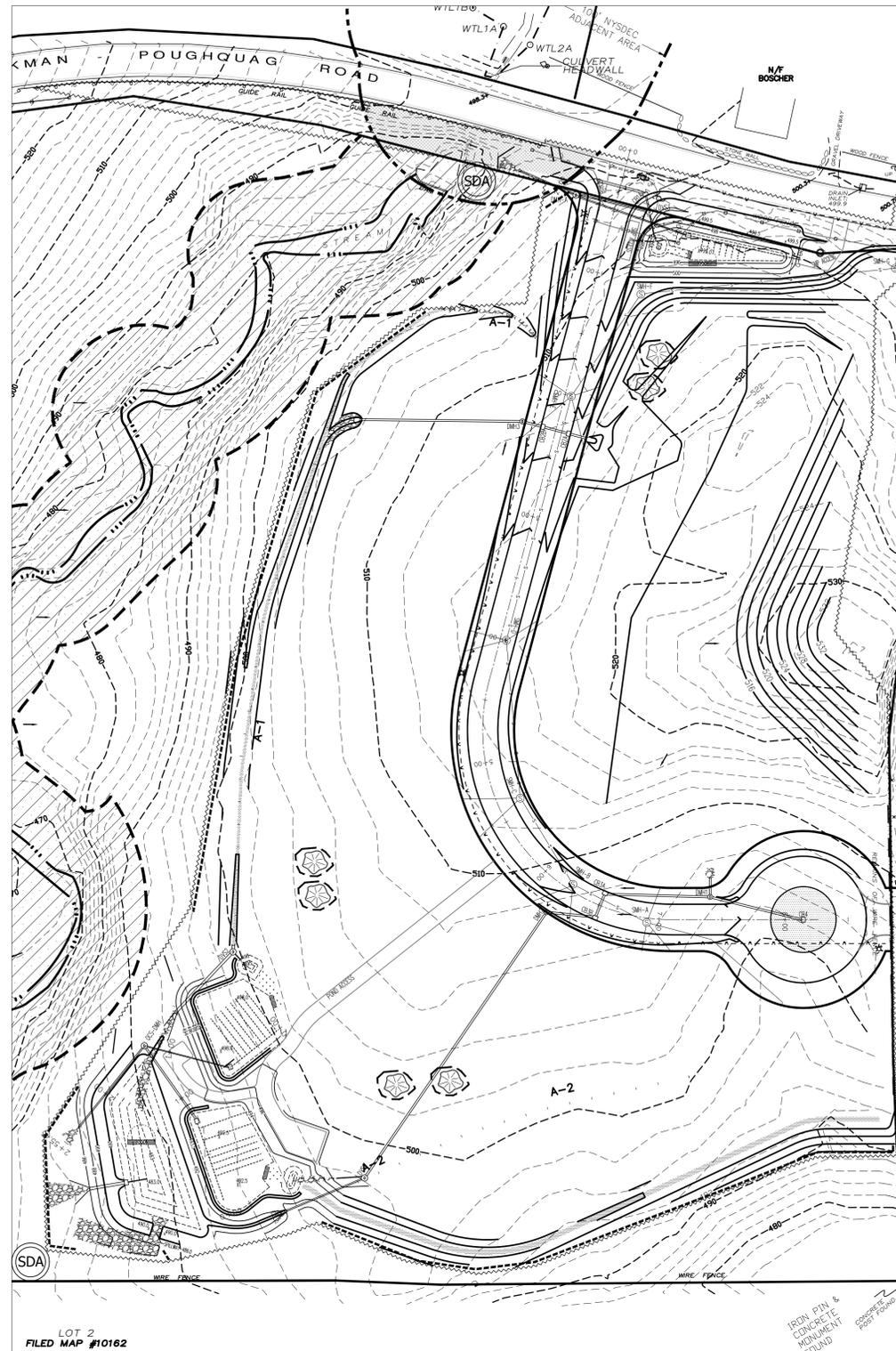
CONTRACTOR ADDRESS: _____

CONTRACTOR PHONE #: _____

CONTRACTOR SIGNATURE: _____

TITLE: _____

DATE: _____



LOT 2
FILED MAP #10162

PHASE II
SCALE: 1" = 60'

SEDIMENT & EROSION PLAN LEGEND

	CSA	CONSTRUCTION STAGING AREA		CHECK DAM LOCATION FOLLOW DAM GRADING TABLE
		DISTURBANCE LIMITS		CONSTRUCTION ENTRANCE
	A-2 B-3	TEMPORARY SWALE		TEMPORARY SOIL STOCKPILE WITH SILT FENCING EROSION CONTROL
		PROPOSED SILT FENCING		STORMWATER DISCHARGE AREA
		ORANGE CONSTRUCTION FENCING		SEDIMENT TRAP LOCATION
		SEDIMENT MARKER		



PHASE III
SCALE: 1" = 60'

SPILL RESPONSE EMERGENCY PHONE NUMBER(S):
NYS Spill Hotline: 1-800-457-7362
National Response Center: 1-800-424-8802

OWNER'S CONSENT

THE UNDERSIGNED OWNER OF THIS PROPERTY HEREOF STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREOF.

OWNER _____ DATE _____

OWNER & APPLICANT

JSM UPSTATE PROPERTIES INC
C/O JOHN MASIMILLO
208 PLEASANT PLAINS AVE
STATEN ISLAND NY 10309

TOWN OF BEEKMAN PLANNING BOARD

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20____, BY _____

CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

Mark A. Day, PE	
Revision	OCTOBER 1, 2018
Project No.	2018.249
License No.	069646

M.A. DAY Engineering, PC
Consulting Engineers

3 Van Wyck Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

ALAINA ESTATES
TOWN OF BEEKMAN
DUTCHESS COUNTY, NEW YORK

CONSTRUCTION DETAILS

SCALE	AS NOTED	DRAWN BY	BJS	CHECKED BY	BJS
DATE	01-01-17				10 of 12

CONSTRUCTION SEQUENCE

THE APPLICANT PROPOSES TO DISTURB MORE THAN 5.0 AC. AT ONE TIME WITH PERMISSION FROM THE TOWN OF LAGRANGE.

PHASE IV (APPROXIMATE AREA OF DISTURBANCE 2.0 ACRES) -

1. CONVERT TEMPORARY SEDIMENT PONDS TO FUNCTIONAL STORMWATER MANAGEMENT FACILITIES AS PER PLAN IF REQUIRED. REMOVE SILT AND SEDIMENT FROM ALL FACILITIES.
 2. BEGIN RESHAPING OF POND INTERIOR ONLY IF THE SEDIMENT TRAP IS FREE OF STANDING WATER TO AVOID A RELEASE OF SEDIMENT INTO RECEIVING SWALE.
 3. REMOVE ANY TEMPORARY SWALE. EXAMINE, REPAIR, FRESHEN, PERMANENT SWALES AS REQUIRED.
 4. INSTALL SMP PLANTINGS AS REQUIRED FOLLOWING ALL PLANTING RECOMMENDATIONS FOUND WITHIN THE PLAN SET.
 5. FINAL ASPHALT COURSE FOR SUBDIVISION ROAD.
 6. SEED AND MULCH, INSTALL STREET TREES, MONUMENTS AS REQUIRED.
 7. SEEDING AND MULCHING SHOULD BE CONDUCTED SO THAT NO AREA GREATER THAN 2 ACRES IS LEFT EXPOSED FOR MORE THAN 14 DAYS AFTER REGULAR CONSTRUCTION IS COMPLETED IN THAT AREA.
 8. REMOVE SILT FENCING WHEN PHASE HAS BEEN STABILIZED AS REQUIRED.
- REFER TO EROSION CONTROL MAINTENANCE SCHEDULE FOR FURTHER INFORMATION
 EROSION AND SEDIMENT CONTROL PLAN SUBJECT TO ANY IN FIELD MODIFICATIONS REQUIRED BY THE TOWN OF BEEKMAN INSPECTORS, NYSDEC, AND PROJECT ENGINEER.
- VEGETATE DISTURBED AREAS NOT TO BE SUBJECT TO CONSTRUCTION WITHIN 14 DAYS.
 UPON INSTALLATION OF ROAD-SUBBASE AND STABILIZATION OF ALL DISTURBED AREAS, SILT FENCING, TEMPORARY SWALES, CHECK DAMS, AND INLET PROTECTION ASSOCIATED WITH THIS PHASE MAY BE REMOVED UNLESS OTHERWISE NOTED BY FIELD INSPECTIONS BY THE TOWN ENGINEER AND PROJECT ENGINEER.

EROSION CONTROL IMPLEMENTATION SCHEDULE (ALL PHASES):

EROSION/SEDIMENT CONTROL	IMPLEMENTATION SCHEDULE
SILT FENCE	PRIOR TO ANY SITE DISTURBANCE/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
STABILIZED CONSTRUCTION ENTRANCE	PRIOR TO ANY GRADING OF THE SITE/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
SEDIMENT TRAP	PRIOR TO ANY GRADING OF THE ROAD/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
SILT FENCE (ADDITIONAL)	INSTALL AS REQUIRED DURING RD CONSTRUCTION/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
CHECK DAM	AS REQUIRED AS PER CONSTRUCTION SEQUENCE
CATCH BASIN PROTECTION	DURING ROUGH GRADING OF ROAD/AS REQUIRED AS PER CONSTRUCTION SEQUENCE
RIPRAP OUTLET/OVERFLOW	AS REQUIRED AS PER CONSTRUCTION SEQUENCE
POND VEGETATION ESTABLISHMENT	AS REQUIRED AS PER CONSTRUCTION SEQUENCE
- REFER TO CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION	

CONSTRUCTION EROSION CONTROL MAINTENANCE SCHEDULE (ALL PHASES):

STRUCTURE	INSPECTION	MAINTENANCE REQUIRED	STRUCTURE TYPE
SILT FENCE	WEEKLY	REPAIR, REPLACE	TEMPORARY
STABILIZED CONSTRUCTION ENTRANCE	DAILY	REPAIR, REPLACE	TEMPORARY
LITTER	DAILY	PICK UP	---
CHECK DAM	WEEKLY	REPAIR	TEMPORARY
DUST	DAILY	SPRAYING, SWEEPING	---
RIPRAP OUTLET/OVERFLOW	WEEKLY	REPAIR	PERMANENT
VEGETATION ESTABLISHMENT	WEEKLY	WATERING, SEEDING	PERMANENT
SEDIMENT TRAP	WEEKLY	REPAIR, DEEPEN	TEMPORARY
SITE DISTURBANCE PLAN UPDATE	WEEKLY	UPDATE DISTURBANCE AREA	---
- REFER TO CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION			



PHASE IV
 SCALE: 1" = 60'

SEDIMENT & EROSION PLAN LEGEND

	CSA CONSTRUCTION STAGING AREA		CHECK DAM LOCATION FOLLOW DAM SPACING TABLE
	A-2 B-3 DISTURBANCE LIMITS		CONSTRUCTION ENTRANCE
	TEMPORARY SWALE		TEMPORARY SOIL STOCKPILE WITH SILT FENCING EROSION CONTROL
	PROPOSED SILT FENCING		STORMWATER DISCHARGE AREA
	ORANGE CONSTRUCTION FENCING		SEDIMENT TRAP LOCATION
	SEDIMENT MARKER		

SWPPP PLAN CERTIFICATION

I, BRIAN J. STOKOSA, P.E. HEREBY CERTIFY THAT THE DESIGN OF ALL STORMWATER MANAGEMENT PRACTICES DETAIL ON THIS PLAN SET MEET THE MINIMUM REQUIREMENTS SET FORTH IN THE GP 0-15-002 PERMIT.

SWPPP PLAN PREPARER: BRIAN J. STOKOSA, P.E. NYSPE #083970

SWPPP PLAN PREPARER SIGNATURE: _____ DATE: _____

SWPPP PLAN ONSITE REQUIREMENTS

EACH CONTRACTOR AND SUBCONTRACTOR IDENTIFIED IN THE SWPPP WHO WILL BE INVOLVED IN SOIL DISTURBANCE AND/OR STORMWATER MANAGEMENT PRACTICE INSTALLATION SHALL SIGN AND DATE A COPY OF THE FOLLOWING CERTIFICATION STATEMENT BEFORE UNDERTAKING ANY LAND DEVELOPMENT ACTIVITY:

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SITE CONSTRUCTION CONTRACTOR: _____

CONTRACTOR ADDRESS: _____

CONTRACTOR PHONE #: _____

CONTRACTOR SIGNATURE: _____ TITLE: _____

DATE: _____

RAIN GARDEN - SEQUENCE OF CONSTRUCTION

1. INSTALL SEDIMENT CONTROL DEVICES.
2. GRADE SITE TO ELEVATIONS SHOWN ON PLAN. IF APPLICABLE, CONSTRUCT CURB OPENINGS AND/OR REMOVE AND REPLACE EXISTING CONCRETE CURB OPENINGS SHOULD BE BLOCKED OR OTHER MEASURES TAKEN TO PROHIBIT DRAINAGE FROM ENTERING CONSTRUCTION AREA.
3. STABILIZE GRADING WITHIN LIMIT OF DISTURBANCE EXCEPT FOR THE BIORETENTION AREA.
4. EXCAVATE BIORETENTION AREA TO PROPOSED INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES, TAKING CARE NOT TO COMPACT THE IN-SITU MATERIALS.
5. INSTALL UNDERDRAIN SYSTEM AND OBSERVATION WELLS, IF SPECIFIED.
6. BACKFILL BIORETENTION AREA WITH PLANTING SOIL. NET DOWN THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO ALLOW FOR SETTLEMENT.
7. EXCAVATE OR FILL TO ACHIEVE PROPER DESIGN GRADE, LEAVING SPACE FOR THE UPPER LAYER OF MULCH THAT WILL BRING THE SURFACE TO FINAL GRADE.
8. PLANT VEGETATION. MULCH AND INSTALL EROSION PROTECTION AT ENTRANCE POINTS. REMOVE SEDIMENT CONTROL PRACTICES OR ENTRANCE BLOCKS WITH INSPECTOR AUTHORIZATION.

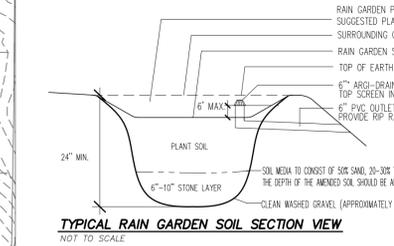
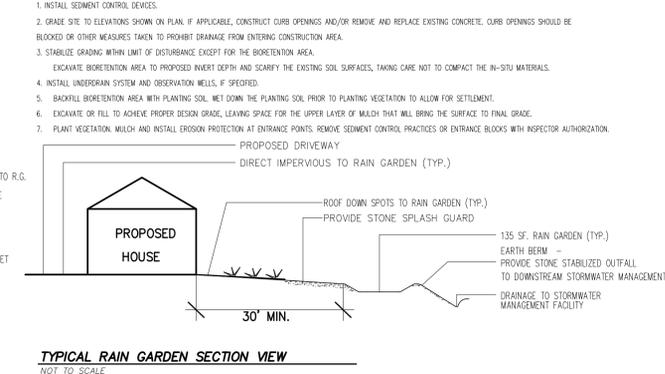
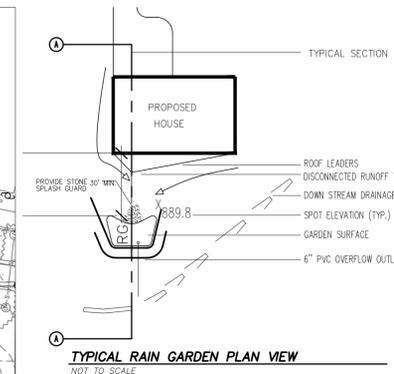


TABLE 2: SUGGESTED PLANT LIST - NYSDEC STORMWATER MAN. - CHAPTER 9

SHRUBS	HERBACEOUS PLANTS
WITCH HAZEL HAMAMELIS VIRGINIANA	CINNAMON FERN OSMUNDA CINNAMOMEA
WINTERBERRY ILEX VERTICILLATA	CUTLEAF CONEFLOWER RUDBECKIA LACINIATA
ARROWWOOD VIBURNUM DENTATUM	WOOLGRASS SCIRPUS CYPERINUS
BROOK-SIDE ALDER ALNUS SERRULATA	NEW ENGLAND ASTER ASTER NOVAE-ANGLIAE
RED-OSIER DOGWOOD CORNUS STOLONIFERA	FOX SEDGE CAREX VULPINOIDEA
SWEET PEPPERBUSH CLETHRA ALNFOLIA	SPOTTED JOE-PYE WEED EUPATORIUM MACULATUM
	SWITCH GRASS PANICUM VIRGATUM
	GREAT BLUE LOBELIA LOBELIA SIPHATICA
	WILD BERGAMOT MONARDA FISTULOSA
	RED MILKWEED ASCLEPIAS INCARNATA

ADAPTED FROM NYSDEM BIORETENTION SPECIFICATIONS, BANNERMAN, BROOKLYN BOTANIC GARDEN.

RAIN GARDEN - GUIDELINES AND INSPECTION POINTS

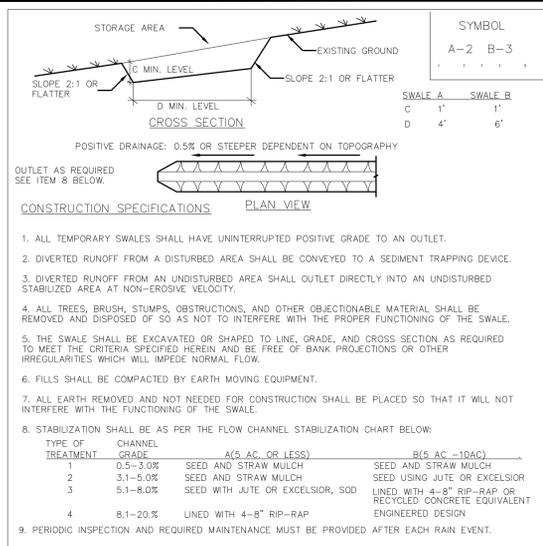
1. ACTIVE SOIL EROSION CONTROL IS THE FIRST LINE OF DEFENSE AGAINST CONTAMINATION OF THE BIORETENTION AREA.
2. ALL SEDIMENT CONTROL DEVICES MUST BE IN PLACE PRIOR TO THE START OF THE MAIN CONSTRUCTION.
3. GRADING OF ANY CATCHMENT AREA DRAINING TO THE FACILITY SHOULD BE DONE SPARINGLY AND STABILIZED IMMEDIATELY (WITHIN 14 DAYS).
4. A BIORETENTION CELL SHOULD NOT BE PLACED IN SERVICE UNTIL ALL OF THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED AND APPROVED BY THE INSPECTOR.
5. SOIL MATERIALS SHOULD NOT BE DELIVERED UNTIL THE BIORETENTION SITE HAS BEEN EXCAVATED OR GRADED AND THE UNDERDRAIN SYSTEMS ARE IN PLACE. PLANTING MATERIALS SHOULD NOT BE DELIVERED UNTIL AFTER THE SOIL MEDIA HAS HAD TIME TO SETTLE TO THE PROPER GRADE ELEVATION.
6. PRIOR TO COVERING THE UNDERDRAIN SYSTEM, THE INSPECTOR MUST OBSERVE THE UNDERDRAIN ITSELF, THE CONNECTIONS, GRAVEL BEDDING, AND ANY FILTER FABRIC. MANUFACTURER'S TICKETS ARE REQUIRED FOR THE GRAVEL, PIPE AND FILTER FABRIC MATERIAL.
7. IF PLACING GRAVEL OVER THE UNDERDRAIN, AVOID DROPPING IT FROM HIGH LEVELS WITH A BACKHOE OR FRONT-END LOADER BUCKET. SPILL DIRECTLY OVER THE UNDERDRAIN AND SPREAD MANUALLY.
8. AVOID OVER-COMPACTING OF THE SOIL MATERIAL BY ALLOWING TIME FOR NATURAL COMPACTION AND SETTLEMENT. NO ADDITIONAL MANUAL COMPACTION OF SOIL IS NECESSARY. TO SPEED UP THE NATURAL COMPACTION PROCESS, PREWATERING THE PLACED SOIL MAY BE PERFORMED.
9. OVERFILL ABOVE THE PROPOSED SURFACE INVERT TO ACCOMMODATE NATURAL SETTLEMENT TO THE PROPER GRADE. DEPENDING UPON THE SOIL MATERIAL, UP TO 20% NATURAL COMPACTION MAY OCCUR. IF CONSTRUCTION SCHEDULING PERMITS, IT IS PREFERABLE TO ALLOW NATURAL SETTLEMENT TO OCCUR WITH THE HELP OF RAINEVENTS.
10. THE MULCH LAYER SURFACE SHOULD APPROXIMATE THE FINAL ELEVATION AS SHOWN ON THE DESIGN PLANS.
11. ALL PLANT MATERIALS SHOULD BE TAGGED FOR IDENTIFICATION IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK.
12. THE LANDSCAPING WORK AND MATERIALS SHALL BE GUARANTEED FOR A MINIMUM OF 1 GROWING SEASON AND A MAXIMUM OF 2 YEARS FROM THE DATE OF INSTALLATION. THE WARRANTY PERIOD BEGINS WHEN THE AS-BUILT CONSTRUCTION PLAN IS APPROVED.

RAIN GARDEN NOTES: (AS PER NYSDEC STORMWATER MANUAL)

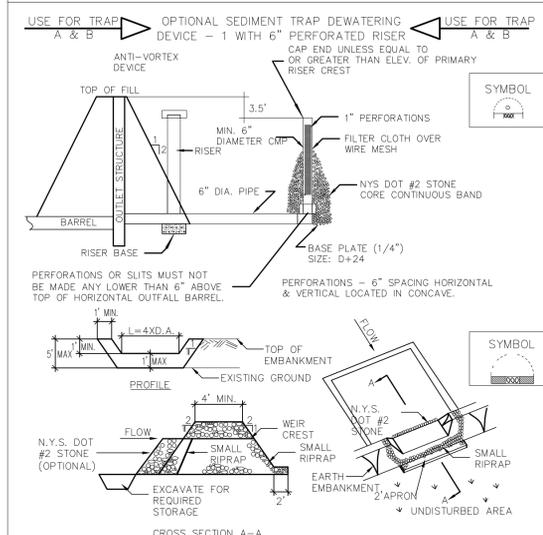
1. RAIN GARDENS SHOULD BE LOCATED WITHIN APPROXIMATELY 30 FEET OF THE DOWNSPOUT OR IMPERVIOUS AREA TREATED.
 2. ROOFTOP CONVEYANCE TO THE RAIN GARDEN IS THROUGH ROOF LEADERS DIRECTED TO THE AREA, WITH STONE OR SPLASH BLOCKS PLACED AT THE POINT OF DISCHARGE INTO THE RAIN GARDEN TO PREVENT EROSION.
 3. RUNOFF FROM DRIVEWAYS AND OTHER PAVED SURFACES SHOULD BE DIRECTED TO THE RAIN GARDEN AT A NON-GRASSY RATE THROUGH SHALLOW SWALES, OR ALLOWED TO SHEET FLOW ACROSS SHORT DISTANCES.
 4. PONDING DEPTH ABOVE THE RAIN GARDEN BED SHOULD NOT EXCEED 6 INCHES. THE RECOMMENDED MAXIMUM PONDING DEPTH OF 6 INCHES PROVIDES SURFACE STORAGE OF STORMWATER RUNOFF, BUT IS NOT TOO DEEP TO AFFECT PLANT HEALTH, SAFETY, OR CREATE AN ENVIRONMENT OF STAGNANT CONDITIONS. ON PERFECTLY FLAT SITES, THIS DEPTH IS ACHIEVED THROUGH EXCAVATION OF THE RAIN GARDEN AND BACKFILLING TO THE APPROPRIATE LEVEL; ON SLOPING SITES, THIS DEPTH CAN BE ACHIEVED WITH THE USE OF A BERM ON THE DOWN-SLOPE EDGE, AND EXCAVATION/BACKFILL TO THE REQUIRED LEVEL.
 5. SURFACE AREA IS DEPENDENT UPON STORAGE VOLUME REQUIREMENTS BUT SHOULD NOT EXCEED A MAXIMUM LOADING RATIO OF 5:1 (DRAINAGE AREA TO INFILTRATION AREA, WHERE DRAINAGE AREA IS ASSUMED TO BE 100% IMPERVIOUS, TO THE EXTENT THAT THE DRAINAGE AREA IS NOT 100% IMPERVIOUS, THE LOADING RATIO MAY BE MODIFIED).
 6. A LENGTH TO WIDTH RATIO OF 2:1, WITH THE LONG AXIS PERPENDICULAR TO THE SLOPE AND FLOW PATH IS RECOMMENDED.
- SOIL
 THE COMPOSITION OF THE SOIL MEDIA SHOULD CONSIST OF 50% SAND, 20-30% TOPSOIL WITH LESS THAN 5% CLAY CONTENT, AND 20-30% LEAF COMPOST. THE DEPTH OF THE AMENDED SOIL SHOULD BE APPROXIMATELY 4 INCHES BELOW THE BOTTOM OF THE DEEPEST ROOT BALL.
- CONSTRUCTION
 RAIN GARDENS SHOULD INITIALLY BE DUG OUT TO A 24" DEPTH, THEN BACKFILLED WITH A 6 - 10 INCH LAYER OF CLEAN WASHED GRAVEL (APPROXIMATELY 1.5-2.0 INCH DIAMETER ROCK), AND FILLED BACK TO THE RAIN GARDEN BED DEPTH WITH A CERTIFIED SOIL MIX.
- ENVIRONMENTAL/LANDSCAPING ELEMENTS
 THE RAIN GARDEN SYSTEM RELIES ON A SUCCESSFUL NATIVE PLANT COMMUNITY TO STABILIZE THE PONDING AREA, PROMOTE INFILTRATION, AND UPTAKE POLLUTANTS. TO DO THAT, PLANT SPECIES NEED TO BE SELECTED THAT ARE ADAPTABLE TO THE WET/DRY CONDITIONS THAT WILL BE PRESENT. THE GOAL OF PLANTING THE RAIN GARDEN IS TO ESTABLISH AN ATTRACTIVE PLANTING BED WITH A MIX OF UPLAND AND WETLAND NATIVE SHRUBS, GRASSES AND HERBACEOUS PLANT MATERIAL ARRANGED IN A NATURAL CONFIGURATION STARTING FROM THE MORE UPLAND SPECIES AT THE OUTER MOST ZONE OF THE SYSTEM TO MORE WETLAND SPECIES AT THE INNER MOST ZONE. PLANTS SHOULD BE CONTAINER GROWN WITH A WELL ESTABLISHED ROOT SYSTEM PLANTED ON ONE FOOT COVERS. TABLE 2 PROVIDES A REPRESENTATIVE LIST OF POSSIBLE PLANT SELECTIONS. RAIN GARDENS SHOULD NOT BE SEEDED AS THIS TAKES TOO LONG TO ESTABLISH THE DESIRED ROOT SYSTEM, AND SEED MAY BE FLOATED OUT WITH RAIN EVENTS. THE SAME LIMITATION IS TRUE FOR PLOTS. SHROUDED HARDWOOD MULCH SHOULD BE APPLIED UP TO 2" TO HELP KEEP SOIL IN PLACE.
- MAINTENANCE
 RAIN GARDENS ARE INTENDED TO BE RELATIVELY LOW MAINTENANCE. WEEDING AND WATERING ARE ESSENTIAL THE FIRST YEAR, AND CAN BE MINIMIZED WITH THE USE OF A WEED FREE MULCH LAYER. RAIN GARDENS SHOULD BE TREATED AS A COMPONENT OF THE LANDSCAPING, WITH ROUTINE MAINTENANCE PROVIDED BY THE HOMEOWNER OR HOMEOWNERS' ASSOCIATION, INCLUDING THE OCCASIONAL REPLACEMENT OF PLANTS, MULCHING, WEEDING AND THINNING TO MAINTAIN THE DESIRED APPEARANCE. HOMEOWNERS AND LANDSCAPERS SHOULD BE EDUCATED REGARDING THE PURPOSE OF THE RAIN GARDEN, SO THE DESIRABLE ASPECTS OF PONDING WATER ARE RECOGNIZED AND MAINTAINED.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

OWNER & APPLICANT		Mark A. Day, PE	
JSM UPSTATE PROPERTIES INC		3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202	
208 JOHN MASIMILLO 208 PLEASANT PLAINS AVE STATEN ISLAND NY 10309		ALAINA ESTATES TOWN OF BEEKMAN DUTCHESS COUNTY, NEW YORK	
OWNER'S CONSENT		TOWN OF BEEKMAN PLANNING BOARD	
THE UNDERSIGNED OWNER OF THIS PROPERTY HEREOF STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.		APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.	
SIGNED THIS _____ DAY OF _____, 20____, BY _____		SIGNED THIS _____ DAY OF _____, 20____, BY _____	
OWNER _____ DATE _____		CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK	
AS NOTED		BJS	
DATE: 01-01-17		BJS	
		11 of 12	



TEMPORARY SWALE DETAIL NOT TO SCALE

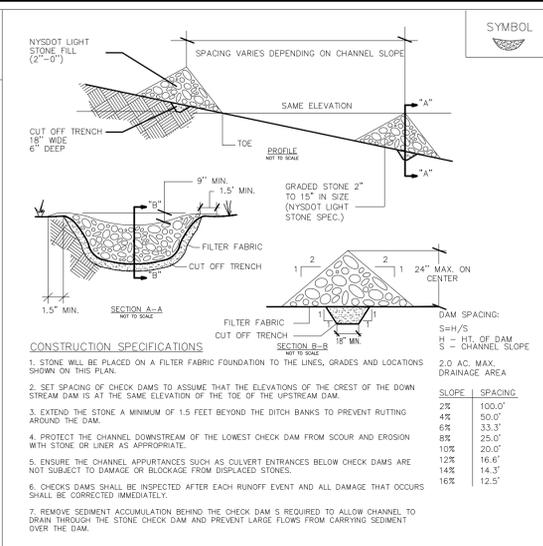


SEDIMENT TRAP ST-IV & DEWATERING DETAIL NOT TO SCALE

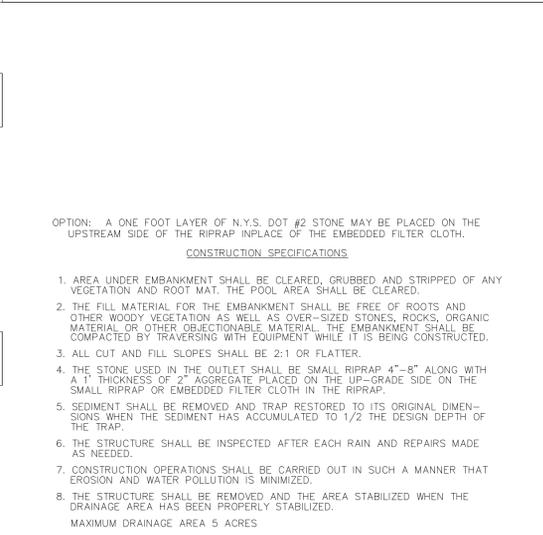
LONG TERM MAINTENANCE TABLE WITH RESPONSIBLE PARTIES:

IN ORDER FOR ANY PLAN TO OPERATE AS IT WAS ORIGINALLY INTENDED, IT MUST BE MAINTAINED PROPERLY. FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES, THE TOWN OF BEEKMAN HIGHWAY DEPARTMENT SHALL ASSUME RESPONSIBILITY FOR MAINTENANCE OF STRUCTURES LOCATED WITHIN THE TOWN RIGHT-OF-WAY AND DRAINAGE EASEMENTS. RESIDENTIAL HOMEOWNERS IDENTIFIED BELOW SHALL BE RESPONSIBLE FOR ANY STORMWATER STRUCTURE (GRASS SWALES) LOCATED ON THEIR PROPERTY. THE HOMEOWNER/TOWN SHALL APPLY MEASURES FOR APPLICABLE STORMWATER STRUCTURES AS PER THE TABLE LISTED BELOW. THE FOLLOWING MEASURES HAVE BEEN IMPLEMENTED IN THE OVERALL DESIGN.

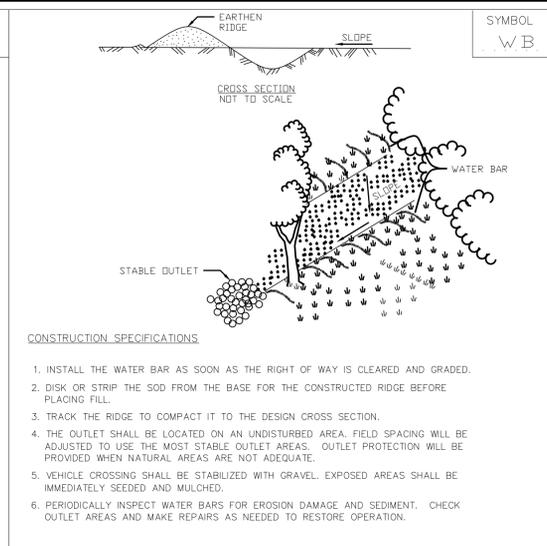
STORMWATER MANAGEMENT PRACTICE	RESPONSIBLE MAINTENANCE ENTITY	RESPONSIBLE MAINTENANCE CONTACT INFO	INSPECTION FREQUENCY	MAINTENANCE REQUIRED	GENERAL NOTES
CATCH BASIN	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	ANNUALLY OR, AFTER EACH EVENT WHERE 3 IN. OF RAINFALL IS EXCEEDED IN A 24-HR PERIOD	GENERAL INSPECTION, CLEANING, REPAIR IF REQUIRED	CATCH BASINS SHOULD BE INSPECTED FOR DEBRIS AND LITTER SHOULD BE REMOVED FROM THE BASINS DURING THESE INSPECTIONS. SEDIMENT WILL HAVE TO BE REMOVED FROM THE BASINS EITHER MANUALLY OR BY VACUUM TRUCK WHEN 10% OF THE AVAILABLE CAPACITY HAS BEEN USED (E.G. FOR 36" SUMP, WHEN THE DEPTH OF SEDIMENT EXCEEDS 3.6"). IN ADDITION, THE STRUCTURES SHOULD BE REPAIRED AND/OR REPLACED ON AN AS-NEEDED BASIS.
SWALES	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	ANNUALLY OR, AFTER EACH EVENT WHERE 3 IN. OF RAINFALL IS EXCEEDED IN A 24-HR PERIOD	GENERAL INSPECTION, CLEANING, REMOVE DEBRIS	ALL DEBRIS AND LITTER SHOULD BE COLLECTED AND REMOVED. IN ADDITION, THE FOLLOWING ITEMS SHOULD BE CHECKED AND REPAIR AS NEEDED: * THE SWALES SHOULD BE CHECKED FOR EROSION, AND ALL ERODED AREAS SHOULD BE STABILIZED IMMEDIATELY. * ALL CULVERT OUTLETS AND INLETS SHOULD BE CHECKED FOR CLOGGING AND ACCUMULATION OF SEDIMENT, AND CLEANED AS NEEDED. GRASSED SWALES SHOULD BE MOWED AT LEAST TWICE DURING THE GROWING SEASON (E.G. MIDDLE AND END OF THE GROWING SEASON) TO PREVENT THE GROWTH OF TREES AND SHRUBS, AND TO CONTROL WEED GROWTH.
SEDIMENT FOREBAY	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	PLUNGE POOL INSPECTED MONTHLY CLEANING TO BE REMOVED EVERY 5 TO 6 YEARS OR AT 50% OF FOREBAY DESIGN CAPACITY	GENERAL INSPECTION, CLEANING, REMOVE DEBRIS & SEDIMENT	THE PLUNGE POOL OUTLET WEIR SHALL BE CHECKED TO INSURE PROPER FUNCTION MEETING DESIGN INTENT. THE PLUNGE POOL SHALL BE CHECKED AND SEDIMENT REMOVED EVERY 5 TO 6 YEARS, OR AFTER 50% OF THE FOREBAY CAPACITY HAS BEEN LOST. ACCUMULATION IN THE PLUNGE POOL, SEDIMENT SHALL BE CAREFULLY REMOVED AS NECESSARY.
BIORETENTION SMP	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	BIORETENTION FACILITY - ANNUALLY MONTHLY - MOW UPLAND AREAS	GENERAL INSPECTION, CLEANING, REMOVE DEBRIS & SEDIMENT, MOW UPLAND AREAS	THE BIORETENTION FACILITY SHALL BE CHECKED TO INSURE PROPER FUNCTION MEETING DESIGN INTENT. UPLAND AREAS SHALL BE CHECKED AND DIVERSION SWALES SHALL BE CHECKED TO INSURE ONLY POST DEVELOPMENT RUNOFF FROM THE SEDIMENT FOREBAY/GRASS SWALE ENTERS THE BIORETENTION PRACTICE. DIVERSION SWALES SHALL BE CAREFULLY CHECKED/REMEDIATED AS NECESSARY.
DRY DETENTION BASIN	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	DRY DETENTION STRUCTURE ANNUALLY, & OUTLET CONTROL STRUCTURE - TWICE A YEAR	GENERAL INSPECTION, CLEANING, REMOVE DEBRIS & MOW UPLAND AREAS	THE DRY DETENTION OUTLET CONTROL STRUCTURE SHALL BE CHECKED TO INSURE PROPER FUNCTION MEETING DESIGN INTENT. DEBRIS SHALL BE REMOVED AS REQUIRED. BASIN AREA SHOULD BE MOWED AND MAINTAINED DURING GROWING SEASON. SEE ALSO SHEET #3 - DRY DETENTION NOTES
STORM SEWER PIPE	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	ANNUALLY - INLET/OUTLET GENERAL INSPECTION BIANNUALLY - DEBRIS AND SILTATION	GENERAL INSPECTION, CLEANING, REMOVE DEBRIS & SEDIMENT	OBSTRUCTION IN THE STORM SEWER PIPING SHOULD BE KEPT TO A MINIMUM. THE PIPING SHOULD BE KEPT FREE OF SILTATION AND BUILD-UP OF EITHER INORGANIC OR ORGANIC LOADING. ALL INLET AND OUTLET CULVERTS SHOULD BE CHECKED FOR EROSION. ALL AREAS DIRECTLY PRIOR TO THE CULVERT INLETS SHOULD BE MAINTAINED TO PREVENT BRUSH FROM IMPEDING CULVERT CAPACITY.
INDIVIDUAL RAIN GARDEN	INDIVIDUAL PARCEL OWNERS & HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	WATERING, WEEDING, DEBRIS REMOVAL, AND REPLANTING AS REQUIRED WHEN REQUIRED TO MAINTAIN THE HEALTH OF THE GARDEN.	GENERAL INSPECTION, WATERING, WEEDING, & REMOVE DEBRIS, REPLANT AS REQUIRED	RAIN GARDENS ARE INTENDED TO BE RELATIVELY LOW MAINTENANCE. WEEDING AND WATERING ARE ESSENTIAL THE FIRST YEAR, AND CAN BE MINIMIZED WITH THE USE OF A WEED FREE MULCH LAYER. RAIN GARDENS SHOULD BE TREATED AS A COMPONENT OF THE LANDSCAPING, WITH ROUTINE MAINTENANCE PROVIDED BY THE SHEET #6 OF DRAWING SET HOMEOWNER, INCLUDING THE OCCASIONAL REPLACEMENT OF PLANTS, MULCHING, WEEDING AND THINNING TO MAINTAIN THE DESIRED APPEARANCE.
SUBDIVISION ENTRANCE SIGHT EASEMENT	HIGHWAY DEPARTMENT ALAINA ESTATES DRAINAGE DISTRICT	AS PER DEED OF RECORD ONFILE WITH THE DUTCHESS COUNTY CLERKS OFFICE.	EVERY 5 YEARS - VEGETATION REMOVAL	GENERAL INSPECTION - REMOVAL OF TREES AND BRUSH UNDERGROWTH	*ALL DEBRIS AND LITTER SHOULD BE COLLECTED AND REMOVED. IN ADDITION, ALL VEGETATION SHALL BE INSPECTED AND CUT BACK TO INSURE SIGHTLINES ARE MAINTAINED AS SHOWN ON THIS PLAN.



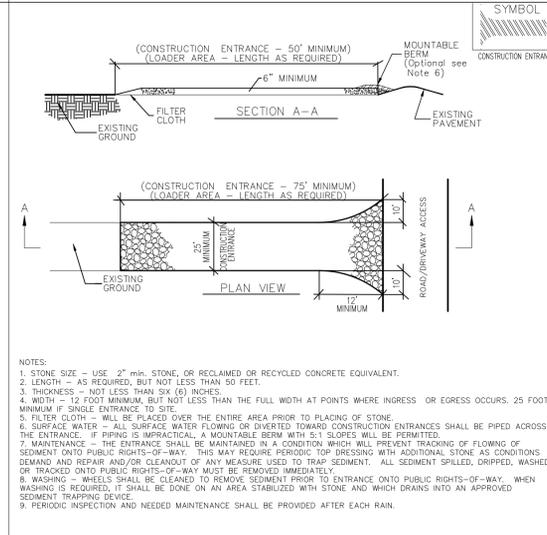
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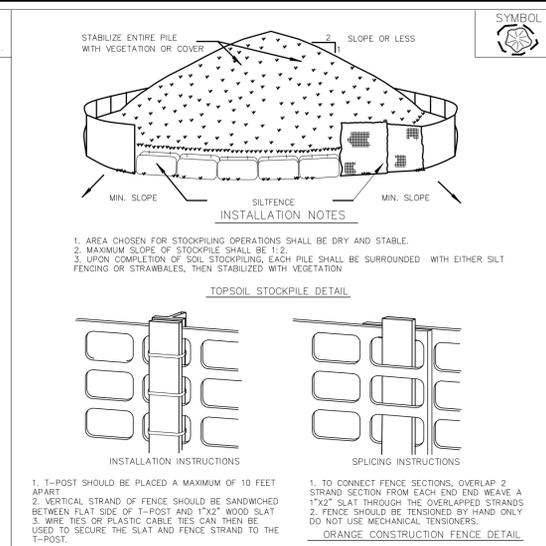
CONSTRUCTION ENTRANCE DETAIL NOT TO SCALE



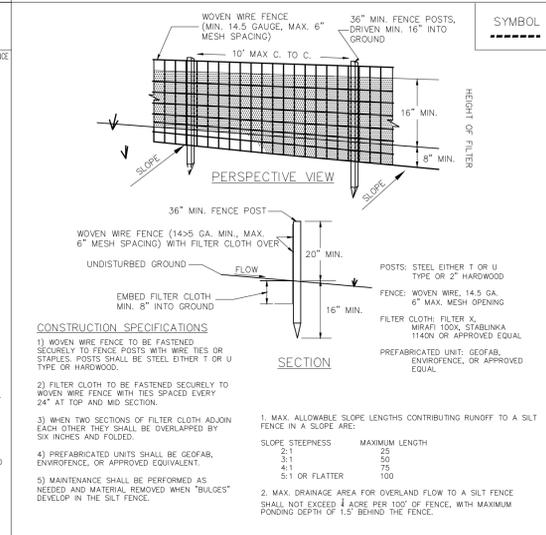
WATER BAR NOT TO SCALE



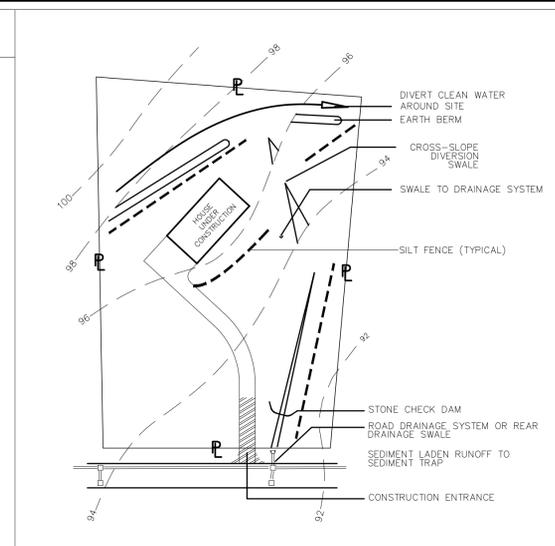
CONSTRUCTION ENTRANCE DETAIL NOT TO SCALE



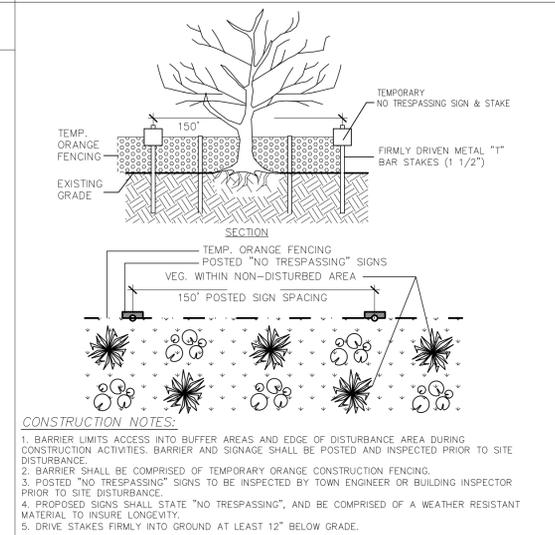
STOCKPILE & FENCING DETAIL NOT TO SCALE



SILT FENCING DETAIL NOT TO SCALE



INDIVIDUAL LOT GRADING WHILE IN CONSTRUCTION PHASE DETAIL NOT TO SCALE



TEMPORARY LIMIT OF DISTURBANCE FENCING NOT TO SCALE

OWNER'S CONSENT

THE UNDERSIGNED OWNER OF THIS PROPERTY HEREOF STATES THAT HE/SHE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREOF.

OWNER _____ DATE _____

TOWN OF BEEKMAN PLANNING BOARD

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK, ON THE _____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THE PLAT AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20____, BY _____

CHAIRMAN OF THE PLANNING BOARD OF THE TOWN OF BEEKMAN, NEW YORK

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Responsible
Project No.
2018.249
License No. 069646

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Consulting Engineers
3 Van Wyck Lane Suite 2 Wappingers Falls, New York (845)-223-3202

ALAINA ESTATES
TOWN OF BEEKMAN DUTCHESS COUNTY, NEW YORK

CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: 01-01-17
DRAWN BY: BJS
CHECKED BY: BJS

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