

PRELIMINARY
NOT FOR
CONSTRUCTION
8/31/18

PCSM LONGTERM OPERATION & MAINTENANCE NOTES

UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPs ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs.

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY WITH THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER §102.7(b)(5) (RELATING TO PERMIT TERMINATION).

THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION, OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPs OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO THE DEPARTMENT.

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPs LOCATED ON THE PROPERTY.

INSPECTIONS SHALL BE PERFORMED AS NOTED FOR EACH BMP AND ANNUALLY. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES SHALL BE PROVIDED ANNUALLY.

STORMWATER BMP FAILURE

A STORMWATER BMP FAILURE FOR THIS SITE IS DEFINED AS:
1. THE SUBSURFACE DETENTION BASIN NOT DEWATERING WITHIN 72 HOURS, IN THE EVENT THAT THIS OCCURS, THE DESIGN ENGINEER SHOULD BE CONTACTED TO INVESTIGATE THE CAUSE OF THE FAILURE. IF THE BMP HAS NOT DEWATERED WITHIN 72 HOURS AND A PRECIPITATION EVENT IS FORECASTED THE FACILITY SHOULD BE DEWATERED PRIOR TO THE PRECIPITATION EVENT.

STRUCTURAL BMP 6.4.5 - RAIN GARDEN/BIO-RETENTION

INSPECTION SCHEDULE:
PERIODIC INSPECTION OF THE BIO-RETENTION FACILITIES IS NECESSARY TO ENSURE ITS PROPER FUNCTIONING. THESE FACILITIES SHALL BE INSPECTED AS FOLLOWS:

- DURING THE FIRST GROWING SEASON FOLLOWING CONSTRUCTION OF THE BIO-RETENTION FACILITY OR UNTIL ESTABLISHED, THE NEWLY PLANTED VEGETATION SHOULD BE INSPECTED EVERY TWO (2) TO THREE (3) WEEKS.
- THE BIO-RETENTION FACILITIES SHOULD BE INSPECTED WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (>1 INCH RAINFALL DEPTH) TO EVALUATE THE DEWATERING AND INSPECT FOR EROSION, AS PART OF THIS EVALUATION, THE INSPECTOR SHALL OPEN THE MONITORING WELL OF EACH BIO-RETENTION FACILITY TO CONFIRM THAT THE WATER ELEVATION IS NOT ABOVE THE BASIN BOTTOM.
- THE BIO-RETENTION FACILITY SHOULD HAVE A GENERAL INSPECTION AT LEAST TWO (2) TIMES PER YEAR. THE GENERAL INSPECTION SHOULD ASSESS THE HEALTH OF VEGETATION, SOIL EROSION, FLOW CHANNELIZATION, BANK STABILITY, CLOGGING OF INLETS OR OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION.
- A WRITTEN INSPECTION REPORT SHOULD BE FILED IN THE INSPECTION AND MAINTENANCE LOG OF THE OWNER OF RECORD OR MADE AVAILABLE UPON REQUEST TO GOVERNMENTAL AUTHORITIES.

OPERATION & MAINTENANCE:
MAINTENANCE OF THE BIO-RETENTION FACILITIES IS NECESSARY TO ENSURE THE PROPER FUNCTIONALITY OF THE FACILITY. THESE FACILITIES SHALL BE MAINTAINED ON AN ANNUAL BASIS AS FOLLOWS:

- THE OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE BIO-RETENTION FACILITIES AND MAINTAINING A LOG OF ALL WRITTEN REPORTS DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES.
- THE BIO-RETENTION FACILITIES VEGETATION MAY NEED ADDITIONAL SUPPORT (E.G., WATERING, WEEDING, MULCHING, REPLANTING) DURING THE FIRST YEAR.
- VEHICLES SHOULD NOT BE PARKED ON OR DRIVEN OVER THE BIO-RETENTION FACILITY BOTTOM AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS.
- MAINTENANCE ACTIVITIES TO BE DONE WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH):
 - VEGETATED AREAS SHOULD BE INSPECTED FOR EROSION.
 - EVALUATE THE DRAIN-DOWN TIME OF THE BIO-RETENTION FACILITIES TO ENSURE THE MAXIMUM TIME OF 72 HOURS IS NOT BEING EXCEEDED. IF DRAIN-DOWN TIMES ARE EXCEEDING THE MAXIMUM TIME, DRAIN THE BIO-RETENTION FACILITIES BY OPENING THE DRAIN VALVE LOCATED IN THE OUTLET STRUCTURE (IF APPLICABLE) OR VIA PUMPING CONTACT THE DESIGN ENGINEER TO DETERMINE THE PROPER REMEDIATION FOR THE SYSTEM.
- MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY:
 - MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. MEADOW GRASSES SHOULD BE MOWED ANNUALLY. MOWING SHOULD BE DONE DURING THE SUMMER TO ENSURE ADEQUATE REGROWTH OF VEGETATION PRIOR TO WINTER. SPECIAL CARE SHOULD BE TAKEN TO MINIMIZE DISTURBANCE ASSOCIATED WITH THE MOWING OF THE MEADOW GRASSES.
 - DETRITUS SHOULD BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
 - VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85% COVER. BARE SPOTS SHALL BE RE-SEEDED IMMEDIATELY UPON DISCOVERY.
 - EXCESSIVE BUILD-UP OF SEDIMENT SHALL BE REMOVED. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE BIO-RETENTION FACILITIES IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND VEGETATED.
- MAINTENANCE ACTIVITIES AS NEEDED:
 - INLETS UPSTREAM OF THE BIO-RETENTION FACILITIES SHOULD BE INSPECTED AND CLEANED AT LEAST TWO (2) TIMES PER YEAR AND AFTER RUNOFF EVENTS GREATER THAN 1-INCH.
 - TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH.
 - MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLISHED AS NEEDED. ONCE EVERY TWO (2) TO THREE (3) YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT.
 - DURING PERIODS OF EXTENDED DROUGHT, THE BIO-RETENTION FACILITIES MAY REQUIRE WATERING.
- WINTER MAINTENANCE:
 - ABRASIVES SUCH AS SAND OR CINDEERS SHOULD NOT BE APPLIED ON OR ADJACENT TO THE PERMEABLE PAVEMENT AREAS.
 - SALT IS AN ACCEPTABLE DEICER AND CAN BE USED ON PERMEABLE PAVEMENT AREAS.

STRUCTURAL BMP - STORM SEWERS

INSPECTION SCHEDULE:

PERIODIC INSPECTION OF THE STORM SEWER SYSTEM IS NECESSARY TO ENSURE THE PROPER FUNCTIONALITY OF THE FACILITY. THESE FACILITIES SHALL BE INSPECTED AS FOLLOWS:
1. THE STORM SEWER SYSTEM SHOULD BE INSPECTED AT LEAST TWO TIMES PER YEAR TO EVALUATE CLOGGING OF INLET GRATES AND SEDIMENT/DEBRIS BUILD-UP WITHIN INLET BOXES.

OPERATION & MAINTENANCE:

MAINTENANCE OF THE STORM SEWER SYSTEM IS NECESSARY TO ENSURE THE PROPER FUNCTIONALITY OF THE FACILITY. THESE FACILITIES SHALL BE MAINTAINED ON AN ANNUAL BASIS AS FOLLOWS:
1. THE OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE STORM SEWER SYSTEM, INCLUDING INLETS, PIPING AND ENDWALLS. A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES.
2. MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY:

- EXCESSIVE BUILD-UP OF DEBRIS AND SEDIMENT SHALL BE REMOVED FROM INLET GRATES AND INLET BOXES; DEBRIS AND SEDIMENT SHOULD BE DISPOSED OF PROPERLY.

STRUCTURAL BMP 6.4.8 - VEGETATED SWALE

INSPECTION SCHEDULE:

PERIODIC INSPECTION OF THE VEGETATED CHANNEL FACILITIES IS NECESSARY TO ENSURE ITS PROPER FUNCTIONING. THESE FACILITIES SHALL BE INSPECTED AS FOLLOWS:

- DURING THE FIRST GROWING SEASON FOLLOWING CONSTRUCTION OF THE VEGETATED CHANNELS OR UNTIL ESTABLISHED, THE NEWLY-PLANTED VEGETATION SHOULD BE INSPECTED EVERY TWO (2) TO THREE (3) WEEKS.
- THE VEGETATED CHANNELS SHOULD BE INSPECTED WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (>1 INCH RAINFALL DEPTH) TO EVALUATE THE CHANNELS FOR EROSION.
- THE VEGETATED CHANNELS SHOULD HAVE A GENERAL INSPECTION AT LEAST TWO (2) TIMES PER YEAR. THE GENERAL INSPECTION SHOULD ASSESS THE HEALTH OF VEGETATION, SOIL EROSION, FLOW CHANNELIZATION, BANK STABILITY, CLOGGING OF INLETS OR OUTLETS, AND SEDIMENT/DEBRIS ACCUMULATION.
- A WRITTEN INSPECTION REPORT SHOULD BE FILED IN THE INSPECTION AND MAINTENANCE LOG OF THE OWNER OF RECORD OR MADE AVAILABLE UPON REQUEST TO GOVERNMENTAL AUTHORITIES.

OPERATION & MAINTENANCE:
MAINTENANCE OF THE VEGETATED CHANNELS IS NECESSARY TO ENSURE THE PROPER FUNCTIONALITY OF THE FACILITY. THESE FACILITIES SHALL BE MAINTAINED ON AN ANNUAL BASIS AS FOLLOWS:

- THE OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE VEGETATED CHANNELS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES.
- THE VEGETATION WITHIN THE CHANNEL MAY NEED SUPPORT (WATERING, WEEDING, MULCHING, REPLANTING, ETC) DURING THE FIRST YEAR.
- MAINTENANCE ACTIVITIES TO BE DONE WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH):
 - VEGETATED AREAS SHOULD BE INSPECTED FOR EROSION.
- MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY:
 - MOWING AND/OR TRIMMING OF VEGETATION SHOULD BE PERFORMED AS NECESSARY TO SUSTAIN THE SYSTEM. MEADOW GRASSES SHOULD BE MOWED ANNUALLY. MOWING SHOULD BE DONE DURING THE SUMMER TO ENSURE ADEQUATE REGROWTH OF VEGETATION PRIOR TO WINTER. SPECIAL CARE SHOULD BE TAKEN TO MINIMIZE DISTURBANCE ASSOCIATED WITH THE MOWING OF THE MEADOW GRASSES.
 - DETRITUS SHOULD BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
 - VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85% COVER. BARE SPOTS SHALL BE RE-SEEDED IMMEDIATELY UPON DISCOVERY.
 - EXCESSIVE BUILD-UP OF SEDIMENT SHALL BE REMOVED. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN THE VEGETATED CHANNELS ARE COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND VEGETATED.

STRUCTURAL BMP CREDIT 6.7.2 - LANDSCAPE RESTORATION

AREAS OF THE SITE HAVE BEEN DESIGNED TO BE PLANTED WITH A MEADOW GRASS MIXTURE WHICH WILL REDUCE THE RATE AND VOLUME OF STORMWATER RUNOFF FROM THE SITE. THESE AREAS WILL ALSO PROVIDE NATURAL HABITAT FOR WILDLIFE.

OPERATION & MAINTENANCE:

- THE LOT OWNER OF RECORD IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE MEADOW AREAS AND PROVIDING A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES.
- MAINTENANCE ACTIVITIES AS NEEDED:
 - PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT.
 - RESEED BARE AREAS. INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING.
 - VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR EROSION AND UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES. VEGETATION SHOULD BE MAINTAINED TO AT LEAST 85% COVER.
 - MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY.
 - MEADOW GRASSES SHOULD BE MOWED ANNUALLY. MOWING SHOULD BE DONE DURING THE SUMMER TO ENSURE ADEQUATE REGROWTH OF VEGETATION PRIOR TO WINTER. SPECIAL CARE SHOULD BE TAKEN TO MINIMIZE DISTURBANCE ASSOCIATED WITH THE MOWING OF THE MEADOW GRASSES.

INSPECTION SCHEDULE:

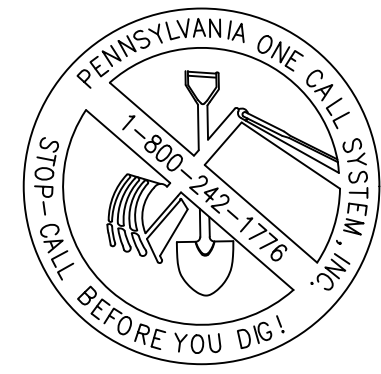
VEGETATED AREAS SHOULD BE INSPECTED ANNUALLY FOR AREAS OF EROSION AND WEED/INVASIVE SPECIES.

RECYCLE & DISPOSAL OF MATERIALS

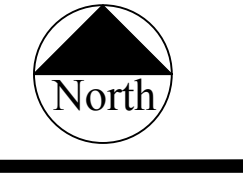
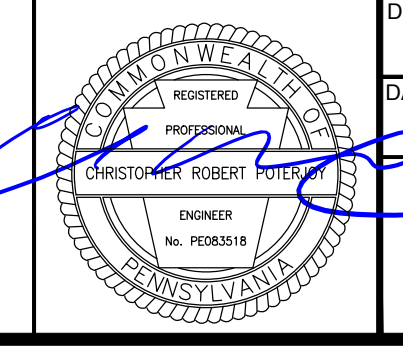
- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 801. ET SECT. 271.1 ET SECT. AND 207.1 ET SECT. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
- AT ANY TIME DURING THE CONSTRUCTION SHOULD EVIDENCE OF A POSSIBLE SNOWHOLE BE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE DESIGN ENGINEER AND A LICENSED GEOTECHNICAL ENGINEER TO PERFORM A SITE VISIT AND DETERMINE THE PROPER REMEDIATION ACTIVITY.

UNFORESEEN EROSION CONDITIONS

- SHOULD UNFORESEEN EROSION CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE, AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.



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PENNONI ASSOCIATES INC.
One South Church Street, 2nd Floor
West Chester, PA 19382
T 610.429.8907 F 610.429.8918

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PRJ #	REV	COMPANY	INITIALS	DATE	DESCRIPTION

1 PENNONI AT 08/31/18 REVISED PER TWP COMMENTS

LONGWOOD GARDENS NURSERY GREENHOUSE

 **LONGWOOD GARDENS**
P.O. Box 501
Kennett Square, PA
19348-0501
Ph: (610)388-1000
F: (610)388-5497

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES

DRAWING ORIGINATOR: PENNONI ASSOCIATES INC.
ONE SOUTH CHURCH STREET, 2ND FLOOR
T 610.429.8907 F 610.429.8918

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2018-06-08	N.T.S.	38 OF 41