VANGUARD MALVERN WEST EXPANSION

CONSTRUCTION SET

EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PENNSYLVANIA

JULY 28, 2017

LAST REVISED: MAY 31st, 2019

PREPARED FOR:

APPLICANT/DEVELOPER

THE VANGUARD GROUP

400 DEVON PARK DRIVE

WAYNE, PA 19087

OWNER

HORATIO REALTY TRUST

400 DEVON PARK DRIVE

WAYNE, PA 19087

STORMWATER ACKNOWLEDGEMENT

All stormwater associated with this project is the responsibility of the applicant and/or developer. The applicant is responsible for the cost of all stormwater treatment and management facilities as required by the local municipality, including, but not limited to, construction, operation, and maintenance. The project will be reviewed and approved by the local municipality, and a revised stormwater management site plan shall be submitted to and approved by the local municipality. Any revisions to the approved stormwater management site plan shall be submitted to and approved by the local municipality.

EAST WHITELAND TOWNSHIP BOARD OF SUPERVISORS

CHES. CNTY PENNSYLVANIA PLANNING COMMISSION

EAST WHITELAND TOWNSHIP PLANNING COMMISSION

TOWNSHIP ENGINEER'S CERTIFICATION

ENGINEER'S CERTIFICATE OF DESIGN

SURVEYOR'S CERTIFICATE OF DESIGN

OWNER/DEVELOPER'S ACKNOWLEDGE:

All documents prepared by Pennoni Associates Inc. are intended for the sole use of the project and may not be reproduced, stored, or transmitted in any form without written permission from Pennoni Associates Inc. All information contained herein is proprietary and is not to be used or distributed outside of the project without written permission from Pennoni Associates Inc.

PREPARED BY:

PENNONI ASSOCIATES INC.

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

NOT FOR CONSTRUCTION
CONTAMINANTS ARE ENCOUNTERED DURING CONSTRUCTION.

THE CONTRACTOR SHALL CONTACT A GEOTECHNICAL ENGINEER TO ANALYZE THE SINK HOLE AREA. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDATIONS OF THE CONTRACTOR TO ABIDE BY THE "HEALTH AND SAFETY PLAN" AND "SOIL MANAGEMENT PLAN"

BASED ON A GOLDER REPORT PREPARED FOR PFIZER AND VANGUARD.

TABLE:

<table>
<thead>
<tr>
<th>STATE</th>
<th>NAME</th>
<th>UPI #:</th>
<th>GRATE</th>
<th>MH-T5</th>
<th>RCP @</th>
<th>OPEN/EXP</th>
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<td>42-4-272</td>
<td>324.34</td>
<td>1872</td>
<td>0.087</td>
<td>1</td>
<td>61 LF</td>
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<td>1872</td>
<td>0.087</td>
<td>1</td>
<td>61 LF</td>
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</tbody>
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NOTES:

PEL:

OVERHEAD HIGH TENSION WIRES

LEGAL RIGHT-OF-WAY

PROPERTY LINE
LIMIT OF DISTURBANCE/NPDES BOUNDARY
865,223 - SF (22.81 - AC)

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA
PA. ACT 287 OF 1974 REQUIRES THREE WORKING DAYS
NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR
BLAST PENNSYLVANIA ONE-CALL SYSTEM, INC.

CONTRACTOR TO REFER
TO SHEET CS0002 FOR
DEMOLITION NOTES

CALL 1-800-242-1776
CALL BEFORE YOU DIG
NOT FOR CONSTRUCTION
DUCT BANK 1

DUCT BANK 2

DUCT BANK 3

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
SINKHOLE STABILIZATION DETAIL FOR BASIN AREAS

TREE PROTECTION FENCE

COMPOST SOCK FABRIC MANUFACTURER

MATERIAL

COMPOST SOCK FABRIC MANUFACTURER

SOIL SOCK LENGTH

COMPOST SOCK FABRIC MANUFACTURER

SOIL SOCK WIDTH

COMPOST SOCK FABRIC MANUFACTURER

EXPOSED ZONE

SOIL SOCK FINISH

COMPOST SOCK FABRIC MANUFACTURER

SOIL SOCK LAY-OFF

EXPOSED ZONE

SOIL SOCK DT.

COMPOST SOCK FABRIC MANUFACTURER

SOIL SOCK MATERIAL

EXPOSED ZONE

SOIL SOCK TENSILE

EXPOSED ZONE

SOIL SOCK WIDTH

EXPOSED ZONE

SOIL SOCK LENGTH

STANDARD CONSTRUCTION DETAIL #4-15

FILTER BAG INLET PROTECTION - TYPE 4-7

STANDARD CONSTRUCTION DETAIL #4-16

FILTER BAG INLET PROTECTION - TYPE 4-8

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
CONSTRUCTION SEQUENCE

1. Begin rough grading of parking areas.

2. Begin vegetation installation.

3. Installation of storm sewer system.


5. Construction of berm and outlet structures as detailed on detail sheets.

6. Monitor the following stages of the construction of the basins:

   a. Construction of pipes, vaults, and valve boxes shall be inspected to ensure construction per approved plans and specifications.

   b. Monitor the following activities:

      i. All earth disturbance activities shall proceed in accordance with the following sequence.

      ii. Monitor any temporary blockages or permanent riser and ensure riser meets PCSM specifications.

5. Installation of skimmer with stone landing berm and temporary riser extension in accordance with BMP specific construction sequence.

6. Begin construction of basin berm and outlet structures as detailed on detail sheets.

7. Begin construction of PCSM long-term operation and maintenance notes.

8. Monitor the following activities:

   a. Construction of a licensed professional knowledgeable about the design and construction of storm sewer systems shall proceed from downstream to upstream.

   b. Construction of storm sewer system shall proceed from downstream to upstream.

   c. Monitor the following activities:

      i. Flushing accumulated sediment from the contributing storm sewer pipes.

      ii. Installation of sediment traps are installed and functioning properly, clear and grub areas of proposed berm and outlet structures.

8. Monitor the following activities:

   a. Construction of storm sewer systems shall proceed from downstream to upstream.

   b. Monitor the following activities:

      i. Construction of sediment basins.

      ii. Monitor the following activities:

         a. Construction of pipes, vaults, and valve boxes shall be inspected to ensure construction per approved plans and specifications.

         b. Construction of pipes, vaults, and valve boxes shall be inspected to ensure construction per approved plans and specifications.

8. Monitor the following activities:

   a. Construction of sediment basins.

   b. Monitor the following activities:

      i. Construction of pipes, vaults, and valve boxes shall be inspected to ensure construction per approved plans and specifications.

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PROPOSED SURFACE BIORETENTION/INFILTRATION BASINS 1-7 PLAN VIEW

SURFACE BIORETENTION/DETENTION BASIN CONSTRUCTION NOTES:

1. **Inlet/Grate Elevation (A)**
   - Inlet box with ACF peak
   - Minimum elevation 324.00'

2. **Top of Berm (B)**
   - Maximum elevation 335.00'

3. **Grate Elevation (C)**
   - Maximum elevation 327.50'

4. **Inlet Box**
   - 12" diameter orifice (both sides)

5. **生物集水池/滞留池的建设注释**

6. **Basin 1**
   - 沉井底面
   - 基准面 325.00'

7. **Basin 2**
   - 沉井底面
   - 基准面 326.00'

8. **Basin 3**
   - 沉井底面
   - 基准面 327.00'

9. **Basin 4**
   - 沉井底面
   - 基准面 328.00'

10. **Basin 5**
    - 沉井底面
    - 基准面 329.00'

11. **Basin 6**
    - 沉井底面
    - 基准面 330.00'

SEE SHEETS CS9509-CS9510 FOR ADDITIONAL DETAILS

NOT FOR CONSTRUCTION
OUTLET STRUCTURE DETAIL
NOT TO SCALE
SECTION A-A
SECTION B-B

RESTRICTOR PLATE NOTES:
1. WIDTH OF RESTRICTOR PLATE EQUALS WIDTH OF INLET BOX LESS 1".
2. RESTRICTOR PLATE AND ASSOCIATED HARDWARE TO BE CONSTRUCTED OF GALVANIZED STEEL.
3. A WATERTIGHT JOINT SHALL BE PROVIDED BETWEEN THE RESTRICTOR PLATE AND OUTLET STRUCTURE WALL.

PLAN VIEW

PENN DOT TYPE 4 INLET BOX WITH MANHOLE LID
12" HDPE
15" RCP
4' WEIR
1.5'

PENN DOT TYPE 4 BOX W/ MANHOLE LID
RIM 336.00

FLOW
4' WEIR
ELEV. 333.00
FROM BASIN

12" HDPE
15" RCP OUTLET PIPE
6" ORIFICE
INV. 332.00

2.5'
RESTRICTOR PLATE

RESTRICTOR PLATE
4' WEIR
ELEV. 333.00
6" ORIFICE
INV. 332.00

INV. 324.13
PENN DOT TYPE 4 BOX W/ MANHOLE LID
RIM 336.00

AASHTO #57 STONE
DOUBLE WASHED AND FREE OF FINES
UNCOMPACTED SUBGRADE

12" PERFORATED HDPE
4 ROWS @ 27 L.F.

2.50'
WRAP BOTTOM OF BASIN WITH PERVIOUS GEOTEXTILE WITH 12" OVERLAP

2 HEADERS 12" PERFORATED HDPE @ 7 LF

4 ROWS 12" PERFORATED HDPE @ 27 LF

OS-13-1
TYPICAL CONNECTION FROM INLET TO BASIN

SUBSURFACE BASIN 13A PLAN VIEW

30.7'
8.7'

WRAP SIDES AND TOP OF BASIN WITH IMPERVIOUS GEOTEXTILE

SUBSURFACE BASIN 13A CROSS SECTION

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

320
330
340
350
320
330
340
350
-0+50
0+00
336.4
336.44
334.5
334.45
1+00
8.7'
18" HDPE @ 1.34%

PROPOSED
EXISTING

GRATE 336.00
INV OUT 324.13 (MH-6.03 TO OS-13-1)

PROPOSED MAT FOUNDATION

38' OF 15" RCP @ 0.010 FT/FT
46' OF 12" HDPE @ 0.119 FT/FT

OS-13-1
GRATE 336.00
INV OUT 324.13 (MH-6.03 TO OS-13-1)

PROPOSED FOUNDATION

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON THE EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.
TO AVOID INTERFERENCE WITH UNDERGROUND UTILITIES.

PLANT MATERIAL.

DIRECTING

HAND WEEDING WILL MOST LIKELY BE NEEDED.

COMPLETELY

AS

PHOSPHORUS

CAREFULLY

POTASSIUM

NITROGEN

SOLEM RISK AND WITHOUT LIABILITY OR LEGAL

OR ADAPTATION BY PENNONI ASSOCIATES FOR THE

PROJECT. THEY ARE NOT INTENDED OR REPRESENTED
AMENDED SOIL

NO LIMITING ZONE

VERTICAL SCALE: 1" = 4'

HORIZONTAL SCALE: 1" = 40'

DRAWN BY:

DATE:

VERTICAL SCALE: 1" = 4'

HORIZONTAL SCALE: 1" = 40'

TP-12: ELEV 326.00

TP-8: ELEV 323.00

TP-6: ELEV 322.00

SURFACE ELEVATION

ELEVATION: 335.00

BERM

PROPOSED SURFACE

EXISTING SURFACE

SPILLWAY

SEDIMENT BASIN

NO LIMITING ZONE ENCOUNTERED

NOT FOR CONSTRUCTION