#### MARCHETTI CONSULTING ENGINEERS

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marceng@optonline.net

June 22, 2018

To: Kathleen Sullivan, Planning Board Chairperson, Hasitngs-on-Hudson, NY

CC: James J. Hahn, P.E., James J Hahn Engineering, P.C.

Re: Site plan revisions

Owner/Applicant – Prokop & Bindler Village of Hastings-on-Hudson, NY

To whom it may concern;

MCE has reviewed and revised the Plans, details and specifications produced by this office as per the letter submitted by James Hahn on 6/19/2018. What follows is an itemized list of the comments with responses.

- 1. A detailed description of the existing drainage system should be provided. Any existing stormwater facilities should be shown and should include sizes and invert elevations.
  - a. At the time of this letter there is no other stormwater facilities nor drainage structures/systems on site. A similar note can be found on SW-1 below the Stormwater Plan
- 2. Location of all existing and proposed roof leaders and downspouts should be provided.
  - a. See updated Impervious Surface Partial Plan
- 3. The 24-Hour, 100-year storm event should be used in the drainage calculations.
  - a. See updated SW-2 specifications
- 4. The proposed increase in impervious surface on SW-2 conflicts with the information on G100. This should be reviewed and revised
  - a. See updated SW-2 specifications
- 5. The terms "retention" and "detention" are both used to describe the stormwater mitigation system. This should be revised.
  - a. All mention of the stormwater mitigation system reads as "retention"

- 6. The infiltration system must not be connected until construction is complete and the site is stabilized, A note, stating as much, should be added to the plans
  - a. See updated SW-2 specifications
- 7. The Cultec Section 2 detail shows a 12-inch diameter pipe entering the system. This conflicts with the 4-inch shown on the plan and 8-inch on the detail. The plans should be revised as required.
  - a. All piping has been upsized to 6" all details and plans follow the upsized diameter. Note, the 8" dimension is not an indication of pipe size but of minimum insertion length of pipe into the Cultec system.
- 8. Six-inch minimum diameter pipe should be used.
  - a. All piping has been upsized to 6" all details and plans follow the upsized diameter.
- 9. A detail for the distribution box should be provided and should depict a two (2') foot minimum sump for pre-treatment. It should also have access from the exiting grade for maintenance.
  - a. See the updated SW-2 for distribution box detail.
- 10. A manhole, drain inlet or cleanout should be provided at all pipe bends. We recommend reconfiguring the system with a header to avoid bends. Alternate configuration with the infiltration units installed linearly and parallel to the slope should be considered to avoid additional structures and limit the bury depth.
  - a. See updated SW-1 for reconfigured layout which eliminates all pipe bends. See SW-2 for updated profile of system.
- 11. Inspection ports should be shown for the infiltration units and a detail should be provided. They should be located as recommended by the manufacturer.
  - a. See updated detail on SW-1
- 12. The area of the proposed infiltration system should be protected from over-compaction during construction. The area should be fenced off during construction or the area should be de-compacted prior to installation of the infiltration units.
  - a. See updated SW-1 layout for fencing requirements as well as note indicating that the area shall not be over compacted.
- 13. Pre-treatment should be provided.
  - a. See Distribution box detail on SW-2.
- 14. An emergency overflow should be provided at the pre-treatment basin (DB-1).
  - a. See Distribution box detail and system section on SW-2 in addition to notes on SW-1.

- 15. Maintenance notes should be provided at the post-stormwater management practices.
  - a. See updated specifications on SW-2.
- 16. Proposed location, size, design and use of all temporary structures, storage areas, and staging areas to be used during the course of construction should be shown.
  - a. See updated Stormwater Plan on SW-1, note, no temporary structures are anticipated for the construction to occur on-site.
- 17. Location of the construction entrance and detail should be provided. It is not clear how a contractor will access the rear yard to install the system.
  - a. See updated Stormwater Plan on SW-1 with accompanying notes.
- 18. Standard engineering scales (i.e. 1"=20', 1"=30', 1"=40', 1"=50') should be used on drawings showing a plan view of the site. Graphic scales should be provided to confirm scale.
  - a. See updated plan notation on SW-1.
- 19. A north arrow should be shown on any drawing showing a plan view of the site.
  - a. See updated Stormwater plan on SW-1.
- 20. The following notes should be shown on the plans:

"The Building Inspector or Village Engineer may require additional erosion control measures if deemed appropriate to mitigate unforeseen siltation and erosion of disturbed soils."

"As-Built" drawings of the site improvements shall be submitted to the Village Engineer for review prior to obtaining Certificate of Occupancy."

"Infiltration system access ports shall be shown on the "As-Built"."

a. See updated notes on SW-2

If you have any questions or comments, please contact our office.

Regards,

Zach Marchetti P.E.

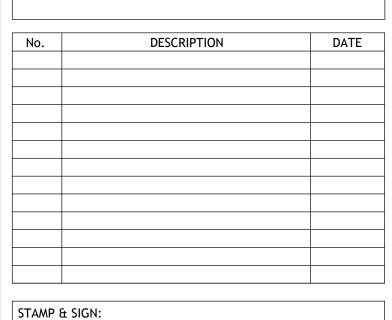
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### 6" PVC DOWN TO STORMWATER XXXXXXXXXXXX RETENTION CHAMBER /X2XXXXXXXXXXXX ARTENHACIOST CAREENHAONASE - EXISTING AZXATSATANAKSI ASAZAZAK DOWNSPOUT PROPOSED **DOWNSPOUT** TEXNEST NAMES TEARNALAETHA RECHARGER 150XLHD — HEAVY DUTY CHAMBER AEXXISTANXG NEW CERK DECK EXTENSION 1-2 INCH [25-51 mm] DIAMETER -WASHED, CRUSHED STONE PROPOSED DOWNSPOUT (TO TIE —— INTO ADJACENT DOWNSPOUT VIA CULTEC NO. 410 NON-WOVEN — LEADER UNDER DECK) GEOTEXTILE AROUND STONE. TOP AND SIDES MANDATORY; BOTTOM PER ENGINEER'S DESIGN PREFERENCE NEW UNCOVERED BRIDGE MINIMUM 95% COMPACTED FILL 2'-9" 4'-9" **EXISTING EXISTING** DOWNSPOUT PAVEMENT OR FINISHED GRADE — DOWNSPOUT (TO BE REMOVED) IMPERVIOUS SURFACE PARTIAL PLAN SCALE: 1"=10' PROPOSED CONSTRUCTION ENTRANCE **CULTEC 150XL HD INSTALLATION PLAN** SCALE: ½"=1'-0" NEW OVERFLOW RIP RAP BUFFER 1 - 2 INCH [25- 51 mm] DIA. WASHED, CRUSHED STONE CULTEC HVLV FC-24 NEW CONSTRUCTION FEED CONNECTOR WHERE SPECIFIED (3) CULTEC 150XL CULTEC NO. 410 NON-WOVEN GEOTEXTILE AROUND STONE. TOP AND SIDES ARE MANDATORY; BOTTOM PER STORMWATER RETENTION RECHARGER 150XLHD - FINISHED GRADE HEAVY DUTY CHAMBER DESIGN PREFERENCE CHAMBERS - NATURALLY COMPACTED FILL 12' MAX **BURIAL DEPTH** PROPOSED INFILTRATION SYSTEM TO BE PROTECTED FROM OVER-COMPACTION DURING CONSTRUCTION 3 HOLE DISTRIBUTION BOX "DB-1" TO BE USED AS PRETREATMENT 6"Ø PVC PIPE — - CULTEC NO. 66 WOVEN GEOTEXTILE (FOR SCOUR PROTECTION) TO BE PLACED BENEATH INTERNAL 3'-3" CENTER MANIFOLD FÉATURE AND BENEATH ALL INLET/OUTLET TO CENTER NEW 14" SONOTUBE FOUNDATION L DESIGN ENGINEER RESPONSIBLE FOR ENSURING THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS (TYP.) 6" PVC UP TC GENERAL NOTES RECHARGER 150XLHD BY CULTEC, INC. OF BROOKFIELD, CT. **DOWN SPOUT** ALL RECHARGER 150XLHD HEAVY DUTY UNITS ARE MARKED WITH A COLORED STRIPE FORMED INTO THE STORAGE PROVIDED = 4.89 CF/FT (0.45 m³/m) PER DESIGN UNIT. REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES. PART ALONG THE LENGTH OF THE CHAMBER. ALL RECHARGER 150XLHD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 '(3.65m). THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. No. 41 **CULTEC 150XL HD INSTALLATION SECTION 1** NEW 14" SONOTUBE FOUNDATION SCALE: ½"=1'-0" **NEW 14" SONOTUBE FOUNDATION** SECOND FL. ELEV. SOUTH FIRST FL. ELEV. SOUTH 1-2" [25-51 MM] WASHED, CRUSHED PIPE DESIGN AND ELEVATION TBD BY ENGINEER. STONE SURROUNDING CHAMBERS PIPE TO BE INSERTED 8.0" [203 mm] MIN. INTO STRUCTURE AND 8.0" [203 mm] MIN. INTO CHAMBER CULTEC NO. 410 NON-WOVEN GEOTEXTILE AROUND STONE. TOP AND SIDES ARE MANDATORY; BOTTOM PER ENGINEER'S RECHARGER 150XL HEAVY DUTY CHAMBER DESIGN PREFERENCE INSPECTION PORT PLACED NATURALLY COMPACTED FILL AS REQUIRED BY **MANUFACTURER** DEED POINT OF BESTANDING FINISHED GRADE 205.0 12' MAX **BURIAL DEPTH** A VENUE H. STANLEY JOHNSON AND COMPANY . 66 WOVEN GEOTEXTILE (FOR SCOUR PROTECTION) TO BE NOTE: AS OF THE TIME OF THIS PLAN, THERE IS NO EXISTING DRAINAGE SYSTEM NOR EXISTING STORMWATER FACILITIES LOCATED ON SITE. SIDE PORTAL TO BE CUT IN FIELD TO ALLOW FOR HVLV PLACED BENEATH INTERNAL FC-24 FEED CONNECTOR AS NEEDED. CUT SHALL BE MANIFOLD FEATURE AND BENEATH ALL WITHIN 1/4" [6 mm] TOLERANCE OF SIDE PORTAL TRIM **INLET/OUTLET PIPES GUIDELINE CULTEC 150XL HD INSTALLATION SECTION 2** STORMWATER PLAN SCALE: ½"=1'-0" SCALE: 1"=10'

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31AMF & 3IG

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HASTINGS-ON-HUDSON, NY 10706

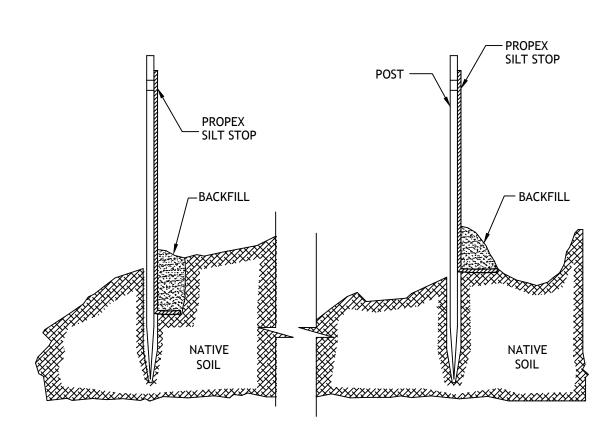
# STORMWATER PLAN AND DETAILS

PROJECT NUMBER:	2017-76
DATE:	5-14-18
DRAWN BY:	ZTM
CHECKED BY:	ZTM
SW-1	
SCALE:	AS NOTED

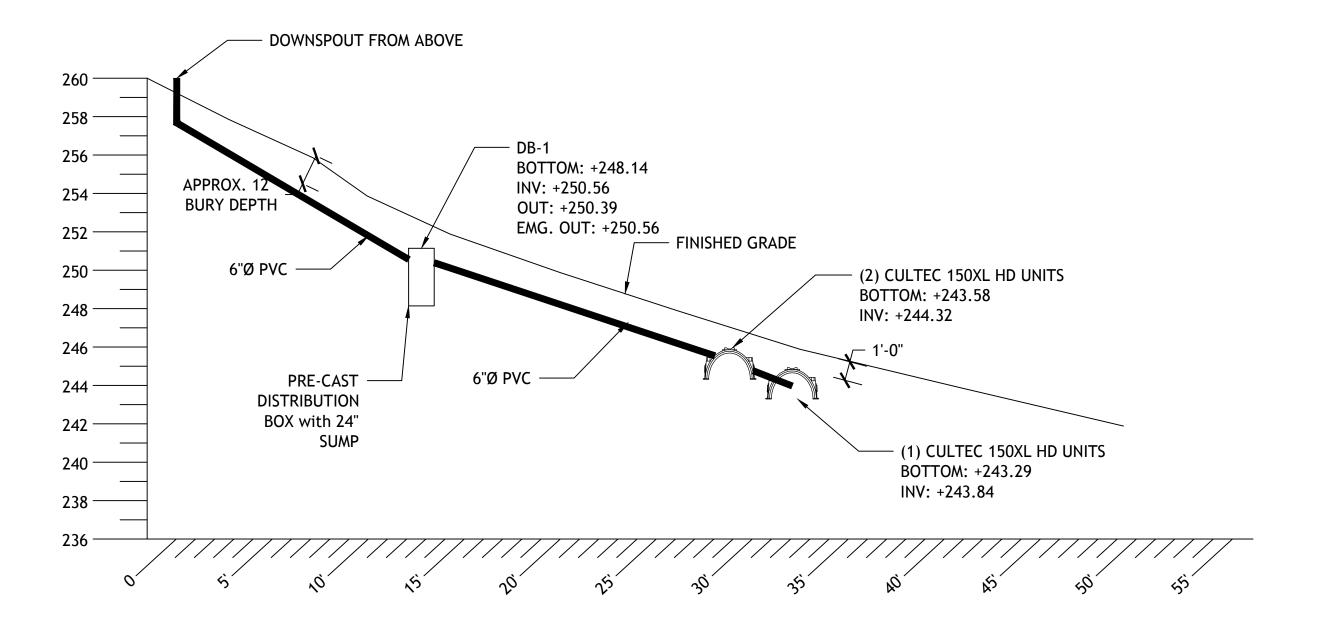
### **NOTES**

- THIS PLAN SHOWS AN ADDITION TO THE EXISTING RESIDENCE AND INCLUDES STORM WATER DESIGN FOR A WATER QUANTITY VOLUME AS DICTATED BY APPROPRIATED TOWN AGENCIES. THE DEISGN IS BASED ON RETAINING THE RUNOFF OF RAINFALL FOR A 100 YEAR STORM:
- SITE HYDRAULIC SOIL CLASSIFICATION: B
- EXISTING SITE CN: 52
- NEW SITE CN: 98
- EXISTING STORM RUNOFF DEPTH: 1.136 IN
- ANTICIPATED STORM RUNOFF DEPTH: 6.96 IN
- ADDITIONAL RUNOFF TO BE ABSORBED: 5.82 IN
- ANTICIPATED INCREASE IN IMPERVIOUS SURFACE: 260.7 SQFT
   ANTICIPATED RUNOFF VOLUME: (5.82IN)/12IN/FT \* 260.7 SQFT = 126.53 CUFT
- CULTEC 150XL HD INSTALLED VOLUME CAPACITY = 50.17 CUFT
- NUMBER OF UNITS REQUIRED= 126.53 CUFT/50.17 CUFT = 2.52 (3 UNITS)
- ALL WORK TO BE DONE IN ACCORDANCE WITH TOWN OF HASTINGS-ON-HUDSON BUILDING DEPARTMENT, STATE OF NEW YORK BUILDING CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION
- THE BUILDING INSPECTOR OR VILLAGE ENGINEER MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES IF DEEMED APPROPRIATE TO MITIGATE UNFORESSEN SILTATION AND EROSION OF DISTURBED SOILS
- AS-BUILT DRAWINGS OF THE SITE IMPROVEMENTS SHALL BE SUBMITTED TO THE
  VILLAGE ENGINEER FOR REVIEW PRIOR TO OBTAINING CERTIFICATE OF OCCUPANCY
- INFILTRATION SYSTEM ACCESS PORTS SHALL BE SHOWN ON THE "AS-BUILT"
- CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS PRIOR TO INITIATION OF ALL WORK
- CONTRACTOR IS RESPONSABLE FOR LOCATION OF ALL UNDERGROUND UTILITIES AND TO PROTECT THOSE IN EXECUTION OF ALL WORK
- PROVIDE ALL SOIL AND EROSION CONTROL MEASURES PRIOR TO CONSTRUCTION AND MAINTAINED DURING THE ENTIRE CONSTRUCTION PROCESS.
- ALL CONCRETE STRUCTURES TO BE 4000 PSI. CONCRETE WITH WIRE MESH REINFORCEMENT BY APPROVED PRECAST SUPPLIER
- CULTEC RETENTION CHAMBER TO HAVE MINIMUM COVER OF FILL AS PER CULTEC RECOMMENDATIONS FOLLOW ALL MANUFACTURERS GUIDELINES DURING INSTALLATION
- CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO INSTALLATION. CONFIRM ALL DATA AND REPORT THE FIELD CONDITIONS AND/OR DISCREPANCIES TO ENGINEER FOR MODIFICATIONS IF REQUIRED
- CONNECT NEW ROOF DRAIN LEADERS TO NEW SYSTEM. VERIFY IN FIELD AND REPORT TO ENGINEER
- RETENTION/INFULTRATION SYSTEM MUST ARE NOT TO BE CONNECTED UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED
- STORMWATER INFILTRATION SYSTEM TO BE MAINTAINED AS FOLLOWS:

   -REMOVE SEDIMENT AND DEBRIS FROM SUMPS IN PRETREATMENT AND OUTLET
   CONTROL STRUCTURES USING A VACUUM OR SIMILAR DEVICE, AFTER OTHER
   SYSTEM COMPONENTS SUCH AS PIPES AND VAULTS HAVE BEEN MAINTAINED
   -REMOVE SEDIMENT AND DEBRIS FROM EMERGENCY OVERFLOW PIPING AND RIP RAP
   VELOCITY DIFFUSER
- GUARANTEE ALL WORK FOR 1 YEAR AFTER COMPLETION

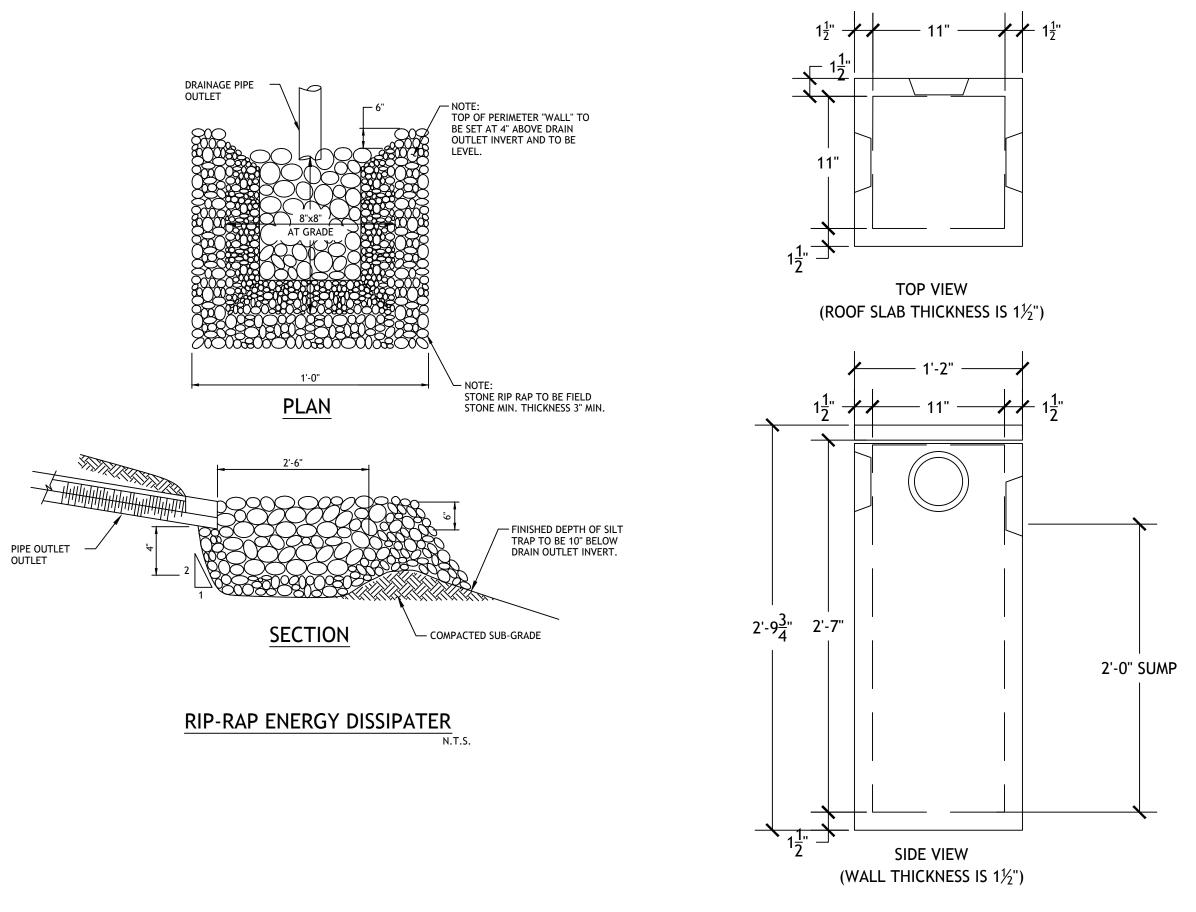


SILT FENCE INSTALLATION DETAIL
SCALE: NTS



### STORMWATER RETENTION SYSTEM PROFILE

SCALE: 1"=5'-0"



## DISTRIBUTION BOX DETAIL

SCALE: 1½"=1'-0"

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	1
DESCRIPTION	DATE
	DESCRIPTION

STAMP & SIGN:

SCALE:

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41 JEFFERSON AVE
HASTINGS-ON-HUDSON, NY 10706

STORMWATER SECTION, DETAILS, AND SPECIFICATIONS

C/4/ 2	
CHECKED BY:	ZTM
DRAWN BY:	ZTM
DATE:	5-14-18
PROJECT NUMBER:	2017-76

**SVV-Z** 

AS NOTED