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Via Overnight Delivery

February 1, 2016

Chemung County Stormwater Coalition
851 Chemung Street
Horseheads, NY 14845

RECEIVED FEB 0 2 2016

Attention: Jimmie Joe Carl, P.E.

Re: Response to Comments Summary
Proposed Retail Development – Primax Properties
658 Main Street
Town of Horseheads, New York

Dear Mr. Carl:

On behalf of our client, Primax Properties, LLC we are pleased to submit this response to comments summary to the Chemung County Stormwater Coalition for the above referenced project. This summary is in response to the various comments received in your email dated December 2, 2015, as noted below with our responses in italics. As part of this response to comments summary, enclosed please find two (2) copies of the final plans entitled "Site Development Plans", dated 5/6/15, last revised 1/27/16, consisting of twelve (12) sheets, and one (1) copy of the SWPPP dated 10/9/15, last revised 2/1/16.

SOILS TESTING & EVALUATION

1. There appears to be a lack of consistency with the infiltration testing and percolation testing completed. In June 2015, two infiltration tests and two percolation tests were completed by Terracon. On November 24, 2015, two infiltration tests and one percolation test were completed by Bohler.

   As per the June 2015 testing, the infiltration test results showed marginal infiltration capacity (an average of 0.33 inches/hour) and the percolation rates ranged from 1.4 to 3.8 min/inch. As per the November 24, 2015 testing, the measured infiltration rates ranged from 8.8 to 9.6 inches/hour and a percolation rate of greater than 9.6 inches/hour was reported.

   The infiltration tests from June 2015 were completed at a depth of 5 feet, as opposed to the November 2015 infiltration tests that were completed at depths of 12 inches and 24 inches. Do these results indicate that there is a confining/restrictive layer that would limit overall infiltration from the proposed basin?

   It is imperative that complete and well-understood soils data (including infiltration test results) exist to allow the feasibility and performance of a conceptual stormwater infiltration basin to be fully evaluated. In regards to the percolation testing, the NYS Stormwater Management Design Manual requires infiltration testing be completed for the sizing and design of infiltration facilities.

   As discussed, our office conducted additional percolation tests in the more native soil which the bottom of our basin will be in. Even if there is a restrictive layer, we have provided a minimum of four feet separation as required per the storm water regulations to a restrictive layer.

STORMWATER MODELING

1. As per the submitted hydrologic modeling, the proposed infiltration basin was modeled with an infiltration rate of 7.5 inches/hour, although the average of the infiltration tests at a depth of 5 feet was less than 0.5 inches/hour. Refer to Comment #1 under Soils Testing & Evaluation. Does a restrictive/limiting soil layer exist?

   As discussed, even if a restrictive layer exists, we have provided the minimum four feet of separation required to this layer.

2. A substantial portion of the adjacent Dandy Mini-Mart site to the east drains to the project site. Much of this off-site area is impervious.

    - Presently, it appears that this off-site area drains to the west to (and through) Existing Watershed Area 2. Runoff from the Dandy Mini-Mart site flows over a gently sloping lawn area (and perhaps a light depression), which promote infiltration of this off-site runoff.

    - In the proposed Post-Developed condition, a swale is proposed to divert runoff from the Dandy Mini-Mart site to the north to a proposed drainage ditch along NYS Route 223.

    As such, this proposed diversion of the runoff from the Dandy Mini-Mart site would act to increase and concentrate stormwater flows to the NYSDOT right-of-way. The drainage analysis should consider this, when estimating peak flows to the NYSDOT right-of-way.

    As discussed, this drainage eventually makes it to this swale before it discharges into the creek. We have confirmed that this swale and proposed driveway culvert pipe are capable of handling this flow. The grass swale also provides better treatment of the storm water.

3. In regards to the hydrologic modeling of the existing, pre-developed conditions, it appears that the predeveloped peak stormwater flow rates and volumes are over-estimated given the following considerations.

    - The estimated times of concentration values for the pre-developed drainage sub-areas appear to be too low and unrepresentative of the existing conditions.

        The time of concentration for existing watershed area 1 is approximately 2.6 min and has been modelled conservatively with the minimum 6 minute time of concentration. Watershed area 2 has been revised to demonstrate an approximate 8.2 minute time of concentration.

    - The existing pervious areas are well-established grassed lawn areas with grass cover of greater than 75 percent. An appropriate curve number should be utilized for these areas.

        The modeling has been revised accordingly.

    - The amount of impervious area in the existing condition appears to be over-estimated.

        The amount of impervious area in the existing conditions is accurate and is outlined in the existing drainage tributary map included within the SWPPP. Please note the site includes sidewalks and concrete pads throughout the site in addition to the driveway and buildings.

    - It is unclear what curve number was utilized to model the existing driveway.

        A CN value of 98, paved parking HSG A, was used to model the existing driveway as detailed in the hydrological modeling.

4. In regards to the modeling of the Grass Swale, off-site areas that drain to this swale should be included.

    As previously discussed, the proposed swale and culvert are designed with enough capacity to accommodate the existing contributing drainage area from the adjoining property to the east. Per NYS DOT requirements, the proposed culvert has been conservatively upsized from 12" to 15" in diameter.

PROPOSED STORMWATER INFILTRATION BASIN

1. A significant portion of the footprint of the proposed infiltration basin is currently occupied by a house. With that said, how will soils within the footprint of this house be prepared/restored/replaced such to achieve the design infiltration rate. Furthermore, specifics of how the existing house shall be demolished should be outlined. The plans and SWPPP should clearly address this item. It is requested that post-construction infiltration testing be completed.

   Soil restoration and decompaction notes are provided on the Grading & Drainage Plan and within the SWPPP.

2. The proposed infiltration basin, as currently designed, is shallow (less than 8 inches). Given this shallow depth, items such as sediment build-up could have a significant impact.

   This basin will be mowed and maintained as setforth within the Operation and Maintenance plans and inspection checklists outlined in the SWPPP.

STORMWATER CONVEYANCE

1. The existing downstream stormwater conveyance system along the southside of NYS Route 223 and the east side of First Street is meager, ill-defined, and in some locations non-existent. Given that the applicant is proposing the following items, it is recommended that the applicant evaluate/pursue improvements to the downstream stormwater conveyance system. These improvements would include increasing the hydraulic capacity of the downstream conveyance system such to accommodate the peak design stormwater flows. Improvements may include re-establishment of the existing conveyance system. This will most likely involve coordination with the NYSDOT and the Town of Horseheads.

   - Runoff from the existing Dandy Mini-Mart site is proposed to be redirected to NYS Route 223
   - A significant portion of the proposed parking lot is proposed to drain directly to NYS Route 223
   - An overflow from the proposed infiltration basin is directed to NYS Route 223

   It is our understanding that your office, the Town, and the NYS DOT are reviewing this item. We will work with the DOT to improve the condition of the swale.

2. Hydraulic calculations justifying the sizing of the proposed driveway culvert should be provided. Peak flows from off-site areas should be estimated and utilized in the sizing of the driveway culvert and downstream conveyance system improvements.

   The culvert pipe has been upsized to a 15" pipe to more than adequately handle the drainage flow. Calculations are provided within the Stormwater Report in the Storm Water Pollution Prevention Plan for onsite contributing flows. Offsite areas were estimated and modeled; the 15" culvert is sized adequately to handle these flows.

3. The proposed type of pipe to be used for the storm sewers should be specified. Will adequate cover exist over the proposed storm sewer?

   The storm sewer pipes proposed are labeled according on the Grading & Drainage Plan. We have confirmed that there is adequate cover over the proposed pipes.

4. Bends in the storm sewer (without access structures) should be avoided.

   Adequate cleanouts have been provided.

SOIL RESTORATION

1. In regards to soil restoration, the Plans and SWPPP should reference NYSDEC's document entitled "Deep-Ripping and Decompaction, April 2008" for specifications. It is recommended that the SWPPP include this document.

   A note to reference this document has been added to the Grading & Drainage Plan and a copy has been included within the SWPPP.

2. Is soil restoration proposed to be completed for the proposed infiltration basin?

   Soil restoration will be completed for the proposed infiltration basin.

3. In regards to Note #2 under Soil Restoration Procedure of Sheet 5 of the Plans, the tilling of compost into the subsoil shall be to the full depth of impacted soils (but at least to a depth of 12 inches).

   This note has been revised accordingly.

EROSION & SEDIMENT CONTROL

1. Silt fence should be provided along the north side of the project site (i.e. along NYS Route 223).

   Silt fence has been added along the north side of the project site.

2. The proposed temporary sediment basin is within the proposed setbacks from the existing water supply wells. This could represent a potential source of contamination.

   We have revised the temporary sediment basin location to be outside of the existing well separation buffers as requested.

MISCELLANEOUS

1. What is the NYSDOT's status regarding their review and approval of the driveway entrance permit, the discharging of developed stormwater to their ditch along Main Street (including the redirecting of the runoff from the Dandy Mini-Mart site), and the culvert for this project?

   This project is currently under the NYS DOT's review.

2. Additional proposed spot elevations at the basin bottom, along the perimeter of the proposed parking lot, at the top and bottom of the proposed curb, and along the "ridgeline" of the parking lot are requested.

   Additional spot elevations have been added as requested.

3. The following comments pertain to the proposed asphalt curb.

   - The Grading Plan does not seem to reflect the proposed curb. Also, the Site Plan should clearly indicate the location of this curb.
   - A concern exists regarding the long-term reliability of asphalt curbing. Asphalt curbing is vulnerable to snow plowing operations. Damage to the proposed curbing could negate its purpose of conveying runoff to the proposed forebay.

   The Site Plan enclosed shows the location of the asphalt wing curb. We find this curb effective and it will be replaced if its condition deteriorates over time.

4. The O & M Plan should clearly indicate what measures shall be taken if the proposed stormwater infiltration basin does not drain at least at the design infiltration rate.

   The infiltration basin has been overdesigned to infiltrate the entire 100-year storm event and the percolation rate has been confirmed with onsite testing per criteria set forth within the Stormwater Design Manual. Operation and maintenance plans, agreements, and inspection checklists are included within the plans and SWPPP to monitor, inspect, and ensure the longevity and functionality of the stormwater management practice.

5. In regards to the NOI, the following comments pertain.

   - Item 16 on Page 5 of the NOI indicates that the municipality/entity that owns the separate storm sewer system is the NYSDOT. Although that may be true (at least for NYS Route 223), runoff may also reach the Town of Horseheads drainage system. As noted previously, the Town of Horseheads is a MS4 municipality.

   - The flow values indicated in Item 37 of the SWPPP, do not appear to agree with those in the Stormwater Management Report.

   The NOI has been updated accordingly.

6. How will the existing on-site well be decommissioned? Likewise, how will the existing on-site septic system be decommissioned? The specific state and local requirements should be referenced.

   Notes have been added to the plans stating that "Existing on-site well to be decommissioned per all State & Local Regulations" and "Existing on-site septic system to be decommissioned per all State & Local Regulations".

Sincerely,

BOHLER ENGINEERING MA, LLC

Caryn Mlodzianowski

cc: **Al Curran, NYSDOT**
Tom Skebey, Town of Horseheads (Plans only)
Primax Properties, LLC