

Memorandum

VIA EMAIL
July 19, 2024

Zayibeth Carballo
Township of West Orange, Department of Engineering
25 Lakeside Avenue
West Orange, NJ 07052

40-42 Eagle Ridge Way
Block 106, Lots 20.03 & 24.01
Township of West Orange, Essex County, NJ 07052
Project No. 24006174A

Dear Ms. Carballo,

Our office acknowledges receipt of your correspondence dated July 9, 2024, regarding the above referenced project. Please accept this letter as both a response to the comments and concerns outlined in your letter and in furtherance of our conversations and my preliminary recommendations,

The applicant has submitted interim as-built surveys from Omland & Osterkorn Inc. of both properties showing the current wall elevations, drainage features, and dimensions to the property lines.¹ Our office has been retained to prepare a comprehensive major site plan application with a stormwater report that we expect to deliver to you within the next four weeks. Given that the design, review, and approval process will require time to prepare, we propose a temporary lift of the current stop work order to address some of the immediate concerns on the site:

1. The previously used verbiage including “temporary/emergency construction allowance” and “potentially hazardous conditions”, appears to have caused a negative reaction from the Township. That was not the intent. The immediate or emergency concerns pertain to the newly installed 36” wide elliptical RCP storm pipe at the outfall of the existing drainage channel which we understand has been the source of concerns by the Township and the adjoining neighbors. Site inspection photos of a 36” elliptical RCP storm pipe can be seen below, along with Omland & Osterkorn’s survey of the As-Built conditions showing the 36” elliptical RCP pipe and associated elevations. Based on conversations and correspondence with the applicant, there was a directive by the Hudson Essex Passaic Soil Conservation District (HEPSCD) to clean and maintain the existing drainage channel that traverses 40 and

¹ These interim as-built surveys were first mailed by Priscila Triolo, Esq. to Richard Trenk, Esq. via Fed Ex on June 21, 2024 and then pdf versions were emailed to you and others on June 26, 2024 in response to Mr. Trenk’s request for an email version to be circulated. So there is no further misunderstandings, I am attaching another copy of these interim as built surveys.

42 Eagle Ridge Way. When the contractor was responding to the HEP SCD directive, he encountered two (2) 12" collapsed clay pipes at the outfall. The intention was to repair and improve this item as part of the cleaning and repair process, not to increase velocity existing at the outfall. The contractor believed that a flatter and wider pipe with a larger surface area should diminish the flow compared to dual 12-inch pipes.

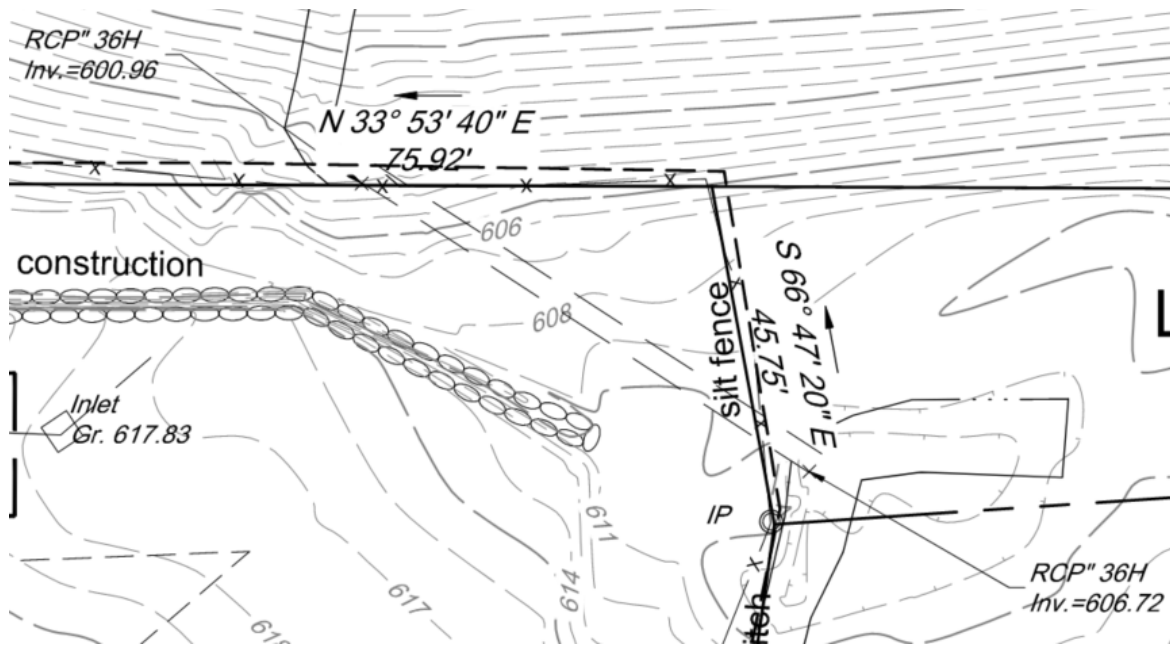


Figure 1: 36" Elliptical Outfall per Omland and Osterkorn Interim As-Built Plan



Figure 2: 36" Elliptical Outfall Site Photos

It is important to note that the majority of the runoff conveyed to the drainage channel originates from upstream properties. The adopted Resolution approving the upstream development specifically prohibited what the Llewellyn Park neighbors are now experiencing. We do not have records available to demonstrate that the association has any stormwater drainage system to comply with the Resolution. Such actions should be on file with the Township, and it would be helpful for both your office and our office to review them. As such, the volume of water is not the responsibility of the applicant, but the maintenance of the channel should be.



Figure 3: Drone Image Taken After Heavy Rainfall

In addition to the lack of stormwater control from the offsite sources, New Jersey has experienced and recorded unseasonably high rain and increased thunderstorm events. Therefore, we consider the outfall to be an issue that requires immediate attention.

While we believe that imposing obligations on the association to comply with the Resolution remains within the Township's authority and may be part of the Township's long-range plans to improve the storm drainage conditions in Llewellyn Park, we nevertheless considered what the owner of 40 Eagle Ridge Way may do to help alleviate this situation. That is why we propose an Outlet Control Structure (OCS) to reduce the downstream flow in a manner that will work to both reduce the flow of stormwater from the pre-existing damaged dual 12" pipes and act as a collector to assure that only rainwater falls down the mountain slope and not debris or trash.

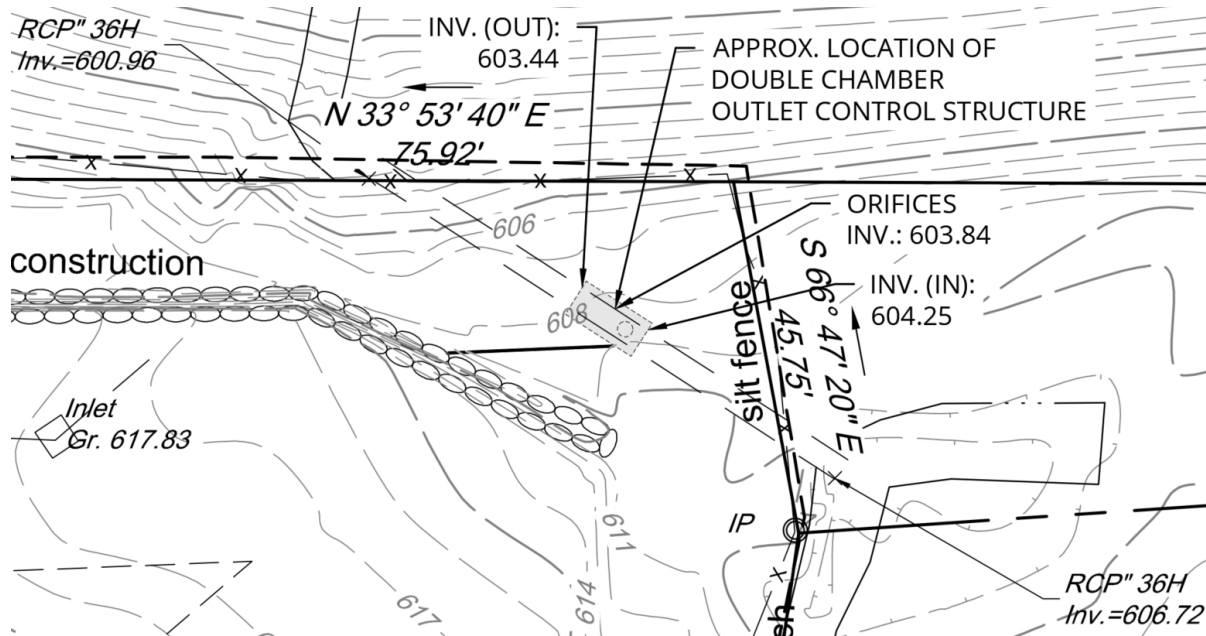


Figure 4: Proposed OCS Location

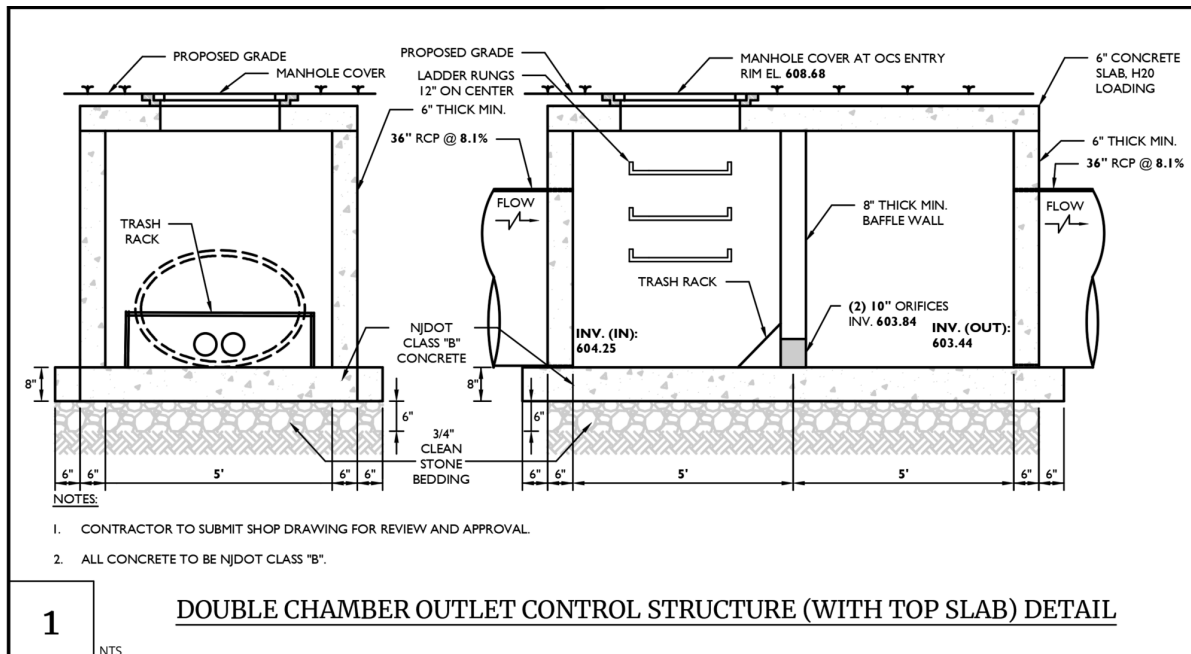


Figure 5: OCS Design Detail

The OCS will be located at the midpoint of the 36" RCP pipe and will contain two (2) 10" orifices that will restrict the flow through the existing 36" elliptical RCP pipe outflow. The below table summarizes the existing and proposed peak flows and peak velocities through the pipes.

	Pre-Existing 12" Pipes	Existing 36" Elliptical Pipe	Proposed OCS
2 Year	11.20 cfs / 14.15 fps	11.20 cfs / 16.06 fps	11.20 cfs / 13.94 fps
10 Year	22.77 cfs / 16.07 fps	22.79 cfs / 20.10 fps	13.62 cfs / 14.23 fps
25 Year	24.13 cfs / 16.07 fps	31.05 cfs / 22.13 fps	13.62 cfs / 14.23 fps
100 Year	22.14 cfs / 16.07 fps	43.54 cfs / 25.01 fps	15.30 cfs / 14.23 fps

Figure 6: Outflow Flow Chart

Another item of concern that we feel requires immediate attention is the completion of the stone retaining wall. Based on correspondence and conversations with the owner it is our understanding that the top layers of stone are temporary and intended to be removed with the restoration of the adjacent grades. We learned that the site contractor overcompensated to contain the site drainage to assure that there was no stormwater runoff from the area under construction. Once the construction was completed, the temporary part of the wall was to be removed and the grades restored. The below site photo shows that the top 4-6 feet of the wall is not mortared. When the temporary top courses are removed the grading on both sides will be restored and compacted in accordance with industry standards. The foundation of the wall will be buried, and the final wall from foundation to top will have a maximum height of 6' in limited areas and the height sloped off as intended.

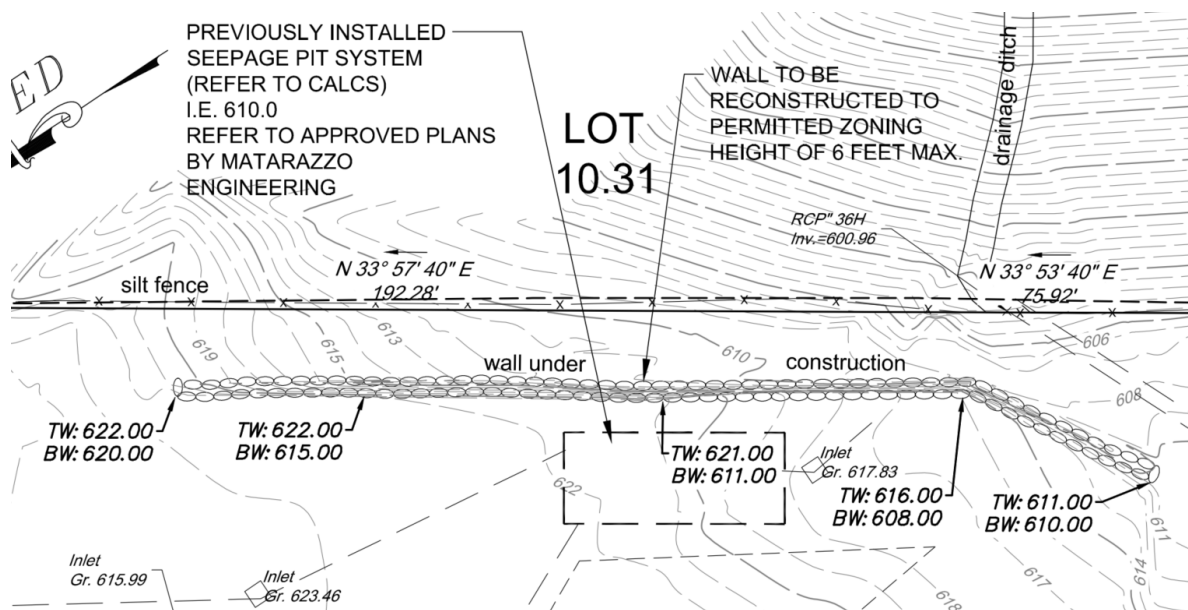


Figure 7: Current Wall Conditions per Omland and Osterkorn Interim As-Built



Again, due to heavy rainfall and thunderstorms, the 15' buffer between the east side of the wall and the downstream property line, should be restored to grade, along with addition of crushed stone, thereby removing the potential for erosion. This cannot be done unless the contractor simultaneously removes the top temporary portion of the retaining wall, which will then result in the wall complying with the allowable height. Colliers recommends a full-time inspector from our office be on site to ensure proper construction means and methods are followed, and an additional interim as-built be performed to confirm the finished wall doesn't exceed 6' in any area and that it conforms to the Matarazzo plans submitted to the Township.

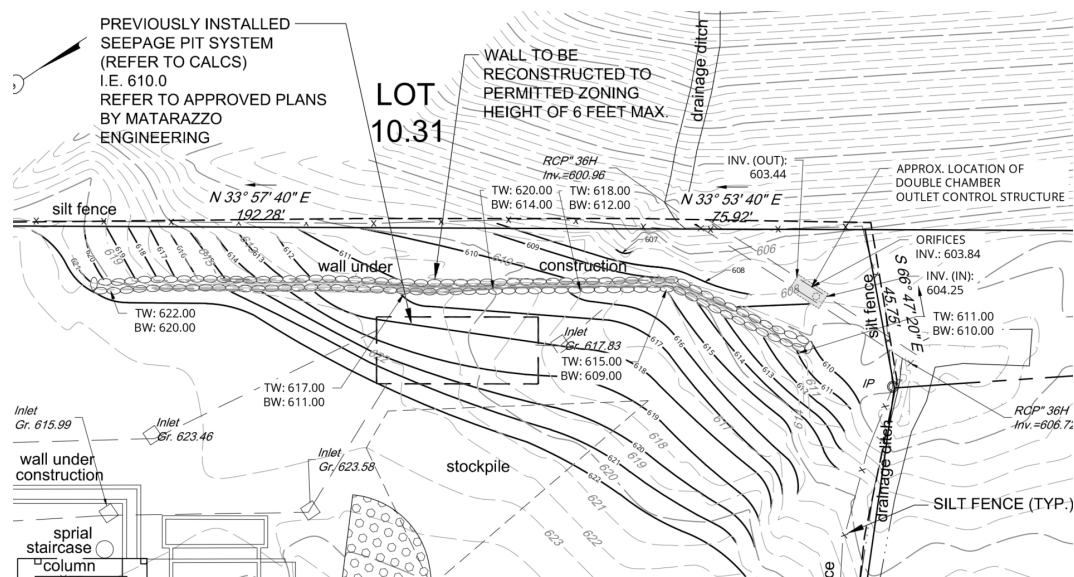
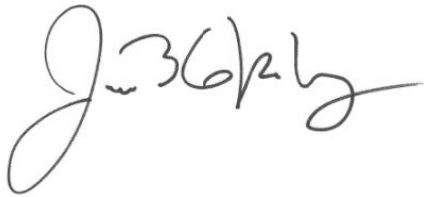


Figure 9: Conceptual Grading Design

We request that the above outlined activities be allowed to be completed now to stabilize the site and significantly improve the downstream drainage patterns compared to the pre-existing damaged dual 12" pipes. I have also attached a proposed sequencing schedule contingent upon your approval of the proposed activities. Should you have any questions, please do not hesitate to contact our office. Of course, the opinions, observations, and recommendations are solely our firms and do not constitute a waiver of any of the property owners' rights, which are all reserved.

Sincerely,

Colliers Engineering & Design, CT, P.C.

A handwritten signature in black ink, appearing to read "Jesse Cokeley".

Jesse Cokeley, P.E.
Geographic Discipline Leader | Principal
NJ License No. GE54006

A handwritten signature in black ink, appearing to read "Justin Ferrazzano".

Justin Ferrazzano
Senior Project Manager | Associate

PROPOSED SEQUENCING SCHEDULE (DATES TO BE COMPLETED PER TOWNSHIP AUTHORIZATION)

1. Permit for outfall structure:
 - a. Permit: Timing/start is pending Township authorization
 - b. Work: 2-4 Weeks from permit approval, dependent on production of pre-cast double chamber Outlet Control Structure
2. Permit for wall:
 - a. Permit: Timing/start is pending Township authorization
 - b. Work: Up to 5 working days
3. Major Site Plan Development:
 - a. Application & Plan Deliverable: Timing – On or before August 19, 2024
 - b. Township Review: 2 Weeks (Anticipated)
 - c. Target Site Plan Review Meeting: 9/10/24
 - d. Site Plan Board: Dependent on Site Plan Committee Review