



TOWN OF NEW CASTLE

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Date: September 3, 2018 (For September 5, 2018 PB Meeting)

To: Planning Board

From: Town Engineer

Re: Chappaqua Crossing – East Village (MFPD) Site
Development Plan Approval - Planning Board Application
for Wetlands Permit, Steep Slopes Permit, Tree Permit, and
Stormwater Pollution Prevention Plan Approval – 480
Bedford Road - Section 93.9, Block 1, Lot 1.4

I have performed a preliminary review of the submitted plans as mentioned in a response letter as prepared by Divney Tung Schwalbe dated July 20, 2018 on behalf of the above referenced application and offer the following comments:

General Comments:

- GC1. The Sight Distance Triangle and associated sight line (located at the intersection of the Main Access Road and Proposed Road A) looking west is obstructed by three (3) trees. Therefore, it is recommended that the three (3) trees be relocated to be outside of the sight line triangle whereas not to interfere with the sight lines which allows for future growth or plant low growing vegetation not to exceed one (1) foot in total vertical growth height.
- GC2. The Sight Distance Triangle and associated sight line (located at the intersection of the main access road and Proposed Road A) looking east is obstructed by four (4) trees. Therefore, it is recommended that the four (4) trees be relocated to be outside of the sight line triangle whereas not to interfere with the sight lines which allows for future growth or plant low growing vegetation not to exceed one (1) foot in total vertical growth height.
- GC3. The Sight Distance Triangle and associated sight line (located at the intersection of the Main Access Road and Proposed Road A) looking west and east, should emanate from the stop line as opposed to the middle of the proposed pedestrian crosswalk. Revise accordingly.
- GC4. The requisite sight distance triangles for Sight Distance Section #3 and Sight Distance Section #4 as shown on Drawing No. SP-4.4 should be clearly demarcated on Drawing No. SP-4.1 and Drawing No. SP-4.2.
- GC5. The Sight Distance Sections as shown on Drawing No. SP-4.4 should be revised as follows:
- Reference the standards from which the sight lines were based upon (AASHTO “Green Book”)

- Indicate the height of object in all instances above the roadway surface elevation (3.5')
- Indicate the proposed posted speed limit that the minimum required sight lines were based upon
- Indicate the existing ground elevation and elevation of the Line of Sight at 50 intervals
- Indicate the minimum height from the existing grade to the Line of Sight and location

GC6. Based upon a review of the written correspondence from local Westchester County area moving companies, it appears as if the type of vehicle that would be used for moving into a townhome like the East Village Site Development Plan would be a non-articulating single unit truck approximately 35 feet in length. This type of vehicle would most likely correspond to that of a Single Unit Truck (SU-40) as per AASHTO.

It should be noted that as per Chapter 2 – Design Controls and Criteria as per the American Association of State Highway Transportation Officials (“AASHTO”) publication “*A Policy on Geometric Design of Highways and Streets*” the Minimum Design Turning Radius, Center-line Turning Radius (CTR) and Minimum Inside Radius of the SU-40 is greater than that of the WB-40, as outlined below:

<u>Type of Design Vehicle</u>	<u>Min. Design Turning Rad.</u>	<u>CTR</u>	<u>Min. Inside Radius</u>
SU-40 (Single-Unit Truck)	41.8'	47.4'	36.4'
WB-40 (Intermediate Semi-Trailer)	39.9'	36.0'	19.3'

Therefore, the applicant’s engineer should provide turning movements for a SU-40 Single Unit Truck in and along all roadway radii to demonstrate adequate and safe pavement areas.

GC7. In my last memo dated June 26, 2018 it was recommended that a turnaround be proposed at the most northerly end of Road E, located northerly of Building (Unit No. 64), to allow vehicles to turnaround and safely enter the intersection.

However, the applicant’s engineer states that providing an additional turnaround at the end of Road E would result in additional impervious surfaces, retaining wall, and the removal of additional trees.

Therefore, it is recommended that the applicant’s engineer submit a conceptual plan which clearly demonstrates the environmental impacts created by the additional turnaround to be reviewed by the Planning Board.

GC8. In my letter dated June 26, 2018 it was noted that the original MFPD Preliminary Development Concept Plan (PDCP) as approved by the Town Board, originally showed the driveway length as measured from the edge of pavement to the garage door as being approximately between 15 feet to 20 feet in length.

However, the latest plans has reduced the driveway length as measured from the edge of pavement to the garage door as being approximately between 8 feet to 12 feet in length. This reduction would limit the driver’s ability to detect an oncoming vehicle prior to the vehicle exiting the driveway and entering the travelled lane of the roadway. Likewise, the vehicle travelling along the roadway would have limited visibility and reduced stopping sight distance of the exiting vehicle from the garage.

The applicant’s engineer has submitted a **Driveway Sight Distance** study as shown on Figure 17 of Section 8(d) – Proposed Townhome Driveways, which indicates a stopping sight distance of approximately 47-feet. It should be noted that the applicant has not indicated the proposed posted speed limit for the internal roadway system to date.

However, the minimum Stopping Sight Distances (level roadways) as per AASHTO for several design speeds have been outlined below:

<u>Design Speed (MPH)</u>	<u>Stopping Sight Distance</u>	
	Calculated (Ft)	Design (Ft)
15	76.7	80
20	111.9	115
25	151.9	155

Also, the average grades of Roads A through E were found to be approximately 3.6% +/- which would increase the braking distance and overall stopping sight distance, as shown below:

<u>Design Speed (MPH)</u>	<u>Stopping Sight Distance</u>
15	80
20	116
25	158

In conclusion, the provided stopping sight distance of 47 feet, would not provide the minimum required stopping sight distances as per AASHTO for the posted speed limits of 15 MPH, 20 MPH or 25 MPH. Therefore, the posted speed limit would most likely be 10 MPH, in which the applicant should provide the minimum required stopping sight distances, which takes into account the roadway grade.

In addition, the applicant's engineer should provide the stopping sight distances based upon the original MFPD Preliminary Development Concept Plan (PDCP) as approved by the Town Board, which originally showed the driveway length as measured from the edge of pavement to the garage door as being approximately between 15 feet to 20 feet in length.

- GC9. The applicant should provide turning movements based upon an AASHTO template for a passenger vehicle (P) entering the garage from the roadway, to demonstrate that the driveways as designed will properly function, since the apron intersection with the roadway does not include a return (radius).
- GC10. Based upon a review of the "East Village Townhome Unit Schedule" as shown on Drawing No. SP-2.2 (Site Grading & Drainage Plan), thirteen (13) units (Units 9, 10, 12, 23, 31, 40, 55, 60, 61, 80, 83, 87 & 91) exceeds the maximum driveway grade of 5% and five (5) units (Units 22, 24, 25, 39 & 43) exceed the maximum allowed driveway grade of 7% as per Section 60-420F.(8)(b)[3], in which a variance may be required from the Zoning Board of Appeals for the five (5) units which exceed the maximum allowed driveway grade of 7%.
- GC11. The Applicant is proposing approximately 930 linear feet retaining walls, which range between 2' and 18' in exposed height. Therefore, the Applicant's engineer should provide complete structural drawings showing the retaining walls, in which the following notes should be added to the structural drawings:
 - a) All work regarding the footing/foundation for all site related retaining walls shall remain accessible and exposed until inspected by the Building/Engineering Divis

Building/Engineering Division shall be notified at least 48 hours in advance to schedule a footing/foundation inspection. **Contact Terry L. Rowe – Civil Engineering Technician at 914-238-1429.**

- b) The retaining wall, as shown hereon, has been designed to meet and/or exceed the minimum factors of safety for sliding, overturning and settlement.
- c) At completion, the applicant's engineer shall submit a "**Certificate of Construction Compliance**" and "**As-Built Section**" certifying that the retaining wall as constructed meets all factors of safety for sliding, overturning and settlement in accordance to the approved plans on file with the Building and Engineering Department.

GC12. Provide water main profiles and associated stationing, in light of the fact that they are required for the WCDOH Approval as well.

GC13. The applicant should provide an engineer's cost estimate for the construction of all the site related items, including tree replacement, wetlands mitigation and stormwater plantings, in order to determine the performance bonding and associated 3% inspection fee.

GC14. The Applicant would be required to obtain approval from the Westchester County Department of Health for the proposed water main and sanitary sewer improvements.

Master Subdivision Plan Comments:

MS1. Indicate the metes and bounds for each parcel.

MS2. Indicate the tax identification (SBL), owner (NOF), address and filed map number (if applicable) of all surrounding properties.

MS3. Indicate the metes and bounds of the lands (and associated areas) to be dedicated to New York State and the Town of New Castle for roadway improvement purposes.

MS4. Indicate the water main, sanitary sewer, stormwater sewer and associated easements.

MS5. Indicate the following legends and or signature blocks:

- Westchester County Department of Health
- Planning Board Chairman signature block
- Owners signature block
- Date survey was completed
- Licensed land surveyors signature and seal
- Title of subdivision
- Any other items that may be required by the Westchester County Clerk's Office – Division of Land Records.

Preliminary Subdivision Plan Comments:

PS1. Indicate the metes and bounds for each parcel. (Parcel 1 through 93)

PS2. Indicate the tax identification (SBL), owner (NOF), address and filed map number (if applicable) of all surrounding properties.

PS3. Indicate the water main, sanitary sewer, stormwater sewer and associated easements.

PS4. Indicate the following legends and or signature blocks:

- Westchester County Department of Health
- Planning Board Chairman signature block
- Owners signature block
- Date survey was completed
- Licensed land surveyors signature and seal
- Title of subdivision
- Any other items that may be required by the Westchester County Clerk's Office – Division of Land Records.

PLEASE NOTE:

A review of the Applicant's Response letter dated July 20, 2018 to my previous Stormwater Comments memo dated June 5, 2018, as outlined below, are currently under review and will be provided to the applicant when completed.

Stormwater Comments:

- ST1. The Flow Length of 466 ft. for the unpaved shallow concentrated flow for Subbasin "F" under existing conditions as shown on Table No. 6 does not correspond with the scaled length of 1,200 ft. as shown on the Existing Drainage Conditions Map (Drawing No. SWM-7). Please revise accordingly.
- ST2. The Flow Length of 232 ft. for the channel flow for Subbasin CC-PKG S under existing conditions as shown on Table No. 6 not correspond with the scaled length of 2,164 ft. to Discharge Point No. 3 as shown on the Existing Drainage Conditions Map (Drawing No. SWM-7). Please revise accordingly.
- ST3. The total flow length of 1,085 ft. which includes the sheet (100'), shallow concentrated flow (unpaved 231') and channel flow (754') does not connect to a known discharge point (DP #1, DP #2, DP #3, and DP # 4/5). Please revise accordingly.
- ST4. The increase is stormwater runoff volume (cubic feet) at Discharge Points Nos. 3 & 4/5, which discharges into the Chappaqua Brook Wetlands System, for the 25-year storm is approximately +6.5% +/- (net increase of 95,500 +/- CF); 50-year storm is approximately +6.8% +/- (net increase of 129,025 +/- CF) ; 100 year storm is approximately 7.1 % +/- (net increase of 170,450 +/- CF). Therefore, the stormwater report should include a comprehensive evaluation of the qualitative and quantitative impacts to the existing downstream off-site drainage system (Chappaqua Brook Wetlands System), in particular in terms of capacity, hydraulic grade, increased pond/stream elevation, water quality and water quantity (peak flows and runoff volumes).
- ST5. Provide a detailed layout and associated section (1" = 20') of the Wet Extended Detention Pond (Pond CC-R) (NYSDEC SMP Classification P-3), as shown on Drawing No. SP-2.2, which should include the following:
- a) Emergency overflow spillway and safe passageway to existing downstream structures
 - b) Direct access of appropriated vehicles (12' wide)
 - c) Fixed vertical sediment depth marker
 - d) Low flow orifice
 - e) Riser

- f) Pond drain
- g) Side slopes (maximum of 3H to 1V)
- h) Perimeter fencing and warning signs

- ST6. The total retained height of stormwater, during a 100-year storm event, along the westerly side of Wet Extended Detention Pond (Pond CC-R) would be approximately 10 feet in height. Therefore, the applicant should obtain a NYSDEC Dam Permit from the NYSDEC regarding the stormwater basin. In the alternative, the applicant should provide a letter of “*No Jurisdiction*” from the NYSDEC stating that a NYSDEC Dam Permit is not required, in this particular case.
- ST7. The Site Grading & Drainage Plans (Drawings SP-2.1 & SP-2.2) should show the existing downstream drainage system (type of pipe, diameter, slope and inverts), which conveys stormwater runoff from the outlet control structure (OCS-A) located within the Wet Extended Detention Pond (Pond CC-R) to the Chappaqua Brook Wetland System. Provide top and invert elevation of OCS-A as well.
- ST8. It is recommended that the existing downstream drainage system, as mentioned in above mentioned comment (ST7), be TV Inspected to ensure that the existing drainage network is operating satisfactorily and does not contain any sediment and/or repairs that may be required.
- ST9. It appears that the bottom contour of the most westerly portion of Pond CC-R is at a proposed elevation of 358'. However, the existing grades at the same location (approximately 5' westerly) indicates an existing elevation of 350.32' (Top of Rim at existing DMH). Therefore, a proposed retaining wall of approximately 7' – 6" would be required in this case.
- ST10. The Design Capacity of 46.0 cfs and 45.4 cfs for DMH A-3, DMH A-2, DMH A-1 and HW-A as shown on the *Drainage Pipe Area Map* (Drawing SWM-11) does not correspond with the Node ID “STMPIPING” for the Qpeak of 61.28 cfs for the 100-year return event. Please clarify.
- ST11. Provide buoyancy calculations which would demonstrate that the proposed underground cisterns (CCR Cis E & CCR Cis w) have been properly designed in which the underground structures would not “float” during high groundwater conditions in this area. Provide sections and details of said underground cisterns as well.
- ST12. Provide profiles for the proposed water main.
- ST13. The Site Grading & Drainage Plans should indicate the stationing along the proposed sanitary sewer main and drainage which correspond to the stationing as shown on the Utility Profiles (Drawings SP-11.1 & SP-11.2).
- ST14. Paragraph B.3. regarding colloidal soils as described on page 5 in the stormwater report should be added to the *Erosion & Sediment Control Notes* as shown on the *Erosion & Sediment Control Plan* (Drawing No. SP-5.2).
- ST15. Paragraph D.3 regarding construction refuse control as described on page 15 in the stormwater report should be added to the *Erosion & Sediment Control Notes* as shown on the *Erosion & Sediment Control Plan* (Drawing No. SP-5.2).
- ST16. The SWPPP shall include a Construction Logistics Plan showing the locations of construction staging, areas for stockpiling of disturbed rock and soils and areas for stockpiling of materials to be removed from the Site, during each phase or sub-phase of construction.

- ST17. The stormwater management controls for the East Village MFPD District parcel shall either be self-contained on the East Village MFPD District parcel or include any necessary drainage or other easement(s) over the B-RO-20 District parcel to support the residential uses on the East Village MFPD District parcel. If the East Village MFPD District parcel is to utilize the B-RO-20 District parcel for drainage, then a restrictive declaration running in favor of the East Village MFPD District parcel should be secured to preserve this feature on the B-RO-20 District parcel. It should be noted that there are approximately nine (9) drainage structures and approximately 1,200 linear feet of storm sewer located over and across the B-RO-20 District parcel, which collects and conveys stormwater runoff from the East Village MFPD District parcel.
- ST18. Since more than one (1) acre of disturbance is proposed (within the East of Hudson Watershed) the applicant must demonstrate that they have obtained coverage from the NYSDEC under GP-0-15-002, including a Full SWPPP (Erosion & Sedimentation Control Plan including post-construction stormwater practices).
- ST19. Since the subject property is proposed to be developed is located within the New York City Watershed, the applicant must demonstrate that they have obtained approval from the New York City Department of Environmental Protection (NYCDEP) for a Stormwater Pollution Prevention Plan (SWPPP).
- ST20. Additional drain inlets and catch basins should be installed in and along Roads A, B, C and H, in the areas of the parallel parking returns and along areas where the roadway is crowned, to ensure that all the stormwater runoff is properly collected and conveyed into the proposed stormwater facilities.
- ST21. Indicate the location of the closed pipe conveyance system, and label the type of pipe, pipe diameter, pipe invert, slope and direction of flows, to ensure that all the stormwater runoff from the new roof areas, pool deck, clubhouse and associated walkways are properly collected and conveyed into the requisite proposed stormwater facilities.
- ST22. Indicate the location of the closed conveyance system, and label the type of pipe, pipe diameter, pipe invert, slope and direction of flows and associated discharge points regarding the foundation drains for each building.
- ST23. It appears that a swale is proposed along the easterly side of Road E, which will collect runoff into in a low point (contour elevation of 422) located easterly of CB G-5. This will create erosion in and along the steep slope (33% grade) located downstream. Therefore, additional drainage should be installed in order to collect and reduce the potential of erosion.
- ST24. According to Section 108A-9 C and E under Maintenance, inspection and repair of stormwater facilities. Prior to the issuance of any approval that has a stormwater management facility; the applicant must execute a formal stormwater maintenance agreement and access easement that shall be binding on all subsequent landowners served by the stormwater management facility. The stormwater maintenance agreement and access easement shall be in a form satisfactory to Town Counsel and shall be recorded in the Office of the County Clerk as a deed restriction on the property. Therefore, it is recommended that the applicant provide the required stormwater maintenance agreement and access easement in accordance with Section 108A-9 C and E as mentioned above.
- ST25. According to Section 108A-11 A and B under Performance guarantee; recordkeeping. The Town in its approval of the stormwater pollution prevention plan (SWPPP) may require the applicant to provide, prior to construction, a performance bond, cash escrow, or irrevocable letter of credit, which guarantees satisfactory completion of the project and names the Town of New Castle as the beneficiary. Also, the Town may require the applicant to provide, prior to construction, with an irrevocable letter of credit from

an approved financial institution or surety to ensure the proper operation and maintenance of all stormwater management and erosion control facilities both during and after construction. Therefore, it is recommended that the applicant provide the required performance bond and maintenance bond in accordance with Section 108A-11 A and B as mentioned above.

ST26. Provide detailed erosion and sediment control plan construction sequencing & phasing plan, which shows that no more than five (5) acres will be disturbed during any one phase. The construction sequencing plans shall include the following notes:

- a) If rock blasting is necessary, a blasting plan shall be developed that shall include restrictions on the types and methods of blasting and other methods of rock removal that shall be allowed. Any blasting plan shall incorporate all measures described in DEIS Sections III.C.1.d(1)(b), III.K.3.b, and III.K.4.c and must be approved by the Planning Board.
- b) Asphalt from all parking areas to be removed shall be stripped and processed on site to be re-used in the creation of new roads and parking areas.
- c) A demolition and construction management program shall be implemented and communicated to existing tenants on the Project Site.
- d) Construction employees shall be issued temporary access control cards to allow them to enter the Project Site through the existing west entry gate to reduce construction-related traffic along Roaring Brook Road. Construction deliveries shall enter and leave the site from Bedford Road (NYS Route 117) via Route 172. Construction truck activity shall be limited to between 9:00 AM and 2:30 PM so as not to conflict with rush hour office or school-related operations. When specialty operations such as concrete placement must be scheduled during peak traffic hours, alternative traffic control procedures could be implemented with the oversight of the Town police department. Flagmen shall be available at all times to ensure safe ingress and egress into the Project Site.
- e) All construction workers parking and all construction truck staging shall be on site in designated areas.
- f) Construction shall be conducted consistent with an approved NYS Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plan developed in accordance with the New York State Stormwater Design Manual (latest publication) and the New York Standards for Erosion and Sediment Control (latest publication).
- g) Best construction practices to be set forth in the Construction Logistics Plan shall be implemented, including wetting soil surfaces, covering trucks and stored materials with tarps to reduce windborne dust, and proper maintenance of equipment. Roadway and haul roads shall be stabilized with tackifiers, geotechnical fabrics and stone ballast as required to minimize dust. Roadways will be washed regularly to prevent dust from being generated by vehicle traffic. Tracking pads will be established where trucking vehicles move from construction areas to established roadways. Wash stations will be installed at the tracking pads, and their utilization will be required prior to leaving a disturbed area.
- h) A Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plan shall include silt fencing, hay bales, inlet protection, temporary sediment traps and outlet protection and control devices, swales, berms, energy dissipaters, wheel wash down areas, anti-tracking pads, mulching, temporary seeding, dust control with misting systems (including during demolition),

covering of stockpile materials or stabilization with an established seed bed, and hay bales. These methods shall be regularly maintained and periodically inspected and shall meet the requirements of NYSDEC Standards and Specifications or Erosion and Sediment Control. These measures shall be included in the construction contract.

- i) No construction exposure shall exceed five (5) acres unless prior written authorization is obtained from the Town MS4 consistent with NYC DEP and Town Code requirements, and a detailed construction sequence (including all phases) shall be prepared and approved by both the NYC DEP and the Town of New Castle prior to the commencement of any site work
- j) Any groundwater that is encountered during construction shall be captured and diverted via curtain drains along the perimeter of the excavated areas, to be released in a controlled manner to a stabilized vegetated surface or channel for eventual discharge to the on-site wetlands. Turbidity or sediments in the temporarily diverted groundwater shall be controlled by lining the curtain drains with filter fabric and using clean washed pea stone as trench backfill.
- k) As soon as grading operations for an area are completed, the area shall be stabilized and landscaped.
- l) During earthwork operations, temporary noise attenuation measures, such as acoustic curtains or screens, shall be implemented along the boundaries of major construction areas.
- m) Equipment used during construction will be fitted with PM traps and will use low-sulfur fuel.
- n) Equipment used during construction will be properly maintained and operated.
- o) Energy Star-compliant construction materials will be used.
- p) To the extent feasible, construction materials that have been extracted and manufactured within 500 miles of the Project Site will be used.
- q) Stormwater management plan(s) approved by all authorities with jurisdiction, including the Planning Board, NYSDEC, and the New York City Department of Environmental Protection (“NYCDEP”), as appropriate, shall be implemented prior to any construction activities, and a program of maintenance (and, if necessary, repairs) shall be implemented to keep all permanent stormwater structures in good working order.

ST27. The Applicant’s Engineer shall respond to all comments as raised in attached letter dated May 24, 2018 entitled “*Chappaqua Crossing SWPPP East Village Residential Development (aka Phase 3) Town of New Castle, Westchester County, NY – Comments of the Watershed Inspector General’s Office Review of Stormwater Pollution Plan*” as prepared by Donald W. Lake, Jr. PE, CPESC, CPSWQ.

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