



October 5, 2020

Truro Zoning Board of Appeals
c/o Ms. Barbara Carboni, Esq., KP Law, P.C.
101 Arch Street, 12th Floor
Boston, MA 02110

Re: Third Peer Review
Cloverleaf Parcel
Highland Road
Truro, Massachusetts

Dear Ms. Carboni and Board Members:

The Horsley Witten Group, Inc. (HW) has reviewed the supplemental information supplied by J.M. O'Reilly & Associates (Applicant's Engineer) on September 16, 2020 regarding the Comprehensive Permit submitted by Community Housing Resource, Incorporated (Applicant) for the residential redevelopment of the Cloverleaf Parcel located on Highland Road in Truro, Massachusetts. Our evaluation of this information is provided below and organized to follow the information presented in Mr. O'Reilly's September 16th memorandum. The original comment from our prior letter is stated first, followed by our comments, in italics, on the applicant's response to the comments.

Wastewater System Design and Operation

Page 4, Item #5 – Setbacks: Additional notes/calculations have been added to the plans that address the separation distance for drywells. The Applicant may wish to consider relocating the drywell for building 22-24 away from the 2:1 slope for ease of construction.

The Applicant has stated that relocation is not possible because of the septic reserve area, however, there appear to be other locations where this could be relocated (adjacent to the drywell in the front of the building or behind building 22-24. These calculations and associated notes have been removed from the current plans. In addition to the drywell, the Applicant should provide similar information for Drainage Facility 4, located near building 22-24. It is difficult to determine the maximum elevation of this drainage facility with the current drainage calculations.

Specific Comments on Stormwater Management Facilities

Page 5, Item #1 - A Stormwater Management Form has been provided. The Applicant will also provide a stamped version of this form when filing for the SWPPP. The Applicant indicated that the swales will remove 70% of the Total Suspended Solids (TSS) in the stormwater runoff.

Although the Applicant has stated the information has been provided, HW has not found the specific information on the plans.

It does not appear that all runoff from impervious surfaces near building 22-24 along with that from the gravel access drive has adequate pretreatment.

The Applicant has provided spot grades and flow direction arrows to the gravel access drive to indicate that runoff will flow into a proposed sediment forebay. No detail or sizing calculations

have been provided for the sediment forebay. The spot grades appear to indicate that the slope for this gravel drive is less than 1% (less than 1/8" change over one foot), and the flow direction arrows indicate that the runoff will move down the road and then take a sharp turn to enter the stormwater facility. A gravel road with this slope and these flow angles will be incredibly difficult to construct and maintain. HW recommends that the Applicant review the grading in this area. We recommend this be revised prior to the issuance of a permit because there is limited space in this area with the proposed drive, required grading, and stormwater infrastructure.

An updated detailed HydroCAD report was provided for review.

Based on HW's review of the report it appears that the infrastructure provided is adequate. However, it appears that the Applicant is using the NOAA Atlas 14 for values of the design storms, Mass DEP utilizes the TP40 values, which are slightly higher for Barnstable County. HW recommends that the Applicant review the calculations with the TP 40 values and determine if the stormwater practices need to be revised.

It would be helpful if a summary table and/or a narrative was provided to assist in the review of this lengthy document. This would be helpful to confirm that the runoff is managed to ensure that post development runoff volumes leaving the site are less than the current pre-development volumes. This is needed for areas where stormwater is collected and treated as well as for areas such as those behind many of the homes, where no stormwater treatment is proposed.

The Applicant has provided pre- and post-developed calculations for two study points. It appears that there should be a third (there is a low point off the property behind buildings 5-7 and 9-11). HW recommends that the Applicant evaluate if runoff will be increased when changing this area from woods to parking spaces, lawns, and decks and provide stormwater management, as necessary.

Page 5, Item #2 and Item #3 - It is still unclear how runoff from the lawn areas outside of the pavement will be managed.

It appears that in some locations, runoff is directed towards the roof/lawn drywells. The detail for the drywell shows a frame and cover so it is unclear how runoff will enter these structures if that is the intent. Sizing calculations should be provided for any of these structures that will receive runoff other than roof runoff.

Page 7, Item#12 – Barriers – HW recommends adding a barrier to the edge of pavement/swale for drainage facility #4 to prevent cars from driving into the swale.

The applicant has added the requested barrier along the edge of the paved area. It is recommended that a barrier also be added between the access drive and this swale.

Other Site Design Comments

Page 7, Item#1 – Phasing - HW recommended that a phasing plan be provided for construction. The Applicant states that a formal phasing plan will be submitted once other permits are obtained. As mentioned above, the phasing of this project relative to the installation of the potable water line needs to be carefully coordinated so the site is not cleared and left vacant for more than two weeks without proper stabilization of the disturbed areas.

The coordination of the phasing plan with the proposed water line installation still needs to be addressed.

Page 7, Item #2 – Erosion Control Plan - The proposed plan addresses HW's previous comments. As mentioned above, this plan should be coordinated with the plans for the water line installation. The site disturbance during that project should be subject to the same, or similar plan for erosion and sedimentation control.

The coordination of the water line installation and project construction is still an outstanding issue that must be addressed prior to the start of construction of either project to ensure the site is managed properly.

Page 7, Item#11 – Snow removal. The Applicant has described several areas for snow removal including the areas to the west of the entrance drive, to the south of units 2-3, at the corners of building #24, in front of the rear units, to the north of the rear drainage swale and around the visitor parking within the central common area. Many of these areas appear to be in the same locations as walkways, steep slopes (2:1) and the emergency access drive. HW recommends that areas for snow removal be shown on the plan. The driveway is fairly narrow and there is not a lot of area outside of the driveway and parking spaces that is not occupied by stormwater or wastewater systems.

The Applicant has indicated that snow plowing will be the responsibility of the Town. HW defers to the Board on this issue.

Page 9, Item 15 – Landscape Plan - The Landscape Plan indicated that several trees/shrubs will be planted along the 2:1 slopes throughout the property. HW recommends additional planting details be added to the final plan set. Additionally, the proposed planting material in the area designated "VS" for vegetated swale should be specified for quantity and types of plants proposed.

This issue still needs to be resolved at some point prior to construction.

Stormwater Management During Construction

The project involves a significant amount of earthwork with many steep slopes on a relatively small site. While the applicant has provided plans showing where erosion control measures will be installed there are no details on how runoff will be managed during construction.

The applicant should provide a plan showing how stormwater will be managed during construction. This is needed to confirm that stormwater will not create erosion problems on the site and that runoff will not be discharged in areas where the permanent stormwater facilities will be built. A proposed construction entrance is currently shown on the plans as well as inlet protection for catch basins once they are installed. However additional detail on where runoff will be directed and how erosion will be prevented, such as through the use of sediment traps or other measures is needed for the construction phase of the project. This will need to be coordinated with the water line construction as well.

The Applicant has acknowledged the importance of construction sequencing, stormwater management and erosion control during construction. Once a schedule is determined, HW recommends construction drainage plans be prepared along with supporting drainage calculations to ensure temporary drainage measures are sized and located appropriately. Additionally, a construction erosion control plan should be prepared.

Additional Comments

It appears that not all parking spaces have been graded and there are dashed lines that indicate double-stacked overflow spaces. HW recommends that the Applicant verify that all parking spaces are feasible and meet the minimum requirements (handicapped spaces as well).

Several spaces (Building 1-3, to the right of Building 9-11, 2 spaces in front of Building 23-25, and 2 spaces in front of Building 22-24) have a steep slope and may be difficult to park on. The handicapped parking spaces should be labeled on the plan to confirm the final number that are provided.

Sincerely,

Horsley Witten Group, Inc.



Mark Nelson, P.G.
Principal