

**Xaverian Brothers High School**

Limited Environmental Impact Design Review

Response to Planning Board Peer Review

July 8, 2013

This memorandum has been prepared as part of the Xaverian Brothers High School Limited Environmental Impact Design Review (LEIDR) Application initiated on May 17<sup>th</sup>, 2013 and previewed with the Planning Board on April 23<sup>rd</sup>, 2013.

The following are responses to the Technical Memorandum prepared by Beta Group, Inc. dated June 11, 2013 for the Town of Westwood.

1. Provide grading information for all areas disturbed for construction.

**RESPONSE:** Updated grading information has been provided on drawing C-300 Grading Plan.

2. The lower ball field requires significant earthwork, removal of 8 to 9 feet plus the depth of the infiltration system exposing glacial till and bedrock. Provide documentation on the quantity to be removed and how earthwork operations will be conducted.


**RESPONSE:** The project team has been sensitive to the earthwork implications of the proposed baseball field and has explored alternatives to minimize earthwork impacts and costs. The optimal solution seems to be placing the baseball infield at an elevation of approximately 151 feet. This elevation results in approximately 16,000 cubic yards of cut, 5,000 cubic yards of fill, and nearly 11,000 cubic yards of export. The project also requires approximately 7,000 cubic yards of specialty materials for grading and drainage imported onto the site.

The earthworks operations will be conducted by large earthwork machinery between normal business hour between 7 and 5 pm. Rock excavation with the use of controlled blasting and/or mechanical means (i.e. hoe-ram) will be required. On-site materials will require processing (screening and/or crushing) to promote reuse on-site. Offsite disposal of unsuitable soil and the management of materials will be performed in accordance with all applicable federal, state and local laws and regulations, including the requirements of the Massachusetts Contingency Plan (MCP, 310 CMR 40.000).

3. Provide a retaining wall detail.

**RESPONSE:** A retaining wall detail is attached.

4. Sewer easement and sewer line are in close proximity of the proposed retaining wall. Recommend that DPW evaluate the wall and drainage impacts to sewer line on the northeast corner of the proposed parking lot.



**RESPONSE:** The site design has purposefully avoided impacts to the sewer easement such that no work, grading or loading will occur in that location.

5. A number of challenges should be reviewed as they relate to the proposed stormwater management system and its impacts.
- a. Infiltration overflow is directed to the sewer easement which slopes down to the abutting property at the northeast corner of the site.

**RESPONSE:** At the request of the Conservation Commission peer reviewer the hydrologic model for the site was revised so that any impacts to the Marshall Street abutters could be clearly quantified. As is indicated on page 2 of the revised Stormwater Memorandum, the peak rates and volumes of runoff in the direction of Marshall Street have been greatly reduced for all of the storm events.

- b. A wall as high as 14 feet is proposed at that corner with infiltration system(s) proposed behind it.

**RESPONSE:** The location of the infiltration systems has been designed in consideration of the structural requirements of the proposed retention wall system. Neither the performance of the infiltration systems nor the structural performance of retaining wall will be impacted.


- c. Infiltration systems should be separated 2 feet from bottom of system to seasonal high ground water (SHGW) elevations. Tests to confirm this should be conducted for system 4, 5, and 6 (borings are not suitable to determine SHGW)


**RESPONSE:** Refer to Stormwater Memorandum Section 6.0 Mounding Analysis which showed that groundwater does not mound high enough to enter the bottom of the systems. The subsurface infiltration systems were designed to provide a minimum 2-foot offset to the estimated seasonal high groundwater.

- d. Test pits indicate the presence of moist glacial till deposits (silty sand noted to be difficult to excavate) in proximity to infiltration systems. Bedrock was also encountered on site. Both are considered poorly draining to impervious. Some infiltration systems are proposed to be partially or completely constructed with glacial till and will not likely function as proposed. Recommend that in-situ-saturated hydraulic conductivity testing at the elevation of the proposed systems be conducted to verify infiltration rates.

**RESPONSE:** The Proposed Conditions HydroCAD reports provided in Stormwater Memorandum Appendix B indicate that the proposed infiltration BMPs will completely dewater within 30 hours for the 2-, 10-, and 100-year storm events, exceeding the 72-hour MassDEP drawdown requirement.

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- e. Some catch basins are directly connected to infiltration systems; provide required treatment to prevent premature failure of the infiltration system.

**RESPONSE:** The plans have been revised so that runoff from all surface areas are pretreated prior to discharge to the infiltration systems.

- f. Groundwater mounding analysis for infiltration systems within four feet of estimated seasonal high groundwater elevation should be provided when designed to mitigate peak rates of runoff.

**RESPONSE:** Refer to Stormwater Memorandum Appendix C: Mounding Analysis Results for Groundwater Mounding Analysis (Hantush's Method using Glover's Solution).

- g. Provide hydraulic analysis of proposed stormwater system showing that pipes have sufficient capacity and will achieve self-cleaning velocities.

**RESPONSE:** Refer to Stormwater Memorandum Appendix B: Proposed Conditions – HydroCAD Calculations for hydraulic analysis.

- h. Provide details of level spreader as well as a detail to prevent erosion along retaining wall.

**RESPONSE:** Refer to drawings C-401 Erosion and Sedimentation Control Details and C-402 Site Utility Details. In addition, a level spreader detail has been included in the plan set. Exit velocities from the level spreader have been calculated to be lower than those that would cause erosion.

6. Glacial till is challenging to work with when wet. Provide and maintain temporary sediment basins until soils are stabilized. Additional erosion controls may be necessary at the down gradient edge of the parking lot and ball field.

**RESPONSE:** Groundwater may be encountered during construction. Contractors shall control precipitation and run-off; we expect that localized dewatering could be accomplished with sumps. Excavation, subgrade preparation, and backfilling should be conducted "in the dry." Refer to drawings C-100 Erosion and Sedimentation Control Plan.

7. Additional screening may be necessary to prevent headlight glare from impacting abutter at northeast corner.

**RESPONSE:** A consistent and continuous row of hedges at the between the edge of parking and retaining wall shall be provided to prevent headlight glare.