Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

Comment 1

June 29, 2022

07-21-2022 Applicant responses in **RED** text

Devens Enterprise Commission
c/o Mr. Neil Angus, AICP CEP, LEED AP
Environmental Planner
33 Andrews Parkway
Devens, MA 01434

RE: Nitsch Project #9419
57 and 75 Jackson Road
Site Plan and Stormwater Review
Devens, MA

Dear Mr. Angus:

Nitsch Engineering received and reviewed the Site Plans (the Plans) entitled, "57 Jackson Road – Site Development Plan, Devens, Massachusetts" and "75 Jackson Road – Site Development Plan, Devens, Massachusetts", dated June 2, 2022, prepared by Highpoint Engineering, Inc. (HEI). In addition, Nitsch Engineering has received and reviewed the following documents:

1. Application for Level 2 – Unified Permit, Site Plan Review, Biomanufacturing Facility and Amenity Building (57 Jackson Road), prepared by HEI, dated June 2, 2022;
2. Application for Level 2 – Unified Permit, Site Plan Review, Biomanufacturing Facility (75 Jackson Road), prepared by HEI, dated June 2, 2022;
3. Supplemental Geotechnical Evaluation, Proposed Development, 57, 59, & 75 Jackson Road, Devens, Massachusetts, prepared by GZA, dated June 3, 2022; and
4. Stormwater Management Report, 57 & 75 Jackson Road – Site Development, prepared by HEI, dated June 2, 2022.

Nitsch Engineering is providing comments with respect to Site Plan and Stormwater Management in this letter. Please note that traffic and landscape review are being provided in separate letters.

PROJECT UNDERSTANDING

King Devens LLC (Proponent/King Street) is seeking approval from the Devens Enterprise Commission (DEC) of a Level 2 – Unified Permit for development of 57 and 75 Jackson Road. These are the fourth and fifth projects, respectively, to be developed at Devens under King Street's biomanufacturing platform, Pathway KSP.

The project at **57 Jackson Road** includes the demolition of an existing building and construction of a new 145,000-gross-square-foot biomanufacturing building including parking, stormwater management, landscaping, and utility infrastructure. The site plan also includes the construction of a separate 8,300-gross-square-foot building featuring potential amenities such as a taproom, café, offices, and other campus uses. These improvements are proposed on a +/-7-acre parcel of land located at 57 Jackson Road (former Netsal building site). This lot is accessible from a common driveway shared with 53 Jackson Road (Xinetics).

The project at **75 Jackson Road** includes the construction of a new 275,000-gross-square-foot biomanufacturing building including parking, stormwater management, landscaping, and utilities. The property located at 75 Jackson Road (Parcel ID#0.18.0-0021-0900.0) in the Innovation & Technology Business Zoning District. This lot is proposing new driveway access from Jackson Road as well as Givry Street.

Both projects are consistent with the King Devens LLC conceptual master plan for their properties at 33, 39, 45, 57, and 75 Jackson Road.

This project site is part of a larger watershed area that was detailed in a report entitled *Stormwater Management Narrative and Calculations, Roadway Reconstruction of Jackson Road, Devens, MA, Roadway, Utility, and Drainage Improvements – Jackson Road,* dated July 1999 prepared by Baystate Environmental Consultants and BETA Engineering. Two (2) detention ponds were constructed as part of this master plan, located to the north (Hospital Road Basin) and west (Lake George Street Basin). The Hospital Road Pond was designed to provide water quality treatment, infiltration, and peak flow attenuation for a portion of the proposed 57-75 Jackson development plan. Remaining subwatersheds within the 57-75 Jackson development were identified to flow toward the Devens Stormwater Pond behind 33 Jackson Road (Lake George Street Basin). The Applicant also noted that the stormwater analysis references "TP-40 – Rainfall Frequency Atlas of the United States" for rainfall data to match the rainfall data assumptions for the design of the Jackson Road watershed areas.

Based on Nitsch Engineering's review of the submitted documents and the above-referenced regulations, we offer the following comments for consideration:

DEC SITE DESIGN STANDARDS – 57 AND 75 JACKSON ROAD

1. **Exhibit C of the Zoning By-Laws** provides a parking maximum of two (2) spaces per 1,000 square feet of gross floor area for manufacturing use. Through shared parking between 57 and 75 Jackson Road, the Applicant has provided 1.15 space per 1,000 square feet and justifies that the industry standard is closer to 1.5 space per 1,000 square feet. The Applicant also provides for a future parking garage to increase parking capacity by 512 additional spaces. This would increase the ratio to 2.06/1,000, which we note exceeds the Devens maximum. Additionally, the parking count is inconsistent between the Applications, the Parking Count text in the plan sets, and the actual parking spaces provided in the plans. This should be reviewed for consistency.

    - *Applicant Response: The parking garage size and number of spaces is a proposed maximum value, and dependent upon market trends and tenant requirements. If a parking garage is required, the final design of the garage together with the remaining site parking will not exceed the Devens Bylaw maximum allowable 2.0 spaces per 1,000 sf. Final design of the garage will be reviewed with DEC staff to demonstrate compliance with this requirement during building permit review.*

2. **974 CMR 3.04(3)(a)1** provides minimum requirements for handicapped spaces. The Applicant should review these requirements and confirm that the minimum is provided for each site (57 and 75 Jackson Road), as well as being sufficient to serve the needs of the Amenity Building. We also note that eight (8) additional handicapped spaces will be required if the future parking garage is constructed with 512 spaces.

    - *Applicant Response: The parking garage size and number of spaces is a proposed maximum value, and dependent upon market trends and tenant requirements. If a parking garage is required, the final design of the garage and its conformance with ADA accessible parking regulations will be reviewed with DEC staff to demonstrate compliance with this requirement during building permit review*

3. **974 CMR 3.04(3)(a)(2)b** provides construction specifications for heavy duty pavement in areas subject to truck traffic. The current details only provide for standard duty pavement. We recommend that the Applicant specify heavy duty pavement in areas that will experience truck traffic, including the access drives to the loading docks at 57 and 75 Jackson Road. The detail should also be added to the plans.

- *Applicant Response: This campus is not designed as a trucking or distribution facility and the Applicant anticipates the number of truck trips on a weekly basis will be insignificant. Standard duty pavement is sufficient to support standard site operations. Loading docks are designed with 6" concrete pads for longer term tractor/trailer staging and storage.*

4. **974 CMR 3.04(3)(a)(2)e** encourages parking lots measuring less than 10,000 square feet in area to utilize an open drainage system to minimize the depth of detention/retention basins, reduce maintenance, and decrease construction costs. The parking lot between 57 Jackson Road and the Amenity Building is less than 5,000 square feet with adjacent landscape space that provides an opportunity for open drainage, including a small rain garden.

   - *Applicant Response: The parking area between the 57 Jackson and the Amenity Building is an integrated vehicular parking/pedestrian zone designed to serve as an intimate public gathering area for passive recreation, small event performances, and intermittent seating. Programming additional open drainage areas and rain gardens within this small area will reduce the available space for passive recreational uses and is not compatible with the proposed outdoor amenity programming.*

5. **974 CMR 3.04(4)(g)** requires standard "STOP" at the intersection of driveways with streets and roads. The Applicant should evaluate the intersections of the internal driveways as well as the intersection of the driveway with Givry Road.

   - *Applicant Response: This has been added to the Plans.*

6. **974 CMR 3.04(5)** requires that the Applicant shall obtain a letter from the Fire Chief stating there is adequate access for fire equipment. This should be provided to the DEC.

   - *Applicant Response: A truck circulation plan has been submitted to Fire Chief Timothy Kelly and coordination is ongoing. An approval letter will be provided to DEC when it is available.*

7. **974 CMR 3.04(5)** requires that all proposed developments shall demonstrate they have made reasonable efforts to consider and, where feasible, include Transportation Demand Management (TDM) initiatives early in the site design and layout process. TDM initiatives can justify a smaller amount of parking than is normally required. Refer to **974 CMR 3.04(5)a.-j.** for TDM initiatives that may affect the site design and layout. Because the proposed parking ratio is less than required and less than suggested for the manufacturing industry, the project site may benefit from some of the TDM strategies. The Application for Level 2 – Unified Permit Narrative indicates that parking areas will include preferred spaces dedicated to electric vehicle charging stations, rideshare, and low-emitting hybrid or electric vehicles but the locations are not indicated on the Plans. The Applicant should review and address this requirement. A Parking Summary Table is also requested to compare the required and provided spaces (total, accessible, compact, electric vehicle, and rideshare spaces) to demonstrate compliance with the regulations.

   - *Applicant Response: Rideshare and electric vehicle spaces have been added to the plans in coordination with the Landscape Plans.*

SITE PLAN DESIGN AND CALCULATIONS – 57 AND 75 JACKSON ROAD

8. Given the relationship of the two (2) sites (57 and 75 Jackson Road) and three (3) buildings, we recommend that the Applicant provide a phasing plan to clarify the construction sequencing for the buildings and supporting utilities and parking.

    - *Applicant Response: The Applicant will work with the General Contractor and Site Engineer to develop a construction phasing plan and submit this to DEC staff for review at pre-construction conference prior to commencement of the work undertaken for each phase.*

9. Sheet C300 provides for utilities to be removed during site preparation, however not all existing utilities are currently shown to be removed, and there is no notation provided to maintain and protect. This information should be clarified, as well as the locations of cut/cap and plugging of manholes.

    - *Applicant Response: The plans have been revised for clarification to ensure that essential municipal utility lines are maintained and protected until the new lines are connected to provide uninterrupted service.*

10. The design of the site currently requires two (2) retaining walls with heights up to 19 feet high. The Applicant should review alternatives to reduce wall height or break up the walls to reduce impact on the site. Additionally, the Applicant should consider the relationship of the walls to the interior site design (parking lot, landscape, etc.) and site perimeter (screening, drainage outfalls, etc.).

    - *Applicant Response: The stormwater easement associated with the Givry stormwater pond limits the potential for stepped walls and location within the site. Site grades and associated wall heights are established to maintain a balanced site to minimize export in accordance with the Devens Soil Management Policy. The wall layout has been completed with considerations to the parking lot layout, landscape screening, and the adjacent stormwater easement. Final approval of the stormwater easement access with respect to the Plans will be coordinated with MassDevelopment.*

11. The Applicant should provide truck turning movements for accessing the loading dock to support the oversized driveways adjacent to the loading dock.

    - *Applicant Response: A truck turning study demonstrating adequate maneuvering to support a WB-67 design vehicle has been provided under separate cover.*

12. The Applicant should consider whether signage or other traffic management is needed to support pedestrian safety at locations where driveways intersect the proposed trail crossings.

    - *Applicant Response: A comprehensive signage plan will be submitted separately for DEC staff review and approval.*

13. The Layout and Materials Plans should clearly indicate the various pavement types intended for all areas of the sites. Specifically, there are many hatches at the 57 Jackson entrance plaza that are not included in the Legend. Details should also be provided for all material types. We note that

enlargements may improve readability for the more detailed areas, especially given the plan scale of 1" inch = 50 feet.

- *Applicant Response: Drafting hatches associated with the landscaping plans have either been removed or added to the legend.*

14. The Layout and Materials Plans should clearly indicate the curbing types intended for all areas of the sites and the Legend should include all acronyms for clarity. Some curbing is labeled, but many areas are not.

- *Applicant Response: Curbing construction details and minor modifications to curb designations have been added to the Plans*

DEC STORMWATER DESIGN STANDARDS – 57 AND 75 JACKSON ROAD

15. **974 CMR 3.04(4)(b)** requires Stormwater Management options shall include green infrastructure and Low Impact Development (LID) techniques, including but not limited to vegetated swales, rain gardens, bio-filtration landscape islands, rainwater harvesting, and pervious pavement, where feasible, to achieve infiltration/capture/reuse of stormwater runoff onsite. Stormwater treatment trains may include a combination of LID techniques. While we appreciate the incorporation of rain gardens and porous pavement into the stormwater management design, there is a large quantity of conveyance structures, closed drainage, proprietary water quality, and subsurface infrastructure as part of the stormwater management design. We encourage the Applicant to expand LID to the greatest extent possible and reduce conveyance.

- *Applicant Response: Rain gardens and pervious pavement have been included in the design to provide green infrastructure within a site with spatial constraints that will promote water quality and infiltration. No credit was taken for the infiltration within the pervious pavement in the stormwater calculations to be conservative, in the event pervious pavement infiltrative capacity diminishes over time.*

16. **974 CMR 3.04(4)(b)(4)** requires catch basins or other drainage features in loading/unloading and/or fueling areas shall be equipped with post-indicator valves (which are to remain in the closed position) on the outlets for containment in the event of any spills. It appears a PIV is missing from the 57 Jackson Road loading dock. The Applicant should review and address this requirement.

- *Applicant Response: A PIV has been added to the 57 Jackson loading dock.*

17. **974 CMR 4.08(2)(d)(ii)** requires irrigation water shall be derived from detained treated stormwater (stormwater harvesting) or roof drainage to the maximum extent feasible. Onsite cisterns may be installed to store water for irrigation. It is unclear if irrigation is intended. The Applicant should review and address this requirement if applicable.

- *Applicant Response: Irrigation plans will be submitted during final design of the site and landscape improvements. Source water to be reviewed with DEC staff and MassDevelopment.*

18. **974 CMR 4.08(2)(d)(iii)** requires "Pre-development" drainage areas shall be considered to be "green fields" regardless of any development or improvements on the site at the time of application. We understand that the Hospital Road Pond was designed and intended to treat existing Lot 14 (a14) in a developed condition of 75% impervious. However, it is stated in the *Stormwater Management Narrative and Calculations, Roadway Reconstruction of Jackson Road, Devens, MA*, under the *Proposed Conditions, Drainage System Design Criteria* that, "Each developable lot will be considered unimproved or in the green fields state per 974 CMR Section 3 for pre-development drainage calculations." The Applicant should further review this statement to confirm that the green field has already been accounted for in the design of the Hospital Road Pond. We also note that the summary tables provided in the Stormwater Report reference a "predevelopment condition" for this design point, when these values are actually "approved allowable" rates for the developed condition.

- *Applicant Response: In Appendix D of the Stormwater Report, page 4 of BETA's narrative states that "each developable lot will be considered unimproved or in the "green fields" state per 974 CMR Section 3 for pre-development drainage calculations. Based upon BETA's assumptions, the maximum allowable peak flow mitigated within the Hospital Road Pond has been calculated assuming existing land use conditions are in an unimproved, green field state.*
- *The summary tables have been revised to reflect the "approved allowable" description.*

19. **974 CMR 4.08(2)(d)(vi)** requires that projects proposing traditional closed drainage systems shall demonstrate to the satisfaction of the DEC why LID stormwater management design methods are not feasible. The Applicant should evaluate addition locations to implement LID to reduce reliance on the traditional closed drainage system. We also note that the project sites include porous pavement (asphalt and pavers) and rain gardens that are not accounted for in the HydroCAD model. The Applicant should consider taking credit for these areas if there is potential to reduce conveyance and closed drainage infrastructure.

- *Applicant Response: The site has significant spatial constraints and cannot encroach onto roadways, the Open Space / Recreation Zone, abutting properties, or the stormwater easement and there is insufficient space for additional open drainage on-site.*
- *The rain gardens are lined and do not provide infiltration and are designed for pre-treatment only, therefore they are only modeled in HydroCAD to determine if they are sufficiently sized for the drainage area. The porous pavement has been included to provide additional LID measures per DEC regulations, however it has been omitted from the hydrologic modeling.*

20. **974 CMR 4.08(3)(a)2.** requires that biorientation cells abutting pavement are designed to capture sheet flow, the edge of pavement shall be reinforced to ensure the integrity of pavement is maintained. The Applicant should review and address this requirement. Additionally, the Plans do not label or provide details on the curb cuts. The Applicant should update the Plans for clarity.

- *Applicant Response: The proposed rain garden curbing with the curb inlets has been changed to concrete curb with curb breaks. A detail has been added to the plans.*

21. **974 CMR 4.08(3)(h)** recommends that post-construction erosion control methods include geotextile and/or biodegradable erosion control fabrics staked or anchored to the slope, with loose weave to allow vegetative cover to be established. Sheet C300 should be updated to include stabilization of any proposed slopes at a 3:1 grade or steeper. Additionally, the Applicant should provide a detail for slope stabilization.

    - *Applicant Response: These have been added to the plans.*

22. **974 CMR 4.08(3)(h)** requires stormwater management systems shall be designed to meet an average annual pollutant removal equivalent to 90% of the average annual load of Total Suspended Solids (TSS) related to the total post-construction impervious area on the site. The treatment train labeled Rain Garden Overflowing to Existing Basin does not appear to meet TSS requirements. It is unclear where a deep sump hooded catch basin leads to a rain garden on the Plans. It appears to be curb cuts that lead to the rain gardens. Additionally, it is unclear if the rain garden is intended for pretreatment or infiltration. The detail shows the rain garden as lined but the HydroCAD accounts for exfiltration. The Applicant should review this treatment train.

    - *Applicant Response: The catch basins have been removed from the rain garden treatment train, and the rain garden with the new pea stone diaphragm provides 90% TSS removal per Massachusetts Stormwater Regulations which meets the requirement. In conjunction with the infiltration basin, the treatment train provides 98.0% TSS removal which exceeds the minimum standard.*
    - *The rain gardens are lined and will be used for pre-treatment, TSS removal only. The infiltration was originally modeled for the infiltration through the subsoil beneath the open-air storage, but the model has been revised and exfiltration has been removed for clarity. The open-air storage and subsoil storage is now modeled together with an overflow grate. None of the rain gardens overflow to the grate in the 1-year storm, so therefore the rain gardens are adequately sized per the Regulations.*

23. **974 CMR 4.08(3)(h and j)** requires to support compliance with the MS4 Permit, all Best Management Practices (BMPs) must be optimized for the removal of phosphorus and achieve 60% phosphorus reduction. The justification and design of such BMPs must also include a methodology for assessing BMP performance. Pollutant removal shall be consistent with EPA Region 1's evaluation tool. We note that the proposed infiltration with pretreatment aligns with phosphorus removal requirement, however the Applicant should review and address for the record.

    - *Applicant Response: According to the EPA's phosphorus removal charts for Region 1, if the infiltration rate is conservatively assumed as 0.17 in/hr (which is lower than the assumed infiltration rate of 3.9 in/hr), then the minimum depth of runoff requiring treatment to achieve 60% phosphorus load reduction from impervious areas is 0.28". All proposed infiltration basins provide greater than 0.28" of runoff storage and infiltration over the impervious area and therefore comply with this requirement. See Appendix B of the Stormwater Report for details.*
    - *All proposed infiltration basins provide greater than 0.28" of storage over the contributing impervious area and therefore comply with this permit. See Appendix B for details.*

STORMWATER DESIGN AND CALCULATIONS – 57 AND 75 JACKSON ROAD

24. The survey identifies existing drainage pipes (maybe a cross-culvert with flared ends?) at the western property boundary, but it is not clear what the intent is with these in the proposed conditions. The Applicant should review this condition and clarify in the plans. Additionally, there is an existing catch basin in the abutter's access driveway that should most likely be reset as the curb line is being moved.

    - *Applicant Response: The existing inlets to the basin will be removed and the overflow will remain. See Soil Erosion & Sedimentation Control / Site Preparation Plan revisions for clarification.*

25. Can the Applicant please clarify the following statement? "Proposed developments within the contributing watershed areas of the Jackson Road drainage area shall assume that post-development stormwater runoff rates shall not exceed pre-development runoff rates for up to the 25-year storm event, with the exception of Lot 14(14a) discharges to the Hospital Road Pond. Where possible, project stormwater discharges shall store and infiltrate runoff volume onsite. Stormwater discharges exceeding the 25-year storm up to and including the 100-year storm can be released to the existing drainage system." It appears that water is discharged in the two- (2-),10-, and 25-year storms, which does not align with this statement.

    - *Applicant Response: Highpoint concurs. The peak rate of runoff is mitigated for all storms. The stormwater report has been revised accordingly.*

26. The Applicant should provide more detail on the stormwater infiltration systems in the Plans such as elevations/inverts, perforated pipe size, header pipe detail, orifices, and pipe connections.

    - *Applicant Response: These have been added to the Plans.*

27. The output flow from SWM-5 is missing on the closed drainage calculations.

    - *Applicant Response: The output flow from SWM-5 in the 25-year storm is 0.00 cfs. See revised Stormwater Report.*

28. The line weights on sheet C500 are very thick and make it hard to decipher the details (contours, perforated vs. solid pipes, area drains, curb cuts) of the rain gardens. We recommend that the Applicant provide enlargements or additional details to clarify the design intent.

    - *Applicant Response: The Plans have been revised for clarity.*

29. An interceptor drain detail is provided. Can the Applicant please clarify where it is being used in the Plans.

    - *Applicant Response: The detail has been removed from the Plans.*

30. There are many pipe sizes missing on Sheet C500 for both 57 and 75 Jackson Road. Additionally, the Applicant should ensure all pipe sizes and inverts exiting the stormwater management systems match the HydroCAD model, as the inverts are not listed in the drainage schedule. Pipe sizes, and inverts where applicable, should be added to all pipes. Inverts and pipe sizes should be added for the roof drains from 57 Jackson Road and 75 Jackson Road, as well.

    - *Applicant Response: These details have been added to the Plans.*

31. The extents and location of TD#3 with respect to the wall/stairs should be clarified on Sheet C500 (57 Jackson).

    - *Applicant Response: The design of TD#3 has been clarified on the Plans.*

32. It appears that runoff from the east side of the Amenity Building will drain towards the building. The Applicant should provide spot grades or area drain to show positive pitch away from the building.

    - *Applicant Response: Area drains have been added to the Plans to provide positive drainage away from the building.*

33. Please note that the area drains proposed onsite are 10 inches in diameter and all pipes out are 12 inches in diameter. A reducer will be required to make the connection from the 10-inch structure to the 12-inch pipe. The 10-inch diameter will also be the hydraulic restrictor (as it is the smaller of the two [2] diameters) and should be accounted for in the closed drainage calculations.

    - *Applicant Response: The area drains have been changed to 15" Nyloplast area drain structures. A detail has been added to the Plans.*

34. It appears there are contours missing in the roadway on Sheet C500 between the 57 Jackson and 75 Jackson buildings in between WQU4 and DMH#24. The Applicant should review and address for clarity.

    - *Applicant Response: The Plans have been updated for coordination with the landscape plans. A note has been added to refer to the Landscape Plans for details.*

35. The Stormwater Report shows a portion of the roof from 75 Jackson Road draining to SWM-4, however there is no roof drain from this portion of the building shown on C500.

    - *Applicant Response: The roof drain line discharging to SWM-4 has been added to the Plans.*

36. The Applicant should review the proposed deep manholes and confirm if special accommodations are needed for future entry into the structures.

    - *Applicant Response: Manhole steps will be installed for access. Structure design will be reviewed during issuance of shop drawings.*

37. The Applicant should confirm manhole sizing is adequate where multiple inlet pipes enter a manhole.

    - *Applicant Response: Final manhole diameters to be confirmed with precast concrete manufacturer and reviewed upon issuance of shop drawings.*

38. Provide a drainage area diagram to show the subcatchments going to the rain gardens and porous pavement.

    - *Applicant Response: A rain garden drainage area diagram has been added to the Stormwater Report.*

39. The Applicant should review the drainage schedule for the following inconsistencies:

    - The invert of the pipe out of DMH#11 is 1 foot higher than the pipes into the structure. The pipe elevations should be revised so that the outlet pipe is a minimum 0.1 feet lower than the inlet.

    - *Applicant Response: This has been revised.*

    - The inverts for the pipe from CB#29 to DMH#24 appear to be set to a default value.

    - *Applicant Response: This has been revised.*

    - There is a spot grade of 327.35 adjacent to CB#25 and CB#24 which are at rim elevation 327.40. Confirm elevations are current as it appears water may bypass catch basins.

    - *Applicant Response: This has been revised.*

    - The pipe out of AD#8 is shown as a 10-inch pipe, but the pipe in is shown as 12 inches in diameter. Confirm if the outlet pipe should be 12 inches in diameter.

    - *Applicant Response: This has been revised.*

    - CB#4 and CB#5 are shown as 11 feet deep. Is it possible to make these shallower structures?

    - *Applicant Response: CB#4 and CB#5 discharge to deep manholes and therefore are deep basins to avoid constructing a drop manhole.*

    - The pipe from CB#9 to DMH#6 is sloping backwards towards CB#9 instead of DMH#6.

    - *Applicant Response: This has been revised.*

- The pipe from CB#14 to DMH#8 is sloping backwards towards CB#14 instead of DMH#8.
- *Applicant Response: This has been revised.*

- The rim of CB#32 is set too low. The rim elevation and pipes from the structure should be raised. This may help raise some downstream pipes.
- *Applicant Response: This has been revised.*

- AD#8 is shown as 19 feet deep. A drop manhole should be used in place of an area drain to manage this depth.
- *Applicant Response: Pipe inverts along this pipe run have been adjusted and AD#8 has less than a 7' drop from rim to invert.*

- The rim elevation of DMH#32 and the invert in from AD#17 appear to have a typo. These elevations should be revised.
- *Applicant Response: This has been revised.*

- Confirm constructability of WQU#3 with four (4) inlet pipes and 0.1-foot drop through the structure.
- *Applicant Response: Contech is reviewing the structures for construction feasibility. Any necessary changes will be incorporated into the construction documents.*

CONFORMANCE WITH THE MASSDEP STORMWATER STANDARDS – 57 AND 75 JACKSON ROAD

In accordance with **974 CMR 4.08(2)(a),** Nitsch Engineering reviewed the stormwater design and calculations for general conformance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Standards. Based on this review, Nitsch Engineering offers the following comments:

40. **Standard 3** requires infiltration structures must be able to drain fully within 72 hours. How was the hydraulic conductivity of 0.075 feet/hour determined for the Drawdown Analysis?
    - *Applicant Response: The Drawdown Analysis has been revised to reflect the infiltration rate of 3.9 in/hr (0.325 ft/hr) which was determined based upon infiltration testing results obtained in the field.*

41. **Standard 4** requires stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). Refer to comment #21. The treatment train labeled Rain Garden Overflowing to Existing Basin does not appear to meet TSS requirements.
    - *Applicant Response: See response to Comment #21.*

42. **Standard 4** requires areas with soils with infiltration rates of 2.4 inches/hour or greater to provide 44% pretreatment prior to infiltration. The 44% pretreatment should be clearly identified in the report.

    - *Applicant Response: The MassDEP worksheets show that more than 44% TSS removal will occur in all treatment trains prior to infiltration in either the on-site infiltration chambers or the Givry stormwater pond. See Attachment B in the stormwater report for more details.*

43. **Standard 5** requires area with a Land Use with Higher Potential Pollutant Loads provide 44% pretreatment prior to infiltration. Based on the anticipated vehicle trips per day, the site should be considered a LUHPPL and the 44% pretreatment should be clearly identified in the report.

    - *Applicant Response: See response to Comment #42.*

44. **Standard 8** is covered by a National Pollutant Discharge Elimination System (NPDES) Construction General Permit, but no Stormwater Pollution Prevention Plan (SWPPP) has been submitted. A SWPPP should be submitted to the DEC before land disturbance begins.

    - *Applicant Response: The SWPPP will be submitted to DEC staff for review prior to construction.*

45. **Standard 10** prohibits illicit discharges to the stormwater management systems. The Illicit Discharge Statement should be provided and signed and stamped by the engineer of record before construction.

    - *Applicant Response: An illicit discharge statement will be provided to DEC staff prior to construction.*

If the Commission has any questions, please call.

Very truly yours,

Nitsch Engineering, Inc.

Approved by:

Paige Simmons, PE
Project Engineer

Jennifer Johnson, PE, CFM, CPSWQ, LEED AP
Deputy Director of Planning

PES/JLJ/ajc

P:\08000-09999\9419 DEC Reviews\Civil\Project Data\Task 51_52 57_75 Jackson Rd\9419-2022-06-29 57_75 Jackson LTReview1.docx