EUGENE T. SULLIVAN INC.
Consulting Engineers & Construction Managers

July 25, 2022

PROJECT: ***PROPOSED BUILDING***
35 Saratoga Boulevard
Devens, Massachusetts

We herein provide the following documents/ information regarding the proposed Industrial Building to be constructed at 35 Saratoga Boulevard, Devens, Massachusetts:

- Updated Civil Engineering drawings including Landscaping plans and Building Elevations.
- Stormwater Management Report
- Sight Distance Assessment as prepared by Bayside Engineering
- Responses to Nitsch Engineering and IBI Group peer review comments
- Authorization letter from 29 Saratoga Boulevard to allow plantings on their property to screen the proposed retaining wall

On behalf of ***35 Saratoga Property Owner, LLC***, we hereby request a waiver for the retaining walls being located within the side yard setback along the eastern property line. It is our opinion, that the site topography in combination with soil conditions [the majority of the site contains ledge, and we are designing the site to have a balanced soils condition] affect our property development significantly. We are proposing to provide landscaping on the 29 Saratoga Boulevard to screen the retaining wall and *35 Saratoga Boulevard Property Owner, LLC* is committed to working with the DOD landowners should they further develop their site and remove the existing vegetated buffer between the development. Furthermore, we believe that the requested waiver does not substantially derogate from the intent of the bylaw.

If you have any further questions regarding this project, please contact me.

Sincerely,

Eugene T. Sullivan P.E.

COMMONWEALTH OF MASSACHUSETTS
EUGENE T. SULLIVAN
CIVIL
No. 48707
REGISTERED PROFESSIONAL ENGINEER

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May 4, 2022

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

RE: Nitsch Project #9419
35 Saratoga
Site Plan and Stormwater Review
Devens, MA

Dear Mr. Angus:

Nitsch Engineering received and reviewed the Site Plans (the Plans) entitled, "Proposed Building, 35 Saratoga Boulevard, Devens, Massachusetts," dated April 20, 2022, prepared by Eugene T. Sullivan, Inc. In addition, Nitsch Engineering has received and reviewed the following documents:

1. Level 2 Unified Permit Application, prepared by Eugene T. Sullivan, inc., dated April 7, 2022;
2. Supplemental Filing Documentation, prepared by Eugene T. Sullivan, Inc., dated April 22, 2022;
3. Sight Distance Assessment, 35 Saratoga Boulevard, Devens, MA, prepared by Bayside Engineering, dated March 31, 2022;
4. Stormwater Drainage Management Report, prepared by Eugene T. Sullivan, Inc., dated April 20, 2022; and
5. Level 2 – Unified Permit, Checklist for Determination of Completeness, dated April 12, 2022.

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

PROJECT UNDERSTANDING

The property owner is seeking approval to clear the 35 Saratoga Boulevard site and construct a +/-154,000-square-foot new industrial building. The project will include associated grading, landscaping, retaining walls, parking, stormwater, and utility improvements. The proposed tenant is Avantor (Bio-Tech) who currently owns and occupies the adjacent facility at 29 Saratoga Boulevard. This new development would be accessed via Barnum Road and Saratoga Boulevard. The principle entry to the site is proposed off of Saratoga Boulevard via a shared driveway with Ryerson (45 Saratoga Boulevard). The Barnum Road entry is being proposed for truck traffic and restricted to right turns only, as sight distance is a concern.

DEC REGULATORY CONFORMANCE

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

Due to the nature of the comments that may cause significant site plan and/or stormwater management design changes, not all comments may be reflected at this point. Nitsch Engineering will re-evaluate upon site plan and stormwater management updates.

DEC SITE PLAN REVIEW DESIGN STANDARDS

1. **974 CMR 3.04(1)(a)** requires the minimum setbacks of structures from lot lines shall be: Front Yard: 25 feet; Side Yard: 10 feet; and Rear Yard: 25 feet. A retaining wall is considered a structure and must follow the setback requirements. The Applicant should review and address this requirement.

   We have removed all retaining walls within the setback along the western property line. We are requesting a waiver for the retaining wall between our site and 29 Saratoga

2. The parking space counts within the Parking Calculations Table on Sheet C.2 and Supplemental Filing Information do not appear to be consistent with the parking shown on the plan. The Applicant should review these discrepancies and confirm the proposed number of spaces is in accordance with **974 CMR 3.04(3)(a)1.**

   This table has been revised

3. **974 CMR 3.04(3)(a)(1)a** requires the following: In cases where buildings in the Rail, Industrial, and Trade Related District are set back 150 feet or more, parking is permitted in the front of the building. In such instances, a landscaped strip between the front lot line and the parking lot, measuring at least 60 feet deep, shall be provided. We note that this site has frontage along both Barnum Road and Saratoga Boulevard. The Applicant should review and address this requirement as the parking on Saratoga Road is within 60 feet of the property line.

   The parking has been re-configured to provide a 60' landscaping strip along Saratoga Boulevard

4. **974 CMR 3.04(3)(a)(1)c** requires 2% of the parking spaces be Americans with Disabilities Act (ADA) compliant. Based on 339 spaces, 2% would be 6.8 spaces, therefore the Applicant should round up to seven (7) spaces. Additionally, all proposed accessible parking spaces are provided in the northern parking lot. The Applicant should confirm that no additional accessible spaces are needed in the eastern parking lot.

   We have provided a total of 7 ADA spaces. We have relocated 2 spaces to the eastern parking lot.

5. **974 CMR 3.04(3)(a)(1)e** requires that parking lots shall extend no more than 180 feet in either length or width without a landscaped island and a pedestrian connection through the parking area and pervious landscape island(s) that is a minimum of 5 feet wide and bordered by 3-inch caliper deciduous shade trees planted a minimum of 40 feet on center. The landscape areas shall be an 18-foot minimum width along intermediate islands, and a 10-foot minimum width for terminal islands and divider islands (see 974 CMR 3.06(2) Figure B). Parking lots measuring less than 180 feet in either length or width shall be divided into bays not greater than 72 feet in length by terminal or intermediate island (see 974 CMR 3.06(2) Figure B). Terminal islands shall be 10 feet in minimum width and intermediate islands shall be 18 feet minimum in width. Portions of the parking lot do not meet these dimensional requirements, and the Applicant should review and address this requirement.

   The parking area layouts have been modified to meet this requirement.

6. **974 CMR 3.04(3)(a)(2)b** requires the portion of the parking lots, loading docks, and driveway subject to truck traffic, truck and container storage, and other railroad related vehicles, shall be constructed of bituminous concrete pavement. The construction specifications shall be as indicated in section **974**

CMR 3.04(3)(a)(2)b i-vi. It appears that the Heavy Duty Pavement Detail provided meets the requirements noted above, however the "New Paved Areas" note provided on the Site Plan Layout does not list the same dimension as the detail. The Applicant should review for consistency. Additionally, the loading dock area is labeled as a concrete apron but this standard applies to areas including the loading dock. As only the Heavy Duty Pavement Detail is provided, it is our understanding that the entire parking lot, with the exception of the porous pavement, will be exposed to truck traffic and Heavy Duty Pavement should be used.

The note on C.2 has been revised. All parking with the exception of porous pavement will be per the heavy duty pavement detail

7. **974 CMR 3.04(3)(a)(2)d** requires parking spaces and striping shall be painted according to the MHDSSHB. Lines shall be located along the sides and unless curbing is present, at the head of parking stalls. Lines shall be a minimum of 4 inches wide and shall be one (1) consistent color, either reflective yellow or reflective white paint. The paint does not appear to be specified on the Site Plan Layout or Site Details Plan. The Applicant should clarify this requirement on the Plans for both ADA and typical spaces.

The note has been revised on C.2

8. **974 CMR 3.04(3)(a)(4)d** requires that Commercial, Industrial, and Multi-Family Residential driveway widths shall be no greater than 24 feet for a two-way (2-way) driveway and 14 feet for a one-way (1-way) driveway. The proposed driveways range from 24 to 35 feet wide.

The driveway from Saratoga Boulevard is existing and we are not proposing any changes

The trucking driveway is larger to accommodate the turning radius of the tractor trailers.

9. **974 CMR 3.04(3)(a)(4)g** requires standard "STOP" at the intersection of driveways with streets and roads. The Applicant should evaluate the intersections of the internal driveways and curb cut at Saratoga Boulevard to provide adequate signage for traffic safety. We note that there is no separation between the stop bar and the Barnum Road travel lane; this should be reevaluated for safety and sight distance.

A stop sign and stop line have been added at the Saratoga entrance and also out of the office parking area near the main drive entrance

10. **974 CMR 3.04(3)(a)(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.

The Fire Chief has reviewed the plan previously, we will request that the Chief provide the memo to the DEC.

11. **974 CMR 3.04(3)(a)(10)** requires that all proposed developments shall demonstrate that they have made reasonable efforts to consider and implement transportation demand management strategies early in the site planning and layout process. These include providing 5% of total parking spaces for each of the following: ridesharing, hybrid or zero/low-emitting vehicles, and hybrid/electrical vehicle plug-in/recharge stations. We note that the Applicant has provided five (5) parking spaces for electric vehicles and four (4) spaces for carpool, both of which are approximately 1% of the total parking count. The Applicant should review and address this requirement and add these calculations to the Parking Calculations Table on the Site Plan Layout.

We have provided [4] parking spaces reserved for electric vehicles and [4] spaces for carpooling/vanpooling adjacent to the main entrance

12. **974 CMR 3.04(6)(a)(2)a** requires vertical granite curb or cement concrete curb is required at all driveway entrance roundings to the point of rounding tangency. Proposed curbing should tie into existing curbing and, in areas where there is no curbing, have transition curbing to tie into ground level. The Applicant should address this requirement at both the Saratoga Boulevard and Barnum Road entrances.
The curbing has been revised at the drive entrances.

13. The Applicant should provide turning movements to clarify the need for the pavement expanses throughout the site and specifically within the loading dock. Where feasible, pavement area should be minimized. This may provide additional area to enable some retaining walls to be pulled back out of the setbacks.
This has been provided to the DEC

14. There are six (6) unprotected parking spaces located immediately adjacent to the loading dock. The design of these spaces should be reviewed as they appear at-risk for collision with trucks accessing the loading docks.

The three unprotected spaces have been removed

15. The Applicant should complete all information in the Zoning Requirements Table on the Site Plan Layout.

The Zoning table has been updated

16. Please add the north arrow to the Site Plan Layout.

The North Arrow has been added.

17. The Applicant should review the top and bottom of wall elevations listed on the Site Plan Layout and confirm that all elevations/contours are accounted for. There appears to be instances where a contour is skipped or not tied into the existing condition.

This has been revised

SIGHT DISTANCE REPORT

18. Please provide the date(s) of the traffic counts used. Since they are from a 2020 report, if the counts themselves were taken that year, clarify whether the volume measurements were taken prior to or during the pandemic. If during the pandemic, please explain if any adjustments were made to establish base traffic conditions.

19. Did the traffic counts include speed data? If so, please provide 50th and 85th percentile speeds on both study roadways.

20. The report states the sight distance calculations are attached, but they appear to be missing. Please provide any relevant sight distance calculations.

21. For the required minimum sight distances in Table 1, please use the Design values from the AASHTO Green Book (2018) Tables 3-1 and 9-7 (rounded-up values, as are standard), or as adjusted for grade. Please ensure the value for SSD for Saratoga Boulevard approaching from the south at 30 MPH is corrected, as well.

22. If either of these roadways has a grade affecting the sight distance (3% or greater), please describe it in the Sight Distance Assessment section and ensure that any calculations provided reflect those grades.

23. In Figures 1 and 2, what is the visual obstruction between driver and object used to determine the sight line?

24. In the last paragraph on page 2, it is stated that the Barnum Road and site driveway intersection will be used for trucks only, but it looks like Barnum Road itself serves other properties and connections so that will have a mix of traffic, and only the site driveway is limited to trucks. Please clarify, and if the roadway will also have passenger cars, in Figure 1, use a driver eye height of 3.5 feet for a passenger car instead of the truck driver eye height.

25. In Figure 2, what distance back from the edge line is used? If using a distance other than the standard 14.5 feet, please explain.

26. Describe whether these measurements all done in CAD, or if there were any field measurements. Please provide figures showing all SSD and ISD measurements done in CAD. For any field measurements, provide the date(s) taken. Also, describe any considerations for change in foliage/vegetation levels for different times of year, especially if taken when there was little or no foliage/vegetation.

27. It is unclear from Table 1 if the ISD for Barnum Road and Site Driveway looking east meets the criteria for 40 MPH for vehicles turning left (minimum 441 feet, measured 400+ feet). Please provide a more specific measurement, and if it is less than the minimum, please explain.

28. At the bottom of page 3, it is stated that “ISD should be at least equal to the SSD.” Please clarify if that is the required minimum SSD or the measured SSD.

29. On page 6, it says the measured ISD at the proposed site driveway is 550+ feet. Please clarify whether this referring to one (1) of the driveways or both. Either way, the measured ISDs in Table 1 do not match. Please correct the table and/or the narrative.

DEC STORMWATER DESIGN STANDARDS

30. **974 CMR 3.04(4)(a)(3)** requires low Impact Development (LID) Stormwater Management design shall be incorporated into the site plan to allow for the full utilization of the property while maintaining the pre-development characteristics of the site as though it were a "green field" (volume, frequency, peak runoff rate) to the maximum extent feasible. Maximizing the use of pervious areas minimizes stormwater runoff from a site, improves stormwater quality, and increases groundwater recharge. While we understand that 6.2 acres of site area is accounted for in the Southeast Quadrant Detention Pond, the green field requirements still must be met for the remainder of the site. The HydroCAD model and Section 3.0 of the Stormwater Report indicate that only 75% of the 6.2 acres can be accounted for as impervious, allowing 4.65 acres of impervious area to overflow to the existing basin. The HydroCAD model indicates that 5.62 acres of impervious area (proposed roof and parking, not including porous pavement) overflow to the existing basin. Additionally, when comparing the existing to proposed for the

remainder of the site, the existing condition should be modeled as a green field. The Applicant should review and address this requirement.

The HydroCAD model has been revised to reflect the existing conditions as a "green field". Calculations have been provided showing that even though the proposed impervious area is greater than what was originally accounted for, both peak rates and volumes have been reduced for all design storms through the use of stormwater best management practices.

31. **974 CMR 3.04(4)(b)** requires Stormwater Management options shall include green infrastructure and 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 on-site.

    a. While we appreciate the use of the porous pavement, there is some unclarity on how this system will function. Much of the porous pavement system is at 3% slope or greater. The HydroCAD model indicates only one (1) elevation for the entire system, but there is an 11-foot grade change between one (1) end of the porous pavement and the other. No overflow is indicated in the HydroCAD model or plans, and this area is not accounted for in the overflow volume to the Southeast Quadrant Detention System. Due to the significant grade change, water may seep out of the pavement at the lower elevations; the bottom of the system elevation at the southwest side of the parking lot will be above the pavement elevation at the northeast side of the parking lot. While we encourage LID, this system should be evaluated to consider the significant grade change as well as any potential overflows. The Applicant may consider making the system tiered or adding subsurface check dams.

At a 3% slope the pervious pavement should function, as designed. Tiered systems and/or subsurface check dams are not required for slopes less than 5%.

    b. Additionally, there is a parking area to the northwest of the proposed building that appears to be excluded from truck traffic and has less significant grade change. The Applicant may consider this parking lot as an additional opportunity for porous pavement.

Due to the existing of bedrock in the area of the northwest parking area, this area of the project is not a good candidate for porous pavement. Porous pavement was proposed in all areas where stormwater test pits have been conducted indicating deep sandy natural soils.

32. **974 CMR 3.04(4)(b)(4)** requires that 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. The Applicant should review and address this requirement.

The plans have been revised to include a Waterman C8U ditch gate valve prior to the CDS Unit.

33. **974 CMR 4.08(2)(c)(vi)** requires all projects shall incorporate LID techniques for stormwater management to the maximum extent feasible. For projects proposing traditional closed drainage systems, the Applicant shall demonstrate to the satisfaction of the DEC why LID stormwater management design methods are not feasible. While we appreciate the use of the porous pavement, the site does not make an effort to replicate natural conditions of infiltration, evapotranspiration, and

runoff. The majority of the site is strung together by a series of catch basins and manholes discharging water at the far end of the site, not promoting decentralized stormwater management systems or modeling natural hydrologic features and infiltration practices that facilitate local groundwater recharge. The Applicant may consider creating additional opportunities for LID and decentralized stormwater management throughout the site by grading towards the parking lot islands and considering rain gardens or bioretention basins. The Applicant should review and address this requirement.

LID stormwater management design methods have been utilized to the maximum extent practicable for the project.

34. **974 CMR 4.08(3)(a)** requires that biofiltration basins shall be the preferred method to reduce curbing, piping, and structures and provide additional overland treatment and recharge. They shall be designed in accordance with the Handbook. The Applicant should review and address this requirement.

Based on the underlying existing soils located on site, as well as limitations due to the slope of the site, biofiltration basins were not practical for this project.

35. **974 CMR 4.08(3)(b)** requires the post-development peak rate of stormwater discharge off-site shall not be greater than the pre-development peak rate of stormwater discharge for the two – (2-), 10-, 25-, 50-, and 100-year storm events from any point of discharge on the site. It appears the stormwater report does not include the analysis for the 50-year storm. The Applicant should review and address this requirement.

The HydroCAD model has been revised to include the 50-year storm.

36. **974 CMR 4.08(3)(g)** recommends 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. Vegetative cover shall consist of native woody plant species installed as live brush or nursery stock, or native grasses. The Applicant should update Sheet EC.1 to show the locations of slope stabilization. Additionally, Sheet EC.1 should be updated to include the proposed condition as there will be significant site regrading that will require stabilization.

Slope stabilization is not anticipated to be necessary as slopes are 2:1 or greater except where blasted rock faces will remain post construction

37. **974 CMR 4.08(3)(i)** requires that stormwater management systems 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 and 60% of the average annual load of Total Phosphorus (TP) related to the total post-construction area on the site. The treatment train provided does not meet the 90% TSS removal calculation and does also not indicate what water quality volume is being treated. The Applicant should review and address this requirement.

The proposed roof and proposed porous pavement are both being recharged into the ground in order to help promote the removal of phosphorus. The remainder of the impervious area is being directed towards the Southeast Quadrant Detention Pond, which also provides phosphorus removal in compliance with the MS4 Permit.

38. **974 CMR 4.08(3)(j)** requires that all best management practices (BMPs) must be optimized for the removal of phosphorus to support compliance with the MS4 Permit. 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. The Applicant should review and address this r **r**equirement.

The proposed roof and proposed porous pavement are both being recharged into the ground in order to help promote the removal of phosphorus. The remainder of the impervious area is being directed towards the Southeast Quadrant Detention Pond, which also provides phosphorus removal in compliance with the MS4 Permit.

STORMWATER DESIGN AND CALCULATIONS

39. The Cultec Detail provided indicates that the maximum cover allowable above the chamber is 8.3 feet. It appears that there will be approximately 9 feet or greater of cover above the southwest portion of the Cultec Infiltration System. The Applicant should review this condition and ensure that the maximum and minimum cover depths are met.

The design of the underground infiltration system has been revised to provide less than 8.3 feet of cover over the chambers.

40. The invert out of the Infiltration System is labeled as elevation 258.00 feet in the plans but modeled as 257.25 feet in the HydroCAD, the Applicant should review and address for consistency.

The plans and the HydroCAD model have been revised for consistency.

41. The details provide a Permeable Paver Detail but the location of permeable pavers is not located on the Site Plan Layout. The Applicant should review and address for consistency.

The plans have been revised to remove the Permeable Paver Detail.

42. The Applicant should be mindful of trees on top of the infiltration system. The Applicant should review species and root penetration depths.

The proposed landscaping has been revised to remove trees from the top of the infiltration system.

43. There appears to be multiple catch basins with 3 feet from rim to invert. The Applicant should confirm constructability of the shallow connection and provide a shallow catch basin detail if required.

The proposed catch basins and pipe depths have been reviewed. In our professional opinion, shallow catch basins will not be required on site.

CONFORMANCE WITH THE MASSDEP STORMWATER STANDARDS

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:

44. **Standard 3** requires the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook. A Recharge Volume Calculation is provided in Section 7.0 of the Stormwater Report. However, the Applicant appears to using a 'B' soil to calculate the required infiltration volume but is using a 'A' soil infiltration rate in the HydroCAD model. The Applicant should use a consistent soil group for both the required recharge volume and infiltration rate.

The HydroCAD model and the stormwater calculations have been revised to use 'A' soils throughout the entire site.

45. **Standard 4** required stormwater management systems shall be designed to remove 80% of the average annual post-construction load of TSS. A Treatment Train was provided however, the Applicant should provide documentation on the water quality volume being treated. Refer to Comment 38 as Devens 4.08 General: Stormwater Management Regulations require 90% TSS removal.

The Contech CDS Unit has been sized based on the flow capacity of a 1" equivalent water quality flow rate.

46. **Standard 8** requires a plan to control construction-related impacts including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented. An Erosion Controls Plan has been included with this submission (Sheet EC.1) however this plan does not indicate any erosion controls in the proposes condition such as inlet protection or slope stabilization.

Inlet Protection has been added to EC.1. Slope stabilization is not anticipated to be necessary as slopes are 2:1 or greater except where blasted rock faces will remain post-construction.

If the Commission has any questions, please call.

Very truly yours,

Nitsch Engineering, Inc.

Approved By:

Paige Simmons, PE, LEED Green Associate
Project Engineer

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

PES/JLJ/ajc

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May 2, 2022

Mr. Neil Angus
Devens Enterprise Commission
33 Andrews Parkway
Devens, MA 01434

Re: 35 Saratoga Blvd

Dear Neil,

IBI Placemaking has reviewed the submitted landscape and lighting plans for the 35 Saratoga Blvd Unified Permit Application. The following comments are offered.

3.0: SITE PLAN
3.02: REQUIREMENTS

1. **3.02 3 (b) 6 a states that "All existing landscape features, especially existing trees and woodland to remain, shall be shown on ALL site plan sheets.**
   Trees to remain are shown on all site drawings, but are not identified as remaining on C2, C3 and L1. (See item 8)

   The plans have been revised.

2. **3.02 3 (b) 6 b requires planting plans to indicate the locations of all proposed lighting and the dimension, materials and finishes of all walks, walls and fences.**
   - The selected bike rack lacks two points of contact and results in less effective use. It is recommended that another fixture with two points of contact with the bicycle is selected.

     Please clarify this comment or provide a bike rack detail you are suggesting.

   - The proximity of the drop-off at the retaining wall to the sidewalk on the east side of the large parking area creates an unsafe condition for pedestrians as well as vehicles. The addition of a pedestrian guardrail is recommended.

   A guardrail and safety fence are shown on C.2

3.04: DESIGN STANDARDS

1. **3.04 (6) (a) 1 d describes the required SRI index.**
   Confirm that colorants are not being added to the concrete pavement that would affect its SRI value.

Colorants are not being added to the concrete pavement

2. **3.04 (6) (a) 3 describes the requirements for site lighting levels and fixtures.**
   - Light levels at the base of proposed fixtures are excessive. Modify the light fixtures/fixture spacing to reduce the maximum light levels to around 2.0 -2.5 fc.
   - Confirm fixture colors.
   - Light trespass beyond the property lines occurs at some portions of the site edges. Provide light fixture cutoffs to address this.
   - Two internal islands lack the required shade tree. Inclusion of the tree will require an adjustment to the light fixtures. (See item 16)

   We have revised the site lighting layout.

3. **3.04 (8) (c) 2 calls for native plants.**
   - *Calamagrostis* is a non-native hybrid; replace it with an ornamental native grass.
   - Given the genetic diversity and associated resilience that the straight species bring to the species and ecosystem, cultivars and hybrids should be avoided where possible, especially where the cultivar has dark pigmented leaves, such as the *Physocarpus* cultivar. Replace *Platanus x acerifolia* with the native *Platanus occidentalis*. (See item 6)
   - *Picea glauca*'s native range is northern New Hampshire and Vermont. Select an evergreen species for this horticultural zone.
   - See item 9

   See revised landscaping plan.

4. **3.04 (8) (c) 5 describes the required sizes for plant materials.**
   - Increase the size of all deciduous shade trees to 3" caliper.
   - Confirm all shrubs meet the height requirements.

   See revised landscaping plan.

5. **3.04 (8) (c) 6 calls for planting to be laid out in informal drifts.**
   The arborvitae proposed for the eastern edge of the property line are planted in a single straight line, rather than a naturalistic informal drift as required. This linear arrangement is due to the insufficient space provided for planting at the property line. (See Item 14)

   The layout will be adjusted

6. **3.04 (8) (c) 8 call for plants within 20' of a paved area to be tolerant of de-icing salts.**
   - Bayberry is tolerant of coastal salt spray but may not be tolerant of road salt; use only adjacent to areas not to be treated with road salt.
   - *Tilia americana* and *Acer rubrum* are sensitive to road salt and should not be used within the parking areas.
   - *Platanus x acerifolia* is sensitive to road salt, however, the native *Platanus occidentalis* is tolerant. (See item 3)
   - *Amelanchier* is sensitive to road salt. (See item 16)

   See revised landscaping plan.

7. **3.04 (8) (c) 11 calls for disturbed areas intended for natural re-growth to be, at a minimum, graded, loamed and seeded.**
   Numerous areas on the site lack any indication of proposed planting or seeding. Indicate on the planting plan the extent of seeding and the proposed seed mix for all disturbed areas on the site. (See item 10)
   See revised landscaping plan.

8. **3.04 (8) (d) 4-7 describes in depth the care to be taken to ensure the survival of existing trees.**
   - Call for tree protection of all existing trees to remain on all plans with keyed symbols tied to a tree protection detail.
   - Provide a tree protection detail, calling for the placement of tree protection fencing a minimum of 12" beyond the dripline of trees
   - Revise the tree protection note on EC1 to call for the placement of tree protection fencing a minimum of 12" beyond the dripline of trees.
   - Call for tree protection on the notes and detail to remain in place for the duration of all construction activities.
   - The proposed grading between the fire lane and the building result in the loss of the three oaks to remain. Adjust the 264 through 268 contours to save the trees.

     This area will be blasted to get to the building pad and create the fire access road

   - The grading of the top of the slope to the right of the entry drive from Barnum Road is incomplete with the 286, 287 and 288 contours unresolved. The resolution of those contours results in the loss of another existing 18" oak.

     This grading has been revised

   - The remaining oaks between the fire lane and Barnum Road would be lost with any flattening of the proposed 1:1 slope. Provide the required slope stabilization required for a 1:1 slope (see item 12) or provide a retaining wall.

     This area is all ledge and we are proposing a blasted rock face at all slopes over 2:1

   - The edges of the disturbed woodland surrounding the oaks to remain between Barnum Road and the fire lane shall be replanted with native woodland species.

     See revised landscaping plan

9. **3.04 (8) (e) describes the soil testing requirements.**
   The soil test results included in the Stormwater report identify the soils as sands. Additional information regarding the onsite soils' suitability as a growing medium is required, and any limitations suggested by the soils need to be reflected in the plant list.

   We believe the plantings selected are appropriate for the onsite soils.

10. **3.04 (8) (f) 2 requires the planting of lawn as a minimum and encourages the limiting of manicured lawn areas.**
    - Indicate the planting of the ground plane for all unpaved areas, including the strip between the parking edge and the retaining wall where the guardrail is sited.
    - Consider the replacement of turf grass with low-mow fescue for ease of maintenance and the incorporation of more sustainable landscape practices in the narrow/treed turf areas proposed for the site.

    See revised landscaping plan.

11. **3.04 (8) (f) 3 requires slopes steeper than 3:1 to be planted with shrubs or trees for stabilization.**
    Proposed slopes on the west, east and south sides of the site exceed 3:1 and are either underplanted to ensure stabilization or not planted at all. Massive slopes on the south side of the site are graded at 1:1.

    The slopes shown at 1:1 are blasted edge rock faces and do not require stabilization.

12. **3.04 (8) (f) 4 stipulates the treatment of 1:1 slopes for stabilization.**
    - Identify the slope stabilization for the extensive 1:1 slopes on the south end of the site.
    - The 1:1 slopes at the south edge of the site flanking the entry drive must be stabilized with bioengineering methods of erosion control and 100% plant cover.

    The slopes shown at 1:1 are blasted edge rock faces and do not require stabilization.

13. **3.04 (8) (f) 6 stipulates the treatment of proposed landscaped areas to ensure that the soils are not compacted.**
    Indicate the location of construction laydown areas. Confirm that the areas not covered by building or pavement will not be used for laydown or provide direction for the decompaction of these areas.

    Construction Laydown areas have been identified on EC.1

14. **3.04 (8) (g) describes screening requirements for buildings, vehicular zones, and unsightly areas viewed from public ways and the Open Space and Recreation Zoning District.**
    - The three existing oaks (see item 8 for the regrading required to save them) provide only partial screening of the southeast corner of the building. Provide the required 6’ high minimum year-round screening that is visually impermeable within 3 years’ time to flank the fire lane’s intersection with Barnum Road.

      See revised landscaping plan.

    - The parking lot is visible from the entry drive on Barnum Road. Provide the required 6’ high minimum year-round screening that is visually impermeable within 3 years’ time flanking the drive entry and on the large 3:1 slope flanking the drive.
      See revised landscaping plan.

- The parking lot is unscreened from Saratoga Blvd. Provide the required 6' high minimum year-round screening that is visually impermeable within 3 years' time.

  See revised landscaping plan.

- The parking lot on the north side of the building is visible from the entry to the existing Avantar building and lacks the required 6' minimum depth year-round screening that is visually impermeable within 3 years' time. The proposed slope of the narrow planting strip is too steep for the planting of the proposed arborvitae. (See item 5)

  Plantings have been added on the Avantor property on the low side of the retaining wall.

15. **3.04 (8) (h) 2 requires one tree per 25 lineal feet of parking perimeter plus one tree per 50 feet in areas where screening is required.**
    - No trees are currently called for the edges of parking for the majority of the site due to the parking edges being too close to the property line. Pull the parking further from the property line and provide the required number of trees, arranged informally rather than aligned with the edge of the parking lots.

      We are requesting a waiver from this requirement along the eastern property line.

    - The 150' length of the north edge of the parking lot requires nine shade trees. Only five are provided.

      We added shade trees here

16. **3.04 (8) (h) 3 and 4 describe the planting requirements for parking islands.**
    - Four areas of the parking areas lack the required internal islands containing one deciduous shade tree—the front of the building, the west face of the building, and two sections along the west property line. Provide the additional four islands.
    - Some of the internal islands lack trees. Add a deciduous shade tree to each island. (See item 2 under 3.04)
    - The trees within the internal islands that include walkways are located too close to the curb. Shift the walkway to provide the required distance to the curb and an adequate distance to the walkway.
    - The *Amelanchier* proposed for five of the internal islands are not deciduous shade trees. Provide a larger canopied tree to provide the desired shade for the parking area. (See item 6)
    - The large linear divider island and the terminal island at its northern end lack the required shrub planting. Provide the shrubs as required.

      See revised landscaping plan.

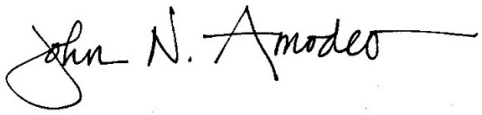
17. **3.04 (8) (k) requires the planting of street trees.**
    No street trees have been proposed for Barnum Road. Provide the required street trees.

    Street Tress have been provided along Barnum Road in the revised landscaping plan set

18. **3.04 (8) (l) describes the landscape treatment for building facades**
    The south face of the building, visible from Barnum Road lacks the required continuous landscape treatment. Add the required landscape elements in an informal manner.

    See revised landscaping plan.

Sincerely,



John N. Amodeo, ASLA, LEED AP B+C

D&D SARATOGA BOULEVARD REALTY TRUST

Douglas Long

4 New England Way #12

Ayer Ma 01432

To: Owners of 35 Saratoga Blvd

D&D Saratoga Blvd approves the plantings on 29 Saratoga along the border retaining wall between the two properties. Should you have any questions, please contact myself or Dave Richard.

Thank you

Douglas Long

Cell# 978-697-3199