

January 7, 2022

Sutton Planning Board
4 Uxbridge Road
Sutton, MA 01590

T 508-856-0321
F 508-856-0357
gravesengineering.com

**Subject: Proposed Roadway – Unified Parkway
Definitive Subdivision Plan Review**

Dear Planning Board Members:

We received the following documents in our office on December 20, 2021:

- Email correspondence from Bohler Engineering to Graves Engineering, Inc. dated December 16, 2021 RE: Sutton Subdivision Roadway – Pipe Sizing, with attachments.
- Correspondence from Nutter McClennen & Fish LLP to Sutton Planning Board dated December 17, 2021 RE: Definitive Subdivision of Land Application, UGPG Sutton LLC, ..., with attachments.
- Plans entitled Definitive Subdivision Plans for Unified² Unified Parkway, Providence Road (Route 122A) to Boston Road, Town of Sutton, Worcester County, Massachusetts dated November 10, 2021 and revised December 16, 2021, prepared by Bohler for Unified² Global Packaging Group. (46 sheets)
- Plans entitled Definitive Subdivision Plan of Land, Sutton, Massachusetts and Millbury, Massachusetts dated November 15, 2021 and revised December 16, 2021, prepared by WSP USA Inc. for UGPG RE Sutton LLC. (23 sheets)

Additionally, we received the following document in our office on December 21, 2021:

- Bound document entitled Drainage Report for Unified² Global Packaging Group Proposed “Unified Parkway”, Providence Road @ Boston Road, Sutton, Massachusetts, Worcester County, dated November 10, 2021 and revised December 16, 2021, prepared by Bohler Engineering.

Graves Engineering, Inc. (GEI) has been requested to review the documents for conformance with Subdivision Rules & Regulations, Sutton, Massachusetts with amendments through October 30, 2006, the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook and generally accepted engineering practices. As part of our initial review, GEI visited the proposed subdivision entrances on December 4, 2021.

This letter is a follow-up to our previous review letter dated December 6, 2021. For clarity, comments from our previous letter are *italicized* and our comments to the design engineer’s responses are depicted in **bold**. Previous comment numbering has been maintained.

Our comments follow:

Subdivision Rules & Regulations

1. *GEI reviewed the waiver requests. GEI has no technical issues with the waiver requests except as noted in the three following comments.*

GEI has no technical issues with the waiver requests.

2. *Use of curb inlets – GEI recommends that the waiver request to eliminate catch basin curb inlets be denied. Curb inlets serve a useful purpose of providing additional inlet hydraulic capacity and will allow inlet flow when catch basin grates are partially or fully clogged with leaf litter or trash. Furthermore, granite catch basin curb inlets and transition stones are customarily required in Sutton subdivisions, including the South Sutton Commerce Park industrial subdivision. GEI would not have an issue with the waiver request to allow catch basin spacing of approximately 325 feet near Basin 4 provided that the catch basins are configured with granite curb inlets and transition stones and that catch basins CB-402 and CB-403 at the intersection of Boston Road be configured with double-inlet grates instead of single-inlet grates. (§4.B.2.b)*

Acknowledged. Sheets C-402 through C-406 were revised to include notes stating that granite curb inlets and transition pieces would be installed at basin curbs. Sheet C-406 was also revised to display CB-402 and CB-403 as double catch basins.

3. *GEI recommends that granite curbing be provided at the radii of the roadway intersections at Boston Road and at Providence Road, and at the intersections of the proposed road and the future site driveways. Such a configuration was used at South Sutton Commerce Park and served to discourage truck drivers from “cutting corners” and allowing truck tires to otherwise encroach upon and damage the curbing and road shoulders. (§5.G.1)*

Acknowledged. Sheets C-302 through C-306 were revised to include granite curbing at the roadway intersections, as well as notes stating that driveway intersections would have granite curbing as well. Sheet C-901 was revised to include a construction detail for the granite curbing.

4. *GEI recommends that a tree be added at stations 41+60+/- right and 42+90+/- right, and along the right (south) side of the road between stations 49+50+/- and 55+50+/- once the final layout of the Boston Road intersection has been determined. (§5.J.4)*

Acknowledged. Sheet C-705 was revised to include two trees between stations 41+75 and 42+75. Sheet C-706 was revised to include six trees between stations 48+75 and 54+00.

5. *GEI has no issues relative to compliance with the Subdivision Rules & Regulations except for the following eight comments.*

Please see comments below.

6. *The plans do not currently have the subdivision name – GEI defers to the Planning Board whether a subdivision name other than “Proposed Road” is needed. The name and address of the owner of record, and the applicant need to be added to the plans. (§3.C.2.a)*

Acknowledged. The title “Unified Parkway” was added to the cover sheet and title blocks, and the applicant and owner names and addresses were provided on the cover sheet.

7. *The land plans prepared by WSP USA Inc. need to include the installation of granite monuments and iron pipes/rods. (§3.C.2.f & §5.M)*

Acknowledged. The land plans were revised to include proposed granite monuments along the right-of-way and iron rods were proposed at key locations along the interior lot lines.

8. *The lot areas in square feet need to be added to the land plans prepared by WSP USA Inc. (§3.C.2.g)*

Acknowledged. The land plans revised to label each lot area and a table was included on Sheet 1.

9. *On Sheet C-901, construction detail “Typical Subdrain Detail” inadvertently indicates a minimum pipe depth of 2 feet. Per the regulations, the minimum depth of cover should be 2 feet. (§4.B.1.b)*

Acknowledged. Sheet C-902 was revised to include a Typical Subdrain Detail with a minimum cover of 2 feet.

10. *Although listed in the table of contents for Appendix F of the Drainage Report, GEI did not receive pipe sizing calculations, which are required. The pipe sizing calculations will need to include the reconfiguring of the drop inlet at the Boston Road entrance. (§4.B.2.b)*

Acknowledged. The revised Drainage Report contained the Rational Method pipe sizing calculations which included the reconfigured drop inlet as DCB-405. GEI reviewed the pipe sizing calculations and found them to be in order.

11. *On Sheet C-902, construction detail “HDPE Storm Drainage Trench” should specify bedding material per the regulations. (§4.B.2.b)*

Acknowledged. The HDPE Storm Drainage Trench detail was revised to specify that the bedding material would be 1-1/2” maximum granular material that complied with AASHTO requirements.

12. *GEI recommends that on Sheet C-901, on the construction detail “Typical Pavement Section” the thickness of the binder course be revised from 1-1/2” to 2-1/2”. A binder thickness of 1-1/2” is thin for the heavy-duty truck traffic that will use the road. Furthermore, for comparison the South Sutton Commerce Park project had a binder course thickness of 2-1/2”. (§5.F.3)*

The “Typical Pavement Section” construction detail on Sheet C-901 was revised to propose a four-inch-thick binder course, a 2-1/2” top course, and a twelve-inch-thick gravel course. Whereas the asphalt thickness will be greater than originally proposed, GEI has no issue with the proposed typical pavement section. The applicant will need to request a waiver to allow a road gravel thickness less than eighteen inches.

13. *On Sheet C-901, on the construction detail “Bituminous Concrete Sidewalk Pavement Section” the thickness of the gravel borrow needs to be revised from six inches to eight inches. Also, GEI recommends that the bituminous wearing course thickness be increased to 1-1/2”. (§5.I.3.)*

Acknowledged. The design engineer responded that the project geotechnical engineer recommended a pavement thickness of three inches. The construction detail was revised to reflected 1-1/2” of wearing course and 1-1/2” of binder course (three inches total), as well as eight inches of gravel base.

Hydrology Calculations & Stormwater Management Review

14. *The hydrology computations and stormwater management documentation address construction of the subdivision road only, which is reasonable. As site development plans are*

prepared and submitted for approval, the hydrologic effects associated with lot development and stormwater management for the lots will have to be addressed during site plan review.
No further comment necessary.

15. *GEI reviewed the hydrology computations and found them to be in order except for the following comment.*

The hydrology computations are in order.

16. *Pre-development Subcatchment E4 consists of a northern area and southern area that drain to different wetlands before the stormwater reaches a stream that is common to both areas. Subcatchment E4 and its corresponding post-development subcatchment(s) need to be divided so that peak runoff rates to each wetland system can be evaluated independently.*

Acknowledged. The Pre-Development subcatchments were revised to include Subcatchments E4 and E6. The revisions are in order.

17. *Compliance with the MassDEP Stormwater Standards and Stormwater Handbook is reasonable except as noted in the following comment.*

See comment below.

18. *On Sheet C-403, access to the northern gate of Stormwater Management Area #2 is proposed down a 3H:1V (33%) slope. The slope of access to a stormwater basin can't exceed 20%.*

The design engineer responded that the grading of the access to Stormwater Management Area #2 had been revised, however Sheet C-403 still shows a 3H:1V slope between the road at station 13+40± and the nearby top of berm.

General Engineering Comments

19. *Available sight distances for drivers of both passenger vehicles and trucks need to be evaluated and shown on the plans. At the Providence Road entrance there is an existing stone wall along the project's frontage; portions of the wall are noted to be rebuilt on Sheet C-402. The plans need to be clear as to how the wall is to be rebuilt so that adequate sight lines and distances are provided. Likewise at the Boston Road entrance, where a dead tree and understory could inhibit sight lines for drivers looking right as they attempt to exit the subdivision.*

Sheets C-302 and C-306 were revised to include sight distances at the intersections. The design engineer responded that plantings and features (such as stone walls) would be rebuilt or modified to ensure clear visuals. The response is not unreasonable. GEI recommends that the Planning Board include a condition in its decision that requires rebuilding or modification of plantings or features and follow-up evaluation of sight lines after the modifications are implemented no later than when the intersections are constructed to approximate road subgrade.

20. *Intersection layout plans with turning templates for the largest vehicle anticipated to access the site (assumed to be a WB-67) need to be provided. The intersection designs need to allow trucks turning left to enter the site and trucks turning right to exit the site to pass one another. As currently proposed, it appears that two trucks will not be able to pass, which would result in traffic delays on the existing streets.*

The design engineer responded that turning templates were added to the intersection with Providence Road, but not the intersection with Boston Road because it would be further refined during the intersection improvement plan/site plan approval process. Sheet C-302 was revised to include a turning template for the intersection with

Providence Road: GEI has no issue with the revised curb radius or the current layout. GEI recommends that the Planning Board require evaluation of the Boston Road intersection either during this definitive plan review process or as a condition in its decision. If a condition in its decision, GEI recommends that the intersection be evaluated, and any improvements made prior to the release of any building lots.

21. *Although sidewalks don't currently exist at the two proposed project entrances, cross walks and accessible curb cuts should be proposed across the proposed subdivision street – a pedestrian will have to travel approximately 90 feet to cross the subdivision street.*

GEI understands that the subject of crosswalks is being addressed with the Town. GEI has no issue relative to the crosswalk within the subdivision that will serve a future sidewalk on Lots 2 and 3.

22. *Sheet 17 of the Existing Conditions Plans shows a 68" diameter sycamore tree near the proposed Boston Road entrance. The construction plans do not show the tree. The tree should be shown on the construction plans and efforts made to retain the tree as part of the project.*

Acknowledged. Sheet C-406 was revised to include the 68-inch diameter sycamore tree with a note stating that the tree would be protected.

23. *GEI understands that off-site improvements needed to address the number of vehicle trips or the type of vehicle(s) using the existing street network resulting from development of the lots will be addressed during site plan review for each lot, once the use and extent of development on each lot is determined.*

The design engineer responded that the applicant will address any required off-site traffic improvements during the site plan review for each lot.

24. *On Sheet C-903, the construction detail "Typical Roadway Cross Section A-A" depicts the proposed retaining wall outside of the right-of-way. However, the Layout Plans (Sheet C-302) propose the retaining wall shall be within the right-of-way. GEI recommends that the Planning Board require any retaining walls to be outside the right-of-way.*

Acknowledged. The design engineer responded that the retaining wall would be located within the right-of-way due to the road being a private way. The construction detail was revised to reflect this information.

25. *A sewer main is proposed between Providence Road (station 0+00+/-) and station 13+50+/-, thereby providing Lots 1, 2 and 4 direct access to the sanitary sewer system. The design engineer should explain how Lots 3 and 5 will be served by sanitary sewer.*

Acknowledged. The design engineer responded that sewer for Lots 2, 3, and 5 would flow towards Hatchery Road before connecting to Providence Road. The plans were revised to provide a sleeve for the sewer cross the proposed roadway from Lot 5 at the driveway entrance to Lots 2 and 3.

26. *The existing drop inlet at the Boston Road entrance that is to be reconfigured will be located in the new intersection. Because of the proposed curbing, runoff would probably bypass the reconfigured drop inlet's new grate. A new inlet should be proposed upgradient of the intersection to capture the stormwater before it enters the intersection.*

Acknowledged. Sheet C-406 was revised to reconfigure the existing drop inlet to a double grate, 8-foot diameter catch basin.

General Comments

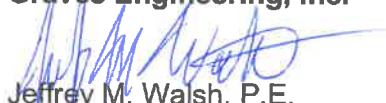
27. On Sheet C-403, the drain manhole at station 13+60+/-, 33' left needs to be labeled.
Acknowledged. Sheet C-403 was revised to label the drain manhole as DMH-2.
28. On Sheet C-404, the headwall downstream of OCS-300 needs to be labeled.
Acknowledged. Sheet C-404 was revised to label the headwall as HW-402.
29. Sheet C-806 was inadvertently named as C-80C.
Acknowledged. The label for Sheet C-806 was revised.
30. On Sheet C-902, construction detail "Typical Basin Cross Section Detail" refers to the Layout Plans, the reference should be revised to the Grading and Drainage Plans.
Acknowledged. The Typical Basin Cross Section Detail was revised to reference the Grading and Drainage Plans.
31. On Sheet C-903, the roadway cross sections indicate the placement of 4" of loam for the proposed 4 ft. wide planting area. However, the Landscape and Lighting Plans (Sheets C-702 to C-706) indicate the placement of 6" of loam. The loam depth should be consistent.
Acknowledged. Sheet C-903 was revised to include six inches of loam in the road cross section details.
32. Construction details need to be provided for the proposed headwalls, sewer manholes and fence gates.
Acknowledged. Fencing around the stormwater basins was eliminated from the plans. Sheet C-901 was revised to include the Typ. PreCast Concrete Sanitary Manhole detail, and Sheet C-903 was revised to include the Typical Headwall Detail.
33. GEI understands that the proposed water and sewer utilities will be reviewed by the applicable utility provider.
No further comment necessary. The design engineer responded that the applicant will coordinate with the appropriate utility providers.

Additional Comments January 7, 2022

34. **The gas main and service lateral stubs formerly proposed between stations 35+80 and 56+30.98 are no longer shown on Sheets C-504 and C-505. The design engineer should confirm whether this section of gas main is no longer proposed.**

We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Principal

cc: Keith Curran, P.E.; Bohler;
Matthew Piekarski; The Kraft Group, LLC