



November 24, 2025

Mr. Gregory Rondeau, Chairman
355 East Central Street
Franklin, MA 02038

**Re: Donovan Estates Definitive Subdivision
Peer Review**

Dear Mr. Rondeau:

BETA Group, Inc. is pleased to provide engineering peer review services for the proposed 9-lot (including a drainage lot) Definitive Subdivision entitled "**Donovan Estates**" located in Franklin, Massachusetts. This letter is provided to outline BETA's findings, comments, and recommendations.

BASIS OF REVIEW

The following documents were received by BETA and will form the basis of the review:

- Form C Application for Approval of a Definitive Plan, dated September 29, 2025, including the following attachments:
 - Certificate of Ownership with Deed
 - Form R-Subdivision Waiver Request
 - Certified Abutters List
- Plans (8 sheets) entitled: **Donovan Estates, Definitive Subdivision, Plan of Land, Franklin Massachusetts**, dated September 3, 2025, prepared by United Consultants, Inc. of Wrentham, MA.
- **Drainage Report for Donovan Estates, Franklin, MA**, dated September 3, 2025, prepared by United Consultants, Inc. of Wrentham, MA.
- Plan entitled: **Donovan Estates, Stormwater Facilities, Located in Franklin, MA**, dated September 3, 2025, prepared by United Consultants, Inc. of Wrentham, MA.
- Plans (2 sheets) entitled: **Donovan Estates, Pre-Development Watershed Plan, Located in Franklin, MA**, and **Donovan Estates, Post-Development Watershed Plan, Located in Franklin, MA**, dated September 3, 2025, prepared by United Consultants, Inc. of Wrentham, MA.

Review by BETA included the above items along with the following, as applicable:

- Site Visit
- **Zoning Chapter 185 From the Code of the Town of Franklin**, current through July 2021
- **Zoning Map of the Town of Franklin, Massachusetts**, attested to October 7, 2020
- **Stormwater Management Chapter 153 From the Code of the Town of Franklin**, Adopted May 2, 2007
- **Subdivision Regulations Chapter 300 From the Code of the Town of Franklin**, current through March 8, 2021
- **Wetlands Protection Chapter 181 From the Code of the Town of Franklin**, dated August 20, 1997
- **Town of Franklin Best Development Practices Guidebook**, dated September 2016

INTRODUCTION

The project site includes three parcels, Nos. 220-013, 220-014, and 220-015, with a total area of 11.62± acres located along the southerly side of Partridge Street. The parcels are zoned Rural Residential II. Currently there is a single-family dwelling with a detached garage and shed at No. 47 Partridge Street. The site itself is comprised of mostly grass fields with several trees that line the edge of the paved driveway that leads to the single-family dwelling. To the western side of the site are wetlands and Shepard's Brook.

The proposed development is an 8-lot residential subdivision with one additional lot dedicated to stormwater control. Each lot will be a minimum of 30,000 square feet in accordance with the underlying zoning regulations. The proposed roadway will be a 600± foot long dead end. Roadway grades will vary from 1.50% to a maximum of 3.00% with elevations ranging from 172.9 at the intersection of Partridge Street to 179.56 at STA 2+71. The project proposes to install new water infrastructure and there is existing sewer infrastructure on the west side of the proposed roadway. A fire hydrant will be placed at the end of the 8" water main at the end of the cul-de-sac. Stormwater runoff will be collected by a series of catch basins in the proposed way, and an infiltration basin is proposed between Lots 5 and 6 on the western side of the roadway. The outlet from the proposed basin will discharge into the nearby Shepard's Brook.

WAIVERS

- W1. Section 330-13.A.(1) A waiver is requested to construct a sidewalk on one side of the roadway.
- W2. A waiver is requested to allow less than 42" of cover over the drainpipes. Drainpipes to be Class V RCP.

GENERAL COMMENTS

- G1. Provide a callout on the plans indicating that proposed curbing will be vertical granite.
- G2. Revise the title of sheets 5 and 6 to match the titles indicated on the cover sheet.
- G3. Wetland buffers, riverfront areas, and floodplain delineation lines are the same line type and are difficult to differentiate. Revise line types to provide clarity.
- G4. Compost sock for perimeter erosion controls should be staked in place adjacent to the compost sock. Revise the detail to include staked compost socks.
- G5. Provide finished floor elevations of the proposed houses.
- G6. Provide a detail for the sediment forebay and water quality swale.
- G7. Provide individual sewer services from each home to the existing sewer main, including inverts.
- G8. Provide individual water services for each home.
- G9. Provide electrical service lines, transformers, connections to proposed homes, and where power will be pulled.
- G10. Indicate whether the existing power poles will be removed as part of the project. BETA recommends including a Demolition Plan clearly indicating existing site features to be removed or features to remain.
- G11. Provide a fence around the detention/infiltration basin.
- G12. Evaluate the need for guardrail between the water quality swale and Partridge Street using the criteria outlined in AASHTO's Roadside Design Guide.

ZONING

The Site is located within the Rural Residential II (RRII) Zoning District. The proposed Site is a residential subdivision with single family residential uses, which are permitted by right in this zoning district.

SCHEDULE OF LOT, AREA, FRONTAGE, YARD AND HEIGHT REQUIREMENTS (§185 ATTACHMENT 9)

Each proposed lot meets the requirements for lot area, depth, frontage, and width. BETA cannot confirm whether the front, side, rear yard setbacks are met, but the building footprints provided appear to conform to the required setbacks. Rough calculations for impervious area were performed generally, the buildings as shown will not exceed the impervious area requirement for each lot.

Z1. Include front, side, rear setback lines for all lots.

SUBDIVISION RULES AND REGULATIONS

PLAN SUBMISSION:

The Definitive Plan is 8 sheets, which include a cover sheet, Existing Conditions Plan, Lot Layout Plan, Grading & Utility Plan, Roadway Plan and Profile, Erosion Control Plan, and construction details. BETA has the following comments regarding the contents of the plans with respect to §300-8 of the Subdivision Rules and Regulations that governs Definitive Plan requirements.

- I.1. In accordance with 300-8.A.(1)(c), at the same scale as the definitive plan, a development plan of the premises plus adjoining land within 300 feet of the property line.” The development plan should include the adjoining land to the limits as identified. At a minimum, BETA recommends that the structures, driveways, and topography (USGS 2022 LIDAR contours are acceptable) for the dwellings at 35, 43, 19, 46, 60, 62 Partridge Street, as well as Harborwood Drive be shown.
- I.2. In accordance with §300-8.A.(1)(i), Zoning District Boundaries should be indicated on the Locus Plan.
- I.3. In accordance with §300-8.A.(2)(a) and B.(2), 3 ties into the Massachusetts Coordinate System should be identified.
- I.4. In accordance with §300-8.A.(2)(g), sight distances at the entrance should be identified in compliance with §300-10B(6).
- I.5. In accordance with §300-8.B.(1), the plan(s) shall be at a scale of one inch equals 40 feet or other such scales as the Board may accept to show details clearly and adequately. BETA recommends revising the plans to this scale in order to provide proper detail.
- I.6. In accordance with §300-8.B.(2)(d)&(h), add the width of the right of way and the tangent length and central angles of all curves to the Lot Layout Plan.
- I.7. In accordance with §300-8.B.(2)(i) location, names, and width of the adjacent streets should be identified.
- I.8. In accordance with §300-8.B.(2)(n), provide the street classification of all roads.
- I.9. In accordance with §300-8.C, Street Plan and profile contents, the following items should be added to Sheet 5
 - In accordance with §300-8.C.(6), provide pipe sizes on the street plan view.
- I.10. In accordance with §300-8.C.(6), include the existing sewer infrastructure on the profile view and provide pipe sizes on the street plan view.

- I.11. In accordance with §300-8.D., an Environmental Analysis is required as the subdivision is proposing more than five proposed lots.
- I.12. In accordance with §300-8.F., the Board of Health shall provide a report, in writing, to the Planning Board expressing its approval or disapproval of the project.

DESIGN AND CONSTRUCTION STANDARDS:

In accordance with Article IV, BETA has the following comments.

- II.1. The project seeks to disturb the 100-year floodplain. Calculations for compensatory floodplain area calculations are provided on the Grading & Utility Plan, but no volume calculations are provided. Provide compensatory flood storage calculations for review to ensure the floodplain volume will remain consistent once the project is completed (§300-9.C.). BETA notes that the project will require a Notice of Intent filed with the Franklin Conservation Commission and floodplain calculations will be reviewed separately through the Commission.
- II.2. Provide the angle with which the proposed road intersections Partridge Street to ensure the angle is greater than 70 degrees (§300-10.B.(4)(a)).
- II.3. In accordance with §300-10.B.(4)(c), intersections of street side lines shall be rounded with a curve of not less than thirty-foot radius, measured at the curbline. Revise roadway layout to meet this requirement.
- II.4. Include a centerline of the proposed street on the Lot Layout Plan. Provide the centerline radius information (§300-10.B.(5)(a)).
- II.5. The centerline offset with Harborwood Drive is less than 200' (§300-10.B.(5)(b)). BETA recommends that the Harborwood Drive be shown on the Plans and the offset with Delta Drive be identified. Ideally, the offset should be zero otherwise a waiver is required.
- II.6. In accordance with §300-10.C.(1), provide the right-of-way width and pavement width of the proposed street.
- II.7. The proposed roadway design requires significantly more fill material than cut material. §300-10.D.(1) indicates that the street grades shall be designed in relation to existing grades such that the volume of cuts and fills made within the right-of-way approximately balances, except to offset peat, boulders, or other unsuitable materials. Revise the design to provide a more balanced cut and fill volume.
- II.8. The proposed roadway design includes areas in which the proposed grades within the right of way are greater than five feet above the existing grades (300-10.D.(5)). This design element requires authorization from the Planning Board. BETA defers to the Planning Board on this item.
- II.9. In accordance with §300-10.E.(1), provide all pavement and curb radii to ensure cul-de-sac meets the required 45 foot outside radius.
- II.10. In accordance with §300-10.E.(3) Approval of dead-end streets may be contingent upon provision of easements and necessary facilities to allow continuity of utility and drainage systems. BETA notes that there is an existing sewer easement running through the site from Partridge Street to the southerly property line. This area generally appears to be wetland resources and utility continuity may be prohibitive. BETA defers to the DPW on this matter.
- II.11. In accordance with §300-10.G.(2), driveways shall have an opening of at least 16 feet in the curb at the gutter line. Revise the plans so all driveways provide the required 16 feet.
- II.12. Note: §300-11 regarding stormwater design will be addressed in the next section.

- II.13. In accordance with §300-12.A.(1)(a), a hydrant flow test should be conducted to confirm that the water main in Partridge Street can provide adequate water pressure to the development. A water supply is considered adequate only if it is capable, without booster pumps, of providing each proposed fire hydrant with a minimum flow of 750 gallons per minute at 20 pounds per square inch residual pressure for single-family home developments.
- II.14. Provide sanitary sewer services, including all appurtenances, to all lots within the subdivisions §300-12.(B)(1)(a). Sewer connections should meet all design requirements of §300-12.(B)(1).
- II.15. Provide information on the existing sanitary sewer main to be utilized for the development including inverts and pipe sizes.
- II.16. Provide an underground electrical layout and connections to proposed streetlights.
- II.17. Provide a Photometric Plan for the development. Ensure the lighting design complies with the requirements of §300-12.C.(2) – Streetlighting.
- II.18. Provide a streetlight detail.
- II.19. In accordance with §300-12.D.(b), each lot shall have at least one side line marked by a bound. Some of the side lines do not have a bound shown.
- II.20. In accordance with §300-12.E., provide a Shade Tree and Landscape Plan with the submission.
- II.21. In accordance with §300-13E.(2)(a), three (3) street trees are required on each lot. An additional street tree is required on Lot 1.

STORMWATER DESIGN STANDARDS

The proposed stormwater management design for the runoff from the roadway and proposed driveways will be an infiltration basin at the southwest corner of the subdivision behind the residence at Lot 5. In addition, a water quality swale is proposed adjacent to Partridge Street that will accept water sheet flowing from the proposed right-of-way towards Partridge Street. The infiltration basin discharges to the existing wetland at the back of the site via a 12-inch RCP pipe and an emergency riprap spillway.

The upland soils on site are classified by the NRCS-WSS as Charlton Hollis Rock-Outcrop Complex, defined as Hydrologic Soil Group C which is somewhat conducive to infiltration and Woodbridge Fine Sandy Loam, with a HSG of B. Three test pits were conducted on site, two of which were conducted in close proximity to the infiltration basin, but not within. Groundwater was encountered at 52 and 60 inches and the soil encountered was consistent with the NRCS classification. Permeability testing using a Guelph Permeameter was conducted and yielded 0.77 inches per hour and 2.98 inches per hour.

GENERAL STORMWATER COMMENTS

- SW1. BETA recommends the designer review the extent of the watershed boundaries along the southeast property line shared with 19 Partridge Street. Work is not proposed for this lot and will have no bearing on the capacity of the stormwater design.
- SW2. BETA recommends the design review watersheds CB-3 and CB-4 on the Post-development Watershed Plan. It appears that a portion of CB-3 (behind the proposed house) should be included in CB-4.
- SW3. Grading at Partridge Street indicates that water will be discharged to the existing catch basin in Partridge Street. Revise the stormwater design, or provide spot grades indicating that no water discharges untreated to the MS4 infrastructure and that gutter flow along the East side of the proposed way will discharge to the water quality swale.

- SW4. Label the watershed closest to Partridge Street on the Post-development Watershed Plan.
- SW5. Provide pipe length, slope, size, and material on the Grading & Utilities Plan (whichever plan is intended to show the stormwater design).
- SW6. The stormwater management system proposes a wet water quality swale. Wet water quality swales are intended to have standing water in them a lot of the time, and require specific plantings such as wetland hydrophytes (plants adapted to grow in water). They also require a significant amount of maintenance in order to maintain effectiveness. Per Volume 2, Chapter 2 of the Massachusetts Stormwater Handbook, a maintenance access way with a minimum width of 15 feet must be provided on one longitudinal side of the basin for a maintenance truck to access the basin. When wet water quality swales are proposed for a residential subdivision, an on-street parking lane may double as a maintenance access, provided that signs are posted. Given the location of the swale, this would require a truck to drive onto the lawn of the Lot 8 resident in order to maintain the swale. BETA defers to the DPW as to whether they have the capacity and capability to maintain the SCM.
- SW7. In accordance with Volume 2, Chapter 2 of the standards, a low-level outlet, accessible during flood events, which will drain the infiltration basin completely, is required.

SUBDIVISION RULES AND REGULATIONS – STORMWATER

Control of stormwater runoff shall meet all federal and state requirements, including the Massachusetts Stormwater Handbook (as amended), the requirements of the Town of Franklin’s Subdivision of Land Stormwater Management Regulations, §300-11 (§153-16.A.)

- SW8. In accordance with §300-11A.(4), stormwater components must be located on a separate lot. The water quality swale is located on Lot 8 within a proposed easement. Revise the design or request a waiver.
- SW9. Revise the detention basin to comply with the setback requirements of §300-11.A.(7)(a) & (b).
- SW10. In accordance with §300-11B.(3)(a) catch basins are required at all low points in the roadway. Catch basins are not provided at the low point where the proposed subdivision road meets Partridge Street at STA 0+00.
- SW11. In accordance with §300-11.B.(3)(a), catch basins are required at the corners of intersecting streets. Provide catch basins where the proposed subdivision road meets Partridge Street.

CHAPTER 153 – STORMWATER MANAGEMENT

- SW12. Provide a detail for the construction entrance and silt sacks (catch basin inserts) per §153-12.F.
- SW13. Provide all time of concentration flow paths on the Pre- and Post-Development Watershed Plans per §153-15.A.(2).
- SW14. TSS removal calculations indicate 85% TSS removal, however, the 80% TSS removal credit for infiltration basins is provided “with adequate pretreatment”. Pre-treatment in this case would be the 25% achieved by the deep-sump hooded catch basins. Revise TSS removal calculations to equal 80% removal.
- SW15. In accordance with the Mass Stormwater Handbook, Volume 2, Chapter 2 (Page 13), provide a sediment forebay at the surface infiltration basin.

BEST DEVELOPMENT PRACTICES GUIDEBOOK

The project is required to comply with the requirements of the Town of Franklin 2021 Best Development Practices Guidebook (BDPG). BETA has reviewed the Guidebook and finds that the proposed development meets or exceeds the requirements.

MASSDEP STORMWATER STANDARDS

The project is subject to Town regulation §153-16 and therefore must comply with the Massachusetts Stormwater Standards as outlined by MassDEP. Compliance with these standards is outlined below:

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES

Existing vegetation removal within the buffer zone has been reduced to the extent practicable and mitigation plantings have been proposed.

NO UNTREATED STORMWATER (STANDARD NUMBER 1): No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. The project proposes two new direct discharges to wetlands. Riprap is shown in these areas, but no riprap calculations were submitted. **Standard #1 is not met.**

SW16. **Provide riprap sizing calculations for all outfalls to ensure scouring does not occur.**

POST-DEVELOPMENT PEAK DISCHARGE RATES (STANDARD NUMBER 2): Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

The project proposes to mitigate increases to runoff rates and volumes with the use of a surface infiltration basin and a water quality swale. The proposed design indicates that water will be discharged to a catch basin within Partridge Street, which would increase flows to Partridge Street. **Standard #2 is not met.**

SW17. Revise the proposed design, or provide spot grades, so water will not be discharged to Partridge Street.

SW18. The existing outlet for POND 1 appears to be modeled incorrectly in Hydro CAD. The model shows four (4) orifices serving as outlets for the proposed system, each of them labeled as “primary” outlets. Hydro CAD interprets this as there are four (4) different outlets from the basin – the plan indicates that there will be one outlet pipe from the basin. The Hydro CAD model should be revised to reflect this by having the primary outlet be a culvert/pipe and making each orifice a “device” that will ultimately discharge to the pipe.

RECHARGE TO GROUNDWATER (STANDARD NUMBER 3): Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable.

The upland soils on site are classified by the NRCS-WSS as Charlton Hollis Rock-Outcrop Complex, defined as Hydrologic Soil Group C which is somewhat conducive to infiltration and Woodbridge Fine Sandy Loam, with a HSG of B. Three test pits were conducted on site, two of which were conducted in close proximity to the infiltration basin, but not within. Groundwater was encountered at 52 and 60 inches and the soil encountered was consistent with the NRCS classification. Permeability testing using a Guelph Permeameter was conducted and yielded 0.77 inches per hour and 2.98 inches per hour.

Groundwater recharge for the development is proposed via a new infiltration basin and water quality swale. The project is expected to provide a recharge volume in excess of what is required. Calculations have been provided indicating all BMPs will draw down within 72 hours. **Additional information is required to meet Standard #3.**

SW19. In accordance with the stormwater standards, test pit data is required at all infiltration structures. A minimum of one soil sample or test pit should be taken for every 5,000 S.F. of basin area, with a minimum of three (3) test pits being performed. Two additional test pits should be conducted in the bottom of the basin – one in the middle of the basin, closest to the wetland, and a second on the north end of the basin, so that any localized soil conditions are detected.

SW20. Test pit data is required in the area of the wet water quality swale.

TOTAL SUSPENDED SOLIDS (STANDARD NUMBER 4): For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids (TSS).

The project includes the following treatment trains:

Treatment Train	SCM 1	SCM 2	Infiltration BMP	TSS Removal %
A	Deep Sump Catch Basin		Subsurface Infiltration System	85%
B	Sediment Forebay		Water Quality Swale – Wet	78%

The project has been designed such that one of the treatment trains provides at least 80% TSS removal for treated impervious areas, while the other does not. The proposed infiltration BMP has been sized to treat the required 1-inch water quality volume. **Standard #4 is not met.**

SW21. See comment SW16 above, regarding inclusion of a sediment forebay prior to discharging to the infiltration basin.

SW22. Provide sediment forebay sizing calculations.

SW23. Provide sizing calculations for the water quality swale. Wet water quality swales should be sized to retain the required water quality volume, not including the standing water within the swale/basin.

HIGHER POTENTIAL POLLUTANT LOADS (STANDARD NUMBER 5): Stormwater discharges from Land Uses with Higher Potential Pollutant Loads (LUHPPLs) require the use of specific stormwater management BMPs. **Standard #5 is not applicable.**

CRITICAL AREAS (STANDARD NUMBER 6): Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. **Standard #6 is not applicable.**

REDEVELOPMENT (STANDARD NUMBER 7): Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable.

The project does not qualify as a redevelopment – **Standard #7 is not applicable.**

EROSION AND SEDIMENT CONTROLS (STANDARD NUMBER 8): Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities. As the project

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proposes to disturb greater than one acre of land, it will be required to file a Notice of Intent with EPA and develop a Stormwater Pollution Prevention Plan (SWPPP). An erosion control plan was provided, and erosion control measures are shown on the project plans showing perimeter sedimentation control (compost filter sock), designated stockpile locations, and a construction entrance. A basic construction sequence is also outlined on the plans. **Additional measures are required for Standard #8 to be fully met.**

SW24. See comment SW13 above, regarding additional erosion control measures to be shown on the plans.

OPERATIONS/MAINTENANCE PLAN (STANDARD NUMBER 9): A Long-Term Operation and Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A Stormwater Operation and Maintenance Manual was provided in the Drainage Analysis Report. The O&M Manual was not signed. **Additional information is required in order for Standard #9 to be fully met.**

SW25. Provide a signature of the owner in the Operation and Maintenance Manual.

ILLICIT DISCHARGES (STANDARD NUMBER 10): All illicit discharges to the stormwater management system are prohibited. A signed Illicit Discharge Compliance Statement was provided with the submission, but was not signed. **Additional information is required in order for Standard #10 to be fully met.**

SW26. Provide a signature of the owner on the illicit discharge statement.

SUMMARY

Based on our review of the Definitive Subdivision, the Applicant is required to provide additional documentation and design revisions to comply with the Subdivision Rules and Regulations, as well as local and state stormwater regulations. We look forward to meeting with the Board to present our findings and recommendations as outlined above. If you have any comments or need any further assistance regarding this matter, please do not hesitate to contact us.

Very truly yours,
BETA Group, Inc.



Steven Lee, PE, SE
Senior Project Engineer