HARDY+ MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING

October 15, 2025
Hardy + Man Design Group, PC
1285 Washington Street
Weymouth, MA 02189

Mr. Eric Arbeene, Planning Director
Department of Planning and Community Development
Wellesley Town Hall
525 Washington Street
Wellesley, MA 02482

RE: Project of Significant Impact (PSI) – PSI-24-01
#49 Walnut Street – Walnut Park

Dear Mr. Arbeene,

We have received the design review comments dated October 8, 2025 prepared by the Assistant Town Engineer Mr. George Saraceno on behalf on the Department of Public Works, Engineering Division. We have reviewed the comments and would like to offer the following responses:

GENERAL

- The plan elevations shall be shown on the Town of Wellesley datum and stated on the plans.

Response: Since we are addressing the FEMA flood plain issue with MA DEP and Conservation Commission, we respectfully request that the current entitlement permit drawings remain in NAVD 1988 Datum as this is the datum used on FEMA Flood elevations. We suggest that the final as-built plan be prepared in Town of Wellesley Datum as record documents.

- The existing 15-foot Right-of-Way must be legally dissolved within the proposed building site as the new site configuration will not require this Right-of-Way. A small portion of the Right-of-Way may remain at the entrance to the site. This should be documented and submitted as part of the PSI process.

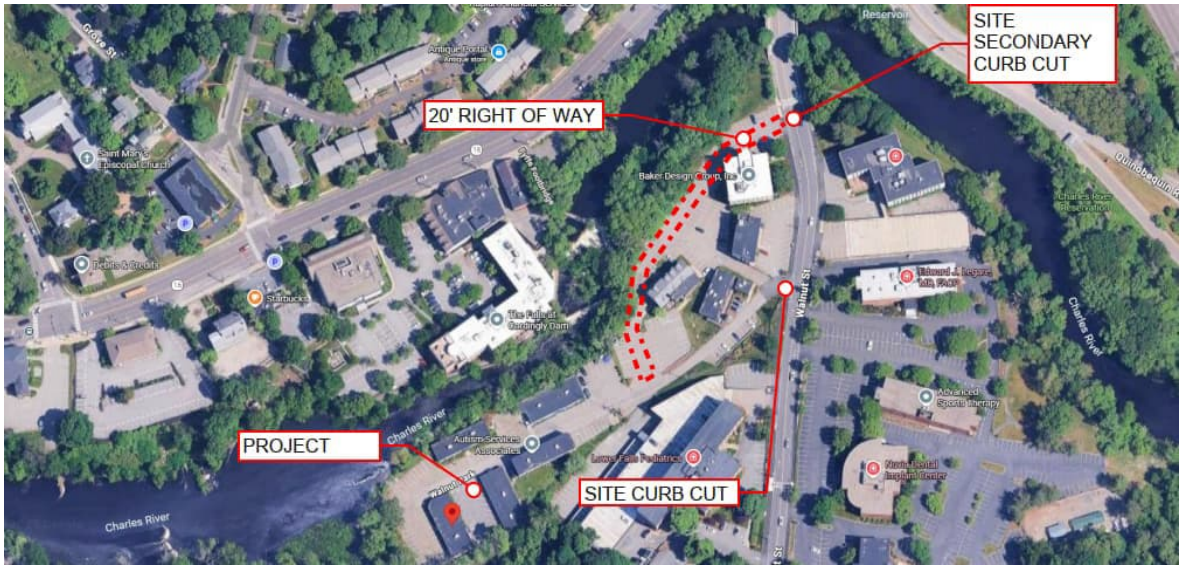
Response: The applicant will review the legal aspect of this 15' right of way will prepare plans and documentation for the modification of this right of way if needed to comply with this comment.

- Show the required zoning setbacks for the lot.

Response: The zoning table will be added to the plan set.

- The curb cut onto Walnut Street is substandard and has challenging sight distances. Improvements that ensure large vehicles and construction equipment can access the site without damage to the sidewalk should be made.

Response: Review of crash records does not indicate any operational or safety deficiency of the driveway including its intersection with Walnut Street, which has historically served higher generating commercial uses on the subject site. The site access/curb cut is under control of the abutting landowner that the project team has no legal right to modify it without the abutter agreement. In addition to the 15' right of way, the site is also entitled to use an existing 20' right of way to access/egress. This 20' easement has a separate curb cut on Walnut Street northerly to building # 15 where the grade is much gentler for access and better sight line for egress. We have performed a fire truck turn exhibit showing fire truck access through this secondary access and have fire department signed off on this route. See Exhibit A for Fire Truck Access Exhibit.



- The locus abuts land owned by Commonwealth of MA where there is an opportunity to provide walking access to both River Street and Washington Street, with this being the first residential use proposed in the area. Opportunities to connect to and improve access should be explored.

Response: Due to the grade changes, a direct route from the site to River Street is not feasible. There is existing foot bridge to cross Charles River for access to Washington Street via the 20' easement. The Applicant agrees to provide additional direction signage to lead pedestrian access around the site.

- Egress from the site will be challenging at certain times as there are left turn prohibitions and restrictions on Washington at Wales and Washington at River, potentially making nuisance cut through traffic on nearby residential streets.

Response: The development of this project will not change any off-site traffic pattern.

- The proposed site is situated within a Zone AE and X on the Norfolk County Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency,

dated July 8, 2025. The flood area confines the site on two sides, while a large retaining wall further constricts access on a third side. It is recommended that the applicant provide a flood emergency access plan showing at least one contiguous "dryland" route to a public street outside the flood zone, to be used for evacuation or access for emergency personnel. Additional information including guidance for residents on when to evacuate vs. shelter-in-place, signage, and/or wayfinding to high ground is also recommended.

Response: We have reviewed the FEMA Flood Map and Flood Study and Flood Profile of the Charles River, the flood elevation across the project site is at EL 47.6 as the highest stage. The proposed building first floor is EL 49. The building is slab on grade construction. We have performed cut-fill analysis to demonstrate that no lost of flood storage volume in foot by foot basis. The finish grades of the access/egress route from the building entrance to Walnut Street are all above EL 49; thus, a "dry" route is provided.

- Provide information regarding the Town of Wellesley floodplain bylaw which states the following.

b. In Zones A1-30 and AE, along watercourses that have a regulatory floodway designated on the Town's FIRM or Flood Boundary & Floodway Map encroachments are prohibited, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

Response: We have reviewed the FEMA Flood Map and Flood Study and Flood Profile of the Charles River, the flood elevation across the project site is at EL 47.6. The proposed building first floor is EL 49. The building is slab on grade construction. The site design is such that the proposed grades are very similar to the existing conditions. We have performed cut-fill analysis to demonstrate that no lost of flood storage volume in foot by foot basis. Any enclosure at the garage will be equipped with appropriate flood vents. Full drainage calculations will be provided with the Conservation Committee submittal next week.

Cut/Fill Summary (ELEVATION 48)

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Cut and fill	1.000	1.000	43528.58 Sq. Ft.	630.44 Cu. Yd.	197.78 Cu. Yd.	432.66 Cu. Yd.<Cut>
Totals			43528.58 Sq. Ft.	630.44 Cu. Yd.	197.78 Cu. Yd.	432.66 Cu. Yd.<Cut>

Cut/Fill Summary (ELEVATION 47)

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Cut and fill	1.000	1.000	41706.11 Sq. Ft.	1514.07 Cu. Yd.	113.83 Cu. Yd.	1400.24 Cu. Yd.<Cut>
Totals			41706.11 Sq. Ft.	1514.07 Cu. Yd.	113.83 Cu. Yd.	1400.24 Cu. Yd.<Cut>

Cut/Fill Summary (ELEVATION 46)

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Cut and fill	1.000	1.000	1451.72 Sq. Ft.	0.00 Cu. Yd.	29.70 Cu. Yd.	29.69 Cu. Yd.<Fill>
Totals			1451.72 Sq. Ft.	0.00 Cu. Yd.	29.70 Cu. Yd.	29.69 Cu. Yd.<Fill>

Cut/Fill Summary (ELEVATION 45)

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Cut and fill	1.000	1.000	172.16 Sq. Ft.	0.00 Cu. Yd.	2.73 Cu. Yd.	2.73 Cu. Yd.<Fill>
Totals			172.16 Sq. Ft.	0.00 Cu. Yd.	2.73 Cu. Yd.	2.73 Cu. Yd.<Fill>

- A nine page Construction Management Plan (CMP) was submitted by Boston Real Estate Capital dated August 2, 2025.
    - In the introduction of the CMP, revise the number of outdoor parking spaces to 26, as shown on the Site Layout Plan, Sheet C-1.
    - A timeline was provided for each phase of construction.
    - Provide a Tree Protection and Mitigation Plan.
    - Provide the Town a copy of the Construction Waste Management Plan (CWMP).
    - Emergency contact information to be provided by the Applicant to the Town prior to construction.
    - Provide details on an agreement with neighboring properties for off-site staging for construction vehicles and/or personnel.

Response: Applicant will provide additional information and/or revision of the CMP prior to building permit issuance.

- Provide an update on the comments/recommendations from the Wetlands Protection Committee for the project.

Response: We are preparing the Notice of Intent Application and will be submitting for Conservation Committee and MA DEP review next week.

WATER & SEWER

- The locus is served by 6" water mains with 2 fire hydrants. This main size and the most recent fire flow tests indicate that the mains from Walnut Street to the proposed building will have to upgraded to 8" CLDI pipe with a minimum of 2 hydrants.

Response: The applicant agrees investigate the existing 6" water mains and agree to replace with a new 8" CLDI pipe if necessary.

- The locus is served by one or more sewer ejector stations that will need to be replaced with a single ejector system with a properly sized wet well, dual pumps, and emergency power.

Response: The sewer pumps from the existing 4 buildings will be removed. A single duplex ejection pump will be designed for the proposed residential building. We are working with Liberty Pump in sizing a proper pump chamber system for the development.

- Zade Engineering LLC has provided a water demand report for the proposed 28 Unit Residential building. However, we recommend a Municipal Systems Impact statement for the existing versus proposed water demand for the site. The units shown in the report shall be in gallons per minute. The water analysis shall show that the Town's existing water system will be able to supply the proposed water demand for the project. This includes both fire protection and domestic water usage.

Response: Zade Engineering LLC will prepare additional impact statement.

- The Applicant shall provide a copy of the Municipal Systems Impact Analysis for the proposed sanitary sewer collection system for the building. The existing sewer system, i.e., force main, from the project site to Walnut Street shall be analyze by the Applicant's engineer.

Response: The existing sewer collection system from the existing site will be completely removed (sewer ejection pumps and force main). The proposed project will install a new sewer ejection pump chamber with duplex pumps that the system is capable of emergency power hook-up. The new sewer will discharge onto the Town's 20" CI sewer cross-country trunk line within a sewer easement located inside the office park. The project team is working with the pump manufacturer Liberty Pump in sizing the pump station and forcemain system for this project.

- To obtain the proper sewer flow for the proposed building, use Title V and calculate the gpd/bedroom, including addition usage such as common area space, etc.

Response: The common areas are exclusive use by the tenants of this project that the sewer generation flow rate shall be included in the overall building generation rate per title V at 110 gpd/br. The sewer generation for the proposed project is calculated as follows:

Proposed use: 68 br x 100 gpd/br = 7,480 gpd
Existing office use: 17,698 sf x 75gpd/1,000 sf = 1,327 gpd

- Provide calculations to show that the existing sewer main on Walnut Street can accommodate the additional flow from the proposed condominium project.

Response: Based on the calculation above, the increase in sewer flow from this project is 6,153 gpd. With peaking factor, the additional flow at peak hour (x5) would be approximately 0.05 cfs. The proposed sewer from this project discharge onto the 20" CI public sewer trunk line within an easement that run through the project site. The sewer connection point is at the existing sewer manhole near the easterly corner of building #47, just outside of project boundary but within the office park complex. We have obtained the sewer plan from the Town and determine that this 20" CI sewer trunk line has the capacity of 3.81 cfs. We have made a site visual inspection of this sewer manhole on October 3, 2025 at 8 am. The flow inside this sewer line appears to be approximately 6" in depth of the pipe. Factoring the Manning calculations for 20" CI pipe with 0.1%, this 20" CI trunk line shall have flow rate of 1.9 cfs. In summary the existing 20" CI has enough capacity for receive the additional flow from this project.

- If the proposed sewer flow exceeds the 15,000 gallons per day, we require I/I removal rate of 4:1. Provide study of the areas within the Town's sanitary sewer collection system that could be upgraded to provide the required I/I removal.

Response: Per sewer generation calculations shown above, the additional sewer flowe from the proposed project is estimated at 6,153 gpd which is under 15,000 gpd; therefore, 4:1 I/I removal is not applicable to this project.

STORMWATER

- A Stormwater Report was provided by Hard + Man Design Group, PC dated June 23, 2025. The Stormwater Report should be revised to show the existing site area of 74,180 square feet, which is what the Town's GIS shows.

Response: The area shown on assessor site area of 74,180 SF includes area of the Charles River water body. The area analyzed in the HydroCAD report is the calculated land area that receives rain fall and generates runoff. The Charles River water body is defined as the discharge point (Reach); therefore, it does not make sense to include the water body in the analysis.

- The Stormwater Report shall include a copy of the Geotechnical Report for the site. The report should include a site plan that shows the location of the proposed borings and test pits. Each boring and test pit log shall be included in the report recording depth of ground and ledge as well as characteristics of the soil and redoximorphic features. Test pits are necessary for areas that include proposed stormwater infiltration.

Response: Geotechnical report is provided as Exhibit B

- Provide a separate Grading and Drainage plan that clarifies the location of porous pavement, grading for parking lot runoff and roof drain connections. The outside parking lot shall have deep sump catch basins and oil/gas traps prior to discharging stormwater runoff.

Response: All the outdoor driveways and parking are porous bituminous concrete pavement as shown on the Site Layout Plan. Runoff from pavement will direct infiltrate into the reservoir course for on-site retention and recharge.

- Provide a details description of the dewatering process for the site. Any discharge to either the Town's drainage system or the Charles River will require prior approval, either through the Town or MassDOT.

Response: The proposed building has slab on grade and shallow spread footings foundation that does not require very deep excavation for foundation installation. We do expect to encounter groundwater for deeper excavation for utility installation. The site contractor shall excavate temporary sedimentation hole and groundwater from dewatering activities shall be pumped into the temporary sedimentation basin for on-site infiltration.

ELECTRICAL

- Show the location of the proposed EV charging stations proposed for the project.

Response: The number of EV charging stations will be installed per code requirement, but exact location has not yet been determined.

- Is the Applicant considering solar power options for the project. Include what the load requirements are and credits received.

Response: The Applicant has not made decision on solar power yet but the roof will be solar ready.

- A proposed generator for the project shall be surrounded by sound proofing material. Provide information on annual testing requirements for the proposed generator. Show the location of the proposed generator on the plans.

Response: Only a small household size generator is proposed to provide emergency power to sewer ejection pump. This generator will be located in the mechanical room inside the garage.

REFUSE

- Provide a copy of the Municipal Systems Impact Analysis for refuse management on the site. Describe how trash and recycling is collected, stored and removed from the site. Show the areas within the building that will temporarily store waste and recycling materials, bins, etc.

Response: A trash room is located on the ground level inside the parking garage. Individual 2-yard trash containers will be located inside the trash room. Tenants will bring the trash from the unit to dispose into the 2-yard containers. On trash disposal day, the private trash disposal contractor will access and park in front of the garage entrance. The contractor will roll trash bins from the trash room to the truck for disposal. After disposal, empty containers will be rolled back into the trash room by the contractor. Building management will monitoring the trash capacity and adjust the pickup frequency as necessary. The waste is to be picked up and disposed by a private waste hauler.

- Provide details on the waste management company chosen to removed trash and recycling materials from the site. Waste management shall include a description of the drop off location for the waste generated at the site.

Response: EL Harvey will be the waste disposal contractor for this site.

- How will traffic flowing into and out of the parking garage be managed during the refuse removal process?

Response: During the refuse removal, the trash hauler truck will be parked in front of the garage. The garage entrance drive isle is 24' and the trash trunk will block one lane during trash loading, leave one land for garage access/egress. The trash pickup will be scheduled in off-peak hours to minimize impact to the garage usage.

TRAFFIC MANAGEMENT

- The traffic consultant MDM in a memo dated May 12, 2025, recommends maintaining the sight lines for the Walnut Park approach to Walnut Street. Specifically, any new plantings within the sight lines shall be maintained at a height of 2 feet or less above the adjacent roadway. We recommend the Applicant provide a recommendation on how the sight lines will be maintained. This work will most likely be performed through the HOA.

Response: The Applicant agrees to work with abutting owner to develop planting plan to maintain low growth plants for site curb cuts.

- MassDOT is planning corridor improvements on Washington Street from the Wellesley Townline over Rte 128, the applicant should explore any opportunities that might exists from that project, including more flexible turning and enhance pedestrian, bicycling and bus connection prospects.

Response: The Applicant agrees to work with the Town representatives on this planning effort.

- We recommend a proposed sidewalk for pedestrian access to the site from Walnut Street. The existing driveway is only 15-feet wide, which does not currently accommodate pedestrian access.

Response: The applicant is exploring option with the abutting owner to turn 15' right of way "one way in" only and the 20' right of way 2-way. We believe that can provide a safer access/egress; however, it will have to be agreed by the abutters. The Applicant also agree to install additional way-finder signage within the office park to direct pedestrian route.

- On the Demolition and Erosion Control Plan, Sheet C-3, provide details on how traffic will be managed for the Autism building at #47 Walnut Street. The stabilized construction entrance for the site is in close proximity to the entrance area at #47 Walnut Street. Show how the construction fence will be laid out around the site, and specifically at #47 Walnut Street.

Response: Demolition plan will be revised to show the existing building 49-2 be demolished first; then the building footprint area will be used for construction access/entrance. The 15' right of way in front of the Autism building will remain clear at all time. The construction fence will be pushed back beyond the Autism building.

- Will access to certain areas of the Autism building be cut off from the limit of work due to a temporary construction fence and erosion controls?

Response: The applicant and construction team will work with the Autism building to provide access to their site at all time. In the event the access will be block, the contractor will schedule such work in the weekend when the building is closed.

- The proposed access route to the locus includes steep grades, narrow widths, perpendicular parking, lack of sidewalks and curbs and likely requires snow removal to assure winter access. A better route or improvements to the route that assure safe access from the lot to this the public way should be provided.

Response: See responses above. The Applicant is working with the abutting owner to explode improvement option for pedestrian access/egress with additional signage and traffic marking.

We hope that these responses have addressed your concern of this project at this PSI review stage.

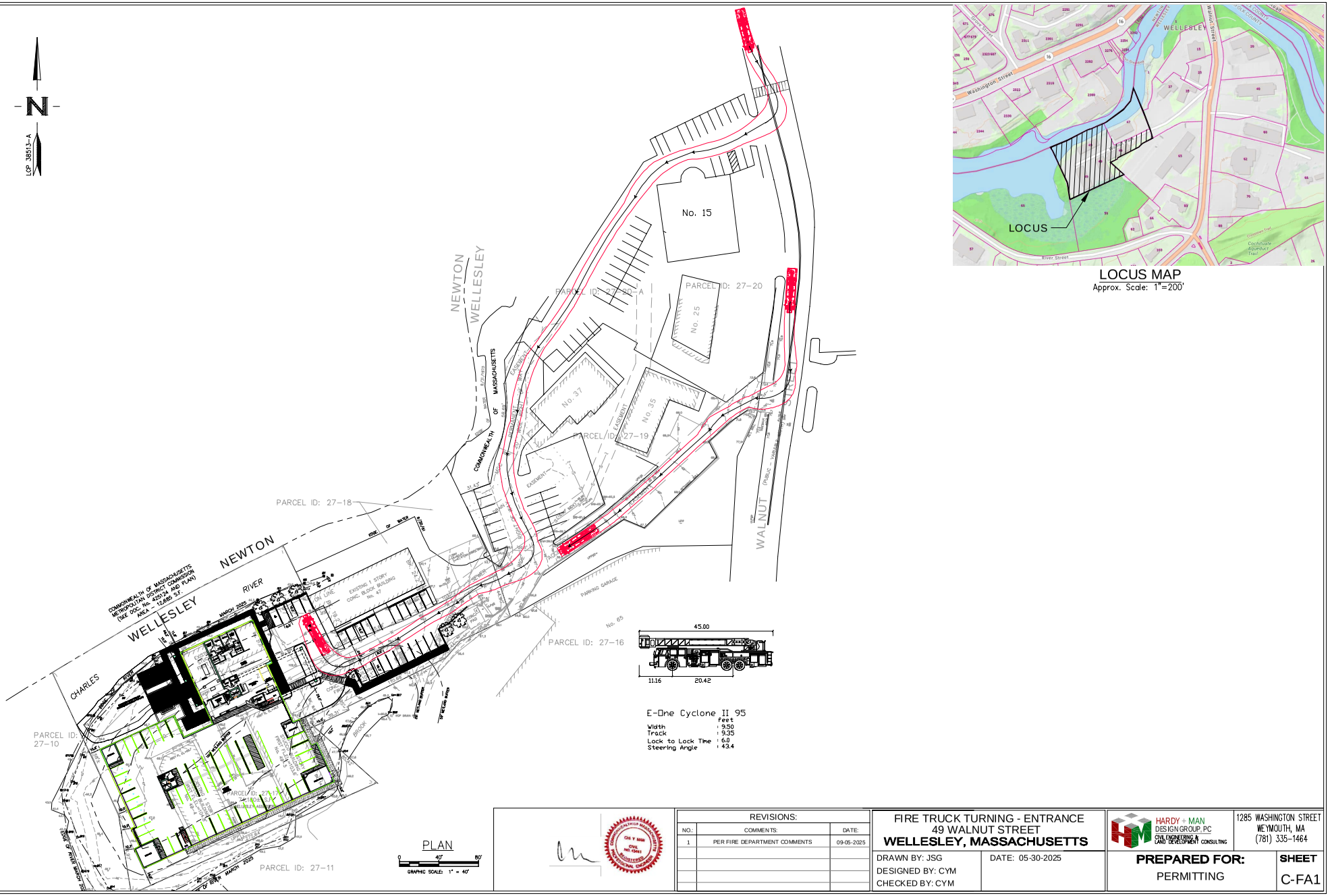
Please let us know if you have any questions or comments.

Sincerely,

Chi Man
Managing Partner

CC: George Saraceno, DPW
Joe Hassell

Exhibit A
Fire Truck Exhibit



LOCUS MAP
Approx. Scale: 1"=200'

REVISIONS:		
NO.:	COMMENTS:	DATE:
1	PER FIRE DEPARTMENT COMMENTS	09-05-2025

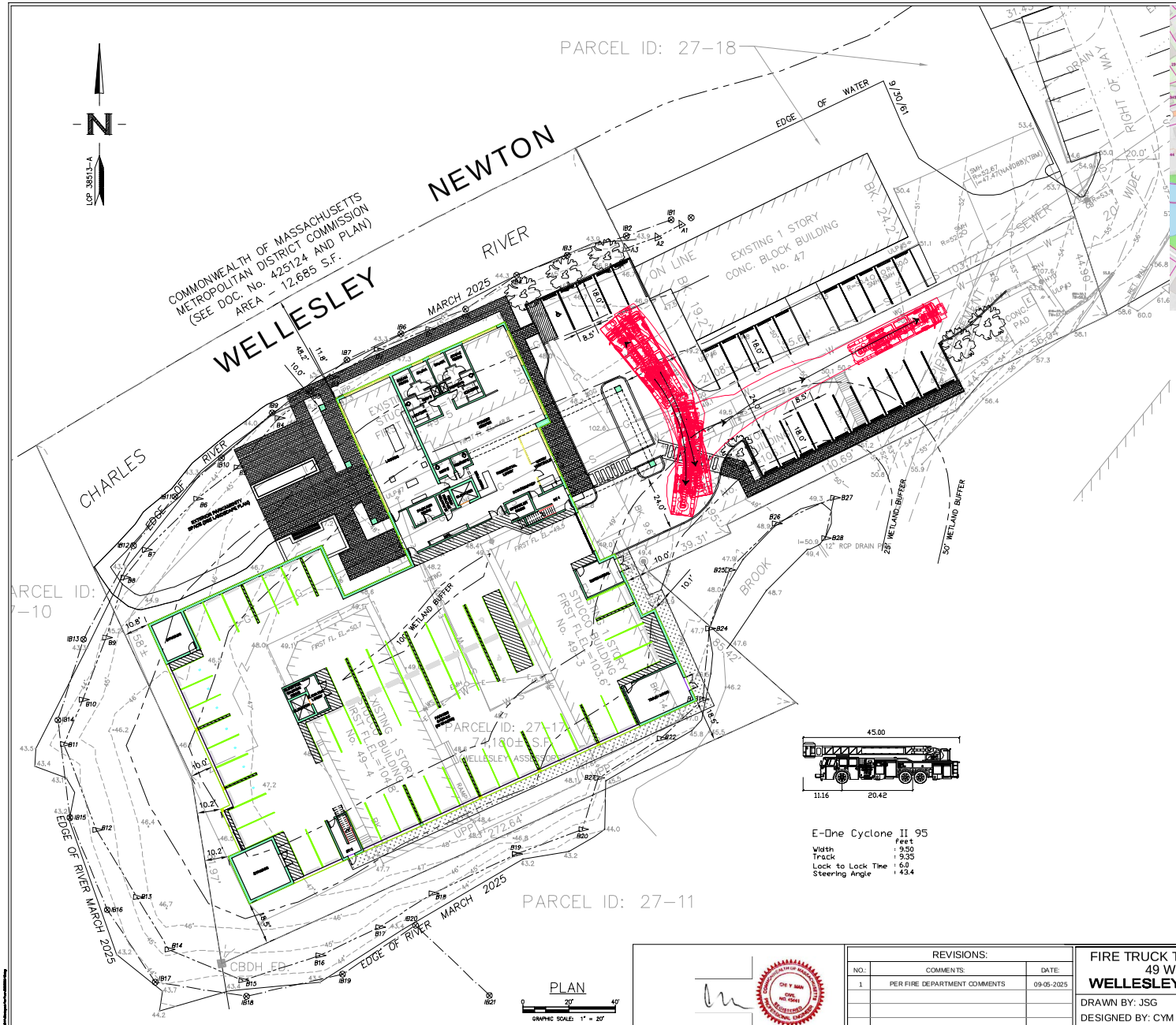
FIRE TRUCK TURNING - ENTRANCE
49 WALNUT STREET
WELLESLEY, MASSACHUSETTS

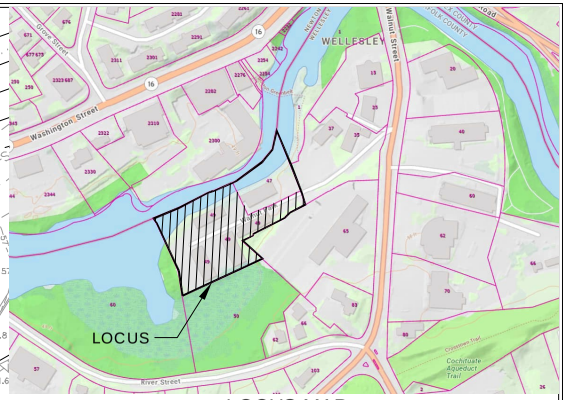
DRAWN BY: JSG
DESIGNED BY: CYM
CHECKED BY: CYM
DATE: 05-30-2025

HARDY + MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING
1285 WASHINGTON STREET
WEYMOUTH, MA
(781) 335-1464

PREPARED FOR:
PERMITTING

SHEET
C-FA1





LOCUS MAP
Approx. Scale: 1"=200'

REVISIONS:		
NO.:	COMMENTS:	DATE:
1	PER FIRE DEPARTMENT COMMENTS	09-05-2025

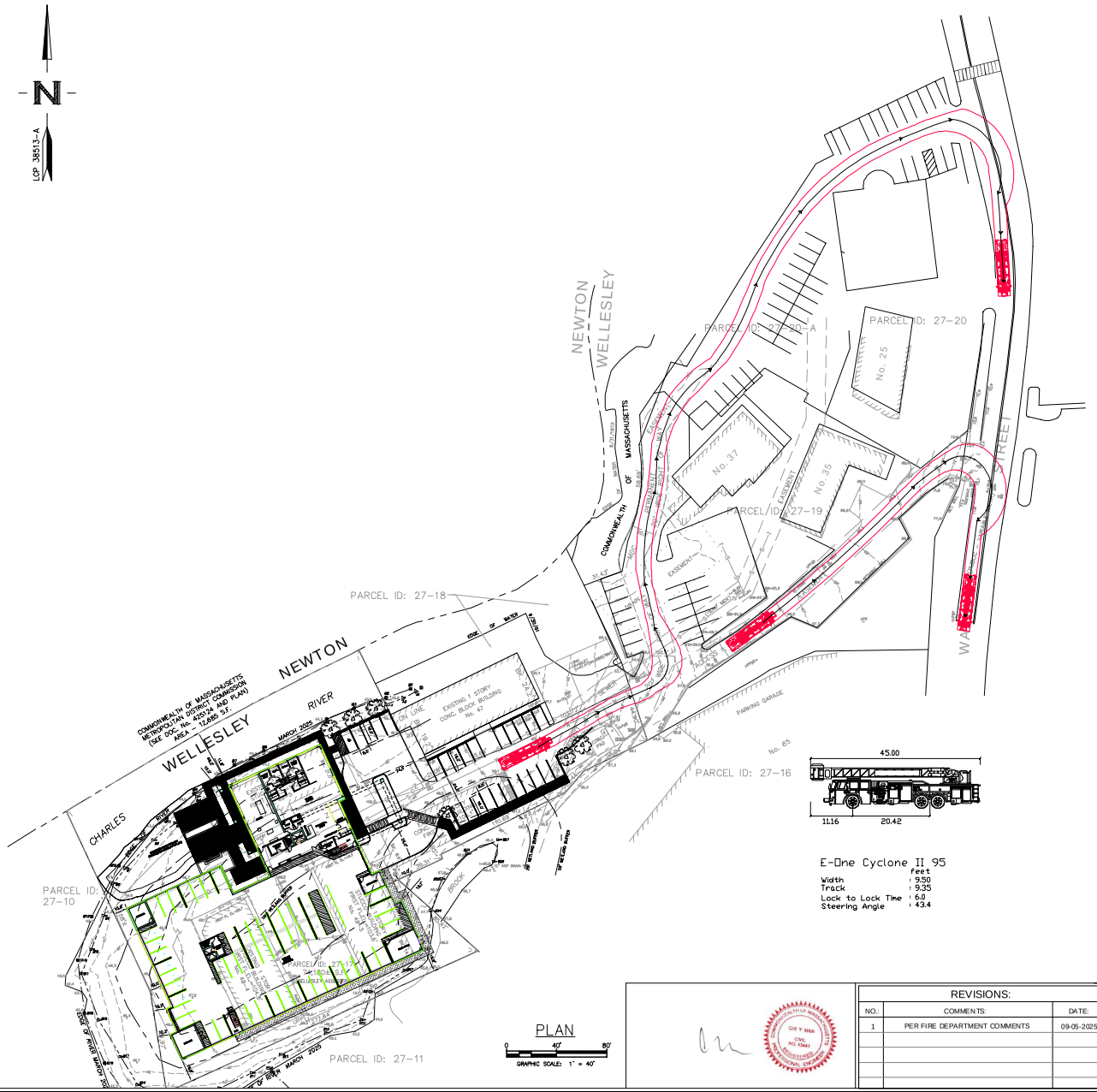
FIRE TRUCK TURNING - TURNAROUND
49 WALNUT STREET
WELLESLEY, MASSACHUSETTS

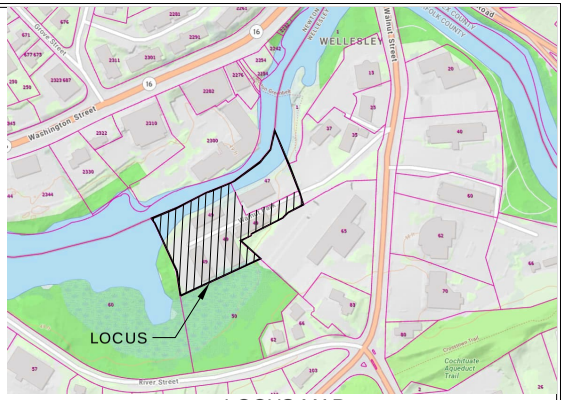
DRAWN BY: JSG
DESIGNED BY: CYM
CHECKED BY: CYM
DATE: 05-30-2025

HARDY + MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING
1285 WASHINGTON STREET
WEYMOUTH, MA
(781) 335-1464

PREPARED FOR:
PERMITTING

SHEET
C-FA2





LOCUS MAP
Approx. Scale: 1"=200'

REVISIONS:		
NO.:	COMMENTS:	DATE:
1	PER FIRE DEPARTMENT COMMENTS	09-05-2025

FIRE TRUCK TURNING - EXIT
49 WALNUT STREET
WELLESLEY, MASSACHUSETTS

DRAWN BY: JSG
DESIGNED BY: CYM
CHECKED BY: CYM
DATE: 05-30-2025

HARDY + MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING
1285 WASHINGTON STREET
WEYMOUTH, MA
(781) 335-1464

PREPARED FOR:
PERMITTING

SHEET
C-FA3

Exhibit B
Geotechnical Report

Geotechnical Consultants, Inc.
(508)229-0900 FAX (508)229-2279

REPORT OF SUBSURFACE INVESTIGATION AND FOUNDATION RECOMMENDATIONS

Proposed Development

35-37 & 49 Walnut Street
Wellesley, Massachusetts

prepared for

Boston Real Estate Capital
Ten Post Office Square 8th Floor
Boston, Massachusetts 02109

GEOTECHNICAL CONSULTANTS, INC.

Kayla J. Dooley

Kayla Dooley, P.E.

Dan Kenneally, P.E.

GCI Project No. 2245535 **4 June 2024**

Geotechnical Consultants, Inc.
(508)229-0900 FAX (508)229-2279

4 June 2024

Boston Real Estate Capital
Ten Post Office Square 8th Floor
Boston, Massachusetts 02109

Attention: Mr. Joe Hassell

RE: Report of Subsurface Investigation and Foundation Recommendations
35-37 & 49 Walnut Street- Wellesley, Massachusetts
GCI Project No. 2245535

Dear Mr. Hassell:

In accordance with our proposal dated 9 May 2024 and your authorization to proceed we have completed a subsurface investigation and geotechnical evaluation for the proposed development located at 35-37 and 49 Walnut Street in Wellesley, Massachusetts. This study has been conducted in general conformance with requirements of Section 780 CMR 1802.0 of the *Massachusetts State Building Code* for foundation investigations. Presented herein and attached are the results of the investigation along with our recommendations concerning the design and construction of the proposed foundations and other geotechnical related issues.

Information regarding the existing site conditions and proposed development was obtained from several sources including:

- Drawing set (7 sheets) entitled "ALTA/NSPS Land Title Survey" prepared by Commercial Due Diligence Services, dated 16 June 2022.

- Site Plan showing proposed building layout, provided by Boston Real Estate Capital.

Some information regarding the proposed development was obtained from discussions with various members of the project team.

SITE LOCATION AND DESCRIPTION

The subject site is located on the western side of Walnut Street and is comprised of two parcels located at 35-37 and 49 Walnut Street in Wellesley, Massachusetts. The combined site has a footprint area of 3.03± acres and is currently occupied by several office buildings. The site is bounded by the Charles River to the north and west and a commercial property to the south. The general site vicinity is shown on the *Locus Plan* attached as Figure 1. and the site limits and surrounding buildings are illustrated on the *OrthoPhoto Map* attached as Figure 2.

Both sites can be accessed via the Walnut Park access road off of Walnut Street. The western most parcel, 49 Walnut Street, is currently occupied by four, one to two story, office buildings. The parcel has a footprint area of approximately 70,743± square feet. Existing surface grades slope downward from east to west and an area of wetlands abuts the parcel to the south. The four buildings are surrounded by paved parking areas and driveways.

The parcel addressed as 35-37 Walnut Street has a footprint area of approximately 53,051± square feet. Currently, two buildings occupy this parcel with a paved parking lot to the west. A two-story brick office building is located at 35 Walnut Street and a three-story stone mill building overlooking the Charles River Lower Falls is located at 37 Walnut Street. The 37 Walnut Street building is to remain as part of the proposed development. Existing surface grades slope steeply from east to west.

The combined project site is serviced by municipal water, sewer and gas as well as electric supply and communications lines.

PROPOSED CONSTRUCTION

Two new 4-story buildings are planned for the site and will both include a ground level parking garage. One building will occupy 35-37 Walnut street and contain a footprint area of approximately 12,000± square feet. Another building will occupy 49 Walnut Street with a footprint area of approximately 33,300± square feet. The surrounding areas will be used as a paved parking lot providing parking.

It is assumed the finished floor levels of the proposed buildings will be at or slightly above the existing grade. At this time details of the building design are undetermined and there is no planned underground space for the proposed building.

SUBSURFACE INVESTIGATION & CONDITIONS

Seven (7) soil borings were completed near and within the footprint area of the proposed building to determine the generalized subsurface conditions. The borings were completed by Carr-Dee Corporation under the supervision and direction of Geotechnical Consultants, Inc. on 22 May 2024. Borehole locations, designated as B-1 through B-7,

were established in the field using tape measurements from existing site features and structures. The approximate boring locations are shown on the *Location Plan* attached as Figure 3.

All boreholes were advanced using a combination of hollow stem augers to depths ranging from 9.5± to 17± feet below existing ground surface. Soil samples were recovered at each borehole using a standard split spoon sampler driven in accordance with ASTM D-1556. The number of blows required to advance the standard sampler was recorded and the Standard Penetration Number (N-value) was determined. Soil samples were generally recovered at five-foot intervals in each borehole.

All recovered samples have been placed in storage in our laboratory and we will continue to store the samples for a period of not less than three months. Subsequently, the samples will be discarded unless otherwise directed.

Based on the results of the subsurface investigation and our knowledge of the local geology, the general subsurface profile at the site includes:

- ***Fill -*** The fill is comprised of coarse to fine sand, some coarse to fine gravel, trace silt, containing loam, wood, brick, cinders and ash. This layer was encountered at all boring locations and extends to depths ranging from about 5± feet to 17± feet below existing ground surface and is underlain by;

- ***Organic silt with Peat-*** A layer of organic silt containing peat fibers was encountered beneath the *Fill* at boring location B-6 and has a thickness of approximately 1± foot. The organic silt extended to a depth of 6± feet below existing grade and is underlain by;

- ***Sand & Gravel-*** An underlying layer of dense, coarse to fine sand and gravel was encountered beneath the *Fill* or *Organics* at all boring locations, with the exception of locations B-1 and B-2.

- ***Bedrock -*** Boring locations B-1, B-2, B-4, B-5 and B-7 were terminated upon called refusal in which the hollow stem auger or split spoon sampler could not penetrate further. Based on the presence of nearby rock outcrops and the location of the site it is likely these depths to refusal coincide with the surface of the bedrock. Depths to refusal varied between approximately 9.5± and 17± feet below ground surface. Based on the *USGS Bedrock Geologic Map of Massachusetts*, the bedrock at this site is Roxbury Conglomerate.

Groundwater was measured during and upon completion of each boring through the hollow stem augers. Within the 35-37 Walnut Street lot the groundwater was measured

at depths of 6.5± and 10± feet below ground surface at boring locations B-1 and B-2, respectively. Within the 49 Walnut Street lot groundwater was measured at a depth of 5± feet below ground surface at boring locations B-3 through B-7. Fluctuations in groundwater levels should be expected and occur due to variations in season, precipitation, site features, and other environmental factors.

ANALYSIS AND RECOMMENDATIONS

Boring locations B-1 and B-2 were located within the footprint of the proposed 35-37 Walnut Street building and encountered 10± and 17± feet of *Fill* materials, respectively, directly overlying the bedrock. The remaining boring locations were within the 49 Walnut Street footprint and encountered between 5± and 10± feet of *Fill* materials and a layer of *Organic Silt with Peat* near the southern wetlands.

In the current state, the *Fill* and *Organic Silt with Peat* layer beneath the proposed building footprint areas are unsuitable for load support. Located in the footprint area of the proposed building at 35-37 Walnut Street and portions of the 49 Walnut Street building, the *Fill* is relatively deep and, in our opinion, cannot be feasibly removed and replaced. It is recommended that ground improvements in the form of aggregate piers, either grouted or ungrouted, be used. A description and summary of the recommended ground improvement follows. Since the piers are a means to improve the existing soils and are not structural elements, the building foundation is then designed using spread footings.

It is assumed that the proposed finished floor elevation will be at or slightly above existing grade and that spread footing foundations will extend a minimum of 4 feet below existing grade. Boring locations B-4 and B-6 encountered *Fill* to a relatively shallow depth of 5± below existing grade. Within the 49 Walnut Street parcel we recommend, once the site has been cleared, test pits are excavated to determine the extent of ground improvements required. Where the natural suitable bearing subgrade is present less than two feet beneath the bottom of footing elevation, the material should be removed and replaced with compacted structural backfill. Recommendations are presented in the *Site Preparation* section of this report for the placement of structural backfill.

Ground Improvement

The purpose of ground improvements for the new construction is to provide higher bearing pressures for the foundations and support for a slab-on-grade floor while providing settlement control. The design shall be developed to limit post-construction settlement of footings to less than 1-inch, and differential settlement of adjacent footings to less than ½-inch.

Based on the recent subsurface investigation, ground improvement will likely consist of aggregate piers, either grouted or ungrouted. Ground improvement consisting of rigid

inclusions may also be considered. Although the equipment used to install aggregate piers or rigid inclusions varies among the local contractors, both element types improve and reinforce the soil matrix, including the organic soils.

Aggregate piers consist of compacted open aggregate (clean crushed stone) which is densified in place using a vibrating mandrel. Some of the piers may be grouted to further strengthen and stiffen the soil matrix. Rigid Inclusions are installed by driving, typically with a vibratory hammer, or by rotary displacement methods to densify and reinforce the soil matrix. Rigid inclusion elements are constructed of unreinforced concrete.

Installation of both aggregate piers and rigid inclusions is relatively fast when compared with the time required to install most types of deep foundation elements. However, compared with a deep foundation system, the quantity of aggregate piers or rigid inclusions required for a given project is typically greater.

Since both aggregate piers and rigid inclusions are a means to improve the existing soils and are not structural elements, the building foundation is then designed using spread footings. The bearing capacity used to size the footings is based on the composite strength and stiffness of the reinforced soil matrix. The footing stresses induced in the composite soil are attracted to the stiffer aggregate pier or rigid inclusion elements; reducing the settlement of the spread footings when compared with the unimproved soil.

Typically the final layout and design of the aggregate piers or rigid inclusions is prepared by the specialty ground improvement contractor using loads provided by the project structural engineer and geotechnical information provided by the geotechnical engineer. The contractor provides a shop drawing for construction which indicates the depth, location and spacing of the piers.

A preliminary determination of either the aggregate pier or rigid inclusion quantities required for this project, can be made once the load take-down is complete.

Spread Footing Foundations

New footings, supported on either ground improvement elements or compacted structural backfill, can be sized for an allowable contact pressure of up to two tons per square foot (4,000 psf).

Exterior footings must be placed at least to the minimum local frost depth, including those footings where ground improvement elements are used. Although not explicitly stated in the current edition of the *Massachusetts State Building Code*, the local frost depth has historically been prescribed by code as four feet below finished exterior grade. In our opinion, the historic minimum frost depth should be maintained for this project.

Interior footings can bear at the highest elevation compatible with the ground floor slab.

Ground Floor Slab

The ground floor slab can be designed as a slab-on-grade and should be supported on a layer of compacted structural backfill meeting the gradation limits for imported structural fill material provided below. Imported structural fill subbase should be at least 12-inches thick. The slab should be reinforced for crack control and the thickness can be determined using a modulus of subgrade reaction of 200 pci using either the PCA or WRI method.

Where trenches are required for the placement of underslab utilities, backfill within the trenches must be adequately compacted to provide continuity of slab support. Trench backfill material should be consistent with the gradation of the slab subbase or as required for the specific utility application.

Although vapor barriers may aggravate problems associated with plastic shrinkage and cracking, we recommend placing a vapor barrier below the slab-on-grade in all areas receiving a moisture-sensitive floor covering or finish. Finishes include coatings, tile, glued carpeting and similar installations. The vapor barrier should consist of a minimum 10 mil thickness polyethylene with the sheets overlapped at least one foot at the joints. The slab may be cast directly against the vapor barrier.

Seismic Considerations

Earthquake loadings must be considered with respect to the requirements of Section 1613 of the *Massachusetts State Building Code*. In addition, the liquefaction potential of the underlying soils must be evaluated in accordance with Section 1806.4 of the *Massachusetts Code Amendments*.

Site classifications are based on the average density, and hence the ability of the soil to transmit shear waves during a seismic event. The average density is based on the material, both soil and rock, within 100 feet below the building. The site classification is then used to determine the site coefficient and mapped spectral response for a given structure. Since the ground improvement elements increase the density of the loose granular soils and organic materials present below some areas of the site, a single site class can be used.

The applicable seismic design criteria, assuming the use of ground improvement as detailed above, are as follows:

Site Class D : Stiff soil profile

Spectral Response Acceleration at short period, Ss (Table 1604.1)	0.200g
Spectral Response Acceleration at 1 sec., S_1 (Table 1604.11):	0.067g
Site Coefficient, F_a (Table 1613.3.3(1)):	1.6
Site Coefficient, F_v (Table 1613.3.3(2)):	2.4
Adjusted spectral response, S_{Ms} (Equation 16-39)**:**	0.320g
Adjusted spectral response, S_{M1} (Equation 16-40):	0.161g

Liquefaction refers to the loss of strength in some saturated soils due to the build up of pore water pressures during cyclic or seismic loading. The soils at this site are not liquefaction susceptible.

Pavement and Parking Areas

Flexible pavement design for standard and heavy duty pavement sections are based on the AASHTO *Guide for Design of Pavement Structures*. The thickness of each course depends on the subgrade strength, traffic, design life, serviceability factors and frost susceptibility. Reference is made to the Commonwealth of Massachusetts Department of Public Works (MADPW) specifications for Bridge and Highway construction, 1988 edition.

In all paved areas, the subgrade should be heavily proofrolled using at least eight passes of a 20-ton vibratory roller operating at maximum amplitude. Where fill is required to attain the desired grade, the ordinary fill should consist of predominately clean granular soil with no heavy concentration of decayable matter or other deleterious material. The fill should be placed in lifts not exceeding 12 inches loose measure and should be compacted to at least 92% modified Proctor density. Adequate precautions to protect the subgrade, as described below, must be implemented.

Should "weak" spots be encountered during the proof rolling operation, they should be investigated by excavating test pits to identify the specific, localized conditions. Unsuitable soils, including organic, deleterious or decayable materials, must be removed at these locations.

The following materials should be used to construct the pavement sections:

	Thickness (inches)	
Pavement Material	Standard Duty	Heavy Duty
Bituminous Concrete Top Course, MA DPW M3.11.03 Table A	1.0	1.0
Bituminous Concrete Binder Course, MA DPW M3.11.03 Table A	2.0	3.0
Processed Gravel for Subbase Course MA DPW M1.03.1	8.0	12.0

The Processed Gravel must consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings and other deleterious materials. The coarse aggregate should have a percentage of wear of not more than 50 when tested by the LA Abrasion Test. Gradation limits for Processed Gravel subbase course must meet the following requirements:

Sieve Size	Percent Passing
3"	100
1½"	70-100
¾"	50-85
No. 4	30-60
No. 200	0-10

Subbase course must be compacted to at least 95 percent of the maximum dry density as determined by the Proctor Test (AASHTO T-99). Bituminous concrete must be placed at the specified temperature range and compacted to at least 95 percent of the Marshall Density for the job mix formula.

It is recommended that the standard duty section, as provided above, be constructed in parking and lightly traveled areas. The heavy duty pavement section should be constructed at primary drives, delivery areas, and other areas subjected to heavy car or truck traffic. Positive site drainage must be provided in all paved areas.

CONSTRUCTION CONSIDERATIONS

The primary purpose of this section of the report is to comment on items related to excavation, foundation construction, earthwork and related geotechnical aspects of the proposed construction. It is written for the Architect and Engineer having responsibility for preparation of plans and specifications. Since it identifies potential construction

problems related to foundations and earthwork, it will also aid personnel who monitor construction activities. Prospective contractors for this project must evaluate construction problems on the basis of their own knowledge and experience in the area, and on the basis of similar projects in other localities, taking into account their proposed construction procedures.

Site Preparation
Site preparation within the selected areas requiring ground improvement will include:

- placement of ordinary fill to where the present site grades are below the proposed working grade
- installation of the ground improvement
- placement of subbase material

Fill soils placed within the ground improvement areas to attain the required grade should consist of predominantly granular soil, free from large particles including boulders or materials that will impede the installation of the ground improvement elements. The granular fill should be sufficiently compacted to provide a stable work platform to support construction equipment. However, the material should not be compacted to a degree that would impede the installation of the ground improvement.

Construction Dewatering
Based on the depth to groundwater encountered in the boring program, it is anticipated that excavations will be conducted above the water table. Since fluctuations in the groundwater table can occur, the contract documents should include provisions for a Contractor designed dewatering system. A dewatering system is required to temporarily lower the water table within the excavation and reduce the water pressures below the excavation so that construction of the pit foundation be constructed in-the-dry.

We anticipate the dewatering system will include pumping from a combination of open sumps, wells, and/or well points. Discharging water through the local drainage system will require a NPDES permit. Our experience has shown that obtaining a permit may require several months and will necessitate groundwater sampling to assess water quality.

Excavation, Handling and Disposal of Fill Soils
The construction documents should include provisions for soil management and require the Contractor to develop, implement, and supervise a Worker Health and Safety Program. The construction phase-specific plan, should incorporate, at a minimum, a general Health and Safety Program to limit safety-related accidents and to promote health in the construction workplace. The Program should include provisions which will limit exposures of workers to contaminants through ingestion, dermal contact and inhalation.

The soil management plan must be developed in cooperation with the project environmental consultant. The contents of the soil management plan will depend upon the nature and character of the fill soils. Disposal and recycling of all classified soils from excavation activities must be performed in general conformance with applicable Federal, State and Local regulations governing Oils and Hazardous Materials (OHMs).

Cuts and Excavations

We expect most of the excavation for the spread footings of each building can be done by open cutting and sloping the sides of the excavation.

All excavations must comply with the Occupational Safety and Health Administration (OSHA) Regulations concerning sloped cuts. The strata encountered in the boreholes can be classified as follows:

Upper layer of Granular Fill:	Type "C" - maximum allowable slope of 1½H:1V
Sand & Gravel:	Type "C" - maximum allowable slope of 1½H:1V

These classifications are provided only as a preliminary construction guide and may not reflect the actual soil conditions encountered during excavation. Soil conditions of sloped or benched cuts should be inspected by a qualified engineer to determine actual soil conditions and allowable slope.

Structural Backfill

Where the fill materials are shallow, requiring less than 2± feet of over-excavation, it is recommended they be removed and replaced with structural backfill. Once removed the exposed subgrade should be heavily proof compacted using a vibratory drum roller having a minimum drum width of at least eight feet and a rated dynamic weight of at least 20 tons. In order to maximize the vibratory densification process, proof-rolling should be performed with the roller operating at maximum amplitude. Each roller pass should be made in a perpendicular direction to one another to ensure full coverage.

Should "weak" spots be encountered during the proof-rolling operation, they should be investigated by excavating test pits to identify the specific, localized conditions. Unsuitable materials, including organic soils, deleterious or decayable materials, must be removed. Where over excavation is required to remove unsuitable materials, all backfill must be placed as structural backfill as defined below.

Imported material used for structural backfill should consist of clean well-graded granular soil or other dense processed aggregate with gradation limits as follows and have no stones larger than 3" (three inches):

Sieve Size	Percent Passing
3"	100
½"	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-8

The material used as structural backfill must be free of organic material, asphalt, loam, snow, ice, frozen soil and other objectionable material. All structural fill, should be placed in 12-inch loose lifts and compacted to a modified Proctor density of 95 % (ASTM D1557). Prior to construction, a sample of the proposed structural fill material should be obtained directly from the source location and tested to assure proper gradation and verify the material is free from oil or hazardous material as defined by the *Massachusetts Contingency Plan* (MCP).

Construction Monitoring

We recommend that you retain Geotechnical Consultants, Inc. to review your foundation and construction plans for compliance with our geotechnical recommendations. We recommend that Geotechnical Consultants, Inc. also be retained to provide construction observation services during construction to prepare reports in order to satisfy the Massachusetts State Building Code's Special Inspections Reporting requirements (refer to Chapter 17). We strongly recommend that Geotechnical Consultants, Inc. be retained to observe and document the following key geotechnical components of construction:

- Site preparation including ground improvement;
- Placement and compaction of fill materials;
- Final preparation of foundation and slab subgrades;
- Placement of all concrete; and
- Erection of structural steel.

Our involvement during construction will allow evaluation of actual conditions exposed during excavation, and to allow a prompt response should unanticipated conditions be encountered. Our involvement will also efficiently facilitate the field-assessment of areas where partial over excavation of existing soils may be warranted, thereby saving the Owner time and money.

LIMITATIONS

This report has been prepared for specific application to the proposed development located at 35-37 and 49 Walnut Street in Wellesley, Massachusetts in accordance with generally accepted geotechnical engineering practices. The recommendations provided herein are based on information of subsurface conditions and proposed construction that is available to us at this time. As the design development progresses, implementation of these recommendations must consider any variations from the currently anticipated construction. The nature and extent of variations in the subsurface conditions between explorations may not be evident until construction. If significant variations appear, it will be necessary to re-evaluate the recommendations presented in this report.

We request that we be provided the opportunity for a general review of the applicable contract drawings and specifications, to determine that our recommendations have been interpreted and implemented as they were intended. If any changes in the nature, design or location of the proposed building is made, we should review the applicability of our recommendations.

It has been our pleasure serving you and we trust that the foregoing and attached are sufficient for your immediate needs. Should you have any questions, or need further assistance, please do not hesitate to contact this office.

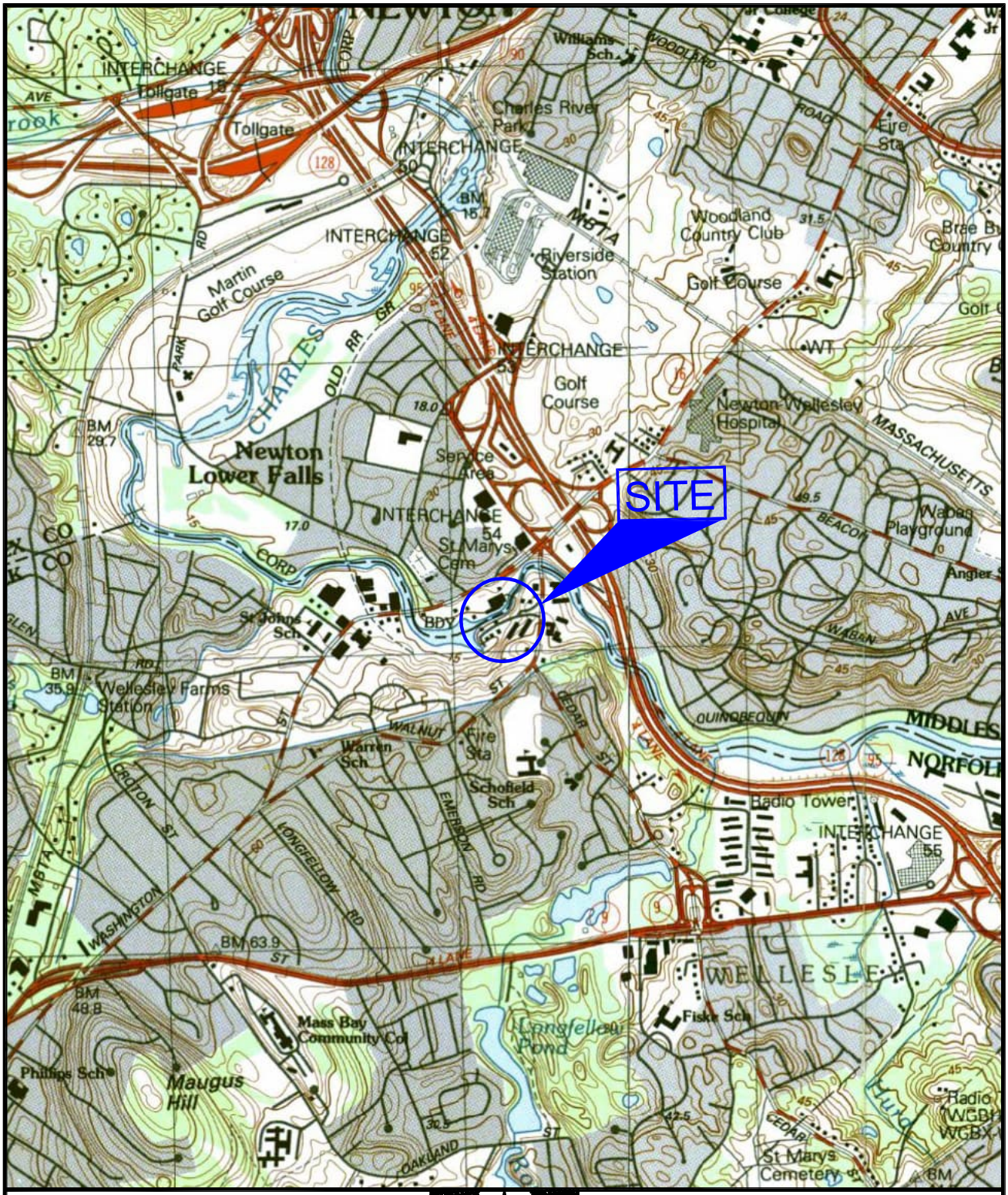
Sincerely,

GEOTECHNICAL CONSULTANTS, INC.

Kayla J. Dooley

Kayla Dooley, P.E.

Dan Kenneally, P.E.
DK/kd
Attachments



35-37 & 49 Walnut Street
Wellesley, Massachusetts

LOCUS PLAN
U.S.G.S. NATICK QUADRANGLE
APPROX. SCALE 1:24 000

Geotechnical Consultants, Inc.
201 Boston Post Road West
Marlborough, MA 01752
(508)229-0900 FAX (508)229-2279

GCI Project # 2245535

Figure 1.

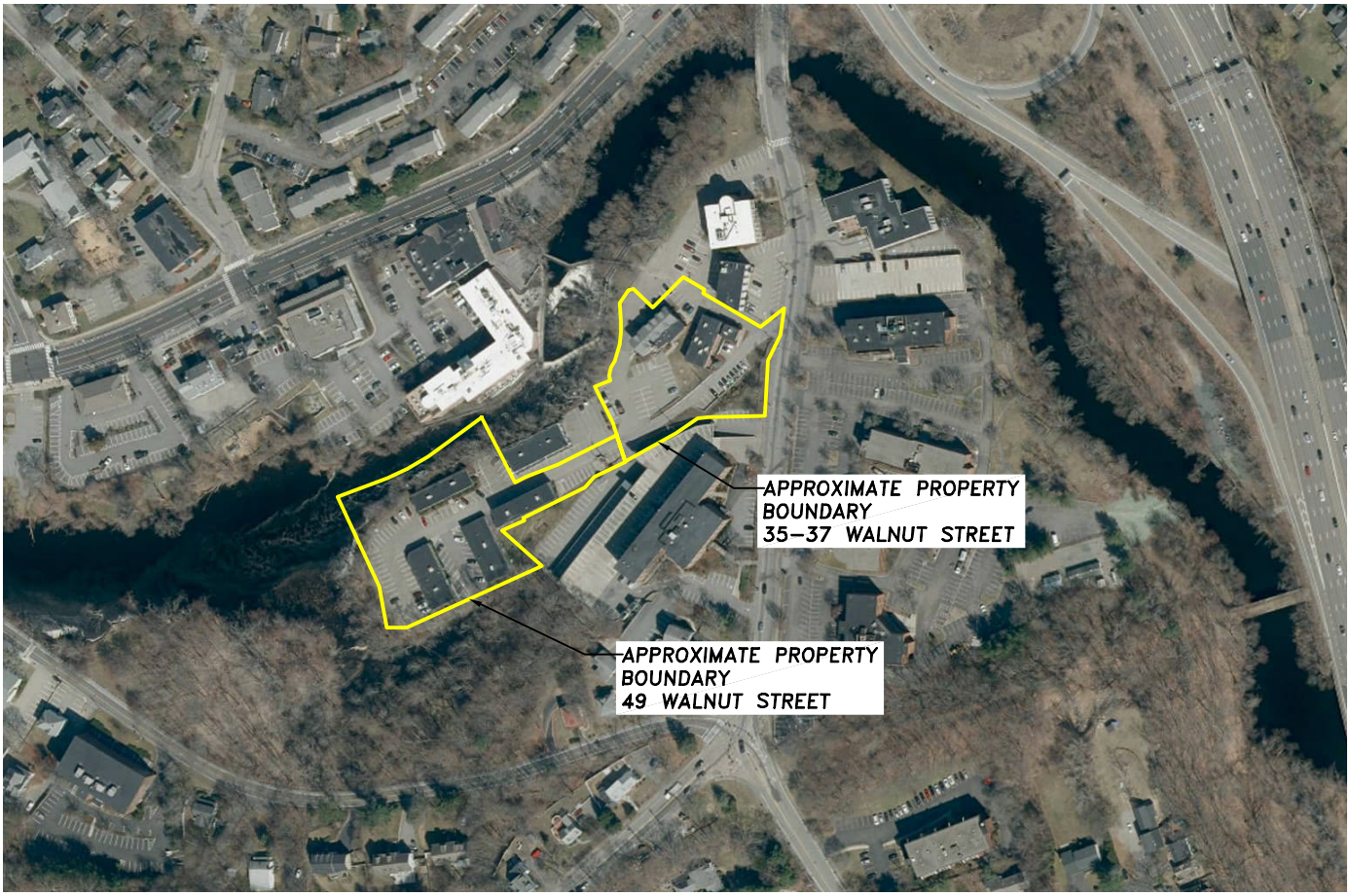
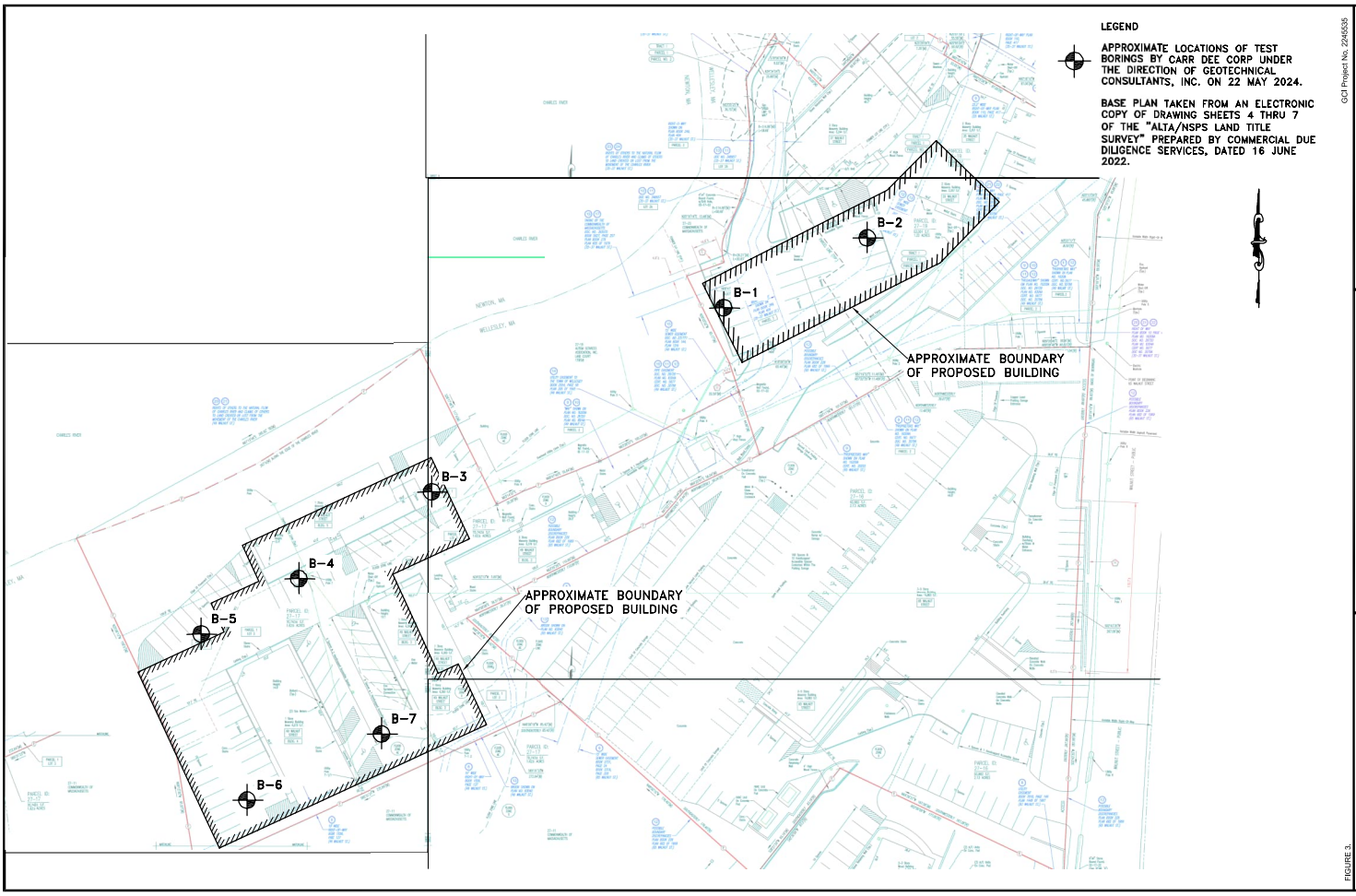


Figure 2.
Color Orthophoto Map

Geotechnical Consultants, Inc.
201 Boston Post Road West
Marlborough, MA 01752
(508)229-0900 FAX (508)229-2279



GCI Project No. 2240535

FIGURE 3.

Geotechnical Consultants, Inc.
201 Boston Post Road West
Marlborough, MA 01752
(508)229-0900 FAX (508)229-2279

LOCATION PLAN

MAY 2024

SCALE: 1" = 60'

Walnut Street
Wellesley, Massachusetts

BORING LOGS

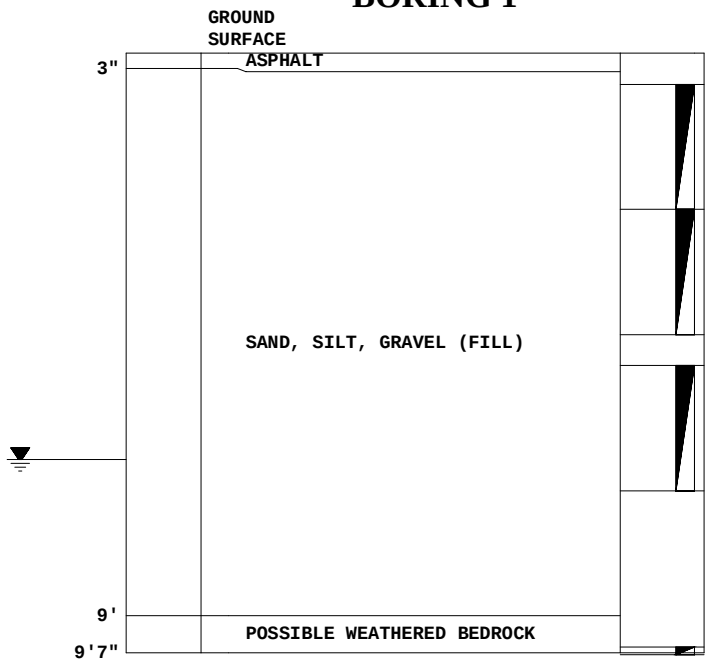
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 1



S#1, 6" to 2'6"
(5-10-17-35)
RECOVERED 10 in.

S#2, 2'6" to 4'6"
(11-9-4-7)
RECOVERED 3 in.

S#3, 5' to 7'
(6-4-4-8)
RECOVERED 3 in.

S#4, 9'6" to 9'7"
(100/1)
RECOVERED 1 in.

WATER LEVEL 6'6"
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 9'6"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

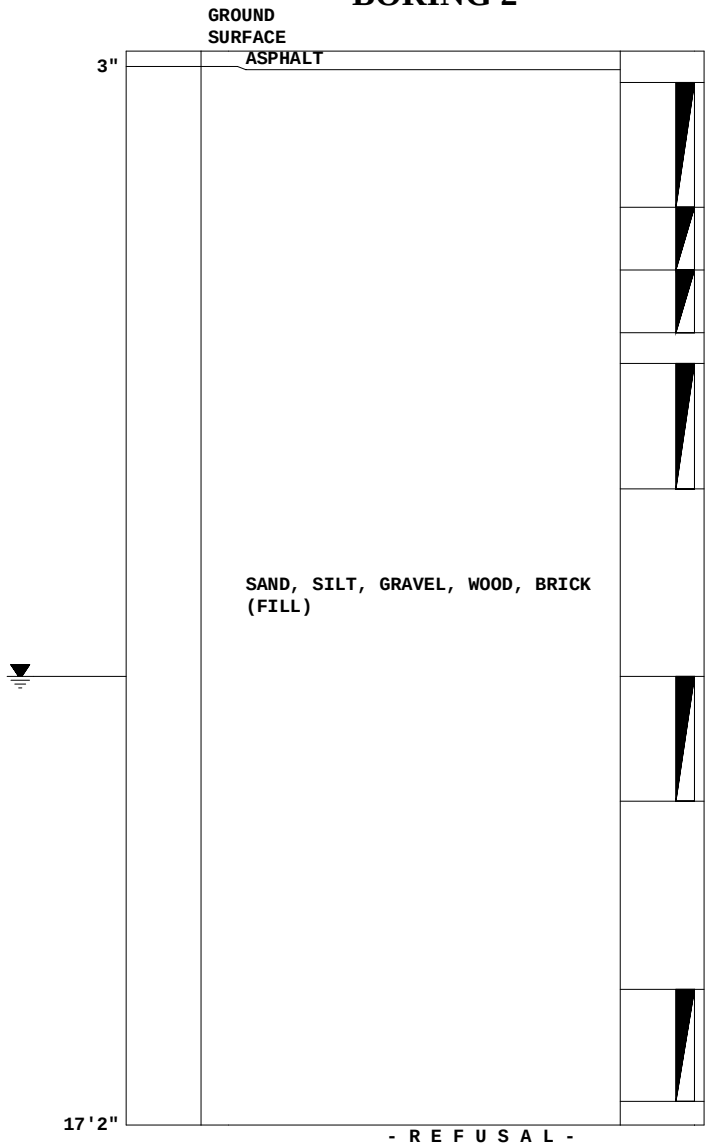
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 2



WATER LEVEL 10'
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 17'1"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

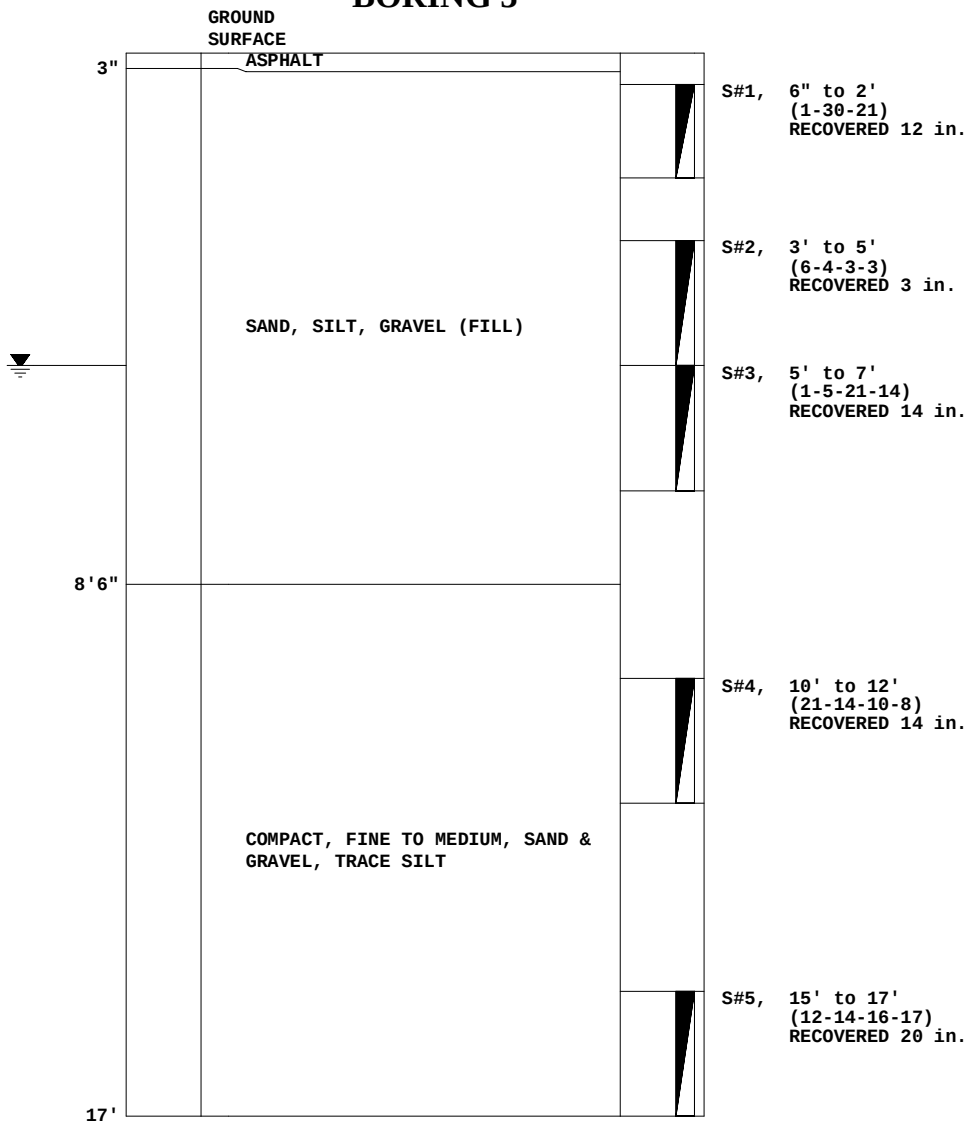
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 3



WATER LEVEL 5'
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 15'0"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

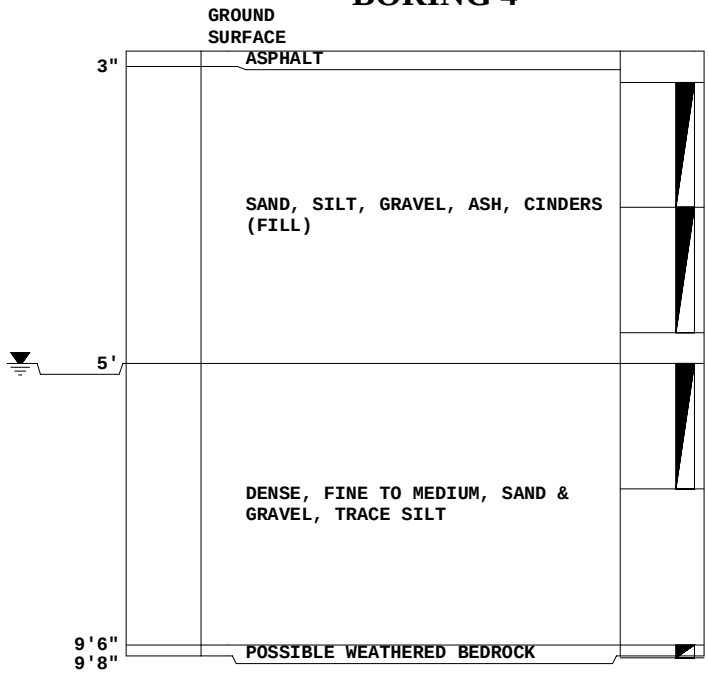
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 4



WATER LEVEL 5'
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 9'6"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

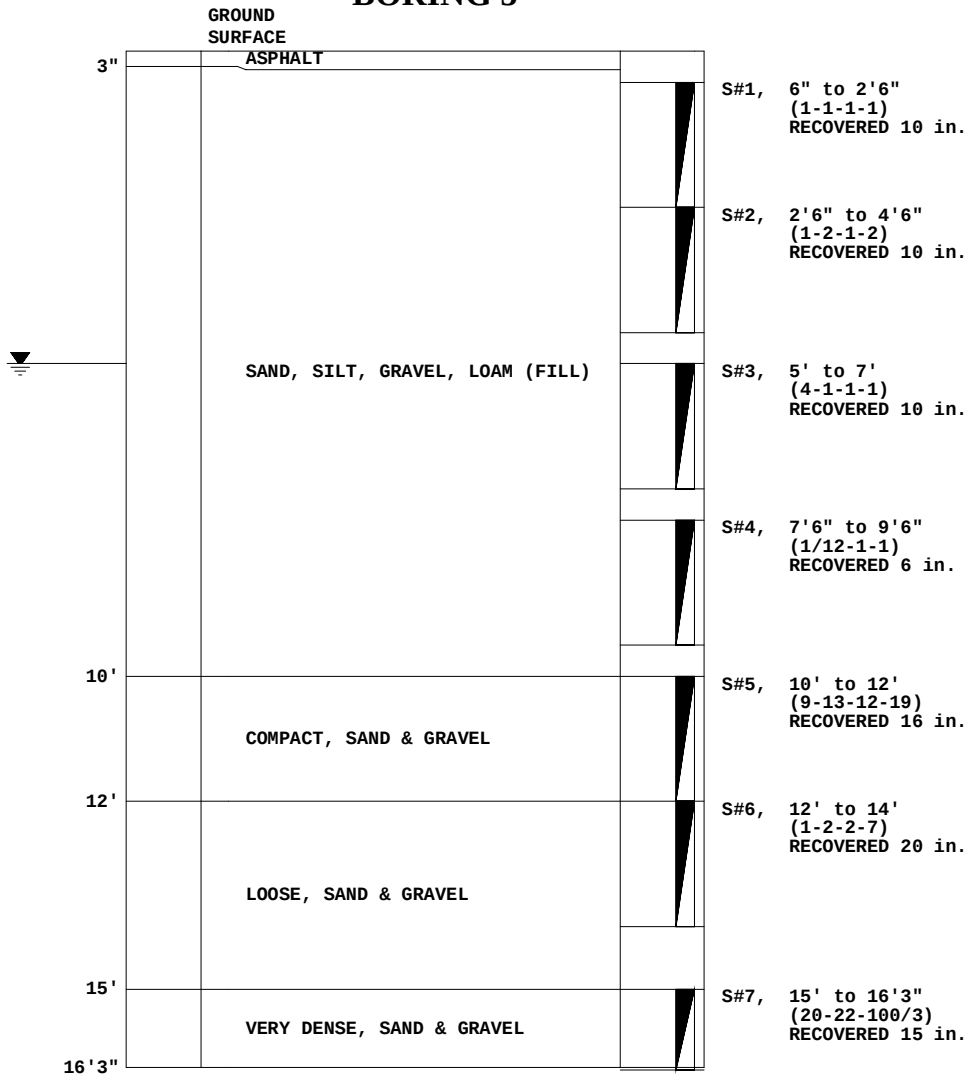
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 5



WATER LEVEL 5'
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 15'0"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

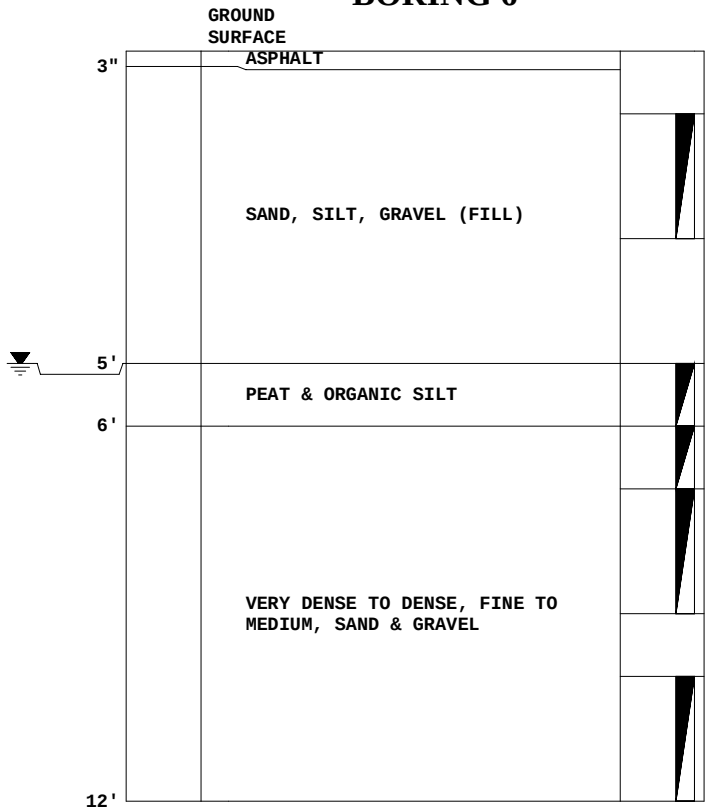
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 6



S#1, 1' to 3' (3-5-5-3) RECOVERED 16 in.

S#2, 5' to 6' (3-1) RECOVERED 6 in.

S#2A, 6' to 7' (10-50) RECOVERED 6 in.

S#3, 7' to 9' (56-22-16-15) RECOVERED 12 in.

S#4, 10' to 12' (18-22-23-50) RECOVERED 16 in.

WATER LEVEL 5'
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 10'0"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

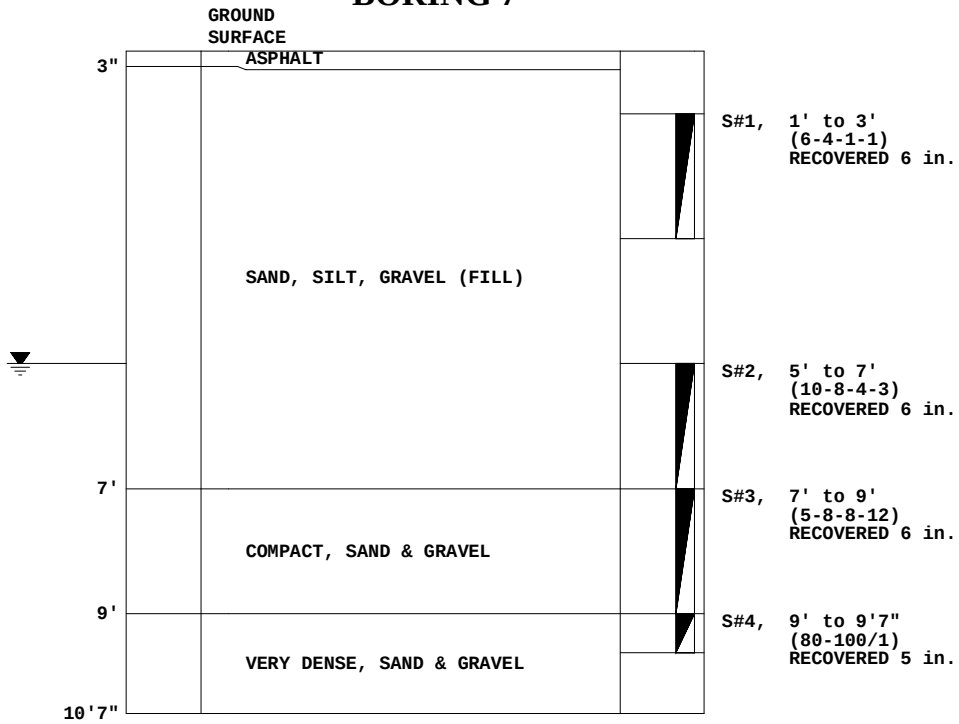
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: GEOTECHNICAL CONSULTANTS, INC., MARLBOROUGH, MA Date: 5-23-2024 Job No.: 2024-80

Location: 49 WALNUT ST., WELLESLEY, MA Scale: 1 in.= 3 ft.

BORING 7



WATER LEVEL 5'
SIZE OF AUGERS: 2 1/4"I.D., LENGTH: 10'0"
DRILLER: S. DESIMONE JR., INSPECTOR: K. DOOLEY
DATE STARTED & COMPLETED: 5-22-2024

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).