



# GROTTO ENGINEERING ASSOCIATES, LLC

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April 26, 2024

Nancy Tran  
Land Use Board Secretary  
Borough of Highlands Land Use Board  
151 Navesink Ave.  
Highlands, New Jersey 07732

Subject: Completeness Review No. 3  
Home & Land Development Corp.  
14 & 32 North Peak Street  
Block 35, Lots 8 & 9  
Borough of Highlands, Monmouth County, New Jersey  
Our File No.: PR-0290

To whom it may concern:

This letter-report has been prepared to address comments issued in the following reports:

1. HLPB2022-10 - COMPLETENESS REVIEW #3 – (February 20, 2024) – Carmela Roberts, P.E., C.M.E., C.P.W.M., Land Use Board Engineer

The comments included in the aforementioned report are repeated below followed by our response in **bold** typeface. Items identified as “Provided” or “Not applicable” in the report have been omitted for brevity.

➤ **COMPLETENESS REVIEW #3 – (February 20, 2024)**

II. CHECKLIST ITEMS:

2. All existing structures, wooded areas, and topographical features, such as slump blocks, within the portion to be subdivided and within seventy-five (75) feet thereof.

*Partially provided. Existing wooded areas shall be indicated on the plan.*

The Applicant has indicated the limit of wooded areas have been field verified and labeled on the plan. Noted in Applicant’s response letter.

The existing dwellings and retaining walls within 75 feet of the subject properties are not shown on the plans. Please provide.

**This office has reviewed aerial imagery and other data in an attempt to provide the “existing dwellings and retaining walls within 75’ of the subject project.**

8. The existence and location of any utility or other easement.

*Not provided. Dwellings which have recently been demolished existed on site. The applicant shall confirm the existence and location of any utilities or other easements.*

The 10 ft wide right-of-way adjacent to the southeasterly property line of both lots is not dimensioned or labeled on the Minor Subdivision.

The Applicant has updated the plans to indicate utility poles (for electric) on the northerly side of North Peak Street, gas and water line on North Peak Street and an additional water meter on Lot 9.

The existing water and gas lines extending into the lots including any meters and cleanouts must be shown on the Minor Subdivision and potential grading plan.

Confirm that there are no utility easements on the existing lots. A portion of the existing pavement and utilities are not within the North Peak Street 40 ft. wide R.O.W.

**The 10 ft wide right-of-way has been dimensioned and labeled.**

**Proposed water and gas connections have been added to the utility plan.**

**Existing water and gas lines have been shown on the plans and shall be field verified by the contractor prior to construction.**

**There are currently no utility easements on the existing lots. Proposed pavement and utilities are located within the North Peak Street 40 ft. wide R.O.W.**

11. Certification from the Tax Collector that all taxes and assessments for local improvements on the property have been paid up to date.

*Not provided. The Applicant's transmittal letter has indicated this item was provided, however was not included as part of the submission to this office. We have no objection to the Board deeming this item complete, provided the Borough confirms receipt of the certification.*

*Acceptable*

**Comment noted.**

14. Zone district boundary lines, if any, on or adjoining the property to be subdivided and a schedule indicating the required minimum lot area, lot width, lot depth and front, rear and side yards of each zone district located on the property.

*Provided.*

*Incomplete. The latest submission does not provide existing bulk requirements and proposed lot coverage. Refer to plan sheet 3 of 3.*

**This office has calculated and shown various bulk requirements and proposed conditions, including lot coverage. Refer to plan sheet 1 of 8.**

15. A wetlands statement provided by a qualified expert.

*Not provided. We have no objection to the Board deeming this item complete pending confirmation from applicant prior to hearing.*

*Provide a statement by a licensed engineer or other authority indicating that wetlands are or are not present on the property.*

**This office has reviewed available state mapping, which does not depict wetlands being present on this site.**

16. The Board reserves the right to require a feasible sketch plan layout of remaining land not being subdivided if it is deemed necessary.

*The applicant has provided a generic house layout that demonstrates the sizes of proposed homes and the need for any additional setback relief.*

Not acceptable. The proposed lots have many engineering issues that must be addressed by a licensed civil engineer. A licensed engineer is required to certify that the developed sites are designed and will be constructed under the appropriate standard of engineering practices and the safety of the homeowner and adjoining properties.

**This office has prepared and provided plot plans for the development of the proposed lots. Changes have been made to the plan to bring the site design into conformance with applicable engineering practices and standards of care.**

#### IV. GENERAL COMMENTS

- a. The plans show adjustments to the existing gutter and roadway within North Peak Street, including installation of a retaining wall and storm drainage improvements within the existing cartway area. It is unclear how the proposed lots will provide the required parking and access to the dwellings from the street. The layout as proposed may require variance relief and approval from the Governing Body.

Partially Provided by Applicant.

The Applicant states, "Each dwelling will have one car garage and 10' wide driveway providing required parking and access to North Peak Steet."

Off-street parking is determined by the number of bedrooms, which is unknown.

**The proposed driveways will provide adequate access to each site. Each lot shall have two parking spaces; one at the bottom of the driveway, and the other in the garage.**

- b. It appears that the applicant has previously demolished structures on both lots and performed clearing and some grading. The limit of disturbance already performed should be shown on the plans.

Partially Provided by Applicant. Refer to comment c.

**An existing one-and-a-half story dwelling, deck, shed, retaining walls, various patios, walkways, and other concrete surfaces were demolished. The limit of disturbance was no greater than is being proposed and shown on the Soil Erosion and Sediment Control Plan (sheet 7 of 8).**

- c. The limit of grading/disturbance for the proposed improvements appears to comprise the entire property limits, including some off-tract elements.

Partially Provided by Applicant.

The plan indicates a wood line to the north and east of the property. The extent of disturbance is unknown without knowing the wood line before clearing.

Please indicate the previous wood line or provide a note on the plans.

Testimony should be provided to address any concerns with adjoining property owners pertaining to off-tract disturbance.

The current purpose of Sheet 2 is unclear and is not as complete as the previous submission.

**A proposed limit of disturbance has been added to the plan. The limit of disturbance was no greater than is being proposed.**

**Proposed disturbance to adjoining property owners has been eliminated. Disturbance shall only occur on Lots 8 & 9 and within the Borough's right-of-way.**

- d. The applicant also notes the installation of a retaining wall within the unnamed 10' right of way to the south of the tracts, with no limit of disturbance or grading shown. The applicant shall provide evidence regarding title to this right of way, and under what authority they propose to install said improvements.

The Applicant has noted in their response letter that it will be addressed during testimony.

Acceptable.

**Comment noted. Testimony to be provided.**



- e. It is my understanding that the prior dwelling on lot 9 utilized a septic system. The location and disposition of this should be shown on the plans.

Partially provided by Applicant.

Sheet 2 indicates the septic tank and one cleanout on existing Lot 9. The disposal bed and service lateral, as part of the system, is requested to be shown. Please provide documentation from the Health Department that the system has been or will be properly removed.

**This office defers to the Applicant regarding the necessary documentation.**

- f. It is presumed that the proposed dwellings will have to connect into the Borough's sanitary sewer system located in Valley Avenue. The applicant shall review and identify their proposed method of connection, which may involve use of the 10' right of way previously mentioned.

The Applicant proposes to provide 4-inch lateral connections to the rear of the dwellings to the 10 ft right-of-way. A 6-inch sanitary sewer line will be constructed within the 10 ft wide right of way and connect to an existing sewer manhole located on Valley Avenue. A profile of the lateral connection from the proposed dwelling to the manhole connection on Valley Avenue is required to demonstrate acceptable coverage, depths, and slopes. As noted in Comment D, the applicant shall provide evidence regarding title to the 40 ft. wide right of way, and under what authority they propose to install said improvements.

**A profile of the lateral connection from the proposed dwelling to the manhole connection on Valley Avenue has been provided on sheet 4 of 8. Monmouth county 2' contours were used for areas not within the surveyed information.**

- g. In addition to the above, the applicant shall identify means of utility connections for water and electric at a minimum and identify their locations on the plans.

Provided by Applicant.

Water, gas, and electric service connections are shown within North Peak Street on the plan.

A utility easement may be required for the existing gas service on Proposed Lot 8, which extends to Proposed Lot 9.

**Comment noted.**

- h. The applicant shall document compliance with the Steep Slope Ordinance found at 21-84.B and provide calculations as required therein. In addition, means and methods for controlling velocity and rate of stormwater runoff shall be documented.

Continuing Comment – The applicant is requesting variance relief from the Steep Slope Ordinance. The property contains slopes greater than 20%. Considering this factor and the extent of improvements proposed, I recommend the applicant demonstrate compliance with all requirements of 21-84B prior to being deemed complete.

Not provided by Applicant.

This review agrees with the continuing comment.

Applicant continues to request variance relief or a waiver from the Steep Slope Ordinance.

Applicant states, in their response letter, “The grading shown on the plan was obtained from a plan prepared by Eastern Civil Engineering. The Applicant is requesting a waiver from compliance to the steep slope ordinance since the proposed grading eliminates all slopes greater than 15%.”

Applicant also states, in their response letter, “Stormtech Chambers will be installed in the rear yards of each property. The chamber will temporarily store roof runoff during a storm event to control the stormwater runoff. The bottom of the chambers are open and are installed on clean stone which allow the stored water to percolate into the ground. Roof leaders will be hard piped directly to the chambers. Details, size, and specification will be provided by the applicant.”

The Applicant is requested to provide a slope area calculation table noting existing and proposed areas of slopes per criteria. The analysis for the Slope Ordinance not only pertains to the subject property but also 100 ft from the boundary of the property. There are slopes greater than 15% as shown on Sheet 2 and the proposed front yard grading on Sheet 3.

**This office has prepared a slope analysis plan, see sheet 5 of 8. Additionally, Stormtech (SC-740) Chamber Systems will be installed in the rear yards of each property. The chambers will temporarily store roof runoff during a storm event to control the stormwater runoff. The bottom of the chambers are open and are installed on clean stone which allows the stored water to percolate into the ground. Roof leaders will be hard piped directly to the chambers. Details, size, and specification may be provided upon request.**

- i. The proposed grading will need to be revised. The proposed contours slope down towards the dwelling, garage, and rear yards. Runoff needs to be redirected away from the dwelling and garage. No runoff is permitted on adjoining properties.

The proposed retaining wall may impede runoff. Provide information on how the runoff will be addressed in the rear yards and without any impact on the adjoining lots.

**The grading plan has been revised. Proposed contours demonstrate that the ground surface will slope down from the street and into a swale at the front and between both yards. Driveway runoff is directed towards the same swale. The proposed retaining walls should not impede runoff. No significant increase in runoff is anticipated, and no negative impacts to downstream facilities or property are expected.**

- j. The proposed retaining wall is very close to the existing retaining walls for Lot 7. The proposed height of the retaining wall in the south corner of Lot 8 is 7.7 ft higher than that of the existing retaining wall on Lot 7.

There are also significant retaining wall heights up to 13.5 ft.

More information is required to determine the impact the new retaining walls will have on the existing dwellings and walls.

**Final retaining walls will be coordinated and designed per applicable standards.**

- k. Please explain the purpose of the proposed retaining wall located in the existing 10 ft. wide right-of- way.

**The proposed retaining wall facilitates the installation of the 6" sanitary sewer. By leveling the grade along that portion of the 10' R.O.W., adequate pipe cover is maintained. This will also result in less disturbance to existing grade and safer conditions during the installation process.**

- l. It is recommended that a performance bond be required for improvements within North Peak Street and the sanitary sewer extension along the 10 ft wide right-of-way.

**This office defers to the Applicant or Applicant's attorney regarding the posting of bonds.**

#### **END OF REVIEW COMMENTS & RECOMMENDATIONS**

If I can be of assistance during the review of the plans or this report, please do not hesitate to contact me.

Very truly yours,

**GROTTO ENGINEERING ASSOCIATES, L.L.C.**



Frank W. Farrell, P.E., C.M.E.  
Principal

# **STEEP SLOPE AND SLUMP BLOCK PERMIT APPLICATION REPORT**

**FOR**

**HOME & LAND DEVELOPMENT CORP.  
14 & 32 North Peak Street**

**BLOCK 35, LOTS 8 & 9  
BOROUGH OF HIGHLANDS  
MONMOUTH COUNTY, NEW JERSEY**

**April 26, 2024**



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A handwritten signature in black ink, appearing to read 'Frank W. Farrell', is written over a horizontal line.

**Frank W. Farrell, P.E., C.M.E.**  
New Jersey Professional Engineer, License No. GE51556

## **INTRODUCTION**

This report has been prepared pursuant to the Borough Of Highlands, Monmouth County, New Jersey, Ordinance Section 21-84B – Steep Slopes and Slump Blocks (Ordinance), for the development of properties identified as 14 and 32 North Peak Street, Lots 8 & 9, of Block 35. The Ordinance is included herein below followed by a corresponding compliance statement or calculation in **bold typeface**.

## **APPLICATION**

### **§ 21-84B. STEEP SLOPES AND SLUMP BLOCKS. [Ord. #O-09-23 § 6; amended 6-15-2022 by Ord. No. O-22-09 ]**

- A. **Areas Covered.** The areas of Highlands covered by this section (referred to hereafter as "slope area") are any properties south of Shore Drive and the Highlands-Sea Bright Bridge, including Blocks 1 through 29, inclusive, Blocks 34 through 38, inclusive, Blocks 40, 60, and 61, and Blocks 103 through 120, inclusive, as described by the Tax Assessment Map of the Borough of Highlands.

**Site is within Block 35; this ordinance shall apply.**

- B. **Permit requirement exceptions.** A slope area permit is required for any work or disturbance affecting a slope area, except when the area of the proposed work or disturbance:

**Does not apply. Application for a slope area permit is required.**

- C. **Application for permit.** An application for a slope area permit shall be made to the Highlands Construction Official. The application shall include at least:
1. Property description by Tax Map block and lot, and by street address if available.

**Tax Map sheet 10, Block 35, Lots 8 & 9, 32 & 14 North Peak Street.**

2. Scalable drawing of location of proposed work or disturbance along with existing and proposed topography. This drawing shall also include a delineation of the proposed limit of disturbance with area calculation.

**Provided in plan set, sheet 6.**

3. Areas clearly identified showing the following, as measured between ten-foot contour lines: Area 1, 30% or greater; Area 2, 20% but less than 30%; Area 3, 15% but less than 20%; Area 4, less than 15%.

**Provided on sheet 4, slope analysis. Ten-foot contour lines have been used, starting from elevation 122' and ending at elevation 162'.**

4. Calculation, in square footage and acres, of amount of area in the various slope categories listed above. All applications shall contain calculations demonstrating compliance with Subsections E1 through E4 of this section.

	1	2	3
	Slopes	Existing Areas (sf)	
		Lot 8	Lot 9
A	30% or greater	2,651	52
B	20% but less than 30%	3,371	2,222
C	15% but less than 20%	1,535	3,197
D	Less than 15%	219	178

**Areas of various slope categories have been acquired using the surface analysis tools provided in Autodesk Civil 3D 2024.**

5. Statement of proposed work or disturbance.

**The applicant wishes to construct two single-family dwellings on two adjacent lots.**

6. Any other additional information as is reasonably necessary to make an informed decision, including, but not limited to, the items listed below and in Subsection F:

**All information as is reasonably necessary to make an informed decision is included herein and shown on the accompanying drawings.**

7. Where site plan or subdivision approval is required, the following exhibits shall also be submitted:
- Topographic map showing existing contours at two-foot intervals.

**Topographic mapping is provided and includes existing and proposed contours at one-foot intervals.**

- Extent and erosion potential of exposed soils.
- Length, steepness and surface roughness of exposed slopes.
- Resistance of soil to compaction and stability of soil aggregates.
- High water table, water infiltration capacity and capacity of soil profile.
- Chemical, physical and biological nature of subsurface soils.

**The USDA Web Soil Survey Soil Map and Map Unit Description showing the site and the soil type (PhbE—Phalanx loamy sand, 10 to 25 percent slopes) are included in this report to satisfy items 7b thru 7f.**

- Type and location of construction activity, including the amount of site grading, and depth of such grading.

**See submitted Soil Erosion and Sediment Control Plans**

- h. The time period of exposure of erodible soils during construction.

**See submitted Soil Erosion and Sediment Control Plans**

- i. The area and density of woodlands and forest, within the construction site and on contiguous lands for a distance of 200 feet, or such other distance as deemed appropriate by the Borough Engineer. All significant tree specimens four inches or greater in diameter, measured at four feet above the ground; all dogwood, American holly, and mountain laurel; and all other vegetation on slopes 15% or greater shall be indicated on the application plans as well as physically marked on the construction site.

**Approximate tree line has been shown on plans per survey/subdivision by others.**

- j. The extent of impervious surface to be constructed.

**Lot 8: 3,036 sf (39.0%) proposed**

**Lot 9: 1,936 sf (34.2%) proposed**

- k. Location of construction access roads.

**Not applicable, proposed driveways shall serve as construction access. No additional roads are required, see Soil Erosion and Sediment Control Plan.**

- l. Calculation of amount of site grading, to include a cut-and-fill balance sheet, including cross sections, and indicating, where applicable, the volume of and source of off-site fill.

**Cut-and-fill cross sections and calculations are provided on sheet 6 of the accompanying plans. Source of fill is to be determined.**

- m. Extent of on-site erosion sediment control measures, during and after construction and until any affected area is stabilized.

**See Soil Erosion and Sediment Control Plan.**

- n. Any other information as is reasonably necessary to make an informed decision.

**The information supplied herein is considered to be sufficient.**

D. Application review and standards of approval.

- 1. The Borough Engineer shall review every slope area application to determine whether the proposed work or disturbance may have a detrimental impact upon any slope area. Such review shall include at least an on-site inspection.

**Comment noted. This office defers to the applicant to provide permission to access the property for the purpose of performing an on-site inspection.**

2. The Borough Engineer shall thereafter approve only those applications where the proposed work or disturbance will:
  - a. Have no detrimental impacts.

**The proposed development plans include soil erosion and stormwater management provisions and will improve the area by reducing the extent of steeply sloped areas, mitigating stormwater runoff to neighboring properties. No adverse impacts to downstream properties or facilities is anticipated.**

- b. Control velocity and rate of water runoff so that such velocity and rate are no greater after construction and development than before, and are within tolerances deemed safe by the Borough Engineer, and the project or site plan complies with all other provisions of the Borough Code and Article XXIV of the Land Use Volume of the Borough Code, Flood Damage Prevention.

**In the existing condition, stormwater runoff is conveyed across the existing site and is not controlled. Grading and stormwater management measures such as Stormtech chambers are proposed to control capture the roof runoff from the proposed dwellings. The velocity and rate of stormwater runoff will be controlled such that they are no greater after construction than in the predevelopment condition.**

- c. Minimize stream turbidity and changes in flow.

**The existing site has no controls to minimize the effects of stormwater runoff or erosion. Grading and stormwater management measures such as Stormtech chambers are proposed to control capture the roof runoff from the proposed dwellings.**

- d. Protect environmentally vulnerable areas.

**No environmentally vulnerable areas have been identified on site. The proposed development will minimize impacts to neighboring and downstream areas thereby protecting any existing environmentally vulnerable areas, should they exist.**

- e. Stabilize exposed soils both during and after construction and development.

**See submitted Soil Erosion and Sediment Control Plans**

- f. Prevent soil slippage.

**See submitted Soil Erosion and Sediment Control Plans. The plans for the proposed retaining walls will be designed by others to the appropriate geotechnical standards for same.**

- g. Minimize number and extent of cuts to prevent groundwater discharge areas to underlying soils.

**The extent to which cuts are proposed is limited to those areas necessary to facilitate the construction of the proposed dwellings.**



- h. Preserve the maximum number of trees and other vegetation on the site and avoid disturbance of the critical hillside, slope and forest areas.

**There are no significant existing trees or vegetation on the site. No forest area is being disturbed.**

- i. Control water infiltration at the top of the slope and thus decrease the tendency for shear failure and erosion.

**No changes to the top of slope are proposed.**

- j. Control the growth of vegetation, which is detrimental to slope stability and promote the establishment of plant species which add to the stabilization of the slope.

**See submitted Soil Erosion and Sediment Control Plans**

- k. Control construction techniques to mitigate damage to steep slopes at the time of greatest vulnerability.

**The proposed development plans have been designed with appropriate soil erosion and sediment control measures in accordance with Ordinance provisions D2.c through k above.**

- 3. The Borough Engineer may impose such conditions upon any approval as said Engineer deems necessary to achieve the purposes of this section. All permanent improvements necessary to achieve the purposes of this section shall require performance and maintenance bonds in forms and amounts to be reviewed and approved by the Borough Engineer and Borough Attorney. Said maintenance bond shall continue for two years after complete stabilization.

**This office defers to the applicant as it pertains to the payment of fees and posting of bonds.**

- 4. Any approval may be subject to the condition that, for safety reasons, the applicant provides and adheres to a detailed construction and inspection schedule, copies of which shall be supplied to the Borough Construction Official for the purpose of monitoring the progress of the work and compliance with the construction schedule. Said approval may be further conditioned upon submission of periodic certifications by the applicant as to compliance with the construction schedule, and, in the event of noncompliance, written assurance as to the nature and time when steps will be taken to achieve compliance with the construction schedule.

**A construction schedule is included on the Soil Erosion and Sediment Control Plans.**

5. If the applicant does not comply with the construction schedule or any other requirements or conditions attached to the approval of the application, and the Borough Engineer or the Borough Construction Official certifies such lack of compliance, the Borough Construction Official shall thereupon revoke approval of the application, after notice to the applicant, and no further work may be performed on such site, with the exception for temporary measures necessary to stabilize the soil and to protect the site from stormwater damage or other hazards created by construction activity on the site.

**Condition noted; informational only.**

- E. Lot size, development density, lot coverage and disturbance. To meet the purposes, goals and standards set forth in this section, in areas of slopes greater than 15%, the applicable provisions of this chapter relating to minimum lot sizes and density of development, and maximum percentage of lot coverage, shall be modified, and limitations including maximum impervious surfaces and maximum lot disturbance shall be added as follows:
  - 1. Minimum lot size; density.

**Does not apply, zone requirements do not include or impose a restriction on density.**

- 2. Determination of maximum lot coverage [1].
  - a. The maximum lot coverage area shall be determined by multiplying the total land area in various slope categories by the following factors, totaling the results and multiplying the result by the maximum lot coverage percentage allowed for the appropriate zone. Slope calculations shall be based on elevation intervals of 10 feet.

Slopes	Factor
30% or greater	0.25
20% but less than 30%	0.50
15% but less than 20%	0.75
Less than 15%	1.00

	1	2	3	4	5	6
	Slopes	Existing Areas (sf)		Factor	Maximum Lot Coverage (sf)	
		Lot 8	Lot 9		Lot 8	Lot 9
A	30% or greater	2,651	52	0.25	663	13
B	20% but less than 30%	3,371	2,222	0.50	1,686	1,111
C	15% but less than 20%	1,535	3,197	0.75	1,151	2,398
D	Less than 15%	219	178	1.00	219	178
E	<b>TOTAL</b>				<b>3,719<sup>[1]</sup></b>	<b>3,700<sup>[1]</sup></b>

The areas for the various slope categories were found using surface analysis tools provided in Autodesk Civil 3D, using 10' contour intervals from elevation 112' to 162'.

The existing land areas per lot for the various slope categories (columns 2 and 3) were multiplied by the factors provided (column 4) to determine the maximum lot coverages (columns 5 and 6).

The maximum lot coverage allowed for the appropriate zone (R-1.01) as found on Schedule I – Bulk and Area Requirements is 70%.

The total areas for Lot 8 and Lot 9 are 7,775 sf and 5,649 sf, respectively.

Therefore, the maximum lot coverage percentages allowed for Lots 8 and 9 are calculated as follows:

**Maximum Lot Coverage for Lot 8:**

$$\begin{aligned}
 3,719 \text{ sf} \times 70\% &= 2,603 \text{ sf} \\
 2,603 \text{ sf} / 7,775 \text{ sf} &= 33.4\% \text{ Maximum Lot Coverage} \\
 \text{Proposed:} & 39.0\%; \text{ Variance Required.}
 \end{aligned}$$

**Maximum Lot Coverage for Lot 9:**

$$\begin{aligned}
 3,700 \text{ sf} \times 70\% &= 2,590 \text{ sf} \\
 2,590 / 5,649 \text{ sf} &= 45.8\% \text{ Maximum Lot Coverage} \\
 \text{Proposed:} & 34.2\%; \text{ complies.}
 \end{aligned}$$

- b. Where the modified maximum lot coverage area is less than the minimum gross floor area required for the proposed building, the minimum gross floor area required shall be the modified maximum lot coverage area.

**Does not apply. No minimum gross floor area is required per “Schedule I – Bulk and Area Requirements” or found in Borough Ordinance §21-85 “R-1.01 District...”**

- 3. The maximum impervious surface area permitted in slope areas shall be determined by multiplying the total land area in various slope categories by the following percentages and totaling the results:

Slopes	Percentage
30% or greater	10%
20% but less than 30%	15%
15% but less than 20%	25%
Less than 15%	35%

	1	2	3	4	5	6
	Slopes	Existing Areas (sf)		Percentage	Max. Impervious Surface (sf)	
		Lot 8	Lot 9		Lot 8	Lot 9
A	30% or greater	2,651	52	10%	265	5
B	20% but less than 30%	3,371	2,222	15%	506	333
C	15% but less than 20%	1,535	3,197	25%	384	799
D	Less than 15%	219	178	35%	77	62
E	<b>TOTAL</b>				<b>1,232</b>	<b>1,199</b>

The existing land areas per lot for the various slope categories (columns 2 and 3) were multiplied by the percentages provided (column 4) to determine the maximum impervious surface area permitted in the various slope categories for each lot (columns 5 and 6).

Totaling the result provides 1,232 sf for Lot 8 and 1,199 sf for Lot 9.

The total areas for Lot 8 and Lot 9 are 7,775 sf and 5,649 sf, respectively.

**Maximum Impervious Surface Area for Lot 8:**

1,232 sf / 7,775 sf = Permitted: 15.8% (maximum)  
Proposed: 39.0%; variance required.

**Maximum Impervious Surface Area for Lot 9:**

1,199 sf / 5,649 sf = Permitted: 21.2% (maximum)  
Proposed: 34.2%; variance required.

4. The maximum lot disturbance shall be no greater than 130% of the maximum impervious surface permitted for the lot.

**Maximum Lot Disturbance for Lot 8:**

7,775 sf x 70% = 5,442 sf  
5,442 sf x 130% = Permitted: 7,075 sf (maximum)  
Proposed: 7,775 sf; variance required.

**Maximum Lot Disturbance for Lot 9:**

5,649 sf x 70% = 3,954 sf  
3,954 sf x 130% = Permitted: 5,140 sf (maximum)  
Proposed: 5,649 sf; variance required.

5. No disturbance or improvements shall be permitted in the areas within 15 feet of the top of slope and no structures shall be located within 25 feet of the top of slope; nor shall there be any disturbance within 10 feet of the toe of the slope or any structures located within 15 feet of the toes of the slope.

**There is no clear top or bottom of slope boundary on the site or proximate thereto. Therefore this subsection is not applicable.**

6. Setbacks of all structures necessary for slope area stabilization shall be sufficient to allow for any future maintenance that may be necessary.

**Retaining walls shall comply with § 21-65.9.B: Wherever a change in final grade results in slopes in excess of 3:1... or wherever it is determined that slopes will not be stable or that erosion will occur, retaining walls shall be used which shall be of a permanent, maintenance-free design.**

**As the walls shall be designed to be maintenance-free, future maintenance of same shall not be necessary. However, a 10 foot unnamed easement exists along the rear lot line, allowing access up from Valley Avenue. The slopes will also be reduced in the unnamed easement as a result of this project to increase the accessibility/usability of same.**

7. All land required to be maintained as permanent open space shall be indicated as such on any approved plans.

**Does not apply.**

- F. Environmental appraisal and applicability.
  1. When site plan or subdivision is required, an environmental impact report or request for waiver shall be prepared. The Borough Engineer shall review and approve the report in accordance with specifications and procedures required by this section.

**A waiver is requested for the Environmental Impact Report.**

2. No application for slope area permit shall be approved unless it has been affirmatively determined, after an environmental appraisal, that the proposed project:
  - a. Will not result in a detrimental impact on the environment; and
  - b. Has been conceived and designed in such a manner that it will not significantly impair natural processes.

**The proposed development plan has been designed such that the proposed construction shall not result in detrimental impact on the environment, nor will it significantly impair natural processes.**

- G. Review and inspections fees. The applicant shall deposit an initial application filing fee of \$425 with the Chief Financial Officer. If additional escrow fees are required, the applicant shall deposit with the Chief Financial Officer an amount equal to the estimated review fee, as determined by the Borough Engineer. Inspections shall be required before, during stabilization and upon completion of the work or disturbance, during and for two years after complete stabilization, or for any other reasonable time, as determined by the Borough Engineer, to insure the purposes of this section are met. No permit will be issued until a deposit is placed with the Chief Financial Officer, equal to the estimated inspection fee, as determined by the Borough Engineer. If additional inspection fees are required, the applicant shall deposit with the Chief Financial Officer an amount equal to the new estimated inspection fee before any work can continue. The inspection fee deposit account shall remain for two years after complete stabilization. Any deposit accounts shall be maintained at levels sufficient at all times to cover all estimated fees or work may be halted. The Chief Financial Officer will keep the Borough Engineer aware of account balances as necessary.

**This office defers to the applicant as it pertains to the payment of fees and posting of bonds.**

- H. Municipal liability. The granting of any permit or approval in any slope area shall not constitute a representation, guarantee or warranty of any kind by the Borough, Borough Engineer, Borough Attorney, Construction Official, or by any other official, employee or representative thereof of the practicability or safety of any structure, use or other plan proposed, and shall create no liability upon, or a cause of action against, such public body, official or employee for any damage that may result pursuant thereto.

**Condition noted; informational only.**

- I. Penalties. In addition to penalties already provided in Section 1-5 of the Borough Code, the Court may order any person convicted of violating this section to pay the Borough all costs for and associated with necessary stabilization or corrective measures, as determined by the Borough Engineer.

**Condition noted; informational only.**

- J. Appeal. The Land Use Board shall have the power to hear and decide appeals where it is alleged by the applicant that there is error in any order, requirement, decision (including review and inspection fees under Subsection G) or refusal made by the Borough Engineer based on or made in the enforcement of this section. All such appeals under this section from the decisions of the Borough Engineer shall be taken within 20 days by filing a notice of appeal with the Borough Engineer specifying the grounds of such appeal. The Borough Engineer shall immediately transmit to the Land Use Board all papers constituting the record upon which the action appealed from was taken. All such appeals shall be heard by the Land Use Board upon notice given by the applicant as required by Section 21-11 of the Land Use Volume of the Borough Code. The Land Use Board may permit, or require, the record on appeal to be supplemented with such documents or other evidence or information as are reasonably necessary to make an informed decision as to whether the requirements of this section have been met.

**Condition noted; informational only.**

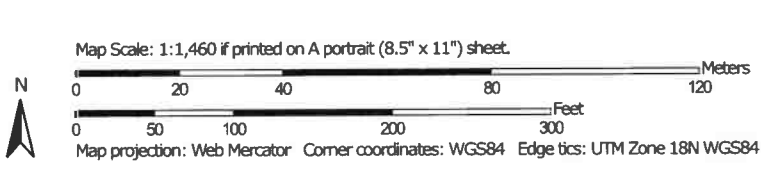
## **CONCLUSION**

The proposed development has been designed to comply with the Borough's Ordinance Section 21-84B – Steep Slopes and Slump Blocks to the maximum extent practicable. Variances identified hereinabove are requested. It is our opinion that said variances can be granted without significant impact to public health, safety, and welfare; without detriment to the environment; and without adverse impacts to downstream properties or facilities.

Soil Map—Monmouth County, New Jersey



Soil Map may not be valid at this scale.



## MAP LEGEND

- Area of Interest (AOI)
- Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot

- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Water Features**
- Streams and Canals
- Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads
- Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Monmouth County, New Jersey  
 Survey Area Data: Version 17, Aug 29, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 9, 2022—Oct 16, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PhbC	Phalanx loamy sand, 5 to 10 percent slopes	0.8	8.4%
PhbE	Phalanx loamy sand, 10 to 25 percent slopes	8.3	91.6%
<b>Totals for Area of Interest</b>		<b>9.1</b>	<b>100.0%</b>

## Monmouth County, New Jersey

### PhbE—Phalanx loamy sand, 10 to 25 percent slopes

#### Map Unit Setting

*National map unit symbol:* 4j8h  
*Elevation:* 0 to 360 feet  
*Mean annual precipitation:* 28 to 59 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 161 to 231 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Phalanx and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Phalanx

##### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy and/or loamy fluviomarine deposits

##### Typical profile

*A - 0 to 2 inches:* loamy sand  
*E - 2 to 7 inches:* loamy sand  
*BA - 7 to 17 inches:* loamy sand  
*Bt - 17 to 21 inches:* sandy loam  
*Bm - 21 to 29 inches:* sandy loam  
*BC - 29 to 38 inches:* sandy loam  
*C - 38 to 60 inches:* very flaggy loamy sand

##### Properties and qualities

*Slope:* 10 to 25 percent  
*Depth to restrictive feature:* 12 to 30 inches to petroferric  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (2.00 to 20.00 in/hr)  
*Depth to water table:* About 48 to 118 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group: A*

*Ecological site: F149AY140NJ - Well Drained Petroferric Upland*

*Hydric soil rating: No*

### **Minor Components**

#### **Evesboro**

*Percent of map unit: 5 percent*

*Landform: Low hills*

*Landform position (three-dimensional): Interfluve, side slope*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Ecological site: F153DY170NJ - Sandy, Excessively Drained Upland*

*Hydric soil rating: No*

#### **Tinton**

*Percent of map unit: 5 percent*

*Landform: Hillslopes, ridges*

*Landform position (two-dimensional): Backslope, summit*

*Landform position (three-dimensional): Side slope, interfluve*

*Down-slope shape: Linear, convex*

*Across-slope shape: Linear*

*Ecological site: F153DY160NJ - Well Drained Coarse-Loamy Upland*

*Hydric soil rating: No*

#### **Sassafras**

*Percent of map unit: 5 percent*

*Landform: Hillslopes, knolls*

*Landform position (two-dimensional): Backslope, summit*

*Landform position (three-dimensional): Side slope, interfluve*

*Down-slope shape: Linear, convex*

*Across-slope shape: Linear*

*Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland*

*Hydric soil rating: No*

## **Data Source Information**

Soil Survey Area: Monmouth County, New Jersey

Survey Area Data: Version 17, Aug 29, 2023



# PLOT PLAN

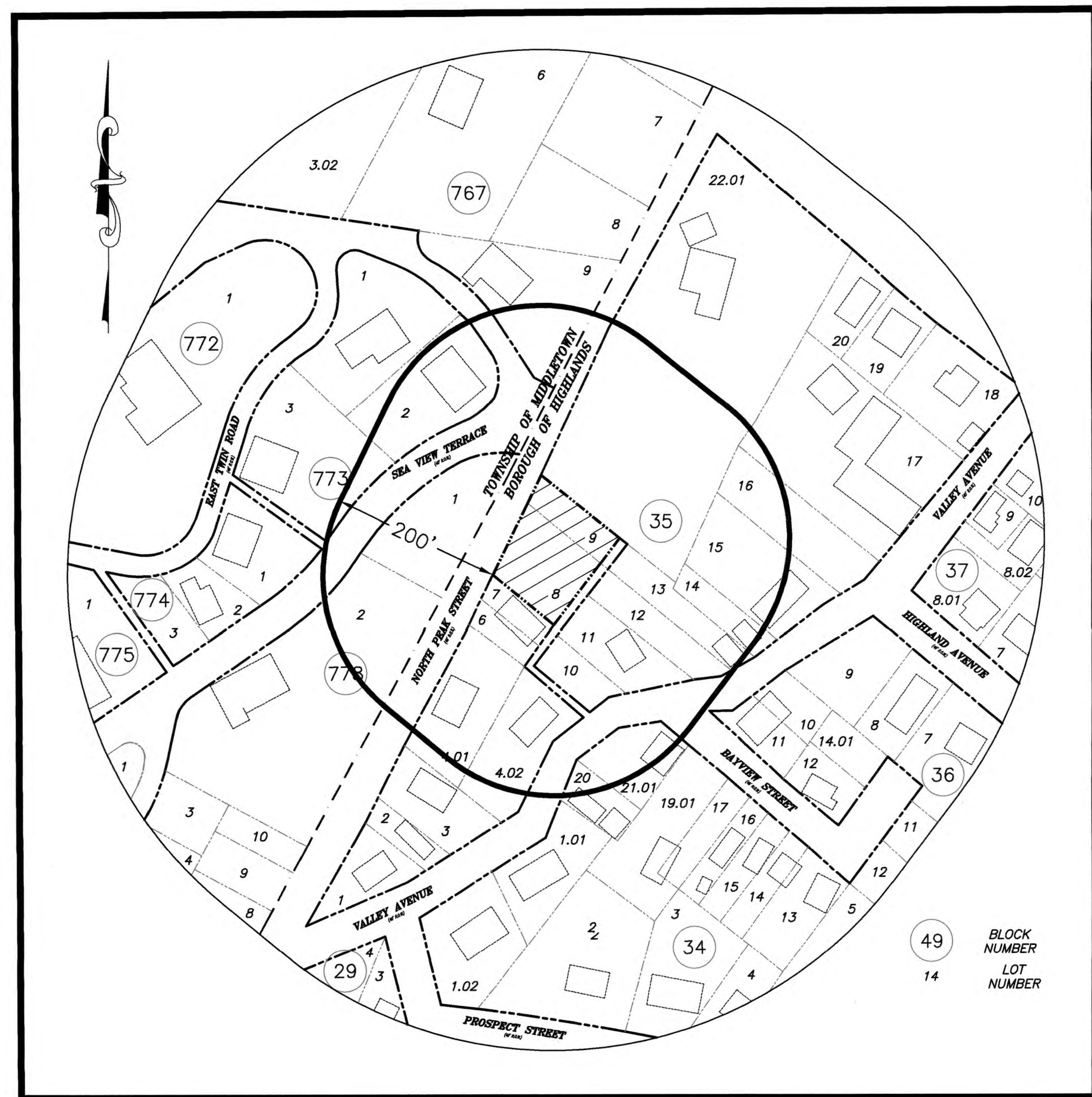
## FOR

# 32 NORTH PEAK STREET

## BLOCK 35, LOTS 8 & 9

### SITUATED IN

# BOROUGH OF HIGHLANDS, MONMOUTH COUNTY, NEW JERSEY



**KEY MAP**  
SCALE: 1"=100'

### PROPERTY OWNERS WITHIN 200 LF

LIST OF OWNERS WITHIN 200 FEET			LIST OF OWNERS WITHIN 200 FEET (CONTINUED)		
BLOCK	LOT	PROPERTY OWNER	BLOCK	LOT	PROPERTY OWNER
758	1.01	MONMOUTH HILLS INC. ACCESS PROP MGMT 1090 KING GEORGES POST RD EDISON, NJ 08837	35	22.01	DEROLD RICHARD & MISCHELE 221 NAVESINK AVENUE HIGHLANDS, NJ 07732
778	1	MONMOUTH HILLS INC. ACCESS PROP MGMT 1090 KING GEORGES POST RD EDISON, NJ 08837	35	4.02	MALONE PATRICK FRANCIS & PAULA ANN 110 VALLEY AVENUE HIGHLANDS, NJ 07732
35	6	ALVATOR DONNA 10 NORTH PEAK STREET HIGHLANDS, NJ 07732	35	15	AKER EDWARD W & EVELYN 92 VALLEY AVENUE HIGHLANDS, NJ 07732
35	10	DORIN JOSEPH & JOSEPH DORIN LM 102 VALLEY AVENUE HIGHLANDS, NJ 07732	767	9	FARROW LEONIDA A & CECIL W PO BOX 646 NAVESINK, NJ 07752
35	12	DORIN JOSEPH & JOSEPH DORIN LM 102 VALLEY AVENUE HIGHLANDS, NJ 07732	778	2	ONEIL MICHAEL & KATHY 34 SEAWAY TERR HIGHLANDS, NJ 07732
35	8	FELICIANO JERRY 202 N BROUGHTON SQUARE BOYNTON BEACH, FL 33436	774	1	MCALLEY COLLEEN FLINN 38 E TWIN RD HIGHLANDS, NJ 07732
35	14	NEWMAN SR. RONALD & NANCY 94 VALLEY AVENUE HIGHLANDS, NJ 07732	773	2	REINHAUER CRAIG 32 SEAWAY TERR HIGHLANDS, NJ 07732
34	20	109 VALLEY AVE LLC 13 JARED LANE LITTLE EGG HARBOR, NJ 08087	773	3	GLASS KEITH 37 E TWIN RD HIGHLANDS, NJ 07750
35	7	ALVATOR DONNA 10 NORTH PEAK STREET HIGHLANDS, NJ 07732	35	16	FENDOCK KERRY & VALENCIA ENRIQUE 79 VALLEY AVE HIGHLANDS, NJ 07732
34	1.01	LEMCEA JERRY & NADYA 111 VALLEY AVE HIGHLANDS, NJ 07732	35	17	VALLEY AVENUE MANAGEMENT LLC 82 VALLEY AVENUE HIGHLANDS, NJ 07732
34	21.01	WAGNER PETER 101 VALLEY AVENUE HIGHLANDS, NJ 07732	35	4.01	JOHNSON EDWARD W 2 NORTH PEAK STREET HIGHLANDS, NJ
35	11	DORIN JOSEPH & JOSEPH DORIN 102 VALLEY AVENUE HIGHLANDS, NJ 07732	773	1	PHAIR ARTHUR H & KUGELMANN 36 E TWIN ROAD HIGHLANDS, NJ 07732
35	9	HOME & LAND DEVELOPMENT CORP 88-1 PORTLAND ROAD HIGHLANDS, NJ 07732	767	6	
36	11	BRANNI GARY & PAMELA 97 VALLEY AVE HIGHLANDS, NJ 07732	61	10	
35	13	SERGHIS DEMETRIOS 96 VALLEY AVENUE HIGHLANDS, NJ 07732	61	12.01	

### INDEX OF UTILITIES

- UTILITY AND GOVERNMENTAL AGENCY TO BE NOTIFIED
- JCP&L  
300 MADISON AVENUE  
PO BOX 1911  
MORRISTOWN, NJ 07960
- NEW JERSEY AMERICAN WATER COMPANY  
ATTN: CONSTRUCTION DEPARTMENT  
651 SHREWSBURY AVE  
SHREWSBURY, NJ 07702
- COMCAST COMMUNICATIONS OF MONMOUTH COUNTY  
RON BERTRAND, CONSTRUCTION FOREMAN  
403 SOUTH ST  
EATONTOWN, NJ 07724
- VERIZON COMMUNICATIONS  
ONE VERIZON WAY  
BASKING RIDGE, NJ 07920
- TOWNSHIP OF MIDDLETOWN SEWERAGE AUTHORITY  
RAYMOND J. NIERSTEDT, P.E., EXECUTIVE DIRECTOR  
PO BOX 205, 100 BEVERLY WAY  
BELFORD, NJ 07718
- NJ NATURAL GAS COMPANY  
PO BOX 1464, 1415 WYCKOFF ROAD  
WALL, NJ 07719
- MONMOUTH COUNTY BAYSHORE OUTFALL AUTHORITY  
ATTN: EXECUTIVE DIRECTOR  
PO BOX 184, 200 HARBOR WAY  
BELFORD, NJ 07718

### SURVEY/SUBDIVISION REFERENCES:

- BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM A PLAN ENTITLED "MINOR SUBDIVISION OF LOTS 8 & 9 - BLOCK 35, 32 & 14 NORTH PEAK STREET, BOROUGH OF HIGHLANDS, MONMOUTH COUNTY, NEW JERSEY", PREPARED BY THOMAS P. SANTRY, P.A., SIGNED THOMAS P. SANTRY, JR., P.L.S., LICENSE NO. 24653540000, DATED 07-29-2022, REVISED THROUGH 11-30-2023.
- ADDITIONAL INFORMATION TAKEN FROM A SURVEY ENTITLED "SURVEY OF LOTS 8 & 9 - BLOCK 35, 32 & 14 NORTH PEAK STREET, BOROUGH OF HIGHLANDS, MONMOUTH COUNTY, NEW JERSEY", PREPARED BY THOMAS P. SANTRY, P.A., ENGINEERS AND SURVEYORS, DATED 07-08-2022.

### SUBDIVISION NOTES:

- TOPOGRAPHY AND GRADING OBTAINED FROM A CERTAIN MAP ENTITLED "GRADING PLAN FOR HOME & LAND DEVELOPMENT CORP. BLOCK 35 LOT 9" SAID MAP WAS DRAWN BY EASTERN CIVIL ENGINEERING, LLC ON 2/10/22. PROJECT NO. 2101980
- SILT FENCE SHALL BE PLACED AROUND THE PERIMETER OF THE LIMITS OF DISTURBANCE AND REMAIN UNTIL SOIL IS STABILIZED
- APPLICANT TO REPAIR ANY DAMAGED CURB OR PAVEMENT AS PART OF CONSTRUCTION
- ELEVATIONS SHOWN HEREON REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988
- VARIANCE REQUESTED STEEP SLOPES ANALYSIS
- NO WETLANDS EXIST ON THIS PROPERTY (SUBDIVISION SHEET 1 OF 3)

### SURVEY NOTES:

- BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM A PLAN ENTITLED "PRELIMINARY GRADING WORKSHEET FOR HOME & LAND DEVELOPMENT CORP. BLOCK 35 LOTS 8 AND 9, TAX MAP SHEET NO. 10, HIGHLANDS BOROUGH, MONMOUTH COUNTY, NEW JERSEY", PREPARED BY EASTERN CIVIL ENGINEERING, LLC, SIGNED ANDREW R. STOCKTON, P.E., N.J.P.L.S., LICENSE NO. 35405, DATED 12-02-2021.
- ELEVATIONS ARE BASED ON NAVD83 DATUM.

INDEX OF SHEETS	
SHEET No.	TITLE
1	COVER SHEET
2	PLOT PLAN
3	UTILITY PLAN
4	SANITARY PLAN AND PROFILE
5	SLOPE ANALYSIS PLAN
6	CUT/FILL CROSS SECTIONS AND CALCULATIONS
7	SOIL EROSION AND SEDIMENT CONTROL PLAN
8	SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

### ZONE REQUIREMENTS

R-1.01 ZONE		BULK ZONE REQUIREMENTS	EXISTING LOTS 8 & 9	PROPOSED LOT 8	PROPOSED LOT 9
SINGLE-FAMILY RESIDENTIAL					
MINIMUM LOT SIZE (SF)		5,000 S.F.	13,423 S.F.	7,775.37 S.F.	5,658.99 S.F.
MINIMUM LOT FRONTAGE/WIDTH (FT)		50 FT.	130.26/127.62	79.23 FT.	50.93 FT.
MINIMUM LOT DEPTH (FT)		100 FT.	105.26	108.08 FT.	118.28 FT.
MINIMUM FRONT SETBACK (FT)		35 FT.	60.6 FT.	35.3 FT.	*31.9 FT.
MINIMUM SIDE SETBACK (FT)		8/12 FT.	**4.7/92.2 FT.	8.3/12 FT.	8.2/12 FT.
MINIMUM REAR SETBACK (FT)		25 FT.	**8.6 FT.	25 FT.	25 FT.
MAXIMUM BUILDING HEIGHT (FT)		30 FT.	-	<30 FT.	<30 FT.
MAXIMUM LOT COVER (%)		70%	+41.9%	39.0%	34.2%
MAXIMUM BUILDING COVERAGE (%)		30%	+8.0%	26.1%	22.5%
*** MAXIMUM LOT COVERAGE (%)		33.4%, 45.8%	**+41.9%	*39.0%	34.2%
*** MAXIMUM IMPERVIOUS COVERAGE (%)		15.8%, 21.2%	**+41.9%	*39.0%	*34.2%

- \* VARIANCE REQUIRED
- \*\* EXISTING NONCONFORMING CONDITION
- \*\*\* PER STEEP SLOPES ORDINANCE AND CALCULATIONS

### COVER SHEET

**32 NORTH PEAK STREET**  
**BLOCK 35, LOTS 8 & 9**

SITUATED IN  
BOROUGH OF HIGHLANDS  
MONMOUTH COUNTY, NEW JERSEY

**GROTTO ENGINEERING ASSOCIATES, LLC**  
ENGINEERS • PLANNERS • SURVEYORS  
Certificate of Authorization No. 24GA27818300  
77 BRANT AVENUE - SUITE 105  
CLARK, NEW JERSEY 07066  
908-272-8901 (F) 908-272-8902

**FRANK W. FARRELL**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. GE51556

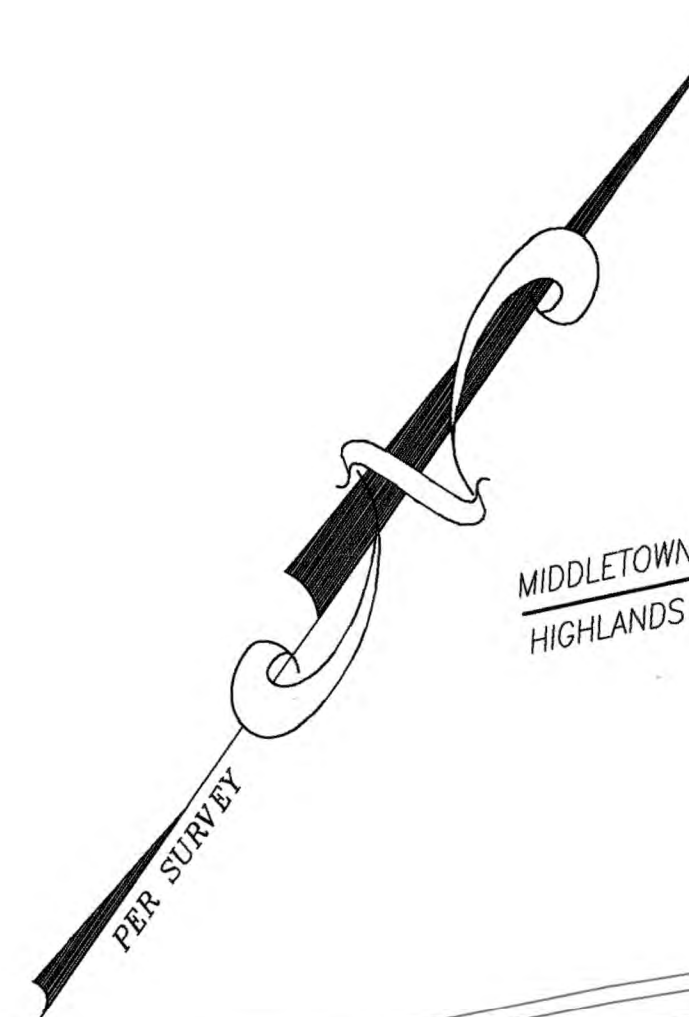
DATE: 04-05-2024 SCALE: AS SHOWN DRAWN: AJC CHECKED: FF SHEET: 1 OF 8 JOB: PR-0290

REVISIONS	
DATE	DESCRIPTION
04-25-2024	ISSUED FOR SUBMISSION

THE OWNER AND CONTRACTOR SHALL HOLD HARMLESS THE ENGINEER FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE WORK BY THE CONTRACTOR. CHANGES TO THE PLANS BY THE OWNER AND THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE PERSONS MAKING SUCH CHANGES. THE CONTRACTOR SHALL CHECK AND VERIFY ALL PLAN DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH CONSTRUCTION.

©Grotto Projects/PR-0290 - 32 North Peak St., Highlands (Chelsea Farnham)/PLOT PLAN/PR-0290 - 32 North Peak St., Highlands (Chelsea Farnham) - 4.23.24.dwg (7/25/2024)



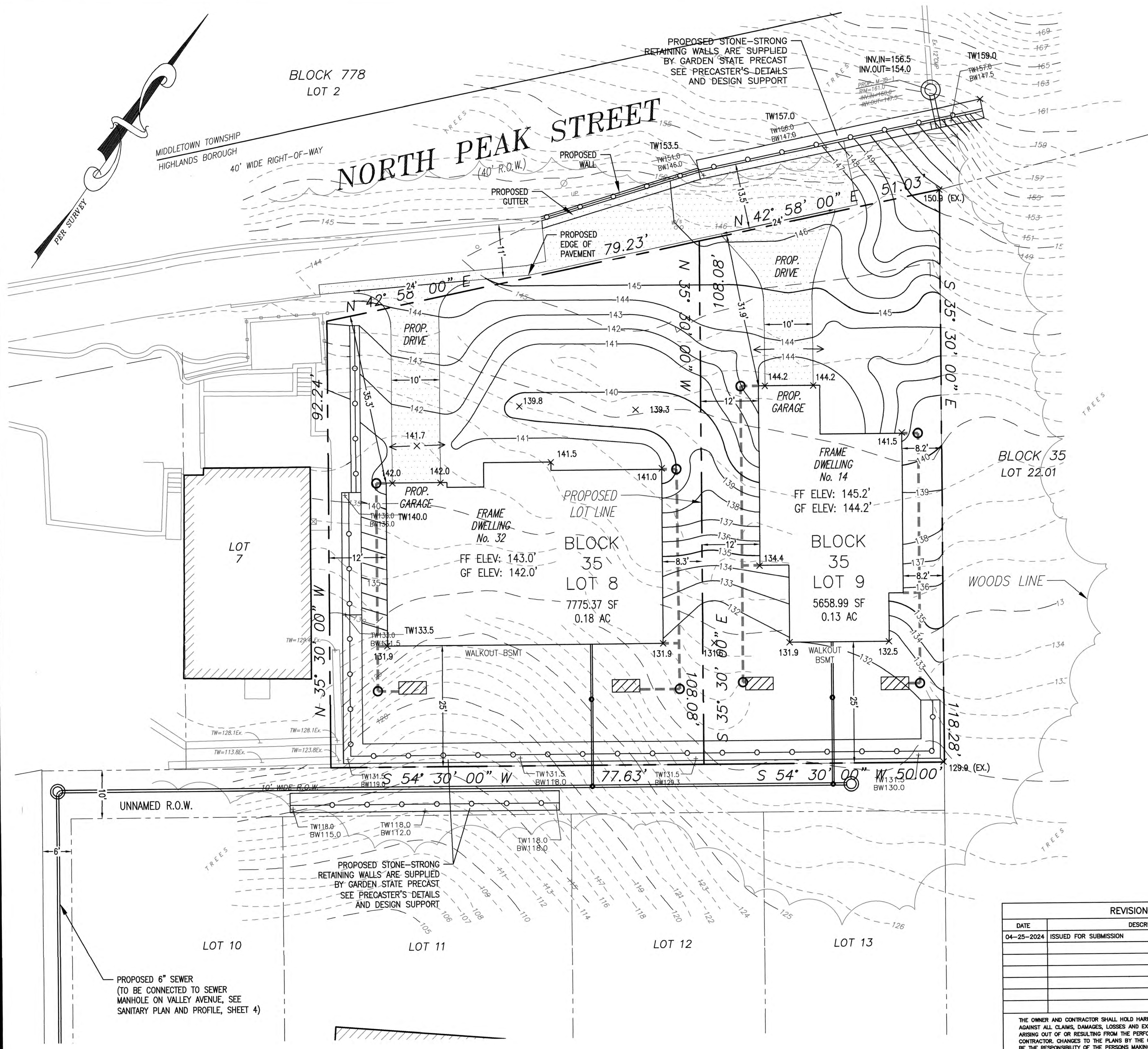


BLOCK 778  
LOT 2

MIDDLETOWN TOWNSHIP  
HIGHLANDS BOROUGH  
40' WIDE RIGHT-OF-WAY

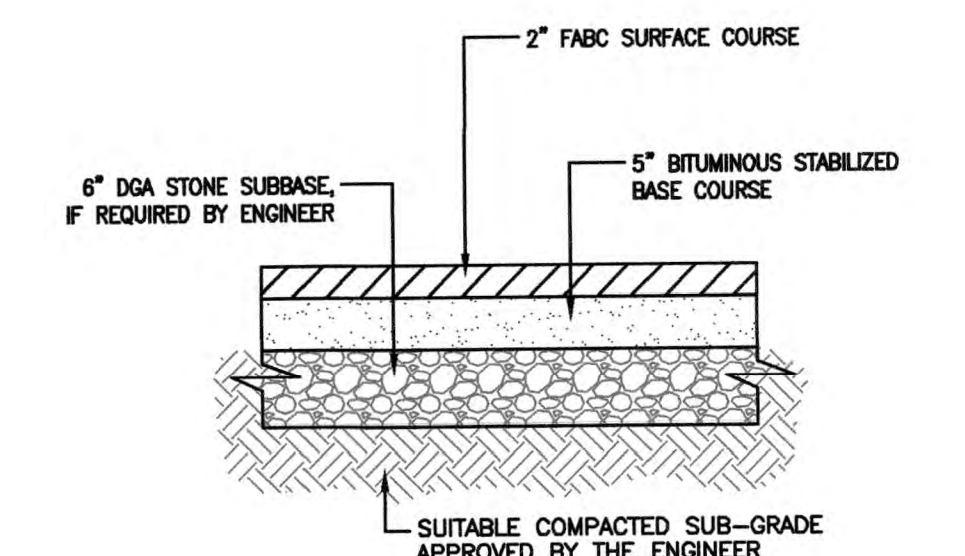
**NORTH PEAK STREET**  
(40' R.O.W.)

PROPOSED STONE-STRONG  
RETAINING WALLS ARE SUPPLIED  
BY GARDEN STATE PRECAST  
SEE PRECASTER'S DETAILS  
AND DESIGN SUPPORT



**GENERAL NOTES**

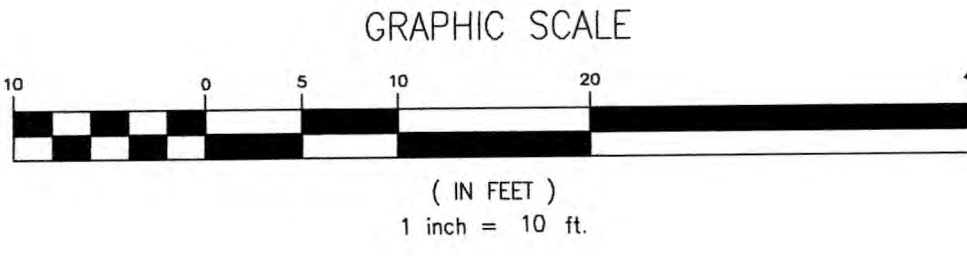
1. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER FROM THOSE REPRESENTED HEREON AND/OR IF IN THE OPINION OF THE CONTRACTOR SUCH CONDITIONS SHOULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE OR INEFFECTIVE.
2. THE CONTRACTOR IS TO CONTACT THE "CALL BEFORE YOU DIG" TOLL FREE NUMBER AT 1-800-272-1000 THREE (3) BUSINESS DAYS BUT NO MORE THAN TEN (10) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DAMAGE CAUSED OR DISCOVERED DURING CONSTRUCTION TO THE APPROPRIATE UTILITY AGENCY.
3. ALL UTILITIES WILL BE INSTALLED UNDERGROUND.
4. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
  - A. CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
  - B. CURRENT PREVAILING UTILITY COMPANY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
  - C. STATE OF NEW JERSEY B.O.C.A. CODE AND BARRIER-FREE DESIGN REGULATIONS AS CURRENTLY AMENDED. BARRIER-FREE FACILITIES, INCLUDING PARKING SPACES AND RAMPS, SHALL BE PROVIDED AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT OF 1991.
  - D. DO NOT SCALE DRAWINGS ADJACENT AND SURROUNDING PHYSICAL CONDITIONS. BUILDINGS, STRUCTURES, ETC. ARE SCHEMATIC ONLY, EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.
5. THIS IS A SITE PLAN AND UNLESS SPECIFICALLY NOTED ELSEWHERE HEREON IS NOT A SURVEY.
6. THIS SET OF PLANS HAS BEEN PREPARED FOR PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL AND SHALL NOT BE UTILIZED AS A CONSTRUCTION DOCUMENT UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED ON THE DRAWINGS AND EACH DRAWING HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".
7. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS, MATERIALS AND SIZES. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS MAY BE REQUIRED TO AVOID CONFLICTS.
8. DISTURBED AREAS TO BE RESTORED TO SATISFACTION OF THE CITY ENGINEER.
9. ALL CONSTRUCTION MATERIALS AND MISCELLANEOUS DEBRIS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
10. BEFORE CONSTRUCTION, TEST PITS WILL BE DONE TO ASCERTAIN THE LEVEL OF THE EXISTING WATER TABLE. TEST RESULTS SHALL BE SUBMITTED TO THE CITY ENGINEER.
11. AT THE TIME OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING GAS, WATER, AND SANITARY MAINS, AND PROVIDE THE CITY ENGINEER WITH THE LOCATIONS, SIZES AND PIPE MATERIAL FOR SAME.
12. ALL EXISTING SERVICES SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH APPLICABLE STANDARDS. REUSE OF EXISTING CONNECTIONS WILL NOT BE ACCEPTED.



- NOTES:
1. PAVEMENT SPECIFICATION MAY BE ALTERED AT THE DISCRETION OF THE MUNICIPAL ENGINEER AS REQUIRED BY SITE CONDITIONS.
  2. HOT MIX ASPHALT SHALL BE SAWCUT WHERE NEW PAVEMENT MEETS EXISTING.
  3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE N.J.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019, AS AMENDED.

**TYPICAL H.M.A PAVEMENT DETAIL**

N.T.S.



**PLOT PLAN**

**32 NORTH PEAK STREET  
BLOCK 35, LOTS 8 & 9**

SITUATED IN  
BOROUGH OF HIGHLANDS  
MONMOUTH COUNTY, NEW JERSEY

**GROTTO ENGINEERING ASSOCIATES, LLC**  
ENGINEERS • PLANNERS • SURVEYORS  
Certificate of Authorization No. 24GA27918300  
77 BRANT AVENUE - SUITE 105  
CLARK, NEW JERSEY 07066  
908-272-8901 (F) 908-272-8902

**FRANK W. FARRELL**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. GE51556

REVISIONS	
DATE	DESCRIPTION
04-25-2024	ISSUED FOR SUBMISSION

THE OWNER AND CONTRACTOR SHALL HOLD HARMLESS THE ENGINEER FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE WORK BY THE CONTRACTOR. CHANGES TO THE PLANS BY THE OWNER AND THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE PERSONS MAKING SUCH CHANGES. THE CONTRACTOR SHALL CHECK AND VERIFY ALL PLAN DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH CONSTRUCTION.

04-05-2024 PR-0290 - 32 North Peak St., Highlands (Clerks' Records) LOT 8/9/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100



BLOCK 778  
LOT 2

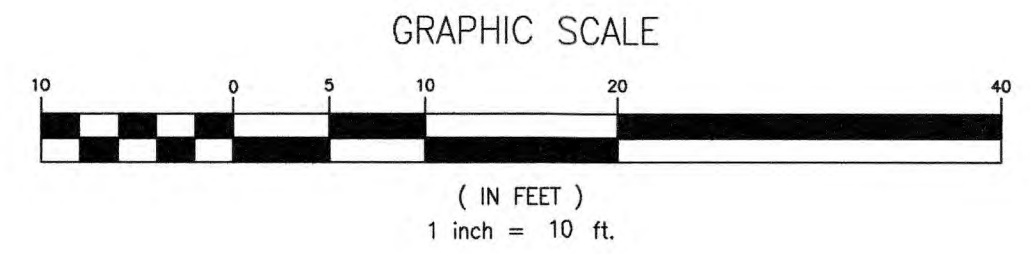
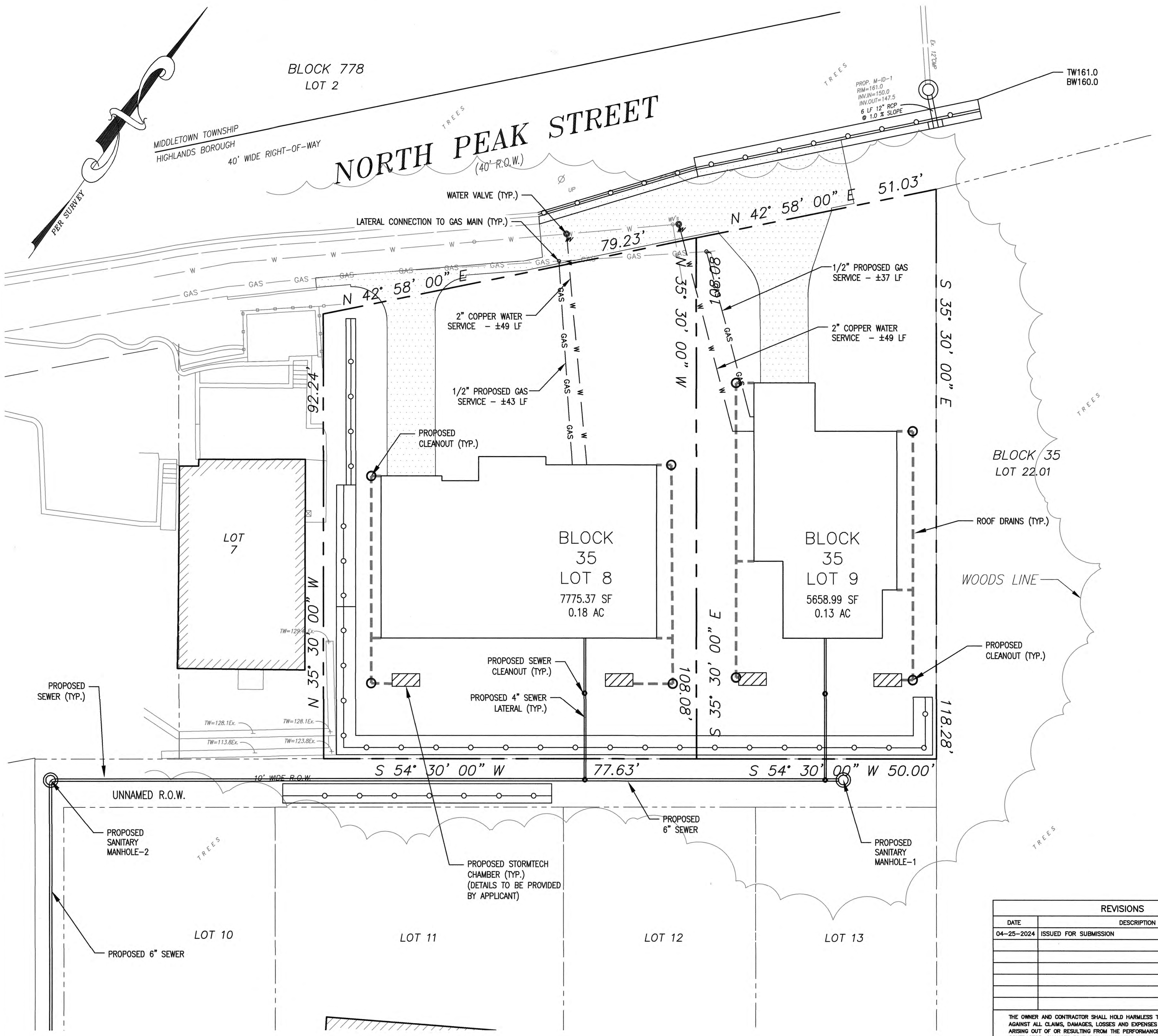
MIDDLETOWN TOWNSHIP  
HIGHLANDS BOROUGH  
40' WIDE RIGHT-OF-WAY

# NORTH PEAK STREET

(40' R.O.W.)

PROP. M-ID-1  
RM=161.0  
INV(IN)=150.0  
INV(OUT)=147.5  
6 LF 12" RCP  
@ 1.0% SLOPE

TW161.0  
BW160.0



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**UTILITY PLAN**

**32 NORTH PEAK STREET  
BLOCK 35, LOTS 8 & 9**

SITUATED IN  
**BOROUGH OF HIGHLANDS**  
MONMOUTH COUNTY, NEW JERSEY

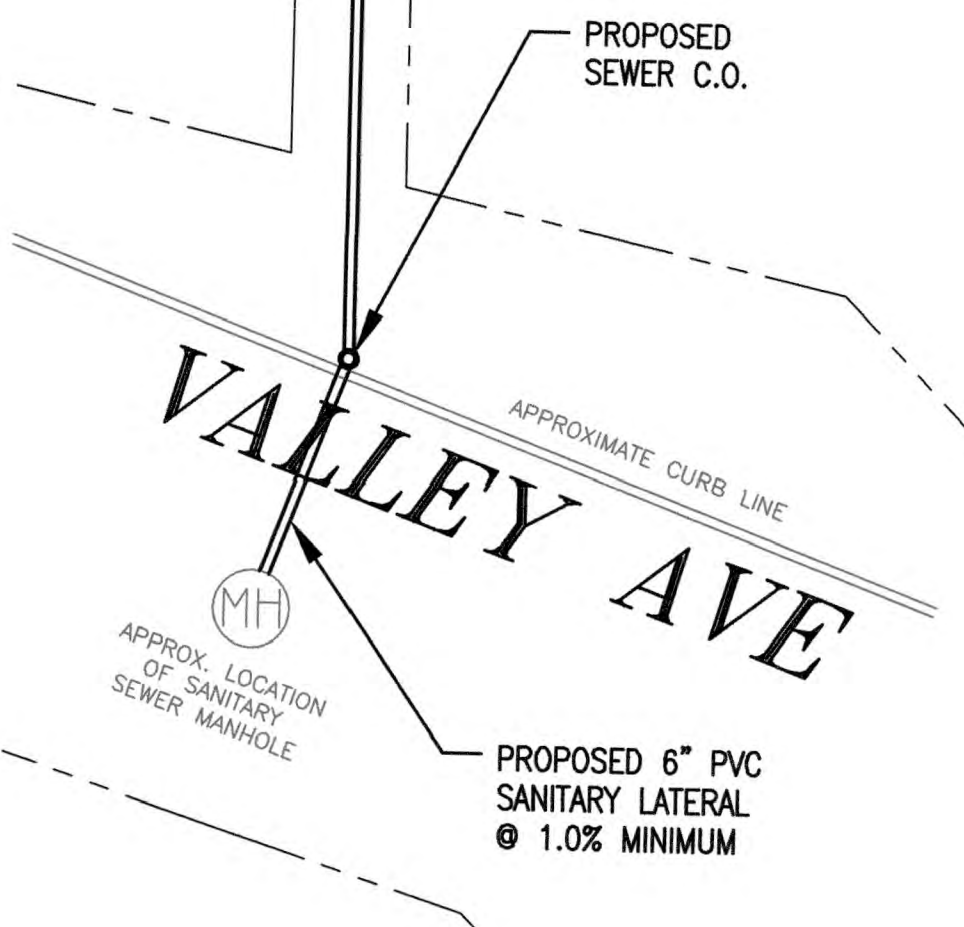
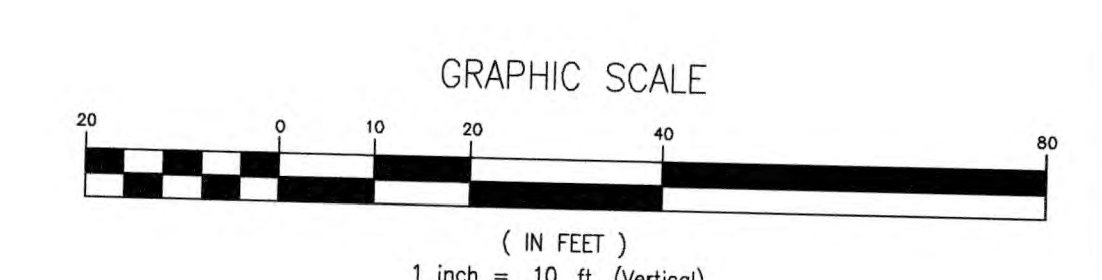
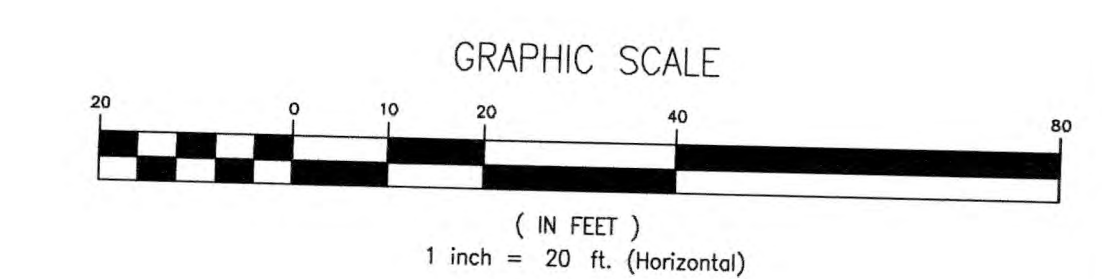
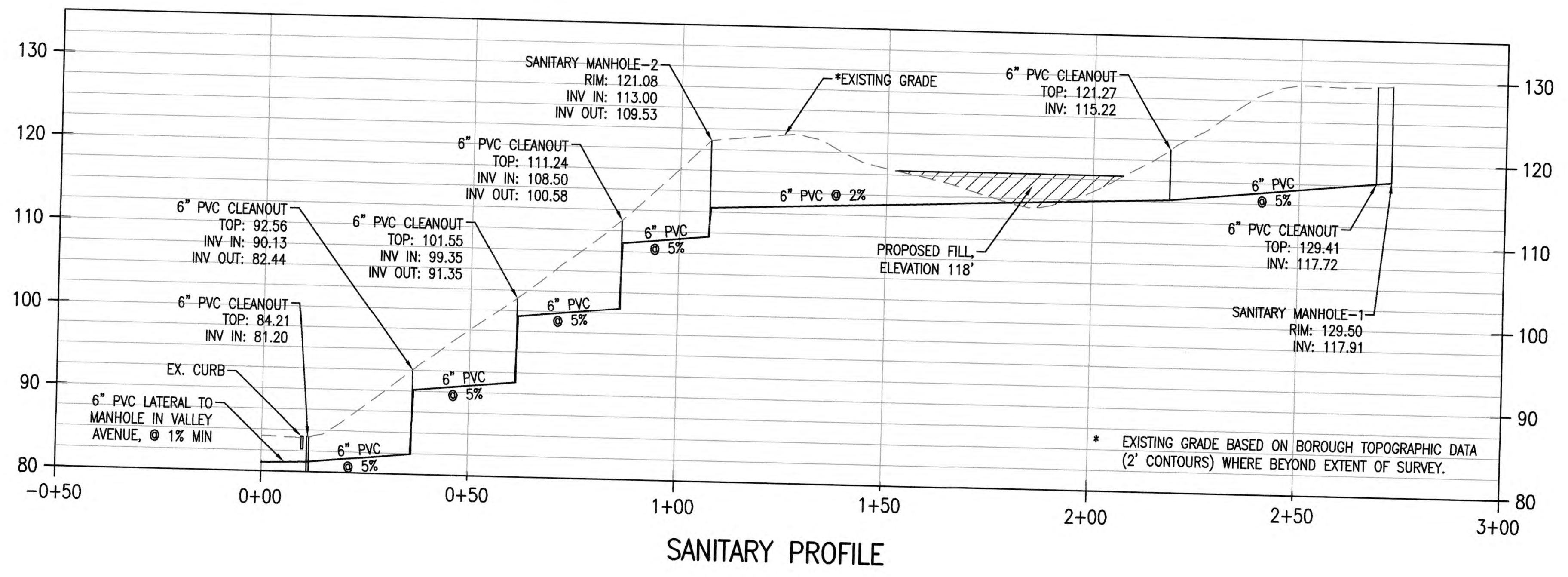
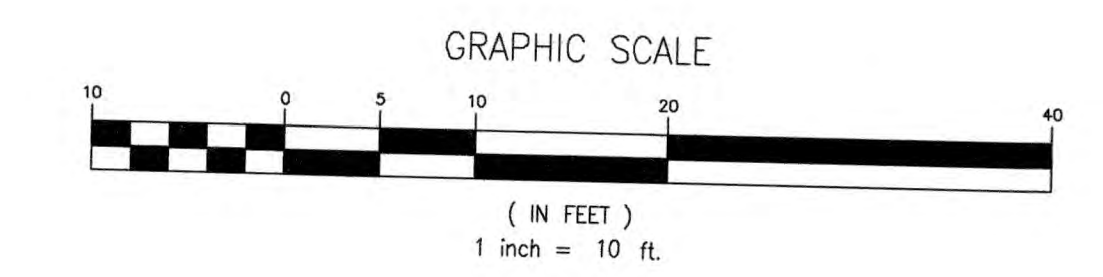
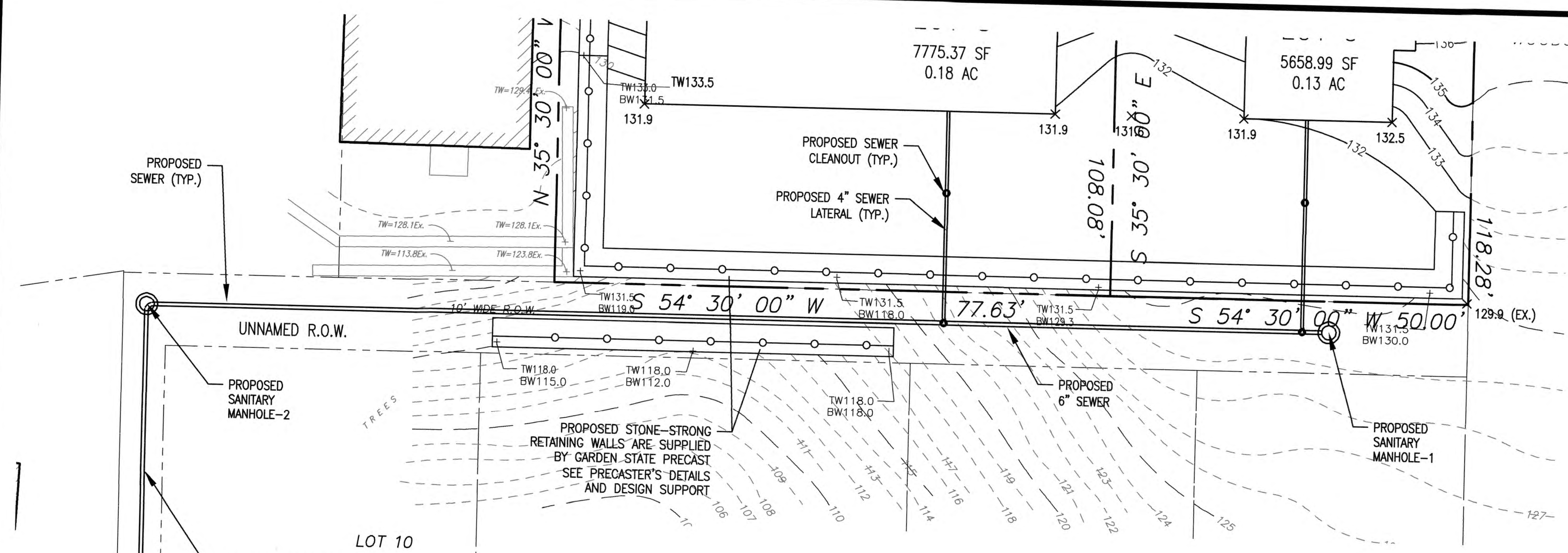
**GROTTO ENGINEERING ASSOCIATES, LLC**  
ENGINEERS • PLANNERS • SURVEYORS  
Certificate of Authorization No. 240A27918300  
77 BRANT AVENUE - SUITE 105  
CLARK, NEW JERSEY 07066  
908-272-8901 (F) 908-272-8902

**FRANK W. FARRELL**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. GE51556

DATE: 04-05-2024 | SCALE: 1"=10' | DRAWN: AJC | CHECKED: FF | SHEET: 3 OF 8 | JOB: PR-0280

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**SEWER REQUIREMENTS**

SEWER FLOW CALCULATIONS:

EXISTING:

- SEPTIC TANK
- TOTAL EXISTING FLOW ..... 0 GALLONS PER DAY

PROPOSED:

- 2 TWO-BEDROOM UNITS @ 225 GALLONS PER DAY ..... 450 GALLONS PER DAY
- TOTAL PROPOSED FLOW ..... 450 GALLONS PER DAY

FLOW CHANGE = INCREASE ..... 450 GALLONS PER DAY

PEAK FLOW = 450 X 3 = 1,350 GPD = 0.9375 GPM OR 0.0021 CFS

**SEWER FLOW VELOCITY**

SANITARY SEWER FLOW VELOCITY:

PEAK FLOW = 0.9375 GPM OR 0.0021 CFS  
 MANNING ROUGHNESS COEFFICIENT, N = 0.009

PROPOSED 6" PVC PIPE @ 2.0% (1V:50H) - VELOCITY = 1.12 FT/S  
 DEPTH OF FLUID IN PIPE = 0.191 INCHES

PROPOSED 6" PVC PIPE @ 5.0% (1V:20H) - VELOCITY = 1.54 FT/S  
 DEPTH OF FLUID IN PIPE = 0.155 INCHES

MAXIMUM SLOPE FOR VELOCITY < 5.0 FT/S = 150.0% (3v:2h)

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**SANITARY PLAN AND PROFILE**

32 NORTH PEAK STREET  
 BLOCK 35, LOTS 8 & 9

SITUATED IN  
 BOROUGH OF HIGHLANDS  
 MONMOUTH COUNTY, NEW JERSEY

**GROTTO ENGINEERING ASSOCIATES, LLC**

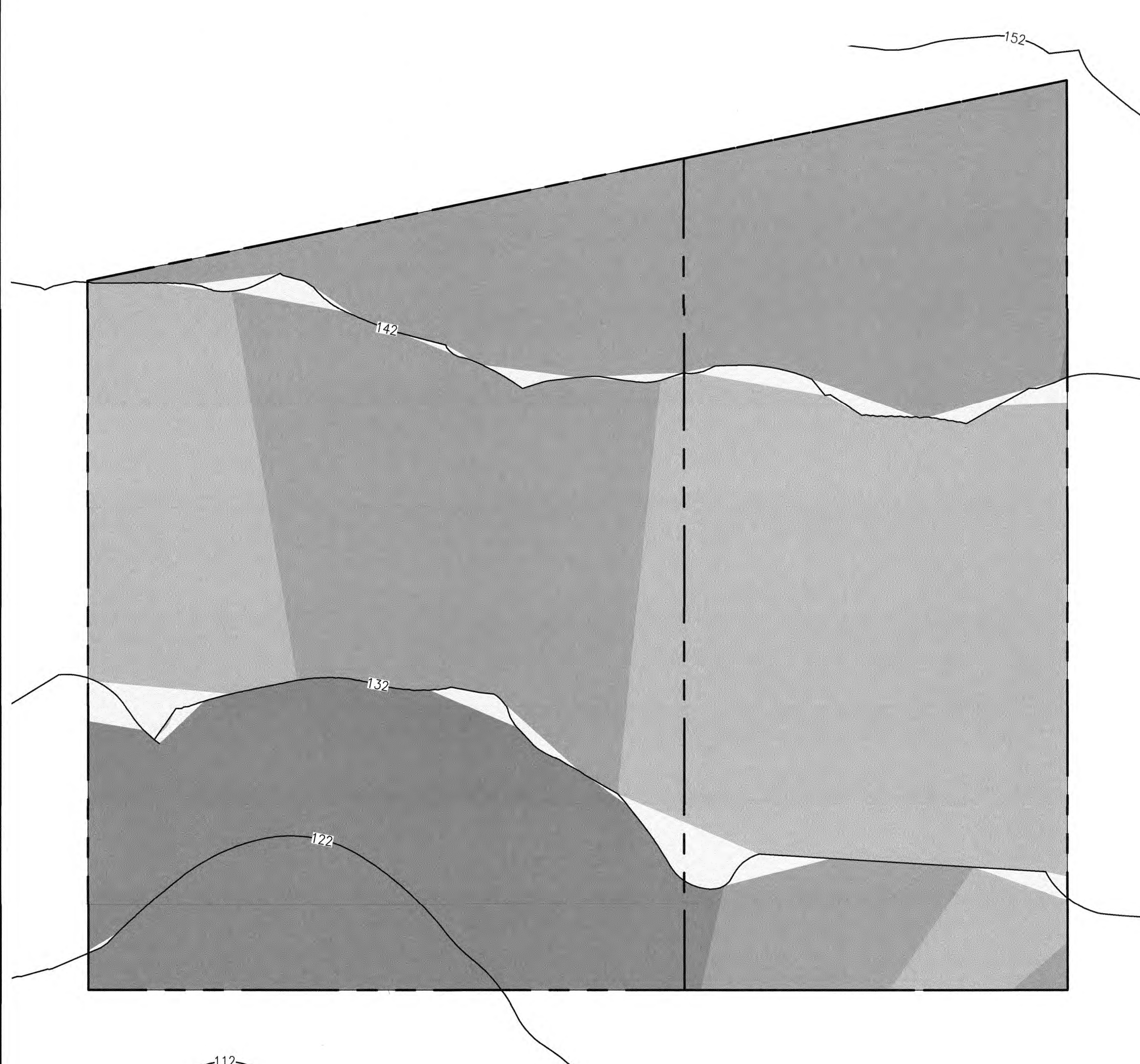
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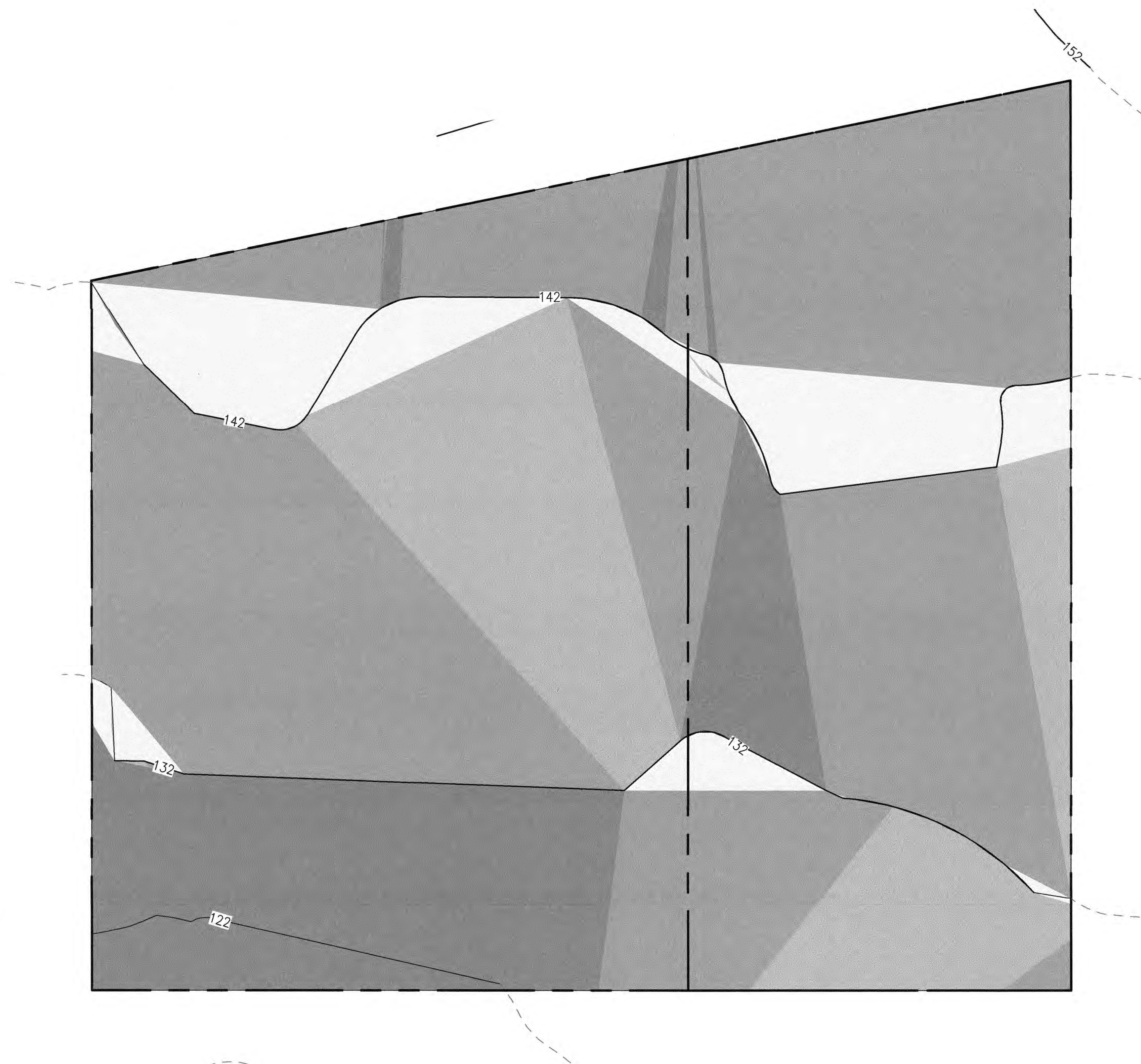
DATE: 04-05-2024 SCALE: AS SHOWN DRAWN: AJC CHECKED: FF SHEET: 4 OF 8 JOB: PR-0290

G:\Projects\PR-0290 - 32 North Peak St., Highlands (Chesler Farm) - 133.24.dwg (1/25/2024)





**EXISTING SLOPES**



**PROPOSED SLOPES**

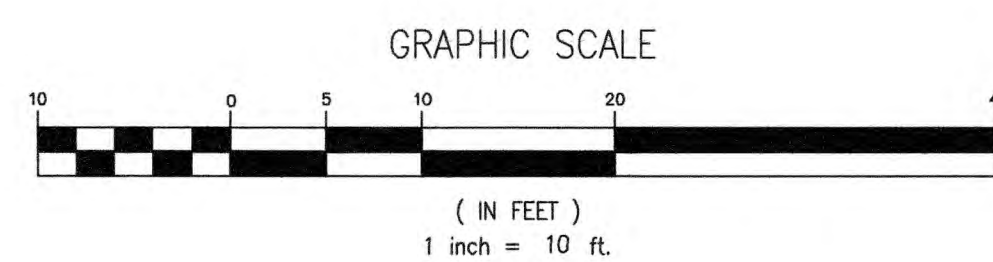
EXISTING SLOPE TABLE (BASED ON 10' CONTOURS, ELEV. 112' TO 162')					
NUMBER	MINIMUM SLOPE	MAXIMUM SLOPE	COLOR	AREA (SF)	AREA (AC)
1	30.00%	1000.00%	Dark Gray	2,703	0.062
2	20.00%	30.00%	Medium Gray	5,593	0.128
3	15.00%	20.00%	Light Gray	4,732	0.109
4	0.00%	15.00%	White	397	0.009

PROPOSED SLOPE TABLE (BASED ON 10' CONTOURS, ELEV. 112' TO 162')					
NUMBER	MINIMUM SLOPE	MAXIMUM SLOPE	COLOR	AREA (SF)	AREA (AC)
1	30.00%	1000.00%	Dark Gray	2,438	0.056
2	20.00%	30.00%	Medium Gray	7,206	0.165
3	15.00%	20.00%	Light Gray	2,350	0.054
4	0.00%	15.00%	White	1,429	0.033

**SURVEY NOTES**

1. BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM A PLAN ENTITLED "PRELIMINARY GRADING WORKSHEET FOR HOME & LAND DEVELOPMENT CORP. BLOCK 35 LOTS 8 AND 9, TAX MAP SHEET NO. 10, HIGHLANDS BOROUGH, MONMOUTH COUNTY, NEW JERSEY", PREPARED BY EASTERN CIVIL ENGINEERING, LLC, SIGNED ANDREW R. STOCKTON, P.E., N.J.P.L.S., LICENSE No. 35405, DATED 12-02-2021.

2. ELEVATIONS ARE BASED ON NAVD88 DATUM.



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**SLOPE ANALYSIS PLAN**

**32 NORTH PEAK STREET  
BLOCK 35, LOTS 8 & 9**

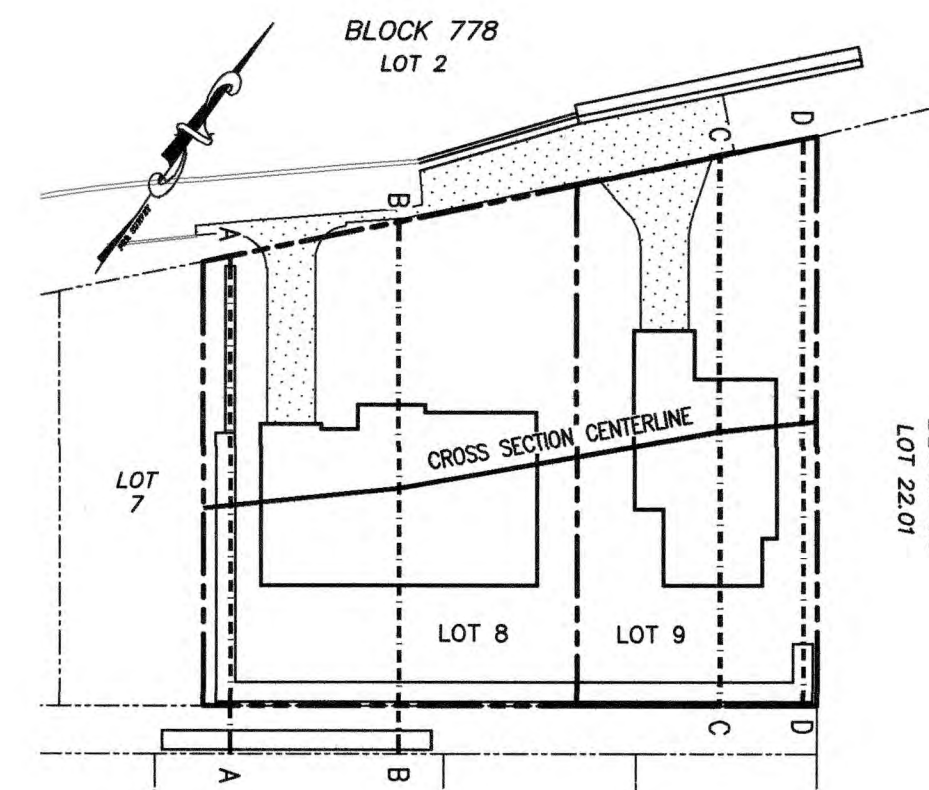
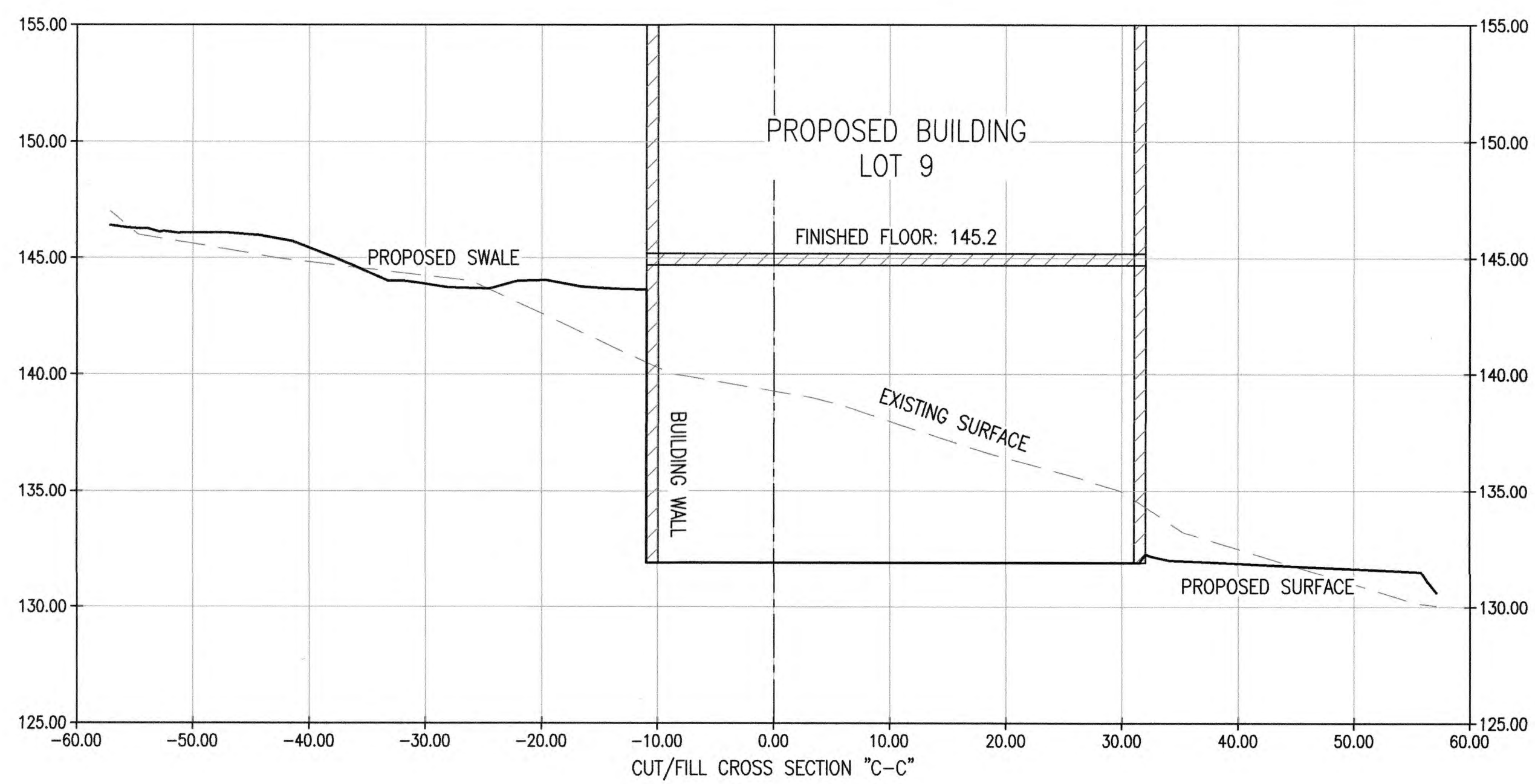
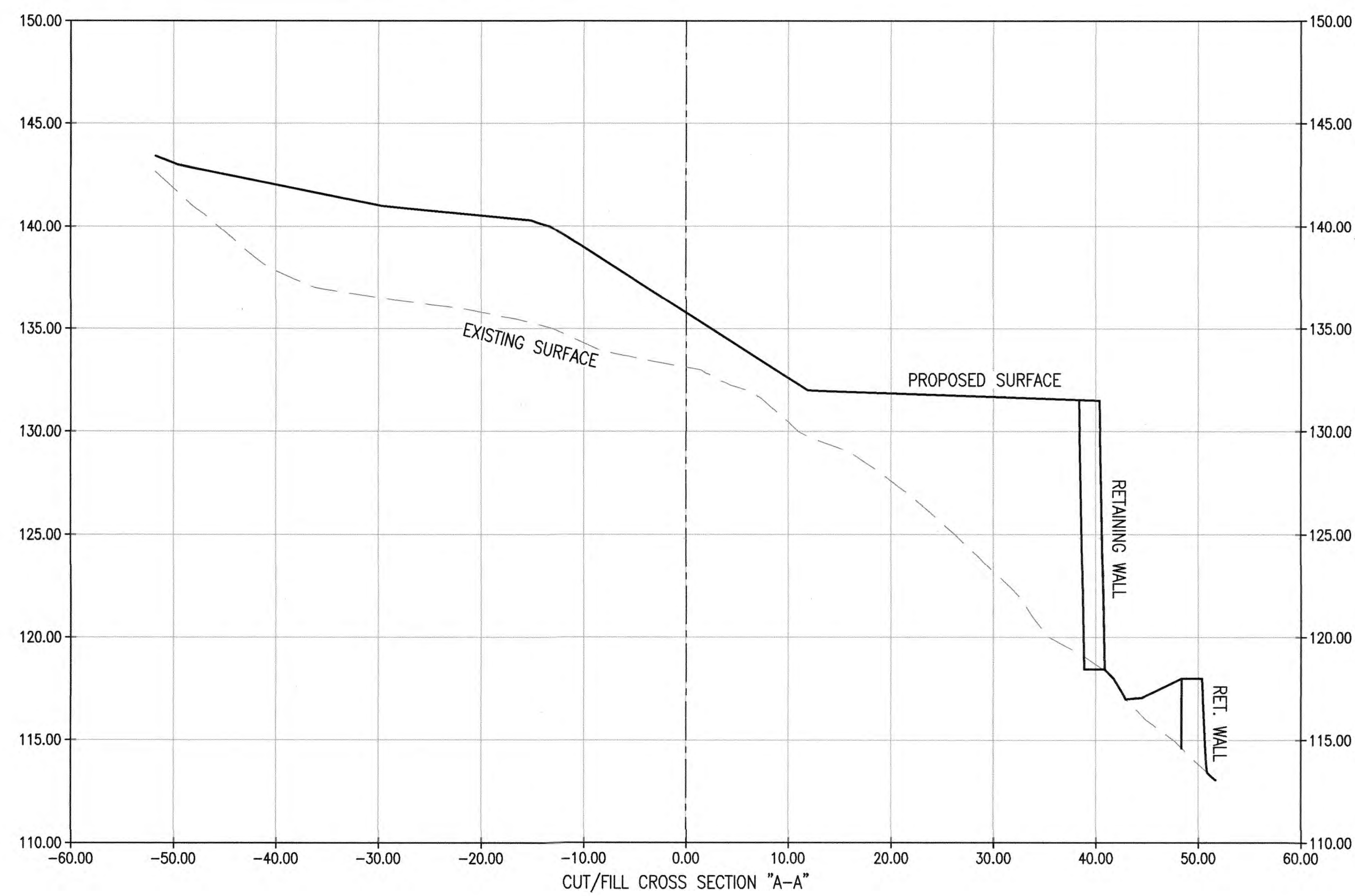
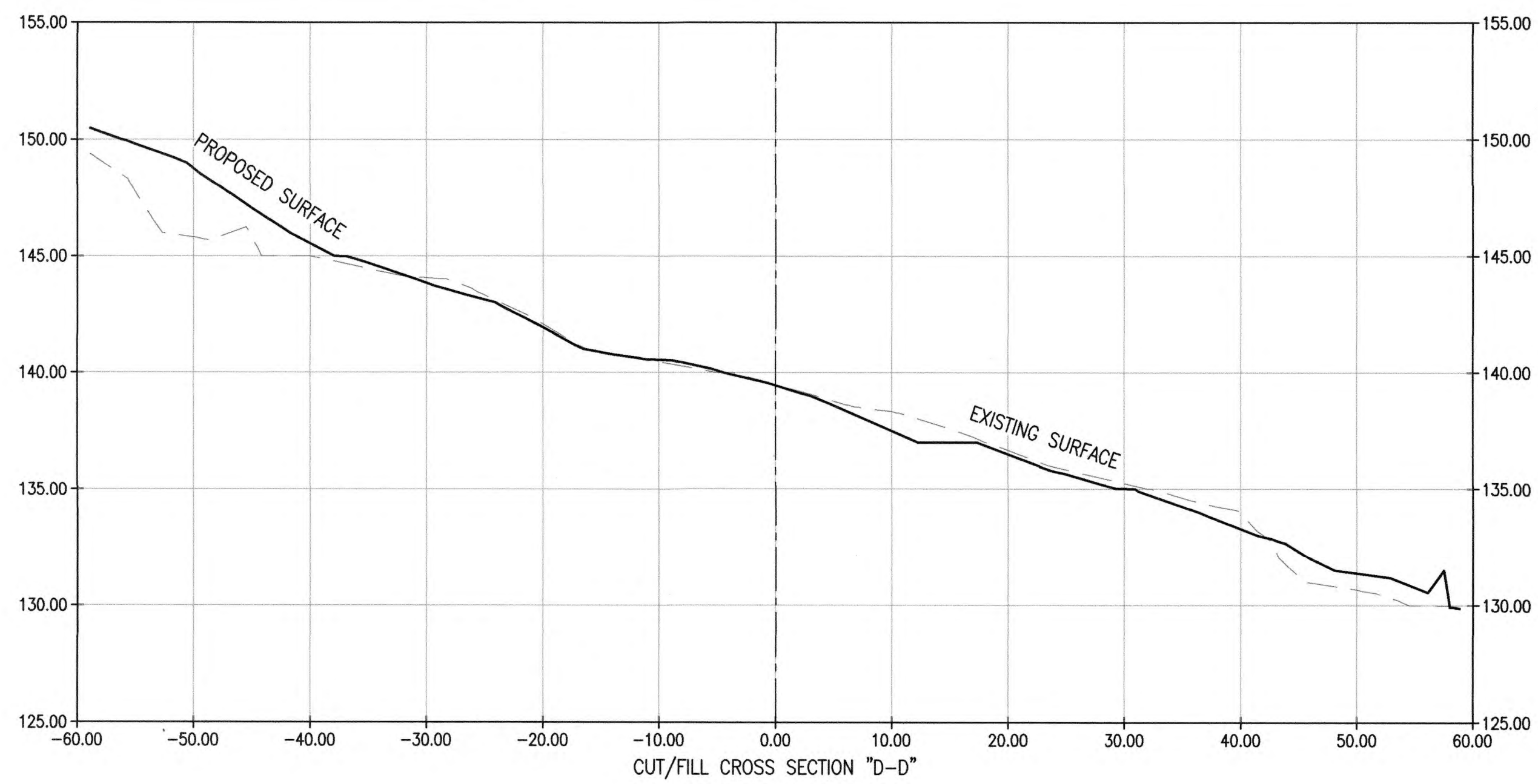
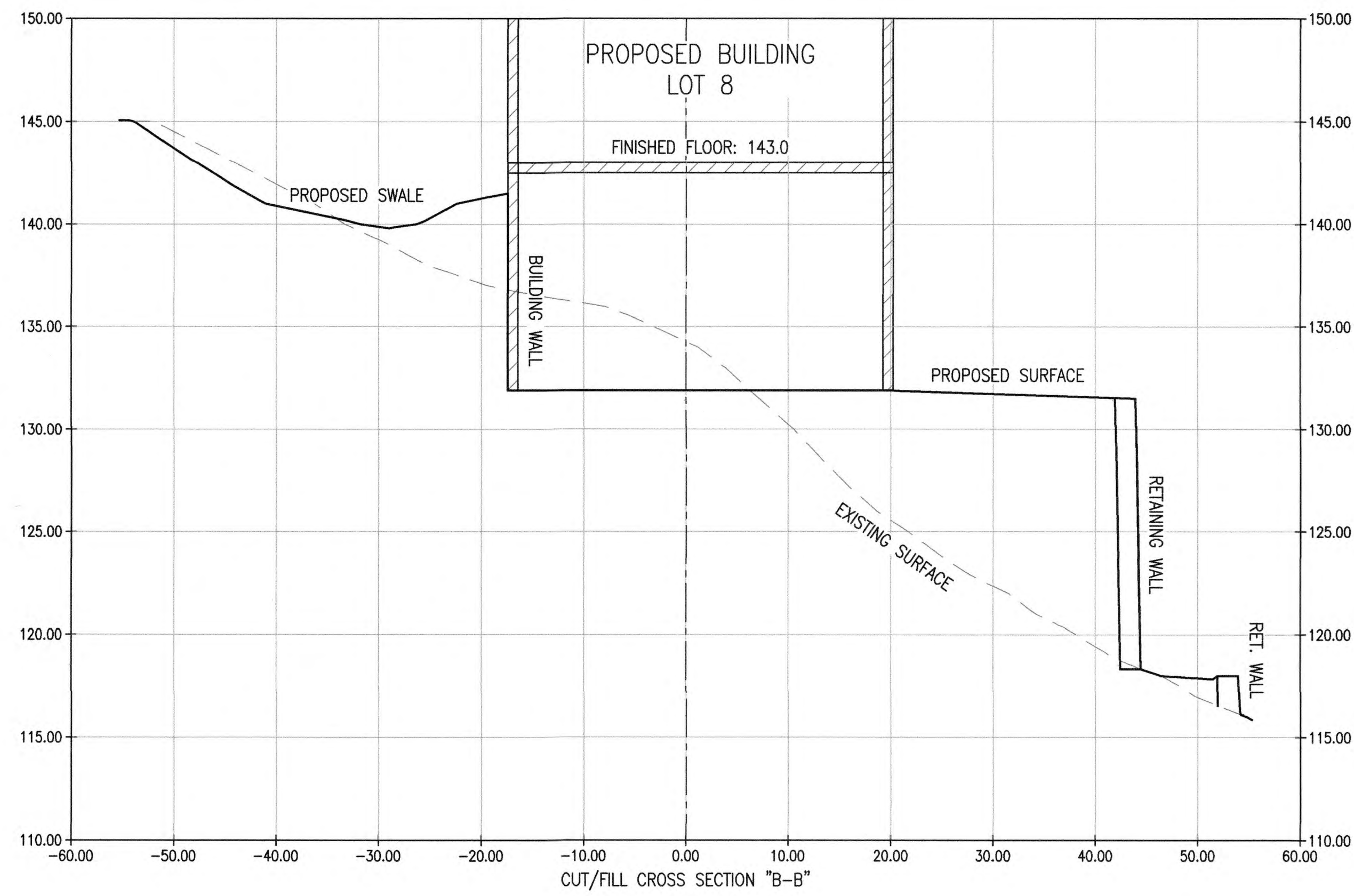
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*Frank W. Farrell*  
**FRANK W. FARRELL**

PROFESSIONAL ENGINEER  
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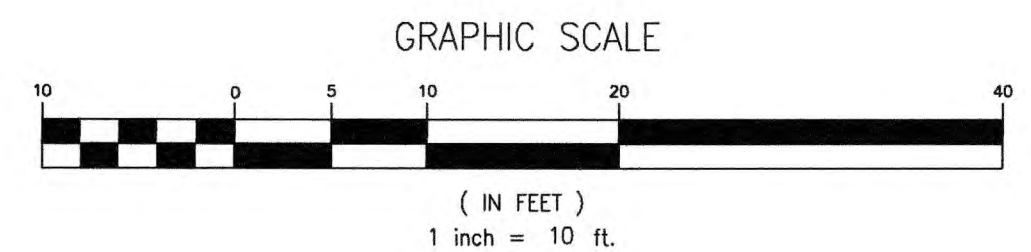
CROSS SECTION KEY MAP

**CUT FILL CALCULATIONS:**

THE FOLLOWING NUMBERS WERE GENERATED BY COMPARING THE EXISTING AND PROPOSED SURFACES IN AUTODESK CIVIL 3D USING THE "IN VOLUME SURFACE" FEATURE:

TOTAL CUT = 691.60 CUBIC YARDS  
TOTAL FILL = 952.46 CUBIC YARDS  
RESULT: NET FILL = 260.86 CUBIC YARDS

THE PROPOSED DEVELOPMENT RESULTS IN A NET FILL OF 261 CY.



CUT/FILL CROSS SECTIONS AND CALCULATIONS

32 NORTH PEAK STREET  
BLOCK 35, LOTS 8 & 9

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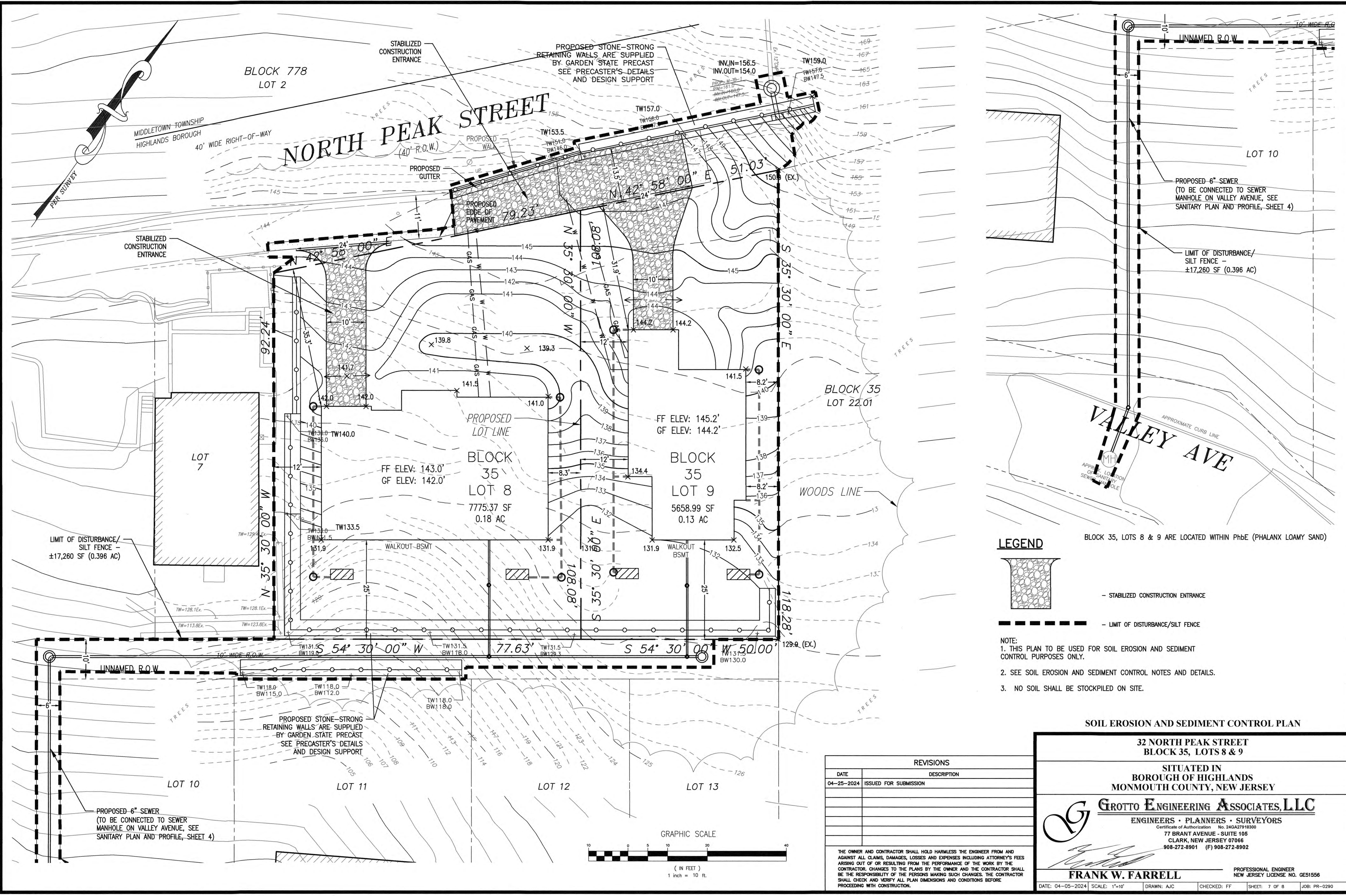
**FRANK W. FARRELL**

PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. GE51556

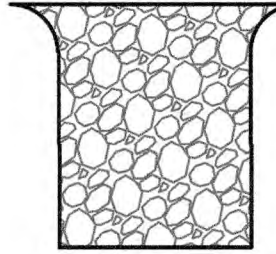

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**LEGEND**

-  - STABILIZED CONSTRUCTION ENTRANCE
-  - LIMIT OF DISTURBANCE/SILT FENCE

- NOTE:
1. THIS PLAN TO BE USED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY.
  2. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
  3. NO SOIL SHALL BE STOCKPILED ON SITE.

**SOIL EROSION AND SEDIMENT CONTROL PLAN**

**32 NORTH PEAK STREET  
BLOCK 35, LOTS 8 & 9**

SITUATED IN  
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MONMOUTH COUNTY, NEW JERSEY

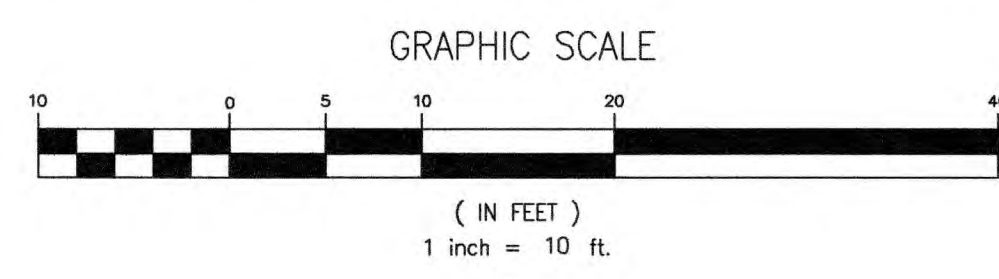
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DATE: 04-05-2024 SCALE: 1"=10' DRAWN: AJC CHECKED: FF SHEET: 7 OF 8 JOB: PR-0290

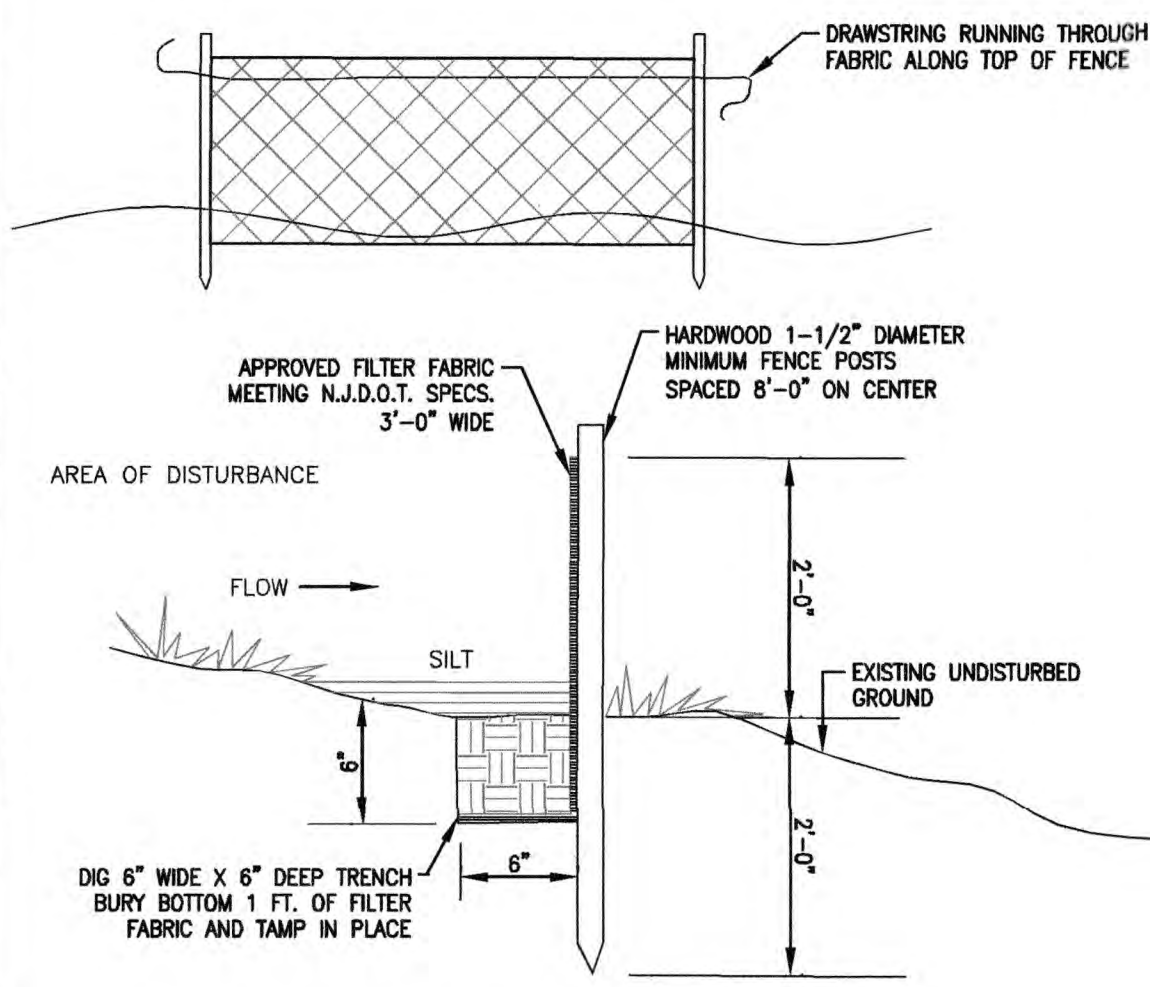
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6:\grotto\Projects\PR-0290 - 32 North Peak St., Highlands (Charlotte Farnham)\PLOT PLAN\PR-0290 - 32 North Peak St., Highlands (Charlotte Farnham) - 4.23.24.dwg 4/25/2024





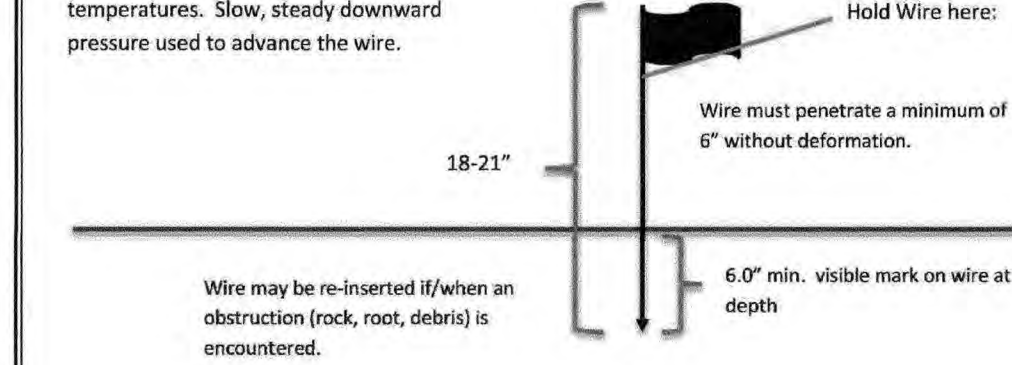
- PLACE SILT FENCE AT LOCATIONS SHOWN ON THE SOIL EROSION PLAN.
- THE SLOPE OF LAND FOR AT LEAST 30 FEET ADJACENT TO ANY SILT FENCE SHALL NOT EXCEED 5%.
- SILT FENCE SHALL BE INSTALLED SO THAT WATER CAN NOT BYPASS THE FENCE AROUND ITS ENDS.
- INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS POSSIBLE.
- SILT FENCE SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP ENGINEER.

### SILT FENCE

N.T.S.

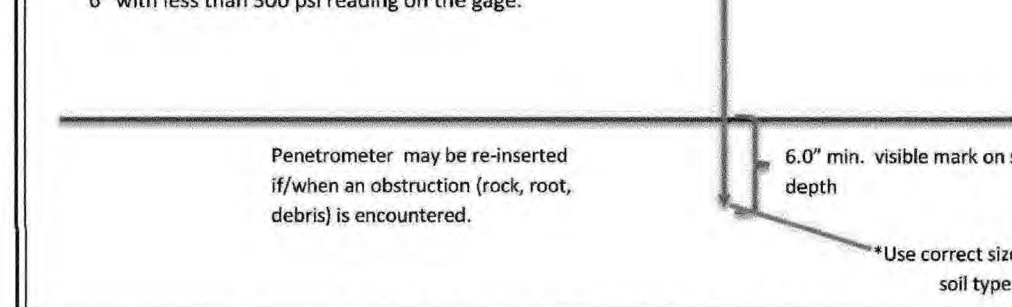
#### Probing Wire Test- 15.5 ga steel wire (survey flag)

Note: soil should be moist but not saturated. Do not test when soil is excessively dry or subject to freezing temperatures. Slow, steady downward pressure used to advance the wire.

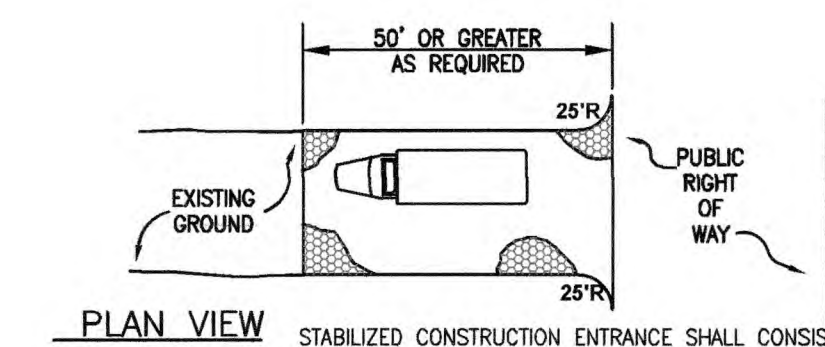
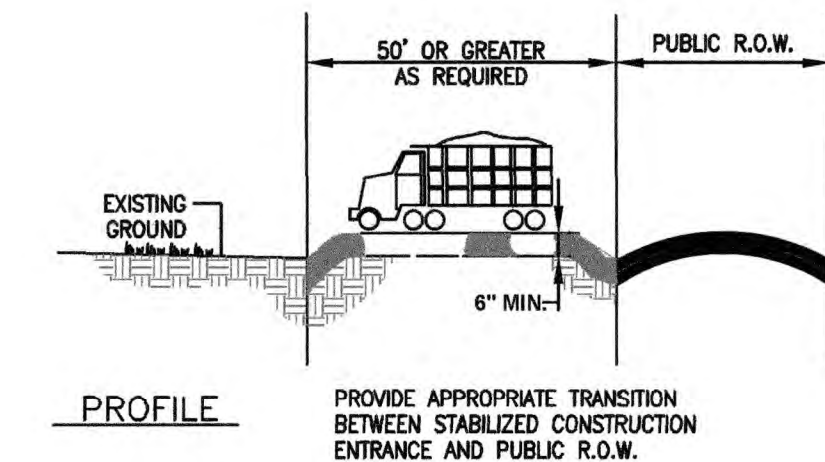


#### Handheld Soil Penetrometer Test

Note: soil should be moist but not saturated. Do not test when soil is excessively dry or subject to freezing temperatures. Slow, steady downward pressure used to advance the probe. Probe must penetrate at least 6\"/>



### SIMPLIFIED COMPACTION TESTING METHODS



### TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

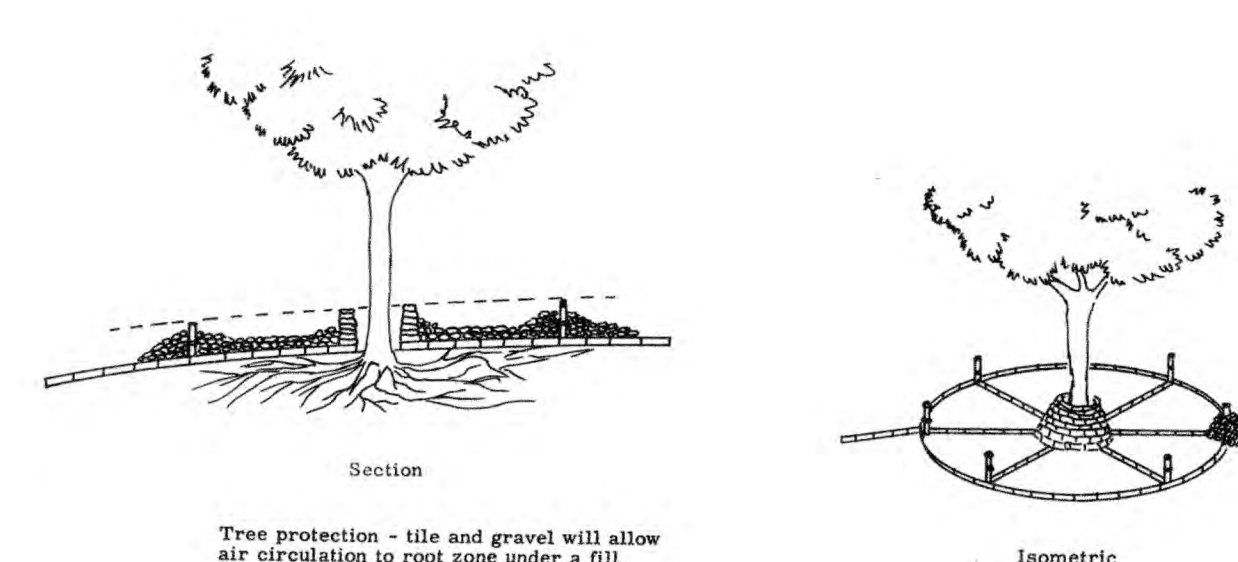


Figure 9-3: Root Protection During Construction Guide

Estimate a tree's Protected Root Zone (PRZ) by calculating the Critical Root Radius (CRR).

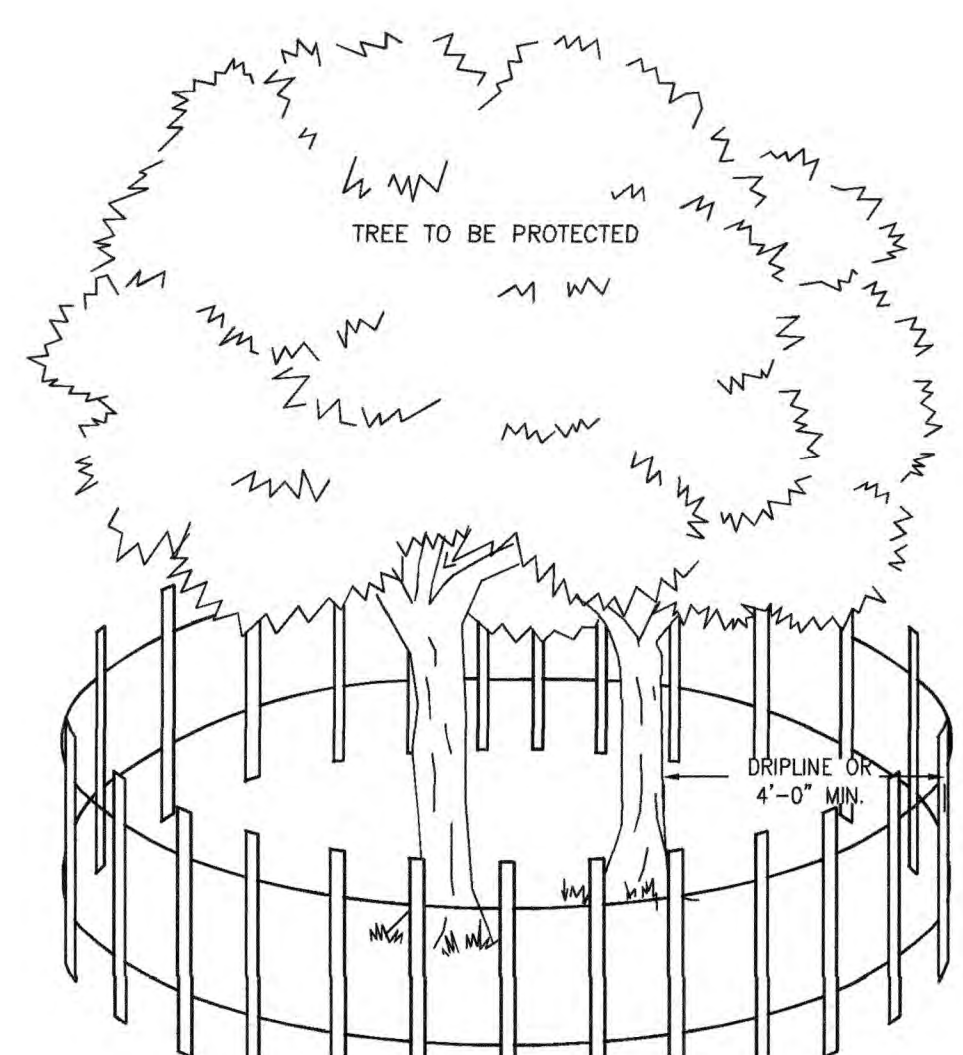
- Measure the dbh (diameter of tree at breast height, 4.5 feet above ground on the uphill side of tree) in inches.
- Multiply measured dbh by 1.5 or 1.8. Express the result in feet.

Dbh x 1.5: Critical root radius for older, established, or sensitive species.

Dbh x 1.8: Critical root radius for younger, healthy or tolerant species.

Example: Diameter at Breast Height = 32\"/>

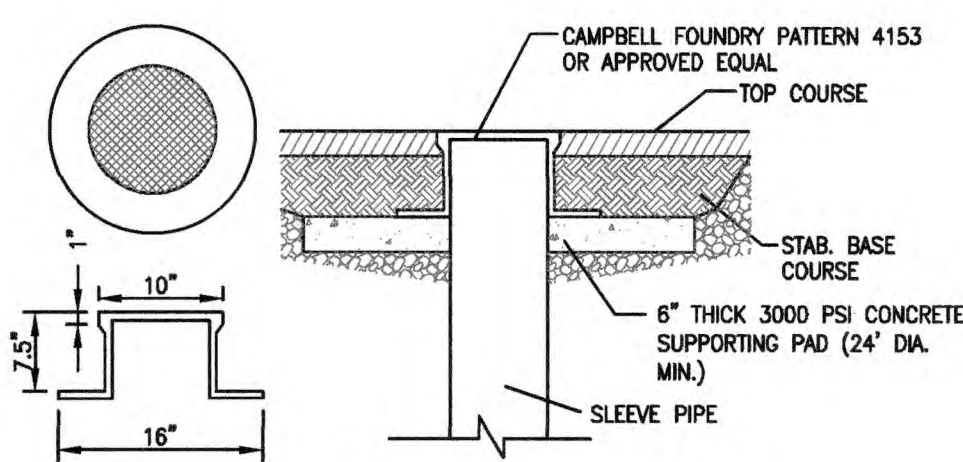
1. Protecting Trees from Construction Damage - A Homeowner's Guide, Gary R. Johnson, University Of Minnesota Extension Service, Saint Paul, MN, 1996.



- TREE PROTECTION SHALL BE PROVIDED FOR ANY AND ALL TREES TO BE PROTECTED DURING AND AFTER CONSTRUCTION.
- 4 FOOT HIGH SNOW FENCE SHALL BE PLACED AT THE DRIP LINE OF THE TREE AND ENIRCLE THE ENTIRE TREE.
- BOARDS SHALL NOT BE NAILED TO TREES DURING CONSTRUCTION.
- ROOTS SHALL NOT BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE BRANCHES.
- DAMAGED TRUNKS OR ROOTS WILL BE PAINTED IMMEDIATELY WITH A GOOD GRADE OF TREE PAINT.
- TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE FLUSH WITH TRUNK OR MAIN LIMB. PAINT IMMEDIATELY WITH A GOOD GRADE OF TREE PAINT AND BE PERFORMED UNDER THE SUPERVISION OF A LICENSED NURSERYMAN.

### TREE PROTECTION DETAIL

N.T.S.



### CLEAN-OUT CASTING DETAIL

N.T.S.

### SEEDING SCHEDULE

- TEMPORARY SEEDING SHALL CONSIST OF SPRING OATS APPLIED AT A RATE OF 2.0 LBS. PER 1,000 SF, OR PERENNIAL RYEGRASS APPLIED AT A RATE OF 1.0 LB PER 1,000 SF. TEMPORARY SEEDING TO BE MAINTAINED UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED WITH PERMANENT SEEDING. IF ANY SERIOUS EROSION PROBLEMS OCCUR, THE ERODED AREAS SHALL BE REPAIRED AND STABILIZED WITH A MULCH AS INDICATED IN NOTE NO. 6. THE OPTIMUM SEEDING DATE IS MARCH 1 THROUGH MAY 15 AND AUGUST 15 THROUGH OCTOBER 1 FOR PERENNIAL RYE AND SPRING OATS.
- PERMANENT SEEDING SHALL CONSIST OF THE FOLLOWING MIXTURE OR APPROVED EQUAL. OPTIMAL PLANTING DATE IS AUGUST 15 THROUGH OCTOBER 15. THE ACCEPTABLE PLANTING DATE IS MARCH 1 THROUGH APRIL 30.
  - TALL FESCUE ○ 6.0 LBS/1,000 SF
  - KENTUCKY BLUEGRASS (BLEND) ○ 0.5 LBS/1,000 SF
  - PERENNIAL RYEGRASS (BLEND) ○ 0.5 LBS/1,000 SF

#### WELL TO MODERATELY WELL DRAINED LOTS (MIXTURE #14)

- FERTILIZER FOR THE ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER SHALL BE 10-20-10 APPLIED AT A RATE OF 11 LBS PER 1,000 SF OR AS DETERMINED BY SOIL TESTS. FERTILIZER FOR THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER SHALL BE 10-10-10 APPLIED AT A RATE OF 11 LBS PER 1,000 SF OR AS DETERMINED BY SOIL TESTS. LIMESTONE FOR TEMPORARY AND PERMANENT SEEDING SHALL BE APPLIED AT A RATE OF 90 LBS PER 1,000 SF.
- MULCHING IS REQUIRED ON ALL SEEDINGS. SEE MULCHING NOTES, THIS SHEET.
- IF SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY OR PERMANENT SEEDING, EXPOSED AREAS TO BE STABILIZED WITH MULCH AS INDICATED IN NOTE NO. 6.
- MULCH TO CONSIST OF SMALL GRAIN STRAW OR SALT HAY ANCHORED WITH A WOOD AND FIBER MULCH BINDER OR AN APPROVED EQUAL. MULCH WILL BE SPREAD AT A RATE OF 90 TO 115 LBS PER 1,000 SF AND ANCHORED WITH A MULCH ANCHORING TOOL OR LIQUID MULCH BINDER.
- WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISS. SPRING-TOOTHED HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED, ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
- REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLOUDS, LUMPS OR OTHER UNSUITABLE MATERIALS.
- INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RE-TILLED AND FIRMED AS ABOVE.

### SOIL DECOMPACTION AND TESTING REQUIREMENTS

#### SOIL COMPACTION TESTING REQUIREMENTS

- SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
- AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
- COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. A COPY OF THE PLAN OR PORTION OF THE PLAN SHALL BE USED TO MARK LOCATIONS OF TESTS, AND ATTACHED TO THE COMPACTION REMEDIATION FORM, AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE DISTRICT.
- IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS BELOW), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL, MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.

#### COMPACTION TESTING METHODS

- PROBING WIRE TEST (SEE DETAIL)
- HAND-HELD PENETROMETER TEST (SEE DETAIL)
- TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
- NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

SOIL COMPACTION TESTING IS NOT REQUIRED IF WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6\"/>

#### PROCEDURES FOR SOIL COMPACTION MITIGATION

PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER. RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6\"/>

### SLOPE STABILIZATION NOTES

- GRADE SLOPES AS PER PLAN.
- APPLY FERTILIZER AT A RATE OF APPROXIMATELY 500 POUNDS PER ACRE (10-10-10 OR EQUAL).
- WORK FERTILIZER INTO SOIL TO A DEPTH OF 4 INCHES.
- APPLY SEED ACCORDING TO SEEDING SCHEDULE ON THIS SHEET.
- AFTER SEEDING, FIRM SOIL WITH CORRUGATED ROLLER TO ASSURE GOOD SEEDING-SOIL CONTACT.
- MULCH AND STABILIZE AS PER MULCHING AND TACKING SPECIFICATIONS ON THIS SHEET.
- STEEP SLOPES TO BE STABILIZED WITH JUTE MATTING (3:1 OR STEEPER).

### CONSTRUCTION SCHEDULE

1. CLEAR PROPOSED ENTRANCE AND PLACE STABILIZED CONSTRUCTION ENTRANCE PAD AS NOTED	3 DAYS
2. INSTALL SEDIMENT CONTROL STRUCTURES (I.E. HAY BALES AND/OR SILT FENCE) ADJACENT TO THE LIMIT OF SOIL DISTURBANCE AS SHOWN.	2 DAYS
3. DEMOLISH EXISTING STRUCTURES	1 WEEK
4. CLEAR LAND AREAS TO BE DEVELOPED. TREES SHALL REMAIN WHEREVER POSSIBLE.	1 WEEK
5. ROUGH GRADE THE SITE.	2 WEEKS
6. CONSTRUCT STORM SEWERS AND DETENTION SYSTEM.	1 WEEK
7. INSTALL SEDIMENT CONTROL MEASURES AROUND INLETS.	1 DAY
8. BEGIN BUILDING CONSTRUCTION AND CURBING.	4 DAYS
9. BEGIN FINE GRADING.	3 DAYS
10. STABILIZE ALL AREAS NOT SUBJECT TO CONSTRUCTION TRAFFIC THAT WILL REMAIN EXPOSED FOR MORE THAN 30 DAYS.	1 DAY
11. CONSTRUCT LIGHTING AND REMAINING UNDERGROUND UTILITIES.	1 WEEK
12. CONSTRUCT DRIVEWAY AND PARKING LOT PAVEMENT.	1 WEEK
13. FINISH BUILDING CONSTRUCTION.	6 MONTHS
14. INSTALL LANDSCAPING.	1 WEEK
15. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH APPLICABLE TEMPORARY OR PERMANENT SEEDING SPECIFICATIONS.	1 WEEK
16. REMOVE SEDIMENT AROUND SILT FENCES AND/OR HAY BALES.	1 WEEK
17. WHEN AREA IS STABILIZED, SEDIMENT CONTROL STRUCTURES CAN BE REMOVED.	2 DAYS

### MULCHING NOTES

- GRADING SHALL BE PERFORMED AS PER STANDARDS FOR LAND GRADING IN THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", SECTION 19.1.
- PERMANENT SEED SHALL BE APPLIED AS PER STANDARD OF THIS SHEET.
- STRAW OR HAY MULCHING IS REQUIRED ON ALL SEEDING AND SHALL CONSIST OF THE FOLLOWING: UNROOTED SMALL GRASS STRAW, MAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET).
- SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% OF THE SOIL SURFACE IS COVERED.
- LIQUID MULCH BINDER (TACKIFIER) SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

### DUST CONTROL NOTES

- ANY OF THE FOLLOWING METHODS SHALL BE USED FOR DUST CONTROL:
- MULCHES: SEE STABILIZATION SPECIFICATION.
  - TILLAGE: TO ROUGHEN THE SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED APPROXIMATELY 12\"/>
  - SPRINKLING: SITE IS SPRINKLED UNTIL THE SURFACE IS WET.
  - BARRIERS: BALES OF HAY AND/OR SILT FENCE CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

### VEGETATIVE COVER MAINTENANCE NOTES

- MAINTENANCE SHOULD OCCUR ON A REGULAR BASIS, CONSISTENT WITH FAVORABLE PLANT GROWTH, SOIL AND CLIMATIC CONDITIONS. THIS INVOLVES REGULAR SEASONAL WORK FOR MOWING, FERTILIZING, LIMING, WATER, PRUNING, FIRE CONTROL, WEED AND PEST CONTROL, RE-SEEDING AND TIMELY REPAIRS.
- MOWING ON IMPROVED AREAS, SUCH AS LAWNS, CERTAIN RECREATION FIELDS AND PICNIC AREAS SHALL BE FREQUENT. ON SEM-IMPROVED AREAS, MOWING WILL BE INFREQUENT. UNIMPROVED AREAS MAY BE LEFT UNMOWED TO PERMIT NATURAL SUCCESSION.
- FERTILIZER SHOULD BE APPLIED AS NEEDED TO MAINTAIN A DENSE STAND OR DESIRABLE SPECIES. FREQUENTLY MOWED AREAS AND THOSE AREAS ON SANDY SOILS WILL REQUIRE MORE FERTILIZATION.
- LIME REQUIREMENT SHOULD BE DETERMINED BY SOIL TESTING TO BE DONE EVERY 2 OR 3 YEARS. FERTILIZATION WILL INCREASE THE NEED FOR LIMING.
- WEED INVASION MAY RESULT FROM ABUSIVE MOWING AND INADEQUATE FERTILIZATION AND LIMING. BRUSH INVASION IS A COMMON CONSEQUENCE OF LACK OF MOWING. CONTROL OF WEEDS OR BRUSH SHALL BE ACCOMPLISHED BY USING HERBICIDES OR MECHANICAL METHODS.
- THE PROPERTY OWNER OR TENANT BY CONTRACT SHALL BE RESPONSIBLE FOR MAINTENANCE DURING AND AFTER CONSTRUCTION.

### SOIL EROSION NOTES

#### FREEHOLD SOIL CONSERVATION DISTRICT

- THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- N.J.S.A. 4:24-39 et. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY AND A REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EXHANGEMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
- THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (1\"/>
- ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHTS-OF-WAY WILL BE REMOVED IMMEDIATELY.
- PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
- AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A pH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE (OR 450 LBS/1,000 SQ. FT. OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12\"/>
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
- SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
- STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.
- ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

### GENERAL SOIL EROSION NOTES:

- STOCKPILES ARE NOT TO BE LOCATED WITHIN 50 FEET OF A FLOOD PLAN, SLOPE, ROADWAY, OR DRAINAGE FACILITY. THE BASE OF ALL STOCKPILES SHALL BE PROTECTED BY A HAY BALE BARRIER OR SEDIMENT CONTROL FENCE.
- THE SITE SHALL AT ALL TIMES, BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- ALL SEDIMENTATION STRUCTURES SHALL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.
- THE SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON-SITE OR OFF-SITE SOIL EROSION PROBLEMS DURING CONSTRUCTION.
- ANY CONVEYANCE OF THIS PROJECT OR PORTION THEREOF PRIOR TO ITS COMPLETION WILL TRANSFER FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CERTIFIED PLAN TO ANY SUBSEQUENT OWNER.
- THE CONTRACTOR SHALL MAINTAIN PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. THE OWNER SHALL MAINTAIN SAID MEASURES THEREAFTER.
- THE SOIL EROSION AND SEDIMENT CONTROL PLAN IS TO BE USED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY.

### SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

32 NORTH PEAK STREET  
BLOCK 35, LOTS 8 & 9

SITUATED IN  
BOROUGH OF HIGHLANDS  
MONMOUTH COUNTY, NEW JERSEY

**Grotto Engineering Associates, LLC**  
ENGINEERS · PLANNERS · SURVEYORS  
Certificate of Authorization No. 24GAZ7918300  
77 BRANT AVENUE - SUITE 105  
CLARK, NEW JERSEY 07066  
908-272-8901 (F) 908-272-8902

**FRANK W. FARRELL**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. GE51556

REVISIONS	
DATE	DESCRIPTION
04-25-2024	ISSUED FOR SUBMISSION

THE OWNER AND CONTRACTOR SHALL HOLD HARMLESS THE ENGINEER FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE WORK BY THE CONTRACTOR. CHANGES TO THE PLANS BY THE OWNER AND THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE PERSONS MAKING SUCH CHANGES. THE CONTRACTOR SHALL CHECK AND VERIFY ALL PLAN DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH CONSTRUCTION.