



TOWN OF NORTH CASTLE  
 WESTCHESTER COUNTY  
 17 Bedford Road  
 Armonk, New York 10504-1898

PLANNING DEPARTMENT  
 Adam R. Kaufman, AICP  
 Director of Planning

Telephone: (914) 273-3542  
 Fax: (914) 273-3554  
[www.northcastleny.com](http://www.northcastleny.com)

### GROSS LAND COVERAGE CALCULATIONS WORKSHEET

Application Name or Identifying Title: 21 Nethermont Ave Date: 12/11/2020

Tax Map Designation or Proposed Lot No.: 122.16-4-7

Gross Lot Coverage

- |     |   |              |
|-----|---|--------------|
| 1.  | Total lot Area (Net Lot Area for Lots Created After 12/13/06):  | <u>7,546</u> |
| 2.  | <b>Maximum</b> permitted gross land coverage (per Section 355-26.C(1)(a)):  | <u>3264</u>  |
| 3.  | <b>BONUS</b> maximum gross land cover (per Section 355-26.C(1)(b)):   |              |
|     | Distance principal home is beyond minimum front yard setback<br><u>0</u> x 10 =   | <u>0</u>     |
| 4.  | <b>TOTAL Maximum Permitted gross land coverage</b> = Sum of lines 2 and 3   | <u>3264</u>  |
| 5.  | Amount of lot area covered by <b>principal building</b> :<br><u>        </u> existing + <u>        </u> proposed =                      | <u>1711</u>  |
| 6.  | Amount of lot area covered by <b>accessory buildings</b> :<br><u>        </u> existing + <u>        </u> proposed =                     | <u>0</u>     |
| 7.  | Amount of lot area covered by <b>decks</b> :<br><u>        </u> existing + <u>        </u> proposed =                                   | <u>293</u>   |
| 8.  | Amount of lot area covered by <b>porches</b> :<br><u>        </u> existing + <u>        </u> proposed =                                 | <u>60</u>    |
| 9.  | Amount of lot area covered by <b>driveway, parking areas and walkways</b> :<br><u>        </u> existing + <u>        </u> proposed =    | <u>1029</u>  |
| 10. | Amount of lot area covered by <b>terraces</b> :<br><u>        </u> existing + <u>        </u> proposed =                                | <u>0</u>     |
| 11. | Amount of lot area covered by <b>tennis court, pool and mechanical equip</b> :<br><u>        </u> existing + <u>        </u> proposed = | <u>0</u>     |
| 12. | Amount of lot area covered by <b>all other structures</b> :<br><u>        </u> existing + <u>        </u> proposed =                    | <u>15</u>    |
| 13. | Proposed <b>gross land coverage</b> : Total of Lines 5 – 12 =   | <u>3108</u>  |

If Line 13 is less than or equal to Line 4, your proposal **complies** with the Town's maximum gross land coverage regulations and the project may proceed to the Residential Project Review Committee for review. If Line 13 is greater than Line 4 your proposal does not comply with the Town's regulations.



Signature and Seal of Professional Preparing Worksheet

12/11/2020  
Date



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January 29, 2019  
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**FLOOR AREA CALCULATIONS WORKSHEET**

Application Name or Identifying Title: 21 NETHERMONT AVE. Date: 12/11/20

Tax Map Designation or Proposed Lot No.: S/B/L 122.16-4-7

Floor Area

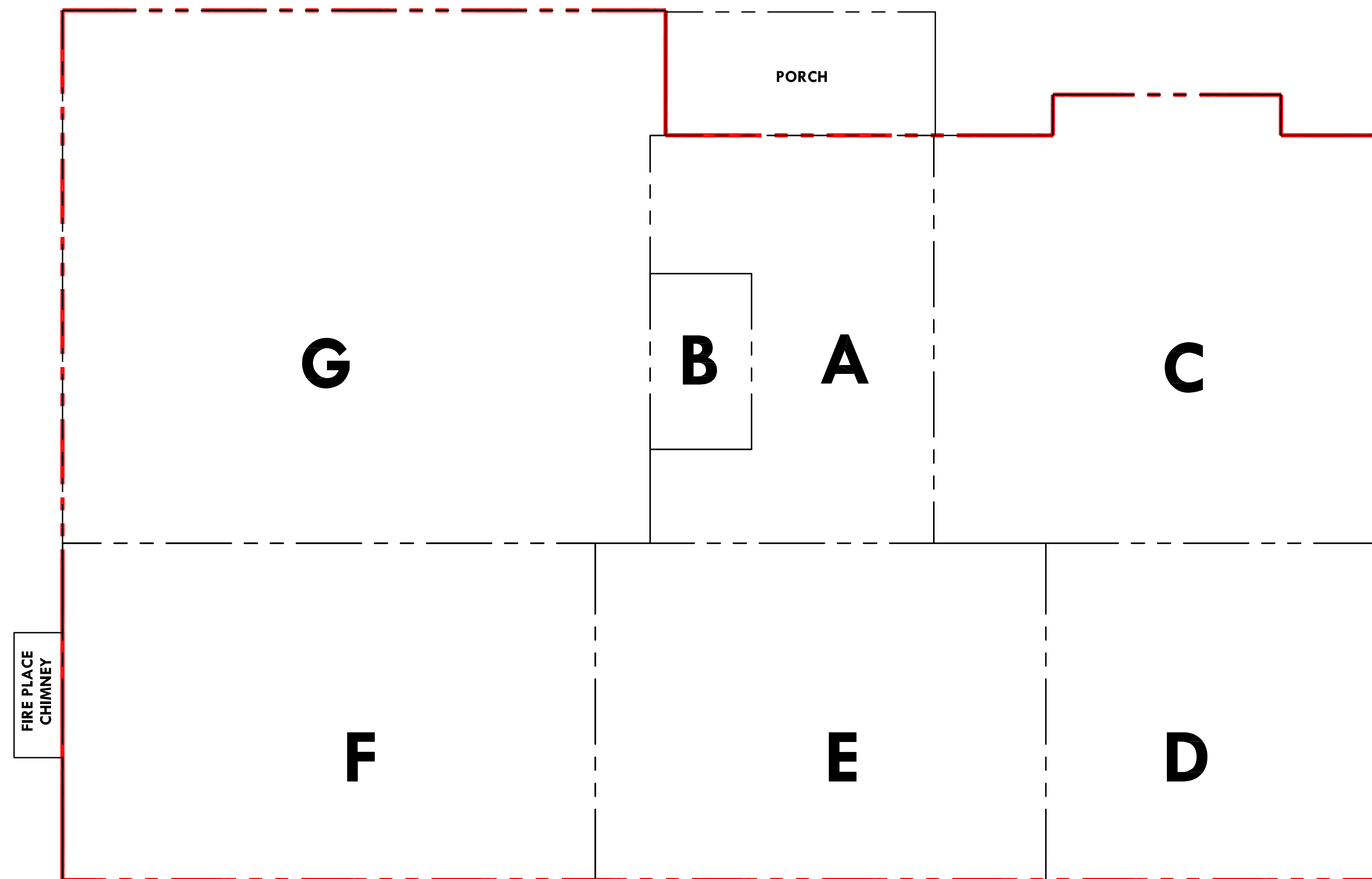
- |     |   |                   |
|-----|---|-------------------|
| 1.  | Total Lot Area (Net Lot Area for Lots Created After 12/13/06):  | <u>7,546</u>      |
| 2.  | <b>Maximum</b> permitted floor area (per Section 355-26.B(4)):  | <u>3,136.5</u>    |
| 3.  | Amount of floor area contained within first floor:<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u>                               | <u>1,205</u>      |
| 4.  | Amount of floor area contained within second floor:<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u>                              | <u>1,416</u>      |
| 5.  | Amount of floor area contained within garage:<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u>                                    | <u>504</u>        |
| 6.  | Amount of floor area contained within porches capable of being enclosed:<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u>         | <u>          </u> |
| 7.  | Amount of floor area contained within basement (if applicable – see definition):<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u> | <u>          </u> |
| 8.  | Amount of floor area contained within attic (if applicable – see definition):<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u>    | <u>          </u> |
| 9.  | Amount of floor area contained within all accessory buildings:<br>— <u>          </u> existing + <u>          </u> proposed = <u>          </u>                   | <u>          </u> |
| 10. | Proposed <b>floor area</b> : Total of Lines 3 – 9 = <u>          </u>   | <u>3,125</u>      |

If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.

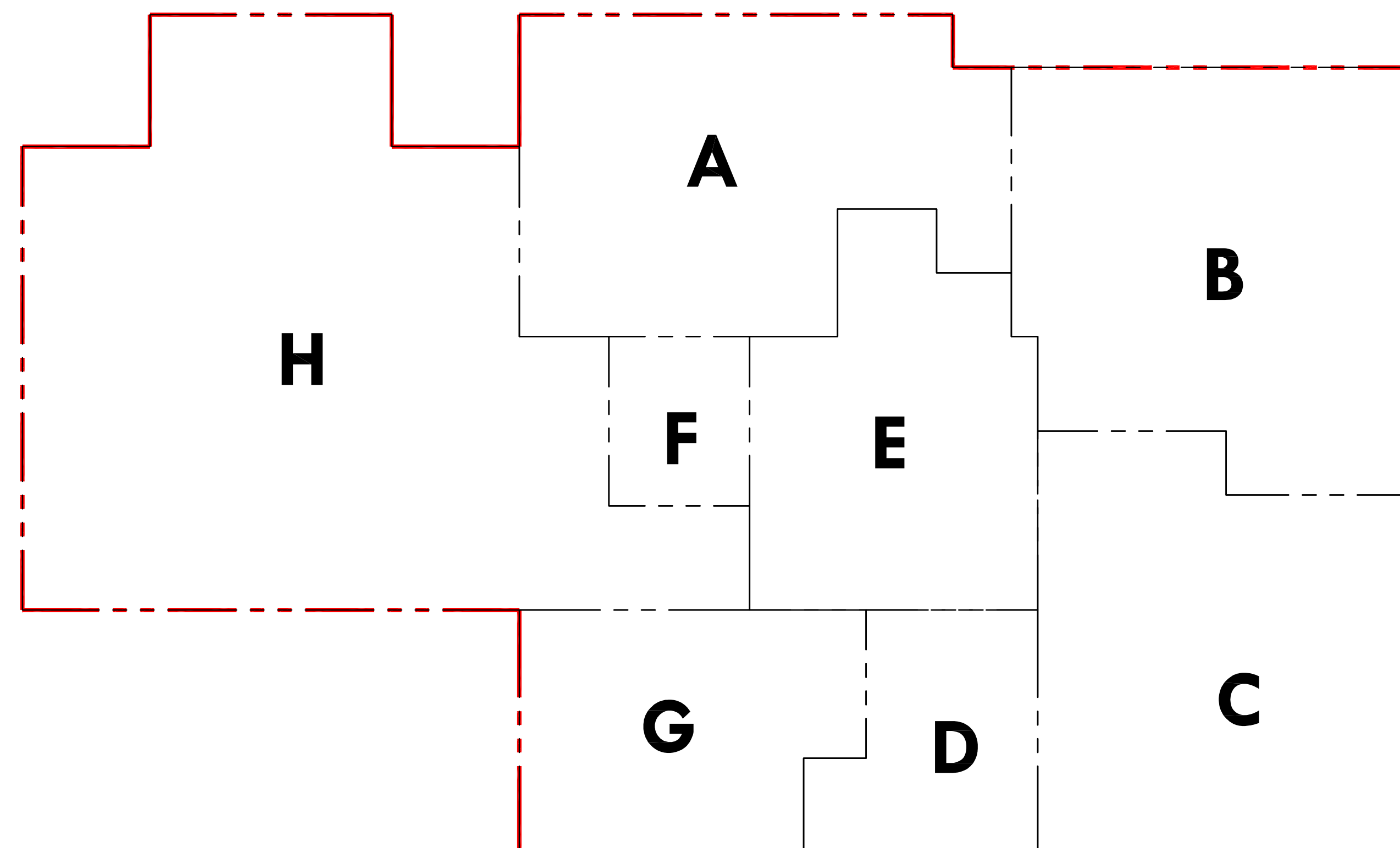
\_\_\_\_\_  
 Signature and Seal of Professional Preparing Worksheet

12/14/2020  
 Date





1ST FLOOR



2ND FLOOR

**FLOOR AREA CALCULATIONS**

**1 S T F L O O R**

HALLWAY  
A = 155 SQ. FT.

PWR. RM.  
B = 30 SQ. FT.

LIVING ROOM  
C = 310 SQ. FT.

DINING ROOM  
D = 183 SQ. FT.

KITCHEN  
E = 240 SQ. FT.

FAMILY ROOM  
F = 287SQ. FT.

(2) CAR GARAGE  
G = 504 SQ. FT.

**TOTAL SQ. FT. (1ST FLOOR)**  
**1,709 SQ. FT.**

**2 N D F L O O R**

BED ROOM #1  
A = 200 SQ. FT.

BED ROOM #2  
B = 227 SQ. FT.

BED ROOM #3  
C = 210 SQ. FT.

BATH ROOM  
D = 69 SQ. FT.

HALLWAY  
E = 134 SQ. FT.

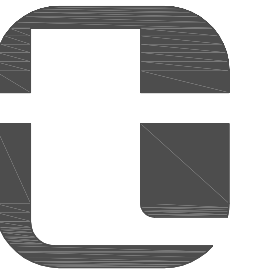
LAUNDRY  
F = 34 SQ. FT.

MASTER BATH ROOM  
G = 112 SQ. FT.

MASTER BED ROOM  
H = 430 SQ. FT.

**TOTAL SQ. FT. (2ND FLOOR)**  
**1,416 SQ. FT.**

**TOTAL COMBINED SQUARE FOOTAGE**  
**= 3,125 SQ. FT.**



**JEFFREY TAYLOR**  
ARCHITECT

572 NORTH BROADWAY  
WHITE PLAINS, NEW YORK 10603

TEL 914 289 0011



REVISIONS:  
12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:

FLOOR AREA  
CALCULATIONS

**DELAURENTIS RESIDENCE**  
NEW HOUSE CONSTRUCTION

21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:

**A-001.00**



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## Application for Site Development Plan Approval

### Application Name

DELAURENTIS - VACANT LOT - 21 NETHERMONT AVE  
NEW HOUSE CONSTRUCTION - TAX ID: SECTION 122.16-BLOCK 4- LOT 41

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### Important General Information

- Prior to submitting an application, the "Notice to Applicants" should be reviewed.
- To appear before the Planning Board, all required application materials shall be submitted not later than **12:00 P.M., Monday, fourteen (14) days** prior to the date of the Planning Board meeting at which the application is scheduled to be heard or as otherwise noted by the Planning Board Secretary. Continuing Business can be submitted 12 days prior to the Next Planning Board meeting by the close of business. Except where noted.

If all required application materials, including the pertinent application fee and escrow monies are not submitted by that deadline, the application shall be automatically removed from the agenda.

At the discretion of the Planning Board Chairman, the application may be rescheduled, if appropriate, for the next available Planning Board meeting or the application may be removed from future agendas altogether. Without prior authorization from the Planning Board, application submissions shall not be accepted at Planning Board meetings.

- At the time of submission, all required application materials shall be submitted. **Piecemeal submissions shall not** be accepted. Substitution of previously submitted materials shall not be permitted.
- All submissions shall be dated, with revision dates identified on new submissions.
- All submissions shall be accompanied by a cover letter describing the project and/or any changes as compared to previous submissions.
- For distribution purposes and mailing to the Planning Board Members and others (as required), multiple copies of application materials shall be collated into separate sets, each containing one copy of every submitted document. All application materials shall be submitted in a form that fits into a **12" x 17" envelope**. Plans shall be **folded** and **rubber banded** as necessary.
- To be considered complete for Planning Board hearing purposes, an application package shall contain the information identified in Parts IV and V of this application form.
- For purposes of completing this application form, all responses provided shall be printed, except as otherwise specified.



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**AT THE TIME OF SUBMISSION TO THE PLANNING DEPARTMENT  
PLEASE MAKE SURE THE FOLLOWING IS PROVIDED**

- ✓ SUBMISSION OF A SINGLE PDF FILE (PLANS, APPLICATION FORM, OTHER PAPERWORK) ON A DISK, THUMBDRIVE OR EMAIL
  
- ✓ COVER LETTER DESCRIBING THE PROJECT OR CHANGES TO THE PROJECT
  
- ✓ ALL PLANS ARE SIGNED AND SEALED BY A LICENSED NYS PROFESSIONAL
  
- ✓ ALL PLANS SHALL BE COLLATED AND FOLDED INTO 8 INDIVIDUAL SETS



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## **NOTICE TO APPLICANTS**

In the Town of North Castle, the Planning Board is responsible for the review and approval of all applications concerning site plans, subdivisions and lot line changes; some applications concerning special use permits, wetlands permits and tree removal permits; and the environmental review of those applications over which it has jurisdiction. The Planning Board may also have an advisory role in connection with some applications before the Town Board, such as those involving other categories of special use permits and zoning amendments.

The Planning Board is composed of five volunteer members – all residents of North Castle – who are appointed by the Town Board for five-year terms. As part of the review of some applications, the Planning Board is assisted on an as-needed basis by other lay boards of the Town, such as the Conservation Board (CB), the Zoning Board of Appeals (ZBA), the Open Space Committee and the Architectural Review Board (ARB). As part of the review of most applications, the Planning Board is also assisted by the Director of Planning, the Town Engineer, the Town Attorney and other special consultants when required.

### **FEES:**

If you submit an application for Planning Board review, you will be required to reimburse the Town for the cost of professional review services, including legal and engineering services, incurred in connection with the review of your application. The charges for professional planning review services have been \$120/hour. If other types of professional consultant review services are required, those charges will be in accord with fees usually charged for such services and pursuant to a contractual agreement between the Town and such professional.

At the time of submission of an application, the Planning Board will require the establishment of an escrow account from which withdrawals shall be made to reimburse the Town for the cost of consultant fees and professional staff services.

### **ESCROW ACCOUNT:**

Escrow Accounts are established for each application. Monies will be deducted from the account for professional review services rendered. Monthly escrow disbursement summaries will be mailed for your reference regarding your project. When the balance in such escrow account is reduced to one-third (1/3) of its initial amount, a letter will be mailed to the applicant and the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit. Additional information on these requirements is provided in the North Castle Town Code (see Sections 355-79B and 275-36.C).



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**PROCEDURE:**

Prior to submitting an application to the Planning Board for review and approval, prospective applicants should schedule an appointment with the Planning Board Secretary at (914) 273-3542 for a consultation with the Town Planner and the Town Engineer. When the appointment is made, a verbal description of the proposal should be provided to the Planning Board Secretary. The Town of North Castle is providing the services of the Director of Planning and the Town Engineer for *initial* consultation at no cost to the applicant so that it is possible to conduct the application review as efficiently as possible for the benefit of the applicant as well as the Planning Board.

After meeting with the Town Planner and Town Engineer, prospective applicants should prepare one complete set of application documents and plans. This set will be reviewed for completeness by the Town Planner. If determined to be incomplete, the Planning Department will submit a checklist indicating which items have not been adequately addressed. If determined to be complete, the checklist will be initialed and the Applicant should submit the remainder of the required application packages.

Once the checklist has been initialed and all application packages have been submitted, the Planning Board Secretary will schedule the application for the first available opening on the Planning Board's meeting agenda. However, if the required application material packages, including the pertinent application fee are not received at the Planning Board office by 12:00 PM, Monday, 14 days prior to the date of the Planning Board meeting at which you are scheduled to appear (or otherwise scheduled by the Planning Board Secretary), your application will be automatically removed from the agenda. At the discretion of the Planning Board Chairman, your application may be rescheduled, if appropriate, for the next available Planning Board meeting or the application may be removed from future agendas altogether. Additional requirements pertinent to each type of application are provided on the individual application forms, which you should carefully review prior to submitting your application.

When an application is deemed complete and submitted for review, it will be forwarded to the Planning Board Members and its professional advisors in advance of the meeting to allow adequate time for review, preparation of written reports and site inspections as necessary. Your application may also be forwarded to other boards and staff of the Town as well as to agencies outside of the Town, if required. Compliance with State Environmental Quality Review (SEQR) procedures is also required as part of the processing of all applications.

At your first appearance before the Planning Board, the Applicant will describe the project and the Planning Board will discuss any preliminary issues. The Planning Board discussion may be continued at future meetings, or if the Planning Board review has progressed sufficiently, the Application may be scheduled for a public hearing (if one is required) The public hearing may occur at a single Planning Board meeting, or it may be adjourned and continued at another Planning Board meeting. Because the nature and complexity of each application varies





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considerably, it is not possible to predict in advance the length of time needed to secure Planning Board approval. There are certain steps that you can take, however, to expedite the review process. These include, but are not limited to, the following:

- Be thoroughly familiar with the requirements pertinent to your application. Carefully review relevant provisions of the North Castle Town Code and the application form for your particular type of application. Be sure to check on what other types of approvals may be required in addition to that of the Planning Board. Approvals by other Town boards or departments as well as agencies outside of the Town may be required before you will be allowed to proceed with your project.
- Make sure that your application materials are accurately prepared and contain all required information. The information that we initially request is required, so make sure that your submission is complete. If supplementary information is requested as the review process continues, make sure that it is submitted in a timely fashion so the Planning Board can continue to move your application along.
- Follow up to make sure that your application materials are being submitted on time, or deliver them to the Planning office yourself.
- Attend the Planning Board meeting at which your application will be discussed and be on time for the meeting. If you cannot appear personally, make sure that your representative will be there and is thoroughly familiar with your application.

If the Application is approved by the Planning Board, a resolution of approval will be adopted by the Planning Board. It is the Applicant's responsibility to address any and all conditions of approval. Permits from the Building Department cannot be issued until all conditions have been addressed and the plans have been signed by the Planning Board Chair and the Town Engineer.

**ON LINE AGENDAS & PLANNING DEPARTMENT MEMORANDA CAN BE  
REVIEWED AT**

**[WWW.NORTHCASTLENY.COM](http://WWW.NORTHCASTLENY.COM)**



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### INFORMATION REGARDING PUBLIC HEARINGS

1. The North Castle Assessor's Office shall prepare a list of neighbors to be notified for the neighbor notifications and public hearings - **A minimum of one week's notice is required**. The fee is \$50.00 which includes the list of neighbors and two sets of labels for mailing. The Assessor's Office may be reached Monday – Friday from 8:30 a.m.– 4:30 p.m. at 273-3324. You may also e-mail your request to [assessor@northcastleny.com](mailto:assessor@northcastleny.com)

When requesting your list please reference the list of application types below so that you can tell the Assessor's office how many feet on all sides of the property to create the list for.

**Subdivisions** - All lots zoned R-10, R-5 and R-2F shall notice all neighbors within 200 feet from all sides of their property. All other zoning districts shall notice neighbors within 500 feet from all sides of their property. Public hearing notice must be published in the newspaper.

**Special Use Permit for Structures over 800 sq ft. & Accessory Apartment** - All Zoning Districts shall notice all neighbors within 250 feet from all sides of their property. Public hearing notice must be published in the newspaper.

**Site Plan, Non Residential** - All Zoning Districts shall notice all neighbors within 250 feet from all sides of their property. Public hearing notice must be published in the newspaper.

**Site Plan, Residential/ Neighbor Notification** – All zoning districts R-3/4A or smaller shall notice all neighbors within 250' from all sides of their property. All zoning districts zoned R-1A or larger shall notice all neighbors within 500' from all sides of the property. No public hearing required, no publication in the newspaper required.

**Wetlands Permit** - All Zoning Districts shall notice all abutting property owners. Public hearing notice must be published in the newspaper.

2. The Director of Planning will prepare a Public Notice. The applicant and or professional will review, sign, date and return to the Planning Department Secretary. If there are any changes necessary, please edit and return for corrections. The corrections will be made and emailed back to the applicant who will forward it to the Journal Newspaper, when applicable.

**If notification to the newspaper is not required, please continue to #3.**

## V. INFORMATION TO BE INCLUDED ON SITE DEVELOPMENT PLAN

The following checklist is provided to enable the Applicant to determine if he/she has provided enough information on the site development plan for the Planning Board to review his/her proposal. Applicants are advised to review ARTICLE VIII, Site Development Plan of the North Castle Town Code for a complete enumeration of pertinent requirements and standards prior to making application for site development plan approval.

The application for site development plan approval will not be accepted for Planning Board review unless all items identified below are supplied and **so indicated with a check mark in the blank line provided**. If a particular item is not relevant to the subject property or the development proposal, **the letters "NA" should be entered instead**. In addition, the project will not be scheduled on a Planning Board agenda until the Applicant receives an initialed "site plan checklist" from the Planning Department.

The information to be included on a site development plan shall include:

### Legal Data:

- Name of the application or other identifying title. *SHEET 1*
- Name and address of the Property Owner and the Applicant, (if different). *ON APPLICATION*
- Name, address and telephone number of the architect, engineer or other legally qualified professional who prepared the plan. *ON APP*
- Names and locations of all owners of record of properties abutting and directly across any and all adjoining streets from the subject property, including the tax map designation of the subject property and abutting and adjoining properties, as shown on the latest tax records. *APPLIED AND ATTACHED*
- Existing zoning, fire, school, special district and municipal boundaries.
- Size of the property to be developed, as well as property boundaries showing dimensions and bearings as determined by a current survey; dimensions of yards along all property lines; name and width of existing streets; and lines of existing lots, reservations, easements and areas dedicated to public use.
- Reference to the location and conditions of any covenants, easements or deed restrictions that cover all or any part of the property, as well as identification of the document where such covenants, easements or deed restrictions are legally established.
- Schedule of minimum zoning requirements, as well as the plan's proposed compliance with those requirements, including lot area, frontage, lot width, lot depth, lot coverage, yards, off-street parking, off-street loading and other pertinent requirements.
- Locator map, at a convenient scale, showing the Applicant's entire property in relation to surrounding properties, streets, etc., within five hundred (500) feet of the site.
- North arrow, written and graphic scales, and the date of the original plan and all revisions, with notation identifying the revisions.
- A signature block for Planning Board endorsement of approval.

**Existing Conditions Data:**

- Location of existing use and design of buildings, identifying first floor elevation, and other structures.
- Location of existing parking and truck loading areas, with access and egress drives thereto.
- Location of existing facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.
- Location of all other existing site improvements, including pavement, walks, curbing, retaining walls and fences.
- Location, size and design of existing signs.
- Location, type, direction, power and time of use of existing outdoor lighting.
- Location of existing outdoor storage, if any.
- Existing topographical contours with a vertical interval of two (2) feet or less.
- Location of existing floodplains, wetlands, slopes of 15% or greater, wooded areas, landscaped areas, single trees with a DBH of 8" or greater, rock outcrops, stone walls and any other significant existing natural or cultural features.

**Proposed Development Data:**

- Proposed location of lots, streets, and public areas, and property to be affected by proposed easements, deed restrictions and covenants.
- Proposed location, use and architectural design of all buildings, including proposed floor elevations and the proposed division of buildings into units of separate occupancy.
- Proposed means of vehicular and pedestrian access to and egress from the site onto adjacent streets.
- Proposed sight distance at all points of vehicular access.
- Proposed number of employees for which buildings are designed
- Proposed streets, with profiles indicating grading and cross-sections showing the width of the roadway; the location and width of sidewalks; and the location and size of utility lines.
- Proposed location and design of any pedestrian circulation on the site and off-street parking and loading areas, including handicapped parking and ramps, and including details of construction, surface materials, pavement markings and directional signage.
- Proposed location and design of facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

- Proposed location of all structures and other uses of land, such as walks, retaining walls, fences, designated open space and/or recreation areas and including details of design and construction.
- Location, size and design of all proposed signs.
- Location, type, direction, power and time of use of proposed outdoor lighting.
- Location and design of proposed outdoor garbage enclosure.
- Location of proposed outdoor storage, if any.
- Location of proposed landscaping and buffer screening areas, including the type (scientific and common names), size and amount of plantings.
- Type of power to be used for any manufacturing
- Type of wastes or by-products to be produced and disposal method
- In multi-family districts, floor plans, elevations and cross sections
- The proposed location, size, design and use of all temporary structures and storage areas to be used during the course of construction.
- Proposed grade elevations, clearly indicating how such grades will meet existing grades of adjacent properties or the street.
- Proposed soil erosion and sedimentation control measures.
- For all proposed site development plans containing land within an area of special flood hazard, the data required to ensure compliance with Chapter 177 of the North Castle Town Code.
- For all proposed site development plans involving clearing or removal of trees with a DBH of 8" or greater, the data required to ensure compliance with Chapter 308 of the North Castle Town Code.
- For all proposed site development plans involving disturbance to Town-regulated wetlands, the data required to ensure compliance with Chapter 340 of the North Castle Town Code.



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You may email your public notice to [legals@lohud.com](mailto:legals@lohud.com). Please request an affidavit of publication which must be submitted to the Planning Board secretary prior to the public hearing. The Journal News requires three days prior notice before 12 noon, not counting weekends and holidays, for ad placement. Make sure the notice placement of the ad in the Greater Westchester Area. This notice cannot be published any sooner than 20 days prior to the meeting and must be published no less than 10 days prior to the meeting.

If you have any questions regarding your publication you may call 888-516-9220:  
Email Address: [legals@lohud.com](mailto:legals@lohud.com)

It is suggested that you purchase the newspaper for your records the day the notice is published.

3. Send out the Public Hearing Notice/ Neighbor Notification by First Class Mail. Notice shall be mailed by the applicant in official envelopes provided by the North Castle Planning Department; the list of noticed neighbors will be prepared by the Assessor's Office. This must be sent out no less than 10 days prior to the meeting and no more than 20 days prior to the meeting date. A Certificate of Mailing (PS Form 3817 or 3877) shall be filled out and post marked by the Post Office on the day of mailing. Neighbor Notifications – no publication in the newspaper required.
4. The Friday before the meeting or no later than 12:00 p.m. the day of the meeting the following **must** be submitted.
  - List of Neighbors prepared by the Assessor's Office
  - Certificate of Mailing – PS form 3817 or 3877 post marked by the US Post Office
  - Affidavit of publication from the Newspaper (only if published in the newspaper)



**Firm Mailing Book For Accountable Mail**

Name and Address of Sender		Check type of mail or service <input type="checkbox"/> Adult Signature Required <input type="checkbox"/> Priority Mail Express <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail <input type="checkbox"/> Certified Mail <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation <input type="checkbox"/> Collect on Delivery (COD) <input type="checkbox"/> Signature Confirmation Restricted Delivery <input type="checkbox"/> Insured Mail <input type="checkbox"/> Priority Mail				<b>Affix Stamp Here</b> <i>(if issued as an international certificate of mailing or for additional copies of this receipt).</i> <b>Postmark with Date of Receipt.</b>									
USPS Tracking/Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	(Extra Service) Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee	
1.				Handling Charge - if Registered and over \$50,000 in value											
2.															
3.															
4.									Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling
5.															
6.															
7.															
8.															
Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster, Per (Name of receiving employee)													



TOWN OF NORTH CASTLE  
WESTCHESTER COUNTY  
17 Bedford Road  
Armonk, New York 10504-1898

PLANNING DEPARTMENT  
Adam R. Kaufman, AICP  
Director of Planning

Telephone: (914) 273-3542  
Fax: (914) 273-3554  
[www.northcastleny.com](http://www.northcastleny.com)

**APPLICATIONS REQUIRING PLANNING BOARD APPROVAL**  
**SCHEDULE OF APPLICATION FEES**

<b><u>Type of Application</u></b>	<b><u>Application Fee</u></b>
Site Development Plan	\$200.00
Each proposed Parking Space	\$10
Special Use Permit (each)	\$200 (each)
Preliminary Subdivision Plat	\$300 1 <sup>st</sup> Lot \$200 (each additional lot)
Final Subdivision Plat	\$250 1 <sup>st</sup> Lot \$100 (each additional lot)
Tree Removal Permit	\$75
Wetlands Permit	\$50 (each)
Short Environmental Assessment Form	\$50
Long Environmental Assessment Form	\$100
Recreation Fee	\$10,000 Each Additional Lot
Discussion Fee	\$200.00
Prior to submission of a sketch or preliminary subdivision Plat, an applicant or an applicant's representative wishes to discuss a subdivision proposal to the Planning Board, a discussion fee of \$200.00 shall be submitted for each informal appearance before the board.	

\*Any amendment to previously approved applications requires new application forms and Fes\*





TOWN OF NORTH CASTLE  
WESTCHESTER COUNTY  
17 Bedford Road  
Armonk, New York 10504-1898

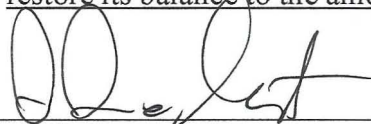
PLANNING DEPARTMENT  
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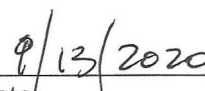
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**PLANNING BOARD SCHEDULE OF ESCROW ACCOUNT DEPOSITS**

<b><u>Type of Application Deposit*</u></b>	<b><u>Amount of Initial Escrow Account</u></b>
Concept Study	\$500.00
Site Plan Waiver for Change of Use	\$500.00
Site Development Plan for:	
Multifamily Developments	\$3,000.00 plus \$100.00 per proposed dwelling unit
Commercial Developments	\$3,000.00 plus \$50.00 for each required parking space
1 or 2 Family Projects	\$2,000.00
Special Use Permit	\$2,000.00 plus \$50.00 for each required parking space
Subdivision:	
Lot Line Change resulting in no new lots	\$1,500.00
All Others	\$3,000.00 plus \$200.00 per proposed new lot in excess of two (2)
Preparation or Review of Environmental Impact Statement	\$15,000.00

\* If a proposed action involves multiple approvals, a single escrow account will be established. The total amount of the initial deposit shall be the sum of the individual amounts indicated. When the balance in such escrow account is reduced to one-third (1/3) of its initial amount, the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit.

  
Applicant Signature

  
Date

**I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES**

Name of Property Owner: Dino DeLaurentis & Michelle DeLaurentis  
Mailing Address: 3 Wilton Rd., Rye Brook, NY 10573  
Telephone: 914-565-4505 Fax: \_\_\_\_\_ e-mail ddelauren@hotmail.com

Name of Applicant (if different): \_\_\_\_\_  
Address of Applicant: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ e-mail \_\_\_\_\_  
Interest of Applicant, if other than Property Owner:  
\_\_\_\_\_

Is the Applicant (if different from the property owner) a Contract Vendee?  
Yes  No   
If yes, please submit affidavit stating such. If no, application cannot be reviewed by Planning Board

Name of Professional Preparing Site Plan:  
Eliot Senor, P.E.  
Address: Gabriel E. Senor, P.C., 90 N Central Ave., Hartsdale NY 10530  
Telephone: 914-422-0070 Fax: \_\_\_\_\_ e-mail info@gesenor.com

Name of Other Professional: Jeffrey Taylor, AIA  
Address: Taylor Associates - Architects, 572 North Broadway, White Plains, NY 10603  
Telephone: 914-289-0011 Fax: \_\_\_\_\_ e-mail jt@taylorarchitects.com


Name of Attorney (if any): \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ e-mail \_\_\_\_\_


**Applicant Acknowledgement**

By making this application, the undersigned Applicant agrees to permit Town officials and their designated representatives to conduct on-site inspections in connection with the review of this application.

The Applicant also agrees to pay all expenses for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the professional review services shall be mailed to the Applicant, unless the Town is notified in writing by the Applicant at the time of initial submission of the application that such mailings should be sent to a designated representative instead.

Signature of Applicant:  Date: 9/13/2020

Signature of Property Owner:  Date: 9/13/2020

**MUST HAVE BOTH SIGNATURES**

**II. IDENTIFICATION OF SUBJECT PROPERTY**

Street Address: 21 Nethermont Ave.

Location (in relation to nearest intersecting street):

280 feet north south, east or west) of Freedom Rd S

Abutting Street(s): Nethermont Ave.

Tax Map Designation (NEW): Section 122.16 Block 4 Lot 41

Tax Map Designation (OLD): Section 7 Block 4 Lot 1-J

Zoning District: R-5 Total Land Area 9,367 sq. ft. or 0.215 ac

Land Area in North Castle Only (if different) \_\_\_\_\_

Fire District(s) N. White Plains School District(s) Valhalla

Is any portion of subject property abutting or located within five hundred (500) feet of the following:

The boundary of any city, town or village?

No  Yes (adjacent)  Yes (within 500 feet)

If yes, please identify name(s): White Plains

The boundary of any existing or proposed County or State park or any other recreation area?

No  Yes (adjacent)  Yes (within 500 feet)

The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?

No  Yes (adjacent)  Yes (within 500 feet)

The existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel lines?

No  Yes (adjacent)  Yes (within 500 feet)

The existing or proposed boundary of any county or State owned land on which a public building or institution is situated?

No  Yes (adjacent)  Yes (within 500 feet)

The boundary of a farm operation located in an agricultural district?

No  Yes (adjacent)  Yes (within 500 feet)

Does the Property Owner or Applicant have an interest in any abutting property?

No  Yes

If yes, please identify the tax map designation of that property:

\_\_\_\_\_

**III. DESCRIPTION OF PROPOSED DEVELOPMENT**

Proposed Use: Single Family Residential

Gross Floor Area: Existing None S.F. Proposed 3,125 S.F.

Proposed Floor Area Breakdown:

Retail \_\_\_\_\_ S.F.; Office \_\_\_\_\_ S.F.;

Industrial \_\_\_\_\_ S.F.; Institutional \_\_\_\_\_ S.F.;

Other Nonresidential \_\_\_\_\_ S.F.; Residential 3,125 S.F.;

Number of Dwelling Units: 1

Number of Parking Spaces: Existing 0 Required 2 Proposed 2

Number of Loading Spaces: Existing N/A Required \_\_\_\_\_ Proposed \_\_\_\_\_

Earthwork Balance: Cut 200 C.Y. Fill 1100 C.Y.

Will Development on the subject property involve any of the following:

Areas of special flood hazard? No x Yes \_\_\_\_\_

(If yes, application for a Development Permit pursuant to Chapter 177 of the North Castle Town Code may also be required)

Trees with a diameter at breast height (DBH) of 8" or greater?

No \_\_\_\_\_ Yes x

(If yes, application for a Tree Removal Permit pursuant to Chapter 308 of the North Castle Town Code may also be required.)

Town-regulated wetlands? No x Yes \_\_\_\_\_

(If yes, application for a Town Wetlands Permit pursuant to Chapter 340 of the North Castle Town Code may also be required.)

State-regulated wetlands? No x Yes \_\_\_\_\_

(If yes, application for a State Wetlands Permit may also be required.)

#### IV. SUBMISSION REQUIREMENTS

The site development plan application package shall include all materials submitted in support of the application, including but not limited to the application form, plans, reports, letters and SEQR Environmental Assessment Form. **Submission of the following shall be required:**

- One (1) set of the site development plan application package (for distribution to the Town Planner for preliminary review purposes).
- Once a completed preliminary site plan checklist has been received from the Planning Department, eight (8) additional sets of the site development plan application package (for distribution to Planning Board, Town Engineer, Town Attorney, Town Planner, Planning Board Secretary, police, fire department and ambulance corps).
- One (1) additional reduced sized set (11" x 17") of the site development plan application package if any portion of the subject property abuts or is located within five hundred (500) feet of the features identified in Section II of this application form (for distribution to Westchester County Planning Board).
- A check for the required application fee and a check for the required Escrow Account, both made payable to "Town of North Castle" in the amount specified on the "Schedule of Application Fees."

(continued next page)

# *Short Environmental Assessment Form*

## *Part 1 - Project Information*

### Instructions for Completing

**Part 1 - Project Information.** The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

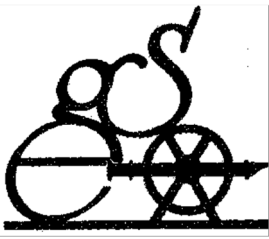
Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

<b>Part 1 - Project and Sponsor Information</b>				
Name of Action or Project: DeLaurentis - 21 Nethermont Ave - Construction of New House on Vacant Lot				
Project Location (describe, and attach a location map): 21 Nethermont Ave., White Plains, NY 10603 - Tax ID Section 122.16- Block 4 - Lot 41				
Brief Description of Proposed Action: Construction of a single family residence on a vacant lot				
Name of Applicant or Sponsor: Dino DeLaurentis		Telephone: 914-565-4505		
		E-Mail: ddelauren@hotmail.com		
Address: 3 Wilton Rd.				
City/PO: Rye Brook		State: NY	Zip Code: 10573	
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.			<b>NO</b>	<b>YES</b>
			<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: Town of North Castle: Planning Board Approval, Architectural Review Board Approval, Building Permit			<b>NO</b>	<b>YES</b>
			<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.a. Total acreage of the site of the proposed action?		0.215 acres		
b. Total acreage to be physically disturbed?		0.215 acres		
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?		0.215 acres		
4. Check all land uses that occur on, adjoining and near the proposed action.				
<input type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential (suburban)				
<input type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input type="checkbox"/> Aquatic <input type="checkbox"/> Other (specify): _____				
<input type="checkbox"/> Parkland				





<p>18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)?</p> <p>If Yes, explain purpose and size: _____</p> <p>_____</p> <p>_____</p>	<p><b>NO</b></p> <p><input checked="" type="checkbox"/></p>	<p><b>YES</b></p> <p><input type="checkbox"/></p>
<p>19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?</p> <p>If Yes, describe: _____</p> <p>_____</p> <p>_____</p>	<p><b>NO</b></p> <p><input checked="" type="checkbox"/></p>	<p><b>YES</b></p> <p><input type="checkbox"/></p>
<p>20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?</p> <p>If Yes, describe: _____</p> <p>_____</p> <p>_____</p>	<p><b>NO</b></p> <p><input checked="" type="checkbox"/></p>	<p><b>YES</b></p> <p><input type="checkbox"/></p>
<p><b>I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE</b></p> <p>Applicant/sponsor name: _____ Date: _____</p> <p>Signature: _____</p>		



# **Gabriel E. Senior, P.C.**

**Engineers Planners Surveyors**

90 N Central Park Avenue

Hartsdale, NY 10530

*Tel:* (914) 422-0070

*Fax:* (914) 422-3009

*E-Mail:* [info@Gabriel E Senior P.C.enor.com](mailto:info@Gabriel E Senior P.C.enor.com)

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10/22/2020

**To: Town of North Castle Planning Board**

**Re: 21 Nethermont Ave - Section, Block & Lot: 122.16/4/41 – Response to RPRC Determination Letter**

Dear Members of the Planning Board,

After attending a meeting with the RPRC, we have been referred to the Planning Board to discuss the subject project further. Below are responses to the questions/comments from the RPRC Determination Letter dated 10/06/2020:

***Residential Project Review Committee Determination Letter Comments***

- Provide calculations and exhibits demonstrating how average grade was calculated.
  - See **GABRIEL E SENOR P.C. Site Plan Package - Stormwater Pollution Prevention Plan Sheet 3 of 6, SW-1 under the zoning table**
- Provide calculations and exhibits demonstrating how roof midpoint was calculated.
  - See **Architects Plan Package - sheets A-400 and A-401 by Taylor Associates – Architects, PC**
- Given the amount of exposed foundation, the basement may be considered a story. Provide calculations and exhibits demonstrating that basement would not be considered a story. If the basement is a story it must be counted in gross floor area. In addition, if the basement is a story, it would appear that the proposed building would exceed the maximum number of stories (2.5)

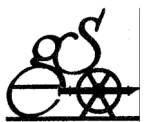
Definition of Gross Floor Area: ... “basement is considered a "story" in accordance with one of the following three alternative measurements:

- Where the finished surface of the floor above the basement is more than six feet above average grade.
  - See **Architects Plan Package - sheets A-400 and A-401 by Taylor Associates – Architects, PC**

- Where the finished surface of the floor above the basement is more than six feet above the finished ground level for more than 50% of the total building perimeter.
  - See **GABRIEL E SENOR P.C. Site Plan Package - Stormwater Pollution Prevention Plan Sheet 3 of 6, SW-1 under the zoning table**

- Where the finished surface of the floor above the basement is more than 12 feet above the finished ground level at any point along the building perimeter.”
  - See **Architects Plan Package - sheets A-400 and A-401 by Taylor Associates – Architects, PC**

- The submitted planting plan should be revised to include a plant schedule that includes the common name, scientific name, label, size and quantity of all proposed plants.
- See Landscape Architect Plan Package - **Planting Plan** by Walter G. Nestler P.C. Dated 10/10/2020.
  
- It is noted that the proposed rear retaining walls are located directly on the property line. This configuration creates a significant adverse visual impact to the adjoining property. The retaining walls should be relocated so that screening plantings can be installed at the base of the wall in an effort to mitigate visual impacts.
- The wall has been relocated and screening has been proposed on the low side of the wall. See GABRIEL E SENOR P.C. Site Plan Package - **Stormwater Pollution Prevention Plan** Sheet 3 of 6, SW-1 for wall location and see Planting Plan by Landscape Architect for screening.
  
- The site plan should be revised to depict the location of all Town-regulated trees. In addition, the plan should depict all trees proposed to remain as well as depict (and quantify) trees proposed to be removed.
- See GABRIEL E SENOR P.C. Site Plan Package - **Existing Conditions, Topographical Survey, Tree Removals Plan** Sheet 1 of 6, TR-1.
  
- Pursuant to Section 308-15.A(11) of the Town Code, the Applicant should prepare a plan detailing the replacement proposed to mitigate impacts from the proposed tree removal.
- See Landscape Architect Plan Package - **Planting Plan** by Walter G. Nestler P.C. Dated 10/10/2020.
  
- The site plan should be revised to depict Town-regulated steep slopes. The plan should also depict (and quantify in square feet) the total proposed amount of Town-regulated steep slope disturbance.
- See GABRIEL E SENOR P.C. Site Plan Package - **Steep Slope Analysis** sheet 2 of 6, TS-1 where all steep slope areas and disturbance within the steep slope areas are clearly shown.
  
- The Applicant should submit a gross land coverage calculations worksheet for review.
- Gross Land Coverage worksheet/calcs attached.
  
- The Applicant should submit a gross floor area calculations worksheet for review.
- GFA worksheet calculations attached.
  
- Sight distance profiles have been provided. The sight line plan shall be made part of the signed/sealed site plan set.
- See GABRIEL E SENOR P.C. Site Plan Package - **Sight Distance Analysis** sheet 5 of 6, SD-1
  
- The sight distance profile facing south shall be revised to correctly illustrate the topography. It appears the sight profile to the south is reversed.
- See Revised on GABRIEL E SENOR P.C. Site Plan Package - **Sight Distance Analysis** sheet 5 of 6, SD-1
  
- Existing vegetation on the neighboring 29 Nethermont Avenue will likely hinder adequate visibility. Clearing will be required. If so, agreement from the neighbor and a sight easement will be needed.
- The owner will discuss an agreement with the neighbor following an initial discussion with the board.



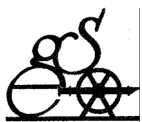
GABRIEL E SENOR P.C.

Page 2 of 5

21 Nethermont Ave - Section, Block & Lot: 122.16/4/41

Response to RPRC Determination Letter

- It is recommended that the applicant evaluate driveway access from the south side of the lot.
- Section 355-59 (B)(3) Does not allow a driveway steeper than 4% within 35 ft of the centerline of the roadway. In order to meet this requirement, even if we shifted the house as far west and south as possible to gain distance, the house would have to be raised by 3+ ft. If we raised the house 3+ ft we would not align with the building height requirements unless we added another wall in the rear or made the rear yard steeper which would make it not usable. The next option would be to add a 3 ft wall along the rear of the home, which would not be aesthetically favorable. We are also limited in our design due to the GFA and height requirements of the building. We spent a lot of time exploring options of a driveway entrance and drainage location to prevent use of a pump chamber and this designed proved to be the only design that works with the topography of the lot and kept us in conformance with town code.
- The plan shall clarify how the slot drain will connect to the 6-inch discharge to the pump chamber.
- See Pump Chamber Detail in GABRIEL E SENOR P.C. Site Plan Package - **Stormwater Pollution Prevention Plan** Sheet 4 of 6, SW-2.
- The slot drain detail is not appropriate for H-20 loading. Revise and replace as needed.
- See slot drain detail in GABRIEL E SENOR P.C. Site Plan Package - **Stormwater Pollution Prevention Plan** Sheet 4 of 6, SW-2.
- The applicant has provided cut and fill volume estimates. It is noted that approximately 900 cubic yards of fill will be imported to the site. Given the narrow roadways in this neighborhood, this office is concerned with the amount of truck traffic required for delivery. Details regarding delivery, staging and stockpiling shall be added to the plan.
- See GABRIEL E SENOR P.C. Site Plan Package – **Fill Delivery and Staging Plan** Sheet 4 of 6, FS-1.
- The driveway detail shall be revised to illustrate and note that the maximum curb cut shall be 18 feet wide.
- Revised
- A north arrow shall be added to Sheet SW-1 (1 of 2).
- Added
- The stormwater calculations shall be revised to correctly illustrate the hydrologic soils native to the site. The same hydrologic soil group shall be used for existing and proposed conditions. The hydrologic analysis shall be updated as needed.
- Pre development conditions on the site are woods with light underbrush and there are visible outcroppings at various locations therefore we know there is shallow rock. We used the D soils group because we are aware that bedrock is shallow, therefore the site has high runoff potential and according to USDA NRCS, Class D soils are *“Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission”*. Given the



GABRIEL E SENOR P.C.

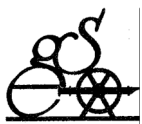
Page 3 of 5

21 Nethermont Ave - Section, Block & Lot: 122.16/4/41

Response to RPRC Determination Letter

USDA guidance and our professional evaluation, we decided that classifying the pre existing conditions as such. Post development will have a decrease in slope in the rear yard and will incorporate fill material and bring grass onto the site therefore improving runoff volume/rate.

- The plan proposes a pumped discharge to the storm system on Nethermont Avenue. We continue to recommend that the applicant evaluate a mitigation system that does not require a pump. If required, design details and sizing calculations for the pump system shall be provided.
- We have included a system in the front yard for the impervious urfaces in the font portion of the property that allow us to gain pitch to the street drain, while downsizing the system in the rear, to accommodate a smaller area. Pump Design details are provided. See pump chamber detail.
- The Highway Department shall opine as to whether a pump discharge is acceptable to discharge to their storm basin.
- The plan shall include design details for the proposed retaining walls. Calculations, preparedby a NYS Licensed Professional Engineer shall be provided to demonstrate adequate factors ofsafety for sliding, overturning and soil bearing.
- Retaining wall design has been provided.
- The Site Plan shall clearly state that the proper construction of all walls four (4) feet and greater in height shall be certified by the Design Professional prior to issuance of a Certificate of Occupancy.
- See Note # 32
- The retaining wall and stormwater mitigation layout shown on the architect's drawings shall be coordinated with the Engineer's plans. The landscaping shown appears minimal.
- Removed for clarification. Gabriel E Senior Plans should only be referenced for site plan.
- The plans from different Design Professionals shall be cross-referenced to one another.
- All plans now match eachother.
- Provide driveway dimensions.
- Dimensions provided.
- Provide inverts for the proposed sewer service. It appears the basement will need to be served by an ejector pump.
- Inverts shown as anticipated but it is noted that field conditions govern and all inverts should be field verified.
- Provide a saddle connection detail for the sewer service.
- Saddle Connection for sewer and drainage overflow provided on sheet 4 of 6 on stormwater plan



GABRIEL E SENOR P.C.

Page 4 of 5

21 Nethermont Ave - Section, Block & Lot: 122.16/4/41

Response to RPRC Determination Letter

- Provide water service details (connections, curb box, valve, etc.) and illustrate the location of the property line curb box.
- **Water service connection and curb box details on sheet 3 of 6 on stormwater plan.**

If you need any further clarification, please contact me.

Sincerely,

Eliot Senor P.E.



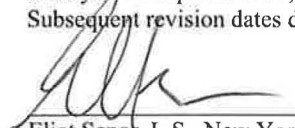
GABRIEL E SENOR P.C.

Page 5 of 5

21 Nethermont Ave - Section, Block & Lot: 122.16/4/41  
Response to RPRC Determination Letter

Possession NOT indicated

This is to certify that this map and the survey on which it is based were made in accordance with the "Minimum Standard" Detail Requirements for New York State Association of Land Surveyors. This Survey is a representation of the property as surveyed on September 10, 2020 the date that the field work was performed. Subsequent revision dates do not constitute an updated survey.

  
 Eliot Senor, L.S. New York State Lic. No. 049822

Copies of the survey map not bearing the land surveyor's original blue signature and embossed seal shall not be considered to be a true and valid copy. Copyright Gabriel E. Senor, P.C., 2018. ALL RIGHTS RESERVED.

A Title report lists easements and restrictions if the report was not provided these easements and or restrictions may not be shown. A copy of the title report was not provided. A copy of the deed was provided. Survey may be subject to easements not shown.

Surface elevations and underground appurtenances, if any, whether or not shown are not guaranteed. Fences or possession lines generally do not follow a straight line. The survey shows straight lines between located points. Any dimensions shown are to the surveyed point only. Labeled dimensions cannot be used for any other point along the line.

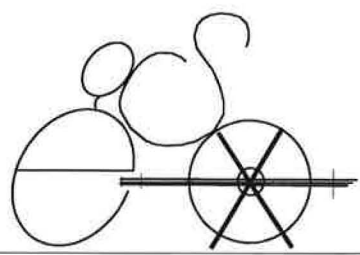
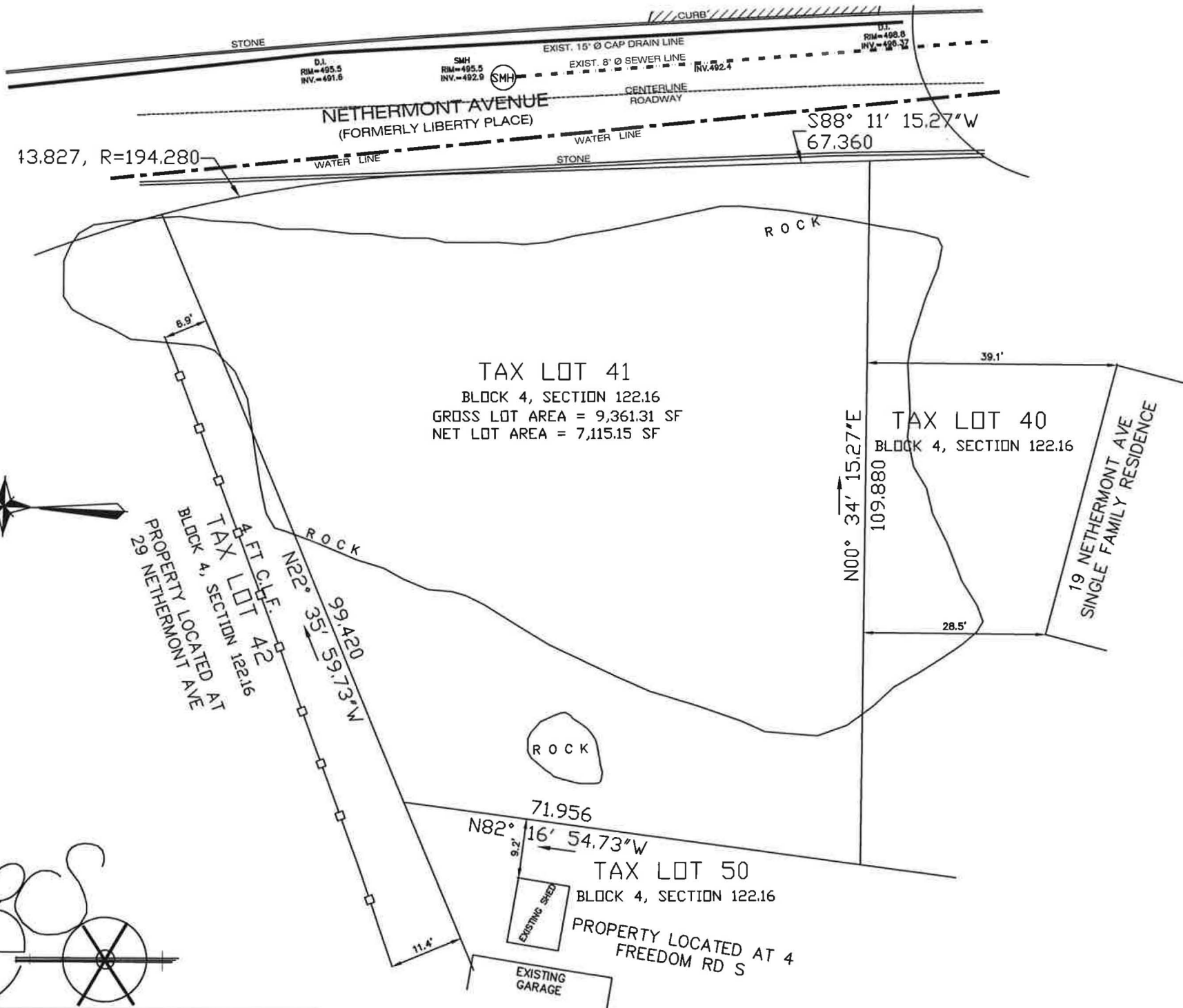
Unauthorized alteration or additions to the survey map is a violation of Section 7209 sub-section 2 of the New York State Education Law

NOT FOR TITLE TRANSFER

**SURVEY OF 21 NETHERMONT AVE**  
 TAX ID: SECTION 122.16 BLOCK 4 LOT 41  
 AS SHOWN ON THE OFFICIAL TAX MAP OF  
 NORTH CASTLE  
 LOCATED IN THE  
 TOWN OF NORTH CASTLE  
 P.O. BOX: WHITE PLAINS, NY  
 WESTCHESTER COUNTY, NEW YORK.

SCALE: 1" = 20'

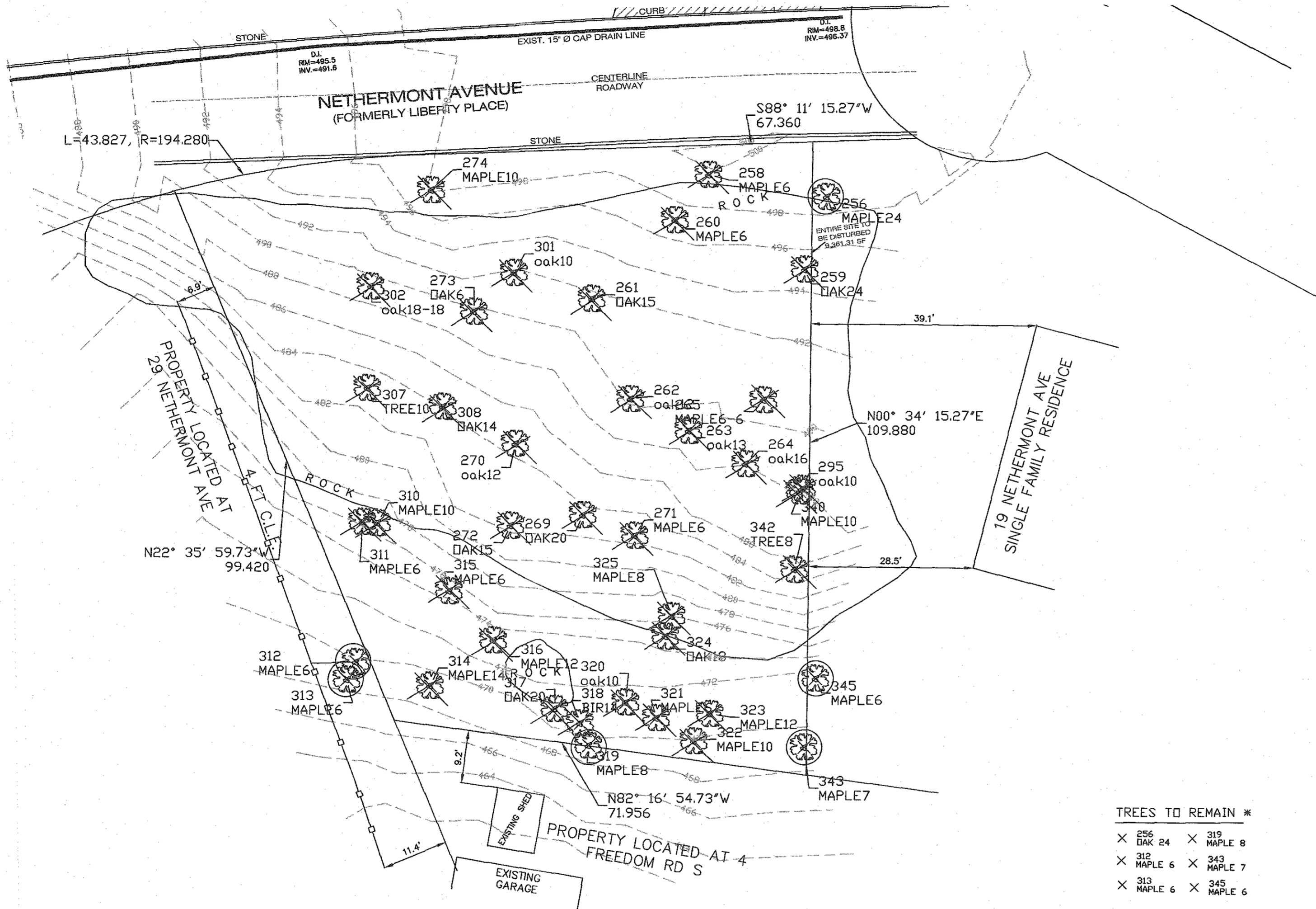
DATE: SEPTEMBER 10, 2020



**GABRIEL E. SENOR, P.C.**  
 CONSULTING ENGINEER • LAND SURVEYORS  
 90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10530  
 (914) 422-0070 FAX 422-3009

**SYMBOLS LEGEND**

- CATCH BASIN
- DRAIN INLET
- UTILITY POLE
- SIGN POST
- ⊗ HYDRANT
- ⊗ WATER VALVE
- ⊗ GAS VALVE
- ⊗ LIGHT POLE
- ⊗ TRAFFIC POLE
- ⊗ TELE. MANHOLE
- ⊗ ELECTRIC BOX
- ⊗ SEWER MANHOLE
- ⊗ WATER MANHOLE
- ⊗ ELECTRIC MANHOLE
- ⊗ DRAIN MANHOLE
- ⊗ MANHOLE
- ⊗ MONITORING WELL
- ⊗ VALVE
- ⊗ TREE
- 1  
SIZE  
+242.5 EXIST. ELEV.  
+242.5 PROP'D ELEV.
- 1  
SIZE  
+242.5 EXIST. ELEV.  
+242.5 PROP'D ELEV.
- ⊗ (TO BE REMOVED)
- III - III - III  
SILT FENCE  
OR HAYBALES AS REQ'D



- TREES TO REMAIN \***
- × 256 MAPLE 24 × 319 MAPLE 8
  - × 312 MAPLE 6 × 343 MAPLE 7
  - × 313 MAPLE 6 × 345 MAPLE 6

TREES TO REMOVE **			
258 MAPLE 6	269 OAK 20	308 OAK 14	319 MAPLE 8
259 OAK 24	270 oak 12	310 MAPLE 10	320 oak 10
260 MAPLE 6	271 MAPLE 6	311 MAPLE 6	321 MAPLE 6
261 OAK 15	272 OAK 15	314 MAPLE 14	322 MAPLE 10
262 oak 12	273 OAK 6	315 MAPLE 6	323 MAPLE 12
263 oak 13	274 MAPLE 10	316 MAPLE 12	324 OAK 18
264 oak 16	301 oak 10	317 OAK 20	325 MAPLE 8
265 MAPLE 6	302 oak 18	318 BEECH 14	

Total Removal  
263 cal. inch

\*\* Removals due to construction & proposed development including Excavation, trenching, filling, grading, stormwater requirements, etc.

JOB NUMBER: R.O.187-74 CAD 2018

**NOTES:**

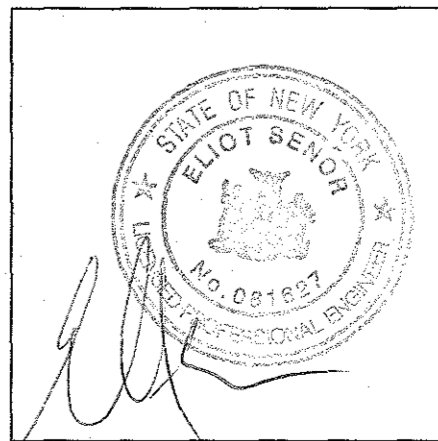
Locations, sizes and descriptions of all utilities are based on field survey location of surface appurtenances and available record plate data. Same is subject to scale and method limitations. Exact location for existing service installations may require verification by the respective utility companies (call 800-962-7962) and by excavation. The location, material and size of existing underground improvements or encroachments hereon are not certified underground routing cannot be guaranteed. Exact connections for existing service installations may require verification by excavation or dye testing. Such tests will be subject to additional fee based on time. Underground utilities may not always follow a straight line between surface appurtenances and should be confirmed by excavation and the respective companies. Please note that there are usually no utility company records of the location of on-site utilities connections.

NO.	DATE	DESCRIPTION	BY
1	12/11/2020	RPRC DET. LETTER	GC

**EXISTING CONDITIONS,  
TOPOGRAPHICAL SURVEY,  
TREE REMOVALS**

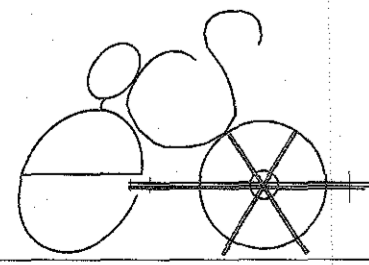
TAX ID: SECTION 122.16  
BLOCK 4 LOT 7  
AS SHOWN ON THE OFFICIAL TAX MAP OF  
NORTH CASTLE  
LOCATED IN THE  
TOWN OF NORTH CASTLE  
P.O. BOX: WHITE PLAINS, NY  
WESTCHESTER COUNTY, NEW YORK.

**GABRIEL E. SENOR, P.C.**  
CONSULTING ENGINEER & LAND SURVEYORS  
90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10530  
(914) 422-0070 FAX 422-3009



SCALE: 1" = 15'	
DATE: SEPTEMBER 10, 2020	
DRAWN BY: GC	CHECKED BY: ES.

TR - 1



**GABRIEL E. SENOR, P.C.**  
Engineer & Surveyor

90 NORTH CENTRAL AVE, HARTSDALE, NEW YORK 10530  
(914) 422-0070



**SYMBOLS LEGEND**

- CATCH BASIN
- DRAIN INLET
- UTILITY POLE
- SIGN POST
- ⊗ HYDRANT
- ⊗ WATER VALVE
- ⊗ GAS VALVE
- ⊗ LIGHT POLE
- ⊗ TRAFFIC POLE
- ⊗ TELE. MANHOLE
- ⊗ ELECTRIC BDX
- ⊗ SEWER MANHOLE
- ⊗ WATER MANHOLE
- ⊗ ELECTRIC MANHOLE
- ⊗ DRAIN MANHOLE
- ⊗ MANHOLE
- ⊗ MONITORING WELL
- ⊗ VALVE
- ⊗ 14 TREE
- 1 SIZE
- +242.5 EXIST. ELEV.
- +242.5 PRGP'D ELEV.
- ⊗ 14 TREE
- (TO BE REMOVED)
- III - III - III SILT FENCE
- or HAYBALES AS REQ'D

**NOTES**

- See Stormwater Plan for Erosion Control Details.
- See Stormwater Plan for Erosion Control notes.
- All Landscaping and Tree Documentation Attached to submittal and provided by licensed Landscape Architect

**DEFINITION:**

**STEEP SLOPE**  
 A natural geographical area, whether on one or more lots, which has a ratio of vertical distance to horizontal distance of 25% or greater over a horizontal area measuring at least 25 feet in all directions.  
**LOT AREA, NET**  
 Lot area minus 75% of the area of any wetlands, water bodies, and watercourses, but excluding any adjacent areas, all as defined in Chapter 340, Wetlands and Watercourse Protection, of the Town Code, and the area of any steep slopes, as defined herein, except that in the case of one-family lots, the deductions for steep slopes shall be only 50%.

All Landscape Architecture and Arborist work performed by:  
 WALTER G. NESTLER P.C.  
 ISA Certified Arborist No. NY-5737A / ISA # 208844  
 Landscape Architect ASLA  
 511 Bolton Avenue  
 Bronx, New York 10473-2901  
 Tel: & FAX: (718) 842-5356  
 e-mail: wgnestler@aol.com.

**STEEP SLOPE LEGEND**



SLOPES < 25% Located Outside Property Lines Which Were Used in Calculating Steep Slope Numbers

Area that DOES NOT meet the Steep Slope Criteria stated below = 5,730.68 SF

STEEP SLOPE AREA = Area of Slopes having a ratio of vertical distance to horizontal distance of 25% or greater over a horizontal area measuring at least 25 feet in all directions = 3,630.62 SF

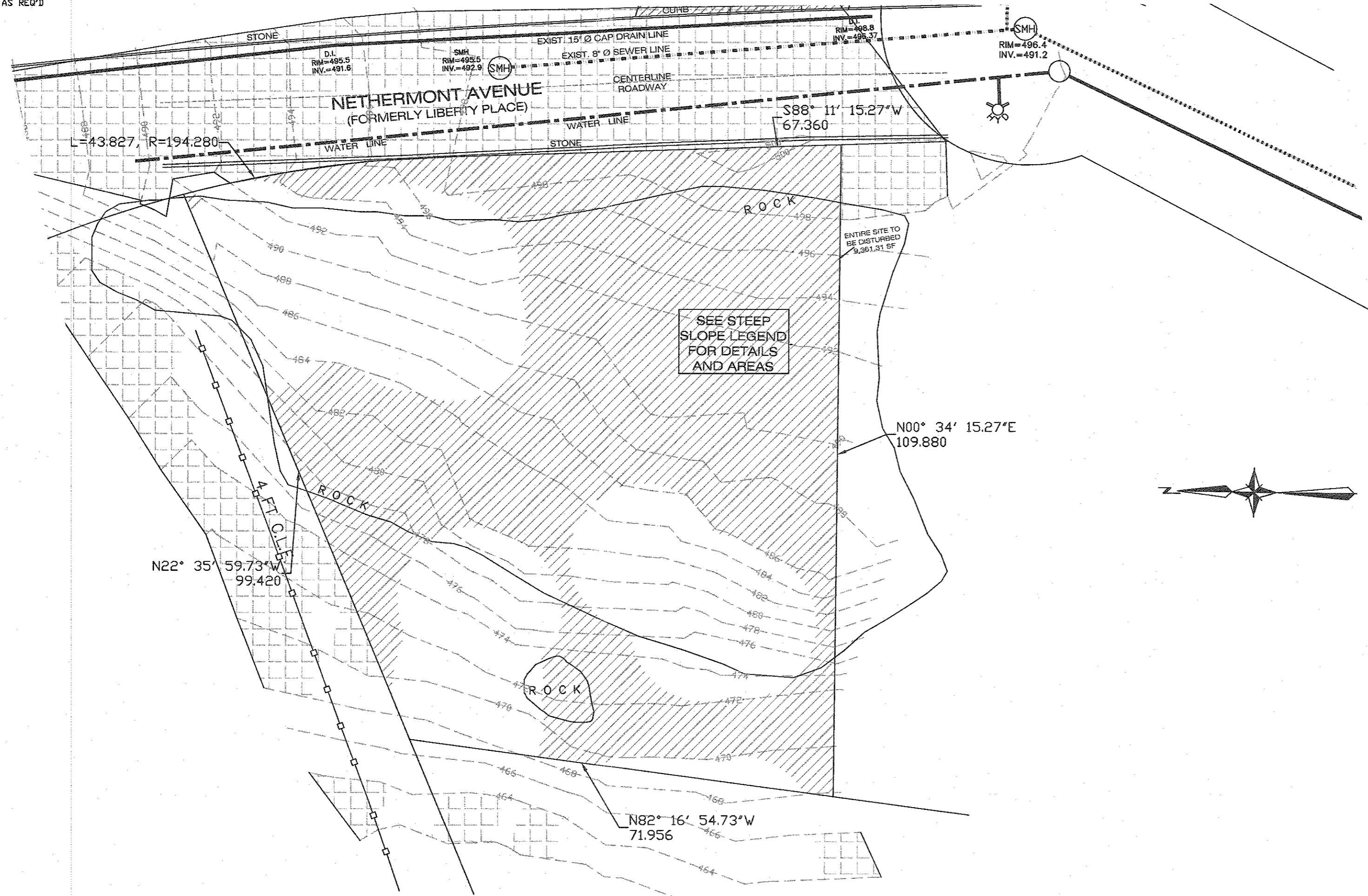
GROSS LOT AREA - 50% OF STEEP SLOPE AREA = NET LOT AREA

9361.31 SF - 1815.31 SF = NET LOT AREA

NET LOT AREA = 7,546 sq.ft.

ALL STEEP SLOPE AREA WILL BE DISTURBED

GROSS LOT AREA = 9,361.3 sq.ft.



JOB NUMBER: R.O.187-74 CAD 2018

**NOTES:**

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1	12/11/2020	RPRC DET. LETTER	GC

**EXISTING CONDITIONS, TOPOGRAPHICAL SURVEY & STEEP SLOPE ANALYSIS**

TAX ID: SECTION 122.16  
 BLOCK 4 LOT 7  
 AS SHOWN ON THE OFFICIAL TAX MAP OF  
 NORTH CASTLE  
 LOCATED IN THE  
 TOWN OF NORTH CASTLE  
 P.O. BOX: WHITE PLAINS, NY  
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GABRIEL E. SENOR, P.C.  
 Engineer & Surveyor  
 90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK 10530  
 (914) 422-0070

SCALE: 1" = 15'  
 DATE: SEPTEMBER 10, 2020  
 DRAWN BY: GC  
 CHECKED BY: ES.  
 TS - 1  
 SHEET 2 of 6

**GENERAL NOTES**

- Gabriel E. Senor, P.C. is not responsible for construction supervision unless retained under separate contract.
- Gabriel E. Senor, P.C. must be notified prior to backfilling any storm water system for inspection if The Engineering Dept. will require a final letter of certification from the design engineer for the storm water approval, site work and drainage installation.
- Any changes made to these plans shall be approved by Gabriel E. Senor, P.C. Any changes must be filed and approved by the appropriate Department as amendments.
- Gabriel E. Senor, P.C. is not responsible for damages if changes are made and not approved as in item 1 above.
- All conditions, locations, dimensions and elevations shall be verified by the Contractor or Owner and must report all discrepancies to the Design Engineer prior to the start of construction.
- All work and materials shall comply with all applicable codes including, but not limited to the following: NYS Building Code, Local Zoning Code, ACI and AISC.
- The Contractor is responsible for all construction means and methods to implement the designs shown.
- Safety during construction is the responsibility of the Contractor and shall conform to all Local, State and Federal Agencies' requirements.
- The Contractor shall apply for and receive all necessary permits to perform the work shown on these plans prior to the start of construction.
- Final grading shall be sloped away from the building and foundations.
- Unless noted, all drainage piping on this plan is to be 6" Rigid HDPE ASTM F810-07 or better.
- This storm water design plan is not designed to accept footing drains. Refer to Architectural plans for footing drain design. Do not connect footing drains or sump pumps to this surface water drainage system.
- If the drainage system is to be built in a filled area, the fill should be well drained material with a settling period of one to three months prior to the system installation. Additional percolations are required after the settling period and the system design will be revised as necessary.
- Proposed Silt Fence to be installed along existing and proposed contours.
- Orange Construction Fence to be installed along the limits of the proposed disturbance limits line.
- Roof leaders to be connected to the drainage system with 6" rigid HDPE pipe at 2% min. slope or as shown.
- The Contractor and all Sub-Contractors must submit a "Contractor Certification Statement" as per section 294-8 of the NYSDEC "Stormwater Pollution Prevention Plan" manual prior to the start of construction.
- If imported fill material is required, it shall be certified in writing by a New York State licensed Professional Engineer as non-contaminated, clean fill suitable for the intended use. Percolation tests shall be performed by the Design Engineer to demonstrate that the stormwater management practice will draw down the entire water quality volume within 48 hours. The results of the percolation test (s) shall be submitted to the Municipal Engineer for review and approval.
- All proposed temporary seeding mixture shall be in accordance with the New York State Standards and Specifications for Urban Erosion Control, dated August 2005.
- New sewer laterals are required for all new construction. Laterals must be extra heavy cast iron or ductile iron pipe or as directed by Municipal Engineer.
- Connection permits are required from the Department of Public Works for Sewer, Water, and Storm Water System overflows.
- All trenches in the Municipality Right of Way must be backfilled with controlled distance fill (k-crete) or as directed by Municipal Engineer.
- A street opening permit must be obtained from the Municipality, all work in the Right of Way and an inspection performed prior to backfilling and final approvals.
- Replace or re-lay stone curb as directed by Municipal Engineer.
- A non-conversion agreement for the basement in Special Flood Hazard Zone must be signed and filed prior to the issuance of a C. of O. for properties subjected to flooding.
- Curb cut permit is required from the Department of Public Works. Curb cut maximum width is 18 feet.
- The contractor shall schedule with the Municipality a rough grading inspection prior to any framing of a building above the first floor braced decking. Excess soils of significance shall be removed and disposed of upon completion of the rough grading.
- The structures for the storm water management system shall be installed at the earliest date possible when the structure's roof is complete. The contractor shall consult with the Municipality and schedule this work upon completion and inspection of the rough grading activities.
- The contractor shall secure a Street Opening Permit with the Municipality for all work to take place on the right of way including construction of a new driveway apron, and installation of new service laterals.
- If necessary, the Contractor shall secure a Tree Removal Permit with the Municipality prior to the commencement of construction activities.
- Contractor required to provide Dig Safe NY ticket prior to issuance of permits.
- proper construction of all walls four (4) feet and greater in height shall be certified by the Design Professional prior to issuance of a Certificate of Occupancy.

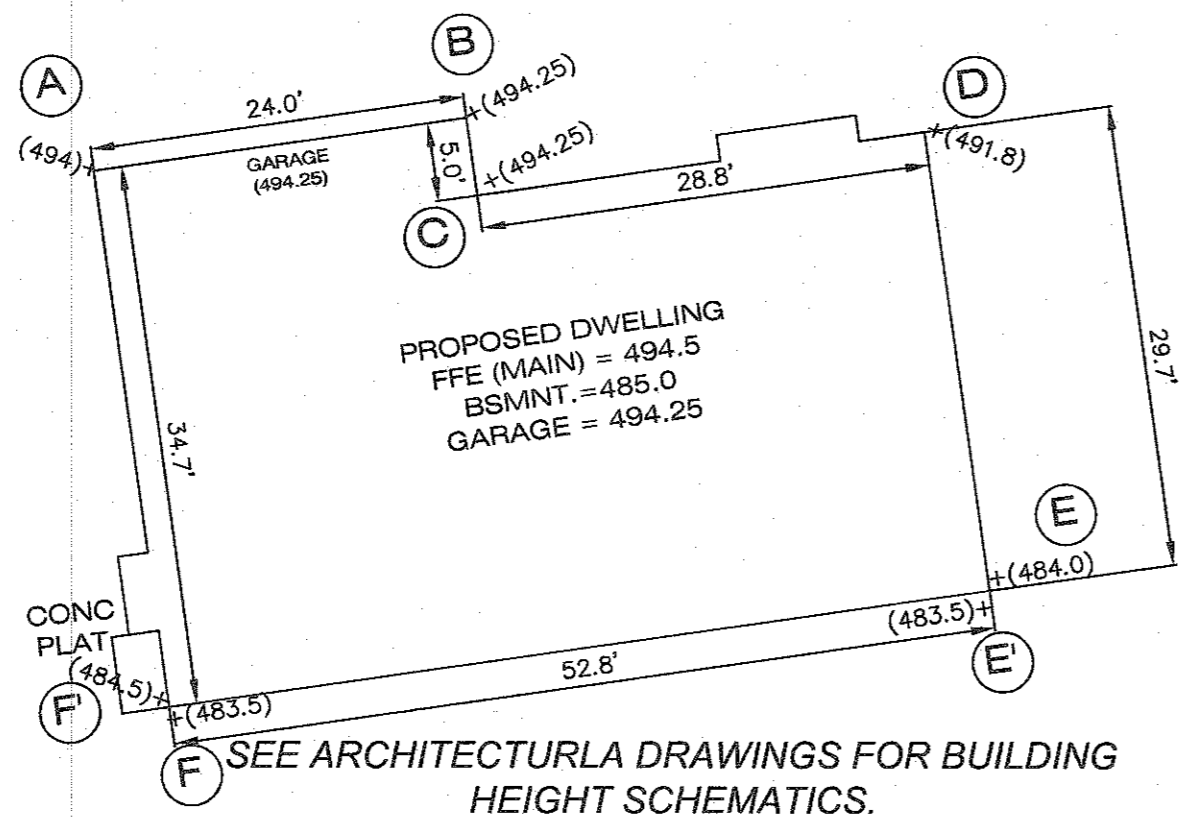
ZONING TABLE - 21 NETHERMONT AVE				
ZONE: SINGLE FAMILY RESIDENCE DISTRICT "R-5"				
TOTAL LOT AREA: 0.21 Acres (9,361.31 SF)				
DESCRIPTION	MIN/REQUIRED	PROPOSED		
MINIMUM LOT AREA	5000 SF	9,361.31	SF	
75% WETLAND AREA	-	N/A	SF	
50% STEEP SLOPE AREA	-	1,815.31	SF	
NET LOT AREA	-	7,546.00	SF	
MIN LOT FRONTAGE	50 FT	111.25	FT	
MIN LOT WIDTH	50 FT	91.6 (AVG)	FT	
MIN LOT DEPTH	100 FT	105 (AVG)	FT	
FRONT YARD SETBACK	30 FT	30.0	FT	
SIDE SETBACK	8 FT	14.5	FT	
SECOND SIDE SETBACK	Total Both Sides - 18 FT	16.0	FT	
REAR YARD SETBACK	30 FT	30.0	FT	
OFF-STREET PARKING	2 EA	2.0	EA	
OFF-STREET LOADING	1 EA	1.0	EA	
MAX BUILDING HEIGHT (AVG GRADE TO MID ROOF)	30 FT	25.87	FT	
MAX BUILDING HEIGHT (HIGHEST SECTION PLANE)	35 FT	33.25	FT	

**AVERAGE GRADE EXHIBIT AND CALCULATIONS**

Average Grade calculations for 21 Nethermont Road						
LOCATION	front	ELEV 1	ELEV 2	AVG ELEV	DISTANCE	AVG ELEV X DIST
A - B		494	494.25	494.125	24	11859
B - C		494.25	494.25	494.25	5	2471.25
C - D		494.25	491.8	493.025	28.83	14213.91075
	right side					
D - E		491.8	484	487.9	29.66	14471.114
	rear					
E - F		483.5	483.5	483.5	52.83	25543.305
	left side					
F - A		484.5	494	489.25	34.75	17001.4375
	sum of distance X avg elev					85561.9611
	sum of distance					175.07
	<b>AVG GRADE</b>		<b>488.73</b>			

**EROSION CONTROL NOTES**

- INSTALLATION & MAINTENANCE OF EROSION CONTROL**
- CONSTRUCTION SCHEDULE**  
NOTIFY APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 5 DAYS PRIOR TO START.
- EROSION CONTROL MEASURES**
- Install all erosion control measures prior to start of construction.
  - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 Days prior to finish.
- INSPECTION BY MUNICIPALITY**
- MAINTENANCE (TO BE PERFORMED DURING ALL PHASES OF CONSTRUCTION)**
- After any rain causing runoff, Contractor to inspect silt fences, etc. and remove any excessive sediment and inspect stockpiles and correct and problems with ased establishment.
  - Inspections shall be documented in writing and submitted to the appropriate Municipal Agency having jurisdiction.
- STOCK PILING OF EXCAVATED MATERIAL**
- Strip Topsoil and Stockpile.
  - Stockpile Excavation Subgrade.
  - Seed piles with 1 lb. total annual ryegrass or remove from site within two days.
- INSPECTION BY MUNICIPALITY**
- FINAL GRADING**
- Remove unseeded subgrade from site.
  - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
- INSPECTION BY MUNICIPALITY**
- LANDSCAPING**
- Spread topsoil evenly over areas to be seeded. Hand rake level.
  - Broadcast 1 25lb. bag of Jonathan Green "Fastgrow" mix or equal over areas to be seeded.



FIRST FLOOR EL. > 6FT ABOVE FINISHED GRADE FOR > 50% OF PERIMETER

**DRAINAGE CALCULATIONS**

The analysis was performed utilizing the Soil Conservation Service (SCS) TR-20 and TR-55 methodologies. Rainfall intensity was utilized for 100 Year storm event at 9.23" for a 24 hour rainfall in Westchester County. The development is the construction of a single family residence with associated impervious areas. For purposes of calculations, the pre-existing condition of the lot was woods with light underbrush and considered a high probability of runoff due to the shallow rock. And outcroppings. For the post development condition, excess surface stormwater generated by the impervious surfaces of the proposed construction shall be stored in drainage detention structures to be constructed on-site which will have a controlled outlet structure entering the existing storm drain system on Nethermont Ave.

**Pre-Development 100 Year Storm**  
The Soil Conservation Service's TR-20 method (a more accurate and precise calculation methodology than TR-55) as incorporated in the HydroCAD software was used to determine the pre-development and post-development runoff rates of the building, driveway and walkway areas.

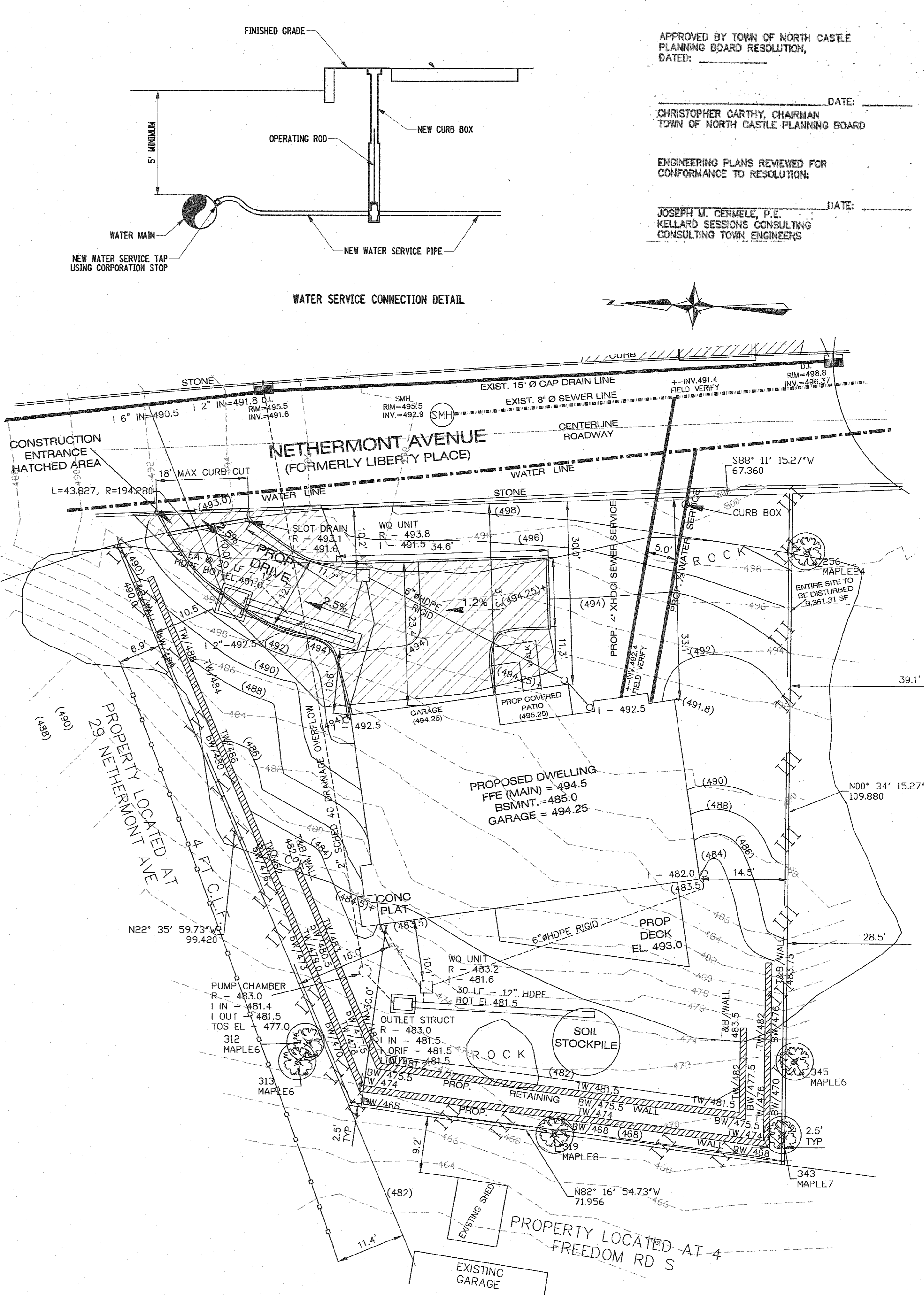
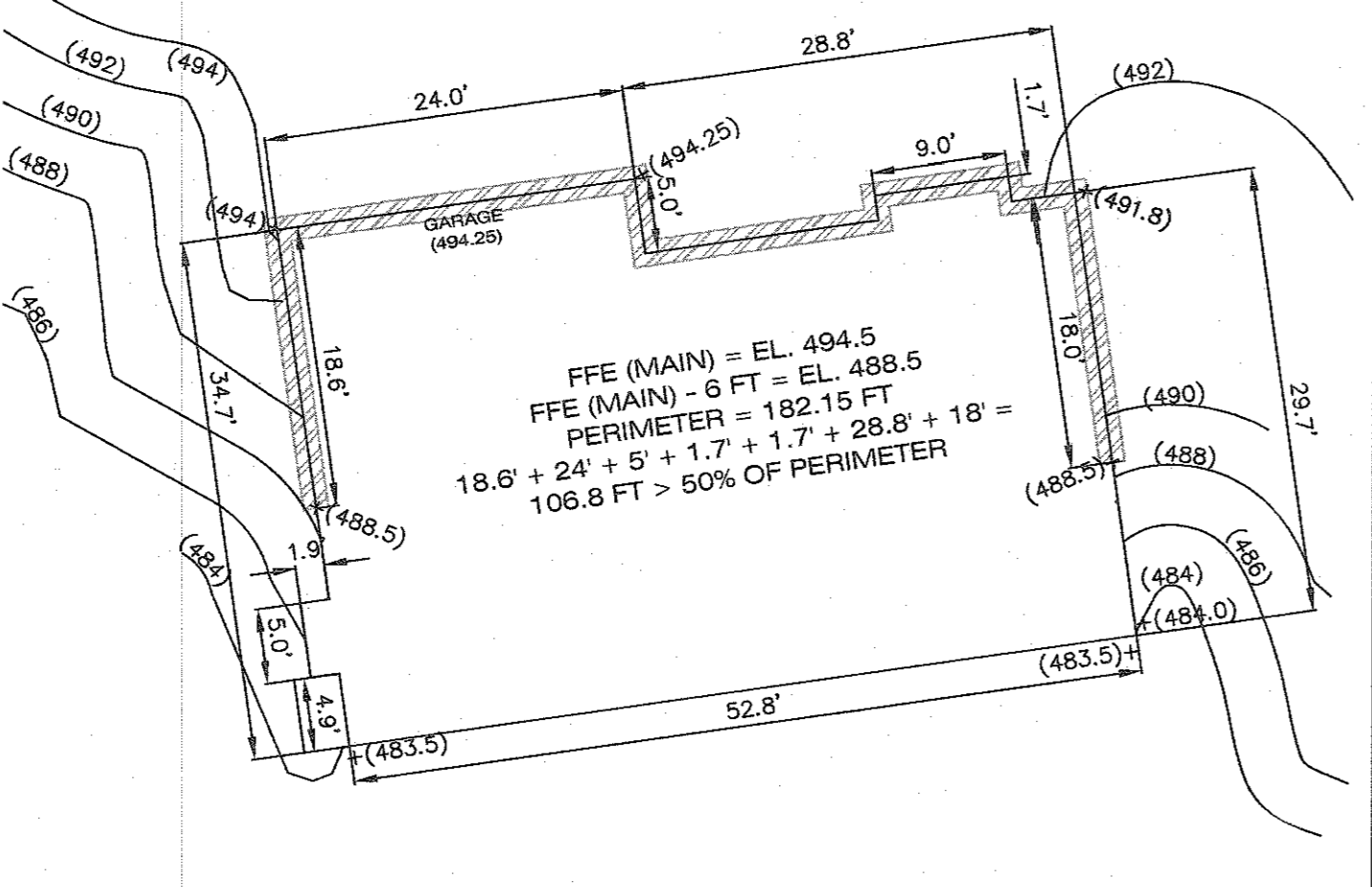
For purposes of calculations the entire lot area was used. Runoff for pre-development is 1.70 cfs. using a 100 year storm. (9.23 inch rainfall).

**Post-Development 25 Year Storm**

Runoff is to be mitigated by a rear yard and front yard system. The rear yard system is 30 L.F. of 12" HDPE which will be connected to the roof leader system of the rear of the house. The front yard system is 40 L.F. of 12" HDPE which will be connected to the front portion of the home and driveway (see diagrams). The outlet structures will control the outflow of the system. The entire system has been calculated to show that the outflow to the water system will be approximately 1.48 cfs.

Design Storm (yr)	Total Pre-development Peak Runoff (cfs)	Total Post-Development Peak Runoff (cfs) basin
25	1.70	1.48

Given the Post Development basin routing runoff rates for the selected storms shown peak runoff has no significant net increase of those of the Pre Development condition. It is concluded that the proposed design satisfactorily meets the Town regulation of no net increase in the rate of offsite storm water discharge.



APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION, DATED: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHRISTOPHER CARTHY, CHAIRMAN  
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION: \_\_\_\_\_ DATE: \_\_\_\_\_  
JOSEPH M. CERMELE, P.E.  
KELLARD SESSIONS CONSULTING  
CONSULTING TOWN ENGINEERS

**LEGEND**

- UTILITY POLE
- SIGN POST
- HYDRANT
- WATER VALVE
- GAS VALVE
- LIGHT POLE
- GUY WIRES
- TELE. MANHOLE
- SEWER MANHOLE
- WATER MANHOLE
- ELECTRIC MANHOLE
- DRAIN MANHOLE
- MANHOLE
- ELECTRIC BOX
- 102
- EXISTING GRADE (102)
- PROPOSED GRADE
- 14 TREE
- SIZE
- TREE TO BE REMOVED
- SILT FENCE or HAYBALES AS REQ'D

**LOCATION MAP**

NO	DATE	DESC	BY
1	12/11/2020	RPRC DET LETTER	GC

**REVISIONS**

**STORMWATER POLLUTION PREVENTION PLAN & EROSION CONTROL**

PREPARED FOR: DINO DELAURENTIS

ADDRESS: 21 NETHERMONT AVE  
NORTH CASTLE, NY (WHITE PLAINS P.O.)

TAX ID: SECTION 122.16 - TAX BLOCK 4 - LOT 41

SITUATED IN THE  
**TOWN OF NORTH CASTLE**  
WESTCHESTER COUNTY, NEW YORK

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**GABRIEL E. SENOR, P.C.**  
CONSULTING ENGINEER LAND SURVEYORS  
90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10330  
• (914) 422-0070 FAX 422-3009

SCALE: 1" = 10'

DATE: JANUARY 10, 2020

DRAWN BY: GC CHECKED BY: ES.

SW-1

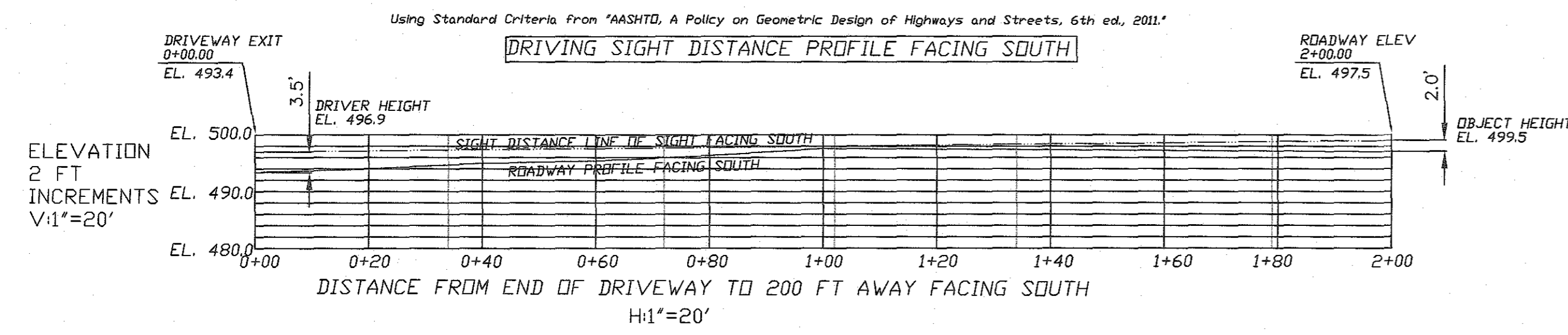
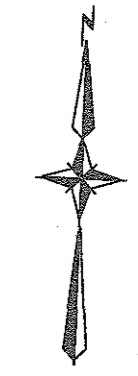
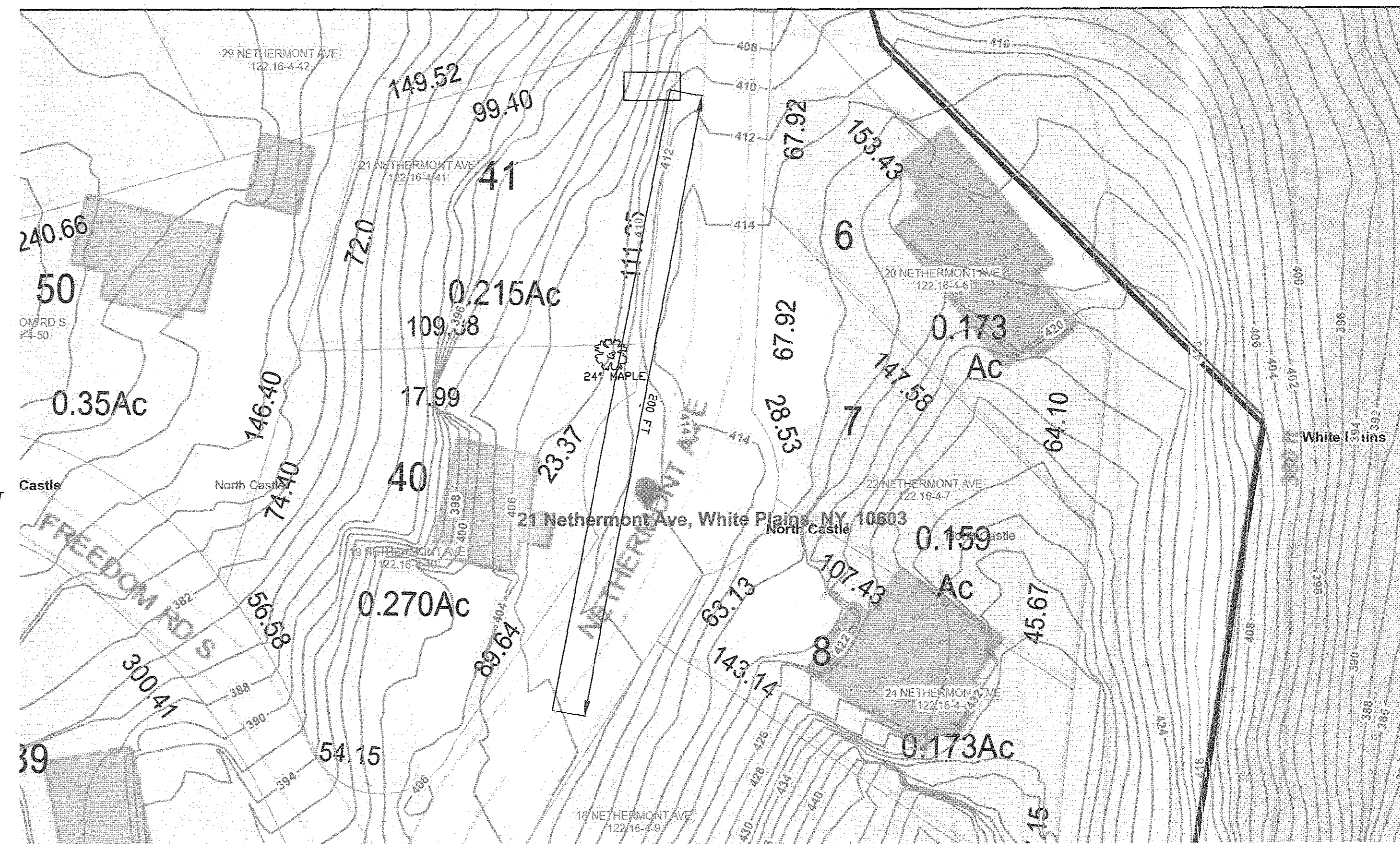
SHEET 3 of 6

**ADDITIONAL NOTES:**

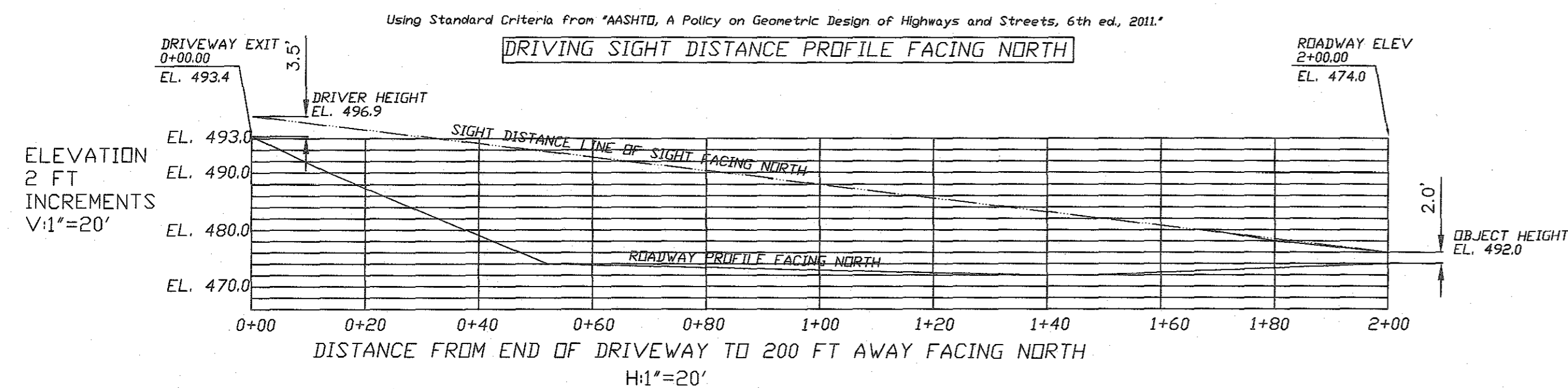
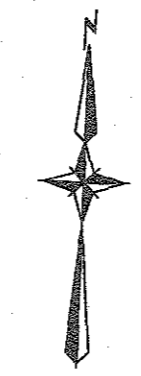
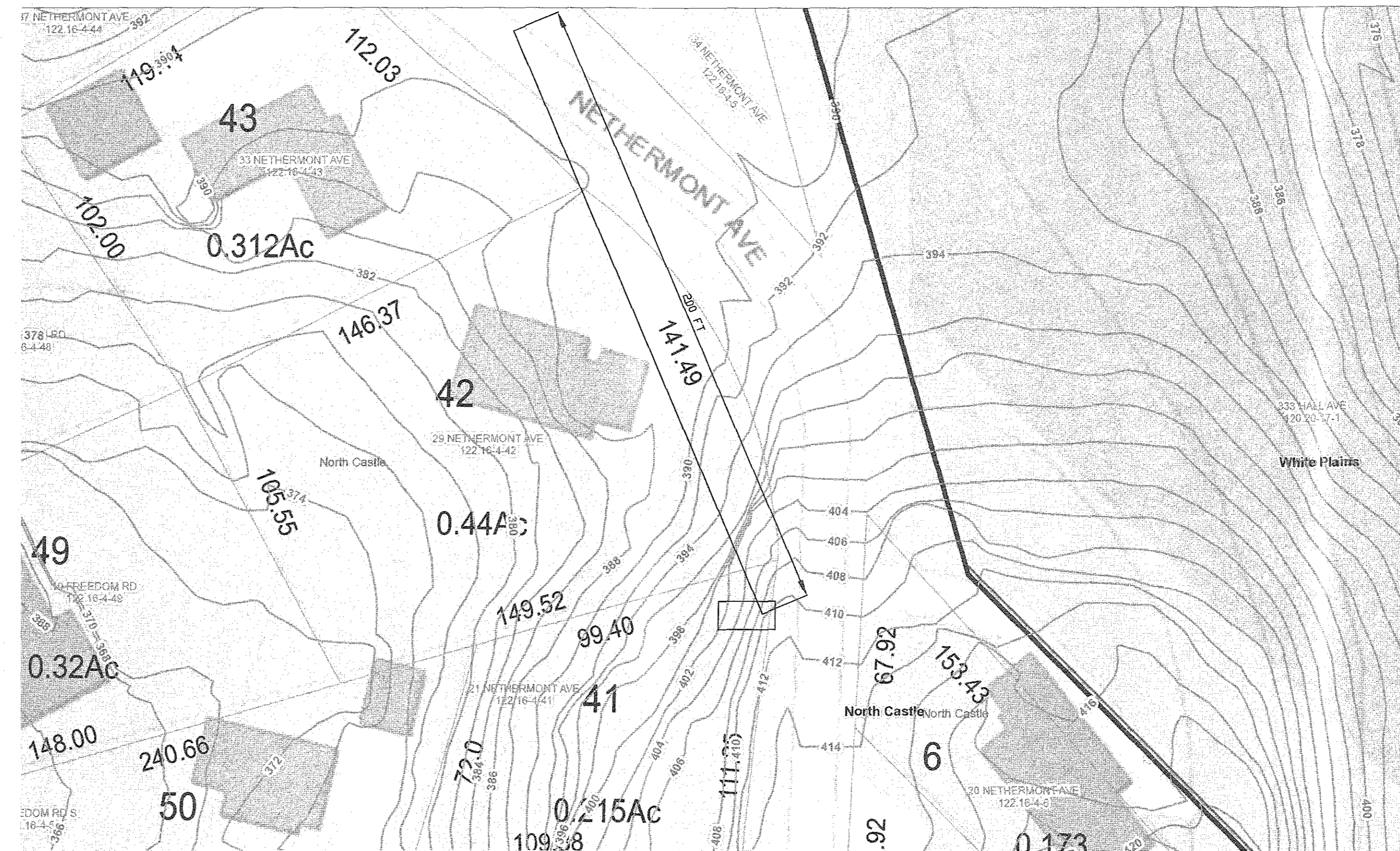
- All retaining walls on the property are proposed. Design of Retaining Walls is attached to this submittal and performed by Earth Retention Systems.
- Garbage will be kept in trash bins in the garage until the day prior to pick up and be brought to the end of the driveway in enclosed lockable bins the day prior to trash pick up.



PLAN VIEW FACING SOUTH  
SCALE: 1"=30'



PLAN VIEW FACING NORTH  
SCALE: 1"=30'



NO	DATE	DESC	BY
REVISIONS			

**SIGHT DISTANCE ANALYSIS**

TAX ID: SECTION 122.16  
BLOCK 4 LOT 7  
AS SHOWN ON THE OFFICIAL TAX MAP OF  
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NOTE: CONTOUR ELEVATIONS ARE ASSUMED.

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**GABRIEL E. SENOR, P.C.**  
CONSULTING ENGINEER LAND SURVEYORS  
90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10530  
• (914) 422-0070 FAX 422-3009

SCALE: AS SHOWN  
DATE: DECEMBER 11, 2020  
DRAWN BY: GC  
CHECKED BY: ES.

SD-1

SHEET 5 of 6

GENERAL INFORMATION AND NOTES:

- THE SITE REQUIRES APPROXIMATELY 900 C.Y. OF FILL
- THERE IS 18 C.Y. OF FILL PER TRUCK LOAD
- THE SITE REQUIRES APPROXIMATELY 50 TRUCK LOADS OF FILL.
- EACH TRUCK WILL TAKE APPROXIMATELY 8 MINUTES TO DUMP AND PULL OFF.
- 2 FLAG MEN MUST BE PRESENT AT ALL TIMES DURING DELIVERIES OF FILL IN ORDER TO ENSURE NO ISSUES WITH TRAFFIC FROM EITHER DIRECTION (NORTH OR SOUTH) ON NETHERMONT AVE.
- FILL DELIVERIES TO BE PERFORMED BETWEEN THE HOURS OF 10AM AND 2PM WHEN TRAFFIC IS AT ITS MINIMUM.
- PLEASE NOTE, THE FOUNDATION DOES NOT GET POURED UNTIL BOTH RETAINING WALLS IN THE REAR ARE CONSTRUCTED AND BACK FILLED TO THEIR APPROXIMATE PROPOSED GRADE ELEVATIONS.

STAGE 1: DIAGRAM A

ASSUMING ALL EROSION CONTROL AND PERMITS/APPROVALS HAVE BEEN OBTAINED, THE FILL DELIVERY/STAGING PLAN IS AS FOLLOWS:

- 1) PERFORM ALL TREE REMOVALS, INCLUDING REMOVAL OF STUMPS.
- 2) BRING 4-5 TRUCK LOADS OF FILL INITIALLY TO LEVEL OUT THE PROPOSED DRIVEWAY AREA WHICH WILL BE USED AS THE TRUCK ENTRANCE/TURN AROUND/DUMPING AREA.
- 3) PREP THE CONSTRUCTION ENTRANCE AREA SHOWN ACCORDING TO THE CONSTRUCTION ENTRANCE DETAIL AND MAKE SURE IT IS STABLE AND FLAT ENOUGH FOR THE DUMP AND DELIVERY TRUCKS TO MANEUVER.
- 4) NEXT THE FIRST TIER OF THE RETAINING WALL WILL BE CONSTRUCTED IN ITS ENTIRETY.
- 5) ON COMPLETION OF THE CONSTRUCTION OF THE FIRST TIER OF THE RETAINING WALL, THE FILL DELIVERIES MAY BEGIN, ACCORDING TO DIAGRAM A NOTES.
- 6) AT NO TIME WILL STOCKPILES OF SOIL BE LEFT STAGNANT AT ANY POINT THROUGHOUT THE OPERATION, THE CONTRACTOR IS TO SPREAD THE FILL IMMEDIATELY ON DELIVERY AS DESCRIBED ON THIS PLAN SHEET.

STAGE 2: DIAGRAM B

- 1) THE SECOND TIER OF THE RETAINING WALL WILL BE CONSTRUCTED IN ITS ENTIRETY, ACCORDING TO THE WALL DESIGN.
- 2) ON THE COMPLETION OF THE WALL CONSTRUCTION, UTILIZING THE SAME CONSTRUCTION ENTRANCE THAT WAS ESTABLISHED DURING STAGE 1, THE FILL DELIVERIES FOR THE BACKFILL OF THE SECOND TIER OF THE WALL WILL BEGIN.
- 3) AFTER THE DUMP TRUCK PULLS IN WITH THE FILL MATERIAL, AND REVERSES TO DUMP IT IN THE LOCATION SHOWN, A FRONT LOADER OR MACHINE OF THE SITE WORK CONTRACTORS CHOICE WILL BE USED TO MOVE THE MATERIAL TO THE REAR YARD BEGINNING AT THE SOUTH END OF THE REAR YARD AND WORKING THEIR WAY TO THE NORTH END OF THE REAR YARD WITH THE BACK FILL.
- 4) AT NO TIME WILL STOCKPILES OF SOIL BE LEFT STAGNANT AT ANY POINT THROUGHOUT THE OPERATION, THE CONTRACTOR IS TO SPREAD THE FILL IMMEDIATELY ON DELIVERY AS DESCRIBED ON THIS PLAN SHEET.

STAGE 3:

- 1) ON COMPLETION OF STAGE 2, THE CONTRACTOR MAY BEGIN THE FOUNDATION INSTALLATION AND REMAINING FILL AND SITE WORK ASSOCIATED WITH THE SIDE YARDS AND FRONT YARDS OF THE PROPERTY.

DIAGRAM A

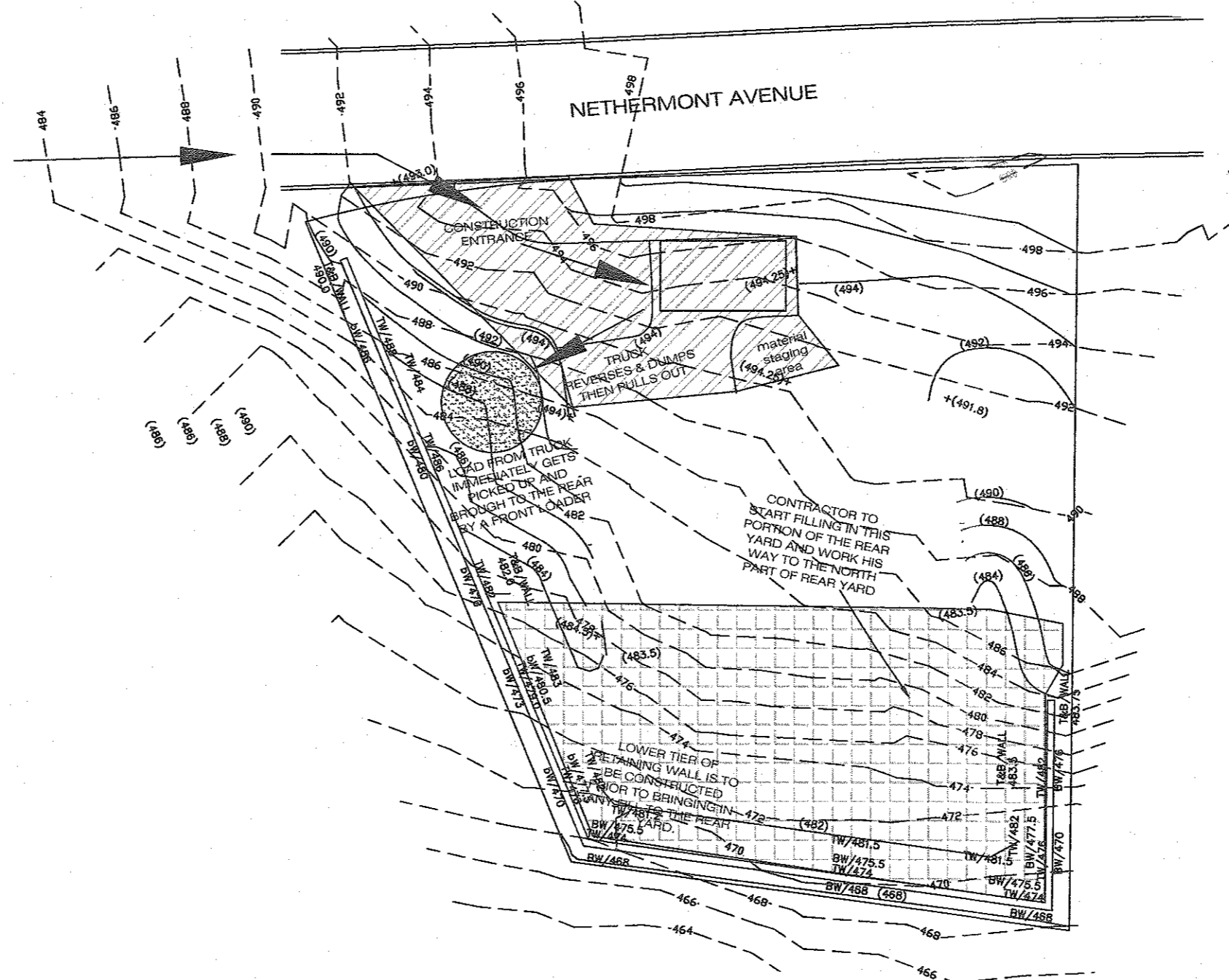
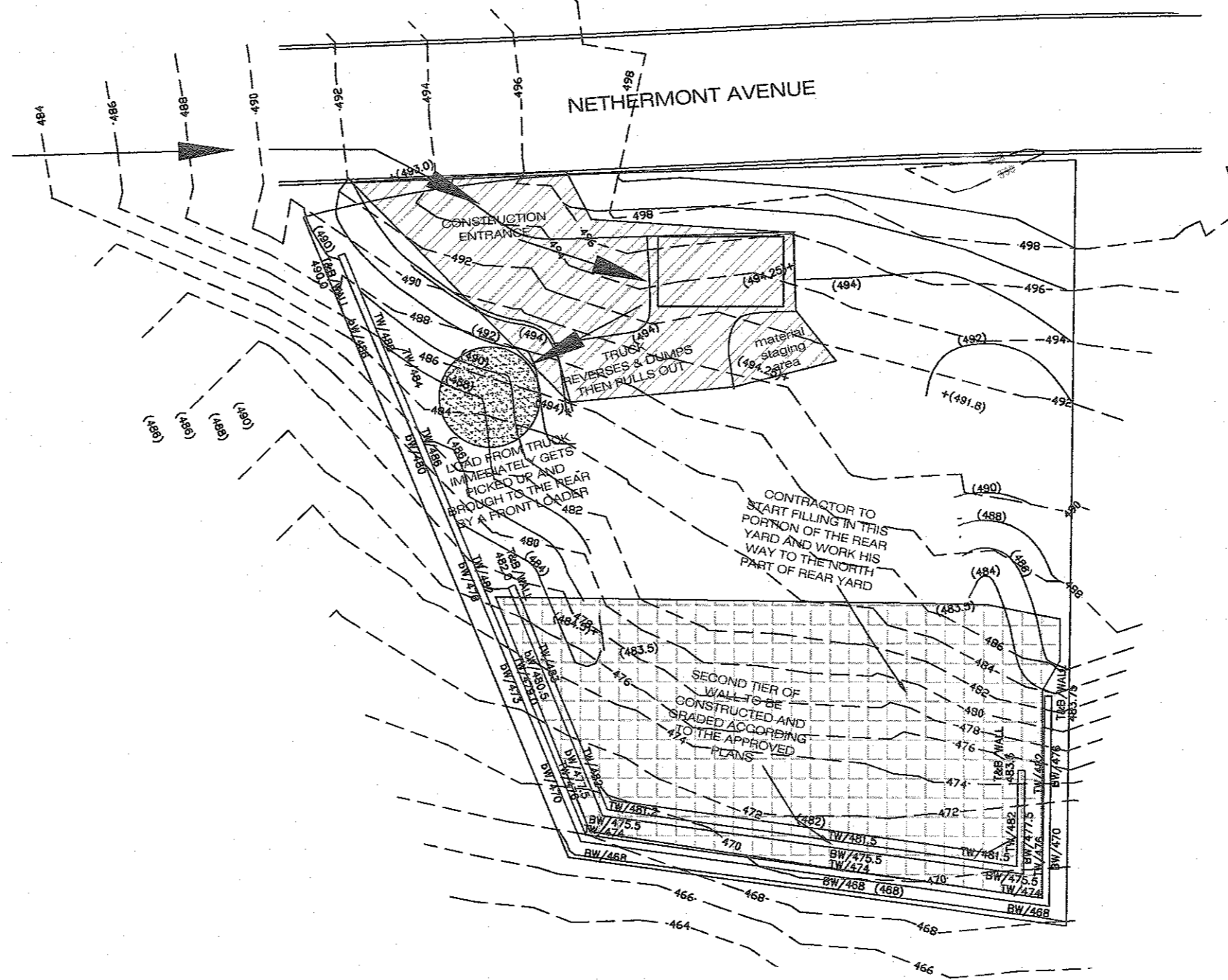


DIAGRAM B



JOB NUMBER: R.D.187-74 CAD 2018

NOTES:

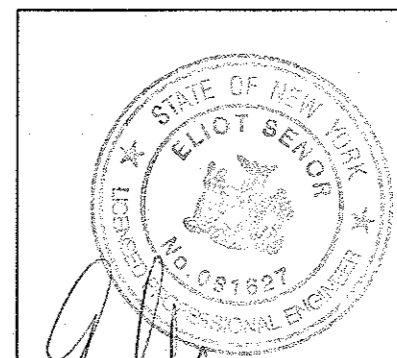
Locations, sizes and descriptions of all utilities are based on field survey location of surface appurtenances and available record plate data. Same is subject to scale and method limitations. Exact location for existing service installations may require verification by the respective utility companies (call 800-962-7962) and by excavation. The location, material and size of existing underground improvements or encroachments hereon are not certified underground routing cannot be guaranteed. Exact connections for existing service installations may require verification by excavation or dye testing. Such tests will be subject to additional fee based on time. Underground utilities may not always follow a straight line between surface appurtenances and should be confirmed by excavation and the respective companies. Please note that there are usually no utility company records of the location of on-site utilities connections.


FILL DELIVERY AND MATERIAL STAGING

TAX ID: SECTION 122.16  
 BLOCK 4 LOT 7  
 AS SHOWN ON THE OFFICIAL TAX MAP OF  
 NORTH CASTLE  
 LOCATED IN THE  
 TOWN OF NORTH CASTLE  
 P.O. BOX: WHITE PLAINS, NY  
 WESTCHESTER COUNTY, NEW YORK.

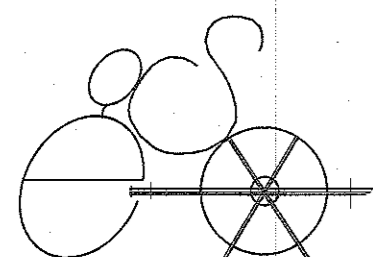
GABRIEL E. SENOR, P.C.

CONSULTING ENGINEER & LAND SURVEYORS  
 90 NORTH CENTRAL AVE., HARTSDALE, NEW YORK, 10530  
 (914) 422-0070 FAX 422-3009



SCALE: 1" = 20'  
 DATE: DECEMBER 11, 2020  
 DRAWN BY: GC  
 CHECKED BY: ES.

FS - 1



GABRIEL E. SENOR, P.C.  
 Engineer & Surveyor

90 NORTH CENTRAL AVE, HARTSDALE, NEW YORK 10530  
 (914) 422-0070

SEGMENTAL RETAINING WALL (RW) PLANS  
PREPARED FOR:

# DINO DELAURENTIIS RESIDENCE

21 NETHERMONT AVE.  
NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK

THE FOLLOWING IS REQUIRED WHERE THE OWNER OR LOCAL MUNICIPALITY REQUIRES ERS TO CERTIFY THE WALL CONSTRUCTION IS IN COMPLIANCE WITH THE WALL PLANS:

- 1.) REINFORCED FILL SHALL BE TESTED AND APPROVED BY ERS PRIOR TO AND THROUGHOUT CONSTRUCTION. SEE SHEET RW-2.0 FOR GRADATION, ATTERBERG LIMIT, LIFT THICKNESS, SHEAR STRENGTH, AND OTHER REQUIREMENTS.
- 2.) THE FOUNDATION SHALL BE INSPECTED AND FOUNDATION BEARING CAPACITY SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER OR GEOTECHNICAL ENGINEER APPROVED BY THE LOCAL MUNICIPALITY.
- 3.) COMPACTION TEST PER CURRENT INDUSTRY STANDARDS SHALL BE PERFORMED ON A MINIMUM FREQUENCY OF 1 TEST FOR EVERY 200 SQUARE FEET OF WALL AREA CONSTRUCTED, NOT TO EXCEED 2-FT VERTICAL IN FILL PLACEMENT. COMPACTION LIFT THICKNESS AND MINIMUM COMPACTION DENSITY SHALL CONFORM TO THE REQUIREMENTS OUTLINED ON SHEET RW-2.0.
- 4.) REINFORCED FILL AND RETAINED FILL PLACED IN CONJUNCTION WITH THE WALL CONSTRUCTION SHALL BE PLACED AND COMPACTED WITHIN +/- 2% OF OPTIMUM MOISTURE CONTENT. SEE SHEET RW-2.0.
- 5.) THE PROJECT GEOTECHNICAL ENGINEER OR THIRD-PARTY, QUALITY ASSURANCE ENGINEER, SHALL PROVIDE WRITTEN CERTIFICATION THAT THE WALLS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH ERS PLANS, INCLUDING BUT NOT LIMITED TO WALL GEOMETRY, FILL MATERIAL TYPE, SOIL STRENGTHS, SOIL COMPACTION, AND GEOGRID TYPE(S) AND LENGTH(S).

INDEX OF SHEETS

SHEET	DESCRIPTION
RW-1.0	TITLE SHEET
RW-2.0	CONSTRUCTION NOTES
RW-3.0	WALL PLAN VIEW
RW-4.0	ELEVATION VIEWS
RW-5.0	CROSS SECTION
RW-6.0 - 6.1	CONSTRUCTION DETAILS

RETAINING WALL (RW) CONSTRUCTION ADDRESSED BY THESE DRAWINGS ARE PART OF A SIGNIFICANTLY LARGER PROJECT BEING BUILT BY THE GENERAL CONTRACTOR, WHO HAS SEPARATELY RETAINED AN EARTHWORK GRADING CONTRACTOR TO ASSIST IN DEVELOPING THE SITE FOR THE OWNER. THE OWNER HAS RETAINED A PROJECT GEOTECHNICAL ENGINEER TO ADVISE IT ON MATTERS RELATIVE TO CONSTRUCTION AND WHO WILL BE PROVIDING QUALITY ASSURANCE TESTING AND OBSERVATION OF THE RW CONSTRUCTION WORK FOR THE OWNER. OUTLINED BELOW IS A BRIEF SUMMARY OF THE RESPONSIBILITIES OF EACH OF THE PARTIES REQUIRED BY THE RW CONSTRUCTION, AS OUTLINED IN THESE DRAWINGS, TO ENSURE A QUALITY CONSTRUCTION PROJECT:

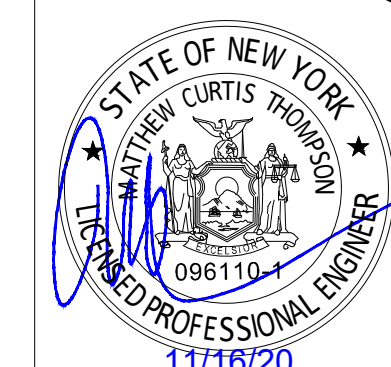
- A. GENERAL/EARTHWORK CONTRACTOR SHALL BE RESPONSIBLE FOR OVERALL SITE GRADING AND STORM WATER CONTROL, BEFORE, DURING, AND AFTER RW CONSTRUCTION, UNTIL THE PERMANENT PAVING AND STORM WATER DRAINAGE CONTROLS ARE ALL IN PLACE AND OPERATIONAL. DAMAGE TO EXISTING RW CONSTRUCTION BY POORLY CONTROLLED STORM WATER DRAINAGE SHALL NOT BE THE RESPONSIBILITIES THE RW CONTRACTOR OR RW DESIGNER.
- B. GENERAL/EARTHWORK CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROL, BEFORE, DURING, AND AFTER RW CONSTRUCTION.
- C. OWNER AND/OR GENERAL CONTRACTOR SHALL PROVIDE SURVEYING SERVICES SUFFICIENT TO LOCATE THE WALL, HORIZONTALLY AND VERTICALLY ON THE SITE FOR CONSTRUCTION PURPOSES.
- D. GENERAL/EARTHWORK CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A BEARING SURFACE AT THE BOTTOM RETAINING WALL ELEVATION THAT MEETS THE BEARING REQUIREMENTS SHOWN ON THESE DRAWINGS. THE BEARING SURFACE AND ALL AREAS INTO WHICH THE RW CONTRACTOR WILL PLACE AND COMPACT FILL MUST BE CLEARED, GRUBBED AND ALL DELETERIOUS SOILS AND/OR ORGANIC MATTER REMOVED TO PROJECT GEOTECHNICAL ENGINEER'S SATISFACTION, AS PROVIDED IN THEIR DAILY PROJECT REPORTING.
- E. THE OWNER'S PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE AND PROVIDE WRITTEN APPROVAL THAT THE "ALLOWABLE" BEARING CAPACITY AT THE BOTTOM RETAINING WALL ELEVATION AND WITHIN THE ENTIRE REINFORCED (GEOGRID) ZONE IN EACH LOCATION MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS SHOWN ON THESE DRAWINGS. THE RW CONTRACTOR WILL NOT BEGIN CONSTRUCTION WITHOUT THE APPROVAL.
- F. THE OWNER AND/OR GENERAL CONTRACTOR SHALL PROVIDE THE FILL SOILS TO THE RW CONTRACTOR TO UTILIZE FOR RW CONSTRUCTION. THOSE FILL SOILS SHOULD BE TESTED PRIOR TO STARTING RW CONSTRUCTION, AND PERIODICALLY THROUGHOUT THE PROJECT, TO ENSURE THEY MEET THE SPECIFICATION OUTLINED HEREIN. RW CONTRACTOR WILL NOTIFY THE OWNER'S GEOTECHNICAL ENGINEER AND/OR THE GENERAL/EARTHWORK CONTRACTOR WHEN A CHANGE IN FILL SOIL APPEARANCE, CONSISTENCY, OR GRADATION LOOKS TO BE DETRIMENTAL, OR HAS REASON TO BELIEVE THE SOIL BEING PROVIDED DOES NOT MEET THE PROJECT SPECIFICATIONS. HOWEVER, THE OWNER'S GEOTECHNICAL ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING WHETHER THE FILL MATERIALS MEET AND ARE PLACED ACCORDING TO THE SPECIFICATIONS IN THESE DRAWINGS.
- G. THE OWNER AND/OR PROJECT GEOTECHNICAL ENGINEER SHALL BE RESPONSIBLE FOR OBTAINING SUFFICIENT DATA THROUGHOUT THE RW CONSTRUCTION TO SATISFY THE REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY TO SECURE APPROVAL OF THE RETAINING WALL CONSTRUCTION AND ULTIMATELY THE "CERTIFICATE OF OCCUPANCY" FOR THE BUILDING ITSELF.

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No.	Date	Revision	Drawn	Design	Check
0	11/16/20	RELEASED FOR CONSTRUCTION	NT	NT	MCT



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Title:	TITLE SHEET	Project No:	20ERS150
Project:	DINO DELAURENTIIS RESIDENCE	Date:	11/16/20
	NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK	Sheet No:	RW-1.0

1.0 MATERIALS

1.1 BACKFILL SOILS

1.1.1 REINFORCED FILL MATERIALS SHALL BE APPROVED IN WRITING BY ERS MATERIALS AND THE OWNER'S REPRESENTATIVE AND SHALL MEET THE STRENGTH REQUIREMENTS AS DEFINED IN SECTION 6.0. THE REINFORCED BACKFILL MATERIAL SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING
3"	100%
1.5"	75-100%
No. 4	20-100%
No. 40	0-60%
No. 200	0-35%

THE PORTION OF THE REINFORCED BACKFILL MATERIAL PASSING THE No. 40 SIEVE SHALL HAVE A LIQUID LIMIT LESS THAN 30 AND A PLASTICITY INDEX LESS THAN 6. REINFORCED BACKFILL MATERIAL SHALL BE CLASSIFIED PER THE UNIFIED SOIL CLASSIFICATION SYSTEM AS NON-PLASTIC SOILS.

THE PH SHALL BE BETWEEN 3 AND 9.

1.1.2 FURTHERMORE, REINFORCED BACKFILL AND RETAINED SOIL/FILL MATERIALS SHALL BE FREE OF EXCESS MOISTURE, ROOTS, MUCK, SOD, SNOW, FROZEN LUMPS, ORGANIC MATTER OR OTHER DELETERIOUS MATERIALS. ALL ROCK PARTICLES AND HARD EARTH CLODS SHALL BE LESS THAN FOUR INCHES IN THE LONGEST DIMENSION. REINFORCED BACKFILL MATERIALS WHICH DO NOT MEET THIS CRITERIA SHALL BE CONSIDERED UNSUITABLE AND SHALL BE REMOVED.

1.1.3 DRAINAGE FILL SHALL CONSIST OF CLEAN CRUSHED STONE OR CRUSHED GRAVEL MEETING THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM C-136:

SIEVE SIZE	PERCENT PASSING
1.5"	100%
1.0"	95-100%
1/2"	25-60%
No. 4	0-10%
No. 8	0-5%

LOSS BY WASHING 2.0 MAX

1.1.4 LEVELING PAD SHALL CONSIST OF DENSE-GRADED OR WELL-GRADED CRUSHED STONE OR CRUSHED GRAVEL MEETING THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM C-136:

SIEVE SIZE	PERCENT PASSING
1.5"	100%
3/4"	60-90%
No. 10	25-45%
No. 60	5-30%
No. 200	4-11%

1.2 GEOGRID REINFORCING SHALL BE TENSAR UX1100MSE (OR STRONGER) GEOGRIDS. THE GEOGRID MANUFACTURER SHALL PROVIDE A MATERIAL CERTIFICATION THAT THE PRODUCT SHIPPED TO THE PROJECT MEETS OR EXCEEDS THE STRENGTHS USED IN THE DESIGN.

1.3 BLOCK FACING SHALL BE TENSAR MESA STANDARD, 8"x18" UNITS. UNITS SHALL MEET ASTM C1372, EXCEPT MANUFACTURED CONCRETE VERTICAL DIMENSIONAL TOLERANCE SHALL BE +/- 1/16". THE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AND MAXIMUM ABSORPTION SHALL BE 5% WHEN TESTED IN ACCORDANCE WITH ASTM C140.

1.4 GEOTEXTILE SHALL BE 3.5 oz/sy (MIN.) NON-WOVEN, NEEDLE PUNCHED, POLYPROPYLENE GEOTEXTILE - WINFAB 350N OR EQUAL.

1.5 DRAIN PIPE SHALL BE 4" DIAMETER, FLEX-DRAIN MANUFACTURED BY CLEVELAND TUBING, CLEVELAND, TN. FLEX-DRAIN AND PIPE FITTINGS SHALL MEET ASTM F405-05, EXCEPT ELONGATION REQUIREMENT SHALL BE WAIVED DUE TO FLEX-DRAIN EXPANDABLE DESIGN. FLEX-DRAIN AND PIPE FITTINGS SHALL MEET CPPA 100-97.

2.0 TECHNICAL REQUIREMENTS

2.1 THE OWNER'S REPRESENTATIVE OR GRADING CONTRACTOR SHALL SUBMIT TO ERS MATERIALS THE GRADATION AND STRENGTH PARAMETERS OF THE REINFORCED BACKFILL MATERIAL, RETAINED SOIL/FILL AND FOUNDATION SOIL, FOR APPROVAL, PRIOR TO PROCEEDING WITH CONSTRUCTION. WORK SHALL NOT PROCEED UNTIL THIS SUBMITTAL IS APPROVED BY ERS MATERIALS.

2.2 PRIOR TO CONSTRUCTION OF THE WALLS, THE GRADING CONTRACTOR SHALL CLEAR AND GRUB THE REINFORCED BACKFILL ZONE AREA, REMOVING TOP SOILS, BRUSH, SOD OR OTHER ORGANIC OR DELETERIOUS MATERIALS. ANY UNSUITABLE SOILS SHALL BE OVER-EXCAVATED, REPLACED AND COMPACTED WITH REINFORCED BACKFILL MATERIAL TO PROJECT SPECIFICATIONS OR OTHERWISE DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER.

2.3 THE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE SITE HAS BEEN PROPERLY PREPARED AND THE DESIGN PARAMETERS IN SECTION 6.0 ARE APPROPRIATE PRIOR TO FILL PLACEMENT. A WRITTEN CONFIRMATION SHALL BE PROVIDED TO ERS MATERIALS PRIOR TO FILL PLACEMENT.

2.4 FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 10 INCHES IN UNCOMPACTED THICKNESS FOR HEAVY COMPACTION EQUIPMENT. FOR ZONES WHERE COMPACTION IS ACCOMPLISHED WITH HAND OPERATED EQUIPMENT, FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6 INCHES IN UNCOMPACTED THICKNESS. ONLY HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN THREE FEET OF THE BACK FACE OF WALL FACING.

2.5 FILL MATERIALS SHALL BE PLACED FROM THE BACK OF THE FACING UNITS TOWARDS THE ENDS OF THE GEOGRID TO ENSURE FURTHER TENSIONING.

2.6 FILL SHALL BE COMPACTED AS SPECIFIED BY PROJECT SPECIFICATIONS OR TO A MINIMUM 95 PERCENT OF THE MAXIMUM DRY DENSITY AND WITHIN -2% TO +2% OF OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH STANDARD PROCTOR (ASTM D-698).

2.7 TESTING METHODS AND VERIFICATION OF MATERIAL SPECIFICATIONS AND COMPACTION TESTING IS THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE. THE MINIMUM REQUIRED COMPACTION TESTING FREQUENCY REQUIRED BY ERS MATERIALS IS ONE TEST FOR EVERY 200 SF OF WALL FACE AT VERTICAL INTERVALS NOT EXCEEDING 2 FEET IN VERTICAL WALL HEIGHT.

2.8 WHERE REQUIRED, CAP UNITS SHALL BE PERMANENTLY SECURED TO THE BLOCK UNITS USING AN OUTDOOR CONSTRUCTION ADHESIVE FOR CONCRETE MASONRY OR HARDSCAPES SUCH AS LIQUID NAILS (OR EQUIVALENT).

2.9 AN APPROVED SET OF CONSTRUCTION DRAWINGS AND CONTRACT SPECIFICATIONS SHALL BE ON-SITE AT ALL TIMES, DURING CONSTRUCTION OF THE RETAINING WALLS.

3.0 GEOGRID PLACEMENT

3.1 GEOGRID SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS.

3.2 GEOGRID LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS. GEOGRID LENGTH IS MEASURED FROM THE FRONT FACE OF WALL UNITS TO THE TAIL OF GEOGRID.

3.2.1 GEOGRID REINFORCEMENT SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTH(S).

3.3 PRIOR TO PLACING FILL, THE GEOGRID MATERIALS SHALL BE PLACED IN BETWEEN BLOCK COURSES IN ACCORDANCE WITH FACING DETAILS. REMOVE GEOGRID SLACK AND ANCHOR GEOGRID PRIOR TO FILL PLACEMENT AND COMPACTION.

3.4 CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM FILL THICKNESS OF SIX INCHES IS REQUIRED FOR OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TURNING OF VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT DISPLACING THE FILL AND/OR THE GEOGRID.

3.5 GEOGRID SHALL BE ROLLED OUT WITH THE LONG AXIS OF THE APERTURES (MACHINE DIRECTION) PERPENDICULAR TO THE WALL FACE.

3.6 A MINIMUM OF 3 INCHES OF FILL MATERIAL SHALL BE REQUIRED BETWEEN OVERLAPPING LAYERS OF GEOGRID AND GEOTEXTILE, UNLESS OTHERWISE SHOWN.

4.0 CHANGES

4.1 NO CHANGES TO THE GEOGRID LAYOUT, INCLUDING, BUT NOT LIMITED TO, LENGTH, GEOGRID TYPE, OR ELEVATION, SHALL BE MADE WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF ERS MATERIALS.

4.2 NO CHANGES TO THE WALL FACING TYPE SHALL BE MADE WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF ERS MATERIALS.

5.0 DRAINAGE

5.1 AT THE END OF EACH WORK DAY, BACKFILL SURFACE SHALL BE COMPACTED WITH A SMOOTH PLATE COMPACTOR TO MINIMIZE PONDING OF WATER AND SATURATION OF THE BACKFILL.

5.2 PERMANENT AND TEMPORARY SURFACE WATER DIVERSION SHALL BE AS REQUIRED AND PROVIDED BY THE OWNER OR OWNER'S REPRESENTATIVE. SURFACE WATER SHALL BE DIVERTED AWAY FROM THE REINFORCED FILL ZONE AND WALL FACE DURING WALL CONSTRUCTION OR AT THE END OF EACH WORK DAY.

6.0 DESIGN PARAMETERS

6.1 DESIGN OF THE REINFORCED SOIL STRUCTURE IS BASED ON THE FOLLOWING PARAMETERS:

	EFFECTIVE FRICTION ANGLE	EFFECTIVE COHESION	MOIST UNIT WT
REINFORCED FILL	30°	0 psf	125 pcf
RETAINED SOILS	30°	0 psf	125 pcf
FOUNDATION SOILS	30°	0 psf	125 pcf

6.1.1 DESIGN METHODOLOGY: NCMA GUIDELINES, THIRD EDITION

6.2 FACTORS OF SAFETY

6.2.1 INTERNAL STABILITY:

	STATIC	SEISMIC*
MINIMUM FACTOR OF SAFETY FOR UNCERTAINTIES =	1.5	1.13
MINIMUM FACTOR OF SAFETY FOR GEOGRID PULLOUT =	1.5	1.13
MINIMUM FACTOR OF SAFETY FOR BLOCK CONNECTION =	1.5	1.13
MINIMUM FACTOR OF SAFETY FOR FACING STABILITY =	1.5	1.13
MINIMUM FACTOR OF SAFETY FOR SLIDING AT LOWEST GEOGRID =	1.5	1.13

SOIL-GEOGRID INTERACTION COEFFICIENT = 0.8  
PERCENT COVERAGE OF GEOGRID = 100%

6.2.2 EXTERNAL STABILITY:

	STATIC	SEISMIC*
MINIMUM FACTOR OF SAFETY FOR OVERTURNING =	2.0	1.5
MINIMUM FACTOR OF SAFETY FOR SLIDING =	1.5	1.13

6.2.3 OVERALL / GLOBAL STABILITY:

	STATIC	SEISMIC*
MINIMUM FACTOR OF SAFETY FOR GLOBAL STABILITY =	1.3	1.1

\*SEISMIC VALUES SHALL BE 75% OF STATIC FACTOR OF SAFETY, BUT NOT LESS THAN 1.1

6.3 SURCHARGE LOADING

LIVE LOAD (SIDEWALK/LANDSCAPE AREAS) = 100 PSF  
LIVE LOAD (DRIVEWAY AREAS) = 250 PSF  
DEAD LOAD (BUILDING SLAB-ON-GRADE FOUNDATION) = 500 PSF

6.4 MAXIMUM APPLIED BEARING PRESSURE = (SEE ELEVATION VIEWS)

6.5 SEISMIC LOADING

DESIGN SEISMIC HORIZONTAL ACCELERATION COEFFICIENT (As) = 0.151g  
SITE CLASS "D"  
PEAK GROUND ACCELERATION (PGA) = 0.094g  
SITE COEFFICIENT (Fpga) = 1.6

6.6 FENCE LOADING

(6' HIGH POST MAX. x 6' POST SPACING MAX.)  
DESIGN IS SUFFICIENT FOR 200 LB SINGLE CONCENTRATED LOAD.

6.7 PHREATIC WATER SURFACE OR HYDROSTATIC WATER PRESSURE

DESIGN DOES NOT CONSIDER PHREATIC WATER SURFACE OR HYDROSTATIC WATER PRESSURE. DESIGN ASSUMES WATER IS SUFFICIENTLY BELOW BOTTOM OF STRUCTURE SO AS NOT TO INFLUENCE STRUCTURE STABILITY.

6.8 WIND LOADING (ASD)

WIND LOAD HAS NOT BEEN EVALUATED IN THE DESIGN OF THE PROPOSED REINFORCED SOIL (MECHANICALLY STABILIZED EARTH) STRUCTURE.

7.0 SPECIAL PROVISIONS

7.1 THE DESIGN PRESENTED HEREIN IS BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, GROUNDWATER CONDITIONS, AND LOADINGS STATED IN SECTION 6.0, AND INTERPOLATED FROM INFORMATION PROVIDED BY OTHERS.

7.2 WALL ELEVATION VIEWS AND LOCATIONS AND GEOMETRY OF EXISTING STRUCTURES AND GRADE ABOVE AND BELOW THE WALLS MUST BE VERIFIED BY THE CONTRACTOR, TO MATCH ELEVATIONS SHOWN IN THE CONTRACT DOCUMENTS, PRIOR TO CONSTRUCTION.

7.3 ERS MATERIALS ASSUMES NO LIABILITY FOR INFORMATION SUPPLIED BY OTHERS SUCH AS GEOTECHNICAL REPORT, SITE PLAN, AND WATER ELEVATIONS.

7.4 THE ON SITE GEOTECHNICAL ENGINEER MUST VERIFY IN WRITING THAT THE FOUNDATION CONDITIONS WITHIN THE WALL AND REINFORCED FILL ZONE OF INFLUENCE ARE SUITABLE FOR THE APPLIED BEARING PRESSURE LISTED IN SECTION 6.0.

7.5 THE SOIL DESIGN PARAMETERS STATED IN SECTION 6.0 SHALL BE VERIFIED BY THE PROJECT GEOTECHNICAL ENGINEER. WRITTEN VERIFICATION OF DESIGN PARAMETERS SHALL BE SUBMITTED TO ERS MATERIALS AND PRIOR TO COMMENCING WITH CONSTRUCTION.

7.6 IF ANY ROCK FORMATIONS AND/OR GROUNDWATER ARE ENCOUNTERED DURING THE CONSTRUCTION OF THIS WALL, IMMEDIATELY CONTACT ERS MATERIALS AT 678-903-3614 AND THE OWNER'S REPRESENTATIVE.

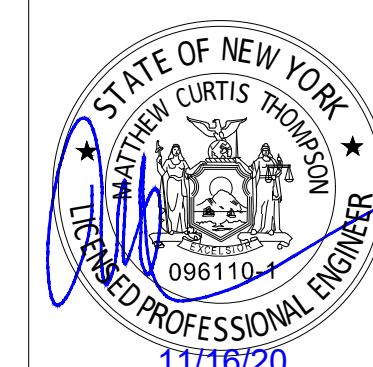
7.7 ANY REVISIONS TO DESIGN PARAMETERS STATED IN SECTION 6.0 OR STRUCTURE GEOMETRY SHALL REQUIRE DESIGN MODIFICATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

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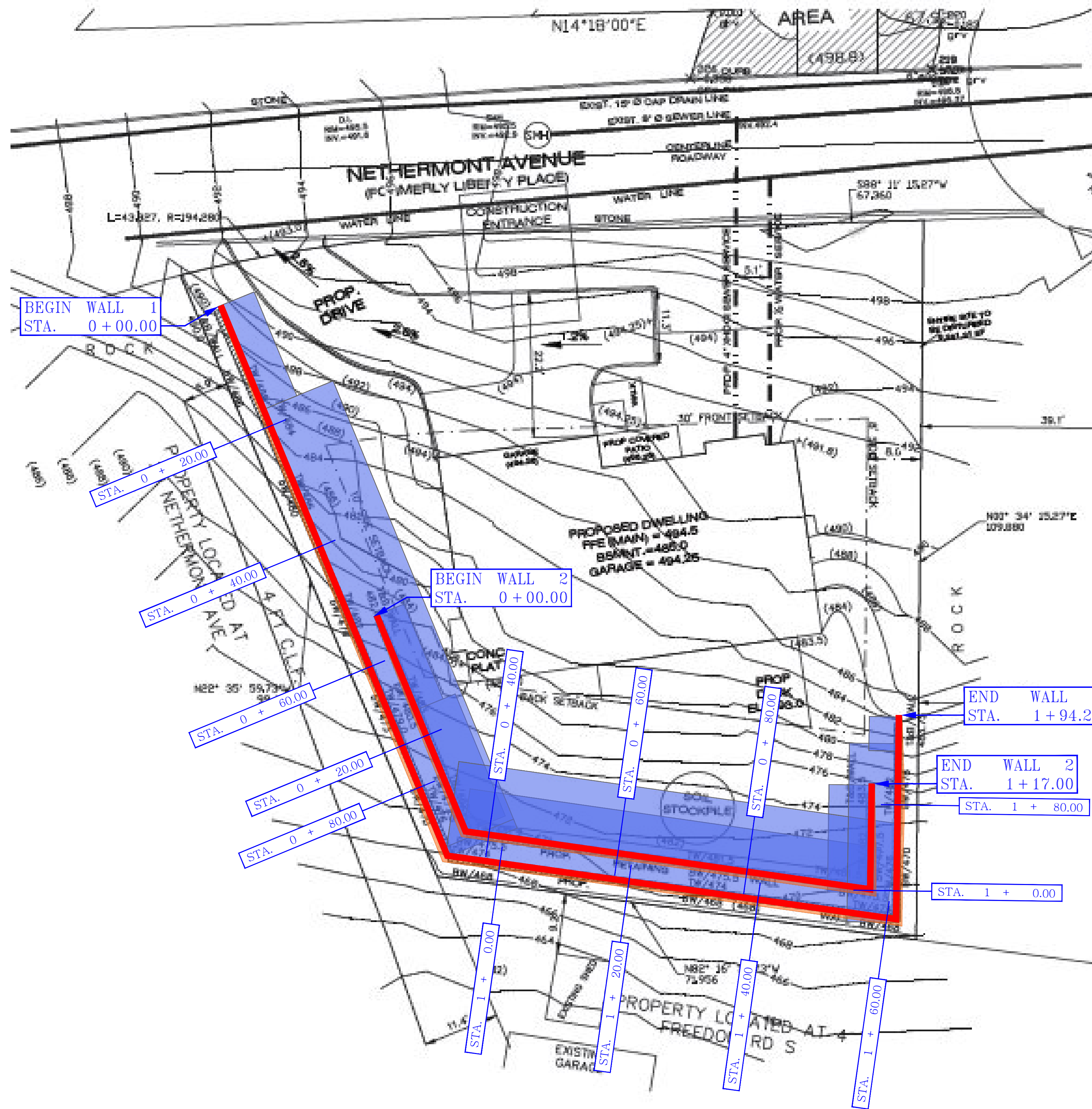
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Title:	CONSTRUCTION NOTES	Project No:	20ERS150
Project:	DINO DELAURENTIIS RESIDENCE	Date:	11/16/20
	NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK	Sheet No:	RW-2.0



NOTE: SITE PLAN VIEW IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS TAKEN FROM:  
 SHEET: SW-1  
 DRAWN BY: GABRIEL E. SENOR, P.C.  
 DATED: 09/29/20 REVISION: 1 (RESP TO RPRC COMM)

- TOP OF WALL
- WALL BATTER
- APPROXIMATE GEOGRID COVERAGE



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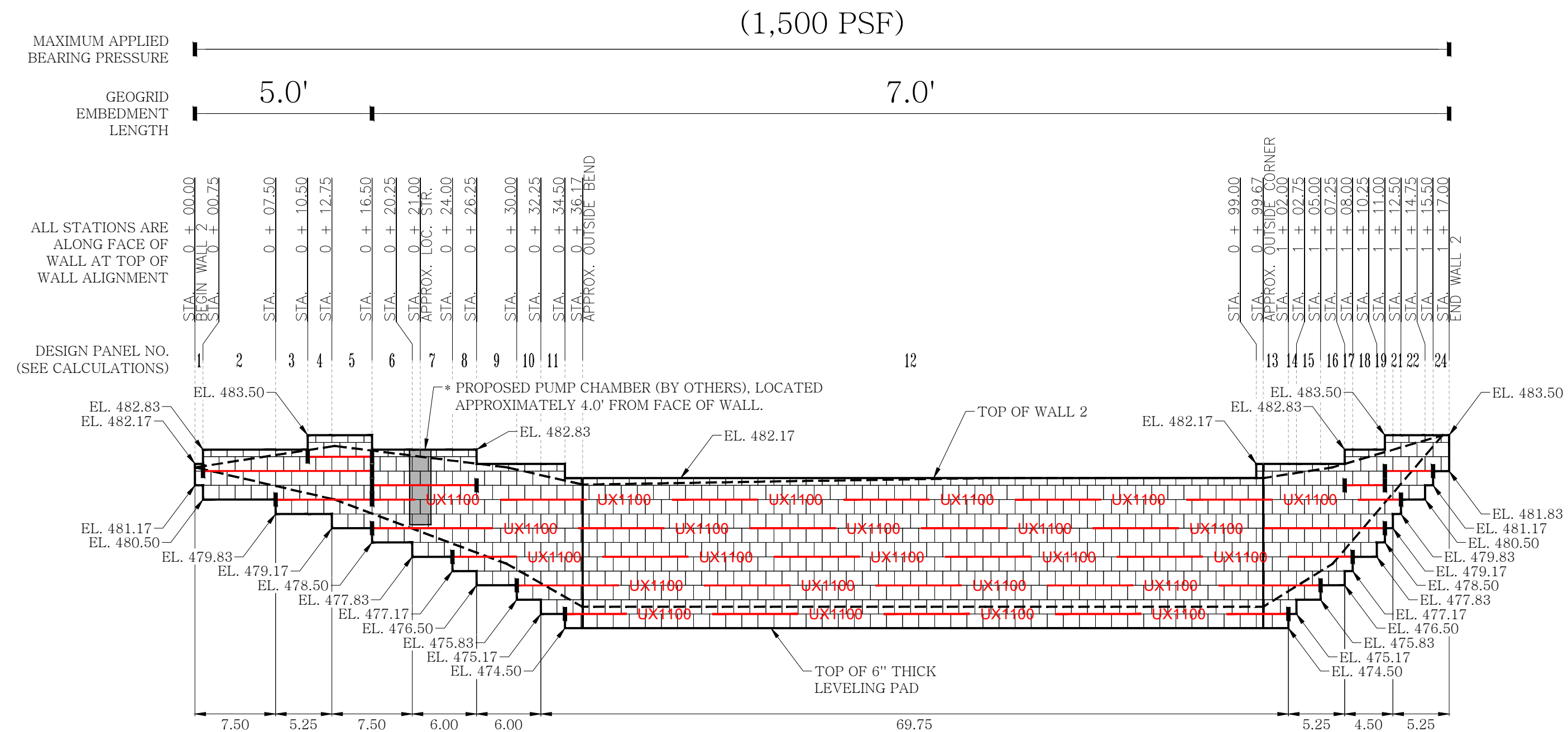
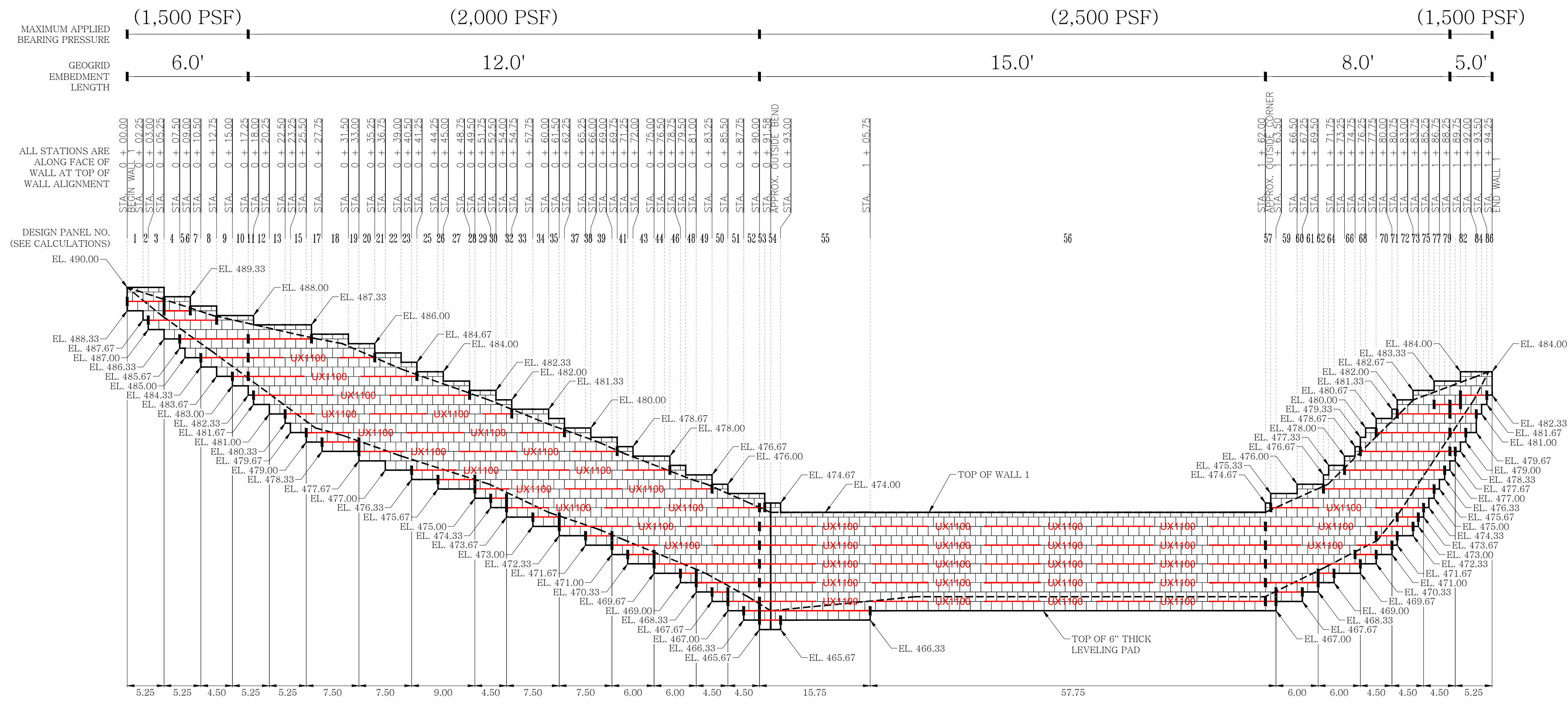
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0	11/16/20	RELEASED FOR CONSTRUCTION	NT	NT	MCT

  
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Title:	WALL PLAN VIEW	Project No:	20ERS150
Project:	DINO DELAURENTIIS RESIDENCE	Date:	11/16/20
	NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK	Sheet No:	RW-3.0





\* CONSTRUCTION COORDINATION WITH PROPOSED SITE UTILITIES MAY BE REQUIRED. REFER TO DETAILS 3 AND 4 ON SHEET RW-6.1. PROPOSED UTILITIES WITHIN THE GEOGRID-REINFORCED ZONE SHALL BE INSTALLED CONCURRENTLY WITH GEOGRID AND BACKFILL RATHER THAN EXCAVATING AND REMOVING GEOGRID AFTER WALL CONSTRUCTION. ERS ASSUMES NO RESPONSIBILITY FOR DAMAGE TO RETAINING WALL AS A RESULT OF CONSTRUCTION, MAINTENANCE, OR MALFUNCTION OF OR LEAKAGE FROM PROPOSED UNDERGROUND UTILITIES.

ERS STRONGLY RECOMMENDS RELOCATING PROPOSED PUMP CHAMBER, PIPES, AND OTHER UTILITIES OUTSIDE OF THE GEOGRID-REINFORCED ZONE.

**LEGEND**

- TENSAR MESA STANDARD 4"x18" CAP UNIT
- TENSAR MESA STANDARD NEAR VERTICAL 8"x18" BLOCK UNIT
- UX1100 GEOGRID TERMINATION OR CHANGE IN TYPE OR LENGTH
- - - FINISHED GRADE
- EL. 0000.00 ELEVATION
- STA 0 + 00.00 WALL STATION
- UX1100 TENSAR UX1100 GEOGRID

HORIZONTAL SCALE: 10 5 0 10 20 FEET

VERTICAL SCALE: 5 2.5 0 5 10 FEET

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Title: ELEVATION VIEW

Project: DINO DELAURENTIIS RESIDENCE

Project No: 20ERS150

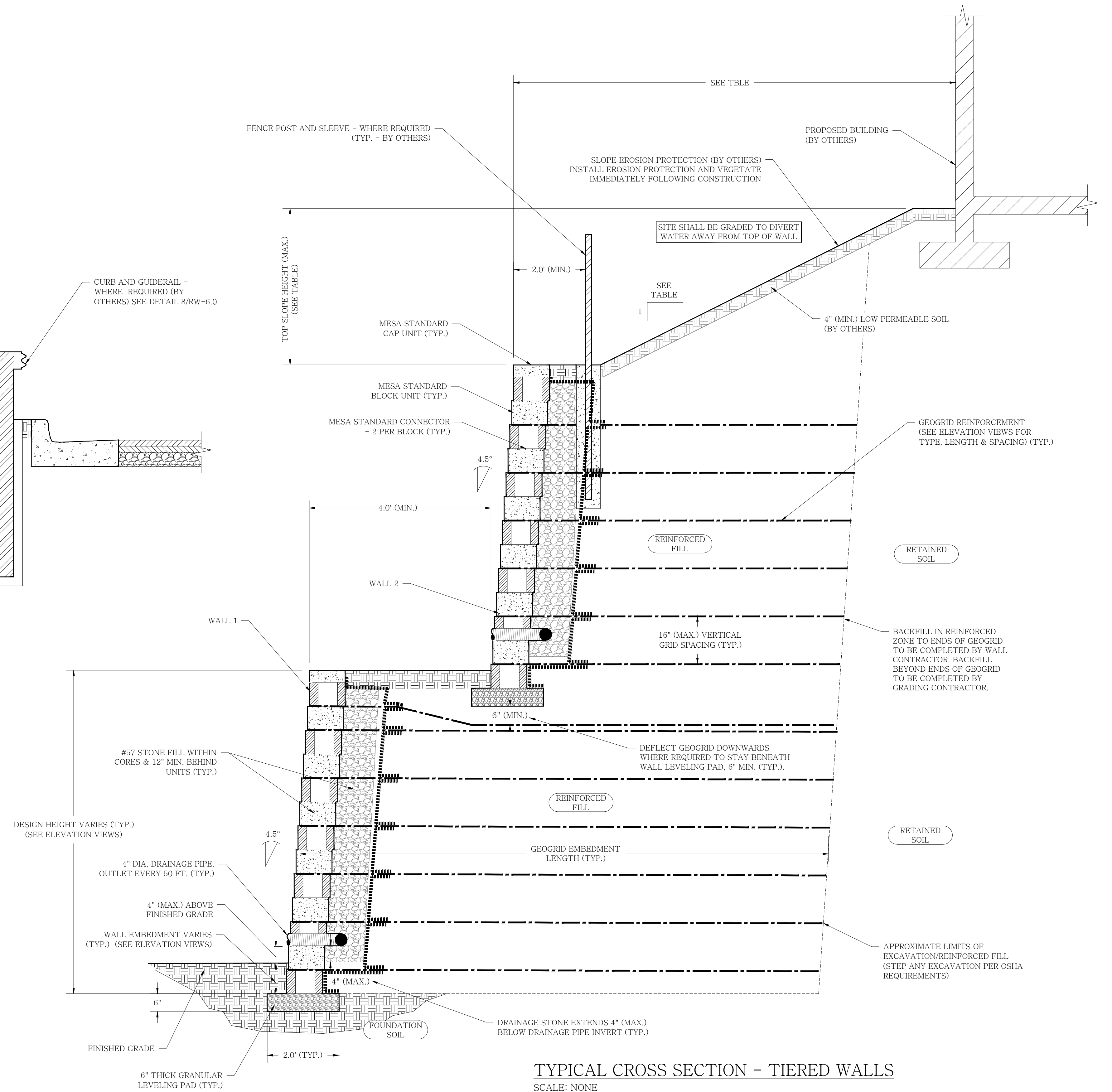
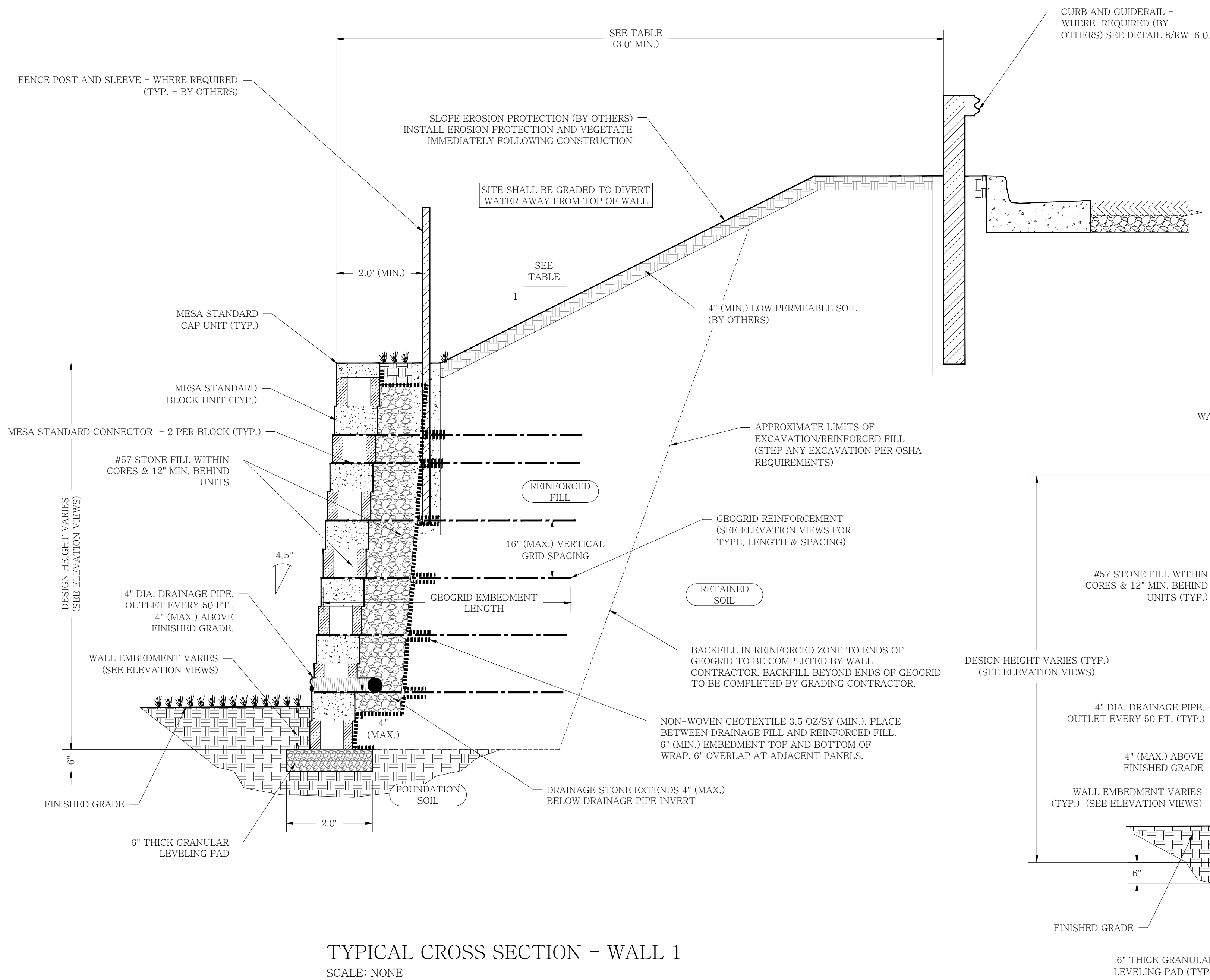
Date: 11/16/20

Sheet No: RW-4.0

DESIGN LOAD TABLE

WALL	SPAN	TOP SLOPE (MAX.)	TOP SLOPE HEIGHT (MAX.)	CURB / PAVEMENT OFFSET (MIN.)	BUILDING / WALL OFFSET (MIN.)
1	0+00.00 - 0+20.25	3H:1V	2.7'	9.0'	-
1	0+20.25 - 0+31.50	3H:1V	7.3'	23.0'	-
1	0+31.50 - 0+51.75	3H:1V	6.0'	-	19.0'
1	0+51.75 - 1+83.00	2H:1V	1.5'	-	4.0'
1	1+83.00 - 1+94.25	-	-	-	-
2	0+00.00 - 0+16.50	2.5H:1V	2.0'	-	11.0'
2	0+16.50 - 0+99.00	8.3H:1V	3.0'	-	26.0'
2	0+99.00 - 1+17.00	-	-	-	-

BORROW SOIL SHALL NOT BE STOCKPILED IN THE VICINITY OF THE RETAINING WALLS.



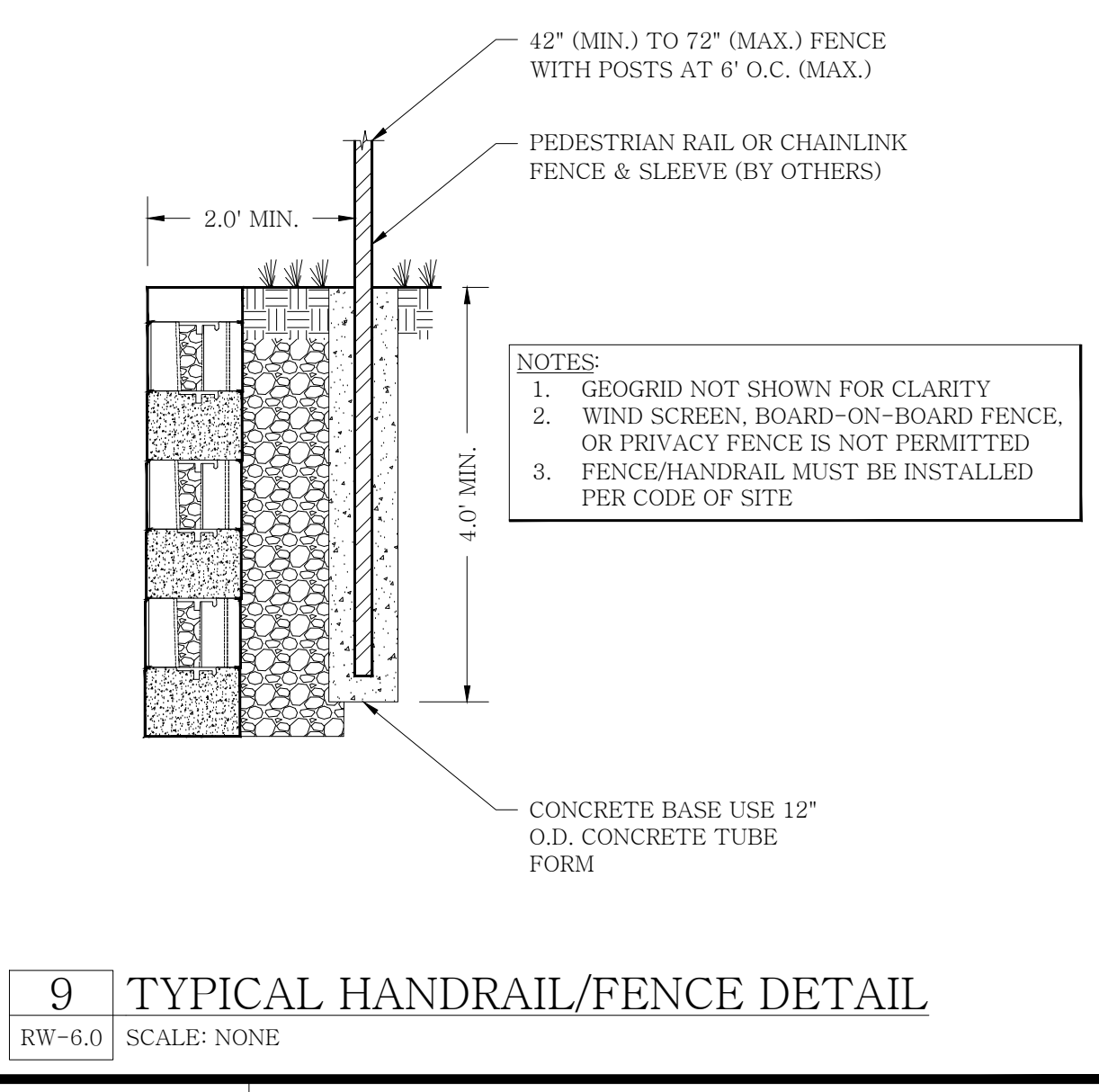
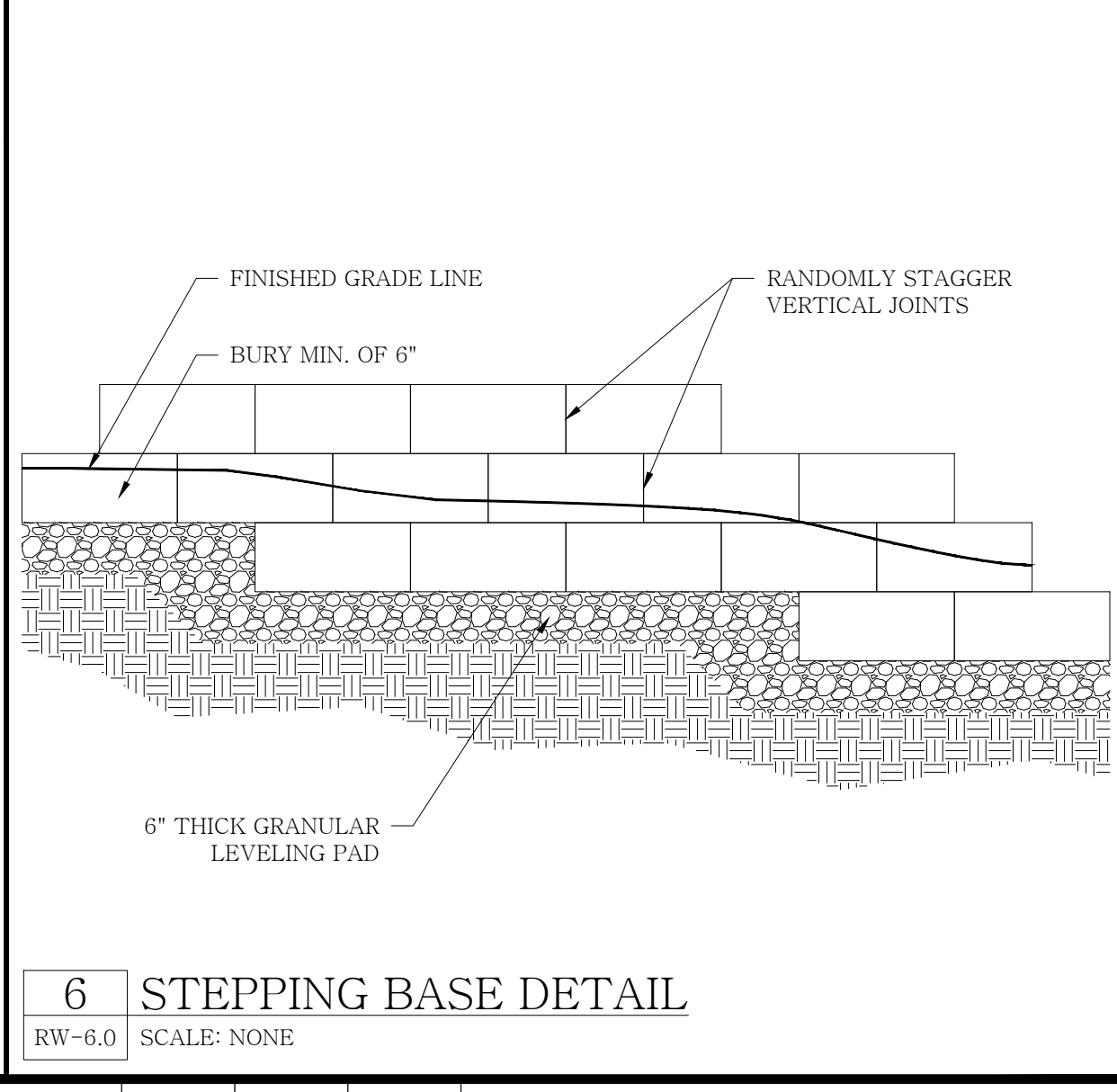
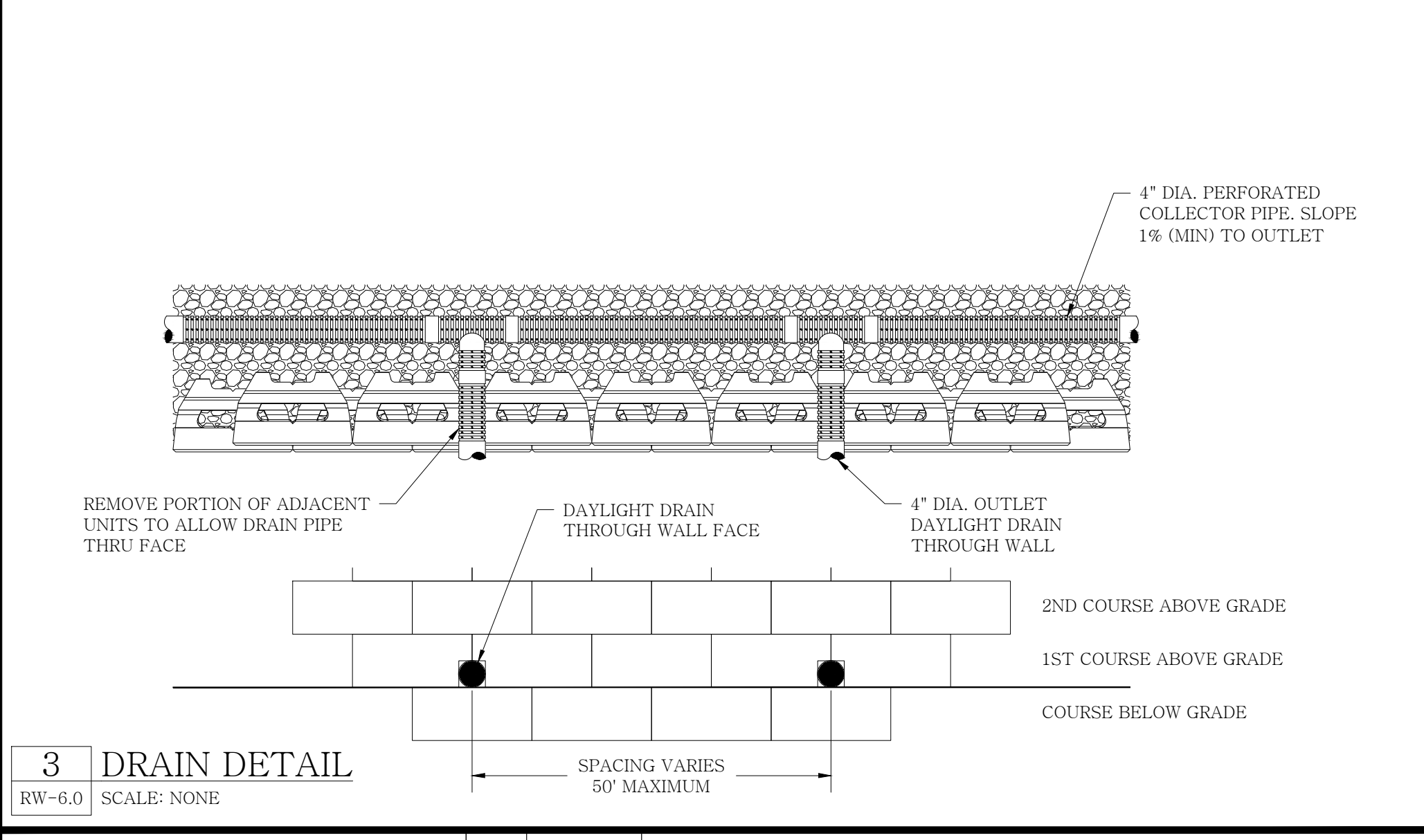
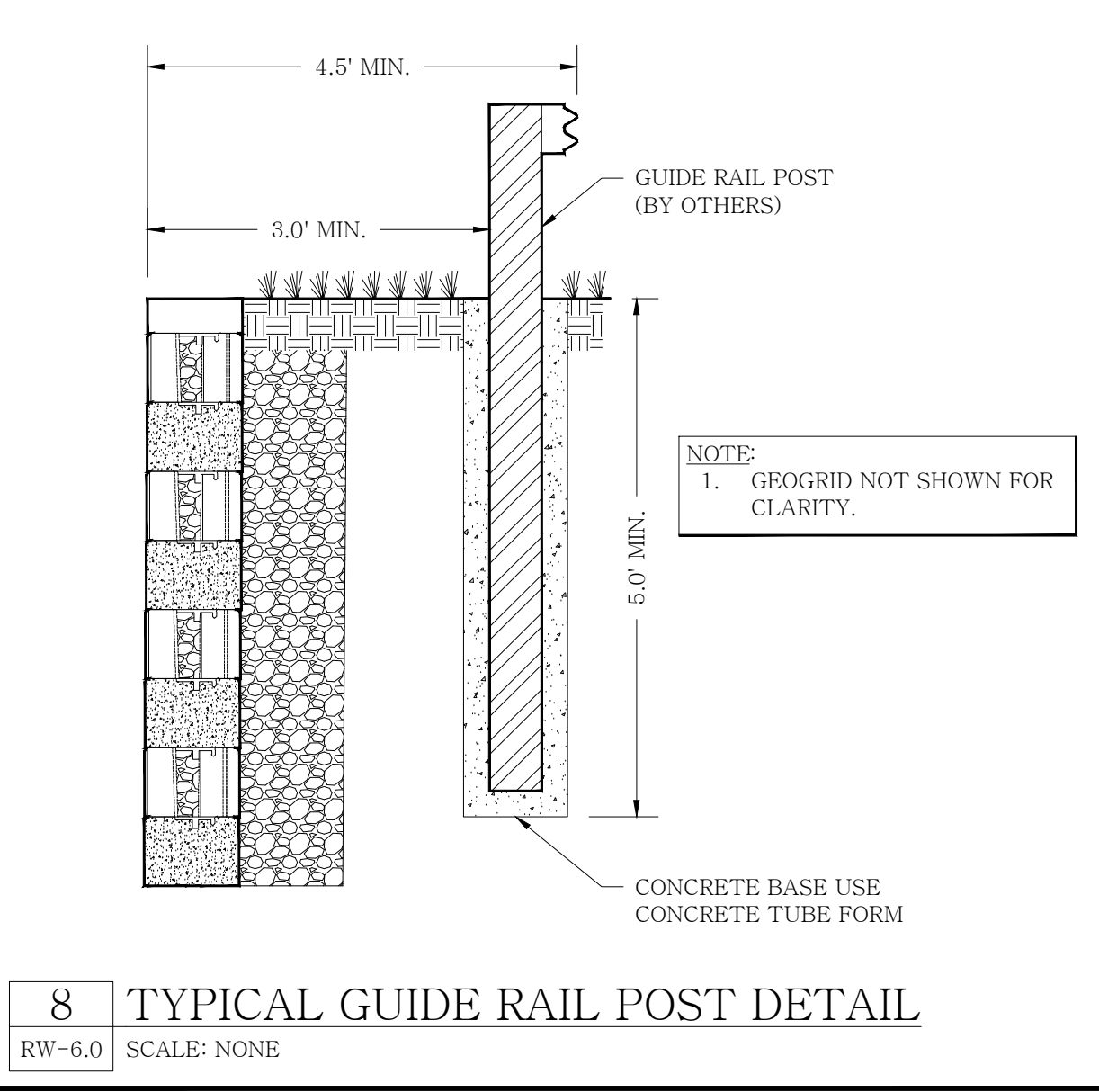
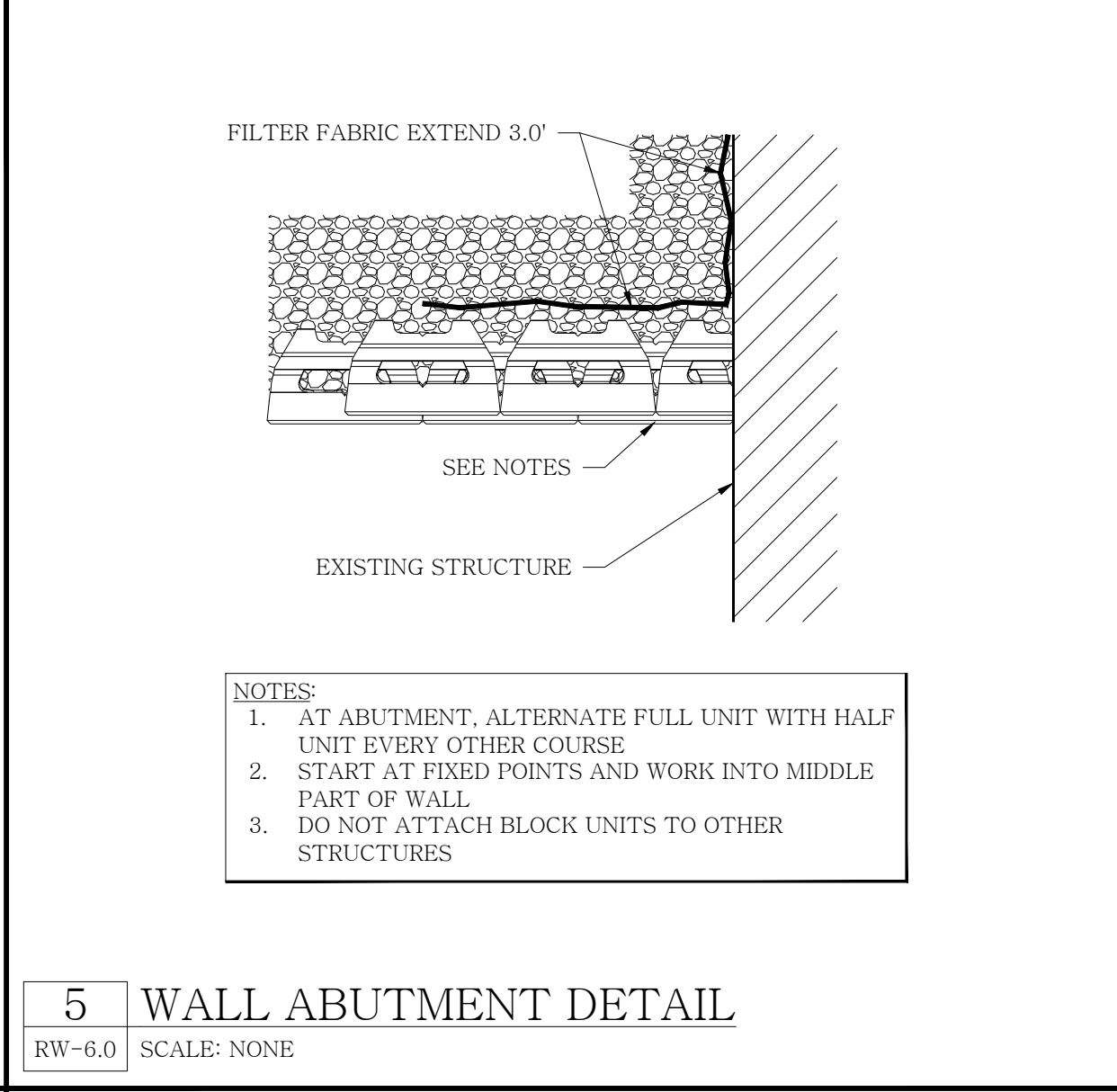
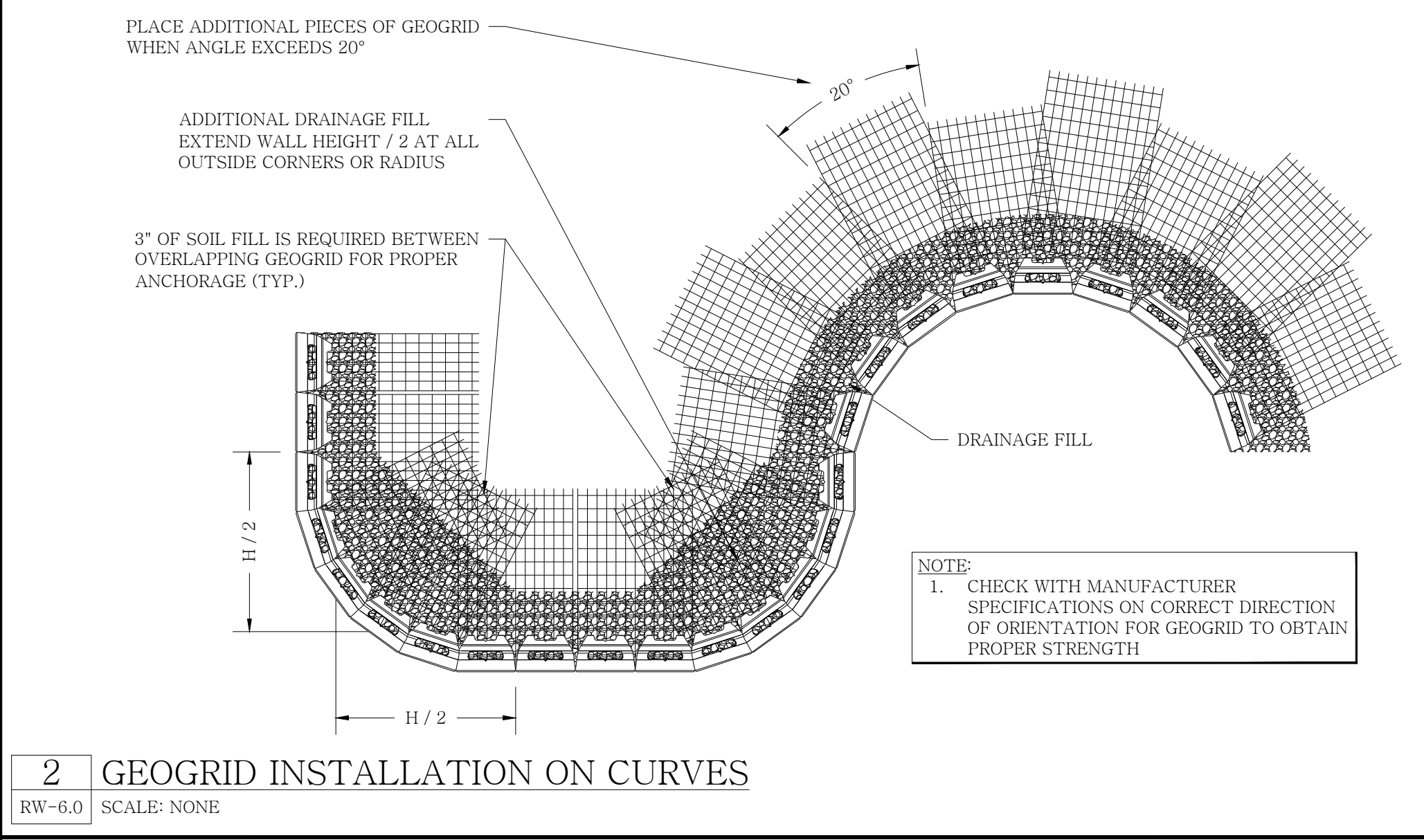
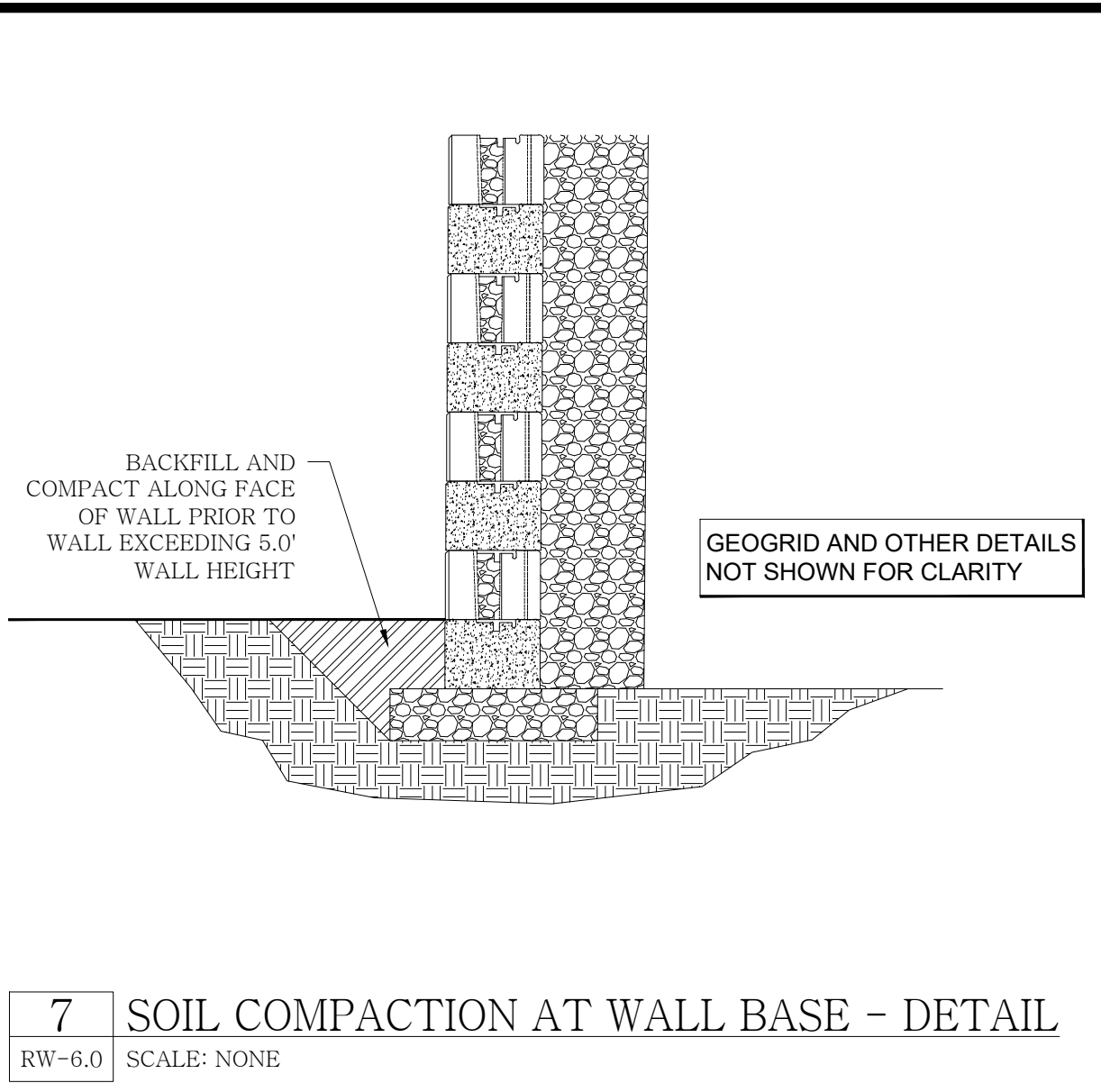
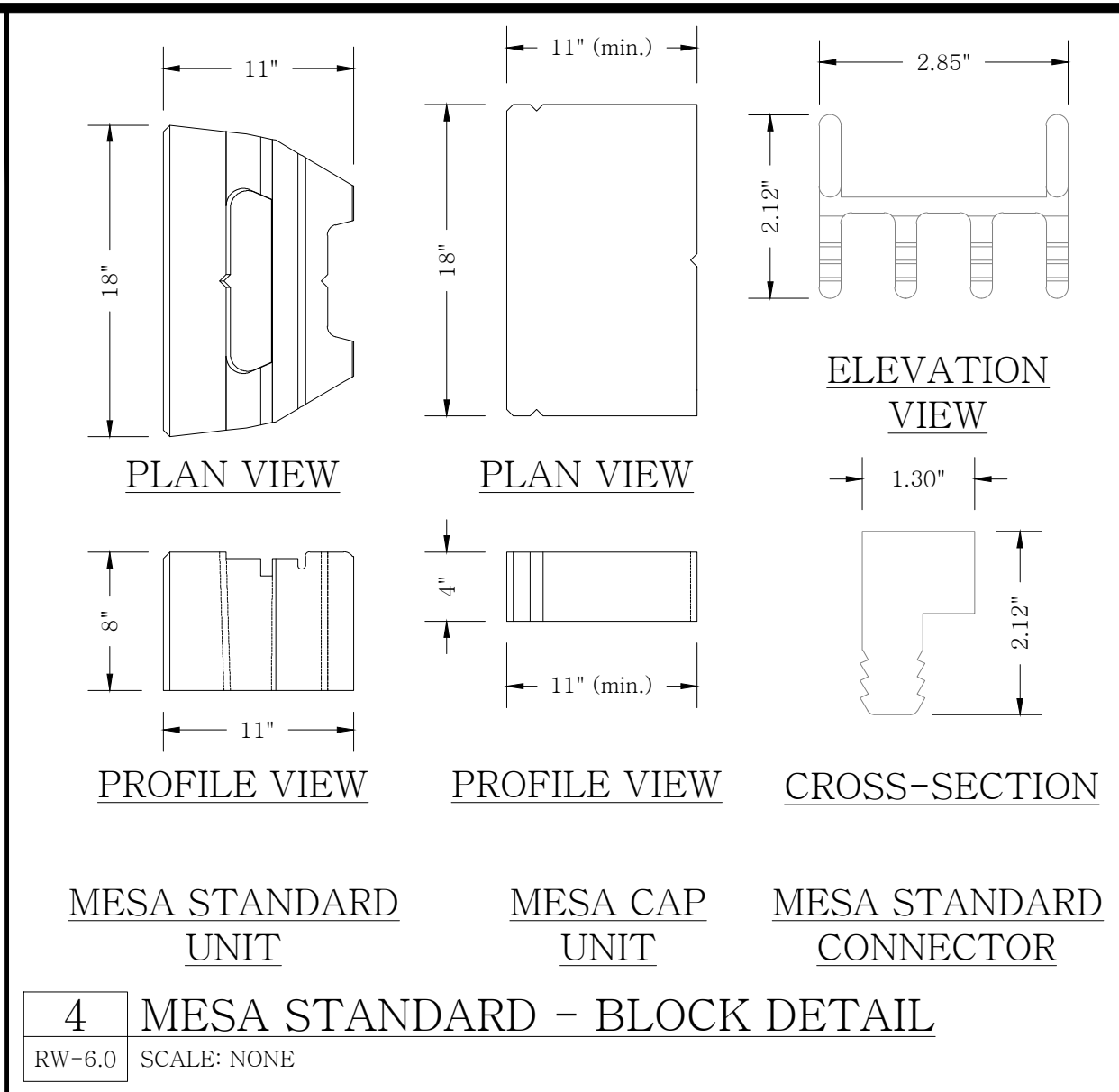
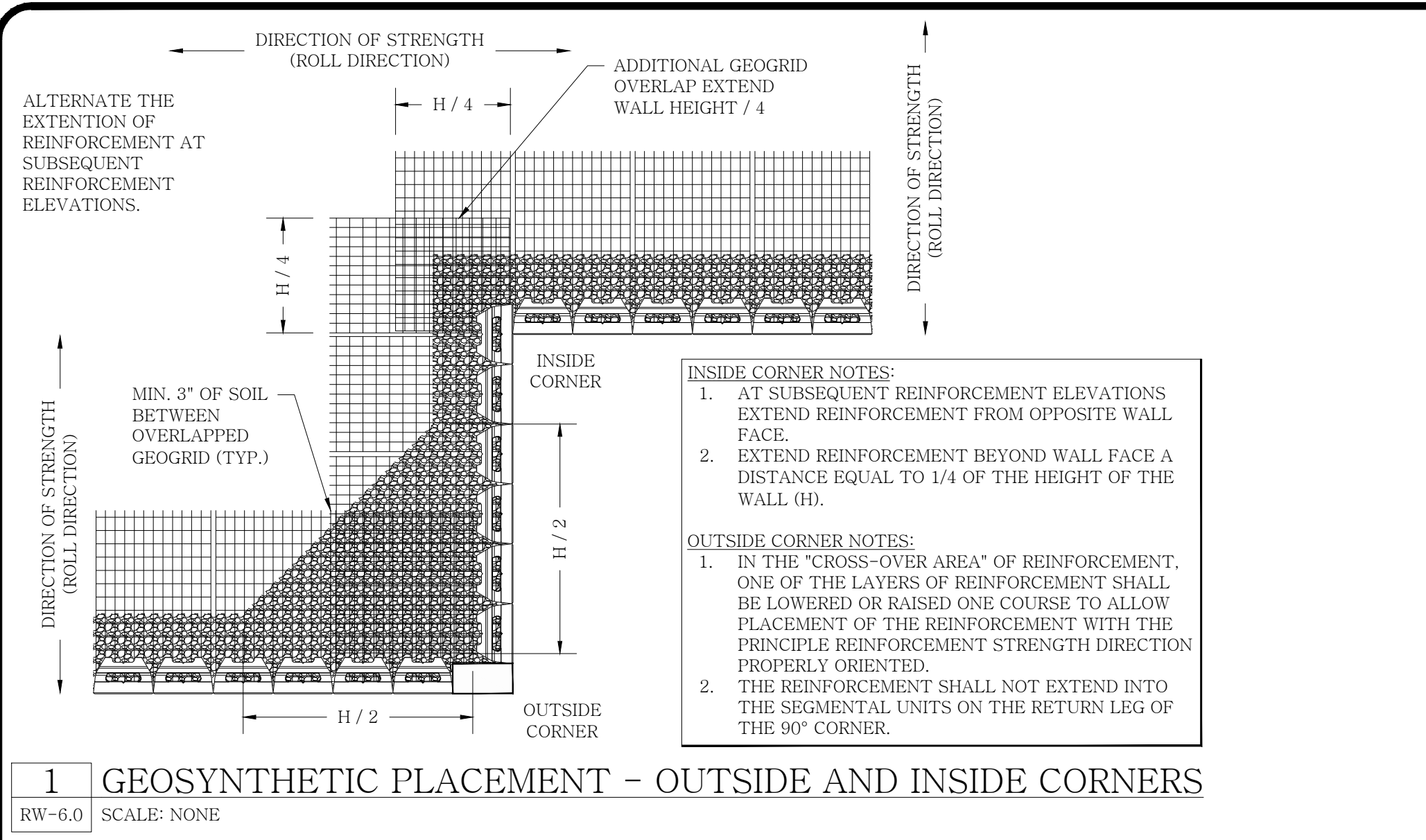
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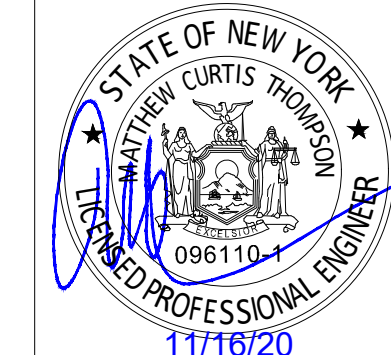
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Project:	DINO DELAURENTIIS RESIDENCE	Date:	11/16/20
	NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK	Sheet No:	RW-5.0



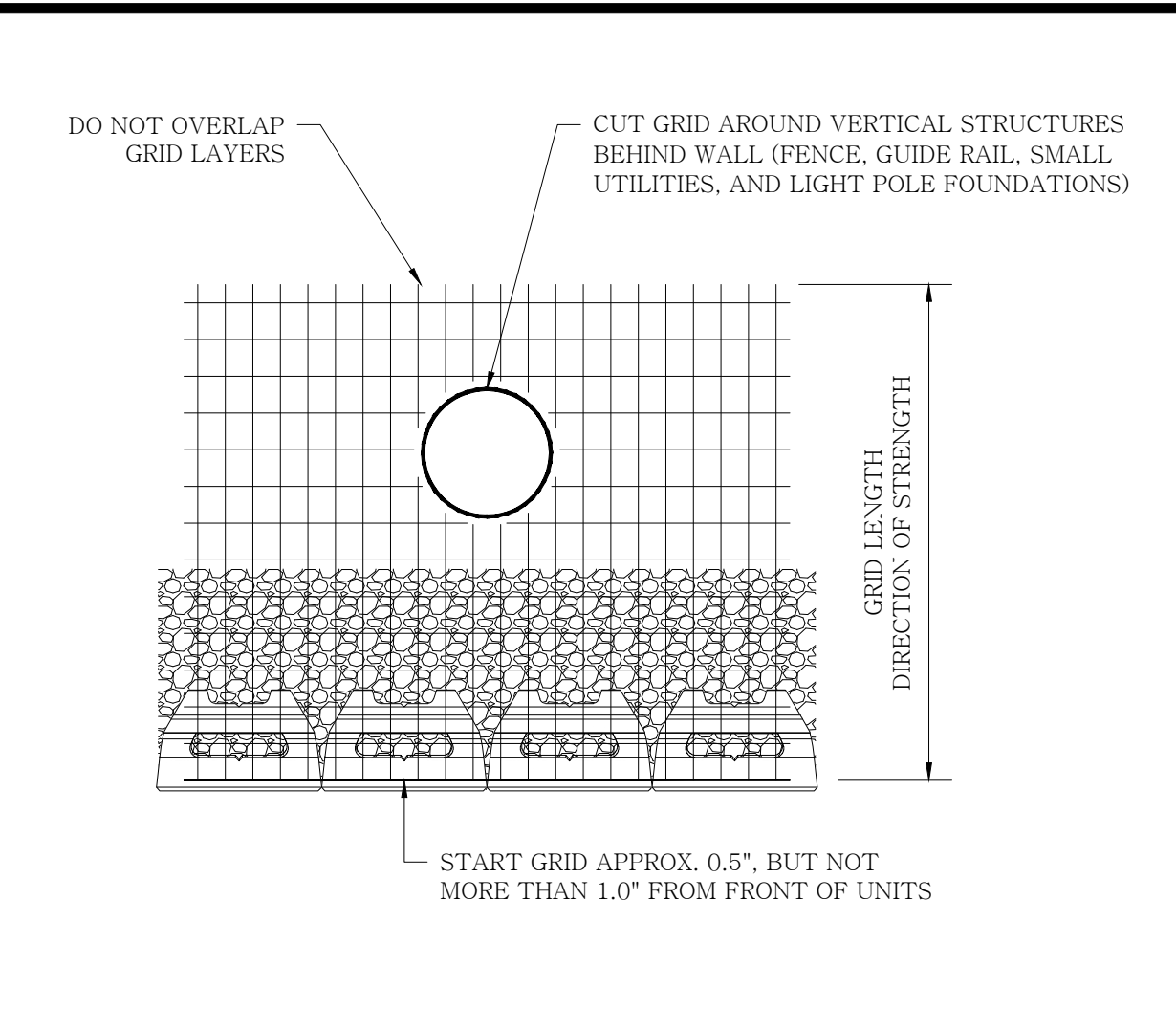
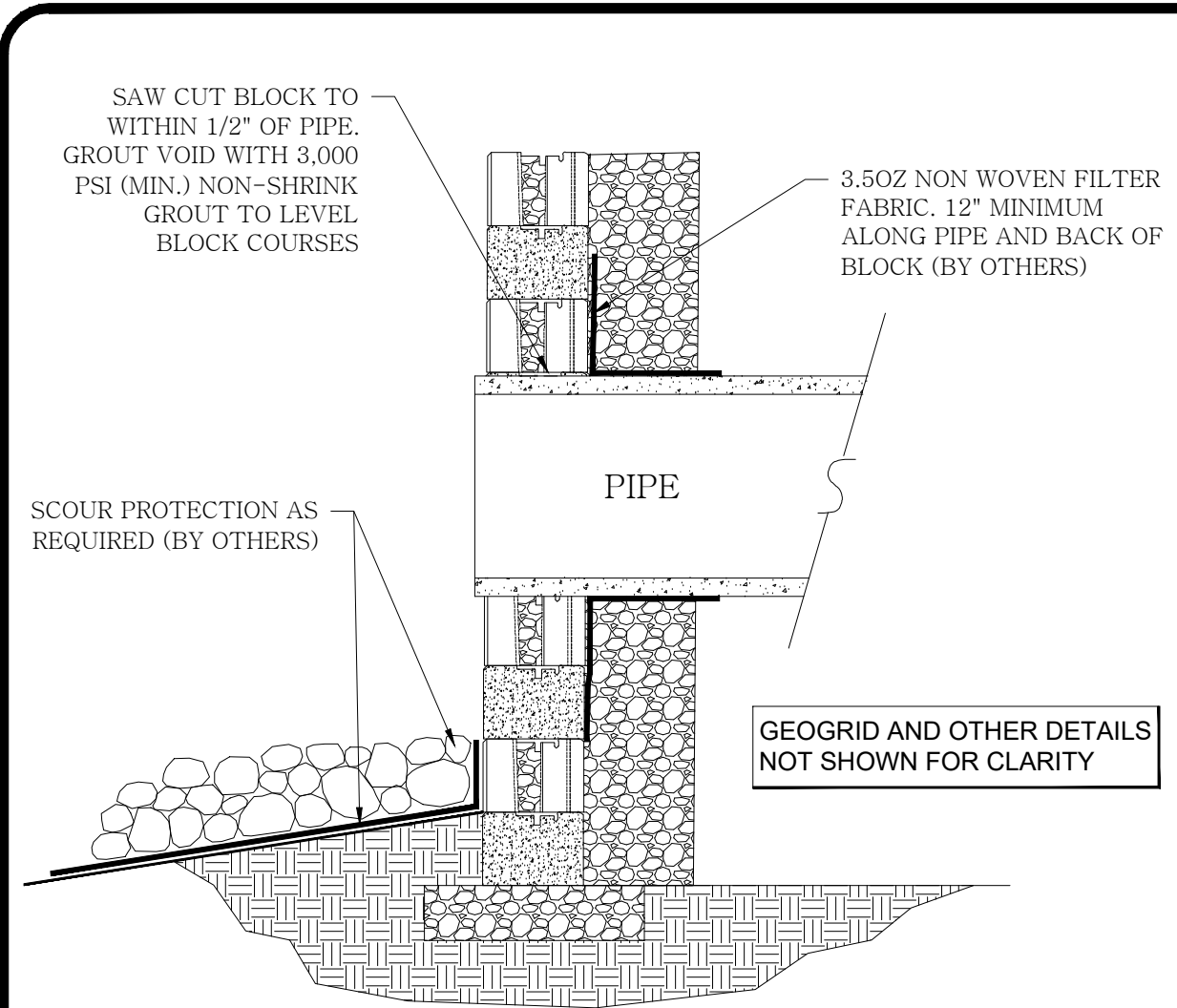
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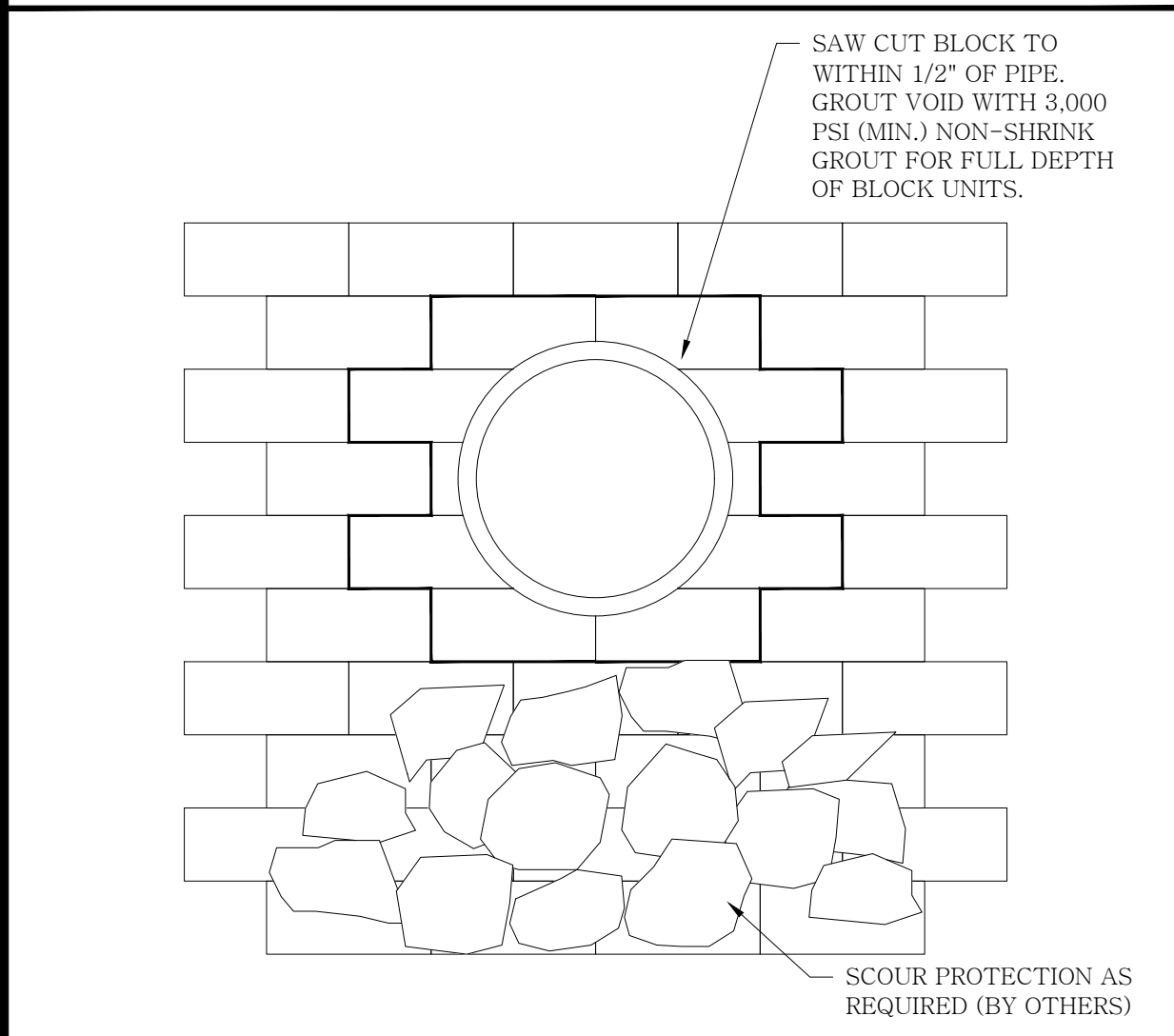


Title:	CONSTRUCTION DETAILS	Project No:	20ERS150
Project:	DINO DELAURENTIIS RESIDENCE	Date:	11/16/20
	NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK	Sheet No:	RW-6.0

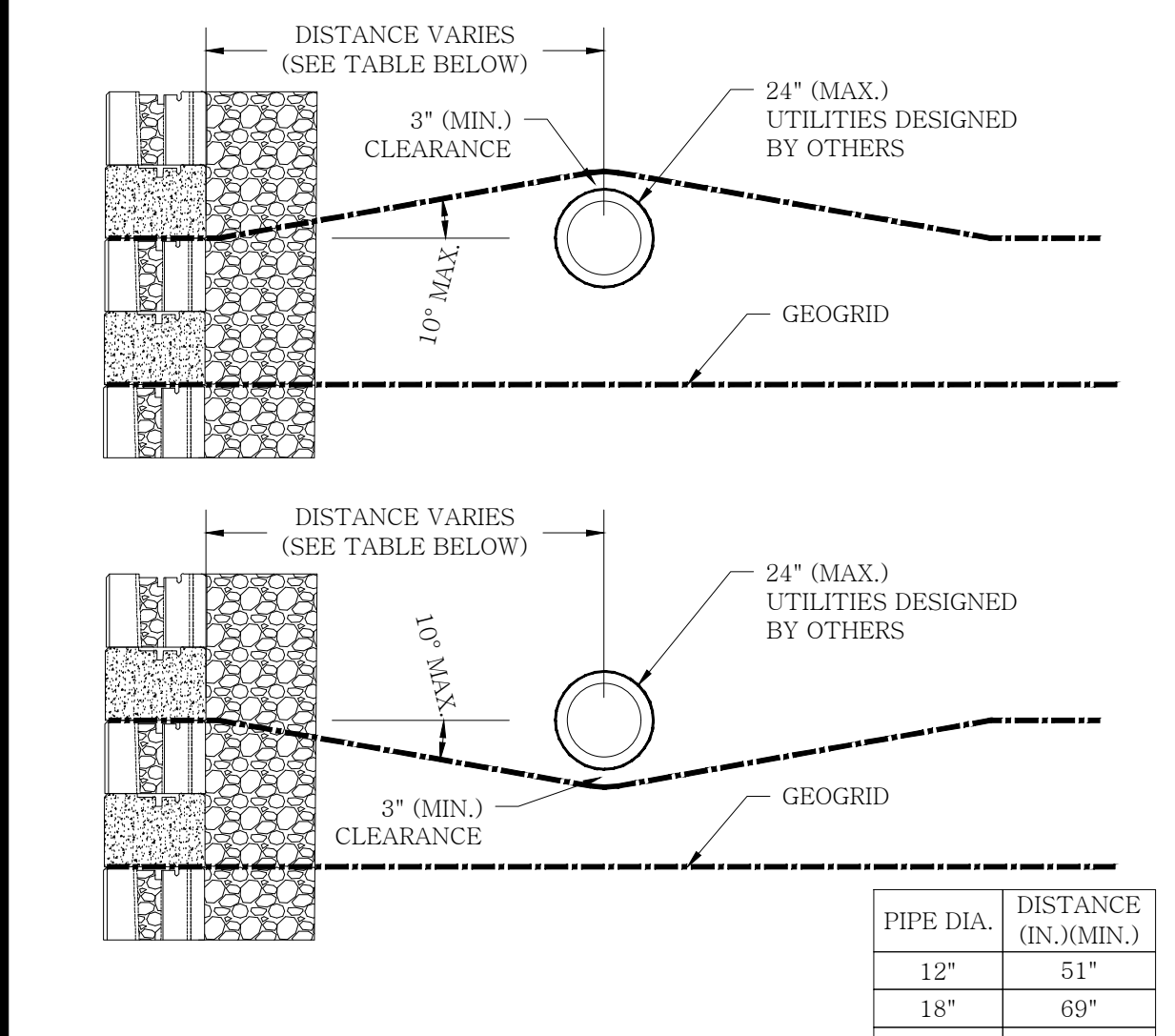


**1** PIPE PENETRATION DETAIL - CROSS SECTION  
RW-6.1 SCALE: NONE

**4** GEOGRID AT STRUCTURES BEHIND WALL  
RW-6.1 SCALE: NONE



**2** PIPE PENETRATION DETAIL - ELEVATION  
RW-6.1 SCALE: NONE



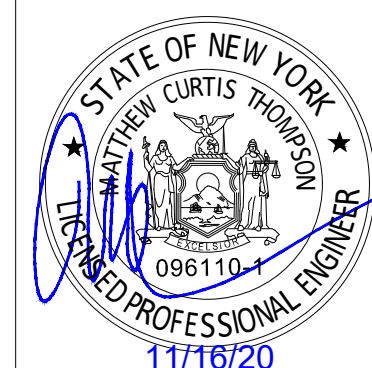
**3** GEOGRID AROUND UTILITIES  
RW-6.1 SCALE: NONE

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Title:	CONSTRUCTION DETAILS	Project No:	20ERS150
Project:	DINO DELAURENTIIS RESIDENCE	Date:	11/16/20
	NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK	Sheet No:	RW-6.1

GENERAL NOTES

SECTION 1 - EXECUTION AND INTENT OF DRAWINGS

- 1.1 THE CONTRACTOR, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT THE PREMISES FAMILIARIZING HIMSELF AS TO THE NATURE AND SCOPE OF THE WORK AND DIFFICULTIES THAT ATTEND ITS EXECUTION.
1.2 THE SUBMISSION OF THE PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE...
1.3 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THESE DRAWINGS, THESE NOTES, AND CONDITIONS BEFORE COMMENCING ANY WORK...
1.4 THE CONTRACTOR SHALL REVIEW THESE DOCUMENTS TO INSURE A FULL UNDERSTANDING OF THE SCOPE OF WORK...
1.5 IF ANY UNFORESEEN CONDITIONS ARISE DURING ANY PORTION OF THE WORK, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE ARCHITECT AT ONCE.
1.6 THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE.
1.7 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OVERALL COORDINATION WITH ALL SUBCONTRACTORS...
1.8 WHEN "APPROVED EQUAL," "EQUAL TO" OR OTHER GENERAL QUALIFYING TERMS ARE USED, IT SHALL BE BASED UPON THE REVIEW AND APPROVAL BY THE ARCHITECT...
1.9 ALL WORK SHOWN ON THE CONSTRUCTION DOCUMENTS SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT UNLESS NOTED OTHERWISE.
1.10 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF WORKMEN, PUBLIC AND PROPERTY.
1.11 ALL REQUIRED EXITS AND EXIT APPROACH SHALL BE CONTINUOUSLY MAINTAINED FREE OF OBSTRUCTIONS THROUGHOUT THE CONSTRUCTION.
1.12 DURING THE ENTIRE CONSTRUCTION PERIOD, ALL EXISTING LIGHTING, FIRE PROTECTION DEVICES AND ALARMS SHALL BE CONTINUOUSLY MAINTAINED.
1.13 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION, CHOPPING AND PATCHING FOR ALL TRADES...
1.14 THE CHARACTER AND SCOPE OF THE WORK ARE ILLUSTRATED BY THE CONTRACT DRAWINGS...
1.15 BEFORE WORK COMMENCES THE ARCHITECT IS TO APPROVE ALL LAYOUTS.
1.16 THE GENERAL CONTRACTOR SHALL FURNISH A LIST OF SUB-CONTRACTORS AND MANUFACTURERS HE INTENDS TO USE BEFORE WORK COMMENCES.
1.17 DRAWINGS SHALL NOT BE SCALED, LARGER SCALE DRAWINGS SHALL ALWAYS GOVERN OVER SMALLER SCALE DRAWINGS.
1.18 THE A.I.A. A101 STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR, 1977 EDITION, B201 GENERAL CONDITIONS, 1976 EDITION, SHALL BE BINDING ON THE WORK.
1.19 THE G.C. SHALL SUBMIT A CONSTRUCTION SCHEDULE AND SCHEDULE OF CONSTRUCTION COST VALUES PRIOR TO THE START OF CONSTRUCTION.
1.20 THE GENERAL CONTRACTOR UPON ACCEPTANCE OF THE DRAWINGS ASSUMES FULL RESPONSIBILITY FOR THE CONSTRUCTION, MATERIAL AND WORKMANSHIP OF THE WORK DESCRIBED IN THESE NOTES AND DRAWINGS...
1.21 ALL EXISTING APPURTENANCES NOT BEING REMOVED SHALL BE REFINISHED WHERE REQUIRED...
1.22 WHERE OPENINGS OCCUR IN EXISTING FIRE RATED AREAS OR PARTITIONS DUE TO EXISTING OR NEW CONDUIT RUNS, DUCTWORK, CABLES, PIPING, ETC...
SECTION 2 - GOVERNING AGENCIES AND PERMITS
2.1 THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY BUILDING PERMITS AND FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS...
2.2 THE GENERAL CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND REGULATORY AGENCIES' CODES HAVING JURISDICTION.
2.3 ALL MATERIALS, ASSEMBLIES, CONSTRUCTION AND EQUIPMENT SHALL CONFORM TO THE TO THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE AND CODE OF THE MUNICIPALITY HAVING JURISDICTION...
2.4 ALL WOOD SHALL BE FIRE-PROOFED AS REQUIRED BY THE BUILDING CODE.
2.5 IF THE CONTRACTOR VIOLATES ANY BUILDING OR FIRE DEPARTMENT CODES OR REGULATIONS, HE SHALL AT HIS OWN EXPENSE BEAR THE COSTS OF ALL PENALTIES AND CORRECTIVE MEASURES...
SECTION 3 - INSURANCES
3.1 NO WORK SHALL COMMENCE UNTIL PROPER CERTIFICATES OF INSURANCE IN THE AMOUNT AGREED TO ARE SUBMITTED TO THE OWNER.
SECTION 4 - WORKMANSHIP
4.1 THE GENERAL CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP AGAINST DEFECTS FOR ONE YEAR FROM FINAL PAYMENT...
4.2 ANY PATCHING AND FINISHING NECESSARY TO FINISH ANY WORK, BUT NOT CALLED OUT ON THESE DRAWINGS, IS CONSIDERED TO BE WITHIN THE SCOPE OF THE WORK.
4.3 THE GENERAL CONTRACTOR SHALL CONTROL, CLEANING TO PREVENT DIRT AND DUST FROM LEAVING THE JOB SITE...
4.4 ALL WALLS SHALL BE PROPERLY PREPARED (SPACKLED, SANDED, ETC.) FOR PAINTING OR WALLCOVERING AS PER MANUFACTURER'S SPECIFICATIONS.
4.5 ALL WORK SHALL BE PERFORMED IN A FIRST CLASS MANNER AND IN ACCORDANCE WITH BEST PRACTICES WITH FIRST CLASS MATERIALS.
4.6 THE GENERAL CONTRACTOR WARRANTS THAT NONE BUT EX-EXPERIENCED WORKMEN SHALL BE EMPLOYED ON THE PROJECT.
4.7 NO INFERIOR WORK OR MATERIALS SHALL BE ACCEPTED ON THIS PROJECT...
4.8 ANY SUBSTITUTION THE GENERAL CONTRACTOR WISHES TO MAKE OTHER THAN THOSE STATED IN HIS PROPOSAL, SHALL BE SUBMITTED IN WRITING WITH THE COST DIFFERENCE BEFORE IT IS ACCEPTED.
4.9 THE GENERAL CONTRACTOR SHALL PERIODICALLY REMOVE ALL RUBBISH AND DEBRIS OF BOTH HIS OWN AND OTHER SUB-CONTRACTORS EMPLOYEES...
SECTION 5 - CHANGE ORDERS AND FIELD ORDERS
5.1 THE OWNER WITHOUT INVALIDATING THE CONTRACT, MAY ORDER EXTRA WORK OR MAKE CHANGES BY ALTERING, ADDING OR DEDUCTING FROM THE WORK...
SECTION 6 - CUTTING AND PATCHING
6.1 THE GENERAL CONTRACTOR SHALL DO ALL PATCHING REQUIRED FOR ALL SUBCONTRACTORS TO COMPLETE THEIR WORK.
6.2 ALL PENETRATIONS THROUGH FIRE PARTITIONS SHALL BE FIRESTOPPED OR FILLED WITH NONCOMBUSTIBLE MATERIALS...
6.3 ALL EXISTING VALVES AND CONTROLS FOR MECHANICAL EQUIPMENT ARE TO BE KEPT CLEAN AND READY FOR ACCESS...

SECTION 7 - PROTECTION OF WORK AND PROPERTY

- 7.1 THE GENERAL CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR THE EXISTING STRUCTURES, FACILITIES AND IMPROVEMENTS ADJOINING THE AREA UNDER THIS CONTRACT...
7.2 THE G.C. SHALL BE RESPONSIBLE FOR THE SECURITY OF THE CONSTRUCTION AREAS UNTIL THE SPACE IS TURNED OVER THE TO THE OWNER.
7.3 THE GENERAL CONTRACTOR SHALL PROVIDE AND MAINTAIN FIRE EXTINGUISHERS AS REQUIRED BY OSHA AND THE FIRE DEPARTMENT THROUGHOUT THE CONSTRUCTION PERIOD.

SECTION 9 - SUBSTANTIAL COMPLETION

- 9.1 SUBSTANTIAL COMPLETION OF THE WORK IS DEFINED AS THE DATE CERTIFIED BY THE OWNER WHEN CONSTRUCTION IS SUFFICIENTLY COMPLETE...
9.2 BEFORE FINAL PAYMENT IS ISSUED THE FOLLOWING ITEMS MUST BE SUBMITTED BUT THESE SUBMISSIONS IS NOT LIMITED TO THESE ITEMS:

- 1. WAIVER OF LIENS
2. ALL WARRANTIES AND GUARANTEES.
3. MANUALS AND INSTRUCTIONS
4. AS BUILT DRAWINGS.

SECTION 10 - ASBESTOS

- 10.1 IF THE CONTRACTOR ENCOUNTERS ASBESTOS HE SHALL NOTIFY THE OWNER'S PROJECT MANAGER IMMEDIATELY AND TAKE PRECAUTIONS TO NOT DISTURB THE ASBESTOS UNTIL PROPER MEASURES FOR ITS REMOVAL HAVE BEEN MADE.

GENERAL CONSTRUCTION NOTES

- 1. CONTRACTOR ACCEPTS THE RESPONSIBILITY TO PROVIDE ALL ITEMS AND SERVICES REQUIRED AS INDICATED ON THESE DRAWINGS AND IN CONFORMANCE WITH ALL THE NOTES, DETAILS, DRAWINGS, ETC. CONTAINED WITHIN THIS SET OF CONSTRUCTION DOCUMENTS...
2. ALL WORK SHALL COMPLY WITH THE LOCAL MUNICIPALITY & THE RESIDENTIAL CODE OF NEW YORK STATE ALONG WITH ALL OTHER APPLICABLE CODES & AGENCIES HAVING JURISDICTION...
3. CONTRACTOR(S) SHALL FOLLOW ALL LISTED AND NOTED DIMENSIONS AND NOTES. DO NOT SCALE OFF OF DRAWINGS.
4. CONTRACTOR TO NOTIFY THE OWNER, IN A TIMELY MANNER, WHEN THE WORK WILL BEGIN ON THE PROJECT AND SHALL COORDINATE WITH SAME...
5. CONTRACTOR TO COORDINATE WORK WITH REQUIRED INSPECTIONS SO AS TO NOT DELAY THE PROGRESS OF THE PROJECT.
6. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH ALL OTHER CONTRACTORS AND SHALL CUT, LAY AND INSTALL THEIR WORK AT SUCH A TIME AND MANNER SO THAT NO DELAY OR INTERFERENCE WITH THE CARRYING FORWARD OF THE WORK OF OTHER CONTRACTORS SHALL OCCUR.
7. CONTRACTOR TO INSTITUTE & MAINTAIN ALL SAFETY MEASURES & AND SHALL PROVIDE ALL EQUIPMENT AND TEMPORARY CONSTRUCTION NECESSARY TO SAFEGUARD ALL PERSONS & PROPERTY...
8. WITH THE EXCEPTION OF THE INITIAL BUILDING PERMIT, ALL PERMITS SHALL BE SECURED BY, AND AT THE EXPENSE OF, THE CONTRACTOR...
9. THIS PROJECT TO BE FILED UNDER SEPARATE ELECTRICAL AND PLUMBING PERMITS AT THE EXPENSE OF THE CONTRACTOR(S)...
10. CONTRACTOR SHALL NOTIFY ARCHITECT DURING THE DEMOLITION PHASE OF ANY QUESTIONABLE CONDITION OF EXPOSED MATERIALS THAT ARE TO REMAIN...
11. ALL PATCHING & REPAIRING SHALL BE DONE WITH MATERIAL & WORKMANSHIP TO MATCH ADJACENT...
12. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE BEST ACCEPTABLE TRADE PRACTICES...
13. ANY SUBSTITUTION TO ANY SPECIFIED MATERIALS OR ASSEMBLIES REQUESTED BY THE CONTRACTOR SHALL BE PRESENTED TO THE ARCHITECT IN A TIMELY MANNER...
14. ALL CONSTRUCTION DEBRIS & REFUSE SHALL BE REMOVED FROM THE PROJECT SITE ON A REGULAR BASIS...
15. ALL FINISHES SHALL COMPLY WITH THE NEW YORK STATE BUILDING CODE...
16. ALL FIXTURES, FINISHES, FURNISHINGS, EQUIPMENT, HARDWARE, ETC. TO BE APPROVED OF BY THE OWNER...
17. ALL STRUCTURAL CONCRETE SHALL COMPLY WITH ACI SPECIFICATIONS...
18. ALL CMU FOUNDATIONS SHALL BE REINFORCED VERTICALLY WITH HOT GALVANIZED ASTM A653 OR EPOXY COATED GRADE 60 OR BETTER DEFORMED REBAR...
19. BEARING CAPACITY OF SOIL 1.5 KIPS/F. MINIMUM ASSUMED.
20. ALL STRUCTURAL STEEL TO BE A-36 GRADE...
21. ALL INTERIOR STRUCTURAL LUMBER TO BE DOUGLAS FIR-LARCH NO. 2 OR EQUAL...
22. ALL CONCRETE, MASONRY, AND EXTERIOR LUMBER FASTENERS, SCREWS, ANCHORS, STRUCTURAL ACCESSORIES, ETC. TO BE HOT-DIPPED GALVANIZED...
23. ALL STRUCTURAL SHEATHING SHALL BE INSTALLED WITH THE FACE GRAIN PERPENDICULAR TO THE FRAMING BENEATH...
24. NO RESPONSIBILITY HAS BEEN ASSUMED BY THE ARCHITECT FOR INFORMATION SUPPLIED BY OTHERS...
25. ANY SITE OBSERVATIONS PERFORMED BY THE ARCHITECT ARE SOLELY FOR THE ARCHITECT'S PURPOSE OF DETERMINING IF THE WORK IS BEING CARRIED OUT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS...

CODE DATA

BUILDING:..... 2020 N.Y. STATE RESIDENTIAL BUILDING CODE
BUILDING:..... 2020 N.Y. STATE BUILDING CODE
ENERGY:..... 2020 N.Y. STATE ENERGY CONSERVATION CODE

Table with columns: LOCATION: TOWN OF WHITE PLAINS, NY; GROUND SNOW LOAD, WIND SPEED, SEISMIC DESIGN CATEGORY, WEATHERG, FROST LINE, TERMITES, DECAY, WINTER DESIGN TEMPERATURE, ICE-SHIELD REQUIREMENT, FLOOD HAZARD.

NYS ENERGY CONSERVATION CODE

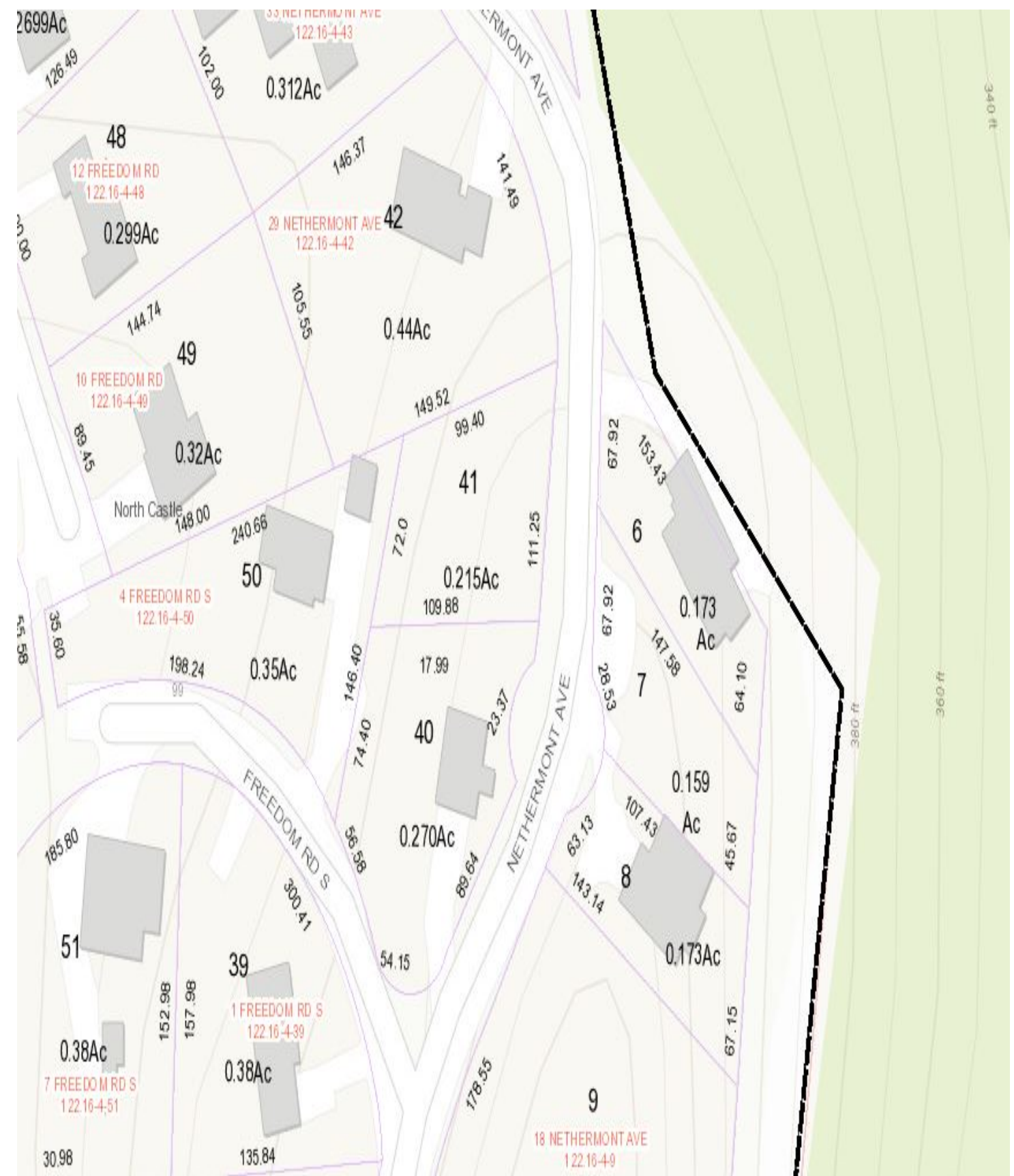
BUILDING TYPE: SINGLE FAMILY RESIDENTIAL
DESIGN DEGREE DAYS: 5500-5999
DESIGN TEMPERATURE: 0 DEGREES F, 7.2 DEGREES F.
CODE DESIGN METHOD: IRC 2000 (TABLE N1102.1)

Table with columns: ENVELOPE COMPONENT, R VALUE REQUIRED, R VALUE PROVIDED. Rows include EXTERIOR WALL, ROOF/CEILING, FLOOR, GLAZING.

I, JEFFREY TAYLOR, RA CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE PLANS AND SPECIFICATIONS CONFORM WITH THE APPLICABLE SECTIONS OF THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE.
HEATING EQUIPMENT TYPE: SHALL BE SPECIFIED BY THE H.V.A.C. CONTRACTOR...
PIPE INSULATION: PROVIDE PIPE INSULATION AT DUCTING AND HOT WATER PIPES OUTSIDE OF INSULATED WALL AND FLOOR AREAS.

SITE LOCATION MAP

CITY OF TOWN OF NORTH CASTLE, NY
R-5 (SPLIT LEVEL DWELLING) - ZONING REGULATIONS
SECTION: 122.16; BLOCK: 4 ; LOT: 41



DELAURENTIIS RESIDENCE

NEW CONSTRUCTION
21 NETHERMONT AVENUE
TOWN OF NORTH CASTLE, NY 10504

LIST OF DRAWINGS

Table with columns: DWG. #, LIST OF DRAWINGS, ISSUED, REVISED & ISSUED, RE-ISSUED NO CHANGE. Rows include T-100.00 TITLE SHEET / CODE INFO, PH-100.00 SITE PHOTOS, GN-100.00 GENERAL NOTES, A-001.00 FLOOR AREA CALCULATIONS, A-100.00 CONSTRUCTION PLAN BASEMENT LEVEL, A-101.00 CONSTRUCTION 1ST FLOOR PLAN, A-102.00 CONSTRUCTION 2ND FLOOR PLAN, A-200.00 CONSTRUCTION ROOF PLAN, A-400.00 EXTERIOR ELEVATIONS, A-401.00 EXTERIOR ELEVATIONS, A-500.00 CROSS SECTION & TYPICAL EXTERIOR SECTION, A-600.00 DOOR & WINDOW SCHEDULE, S-100.00 FOUNDATION PLAN, CIVIL DRAWINGS (SW-1, SW-2, TS-1), 1 OF 3 EXISTING TREE LOCATION & DESCRIPTION, 2 OF 3 EXISTING TREE LOCATION & REMOVAL PLAN, 3 OF 3 PLANTING PLAN.

PROJECT TEAM

ARCHITECT
JEFFREY TAYLOR ARCHITECT
572 NORTH BROADWAY
WHITE PLAINS, NY 10603
PHONE:.....(914) 289-0011
CONTACT:JEFFREY TAYLOR

CIVIL ENGINEER
GABRIEL E. SENOR, PC
90 NORTH CENTRAL AVE.
HARTSDALE, NEW YORK, 10530
PHONE:.....(914) 422-0070
CONTACT:GREG



572 NORTH BROADWAY
WHITE PLAINS, NEW YORK 10603
TEL 914 289 0011

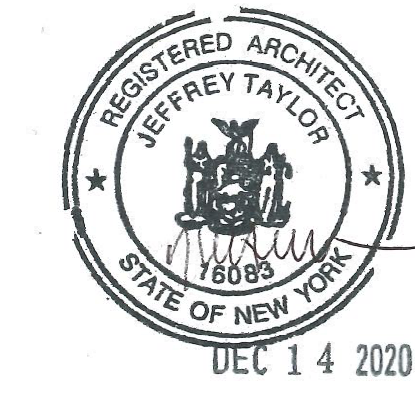


Table for REVISIONS with columns: NO., DATE, REVISION PER RPRC COMMENTS. Row 1: 12.14.20, REVISED PER RPRC COMMENTS.

PROJECT NO. 9458
START DATE: 08.02.20
DRAWN BY: FTA (R.M)
SCALE: AS NOTED

SHEET TITLE:
TITLE SHEET / CODE DATA

DELAURENTIIS RESIDENCE
NEW HOUSE CONSTRUCTION
21 NETHERMONT AVENUE
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:
T-100.00



REFERENCE PHOTO OF HOUSE ELEVATION



A SITE PHOTO



SITE PHOTO



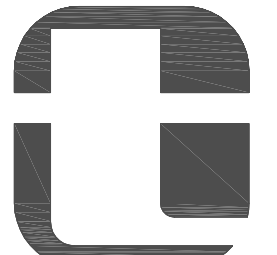
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JEFFREY TAYLOR ARCHITECT

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REVISIONS:  
12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:  
SITE PHOTOS

DELAURENTIS RESIDENCE  
NEW HOUSE CONSTRUCTION  
21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:

PH-100.00

PLUMBING NOTES	
PLUMBER SHALL FILE SEPARATELY FOR ALL PERMITS AND INSPECTIONS	
PLUMBER SHALL FILE SEPARATELY FOR ALL PLUMBING PERMITS AND INSPECTIONS	
1.	ALL FIXTURES SHALL BE PROVIDED BY OWNER AND INSTALLED BY PLUMBING CONTRACTOR U.O.N.
2.	COORDINATE ALL FIXTURE LOCATIONS WITH THE REQUIREMENTS OF THE OWNER AND IN ACCORDANCE W/ THE CODE.
3.	PROVIDE ALL REQUIRED ROUGH PLUMBING, CONNECTIONS TO HARDWARE, WASTE CONNECTIONS TO FIXTURES, VENTING, ETC. AS REQUIRED.
4.	MAINTAIN ALL REQUIRED CLEARANCES AROUND EACH FIXTURE IN ACCORDANCE w/ FIGURE R307.2 OF THE RESIDENTIAL CODE.
5.	ALL HOT WATER SHALL BE DOUBLE PIPED WITH CIRCULATING PUMP.
6.	ALL HOT AND COLD WATER PIPES SHALL BE PEX THROUGHOUT HOUSE WITH A CIRCULATOR PUMP. (FOR HOT WATER).
7.	HOT WATER HEATER SHALL BE PROPANE FIRED AND HIGHEST EFFICIENCY AVAILABLE ON MARKET WITH MINIMUM 100 GALLON CAPACITY.

ELECTRICAL & POWER NOTES	
ELECTRICIAN SHALL FILE SEPARATELY FOR ALL PLUMBING PERMITS AND INSPECTIONS	
1.	ELECTRICIAN SHALL BE LICENSED AND INSURED TO PERFORM WORK IN THIS JURISDICTION.
2.	ALL DEVICES AND WIRING SHALL BE OF AN APPROVED TYPE AS REQUIRED BY THE N.E.C. AND ALL LOCAL CODES GOVERNING.
3.	ALL STANDARD RECESSED FIXTURES SHALL BY I.C. TYPE 100-WATT PAR 30 BULBS U.O.N. COORDINATE TRIM KITS WITH OWNER.
4.	COORDINATE TYPE AND LOCATIONS ALL FIXTURES, SWITCHES, DEVICES AND OUTLETS WITH OWNER.
5.	PROVIDE MIN. 100 C.F.M. FANS IN BATHROOMS. FAN SHALL BE INSTALLED WITH A RIGID DUCT RUNNING DIRECTLY TO THE EXTERIOR.
6.	ALL FIXTURES LOCATED WITHIN BATHROOMS AND LOCATED OUTSIDE SHALL BE RATED FOR WET SERVICE.
7.	ALL SURFACE FIXTURES SHALL HAVE A COVER OR GLOBE - NO BARE-BULB FIXTURES PERMITTED.
8.	ELECTRICIAN SHALL EVALUATE THE ELECTRICAL PANEL AND UPGRADE AS REQUIRED. CONTRACTOR SHALL COORDINATE WORK AND COMPLY WITH THE LOCAL UTILITY COMPANY AS REQUIRED.
9.	CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT THE LIGHT FIXTURE TRIM SPECIFIED IS COMPATIBLE WITH CEILING CONSTRUCTION SPECIFIED.
10.	MULTIPLE ADJACENT SWITCHES SHALL BE MOUNTED IN A SINGLE MULTI-GANG BOX AND BE COVERED WITH A SINGLE CONTINUOUS FACEPLATE. WHERE AN ADDITIONAL SWITCH IS ADDED TO AN EXISTING SWITCH LOCATION, REMOVE EXISTING SWITCHES AND PROVIDE A NEW SINGLE FACEPLATE.
11.	*AREA OF NEW CEILING IS NOTED SCHEMATICALLY ONLY AND DOES NOT CONSTITUTE "THE LIMITS FOR SCOPE OF WORK. CONTRACTOR TO VERIFY SCOPE OF REMOVALS AND NEW CONSTRUCTION TO DETERMINE LIMITS OF NEW CEILING CONSTRUCTION.
12.	PROVIDE ALL NECESSARY HANGERS & CLIPS FOR PROPER LIGHT FIXTURE INSTALLATION.
13.	FOR LIGHT SWITCHES AND EXHAUST FAN CONTROLS SEE ELECTRICAL DRAWINGS.
14.	TRACING SHALL HAVE DIMMUS SWITCHES.
15.	PATCH EXISTING CEILING AT AREA OF NEW CONSTRUCTION AND ALONG ACCESSIBLE ROUTE FOR ALL TRADES, INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, AND PLUMBING TRADES.
16.	ALL CEILING REGISTERS TO BE CENTERED IN CEILING COORDINATE WITH OWNER.
17.	ELECTRICAL CONTRACTOR TO HARD WIRE SMOKE & CARBON MONOXIDE DETECTORS.
18.	ALL TOILET ROOM EXHAUST FANS SHALL BE MIN. 100 CFM (WHISPER FANS).
19.	COORDINATE NEW GENERATOR INTERLOCKING WITH THE MAIN PANEL.
20.	CONTRACTOR SHALL INSTALL ALL LIGHTS PROVIDE BY OWNER.
21.	ALL LIGHT SHALL BE LED.

H.V.A.C NOTES	
H.V.A.C G.C. SHALL FILE SEPARATELY FOR ALL PERMITS AND INSPECTIONS	
1.	THE HVAC SYSTEM FOR THE ENTIRE HOUSE CONSTRUCTION IS TO BE COORDINATED AND REVIEWED WITH THE OWNER AND THE ARCHITECT PRIOR TO CONSTRUCTION ANY COST ASSOCIATED WITH ADDITIONAL SERVICE THAT IS REQUIRED SHOULD BE INCLUDED IN THE BASE BID. ALL UNITS TO BE SUBMITTED TO OWNER AND ARCHITECT FOR APPROVAL.
2.	TEMPORARY HEAT: THE CONTRACTOR SHALL FURNISH TEMPORARY HEAT FOR THE DURATION OF THE PROJECT, WHENEVER REQUIRED. SUFFICIENT HEAT OF THE PROPER AND ADEQUATE TEMPERATURE SHALL BE FURNISHED AS NEEDED TO CARRY OUT THE WORK OF ALL TRADES UNDER THE CORRECT CONDITIONS, INCLUDING THE REQUIRED DRYNESS FOR INSTALLATION OF VARIOUS MATERIALS. TEMPORARY HEATING UNITS SHALL BE ELECTRICAL AND SUCH AS ARE APPROVED BY THE AMERICAN INSURANCE ASSOCIATION AND LOCAL AUTHORITIES. A SUFFICIENT NUMBER OF UNITS SHALL BE PROVIDED TO AFFORD EVEN DISTRIBUTION TO HEAT THROUGHOUT THE BUILDING UNDER ALL CONDITIONS.
3.	AC IS TO COMPLY WITH THE FOLLOWING CRITERIA: ALL ROOM TEMPERATURES ARE NOT TO EXCEED 72 DEGREES IN COOLING SEASON, OR BE LESS THAN 65 DEGREES IN THE HEATING SEASON.
4.	LOCATION OF THERMOSTATS TO BE REVIEWED WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.
5.	DUCTING AND GRILLES, PER "H" DRAWINGS.
6.	REVIEW SIZE, LAYOUT, LOCATION AND TYPE OF HVAC GRILLES WITH THE OWNER AND ARCHITECT IN THE FIELD PRIOR TO CONSTRUCTION.
7.	BALANCE THE SYSTEM: THE ENTIRE AC SYSTEM IS TO BE BALANCED ONCE THE CONSTRUCTION IS COMPLETED.
8.	CONTRACTOR SHALL INSTALL BOILER PER "H" DRAWINGS.
9.	CONTRACTOR SHALL PROVIDE 2 SPLIT A/C UNITS PER "H" DRAWINGS.
10.	ALL HVAC SYSTEM TO BE CONTROLLED BY I-PHONE.

SMOKE AND C.O DETECTORS	
PER N.Y.S. CODE - SECTION R317:	
PROVIDE SMOKE DETECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES THROUGHOUT THE ENTIRE DWELLING.	
SMOKE ALARM SYSTEM SHALL BE HARD-WIRED AND INTERCONNECTED.	
ALL SMOKE ALARMS SHALL BE LISTED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE AND THE HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 72.	
PROVIDE ONE SMOKE DETECTOR IN EACH ROOM USED FOR SLEEPING PURPOSES, OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE SLEEPING AREAS, AND ONE ON EACH LEVEL OF THE DWELLING, INCLUDING BASEMENTS, GARAGES, AND CELLARS (BUT NOT CRAWL SPACES AND UNINHABITABLE ATTICS).	
INSTALL CARBON MONOXIDE DETECTORS IN CONFORMANCE WITH PART 1225 OF TITLE 19 NYCRR.	

FRAMING & FASTENING SCHEDULE	
PROPOSED PROJECT SHALL COMPLY WITH THE FOLLOWING:	
TABLE R602.3(1) FASTENERS SCHEDULE FOR STRUCTURAL MEMBERS	
TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA	
TABLE R301.4 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS	
TABLE R605.2.5 FASTENERS	
TABLE R301.2.1.1	
DESIGN CRITERIA: CONSTRUCTION DESIGNED IN ACCORDANCE WITH AMERICAN FOREST & PAPER ASSOCIATION (AF & PA) WOOD FRAME CONSTRUCTION MANUAL FOR ONE & TWO FAMILY DWELLINGS (WFCM).	
R605.2.5 FASTENERS	
FASTENERS FOR ASPHALT SHINGLES SHALL BE GALVANIZED STEEL, STAINLESS STEEL, ALUMINUM OR COPPER ROOFING NAILS, MIN. 12 GAGE SHANK W/ A MIN. 3/8" HEAD ASTM 1067, OF A LENGTH TO PENETRATE THROUGH THE ROOFING MATERIAL AND A MIN. OF 3/4" INTO THE ROOF SHEATHING. WHERE THE ROOF SHEATHING IS LESS THAN 3/4" THICK, THE FASTENERS SHALL PENETRATE THROUGH THE SHEATHING. FASTENERS SHALL COMPLY W/ASTM F 1667.	
R605.2.6 ATTACHMENT	
ASPHALT ROOF SHINGLES SHALL HAVE A MIN. OF SIX FASTENERS PER SHINGLE WHERE THE ROOF IS IN ONE OF THE FOLLOWING CATEGORIES - THE BASIC WIND SPEED PER R301.2(4) IS 110 MPH OR GREATER AND THE EAWE IS 20' OR HIGHER ABOVE GRADE.	
R605.2.7 UNDERLAYMENT APPLICATION	
FOR ROOF SLOPES FROM TWO VERTICAL UNITS IN 12 UNITS HORIZ. UP TO FOUR UNITS VERT. IN 12 UNITS HORIZ. UNITS SHALL BE TWO LAYERS.	

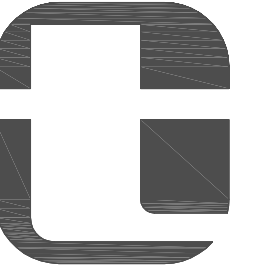
CARPENTRY NOTES	
1.	ALL FRAMING SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF "NATIONAL DESIGN SPECIFICATIONS FOR WOODS AND WOOD PRODUCTS ASSOCIATION."
2.	ALL LUMBER MATERIALS USED IN THE BUILDING SHALL BE GOOD, SOUND, DRY MATERIAL, FREE FROM ROT, WARP, AND LOOSE KNOTS, NEKES, AND OTHER IMPERFECTIONS WHEREBY THE STRENGTH MAY BE IMPAIRED AND OF SIZES INDICATED ON DRAWINGS.
3.	ALL WORKMANSHIP INCLUDING NAILING, BLOCKING, BRIDGING, ETC., SHALL CONFORM TO THE LATEST EDITION OF THE RESIDENTIAL CODE OF THE STATE OF NEW YORK.
4.	PROVIDE 4" X 6" OR 4" X 4" SOLID POST OR (2) 2" X 6" OR (2) 2" X 4" SPIKED AT BEARING POINTS OF ALL DOUBLE FRAMED MEMBERS UNLESS OTHERWISE NOTED AS REQUIRED FOR WALL THICKNESS.
5.	ALL HEADERS SHALL BE (2) 2" X 12" UNLESS OTHERWISE NOTED.
6.	PROVIDE (3) 2" X 6" SPIKED AT BEARING POINTS OF ALL TRIPLE FRAMING MEMBERS UNLESS OTHERWISE NOTED.
7.	PROVIDE MID-HEIGHT BLOCKING IN ALL BEARING PARTITIONS.
8.	PROVIDE "X" BRIDGING OR SOLID BLOCKING MAXIMUM 8'-0" ON CENTER AT MID-SPAN OF ALL FLOOR JOISTS SPANNING MORE THAN 8'-0".
9.	PROVIDE DOUBLE JOISTS UNDER ALL PARTITIONS PARALLEL TO JOIST AND AROUND ALL OPENINGS IN FLOORS, CEILINGS, AND ROOF.
10.	FLASH THE FRONT AND REAR DECK AND ANY OTHER EXTERIOR DOORS WHEN THE DECK IS POURED AGAINST WOOD BOX BEAM.
11.	LUMBER IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
12.	ALL LUMBER USED FOR EXTERIOR DECKING, IF REQUIRED, SHALL BE PRESSURE TREATED, WHITE CEDAR OR MAHOAGANY. SEE DRAWINGS FOR SIZES AND THICKNESSES. VERIFY FINISH WITH OWNER.
13.	ALL NEW EXTERIOR SHEATHING SHALL BE 1/2" EXTERIOR PLYWOOD AS SHOWN ON DRAWINGS, AND NOTED ABOVE. ALL SHEATHING SHALL BE AGENCY APPROVED, GRADE DOUGLAS FIR PLYWOOD AND SHALL BE SECURED IN ACCORDANCE WITH APA MINIMUM NAILING FREQUENCIES, TYPICALLY AS FOLLOWS: EDGES 8" O.C. FIELD 9" O.C.
14.	ALL INTERIOR PARTITIONS SHALL BE 5/8" GYPSUM BOARD ON EACH SIDE OF 2" X 4" STUD 16" INCHES ON CENTER UNLESS OTHERWISE NOTED.
15.	A VAPOR BARRIER SHALL BE PROVIDED ON THE WARM SIDE OF ALL INSULATED CONSTRUCTION.
16.	METHOD OF SUPPORT AT STAIRS OR STEPS SHALL BE BY CONTRACTOR. ALL STAIRS/STEPS TO SUPPORT 100 LB. LIVE LOAD.
17.	STUD FRAMING HAVING AN UNSUPPORTED HEIGHT OF 10'-0" SHALL BE BRIDGED AT 8'-0" INTERVALS.
18.	STUDS TO BE DOUBLED AT ALL SIDES OF OPENING IN EXTERIOR WALLS AND BEARING PARTITIONS.
19.	ALL RAFTERS AND FLOOR FRAMING TO BE BRIDGED AT 8'-0" ON CENTER MAXIMUM INTERVALS.
20.	ALL WOOD POSTS TO BE DOUGLAS FIR OR SOUTHERN YELLOW PINE NO. 1 OR BETTER.
21.	CUT OFF AND DISCARD ALL SPLIT OR CHECKED ENDS OF LUMBER BEFORE USING.
22.	PROVIDE BRIDGING SPACED NOT MORE THAN 8'-0" O.C. AND SOLID BLOCKING AT SUPPORTS.
23.	PROVIDE TEMPORARY AND PERMANENT BRACING FOR FRAMING AS REQUIRED TO HOLD IT SECURELY IN POSITION AT ALL TIMES.
24.	PROVIDE DOUBLE MEMBERS AROUND OPENINGS MORE THAN 16" WIDE.
25.	PROVIDE A MINIMUM OF TWO MEMBERS OR SOLID BLOCKING AT 2'-0" O.C. UNDER ALL PARTITIONS THAT ARE PARALLEL TO FLOOR FRAMING.
26.	PROVIDE NAILERS, LEDGERS AND BLOCKING WHERE REQUIRED, FASTEN SECURELY.
27.	LAP AND SPIKE ENDS OF RAFTERS OR JOISTS, ANCHOR ALL FRAMING TO WALLS AT 2'-0" O.C. MAXIMUM WHEN RAFTERS OR JOISTS ARE PARALLEL TO WALLS.
28.	PROVIDE ALL HARDWARE AND STORM CONNECTIONS AS REQUIRED TO PROPERLY SECURE AND SUPPORT THE FRAMING AND AS NOTICED ON DRAWINGS OR REQUIRED BY CODE.
29.	LAMINATED VENEER LUMBER (LVL) BEAMS SHALL BE 2 OF G-F LAM PRODUCTS AS MANUFACTURED BY THE GEORGIA - PACIFIC CORP. OR 2 OF G-F LAM PRODUCTS AS MANUFACTURED BY THE LOUISIANA - PACIFIC CORP. *THE ALLOWABLE STRESSES SHALL BE AS FOLLOWS (PSI): FB 2,800 (FOR 12" DEPTH) (12D)19 FC PERPENDICULAR 750 FV 270 E 2,000,000
30.	DO NOT SUBSTITUTE WITH OTHER MANUFACTURER'S PRODUCTS. THE CONTRACTOR SHALL INSPECT THE G-F LAM OR G-F LAM PRODUCTS UPON ARRIVAL AT THE JOB SITE AND REJECT ANY MATERIAL WHICH IS WARPED, WET OR OTHERWISE DEFECTIVE. G-F LAM PRODUCTS SHALL BE KEPT UNDER COVER BEFORE, DURING AND AFTER INSTALLATION.
31.	ALL LUMBER IN CONTACT WITH CONCRETE, MASONRY OR THE GROUND, OR EXPOSED TO THE WEATHER OR WITHIN 12" OF THE GROUND, AND WHERE INDICATED ON THE DRAWINGS SHALL BE PRESSURE TREATED TO 40% RETEN. AGAINST ROT AND INSECT INFESTION. TREATED LUMBER SHALL CARRY A 30 YEAR MANUFACTURER WARRANTY AND SHALL NOT STAIN OR OTHERWISE DAMAGE ADJACENT MATERIALS, NAILS, BOLTS, CONNECTIONS AND OTHER DEVICES USED TO ANCHOR TREATED LUMBER SHALL BE COMPATIBLE WITH TREATMENT METHOD.
32.	MEMBERS LISTED AS "FLASH" SHALL BE CONNECTED TO HEADERS OR OTHER SUPPORTING MEMBERS WITH HANGERS OF THE APPROPRIATE SIZE AND TYPE. THE TOP OF THE FLASH MEMBER SHALL BE SET EVEN WITH THE TOP OF THE SURROUNDING FRAMING OR AS OTHERWISE INDICATED ON DRAWINGS.
33.	ALL MEMBERS GREATER THAN THREE (3) COMPONENT WIDTHS, IE: (4) 2"x12", ETC., SHALL BE ASSEMBLED WITH 1/2" DIAMETER CARRIAGE BOLTS STAGGERED AT 16" O.C.
34.	TREATED LUMBER SHALL CONFORM WITH THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. DESIGN VALUES FOR WOOD CONSTRUCTION SUPPLEMENT AS PUBLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION. LUMBER SHALL BE SOUTHERN YELLOW PINE NO. 2 OR BETTER AND SHALL BE CAPABLE OF DEVELOPING THE FOLLOWING MINIMUM ALLOWABLE STRESSES (IN PSI): SIZE (NOM. IN.) FB FT FV FC PERPENDICULAR FC 2 X 4 1,275 925 106 378 1,320 1,8 X 106 2 X 6 1,062 725 - - - 1,280 - 2 X 8 890 650 - - - 1,240 - 2 X 10 1,050 975 550 - - - 1,200 1,160 -
35.	CEGAR LUMBER SHALL CONFORM WITH THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. DESIGN VALUES FOR WOOD CONSTRUCTION SUPPLEMENT AS PUBLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION. LUMBER SHALL BE WESTERN CEDAR, GRADE D - SELECT OR CLEAR AND SHALL BE CAPABLE OF DEVELOPING THE FOLLOWING MINIMUM ALLOWABLE STRESSES (IN PSI): SIZE (NOM. IN.) FB 900 FT FV 425 FC PERPENDICULAR FC 2 X 4 1,100 750 125 425 1,100 1,1 X 106 2 X 6 1,300 780 - - - 1,100 - 2 X 8 1,200 660 - - - 1,050 - 2 X 10 1,100 660 - - - 1,000 - 2 X 12 1,000 660 1,000 -

STRUCTURAL STEEL NOTES	
1.	STRUCTURAL STEEL
A.	STEEL CONSTRUCTION SHALL CONFORM TO AISC "MANUAL OF STEEL CONSTRUCTION" LATEST EDITION, AND SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" AS ADOPTED SEPTEMBER 1, 1986.
B.	MATERIALS FOR STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS: BEAMS, GIRDERS, COLUMNS, MISC. STEEL - A36 PLATE - A36 STRUCTURAL TUBE - A500, GRADE B STRUCTURAL PIPE - A501 OR A53 TYPE E
C.	ALL BOLTED CONNECTIONS SHALL BE MADE USING A325-F BOLTS, 1/2" DIAMETER INSTALLED IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL JOINTS" USING ASTM A325 BOLTS OR A490 BOLTS*, UNLESS OTHERWISE DETAIL.
D.	ANCHOR BOLTS SHALL BE OF A36 OR A307 STEEL 5/8" X 12" WITH 7" MINIMUM EMBEDMENT @ 4'-0" ON CENTER (MAXIMUM).
E.	ALL STEEL SHALL BE SHOP PAINTED WITH GRAY ZINC CHROMATE PRIMER 2.0 MILS IN THICKNESS, EXCEPT WHERE FIELD WELDING OR FRICTION BOLTING IS TO BE DONE, AND EXCEPT WHERE STEEL IS TO RECEIVE SPRAY APPLIED FIREPROOFING. ALL WELDS AND BASE SPOTTING SHALL RECEIVE TOUGH LUP PAINT.
F.	ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH STANDARDS OF THE AMERICAN WELDING SOCIETY. ELECTRODES MUST MEET ASTM A232E/XXXX SERIES REQUIREMENTS.
G.	SHOP AND ERECTION DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT OR LICENSED PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL. SHOP DRAWINGS SHALL BEAR THE SEAL OF A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THIS PROJECT. NO FABRICATION OF STEEL SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS. SHOP DRAWINGS ARE PREPARED AND USED BY THE CONTRACTOR AS INSTRUMENTS TO SEQUENCE HIS WORK AND TO FACILITATE FABRICATION AND ERECTION. REVIEW OF SHOP DRAWINGS SHALL BE LIMITED TO CORRECTING ERRORS AND ARRANGING ONLY. CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR DIMENSIONS, PROPER FIT, AND DETAILED DESIGN OF CONNECTIONS. THEIR APPROVAL BY THE ARCHITECT OR STRUCTURAL ENGINEER IS NOT TO BE CONSIDERED AS A WAIVER OF CONSTRUCTION CONTRACT REQUIREMENT OR RESPONSIBILITIES, UNLESS THE CONTRACTOR HAS BEEN GRANTED A DEVIATION IN WRITING.
H.	CONNECTIONS SHALL BE DESIGNED FOR MAXIMUM CAPACITY OF THE MEMBER, OR FOR SHEARS SHOWN X 1.25 UNLESS OTHERWISE OTHERWISE DETAIL.
I.	DURING ERECTION, APPROVED TEMPORARY BRACING SHALL BE INSTALLED AS REQUIRED TO PREVENT DISTORTION OR DAMAGE TO THE FRAMEWORK DUE TO ERECTION FORCES.
J.	STEEL ERECTOR SHALL PROVIDE A FIRE WATCH DURING ALL FIELD WELDING OPERATIONS.
2.	LINTELS
A.	STEEL LINTELS SHALL BE HOT STIFFED GALVANIZED WITH A MINIMUM OF 5" BEARING. PRECAST LINTELS SHALL HAVE MINIMUM BEARING OF 8" BEARING POINTS SHALL HAVE GROUTED BLOCK FOR THREE COURSES BELOW LINT.
B.	FOR MASONRY OPENINGS 4'-0" OR LESS, USE (1) 1.3-1/2" X 3-1/2" X 5/16" FOR EACH 4" OF WALL THICKNESS OR PRECAST LINTEL 8" DEEP WITH ONE RE-BAR TOP AND BOTTOM FOR EACH 2'-0". F1M-500 PSI WHERE 10" BLOCK IS USED, USE 1.4" X 4" X 5/16" FOR EACH 5" OF WALL THICKNESS.
C.	FOR MASONRY OPENINGS 4'-0" TO 6'-0" USE (1) 1.7" X 3-1/2" X 5/16" FOR EACH 4" OF WALL THICKNESS, OR PRECAST LINTEL 8" DEEP WITH ONE RE-BAR TOP AND BOTTOM FOR EACH 4'-0". F1M-500 PSI. WHERE 10" BLOCK IS USED, USE 1.8" X 4" X 5/16" FOR EACH 5" OF WALL.
3.	FRAMING LUMBER
A.	ALL NEW INTERIOR FRAMING LUMBER SHALL BE DOUGLAS FIR, S-DRY OR KILN DRY, NO. 2 OR BETTER, AS GOVERNED BY THE WESTLY WOOD PRODUCTS ASSOCIATION, AS DETERMINED BY THE IN-GRADE TESTING PROGRAM IN 1978. DESIGN VALUES ASSUMED.
B.	ALL NEW EXTERIOR FRAMING LUMBER SHALL BE SOUTHERN YELLOW PINE, S-DRY OR KILN DRY, NO. 1 DENSE OR BETTER PRESSURE TREATED FOR ABOVE GROUND USE, AS GOVERNED BY THE STANDARD GRADING RULES FOR THE SOUTHERN PINE LUMBER (SPL), AS DETERMINED BY THE IN-GRADE TESTING PROGRAM IN 1978. MIN. DESIGN VALUES ASSUMED.
C.	ALL LUMBER SHALL BEAR VISIBLE GRADE STAMPING.
D.	ALL JOISTS BEARING ON MASONRY SHALL BE FIREPROOF WITH MINIMUM BEARING LENGTH OF FOUR INCHES EXCEPT AS UPDAGED ON PLANS AND DETAILS. ALL LUMBER SHALL BE NAIED IN ACCORDANCE WITH THE SPECIFIED NAILING SCHEDULE OR NAILING SCHEDULE FOR SPECIFIC COMPONENT FASTENING AS DEFINED IN THE NEW YORK STATE BUILDING CODE, LATEST EDITION.
F.	ALL COLUMNS & POSTS EITHER EXISTING, INDICATED ON THE DRAWINGS, OR REQUIRED IN THE FIELD ARE TO BE CONTINUED DOWN TO AND BEAR ON THE FOUNDATION WALL OR FOOTING. PROVIDE FULL BLOCKING AS REQUIRED TO ACHIEVE FULL COLUMN CONTINUITY.
4.	MICROLAM AND PARALLAM BEAMS
A.	MICROLAM AND PARALLAM BEAMS INDICATED ON DRAWINGS SHALL HAVE A MIN. E= 2,000,000 PSI; G= 120,000 PSI; FC PERP = 750 PSI; FC= 2725 PSI; FV=285 PSI.
B.	BEAMS THAT ARE DOUBLED AND TRIPLED SHALL BE FASTENED TOGETHER WITH A MIN. OF TWO ROWS OF 16D NAILS AT 12" O.C. USE THREE ROWS OF 16D NAILS AT 12" O.C. FOR 14" AND DEEPER SIZES OR PER MANUFACTURES SPECS. OR AS SHOWN ON PLANS.
C.	BEAMS THAT ARE SIDE LOADED SHALL BE FASTENED TOGETHER USING 2 ROWS OF 1/2" DIA. BOLTS @ 12" O.C. MAINTAIN A MIN. OF 2" EDGE DISTANCE FROM TOP AND BOTTOM OF BEAMS.
D.	NO NOTCHING OR DRILLING THROUGH MICROLAM BEAM SHALL BE PERMITTED.
5.	PLYWOOD
A.	PLYWOOD FOR SUBFLOOR (FLOOR SHEATHING) OVER SAWN LUMBER SHALL BE MINIMUM OF 3/4" CDX EXTERIOR, SPECIES GROUP 3. APA IDENTIFICATION INDEX 4220 GLEUED TO TOP OF JOIST. BEAM OR TRUSS AND SCREWED TO TOP FLANGE AT 12" O.C. AND GLEUED WITH CONSTRUCTION ADHESIVE. INDEX STAMP SHALL BE VISIBLE ON ALL SHEETS.
B.	PLYWOOD USED FOR SLOPED ROOF SHEATHING SHALL BE MINIMUM OF 1/2" CDX EXTERIOR APA IDENTIFICATION INDEX 4210. COVER WITH 30LB BUILDERS FELT IMMEDIATELY AFTER INSTALLATION.
C.	PLYWOOD SHALL BE NAILED TO JOISTS WITH 8D COMMON NAILS AT 6" ON CENTER AT EXTERIOR EDGES AND 12" ON CENTER INTERIORS.
D.	USE PLYCLIPS OR OTHER EDGE SUPPORTS FOR ALL PLYWOOD SHEATHING.
E.	PLACE FACE GRAIN IN DIRECTION OF SPAN (TRANSVERSE TO JOISTS SPAN).
F.	LEAVE 1/16" SPACE AT ALL PLYWOOD PANEL END JOINTS AND 1/8" SPACE AT ALL PANEL EDGE JOINTS.
G.	PLYWOOD USED FOR WALL SHEATHING SHALL BE MINIMUM OF 1/2" CDX EXTERIOR APA COVER WITH TYVEK HOUSE WRAP OR BUILDERS PAPER IMMEDIATELY AFTER INSTALLATION.

STRUCTURAL GENERAL NOTES	
1.	BUILDING CODES: THESE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED IN ACCORDANCE WITH THE RESIDENTIAL NEW YORK STATE BUILDING CODE, LATEST EDITION. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THIS CODE, AND LOCAL REQUIREMENTS OF THE VILLAGE OF ARBELY.
2.	DESIGN LOADS: A. ROOF: UPLIFT 14 PSF LIVE LOAD 30 PSF DEAD LOAD 10 PSF B. FLOORS: LIVE LOAD 40 PSF DEAD LOAD 10 PSF C. SNOW DRIFT LOAD HAS BEEN CONSIDERED WHERE REQUIRED. D. HABITABLE ATTIC FOR STORAGE: LIVE LOAD 30PSF DEAD LOAD 10 PSF E. ATTIC WITH STORAGE 20 PSF F. ATTIC W/O STORAGE 10 PSF G. DECKS: LIVE LOAD 60 PSF DEAD LOAD 10PSF

FOUNDATION NOTES	
1.	FOUNDATIONS HAVE BEEN DESIGNED TO AN ALLOWABLE SOIL BEARING PRESSURE OF 3,000 PSF, WHICH SHALL BE VERIFIED BY A SOIL ENGINEER. SHOULD CONDITIONS VARY FROM THOSE ASSUMED THE ARCHITECT SHALL BE NOTIFIED BEFORE CONTINUATION OF WORK. CONTRACTOR TO BE RESPONSIBLE FOR CONTACTING THE CONTRACTOR IN THE EVENT OF SOIL ENGINEER. IN THE EVENT OF A SECOND STAMP ADDITION THE CONTRACTOR SHALL EXCAVATE A PORTION OF THE EXISTING FOOTING AND VERIFY THE SIZE AND COMPOSITION OF THE FOOTING AND FOUNDATION AND THE SOIL BEARING PRESSURE AND REPORT FINDINGS TO THE ARCHITECT/ENGINEER.
2.	ALL FOOTINGS SHALL BE PLACED DIRECTLY ON VIRGIN SOIL. BUILDER TO EXCAVATE TO VIRGIN SOIL FOR FOOTINGS AND IF EXCAVATION VARIES FROM DRAWINGS, NOTIFY ARCHITECT.
3.	CONCRETE FOR FOUNDATIONS: A. 28-DAY COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE AS FOLLOWS: FOOTINGS 3000 PSI SLAB ON GRADE 3000 PSI WALLS 3000 PSI B. MAXIMUM CONCRETE SLUMP SHALL BE 4". C. SLAB ON GRADE SHALL BE 5" THICK WITH W/F 6 X 6 - W/6 X W/6 WITH VAPOR BARRIER OVER 4" OF TRIMMABLE FILL OVER 1/4" GRAVEL. SLAB SHALL BE FINISHED IN ACCORDANCE WITH ACI STANDARD 302 FOR CLASS 2 FLOORS. D. ALL CONCRETE SHALL BE MIXED, TRANSPORTED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 318, 304, AND 301. E. ALL REINFORCING BARS SHALL BE OF NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60, # 4 AND #5 BARS TYPICAL. F. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A165. G. ALL VERTICAL SURFACES OF CONCRETE SHALL BE FORMED FOR WALLS. H. REINFORCING STEEL SHALL BE PLACED TO PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER: SLAB ON GRADE 1-1/2" W/ALLS 2" FOOTINGS 2" I. GRADE BEAMS SHALL BE FORMED ON BOTTOM AND SIDES. J. ALL EXPOSED CONCRETE SHALL BE AIR ENTRAINED 5% TO 7% BY VOLUME. 4. ALL EXTERIOR FOOTINGS SHALL BE PLACED A MINIMUM OF 3'-6" BELOW FINAL GRADE WHEN BEARING ON SOIL. 5. ALL FILL SHALL BE PLACED IN EIGHT INCH LOOSE LIFTS (MAXIMUM), COMPACTED WITH VIBRATORY ROLLERS. FILL MATERIAL MUST BE TESTED BY MOHRE PROCTOR DENSITY METHOD (AST D1557-76) AND MUST QUALIFY AS SELECT WITH LESS THAN 10% PASSING THROUGH NO. 200 SIEVE. SOIL SHALL BE PLACED WITH MOISTURE CONTENT AND ENERGY TO PROVIDE 92% OF MAXIMUM DRY DENSITY BELOW SLABS ON GRADE. IN PLACE DENSITY TESTS SHALL BE TAKEN FOR EACH LIFT. FOR ACCEPTANCE OF SOIL, AVERAGE OF DENSITY TESTS MUST EXCEED THE SPECIFIED COMPACTION. NO TESTS SHALL BE PERMITTED TO FALL BELOW 88% COMPACTION.
1.	PROVIDE (3) COAT PAINT SYSTEM THROUGHOUT ALL AREAS.
2.	PATCH AND PREPARE WALLS TO RECEIVE NEW FINISHES.
3.	AT PARTITIONS, PAINT ALL FASCIAS AND SOFFITS TO MATCH PARTITION.
4.	DO NOT INSTALL WORK OF THIS SECTION UNTIL SURROUNDING WORK HAS BEEN INSTALLED TO SUCH AN EXTENT AS TO AVOID DAMAGE TO THE FINISHED FLOORING.
5.	ALL WALLS ARE TO BE PRIMED. CONTRACTOR TO DETERMINE TYPE OF PRIME, DEPENDING ON SUBSTRATE.
6.	PRIOR TO COMMENCING WORK, TEST THE SUBSTRATE FOR MOISTURE TO ASCERTAIN ITS ACCEPTABILITY TO RECEIVE THE FINISH FLOORING. REMOVE ALL DIRT, GREASE, OIL AND OTHER FOREIGN MATTER WHICH MIGHT IMPAIR THE PROPER BOND OF MATERIALS. DO ALL STRAIGHTENING, LEVELING, AND SMOOTHING AS REQUIRED.
7.	ENSURE REQUIRED DOOR CLEARANCE WHEN NEW TILE IS BEING INSTALLED.
8.	INSTALL WALL BASE ONLY AFTER WALL FINISHES HAVE BEEN COMPLETED COORDINATE WITH INTERIOR DESIGNER. A LEVEL FLOOR.
9.	ALL NEW WALL BASE AND DOOR / WINDOW TRIM TO MATCH MAIN HOUSE TRIM.
10.	PAINT ENTIRE EXTERIOR OF THE HOUSE-VERIFY EXTENT AND COLOR W/ OWNER.

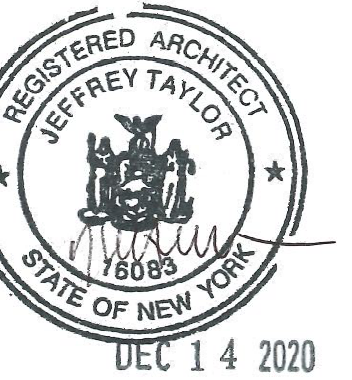
SITE WORK NOTES:	
1.	VERTICAL CONTROL JOINTS SHALL BE PLACED AT A MAXIMUM DISTANCE OF 50 FEET ON CENTER FOR STRAIGHT WALLS. CONTROL JOINTS SHALL BE CONSTRUCTED USING CONCRETE AND CEMENT W/ PREFORMED REGULAR RAPID CONTROL JOINT (OR EQUAL OF EXTRUDED RUBBER). WALL REINFORCING SHALL BE DISCONTINUED AT CONTROL JOINTS. WALLS SHALL BE LOCATED AT CENTER LINE OR COLUMNS, UNLESS SPECIFIC LOCATIONS ARE INDICATED ON DRAWINGS.
J.	CMU WALLS SHALL BE REINFORCED WITH TRUSS TYPE REINFORCING OF 9 GAGE ASTM A62 WIRE, GALVANIZED AT 16" ON CENTER (VERTICALLY).
K.	ALL MASONRY WALLS SHALL BE ADEQUATELY BRACED DURING CONSTRUCTION TO RESIST WIND LOADS OF 25 PSF. NOTE THAT FLOOR AND ROOF DIAPHRAGMS WILL PROVIDE ULTIMATE STABILITY FOR WALLS. UNTIL THESE ARE IN PLACE, MASONRY WALLS SHALL NOT BE BUILT HIGHER THAN 12 TIMES THEIR THICKNESS WITHOUT BRACING.
L.	EXPOSED EXTERIOR FACES OF FOUNDATION WALLS SHALL BE FINISHED WITH 3/8" CEMENT PLASTER BRACING (FLAT FINISH) PRIOR TO THE FIRST BLOCK COURSE. ON FOOTING CONSTRUCTION IS IN PLACE, GRADE EXTERIOR SURFACES. INSTALL #6 RE-BAR
1.	ALL FILL MATERIAL SHALL BE SOIL-ROCK MIXTURE WHICH IS FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES. IT SHALL CONTAIN NO ROCKS OR LUMPS OVER SIX INCHES IN GREATEST DIMENSION, AND NOT MORE THAN 15% OF THE ROCKS OR LUMPS SHALL BE LARGER THAN 2.5 INCHES IN GREATEST DIMENSION.
2.	GRANULAR CUSHION UNDER INTERIOR FLOOR SLABS SHALL BE CLEAN MINERAL AGGREGATE WITH PARTICLE SIZE GRADING WITHIN THE FOLLOWING LIMITS: PASSING THE ONE INCH SIEVE: 100% PASSING THE NUMBER 4 SIEVE: NOT MORE THAN 8% PASSING THE NUMBER 20 SIEVE: NOT MORE THAN 1%
3.	IMPORTED CUSHION LESS MATERIAL USED FOR TRENCH AND STRUCTURAL BACKFILL SHALL BE FREE FROM ORGANIC SUBSTANCE AND OTHER DELETERIOUS MATTER. SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER, AND SHALL BE IN PARTICLE SIZE GRADING WITHIN THE FOLLOWING LIMITS: PASSING THE NUMBER 4 SIEVE: 100% PASSING THE NUMBER 200 SIEVE: 5% MAXIMUM
4.	CAREFULLY PLACE THE SPECIFIED CUSHION IN AREAS TO RECEIVE CORNER SLABS ON GRADE, UNIFORMLY ATTAINING THE THICKNESS INDICATED ON THE DRAWINGS AND PROVIDING ALL REQUIRED TRANSITION PLANES.
5.	MINIMAL VEGETATION IS TO BE DISTURBED DURING EXCAVATION AND CONSTRUCTION. REMOVE EXISTING VEGETATION IF DEEMED REQUIRED, ONLY WITH PERMISSION OF OWNER. GENERAL CONTRACTOR TO COORDINATE BEFORE COMMENCEMENT OF WORK.
6.	CONSTRUCTION LIMIT: 5' - 0" OUTSIDE OF NEW BUILDING CONSTRUCTION.
7.	FINISHED GRADE AT PERIMETER OF BUILDING SHALL BE 8" BELOW TOP OF FOUNDATION WALL.
8.	FINAL GRADING TO BE DETERMINED BY OWNER AND ARCHITECT AT A LATER TIME IN THE FIELD.
9.	STOCKPILING OF TOPSOIL, CONSTRUCTION DEBRIS OR CONSTRUCTION MATERIAL, ETC. SHALL NOT BE PERMITTED WITHIN DRP LINE OF ANY TREE DESIGNATED TO REMAIN. FURTHER INFORMATION AS TO STORAGE ON SITE TO BE REGULATED BY OWNER OR AGENCIES HAVING JURISDICTION.
10.	ALL TREES DESIGNATED TO REMAIN SHALL BE PRUNED TO ELIMINATE DEAD, DISEASED OR DAMAGED WOOD AS MAY BE REQUIRED. ALL PRUNING TO BE PERFORMED BY A RECOGNIZED PROFESSIONAL. IN THE EVENT A DESIRABLE TREE IS DAMAGED DURING THE COURSE OF THE CONSTRUCTION, THE CONTRACTOR TO ENGAGE THE SERVICES OF A REPUTABLE TREE SURGEON IN ORDER TO REPAIR OR REPLACE THE DAMAGED TREE.
11.	TREE PROTECTION TECHNIQUES TO REMAIN INTACT UNTIL FINAL GRADING PHASE OF SITE IMPROVEMENT OR UNTIL AUTHORIZATION IS GRANTED BY OWNER AND ARCHITECT.
12.	IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT TREES WITH PROTECTION TECHNIQUES ON A DAILY BASIS AND TO REPAIR ANY DAMAGE TO INSURE TREE'S SAFETY.
13.	ANY TREE DESIGNATED TO REMAIN WHICH IS SEVERELY DAMAGED MUST BE REMOVED AND REPLACED WITH A DESIRABLE TREE OF SIMILAR SPECIES, ARCHITECT'S REPLACEMENT IS SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
14.	GENERAL CONTRACTOR TO PROVIDE FOR SEEDING AND FERTILIZING ALL DISTURBED AREAS AFTER FINAL GRADING.
15.	PROVIDE NEW PRECAST OR HEAVY DUTY RECHARGER UNITS. RESIDENTIAL DOWNSPOUT DRAINAGE SYSTEM FOR SITE DRAINAGE AND/OR FOR FOOTING DRAINS SIZED FOR 2" RAINFALL, OR AS REQUIRED BY MUNICIPALITY.
16.	TIMBERLUMBER CONNECTIONS A. JOISTS HANGERS, FRAMING ANCHORS & RAFTER ANCHORS SHALL BE MINIMUM 18 GAGE PRIME GALVANIZED STEEL MANUFACTURED BY TICO, SIMPSON, OR APPROVED EQUAL. SPECIAL NAILS AS SUPPLIED BY MANUFACTURER SHALL BE USED FOR REQUIRED NAILING. PROVIDE METAL CONNECTORS AS REQUIRED BY NYS CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. B. METAL CROSS BRIDGING SHALL BE GALVANIZED STEEL AS MANUFACTURED BY TICO, SIMPSON, OR APPROVED EQUAL, AND INSTALLED IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS. C. JOISTS SHALL BE ANCH



JEFFREY TAYLOR ARCHITECT

572 NORTH BROADWAY  
WHITE PLAINS, NEW YORK 10603

TEL 914 289 0011



REVISIONS:  
12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:  
BASEMENT LEVEL  
CONSTRUCTION  
FLOOR PLAN

DELAURENTIS RESIDENCE  
NEW HOUSE CONSTRUCTION  
21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:

A-100.00

### SYMBOL LEGEND

SYMBOL	DESCRIPTION
☐	DENOTES DRAWING NOTE ( SEE THIS DRAWING )
⊗	DENOTES WINDOW SIZE ( SEE WINDOW SCHEDULE THIS DRAWING )
⊗	DENOTES DOOR SIZE ( SEE WINDOW SCHEDULE THIS DRAWING )
⊕	QUAD OUTLET (CONFIRM HEIGHTS OF ALL OUTLETS WITH OWNER)
⊕	DUPLEX OUTLET (CONFIRM HEIGHTS OF ALL OUTLETS WITH OWNER)
G.F.I	PROVIDE GROUND FAULT CIRCUIT INTERRUPTER OUTLET
▷	DATA OUTLET (CONFIRM HEIGHT WITH OWNER)

### WALL LEGEND

SYMBOL	DESCRIPTION
	NEW EXTERIOR WALL: - 2 x 6 WOOD STUDS @ 16" O.C (TO ALIGN WITH EXISTING). - BATT INSULATION (R-21) BETWEEN STUDS, FULL HEIGHT. - FINISH EXTERIOR SIDE OF WALL WITH 3/4" EXTERIOR GRADE PLY. WOOD (ALL JOINTS TO BE STAGGER). - PROVIDE "TYVEK" VAPOR BARRIER THRU OUT EXTERIOR WALL. - FINISH INTERIOR SIDE OF WALL WITH 1/2" GYP. BD.  NOTE: WHERE WALL TILE IS BEEN INSTALLED G.C TO PROVIDE 5/8" CEMENT BOARD.
	NEW INTERIOR WALL: 2 x 4 WOOD STUDS @ 16" O.C FINISH WITH 1/2" GYP. BD. PROVIDE WATER RESISTANT (PURPLE BOARD) GYP. BD. AT ALL WET AREAS NOTES: WHERE WALL TILE IS BEEN INSTALLED G.C TO PROVIDE 1/2" CEMENT BOARD. PROVIDE SOUND INSUL. IN ALL INTERIOR PARTITIONS.

### PLAN KEY NOTES

- 2'-8" x 7'-0" DOOR (DOOR TO BE GASKETED)  
NOTE: PROVIDE 4" RAISED CURB @ DOOR WAY
- FLOOR DRAIN

BASEMENT LEVEL SQ. FT. =  
( - - - - )

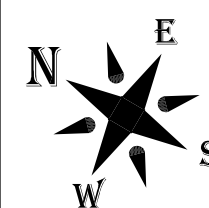
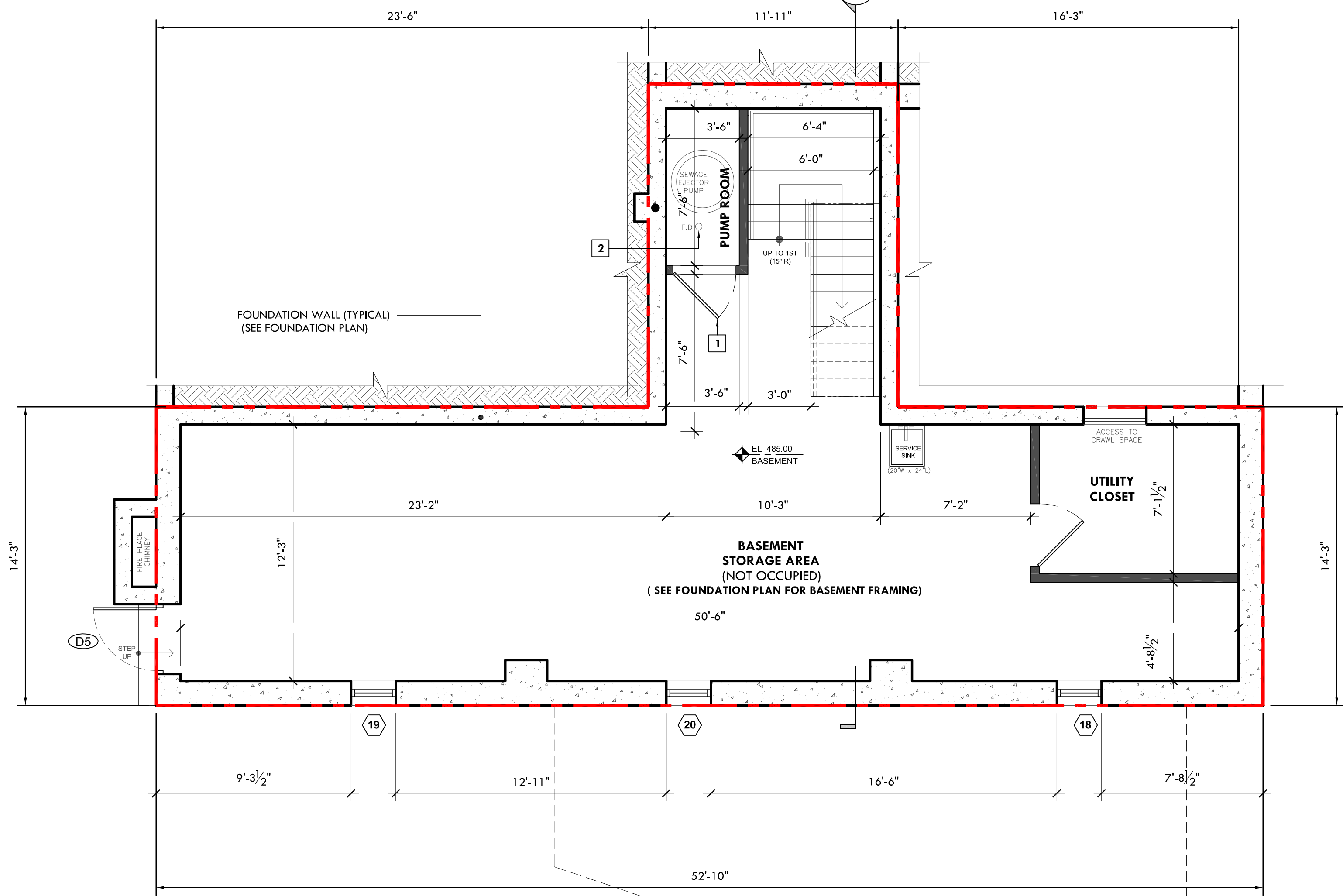
1  
A-400

2  
A-500

2  
A-401

1  
A-401

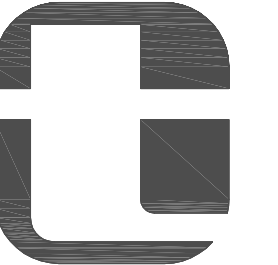
2  
A-400



BASEMENT LEVEL CONSTRUCTION PLAN  
SCALE: 1/4" = 1'-0"







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WHITE PLAINS, NEW YORK 10603

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PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:  
2ND FLOOR  
CONSTRUCTION  
FLOOR PLAN

DELAURENTIS RESIDENCE  
NEW HOUSE CONSTRUCTION

21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:

A-102.00

### SYMBOL LEGEND

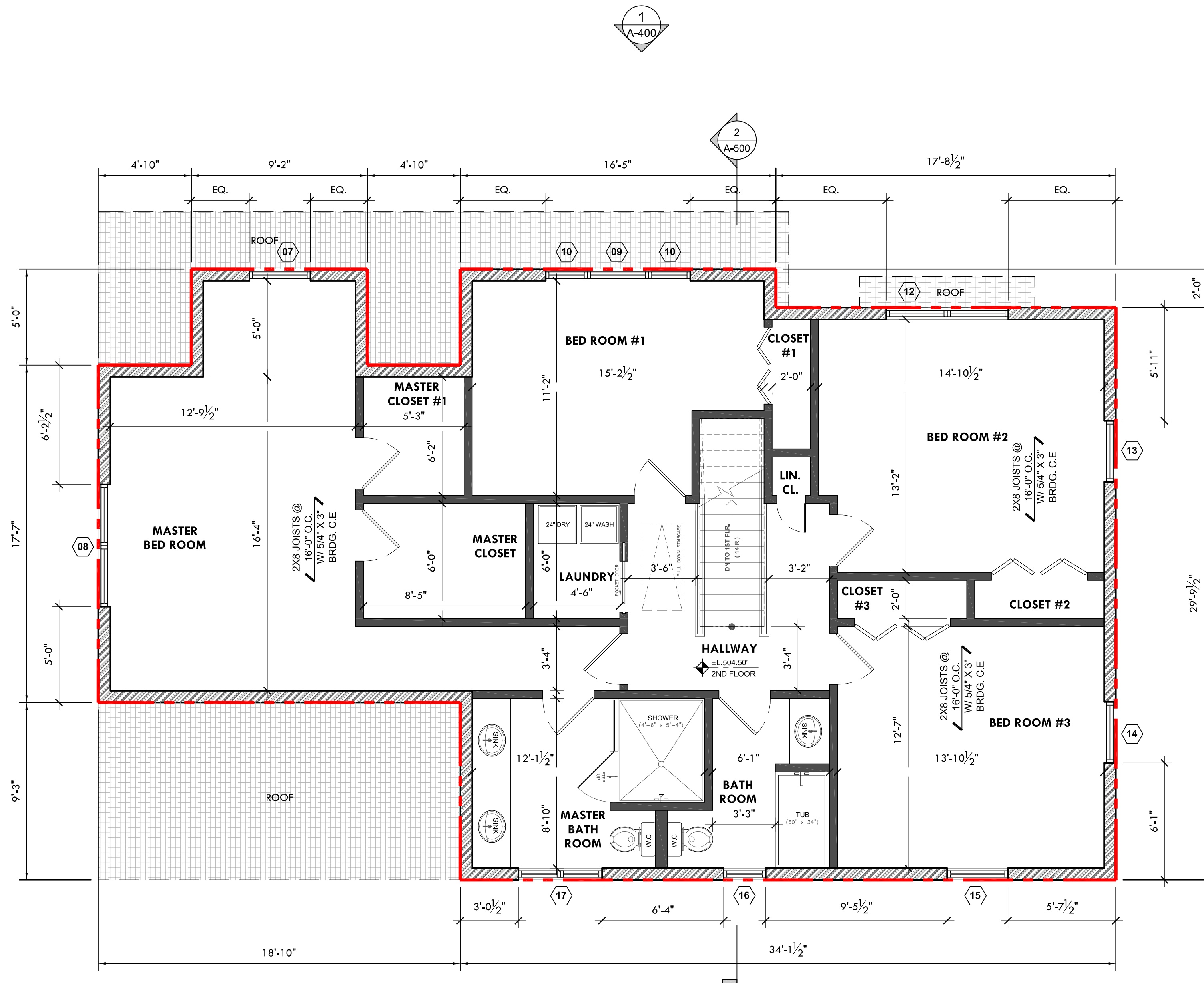
SYMBOL	DESCRIPTION
☐	DENOTES DRAWING NOTE ( SEE THIS DRAWING )
⊗	DENOTES WINDOW SIZE ( SEE WINDOW SCHEDULE THIS DRAWING )
⊗	DENOTES DOOR SIZE ( SEE WINDOW SCHEDULE THIS DRAWING )
⊕	QUAD OUTLET (CONFIRM HEIGHTS OF ALL OUTLETS WITH OWNER)
⊕	DUPLEX OUTLET (CONFIRM HEIGHTS OF ALL OUTLETS WITH OWNER)
G.F.I	PROVIDE GROUND FAULT CIRCUIT INTERRUPTER OUTLET
▷	DATA OUTLET (CONFIRM HEIGHT WITH OWNER)

### WALL LEGEND

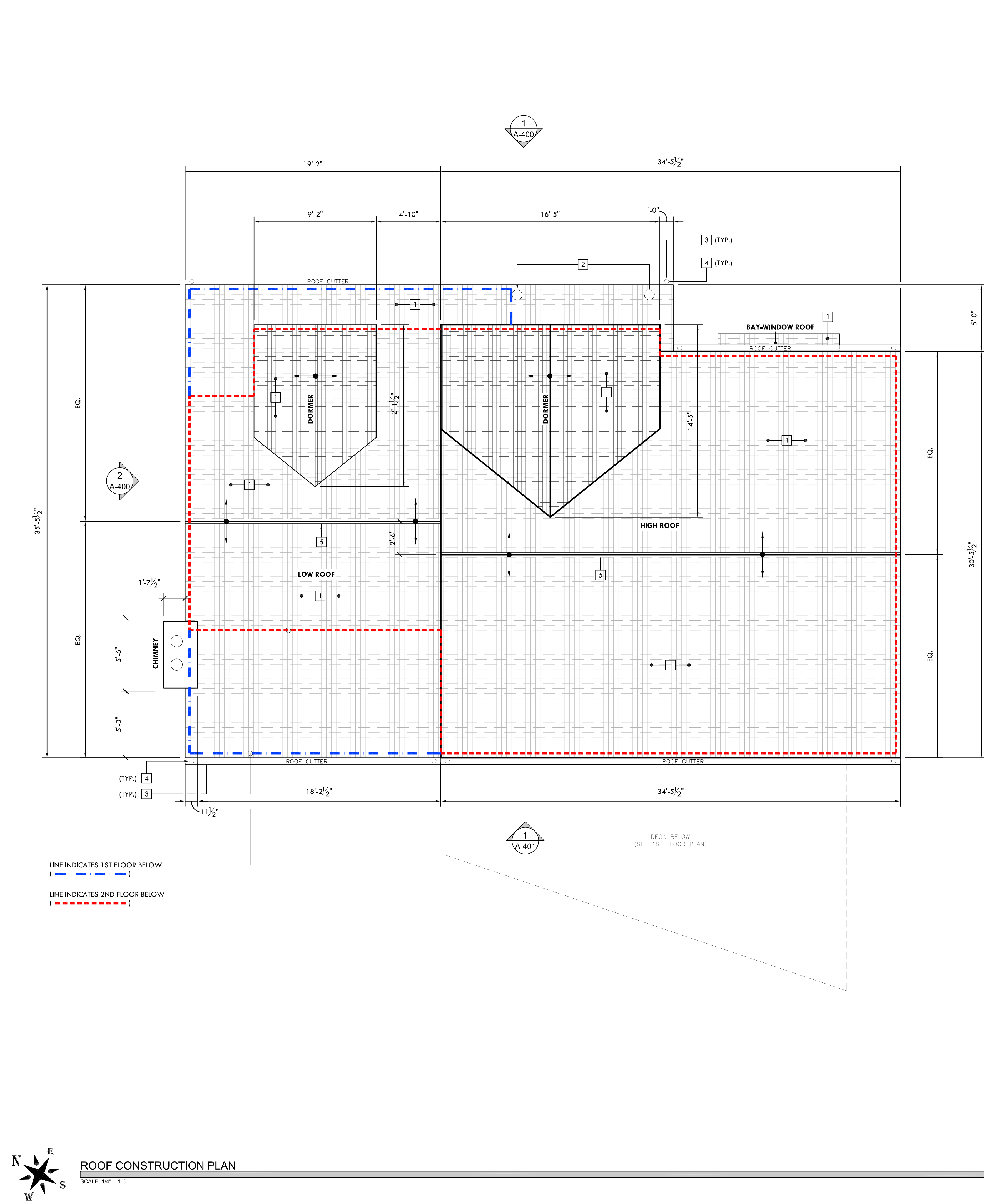
SYMBOL	DESCRIPTION
	NEW EXTERIOR WALL: (SEE WALL SECTION ON A-500 )  - 2 x 6 WOOD STUDS @ 16" O.C. (TO ALIGN WITH EXISTING). - BATT INSULATION (R-20) BETWEEN STUDS, FULL HEIGHT. - FINISH EXTERIOR SIDE OF WALL WITH 3/4" EXTERIOR GRADE PLY. WOOD (ALL JOINTS TO BE STAGGER). - PROVIDE "TYVEK" VAPOR BARRIER THRU OUT EXTERIOR WALL. - FINISH INTERIOR SIDE OF WALL WITH 1/2" GYP. BD.  NOTE: WHERE WALL TILE IS BEEN INSTALLED G.C TO PROVIDE 5/8" CEMENT BOARD.
	NEW INTERIOR WALL: 2 x 4 WOOD STUDS @ 16" O.C FINISH WITH 1/2" GYP. BD. PROVIDE WATER RESISTANT (PURPLE BOARD) GYP. BD. AT ALL WET AREAS NOTES: WHERE WALL TILE IS BEEN INSTALLED G.C TO PROVIDE 1/2" CEMENT BOARD.  PROVIDE SOUND INSUL. IN ALL INTERIOR PARTITIONS.

### PLAN KEY NOTES

1	
2	



2ND FLOOR SQ. FT. =  
( - - - - )  
( SEE DRAWING A-001 )



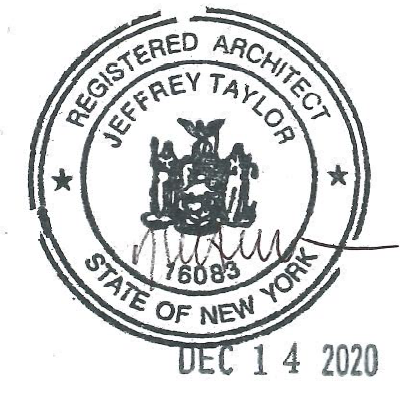
LEGEND	
SYMBOL	DESCRIPTION
☐	DENOTES DRAWING NOTE (SEE THIS DRAWING)
●→	DENOTES ROOF SLOPE

PLAN KEY NOTES	
1	ASPHALT ROOF SHINGLES (SEE DRAWING A-200'S FOR SPEC. ), INSTALL PER MANUFACTURER PUBLISH INSTRUCTIONS
2	COLUMNS BELOW (1ST FLOOR PLAN)
3	CONTINUOUS ALUMINUM ROOF GUTTER WITH LEAF GUARD. (COLOR PER OWNERS DIRECTION - G.C TO COORDINATE)
4	CONTINUOUS VERTICAL ALUMINUM ROOF LEADER. (COLOR PER OWNERS DIRECTION - G.C TO COORDINATE ) NOTE: ROOF LEADERS TIE INTO TO "CULTEC" CHAMBERS- (SEE CIVIL DRAWINGS)
5	CONTINUOUS RIDGE VENT



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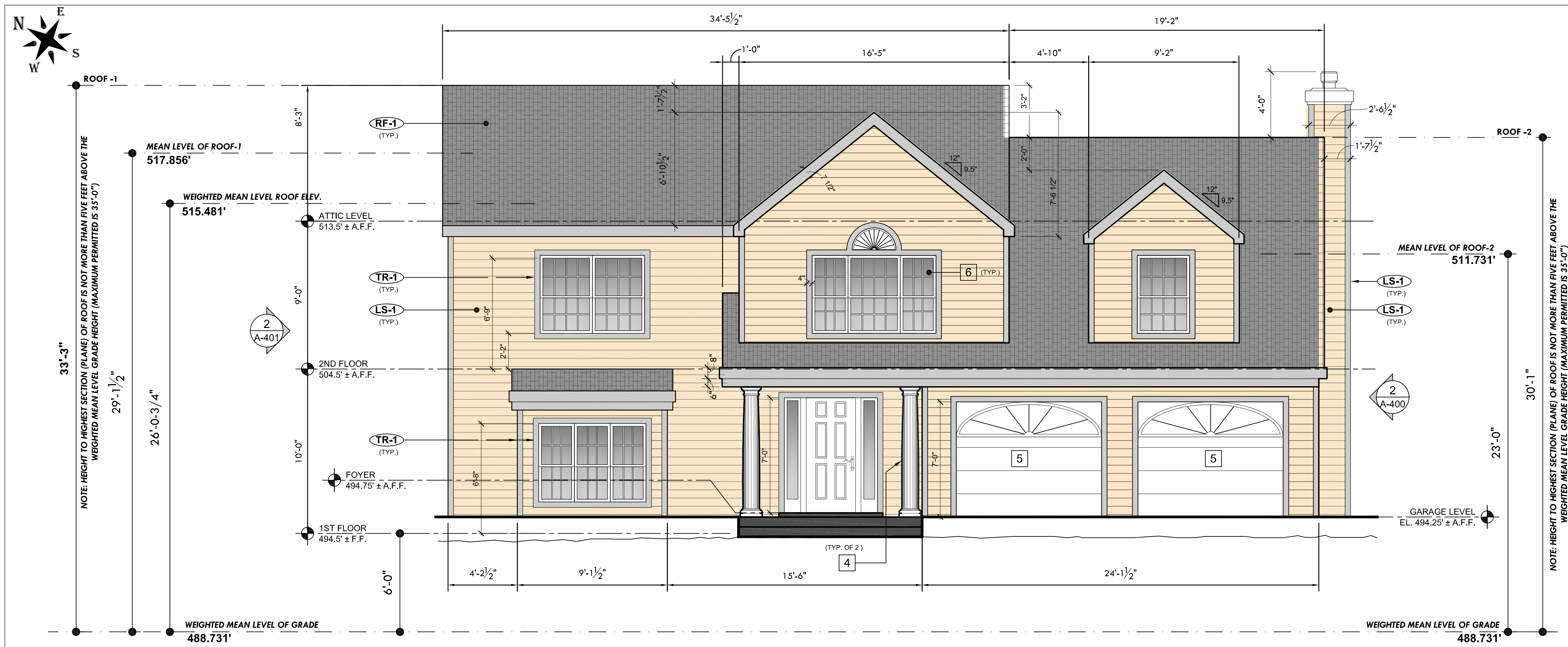
PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:  
ROOF  
CONSTRUCTION PLAN

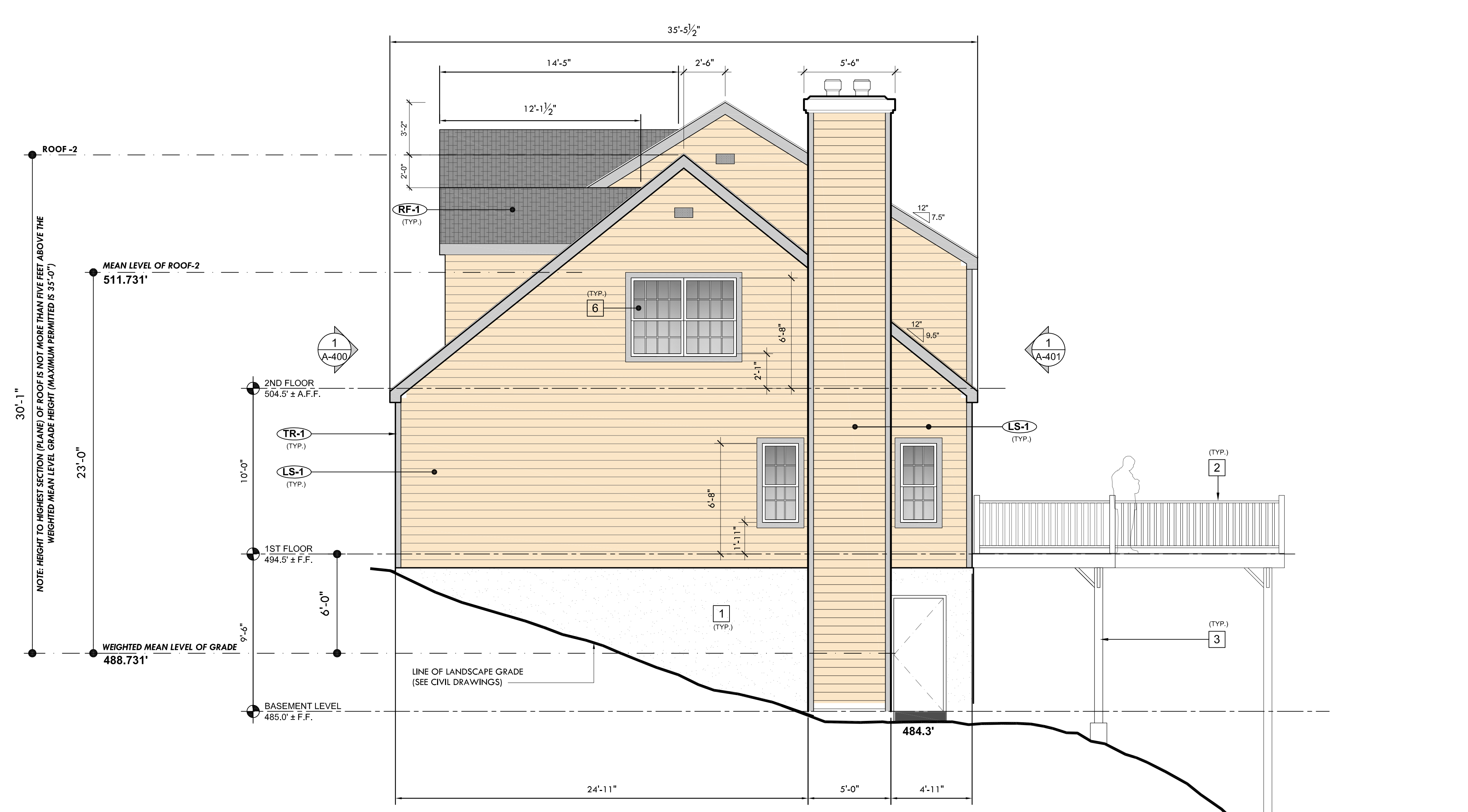
**DELAURENTIS RESIDENCE**  
NEW HOUSE CONSTRUCTION

21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:  
**A-200.00**



EAST ELEVATION (FRONT)  
SCALE: 1/4" = 1'-0"



NORTH ELEVATION (SDIE)  
SCALE: 1/4" = 1'-0"



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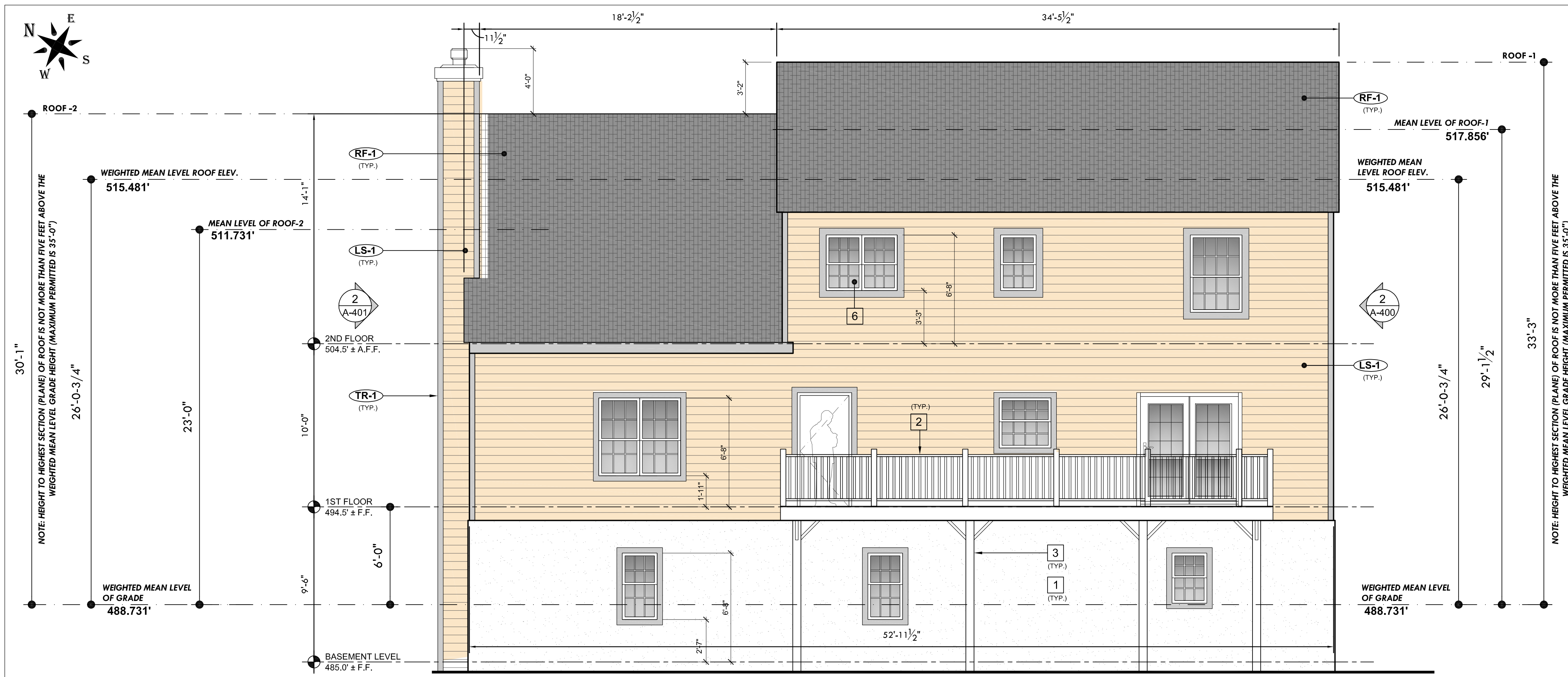
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12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:  
EXTERIOR ELEVATIONS

**DELAURENTIS RESIDENCE**  
NEW HOUSE CONSTRUCTION  
21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:  
**A-400.00**

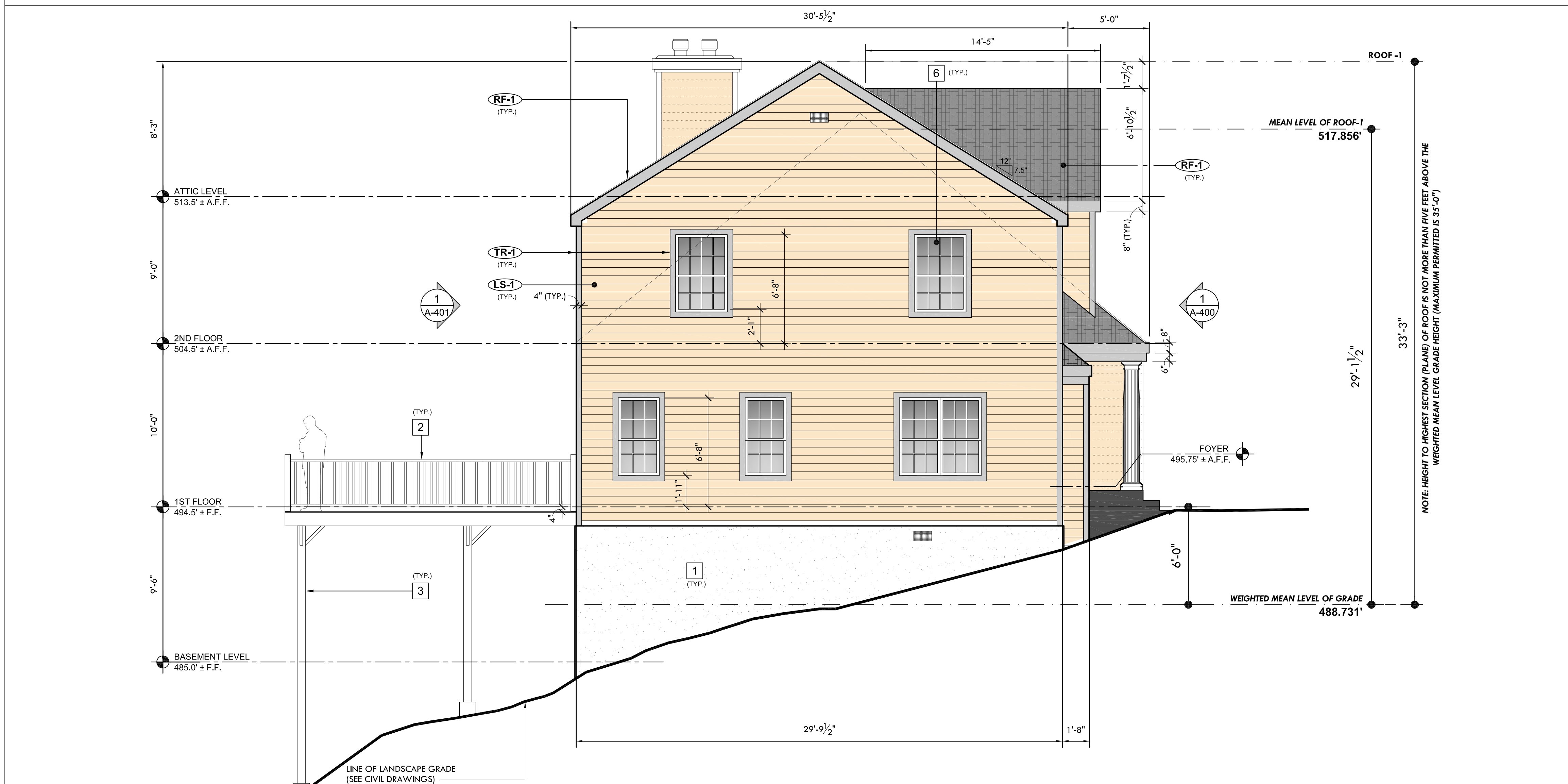


WEST ELEVATION ( REAR )

FINISH	DESCRIPTION
LS-1 LAP SIDING	MANUFACTURER:..... JAMESHARDIE FINISH:..... SMOOTH COLOR:..... DESIGNER CREAM SIZE:..... 6-1/4" WITH 5" EXPOSURE
TR-1 TRIM BOARD	MANUFACTURER:..... AZEK FINISH:..... SMOOTH COLOR:..... WHITE SIZE:.....
RF-1 ROOFING	MANUFACTURER:..... GAF TIMBERLINE HDZ FINISH:..... ASPHALT ROOF SHINGLES COLOR:..... CHARCOAL

NO.	DESCRIPTION
1	SMOOTH FINISHED PARGED REINFORCED EXPOSE CONCRETE .
2	+42" HIGH P.T RAILING WITH 2x2 P.T BALUSTERS @ 4" O.C
3	6x6 P.T COLUMNS OVER 18" DIA. "SONETUBE" FOOTING 42" MIN. BELOW GRADE
4	1 2" Ø TAPERED COMPOSITE BEARING COLUMNS FOR ENTRY PORCH OVERHANG. (BEARING)
5	INSULATED GARAGE DOORS
6	DOUBLE GLAZED VINYL CLAD, DOUBLE HUNG OPERABLE WINDOWS (TYPICAL)

WEIGHTED MEAN ROOF ELEVATION CALCULATIONS ( WEIGHTED MEAN LEVEL OF GRADE = 488.731 )	
<b>WEST ELEVATION</b>	
A. NORTH SIDE ROOF MEAN ELEVATION = .....	23'-0"
B. SOUTH SIDE ROOF MEAN ELEVATION = .....	29'-1-1/2"
<b>WEIGHTED MEAN ROOF ELEVATION EAST SIDE</b>	
<b>A + B / 2 = 26 - 0-3/4" ABOVE MEAN GRADE ELEVATION</b>	
<b>SOUTH ELEVATION</b>	
A. MEDIAN LEVEL OF END GABLE ROOF=.....	29'-1-1/2"
<b>29'-1-1/2" ABOVE MEAN GRADE ELEVATION</b>	



SOUTH ELEVATION ( SDIE )



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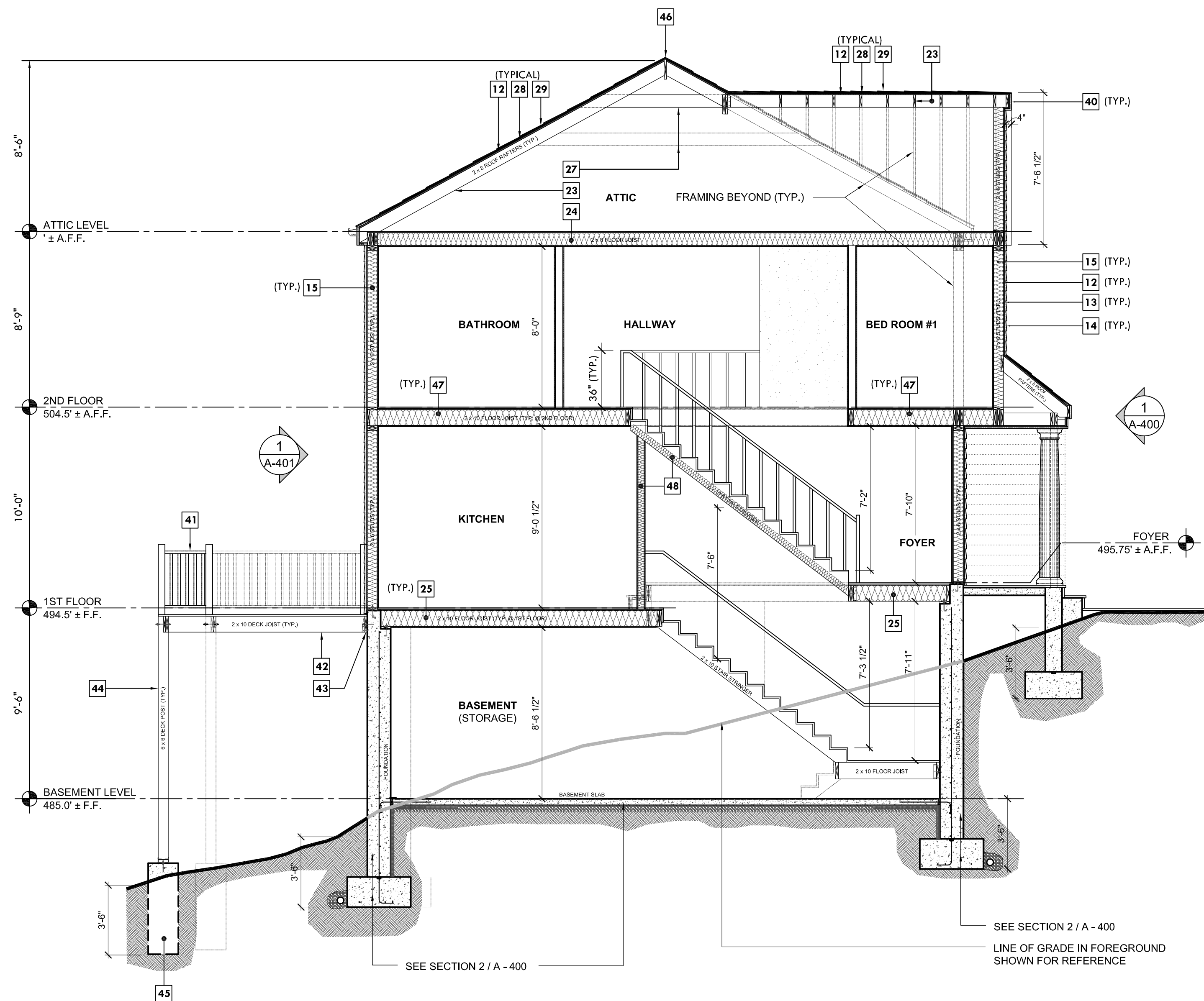
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START DATE: 08.02.20  
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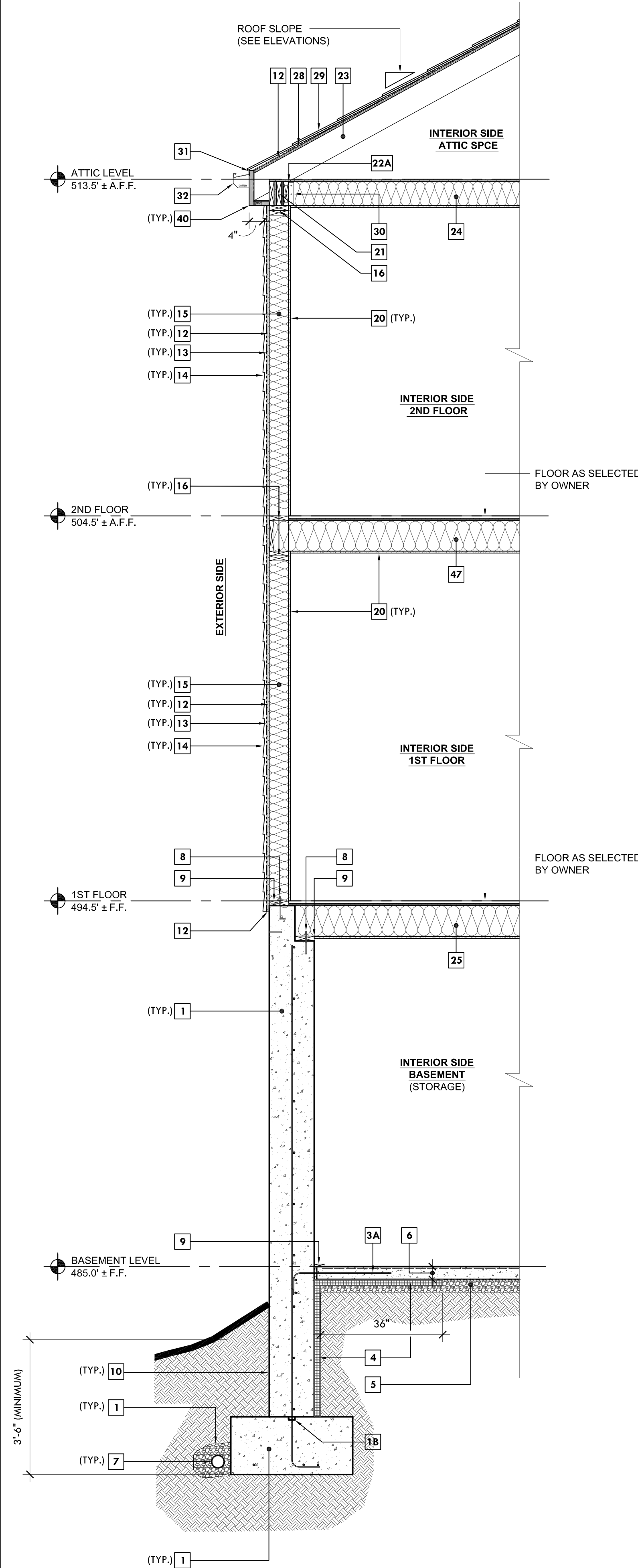
SHEET TITLE:  
EXTERIOR ELEVATIONS

**DELAURENTIS RESIDENCE**  
NEW HOUSE CONSTRUCTION  
21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:  
**A-401.00**



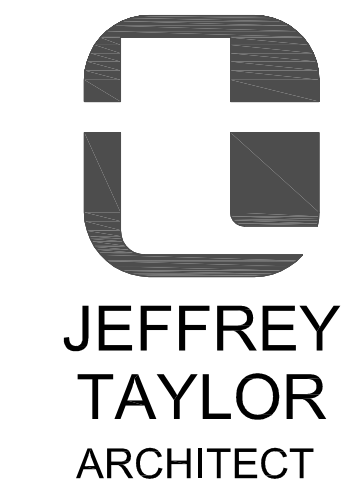
1 CROSS SECTION  
1/4" = 1'-0"



2 TYPICAL EXTERIOR WALL SECTION  
1/4" = 1'-0"

**PLAN KEY NOTES**

- 1 NEW REINFORCED POURED IN PLACE CONCRETE FOUNDATION WALL (SEE DRAWING S-1 FOR ADDITIONAL INFORMATION)
- 1A NEW REINFORCED POURED IN PLACE CONCRETE FOOTING (SEE DRAWING S-1 FOR ADDITIONAL INFORMATION)
- 2 #4 HORIZONTAL CONTINUOUS REBAR CROSSED TIED TO VERTICAL REBAR EVERY 24"
- 3 #10 VERTICAL BENT REBAR INTO FOOTINGS @ 24" O.C.
- 3A BENT REBAR INTO FLOOR SLAB @ 24" O.C.
- 3B 2 x 4 KEY
- 4 2" THICK CONTINUOUS RIGID INSULATION.
- 5 4" COMPACTED CRUSHED STONE
- 6 4" THICK CONCRETE SLAB ON GRADE WITH W.W.M 6x6 W10 x W10 ON CRUSH STONE. WELL TAMPED FILL WITH 8 MIL. "VISQUEEN" VAPOR BARRIER
- 7 6" Ø CONTINUOUS PERIMETER PERFORATED FOOTING DRAIN SET IN GRAVEL. TIE INTO NEW STORM WATER CONTAINMENT CATCH BASIN (SEE DRAWING C-100)
- 8 1/2" BENT END GALVANIZED ANCHOR BLOT SET MIN. 16" INTO FOUNDATION - 6'-0" O.C (MAX)
- 9 (2) 2 x 6 CONTINUOUS P.T WOOD SILL PLATE OVER POLYSTYRENE SILL SEALER.
- 10 "ENKA" DRAINAGE MATT (OR APPROVED EQUAL) - WATERPROOFING @ FOUNDATION WALL. INSTALLED PER MANUFACTURE PUBLISHED INSTRUCTIONS.
- 11 CONTINUOUS TERMITE SHIELD OVER SEALANT.
- 12 3/4" CDX PLYWOOD. (NOTE: ALL JOINTS TO BE STAGGERED)
- 13 "TYVEK" VAPOR BARRIER (OR APPROVED EQUAL) ON SUBSTRATE - INSTALLED PER MANUFACTURE PUBLISHED INSTRUCTIONS. NOTE: TURN BARRIER INTO ALL WINDOW OPENINGS.
- 14 EXTERIOR SIDING (SEE EXTERIOR ELEVATIONS)
- 15 2 x 6 WOOD STUDS 16" O.C WITH R-21 BATT. INSULATION (TYP. AT EXTERIOR WALLS)
- 16 2 x 6 CONTINUOUS P.T WOOD BLOCKING.
- 17 CONTINUOUS P.T WOOD BLOCKING (AS REQUIRED)
- 18 FILL VOID WITH "TOUCH N SEAL" ALL SEASON POLYURETHANE FOAM SEALANT.
- 19 PROVIDE CONTINUOUS CAULKING WITH BACKER ROD.
- 20 1/2" GYP. BD. FINISH TAPE / SPACKLE & SAND SMOOTH. PROVIDE CORNER BEADS.
- 21 (3) 2 x 8 HEADER WITH 3/4" CDX PLY. WD. SPACER, GLUE & SCREW (LAG SCREW) TOGETHER.
- 22 (3) 2 x 8 HEADER - GLUE & NAIL TOGETHER.
- 22A PROVIDE "BIRDS MOUTH" CUT AT HEADER.
- 23 2 x 8 ROOF RAFTERS @ 16" O.C. TYPICAL (G.C TO COORDINATE IN FIELD)
- 24 2 x 8 ATTIC FLOOR JOIST @ 16" O.C. WITH R-49 BATT. INSUL. (TYP.)
- 25 2 x 10 FLOOR JOIST @ 16" O.C. WITH R-49 BATT. INSUL. (TYP.)
- 26 FASCIA BOARD TO MATCH AND ALIGN WITH EXISTING.
- 27 2 x 8 COLLAR TIE @ EVERY OTHER ROOF RATERS
- 28 "TYVEK" PROTEC 200 ROOF UNDERLAYMENT (OR APPROVED EQUAL) ON SUBSTRATE - INSTALLED PER MANUFACTURE PUBLISHED INSTRUCTIONS.
- 29 ROOF SHINGLES AS SELECTED BY OWNER - SEE EXTERIOR ELEVATIONS. INSTALLED PER MANUFACTURE PUBLISHED INSTRUCTIONS.
- 30 "SIMPSON" STRONG JOIST TIES (OR APPROVED EQUAL) INSTALLED PER MANUFACTURE PUBLISHED INSTRUCTIONS.
- 31 CONTINUOUS FLASHING AND ALUMINUM DRIP EDGE.
- 32 CONTINUOUS ROOF GUTTER AS SELECTED BY OWNER (G.C TO COORDINATE)
- 33 "AZEK" WINDOW SILL AND FRAME TRIM AS SELECTED BY OWNER.
- 34 4 OZ. NON - WOVEN FILTER FABRIC AROUND STONE SURROUND FOOTING DRAIN.
- 40 SOFFIT FINISH TO MATCH TRIM BOARD. SEE EXTERIOR ELEVATION NOTE: PROVIDE FLUSH SOFFIT VENTS
- 41 +42" HIGH P.T RAILING WITH 2X2 P.T BALUSTERS @ 4" O.C
- 42 2 x 10 P.T DECK FLOOR JOIST @ 16" O.C.
- 43 2 x 10 CONTIONOUS P.T LEDGER (AT DECK) SECURED TO FOUNDATION WALL WITH CARRIAGE BOLTS @ 24" O.C
- 44 P.T POST (SEE FOUNDATION PLAN)
- 45 "SONEOTUBE" FOOTING (SEE FOUNDATION PLAN)
- 46 CONTINUOUS RIDGE VENT (SEE ROOF PLAN)
- 47 ROLLED BATT SOUND INSULATION BETWEEN FLOOR JOIST
- 48 R-13 INSULATION



JEFFREY TAYLOR ARCHITECT  
572 NORTH BROADWAY  
WHITE PLAINS, NEW YORK 10603

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REVISIONS:  
12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:

SECTIONS

DELAURENTIS RESIDENCE  
NEW HOUSE CONSTRUCTION  
21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:

A-500.00

## WINDOW SCHEDULE

Anderson Window: Double Hung, Tilt Wash (TW) 400

Exterior Finish & Color: White Vinyl, Interior Finish: Pine

#	Catalog #	QTY	Location	Window Dimension Width / Height		Rough Opening Width / Height	
①	TW2046	3	LIVING ROOM	2'-1 5/8"	4'-8 7/8"	2'-2 1/8"	4'-8 7/8"
②	TW2446	1	LIVING ROOM	2'-5 5/8"	4'-8 7/8"	2'-6 1/8"	4'-8 7/8"
②	TW2446	2	DINING ROOM	2'-5 5/8"	4'-8 7/8"	2'-6 1/8"	4'-8 7/8"
③	TW30210	1	KITCHEN	3'-1 5/8"	3'-0 7/8"	3'-2 1/8"	3'-0 7/8"
④	TW2446	(2) - Double Mullion	FAMILY ROOM	2'-5 5/8"	4'-8 7/8"	2'-6 1/8"	4'-8 7/8"
⑤	TW2046	1	FAMILY ROOM	2'-1 5/8"	4'-8 7/8"	2'-2 1/8"	4'-8 7/8"
⑥	TW2046	1	FAMILY ROOM	2'-1 5/8"	4'-8 7/8"	2'-2 1/8"	4'-8 7/8"
⑦	TW3046	1	MASTER BEDROOM	3'-1 5/8"	4'-8 7/8"	3'-2 1/8"	4'-8 7/8"
⑧	TW3046	(2) DBL Mullion	MASTER BEDROOM	3'-1 5/8"	4'-8 7/8"	3'-2 1/8"	4'-8 7/8"
⑨	TW3046	1	BEDROOM - 1	3'-1 5/8"	4'-8 7/8"	3'-2 1/8"	4'-8 7/8"
⑩	TW2046	2	BEDROOM - 1	2'-1 5/8"	4'-8 7/8"	2'-2 1/8"	4'-8 7/8"
⑪	CTN30	1	BEDROOM - 1	3'-1 5/8"	1'-9 3/16"	3'-2 1/8"	1'-9 3/4"
⑫	TW3046	(2) DBL Mullion	BEDROOM - 2	3'-1 5/8"	4'8 7/8"	3'-2 1/8"	4'-8 7/8"
⑬	TW3046	1	BEDROOM - 2	3'-1 5/8"	4'8 7/8"	3'-2 1/8"	4'-8 7/8"
⑭	TW3046	1	BEDROOM - 3	3'-1 5/8"	4'8 7/8"	3'-2 1/8"	4'-8 7/8"
⑮	TW3046	1	BEDROOM - 3	3'-1 5/8"	4'8 7/8"	3'-2 1/8"	4'-8 7/8"
⑯	TW2032	1	HALL BATH	2'-1 5/8"	3'-4 7/8"	2'-2 1/8"	3'-4 7/8"
⑰	TW2032	(2) DBL Mullion	MASTER BATH	2'-1 5/8"	3'-4 7/8"	2'-2 1/8"	3'-4 7/8"
⑱	TW20210	1	BASEMENT	2'-1 5/8"	3'-0 7/8"	2'-1 5/8"	3'-0 7/8"
⑲	TW210310	1	BASEMENT	2'-11 5/8"	4'-0 7/8"	3'-0 1/8"	4'-0 7/8"
⑳	TW210310	1	BASEMENT	2'-11 5/8"	4'-0 7/8"	3'-0 1/8"	4'-0 7/8"

## DOOR SCHEDULE

#	Catalog #	Manufacturer	QTY	Location	Width / Height		NOTES
①	CCA9100	Thermatru	1	ENTRY	3'-0"	6'-8"	Front Entry Door: Thermatru Classic-Craft American Style Collection. Arborwatch 1-Lite w/ privacy glass. Autumn Harvest color finish.
②	CCA9100SL	Thermatru	2	ENTRY-Side Lites	12"	6'-8"	Thermatru Classic-Craft American Style Collection. Right and Left Side Lite Arborwatch w/ privacy glass. Autumn Harvest color finish.
③	NLGD6068R	Anderson	1	DINING ROOM	6'-0"	6'-8"	Gliding Patio Door. Color is white.
④	ISPD3168AR	Anderson	1	DINETTE	3'-0"	6'-8"	Hinged Patio door. Color is white.
⑤	Exterior door	Jeld Wen	1	BASEMENT	3'-0"	6'-8"	Metal panel door

### ALTERNATES

③	PS61611R	Anderson	1	DINING ROOM	6'-0"	6'-8"	Perma-Shield Gliding Patio Door. Color is white.
④		Anderson	1	DINETTE	3'-0"	6'-8"	Hinged Patio door. Color is white.



**JEFFREY  
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WHITE PLAINS, NEW YORK 10603

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REVISIONS:  
12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M)  
SCALE: AS NOTED

SHEET TITLE:

DOOR & WINDOW SCHEDULE

**DELAURENTIS RESIDENCE**  
NEW HOUSE CONSTRUCTION

21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:

**A-600.00**

## Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.



Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

## Westchester County, New York

### HrF—Hollis-Rock outcrop complex, 35 to 60 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2w69q

*Elevation:* 0 to 1,540 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 145 to 240 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Hollis, very stony, and similar soils:* 60 percent

*Rock outcrop:* 20 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Hollis, Very Stony**

#### **Setting**

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Shoulder, summit, backslope

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

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

#### **Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 7 inches:* gravelly fine sandy loam

*Bw - 7 to 16 inches:* gravelly fine sandy loam

*2R - 16 to 26 inches:* bedrock

#### **Properties and qualities**

*Slope:* 35 to 60 percent

*Surface area covered with cobbles, stones or boulders:* 1.6 percent

*Depth to restrictive feature:* 8 to 23 inches to lithic bedrock

*Drainage class:* Somewhat excessively drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water capacity:* Very low (about 2.7 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Ecological site:* F144AY033MA - Shallow Dry Till Uplands

*Hydric soil rating:* No

### **Description of Rock Outcrop**

#### **Setting**

*Landform:* Hills, ridges

*Parent material:* Igneous and metamorphic rock

### Typical profile

*R - 0 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 35 to 60 percent

*Depth to restrictive feature:* 0 inches to lithic bedrock

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Very low  
(0.00 to 0.00 in/hr)

*Available water capacity:* Very low (about 0.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* D

*Hydric soil rating:* No

### Minor Components

#### Chatfield, very stony

*Percent of map unit:* 10 percent

*Landform:* Hills, ridges

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

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

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Hydric soil rating:* No

#### Charlton, very stony

*Percent of map unit:* 5 percent

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope

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

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Leicester, very stony

*Percent of map unit:* 4 percent

*Landform:* Depressions, drainageways, hills, ground moraines

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear, concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Sutton, very stony

*Percent of map unit:* 1 percent

*Landform:* Hills, ground moraines

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

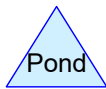
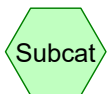
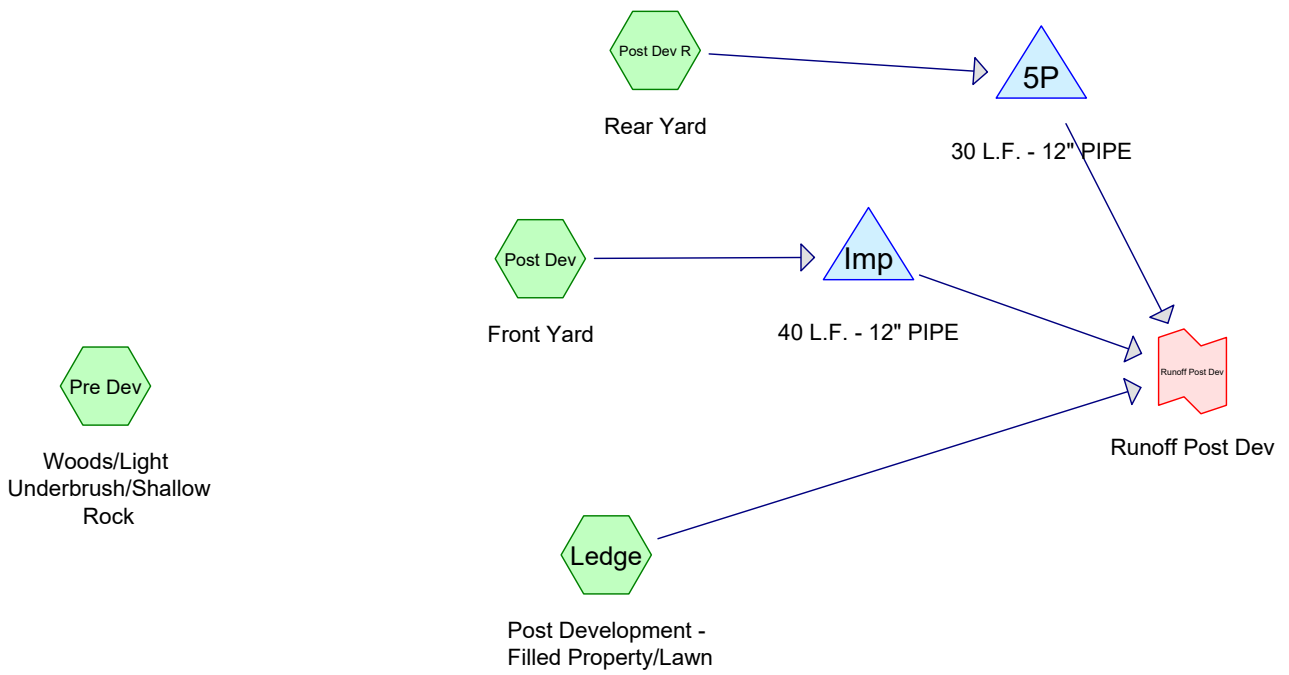
*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Westchester County, New York  
Survey Area Data: Version 16, Jun 11, 2020



**Routing Diagram for 21 NETHERMONT HYDROCAD**  
 Prepared by {enter your company name here}, Printed 12/30/2020  
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**21 NETHERMONT HYDROCAD**

Prepared by {enter your company name here}

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Page 2

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.150	69	50-75% Grass cover, Fair, HSG B (Ledge)
0.065	98	Impervious Area Constructed (Post Dev, Post Dev R)
0.215	83	Woods, Poor, HSG D (Pre Dev)
<b>0.430</b>	<b>80</b>	<b>TOTAL AREA</b>

**21 NETHERMONT HYDROCAD**

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.150	HSG B	Ledge
0.000	HSG C	
0.215	HSG D	Pre Dev
0.065	Other	Post Dev, Post Dev R
<b>0.430</b>		<b>TOTAL AREA</b>

**21 NETHERMONT HYDROCAD**

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.150	0.000	0.000	0.000	0.150	50-75% Grass cover, Fair	Ledge
0.000	0.000	0.000	0.000	0.065	0.065	Impervious Area Constructed	Post Dev, Post Dev R
0.000	0.000	0.000	0.215	0.000	0.215	Woods, Poor	Pre Dev
<b>0.000</b>	<b>0.150</b>	<b>0.000</b>	<b>0.215</b>	<b>0.065</b>	<b>0.430</b>	<b>TOTAL AREA</b>	



**21 NETHERMONT HYDROCAD**

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment Ledge: Post Development -** Runoff Area=6,546 sf 0.00% Impervious Runoff Depth>5.41"  
 Flow Length=124' Tc=6.4 min CN=69 Runoff=0.98 cfs 0.068 af

**Subcatchment Post Dev: Front Yard** Runoff Area=2,062 sf 100.00% Impervious Runoff Depth>8.99"  
 Flow Length=35' Slope=0.0500 '/' Tc=0.3 min CN=98 Runoff=0.50 cfs 0.035 af

**Subcatchment Post Dev R: Rear Yard** Runoff Area=753 sf 100.00% Impervious Runoff Depth>8.99"  
 Flow Length=50' Slope=0.0300 '/' Tc=0.6 min CN=98 Runoff=0.18 cfs 0.013 af

**Subcatchment Pre Dev: Woods/Light** Runoff Area=9,361 sf 0.00% Impervious Runoff Depth>7.15"  
 Flow Length=126' Tc=7.6 min CN=83 Runoff=1.70 cfs 0.128 af

**Pond 5P: 30 L.F. - 12" PIPE** Peak Elev=482.08' Storage=14 cf Inflow=0.18 cfs 0.013 af  
 Outflow=0.16 cfs 0.013 af

**Pond Imp: 40 L.F. - 12" PIPE** Peak Elev=492.10' Storage=31 cf Inflow=0.50 cfs 0.035 af  
 Outflow=0.44 cfs 0.035 af

**Link Runoff Post Dev: Runoff Post Dev** Inflow=1.48 cfs 0.116 af  
 Primary=1.48 cfs 0.116 af

**Total Runoff Area = 0.430 ac Runoff Volume = 0.244 af Average Runoff Depth = 6.82"**  
**84.96% Pervious = 0.365 ac 15.04% Impervious = 0.065 ac**

# 21 NETHERMONT HYDROCAD

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21 Nethermont Ave - Drainage Analysis 100 Year Storm  
 NRCC 24-hr C 100 year Rainfall=9.23"  
 Printed 12/30/2020  
 Page 6

## Summary for Subcatchment Ledge: Post Development - Filled Property/Lawn

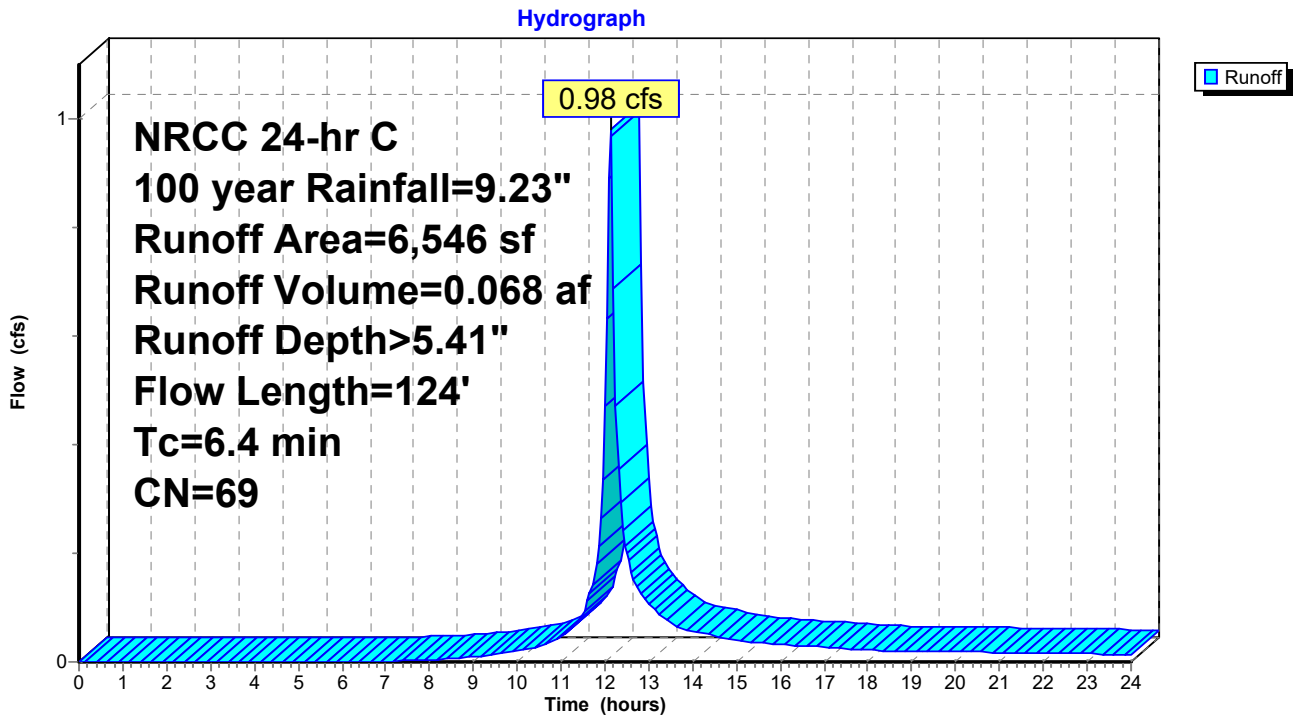
Runoff = 0.98 cfs @ 12.14 hrs, Volume= 0.068 af, Depth> 5.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100 year Rainfall=9.23"

Area (sf)	CN	Description
6,546	69	50-75% Grass cover, Fair, HSG B
6,546		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	61	0.2600	0.45		<b>Sheet Flow, First 100 FT</b> Grass: Short n= 0.150 P2= 3.50"
3.8	39	0.0300	0.17		<b>Sheet Flow, First 100 FT</b> Grass: Short n= 0.150 P2= 3.50"
0.3	24	0.0300	1.21		<b>Shallow Concentrated Flow, Flow to NW Corner of Prop/Design</b> Short Grass Pasture Kv= 7.0 fps
6.4	124	Total			

## Subcatchment Ledge: Post Development - Filled Property/Lawn



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**Summary for Subcatchment Post Dev: Front Yard**

[49] Hint: Tc<2dt may require smaller dt

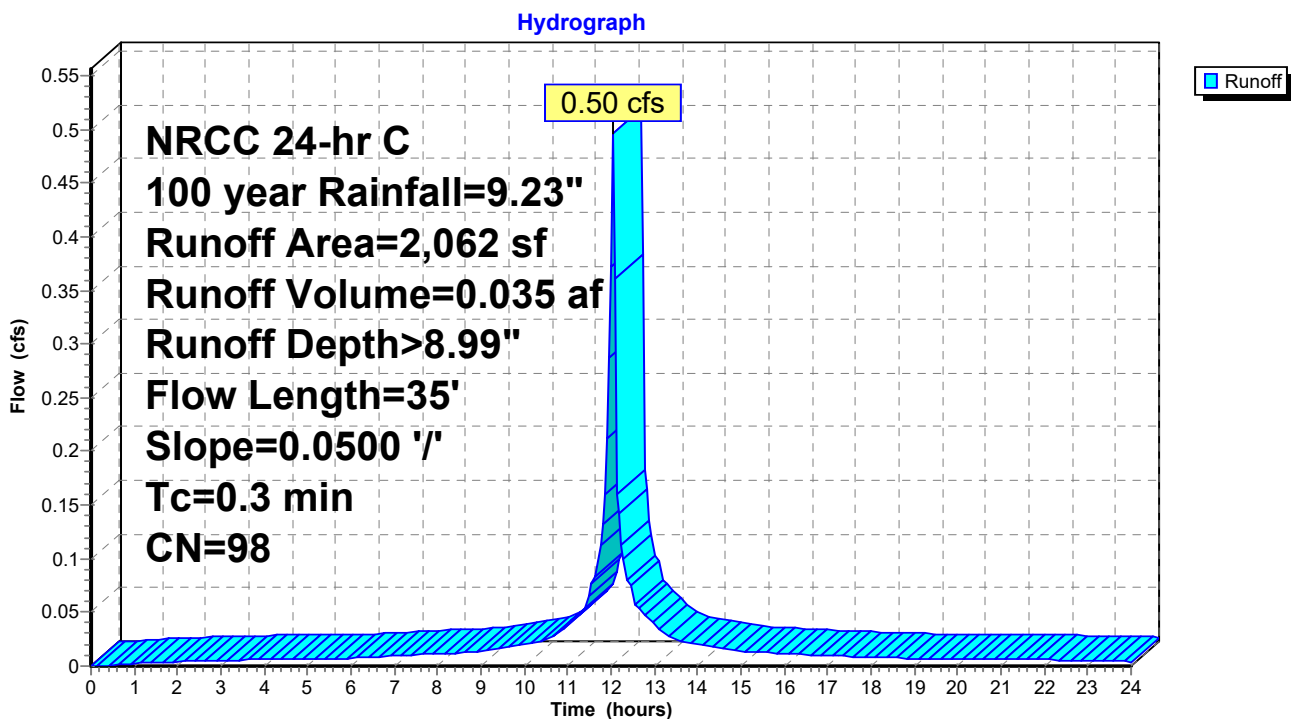
Runoff = 0.50 cfs @ 12.05 hrs, Volume= 0.035 af, Depth> 8.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100 year Rainfall=9.23"

Area (sf)	CN	Description
* 2,062	98	Impervious Area Constructed
2,062		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	35	0.0500	1.68		Sheet Flow, Imp Surfaces to FY Detention Smooth surfaces n= 0.011 P2= 3.50"

**Subcatchment Post Dev: Front Yard**



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**Summary for Subcatchment Post Dev R: Rear Yard**

[49] Hint: Tc<2dt may require smaller dt

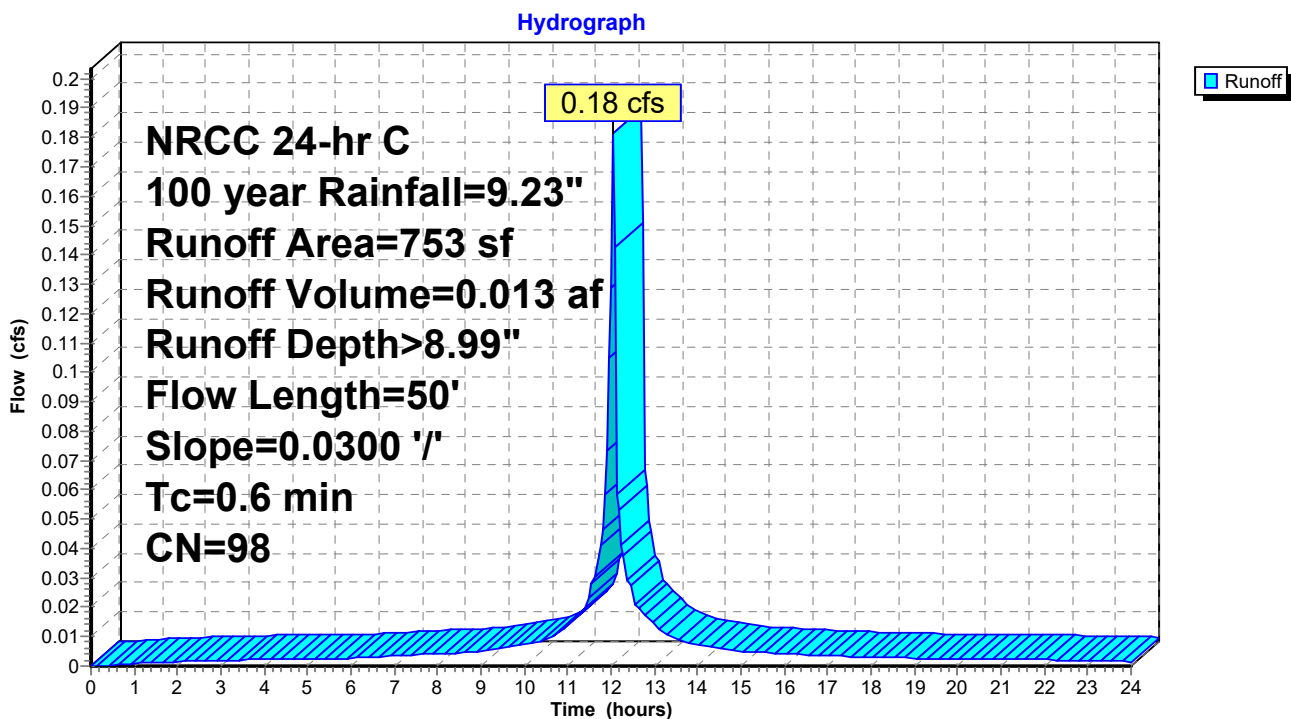
Runoff = 0.18 cfs @ 12.05 hrs, Volume= 0.013 af, Depth> 8.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100 year Rainfall=9.23"

Area (sf)	CN	Description
* 753	98	Impervious Area Constructed
753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	50	0.0300	1.47		Sheet Flow, Imp Surfaces to RY Detention Smooth surfaces n= 0.011 P2= 3.50"

**Subcatchment Post Dev R: Rear Yard**



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**Summary for Subcatchment Pre Dev: Woods/Light Underbrush/Shallow Rock**

Runoff = 1.70 cfs @ 12.14 hrs, Volume= 0.128 af, Depth> 7.15"

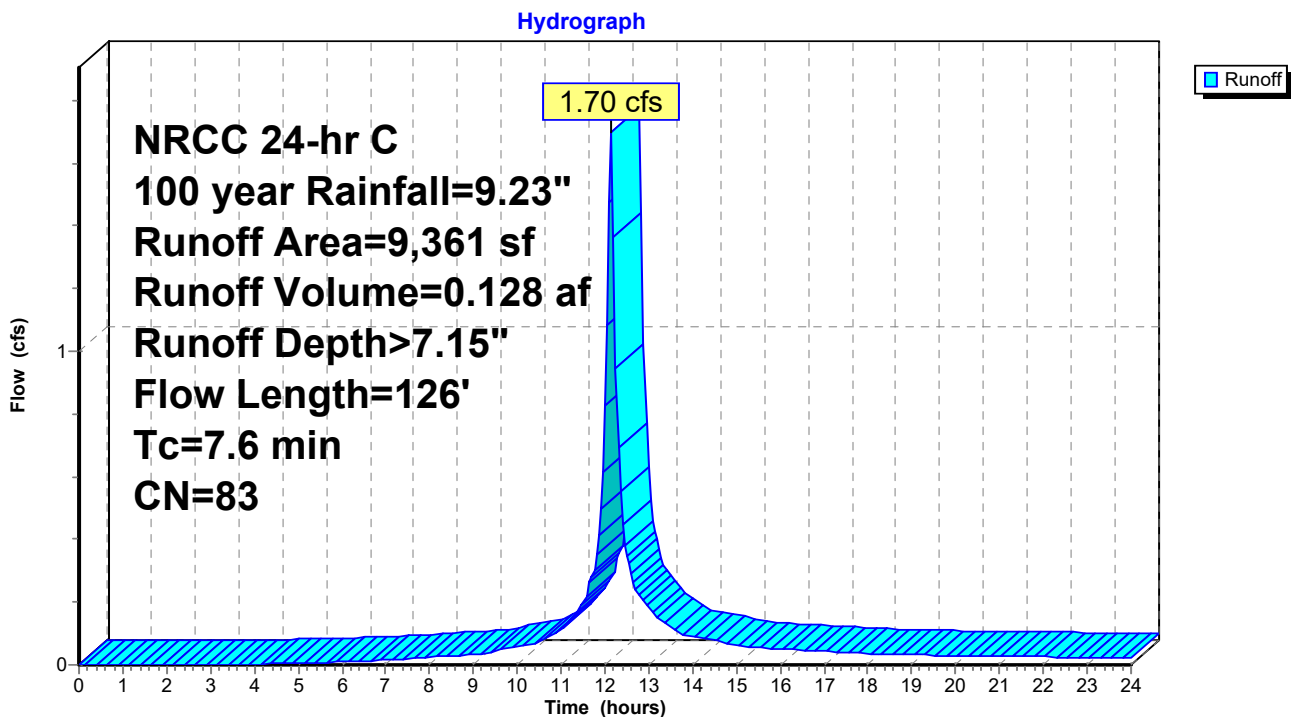
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100 year Rainfall=9.23"

Area (sf)	CN	Description
9,361	83	Woods, Poor, HSG D
9,361		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2600	0.23		<b>Sheet Flow, First 100 Ft = 500.0 - 474.0</b> Woods: Light underbrush n= 0.400 P2= 3.50"
0.2	26	0.2690	2.59		<b>Shallow Concentrated Flow, Last 26 FT = 474.0 - 467</b> Woodland Kv= 5.0 fps
7.6	126	Total			

**Subcatchment Pre Dev: Woods/Light Underbrush/Shallow Rock**



**21 NETHERMONT HYDROCAD**

NRCC 24-hr C 100 year Rainfall=9.23"

Prepared by {enter your company name here}

Printed 12/30/2020

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Page 10

**Summary for Pond 5P: 30 L.F. - 12" PIPE**

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.017 ac, 100.00% Impervious, Inflow Depth > 8.99" for 100 year event  
 Inflow = 0.18 cfs @ 12.05 hrs, Volume= 0.013 af  
 Outflow = 0.16 cfs @ 12.09 hrs, Volume= 0.013 af, Atten= 12%, Lag= 1.9 min  
 Primary = 0.16 cfs @ 12.09 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 482.08' @ 12.09 hrs Surf.Area= 30 sf Storage= 14 cf

Plug-Flow detention time= 1.3 min calculated for 0.013 af (100% of inflow)  
 Center-of-Mass det. time= 1.1 min ( 736.3 - 735.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	481.50'	24 cf	<b>12.0" Round Pipe Storage</b> L= 30.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	481.50'	<b>3.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	482.50'	<b>2.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s) 0.5' Crest Height

**Primary OutFlow** Max=0.15 cfs @ 12.09 hrs HW=482.05' (Free Discharge)

1=Orifice/Grate (Orifice Controls 0.15 cfs @ 3.15 fps)  
 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)

**21 NETHERMONT HYDROCAD**

Prepared by {enter your company name here}

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21 Nethermont Ave - Drainage Analysis 100 Year Storm

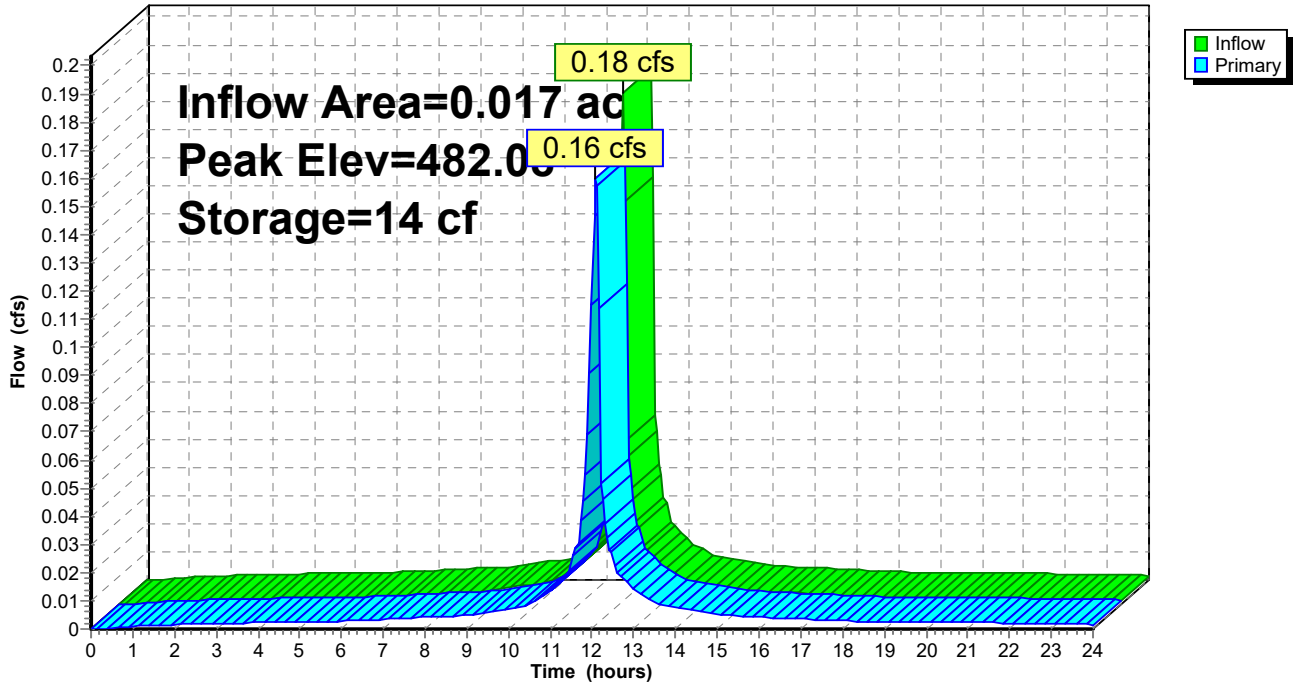
NRCC 24-hr C 100 year Rainfall=9.23"

Printed 12/30/2020

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**Pond 5P: 30 L.F. - 12" PIPE**

Hydrograph



**21 NETHERMONT HYDROCAD**

Prepared by {enter your company name here}

Printed 12/30/2020

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**Summary for Pond Imp: 40 L.F. - 12" PIPE**

[92] Warning: Device #2 is above defined storage

[93] Warning: Storage range exceeded by 0.10'

Inflow Area = 0.047 ac, 100.00% Impervious, Inflow Depth > 8.99" for 100 year event  
 Inflow = 0.50 cfs @ 12.05 hrs, Volume= 0.035 af  
 Outflow = 0.44 cfs @ 12.00 hrs, Volume= 0.035 af, Atten= 12%, Lag= 0.0 min  
 Primary = 0.44 cfs @ 12.00 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 492.10' @ 12.00 hrs Surf.Area= 0 sf Storage= 31 cf

Plug-Flow detention time= 1.5 min calculated for 0.035 af (100% of inflow)  
 Center-of-Mass det. time= 1.3 min ( 736.3 - 735.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	491.00'	31 cf	<b>12.0" Round Pipe Storage</b> L= 40.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	491.00'	<b>3.0" Vert. Orifice/Grate</b> C= 0.600
#2	Primary	492.00'	<b>2.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s) 0.5' Crest Height

**Primary OutFlow** Max=0.44 cfs @ 12.00 hrs HW=492.10' (Free Discharge)

1=Orifice/Grate (Orifice Controls 0.23 cfs @ 4.75 fps)

2=Sharp-Crested Rectangular Weir (Weir Controls 0.21 cfs @ 1.05 fps)



**21 NETHERMONT HYDROCAD**

Prepared by {enter your company name here}

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21 Nethermont Ave - Drainage Analysis 100 Year Storm

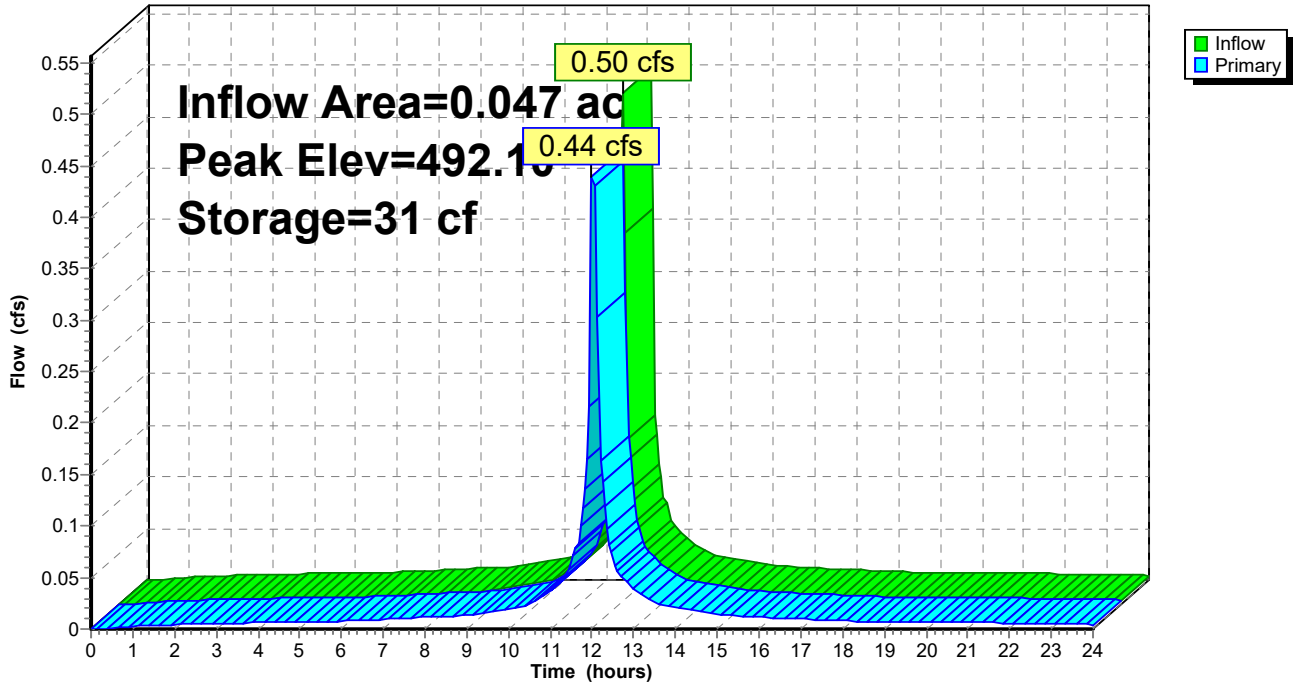
NRCC 24-hr C 100 year Rainfall=9.23"

Printed 12/30/2020

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**Pond Imp: 40 L.F. - 12" PIPE**

Hydrograph



# 21 NETHERMONT HYDROCAD

Prepared by {enter your company name here}

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21 Nethermont Ave - Drainage Analysis 100 Year Storm

NRCC 24-hr C 100 year Rainfall=9.23"

Printed 12/30/2020

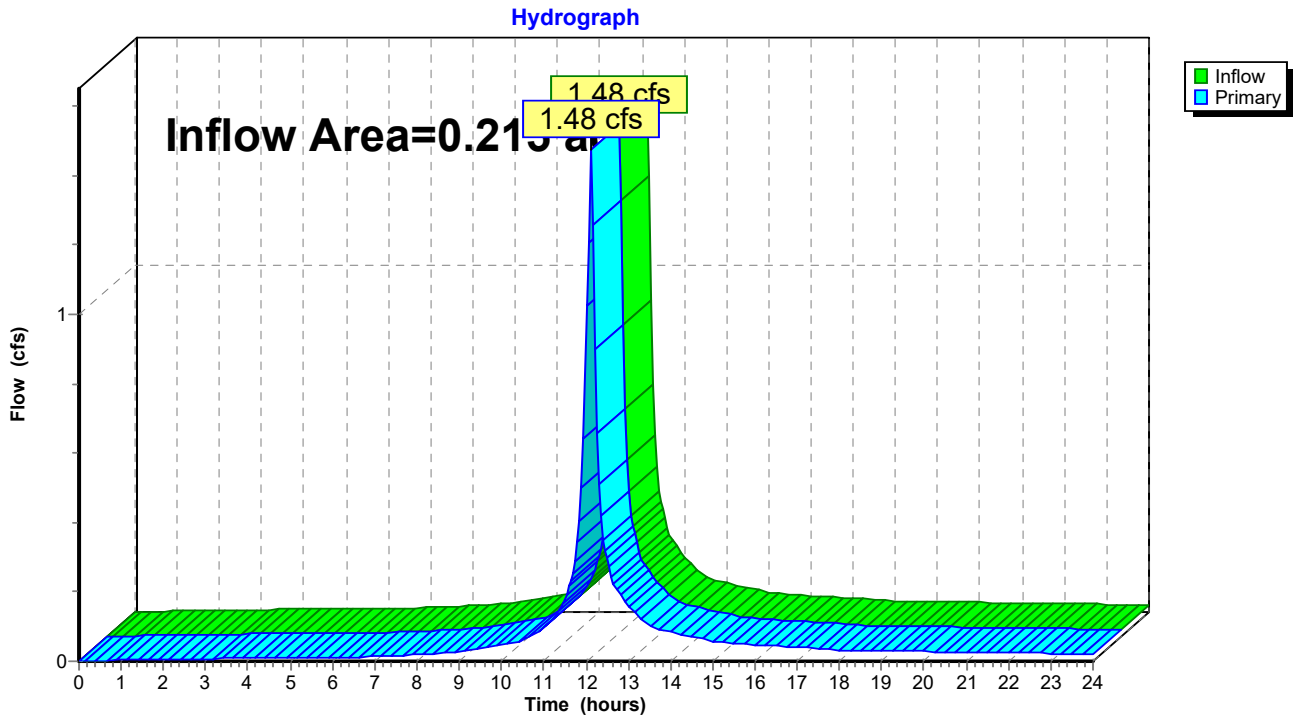
Page 14

## Summary for Link Runoff Post Dev: Runoff Post Dev

Inflow Area = 0.215 ac, 30.07% Impervious, Inflow Depth > 6.48" for 100 year event  
Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.116 af  
Primary = 1.48 cfs @ 12.10 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

## Link Runoff Post Dev: Runoff Post Dev



TOTAL IMPERVIOUS COVERAGE  
= 3108 SF

DRIVEWAY  
999 SF

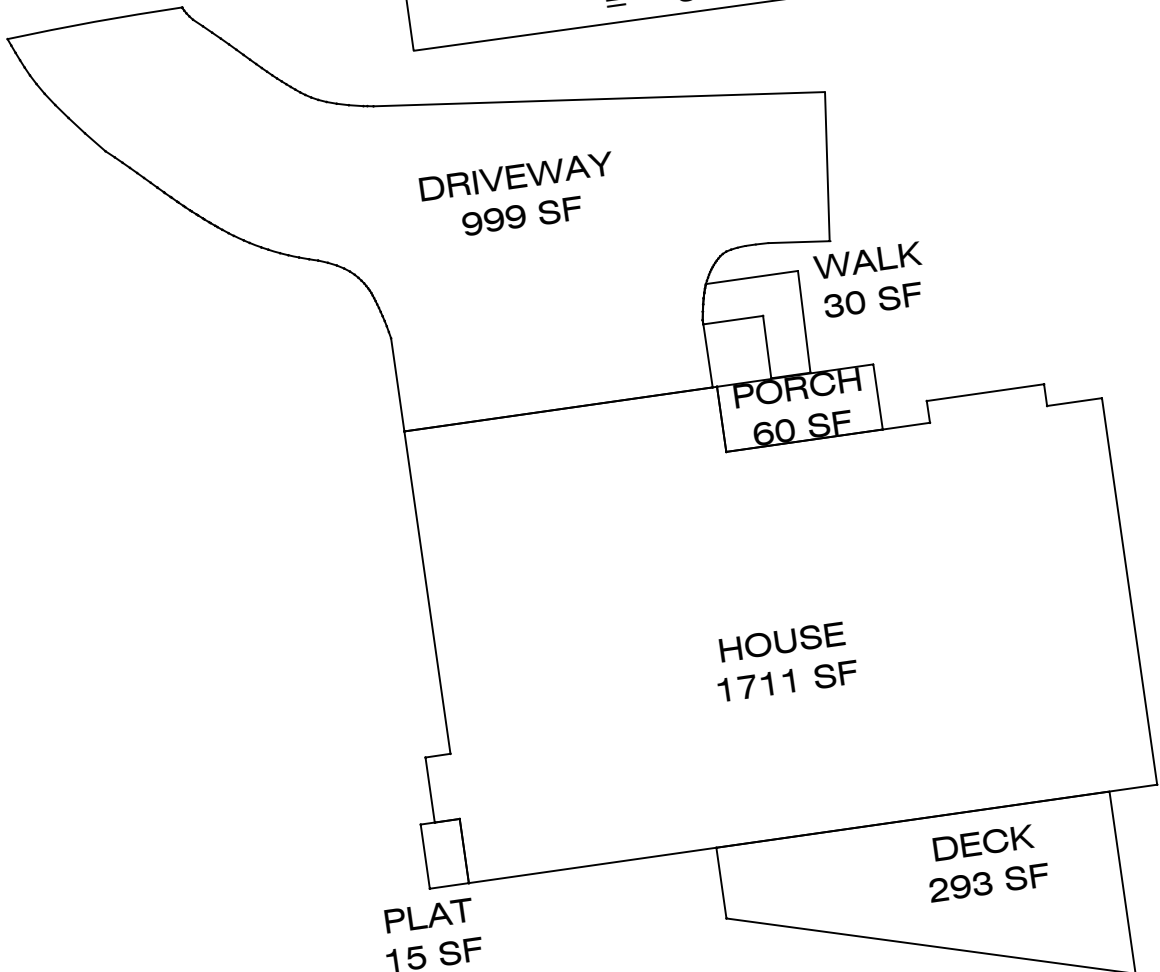
WALK  
30 SF

PORCH  
60 SF

HOUSE  
1711 SF

DECK  
293 SF

PLAT  
15 SF



DESIGN CALCULATIONS

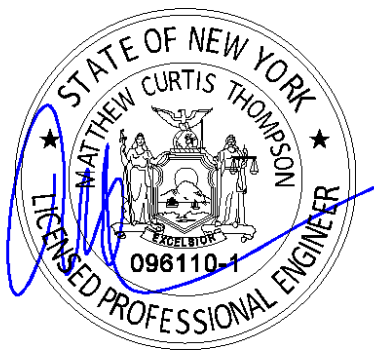
FOR

## DINO DELAURENTIIS RESIDENCE

NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK

PROJECT NO.: 20ERS150

PLANS & CALCULATIONS DATED 11/16/20, REV. 0



11/16/20

PREPARED BY:



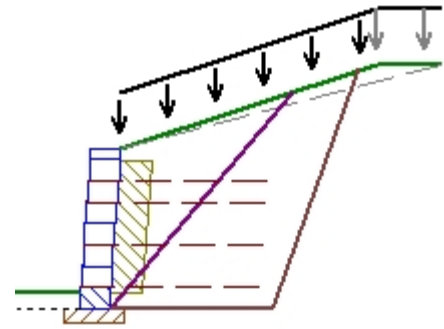
## Project Information

<b>Client</b>	ERS				
<b>Name</b>	Dino DeLaurentis Residence			<b>Number</b>	20ERS150
<b>Site</b>	North Castle, NY			<b>Designer</b>	NT
<b>Revision</b>	1	<b>Created</b>	11/12/2020	<b>Modified</b>	11/13/2020
<b>Standard</b>	National Concrete Masonry Association 3rd Edition				
<b>Seismic As</b>	0.15	Default Deflection of 2.00 inch			

## Selected Facing Unit

**Licensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)

**Section** #10 at Station 15.00  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	5.00	Back Slope	18.40°	LL Surcharge	100	DL Surcharge	250
Design Height	5.00 ft	Crest Offset	8.00 ft	LL Offset	0.00 ft	DL Offset	8.00 ft
Embedment	0.53 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.50	FSSl Internal Sliding	1.50	FSSc Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FSto Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.10	FSSl Internal Sliding	1.10	FSSc Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FSto Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static	FS		
Bearing Capacity	8.76	Bearing Pressure	928.15 lb/ft²
Overturning	5.28	Max Eccentricity	0.10 ft
Base Sliding	2.26		
Crest Toppling	2.36		
Internal Sliding	2.67		

External Seismic	FS		
Bearing Capacity	10.26	Bearing Pressure	792.73 lb/ft²
Overturning	5.61	Max Eccentricity	0.04 ft

External Seismic		FS
Base Sliding		2.32
Crest Toppling		3.05
Internal Sliding		2.76

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
4	487.00	UXMSE	6.00	4.48	7.08	18.54
3	486.33	UXMSE	6.00	3.90	8.16	13.77
2	485.00	UXMSE	6.00	3.15	8.24	7.16
1	483.67	UXMSE	6.00	2.67	10.04	5.30

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
4	487.00	UXMSE	6.00	5.19	3.08	20.65
3	486.33	UXMSE	6.00	4.34	4.73	20.46
2	485.00	UXMSE	6.00	3.34	5.49	12.20
1	483.67	UXMSE	6.00	2.76	7.32	9.89

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
4	487.00	UXMSE	6.00	16.18
3	486.33	UXMSE	6.00	12.01
2	485.00	UXMSE	6.00	6.24
1	483.67	UXMSE	6.00	4.62

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
4	487.00	UXMSE	6.00	7.04
3	486.33	UXMSE	6.00	6.97
2	485.00	UXMSE	6.00	4.16
1	483.67	UXMSE	6.00	3.37

**Internal Compound Stability**

**10 Lowest Static**

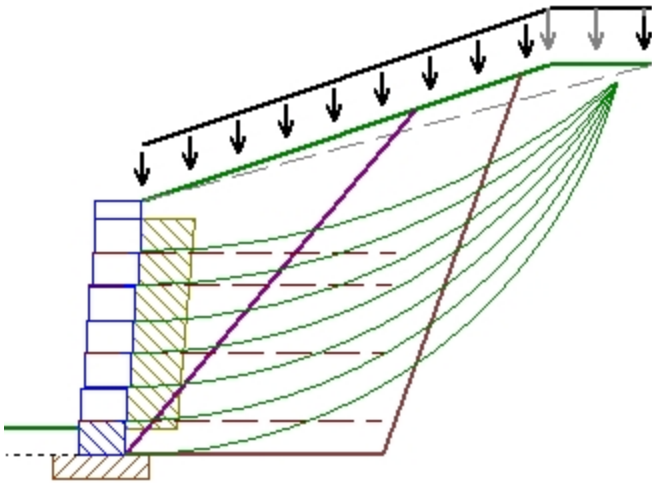
Radius Point	Entry Point	Exit Point	Result	Status
1	10	1	1.66	Pass
1	10	2	1.66	Pass
1	10	4	1.79	Pass
1	10	3	2.02	Pass
1	10	5	2.19	Pass
1	10	6	2.33	Pass
1	10	7	2.34	Pass

**10 Lowest Seismic**

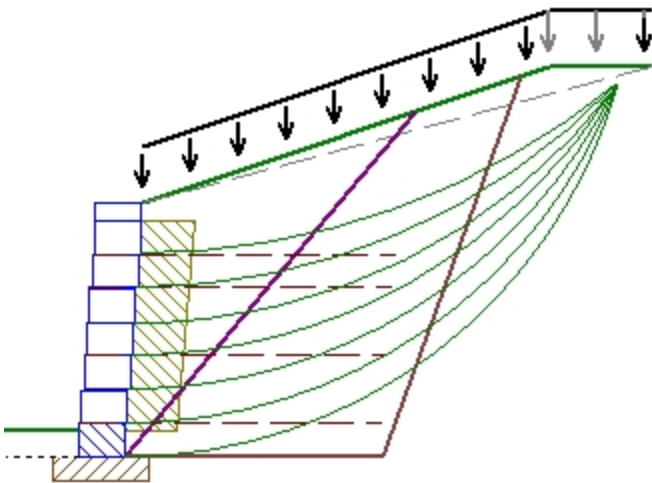
1	10	1	1.62	Pass
1	10	2	1.62	Pass
1	10	4	1.75	Pass
1	10	3	2.03	Pass
1	10	5	2.22	Pass
1	10	7	2.36	Pass
1	10	6	2.38	Pass

## Section 10 Details

### Section 10 Static ICS Cross-section



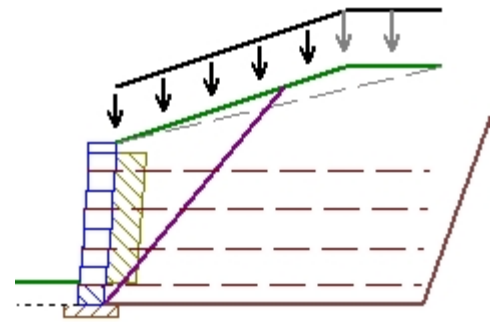
### Section 10 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity



**Section** #12 at Station 18.00  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	5.67	Back Slope	18.40°	LL Surcharge	100	DL Surcharge	250
Design Height	5.67 ft	Crest Offset	8.00 ft	LL Offset	0.00 ft	DL Offset	8.00 ft
Embedment	0.76 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.50	FSSl Internal Sliding	1.50	FSSc Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FSto Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.10	FSSl Internal Sliding	1.10	FSSc Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FSto Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**External Static**

FS			
Bearing Capacity	14.75	Bearing Pressure	1138.95 lb/ft²
Overturning	15.84	Max Eccentricity	0.00 ft
Base Sliding	4.16		
Crest Toppling	2.36		
Internal Sliding	3.99		

**External Seismic**

FS			
Bearing Capacity	16.16	Bearing Pressure	1040.00 lb/ft²
Overturning	16.36	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		4.18
Crest Toppling		3.05
Internal Sliding		4.03

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
4	486.33	UXMSE	12.00	5.93	45.39	13.73
3	485.00	UXMSE	12.00	5.07	40.43	8.95
2	483.67	UXMSE	12.00	4.46	37.11	6.28
1	482.33	UXMSE	12.00	3.99	36.18	4.83

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
4	486.33	UXMSE	12.00	6.55	20.46	15.85
3	485.00	UXMSE	12.00	5.35	24.73	14.01
2	483.67	UXMSE	12.00	4.58	25.67	11.12
1	482.33	UXMSE	12.00	4.03	26.94	9.21

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
4	486.33	UXMSE	12.00	11.98
3	485.00	UXMSE	12.00	7.80
2	483.67	UXMSE	12.00	5.47
1	482.33	UXMSE	12.00	4.22

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
4	486.33	UXMSE	12.00	5.40
3	485.00	UXMSE	12.00	4.77
2	483.67	UXMSE	12.00	3.79
1	482.33	UXMSE	12.00	3.14

**Internal Compound Stability**

**10 Lowest Static**

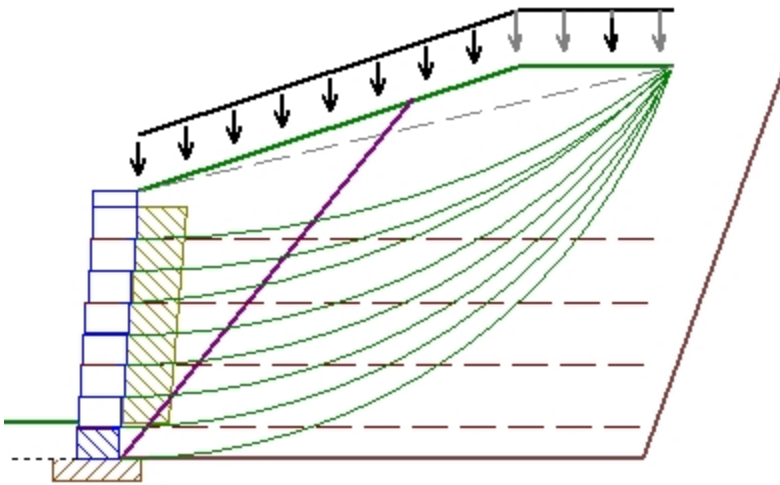
Radius Point	Entry Point	Exit Point	Result	Status
1	10	8	2.30	Pass
3	9	6	3.28	Pass
1	1	2	3.53	Pass
1	1	1	3.63	Pass
1	1	4	3.64	Pass
1	1	7	3.79	Pass
1	1	3	4.11	Pass
1	1	5	4.45	Pass

**10 Lowest Seismic**

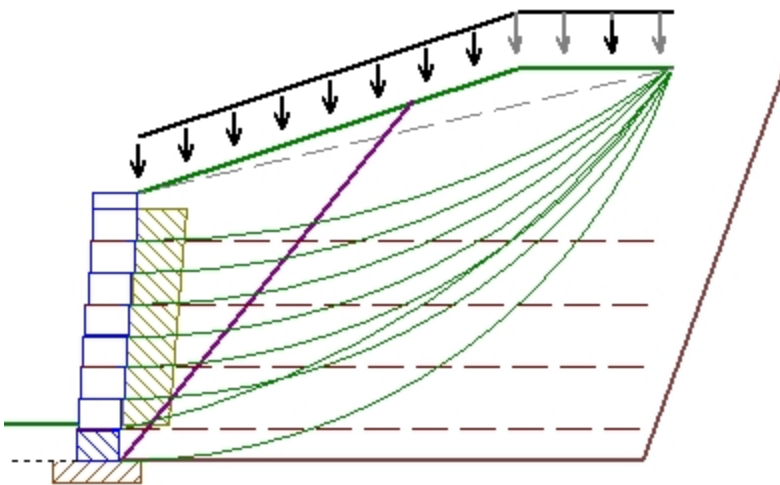
1	10	8	2.18	Pass
1	1	1	2.43	Pass
6	1	2	2.45	Pass
1	10	6	2.51	Pass
1	1	4	2.53	Pass
1	1	3	2.73	Pass
1	1	5	2.86	Pass
1	10	7	2.88	Pass

## Section 12 Details

### Section 12 Static ICS Cross-section

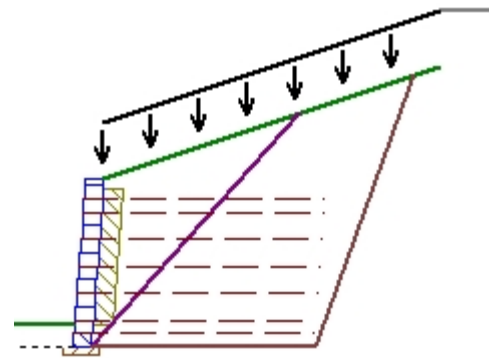


### Section 12 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**Section** #18 at Station 27.75  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	8.33	Back Slope	18.40°	LL Surcharge	100	DL Surcharge	250
Design Height	8.33 ft	Crest Offset	22.00 ft	LL Offset	0.00 ft	DL Offset	22.00 ft
Embedment	1.13 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50	FScs	Connection Strength	1.50
FSbc	Bearing Capacity	2.00	FSpO	Pullout	1.50	FSsc	Facing Shear	1.50
FSct	Crest Toppling	1.50	FSto	Tensile Overstress	1.50			
FSot	Overturning	2.00						

**Seismic**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.10	FSSl	Internal Sliding	1.10	FScs	Connection Strength	1.10
FSbc	Bearing Capacity	1.50	FSpO	Pullout	1.10	FSsc	Facing Shear	1.10
FSct	Crest Toppling	1.10	FSto	Tensile Overstress	1.10			
FSot	Overturning	1.50						

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static		FS	
Bearing Capacity	11.34	Bearing Pressure	1481.56 lb/ft²
Overturning	8.73	Max Eccentricity	0.00 ft
Base Sliding	2.99		
Crest Toppling	2.36		
Internal Sliding	2.77		

External Seismic		FS	
Bearing Capacity	12.15	Bearing Pressure	1383.22 lb/ft²
Overturning	8.47	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		2.85
Crest Toppling		3.05
Internal Sliding		2.65

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	485.67	UXMSE	12.00	4.66	27.19	17.26
6	485.00	UXMSE	12.00	4.38	25.58	12.81
5	483.67	UXMSE	12.00	3.90	19.87	6.66
4	482.33	UXMSE	12.00	3.49	20.53	4.93
3	481.00	UXMSE	12.00	3.16	21.68	3.91
2	479.67	UXMSE	12.00	2.89	31.43	4.42
1	479.00	UXMSE	12.00	2.77	31.14	3.91

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	485.67	UXMSE	12.00	5.20	6.16	10.01
6	485.00	UXMSE	12.00	4.70	8.82	11.31
5	483.67	UXMSE	12.00	3.97	8.58	7.36
4	482.33	UXMSE	12.00	3.46	10.40	6.39
3	481.00	UXMSE	12.00	3.08	12.22	5.65
2	479.67	UXMSE	12.00	2.78	18.98	6.84
1	479.00	UXMSE	12.00	2.65	19.71	6.33

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	485.67	UXMSE	12.00	15.05
6	485.00	UXMSE	12.00	11.18
5	483.67	UXMSE	12.00	5.81
4	482.33	UXMSE	12.00	4.30
3	481.00	UXMSE	12.00	3.41
2	479.67	UXMSE	12.00	3.86
1	479.00	UXMSE	12.00	3.41

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	485.67	UXMSE	12.00	3.41
6	485.00	UXMSE	12.00	3.85
5	483.67	UXMSE	12.00	2.51
4	482.33	UXMSE	12.00	2.18
3	481.00	UXMSE	12.00	1.92
2	479.67	UXMSE	12.00	2.33
1	479.00	UXMSE	12.00	2.16

**Internal Compound Stability**

**10 Lowest Static**

Radius Point	Entry Point	Exit Point	Result	Status
1	10	3	2.66	Pass
1	10	5	2.86	Pass
1	10	1	2.89	Pass
1	10	2	2.90	Pass
1	10	4	3.12	Pass
1	10	7	3.20	Pass
1	10	6	3.40	Pass
1	10	9	3.50	Pass
1	10	11	3.72	Pass
1	10	8	4.01	Pass

**10 Lowest Seismic**

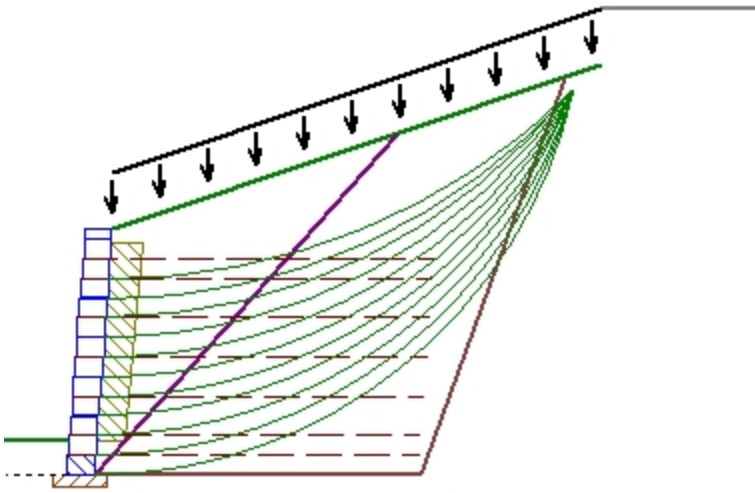
1	10	1	2.00	Pass
1	10	3	2.04	Pass

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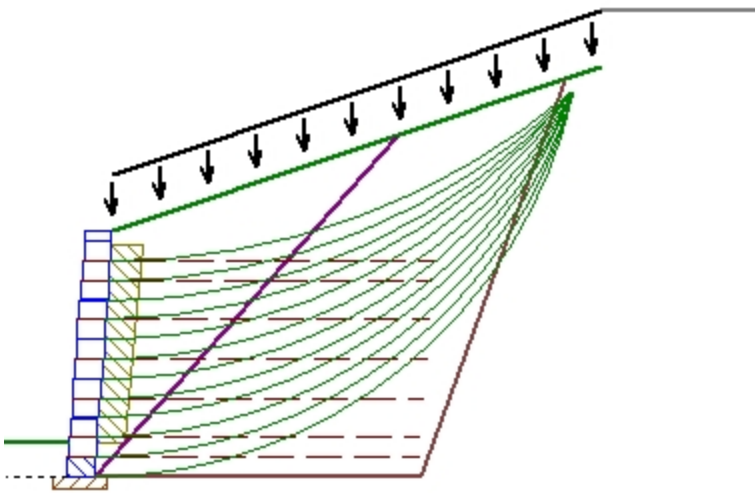
1	10	2	2.11	Pass
1	10	5	2.22	Pass
1	10	4	2.29	Pass
1	10	12	2.35	Pass
1	10	6	2.54	Pass
1	10	7	2.65	Pass
1	10	9	3.05	Pass
1	10	8	3.15	Pass

## Section 18 Details

### Section 18 Static ICS Cross-section



### Section 18 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

# Dino DeLaurentis Residence

**Report created by ReSSA(3.0): Copyright (c) 2001-2012, ADAMA Engineering, Inc.**

## PROJECT IDENTIFICATION

Title: Dino DeLaurentis Residence  
 Project Number: 20ERS150 -  
 Client: ERS  
 Designer: NT

**Description:**  
 WALL 1 - PANEL 18

### Company's information:

Name: ERS Materials, LLC  
 Street: 116 Edwards Ferry Road NE  
 Unit S  
 Leesburg, VA 20176

Telephone #:  
 Fax #:  
 E-Mail:

**Original file path and name:** V:\2020\20 ..... tle, NY\Calculations\Ressa\ReSSA\_WALL1\_PANEL18.MSE  
**Original date and time of creating this file:** Thu Nov 12 11:06:25 2020

**PROGRAM MODE:** Analysis of a General Slope using GEOSYNTHETIC as reinforcing material.



**INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)**

**SOIL DATA**

Soil Layer #:	Unit weight, $\gamma$ [lb/ft <sup>3</sup> ]	Internal angle of friction, $\phi$ [deg.]	Cohesion, c [lb/ft <sup>2</sup> ]
1..... Block Face.....	130.0	0.0	500.0
2..... Reinforced Fill.....	125.0	30.0	0.0
3..... Retained Soil.....	125.0	30.0	0.0
4..... Foundation Soil.....	125.0	30.0	0.0

**REINFORCEMENT**

Reinforcement Type #	Geosynthetic Designated Name	Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Additional Reduction Factor, RFa	Coverage Ratio, Rc
1	UX1100MSE	3971.52	1.08	1.00	2.56	1.00	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
1	UX1100MSE	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, Fs-po = 1.50  
 Design method for Global Stability: AASHTO/FHWA Bishop.

**WATER**

Water is not present

**SEISMICITY**

Not Applicable

### DRAWING OF SPECIFIED GEOMETRY - GENERAL - Quick Input

- Problem geometry is defined along sections selected by user at x,y coordinates.
- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

#### GEOMETRY

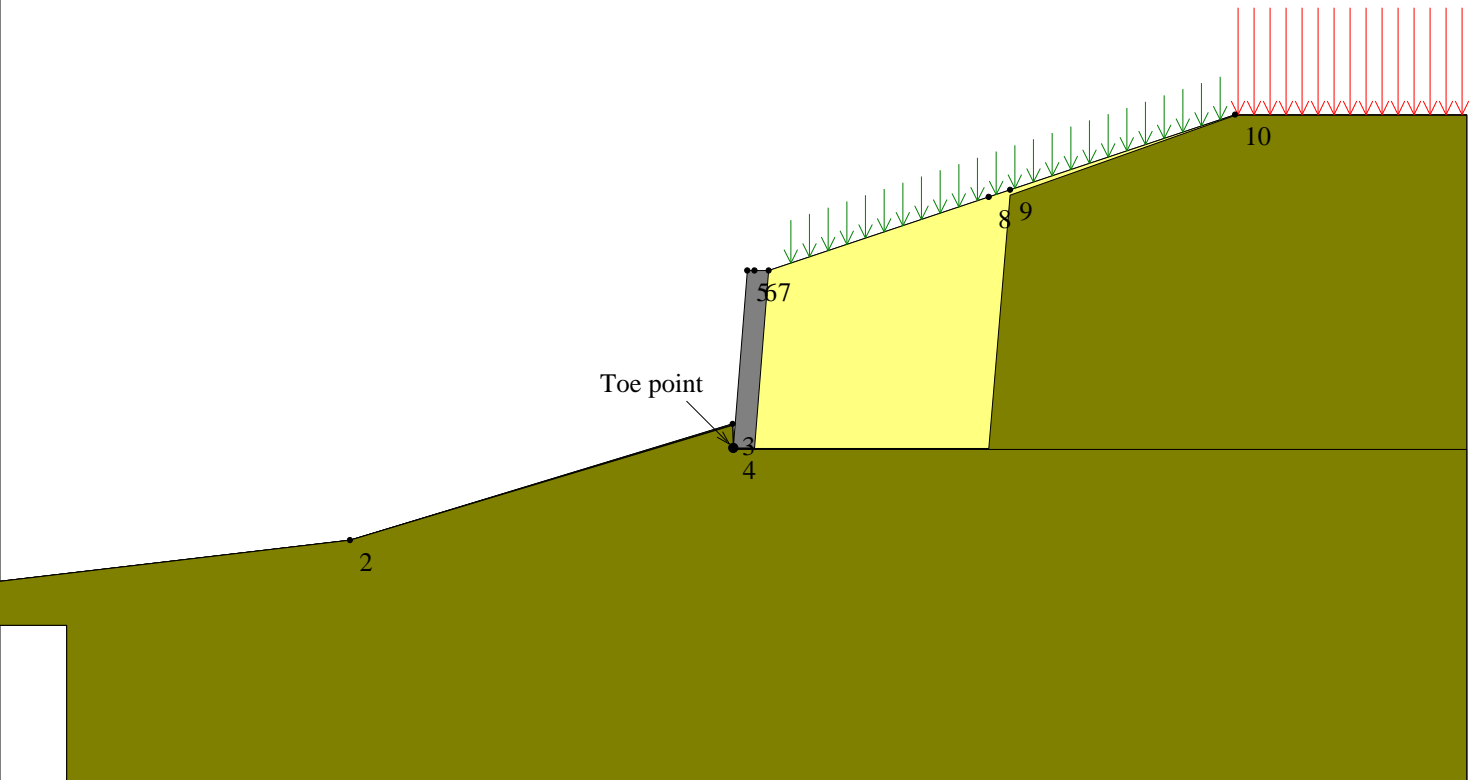
Soil profile contains 4 layers (see details in next page)

#### UNIFORM SURCHARGE

Load Q1 = 100.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X1s = 2.70 and ends at X1e = 23.70 [ft].  
 Load Q2 = 250.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X2s = 23.70 and ends at X2e = 100.00 [ft].  
 Surcharge load, Q3.....None

#### STRIP LOAD

.....None.....



SCALE:



**TABULATED DETAILS OF GENERAL SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

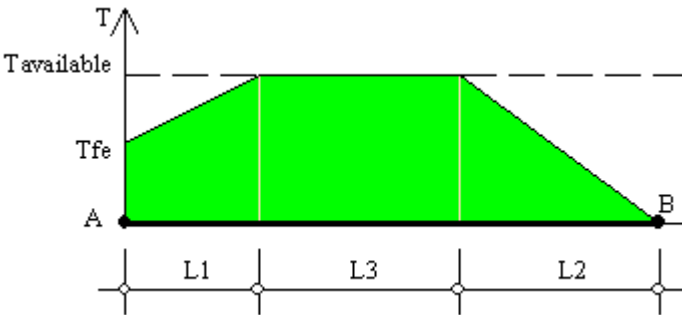
	#	Xi	Yi
■ Top of Layer 1	1	-52.00	470.00
	2	-18.00	474.00
	3	-0.03	479.46
	4	0.00	478.33
	5	0.66	486.66
	6	1.66	486.66
	7	23.57	493.98
■ Top of Layer 2	8	-52.00	470.00
	9	-18.00	474.00
	10	-0.03	479.46
	11	0.00	478.33
	12	1.00	478.33
	13	1.66	486.66
	14	23.57	493.98
■ Top of Layer 3	15	-52.00	470.00
	16	-18.00	474.00
	17	-0.03	479.42
	18	0.00	478.30
	19	12.00	478.30
	20	13.00	490.20
	21	23.57	493.95
■ Top of Layer 4	22	-52.00	470.00
	23	-18.00	474.00
	24	-0.03	479.39
	25	0.00	478.26

**TABULATED DETAILS OF SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

#	X	Y1	Y2	Y3	Y4
1	-52.00	470.00	470.00	470.00	470.00
2	-18.00	474.00	474.00	474.00	474.00
3	-0.03	479.46	479.46	479.42	479.39
4	0.00	478.33	478.33	478.30	478.26
5	0.66	486.66	478.33	478.30	478.26
6	1.00	486.66	478.33	478.30	478.26
7	1.66	486.66	486.66	478.30	478.26
8	12.00	490.11	490.11	478.30	478.26
9	13.00	490.45	490.45	490.20	478.26
10	23.57	493.98	493.98	493.95	478.26

**DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER**



A = Front-end of reinforcement (at face of slope)  
 B = Rear-end of reinforcement  
 AB = L1 + L2 + L3 = Embedded length of reinforcement

Tavailable = Long-term strength of reinforcement  
 Tfe = Available front-end strength (e.g., connection to facing)

L1 = Front-end 'pullout' length  
 L2 = Rear-end pullout length  
 Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement,  $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	UX1100MSE	0.67	12.00	0.46	2.20	9.34	1249.72	1436.46
2	UX1100MSE	1.33	12.00	0.46	2.33	9.21	1249.72	1436.46
3	UX1100MSE	2.67	12.00	0.46	2.69	8.85	1249.72	1436.46
4	UX1100MSE	4.00	12.00	0.46	3.18	8.36	1249.72	1436.46
5	UX1100MSE	5.33	12.00	0.46	3.94	7.60	1249.72	1436.46
6	UX1100MSE	6.67	12.00	0.46	5.31	6.23	1249.72	1436.46
7	UX1100MSE	7.33	12.00	0.46	6.59	4.95	1249.72	1436.46

**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

<b>Critical circles for each entry point (considering all specified exit points)</b>									
Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	4.00	487.45	-23.91	473.41	-13.50	487.48	17.51	3.77	
2	5.24	487.86	-21.91	473.69	-12.05	487.90	17.30	3.27	
3	6.49	488.27	-19.84	473.92	-10.77	488.60	17.26	2.94	
4	7.73	488.69	-18.93	474.11	-9.84	489.14	17.57	2.68	
5	8.97	489.10	-18.93	474.08	-10.18	491.24	19.26	2.46	
6	10.21	489.52	-17.61	474.14	-8.88	491.20	19.17	2.28	
7	11.45	489.93	-17.73	474.19	-9.12	493.14	20.82	2.11	
8	12.69	490.35	-14.76	475.24	-5.24	490.44	17.94	1.92	
9	13.93	490.76	-14.53	475.10	-4.64	490.82	18.57	1.75	
10	15.17	491.18	-13.50	475.41	-3.53	491.25	18.71	1.61	
11	16.42	491.59	-13.74	475.56	-3.48	492.64	19.93	1.53	
12	17.66	492.00	-13.62	475.48	-3.48	494.14	21.24	1.46	
13	18.90	492.42	-14.85	475.24	-4.46	496.57	23.72	1.41	
14	20.14	492.83	-15.62	474.80	-5.58	499.35	26.53	1.38	
15	21.38	493.25	-15.70	474.82	-6.12	502.05	28.87	1.35	
16	22.62	493.66	-16.94	474.56	-7.22	504.96	31.91	1.33	
17	23.86	493.98	-17.70	474.16	-8.45	508.24	35.32	1.32	
18	25.10	493.98	-18.93	474.01	-9.30	511.30	38.52	1.31	
19	26.35	493.98	-18.93	474.00	-9.43	513.75	40.87	1.30	OK
20	27.59	493.98	-18.93	473.99	-10.13	517.62	44.51	1.30	
21	28.83	493.98	-19.93	473.86	-11.19	521.81	48.74	1.31	
22	30.07	493.98	-18.93	473.97	-11.38	525.48	52.05	1.32	
23	31.31	493.98	-19.91	473.84	-12.68	530.64	57.26	1.33	
24	32.55	493.98	-20.86	473.70	-14.10	536.38	63.04	1.35	
25	33.79	493.98	-20.84	473.70	-14.79	541.12	67.69	1.38	
26	35.03	493.98	-20.81	473.69	-15.61	546.37	72.87	1.40	
27	36.28	493.98	-20.79	473.69	-16.57	552.22	78.65	1.43	
28	37.52	493.98	-24.10	473.34	-19.20	560.98	87.78	1.46	
29	38.76	493.98	-24.11	473.33	-20.48	568.29	95.03	1.49	
30	40.00	493.98	-22.97	473.44	-21.00	574.21	100.79	1.53	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

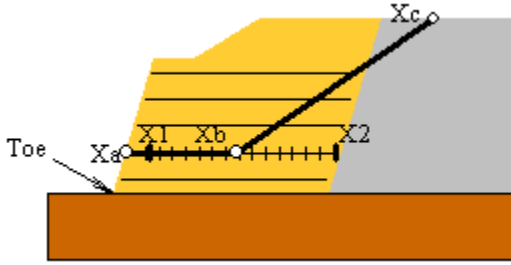
**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

<b>Critical circles for each exit point (considering all specified entry points).</b>									
Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	-30.10	472.61	28.83	493.98	-17.07	528.61	57.49	1.36	
2	-29.28	472.78	28.83	493.98	-16.32	527.50	56.23	1.36	
3	-28.52	472.98	27.59	493.98	-15.36	523.27	51.98	1.35	
4	-26.98	472.97	28.83	493.98	-15.43	526.91	55.16	1.34	
5	-26.11	473.13	28.83	493.98	-14.66	525.77	53.87	1.33	
6	-25.28	473.30	27.59	493.98	-13.67	521.54	49.61	1.32	
7	-24.36	473.45	27.59	493.98	-12.91	520.47	48.39	1.31	
8	-22.86	473.46	27.59	493.98	-12.70	520.76	48.38	1.31	
9	-21.91	473.60	27.59	493.98	-11.93	519.66	47.12	1.30	
10	-20.94	473.74	27.59	493.98	-11.15	518.56	45.88	1.30	
11	-19.96	473.88	26.35	493.98	-10.20	514.77	42.04	1.30	
12	-18.93	474.00	26.35	493.98	-9.43	513.75	40.87	1.30	OK
13	-18.06	474.22	27.59	493.98	-9.32	516.64	43.31	1.30	
14	-17.00	474.53	27.59	493.98	-8.50	515.87	42.21	1.30	
15	-15.82	474.83	26.35	493.98	-7.04	511.48	37.69	1.30	
16	-14.76	475.13	26.35	493.98	-6.24	510.79	36.66	1.31	
17	-13.70	475.44	26.35	493.98	-5.43	510.10	35.64	1.31	
18	-12.64	475.75	26.35	493.98	-4.63	509.42	34.61	1.32	
19	-11.58	476.06	26.35	493.98	-3.82	508.74	33.59	1.34	
20	-10.70	476.42	26.35	493.98	-2.63	507.25	31.88	1.35	
21	-9.63	476.72	26.35	493.98	-1.84	506.61	30.88	1.37	
22	-8.57	477.03	26.35	493.98	-1.04	505.96	29.90	1.39	
23	-7.50	477.33	26.35	493.98	-0.25	505.32	28.91	1.42	
24	-6.53	477.67	26.35	493.98	0.88	504.03	27.38	1.46	
25	-5.39	477.95	27.59	493.98	1.67	505.36	28.30	1.50	
26	-4.29	478.25	27.59	493.98	2.47	504.72	27.32	1.55	
27	-3.17	478.54	27.59	493.98	3.58	503.46	25.81	1.61	
28	-2.39	478.94	26.35	493.98	4.58	500.59	22.75	1.71	
29	-1.18	479.28	32.55	493.98	12.27	494.46	20.28	3.08	
30	-0.33	478.31	28.83	493.98	-1.99	516.38	38.10	1.62	
31	-4.10	478.43	27.59	493.98	3.09	503.84	26.41	1.57	
32	-1.62	479.27	26.35	493.98	8.27	494.40	18.08	2.34	
33	-0.15	479.80	27.59	493.98	-1.15	515.98	36.19	1.60	
34	-0.07	480.57	27.59	493.98	1.82	511.89	31.38	1.73	
35	0.02	481.32	27.59	493.98	3.71	509.63	28.54	1.72	
36	0.11	482.05	27.59	493.98	2.03	515.22	33.23	1.86	
37	0.20	482.80	26.35	493.98	4.49	508.92	26.47	1.81	
38	0.29	483.54	27.59	493.98	5.96	509.63	26.69	1.96	
39	0.37	484.27	26.35	493.98	4.85	511.90	27.99	1.91	
40	0.46	485.01	27.59	493.98	6.39	512.59	28.20	2.05	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

**RESULTS OF TRANSLATIONAL ANALYSIS**



Results in the table below represent critical two-part wedges identified between specified starting (X1) and ending (X2) search points. Wedges along all reinforcement layers and at elevation zero are reported. The critical two-part wedge, one for each predetermined elevation, is defined by Xa, Xb and Xc where Xa is the front end of the passive wedge (slope face), Xb is where the passive wedge ends and the active one starts, and Xc is the X-ordinate at which the active wedge starts.

Critical two-part wedge along each interface:										
Interface	Height Relative to Toe [ft]	( Xa, Ya ) [ft]	( Xb, Yb ) [ft]	( Xc, Yc ) [ft]	Fs	STATUS				
At toe elevation	0.00	0.00 478.33	10.83 478.33	32.37 493.98	1.67	OK				
Reinf. Layer #1	0.67	0.05 479.00	11.30 479.00	30.47 493.98	1.53	OK				
Reinf. Layer #2	1.33	0.11 479.66	12.29 479.66	30.62 493.98	1.55	Minimum on Edge				
Reinf. Layer #3	2.67	0.21 481.00	12.39 481.00	29.00 493.98	1.59	Minimum on Edge				
Reinf. Layer #4	4.00	0.32 482.33	12.49 482.33	27.95 493.98	1.64	Minimum on Edge				
Reinf. Layer #5	5.33	0.42 483.66	12.69 483.66	27.43 493.98	1.70	Minimum on Edge				
Reinf. Layer #6	6.67	0.53 485.00	12.79 485.00	26.62 493.98	1.76	Minimum on Edge				
Reinf. Layer #7	7.33	0.58 485.66	12.79 485.66	26.10 493.98	1.78	Minimum on Edge				

Note: In the 'Status' column, OK means the critical two part-wedge was identified within the specified search domain. 'Minimum on Edge' means the critical result corresponds to a minimum on the edge of the search domain; i.e., either on X1 or X2 or the internally preset limits on Xc.



### CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

#### Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.30

Critical Circle:  $X_c = -9.43$ [ft],  $Y_c = 513.75$ [ft],  $R = 40.87$ [ft]. (Number of slices used = 59 )

#### Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

Minimum Factor of Safety = 1.53

Critical Two-Part Wedge: ( $X_a = 0.05$ ,  $Y_a = 479.00$ ) [ft]

( $X_b = 11.30$ ,  $Y_b = 479.00$ ) [ft]

( $X_c = 30.47$ ,  $Y_c = 493.98$ ) [ft]

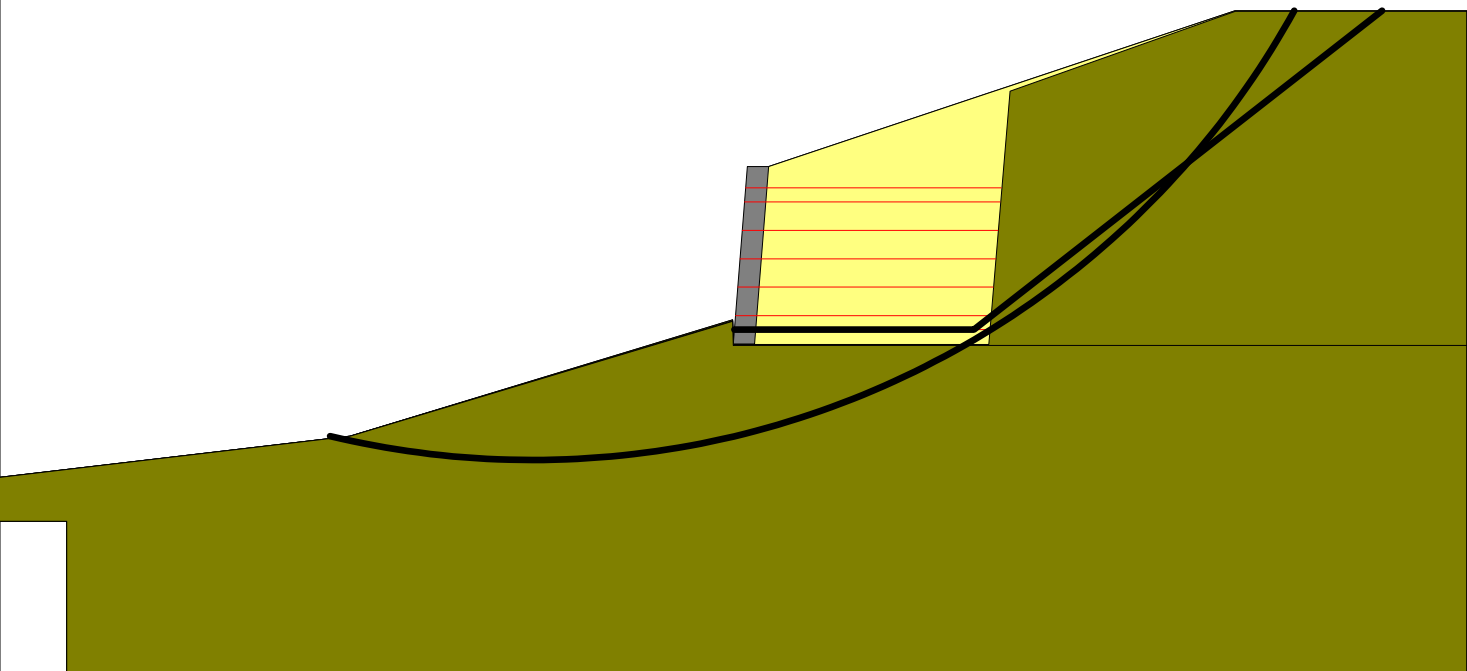
(Number of slices used = 30 )

Interslice resultant force inclination = 26.09 [degrees]

#### Three-Part Wedge Stability Analysis

**NOT CONDUCTED**

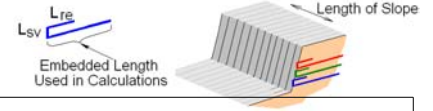
**REINFORCEMENT LAYOUT: DRAWING**



**SCALE:**

0 2 4 6 8 10 [ft]





**REINFORCEMENT LAYOUT: TABULATED DATA & QUANTITIES**

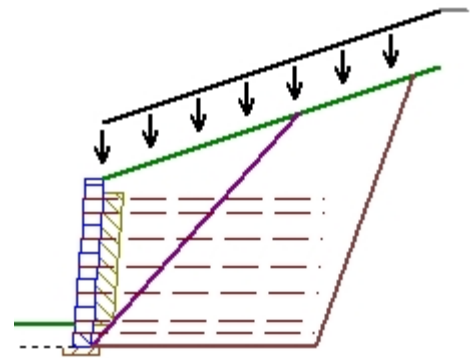
Layer #	Reinf. Type #	Geosynthetic Designated Name	Height Relative to Toe [ft]	Embedded Length [ft]	Covergae Ratio, Rc	( X, Y ) front [ft]	( X, Y ) rear [ft]	Lsv * [ft]	Lre [ft]
1	1	UX1100MSE	0.67	12.00	1.00	0.05 1569.99	12.05 1569.99	0.00	0.00
2	1	UX1100MSE	1.33	12.00	1.00	0.11 1570.65	12.11 1570.65	0.00	0.00
3	1	UX1100MSE	2.67	12.00	1.00	0.21 1571.99	12.21 1571.99	0.00	0.00
4	1	UX1100MSE	4.00	12.00	1.00	0.32 1573.32	12.32 1573.32	0.00	0.00
5	1	UX1100MSE	5.33	12.00	1.00	0.42 1574.65	12.42 1574.65	0.00	0.00
6	1	UX1100MSE	6.67	12.00	1.00	0.53 1575.99	12.53 1575.99	0.00	0.00
7	1	UX1100MSE	7.33	12.00	1.00	0.58 1576.65	12.58 1576.65	0.00	0.00

\* Vertical distance between layers.

**QUANTITIES**

Reinf. Type #	Designated Name	Coverage Ratio	Area of reinforcemnt [ft <sup>2</sup> ] / length of slope [ft]
1	UX1100MSE	1.00	84.00

**Section** #26 at Station 44.25  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	8.33	Back Slope	18.40°	LL Surcharge	100	DL Surcharge	500
Design Height	8.33 ft	Crest Offset	18.00 ft	LL Offset	0.00 ft	DL Offset	18.00 ft
Embedment	1.14 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50	FScs	Connection Strength	1.50
FSbc	Bearing Capacity	2.00	FSpO	Pullout	1.50	FSsc	Facing Shear	1.50
FSct	Crest Toppling	1.50	FSto	Tensile Overstress	1.50			
FSot	Overturning	2.00						

**Seismic**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.10	FSSl	Internal Sliding	1.10	FScs	Connection Strength	1.10
FSbc	Bearing Capacity	1.50	FSpO	Pullout	1.10	FSsc	Facing Shear	1.10
FSct	Crest Toppling	1.10	FSto	Tensile Overstress	1.10			
FSot	Overturning	1.50						

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static		FS	
Bearing Capacity	11.44	Bearing Pressure	1468.37 lb/ft²
Overturning	9.61	Max Eccentricity	0.00 ft
Base Sliding	3.31		
Crest Toppling	2.36		
Internal Sliding	3.07		

External Seismic		FS	
Bearing Capacity	12.27	Bearing Pressure	1368.98 lb/ft²
Overturning	9.36	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		3.16
Crest Toppling		3.05
Internal Sliding		2.94

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	483.00	UXMSE	12.00	5.18	27.19	17.26
6	482.33	UXMSE	12.00	4.88	25.58	12.81
5	481.00	UXMSE	12.00	4.33	19.87	6.66
4	479.67	UXMSE	12.00	3.88	20.53	4.93
3	478.33	UXMSE	12.00	3.51	21.68	3.91
2	477.00	UXMSE	12.00	3.20	31.43	4.42
1	476.33	UXMSE	12.00	3.07	31.14	3.91

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	483.00	UXMSE	12.00	5.79	6.16	10.01
6	482.33	UXMSE	12.00	5.23	8.82	11.31
5	481.00	UXMSE	12.00	4.41	8.58	7.36
4	479.67	UXMSE	12.00	3.84	10.40	6.39
3	478.33	UXMSE	12.00	3.42	12.22	5.65
2	477.00	UXMSE	12.00	3.08	18.98	6.84
1	476.33	UXMSE	12.00	2.94	19.71	6.33

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	483.00	UXMSE	12.00	15.05
6	482.33	UXMSE	12.00	11.18
5	481.00	UXMSE	12.00	5.81
4	479.67	UXMSE	12.00	4.30
3	478.33	UXMSE	12.00	3.41
2	477.00	UXMSE	12.00	3.86
1	476.33	UXMSE	12.00	3.41

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	483.00	UXMSE	12.00	3.41
6	482.33	UXMSE	12.00	3.85
5	481.00	UXMSE	12.00	2.51
4	479.67	UXMSE	12.00	2.18
3	478.33	UXMSE	12.00	1.92
2	477.00	UXMSE	12.00	2.33
1	476.33	UXMSE	12.00	2.16

**Internal Compound Stability**

**10 Lowest Static**

Radius Point	Entry Point	Exit Point	Result	Status
1	10	3	2.80	Pass
1	10	5	3.03	Pass
1	10	2	3.04	Pass
1	10	1	3.05	Pass
1	10	4	3.29	Pass
1	10	7	3.40	Pass
1	10	6	3.65	Pass
1	10	9	3.70	Pass
1	10	11	3.92	Pass
1	10	8	4.29	Pass

**10 Lowest Seismic**

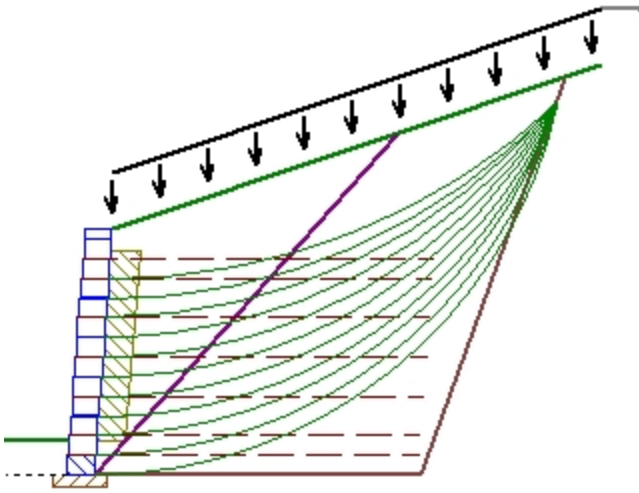
1	10	1	2.09	Pass
1	10	3	2.14	Pass

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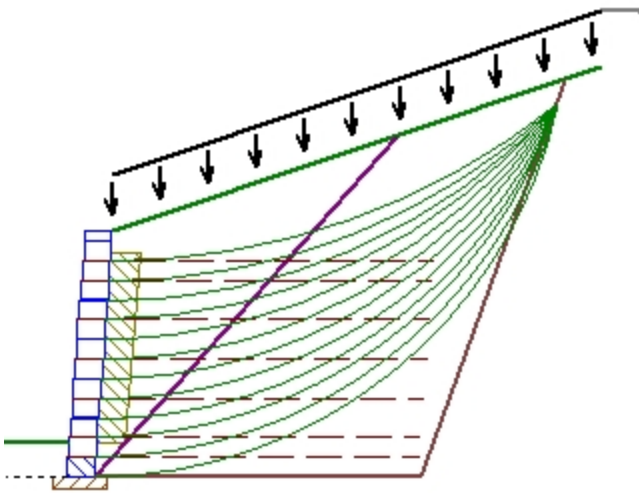
1	10	2	2.19	Pass
1	10	5	2.34	Pass
1	10	4	2.41	Pass
1	10	12	2.53	Pass
1	10	6	2.73	Pass
1	10	7	2.83	Pass
1	10	9	3.29	Pass
1	10	8	3.39	Pass

## Section 26 Details

### Section 26 Static ICS Cross-section



### Section 26 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

# Dino DeLaurentis Residence

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## PROJECT IDENTIFICATION

Title: Dino DeLaurentis Residence  
 Project Number: 20ERS150 -  
 Client: ERS  
 Designer: NT

**Description:**  
 WALL 1 - PANEL 26

### Company's information:

Name: ERS Materials, LLC  
 Street: 116 Edwards Ferry Road NE  
 Unit S  
 Leesburg, VA 20176

Telephone #:  
 Fax #:  
 E-Mail:

**Original file path and name:** V:\2020\20 ..... tle, NY\Calculations\Ressa\ReSSA\_WALL1\_PANEL26.MSE  
**Original date and time of creating this file:** Thu Nov 12 11:06:25 2020

**PROGRAM MODE:** Analysis of a General Slope using GEOSYNTHETIC as reinforcing material.

**INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)**

**SOIL DATA**

Soil Layer #:	Unit weight, $\gamma$ [lb/ft <sup>3</sup> ]	Internal angle of friction, $\phi$ [deg.]	Cohesion, c [lb/ft <sup>2</sup> ]
1..... Block Face.....	130.0	0.0	500.0
2..... Reinforced Fill.....	125.0	30.0	0.0
3..... Retained Soil .....	125.0	30.0	0.0
4..... Foundation Soil .....	125.0	30.0	0.0

**REINFORCEMENT**

Reinforcement Type #	Geosynthetic Designated Name	Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Additional Reduction Factor, RFa	Coverage Ratio, Rc
1	UX1100MSE	3971.52	1.08	1.00	2.56	1.00	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
1	UX1100MSE	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, Fs-po = 1.50  
 Design method for Global Stability: AASHTO/FHWA Bishop.

**WATER**

Water is not present

**SEISMICITY**

Not Applicable



### DRAWING OF SPECIFIED GEOMETRY - GENERAL - Quick Input

- Problem geometry is defined along sections selected by user at x,y coordinates.
- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

#### GEOMETRY

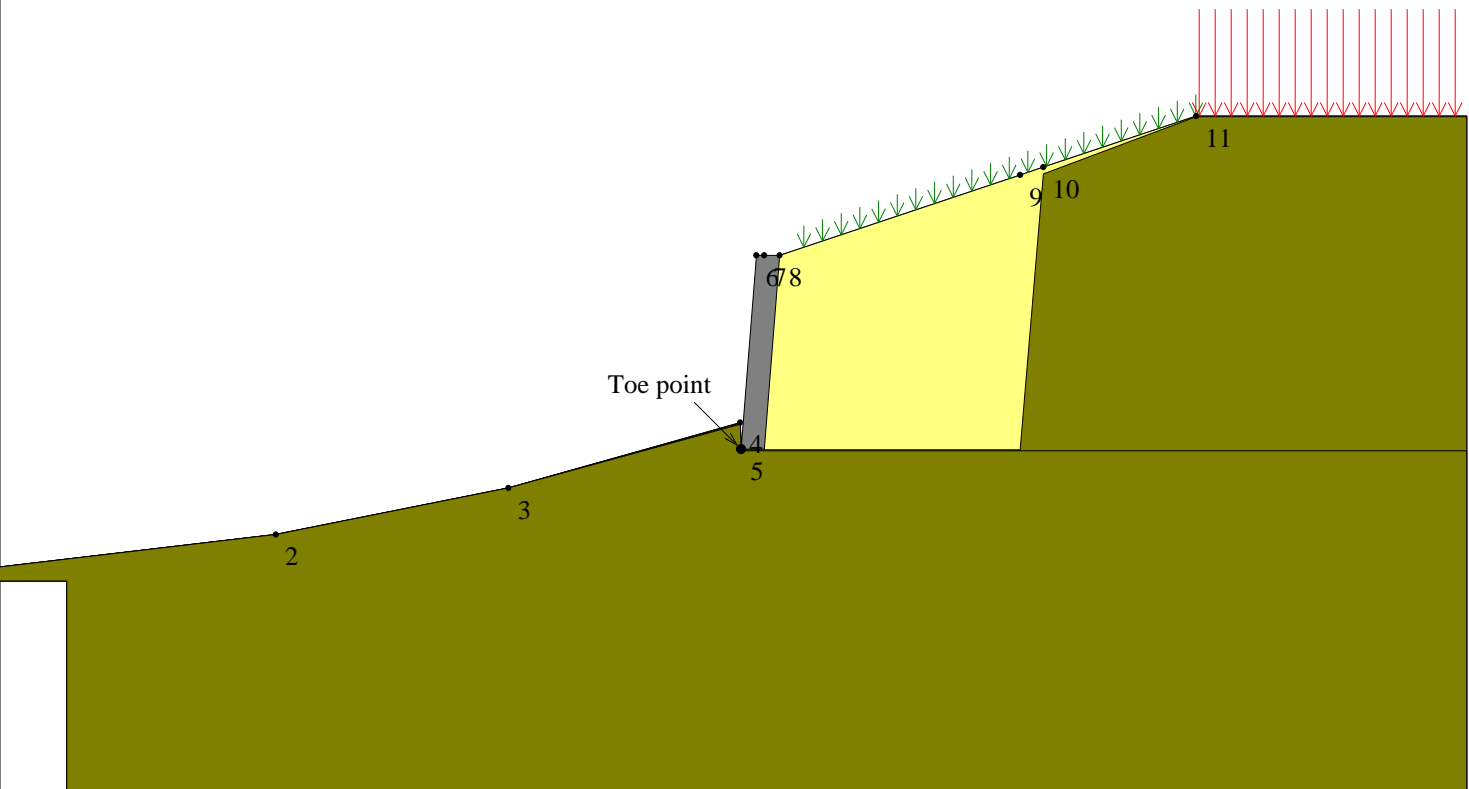
Soil profile contains 4 layers (see details in next page)

#### UNIFORM SURCHARGE

Load Q1 = 100.00 [lb/ft<sup>2</sup>] inclined from verical at 0.00 degrees, starts at X1s = 2.70 and ends at X1e = 19.70 [ft].  
Load Q2 = 500.00 [lb/ft<sup>2</sup>] inclined from verical at 0.00 degrees, starts at X2s = 19.70 and ends at X2e = 100.00 [ft].  
Surcharge load, Q3.....None

#### STRIP LOAD

.....None.....



SCALE:



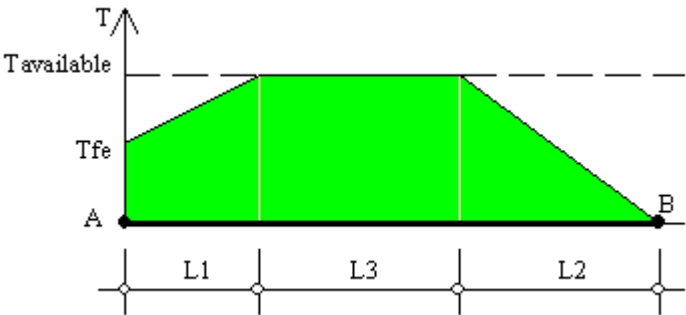


**TABULATED DETAILS OF SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

#	X	Y1	Y2	Y3	Y4
1	-37.00	470.00	470.00	470.00	470.00
2	-20.00	472.00	472.00	472.00	472.00
3	-10.00	474.00	474.00	474.00	474.00
4	-0.03	476.81	476.81	476.78	476.74
5	0.00	475.67	475.67	475.64	475.60
6	0.66	484.00	475.67	475.64	475.60
7	1.00	484.00	475.67	475.64	475.60
8	1.66	484.00	484.00	475.64	475.60
9	12.00	487.46	487.46	475.64	475.60
10	13.00	487.79	487.79	487.50	475.60
11	19.57	489.99	489.99	489.96	475.60

**DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER**



A = Front-end of reinforcement (at face of slope)  
 B = Rear-end of reinforcement  
 AB = L1 + L2 + L3 = Embedded length of reinforcement

Tavailable = Long-term strength of reinforcement  
 Tfe = Available front-end strength (e.g., connection to facing)

L1 = Front-end 'pullout' length  
 L2 = Rear-end pullout length  
 Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement,  $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	UX1100MSE	0.67	12.00	0.46	2.20	9.34	1249.72	1436.46
2	UX1100MSE	1.33	12.00	0.46	2.33	9.21	1249.72	1436.46
3	UX1100MSE	2.67	12.00	0.46	2.69	8.85	1249.72	1436.46
4	UX1100MSE	4.00	12.00	0.46	3.18	8.36	1249.72	1436.46
5	UX1100MSE	5.33	12.00	0.46	3.94	7.60	1249.72	1436.46
6	UX1100MSE	6.67	12.00	0.46	5.31	6.23	1249.72	1436.46

**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)									
Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	6.00	485.46	-13.61	473.39	-7.52	485.47	13.52	3.03	
2	7.18	485.86	-14.72	473.24	-7.41	485.86	14.59	2.74	
3	8.35	486.24	-13.47	473.32	-6.64	486.67	14.99	2.54	
4	9.52	486.63	-13.69	473.43	-6.44	487.68	15.99	2.37	
5	10.69	487.02	-13.63	473.40	-6.25	488.75	17.03	2.22	
6	11.86	487.41	-12.70	473.68	-4.48	487.82	16.35	2.07	
7	13.04	487.81	-12.66	473.67	-3.76	487.92	16.80	1.91	
8	14.21	488.20	-12.63	473.65	-3.19	488.27	17.40	1.76	
9	15.38	488.60	-12.60	473.64	-2.61	488.61	17.99	1.63	
10	16.55	488.98	-12.56	473.61	-2.38	489.58	18.94	1.55	
11	17.73	489.37	-13.65	473.43	-3.03	491.36	20.85	1.49	
12	18.90	489.77	-13.60	473.39	-3.26	493.30	22.44	1.45	
13	20.07	489.99	-13.56	473.36	-3.57	495.49	24.28	1.40	
14	21.24	489.99	-13.52	473.34	-3.97	498.01	26.46	1.36	
15	22.42	489.99	-14.56	473.13	-4.90	500.93	29.43	1.33	
16	23.59	489.99	-14.51	473.11	-4.85	502.75	31.17	1.31	
17	24.76	489.99	-15.95	473.03	-5.57	505.45	34.04	1.30	
18	25.93	489.99	-15.90	473.00	-5.97	508.54	36.90	1.30	OK
19	27.10	489.99	-15.86	472.98	-6.48	512.05	40.18	1.31	
20	28.28	489.99	-16.81	472.74	-7.41	515.72	43.99	1.32	
21	29.45	489.99	-17.72	472.51	-8.98	521.30	49.57	1.34	
22	30.62	489.99	-19.06	472.35	-10.12	525.95	54.34	1.36	
23	31.79	489.99	-19.85	472.10	-11.36	531.07	59.59	1.38	
24	32.97	489.99	-21.03	471.96	-12.71	536.92	65.48	1.41	
25	34.14	489.99	-21.98	471.82	-14.19	543.51	72.11	1.44	
26	35.31	489.99	-21.03	471.95	-14.10	547.29	75.66	1.47	
27	36.48	489.99	-21.03	471.94	-14.99	553.37	81.65	1.50	
28	37.66	489.99	-21.95	471.81	-15.69	558.10	86.51	1.54	
29	38.83	489.99	-24.36	471.59	-18.65	569.66	98.24	1.58	
30	40.00	489.99	-25.18	471.46	-17.94	569.89	98.70	1.61	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

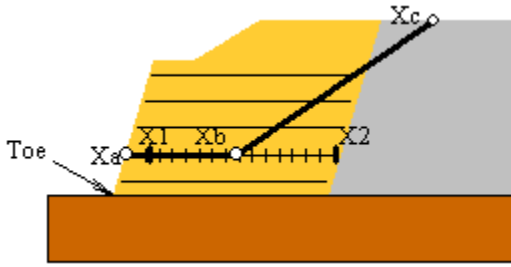
**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

<b>Critical circles for each exit point (considering all specified entry points).</b>									
Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	-30.52	470.96	28.28	489.99	-16.08	526.67	57.55	1.40	
2	-29.05	470.97	28.28	489.99	-15.35	525.56	56.29	1.39	
3	-28.19	471.13	28.28	489.99	-14.62	524.46	55.03	1.38	
4	-27.36	471.32	27.10	489.99	-13.73	520.32	50.87	1.37	
5	-25.87	471.31	27.10	489.99	-13.01	519.29	49.67	1.35	
6	-24.95	471.46	27.10	489.99	-12.28	518.26	48.48	1.35	
7	-24.00	471.61	27.10	489.99	-12.06	518.63	48.51	1.34	
8	-23.03	471.75	27.10	489.99	-11.32	517.56	47.29	1.33	
9	-22.05	471.88	27.10	489.99	-10.58	516.50	46.08	1.32	
10	-21.03	472.01	25.93	489.99	-9.73	512.82	42.34	1.32	
11	-19.82	472.11	25.93	489.99	-8.99	511.88	41.21	1.31	
12	-18.87	472.34	25.93	489.99	-8.23	511.04	40.13	1.31	
13	-17.90	472.57	25.93	489.99	-7.48	510.20	39.05	1.30	
14	-16.92	472.79	25.93	489.99	-6.72	509.37	37.97	1.30	
15	-15.90	473.00	25.93	489.99	-5.97	508.54	36.90	1.30	OK
16	-14.87	473.21	25.93	489.99	-5.21	507.71	35.83	1.30	
17	-13.85	473.43	24.76	489.99	-4.43	504.76	32.71	1.31	
18	-12.76	473.62	24.76	489.99	-3.68	503.98	31.69	1.31	
19	-11.65	473.80	24.76	489.99	-2.92	503.22	30.68	1.31	
20	-10.52	473.98	24.76	489.99	-2.17	502.45	29.67	1.33	
21	-9.38	474.21	25.93	489.99	-1.75	504.53	31.27	1.34	
22	-8.55	474.57	24.76	489.99	-0.63	501.15	27.73	1.36	
23	-7.32	474.80	25.93	489.99	0.16	502.41	28.61	1.39	
24	-6.26	475.08	25.93	489.99	0.94	501.75	27.62	1.42	
25	-5.53	475.46	25.93	489.99	2.02	500.45	26.10	1.45	
26	-4.40	475.73	25.93	489.99	2.79	499.82	25.14	1.50	
27	-3.22	475.98	27.10	489.99	3.61	501.01	25.95	1.56	
28	-2.12	476.25	24.76	489.99	4.74	496.00	20.91	1.66	
29	-1.21	476.69	29.45	489.99	11.19	490.10	18.26	2.86	
30	-0.03	475.67	25.93	489.99	-2.45	510.75	35.17	1.57	
31	-4.31	475.74	25.93	489.99	2.84	499.78	25.08	1.51	
32	-1.74	476.46	23.59	489.99	6.31	491.86	17.38	1.93	
33	-0.16	477.07	25.93	489.99	-1.10	511.77	34.72	1.53	
34	-0.08	477.79	25.93	489.99	1.25	508.78	31.02	1.64	
35	0.00	478.50	25.93	489.99	2.75	507.32	28.95	1.62	
36	0.09	479.23	25.93	489.99	5.34	503.02	24.36	1.74	
37	0.17	479.91	24.76	489.99	3.61	506.56	26.87	1.68	
38	0.26	480.62	24.76	489.99	5.63	503.30	23.30	1.81	
39	0.34	481.31	24.76	489.99	4.31	508.82	27.80	1.76	
40	0.42	482.02	23.59	489.99	5.91	503.71	22.37	1.87	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

**RESULTS OF TRANSLATIONAL ANALYSIS**



Results in the table below represent critical two-part wedges identified between specified starting (X1) and ending (X2) search points. Wedges along all reinforcement layers and at elevation zero are reported. The critical two-part wedge, one for each predetermined elevation, is defined by Xa, Xb and Xc where Xa is the front end of the passive wedge (slope face), Xb is where the passive wedge ends and the active one starts, and Xc is the X-ordinate at which the active wedge starts.

Critical two-part wedge along each interface:										
Interface	Height Relative to Toe [ft]	( Xa, Ya ) [ft]	( Xb, Yb ) [ft]	( Xc, Yc ) [ft]	Fs	STATUS				
At toe elevation	0.00	0.00 475.67	10.83 475.67	29.84 489.99	1.63	OK				
Reinf. Layer #1	0.67	0.05 476.34	11.30 476.34	28.16 489.99	1.49	OK				
Reinf. Layer #2	1.33	0.11 477.00	12.29 477.00	28.33 489.99	1.51	Minimum on Edge				
Reinf. Layer #3	2.67	0.21 478.34	12.39 478.34	26.78 489.99	1.54	Minimum on Edge				
Reinf. Layer #4	4.00	0.32 479.67	12.49 479.67	25.70 489.99	1.58	Minimum on Edge				
Reinf. Layer #5	5.33	0.42 481.00	12.69 481.00	25.06 489.99	1.63	Minimum on Edge				
Reinf. Layer #6	6.67	0.53 482.34	12.79 482.34	23.72 489.99	1.68	Minimum on Edge				

Note: In the 'Status' column, OK means the critical two part-wedge was identified within the specified search domain. 'Minimum on Edge' means the critical result corresponds to a minimum on the edge of the search domain; i.e., either on X1 or X2 or the internally preset limits on Xc.

### CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

#### Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.30

Critical Circle:  $X_c = -5.97$ [ft],  $Y_c = 508.54$ [ft],  $R = 36.90$ [ft]. (Number of slices used = 59 )

#### Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

Minimum Factor of Safety = 1.49

Critical Two-Part Wedge: ( $X_a = 0.05$ ,  $Y_a = 476.34$ ) [ft]

( $X_b = 11.30$ ,  $Y_b = 476.34$ ) [ft]

( $X_c = 28.16$ ,  $Y_c = 489.99$ ) [ft]

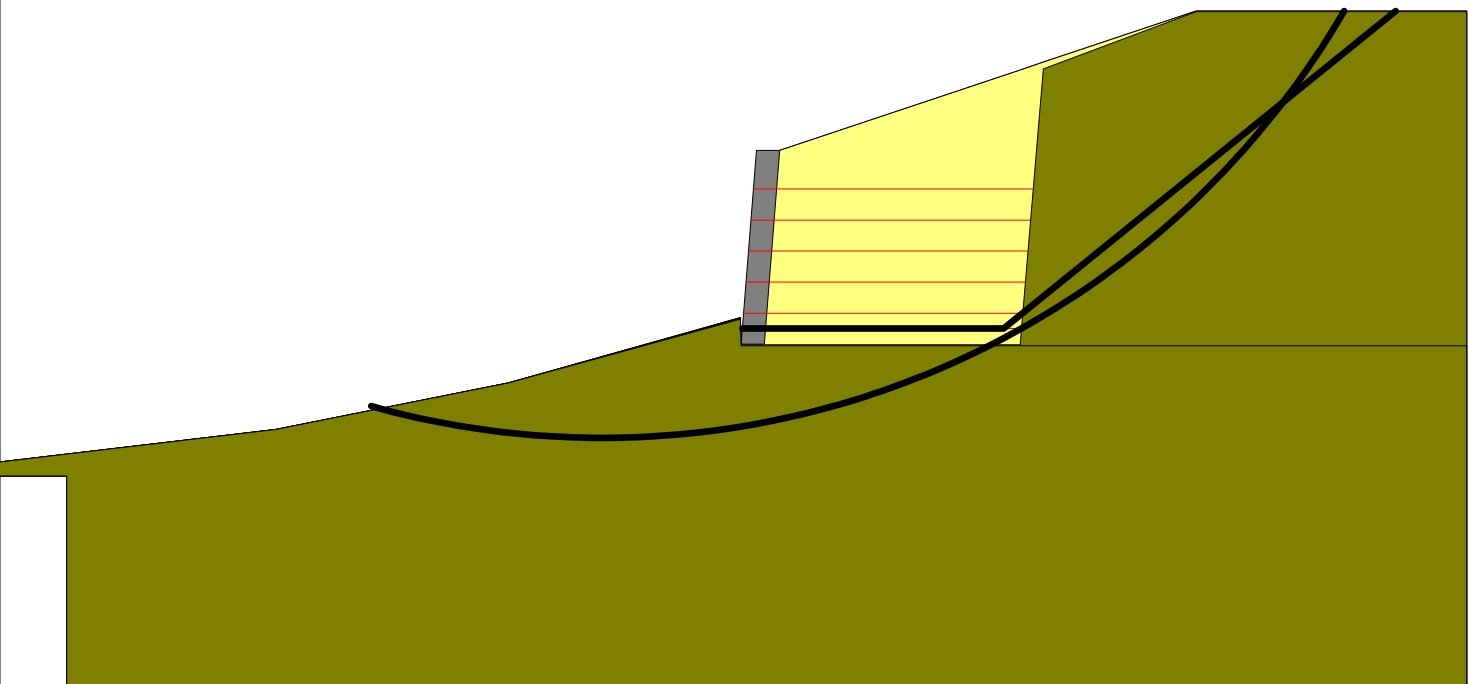
(Number of slices used = 30 )

Interslice resultant force inclination = 26.52 [degrees]

#### Three-Part Wedge Stability Analysis

**NOT CONDUCTED**

**REINFORCEMENT LAYOUT: DRAWING**



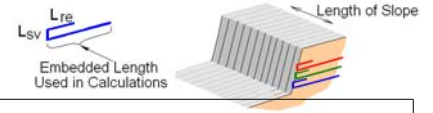
**SCALE:**

0 2 4 6 8 10 [ft]





**REINFORCEMENT LAYOUT: TABULATED DATA & QUANTITIES**



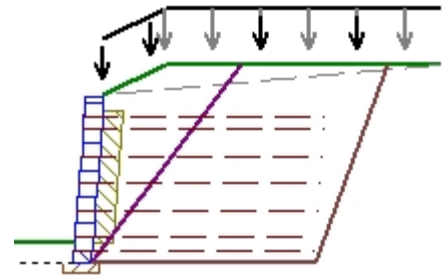
Layer #	Reinf. Type #	Geosynthetic Designated Name	Height Relative to Toe [ft]	Embedded Length [ft]	Covergae Ratio, Rc	( X, Y ) front [ft]	( X, Y ) rear [ft]	Lsv * [ft]	Lre [ft]
1	1	UX1100MSE	0.67	12.00	1.00	0.05 1561.27	12.05 1561.27	0.00	0.00
2	1	UX1100MSE	1.33	12.00	1.00	0.11 1561.93	12.11 1561.93	0.00	0.00
3	1	UX1100MSE	2.67	12.00	1.00	0.21 1563.27	12.21 1563.27	0.00	0.00
4	1	UX1100MSE	4.00	12.00	1.00	0.32 1564.60	12.32 1564.60	0.00	0.00
5	1	UX1100MSE	5.33	12.00	1.00	0.42 1565.93	12.42 1565.93	0.00	0.00
6	1	UX1100MSE	6.67	12.00	1.00	0.53 1567.27	12.53 1567.27	0.00	0.00

\* Vertical distance between layers.

**QUANTITIES**

Reinf. Type #	Designated Name	Coverage Ratio	Area of reinforcemnt [ft <sup>2</sup> ] / length of slope [ft]
1	UX1100MSE	1.00	72.00

**Section** #38 at Station 65.25  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	8.33	Back Slope	26.60°	LL Surcharge	100	DL Surcharge	800
Design Height	8.33 ft	Crest Offset	3.00 ft	LL Offset	0.00 ft	DL Offset	3.00 ft
Embedment	1.04 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSsl Base Sliding	1.50	FSsl Internal Sliding	1.50	FScs Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FSto Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSsl Base Sliding	1.10	FSsl Internal Sliding	1.10	FScs Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FSto Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static	FS		
Bearing Capacity	8.51	Bearing Pressure	1973.76 lb/ft²
Overturning	11.22	Max Eccentricity	0.00 ft
Base Sliding	3.65		
Crest Toppling	1.82		
Internal Sliding	3.32		
External Seismic	FS		
Bearing Capacity	8.96	Bearing Pressure	1875.33 lb/ft²
Overturning	10.84	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		3.52
Crest Toppling		2.48
Internal Sliding		3.20

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	479.00	UXMSE	12.00	8.59	94.80	21.52
6	478.33	UXMSE	12.00	7.15	65.17	12.83
5	477.00	UXMSE	12.00	5.49	20.34	3.10
4	475.67	UXMSE	12.00	4.56	22.60	2.74
3	474.33	UXMSE	12.00	3.94	24.86	2.45
2	473.00	UXMSE	12.00	3.50	36.60	3.00
1	472.33	UXMSE	12.00	3.32	37.27	2.80

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	479.00	UXMSE	12.00	8.63	36.38	21.14
6	478.33	UXMSE	12.00	7.10	37.93	19.12
5	477.00	UXMSE	12.00	5.39	16.52	6.44
4	475.67	UXMSE	12.00	4.44	18.77	5.82
3	474.33	UXMSE	12.00	3.82	21.02	5.31
2	473.00	UXMSE	12.00	3.38	31.34	6.57
1	472.33	UXMSE	12.00	3.20	32.22	6.20

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	479.00	UXMSE	12.00	18.78
6	478.33	UXMSE	12.00	11.19
5	477.00	UXMSE	12.00	2.70
4	475.67	UXMSE	12.00	2.39
3	474.33	UXMSE	12.00	2.14
2	473.00	UXMSE	12.00	2.62
1	472.33	UXMSE	12.00	2.44

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	479.00	UXMSE	12.00	7.20
6	478.33	UXMSE	12.00	6.51
5	477.00	UXMSE	12.00	2.19
4	475.67	UXMSE	12.00	1.98
3	474.33	UXMSE	12.00	1.81
2	473.00	UXMSE	12.00	2.24
1	472.33	UXMSE	12.00	2.11

**Internal Compound Stability**

**10 Lowest Static**

Radius Point	Entry Point	Exit Point	Result	Status
1	10	3	2.13	Pass
1	10	2	2.24	Pass
1	10	1	2.25	Pass
1	10	5	2.33	Pass
1	10	4	2.39	Pass
1	10	7	2.55	Pass
1	10	6	2.68	Pass
1	10	9	2.99	Pass
1	10	8	3.11	Pass
1	1	11	4.26	Pass

**10 Lowest Seismic**

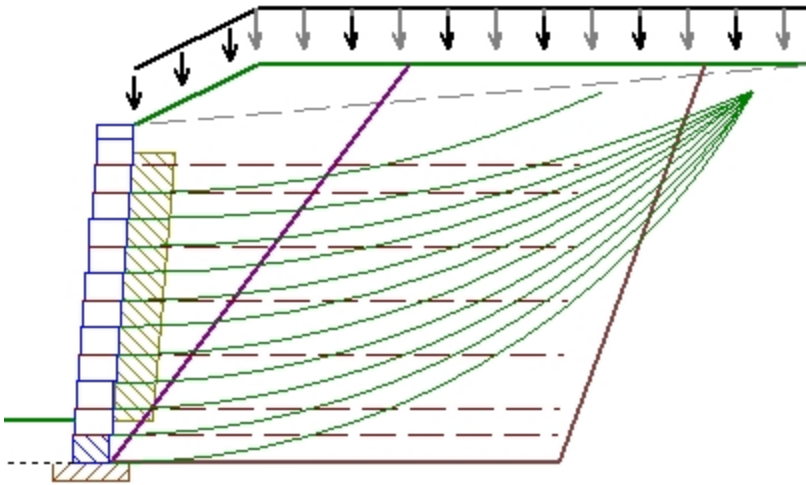
1	10	1	1.71	Pass
4	10	3	1.74	Pass

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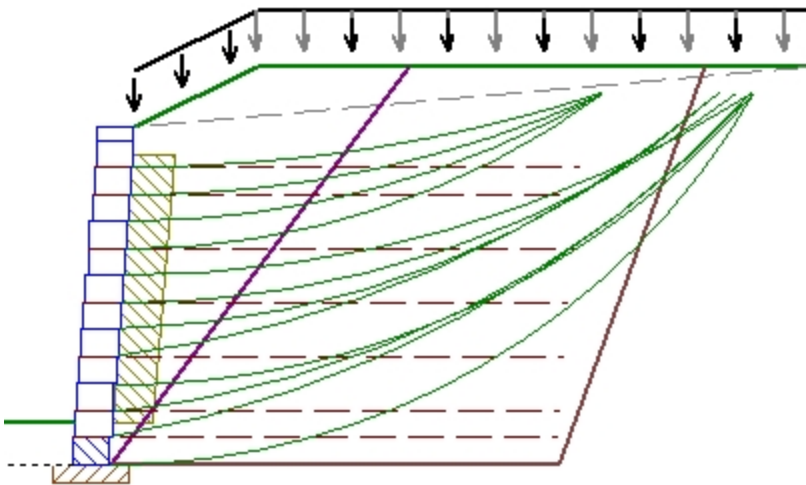
6	10	2	1.75	Pass
1	10	4	1.90	Pass
6	8	5	1.90	Pass
2	8	6	2.11	Pass
1	9	7	2.12	Pass
1	10	8	2.51	Pass
1	1	9	2.61	Pass
1	1	10	3.09	Pass

## Section 38 Details

### Section 38 Static ICS Cross-section

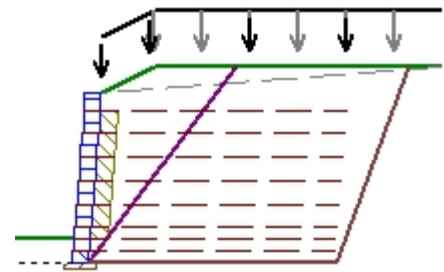


### Section 38 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**Section** #53 at Station 90.00  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	9.67	Back Slope	26.60°	LL Surcharge	100	DL Surcharge	1,100
Design Height	9.67 ft	Crest Offset	3.00 ft	LL Offset	0.00 ft	DL Offset	3.00 ft
Embedment	1.35 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50	FSCs	Connection Strength	1.50
FSbc	Bearing Capacity	2.00	FSpO	Pullout	1.50	FSsc	Facing Shear	1.50
FSct	Crest Toppling	1.50	FSto	Tensile Overstress	1.50			
FSot	Overturning	2.00						

**Seismic**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.10	FSSl	Internal Sliding	1.10	FSCs	Connection Strength	1.10
FSbc	Bearing Capacity	1.50	FSpO	Pullout	1.10	FSsc	Facing Shear	1.10
FSct	Crest Toppling	1.10	FSto	Tensile Overstress	1.10			
FSot	Overturning	1.50						

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static		FS	
Bearing Capacity	8.60	Bearing Pressure	2443.33 lb/ft²
Overturning	13.20	Max Eccentricity	0.00 ft
Base Sliding	4.01		
Crest Toppling	1.82		
Internal Sliding	3.54		

External Seismic		FS	
Bearing Capacity	8.96	Bearing Pressure	2344.56 lb/ft²
Overturning	12.63	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		3.84
Crest Toppling		2.48
Internal Sliding		3.39

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
8	474.33	UXMSE	15.00	10.56	103.88	13.77
7	473.00	UXMSE	15.00	7.47	24.92	2.67
6	471.67	UXMSE	15.00	5.93	27.17	2.40
5	470.33	UXMSE	15.00	5.00	29.44	2.18
4	469.00	UXMSE	15.00	4.36	31.70	2.00
3	467.67	UXMSE	15.00	3.89	45.74	2.48
2	467.00	UXMSE	15.00	3.70	70.21	3.55
1	466.33	UXMSE	15.00	3.54	47.89	2.26

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
8	474.33	UXMSE	15.00	10.45	42.05	14.27
7	473.00	UXMSE	15.00	7.29	20.29	5.56
6	471.67	UXMSE	15.00	5.75	22.55	5.10
5	470.33	UXMSE	15.00	4.82	24.81	4.71
4	469.00	UXMSE	15.00	4.19	27.08	4.37
3	467.67	UXMSE	15.00	3.74	39.46	5.49
2	467.00	UXMSE	15.00	3.55	60.96	7.90
1	466.33	UXMSE	15.00	3.39	41.83	5.06

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
8	474.33	UXMSE	15.00	12.02
7	473.00	UXMSE	15.00	2.33
6	471.67	UXMSE	15.00	2.09
5	470.33	UXMSE	15.00	1.90
4	469.00	UXMSE	15.00	1.74
3	467.67	UXMSE	15.00	2.17
2	467.00	UXMSE	15.00	3.10
1	466.33	UXMSE	15.00	1.97

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
8	474.33	UXMSE	15.00	4.86
7	473.00	UXMSE	15.00	1.90
6	471.67	UXMSE	15.00	1.74
5	470.33	UXMSE	15.00	1.60
4	469.00	UXMSE	15.00	1.49
3	467.67	UXMSE	15.00	1.87
2	467.00	UXMSE	15.00	2.69
1	466.33	UXMSE	15.00	1.72

**Internal Compound Stability**

**10 Lowest Static**

Radius Point	Entry Point	Exit Point	Result	Status
1	10	4	2.31	Pass
1	10	3	2.37	Pass
1	10	1	2.43	Pass
1	10	2	2.43	Pass
1	10	6	2.48	Pass
1	10	5	2.53	Pass
1	9	8	2.75	Pass
1	10	7	2.83	Pass
1	7	10	3.21	Pass

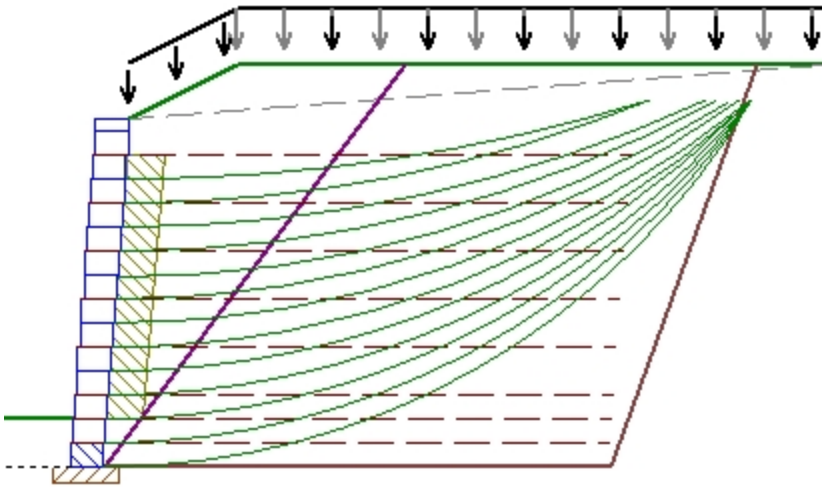
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<b>Radius Point</b>	<b>Entry Point</b>	<b>Exit Point</b>	<b>Result</b>	<b>Status</b>
1	8	9	3.26	Pass
<b>10 Lowest Seismic</b>				
1	9	1	1.76	Pass
9	10	2	1.76	Pass
6	10	3	1.78	Pass
4	10	4	1.80	Pass
8	6	5	1.94	Pass
5	6	6	1.96	Pass
5	7	7	2.15	Pass
1	7	8	2.19	Pass
5	1	9	2.47	Pass
1	1	10	2.54	Pass

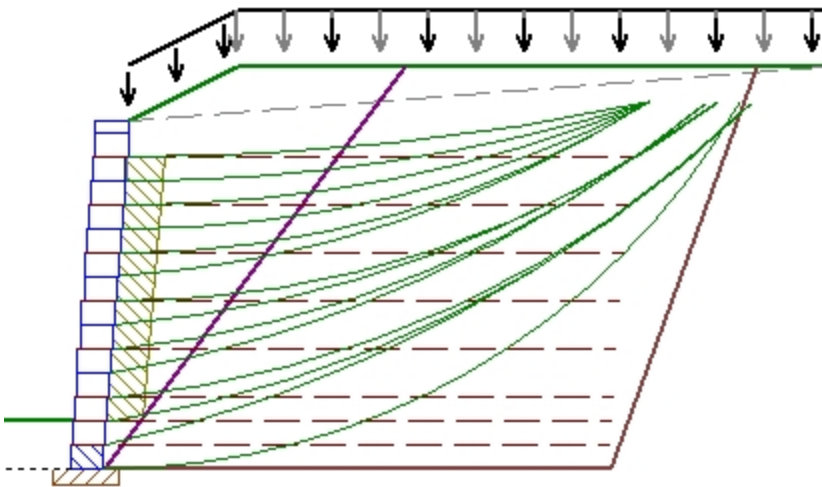


## Section 53 Details

### Section 53 Static ICS Cross-section

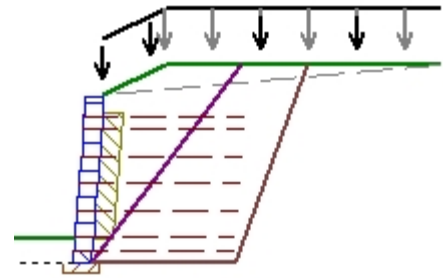


### Section 53 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**Section** #60 at Station 166.50  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	8.33	Back Slope	26.60°	LL Surcharge	100	DL Surcharge	1,200
Design Height	8.33 ft	Crest Offset	3.00 ft	LL Offset	0.00 ft	DL Offset	3.00 ft
Embedment	1.26 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSsl Base Sliding	1.50	FSsl Internal Sliding	1.50	FScs Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FSto Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSsl Base Sliding	1.10	FSsl Internal Sliding	1.10	FScs Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FSto Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static	FS			
Bearing Capacity	5.18	Bearing Pressure	2161.86	lb/ft²
Overturning	4.70	Max Eccentricity	0.00	ft
Base Sliding	2.12			
Crest Toppling	1.82			
Internal Sliding	1.97			
External Seismic	FS			
Bearing Capacity	5.43	Bearing Pressure	2064.23	lb/ft²
Overturning	4.58	Max Eccentricity	0.00	ft

External Seismic		FS
Base Sliding		2.06
Crest Toppling		2.48
Internal Sliding		1.92

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	475.00	UXMSE	8.00	4.82	45.12	21.52
6	474.33	UXMSE	8.00	4.03	31.20	11.68
5	473.00	UXMSE	8.00	3.13	9.34	2.36
4	471.67	UXMSE	8.00	2.63	11.68	2.14
3	470.33	UXMSE	8.00	2.30	14.01	1.96
2	469.00	UXMSE	8.00	2.06	21.99	2.44
1	468.33	UXMSE	8.00	1.97	23.11	2.31

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	475.00	UXMSE	8.00	4.84	17.31	21.14
6	474.33	UXMSE	8.00	4.01	18.87	18.08
5	473.00	UXMSE	8.00	3.09	7.95	5.13
4	471.67	UXMSE	8.00	2.58	10.07	4.73
3	470.33	UXMSE	8.00	2.25	12.22	4.39
2	469.00	UXMSE	8.00	2.01	19.35	5.50
1	468.33	UXMSE	8.00	1.92	20.47	5.23

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	475.00	UXMSE	8.00	18.78
6	474.33	UXMSE	8.00	10.19
5	473.00	UXMSE	8.00	2.06
4	471.67	UXMSE	8.00	1.87
3	470.33	UXMSE	8.00	1.71
2	469.00	UXMSE	8.00	2.13
1	468.33	UXMSE	8.00	2.01

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	475.00	UXMSE	8.00	7.20
6	474.33	UXMSE	8.00	6.16
5	473.00	UXMSE	8.00	1.75
4	471.67	UXMSE	8.00	1.61
3	470.33	UXMSE	8.00	1.49
2	469.00	UXMSE	8.00	1.87
1	468.33	UXMSE	8.00	1.78

**Internal Compound Stability**

**10 Lowest Static**

Radius Point	Entry Point	Exit Point	Result	Status
1	5	3	1.40	Pass
1	4	5	1.48	Pass
1	9	1	1.49	Pass
1	7	2	1.54	Pass
1	4	7	1.60	Pass
1	6	4	1.63	Pass
1	5	6	1.78	Pass
1	3	9	1.83	Pass
1	4	8	2.01	Pass
1	5	10	2.55	Pass

**10 Lowest Seismic**

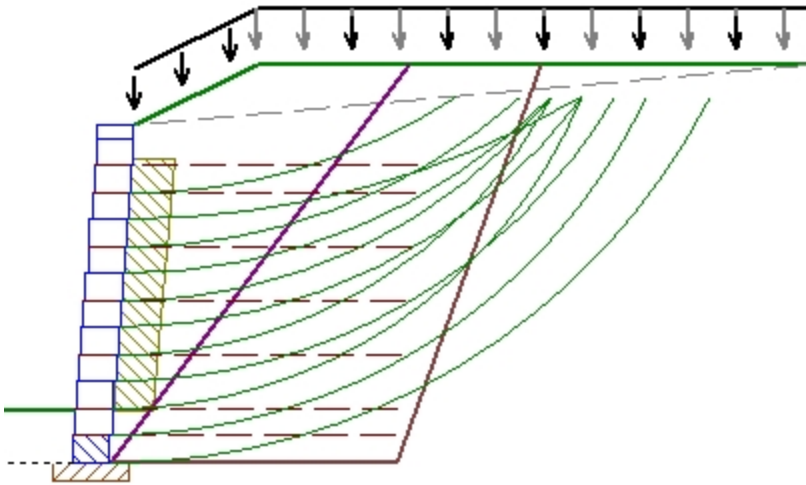
3	5	3	1.29	Pass
7	6	2	1.33	Pass

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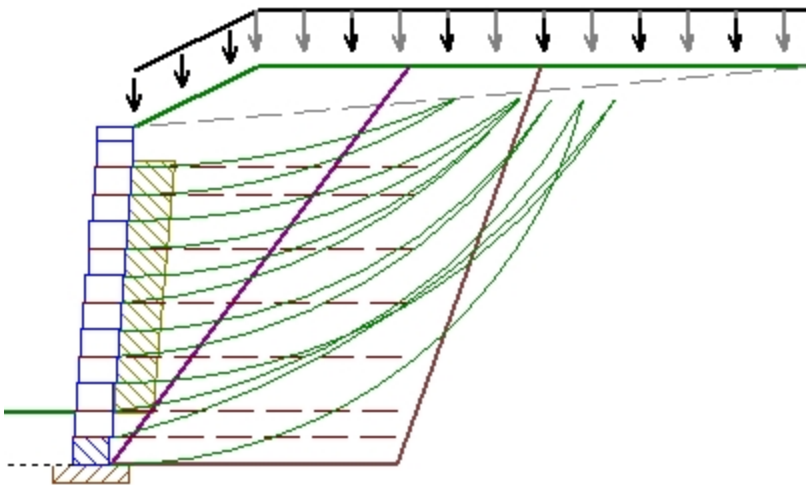
1	5	1	1.34	Pass
2	4	5	1.38	Pass
1	6	4	1.42	Pass
3	3	7	1.51	Pass
1	4	6	1.53	Pass
1	3	8	1.71	Pass
1	3	9	1.77	Pass
1	3	10	2.30	Pass

## Section 60 Details

### Section 60 Static ICS Cross-section

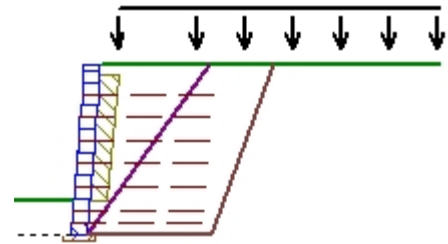


### Section 60 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**Section** #73 at Station 183.00  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	9.67	Back Slope	0.00°	LL Surcharge	100	DL Surcharge	0
Design Height	9.67 ft	Crest Offset	0.00 ft	LL Offset	1.00 ft	DL Offset	0.00 ft
Embedment	1.90 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSsl Base Sliding	1.50	FSsl Internal Sliding	1.50	FScs Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FSto Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSsl Base Sliding	1.10	FSsl Internal Sliding	1.10	FScs Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FSto Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**External Static**

	FS		
Bearing Capacity	8.11	Bearing Pressure	1381.07 lb/ft²
Overturning	8.50	Max Eccentricity	0.00 ft
Base Sliding	3.68		
Crest Toppling	4.20		
Internal Sliding	3.73		

**External Seismic**

	FS		
Bearing Capacity	8.60	Bearing Pressure	1302.01 lb/ft²
Overturning	7.26	Max Eccentricity	0.01 ft

External Seismic		FS
Base Sliding		3.27
Crest Toppling		1.82
Internal Sliding		3.30

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	481.00	UXMSE	8.00	18.69	3.17	12.03
6	479.67	UXMSE	8.00	10.59	6.00	8.83
5	478.33	UXMSE	8.00	7.44	8.36	6.54
4	477.00	UXMSE	8.00	5.76	10.70	5.19
3	475.67	UXMSE	8.00	4.72	13.02	4.30
2	474.33	UXMSE	8.00	4.00	20.83	4.99
1	473.67	UXMSE	8.00	3.73	21.63	4.49

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
7	481.00	UXMSE	8.00	14.79	1.12	10.94
6	479.67	UXMSE	8.00	8.77	3.61	13.59
5	478.33	UXMSE	8.00	6.32	5.61	11.23
4	477.00	UXMSE	8.00	4.98	7.70	9.56
3	475.67	UXMSE	8.00	4.13	9.84	8.33
2	474.33	UXMSE	8.00	3.54	16.26	9.97
1	473.67	UXMSE	8.00	3.30	17.26	9.17

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	481.00	UXMSE	8.00	10.49
6	479.67	UXMSE	8.00	7.71
5	478.33	UXMSE	8.00	5.70
4	477.00	UXMSE	8.00	4.53
3	475.67	UXMSE	8.00	3.75
2	474.33	UXMSE	8.00	4.35
1	473.67	UXMSE	8.00	3.92

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
7	481.00	UXMSE	8.00	3.73
6	479.67	UXMSE	8.00	4.63
5	478.33	UXMSE	8.00	3.82
4	477.00	UXMSE	8.00	3.26
3	475.67	UXMSE	8.00	2.84
2	474.33	UXMSE	8.00	3.40
1	473.67	UXMSE	8.00	3.13

**Internal Compound Stability**

**10 Lowest Static**

Radius Point	Entry Point	Exit Point	Result	Status
1	7	3	2.08	Pass
1	9	1	2.15	Pass
1	6	5	2.30	Pass
1	10	2	2.43	Pass
2	6	7	2.63	Pass
1	10	4	2.73	Pass
1	10	6	3.09	Pass
1	4	9	3.14	Pass
1	9	8	3.60	Pass
10	3	11	4.28	Pass

**10 Lowest Seismic**

1	8	1	1.88	Pass
1	7	3	1.93	Pass

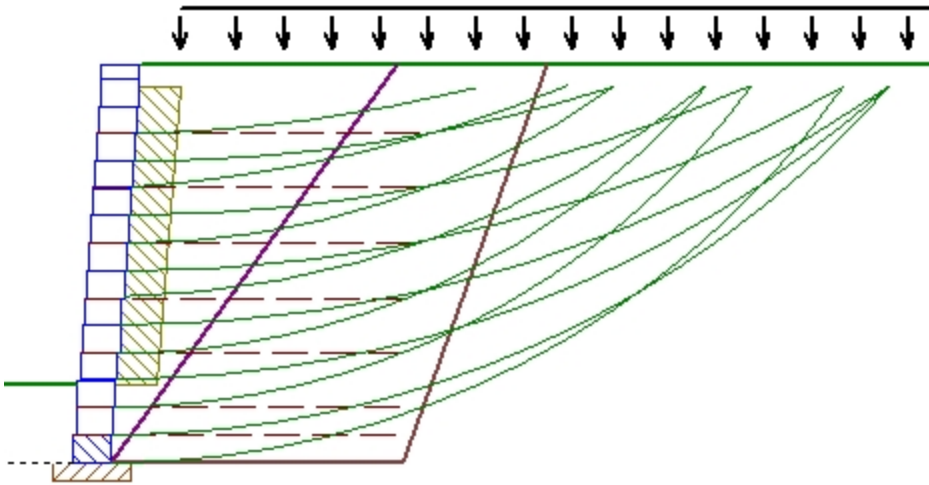
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5	8	2	1.99	Pass
3	8	5	2.11	Pass
6	7	4	2.25	Pass
2	6	7	2.41	Pass
9	6	6	2.65	Pass
5	5	9	2.95	Pass
1	10	8	3.08	Pass
1	7	10	3.90	Pass

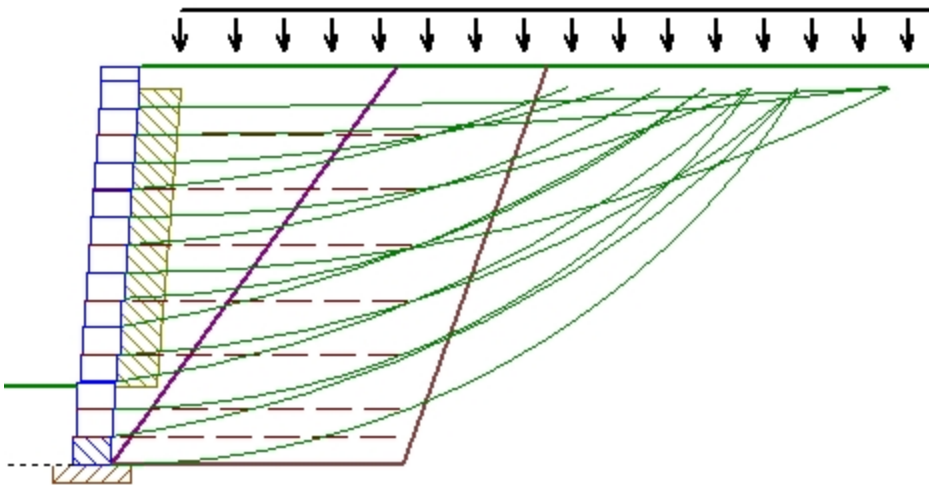


## Section 73 Details

### Section 73 Static ICS Cross-section

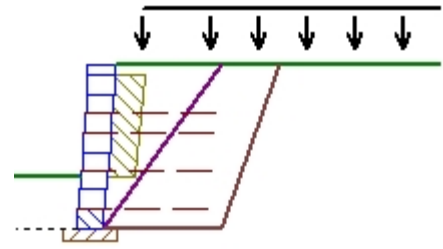


### Section 73 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**Section** #80 at Station 188.25  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	5.67	Back Slope	0.00°	LL Surcharge	100	DL Surcharge	0
Design Height	5.67 ft	Crest Offset	0.00 ft	LL Offset	1.00 ft	DL Offset	0.00 ft
Embedment	1.76 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.50	FSSl Internal Sliding	1.50	FSCs Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FStO Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.10	FSSl Internal Sliding	1.10	FSCs Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FStO Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.00	LTDS	1,436.46 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static	FS		
Bearing Capacity	8.45	Bearing Pressure	828.49 lb/ft²
Overturning	8.34	Max Eccentricity	0.00 ft
Base Sliding	3.55		
Crest Toppling	4.20		
Internal Sliding	4.73		

External Seismic	FS		
Bearing Capacity	9.24	Bearing Pressure	757.32 lb/ft²
Overturning	8.13	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		3.48
Crest Toppling		1.82
Internal Sliding		4.65

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
4	481.67	UXMSE	5.00	15.12	3.34	16.38
3	481.00	UXMSE	5.00	10.53	4.96	13.56
2	479.67	UXMSE	5.00	6.52	6.21	7.52
1	478.33	UXMSE	5.00	4.73	8.51	5.79

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
4	481.67	UXMSE	5.00	15.68	1.42	17.77
3	481.00	UXMSE	5.00	10.72	3.47	24.26
2	479.67	UXMSE	5.00	6.49	4.71	14.59
1	478.33	UXMSE	5.00	4.65	6.83	11.90

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
4	481.67	UXMSE	5.00	14.29
3	481.00	UXMSE	5.00	11.83
2	479.67	UXMSE	5.00	6.56
1	478.33	UXMSE	5.00	5.05

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
4	481.67	UXMSE	5.00	6.06
3	481.00	UXMSE	5.00	8.26
2	479.67	UXMSE	5.00	4.97
1	478.33	UXMSE	5.00	4.05

**Internal Compound Stability**

**10 Lowest Static**

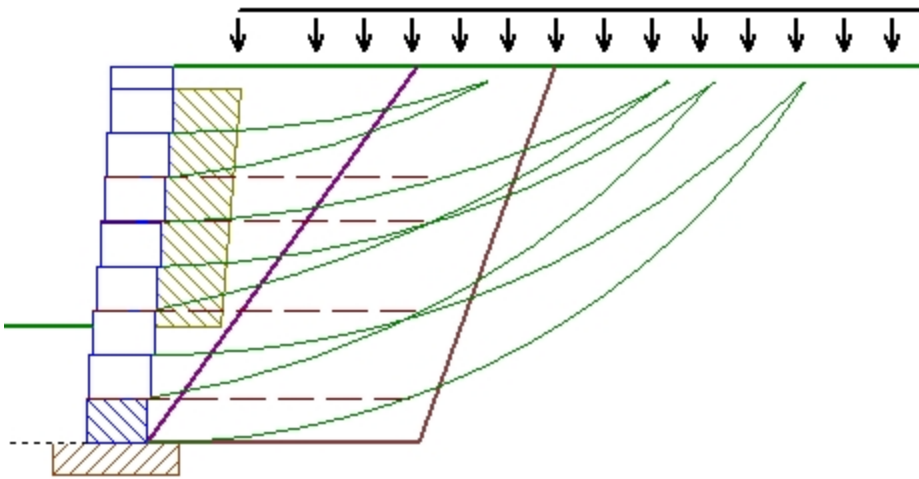
Radius Point	Entry Point	Exit Point	Result	Status
1	8	1	1.81	Pass
5	6	2	2.05	Pass
10	5	4	2.52	Pass
1	8	3	2.64	Pass
2	6	5	3.46	Pass
3	5	6	4.30	Pass
10	1	7	5.30	Pass
1	1	8	10.53	Pass

**10 Lowest Seismic**

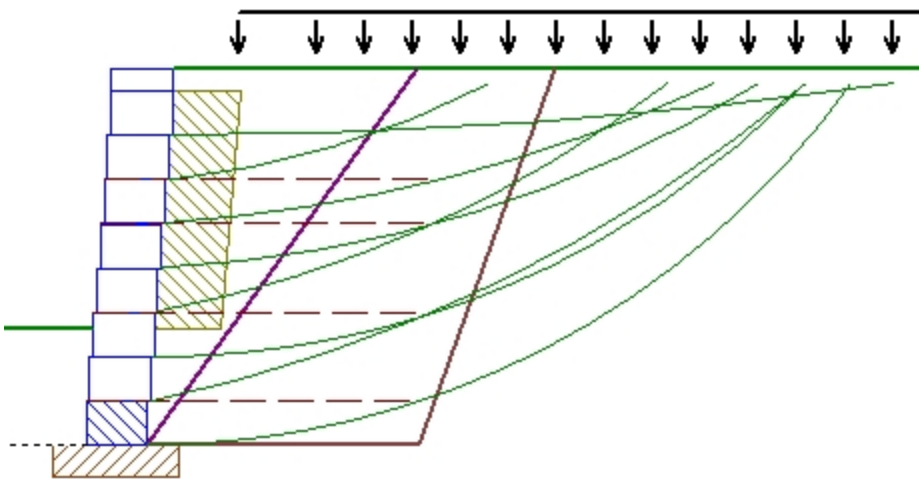
1	9	1	1.70	Pass
10	8	2	2.05	Pass
1	8	3	2.61	Pass
10	5	4	2.65	Pass
4	7	5	3.60	Pass
8	6	6	4.74	Pass
10	1	7	7.32	Pass
1	10	8	15.09	Pass

## Section 80 Details

### Section 80 Static ICS Cross-section



### Section 80 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

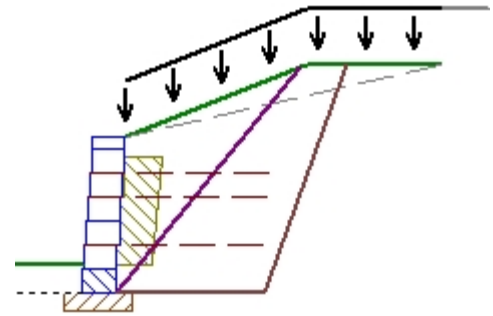
## Project Information

<b>Client</b>	ERS				
<b>Name</b>	Dino DeLaurentis Residence			<b>Number</b>	20ERS150
<b>Site</b>	North Castle, NY			<b>Designer</b>	NT
<b>Revision</b>	1	<b>Created</b>	11/12/2020	<b>Modified</b>	11/13/2020
<b>Standard</b>	National Concrete Masonry Association 3rd Edition				
<b>Seismic As</b>	0.15	Default Deflection of 2.00 inch			

## Selected Facing Unit

**Licenser/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)

**Section** #5 at Station 12.75  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	4.33	Back Slope	21.80°	LL Surcharge	100	DL Surcharge	500
Design Height	4.33 ft	Crest Offset	5.00 ft	LL Offset	0.00 ft	DL Offset	10.00 ft
Embedment	0.83 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50	FSCs	Connection Strength	1.50
FSbc	Bearing Capacity	2.00	FSpO	Pullout	1.50	FSsc	Facing Shear	1.50
FSct	Crest Toppling	1.50	FSto	Tensile Overstress	1.50			
FSot	Overturning	2.00						

**Seismic**

**Reinforced**

External		Value	Internal		Value	Facing		Value
FSSl	Base Sliding	1.10	FSSl	Internal Sliding	1.10	FSCs	Connection Strength	1.10
FSbc	Bearing Capacity	1.50	FSpO	Pullout	1.10	FSsc	Facing Shear	1.10
FSct	Crest Toppling	1.10	FSto	Tensile Overstress	1.10			
FSot	Overturning	1.50						

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.10	LTDS	1,305.87 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**External Static**

**FS**

Bearing Capacity	8.98	Bearing Pressure	779.64 lb/ft²
Overturning	6.53	Max Eccentricity	0.00 ft
Base Sliding	2.78		
Crest Toppling	2.17		
Internal Sliding	4.18		

**External Seismic**

**FS**

Bearing Capacity	10.22	Bearing Pressure	685.23 lb/ft²
Overturning	7.36	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		2.94
Crest Toppling		2.92
Internal Sliding		4.60

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
3	482.50	UXMSE	5.00	6.95	5.69	17.44
2	481.83	UXMSE	5.00	5.67	6.84	12.95
1	480.50	UXMSE	5.00	4.18	4.43	4.13

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding	Pullout	Tensile Overstress
				FS	FS	FS
3	482.50	UXMSE	5.00	8.98	2.86	22.46
2	481.83	UXMSE	5.00	6.77	4.41	21.39
1	480.50	UXMSE	5.00	4.60	3.28	7.82

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
3	482.50	UXMSE	5.00	16.74
2	481.83	UXMSE	5.00	12.43
1	480.50	UXMSE	5.00	3.96

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength
				FS
3	482.50	UXMSE	5.00	8.42
2	481.83	UXMSE	5.00	8.02
1	480.50	UXMSE	5.00	2.93

**Internal Compound Stability**

**10 Lowest Static**

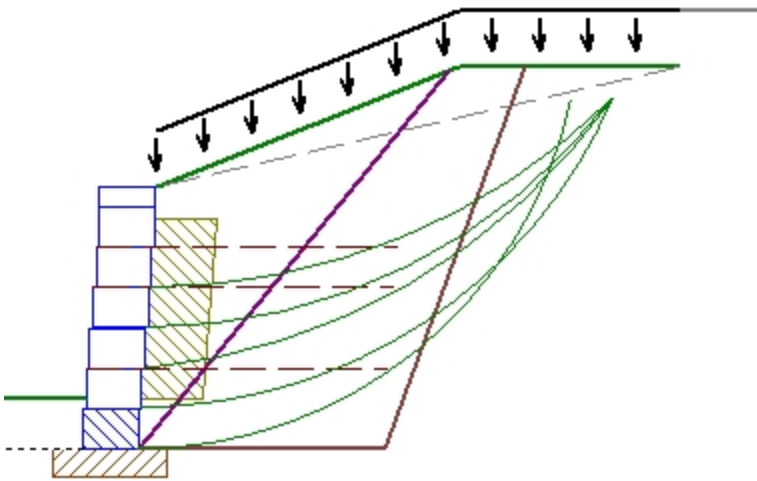
Radius Point	Entry Point	Exit Point	Result	Status
1	8	1	1.36	Pass
3	10	3	2.00	Pass
1	10	2	2.19	Pass
1	10	4	2.55	Pass
1	10	5	2.87	Pass

**10 Lowest Seismic**

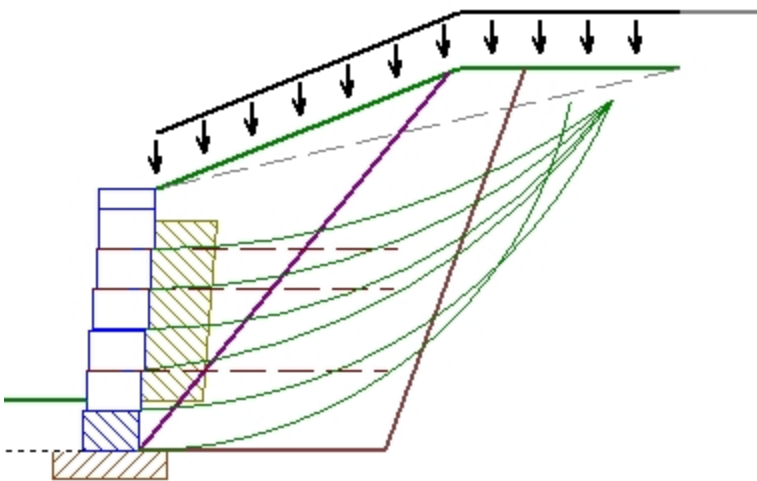
1	8	1	1.31	Pass
3	10	3	2.08	Pass
1	10	2	2.26	Pass
1	10	4	2.73	Pass
1	10	5	3.16	Pass
1	10	6	3.86	Pass

## Section 5 Details

### Section 5 Static ICS Cross-section



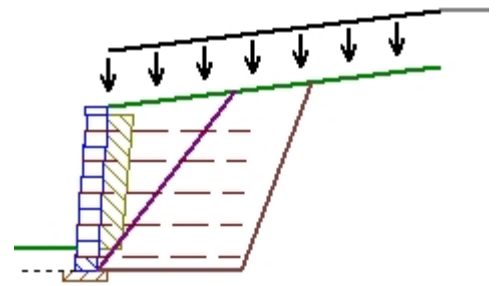
### Section 5 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity



**Section** #12 at Station 34.50  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	7.00	Back Slope	6.84°	LL Surcharge	100	DL Surcharge	500
Design Height	7.00 ft	Crest Offset	25.00 ft	LL Offset	0.00 ft	DL Offset	25.00 ft
Embedment	1.00 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.50	FSSl Internal Sliding	1.50	FSCs Connection Strength	1.50
FSbc Bearing Capacity	2.00	FSpO Pullout	1.50	FSsc Facing Shear	1.50
FSct Crest Toppling	1.50	FSto Tensile Overstress	1.50		
FSot Overturning	2.00				

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl Base Sliding	1.10	FSSl Internal Sliding	1.10	FSCs Connection Strength	1.10
FSbc Bearing Capacity	1.50	FSpO Pullout	1.10	FSsc Facing Shear	1.10
FSct Crest Toppling	1.10	FSto Tensile Overstress	1.10		
FSot Overturning	1.50				

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.10	LTDS	1,305.87 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static	FS		
Bearing Capacity	9.05	Bearing Pressure	1082.82 lb/ft²
Overturning	8.47	Max Eccentricity	0.00 ft
Base Sliding	3.38		
Crest Toppling	2.86		
Internal Sliding	3.70		

External Seismic	FS		
Bearing Capacity	9.93	Bearing Pressure	986.76 lb/ft²
Overturning	8.14	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		3.24
Crest Toppling		3.30
Internal Sliding		3.56

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding FS	Pullout FS	Tensile Overstress FS
5	480.50	UXMSE	7.00	13.45	3.85	13.75
4	479.17	UXMSE	7.00	7.95	6.57	8.96
3	477.83	UXMSE	7.00	5.71	8.73	6.28
2	476.50	UXMSE	7.00	4.48	10.89	4.84
1	475.17	UXMSE	7.00	3.70	13.05	3.94

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding FS	Pullout FS	Tensile Overstress FS
5	480.50	UXMSE	7.00	15.64	1.72	15.71
4	479.17	UXMSE	7.00	8.17	3.99	13.93
3	477.83	UXMSE	7.00	5.64	6.01	11.07
2	476.50	UXMSE	7.00	4.35	8.08	9.18
1	475.17	UXMSE	7.00	3.56	10.17	7.85

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength FS
5	480.50	UXMSE	7.00	13.19
4	479.17	UXMSE	7.00	8.60
3	477.83	UXMSE	7.00	6.03
2	476.50	UXMSE	7.00	4.64
1	475.17	UXMSE	7.00	3.78

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength FS
5	480.50	UXMSE	7.00	5.89
4	479.17	UXMSE	7.00	5.22
3	477.83	UXMSE	7.00	4.15
2	476.50	UXMSE	7.00	3.44
1	475.17	UXMSE	7.00	2.94

**Internal Compound Stability**

**10 Lowest Static**

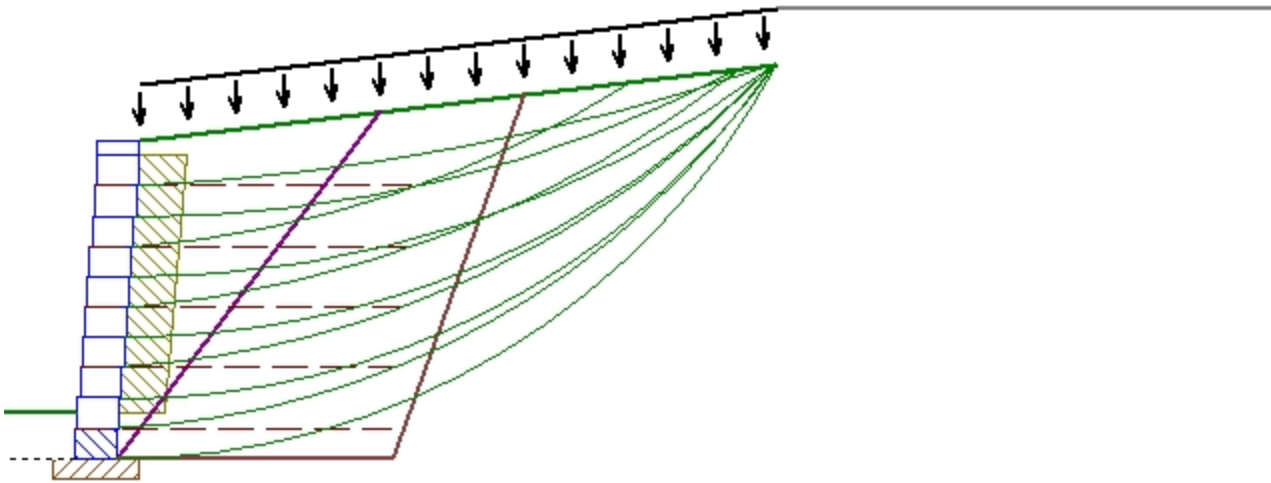
Radius Point	Entry Point	Exit Point	Result	Status
2	10	2	1.87	Pass
1	10	1	1.93	Pass
3	10	4	2.06	Pass
1	10	3	2.31	Pass
5	9	6	2.38	Pass
1	10	5	2.57	Pass
1	10	7	3.00	Pass
6	6	8	3.00	Pass
1	9	9	3.84	Pass
10	10	10	4.80	Pass

**10 Lowest Seismic**

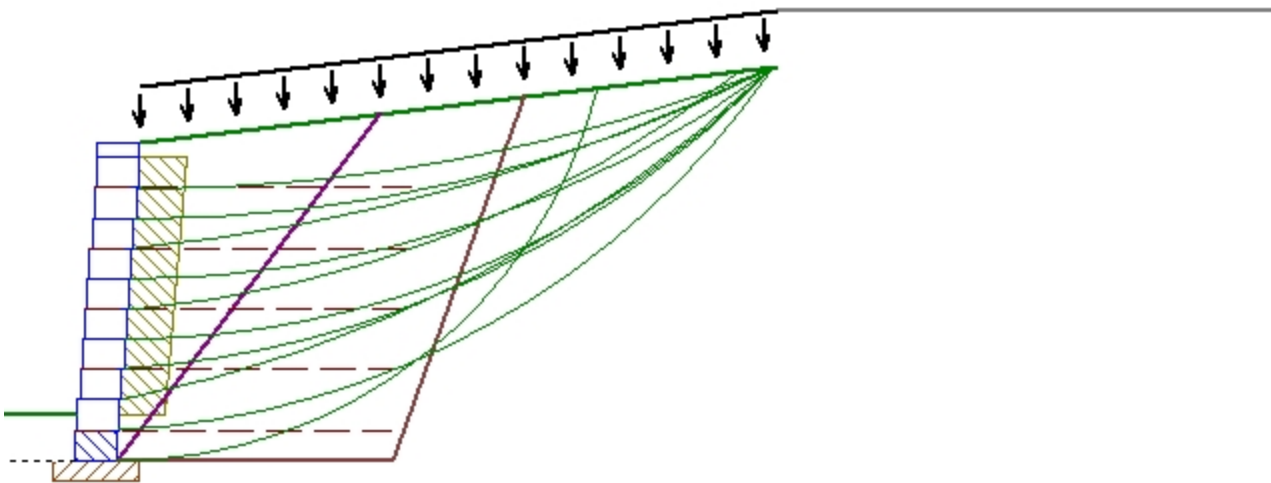
2	10	2	1.76	Pass
1	5	1	1.82	Pass
3	10	4	1.94	Pass
8	10	3	2.15	Pass
5	9	6	2.28	Pass
1	10	5	2.46	Pass
1	10	7	2.86	Pass
10	10	8	3.04	Pass
1	10	9	3.73	Pass
1	10	10	4.88	Pass

## Section 12 Details

### Section 12 Static ICS Cross-section

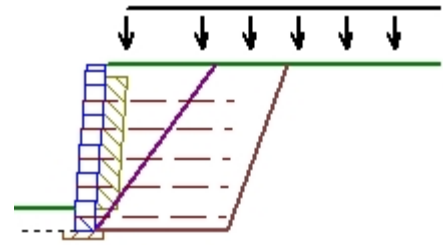


### Section 12 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

**Section** #13 at Station 99.00  
**Report Date** November 13, 2020  
**Designer** NT  
**Design Standard** National Concrete Masonry Association 3rd Edition  
**Design** Static and Seismic  
**Unit of Measure** U.S./Imperial  
**SeleLicensor/Product Line:** User defined  
**Name:** MESA (STD. PRIVATE)  
**Seismic As** 0.15 Default Deflection of 2.00 inch



**Soil Parameters**

Soil Zone	Soil Type	Friction Angle	In Situ	
			Density [lb/ft³]	Cohesion Cf [lb/ft²]
Infill (i)	SM	30°	125.00	n/a
Retained (r)	SM	30°	125.00	n/a
Foundation (f)	SM	30°	125.00	0.00
Base (b)	GW	36°	140.02	n/a
Drainage (d)	GP	38°	105.00	n/a

**Section Details**

Section Height	7.67	Back Slope	0.00°	LL Surcharge	100	DL Surcharge	0
Design Height	7.67 ft	Crest Offset	0.00 ft	LL Offset	1.00 ft	DL Offset	0.00 ft
Embedment	1.00 ft	Wall Batter	4.50°	Toe Slope	0.00°	Toe Offset	0.00 ft

**Minimum Factors of Safety**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50
FSbc	Bearing Capacity	2.00	FSpO	Pullout	1.50
FSct	Crest Toppling	1.50	FSto	Tensile Overstress	1.50
FSot	Overturning	2.00			
				FSCs	Connection Strength
				FSsc	Facing Shear
					1.50

**Seismic**

**Reinforced**

External	Value	Internal	Value	Facing	Value
FSSl	Base Sliding	1.10	FSSl	Internal Sliding	1.10
FSbc	Bearing Capacity	1.50	FSpO	Pullout	1.10
FSct	Crest Toppling	1.10	FSto	Tensile Overstress	1.10
FSot	Overturning	1.50			
				FSCs	Connection Strength
				FSsc	Facing Shear
					1.10

**Reinforcements**

**UXMSE - UX1100MSE Supplier: Tensar International Corporation, Fill Type: Sands**

Tult	3,971.52 lb/ft	RFcr	2.56	RFd	1.10	LTDS	1,305.87 lb/ft
RFid	1.08	Cds	0.80	Ci	0.80		

**Connection/Shear Properties**

cs1	1,253.00 lb/ft	IP-1	0.00 lb/ft	cs2	1,253.00 lb/ft	IP-2	6,502.00 lb/ft
cs max	1,253.00 lb/ft	au	705.00 lb/ft	u	33.00 lb/ft	Vu(max)	1,927.00 lb/ft

**Analysis Results**

- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

External Static	FS		
Bearing Capacity	8.89	Bearing Pressure	1103.04 lb/ft²
Overturning	9.65	Max Eccentricity	0.00 ft
Base Sliding	3.89		
Crest Toppling	4.20		
Internal Sliding	4.27		
External Seismic	FS		
Bearing Capacity	9.59	Bearing Pressure	1022.38 lb/ft²
Overturning	8.67	Max Eccentricity	0.00 ft

External Seismic		FS
Base Sliding		3.59
Crest Toppling		1.82
Internal Sliding		3.93

Internal Static Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding FS	Pullout FS	Tensile Overstress FS
5	480.50	UXMSE	7.00	17.50	3.62	10.94
4	479.17	UXMSE	7.00	9.75	6.60	8.03
3	477.83	UXMSE	7.00	6.79	9.00	5.94
2	476.50	UXMSE	7.00	5.23	11.36	4.72
1	475.17	UXMSE	7.00	4.27	13.70	3.91

Internal Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Internal Sliding FS	Pullout FS	Tensile Overstress FS
5	480.50	UXMSE	7.00	15.71	1.46	11.33
4	479.17	UXMSE	7.00	8.85	4.34	13.53
3	477.83	UXMSE	7.00	6.20	6.50	10.99
2	476.50	UXMSE	7.00	4.80	8.70	9.26
1	475.17	UXMSE	7.00	3.93	10.93	7.99

Facing Static Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength FS
5	480.50	UXMSE	7.00	10.49
4	479.17	UXMSE	7.00	7.71
3	477.83	UXMSE	7.00	5.70
2	476.50	UXMSE	7.00	4.53
1	475.17	UXMSE	7.00	3.75

Facing Seismic Layer	Elevation [ft]	Rein.	Length [ft]	Connection Strength FS
5	480.50	UXMSE	7.00	4.25
4	479.17	UXMSE	7.00	5.07
3	477.83	UXMSE	7.00	4.12
2	476.50	UXMSE	7.00	3.47
1	475.17	UXMSE	7.00	3.00

**Internal Compound Stability**

**10 Lowest Static**

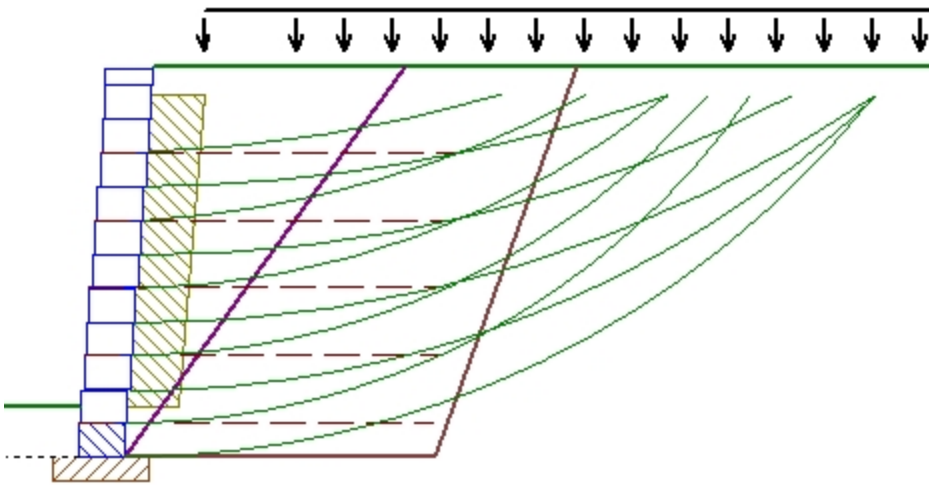
Radius Point	Entry Point	Exit Point	Result	Status
1	7	2	2.11	Pass
1	10	1	2.15	Pass
1	6	4	2.38	Pass
1	10	3	2.74	Pass
2	5	6	2.88	Pass
1	10	5	3.20	Pass
6	3	8	3.87	Pass
1	8	7	4.00	Pass
3	5	9	6.00	Pass
10	1	10	8.06	Pass

**10 Lowest Seismic**

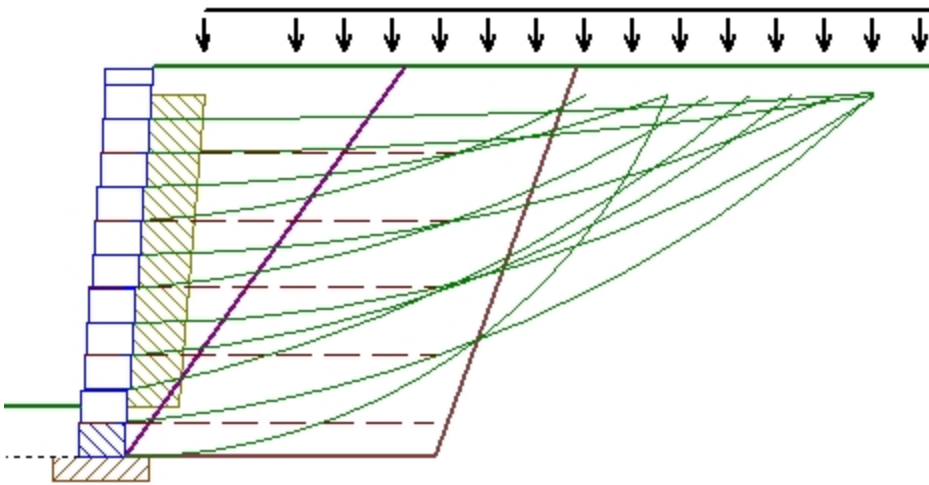
1	5	1	1.99	Pass
4	10	2	1.99	Pass
4	8	4	2.28	Pass
9	7	3	2.50	Pass
6	6	6	2.79	Pass
1	10	5	2.95	Pass
2	9	7	3.69	Pass
6	3	8	4.06	Pass
3	5	9	6.00	Pass
1	10	10	10.00	Pass

## Section 13 Details

### Section 13 Static ICS Cross-section



### Section 13 Seismic ICS Cross-section



- \* Analysis includes Vertical Forces
- \* Uses Live and Dead Load Reduction due to Offset
- \* Uses External Horiz. Accel Coeff in Seismic Crest Toppling
- \* Embedment is not included in Bearing Capacity

# Dino DeLaurentis Residence

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## PROJECT IDENTIFICATION

Title: Dino DeLaurentis Residence  
 Project Number: 20ERS150 -  
 Client: ERS  
 Designer: NT

**Description:**  
 Tiered Section - sta. 0+66 (Wall 1 panel 38, Wall 2 panel 5)

## Company's information:

Name: ERS Materials, LLC  
 Street: 116 Edwards Ferry Road NE  
 Unit S  
 Leesburg, VA 20176

Telephone #:  
 Fax #:  
 E-Mail:

**Original file path and name:** V:\2020\20 ..... \Ressa\ReSSA\_Tiered Section - sta. 0+66-Wall 1.MSE  
**Original date and time of creating this file:** Thu Nov 12 11:06:25 2020

**PROGRAM MODE:** Analysis of a General Slope using GEOSYNTHETIC as reinforcing material.

**INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)**

**SOIL DATA**

Soil Layer #:	Unit weight, $\gamma$ [lb/ft <sup>3</sup> ]	Internal angle of friction, $\phi$ [deg.]	Cohesion, c [lb/ft <sup>2</sup> ]
1..... Block Face.....	130.0	0.0	500.0
2..... Reinforced Fill.....	125.0	30.0	0.0
3..... Retained Soil.....	125.0	30.0	0.0
4..... Foundation Soil .....	125.0	30.0	0.0

**REINFORCEMENT**

Reinforcement Type #	Geosynthetic Designated Name	Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Additional Reduction Factor, RFa	Coverage Ratio, Rc
1	UX1100MSE	3971.52	1.08	1.00	2.56	1.00	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
1	UX1100MSE	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, Fs-po = 1.50  
 Design method for Global Stability: AASHTO/FHWA Bishop.

**WATER**

Water is not present

**SEISMICITY**

Not Applicable



**DRAWING OF SPECIFIED GEOMETRY - GENERAL - Quick Input**

- Problem geometry is defined along sections selected by user at x,y coordinates.
- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

**GEOMETRY**

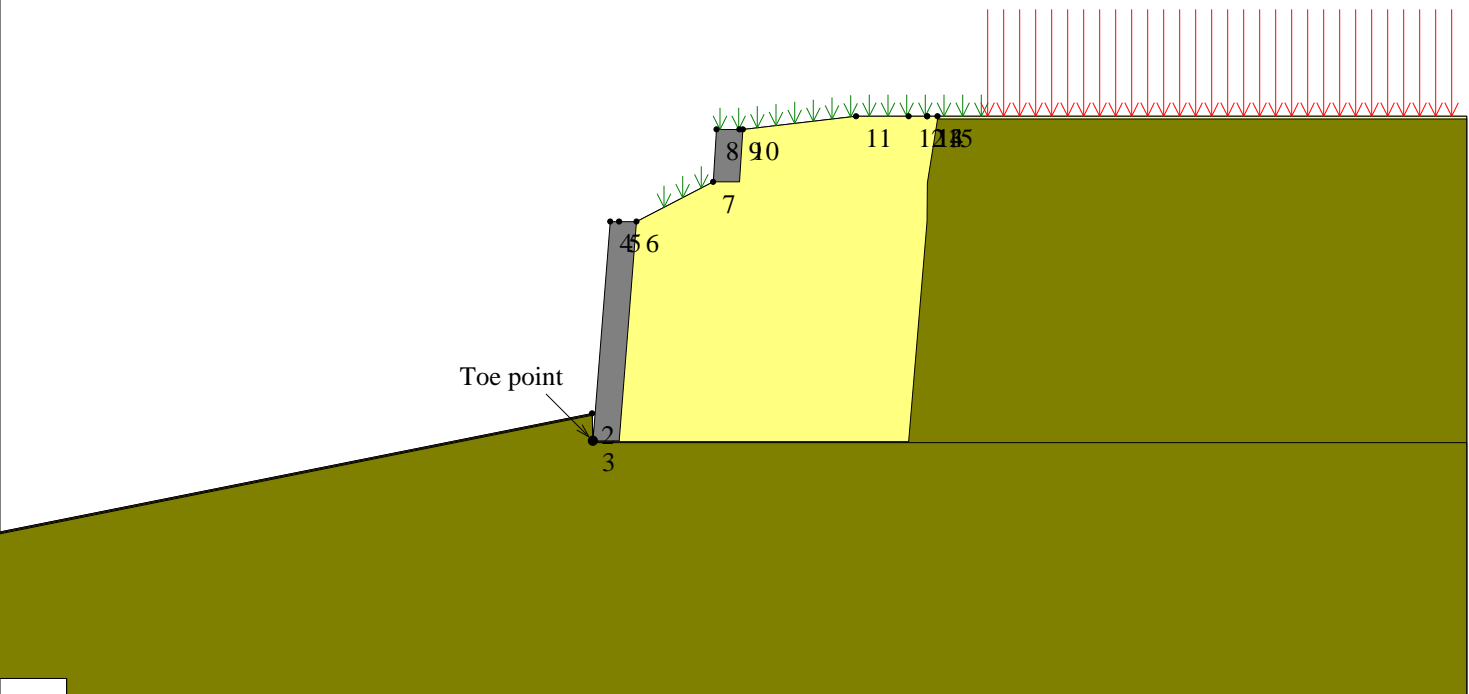
Soil profile contains 4 layers (see details in next page)

**UNIFORM SURCHARGE**

Load Q1 = 100.00 [lb/ft<sup>2</sup>] inclined from verical at 0.00 degrees, starts at X1s = 2.70 and ends at X1e = 15.00 [ft].  
 Load Q2 = 500.00 [lb/ft<sup>2</sup>] inclined from verical at 0.00 degrees, starts at X2s = 15.00 and ends at X2e = 100.00 [ft].  
 Surcharge load, Q3.....None

**STRIP LOAD**

.....None.....



SCALE:



**TABULATED DETAILS OF GENERAL SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

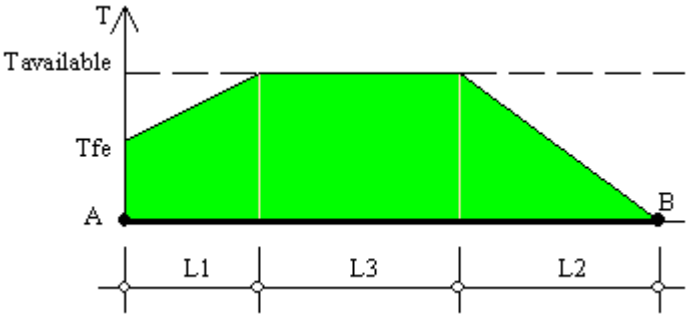
	#	Xi	Yi	
■ Top of Layer 1	1	-50.00	462.71	
	2	-0.03	472.71	
	3	0.00	471.67	
	4	0.66	480.00	
	5	1.66	480.00	
	6	4.57	481.51	
	7	4.70	483.50	
	8	5.70	483.50	
	9	10.00	484.00	
■ Top of Layer 2	10	-50.00	462.71	
	11	-0.03	472.71	
	12	0.00	471.67	
	13	1.00	471.67	
	14	1.66	480.00	
	15	4.57	481.51	
	16	5.57	481.51	
	17	5.70	483.50	
	18	10.00	484.00	
■ Top of Layer 3	19	-50.00	462.68	
	20	-0.03	472.68	
	21	0.00	471.64	
	22	12.00	471.64	
	23	12.70	480.00	
	24	12.71	481.47	
	25	13.10	483.90	
	■ Top of Layer 4	26	-50.00	462.64
		27	-0.03	472.64
28		0.00	471.60	

**TABULATED DETAILS OF SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

#	X	Y1	Y2	Y3	Y4
1	-50.00	462.71	462.71	462.68	462.64
2	-0.03	472.71	472.71	472.68	472.64
3	0.00	471.67	471.67	471.64	471.60
4	0.66	480.00	471.67	471.64	471.60
5	1.00	480.00	471.67	471.64	471.60
6	1.66	480.00	480.00	471.64	471.60
7	4.57	481.51	481.51	471.64	471.60
8	4.70	483.50	481.51	471.64	471.60
9	5.57	483.50	481.51	471.64	471.60
10	5.70	483.50	483.50	471.64	471.60
11	10.00	484.00	484.00	471.64	471.60
12	12.00	484.00	484.00	471.64	471.60
13	12.70	484.00	484.00	480.00	471.60
14	12.71	484.00	484.00	481.47	471.60
15	13.10	484.00	484.00	483.90	471.60

**DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER**



A = Front-end of reinforcement (at face of slope)  
 B = Rear-end of reinforcement  
 AB = L1 + L2 + L3 = Embedded length of reinforcement

Tavailable = Long-term strength of reinforcement  
 Tfe = Available front-end strength (e.g., connection to facing)

L1 = Front-end 'pullout' length  
 L2 = Rear-end pullout length  
 Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement,  $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	UX1100MSE	0.67	12.00	0.46	2.00	9.54	1249.72	1436.46
2	UX1100MSE	1.33	12.00	0.46	2.13	9.41	1249.72	1436.46
3	UX1100MSE	2.67	12.00	0.46	2.43	9.11	1249.72	1436.46
4	UX1100MSE	4.00	12.00	0.46	2.82	8.72	1249.72	1436.46
5	UX1100MSE	5.33	12.00	0.46	3.35	8.19	1249.72	1436.46
6	UX1100MSE	6.67	12.00	0.46	4.17	7.37	1249.72	1436.46
7	UX1100MSE	7.33	12.00	0.46	4.72	6.82	1249.72	1436.46
8	UX1100MSE	10.00	5.00	0.00	5.00	0.00	949.00	949.00 (*)
9	UX1100MSE	11.33	5.00	0.00	5.00	0.00	626.07	626.07 (*)

(\*) This Tavailable is dictated by the pullout resistance capacity, which is smaller than the long-term strength of the reinforcement that is related to its specified ultimate strength.

**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

<b>Critical circles for each entry point (considering all specified exit points)</b>									
Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	6.00	483.54	-22.93	468.27	-12.62	483.78	18.62	3.70	
2	7.18	483.67	1.80	480.10	2.77	484.47	4.48	2.45	
3	8.35	483.81	1.78	480.11	2.94	485.73	5.74	2.03	
4	9.52	483.94	1.76	480.11	3.09	487.18	7.20	1.80	
5	10.69	484.00	1.77	480.10	2.99	489.47	9.45	1.68	
6	11.86	484.00	1.82	480.10	3.22	491.36	11.35	1.71	
7	13.04	484.00	1.79	480.10	2.66	495.74	15.67	1.78	
8	14.21	484.00	-11.48	470.50	-2.51	484.63	16.73	1.77	
9	15.38	484.00	-11.47	470.51	-1.47	484.07	16.85	1.66	
10	16.55	484.00	-12.46	470.26	-2.16	486.02	18.82	1.57	
11	17.73	484.00	-13.53	470.08	-2.55	487.47	20.57	1.49	
12	18.90	484.00	-13.67	470.15	-2.86	489.94	22.55	1.44	
13	20.07	484.00	-14.56	469.86	-3.75	492.84	25.41	1.40	
14	21.24	484.00	-14.72	469.91	-4.05	495.63	27.84	1.39	
15	22.42	484.00	-14.68	469.90	-3.90	497.38	29.52	1.39	OK
16	23.59	484.00	-14.55	469.84	-4.07	500.06	31.98	1.39	
17	24.76	484.00	-16.85	469.50	-5.77	504.66	36.87	1.40	
18	25.93	484.00	-18.70	469.01	-7.63	510.00	42.46	1.42	
19	27.10	484.00	-17.77	469.24	-7.40	513.31	45.28	1.45	
20	28.28	484.00	-17.67	469.21	-7.53	516.50	48.36	1.48	
21	29.45	484.00	-19.75	468.80	-9.90	524.13	56.20	1.51	
22	30.62	484.00	-22.16	468.44	-11.84	530.75	63.16	1.54	
23	31.79	484.00	-20.80	468.59	-11.47	534.20	66.27	1.58	
24	32.97	484.00	-22.09	468.41	-12.84	540.76	72.93	1.62	
25	34.14	484.00	-24.40	468.02	-15.21	549.58	82.08	1.66	
26	35.31	484.00	-26.01	467.55	-17.81	559.53	92.35	1.70	
27	36.48	484.00	-28.10	467.14	-18.08	560.89	94.28	1.74	
28	37.66	484.00	-27.12	467.36	-16.94	562.10	95.29	1.78	
29	38.83	484.00	-29.28	466.95	-18.35	567.88	101.52	1.82	
30	40.00	484.00	-30.40	466.76	-18.91	572.19	106.06	1.86	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

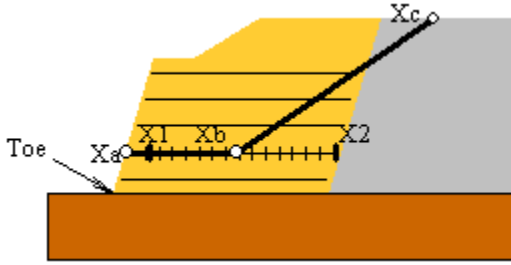
**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

<b>Critical circles for each exit point (considering all specified entry points).</b>									
Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	-30.39	466.82	25.93	484.00	-15.77	519.81	54.97	1.50	
2	-29.33	467.02	25.93	484.00	-15.04	518.91	53.82	1.49	
3	-28.06	467.17	24.76	484.00	-13.74	513.53	48.52	1.47	
4	-27.00	467.36	24.76	484.00	-13.02	512.72	47.46	1.47	
5	-25.94	467.56	24.76	484.00	-12.30	511.90	46.39	1.46	
6	-24.90	467.77	24.76	484.00	-11.58	511.09	45.32	1.45	
7	-23.86	467.98	24.76	484.00	-10.85	510.28	44.26	1.44	
8	-23.03	468.26	23.59	484.00	-9.77	505.88	39.90	1.43	
9	-21.96	468.45	23.59	484.00	-9.06	505.15	38.90	1.42	
10	-20.90	468.65	23.59	484.00	-8.35	504.41	37.90	1.41	
11	-19.83	468.84	23.59	484.00	-7.64	503.68	36.91	1.40	
12	-18.76	469.04	23.59	484.00	-6.93	502.95	35.92	1.40	
13	-17.90	469.32	22.42	484.00	-6.01	499.36	32.31	1.39	
14	-16.82	469.51	22.42	484.00	-5.31	498.70	31.38	1.39	
15	-15.75	469.70	22.42	484.00	-4.61	498.04	30.45	1.39	
16	-14.68	469.90	22.42	484.00	-3.90	497.38	29.52	1.39	OK
17	-13.61	470.09	22.42	484.00	-3.20	496.73	28.60	1.39	
18	-12.54	470.28	22.42	484.00	-2.49	496.07	27.68	1.39	
19	-11.50	470.49	21.24	484.00	-1.95	493.78	25.17	1.40	
20	-10.62	470.77	21.24	484.00	-0.80	492.09	23.48	1.41	
21	-9.37	470.88	21.24	484.00	-0.54	492.55	23.40	1.43	
22	-8.52	471.17	21.24	484.00	0.59	490.97	21.80	1.45	
23	-7.45	471.35	21.24	484.00	0.87	491.35	21.66	1.48	
24	-6.27	471.50	22.42	484.00	1.76	492.23	22.23	1.52	
25	-5.23	471.70	21.24	484.00	2.09	490.59	20.26	1.57	
26	-4.31	471.95	22.42	484.00	2.98	491.45	20.81	1.62	
27	-3.17	472.12	22.42	484.00	3.71	490.80	19.91	1.69	
28	-2.22	472.36	22.42	484.00	4.82	489.35	18.39	1.79	
29	-1.25	472.71	25.93	484.00	9.78	484.52	16.16	3.11	
30	-0.08	471.65	21.24	484.00	-7.15	508.45	37.47	1.64	
31	-5.29	471.70	21.24	484.00	2.05	490.63	20.31	1.56	
32	0.06	472.87	21.24	484.00	-2.60	503.65	30.90	1.74	
33	0.18	474.08	20.07	484.00	-1.83	503.00	29.00	1.85	
34	0.10	475.30	20.07	484.00	2.86	496.24	21.12	1.95	
35	0.24	476.52	21.24	484.00	5.20	495.81	19.92	2.04	
36	0.39	477.71	20.07	484.00	5.39	496.01	18.97	2.12	
37	0.53	478.90	18.90	484.00	5.05	498.27	19.89	2.46	
38	1.77	480.10	10.69	484.00	2.99	489.47	9.45	1.68	
39	4.10	481.30	10.69	484.00	5.03	488.43	7.18	2.59	
40	4.60	482.52	18.90	484.00	10.77	492.71	11.92	4.16	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

**RESULTS OF TRANSLATIONAL ANALYSIS**



Results in the table below represent critical two-part wedges identified between specified starting (X1) and ending (X2) search points. Wedges along all reinforcement layers and at elevation zero are reported. The critical two-part wedge, one for each predetermined elevation, is defined by Xa, Xb and Xc where Xa is the front end of the passive wedge (slope face), Xb is where the passive wedge ends and the active one starts, and Xc is the X-ordinate at which the active wedge starts.

**Critical two-part wedge along each interface:**

Interface	Height Relative to Toe [ft]	( Xa, Ya ) [ft]	( Xb, Yb ) [ft]	( Xc, Yc ) [ft]	Fs	STATUS
At toe elevation	0.00	0.00 471.67	4.07 471.67	23.80 484.00	1.75	OK
Reinf. Layer #1	0.67	0.05 472.34	11.30 472.34	25.19 484.00	1.63	OK
Reinf. Layer #2	1.33	0.11 473.00	11.30 473.00	24.41 484.00	1.66	OK
Reinf. Layer #3	2.67	0.21 474.34	12.39 474.34	23.90 484.00	1.71	Minimum on Edge
Reinf. Layer #4	4.00	0.32 475.67	12.49 475.67	22.42 484.00	1.78	Minimum on Edge
Reinf. Layer #5	5.33	0.42 477.00	12.69 477.00	21.33 484.00	1.87	Minimum on Edge
Reinf. Layer #6	6.67	0.53 478.34	12.79 478.34	20.03 484.00	1.99	Minimum on Edge
Reinf. Layer #7	7.33	0.58 479.00	12.79 479.00	19.43 484.00	2.07	Minimum on Edge
Reinf. Layer #8	10.00	4.58 481.67	9.38 481.67	12.16 484.00	2.42	OK
Reinf. Layer #9	11.33	4.67 483.00	9.08 483.00	10.45 484.00	3.67	OK

Note: In the 'Status' column, OK means the critical two part-wedge was identified within the specified search domain. 'Minimum on Edge' means the critical result corresponds to a minimum on the edge of the search domain; i.e., either on X1 or X2 or the internally preset limits on Xc.

### CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

#### Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.39

Critical Circle:  $X_c = -3.90$ [ft],  $Y_c = 497.38$ [ft],  $R = 29.52$ [ft]. (Number of slices used = 62 )

#### Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

Minimum Factor of Safety = 1.63

Critical Two-Part Wedge: ( $X_a = 0.05$ ,  $Y_a = 472.34$ ) [ft]

( $X_b = 11.30$ ,  $Y_b = 472.34$ ) [ft]

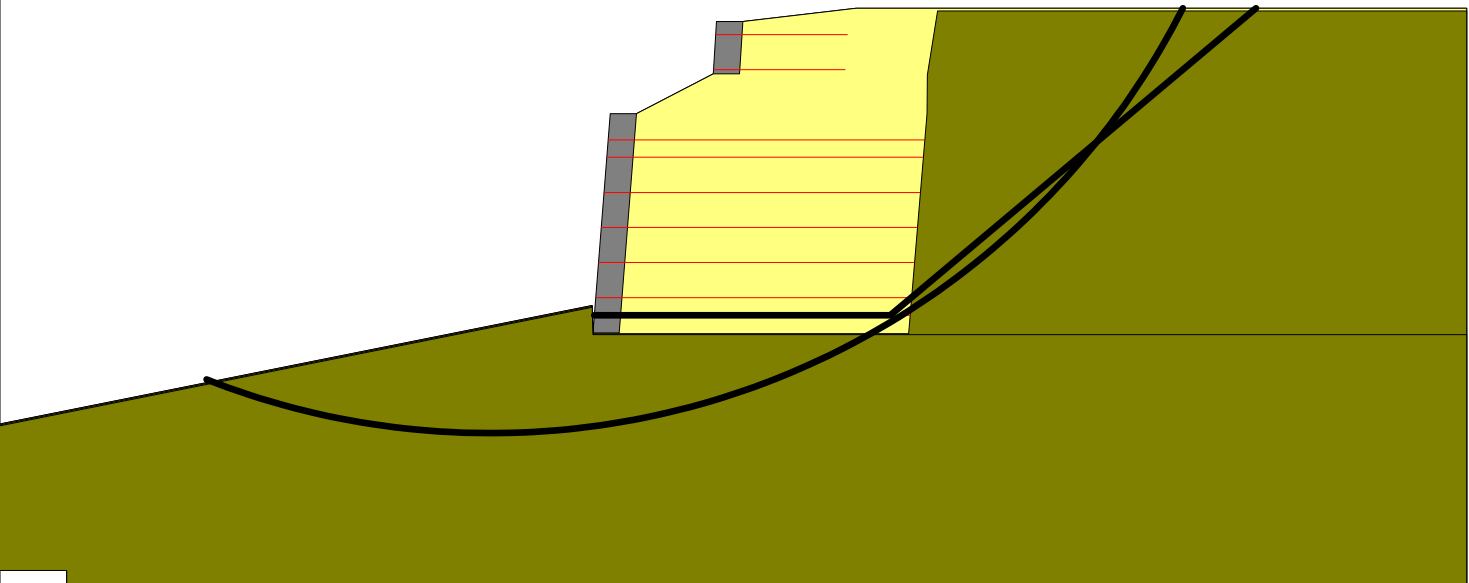
( $X_c = 25.19$ ,  $Y_c = 484.00$ ) [ft]

(Number of slices used = 30 )

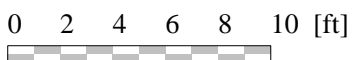
Interslice resultant force inclination = 25.50 [degrees]

#### Three-Part Wedge Stability Analysis

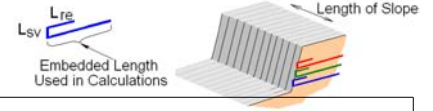
**NOT CONDUCTED**  
**REINFORCEMENT LAYOUT: DRAWING**



**SCALE:**







**REINFORCEMENT LAYOUT: TABULATED DATA & QUANTITIES**

Layer #	Reinf. Type #	Geosynthetic Designated Name	Height Relative to Toe [ft]	Embedded Length [ft]	Covergae Ratio, Rc	( X, Y ) front [ft]	( X, Y ) rear [ft]	Lsv * [ft]	Lre [ft]
1	1	UX1100MSE	0.67	12.00	1.00	0.05 1548.14	12.05 1548.14	0.00	0.00
2	1	UX1100MSE	1.33	12.00	1.00	0.11 1548.80	12.11 1548.80	0.00	0.00
3	1	UX1100MSE	2.67	12.00	1.00	0.21 1550.14	12.21 1550.14	0.00	0.00
4	1	UX1100MSE	4.00	12.00	1.00	0.32 1551.47	12.32 1551.47	0.00	0.00
5	1	UX1100MSE	5.33	12.00	1.00	0.42 1552.80	12.42 1552.80	0.00	0.00
6	1	UX1100MSE	6.67	12.00	1.00	0.53 1554.14	12.53 1554.14	0.00	0.00
7	1	UX1100MSE	7.33	12.00	1.00	0.58 1554.80	12.58 1554.80	0.00	0.00
8	1	UX1100MSE	10.00	5.00	1.00	4.58 1557.47	9.58 1557.47	0.00	0.00
9	1	UX1100MSE	11.33	5.00	1.00	4.67 1558.80	9.67 1558.80	0.00	0.00

\* Vertical distance between layers.

**QUANTITIES**

Reinf. Type #	Designated Name	Coverage Ratio	Area of reinforcemnt [ft <sup>2</sup> ] / length of slope [ft]
1	UX1100MSE	1.00	94.00

# Dino DeLaurentis Residence

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## PROJECT IDENTIFICATION

Title: Dino DeLaurentis Residence  
 Project Number: 20ERS150 -  
 Client: ERS  
 Designer: NT

**Description:**  
 Tiered Section - sta. 0+88 (Wall 1 panel 53, Wall 2 panel 12)

### Company's information:

Name: ERS Materials, LLC  
 Street: 116 Edwards Ferry Road NE  
 Unit S  
 Leesburg, VA 20176

Telephone #:  
 Fax #:  
 E-Mail:

**Original file path and name:** V:\2020\20 ..... \Ressa\ReSSA\_Tiered Section - sta. 0+88-Wall 1.MSE  
**Original date and time of creating this file:** Thu Nov 12 11:06:25 2020

**PROGRAM MODE:** Analysis of a General Slope using GEOSYNTHETIC as reinforcing material.

**INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)**

**SOIL DATA**

Soil Layer #:	Unit weight, $\gamma$ [lb/ft <sup>3</sup> ]	Internal angle of friction, $\phi$ [deg.]	Cohesion, c [lb/ft <sup>2</sup> ]
1..... Block Face.....	130.0	0.0	500.0
2..... Reinforced Fill.....	125.0	30.0	0.0
3..... Retained Soil.....	125.0	30.0	0.0
4..... Foundation Soil.....	125.0	30.0	0.0

**REINFORCEMENT**

Reinforcement Type #	Geosynthetic Designated Name	Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Additional Reduction Factor, RFa	Coverage Ratio, Rc
2	UX1100MSE	3971.52	1.08	1.00	2.56	1.00	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
2	UX1100MSE	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, Fs-po = 1.50  
 Design method for Global Stability: AASHTO/FHWA Bishop.

**WATER**

Water is not present

**SEISMICITY**

Not Applicable

### DRAWING OF SPECIFIED GEOMETRY - GENERAL - Quick Input

- Problem geometry is defined along sections selected by user at x,y coordinates.
- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

#### GEOMETRY

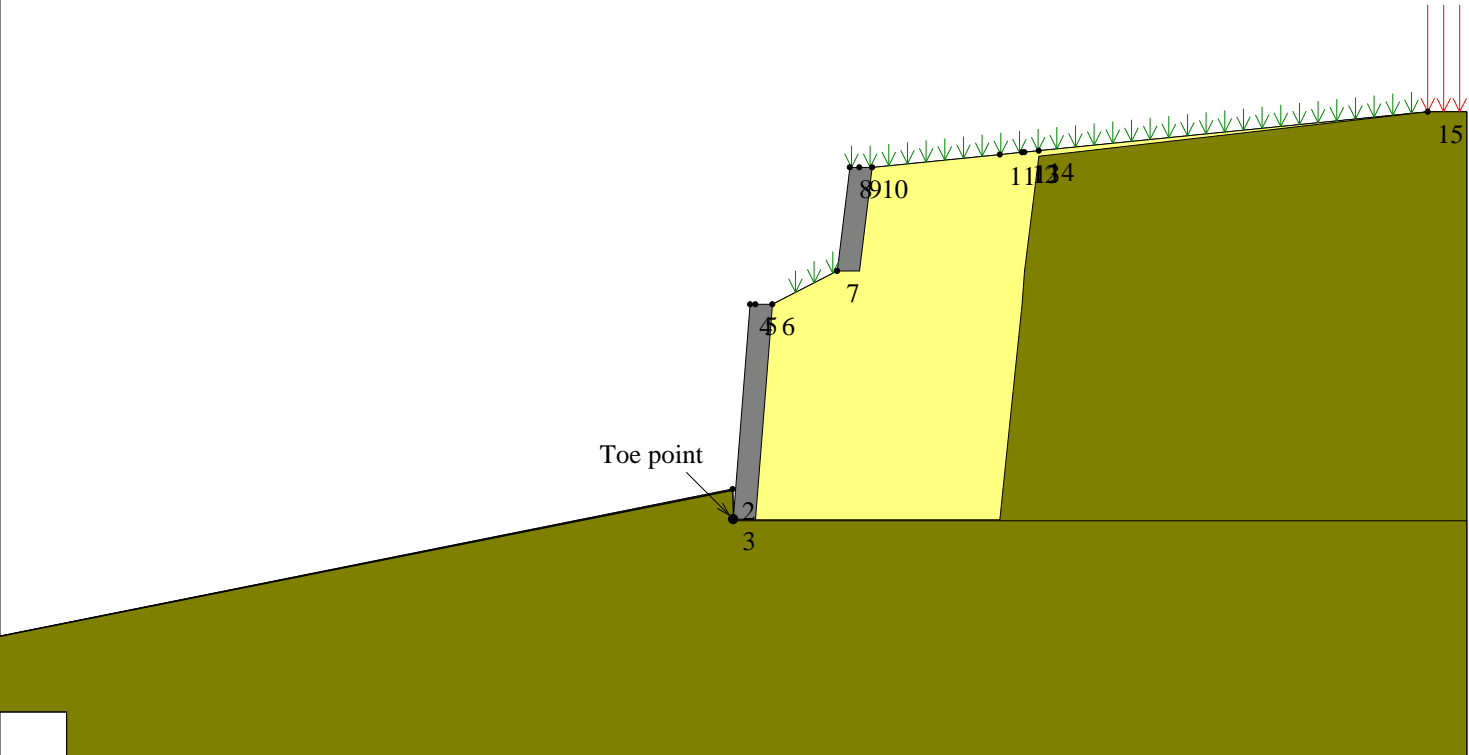
Soil profile contains 4 layers (see details in next page)

#### UNIFORM SURCHARGE

Load Q1 = 100.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X1s = 2.80 and ends at X1e = 31.25 [ft].  
Load Q2 = 500.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X2s = 31.25 and ends at X2e = 100.00 [ft].  
Surcharge load, Q3.....None

#### STRIP LOAD

.....None.....



SCALE:



**TABULATED DETAILS OF GENERAL SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

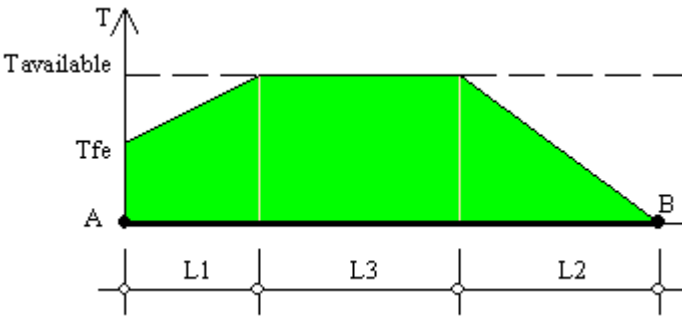
	#	Xi	Yi
■ Top of Layer 1	1	-50.00	457.00
	2	-0.03	467.02
	3	0.00	465.67
	4	0.76	475.34
	5	1.76	475.34
	6	4.68	476.84
	7	5.25	481.50
	8	6.25	481.50
	9	31.25	484.00
■ Top of Layer 2	10	-50.00	457.00
	11	-0.03	467.02
	12	0.00	465.67
	13	1.00	465.67
	14	1.76	475.34
	15	4.68	476.84
	16	5.68	476.84
	17	6.25	481.50
	18	31.25	484.00
■ Top of Layer 3	19	-50.00	457.00
	20	-0.03	466.99
	21	0.00	465.64
	22	12.00	465.64
	23	13.00	475.33
	24	13.10	476.81
	25	13.75	482.00
	26	31.25	484.00
	27	-50.00	457.00
■ Top of Layer 4	28	-0.03	466.96
	29	0.00	465.60

**TABULATED DETAILS OF SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

#	X	Y1	Y2	Y3	Y4
1	-50.00	457.00	457.00	457.00	457.00
2	-0.03	467.02	467.02	466.99	466.96
3	0.00	465.67	465.67	465.64	465.60
4	0.76	475.34	465.67	465.64	465.60
5	1.00	475.34	465.67	465.64	465.60
6	1.76	475.34	475.34	465.64	465.60
7	4.68	476.84	476.84	465.64	465.60
8	5.25	481.50	476.84	465.64	465.60
9	5.68	481.50	476.84	465.64	465.60
10	6.25	481.50	481.50	465.64	465.60
11	12.00	482.07	482.07	465.64	465.60
12	13.00	482.18	482.18	475.33	465.60
13	13.10	482.19	482.19	476.81	465.60
14	13.75	482.25	482.25	482.00	465.60
15	31.25	484.00	484.00	484.00	465.60

**DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER**



A = Front-end of reinforcement (at face of slope)  
 B = Rear-end of reinforcement  
 AB = L1 + L2 + L3 = Embedded length of reinforcement  
  
 Tavailable = Long-term strength of reinforcement  
 Tfe = Available front-end strength (e.g., connection to facing)  
  
 L1 = Front-end 'pullout' length  
 L2 = Rear-end pullout length  
 Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement,  $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	UX1100MSE	0.67	12.00	0.46	1.51	10.03	1249.72	1436.46
2	UX1100MSE	2.00	12.00	0.46	1.64	9.90	1249.72	1436.46
3	UX1100MSE	3.33	12.00	0.46	1.80	9.74	1249.72	1436.46
4	UX1100MSE	4.67	12.00	0.46	2.00	9.54	1249.72	1436.46
5	UX1100MSE	6.00	12.00	0.46	2.26	9.28	1249.72	1436.46
6	UX1100MSE	7.33	12.00	0.46	2.59	8.95	1249.72	1436.46
7	UX1100MSE	8.67	12.00	0.46	3.05	8.49	1249.72	1436.46
8	UX1100MSE	11.33	7.00	0.46	4.89	1.65	1249.72	1436.46
9	UX1100MSE	12.67	7.00	0.46	6.40	0.14	1249.72	1436.46
10	UX1100MSE	14.00	7.00	0.00	7.00	0.00	1223.48	1223.48 (*)
11	UX1100MSE	15.33	7.00	0.00	7.00	0.00	739.83	739.83 (*)

(\*) This Tavailable is dictated by the pullout resistance capacity, which is smaller than the long-term strength of the reinforcement that is related to its specified ultimate strength.

**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)									
Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	10.00	481.88	-0.03	465.66	-8.32	481.99	18.32	2.15	
2	11.04	481.98	-0.00	465.67	-7.58	482.69	18.63	1.97	
3	12.07	482.08	0.69	474.73	3.19	483.35	8.98	1.82	
4	13.11	482.19	0.69	474.73	2.91	485.09	10.60	1.67	
5	14.14	482.29	-12.72	464.66	-5.18	482.45	19.32	1.61	
6	15.18	482.39	-12.61	464.62	-4.44	482.45	19.61	1.50	
7	16.21	482.50	-13.65	464.43	-4.19	482.50	20.40	1.43	
8	17.24	482.60	-12.73	464.68	-3.83	483.82	21.11	1.39	
9	18.28	482.70	-13.68	464.44	-3.76	484.19	22.09	1.36	
10	19.31	482.81	-14.62	464.18	-4.64	486.23	24.20	1.35	
11	20.35	482.91	-14.87	464.28	-4.85	487.95	25.70	1.33	
12	21.38	483.01	-14.52	464.14	-4.54	488.73	26.54	1.32	
13	22.42	483.12	-15.95	464.09	-5.24	490.68	28.67	1.32	
14	23.45	483.22	-16.96	463.86	-5.97	492.78	30.93	1.31	OK
15	24.48	483.32	-15.64	463.95	-5.61	494.42	32.07	1.31	
16	25.52	483.43	-17.67	463.52	-7.17	497.56	35.62	1.32	
17	26.55	483.53	-18.79	463.35	-6.46	496.69	35.54	1.32	
18	27.59	483.63	-19.03	463.43	-6.91	499.34	37.90	1.33	
19	28.62	483.74	-18.90	463.38	-7.01	501.27	39.71	1.33	
20	29.66	483.84	-19.82	463.13	-7.89	504.10	42.67	1.34	
21	30.69	483.94	-20.22	463.24	-8.07	506.31	44.75	1.35	
22	31.73	484.00	-22.20	462.79	-9.81	510.45	49.24	1.36	
23	32.76	484.00	-22.00	462.73	-10.07	513.15	51.81	1.37	
24	33.79	484.00	-21.78	462.68	-10.38	516.05	54.58	1.37	
25	34.83	484.00	-24.29	462.35	-12.33	521.24	60.09	1.38	
26	35.86	484.00	-22.94	462.50	-11.97	523.65	62.13	1.39	
27	36.90	484.00	-24.35	462.35	-13.30	528.53	67.10	1.41	
28	37.93	484.00	-24.41	462.36	-13.03	530.19	68.78	1.43	
29	38.97	484.00	-25.11	462.09	-14.48	535.65	74.33	1.44	
30	40.00	484.00	-25.40	462.12	-15.21	540.35	78.89	1.46	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.



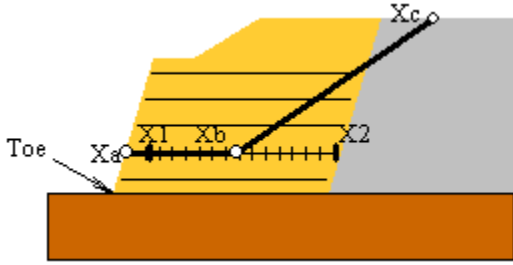
**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

<b>Critical circles for each exit point (considering all specified entry points).</b>									
Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	-30.31	461.11	28.62	483.74	-14.63	508.32	49.75	1.39	
2	-29.24	461.31	28.62	483.74	-13.90	507.58	48.75	1.38	
3	-28.33	461.56	27.59	483.63	-13.04	504.69	45.75	1.37	
4	-27.25	461.76	27.59	483.63	-12.31	503.98	44.79	1.36	
5	-26.18	461.95	27.59	483.63	-11.59	503.28	43.83	1.36	
6	-25.11	462.15	27.59	483.63	-10.87	502.58	42.87	1.35	
7	-24.04	462.34	27.59	483.63	-10.15	501.89	41.92	1.34	
8	-23.09	462.58	26.55	483.53	-9.35	499.31	39.22	1.34	
9	-22.01	462.78	26.55	483.53	-8.63	498.65	38.29	1.33	
10	-21.19	463.05	24.48	483.32	-8.93	497.03	36.12	1.33	
11	-20.11	463.24	24.48	483.32	-8.20	496.35	35.19	1.32	
12	-18.74	463.33	25.52	483.43	-7.92	498.29	36.59	1.32	
13	-17.79	463.57	24.48	483.32	-7.09	495.79	33.95	1.31	
14	-16.96	463.86	23.45	483.22	-5.97	492.78	30.93	1.31	OK
15	-15.64	463.95	24.48	483.32	-5.61	494.42	32.07	1.31	
16	-14.66	464.18	23.45	483.22	-4.83	492.16	29.66	1.32	
17	-13.58	464.38	23.45	483.22	-4.09	491.52	28.76	1.32	
18	-12.50	464.57	23.45	483.22	-3.34	490.88	27.87	1.32	
19	-11.43	464.76	23.45	483.22	-2.60	490.25	26.98	1.33	
20	-10.43	464.98	22.42	483.12	-1.86	488.27	24.81	1.35	
21	-9.37	465.17	22.42	483.12	-2.91	490.85	26.48	1.36	
22	-8.64	465.46	22.42	483.12	-2.11	490.11	25.50	1.38	
23	-7.41	465.61	22.42	483.12	-1.62	489.91	24.98	1.40	
24	-6.33	465.81	22.42	483.12	-0.81	489.17	24.00	1.43	
25	-5.52	466.05	22.42	483.12	-0.95	489.96	24.34	1.46	
26	-4.20	466.21	21.38	483.01	0.61	486.76	21.11	1.50	
27	-3.28	466.46	22.42	483.12	2.94	485.01	19.57	1.61	
28	-2.36	466.77	26.55	483.53	7.08	483.81	19.48	2.10	
29	0.00	465.67	0.00	465.67	0.00	465.67	0.00	N/A	#10 - Overhanging Cliff
30	-0.09	465.64	23.45	483.22	-11.36	505.29	41.22	1.38	
31	-6.91	465.71	22.42	483.12	-1.25	489.57	24.52	1.41	
32	-3.16	466.48	21.38	483.01	2.99	483.83	18.41	1.62	
33	0.07	467.17	22.42	483.12	-8.90	503.37	37.30	1.48	
34	0.15	467.93	21.38	483.01	-4.40	496.81	29.24	1.48	
35	-0.02	468.64	22.42	483.12	-6.49	503.28	35.24	1.62	
36	0.06	469.41	21.38	483.01	-3.87	499.08	29.93	1.61	
37	0.15	470.19	21.38	483.01	-1.00	496.07	25.91	1.77	
38	0.24	470.89	17.24	482.60	-10.59	504.83	35.63	1.73	
39	0.33	471.67	17.24	482.60	-6.10	500.17	29.22	1.63	
40	0.42	472.44	17.24	482.60	-2.91	496.97	24.76	1.79	
41	0.51	473.21	17.24	482.60	-0.96	495.43	22.27	1.65	
42	0.60	473.97	17.24	482.60	1.32	492.95	19.00	1.83	
43	0.69	474.72	15.18	482.39	2.45	488.91	14.29	1.59	
44	1.93	475.49	15.18	482.39	3.79	488.07	12.72	1.59	
45	3.46	476.23	15.18	482.39	5.22	487.12	11.02	1.91	
46	4.67	476.98	16.21	482.50	-0.14	501.86	25.34	2.55	
47	4.68	477.74	15.18	482.39	5.24	490.64	12.91	2.42	
48	4.80	478.48	14.14	482.29	3.02	496.22	17.83	2.42	
49	4.84	479.26	18.28	482.70	7.25	497.80	18.70	3.39	
50	4.97	480.00	16.21	482.50	4.57	508.33	28.33	3.72	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

**RESULTS OF TRANSLATIONAL ANALYSIS**



Results in the table below represent critical two-part wedges identified between specified starting (X1) and ending (X2) search points. Wedges along all reinforcement layers and at elevation zero are reported. The critical two-part wedge, one for each predetermined elevation, is defined by Xa, Xb and Xc where Xa is the front end of the passive wedge (slope face), Xb is where the passive wedge ends and the active one starts, and Xc is the X-ordinate at which the active wedge starts.

**Critical two-part wedge along each interface:**

Interface	Height Relative to Toe [ft]	( Xa, Ya ) [ft]	( Xb, Yb ) [ft]	( Xc, Yc ) [ft]	Fs	STATUS
At toe elevation	0.00	0.00 465.67	2.13 465.67	27.82 483.66	1.45	OK
Reinf. Layer #1	0.67	0.05 466.34	4.36 466.34	27.27 483.60	1.45	OK
Reinf. Layer #2	2.00	0.16 467.67	5.45 467.67	27.40 483.62	1.51	OK
Reinf. Layer #3	3.33	0.26 469.00	5.55 469.00	25.39 483.41	1.60	OK
Reinf. Layer #4	4.67	0.37 470.34	3.67 470.34	18.42 482.72	1.68	OK
Reinf. Layer #5	6.00	0.47 471.67	4.76 471.67	18.97 482.77	1.67	OK
Reinf. Layer #6	7.33	0.58 473.00	4.86 473.00	18.21 482.70	1.66	OK
Reinf. Layer #7	8.67	0.68 474.34	4.96 474.34	19.69 482.84	1.66	OK
Reinf. Layer #8	11.33	4.70 477.00	11.32 477.00	18.98 482.77	2.00	OK
Reinf. Layer #9	12.67	4.86 478.34	11.52 478.34	17.40 482.61	2.27	OK
Reinf. Layer #10	14.00	5.03 479.67	11.72 479.67	15.85 482.46	2.76	OK
Reinf. Layer #11	15.33	5.19 481.00	9.52 481.00	10.78 481.95	5.21	OK

Note: In the 'Status' column, OK means the critical two part-wedge was identified within the specified search domain. 'Minimum on Edge' means the critical result corresponds to a minimum on the edge of the search domain; i.e., either on X1 or X2 or the internally preset limits on Xc.

### CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

#### Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.31

Critical Circle:  $X_c = -5.97$ [ft],  $Y_c = 492.78$ [ft],  $R = 30.93$ [ft]. (Number of slices used = 60 )

#### Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

Minimum Factor of Safety = 1.45

Critical Two-Part Wedge: ( $X_a = 0.05$ ,  $Y_a = 466.34$ ) [ft]

( $X_b = 4.36$ ,  $Y_b = 466.34$ ) [ft]

( $X_c = 27.27$ ,  $Y_c = 483.60$ ) [ft]

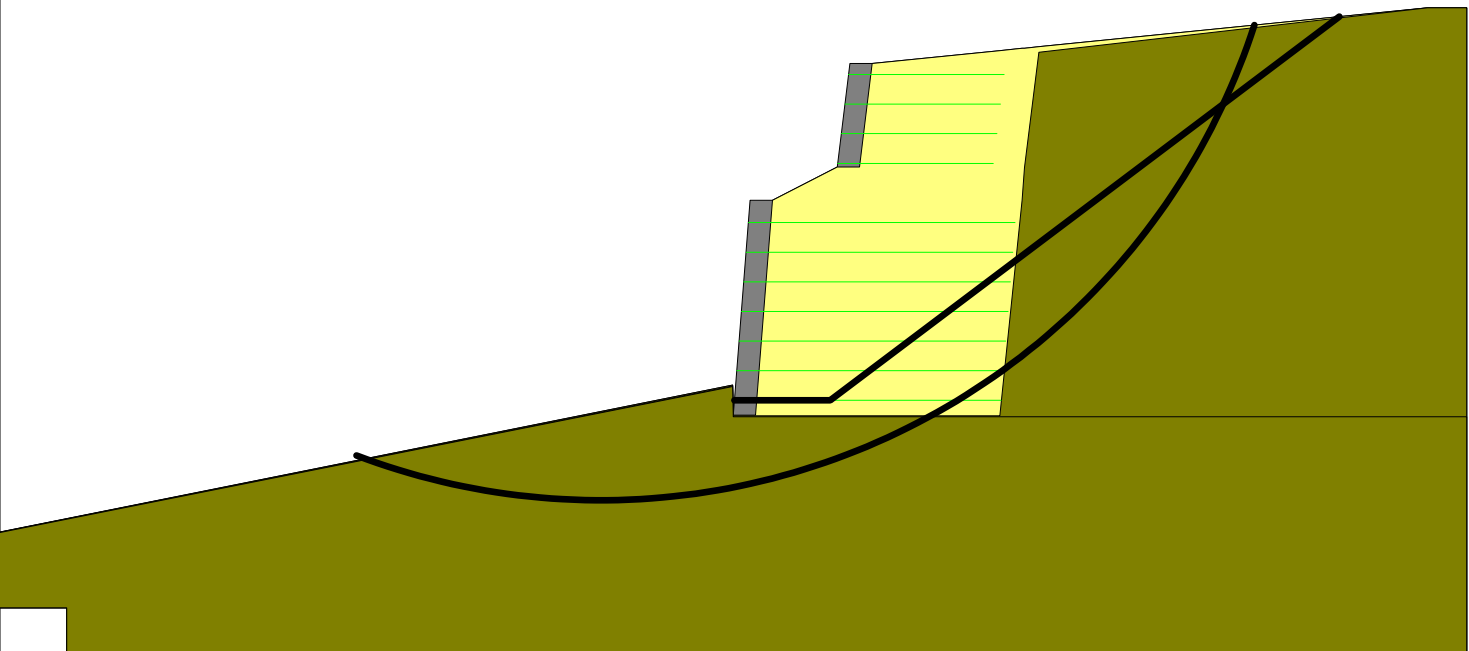
(Number of slices used = 30 )

Interslice resultant force inclination = 34.65 [degrees]

#### Three-Part Wedge Stability Analysis

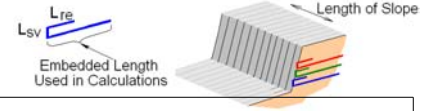
**NOT CONDUCTED**

**REINFORCEMENT LAYOUT: DRAWING**



**SCALE:**





**REINFORCEMENT LAYOUT: TABULATED DATA & QUANTITIES**

Layer #	Reinf. Type #	Geosynthetic Designated Name	Height Relative to Toe [ft]	Embedded Length [ft]	Covergae Ratio, Rc	( X, Y ) front [ft]	( X, Y ) rear [ft]	Lsv * [ft]	Lre [ft]
1	2	UX1100MSE	0.67	12.00	1.00	0.05 1528.46	12.05 1528.46	0.00	0.00
2	2	UX1100MSE	2.00	12.00	1.00	0.16 1529.79	12.16 1529.79	0.00	0.00
3	2	UX1100MSE	3.33	12.00	1.00	0.26 1531.12	12.26 1531.12	0.00	0.00
4	2	UX1100MSE	4.67	12.00	1.00	0.37 1532.46	12.37 1532.46	0.00	0.00
5	2	UX1100MSE	6.00	12.00	1.00	0.47 1533.79	12.47 1533.79	0.00	0.00
6	2	UX1100MSE	7.33	12.00	1.00	0.58 1535.12	12.58 1535.12	0.00	0.00
7	2	UX1100MSE	8.67	12.00	1.00	0.68 1536.46	12.68 1536.46	0.00	0.00
8	2	UX1100MSE	11.33	7.00	1.00	4.70 1539.12	11.70 1539.12	0.00	0.00
9	2	UX1100MSE	12.67	7.00	1.00	4.86 1540.46	11.86 1540.46	0.00	0.00
10	2	UX1100MSE	14.00	7.00	1.00	5.03 1541.79	12.03 1541.79	0.00	0.00
11	2	UX1100MSE	15.33	7.00	1.00	5.19 1543.12	12.19 1543.12	0.00	0.00

\* Vertical distance between layers.

**QUANTITIES**

Reinf. Type #	Designated Name	Coverage Ratio	Area of reinforcemnt [ft <sup>2</sup> ] / length of slope [ft]
2	UX1100MSE	1.00	112.00

# Dino DeLaurentis Residence

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## PROJECT IDENTIFICATION

Title: Dino DeLaurentis Residence  
 Project Number: 20ERS150 -  
 Client: ERS  
 Designer: NT

**Description:**  
 Tiered Section - sta. 0+91 (Wall 1 panel 53, Wall 2 panel 12)

## Company's information:

Name: ERS Materials, LLC  
 Street: 116 Edwards Ferry Road NE  
 Unit S  
 Leesburg, VA 20176

Telephone #:  
 Fax #:  
 E-Mail:

**Original file path and name:** V:\2020\20 ..... \Ressa\ReSSA\_Tiered Section - sta. 0+91-Wall 1.MSE  
**Original date and time of creating this file:** Thu Nov 12 11:06:25 2020

**PROGRAM MODE:** Analysis of a General Slope using GEOSYNTHETIC as reinforcing material.

**INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)**

**SOIL DATA**

Soil Layer #:	Unit weight, $\gamma$ [lb/ft <sup>3</sup> ]	Internal angle of friction, $\phi$ [deg.]	Cohesion, c [lb/ft <sup>2</sup> ]
1..... Block Face.....	130.0	0.0	500.0
2..... Reinforced Fill.....	125.0	30.0	0.0
3..... Retained Soil.....	125.0	30.0	0.0
4..... Foundation Soil.....	125.0	30.0	0.0

**REINFORCEMENT**

Reinforcement Type #	Geosynthetic Designated Name	Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Additional Reduction Factor, RFa	Coverage Ratio, Rc
2	UX1100MSE	3971.52	1.08	1.00	2.56	1.00	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
2	UX1100MSE	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, Fs-po = 1.50  
 Design method for Global Stability: AASHTO/FHWA Bishop.

**WATER**

Water is not present

**SEISMICITY**

Not Applicable

### DRAWING OF SPECIFIED GEOMETRY - GENERAL - Quick Input

- Problem geometry is defined along sections selected by user at x,y coordinates.
- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

#### GEOMETRY

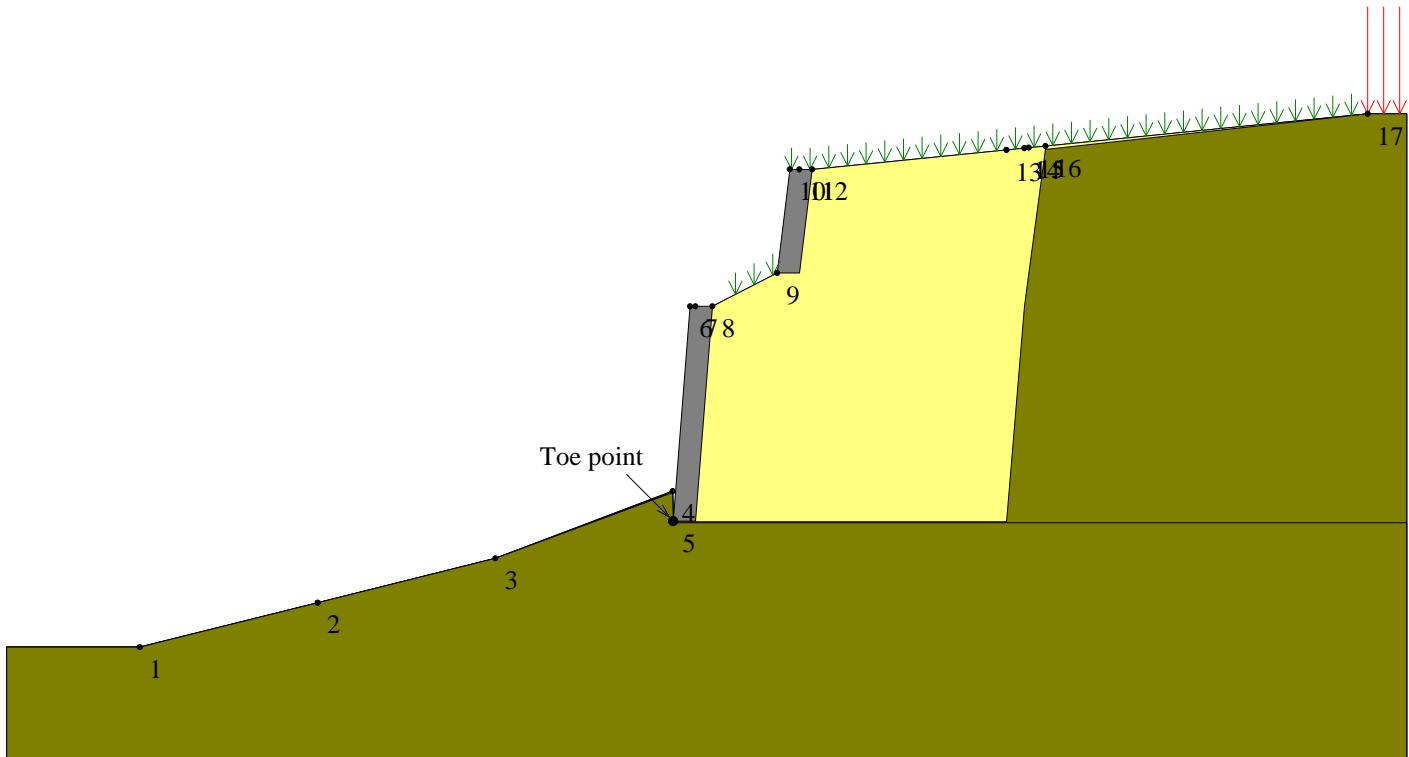
Soil profile contains 4 layers (see details in next page)

#### UNIFORM SURCHARGE

Load Q1 = 100.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X1s = 2.80 and ends at X1e = 31.25 [ft].  
Load Q2 = 500.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X2s = 31.25 and ends at X2e = 100.00 [ft].  
Surcharge load, Q3.....None

#### STRIP LOAD

.....None.....



SCALE:



**TABULATED DETAILS OF GENERAL SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

	#	Xi	Yi
■ Top of Layer 1	1	-24.00	460.00
	2	-16.00	462.00
	3	-8.00	464.00
	4	-0.03	467.02
	5	0.00	465.67
	6	0.76	475.34
	7	1.76	475.34
	8	4.68	476.84
	9	5.25	481.50
	10	6.25	481.50
■ Top of Layer 2	11	31.25	484.00
	12	-24.00	460.00
	13	-16.00	462.00
	14	-8.00	464.00
	15	-0.03	467.02
	16	0.00	465.67
	17	1.00	465.67
	18	1.76	475.34
	19	4.68	476.84
	20	5.68	476.84
	21	6.25	481.50
	22	31.25	484.00
■ Top of Layer 3	23	-24.00	460.00
	24	-16.00	462.00
	25	-8.00	464.00
	26	-0.03	466.99
	27	0.00	465.64
	28	15.00	465.64
	29	15.80	475.33
	30	16.00	476.81
	31	16.75	482.40
	32	31.25	484.00
■ Top of Layer 4	33	-24.00	460.00
	34	-16.00	462.00
	35	-8.00	464.00
	36	-0.03	466.96
	37	0.00	465.60

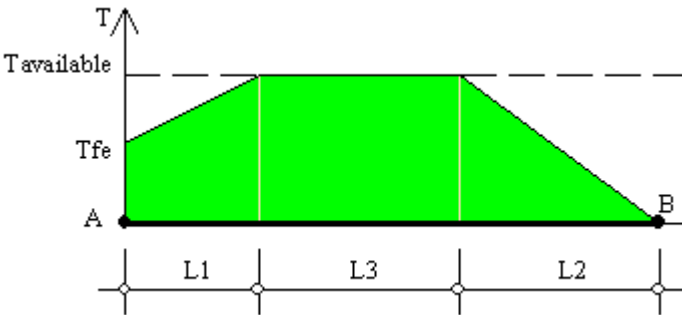


**TABULATED DETAILS OF SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

#	X	Y1	Y2	Y3	Y4
1	-24.00	460.00	460.00	460.00	460.00
2	-16.00	462.00	462.00	462.00	462.00
3	-8.00	464.00	464.00	464.00	464.00
4	-0.03	467.02	467.02	466.99	466.96
5	0.00	465.67	465.67	465.64	465.60
6	0.76	475.34	465.67	465.64	465.60
7	1.00	475.34	465.67	465.64	465.60
8	1.76	475.34	475.34	465.64	465.60
9	4.68	476.84	476.84	465.64	465.60
10	5.25	481.50	476.84	465.64	465.60
11	5.68	481.50	476.84	465.64	465.60
12	6.25	481.50	481.50	465.64	465.60
13	15.00	482.38	482.38	465.64	465.60
14	15.80	482.46	482.46	475.33	465.60
15	16.00	482.48	482.48	476.81	465.60
16	16.75	482.55	482.55	482.40	465.60
17	31.25	484.00	484.00	484.00	465.60

**DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER**



A = Front-end of reinforcement (at face of slope)  
 B = Rear-end of reinforcement  
 AB = L1 + L2 + L3 = Embedded length of reinforcement

Tavailable = Long-term strength of reinforcement  
 Tfe = Available front-end strength (e.g., connection to facing)

L1 = Front-end 'pullout' length  
 L2 = Rear-end pullout length  
 Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement,  $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	UX1100MSE	0.67	15.00	0.46	1.48	13.06	1249.72	1436.46
2	UX1100MSE	2.00	15.00	0.46	1.61	12.93	1249.72	1436.46
3	UX1100MSE	3.33	15.00	0.46	1.77	12.77	1249.72	1436.46
4	UX1100MSE	4.67	15.00	0.46	1.97	12.57	1249.72	1436.46
5	UX1100MSE	6.00	15.00	0.46	2.20	12.34	1249.72	1436.46
6	UX1100MSE	7.33	15.00	0.46	2.53	12.01	1249.72	1436.46
7	UX1100MSE	8.67	15.00	0.46	2.95	11.59	1249.72	1436.46
8	UX1100MSE	11.33	7.00	0.46	4.89	1.65	1249.72	1436.46
9	UX1100MSE	12.67	7.00	0.46	6.40	0.14	1249.72	1436.46
10	UX1100MSE	14.00	7.00	0.00	7.00	0.00	1223.48	1223.48 (*)
11	UX1100MSE	15.33	7.00	0.00	7.00	0.00	739.83	739.83 (*)

(\*) This Tavailable is dictated by the pullout resistance capacity, which is smaller than the long-term strength of the reinforcement that is related to its specified ultimate strength.

**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)									
Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	10.00	481.88	-15.79	462.19	-10.55	482.06	20.55	2.04	
2	11.04	481.98	-15.73	462.18	-9.78	482.13	20.82	1.86	
3	12.07	482.08	-13.51	462.65	-8.20	482.22	20.27	1.73	
4	13.11	482.19	-14.74	462.44	-9.40	484.41	22.61	1.67	
5	14.14	482.29	0.69	474.73	3.28	485.86	11.43	1.61	
6	15.18	482.39	0.69	474.72	2.45	488.91	14.29	1.59	
7	16.21	482.50	-15.72	462.17	-9.25	487.25	25.90	1.59	
8	17.24	482.60	-15.74	462.23	-5.78	482.99	23.03	1.53	
9	18.28	482.70	-15.69	462.20	-5.73	484.09	24.05	1.46	
10	19.31	482.81	-15.65	462.17	-6.27	486.21	25.81	1.42	
11	20.35	482.91	-15.56	462.14	-5.39	485.98	25.92	1.38	
12	21.38	483.01	-17.90	461.73	-7.15	488.78	29.11	1.35	
13	22.42	483.12	-17.89	461.70	-7.87	491.49	31.43	1.33	
14	23.45	483.22	-18.91	461.45	-7.62	491.58	32.17	1.32	
15	24.48	483.32	-18.89	461.43	-8.05	493.87	34.20	1.31	
16	25.52	483.43	-19.86	461.15	-8.92	496.21	36.73	1.31	
17	26.55	483.53	-19.84	461.14	-9.06	498.05	38.46	1.30	
18	27.59	483.63	-20.76	460.85	-9.54	499.72	40.46	1.30	OK
19	28.62	483.74	-20.73	460.84	-10.22	502.82	43.28	1.30	
20	29.66	483.84	-23.09	460.39	-12.06	506.63	47.54	1.30	
21	30.69	483.94	-23.03	460.38	-10.70	505.30	46.58	1.31	
22	31.73	484.00	-22.99	460.37	-10.95	507.66	48.80	1.31	
23	32.76	484.00	-25.24	460.10	-12.78	512.18	53.55	1.31	
24	33.79	484.00	-25.24	460.09	-13.13	515.03	56.25	1.31	
25	34.83	484.00	-25.24	460.08	-13.54	518.08	59.17	1.31	
26	35.86	484.00	-25.24	460.07	-14.01	521.37	62.32	1.32	
27	36.90	484.00	-26.10	460.04	-15.33	526.51	67.34	1.33	
28	37.93	484.00	-25.24	460.06	-15.16	528.78	69.45	1.34	
29	38.97	484.00	-27.62	460.11	-16.51	533.88	74.60	1.36	
30	40.00	484.00	-27.61	460.09	-17.27	538.40	78.99	1.37	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

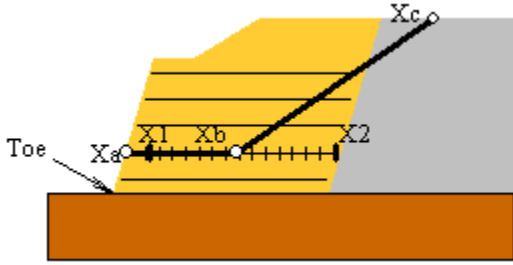
**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each exit point (considering all specified entry points).									
Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	-30.19	460.05	32.76	484.00	-14.59	513.75	55.92	1.32	
2	-29.34	460.10	33.79	484.00	-14.77	516.94	58.68	1.32	
3	-28.53	460.16	32.76	484.00	-13.76	512.90	54.76	1.31	
4	-26.98	460.02	33.79	484.00	-13.96	516.03	57.50	1.31	
5	-26.13	460.07	32.76	484.00	-12.91	511.95	53.54	1.31	
6	-25.24	460.11	28.62	483.74	-12.79	504.93	46.52	1.31	
7	-24.02	460.11	28.62	483.74	-12.57	505.06	46.38	1.30	
8	-23.13	460.41	28.62	483.74	-11.79	504.31	45.35	1.30	
9	-22.26	460.73	27.59	483.63	-10.30	500.40	41.43	1.30	
10	-20.76	460.85	27.59	483.63	-9.54	499.72	40.46	1.30	OK
11	-19.81	461.13	27.59	483.63	-9.23	500.00	40.29	1.30	
12	-18.84	461.40	27.59	483.63	-8.45	499.30	39.30	1.30	
13	-17.85	461.67	27.59	483.63	-7.67	498.60	38.31	1.30	
14	-16.83	461.94	27.59	483.63	-6.89	497.91	37.32	1.31	
15	-15.70	462.17	26.55	483.53	-5.97	495.41	34.63	1.31	
16	-14.72	462.45	26.55	483.53	-5.20	494.75	33.68	1.32	
17	-13.73	462.72	26.55	483.53	-4.43	494.10	32.73	1.33	
18	-12.76	462.98	25.52	483.43	-5.08	494.66	32.60	1.34	
19	-11.71	463.23	25.52	483.43	-4.27	493.94	31.59	1.35	
20	-10.63	463.48	25.52	483.43	-3.86	493.93	31.20	1.37	
21	-9.54	463.72	25.52	483.43	-3.44	493.90	30.79	1.39	
22	-8.41	463.96	25.52	483.43	-3.00	493.83	30.36	1.41	
23	-7.32	464.30	25.52	483.43	-2.15	493.18	29.33	1.44	
24	-6.25	464.68	25.52	483.43	-2.98	495.43	30.92	1.47	
25	-5.36	465.09	25.52	483.43	-2.51	495.46	30.51	1.51	
26	-4.32	465.47	25.52	483.43	-3.03	497.10	31.66	1.55	
27	-3.23	465.87	24.48	483.32	0.04	491.42	25.75	1.61	
28	-2.10	466.26	22.42	483.12	3.95	483.72	18.48	1.84	
29	0.00	465.67	0.00	465.67	0.00	465.67	0.00	N/A	#10 - Overhanging Cliff
30	-0.07	465.65	26.55	483.53	-12.77	513.32	49.33	1.52	
31	-3.89	465.69	25.52	483.43	-1.54	495.04	29.45	1.57	
32	-1.66	466.45	27.59	483.63	7.72	483.96	19.87	2.21	
33	0.10	467.17	25.52	483.43	-11.31	513.03	47.25	1.64	
34	0.09	467.89	18.28	482.70	-28.02	520.96	60.06	1.61	
35	0.18	468.66	18.28	482.70	-24.16	518.71	55.66	1.73	
36	0.26	469.42	17.24	482.60	-20.13	513.24	48.32	1.67	
37	0.35	470.19	17.24	482.60	-15.54	509.53	42.43	1.80	
38	0.24	470.89	17.24	482.60	-10.59	504.83	35.63	1.73	
39	0.33	471.67	17.24	482.60	-6.10	500.17	29.22	1.63	
40	0.42	472.44	17.24	482.60	-2.91	496.97	24.76	1.79	
41	0.51	473.21	17.24	482.60	-0.96	495.43	22.27	1.65	
42	0.60	473.97	17.24	482.60	1.32	492.95	19.00	1.83	
43	0.69	474.72	15.18	482.39	2.45	488.91	14.29	1.59	
44	1.93	475.49	15.18	482.39	3.79	488.07	12.72	1.59	
45	3.46	476.23	15.18	482.39	5.22	487.12	11.02	1.91	
46	4.67	476.98	16.21	482.50	-0.14	501.86	25.34	2.55	
47	4.68	477.74	15.18	482.39	5.24	490.64	12.91	2.42	
48	4.80	478.48	14.14	482.29	3.02	496.22	17.83	2.42	
49	4.84	479.26	18.28	482.70	7.25	497.80	18.70	3.39	
50	4.97	480.00	16.21	482.50	4.57	508.33	28.33	3.72	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

**RESULTS OF TRANSLATIONAL ANALYSIS**



Results in the table below represent critical two-part wedges identified between specified starting (X1) and ending (X2) search points. Wedges along all reinforcement layers and at elevation zero are reported. The critical two-part wedge, one for each predetermined elevation, is defined by Xa, Xb and Xc where Xa is the front end of the passive wedge (slope face), Xb is where the passive wedge ends and the active one starts, and Xc is the X-ordinate at which the active wedge starts.

**Critical two-part wedge along each interface:**

Interface	Height Relative to Toe [ft]	( Xa, Ya ) [ft]	( Xb, Yb ) [ft]	( Xc, Yc ) [ft]	Fs	STATUS
At toe elevation	0.00	0.00 465.67	0.20 465.67	19.22 482.80	1.56	Minimum on Edge
Reinf. Layer #1	0.67	0.05 466.34	1.39 466.34	20.47 482.92	1.57	OK
Reinf. Layer #2	2.00	0.16 467.67	1.49 467.67	19.56 482.83	1.61	OK
Reinf. Layer #3	3.33	0.26 469.00	2.59 469.00	18.36 482.71	1.65	OK
Reinf. Layer #4	4.67	0.37 470.34	3.68 470.34	18.43 482.72	1.68	OK
Reinf. Layer #5	6.00	0.47 471.67	4.77 471.67	18.98 482.77	1.67	OK
Reinf. Layer #6	7.33	0.58 473.00	4.87 473.00	18.22 482.70	1.66	OK
Reinf. Layer #7	8.67	0.68 474.34	4.97 474.34	19.70 482.85	1.66	OK
Reinf. Layer #8	11.33	4.70 477.00	11.43 477.00	19.11 482.79	2.00	OK
Reinf. Layer #9	12.67	4.86 478.34	11.63 478.34	17.53 482.63	2.27	OK
Reinf. Layer #10	14.00	5.03 479.67	11.83 479.67	15.99 482.47	2.75	OK
Reinf. Layer #11	15.33	5.19 481.00	9.63 481.00	11.03 481.98	5.23	OK

Note: In the 'Status' column, OK means the critical two part-wedge was identified within the specified search domain. 'Minimum on Edge' means the critical result corresponds to a minimum on the edge of the search domain; i.e., either on X1 or X2 or the internally preset limits on Xc.

### CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

#### Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.30

Critical Circle:  $X_c = -9.54$ [ft],  $Y_c = 499.72$ [ft],  $R = 40.46$ [ft]. (Number of slices used = 61 )

#### Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

Minimum Factor of Safety = 1.56

Critical Two-Part Wedge: ( $X_a = 0.00$ ,  $Y_a = 465.67$ ) [ft]

( $X_b = 0.20$ ,  $Y_b = 465.67$ ) [ft]

( $X_c = 19.22$ ,  $Y_c = 482.80$ ) [ft]

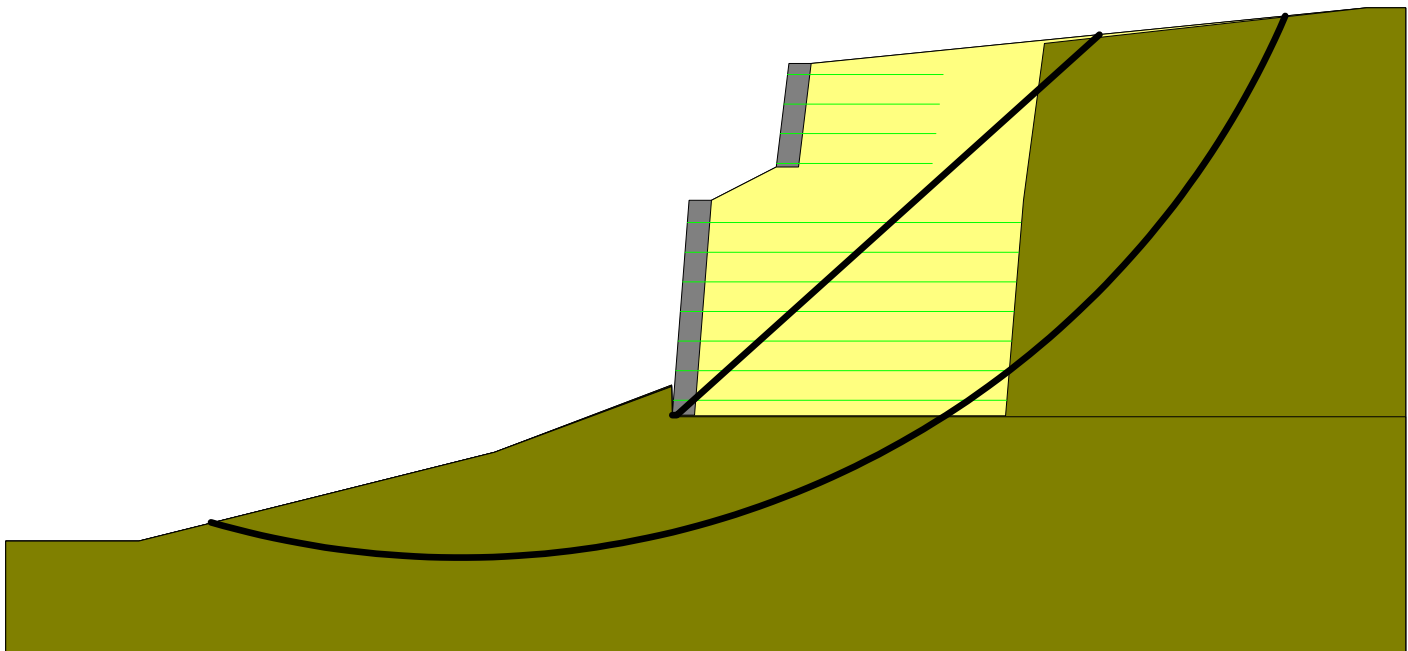
(Number of slices used = 30 )

Interslice resultant force inclination = 42.00 [degrees]

#### Three-Part Wedge Stability Analysis

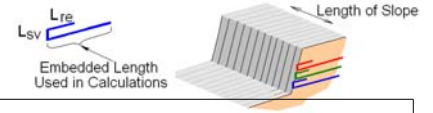
**NOT CONDUCTED**

**REINFORCEMENT LAYOUT: DRAWING**



**SCALE:**





**REINFORCEMENT LAYOUT: TABULATED DATA & QUANTITIES**

Layer #	Reinf. Type #	Geosynthetic Designated Name	Height Relative to Toe [ft]	Embedded Length [ft]	Covergae Ratio, Rc	( X, Y ) front [ft]	( X, Y ) rear [ft]	Lsv * [ft]	Lre [ft]
1	2	UX1100MSE	0.67	15.00	1.00	0.05 1528.46	15.05 1528.46	0.00	0.00
2	2	UX1100MSE	2.00	15.00	1.00	0.16 1529.79	15.16 1529.79	0.00	0.00
3	2	UX1100MSE	3.33	15.00	1.00	0.26 1531.12	15.26 1531.12	0.00	0.00
4	2	UX1100MSE	4.67	15.00	1.00	0.37 1532.46	15.37 1532.46	0.00	0.00
5	2	UX1100MSE	6.00	15.00	1.00	0.47 1533.79	15.47 1533.79	0.00	0.00
6	2	UX1100MSE	7.33	15.00	1.00	0.58 1535.12	15.58 1535.12	0.00	0.00
7	2	UX1100MSE	8.67	15.00	1.00	0.68 1536.46	15.68 1536.46	0.00	0.00
8	2	UX1100MSE	11.33	7.00	1.00	4.70 1539.12	11.70 1539.12	0.00	0.00
9	2	UX1100MSE	12.67	7.00	1.00	4.86 1540.46	11.86 1540.46	0.00	0.00
10	2	UX1100MSE	14.00	7.00	1.00	5.03 1541.79	12.03 1541.79	0.00	0.00
11	2	UX1100MSE	15.33	7.00	1.00	5.19 1543.12	12.19 1543.12	0.00	0.00

\* Vertical distance between layers.

**QUANTITIES**

Reinf. Type #	Designated Name	Coverage Ratio	Area of reinforcemnt [ft <sup>2</sup> ] / length of slope [ft]
2	UX1100MSE	1.00	133.00

# Dino DeLaurentis Residence

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## PROJECT IDENTIFICATION

Title: Dino DeLaurentis Residence  
 Project Number: 20ERS150 -  
 Client: ERS  
 Designer: NT

**Description:**  
 Tiered Section - sta. 1+67 (Wall 1 panel 60, Wall 2 panel 13)

### Company's information:

Name: ERS Materials, LLC  
 Street: 116 Edwards Ferry Road NE  
 Unit S  
 Leesburg, VA 20176

Telephone #:  
 Fax #:  
 E-Mail:

**Original file path and name:** V:\2020\20 ..... \Ressa\ReSSA\_Tiered Section - sta. 1+67-Wall 1.MSE  
**Original date and time of creating this file:** Thu Nov 12 11:06:25 2020

**PROGRAM MODE:** Analysis of a General Slope using GEOSYNTHETIC as reinforcing material.



**INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)**

**SOIL DATA**

Soil Layer #:	Unit weight, $\gamma$ [lb/ft <sup>3</sup> ]	Internal angle of friction, $\phi$ [deg.]	Cohesion, c [lb/ft <sup>2</sup> ]
1..... Block Face.....	130.0	0.0	500.0
2..... Reinforced Fill.....	125.0	30.0	0.0
3..... Retained Soil .....	125.0	30.0	0.0
4..... Foundation Soil .....	125.0	30.0	0.0

**REINFORCEMENT**

Reinforcement Type #	Geosynthetic Designated Name	Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Additional Reduction Factor, RFa	Coverage Ratio, Rc
2	UX1100MSE	3971.52	1.08	1.00	2.56	1.00	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
2	UX1100MSE	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, Fs-po = 1.50  
 Design method for Global Stability: AASHTO/FHWA Bishop.

**WATER**

Water is not present

**SEISMICITY**

Not Applicable

### DRAWING OF SPECIFIED GEOMETRY - GENERAL - Quick Input

- Problem geometry is defined along sections selected by user at x,y coordinates.
- X1,Y1 represents the coordinates of soil surface. X2,Y2 represent the coordinates of the end of soil layer 1 and start of soil layer 2, and so on.

#### GEOMETRY

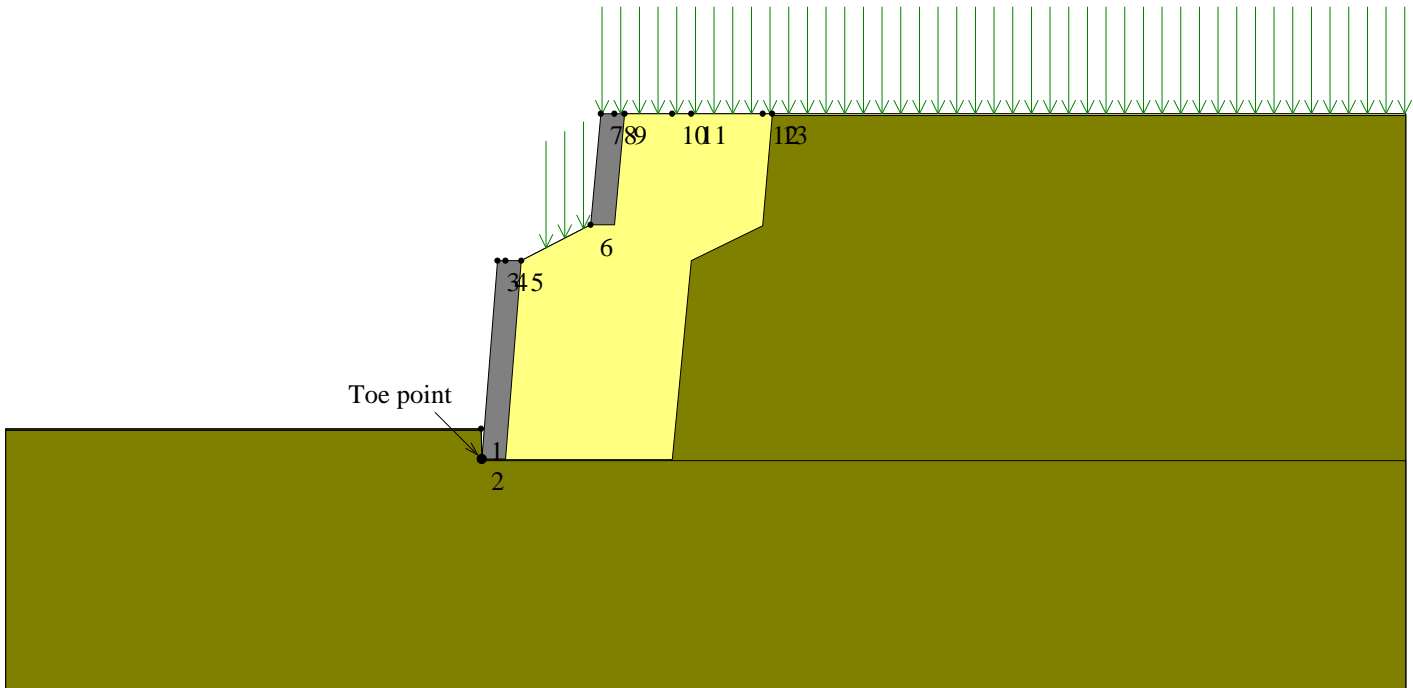
Soil profile contains 4 layers (see details in next page)

#### UNIFORM SURCHARGE

Load Q1 = 100.00 [lb/ft<sup>2</sup>] inclined from vertical at 0.00 degrees, starts at X1s = 2.70 and ends at X1e = 100.00 [ft].  
Surcharge load, Q2.....None  
Surcharge load, Q3.....None

#### STRIP LOAD

.....None.....



SCALE:



**TABULATED DETAILS OF GENERAL SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

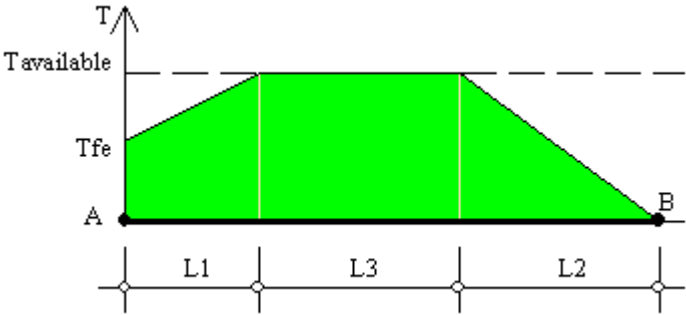
	#	Xi	Yi
■ Top of Layer 1	1	-0.03	468.94
	2	0.00	467.67
	3	0.66	476.00
	4	1.66	476.00
	5	4.57	477.51
	6	5.00	482.17
■ Top of Layer 2	7	-0.03	468.94
	8	0.00	467.67
	9	1.00	467.67
	10	1.66	476.00
	11	4.57	477.51
	12	5.57	477.51
■ Top of Layer 3	13	6.00	482.17
	14	-0.03	468.90
	15	0.00	467.64
	16	8.00	467.64
	17	8.80	476.00
	18	11.80	477.47
■ Top of Layer 4	19	12.20	482.10
	20	-0.03	468.87
	21	0.00	467.60

**TABULATED DETAILS OF SPECIFIED GEOMETRY**

Soil profile contains 4 layers. Coordinates in [ft.]

#	X	Y1	Y2	Y3	Y4
1	-0.03	468.94	468.94	468.90	468.87
2	0.00	467.67	467.67	467.64	467.60
3	0.66	476.00	467.67	467.64	467.60
4	1.00	476.00	467.67	467.64	467.60
5	1.66	476.00	476.00	467.64	467.60
6	4.57	477.51	477.51	467.64	467.60
7	5.00	482.17	477.51	467.64	467.60
8	5.57	482.17	477.51	467.64	467.60
9	6.00	482.17	482.17	467.64	467.60
10	8.00	482.17	482.17	467.64	467.60
11	8.80	482.17	482.17	476.00	467.60
12	11.80	482.17	482.17	477.47	467.60
13	12.20	482.17	482.17	482.10	467.60

**DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER**



A = Front-end of reinforcement (at face of slope)  
 B = Rear-end of reinforcement  
 AB = L1 + L2 + L3 = Embedded length of reinforcement

Tavailable = Long-term strength of reinforcement  
 Tfe = Available front-end strength (e.g., connection to facing)

L1 = Front-end 'pullout' length  
 L2 = Rear-end pullout length  
 Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement,  $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	UX1100MSE	0.67	8.00	0.46	1.71	5.83	1249.72	1436.46
2	UX1100MSE	1.33	8.00	0.46	1.77	5.77	1249.72	1436.46
3	UX1100MSE	2.67	8.00	0.46	2.00	5.54	1249.72	1436.46
4	UX1100MSE	4.00	8.00	0.46	2.23	5.31	1249.72	1436.46
5	UX1100MSE	5.33	8.00	0.46	2.56	4.98	1249.72	1436.46
6	UX1100MSE	6.67	8.00	0.46	2.99	4.56	1249.72	1436.46
7	UX1100MSE	7.33	8.00	0.46	3.25	4.29	1249.72	1436.46
8	UX1100MSE	10.33	7.00	0.46	5.61	0.93	1249.72	1436.46
9	UX1100MSE	11.67	7.00	0.33	6.67	0.00	1249.72	1383.99 (*)
10	UX1100MSE	13.00	7.00	0.00	7.00	0.00	999.74	999.74 (*)

(\*) This Tavailable is dictated by the pullout resistance capacity, which is smaller than the long-term strength of the reinforcement that is related to its specified ultimate strength.

**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)									
Entry Point #	Entry Point (X, Y) [ft]		Exit Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	7.00	482.17	-0.08	467.61	-11.89	482.35	18.90	3.52	
2	7.97	482.17	0.06	468.54	-7.83	482.23	15.80	2.82	
3	8.93	482.17	0.03	469.39	-4.77	482.23	13.71	2.32	
4	9.90	482.17	-0.16	467.61	-5.93	482.35	15.83	1.95	
5	10.86	482.17	0.06	469.42	-2.11	482.21	12.98	1.64	
6	11.83	482.17	-0.03	468.53	-2.11	482.32	13.94	1.47	
7	12.80	482.17	0.07	469.43	-0.81	483.03	13.63	1.38	
8	13.76	482.17	0.08	469.43	-1.48	484.81	15.47	1.35	
9	14.73	482.17	0.08	469.42	-2.71	487.41	18.21	1.34	
10	15.69	482.17	0.09	469.42	-3.42	489.65	20.53	1.34	
11	16.66	482.17	-0.11	467.64	-6.51	491.97	25.15	1.34	OK
12	17.62	482.17	-0.10	467.64	-6.42	493.44	26.56	1.34	
13	18.59	482.17	-0.10	467.64	-10.67	500.52	34.54	1.35	
14	19.55	482.17	-0.09	467.65	-6.09	496.31	29.28	1.36	
15	20.52	482.17	-0.08	467.66	-5.84	497.70	30.59	1.37	
16	21.48	482.17	-0.07	467.66	-6.32	500.21	33.15	1.38	
17	22.45	482.17	-0.06	467.66	-7.80	504.38	37.53	1.40	
18	23.42	482.17	-0.06	467.66	-8.47	507.50	40.72	1.42	
19	24.38	482.17	-0.05	467.66	-10.47	513.02	46.54	1.44	
20	25.35	482.17	-0.04	467.66	-12.99	519.79	53.71	1.46	
21	26.31	482.17	-0.04	467.66	-14.17	524.51	58.58	1.49	
22	27.28	482.17	-0.03	467.66	-15.45	529.64	63.87	1.51	
23	28.24	482.17	-0.02	467.66	-19.48	540.36	75.26	1.54	
24	29.21	482.17	-0.01	467.67	-21.35	547.33	82.47	1.56	
25	30.17	482.17	-0.01	467.67	-27.47	563.48	99.68	1.59	
26	31.14	482.17	-0.33	467.58	-30.36	573.56	110.16	1.62	
27	32.10	482.17	-0.33	467.58	-33.60	584.86	121.91	1.65	
28	33.07	482.17	-0.33	467.57	-45.40	616.18	155.29	1.68	
29	34.03	482.17	-0.33	467.57	-51.09	634.79	174.76	1.71	
30	35.00	482.17	-0.33	467.57	-57.75	656.55	197.51	1.74	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

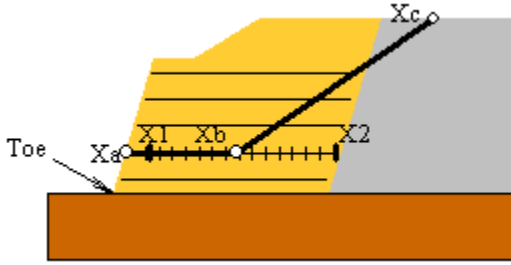
**RESULTS OF ROTATIONAL STABILITY ANALYSIS**

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.)  
 The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each exit point (considering all specified entry points).									
Exit Point #	Exit Point (X, Y) [ft]		Entry Point (X, Y) [ft]		Critical Circle (Xc, Yc, R) [ft]			Fs	STATUS
1	-25.13	469.01	22.45	482.17	-7.99	499.63	35.09	1.67	
2	-24.03	468.98	22.45	482.17	-7.39	498.83	34.18	1.63	
3	-22.98	468.98	21.48	482.17	-6.97	496.55	31.89	1.61	
4	-22.31	469.19	21.48	482.17	-6.37	495.79	31.01	1.57	
5	-21.08	469.07	22.45	482.17	-5.81	497.20	32.01	1.55	
6	-20.11	469.13	20.52	482.17	-5.35	492.97	28.04	1.52	
7	-18.90	469.02	21.48	482.17	-4.76	494.18	28.86	1.50	
8	-17.91	469.07	19.55	482.17	-4.33	490.35	25.25	1.47	
9	-16.73	468.98	19.55	482.17	-3.90	490.19	24.79	1.45	
10	-15.68	468.98	19.55	482.17	-3.28	489.49	23.98	1.43	
11	-14.90	469.14	18.59	482.17	-2.85	487.72	22.14	1.41	
12	-13.79	469.10	18.59	482.17	-2.22	487.06	21.37	1.39	
13	-12.68	469.06	17.62	482.17	-1.78	485.44	19.68	1.38	
14	-11.51	468.98	17.62	482.17	-1.30	485.19	19.17	1.37	
15	-10.72	469.14	17.62	482.17	-0.65	484.57	18.43	1.37	
16	-9.60	469.09	16.66	482.17	-0.19	483.09	16.87	1.37	
17	-8.58	469.10	16.66	482.17	0.33	482.80	16.34	1.38	
18	-7.46	469.04	16.66	482.17	0.85	482.49	15.81	1.39	
19	-6.33	468.99	16.66	482.17	1.23	482.43	15.43	1.43	
20	-5.40	469.04	17.62	482.17	2.09	482.66	15.54	1.47	
21	-4.24	468.98	17.62	482.17	2.64	482.29	14.99	1.52	
22	-3.21	468.99	19.55	482.17	4.28	482.30	15.27	1.80	
23	-2.18	469.01	24.38	482.17	7.71	482.43	16.67	2.62	
24	0.00	467.67	0.00	467.67	0.00	467.67	0.00	N/A	#10 - Overhanging Cliff
25	-0.11	467.64	16.66	482.17	-6.51	491.97	25.15	1.34	OK
26	0.00	467.67	0.00	467.67	0.00	467.67	0.00	N/A	#10 - Overhanging Cliff
27	-0.01	468.53	16.66	482.17	-4.78	491.37	23.33	1.34	
28	0.09	469.42	15.69	482.17	-3.42	489.65	20.53	1.34	
29	0.18	470.31	15.69	482.17	-3.46	491.14	21.15	1.52	
30	0.09	471.18	14.73	482.17	-0.57	487.30	16.13	1.52	
31	0.19	472.07	14.73	482.17	-0.52	488.59	16.54	1.51	
32	0.30	472.97	14.73	482.17	1.63	486.79	13.89	1.75	
33	0.40	473.86	13.76	482.17	3.12	484.38	10.87	1.69	
34	0.51	474.73	14.73	482.17	3.47	486.38	12.02	1.80	
35	0.61	475.60	13.76	482.17	2.60	488.06	12.62	1.67	
36	2.46	476.48	14.73	482.17	3.09	491.19	14.72	1.74	
37	4.25	477.36	14.73	482.17	4.92	489.70	12.36	2.23	
38	4.56	478.23	13.76	482.17	3.59	493.22	15.02	2.34	
39	4.68	479.12	13.76	482.17	6.06	490.06	11.03	3.67	
40	4.76	479.99	9.90	482.17	3.31	490.57	10.67	3.77	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

**RESULTS OF TRANSLATIONAL ANALYSIS**



Results in the table below represent critical two-part wedges identified between specified starting (X1) and ending (X2) search points. Wedges along all reinforcement layers and at elevation zero are reported. The critical two-part wedge, one for each predetermined elevation, is defined by Xa, Xb and Xc where Xa is the front end of the passive wedge (slope face), Xb is where the passive wedge ends and the active one starts, and Xc is the X-ordinate at which the active wedge starts.

Critical two-part wedge along each interface:									
Interface	Height Relative to Toe [ft]	( Xa, Ya ) [ft]	( Xb, Yb ) [ft]	( Xc, Yc ) [ft]	Fs	STATUS			
At toe elevation	0.00	0.00 467.67	4.00 467.67	21.91 482.17	1.42	OK			
Reinf. Layer #1	0.67	0.05 468.34	7.30 468.34	22.66 482.17	1.36	OK			
Reinf. Layer #2	1.33	0.11 469.00	5.33 469.00	20.48 482.17	1.33	OK			
Reinf. Layer #3	2.67	0.21 470.34	5.43 470.34	19.04 482.17	1.38	OK			
Reinf. Layer #4	4.00	0.32 471.67	5.53 471.67	17.61 482.17	1.45	OK			
Reinf. Layer #5	5.33	0.42 473.00	6.72 473.00	18.04 482.17	1.51	OK			
Reinf. Layer #6	6.67	0.53 474.34	7.80 474.34	16.81 482.17	1.60	OK			
Reinf. Layer #7	7.33	0.58 475.00	7.80 475.00	16.98 482.17	1.65	OK			
Reinf. Layer #8	10.33	4.62 478.00	8.35 478.00	14.53 482.17	2.45	OK			
Reinf. Layer #9	11.67	4.74 479.34	9.41 479.34	14.31 482.17	3.07	OK			
Reinf. Layer #10	13.00	4.86 480.67	6.06 480.67	7.23 482.17	3.56	OK			

Note: In the 'Status' column, OK means the critical two part-wedge was identified within the specified search domain. 'Minimum on Edge' means the critical result corresponds to a minimum on the edge of the search domain; i.e., either on X1 or X2 or the internally preset limits on Xc.



### CRITICAL RESULTS OF ROTATIONAL AND TRANSLATIONAL STABILITY ANALYSES

#### Rotational (Circular Arc; Bishop) Stability Analysis

Minimum Factor of Safety = 1.34

Critical Circle:  $X_c = -6.51$ [ft],  $Y_c = 491.97$ [ft],  $R = 25.15$ [ft]. (Number of slices used = 60 )

#### Translational (2-Part Wedge; Spencer), Direct Sliding, Stability Analysis

Minimum Factor of Safety = 1.33

Critical Two-Part Wedge: ( $X_a = 0.11$ ,  $Y_a = 469.00$ ) [ft]

( $X_b = 5.33$ ,  $Y_b = 469.00$ ) [ft]

( $X_c = 20.48$ ,  $Y_c = 482.17$ ) [ft]

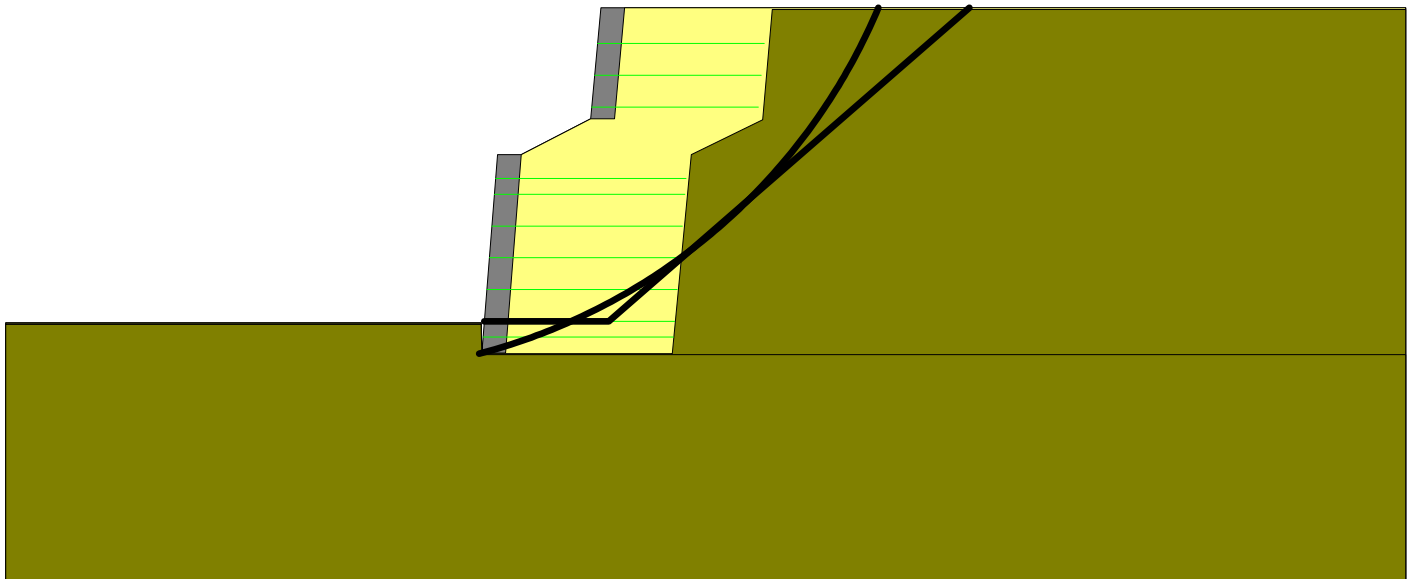
(Number of slices used = 30 )

Interslice resultant force inclination = 35.17 [degrees]

#### Three-Part Wedge Stability Analysis

**NOT CONDUCTED**

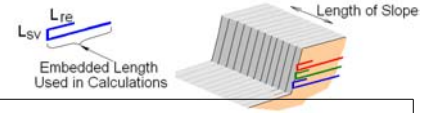
**REINFORCEMENT LAYOUT: DRAWING**



**SCALE:**

0 2 4 6 8 10 [ft]





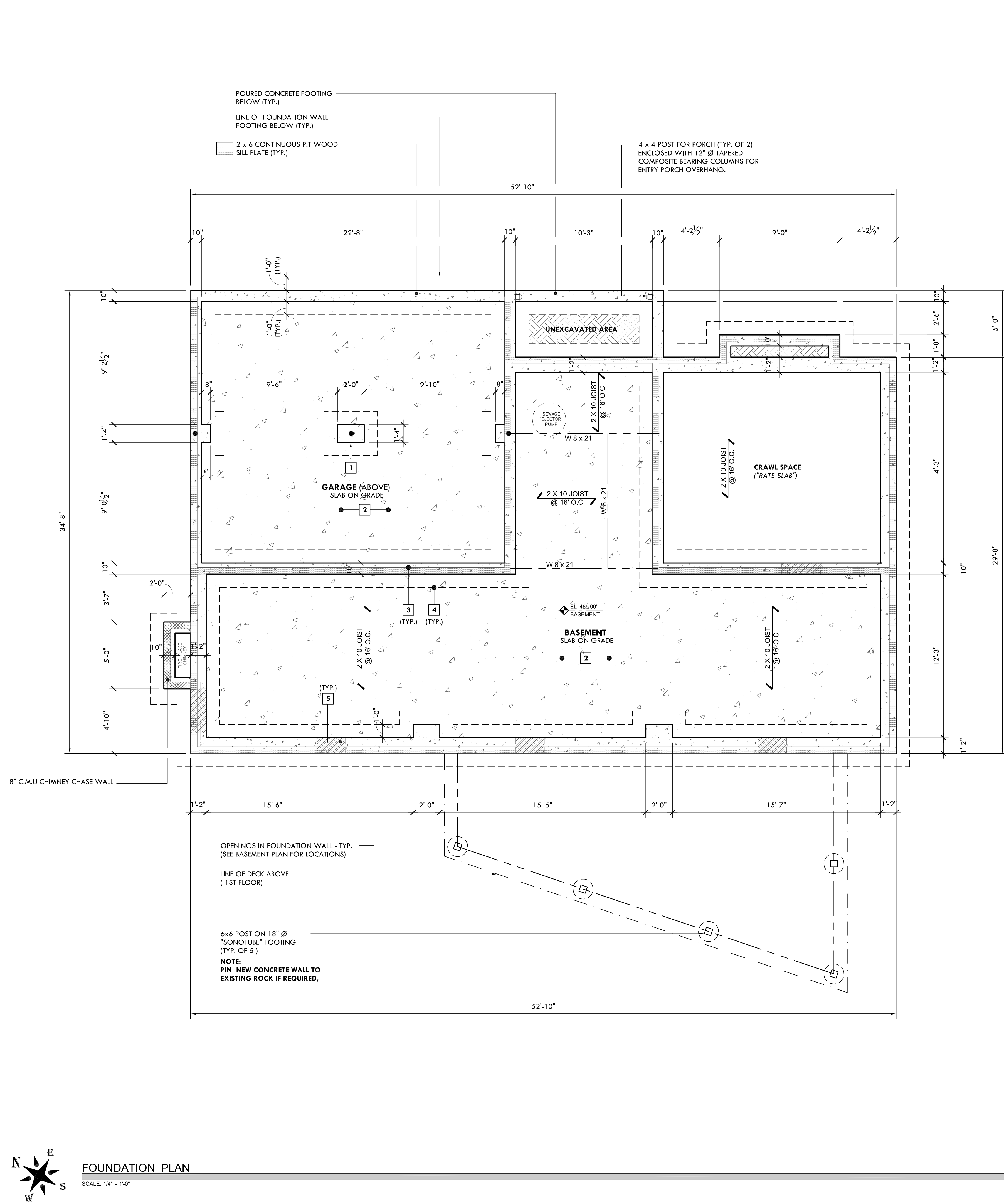
**REINFORCEMENT LAYOUT: TABULATED DATA & QUANTITIES**

Layer #	Reinf. Type #	Geosynthetic Designated Name	Height Relative to Toe [ft]	Embedded Length [ft]	Covergae Ratio, Rc	( X, Y ) front [ft]	( X, Y ) rear [ft]	Lsv * [ft]	Lre [ft]
1	2	UX1100MSE	0.67	8.00	1.00	0.05 1535.02	8.05 1535.02	0.00	0.00
2	2	UX1100MSE	1.33	8.00	1.00	0.11 1535.68	8.11 1535.68	0.00	0.00
3	2	UX1100MSE	2.67	8.00	1.00	0.21 1537.02	8.21 1537.02	0.00	0.00
4	2	UX1100MSE	4.00	8.00	1.00	0.32 1538.35	8.32 1538.35	0.00	0.00
5	2	UX1100MSE	5.33	8.00	1.00	0.42 1539.68	8.42 1539.68	0.00	0.00
6	2	UX1100MSE	6.67	8.00	1.00	0.53 1541.02	8.53 1541.02	0.00	0.00
7	2	UX1100MSE	7.33	8.00	1.00	0.58 1541.68	8.58 1541.68	0.00	0.00
8	2	UX1100MSE	10.33	7.00	1.00	4.62 1544.68	11.62 1544.68	0.00	0.00
9	2	UX1100MSE	11.67	7.00	1.00	4.74 1546.02	11.74 1546.02	0.00	0.00
10	2	UX1100MSE	13.00	7.00	1.00	4.86 1547.35	11.86 1547.35	0.00	0.00

\* Vertical distance between layers.

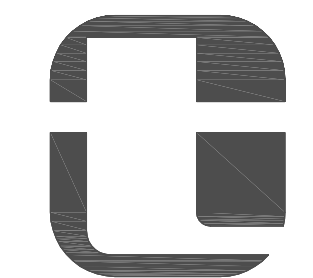
**QUANTITIES**

Reinf. Type #	Designated Name	Coverage Ratio	Area of reinforcemnt [ft²] / length of slope [ft]
2	UX1100MSE	1.00	77.00



**PLAN KEY NOTES**

- 1 16" X 24" CONC. PIER ON 3'-0" X 4'-0" X 1'-4" CONC. FTG. W/ 6 #5 BARS BOTH WAYS
- 2 4" CONCRETE SLAB W/ 6X6 X 10X10 W.W.M. ON GRAVEL & WELL TAMPED FILL W/ POLYURETHANE VAPOR SEAL
- 3 10" POURED CONC. W/ #6 BARS @ 10" O.C. VERTICALLY AND 3/8" DIA. @ 18" O.C. HORIZONTALLY
- 4 CONC. FTG. W/ 4 #5 BARS CONT.
- 5 PROVIDE STEEL LINTEL AT ALL OPENINGS



**JEFFREY TAYLOR ARCHITECT**

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WHITE PLAINS, NEW YORK 10603  
TEL 914 289 0011



REVISIONS:  
12.14.20 REVISED PER RPRC COMMENTS

PROJECT NO. 9458  
START DATE: 08.02.20  
DRAWN BY: FTA (R.M.)  
SCALE: AS NOTED

SHEET TITLE:  
FOUNDATION PLAN

**DELAURENTIS RESIDENCE**  
NEW HOUSE CONSTRUCTION  
21 NETHERMONT AVENUE  
TOWN OF NORTH CASTLE, NY 10504

SHEET NO:  
**S-100.00**