



TOWN OF NORTH CASTLE

WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

RESIDENTIAL PROJECT
REVIEW COMMITTEE
Adam R. Kaufman AICP, Chair

Telephone: (914) 273-3000 x 43
Fax: (914) 273-3554
www.nortcastleny.com

RESIDENTIAL PROJECT REVIEW COMMITTEE (RPRC) APPLICATION

Section I- PROJECT

ADDRESS: 34 Starkey Rd, West Harrison, NY 10604

Section III- DESCRIPTION OF WORK:

ADDITION TO EXISTING COTTAGE OF BEDROOMS, FAMILY ROOM, AND GARAGE.

COTTAGE RENOVATION completed in 2021 under separate PERMIT # 2020-3896 (4/22/21 cert of compliance)

Section III- CONTACT INFORMATION:

APPLICANT: MICHAEL + PAMELA GRIMALDI

ADDRESS: 34 STARKEY RD W. HARRISON, NY 10604

PHONE: 561-818-3939 MOBILE: 561-818-3939 EMAIL: M.GRIMALDI22@gmail.com

PROPERTY OWNER: SAME AS APPLICANT

ADDRESS: _____

PHONE: _____ MOBILE: _____ EMAIL: _____

PROFESSIONAL: JOSEPH RIINA RE-SITE DESIGN CONSULTANTS

ADDRESS: 251-F UNDERHILL AVE YONKON Hts NY 10598

PHONE: (914) 962-4488 MOBILE: _____

EMAIL: JRIINA@Sitedesignconsultants.com

Section IV- PROPERTY INFORMATION:

Zone: R-1/2A Tax ID (lot designation) 123.05-1-52#53



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RESIDENTIAL PROJECT REVIEW COMMITTEE (RPRC) PROCEDURES

The RPRC was created to streamline the residential review process and quickly reviews all residential projects. Projects determined to have no impact are permitted to apply to the Building Department while more complicated projects are directed to the appropriate review board(s).

THE RPRC reviews all applications for residential permits (including, but not limited to, buildings permits, steep slope permits, wetlands permits and pool permits), but excluding permits only relating to interior alterations/renovations.

To get on an RPRC agenda you must submit a single PDF file containing the following to the Planning Department:

1. Complete all items on the RPRC checklist
2. RPRC Application fee. Check made payable to: Town of North Castle.
3. Floor Area and Gross Land Coverage work sheets (with backup information)
4. Plans for your project according the RPRC Checklist
5. Submit one single PDF file containing all information listed above to the Planning Department: planning@nortcastleny.com.

Once your application has been submitted, you may follow your application on the RPRC webpage located at <http://www.nortcastleny.com/residential-project-review-committee-rprc>

Determination Letters are posted on the website (click on determination letters, find the date of your meeting and click on the name of your project - Letters are posted the day after the meeting, typically by 1 :00 p.m.)



**Town of North Castle
Residential Project Review Committee**

17 Bedford Road Armonk, New York 10504
(914) 273-3542 (914) 273-3554 (fax)

RPRC COMPLETENESS REVIEW FORM

This form represents the standard requirements for a completeness review for all Residential Project Review Committee submissions. Failure to provide all of the information requested will result in a determination that the application is incomplete.

Project Name on Plan: Grimaldi Residence

Initial Submittal Revised Preliminary

Street Location: 34 Starkey Road

Zoning District: R-1/2 A Property Acreage: 0.262 Tax Map Parcel ID: 123.05-1-52 & 53

Date: Grimaldi Residence

DEPARTMENTAL USE ONLY

Date Filed: _____ Staff Name: _____

Preliminary Plan Completeness Review Checklist

Items marked with a are complete, items left blank are incomplete and must be completed, "NA" means not applicable.

1. Plan prepared by a registered architect or professional engineer
2. Aerial photo (Google Earth) showing the applicant's entire property and adjacent properties and streets
3. Map showing the applicant's entire property and adjacent properties and streets
4. A locator map at a convenient scale
5. The proposed location, use and design of all buildings and structures
6. Existing topography and proposed grade elevations
7. Location of drives
8. Location of all existing and proposed site improvements, including drains, culverts, retaining walls and fences

RPRC COMPLETENESS REVIEW FORM

Page 2

| | |
|--------------------------|--|
| <input type="checkbox"/> | 9. Description of method of water supply and sewage disposal and location of such facilities |
| <input type="checkbox"/> | 10. The name and address of the applicant, property owner(s) if other than the applicant and of the planner, engineer, architect, surveyor and/or other professionals engaged to work |
| <input type="checkbox"/> | 1. Submission of a Zoning Conformance Table depicting the plan's compliance with the minimum requirements of the Zoning District |
| <input type="checkbox"/> | 2. If a tree removal permit is being sought, submission of a plan depicting the location and graphical removal status of all Town-regulated trees within the proposed area of disturbance. In addition, the tree plan shall be accompanied by a tree inventory includes a unique ID number, the species, size, health condition and removal status of each tree. |
| <input type="checkbox"/> | 3. If a wetlands permit is being sought, identification of the wetland and the 100-foot wetland buffer. |

More information about the items required herein can be obtained from the North Castle Planning Department. A copy of the Town Code can be obtained from Town Clerk or on the North Castle homepage: <http://www.northcastleny.com/townhall.html>

| | |
|-------|---|
| _____ | On this date, all items necessary for a technical review of the proposed site plan have been submitted and constitute a COMPLETE APPLICATION. |
|-------|---|



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**PLANNING DEPARTMENT
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GROSS LAND COVERAGE CALCULATIONS WORKSHEET

Application Name or Identifying Title: Grimaldi Residence Date: _____

Tax Map Designation or Proposed Lot No.: 123.05-1-53 & 123.05-1-52

Gross Lot Coverage

- | | | |
|-----|--|------------------|
| 1. | Total lot Area (Net Lot Area for Lots Created After 12/13/06): | <u>11,415.90</u> |
| 2. | Maximum permitted gross land coverage (per Section 355-26.C(1)(b)): | <u>4,339.81</u> |
| 3. | BONUS maximum gross land cover (per Section 355-26.C(1)(b)): | |
| | Distance principal home is beyond minimum front yard setback | |
| | <u> 0 </u> x 10 = <u> </u> | <u> 0 </u> |
| 4. | TOTAL Maximum Permitted gross land coverage = Sum of lines 2 and 3 | <u>4,339.81</u> |
| 5. | Amount of lot area covered by principal building : | |
| | <u>549.70</u> existing + <u>1,846.26</u> proposed = | <u>2,395.96</u> |
| 6. | Amount of lot area covered by accessory buildings : | |
| | <u> 0 </u> existing + <u> </u> proposed = | <u> 0 </u> |
| 7. | Amount of lot area covered by decks : | |
| | <u> 0 </u> existing + <u> 0 </u> proposed = | <u> 0 </u> |
| 8. | Amount of lot area covered by porches : | |
| | <u> 0 </u> existing + <u> 0 </u> proposed = | <u> 0 </u> |
| 9. | Amount of lot area covered by driveway, parking areas and walkways : | |
| | <u>131.34</u> existing + <u>1,089.66</u> proposed = | <u>1,221</u> |
| 10. | Amount of lot area covered by terraces : | |
| | <u> 0 </u> existing + <u>128.50</u> proposed = | <u>128.50</u> |
| 11. | Amount of lot area covered by tennis court, pool and mechanical equip : | |
| | <u> 0 </u> existing + <u> 0 </u> proposed = | <u> 0 </u> |
| 12. | Amount of lot area covered by all other structures : | |
| | <u> 0 </u> existing + <u> 0 </u> proposed = | <u> 0 </u> |
| 13. | Proposed gross land coverage : Total of Lines 5 – 12 = | <u>3745.46</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.

Richard J. Skop
Signature and Seal of Professional Preparing Worksheet



3/27/21
Date



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

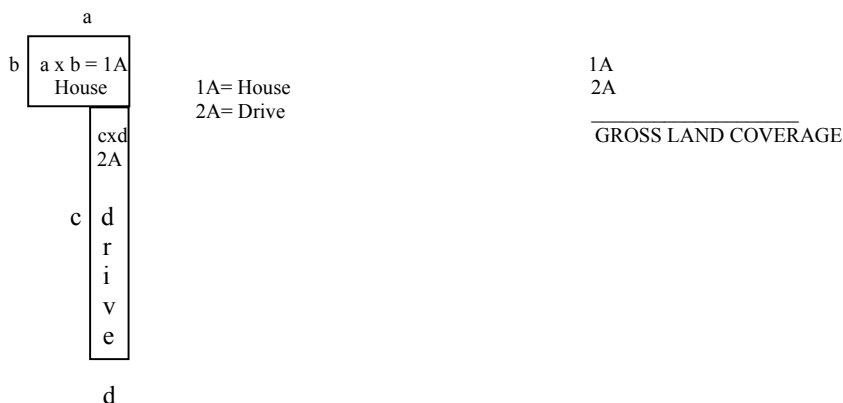
PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

GROSS LAND COVERAGE WORKSHEET

The following format is to be used for all applications for the purpose of demonstrating the gross land coverage of a property as necessary to show compliance with gross land coverage limitations of the Town Code.

1. Scaled worksheets are to be prepared based upon a site plan which represents existing or proposed conditions as applicable to the particular circumstances of the approval being sought. All site plans and worksheets are required to be prepared by a licensed or registered professional in the State of New York.
2. Each component of the gross land coverage is to be divided into simple polygons (squares, rectangles, etc.) each being drawn on the plan. The area of each polygon is to be shown by providing the dimensions and resulting area measurement. Each polygon is to be assigned an identifying label for reference purposes.
3. A summary table for each component is to be completed. The area of each polygon is to be listed by reference label then added, resulting in the gross land coverage for the entire site.
4. Any exception of land coverage from the gross land coverage must be identified on the floor plans and summary tables. The rationale for any exception must accompany the floor area worksheets.
5. A schematic illustration of the format is shown below



LOT AREA, NET – Lot area minus seventy five (75) percent of the area of any wetlands, waterbodies and, watercourses, but excluding any adjacent areas, all as defined in Chapter 209 Wetlands and Drainage, of the Town Code, and the area of any steep slopes, as defined Chapter 213, except that in the case of one-family lots, the deduction for steep slopes shall be only fifty (50) percent.

| Lot Size | Maximum Permitted Gross Land Coverage for One-Family Dwelling Lots ¹ (square feet) |
|-----------------------------------|---|
| Less than 5,000 square feet | 50% of the lot area |
| 5,000 to 9,999 square feet | 2,500 plus 30% of the lot area in excess of 5,000 square feet |
| 10,000 to 14,999 square feet | 4,000 plus 24% of the lot area in excess of 10,000 square feet |
| 15,000 square feet to 0.499 acres | 5,200 plus 18% of the lot area in excess of 15,000 square feet |
| 0.5 to 0.749 acres | 6,420 plus 15% of the lot area in excess of 0.5 acres |
| 0.75 to 0.999 acres | 8,050 plus 12% of the lot area in excess of 0.75 acres |
| 1.0 to 1.999 acres | 9,350 plus 9% of the lot area in excess of 1.0 acres |
| 2.0 acres or more | 13,270 plus 7.5% of the lot area in excess of 2.0 acres |

*Permitted gross land coverage limitations for two-family dwelling lots in the R-2F District shall be twenty five (25) percent greater than that permitted for one-family dwelling lots.

NOTWITHSTANDING ABOVE LIMITATIONS, AN ADDITIONAL 10 SQUARE FEET OF GROSS LAND COVERAGE SHALL BE PERMITTED FOR EACH ONE FOOT OF FRONT YARD SETBACK OF THE PRINCIPAL DWELLING IN EXCESS OF THE MINIMUM FRONT YARD SETBACK REQUIRED.



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

**PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning**

January 29, 2019
Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: Grimaldi Residence Date: _____

Tax Map Designation or Proposed Lot No.: 123.05-1-53 & 123.05-1-52

Floor Area

- | | | |
|-----|---|-----------------------------|
| 1. | Total Lot Area (Net Lot Area for Lots Created After 12/13/06): | <u>11,415.90</u> |
| 2. | Maximum permitted floor area (per Section 355-26.B(4)): | <u>4,033.18</u> |
| 3. | Amount of floor area contained within first floor: - <u>549.70</u> existing + <u>1,674.09</u> proposed = | <u>2223.79</u> |
| 4. | Amount of floor area contained within second floor: - <u>0</u> existing + <u>1,488.65</u> proposed = | <u>1,488.65</u> |
| 5. | Amount of floor area contained within garage: - <u>0</u> existing + <u>0</u> proposed = | Included in 1st Floor Total |
| 6. | Amount of floor area contained within porches capable of being enclosed: - <u>0</u> existing + <u>0</u> proposed = | <u>0</u> |
| 7. | Amount of floor area contained within basement (if applicable – see definition): - <u>0</u> existing + <u>0</u> proposed = | <u>0</u> |
| 8. | Amount of floor area contained within attic (if applicable – see definition): - <u>0</u> existing + <u>0</u> proposed = | Included in 2nd Floor Total |
| 9. | Amount of floor area contained within all accessory buildings: - <u>0</u> existing + <u>0</u> proposed = | <u>0</u> |
| 10. | Proposed floor area : Total of Lines 3 – 9 = | <u>3,712.44</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

3/27/21
Date





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

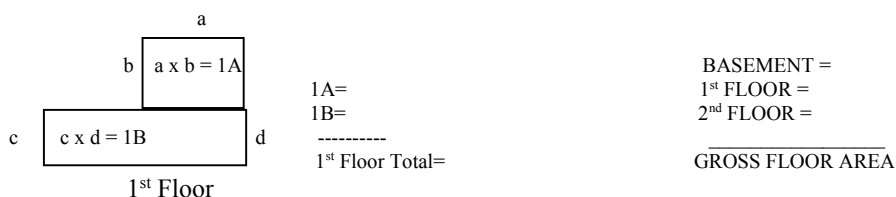
PLANNING DEPARTMENT
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GROSS FLOOR AREA WORKSHEET

The following format is to be used for all applications for the purpose of demonstrating the gross floor area of a building or group of buildings as necessary to show compliance with a building or group of buildings as necessary to show compliance with floor area limitations of the Town Code or as otherwise necessary to illustrate the intended or potential use of a structure.

1. Scaled worksheets are to be prepared based upon floor plans which represent existing or proposed conditions as applicable to the particular circumstances of the approval being sought. All floor plans and worksheets are required to be prepared by a licensed or registered professional in the State of New York.
2. The floor area of each floor is to be divided into simple polygons (squares, rectangles, etc.) each being drawn on the plan. The area of each polygon is to be shown by providing the dimensions and resulting area measurement. Each polygon is to be assigned an identifying label for reference purposes.
3. A summary table for each floor is to be completed. The area of each polygon is to be listed by reference label then added, resulting in the floor area for the entire floor.
4. A similar summary table is to be provided listing the total floor area of each floor within the resulting floor area of each building.
5. Any exception of floor area from the gross floor area must be identified on the floor plans and summary tables. The rationale for any exception must accompany the floor area worksheets.
6. A schematic illustration of the format is shown below.



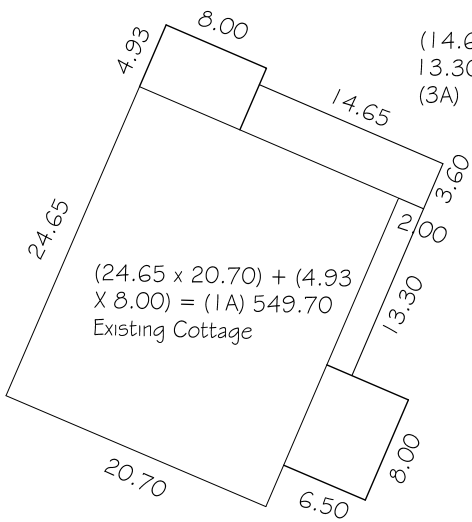
LOT AREA, NET – Lot area minus seventy five (75) percent of the area of any wetlands, waterbodies and, watercourses, but excluding any adjacent areas, all as defined in Chapter 209 Wetlands and Drainage, of the Town Code, and the area of any steep slopes, as defined Chapter 213, except that in the case of one-family lots, the deduction for steep slopes shall be only fifty (50) percent.

FLOOR AREA, GROSS -- The sum of the horizontal areas of the several stories of the building or buildings, excluding any floor area used for off-street parking or loading purposes (except for one- and two-family residences), measured from the exterior walls or, in the case of a common wall separating two buildings, from the center line of such a common wall, and including any two-story or any enclosed porch, or one having a roof and capable of being enclosed. See the definition of "basement" for exclusion of basement/mechanical areas in nonresidential buildings from "floor area, gross." For one- and two-family residences, any attic space with a floor to ceiling height of 7.5 feet or greater shall be included as part of gross floor area, as shall those portions of any basement with a floor to ceiling height of 7.5 feet or greater if the basement is considered a "story" in accordance with one of the following three alternative measurements:

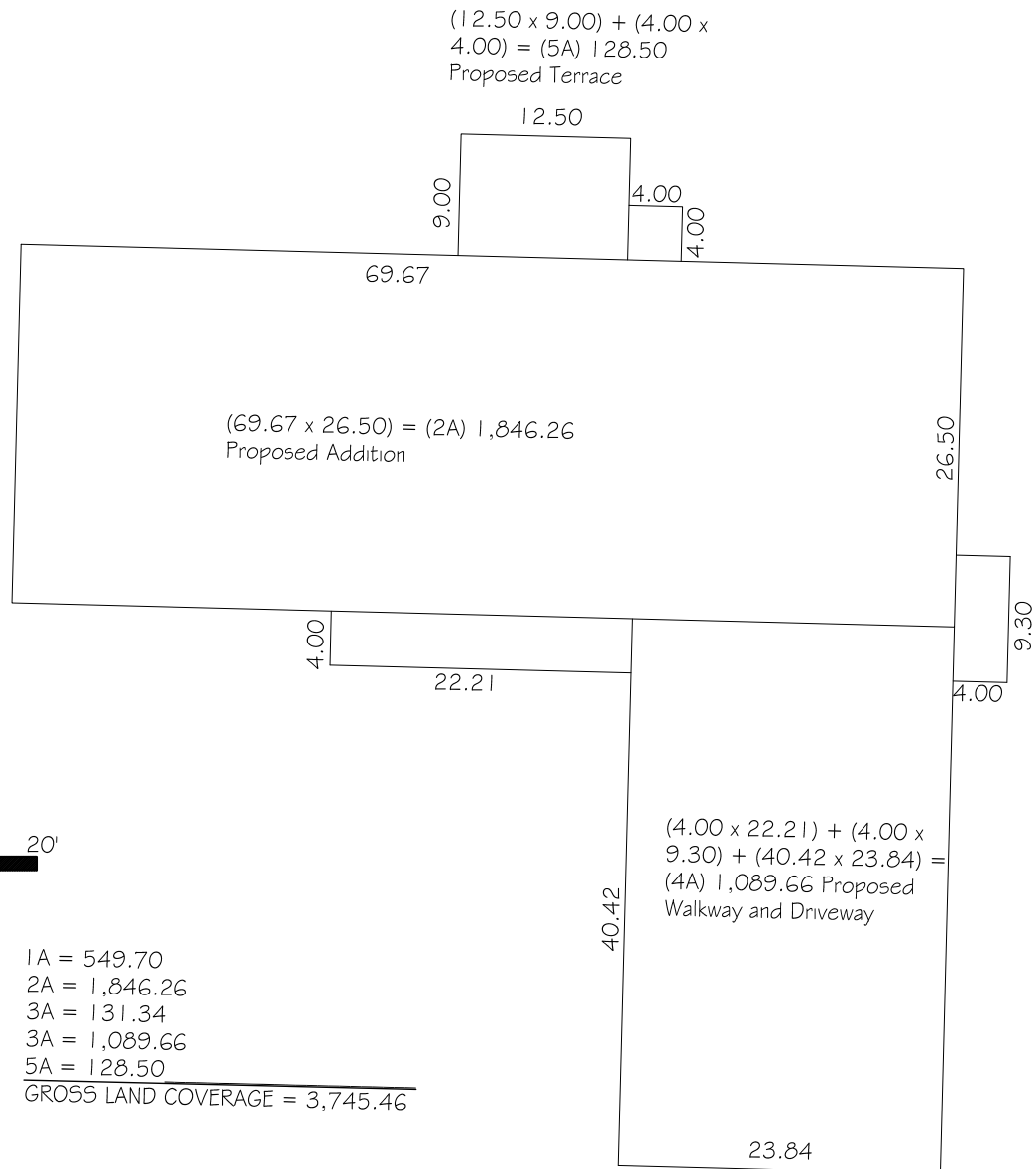
- A. Where the finished surface of the floor above the basement is more than six feet above average grade.
- B. Where the finished surface of the floor above the basement is more than six feet above the finished ground level for more than 50% of the total building perimeter.
- C. Where the finished surface of the floor above the basement is more than 12 feet above the finished ground level at any point along the building perimeter.

| Lot Size | Maximum Permitted Gross Floor Area for One-Family Dwellings and Accessory Buildings ¹ (square feet) |
|-----------------------------------|--|
| Less than 5,000 square feet | 1,875 or 50% of the lot area, whichever is greater |
| 5,000 to 9,999 square feet | 2,500 plus 25% of the lot area in excess of 5,000 square feet |
| 10,000 to 14,999 square feet | 3,750 plus 20% of the lot area in excess of 10,000 square feet |
| 15,000 square feet to 0.499 acres | 4,750 plus 15% of the lot area in excess of 15,000 square feet |
| 0.5 to 0.749 acres | 5,768 plus 10% of the lot area in excess of 0.5 acres |
| 0.75 to 0.999 acres | 6,856 plus 8% of the lot area in excess of 0.75 acres |
| 1.0 to 1.499 acres | 7,727 plus 6% of the lot area in excess of 1.0 acres |
| 1.5 to 1.999 acres | 9,034 plus 5% of the lot area in excess of 1.5 acres |
| 2.0 to 3.999 acres | 10,122 plus 4% of the lot area in excess of 2.0 acres |
| 4.0 acres or more | 13,607 plus 3% of the lot area in excess of 4.0 acres |

*Permitted gross floor area for two-family dwellings in the R-2F District shall be one-third (1/3) greater than that permitted for one-family dwellings.



$(14.65 \times 3.60) + (2.00 \times 13.30) + (8.00 \times 6.50) =$
 (3A) 131.34 Existing Walkways



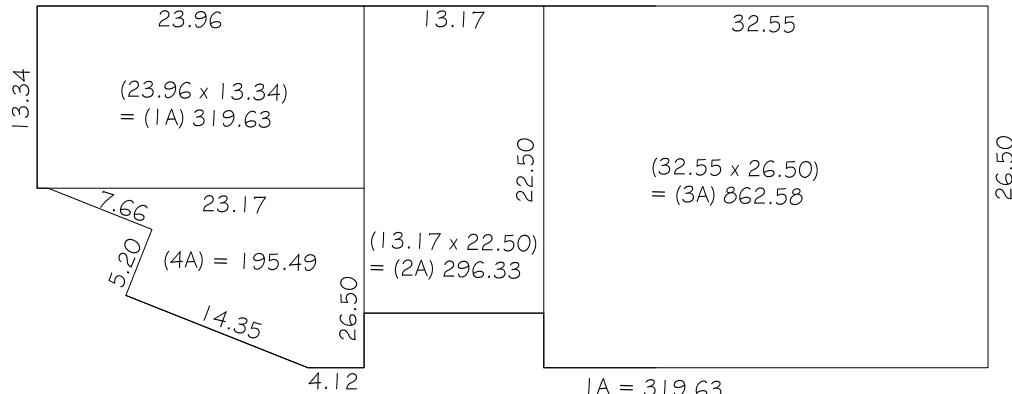
Richard J. Skop



- 1A = Existing Cottage
- 2A = Proposed Addition
- 3A = Existing Walkways
- 4A = Proposed Walkway and Driveway
- 5A = Proposed Terrace

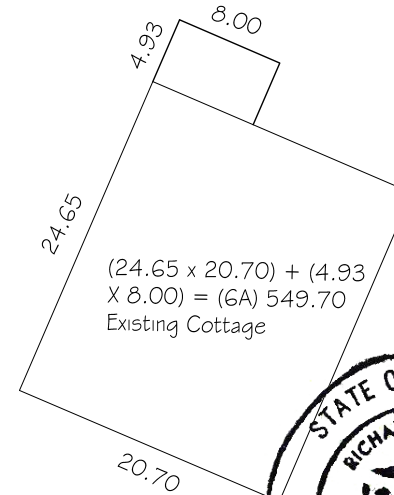
1A = 549.70
 2A = 1,846.26
 3A = 131.34
 3A = 1,089.66
 5A = 128.50
 GROSS LAND COVERAGE = 3,745.46

8/2/2021



FIRST FLOOR

1A = 319.63
 2A = 296.33
 3A = 862.58
 4A = 195.49
 5A = 549.70
FIRST FLOOR TOTAL = 2,223.73

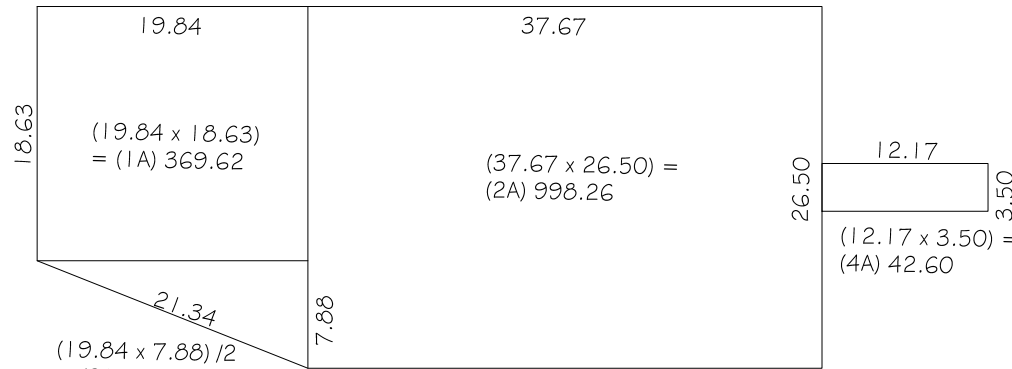


8/2/2021



Richard J. Skop

FIRST FLOOR = 2,223.73
 SECOND FLOOR = 1,488.65
GROSS FLOOR AREA = 3,712.38

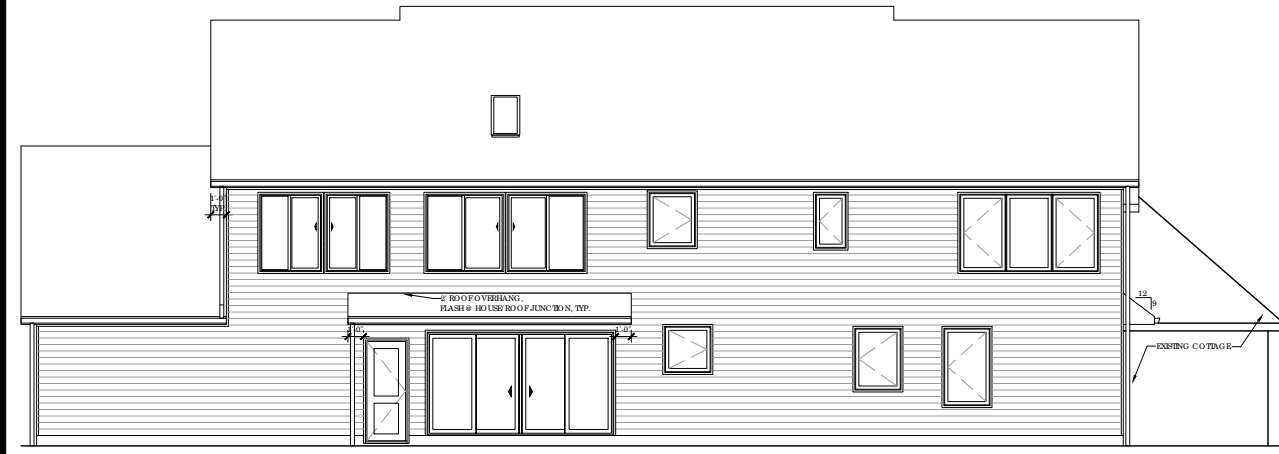


SECOND FLOOR

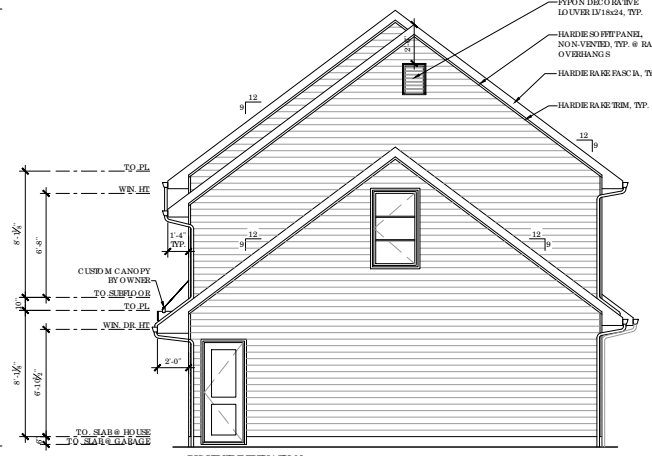
1A = 369.62
 2A = 998.26
 3A = 78.17
 4A = 42.60
SECOND FLOOR TOTAL = 1,488.65



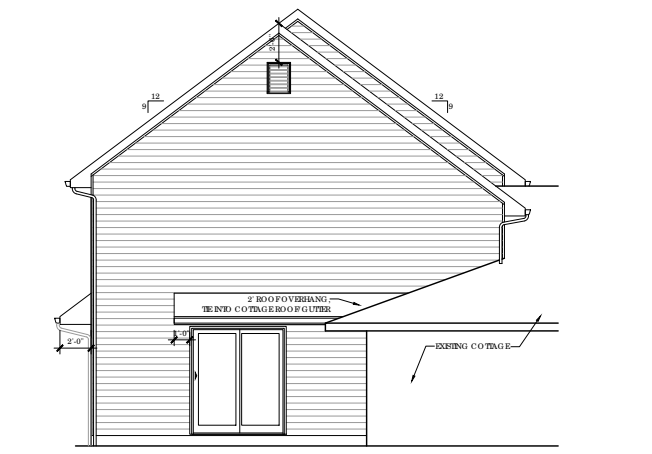
FRONT ELEVATION



REAR ELEVATION



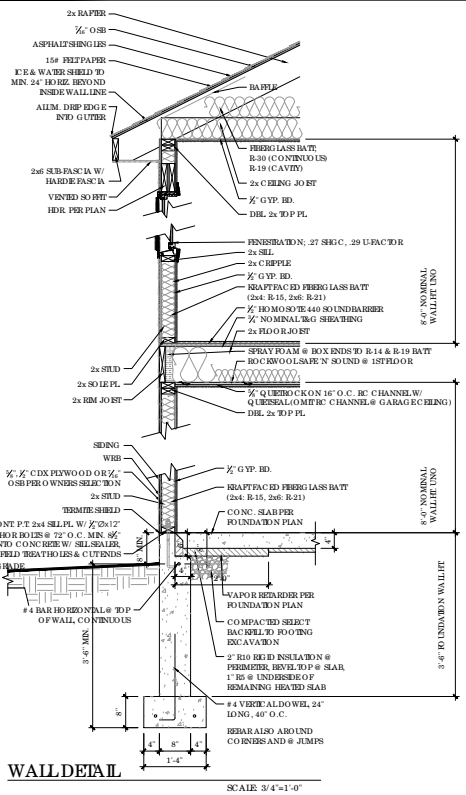
RIGHTSIDE ELEVATION



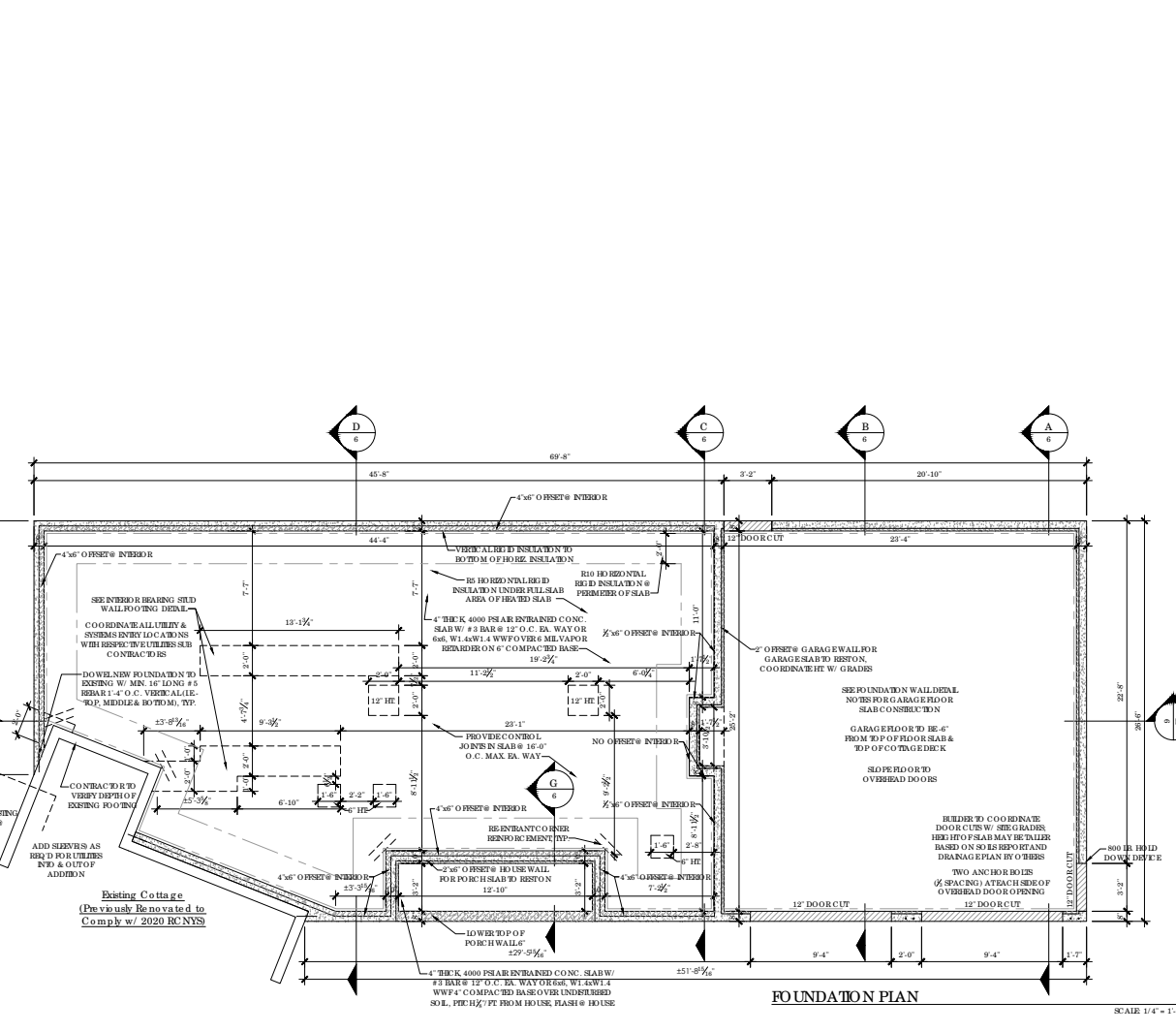
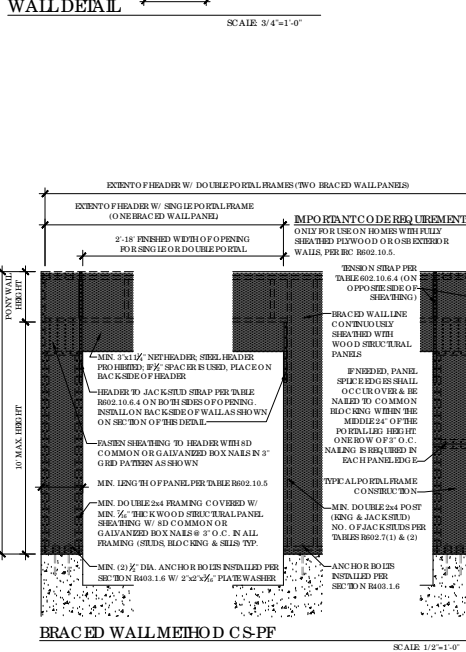
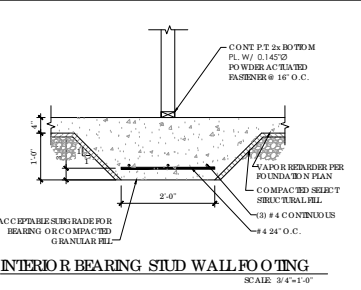
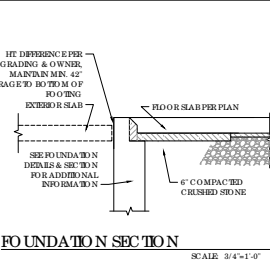
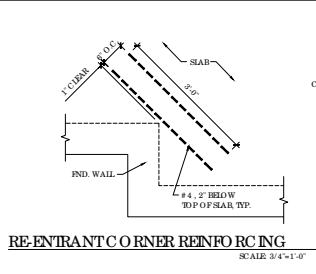
LEFTSIDE ELEVATION

- HARDE TRM NOTES**
- ALL CORNERS WINDOW & DOOR TRM TO BE HARDE BATTEN, PF WHITE 4/4x2 1/2"
 - DOOR & WINDOW FLANGES ADD TRM TO INSIDE LEVEL INSTALLATION OF TRM
 - USE BATTENS FOR INSIDE CORNERS, UNDERSIDE OF SO FHT & RAKE SO FHT @ WALLS
 - USE PELLA THERMO TRM INSTALLATION, ALL'S S NAEM, MINIMAL HEAD EXPOSURE, TOUCH UP & CALLER ALL POINTS W/ MATCHING WERE
 - INSTALL COORDING TO PELLA INSTALLATION REQUIREMENTS TO ENSURE WARRANTIES
- HARDE SIDING NOTES**
- 1x14" W/ 2" END NAIL INSTALLATION & EXPOSURE, STAGGER JOINTS AS PER HARDE INSTALLATION GUIDELINES, PF WHITE
 - RAKE SO FHT, NON VENTED 4/4x1 1/2", PF WHITE
 - FASCIA SO FHT, VENTED 4/4x1 1/2", GARAGE & DOOR ROOFS 4/4x2 1/2", PF WHITE
 - FASCIA & RAKE FASCIA 4/4x6", PF WHITE

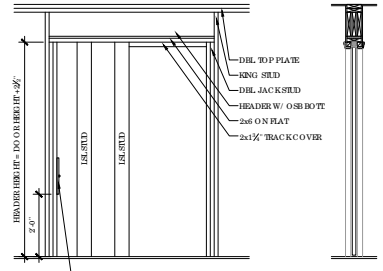
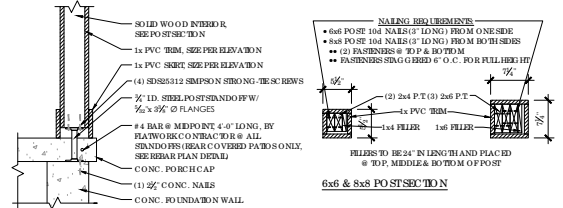
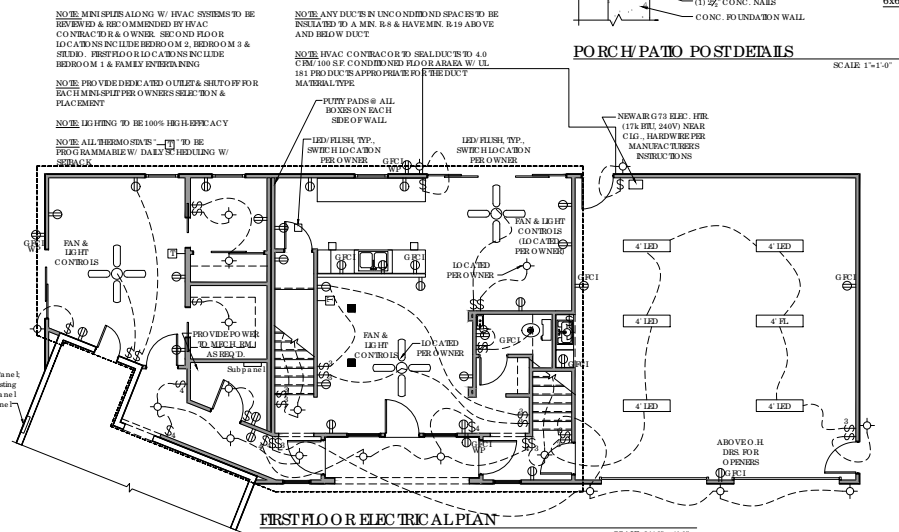
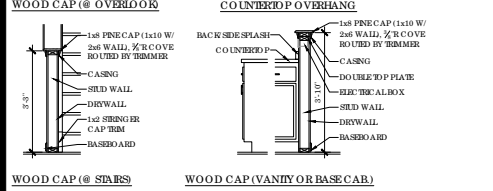
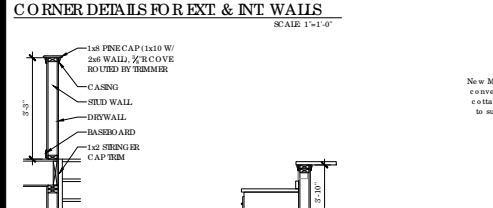
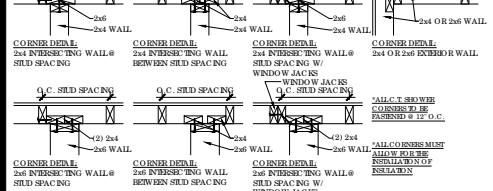
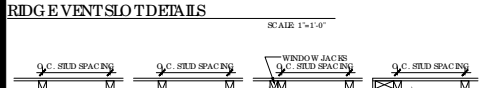
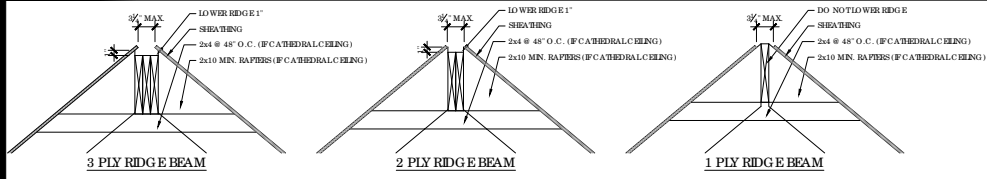
ADDITION TO GRIMALDI RESIDENCE
34 STARKEY ROAD, NORTH CASTLE, NY 10504



- FOUNDATION NOTES**
1. CONCRETE WALL SPECIES (SEE DETAIL) AND PLAN FOR SIZE AND REBAR REQ. URBANITY:
 - 2.1. WALLS 3000 PSI (ARE INFRAMED 5-7%) UN O.
 - 2.2. CONCRETE FLOORING (SEE DETAIL) AND PLAN FOR SIZE AND REBAR REQ. URBANITY:
 - 3.1. BASEMENT FLOORING (SEE DETAIL) AND PLAN FOR SIZE AND REBAR REQ. URBANITY:
 - 3.2. GARAGE AND POCH FLOORING: 3000 PSI
 - 3.3. GARAGE FLOOR TO BE 4000 PSI, 4" THICK CONCRETE SLAB ARE INFRAMED 5-7% OVER 6" CRUSHED STONE, TOP OF GARAGE SLAB TO BE 4" DOWN FROM TOP OF HOUSE FLOOR SLAB. FTCH SLAB TO WARD OVERHEAD DOORS. BUILDER TO COORDINATE DOOR CUTTINGS WITH GRADING ON SITE.
 - 4.1. ANCHOR BOLTS, MIN. 10" LONG x 4" O.C., EXTENDING 7" INTO CONCRETE.
 - 4.2. USE STEEL REBAR OR GALVANIZED ANCHOR BOLTS, WASHERS AND NUTS WHERE POSSIBLE. TRUSS MEMBER IS USED FOR SLAB.
 - 4.3. SEE DETAIL FOR ANCHOR BOLTS.
 - 4.4. SEE DETAIL FOR ANCHOR BOLTS.
 - 4.5. SEE DETAIL FOR ANCHOR BOLTS.
 - 5.1. EXTERIOR FOUNDATION WALL MEMBRANE SYSTEM ON FOUNDATION WALLS.
 - 5.2. ELECTRICAL GROUNDING TO CONFORM TO THE NYS RESIDENTIAL BUILDING CODE SECTION B608, SPECIFICALLY B608.1.2.
 7. FOUNDATION CONSTRUCTION IS CAPABLE OF ACCOMMODATING ALL LOADS AND OF TRANSMITTING THE RESULTING LOAD TO THE SUPPORTING SOIL AND IN FULL COMPLIANCE WITH REQ. OF THE RCNYS.

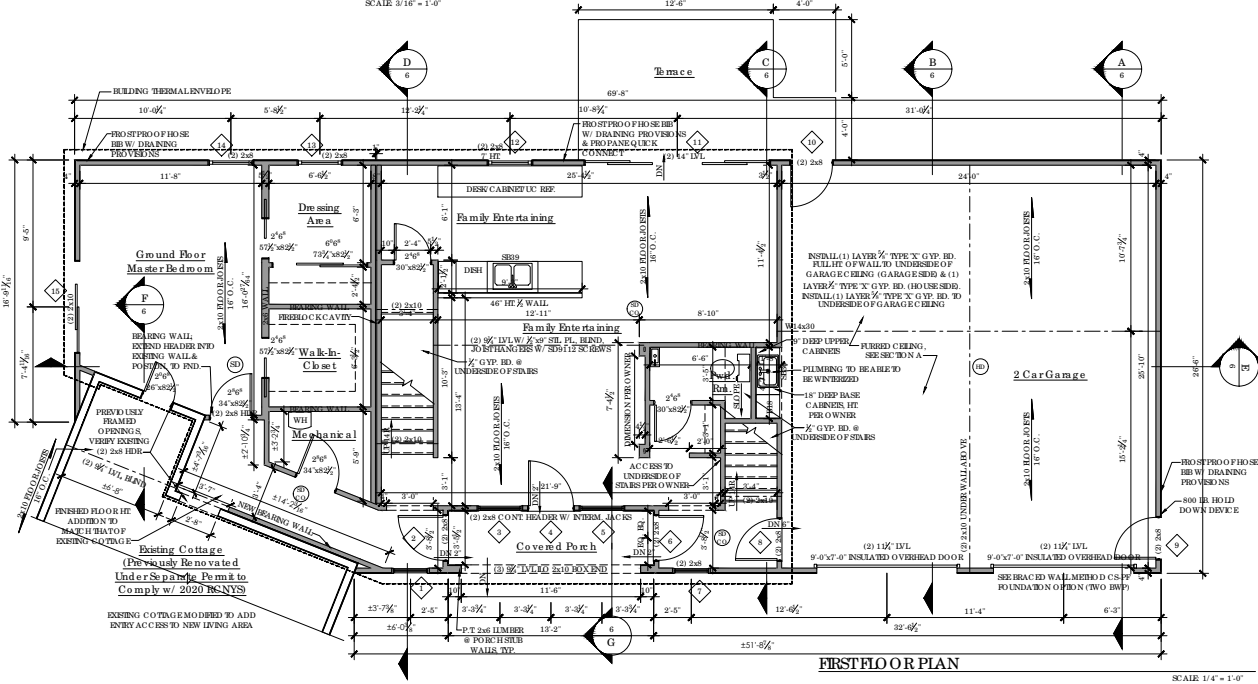


ADDITION TO GRIMALDI RESIDENCE
 34 STARKEY ROAD, NORTH CASTLE, NY 10504
 SHEET 2



LIGHT & VENT CALCULATIONS

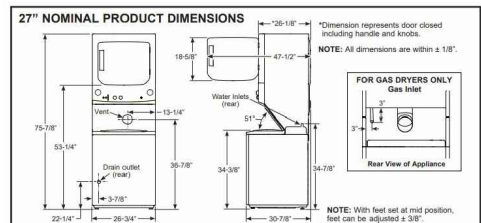
| ROOM | SO. FT. | REQ'D VENT ACT. VENT | 8% LIGHTING | ACT. DAYLIGHT |
|-----------------------------|---------|----------------------|-------------|---------------|
| Family Entertaining/Kitchen | 420.0 | 16.80 | 30.30 | 58.80 |
| Bedroom 1 | 178.0 | 7.12 | 14.80 | 28.90 |
| Home Office/Studio | 224.0 | 9.16 | 14.40 | 32.60 |
| Bedroom Suite 3/Sitting | 384.0 | 15.36 | 19.00 | 39.60 |
| Bedroom 2 | 181.0 | 7.24 | 21.00 | 22.60 |



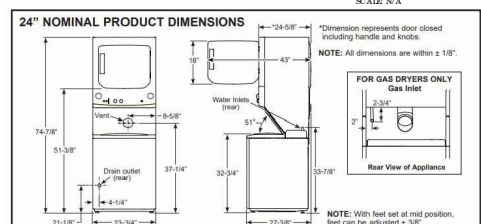
| VELUX SKYLIGHT SCHEDULE | | | | | | |
|-------------------------|-------|--------|-------|--------|-------|-----------------------------------|
| Mark | Size | | R.O. | | Type | Notes |
| | Width | Height | Width | Height | | |
| RS06 | 23" | 48" | 23" | 45" | Fixed | Deck Mounted / Drilling Allowance |
| RS06 | 23" | 48" | 23" | 45" | Fixed | Deck Mounted / Drilling Allowance |

| PELMA WINDOW & EXTERIOR DOOR SCHEDULE | | | | | | | | | | | | | |
|---------------------------------------|--------------------|------------|-------|--------|-------|--------|----------------|----------|-----------|-----------|-------|-------------|---|
| Mark | Location | Model | Size | | R.O. | | Type | Material | Color | | Hand | Insets (GG) | Notes |
| | | | Width | Height | Width | Height | | | Exterior | Interior | | | |
| 1 | Left Hall | Life style | 29" | 59" | 29% | 59% | Camelnet | Wood Chd | Black | White | Left | 2 Hm. | Temped |
| 2 | Left Hall Entry | Life style | 29" | 59" | 29% | 59% | Swing Door | Wood Chd | Black | White | Right | N/A | Temped, Egress |
| 3 | Family Entrance | Life style | 35" | 71" | 35% | 71% | Swing Door | Wood Chd | Black | White | Left | 2 Hm. | Temped |
| 4 | Family Entrance | Life style | 36" | 81% | 36% | 81% | Swing Door | Wood Chd | Black | White | Left | N/A | Temped, Egress |
| 5 | Family Entrance | Life style | 35" | 71" | 35% | 71% | Camelnet | Wood Chd | Black | White | Right | 2 Hm. | Temped |
| 6 | Back Hall Entry | Life style | 29" | 59% | 29% | 59% | Swing Door | Wood Chd | Black | White | Left | N/A | Temped, Egress |
| 7 | Right Hall | Life style | 29" | 59" | 29% | 59% | Camelnet | Wood Chd | Black | White | Left | 2 Hm. | Temped |
| 8 | Garage Entry | Per Owner | 32" | 80" | 32" | 80" | Swing Door | Steel | Per Owner | Per Owner | Left | N/A | Rate of 20 Min. Fire Rated / Self-Closing |
| 9 | Garage Side | Per Owner | 32" | 80" | 32" | 80" | Swing Door | Steel | Per Owner | Per Owner | Left | N/A | Rate of 20 Min. Fire Rated / Self-Closing |
| 10 | Garage Bay | Per Owner | 32" | 80" | 32" | 80" | Swing Door | Steel | Per Owner | Per Owner | Right | N/A | Rate of 20 Min. Fire Rated / Self-Closing |
| 11 | Family Entrance | 250 SERRIS | 144% | 79% | 144% | 80" | Sliding Door | Vinyl | Black | White | O/X | N/A | Temped |
| 12 | Family Entrance | Life style | 35" | 35" | 35% | 35% | Camelnet | Wood Chd | Black | White | Right | N/A | Temped |
| 13 | Den/Study Area | Life style | 35" | 47" | 35% | 47% | Camelnet | Wood Chd | Black | White | Right | N/A | Temped |
| 14 | Bedroom 1 | Life style | 35" | 59" | 35% | 59% | Camelnet | Wood Chd | Black | White | Left | N/A | Temped |
| 15 | Bedroom 1 | 250 SERRIS | 71% | 79% | 72" | 80" | Sliding Door | Vinyl | Black | White | XO | N/A | Temped, Egress |
| 16 | Dressing Area | Life style | 29" | 59" | 29% | 59% | Camelnet | Wood Chd | Black | White | Left | 2 Hm. | WOCD |
| 17 | Bedroom Suite 3 | Life style | 35" | 65" | 35% | 65% | Camelnet | Wood Chd | Black | White | Left | 2 Hm. | Egress, WOCD |
| 18 | Bedroom Suite 3 | Life style | 35" | 65" | 35% | 65% | Camelnet | Wood Chd | Black | White | Right | 2 Hm. | Temped, WOCD |
| 19 | Bath 3 | Life style | 29" | 59" | 29% | 59% | Camelnet | Wood Chd | Black | White | Right | 2 Hm. | Temped, WOCD |
| 20 | Home Office/Studio | Life style | 29" | 35" | 29% | 35% | Camelnet | Wood Chd | Black | White | Right | 2 Hm. | Temped |
| 21 | Bath 4 | Life style | 29" | 35" | 29% | 35% | Camelnet | Wood Chd | Black | White | Right | 2 Hm. | Temped, WOCD |
| 22 | Attic | Per Owner | 32" | 80" | 32" | 80" | Swing Door | Steel | Per Owner | Per Owner | Left | N/A | Rate of 20 Min. Fire Rated / Self-Closing |
| 23 | Attic | Life style | 35" | 59" | 35% | 59% | Camelnet | Wood Chd | Black | White | Left | 2 Hm. | WOCD |
| 24 | Home Office/Studio | 250 SERRIS | 47% | 59% | 48" | 60" | Sliding Window | Vinyl | Black | White | O/X | N/A | WOCD |
| 25 | Home Office/Studio | 250 SERRIS | 47% | 59% | 48" | 60" | Sliding Window | Vinyl | Black | White | XO | N/A | WOCD |
| 26 | Sting Area | 250 SERRIS | 59% | 59% | 60" | 60" | Sliding Window | Vinyl | Black | White | O/X | N/A | WOCD |
| 27 | Sting Area | 250 SERRIS | 59% | 59% | 60" | 60" | Sliding Window | Vinyl | Black | White | XO | N/A | WOCD |
| 28 | Bedroom Suite 3 | Life style | 35" | 41" | 35% | 41% | Camelnet | Vinyl | Black | White | Right | N/A | Temped |
| 29 | Bath 2 | Life style | 29" | 41" | 29% | 41% | Camelnet | Vinyl | Black | White | Left | N/A | Temped |
| 30 | Bedroom 2 | Life style | 105" | 59" | 105% | 59% | Camelnet | Vinyl | White | White | I/O/R | N/A | Egress, WOCD |

| INTERIOR DOOR SCHEDULE | | | | | | | | |
|------------------------|-------|--------|---------|--------|--------|-------|------------------------------------|-------|
| Mark | Size | | R.O. | | Type | Hand | Jamb Size/Notes | Style |
| | Width | Height | Width | Height | | | | |
| 2 ⁶ | 32" | 80" | 34" | 82% | Swing | Left | 4 1/2" Mechanical | ? |
| 2 ⁶ | 32" | 80" | 34" | 82% | Swing | Right | 4 1/2" Bedroom 1 | ? |
| 2 ⁶ | 31" | 80" | 29" | 82% | Swing | Left | 4 1/2" Cottage | ? |
| 2 ⁶ | 28" | 80" | 27" | 82% | Pocket | N/A | 4 1/2" Bedroom 1 Walk-In Closet | ? |
| 2 ⁶ | 28" | 80" | 27" | 82% | Pocket | N/A | 4 1/2" Bedroom 1 Dressing Area | ? |
| 2 ⁶ | 72" | 80" | 73 1/2" | 82% | Pass | N/A | 4 1/2" Bedroom 1 Dressing Area | ? |
| 2 ⁶ | 28" | 80" | 29" | 82% | Swing | Right | 4 1/2" Bedroom | ? |
| 2 ⁶ | 28" | 80" | 30" | 82% | Swing | Left | 4 1/2" Under Stairs | ? |
| 2 ⁶ | 32" | 80" | 65% | 82% | Pocket | N/A | 4 1/2" Bath 2 | ? |
| 2 ⁶ | 28" | 80" | 57% | 82% | Pocket | N/A | 4 1/2" Bedroom 2 Walk-In Closet | ? |
| 2 ⁶ | 32" | 80" | 34" | 82% | Swing | Right | 4 1/2" Bedroom 2 Hall Access | ? |
| 2 ⁶ | 28" | 80" | 57% | 82% | Pocket | N/A | 4 1/2" Bedroom 2 Large Storage | ? |
| 2 ⁶ | 32" | 80" | 34" | 82% | Pocket | N/A | 4 1/2" Bedroom 2 Small Storage | ? |
| 2 ⁶ | 28" | 80" | 30" | 82% | Pocket | N/A | Landing Landing | ? |
| 2 ⁶ | 30" | 80" | 32" | 82% | Swing | Right | 4 1/2" Bedroom Suite 3 | ? |
| 2 ⁶ | 28" | 80" | 57% | 82% | Pocket | N/A | 4 1/2" Bath 3 | ? |
| 2 ⁶ | 30" | 80" | 32" | 82% | Swing | Right | Home Office | ? |
| 2 ⁶ | 28" | 80" | 30" | 82% | Swing | Right | 4 1/2" Home Office Closet | ? |
| 2 ⁶ | 28" | 80" | 30" | 82% | Swing | Left | 4 1/2" Bath 4 | ? |
| 2 ⁶ | 32" | 80" | 34" | 82% | Swing | Left | 4 1/2" Attic / Extra no. Insulated | ? |

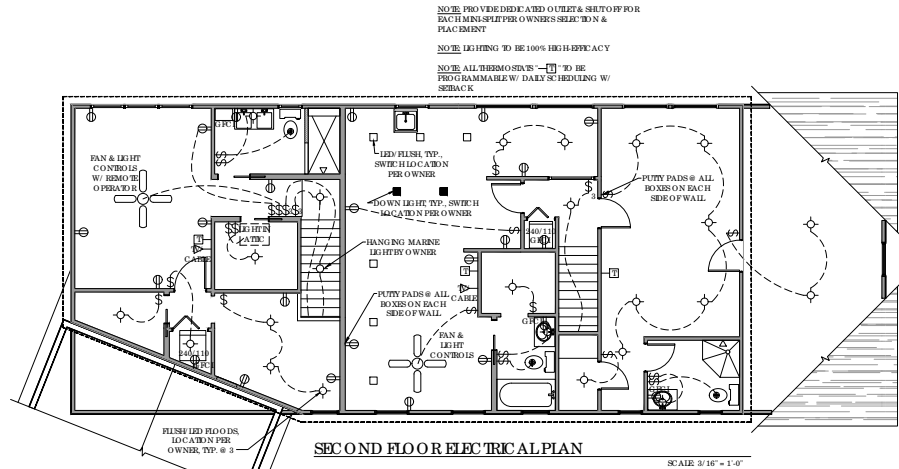


GAS DRYER REAR EXHAUST DETAIL & DIMS. SCALE: N/A

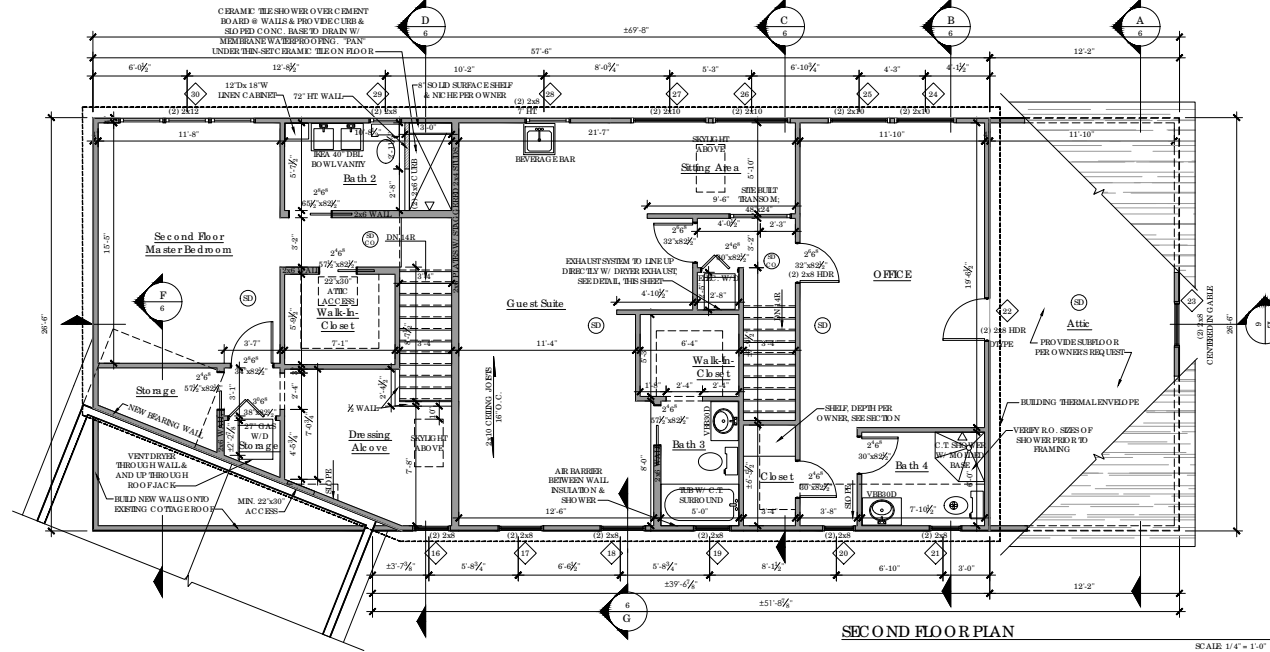


ELECTRIC DRYER REAR EXHAUST DETAIL & DIMS. SCALE: N/A

CONTRACTOR TO VERIFY ALL WINDOWS & DOORS PRIOR TO PURCHASING & VERIFY PURCHASED WINDOWS & DOORS MEET LIGHT VENT AND EGRESS REQUIREMENTS (VALUES REQUIRED GREATER THAN PELMA LISTINGS & 250 SERRIS REQUIREMENTS)



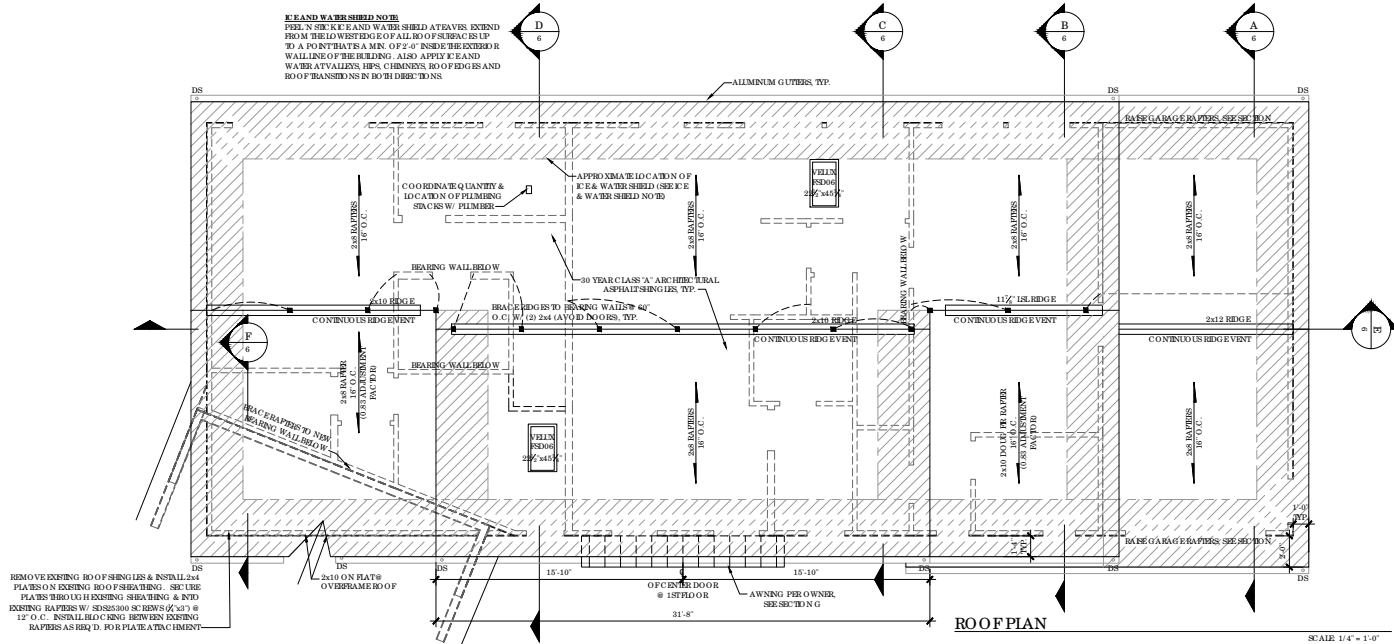
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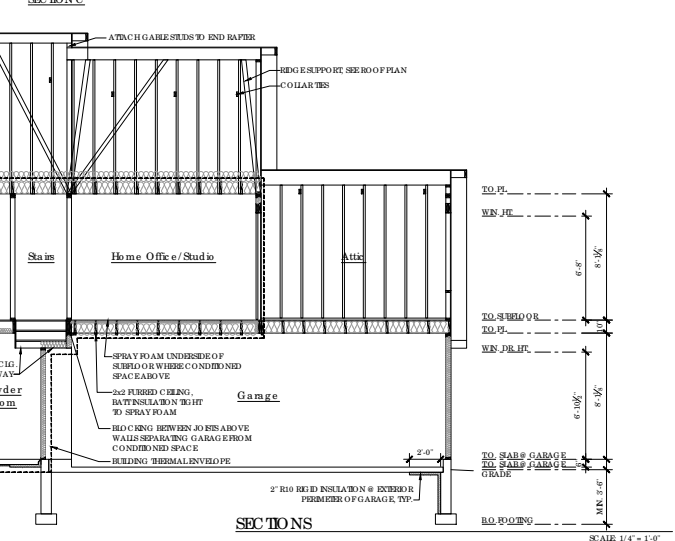
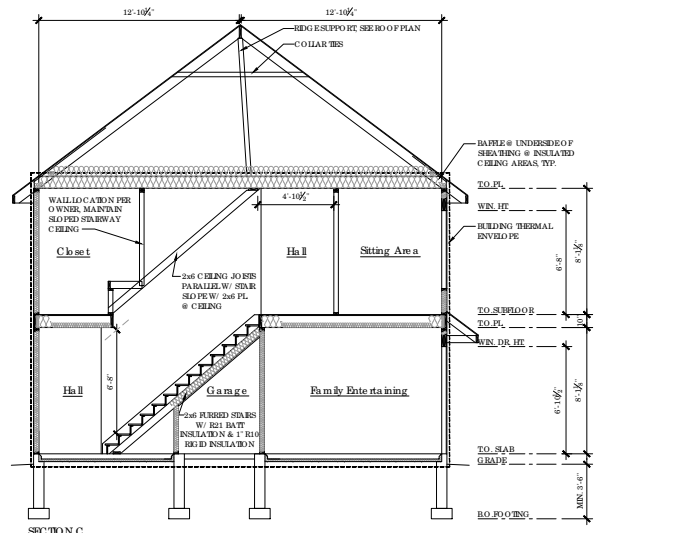
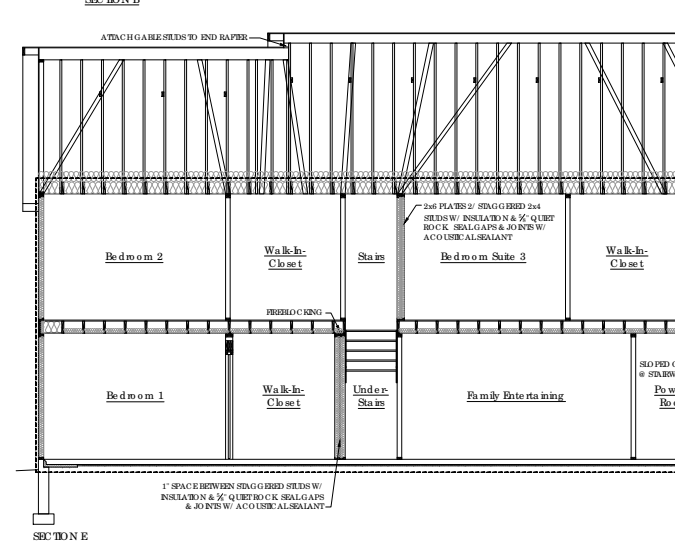
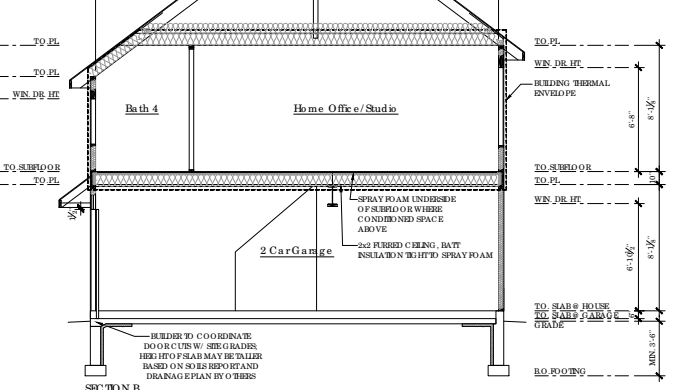
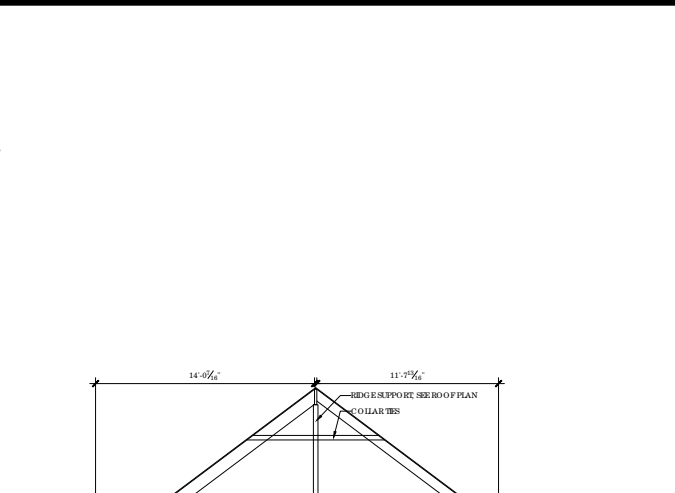
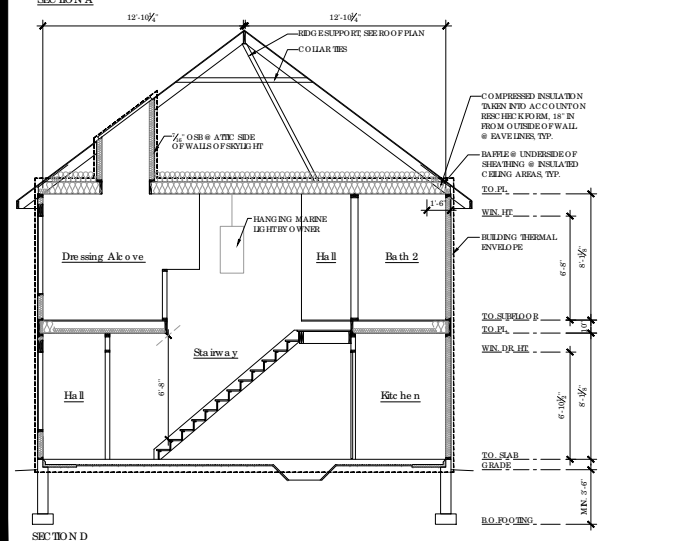
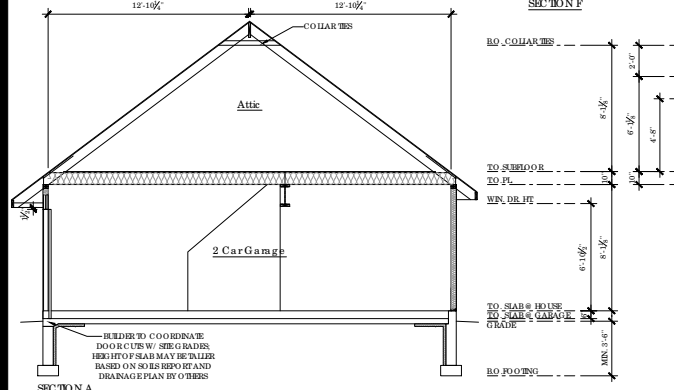
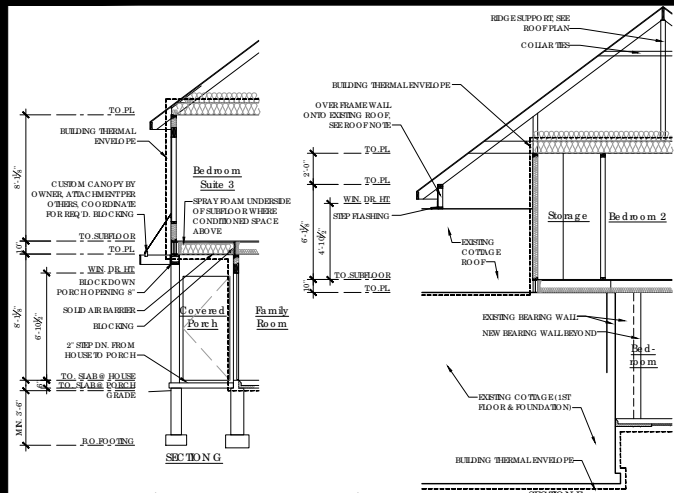
SECOND FLOOR PLAN. SCALE: 1/4\"/>

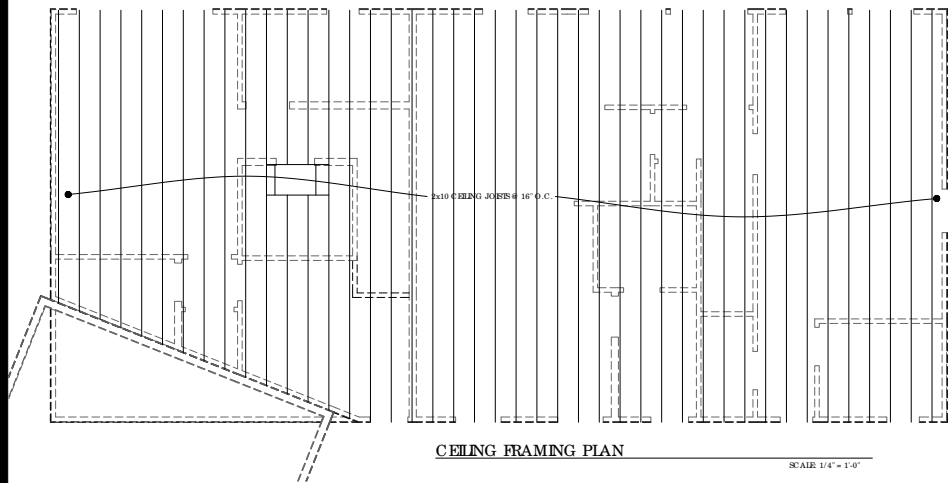
ADDITION TO GRIMALDI RESIDENCE
34 STARKEY ROAD, NORTH CASTLE, NY 10504

| AIR BARRIER AND INSULATION INSTALLATION | | |
|---|---|---|
| COMPONENT | AIR BARRIER CRITERIA | INSULATION INSTALLATION CRITERIA |
| General Requirements | A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. The air barrier in any dropped ceilings/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed. | Air permeable insulation shall not be used as a sealing material. The insulation in any dropped ceilings/soffit shall be aligned with the air barrier. Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. |
| Ceiling/attic | | |
| Walls | The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed. | |
| Windows, skylights and doors | The space between window/door jambs and framing, and skylights and framing shall be sealed. Rim joists shall include the air barrier. | |
| Floors (including above garage and cantilevered floors) | The air barrier shall be installed at any exposed edge of insulation. | Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing, and extends from the bottom to the top of all perimeter floor framing members. Where provided instead of floor insulation, insulation shall be permanently attached to the crawl space walls. |
| Crawl space walls | Exposed earth in unvented crawl spaces shall be covered with Class I vapor retarder with overlapping joints taped. | |
| Shafts, penetrations | Shaft shafts, utility penetrations, and fire shafts opening to exterior or unconditioned space shall be sealed. | Batts in narrow cavities shall be cut to fit or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space. |
| Narrow cavities | | |
| Garage separation | Air sealing shall be provided between the garage and conditioned spaces. | |
| Recessed lighting | Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall. | Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated. |
| Plumbing and wiring | | Bath insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring. |
| Shower/tub on exterior wall | The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs. | Exterior walls adjacent to showers and tubs shall be insulated. |
| Electrical/phone box on exterior walls | The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed. | |
| HVAC register boots | HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall. | |
| Concealed sprinklers | When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings. | |



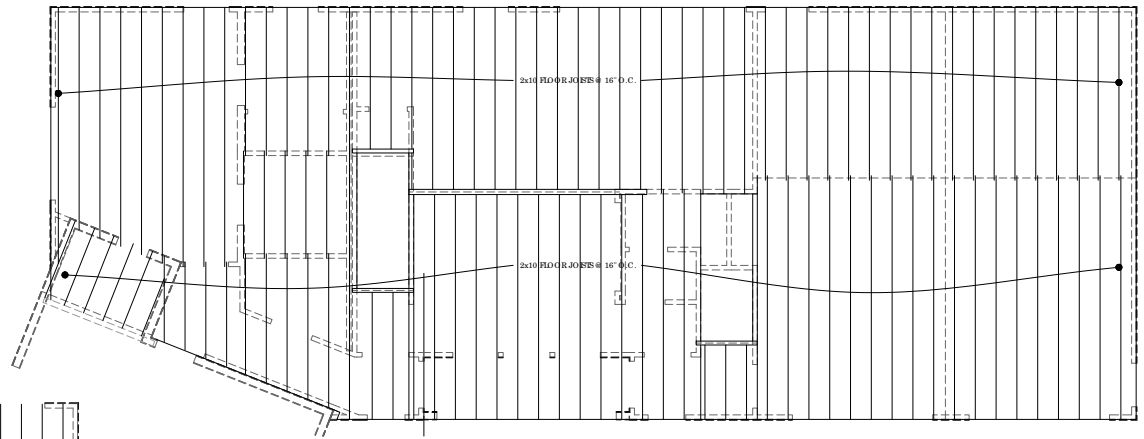
ADDITION TO GRIMALDI RESIDENCE
 34 STARKEY ROAD, NORTH CASTLE, NY 10504





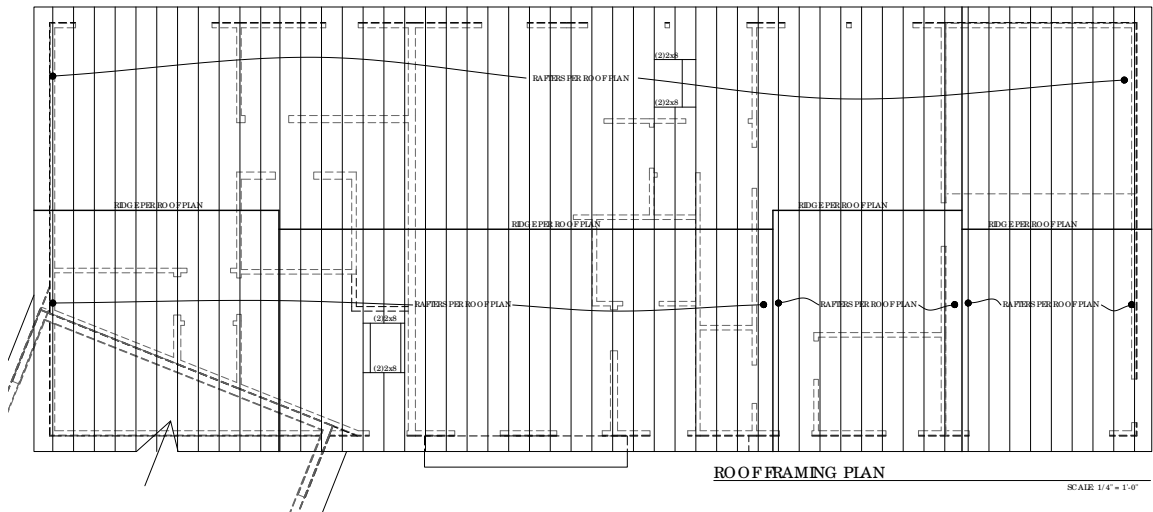
CEILING FRAMING PLAN

SCALE: 1/4" = 1'-0"



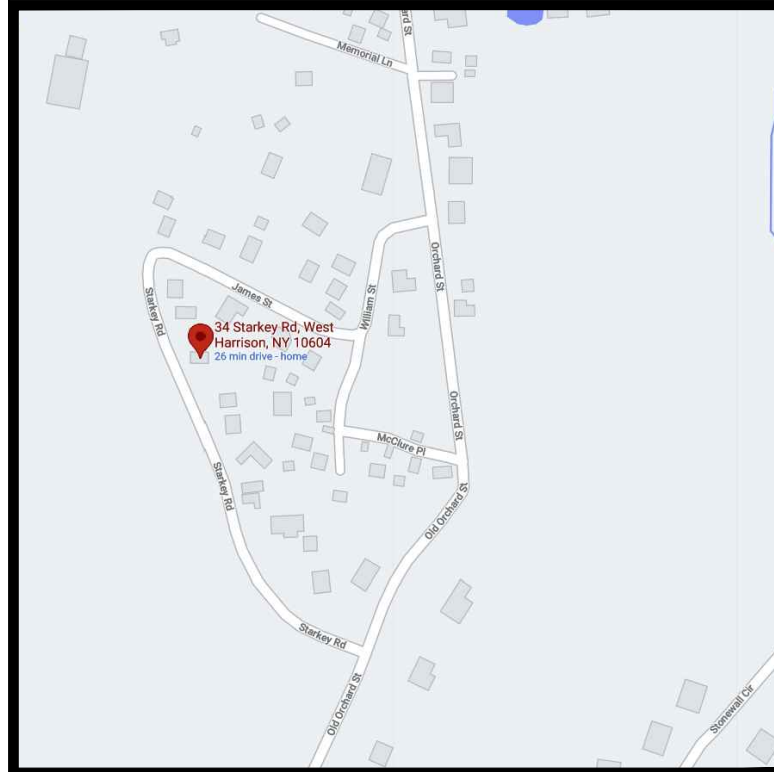
FLOOR FRAMING PLAN

SCALE: 1/4" = 1'-0"

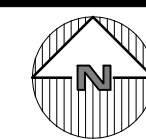


ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"



LOCATION MAP
NOT TO SCALE



SITE DATA:

OWNER / DEVELOPER: MICHAEL & PAM GRIMALDI
 34 STARKEY ROAD
 NORTH CASTLE, NY, 10604

PROJECT LOCATION: WEST HARRISON, NY, 10604

EXISTING TOWN ZONING: R-1/2 A, ONE FAMILY RESIDENTIAL, 1/2 ACRE

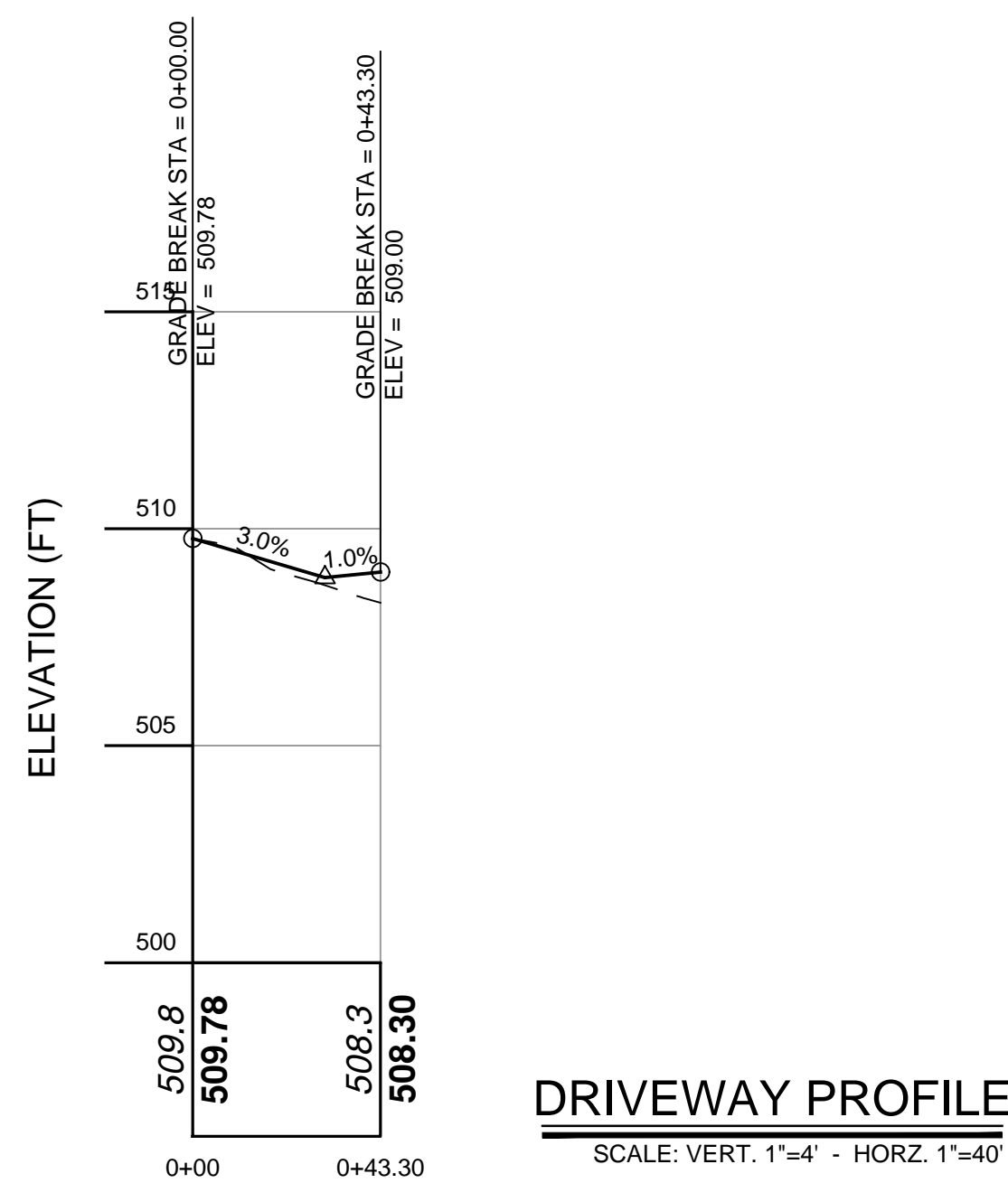
PROPOSED USE: R-1/2 A, ONE FAMILY RESIDENTIAL, 1/2 ACRE

TOWN TAX MAP DATA: SECTION 123.05, BLOCK 1, LOT 52
 SECTION 123.05, BLOCK 1, LOT 52

SITE AREA: 0.262 ACRES (11,415.90 SF)

SEWAGE FACILITIES: PUBLIC SEWERS

WATER FACILITIES: DRILLED WELL

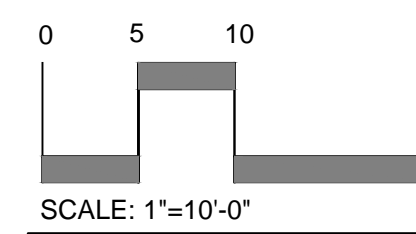
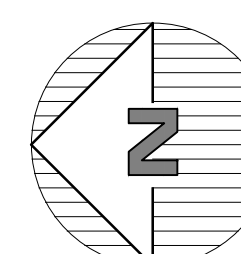
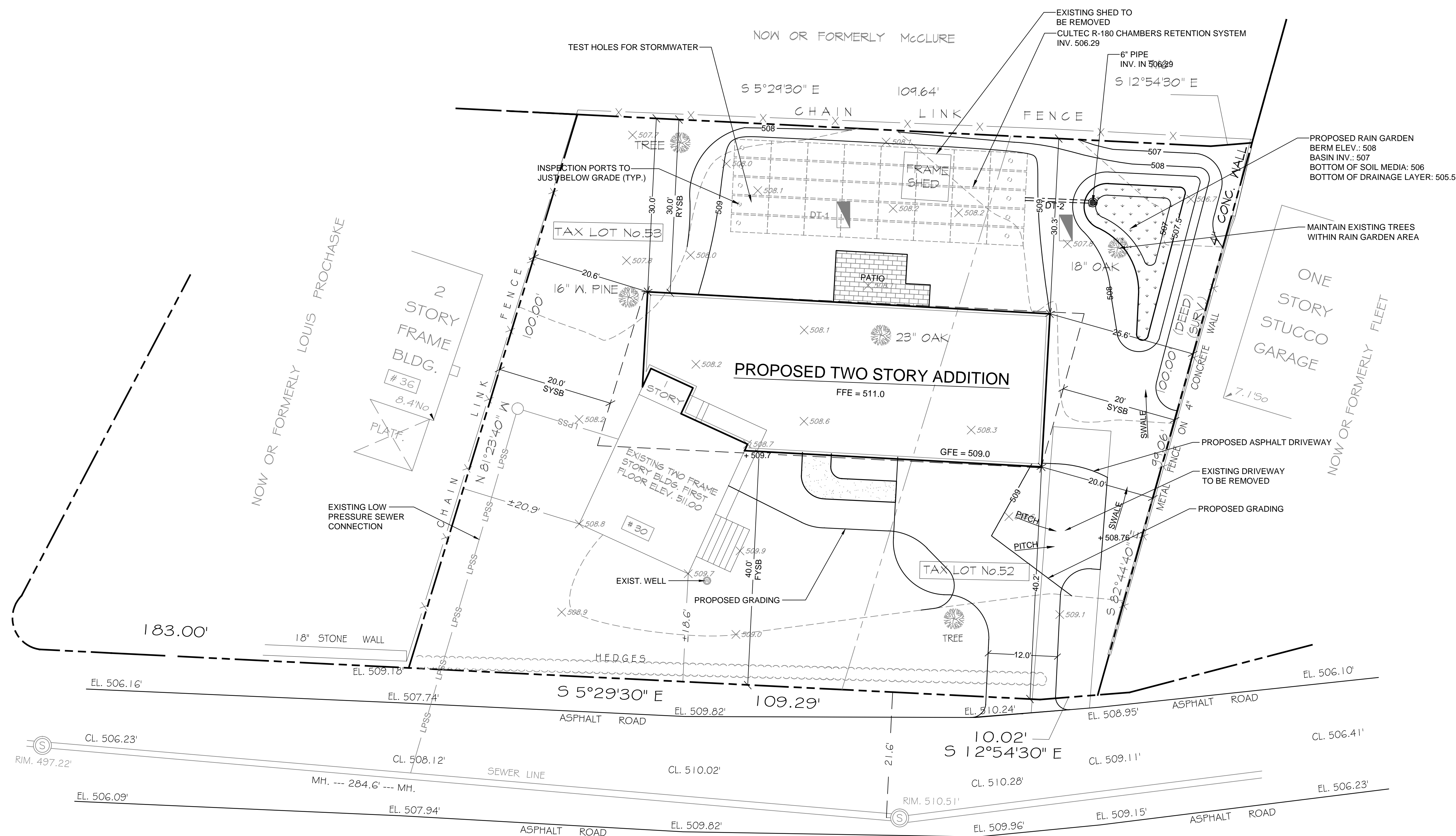


DRIVEWAY PROFILE
SCALE: VERT. 1"=4' - HORZ. 1"=40'

ZONING SCHEDULE:

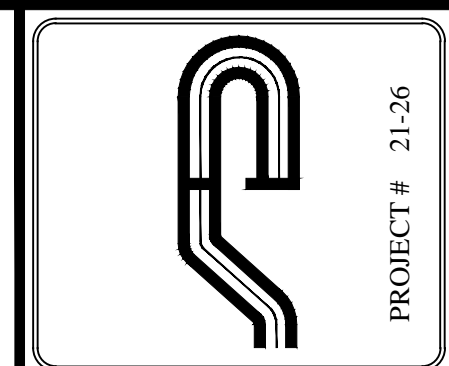
| ZONING DISTRICT: R-1/2 A, SINGLE FAMILY RESIDENTIAL | | | |
|---|-------------------------|---|-------------------|
| DIMENSIONAL REGULATIONS: | REQUIRED | PROVIDED | VARIANCE REQUIRED |
| MINIMUM SIZE OF LOT: | | | |
| MINIMUM LOT AREA: | 1/2 Acre or (21,780 SF) | 11,415 SF. | SEE NOTE 1 |
| MINIMUM FRONTAGE: | 125 FT. | 119.31 FT. | SEE NOTE 1 |
| MINIMUM LOT WIDTH: | 125 FT. | 121.01 FT. | SEE NOTE 1 |
| MINIMUM LOT DEPTH: | 100 FT. | 100 FT. | SEE NOTE 1 |
| MINIMUM YARD DIMENSIONS: | | | |
| PRINCIPAL BUILDING: | | | |
| FRONT YARD SETBACK: | 40 FT. | 18.6 FT. | SEE NOTE 1 |
| REAR YARD SETBACK: | 30 FT. | 30 FT. | NONE |
| ONE SIDE YARD SETBACK: | 20 FT. | 20 FT. | NONE |
| MAXIMUM HEIGHT: | | | |
| PRINCIPAL BUILDING - STORIES: | 2 1/2 | 2 | NONE |
| PRINCIPAL BUILDING - FEET: | 30 FEET | 28 FT | NONE |
| MAXIMUM % OF LOT TO BE OCCUPIED: | | | |
| GROSS LAND COVERAGE: | 4,339.6 SF | (BLDG, STEPS+PAVE, WALK) 2359+1247=3606 SF Total | NONE |
| 4,000 SF + 24% LOT AREA OVER 10,000 SF | | | |
| MINIMUM DWELLING SIZE: | | | |
| | 900 SF | >900 SF | NONE |

NOTE 1: PRE-EXISTING, NON-CONFORMING

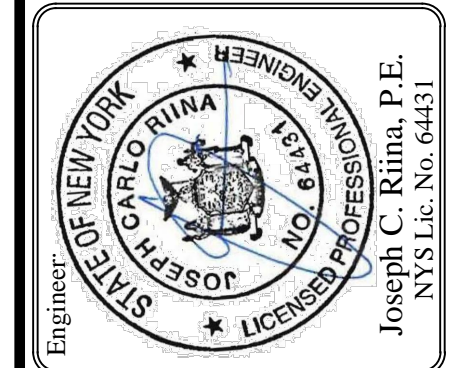


SCALE: 1"=10'-0"

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| Revisions: | No. | Date | Comments |
|------------|-----|------|----------|
| | | | |

SCALE: 1" = 10'

DRAWN BY: GO

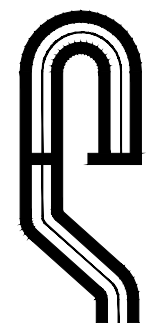
DATE: 08-03-21

SITE PLAN

SITE PLAN PREPARED FOR
MICHAEL & PAM GRIMALDI
 34 STARKEY ROAD
 Westchester County, NY
 Town of North Castle

NOTE:
 1. THIS IS NOT A SURVEY. ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY VINCENT M. TEUTONICO, DATED 02/15/21. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

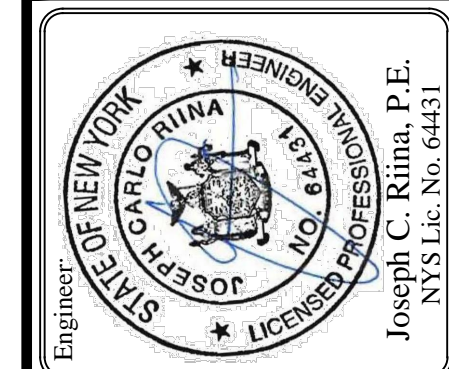
NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.



PROJECT # 21-26

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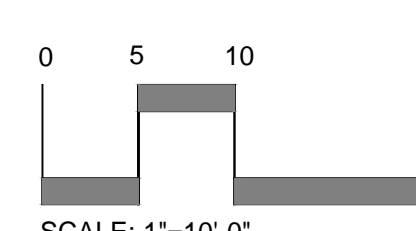
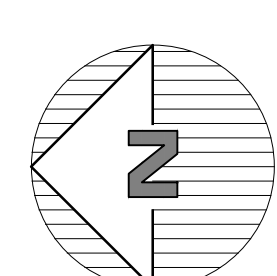
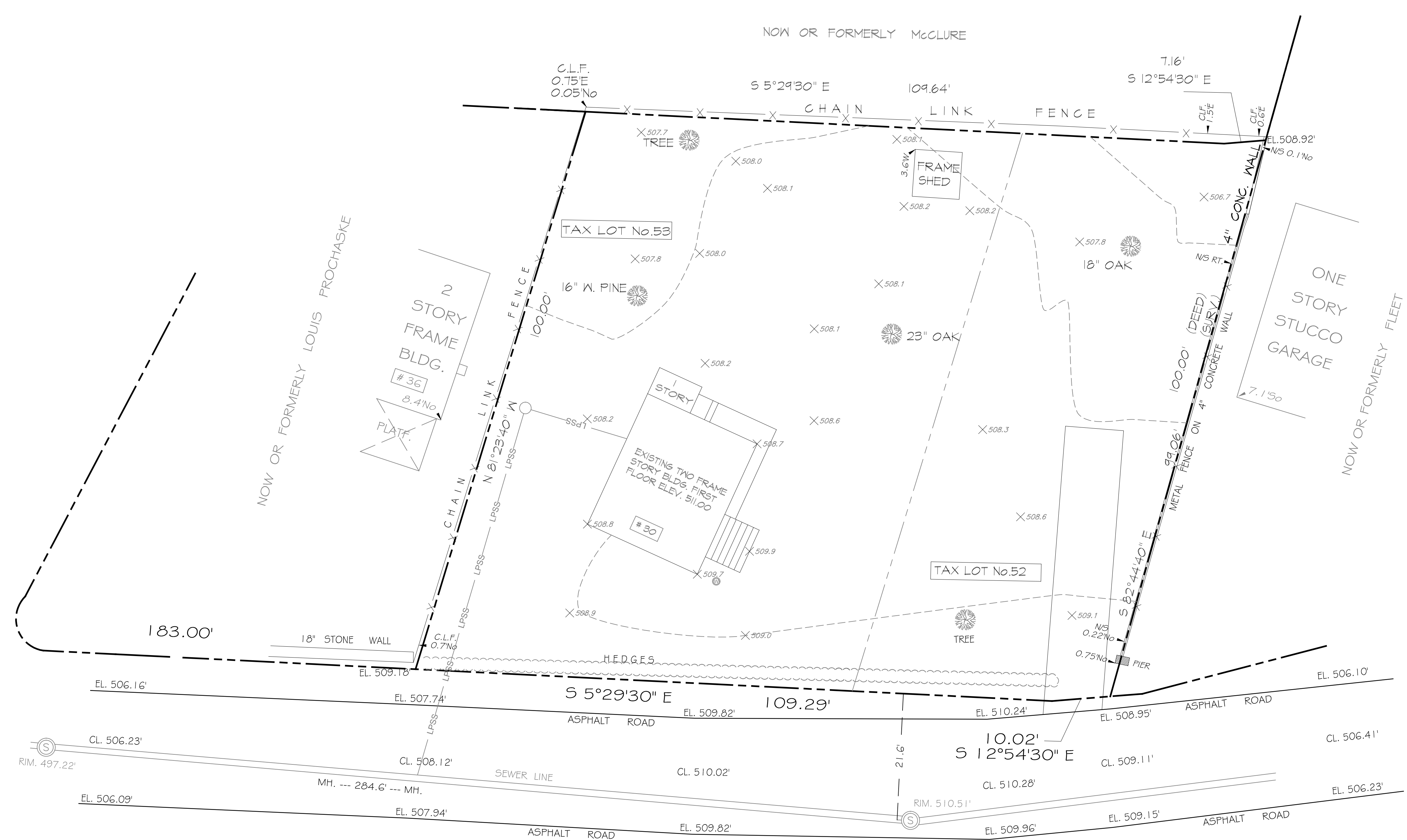
| Revisions: | No. | Date | Comments |
|------------|-----|------|----------|
| | | | |
| | | | |
| | | | |
| | | | |

| | |
|-----------|----------|
| SCALE: | 1" = 10' |
| DRAWN BY: | GO |
| DATE: | 08-03-21 |

EXISTING CONDITIONS PLAN

SITE PLAN PREPARED FOR
MICHAEL & PAM GRIMALDI
34 STARKEY ROAD
Town of North Castle
Westchester County, NY

Sheet 2 of 5



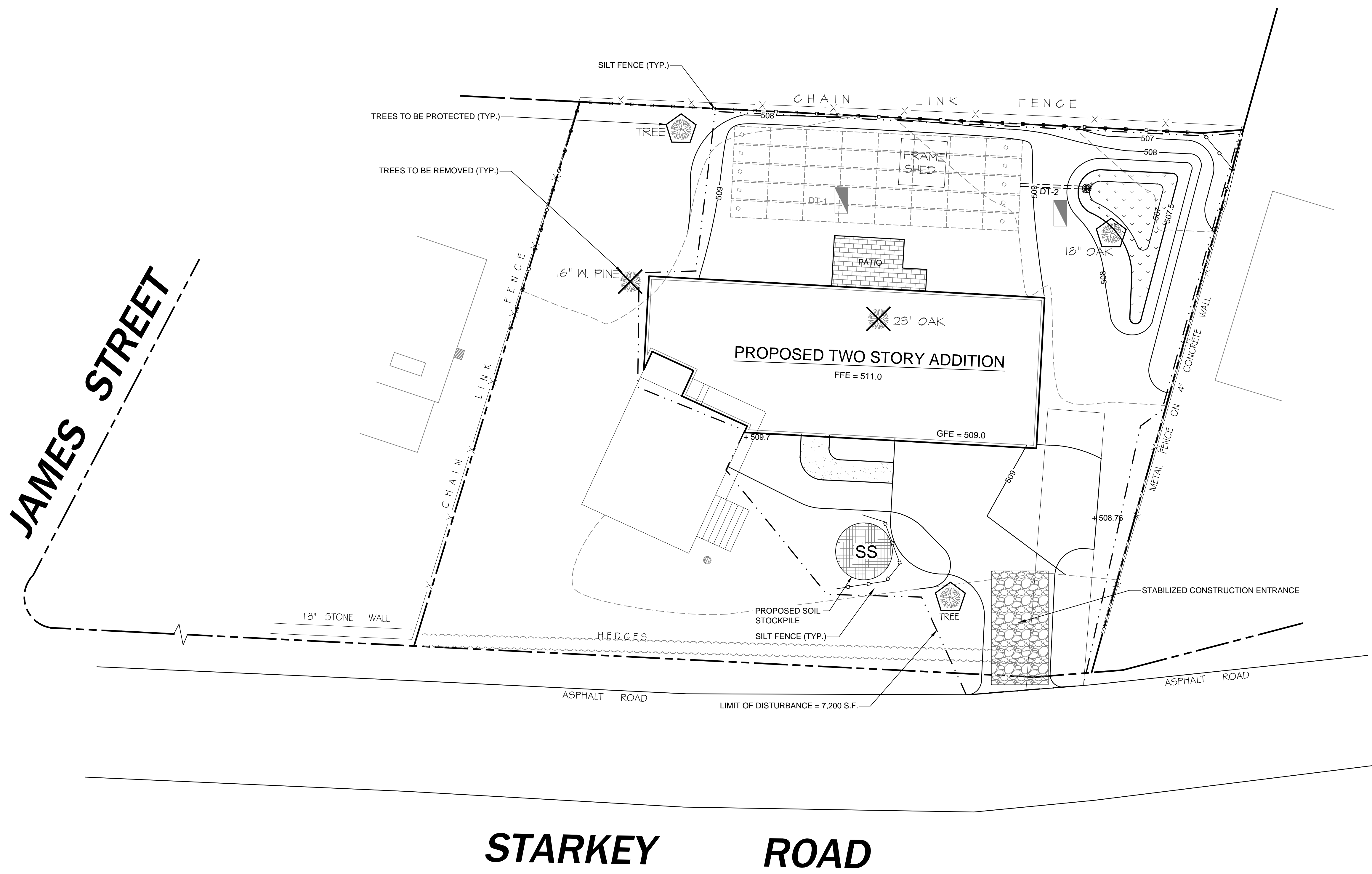
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NOTE:
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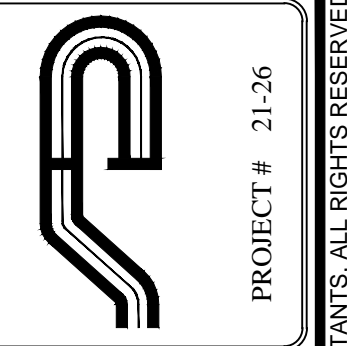
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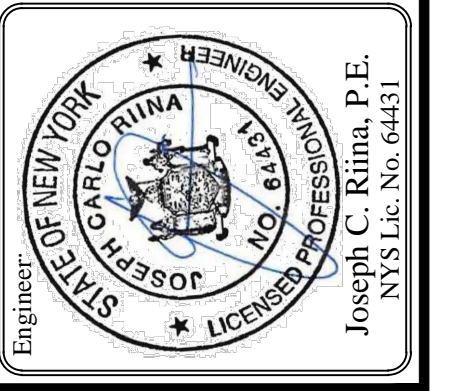


JAMES STREET

STARKEY ROAD



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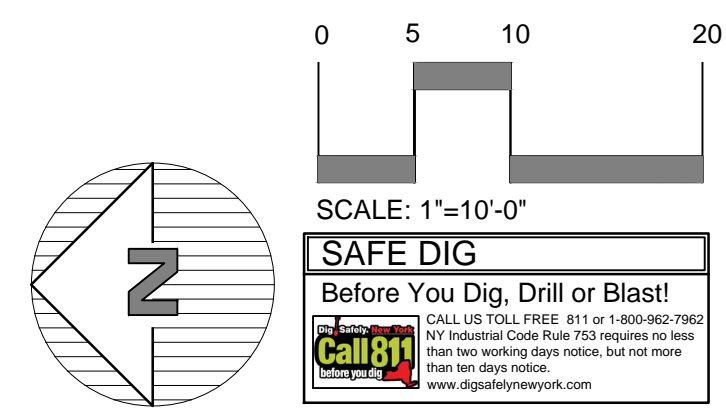


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SCALE: 1" = 10'
 DRAWN BY: GO
 DATE: 08-03-21

EROSION & SEDIMENT CONTROL PLAN

SITE PLAN PREPARED FOR
MICHAEL & PAM GRIMALDI
 34 STARKEY ROAD
 Town of North Castle
 Westchester County, NY



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Sheet 3 of 5

E:\2021\21-26\MICHAEL GRIMALDI\ENGINEERING\CAD\CAD-21-26\MICHAEL GRIMALDI\DWG\EROSION CONTROL SITE PLAN.DWG 11/16/2021 3:18:52 PM

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GENERAL EROSION CONTROL NOTES:

- Contractor shall be responsible for compliance with all sediment and erosion control practices. The sediment and erosion control practices are to be installed prior to any major soil disturbances, and maintained until permanent protection is established. Road surface flows from the site should be dissipated with tracking pad or appropriate measures during adjacent road shoulder regrading. Contractor is responsible for the installation and maintenance of all soil erosion and sedimentation control devices throughout the course of construction.
- Catch basin inlet protection must be installed and operating at all times until tributary areas and basin have been stabilized. When possible flows should be stabilized before reaching inlet protection structure. Timely maintenance of sediment control structures is the responsibility of the Contractor.
- All structures shall be maintained in good working order at all times. The sediment level in all sediment traps shall be closely monitored and sediment removed promptly when maximum levels are reached or as ordered by the engineer. All sediment control structures shall be inspected on a regular basis, and after each heavy rain to insure proper operation as designed. An inspection schedule shall be set forth prior to the start of construction.
- The locations and the installation times of the sediment capturing standards shall be as specified in these plans, as ordered by the Engineer, and in accordance with the latest edition of the "New York Standards and Specifications for Erosion and Sediment Control" (NYSSESC).
- All topsoil shall be placed in a stabilized stockpile for reuse on the site. All stockpile material required for final grading and stored on site shall be temporarily seeded and mulched within 7 days. Refer to soil stockpile details.
- Any disturbed areas that will be left exposed more than 7 days and not subject to construction traffic, shall immediately receive temporary seeding. Mulch shall be used if the season prevents the establishment of a temporary cover. Disturbed areas shall not be limed and fertilized prior to temporary seeding.
- All disturbed areas within 500 feet of an inhabited dwelling shall be wetted as necessary to provide dust control.
- The contractor shall keep the roadways within the project clear of soil and debris and is responsible for any street cleaning necessary during the course of the project.
- Sediment and erosion control structures shall be removed and the area stabilized when the drainage area has been properly stabilized by permanent measures.
- All sediment and erosion control measures shall be installed in accordance with current edition of NYSSESC.
- All regraded areas must be stabilized appropriately prior to any rock blasting, cutting, and/or filling of soils. Special care should be taken during construction to insure stability during maintenance and integrity of control structures.
- Any slopes graded at 3:1 or greater shall be stabilized with erosion blankets to be staked into place in accordance with the manufactures requirements. Erosion blankets may also be required at the discretion of Town officials or Project Engineer. When stabilized blanket is utilized for channel stabilization, place one half the volume of seed mix prior to laying net, and place the remaining seed after laying the stabilized blanket.
- To prevent heavy construction equipment and trucks from tracking soil off-site, construct a pervious crushed stone pad. Locate and construct pads as detailed in these plans.
- Contractor is responsible for controlling dust by sprinkling exposed soil areas periodically with water as required. Contractor to supply all equipment and water.
- Contractor shall be responsible for construction inspections as per the Town of North Castle requirements.

MAINTENANCE OF TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES:

- Trees and vegetation shall be protected at all times as shown on the detail drawing and as directed by the Engineer.
- Care should be taken so as not to channel concentrated runoff through the areas of construction activity on the site.
- Fill and site disturbances should not be created which causes water to pond off site or on adjacent properties.
- Runoff from land disturbances shall not be discharged or have the potential to discharge off site without first being intercepted by a control structure, such as a sediment trap or the sediment pond. Sediment shall be removed before exceeding 50% of the retention structure's capacity.
- For finished grading, adequate grade shall be provided so that water will not pond on lawns for more than 24 hours after rainfall, except in swale flow areas which may drain for as long as 48 hours after rainfall.
- All swales and other areas of concentrated flow shall be properly stabilized with temporary control measures to prevent erosion and sediment travel. Surface flows over cut and fill areas shall be stabilized at all times.
- All sites shall be stabilized with erosion control materials within 7 days of final grading.
- Temporary sediment trapping devices shall be removed from the site within 30 days of final stabilization.

MAINTENANCE OF TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES:

- Trees and vegetation shall be protected at all times as shown on the detail drawing and as directed by the Engineer.
- Care should be taken so as not to channel concentrated runoff through the areas of construction activity on the site.
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- All swales and other areas of concentrated flow shall be properly stabilized with temporary control measures to prevent erosion and sediment travel. Surface flows over cut and fill areas shall be stabilized at all times.
- All sites shall be stabilized with erosion control materials within 7 days of final grading.
- Temporary sediment trapping devices shall be removed from the site within 30 days of final stabilization.

MAINTENANCE SCHEDULE:

| | DAILY | WEEKLY | MONTHLY | AFTER RAINFALL | NECESSARY TO MAINTAIN FUNCTION | AFTER APPROVAL OF INSPECTOR |
|--------------------|-------|--------|---------|----------------|--------------------------------|-----------------------------|
| SILT FENCE | --- | YES | YES | YES | INSPECT/ CLEAN/ REPLACE | REMOVE |
| CONSTRUCT ENTRANCE | YES | YES | --- | YES | INSPECT/ CLEAN/ REPLACE | REMOVE |

MAINTENANCE OF PERMANENT CONTROL STRUCTURES DURING CONSTRUCTION:

The stormwater management system and outlet structure shall be inspected on a regular basis and after every rainfall event. Sediment build up shall be removed from the inlet protection regularly to insure detention capacity and proper drainage. Outlet structure shall be free of obstructions. All piping and drain inlets shall be free of obstruction. Any sediment build up shall be removed.

MAINTENANCE OF CONTROLS AFTER CONSTRUCTION:

Controls (including respective outlet structures) should be inspected periodically for the first few months after construction and on an annual basis thereafter. They should also be inspected after major storm events.

DEBRIS AND LITTER REMOVAL:

Twice a year, inspect outlet structure and drain inlets for accumulated debris. Also, remove any accumulations during each mowing operation.

STRUCTURAL REPAIR/REPLACEMENT:

Outlet structure must be inspected twice a year for evidence of structural damage and repaired immediately.

EROSION CONTROL:

Unstable areas tributary to the basin shall immediately be stabilized with vegetation or other appropriate erosion control measures.

SEDIMENT REMOVAL:

Sediment should be removed after it has reached a maximum depth of five inches above the stormwater management system floor.

CONSTRUCTION SEQUENCE:

- Prior to the beginning of any site work the major features of the construction must be field staked by a licensed surveyor. These include the proposed house, limits of disturbance, and Stormwater practices.
- Prior to commencement of work, an on-site preconstruction meeting will be held. This will be attended by the Owner responsible for any fines or penalties, the Operator responsible for complying with the approved construction drawings including the E&S plan and details, the Environmental Planner responsible for E&S monitoring during construction, town representatives from the Engineering Department and Code Enforcement.
- Temporary erosion and sediment controls (E&SCs) as shown on the approved construction drawings shall be installed as detailed.
- Remove existing vegetative cover and other surface features in the limit of construction.
- Excavate for the house construction. Upon completion of foundation backfill and grade area around the foundation walls.
- Install rain garden and drainage structures. Entry to the system shall be blocked until the site has reached final stabilization.
- Install underground services to house.
- Install final plantings.
- Topsoil, rake, seed and mulch all disturbed areas.
- Upon stabilization of all disturbed areas and approval from the Town representative remove all temporary erosion and sediment controls

TOPSOIL:

Existing topsoil will be removed and stored in piles sufficiently as to avoid mixing with other excavation. Stockpiles shall be surrounded by erosion control as outlined on these plans. The furnishing of new topsoil shall be of a better or equal to the following criteria (SS713.01 NYSDOT):

- The pH of the material shall be 5.5 to 7.6.
- The organic content shall not be less than 2% or more than 70%.
- Gradation:

| SIEVE SIZE | % PASSING BY WGT. |
|--------------|-------------------|
| 2 INCH | 100 |
| 1 INCH | 85 TO 100 |
| 1/4 INCH | 65 TO 100 |
| NO. 200 MESH | 20 TO 80 |

PERMANENT VEGETATIVE COVER:

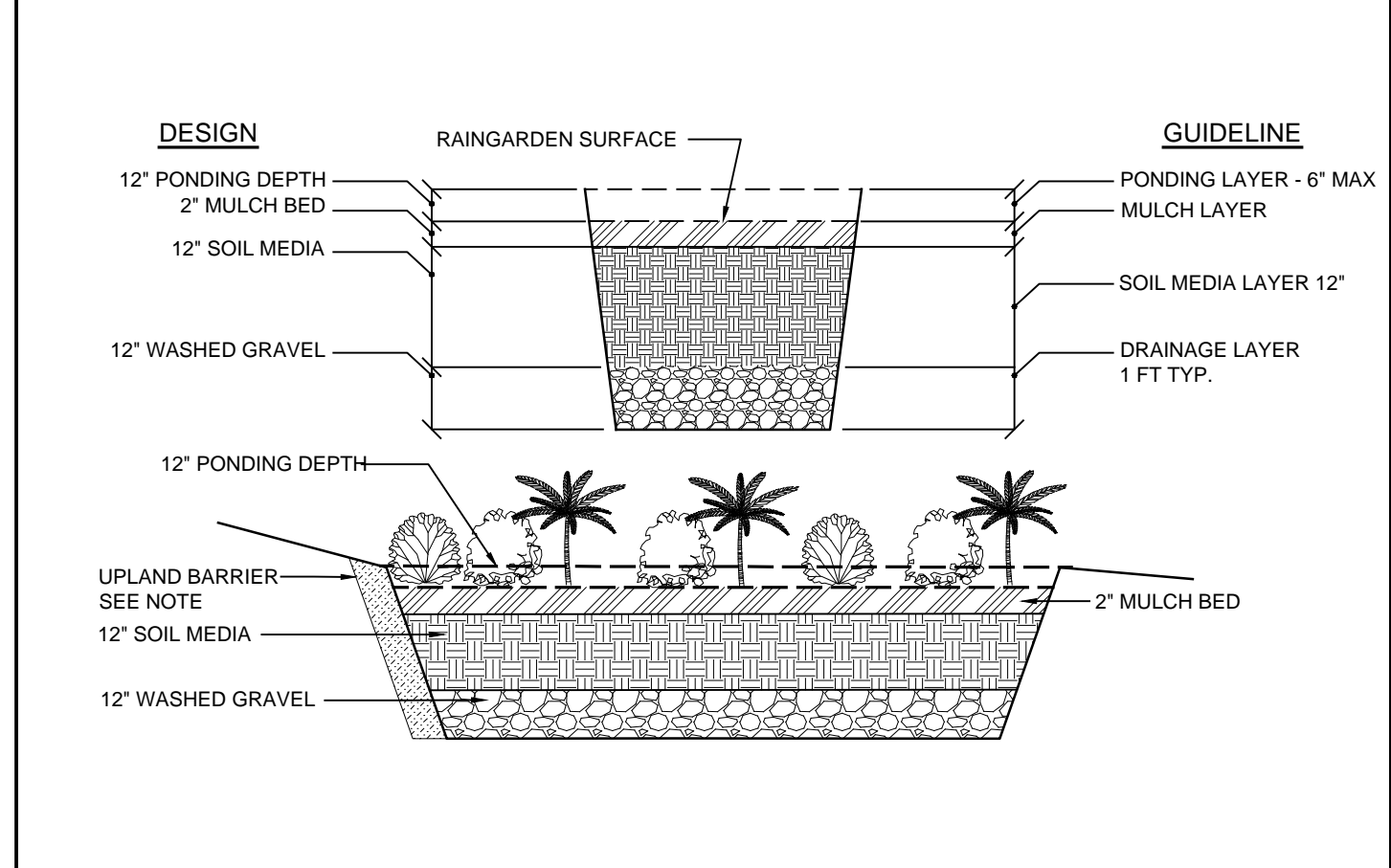
- Site preparation:
 - Install erosion control measures.
 - Scarify compacted soil areas.
 - Lime as required to pH 6.5.
 - Fertilize with 10-6-4 4 lbs/1,000 S.F.
 - Incorporate amendments into soil with disc harrow.
- Seed mixtures for use on swales and cut and fill areas.

| MIXTURE | | LBS./ACRE |
|---------|---|---------------|
| ALT. A | KENTUCKY BLUE GRASS CREEPING RED FESCUE RYE GRASS OR REDTOP | 20 28 5 |
| ALT. B | CREEPING RED FESCUE REDFOP | 20 2 |
| | TALL FESCUE/SMOOTH BLOOMGRASS | 20 |
- SEEDING
 - Prepare seed bed by raking to remove stones, twigs, roots and other foreign material.
 - Apply soil amendments and integrate into soil.
 - Apply seed uniformly by cyclone seeder culti-packer or hydro-seeder at rate indicated.
 - Stabilize seeded areas in drainage swales.
 - Irrigate to fully saturate soil layer, but not to dislodge planting soil.
 - Seed between April 1st and May 15th or August 15th and October 15th.
 - Seeding may occur May 15th and August 15th if adequate irrigation is provided.

TEMPORARY VEGETATIVE COVER:

SITE PREPARATION:

- Install erosion control measures.
 - Scarify areas of compacted soil.
 - Fertilize with 10-10-10 at 400/lb/acre.
 - Lime as required to pH 6.5.
- SEED SPECIES:**
- | MIXTURE | LBS./ACRE |
|-------------------------------------|-----------|
| Rapidly germinating annual ryegrass | 20 |
| Perennial ryegrass | 20 |
| Cereal oats | 36 |
- SEEDING:**
Same as permanent vegetative cover



DESIGN
12" PONDING DEPTH
2" MULCH BED
12" SOIL MEDIA
12" WASHED GRAVEL
12" PONDING DEPTH
UPLAND BARRIER
SEE NOTE
12" WASHED GRAVEL

GUIDELINE
PONDING LAYER - 6" MAX MULCH LAYER
SOIL MEDIA LAYER 12"
DRAINAGE LAYER 1 FT TYP.

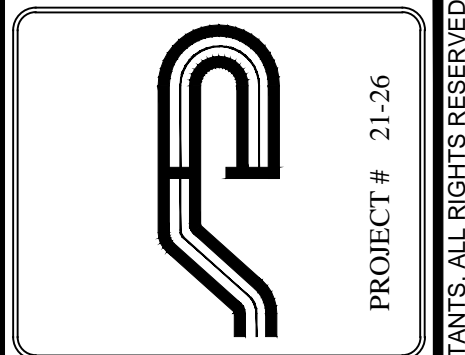
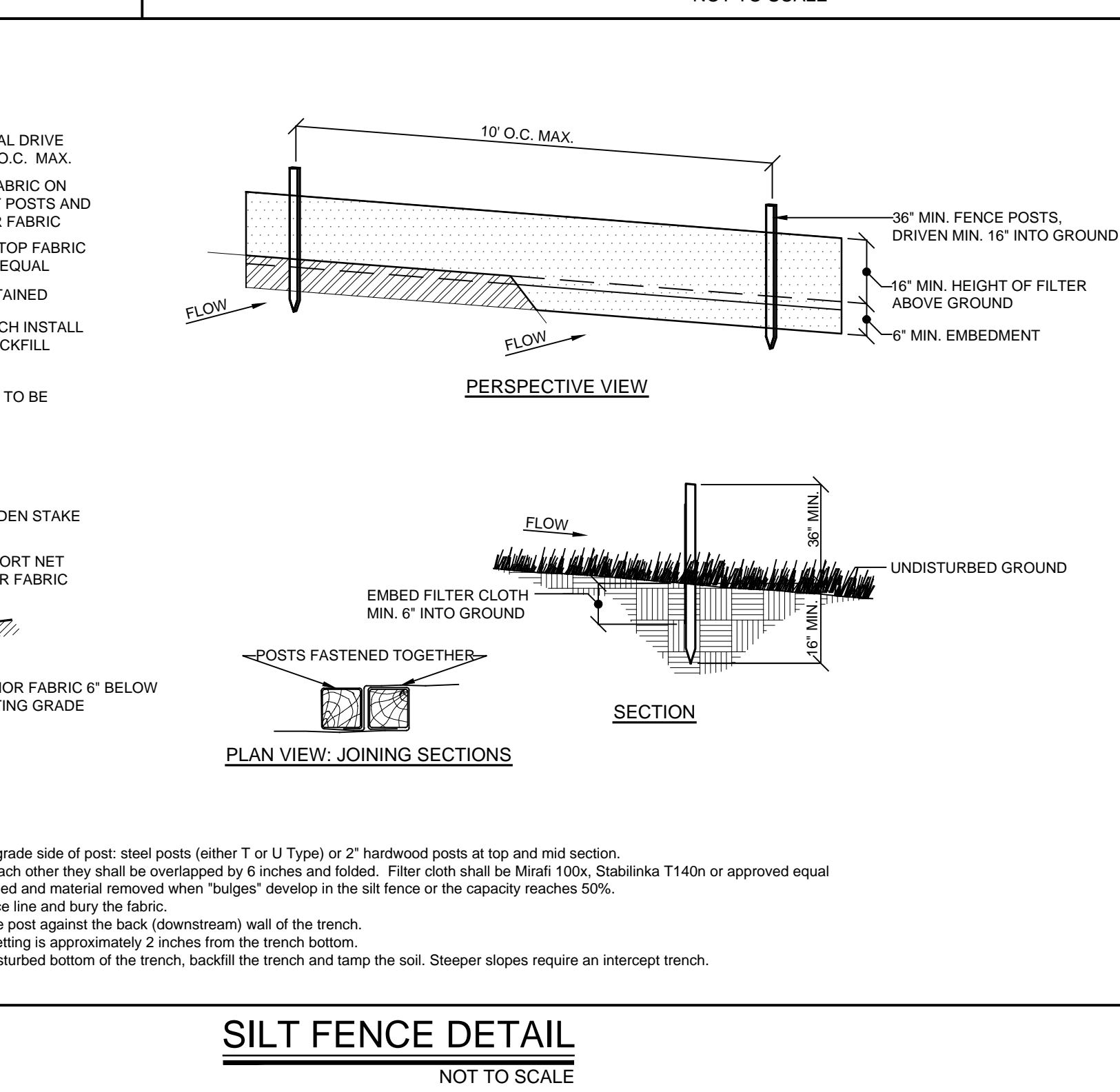
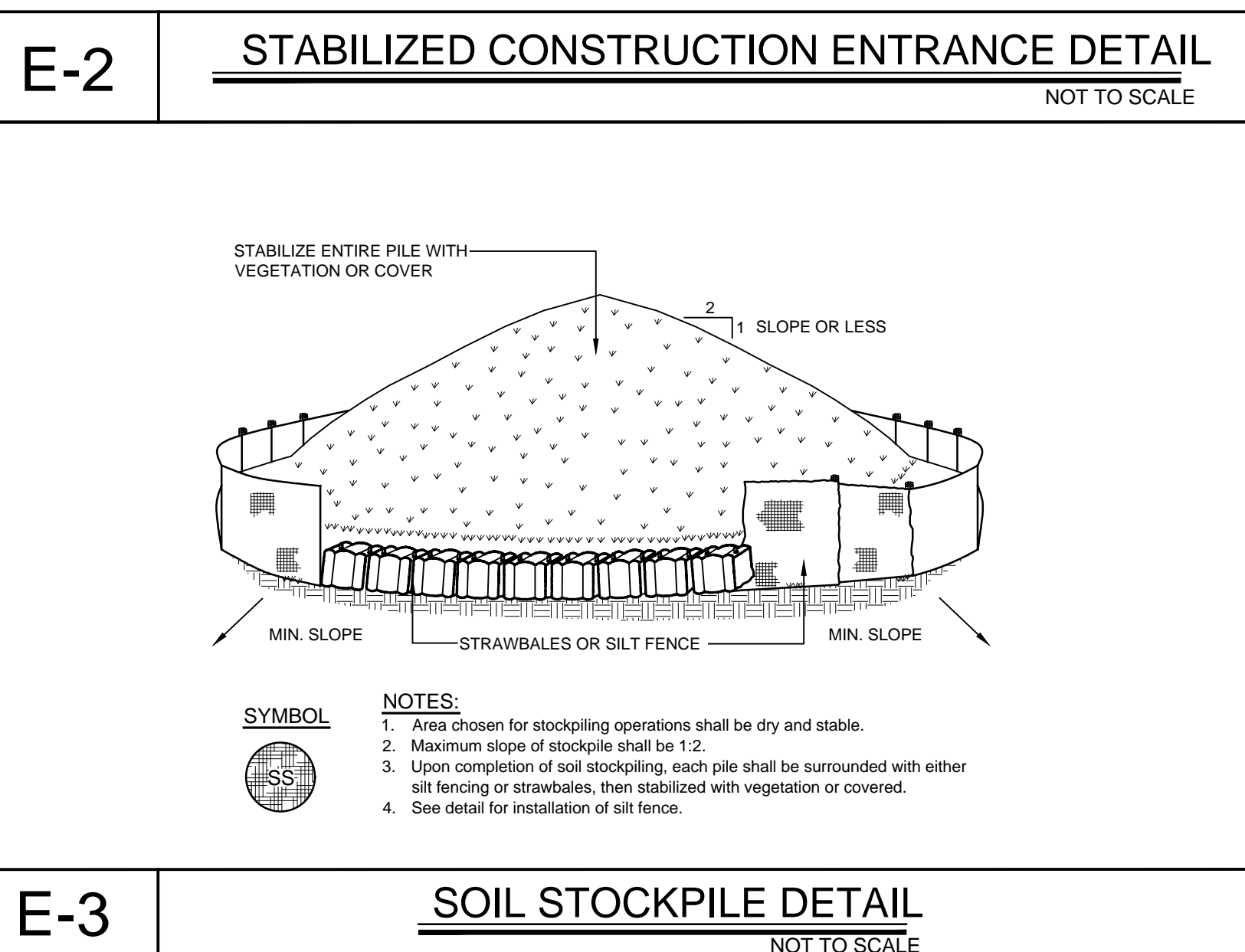
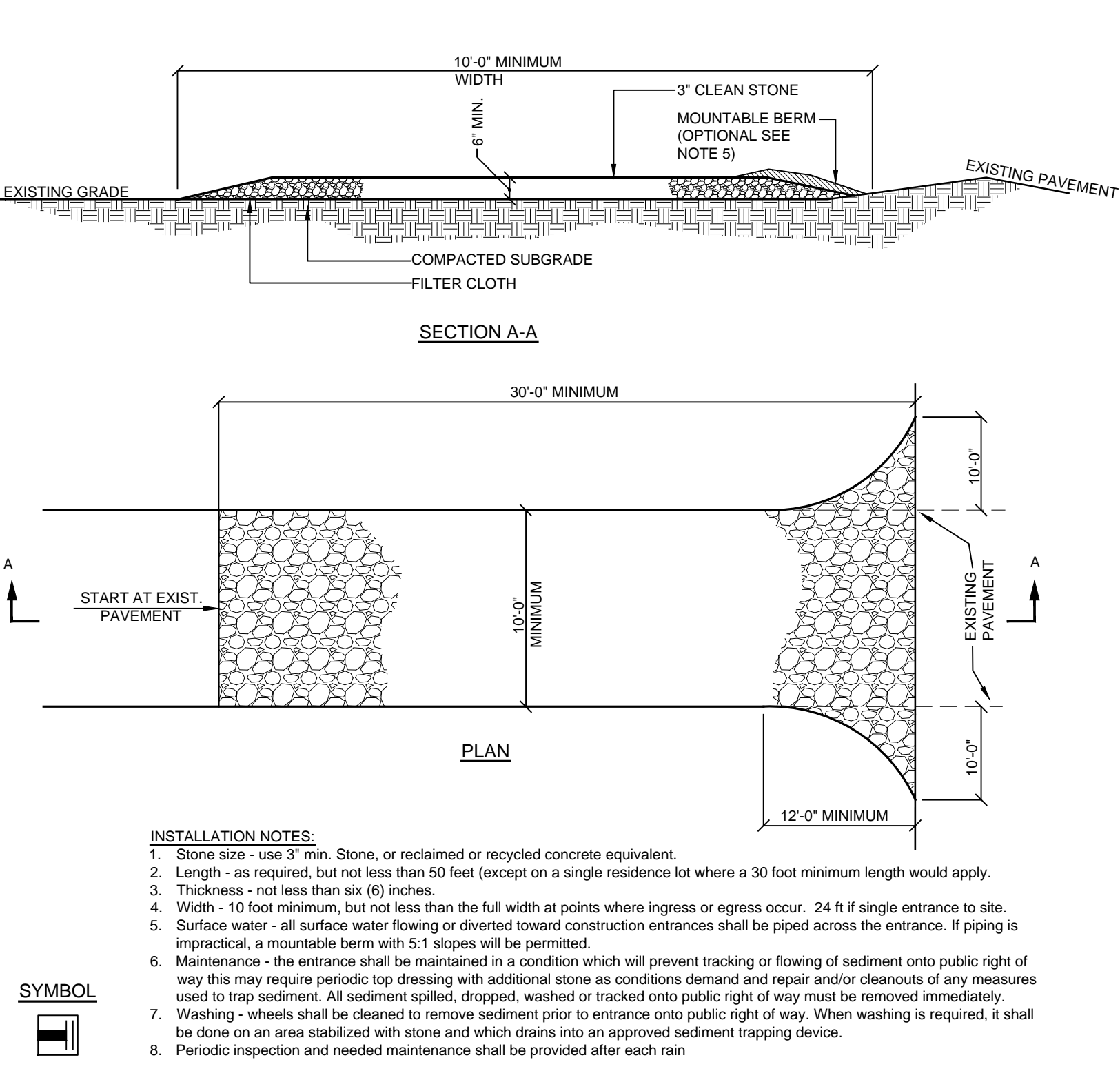
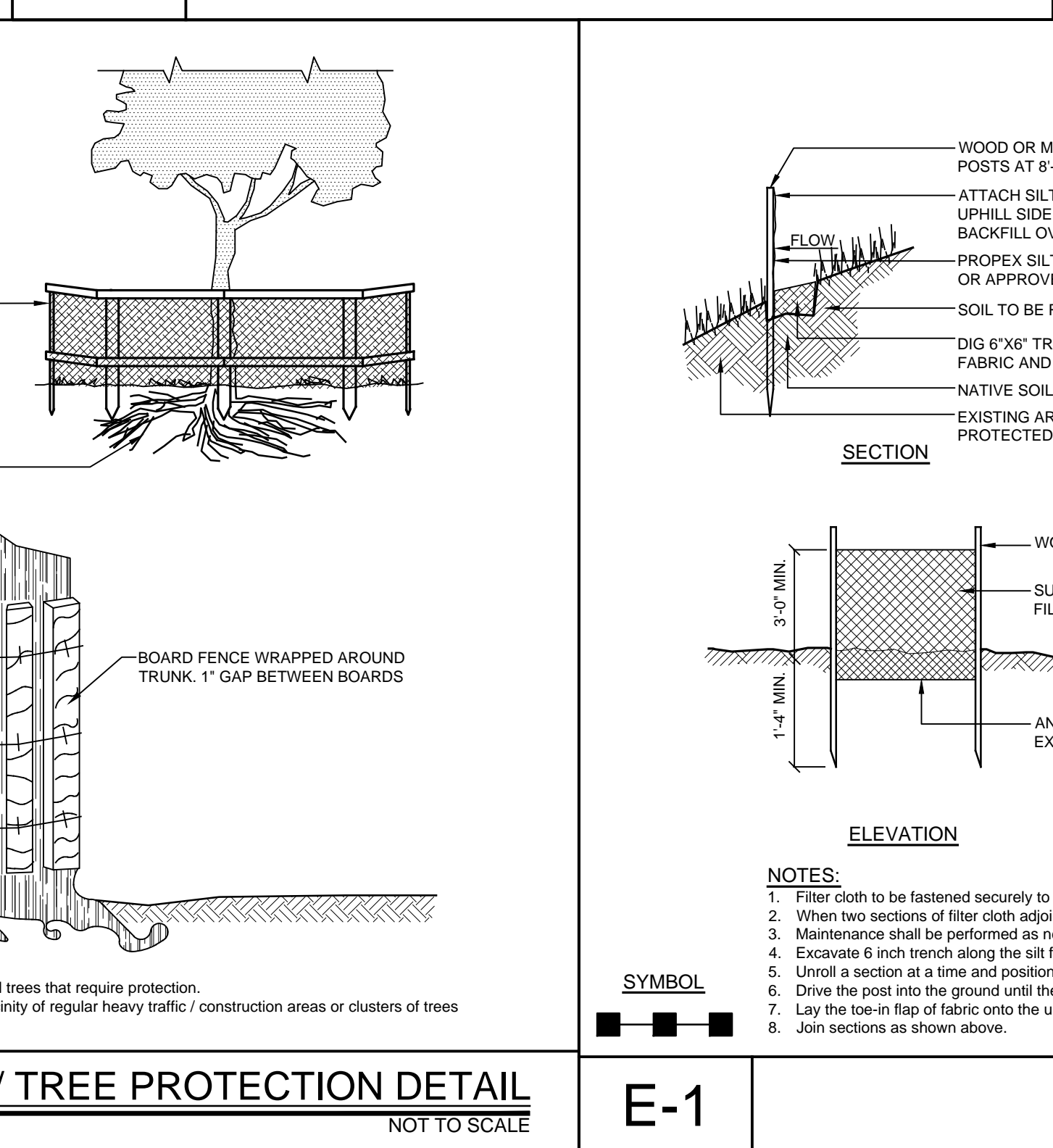
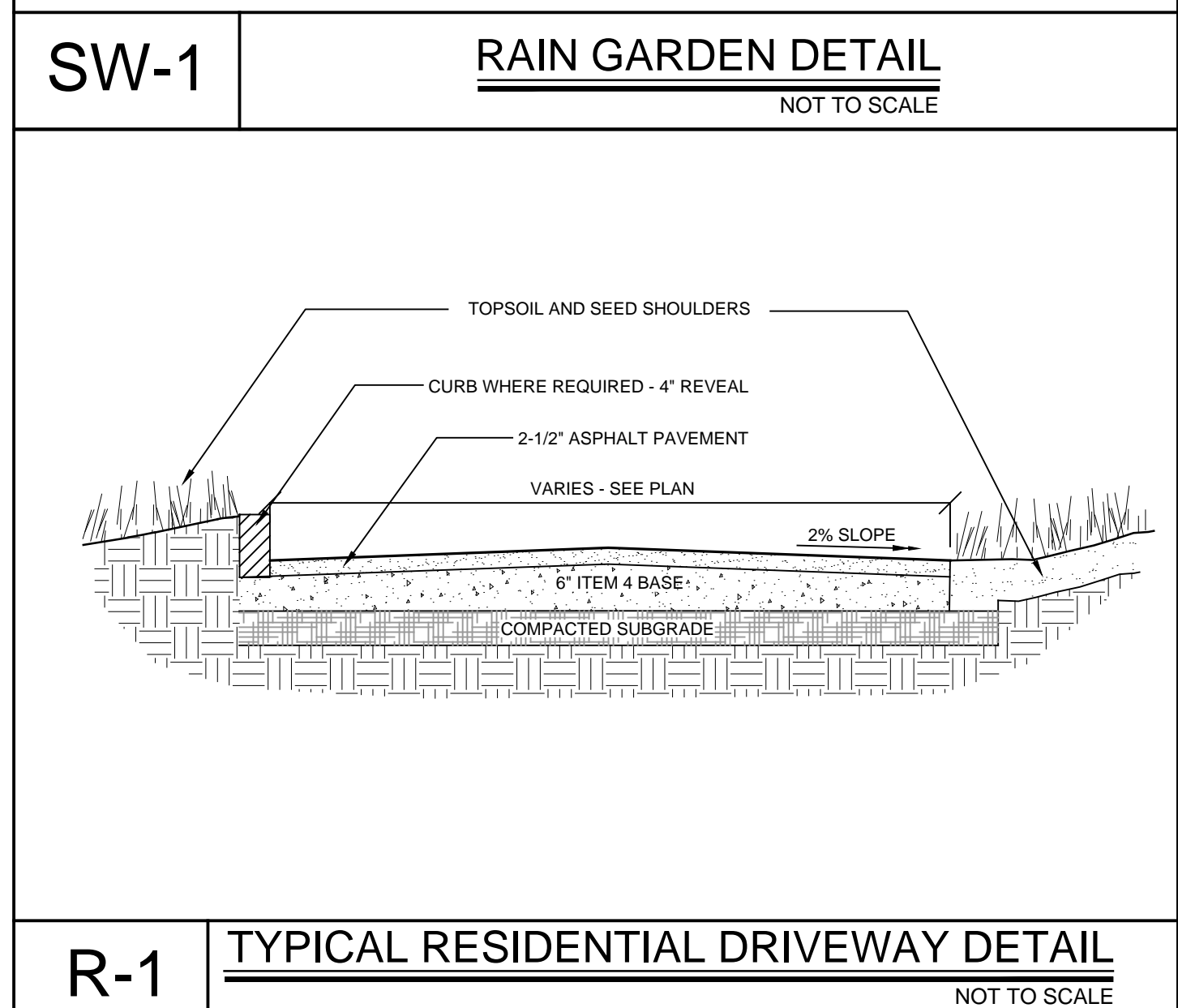
SOIL MEDIA SPECIFICATIONS:
COMPOSITION - 50% SAND, 20-30% TOPSOIL W/ LESS THAN 5% CLAYS, 20-30% LEAF COMPOST
POROSITY - 0.20

DRAINAGE LAYER SPECIFICATIONS:
POROSITY - 0.40

PLANT SPECIFICATIONS:
Suggested Shrub List
WITCH HAZEL (Hamamelis virginiana)
WINTERBERRY (Ilex verticillata)
ARROWWOOD (Viburnum dentatum)
BROOK-SIDE ALDER (Alnus serrulata)
RED-OISER DOGWOOD (Cornus stolonifera)
SWEET PEPPERBUSH (Clethra alnifolia)

Suggested Herbaceous Plant List
CINNAMON FERN (Osmunda cinnamomea)
CUTLEAF CONEFLOWER (Rudbeckia laciniata)
WOOLGRASS (Scirpus cyperinus)
NEW ENGLAND ASTER (Aster novea-angliae)
FOX SEDGE (Carex vulpinoidea)
SPOTTED JOE-PYE WEED (Eupatorium maculatum)
SWITCH GRASS (Panicum virgatum)
GREAT BLUE LOBELIA (Lobelia siphacica)
WILD BERGAMOT (Monarda fistulosa)
RED MILKWEEED (Asclepias incarnata)

NOTE:
1. The upland side of the rain garden shall be protected from upgradient subsurface conditions with the installation of either a 12" thick clay barrier or placement of 6 mil polyethylene sheeting along the excavated side-walls of the drainage layers.



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| Revisions: | No. | Date | Comments |
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SCALE: 1" = 10'
DRAWN BY: GO
DATE: 08-03-21

E&S C & SITE DETAILS

SITE PLAN PREPARED FOR
MICHAEL & PAM GRIMALDI
34 STARKEY ROAD
Westchester County, NY
Town of North Castle

CULTEC RECHARGER 180HD SPECIFICATIONS

GENERAL
CULTEC RECHARGER® 180HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS

- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
- THE CHAMBER SHALL BE ARCHED IN SHAPE.
- THE CHAMBER SHALL BE OPEN-BOTTOMED.
- THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER® 180HD SHALL BE 20.5 INCHES (521 MM) TALL, 36 INCHES (914 MM) WIDE AND 7.33 FEET (2.23 M) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER® 180HD SHALL BE 6.33 FEET (1.93 M).
- MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 15 INCHES (375 MM) HDPE.
- THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE O.D. IN THE SIDE PORTAL IS 12.25 INCHES (311 MM).
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV® FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 MM) TALL, 16 INCHES (406 MM) WIDE AND 24 INCHES (614 MM) LONG.
- THE NOMINAL STORAGE VOLUME OF THE RECHARGER® 180HD CHAMBER SHALL BE 3.445 FT³ / FT (0.32 M³ / M) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A SINGLE RECHARGER 180HD STAND ALONE UNIT SHALL BE 25.25 FT³ (0.72 M³) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER® 180HD AS AN INTERMEDIATE UNIT SHALL BE 21.81 FT³ (0.62 M³) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF THE LENGTH ADJUSTMENT AMOUNT PER RUN SHALL BE 3.445 FT³ (0.32 M³) - WITHOUT STONE.
- THE NOMINAL STORAGE VOLUME OF THE HVLV® FC-24 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 M³ / M) - WITHOUT STONE.
- THE RECHARGER® 180HD CHAMBER SHALL HAVE SEVENTY-EIGHT DISCHARGE HOLES BORED INTO THE SIDE WALLS OF THE UNITS' CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- THE RECHARGER® 180HD CHAMBER SHALL HAVE 14 CORRUGATIONS.
- THE ENDWALL OF THE CHAMBER, WHEN PRESENT, SHALL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
- THE RECHARGER® 180HD STAND ALONE/STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
- THE RECHARGER® 180HD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.
- THE HVLV® FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE RECHARGER® 180HD AND ACT AS CROSS FEED CONNECTIONS.
- CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- THE CHAMBER SHALL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
- THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION ON THE LARGE RIB END.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.
- MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 12.0' (3.66 M).
- THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED TO MEET THE MATERIAL AND STRUCTURAL REQUIREMENTS OF IAPMO PS 63-2019, INCLUDING RESISTANCE TO ASHTO H-10 HIGHWAY LIVE LOADS, WHEN INSTALLED IN ACCORDANCE WITH CULTEC'S INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

CULTEC FC-24 FEED CONNECTOR SPECIFICATIONS

GENERAL
CULTEC HVLV (HIGH VOLUME, LOW VELOCITY) FEED CONNECTOR POLYETHYLENE CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED TO MANIFOLD CULTEC RECHARGER MODEL 180HD CHAMBER SYSTEMS FOR RETENTION, RECHARGING, DETENTION, AND CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PROPERTIES

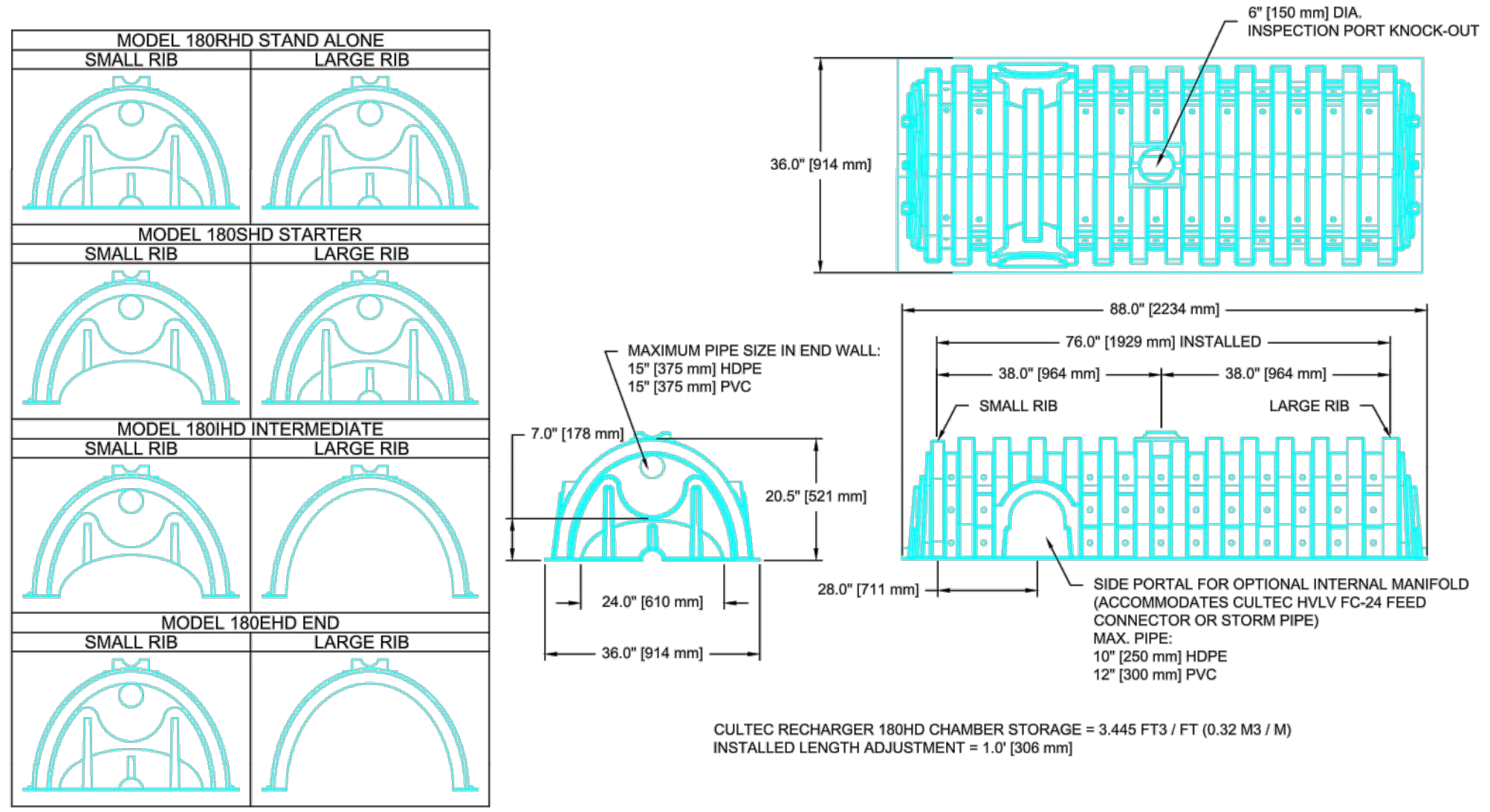
- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416).
- CONTACT CULTEC, INC. AT 203-775-4416 FOR SUBMITTAL PACKAGES AND TO PURCHASE PRODUCT.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC FEED CONNECTOR SHALL BE 12 INCHES TALL, 16 INCHES WIDE. THE HVLV FC-48 IS 54 INCHES LONG. THE HVLV FC-24 IS 24.2 INCHES LONG.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR SHALL BE 0.819 CF/LF.
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
- THE HVLV FC FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS, AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE RECHARGER 180HD.
- ALL CHAMBERS SHALL BE ARCHED IN SHAPE.
- HEAVY DUTY UNITS ARE DESIGNED ACCORDING TO ASHTO H-20 LOAD RATING (40,000 LBS. AXLE) WHEN BURIED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- HEAVY DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE ALONG THE LENGTH OF THE CHAMBER.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.

CULTEC NO. 410™ NON-WOVEN GEOTEXTILE

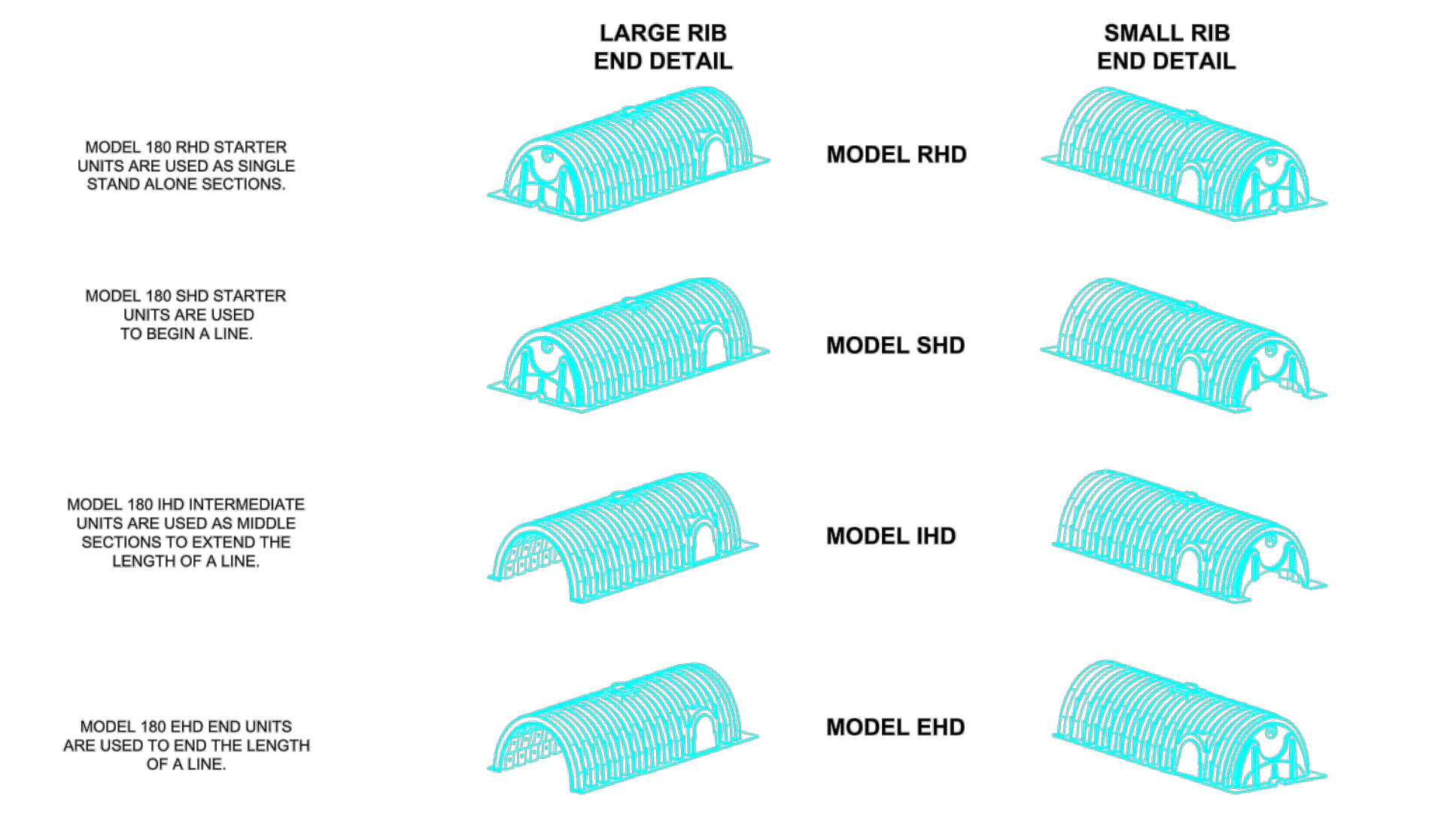
CULTEC NO. 410™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER® STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL INTRUSION INTO THE STONE.

GEOTEXTILE PARAMETERS

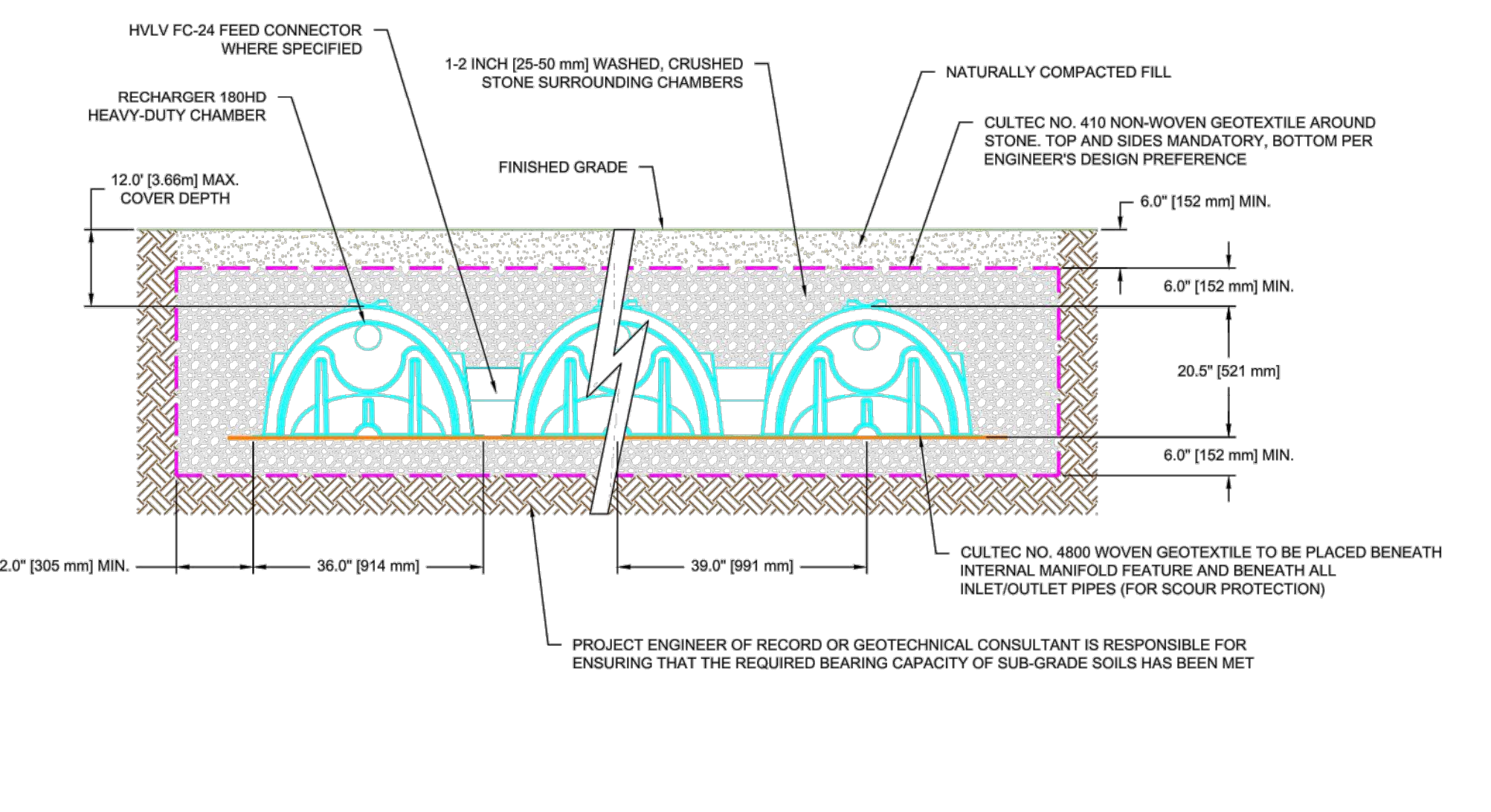
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
 - THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
 - THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M²).
 - THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM D4632 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (500 L/MIN/SM) PER ASTM D4491 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4355 TESTING METHOD.
- CULTEC NO. 4800™ WOVEN GEOTEXTILE**
CULTEC NO. 4800 WOVEN GEOTEXTILE IS DESIGNED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR MAINTENANCE.
- GEOTEXTILE PARAMETERS**
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
 - THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
 - THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 5,070 X 5,070 LBS/FT (74 X 74 KN/M) PER ASTM D4595 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 2% STRAIN OF 960 X 1,096 LBS/FT (14 X 16 KN/M) PER ASTM D4595 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 5% STRAIN OF 2,740 X 2,740 LBS/FT (40 X 40 KN/M) PER ASTM D4595 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 10% STRAIN OF 4,800 X 4,800 LBS/FT (70 X 70 KN/M) PER ASTM D4595 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4491 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT² (470 LPM/M²) PER ASTM D4491 TESTING METHOD.
 - THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4355 TESTING METHOD.



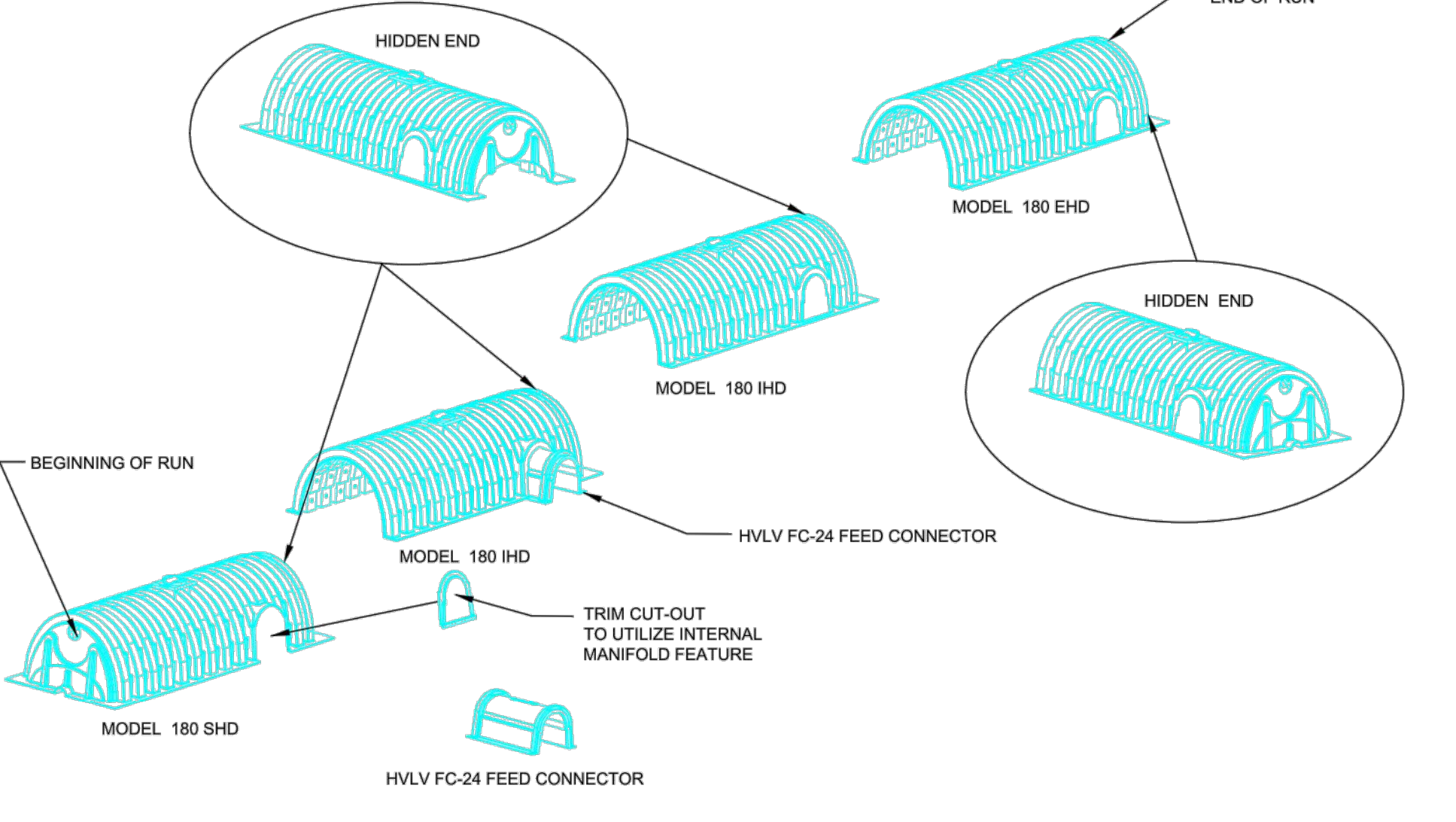
CULTEC RECHARGER 180HD HEAVY DUTY THREE VIEW



CULTEC RECHARGER 180HD HEAVY DUTY END DETAIL INFORMATION

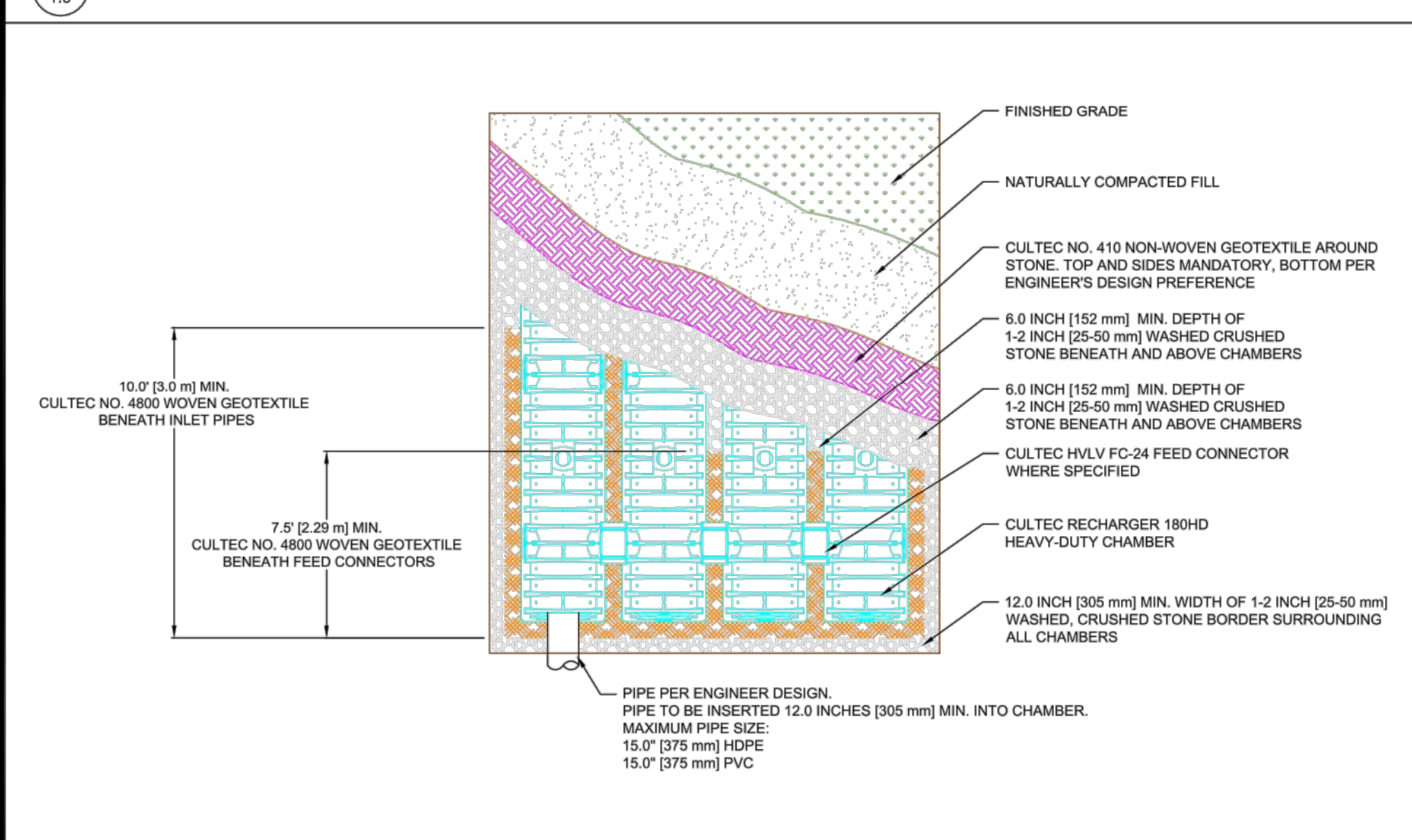


CULTEC RECHARGER 180HD HEAVY DUTY CROSS SECTION



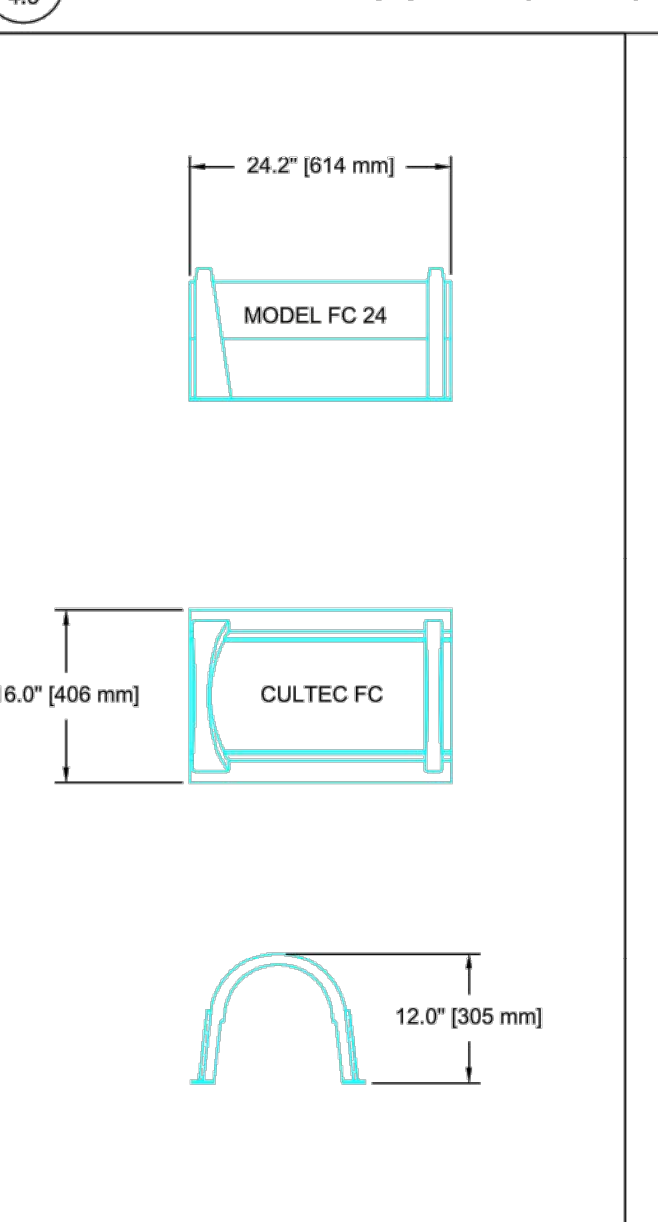
CULTEC RECHARGER 180HD HEAVY DUTY TYPICAL INTERLOCK

GENERAL NOTES



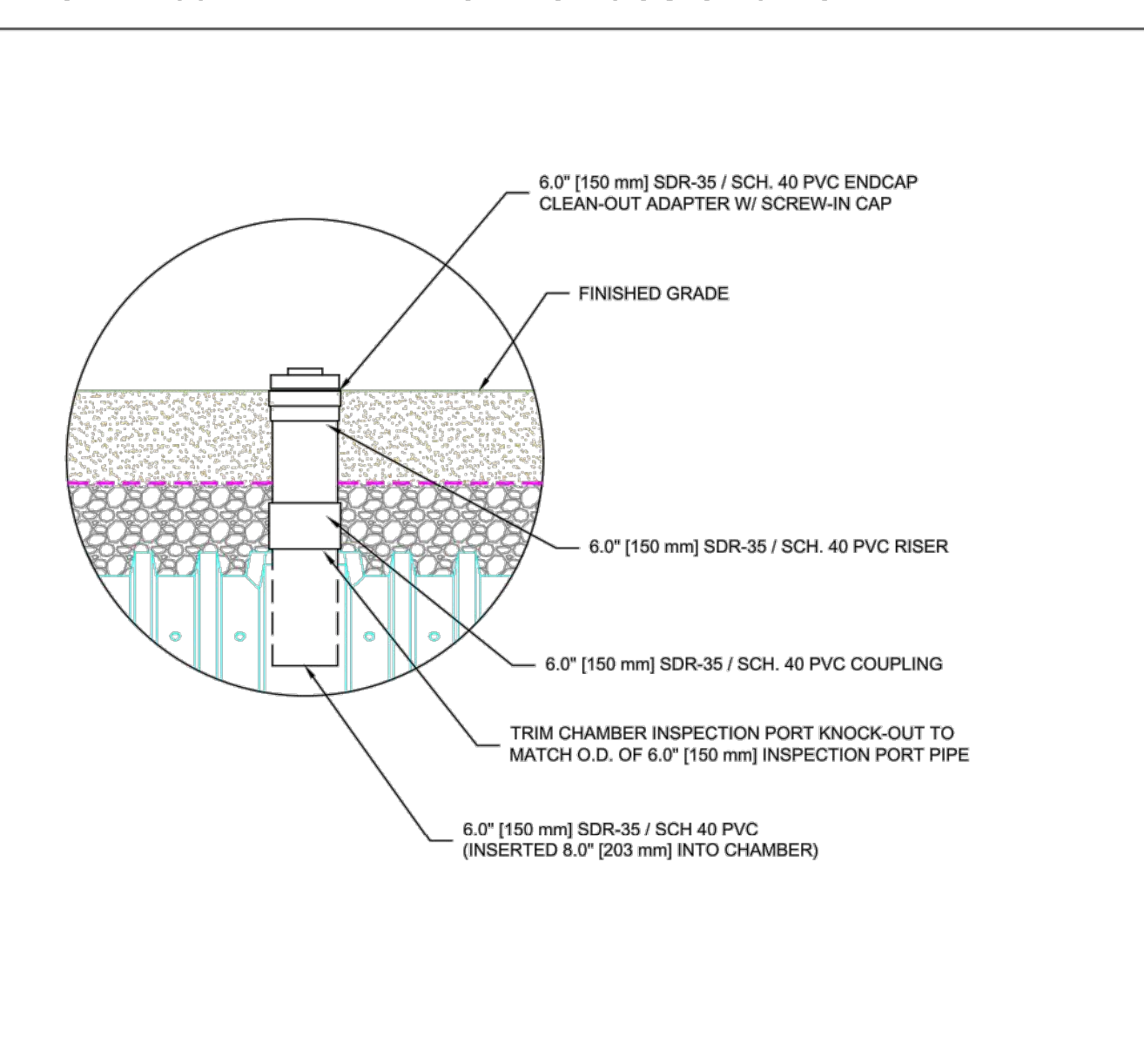
CULTEC RECHARGER 180HD HEAVY DUTY PLAN VIEW

CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW



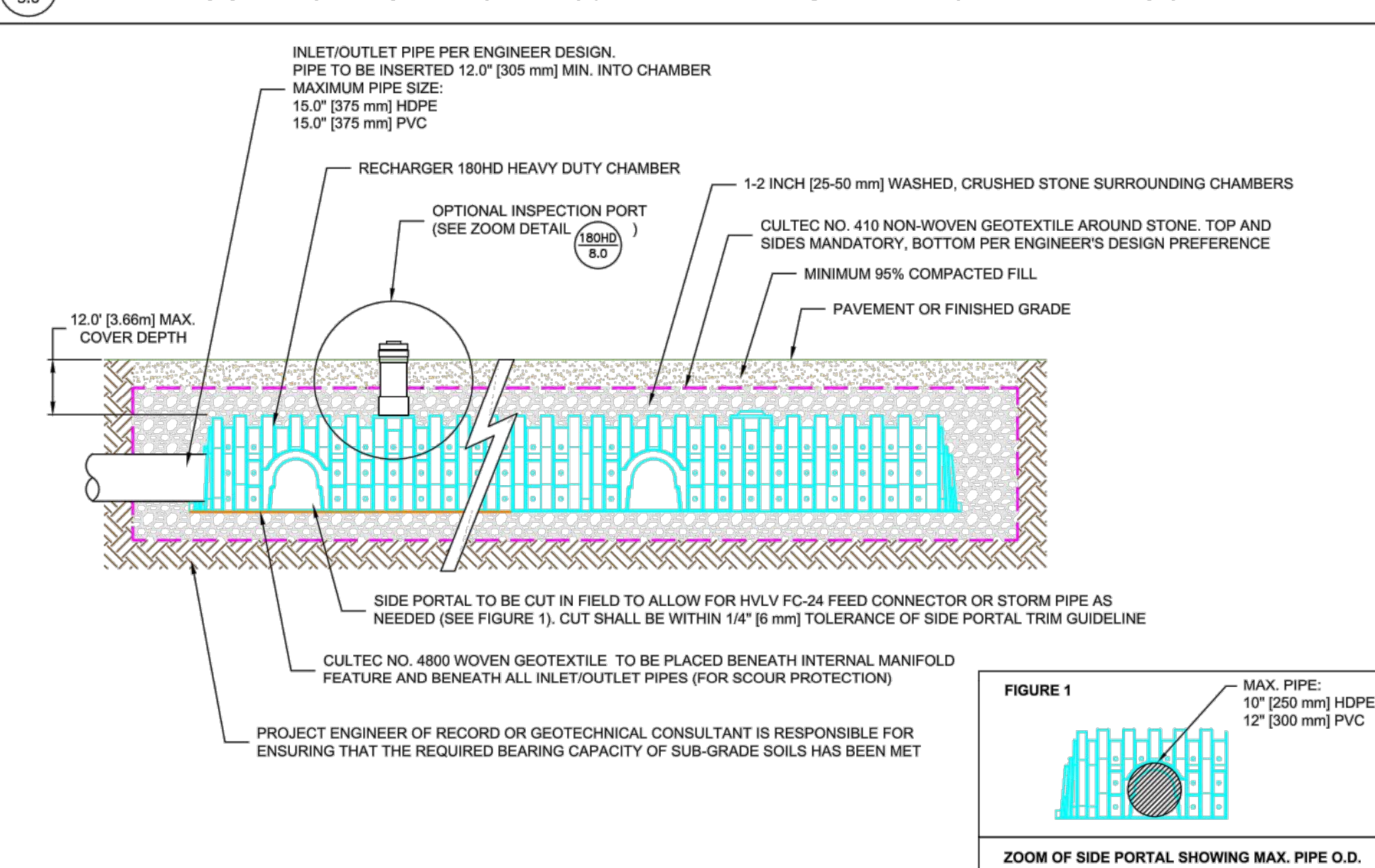
CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW

OPTIONAL INSPECTION PORT - ZOOM DETAIL



OPTIONAL INSPECTION PORT - ZOOM DETAIL

CULTEC INTERNAL MANIFOLD DETAIL - OPTIONAL INSPECTION PORT DETAIL



CULTEC INTERNAL MANIFOLD DETAIL - OPTIONAL INSPECTION PORT DETAIL

CULTEC, Inc.
Subsurface Stormwater Management Systems
P.O. Box 280
878 Federal Road
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www.cultec.com

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FX: (203) 775-1462
tech@cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE DESIGN ENGINEER FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE DESIGN ENGINEER TO ASSURE THAT THE STORMWATER SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC INC. DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS. THE DESIGNING ENGINEER IS RESPONSIBLE FOR ALL DESIGN DECISIONS.

**RECHARGER 180HD
DETAIL SHEET
NON-Traffic APPLICATION**

| CULTEC STORMWATER CHAMBER | |
|---------------------------|------------------|
| PROJECT NO: | DATE: 2019 |
| DRAWN BY: CULTEC, INC | CHECKED BY: TECH |
| SCALE: N.T.S. | SHEET NO: 1 OF 1 |

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
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www.sitedesignconsultants.com

PROJECT # 21-26

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Engineer: Joseph C. Rina, P.E.
Professional Engineer
NYS Lic. No. 64431

Revisions:
No. | Date | Comments

SCALE: 1" = 10'
DRAWN BY: GO
DATE: 08-03-21

CULTEC DETAILS

SITE PLAN PREPARED FOR
MICHAEL & PAM GRIMALDI
34 STARKEY ROAD
Westchester County, NY
Town of North Castle

Sheet 5 of 5

STORMWATER MANAGEMENT PLAN

Prepared for

**Grimaldi Residence
34 Starkey Road
Town of North Castle , NY**

Prepared by:

**Site Design Consultants
251F Underhill Avenue
Yorktown Heights, New York 10598
914-962-4488**

**Joseph C. Riina, P.E.
NYS Lic. No. 64431
CPESC No. 2670
CPSWQ No. 0073**

July 2021

STORMWATER MANAGEMENT PLAN

Prepared for

Michael & Pam Grimaldi
34 Starkey Road
Town of North Castle, NY

Property Owner: Michael & Pam Grimaldi
34 Starkey road
West Harrison, NY 10604
914-275-5335

Site Engineer: Joseph C. Riina, P.E.
NYS Lic. No. 64431
CPESC No. 2670
CPSQW No. 0073

Site Design Consultants
251-F Underhill Avenue
Yorktown Heights, NY 10598
914-962-4488

July 2021

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Appendices

Figures

Figure 1 – Pre/Post Development Conditions Watershed Map
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Appendix A

List of Approvals and Applications
Town of North Castle Building Permit – approvals pending

Appendix B

Town of North Castle Chapter 267, Stormwater Management

Appendix C

Stormwater Runoff Calculations and Stormwater Runoff Management Practices
Sizing Calculations

1.0 Project Description

The subject property is located at 34 Starkey Road in the Town of North Castle, New York. The existing lot has an area of 0.262 acres and is zoned R-1A. There is an existing house, driveway, and deck which is proposed to be expanded. Most of the site is open lawn and landscaping, with shrubs and fencing along most of the property boundary. The site is serviced by public sewer and has a drilled well for water supply.

It is proposed to expand by adding to the existing home. The existing driveway will be removed and a new one constructed keeping the current entry point from Starkey Road. A stormwater management system is proposed to capture and treat runoff from the new impervious surfaces which will exceed 500 sf, and adjoining areas from the 90% storm event and retain the 25 year storm event.

The total disturbance proposed for the site will be 7,200 SF. This disturbance will be managed during construction by implementing this stormwater management plan which will control stormwater runoff and related erosion potential. During construction, temporary erosion and sediment control measures will be installed and maintained. After construction surface runoff will be drain to a Rain Garden.

The following Report and Plans describe in detail the design and implementation of the Stormwater Management Plan.

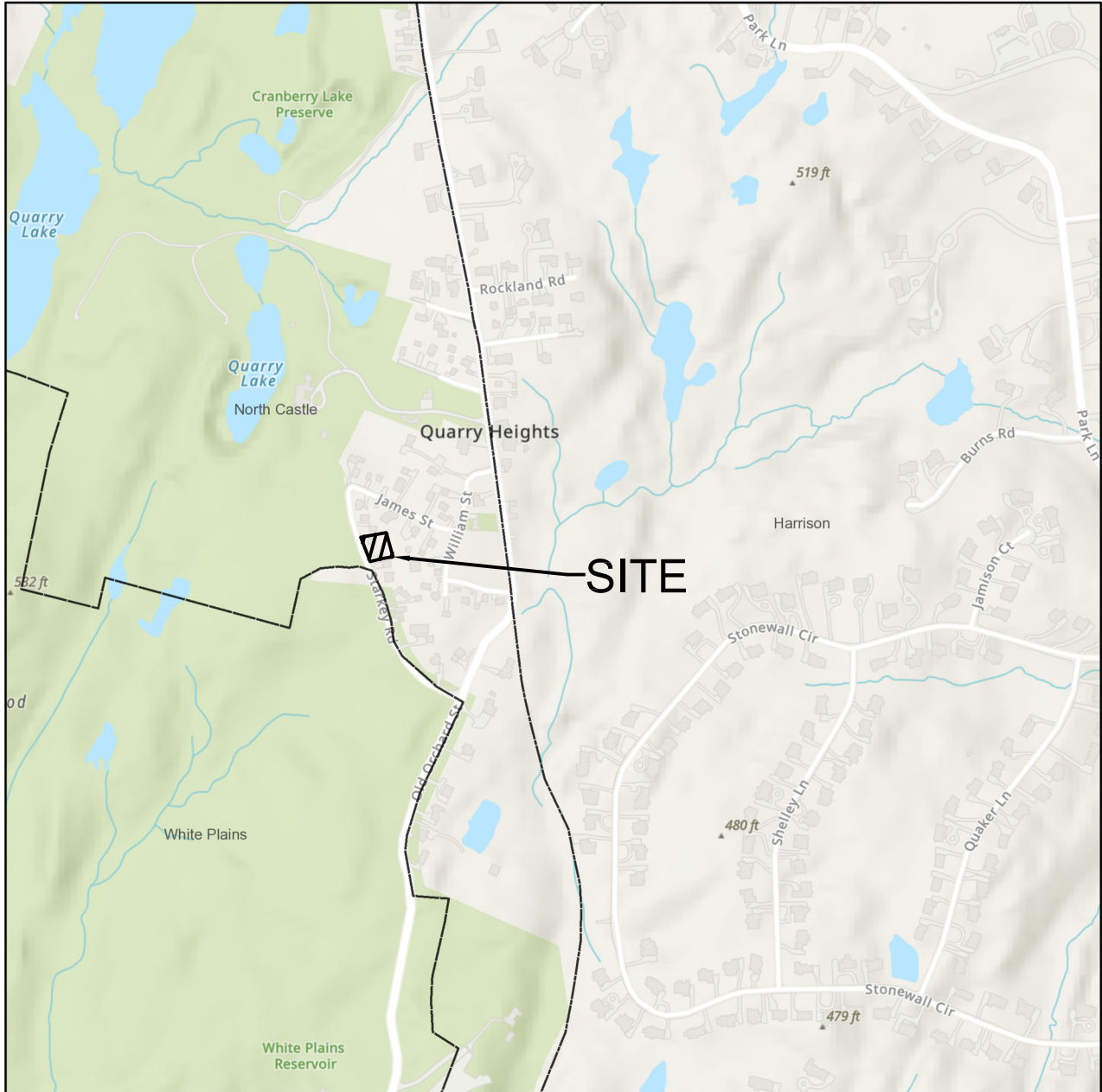
2.0 Site Hydrology

The proposed improvements will not significantly change the surface runoff patterns. The site has very little grade change sloping downward from front to back. Currently, the surface runoff pattern is away from the building in the back yard, to a low point at the southeast corner of property. Most of the surface runoff is sheet flow. The majority of this area is lawn with a small amount of wood line.

Under the proposed condition the general direction of the surface runoff will not be altered. It is proposed that all of the surface runoff from the new impervious areas will be collected and retained up to and including the 25 year storm. The proposed improvements as shown will result in an increase in the imperviousness of the area. Therefore, there will be an increase in the volume of runoff generated by the project for a given rainfall event. This will be mitigated with the stormwater management system.

In the planning, design and construction of the development, stormwater will be managed to minimize or eliminate potential off-site impacts. The proper implementation of temporary sediment and erosion control measures are used to achieve this goal. Erosion and Sediment Control measures have been established and will be implemented during construction until the completion of the project. The Erosion and Sediment Control measures incorporate the sequence of construction and designed measures to be installed, operated and maintained during all aspects of construction. The erosion and sediment control measures are designed in accordance with the NYS Standards and Specifications for Erosion and Sediment Control.

Mapping Westchester County



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 Municipal Boundaries



GIS
<http://giswww.westchestergov.com>
 Michaelian Office Building
 148 Martine Avenue Rm 214
 White Plains, New York 10601

FIGURE 1.1 - LOCATION MAP

PREPARED FOR
GRIMALDI

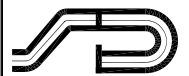
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Westchester Co., New York

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Civil Engineers • Land Planners

251 F Underhill Avenue Yorktown Heights, NY 10598
 (914) 962-4488 - Fax (914) 962-7386
 email sdc@cloud9.net



NOT TO SCALE
 DATE: 7/7/21

3.0 Soils

On-site soils were classified by using the USDA Natural Resources Conservation Service (NRCS) Websoil survey for Westchester County, NY, see Figure 4.1 – Soil Map.

The predominant soil type for this project is Charlton / Chatfield complex, which has a hydrologic classification of “B”. The erosion hazard level for these soil at the given slope is low. These soil properties are essential in the design and proper construction management of the site.

4.0 Stormwater Regulatory Requirements

Regulatory Obligation

Since the project disturbance is less than one acre, the filing of a Notice of Intent with the NYS DEC for compliance with General Permit 0-20-001 is not required. Therefore, the project only needs to comply with the provisions of the Town of North Castle Code Chapter 267 Stormwater Management. This project as designed complies with the Town Code Chapter 267.

A stormwater analysis has been performed and Stormwater Management Systems have been designed to provide for water quality treatment and the retention of stormwater. The basis of analysis was to capture, treat and retain the 90% storm event with a runoff depth of 1.5” and to attenuate the 25 year storm which has a runoff depth of 6.5”. The rain garden has the capacity to retain and infiltrate the water quality volume with an overflow to retain the difference of the 25 year storm event in Cultec 180 Chambers.

5.0 Reducing Pollutant Impact

Stormwater Management During Construction

The Erosion and Sediment Control measures will be implemented during all phases of construction until the completion of the project. This will minimize or eliminate the potential short-term adverse impacts which may occur during construction. After completion, the erosion and sediment control will become a maintenance plan to ensure that permanent erosion and sediment controls continue to function and prevent the transport of sediments.

The plans includes the Sequence of Construction and designed measures to be installed, operated and maintained during all aspects of construction. The appropriate measures were selected and detailed in plan for implementation by the site contractor. The main objective of the plan is to prevent erosion from occurring by stabilization of the construction site where possible. Sediment controls are to be used as a containment system to allow the removal of sediment from runoff to the greatest extent possible before leaving the work site. Control methods and standards utilized are provided in the NYS GUE&SC.

Prior to completion of the project, all permanent structural features will be cleaned, restored, and re-vegetated as necessary. The erosion and sediment control phase of the project is complete when all work is completed, and all areas are stabilized. The post-construction Stormwater Management Inspection and Maintenance agreement will describe the long-term inspection schedule, periodic maintenance requirements, and the responsible party.

6.0 Methodology

To satisfy the requirements of the Town of North Castle standard practices have been selected. These practices meet either attenuation or water quality goals. The practices selected and the sizing analyses are found in Chapter 6 of the NYS DEC Stormwater Management Design Manual January, 2015.

Water Quality Volume (WQv)

The Treatment volumes are determined as prescribed by the standard methods as outlined in the NYS DEC SMDM. This Water Quality Volume WQv requirement is normally based on the 90% rainfall event. This equates to 90% of the average rainfall for the specific region. With the design provided, this entire volume will be captured and retained for an extended period of 24-hours for pollutants to settle out of the contained runoff. The volumes to be treated have been calculated as shown in the following table.

Water Quality Volume

| Drainage Area | WQv based on 90% Rainfall Event | Volume Provided Treatment | Pretreatment Provided | Surface Area |
|---------------|---------------------------------|---------------------------|-----------------------|--------------|
| DA-1 | 365 cf | 365 cf | Rain-Garden | 228 sf min |

7.0 Hydrologic Analysis

A hydrologic analysis was performed for the area of interest or subject to development site for existing and proposed conditions. For the purpose of this analysis the existing and proposed conditions were compared to determine the increase in runoff volume to be controlled. The method used to compute project runoff was the Soil Conservation Service TR-55. The basis for the analysis was the Type III, 24-hour storm, for the 25-year storm event. The rainfall depth for the 25-year storm is 6.5 inches. The runoff coefficient “CN” and Time of Concentration for existing and post-development conditions were computed using Standard TR-55 criteria. The summary of the input can be found in Appendix C.

For the portion of the site analyzed, runoff leaves the site via one path. The chosen design point contains the flow from the lawn area toward a low point on the southeastern property

corner where it leaves the site. This area was called DA-1, and consists of half of the existing house and the rear yard. The tributary area is 6,905 sf of which 463 sf is impervious with a runoff coefficient C_n of 73.

Under the proposed condition DA-1, which includes the proposed addition and driveway has a tributary area of 7,386 sf with 2,833 sf of impervious area and a CN number of 75. Runoff from this area will drain to the proposed rain garden. It is proposed that there will be a total of 218 SF of filter bed for the water quality volume generated at the 90% storm event. The rain garden will be constructed as detailed. Typically, the stormwater would be attenuated comparing the existing and proposed runoff scenarios then controlling the rate of discharge to mimic existing peak flow conditions. In this case there is no possible point of discharge since a municipal drainage system does not exist and a point discharge to the rear is not possible due to possible impacts to neighboring properties. Therefore, the entire 25 year storm is being stored within a Cultec R-180 system which has been designed to receive and store overflow from the raingarden. The area which the Cultec units are to be placed does not have the required soil depth to meet the minimum criteria for infiltration. Soil testing in this location found sandy well drained soils to a depth of 48". The total depth of 74.5" is required to allow for 3' separation from the from the bottom of the Cultec 180 units to rock. Even though the area is being raised by 12", there is still 14.5" of additional separation needed. With that said, the Cultecs are being used for storage only although by the nature of the well-drained soils there will be infiltration occurring. The raingarden is the primary point of infiltration to allow for the dissipation of the retained stormwater.

The contributing watershed is limited to the project site with the design point which is the lowest point of the site where all of the current surface runoff flows to. The following table summarizes the runoff calculations shown in Appendix C.

Drainage Summary:

| Storm Frequency | Existing, cfs | Proposed, cfs | Net Change, cfs | % Change |
|------------------------|----------------------|----------------------|------------------------|-----------------|
| 25 year | 0.81 | 0.00 | 0.81 | -100% |

The peak rate of discharge from the 24-hour rainfall for each rainfall event shows no increase over the existing condition; therefore, there are no downstream impacts associated with this project. The rain garden and Cultec units have been sized to attenuate peak flows from the 25-year.

8.0 Selected Stormwater Management Practices (SMPs)

Since the only requirement is the attenuation of the increase in stormwater runoff during the 25-year storm event most of the runoff from the impervious areas is being collected and detained with a controlled release with no increase in peak runoff over existing conditions.

The selected practices are as follows:

Rain Garden NYSDEC SMDM:

A Water Quality Volume was determined for each of the treatment areas and discharged into the associated Rain Garden. The Stormwater Management Practice selected is a Rain Garden as described in the NYS DEC SMDM. This design is a combination of an extended detention and peat/sand filter bed for the treatment of water. The basin is supplemented with plantings and blended into the landscape features of the project. The Basin has been located at the lowest possible hydraulic location to intercept and treat runoff. As described in earlier sections of this report, the required Water Quality Volume has been exceeded in the design. The Water Quality Volumes are summarized in Section 6.2. A typical cross section of the proposed Rain Garden can be found in the Plan Set.

The Rain Garden is designed to have runoff sheet flow directly into the system. The Rain Garden has been sized to provide attenuation of peak flows up to the 25-year storm. Attenuation is provided through extended detention and exfiltration of runoff through the filter bed. This will provide the necessary storage for channel and flood protection. The bottom of the pond should maintain a 2 foot separation from the ground water table. The soil logs noted above indicate that sufficient depth is available at the proposed location to provide the required separation.

The following is the size criteria for the practice as per Chapter 6 of the NYS SMDM:

- Typical length to width ratio of 1.5:1;
- Filter media shall be a peat/sand mix (reed-sedge hemic peat shall be used);
- Provide the required minimum filter bed surface area;

See Routing Calculations in Appendix C for sizing calculations.

9.0 Stormwater Management Practice Justification and Design

The selection of the management practice was based on evaluating the site to determine what would best fit the conditions providing maximum benefits. The goal was to select practices which would meet treatment and attenuation standards and minimize the disturbance footprint. The selection of Stormwater Practices was based on the surface and subsurface conditions of the site. In addition, the site design concept is to create a natural and environmentally sensitive setting. The well-drained soils made it very clear that infiltration was a possible practice. Therefore, a Rain Garden was selected for its low profile and aesthetically appealing qualities. These calculations are located in Appendix C.

10.0 Erosion and Sediment Control Selection**Stabilized Construction Entrance:**

This has been specified for the entrance of the driveway in compliance with the NYSSESC. The installation will occur at the beginning of the project as described in the Suggested Construction Sequence. It will be maintained so as to prevent the tracking of sediment off-site. The location and detail can be found on the Construction Drawings.

Silt / Sediment Fence:

Silt fence has been specified to control and contain sediment from leaving areas under disturbance to undisturbed areas. The type, placement, and installation shall meet the requirements of the NYSGUESC. The fence shall be installed as best as possible following the contours and will be spaced in accordance with the same criteria. The fence will be inspected daily, repaired, and sediment removed. The location and details can be found on the site plan.

Soil Stockpile:

Areas are provided for temporary stockpiling of delivered soil material for the construction. These areas will be contained with sediment fence to prevent the movement of sediment. The stockpiles if not active for less than 14 days will be seeded and mulched. The stockpile areas were placed to best suit the proposed construction activity. The stockpile will be installed as described in the Construction Sequence. The location and detail can be found on the site plan.

Temporary and Permanent Vegetative Cover:

Disturbed areas that will not contain structures or other improvements must be stabilized. The stabilization may be temporary and in other cases permanent vegetative cover. The vegetative cover specifications are based on the NYS ES&C Manual. On the Construction Plans are notes, locations, and specifications as to the vegetative cover requirements. In the notes, there are specific situations and time constraints related to stabilization of disturbed areas. The specifications give seed and fertilizer mixes as well as placement.

11.0 Construction Sequence

A key object of the SWPPP is to reduce erosion and sedimentation potentials for the project. The construction sequence was developed to assist the site contractor. Its intent is to coordinate the installation of E&SCs with the site disturbing activities as a means to minimize the adverse impacts of the site work.

Construction Sequence

1. Prior to the beginning of any site work the major features of the construction must be field staked by a licensed surveyor. These include the proposed house, limits of disturbance, and Stormwater practices.
2. Prior to commencement of work, an on-site preconstruction meeting will be held. This will be attended by the Owner responsible for any fines or penalties, the Operator responsible for complying with the approved construction drawings including the E&SC plan and details, the Environmental Planner responsible for E&SC monitoring during construction, town representatives from the Engineering Department and Code Enforcement.
3. Temporary erosion and sediment controls (E&SCs) as shown on the approved construction drawings shall be installed as detailed.
4. Remove existing vegetative cover and other surface features in the limit of construction.

5. Excavate for the house construction. Upon completion of foundation backfill and grade area around the foundation walls.
6. Install rain garden and drainage structures. Entry to the system shall be blocked until the site has reached final stabilization.
7. Install underground services to house.
8. Install final plantings.
9. Topsoil, rake, seed and mulch all disturbed areas.
10. Upon stabilization of all disturbed areas and approval from the Town representative remove all temporary erosion and sediment control

The Construction Sequence is also shown on the E&SC Notes and Details. A signature line for the Owner and Operator, if different, to certify that they have read, understand and agree to follow the Site Development, including the Construction Sequence and Erosion and Sedimentation Control Plan.

Responsible Party during and after Construction:

Michael Grimaldi
 37 Starkey Road
 West Harrison, NY 10604
 561-818-3939

12.0 Maintenance of Stormwater Management Practices During Construction

Regular site inspections will be performed by the Town or certified inspector throughout the construction of the project. Inspections will be made weekly and after major rainfall events, i.e. ½" or greater. A report will be made of each inspection.

13.0 Maintenance of Stormwater Management Practices After Construction

This will be clearly detailed in the Stormwater Management Inspection and Maintenance Agreement. These responsibilities will reside with the Town.

The following is the proposed Inspection and Maintenance Schedule:

| Control to be Inspected | Inspection Frequency | Maintenance Threshold Criteria | Maintenance Procedure |
|------------------------------|----------------------|--------------------------------|--|
| Rain Garden/ Bioretention | Quarterly | Ponding for more than 48 hours | Remove accumulated sediment and debris; weed and replace plants and mulch as needed. During winter months check for Icing on outlet Bi-weekly. |

| | | | |
|------------------------------------|--------------------|-------------------------------------|---|
| <p>Subsurface Infiltration</p> | <p>Bi-annually</p> | <p>3"+ accumulated sediment</p> | <p>JetVac debris and sediment. Replace gravel surface when necessary.</p> |
|------------------------------------|--------------------|-------------------------------------|---|

Drain Inlets:

Access through grate structure and remove debris and sediment with hand tools.

In General:

- Controls should be inspected periodically for the first few months after construction and on a semi-annual basis thereafter. They should also be inspected after major storm events (greater than 0.5 inches).
- All stormwater controls shall be inspected and cleaned of any debris or sediment.
- Any erosion shall be repaired and stabilized with seeding and mulch or stone.

Please note that additional notes regarding maintenance activities are contained on the project Construction Drawings and should be adhered to during and after construction.

15.0 Conclusion

The Stormwater Management Plan has been established for this project in accordance with the requirements of Town of North Castle Code Chapter 267 Stormwater Management. This plan will effectively control stormwater generated by this project during and after construction. The management of the stormwater is based on controlling increases in peak runoff as well as water quality. The design of the water quality component not only will treat runoff due to the project, but also that which is currently not treated. Overall it would improve even the existing conditions.

The effectiveness of the stormwater practices selected in design will be insured by implementing a maintenance plan. The maintenance plan details specific activities, safeguards and provisions to be monitored and performed by specified frequencies. By adhering to the maintenance plan, optimum performance of the stormwater practices can be expected.

In conclusion, the Stormwater Management System will not create negative downstream impacts as a result of this project.

July 7, 2021

Joseph C. Riina, P.E.
NYS License No. 64431

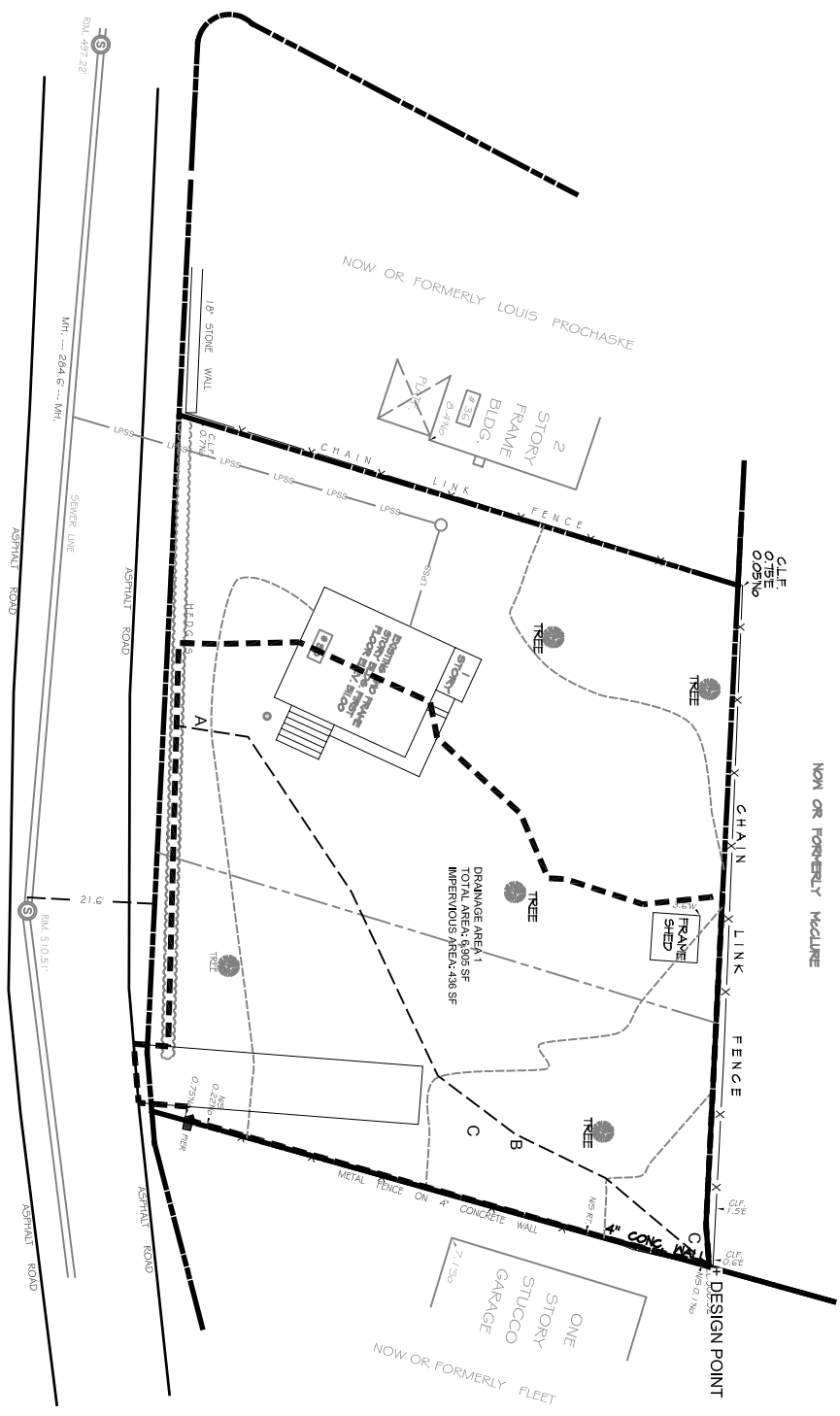
Figures

Figure 1 – Pre and Post-Development Conditions Watershed Map

Figure 1.1 – Location Map

Figures 4.1 – Soils Maps

NOTE:
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Sheet
 of

SITE PLAN
 PREPARED FOR
**MICHAEL & PAM
 GRIMALDI**
 34 STARKEY ROAD
 Town of North Castle Westchester County, NY

**PRE
 DEVELOPMENT
 WATERSHED**

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 1" = 10'
 DRAWN BY:
 GO
 DATE:
 05-11-21

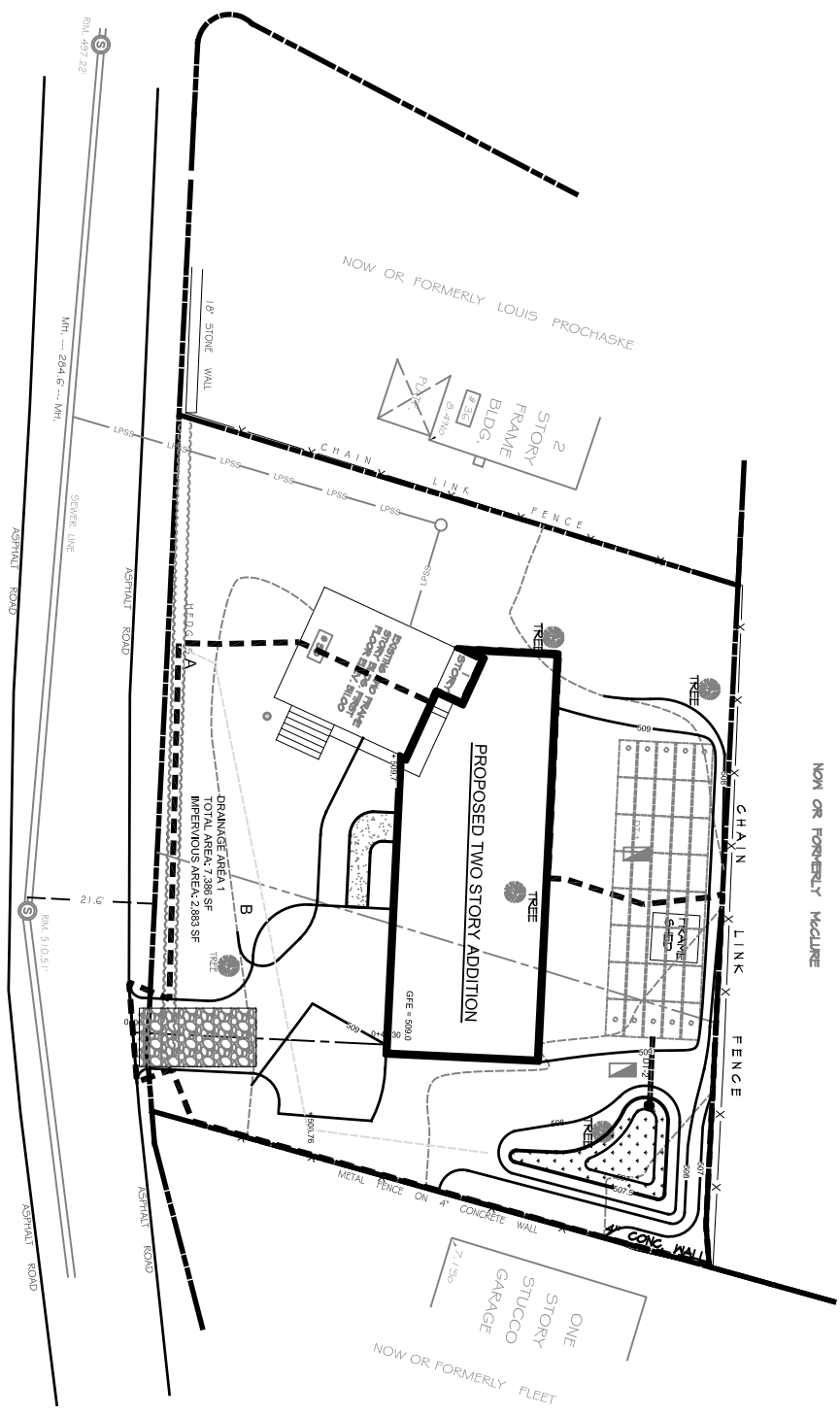
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Sheet
 of

SITE PLAN
 PREPARED FOR
**MICHAEL & PAM
 GRIMALDI**
 34 STARKEY ROAD
 Town of North Castle Westchester County, NY

**POST
 DEVELOPED
 WATERSHED**

SCALE: 1" = 10'

DRAWN BY: GO

DATE: 05-11-21

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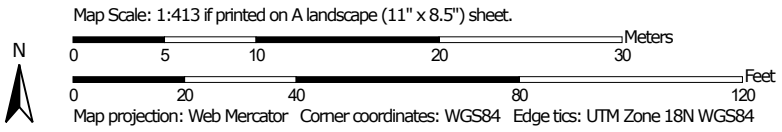
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Hydrologic Soil Group—Westchester County, New York



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

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

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

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

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

Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------|--------------|----------------|
| CrC | Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky | B | 0.9 | 100.0% |
| Totals for Area of Interest | | | 0.9 | 100.0% |

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. 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.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Appendix A

List of Approvals and Applications:

Town of North Castle Building Permit – approvals pending

Appendix B

Town of North Castle Code Chapter 267 Stormwater Management

Appendix C

Stormwater Runoff Calculations
and Stormwater Runoff Management Practices Sizing Calculations

Hydrologic Analysis

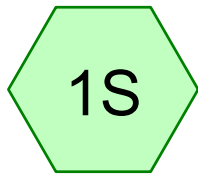
Rain Garden Worksheet

$$WQv \leq VSM + VDL + (DP \times ARG)$$

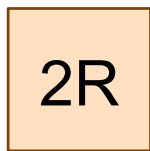
$$VSM = ARG \times DSM \times nSM$$

$$VDL \text{ (optional)} = ARG \times DDL \times nDL$$

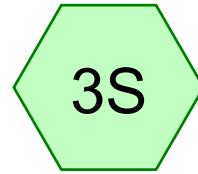
| Enter Site Data For Drainage Area to be Treated by Practice | | | | | | | |
|---|-----------------------|----------------------------|---------------------------|-----------------|---------------------------|---|-------------|
| Catchment Number | Total Area (Acres) | Impervious Area (Acres) | Percent Impervious % | Rv | WQv (ft ³) | Precipitation (In) | Description |
| 1 | 0.17 | 0.07 | 38% | 0.39 | 365 | 1.50 | 0 |
| Reduced by Disconnection of Rooftops | | 0.00 | 38% | 0.39 | 365 | <<WQv after adjusting for Disconnected Rooftops | |
| Soil Information | | | | | | | |
| Soil Group | B | | | | | | |
| Using Underdrains | No | | Okay | | | | |
| Infiltration Rate | 10.00 | | in/hour | Okay | | | |
| Rain Garden Parameters | | | | | | | |
| Enter number of Rain Gardens | | | 1 | | | | |
| Enter area of each Rain Garden | | | 229 | | | | |
| Enter Rain Garden Surface area | ARG | 229 | sf | | | | |
| Enter depth of Soil Media | DSM | 1.00 | ft | 1 to 1.50 | | | |
| Enter depth of drainage layer | DDL | 1.00 | ft | ≥ 0.50 ft | | | |
| Enter ponding depth above surface | DP | 1.00 | ft | ≤ 0.50 | | | |
| Enter porosity of Soil Media | nSM | 0.20 | ≥20%, enter as a decimal | | | | |
| Enter porosity of Drainage Layer | nDL | 0.40 | ≥ 40%, enter as a decimal | | | | |
| Volume Provided In Soil Media | VSM | 46 | ft ³ | | | | |
| Volume Provided in Drainage Layer | VDL | 92 | ft ³ | | | | |
| Volume Provided In Ponding Area | | 229 | ft ³ | | | | |
| Total Volume Provided | | 366 | ft ³ | | | | |
| Determine Runoff Reduction | | | | | | | |
| Percent Reduction | | | 100% | | | | |
| Runoff Reduction | | | 365 | ft ³ | | | |
| WQv ≤ VSM + VDL + (DP x ARG) √ | | | OK | | | | |



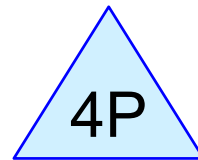
Pre Dev DA-1



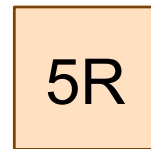
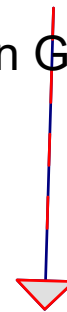
Pre Dev Design Point



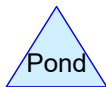
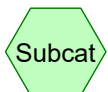
POST DEV DA-1



Rain Garden



Post Dev Design Point



Routing Diagram for 21-26 Grimaldi

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21-26 Grimaldi

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Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 7139 NY Westchester

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Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|----------------|-------|---------|------------------|-----|----------------|-----|
| 1 | 1-Year | Type III 24-hr | | Default | 24.00 | 1 | 2.78 | 2 |
| 2 | 5-Year | NRCC 24-hr | D | Default | 24.00 | 1 | 4.30 | 2 |
| 3 | 10-Year | Type III 24-hr | | Default | 24.00 | 1 | 5.13 | 2 |
| 4 | 25-Year | Type III 24-hr | | Default | 24.00 | 1 | 6.49 | 2 |

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Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|-----------|--|
| 0.240 | 61 | >75% Grass cover, Good, HSG B (1S, 3S) |
| 0.110 | 85 | Gravel roads, HSG B (1S) |
| 0.076 | 98 | Paved parking, HSG B (1S, 3S) |
| 0.426 | 74 | TOTAL AREA |

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Soil Listing (all nodes)

| Area (acres) | Soil Group | Subcatchment Numbers |
|-----------------|---------------|-------------------------|
| 0.000 | HSG A | |
| 0.426 | HSG B | 1S, 3S |
| 0.000 | HSG C | |
| 0.000 | HSG D | |
| 0.000 | Other | |
| 0.426 | | TOTAL AREA |

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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 | 0.240 | 0.000 | 0.000 | 0.000 | 0.240 | >75% Grass cover, Good | 1S, 3S |
| 0.000 | 0.110 | 0.000 | 0.000 | 0.000 | 0.110 | Gravel roads | 1S |
| 0.000 | 0.076 | 0.000 | 0.000 | 0.000 | 0.076 | Paved parking | 1S, 3S |
| 0.000 | 0.426 | 0.000 | 0.000 | 0.000 | 0.426 | TOTAL AREA | |

21-26 Grimaldi

Type III 24-hr 25-Year Rainfall=6.49"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 1S: Pre Dev DA-1

Runoff Area=0.257 ac 3.89% Impervious Runoff Depth>3.25"
Flow Length=135' Tc=14.3 min CN=73 Runoff=0.81 cfs 0.070 af

Subcatchment 3S: POST DEV DA-1

Runoff Area=0.169 ac 39.05% Impervious Runoff Depth>3.45"
Flow Length=120' Tc=10.7 min CN=75 Runoff=0.62 cfs 0.049 af

Reach 2R: Pre Dev Design Point

Inflow=0.81 cfs 0.070 af
Outflow=0.81 cfs 0.070 af

Reach 5R: Post Dev Design Point

Pond 4P: Rain Garden

Peak Elev=507.02' Storage=0.039 af Inflow=0.62 cfs 0.049 af
Outflow=0.01 cfs 0.009 af

Total Runoff Area = 0.426 ac Runoff Volume = 0.118 af Average Runoff Depth = 3.33"
82.16% Pervious = 0.350 ac 17.84% Impervious = 0.076 ac

Summary for Subcatchment 1S: Pre Dev DA-1

Runoff = 0.81 cfs @ 12.20 hrs, Volume= 0.070 af, Depth> 3.25"

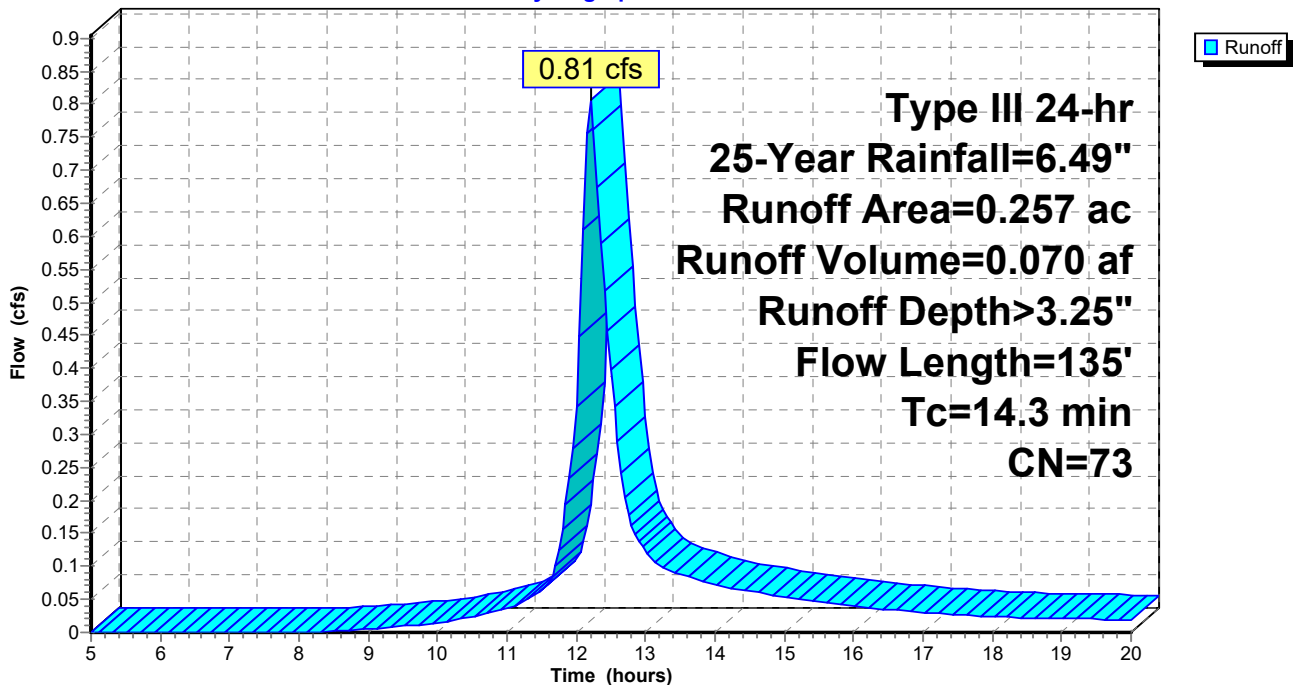
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.49"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.110 | 85 | Gravel roads, HSG B |
| 0.010 | 98 | Paved parking, HSG B |
| 0.137 | 61 | >75% Grass cover, Good, HSG B |
| 0.257 | 73 | Weighted Average |
| 0.247 | | 96.11% Pervious Area |
| 0.010 | | 3.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.1 | 100 | 0.0200 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 3.30" |
| 0.2 | 35 | 0.0330 | 2.92 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 14.3 | 135 | Total | | | |

Subcatchment 1S: Pre Dev DA-1

Hydrograph



21-26 Grimaldi

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Type III 24-hr 25-Year Rainfall=6.49"

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Summary for Subcatchment 3S: POST DEV DA-1

Runoff = 0.62 cfs @ 12.15 hrs, Volume= 0.049 af, Depth> 3.45"

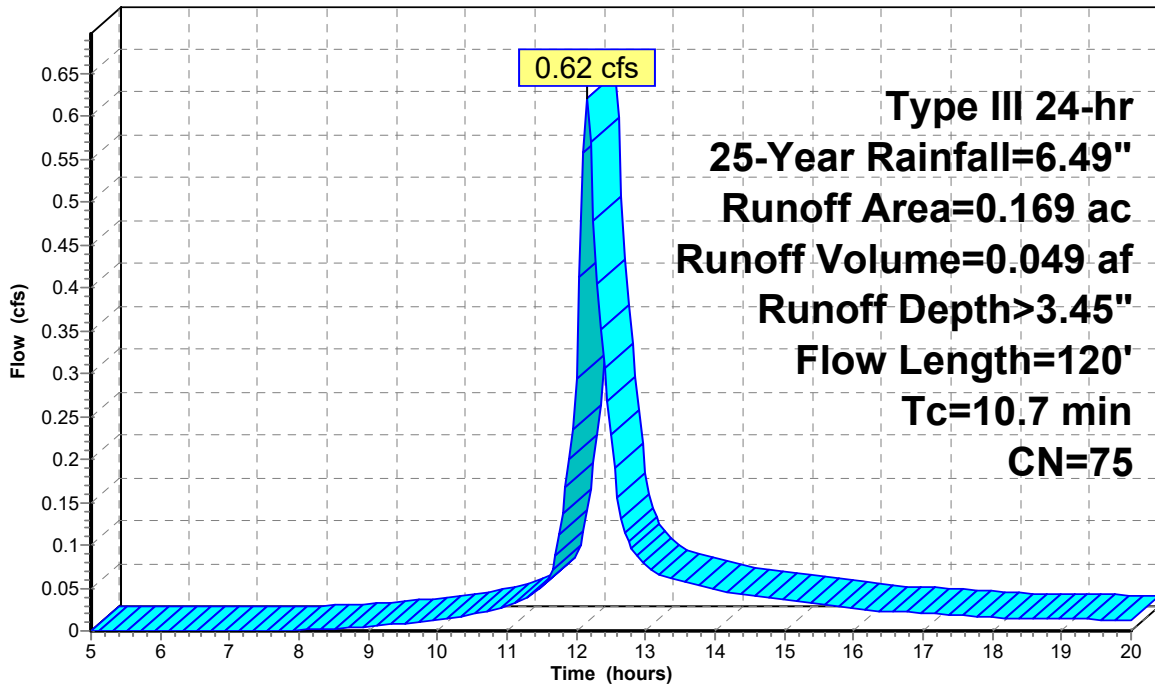
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.49"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.066 | 98 | Paved parking, HSG B |
| 0.103 | 61 | >75% Grass cover, Good, HSG B |
| 0.169 | 75 | Weighted Average |
| 0.103 | | 60.95% Pervious Area |
| 0.066 | | 39.05% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 50 | 0.0100 | 0.08 | | Sheet Flow, Grass: Dense n= 0.240 P2= 3.30" |
| 0.1 | 70 | 0.0050 | 13.90 | 13.90 | Channel Flow, Area= 1.0 sf Perim= 0.5' r= 2.00' n= 0.012 |
| 10.7 | 120 | Total | | | |

Subcatchment 3S: POST DEV DA-1

Hydrograph



Runoff

**Type III 24-hr
25-Year Rainfall=6.49"
Runoff Area=0.169 ac
Runoff Volume=0.049 af
Runoff Depth>3.45"
Flow Length=120'
Tc=10.7 min
CN=75**

Summary for Reach 2R: Pre Dev Design Point

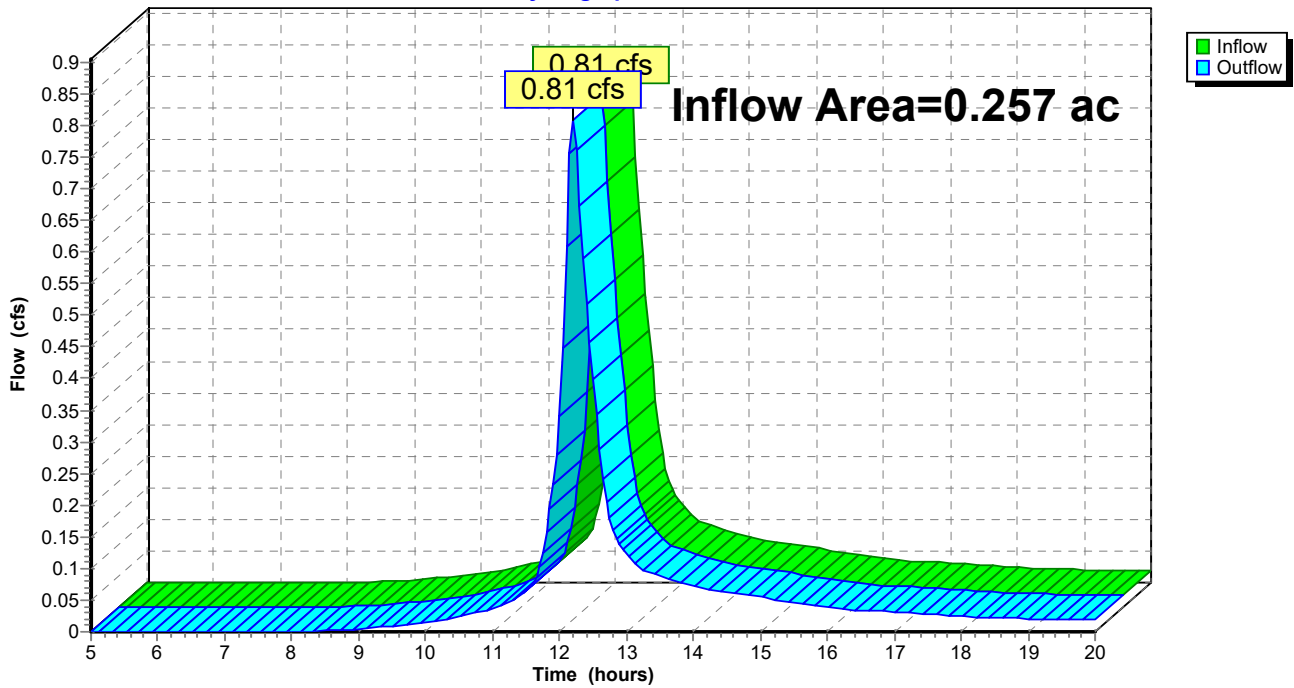
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.257 ac, 3.89% Impervious, Inflow Depth > 3.25" for 25-Year event
Inflow = 0.81 cfs @ 12.20 hrs, Volume= 0.070 af
Outflow = 0.81 cfs @ 12.20 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 2R: Pre Dev Design Point

Hydrograph



Summary for Reach 5R: Post Dev Design Point

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.169 ac, 39.05% Impervious, Inflow Depth = 0.00" for 25-Year event

Routing by Stor-Ind+Trans method

Summary for Pond 4P: Rain Garden

Inflow Area = 0.169 ac, 39.05% Impervious, Inflow Depth > 3.45" for 25-Year event
 Inflow = 0.62 cfs @ 12.15 hrs, Volume= 0.049 af
 Outflow = 0.01 cfs @ 9.75 hrs, Volume= 0.009 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 9.75 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 507.02' @ 20.00 hrs Surf.Area= 0.020 ac Storage= 0.039 af

Plug-Flow detention time= 193.5 min calculated for 0.009 af (19% of inflow)
 Center-of-Mass det. time= 76.3 min (868.0 - 791.7)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 504.00' | 0.009 af | Custom Stage Data Listed below |
| #2A | 504.50' | 0.014 af | 18.00'W x 47.31'L x 2.71'H Field A 0.053 af Overall - 0.018 af Embedded = 0.035 af x 40.0% Voids |
| #3A | 505.00' | 0.018 af | Cultec R-180 x 35 Inside #2 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 5 rows |
| | | 0.041 af | Total Available Storage |

Storage Group A created with Chamber Wizard

| Elevation (feet) | Cum.Store (acre-feet) |
|------------------|-----------------------|
| 504.00 | 0.000 |
| 506.00 | 0.002 |
| 507.00 | 0.009 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|--|
| #1 | Discarded | 504.00' | 0.01 cfs Exfiltration at all elevations |

Discarded OutFlow Max=0.01 cfs @ 9.75 hrs HW=504.03' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

21-26 Grimaldi

Type III 24-hr 25-Year Rainfall=6.49"

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Pond 4P: Rain Garden - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD)

Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf

Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap

Row Length Adjustment= +1.00' x 3.44 sf x 5 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

7 Chambers/Row x 6.33' Long +1.00' Row Adjustment = 45.31' Row Length +12.0" End Stone x 2 = 47.31' Base Length

5 Rows x 36.0" Wide + 3.0" Spacing x 4 + 12.0" Side Stone x 2 = 18.00' Base Width

6.0" Stone Base + 20.5" Chamber Height + 6.0" Stone Cover = 2.71' Field Height

35 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 5 Rows = 779.2 cf Chamber Storage

2,306.4 cf Field - 779.2 cf Chambers = 1,527.1 cf Stone x 40.0% Voids = 610.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,390.1 cf = 0.032 af

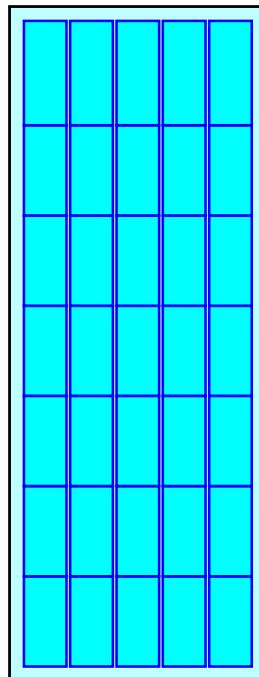
Overall Storage Efficiency = 60.3%

Overall System Size = 47.31' x 18.00' x 2.71'

35 Chambers

85.4 cy Field

56.6 cy Stone



Pond 4P: Rain Garden

Hydrograph

