

David A. Goessl, P.E.
Civil Engineer
622 Sprout Brook Road
Putnam Valley, N.Y. 10579
(914) 227-0258

November 30, 2022

Chairman Larry Vranka and
Members of the Planning Board
Village of Bronxville
200 Pondfield Road
Bronxville, NY 10708

RE: 27 Sturgis Road (Tax ID 7E-3-6) – Application for Site Development and Permit Procurement for Single Family Residential Addition, Stormwater Management and Related Improvements

Dear Chairman Vranka and Members of the Planning Board:

On behalf of the owners for the above referenced property, we respectfully submit the attached engineering plans for stormwater management and sediment and erosion control dated November 28, 2022, to supplement plans developed by Joseph R. Crocco Architects for an application involving residential addition/alteration in the AA Zoning District. The submission before you is to request approval for site plan development as the project meets established review criteria for a material alteration.

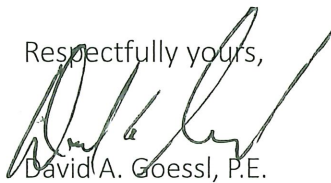
To further assist you with the review of this application, the following background information is offered in regard to the property configuration, developed engineering plans and proposed mitigating stormwater management system.

- A. **Subject Property:** The property for 27 Sturgis Road is situated on 13,386 square feet of land in the AA residential Zoning District and currently contains a single-family residence of 2,314 square feet. Developed lot features include a rear flagstone patio, walkways, short stature landscape walls and a paved driveway with attached garage allowing for four off street parking spaces. The grade of the property is modestly sloped from northeast to southwest and is fairly landscaped with trees, shrubs, and open lawn areas. The property as originally constructed is considered pre-existing nonconforming with respect to lot size and zoning setbacks. Subsequent to this review, the applicant will be appearing before the Zoning Board of Appeals to seek variance relief for side yard setbacks and building coverage.
- B. **Construction Sequence and Site Protections:** As with most projects, disturbance to neighboring properties is inevitable with residential development. Specified in the attached plan are a full set of sediment and erosion control measures including contractor acknowledgement/certification to ensure that all precautionary measures are in place to protect the municipal road, right of way and adjacent properties. As the subject property contains open lawn areas along the left side and rear yard, staging of equipment and construction materials should not be an issue as work progresses.

C. Stormwater Management Design: In consultation with the Village's consultant engineer Arshad Jalil of Professional Consulting Inc., a plan to mitigate surface water runoff from increased impervious coverages is developed and provided on pages 2 and 3 of attached plans. The design standard for the 25-year, 24-hour rain event is utilized in conjunction with a conservative percolation rate of one-half inch per hour. With modeling consistent with New York State Department of Conservation's design standards based on the rational theorem, an underground stormwater management system containing four Cultec 330XLHD units is proposed in the rear yard sized to collect and infiltrate over 500 cubic feet of surface water runoff collected from the rear addition roof and patio areas.

In summary, the plan before you includes all of the requisite design elements for residential development and is consistent with the general provisions, legislative intent and adopted standards of Chapter 257 of the Village's Code for Stormwater Management, Erosion and Sediment Control. The owner, architectural design team and I appreciate having the opportunity to submit this project and very much look forward to the Board's consideration.

Respectfully yours,



David A. Goessl, P.E.

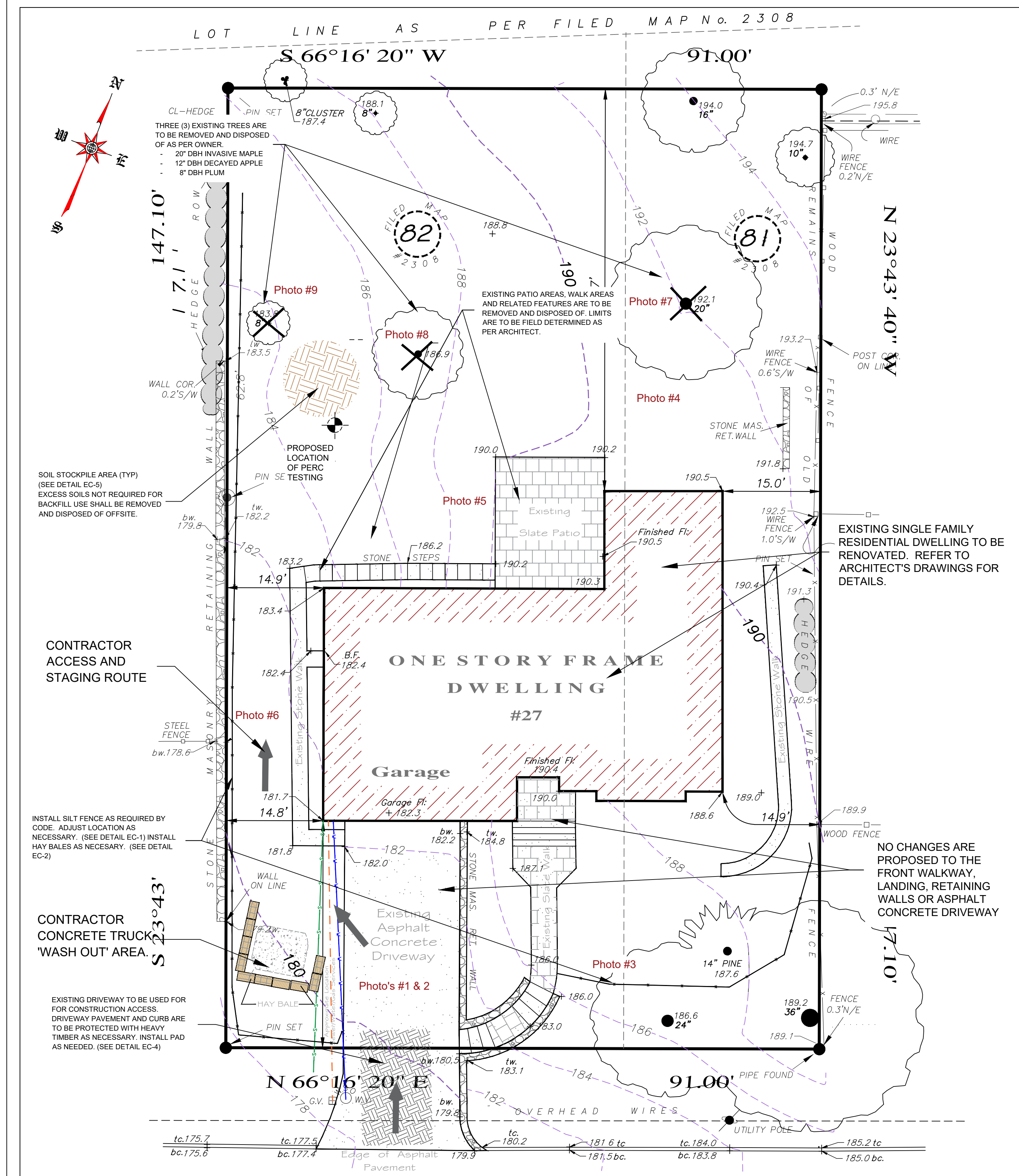
Civil Engineer

dgoessl2@gmail.com

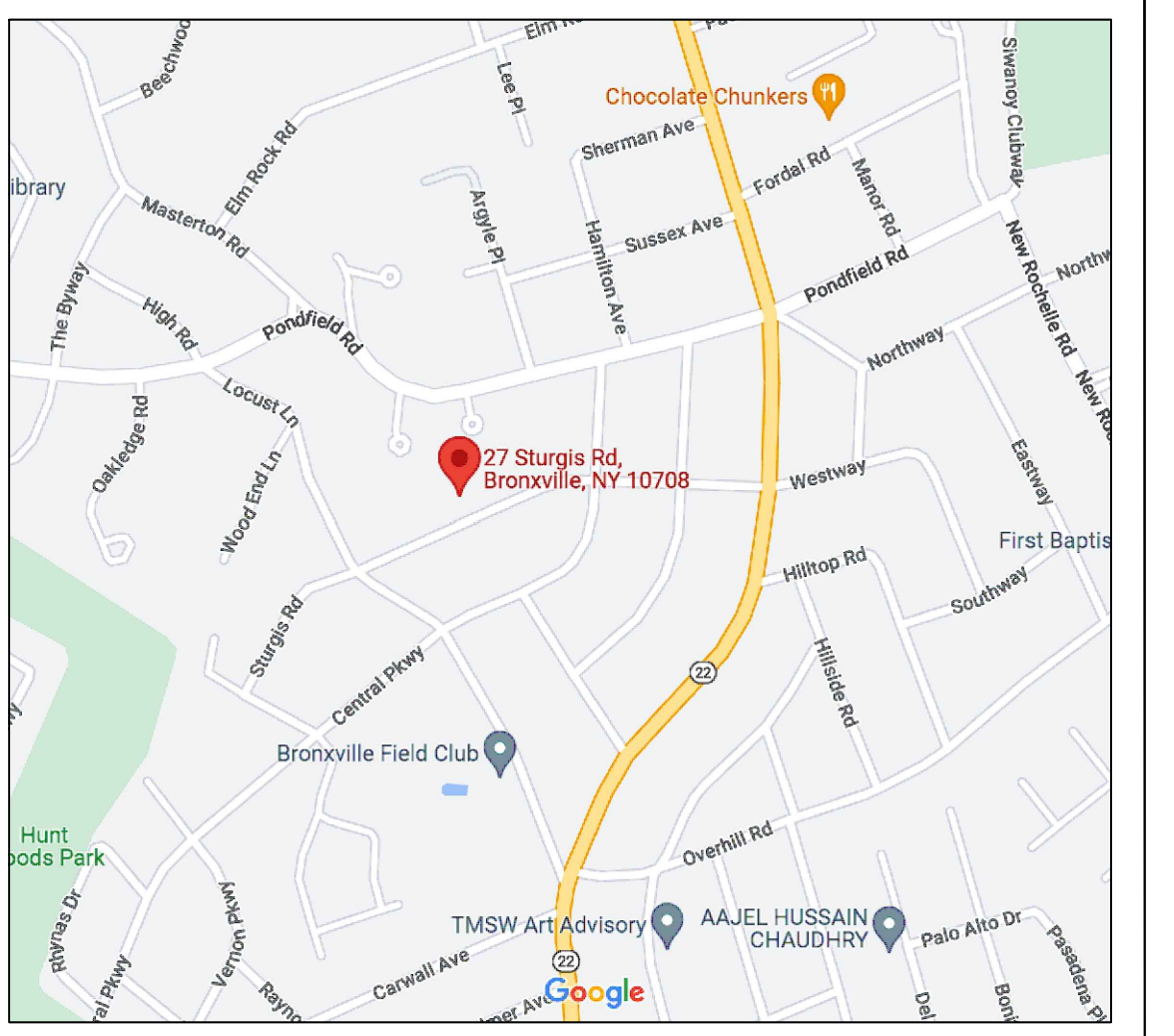
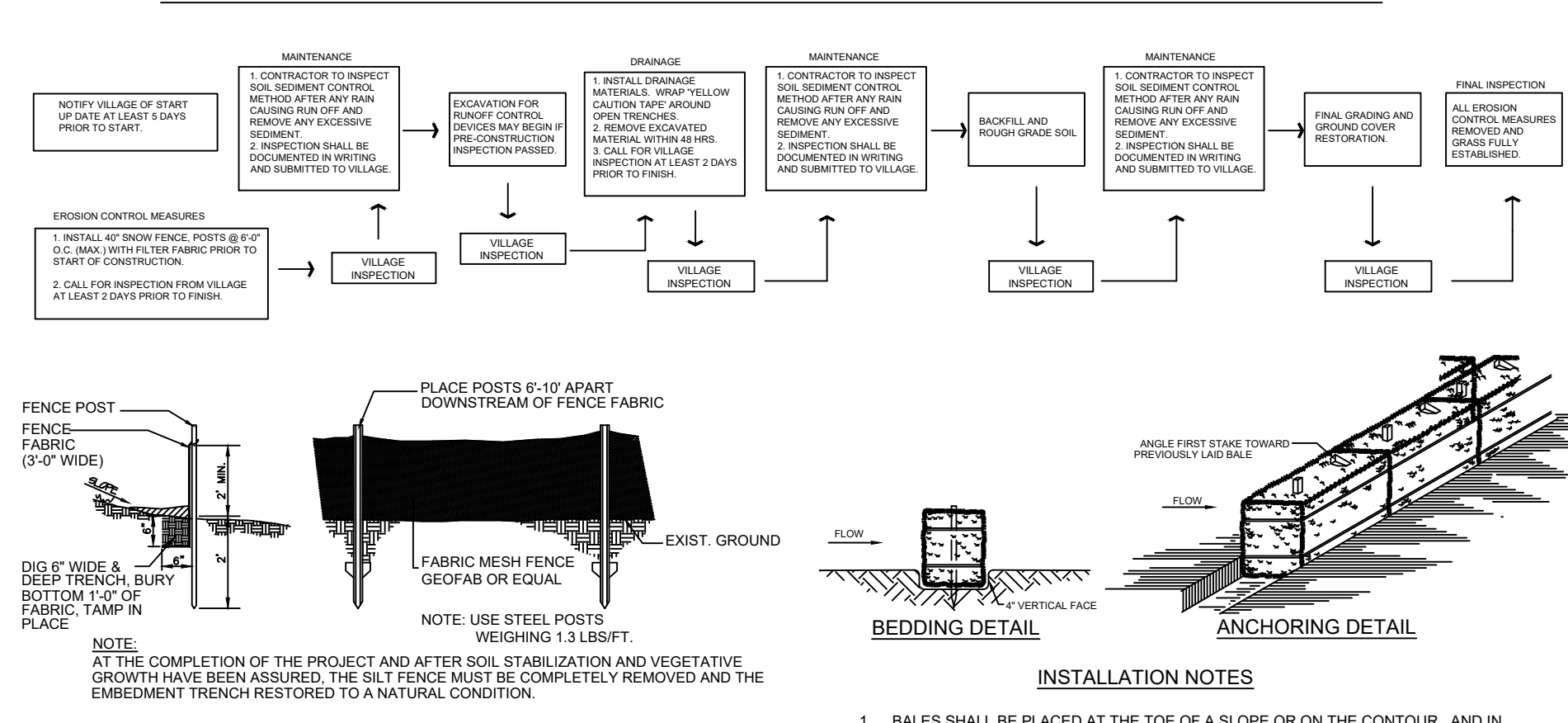
CC: Paul Taft, Village Building Inspector
Arshad Jalil, P.E., Village Consultant Engineer
Andrew Korb, Property Owner
Joseph R Crocco Architects
Frank Diodati, Code Specialist



EXISTING CONDITIONS - EROSION CONTROL / DEMOLITION PLAN



EROSION CONTROL SCHEDULE AND DETAILS



- INSTALLATION & MAINTENANCE OF EROSION CONTROL**
- CONSTRUCTION SCHEDULE**
- NOTIFY APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 5 DAYS PRIOR TO START**
- INSPECTION BY MUNICIPALITY - PRECONSTRUCTION EROSION CONTROL MEASURES**
- Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
- INSPECTION BY MUNICIPALITY - MAINTENANCE ACTIVITIES DURING ALL PHASES OF CONSTRUCTION**
- After any rain causing runoff Contractor to inspect haybales, etc. and remove any excessive sediment, and inspect stockpiles and correct any problems with seed establishment.
 - Inspections shall be documented in writing and submitted to the appropriate Municipal Agency having jurisdiction.
- INSPECTION BY MUNICIPALITY - STOCKPILING OF SOILS AND ROUGH GRADING OF SITE**
- Strip topsoil and stockpile soil for reuse and properly dispose of all excess soils.
 - Stockpile excavation subgrade materials and properly dispose of all excess soils.
 - Seed stockpiles with 1 lb. total annual ryegrass or mix as per engineer.
 - Perform rough grading activities as soon as practical. Call for inspections as required.
- INSPECTION BY MUNICIPALITY - FINE GRADING OF SITE**
- Remove all remaining excess soils from site. Compact all graded materials as required.
 - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
 - Perform all additional fine grading activities as required. Call for reinspection.
- INSPECTION BY MUNICIPALITY - ESTABLISHMENT OF TURF, FINAL LANDSCAPING AND TREE REPLACEMENTS**
- Spread topsoil evenly over areas to be seeded. Hand rake level.
 - Broadcast 1.25 lb. Bag of Jonathan Green "Fastgro" mix or equal over areas to be seeded. Apply straw mulch and water within 2 days of completion of topsoiling.
 - Install turf (optional) landscaping materials and any replacement trees.
 - Demobilize all equipment and materials from site as necessary.
 - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
- INSPECTION BY MUNICIPALITY - FINAL INSPECTION**
- Perform any as-built drawings, land surveys and/or engineering certifications. Submit documents to the appropriate Municipal Agency having jurisdiction.
 - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
 - Remove all erosion control measures upon establishment of turf or as per the Municipal Agency having jurisdiction.

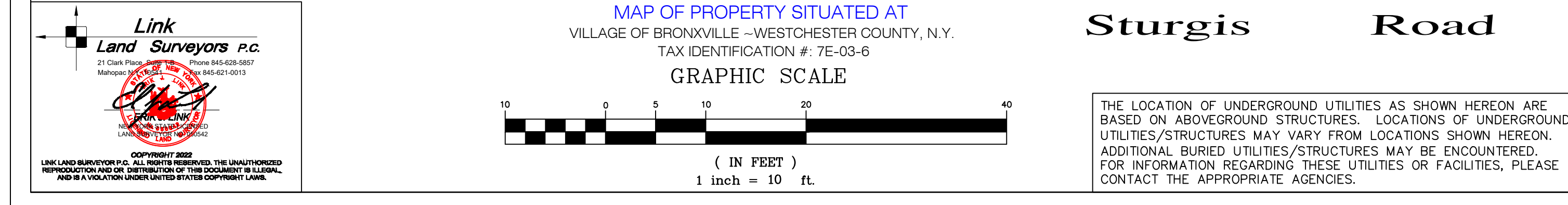
CONTRACTOR CERTIFICATION FOR SWEC COMPLIANCE:

THE UNDERSIGNED HEREBY CERTIFIES AND AGREES TO COMPLY WITH THE TERMS AND CONDITIONS OF THE STORM WATER, POLLUTION PREVENTION PLAN AND AGREES TO IMPLEMENT ANY AND ALL CORRECTIVE ACTIONS IDENTIFIED BY THE NYSDEC QUALIFIED INSPECTOR AND/OR VILLAGE ENGINEER AND/OR BUILDING INSPECTOR DURING ALL SITE INSPECTIONS. FURTHERMORE THE UNDERSIGNED UNDERSTANDS THAT THE OWNER AND/OR PERMIT HOLDER SHALL COMPLY WITH ALL LOCAL CODES FOR STORMWATER MANAGEMENT AND ALL TERMS AND CONDITIONS OF NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM ACTIVE CONSTRUCTION SITES AS IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION(S) OF WATER QUALITY STANDARDS.

NAME: _____

SIGNATURE: _____

DATED: _____



ANY UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A SEAL OF A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209 OF THE NYS EDUCATION LAW.

ADDITIONAL PLANIMETRIC SURVEY DATA SHOWN HEREIN ON THIS PLAN OF THE PROPERTY OF 27 STURGIS ROAD, BRONXVILLE NY WAS PREPARED FROM ARCHITECT'S PLAN, COUNTY GIS DATA, LAND SURVEY AND RECORDED DEED FOR SAID PROPERTY.

THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES, PLEASE CONTACT THE APPROPRIATE AGENCIES.

PROJECT NOTES:

PROPERTY OWNER / SITE ADDRESS: ANDREW KORB, 27 STURGIS ROAD, BRONXVILLE, N.Y. 10708, TAX ID: 7E-03-06

EXISTING LOT AREA: 13,386 SQUARE FEET

ZONING DISTRICT: AA - RESIDENTIAL

PRINCIPAL USE: SINGLE FAMILY

EXIST. IMPERVIOUS COVERAGE: 3,858 SF (28.8%)

PROP. IMPERVIOUS COVERAGE: 5,066 SF (37.8%)

NET INCREASE: 1,208 SF (9.0%)

SANITARY SEWER DISTRICT: BRONX VALLEY

WATERSHED: BRONX RIVER DRAINAGE BASIN

USDA SOIL TYPE:

- UpB Urban land-Paxton complex, 3
- to B percent slopes 11.9%
- UpC Urban land-Paxton complex, 8
- to 15 percent slopes 88.1%

Site Disturbance Analysis:

- ADDITION	1,000 SF
- PATIO & WALL	600 SF
- DRAINAGE	500 SF
- MISC. GRADING	500 SF
TOTAL	2,600 SF +/-

INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE
2. SOILS SHALL BE STOCKPILED ON SITE DURING CUTTING AND PLING ACTIVITIES SETBACKS FROM TEMPORARY DRAINAGE SWALES.
3. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2
4. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
5. STOCKPILES REMAINING IN PLACE FOR MORE THAN A WEEK SHOULD BE SEEDED AND MULCHED OR COVERED WITH GEOTEXTILE FABRIC SURROUNDED BY SILT FENCE.
6. SEE SPECIFICATIONS (INSDC MANUAL) FOR INSTALLATION OF SILT FENCE.

DAVID A. GOESSL, PE
CIVIL ENGINEER
622 SPROUT BROOK ROAD
PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED RESIDENTIAL ADDITION, PATIO AND STORMWATER MANAGEMENT IMPROVEMENTS
27 STURGIS ROAD, BRONXVILLE, N.Y. 10708

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: ANDREW KORB

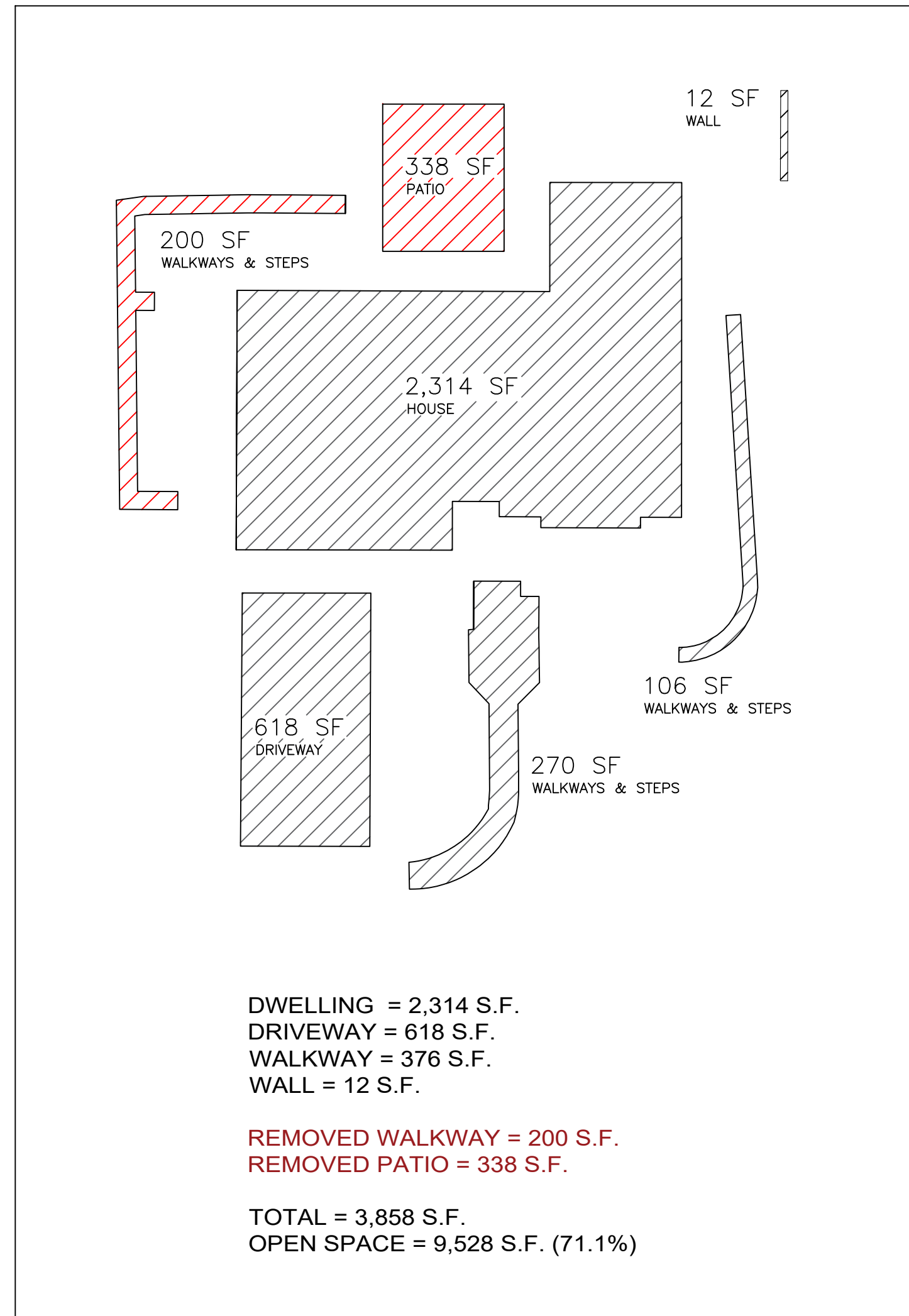
DATE: NOVEMBER 28, 2022 SCALE: NONE SHEET: 1 OF 3

NO. REVISION DATE

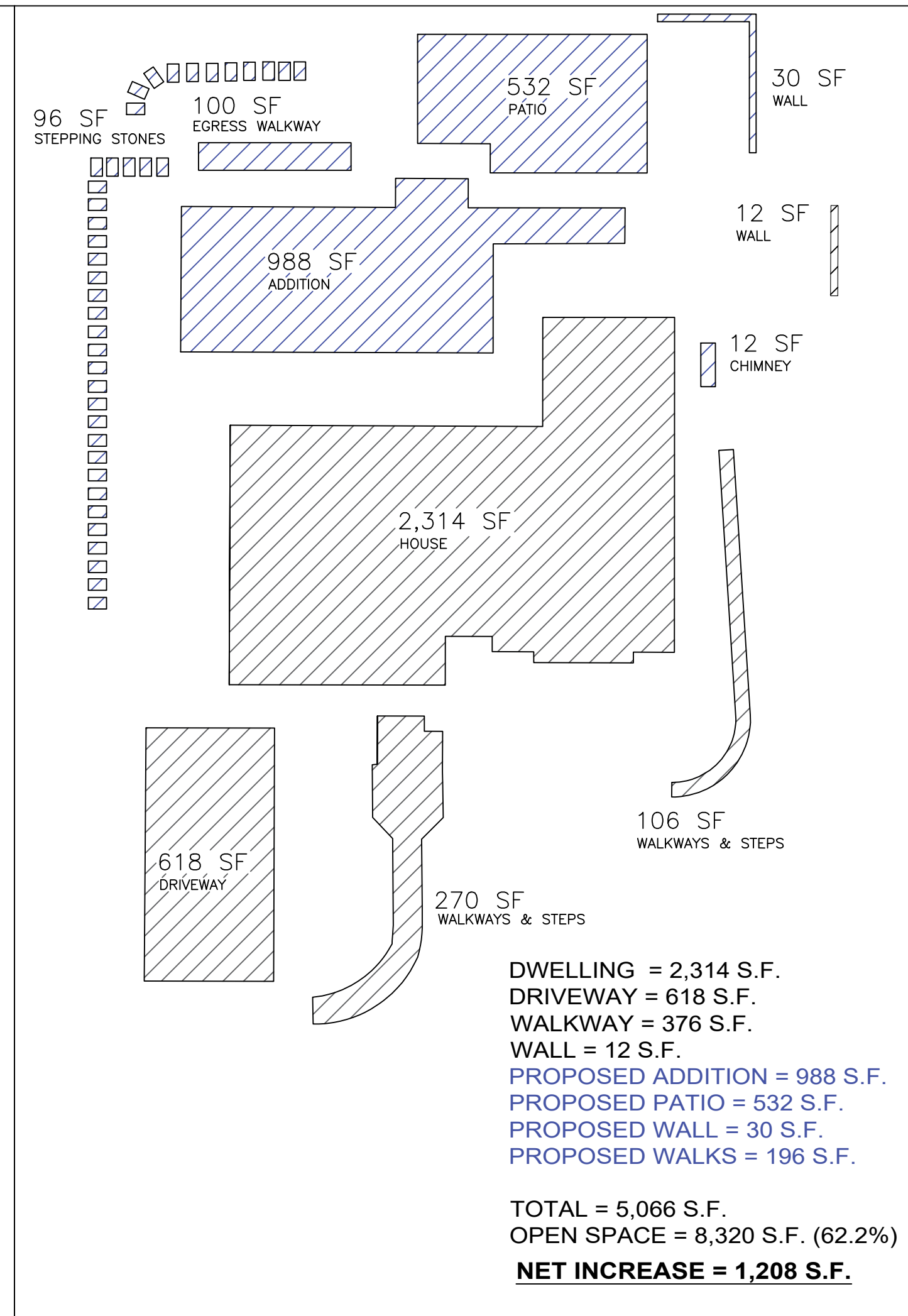
811 Know what's below. Call before you dig. 1-800-962-7962

STATE OF NEW YORK
DAVID A. GOESSL, P.E.
PROFESSIONAL ENGINEER

PRE-EXISTING LOT COVERAGE AREA ANALYSIS



DEVELOPED LOT COVERAGE AREA ANALYSIS



STORMWATER DESIGN CALCULATIONS

STORMWATER DRAINAGE DESIGN FOR 27 STURGIS ROAD BRONXVILLE, NY 10708

The proposed storm water modeling utilized is for a net zero increase in site surface runoff. The modeling will capture the net surface water runoff created from the new residential addition and patio by capturing runoff from these developed features. The total net increase of developed impervious surface areas, amounting to 1,208 square feet, is modeled using the 24 hour, 25 year design storm of 6.4 inches. For design purposes a conservative percolation rate of 120 minutes per inch is utilized. On site testing will be performed at a later date to confirm this assumption. Proposed drainage consists of onsite percolation using Cutlec Recharger drywells installed in the rear left section of the property surrounded by one foot of crushed processed gravel.

LOT AREA FOR DESIGN
DESCRIPTION SQUARE FEET CONVERSION ACRES CURVE NUMBER
Total Lot Area 13,386 43,560 0.307

PRE-DEVELOPMENT - EXISTING CONDITIONS
DESCRIPTION SQUARE FEET CONVERSION ACRES CURVE NUMBER
Total Lot Area 13,386 43,560 0.307
Dwelling/Bldgs 2,314 43,560 0.053 98
Driveway 618 43,560 0.014 98
Patios, Walls & W 200 43,560 0.002 98
Open Lawn Area 9,528 43,560 0.219 72

COMPOSITE CURVE NUMBER = 79.5
TOTAL IMPERVIOUS AREAS = 3,858 SF

POST-DEVELOPMENT - PROPOSED CONDITIONS
DESCRIPTION SQUARE FEET CONVERSION ACRES CURVE NUMBER
Total Lot Area 13,386 43,560 0.307
Dwelling/Bldgs 3,302 43,560 0.076 98
Driveway 618 43,560 0.014 98
Patios, Walls & W 1,146 43,560 0.026 98
Open Lawn Area 8,320 43,560 0.191 72

COMPOSITE CURVE NUMBER = 81.8
TOTAL IMPERVIOUS AREAS = 5,066 SF

WATER QUANTITY VOLUME ANALYSIS
- Reference NYSDDEC Stormwater Design Manual Chapter 4 and WPCS TR-55 Modeling for Urban Hydrology for Small Watersheds
- Design Storm used is 25 year, 24 hour
- Pre-Development Composite Curve Number (CN) 79.5
- Post-Development Composite Curve Number (CN) 81.8
- Rainfall Intensity (i) 6.4 Inches/day
- Pre-Developed Impervious Area (A) 3,858 ft²
- Post-Developed Impervious Area (A) 5,066 ft²

Using the TR-55 SCS Runoff Equation
Max Retention (S) = 1.000(CN - 10)
Runoff (Q) = (P - 0.25)/(P + 0.85)S
Runoff Volume (V) = Q x A

1) Pre-Development Runoff Determination
Pre-Development S 2.500 Inches
Pre-Development Q 4.03 Inches
Pre-Development Va = 1,284.4 Cubic Feet

2) Post-Development Runoff Determination
Post-Development S 2.219 Inches
Post-Development Q 4.20 Inches
Post-Development Va = 1,807.5 Cubic Feet

3) Water Quantity Volume for Storage
Storage Volume = V_{s post} - V_{s pre}
Stor. Volume = 523.0 Cubic Feet

SOIL PERCOLATION RATE
a) Area of Percolation (A_p):
1) Surface Area of Cylinder (A_c)
Perc Hole Depth 24
Diameter 18
Water Depth (H_{wd}) 12
A_c = π x D_h² / 4
A_c = 4712 ft²

2) Cylinder Bottom Area
A_b = π r²
A_b = 1767 ft²

3) Percolation Area
A_p = A_c - A_b
A_p = 6,48

b) Volume of Percolation (V_p):
V_p = A_p x h
V_p = 6,48 x 1
V_p = 6,48 ft³

c) Soil percolation rate (S_p):
S_p = V_p / (A_p x Time)
S_p = 6,48 / (6,48 x 120)
S_p = 0.0083 8.3 in/day

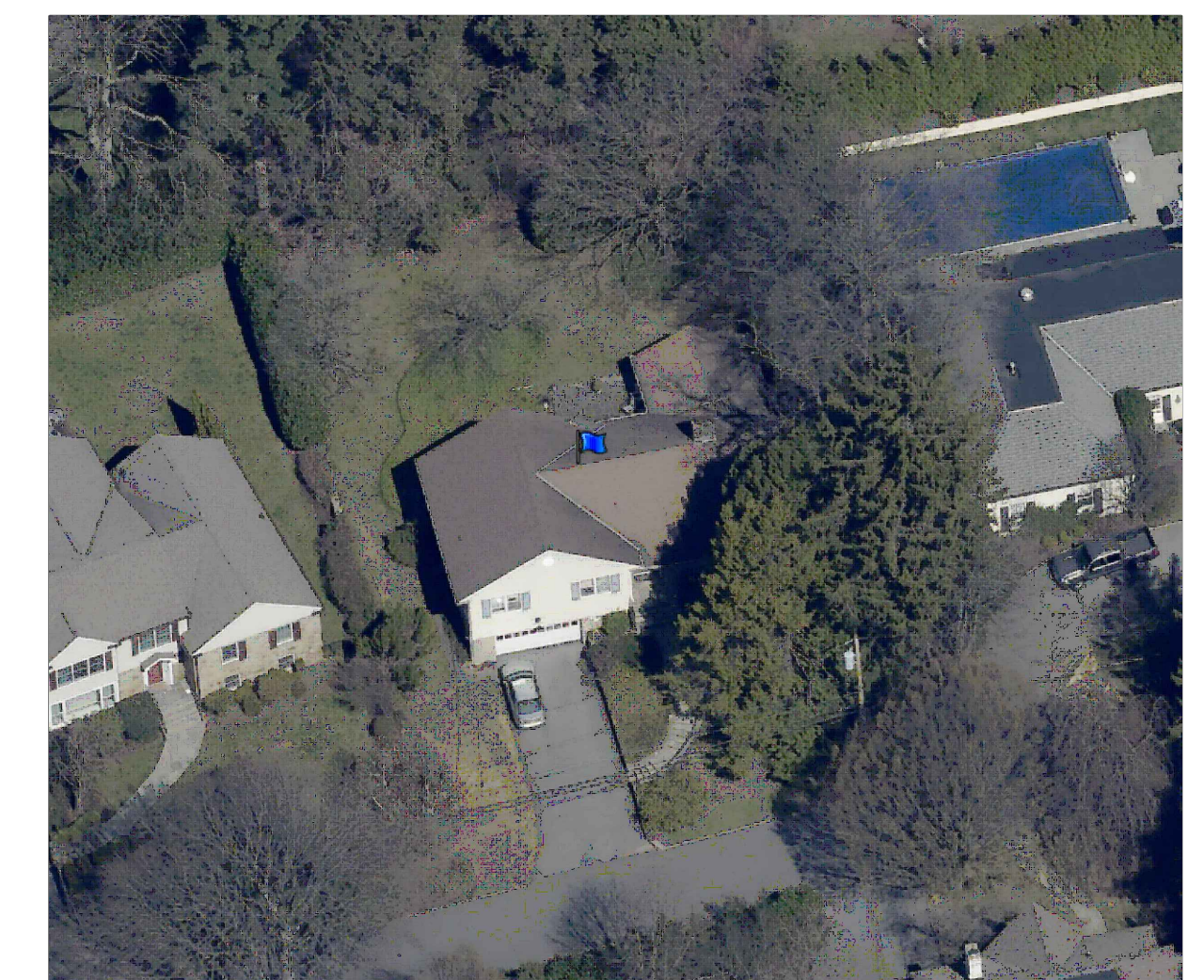
VOLUME PER DRYWELL (V_w)
Cutlec Recharger Stormwater Chamber, Model # 330 XLHD
Chamber Volume (CF) 126.00
Stone Length (inches) 76.00
Stone Width (inches) 42.50
Stone Height (inches) 73.30
Total Volume (CF) 66.50
Units 126.57

24-HOUR PERCOLATION VOLUME PER DRYWELL (V_{pd}):
Percolation Volume of Drywell (V_{pd}) V_{pd} = V_w x S_p
V_{pd} = 126.57 x 0.0083
V_{pd} = 1.05

NUMBER OF DRYWELLS REQUIRED (DW_r):
DW_r = Total Volume of Storage (V_s) / (V_{pd} x # of Sides Exposed)
DW_r = 523.0 / (1.05 x 2)
DW_r = 245.7 (Rounded to 4 Units)

Calculations determine that four Cutlec Model 330XLHD chambers are sufficient to handle the design impervious surfaces. The design will place four chambers surrounded by one foot of 3/4 to 1 1/2 inch nominal size processed gravel in the rear yard of 27 Sturgis Road. Each Cutlec chamber will mitigate patio and tributary roof runoff areas.

AERIAL IMAGERY - EXISTING CONDITIONS



GENERAL NOTES:

SCOPE: THE PURPOSE OF THIS MAP IS TO PRESENT AN ASSESSMENT OF EXISTING CONDITIONS FOR THE RESIDENTIAL PROPERTY LOCATED AT 27 STURGIS ROAD IN THE VILLAGE OF BRONXVILLE, NY. PROPOSED ON THE SUBJECT PROPERTY IS THE CONSTRUCTION OF RESIDENTIAL ADDITION, REAR PATIO WALKWAYS AND RELATED IMPROVEMENTS.

MAPPING: THE BASE MAP DEPICTED HEREIN WAS PREPARED FROM A LAND SURVEY PREPARED BY LINK LAND SURVEYORS, OF MAHOPAC NEW YORK, DATED SEPTEMBER 6, 2022.

CURRENT CONDITIONS: THE EXISTING PROPERTY HAS 13,386 SQUARE FEET OF LAND WHICH CONTAINS A SINGLE FAMILY DWELLING, ASPHALT CONCRETE DRIVEWAY AND REAR PATIO. THE PROPERTY CONTAINS FOUR OFF STREET PARKING SPACES AND IS SERVED BY MUNICIPAL SEWER, WATER AND NATURAL GAS. THE PROPERTY DOES NOT APPEAR TO HAVE ANY ONSITE STORMWATER MANAGEMENT SYSTEM. THE DWELLING DOES NOT MEET ZONING DIMENSIONAL REQUIREMENTS FOR SIDE YARD SETBACKS FOR THE AA ZONING DISTRICT. ZONING VARIANCES FOR SIDEYARD SETBACK AND BUILDING COVERAGE ARE BEING SOUGHT BY THE OWNER. A REFERRAL TO THE VILLAGE PLANNING BOARD AND CONSULTANT ENGINEER IS REQUIRED FOR THE PROPOSED ACTIONS.

GENERAL SITE DATA:

PROPERTY INFORMATION & OWNER:

ANDREW KORB
27 STURGIS ROAD
BRONXVILLE, NY 10708
TAX ID: 7E-03-06

1. ZONING DISTRICT & USE:

AA - RESIDENTIAL DISTRICT

2. ZONING BULK REQUIREMENTS:

FOR RESIDENTIAL USE:

- LOT AREA (MIN) - 15,000 SF
- BUILDING COVERAGE (MAX) - 22.5% (3,012 SF)
- LOT WIDTH (MIN) - 100 FEET
- FRONT YARD (MIN) - 35 FEET
- SIDE (MIN ONE) - 15 FEET
- SIDE (MIN BOTH) - 35 FEET
- REAR (MIN) - 32 FEET
- HEIGHT (MAX) - 30 FEET

4. LAND USE DEVELOPED AREA SUMMARY:

SEE SEPARATE TABLE

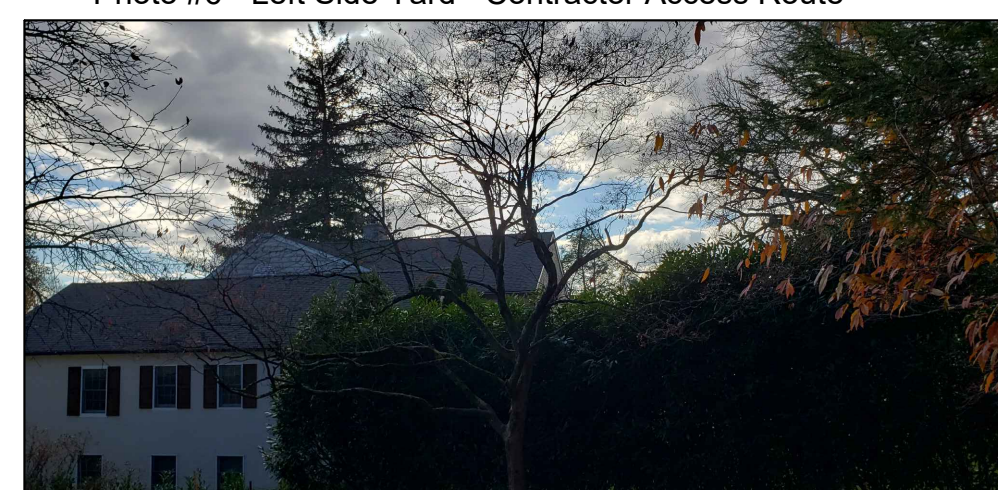
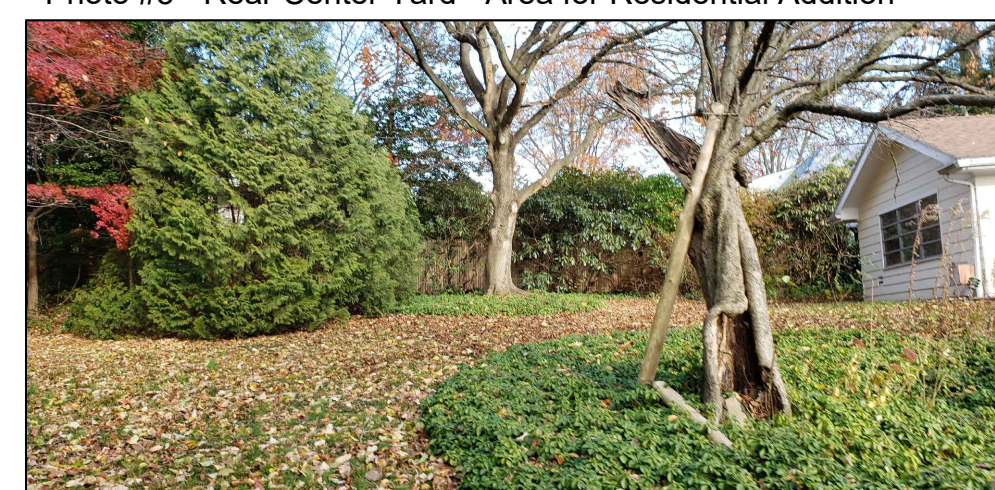
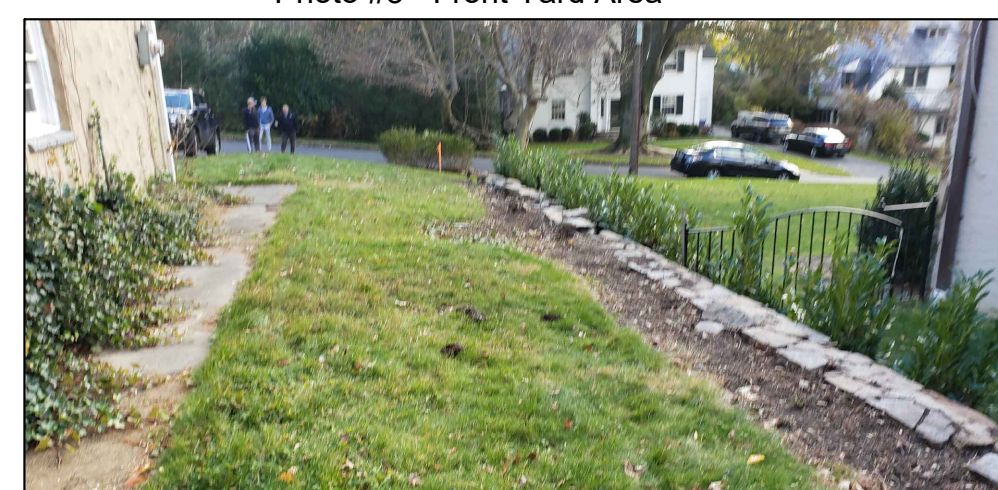
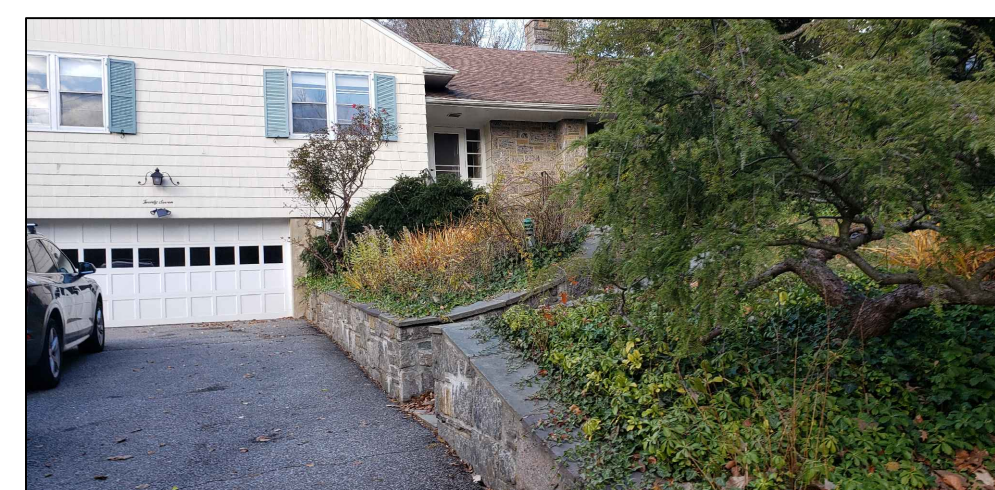
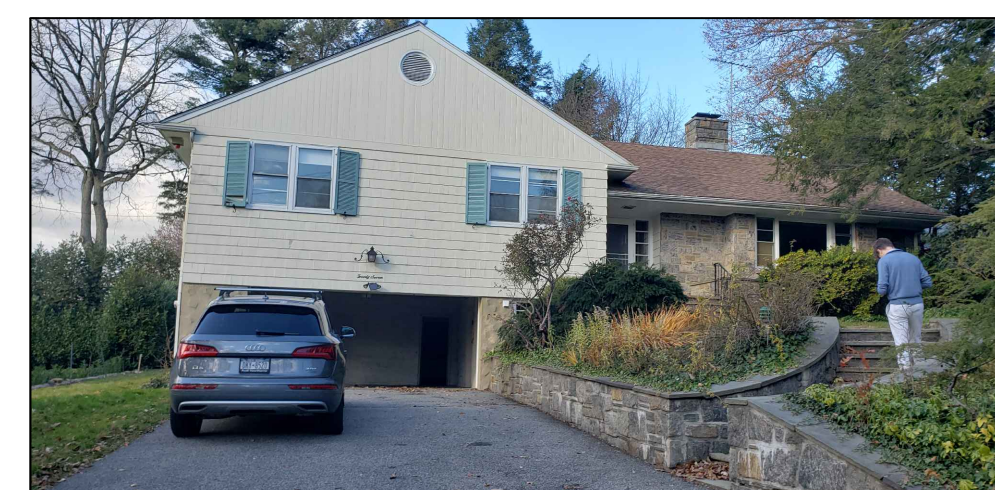
5. UTILITY SERVICES:

WATER DISTRICT - VEOLIA (FORMERLY SUEZ & UNITED WATER)
SEWER DISTRICT - BRONX SEWER DISTRICT
GAS PROVIDER - CON EDISON COMPANY OF NY

6. CRITICAL ENVIRONMENTAL AREAS:

NONE

PHOTOS - PROJECT LOCATION & PRE-EXISTING CONDITIONS



ZONING SCHEDULE (R-15) - BULK REQUIREMENTS

SCHEDULE ITEM	REQUIRED/ALLOWED	EXISTING	PROPOSED
Lot Area	15,000 s.f.	13,386 s.f.	N/C
Lot Width	100 ft.	91.00 ft.	N/C
Lot Depth	120 ft.	147.10 ft.	N/C
Yard (Front)	35 ft.	34.80 ft.	N/C
Yard (1 Side)	15 ft.	14.80 ft.	14.80 ft.
Yard (Combined Sides)	35 ft.	29.80 ft.	29.80 ft.
Yard (Rear)	32 ft.	61.70 ft.	52.20 ft.
Coverage (Building)	22.5% (3,012 s.f.)	17.3% (2,314 s.f.)	24.7% (3,302 s.f.)
Open Space (pervious)	55% (7,362 s.f.)	71.1% (8,528 s.f.)	62.2% (8,320 s.f.)
Off Street Parking	2 Spaces	4 Spaces	N/C

PERCOLATION AND DEEP TEST PIT DATA:

TEST DATE: TBD	PERCOLATION TEST #1 START TIME:	PERCOLATION TEST #2 START TIME:
WEATHER: TBD	END TIME:	END TIME:
PRE-SOAK DATE: TBD		
WITNESS: PCI (CONSULTANT ENGINEER)		
DEEP TEST PIT: 48" DEPTH DATE TBD	START DEPTH FROM SURFACE: 0"	START DEPTH FROM SURFACE: 0"
	START DEPTH FROM SURFACE: 3"	START DEPTH FROM SURFACE: 3"
	RESULT: ## MIN / 3"DROP	RESULT: ## MIN / 3"DROP

- CONTRACTOR SHALL PROVIDE DESIGN ENGINEER WITH ADDITIONAL DEEP TEST PIT AT TIME OF CONSTRUCTION.
- USE 120 MIN / 1" DROP FOR INITIAL DESIGN PENDING FUTURE PERCOLATION TESTING WITNESSED BY THE VILLAGE ENGINEER.

ANY UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A SEAL OF A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209 OF THE NYS EDUCATION LAW.

DAVID A. GOESSL, PE
CIVIL ENGINEER
622 SPROUT BROOK ROAD
PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED RESIDENTIAL ADDITION, PATIO AND STORMWATER MANAGEMENT IMPROVEMENTS
27 STURGIS ROAD, BRONXVILLE, N.Y. 10708

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: ANDREW KORB

DATE: NOVEMBER 28, 2022 SCALE: NONE SHEET: 3 OF 3

NO.	REVISION	DATE

