CITY OF STAMFORD

MAYOR
CAROLINE SIMMONS

DIRECTOR OF OPERATIONS
MATT QUINONES
Email: MQuinones@StamfordCT.gov

CITY ENGINEER
LOUIS CASOLO, JR., P.E.
Email: LCasolo@StamfordCT.gov

INTEROFFICE MEMORANDUM

December 5, 2023

To: Vineeta Mathur Principal Planner

From: Willetta Capelle P.E. - Coordinator of Site Plan Reviews and Inspections

Subject:

1911 Summer Street - KCI Summer, LLC
Zoning Application No. 223-39, 223-40

The Engineering Bureau received Zoning Application documents for a Text Change proposing amendments to Section 7.3 of the Zoning Regulations to facilitate the construction of residential uses located on corner lots and to grant the Zoning Board the authority to reduce setbacks applicable to on-site parking areas. Also received was an application proposing Critical Reconstruction of a historic house and construction of 4 new townhouses attached to the rear along with landscaping and on-site parking.

The following documents were reviewed:

-"TP-1 Topographic Survey Prepared for Daniel Kolich 1911 Summer Street" by Ahneman Kirby dated 8/16/21

-"SP-1 Proposed Site Plan Prepared for Daniel Kolich 1911 Summer Street" by Ahneman Kirby latest revision 9/21/23

-"SP-2 Proposed Site Details Prepared for Daniel Kolich 1911 Summer Street" by Ahneman Kirby dated 3/28/22

-"Stormwater Management Report Prepared for Daniel Kolich 1911 Summer Street" by Ahneman Kirby dated 7/24/23

The Engineer of Record Keith Werner, P.E. of Ahneman Kirby, LLC stated: "Based on the above information the proposed improvements are designed in accordance with the City of Stamford Stormwater Drainage Manual and will not adversely impact adjacent or downstream properties or City-owned drainage facilities."

The Engineering Bureau does not object to the Text Change since it does not affect the authority of this department. Regarding the reconstruction of the historic house and construction of 4 new townhouses, the Engineering Bureau previously reviewed Zoning Board of Appeals documents for this project and the following items numbered from that review are still outstanding and are to be addressed by a CT Professional Engineer PRIOR to Zoning Board approval:

2) Connections to the City storm system must be via manhole and a Storm Sewer Connection Waiver will be

required.Revised the plan to connect to the manhole on 5th St. Storm Sewer Waiver will be submitted

5) Protect the infiltration system from over compacting during construction. Add a note to the Site Plan.
Added #10 in drainage note on SP-2

6) Provide a construction sequence, which shall include the protection of the infiltration system. Added #10 in general construction staging on SP-2

7) An additional test pit and saturated hydraulic conductivity test are needed in the proposed infiltration area. Provide the results. Additional testing results will be submitted to engineering

8) Identify proposed pipe types, lengths, diameters, slopes and functions. Done

10) Add hay bales or silt fence on the eastern and southern property lines in the area of work. Done

11) Identify all proposed grading.The majority of the contours will stay as it and proposed spot elevations are shown

12) Provide a detail of the parking area. 4 garage parking and 2 outdoor parking spaces are proposed. Refer to architectural plan

13) Show inlet protection for all catch basins and inlets. Ultra-Urban Filter TSS added.

15) Provide survey references on the Site Plan. Done

16) Add a sump elevation for CB #1 callout. Done

17) Extend the length of the anti-tracking pad. Extended to be 30' in length

19) A Drainage Maintenance Agreement will be required. Drainage Maintenance Agreement will be submitted

20) Identify the location of the construction vehicle staging area. Done

In addition to the above comments, the Engineering Bureau determined that the following must also be addressed prior to Zoning Board approval:

A) Provide additional plan sheet(s) to clearly show the utility and drainage information, erosion and sediment controls and other site information, as well as all 4 proposed townhouses. S&E plan and site plan have been separated. Refer to architectural drawing

B) The Stormwater Management Report states that 3 catch basins will collect the parking lot drainage, however, only 1 catch basin is shown on the Site Plan. Clarify and clearly show proposed contours.There is one as shown on site plan

C) Provide a permanent insert for CB #1 for Water Quality improvement. AbTech details added

D) Eliminate the 90 degree bend in the pipe from the infiltration system to the outlet control structure. The maximum allowable bend is 45 degrees, unless there is a structure at the bend.
Replaced 90° bend with two 45° with a short segment of PVC

E) Pervious pavers are not permitted in parking areas without Water Quality pretreatment. Replaced with asphalt

F) Add inlet protection to the Legend. Done

G) The symbols for tree protection and tree removal are too similar. It appears that the triangle on the east property line and the X on the south property line identify tree protection and tree removal. Clarify.
Yes. Triangle is protection and X is removal

H) Verify with the Zoning and Traffic Departments if the planted buffer along the 5th Street frontage is permitted.
Refer to landscape Plan. It is designed per requirement to Section 12.k.2.b. and 12.k.5 of Stamford Zoning regulations

I) Add a catch basin inlet protection detail. Done

J) Add a detail for the permanent insert for Water Quality improvement. Done

K) Catch basins in parking lot areas must be H20 load rated. Add this to the detail. Added to the callout & detail

L) Provide an infiltration test and test pit within the footprint of the proposed infiltration system. The infiltration test results provided have varied time intervals and the inches dropped is not accurate for all time periods. The percolation rate should be shown in inches per minute, not minutes per inches. Clarify the type of infiltration test to be performed, to confirm compliance with the Stamford Drainage Manual. For the first 6 reading, it is measured 5 minutes apart and for the last 3 reading, it is10 minute intervals. The constant rate is 1" in 10 min or 6" per hour. 30" deep hole was excavated for percolation test. Presoaked for 2 hour then reading started. Another test results will be submitted

M) Revise the drawdown calculations for the correct infiltration rate and test location.
Revised percolation rate in table with inch per minute on SP-2. Revised the drawdown calculations

N) Show all pipe connections to the infiltration system.
Roof leaders connections are shown

O) Use a minimum Tc of 5 minutes for existing and proposed conditions in the drainage model. Done

P) Provide a draft Drainage Maintenance Agreement. Done

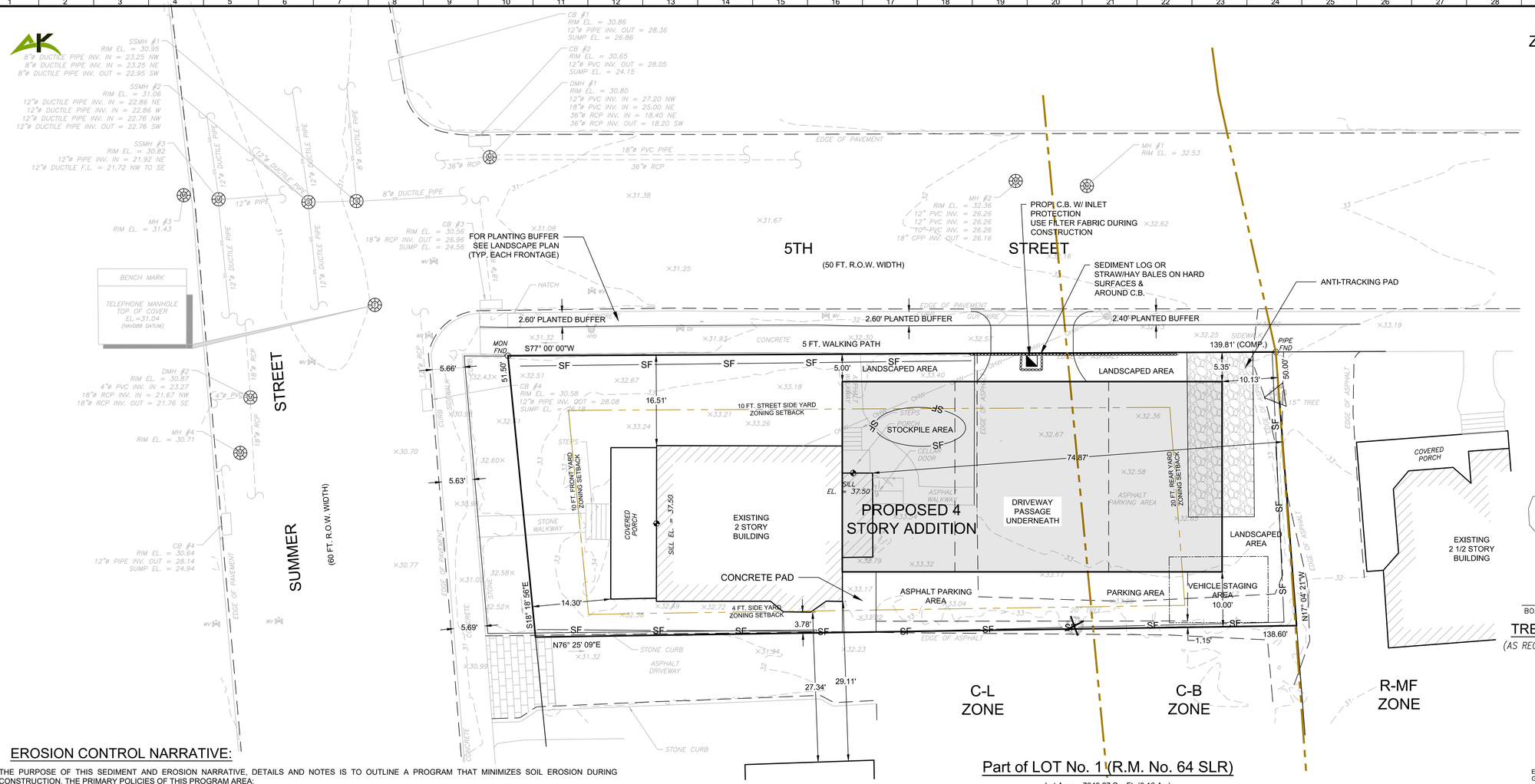
Q) An Excavation Permit will be required. Note is added as #1 in Standard City of Stamford Notes on SP-2

R) The Engineering Bureau reserves the right to make additional comments.

Please contact me at 203-977-4003 with any questions.

CC: Keith Werner

Reg. No. 349



ABBREVIATIONS

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- 90 — PROPOSED CONTOURS
- x 94 — PROPOSED SPOT GRADES
- PROPOSED CATCH BASIN WITH INLET PROTECTION
- TREE — TREES TO BE REMOVED
- SEDIMENT LOG OR HAY BALES
- —sf— SILT FENCE

TREE PROTECTION DETAIL

(AS REQUIRED FOR ALL TREES TO BE SAVED)

SCALE: N.T.S.

EROSION CONTROL NARRATIVE:

THE PURPOSE OF THIS SEDIMENT AND EROSION NARRATIVE, DETAILS AND NOTES IS TO OUTLINE A PROGRAM THAT MINIMIZES SOIL EROSION DURING CONSTRUCTION. THE PRIMARY POLICIES OF THIS PROGRAM AREA:

a) AVOID CONTAMINATION OF ADJACENT NEIGHBORING PROPERTIES AND DOWN GRADIENT MUNICIPAL ROADWAYS.
b) TRAPPING PARTICLES AT THEIR SOURCE BY PROMPTLY STABILIZING DISTURBED AREAS.
c) AVOID CONCENTRATION OF WATER OR STORM WATER RUNOFF.
d) AVOID CONTAMINATION OF EXISTING STORM DRAIN STRUCTURES AND DRAINAGE PIPES.
e) MAINTENANCE SHALL BE WEEKLY AND AFTER EVERY STORM EVENT FOR ALL CONTROLS TO ENSURE THEY ARE FUNCTIONING PROPERLY.

1. PROPOSED EROSION CONTROLS SHALL BE INSTALLED TO THE LOCATIONS AND DETAILS SHOWN ON THESE PLANS PRIOR TO CONSTRUCTION AS APPROVED IN THE FIELD BY THE APPROPRIATE MUNICIPAL AGENCY PERSONNEL. PROPOSED CONSTRUCTION PHASING TO BE DETERMINED IN CONSULTATION WITH THE APPROPRIATE MUNICIPAL AGENCY PRIOR TO THE START OF CONSTRUCTION.
2. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM. RESTABILIZATION WILL BE SCHEDULED AS SOON AS POSSIBLE WITH A MINIMUM OF 4 INCHES TOPSOIL, SEED AND MULCH. "HYDRO-SEED" MAY BE REQUIRED BASED ON FIELD CONDITIONS FOR TEMPORARY GRASS GERMINATION DURING SEASONAL PLANTING PERIODS TO INSURE MINIMAL SEDIMENTATION AND EROSION.
3. HAY BALES AND SNOW FENCE AND/OR SILT CURTAIN BARRIERS WILL BE INSTALLED AT THE LOCATIONS INDICATED ON THESE PLANS AND, IF NEEDED, ALONG THE TOE OF ALL CUT AND FILL SLOPES. ALL EROSION CONTROLS SHALL BE REVIEWED WITH AND APPROVED BY THE APPROPRIATE MUNICIPAL AGENCY PERSONNEL PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
4. ALL CONTROL MEASURES WILL BE MAINTAINED DURING THE CONSTRUCTION PERIOD.
5. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF NECESSARY OR REQUIRED.
6. SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED OF IN A MANNER WHICH IS CONSISTENT WITH THE INTENT OF THESE PLANS AND/OR AS DIRECTED BY THE MUNICIPAL STAFF.
7. IT IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO INCLUDE THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFYING THE MUNICIPAL STAFF OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THESE PLANS IF THE TITLE TO THE LAND IS TRANSFERRED.
8. THE EROSION CONTROLS (WHICH WILL BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE PROPOSED CONSTRUCTED AREAS) SHALL BE INSPECTED PERIODICALLY AND ESPECIALLY FOLLOWING ANY PERIODS OF EXTENDED PRECIPITATION. ANY SILTATION WHICH WAS ACCUMULATED UPSLOPE OF THE PROPOSED EROSION BARRIERS IF GREATER THAN 6 INCHES IN DEPTH SHALL BE REMOVED AND THE EROSION CONTROLS CHECKED AND REPAIRED AS NECESSARY TO INSURE THAT NO BREACHING OCCURRED. ALL LAWN AND PROPOSED PLANTED AREAS SHALL BE CHECKED TO INSURE THAT GERMINATION HAS OCCURRED AND ANY REQUIRED ADJUSTMENTS PERFORMED AS NECESSARY PRIOR TO REMOVE OF TEMPORARY CONSTRUCTION EROSION CONTROLS.
9. TREES TO BE CUT, FALLEN TREES OR BUSH WITHIN DESIGNATED PROPOSED CONSTRUCTION AREAS SHALL BE CUT TO FIREPLACE LENGTHS AND STACKED OUTSIDE OF THOSE AREAS, FEED SMALLER BRANCHES AND TWIGS THROUGH CHIPPER AND STOCKPILE. ALL STOCKPILES SHALL BE OUTSIDE OF DRIP LINES OF PROTECTED TREES.
10. TREES TO BE SAVED SHALL BE BANDED WITH A BRIGHT-COLORED SURVEYOR'S RIBBON LOCATED AT A HEIGHT VISIBLE TO EQUIPMENT OPERATORS. TREE ARMORING PROTECTION MEASURES SHALL BE USED AS SHOWN IN THE DETAIL ON THIS PLAN.
11. INDIVIDUAL TREES OR STANDS TO BE SAVED WITHIN DESIGNATED AREAS OF PROPOSED STRUCTURES SHALL BE PROTECTED BY FENCING WHICH CIRCUMSCRIBES THE DRIP LINE OF THE INDIVIDUAL GROUP PER THE DETAIL ON THIS DRAWING.

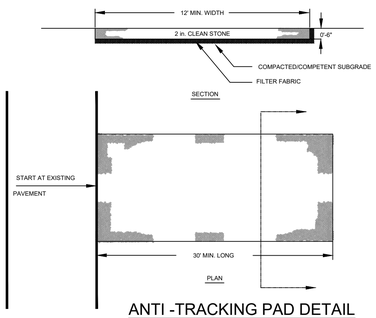
GENERAL NOTES:

1. THIS PLAN IS FOR A BUILDING DEPARTMENT APPLICATION FOR A 4 STORY ATTACHED ADDITION TO THE EXISTING HOUSE AND RECONFIGURED DRIVEWAY, AS INDICATED HEREON. THIS PLAN IS NOT TO BE USED AS A FINAL CONSTRUCTION PLAN. ADDITIONAL DETAILS MAY BE REQUIRED PRIOR TO ANY ACTUAL CONSTRUCTION.
2. THE PROPOSED ADDITION INDICATED HEREON WAS OBTAINED FROM PLANS PREPARED BY ELENA KALMAN ARCHITECTS, ARCHITECT FOR THE HOMEOWNER. FOR FINISHED FLOOR ELEVATIONS OF THE PROPOSED DWELLING SEE ARCHITECTURAL PLANS.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS AND SEQUENCES OF CONSTRUCTION AND FOR THE SAFETY OF WORKERS AND OTHERS ON THE CONSTRUCTION SITE. THE CONTRACTOR SHALL ALSO LOCATE AND VERIFY THE SIZE, LOCATION, DEPTH AND INVERTS OF ANY AND ALL EXISTING UTILITIES PRIOR TO COMMENCING OPERATIONS. THE CONTRACTOR SHALL ALSO BE REQUIRED TO CONTACT THE TOLL FREE "CALL-BEFORE-YOU-DIG" PHONE NUMBER AT 1-800-992-4455.
4. THE EXISTING DRIVEWAY WILL SERVE AS THE MACHINERY ACCESS ROUTE.
5. SUGGESTED LOCATIONS AND DETAILS OF EROSION CONTROL MEASURES ARE INDICATED HEREON. TREE PROTECTION MEASURES ARE ALSO INDICATED HEREON AND SHALL BE IMPLEMENTED AS REQUIRED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. EXACT LOCATIONS EROSION CONTROL MEASURES TO BE DETERMINED AT THE SITE BASED ON FIELD CONDITIONS BY THE CERTIFYING ENGINEER IN CONSULTATION WITH THE APPROPRIATE TOWN AGENCY STAFF.
6. RESTORE ALL DISTURBED AREAS WITH A MINIMUM OF FOUR (4") INCHES OF TOPSOIL, SEED, AND HAY MULCH UPON COMPLETION OF CONSTRUCTION.
7. EXCAVATED SOILS SHALL BE TEMPORARILY STORED OR STOCKPILED UPGRADE OF THE EROSION CONTROL MEASURES.

Part of LOT No. 1 (R.M. No. 64 SLR)

Lot Area = 7043.27 Sq. Ft. (0.16 Ac.)

GRAPHIC SCALE :
10 0 10
FEET

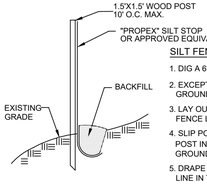


ANTI -TRACKING PAD DETAIL

N.T.S.

INSTALLATION NOTES

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 15' FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES
4. WIDTH - 10 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR.
5. FILTER FABRIC - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE, IF PIPING IS IMPARITAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC. RIGHT OF WAY THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT. OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

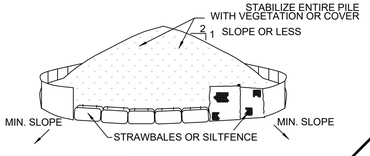


SILT FENCE NOTES

1. DIG A 6" DEEP TRENCH ALONG THE INTENDED FENCE LINE.
2. EXCEPT FOR THE END POST, DRIVE ALL POSTS INTO THE GROUND AT BACK SIDE OF TRENCH 10' O.C. MAX.
3. LAY OUT FILTER FABRIC ON THE UPHILL SIDE ALONG THE FENCE LINE.
4. SLIP POCKET IN END OF FILTER FABRIC OVER THE FIRST POST INSURING THAT THE BOTTOM RED GAUGE LINE IS AT GROUND LEVEL.
5. DRAPE BOTTOM 6" OF FILTER FABRIC BELOW RED GAUGE LINE IN TRENCH, BACK FILL WITH SOIL AND COMPACT.

EROSION CONTROL SILT FENCE DETAIL

N.T.S.



INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE DETAIL THIS SHEET FOR INSTALLATION OF SILT FENCE.
5. PROVIDE PLASTIC BELOW STOCK PILE + PROTECT UNDERSIDE.

STOCKPILE DETAIL

Date:	August 16, 2021
Scale:	1" = 10'
Drawn/Checked By:	KBF, KAW / TGA
Book #:	258:135
Job #:	21-147-06905
Reference:	06905

PRINT INVALID WITHOUT SEAL AND ORIGINAL SIGNATURE

STATE OF CONNECTICUT · KEITH WERNER · 31178 · LICENSED PROFESSIONAL ENGINEER

REV. #:	REV. DESCRIPTION:	DATE:
5	ENGINEERING COMMENTS DATED 12/5/23	03/01/2024
4	PLANTING BUFFER DIMENSION	09/21/2023
3	SIDEWALK & PLANTING BUFFER	09/08/2023
2	PERVIOUS PAVERS	08/04/2023
1	REVISED BUILDING FOOTPRINT	11/15/2022
----	ISSUED TO CLIENT	3/31/2022

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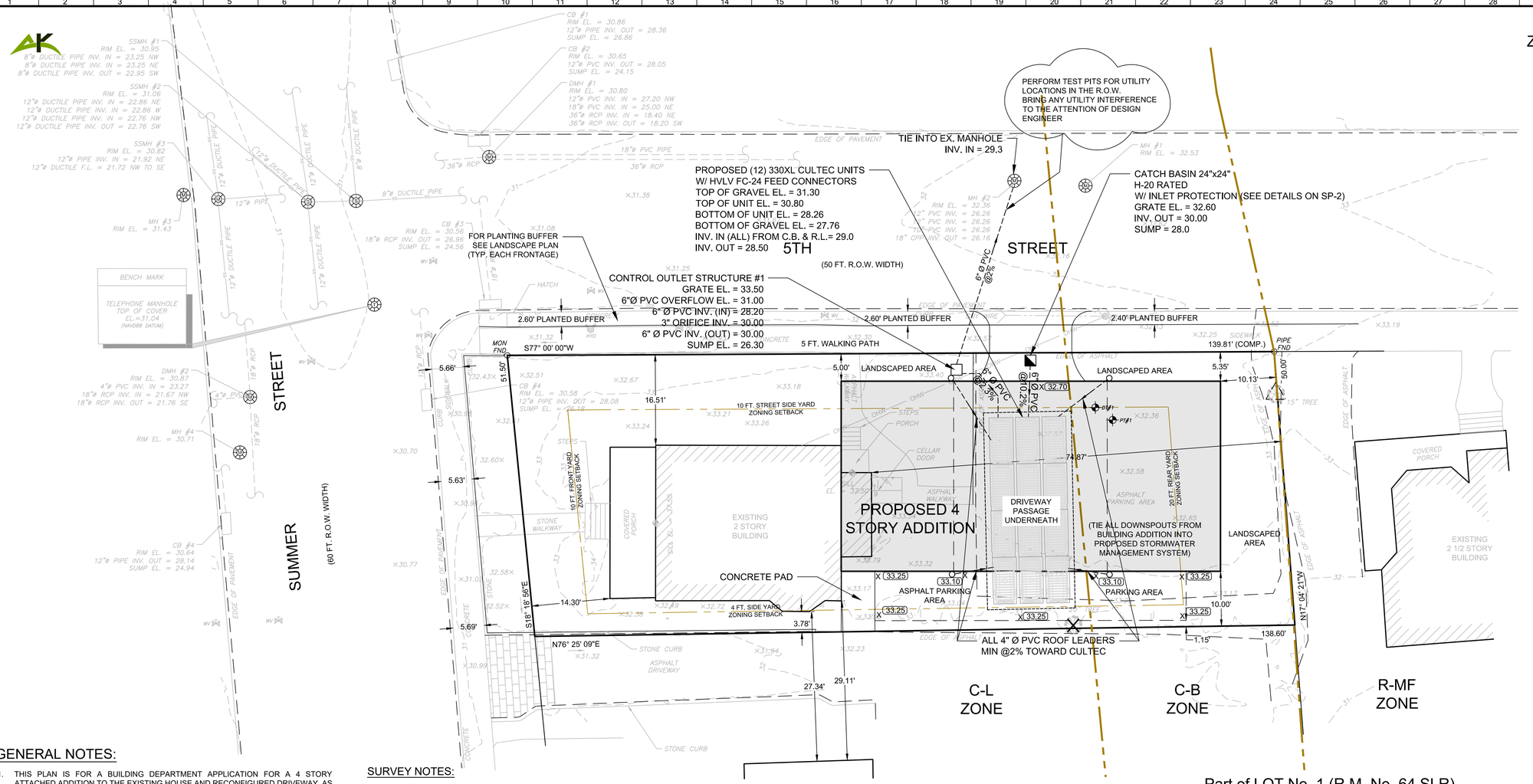
www.ahnemankirby.com

PREPARED FOR:
DANIEL KOLICH
1911 Summer Street, Stamford, CT 06905
(Tax ID: 001-5245)

SEDIMENT & EROSION CONTROL PLAN

SE-1

Z:\AKL_projects\1911 Summer St\06905 Kolich 21-147-06905Dwg\2024-02-29 1911 Summer St Kolich SP-1 & SP-2 Rev-5.dwg 03/01/24 - 3:38pm kfagherlin



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2. THE PROPOSED BUILDING ADDITION WILL BE SERVED BY THE EXISTING CITY OF STAMFORD SEWER SYSTEM.
3. THE SUBJECT PROPERTY IS CURRENTLY SERVED BY MUNICIPAL WATER SERVICE AND OTHER UTILITY CONNECTIONS AND WILL REMAIN AS IS FOR THIS PROPOSAL. THE PROPOSED ADDITION SERVICES SHALL CONNECT TO THE EXISTING SERVICE LINE LOCATIONS WITHIN THE DWELLING.
4. THE PROPOSED ADDITION INDICATED HEREON WAS OBTAINED FROM PLANS PREPARED BY ELENA KALMAN ARCHITECTS, ARCHITECT FOR THE HOMEOWNER. FOR FINISHED FLOOR ELEVATIONS OF THE PROPOSED DWELLING SEE ARCHITECTURAL PLANS.
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8. RESTORE ALL DISTURBED AREAS WITH A MINIMUM OF FOUR (4") INCHES OF TOPSOIL, SEED, AND HAY MULCH UPON COMPLETION OF CONSTRUCTION.
9. EXACT SETBACK LINES AND PROPERTY LINES TO BE STAKED BY A LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION (NOT PART OF THIS CONTRACT).
10. EXCAVATED SOILS SHALL BE TEMPORARILY STORED OR STOCKPILED UPGRADE OF THE EROSION CONTROL MEASURES.

SURVEY NOTES:

This survey has been prepared in accordance with sections 20-300b-1 thru 20-300b-20 of the regulations of Connecticut state agencies and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. as a Zoning Location Survey the boundary determination category of which is a dependent resurvey conforming to horizontal accuracy class A-2, vertical accuracy class T-2.

Reference is made to book 3743 at page 245 and designated as part of Lot No. 1 on a certain map entitled "Map of Building Property of Ayres Brothers and Hoit in Stamford, Conn." filed in the office of City Clerk of City of Stamford as Map No. 64.

Property subject to any and all public or private restrictive covenants, declarations and/ or easements of record, if any.

This map is based on a field survey conducted by Ahneman Kirby, LLC on August 4, 2021.

Contours and elevation shown are based on North American Vertical Datum of 1988 (NAVD88).

Underground utilities, facilities and structures are not shown hereon. The locations of any underground utilities shown hereon are approximate only. Additionally there are underground utilities the locations of which are currently unknown. Any party utilizing the utility information and data depicted on this survey shall contact the "CALL BEFORE YOU DIG" phone number at 800-922-4455 a minimum of forty eight (48) hours prior to any construction activities to verify the location of any and all underground utilities.

Part of LOT No. 1 (R.M. No. 64 SLR)

Lot Area = 7043.27 Sq. Ft. (0.16 Ac.)

GRAPHIC SCALE :

10 0 10

FEET

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Date:	August 16, 2021
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Drawn/Checked By:	KBF, KAW / TGA
Book #:	258:135
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PREPARED FOR:
DANIEL KOLICH
1911 Summer Street, Stamford, CT 06905
(Tax ID: 001-5245)

PROPOSED SITE PLAN

SP-1

Z:\AKL_project\1911 Summer St\06905 Kolich 21-147-06905\Dwg\2024-02-28 1911 Summer St Kolich SP-1 & SP-2 Rev5.dwg 03/01/24 - 3:39pm kbaghebi

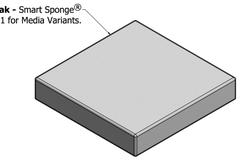
Ultra-Urban® Filter DI (Drop In) & CO (Curb Opening) Smart Pak Product Size Chart			
Type	Product Code	Treatment Box Dimension (L"x W"x H")	Approx. Weight (lbs)
Filter	SMPK 161603-XX	16" x 16" x 3"	8.5

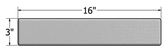
Smart Sponge® Smart Pak SMPK 161603-XX

Table #1 Smart Sponge® Media Variation Choice				
Technology	Smart Sponge®	*Smart Sponge® Plus	Smart Sponge® HM	Smart Sponge® AC
Targeted Contaminants	Hydrocarbons	Bacteria and Hydrocarbons	Dissolved Heavy Metals, Dissolved Phosphorus, and Hydrocarbons	Organics and Soluble Hydrocarbons
Media Code	SS	PL	HM	AC

*Filtration media is registered with the EPA for the reduction of total coliform bacteria

SmartPak - Smart Sponge®
Media See Table #1 for Media Variants.





Specifiable Features
The following information relates to the product shown:

1. ≥80% Total Petroleum Hydrocarbons (TPH) through 100% Absorption
2. ≥80% Total Suspended Solids (TSS) removal
3. ≥90% Reduction of Microbial Pathogens for Smart Sponge Plus media only
4. ≥80% Reduction of Total and Dissolved Phosphorus with Smart Sponge® HM Media
5. Significant reduction of Dissolved Metals to include; Copper, Lead, Zinc, and others with HM Media

The Smart Pak is designed for use in new or existing stormwater vaults, including the AbTech Chester UUF models, that experience hydrocarbon, heavy metal pollution accompanied by sediment, debris, or bacteria. Smart Paks help meet or exceed stormwater National Pollutant Discharge Elimination System (NPDES) permit requirements with effective filtration, absorption, life expectancy, and maintenance costs.

PROJECT NAME: | LOCATION:
PROJECT CONTACT ENGINEER: | CONTACT: | SITE MANAGER:

AbTech
4110 N. Scottsdale Rd., Suite 235 Scottsdale, AZ 85251 USA
P: (480) 970-1665
www.abtechindustries.com

Smart Sponge® Media

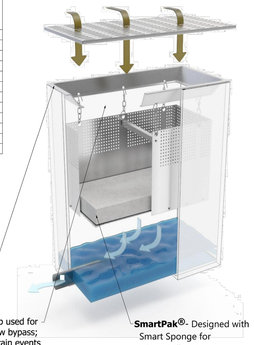
SCALE: | 1 / 1
PROJECT ENGINEER:
DRAWN BY: EGB
DESIGNED BY:
CHECKED BY:
ISSUE DATE: 4/1/2022
PROJECT NO.:
SHEET TITLE:
SHEET NUMBER: 1 OF 1

Ultra-Urban® Filter DI (Drop Inlet) Product Size Chart (solutions available for most catch basin sizes, call AbTech for assistance)								
Type	Product Code	Filter Box Dimension (L"x W"x H")	Treatment Flow w/ Smart Pack (cfs)	Treatment Flow w/o Smart Pak (cfs)	Bypass Flow (cfs)	Storage Capacity (cu-ft)	Total Filter Depth (inches)	Approx. Weight Including SS (lbs)
Shallow	DI1212H	12" x 12" x 10"	0.15	0.38	4.3	0.6	18	19.1
Shallow	DI1414H	14" x 14" x 10"	0.20	0.52	4.7	0.8	18	23.7
Shallow	DI1616H	16" x 16" x 10"	0.27	0.68	5.9	1.0	18	28.9
Shallow	DI2020H	20" x 20" x 10"	0.42	1.14	6.9	1.6	18	40.7
Shallow	DI2814H	28" x 14" x 10"	0.41	1.00	7.6	1.6	18	41.1
Shallow	DI3216H	32" x 16" x 10"	0.53	1.36	8.7	2.1	18	50.5
Deep	DI1212N	12" x 12" x 18"	0.25	0.94	4.3	1.3	26	26.8
Deep	DI1414N	14" x 14" x 18"	0.34	1.17	4.7	1.7	26	34.0
Deep	DI1616N	16" x 16" x 18"	0.45	1.46	5.9	2.2	26	40.7
Deep	DI2020N	20" x 20" x 18"	0.70	2.12	6.9	3.5	26	55.4
Deep	DI2814N	28" x 14" x 18"	0.68	1.91	7.6	3.4	26	56.6
Deep	DI3216N	32" x 16" x 18"	0.89	2.43	8.7	4.4	26	68.2

DESCRIPTION
Ultra-Urban® Filter Chester DI

Smart Sponge® Smart Pak Media Variation Choices				
Technology	Smart Sponge®	*Smart Sponge® Plus	Smart Sponge® HM	Smart Sponge® AC
Targeted Contaminants	Hydrocarbons	Bacteria and Hydrocarbons	Dissolved Heavy Metals, Dissolved Phosphorus, and Hydrocarbons	Organics and Soluble Hydrocarbons
Media Code	SS	PL	HM	AC

*Plus media is registered with the EPA for the reduction of total coliform bacteria

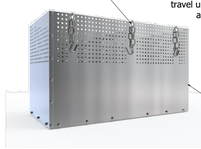


Mounting Collar - customizable stainless-steel collar for attaching the filter box

Hook and Chain - Mounting system to secure UUF in place

Bypass - Air gap used for high flow bypass; large rain events travel unimpeded as intended

SmartPak®- Designed with Smart Sponge for various pollutants of concern



Material - 304 Stainless Steel filter box with 20-year warranty

Specifiable Features
The following information relates to the product shown:

1. Fabricated from 304 stainless steel
2. Full Trash Capture Certified by California Water Board
3. Purification Capabilities, by including Smart Sponge filter media (SmartPak®), the UUF Chester DI can also remove up to:
   - 80% Total Petroleum Hydrocarbons (TPH)
   - 80% Total Suspended Solids (TSS)
   - 95% Total Phosphorus (Particulate and Dissolved)
   - Total Metals (Particulate and Dissolved)
   - Coliform bacteria reduction is possible with Smart Sponge Plus media*

PROJECT NAME: | LOCATION:
PROJECT CONTACT ENGINEER: | CONTACT: | SITE MANAGER:

AbTech
4110 N. Scottsdale Rd., Suite 235 Scottsdale, AZ 85251 USA
P: (480) 970-1665
www.abtechindustries.com

Drop In Filter
With
Smart Sponge® Media

SCALE:
PROJECT ENGINEER:
DRAWN BY:
DESIGNED BY:
CHECKED BY:
REVISION DATE: 4/2023
PROJECT NO.:
SHEET TITLE:
SHEET NUMBER: 1 OF 1

PERMANENT INLET PROTECTION INSERT FOR C.B.
N.T.S.

GENERAL CONSTRUCTION STAGING:

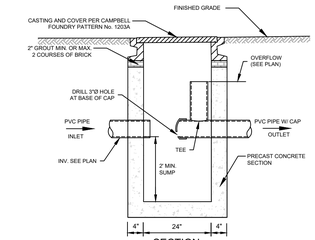
1. INSTALL EROSION & SEDIMENT CONTROLS.
2. INSTALL TREE PROTECTION AS REQUIRED.
3. MARK AND CUT TREES TO BE REMOVED.
4. STRIP TOPSOIL AND STOCKPILE IT WITH APPROPRIATE SEDIMENTATION CONTROL MEASURES.
5. ROUGH IN PROPOSED FOUNDATION AND CONSTRUCTION ACCESS.
6. EXCAVATE FOR PROPOSED FOUNDATION.
7. CONSTRUCT PROPOSED FOUNDATION.
8. BACKFILL AND ROUGH GRADE AROUND FOUNDATION.
9. INSTALL STORM DRAINAGE SYSTEM, AND UTILITIES AS REQUIRED.
10. USE INLET PROTECTION SUCH AS FILTER FABRIC ON CATCH BASIN AND HAYBALES AROUND IT DURING CONSTRUCTION..
11. PROTECT THE INFILTRATION SYSTEM FROM OVER COMPACTING DURING CONSTRUCTION (WORK WHEN SOIL IS DRY AND USE LIGHTWEIGHT MACHINES).
12. CONSTRUCT PROPOSED ADDITION.
13. CONSTRUCT STEPS AND WALKWAYS.
14. FINE GRADE AND STABILIZE ALL SLOPES.
15. LANDSCAPE AS REQUIRED.
16. INSERT PERMANENT INLET PROTECTION IN CATCH BASIN.
17. REMOVE EROSION AND SEDIMENT CONTROLS.

Standard City of Stamford Notes:

1. A Street Opening Permit is required for all work within the City of Stamford Right-of-Way.
2. All work within the City of Stamford Right-of-Way shall be constructed to City of Stamford requirements, the State of Connecticut Basic Building Code and the Connecticut Guidelines for Soil Erosion and Sedimentation Control.
3. The Engineering Bureau of the City of Stamford shall be notified three days prior to any commencement of construction or work within the City of Stamford Right-of-Way.
4. Trees within the City of Stamford Right-of-Way to be removed shall be posted in accordance with the Tree Ordinance.
5. Prior to any excavation the Contractor and/or Applicant/Owner, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark out of underground utilities.
6. All retaining walls three (3) feet or higher measured from finished grade at the bottom of the wall to finished grade at the top of the wall and retaining walls supporting a surcharge or impounding Class I, II or III-A liquids are required to have a Building Permit. Retaining walls shall be designed and inspected during construction by a Professional Engineer licensed in the State of Connecticut. Prior to the issuance of a Certificate of Occupancy, retaining walls shall be certified by a Professional Engineer licensed in the State of Connecticut.
7. Certification will be required by a professional engineer licensed in the State of Connecticut that work has been completed in compliance with the approved drawings.
8. A Final Improvement Location Survey will be required by a professional land surveyor licensed in the State of Connecticut.
9. Connection to a city-owned storm sewer shall require the Waiver Covering Storm Sewer Connection to be filed with the City of Stamford Engineering Bureau.
10. Granite block or other decorative stone or brick, depressed curb, driveway apron and curbing within the City of Stamford Right-of-Way shall require the Waiver Covering Granite Block Depressed Curb and Driveway Aprons to be filed with the City of Stamford Engineering Bureau.
11. Sediment and erosion controls shall be maintained and repaired as necessary throughout construction until the site is stabilized.
12. To obtain a Certificate of Occupancy, submittal must include all items outlined in the Checklist for Certificate of Occupancy (Appendix D of the City of Stamford Drainage Manual).
13. Reference EPB Permit #, Zoning Permit #, Zoning Board of Appeals #, Subdivision #, if applicable.

DRAINAGE NOTES:

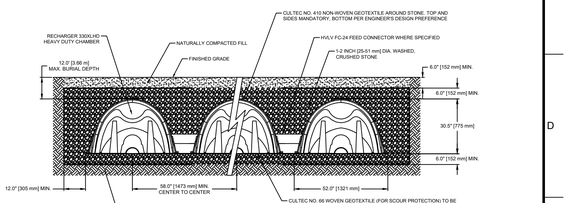
1. CONTRACTOR TO PROBE AND EXCAVATE WHERE POTENTIAL CONFLICTS MAY EXIST PRIOR TO DRAINAGE INSTALLATION. ALL KNOWN OR POTENTIAL CONFLICTS SHOULD BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.
2. ALL NEW AND EXISTING AND FINISHED GRADES SHALL SLOPE TO DRAIN AWAY FROM THE PROPOSED AND EXISTING BUILDINGS.
3. ALL PVC PIPE TO BE SCHEDULE 40, OR EQUAL. MINIMUM PIPE PITCH SHALL BE 1-PERCENT.
4. ALL RETAINING WALLS GREATER THAN THREE FEET REQUIRE COMPUTATIONS SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT TO BE SUBMITTED FOR ENGINEERING DIVISIONS RECORDS, PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. THE DESIGN ENGINEER ASSUMES ALL RESPONSIBILITY OF THE RETAINING WALL DESIGN.
5. ALL DETENTION/RETENTION SYSTEMS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS. ALL SYSTEMS SHALL USE A MANIFOLD SYSTEM TO DISTRIBUTE RUNOFF EVENLY INTO EACH ROW OF INFILTRATORS. THE MANIFOLD SHALL BE INSTALLED ON THE INLET AND OVERFLOW SIDES WHEN NOT HANDLING THE FIRST FLUSH AND ONLY ON THE INLET SIDE WHEN A FIRST FLUSH SYSTEM IS BEING INSTALLED.
6. THERE MUST BE AT LEAST A 1-FOOT SEPARATION DISTANCE FROM THE BOTTOM OF STONE BELOW THE INFILTRATION STRUCTURE TO THE SEASONAL HIGH GROUNDWATER OR BEDROCK/LEDGE. PRIOR TO THE INSTALLATION OF THE INFILTRATORS THE ENGINEER SHALL VERIFY THE INFILTRATION STRUCTURE IS BEING INSTALLED IN THE APPROVED LOCATION AND IF THE LOCATION HAS BEEN CHANGED ADDITIONAL SOIL TESTING SHALL BE PERFORMED AND THE ENGINEER SHALL APPROVE THE REVISED LOCATION. A REVIEW BY THE APPROVING AUTHORITY WILL BE REQUIRED.
7. EACH BMP TO BE INSTALLED SHALL HAVE THE SOILS BENEATH THE BMP SCARIFIED OR TILLED TO IMPROVE INFILTRATION.
8. ALL AREAS THAT ARE USED BY CONSTRUCTION EQUIPMENT AND USED FOR CONTRACTOR PARKING MUST HAVE THE SOIL TILLED 12 TO 16 INCHES AND AMENDED WITH SMALL AMOUNTS OF ORGANIC MATERIAL IF NEEDED. THE AREA TO BE RESTORED SHALL BE DETERMINED BY THE SITE ENGINEER.
9. A LETTER OF CERTIFICATION FROM A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT AND AN "IMPROVEMENT LOCATION SURVEY MAP" THAT DEPICTS ALL NEW "AS-BUILT" CONDITIONS FROM A SURVEYOR REGISTERED IN THE STATE OF CONNECTICUT SHALL BE SUBMITTED TO THE TOWN UPON COMPLETION OF WORK AND PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE BUILDING DEPARTMENT.
10. PROTECT THE INFILTRATION SYSTEM FROM OVER COMPACTING DURING CONSTRUCTION.



SECTION

FOR USE WITHIN SUBJECT PROPERTY ONLY AND AS MANUFACTURED BY CONNECTICUT PRECAST Co., INC., MONROE, CT., OR APPROVED EQUIVALENT.
1. REINFORCED 6 x 6 x 10 GAUGE MESH OR TO SPECIFICATIONS.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH: 4,000 PSI @ 28 DAYS.

CONTROL OUTLET STRUCTURE DETAIL
N.T.S.



GENERAL NOTES
RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT (1.05 m³/m) PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS

ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS

DEEP TESTS PERFORMED BY AKL 3/8/2022

Test Pit or Soil Boring #: 1 Ground Elevation: 32.4

Elevation	Soil Texture (Percent Sand, Silt and Clay)	Depth Range in Inches
32.40	Asphalt	0-2
32.23	Dark Sandy Loam	2-38
29.07	Brown Sandy Loam w/ Gravel & Cobbles	38-84

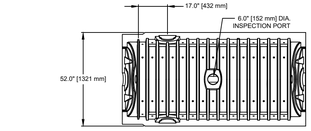
Elevation		Depth in Inches
NA	Mottling (Seasonally High Groundwater)	NA
NA	Groundwater	NA
NA	Ledge	NA

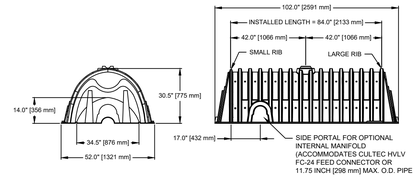
PEROLCATION TEST RESULTS

Date: March 8, 2022
AKL Witness: Ida Gheibi
Note: Test holes were presoaked
Perc. Test: 1 Hole Depth = 30.0"

Time	Depth to Water (in)	Difference (in)	Perc. Rate (min/in)
11:21 AM	7	-	-
11:26 AM	8.5	1.5	0.3
11:31 AM	9.5	1.0	0.2
11:36 AM	10.5	1.0	0.2
11:41 AM	11.5	1.0	0.2
11:46 AM	12	0.5	0.1
11:56 AM	13	1.0	0.1
12:06 PM	14	1.0	0.1
12:16 PM	15	1.0	0.1

Constant rate = 0.10 in/min
6.00 in/hr





CULTEC RECHARGER 330XLHD CHAMBER STORAGE = 7.459 CF/FT [0.693 m³/m]
INSTALLED LENGTH ADJUSTMENT = 1.5' [0.46 m]
SIDE PORTAL ACCEPTS CULTEC HVLV FC-24 FEED CONNECTOR

CULTEC RECHARGER 330XLHD
N.T.S.

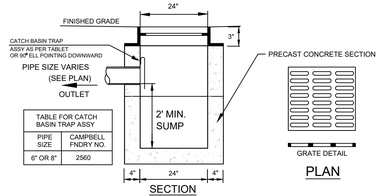


TABLE FOR CATCH BASIN TRAP ASSY

PIPE SIZE	CAMPBELL FNDRY NO.
6" OR 8"	2560

SECTION

GRATE DETAIL

PLAN

FOR USE WITHIN SUBJECT PROPERTY ONLY AND AS MANUFACTURED BY CONNECTICUT PRECAST Co., INC., MONROE, CT., OR APPROVED EQUIVALENT.
1. REINFORCED 6 x 6 x 10 GAUGE MESH OR TO SPECIFICATIONS.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH: 4,000 PSI @ 28 DAYS.
3. MUST BE H-20 LOAD RATED

PRECAST CONCRETE CATCH BASIN (CB)
N.T.S.

Date: March 28, 2022
Scale: AS SHOWN
Drawn/Checked By: KW / TGA
Book #: 258:135
Job #: 21-147-06905
Reference: 06905

PRINT INVALID WITHOUT SEAL AND ORIGINAL SIGNATURE

STATE OF CONNECTICUT · KEITH WEINBERG · 31179 · LICENSED PROFESSIONAL ENGINEER

REV. #	REV. DESCRIPTION:	DATE:
5	ENGINEERING COMMENTS DATED 12/5/23	03/01/2024

AHNEMAN KIRBY
ENGINEERS•SURVEYORS•PLANNERS
SINCE 1871
1171 East Putnam Avenue, Riverside, CT 06878
Tel: 203.869.7707 • Fax: 203.869.4606
www.ahnemankirby.com

PREPARED FOR:
DANIEL KOLICH
1911 Summer Street, Stamford, CT 06905
(Tax ID: 001-5245)

PROPOSED SITE DETAILS

SP-2

OPERATIONS AND MAINTENANCE PLAN REPORT

Prepared for:

Daniel Kolich
1911 Summer St, Stamford, CT 06905

Prepared by:

Ahneman Kirby, LLC
1171 East Putnam Avenue
Riverside, Connecticut 06878

March 1, 2024

Operations and Maintenance Plan

1911 Summer St, Stamford, CT 06905
March 1, 2024

Scope:

The purpose of the Operations and Maintenance Plan is to ensure that the existing and proposed stormwater components installed at *1911 Summer St, Stamford, CT 06905* are maintained in operational condition throughout the life of the project. The service procedures associated with this plan shall be performed as required by the parties legally responsible for their maintenance.

Recommended Frequency of Service:

As further defined below, all stormwater components should be checked on a periodic basis and kept in full working order. Ultimately, the required frequency of inspection and service will depend on runoff quantities, pollutant loading, and clogging due to debris. At a minimum, we recommend that all stormwater components be inspected and serviced twice per year, once before winter begins and once during spring cleanup.

Qualified Inspector:

The inspections must be completed by an individual experienced in the construction and maintenance of stormwater drainage systems. Once every five years the inspections must be completed by a professional engineer.

Service Procedures:

1. Catch Basins & Drainage Inlets:

    a. Catch basins and drainage inlets shall be completely cleaned of accumulated debris and sediments at the completion of construction.
    b. For the first year, catch basins and drainage inlets shall be inspected on a quarterly basis.
    c. Any accumulated debris within the catch basins/inlets shall be removed and any repairs as required.
    d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
    e. Accumulated debris within the catch basins/inlets shall be removed and repairs made as required.
    f. Accumulated sediments shall be removed at which time they are within 12 inches of the invert of the outlet pipe.
    g. Any additional maintenance required per the manufacturer's specifications shall also be completed.

2. Storm Drainage Piping and Manholes/Junction Boxes:

    a. All storm drainage piping shall be completely flushed of debris and accumulated sediment at the completion of construction.
    b. Manholes/Junction Boxes shall be inspected and repaired on an annual basis.

c. Unless system performance indicates degradation of piping, comprehensive video inspection of storm drainage piping shall occur once every ten years.
d. Any additional maintenance required per the manufacturer's specifications shall also be completed.

3. Stormwater Control Structures:

a. All control structures (orifice, weir, etc.) shall be completely cleaned of accumulated debris and sediments at the completion of construction. Any repairs shall be performed.
b. For the first year, control structures (orifice, weir, etc.) shall be inspected on a quarterly basis.
c. Any accumulated debris shall be removed and any repairs made to the control structures (orifice, weir, etc.) as required.
d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
e. Accumulated debris shall be removed and repairs made as required.
f. Any additional maintenance required per the manufacturer's specifications shall also be completed.

7. Drywells and Infiltration Systems:

a. All drywells/infiltrators shall be completely cleaned of accumulated debris and sediments upon the completion of construction.
b. For the first year, the drywells/infiltrators shall be inspected on a quarterly basis.
c. Any accumulated debris within the drywells/infiltrators shall be removed and any repairs made to the units as required.
d. From the second year onward, visual inspection shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
e. Accumulated debris within the units shall be removed and repairs made as required.
f. Any additional maintenance required per the manufacturer's specifications shall also be completed.

11. Roof Gutters:

a. Remove accumulated debris and inspect for damage. Any damage should be repaired as required.

Disposal of Debris and Sediment:

All debris and sediment removed from the stormwater structures and bioretention/biofiltration basins shall be disposed of legally. There shall be no dumping of silt or debris into or in proximity to any inland or tidal wetlands.

Maintenance Records:

The Owners(s) must maintain all records (logs, invoices, reports, data, etc.) and have them readily available for inspection at all times.

Operations and Maintenance Log (Page 1 of 5)

1911 Summer St, Stamford, CT 06905
March 1, 2024

Type of Inspection: ☐ Spring ☐ Fall ☐ Other

Inspector's Name:_____ Date of Inspection:_____

Affiliation:_____ Phone #:_____

Catch Basins & Drainage Inlets:

- Has accumulated debris been removed from grates? ☐ Yes ☐ No ☐ N/A
- Do any basins require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Have sumps been cleaned of sediment? ☐ Yes ☐ No ☐ N/A

Notes:

Storm Drainage Piping and Manholes/Junction Boxes:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Do any manholes require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Is there any evidence of stormwater piping failure? ☐ Yes ☐ No ☐ N/A
- Has a comprehensive video inspection been completed? ☐ Yes ☐ No ☐ N/A

Notes:

Stormwater Control Structures:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Are any repairs required? (identify below): ☐ Yes ☐ No ☐ N/A
- Have orifices and weirs been cleaned of debris? ☐ Yes ☐ No ☐ N/A

Notes:

Operations and Maintenance Log (Page 2 of 5)

1911 Summer St, Stamford, CT 06905
March 1, 2024

Hydrodynamic Separators:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Does unit require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Has unit been cleaned of sediment? ☐ Yes ☐ No ☐ N/A

Notes:

Drainage Outfalls/Splash Pads/Scour Holes/Level Spreaders:

- Have all drainage outlets been cleared of debris? ☐ Yes ☐ No ☐ N/A
- Have all outlet protections been inspected/repaired? ☐ Yes ☐ No ☐ N/A
- Have all erosion issues been repaired? ☐ Yes ☐ No ☐ N/A

Notes:

Bioretention/Biofiltration Basins/Rain Gardens:

- Have basins been cleared of debris/sediments? ☐ Yes ☐ No ☐ N/A
- Have draining times of basins been verified? ☐ Yes ☐ No ☐ N/A
- Has vegetation been mowed (twice/year max.)? ☐ Yes ☐ No ☐ N/A
- Has plantings and mulch been replaced (twice/year)? ☐ Yes ☐ No ☐ N/A

Notes:

Operations and Maintenance Log (Page 3 of 5)

1911 Summer St, Stamford, CT 06905
March 1, 2024

Drywells and Infiltration Systems:

- Have units been cleared of debris/sediments? ☐ Yes ☐ No ☐ N/A
- Do units require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Has draining times of system been verified? ☐ Yes ☐ No ☐ N/A

Notes:

Porous Pavement:

- Has pavement been vacuumed? ☐ Yes ☐ No ☐ N/A
- Has draining times been verified? ☐ Yes ☐ No ☐ N/A

Notes:

Gravel Pavement:

- Has pavement been graded and additional gravel added? ☐ Yes ☐ No ☐ N/A
- Has draining times been verified? ☐ Yes ☐ No ☐ N/A

Notes:

Operations and Maintenance Log (Page 4 of 5)

1911 Summer St, Stamford, CT 06905
March 1, 2024

Vegetative Roof:

- Have trays been cleared of debris/sediments? ☐ Yes ☐ No ☐ N/A
- Have draining times of trays been verified? ☐ Yes ☐ No ☐ N/A
- Has vegetation been weeded (bi-weekly) ☐ Yes ☐ No ☐ N/A
- Have roof drains been inspected and cleared of debris ☐ Yes ☐ No ☐ N/A

Notes:

Roof Gutters:

- Has accumulated debris been removed from gutters? ☐ Yes ☐ No ☐ N/A
- Do any gutters require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A

Notes:

Groundwater Pump System:

- Has the electrical connections been inspected? ☐ Yes ☐ No ☐ N/A
- Has the electrical connections for the generator been inspected? ☐ Yes ☐ No ☐ N/A
- Has the generator been exercised? ☐ Yes ☐ No ☐ N/A
- Has the sump been cleaned? (identify below): ☐ Yes ☐ No ☐ N/A

Notes:

Operations and Maintenance Log (Page 5 of 5)

1911 Summer St, Stamford, CT 06905
March 1, 2024

Stormwater Pump System:

- Has the electrical connections been inspected? ☐ Yes ☐ No ☐ N/A
- Has the electrical connections for the generator been inspected? ☐ Yes ☐ No ☐ N/A
- Has the generator been exercised? ☐ Yes ☐ No ☐ N/A
- Has the sump been cleaned? (identify below): ☐ Yes ☐ No ☐ N/A

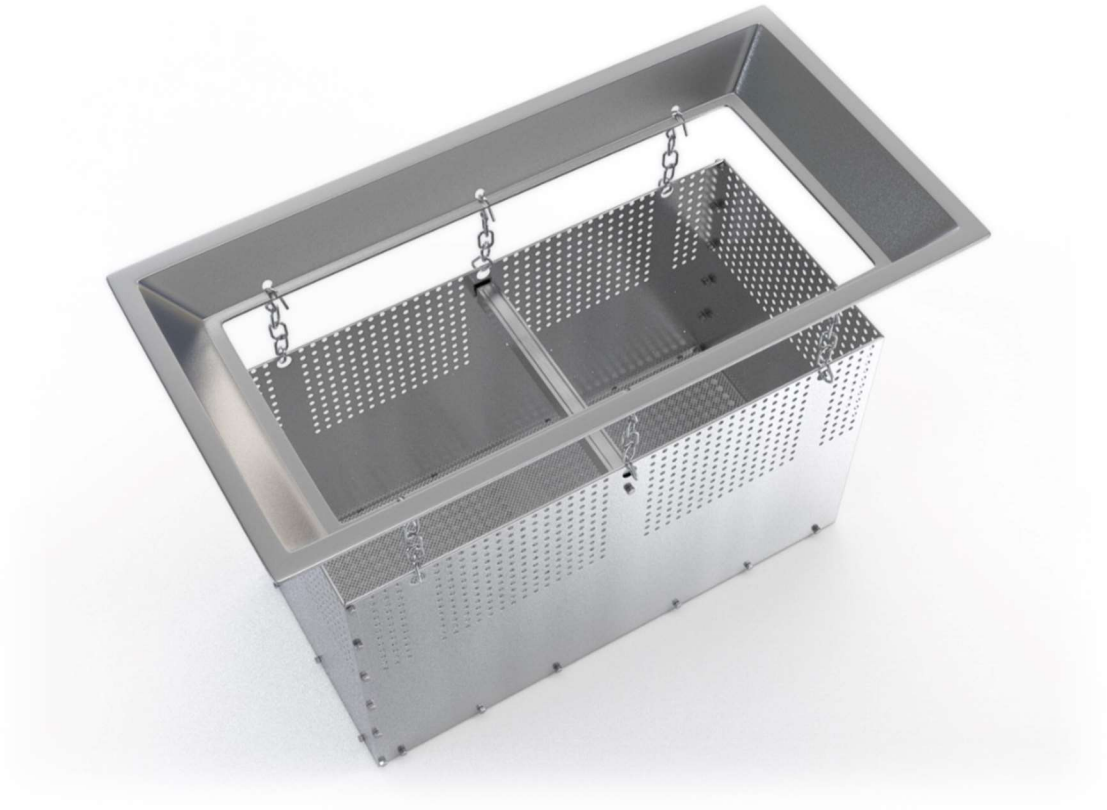
Notes:

Please make additional notes/observations and particular concerns below. Also record any additional maintenance that has been performed:

Signature of Inspector: **Date**

AbTech INDUSTRIES

Operation, Maintenance Manual
Ultra Urban Filter Chester Drop In



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1.0 Description 1
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7.0 Sample Reports 7
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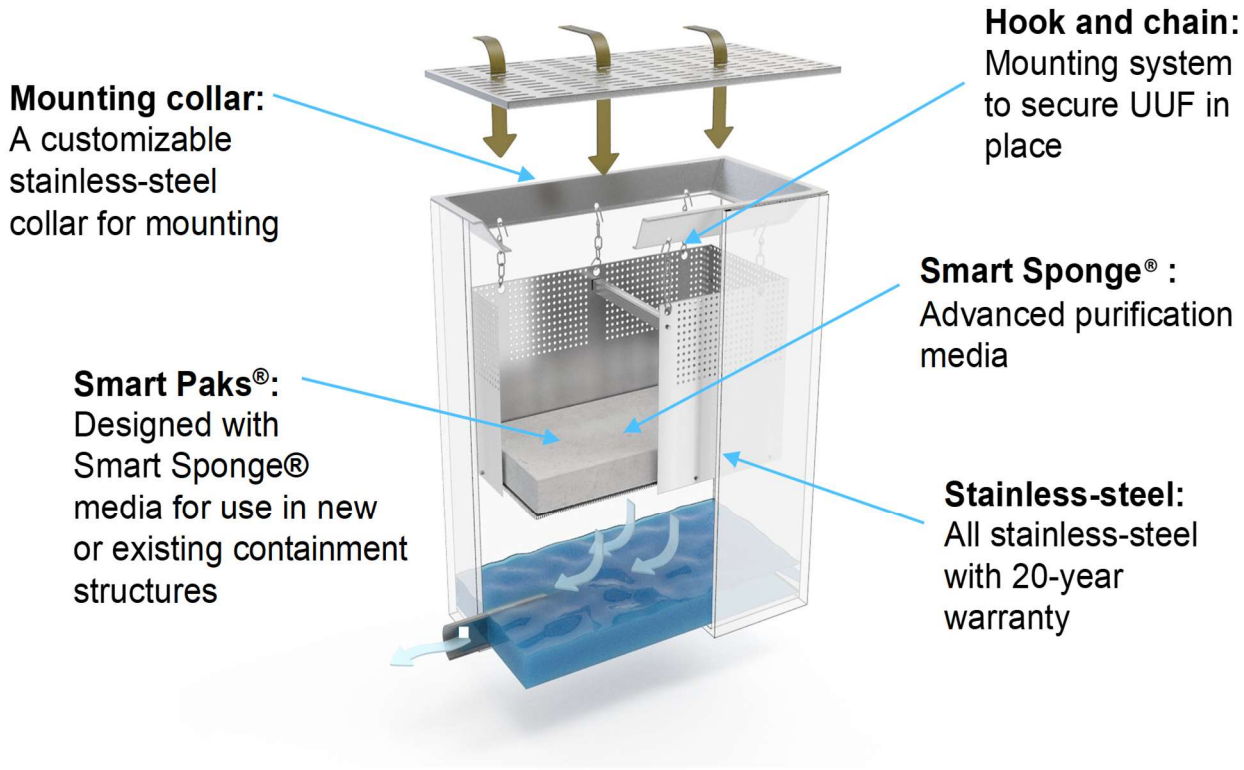
1.0 Description

The Ultra-Urban® Filter (UUF) Chester series is a passive, flow-through, stainless-steel, stormwater filtration system with an optional interchangeable SmartPak® media insert with Smart Sponge® technology that targets additional contaminants of concern. The Chester UUFs with or without the SmartPak, are California Water Board Certified for Full Trash Capture. There are two types of models: the UUF “Drop-In” (UUF DI) and the UUF “Curb Opening” (UUF CO). Although the O&M guidelines are similar, this Guide is specific for the UUF Chester DI models.

The UUF Chester DI filter boxes are an all-stainless-steel design comprised of a collar, suspension chains, filter box, and optional SmartPak. The UUF is installed in catch basins just beneath the grate and utilizes gravity to operate without any mechanical parts or electricity. The unit has holes of 5mm in size to reduce trash and debris. With the optional SmartPak, will additionally reduce, TSS >80%, sediment, and both particulate and dissolved contaminants. Please see our media guide for more information on specific contaminant reduction.



2.0 Operation

The UUF filter box is positioned beneath the frame and inlet grate of stormwater catch basin structures. Untreated stormwater water can enter from any side of the inlet grate and funnels with the collar into the filter insert via gravity. This untreated stormwater continues through the filter screen at the bottom of the unit and will be filtered to less than 5mm in particle size. If a SmartPak is installed, it will provide the additional filtration for other pollutants of concern. The filtered water will flow out of the unit to be discharged. The filter is designed with an integrated bypass system consisting of an air gap to prevent backup in the case of a major storm event or the substantial accumulation of debris.

3.0 Inspection & Maintenance Overview

3.1 General

Catch basin inspection, maintenance and historic documentation is an integral part of any comprehensive stormwater management plan. An inspection program that is regularly reviewed is necessary to ensure the UUF is operating as designed to provide the necessary pollutant removal. The frequency in which catch basins are cleaned is based on site-specific factors. It is important to closely monitor and document the first year of operation after initial installation to develop a long-term maintenance plan for the filter that is consistent with actual pollutant loadings.

3.2 Frequency and Timing of Inspections and Maintenance

In general, all treatment systems need to be inspected and maintained on a routine basis. The frequency and timing of the visits will vary based on the configuration of the filter, site-specific conditions such as rainfall, vegetation, surrounding ground type, and the geographic region. During the first year of operation, after initial installation, the UUF should be inspected more frequently to create a baseline of understanding of the operation of the filter and contaminant loading. Subsequent years of operation can have inspection frequency adjusted based on working experience, provided that no unusual events have occurred during the year. For most installations, AbTech recommends the following:

- First-Year Schedule – 1) Quarterly inspections. 2) An inspection at the start and end of the rainfall season. 3) An inspection after each major rainfall event. Inspection visits may require maintenance.

- Subsequent Years Schedule – Based on the first-year inspection findings, frequency of inspections may be adjusted. For example, if during the first year, the filter and location are determined to have high pollutant loadings, additional

inspections and maintenance may be necessary. Conversely, if pollutant loadings are minimal, frequency of visits may be reduced. Inspection visits may require maintenance.

3.3 Inspection & Maintenance Safety and Equipment Considerations

Safety is the most important consideration before inspecting and removing pollutants from the UUF Chester DI. Always employ proper traffic management and handling procedures for all inspections/maintenance where vehicles and pedestrians have access. Disposing of waste liquids and solids may be regulated and should be understood before removing waste products from the treatment system. Urban stormwater drainage structures are often installed along roadside curbs or in parking lots with limited space.

Examples of things to consider during inspection and maintenance:

- Personal Protective Equipment (PPE) – reflective vests, glasses, steel-toed shoes, gloves.
- Allowing personnel space to remove and temporarily store surface grates.
- Maneuvering and parking maintenance vehicles.
- Equipment for directing traffic and pedestrians - safety cones or barriers and use of appropriate signage.
- Tools to loosen consolidated sediment and debris covering the manway/grate.
- Equipment for removing the manway/grate (e.g. crowbar, manhole hook, jib crane).
- Storing and disposal of pollutants.
- Inspection Data Sheet.

In the event of accidental or chemical spill, contact emergency services and follow standard hazmat procedures.

4.0 Inspection Procedures

The UUF Chester DI can be typically inspected without entry into the catch basin. The inspection should begin by preparing all safety measures on site then followed by the inspection and documentation process. Specific procedures for the inspection are detailed below:

1. Wear all PPE and prepare documentation equipment.

2. Install all work zone safety equipment and conduct a brief safety meeting. Work zone safety equipment should protect the inspector(s) from vehicular traffic and should also isolate and protect pedestrians and vehicles from the work zone.

3. Remove the grate utilizing a puller/remover and safely set aside out of the way of the inspection operations and pedestrians or vehicles.

4. Inspect the grate and catch basin lip. The areas outside of the catch basin should be free from debris, obstructions, and standing water. The presence of any of these conditions outside of the catch basin are potential indicators of maintenance that may be necessary for the treatment system. If any of these maintenance indicators are encountered, they should be documented and, depending on severity, should be rectified through recommended maintenance.

5. Inspect the inside of the catch basin. A flashlight may be needed depending on lighting. The interior of the catch basin and pipe outlet(s) should be free from debris, obstructions, mosquitos, and in some cases standing water. The presence of any of these conditions in the interior of the catch basin are potential indicators of maintenance that may be necessary for the treatment system. The presence of standing water or mosquitos should be highlighted per vector control procedures. The local vector control agency should be notified if mosquitos are present in the catch basin or filter unit.

6. Inspect the collar and filter enclosure for physical or structural damage. The collar should be firmly mounted to the catch basin lip and there should be no loose or missing hardware. The filter should be supported by the suspension hooks and chains. Bent, broken, or otherwise damaged structural components should be documented and recommended for replacement.

7. Inspect the filter screen for pollutants. Pollutants such as trash and debris, and sediment are expected to be captured inside of the treatment system. The presence of such pollutants are indicators the filter is operating as intended. However, an unusually low quantity of such pollutants in the filter may be an indicator that the water is not being properly directed into the filter. The amount of pollutants should be documented and compared with the maximum capacities for the filter.

8. Inspect the SmartPak media filter (if included). When equipped with the optional SmartPak, the media filter fabric should be inspected for rips or tears. The Smart Sponge® media darkens in color as it collects pollutants, but with the media fabric around the Smart Pak®, it may be difficult to observe. If an oily film has accumulated on top of the media fabric, it may indicate a need to be replaced. See maintenance section for recommended change out schedule.

9. Finalize the Inspection Data Sheet. Photograph the conditions of interior and exterior of the catch basin and filter unit. Document the inspection event utilizing the Inspection Data Sheet included with this manual or similar.

10. Replace the grate and remove all work zone safety equipment.

5.0 Maintenance Procedures

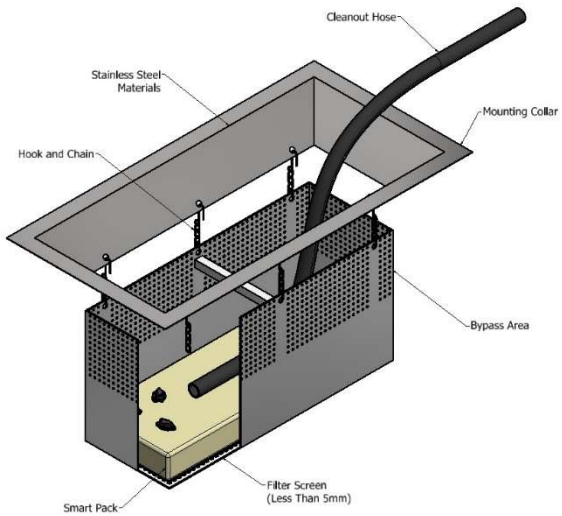
The UUF Chester DI is typically maintained without entry into the catch basin and requires very little time. The maintenance should begin by preparing and installing all safety measures followed by the maintenance and documentation. Specific procedures for the maintenance are detailed below:

1. Wear all PPE and prepare documentation equipment.

2. Install all work zone safety equipment and conduct a brief safety meeting. Work zone safety equipment should protect the inspector(s) from vehicular traffic and should also isolate and protect pedestrians and vehicles from the work zone.

3. Remove the grate utilizing the puller/remover and safely set aside out of the way from inspection/maintenance operations and pedestrians or vehicles.

4. If during inspection it is determined the accumulated trash, debris, and sediment requires removal, an industrial vacuum can be utilized to remove the material. Using a reduced diameter suction hose, vacuum the trash, debris, and sediment from the catch basin filter. The suction hose may be inserted into the filter through catch basin opening as illustrated below. A pressure washing wand may be utilized to assist this process by freeing clogged material from the enclosure screen or media fabric. The suction hose should remain inside the filter while the filter is being washed down. It is also possible to remove sediment by hand by removing the filter enclosure from the catch basin.



5. If during inspection it is determined the media requires replacement, the following replacement procedures should be implemented. Replacement media should be pre-ordered in advance of the maintenance visit. After removal of sediment, remove the SmartPak from the filter box. Additional cleaning may be needed under the SmartPak where sediment may have accumulated on the filter screen. Once cleaned, place a new SmartPak into the bottom of the box, is flat, and fits tightly.

6. Removed trash, debris, and sediment, and media should be disposed of following local, state, and federal guidelines. Material disposal is discussed in section 5.0.

7. The presence of standing water or mosquitos should be highlighted per vector control procedures. The local vector control agency should be notified if mosquitos are present in the catch basin or filter unit.

8. Finalize the Maintenance Report. Photograph the conditions of interior and exterior of the catch basin and filter unit. Document the maintenance event utilizing the Maintenance Report included with this manual or similar.

9. Replace the grate cover and remove all work zone safety equipment.

6.0 Smart Sponge Media Replacement & Disposal

6.1 Media Replacement

AbTech has determined through extensive testing and maintenance history, that replacing the SmartPak every 18 months to two years ensures regulatory compliance in most installations. However, media replacement can be determined by weight, contact info@abtechindustries.com for directions on this method.

6.2 Media Disposal

Generally, spent Smart Sponge filtration media used in typical stormwater applications saturated with hydrocarbons have been classified as a non-hazardous substance. Smart Sponge filtration media saturated with hydrocarbons, both in the lab and field settings, have been tested according to the EPA's Toxicity Characteristic Leaching Procedure (TCLP). The tests indicated that Smart Sponge is a non-leaching product and may be disposed of as follows:

- Subtitle D Landfills
- Waste-to-Energy Facilities
- Thermal Conversion Process Facilities
- Cement Kilns

Note:

In some cases, it is possible Smart Sponge and accumulated sediment found in a stormwater treatment system may contain measurable amounts of hazardous material. Areas with the greatest potential for hazardous pollutant loading include industrial areas and heavily traveled roads. These contaminants must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes and may require coordination with a local landfill for solid waste disposal. For liquid waste disposal, several options are available including a municipal vacuum truck decant facility, local wastewater treatment plant or on-site treatment and discharge.

7.0 Sample Reports

7.1 Inspection Report

Date_____ **Personnel**_____

Location_____ **System Size**_____

No.	Inspection Item	
1	**Is settled trash, debris, and/or sediment on the surrounding area? Is the grate occluded?**	☐ Yes ☐ No
2	**Is standing water surrounding the catch basin?**	☐ Yes ☐ No
3	**Check the collar for structural integrity. Are there any abnormalities?**	☐ Yes ☐ No
4	**Are any of the hooks or chains: bent, broken, or missing?**	☐ Yes ☐ No
5	**Check the filter enclosure for structural integrity. Is there any damage to the enclosure?**	☐ Yes ☐ No
6	**Is there any damage to the filter screen?**	☐ Yes ☐ No
7	**Is there trash and debris, and sediment accumulated in the filter? If so, document the qty. If yes, then must be removed as part of the maintenance plan.**	☐ Yes ☐ No

8	**Is there a black or oily sheen on top of the Smart Pak®? (if included). If yes, then media must be replaced as part of maintenance plan.**	☐ Yes ☐ No
9	**Is there standing water inside the catch basin?**	☐ Yes ☐ No
10	**Do you observe any mosquitos? If yes, contact vector control as per local guidelines.**	☐ Yes ☐ No

7.2 Maintenance Report

No.	Maintenance Activity	Date
1	Set up appropriate safety equipment and put on safety gear.	
2	Collect and remove trash, debris, etc. surrounding the catch basin and on the grate.	
3	Remove the trash, debris, and sediment from the filter using a vacuum hose, or by hand	
4	Repair or replace damaged or deteriorated structural components such as collar, chains, hooks, or enclosure.	
5	Remove obstructions from filter screen.	
6	Remove the spent media and replace with new media.	
7	Conduct O+M procedures as needed for any instrumentation, valves, and other devices. Repair or replace as needed.	
8	Notify agency or owner representative.	

8.0 Warranty

AbTech Industries, Inc. (AbTech) warrants to buyer that the Ultra-Urban Filter Chester Stainless Steel Filter ("UUF Chester") shall materially conform to the description in AbTech's product documentation as of the sale date and shall be free from defects in material and workmanship for twenty (20) years from the date of purchase as referenced by the sales order number printed on the Chester UUF or by invoice. This warranty is transferable and is conditioned on: (a) the UUF Chester being properly installed and maintained at least semi-annually from the time of installation, (b) no unauthorized repairs or alterations having been made to the UUF Chester, (c) buyer not being in default on any contractual obligation for the UUF Chester, (d) any warranty claim being provided to AbTech in writing within thirty (30) days of buyer's identification of the suspected defect. This warranty specifically excludes coverage of any damage caused by circumstances beyond the control of the party affected, including without limitation acts of God, fire, vandalism, natural disaster, chemical action, abrasive material, misuse, explosion, war, action or demand of governmental authority, injunction, or labor strikes, or improper or unauthorized installation or repairs.

This warranty does not apply to (i) any consumable or wearable parts used in conjunction with the UUF Chester, or other parts which are designed to diminish or wear over time, (eg SmartPaks); or (ii) damage caused by use with a third-party component or product that is not provided by AbTech. The warranties set forth herein are AbTech's sole and exclusive warranties and are in lieu of all other warranties, remedies, and conditions, whether oral, written statutory, express or implied. AbTech disclaims all statutory and implied warranties, including without limitation, warranties of merchantability, fitness for a particular purpose and non-infringement.

If AbTech responds to a claim from buyer under this warranty, and it is later determined that the claim is not, in fact, covered by this warranty, buyer shall pay AbTech its then customary charges for any repair or replacement made by AbTech. IN NO EVENT WILL ABTECH BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, SUCH AS, BY WAY OF EXAMPLE AND NOT LIMITATION, LOSS OF REVENUES, BUSINESS OPPORTUNITIES OR GOODWILL, ARISING OUT OF OR IN CONNECTION WITH THE INFRASTRUCTURE SLEEVE, HOWSOEVER CAUSED, WHETHER OR NOT BUYER HAS BEEN ADVISED, KNEW OR SHOULD HAVE KNOWN OF THE POSSIBILITY OF SUCH DAMAGES.

Stormwater Management Report

Prepared for:

Daniel Kolich

1911 Summer St

Stamford, CT 06905

March 28, 2022

Revision 1: March 1, 2024

Prepared by:

Ahneman Kirby, LLC

1171 East Putnam Avenue

Riverside, Connecticut

Project Narrative

Property of Daniel Kolich
1911 Summer St, Stamford, CT 06903
March 1, 2024

A. GEOGRAPHICAL LOCATION AND DESCRIPTION

The subject parcel is located on the East side of Summer St, it is a corner lot located at the intersection of Summer St and 5th Street and has a lot area of 0.16 Acres. The topographic nature of the lot is fairly flat sloped from South to North. The property contains an existing dwelling, porch, parking lot, stone and asphalt walkways, with trees.

B. PURPOSE AND DESCRIPTION

This application package proposes a new 2397 ft^2 of a 4-story building addition containing 4 new townhouses and new curb cut with parking area on the parcel. The proposed building with the existing building footprint is 3,600 ft^2. The proposed parking area is 1579 ft^2 including 971 ft^2 of under building driveway (See Appendix A). The regrading of the lot keeps the topography of the site going from South to North at a rate of approximately 1% in the front and rear yards.

Drainage design was performed in accordance with the City of Stamford's Stormwater Drainage Manual, with a net zero increase in the rate of runoff for all events up to the 50 year storm. We proposed collecting runoff from the proposed building and parking area and treating it with Stamford's Stormwater Best Management Practices (BMP).

The area of the site being collected is in the rear yard. The stormwater will be collected by one (1) proposed catch basin in the proposed parking area. The storm drain piping conveys the stormwater from catch basin and the proposed building addition through roof leaders to twelve (12) Cultec 330XL recharger basins located under the proposed parking area. The outlet from the Cultecs will then be routed to a control outlet structure to control the discharge rate. From the controlled outlet the runoff is directed to an existing Stamford Manhole located at the 5th Street (See Plans).

C. SOIL EVALUATION

The soils within the site below the surface are 100% Type D per the USDA Natural Resource Conservation Service and are depicted on the soils map located in Appendix B of this report as follows:

- Urban land (map unit symbol 307)

Refer to Appendix B for USDA Soils Engineering Properties.

D. PRE & POST DEVELOPMENT SITE HYDROLOGY COMPARISON

The proposed development increases the impervious coverage for the watershed but will decrease peak flows to all points of concern. A series of roof leader downspouts and catch basin will pick up the runoff from the newly introduced impervious surfaces. The proposed grades slope towards the same location as the existing grades making for

a straight forward comparison of pre and post development hydrology at the common Points of Interest.

Refer to Table 1 & 2 for a comparison of peak flow rates for the existing and proposed site conditions at point of interest A and point of interest B, respectively. The peak runoff to all points of concern has a zero increase for the 1, 2, 5, 10, 25, and 50 year storms. Based on the above information, the proposed improvements are designed in accordance with the City of Stamford Stormwater Drainage Manual and will not adversely impact adjacent or downstream properties or City-owned drainage facilities.

Table 1: Comparison of Existing and Proposed Peak Flow Rates for Point of Interest A

1911 Summer St, Stamford, CT - P.O.I "A"						
Existing / Proposed Stormwater Runoff Data Comparison Chart						
STORM EVENT	POINT OF INTEREST	Flow/Volume	EXISTING	PROPOSED	Δ	Δ (%)
1 YEAR	TOTAL FLOW P.O.I. A	q(ft^3/s)	0.17	0.14	-0.03	-17.65%
2 YEAR		q(ft^3/s)	0.21	0.18	-0.03	-14.29%
5 YEAR		q(ft^3/s)	0.29	0.25	-0.04	-13.79%
10 YEAR		q(ft^3/s)	0.36	0.30	-0.06	-16.67%
25 YEAR		q(ft^3/s)	0.48	0.40	-0.08	-16.67%
50 YEAR		q(ft^3/s)	0.58	0.49	-0.09	-15.52%
100 YEAR		q(ft^3/s)	0.71	0.60	-0.11	-15.49%

Table 2: Comparison of Existing and Proposed Peak Flow Rates for Point of Interest B

1911 Summer St, Stamford, CT - P.O.I "B"						
Existing / Proposed Stormwater Runoff Data Comparison Chart						
STORM EVENT	POINT OF INTEREST	Flow/Volume	EXISTING	PROPOSED	Δ	Δ (%)
1 YEAR	TOTAL FLOW P.O.I. B	q(ft^3/s)	0.16	0.02	-0.14	-87.50%
2 YEAR		q(ft^3/s)	0.19	0.03	-0.16	-84.21%
5 YEAR		q(ft^3/s)	0.25	0.05	-0.20	-80.00%
10 YEAR		q(ft^3/s)	0.29	0.06	-0.23	-79.31%
25 YEAR		q(ft^3/s)	0.37	0.16	-0.21	-56.76%
50 YEAR		q(ft^3/s)	0.44	0.25	-0.19	-43.18%
100 YEAR		q(ft^3/s)	0.53	0.59	0.06	11.32%

E. ALTERNATIVES CONSIDERED

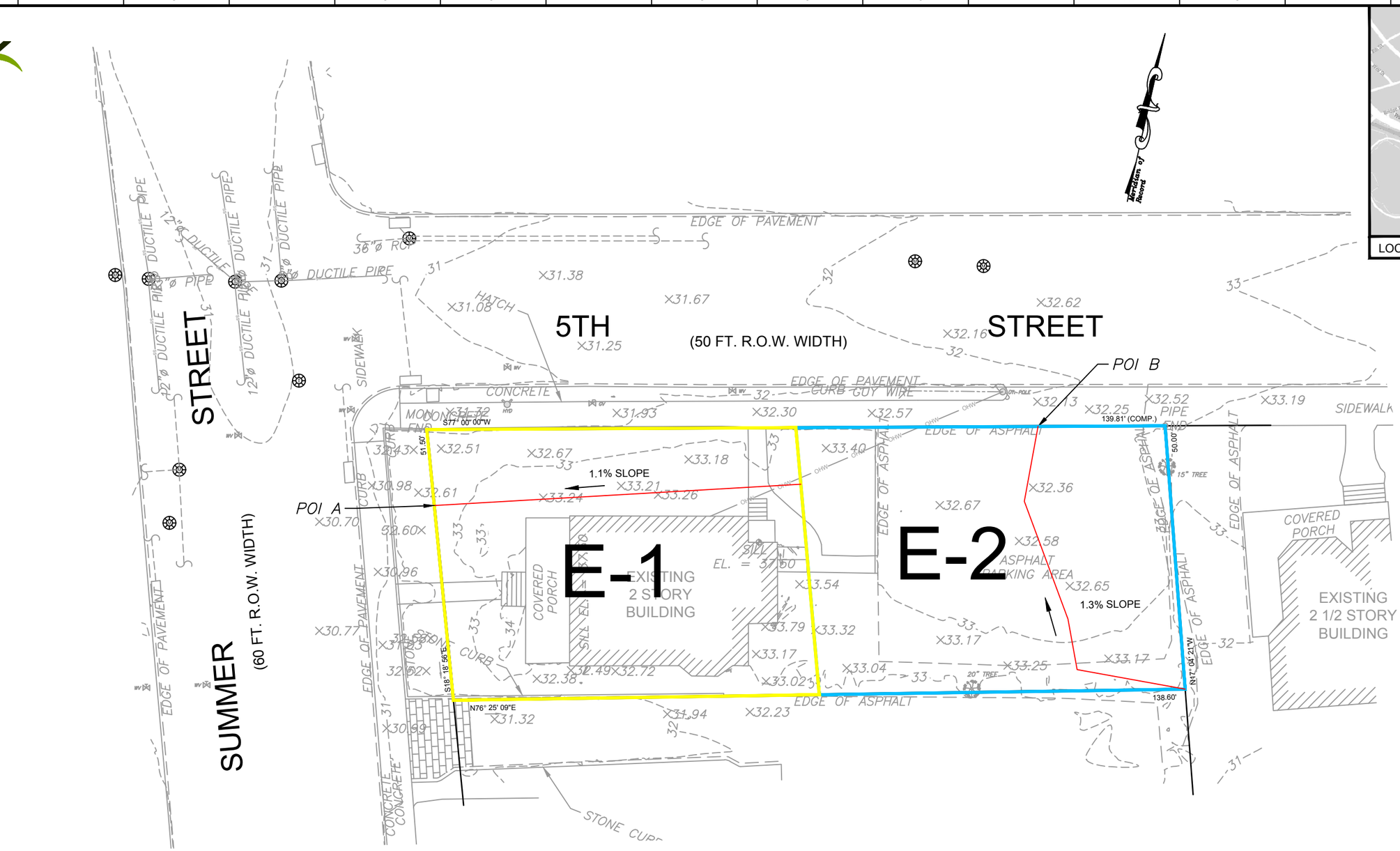
The alternatives considered included drywells collecting runoff from catch basins in the driveway and Cultecs installed under the lawn in the front yard collecting the front portion of the existing building. A level spreader discharge point was also considered.

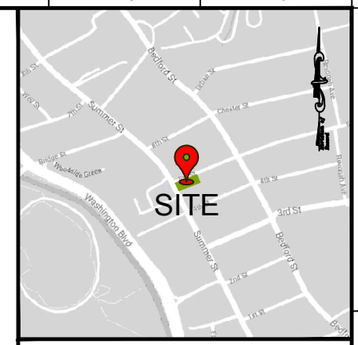
The drywells were discarded due to their limited capacity.

The Cultecs in the front yard were discarded due to limiting the area of disturbance to the rear yard where the other work will be taking place.

The level spreader was discarded due to space limitations on site and it would introduce a concentrated surface discharge point.

Appendix A Impervious Coverage Pre & Post Development





Part of LOT No. 1 (R.M. No. 64 SLR)

Lot Area = 7043.27 Sq. Ft. (0.16 Ac.)

GRAPHIC SCALE :

20 0 20

FEET

REV. #:	REV. DESCRIPTION:	DATE:

AHNEMAN KIRBY
ENGINEERS•SURVEYORS•PLANNERS
SINCE 1871

1171 East Putnam Avenue, Riverside, CT 06878
Tel: 203.869.7707 • Fax: 203.869.4606
www.ahnemankirby.com

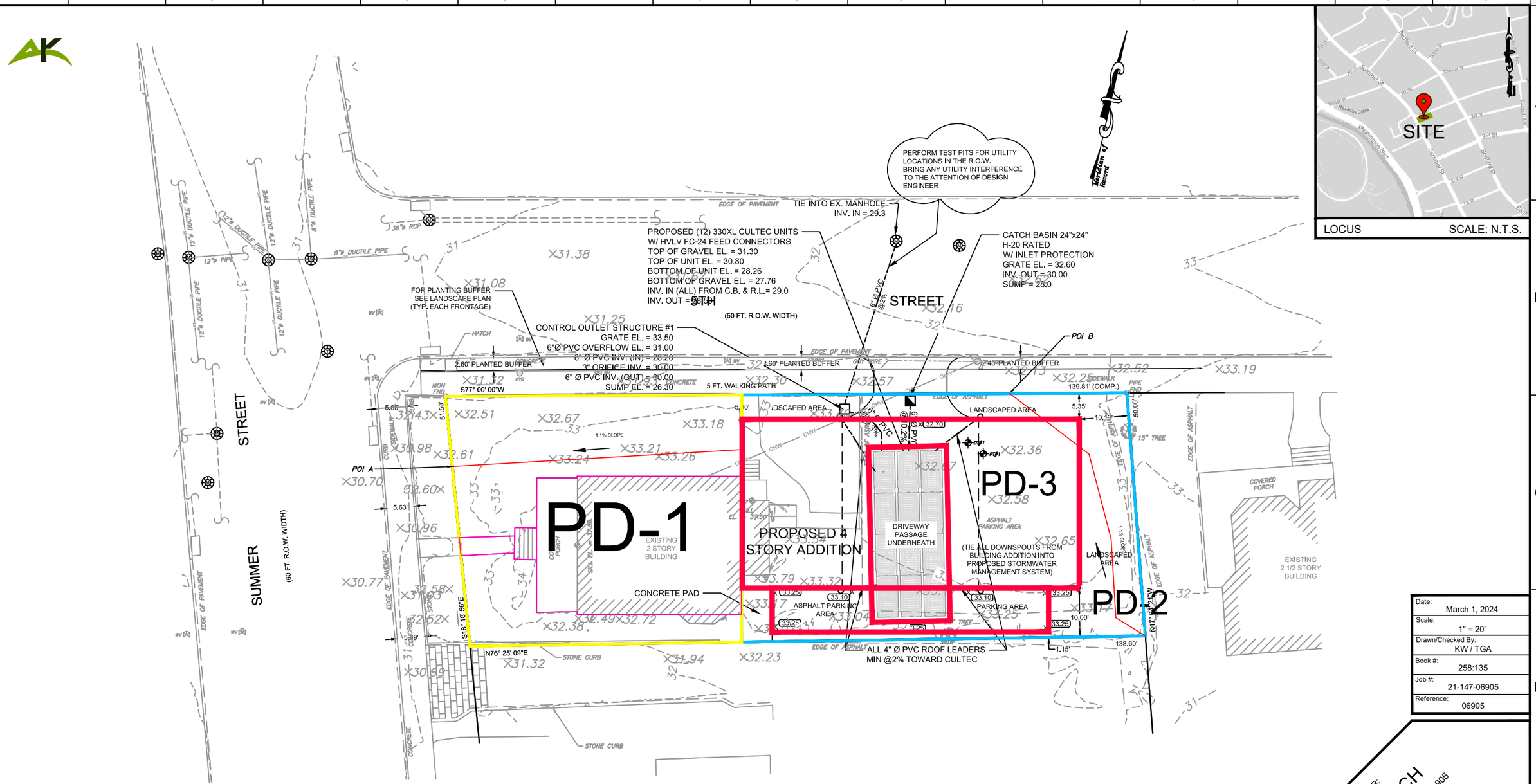
Date:	March 28, 2022
Scale:	1" = 20'
Drawn/Checked By:	KW / TGA
Book #:	258:135
Job #:	21-147-06905
Reference:	06905

PREPARED FOR:
DANIEL KOLICH
1911 Summer Street, Stamford, CT 06905
(Tax ID: 001-5245)

EXISTING
WATERSHED MAP

EW-1

C:\Users\keithwerner\Ahneman Kirby Dropbox\Keith Werner\gshare\AKL_project\1911 Summer St 06905 Kolich 21-147-06905\EngineeringHydrology\1911 Summer St Existing Watershed.dwg 03/28/22 - 2:07pm keithwerner



Part of LOT No. 1 (R.M. No. 64 SLR)

Lot Area = 7043.27 Sq. Ft. (0.16 Ac.)

GRAPHIC SCALE :

20 0 20

FEET

REV. #:	REV. DESCRIPTION:	DATE:
5	REVISED DRAINAGE	03/01/2024
1	REVISED BUILDING	07/24/2023

AHNEMAN KIRBY
ENGINEERS•SURVEYORS•PLANNERS
SINCE 1871
1171 East Putnam Avenue, Riverside, CT 06878
Tel: 203.869.7707 • Fax: 203.869.4606
www.ahnemankirby.com

Date:	March 1, 2024
Scale:	1" = 20'
Drawn/Checked By:	KW / TGA
Book #:	258:135
Job #:	21-147-06905
Reference:	06905

PREPARED FOR:
DANIEL KOLICH
1911 Summer Street, Stamford, CT 06905
(Tax ID: 001-5245)

PROPOSED WATERSHED MAP

PW-1

Appendix B USDA Soils Engineering Properties

Hydrologic Soil Group—State of Connecticut
(1911 Summer St)

Map Scale: 1:262 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 3 7 14 21

Feet
0 10 20 40 60

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

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: State of Connecticut
Survey Area Data: Version 21, Sep 7, 2021

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

Date(s) aerial images were photographed: Oct 4, 2020—Oct 31, 2020

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
307	Urban land	D	0.2	100.0%
Totals for Area of Interest			**0.2**	**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.

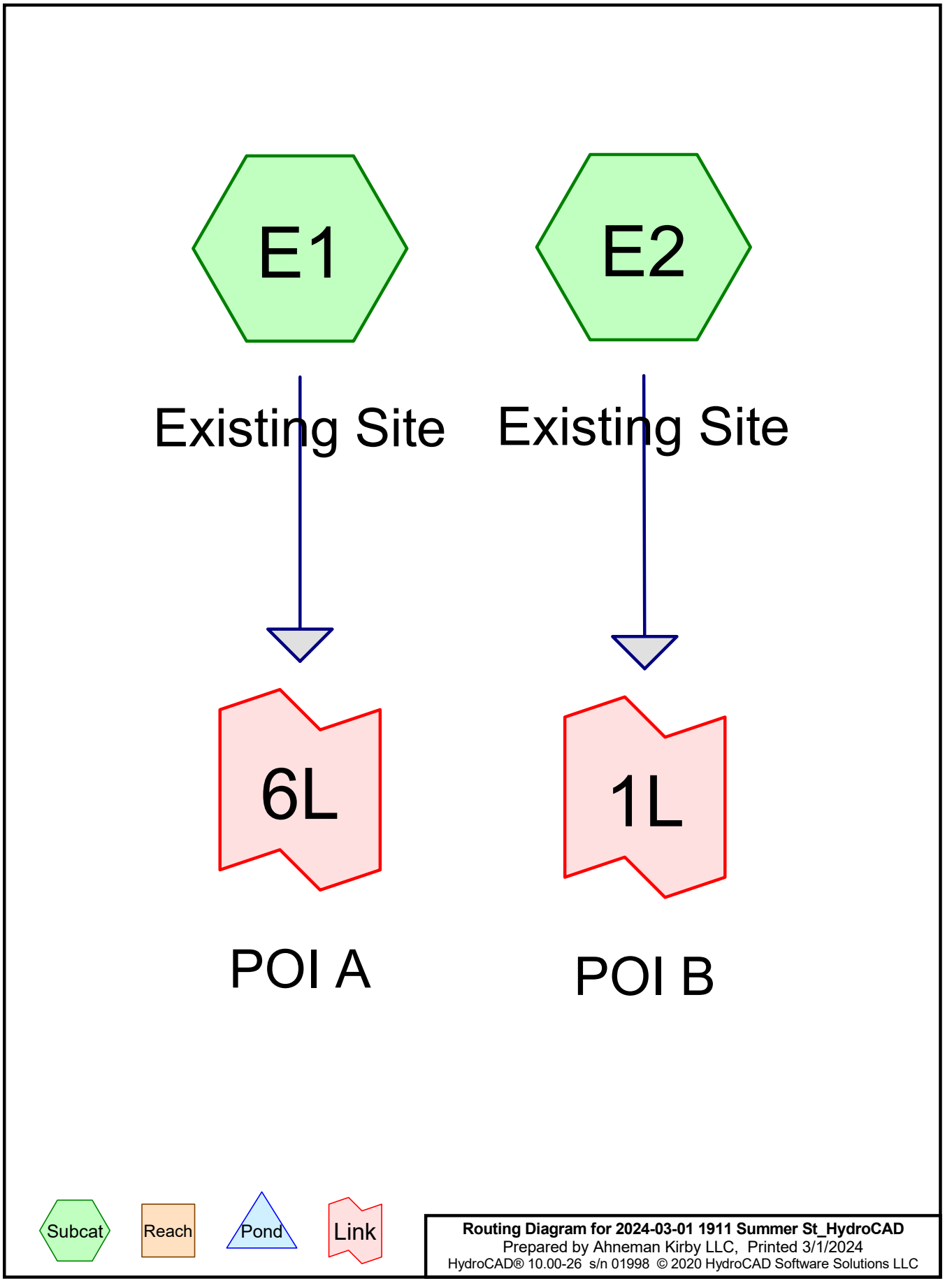
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Appendix C HydroCAD Pre & Post Development Calculations



Routing Diagram for 2024-03-01 1911 Summer St_HydroCAD
Prepared by Ahneman Kirby LLC, Printed 3/1/2024
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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
2,042	80	>75% Grass cover, Good, HSG D (E1)
1,273	98	Existing Dwelling (E1)
2,413	98	Existing Partial Driveway (E2)
288	98	Existing Walkways (E1, E2)
6,016	**92**	**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	2,042	0	2,042	>75% Grass cover, Good	
0	0	0	0	1,273	1,273	Existing Dwelling	
0	0	0	0	2,413	2,413	Existing Partial Driveway	
0	0	0	0	288	288	Existing Walkways	
0	**0**	**0**	**2,042**	**3,974**	**6,016**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>1.73"
Tc=5.0 min CN=88 Runoff=0.17 cfs 511 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>2.67"
Tc=5.0 min CN=98 Runoff=0.16 cfs 549 cf

Link 1L: POI B Inflow=0.16 cfs 549 cf
Primary=0.16 cfs 549 cf

Link 6L: POI A Inflow=0.17 cfs 511 cf
Primary=0.17 cfs 511 cf

Total Runoff Area = 6,016 sf Runoff Volume = 1,060 cf Average Runoff Depth = 2.11"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>2.18"
Tc=5.0 min CN=88 Runoff=0.21 cfs 643 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>3.16"
Tc=5.0 min CN=98 Runoff=0.19 cfs 651 cf

Link 1L: POI B Inflow=0.19 cfs 651 cf
Primary=0.19 cfs 651 cf

Link 6L: POI A Inflow=0.21 cfs 643 cf
Primary=0.21 cfs 643 cf

Total Runoff Area = 6,016 sf Runoff Volume = 1,294 cf Average Runoff Depth = 2.58"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>3.01"
Tc=5.0 min CN=88 Runoff=0.29 cfs 888 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>4.06"
Tc=5.0 min CN=98 Runoff=0.25 cfs 836 cf

Link 1L: POI B Inflow=0.25 cfs 836 cf
Primary=0.25 cfs 836 cf

Link 6L: POI A Inflow=0.29 cfs 888 cf
Primary=0.29 cfs 888 cf

Total Runoff Area = 6,016 sf Runoff Volume = 1,724 cf Average Runoff Depth = 3.44"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>3.76"
Tc=5.0 min CN=88 Runoff=0.36 cfs 1,111 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>4.86"
Tc=5.0 min CN=98 Runoff=0.29 cfs 1,000 cf

Link 1L: POI B Inflow=0.29 cfs 1,000 cf
Primary=0.29 cfs 1,000 cf

Link 6L: POI A Inflow=0.36 cfs 1,111 cf
Primary=0.36 cfs 1,111 cf

Total Runoff Area = 6,016 sf Runoff Volume = 2,112 cf Average Runoff Depth = 4.21"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>6.17"
Tc=5.0 min CN=88 Runoff=0.58 cfs 1,824 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>7.36"
Tc=5.0 min CN=98 Runoff=0.44 cfs 1,514 cf

Link 1L: POI B Inflow=0.44 cfs 1,514 cf
Primary=0.44 cfs 1,514 cf

Link 6L: POI A Inflow=0.58 cfs 1,824 cf
Primary=0.58 cfs 1,824 cf

Total Runoff Area = 6,016 sf Runoff Volume = 3,338 cf Average Runoff Depth = 6.66"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>7.64"
Tc=5.0 min CN=88 Runoff=0.71 cfs 2,258 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>8.85"
Tc=5.0 min CN=98 Runoff=0.53 cfs 1,822 cf

Link 1L: POI B Inflow=0.53 cfs 1,822 cf
Primary=0.53 cfs 1,822 cf

Link 6L: POI A Inflow=0.71 cfs 2,258 cf
Primary=0.71 cfs 2,258 cf

Total Runoff Area = 6,016 sf Runoff Volume = 4,080 cf Average Runoff Depth = 8.14"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	2,042	0	2,042	>75% Grass cover, Good	
0	0	0	0	1,273	1,273	Existing Dwelling	
0	0	0	0	2,413	2,413	Existing Partial Driveway	
0	0	0	0	288	288	Existing Walkways	
0	**0**	**0**	**2,042**	**3,974**	**6,016**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 E1: Existing Site Runoff Area=3,546 sf 42.41% Impervious Runoff Depth>5.01"
Tc=5.0 min CN=88 Runoff=0.48 cfs 1,480 cf

Subcatchment E2: Existing Site Runoff Area=2,470 sf 100.00% Impervious Runoff Depth>6.16"
Tc=5.0 min CN=98 Runoff=0.37 cfs 1,267 cf

Link 1L: POI B Inflow=0.37 cfs 1,267 cf
Primary=0.37 cfs 1,267 cf

Link 6L: POI A Inflow=0.48 cfs 1,480 cf
Primary=0.48 cfs 1,480 cf

Total Runoff Area = 6,016 sf Runoff Volume = 2,747 cf Average Runoff Depth = 5.48"
33.94% Pervious = 2,042 sf 66.06% Impervious = 3,974 sf

Summary for Subcatchment E1: Existing Site

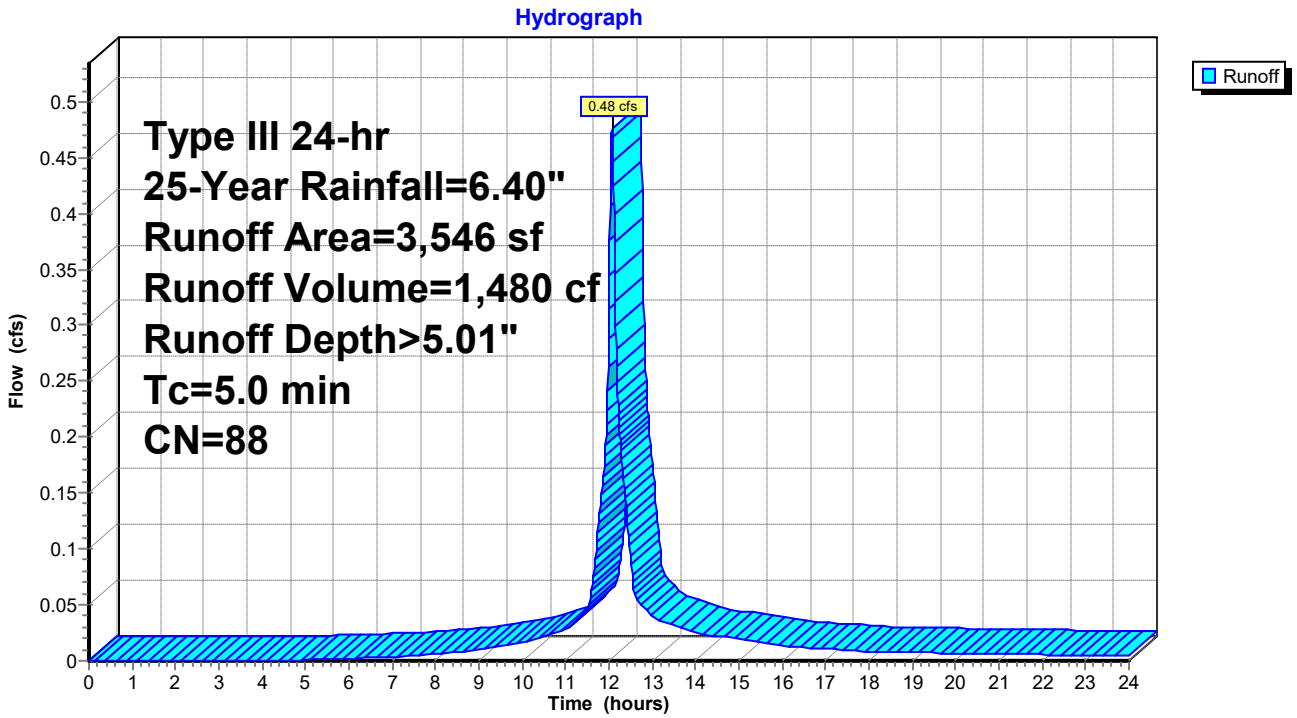
Runoff = 0.48 cfs @ 12.07 hrs, Volume= 1,480 cf, Depth> 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
*	1,273	98	Existing Dwelling
*	231	98	Existing Walkways
	2,042	80	>75% Grass cover, Good, HSG D
	3,546	88	Weighted Average
	2,042		57.59% Pervious Area
	1,504		42.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E1: Existing Site



Summary for Subcatchment E2: Existing Site

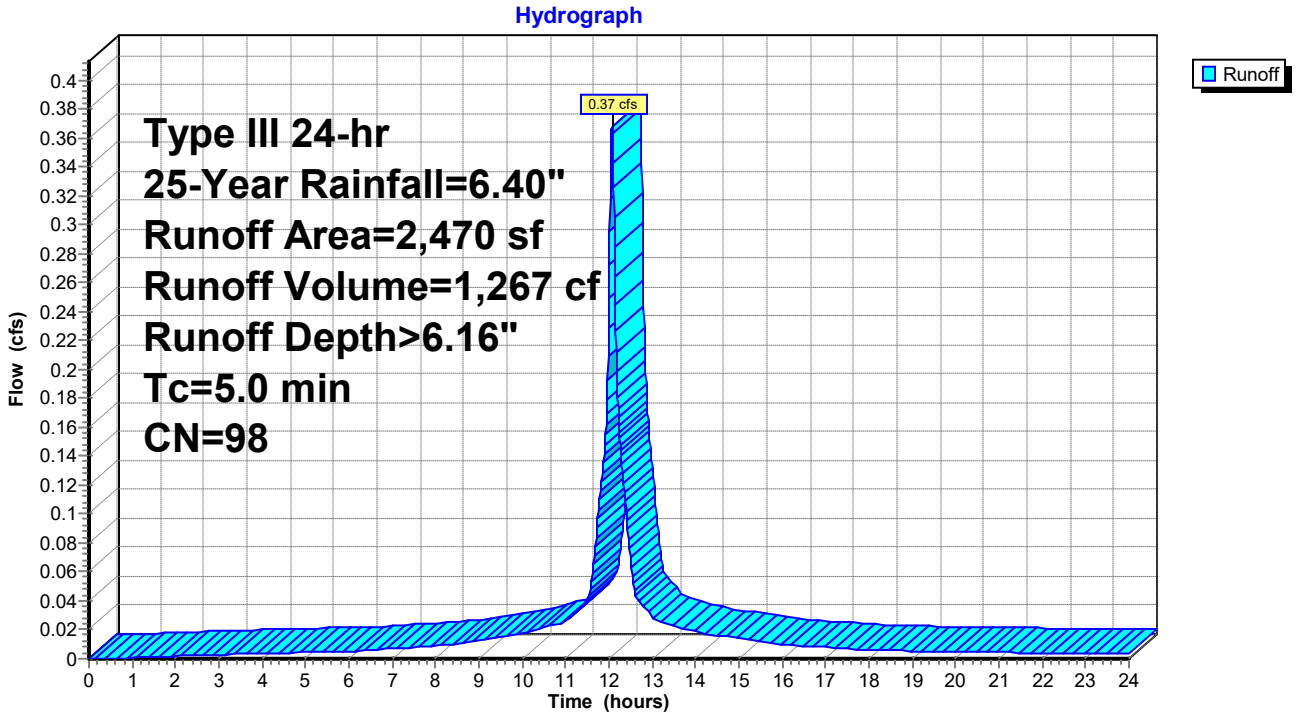
Runoff = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
*	2,413	98	Existing Partial Driveway
*	57	98	Existing Walkways
	2,470	98	Weighted Average
	2,470		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment E2: Existing Site

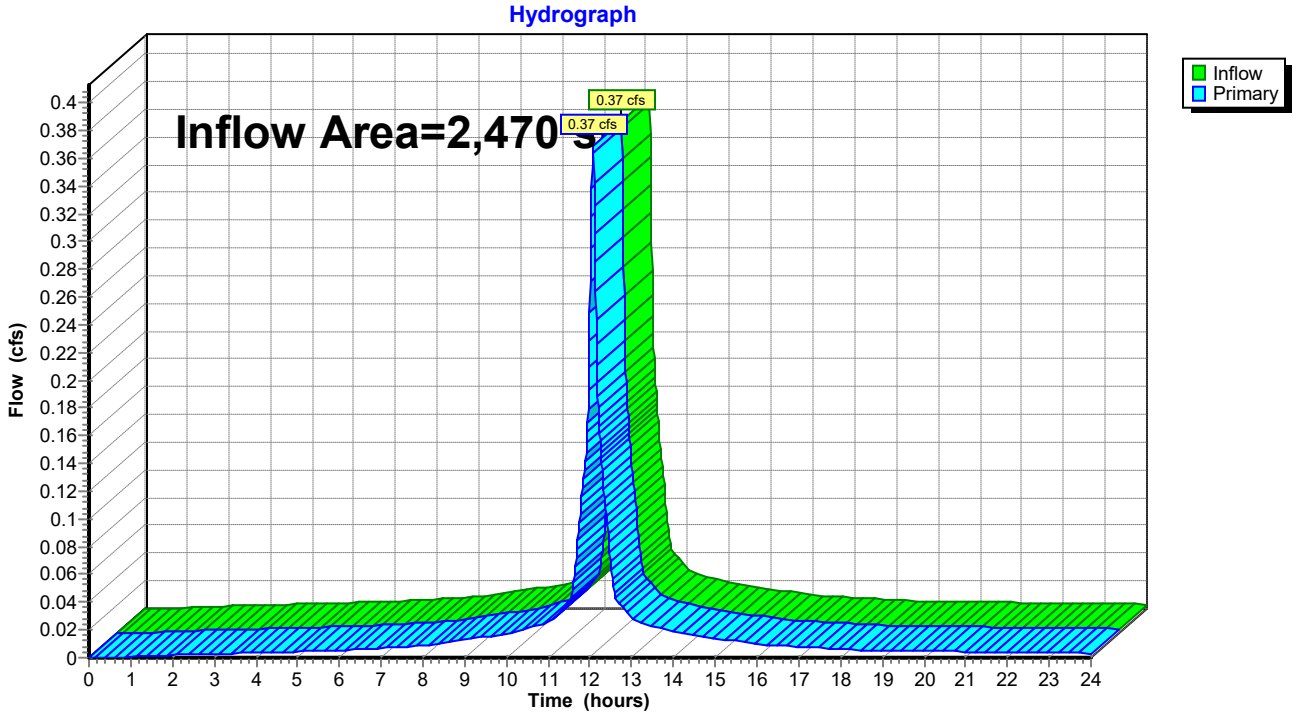


Summary for Link 1L: POI B

Inflow Area = 2,470 sf,100.00% Impervious, Inflow Depth > 6.16" for 25-Year event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf
Primary = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: POI B

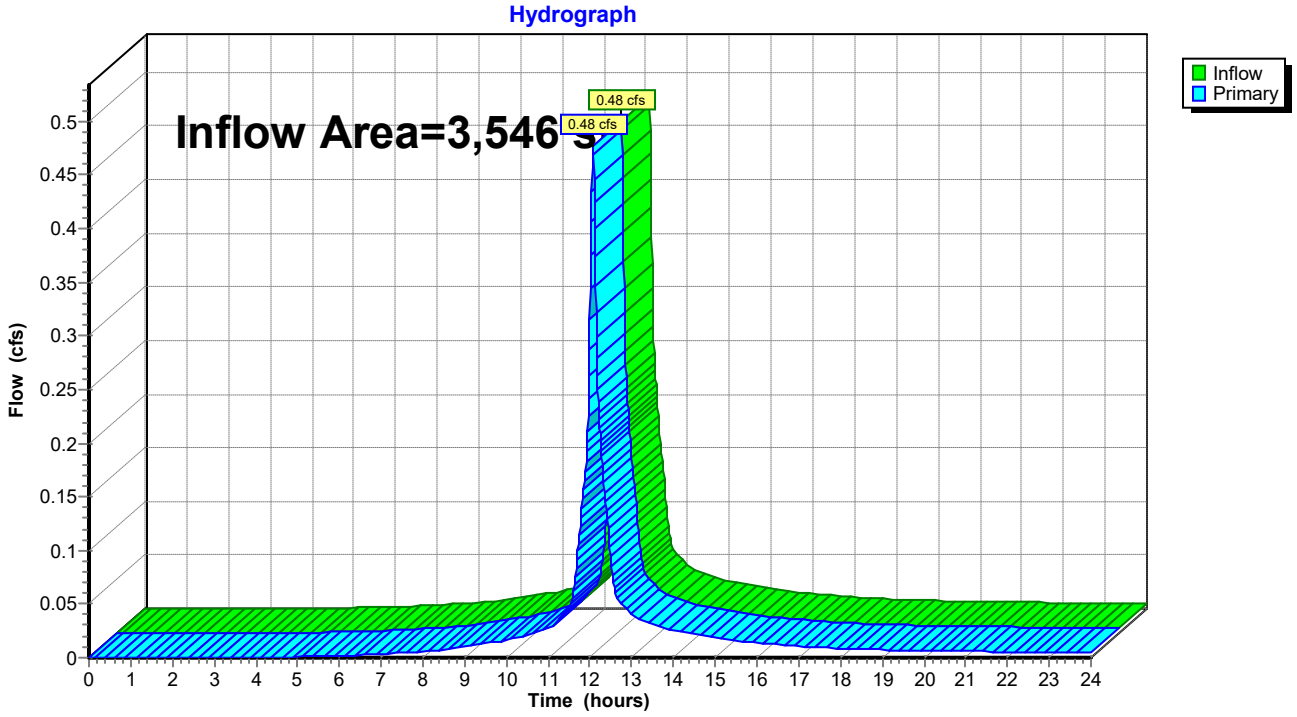


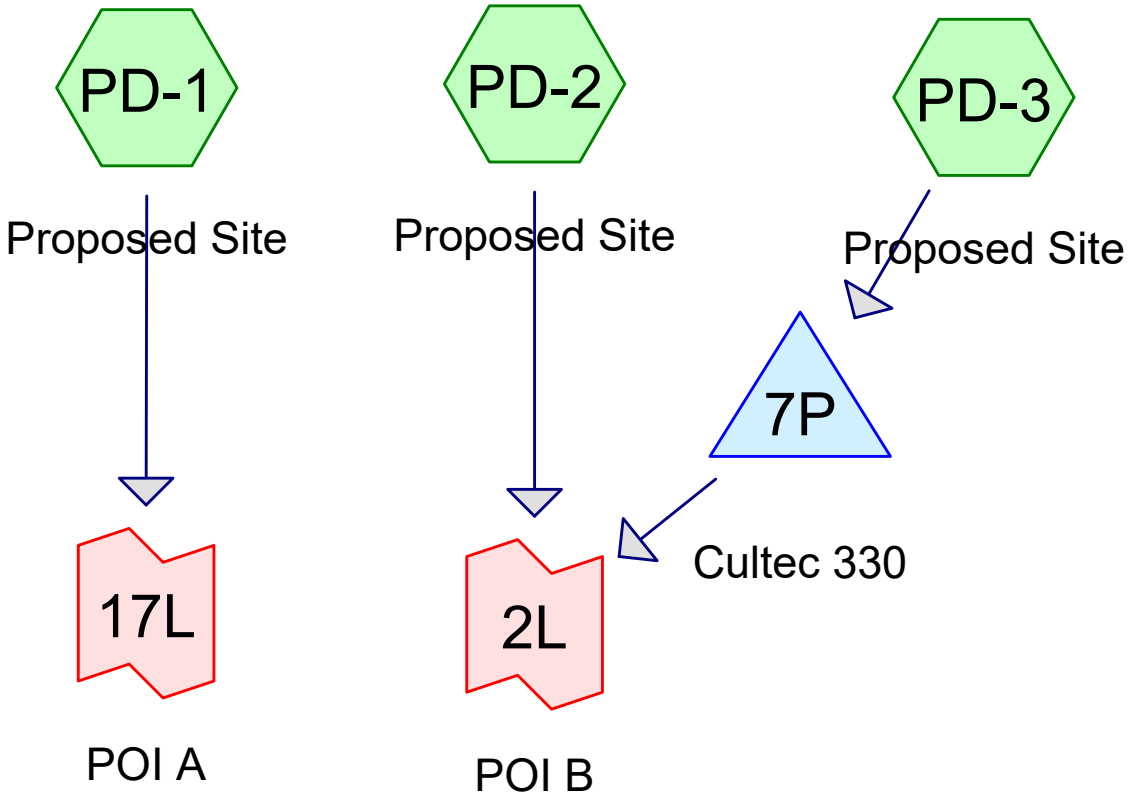
Summary for Link 6L: POI A

Inflow Area = 3,546 sf, 42.41% Impervious, Inflow Depth > 5.01" for 25-Year event
Inflow = 0.48 cfs @ 12.07 hrs, Volume= 1,480 cf
Primary = 0.48 cfs @ 12.07 hrs, Volume= 1,480 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 6L: POI A





Subcat Reach Pond Link

Routing Diagram for 2024-03-01 1911 Summer St_HydroCAD
Prepared by Ahneman Kirby LLC, Printed 3/1/2024

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
2,426	80	>75% Grass cover, Good, HSG D (PD-1, PD-2)
1,184	98	Existing Dwelling (PD-1)
70	98	Existing Walkways (PD-1)
607	98	Proposed Driveway (PD-3)
2,397	98	Proposed Partial Building (PD-3)
67	98	Proposed walkway (PD-3)
6,751	**92**	**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	2,426	0	2,426	>75% Grass cover, Good	
0	0	0	0	1,184	1,184	Existing Dwelling	
0	0	0	0	70	70	Existing Walkways	
0	0	0	0	607	607	Proposed Driveway	
0	0	0	0	2,397	2,397	Proposed Partial Building	
0	0	0	0	67	67	Proposed walkway	
0	**0**	**0**	**2,426**	**4,325**	**6,751**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>1.73"
Tc=5.0 min CN=88 Runoff=0.14 cfs 428 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>1.17"
Tc=5.0 min CN=80 Runoff=0.02 cfs 69 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>2.67"
Tc=5.0 min CN=98 Runoff=0.21 cfs 683 cf

Pond 7P: Cultec 330 Peak Elev=29.73' Storage=682 cf Inflow=0.21 cfs 683 cf
Outflow=0.00 cfs 0 cf

Link 2L: POI B Inflow=0.02 cfs 69 cf
Primary=0.02 cfs 69 cf

Link 17L: POI A Inflow=0.14 cfs 428 cf
Primary=0.14 cfs 428 cf

Total Runoff Area = 6,751 sf Runoff Volume = 1,180 cf Average Runoff Depth = 2.10"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>2.18"
Tc=5.0 min CN=88 Runoff=0.18 cfs 539 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>1.56"
Tc=5.0 min CN=80 Runoff=0.03 cfs 92 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>3.16"
Tc=5.0 min CN=98 Runoff=0.24 cfs 810 cf

Pond 7P: Cultec 330 Peak Elev=30.03' Storage=790 cf Inflow=0.24 cfs 810 cf
Outflow=0.00 cfs 20 cf

Link 2L: POI B Inflow=0.03 cfs 112 cf
Primary=0.03 cfs 112 cf

Link 17L: POI A Inflow=0.18 cfs 539 cf
Primary=0.18 cfs 539 cf

Total Runoff Area = 6,751 sf Runoff Volume = 1,441 cf Average Runoff Depth = 2.56"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>3.01"
Tc=5.0 min CN=88 Runoff=0.25 cfs 745 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>2.29"
Tc=5.0 min CN=80 Runoff=0.05 cfs 135 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>4.06"
Tc=5.0 min CN=98 Runoff=0.31 cfs 1,039 cf

Pond 7P: Cultec 330 Peak Elev=30.08' Storage=808 cf Inflow=0.31 cfs 1,039 cf
Outflow=0.01 cfs 249 cf

Link 2L: POI B Inflow=0.05 cfs 384 cf
Primary=0.05 cfs 384 cf

Link 17L: POI A Inflow=0.25 cfs 745 cf
Primary=0.25 cfs 745 cf

Total Runoff Area = 6,751 sf Runoff Volume = 1,919 cf Average Runoff Depth = 3.41"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>3.76"
Tc=5.0 min CN=88 Runoff=0.30 cfs 931 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>2.98"
Tc=5.0 min CN=80 Runoff=0.06 cfs 176 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>4.86"
Tc=5.0 min CN=98 Runoff=0.36 cfs 1,244 cf

Pond 7P: Cultec 330 Peak Elev=30.16' Storage=833 cf Inflow=0.36 cfs 1,244 cf
Outflow=0.04 cfs 452 cf

Link 2L: POI B Inflow=0.06 cfs 628 cf
Primary=0.06 cfs 628 cf

Link 17L: POI A Inflow=0.30 cfs 931 cf
Primary=0.30 cfs 931 cf

Total Runoff Area = 6,751 sf Runoff Volume = 2,351 cf Average Runoff Depth = 4.18"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>6.17"
Tc=5.0 min CN=88 Runoff=0.49 cfs 1,529 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>5.25"
Tc=5.0 min CN=80 Runoff=0.10 cfs 310 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>7.36"
Tc=5.0 min CN=98 Runoff=0.54 cfs 1,882 cf

Pond 7P: Cultec 330 Peak Elev=30.84' Storage=1,014 cf Inflow=0.54 cfs 1,882 cf
Outflow=0.20 cfs 1,088 cf

Link 2L: POI B Inflow=0.25 cfs 1,397 cf
Primary=0.25 cfs 1,397 cf

Link 17L: POI A Inflow=0.49 cfs 1,529 cf
Primary=0.49 cfs 1,529 cf

Total Runoff Area = 6,751 sf Runoff Volume = 3,721 cf Average Runoff Depth = 6.61"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>7.64"
Tc=5.0 min CN=88 Runoff=0.60 cfs 1,892 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>6.66"
Tc=5.0 min CN=80 Runoff=0.13 cfs 393 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>8.85"
Tc=5.0 min CN=98 Runoff=0.65 cfs 2,266 cf

Pond 7P: Cultec 330 Peak Elev=31.13' Storage=1,075 cf Inflow=0.65 cfs 2,266 cf
Outflow=0.49 cfs 1,469 cf

Link 2L: POI B Inflow=0.59 cfs 1,862 cf
Primary=0.59 cfs 1,862 cf

Link 17L: POI A Inflow=0.60 cfs 1,892 cf
Primary=0.60 cfs 1,892 cf

Total Runoff Area = 6,751 sf Runoff Volume = 4,551 cf Average Runoff Depth = 8.09"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	2,426	0	2,426	>75% Grass cover, Good	
0	0	0	0	1,184	1,184	Existing Dwelling	
0	0	0	0	70	70	Existing Walkways	
0	0	0	0	607	607	Proposed Driveway	
0	0	0	0	2,397	2,397	Proposed Partial Building	
0	0	0	0	67	67	Proposed walkway	
0	**0**	**0**	**2,426**	**4,325**	**6,751**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 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 PD-1: Proposed Site Runoff Area=2,972 sf 42.19% Impervious Runoff Depth>5.01"
Tc=5.0 min CN=88 Runoff=0.40 cfs 1,240 cf

Subcatchment PD-2: Proposed Site Runoff Area=708 sf 0.00% Impervious Runoff Depth>4.14"
Tc=5.0 min CN=80 Runoff=0.08 cfs 244 cf

Subcatchment PD-3: Proposed Site Runoff Area=3,071 sf 100.00% Impervious Runoff Depth>6.16"
Tc=5.0 min CN=98 Runoff=0.46 cfs 1,576 cf

Pond 7P: Cultec 330 Peak Elev=30.43' Storage=918 cf Inflow=0.46 cfs 1,576 cf
Outflow=0.13 cfs 782 cf

Link 2L: POI B Inflow=0.16 cfs 1,027 cf
Primary=0.16 cfs 1,027 cf

Link 17L: POI A Inflow=0.40 cfs 1,240 cf
Primary=0.40 cfs 1,240 cf

Total Runoff Area = 6,751 sf Runoff Volume = 3,060 cf Average Runoff Depth = 5.44"
35.94% Pervious = 2,426 sf 64.06% Impervious = 4,325 sf

Summary for Subcatchment PD-1: Proposed Site

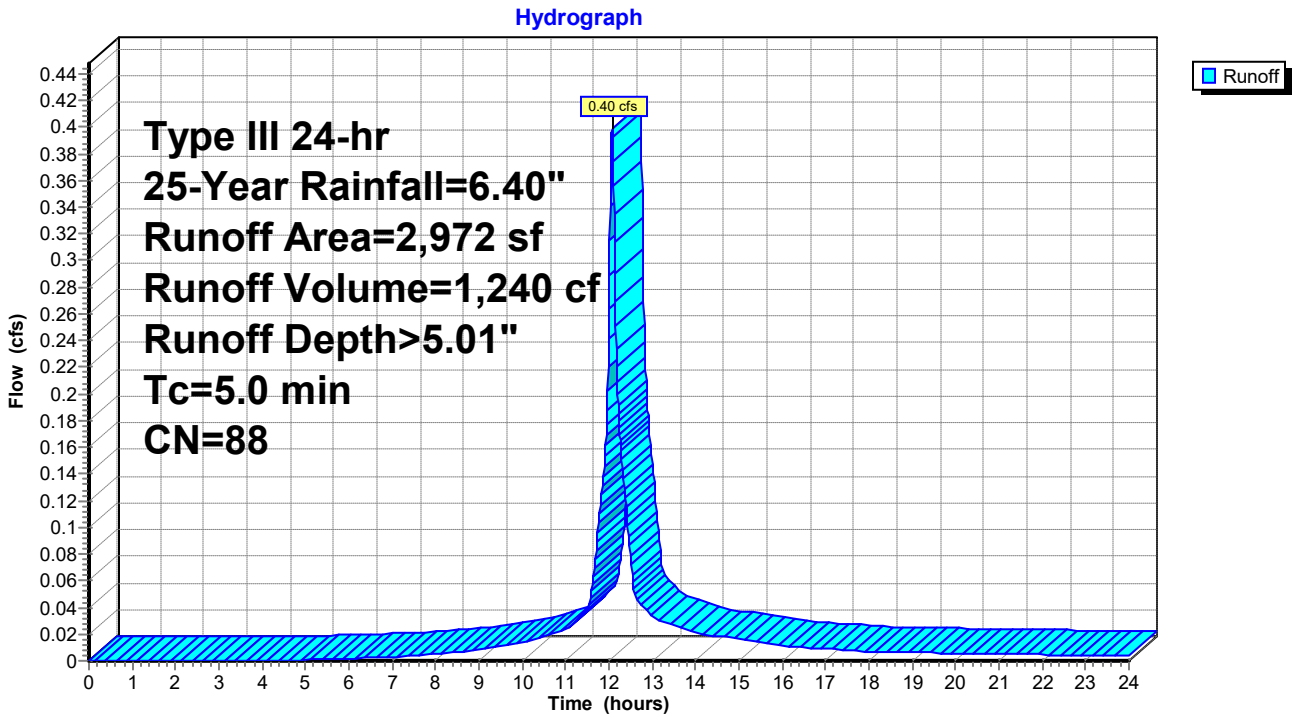
Runoff = 0.40 cfs @ 12.07 hrs, Volume= 1,240 cf, Depth> 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
*	1,184	98	Existing Dwelling
*	70	98	Existing Walkways
	1,718	80	>75% Grass cover, Good, HSG D
	2,972	88	Weighted Average
	1,718		57.81% Pervious Area
	1,254		42.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PD-1: Proposed Site



Summary for Subcatchment PD-2: Proposed Site

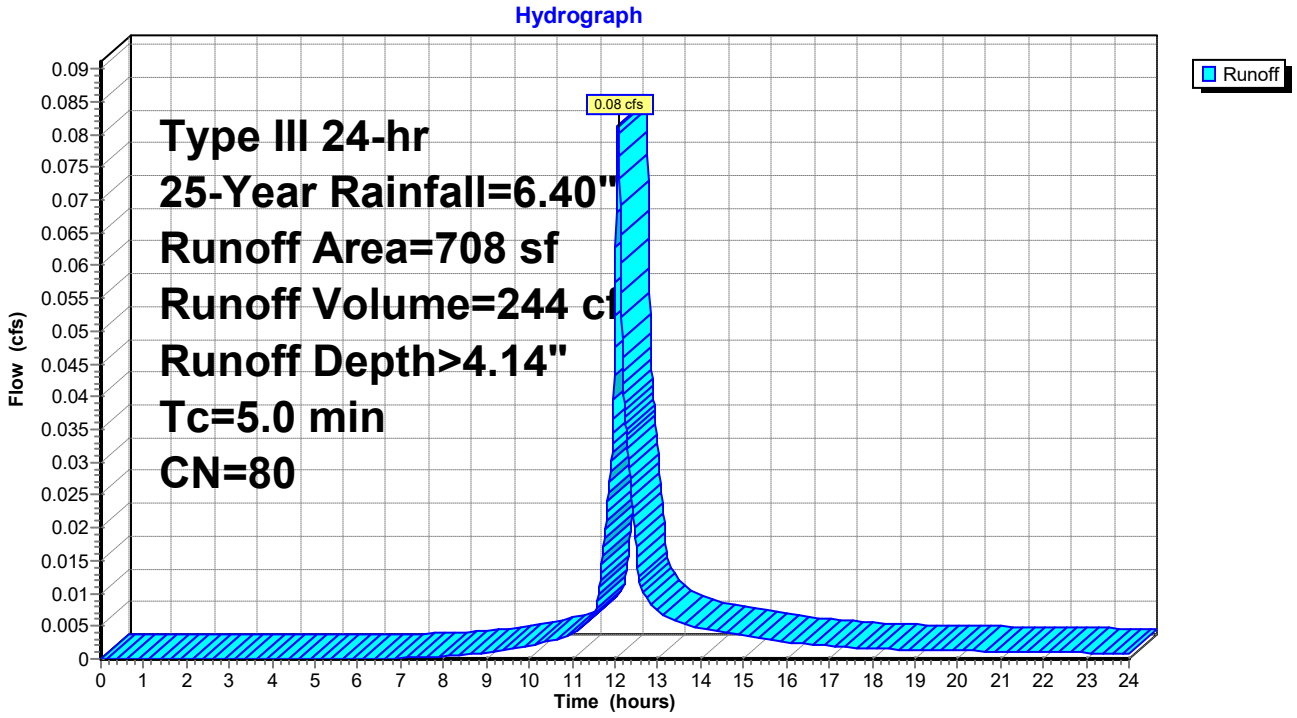
Runoff = 0.08 cfs @ 12.07 hrs, Volume= 244 cf, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.40"

Area (sf)	CN	Description
708	80	>75% Grass cover, Good, HSG D
708		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PD-2: Proposed Site



Summary for Subcatchment PD-3: Proposed Site

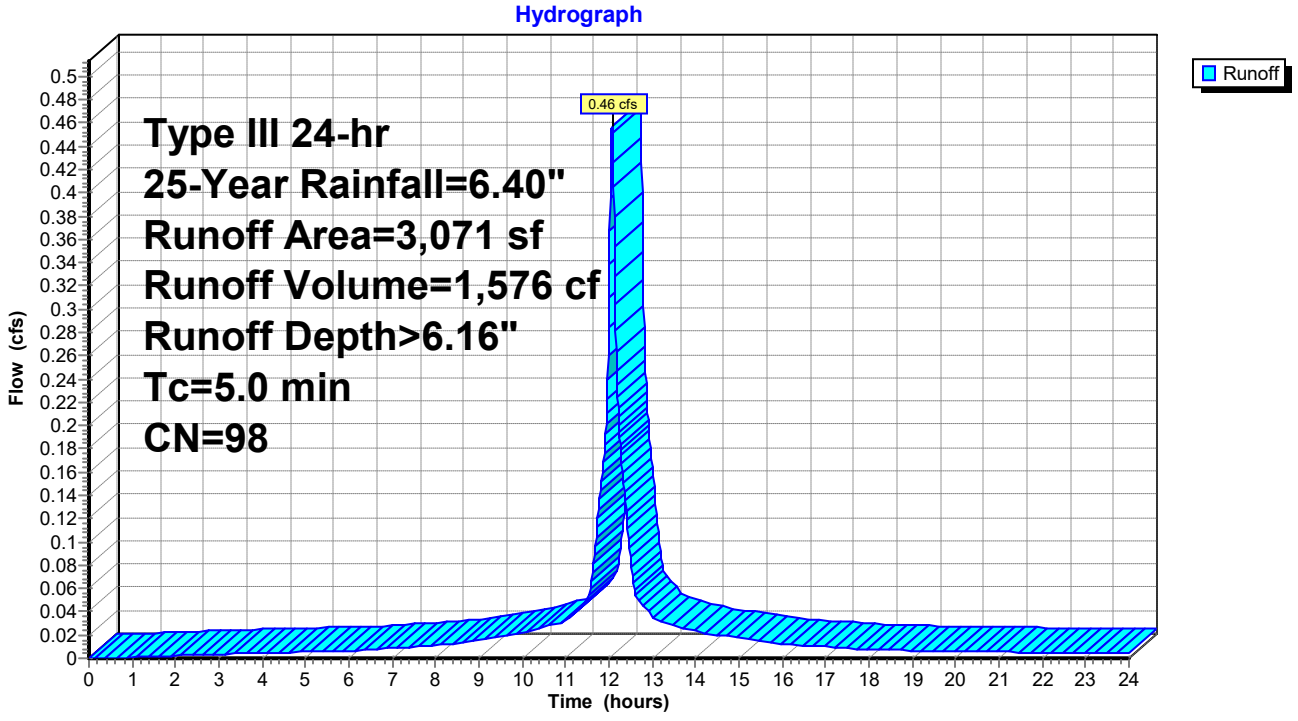
Runoff = 0.46 cfs @ 12.07 hrs, Volume= 1,576 cf, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.40"

	Area (sf)	CN	Description
*	2,397	98	Proposed Partial Building
*	607	98	Proposed Driveway
*	67	98	Proposed walkway
	3,071	98	Weighted Average
	3,071		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PD-3: Proposed Site



Summary for Pond 7P: Cultec 330

Inflow Area = 3,071 sf,100.00% Impervious, Inflow Depth > 6.16" for 25-Year event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 1,576 cf
Outflow = 0.13 cfs @ 12.39 hrs, Volume= 782 cf, Atten= 71%, Lag= 18.9 min
Primary = 0.13 cfs @ 12.39 hrs, Volume= 782 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 30.43' @ 12.39 hrs Surf.Area= 508 sf Storage= 918 cf

Plug-Flow detention time= 279.3 min calculated for 782 cf (50% of inflow)
Center-of-Mass det. time= 147.0 min (889.9 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	27.76'	460 cf	**11.17'W x 45.50'L x 3.54'H Field A** 1,799 cf Overall - 648 cf Embedded = 1,151 cf x 40.0% Voids
#2A	28.26'	648 cf	**Cultec R-330XLHD** x 12 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,109 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	30.00'	**6.0" Vert. 6" Outlet** C= 0.600
#2	Device 1	30.00'	**3.0" Vert. 3" Orifice** C= 0.600
#3	Device 1	31.00'	**6.0" Horiz. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.13 cfs @ 12.39 hrs HW=30.43' (Free Discharge)
└**1=6" Outlet** (Passes 0.13 cfs of 0.40 cfs potential flow)
  ├**2=3" Orifice** (Orifice Controls 0.13 cfs @ 2.66 fps)
  └**3=6" Overflow** (Controls 0.00 cfs)

Pond 7P: Cultec 330 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

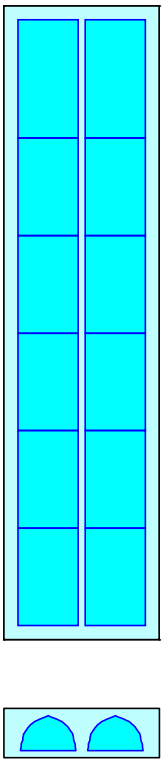
6 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 43.50' Row Length +12.0" End Stone x 2 = 45.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

12 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 648.2 cf Chamber Storage

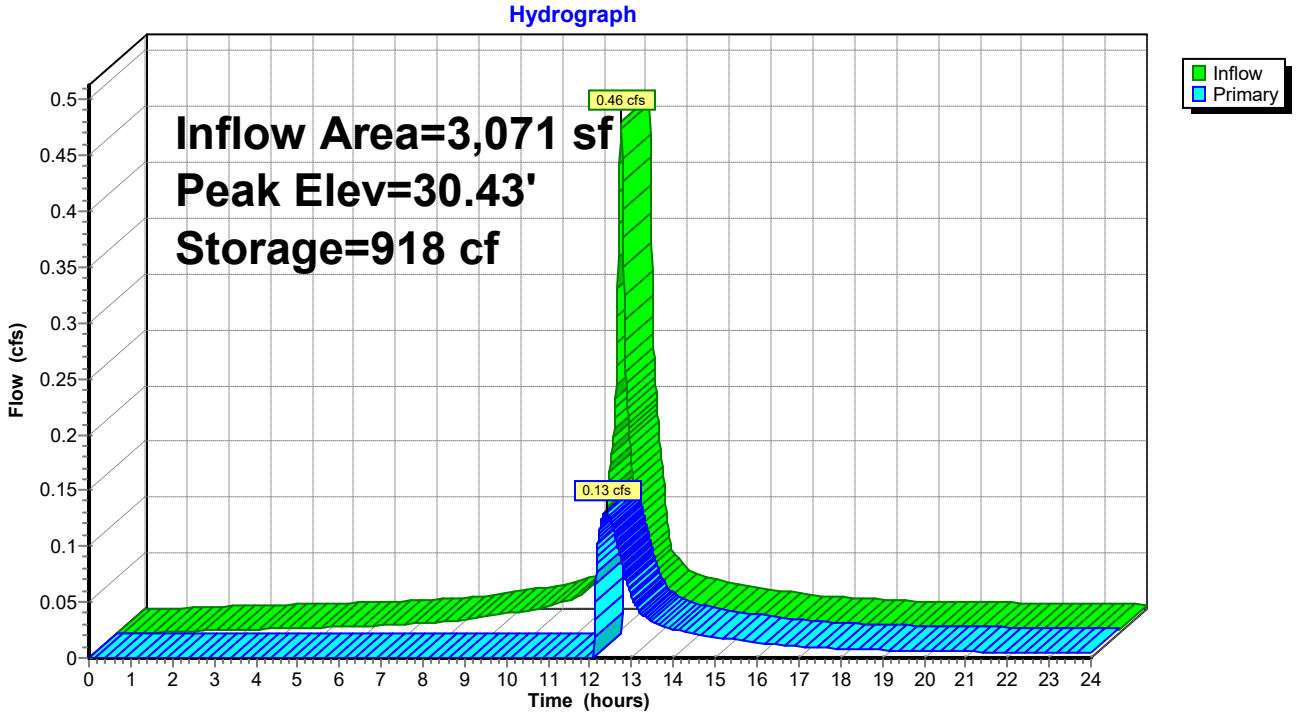
1,799.5 cf Field - 648.2 cf Chambers = 1,151.2 cf Stone x 40.0% Voids = 460.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,108.7 cf = 0.025 af
Overall Storage Efficiency = 61.6%
Overall System Size = 45.50' x 11.17' x 3.54'

12 Chambers
66.6 cy Field
42.6 cy Stone



Pond 7P: Cultec 330

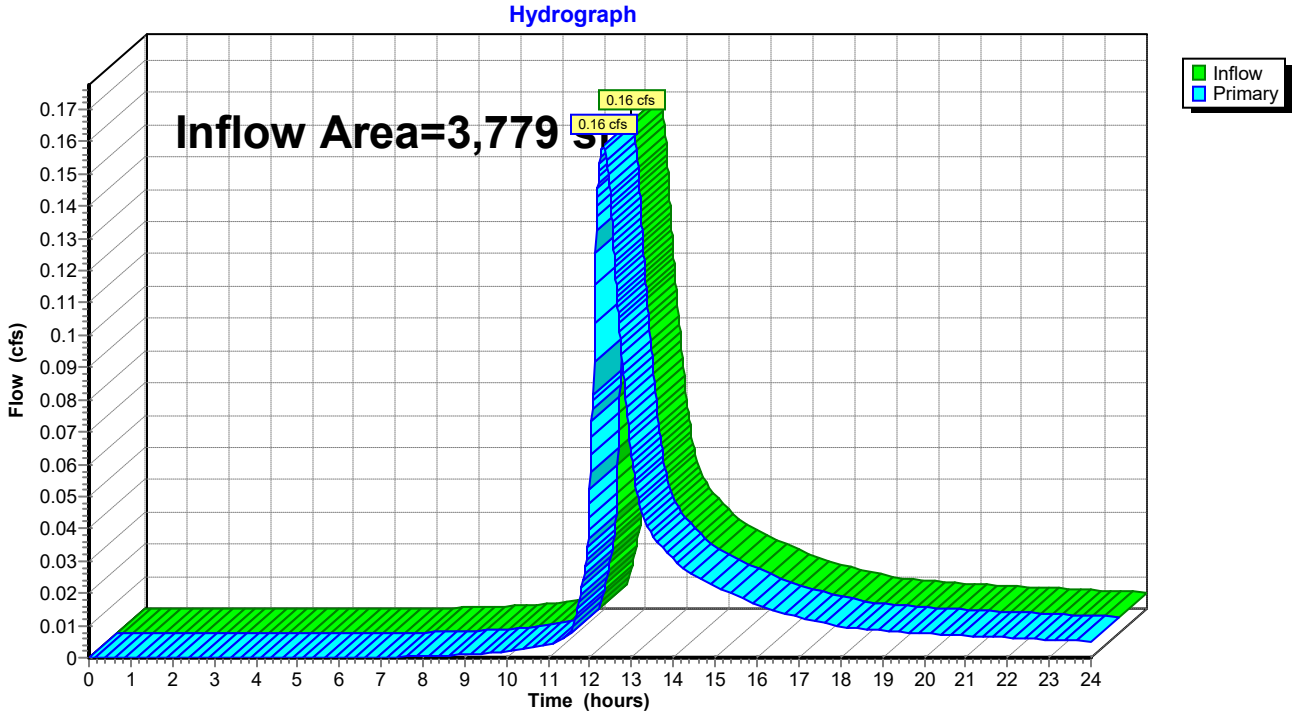


Summary for Link 2L: POI B

Inflow Area = 3,779 sf, 81.26% Impervious, Inflow Depth > 3.26" for 25-Year event
Inflow = 0.16 cfs @ 12.32 hrs, Volume= 1,027 cf
Primary = 0.16 cfs @ 12.32 hrs, Volume= 1,027 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2L: POI B

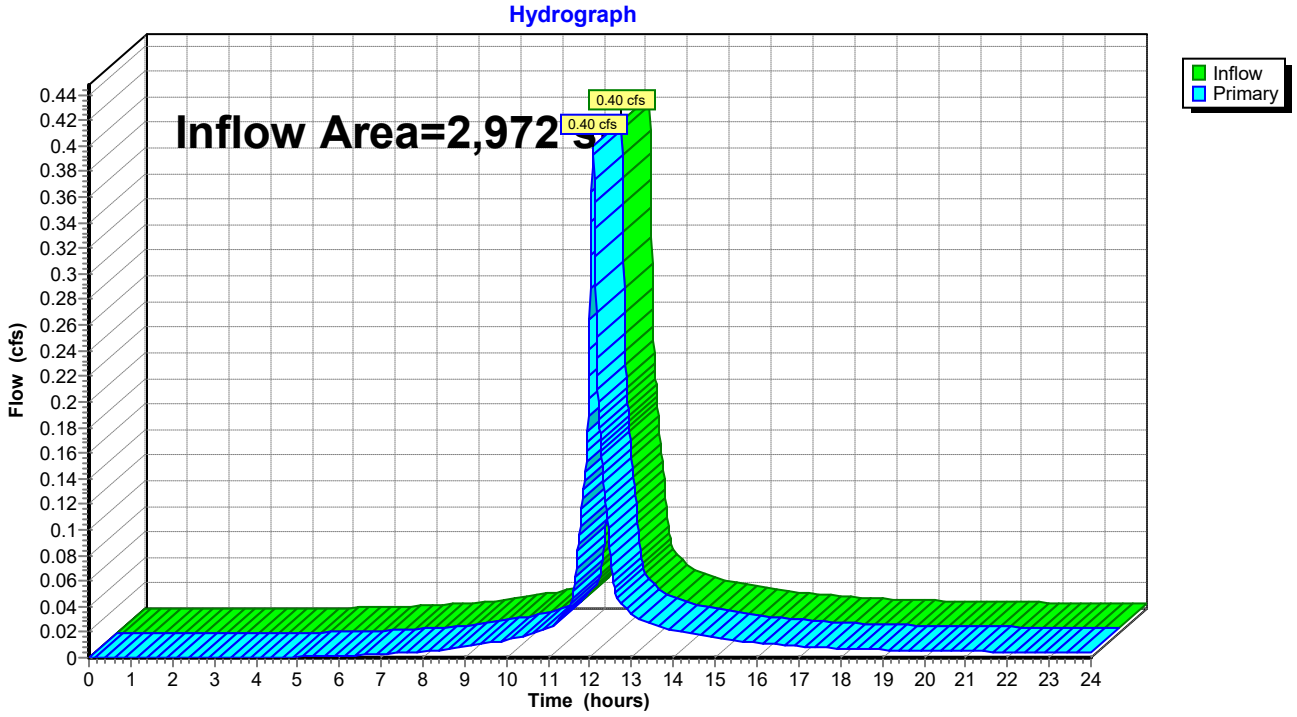


Summary for Link 17L: POI A

Inflow Area = 2,972 sf, 42.19% Impervious, Inflow Depth > 5.01" for 25-Year event
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 1,240 cf
Primary = 0.40 cfs @ 12.07 hrs, Volume= 1,240 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 17L: POI A



Appendix D DCIA Tracking Worksheet

Directly Connected Impervious Area Tracking Worksheet
City of Stamford Drainage Manual

Note to user: complete all cells of this color only, as indicated by section headings

Part 1: General Information (All Projects)	
Project Name	Kolich Property
Project Address	1911 Summer St, Stamford, CT
Project Applicant	Ahneman Kirby
Title of Plan	Proposed Site Plan
Revision Date of Plan	3/1/2024
Tax Account Number	001-5245

Part 2: Project Details (All Projects)		
1. What type of development is this? (choose from dropdown)	Redevelopment	
2. What is the total area of the project site?	7043	ft^2
3. What is the total area of land disturbance for this project?	4000	ft^2
4. Does project site drain to High Quality Waters, a Direct Waterfront, or within 500 ft. of Tidal Wetlands? (Yes/No)	No	
Does Standard 1 apply based on information above?	No	

Part 3: Water Quality Target Total (Only for Standard 1 Projects)		
5. What is the current (pre-development) ***DCIA*** for the site?	N/A	ft^2
6. Will the proposed development increase ***DCIA*** (without consideration of proposed stormwater management)? (Yes/No)	N/A	
7. What is the proposed-development ***total impervious area*** for the site?	N/A	ft^2
Water Quality Volume (WQV)	N/A	ft^3
Standard 1 requirement	N/A	
Required treatment/retention volume	N/A	ft^3
Provided treatment/retention volume for proposed development	N/A	ft^3

Part 4: Proposed DCIA Tracking (Only for Standard 1 Projects)		
Pre-development ***total impervious area***	N/A	ft^2
Current ***DCIA***	N/A	ft^2
Proposed-development ***total impervious area***	N/A	ft^2
Proposed-development ***DCIA*** (after stormwater management)	N/A	ft^2
Net change in ***DCIA*** from current to proposed-development	N/A	ft^2

Part 5: Post-Development (As-Built Certified) DCIA Tracking (Only for Standard 1 Projects)		
Post-development (per as-built) ***total impervious area***	**N/A**	ft^2
Post-development (per as-built) ***DCIA*** (after stormwater management)	N/A	ft^2
Net change in ***DCIA*** from current to post-development	N/A	ft^2

Certification Statement

I hereby certify that the information contained in this worksheet is true and correct.

Engineer's Signature Keith Werner Date 3/1/2024 Engineer's Seal

Appendix E Drawdown Calculations

1911 Summer St, Stamford, CT

Drawdown Calculations

Drawdown Cultec System C-1

$Time_{drawdown}$	=	$\frac{DV}{(K)\ (A)}$	=	**6.1**	**hours**	**OK < 72 hours**
DV	=	Design Volume	=	779	cf	= stored volume water below outlet pipe, see HydroCAD calculations
$K_{Soil\ Goup\ C}$	=	Infiltration Rate	=	3	inches/hour	Soil Group B (6"/2(safety factor))
A	=	Bottom Area	=	508	ft^2	

5th STREET ELEVATION

SITE STATISTICS:

EXISTING HISTORIC HOUSE – RESIDENTIAL DWELLING UNIT 5 – 2 BRM
GROSS AREA PRIOR TO DEMOLITION OF NON–HISTORIC REAR ENTRY ADDITION: 3630 S.F.

TOTAL GROSS LIVING AREA WITHOUT DEMOLISHED PORTION: 1930 S.F.
BASEMENT AND ATTIC ARE NOT INCLUDED IN AREA ABOVE
BASEMENT GROSS AREA IS: 998 S.F
ATTIC GROSS AREA IS 572 S.F.

TOTAL GROSS AREA REMAINING AFTER DEMOLITION OF REAR ADDITION INCLUDING BASEMENT AND ATTIC AREAS: 3500 S.F.

NEW CONSTRICTION: 2 TWO–FAMILY DWELLINGS: 4 DWELLING UNITS

EACH DWELLING UNIT LIVING AREAS	GROSS	NET
FIRST FLOOR (GARAGE NOT INCLUDED):	81 S.F.	67 S.F.
SECOND FLOOR:	568 S.F.	517 S.F.
THIRD FLOOR:	568 S.F.	517 S.F.
FOURTH FLOOR:	405 S.F.	366 S.F.
TOTAL LIVING AREA PER UNIT	1622 S.F.	1467 S.F.
GARAGE AREA:	322 S.F.	285 S.F.
TOTAL GROSS AREA PER UNIT INCLUDING GARAGES:	1944 S.F.	1752 S.F.
TOTAL NEW CONSTRUCTION 4 D.U.'S GROSS AREA INCLUDING GARAGES:	7776 S.F.	
EXISTING BUILDING GROSS AREA:	3500 S.F.	
TOTAL DEVELOPMENT GROSS LIVING AREA:	11,276 S.F.	

APPLICABLE CODES:

Adopted and Referenced Publications

2021 International Existing Building Code
2021 International Plumbing Code
2021 International Mechanical Code
2021 International Energy Conservation Code
2020 NFPA 70, National Electrical Code, of the National Fire Protection Association Inc.
2021 International Residential Code

THE CHANGES FROM THE PREVIOUS PLAN, DATED 2/10/23:

1. HIP ROOF CONFIGURATION OF THE ADDITION IS NOW SIMILAR TO THE ROOF OF THE EXISTING HISTORIC HOUSE.
2. THE BUILDING HEIGHT IS NOW 37'–10" TO THE MIDPOINT OF THE ROOF, VERSUS 45' TO THE TOP OF THE STAIRS' ROOFS IN THE 2/10/23 DESIGN.
3. BUILDING FACADE IS NOW THREE STORY HIGH WITH HIP ROOF AND DORMERS AT THE FOURTH FLOOR. THIS IS ONE STORY LESS THAN ON THE PREVIOUS DESIGN.
4. ROOF ACCESS IS ELIMINATED.
5. BAYS ARE REDUCED.
6. COLOR OF THE CENTRAL PROJECTING PORTION OF THE BUILDING IS NOW THE SAME AS THE EXISTING BUILDING. USING TWO COLOR SCHEME VISUALLY BREAKS THE MASS OF THE BUILDING.
7. DRIVEWAY UNDER THE BUILDING BETWEEN THE GARAGE DOORS IS NOW 28' WIDE VERSUS 20' WIDE OF THE PREVIOUS DESIGN.

SIDING NOTE:
SIDING ON THE ADDITION: JAMES HARDIE PLANK, SMOOTH FINISH COLOR: DEEP OCEAN AND BOOTHBAY BLUE.
SHINGLES ON THE EXISTING HOUSE PAINTED: TO MATCH BOOTHBAY BLUE.
TRIM AND SOFFITS ON BOTH HOUSES: WHITE

ELENA KALMAN
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FAX (203) 329–7149

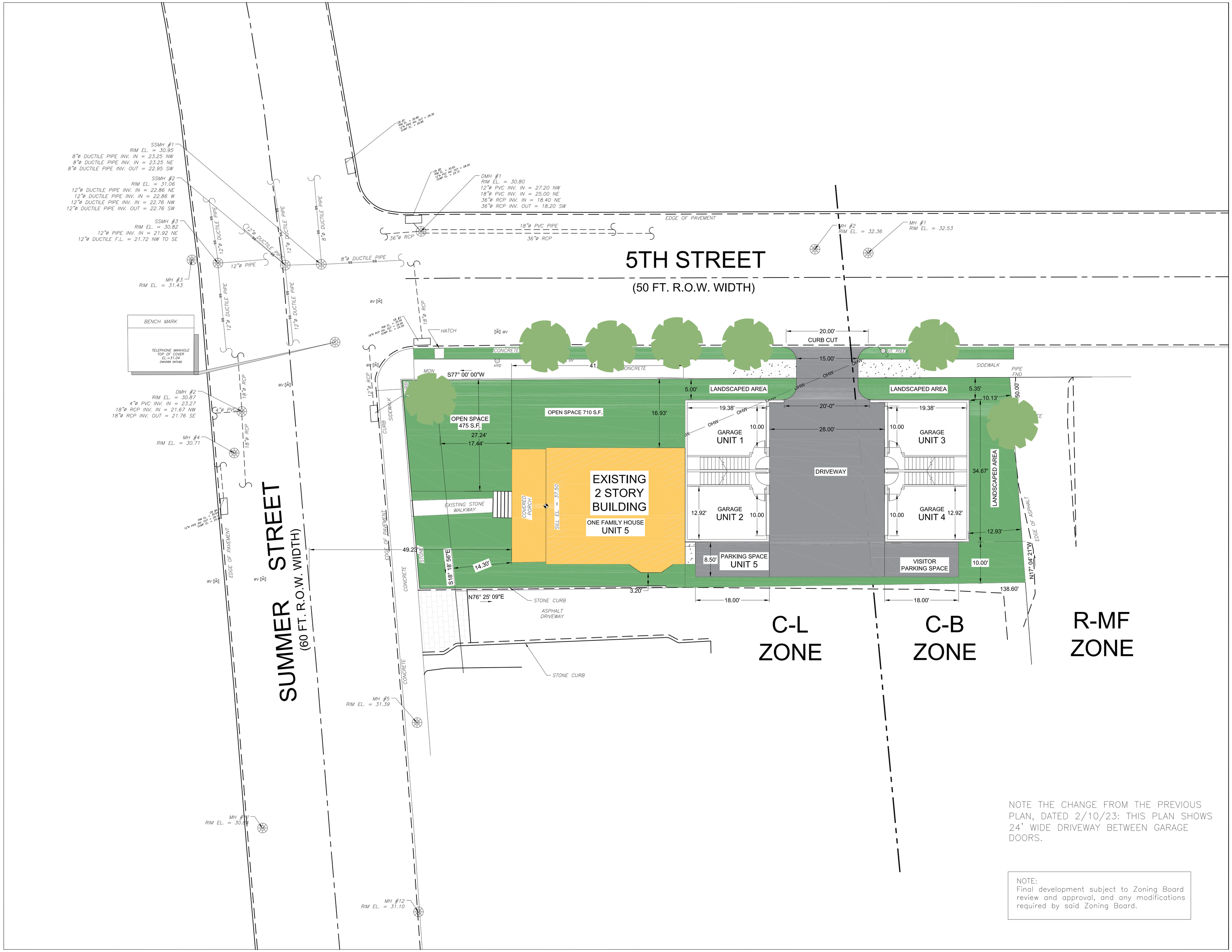
STATE OF CONNECTICUT
ELENA L. KALMAN
No. 4113
LICENSED ARCHITECT

DRAWING TITLE

COVER, CODE AND NOTES

DRAWN BY	EK
CHECKED BY	EK
DATE	12–6–23
SCALE	1/4" = 1'–0"
PROJECT NAME	11911 SUMMER ST
DRAWING NUMBER	

A-00



NOTE THE CHANGE FROM THE PREVIOUS PLAN, DATED 2/10/23: THIS PLAN SHOWS 24' WIDE DRIVEWAY BETWEEN GARAGE DOORS.

NOTE:
Final development subject to Zoning Board review and approval, and any modifications required by said Zoning Board.

NOTE:

WRITTEN DIMENSIONS ON THIS DRAWING SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. SHOP DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR REVIEW BEFORE PROCEEDING WITH FABRICATION.

No.	Date	Revision

1911 SUMMER STREET, STAMFORD, CT

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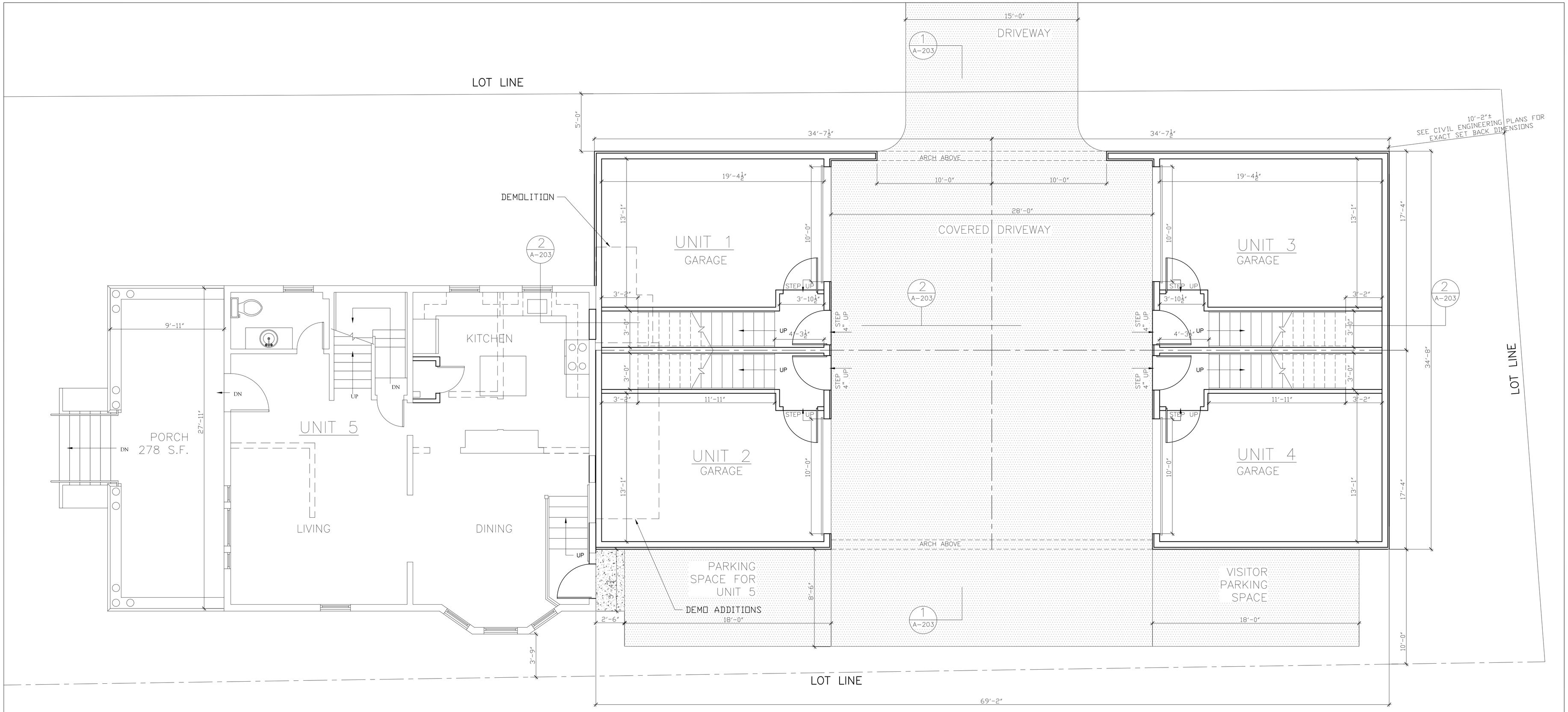
STATE OF CONNECTICUT
ELENA L. KALMAN
No. 4112
LICENSED ARCHITECT

DRAWING TITLE

SITE PLAN

DRAWN BY	EK
CHECKED BY	EK
DATE:	12-6-23
SCALE	1"=20'
PROJECT NAME	EK 11911 SITE
DRAWING NUMBER	DRAWING NUMBER

A-01



NOTE THE CHANGE FROM THE PREVIOUS PLAN, DATED 2/10/23: THIS PLAN SHOWS 24' WIDE DRIVEWAY BETWEEN GARAGE DOORS.

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No.	Date	Issue

No.	Date	Revision

1911 SUMMER STREET,
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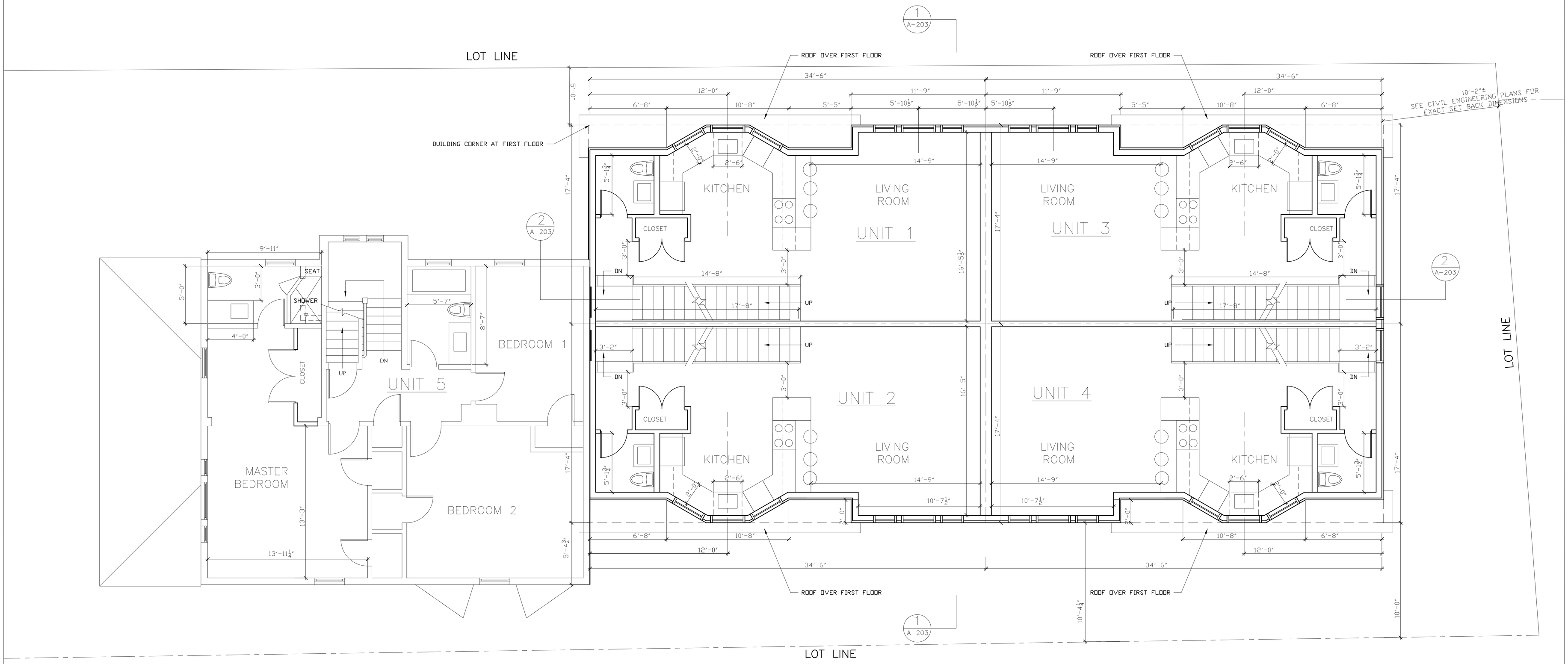
STATE OF CONNECTICUT
ELENA KALMAN
No. 4113
LICENSED ARCHITECT

DRAWING TITLE

FIRST FLOOR PLAN

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	11911 SUMMER ST
DRAWING NUMBER	

A-101



NOTE:
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No.	Date	Issue

No.	Date	Revision

1911 SUMMER STREET, STAMFORD, CT

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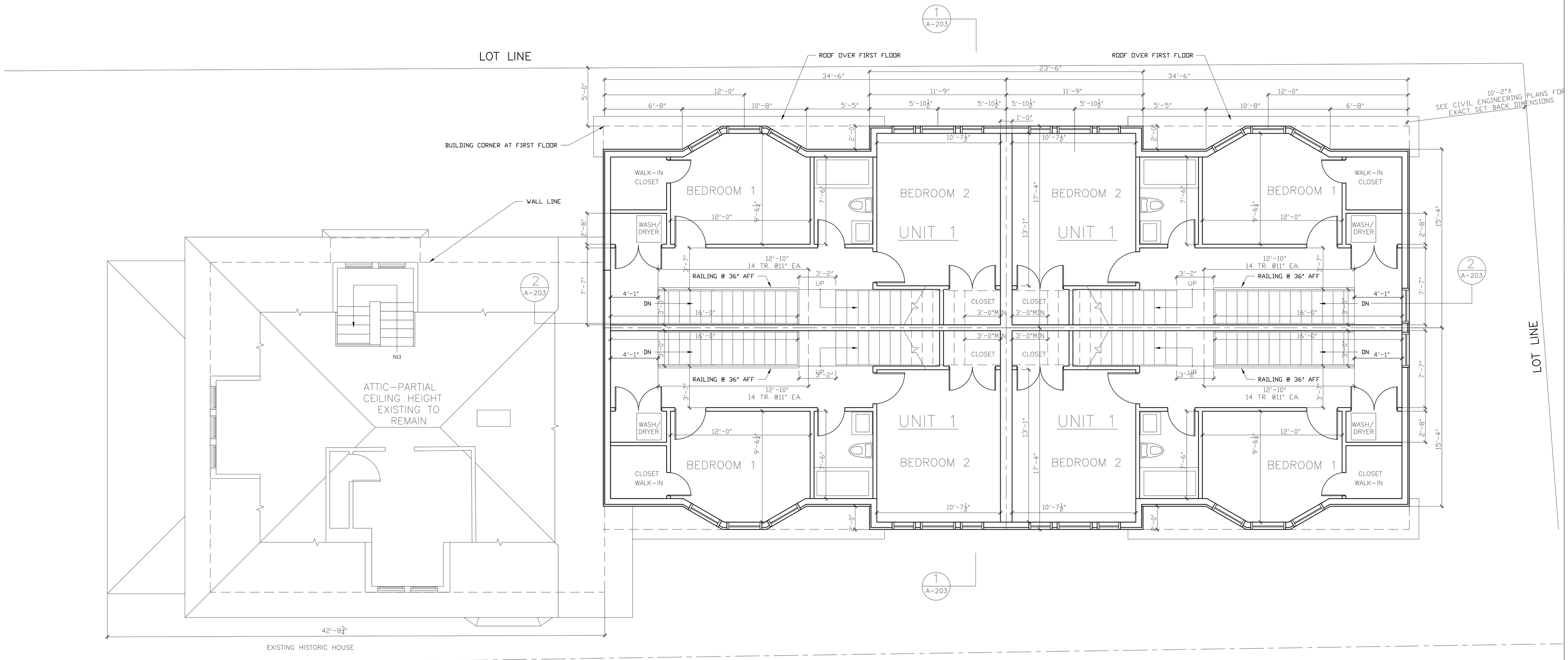
STATE OF CONNECTICUT · ELENA KALMAN · No. 4113 · LICENSED ARCHITECT

DRAWING TITLE

SECOND FLOOR PLAN

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	11911 SUMMER ST
DRAWING NUMBER	

A-102



NOTE:
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NOTE:

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY, AND ARE THE PROPERTY OF ELENA KALMAN ARCHITECT WERE CREATED, EVOLVED AND DEVELOPED FOR USE ON, AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF SUCH IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION OF ELENA KALMAN ARCHITECT

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No.	Date	Issue

No.	Date	Revision

1911 SUMMER STREET, STAMFORD, CT

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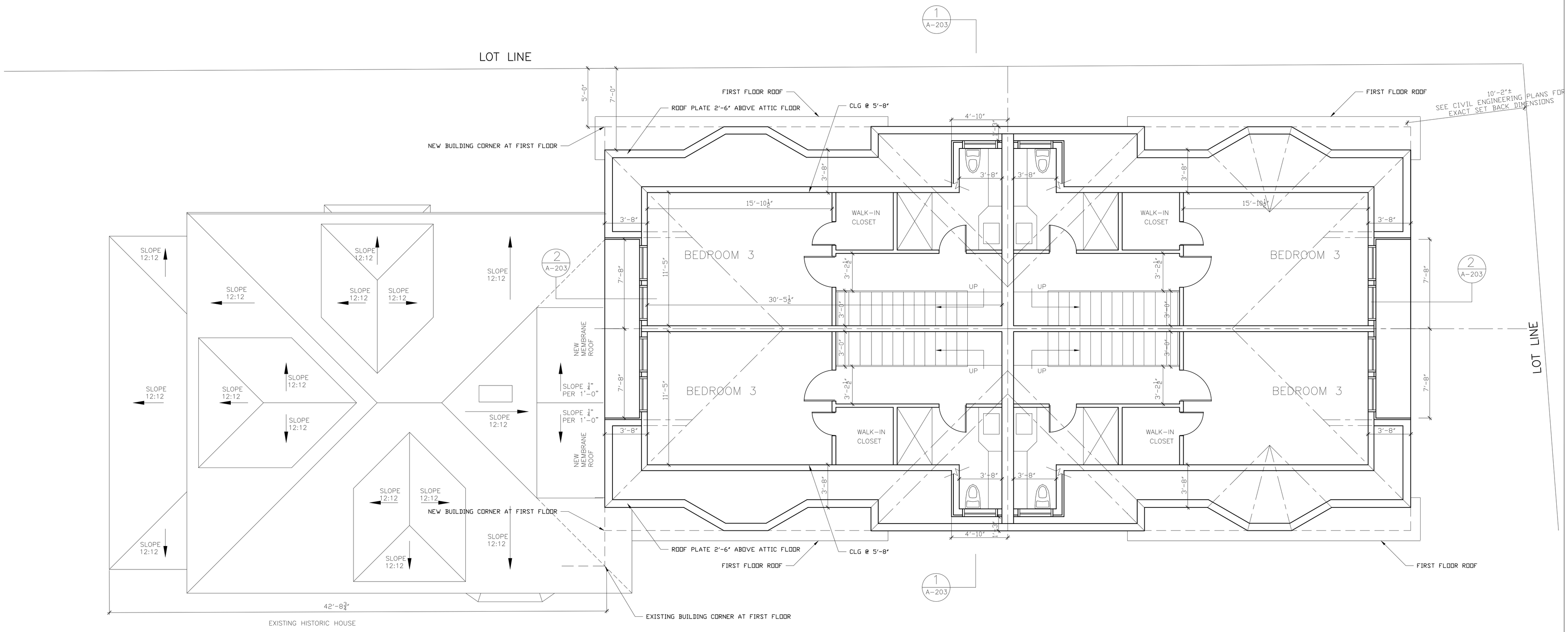
STATE OF CONNECTICUT ELENA KALMAN No. 4113 LICENSED ARCHITECT

DRAWING TITLE

ATTIC/THIRD FLOOR PLAN

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	1911 SUMMER ST
DRAWING NUMBER	

A-103



LOT LINE

NOTE:
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No.	Date	Issue

No.	Date	Revision

1911 SUMMER STREET,
STAMFORD, CT

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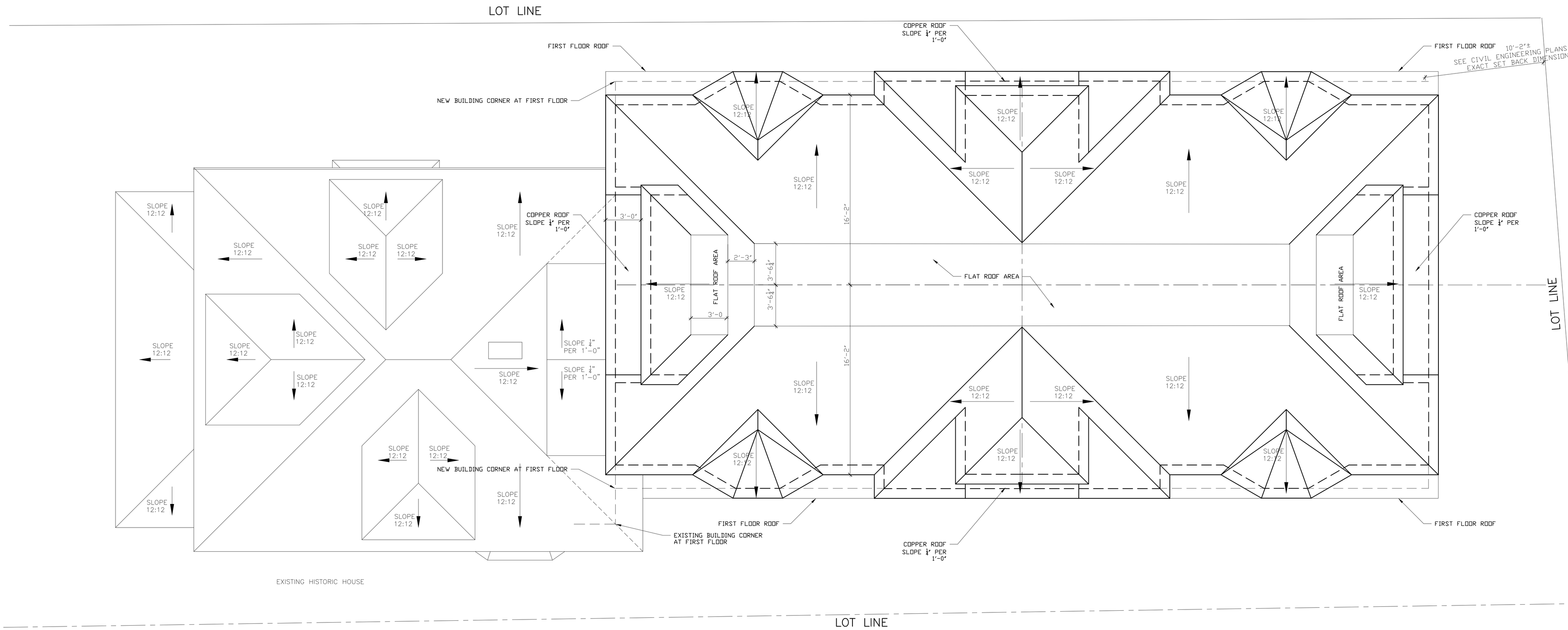
STATE OF CONNECTICUT
ELENA L. KALMAN
No. 4118
LICENSED ARCHITECT

DRAWING TITLE

FOURTH FLOOR PLAN

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	1911 SUMMER ST
DRAWING NUMBER	

A-104



NOTE:
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No.	Date	Revision
	Date	Issue

1911 SUMMER
STREET,
STAMFORD, CT

ELENA
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FAX (203) 329-7149

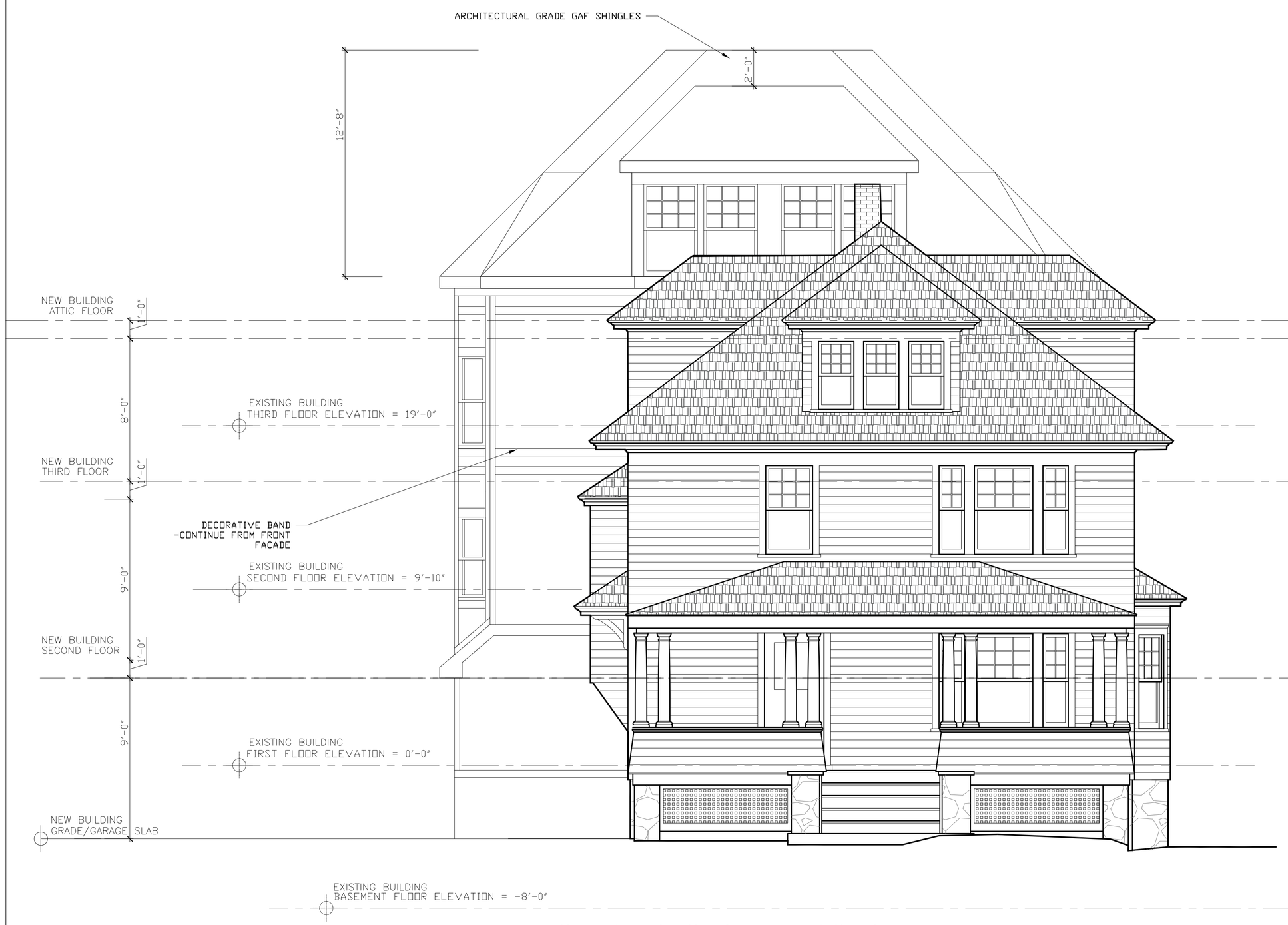
STATE OF CONNECTICUT
ELENA L. KALMAN
No. 4112
LICENSED ARCHITECT

DRAWING TITLE

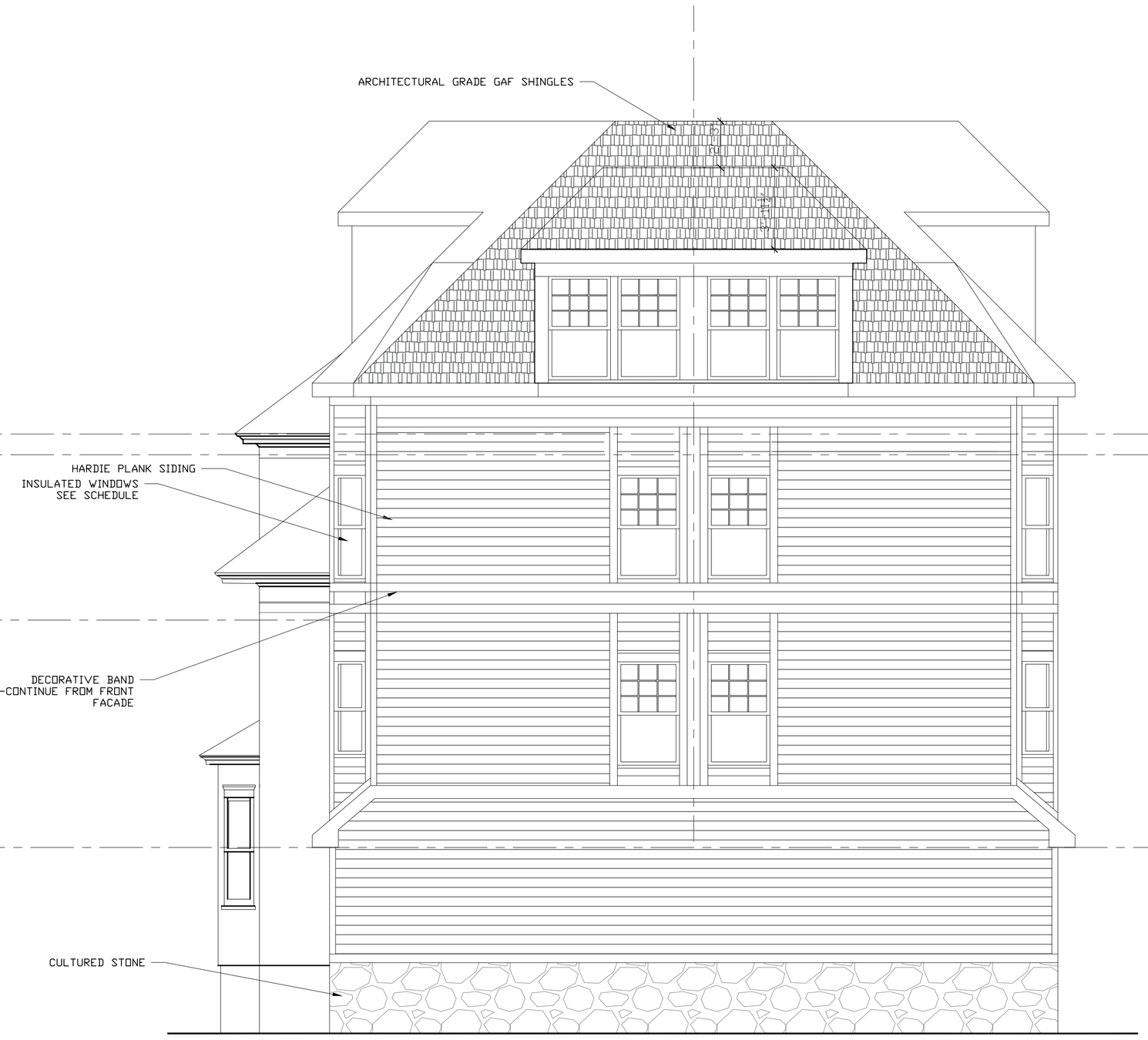
ROOF PLAN

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	1911 SUMMER ST
DRAWING NUMBER	

A-105



SUMMER STREET FACADE (WESTERN)



EASTERN FACADE

NOTE:
SIDING ON THE ADDITION: JAMES HARDIE PLANK, SMOOTH FINISH COLOR: DEEP OCEAN.
SHINGLES ON THE EXISTING HOUSE PAINTED: BENJAMIN MOORE, HC-159 PHILPSBURY BLUE.
TRIM AND SOFFITS ON BOTH HOUSES: WHITE

NOTE:
Final development subject to Zoning Board review and approval, and any modifications required by said Zoning Board.

No.	Date	Revision
	Date	Issue

ELENA KALMAN ARCHITECT
AIA
99 WILD DUCK ROAD
STAMFORD, CT. 06903
TEL. (203) 329-3074
WWW.KALMANDESIGN.COM

STATE OF CONNECTICUT
ELENA L. KALMAN
No. 4112
LICENSED ARCHITECT

PROJECT NAME

1911 SUMMER STREET, STAMFORD, CT

DRAWING TITLE

SUMMER STREET FACADE (WESTERN) AND EASTERN FACADE

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	1911 SUMMER ST
DRAWING NUMBER	

A-201

FIFTH STREET ELEVATION – ALTERNATE FACADE "D"

NOTE:
SIDING ON THE ADDITION: JAMES HARDIE PLANK, SMOOTH FINISH COLOR: DEEP OCEAN.
SHINGLES ON THE EXISTING HOUSE PAINTED: BENJAMIN MOORE, HC–159 PHILPSBURY BLUE.
TRIM AND SOFFITS ON BOTH HOUSES: WHITE

NOTE:
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No.	Date	Revision
	Date	Issue

ELENA KALMAN
ARCHITECT
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99 WILD DUCK ROAD
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STATE OF CONNECTICUT · ELENA L. KALMAN · No. 4112 · LICENSED ARCHITECT

PROJECT NAME

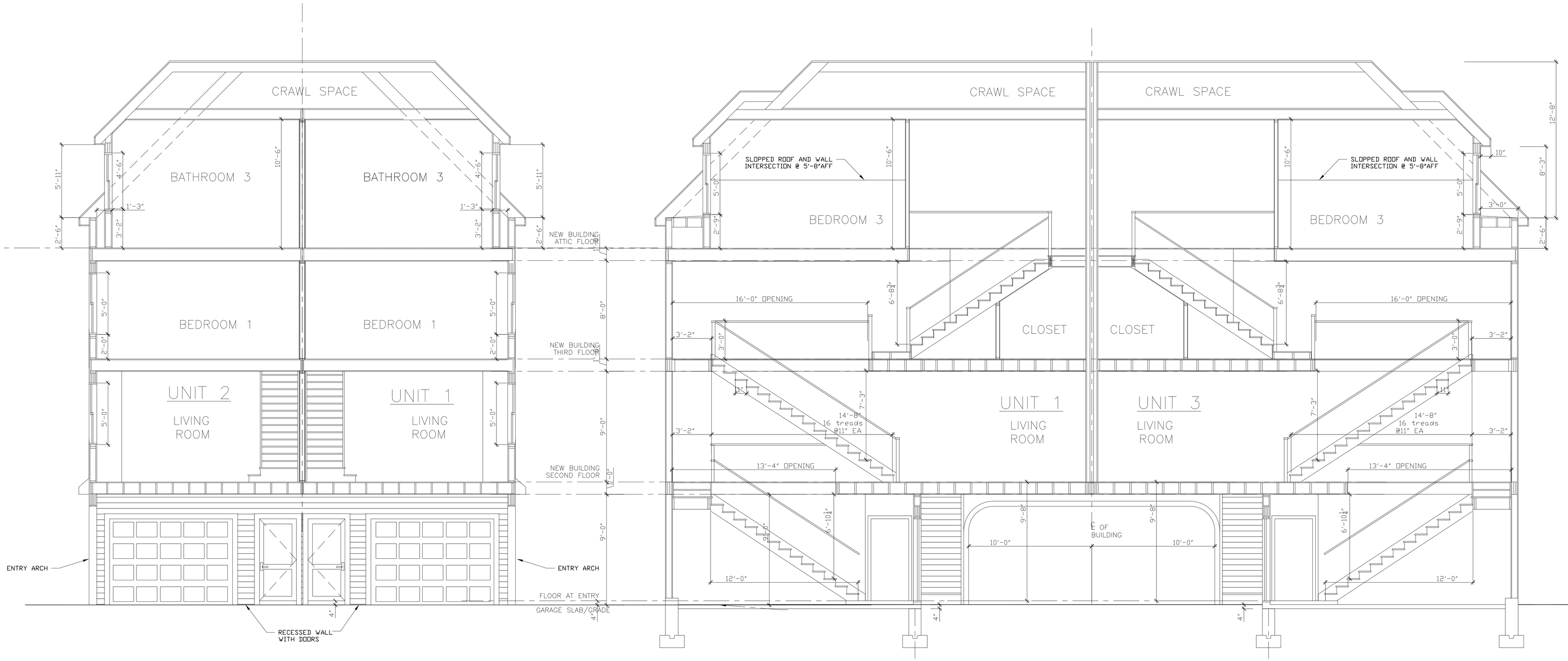
1911 SUMMER STREET, STAMFORD, CT

DRAWING TITLE

FIFTH STREET FACADE (NORTHERN)

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	11911 SUMMER ST
DRAWING NUMBER	

A-202



1 A-203 BUILDING CROSS SECTION AND ENTRY ELEVATION

2 A-203 BUILDING LONGITUDINAL SECTION

NOTE:
Final development subject to Zoning Board review and approval, and any modifications required by said Zoning Board.

No.	Date	Revision
	Date	Issue

ELENA KALMAN
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STATE OF CONNECTICUT
ELENA KALMAN
No. 4112
LICENSED ARCHITECT

PROJECT NAME

1911 SUMMER STREET, STAMFORD, CT

DRAWING TITLE

BUILDING SECTIONS AND ENTRY ELEVATION

DRAWN BY	EK
CHECKED BY	EK
DATE	12-6-23
SCALE	1/4" = 1'-0"
PROJECT NAME	1911 SUMMER ST
DRAWING NUMBER	

A-203