TOWN OF MILFORD, NEW HAMPSHIRE
OFFICE OF COMMUNITY DEVELOPMENT
1 UNION SQUARE, MILFORD, NH 03055 TEL: (603)249-0620 WEB: WWW.MILFORD.NH.GOV

STAFF MEMO

Date: April 14, 2021

To: Town of Milford Planning Board

From: Jason Cleghorn, Town Planner

Subject: **SP2021-11 Housing Initiatives of New England (owners/applicants), 54 School St., Map 26, Lot 169.** Public Hearing for review of a major site plan regarding an addition to an existing building and a conversion of use within that building for the purposes of senior housing.

BACKGROUND:
The applicant is before the Planning Board seeking approval of a major site plan for a 3 story addition to an existing building and change of use to senior related housing, on a parcel located within the Commercial zoning district of approximately .52 acres. The applicant recently received approval from the Zoning Board of Adjustment for increased density of up to eighteen (18) units as well as relief from the fifteen (15) foot side yard setback. The location of the three story addition would replace a non-historic single story area of the building added much later than the original construction.

ADDRESS:
54 School St.

EXISTING USE:
The parcel is currently occupied by an existing building built in 1853 that is primarily being currently used for storage and a very limited amount of leased space.

LOT AREA:
.52 acres

APPLICATION STATUS:
The application is complete and ready to be accepted. The Board will need to make a determination of regional impact.

NOTICES:
Notices were sent to all property abutters on April 7, 2021. No public comment or input was received.

ZONING DISTRICT/INFORMATION:
The subject property is within the Commercial (C) District: The intent of the Industrial District is to provide areas for those businesses, institutional, financial, governmental and compatible residential uses which constitute the commercial requirements of the Town. The parcel is also located within the Oval Overlay.

EXISTING CONDITIONS:
The subject property, Tax Map 26 Lot 169 is a .52 acre parcel zoned Commercial currently occupied with a building built in 1853. It has been utilized for various purposes over the year and most recently housed the Milford Cabinet business. Currently the building is mostly vacant although the applicant leases out space currently to a couple of end users. There currently exists onsite a parking area along Bridge Street with approximately 10-12 parking spaces, mostly used for overflow parking at the adjacent senior living apartments.

TRAFFIC AND ACCESS MANAGEMENT:

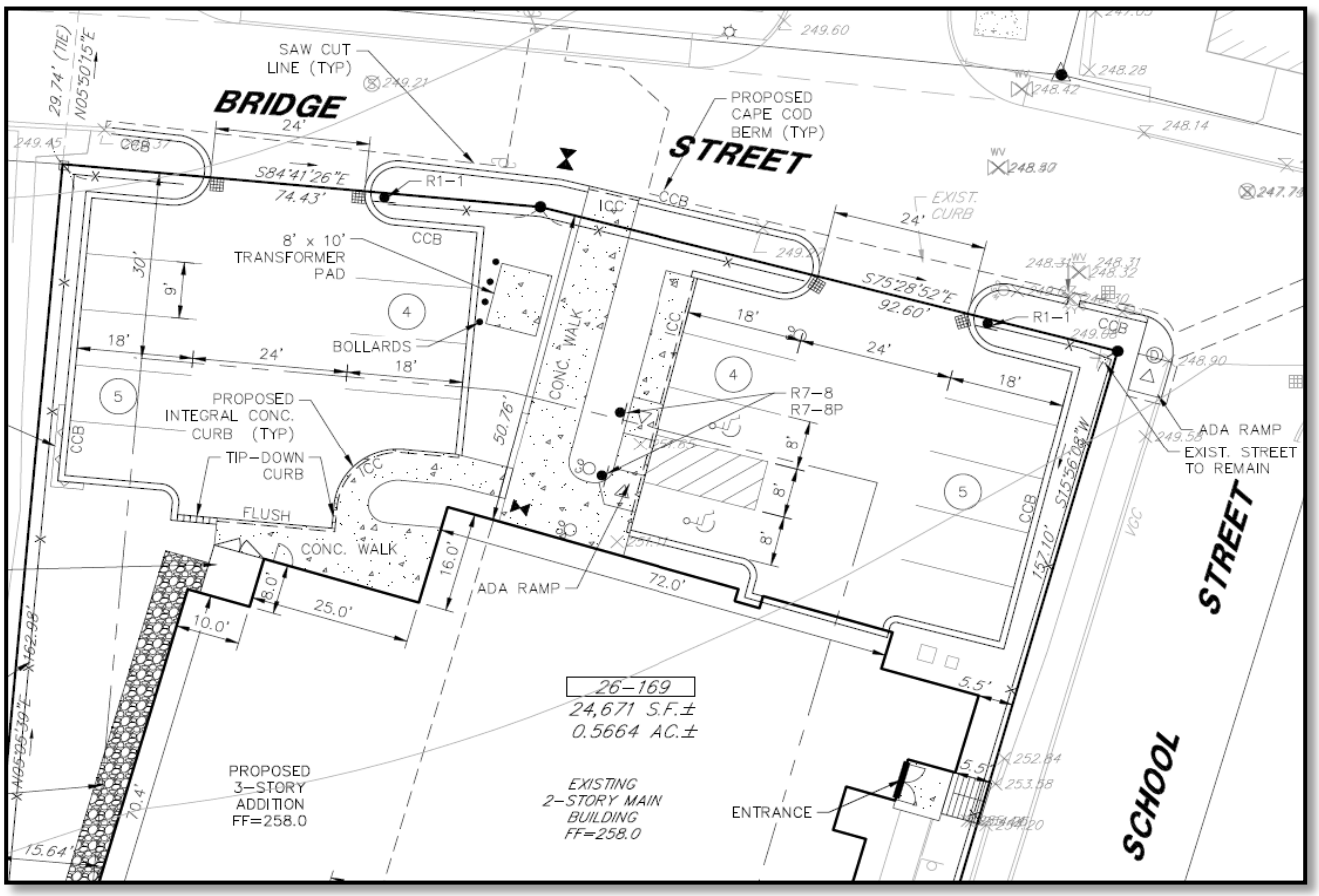
TRIP GENERATION

Trip generation rates published by the ITE (10th Edition) for Land Use Code (LUC) 252, Senior Adult Housing - Attached, was used to calculate the vehicle trips for the proposed senior housing development. The table below shows the proposed trip generation.

Proposed Trip Generation

	In	Out	Total
Weekday AM Peak Hour of Adjacent Street	1	3	4
Weekday PM Peak Hour of Adjacent Street	3	2	5
Weekend SAT Peak Hour of Generator	4	2	6

The parcel would be accessed solely off of Bridge St. with two similarly sized small parking areas each housing nine (9) parking spaces. Each parking area would be separated by a concrete sidewalk connecting the building to Bridge St. The applicant also has a parking easement to access ten (10) spaces at a lot located diagonally across the street from the property (shown in second picture below)



OPEN SPACE/LANDSCAPING:
The project would require 30% of open space and 31% is being provided. All landscaping requirements of the zoning code are being met except for two sections, § 6.08.07 (A) which requires a 10' buffer strip along public ROW and abutting properties and § 6.08.07 (B) which requires 1 tree per 15 parking spaces (2 would be required) and the applicant is providing 1.

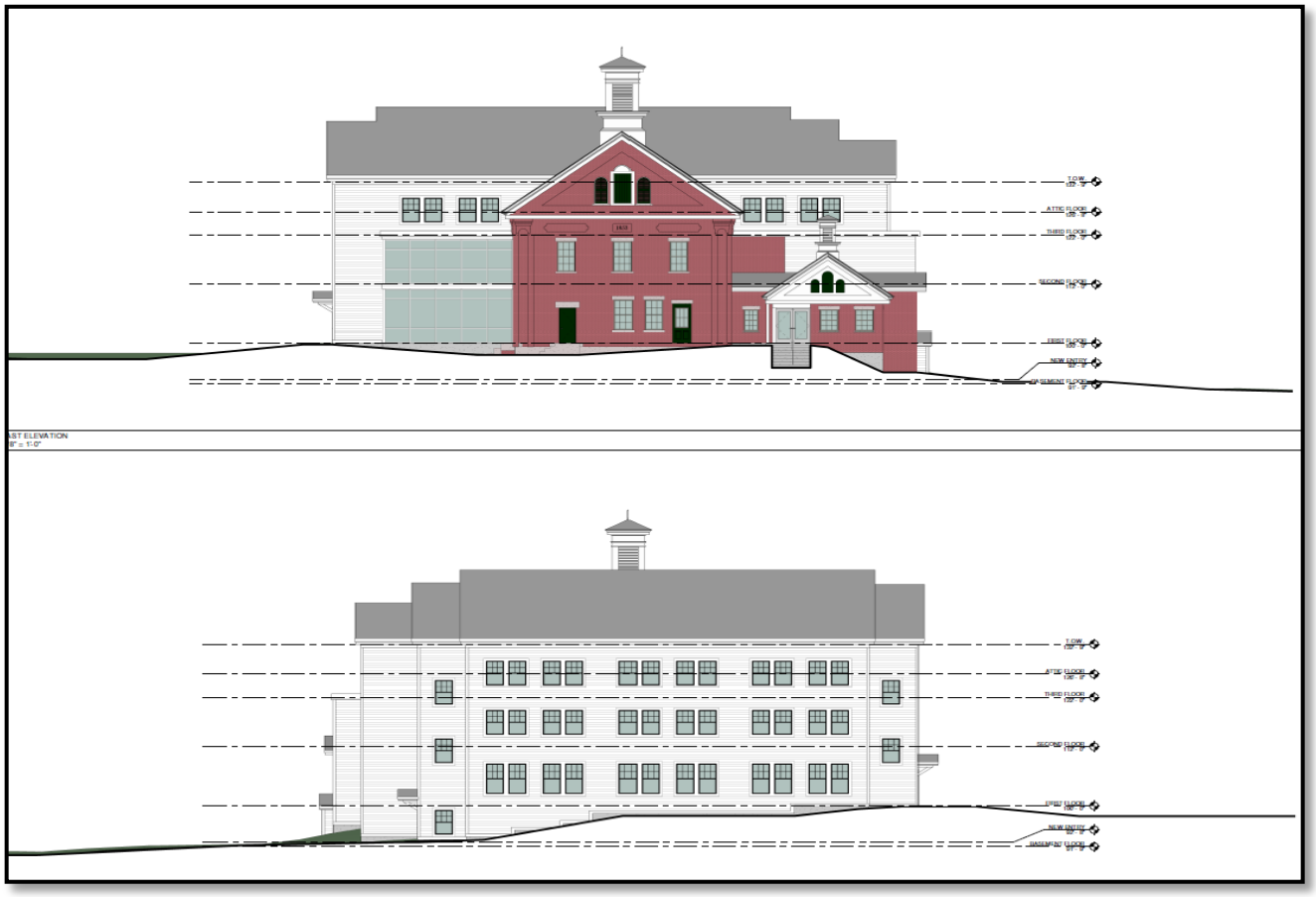
Ordinarily, §5.05.07 of the Zoning Ordinance would exempt uses within the Oval Sub-district from open space and yard requirements, but the way the Ordinance is written, it does not exempt multi-family residences.

In the opinion of Staff, neither of these requirements are deal breakers for this project and it would support their relaxation, especially the 10' buffer strip.

DRAINAGE:
Although the project is not located within the 100-year flood plain as shown on the Flood Insurance Rate Map Number 330096, dated September 25, 2009, the properties fall within the Milford Groundwater Protection Zone 1 Overlay.

PARKING:
The project is providing a total of 28 spaces and 27 spaces would be required based on the number of units.

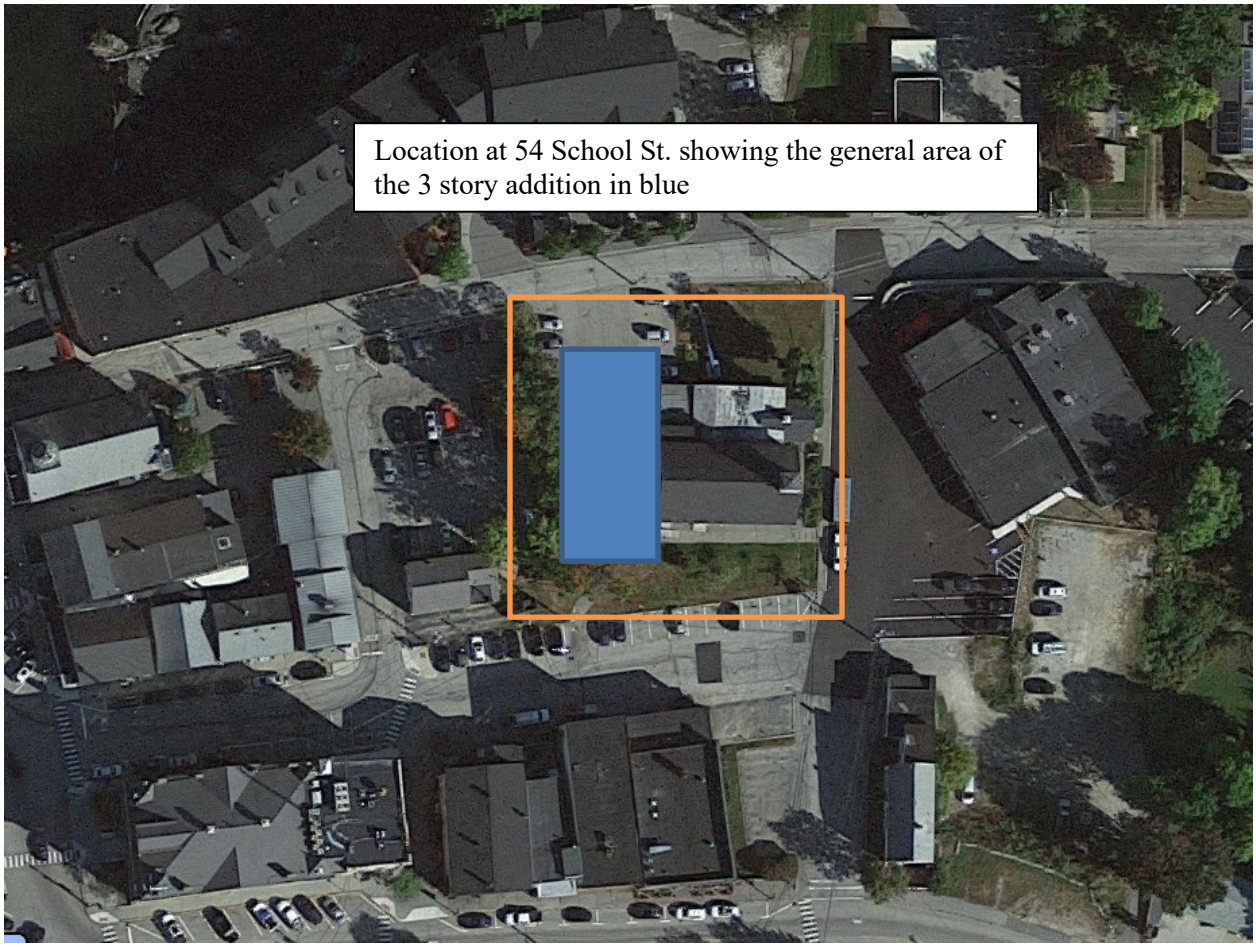
BUILDING ELEVATIONS:



STAFF RECOMMENDATIONS:

Barring any/all input and recommendations from the Board, Staff recommends approving the application conditionally, with revisions to the landscape plan being made to satisfy the requirement or the waiver is approved.

Aerial of Map 26 Lot 169



Existing Conditions

View From Middle Street

View From Middle Street

View From School Street

View From Middle & School & Street

View From School & Bridge Street

View From Bridge Street

Massing Study

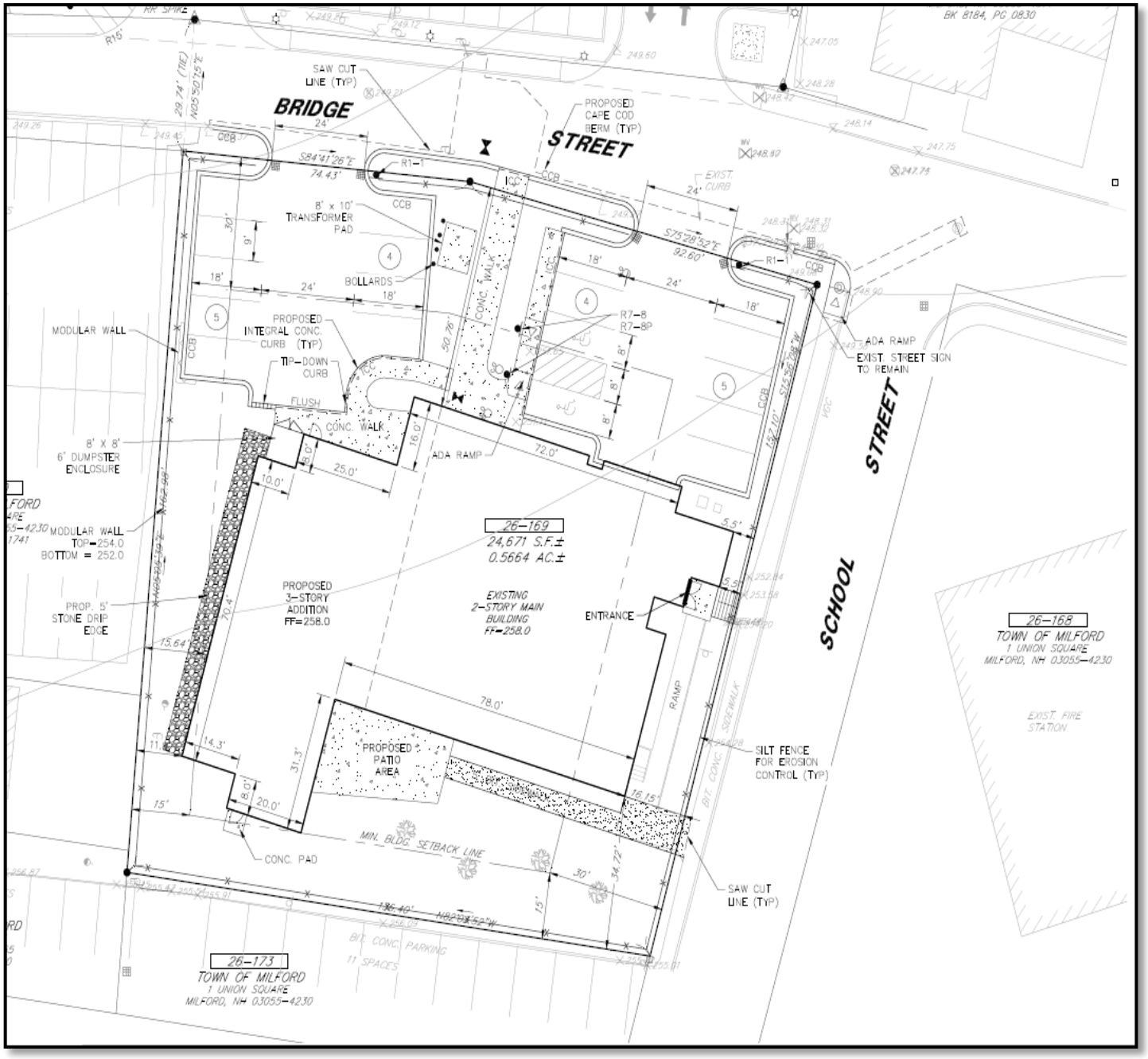
3D View 1

3D View 2

3D View 3

3D View 4

Site Plan


BRIDGE STREET
SCHOOL STREET
SAW CUT LINE (TYP)
PROPOSED CAPE COD BERM (TYP)
8' x 10' TRANSFORMER PAD
BOLLARDS
MODULAR WALL
PROPOSED INTEGRAL CONC. CURB (TYP)
TIP-DOWN CURB
CONC. WALK
ADA RAMP
EXIST. STREET SIGN TO REMAIN
8' X 8' 6' DUMPSTER ENCLOSURE
MODULAR WALL TOP=254.0 BOTTOM = 252.0
PROP. 5' STONE DRIP EDGE
26-169
24,671 S.F.±
0.5664 AC.±
PROPOSED 3-STORY ADDITION FF=258.0
EXISTING 2-STORY MAIN BUILDING FF=258.0
ENTRANCE
PROPOSED PATIO AREA
SILT FENCE FOR EROSION CONTROL (TYP)
SAW CUT LINE (TYP)
CONC. PAD
MIN. BLDG. SETBACK LINE
BIT. CONC. PARKING
11 SPACES
26-173
TOWN OF MILFORD
1 UNION SQUARE
MILFORD, NH 03055-4230
26-168
TOWN OF MILFORD
1 UNION SQUARE
MILFORD, NH 03055-4230
EXIST. FIRE STATION
BK 8184, PG 0830

APPLICATION FOR SITE PLAN APPROVAL

CONTACT INFORMATION

Property Owners(s):
Name: Housing Initiatives of New England Corp.
Address: 264 US Route 1, Building 300, Suite 2A
Scarborough, ME 04074
Telephone Number: (207)885-8801 Fax:
Email Address: ctaylor@hinec.org

Applicant:
(if different from above)
Name:
Address:
Telephone Number: Fax:
Email Address:

Engineer/ Surveyor/ Architect:
Name: TFMoran, inc.
Address: 48 Constitution Drive
Bedford, NH 03110
Telephone Number: (603)472-4488 Fax: (603)472-9747
Email Address: jkevan@tfmoran.com
Primary Contact Person: Jeff Kevan

TYPE OF APPLICATION

(Please check all that apply)

- ☐ **Discussion** - Informal meeting with Planning Board.
- ☐ **Minor Site Plan** – Less than 600 sq. ft. of additional exterior construction.
- ☒ **Major Site Plan**
  - ☐ **Design Review Plan**
  - ☒ **Final Plan**
- ☐ **Request for Waiver of Site Plan Review**
- ☐ **Request for Waiver of Specific Site Plan Requirements**
- ☐ **Other** - (i.e. amendments and/or revisions)

SITE INFORMATION

LOCATION: Tax Map Number 26 Lot(s) 169 **ZONING DISTRICT:** Commercial/Oval

ROAD FRONTAGE ON: Bridge St. & School St. **TOTAL SITE AREA:** 24,671 SF

BRIEF DESCRIPTION OF PROJECT: Addition to exist. bldg and renovate to change use to senior housing.

NAME OF EXISTING OR PROPOSED SITE PLAN: Site Plan - Milford Independent Senior Housing

INSTRUCTIONS FOR SUBMITTING A COMPLETE APPLICATION (Please read carefully)

For an application to be scheduled on the next available Planning Board agenda, the following items MUST be submitted to the Department of Planning & Community Development by close of business on the officially posted submittal date:

☐ 1. **Completed and signed SITE PLAN APPLICATION FORM and ABUTTERS LIST.**
The application will not be placed on the Planning Board agenda unless all required signatures are on the application. The owner MUST sign the application form.

☐ 2. **Three (3) large and one (1) 11" x 17" prints of the site plan or site plan set.**
At least one (1) plan MUST be signed by the owner. All applicable information as described on the attached SITE PLAN CHECKLIST MUST be shown on the plans. Owner's signature must be on at least one (1) plan, indicating his/her knowledge of the plan and application.

☐ 3. **Application fee and Abutter Mailing Fees.**
These fees will be determined at the time you turn in the application. Fees are based on square footage of new construction and number of certified mailings, which must be sent. All checks are to be made payable to the **Town of Milford**.

AUTHORIZED SIGNATURES

Owner(s): I/We, as owner(s) of the property described hereon, certify that this application is correctly completed with all required attachments and requirements in accordance with the Site Plan Regulations for the Town of Milford. I/We also authorized members of the Milford Planning Board and its agents to access the property described on this application for on-site review of the proposed site plan.

Cynthia Tillinghast Taylor — 3/22/2024

Name (please print) and Title — Date

IF APPLICABLE:

Owner(s) authorization for Applicant or Agent to represent the application:
The applicant or agent, as stated hereon, has authorization from the property owner to submit this site plan application and represent the property owner on matters relative to the Town site plan approval process.

Owner's Signature — Date

Applicant's Signature:
I acknowledge, as the applicant stated hereon, that this site plan application has been completed and submitted in conformance with all applicable Town of Milford regulations, and that I am the designated representative for the property owner on matters relative to this site plan application.

Applicant's Signature — Date

Agent's Signature (someone other than the Owner or Applicant who is representing the project):
I acknowledge, as the agent stated hereon, that this site plan application has been completed and submitted in conformance with all applicable Town of Milford regulations, and that I am the designated representative for the property owner on matters relative to this site plan application.

Agent's Signature — Date

ABUTTER LIST

Abutter – Any person whose property is located in New Hampshire and adjoins or is directly across the street, stream, or active railroad property from the land under consideration by the local land use board.

For purposes of receiving testimony only, and not for purposes of notification, the term "abutter" shall include any person who is able to demonstrate that his/her land will be directly affected by the proposal under consideration.

For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a condominium or other collective form of ownership, the term "abutter" means the officers of the collective or association, as defined in RSA 356-B:3, XXIII. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a manufactured housing park form of ownerships defined in RSA 205-A:1, the term "abutter" includes the manufactured housing park owner and the tenants who own manufactured housing which adjoins or is directly across the street, stream, or active railroad from the land under consideration by the local land use board. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being an active railroad property, the owner of the railroad property shall be notified. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case where the applicant is different from the owner of the land under consideration by the local land use board, the term "abutter" includes the applicant.

Map	Lot	Property Owner	Street Address	Town	State	Zip Code
		Please see attached abutters list.				

My signature attests that the above abutter listing reflects the most current assessing records and that the Milford Planning Board is released from any responsibility for inaccurate information or incorrect abutter notification.

Signature of Owner

3/22/2021
Date

Map & Lot

MILFORD INDEPENDENT ELDERLY HOUSING

54 SCHOOL STREET
MILFORD, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER/PREPARED FOR
MAP 26, PARCEL 169
HOUSING INITIATIVES OF NEW ENGLAND CORP.
264 US RTE 1, BLDG 300 STE 2A
SCARBOROUGH, ME 04074

RESOURCE LIST

PLANNING DEPARTMENT
1 UNION SQUARE
MILFORD, NH 03055
(603)249-0620
LINCOLN DALEY
COMMUNITY DEV. DIRECTOR

PUBLIC WORKS
289 SOUTH STREET
MILFORD, NH 03055
RICK RIENDEAU, DIRECTOR
(603)249-0685

POLICE DEPARTMENT
19 GARDEN STREET
MILFORD, NH 03055
(603)249-0630
MIKE VIOLA, CHIEF

FIRE DEPARTMENT
39 SCHOOL STREET
MILFORD, NH 03055
(603)249-0680
KEN FLAHERTY, CHIEF

WATER UTILITIES
564 NASHUA STREET
MILFORD, NH 03055
(603)249-0660
KEVIN STE4TSON, DIRECTOR

ELECTRIC:
EVERSOURCE
P.O. BOX 330
MANCHESTER, NH 03105-0330
PHONE: (603) 634-3514
CONTACT: MARIO BOUCHER

GAS:
LIBERTY UTILITIES
130 ELM STREET
MANCHESTER, NH 03101
PHONE: (603) 782-2321
CONTACT: ANDY MORGAN

ABUTTERS

MAP 26, LOT 91
MILFORD MILL LTD. PARTNERSHIP
264 US RTE 1, BLDG 300 STE 2A
SCARBOROUGH, ME 04074

MAP 26, LOT 92
JUDITH E WHITE, TRUSTEE,
JUDITH E WHITE REVOCABLE TRUST
100 BRIDGE STREET
MILFORD, NH 03055-4571

MAP 26, LOT 164
PAUL C & LORI A WORRALL
1 BORDER STREET
MILFORD, NH 03055

MAP 26, LOT 165
RKSK REALTY LLC
480 NASHUA STREET
MILFORD, NH 03055

MAP 26, LOT 168
TOWN OF MILFORD, NH
ONE UNION SQUARE
MILFORD, NH 03055-4230

MAP 26, LOT 170
TOWN OF MILFORD, NH
ONE UNION SQUARE
MILFORD, NH 03055-4230

MAP 26, LOT 171
ARCHELON PROPERTIES, LLC
62 PRENTISS ST.
CAMBRIDGE, MA 02140

MAP 26, LOT 172
TOWN OF MILFORD, NH
1 UNION SQUARE
MILFORD, NH 03055-4230

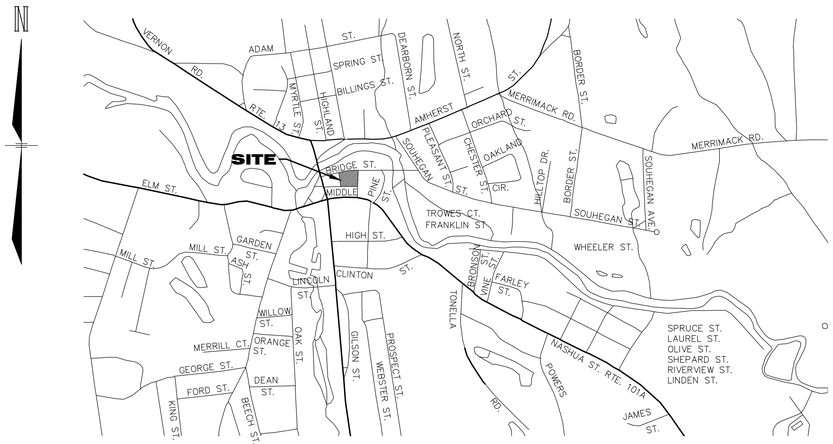
MAP 26, LOT 173
TOWN OF MILFORD, NH
ONE UNION SQUARE
MILFORD, NH 03055-4230

MAP 26, LOT 174
KSH REALTY, LLC
320 MILE SLIP ROAD
MOLFORD, NH 03055

MAP 26, LOT 176
RONALD & LOREEN RACICOT,
CO-TRUSTEES, RACICOT FAMILY
21 OLD WILTON ROAD
MILFORD, NH 03055

MAP 26, LOT 177
FRANKO ESTATE HOLDINGS OF NH LLC
116 BURNS HILL ROAD
WILTON, NH 03086-5106

VICINITY PLAN



INDEX OF SHEETS

PERMITS / APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN SITE PLAN			

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF MILFORD SITE REVIEW REGULATIONS ARE BEING REVIEWED BY THE PLANNING BOARD:

1. TOWN OF MILFORD SITE REVIEW REGULATIONS SECTION 5.03.4 – VARIANCE FOR ALLOWABLE DENSITY
2. TOWN OF MILFORD SITE REVIEW REGULATIONS SECTION 5.05.5.B – SPECIAL EXCEPTION FOR SIDE SETBACK

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE _____ DATE _____

APPROVED BY THE TOWN OF MILFORD PLANNING BOARD

ON _____

BOARD MEMBER _____ AND

BOARD MEMBER _____

TAX MAP 26 LOT 169

COVER SHEET

MILFORD INDEPENDENT
SENIOR HOUSING
54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR
HOUSING INITIATIVES OF NEW ENGLAND CORP.

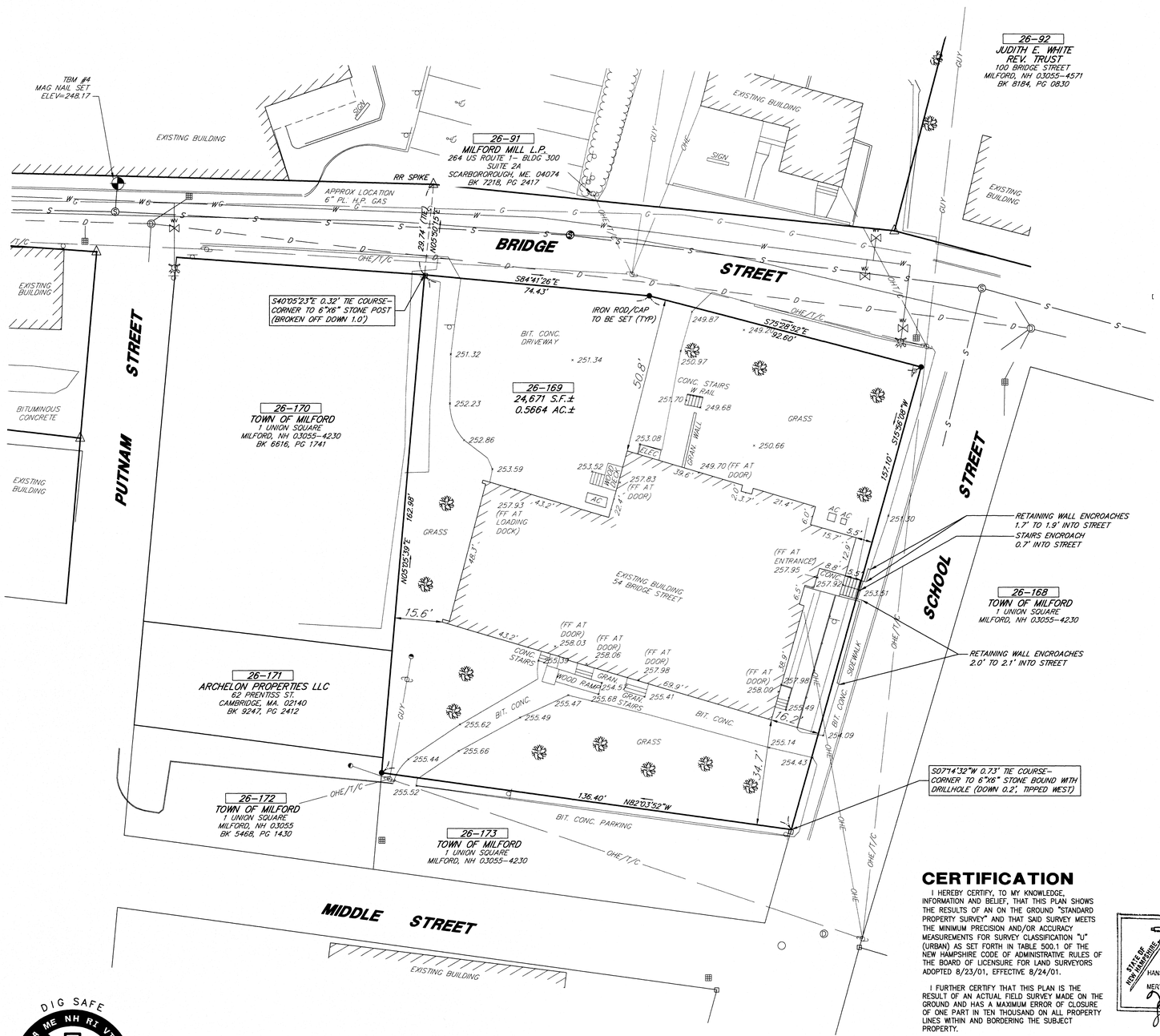
SCALE: NTS **MARCH 22, 2021**

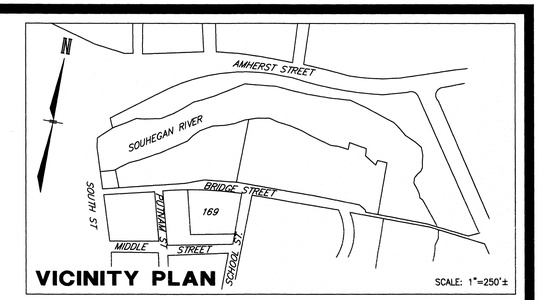
REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	SRP	FB	–	SHEET 1 OF 15
	76451.21	CK	JK	CADFILE	76451-21 COVER-DETAILS	





REFERENCE PLANS

1. SUBDIVISION PLAN OF LAND, MILFORD TEXTILE CORP, SAMUEL GOLDMAN – HELEN N. GOODWIN (GUARDIAN), BRIDGE STREET, MILFORD, NEW HAMPSHIRE, SCALE 1"=20', DATED JANUARY 1974 BY ALLAN H. SWANSON, INC AND RECORDED AS PLAN #7432 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
2. MILL PROPERTY IN MILFORD–AS SOLD MAURICE A. GOLDMAN, 1916 BY S.H. ABBOT, SURVEYOR.
3. PART OF BRICK SCHOOL HOUSE PROPERTY, MILFORD, NH, CONVEYED TO JOHN T. SMITH, SURVEYED OCT. 1, 1929 BY LL JUNKINS, SURVEYOR, SCALE 30 FT=1 INCH, RECORDED AS PLAN #581 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
4. 6K PROPERTIES SUBDIVISION PLAN OF LAND OF TOWN OF MILFORD ON BRIDGE ST., PINE ST. AND SCHOOL ST., MILFORD, NEW HAMPSHIRE, SCALE: 1"=30', DATED AUGUST 25, 1989 (LAST REVISED 10/11/89) BY REISLAND ASSOCIATED, INC., RECORDED AS PLAN #23865 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
5. MIDDLE ST., MILFORD, DATED 1922, BY S.H. ABBOT, SURVEYOR, SCALE 40' = 1 INCH.
6. SITE PLAN SOUHEGAN NATIONAL BANK, MILFORD, N.H., SCALE: 1"=20', DATED MARCH 7, 1980 (LAST REVISED 4/18/80), BY THOMAS F. MORAN INC., RECORDED AS PLAN #13100 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.

NOTES

1. OWNER OF RECORD OF MAP 26 LOT 169: HOUSING INITIATIVES OF NEW ENGLAND CORP., 264 US ROUTE 1–BLDG 300 SUITE 2A, SCARBOROUGH, ME. 04074. DEED REFERENCE TO PARCEL IS BOOK 8430, PAGE 911.

   AREA OF MAP 26, LOT 169 = 24,671 S.F.± OR 0.5664 ACRES±
2. 26-169 INDICATES TAX MAP AND LOT NUMBER.
3. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR HILLSBOROUGH COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33011C0459D, EFFECTIVE DATE SEPTEMBER 25, 2009, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
4. BENCHMARK USED: USGS DISK G-1 #1934 MOUNTED VERTICALLY IN THE NORTHWEST CORNER OF THE TOWN HALL (5'± ABOVE SIDEWALK). ELEV.=262.53 (NGVD 1929).

   BENCHMARKS SET: AS NOTED
5. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
6. CURRENT ZONING DISTRICT: COMMERCIAL
7. TOWN OF MILFORD STREET RECORDS DEFINE BRIDGE STREET AS A CLASS V HIGHWAY, "33 FEET WIDE AT SWINGING BRIDGE TAPERING TO 26 FEET WIDE AT JUNCTION WITH UNION SQUARE".

   TOWN OF MILFORD STREET RECORDS DEFINE SCHOOL STREET AS A CLASS V HIGHWAY, APPROXIMATELY 30' WIDE FROM BRIDGE STREET SOUTHERLY TO THE NORTHEAST CORNER OF MIDDLE STREET.

   STREET LINES AS ESTABLISHED BY THIS SURVEY ARE BASED UPON REFERENCE PLANS 1, 2, 3 AND 6.
8. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.

LEGEND

- IRON PIN/CAP TO BE SET
- RAILROAD SPIKE
- GRANITE POST / BOUND
- CURB
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- RETAINING WALL
- RAILING
- SIGN
- GASGATE
- LIGHT POLE
- GROUND LIGHT
- HYDRANT
- SEWER MANHOLE
- DRAIN MANHOLE
- CATCH BASIN
- WATER GATE
- UTILITY POLE
- SPOT GRADE (x 202.0)
- BROOK, STREAM OR RIVER
- LIMITS OF CLEARING / TREELINE
- TREES
- SHRUBLINE
- RIP-RAP
- SEWER LINE (S)
- WATER LINE (SEE NOTE 5) (W)
- DRAIN LINE (D)
- GAS LINE (G)
- OVERHEAD UTILITIES (OHE/T/C)
- UNDERGROUND UTILITIES (UGE/T/C)

DIG SAFE
ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

CERTIFICATION

I HEREBY CERTIFY, TO MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN SHOWS THE RESULTS OF AN ON THE GROUND "STANDARD PROPERTY SURVEY" AND THAT SAID SURVEY MEETS THE MINIMUM PRECISION AND/OR ACCURACY MEASUREMENTS FOR SURVEY CLASSIFICATION "U" (URBAN) AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS ADOPTED 8/23/01, EFFECTIVE 8/24/01.

I FURTHER CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE — No. 787 — LICENSED LAND SURVEYOR — HANS-GEORG MERTSCH, JR.

1/19/2021

REV.	DATE	DESCRIPTION	DR	CK

TAX MAP 26 LOT 169

BOUNDARY AND EXISTING CONDITIONS PLAN

BRIDGE STREET AND SCHOOL STREET

54 BRIDGE STREET
MILFORD, NEW HAMPSHIRE

OWNED BY/PREPARED FOR
HOUSING INITIATIVES OF NEW ENGLAND

SCALE: 1"=20' **JANUARY 18, 2021**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

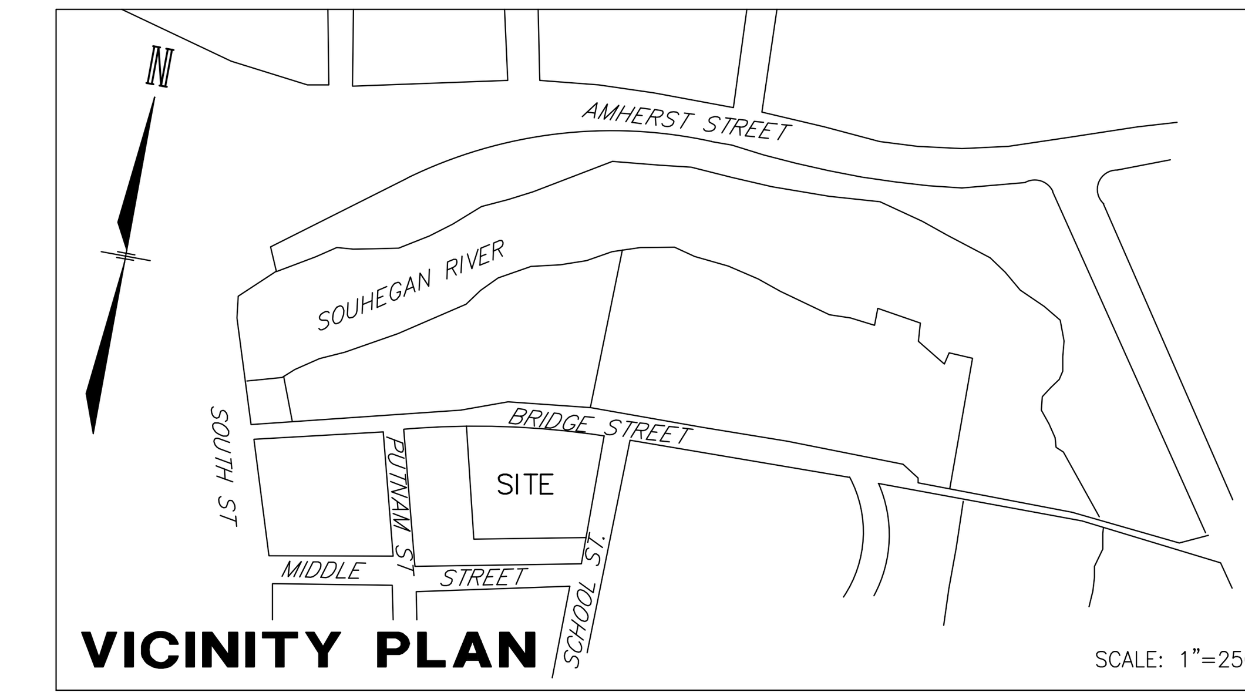
FILE	DR	FB		
76451.20	STB			SHEET 2 OF 2
	CK	CADFILE		
	HGM	76451-21 SURVEY.DWG		

LEGEND

- IRON PIN/CAP TO BE SET
- RAILROAD SPIKE
- GRANITE POST / BOUND
- CURB
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- RETAINING WALL
- RAILING
- GASGATE
- LIGHT POLE
- GROUND LIGHT
- HYDRANT
- SEWER MANHOLE
- DRAIN MANHOLE
- CATCH BASIN
- WATER GATE
- UTILITY POLE
- SPOT GRADE x 202.0
- BROOK, STREAM OR RIVER
- LIMITS OF CLEARING / TREELINE
- TREES
- SHRUBLINE
- RIP-RAP
- SEWER LINE
- WATER LINE (SEE NOTE 5)
- DRAIN LINE
- GAS LINE
- OVERHEAD UTILITIES
- UNDERGROUND UTILITIES

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Apr 14, 2021 - 1:23pm
C:\Users\SPerley\appdata\local\temp\AcPublish_75504\76451-21 Site.dwg



VICINITY PLAN

SCALE: 1"=250'±

REFERENCE PLANS

1. SUBDIVISION PLAN OF LAND, MILFORD TEXTILE CORP, SAMUEL GOLDMAN – HELEN N. GOODWIN (GUARDIAN), BRIDGE STREET, MILFORD, NEW HAMPSHIRE, SCALE 1"=20', DATED JANUARY 1974 BY ALLAN H. SWANSON, INC AND RECORDED AS PLAN #7432 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
2. MILL PROPERTY IN MILFORD–AS SOLD MAURICE A. GOLDMAN, 1916 BY S.H. ABBOT, SURVEYOR.
3. PART OF BRICK SCHOOL HOUSE PROPERTY, MILFORD, NH, CONVEYED TO JOHN T. SMITH, SURVEYED OCT. 1, 1929 BY LL JUNKINS, SURVEYOR, SCALE 30 FT=1 INCH, RECORDED AS PLAN #581 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
4. 6K PROPERTIES SUBDIVISION PLAN OF LAND OF TOWN OF MILFORD ON BRIDGE ST., PINE ST. AND SCHOOL ST., MILFORD, NEW HAMPSHIRE, SCALE: 1"=30', DATED AUGUST 25, 1989 (LAST REVISED 10/11/89) BY REISLAND ASSOCIATED, INC., RECORDED AS PLAN #23865 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
5. MIDDLE ST., MILFORD, DATED 1922, BY S.H. ABBOT, SURVEYOR, SCALE 40' = 1 INCH.
6. SITE PLAN SOUHEGAN NATIONAL BANK, MILFORD, N.H., SCALE: 1"=20', DATED MARCH 7, 1980 (LAST REVISED 4/18/80), BY THOMAS F. MORAN INC., RECORDED AS PLAN #13100 AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.

NOTES

1. OWNER OF RECORD OF MAP 26 LOT 169: HOUSING INITIATIVES OF NEW ENGLAND CORP., 264 US ROUTE 1-BLDG 300 SUITE 2A, SCARBOROUGH, ME. 04074. DEED REFERENCE TO PARCEL IS BOOK 8430, PAGE 911.

   AREA OF MAP 26, LOT 169 = 24,671 S.F.± OR 0.5664 ACRES±
2. 26-169 INDICATES TAX MAP AND LOT NUMBER.
3. CURRENT ZONING: <u>COMMERCIAL AND OVAL SUBDISTRICT</u>

   THE SITE IS LOCATED WITHIN THE FOLLOWING OVERLAY DISTRICTS:
   - AQUIFER PROTECTION OVERLAY DISTRICT
   - GROUNDWATER PROTECTION DISTRICT LEVEL 1
   - OVAL SUBDISTRICT

	REQUIRED	PROVIDED
MIN. LOT SIZE:	20,000 S.F.	24,671 S.F.
MIN. LOT FRONTAGE:	150'	324'
MIN. BUILDING SETBACKS:		
FRONT	30'	5.5'
SIDE/REAR	15'	15.6'
OPEN SPACE:	30%	35.6%

4. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR HILLSBOROUGH COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33011C0459D, EFFECTIVE DATE SEPTEMBER 25, 2009, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
5. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
6. TOWN OF MILFORD STREET RECORDS DEFINE BRIDGE STREET AS A CLASS V HIGHWAY, "33 FEET WIDE AT SWINGING BRIDGE TAPERING TO 26 FEET WIDE AT JUNCTION WITH UNION SQUARE".
7. TOWN OF MILFORD STREET RECORDS DEFINE SCHOOL STREET AS A CLASS V HIGHWAY, APPROXIMATELY 30' WIDE FROM BRIDGE STREET SOUTHERLY TO THE NORTHEAST CORNER OF MIDDLE STREET.
8. STREET LINES AS ESTABLISHED BY THIS SURVEY ARE BASED UPON REFERENCE PLANS 1, 2, 3 AND 6.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
10. THE SITE IS LOCATED WITH IN THE GROUNDWATER PROTECTION DISTRICT, LEVEL 1.

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TAX MAP 26 LOT 169

<u>OVERVIEW - EXISTING CONDITIONS PLAN</u>

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: 1" = 30' **MARCH 22, 2021**

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HORIZONTAL SCALE 1"=20'
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NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATIONS, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY DEMOLITION. THE LOCATIONS SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED DEMOLITION TO DETERMINE APPROPRIATE ACTION TO BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. CONSTRUCTION DEBRIS AND INVASIVE SPECIES SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
6. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL PLACE ORANGE CONSTRUCTION FENCING AROUND EACH TREE TO BE RETAINED THROUGHOUT CONSTRUCTION. NO STOCKPILES OF MATERIAL ARE PERMITTED WITHIN THE DRIP LINE OF THE TREES TO BE SAVED.
7. CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY IF ANY TREES ARE DAMAGED DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE NOTES

TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.

MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.

THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.

THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.

1. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
3. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
4. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
5. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
6. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
7. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
8. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
9. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
10. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
11. COMPLETE BUILDING.
12. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
13. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
14. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
15. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.

TAX MAP 26 LOT 169

SITE PREPARATION PLAN

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: 1" = 20' **MARCH 22, 2021**

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

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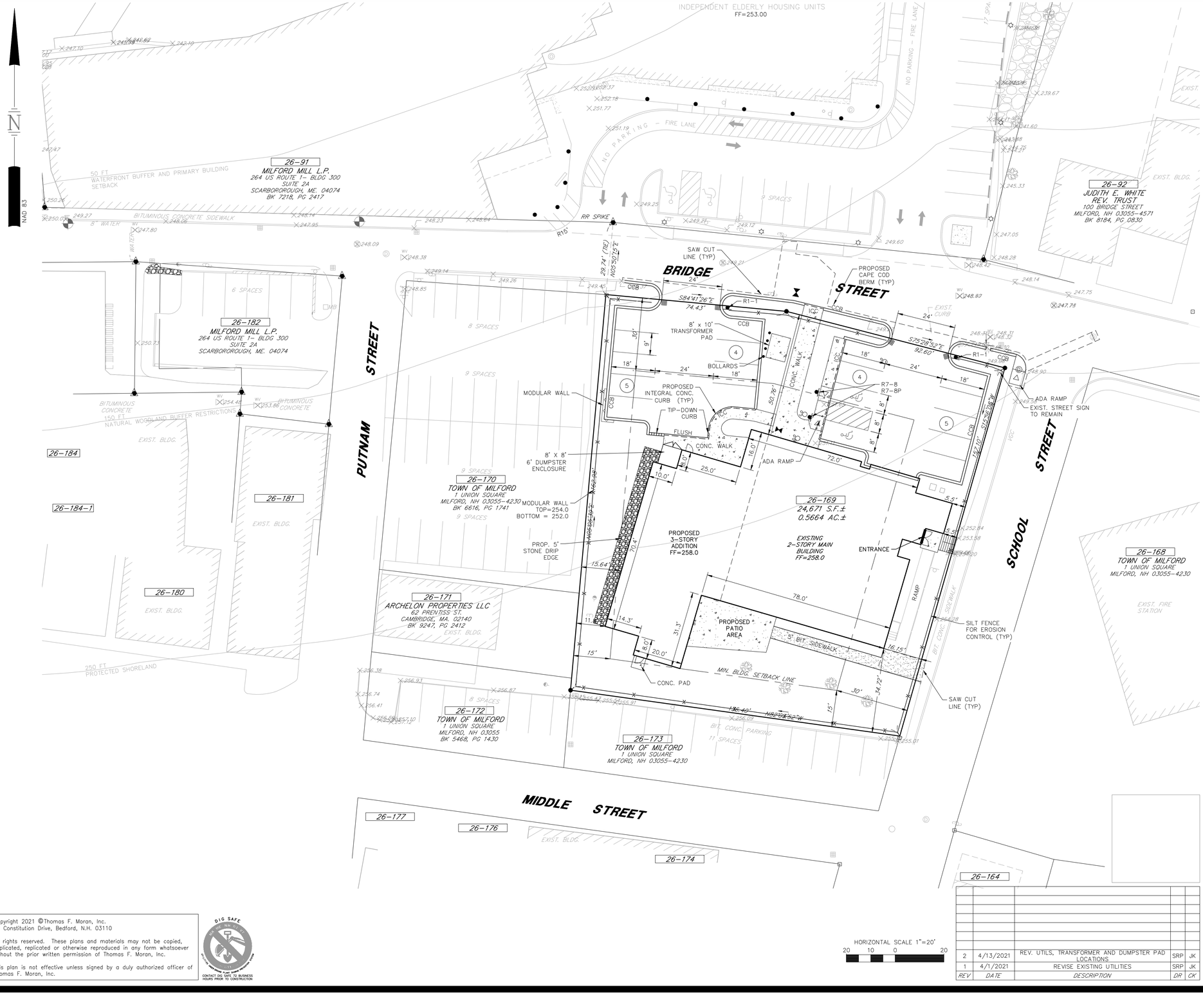

NOTES

1. OWNER OF RECORD OF MAP 26 LOT 169: HOUSING INITIATIVES OF NEW ENGLAND CORP, 264 US RTE. 1 – BLDG 300, SUITE 2A, SCARBOROUGH, ME 04074.
   DEED REFERENCE TO PARCEL IS BOOK 8430, PAGE 0911.
2. AREA OF MAP 26, LOT 169 = 24,671 S.F.± OR 0.566 ACRES±
3. 26–169 INDICATES TAX MAP AND LOT NUMBER.
4. THE PURPOSE OF THIS PLAN IS TO SHOW AN ADDITION TO THE EXISTING BUILDING AND RENOVATE TO CHANGE THE USE TO INDEPENDENT SENIOR HOUSING. PROPOSING 3–STORY 3,330 SF FOOTPRINT ADDITION, RENOVATE EXISTING BUILDING TO CREATE AN 18 UNIT APARTMENT BUILDING.
5. CURRENT ZONING: COMMERCIAL AND OVAL SUBDISTRICT

   THE SITE IS LOCATED WITHIN THE FOLLOWING OVERLAY DISTRICTS:
   –AQUIFER PROTECTION OVERLAY DISTRICT
   –GROUNDWATER PROTECTION DISTRICT LEVEL 1
   –OVAL SUBDISTRICT

	REQUIRED	PROVIDED
MIN. LOT SIZE:	20,000 S.F.	24,671 S.F.
MIN. LOT FRONTAGE:	150'	324'
MIN. BUILDING SETBACKS:		
FRONT	30'	5.5' (GRANDFATHERED)
SIDE/REAR	15'	11.8' AND >15'
OPEN SPACE:	30%	31%

6. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING SERVICES:

STORM DRAINAGE:	PRIVATE AND MUNICIPAL
SANITARY SEWER:	MUNICIPAL
WATER:	MUNICIPAL
GAS:	LIBERTY UTILITIES
ELECTRIC:	EVERSOURCE
TELEPHONE:	CONSOLIDATED COMMUNICATIONS

7. PARKING CALCULATIONS
   REQUIRED:
   SENIOR HOUSING DEVELOPMENT: 1.5 SP./UNIT X 18 UNITS = 27 SPACES REQ.

   PROPOSED: 18 SPACES (INCL. 2 ADA) – ON SITE
   10 SPACES (PARKING EASEMENT ON LOT 26–92)
   28 SPACES TOTAL
8. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH N.H.D.E.S. REGULATIONS.
9. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
10. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE TOWN OF MILFORD ZONING ORDINANCE AND SITE PLAN REGULATIONS.
11. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
12. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
14. WATER, SEWER, ROAD (INCLUDING PARKING LOT) AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH TOWN OF MILFORD'S WATER UTILITIES DEPARTMENT AND PUBLIC WORKS DEPARTMENT STANDARDS.
15. AS–BUILT PLANS SHALL BE DELIVERED TO THE BUILDING DEPARTMENT PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED.

HORIZONTAL SCALE 1"=20'
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REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TAX MAP 26 LOT 169

SITE PLAN

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

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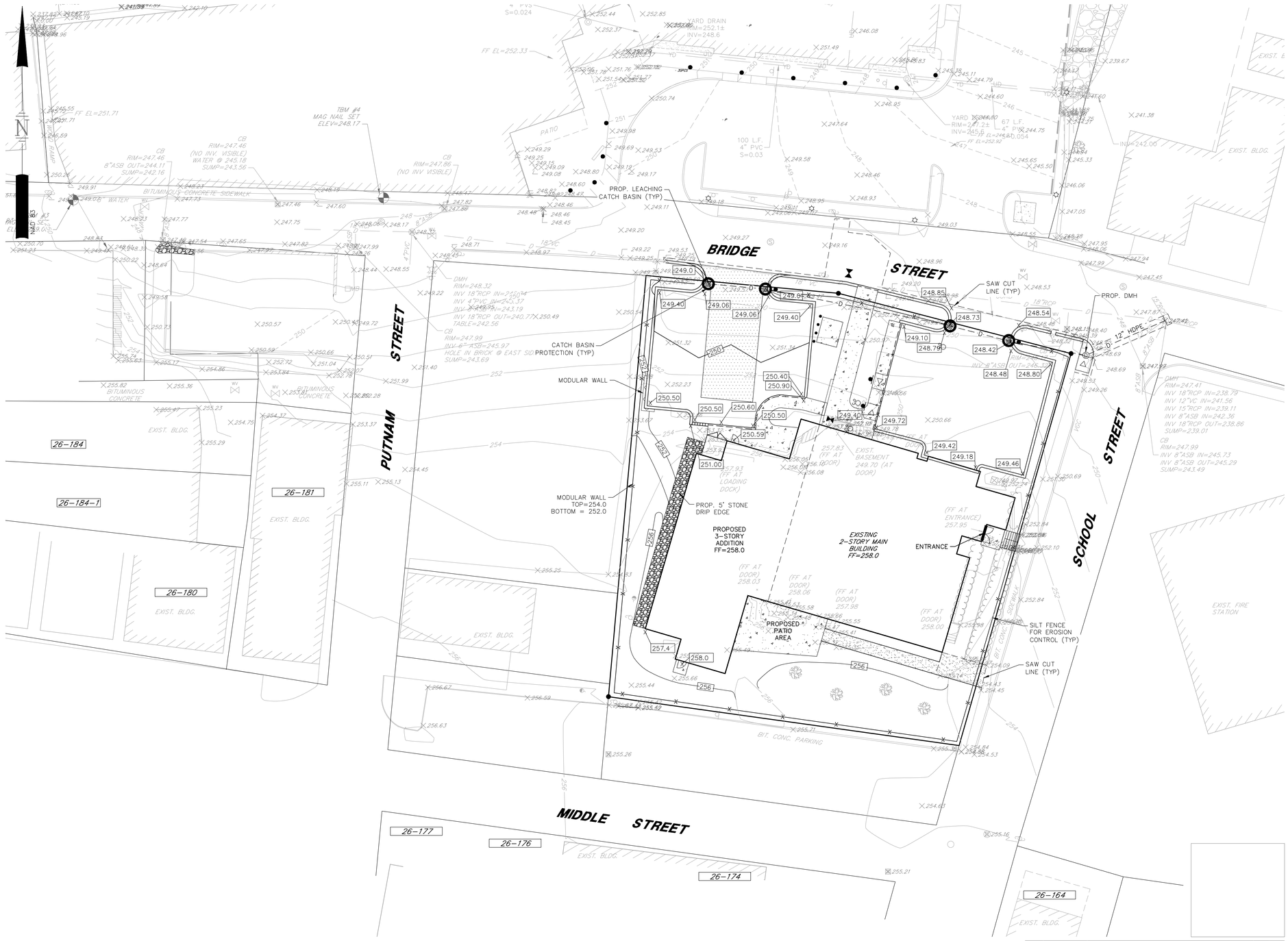

NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF MILFORD, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL SURROUNDING CONDITIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
6. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
7. STORM DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
8. ALL MANHOLES IN PAVEMENT SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
9. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
10. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
11. THE EROSION CONTROL PRACTICES SHOWN ON THESE PLANS ARE ILLUSTRATIVE ONLY AND SHALL BE SUPPLEMENTED BY THE SITE CONTRACTOR AS NEEDED.
12. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
13. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
14. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
15. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS AND ALIGNMENTS.
16. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEERS RECOMMENDED METHODS TO ADDRESS ANY GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
17. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
18. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
19. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
20. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
21. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
22. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
23. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
24. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
25. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.
26. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.

HORIZONTAL SCALE 1"=20'
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REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TAX MAP 26 LOT 169

GRADING AND DRAINAGE PLAN

MILFORD INDEPENDENT SENIOR HOUSING

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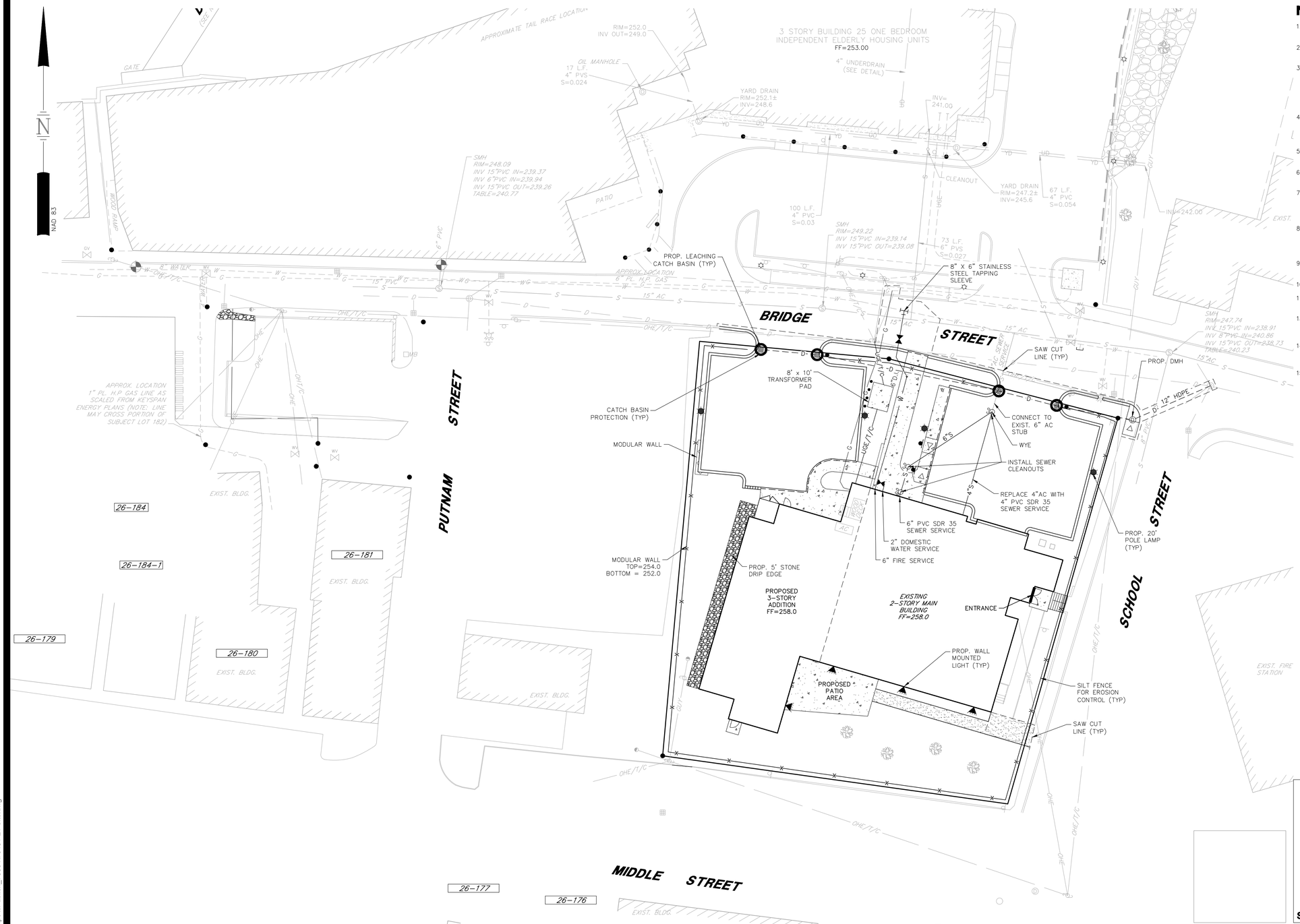

NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF MILFORD, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL SURROUNDING CONDITIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
6. ALL MANHOLES IN PAVEMENT SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
7. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
8. ON-SITE WATER DISTRIBUTION SHALL BE TO MILFORD WATER DEPARTMENT STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5 FEET COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10 FEET MINIMUM.
9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
10. VERIFY UTILITY CONNECTIONS TO BUILDING WITH ARCHITECTURAL DRAWINGS.
11. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
13. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS AND ALIGNMENTS.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
15. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.

HORIZONTAL SCALE 1"=20'
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REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TAX MAP 26 LOT 169

UTILITY PLAN

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: 1" = 20' **MARCH 22, 2021**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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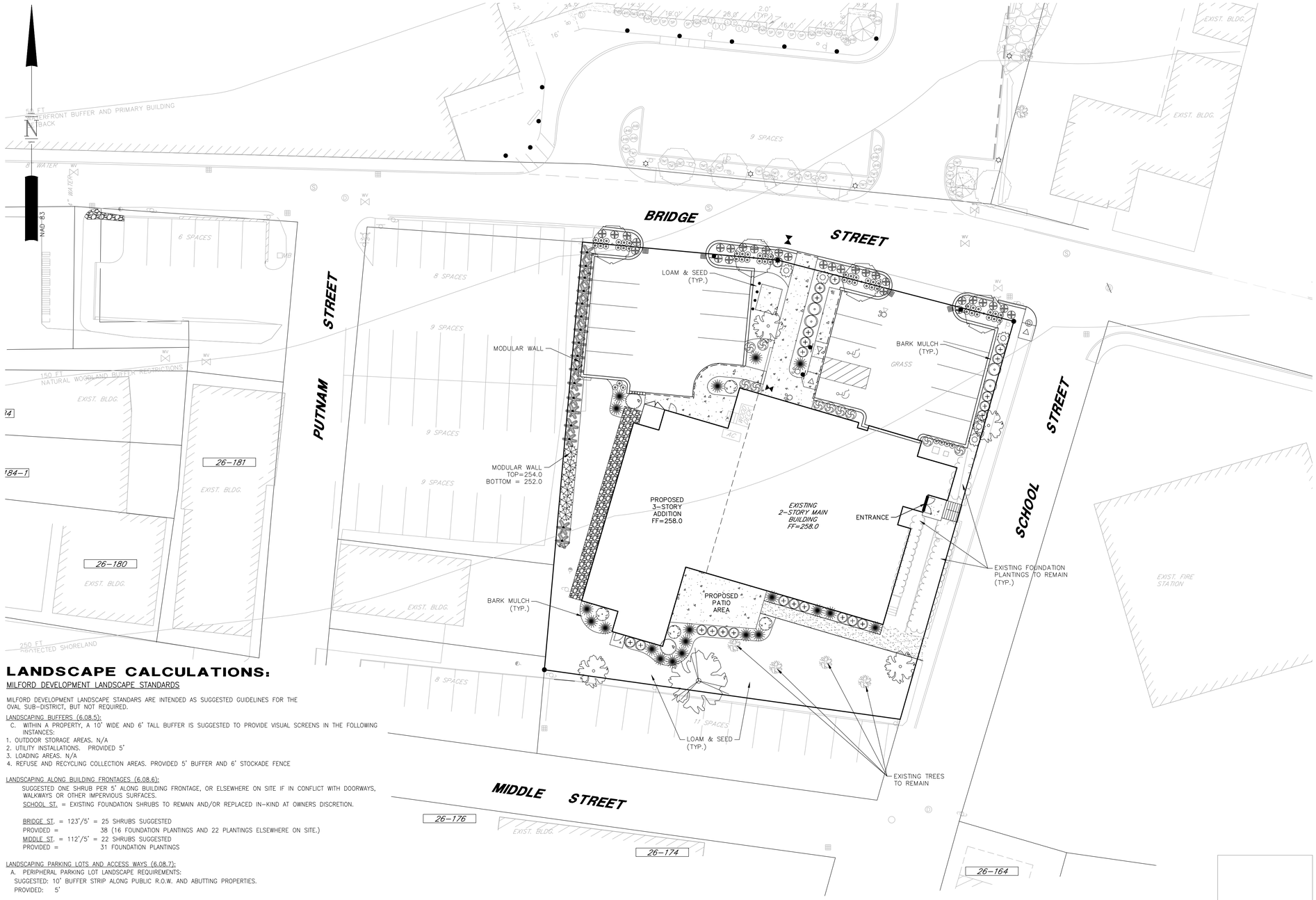

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	4	ACER R. 'BOWHALL' BOWHALL RED MAPLE	2 1/2" TO 3" CAL.	B&B
	1	PLATANUS X ACREIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANETREE	2 1/2" TO 3" CAL.	B&B
	4	PYRUS C. 'CHANTICLEER' CHANTICLEER FLOWERING PEAR	2 1/2" TO 3" CAL.	B&B
	10	EUONYMUS F. 'MOONSHADOW' MOONSHADOW WINTERCREEPER	3 GAL.	CONT.
	24	HYDRANGEA MACROPHYLLA 'PENNY MAC' PENNY MAC HYDRANGEA	3 GAL.	CONT.
	4	HYDRANGEA PANICULATA 'FIRE LIGHT' FIRE LIGHT PANICLE HYDRANGEA	2 1/2' TO 3'	B&B
	5	JUNIPERUS C. 'PFITZERIANA COMPACTA' COMPACT PFITZER JUNIPER	3 GAL.	CONT.
	4	RHODODENDRON 'LEE'S DARK PURPLE' LEE'S DARK PURPLE RHODODENDRON	2' TO 2 1/2'	B&B
	20	TAXUS M. 'GREENWAVE' GREENWAVE YEW	18" TO 24"	B&B
	6	THUJA O. 'TECHNY' MISSION ARBORVITAE	5' TO 6'	B&B
	2	VIBURNUM PRUNIFORIUM 'RED ARROW' RED ARROW BLACKHAW VIBURNUM	4' TO 5'	B&B
	55	BOUTELOUA 'BLONDE AMBITIONS' BLONDE AMBITION BLUE GRAMA GRASS	2 GAL.	CONT.
	17	MISCANTHUS S. 'VARIEGATA' VARIEGATED SILVER GRASS	3 GAL.	CONT.
	29	ARCTOSTAPHYLOS UVA-URSI BEARBERRY	1 GAL.	CONT.

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1-1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FN."

GUARANTEE

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

LANDSCAPE CALCULATIONS:

MILFORD DEVELOPMENT LANDSCAPE STANDARDS

MILFORD DEVELOPMENT LANDSCAPE STANDARS ARE INTENDED AS SUGGESTED GUIDELINES FOR THE OVAL SUB-DISTRICT, BUT NOT REQUIRED.

LANDSCAPING BUFFERS (6.08.5):

C. WITHIN A PROPERTY, A 10' WIDE AND 6' TALL BUFFER IS SUGGESTED TO PROVIDE VISUAL SCREENS IN THE FOLLOWING INSTANCES:

1. OUTDOOR STORAGE AREAS. N/A
2. UTILITY INSTALLATIONS. PROVIDED 5'
3. LOADING AREAS. N/A
4. REFUSE AND RECYCLING COLLECTION AREAS. PROVIDED 5' BUFFER AND 6' STOCKADE FENCE

LANDSCAPING ALONG BUILDING FRONTAGES (6.08.6):

SUGGESTED ONE SHRUB PER 5' ALONG BUILDING FRONTAGE, OR ELSEWHERE ON SITE IF IN CONFLICT WITH DOORWAYS, WALKWAYS OR OTHER IMPERVIOUS SURFACES.

SCHOOL ST. = EXISTING FOUNDATION SHRUBS TO REMAIN AND/OR REPLACED IN-KIND AT OWNERS DISCRETION.

BRIDGE ST. = 123'/5' = 25 SHRUBS SUGGESTED
PROVIDED = 38 (16 FOUNDATION PLANTINGS AND 22 PLANTINGS ELSEWHERE ON SITE.)
MIDDLE ST. = 112'/5' = 22 SHRUBS SUGGESTED
PROVIDED = 31 FOUNDATION PLANTINGS

LANDSCAPING PARKING LOTS AND ACCESS WAYS (6.08.7):

A. PERIPHERAL PARKING LOT LANDSCAPE REQUIREMENTS:
SUGGESTED: 10' BUFFER STRIP ALONG PUBLIC R.O.W. AND ABUTTING PROPERTIES.
PROVIDED: 5'

SUGGESTED: 1 TREE PER 30' OF LANDSCAPE STRIP AND COMPLEMENTED BY SUITABLE GROUND COVER AND SHRUBS. [162'/30' = 5 TREES]
PROVIDED: 5 TREES AND COMPLEMENTED BY SUITABLE GROUND COVER AND SHRUBS.

B. INTERIOR LANDSCAPE REQUIREMENTS:
SUGGESTED: 5% INTERIOR GREEN SPACE AND 1 TREE PER 15 SPACES

PROVIDED: 9.6% INTERIOR GREEN AND 1 TREE

DIG SAFE
CALL DIG SAFE SYSTEM, INC. 811 OR 1-888-DIG-SAFE (1-888-344-7233)
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
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REV	DATE	DESCRIPTION	DR	CK
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1	3/26/2021	ADD LANDSCAPE REVISIONS PER STAFF COMMENTS	SRP	JK

TAX MAP 26 LOT 169

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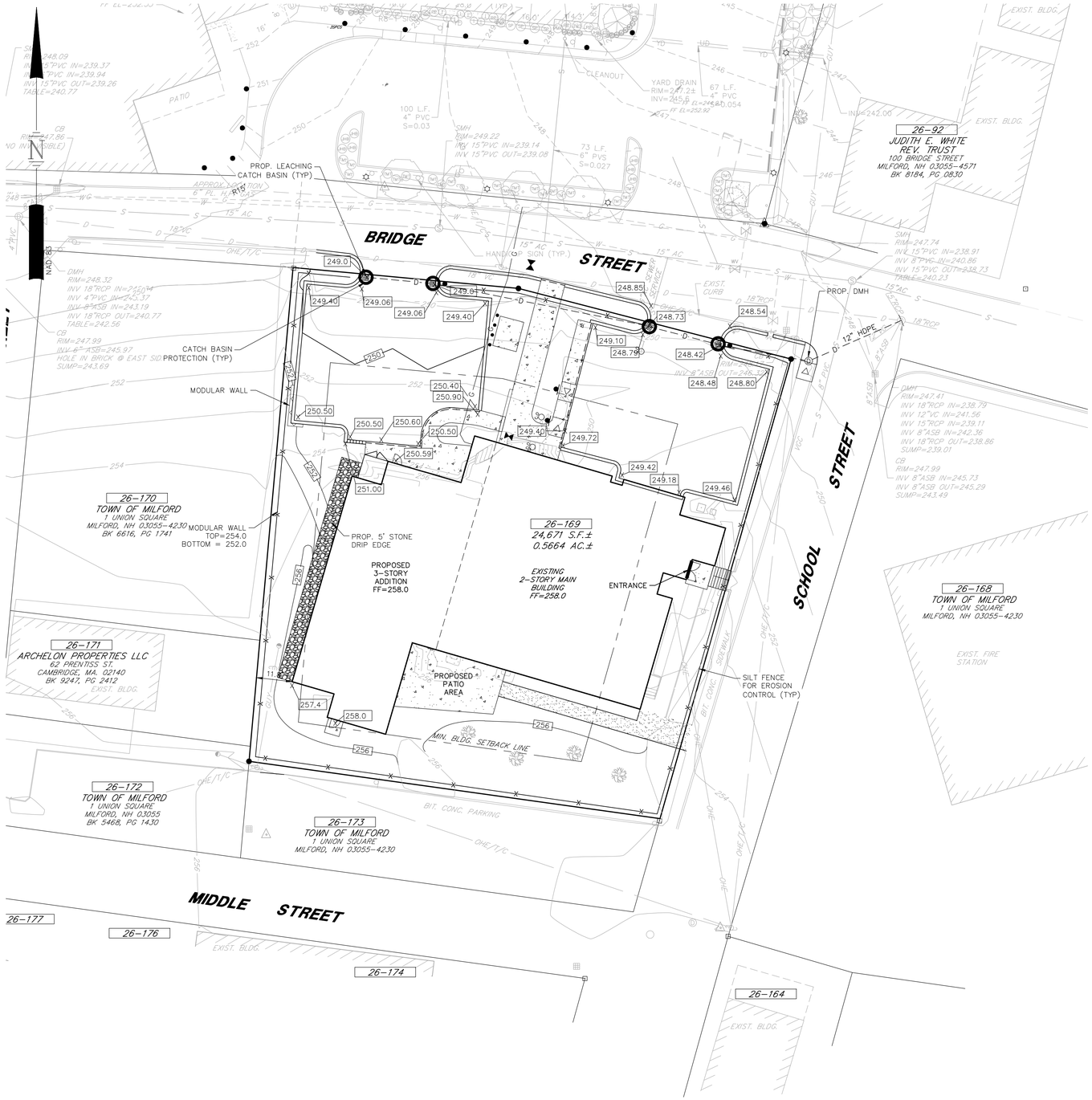

HORIZONTAL SCALE 1"=20'
20 10 0 20

CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.

2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO SHOW AN ADDITION TO THE EXISTING BUILDING AND RENOVATE TO CHANGE THE USE TO INDEPENDENT SENIOR HOUSING.

2. TOTAL SITE AREA: 0.56 AC
TOTAL AREA OF DISTURBANCE: 0.31 AC

3. SOILS SHOWN ARE FROM THE SOIL SURVEY OF HILLSBOROUGH COUNTY, NH, EASTERN PART, PREPARED BY USDA-NATIONAL RESOURCE CONSERVATION SERVICES.
HsB - HINCKLY LOAMY SAND

4. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.79
IMPERVIOUS SURFACE AREA: 0.39± AC

5. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

TEMPORARY STABILIZATION - TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL BE AS SPECIFIED BY THE LANDSCAPE PLAN NOTES OR MAY OTHERWISE CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

6. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

SILT FENCE - WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8" OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE - WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

CATCH BASINS - WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

CATCH BASIN PROTECTION - WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

BLANKET SLOPE PROTECTION - SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

7. STORM WATER MANAGEMENT

STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY A PIPE AND CATCH BASIN CLOSED DRAINAGE SYSTEM. RUNOFF FROM THE ENTIRE SITE DISCHARGES TO THE MUNICIPAL DRAINAGE SYSTEM THAT OUTLETS TO THE MERRIMACK RIVER FROM BRIDGE STREET.

8. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

9. THRUST BLOCK SHALL BE PROVIDED WHERE WATER LINE CHANGES DIRECTION OR TAPS INTO EXISTING WATER LINE.

10. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
- NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
- WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
- MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.

TAX MAP 26 LOT 169

STORMWATER MANAGEMENT PLAN

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: 1" = 20' **MARCH 22, 2021**

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Apr 14, 2021 - 1:24pm
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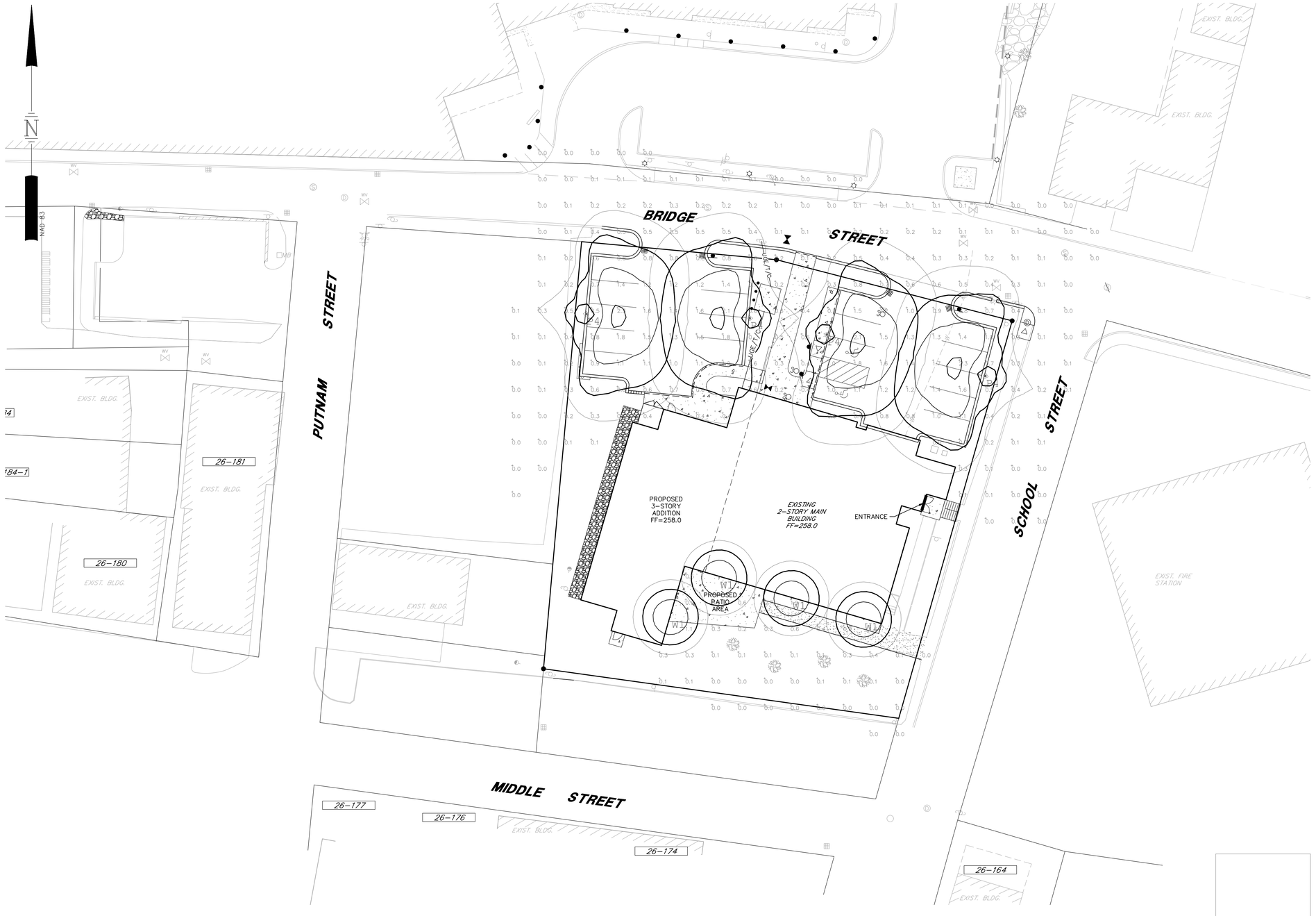
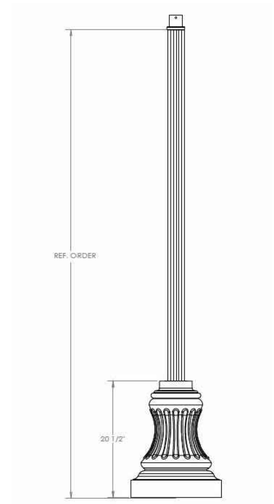


Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
✹	4	P4	SINGLE	LEX-NL-PLC5-40W27K-U-4-A1-T2-N-N-BK / PLB130-4-12-S-.188-T300-N-BK (12' POLE)
◀	4	W1	SINGLE	66410-K27-BLK / WALL MTD 10' AFG

StatArea_1
WEST PARKING LOT
Illuminance (Fc)
Average = 1.27
Maximum = 2.3
Minimum = 0.5
Avg/Min Ratio = 2.54
Max/Min Ratio = 4.60

StatArea_2
EAST PARKING LOT
Illuminance (Fc)
Average = 1.31
Maximum = 2.3
Minimum = 0.7
Avg/Min Ratio = 1.87
Max/Min Ratio = 3.29

BEGA LED WALL LUMIERE



PEMCO POLE LAMPS

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	~~REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS~~	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TAX MAP 26 LOT 169

LIGHTING PLAN (BY CHARRON LIGHTING)

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: 1" = 20' **MARCH 22, 2021**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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FILE		DR	SRP	FB	–	
	76451.21	CK	JK	CADFILE	76451-21 SITE	SHEET L-1

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CONSTRUCTION SEQUENCE NOTES

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
3. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES PRIOR TO ANY EARTH MOVING OPERATION.
4. ROUGH GRADE SITE. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.

   AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
5. CONSTRUCT CULVERTS, DETENTION BASINS AND TREATMENT SWALES. PLACE HEADWALLS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS/BASINS PRIOR TO DIRECTING FLOW TO THEM.
6. INSTALL ALL UNDERGROUND UTILITIES.
7. CONSTRUCT BUILDINGS.
8. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
9. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES PERIODICALLY AND IMMEDIATELY AFTER STORM EVENTS.
10. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
11. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.

* REFER TO THE STORM WATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. ALL IN PAVEMENT MANHOLES SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
2. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
3. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
5. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
6. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
7. REFER TO THE CITY'S STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
8. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING FLOW TO THEM.
9. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. ALL PROPOSED VEGETATED AREAS THAT DO NO EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
3. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
4. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OR 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
5. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
6. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
7. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
8. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
9. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   TYPICAL LAWN MIX (MIN. 200 LBS/ACRE):
   33% CREEPING RED FESCUE (MIN. 66 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 84 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 42 LBS/ACRE)
   4% REDTOP (MIN. 8 LBS/ACRE)

   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   WILDFLOWER SLOPE (NHDOT TYPE 45) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):
   38% CREEPING RED FESCUE (MIN. 60 LBS/ACRE)
   32% PERENNIAL RYEGRASS (MIN. 51 LBS/ACRE)
   5% REDTOP (MIN. 8 LBS/ACRE)
   5% ALSIKE CLOVER (MIN. 8 LBS/ACRE)
   5% BIRDSFOOT TREFOIL (MIN. 8 LBS/ACRE)
   3% LANCE-LEAF COREOPSIS (MIN. 3 LBS/ACRE)
   3% OXEYE DAISY (MIN. 3 LBS/ACRE)
   3% BUTTERFLY WEED (MIN. 3 LBS/ACRE)
   3% BLACKEYED SUSAN (MIN. 3 LBS/ACRE)
   3% WILD LUPINE (MIN. 3 LBS/ACRE)

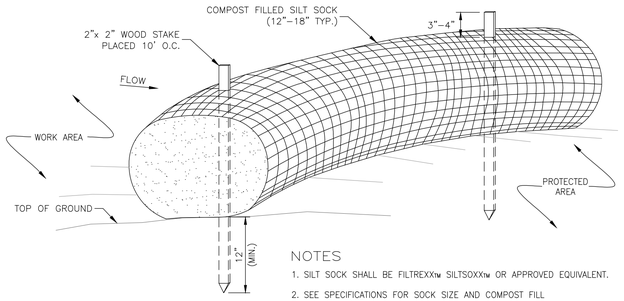
   GENERAL SLOPE (NHDOT TYPE 44) MIX 3:1 OR GREATER SLOPES (MIN. 160 LBS/ACRE):
   44% CREEPING RED FESCUE (MIN. 70 LBS/ACRE)
   38% PERENNIAL RYEGRASS (MIN. 60 LBS/ACRE)
   6% REDTOP (MIN. 10 LBS/ACRE)
   6% ALSIKE CLOVER (MIN. 10 LBS/ACRE)
   6% BIRDSFOOT TREFOIL (MIN. 10 LBS/ACRE)

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
   a. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
   b. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
9. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.

STOCKPILE NOTES

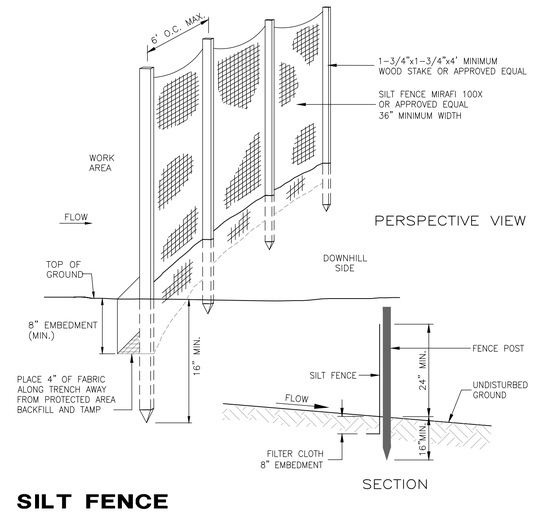
1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES AND INLETS.
2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER APPROVED PRACTICES.
3. STOCKPILES SHOULD BE SURROUNDED BY SEDIMENT BARRIERS, SUCH AS SILT FENCE OR SILT SOCK, TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.
4. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
5. PLACE BAGGED MATERIALS ON PALLETS AND UNDER COVER.
6. INACTIVE STOCKPILES
   a. INACTIVE SOIL STOCKPILES sHOULD BE COVERED WITH ANCHORED TARPS OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS AT ALL TIMES.
   b. INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS AND OTHER SIMILAR MATERIALS SHOULD BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHOULD ALSO BE COVERED.
7. ACTIVE STOCKPILES
   a. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
   b. WHEN A STORM EVENT IS PREDICTED, STOCKPILES SHOULD BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.



NOTES
1. SILT SOCK SHALL BE FILTREXXtm SILTSOXXtm OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK

NOT TO SCALE



SILT FENCE

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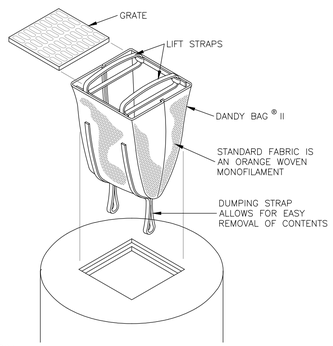


INSTALLATION

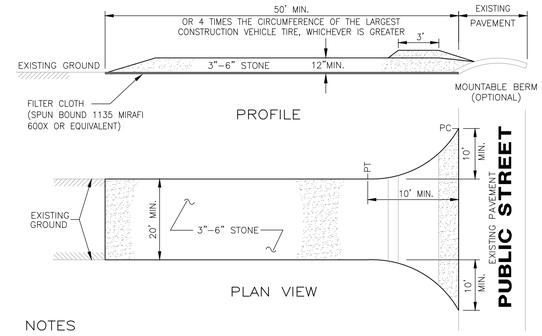
INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN UNIT. STAND THE GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO THE DANDY BAG IP SO THAT THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

MAINTENANCE

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE DANDY BAG II. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL OIL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.

DANDY BAG® II

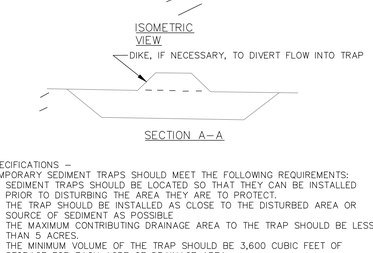
NOT TO SCALE



NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-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 RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-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.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

USDA - SCS STABILIZED CONSTRUCTION ENTRANCE

SEE PLAN FOR PROPOSED LOCATION — NOT TO SCALE



SPECIFICATIONS –
TEMPORARY SEDIMENT TRAPS SHOULD MEET THE FOLLOWING REQUIREMENTS:
- SEDIMENT TRAPS SHOULD BE LOCATED SO THAT THEY CAN BE INSTALLED PRIOR TO DISTURBING THE AREA THEY ARE TO PROTECT.
- THE TRAP SHOULD BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE
- THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHOULD BE LESS THAN 5 ACRES.
- THE MINIMUM VOLUME OF THE TRAP SHOULD BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
- THE SIDE SLOPES OF THE TRAP SHOULD BE 3:1 OR FLATTER, AND SHOULD BE STABILIZED IMMEDIATELY AFTER THE CONSTRUCTION.

EXCAVATED EARTH OUTLET SEDIMENT TRAP DETAIL

NOT TO SCALE

TAX MAP 26 LOT 169

DETAIL SHEET

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: AS SHOWN **MARCH 22, 2021**

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

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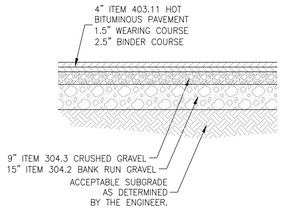
FILE		DR	SRP	FB	–	
	76451.21	CK	JK	CADFILE	76451-21 COVER-DETAILS	SHEET 10 OF 15



NOTES:

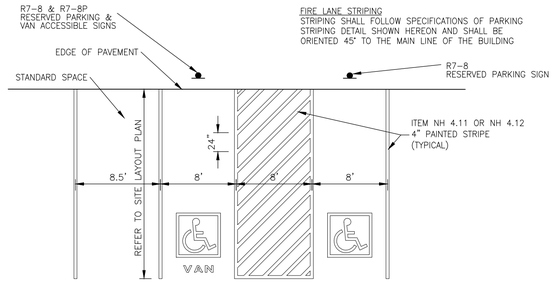
REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.

ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.

ALL PAVEMENT TO MEET AASHOT H-20 LOADING.

TYPICAL PAVEMENT SECTION

NOT TO SCALE



PARKING STRIPING DETAIL

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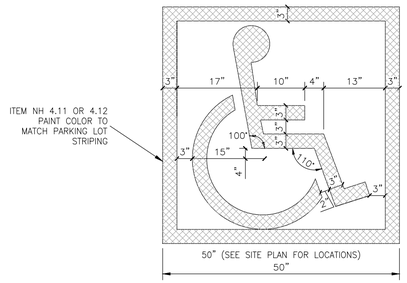
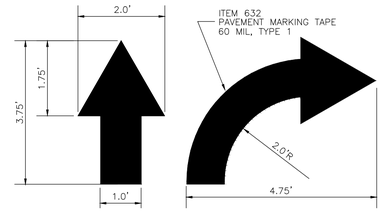


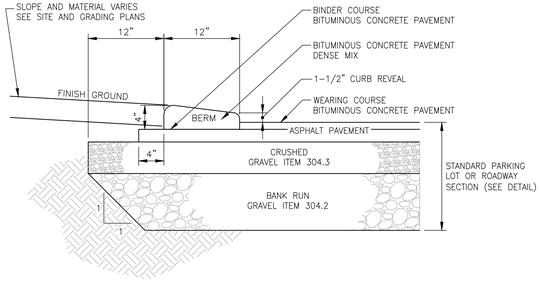
PAINTED HANDICAP SYMBOL

NOT TO SCALE



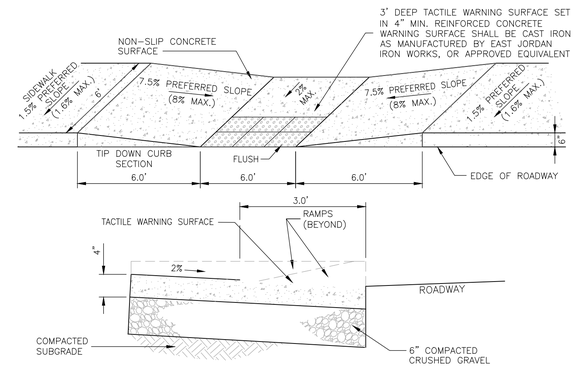
TRAFFIC FLOW ARROW

NOT TO SCALE



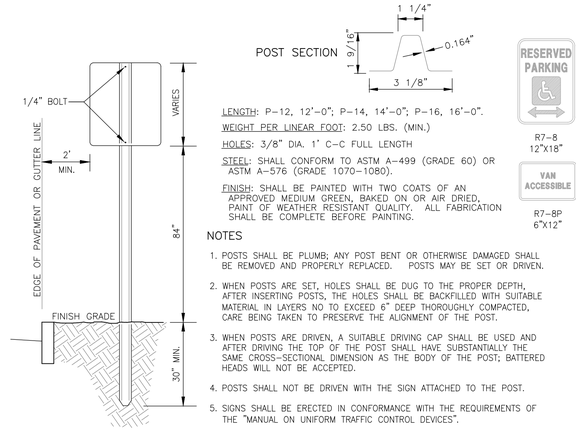
CAPE COD BERM

NOT TO SCALE



ACCESSIBLE RAMP RECESSED IN WALK

WITH DETECTABLE WARNING SURFACE (CAST IRON) NOT TO SCALE



LENGTH: P-12, 12'-0"; P-14, 14'-0"; P-16, 16'-0".

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

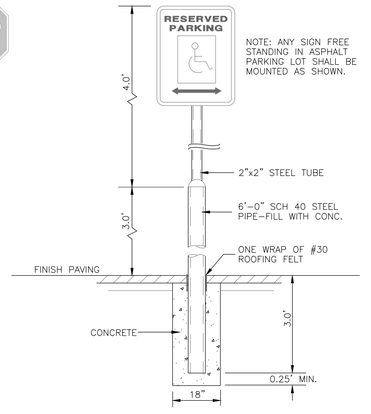
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NO TO EXCEED 6" DEEP THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS-SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL.
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

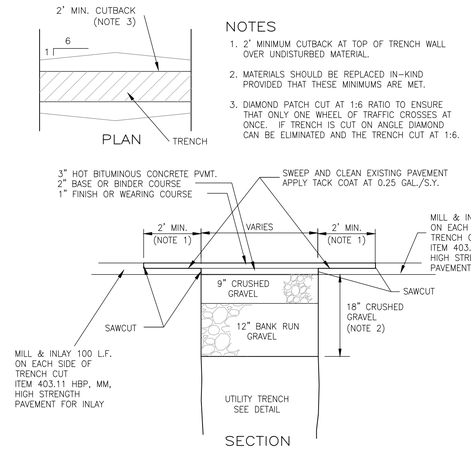
TRAFFIC SIGN POST IN GRADE

NOT TO SCALE



SIGN POLE IN PAVEMENT

NOT TO SCALE

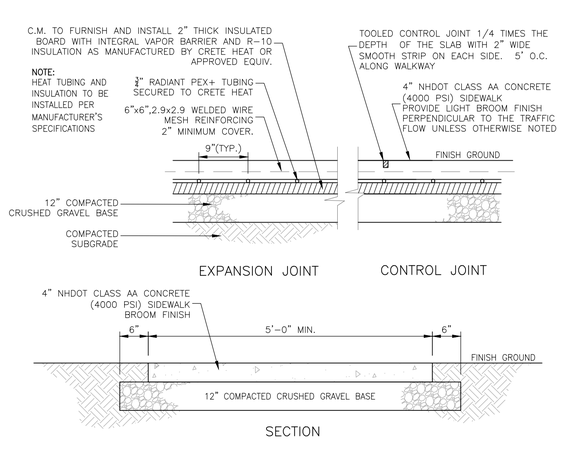


NOTES

1. 2' MINIMUM CUTBACK AT TOP OF TRENCH WALL OVER UNDISTURBED MATERIAL.
2. MATERIALS SHOULD BE REPLACED IN-KIND PROVIDED THAT THESE MINIMUMS ARE MET.
3. DIAMOND PATCH CUT AT 1:6 RATIO TO ENSURE THAT ONLY ONE WHEEL OF TRAFFIC CROSSES AT ONCE. IF TRENCH IS CUT ON ANGLE DIAMOND CAN BE ELIMINATED AND THE TRENCH CUT AT 1:6.

PAVEMENT TRENCH PATCH

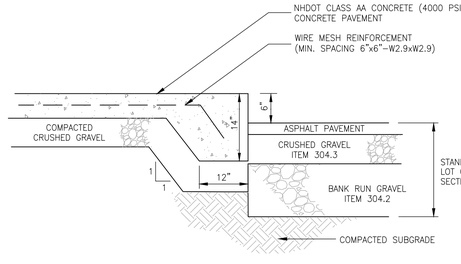
FLUSH NOT TO SCALE



CONCRETE SIDEWALK

NOT TO SCALE

NOTE:
TOOLED EXPANSION JOINT TO BE PLACED 5' O.C. AND 1/2" THICK FABRIC EXPANSION JOINT 20' O.C.



CONCRETE CURB AT SIDEWALK

NOT TO SCALE

TAX MAP 26 LOT 169

DETAIL SHEET

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

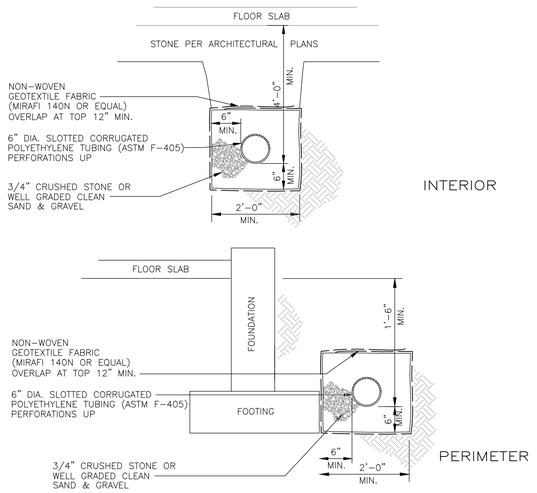
SCALE: AS SHOWN **MARCH 22, 2021**

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

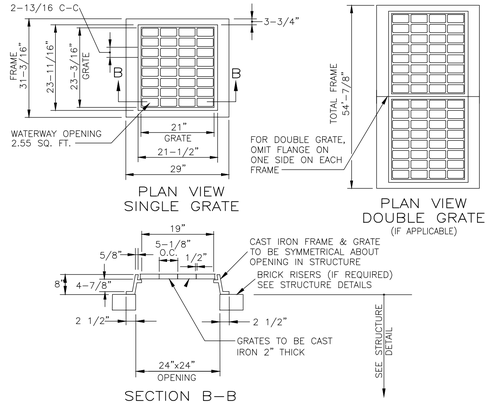
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	SRP	FB	–	
	76451.21	CK	JK	CADFILE	76451-21 COVER-DETAILS	SHEET 11 OF 15



FOUNDATION UNDERDRAIN

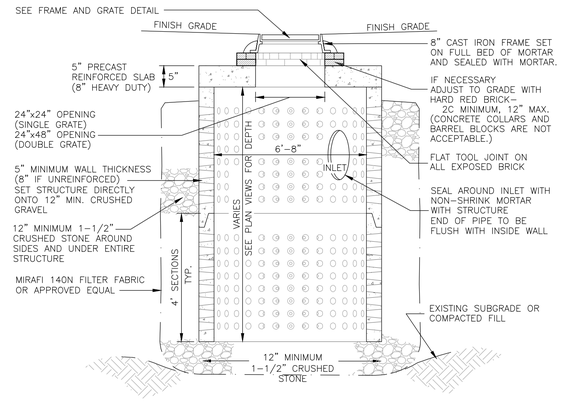
NOT TO SCALE



FRAME AND GRATE

NHDOT TYPE B ALT 1

NOT TO SCALE



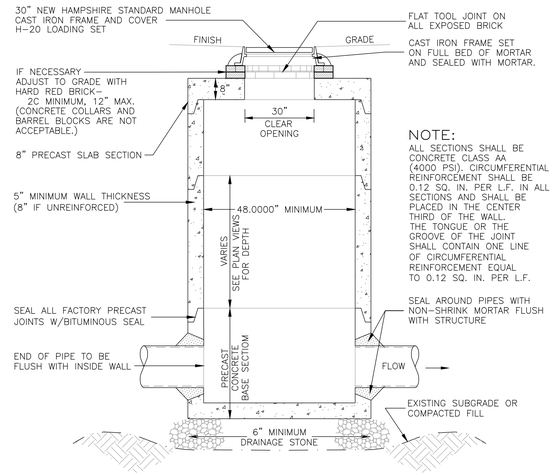
NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478

SUPERIOR CONCRETE CO. CIRCULAR LEACHING CATCH BASIN OR APPROVED EQUAL (H20 LOADING)

LEACHING CATCH BASIN

SLAB TOP

NOT TO SCALE



NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478

DRAIN MANHOLE

SLAB TOP

NOT TO SCALE

STORM DRAIN TRENCH

NOT TO SCALE

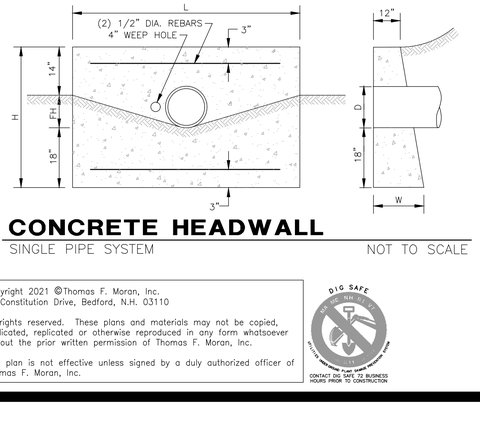
SEWER OR DRAINAGE CLEAN OUT

NOT TO SCALE

YARD DRAIN

NOT TO SCALE

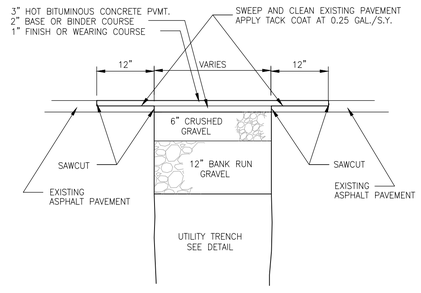
NOMINAL PIPE SIZE D	LENGTH OF BARS L	H	FH	W
12	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	4-2	4-6	3-9	1-1	1-11.25
18	5-2	5-6	4-0	1-4	2-0
24	7-2	7-6	4-6	1-10	2-1.5
30	9-2	9-6	5-0	2-4	2-3
36	11-2	11-6	5-6	2-10	2-4.5
42	13-2	13-6	6-0	3-4	2-6
48	15-2	15-6	6-6	3-10	2-7.5



CONCRETE HEADWALL

SINGLE PIPE SYSTEM

NOT TO SCALE



PAVEMENT TRENCH PATCH

FLUSH

NOT TO SCALE

DIG SAFE
IT'S THE LAW!
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
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FILE	DR	SRP	FB	–	SHEET 12 OF 15
76451.21	CK	JK	CADFILE	76451-21 COVER-DETAILS	

Apr 14, 2021 - 1:19pm
F:\TFM Projects\76451 Milford Elderly\76451-21 Housing Initiative - Site Plan & Permitting - Milford, NH\76451-21_C3D\Design\Production Drawings\76451-21 Cover-Details.dwg

GENERAL NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

   B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

   C. DRY FLUORESCENE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

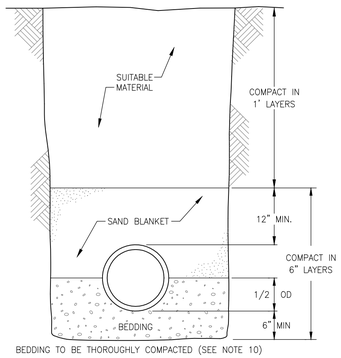
10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

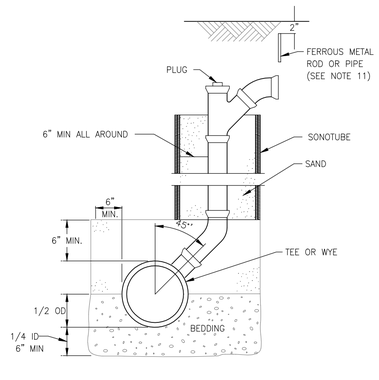
12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.



BEDDING TO BE THOROUGHLY COMPACTED (SEE NOTE 10)

TRENCH CROSS-SECTION

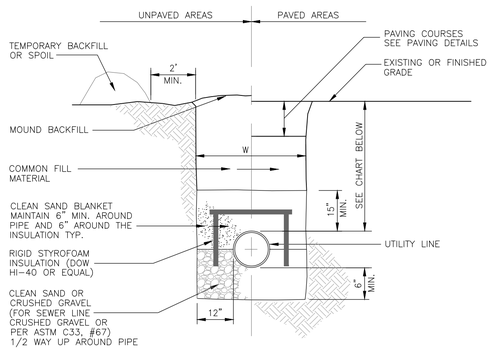
NOT TO SCALE



BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

CHIMNEY (SEE NOTE 12)

NOT TO SCALE



UTILITY	MINIMUM PIPE COVER PAVED AREAS	UNPAVED AREAS
SANITARY SEWER MAIN	6'	4'

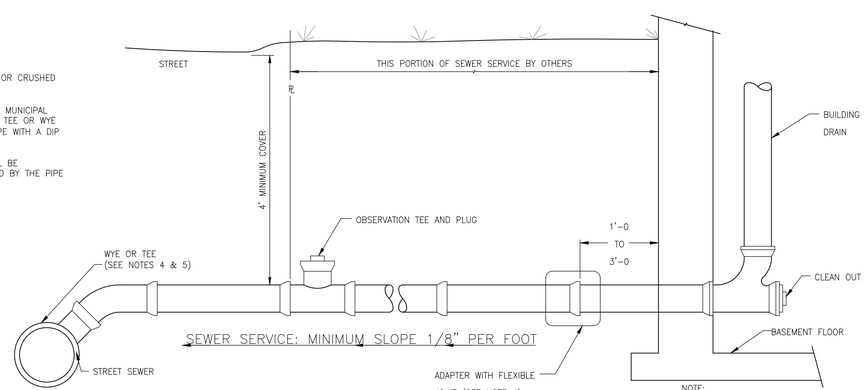
NOTE:

W=MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

PIPE INSULATION

8" SEWER SERVICE

NOT TO SCALE



SEWER SERVICE

NOT TO SCALE

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04e	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C151/A21.51-02 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536-84 (2004) DUCTILE IRON CASTINGS.

   AWWA C151/A21.51-02 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.

   JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.

   JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
8. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
9. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

   ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

   LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

   ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

   UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
10. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
11. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
12. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF THE AVERAGE INSIDE DIAMETER.
13. TRENCH CONSTUCTION SHALL CONFORM TO THE FOLLOWING:

    TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

    PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

    PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

    PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

    COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

    BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

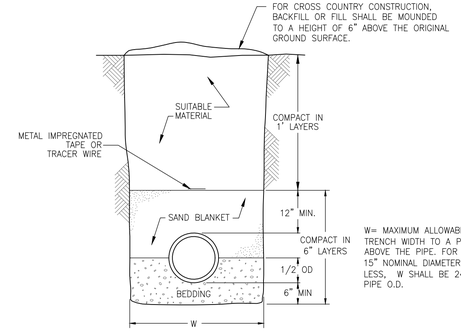
    TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

    TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

    BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

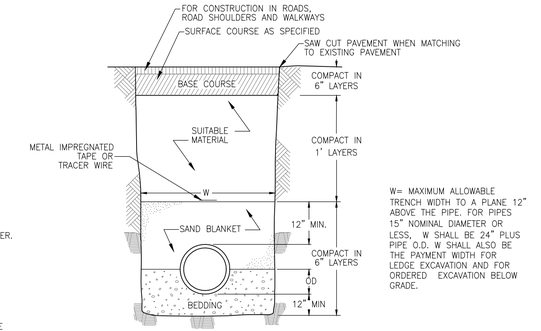
    WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

    TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.



EARTH CONSTRUCTION

NOT TO SCALE



LEDGE CONSTRUCTION

NOT TO SCALE

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	4/1/2021	REVISE EXISTING UTILITIES	SRP	JK

TAX MAP 26 LOT 169

DETAIL SHEET

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED BY/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: AS SHOWN **MARCH 22, 2021**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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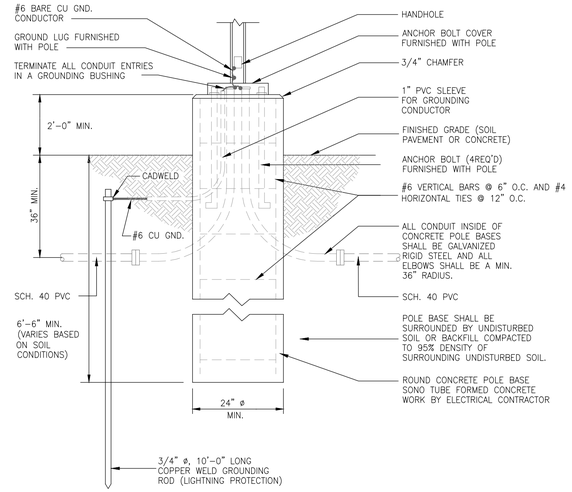
FILE		DR	SRP	FB	–	SHEET 13 OF 15
	76451.21	CK	JK	CADFILE	76451-21 COVER-DETAILS	

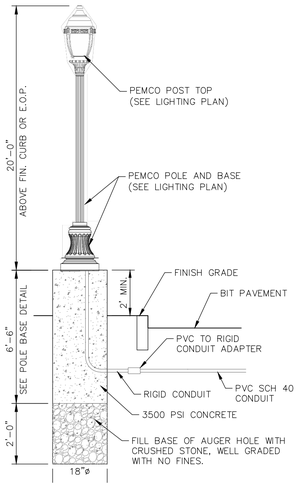
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

SEWER SERVICE DETAILS



LIGHT POLE BASE

NOT TO SCALE

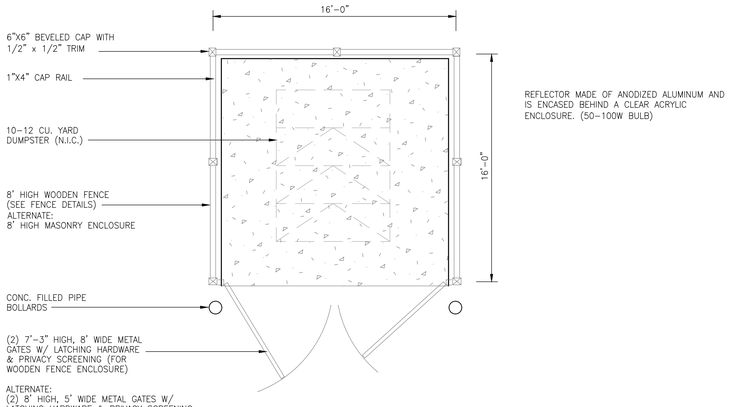


LAMP AND POST

NOT TO SCALE

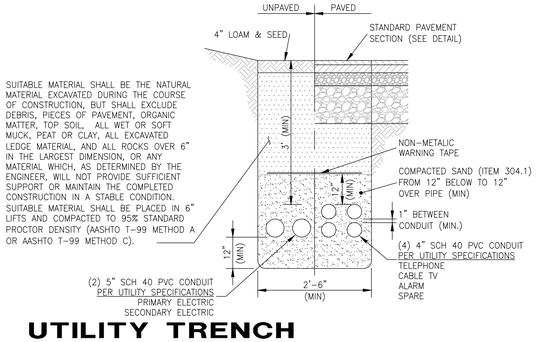
NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON DRAWING.
3. LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY BE REQUIRED.
4. SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.



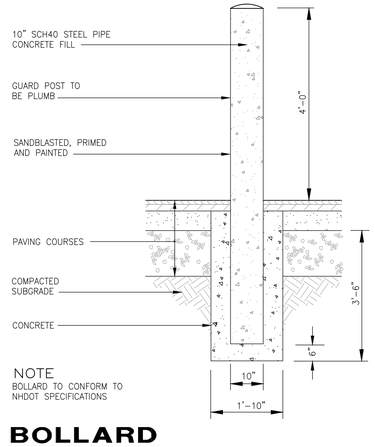
DUMPSTER ENCLOSURE - WOOD

NOT TO SCALE



UTILITY TRENCH

NOT TO SCALE



NOTE
BOLLARD TO CONFORM TO NHDOT SPECIFICATIONS

BOLLARD

NOT TO SCALE

TAX MAP 26 LOT 169

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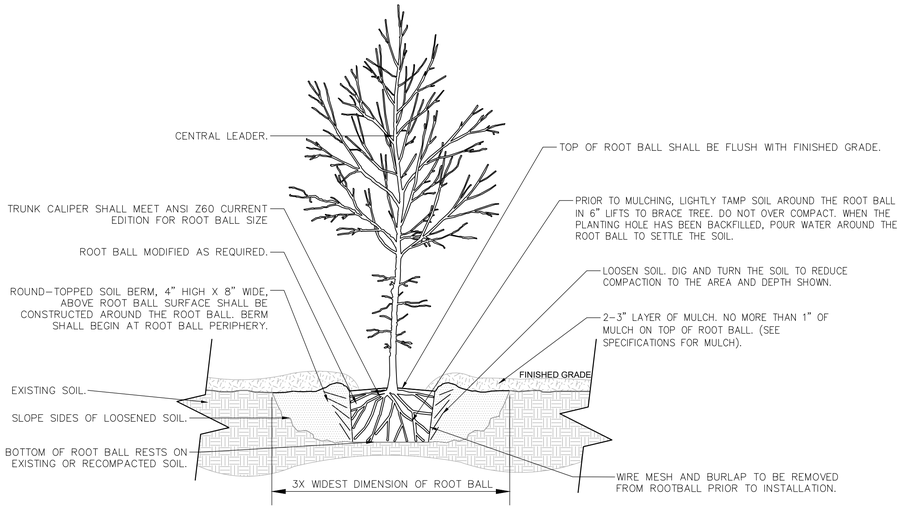
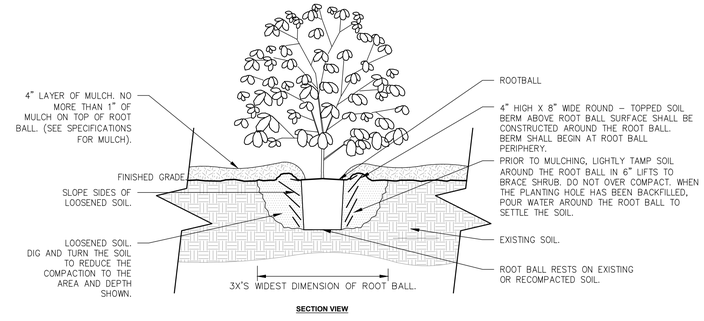


SECTION VIEW

TREE WITH MULCH BERM

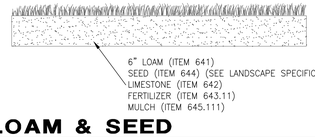
NOT TO SCALE



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE



LOAM & SEED

NOT TO SCALE

SITE AND SOIL PREPARATION

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.
3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.0. LOAM SHALL CONTAIN A MINIMUM OF TWO PERCENT (2%) AND A MAXIMUM OF FIVE PERCENT (5%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. SOIL TEXTURE SHALL BE SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.
4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.
5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.
2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:

33% CREEPING RED FESCUE	(MIN. 45 LBS/ACRE)
42% PERENNIAL RYEGRASS	(MIN. 55 LBS/ACRE)
21% KENTUCKY BLUEGRASS	(MIN. 30 LBS/ACRE)
4% REDTOP	(MIN. 5 LBS/ACRE)

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
100% ANNUAL RYE

PLANTING

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.
2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.
3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH - PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.
6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT MORE THAN 3" THICKNESS OF BARK MULCH, 3/8"-2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.
7. TREEGATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.
8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
9. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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TAX MAP 26 LOT 169

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LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	4	ACER R. 'BOWHALL' BOWHALL RED MAPLE	2 1/2" TO 3" CAL.	B&B
	1	PLATANUS X ACREIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANETREE	2 1/2" TO 3" CAL.	B&B
	4	PYRUS C. 'CHANTICLEER' CHANTICLEER FLOWERING PEAR	2 1/2" TO 3" CAL.	B&B
	10	EUONYMUS F. 'MOONSHADOW' MOONSHADOW WINTERCREEPER	3 GAL.	CONT.
	24	HYDRANGEA MACROPHYLLA 'PENNY MAC' PENNY MAC HYDRANGEA	3 GAL.	CONT.
	4	HYDRANGEA PANICULATA 'FIRE LIGHT' FIRE LIGHT PANICLE HYDRANGEA	2 1/2' TO 3'	B&B
	5	JUNIPERUS C. 'PFITZERIANA COMPACTA' COMPACT PFITZER JUNIPER	3 GAL.	CONT.
	4	RHODODENDRON 'LEE'S DARK PURPLE' LEE'S DARK PURPLE RHODODENDRON	2' TO 2 1/2'	B&B
	20	TAXUS M. 'GREENWAVE' GREENWAVE YEW	18" TO 24"	B&B
	6	THUJA O. 'TECHNY' MISSION ARBORVITAE	5' TO 6'	B&B
	2	VIBURNUM PRUNIFORIUM 'RED ARROW' RED ARROW BLACKHAW VIBURNUM	4' TO 5'	B&B
	55	BOUTELOUA 'BLONDE AMBITIONS' BLONDE AMBITION BLUE GRAMA GRASS	2 GAL.	CONT.
	17	MISCANTHUS S. 'VARIEGATA' VARIEGATED SILVER GRASS	3 GAL.	CONT.
	29	ARCTOSTAPHYLOS UVA-URSI BEARBERRY	1 GAL.	CONT.

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1-1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FN."

GUARANTEE

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

LANDSCAPE CALCULATIONS:

MILFORD DEVELOPMENT LANDSCAPE STANDARDS

MILFORD DEVELOPMENT LANDSCAPE STANDARS ARE INTENDED AS SUGGESTED GUIDELINES FOR THE OVAL SUB-DISTRICT, BUT NOT REQUIRED.

LANDSCAPING BUFFERS (6.08.5):

C. WITHIN A PROPERTY, A 10' WIDE AND 6' TALL BUFFER IS SUGGESTED TO PROVIDE VISUAL SCREENS IN THE FOLLOWING INSTANCES:

1. OUTDOOR STORAGE AREAS. N/A
2. UTILITY INSTALLATIONS. PROVIDED 5'
3. LOADING AREAS. N/A
4. REFUSE AND RECYCLING COLLECTION AREAS. PROVIDED 5' BUFFER AND 6' STOCKADE FENCE

LANDSCAPING ALONG BUILDING FRONTAGES (6.08.6):

SUGGESTED ONE SHRUB PER 5' ALONG BUILDING FRONTAGE, OR ELSEWHERE ON SITE IF IN CONFLICT WITH DOORWAYS, WALKWAYS OR OTHER IMPERVIOUS SURFACES.

SCHOOL ST. = EXISTING FOUNDATION SHRUBS TO REMAIN AND/OR REPLACED IN-KIND AT OWNERS DISCRETION.

BRIDGE ST. = 123'/5' = 25 SHRUBS SUGGESTED
PROVIDED = 38 (16 FOUNDATION PLANTINGS AND 22 PLANTINGS ELSEWHERE ON SITE.)
MIDDLE ST. = 112'/5' = 22 SHRUBS SUGGESTED
PROVIDED = 31 FOUNDATION PLANTINGS

LANDSCAPING PARKING LOTS AND ACCESS WAYS (6.08.7):

A. PERIPHERAL PARKING LOT LANDSCAPE REQUIREMENTS:
SUGGESTED: 10' BUFFER STRIP ALONG PUBLIC R.O.W. AND ABUTTING PROPERTIES.
PROVIDED: 5'

SUGGESTED: 1 TREE PER 30' OF LANDSCAPE STRIP AND COMPLEMENTED BY SUITABLE GROUND COVER AND SHRUBS. [162'/30' = 5 TREES]
PROVIDED: 5 TREES AND COMPLEMENTED BY SUITABLE GROUND COVER AND SHRUBS.

B. INTERIOR LANDSCAPE REQUIREMENTS:
SUGGESTED: 5% INTERIOR GREEN SPACE AND 1 TREE PER 15 SPACES

PROVIDED: 9.6% INTERIOR GREEN AND 1 TREE

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HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
2	4/13/2021	REV. UTILS, TRANSFORMER AND DUMPSTER PAD LOCATIONS	SRP	JK
1	3/26/2021	ADD LANDSCAPE CALCS AND SITE REVISIONS PER SCALE	SRP	JK

TAX MAP 26 LOT 169

LANDSCAPE PLAN

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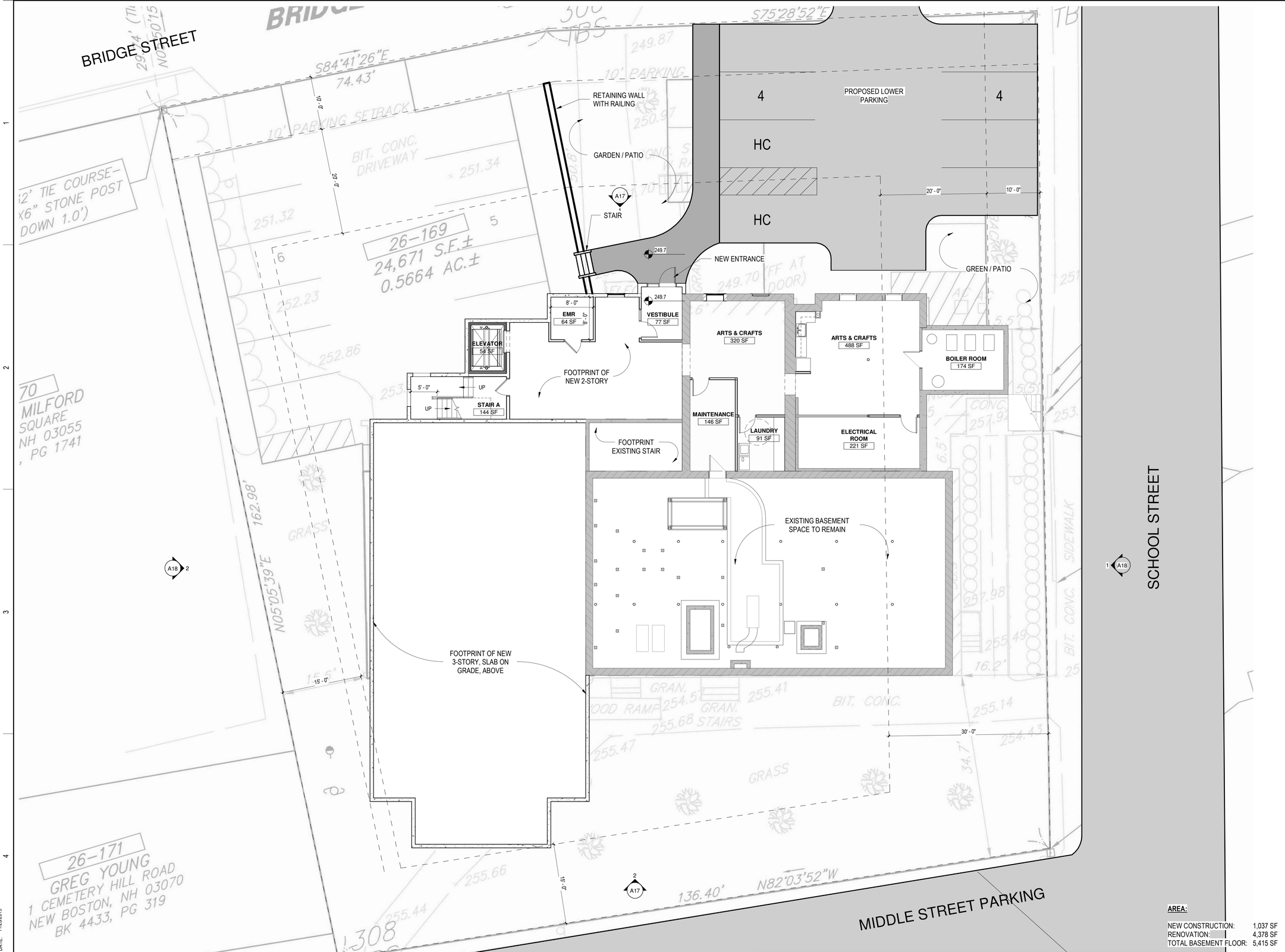

1 BASEMENT FLOOR PLAN
A12 1/8" = 1'-0"

AREA:

NEW CONSTRUCTION:	1,037 SF
RENOVATION:	4,378 SF
TOTAL BASEMENT FLOOR:	5,415 SF

WARRENSTREET ARCHITECTS
27 Warren Street Concord NH 03301
T 603.225.0640 F 603.225.0621 www.warrenstreet.coop

OWNER
HOUSING INITIATIVES OF NEW ENGLAND CORPORATION
264 U.S. ROUTE 1
BUILDING 300, SUITE 2A
SCARBOROUGH, ME 04074
P. (207) 774-8812 F. (207) 510-6366

CONSTRUCTION MANAGER
N/A

PLAN KEY:

PROJECT TITLE / ADDRESS:

MILFORD CABINET BUILDING

54 SCHOOL STREET
MILFORD, NH 03055

PROGRESS NOT FOR CONSTRUCTION

SCALE: AS NOTED DWN BY: Author
JOB #: 3677 CHK BY: Checker

PRINT DATE: 3/25/2021 11:01:46 AM

ISSUE DATE:

SCHEMATIC DESIGN CONCEPTS

REVISION	DATE	COMMENTS

CONCEPT 6 - BASEMENT PLAN

A12

SHEET NUMBER: 1 OF 7 ARCHITECTURAL

BIM 360://3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
TEMPLATE DATE: 11/25/2019

1 FIRST FLOOR PLAN
A13 1/8" = 1'-0"

AREA:

NEW CONSTRUCTION:	4,150 SF
RENOVATION:	4,612 SF
TOTAL BASEMENT FLOOR:	8,762 SF

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PLAN KEY:

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PROGRESS

PROJECT TITLE / ADDRESS:
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MILFORD, NH 03055

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ISSUE DATE:

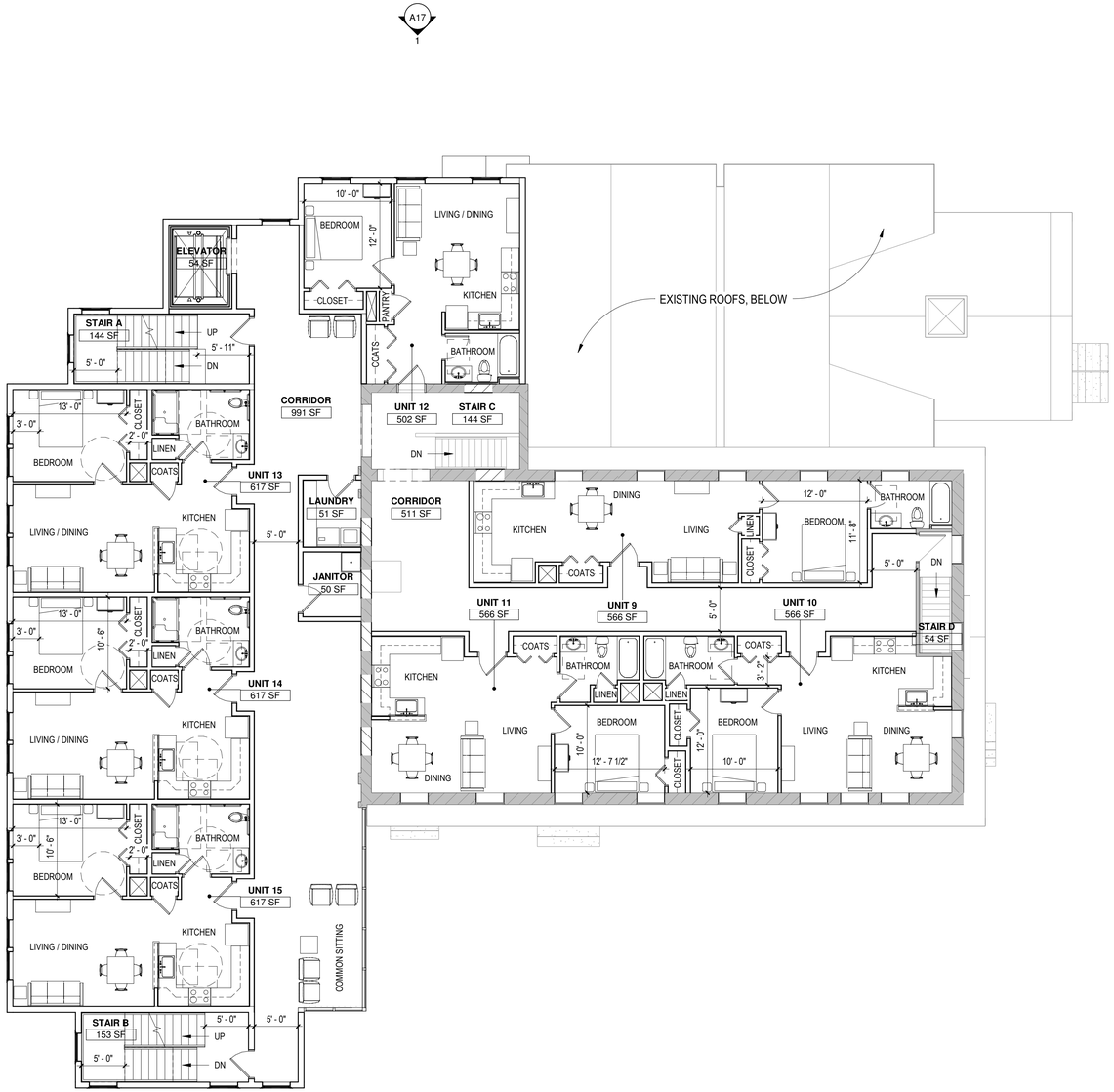
SCHEMATIC DESIGN CONCEPTS

REVISION	DATE	COMMENTS

CONCEPT 6 - FIRST FLOOR PLAN

A13
SHEET NUMBER: 2 OF 7 ARCHITECTURAL

BIM 360://3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
TEMPLATE DATE: 11/25/2019



AREA:

NEW CONSTRUCTION:	4,166 SF
RENOVATION:	2,838 SF
TOTAL BASEMENT FLOOR:	7,004 SF

1 SECOND FLOOR PLAN
A14 1/8" = 1'-0"

WARRENSTREET ARCHITECTS
27 Warren Street Concord NH 03301
T 603.225.0640 F 603.225.0621 www.warrenstreet.coop

OWNER
HOUSING INITIATIVES OF NEW ENGLAND CORPORATION
264 U.S. ROUTE 1
BUILDING 300, SUITE 2A
SCARBOROUGH, ME 04074
P. (207) 774-8812 F. (207) 510-6366

CONSTRUCTION MANAGER
N/A

PLAN KEY:

PROGRESS NOT FOR CONSTRUCTION

PROJECT TITLE / ADDRESS:

MILFORD CABINET BUILDING

54 SCHOOL STREET
MILFORD, NH 03055

SCALE: AS NOTED DWN BY: Author
JOB #: 3677 CHK BY: Checker

PRINT DATE: 3/25/2021 11:01:50 AM

ISSUE DATE:

SCHEMATIC DESIGN CONCEPTS

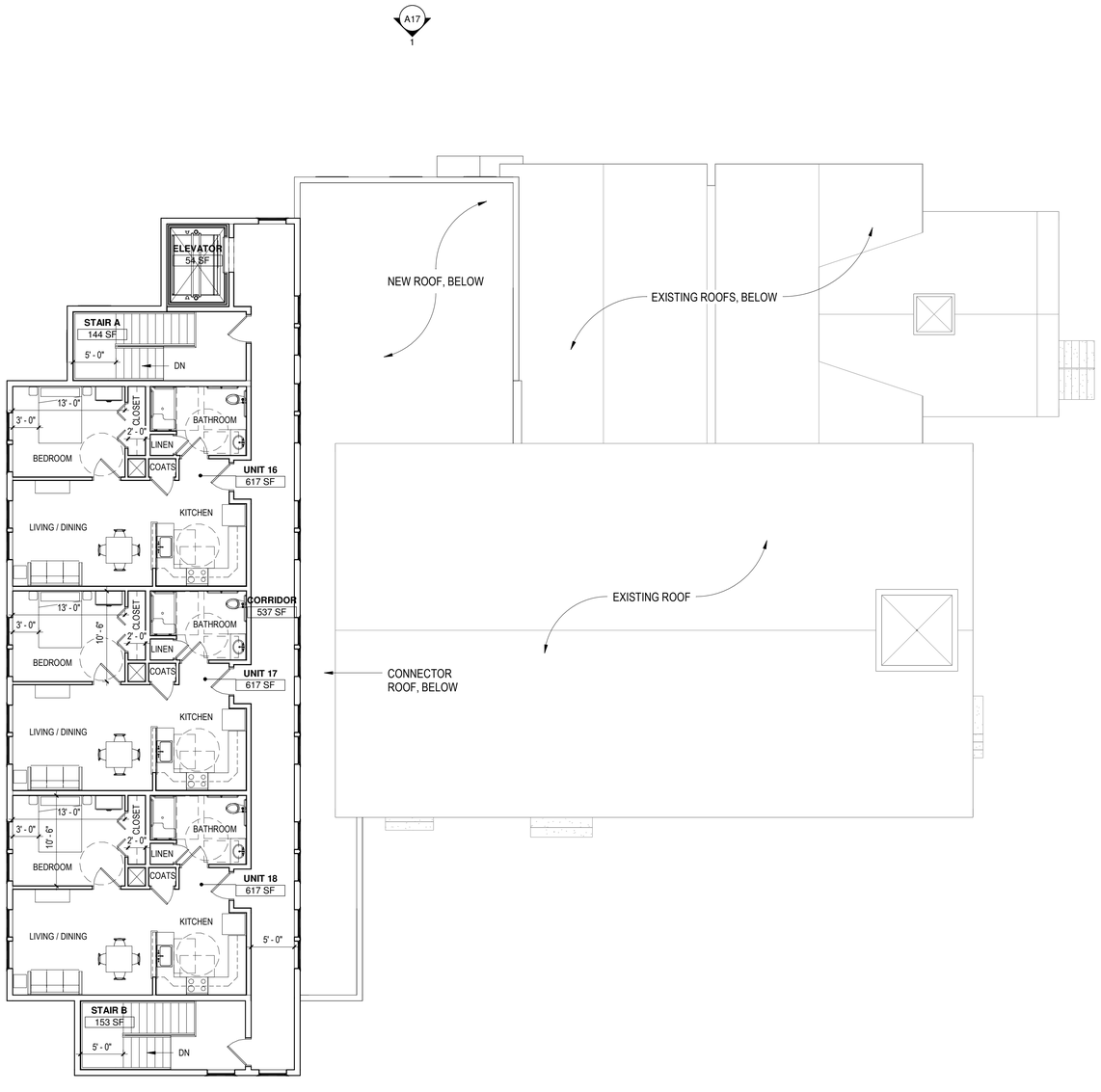
REVISION	DATE	COMMENTS

CONCEPT 6 - SECOND FLOOR PLAN

A14

SHEET NUMBER: 3 OF 7 ARCHITECTURAL

BIM 360:/3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
TEMPLATE DATE: 11/25/2019



1 THIRD FLOOR PLAN
A15 1/8" = 1'-0"

AREA:

NEW CONSTRUCTION:	3,073 SF
RENOVATION:	0 SF
TOTAL BASEMENT FLOOR:	3,073 SF

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NOT FOR CONSTRUCTION
PROGRESS

SCALE: AS NOTED
JOB #: 3677
DWN BY: Author
CHK BY: Checker
PRINT DATE: 3/25/2021 11:01:51 AM
ISSUE DATE:

SCHEMATIC DESIGN CONCEPTS

REVISION	DATE	COMMENTS

CONCEPT 6 - THIRD FLOOR PLAN

A15
SHEET NUMBER: 4 OF 7 ARCHITECTURAL

BIM 360://3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
TEMPLATE DATE: 11/25/2019

1 NORTH ELEVATION
A12 1/8" = 1'-0"

2 SOUTH ELEVATION
A12 1/8" = 1'-0"

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eight inch = one foot

BIM 360:/3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
TEMPLATE DATE: 11/25/2019

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CONSTRUCTION MANAGER
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MILFORD CABINET BUILDING

54 SCHOOL STREET
MILFORD, NH 03055

SCALE: AS NOTED DWN BY: CC
JOB #: 3677 CHK BY: JH

PRINT DATE: 3/30/2021 6:03:51 PM

ISSUE DATE:

SCHEMATIC DESIGN CONCEPTS

REVISION	DATE	COMMENTS

CONCEPT 6 - ELEVATIONS

A17

SHEET NUMBER: 6 OF 8 ARCHITECTURAL

1 EAST ELEVATION
A12 1/8" = 1'-0"

2 WEST ELEVATION
A12 1/8" = 1'-0"

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eight inch = one foot

BIM 360:/3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
TEMPLATE DATE: 11/25/2019

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CONSTRUCTION MANAGER
N/A

PLAN KEY:

PROGRESS NOT FOR CONSTRUCTION

PROJECT TITLE / ADDRESS:

MILFORD CABINET BUILDING

54 SCHOOL STREET
MILFORD, NH 03055

SCALE: AS NOTED DWN BY: CC
JOB #: 3677 CHK BY: JH

PRINT DATE: 3/30/2021 6:03:54 PM

ISSUE DATE:

SCHEMATIC DESIGN CONCEPTS

REVISION	DATE	COMMENTS

CONCEPT 6 - ELEVATIONS

A18

SHEET NUMBER: 7 OF 8 ARCHITECTURAL

3D View 1

3D View 2

3D View 3

3D View 4

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarter inch = one foot
one quarter inch = one foot
one eight inch = one foot

BIM 360://3677 Milford Cabinet Shop/3677 MILFORD CABINET SHOP_R21.rvt
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CONSTRUCTION MANAGER
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PLAN KEY:

NOT FOR CONSTRUCTION

PROGRESS

PROJECT TITLE / ADDRESS:
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MILFORD, NH 03055

SCALE: AS NOTED DWN BY: CC
JOB #: 3677 CHK BY: JH

PRINT DATE: 3/30/2021 7:15:53 PM

ISSUE DATE:

SCHEMATIC DESIGN CONCEPTS

REVISION	DATE	COMMENTS

COLORED MASSING STUDY

A19

SHEET NUMBER: 8 OF 8 ARCHITECTURAL

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

TRAFFIC MEMORANDUM

Date: March 30, 2021

To: Town of Milford
1 Union Square
Milford, NH 03055

From: Robert E. Duval, P.E.

Re: Proposed Senior Housing
54 School Street, Milford, NH
TFM Project No. 76451.21

INTRODUCTION

TFMoran has prepared this memo to evaluate new trip generation and the nearby roadway network associated with converting a former mill building into senior housing at 54 School Street in Milford, NH.

PROPOSAL

Housing Initiatives of New England is proposing to renovate the historic Milford Cabinet building to create a senior housing development. The renovation also includes a 3-story addition to the existing building to provide 18 single-bedroom age-restricted apartment units on the site. A total of 18 parking spaces will be provided on-site. To the north on Bridge Street, Housing Initiatives already has a similar senior-living facility with 90 units. The two buildings will create efficiencies that help reduce housing costs share services such as shuttles to supermarkets and other local destinations.

DESCRIPTION OF SITE

The existing site (Map 26 Lot 169) is located at the corner of School Street and Bridge Street. The building, originally built in 1853, has most recently been used as a mill by Milford Cabinet. The site is one block from the Milford Oval and bounded by public parking areas to the south and west. An existing parking area with access off Bridge Street currently services the lot.

DESCRIPTION OF ROADWAYS AND INTERSECTIONS

School Street

- Classification. School Street is a Town-maintained local roadway that runs north-south between Bridge Street and Nashua Street.

- Lane widths and usage. In the project vicinity, the roadway generally provides one 12' travel lane in each direction, with no shoulders.
- Pedestrian facilities. There is a sidewalk along the west side of School Street.
- Signage. The speed limit is assumed to be 30 mph. Traffic signage consists of Stop signs, street signs at intersections, no parking signs and directional signage to Public Parking. No pavement markings are present.
- Sight Distance. There is no driveway proposed onto School Street.
- Lighting. Street lighting is provided at the intersection of School and Middle Streets.
- Road conditions. The roadway is straight and generally level and slopes gently from Nashua Street down towards Bridge Street.
- Adjacent uses and driveways include:
  - The roadway primarily serves the Milford Fire Department directly to the east which has an open curb cut the entire length of the Cabinet lot.

Bridge Street

- Classification. Bridge Street is a Town-maintained local roadway that runs east-west between the Oval and dead-ends at the Souhegan River.
- Lane widths and usage. In the project vicinity, the roadway generally provides one 12' travel lane in each direction from Putnam Street to the River, with no shoulders. Between the Oval and Putnam Street, the roadway is signed for one-way traffic traveling east from the Oval.
- Pedestrian facilities. There is a sidewalk along the north side of Bridge Street.
- Signage. The speed limit is assumed to be 30 mph. Traffic signage consists of Stop signs, street signs at intersections, no parking signs and directional signage to Public Parking. No pavement markings are present.
- Sight Distance. There is no driveway proposed onto School Street.
- Lighting. Street lighting is provided at the intersection of School Street at Bridge Street and at Putnam Street.
- Road conditions. The roadway is slightly curved and generally level and slopes gently from the Oval down towards the dead-end.
- Adjacent uses and driveways include:
  - The roadway primarily serves the Milford Fire Department directly to the east which has an open curb cut facing the length of the Milford Cabinet lot.

TRIP GENERATION

Trip generation rates published by the ITE (10th Edition) for Land Use Code (LUC) 252, Senior Adult Housing - Attached, was used to calculate the vehicle trips for the proposed senior housing development. The table below shows the proposed trip generation.

Proposed Trip Generation

	In	Out	Total
Weekday AM Peak Hour of Adjacent Street	1	3	4
Weekday PM Peak Hour of Adjacent Street	3	2	5
Weekend SAT Peak Hour of Generator	4	2	6

CONCLUSION

Based on the foregoing, we anticipate the impacts associated with traffic from this project will be minimal. The traffic from this development will add only 4-5 trips during the am and pm peak hours.

This level of traffic, one new trip every 12-15 minutes, falls within ordinary incremental growth and is less than typical day-to-day variations in volumes at the intersections, and therefore can be safely accommodated on the adjacent roadway network without need for improvements.

Please let me know if you have any questions in regard to these items.

TFMORAN, INC.

Robert Duval, PE
Chief Engineer

Trip Generation Summary

Alternative: Senior Housing - 18 Units
Phase:
Project: 76451.21 Milford Senior Housing

Open Date: 3/29/2021
Analysis Date: 3/29/2021

ITE	Land Use		Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic				Saturday Peak Hour of Generator			
		*	Enter	Exit	Total		*	Enter	Exit	Total		*	Enter	Exit	Total
252	SENIORATTACHED 1		1	3	4			3	2	5			4	2	6
	18 Dwelling Units														
Unadjusted Volume			1	3	4			3	2	5			4	2	6
Internal Capture Trips			0	0	0			0	0	0			0	0	0
Pass-By Trips			0	0	0			0	0	0			0	0	0
Volume Added to Adjacent Streets			1	3	4			3	2	5			4	2	6

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Saturday Peak Hour of Generator Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

Stormwater Management Report

Milford Independent Senior Housing

Tax Map 26 Lot 169
54 School Street
Milford, NH 03055

Date:
March 22, 2021

Prepared for:
Housing Initiatives of New England
264 US Route 1
Scarborough, ME 04074

TFM #: 76451.21

Prepared by:

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive, Bedford, NH 03110
Tel: (603) 472-4488 **Fax**: (603) 472-9747
www.tfmoran.com

Milford Independent Senior Housing

54 School Street – Milford, NH

Table of Contents

Executive Summary

- Housing Initiatives of New England is proposing to construct a senior housing development at 54 Bridge street in Milford, NH. The development will require the renovation of the existing building, and construction of a 3-story addition for 18 apartment units.

- The proposed area for this construction is within Map 26 Lot 169.

- The existing building is the historic Milford Cabinet Building. The building will be restored and repurposed. The surfaces on the parcel will change from existing impervious of 13,451 sf and existing open space of 11,225 sf to proposed impervious of 16,824 sf and proposed open space of 7,852 sf.

- A closed system of catch basin and pipe discharging to the Municipal drainage system that outlets to the nearby Merrimack River.

- The peak rates of runoff will be mitigated at locations where stormwater leaves the project area in post-development conditions to not create an adverse impact to existing infrastructure. Stormwater from the project will not impact any abutters. The project discharges external to the east of the site.

- A series of Leaching Catch Basins are proposed at the driveways to infiltrate and treat runoff, with an overflow during large storm events.

Description of Project

Housing Initiatives of New England is proposed to construct a senior housing development. The development entails a renovation of an existing building on Map 26 Lot 169. The existing building is the historic Milford Cabinet building. This renovation will add a 3-story structure to the west side of the building. There will also be approximately 6,000 sf of pavement added. The new pavement will include a re-pavement of the existing parking lot and the construction of one new parking lot.

Town Site Plan approvals will be required for the development of this project. The proposed disturbed area is less than 100,000 sf, a NHDES Alteration of Terrain Permit is not needed.

The intent of this report is to analyze the rate of runoff from the project area for the pre-development conditions and compare to the post-development conditions. The drainage system will be designed to maintain the current peak rate of runoff from the site.

Storm Water Methodology

Pre-Development Conditions

The existing site is a 0.56 acre parcel location at 54 School Street, Milford, NH. The parcel is occupied by the historic Milford Cabinet building. Based on a NRCS soil report, the soil for the whole lot is Hinckley Loamy Sand. This is a soil type A. The site consists of the exiting building, some grass spaces and one parking area.

The project area was divided into subcatchments based on existing topography and drainage systems. The drainage model represents the flow to discharge points identified along the limits of the project areas where runoff would leave the development area. The runoff curve numbers for each subcatchment were calculated based on the existing ground cover and hydrologic soil group. The time of concentration for each subcatchment was determined using the land, ground cover and the slope of the land. Discharge points are identified on the drainage maps.

To model the site drainage, the HydroCAD Version 10.0 program has been used. The software is based on the SCS TR-20 technique used for modeling the hydrology and hydraulics of the storm water runoff. The 2-year, 10-year, 25 year, and 50-year calculations are included per the requirements of the Town of Rindge.

Rainfall Intensity

Rainfall data was obtained from the Northeast Regional Climate Center (NRCC). The below table lists the rainfall data used to model storms in HydroCAD.

24-Hour Rainfall Intensity

	Northeast Regional Climate Center
2-year	2.96 inches
10-year	4.40 inches
25-year	5.52 inches
50-year	6.57 inches
100-year	7.81 inches

Post-Development Conditions

The proposed expansion/renovation on site includes the addition of residential living spaces on the west side of the building, re-pavement of the existing parking area, construction of an additional parking area, and construction of a 3-story addition for apartment units.

The objectives for the post-development drainage design are to capture and convey the flow. The post-development drainage model represents the project drainage areas divided into multiple subcatchments based on the layout of the proposed stormwater collection system.

A closed system in proposed with impervious surface, roof drains, and roof drip edge spaces, conveying the surface water from the parking lot into the catch basins. The catch basins discharge the collected stormwater into the Merrimack River. The proximity to the river will result in a short concentration time between the parcel discharge points and the river front. The water will drain into the river prior to the peak flow of the river.

All pre-development discharge points have been analyzed in post-development conditions to illustrate the increase in stormwater runoff from the proposed expansion/renovation.

Erosion Control Measures

Erosion Control Measures are found on the Site Preparation Plan within the plan set. The erosion control notes and construction sequence notes on the Detail Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

Silt fences and catch basin protection is proposed along the edges of site work to prevent sediment from leaving the project area.

Permanent Erosion Control Measures

A closed drainage system is on the site to capture the runoff from the development project.

Flood Protection

Examination of the following Flood Insurance Rate Map indicates that no portion of the project area is located within a flood hazard area:

- FIRM, Hillsborough County, New Hampshire (All Jurisdictions), Map Number 33011C0459D, Effective Date September 25, 2009.

Conclusion

Peak Rate Flows

The peak rates of runoff will be mitigated at locations where stormwater leaves the project area in post-development conditions to not create an adverse drainage impact at the discharge points. Stormwater from the project will not impact any abutters, the project discharges external to the east portion of the parcel and then to the Merrimack River.

Discharge Point	**Pre-development** cfs				**Post-development** cfs			
	2-yr	**10-yr**	**25-yr**	**50-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.00	0.00	0.03	0.06	0.07	0.21	0.34	0.48
B	0.06	0.21	0.37	0.52	0.00	0.00	0.01	0.04
C	0.77	1.56	2.21	2.84	1.31	2.13	2.78	3.38

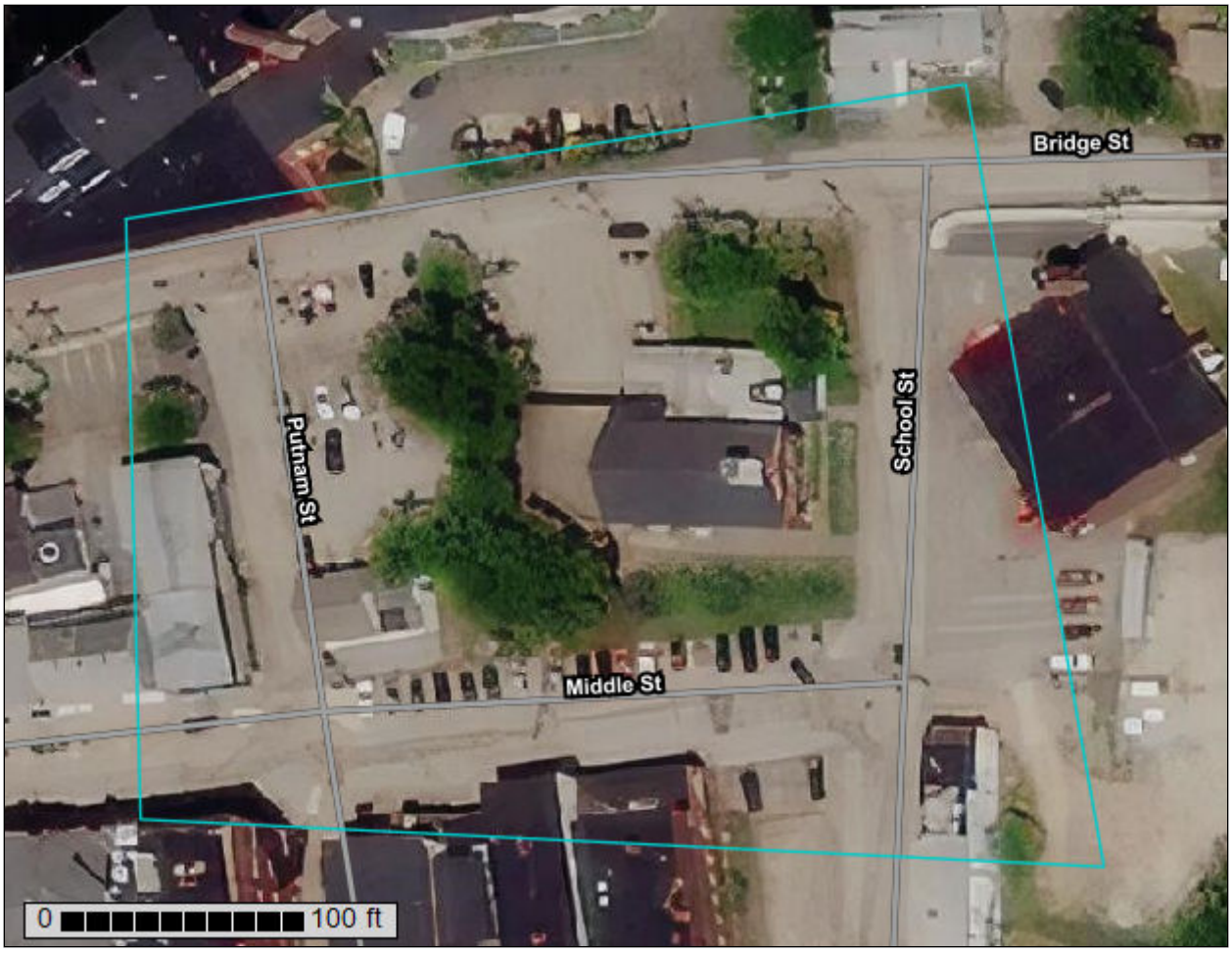
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Hillsborough County, New Hampshire, Eastern Part



March 19, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:830 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Hillsborough County, New Hampshire, Eastern Part
Survey Area Data: Version 22, May 29, 2020

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

Date(s) aerial images were photographed: May 22, 2015—Jun 14, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HsB	Hinckley loamy sand, 3 to 8 percent slopes	2.4	100.0%
Totals for Area of Interest		**2.4**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

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

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

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

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

Hillsborough County, New Hampshire, Eastern Part

HsB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Hinckley

Setting

Landform: Kames, kame terraces, moraines, outwash deltas, eskers, outwash terraces, outwash plains
Landform position (two-dimensional): Summit, backslope, footslope, shoulder
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, tread, riser
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Kames, kame terraces, moraines, outwash deltas, eskers, outwash terraces, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, tread, riser
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Kame terraces, moraines, outwash deltas, outwash terraces, outwash plains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope, head slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Agawam

Percent of map unit: 2 percent
Landform: Kames, kame terraces, moraines, outwash deltas, eskers, outwash terraces, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, tread, riser
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

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Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	71.649 degrees West
Latitude	42.835 degrees North
Elevation	0 feet
Date/Time	Fri, 19 Mar 2021 09:45:43 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.27	0.42	0.52	0.69	0.86	1.08	**1yr**	0.74	1.01	1.24	1.56	1.96	2.48	2.74	**1yr**	2.19	2.63	3.03	3.78	4.36	**1yr**
2yr	0.33	0.51	0.63	0.84	1.05	1.32	**2yr**	0.91	1.20	1.52	1.90	2.37	2.96	3.31	**2yr**	2.62	3.18	3.69	4.41	5.02	**2yr**
5yr	0.39	0.61	0.76	1.02	1.31	1.66	**5yr**	1.13	1.50	1.93	2.41	2.99	3.71	4.22	**5yr**	3.28	4.06	4.69	5.54	6.20	**5yr**
10yr	0.44	0.69	0.88	1.19	1.55	1.98	**10yr**	1.34	1.78	2.30	2.88	3.57	4.40	5.07	**10yr**	3.90	4.88	5.62	6.57	7.27	**10yr**
25yr	0.52	0.83	1.06	1.46	1.93	2.49	**25yr**	1.67	2.23	2.91	3.64	4.50	5.52	6.48	**25yr**	4.89	6.23	7.15	8.25	8.99	**25yr**
50yr	0.59	0.94	1.21	1.70	2.29	2.98	**50yr**	1.98	2.64	3.49	4.36	5.38	6.57	7.81	**50yr**	5.81	7.51	8.58	9.80	10.55	**50yr**
100yr	0.68	1.09	1.41	1.99	2.72	3.55	**100yr**	2.34	3.12	4.16	5.21	6.41	7.81	9.41	**100yr**	6.91	9.05	10.30	11.65	12.40	**100yr**
200yr	0.77	1.25	1.62	2.33	3.22	4.24	**200yr**	2.78	3.71	4.97	6.22	7.65	9.29	11.36	**200yr**	8.22	10.92	12.37	13.85	14.58	**200yr**
500yr	0.92	1.52	1.98	2.88	4.04	5.35	**500yr**	3.48	4.65	6.29	7.88	9.67	11.70	14.58	**500yr**	10.36	14.02	15.76	17.43	18.06	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.21	0.32	0.39	0.53	0.65	0.77	**1yr**	0.56	0.76	1.00	1.33	1.67	2.29	2.27	**1yr**	2.02	2.18	2.56	3.32	3.54	**1yr**
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.17	1.35	1.75	2.25	2.88	3.22	**2yr**	2.55	3.09	3.58	4.28	4.88	**2yr**
5yr	0.35	0.55	0.68	0.93	1.18	1.39	**5yr**	1.02	1.36	1.61	2.09	2.67	3.49	3.91	**5yr**	3.09	3.76	4.34	5.14	5.77	**5yr**
10yr	0.39	0.60	0.74	1.03	1.33	1.56	**10yr**	1.15	1.53	1.76	2.37	3.02	4.04	4.55	**10yr**	3.58	4.37	5.01	5.87	6.53	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.82	**25yr**	1.34	1.78	2.05	2.81	3.53	4.92	5.56	**25yr**	4.36	5.35	6.05	7.01	7.70	**25yr**
50yr	0.47	0.72	0.89	1.28	1.73	2.05	**50yr**	1.49	2.00	2.31	3.21	3.98	5.74	6.50	**50yr**	5.08	6.25	6.97	8.01	8.72	**50yr**
100yr	0.51	0.76	0.96	1.38	1.89	2.30	**100yr**	1.64	2.25	2.60	3.27	4.50	6.70	7.59	**100yr**	5.93	7.30	8.03	9.14	9.87	**100yr**
200yr	0.55	0.82	1.04	1.50	2.10	2.60	**200yr**	1.81	2.54	2.90	3.66	5.12	7.84	8.91	**200yr**	6.94	8.56	9.24	10.43	11.16	**200yr**
500yr	0.60	0.90	1.16	1.68	2.39	3.06	**500yr**	2.06	2.99	3.40	4.26	6.10	9.68	11.03	**500yr**	8.56	10.60	11.13	12.40	13.13	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.48	0.59	0.79	0.97	1.15	**1yr**	0.84	1.13	1.28	1.68	2.09	2.62	2.95	**1yr**	2.32	2.84	3.43	4.25	4.76	**1yr**
2yr	0.36	0.55	0.68	0.92	1.13	1.32	**2yr**	0.98	1.29	1.48	1.91	2.44	3.04	3.43	**2yr**	2.69	3.30	3.84	4.56	5.19	**2yr**
5yr	0.43	0.67	0.83	1.14	1.45	1.67	**5yr**	1.25	1.63	1.86	2.37	2.96	3.94	4.53	**5yr**	3.49	4.35	5.03	5.96	6.62	**5yr**
10yr	0.52	0.79	0.98	1.37	1.77	2.04	**10yr**	1.53	1.99	2.29	2.81	3.49	4.80	5.62	**10yr**	4.25	5.40	6.22	7.28	7.98	**10yr**
25yr	0.66	1.00	1.25	1.78	2.34	2.65	**25yr**	2.02	2.59	2.97	3.54	4.31	6.21	7.42	**25yr**	5.50	7.14	8.23	9.54	10.22	**25yr**
50yr	0.79	1.20	1.50	2.15	2.90	3.23	**50yr**	2.50	3.16	3.60	4.21	5.07	7.55	9.17	**50yr**	6.68	8.82	10.21	11.71	12.36	**50yr**
100yr	0.95	1.44	1.81	2.61	3.58	3.95	**100yr**	3.09	3.86	4.39	5.49	5.96	9.18	11.33	**100yr**	8.13	10.90	12.64	14.39	14.93	**100yr**
200yr	1.15	1.73	2.19	3.18	4.43	4.82	**200yr**	3.82	4.71	5.32	6.64	7.02	11.14	14.02	**200yr**	9.86	13.48	15.68	17.71	18.06	**200yr**
500yr	1.49	2.21	2.85	4.14	5.88	6.24	**500yr**	5.08	6.10	6.88	8.54	8.69	14.33	18.55	**500yr**	12.68	17.84	20.86	23.30	23.26	**500yr**

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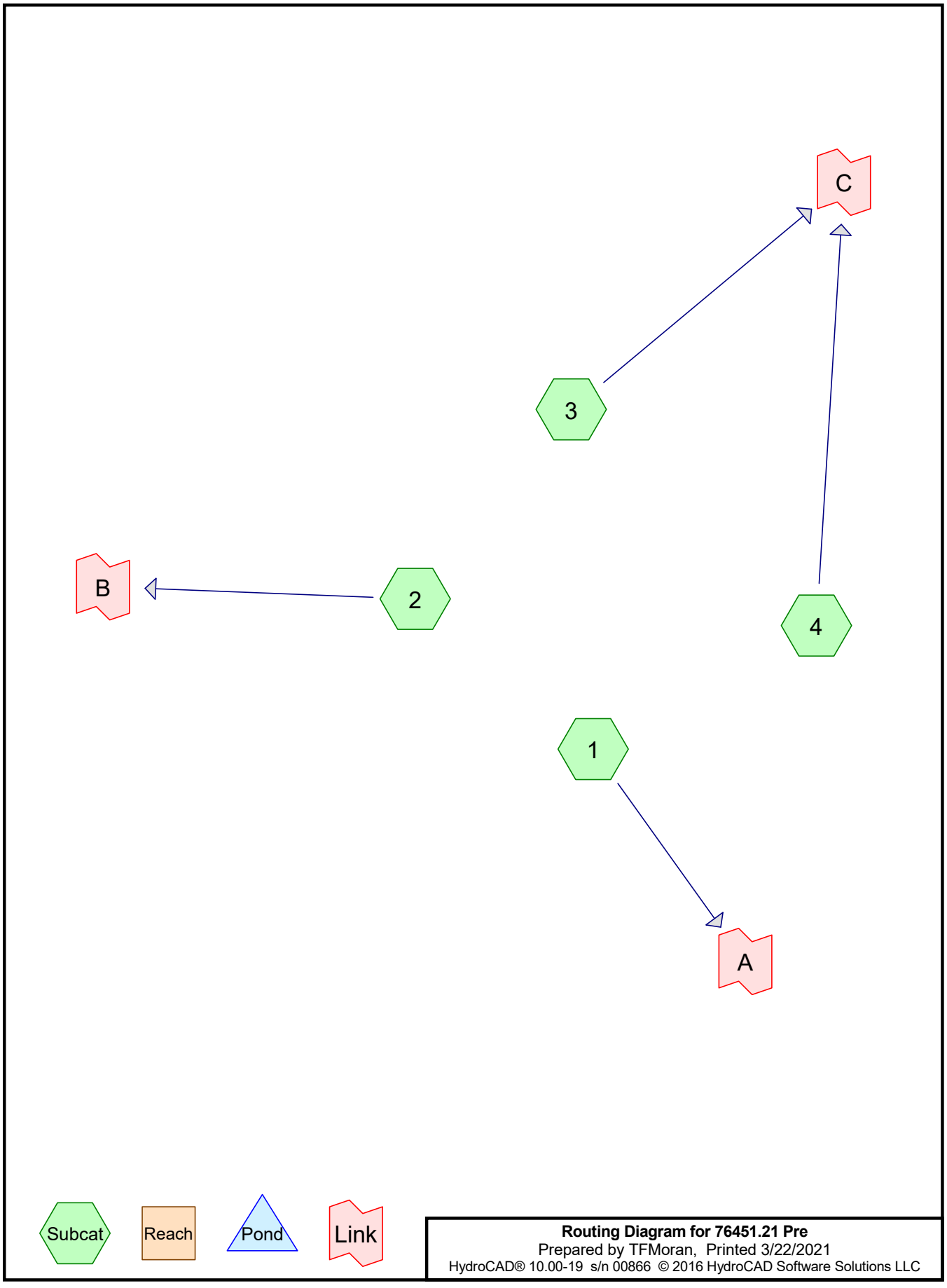
Northeast Regional Climate Center



Routing Diagram for 76451.21 Pre
Prepared by TFMoran, Printed 3/22/2021

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
11,225	39	>75% Grass cover, Good, HSG A (1, 2, 3, 4)
4,694	98	Paved parking, HSG A (1, 3)
8,757	98	Unconnected roofs, HSG A (2, 3, 4)
24,676	**71**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
24,676	HSG A	1, 2, 3, 4
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
24,676		**TOTAL AREA**

Ground Covers (all 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
11,225	0	0	0	0	11,225	>75% Grass cover, Good	
4,694	0	0	0	0	4,694	Paved parking	
8,757	0	0	0	0	8,757	Unconnected roofs	
24,676	**0**	**0**	**0**	**0**	**24,676**	**TOTAL AREA**	

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

Subcatchment 1: Runoff Area=2,035 sf 6.98% Impervious Runoff Depth>0.01"
Tc=5.0 min CN=43 Runoff=0.00 cfs 1 cf

Subcatchment 2: Runoff Area=5,316 sf 37.83% Impervious Runoff Depth>0.35"
Tc=5.0 min CN=61 Runoff=0.06 cfs 155 cf

Subcatchment 3: Runoff Area=11,225 sf 67.78% Impervious Runoff Depth>1.16"
Tc=5.0 min CN=79 Runoff=0.54 cfs 1,083 cf

Subcatchment 4: Runoff Area=6,100 sf 60.49% Impervious Runoff Depth>0.93"
Tc=5.0 min CN=75 Runoff=0.23 cfs 475 cf

Link A: Inflow=0.00 cfs 1 cf
Primary=0.00 cfs 1 cf

Link B: Inflow=0.06 cfs 155 cf
Primary=0.06 cfs 155 cf

Link C: Inflow=0.77 cfs 1,558 cf
Primary=0.77 cfs 1,558 cf

Total Runoff Area = 24,676 sf Runoff Volume = 1,714 cf Average Runoff Depth = 0.83"
45.49% Pervious = 11,225 sf 54.51% Impervious = 13,451 sf

Summary for Subcatchment 1:

[49] Hint: Tc<2dt may require smaller dt
[73] Warning: Peak may fall outside time span

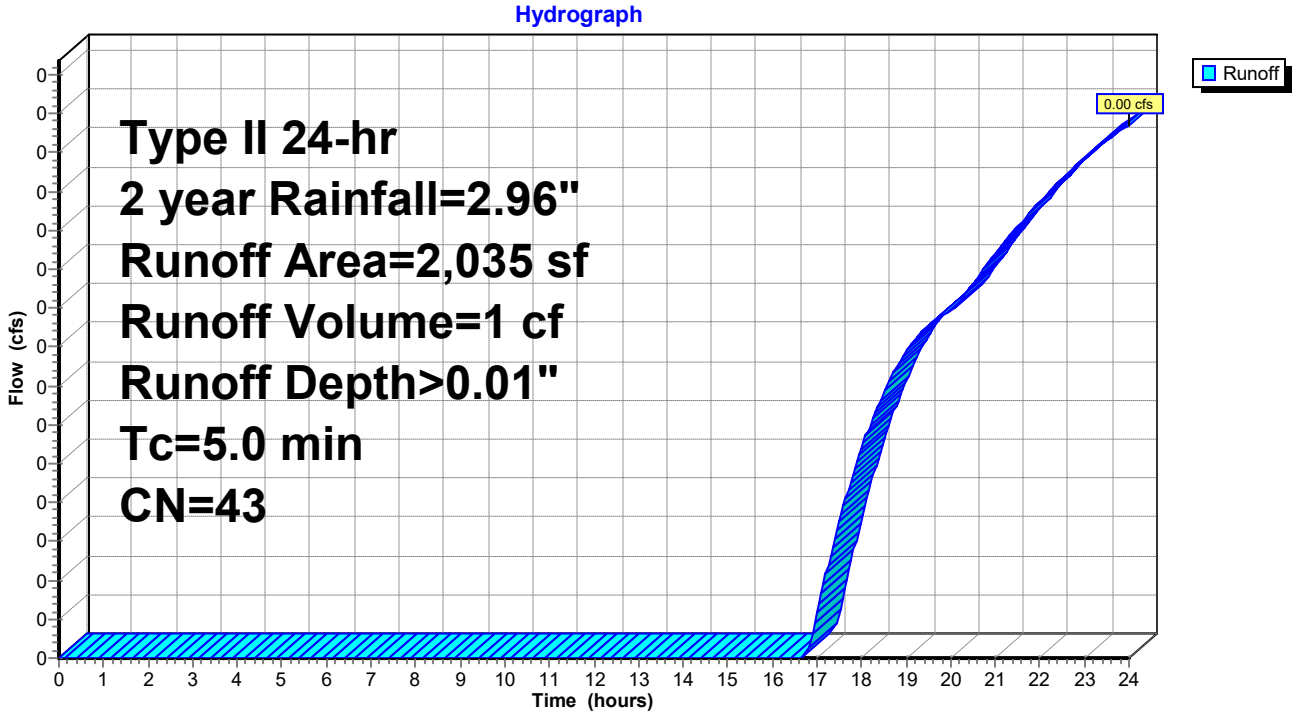
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 1 cf, Depth> 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
142	98	Paved parking, HSG A
1,893	39	>75% Grass cover, Good, HSG A
2,035	43	Weighted Average
1,893		93.02% Pervious Area
142		6.98% Impervious Area

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

Subcatchment 1:



Summary for Subcatchment 2:

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

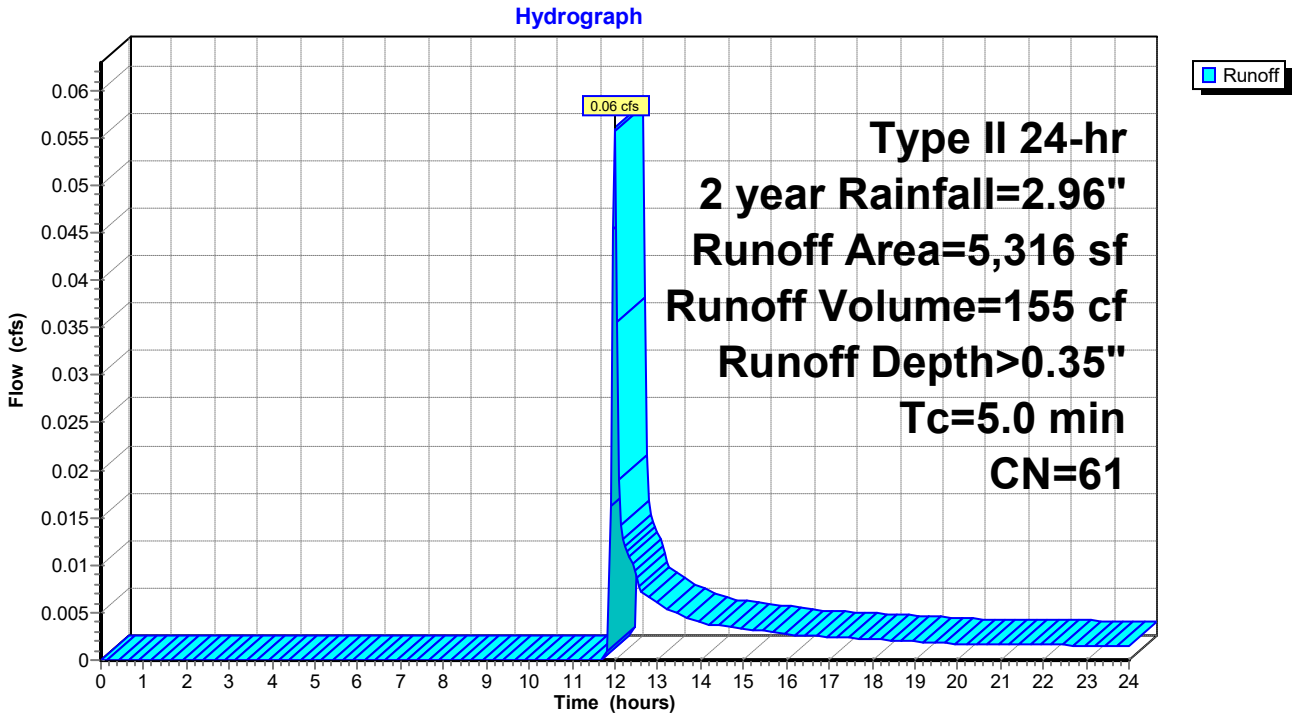
Runoff = 0.06 cfs @ 11.99 hrs, Volume= 155 cf, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
2,011	98	Unconnected roofs, HSG A
3,305	39	>75% Grass cover, Good, HSG A
5,316	61	Weighted Average
3,305		62.17% Pervious Area
2,011		37.83% Impervious Area
2,011		100.00% Unconnected

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

Subcatchment 2:



Summary for Subcatchment 3:

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

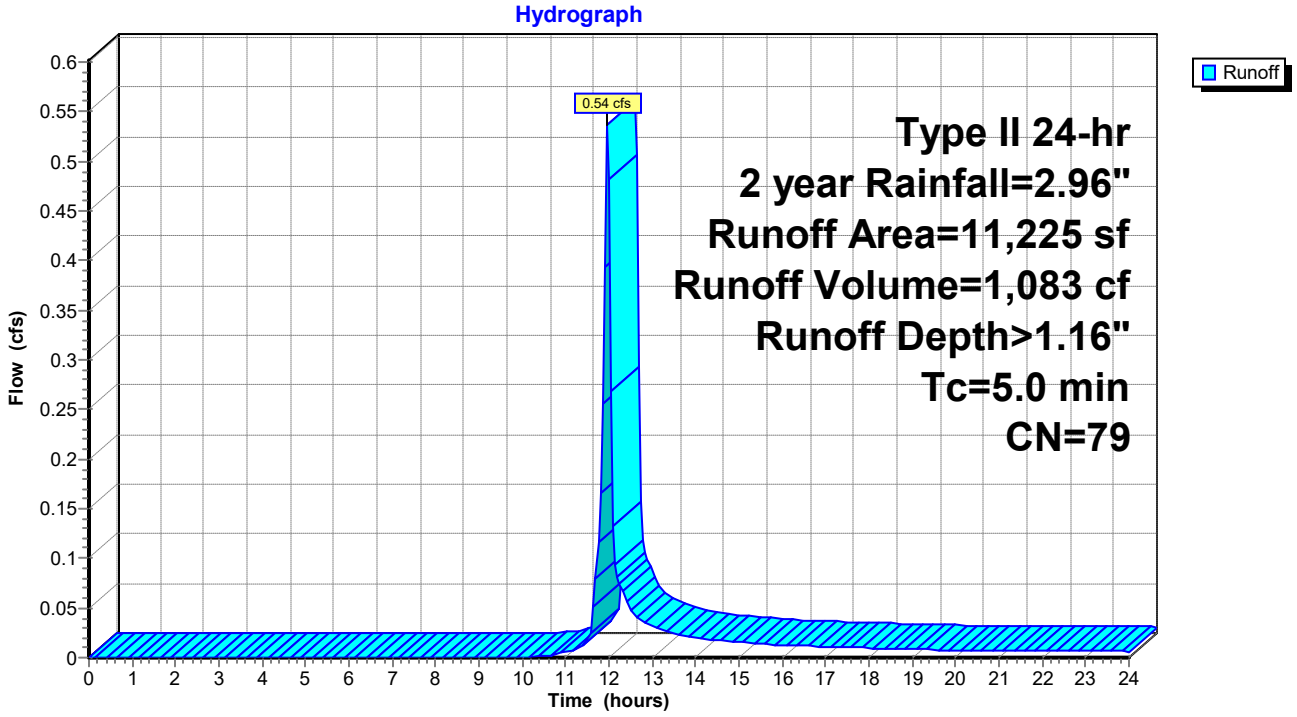
Runoff = 0.54 cfs @ 11.96 hrs, Volume= 1,083 cf, Depth> 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
4,552	98	Paved parking, HSG A
3,056	98	Unconnected roofs, HSG A
3,617	39	>75% Grass cover, Good, HSG A
11,225	79	Weighted Average
3,617		32.22% Pervious Area
7,608		67.78% Impervious Area
3,056		40.17% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

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

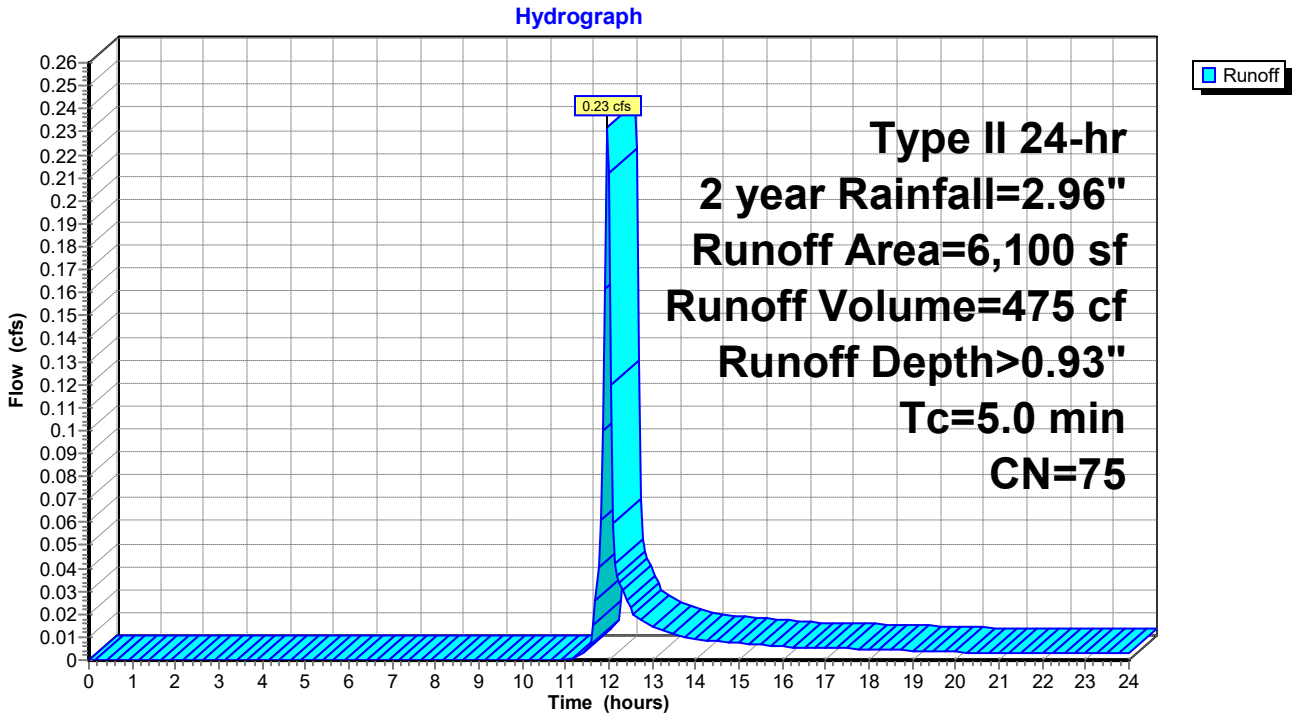
Runoff = 0.23 cfs @ 11.97 hrs, Volume= 475 cf, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
3,690	98	Unconnected roofs, HSG A
2,410	39	>75% Grass cover, Good, HSG A
6,100	75	Weighted Average
2,410		39.51% Pervious Area
3,690		60.49% Impervious Area
3,690		100.00% Unconnected

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

Subcatchment 4:

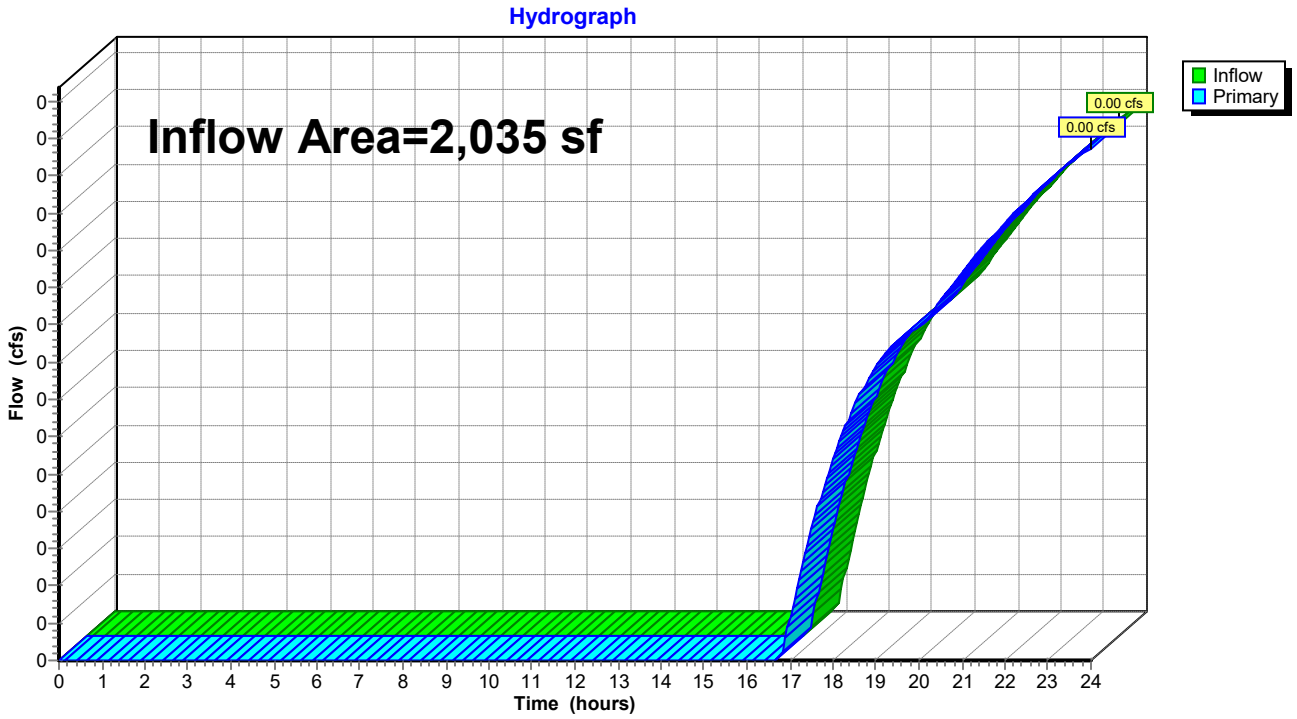


Summary for Link A:

Inflow Area = 2,035 sf, 6.98% Impervious, Inflow Depth > 0.01" for 2 year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 1 cf
Primary = 0.00 cfs @ 24.00 hrs, Volume= 1 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

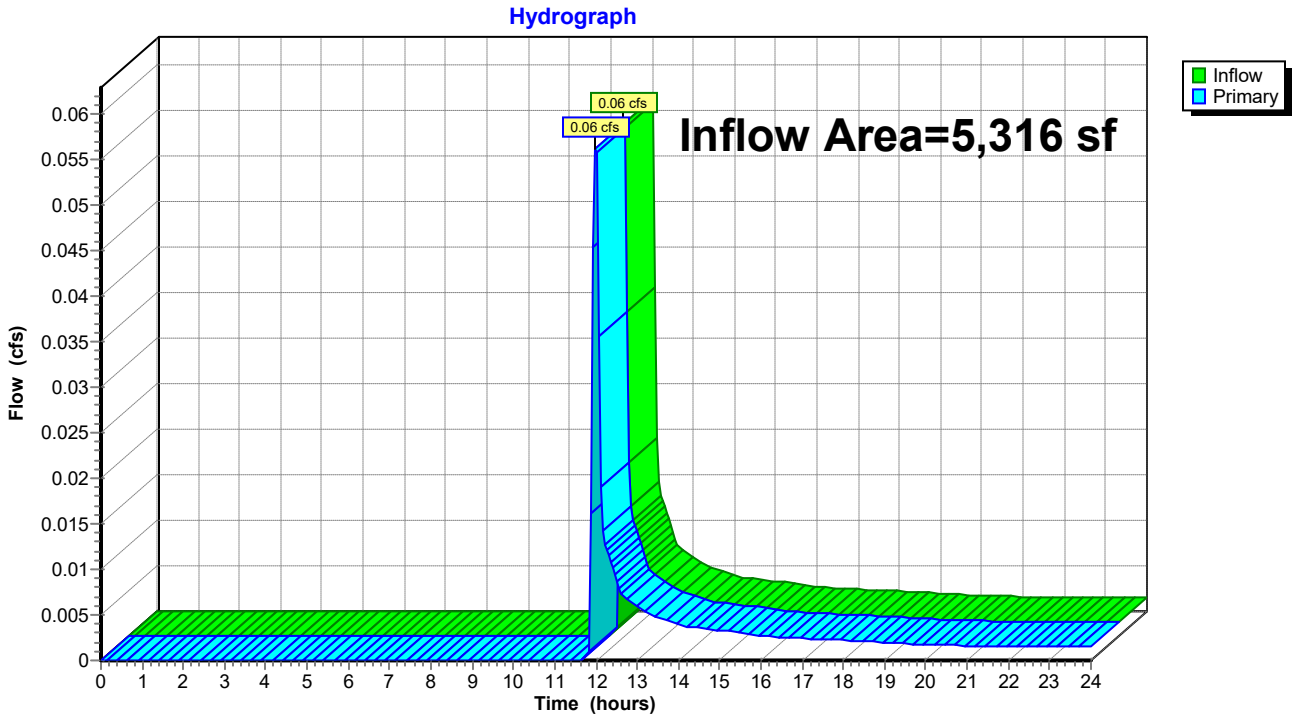


Summary for Link B:

Inflow Area = 5,316 sf, 37.83% Impervious, Inflow Depth > 0.35" for 2 year event
Inflow = 0.06 cfs @ 11.99 hrs, Volume= 155 cf
Primary = 0.06 cfs @ 11.99 hrs, Volume= 155 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

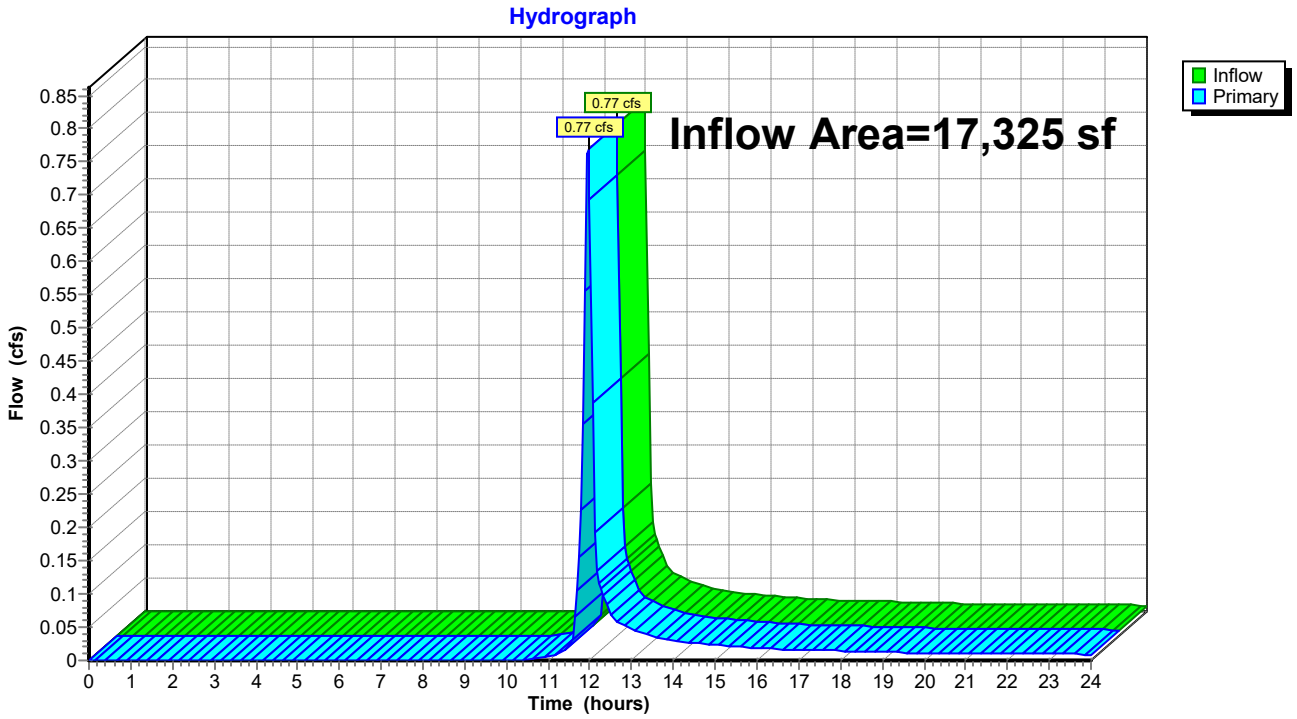


Summary for Link C:

Inflow Area = 17,325 sf, 65.21% Impervious, Inflow Depth > 1.08" for 2 year event
Inflow = 0.77 cfs @ 11.96 hrs, Volume= 1,558 cf
Primary = 0.77 cfs @ 11.96 hrs, Volume= 1,558 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=2,035 sf 6.98% Impervious Runoff Depth>0.20"
Tc=5.0 min CN=43 Runoff=0.00 cfs 34 cf

Subcatchment 2: Runoff Area=5,316 sf 37.83% Impervious Runoff Depth>1.02"
Tc=5.0 min CN=61 Runoff=0.21 cfs 453 cf

Subcatchment 3: Runoff Area=11,225 sf 67.78% Impervious Runoff Depth>2.29"
Tc=5.0 min CN=79 Runoff=1.06 cfs 2,143 cf

Subcatchment 4: Runoff Area=6,100 sf 60.49% Impervious Runoff Depth>1.97"
Tc=5.0 min CN=75 Runoff=0.50 cfs 1,002 cf

Link A: Inflow=0.00 cfs 34 cf
Primary=0.00 cfs 34 cf

Link B: Inflow=0.21 cfs 453 cf
Primary=0.21 cfs 453 cf

Link C: Inflow=1.56 cfs 3,144 cf
Primary=1.56 cfs 3,144 cf

Total Runoff Area = 24,676 sf Runoff Volume = 3,632 cf Average Runoff Depth = 1.77"
45.49% Pervious = 11,225 sf 54.51% Impervious = 13,451 sf

Summary for Subcatchment 1:

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

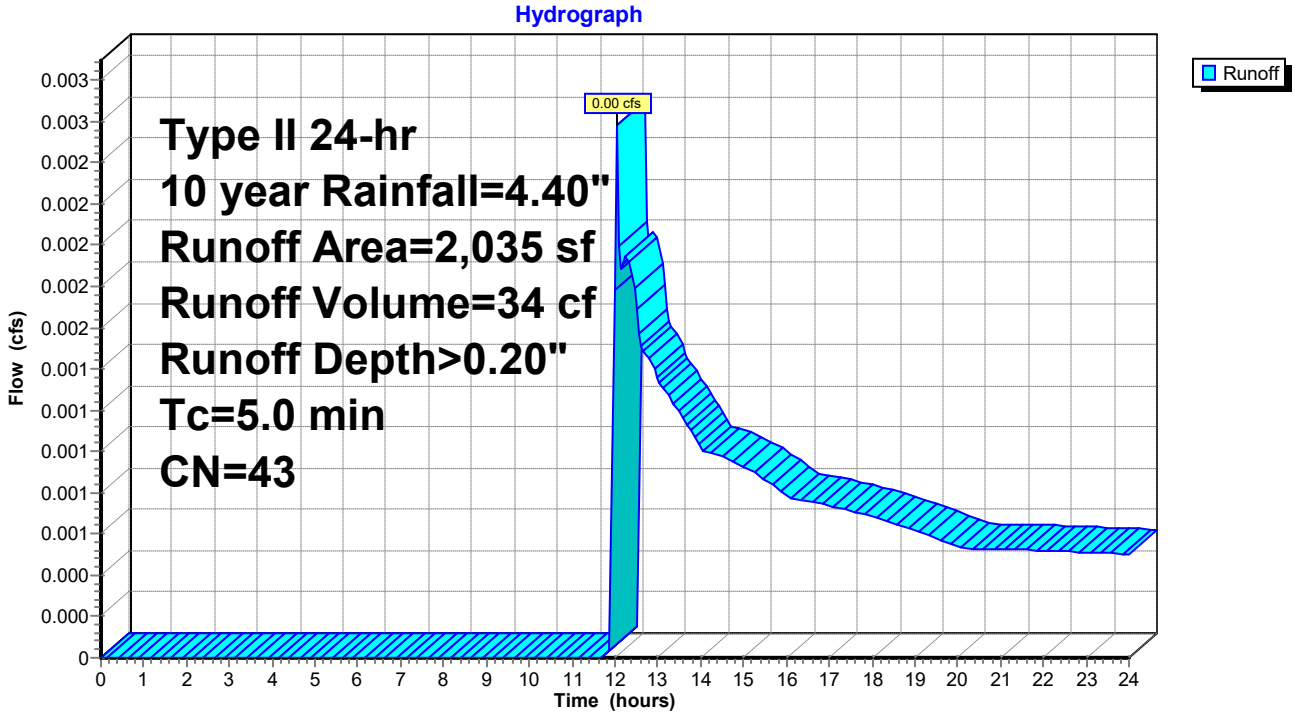
Runoff = 0.00 cfs @ 12.05 hrs, Volume= 34 cf, Depth> 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
142	98	Paved parking, HSG A
1,893	39	>75% Grass cover, Good, HSG A
2,035	43	Weighted Average
1,893		93.02% Pervious Area
142		6.98% Impervious Area

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

Subcatchment 1:



Summary for Subcatchment 2:

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

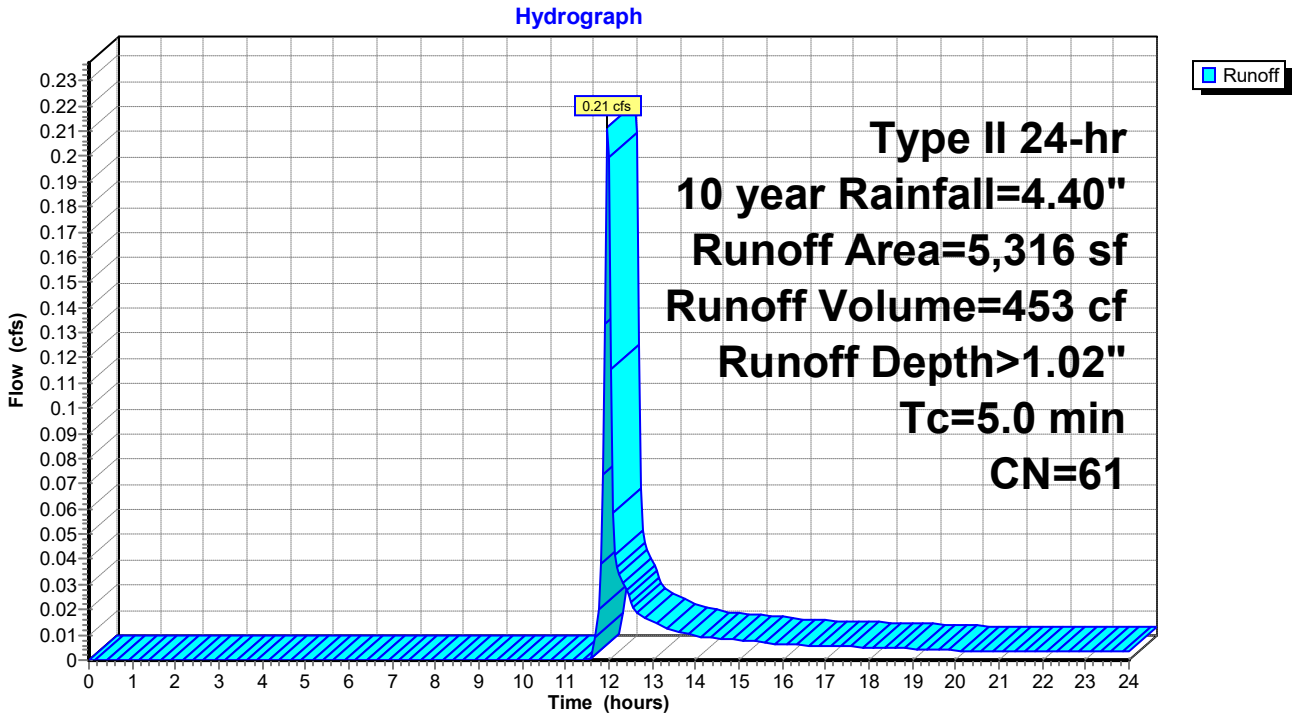
Runoff = 0.21 cfs @ 11.97 hrs, Volume= 453 cf, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
2,011	98	Unconnected roofs, HSG A
3,305	39	>75% Grass cover, Good, HSG A
5,316	61	Weighted Average
3,305		62.17% Pervious Area
2,011		37.83% Impervious Area
2,011		100.00% Unconnected

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

Subcatchment 2:



Summary for Subcatchment 3:

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

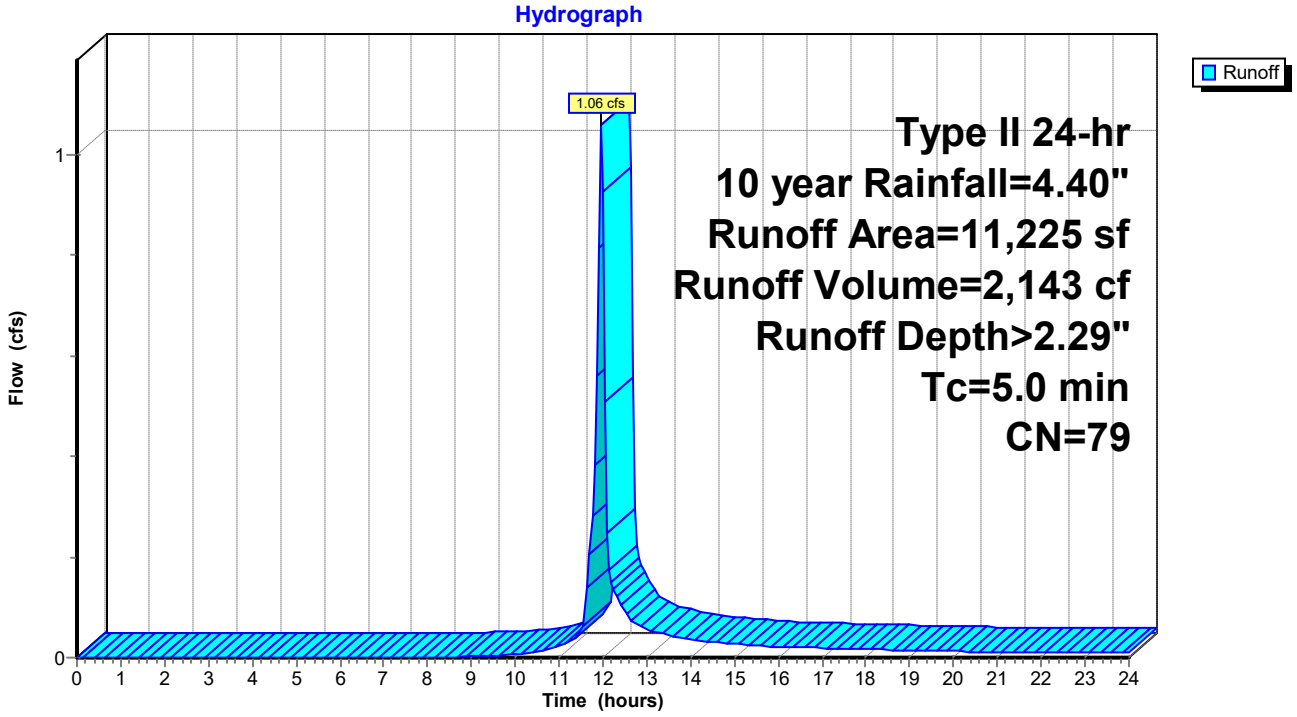
Runoff = 1.06 cfs @ 11.96 hrs, Volume= 2,143 cf, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
4,552	98	Paved parking, HSG A
3,056	98	Unconnected roofs, HSG A
3,617	39	>75% Grass cover, Good, HSG A
11,225	79	Weighted Average
3,617		32.22% Pervious Area
7,608		67.78% Impervious Area
3,056		40.17% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

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

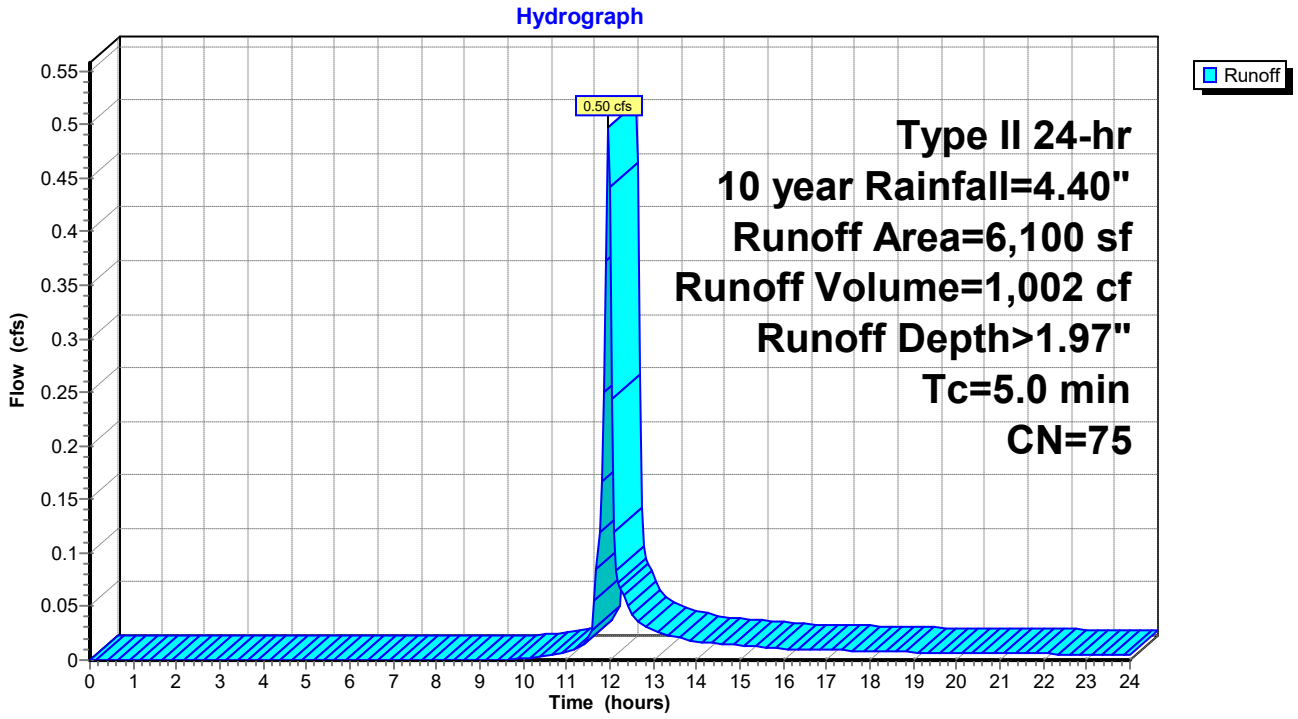
Runoff = 0.50 cfs @ 11.96 hrs, Volume= 1,002 cf, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
3,690	98	Unconnected roofs, HSG A
2,410	39	>75% Grass cover, Good, HSG A
6,100	75	Weighted Average
2,410		39.51% Pervious Area
3,690		60.49% Impervious Area
3,690		100.00% Unconnected

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

Subcatchment 4:

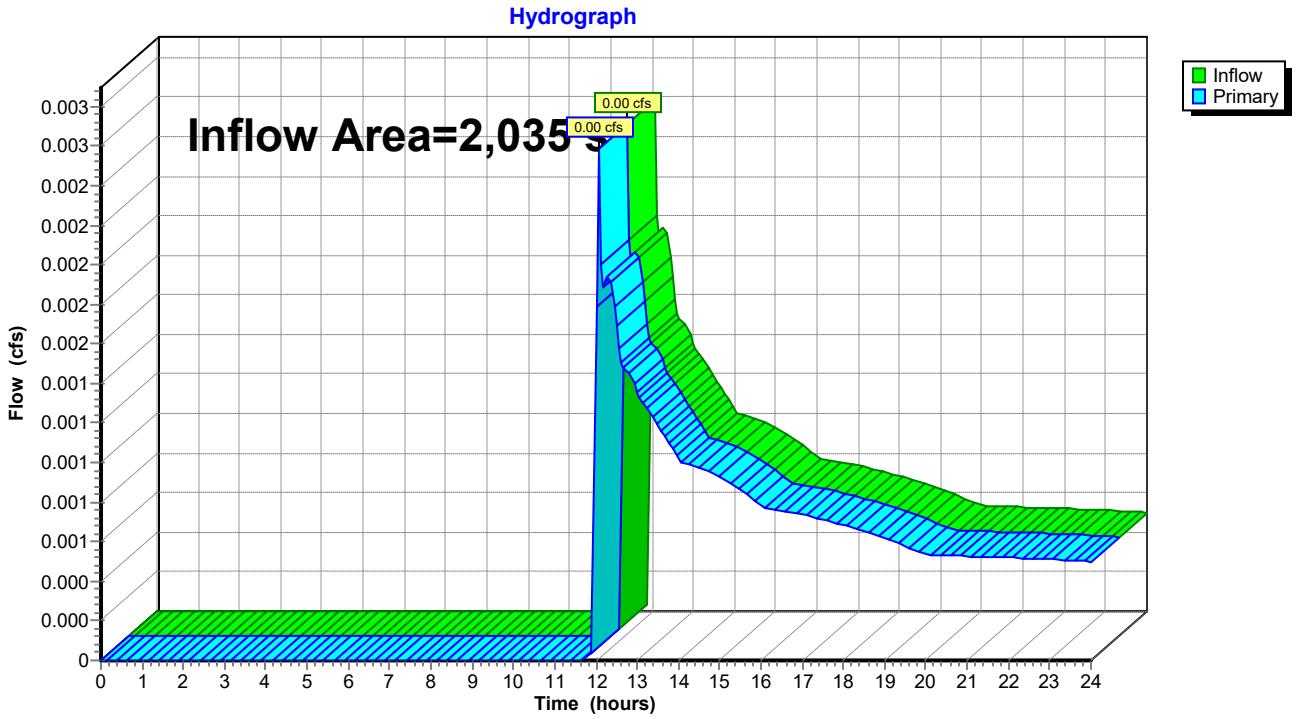


Summary for Link A:

Inflow Area = 2,035 sf, 6.98% Impervious, Inflow Depth > 0.20" for 10 year event
Inflow = 0.00 cfs @ 12.05 hrs, Volume= 34 cf
Primary = 0.00 cfs @ 12.05 hrs, Volume= 34 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

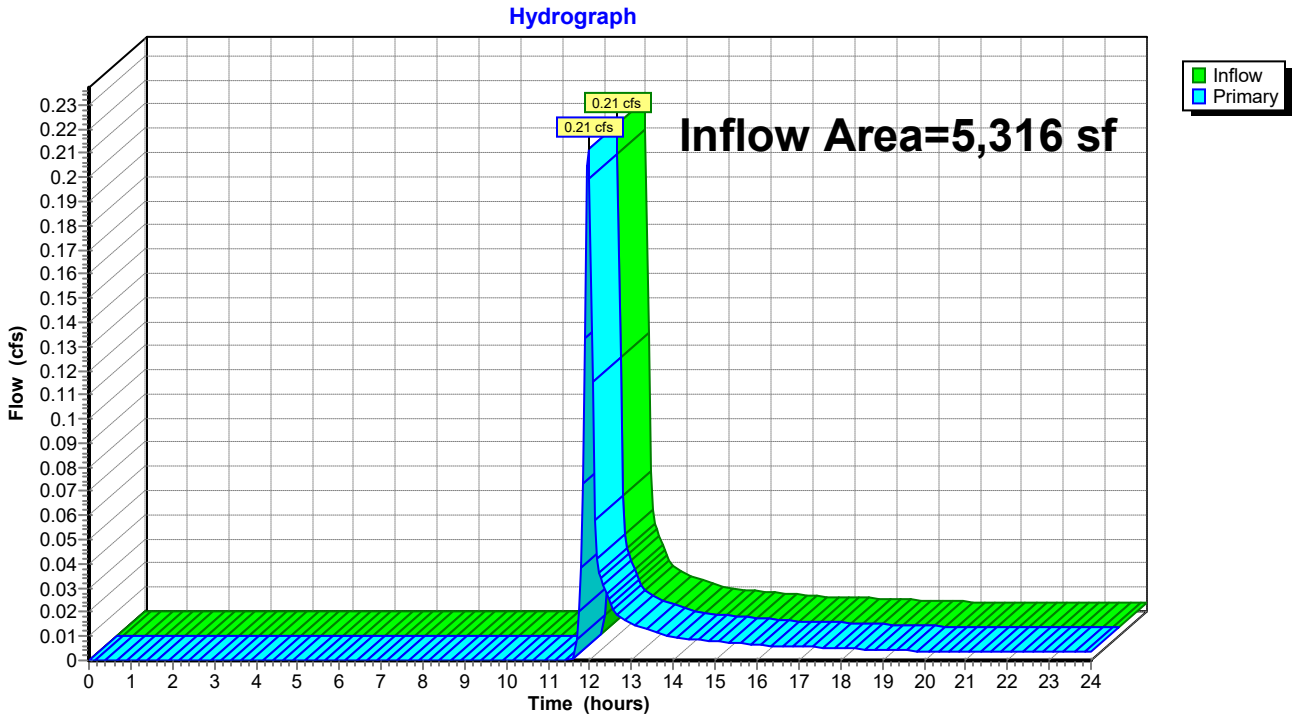


Summary for Link B:

Inflow Area = 5,316 sf, 37.83% Impervious, Inflow Depth > 1.02" for 10 year event
Inflow = 0.21 cfs @ 11.97 hrs, Volume= 453 cf
Primary = 0.21 cfs @ 11.97 hrs, Volume= 453 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

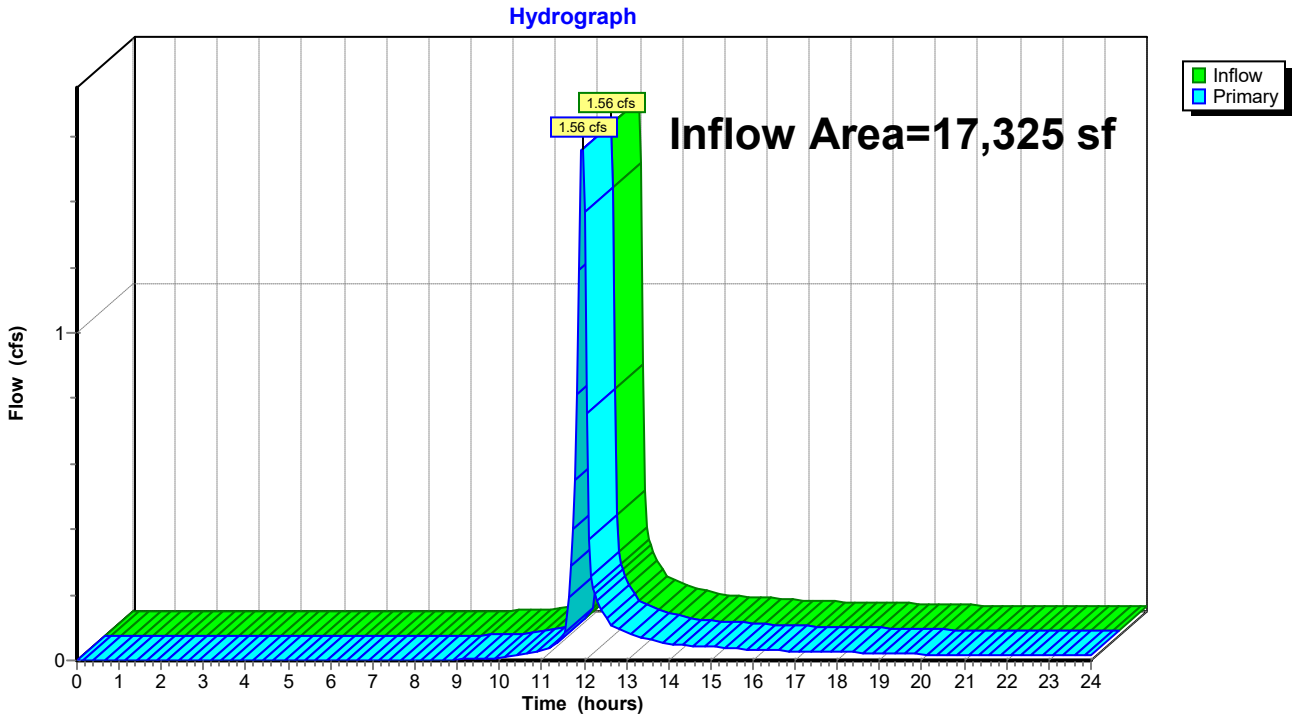


Summary for Link C:

Inflow Area = 17,325 sf, 65.21% Impervious, Inflow Depth > 2.18" for 10 year event
Inflow = 1.56 cfs @ 11.96 hrs, Volume= 3,144 cf
Primary = 1.56 cfs @ 11.96 hrs, Volume= 3,144 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=2,035 sf 6.98% Impervious Runoff Depth>0.51"
Tc=5.0 min CN=43 Runoff=0.03 cfs 86 cf

Subcatchment 2: Runoff Area=5,316 sf 37.83% Impervious Runoff Depth>1.69"
Tc=5.0 min CN=61 Runoff=0.37 cfs 748 cf

Subcatchment 3: Runoff Area=11,225 sf 67.78% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=79 Runoff=1.49 cfs 3,041 cf

Subcatchment 4: Runoff Area=6,100 sf 60.49% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=75 Runoff=0.72 cfs 1,461 cf

Link A: Inflow=0.03 cfs 86 cf
Primary=0.03 cfs 86 cf

Link B: Inflow=0.37 cfs 748 cf
Primary=0.37 cfs 748 cf

Link C: Inflow=2.21 cfs 4,503 cf
Primary=2.21 cfs 4,503 cf

Total Runoff Area = 24,676 sf Runoff Volume = 5,337 cf Average Runoff Depth = 2.60"
45.49% Pervious = 11,225 sf 54.51% Impervious = 13,451 sf

Summary for Subcatchment 1:

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

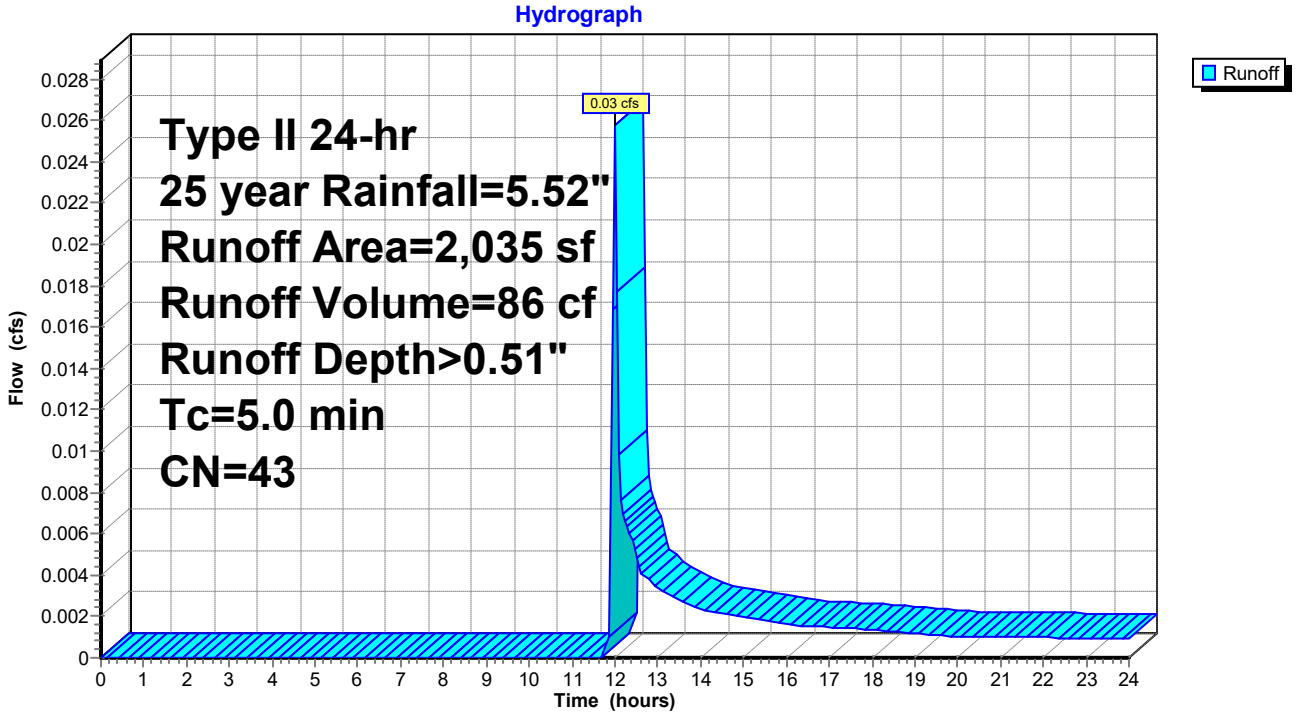
Runoff = 0.03 cfs @ 12.00 hrs, Volume= 86 cf, Depth> 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
142	98	Paved parking, HSG A
1,893	39	>75% Grass cover, Good, HSG A
2,035	43	Weighted Average
1,893		93.02% Pervious Area
142		6.98% Impervious Area

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

Subcatchment 1:



Summary for Subcatchment 2:

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

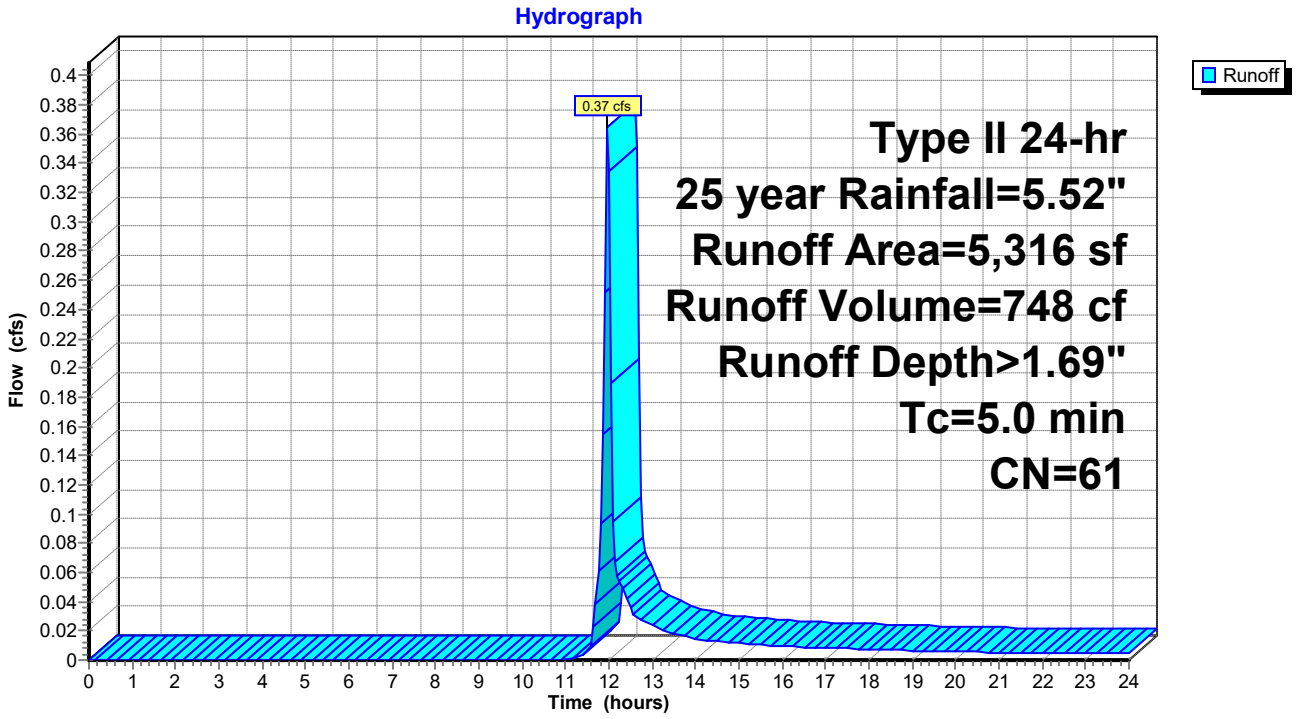
Runoff = 0.37 cfs @ 11.97 hrs, Volume= 748 cf, Depth> 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
2,011	98	Unconnected roofs, HSG A
3,305	39	>75% Grass cover, Good, HSG A
5,316	61	Weighted Average
3,305		62.17% Pervious Area
2,011		37.83% Impervious Area
2,011		100.00% Unconnected

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

Subcatchment 2:



Summary for Subcatchment 3:

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

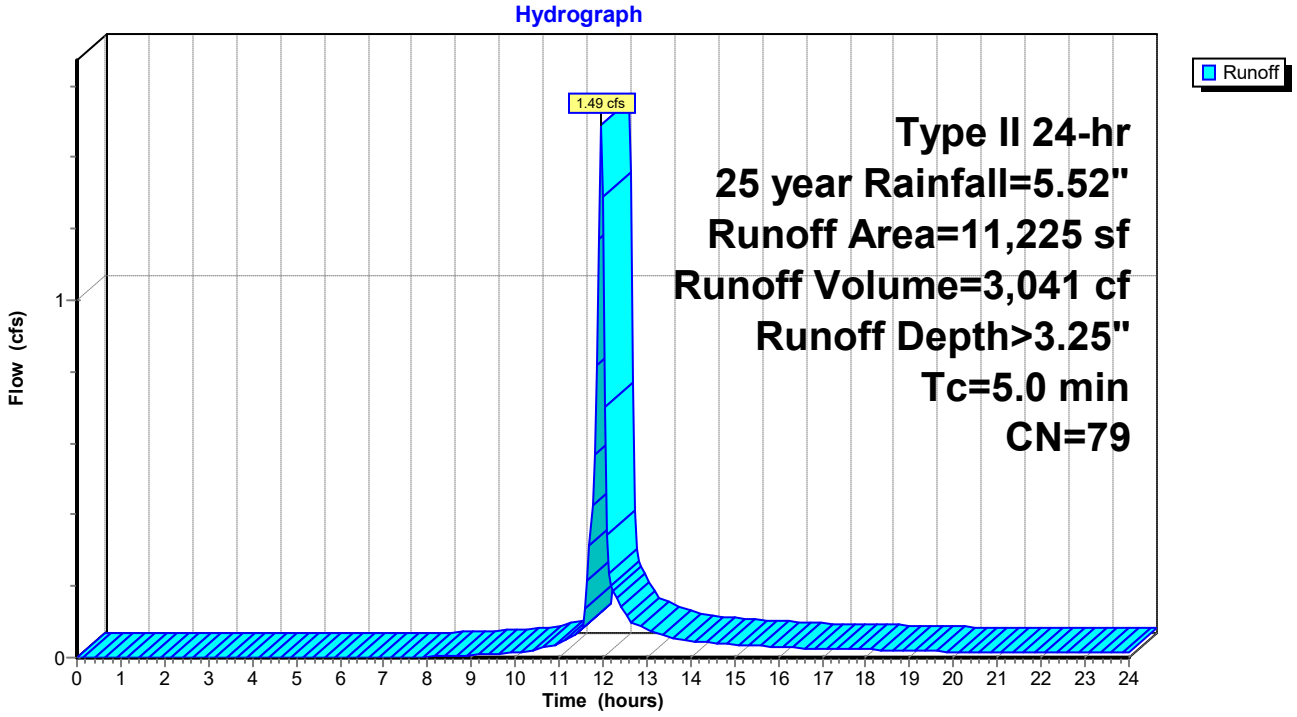
Runoff = 1.49 cfs @ 11.96 hrs, Volume= 3,041 cf, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
4,552	98	Paved parking, HSG A
3,056	98	Unconnected roofs, HSG A
3,617	39	>75% Grass cover, Good, HSG A
11,225	79	Weighted Average
3,617		32.22% Pervious Area
7,608		67.78% Impervious Area
3,056		40.17% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

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

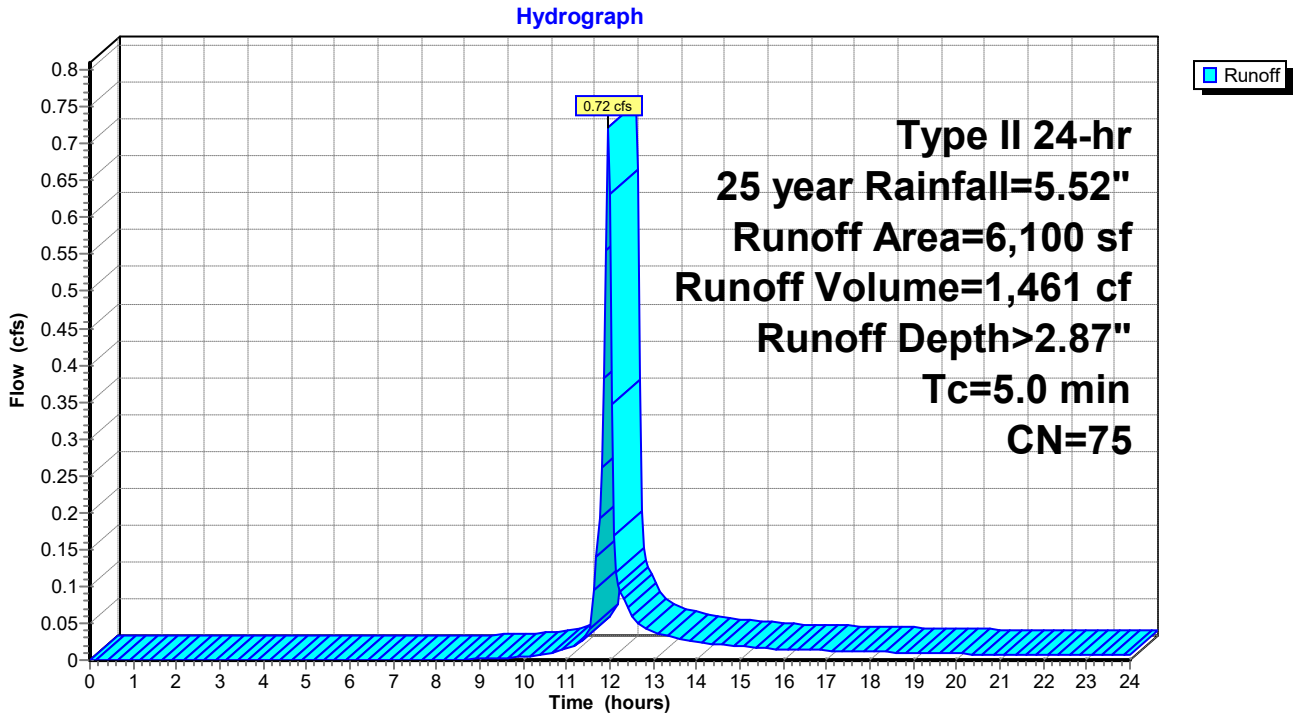
Runoff = 0.72 cfs @ 11.96 hrs, Volume= 1,461 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
3,690	98	Unconnected roofs, HSG A
2,410	39	>75% Grass cover, Good, HSG A
6,100	75	Weighted Average
2,410		39.51% Pervious Area
3,690		60.49% Impervious Area
3,690		100.00% Unconnected

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

Subcatchment 4:

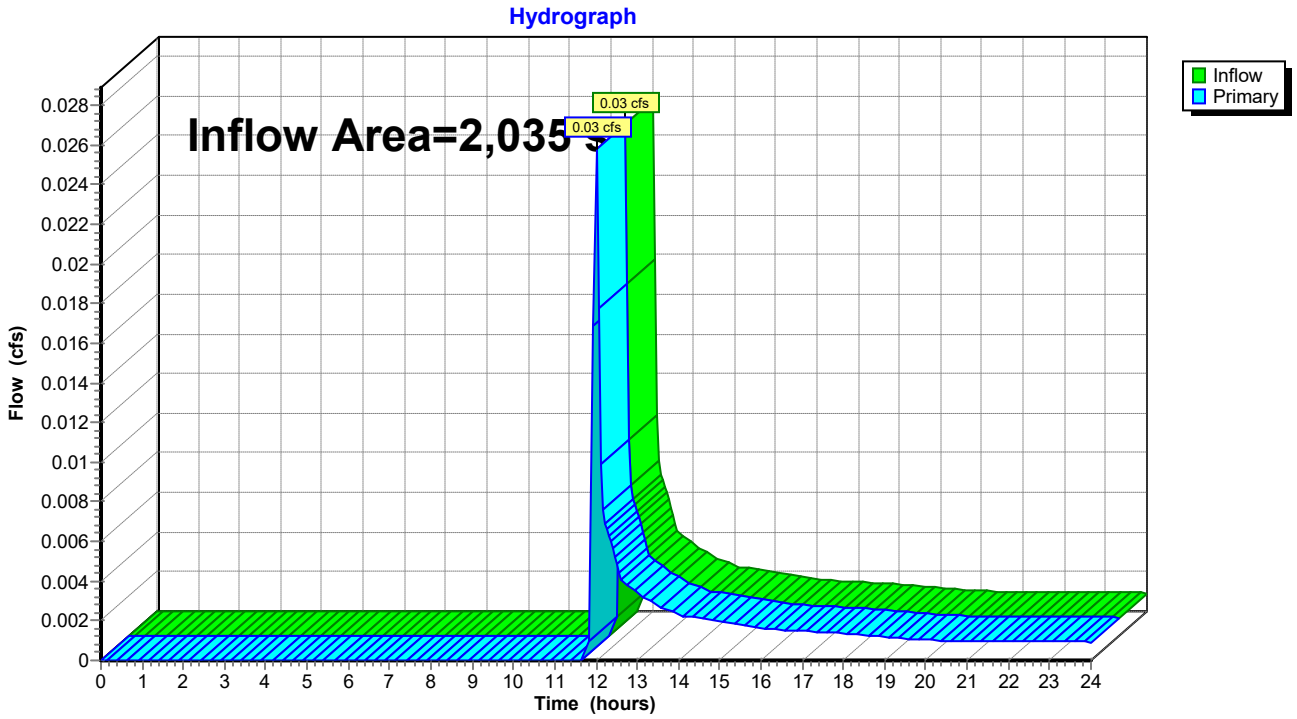


Summary for Link A:

Inflow Area = 2,035 sf, 6.98% Impervious, Inflow Depth > 0.51" for 25 year event
Inflow = 0.03 cfs @ 12.00 hrs, Volume= 86 cf
Primary = 0.03 cfs @ 12.00 hrs, Volume= 86 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

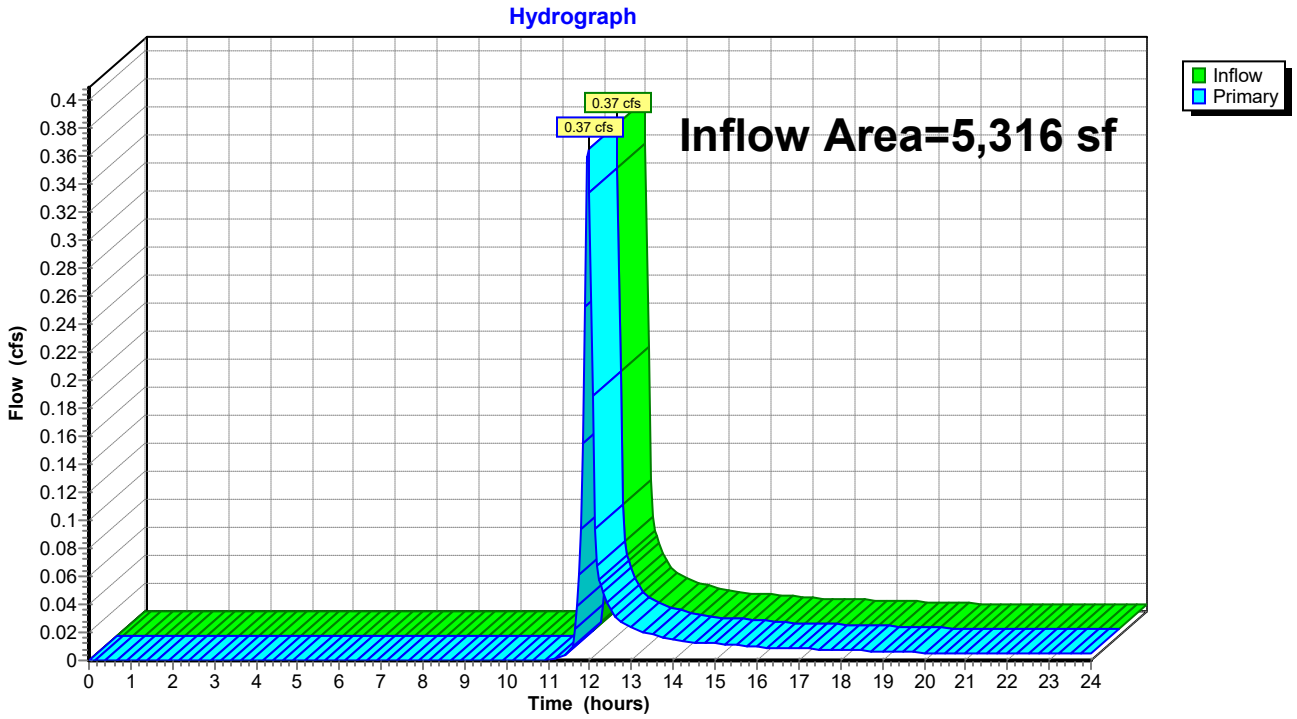


Summary for Link B:

Inflow Area = 5,316 sf, 37.83% Impervious, Inflow Depth > 1.69" for 25 year event
Inflow = 0.37 cfs @ 11.97 hrs, Volume= 748 cf
Primary = 0.37 cfs @ 11.97 hrs, Volume= 748 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

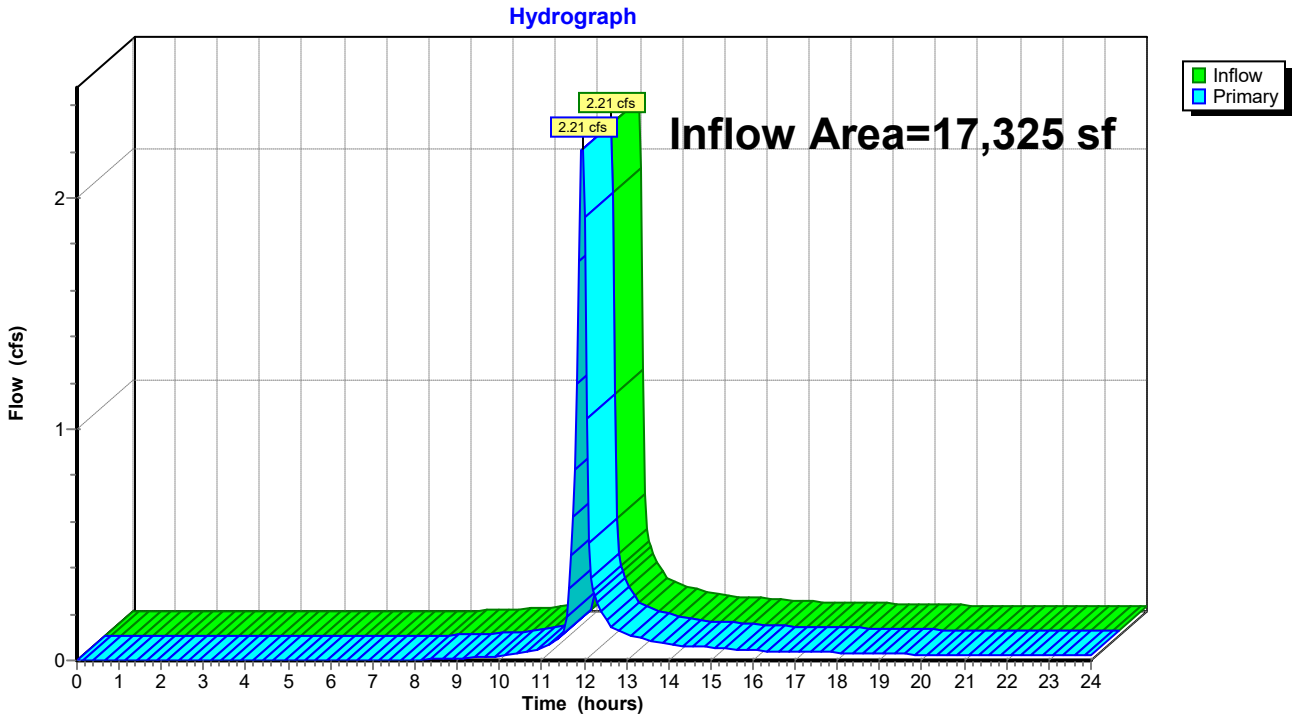


Summary for Link C:

Inflow Area = 17,325 sf, 65.21% Impervious, Inflow Depth > 3.12" for 25 year event
Inflow = 2.21 cfs @ 11.96 hrs, Volume= 4,503 cf
Primary = 2.21 cfs @ 11.96 hrs, Volume= 4,503 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=2,035 sf 6.98% Impervious Runoff Depth>0.89"
Tc=5.0 min CN=43 Runoff=0.06 cfs 151 cf

Subcatchment 2: Runoff Area=5,316 sf 37.83% Impervious Runoff Depth>2.39"
Tc=5.0 min CN=61 Runoff=0.52 cfs 1,060 cf

Subcatchment 3: Runoff Area=11,225 sf 67.78% Impervious Runoff Depth>4.19"
Tc=5.0 min CN=79 Runoff=1.90 cfs 3,919 cf

Subcatchment 4: Runoff Area=6,100 sf 60.49% Impervious Runoff Depth>3.77"
Tc=5.0 min CN=75 Runoff=0.94 cfs 1,916 cf

Link A: Inflow=0.06 cfs 151 cf
Primary=0.06 cfs 151 cf

Link B: Inflow=0.52 cfs 1,060 cf
Primary=0.52 cfs 1,060 cf

Link C: Inflow=2.84 cfs 5,835 cf
Primary=2.84 cfs 5,835 cf

Total Runoff Area = 24,676 sf Runoff Volume = 7,047 cf Average Runoff Depth = 3.43"
45.49% Pervious = 11,225 sf 54.51% Impervious = 13,451 sf

Summary for Subcatchment 1:

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

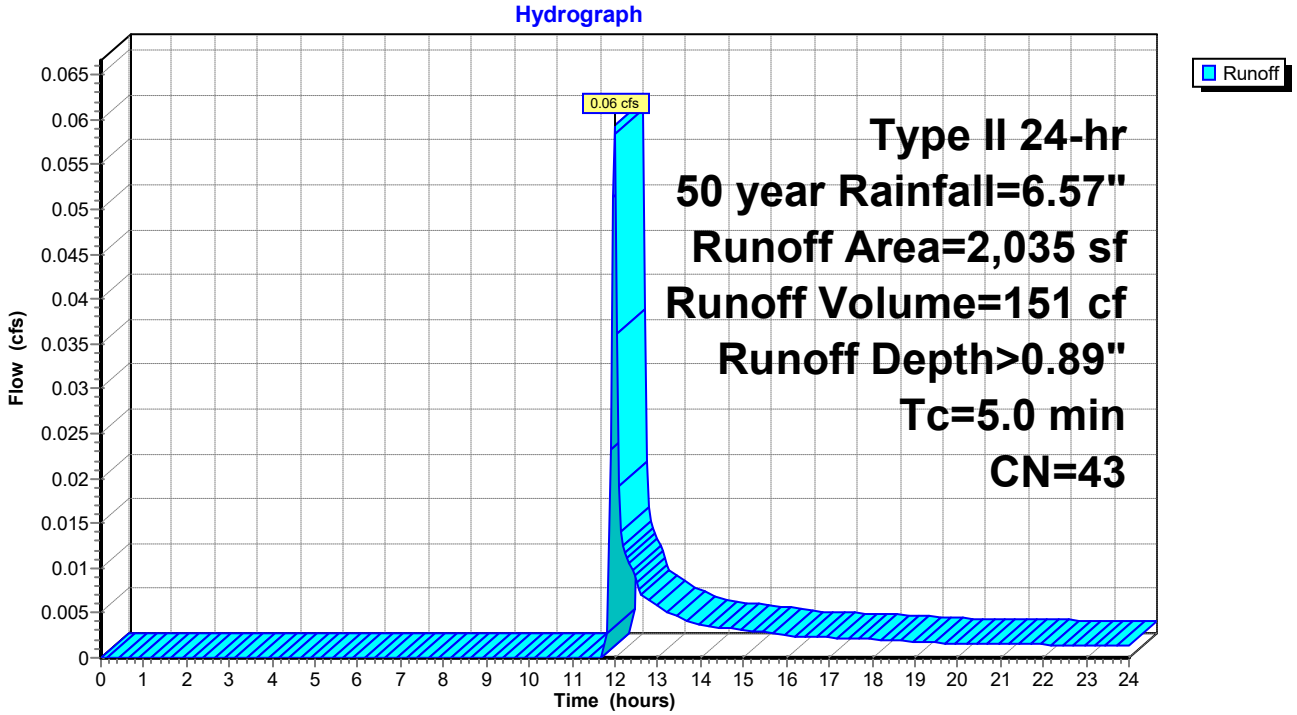
Runoff = 0.06 cfs @ 11.99 hrs, Volume= 151 cf, Depth> 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
142	98	Paved parking, HSG A
1,893	39	>75% Grass cover, Good, HSG A
2,035	43	Weighted Average
1,893		93.02% Pervious Area
142		6.98% Impervious Area

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

Subcatchment 1:



Summary for Subcatchment 2:

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

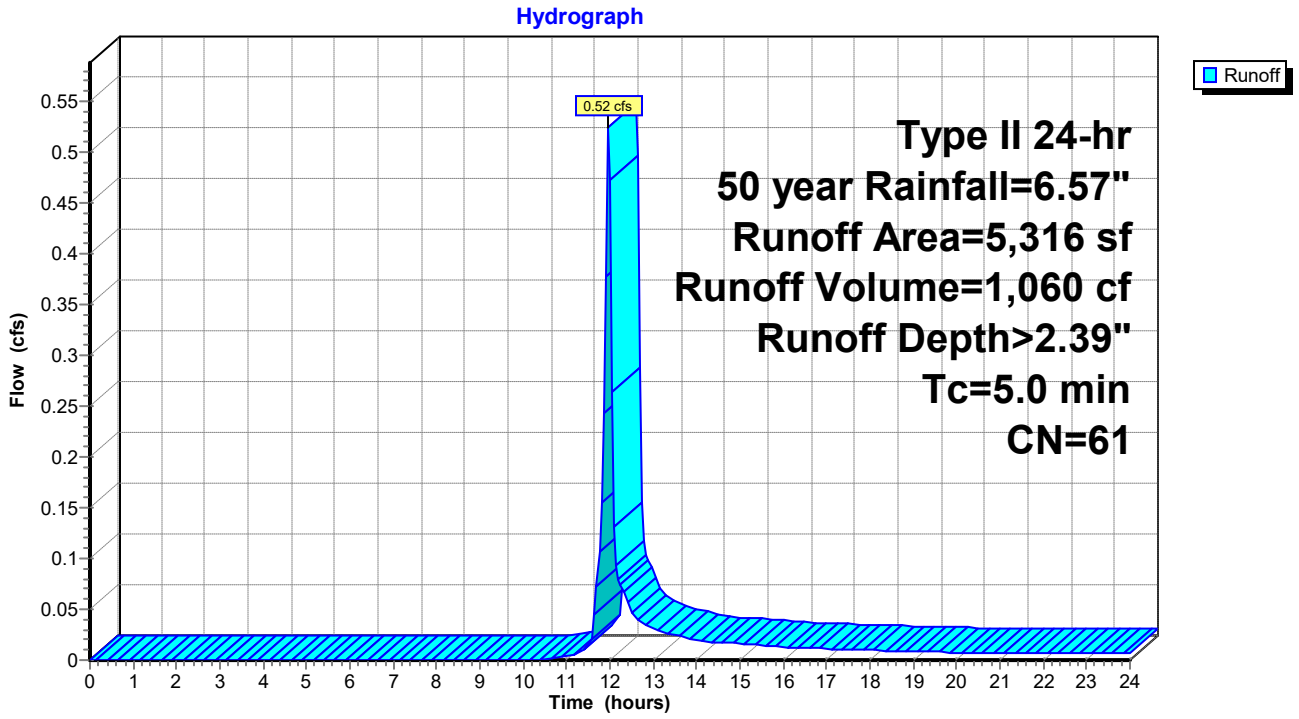
Runoff = 0.52 cfs @ 11.96 hrs, Volume= 1,060 cf, Depth> 2.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
2,011	98	Unconnected roofs, HSG A
3,305	39	>75% Grass cover, Good, HSG A
5,316	61	Weighted Average
3,305		62.17% Pervious Area
2,011		37.83% Impervious Area
2,011		100.00% Unconnected

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

Subcatchment 2:



Summary for Subcatchment 3:

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

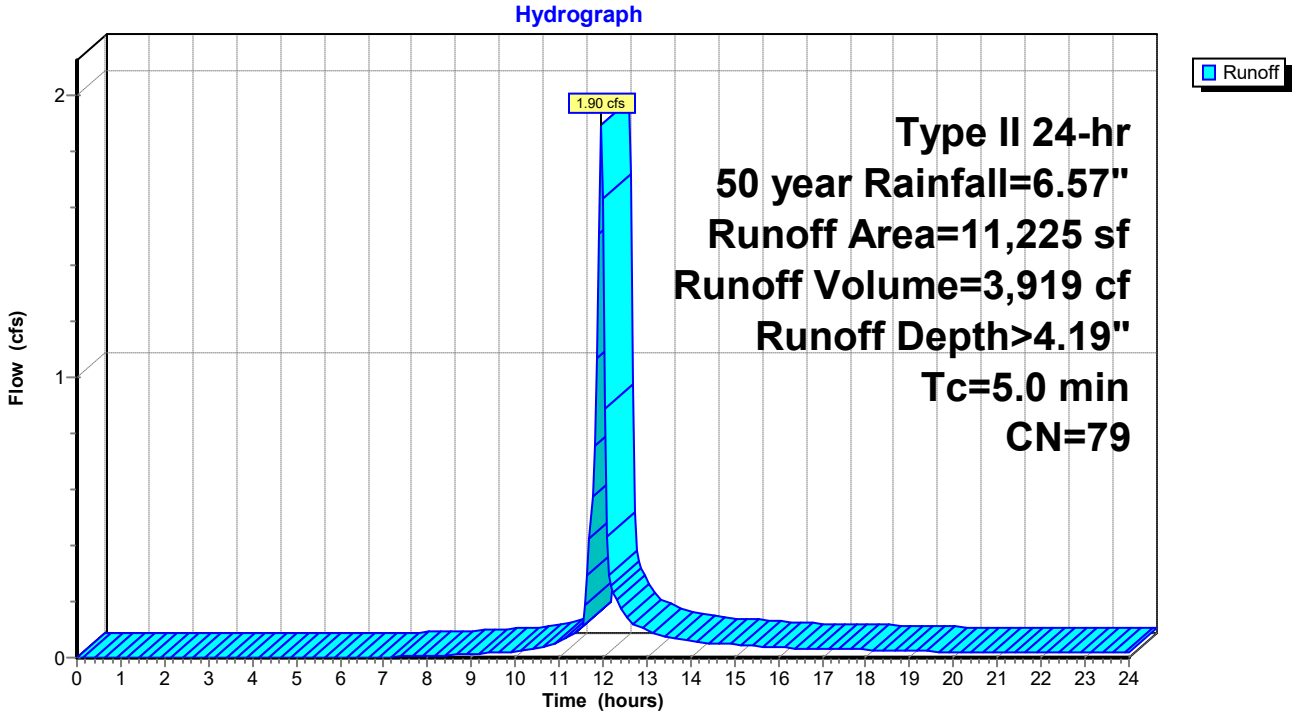
Runoff = 1.90 cfs @ 11.95 hrs, Volume= 3,919 cf, Depth> 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
4,552	98	Paved parking, HSG A
3,056	98	Unconnected roofs, HSG A
3,617	39	>75% Grass cover, Good, HSG A
11,225	79	Weighted Average
3,617		32.22% Pervious Area
7,608		67.78% Impervious Area
3,056		40.17% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

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

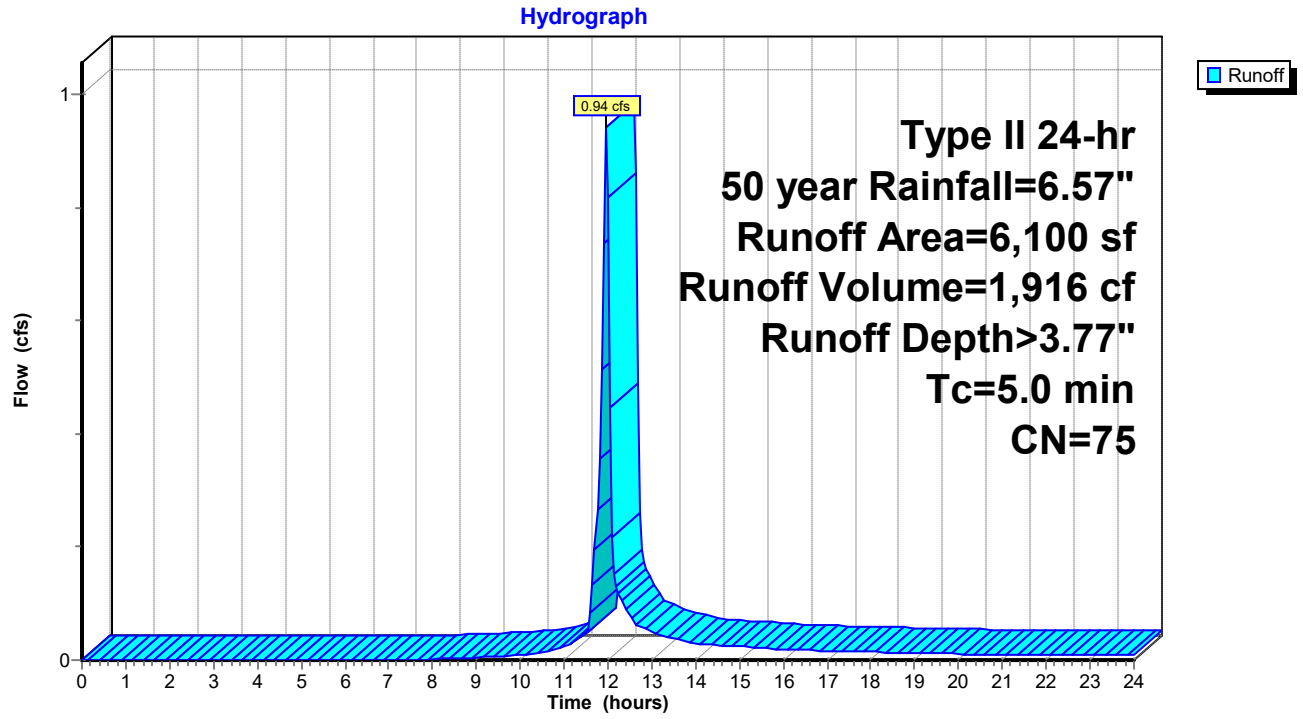
Runoff = 0.94 cfs @ 11.96 hrs, Volume= 1,916 cf, Depth> 3.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
3,690	98	Unconnected roofs, HSG A
2,410	39	>75% Grass cover, Good, HSG A
6,100	75	Weighted Average
2,410		39.51% Pervious Area
3,690		60.49% Impervious Area
3,690		100.00% Unconnected

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

Subcatchment 4:

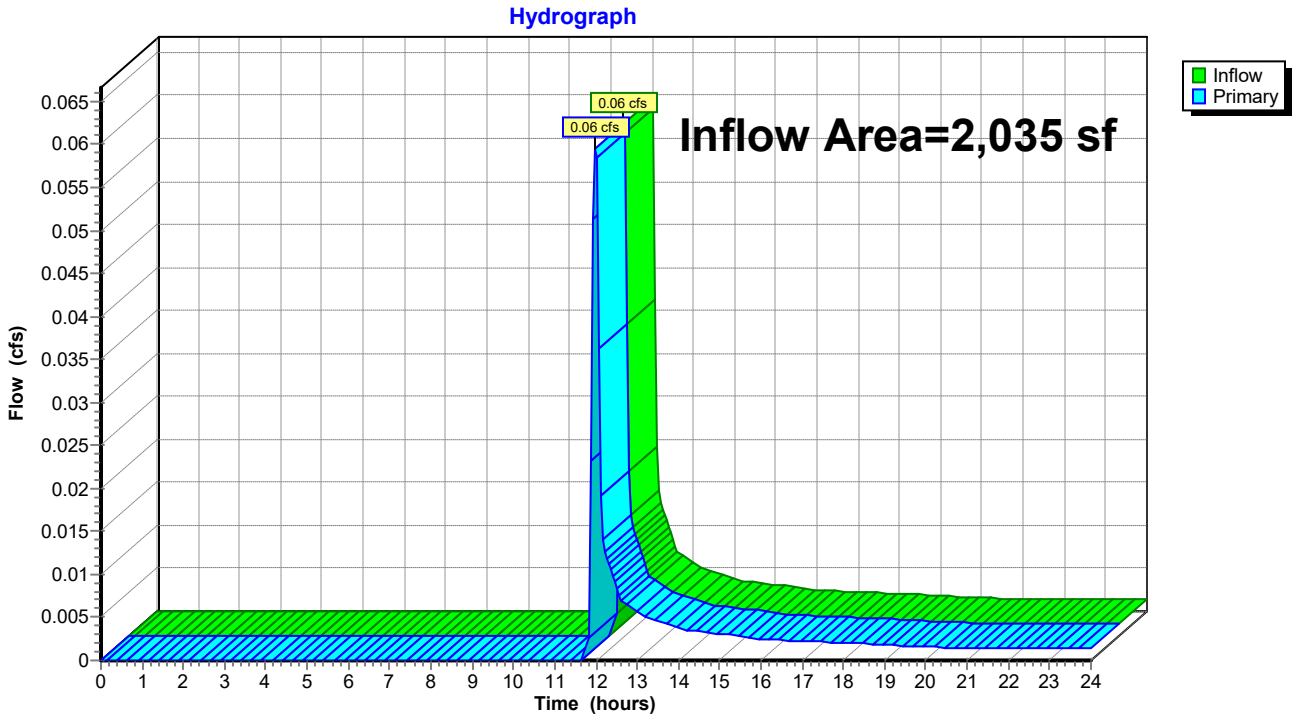


Summary for Link A:

Inflow Area = 2,035 sf, 6.98% Impervious, Inflow Depth > 0.89" for 50 year event
Inflow = 0.06 cfs @ 11.99 hrs, Volume= 151 cf
Primary = 0.06 cfs @ 11.99 hrs, Volume= 151 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

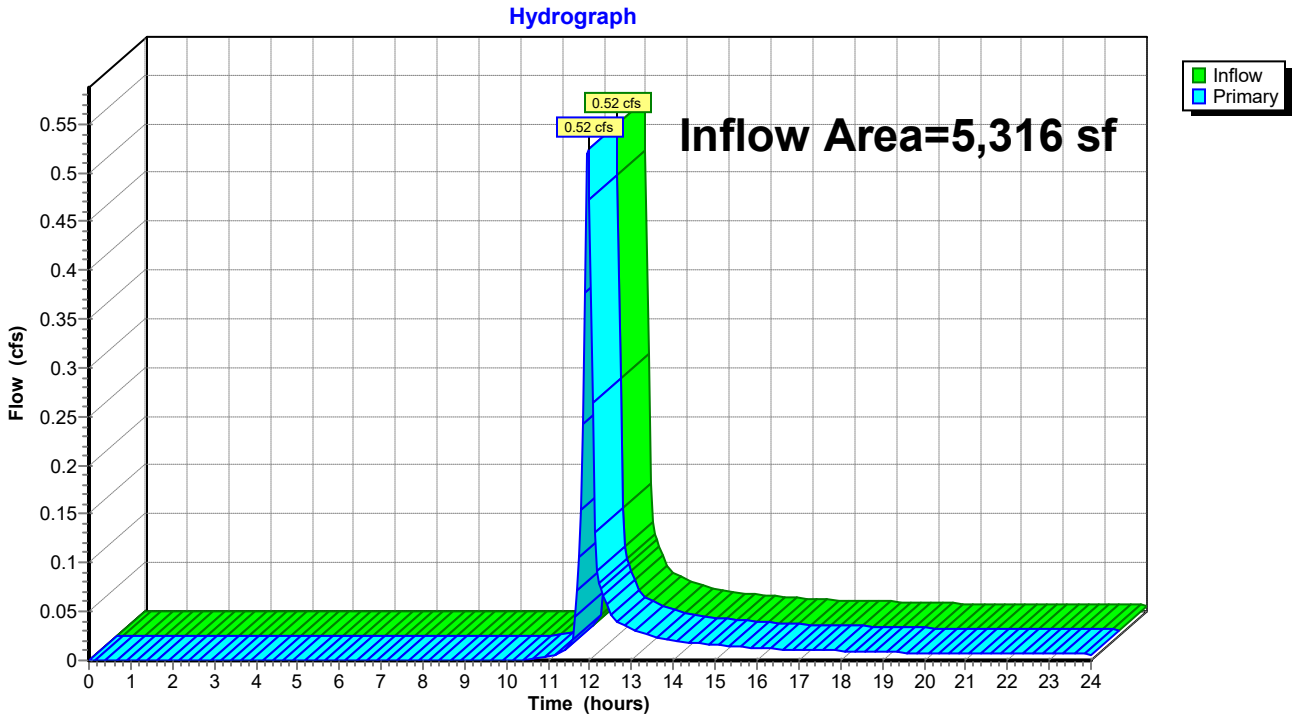


Summary for Link B:

Inflow Area = 5,316 sf, 37.83% Impervious, Inflow Depth > 2.39" for 50 year event
Inflow = 0.52 cfs @ 11.96 hrs, Volume= 1,060 cf
Primary = 0.52 cfs @ 11.96 hrs, Volume= 1,060 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

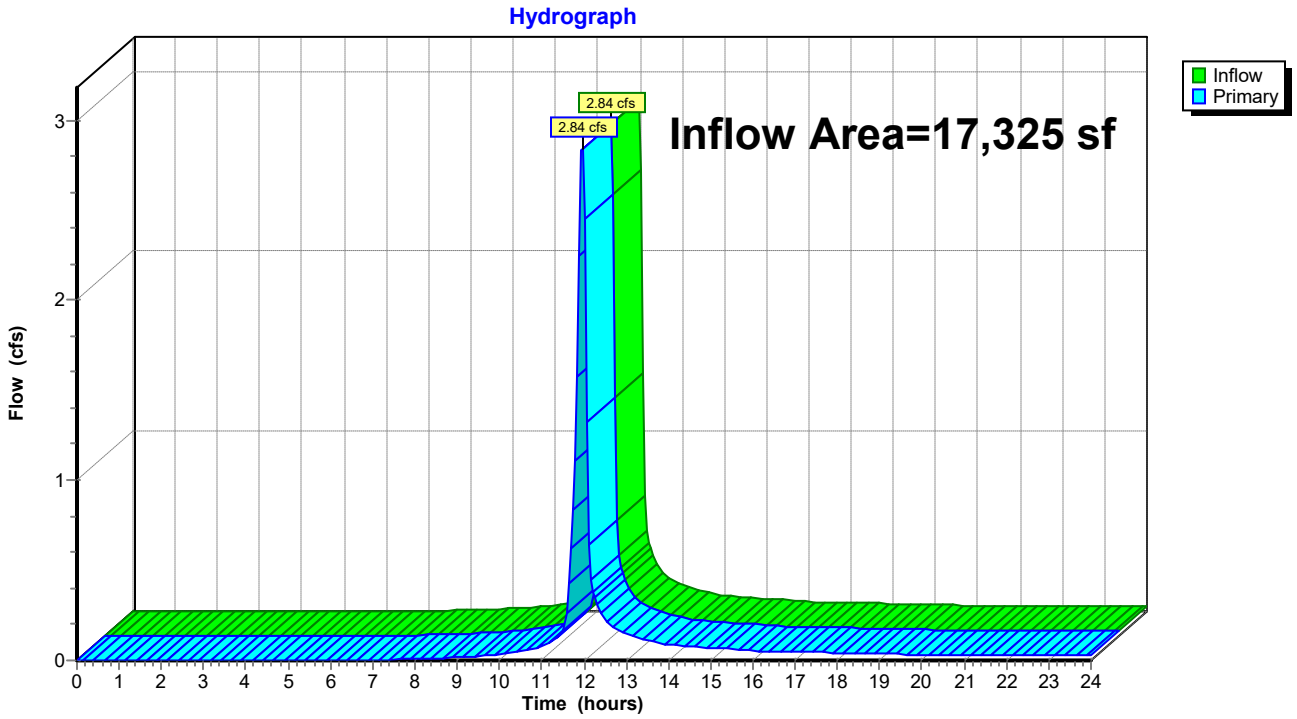


Summary for Link C:

Inflow Area = 17,325 sf, 65.21% Impervious, Inflow Depth > 4.04" for 50 year event
Inflow = 2.84 cfs @ 11.96 hrs, Volume= 5,835 cf
Primary = 2.84 cfs @ 11.96 hrs, Volume= 5,835 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=2,035 sf 6.98% Impervious Runoff Depth>1.44"
Tc=5.0 min CN=43 Runoff=0.11 cfs 245 cf

Subcatchment 2: Runoff Area=5,316 sf 37.83% Impervious Runoff Depth>3.30"
Tc=5.0 min CN=61 Runoff=0.73 cfs 1,461 cf

Subcatchment 3: Runoff Area=11,225 sf 67.78% Impervious Runoff Depth>5.33"
Tc=5.0 min CN=79 Runoff=2.39 cfs 4,983 cf

Subcatchment 4: Runoff Area=6,100 sf 60.49% Impervious Runoff Depth>4.87"
Tc=5.0 min CN=75 Runoff=1.20 cfs 2,474 cf

Link A: Inflow=0.11 cfs 245 cf
Primary=0.11 cfs 245 cf

Link B: Inflow=0.73 cfs 1,461 cf
Primary=0.73 cfs 1,461 cf

Link C: Inflow=3.59 cfs 7,457 cf
Primary=3.59 cfs 7,457 cf

Total Runoff Area = 24,676 sf Runoff Volume = 9,162 cf Average Runoff Depth = 4.46"
45.49% Pervious = 11,225 sf 54.51% Impervious = 13,451 sf

Summary for Subcatchment 1:

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

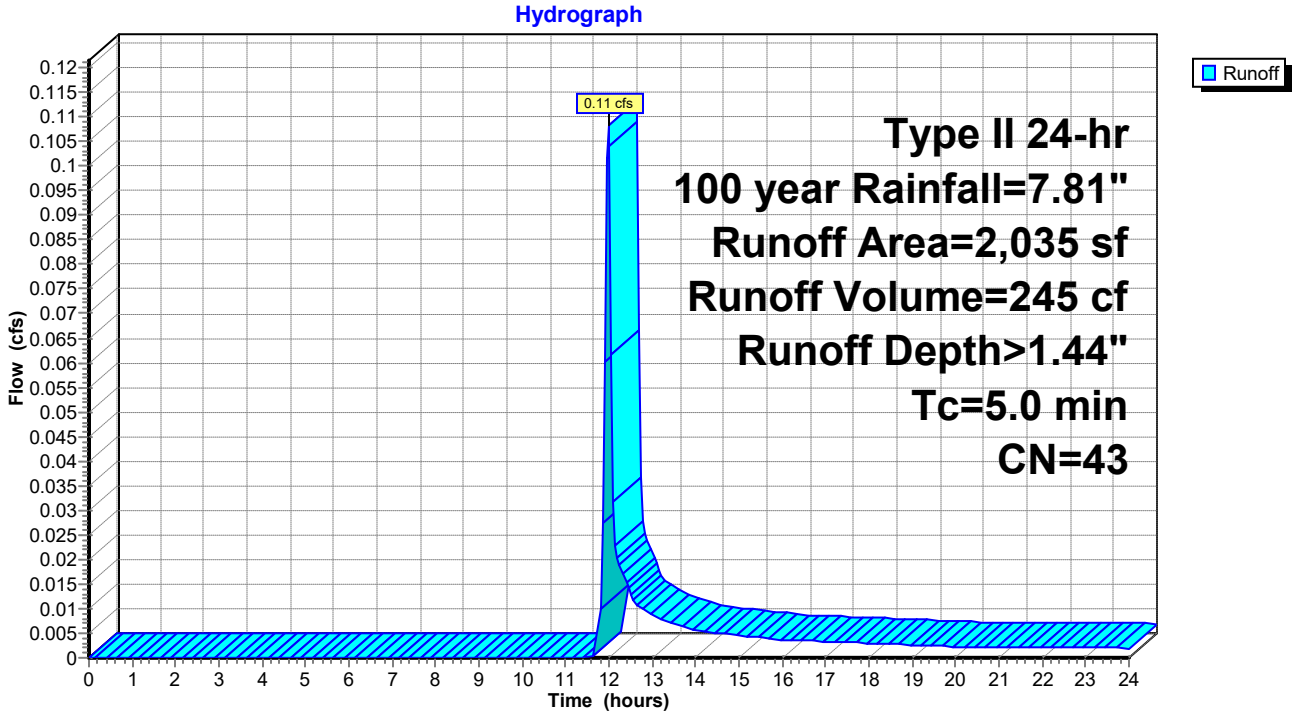
Runoff = 0.11 cfs @ 11.98 hrs, Volume= 245 cf, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
142	98	Paved parking, HSG A
1,893	39	>75% Grass cover, Good, HSG A
2,035	43	Weighted Average
1,893		93.02% Pervious Area
142		6.98% Impervious Area

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

Subcatchment 1:



Summary for Subcatchment 2:

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

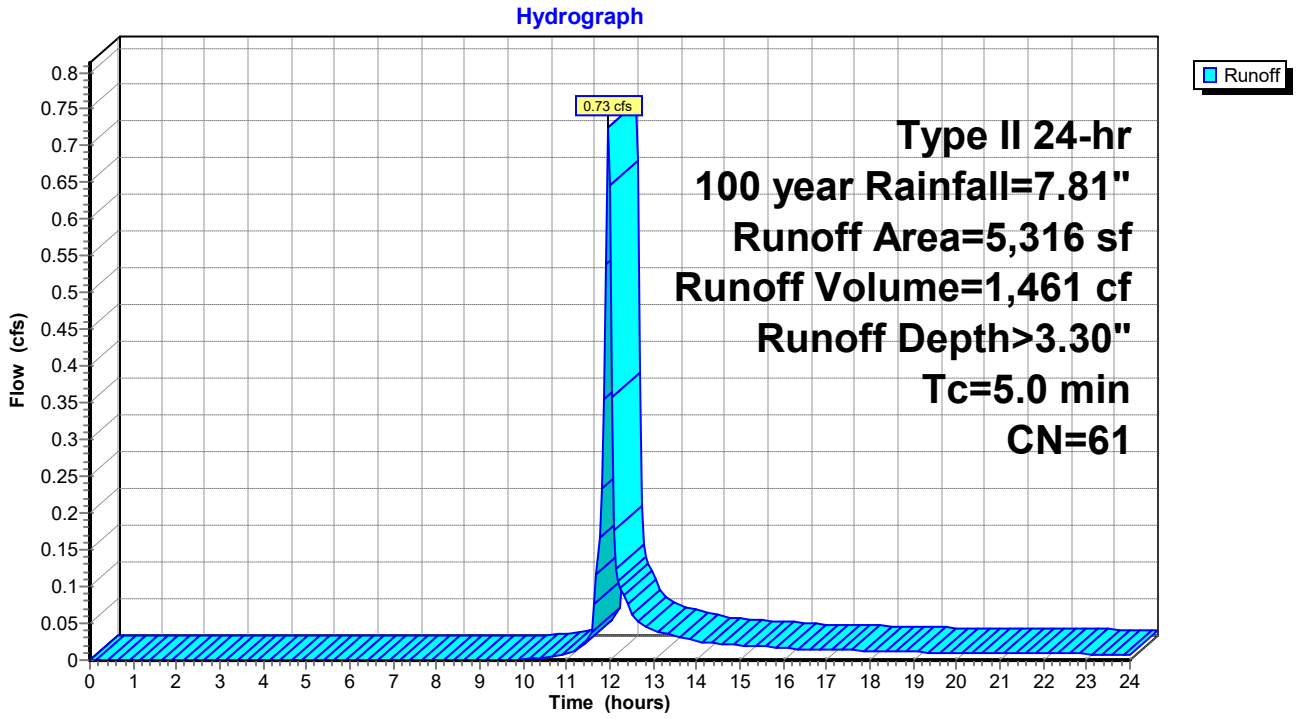
Runoff = 0.73 cfs @ 11.96 hrs, Volume= 1,461 cf, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
2,011	98	Unconnected roofs, HSG A
3,305	39	>75% Grass cover, Good, HSG A
5,316	61	Weighted Average
3,305		62.17% Pervious Area
2,011		37.83% Impervious Area
2,011		100.00% Unconnected

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

Subcatchment 2:



Summary for Subcatchment 3:

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

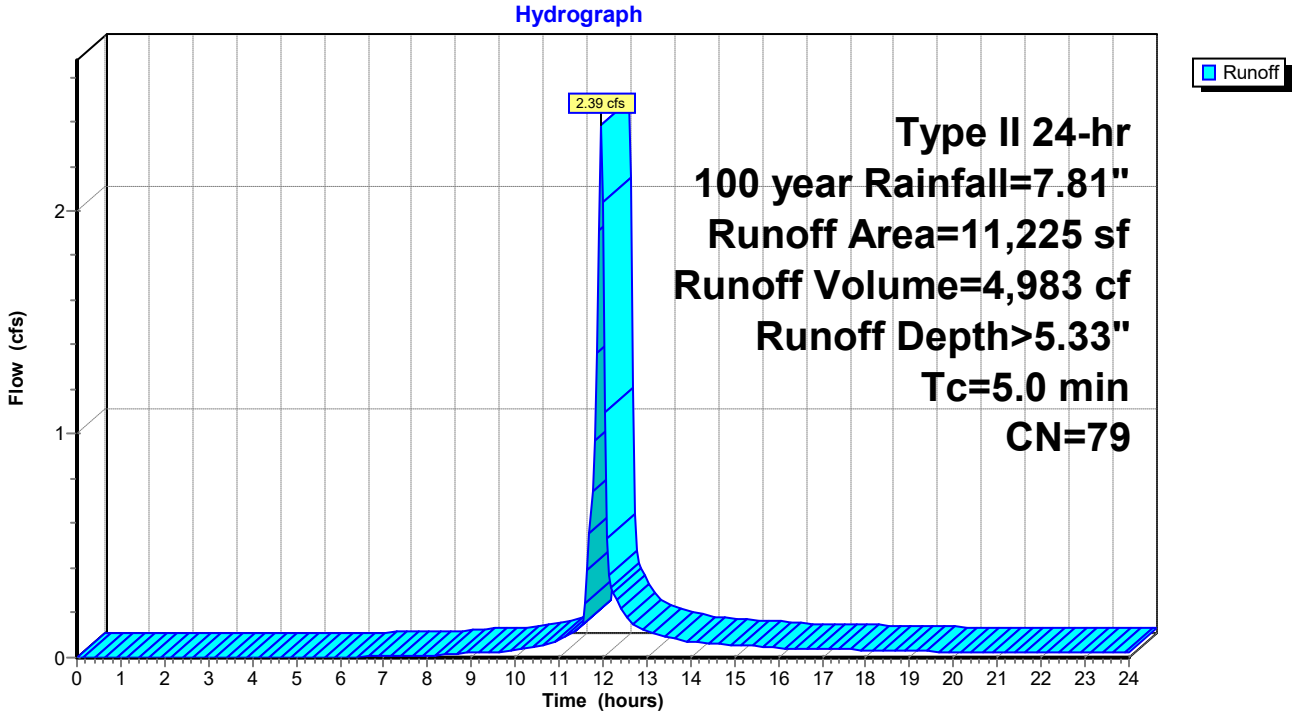
Runoff = 2.39 cfs @ 11.95 hrs, Volume= 4,983 cf, Depth> 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
4,552	98	Paved parking, HSG A
3,056	98	Unconnected roofs, HSG A
3,617	39	>75% Grass cover, Good, HSG A
11,225	79	Weighted Average
3,617		32.22% Pervious Area
7,608		67.78% Impervious Area
3,056		40.17% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

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

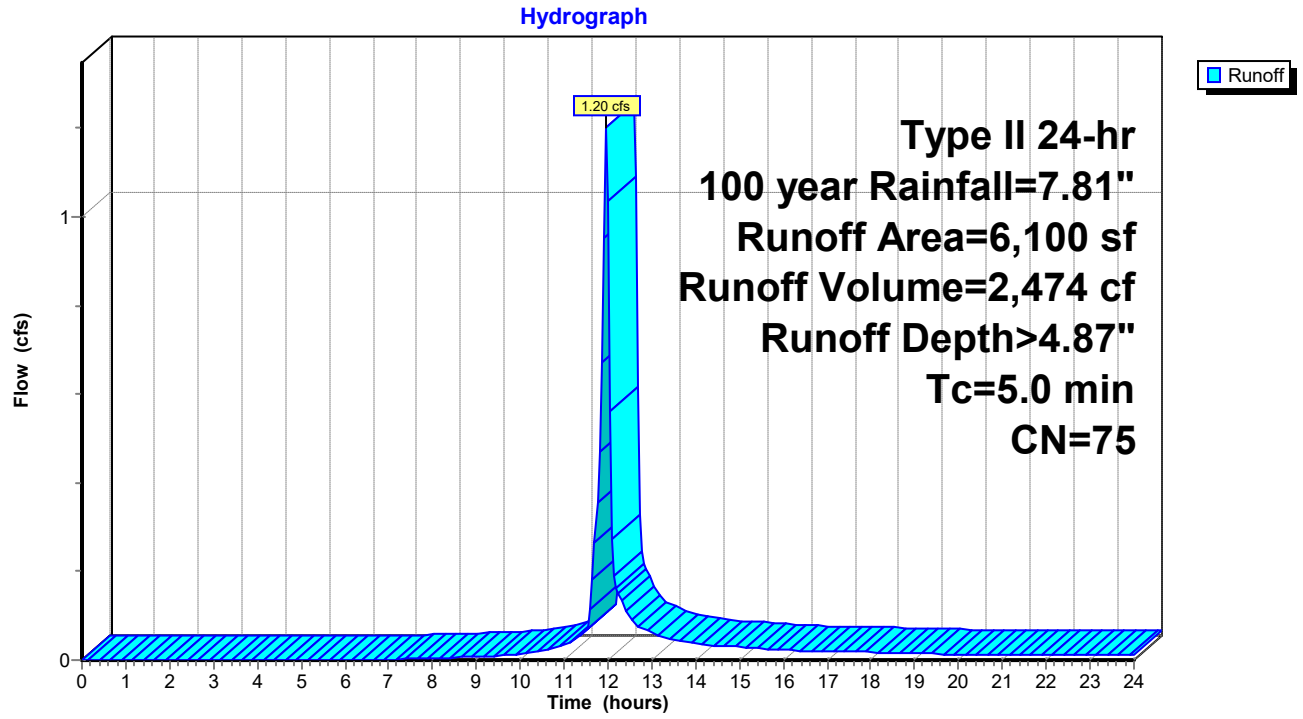
Runoff = 1.20 cfs @ 11.96 hrs, Volume= 2,474 cf, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
3,690	98	Unconnected roofs, HSG A
2,410	39	>75% Grass cover, Good, HSG A
6,100	75	Weighted Average
2,410		39.51% Pervious Area
3,690		60.49% Impervious Area
3,690		100.00% Unconnected

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

Subcatchment 4:

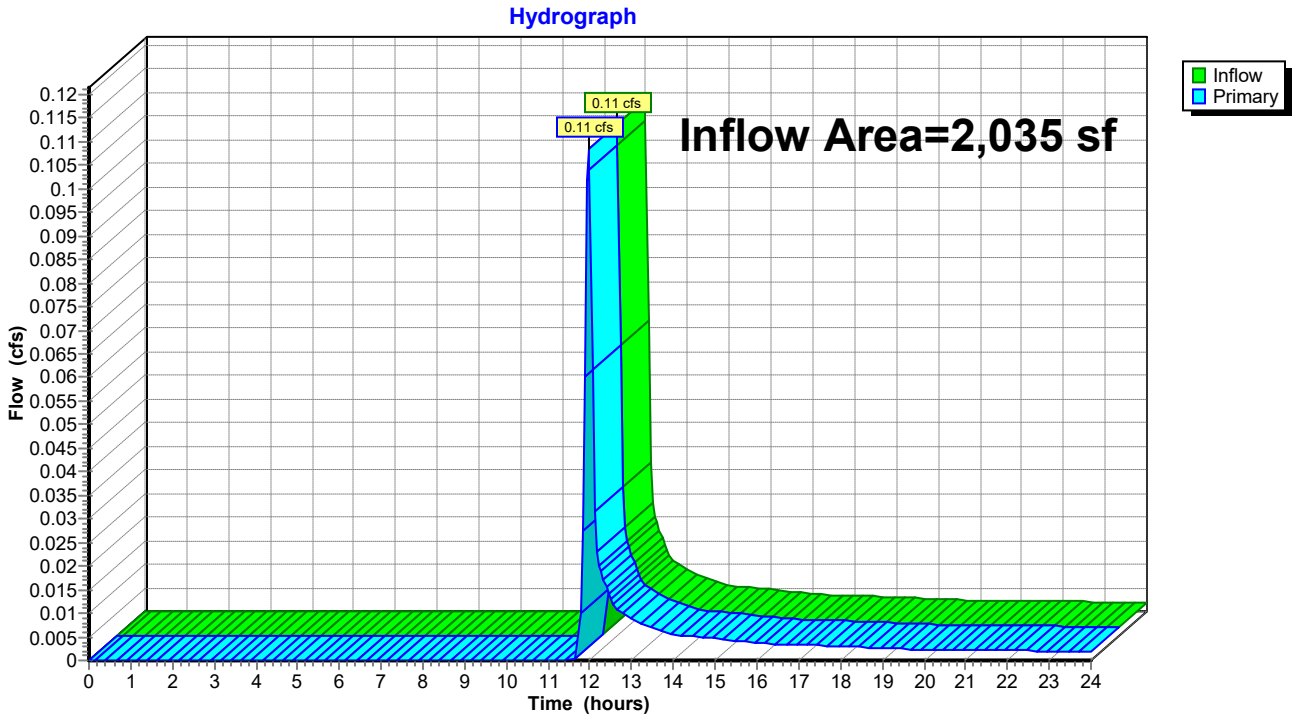


Summary for Link A:

Inflow Area = 2,035 sf, 6.98% Impervious, Inflow Depth > 1.44" for 100 year event
Inflow = 0.11 cfs @ 11.98 hrs, Volume= 245 cf
Primary = 0.11 cfs @ 11.98 hrs, Volume= 245 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

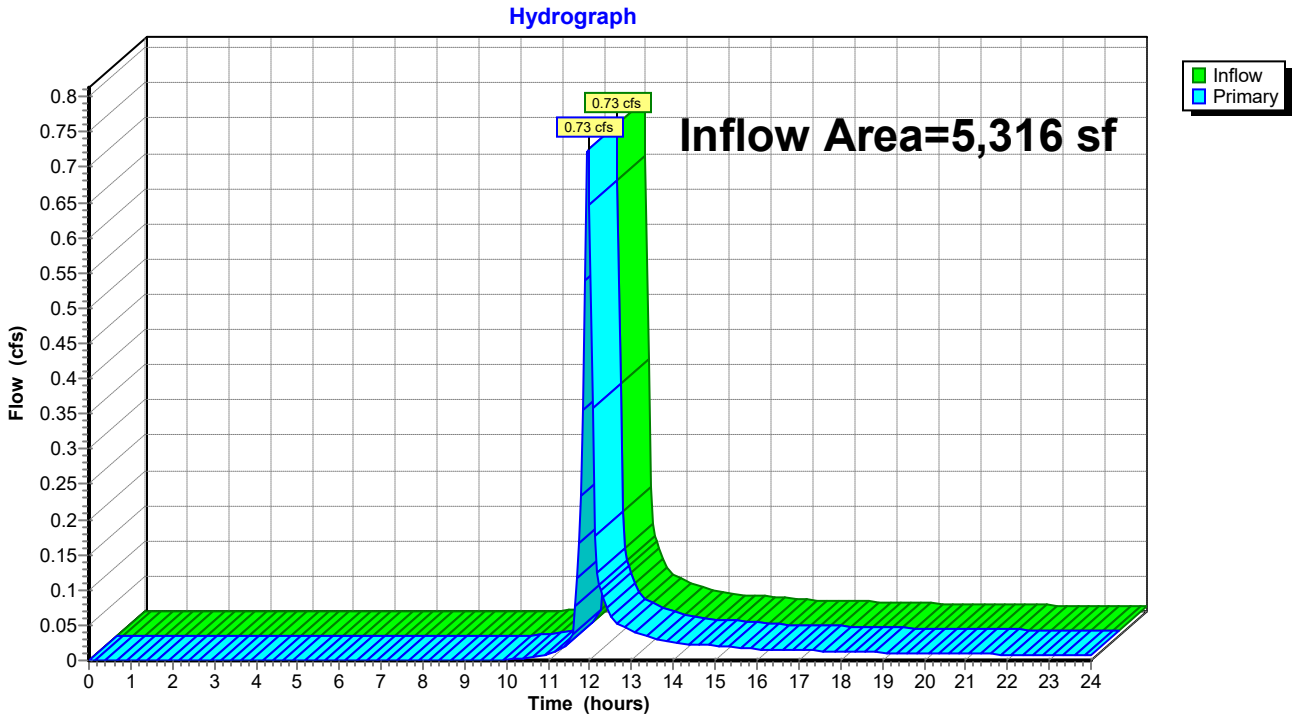


Summary for Link B:

Inflow Area = 5,316 sf, 37.83% Impervious, Inflow Depth > 3.30" for 100 year event
Inflow = 0.73 cfs @ 11.96 hrs, Volume= 1,461 cf
Primary = 0.73 cfs @ 11.96 hrs, Volume= 1,461 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

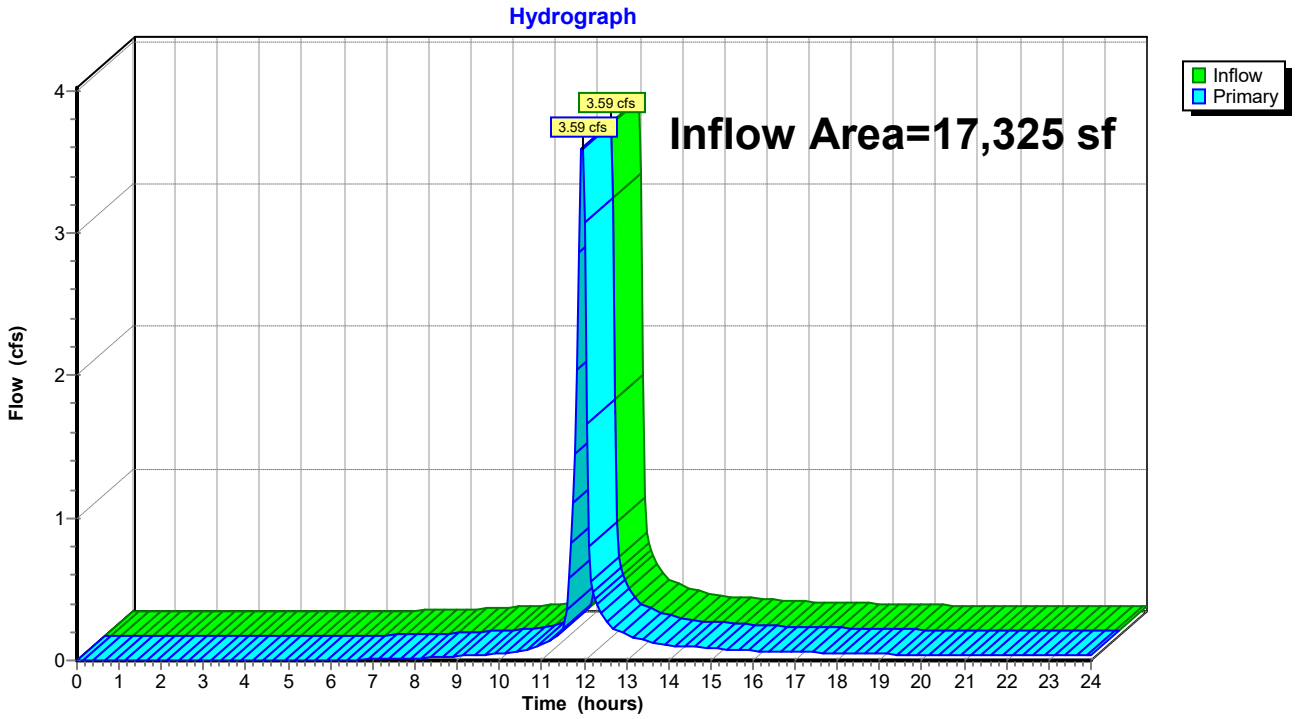


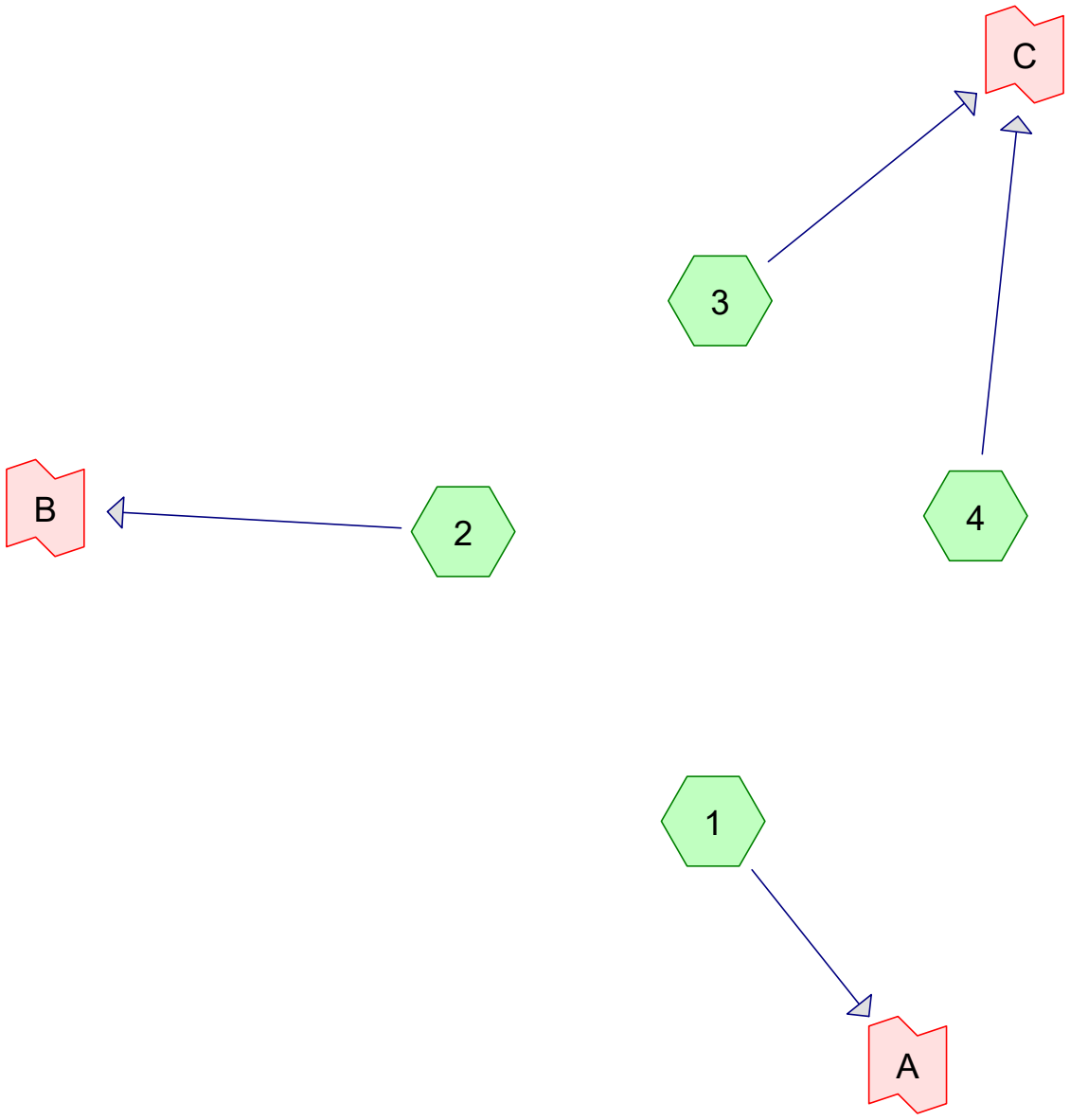
Summary for Link C:

Inflow Area = 17,325 sf, 65.21% Impervious, Inflow Depth > 5.16" for 100 year event
Inflow = 3.59 cfs @ 11.95 hrs, Volume= 7,457 cf
Primary = 3.59 cfs @ 11.95 hrs, Volume= 7,457 cf, Atten= 0%, Lag= 0.0 min

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

Link C:





Subcat Reach Pond Link

Routing Diagram for 76451.21 Post
Prepared by TFMoran, Printed 3/22/2021

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
7,848	39	>75% Grass cover, Good, HSG A (1, 2, 3, 4)
8,454	98	Paved parking, HSG A (1, 3, 4)
8,374	98	Unconnected roofs, HSG A (1, 3, 4)
24,676	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
24,676	HSG A	1, 2, 3, 4
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
24,676		**TOTAL AREA**

Ground Covers (all 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
7,848	0	0	0	0	7,848	>75% Grass cover, Good	
8,454	0	0	0	0	8,454	Paved parking	
8,374	0	0	0	0	8,374	Unconnected roofs	
24,676	**0**	**0**	**0**	**0**	**24,676**	**TOTAL AREA**	

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

Subcatchment 1: Runoff Area=4,162 sf 43.39% Impervious Runoff Depth>0.49"
Tc=5.0 min CN=65 Runoff=0.07 cfs 169 cf

Subcatchment 2: Runoff Area=2,588 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0 cf

Subcatchment 3: Runoff Area=13,585 sf 90.90% Impervious Runoff Depth>2.21"
Tc=5.0 min CN=93 Runoff=1.17 cfs 2,507 cf

Subcatchment 4: Runoff Area=4,341 sf 61.58% Impervious Runoff Depth>0.93"
Tc=0.0 min CN=75 Runoff=0.19 cfs 338 cf

Link A: Inflow=0.07 cfs 169 cf
Primary=0.07 cfs 169 cf

Link B: Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link C: Inflow=1.31 cfs 2,845 cf
Primary=1.31 cfs 2,845 cf

Total Runoff Area = 24,676 sf Runoff Volume = 3,014 cf Average Runoff Depth = 1.47"
31.80% Pervious = 7,848 sf 68.20% Impervious = 16,828 sf

Summary for Subcatchment 1:

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

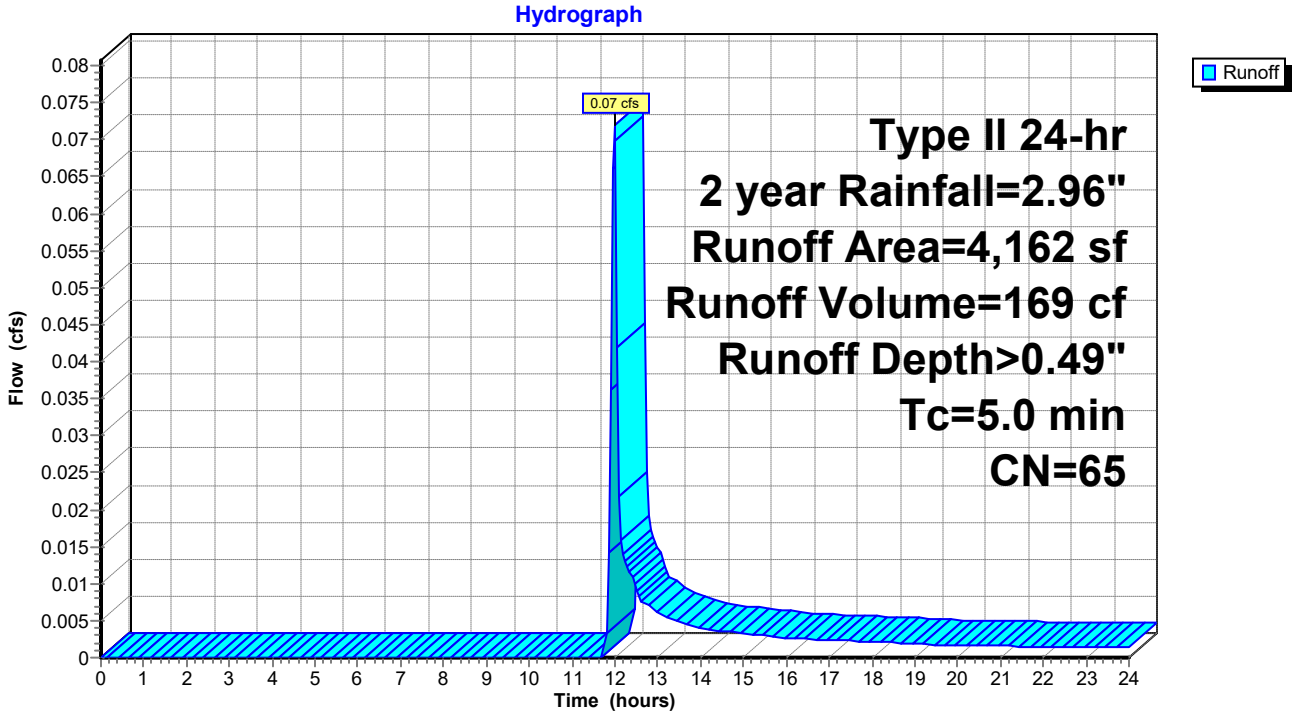
Runoff = 0.07 cfs @ 11.98 hrs, Volume= 169 cf, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
590	98	Paved parking, HSG A
1,216	98	Unconnected roofs, HSG A
2,356	39	>75% Grass cover, Good, HSG A
4,162	65	Weighted Average
2,356		56.61% Pervious Area
1,806		43.39% Impervious Area
1,216		67.33% Unconnected

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

Subcatchment 1:



Summary for Subcatchment 2:

[49] Hint: Tc<2dt may require smaller dt
[45] Hint: Runoff=Zero

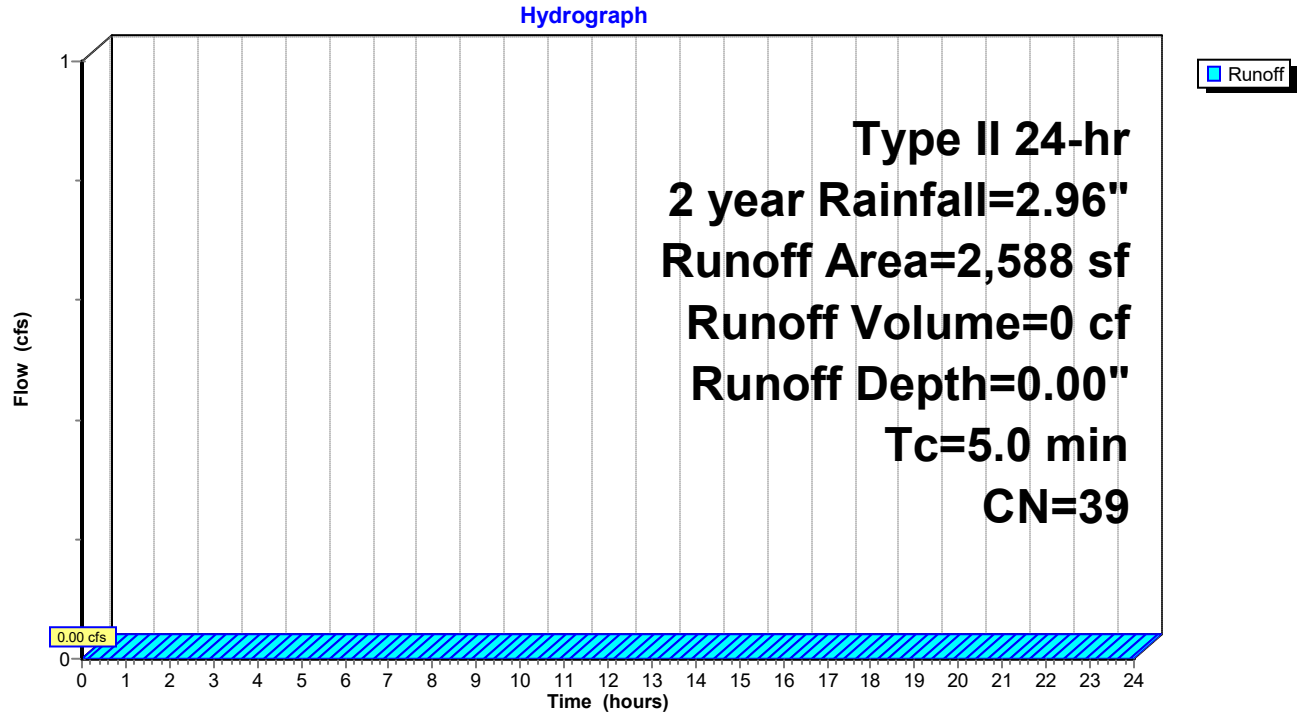
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
2,588	39	>75% Grass cover, Good, HSG A
2,588		100.00% Pervious Area

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

Subcatchment 2:



Summary for Subcatchment 3:

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

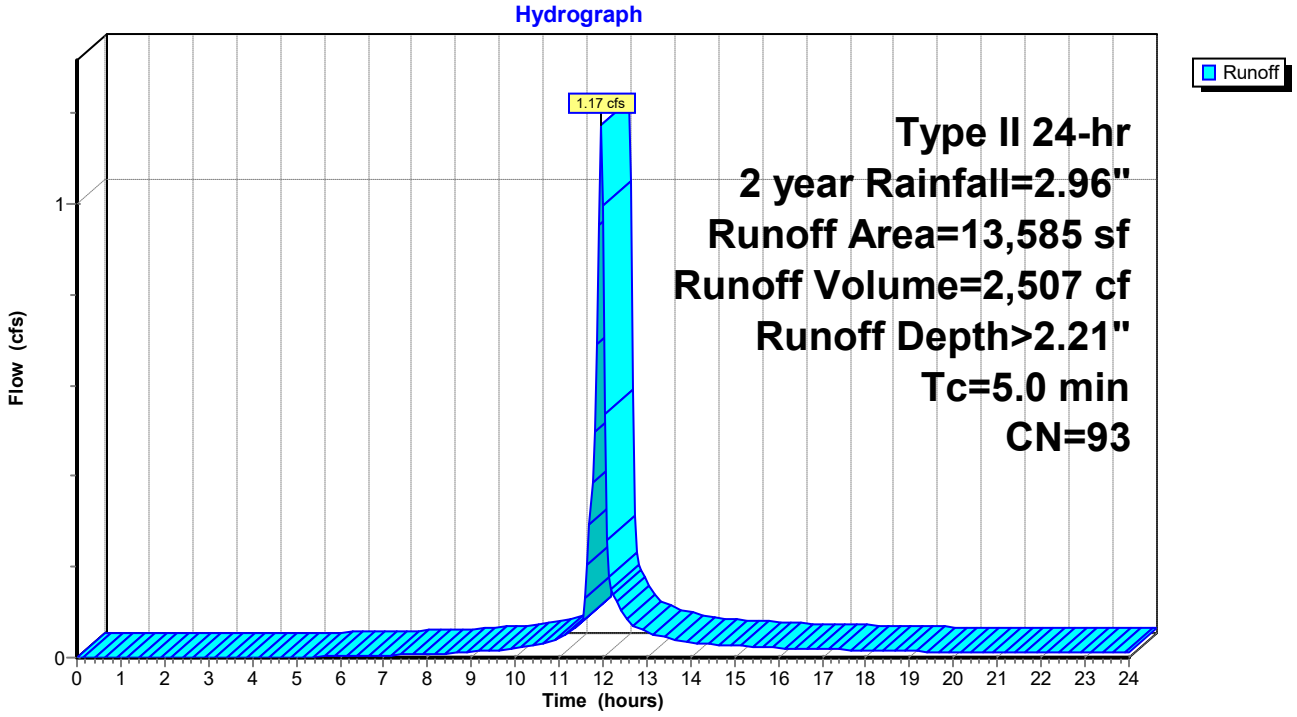
Runoff = 1.17 cfs @ 11.95 hrs, Volume= 2,507 cf, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
6,967	98	Paved parking, HSG A
5,382	98	Unconnected roofs, HSG A
1,236	39	>75% Grass cover, Good, HSG A
13,585	93	Weighted Average
1,236		9.10% Pervious Area
12,349		90.90% Impervious Area
5,382		43.58% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

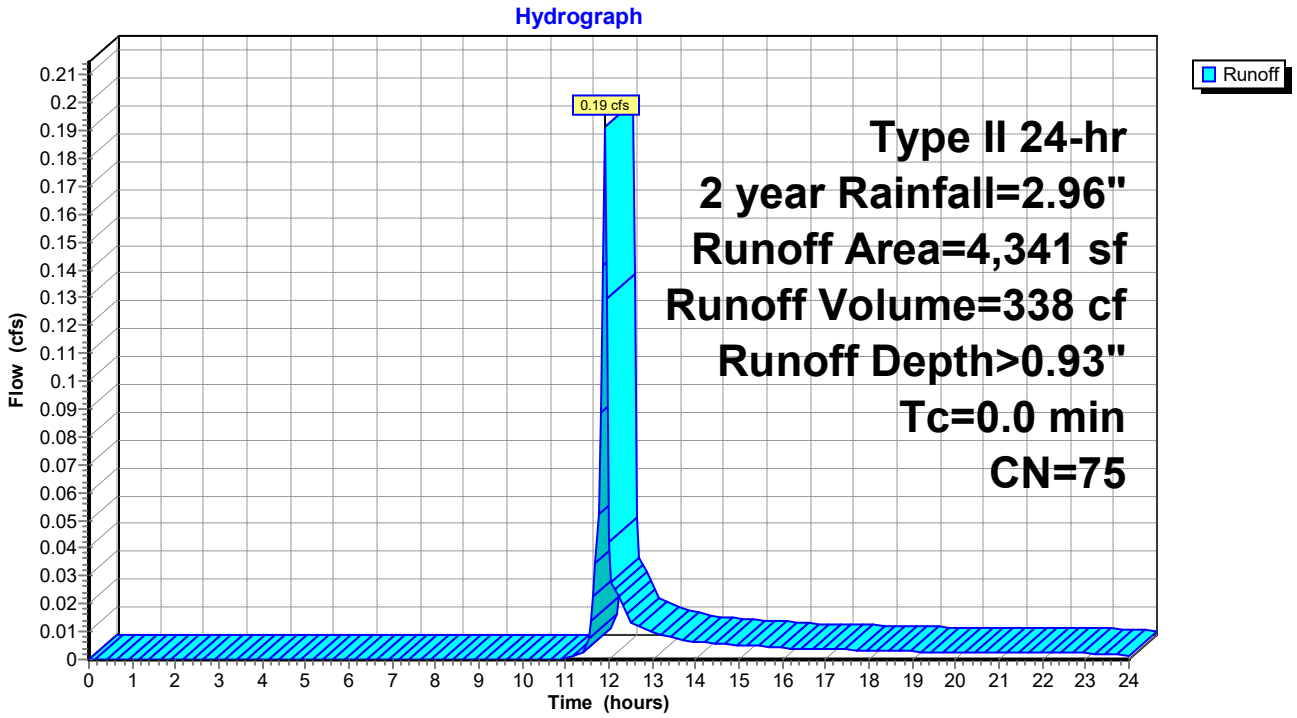
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.19 cfs @ 11.90 hrs, Volume= 338 cf, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 year Rainfall=2.96"

Area (sf)	CN	Description
897	98	Paved parking, HSG A
1,776	98	Unconnected roofs, HSG A
1,668	39	>75% Grass cover, Good, HSG A
4,341	75	Weighted Average
1,668		38.42% Pervious Area
2,673		61.58% Impervious Area
1,776		66.44% Unconnected

Subcatchment 4:

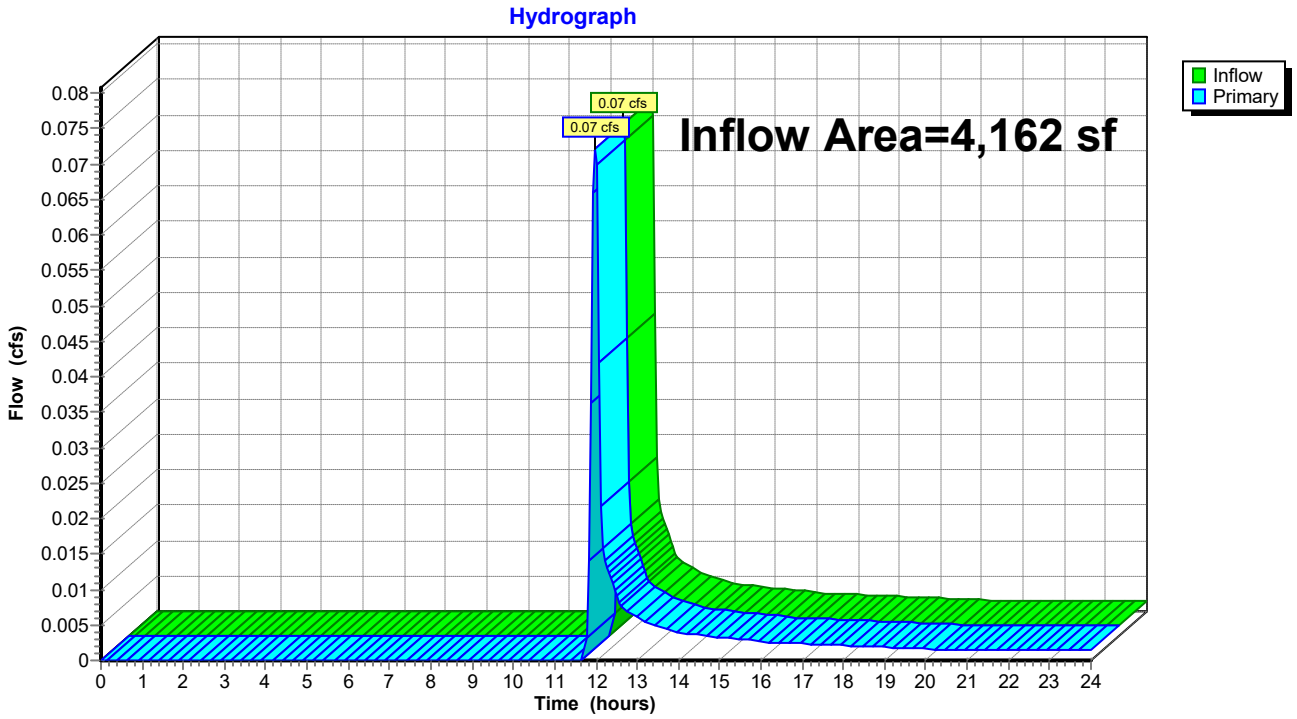


Summary for Link A:

Inflow Area = 4,162 sf, 43.39% Impervious, Inflow Depth > 0.49" for 2 year event
Inflow = 0.07 cfs @ 11.98 hrs, Volume= 169 cf
Primary = 0.07 cfs @ 11.98 hrs, Volume= 169 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

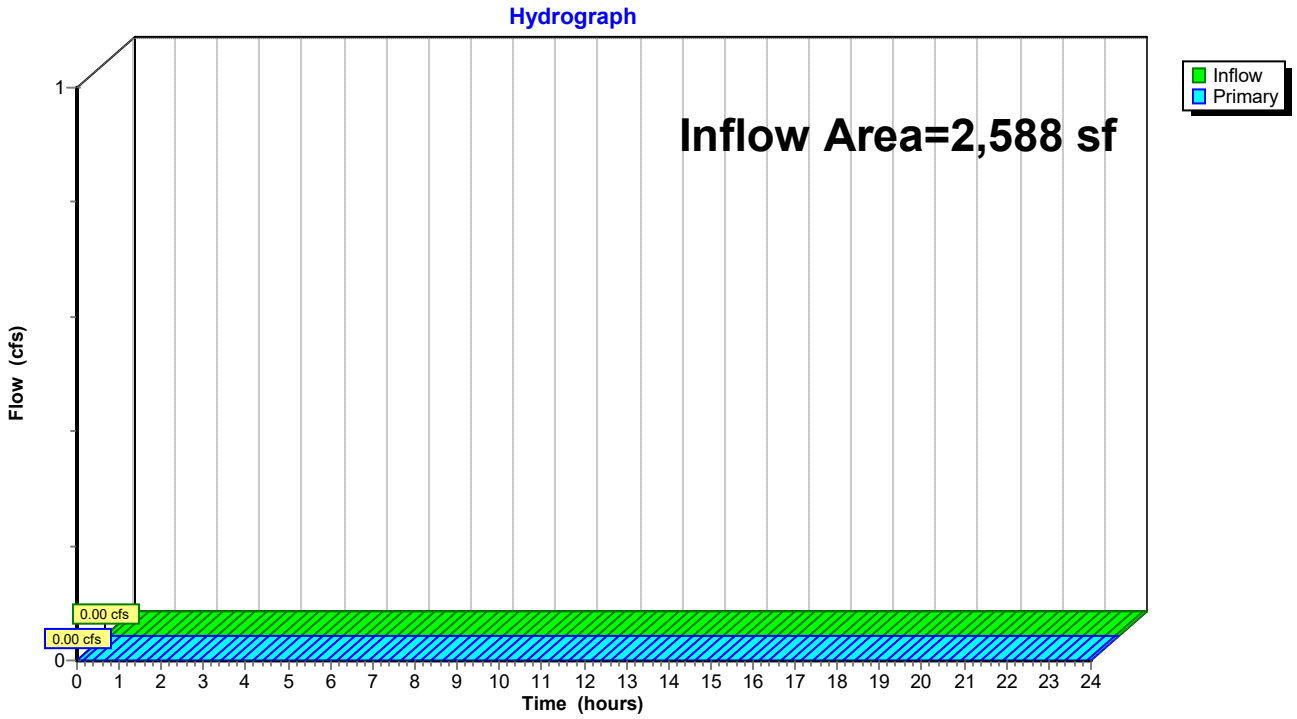


Summary for Link B:

Inflow Area = 2,588 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

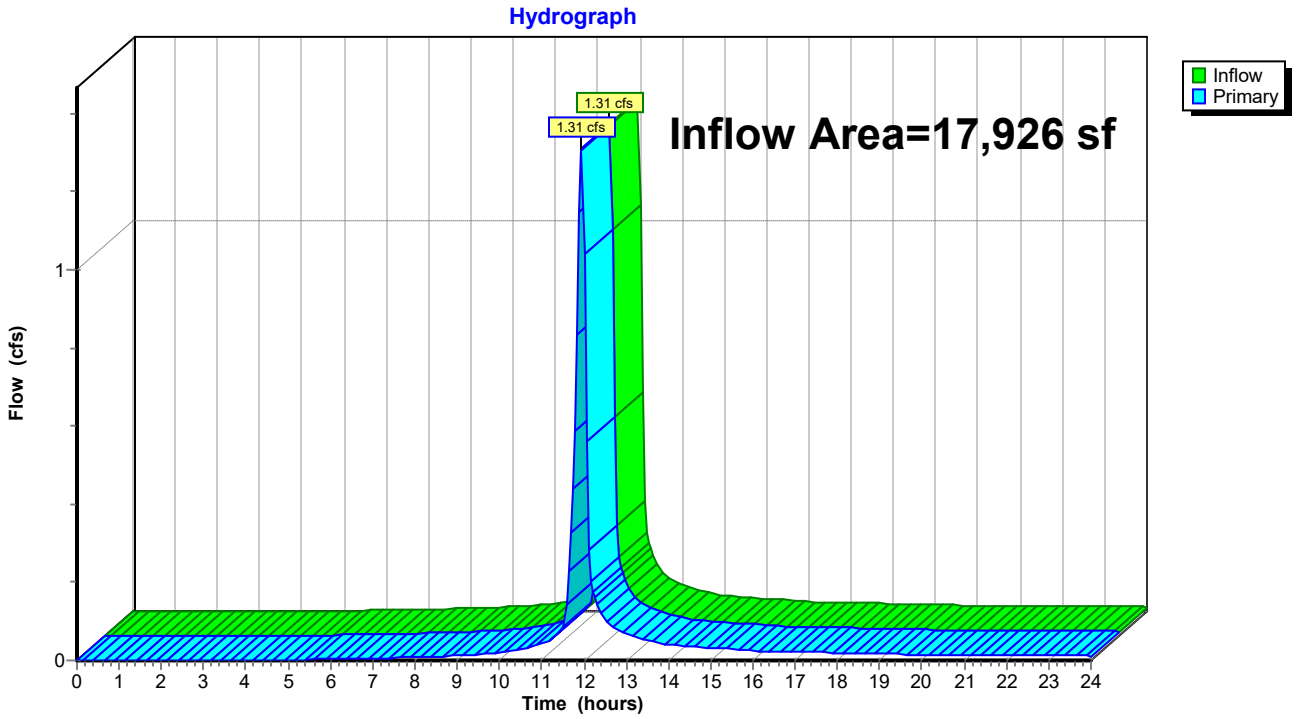


Summary for Link C:

Inflow Area = 17,926 sf, 83.80% Impervious, Inflow Depth > 1.90" for 2 year event
Inflow = 1.31 cfs @ 11.94 hrs, Volume= 2,845 cf
Primary = 1.31 cfs @ 11.94 hrs, Volume= 2,845 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=4,162 sf 43.39% Impervious Runoff Depth>1.27"
Tc=5.0 min CN=65 Runoff=0.21 cfs 439 cf

Subcatchment 2: Runoff Area=2,588 sf 0.00% Impervious Runoff Depth>0.10"
Tc=5.0 min CN=39 Runoff=0.00 cfs 21 cf

Subcatchment 3: Runoff Area=13,585 sf 90.90% Impervious Runoff Depth>3.61"
Tc=5.0 min CN=93 Runoff=1.85 cfs 4,084 cf

Subcatchment 4: Runoff Area=4,341 sf 61.58% Impervious Runoff Depth>1.97"
Tc=0.0 min CN=75 Runoff=0.41 cfs 713 cf

Link A: Inflow=0.21 cfs 439 cf
Primary=0.21 cfs 439 cf

Link B: Inflow=0.00 cfs 21 cf
Primary=0.00 cfs 21 cf

Link C: Inflow=2.13 cfs 4,798 cf
Primary=2.13 cfs 4,798 cf

Total Runoff Area = 24,676 sf Runoff Volume = 5,257 cf Average Runoff Depth = 2.56"
31.80% Pervious = 7,848 sf 68.20% Impervious = 16,828 sf

Summary for Subcatchment 1:

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

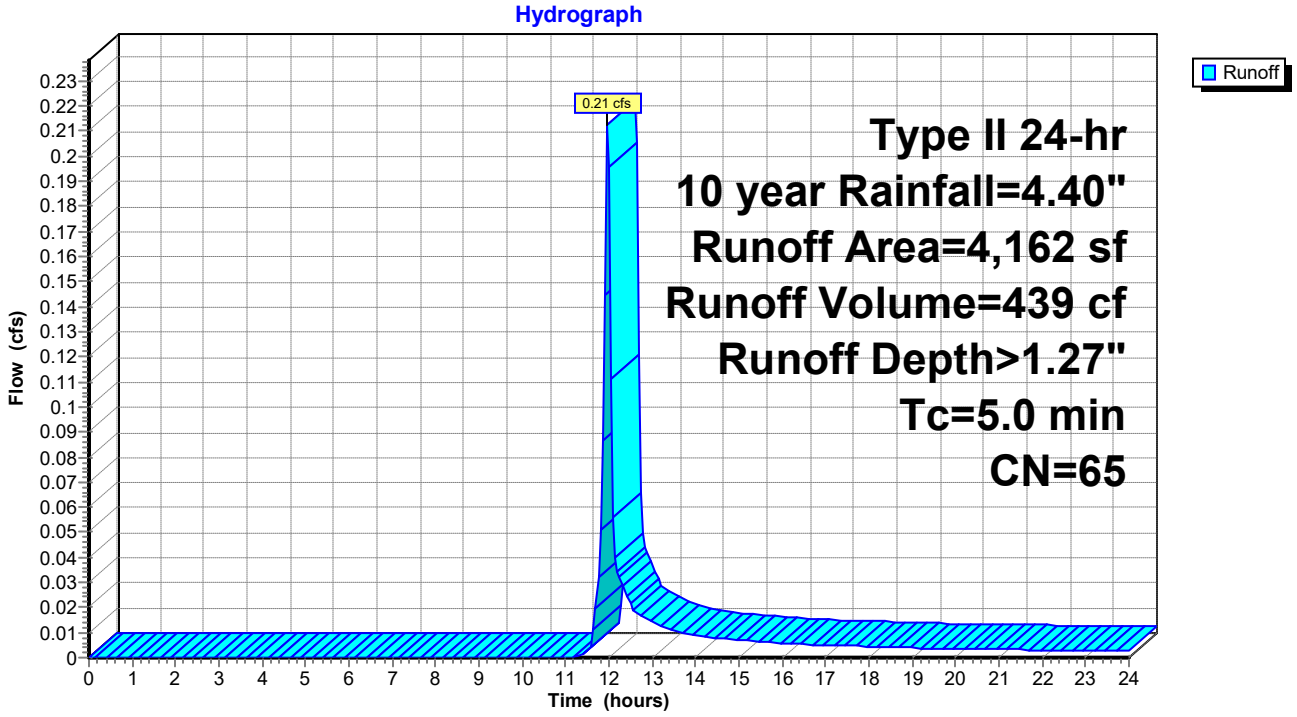
Runoff = 0.21 cfs @ 11.97 hrs, Volume= 439 cf, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
590	98	Paved parking, HSG A
1,216	98	Unconnected roofs, HSG A
2,356	39	>75% Grass cover, Good, HSG A
4,162	65	Weighted Average
2,356		56.61% Pervious Area
1,806		43.39% Impervious Area
1,216		67.33% Unconnected

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

Subcatchment 1:



Summary for Subcatchment 2:

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

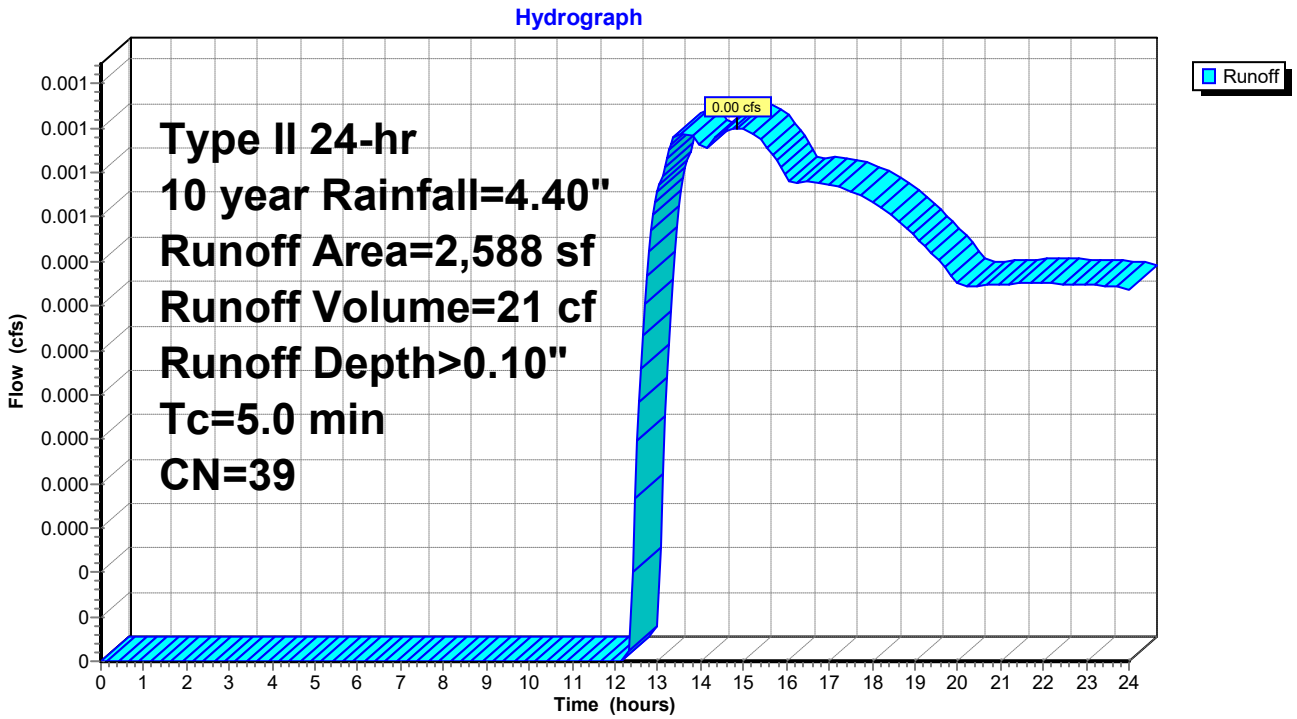
Runoff = 0.00 cfs @ 14.84 hrs, Volume= 21 cf, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
2,588	39	>75% Grass cover, Good, HSG A
2,588		100.00% Pervious Area

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

Subcatchment 2:



Summary for Subcatchment 3:

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

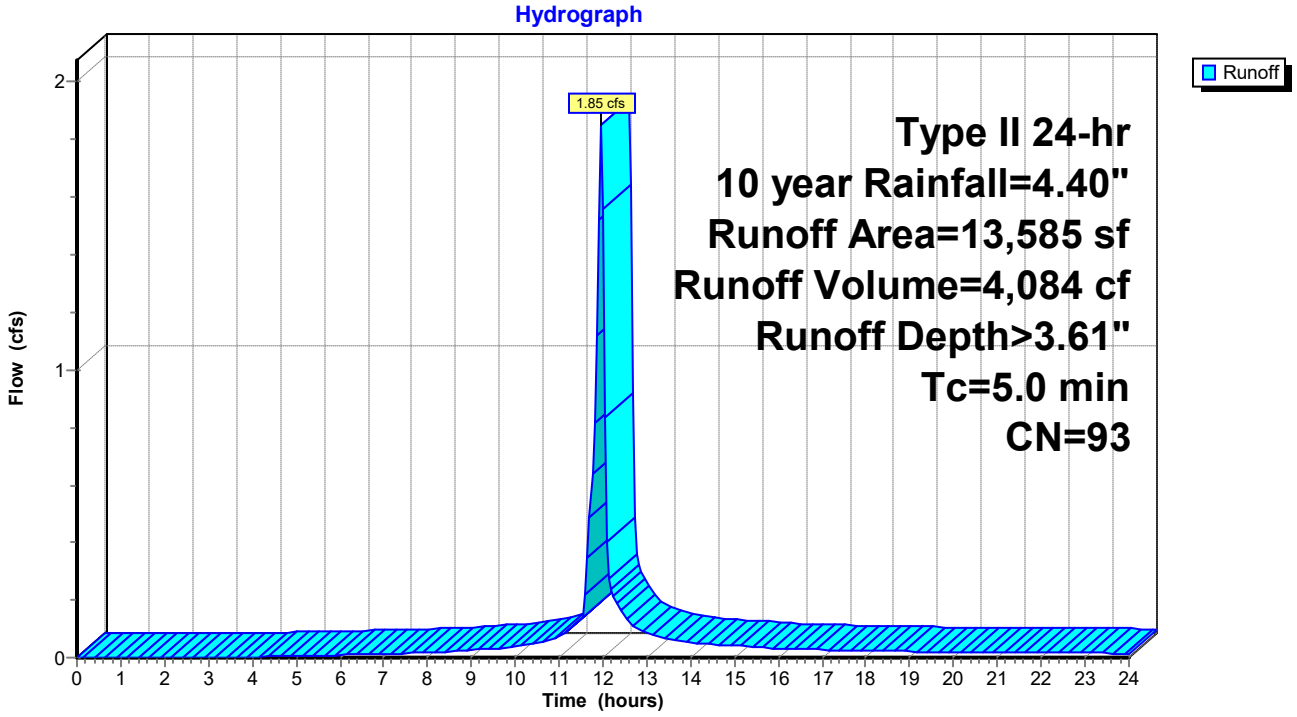
Runoff = 1.85 cfs @ 11.95 hrs, Volume= 4,084 cf, Depth> 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
6,967	98	Paved parking, HSG A
5,382	98	Unconnected roofs, HSG A
1,236	39	>75% Grass cover, Good, HSG A
13,585	93	Weighted Average
1,236		9.10% Pervious Area
12,349		90.90% Impervious Area
5,382		43.58% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

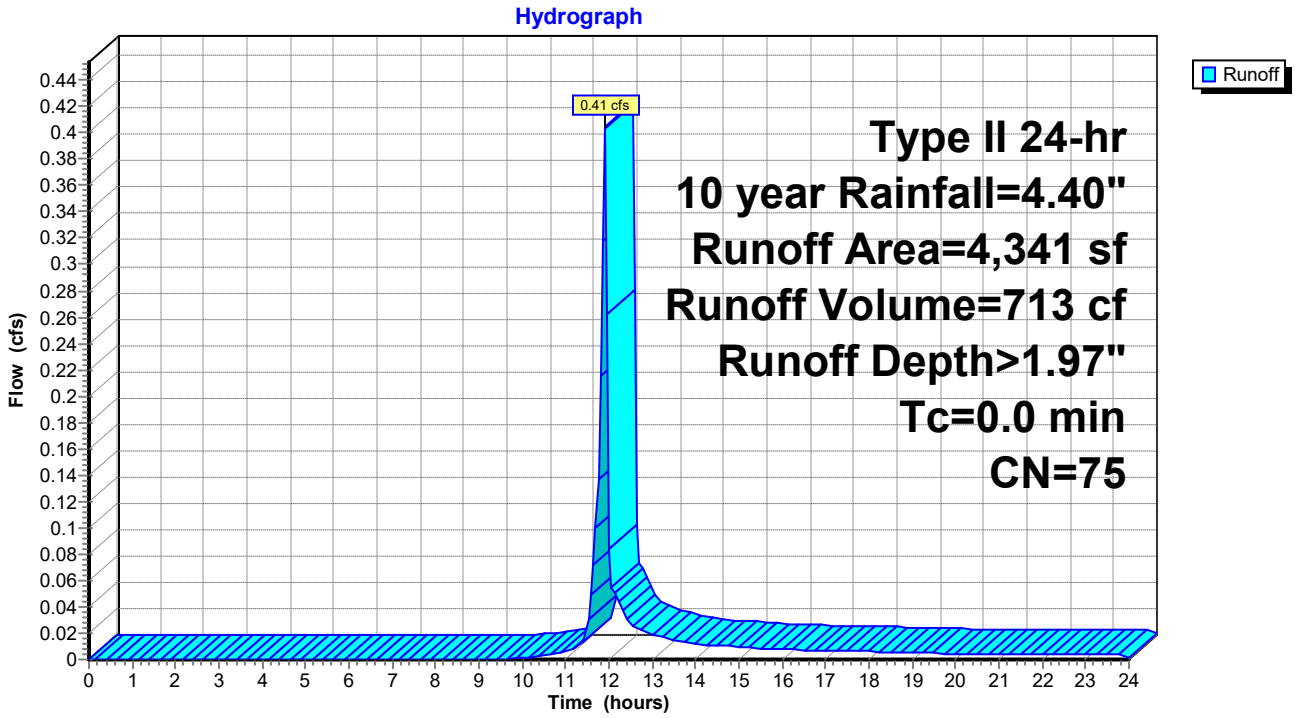
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.41 cfs @ 11.89 hrs, Volume= 713 cf, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 year Rainfall=4.40"

Area (sf)	CN	Description
897	98	Paved parking, HSG A
1,776	98	Unconnected roofs, HSG A
1,668	39	>75% Grass cover, Good, HSG A
4,341	75	Weighted Average
1,668		38.42% Pervious Area
2,673		61.58% Impervious Area
1,776		66.44% Unconnected

Subcatchment 4:

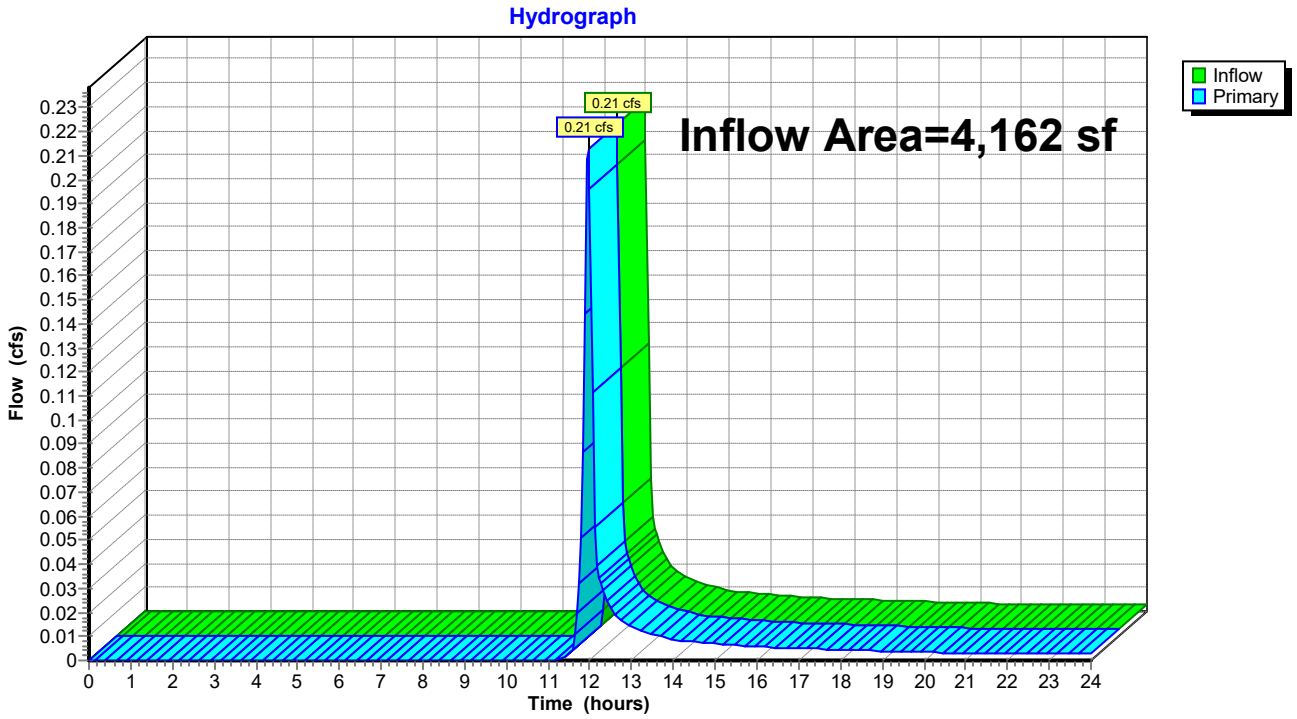


Summary for Link A:

Inflow Area = 4,162 sf, 43.39% Impervious, Inflow Depth > 1.27" for 10 year event
Inflow = 0.21 cfs @ 11.97 hrs, Volume= 439 cf
Primary = 0.21 cfs @ 11.97 hrs, Volume= 439 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

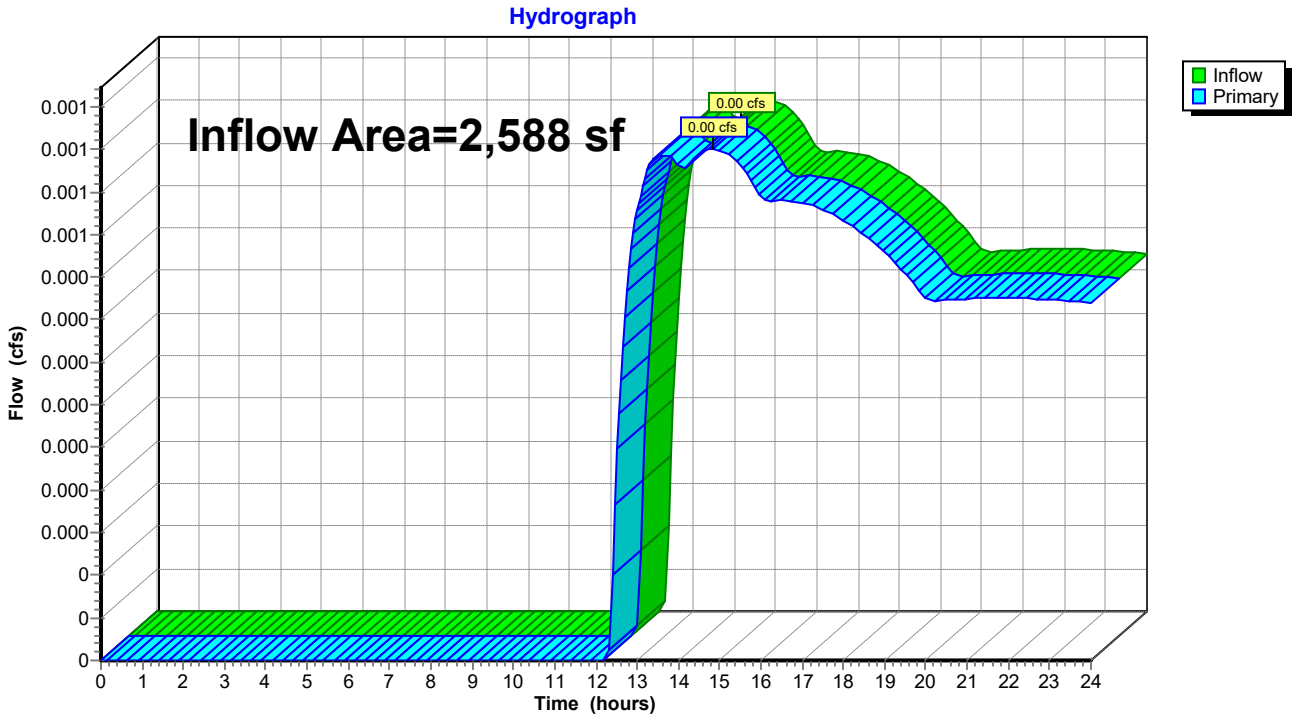


Summary for Link B:

Inflow Area = 2,588 sf, 0.00% Impervious, Inflow Depth > 0.10" for 10 year event
Inflow = 0.00 cfs @ 14.84 hrs, Volume= 21 cf
Primary = 0.00 cfs @ 14.84 hrs, Volume= 21 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

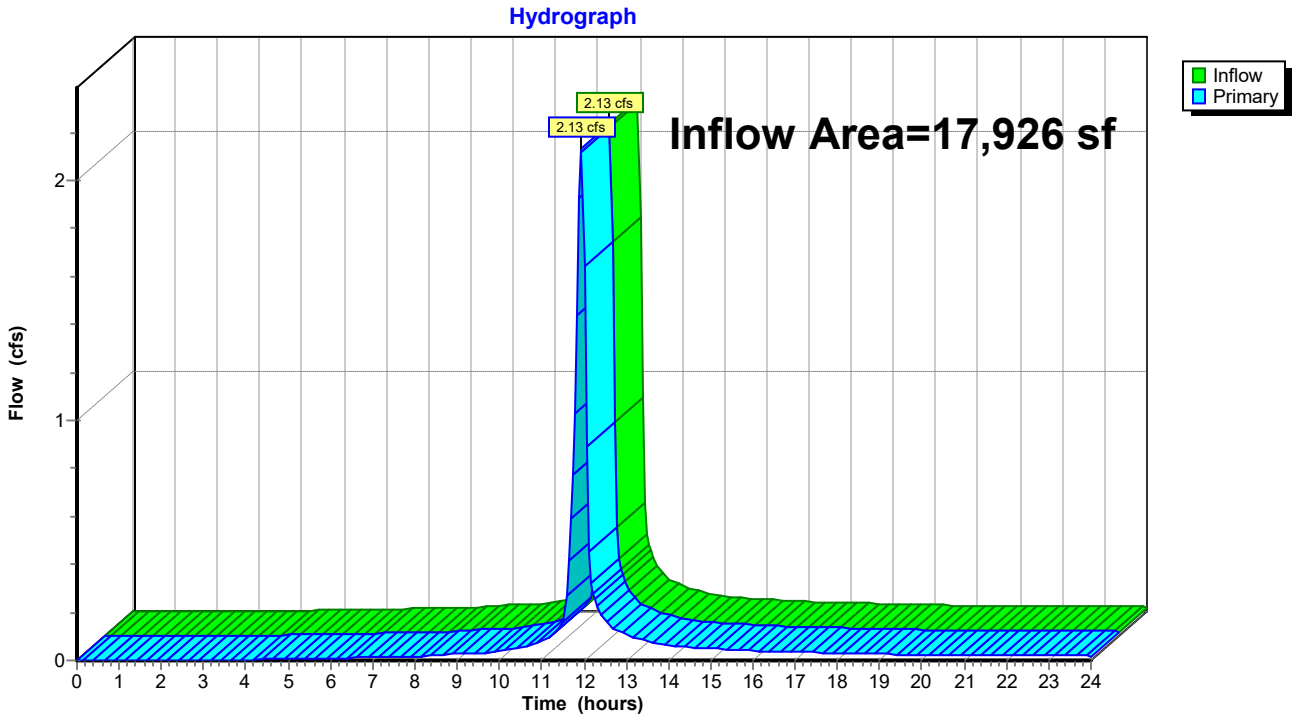


Summary for Link C:

Inflow Area = 17,926 sf, 83.80% Impervious, Inflow Depth > 3.21" for 10 year event
Inflow = 2.13 cfs @ 11.94 hrs, Volume= 4,798 cf
Primary = 2.13 cfs @ 11.94 hrs, Volume= 4,798 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=4,162 sf 43.39% Impervious Runoff Depth>2.01"
Tc=5.0 min CN=65 Runoff=0.34 cfs 696 cf

Subcatchment 2: Runoff Area=2,588 sf 0.00% Impervious Runoff Depth>0.32"
Tc=5.0 min CN=39 Runoff=0.01 cfs 68 cf

Subcatchment 3: Runoff Area=13,585 sf 90.90% Impervious Runoff Depth>4.71"
Tc=5.0 min CN=93 Runoff=2.38 cfs 5,328 cf

Subcatchment 4: Runoff Area=4,341 sf 61.58% Impervious Runoff Depth>2.88"
Tc=0.0 min CN=75 Runoff=0.58 cfs 1,041 cf

Link A: Inflow=0.34 cfs 696 cf
Primary=0.34 cfs 696 cf

Link B: Inflow=0.01 cfs 68 cf
Primary=0.01 cfs 68 cf

Link C: Inflow=2.78 cfs 6,369 cf
Primary=2.78 cfs 6,369 cf

Total Runoff Area = 24,676 sf Runoff Volume = 7,133 cf Average Runoff Depth = 3.47"
31.80% Pervious = 7,848 sf 68.20% Impervious = 16,828 sf

Summary for Subcatchment 1:

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

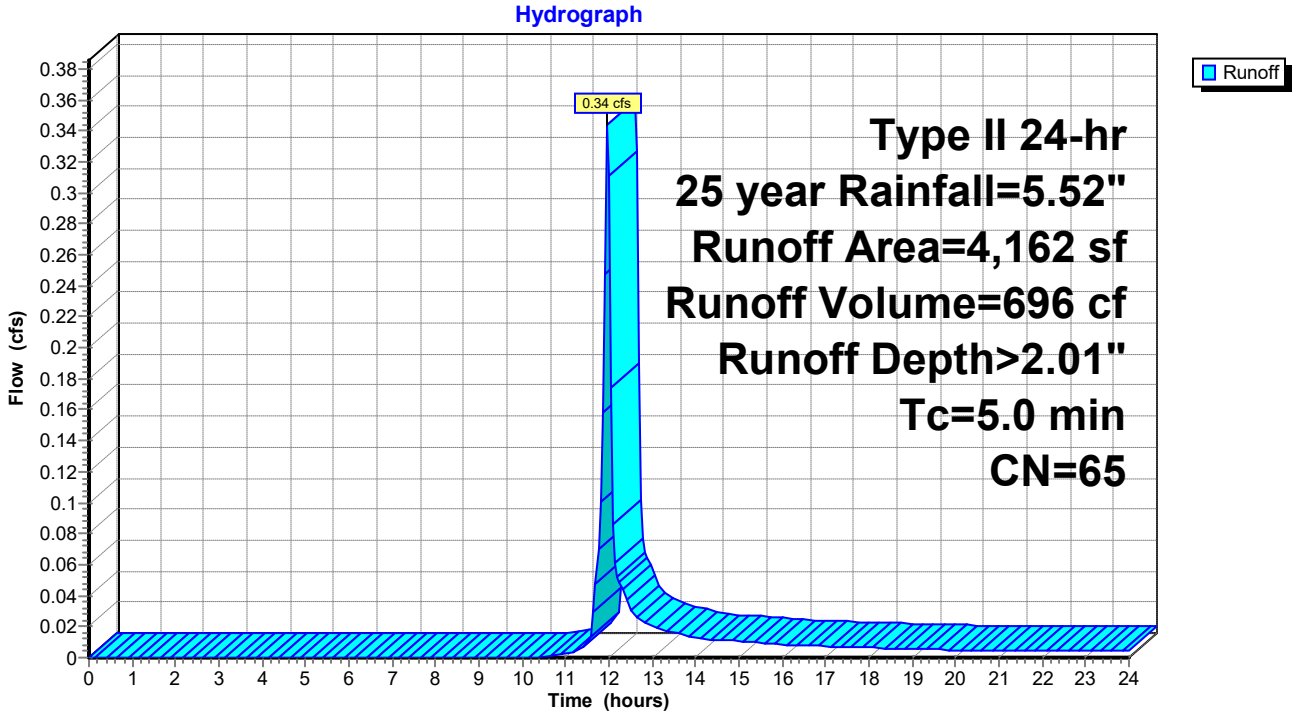
Runoff = 0.34 cfs @ 11.96 hrs, Volume= 696 cf, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
590	98	Paved parking, HSG A
1,216	98	Unconnected roofs, HSG A
2,356	39	>75% Grass cover, Good, HSG A
4,162	65	Weighted Average
2,356		56.61% Pervious Area
1,806		43.39% Impervious Area
1,216		67.33% Unconnected

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

Subcatchment 1:



Summary for Subcatchment 2:

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

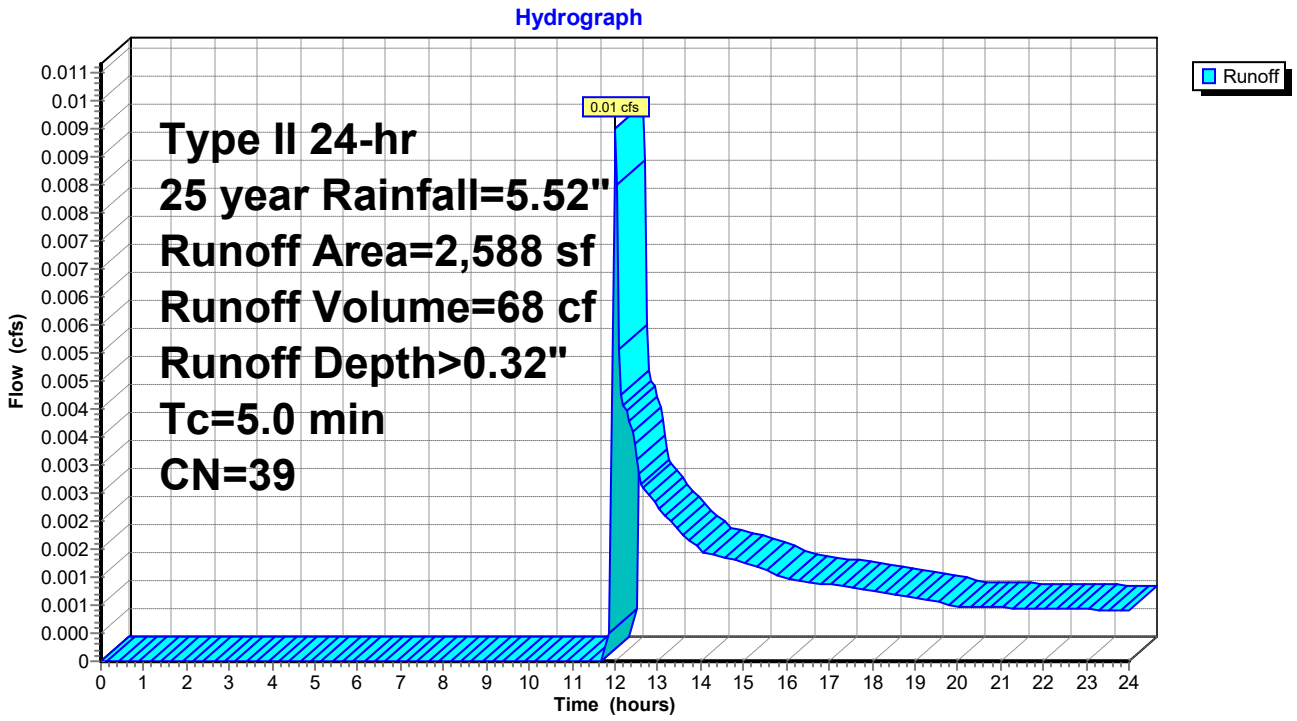
Runoff = 0.01 cfs @ 12.02 hrs, Volume= 68 cf, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
2,588	39	>75% Grass cover, Good, HSG A
2,588		100.00% Pervious Area

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

Subcatchment 2:



Summary for Subcatchment 3:

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

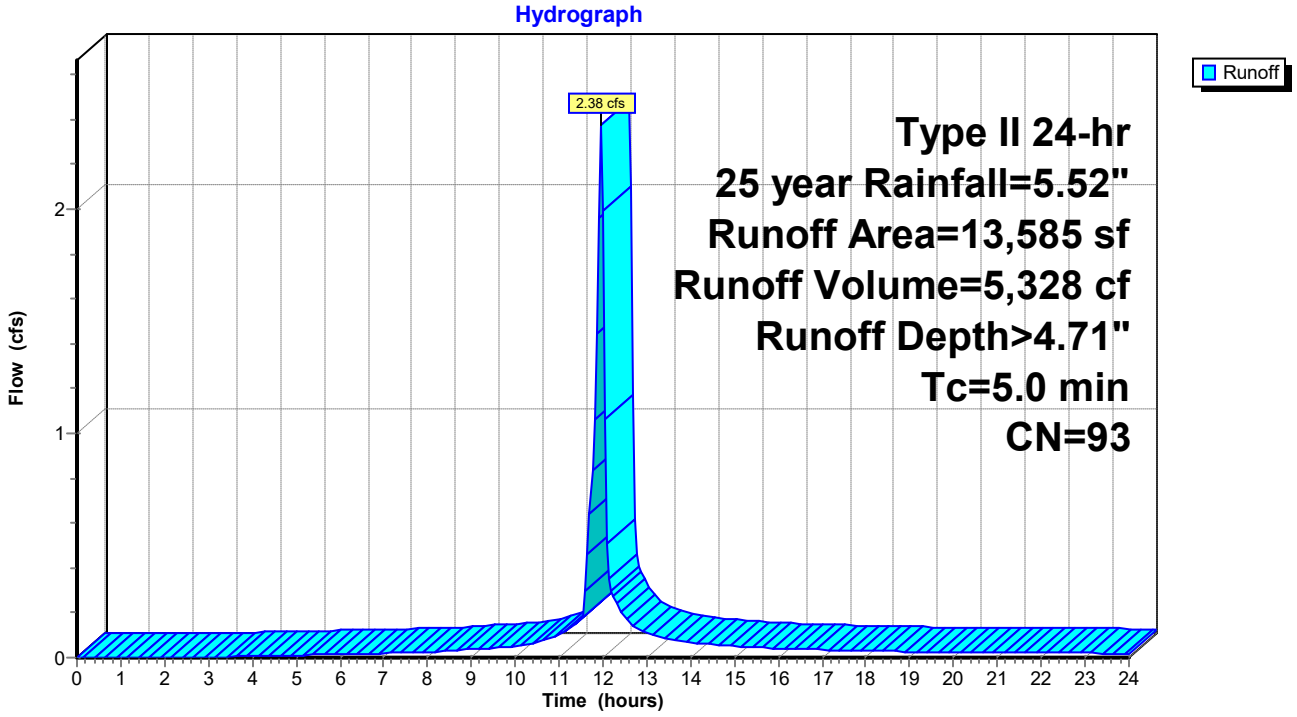
Runoff = 2.38 cfs @ 11.95 hrs, Volume= 5,328 cf, Depth> 4.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
6,967	98	Paved parking, HSG A
5,382	98	Unconnected roofs, HSG A
1,236	39	>75% Grass cover, Good, HSG A
13,585	93	Weighted Average
1,236		9.10% Pervious Area
12,349		90.90% Impervious Area
5,382		43.58% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

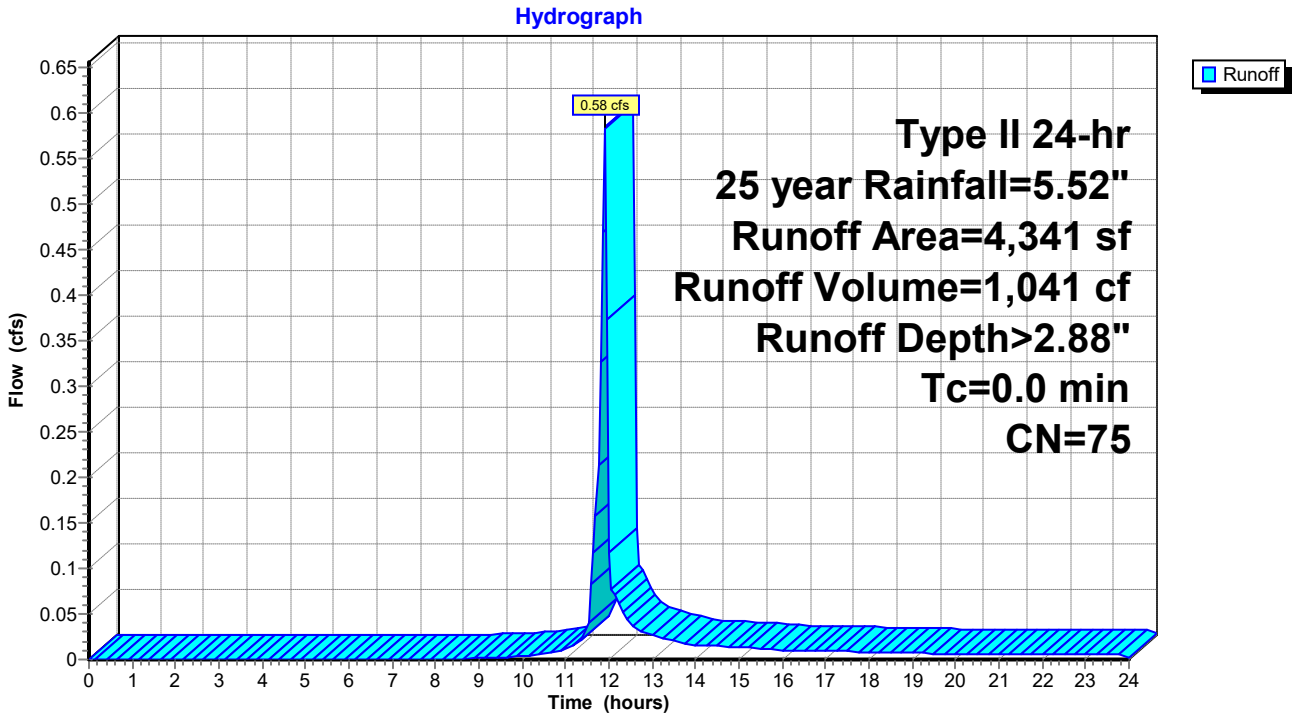
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.58 cfs @ 11.89 hrs, Volume= 1,041 cf, Depth> 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 year Rainfall=5.52"

Area (sf)	CN	Description
897	98	Paved parking, HSG A
1,776	98	Unconnected roofs, HSG A
1,668	39	>75% Grass cover, Good, HSG A
4,341	75	Weighted Average
1,668		38.42% Pervious Area
2,673		61.58% Impervious Area
1,776		66.44% Unconnected

Subcatchment 4:

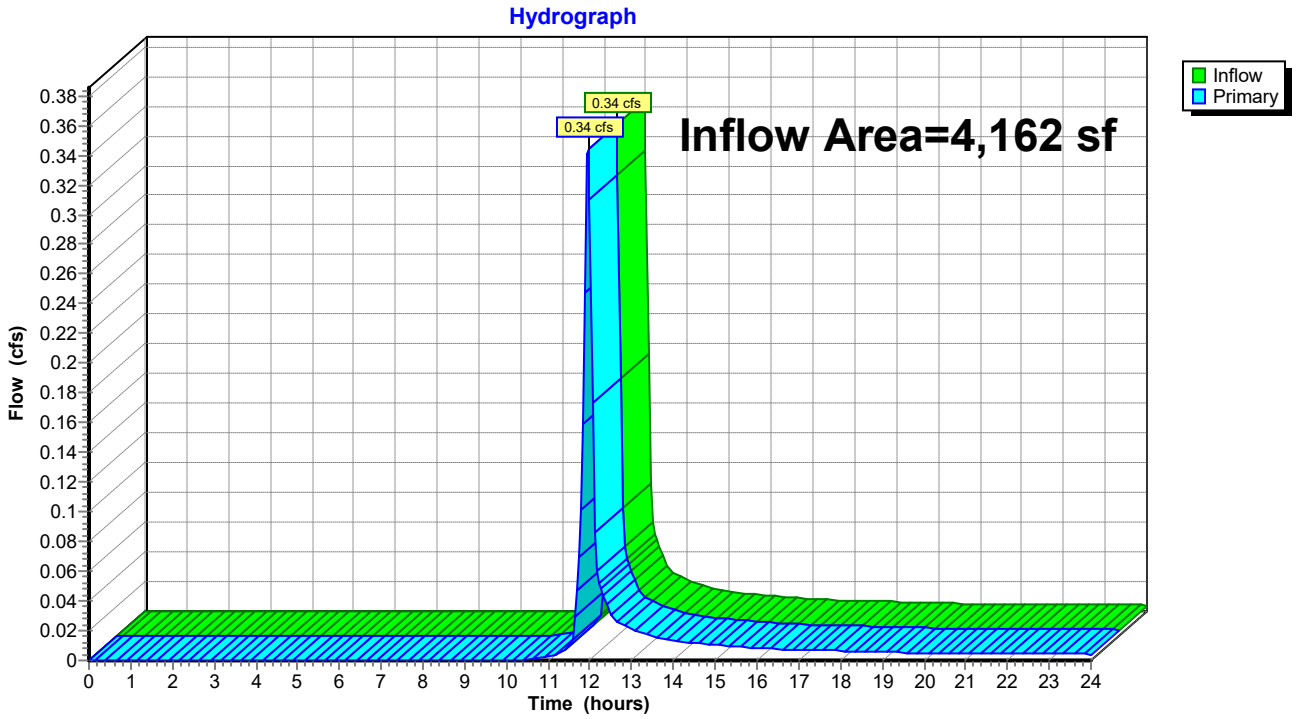


Summary for Link A:

Inflow Area = 4,162 sf, 43.39% Impervious, Inflow Depth > 2.01" for 25 year event
Inflow = 0.34 cfs @ 11.96 hrs, Volume= 696 cf
Primary = 0.34 cfs @ 11.96 hrs, Volume= 696 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

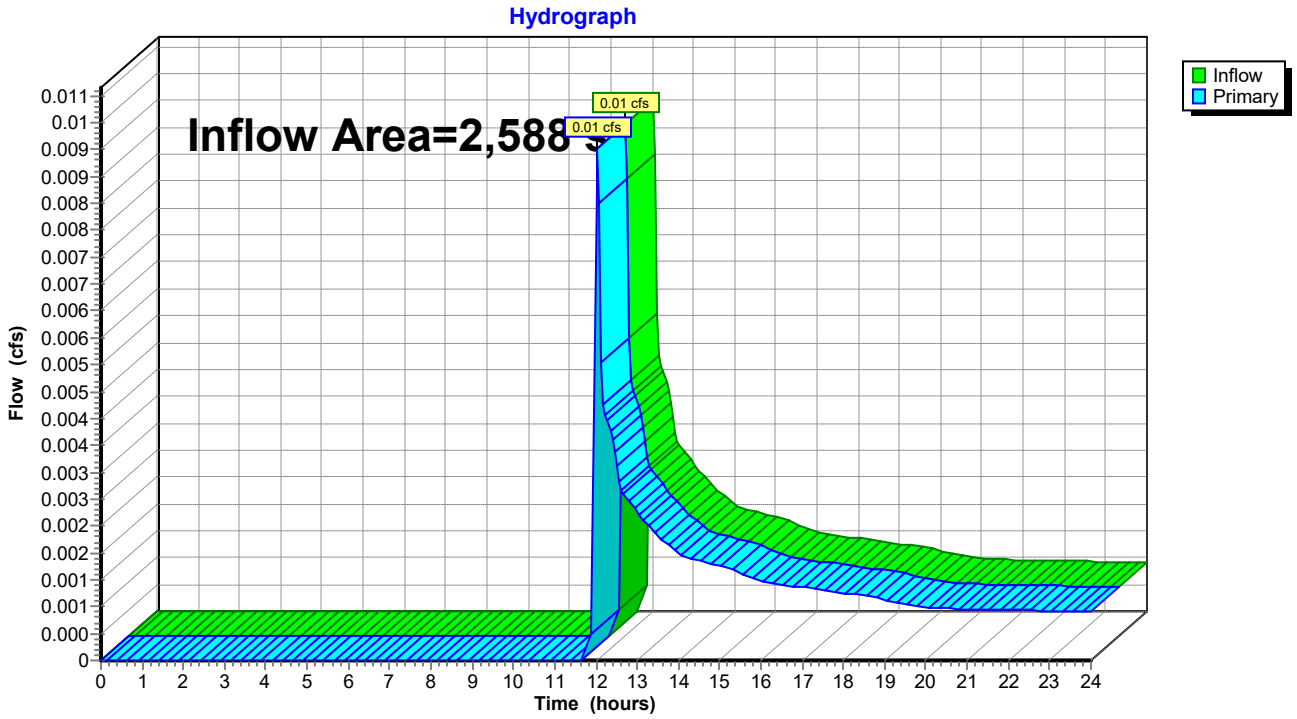


Summary for Link B:

Inflow Area = 2,588 sf, 0.00% Impervious, Inflow Depth > 0.32" for 25 year event
Inflow = 0.01 cfs @ 12.02 hrs, Volume= 68 cf
Primary = 0.01 cfs @ 12.02 hrs, Volume= 68 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

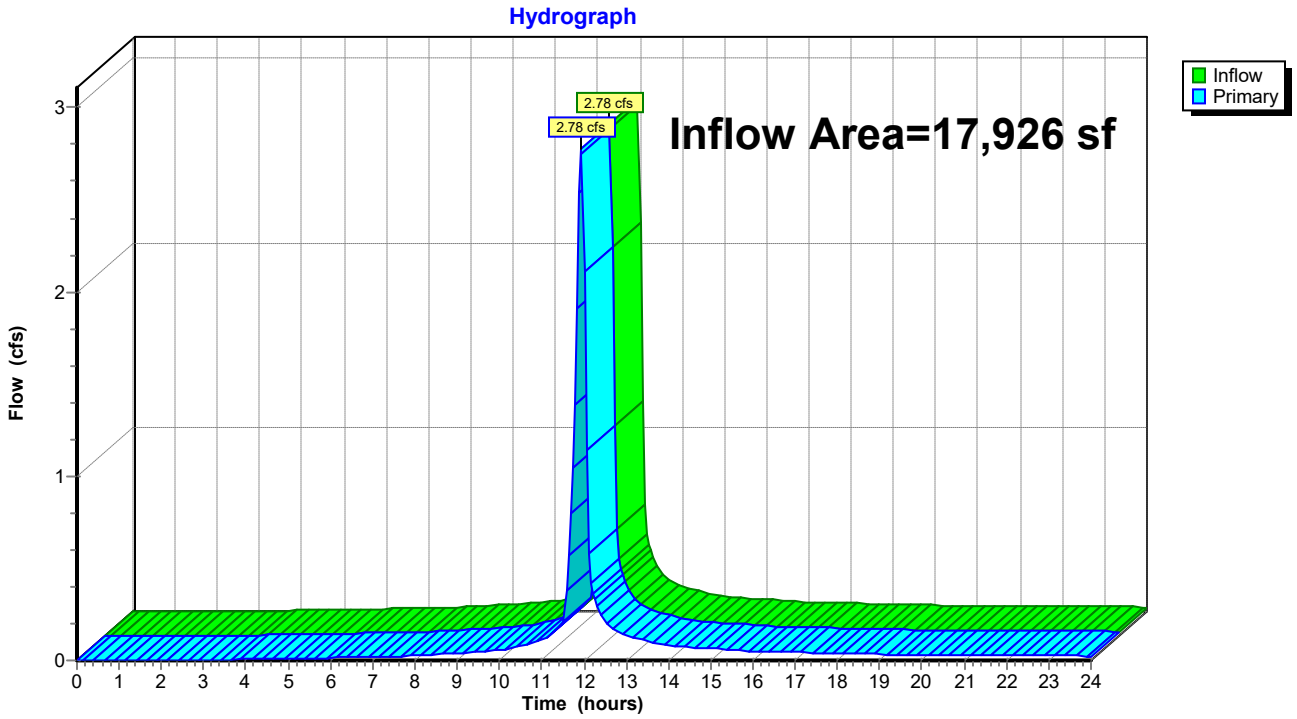


Summary for Link C:

Inflow Area = 17,926 sf, 83.80% Impervious, Inflow Depth > 4.26" for 25 year event
Inflow = 2.78 cfs @ 11.94 hrs, Volume= 6,369 cf
Primary = 2.78 cfs @ 11.94 hrs, Volume= 6,369 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=4,162 sf 43.39% Impervious Runoff Depth>2.77"
Tc=5.0 min CN=65 Runoff=0.48 cfs 961 cf

Subcatchment 2: Runoff Area=2,588 sf 0.00% Impervious Runoff Depth>0.62"
Tc=5.0 min CN=39 Runoff=0.04 cfs 134 cf

Subcatchment 3: Runoff Area=13,585 sf 90.90% Impervious Runoff Depth>5.74"
Tc=5.0 min CN=93 Runoff=2.86 cfs 6,500 cf

Subcatchment 4: Runoff Area=4,341 sf 61.58% Impervious Runoff Depth>3.77"
Tc=0.0 min CN=75 Runoff=0.76 cfs 1,365 cf

Link A: Inflow=0.48 cfs 961 cf
Primary=0.48 cfs 961 cf

Link B: Inflow=0.04 cfs 134 cf
Primary=0.04 cfs 134 cf

Link C: Inflow=3.38 cfs 7,865 cf
Primary=3.38 cfs 7,865 cf

Total Runoff Area = 24,676 sf Runoff Volume = 8,960 cf Average Runoff Depth = 4.36"
31.80% Pervious = 7,848 sf 68.20% Impervious = 16,828 sf

Summary for Subcatchment 1:

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

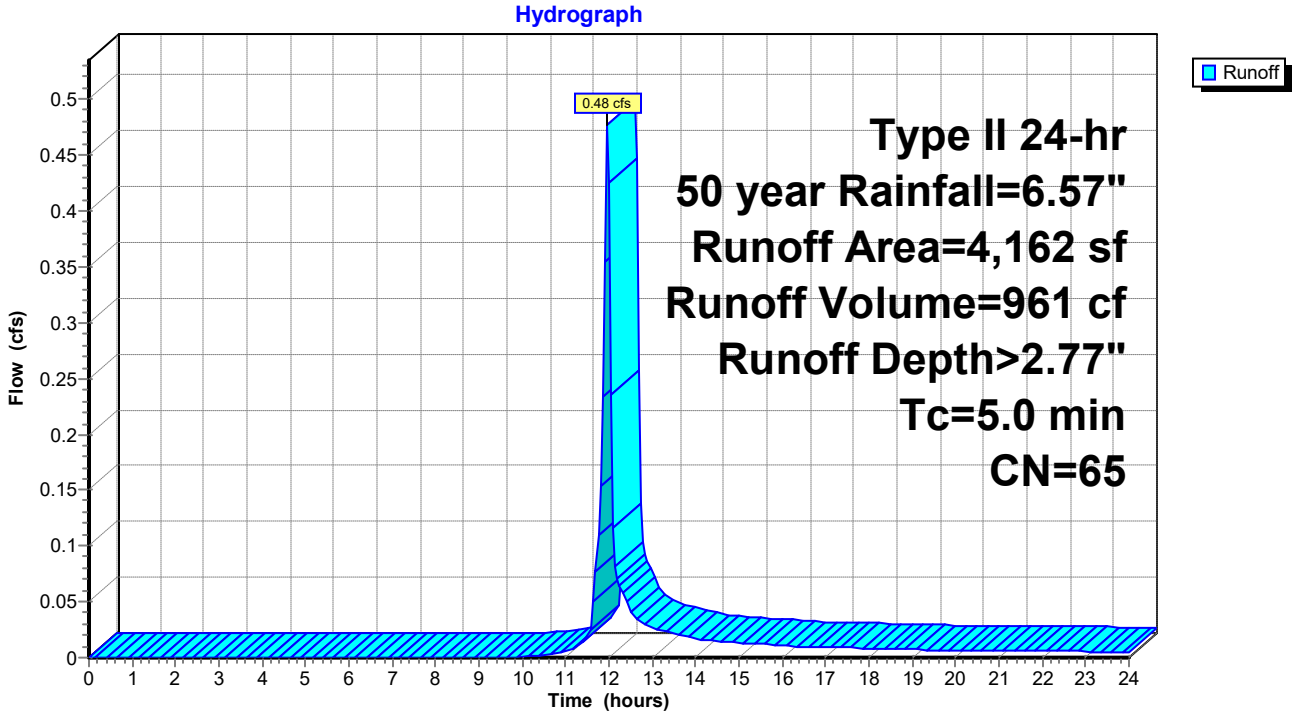
Runoff = 0.48 cfs @ 11.96 hrs, Volume= 961 cf, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
590	98	Paved parking, HSG A
1,216	98	Unconnected roofs, HSG A
2,356	39	>75% Grass cover, Good, HSG A
4,162	65	Weighted Average
2,356		56.61% Pervious Area
1,806		43.39% Impervious Area
1,216		67.33% Unconnected

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

Subcatchment 1:



Summary for Subcatchment 2:

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

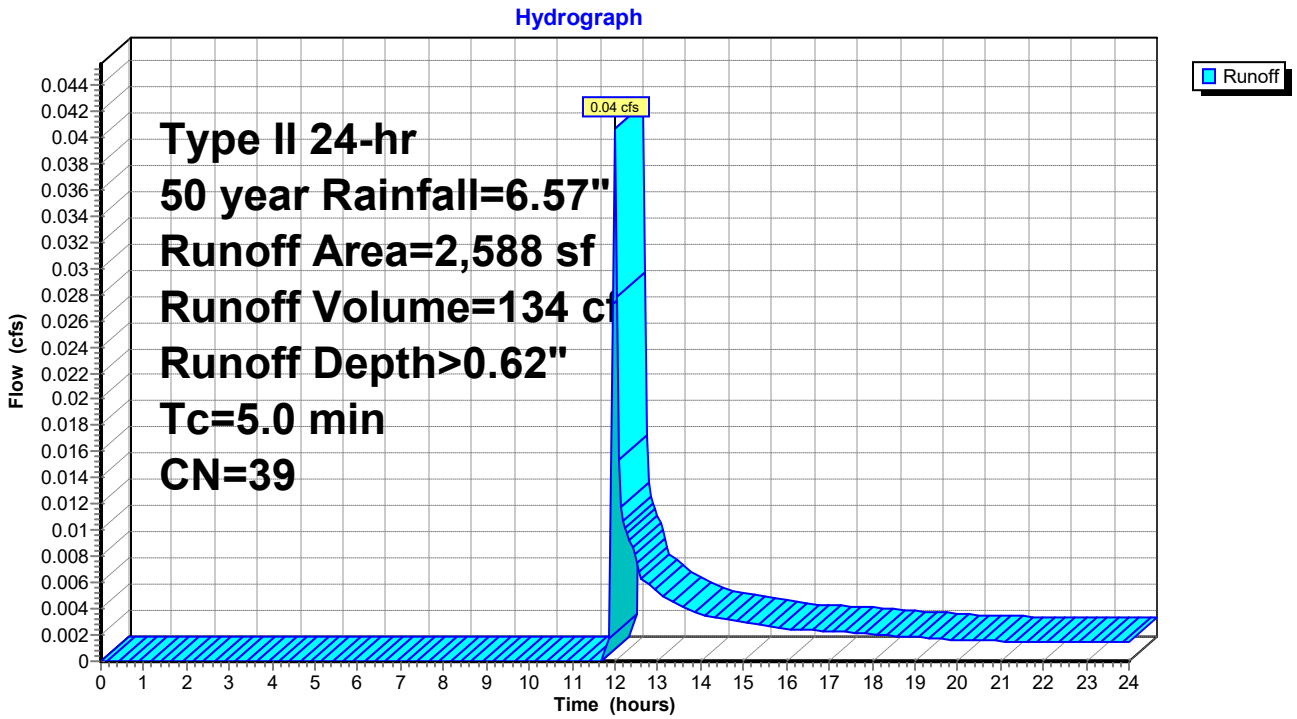
Runoff = 0.04 cfs @ 12.00 hrs, Volume= 134 cf, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
2,588	39	>75% Grass cover, Good, HSG A
2,588		100.00% Pervious Area

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

Subcatchment 2:



Summary for Subcatchment 3:

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

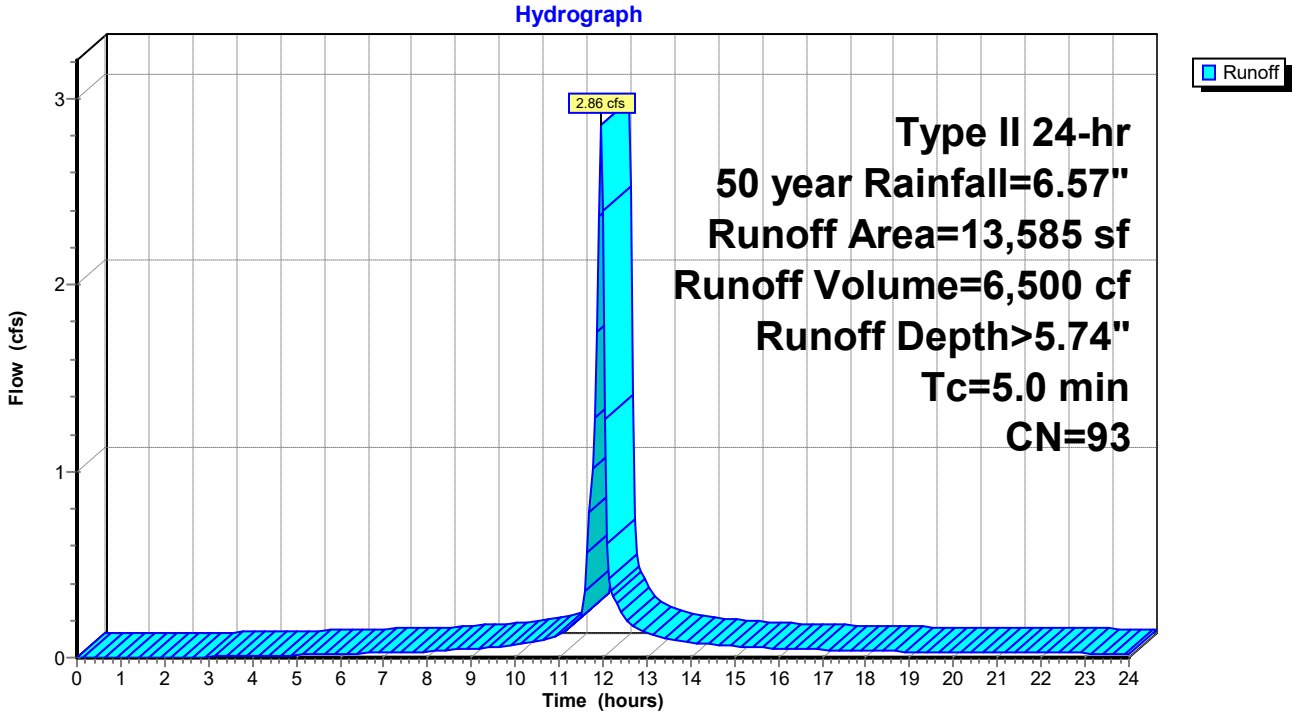
Runoff = 2.86 cfs @ 11.95 hrs, Volume= 6,500 cf, Depth> 5.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
6,967	98	Paved parking, HSG A
5,382	98	Unconnected roofs, HSG A
1,236	39	>75% Grass cover, Good, HSG A
13,585	93	Weighted Average
1,236		9.10% Pervious Area
12,349		90.90% Impervious Area
5,382		43.58% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

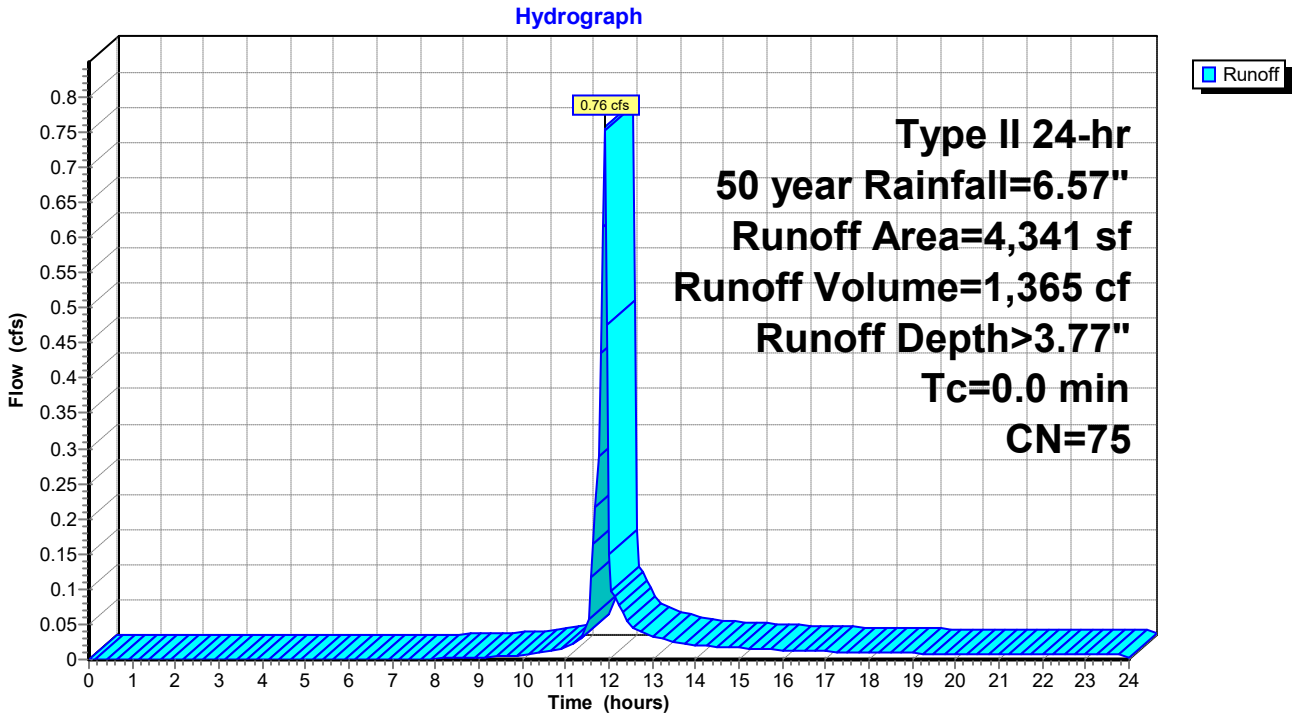
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.76 cfs @ 11.89 hrs, Volume= 1,365 cf, Depth> 3.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 year Rainfall=6.57"

Area (sf)	CN	Description
897	98	Paved parking, HSG A
1,776	98	Unconnected roofs, HSG A
1,668	39	>75% Grass cover, Good, HSG A
4,341	75	Weighted Average
1,668		38.42% Pervious Area
2,673		61.58% Impervious Area
1,776		66.44% Unconnected

Subcatchment 4:

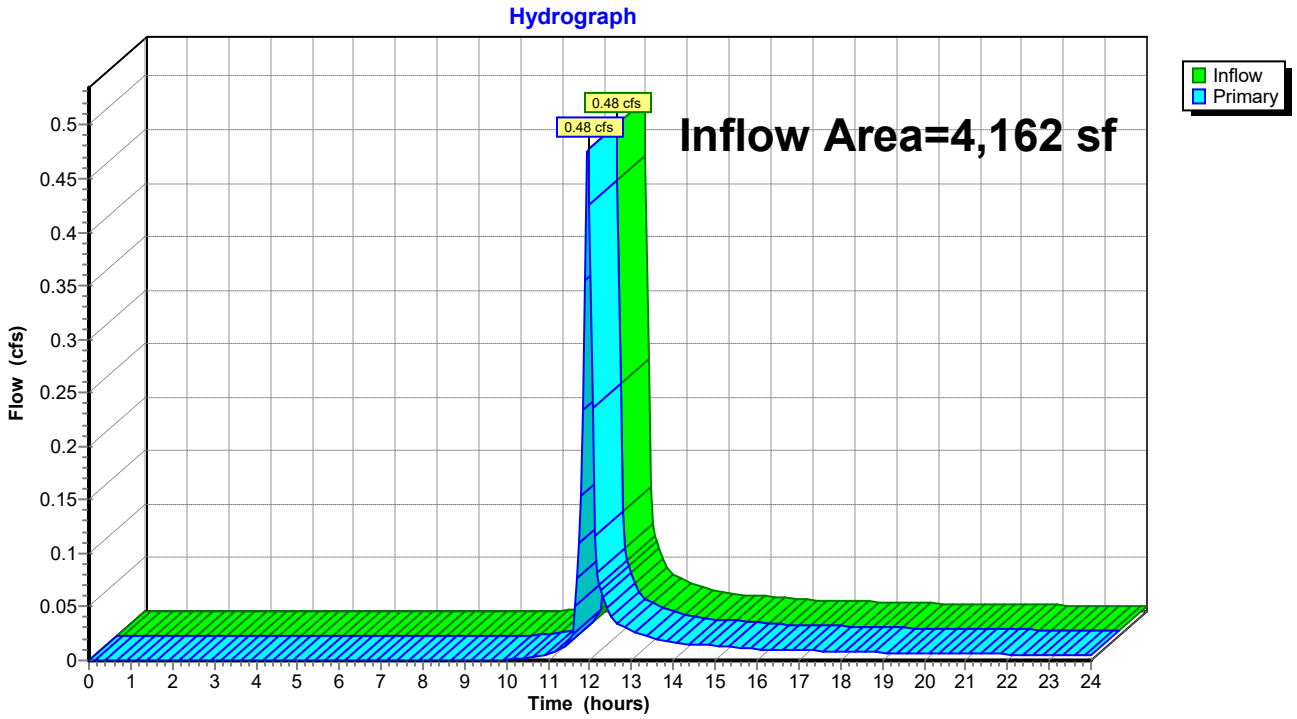


Summary for Link A:

Inflow Area = 4,162 sf, 43.39% Impervious, Inflow Depth > 2.77" for 50 year event
Inflow = 0.48 cfs @ 11.96 hrs, Volume= 961 cf
Primary = 0.48 cfs @ 11.96 hrs, Volume= 961 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

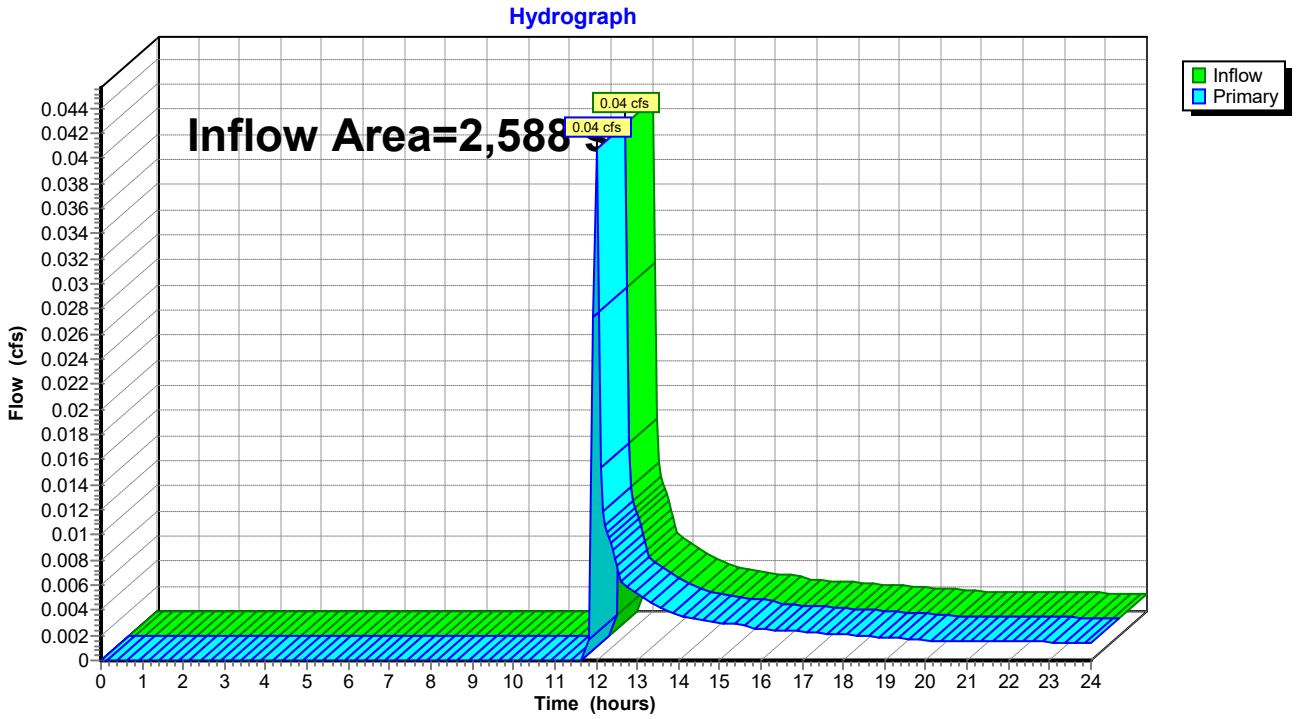


Summary for Link B:

Inflow Area = 2,588 sf, 0.00% Impervious, Inflow Depth > 0.62" for 50 year event
Inflow = 0.04 cfs @ 12.00 hrs, Volume= 134 cf
Primary = 0.04 cfs @ 12.00 hrs, Volume= 134 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

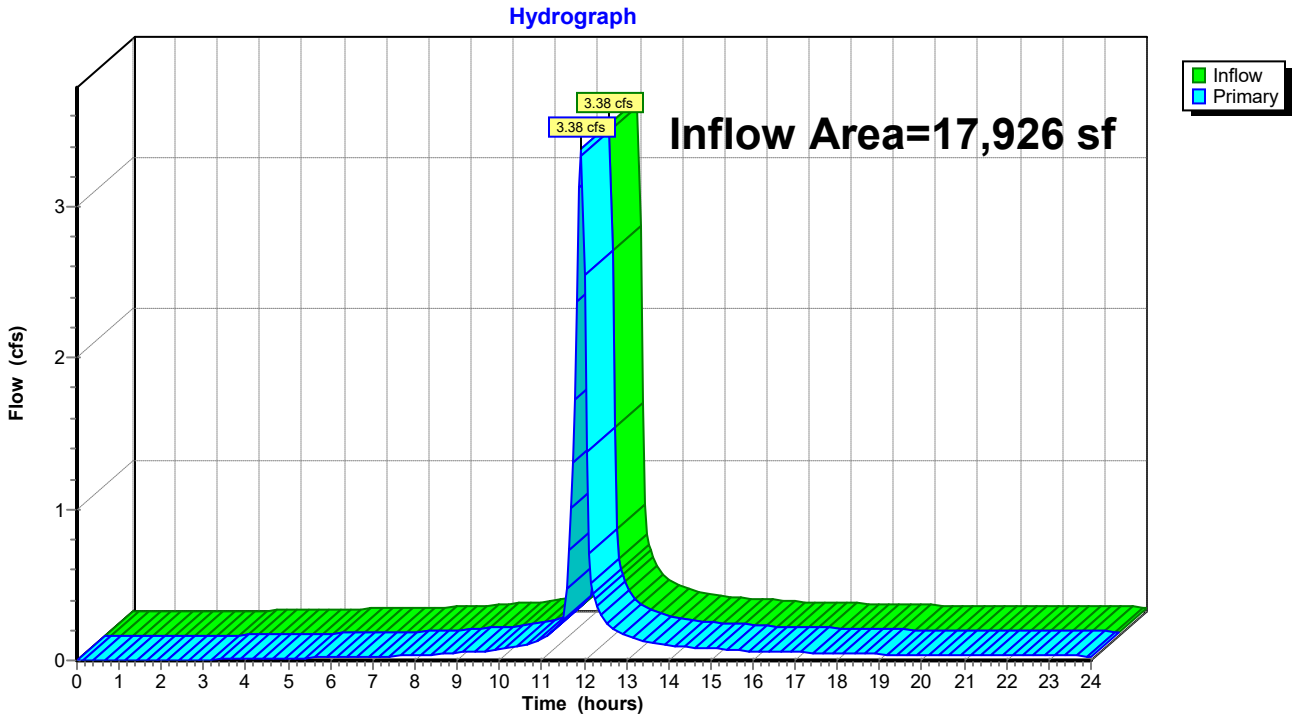


Summary for Link C:

Inflow Area = 17,926 sf, 83.80% Impervious, Inflow Depth > 5.27" for 50 year event
Inflow = 3.38 cfs @ 11.94 hrs, Volume= 7,865 cf
Primary = 3.38 cfs @ 11.94 hrs, Volume= 7,865 cf, Atten= 0%, Lag= 0.0 min

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

Link C:



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

Subcatchment 1: Runoff Area=4,162 sf 43.39% Impervious Runoff Depth>3.74"
Tc=5.0 min CN=65 Runoff=0.64 cfs 1,296 cf

Subcatchment 2: Runoff Area=2,588 sf 0.00% Impervious Runoff Depth>1.08"
Tc=5.0 min CN=39 Runoff=0.09 cfs 232 cf

Subcatchment 3: Runoff Area=13,585 sf 90.90% Impervious Runoff Depth>6.97"
Tc=5.0 min CN=93 Runoff=3.43 cfs 7,890 cf

Subcatchment 4: Runoff Area=4,341 sf 61.58% Impervious Runoff Depth>4.87"
Tc=0.0 min CN=75 Runoff=0.97 cfs 1,762 cf

Link A: Inflow=0.64 cfs 1,296 cf
Primary=0.64 cfs 1,296 cf

Link B: Inflow=0.09 cfs 232 cf
Primary=0.09 cfs 232 cf

Link C: Inflow=4.09 cfs 9,652 cf
Primary=4.09 cfs 9,652 cf

Total Runoff Area = 24,676 sf Runoff Volume = 11,181 cf Average Runoff Depth = 5.44"
31.80% Pervious = 7,848 sf 68.20% Impervious = 16,828 sf

Summary for Subcatchment 1:

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

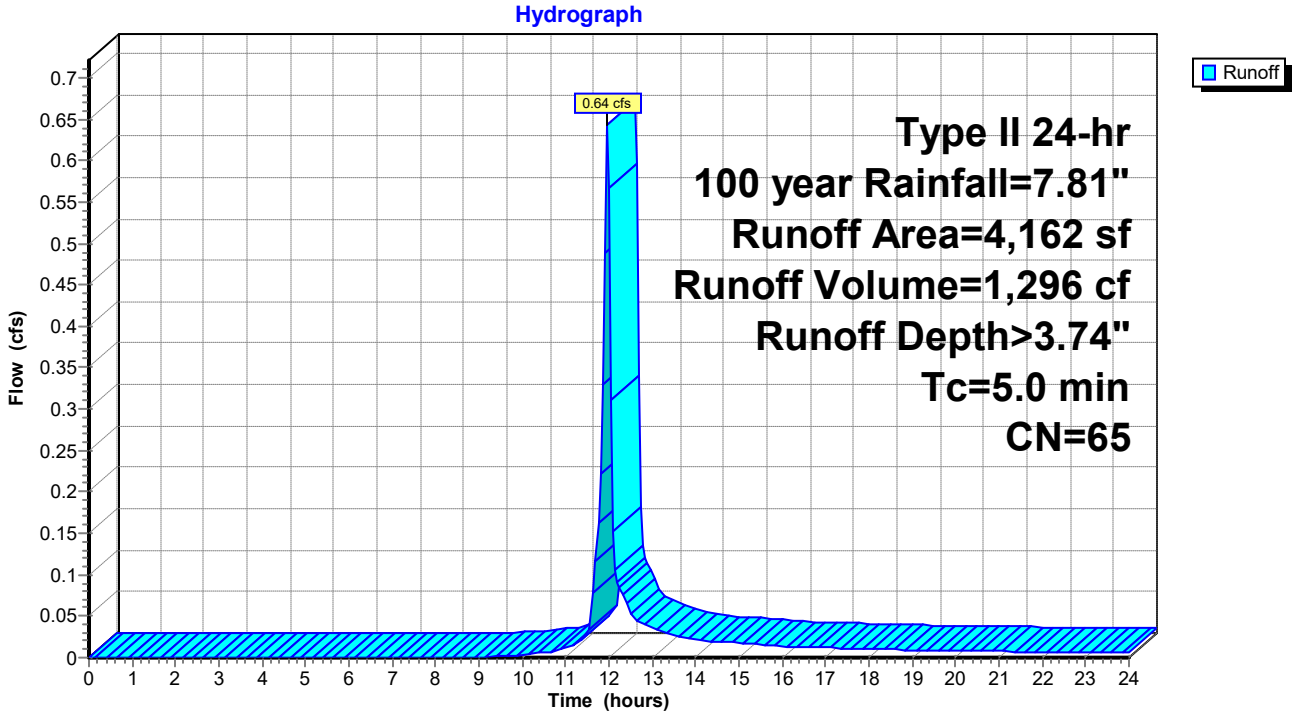
Runoff = 0.64 cfs @ 11.96 hrs, Volume= 1,296 cf, Depth> 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
590	98	Paved parking, HSG A
1,216	98	Unconnected roofs, HSG A
2,356	39	>75% Grass cover, Good, HSG A
4,162	65	Weighted Average
2,356		56.61% Pervious Area
1,806		43.39% Impervious Area
1,216		67.33% Unconnected

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

Subcatchment 1:



Summary for Subcatchment 2:

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

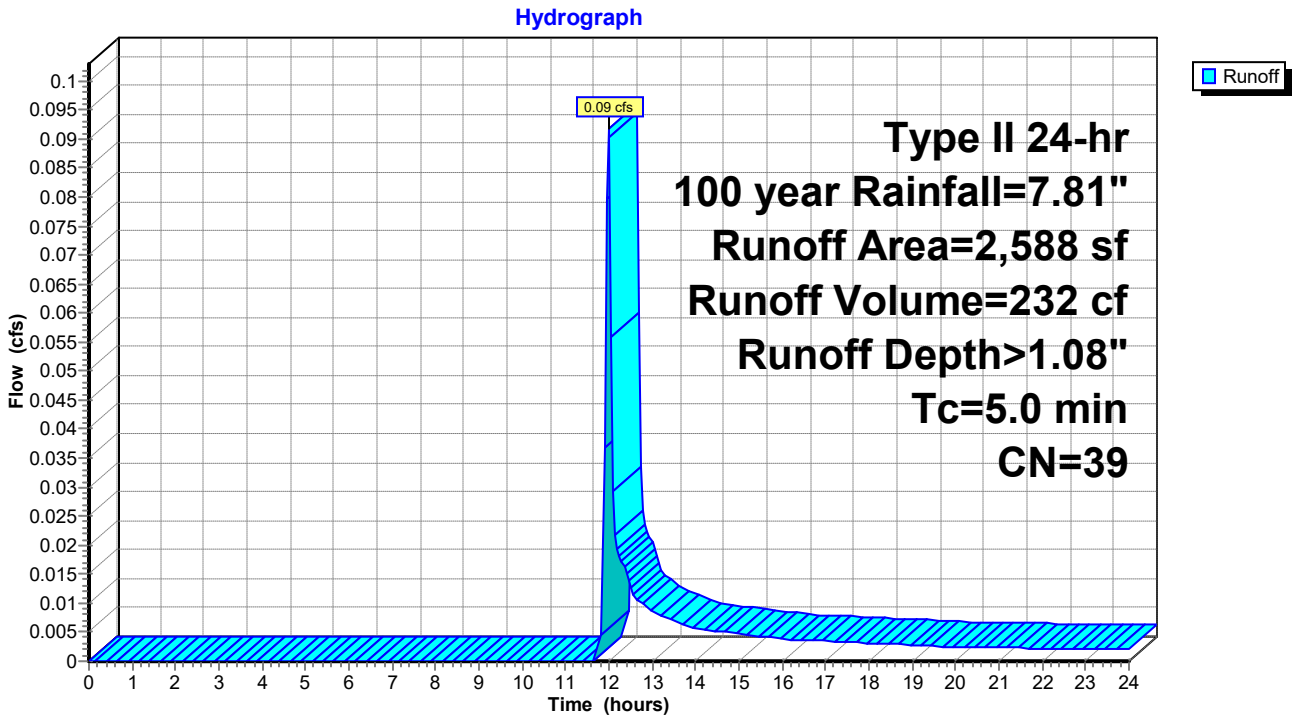
Runoff = 0.09 cfs @ 11.99 hrs, Volume= 232 cf, Depth> 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
2,588	39	>75% Grass cover, Good, HSG A
2,588		100.00% Pervious Area

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

Subcatchment 2:



Summary for Subcatchment 3:

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

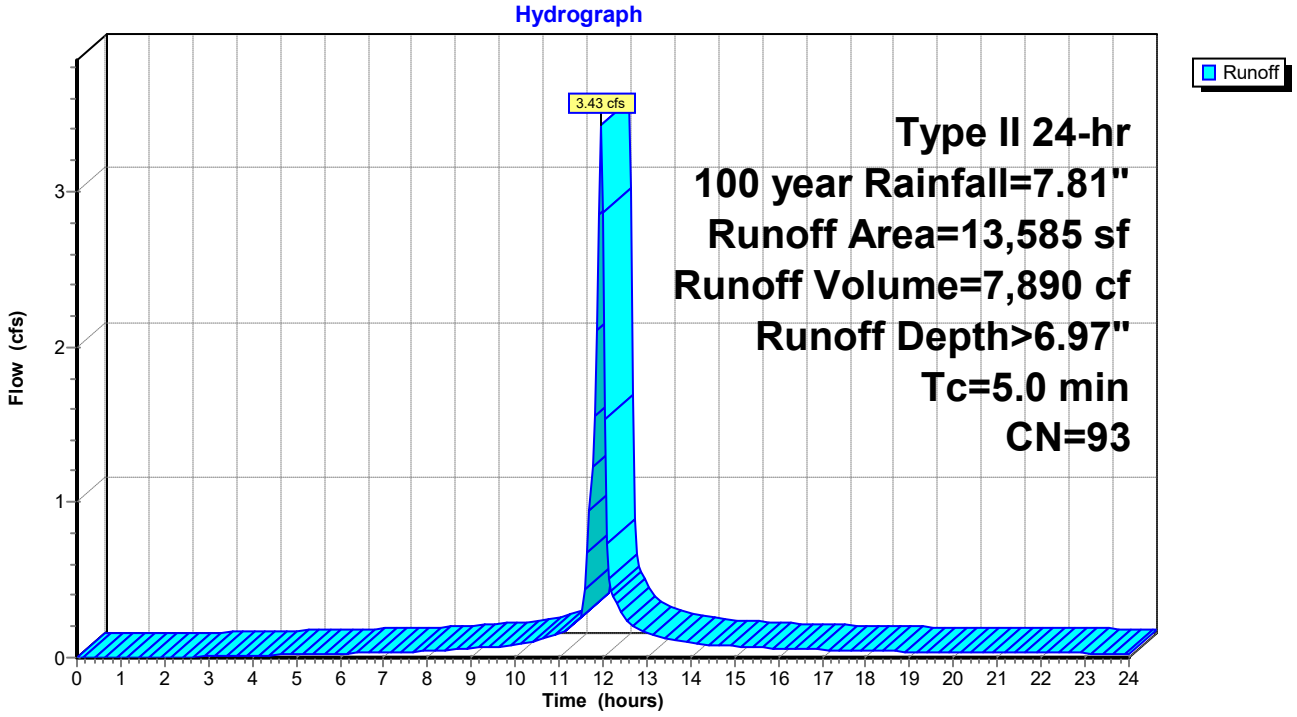
Runoff = 3.43 cfs @ 11.95 hrs, Volume= 7,890 cf, Depth> 6.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
6,967	98	Paved parking, HSG A
5,382	98	Unconnected roofs, HSG A
1,236	39	>75% Grass cover, Good, HSG A
13,585	93	Weighted Average
1,236		9.10% Pervious Area
12,349		90.90% Impervious Area
5,382		43.58% Unconnected

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

Subcatchment 3:



Summary for Subcatchment 4:

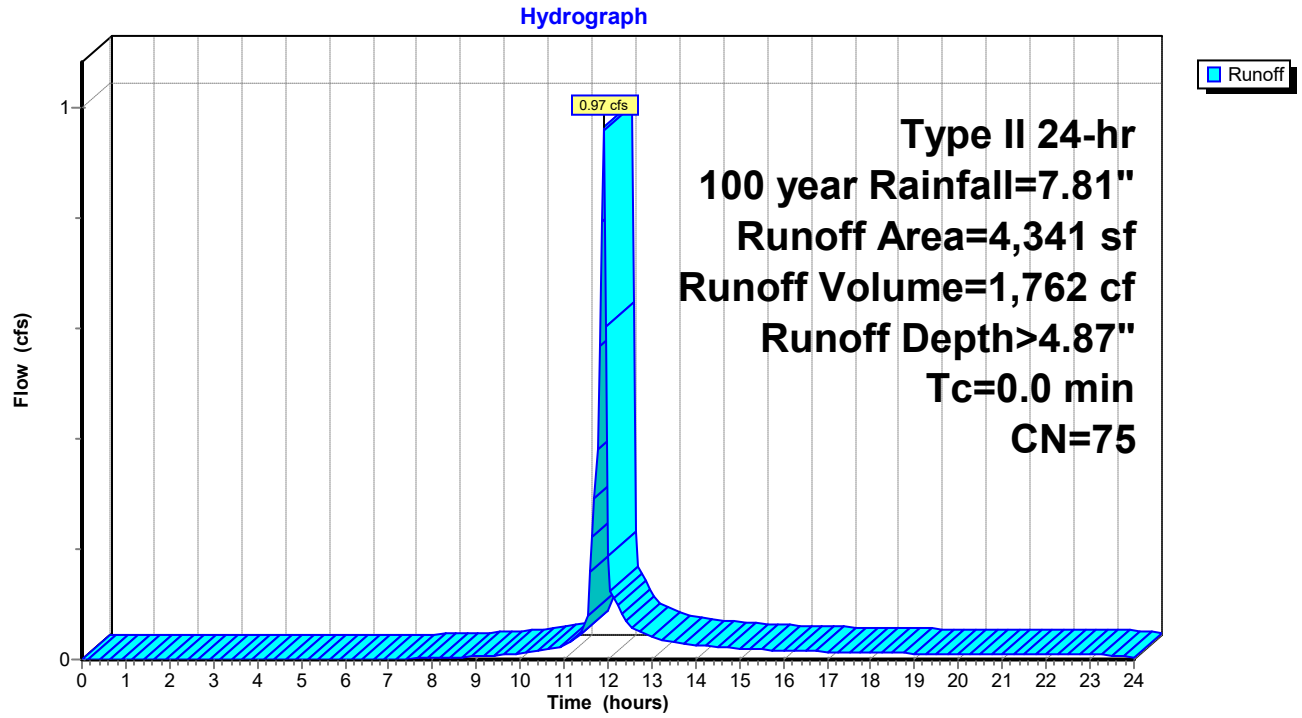
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.97 cfs @ 11.89 hrs, Volume= 1,762 cf, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 year Rainfall=7.81"

Area (sf)	CN	Description
897	98	Paved parking, HSG A
1,776	98	Unconnected roofs, HSG A
1,668	39	>75% Grass cover, Good, HSG A
4,341	75	Weighted Average
1,668		38.42% Pervious Area
2,673		61.58% Impervious Area
1,776		66.44% Unconnected

Subcatchment 4:

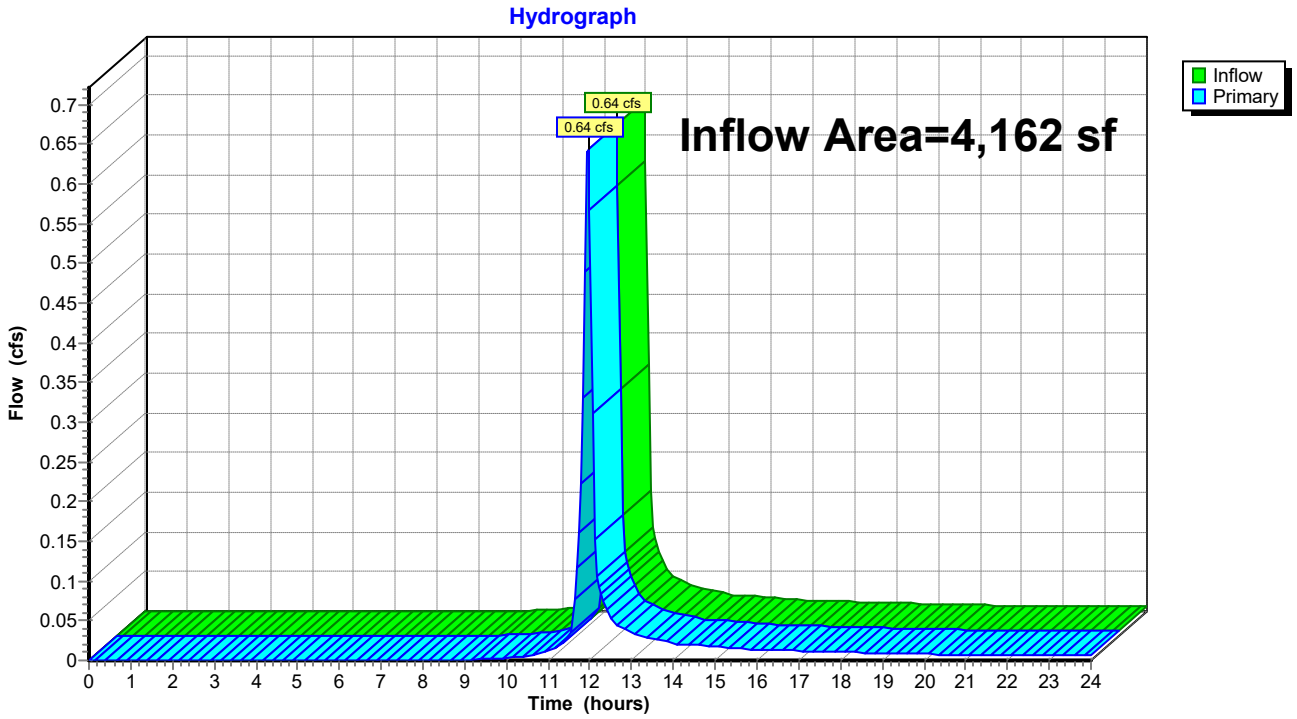


Summary for Link A:

Inflow Area = 4,162 sf, 43.39% Impervious, Inflow Depth > 3.74" for 100 year event
Inflow = 0.64 cfs @ 11.96 hrs, Volume= 1,296 cf
Primary = 0.64 cfs @ 11.96 hrs, Volume= 1,296 cf, Atten= 0%, Lag= 0.0 min

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

Link A:

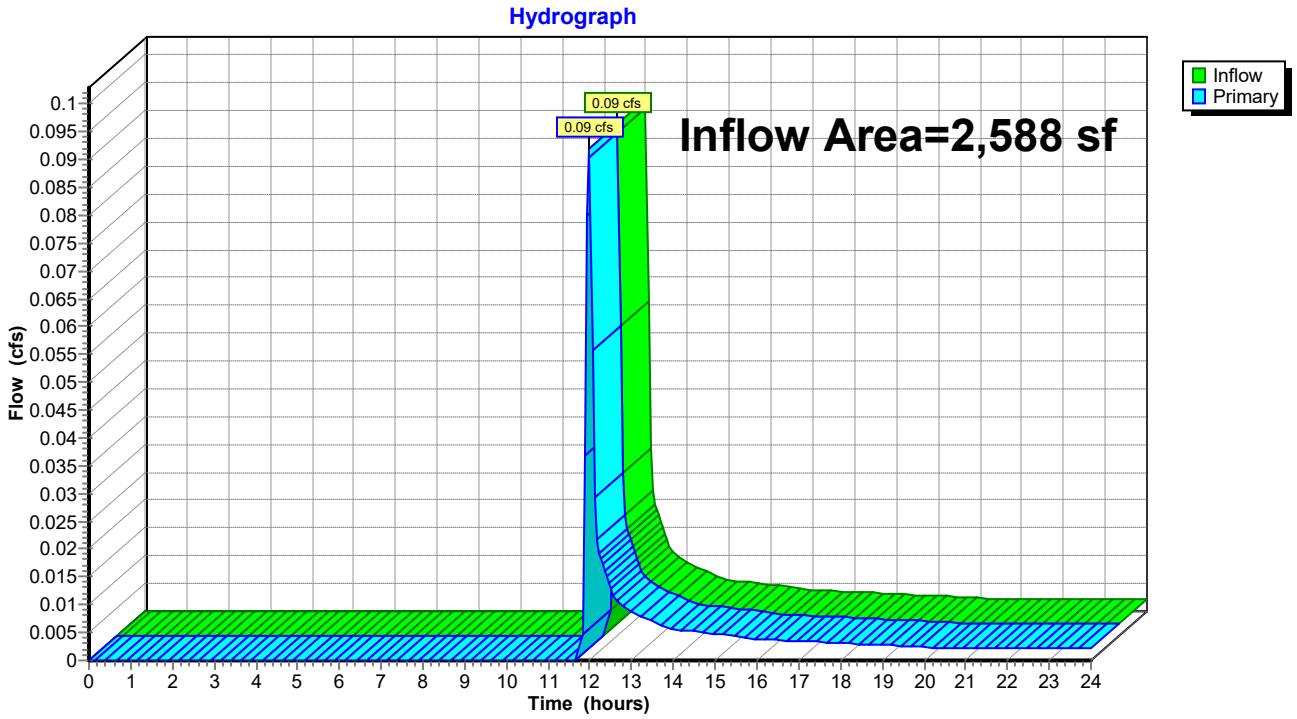


Summary for Link B:

Inflow Area = 2,588 sf, 0.00% Impervious, Inflow Depth > 1.08" for 100 year event
Inflow = 0.09 cfs @ 11.99 hrs, Volume= 232 cf
Primary = 0.09 cfs @ 11.99 hrs, Volume= 232 cf, Atten= 0%, Lag= 0.0 min

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

Link B:

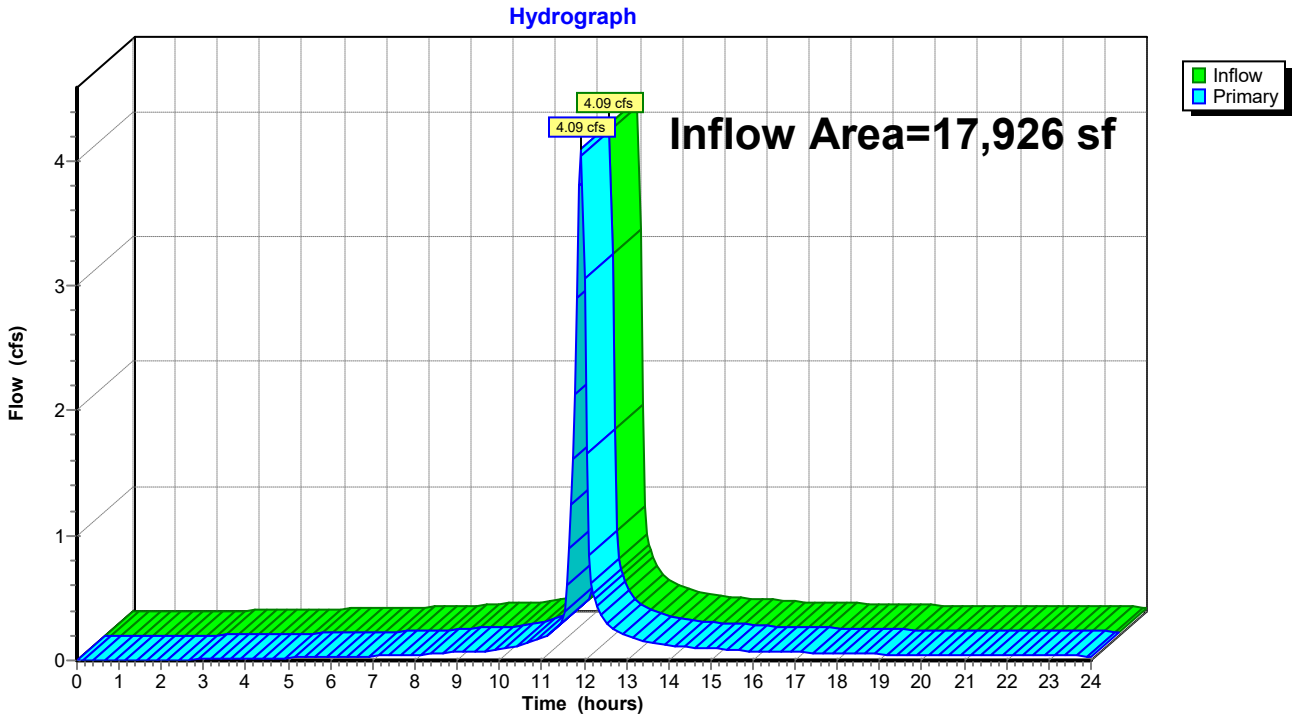


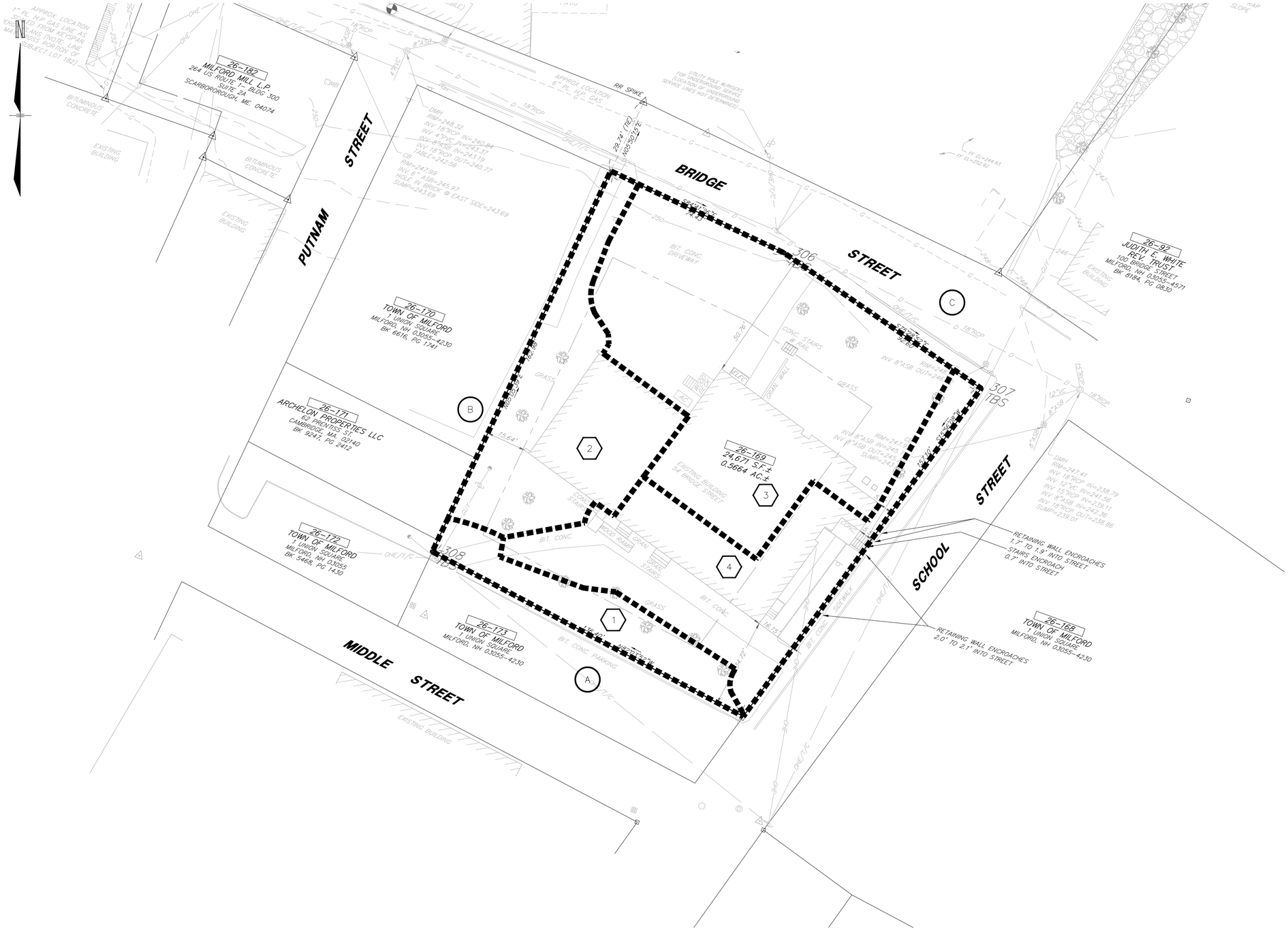
Summary for Link C:

Inflow Area = 17,926 sf, 83.80% Impervious, Inflow Depth > 6.46" for 100 year event
Inflow = 4.09 cfs @ 11.93 hrs, Volume= 9,652 cf
Primary = 4.09 cfs @ 11.93 hrs, Volume= 9,652 cf, Atten= 0%, Lag= 0.0 min

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

Link C:





LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- 5 — SUBCATCHMENT
- 1 — POND
- 9 — REACH
- D — DISCHARGE POINT

NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG	LOT COVERAGE
HsB	HINCKLEY LOAMY SAND	3–8%	A	100%

Graphic Scale: 20 10 5 0 20

REV.	DATE	DESCRIPTION	DR	CK

TAX MAP 26 LOT 169

PRE-DEVELOPMENT DRAINAGE PLAN

MILFORD INDEPENDENT SENIOR HOUSING

54 SCHOOL STREET, MILFORD, NH

OWNED/PREPARED FOR

HOUSING INITIATIVES OF NEW ENGLAND CORP.

SCALE: 1"=20' (34"X22") **MARCH 22, 2021**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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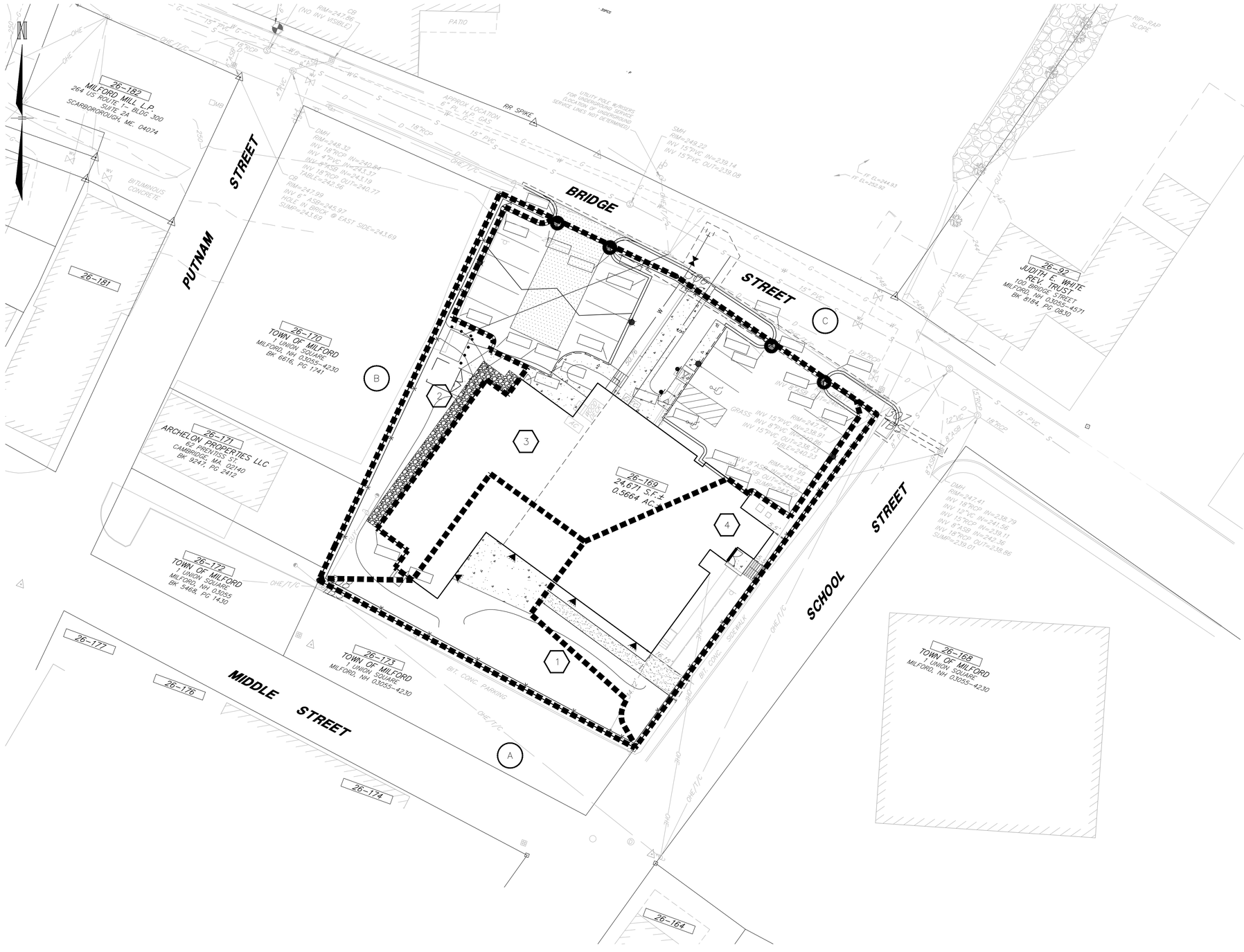
www.tfmoran.com

FILE	76451.21	DR	AJC	FB	–	SHEET 1 OF 2
		CK	JK	CADFILE	76451-27 DRAINAGE	



LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- 5 — SUBCATCHMENT
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NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG	LOT COVERAGE
HsB	HINCKLEY LOAMY SAND	3–8%	A	100%

TAX MAP 26 LOT 169

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20 10 5 0 20
Graphic Scale

REV.	DATE	DESCRIPTION	DR	CK

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76451.21	DR	AJC	FB	–	SHEET 2 OF 2
	CK	JK	CADFILE	76451-27 DRAINAGE	