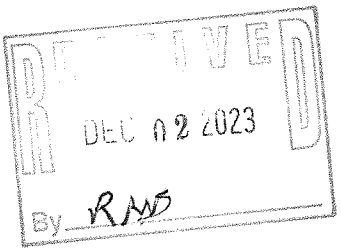


Morris Housing Authority
East Street Housing
Application for a Special Exception

November 2023

Statement of Use

The proposed use of this site will be eight units of rental housing in two buildings. This will be owned and managed by the Morris Housing Authority and will be affordable to residents who earn a range of incomes below 80% of the area median income.

The Morris Housing Authority (MHA) is applying for this special exception under the "Town-Sponsored Multi-Family Housing" section of the zoning regulations. This section states that the purpose is to permit the creation of needed housing sponsored by the Town of Morris.

The Town of Morris provided American Rescue Plan Act (ARPA) funding to the MHA to allow them to purchase this site for this use and is now supporting the MHA with an application to the CT Dept. of Housing for the funding to build the water, septic, and driveway infrastructure that will be needed on the site to accommodate these eight units of housing.

The Morris Housing Plan (adopted October 5, 2021) details the need for this type of housing and supports this use for this site (p. 12). As the plan further details, the Town had 268 households that were housing cost burdened and long waiting lists at the MHA's one existing affordable housing development.

TOWN OF MORRIS

APPLICATION FOR ZONING PERMIT

Property Location: 103 East Street Date: 11/7/23 Application/Permit #: MHA-23-01

Owner (of Property): Morris Housing Authority C/O Jim Simincelli Jr.

Mailing Address: 109 East Street Phone Number: 860-567-5876

Cell Number: 860-459-4417 Email Address: jimsimoncelli@outlook.com
(Jim Simoncelli Jr.)

The undersigned hereby makes application for a zoning permit under the provisions of the Morris Zoning Regulations of the Town of Morris, Connecticut.

Owner's Signature [signature] Executive Director *Date* 11/7/23

CATEGORY OF APPLICATION

A: Application is made for one or more of the following:

___use of land
___change of use of existing building or structure
_x_proposed building or structure and use thereof
___sign
___certificate for a lawful nonconformity

B: The proposal involves one of more of the following under the requirements of the Zoning Regulations:

___outside storage area
___landscaping
_x_parking area
_x_driveway access
___loading space
___flood plain district (see Sec. 53)
_x_on-site sewerage and/or water supply

C: The proposal is authorized by the Regulations (under one or more of the following):

___as a matter of right in the appropriate district
___subject to approval of a SITE PLAN (see Sec. 51)
_x_subject to approval of a SPECIAL EXCEPTION (see Sec. 52)
___as an extension of use_____excavation and grading (see Sec. 64)
___subject to Certificate of Approval of Location from Zoning Board of Appeals
___other: _____

Location/Address of Property: 103 East Street

Map: 17 Block: 380 Lot: 107

The lot has frontage of 50 (feet) on one or more of the following:

X state highway
___accepted town road
___in a filed subdivision approved by the Planning Commission with a completion bond in effect
___in a filed subdivision approved by the Planning Commission with no completion bond in effect
X other, please describe 316.38 ft on a private road leading to the existing Eldridge Elderly Housing complex.

Zoning District: R-60 Existing Use of Property/Structure: Vacant Land

Area of Lot: 111,897 sqft

Purpose of Proposed Building/Use Is: Multi-family, affordable housing.

EXISTING STRUCTURES:

There **are** / **are not** *(circle one)* existing buildings and structures on the lot as indicated below:

(If there are more than 3 existing structures, please provide this information for all additional structures on a separate sheet of paper and attach to this application.)

Structure 1: Type/Use_____Ground Coverage_____Total Floor Area _____
No. of Stories:_____Height:_____
Attached Structures: (Deck, Etc.)Yes__NO___ Ground Coverage(Footprint)_____

Structure 2: Type/Use_____Ground Coverage_____Total Floor Area _____
No. of Stories:_____Height:_____
Attached Structures: (Deck, Etc.)Yes__NO___ Ground Coverage(Footprint)_____

Structure 3: Type/Use_____Ground Coverage_____Total Floor Area _____
No. of Stories:_____Height:_____
Attached Structures: (Deck, Etc.)Yes__NO___ Ground Coverage(Footprint)_____

PROPOSED STRUCTURES:

The proposed buildings and structures on the lot as indicated below:

(if there are more than 3 proposed structures, please provide this information for all additional structures on a separate sheet of paper and attach to this application.)

Structure 1: Type/Use Multi-family dwelling Ground Coverage 3,280 sqft Total Floor Area 3,200 sqsf
No. of Stories:_____ Height:_____
Attached Structures: (Deck, Etc.)Yes x NO___ Ground Coverage(Footprint) 520 sqft (4 Decks)
Proposed Use (Cite Appropriate Paragraph #): Multi-family affordable housing
Description: Structure 1 is a 4-unit multi-family dwelling with a total of 8 bedrooms.
Type/Use: The intended use is to create a permanent and affordable housing opportunity.

Structure 2: Type/Use Same as Structure 1 Ground Coverage_____ Total Floor Area _____
No. of Stories:_____ Height:_____
Attached Structures: (Deck, Etc.)Yes__NO___ Ground Coverage(Footprint)_____
Proposed Use (Cite Appropriate Paragraph #): _____
Description:_____
Type/Use:_____

Structure 3: Type/Use_____ Ground Coverage_____ Total Floor Area _____
No. of Stories:_____ Height:_____
Attached Structures: (Deck, Etc.)Yes__NO___ Ground Coverage(Footprint)_____
Proposed Use (Cite Appropriate Paragraph #): _____
Description:_____
Type/Use:_____

ADDITIONAL DATA

This application is accompanied by one or more of the following as required by the Zoning Regulations.

East Street Housing - 8 Unit

- x Plan Drawing (entitled: Residential Development)
- x Site Plan
- x Application for Special Exception Use
- ___ Application for Excavation and Grading
- ___ Application for Certificate of Approval of Location

I hereby agree to conform to all requirements of the Laws of the State of Connecticut and the Ordinances and Zoning Regulations of the Town of Morris, and to notify the Zoning Officer and the Commission of any alteration in the plans for which this Zoning Permit is being sought.

I furthermore agree the above described structure/use is to be located at the proper distance from all street lines as required by the Zoning Regulations or any other applicable local and state ordinances and regulations. It is also understood that the proposed structure/use, upon completion, will be used in compliance with the Zoning Regulations of the Town of Morris.

I hereby apply for Certificate of Use and Compliance for the use of the property as described in the above application. I also understand that the structure/use cannot be used or occupied until a Certificate of Occupancy has been issued by the Morris Building Official.

Furthermore, I hereby note that it is the responsibility of the applicant to notify the Zoning Officer and Commission and arrange an on-site inspection as soon as the foundation is poured for the site plan and placement verification. This notification must take place prior to any construction or framing activity on the foundation.

The undersigned states that he is aware of the applicable provisions of the Zoning Regulations of the Town of Morris, including but not limited to requirements pertaining to performance standards (sec. 61), signs (sec. 63), off-street parking and loading (sec. 62) and earth removal (sec. 64), that if the proposal is authorized under a special exception, site plan, or other action of the Zoning Commission or Zoning Board of Appeals he is aware of any applicable conditions, limitations and stipulations and that approval of this application or issuance of a certificate shall not be considered to constitute compliance with any other regulations, ordinance, or law nor relieve the undersigned from responsibility to obtain any permit thereunder.

11/7/23
date

applicant's signature - Executive Director

date

authorized agent for applicant

This application was received by the Zoning Office on 11-15-2023 by JOtor Ardili.

This application was:

____approved
____denied

by the:

____Zoning Enforcement Officer
____Planning and Zoning Commission (Meeting Date:_____)

Explanation:_____

_____

If your Zoning Permit application has been denied by the Zoning Enforcement Officer or the Zoning Commission, the Connecticut General Statutes provides you with the right to appeal the decision of the Zoning Office to the Morris Zoning Board of Appeals. You have thirty (30) days from the denial date to start the appeals process.

Hrica Associates LLC

Kenneth S. Hrica, PE,RLS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759

Engineers *Surveyors*

860-567-2112 (business)
860-567-0491 (faximile)
e-mail:
hricaassociates@optonline.net

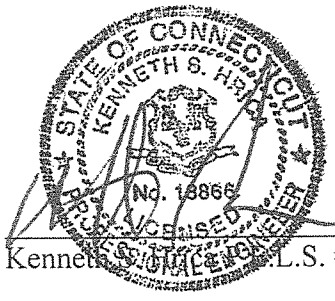
STORM WATER MANANGEMENT PLAN

DRAINAGE CALCULATIONS
&
SEDIMENT & EROSION CONTROL REPORT
SHORT & LONG TERM MAINTENANCE FOR STORMWATER QUALITY

ELDRIDGE DRIVE
MORRIS, CONNECTICUT

PREPARED FOR:
MORRIS HOUSING AUTHORITY

DECEMBER 19, 2023



Kenneth S. Hrica, L.S. #18866

Hrica Associates LLC

Kenneth S. Hrica, PE,RLS
44 Maple View Trail
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Litchfield, Connecticut 06759

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Engineers Surveyors

SEDIMENT & EROSION CONTROL REPORT
SHORT & LONG TERM MAINTENANCE FOR STORMWATER QUALITY

MORRIS HOUSING AUTHORITY

EAST STREET HOUSING
103 East Street
Morris, Connecticut

During Construction – Sediment and Erosion Control Measures:

Silt Fence:

1. The silt fence shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. Sediments shall be removed when the sediments reach ½ the height of the fence. Sediment is to be spread and seeded immediately. Silt fence to be reinstalled and replaced as necessary.
3. Silt fence shall be installed with a woven wire backing or orange construction fencing to maintain stability.
4. A log is to be kept and submitted monthly to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Coir Logs / Woodchip Wattles:

1. Coir Logs / Woodchip Wattles shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. Sediment captured by the Coir Logs / Woodchip Wattles shall be removed when the sediment reaches 0.5 feet in depth. Sediment is to be spread on site and seeded immediately, or hauled to an approved, non- wetland site. New Coir Logs / Woodchip Wattles are to be installed if at any time during construction, the Coir Logs / Woodchip Wattles fiber membrane is torn or damaged.
3. Coir Logs / Woodchip Wattles shall be kept and maintained in place until the site is stabilized and removal is authorized by the Town of Morris.

Construction Entrance:

1. The construction entrance shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. The entrance shall be maintained in a condition that will prevent tracking of sediments on to the public right-of-way or streets. This may require periodic top dressing with additional aggregate.
3. All sediment tracked or spilled onto the roadway will be cleaned up and the roadway swept by the end of the working day.
4. If washing is required, it shall be done on an area stabilized with aggregate, which drain to an approved sediment-trapping device.
5. All sediment shall be prevented from entering storm drains, swales, or watercourses.
6. A log is to be kept and submitted to the Town of Morris indicated inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Pipe Inlets:

1. Pipe inlets are to be protected with staked geotextile silt fence installed in a "U" shape, approximately six feet from the pipe inlet in the direction of the incoming flow. Silt fence is to be embedded a minimum of six inches.
2. Sediment shall be cleared from silt fence when it reaches a maximum of ½ the height of the fence.
3. The silt fence shall be inspected for stability and operation within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater, but in no case lass than once per week. Repairs shall be made within one working day to maintain the practice as designed.
4. A log is to be kept and submitted monthly to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Catch Basin / Lawn Drain Inlet Structures:

1. Catch basins are to be protected with staked geotextile silt fence on all four sides. Silt fence is to be embedded a minimum of six inches.
2. Sediment shall be cleared from silt fence when it reaches a maximum of ½ the height of the fence.
3. Catch basin stumps are to be inspected weekly and sediment removed when it reaches a depth of twelve inches.
4. The silt fence shall be inspected for stability and operation within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater, but in no case lass than once per week. Repairs shall be made within one working day to maintain the practice as designed.

5. A log is to be kept and submitted monthly to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Water Treatment Wastewater Infiltration Units:

1. Water Treatment Wastewater Infiltration Units and the associated pop-up emitter overflow structure shall be installed prior to final grade stabilization.
2. Infiltration Unit Inspection Ports shall be checked after rainfall amounts of 0.5 inches or greater, and at weekly intervals during construction. Accumulation of silt and debris shall be removed from the chambers when it reaches a maximum of 0.5 feet.
3. A log is to be kept and submitted monthly to the Town of Morris Inland Wetland Officer indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Rain Barrels:

4. Water Treatment Wastewater Infiltration Units and the associated stormwater outlet piping overflow shall be installed prior to installation of building roof gutters.
5. Rain Barrels shall be checked after rainfall amounts of 0.5 inches or greater, and at weekly intervals during construction. Accumulation of silt and debris shall be cleaned / flushed from the Barrel when it reaches a maximum of 0.17 feet (2").
6. A log is to be kept and submitted monthly to the Town of Morris Inland Wetland Officer indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Slope Inspection:

1. All erosion control blankets shall be installed per the manufacturer's requirements.
2. Slopes shall be seeded immediately after rough grading. If rill erosion occurs, it will be repaired immediately, and erosion control blankets installed.
3. All seeded areas will be fertilized, reseeded as necessary, and mulched according to specifications to maintain a vigorous, dense vegetative cover. Rilling will be repaired and reseeded prior to final stabilization.

Water Quality Forebay Dam:

1. The forebay dam shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. Sediment shall be removed, and original volume restored when sediment accumulates to one half the design volume.
3. The forebay dam shall be inspected weekly to check for erosion, piping, and rock displacement before and after each runoff-producing event. Repairs are to be made immediately.

4. Structure is to be restored to its original condition prior to final stabilization of the detention pond.
5. Stones are to be replaced as needed to maintain the design cross section of the measure.

Long Term Maintenance of Stormwater Quality Structures:

Roads and Pavement:

1. Impervious surfaces shall be vacuum swept annually between April 1st and May 1st.
2. Grass shoulders shall be repaired in springtime if damaged by snow plowing.

Roof Drainage System:

1. The roof drainages system including Rain Barrels shall be cleaned of leaves and debris, inspected and repaired biannually (April and October) and as needed.

Storm Drainage System:

1. The storm drainage system shall be inspected monthly during the first year after construction of all phases.
2. Debris, leaves, and sediment are to be cleaned out when sediment reaches one half the design depth and at minimum, annually.

Open Channels and Swales:

1. Sediment shall be removed when twenty-five percent of the original volume has been exceeded and at minimum, annually.
2. Grass height of four inches to six inches shall be maintained.
3. Swales shall be inspected for erosion damage on a quarterly basis. All damage shall be repaired immediately with suitable organic growing medium, erosion control blankets and reseeded.

Water Quality Basins:

1. Water quality Basins provide additional water quality improvements to the stormwater after discharge from the vegetated swales. Maintenance of the basins will include removing by vacuum truck and/or hand shoveling of any visible accumulated sediment existing in the forebay of the basin. The main bay of the basin will have a stone bottom and planted embankments. The embankments will not require maintenance other than replacing any plantings that have not taken. The bottom of the basin will require biannual visual inspection for accumulation of foreign matter such as leaves, branches, grass clippings and trash. As specified in the erosion control plan temporary silt fences are to remain in place to protect the main bay of the basin until the site is fully vegetated.

a. The basin shall be inspected monthly during the first year after construction of all phases.
b. Sediment and debris shall be removed from the basin and the weir area when six inches (0.5 feet) deep.
c. Vegetation shall be replaced, and area reseeded annually or after a storm event to maintain fifty percent plant coverage.
d. All berms and riprap outlets are to be inspected and repaired annually or if damaged by a storm event.

2. Outlet riprap shall be inspected for condition and repaired or replaced as needed.

3. Minor erosion shall be repaired, and the area replanted in accordance with the plans. Should major erosion occur within the basin the inspector (representative of the Homeowners Association) shall notify the Town of Morris Inland Wetland Enforcement Officer. Repairs shall be performed as specified thereafter.

4. The requirements for disposal of materials removed from the detention basins are similar to that of any other BMP. Disposal should be by a Connecticut licensed waste management company and discharged to a Connecticut DEP approved location.

5. A log is to be kept and submitted Annually to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Water Treatment Wastewater Infiltration Units:

1. Infiltration Unit Inspection Ports and the associated pop-up emitter overflow structure shall be checked at 6-month intervals. Accumulation of silt and debris shall be removed from the chambers when it reaches a maximum of 0.5 feet.
2. A log is to be kept and submitted Annually to the Town of Morris Inland Wetland Officer indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Hydraflow Table of Contents

DRAINAGE CALCS 12-19-23.gpw

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Wednesday, 12 / 20 / 2023

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	------	-------	1.487	-------	1.757	2.019	2.427	2.795	3.238	POST DEVELOPEMENT (TO CCB)
4	Rational	------	-------	4.682	-------	5.531	6.356	7.640	8.798	10.19	POST DEVELOPEMENT (TO FOR
5	Rational	------	-------	0.213	-------	0.252	0.289	0.348	0.401	0.464	POST DEVELOPEMENT (TO CCB)
6	Rational	------	-------	0.208	-------	0.246	0.283	0.340	0.391	0.453	POST DEVELOPEMENT (OFF SIT
9	Reservoir(i)	4	-------	0.000	-------	0.000	0.017	0.042	0.093	0.314	FOREBAY AND POND
12	Combine	5, 6, 9,	-------	0.421	-------	0.498	0.572	0.688	0.792	0.918	TOTAL POST DEVELOPEMENT

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	3.238	1	5	972	------	------	------	POST DEVELOPEMENT (TO CCB)
4	Rational	10.19	1	5	3,058	------	------	------	POST DEVELOPEMENT (TO FOR
5	Rational	0.464	1	5	139	------	------	------	POST DEVELOPEMENT (TO CCB)
6	Rational	0.453	1	5	136	------	------	------	POST DEVELOPEMENT (OFF SIT
9	Reservoir(i)	0.314	1	27	1,305	4	104.19	3,267	FOREBAY AND POND
12	Combine	0.918	1	5	1,580	5, 6, 9,	------	------	TOTAL POST DEVELOPEMENT

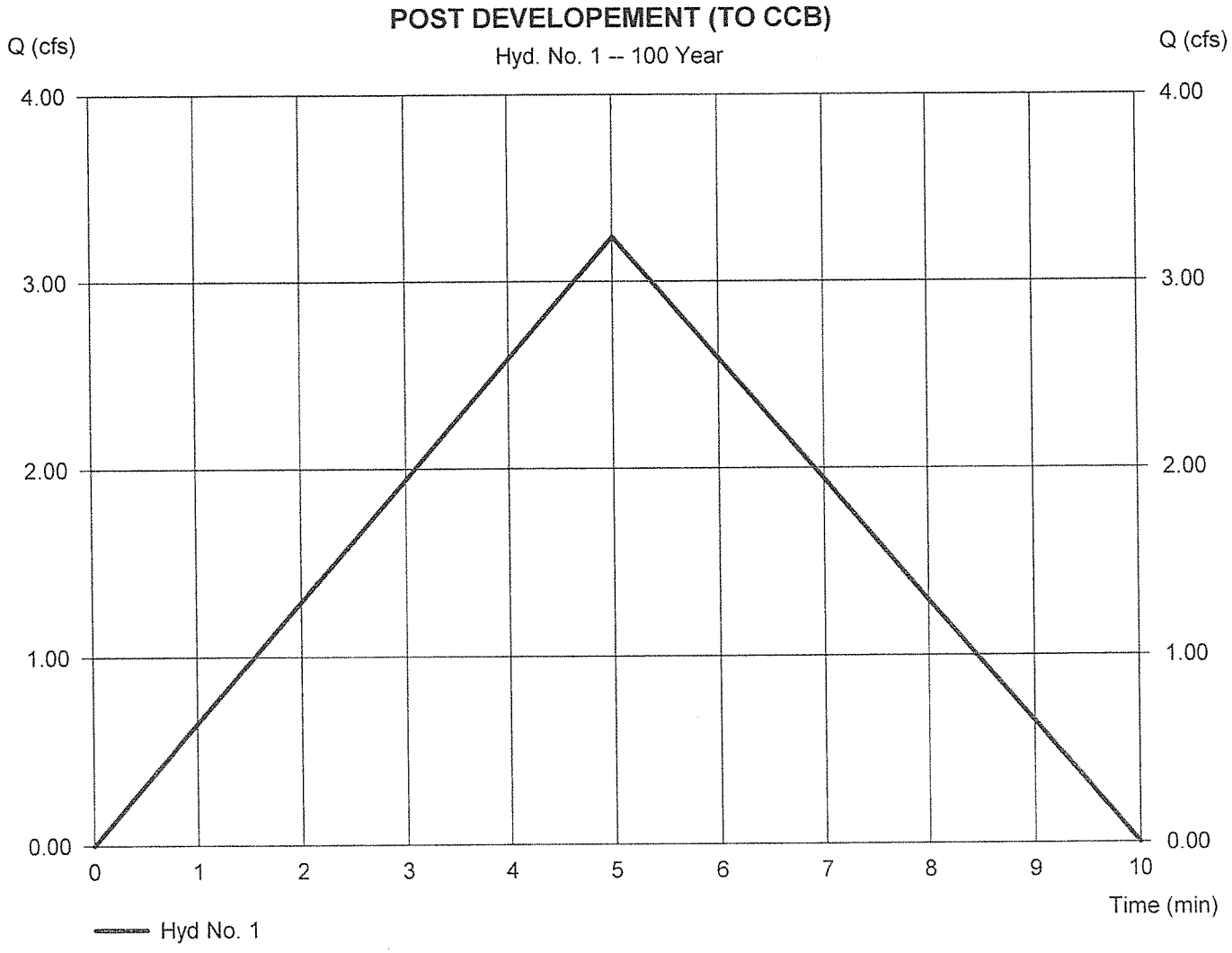
Hydrograph Report

Hyd. No. 1

POST DEVELOPEMENT (TO CCB)

Hydrograph type	= Rational	Peak discharge	= 3.238 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 972 cuft
Drainage area	= 2.200 ac	Runoff coeff.	= 0.15*
Intensity	= 9.814 in/hr	Tc by User	= 5.00 min
IDF Curve	= litch-co.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.300 x 0.15)] / 2.200



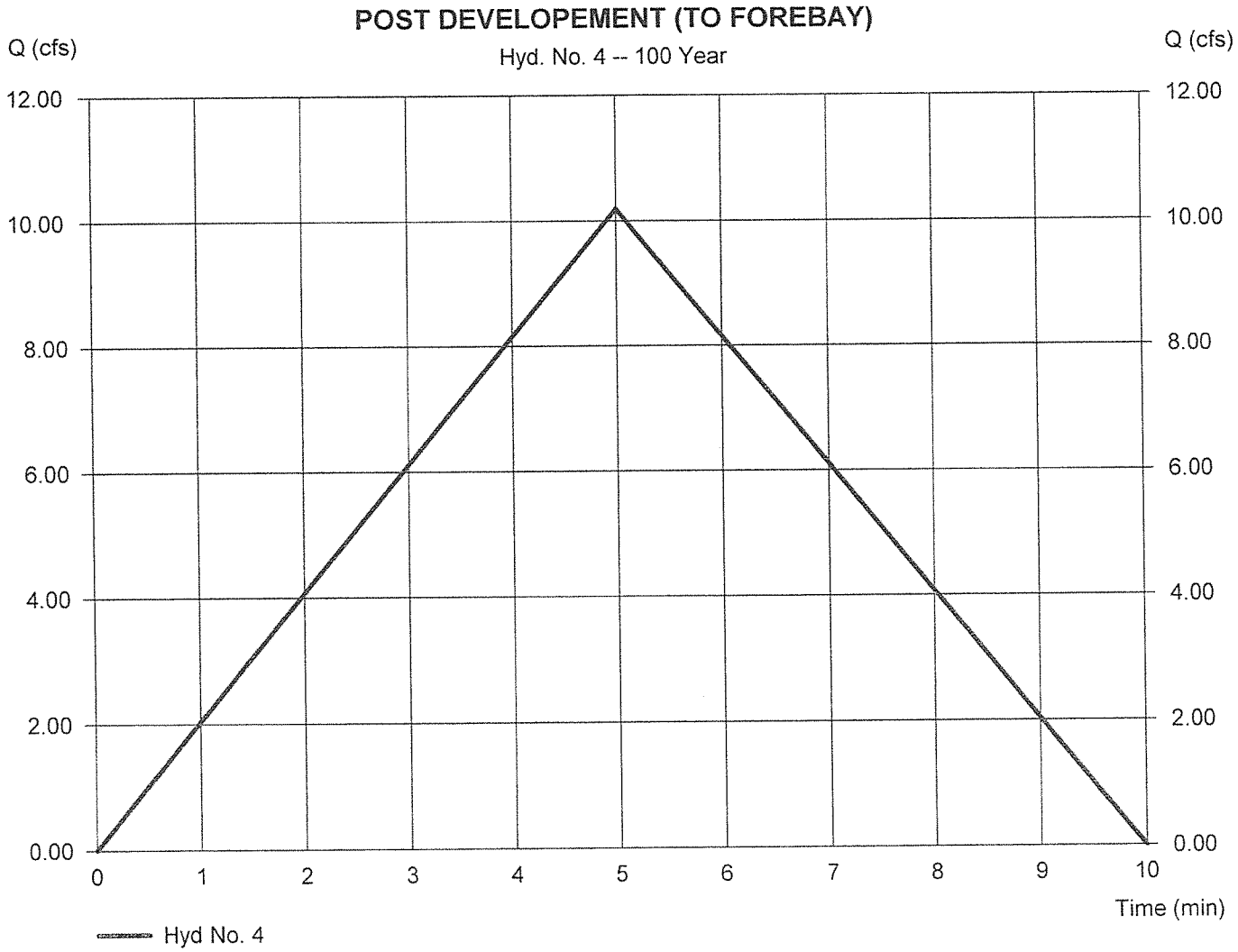
Hydrograph Report

Hyd. No. 4

POST DEVELOPEMENT (TO FOREBAY)

Hydrograph type	= Rational	Peak discharge	= 10.19 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 3,058 cuft
Drainage area	= 2.120 ac	Runoff coeff.	= 0.49*
Intensity	= 9.814 in/hr	Tc by User	= 5.00 min
IDF Curve	= litch-co.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.460 x 0.30) + (0.660 x 0.90)] / 2.120



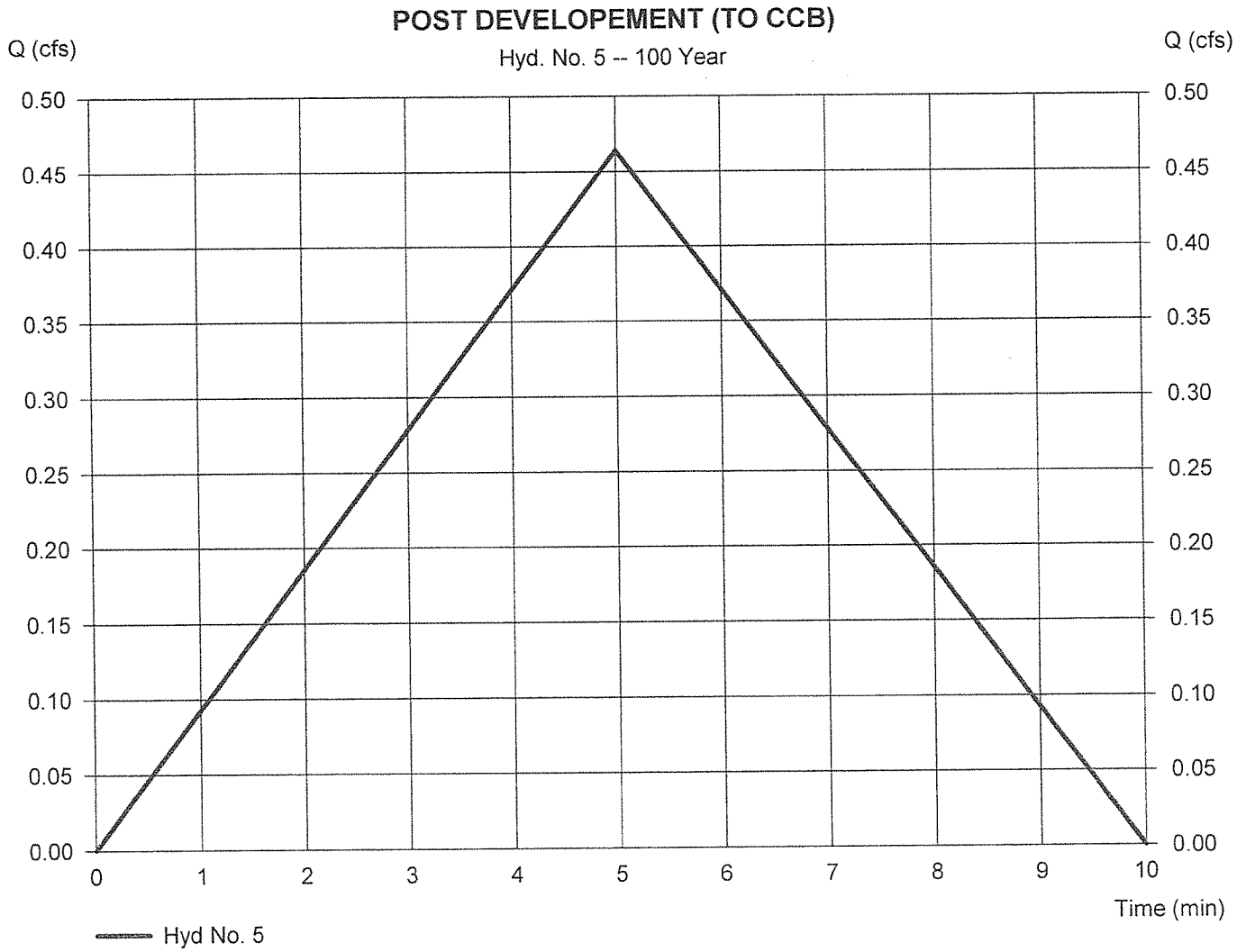
Hydrograph Report

Hyd. No. 5

POST DEVELOPEMENT (TO CCB)

Hydrograph type	= Rational	Peak discharge	= 0.464 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 139 cuft
Drainage area	= 0.110 ac	Runoff coeff.	= 0.43*
Intensity	= 9.814 in/hr	Tc by User	= 5.00 min
IDF Curve	= litch-co.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.030 x 0.90) + (0.080 x 0.25)] / 0.110

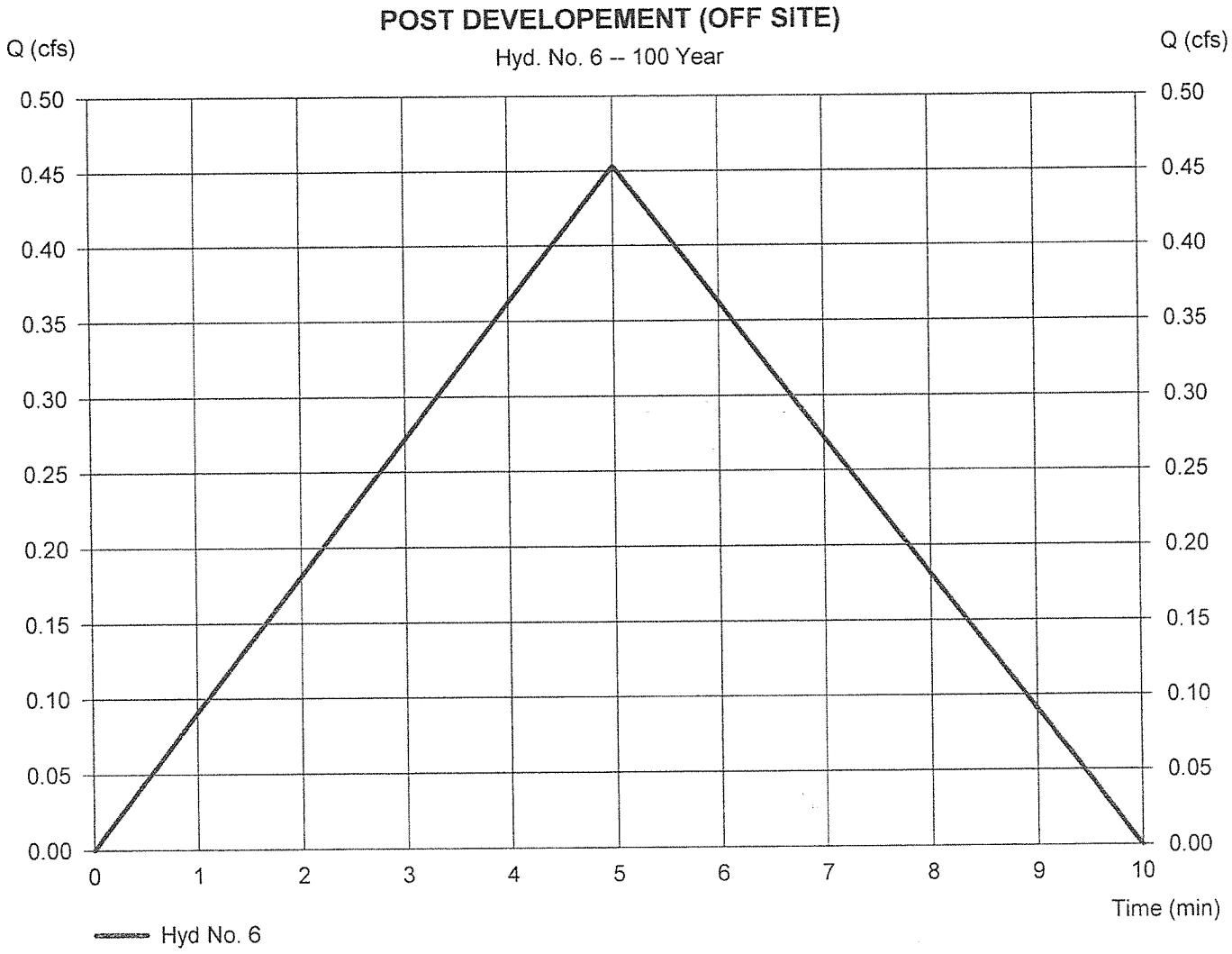


Hydrograph Report

Hyd. No. 6

POST DEVELOPEMENT (OFF SITE)

Hydrograph type	= Rational	Peak discharge	= 0.453 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 136 cuft
Drainage area	= 0.154 ac	Runoff coeff.	= 0.3
Intensity	= 9.814 in/hr	Tc by User	= 5.00 min
IDF Curve	= litch-co.IDF	Asc/Rec limb fact	= 1/1



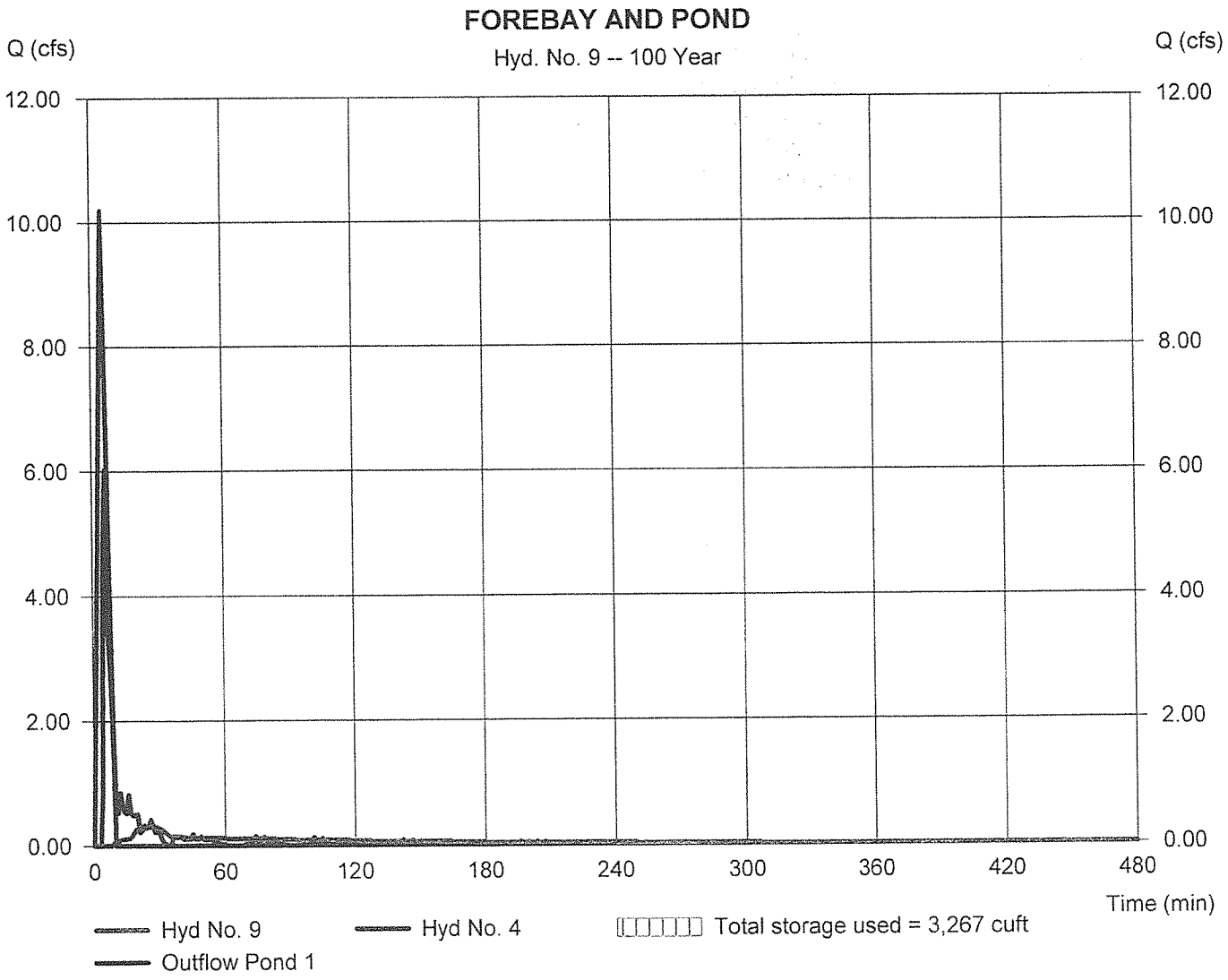
Hydrograph Report

Hyd. No. 9

FOREBAY AND POND

Hydrograph type	= Reservoir (Interconnected)	Peak discharge	= 0.314 cfs
Storm frequency	= 100 yrs	Time to peak	= 27 min
Time interval	= 1 min	Hyd. volume	= 1,305 cuft
Upper Pond	= FOREBAY	Lower Pond	= POND
Inflow hyd.	= 4 - POST DEVELOPEMENT (To FOREBAY)	Outflow hyd.	= None
Max. Elevation	= 104.19 ft	Max. Elevation	= 104.16 ft
Max. Storage	= 1,781 cuft	Max. Storage	= 1,486 cuft

Interconnected Pond Routing. Storage Indication method used.

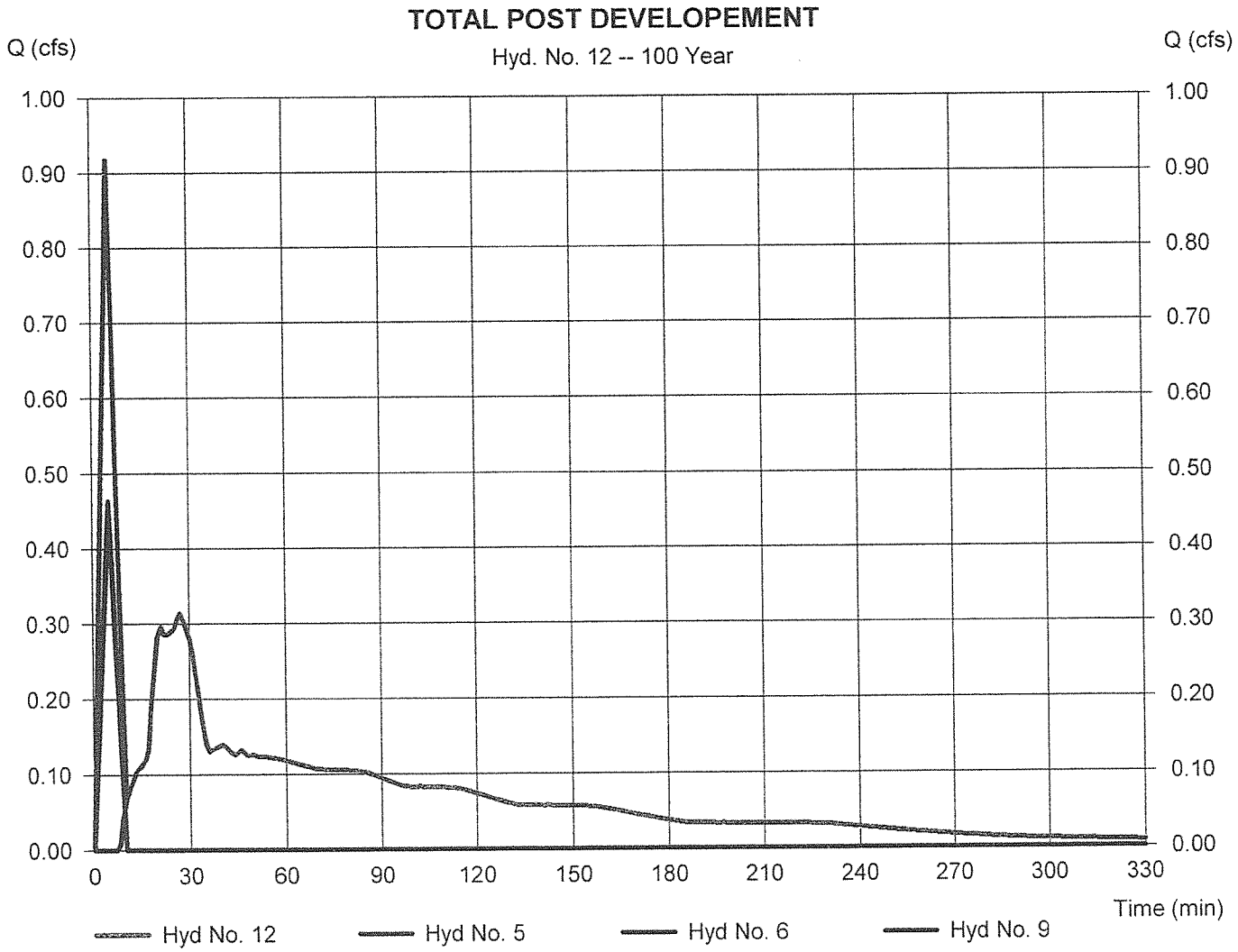


Hydrograph Report

Hyd. No. 12

TOTAL POST DEVELOPEMENT

Hydrograph type	= Combine	Peak discharge	= 0.918 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,580 cuft
Inflow hyds.	= 5, 6, 9	Contrib. drain. area	= 0.264 ac



WATER QUALITY VOLUME ANALYSIS

PROJECT: East Street Housing
PROJ. #: 23-0891
LOCATION: 103 East Street
Morris, Connecticut

WQV = $\frac{\text{"1" (R) (A)}}{12}$

R = VOLUMETRIC RUNOFF COEFFICIENT
= 0.05 + 0.009(I)
I = PERCENT IMPERVIOUS COVER
A = CONTRIBUTING AREA IN ACRES

BASIN IDENTIFICATION: **WQ Forebay**

SITE AREA (ACRES): 2.300
IMPERVIOUS AREA: 0.497

R = 0.2445

I = 21.609

WATER QUALITY VOLUME (WQV) =	**0.0469**	**AC.-FT.**
FOREBAY WQV REQUIRED (10%) =	**0.0047**	**AC.-FT.**

DEPTH OF POOL ft.: 1.5
DEPTH OF STORAGE PROVIDED ft.: 0.5 (0.5' SEDIMENT STORAGE)
AVAILABLE STORAGE VOL. cu.ft.: 655

WATER QUALITY VOLUME PROVIDED =	**0.0150**	**AC.-FT.**

32.1 %

WATER QUALITY VOLUME ANALYSIS

PROJECT: East Street Housing
PROJ. #: 23-0891
LOCATION: 103 East Street
Morris, Connecticut

WQV = "1" (R) (A) / 12

R = VOLUMETRIC RUNOFF COEFFICIENT
= 0.05 + 0.009(I)
I = PERCENT IMPERVIOUS COVER
A = CONTRIBUTING AREA IN ACRES

BASIN IDENTIFICATION: **WQ Basin**

SITE AREA (ACRES): 2.300
IMPERVIOUS AREA: 0.497

R = 0.2445

I = 21.609

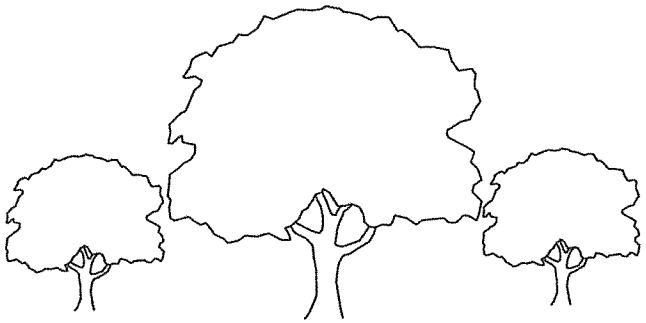
WATER QUALITY VOLUME (WQV) = 0.0469 AC.-FT.
FOREBAY WQV REQUIRED (10%) = 0.0047 AC.-FT.

DEPTH OF POOL ft.: 1.5
DEPTH OF STORAGE PROVIDED ft.: 1.5 (1.5' SEDIMENT STORAGE)
AVAILABLE STORAGE VOL. cu.ft.: 915

WATER QUALITY VOLUME PROVIDED = 0.0210 AC.-FT.
44.8 %

EAST STREET HOUSING

8 UNIT RESIDENTIAL DEVELOPMENT



PREPARED FOR

MORRIS HOUSING AUTHORITY

103 EAST STREET
MORRIS, CONNECTICUT

Hrica Associates LLC

Engineers *Surveyors*

)F DRAWINGS

TITLE

Not Valid Without Original Seal

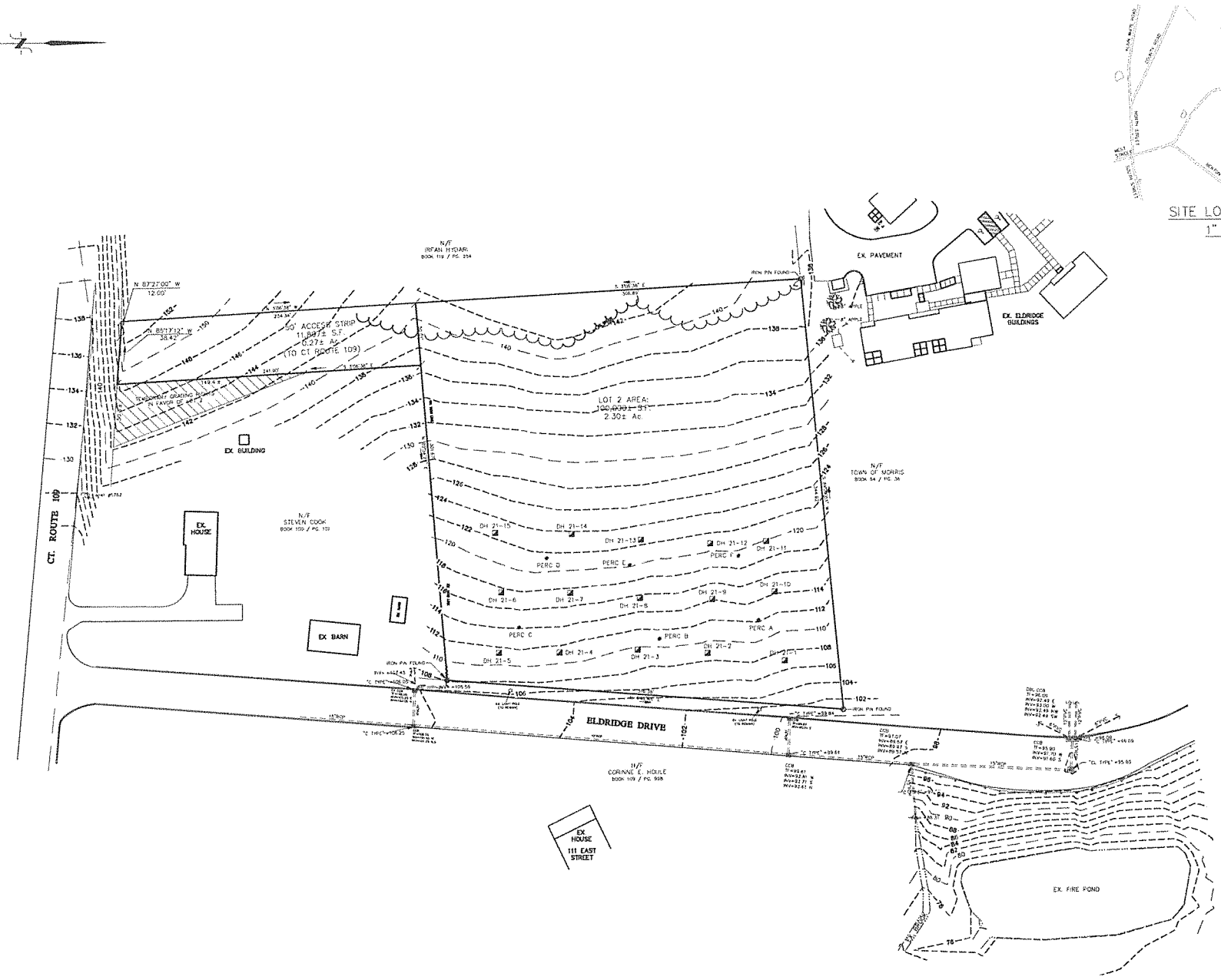
Kenneth S. Hrica, PE,RLS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759

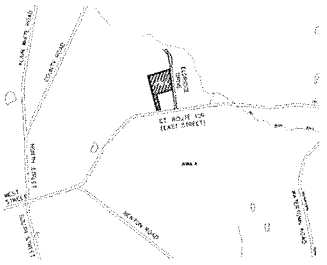
860-567-2112 (business)
860-567-0491 (facsimile)

e-mail:
hricaassociates@optonline.net

JUNE 23, 2023 — Date
DECEME — Lates

EAST STREE
HOUSING
PREPARED FOR
MORRIS HOUSING AUT
103 EAST STREET
MORRIS, CONNECTICU





LEGEND

- PROPERTY LINE
- EXISTING MONUMENT
- EXISTING IRON PIN OR PIPE
- DRILL HOLE
- STONE BOUND
- UTILITY POLE W/ANCHOR
- WELL
- STONE WALL
- CATCH BASIN
- BLDG. SETBACK LINE
- WATERCOURSE
- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- DEEP HOLE
- PERCOLATION TEST
- LOT NUMBER
- STREET NUMBER
- TREE LINE

NOTES:

- BOUNDARY DETERMINATION CATEGORY:
  ORIGINAL PARCEL: DEPENDENT RESURVEY
  PROPOSED LOTS: ORIGINAL SURVEY
- OWNER / APPLICANT
  MORRIS HOUSING AUTHORITY
  103 EAST STREET
  MORRIS, CONNECTICUT 06763
  REF: VOL. 122 / PG. 46-48
  ASSESSORS MAP 17 / BLOCK 389 / LOT 107
- TOTAL AREA = 111,897+/- S.F., 2.57+/- AC.
- ZONE: R-60
- REFER TO THE FOLLOWING MAPS (TC# 535) ON FILE IN MORRIS LAND RECORDS
- ALSO REFER TO THE FOLLOWING MAP:
  "GRADING PLAN, MORRIS ELDERLY HOUSING, MORRIS HOUSING AUTHORITY, TOWN OF MORRIS, CONNECTICUT, PREPARED BY DeCARLO & DOLL INC. SCALE: 1" = 40'"
- REFER TO THE FOLLOWING DEEDS: VOL. 122 / PG. 46-48, VOL. 82 / PG. 78, VOL. 111 / PG. 903-904 ON FILE IN MORRIS LAND RECORDS
- PROPERTY IS SUBJECT TO EASEMENTS, COVENANTS AND RESTRICTIONS AS OF RECORD THEY MAY APPEAR.
- STONE WALLS AND FENCES MAY VARY FROM PRINCIPLE COURSES SHOWN.
- REFER TO SHEET C-4 FOR DEEP HOLE TEST DATA.

"I HEREBY DECLARE THAT TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON". THIS SURVEY CONFORMS TO THE STANDARDS OF AN A-2 SURVEY AND WAS PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THROUGH 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES AND THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996

KENNETH S. HRICA P.E.,L.S. CT LIC. #18668
NOT VALID WITHOUT ORIGINAL SEAL

12/14/23 111 EAST STREET STRUCT
DATE REVISION

EXISTING CON

EAST STR
HOUSIN

103 EAST ST
MORRIS, CONNE

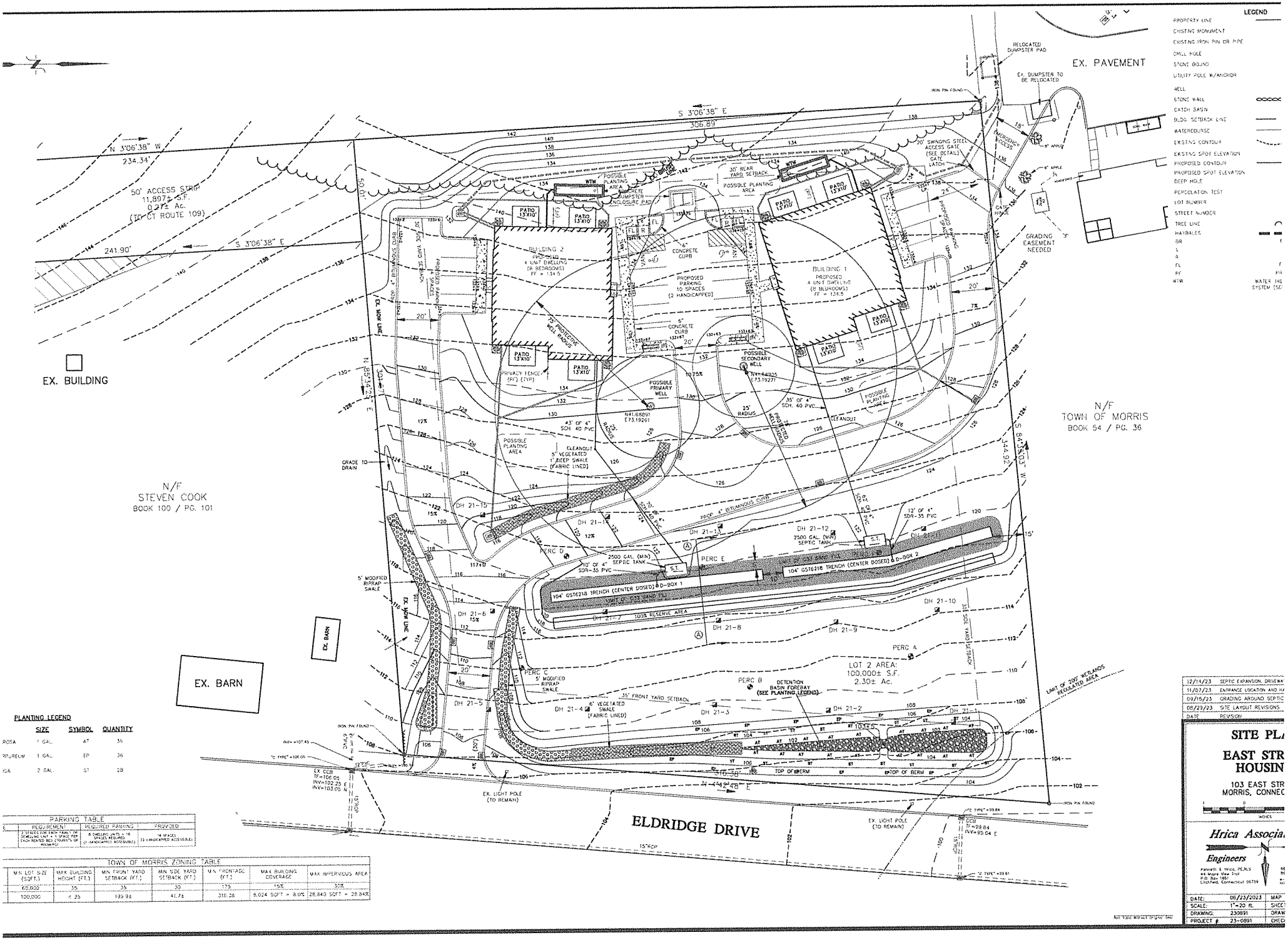
1" = 40'

Hrica Associa

Engineers

Kenneth S. Hrica, PE,LS
88 Maple View Trail
P.O. Box 1981
Litchfield, Connecticut 06759

DATE:	06/23/2023
SCALE:	1"=40 ft.
DRAWING:	230891
PROJECT #:	23-0891



PLANTING LEGEND

	SIZE	SYMBOL	QUANTITY
ROSA	1 GAL.	AT	36
PURPUREUM	1 GAL.	EP	36
YEA	2 GAL.	ST	28

PARKING TABLE

REQUIREMENT	REQUIRED PARKING	PROVIDED
2 SPACES FOR EACH FAMILY OR DWELLING UNIT + 1 SPACE PER EACH RENTED BED (TOWN'S OF MORRIS)	8 DWELLING UNITS = 16 SPACES REQUIRED (1 HANDICAPPED ACCESSIBLE)	18 SPACES (2 HANDICAPPED ACCESSIBLE)

TOWN OF MORRIS ZONING TABLE

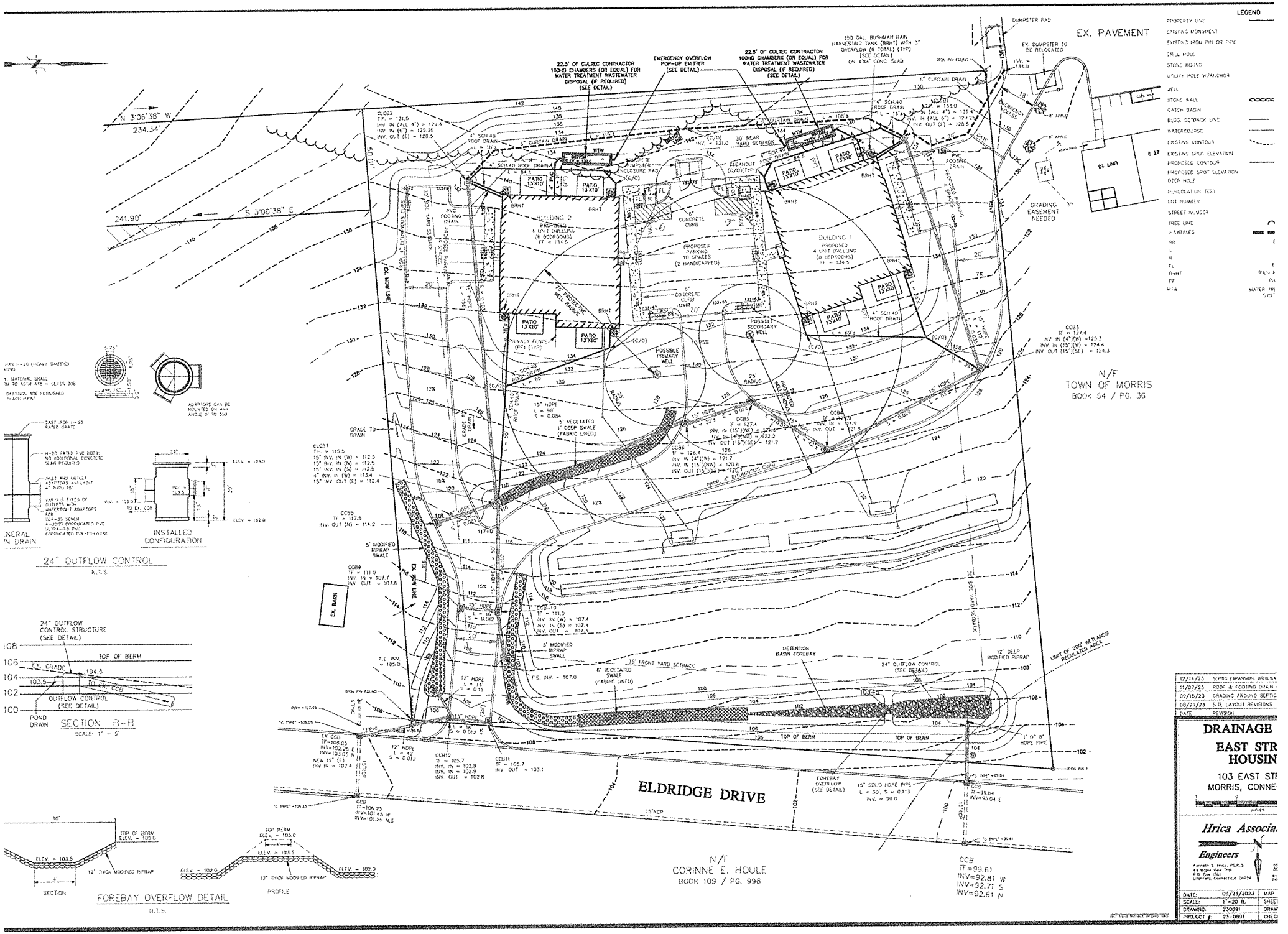
MIN. LOT SIZE (SQ.FT.)	MAX. BUILDING HEIGHT (FT.)	MIN. FRONT YARD SETBACK (FT.)	MIN. SIDE YARD SETBACK (FT.)	MIN. FRONTAGE (FT.)	MAX. BUILDING COVERAGE	MAX. IMPERVIOUS AREA
60,000	35	35	30	175	15%	30%
100,000	< 35	139.9±	41.7±	316.3±	8,024 SQFT = 8.0%	28,840 SQFT = 28.84%

DATE	REVISION
12/14/23	SEPTIC EXPANSION, DRIVEWA
11/07/23	ENTRANCE LOCATION AND HA
09/15/23	GRADING AROUND SEPTIC
08/29/23	SITE LAYOUT REVISIONS

SITE PLA
EAST STR
HOUSIN
103 EAST STR
MORRIS, CONNEC

Hrica Associa
Engineers

DATE:	08/15/2023
SCALE:	1"=20 FT.
DRAWING:	230891
PROJECT #:	23-0891



24" OUTFLOW CONTROL
N.T.S.

SECTION B-B
SCALE: 1" = 5'

FOREBAY OVERFLOW DETAIL
N.T.S.

DATE	REVISION
12/14/23	SEPTIC EXPANSION, DRIVEWA
11/07/23	ROOF & FOOTING DRAIN
09/15/23	GRADING AROUND SEPTIC
08/29/23	SITE LAYOUT REVISIONS

DRAINAGE

EAST STR HOUSIN

103 EAST ST
MORRIS, CONNE

INCHES

Hrica Associa

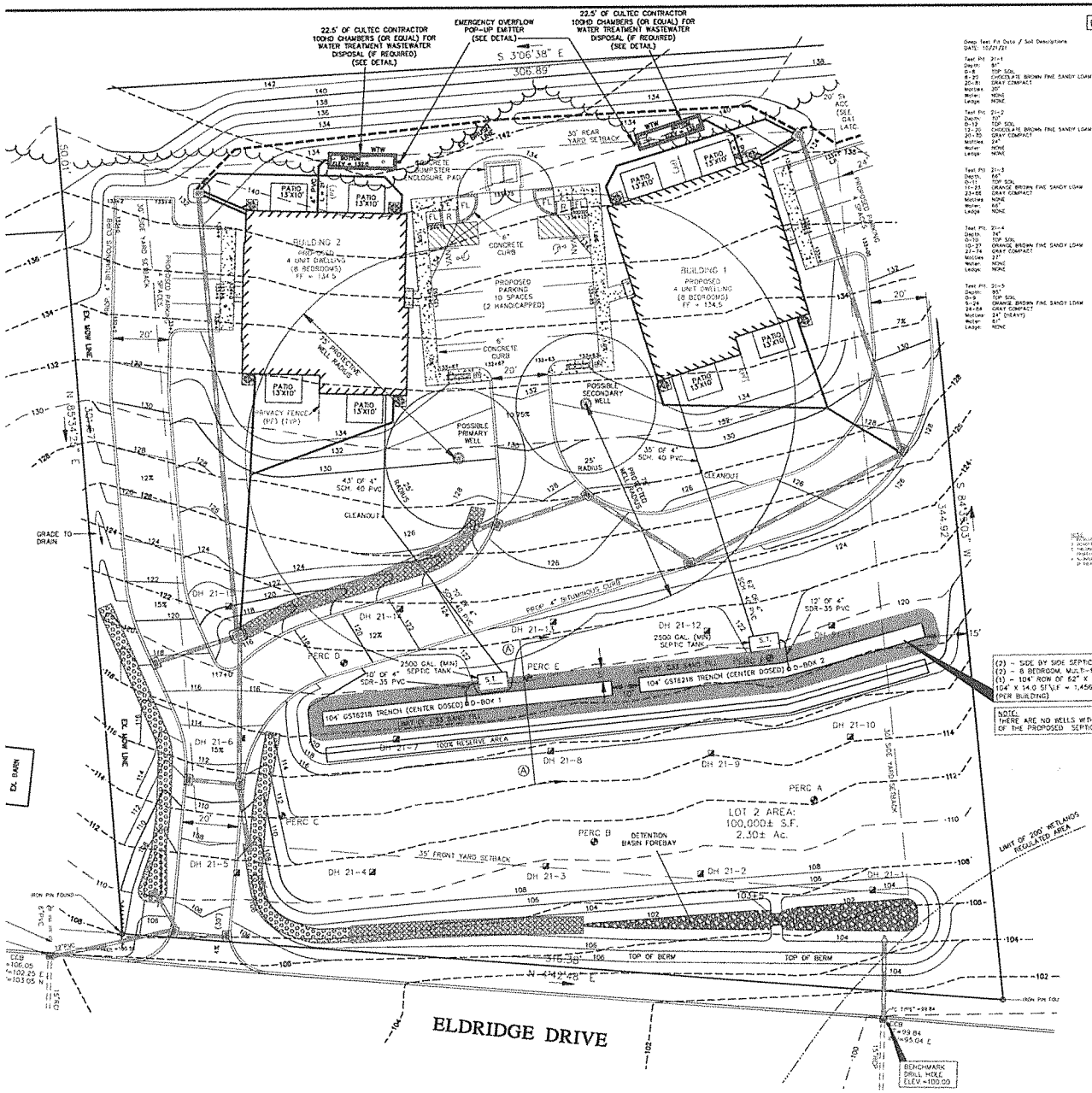
Engineers

Kenneth S. Hrica, PE,RLS
46 Maple View Trail
P.O. Box 1561
Litchfield, Connecticut 06759

DATE:	06/23/2023
SCALE:	1"=20 FT.
DRAWING:	230831
PROJECT #	23-0891

MAP
SHEET
DRAW
CHEC

NOT VALID WITHOUT ORIGINAL SEAL



DEEP HOLE RESULTS

Deep Test Pit Data / Soil Descriptions
DATE: 10/21/21

Test Pit 21-1	Test Pit 21-6	Test Pit 21-11
Depth: 81"	Depth: 81"	Depth: 72"
0-8 TOP SOIL	0-11 TOP SOIL	0-11 TOP SOIL
8-20 CHOCOLATE BROWN FINE SANDY LOAM	11-23 ORANGE BROWN FINE SANDY LOAM	11-21 ORANGE BROWN FINE SANDY LOAM
20-81 GRAY COMPACT	23-81 GRAY COMPACT	21-72 GRAY COMPACT
Mottles: 20"	Mottles: NONE	Mottles: NONE
Water: NONE	Water: 68"	Water: NONE
Ledge: NONE	Ledge: NONE	Ledge: NONE
Test Pit 21-2	**Test Pit 21-7**	**Test Pit 21-12**
Depth: 70"	Depth: 76"	Depth: 72"
0-12 TOP SOIL	0-9 TOP SOIL	0-12 TOP SOIL
12-70 CHOCOLATE BROWN FINE SANDY LOAM	9-76 DULL ORANGE BROWN FINE SANDY LOAM	12-25 ORANGE BROWN FINE SANDY LOAM
70+ NO	22-76 GRAY COMPACT	25-72 GRAY COMPACT
Mottles: 24"	Mottles: NONE	Mottles: NONE
Water: NONE	Water: 64"	Water: NONE
Ledge: NONE	Ledge: NONE	Ledge: NONE
Test Pit 21-3	**Test Pit 21-8**	**Test Pit 21-13**
Depth: 66"	Depth: 84"	Depth: 88"
0-11 TOP SOIL	0-10 TOP SOIL	0-10 TOP SOIL
11-24 ORANGE BROWN FINE SANDY LOAM	10-24 DULL BROWN FINE SANDY LOAM	10-24 ORANGE BROWN FINE SANDY LOAM
24-66 GRAY COMPACT	24-31 GRAY WASHED SANDY LOAM	24-88 GRAY COMPACT
Mottles: NONE	31-66 GRAY COMPACT	Mottles: 24"
Water: 60"	Mottles: 24" to 31"	Water: 76"
Ledge: NONE	Water: NONE	Ledge: NONE
	Ledge: NONE	
Test Pit 21-4	**Test Pit 21-9**	**Test Pit 21-14**
Depth: 74"	Depth: 81"	Depth: 90"
0-10 TOP SOIL	0-10 TOP SOIL	0-8 TOP SOIL
10-27 ORANGE BROWN FINE SANDY LOAM	10-18 ORANGE BROWN FINE SANDY LOAM	8-12 ORANGE BROWN FINE SANDY LOAM
27-74 GRAY COMPACT	18-81 GRAY COMPACT	12-22 GRAY WASH
Mottles: 27"	Mottles: 24"	22-90 GRAY COMPACT
Water: NONE	Water: NONE	Mottles: 12"
Ledge: NONE	Ledge: NONE	Water: NONE
		Ledge: NONE
Test Pit 21-5	**Test Pit 21-10**	**Test Pit 21-15**
Depth: 93"	Depth: 82"	Depth: 78"
0-9 TOP SOIL	0-10 TOP SOIL	0-10 TOP SOIL
9-24 ORANGE BROWN FINE SANDY LOAM	10-24 ORANGE BROWN FINE SANDY LOAM	10-24 ORANGE BROWN FINE SANDY LOAM
24-84 GRAY COMPACT	24-82 GRAY COMPACT	24-78 GRAY COMPACT
Mottles: 24" (HEAVY)	Mottles: 24"	Mottles: 24"
Water: 61"	Water: NONE	Water: 60"
Ledge: NONE	Ledge: NONE	Ledge: NONE
	Rocks: 24"	

PERCOLATION TEST RESULTS

Perc A	Perc D
Depth: 18"	Depth: 22"
Pressure: 2 HR	Pressure: 2 HR
Time	Time
0 4 1/2	0 5 1/2
10 5 1/4 5.71	10 7 5/8 4.71
20 5/8 7.27	20 8 1/2 5.33
30 8 1/2 11.43	30 10 3/4 8.00
40 8 3/4 8.00	40 12 8.00
50 10 3/4 16.00	50 DRY
60 11 16.00	60
Perc Rate: 1" IN 16 MIN	Perc Rate: 1" IN 8 MIN
Perc B	Perc E
Depth: 20"	Depth: 20"
Pressure: 2 HR	Pressure: 2 HR
Time	Time
0 5	0 4 3/4
10 6 1/2 6.67	10 7 1/2 3.64
20 7 7/8 7.27	20 9 1/2 5.00
30 9 1/4 7.27	30 10 3/4 8.00
40 10 3/8 8.91	40 12 1/4 6.67
50 11 1/4 11.43	50 DRY
60 12 13.33	60
Perc Rate: 1" in 13.33 MIN	Perc Rate: 1" IN 8.67 MIN
Perc C	Perc F
Depth: 18"	Depth: 22"
Pressure: 2 HR	Pressure: 2 HR
Time	Time
0 3 1/2	0 10 1/2
10 4 3/4 4.44	10 12 3/4 4.44
20 7 2/8 6.15	20 14 1/2 6.67
30 8 3/4 7.27	30 16 1/2 8.00
45 10 8.00	40 18 1/2 10.00
50 11 1/4 8.00	50 20 1/2 10.00
60 DRY	60 18 1/2 10.00
Perc Rate: 1" IN 8 MIN	Perc Rate: 1" IN 10 MIN

LEGEND

PROPERTY LINE
EXISTING MONUMENT
EXISTING IRON PIN OR PIPE
DRILL HOLE
STONE BOUND
UTILITY POLE W/ANCHOR
WELL
STONE WALL
CATCH BASIN
BLDG. SETBACK LINE
WATERCOURSE
EXISTING CONTOUR
EXISTING SPOT ELEVATION
PROPOSED CONTOUR
PROPOSED SPOT ELEVATION
DEEP HOLE
PERCOLATION TEST
LOT NUMBER
STREET NUMBER
TREE LINE
BW
L
R
FL
PF
WTW

(2) - SIDE BY SIDE SEPTIC SYSTEM LEACHING AREAS FOR (2) - 8 BEDROOM, MULTI-FAMILY BUILDINGS.
(1) - 104' ROW OF 62" K 18" GEOMATRIX GST6218 TRENCH.
104' X 14.0 SF/LF = 1,456 S.F. PROVIDED, 1,320 REQUIRED. (PER BUILDING)

NOTE:
THERE ARE NO WELLS WITHIN 75 FEET OF THE PROPOSED SEPTIC SYSTEM

DRAINAGE POPUP EMITTER

SEWER LINE CLEANOUT DE
N.T.S.

CULTEC CONTRACTOR 100HD CHAMBER
N.T.S.

GEOMATRIX GST 6218 DETAIL
NOT TO SCALE

C-33 SAND FILL (CONCRETE SAND) SPECIFICATION:
C-33 SAND FILL PLACED WITHIN AND ADJACENT TO LEACHING SYSTEM AREAS SHALL BE COMPOSED OF CLEAN SAND, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. THE SAND FILL SHALL MEET THE FOLLOWING REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	5-30
#100	0-10
#200	

SYSTEM CRITERIA

OF BEDROOMS:	8 (PER BUILDING)
APACITY BATHTUB:	NO
DISPOSAL:	NO
ERCOLATION RATE:	0 TO 10.1 MINUTES/INCH
) SEPTIC TANK SIZE:	2500 GALLONS (PER BUILDING)
) LEACHING AREA:	1320 SQ.FT. (PER BUILDING)
: AREA PROVIDED:	1,456 SQ.FT. (PER BUILDING)
AREA PROVIDED:	1,456 SQ.FT. (PER BUILDING)

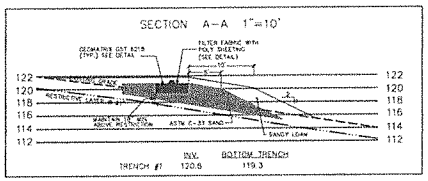
MINIMUM LEACHING SYSTEM SPREAD (MLSS)

AVERAGE HYDRAULIC GRADIENT:	13.6%	
DEPTH TO RESTRICTIVE LAYER (AVG.):	23.1 INCHES	
HYDRAULIC FACTOR:	26	
FLOW FACTOR:	4 (8 BEDROOMS)	(PER BUILDING)
PERCOLATION FACTOR:	1.0	
MLSS REQUIRED:	104 FEET	(PER BUILDING)
MLSS PROVIDED:	104 FEET	(PER BUILDING)

SEPTIC SYSTEM DESIGN ELEVATIONS

STRUCTURE	IN.	OUT
INV. AT HOUSE		133.0 (BOTH)
SEPTIC TANK	121.45	121.2 (BOTH)
D-BOX #1,#2	121.0	120.8 (TO TRENCH)(BOTH)

SECTION A-A 1"=10'

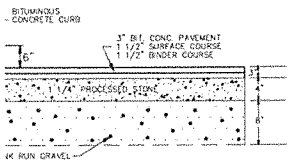


DATE	REVISION
12/04/23	SEPTIC LAYOUT UPDATED TO

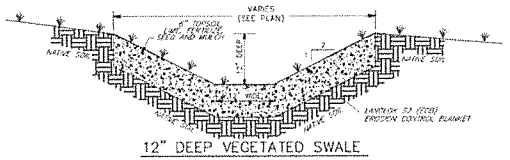
SEPTIC SYS DESIGN P EAST STR HOUSIN
103 EAST ST
MORRIS, CONNE

Hrica Associa
Engineers
Kenneth S. Hrica, PE/LS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759

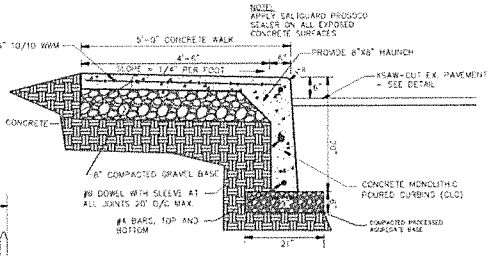
DATE:	6/23/2023
SCALE:	1"=20 ft.
DRAWING:	230691
PROJECT #	23-0851
MAP	
SHEE	
DRAW	
CHEC	



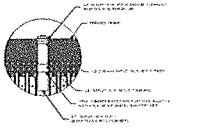
ARKING & DRIVEWAY DETAIL
N.T.S.

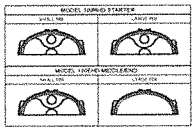


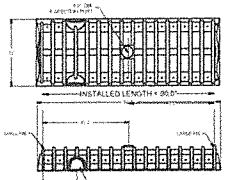
12" DEEP VEGETATED SWALE
N.T.S.

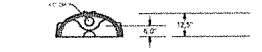


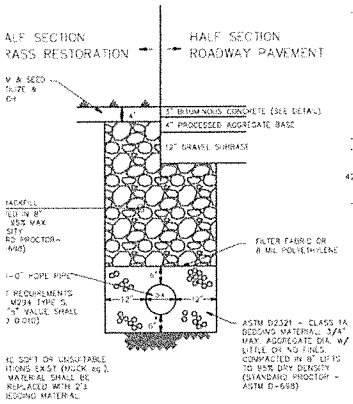
SIDEWALK WITH MONOLITHIC CURB
N.T.S.



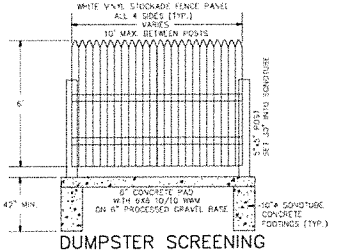




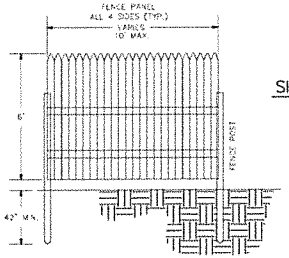




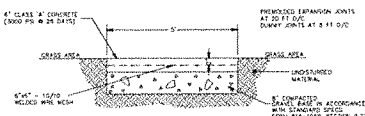
DETAIL - STORM SEWER TRENCH
N.T.S.



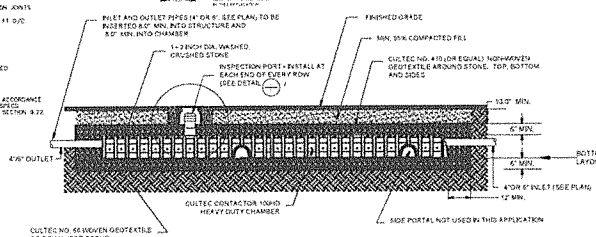
DUMPSTER SCREENING AND PAD DETAIL
N.T.S.



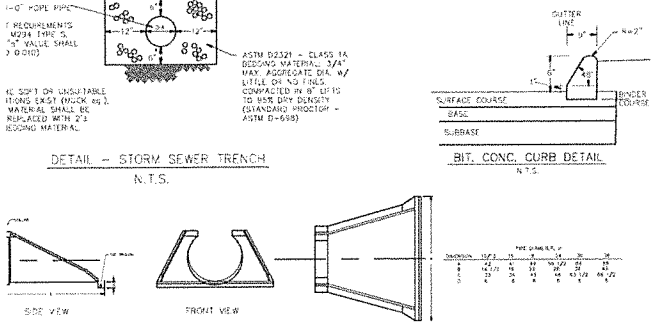
PRIVACY FENCE DETAIL
N.T.S.



CONCRETE SIDEWALK DETAIL
N.T.S.

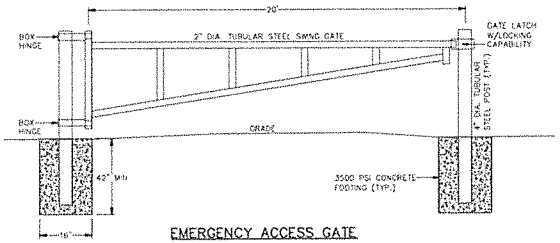


CULTEC CONTRACTOR 100HD CHAMBER
N.T.S.

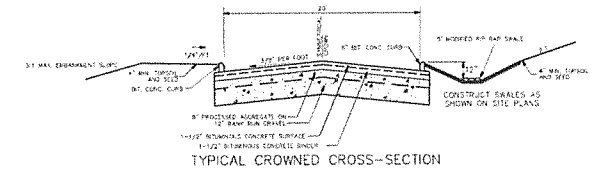


HI-Q FLARED END SECTION
N.T.S.

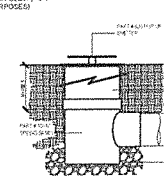
BIT. CONC. CURB DETAIL
N.T.S.



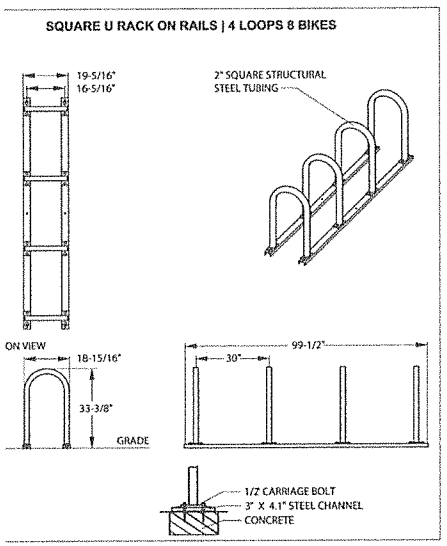
EMERGENCY ACCESS GATE
NOT TO SCALE



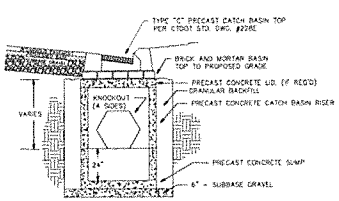
TYPICAL CROWNED CROSS-SECTION
20' WIDE ROAD
N.T.S.



DRAINAGE POP-UP EMITTER

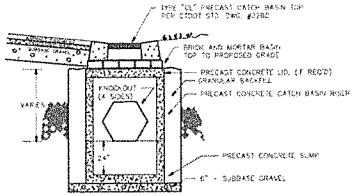


BELSON OUTDOORS BIKE RACK
MODEL #U200-8-P (OR EQUAL)
N.T.S.



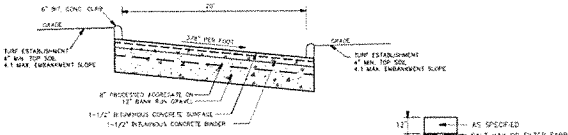
NOTE - 1) ALL PRECAST COMPONENTS TO BE ABLE TO WITHSTAND HS-20 WHEEL LOADING
- 2) BACKFILL TO BE COMPACTED IN 8" LIFTS AROUND BASIN
- 3) TYPE C-I, OR C-G BASIN TOP MAY BE SUBSTITUTED ABOVE WHERE CALLED FOR ON THE PLANS

DETAIL - PRECAST CATCH BASIN WITH TYPE "C" CATCH BASIN TOP
SCALE 1/4"=1'-0"

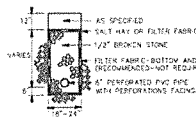


NOTE - 1) ALL PRECAST COMPONENTS TO BE ABLE TO WITHSTAND HS-20 WHEEL LOADING
- 2) BACKFILL TO BE COMPACTED IN 8" LIFTS AROUND BASIN
- 3) TYPE C OR C-G BASIN TOP MAY BE SUBSTITUTED ABOVE WHERE CALLED FOR ON THE PLANS

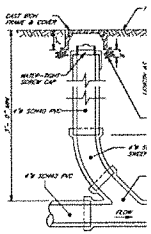
DETAIL - PRECAST CATCH BASIN WITH TYPE CL CATCH BASIN TOP
SCALE 1/4"=1'-0"



TYPICAL CROSS-SLOPE CROSS-SECTION
20' WIDE ROAD
N.T.S.



CURTAIN DRAIN DETAIL
SCALE 1/4"=1'-0"



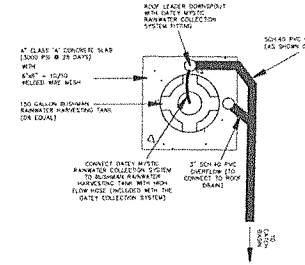
SEWER LINE CLEAN
N.T.S.

HANDICAP SPECIFICATIONS:

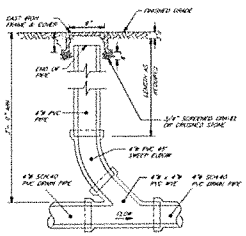
-PRIMARY ENTRANCE WALK & RAMP NOT TO EXCEED 1 IN 20 SLOPE
-PROVIDE 5' LANDING AT PRIMARY ACCESS DOOR.
-LANDING WIDTH TO EXTEND 2' MIN ON LATCH SIDE OF DOOR.
-EACH H.C. SPACE TO HAVE ABOVE GRADE SIGN WITH SYMBOL & THE FOLLOWING STATEMENTS:"RESERVED PARKING PERMIT REQUIRED" & "VIOLATORS WILL BE FINED".
-H.C. CURB CUTS TO BE CONSTRUCTED OF SLIP RESISTANT SURFACE, AT MAX. 1 IN 12 GRADIENT AND MINIMUM OF 4 FEET WIDE.
-H.C. ACCESS WALKS TO BE MINIMUM 4' WIDE WITH MIN. 5' PASSING ZONES WHERE REQUIRED.
-H.C. REQUIREMENTS TO CONFORM TO CT & ADA REQUIREMENTS.

HANDICAP SIGN DETAIL
N.T.S.

HANDICAPPED PARKING STALL LAYOUT
N.T.S.



BUSHMAN RAINWATER HARVESTING TANK LAYOUT (BRHT)
N.T.S.



4" ROOF DRAIN CLEANOUT DETAIL
N.T.S.

DATE	REVISION
12/04/23	SEWER LINE CLEANOUT DETAIL A
11/07/23	EMERGENCY ACCESS GA
08/29/23	SITE LAYOUT REVISIONS

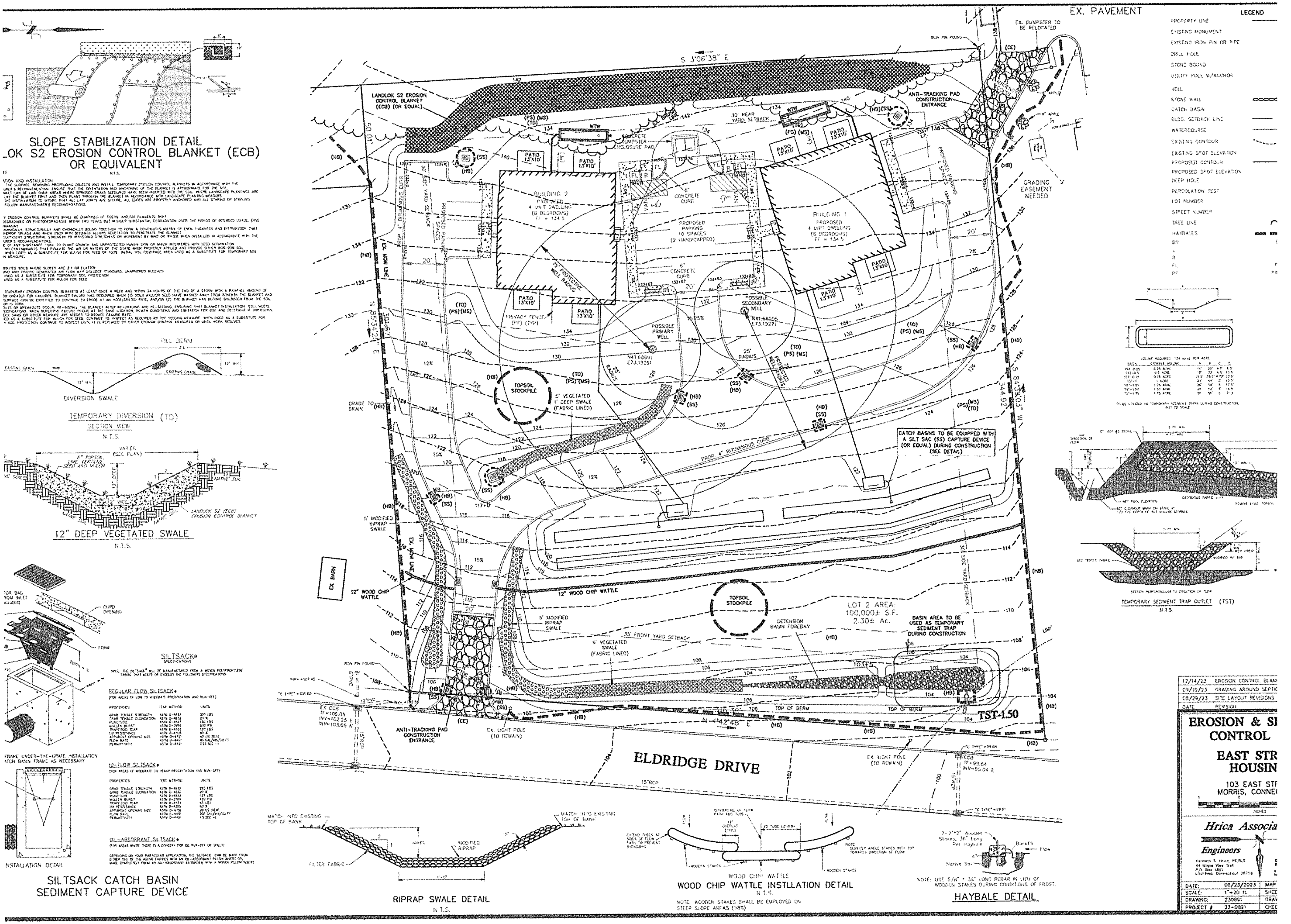
CONSTRUCTIO
& DETA

EAST STR
HOUSIN

103 EAST ST
MORRIS, CONNE

Hrica Associa
Engineers
Kenneth S. Hrica, PE/LS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759

DATE:	6/23/2023
SCALE:	N/A
DRAWING:	230891
PROJECT #:	23-0891


SLOPE STABILIZATION DETAIL
LOK S2 EROSION CONTROL BLANKET (ECB) OR EQUIVALENT
N.T.S.
FILL BERM
EXISTING GRADE
DIVERSION SWALE
TEMPORARY DIVERSION (TD)
SECTION VIEW
N.T.S.
VARIES (SEE PLAN)
6" TOPSOIL, LIME, FERTILIZE, SEED AND MULCH
NATIVE SOIL
LANDLOK S2 (ECB) EROSION CONTROL BLANKET
12" DEEP VEGETATED SWALE
N.T.S.
CURB OPENING
FOAM
SILTSACK®
SPECIFICATIONS
REGULAR FLOW SILTSACK®
HI-FLOW SILTSACK®
OIL-ABSORBANT SILTSACK®
INSTALLATION DETAIL
SILTSACK CATCH BASIN
SEDIMENT CAPTURE DEVICE
EX. PAVEMENT
EX. DUMPSTER TO BE RELOCATED
S 3°06'38" E
LANDLOK S2 EROSION CONTROL BLANKET (ECB) (OR EQUAL)
ANTI-TRACKING PAD CONSTRUCTION ENTRANCE
30' REAR YARD SETBACK
CONCRETE DUMPSTER ENCLOSURE PAD
PATIO 13'X10'
BUILDING 2
PROPOSED 4 UNIT DWELLING (8 BEDROOMS) FF = 134.5
BUILDING 1
PROPOSED 4 UNIT DWELLING (8 BEDROOMS) FF = 134.5
PROPOSED PARKING 10 SPACES (2 HANDICAPPED)
PROPOSED PARKING 4 SPACES
6" CONCRETE CURB
GRADING EASEMENT NEEDED
30' SIDE YARD SETBACK
PRIVACY FENCE (PF) (TYP)
75' PROTECTIVE WELL RADIUS
POSSIBLE PRIMARY WELL
N41.68891 E73.19261
POSSIBLE SECONDARY WELL
N41.68905 E73.19271
25' RADIUS
TOPSOIL STOCKPILE
5' VEGETATED 1' DEEP SWALE (FABRIC LINED)
PROP. 4" BITUMINOUS CURB
CATCH BASINS TO BE EQUIPPED WITH A SILT SAC (SS) CAPTURE DEVICE (OR EQUAL) DURING CONSTRUCTION (SEE DETAIL)
S 84°33'03" W
344.92'
N 85°34'24" E
301.67'
EX. MOW LINE
GRADE TO DRAIN
5' MODIFIED RIPRAP SWALE
12" WOOD CHIP WATTLE
EX. BARN
LOT 2 AREA: 100,000± S.F. 2.30± Ac.
DETENTION BASIN FOREBAY
BASIN AREA TO BE USED AS TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION
35' FRONT YARD SETBACK
6' VEGETATED SWALE (FABRIC LINED)
TOP OF BERM
TST-1.50
EX. LIGHT POLE (TO REMAIN)
ELDRIDGE DRIVE
15"RCP
EX. CCB TF=106.05 INV=102.25 E INV=103.05 N
CCB TF=99.84 INV=95.04 E
MATCH INTO EXISTING TOP OF BANK
MODIFIED RIPRAP
FILTER FABRIC
RIPRAP SWALE DETAIL
N.T.S.
WOOD CHIP WATTLE
WOOD CHIP WATTLE INSTLLATION DETAIL
N.T.S.
NOTE: WOODEN STAKES SHALL BE EMPLOYED ON STEEP SLOPE AREAS (>8%)
2-2"x2" Wooden Stakes, 36" Long Per Haybale
Backfill
Flow
Native Soil
NOTE: USE 5/8" x 35" LONG REBAR IN LIEU OF WOODEN STAKES DURING CONDITIONS OF FROST.
HAYBALE DETAIL
TEMPORARY SEDIMENT TRAP OUTLET (TST)
N.T.S.
LEGEND
PROPERTY LINE
EXISTING MONUMENT
EXISTING IRON PIN OR PIPE
DRILL HOLE
STONE BOUND
UTILITY POLE W/ANCHOR
WELL
STONE WALL
CATCH BASIN
BLDG. SETBACK LINE
WATERCOURSE
EXISTING CONTOUR
EXISTING SPOT ELEVATION
PROPOSED CONTOUR
PROPOSED SPOT ELEVATION
DEEP HOLE
PERCOLATION TEST
LOT NUMBER
STREET NUMBER
TREE LINE
HAYBALES
12/14/23 EROSION CONTROL BLAN
09/15/23 GRADING AROUND SEPTIC
08/29/23 SITE LAYOUT REVISIONS
DATE REVISION
EROSION & S
CONTROL
EAST STR
HOUSIN
103 EAST STR
MORRIS, CONNEC
Hrica Associa
Engineers
Kenneth S. Hrica, PE/LS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759
DATE: 06/23/2023
SCALE: 1"=20 ft.
DRAWING: 230891
PROJECT # 23-0891

(TO) TOPSOILING

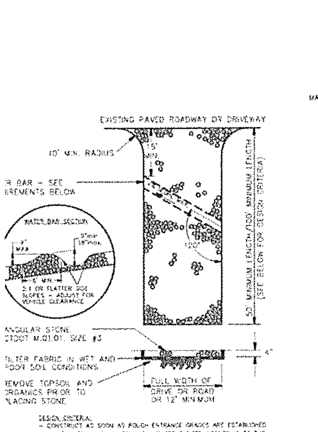
[illegible]ALS
[SITE] INVESTIGATIONS SHALL BE MADE TO DETERMINE IF THERE IS [SUFF]ICIENT TOPSOIL OF GOOD QUALITY TO JUSTIFY STRIPPING. HIGH [QU]ALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, [SILT]Y LOAM, SANDY CLAY LOAM, CLAY LOAM). OTHER SOIL TYPES WITH [HIG]H ORGANIC CONTENT MAY BE FOUND SUITABLE AFTER TESTING. IT [SHA]LL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS, AND [NOX]IOUS WEEDS. IT SHALL GIVE EVIDENCE OF BEING ABLE TO [SU]PPORT HEALTHY VEGETATION. IT SHALL CONTAIN NO SUBSTANCE [TH]AT IS POTENTIALLY TOXIC TO PLANT GROWTH.

[THE] TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY FOR THE [FOL]LOWING AND SHALL MEET THE REQUIREMENTS GIVEN:

CONTAINING NOT LESS THAN 6% AND NOT MORE THAN 20% ORGANIC MATTER AS DETERMINED BY LOSS-ON-IGNITION OF OVEN DRIED SAMPLES DRIED AT 105 DEGREES CENTIGRADE.
pH RANGE SHALL BE 6.0-7.5. IF pH IS LESS THAN 6.0, LIME SHALL BE ADDED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
SOLUBLE SALTS SHALL NOT EXCEED 500 PPM.

[IF] ADDITIONAL OFF-SITE TOPSOIL IS NEEDED, IT MUST MEET THE [STA]NDARDS STATED ABOVE.

[STRIP]PING
[STR]IPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION [ARE]A. A 4 TO 6 INCH STRIPPING DEPTH IS COMMON, BUT DEPTH MAY [VA]RY DEPENDING ON THE PARTICULAR SOIL. ALL PERIMETER DIKES, [BA]SINS, AND OTHER SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO [STR]IPPING.
[STOCK]PILING
[T]OPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL [DR]AINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE [SH]ALL RESULT.
[T]OPSOIL STOCKPILES NEED TO BE LOCATED AWAY FROM ALL [CO]NSTRUCTION ACTIVITIES.
[S]LOPES
[THE] SIDE SLOPES OF ALL STOCKPILES SHALL NOT EXCEED 2 TO 1.
[SEDIME]NT BARRIER
[A] SEDIMENT BARRIER OF GEOSYNTHETIC SILT FENCE SHALL SURROUND [ALL] TOPSOIL STOCKPILES.
[TEMPO]RARY SEEDING
[TEM]PORARY SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 30 [DA]YS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH THE [TEM]PORARY VEGETATIVE COVER MEASURE.
[SITE P]REPARATION
[BEF]ORE TOPSOILING, ESTABLISH NEEDED EROSION AND SEDIMENT [CO]NTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION [ST]RUCTURES, WATERWAYS, SILT FENCE AND SEDIMENT BASINS. [THE]SE MEASURES MUST BE MAINTAINED DURING TOPSOILING.
[GRADI]NG
[PRE]VIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED [SH]ALL BE MAINTAINED ACCORDING TO THE APPROVED PLAN.
[LIMING]
[WHE]RE THE pH OF THE SUBSOIL IS 6.0 OR LESS, GROUND [AGR]ICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH THE [SOI]L TEST OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
[BONDI]NG
[AF]TER THE AREA TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND [IMM]EDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING SCARIFYING OR TRACKING TO A DEPTH OF AT LEAST 4 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
[SPREAD]ING TOPSOIL
[TO]PSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY [CO]NDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR IN A [CO]NDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING [AND] PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE [UNI]FORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 [INC]HES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM [TO]PSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO [PR]EVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. [IT] IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD [CO]NTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A UNIFORM FIRM [SE]EDBED FOR THE ESTABLISHMENT OF A HIGH MAINTENANCE TURF. [HO]WEVER, UNDUE COMPACTION IS TO BE AVOIDED AS IT INCREASES [RU]NOFF VELOCITY AND VOLUME, AND PREVENTS SEED GERMINATION.
[HERBICIDE]S AND HERBICIDES
[PE]RMANENT SEEDINGS OR SOD WILL NOT BE ESTABLISHED IN TOPSOIL [TH]AT HAS BEEN TREATED WITH HERBICIDES WHICH WOULD INHIBIT [GR]ASS GROWTH. TOPSOIL SO TREATED WILL BE STOCKPILED FOR ONE [YE]AR TO ALLOW BREAKDOWN OF HERBICIDE RESIDUES OR TOPSOIL WILL BE COVERED WITH 6 INCHES OF UNTREATED TOPSOIL TO SERVE AS A [S]EEDBED.



DESIGN CRITERIA:
- CONSTRUCT AS SOON AS ROUGH ENTRANCE GRADES ARE ESTABLISHED.
- STONE MATERIAL SHALL BE ANGULAR STONE SIZED ACCORDING TO THE STANDARDS SET BY ASTM C-33, SIZE NO. 2 OR 3, OR DOT STANDARD SPECIFICATIONS SECTION M.01.01, SIZE #3.
- AT POORLY DRAINED LOCATIONS SUBSURFACE DRAINAGE SHOULD BE INSTALLED BEFORE INSTALLING THE STABILIZED CONSTRUCTION ENTRANCE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR PAVED AREAS. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
- MINIMUM LENGTH OF ENTRANCE: A 50 FOOT MINIMUM LENGTH EXCEPT WHERE THE TRACKED SEDIMENTS CONTAIN LESS THAN 80% SAND, A 100 FOOT MINIMUM IS REQUIRED. SEE SITE DEVELOPMENT PLAN FOR LENGTH AND/OR ADDITIONAL INFORMATION.
- IF GRADE OF CONSTRUCTION ENTRANCE DRAINS TO THE PAVED SURFACE AND EXCEEDS 2%, CONSTRUCT A "WATER BAR" WITHIN THE CONSTRUCTION ENTRANCE AT LEAST 15 FEET FROM ITS ENTRANCE ON THE PAVED SURFACE DIVERTING RUNOFF TO A FILTERING AREA OF STAKED FILTRATION FENCE.

) ANTI-TRACKING PAD CONSTRUCTION ENTRANCE

N.T.S.

[R]EFERENCE: 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL HANDBOOK

(PS) PERMANENT SEEDING

[TI]MING
SEED WITH A PERMANENT SEED MIXTURE WITHIN 7 DAYS AFTER ESTABLISHING FINAL GRADES OR WHEN GRADING WORK WITHIN A DISTURBED ARE IS TO BE SUSPENDED FOR A PERIOD OF MORE THAN 1 YEAR. SEEDING IS RECOMMENDED FROM APRIL 1 THROUGH JUNE 15 AND AUGUST 15 THROUGH OCTOBER 1.
FOR THE COASTAL TOWNS AND IN THE CONNECTICUT RIVER VALLEY FINAL FALL SEEDING DATES CAN BE EXTENDED AN ADDITIONAL 15 DAYS, AND DORMANT OR FROST CRACK SEEDING IS DONE AFTER THE GROUND IS FROZEN.

A. SITE PREPARATION
GRADE IN ACCORDANCE WITH THE SITE GRADING PLAN. INSTALL ALL SURFACE WATER CONTROLS. FOR AREAS TO BE MOWED REMOVE ALL STONES 2 INCHES OR LARGER. REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

NOTE: ON AREAS WHERE WOOD CHIPS AND/OR BARK MULCH WAS PREVIOUSLY APPLIED, EITHER REMOVE THE MULCH OR INCORPORATE IT INTO THE SOIL WITH A NITROGEN FERTILIZER ADDED. NITROGEN APPLICATION RATE IS DETERMINED BY SOIL TEST AT TIME OF SEEDING. ANTICIPATE 12lbs NITROGEN PER TON OF WOOD CHIPS AND/OR BARK MULCH.

DO NOT USE PERMANENT SEEDING ON SLOPES STEEPER THAN 2 TO 1.

B. SEEDBED PREPARATION
APPLY TOPSOIL IF NECESSARY.
APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIOUS SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET USING 10-10-10 OR EQUIVALENT. IN ADDITION, 300 POUNDS OF 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED FOR TOPDRESSING. APPLY GROUND LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AS FOLLOWS:

SOIL TEXTURE	TONS/AC	LBS./1000 SQ.FT.
CLAY, CLAY LOAM AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND, SAND	1	45

REFER TO COUNTY SOIL SURVEY REPORT FOR SOIL TEXTURES AT THE SITE.
WORK LIME AND FERTILIZE INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.
INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

D. SEEDING
SELECT A MIXTURE FROM BELOW OR USE MIXTURE RECOMMENDED BY THE SOIL CONSERVATION SERVICE. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE AND AMOUNT OF INOCULANT.
APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDINGS WHICH ARE MULCHED MAY BE LEFT ON SOIL SURFACE.
WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
HYDRAULIC APPLICATION (HYDROSEEDING), IS A SUITABLE METHOD FOR USE IN CRITICAL AREAS. WHEN HYDROSEEDING, A SEEDBED IS PREPARED IN THE CONVENTIONAL WAY OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN SIX INCHES IN DIAMETER. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY). LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). FIBER MULCH DOES NOT PROVIDE ADEQUATE SEEDBED PROTECTION. BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH. SEEDING RATES MUST BE INCREASED 10 PERCENT WHEN HYDROSEEDING.
SEED WARM SEASON GRASSES DURING THE SPRING PERIOD ONLY.

APPLY MULCH ACCORDING TO THE TEMPORARY MULCHING MEASURE OF THE GUIDELINES.
IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, USE THE TEMPORARY MULCHING MEASURE IN THE GUIDELINES TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

MAINTENANCE
INITIAL ESTABLISHMENT
INSPECT SEEDED AREA AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER DURING THE GROWING SEASON.
WHERE SEED HAS BEEN REMOVED OR WHERE SOIL EROSION HAS OCCURRED DETERMINE THE CAUSE OF THE FAILURE. BIRD DAMAGE MAY BE PROBLEM IF MULCH WAS APPLIED TO THINLY TO PROTECT SEED. RE-SEED AND RE-MULCH. IF MOVEMENT WAS THE RESULT OF WIND, REPAIR EROSION DAMAGE ANY, RE-APPLY SEED AND MULCH, AND APPLY MULCH ANCHORING FAILURE WAS CAUSED BY CONCENTRATED WATER, (1) INSTALL ADDITIONAL MEASURES TO CONTROL WATER AND SEDIMENT MOVEMENT, (2) REPAIR EROSION DAMAGE, (3) RE-SEED AND (4) RE-APPLY MULCH WITH ANCHORING OR USE TEMPORARY EROSION CONTROL BLANKET AND/OR PERMANENT TURF REINFORCEMENT MAT MEASURE.
CONTINUE INSPECTION UNTIL AT LEAST 100 PLANTS PER SQUARE FOOT HAVE GROWN AT LEAST 6 INCHES TALL OR UNTIL THE FIRST MOWING.
FIRST MOWING
ALLOW THE MAJORITY OF PLANTS TO ACHIEVE A HEIGHT OF AT LEAST 6 INCHES BEFORE MOWING THE FIRST TIME. DO NOT MOW WHILE THE SURFACE IS WET. MOWING WHILE THE SURFACE IS WET MAY PULL MANY SEEDLING FROM THE SOIL AND OFTEN LEAVES A SERIES OF UNNECESSARY RUTS. THE FIRST MOWING SHOULD REMOVE APPROXIMATELY ONE THIRD OF THE GROWTH, DEPENDING ON THE TYPE OF GRASS AND WHERE IT IS BEING USED. DO NOT MOW GRASS BELOW 3 INCHES.
IF THE SEEDING WAS MULCHED, DO NOT ATTEMPTED TO RAKE OUT THE MULCHING MATERIAL. NORMAL MOWING WILL GRADUALLY REMOVE ALL UNWANTED DEBRIS.
ONE THIRD OF THE GROWTH, DEPENDING ON THE TYPE OF GRASS.
LONG TERM MAINTENANCE
MOW AND FERTILIZE AT A RATE THAT SUSTAINS AN AREA CONDITION THAT SUPPORTS THE INTENDED USE. IF APPROPRIATE THE HEIGHT OF THE CUT MAY BE ADJUSTED DOWNWARD, BY DEGREES, AS NEW PLANTS BECOME ESTABLISHED. CARRY OUT ANY FERTILIZATION PROGRAM ACCORDANCE WITH APPROVED SOIL TEST THAT DETERMINE THE PROPER AMOUNT OF LIME AND FERTILIZER NEED TO MAINTAIN A VIGOROUS SOD YET PREVENT EXCESSIVE LEACHING OF NUTRIENTS TO THE GROUND-WATER OR RUNOFF TO SURFACE WATER.
ALTHOUGH WEEDS MAY APPEAR TO BE A PROBLEM, THEY SHADE THE NEW SEEDINGS AND HELP CONSERVE SURFACE MOISTURE. DO NOT APPLY WEED CONTROL UNTIL THE NEW SEEDLING HAVE BEEN MOWED AT LEAST FOUR TIMES.

SELECTING SEED MIX TO MATCH NEED

AREA TO BE SEEDED	MIXTURE NUMBER: MOWING DESIRED	MIXTURE NUMBER: MOWING NOT REQUIRED
BORROW AREAS, ROADSIDES, DIKES, LEVEES, POND BANKS AND OTHER SLOPES AND BANKS		
A) WELL OR EXCESSIVELY DRAINED SOILS	1,2,3,4,5, OR 8	5,6,7,8,9,10,11,12,16,22
B) SOMEWHAT POORLY DRAINED SOILS2	3	5,6
C) VARIABLE DRAINAGE SOILS2	2	5,6,11
DRAINAGE DITCH AND CHANNEL BANKS		
A) WELL OR EXCESSIVELY DRAINED SOILS2	1,2,3, OR 4	9,10,11,12
B) SOMEWHAT POORLY DRAINED SOILS2	2	
C) VARIABLE DRAINAGE SOILS2	2	
DIVERSIONS		
A) WELL OR EXCESSIVELY DRAINED SOILS	2,3, OR 4	9,10,11
B) SOMEWHAT POORLY DRAINED SOILS	2	
C) VARIABLE DRAINAGE SOILS	2	
EFFLUENT DISPOSAL		5 OR 6
GRAVEL PITS		26,27,28
GULLIED AND ERODED AREAS		3,4,5,6,10,11,12
WASTEPOK. & WASTE		

(IF TOXIC SUBSTANCES AND PHYSICAL PROPERTIES NOT LIMITING)		
SHORELINES		5 OR 6
(FLUCTUATING WATER LEVELS)		4,10
SKI SLOPES		
SOD WATERWAYS AND SPILLWAYS	1,2,3,4,6,7, OR 8	1,2,3,4,6,7, OR 8
SUNNY RECREATION AREAS	1,2, OR 23	
(PICNIC AREAS AND PLAYGROUNDS OR DRIVING AND ARCHERY RANGES, NATURE TRAILS)		
CAMPING AND PARKING, NATURE TRAILS (SHADED)	19,21, OR 23	
SAND DUNES (BLOWING SAND)	25	
WOODLAND ACCESS ROADS, SKID TRAILS AND LOG TARDING AREAS		9,10,18,22,26
LAWNS AND HIGH MAINTENANCE	1,19,21 OR 29	

FOOTNOTES:
1 THE NUMBERS FOLLOWING IN THESE COLUMNS REFER TO SEED MIXTURES IN FOLLOWING TABLE. MIXES FOR SHADY AREAS ARE IN BOLD ITALICS PRINT (INCLUDING MIXES 20 THROUGH 24).
2 SEE COUNTY SOIL SURVEY FOR DRAINAGE CLASS. SOIL SURVEYS ARE AVAILABLE FROM THE COUNTY SOIL AND WATER CONSERVATION DISTRICT OFFICE.
3 USE MIX 26 WHEN SOIL PASSING A 200 MESH SIEVE IS LESS THAN 15% OF TOTAL WEIGHT. USE MIX 26 & 27 WHEN SOIL PASSING A 200 MESH SIEVE IS BETWEEN 15 AND 20% OF TOTAL WEIGHT. USE MIX 26,27 & 28 WHEN SOIL PASSING A 200 MESH SIEVE IS ABOVE 20% OF TOTAL WEIGHT.

SEED MIXTURES FOR PERMANENT SEEDING

No.	SEED MIXTURE (VARIETY)	LBS/ACRE	LBS/1,000 SF
15	KENTUCKY BLUEGRASS	20	.45
	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	5	.10
		TOTAL 45	1.00
25	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	REDTOP (STREEKER, COMMON)	2	.05
	TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	20	.45
		TOTAL 42	.95
35	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT	8	.20
	TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	20	.45
		TOTAL 48	1.10
45	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN) OR TALL FESCUE (KENTUCKY 31)	20	.45
	REDTOP (STEEKER, COMMON)	2	.05
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) W/INOCULANT	8	.20
		TOTAL 30	.70
55	WHITE CLOVER	10	.25
	PERENNIAL RYE GRASS	2	.05
		TOTAL 12	.30
65	CREEPING RED FESCUE	20	.50
	REDTOP (STREEKER, COMMON)	2	.05
	PERENNIAL RYE GRASS	20	.50
		TOTAL 42	1.05
75	SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	15	.35
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	5	.10
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) W/INOCULANT	10	.25
		TOTAL 30	.70
85	SWITCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	10	.25
	WEEPING LOVEGRASS	1	.02
	LITTLE BLUESTEM (BLAZE, ALDOUS, CAMPER)	10	.25
		TOTAL 21	.57
95	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	15	.35
	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	15	.35
	OR (FLATPEA (LATHCO) WITH INOCULANT)	(30)	(.75)
	TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN) REDTOP (STREEKER, COMMON)	10	.25
		2	.05
		TOTAL 42 (OR 57)	1.00 (OR 1.25)
105	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	REDTOP (STREEKER, COMMON)	2	.05
	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	15	.35
	OR (FLATPEA (LATHCO) WITH INOCULANT)	(30)	(.75)
		TOTAL 37 (OR 52)	.85 (OR 1.25)
115	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT	8	.20
	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	15	.35
	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)		
126	SWITCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	10	.25
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	5	.10
	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	15	.35
		TOTAL 45	1.05
136	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	10	.25
	OR (FLATPEA (LATHCO) WITH INOCULANT)	(30)	(.75)
	SWITCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	51	.10
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	5	.10
		TOTAL 20 (OR 40)	.45 (OR .95)
146	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	15	.35
	OR (FLATPEA (LATHCO) WITH INOCULANT)	(30)	(.75)
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	10	.25
		TOTAL 25 (OR 40)	.60 (OR 1.00)
156	SWITCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	5	.10
	BIG BLUESTEM (NIAGRA, KAW) OR LITTLE BLUESTEM (BLAZE, ALDOUS, CAMPER)	5	.10
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	5	.10
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT	5	.10
		TOTAL 20	.50
166	TALL FESCUE (KENTUCKY 31)	20	.45
	FLATPEA (LATHCO) WITH INOCULANT	30	.75
		TOTAL 50	1.20
176	DEER TONGUE (TIOGA) WITH INOCULANT	10	.25
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT	8	.20
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	3	.07
		TOTAL 21	.52
186	DEER TONGUE (TIOGA) WITH INOCULANT	10	.25
	CROWN VETCH (CHEMUNG, PENNGIFT) WITH INOCULANT	15	.35
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	3	.07
		TOTAL 28	.67
197	CHEWINGS FESCUE	35	.80
	HARD FESCUE	30	.70
	COLONIAL BENTGRASS	5	.10
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT	10	.20
	PERENNIAL RYEGRASS	20	.50
		TOTAL 100	2.30
201	DELETED DUE TO INVASIVE SPECIES		
215	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	TOTAL 60	1.35
225	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	40	.90
	TALL FESCUE (KENTUCKY 31)	20	.45
		TOTAL 60	1.35
235	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	15	.35
	FLATPEA (LATHCO) WITH INOCULANT	30	.75
		TOTAL 45	1.60
245	TALL FESCUE (KENTUCKY 31)	TOTAL 150	3.60
255	AMERICAN BEACHGRASS (CAPE)	58,500 CULMS/ACRE	1,345 CULMS/100 SF
266	SWITCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	4.0	.10
	BIG BLUESTEM (NIAGRA, KAW)	4.0	.10
	LITTLE BLUESTEM (BLAZE, ALDOUS, CAMPER)	2.0	.05
	SAND LOVEGRASS (NE-27, BEND)	1.5	.03
	BIRD'S-FOOT TREFOIL (EMPIRE VIKING)	2.0	.05
		TOTAL 13.5	.33
275	FLATPEA (LATHCO)	10	.20
	PERENNIAL PEA (LANCER)	2	.05
	CROWN VETCH (CHEMUNG, PENNGIFT)	10	.20
	TALL FESCUE (KENTUCKY 31)	2	.05
		TOTAL 24	.55
285	ORCHARDGRASS (PENNLATE, KAY, POTOMAC)	5	.10
	TALL FESCUE (KENTUCKY 31)	10	.20
	REDTOP (STREEKER, COMMON)	2	.05
	BIRDS-FOOT TREFOIL (EMPIRE VIKING)	2	.05
29	TURF TYPE TALL FESCUE (BONANZA, MUSTANG, REBEL II, SPARTAN, JAGUAR) OR PERENNIAL RYE (“FUTURE 2000” MIX: FIESTA II, BLAZER II, AND DASHER II)	175 - 250	6 TO 8

FOOTNOTES:
1 USE PROPER INOCULANT FOR LEGUME SEEDS. USE FOUR TIMES RECOMMENDED RATE WHEN HYDROSEEDING.
2 USE PURE LIVE SEED (PLS) = (GERMINATION X PURITY). EXAMPLE: COMMON BERMUDA SEED WITH 70% GERMINATION AND 80% PURITY = 56% OF PLS. LBS PLS/ACRE/PLS = 17.9 LBS/ACRE OF BAGGED SEED.
3 DOT, ALL PURPOSE MIX.
4 WILD FLOWER MIX CONTAINING NEW ENGLAND ASTER, BABYS BREATH, BLACK EYE SUSAN, CATCHFLY, DWARF COLUMBINE, PURPLE CONEFLOWER, LANCED-LEAVED COREOPSIS, CORNFLOWER, OX-EYE DAISY, SCARLET FLAX, FOXGLOVE, GAYFEATHER, ROCKY LARKSPUR, SPANISH LARKSPUR, CORN POPPY, SPURRED SNAPDRAGON, WALLFLOWER AND/OR YARROW MAY BE ADDED TO ANY SEED MIX GIVEN. MOST SEED SUPPLIERS CARRY A WILD FLOWER MIXTURE THAT IS SUITABLE FOR THE NORTHEAST AND CONTAINS A VARIETY OF BOTH ANNUAL AND PERENNIAL FLOWERS. SEEDING RATES FOR THE SPECIFIC MIXTURES SHOULD BE FOLLOWED.
5 CONSIDERED TO BE A COOL SEASON MIX.
6 CONSIDERED TO BE A WARM SEASON MIX.

(RR) RIP RAP

STANDARD RIPRAP: THIS MATERIAL SHALL CONFORM TO THE CONN DOT SPECIFICATIONS FOR RIPRAP AND THE FOLLOWING REQUIREMENTS:
NOT MORE THAN 15 PERCENT OF THE RIPRAP SHALL BE SCATTERED SPALLS AND STONES LESS THAN 6 INCHES IN SIZE.
NO STONE SHALL BE LARGER THAN 30 INCHES IN SIZE, AND AT LEAST 75 PERCENT OF THE MASS SHALL BE STONES AT LEAST 15 INCHES IN SIZE.
d50 = 1.25 FEET = 15 INCHES

INTERMEDIATE RIPRAP: THIS MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION:

STONE SIZE	PERCENT OF THE MASS
18" OR OVER	0
10" TO 18"	30-50
6" TO 10"	30-50
4" TO 6"	20-33
2" TO 4"	10-20
LESS THAN 2"	0-10

d50 = 0.67 FEET = 8 INCHES

MODIFIED RIPRAP: THIS MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION:

STONE SIZE	PERCENT OF THE MASS
10" OR OVER	0
6" TO 10"	20-50
4" TO 6"	30-60
2" TO 4"	30-45
1" TO 2"	10-20
LESS THAN 1"	0-10

d50 = 0.42 FEET = 5 INCHES

DESIGN CRITERIA
- GRADATION
THE RIPRAP SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D=50 SIZE AS DETERMINED FROM THE DESIGN PROCEDURE. A WELL-GRADED MIXTURE AS USED HEREIN IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D=50 SIZE.
- THICKNESS
THE MINIMUM THICKNESS OF THE RIPRAP LAYER SHALL BE 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 12 INCHES.
- QUALITY OF STONE
INDIVIDUAL ROCK FRAGMENTS SHALL BE DENSE, SOUND AND FREE FROM CRACKS, SEAMS AND OTHER DEFECTS CONDUCIVE TO ACCELERATED WEATHERING. THE ROCK FRAGMENTS SHALL BE ANGULAR IN SHAPE. THE LEAST DIMENSION OF A INDIVIDUAL ROCK FRAGMENT SHALL BE NOT LESS THAN ONE-THIRD THE GREATEST DIMENSION OF FRAGMENT. THE STONE SHALL BE OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE, AND SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.50.
NOTE: D.O.T. STANDARD SPECIFICATIONS DO NOT ACCEPT ROUNDED STONE OR BROKEN CONCRETE FOR RIPRAP.
- RIPRAP FOR CHANNEL STABILIZATION
RIPRAP SHALL EXTEND UP THE BANKS OF THE CHANNEL TO A HEIGHT EQUAL TO THE MAXIMUM DEPTH OF FLOW OR TO A POINT WHERE VEGETATION CAN BE ESTABLISHED TO ADEQUATELY PROTECT THE CHANNEL.
THE RIPRAP SIZE TO BE USED IN A CHANNEL BEND SHALL EXTEND UPSTREAM FROM THE POINT OF CURVATURE AND DOWNSTREAM FROM THE POINT OF TANGENCY A DISTANCE OF AT LEAST 5 TIMES THE CHANNEL BOTTOM WIDTH. THE RIPRAP SHALL EXTEND ACROSS THE BOTTOM AND UP BOTH SIDES OF THE CHANNEL.
WHERE RIPRAP IS USED ONLY FOR BANK PROTECTION AND DOES NOT EXTEND ACROSS THE BOTTOM OF THE CHANNEL, RIPRAP SHALL BE KEYED INTO THE BOTTOM OF THE CHANNEL TO A MINIMUM DEPTH EQUAL TO 1.5 TIMES MAXIMUM SIZE STONE AND SHALL EXTEND ACROSS THE BOTTOM OF THE CHANNEL THE SAME DISTANCE.
- RIPRAP FOR SLOPE STABILIZATION
RIPRAP FOR SLOPE STABILIZATION SHALL BE DESIGNED SO THAT THE NATURAL ANGLE OF REPOSE OF THE STONE MIXTURE IS GREATER THAN THE GRADIENT OF THE SLOPE BEING STABILIZED.
- FILTER BLANKETS
A FILTER BLANKET IS A LAYER OF MATERIAL PLACED BETWEEN THE RIPRAP AND THE UNDERLYING SOIL SURFACE TO PREVENT SOIL MOVEMENT INTO OR THROUGH THE RIPRAP.
A FILTER BLANKET CAN BE EITHER A GRANULAR STONE LAYER OR A GEOTEXTILE FILTER FABRIC. FILTER BLANKETS OR BEDDING SHOULD ALWAYS BE PROVIDED WHERE SEEPAGE FROM UNDERGROUND SOURCES THREATENS THE STABILITY OF THE RIPRAP.

INSTALLATION REQUIREMENTS
- SUBGRADE PREPARATION
THE SUBGRADE FOR THE RIPRAP OR FILTER SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY APPROXIMATING THAT OF THE SURROUNDING UNDISTURBED MATERIAL. BRUSH, TREES, STUMPS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED.
- FILTER BLANKET
PLACEMENT OF THE FILTER BLANKET SHOULD BE DONE IMMEDIATELY AFTER SLOPE PREPARATION. FOR GRANULAR FILTERS THE STONE SHOULD BE SPREAD IN A UNIFORM LAYER TO THE SPECIFIED DEPTH. WHERE MORE THAN ONE LAYER OF FILTER MATERIAL IS USED, THE LAYERS SHOULD BE SPREAD SO THAT THERE IS MINIMAL MIXING OF THE LAYERS.
FOR FABRIC FILTERS, THE MATERIAL SHOULD BE PLACED DIRECTLY ON THE PREPARED SLOPE. THE EDGES OF THE SHEETS SHOULD OVERLAP BY AT LEAST 12 INCHES. EITHER ANCHOR PINS OR WIRE STAPLES CAN BE USED. ANCHOR PINS, 15 INCHES LONG, SHOULD BE SPACED EVERY 3 FEET ALONG THE OVERLAP. ELEVEN GAUGE WIRE STAPLES, 6 TO 10 INCHES LONG WITH A 2 TO 6 INCH SPREAD CAN ALSO BE USED AT 3 FOOT SPACING. THE UPPER END OF THE FABRIC SHOULD BE BURIED A MINIMUM OF 12 INCHES DEEP. THE LOWER END SHOULD BE TOED IN. CARE SHOULD BE TAKEN NOT TO DAMAGE THE FABRIC WHEN PLACING THE RIPRAP. IF DAMAGE OCCURS, THAT SHEET SHOULD BE REMOVED AND REPLACED. FOR LARGE STONE, 12 INCHES OR GREATER, A 4-INCH LAYER OF GRAVEL SHALL BE USED TO PREVENT DAMAGE TO THE MATERIAL, PROTECTION FROM ULTRAVIOLET RAYS AND TO PROVIDE INTERFACIAL CONTACT.
- STONE PLACEMENT
PLACEMENT OF RIPRAP SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER. THE RIPRAP SHOULD BE PLACED TO ITS FULL SO THAT IT COURSE THICKNESS PRODUCES A DENSE WELL-GRADED MASS OF STONE WITH A MINIMUM OF VOIDS. THE DESIRED DISTRIBUTION OF STONES THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY, CONTROLLED DUMPING OF SUCCESSIVE LOADS DURING FINAL PLACING, OR BY A COMBINATION OF THESE METHODS. THE RIPRAP SHOULD NOT BE PLACED BY DUMPING INTO CHUTES OR SIMILAR METHODS WHICH ARE LIKELY TO CAUSE SEGREGATION OF THE VARIOUS STONE SIZES. CARE SHOULD BE TAKEN NOT TO DISLODGE THE UNDERLYING MATERIAL WHEN PLACING THE STONES.
THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STONES. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE REQUIRED GRADES AND A GOOD DISTRIBUTION OF STONE SIZES. FINAL THICKNESS OF THE RIPRAP BLANKET SHOULD BE WITHIN PLUS OR MINUS 1/4 OF THE SPECIFIED THICKNESS.
TAKE CARE NOT TO DISLODGE THE UNDERLYING MATERIAL WHEN PLACING THE STONES. WHEN PLACING RIPRAP ON A GEOTEXTILE TAKE CARE NOT TO DAMAGE THE FABRIC. IF DAMAGED OCCURS, REMOVE AND REPLACE THE DAMAGED SHEET. FOR LARGE STONE, 12 INCHES OR GREATER, USE A 6 INCH LAYER OF FILTER OR BEDDING MATERIAL TO PREVENT DAMAGE TO THE MATERIAL OF THE PUNCTURE.
- MAINTENANCE
ONCE A RIPRAP INSTALLATION HAS BEEN COMPLETED, IT SHOULD REQUIRE VERY LITTLE MAINTENANCE. IT SHOULD, HOWEVER, BE INSPECTED PERIODICALLY TO DETERMINE IF HIGH FLOWS HAVE CAUSED SCOUR BENEATH THE RIPRAP OR DISLODGED ANY OF THE STONE. REMOVE REMOVAL OF LARGE TREES MAY BE REQUIRED TO INSURE THE INTEGRITY OF THE RIPRAP PROTECTION. REPAIR IMMEDIATELY UPON OBSERVED FAILURE.

SPECIFICATIONS
MATERIALS
MULCH FOR SEED, INCLUDING TACKIFIERS AND NETTINGS USED TO ANCHOR MULCH, SHALL BE:
BIODEGRADABLE OR PHOTO-DEGRADABLE WITHIN 2 YEARS BUT WITHOUT SUBSTANTIAL DEGRADATION OVER A PERIOD OF 6 WEEKS, FREE OF CONTAMINANTS THAT POLLUTE THE AIR OR WATERS OF THE STATE WHEN PROPERLY APPLIED, FREE OF FOREIGN MATERIAL, COARSE STEMS AND ANY SUBSTANCE TOXIC TO PLANT GROWTH OR WHICH INTERFERES WITH SEED GERMINATION, AND CAPABLE OF BEING APPLIED EVENLY SUCH THAT IT PROVIDES 80%-95% SOIL COVERAGE AND STILL ADHERES TO THE SOIL SURFACE, DOES NOT SLIP ON SLOPES WHEN IT RAINS OR IS WATERED, DOES NOT BLOW OFF SITE, DISSIPATES RAINDROP SPLASH, HOLDS SOIL MOISTURE, MODERATES SOIL TEMPERATURES AND DOES NOT INTERFERE WITH SEED GROWTH.

TYPES OF MULCHES WITHIN THIS SPECIFICATION INCLUDE, BUT ARE NOT LIMITED TO:
HAY: THE DRIED STEMS AND LEAFY PARTS OF PLANTS CUT AND HARVESTED, SUCH AS ALFALFA, CLOVERS, OTHER FORAGE LEGUMES AND THE FINER STEMMED, LEAFY GRASSES. STEM LENGTH SHOULD NOT AVERAGE LESS THAN 4 INCHES. HAY THAT CAN BE WINDBLOWN MUST BE ANCHORED. PREFERRED MULCH WHEN SEEDING OCCURS OUTSIDE OF THE RECOMMENDED SEEDING DATES.
STRAW: CUT AND DRIED STEMS OF HERBACEOUS PLANTS, SUCH AS WHEAT, BARLEY, CEREAL RYE, OR BROOM. THE AVERAGE STEM LENGTH SHOULD NOT BE LESS THAN 4 INCHES. STRAW THAT CAN BE WINDBLOWN SHOULD BE ANCHORED TO HOLD IT IN PLACE.
CELLULOSE FIBER: FIBER ORIGIN IS EITHER VIRGIN WOOD, POST-INDUSTRIAL/PRE-CONSUMER WOOD OR POST CONSUMER WOOD COMPLYING WITH MATERIALS SPECIFICATION (COLLECTIVELY REFERRED TO AS “WOOD FIBER”), NEWSPAPER, KRAFT PAPER, CARDBOARD (COLLECTIVELY REFERRED TO AS “PAPER FIBER”) OR A COMBINATION OF WOOD AND PAPER FIBER. PAPER FIBER, IN PARTICULAR, SHALL NOT CONTAIN BORON, WHICH INHIBITS SEED GERMINATION.

TACKIFIERS WITHIN THIS SPECIFICATION INCLUDE, BUT ARE NOT LIMITED TO: WATER SOLUBLE MATERIALS THAT CAUSE MULCH PARTICLES TO ADHERE TO ONE ANOTHER. EMULSIFIED ASPHALT IS SPECIFICALLY PROHIBITED FOR USE AS TACKIFIERS DUE TO ITS POTENTIAL FOR CAUSING WATER POLLUTION FOLLOWING ITS APPLICATION.

NETTINGS WITH THIS SPECIFICATION INCLUDE, BUT ARE NOT LIMITED TO: PREFABRICATED OPENWORK FABRICS MADE OF CELLULOSE CORDS, ROPES, THREADS, OR BIODEGRADABLE SYNTHETIC MATERIAL THAT IS WOVEN, KNOTTED OR MOLDED IN SUCH A MANNER THAT IT HOLDS MULCH IN PLACE UNTIL VEGETATION GROWTH IS SUFFICIENT TO STABILIZE THE SOIL. GENERALLY USED IN AREAS WHERE NO MOWING IS PLANNED. EXAMPLES OF NETTING ARE TOBACCO NETTING (USED WHERE FLOWS ARE NOT CONCENTRATED) AND JUTE NETTING (TYPICALLY USED IN DRAINAGE WAYS).

WHERE MULCH ANCHORING IS REQUIRED A TEMPORARY EROSION CONTROL BLANKET MAY BE USED.

APPLICATION
TIMING: APPLIED IMMEDIATELY FOLLOWING SEEDING. SOME CELLULOSE FIBER MAY BE APPLIED WITH SEED TO ASSIST IN MARKING WHERE SEED HAS BEEN SPRAYED, BUT EXPECT TO APPLY A SECOND APPLICATION OF CELLULOSE FIBER TO MEET THE REQUIREMENTS OF MULCH FOR SEED.
SPREADING: MULCH MATERIAL SHALL BE SPREAD UNIFORMLY BY HAND OR MACHINE RESULTING IN 80%-95% COVERAGE OF THE DISTURBED SOIL WHEN SEEDING WITHIN THE RECOMMENDED SEEDING DATES. APPLICATIONS THAT ARE UNEVEN CAN RESULT IN EXCESSIVE MULCH SMOTHERING THE GERMINATING SEEDS. FOR HAY OR STRAW ANTICIPATE AN APPLICATION RATE OF 2 TONS PER ACRE. FOR CELLULOSE FIBER FOLLOW MANUFACTURER'S RECOMMENDED APPLICATION RATES TO PROVIDE 80%-95% COVERAGE. WHEN SEEDING OUTSIDE THE RECOMMENDED SEEDING DATES, INCREASE MULCH APPLICATION RATE TO PROVIDE BETWEEN 95%-100% COVERAGE OF THE DISTURBED SOIL. FOR HAY OR STRAW ANTICIPATE AN APPLICATION RATE OF 2.5 TO 3 TONS PER ACRE. WHEN SPREADING HAY MULCH BY HAND, DIVIDE THE AREA TO BE MULCHED INTO APPROXIMATELY 1,000 SQUARE FEET AND PLACE 1.5-2 BALES OF HAY IN EACH SECTION TO FACILITATE UNIFORM DISTRIBUTION. FOR CELLULOSE FIBER MULCH, EXPECT SEVERAL SPRAY PASSES TO ATTAIN ADEQUATE COVERAGE, TO ELIMINATE SHADOWING, AND TO AVOID SLIPPAGE (SIMILAR TO SPRAYING WITH PAINT).
ANCHORING: WHEN NEEDED, MULCH ANCHORING IS APPLIED EITHER WITH THE MULCH AS WITH CELLULOSE FIBER OR APPLIED IMMEDIATELY FOLLOWING MULCH APPLICATION. EXCEPT THE NEED FOR MULCH ANCHORING ALONG THE SHOULDERS OF ACTIVELY TRAVELED ROADS, HILL TOPS AND LONG OPEN SLOPES NOT PROTECTED BY WIND BREAKS. WHEN USING NETTING, THE MOST CRITICAL ASPECT IS TO ENSURE THAT THE NETTING MAINTAINS SUBSTANTIAL CONTACT WITH THE UNDERLYING MULCH AND THE MULCH, IN TURN, MAINTAINS CONTINUOUS CONTACT WITH THE SOIL SURFACE.

MAINTENANCE
INSPECT MULCHED AREAS AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER UNTIL THE GRASS HAS GERMINATED TO DETERMINE MAINTENANCE NEEDS WHERE MULCH HAS BEEN MOVED OR WHERE SOIL EROSION HAS OCCURRED, DETERMINE THE CAUSE OF THE FAILURE. IF IT WAS THE RESULT OF WIND, THEN REPAIR EROSION DAMAGE (IF ANY), RE-APPLY MULCH (AND SEED AS NEEDED) AND CONSIDER APPLYING A NETTING OR TACKIFIERS. IF MULCH FAILURE WAS CAUSED BY CONCENTRATING WATER, INSTALL ADDITIONAL MEASURES TO CONTROL WATER AND SEDIMENT MOVEMENT, REPAIR EROSION DAMAGE, RE-APPLY MULCH AND CONSIDER APPLYING A NETTING OR TACKIFIERS OR USE THE TEMPORARY EROSION CONTROL BLANKET MEASURE. ONCE GRASS HAS GERMINATED, INSPECTIONS SHOULD CONTINUE AS REQUIRED BY TEMPORARY SEEDING AND PERMANENT SEEDING.

(GSF) GEOSYNTHETIC SILT

SEDIMENT BARRIERS
SPECIFICATIONS

GEOTEXTILE SILT FENCING MINIMUM REQUIREMENTS

PHYSICAL PROPERTY	TEST METHOD	MINIMUM REQUIREMENT
FILTERING EFFICIENCY	ASTM 5141	75% (MIN)
GRAB TENSILE STRENGTH (LBS.)	ASTM D4632	100 LBS.
ELONGATION @ FAILURE	ASTM D4632	15%
MULLEN BURST STRENGTH	ASTM D3786	250 PSI
PUNCTURE STRENGTH	ASTM 4833	50 LBS
APPARENT OPENING SIZE	ASTM D4751	NO LESS THAN 0.[illegible] AND NO GREATER 0.60 MM
FLOW RATE	ASTM D4491	0.2 GAL/FT2
PERMATIVITY	ASTM D4491	0.05 SEC. -1
ULTRAVIOLET RADIATION STABILITY %	ASTM-D4355	70% AFTER 500 H[R] OF EXPOSURE [illegible]

GEOTEXTILE SILT FENCE SLOPE/LENGTH LIMITATIONS

SLOPE STEEPNESS	SLOPE LENGTH AND WING SPACING
5:1 OR FLATTER	100 FEET
3:1 TO 5:1	75 FEET
2:1 TO 3:1	50 FEET

MATERIALS

GEOTEXTILE FABRIC: SHALL BE A PERVIOUS SHEET OF POLYPROPYLENE, NY[LON,] POLYESTER, ETHYLENE OR SIMILAR FILAMENTS AND SHALL BE CERTIFIED BY [THE] MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS SHOW[N.] GEOTEXTILE SHALL BE NON-ROTTING, ACID AND ALKALI RESISTANT AND HAV[E] SUFFICIENT STRENGTH AND PERMEABILITY FOR THE PURPOSE INTENDED, INCL[UDING] HANDLING AND BACKFILLING OPERATIONS. FILAMENTS IN THE GEOTEXTILE SH[ALL BE] RESISTANT TO ABSORPTION. THE FILAMENT NETWORK MUST BE DIMENSIONAL[LY] STABLE AND RESISTANT TO DE-LAMINATION. THE GEOTEXTILE SHALL BE FRE[E OF] ANY CHEMICAL TREATMENT OR COATING THAT WILL REDUCE ITS PERMEABILITY. GEOTEXTILE SHALL ALSO BE FREE OF ANY FLAWS OR DEFECTS WHICH WILL A[LTER ITS] PHYSICAL PROPERTIES. TORN OR PUNCTURED GEOTEXTILES SHALL NOT BE U[SED.]

SUPPORTING POSTS: SHALL BE AT LEAST 42 INCHES LONG MADE OF EITH[ER] INCH SQUARE HARDWOOD STAKES OR STEEL POSTS WITH PROJECTIONS FOR FASTENING THE GEOTEXTILE POSSESSING A MINIMUM STRENGTH OF 0.5 POUN[DS PER] LINEAR FOOT.

PLACEMENT ON THE LANDSCAPE

LOCATE 5-10 FEET DOWN GRADIENT FROM THE TOE OF THE SLOPE, GENERALLY ON THE CONTOUR WITH MAINTENANCE AND SEDIMENT REM[OVAL] REQUIREMENTS IN MIND. WHEN THE CONTOUR CANNOT BE FOLLOWED INSTAL[L] FENCE SUCH THAT PERPENDICULAR WINGS ARE CREATED TO BREAK THE VEL[OCITY OF] WATER FLOWING ALONG THE FENCE.

SWALES: LOCATE "U" SHAPE ACROSS SWALE SUCH THAT THE BOTTOM O[F THE] ENDS OF THE FENCE ARE HIGHER THAN THE TOP OF THE LOWEST SECTION O[F THE] FENCE.

CATCH BASINS IN SWALE OR SLOPES: LOCATE 2 "U" SHAPES ACROSS [THE SWALE] AS ABOVE: ONE IMMEDIATELY UP SLOPE FROM THE CATCH BASIN AND THE [OTHER] IMMEDIATELY DOWN SLOPE FROM THE CATCH BASIN.

CATCH BASINS IN DEPRESSIONS: ENCIRCLE ENTIRE CATCH BASIN.

CULVERT INLETS: LOCATE IN "U" SHAPES APPROXIMATELY 5 FEET FROM [THE] CULVERT IN THE DIRECTION OF THE INCOMING FLOW.

CULVERT OUTLETS: LOCATE ACROSS THE SWALE AT LEAST 6 FEET FR[OM THE] CULVERT OUTLET.

INSTALLATION

TRENCH EXCAVATION: EXCAVATE A TRENCH A MINIMUM OF 6 INCHES D[EEP] AND 6 INCHES WIDE ON THE UP SLOPE SIDE OF THE FENCE LOCATION. FOR [SLOPE] AND SWALE INSTALLATIONS, EXTEND THE ENDS OF THE TRENCH SUFFICIENTLY [UP] SLOPE SUCH THAT BOTTOM END OF THE FENCE WILL BE HIGHER THAN THE [TOP OF] THE LOWEST PORTION OF THE FENCE. WHEN THE FENCE IS NOT TO BE INST[ALLED ON] THE CONTOUR, EXCAVATE WING TRENCHES SPACED AT THE INTERVALS GIVEN [IN THE] TABLE ABOVE.

SUPPORT POSTS: DRIVE SUPPORT POSTS ON THE DOWN SLOPE OF THE TR[ENCH] TO A DEPTH OF AT LEAST 12 INCHES INTO ORIGINAL GROUND. INSTALL SUPP[ORTS] CLOSER THAN 10 FEET APART WHEN CONCENTRATED FLOWS ARE ANTICIPATE[D OR] STEEP CONTRIBUTING SLOPES AND SOIL CONDITIONS ARE EXPECTED TO GENE[RATE] VOLUMES OF SEDIMENT. FOR CATCH BASINS IN HOLLOWS, DRIVE POSTS AT [EACH] CORNER OF THE CATCH BASIN.
GEOTEXTILE FILTER FABRIC: STAPLE OR SECURE THE GEOTEXTILE TO THE SUPPORT POSTS PER MANUFACTURER'S INSTRUCTION SUCH THAT AT LEAST [6] INCHES OF GEOTEXTILE LIES WITHIN THE TRENCH, THE HEIGHT OF THE FENCE [DOES] NOT EXCEED 30 INCHES AND THE GEOTEXTILE IS TAUT BETWEEN THE POSTS. [IF] THE TRENCH IS OBSTRUCTED BY STONES, TREE ROOTS, ETC. ALLOW THE GEO[TEXTILE] TO LAY OVER THE OBSTRUCTION SUCH THAT THE BOTTOM OF THE GEOTEXTIL[E LIES] UP SLOPE.
IN THE ABSENCE OF MANUFACTURER'S INSTRUCTIONS, SPACE WIRE STAPLES [ON] WOODEN STAKES AT A MAXIMUM OF 4 INCHES APART AND ALTERNATE THEIR [ANGLE] FROM PARALLEL TO THE AXIS OF THE STAKE TO PERPENDICULAR. DO NOT [ATTACH] THE GEOTEXTILE TO LIVING TREES.
PROVIDE REINFORCEMENT FOR THE FENCE WHEN IT CAN BE EXPOSED TO HIG[H FLOWS.] WHEN JOINTS IN THE GEOTEXTILE FABRIC ARE NECESSARY, SPLICE TOGETHER [AT] A SUPPORT POSTS, AND SECURELY SEAL (SEE MANUFACTURER'S RECOMMENDATIONS).

BACKFILL & COMPACTION: BACKFILL THE TRENCH WITH TAMPED SOIL OR AGGREGATE OVER THE GEOTEXTILE. WHEN THE TRENCH IS OBSTRUCTED BY [A] TREE ROOT, ETC. MAKE SURE THE BOTTOM OF THE GEOTEXTILE LIES HORIZON[TALLY ON] THE GROUND WITH THE RESULTING FLAP ON THE UP SLOPE SIDE OF THE GE[OTEXTILE] AND BURY THE FLAP 6 INCHES OF TAMPED SOIL, OR AGGREGATE.

MAINTENANCE
INSPECT THE SILT FENCE AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF [THE] END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER TO D[ETERMINE] MAINTENANCE NEEDS. WHEN USED FOR DEWATERING OPERATIONS, INSPECT FREQUENTLY BEFORE, DURING AND AFTER PUMPING OPERATIONS.
REMOVE THE SEDIMENT DEPOSITS OR, IF ROOM ALLOWS, INSTALL A SECONDA[RY] FENCE UP SLOPE OF THE EXISTING FENCE WHEN SEDIMENT DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE EXISTING FENCE. REPLACE [OR] REPAIR THE FENCE WITHIN 24 HOURS OF OBSERVED FAILURE. FAILURE OF [THE FENCE] HAS OCCURRED WHEN SEDIMENT FAILS TO BE RETAINED BY THE FENCE BECA[USE:]
(A) THE BARRIER HAS BEEN OVER TOPPED, UNDERCUT OR BYPASSED BY RU[NOFF] WATER,
(B) THE BARRIER HAS BEEN MOVED OUT OF POSITION, OR

WHEN REPETITIVE FAILURES OCCUR AT THE SAME LOCATION, REVIEW CONDITI[ONS AND] LIMITATIONS FOR USE AND DETERMINE IF ADDITIONAL CONTROLS (E.G. TEMPO[RARY] STABILIZATION OF CONTRIBUTING AREA, DIVERSIONS, STONE BARRIERS OR HA[Y BALE] BACKING) ARE NEEDED TO REDUCE FAILURE RATE. MAINTAIN THE SILT FENCE UNTIL THE CONTRIBUTING AREA IS STABILIZED. AFTER THE UPSLOPE AREAS H[AVE] BEEN PERMANENTLY STABILIZED, REMOVE THE SILT FENCE.

REFER TO 2002 CON[N] GUIDELINES FOR SOIL E[ROSION AND] SEDIMENT CONTROL FOR [MORE] INFORMATION ON THE SE[LECTED] EROSION CONTROL MEAS[URES]

EROSION & SE[DIMENT] CONTROL NAR[RATIVE]

EAST STR[EET] HOUSIN[G]

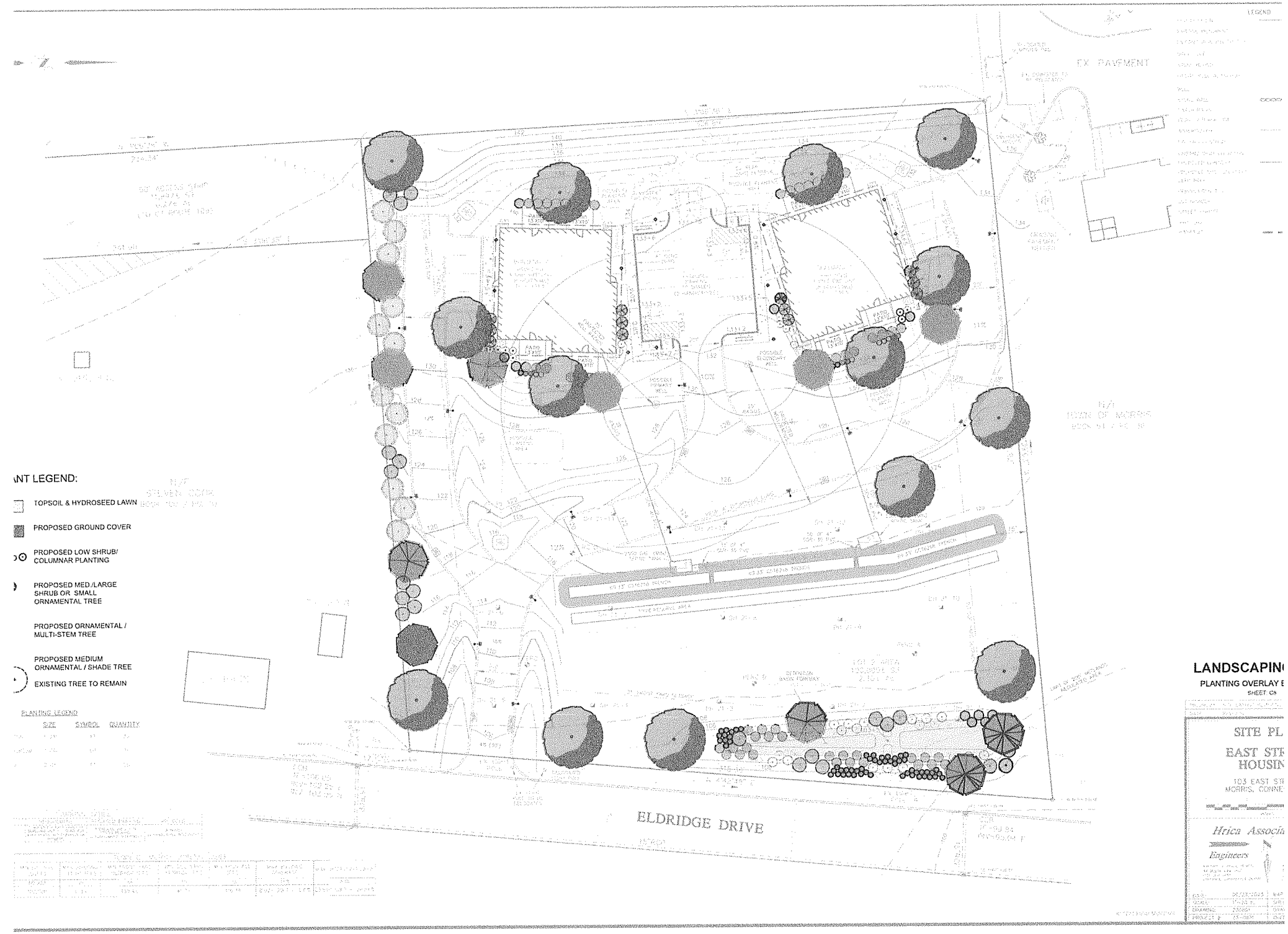
103 EAST ST[REET]
MORRIS, CONNE[CTICUT]

INCHES

Hrica Associa[tes]
Engineers

Kenneth S. Hrica, PE,RLS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759

DATE:	6/23/2023	MAP
SCALE:	N/A	SHEE[T]
DRAWING:	230891	DRAW[N]
PROJECT #:	23-0891	CHEC[KED]


EX PAVEMENT
ELDRIDGE DRIVE
NT LEGEND:
TOPSOIL & HYDROSEED LAWN
PROPOSED GROUND COVER
PROPOSED LOW SHRUB/ COLUMNAR PLANTING
PROPOSED MED./LARGE SHRUB OR SMALL ORNAMENTAL TREE
PROPOSED ORNAMENTAL / MULTI-STEM TREE
PROPOSED MEDIUM ORNAMENTAL / SHADE TREE
EXISTING TREE TO REMAIN
PLANTING LEGEND
SIZE
SYMBOL
QUANTITY
LANDSCAPIN
PLANTING OVERLAY
SHEET
SITE PL
EAST STE
HOUSIN
103 EAST ST
MORRIS, CONNE
Engineers

Filename: East Street Housing - 103 East Street Site Lighting - Morris.AGI

Luminaire Schedule								
Symbol	Qty	Label	Luminaire Lumens	Luminaire Watts	LLF	BUG Rating	Mounting Height	Description
⊙	4	LP2	3069	33	0.900	B1-U0-G1	14.4	NLS Lighting DMR-I-T2-32L-35-30K7-UNV-PT2-BLK-FSP-20 - RSSP-12-4R-11G-9BC-T2R-BLK-3430-RBC 12FT POLE
⊙	12	LP4	3135	33	0.900	B1-U0-G1	14.4	NLS Lighting DMR-I-T4-32L-35-30K7-UNV-PT2-BLK-FSP-20 - RSSP-12-4R-11G-9BC-T2R-BLK-3430-RBC 12FT POLE
⊡	12	SB	1076	10	0.900	B0-U0-G1	3.6	NLS Lighting TBA--42-T3-16L-175-30K7-UNV-AB-BLK

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE	Illuminance	Fc	0.35	15.4	0.0	N.A.	N.A.
BETWEEN BUILDINGS PARKING	Illuminance	Fc	1.61	4.3	0.8	2.01	5.38
BUILDING 1 NORTH PARKING	Illuminance	Fc	1.14	4.0	0.3	3.80	13.33
BUILDING 2 SOUTH PARKING	Illuminance	Fc	0.88	1.9	0.3	2.93	6.33
DRIVEWAYS	Illuminance	Fc	1.08	3.2	0.3	3.60	10.67

Greg Loda
Lighting Affiliates
1208 Cromwell Ave
Rocky Hill, CT 06067

website: www.lightingaffiliates.com
Voice Number : (860) 721-1171 x 219
Email : gloda@lightingaffiliates.com