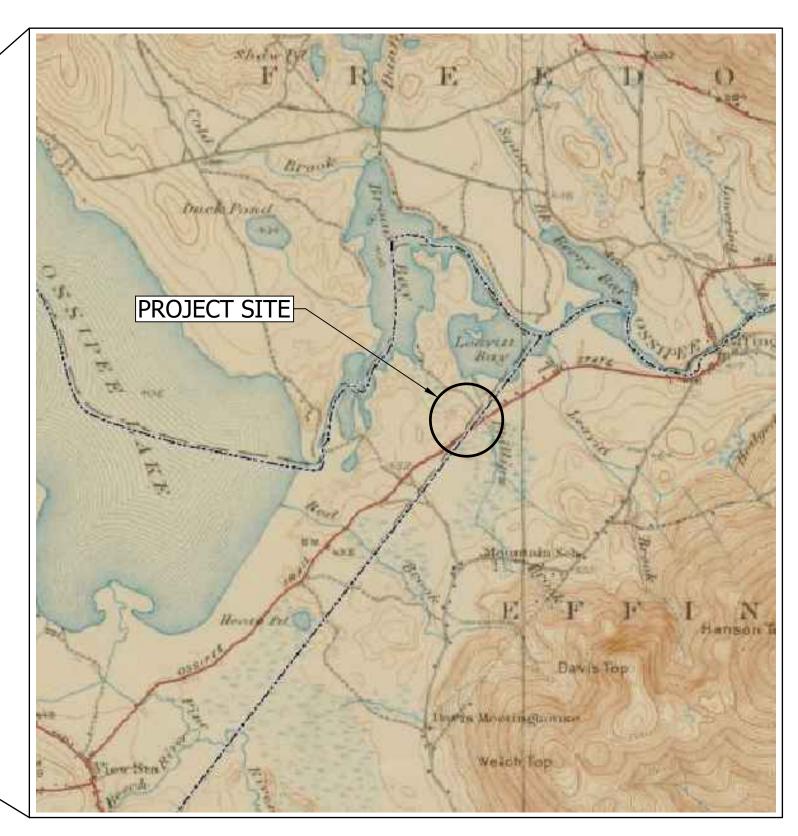


	COVER
DWG 21-27	BOUNDARY SURVEY PLAN
E1.00	EXISTING CONDITIONS PLAN
C1.01	SITE PLAN
SMP1.01	STORMWATER MANAGEMENT PLAN
SMP1.02	STORMWATER MANAGEMENT DETAILS
SMP1.03	BIORETENTION BASIN DETAILS

# MEENA LLC 41 ROUTE 25 TAX MAP 401 LOT 5

# EFFINGHAM, NEW HAMPSHIRE

# JULY, 2022 REVISED DECEMBER 2023



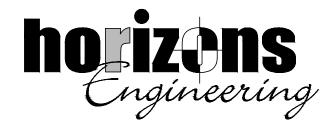
LOCATION PLAN

# OWNER:

MEENA, LLC 41 NH ROUTE 25

EFFINGHAM NH 03882

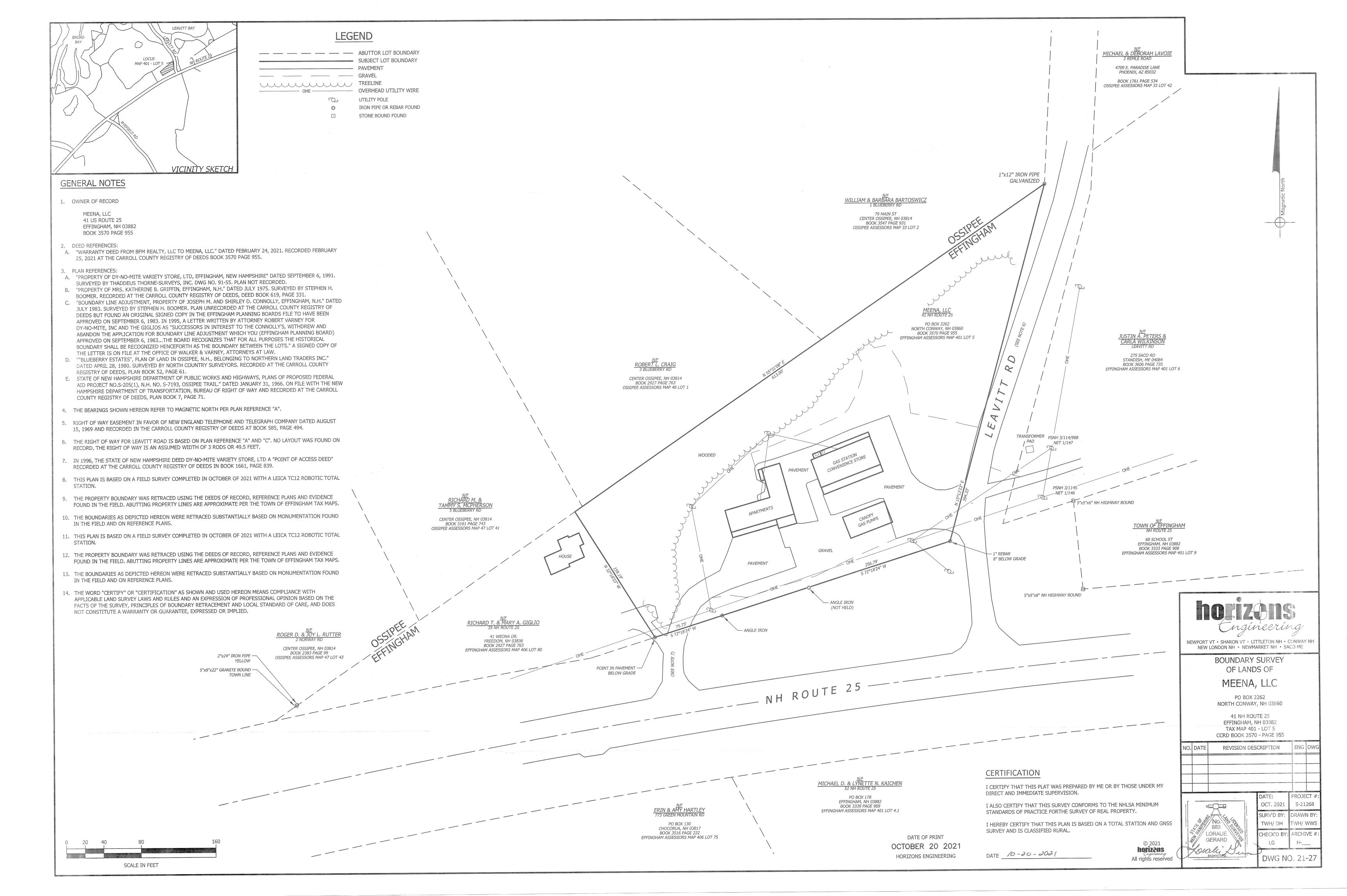
# ENGINEER & SURVEYOR:

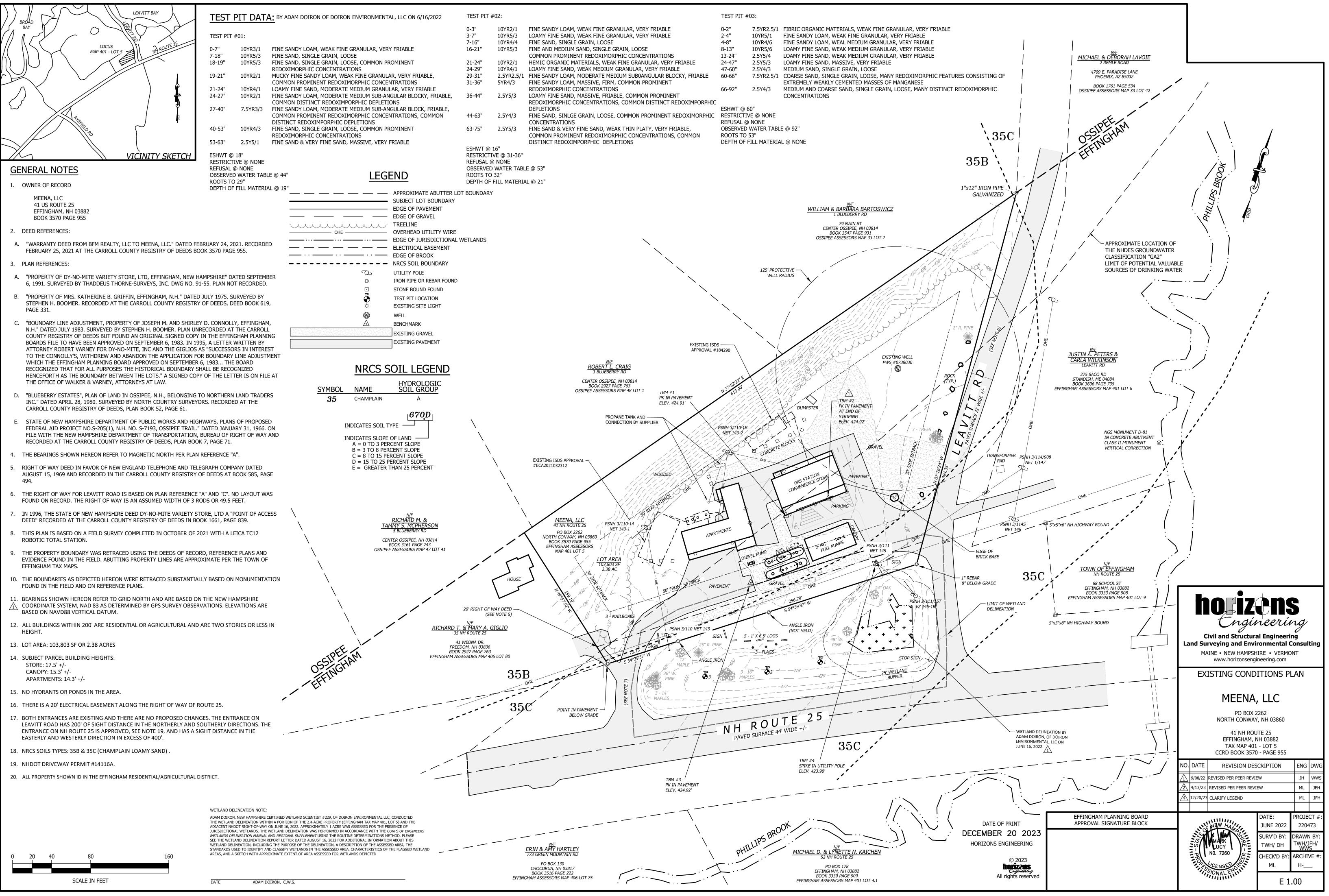


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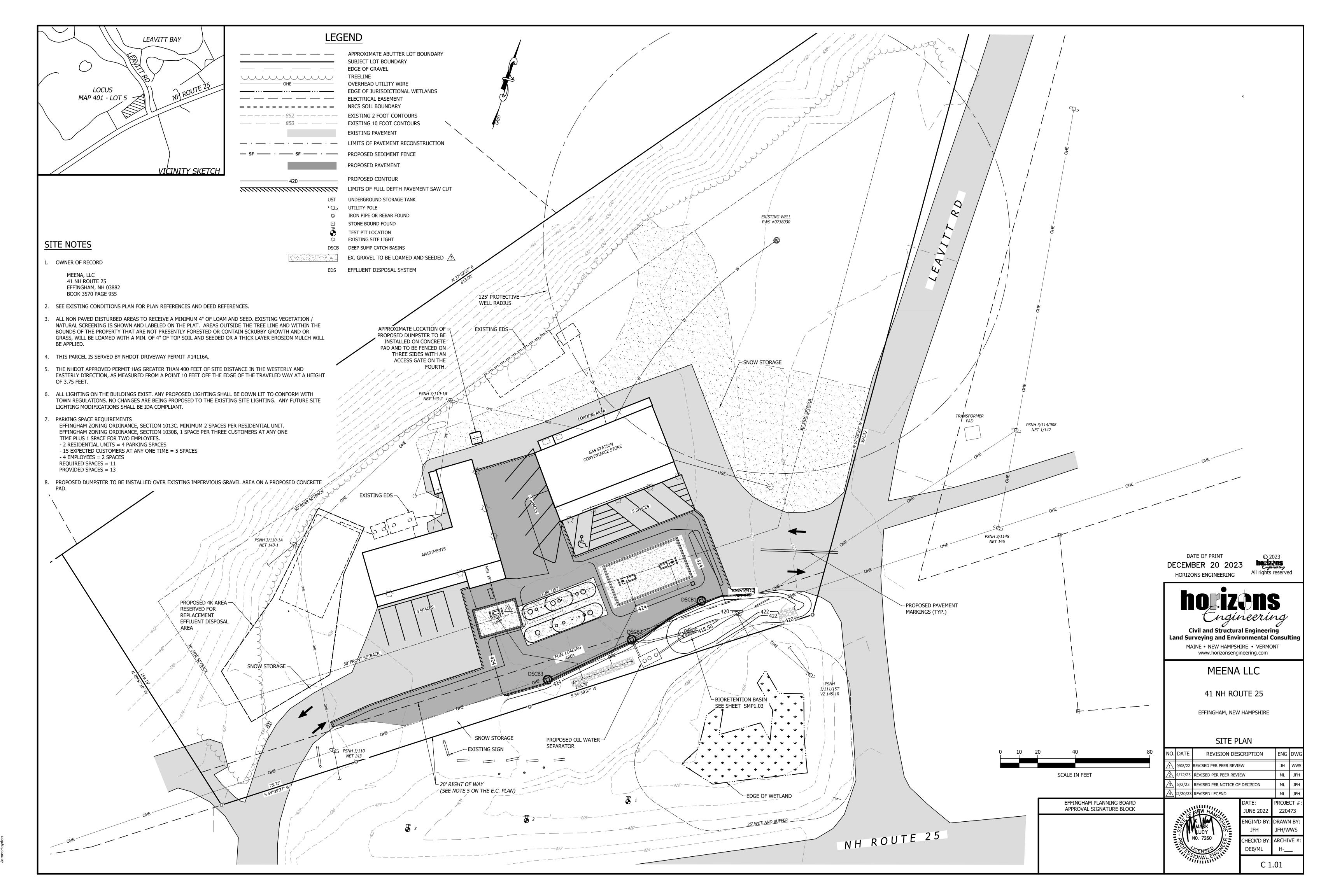
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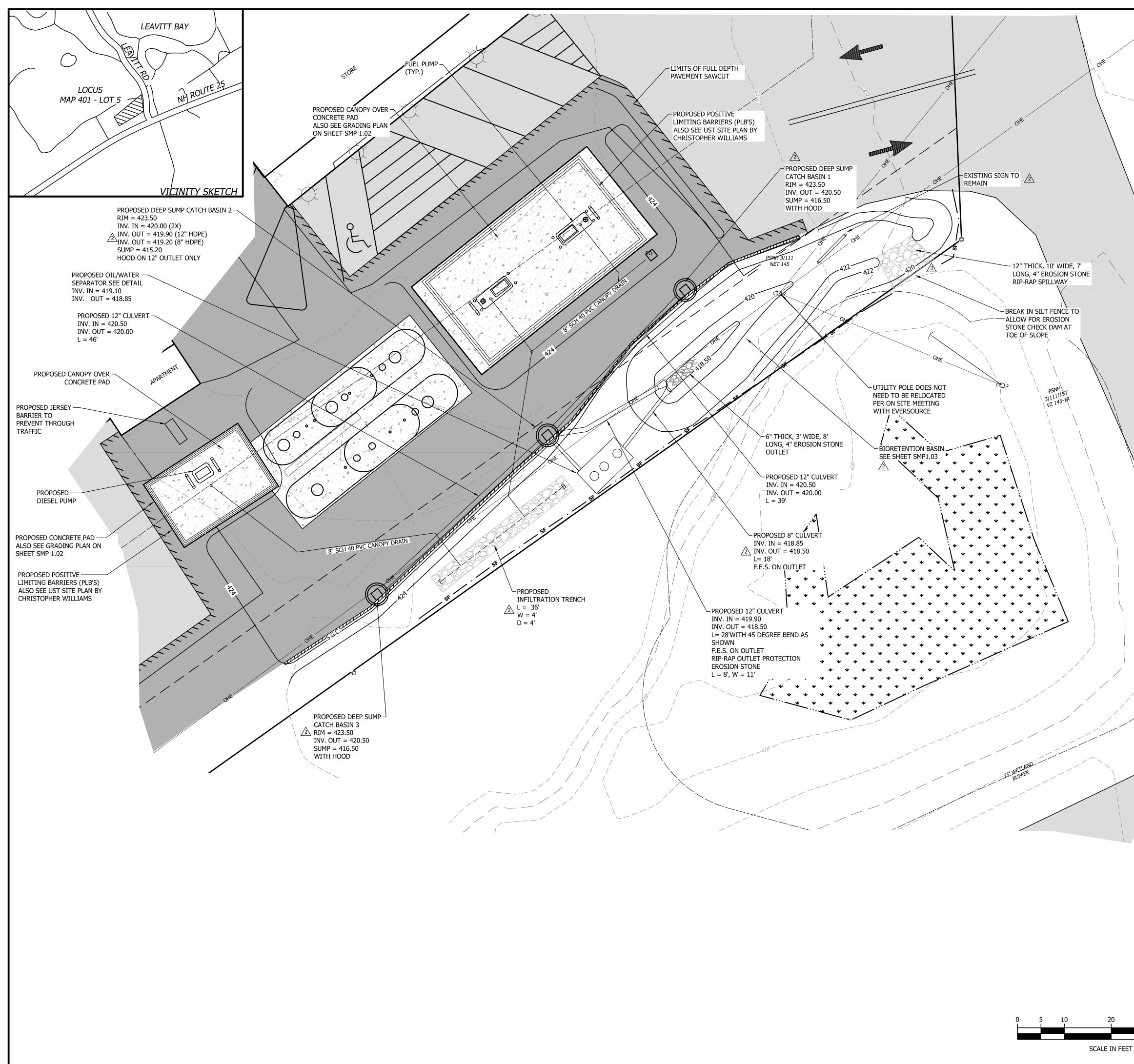
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SCALE IN FEET							





# STORMWATER MANAGEMENT GUIDELINES

# GENERAL

### EXCEPT WHERE MODIFIED HEREIN, ALL CONDITIONS, MEANS, METHODS AND MATERIALS SHALL COMPLY WITH THE NHDOT'S MOST RECENT EDITIONS OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AND AS MAY BE FURTHER SPECIFIED WITHIN THE TOWN'S MOST RECENTLY ADOPTED ROAD OR STREET REGULATIONS. (1) CURBING

ALL PROPOSED GRANITE CURBING SHALL BE SLOPED OR VERTICAL FACE CURBING MEETING NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, HIGHWAY DESIGN MANUAL, STANDARD CR-1 PLATES 1 THROUGH 4. "BACKFIL MATERIAL" DEPICTED ON PLATE 1 SHALL BE CLASS B CONCRETE PLACED ON VEHICLE SIDE OF CURB.

(2) PRECAST CONCRETE DRAINAGE STRUCTURES ALL PROPOSED DRAINAGE STRUCTURES SHALL MEET NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DIVISION 600, SECTION 604.

#### (3) CULVERTS AND STORM DRAINS ALL PROPOSED PIPING SHALL BE AS INDICATED IN PLAN VIEW:

A. CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR HDPE PIPE COMPLYING WITH AASHTO M294, TYPE S. B. FLARED STEEL END SECTIONS SHALL BE GALVANIZED COMPLYING WITH AASHTO M 36 M/M 36 AND SHALL BE INSTALLED WHERE STONE RIPRAP OUTLET PROTECTION IS NOT USED. C. ALL STREET CROSS CULVERTS SHALL HAVE PRECAST CONCRETE, CAST IN PLACE CONCRETE OR MORTARED RUBBLE MASONRY HEADWALLS AT BOTH ENDS OF THE CULVERTS.

(4) LOAMING AND LOAM AMENDMENTS

A. ALL REMAINING DISTURBED AREAS SHALL HAVE FOUR INCHES OF LOAM INSTALLED. LOAM SHALL BE FRIABLE, FREE OF STUMPS, ROOTS AND OTHER UNSUITABLE MATERIAL AND SHALL NOT BE SPREAD WHEN WET. B. ALL LOAMED AREAS SHALL BE FERTILIZED AND SEEDED BY HAND, BROADCAST OR HYDROSEED, AS FOLLOWS:

FERTILIZER

C. BEYOND 100 FEET FROM ANY RIVER, STREAM, POND OR LAKE, THE FOLLOWING MAY BE USED: LIMESTONE AT 100 LBS PER 1000 SF 10-20-20 AT 12 LBS PER 1,000 SF

PERMANENT SEED MIXES AREAS WITHIN ROAD ROW AND DITCHES AND SWALES: NHDOT SLOPE SEED TYPE 44 AT 80 LBS PER ACRE AREAS OUTSIDE OF THE ROAD WORK: NHDOT PARK SEED TYPE 15 AT 120 LBS PER ACRE

TEMPORARY SEED MIX SPRING PLANTING (BEFORE MAY 15): OATS AT 34 LBS PER ACRE OR ANNUAL RYEGRASS AT 16 LBS. PER ACRE FALL PLANTING (AFTER AUGUST 15): WINTER RYE AT 45 LBS. PER ACRE OR ANNUAL RYEGRASS AT 16 LBS. PER ACRE

D. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING UNLESS HYDROSEEDING IS USED THAT INCLUDES A MULCH AND TACIFIER. HYDROSEEDING NOTWITHSTANDING, MULCH SHALL CONSIST OF DRY STRAW OR SEEDLESS HAY SPREAD BY HAND OR MACHINE AND SHALL EITHER CONTAIN A TACKIFIER OR HAVE A TACKIFIER APPLIED.

E. DRAINAGE BASINS' AND CUT/FILL SLOPES STEEPER THAN 3:1 SHALL BE TREATED WITH EROSION CONTROL BLANKET PER MANUFACTURERS' SPECIFICATIONS FOLLOWING THE LOAMING AND LOAM AMENDMENTS' APPLICATION. EROSION CONTROL BLANKET SHALL BE EQUIVALENT TO GEOCOIR DEKOWE 400. THESE AREAS NEED NOT BE MULCHED.

F. SLOPES SHOWN STEEPER THAN 2:1, IF NOT PROTECTED BY STONE RIPRAPPING, SHALL BE PROTECTED WITH JUTE EROSION CONTROL BLANKET INSTALLED PER MANUFACTURER'S SPECIFICATIONS FOLLOWING THE LOAMING AND LOAM AMENDMENTS' APPLICATION. JUTE EROSION CONTROL BLANKET SHALL BE EQUIVALENT TO GEOCOIR DEKOWE 700. THESE AREAS NEED NOT BE MULCHED.

G. DITCHES' AND SWALES' SIDESLOPES AND INVERTS, IF NOT PROTECTED BY STONE RIPRAPPING, SHALL BE PROTECTED WITH JUTE EROSION CONTROL BLANKET INSTALLED PER MANUFACTURER'S SPECIFICATIONS FOLLOWING THE LOAMING AND LOAM AMENDMENTS' APPLICATION. JUTE EROSION CONTROL BLANKET SHALL BE EQUIVALENT TO GEOCOIR DEKOWE 900. THESE AREAS NEED NOT BE MULCHED.

- (5) ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS STABILIZED.
- (6) THE GAS STATION IS CONSIDERED A "HIGH LOAD AREA" AND THE FOLLOWING DESIGN METHODS ARE REQUIRED. 1. CANOPIES OVER THE FUELING AREAS
- 2. POSITIVE LIMITING BARRIERS AROUND THE FUELING ISLAND 3. FUELING ISLANDS HIGHER THAN THE SURROUNDING PAVEMENT.

DATE OF PRINT **DECEMBER 20 2023** 

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# LEGEND

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EXISTING 2 FOOT CONTOURS EXISTING 10 FOOT CONTOURS PROPERTY LINE EDGE OF WETLANDS PROPOSED SEDIMENT FENCE PROPOSED CONTOUR ROOF DRAIN CLEAN OUT PROPOSED CURB

EXISTING PAVEMENT

PROPOSED PAVEMENT EFFINGHAM PLANNING BOARD APPROVAL SIGNATURE BLOCK horizons Engineering

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MEENA LLC

# 41 NH ROUTE 25

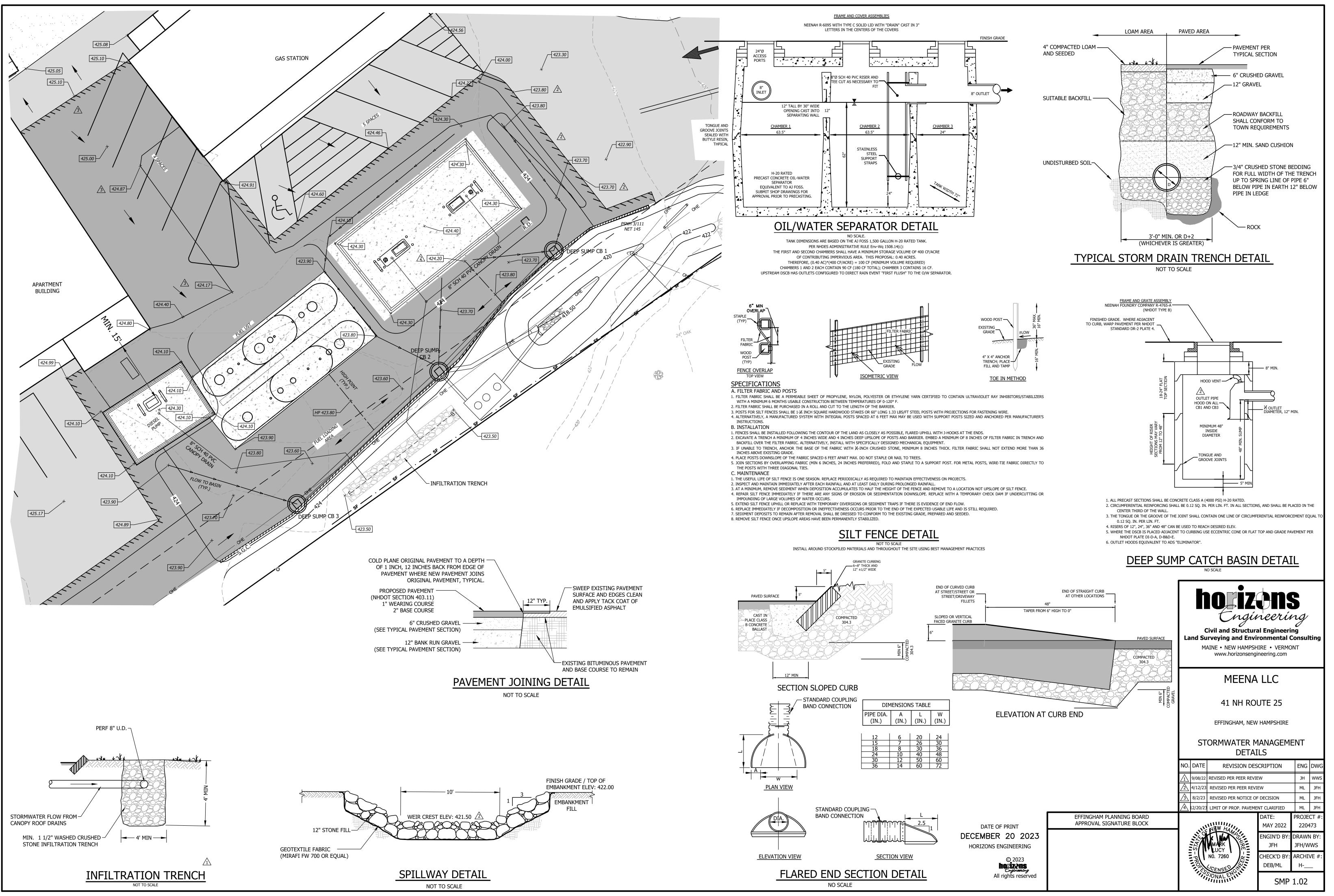
EFFINGHAM, NEW HAMPSHIRE

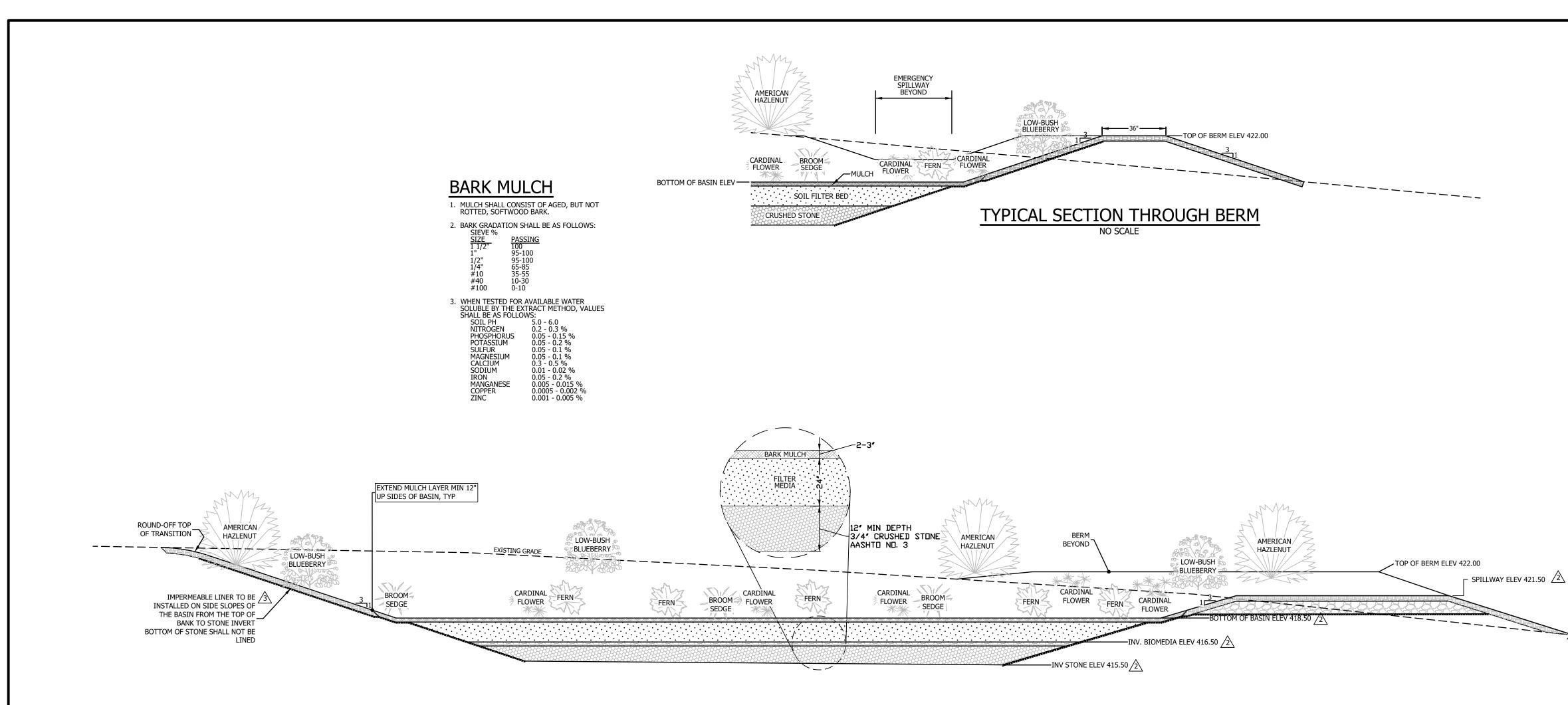
# STORMWATER MANAGEMENT PLAN

#### NO. DATE **REVISION DESCRIPTION** ENG DW 9/08/22 REVISED PER PEER REVIEW 4/12/23 REVISED PER PEER REVIEW 8/2/23 REVISED PER NOTICE OF DECISION 12/20/23 REVISED LEGEND DATE: PROJECT JUNE 2022 220473 NGIN'D BY DRAWN BY JFH IFH/WWS HECK'D BY: ARCHIVE # 7260 DEB/ML

SMP 1.01

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COMPONENT MATERIAL	PERCENT (%) OF MIXTURE BY VOLUME			COMPONENT MATERIAL	PERCENT (%) OF MIXTURE BY VOLUME	SIEVE NO.	PERCENT PASSING (%) STANDARD SIEVE	
ASTM C-33 CONCRETE SAND	50 TO 55				MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH,	20 TO 30	200	<5
LOAMY SAND TOPSOIL, WITH	20 TO 30	200	15 TO 25	WITH FINES AS INDICATED				
FINES AS INDICATED				_	LOAMY COARSE SAND		10	85 to 100
MODERATELY FINE SHREDDED	20 TO 30	200	<5			70 TO 80	20	70 to 100
BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED						/01000	60	15 to 40
				•			200	8 to 15

# TYPICAL SECTION THROUGH PONDING AREA

NO SCALE PLANTINGS SHOWN ARE REPRESENTATIVE ONLY SEE INDIVIDUAL BIORETENTION BASIN PLAN(S) FOR PLANTINGS

# FILTER MEDIA OPTION A

### FILTER MEDIA OPTION B

# FILTER MEDIA DETAIL

NOT TO SCALE

## **INVASIVE SPECIES CONTROL (BY OWNER)**

- 1. MONITOR ALL DISTURBED AND REVEGETATED AREAS REGULARLY FOR ESTABLISHMENT OF INVASIVE SPECIES SUCH AS PURPLE LOOSESTRIFE (LYTHRUM SALICARIA) OR COMMON REED (PHRAGMITES AUSTRALIS).
- 2. REMOVE PURPLE LOOSESTRIFE BY HAND DIGGING AS SOON AS IT IS IDENTIFIABLE. MAKE SURE THAT ALL PIECES OF ROOT TISSUE ARE REMOVED AND DRY OUT THE PLANT MATERIAL THOROUGHLY BEFORE DISPOSAL. WHERE PERMITTED, PLANT MATERIAL SHALL BE BURNED. OTHERWISE, PLACE ALL PLANT MATERIAL IN A CLOSED BLACK PLASTIC BAG IN THE SUN FOR SEVERAL DAYS TO KILL THE PLANT AND SEEDS.
- 3. COMMON REED CAN BE CONTROLLED BY FREQUENT CUTTING AND PULLING OF RHIZOMES DURING THE LATE GROWING SEASON.
- 4. JAPANESE BARBERRY SHALL BE PULLED OUT AT THE EARLIEST OPPORTUNITY. IF MOST OF THE CROWN IS REMOVED, IT DOES NOT RE-GROW.
- 5. IN ALL CASES, THE BEST METHOD OF CONTROL IS TO MAINTAIN HEALTHY GROUND COVER IN ALL AREAS TO MINIMIZE OPPORTUNITY FOR UNWANTED INVASIVE SPECIES TO GAIN A FOOTHOLD.
- 6. WILDFLOWER/MEADOW SEED MIX SHALL NOT CONTAIN ANY INVASIVE SPECIES.

### EFFICACY DOCUMENTATION (BY INSTALLER)

- 1. FOLLOWING COMPLETION OF PLANTING AND REVEGETATION ACTIVITIES, MONITOR THE PROJECT AREA ON A WEEKLY BASIS FOR THE FOLLOWING FOUR WEEKS. DOCUMENT THE SUCCESS OF EFFORTS WITH PHOTOGRAPHS AND A WRITTEN DESCRIPTION OF PROGRESS AND ANY MEASURES TAKEN TO ENSURE SUCCESS.
- 2. FOR THE REMAINDER OF THE FIRST GROWING SEASON, MONITOR AND DOCUMENT ON A MONTHLY BASIS.
- 3. OWNER SHALL INSPECT THE AREA AT THE BEGINNING OF THE FOLLOWING GROWING SEASON. CONTRACTOR SHALL REPAIR OR REPLACE ANY VEGETATION DAMAGED OR KILLED DURING THE WINTER SEASON.

# **BIORETENTION BASIN PLANTINGS**

- TREES, SHRUBS AND GROUNDCOVERS USED IN RESTORATION EFFORTS CAN BE SUPPLIED FROM AREAS ON-SITE THAT ARE OUTSIDE OF ANY EXISTING JURISDICTIONAL WETLANDS. ADDITIONALLY, PLANTS AND SEEDS MAY ALSO BE SUPPLIED FROM APPROVED NURSERY STOCK IF ON-SITE VEGETATION IS NOT SUITABLE FOR TRANSPLANTATION.
- 2. TREES TO BE USED SHALL BE 2" TO 3" MINIMUM CALIPER AT 6" ABOVE THE ROOT BALL AND BE TRANSPORTED BALLED AND BURLAPPED. SUITABLE TREE SPECIES SHALL BE OF THE FOLLOWING ALTERNATIVES: - EASTERN RED CEDAR (JUNIPERUS VIRGINIANA) - SUGAR MAPLE (ACER ACCHARUM)
- 3. SHRUBS TO BE USED SHALL BE 24 INCH TO 36 INCH IN HEIGHT AND BE TRANSPORTED IN 2 GALLON TO 3 GALLON POTS OR BALLED AND BURLAPED. SUITABLE SHRUB SPECIES SHALL BE OF THE FOLLOWING ALTERNATIVES: - AMERICAN HAZLENUT (CORYLIS AMERICANA) - LOWBUSH BLUEBERRY (VACCINIUM ANGUSTIFOLIUM)
- 4. GROUNDCOVER TO BE USED SHALL BE IN #1 CONTAINERS OR FLATS. GROUNDCOVER TO BE PLANTED AT RANDOM, WITH A MAXIMUM CENTER-TO-CENTER SPACING OF 60". SUITABLE GROUNDCOVER SPECIES SHALL BE OF THE FOLLOWING ALTERNATIVES: - MAIDENHAIR FERN (ADIANTUM PEDATUM) - CINNAMON FERN (OSMUNDA CINNAMOMEA) - BROOM SEDGE (CAREX SCOPARIA) - CARDINAL FLOWER (LOBELIA CADINALIS)
- 5. BIORETENTION BASIN SHALL NOT BE PLACED INTO SERVICE UNTIL COMPLETELY PLANTED AND ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED.
- 6. SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (E.G., STORMWATER RUNOFF, WATER FROM EXCAVATION DE-WATERING) SHALL NOT BE ALLOWED TO DISCHARGE INTO THE BIORETENTION BASIN DURING ANY STAGE OF CONSTRUCTION.
- CONSTRUCTION EQUIPMENT SHALL NOT TRAFFIC EXPOSED SOIL SURFACES. WHEREVER PRACTICABLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE OF THE LIMITS OF THE INFILTRATION COMPONENTS OF THE BIORETENTION BASINS.

### EROSION CONTROL AND STABILIZATION

- 1. AS NEEDED, INSTALL HAY BALES BARRIERS OR SILT FENCE BETWEEN PLANTING AREAS. BEGIN BY PLANTING VEGETATION AT THE CENTER OF THE BASIN, THEN WORKING OUTWARD FROM THE CENTER OF THE BASIN. REDUCE IMPACT TO GROUNDCOVER BY MANEUVERING CONSTRUCTION EQUIPMENT ONLY THROUGH AREAS YET TO BE PLANTED.
- 2. PLANT ANY DISTURBED SURROUNDING AREAS USING A WILDFLOWER/MEADOW SEED CONTAINING NO INVASIVE SPECIES MIXTURE, MULCHED WITH STRAW.
- 3. INSPECT THE AREA ON A REGULAR BASIS TO ENSURE ADEQUATE WATER SUPPLY UNTIL VEGETATION IS WELL-ESTABLISHED. REPAIR ANY DISTURBED AREAS IMMEDIATELY UPON DISCOVERY.
- 4. ONCE THE AREA IS STABILIZED AND VEGETATION IS DEMONSTRATING VIGOROUS GROWTH, CAREFULLY REMOVE HAY BALES AND/OR SILT FENCE.



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# MEENA LLC

### 41 NH ROUTE 25

EFFINGHAM, NEW HAMPSHIRE

# **BIORETENTION BASIN DETAILS**

NO.	DATE	DATE REVISION DESCRIPTION					
1	9/08/22	REVISED PER PEER REVI	JH	wws			
$\Delta$	4/12/23	REVISED PER PEER REVI	ML	JFH			
$\overline{\mathbb{A}}$	8/2/23	REVISED PER NOTICE OF	ML	JFH			
	.11	NEW HALL	DATE: MAY 2022	PROJE			
	STATES	MARK UCY	ENGIN'D BY: JFH	DRAWN BY: JFH/WWS			
-	PROF	NO. 7260	CHECK'D BY: DEB/ML	ARCHIVE #: H			
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