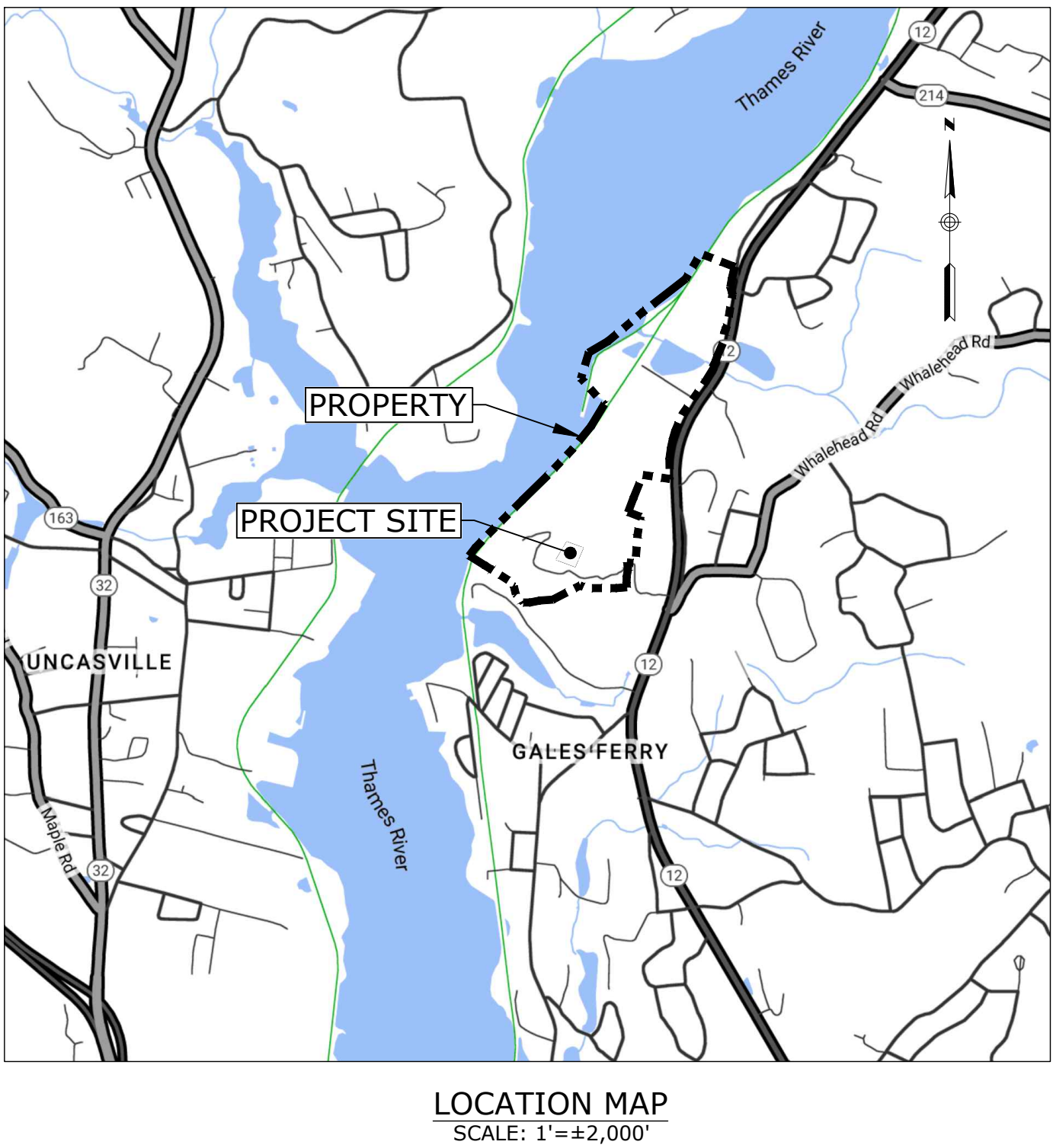


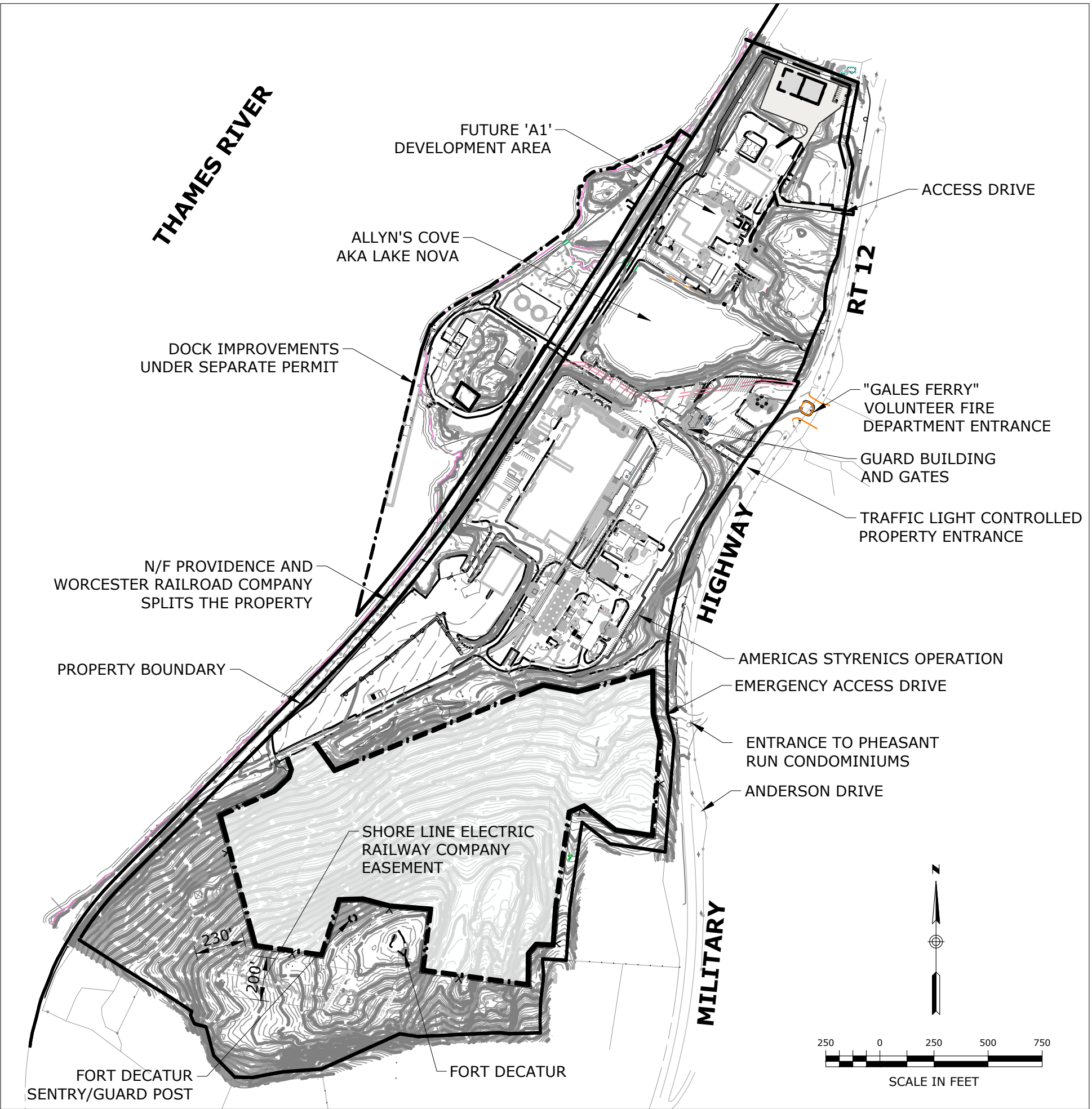
GALES FERRY INTERMODAL INDUSTRIAL SITE PREPARATION PLANS

1737 & 1761 ROUTE 12
GALES FERRY, CT 06335

APRIL 3, 2023



LOCATION MAP
SCALE: 1"=±2,000'



PROPERTY MAP AND ADJACENT FEATURES



DRAWING INDEX		
SHEET NO.	DRAWING	TITLE
1	-	COVER SHEET
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3	C-2	EXISTING CONDITIONS PLAN
4	C-3	OVERALL SITE PLAN
5	C-4	GRADING AND DRAINAGE PLAN
6	C-5	SOIL EROSION & SEDIMENT CONTROL - OVERALL PHASING
7	C-6	SOIL EROSION & SEDIMENT CONTROL - PHASE 1
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12	C-11	WETLAND MITIGATION PLAN
13	C-12	DETAILS

PZC PERMIT #	DATE OF APPROVAL	EXPIRATION DATE
PZC CHAIRMAN OR SECRETARY	DATE	
IWWC PERMIT #	DATE OF APPROVAL	
IWWC CHAIRMAN	DATE	

Property Owner / Applicant:

GALES FERRY INTERMODAL LLC
549 SOUTH STREET
QUINCY, MA 02169



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Engineering · Construction · EH&S · Energy
Waste · Facility Services · Laboratory



SURVEY NOTES

- THIS PLAN IS BASED ON MAP REFERENCE A AND B.
- REFERENCE IS MADE TO THE TOWN OF LEDYARD, CT LAND EVIDENCE RECORDS VOLUME 621 AT PAGE 981 FOR THE SUBJECT PROPERTY.
- THE SUBJECT PROPERTY IS LOCATED ENTIRELY WITHIN THE "I" INDUSTRIAL ZONE DISTRICT.
- "NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP NEW LONDON COUNTY, CONNECTICUT ALL JURISDICTIONS PANEL 354, TOWN OF LEDYARD, MAP NUMBER 0901C03540 EFFECTIVE DATE JULY 18, 2011 FEDERAL EMERGENCY MANAGEMENT AGENCY" INDICATES THE SUBJECT PROPERTY IS LOCATED IN ZONE AE (EL 12) AND ZONE X.
- THE SUBJECT PROPERTIES ARE SHOWN ON THE TOWN OF LEDYARD, CT TAX ASSESSOR MAP 61 BLOCK 2120 AS LOT 1761 WHICH HAS ASSIGNED STREET ADDRESS OF 1761 ROUTE 12, GALES FERRY, CONNECTICUT 06335 AND TOWN OF LEDYARD, CT TAX ASSESSOR MAP 76 BLOCK 2120 AS LOT 1737 WHICH HAS ASSIGNED STREET ADDRESS OF 1737 ROUTE 12, GALES FERRY, CONNECTICUT 06335.
- UNDERGROUND UTILITIES MUST BE FIELD VERIFIED PRIOR TO ANY EXCAVATION.
- A PORTION OF INLAND WETLANDS WERE DELINEATED IN THE FIELD BY JMM WETLAND CONSULTING SERVICES, LLC AND LOCATED BY LOUREIRO ENGINEERING ASSOCIATES, INC., GROTON, CONNECTICUT. THE REMAINING WETLANDS WERE FROM ELECTRONIC DATA FROM CMA AS RECEIVED FROM GALES FERRY INTERMODAL LLC.

MAP REFERENCES

- PROPERTY SURVEY, PROPERTY OF TRINSEO LLC, #1737 & #1761 MILITARY HIGHWAY (ROUTE 12), LEDYARD, GALES FERRY, CT, PREPARED FOR: JAY CASHMAN, INC., 549 SOUTH STREET, QUINCY, MA, SCALE: 1"=100', DATE: 5/10/2022, BY CHA.
- PROPERTY AND TOPOGRAPHIC SURVEY, #1737 & #1761 MILITARY HIGHWAY (ROUTE 12), LEDYARD, GALES FERRY, CT, PREPARED FOR: STYRON LLC "ALLYN'S POINT PLANT", BY CME.

SITE NOTES:

- THE APPLICANT/OWNER IS GALES FERRY INTERMODAL LLC OF 549 SOUTH STREET, QUINCY, MA.
- THE APPLICANT IS PROPOSING A REGRADING OPERATION TO CREATE ADDITIONAL BUILDING PADS FOR FUTURE INDUSTRIAL DEVELOPMENT. THE PROPOSED SITE REGRADING AND PREPARATION APPLICATION WILL BE CONDUCTED IN FOUR PHASES WITH EACH PHASE BEING 10 ACRES OR LESS OF DISTURBED LAND, BASED ON TEST BORINGS CONDUCTED ONSITE, THE SITE PREPARATION WILL REQUIRE THE REMOVAL OF TOPSOIL AND BEDROCK WITH FINAL GRADING BEING SUITABLE FOR FUTURE INDUSTRIAL BUILDINGS.
- OTHER USES ON THE SITE CURRENTLY INCLUDE MANUFACTURING OF STYROFOAM PRODUCTS BY AMERICAS STYRENICS, A TENANT OF THE PROPERTY.
- THE PURPOSE OF THESE PLANS IS FOR REVIEW BY THE TOWN OF LEDYARD INLAND WETLAND WATERCOURSE COMMISSION AND PLANNING AND ZONING COMMISSION. THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND ARE NOT TO BE USED FOR CONTRACT DOCUMENTS.
- NO CONSTRUCTION OF BUILDINGS IS ASSOCIATED WITH THIS APPLICATION.
- THE SUBJECT PROPERTY IS LOCATED WITHIN THE 'I' INDUSTRIAL ZONE. THE PARCEL DOES LIE WITHIN THE COASTAL AREA MANAGEMENT ZONE. A PORTION OF THE SITE IS WITHIN THE FEMA AE (EL 12) AND ZONE X.
- LOT COVERAGE CALCULATIONS:
 - ALLOWED @ 70% = 70% X 7,220,941 SF = 5,054,658 SF
 - PROVIDED: 2,091,741 (EXISTING) + 73,965 (PROPOSED BUILDING AND PAVEMENT ON OTHER PORTION OF SITE UNDER DIFFERENT APPLICATION) / 7,220,941 SF = 30.0 %
- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS INCLUDING A CONNECTICUT D.O.T. ENCROACHMENT PERMIT FOR ANY WORK WITHIN THE D.O.T. RIGHT-OF-WAY PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN, REVIEW AND ADHERE TO ALL REQUIREMENTS AND ANY CONDITIONS OF APPROVAL OF THE TOWN OF LEDYARD.
- ALL EXISTING CURBING, PAVEMENT, ETC. DISTURBED AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE REPLACED/RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR.

EROSION AND SEDIMENTATION (E&S) CONTROL PLAN:

NARRATIVE

- THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN IS FOR THE REGRADING OPERATION FOR BUILDING PADS FOR FUTURE INDUSTRIAL SITE.
- THE TOPOGRAPHY VARIES ACROSS THE SITE AND GENERALLY SLOPES FROM THE SOUTH ALONG THE ONSITE POWER LINE EASEMENT NORTH DOWN TO THE EXISTING RAILROAD AND IMPROVED PORTION OF THE TENANT AMERICA'S STYRENICS. THE UNDERLYING SOIL ON THE HIGHER PORTION OF THE PROJECT AREA IS HOLLIS CHATFIELD ROCK, HYDROLOGIC GROUP D, AND THE LOWER PORTION OF THE PROJECT AREA IS HINCKLEY LOAMY SAND, HYDROLOGIC SOIL GROUP A.
- A LARGE PORTION OF THE UPLAND SOILS WILL BE DISTURBED BY EARTHWORK ACTIVITIES AND THE INTENT OF THIS EROSION AND SEDIMENT CONTROL PLAN IS TO ESTABLISH STORMWATER CONTROLS DURING CONSTRUCTION TO PREVENT THE DISCHARGE OF SEDIMENT LADEN RUNOFF FROM ENTERING THE EXISTING INLAND WETLANDS.
- EROSION CONTROL MEASURES INTENDED TO MINIMIZE SOIL EROSION AND TO CONTROL SEDIMENTATION DURING CONSTRUCTION INCLUDE:
 - THE INSTALLATION OF MULCH SOCKS ALONG THE DOWN-GRADIENT LIMIT OF DISTURBANCE. INSTALL MULCH SOCKS AND/OR HAYBALES AS SHOWN ON PLANS.
 - TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION.
 - THE IMMEDIATE STABILIZATION OF FINAL GRADED AREAS THROUGH THE PLACEMENT OF CRUSHED STONE, TOPSOIL, SEED, MULCH AND EROSION CONTROL NETTING.
 - SWEET THE PAVED AREA IN THE CONSTRUCTION AREA WEEKLY.
 - DEVELOPMENT OF A CONSTRUCTION OPERATIONS PLAN IN CONSIDERATION OF BASIC CONSTRUCTION SEQUENCING OUTLINED HEREIN.
- THE CONSTRUCTION OF THIS PROJECT IS IN A PHASES. IT IS ANTICIPATED THAT SITE WORK CONSTRUCTION WILL BEGIN IN THE FALL OF 2023 AND WILL CONTINUE OFF AND ON FOR 5-10 YEARS.
- A STATE OF CONNECTICUT GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTERWATERS FROM CONSTRUCTION ACTIVITIES MUST BE FILED AT LEAST 60 DAYS PRIOR TO CONSTRUCTION.

CONSTRUCTION SEQUENCE

- CONTACT "CALL BEFORE YOU DIG" TO MARK OUT ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITIES.
- ENSURE ALL LAND USE PERMITS HAVE BEEN SECURED. OBTAIN ALL NECESSARY LOCAL, STATE AND FEDERAL PERMITS, AS REQUIRED. FILE ALL STATE GENERAL PERMITS FOR CONSTRUCTION ACTIVITY THAT APPLY AS REQUIRED.
- PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL MEET WITH THE TOWN REPRESENTATIVE FOR A PRE-CONSTRUCTION MEETING TO DISCUSS ESC REQUIREMENTS AND WATER QUALITY MANAGEMENT PROCEDURES.
- THE LIMITS OF PHASE 1 EXCAVATION AND WORK AREA SHALL BE DELINEATED IN THE FIELD PRIOR TO ANY WORK.
- INSTALL TEMPORARY CONSTRUCTION ENTRANCE, MULCH SOCKS, TEMPORARY SEDIMENT BASIN AND/OR HAY BALE BARRIERS AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN FOR EACH PHASE. INSTALL A DOUBLE ROW OF MULCH SOCKS WHERE WETLANDS ARE DOWNGRADIENT OF ANY WORK.
- INSTALL NEW CULVERT ACROSS EXISTING STREAM AND ANY WORK NEEDED TO CROSS THE EXISTING RAILROAD TRACKS.
- REMOVE ALL TREES, BRUSH, STUMPS, TOPSOIL AND SUBSOIL WITHIN PHASE 1 AS NECESSARY. PROTECT WETLANDS AT ALL TIMES. ALL TOPSOIL AND SUBSOIL SHALL BE RETAINED ONSITE FOR USE IN THE FINAL STABILIZATION AND RECLAMATION OF THE SITE. THE TOPSOIL AND SUBSOIL SHALL BE STOCKPILED IN AREA DELINEATED ON THE PLAN. THE SURFACE OF THE SOIL STOCKPILE SHALL BE STABILIZED BY SEEDING WITH A PERENNIAL RYEGRASS MIX AND MULCH. THE PERENNIAL RYEGRASS MIX SHALL BE APPLIED AT A RATE OF 40 POUNDS PER ACRE. MULCH SHALL BE APPLIED AT A RATE OF 80 POUNDS PER 1,000 SQUARE FEET.
- PRIOR TO ANY BLASTING ACTIVITIES, THE APPLICANT'S BLASTING CONTRACTOR SHALL CONDUCT A PRE-BLAST SURVEY. THE APPLICANT'S GEOTECHNICAL/BLASTING CONSULTANT WILL DETERMINE A SAFE PRE-BLASTING PROCEDURE.
- SURFICIAL MATERIAL (OTHER THAN TOPSOIL AND SUBSOIL) SHALL BE EXCAVATED FROM THE PHASE 1 AREA AND REMOVED BY TRUCK TO THE PROCESSING AREA SHOWN ON THE PLAN.
- PHASE 1 EXCAVATION AREA SHALL BE OVER-EXCAVATED TO A DEPTH OF 6 FEET AND THEREAFTER BACKFILLED WITH STONE DUST OR EQUALLY SUITABLE MATERIAL IN ORDER TO ACCOMMODATE THE INSTALLATION OF FUTURE UNDERGROUND UTILITIES NECESSARY TO SERVE THE FUTURE INDUSTRIAL DEVELOPMENT ON THE PROPERTY.
- UPON THE COMPLETION OF THE EXTRACTION OF STONE IN EACH PHASE OF THE PROJECT, BACKFILL THE FUTURE DEVELOPMENT PAD WITH A MINIMUM OF 6 FEET OF COMPACTED STONE DUST OR EQUALLY SUITABLE MATERIAL AND PLACE SUFFICIENT FILL MATERIAL. THEN LOAM THE AREA WITH NO LESS THAN 4 INCHES OF TOPSOIL FROM THE TOPSOIL THAT WAS PREVIOUSLY STRIPPED AND STOCKPILED ONSITE. THEN SEED AREA WITH FUTURA 2000 BY THE CHAS C. ART CO CONTAINING VARIETIES OF PERENNIAL RYEGRASSES. APPLY AT A RATE OF 90 POUNDS PER 1,000 SQUARE FEET.
- ESC MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE WORK IN EACH PHASE.
- THE CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR IMPLEMENTING AND INSPECTING ESC MEASURES PER THIS PLAN AND SHALL INFORM ALL CONTRACTORS OF THE OBJECTIVES AND REQUIREMENTS OF THE PLAN. THE OWNER SHALL NOTIFY THE PROPER TOWN AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY AND SHALL ADVISE THE TOWN REGARDING THE NEED FOR IMPLEMENTING ADDITIONAL CONTROL MEASURES OR MAINTAINING EXISTING MEASURES AS DEEMED NECESSARY DURING CONSTRUCTION. WEEKLY INSPECTIONS SHALL BE CONDUCTED AND/OR WITHIN 24 HOURS OF THE END OF A STORM RESULTING IN A DISCHARGE. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REPAIRED AND MAINTAINED AS NECESSARY. MONTHLY WRITTEN REPORTS SHALL BE PREPARED INFORMING THE TOWN OF LEDYARD OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL DURING THE CONSTRUCTION PROCESS. THE CONSTRUCTION MANAGER SHALL INSPECT THE SITE TO ASSURE DUST IS ADEQUATELY CONTROLLED. IF THE CONSTRUCTION MANAGER DETERMINES DUST CONTROL MEASURES ARE NOT ADEQUATE, THE CONTRACTOR SHALL BE REQUIRED TO INCREASE THESE MEASURES AS DIRECTED BY THE CONSTRUCTION MANAGER.
- WHEN ALL GRADED AREAS ARE PERMANENTLY STABILIZED, REMOVE ALL EROSION AND SEDIMENT CONTROLS AS INDICATED ON PLAN.
- THE SEQUENCE ABOVE APPLIES TO PHASES 2, 3 AND 4.
- CONSTRUCT WETLAND MITIGATION AS SHOWN ON PLANS.
- WETLAND AREAS ONSITE DOWNSTREAM OF THE EXCAVATION AREA SHALL BE MONITORED FOR 5 YEARS BY A WETLAND SCIENTIST. IF THESE WETLANDS ARE DETERMINED TO BE IMPACTED THEN FUTURE MITIGATION WILL BE DESIGNED AND IMPLEMENTED.

MAINTENANCE OF EROSION CONTROL DEVICES:

- HAYBALE BARRIERS/MULCH SOCK/SILT FENCE:
 - INSPECT HAY BALE BARRIERS/MULCH SOCK/SILT FENCE AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER THE END OF A STORM RESULTING IN A DISCHARGE TO DETERMINE MAINTENANCE NEEDS.
 - IF A MULCH SOCK IS OVERTOPPED DURING A STORM EVENT, CONTRACTOR SHALL INSTALL AN ADDITIONAL MULCH SOCK ON TOP OF THE EXISTING MULCH SOCK OR PLACE ANOTHER MULCH SOCK UPSTREAM OF THE MULCH SOCK THAT OVERTOPPED.
 - INSTALL A SECONDARY BARRIER/FENCE WHEN SEDIMENT DEPOSITS REACH APPROXIMATELY ONE HALF HEIGHT OF THE BARRIER/FENCE.
 - REMOVE SEDIMENT THAT BUILDS UP AGAINST THE MULCH SOCK/BARRIER/SILT FENCE.
 - REPAIR OR REPLACE SPLIT, TORN OR UNRAVELING SOCKS. REPLACE BROKEN OR SPLIT STAKES. SAGGING OR SLUMPING MULCH SOCKS MUST BE REPAIRED WITH ADDITIONAL STAKES OR REPLACED.
 - REPLACE OR REPAIR THE BARRIER/sock/FENCE WITHIN 24 HOURS OF OBSERVED FAILURE. IF REPETITIVE FAILURE OCCURS, CONSULT 2002 GUIDELINES FOR TROUBLESHOOTING FAILURES.
 - MAINTAIN THE HAY BALE BARRIER/MULCH SOCK/FENCE UNTIL THE CONTRIBUTING AREA IS STABILIZED.
- CONSTRUCTION ENTRANCES AND ROADWAYS:
 - MAINTAIN THE ENTRANCE IN A CONDITION IN WHICH WILL PREVENT TRACKING AND WASHING OF SEDIMENTS ONTO PAVED SURFACES.
 - PROVIDE PERIODIC TOP DRESSING AND ADDITIONAL STONE OR LENGTH AS NECESSARY.
 - IMMEDIATELY REMOVE ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE LEFT CLEAN EVERY DAY.
- TEMPORARY SEDIMENT TRAP:
 - INSPECTIONS SHALL BE AT SAME INTERVALS AS ABOVE.
 - OUTLET SHALL BE CHECKED FOR INTEGRITY; HEIGHT OF THE STONE OUTLET SHALL BE MAINTAINED AT ONE FOOT BELOW CREST OF EMBANKMENT. SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE SHOULD BE OBSERVED.
 - WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF OF THE MINIMUM REQUIRED STORAGE VOLUME, DE-WATER BASIN, REMOVE SEDIMENTS, RESTORE TRAP TO ORIGINAL DIMENSIONS AND DISPOSE OF SEDIMENT AT A LOCATION AND MANNER THAT WILL NOT RESULT IN EROSION OR SEDIMENTATION.
 - AFTER CONTRIBUTING AREA IS STABILIZED, REMOVE BASIN AND RE-GRADE/STABILIZE AREA. PHASE 1 AND PHASE 2 TEMPORARY SEDIMENT BASINS WILL BE CLEANED AND CONVERTED TO PERMANENT WATER QUALITY BASINS.
- TEMPORARY DIVERSION DITCHES/SWALES:
 - WHEN THE TEMPORARY DIVERSION IS LOCATED IN CLOSE PROXIMITY TO ONGOING CONSTRUCTION ACTIVITIES, INSPECT AT THE END OF EACH DAY AND IMMEDIATELY REPAIR DAMAGES. OTHERWISE, INSPECT ON SAME INTERVAL AS ABOVE.
 - REPAIR THE DIVERSION WITHIN 24 HOURS OF ANY OBSERVED FAILURE. FAILURE HAS OCCURRED WHEN THE DIVERSION HAS BEEN DAMAGED SUCH THAT IT NO LONGER MEETS THE SPECIFICATIONS IN THE 2002 GUIDELINES.
 - IF REPETITIVE FAILURES OCCUR, REVIEW CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES OR AN ALTERNATIVE MEASURES IS NECESSARY.

ZONING DATA TABLE		
'I' INDUSTRIAL ZONE		
ITEM	REQUIRED	PROVIDED
LOT AREA	200,000 SQ. FT. (4.59 AC.)	7,220,941 SQ. FT. (165.7 AC.)
FRONTAGE	200 FT.	3700 ± FT.
LOT WIDTH	200 FT	> 200 FT.
FRONT SETBACK	35 FT.	> 35 FT EXISTING BUILDINGS
SIDE SETBACK	25 FT	> 25 FT EXISTING BUILDINGS
REAR SETBACK	25 FT.	> 25 FT EXISTING BUILDINGS
LOT COVERAGE (%) (SEE SITE NOTE 5)	70% (4,817,736 SQ. FT.)	30.0 % (2,165,706 SQ. FT.)
BUILDING HEIGHT	N/A	N/A
PARKING (# OF SPACES)	N/A	N/A
WATER SUPPLY	MUNICIPAL	
SANITARY DISPOSAL	ONSITE SSDS	



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SCALE		NOT TO SCALE	
DRAWN BY		DATE	
SMR		04/03/2023	
APPROVED BY		DATE	
GFA		04/03/2023	

NOTES LEGEND AND ABBREVIATIONS

GALES FERRY INTERMODAL LLC
1737 & 1761 ROUTE 12, GALES FERRY, CT 06335

GALES FERRY INTERMODAL LLC
549 SOUTH STREET, QUINCY, MA 02169

DRAWING	
C-1	
SHEET NO.	NO. OF SHEETS
2	13

LEGEND

- AC

ACRES
- BIT

CONC
- TC

TOP OF CURB
- CHD

CONNECTICUT HIGHWAY DEPARTMENT MONUMENT
- BC

BOTTOM OF CURB
- C.O.

CLEAN OUT
- CL&P

CONNECTICUT LIGHT & POWER
- LLR

LEDYARD LAND RECORDS
- INV

INVERT
- M/L

MOR EOR LESS
- MIN

MINIMUM
- N/F

NOW OR FORMERLY
- SF

SQUARE FEET
- TYP

TYPICAL
- TORW

TOP OF ROCK WALL
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- x6.1

NEW SPOT GRADE
- NEW CONTOUR
- NEW INDEX CONTOUR
- BUILDING SETBACK LINE
- MUNICIPAL WATER
- UNDERGROUND ELECTRIC
- ☑

CATCH BASIN W/ E&SC
- ⌊

SEDIMENT FENCE
- ⌋

SIGN
- ⌋

UTILITY POLE
- ☁

DECIDUOUS TREE
- 13

SOIL TYPE - TAKEN FROM NATURAL RESOURCES CONSERVATION SERVICE, WEBSOIL SURVEY, NATIONAL COOPERATIVE SOIL SURVEY

PZC PERMIT # _____	DATE OF APPROVAL _____	EXPIRATION DATE _____
PZC CHAIRMAN OR SECRETARY _____	DATE _____	
IWWC PERMIT # _____	DATE OF APPROVAL _____	
IWWC CHAIRMAN _____	DATE _____	

1) "RIGHT OF WAY AND TRACK MAP OPERATED BY THE NORWICH AND WORCESTER R.R. CO. OPERATED BY THE NEW YORK NEW HAVEN AND HARTFORD R.R. CO. FROM WORCESTER TO GROTON STATION 3379+20 TO STATION 3405+60 TOWN OF LEDYARD, STATE OF CONN. SCALE 1"=50' DATE: JUNE 30, 1915 REVISED THROUGH OCTOBER 9, 1947. OFFICE OF VALUATION ENGINEER, BOSTON MASS. MAP NO. V.5063 / 129.

2) "RIGHT OF WAY AND TRACK MAP OPERATED BY THE NORWICH AND WORCESTER R.R. CO. OPERATED BY THE NEW YORK NEW HAVEN AND HARTFORD R.R. CO. FROM WORCESTER TO GROTON STATION 3405+60 TO STATION 3420+00 TOWN OF LEDYARD, STATE OF CONN. SCALE 1"=50' DATE: JUNE 30, 1915. OFFICE OF VALUATION ENGINEER, BOSTON MASS. MAP NO. V.5063 / 130.

3) "RIGHT OF WAY AND TRACK MAP OPERATED BY THE NORWICH AND WORCESTER R.R. CO. OPERATED BY THE NEW YORK NEW HAVEN AND HARTFORD R.R. CO. FROM WORCESTER TO GROTON STATION 32+00 TO STATION 58+40 TOWN OF LEDYARD, STATE OF CONN. SCALE 1"=50' DATE: JUNE 30, 1915 REVISED THROUGH APRIL 11, 1951. OFFICE OF VALUATION ENGINEER, BOSTON MASS. MAP NO. V.5063 / 131.

4) "RIGHT OF WAY AND TRACK MAP OPERATED BY THE NORWICH AND WORCESTER R.R. CO. OPERATED BY THE NEW YORK NEW HAVEN AND HARTFORD R.R. CO. FROM GROTON STATION 34+00 TO STATION 84+00 TOWN OF LEDYARD, STATE OF CONN. SCALE 1"=50' DATE: JUNE 30, 1915 REVISED THROUGH APRIL 11, 1951. OFFICE OF VALUATION ENGINEER, BOSTON MASS. MAP NO. V.5063 / 132.

5.) "NORWICH AND WESTER RAILROAD REAL ESTATE & RIGHT OF WAY DEPARTMENT LAND IN LEDYARD, CONN. TO BE CONVEYED TO THE DOW CHEMICAL COMPANY" SCALE 1"=200' DATE: SEPTEMBER 1950 RECEIVED THROUGH OCTOBER 1950, ON FILE AS MAP NO. 5A.

6.) "LOCATION OF THE RIGHT OF WAY OF THE CONNECTICUT LIGHT & POWER COMPANY ACROSS THE PROPERTY OF THE DOW CHEMICAL COMPANY, TOWN OF LEDYARD, COUNTY OF NEW LONDON, STATE OF CONNECTICUT" SCALE 1"=200' DATE: APRIL 17, 1951.

7.) "MAP OF PROPERTY OWNED BY THE DOW CHEMICAL COMPANY LOCATED AT ALLYN'S POINT ON THE WEST SIDE OF ROUTE 12 AND EAST OF THE NEW YORK NEW HAVEN & HARTFORD RAILROAD CO. LEDYARD, CONN." SCALE: 1"=100' DATE: JULY 1952 REVISED AUGUST 1953, G.L. BILDERBECK CONSULTING ENGINEERS, NEW LONDON, CONN.

8.) "MAP SHOWING PROPERTY OWNED BY DOW CHEMICAL COMPANY, ALLYN'S POINT, LEDYARD, CONN." SCALE: 1"=100' DATE : DECEMBER 1953, G.L. BILDERBECK, CONSULTING ENGINEERS, NEW LONDON, CONN.

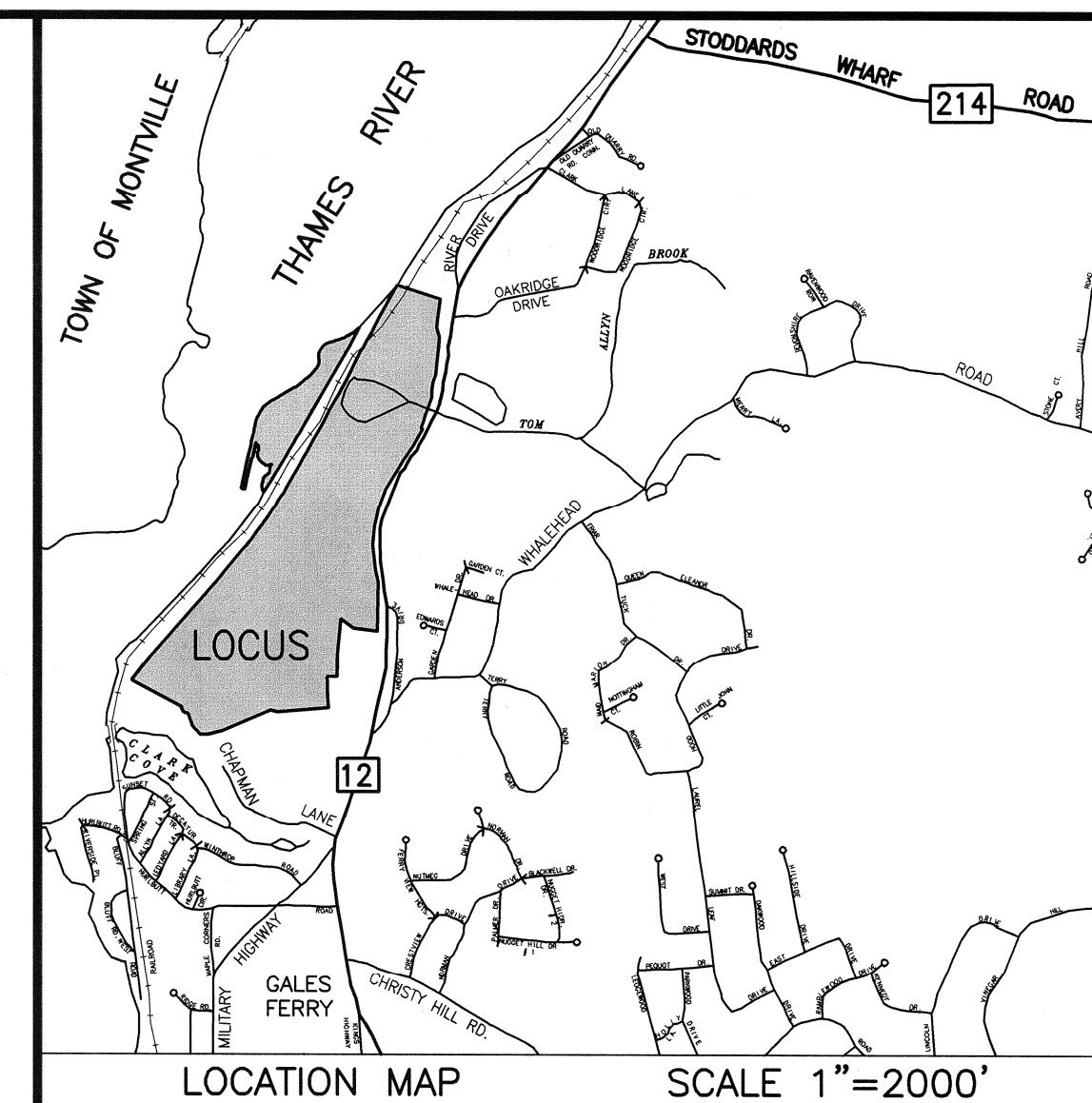
- 9.) "CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF LEDYARD GROTON-GROTON ROAD FROM ALLYN'S BROOK NORTHERLY TO LEDARD-PRESTON TOWN LINE" SCALE "1"="40" DATE: NOVEMBER 5, 1957, SHEETS 1 THROUGH 3 OF 9 PROJECT NUMBER: 71-16. THESE MAPS SUPERSEDE PROJECT 71-05, SHEET 3 REVISED AUGUST 26, 1967.
- 10.) "CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF LEDYARD GROTON-NORWICH ROAD GILES FERRY ROAD TO ALLYN'S BROOK" SCALE "1"="40" DATE: NOVEMBER 5, 1957, SHEETS 1 THROUGH 4 OF 4 PROJECT NUMBER: 71-15. THESE MAPS SUPERSEDE PROJECT 71-04, SHEET 1 REVISED THROUGH MAY 17, 2004.
- 11.) "PLAN SHOWING LANDS NOW AND FORMALLY OF H. WINTHROP HURLBUTT LEDYARD, CONNECTICUT" SCALE "1"="100" DATE: OCTOBER 1964, GEORGE H. DIETER, LAND SURVEYOR, ON FILE AS MAP # 226.
- 12.) "PLAN OF PROPERTY TO BE CONVEYED TO THE TOWN OF LEDYARD BY THE DOW CHEMICAL COMPANY, TOWN OF LEDYARD, CONN." SCALE "1"="100" DATE: APRIL 1972, CHENDLER PALMER & SONS, WEDGEMONT, N.H.

13.) "PLAN SHOWING PARCELS OF LAND WITH BUILDINGS PROPERTY OF JAMES L. LEWIS AND ALICE L. LEWIS, PENWAY AT WEST END CHAPMAN LANE LEDYARD, CONNECTICUT" SCALE 1"=20' DATE: JUNE 1976, GEORGE H. DIETER, LAND SURVEYOR, ON FILE AS MAP # 672.

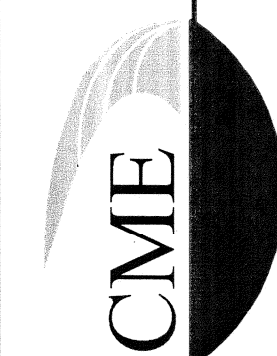
14.) "TOPOGRAPHICAL PLAN, PLAN OF A PORTION OF DOW CHEMICAL CO. ALLYN'S POINT PLANT GALES FERRY, CONN." SCALE: 1"=40' DATE: JULY 9, 1984 REVISIONS THROUGH AUGUST 28, 1984, CHANDLER, PALMER & KING, NORWICH, CONN.

15.) "MONUMENTED PROPERTY SURVEY MAP DEPICTING LAND OF GALES FERRY MARINA, INC. A PORTION OF LAND OF JAMES L. LEWIS AND LUCILLE A. LUPINACIO, CHAPMAN LAN GALES FERRY, LEDYARD, CONNECTICUT" SCALE: 1"=40' DATE: MARCH 26, 1994 REVISED APRIL 19, 1994, DAVID L. STEIN, LAND SURVEYOR, WESTBROOK, CONNECTICUT, ON FILE AS MAP #1753.

16.) COMPILED PLAN MAP SHOWING EASEMENT AREA TO BE GRANTED TO THE YANKEE GAS SERVICES COMPANY ACROSS THE PROPERTY OF DOW CHEMICAL COMPANY (ALLYN'S POINT PLANT) #1751 ROUTE 12 GALES FERRY-LEDYARD CONNECTICUT SCALE: 1"=60' DATE: 01/01/01 DATE: 03-04-2010 YANKEE FILE #E0048, BY CME ASSOCIATES, INC. ON FILE AS MAP #2629.



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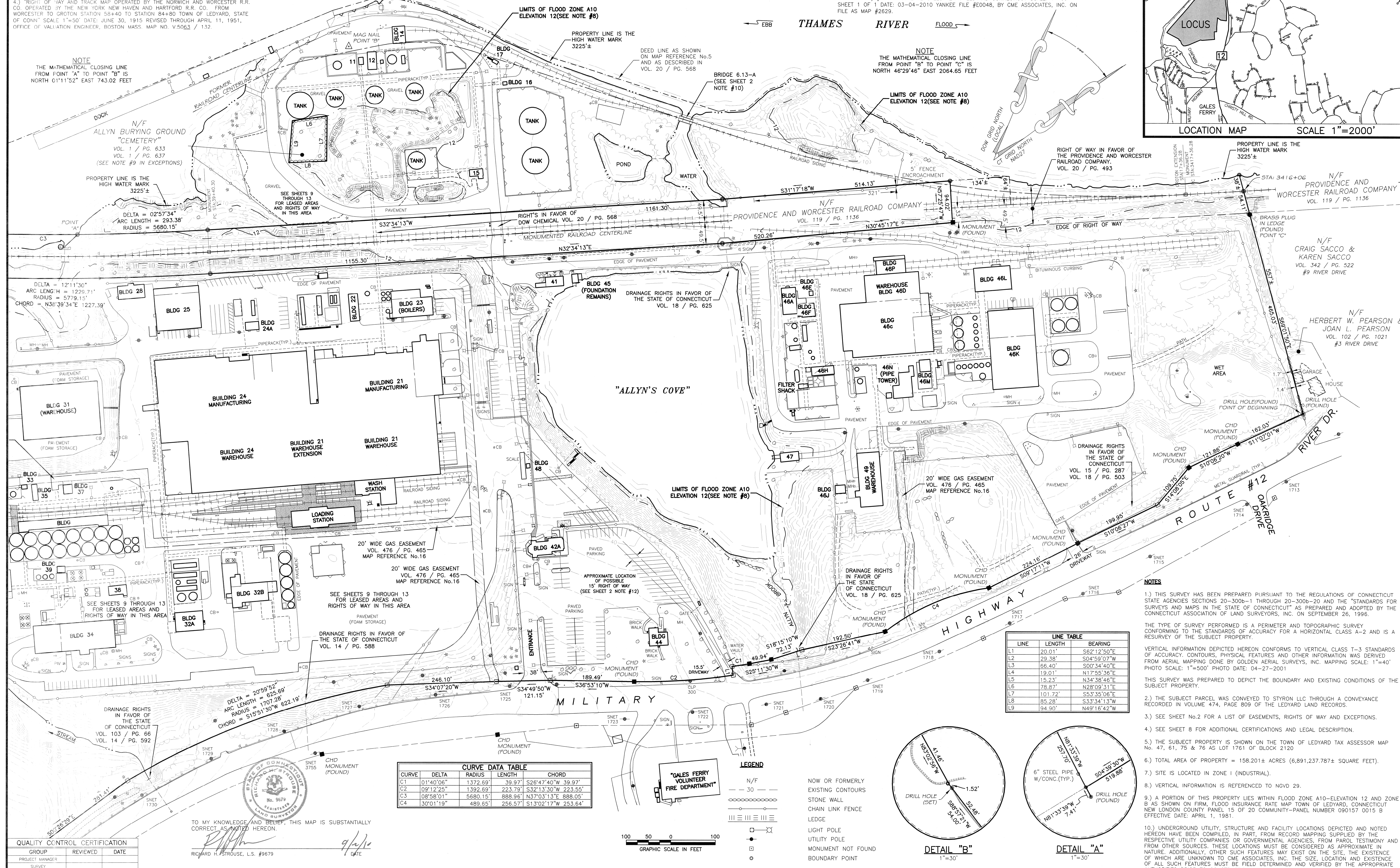
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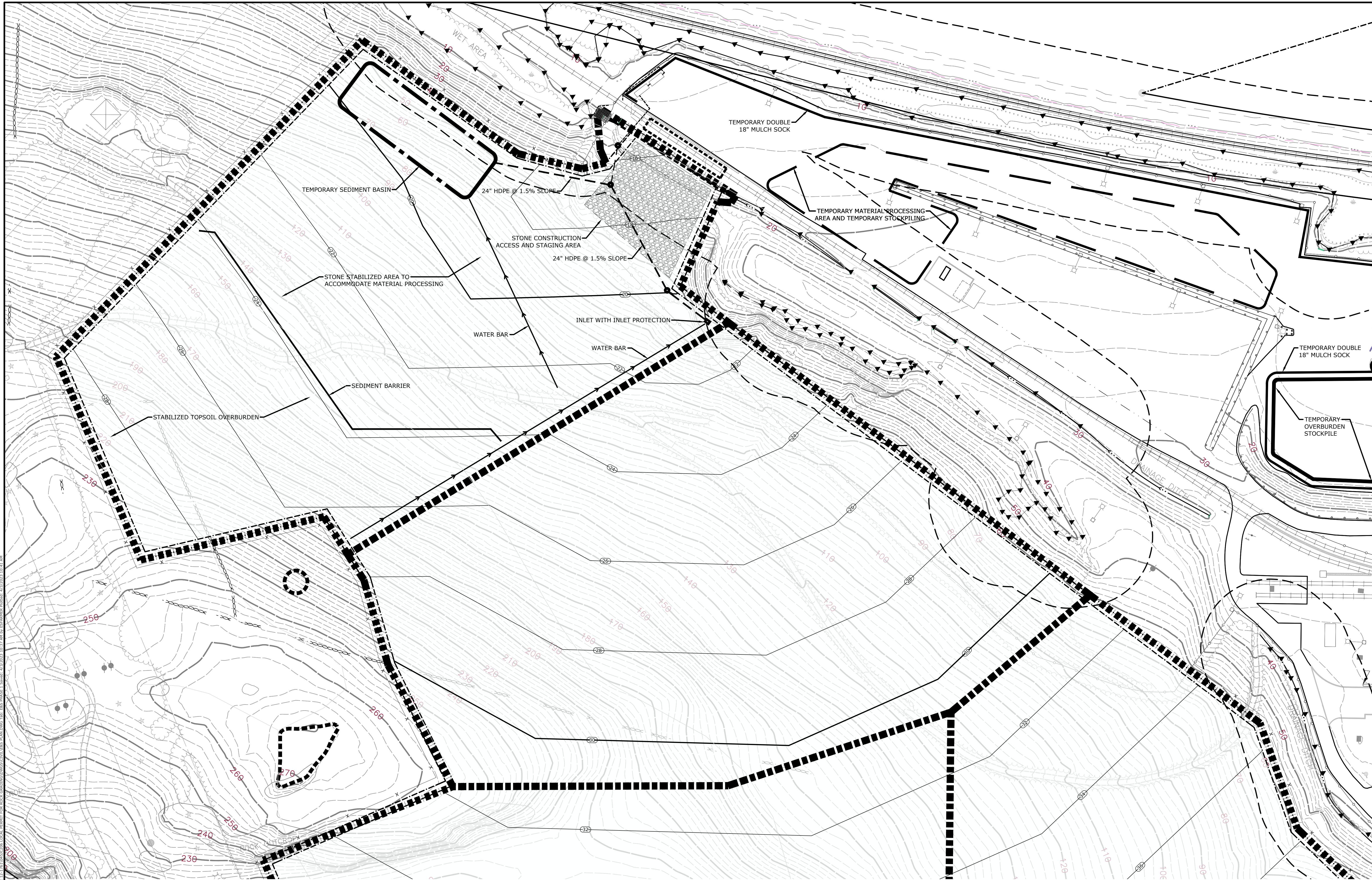
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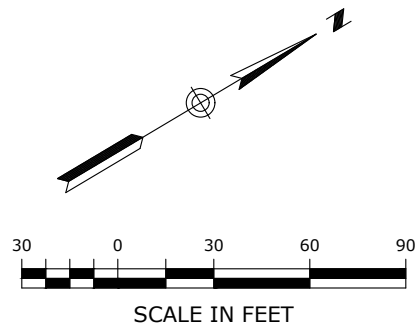
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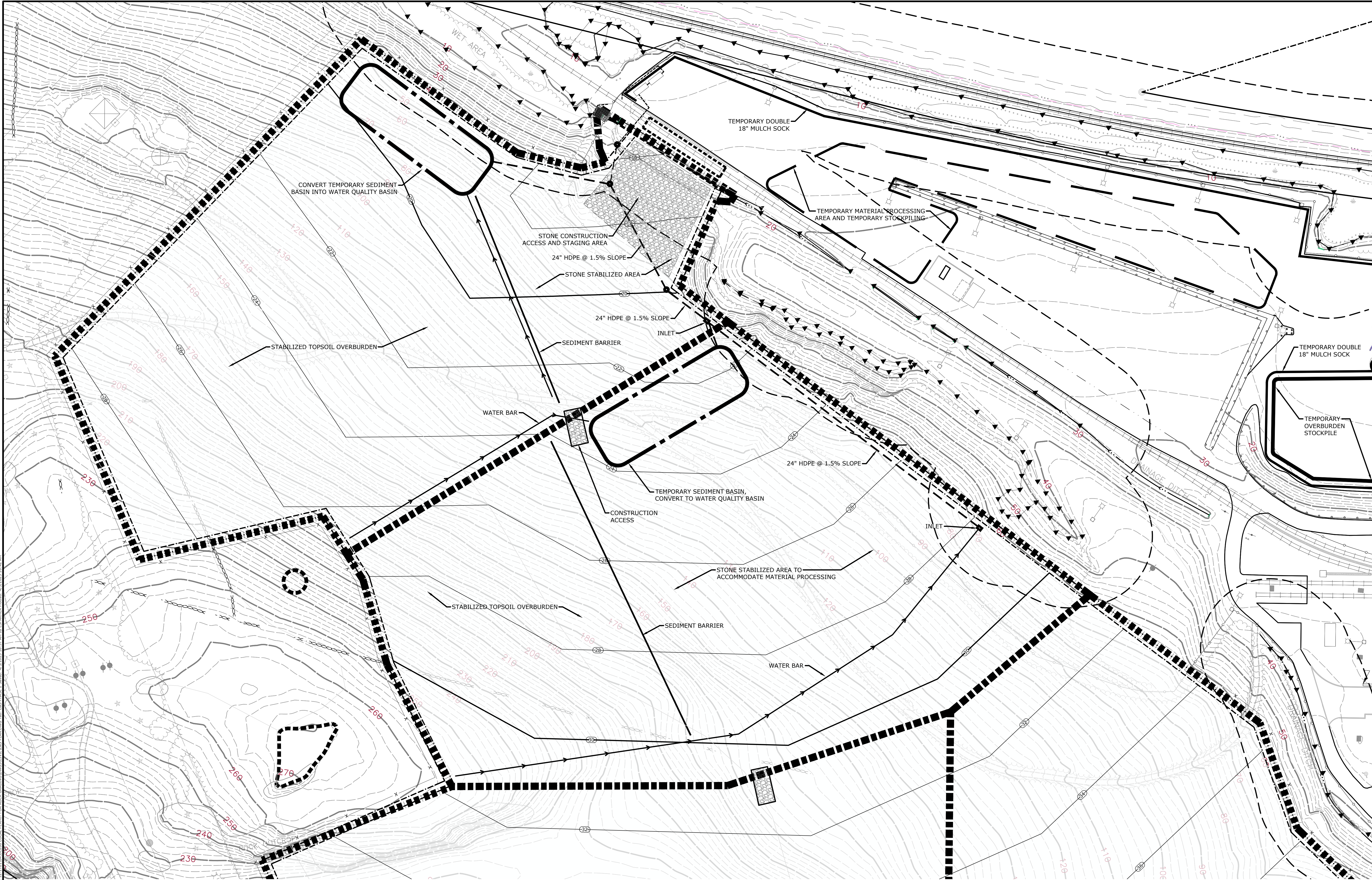
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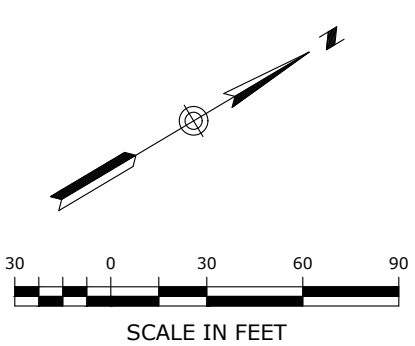
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GALES FERRY INTERMODAL 1737 & 1761 ROUTE 12, GALES FERRY, CT 06335		GALES FERRY INTERMODAL LLC 383 SOUTH STREET, SUITE 201, NEW BRITAIN, CT 06053							
C-6		SHEET NO. 7		NO. OF SHEETS 13		REV.		DATE	
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INDUSTRIAL SITE PREPARATION PLAN:
SOIL EROSION & SEDIMENT CONTROL - PHASE 2

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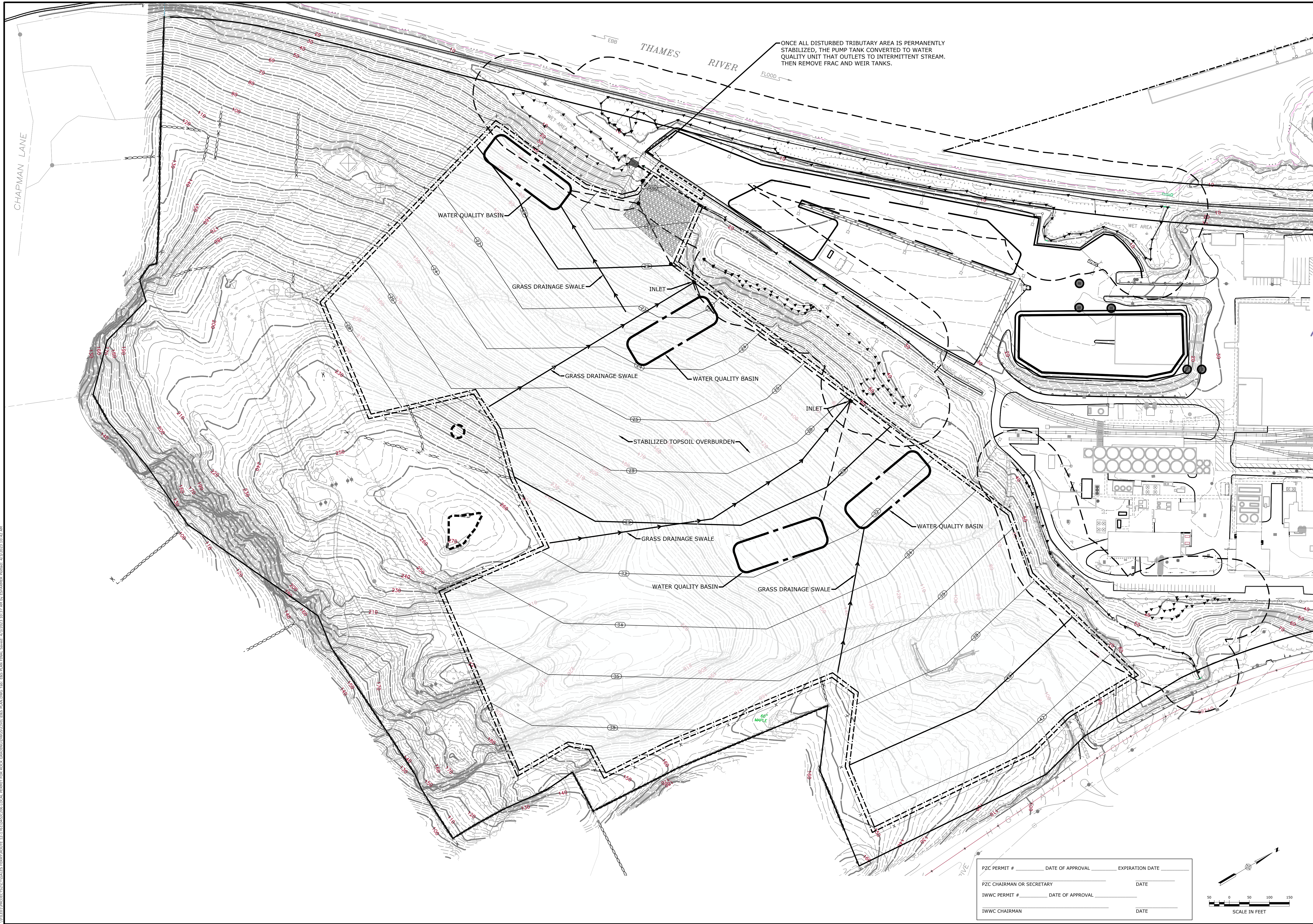
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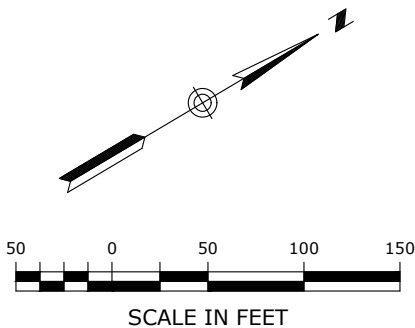


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ONCE ALL DISTURBED TRIBUTARY AREA IS PERMANENTLY STABILIZED, THE PUMP TANK CONVERTED TO WATER QUALITY UNIT THAT OUTLETS TO INTERMITTENT STREAM. THEN REMOVE FRAC AND WEIR TANKS.

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INDUSTRIAL SITE PREPARATION PLAN:
SOIL EROSION & SEDIMENT CONTROL - FINAL

DRAWING C-10		INDUSTRIAL SITE PREPARATION PLAN: SOIL EROSION & SEDIMENT CONTROL - FINAL	
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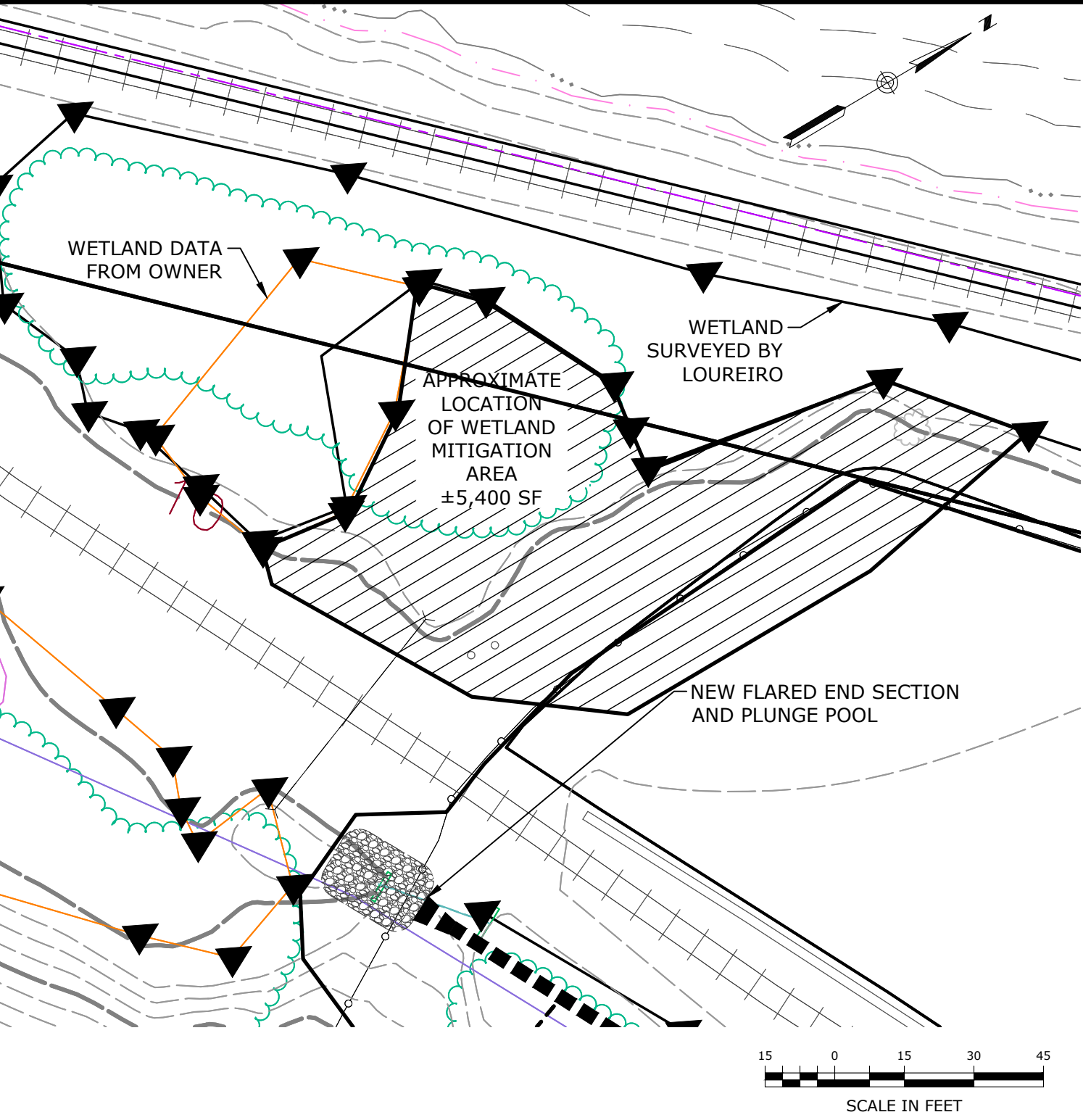


Table 3. Herbs						Wetland Creation Area	Totals
Hydrologic Zones: Zone A: Saturated/Shallow inundation; Zone B: seasonally saturated, moist Zone C: moderately well drained, usually moist; Zone D: well-drained							
Scientific Name	Zone	Common Name	Form	NWI*	Spacing		
<i>Asclepias incarnata</i>	A,B	Swamp milkweed	2" plug	OBL	2'OC	50	50
<i>Carex lupulina</i>	B	Hop sedge	2" plug	FACW	2'OC	100	100
<i>Eutrochium purpureum</i>	B	Purple Joe Pye weed	2" plug	FAC	3'OC	50	50
<i>Juncus canadensis</i>	A,B	Canada rush	2" plug	OBL	2'OC	50	50
<i>Mimulus ringens</i>	B	Monkey-flower	2" plug	OBL	2'OC	50	50
<i>Monarda fistulosa</i>	C	Wild bergamot	2" plug	UPL	3'OC	50	50
<i>Panicum virgatum</i>	C	Switchgrass	2" plug	FAC	3'OC	100	100
<i>Oncoclea sensibilis</i>	B	Sensitive fern	6" pot	FAC	2'OC	20	20
<i>Verbena hastata</i>	B	Blue vervain	2" plug	FACW	3'OC	50	50
<i>Vernonia noveboracensis</i>	B	New York Ironweed	2" plug	FACW	3'OC	50	50
<i>Zizia aurea</i>	B	Golden alexanders	2" plug	FAC	3'OC	50	50
Total:						620	620
* NWI Status (National Wetland Inventory; National Wetland Plant List: Northcentral & Northeast)							
NOTES:							
1. Plant between May 15 and June 30 for herbaceous species. July planting will need watering through end of August.							
2. Purchased woody material may be installed either in the spring (April 15 to June 15), or in the fall (August 15 to October 15)							
3. Plant in same species groupings of three to six shrubs, ten to twenty for herbs							
4. Use seed mixes from New England Wetland Plants, Inc., South Hadley, MA (see Table 4), at specified seeding rate.							
5. No seeding or plants in 3' diameter circle around each shrub and tree, 1' around plugs; mulch with shredded bark							
6. Water and weed as needed during first growing season.							

Table 1. Trees							Wetland Creation Area	Totals
Hydrologic Zones: Zone A: Saturated/Shallow inundation; Zone B: seasonally saturated, moist Zone C: moderately well drained, usually moist; Zone D: well-drained								
Scientific Name	Zone	Common Name	Size	Shade tolerant?	NWI*	Form		
FULL SIZE TREES								
<i>Nyssa sylvatica</i>	B,C	Black gum	4'-6'	Y	FAC	nursery pot	1	1
<i>Quercus palustris</i>	B,C	Pin Oak	4'-6'	Y	FACW	nursery pot	2	2
<i>Acer rubrum</i>	D	Red maple	4'-6'	Y	FACU-	nursery pot	2	2
Total:							5	5
SMALL TREES/LARGE SHRUBS								
<i>Amelanchier canadensis</i>	C,D	Shadblow	3'-4'	Y/N	FAC	nursery pot	2	2
<i>Salix discolor</i>	B,C	Pussy willow	3'-4'	N	FACW	nursery pot	4	4
<i>Juniperus virginiana</i>	C,D	Red cedar	3'-4'	Y	UPL	nursery pot	8	8
Total:							14	14

Table 2. Shrubs								Totals
Scientific Name	Zone	Common Name	Size	Shade tolerant?	NWI*	Form		
MEDIUM TO LOW SHRUBS								
<i>Aronia arbutifolia</i>	B,C	Chokeberry	3'-4'	N	FACW	pot	6	6
<i>Clethra alnifolia</i>	B,C	Sweet pepperbush	3'-4'	Y	FAC+	pot	6	6
<i>Corylus americana</i>	C,D	American hazelnut	3'-4'	Y	FACU-	pot	6	6
<i>Ilex verticillata</i>	B,C	Winterberry	3'-4'	Y	FACW+	pot	8	8
<i>Lyonia ligustrina</i>	B,C	Maleberry	3'-4'	Y/N	FACW	pot	8	8
<i>Morella pensylvanica</i>	C,D	Bayberry	3'-4'	N	FAC	pot	8	8
<i>Vaccinium corymbosum</i>	B	Highbush blueberry	3'-4'	Y	FACW	pot	10	10
<i>Viburnum lentago</i>	B,C	Nannyberry	3'-4'	Y	FAC	pot	10	10
<i>Spiraea latifolia</i>	B,C	Meadowsweet	3'-4'	N	FAC+	pot	30	30
<i>Swida racemosa</i>	B,C	Gray dogwood	3'-4'	Y	FAC	pot	15	15
<i>Rosa palustris</i>	A	Swamp rose	3'-4'	Y	OBL	pot	5	5
Total:							112	112

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New England Conservation/Wildlife Mix			
Botanical Name	Common Name	Indicator	
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-	
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU-	
<i>Andropogon gerardii</i>	Big Bluestem	FAC	
<i>Festuca rubra</i>	Red Fescue	FACU	
<i>Sorghastrum nutans</i>	Indian Grass	UPL	
<i>Panicum virgatum</i>	Switch Grass	FAC	
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU	
<i>Desmodium canadense</i>	Showy Tick Trefoil	FAC	
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI	
<i>Bidens frondosa</i>	Beggar Ticks	FACW	
<i>Eupatorium purpureum (Eutrochium maculatum)</i>	Purple Joe Pye Weed	FAC	
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-	
<i>Aster pilosus (Symphyotrichum pilosum)</i>	Heath (or Hairy) Aster	UPL	
<i>Solidago juncea</i>	Early Goldenrod		
PRICE PER LB. \$39.50 MIN. QUANTITY 2 LBS. TOTAL: \$79.00 APPLY: 25 LBS/ACRE :1750 sq ft/lb			
The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes For both good erosion control and wildlife habitat value. The mix is designed to be a no maintenance seeding, and is appropriate for cut and fill slopes, detention basin side slopes, and disturbed areas adjacent to commercial and residential projects. New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.			

New England Wetmix (Wetland Seed Mix)			
Botanical Name	Common Name	Indicator	
<i>Carex vulpinoidea</i>	Fox Sedge	OBL	
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW	
<i>Carex lurida</i>	Lurid Sedge	OBL	
<i>Carex lupulina</i>	Hop Sedge	OBL	
<i>Poa palustris</i>	Fowl Bluegrass	FACW	
<i>Bidens frondosa</i>	Beggar Ticks	FACW	
<i>Scirpus atrovirens</i>	Green Bulrush	OBL	
<i>Asclepias incarnata</i>	Swamp Milkweed	OBL	
<i>Carex crinita</i>	Fringed Sedge	OBL	
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+	
<i>Juncus effusus</i>	Soft Rush	FACW+	
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW	
<i>Iris versicolor</i>	Blue Flag	OBL	
<i>Glyceria grandis</i>	American Mannagrass	OBL	
<i>Minulus ringens</i>	Square Stemmed Monkey Flower	OBL	
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL	
PRICE PER LB. \$135.00 MIN. QUANTITY 1 LBS. TOTAL: \$135.00 APPLY: 18 LBS/ACRE :2500 sq ft/lb			
The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months the seed mix will germinate the following spring. During the first season of growth several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons. The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended. New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.			

Table 4: Seed Mixes for Wetland Mitigation Area			Total (lbs per seed mix)
COMMENTS: See notes accompanying each seed mix for additional guidance pertaining to the season that seed mix is applied. Implementation notes also include a section on seeding.			
NEWP Seed Mix #1	Wetland Creation Area		3
New England Wetmix	(in seasonally saturated to moist areas)		
1 lb/2,500 sf			2
NEWP Seed Mix #2	Wetland Creation Area (moist edges)		
New England Conservation/Wildlife Mix	(also on 3:1 slopes above wetland)		
1 lb/1,750 sf			5
TOTAL:			
Notes:			
1. Mix 1:1 with filler (coarse sand, kitty litter) to help correctly divide seed packages and for even spreading.			
2. Mixes contain seeds with a range of hydrologic tolerances, so different species will thrive in different areas.			
3. Plants will set seed and spread further, increasing in density, becoming concentrated in most suitable areas.			
4. Mulch (do not seed) areas under and around plug & shrub clusters, to exclude weeds and hold moisture. (Coverage specified assumes area occupied by mulched woody plantings has been subtracted.)			
5. A late fall seeding will require 20% more seed, because some seed will be lost to wash off and herbivory, but germination rates will actually be higher the following spring, due to the cold winter stratification of the seed.			
Source:			
New England Wetland Plants, 14 Pearl Lane, South Bradley, Massachusetts; phone: 413-548-8000			

MITIGATION PLAN FOR CREATION OF WETLAND HABITATS

IMPLEMENTATION NOTES

1.0 INTRODUCTION

EMERGENT AND SCRUB-SHRUB WETLAND (I.E., WET MEADOW/MARSH AND SHRUB SWAMP) CREATION BY EXCAVATION, AND HERBACEOUS AND WOODY PLANTINGS, WILL TAKE PLACE AT ONE LOCATION ON THE SUBJECT SITE, AT THE SOUTHWESTERN PORTION OF THE OVERALL PROPERTY, SOUTHERLY OF AN EXISTING PAVED STORAGE AREA, EASTERLY OF EXISTING RAILROAD TRACKS, AND IMMEDIATELY ADJACENT AND TO THE NORTH OF A DELINEATED WETLAND, WHICH DOES NOT HAVE A SURFACE WATER CONNECTION TO THE TIDAL WATERS OF THE THAMES RIVER.

A PORTION OF THE SELECTED WETLAND MITIGATION SITE IS CURRENTLY PAVED. SOILS RANGE FROM WELL DRAINED, TO MODERATELY WELL DRAINED FINE SANDY LOAMS TO LOAMY SAND. BASED ON PRELIMINARY SOIL EXPLORATION THE SITE WAS PREVIOUSLY A WETLAND, WITH A FOOT OR MORE OF FILL PLACED OVER PRE-EXISTING POORLY DRAINED WETLAND SOILS.

THOUGH SOME GOOD-QUALITY NATIVE VEGETATION OF FORESTED WETLAND HABITATS DOMINATE THE ADJACENT EXISTING WETLAND, THE SELECTED CREATION AREA HAS LOW HABITAT VALUE, INCLUDING DOMINANCE BY INVASIVE PLANTS (E.G., MULTIFLORA ROSE, MUGWORT, ASIATIC BITTERSWEET, TREE OF HEAVEN, ETC.).

IN-KIND MITIGATION (I.E., CREATION) IS PROPOSED TO OFF-SET LOST FUNCTIONS & VALUES FROM THE CURRENTLY PROPOSED PERMANENT WETLAND IMPACT (I.E., +/- **1,700 SQUARE FEET**) (I.E., "WETLAND Z") THE GOAL IS TO CREATE ECOLOGICAL COMMUNITIES WITH AT LEAST COMPARABLE, AND PREFERABLY HIGHER, FUNCTIONS AND COMPLIMENTARY WETLAND COVER TYPES TO THE WETLAND THAT WOULD BE IMPACTED. THE INITIAL TARGET COVER TYPE RATIO FOR THE WETLAND REPLICATION SHALL BE ½ EMERGENT (I.E., WET MEADOW, MARSH) AND ½ SCRUB SHRUB HABITATS. APPROXIMATELY **5,400 SQUARE FEET** OF PRODUCTIVE WETLAND CAN BE CREATED AT THIS LOCATION.

THE WETLAND CREATION GOAL IS 100% COVER, AND 95% COVER BY NATIVE SPECIES, BY THE END OF THE FIVE-YEAR (5) MONITORING PERIOD. PLANT SPECIES WERE SELECTED TO ENCOMPASS THE FOLLOWING CRITERIA: FOOD PLANTS FOR CATEPILLARS, BEETLES, AND OTHER INSECTS; FRUIT, SEED, AND NUT PRODUCTION IN DIFFERENT SEASONS, INCLUDING PERSISTENT WINTER FRUIT AND SPRING SEEDS; FORAGE FOR VERTEBRATE HERBIVORES; SUITABLE MICRO-HABITATS FOR OVERWINTERING INSECTS; AND NECTAR AND POLLEN THROUGHOUT THE GROWING SEASON (SEE TABLE 3). SPECIES ALREADY PRESENT IN NEARBY WETLAND HABITATS, ESPECIALLY WOODY SPECIES, WERE SELECTED FIRST, AS THEY ARE ALREADY USED BY THE LOCAL FAUNAL ASSEMBLAGE.

2.0 WETLAND CREATION

PREPARATION

- ORDER THE TRAYS OF HERBACEOUS PLUGS AND THE SEED MIX, FOR DELIVERY RIGHT AFTER COMPLETION OF GRADING. STORE IN SHADE WHEN THEY ARRIVE.
- EARTHWORK FOR THE WETLAND CREATION AREA WILL TAKE PLACE IN APRIL / MAY, OR IN AUGUST, SO THAT PLANTINGS CAN BE INSTALLED IMMEDIATELY AFTERWARDS, EITHER IN LATE SPRING OR VERY EARLY FALL SEASONS.
- A MINIMUM OF 10 INCHES OF TOPSOIL (AFTER COMPACTION) SHALL BE USED. SOIL TEXTURE SHALL BE LOAM OR FINER. ORGANIC MATTER CONTENT SHALL BE A MINIMUM OF 10 PERCENT BY WEIGHT (I.E., LOSS AT IGNITION), AS TESTED AT A QUALIFIED LABORATORY (E.G., UNIVERSITY OF CONNECTICUT SOILS LAB).
- IF NECESSARY, WELL-ROTTED LEAF COMPOST (I.E., TWO YEAR MINIMUM) WILL BE ADDED TO BRING THE PERCENT ORGANIC MATTER TO THE DESIRED SPECIFICATION.
- A ONE TO TWO INCH THICK "TOP-DRESSING" SHALL BE APPLIED TO THE FINAL GRADE AT THE CREATION AREA, EXCEPT IN AREAS WITH PROPOSED INUNDATION, CONSISTING OF LEAF COMPOST (2-YEAR OLD, MINIMUM).
- ADD ORGANIC, SLOW-RELEASE FERTILIZER OR OTHER AMENDMENT ONLY AS INDICATED BY THE SOIL TEST RESULTS. **NOTE** THAT NUTRIENT LEVELS SHOULD BE LOWER FOR NATURAL HABITATS THAN FOR AGRICULTURAL OR HORTICULTURAL SITES, TO PREVENT EXCESSIVE COMPETITION BY RANK WEEDS.
- INSTALL PERIMETER EROSION CONTROLS AROUND THE MITIGATION AREAS AS SHOWN ON PLAN. CORRECTLY TRENCHED AND STAKED SILT FENCE PER THE 2002 CONNECTICUT EROSION & SEDIMENTATION CONTROL GUIDELINES (2002 GUIDELINES).

EARTHWORK

- CLEAR AND GRUB THE WETLAND MITIGATION AREA.
 - REMOVE THE EXISTING TOPSOIL FROM THESE LOCATIONS & PLACE IN A DESIGNATED SOIL STOCKPILE AREA, AT LEAST FIFTY FEET AWAY. **[IMPORTANT NOTE: THE TOPSOIL FROM THE MITIGATION AREA SHALL NOT BE USED, BECAUSE IT IS HEAVILY INFESTED WITH INVASIVE PLANT SPECIES.]**
- SUBSOIL FROM CERTAIN PORTIONS OF THE WETLAND REPLICATION AREA, WITH HIGHER POTENTIAL FOR INVASIVE SPECIES, WILL BE TRUCKED TO OTHER UPLAND PARTS OF THE SITE, AND COULD BE STOCKPILED FOR USE IN AREAS OF MAINTAINED LAWN.
- EXCAVATION, GRADING, AND TRANSPLANTING** WILL TAKE PLACE UNDER THE DIRECTION OF THE WETLAND SCIENTIST. GRADING WILL BE BASED ON CONDITIONS OBSERVED AT THE FIELD BY THE WETLAND SCIENTIST WHO MAY MAKE SMALL IN-FIELD ADJUSTMENTS TO ACHIEVE THE DESIRED WETLAND HYDROLOGY.
- GRADING FOR THE WETLAND REPLICATION AREA WILL ENTAIL THE REMOVAL OF FILL OVER PRE-EXISTING WETLANDS. THE DEPTH OF MATERIALS TO BE REMOVED, BEFORE TOPSOIL IS PLACED, WILL RANGE FROM APPROXIMATELY ONE FOOT TO OVER FIVE FEET.
- NO MACHINERY WILL BE ALLOWED WITHIN THE WETLAND CREATION AREAS WHERE TOPSOIL HAS BEEN PLACED.
- SPECIAL PROTECTIVE MEASURES SHALL BE IMPLEMENTED TO ALLOW FOR THE DISCHARGE OF SURFACE RUNOFF FROM AN EXISTING CULVERT WHICH DIRECTS WATER TO THIS THE MITIGATION AREA UNDER THE RAILROAD TRACKS, FROM A DELINEATED AREA TO THE EAST. THIS MAY INCLUDE HAYBALE CHECK DAMS REINFORCED WITH WIRE FENCING TO ENSURE THAT FLOWS WILL NOT ERODE THE MITIGATION AREA WHILE VEGETATION IS BEING ESTABLISHED. WE NOTE THAT THIS CULVERT, WHICH IS LIKELY FULLY OR PARTIALLY CLOGGED, WILL PROVIDE FORE SOME OF THE EXPECTED HYDROLOGY FOR THE CREATED WETLAND.

PLANTINGS

- ORDER THE WOODY PLANTING MATERIALS** FOR DELIVERY DURING THE PLANTING WINDOWS LISTED ABOVE (MID TO LATE SPRING OR EARLY FALL). STORE IN SHADE WHEN THEY ARRIVE AND INSTALL WITHIN THREE DAYS OF DELIVERY. MAKE SURE THAT ALL DESIRED SPECIES ARE AVAILABLE AT TIME OF ORDERING. WETLAND SCIENTIST SHALL APPROVE ANY SUBSTITUTIONS.
- CHECK DELIVERY.** MAKE SURE SPECIES, SIZES, AND QUANTITIES ARE AS SPECIFIED.
- A WETLAND PROFESSIONAL OR ECOLOGIST SHALL SPECIFY PLANTING AND SEEDING LOCATIONS. THE PROFESSIONAL WILL DIRECT THE INSTALLATION, EITHER BY STAKING PLANTING LOCATIONS WITH A WIRE FLAG OR BAMBOO STAKE LABELED WITH THE SPECIES NAME OR CODE; OR POTTED STOCK MAY ALSO BE DIRECTLY PLACED AT PLANTING LOCATION.
- INSTALL THE PURCHASED WOODY MATERIALS FIRST, THEN THE HERBACEOUS PLUGS.**
- WOODY PLANTINGS AND LARGE HERBACEOUS PERENNIALS** (SEE TABLE 1 THROUGH TABLE 3) SHALL BE PLANTED IN SAME-SPECIES CLUSTERS, TWO TO THREE FEET APART FOR HERBACEOUS PERENNIALS, FIVE TO SIX FEET APART, FOR SHRUBS, TEN FEET APART FOR SMALL TREE SEEDLINGS/SAPLINGS. LARGER TREES SHALL BE NO CLOSER THAN EIGHT FEET FROM A SHRUB OR SMALL TREE.
- DIG HOLES BY HAND TO MINIMIZE COMPACTION OF SOIL. MECHANICAL AUGERS ARE PROHIBITED. WATER HOLES BEFORE PLANTING, UNLESS SOIL IS ALREADY MOIST. ADD SLOW-RELEASE FERTILIZER (OSMOCOTE, MILORGANITE OR EQUIVALENT) TO PLANTING HOLE. PLACE PLANTS INTO HOLES AND REPLACE SOIL, SO THAT THERE IS FULL COVERAGE OF ROOTS, WITH NO AIR SPACES AND LEVEL SOIL AROUND THE PLANT. HOLES SHALL BE OVERSIZED (2X THE ROOT MASS DIAMETER) AND BACKFILLED WITH LOCAL TOPSOIL OR EXTRA TOPSOIL IN AN OVERSIZED TRANSPLANT POT (NOT SUBSOIL REMOVED FROM BOTTOM PART OF HOLE).
- MULCH WITH A THREE-INCH LAYER OF WELL-ROTTED HARDWOOD MULCH TO REDUCE COMPETITION FROM MEADOW VEGETATION IN A THREE-FOOT DIAMETER CIRCLE. LEAVE A GAP OF THREE INCHES AROUND EACH TRUNK. FORM SAUCERS AROUND ALL MULCHED TREE AND SHRUB PLANTINGS. TWO TO THREE INCHES HIGH. 36" ACROSS FOR NURSERY STOCK. WATER RIGHT AFTER PLANTING.
- HERBACEOUS PLUGS:** PLANT IN MID TO LATE AFTERNOON, OR UNDER SHADY CONDITIONS, WATER IMMEDIATELY AFTER PLANTING. SPACE PLUGS 24 TO 36 INCHES APART, PER PLAN (SEE TABLE 3) IN THE BARE SOIL AREAS, AND SPREAD SHREDDED LEAF MULCH IN A SIX-INCH CIRCLE AROUND EACH PLUG. PLANT IN SAME-SPECIES GROUPINGS OF VARIABLE SIZE AND SHAPE.
- SEEDING:** AFTER MIXING 1:1 WITH NON-CLUMPING KITTY LITTER (CLAY BASED), SPREAD SEED OVER BARE SOIL AREAS, AVOIDING MULCHED CIRCLES AROUND PLUGS. SEEDING RATE SHALL BE HALF THAT SPECIFIED FOR THE MIX. IF GERMINATION RATES ARE LOW, OVER-SEED IN FALL IN YEAR 2.
- FOR SPRING SEEDING IN MOIST, BUT NOT SATURATED SOIL, LIGHTLY RAKE IN SEED (LESS THAN ¼ INCH DEEP), TAMP DOWN, AND LIGHTLY MULCH WITH STRAW (FREE OF SEEDS) TO HOLD MOISTURE FOR GERMINATION. FOR FALL SEEDING, WAIT UNTIL AFTER HARD FROST. SEED MAY SIMPLY BE SOWN. SNOW AND FROST WILL INCORPORATE INTO THE SOIL. NOTE THAT COLD STRATIFICATION WILL INCREASE GERMINATION RATES OF SOME SPECIES IN A FALL SEEDING, BUT MORE SEEDS WILL ALSO BE EATEN BY WILDLIFE OR WASHED AWAY. IF SOIL IS SATURATED, BROADCAST ON SOIL SURFACE WITHOUT RAKING.
- SPREAD A THIN LAYER OF WEED-FREE STRAW MULCH OVER ALL SEEDED AREAS WITHOUT STANDING WATER, ALLOWING FOR SOME LIGHT PENETRATION.
- FOR SPRING SEEDING IN THE WET MEADOW AND FOR SEED GERMINATION, WATERING SEVERAL TIMES A WEEK IS ESSENTIAL. IN DRY WEATHER, FOR IRRIGATION, SET UP A PUMP DRAWING ON LOCAL WATER, OR FROM A WATER TANK BROUGHT TO THE SITE.

3.0 PROTECTION FROM HERBIVORY

- WOODY PLANTINGS WILL BE MONITORED DURING THE FIRST AND SECOND GROWING SEASONS AFTER PLAN IMPLEMENTATION FOR EXCESSIVE HERBIVORY. IF OBSERVED, THE WETLAND ECOLOGIST MAY PROPOSE ADDITIONAL CONTROLS/METHODS TO REDUCE HERBIVORY. DEER FENCE MAY BE CONSIDERED, AS THE MITIGATION AREA IS RELATIVELY SMALL.
- AS AN INITIAL CONTROL, THE ORGANIC, SLOW-RELEASE FERTILIZER MILORGANITE SHALL BE USED AT EACH SHRUB/TREE PLANTING, AND ALONG THE PERIMETER OF EACH OF THE MITIGATION AREAS. THIS FERTILIZER IS A MILD TO MODERATE DETERRENT TO HERBIVORY BY DEER. APPLICATION OF MILORGANITE SHALL TAKE PLACE THREE TIMES DURING THE FIRST GROWING SEASON, SHOULD A DETERRENT BE NECESSARY.

4.0 INITIAL FOLLOW-UP AND MAINTENANCE

- PROMPT SEEDING AND HAY MULCH APPLICATION FOLLOWING INITIAL GRADING IS KEY, TO PREVENT EROSION OF EXPOSED, RECENTLY GRADED SOILS. GRADING OF WETLAND CREATION AREAS SHOULD BE TIMED TO PRECEDE A FORECAST RAIN-FREE PERIOD, ENCOMPASSING THE SCHEDULED PLANTING DAY.
- PERIMETER SEDIMENT CONTROLS. MAINTAIN PER THE 2002 CT E&S GUIDELINES. CHECK AFTER EACH RAIN MORE THAN ONE INCH. REMOVE SILT FENCE AS SOON AS GROUND IS VEGETATED (>80% COVER) TO PREVENT IMPEDING ANIMAL MOVEMENT TO AND FROM ADJACENT SEASONALLY FLOODED AND SATURATED WETLANDS. SEDIMENT COLLECTED BY THESE DEVICES WILL BE REMOVED AND PLACED UPLAND IN A MANNER THAT PREVENTS ITS EROSION AND TRANSPORT TO A WATERWAY OR WETLAND.
- IRRIGATION. WATER ALL SEEDED AREAS, PLANTINGS AND/OR TRANSPLANTS AT LEAST WEEKLY IN DROUGHT PERIODS. MORE FREQUENT WATERING WILL INCREASE PLANTINGS' SUCCESS. FOR PLUGS, MORE FREQUENT WATERING COULD BE NEEDED.
- WEED CONTROL**
- FOR 2-3 SEASONS FOLLOWING PLAN IMPLEMENTATION, CONTROL WEEDS IN A THREE- FOOT DIAMETER CIRCLE AROUND WOODY PLANTINGS. NECESSARY FREQUENCY WILL DEPEND ON RAINFALL AND SOIL SEED BANK, BUT AT LEAST MONTHLY FROM MAY TO JULY. MULCH HELPS CONTROL WEEDS, BUT IS NOT SUFFICIENT. THE SEED MIX AND OTHER NATURAL COLONIZERS NEEDS TO GERMINATE AND SPROUT IN THE MATRIX AROUND THE WOODY PLANTINGS.
- AT TIME OF PLANTING MARK EACH SHRUB OR TREE WITH A FOUR-FOOT TALL "SNOW STAKE" OR "DRIVEWAY MARKER" WITH REFLECTOR TAPE. THESE SHALL BE REMOVED AT THE END OF THE MONITORING PERIOD, BUT WILL ASSIST IN FINDING THEM, SHOULD TALL HERBACEOUS VEGETATION BEGIN TO OBSCURE THEM.
- FOR CONTROL OF SMALL SEEDLINGS USE A HOE.
- FOR LARGER WEEDS USE A WEED WHACKER (POLE HEDGE TRIMMER).
- LANDSCAPER SHALL FOLLOW DIRECTION OF WETLAND SCIENTIST WHO SHALL PROVIDE INITIAL GUIDANCE, BUT NEED NOT REMAIN ON SITE DURING MAINTENANCE.
- THE WETLANDS PROFESSIONAL WILL POINT OUT TO THE LANDSCAPER CERTAIN WEEDS LIKE MUGWORT, WHICH IS PREVALENT IN PORTIONS OF THE SITE, WHICH ARE BEST PULLED, TO WEAKEN ROOT SYSTEM AND REDUCE

