

# SITE PLAN SEA-3 FACILITY EXPANSION

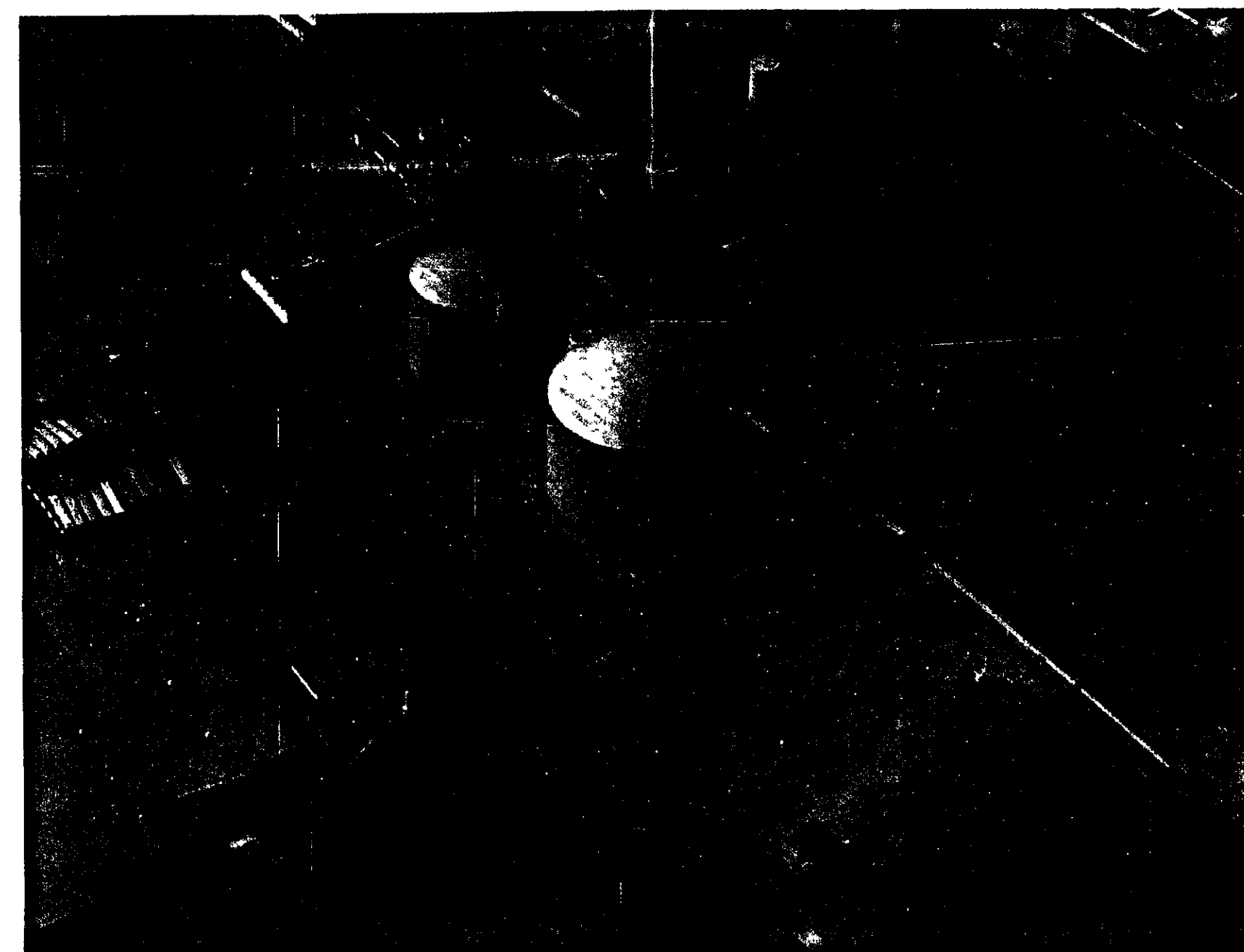
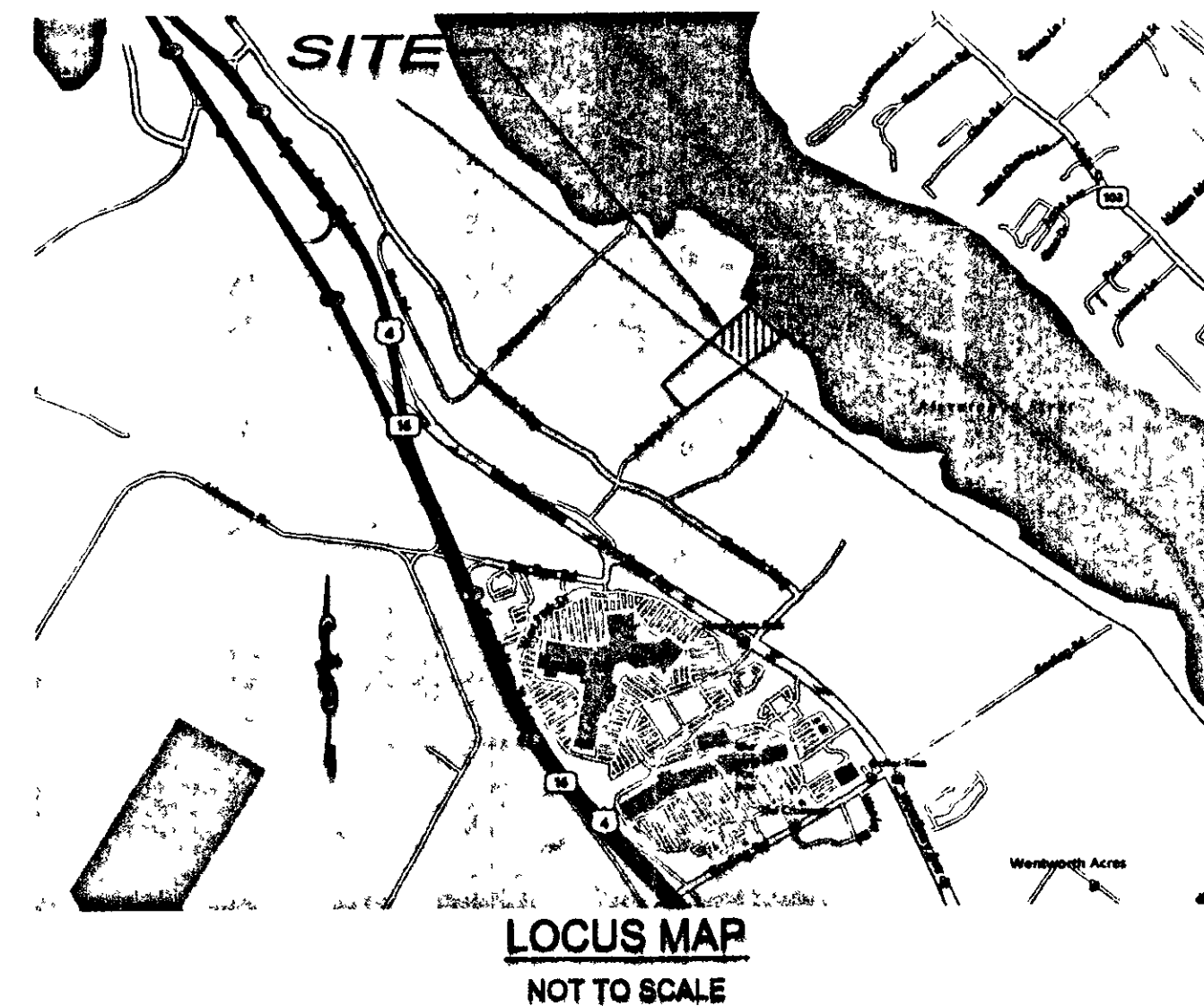
LOTS 20/13 & 14/2  
**190 SHATTUCK WAY**

**NEWINGTON, NH**  
**NOVEMBER 4, 2013**

REVISED: MARCH 6, 2014

REVISED: MARCH 12, 2014

REVISED: MAY 16, 2014



OWNER SEA-3, INC.  
190 SHATTUCK WAY  
NEWINGTON, NH 03801

BOSTON AND MAINE CORPORATION/SPRINGFIELD TERMINAL RAILWAY COMPANY  
D/B/A PAN AM RAILWAYS  
IRON HORSE PARK, NO. BILLERICA, MA 01862

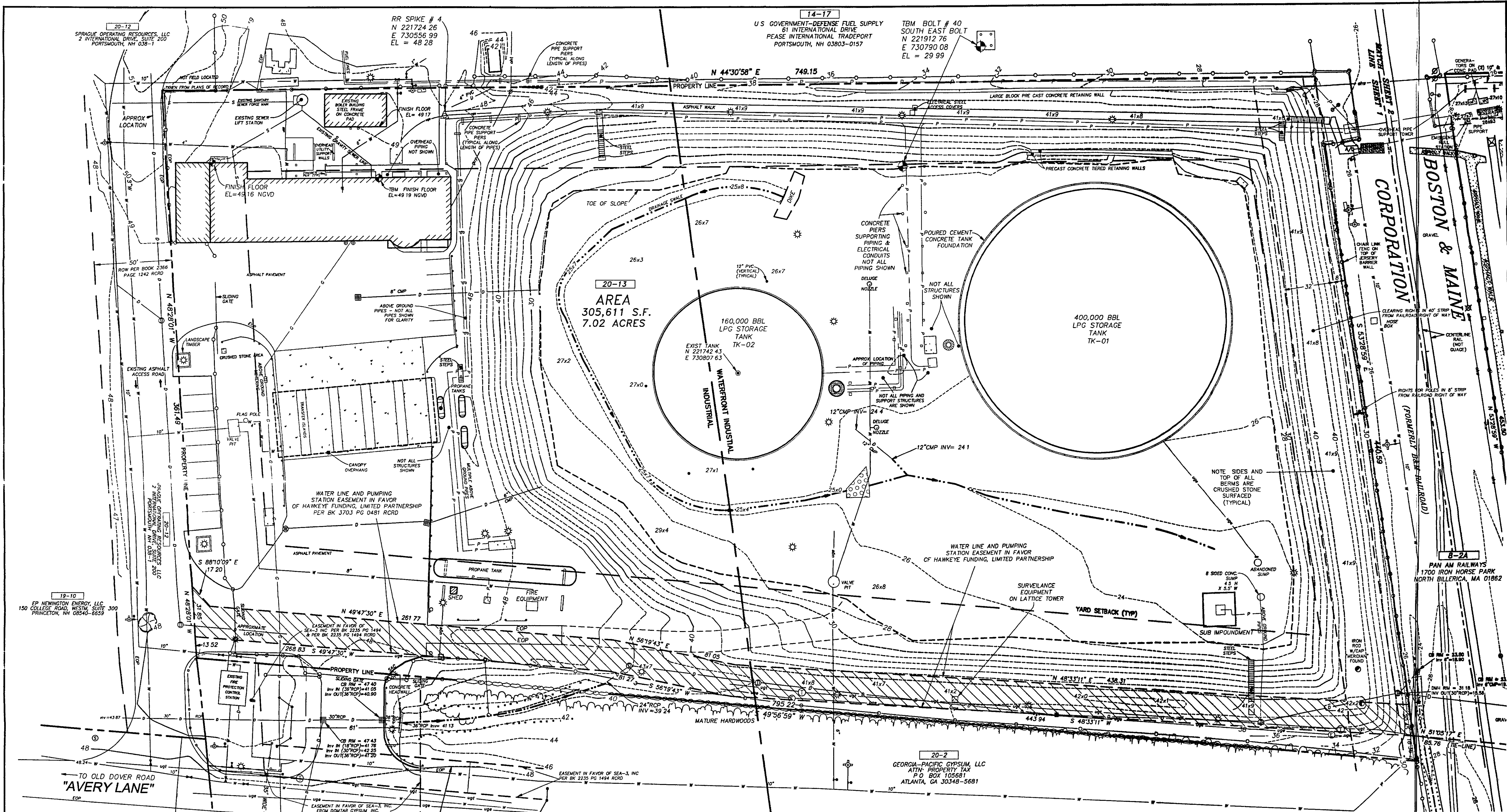
SITE CIVIL ENGINEER HAIGHT ENGINEERING, PLLC  
181 WATSON ROAD  
DOVER, NH 03820

LAND SURVEYOR JAMES VERRA AND ASSOCIATES, INC  
101 SHATTUCK WAY  
SUITE 8  
NEWINGTON, NH 03801

SOIL SCIENTIST GOVE ENVIRONMENTAL SERVICES, INC.  
8 CONTINENTAL DRIVE  
UNITS H  
EXETER, NH 03833

SHEET INDEX  
EXISTING CONDITIONS PLAN  
EXISTING CONDITIONS PLAN  
OVERALL SITE PLAN  
SITE PLAN  
GRADING AND DRAINAGE PLAN  
UTILITY PLAN  
EROSION CONTROL NOTES & DETAILS  
DETAILS

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EX-1  
EX-2  
C-1  
C-2  
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C-4  
C-5  
C-6



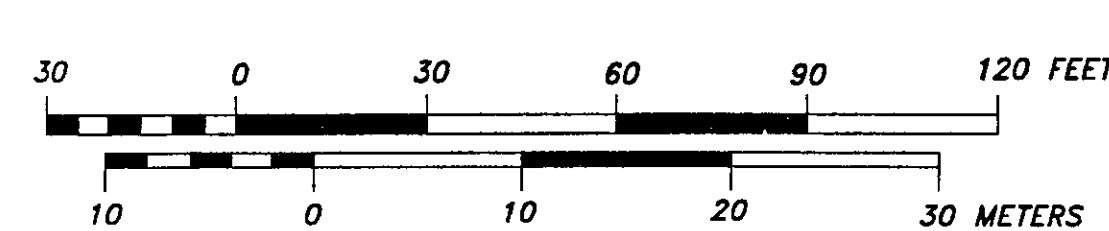
20-12  
 SPRAGUE OPERATING RESOURCES, LLC  
 2 INTERNATIONAL DRIVE, SUITE 200  
 PORTSMOUTH, NH 038-1

14-17  
 U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
 81 INTERNATIONAL DRIVE  
 PEASE INTERNATIONAL TRADEPORT  
 PORTSMOUTH, NH 03803-0157

19-10  
 EP NEWINGTON ENERGY, LLC  
 150 COLLEGE ROAD, WESTWING, SUITE 300  
 PRINCETON, NH 08540-6535

20-3  
 WESTINGHOUSE C E  
 1000 WESTINGHOUSE DRIVE, SUITE 300  
 CRANBERRY, PA 16066

20-2  
 GEORGIA-PACIFIC CYPSSUM, LLC  
 ATTN: PROPERTY TAX  
 P.O. BOX 105681  
 ATLANTA, GA 30348-5681

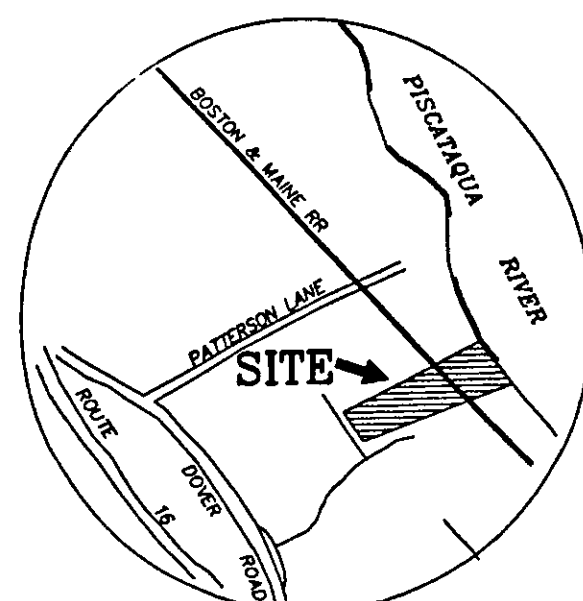


FORMERLY NH STATE PLANE COORDINATE SYSTEM  
 NAD 83  
 MAD 1927  
 (PER REFERENCE PLAN 5)

NOTES:  
 7 SHEET 1 PLANIMETRICS REPRESENTS THE CONDITIONS AS OF JULY 2002  
 SEE SHEET 2 FOR NOTES.

REV. NO.	DATE	DESCRIPTION	APPROV.
<b>EXISTING CONDITIONS PLAN : EX-1</b>			
<b>190 SHATTUCK WAY</b>			
<b>NEWINGTON, NEW HAMPSHIRE</b>			
for:			
<b>SEA-3, INC.</b>			
<b>JAMES VERRA and ASSOCIATES, INC.</b>		DATE 9-20-2013	
101 SHATTUCK WAY		JOB NO 21289	
SUITE B		SCALE 1" = 30'	
NEWINGTON, NEW HAMPSHIRE 03801-7876		DWG NAME 21289-5	
603-436-3557		PLAN NO. 21289-5	
JV	HRM	PROJECT MGR	DRAWN BY
COPYRIGHT © 2013 by JAMES VERRA and ASSOCIATES, INC.			
1	9-25-2013	ADD SETBACKS	JV
REV	DATE	DESC	APPR





LOCUS MAP

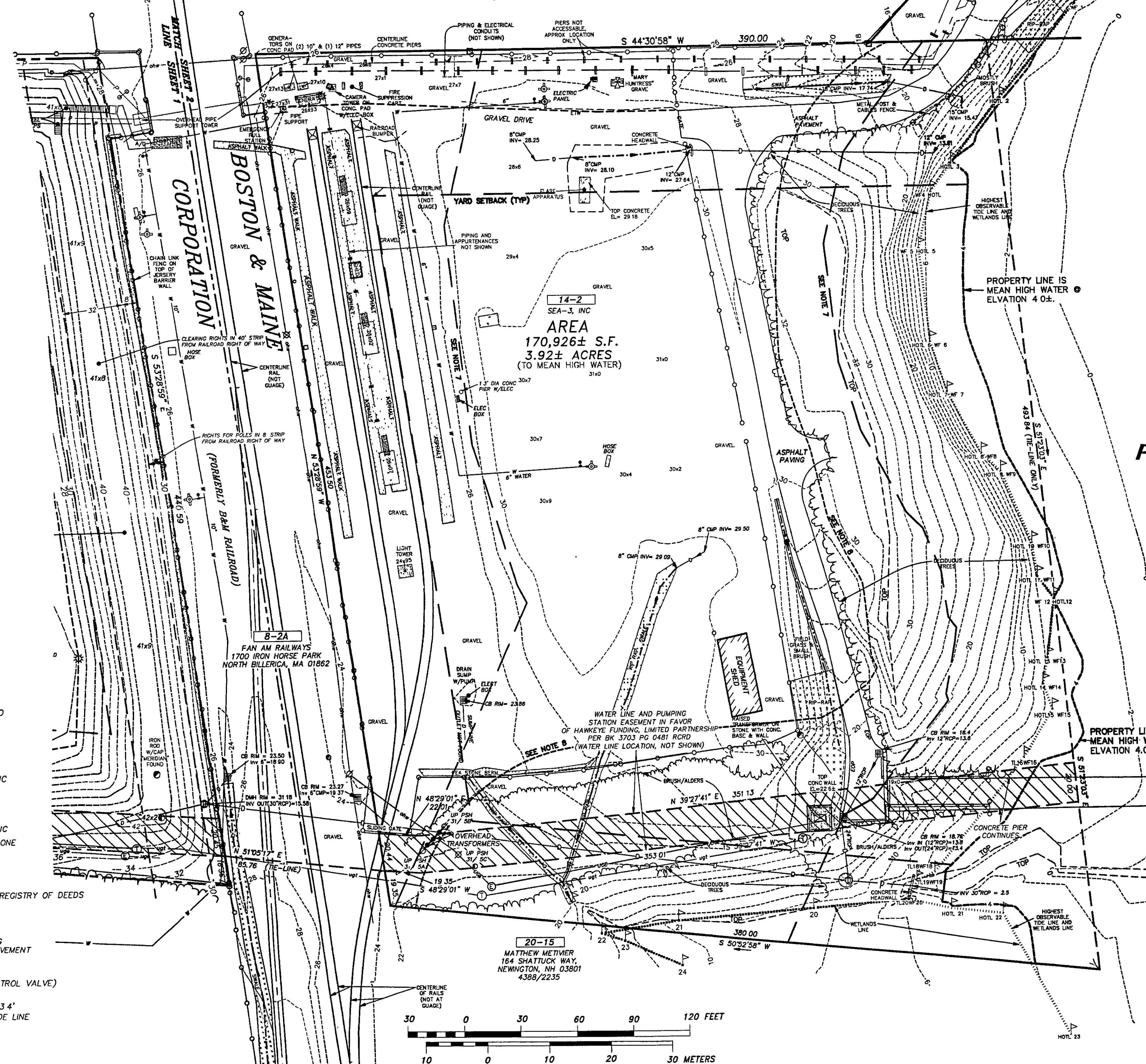
14-17  
U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
5 INTERNATIONAL DRIVE  
PEASE INTERNATIONAL TRADEPORT  
PORTSMOUTH, NH 03803-0157

14-17  
U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
51 INTERNATIONAL DRIVE  
PEASE INTERNATIONAL TRADEPORT  
PORTSMOUTH, NH 03803-0157

14-16  
SPRAGUE OPERATING RESOURCES, LLC  
2 INTERNATIONAL DRIVE, SUITE 200  
PORTSMOUTH, NH 03801

14-03 (TANKS)  
DEPARTMENT OF DEFENSE  
C/O TOWN OF NEWINGTON  
205 NIMBLE HILL ROAD  
NEWINGTON, NH 03801

FORMERLY NH STATE PLANE COORDINATE SYSTEM  
MAD 1927  
(PER REFERENCE PLAN 3)



NOTES:

- OWNER OF RECORD.....SEA-3, INC.  
ADDRESS.....190 SHATTUCK WAY, NEWINGTON, NH 03801  
DEED REFERENCE.....2544/0039  
TAX SHEET / LOT.....20-13 & 14-2
- ZONED.....WATERFRONT INDUSTRIAL & INDUSTRIAL  
MINIMUM LOT AREA 200,000 S.F.  
FRONTAGE.....100'  
SIDE YARD SETBACK.....50'  
REAR YARD SETBACK.....50'  
FRONT YARD SETBACK.....75'
- VERTICAL DATUM: NGVD 1929. PRIMARY BENCH MARK: NHDOT DISK 331-120, NOW DESTROYED
- THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-800-225-4977
- THE RELATIVE ERROR OF CLOSURE WAS LESS THAN 1 FOOT IN 15,000 FEET
- WETLANDS IDENTIFICATION BY LUKE D. HURLEY, CERTIFIED WETLAND SCIENTIST NO. 232 IN SEPTEMBER 2013, GOVE ENVIRONMENTAL SERVICES, INC., 8 CONTINENTAL DR UNIT H, EXETER, NH 03833-7507
- SHORELAND QUALITY PROTECTION ACT: 50' WATERFRONT BUFFER & PRIMARY BUILDING SETBACK; 250' REFERENCE LINE FROM THE PROTECTED SHORELINE
- NEWINGTON ZONING ORDINANCE, ARTICLE X, SECTION 7, STRUCTURAL SETBACK

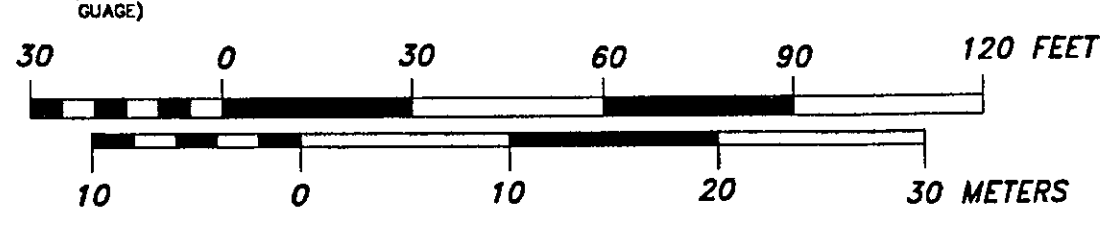
PISCATAQUA RIVER  
(TIDAL, AN ARM OF THE SEA)

REFERENCE PLANS:

- SITE PLAN, OLD DOVER ROAD, NEWINGTON, NEW HAMPSHIRE, for SEA-3, INC. DATED 4/12/95, REV. 5/25/95, PLAN NO 20529, by DURGIN, VERRA and ASSOCIATES, INC
- SITE PLAN, OLD DOVER ROAD, NEWINGTON, N.H., for SEA-3, INC. & DONAR CYSUM, INC. DATED 6/7/94, REV. 8/5/94, by DURGIN, VERRA and ASSOCIATES, INC. RCRD # D-23681
- SITE PLAN, NEWINGTON, NEW HAMPSHIRE, for DORCHESTER SEA-3 PRODUCTS, INC., NOVEMBER 5, 1981, PLAN NO. 50004, by JOHN W. DURGIN ASSOCIATES, INC

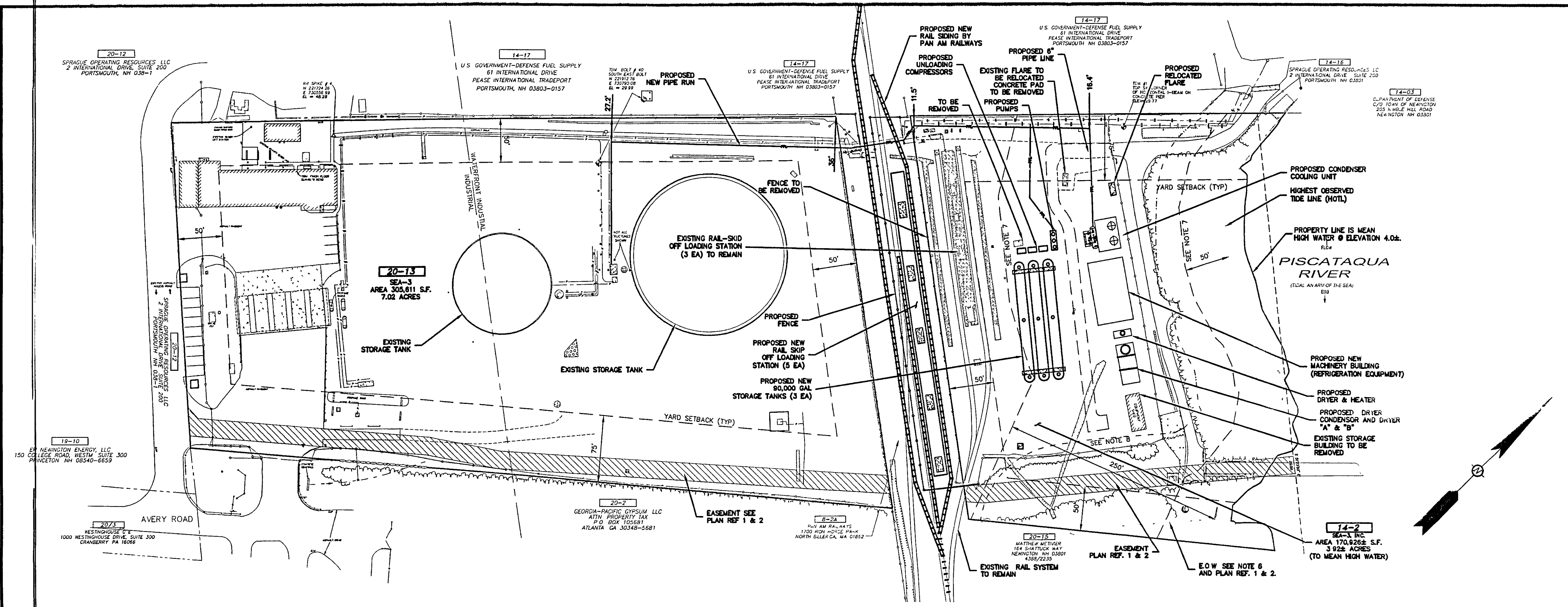
LEGEND:

- CHAIN LINK FENCE
- HYDRANT
- WATER GATE VALVE
- CEMENT CONCRETE PAD
- UTILITY POLE
- LIGHT POLE
- SEWER LINE
- WATER LINE
- DRAIN LINE
- UNDERGROUND ELECTRIC
- TRAFFIC FLOW
- 20/12 TAX SHEET / LOT NO
- GAS LINE
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- CATCH BASIN
- TELEPHONE MANHOLE
- SEWER MANHOLE
- DRAIN MANHOLE
- ROCKINGHAM COUNTY REGISTRY OF DEEDS
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIP)
- ABOVE GROUND PIPING
- EDGE OF ASPHALT PAVEMENT
- RIP-RAP
- DIV (FIRE WATER CONTROL VALVE)
- ELECTRICAL MANHOLE
- SPOT ELEVATION OF 23.4'
- HIGHEST OBSERVED TIDE LINE
- IRON ROD
- IRON PIPE
- BOUND as DESCRIBED
- DRILL HOLE



REV. NO.	DATE	DESCRIPTION	JV	APPR'D
1	9-20-2013	ADD SETBACKS & NOTES 7&8		
<b>EXISTING CONDITIONS PLAN : EX-2</b>				
<b>190 SHATTUCK WAY</b>				
<b>NEWINGTON, NEW HAMPSHIRE</b>				
for <b>SEA-3, INC.</b>				
<b>JAMES VERRA and ASSOCIATES, INC.</b>			DATE:	9-20-2013
101 SHATTUCK WAY SUITE 8 NEWINGTON, NEW HAMPSHIRE 03801-7876 603-436-3557			JOB NO.:	21289
PROJECT NO. 21289-5			SCALE 1" =:	30'
DRAWN BY			DWG NAME:	21289-5
SHEET:			PLAN NO.:	21289-5
COPYRIGHT © 2013 by JAMES VERRA and ASSOCIATES, INC.			SHEET:	EX-2





19-10  
NEWINGTON ENERGY, LLC  
150 COLLEGE ROAD, WESTM SUITE 300  
PRINCETON, NH 05440-6653

20-12  
SPRAGUE OPERATING RESOURCES, LLC  
2 INTERNATIONAL DRIVE, SUITE 200  
PORTSMOUTH, NH 03801

14-17  
U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
61 INTERNATIONAL DRIVE  
FEASE INTERNATIONAL TRADEPORT  
PORTSMOUTH, NH 03803-0157

14-17  
U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
61 INTERNATIONAL DRIVE  
FEASE INTERNATIONAL TRADEPORT  
PORTSMOUTH, NH 03803-0157

14-16  
SPRAGUE OPERATING RESOURCES, LLC  
2 INTERNATIONAL DRIVE, SUITE 200  
PORTSMOUTH, NH 03801

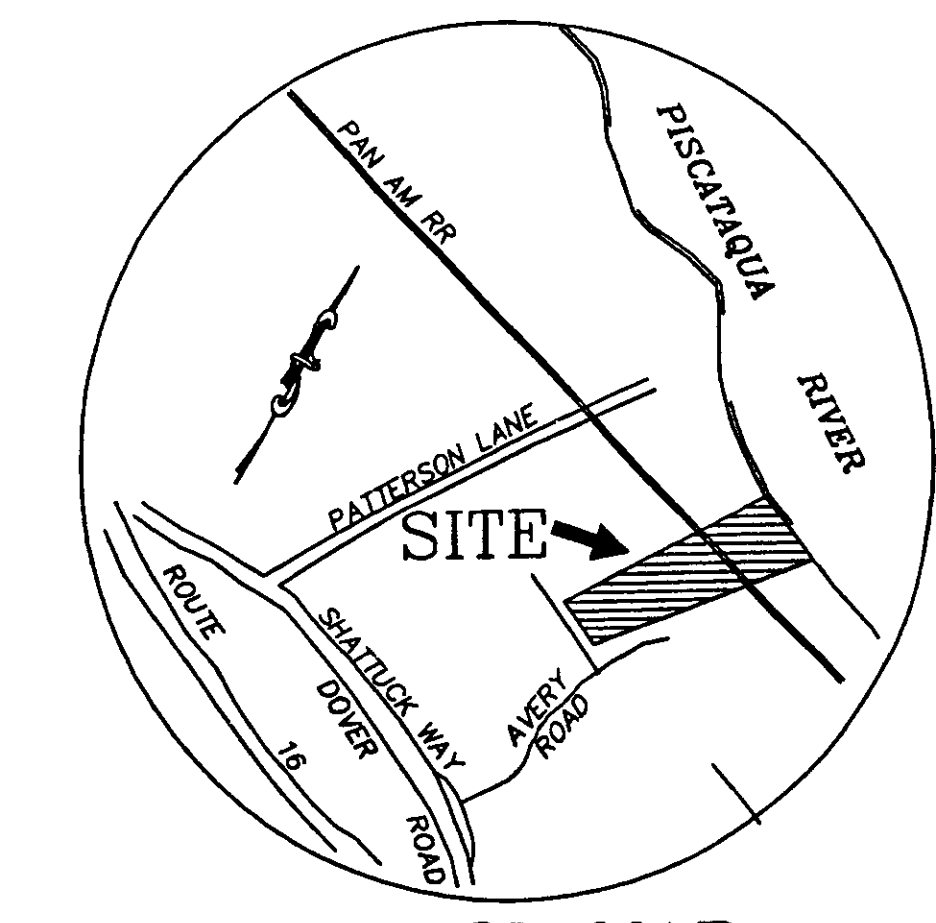
14-03  
CLIPMOUNT OF SEASIDE  
C/O TOWN OF NEWINGTON  
225 N. WHEEL HILL ROAD  
NEWINGTON, NH 03801

20-2  
GEORGIA-PACIFIC CHEMICAL, LLC  
ATTN: PROPERTY TAX  
P.O. BOX 105681  
ATLANTA, GA 30348-5681

8-24  
P.O. BOX 144145  
1300 HON HOOCH PARK  
NORTH ELLEN CA, CA 91852

20-15  
MATTHEW W. METZGER  
124 SHATTUCK WAY  
NEWINGTON, NH 03801  
438-0250

14-2  
SEA-3, INC.  
AREA 170,026 S.F.  
3.924 ACRES  
(TO MEAN HIGH WATER)



**LOCUS MAP**  
NOT TO SCALE

**SITE NOTES:**

- OWNER OF RECORD: SEA-3, INC. ADDRESS: 190 SHATTUCK WAY, NEWINGTON, NH 03801. DEED REFERENCE: 2544/0039. TAX SHEET / LOT: 20-13 & 14-2.
- ZONED: WATERFRONT INDUSTRIAL & INDUSTRIAL. MIN. LOT AREA: 200,000 S.F. FRONTAGE: 100'. SETBACK: FRONT: 75', SIDE: 50', REAR: 50'.
- BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY JAMES VERRA AND ASSOCIATES. SEE REFERENCES 1 & 2 EXISTING CONDITIONS PLANS WHICH ARE PART OF THIS PLAN SET.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE SITE IMPROVEMENTS ASSOCIATED WITH THE EXPANSION OF EXISTING FACILITIES TO INCREASE OFF LOADING CAPACITY OF LIQUID PETROLEUM (LP) GAS. THE EXPANSION INCLUDES UPGRADES TO THE EXISTING RAILROAD SIDING TO ACCOMMODATE UP TO AN ADDITIONAL 10 RAIL CARS, THE INSTALLATION OF (3) 90,000 GALLON ABOVE GROUND TANKS AND THE ASSOCIATED DRYING, CHILLING AND PUMPING EQUIPMENT.
- THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-800-225-4977.
- WETLANDS IDENTIFICATION BY LUKE D. HURLEY, CERTIFIED WETLAND SCIENTIST NO. 232 IN SEPTEMBER 2013, GOVE ENVIRONMENTAL SERVICES, INC., 8 CONTINENTAL DR UNIT H, EXETER, NH 03833-7507.
- SHORELAND QUALITY PROTECTION ACT: 50' WATERFRONT BUFFER & PRIMARY BUILDING SETBACK, 250' REFERENCE LINE FROM THE PROTECTED SHORELINE.
- NEWINGTON ZONING ORDINANCE, ARTICLE X, SECTION 7, STRUCTURAL SETBACK.
- ALL CONSTRUCTION SHALL BE TO THE APPLICABLE REGULATION AND STANDARDS OF THE TOWN OF NEWINGTON AND THE STATE OF NEW HAMPSHIRE.
- VARIANCE TO ARTICLE V- DIMENSIONAL REQUIREMENTS: PENDING.

**NOTES:**

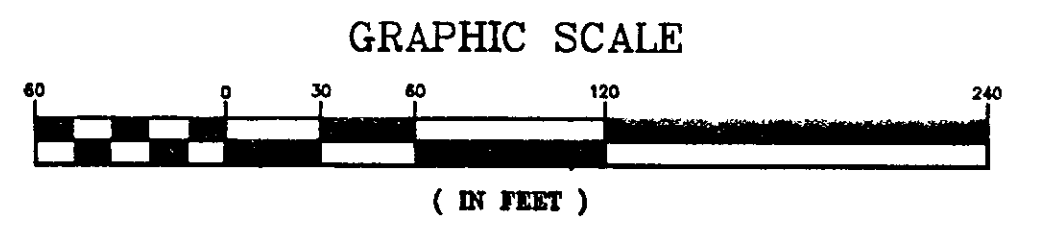
- ON SEPTEMBER 9, 2013, THE APPLICANT MET WITH THE PLANNING BOARD AND REQUESTED THAT IT DESIGNATE THE FRONT OF LOT 20/13 AND LOT 14/2 TO AID THE APPLICANT IN DETERMINING THE PROPER SETBACKS. UPON REVIEW, THE PLANNING BOARD ADVISED THAT IT REGARDS THE SOUTHERN BOUNDARY OF LOT 20/13 AS THE FRONT AND THE NORTHERN BOUNDARY OF LOT 14/2 AS THE FRONT, EACH BOUNDARY BEING THE MAIN APPROACH FOR VEHICLE ACCESS.

**PLAN REFERENCE:**

- EXISTING CONDITIONS PLAN: EX-1, 190 SHATTUCK WAY, NEWINGTON, NEW HAMPSHIRE, FOR SEA-3, INC., PREPARED BY JAMES VERRA AND ASSOCIATED, INC.; JOB NUMBER 21289, SCALE: 1"=30', PLAN NO 21289-5 SHEET EX-1; DATE 9-20-2013 REV. 1 (9-25-2013)
- EXISTING CONDITIONS PLAN: EX-2, 190 SHATTUCK WAY, NEWINGTON, NEW HAMPSHIRE, FOR SEA-3, INC., PREPARED BY JAMES VERRA AND ASSOCIATED, INC.; JOB NUMBER 21289, SCALE: 1"=30', PLAN NO 21289-5 SHEET EX-2; DATE 9-20-2013. REV.1 (9-25-2013)

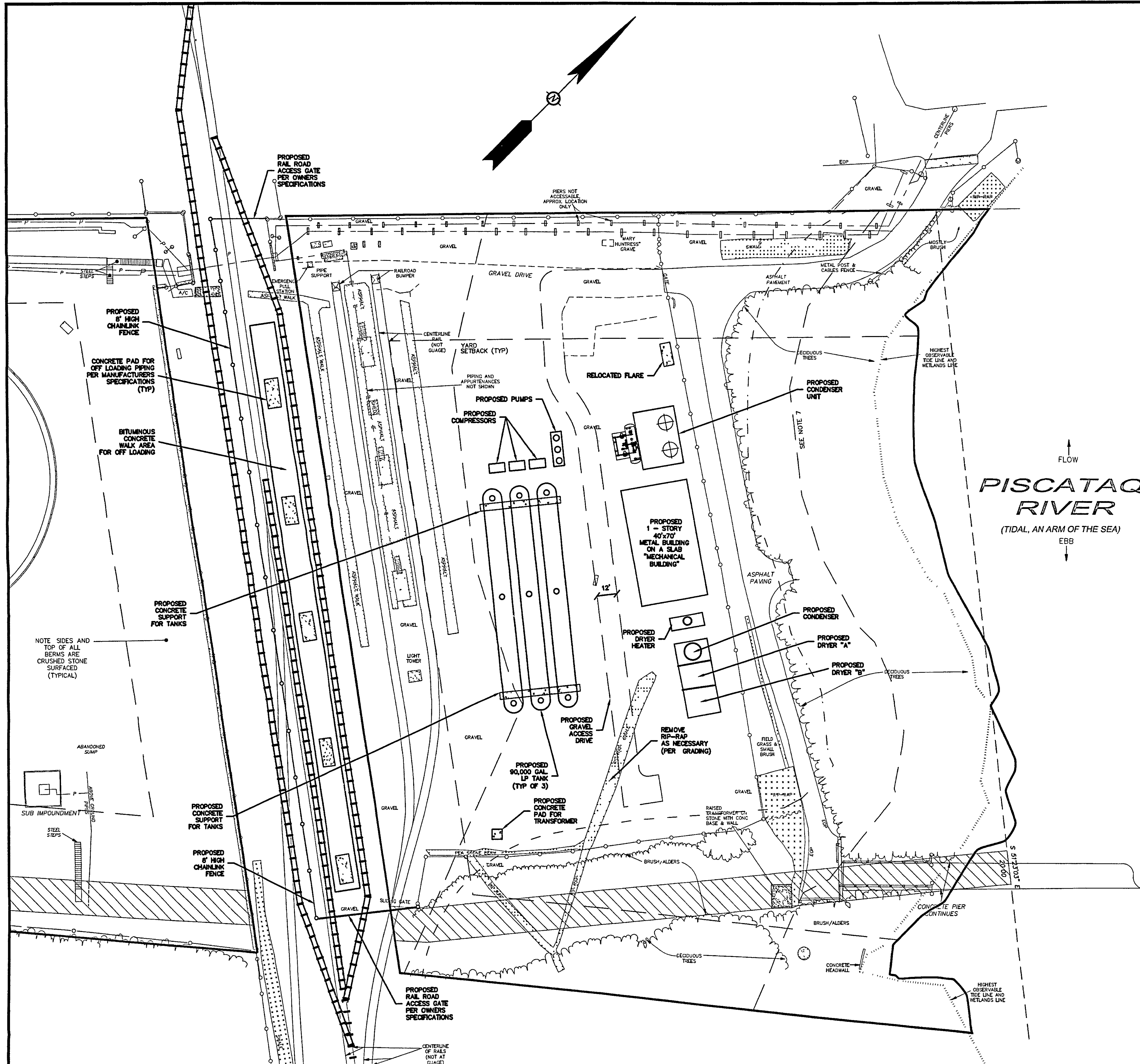
**LEGEND:**

- PPL PROPOSED PIPE LINE
- CHAIN LINK FENCE
- HYDRANT
- CEMENT CONCRETE PAD
- UTILITY POLE
- LIGHT POLE
- TRAFFIC FLOW
- TAX SHEET / LOT NO
- ROCKINGHAM COUNTY REGISTER OF DEEDS
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIP)
- AGOVE GROUND PIPING
- EDGE OF ASPHALT PAVEMENT
- RIP-RAP



DATE: 11-4-2013		DRAWN BY: SRD		DESIGN BY: SRD		APPROVED BY: SRD		PROJECT NO: 1322		FILE: ZBA-SEA-3	
SCALE: 1"=60'		REVISION PER PLANING BO. REVIEW		REVISION PER PLANING BO. REVIEW		REVISION PER PLANING BO. REVIEW		REVISION PER PLANING BO. REVIEW		REVISION PER PLANING BO. REVIEW	
SEA-3, INC.		SEA-3, INC.		SEA-3, INC.		SEA-3, INC.		SEA-3, INC.		SEA-3, INC.	
190 SHATTUCK WAY		190 SHATTUCK WAY		190 SHATTUCK WAY		190 SHATTUCK WAY		190 SHATTUCK WAY		190 SHATTUCK WAY	
NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH	
SEA-3 FACILITY EXPANSION		SEA-3 FACILITY EXPANSION		SEA-3 FACILITY EXPANSION		SEA-3 FACILITY EXPANSION		SEA-3 FACILITY EXPANSION		SEA-3 FACILITY EXPANSION	
LOTS 20/13 & 14/2		LOTS 20/13 & 14/2		LOTS 20/13 & 14/2		LOTS 20/13 & 14/2		LOTS 20/13 & 14/2		LOTS 20/13 & 14/2	
SHATTUCK WAY		SHATTUCK WAY		SHATTUCK WAY		SHATTUCK WAY		SHATTUCK WAY		SHATTUCK WAY	
NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH		NEWINGTON, NH	
OVERALL SITE PLAN		OVERALL SITE PLAN		OVERALL SITE PLAN		OVERALL SITE PLAN		OVERALL SITE PLAN		OVERALL SITE PLAN	
C-1		C-1		C-1		C-1		C-1		C-1	

HAIGHT ENGINEERING, PLLC  
CIVIL ENGINEERS  
P.O. BOX 1186, 181 WATSON ROAD  
DOVER, NEW HAMPSHIRE  
03826. FAX: 603.749.7848



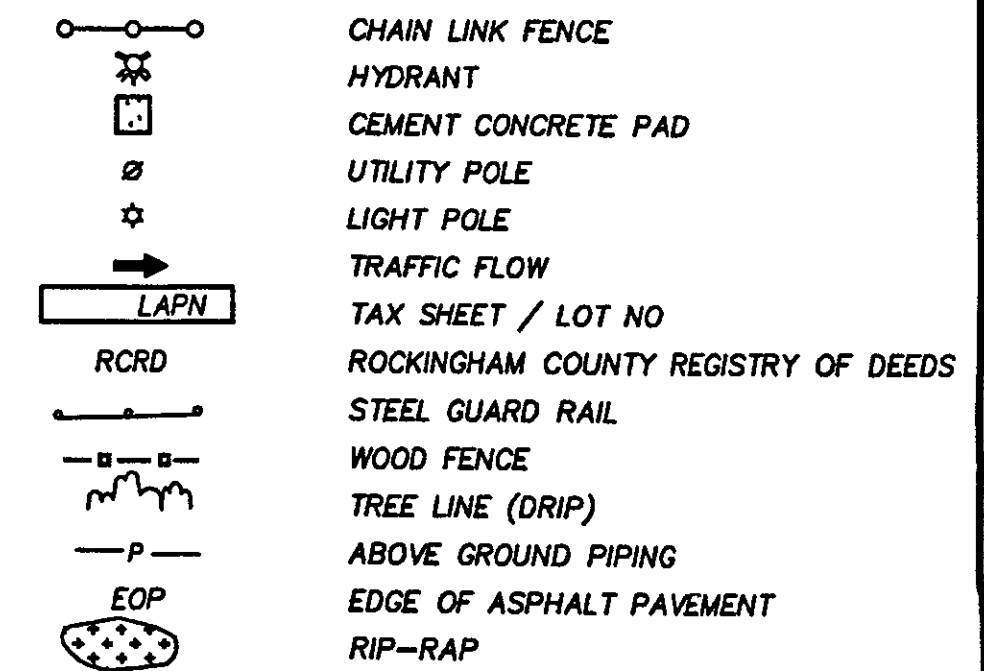
**SITE NOTES:**

- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNERS REPRESENTATIVE. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE-DOWNS. SUCH MATERIALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF THE PROJECT.
- METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTORS' RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.
- ALL LAYOUT SHALL BE PERFORMED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
- EXISTING SITE LIGHTING WILL REMAIN AND ANY ADDITIONAL SECURITY LIGHTING WILL BE PROVIDED INTEGRAL TO THE PROPOSED SERVICE EQUIPMENT.

**DEMOLITION NOTES:**

- COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
- ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION / CONSTRUCTION ACTIVITIES
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, CULVERTS, POLES AND FENCES.
- IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.

**LEGEND:**



**GRAPHIC SCALE**



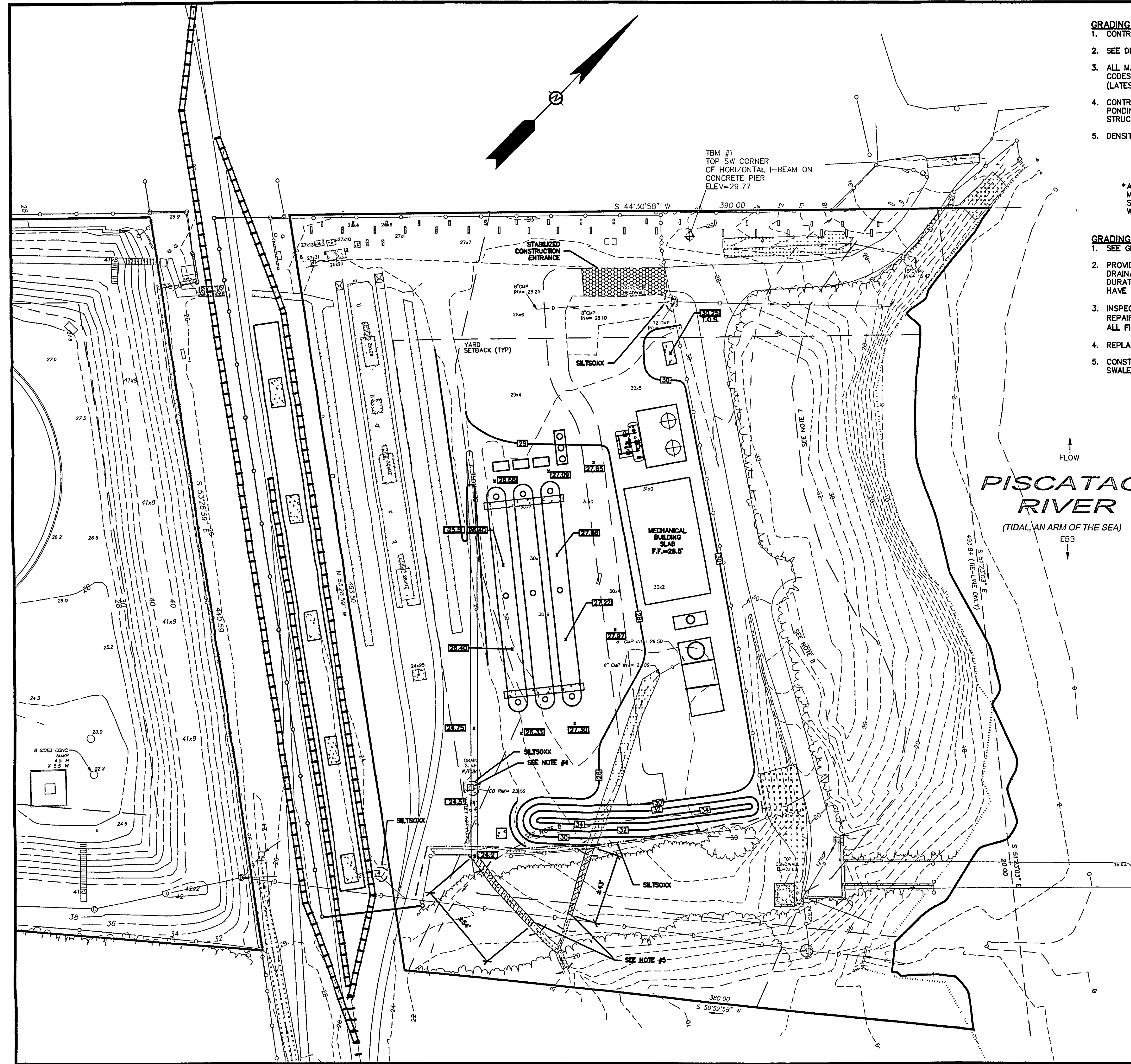
HAUGHT ENGINEERING, PLLC  
 CIVIL ENGINEERS  
 P.O. BOX 1166, 181 WATSON ROAD  
 DOWVER, NEW HAMPSHIRE  
 603.760.4266 FAX 603.749.7348

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE	REVISION
11-4-2013	1"=60'	SRD	SRD	SRD	1322	ZBA-SEA-3	

SEA-3 INC.  
 SEA-3 FACILITY EXPANSION  
 LOTS 20/13 & 14/2  
 SHATTUCK WAY  
 NEWINGTON, NH

SITE PLAN





- GRADING NOTES:**
- CONTRACTOR SHALL RELOCATE ALL BENCHMARKS AS NECESSARY.
  - SEE DETAIL SHEETS FOR EROSION CONTROL PROCEDURES AND CONSTRUCTION SEQUENCING.
  - ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE TOWN AND STATE CODES AND NHDOT - STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).
  - CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
  - DENSITY REQUIREMENTS:
 

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	95%

\*ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180. METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T-191, T-204, OR T-238 AND T-239.

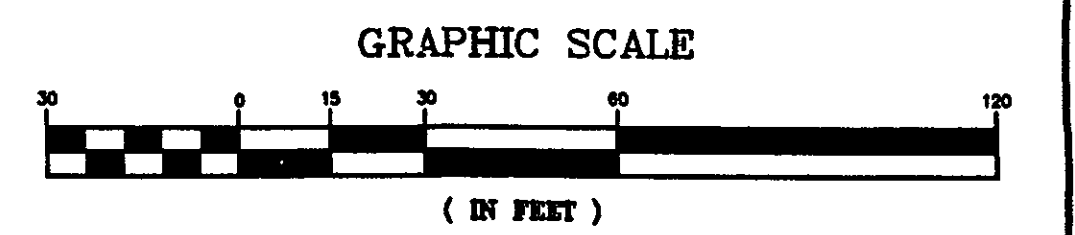
- GRADING NOTES:**
- SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEET.
  - PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
  - INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
  - REPLACE EXISTING CB WITH A 4' DEEP SUMP CB. REUSE EXISTING FRAME AND GRATE.
  - CONSTRUCT GRASS LINED SWALE START AT FENCE LINE. RECONSTRUCT THE EXISTING SWALE STABILIZE WITH NORTH AMERICAN GREEN ERONET SC150.

DIG-SAFE  
1-888-344-7233



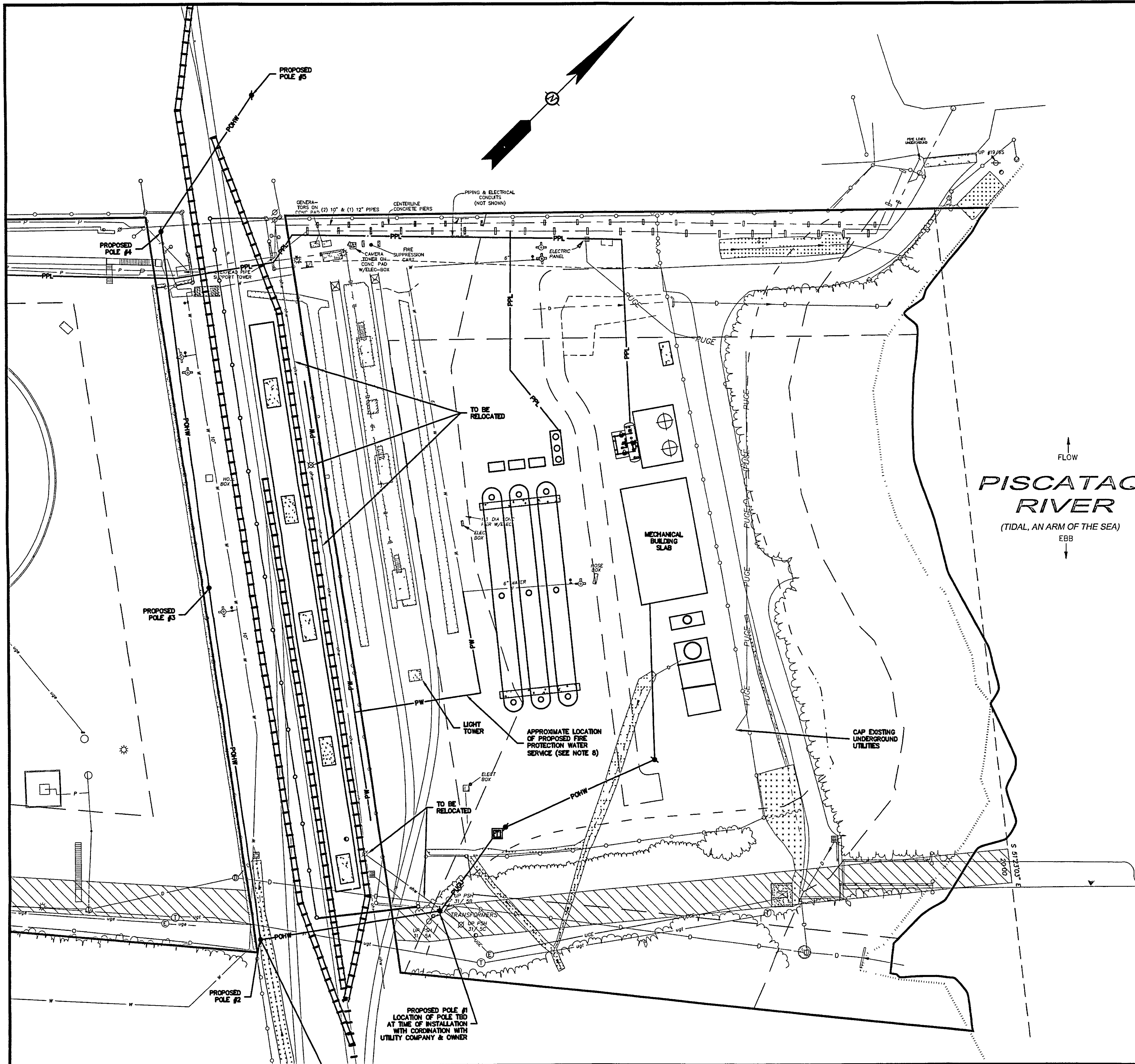
NOTE:  
CONTRACTOR IS REQUIRED TO CALL DIGSAFE AND COORDINATE LOCATIONS OF EXISTING UTILITY SERVICES A MINIMUM OF 72 HOURS PRIOR TO STARTING ANY WORK ON SITE.

- LEGEND:**
- PROPOSED SPOT ELEVATION
  - PROPOSED FINISH CONTOUR
  - EXISTING SPOT ELEVATION
  - EXISTING CONTOUR
  - CHAIN LINK FENCE
  - HYDRANT
  - CEMENT CONCRETE PAD
  - UTILITY POLE
  - LIGHT POLE
  - TRAFFIC FLOW
  - TAX SHEET / LOT NO
  - ROCKINGHAM COUNTY REGISTRY OF DEEDS
  - STEEL GUARD RAIL
  - WOOD FENCE
  - TREE LINE (DRIP)
  - ABOVE GROUND PIPING
  - EDGE OF ASPHALT PAVEMENT
  - RIP-RAP



DATE: 11-4-2013		DRAWN BY: SRD		DESIGN BY: SRD		APPROVED BY: SH		PROJECT NO: 1322		FILE: ZEA-SEA-3		NO.	
SCALE: 1"=60'		REVISION PER NOT COMMENTS		REVISION PER PLANNING BOARD REVIEW		REVISION		DATE		DATE		DATE	
		2		1				3-12-14		3-6-14		APP'D	
<b>GRADING, DRAINAGE &amp; EROSION CONTROL PLAN</b>													
SEA-3 INC. 190 SHATTUCK WAY NEWINGTON, NH													
SEA-3 FACILITY EXPANSION LOTS 20/13 & 14/2 SHATTUCK WAY NEWINGTON, NH													
C-3													

HAUGHT ENGINEERING, PLLC  
100 WATSON ROAD  
PO BOX 1166  
DOVER, NEW HAMPSHIRE  
603.750.4266 FAX 603.749.7348



- UTILITY NOTES:**
1. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON-SITE AT ALL TIMES.
  2. THE BEST AVAILABLE INFORMATION WAS USED TO DETERMINE THE LOCATION AND SIZE OF EXISTING UTILITIES. THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE EXACT SIZE AND LOCATION OF UTILITIES SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
  3. ALL ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND, UNLESS OTHERWISE INDICATED.
  4. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE TOWN AND STATE CODES.
  5. THE EXACT LOCATION OF NEW PAD MOUNTED TRANSFORMER, UTILITY POLES, UTILITY SERVICES AND CONNECTIONS NUMBER TO BE DETERMINED BY UTILITY COMPANY. INSTALLATION SHALL CONFORM THE NATIONAL ELECTRIC CODE AND TO UTILITY COMPANY STANDARDS.
  6. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
  7. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
  8. ANY UPGRADE REQUIRED TO THE FIRE SUPPRESSION TO BE DESIGNED BY A FIRE PROTECTION ENGINEER.

↑ FLOW  
**PISCATAQUA RIVER**  
 (TIDAL, AN ARM OF THE SEA)  
 EBB  
 ↓

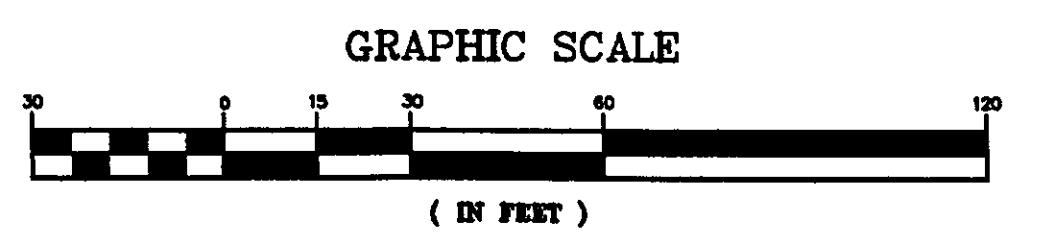
**DIG-SAFE**  
 1-888-344-7233



NOTE:  
 CONTRACTOR IS REQUIRED TO CALL DIGSAFE AND COORDINATE LOCATIONS OF EXISTING UTILITY SERVICES A MINIMUM OF 72 HOURS PRIOR TO STARTING ANY WORK ON SITE.

**LEGEND:**

- ⊕ FIRE HYDRANT WITH SPRAY NOZZLES
- PPL PROPOSED TRANSFORMER
- PUGU PROPOSED PIPE LINE
- PROPOSED UNDERGROUND UTILITIES
- POHW PROPOSED UTILITY POLE
- POHW PROPOSED OVERHEAD WIRES
- CHAIN LINK FENCE
- ⊕ HYDRANT
- CEMENT CONCRETE PAD
- ⊕ EXISTING UTILITY POLE
- ⊕ EXISTING LIGHT POLE
- TRAFFIC FLOW
- LAPN TAX SHEET / LOT NO
- RCRD ROCKINGHAM COUNTY REGISTRY OF DEEDS
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIP)
- EXISTING ABOVE GROUND PIPING
- EOP EDGE OF ASPHALT PAVEMENT
- RIP-RAP
- PW PROPOSED FIRE PROTECTION WATER LINE



**HAIGHT ENGINEERING, PLLC**  
 CIVIL ENGINEERS  
 P.O. BOX 1166, 181 WATSON ROAD  
 BETHLEHEM, NH 03750-0166  
 603.750.4286 FAX 603.749.7948

DATE	BY	REVISION	DATE
11-4-2013	SRD	1	3-12-14
11-4-2013	SRD	2	3-12-14
11-4-2013	SRD	3	3-12-14
11-4-2013	SRD	4	3-12-14
11-4-2013	SRD	5	3-12-14
11-4-2013	SRD	6	3-12-14
11-4-2013	SRD	7	3-12-14
11-4-2013	SRD	8	3-12-14
11-4-2013	SRD	9	3-12-14
11-4-2013	SRD	10	3-12-14

**SEA-3 INC.**  
**190 SHATTUCK WAY**  
**NEWINGTON, NH**

**SEA-3 FACILITY EXPANSION**  
**LOTS 20/13 & 14/2**  
**SHATTUCK WAY**  
**NEWINGTON, NH**

**UTILITY PLAN**

**C-4**



**DESCRIPTION**

The purpose of this plan is to show the site improvements associated with the expansion of existing facilities to increase off loading capacity of liquid petroleum (L) gas. The expansion includes upgrades to the existing railroad siding to accommodate up to an additional 10 rail cars, the installation of (3) 90,000 gallon above ground tanks and the associated drying, chilling and pumping equipment.

**PROJECT NAME AND LOCATION**

SEA-3, Inc.  
190 Shattuck Way  
Newington, NH

LATITUDE N43°08'22"  
LONGITUDE W70°48'02"

**NAME OF RECEIVING WATERS**

Piscataqua River

**SOIL CHARACTERISTICS**

Active - Industrial Yard Urban Developed Condition

**DISTURBED AREA**

±65,000 square feet

**SEQUENCE OF MAJOR ACTIVITIES**

- Place all temporary erosion and sediment control BMP's.
- Selective demolition of fencing and miscellaneous concrete pads.
- Regrade gravel site to grades on site plan.
- Installation of underground utilities and pads for structures.
- Place finish gravel and the grass.
- When all site work is complete and all disturbed areas are stabilized remove all temporary erosion control measures.
- All work shall be performed in accordance and meet the requirements of RSA 430:53 and Chapter AGR 3800 relative to invasive species.
- All erosion control and perimeter controls shall be installed prior to commencing earth moving operations.
- Swales and ponds (as applicable) shall be constructed early on in the construction sequence and before rough grading of the site and all ditched and swales shall be stabilized prior to directing runoff to them.
- Stabilize, roadway & parking lots within 72 hours of achieving finish grade.
- All cut and fill slopes shall be loamed and seeded (as applicable) within 72 hours of achieving finish grade.
- All erosion control measures shall be inspected at least weekly and after every 1/2" of rainfall.
- In all cases the smallest practical area shall be disturbed during construction and in NO case shall exceed 5 acres at any one time before disturbed areas are stabilized. All disturbed areas shall be stabilized within 145 days of initiation.

**DEFINITIONS**

- An area shall be considered stable if one of the following has occurred:
- Base course gravel has been installed in areas to be paved.
  - A minimum of 85% vegetated growth has been established.
  - A minimum of 3" of non-erodible material such as stone or rip-rap has been installed, or
  - Erosion control blankets have been properly installed.

**INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS**

**A. GENERAL**

These are the general inspection and maintenance practices that will be used to implement the plan.

- All ditches and swales shall be stabilized prior to directing runoff to them.
- The smallest practical portion of the site will be denuded at one time.
- All control measures will be inspected at least once each week and following any storm event of 1/2 inch or greater.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.
- Built up sediment will be removed from silt fence or check dams when it has reached one third the height of the fence or dam.
- All diversion dikes will be inspected and any breaches promptly repaired.
- Temporary seeding and planting will be inspected for bare spots, washouts, and unhealthy growth.
- A maintenance inspection report will be made after each inspection.
- A representative of the owner, will be responsible for inspections, maintenance and repair activities, and filing out the inspection and maintenance report.
- All areas shall be restabilized within 72 hours of achieving finish grade.

**B. FILTERS**

**1. Silt Fence**

- Synthetic filter fabric shall be a pervious sheet of polypropylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:
 

Physical Property	Test	Requirements
Filtering Efficiency	VFM-51	75% minimum
Tensile Strength at Break	VFM-52	Extra Strength
20% Maximum Elongation*		50 lb./in. in (mm)
Standard Strength		
Flow Rate	VFM-51	0.3 gal/ft <sup>2</sup> /min (m)

\* Requirements reduced by 50 percent after six (6) months of installation.

Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six (6) months of expected usable construction life at a temperature range of 0 degrees F to 120 Degrees F.

- The height of a silt fence shall not exceed thirty-six (36) inches.
- The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at support posts, with a minimum six (6) inch overlap, and securely secured.
- Posts shall be spaced a maximum of ten (10) feet apart at the barrier location and driven securely into the ground (minimum of 16 inches). When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
- Posts for silt fences shall be 2-inch diameter wood with a minimum length of 5 feet.
- Wire fence reinforcement for silt fences using standard strength filter cloth shall be a minimum of 42 inches in height, a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches.
- A trench shall be excavated approximately four (4) inches wide and four (4) inches deep along the line of posts and upslope from the barrier.
- When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, the wires or hog rings. The wire shall extend no more than 36 inches above the original ground surfaces.
- The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of Item (1) applying.
- The trench shall be backfilled and the soil compacted over the filter fabric.
- Silt fences shall be removed when they have served their useful purpose, but not before the upslope areas have been permanently stabilized.

**2. Sequence of Installation**

Sediment barriers shall be installed prior to any soil disturbance of the contributing drainage area above them.

**3. Maintenance**

- Check dams and silt fence barriers shall be inspected immediately after rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting of the center or the edges, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam.
- Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
- Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one third (1/3) the height of the barrier.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

**C. MULCHING**

- Timing  
In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
  - Apply mulch prior to any storm event. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
  - Required Mulching with a specified time period. The time period can range from 14 to 21 days of inactivity on an area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.
- Application Rate  
Mulch shall be applied at a rate of between 1.5 to 2 tons per acre, or 90 to 100 pounds per 1000 square feet.
- Guidelines for Winter Mulch Application  
When mulch is applied to provide protection over winter (and the growing season) it shall be at a rate of 6,000 pounds of hay or straw per acre. A fertilizer may be added to the mulch.
- Maintenance  
All mulches must be inspected periodically in particular after rainstorms, to check for fill erosion. If less than 50% of the soil surface is covered by mulch, additional mulch shall be immediately applied.
- Excelsior Matting  
Excelsior Matting shall be used in place of mulch on all slopes steeper than 3:1.

**D. TEMPORARY GRASS COVER**

- Soilbed Preparation  
Apply fertilizer at the rate of 600 pounds per acre of 10-10-10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.
- Seeding
  - Utilize annual ryegrass at a rate of 40 lbs./acre.
  - Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
  - Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

**E. PERMANENT SEEDING**

- Bedding - stones larger than 1 1/2", trash, roots, and other debris interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 4" to prepare a seedbed and mix fertilizer into the soil.
- Fertilizer - lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds and amounts of lime and fertilizer should be based on an evaluation of soil tests. When a soil test is not available, the following minimum amounts should be applied:
 

Agricultural Limestone @ 100 lbs. per 1,000 s.f.	10-20-20 fertilizer @ 12 lbs. per 1,000 s.f.
--	--
- Seed Mixture (recommended)
 

Rate	lbs. per acre	lbs. per 1,000 s.f.
Tall Fescue	20	0.45
Creeping Red Fescue	20	0.45
Birdfoot Trefoil	8	0.22
Total	48	1.10

**F. STORM DRAIN INLET PROTECTION**

- Straw/Hay Bale Inlet Structure
  - Bales shall be either wire bound or string tied with the bindings oriented around the sides rather than over and under the bales.
  - Bales shall be placed lengthwise in a single row surrounding the inlet, with the ends of adjacent bales pressed together.
  - The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet with a width of bales a minimum depth of four (4) inches. After the bales are staked, the excavated soil shall be backfilled and compacted against the filter barrier.
  - Each bale shall be securely anchored and held in place by at least two (2) stakes or rebars driven through the bales.
  - Loose straw/hay shall be wedged between bales to prevent water from entering between bales.
  - All structures should be inspected after every rainstorm and repairs made as necessary.
  - Sediment should be removed from the devices after the sediment has reached a maximum of one-third the depth of the trap.
  - Haybales should be removed and the area repaired as soon as the contributing drainage area to the inlet has been completely stabilized.

**TIMING OF CONTROLS/MEASURES**

As indicated in the sequence of Major Activities the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Areas where construction activity temporarily ceases for more than twenty one (21) days will be stabilized with a temporary seed and mulch within fourteen (14) days of the last disturbance. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established. All areas shall be stabilized within 72 hours of achieving finish grade.

**WASTE DISPOSAL**

- WASTE MATERIALS**  
All waste materials will be collected and stored in securely lidded receptacles. All trash and construction debris from the site will be deposited in a dumpster. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal by the superintendent.
- HAZARDOUS WASTE**  
All hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices by the superintendent.
- SANITARY WASTE**  
All sanitary waste will be collected from the portable units a minimum of once per week by a licensed sanitary waste management contractor.

**SPILL PREVENTION**

- MATERIAL MANAGEMENT PRACTICES**  
The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances during construction to stormwater runoff:
  - Good Housekeeping:  
The following good housekeeping practices will be followed on site during the construction project:
    - As effort will be made to store only sufficient amounts of products to do the job.
    - All materials stored on site will be stored in a neat, orderly manner in their proper (original if possible) containers and, if possible, under a roof or other enclosure.
    - Manufacturer's recommendations for proper use and disposal will be followed.
    - The site superintendent will inspect daily to ensure proper use and disposal of materials.
    - Substances will not be mixed with one another unless recommended by the manufacturer.
    - Whenever possible all of a product will be used up before disposing of the container.

**Hazardous Products**

- The following practices will be used to reduce the risks associated with hazardous materials:
- Products will be kept in their original containers unless they are not resealable.
  - Original labels and material safety data will be retained for important product information.
  - Surplus product that must be disposed of will be discarded according to the manufacturer's recommended methods of disposal.

**PRODUCT SPECIFICATION PRACTICES**

- The following product specific practices will be followed on site:
- Petroleum Products**  
All on site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce leaks. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt based substances used on site will be applied according to the manufacturer's recommendations.

**Fertilizers**

Fertilizers used will be applied only in the minimum amounts directed by the specifications. Once applied fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed or enclosed trailers. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

**Paints**

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be disposed of properly according to manufacturer's instructions or state and local regulations.

**Concrete Trucks**

Concrete trucks will discharge and wash out surplus concrete or drum wash water in a contained area on site.

**SPILL CONTROL PRACTICES**

- In addition to good housekeeping and material management practices discussed in the previous section the following practices will be followed for spill prevention and cleanup:
- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
  - Materials and equipment necessary for spill cleanup will be kept in the material storage area on site. Equipment and materials will include but not be limited to brooms, shovels, mats, rags, gloves, goggles, kitty litter, sand, sawdust and plastic or metal trash containers specifically for this purpose.
  - All spills will be cleaned up immediately after discovery.
  - The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
  - Spills of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size.
  - The spill prevention plan will be adjusted to include measures to prevent the type of spill from recurring and how to cleanup the spill if it recurs. A description of the spill, its cause, and the cleanup measures will be included.
  - The site superintendent responsible for day-to-day site operations will be the spill prevention and cleanup coordinator.

**MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES**

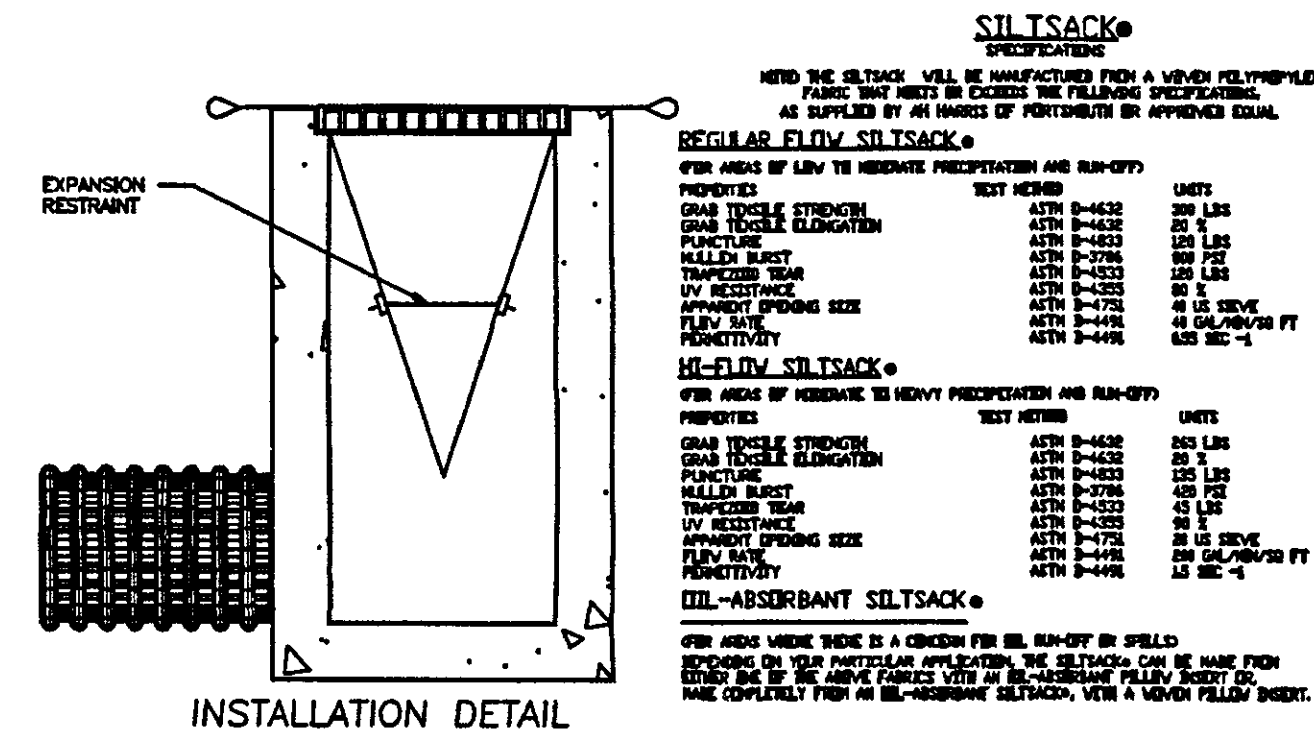
The project proponent is responsible for the maintenance of roadway and of all stormwater facilities.

**CATCH BASINS & STORMWATER TREATMENT STRUCTURES**

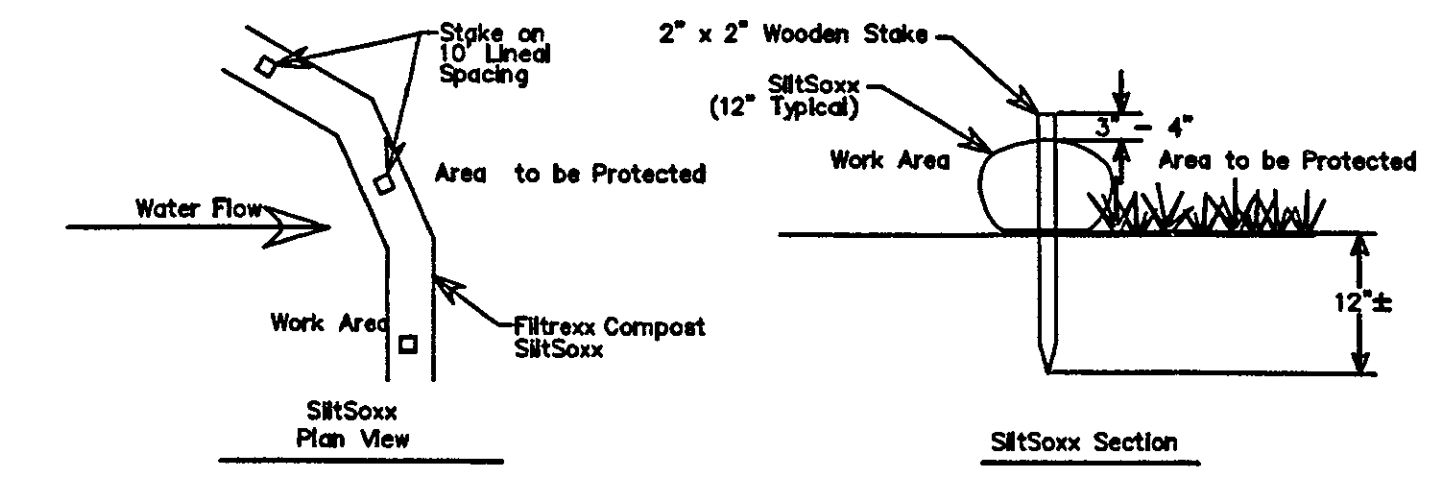
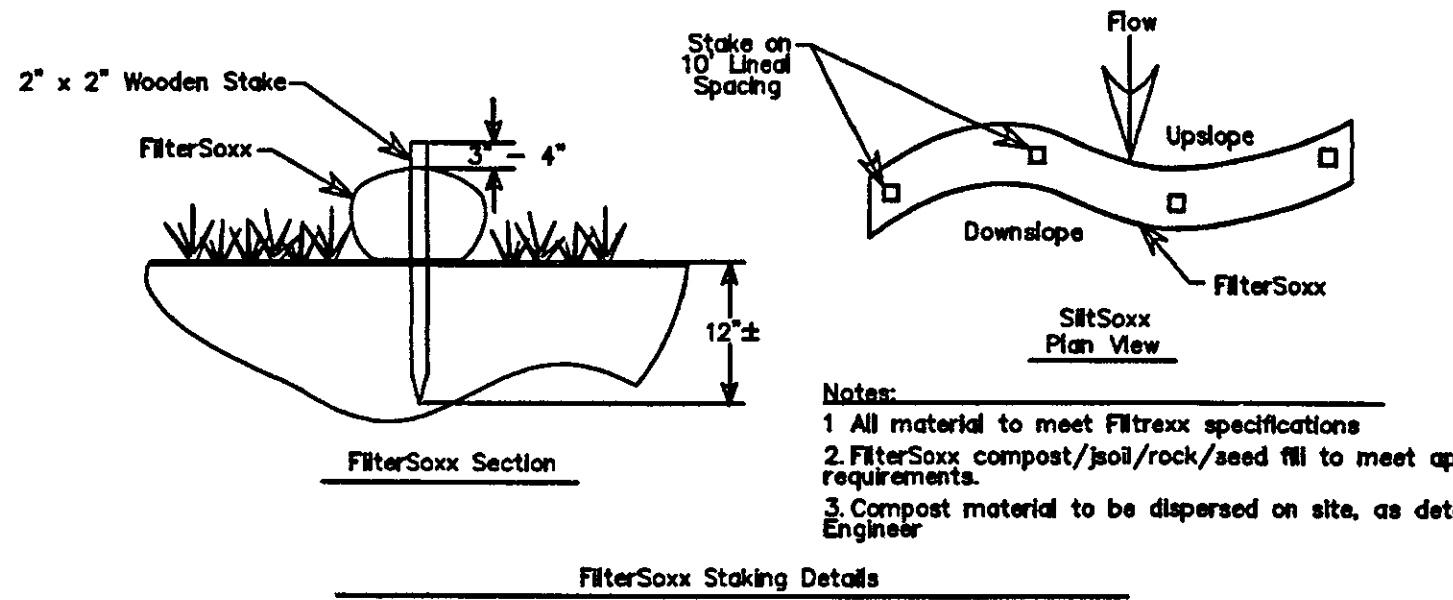
- Catch basins & Stormwater treatment structures should be inspected on a monthly basis and/or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system.

**WINTER CONSTRUCTION NOTES**

- All proposed post-development vegetated areas which do not exhibit a minimum of 85 % vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The placement of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt.
- All slopes that do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th shall be stabilized with stone or erosion control blankets.
- After October 15th, incomplete road surfaces shall be protected with a minimum of 3-inches of crushed gravel per NHDOT Item 403.3 or if construction is to continue through the winter season be cleared of any accumulated snow after each storm event.



DETAIL OF INLET SEDIMENT CONTROL DEVICE  
NOT TO SCALE



- Notes:**
- All material to meet FilterSox specifications.
  - FilterSox compost/soil/rock/seed fill to meet application requirements.
  - FilterSox depicted is for minimum slopes. Greater slopes may require larger stakes per the Engineer.
  - Compost material to be dispersed on site, as determined by Engineer.

Filter Barrier Detail  
NOT TO SCALE

HAIGHT ENGINEERING, PLLC  
CIVIL ENGINEERS  
P.O. BOX 1166, 181 WATSON ROAD  
DOVER, NEW HAMPSHIRE  
603.760.4266, FAX 603.749.7948

DATE: 10-22-13	DRAWN BY: SRD	DESIGN BY: SRD	REVISION PER AOT COMMENTS	REVISION
SCALE: 1"=60'			2	1
			REVISION PER PLANNING BOARD REVIEW	NO.
			3-12-14	DATE
			3-8-14	DATE
			APP'D	DATE

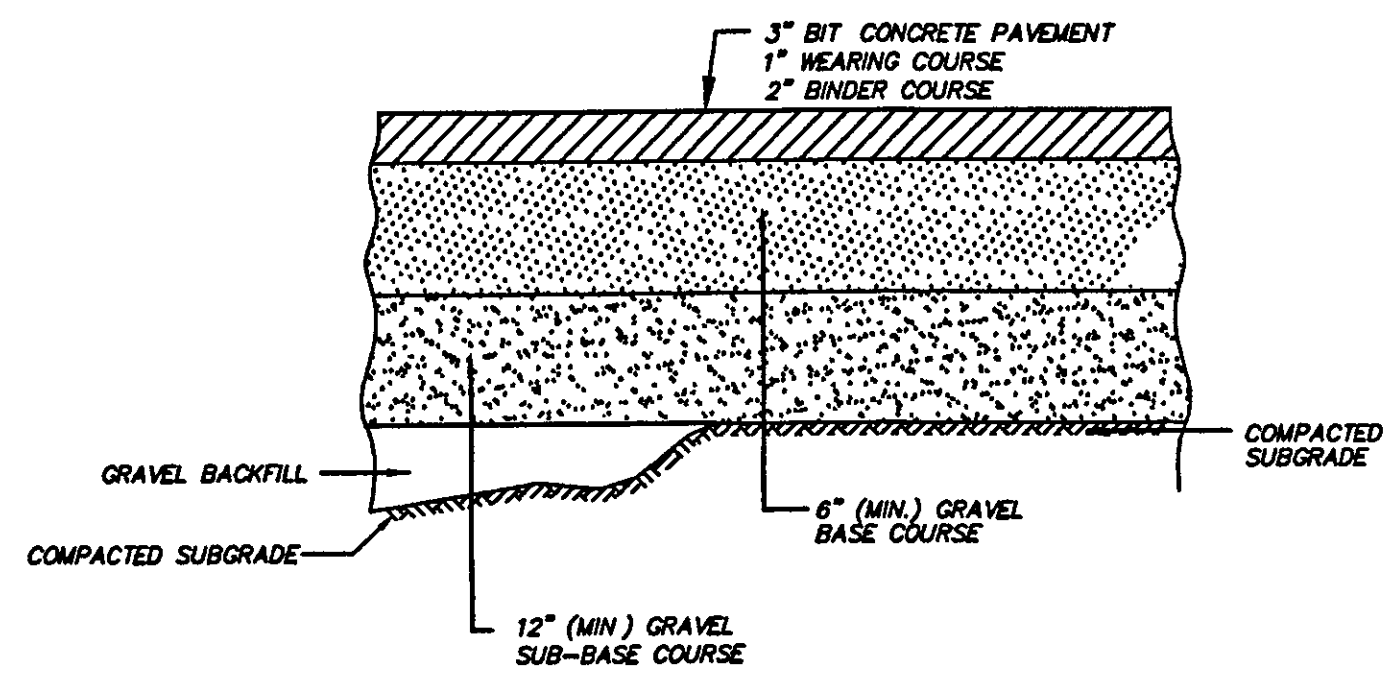
**EROSION CONTROL NOTES & DETAILS**

**SEA-3 FACILITY EXPANSION**  
**LOTS 20/13 & 14/2**  
**SHATTUCK WAY**  
**NEWINGTON, NH**

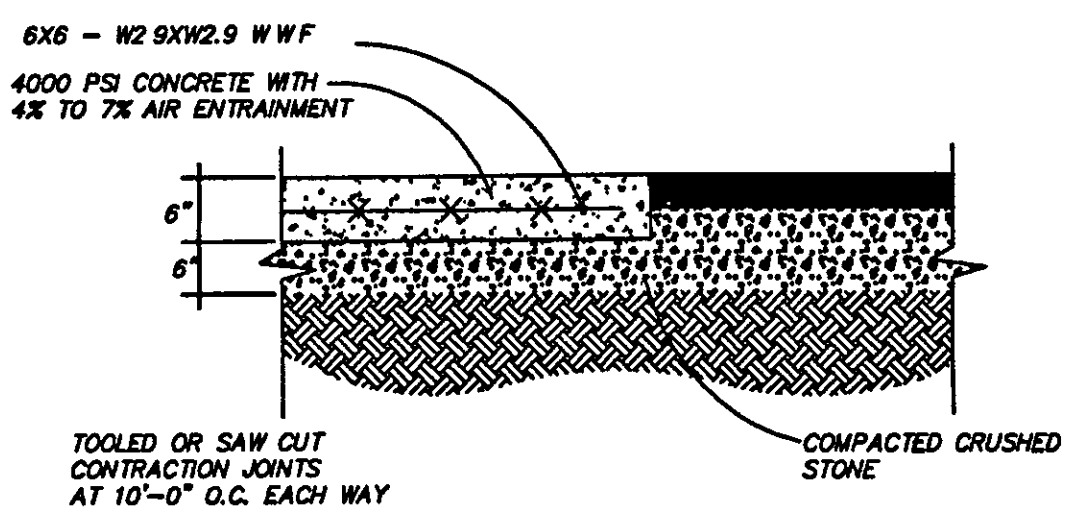
**SEA-3 INC.**  
**190 SHATTUCK WAY**  
**NEWINGTON, NH**

**C-5**

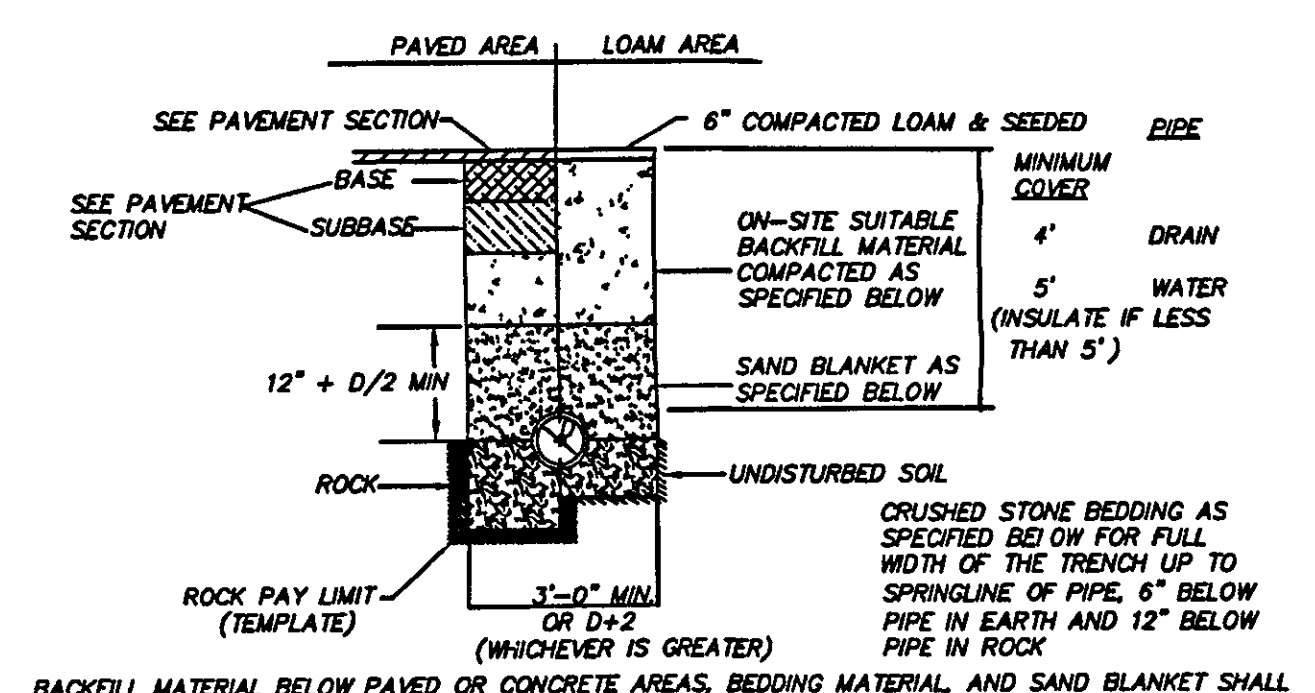




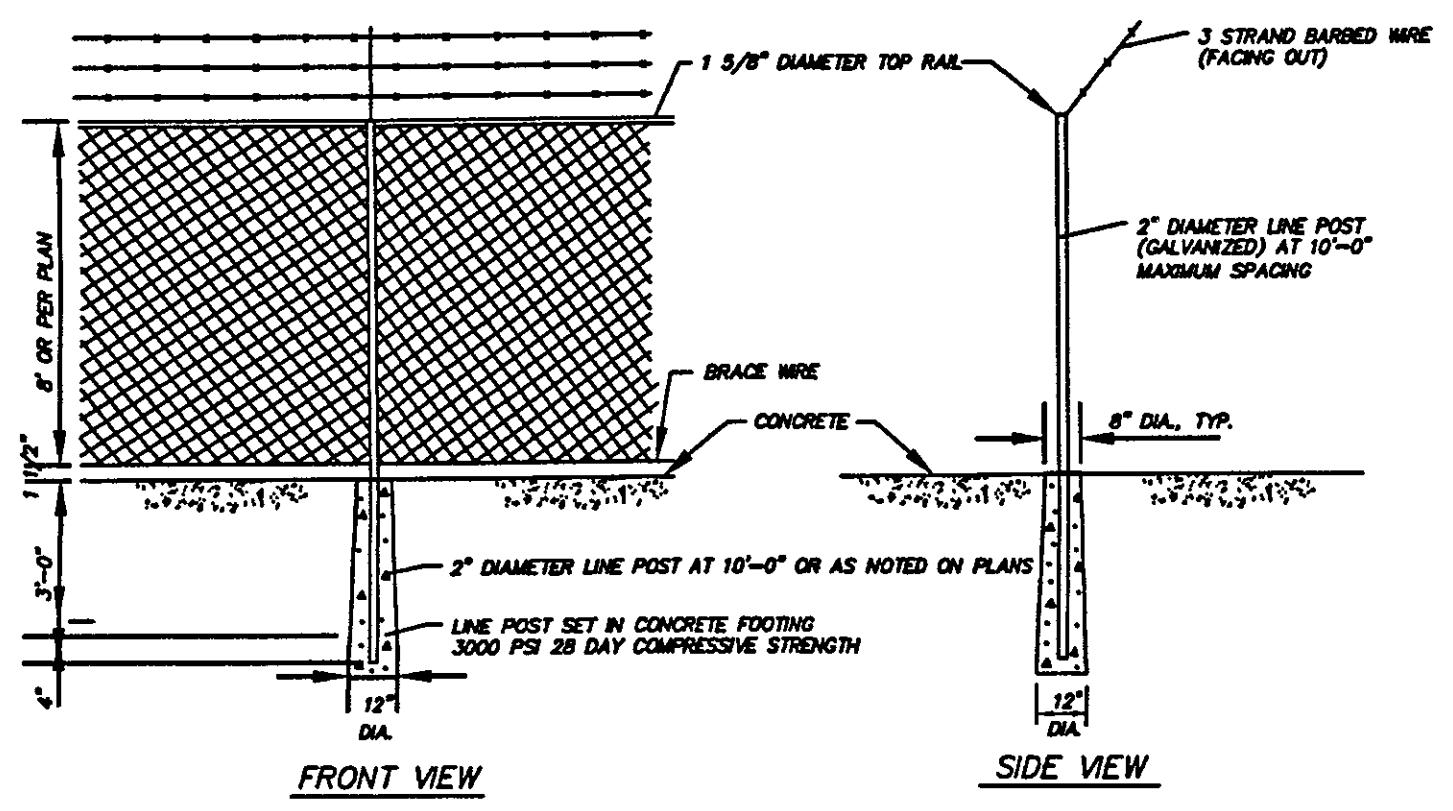
PAVEMENT SECTION AT RAIL SKIP  
NOT TO SCALE



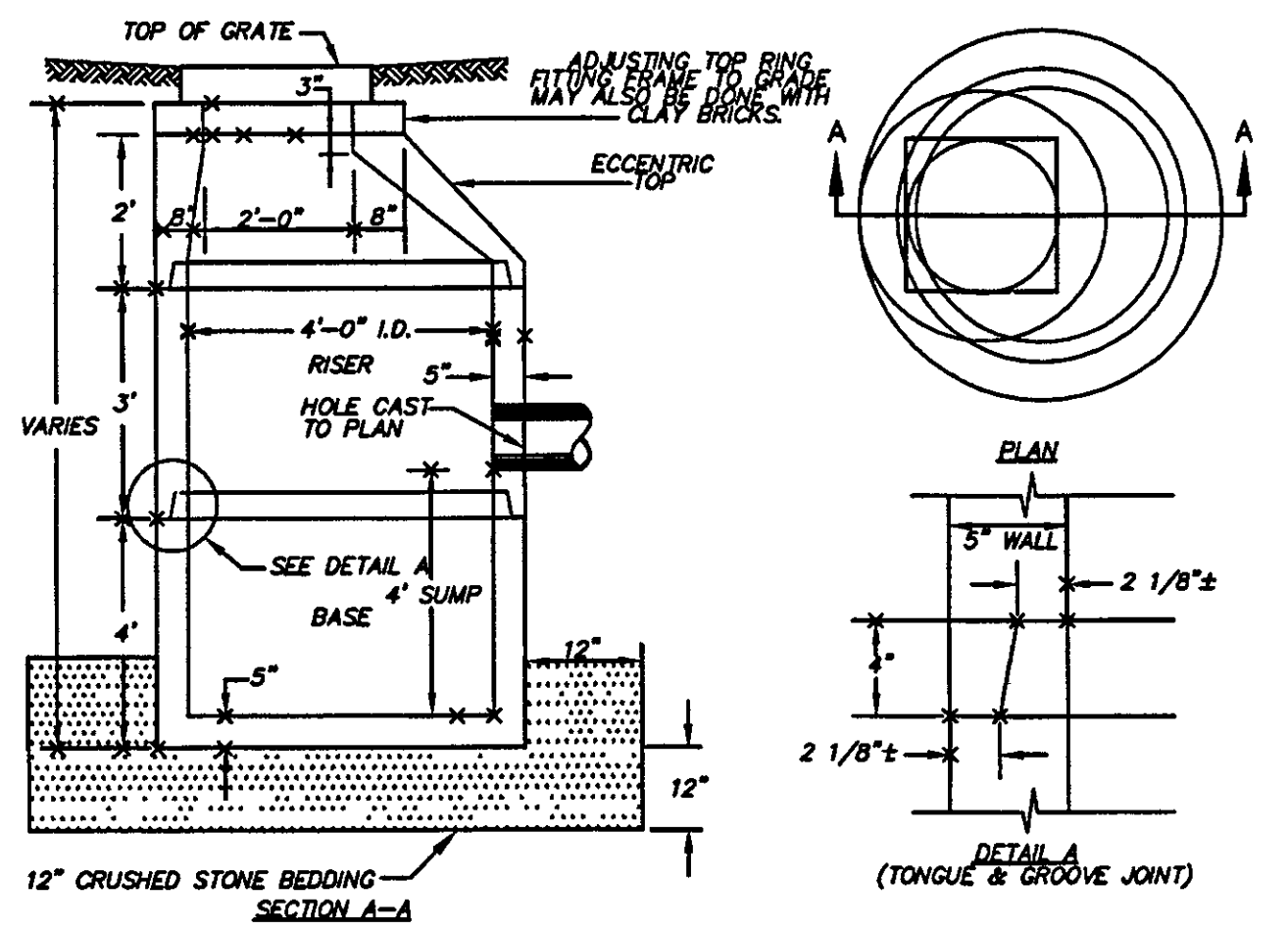
CONCRETE PAD DETAIL FOR FLARE  
NOT TO SCALE



UTILITY TRENCH  
NOT TO SCALE

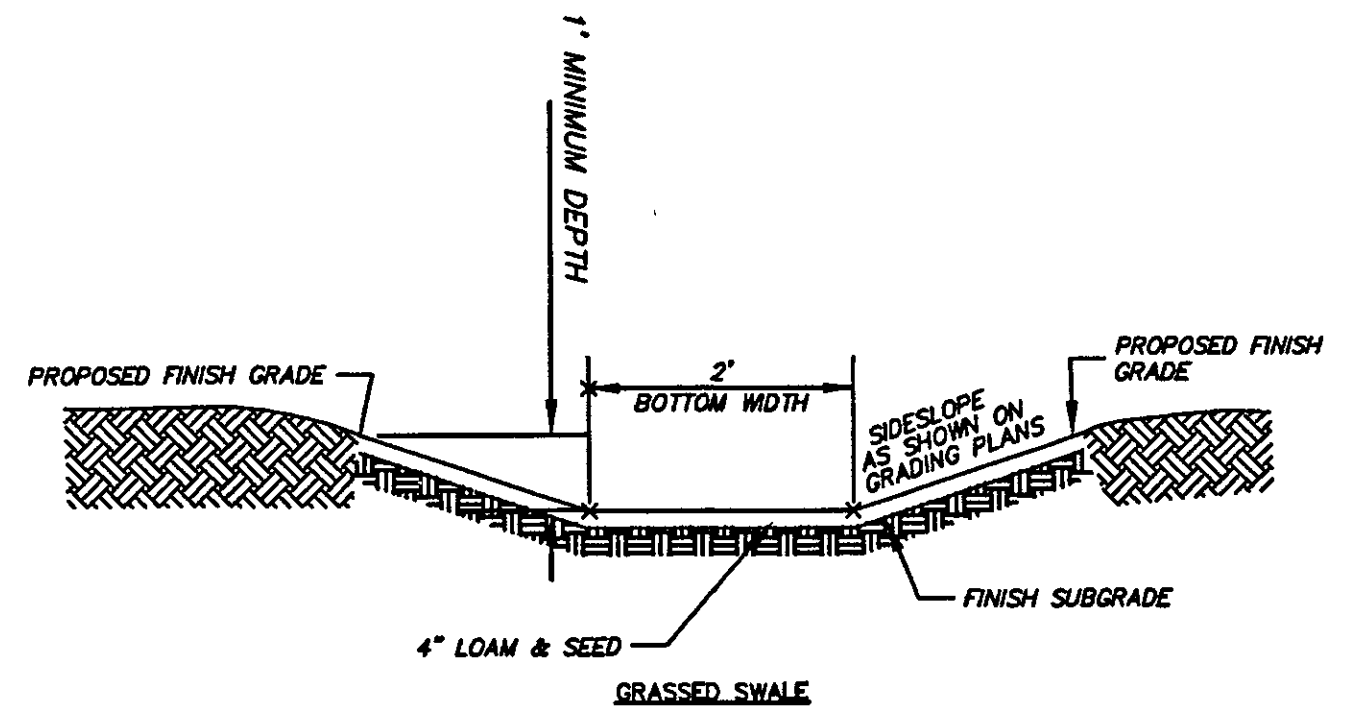


CHAIN LINK FENCE DETAIL  
NOT TO SCALE



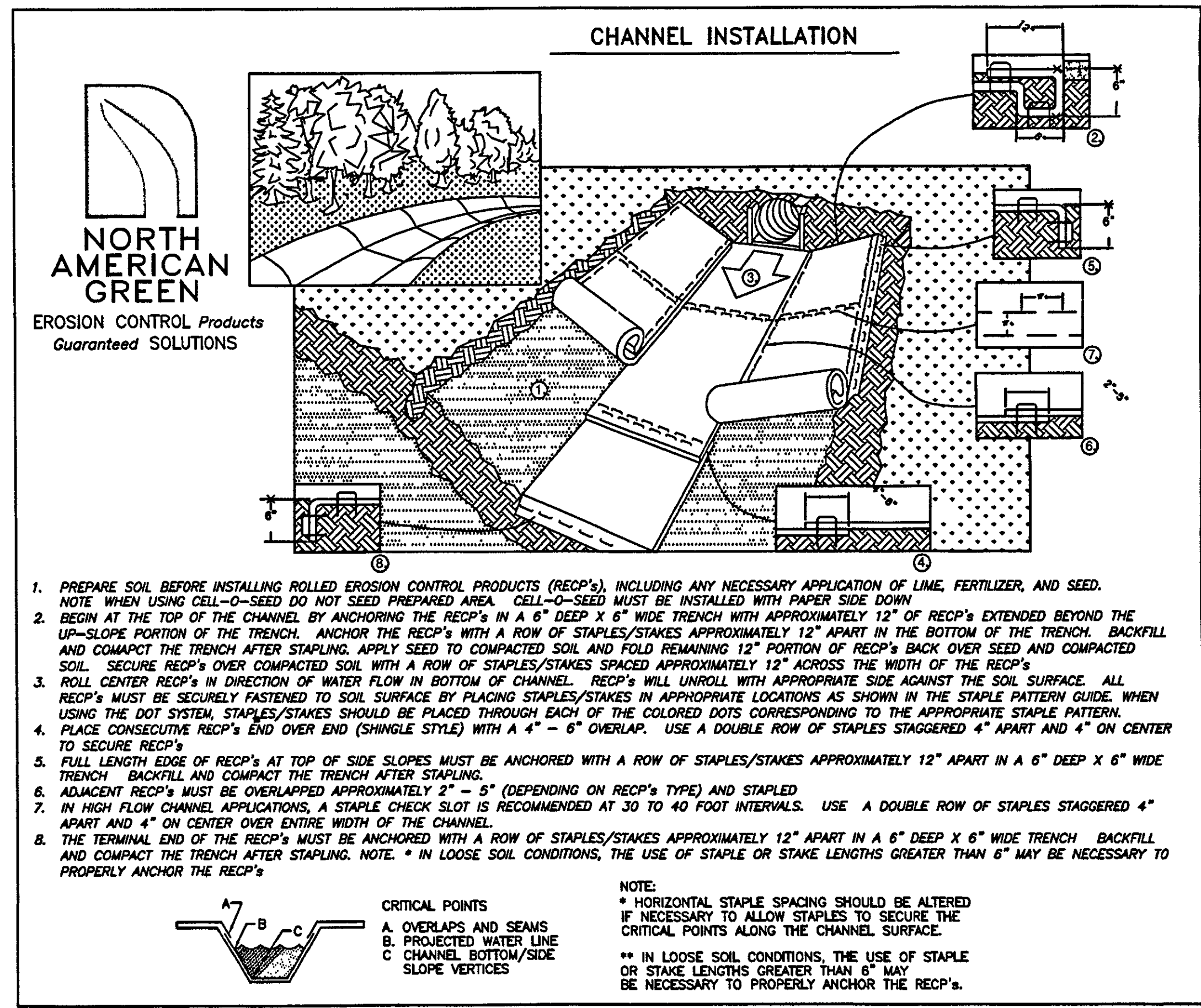
- NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
  2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
  3. THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
  4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
  5. THE STRUCTURES SHALL BE DESIGNED FOR H2O LOADING.

DEEP SUMP CATCHBASIN  
NOT TO SCALE

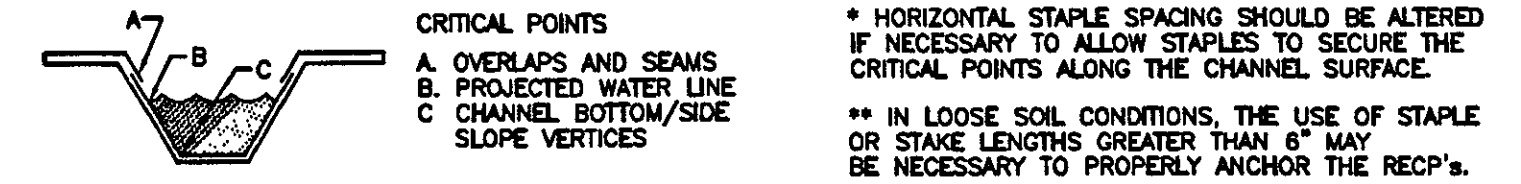


- NOTES:
1. THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.
  2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
  3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
  4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.
  5. VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.
  6. MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT BILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.
  7. THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.
  8. PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.

GRASSED SWALE  
NOT TO SCALE

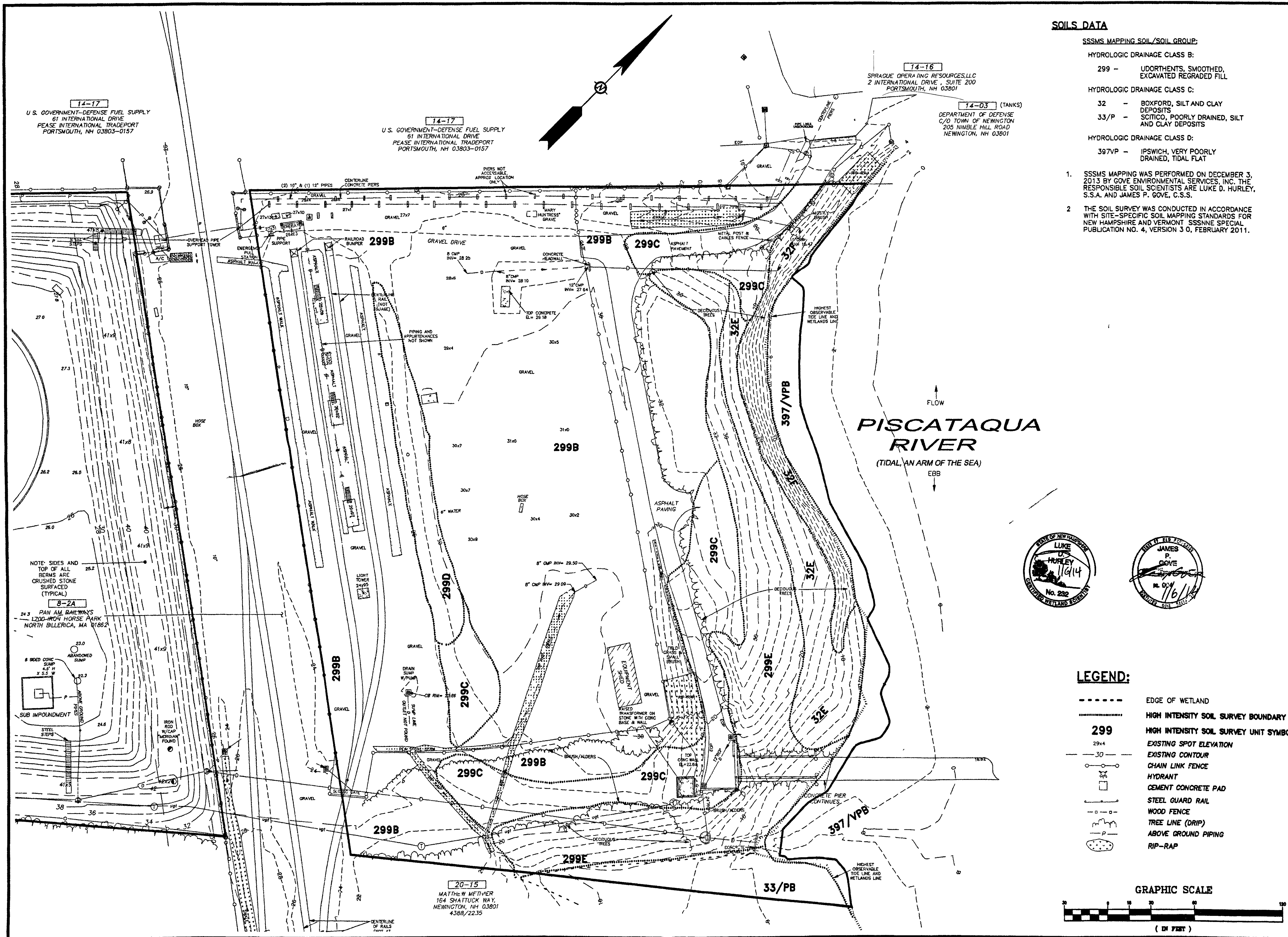


1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP'S.
3. ROLL CENTER RECP'S IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP'S END OVER END (SHINGLE STYLE) WITH A 4" - 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECP'S.
5. FULL LENGTH EDGE OF RECP'S AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP'S MUST BE OVERLAPPED APPROXIMATELY 2" - 6" (DEPENDENT ON RECP'S TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP'S MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: \* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP'S.



- CRITICAL POINTS
- A. OVERLAPS AND SEAMS
  - B. PROJECTED WATER LINE
  - C. CHANNEL BOTTOM/SIDE SLOPE VERTICES
- NOTE:
- \* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
  - \*\* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP'S.

DATE: 10-22-13		SCALE: 1"=60'		DRAWN BY: SRD		DESIGN BY: SRD		APPROVED BY: S.J.H.		PROJECT NO: 1322		FILE: ZBA-SEA-3		NO.	
DATE: 10-22-13		SCALE: 1"=60'		DRAWN BY: SRD		DESIGN BY: SRD		APPROVED BY: S.J.H.		PROJECT NO: 1322		FILE: ZBA-SEA-3		NO.	
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**SOILS DATA**

- SSSMS MAPPING SOIL/SOIL GROUP:  
 HYDROLOGIC DRAINAGE CLASS B:  
 299 - UDORTMENTS, SMOOTHED, EXCAVATED REGRADED FILL  
 HYDROLOGIC DRAINAGE CLASS C:  
 32 - BOXFORD, SILT AND CLAY DEPOSITS  
 33/P - SCITICO, POORLY DRAINED, SILT AND CLAY DEPOSITS  
 HYDROLOGIC DRAINAGE CLASS D:  
 397VP - IPSWICH, VERY POORLY DRAINED, TIDAL FLAT

1. SSSMS MAPPING WAS PERFORMED ON DECEMBER 3, 2013 BY GOVE ENVIRONMENTAL SERVICES, INC. THE RESPONSIBLE SOIL SCIENTISTS ARE LUKE D. HURLEY, S.S.A. AND JAMES P. GOVE, C.S.S.
2. THE SOIL SURVEY WAS CONDUCTED IN ACCORDANCE WITH SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT SSSSNE SPECIAL PUBLICATION NO. 4, VERSION 3.0, FEBRUARY 2011.

HAUGHT ENGINEERING, PLLC  
 CIVIL ENGINEERS  
 P.O. BOX 1196, 181 WATSON ROAD  
 DOWRY, NEW HAMPSHIRE  
 603.760.4286, FAX 603.749.7348

DATE	APP'D	REVISION
12-3-13		
SCALE: 1"=30'		
DRAWN BY: JPC		
DESIGN BY: JPC		
APPROVED BY: JPH		
PROJECT NO: 1322		
FILE: 1322-HSS		

14-17  
 U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
 61 INTERNATIONAL DRIVE  
 PEASE INTERNATIONAL TRADEPORT  
 PORTSMOUTH, NH 03803-0157

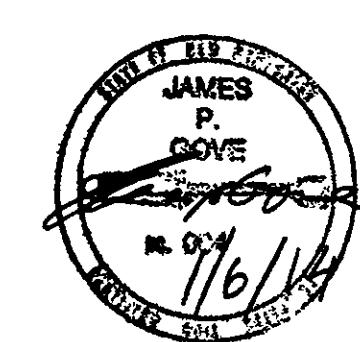
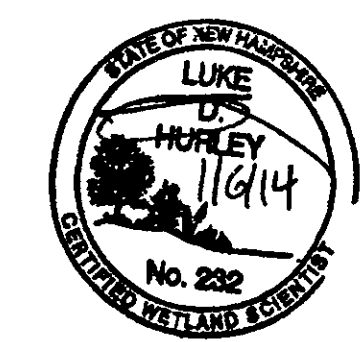
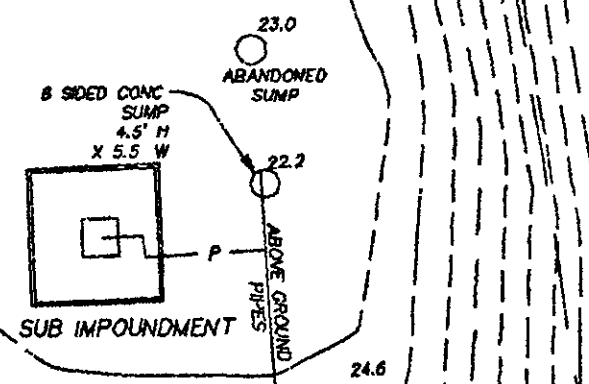
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 61 INTERNATIONAL DRIVE  
 PEASE INTERNATIONAL TRADEPORT  
 PORTSMOUTH, NH 03803-0157

14-16  
 SPRAGUE OPERATING RESOURCES, LLC  
 2 INTERNATIONAL DRIVE, SUITE 200  
 PORTSMOUTH, NH 03801

14-03 (TANKS)  
 DEPARTMENT OF DEFENSE  
 C/O TOWN OF NEWINGTON  
 205 NIMBLE HILL ROAD  
 NEWINGTON, NH 03801

20-15  
 MATTHEW METIVER  
 164 SHATTUCK WAY  
 NEWINGTON, NH 03801  
 4388/2235

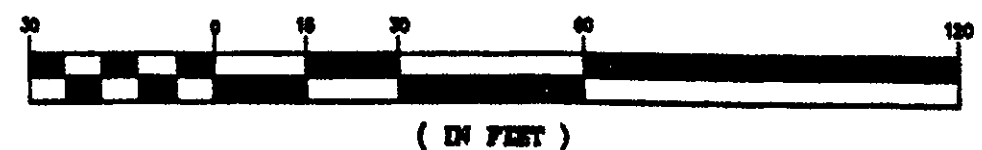
NOTE: SIDES AND TOP OF ALL BERMS ARE CRUSHED STONE SURFACED (TYPICAL)  
 8-24  
 PAN AM BARTHWAN'S  
 1200-IRON HORSE PARK  
 NORTH BILLERICA, MA 01862



**LEGEND:**

- EDGE OF WETLAND
- HIGH INTENSITY SOIL SURVEY BOUNDARY
- 299 HIGH INTENSITY SOIL SURVEY UNIT SYMBOL
- 29x4 EXISTING SPOT ELEVATION
- 30 EXISTING CONTOUR
- CHAIN LINK FENCE
- HYDRANT
- CEMENT CONCRETE PAD
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIP)
- ABOVE GROUND PIPING
- RIP-RAP

**GRAPHIC SCALE**



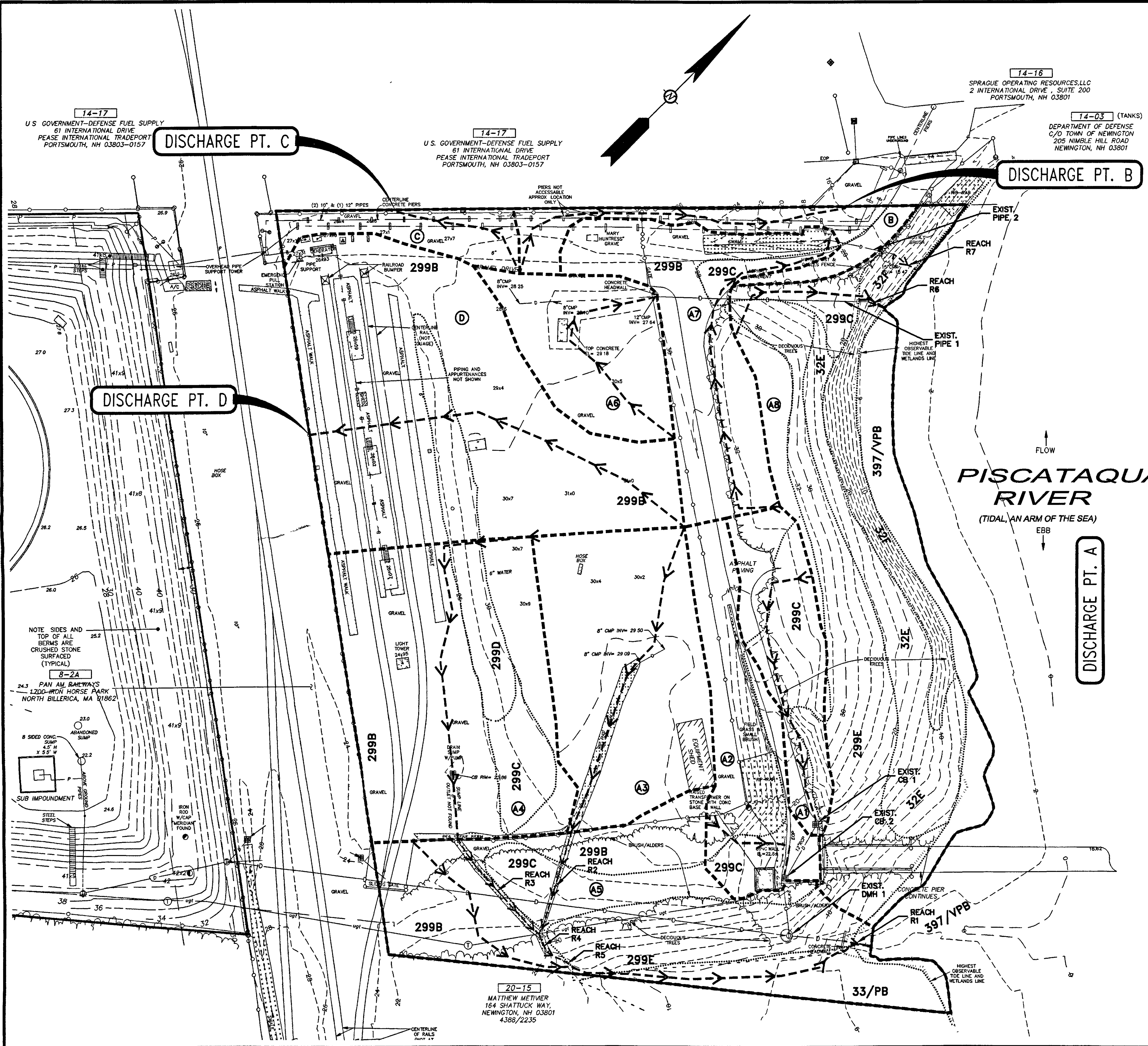
**HIGH INTENSITY SOIL SURVEY MAP**

SEA-3 INC.  
 190 SHATTUCK WAY  
 NEWINGTON, NH

SEA-3 FACILITY EXPANSION  
 LOTS 20/13 & 14/2  
 SHATTUCK WAY  
 NEWINGTON, NH

H-1





**PRE-DEVELOPMENT WATERSHED CHARACTERISTICS**

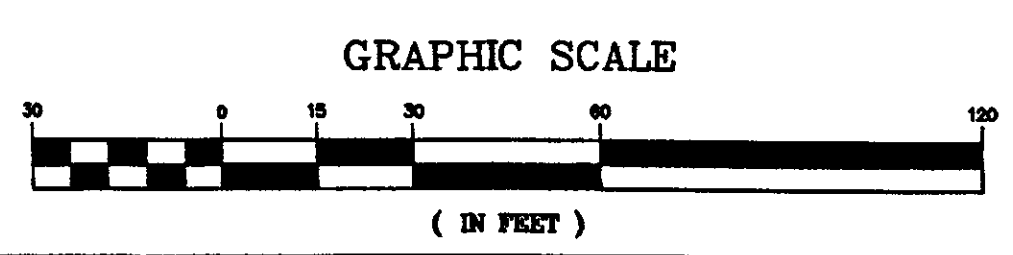
SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A1	0.164	53	7.2
A2	0.211	76	5.0
A3	0.364	200	2.0
A4	0.507	232	3.3
A5	0.564	325	2.0
A6	0.188	154	1.6
A7	0.285	237	5.7
A8	0.776	110	7.8
B	0.110	224	1.3
C	0.078	97	1.1
D	0.675	248	2.2

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- HYDROLOGIC DRAINAGE CLASS C**
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- HYDROLOGIC DRAINAGE CLASS D:**
- 397VP - IPSWICH, VERY POORLY DRAINED, TIDAL FLAT
- 1 HISS MAPPING WAS PERFORMED ON DECEMBER 3, 2013 BY GOVE ENVIRONMENTAL SERVICES, INC THE RESPONSIBLE SOIL SCIENTISTS ARE LUKE D. HURLEY, S.S.A. AND JAMES P. GOVE, C.S.S.
- 2 THE SOIL SURVEY WAS CONDUCTED IN ACCORDANCE WITH SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT SSSNNE SPECIAL PUBLICATION NO. 4, VERSION 3.0, FEBRUARY 2011.

**LEGEND:**

- EDGE OF WETLAND
- ..... HIGH INTENSITY SOIL SURVEY BOUNDARY
- 299** HIGH INTENSITY SOIL SURVEY UNIT SYMBOL
- SUBCATCHMENT BOUNDARY
- > LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (A) SUBCATCHMENT DESIGNATION
- 29.4 EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- CHAIN LINK FENCE
- HYDRANT
- CEMENT CONCRETE PAD
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIP)
- ABOVE GROUND PIPING
- RIP-RAP



**PRE-DEVELOPMENT WATERSHED PLAN**

**SEA-3 INC.**  
190 SHATTUCK WAY  
NEWINGTON, NH

**SEA-3 FACILITY EXPANSION**  
LOTS 20/13 & 14/2  
SHATTUCK WAY  
NEWINGTON, NH

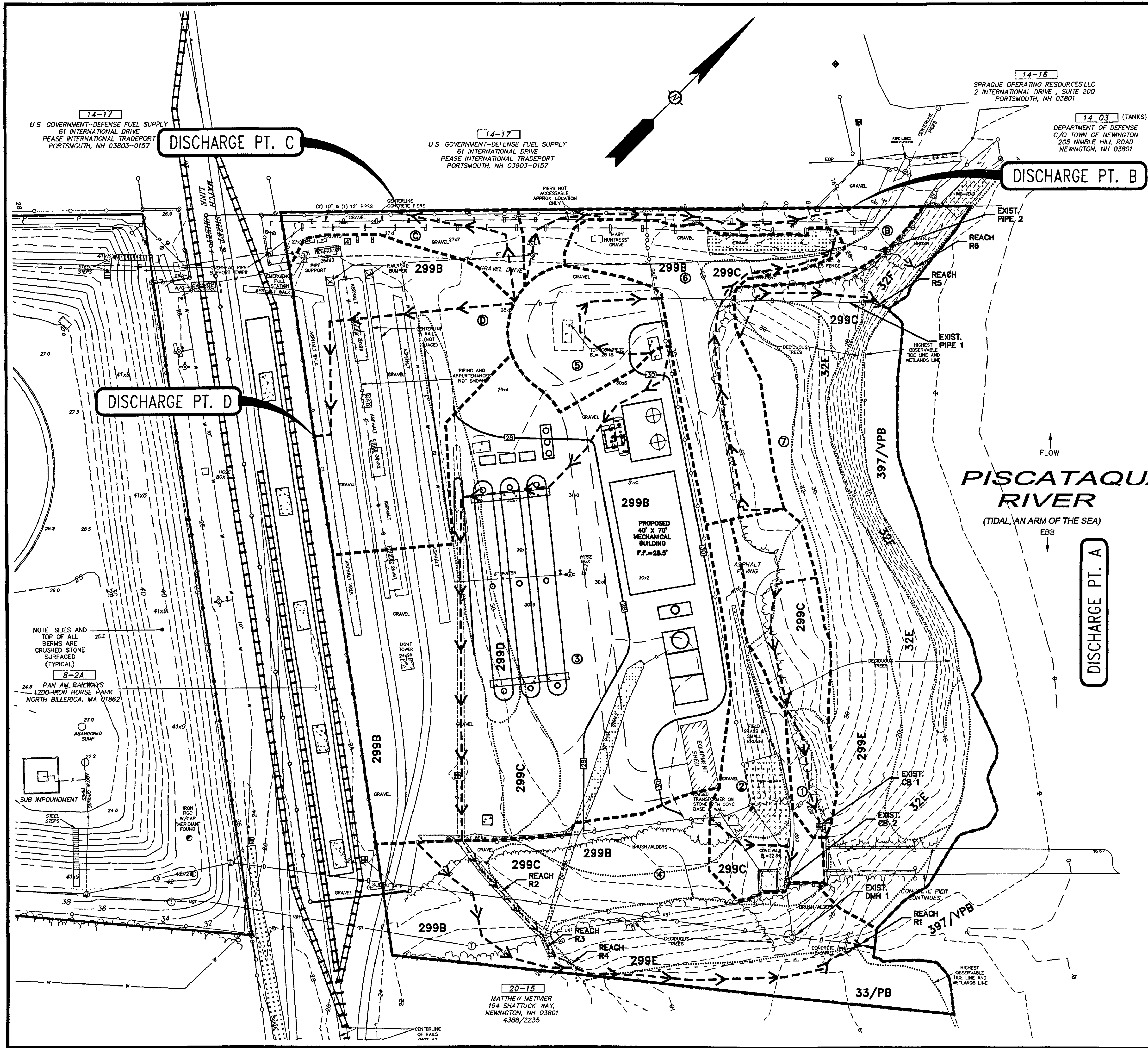
**WS-1**

**HAIGHT ENGINEERING, PLLC**  
CIVIL ENGINEERS  
P.O. BOX 1166, 161 WATSON ROAD  
DOVER, NEW HAMPSHIRE  
603.760.4266 FAX 603.749.7348

**STATE OF NEW HAMPSHIRE**  
STEPHEN J. HAIGHT  
No. 7978  
LICENSED PROFESSIONAL ENGINEER

DATE	SCALE	DRAWN BY	DESIGN BY	APPROVED BY	PROJECT NO.	FILE	NO.	REVISION	APP'D	DATE
12-3-13	1"=30'	SRD	JPG	SH	1322	1322-0m				





**POST-DEVELOPMENT WATERSHED CHARACTERISTICS**

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.108	53	7.2
2	0.177	76	5.0
3	1.016	379	3.7
4	0.572	325	2.0
5	0.137	111	1.2
6	0.268	237	5.7
7	0.776	110	7.8
B	0.109	231	1.3
C	0.083	112	1.3
D	0.425	190	2.0

**SOILS DATA**

- HISS MAPPING SOIL/SOIL GROUP:**
- HYDROLOGIC DRAINAGE CLASS B**
- 299 - UDORTHENTS, SMOOTHED, EXCAVATED REGRADED FILL
- HYDROLOGIC DRAINAGE CLASS C:**
- 32 - BOXFORD, SILT AND CLAY DEPOSITS
- 33/P - SCITICO, POORLY DRAINED, SILT AND CLAY DEPOSITS
- HYDROLOGIC DRAINAGE CLASS D:**
- 397VP - IPSWICH, VERY POORLY DRAINED, TIDAL FLAT
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**POST-DEVELOPMENT WATERSHED PLAN**

**SEA-3 INC.**  
190 SHATTUCK WAY  
NEWINGTON, NH

**SEA-3 FACILITY EXPANSION**  
LOTS 20/13 & 14/2  
SHATTUCK WAY  
NEWINGTON, NH

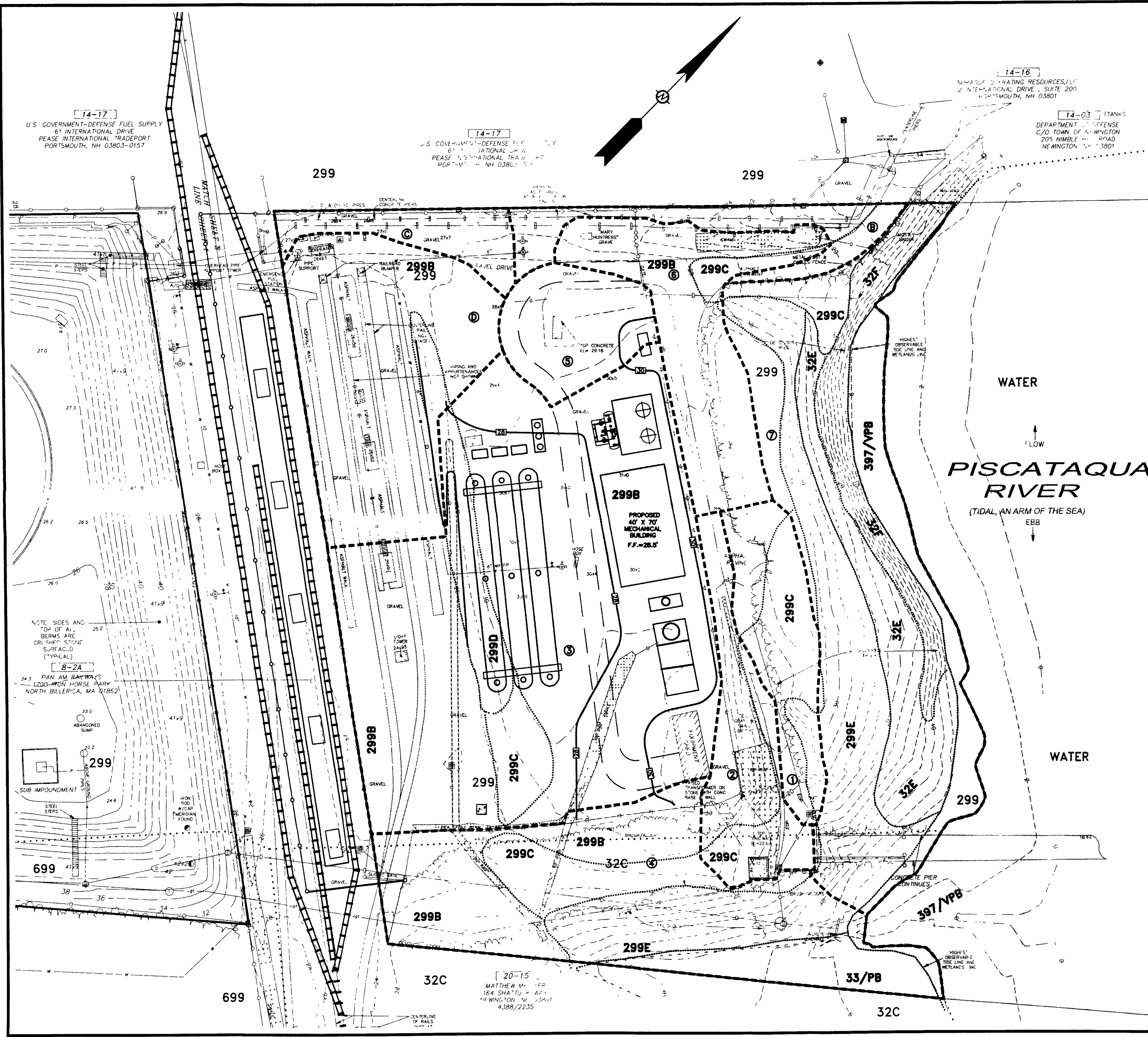
**WS-2**

**STEPHEN J. HAIGHT**  
REGISTERED PROFESSIONAL ENGINEER  
NO. 7878

**DATE:** 12-3-13  
**SCALE:** 1"=40'  
**DRAWN BY:** SRD  
**DESIGN BY:** JFG  
**APPROVED BY:** SHS  
**PROJECT NO.:** 1322  
**FILE:** 1322-Dm

NO.	REVISION	APPD.	DATE





**PRE-DEVELOPMENT WATERSHED CHARACTERISTICS**

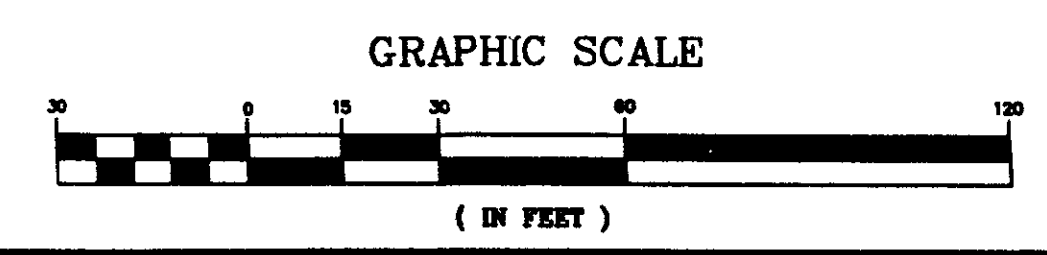
SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A1	0.164	53	7.2
A2	0.211	76	5.0
A3	0.364	200	2.0
A4	0.507	232	3.3
A5	0.564	325	2.0
A6	0.188	154	1.6
A7	0.285	237	5.7
A8	0.776	110	7.8
B	0.110	224	1.3
C	0.078	97	1.1
D	0.675	248	2.2

**SOILS DATA**

- HISS MAPPING SOIL/SOIL GROUP:  
HYDROLOGIC DRAINAGE CLASS B:  
299 - UDORTHENTS, SMOOTHED, EXCAVATED REGRADED FILL
- HYDROLOGIC DRAINAGE CLASS C:  
32 - BOXFORD, SILT AND CLAY DEPOSITS  
33/P - SCITICO, POORLY DRAINED, SILT AND CLAY DEPOSITS
- HYDROLOGIC DRAINAGE CLASS D:  
397VP - IPSWICH, VERY POORLY DRAINED, TIDAL FLAT
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**LEGEND:**

- SOIL DESIGNATION "TYPE B"
- SOIL DESIGNATION "TYPE C"
- SOIL DESIGNATION "TYPE D"
- WATER SURFACE DESIGNATION
- IMPERVIOUS SURFACE DESIGNATION
- EDGE OF WETLAND
- HIGH INTENSITY SOIL SURVEY BOUNDARY
- 299 HIGH INTENSITY SOIL SURVEY UNIT SYMBOL
- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT DESIGNATION
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- CHAIN LINK FENCE
- HYDRANT
- CEMENT CONCRETE PAD
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIF)
- ABOVE GROUND PIPING
- RIP-RAP



**PRE-DEVELOPMENT COLOR CODED SOILS PLAN**

SEA-3 INC.  
190 SHATTUCK WAY  
NEWINGTON, NH

SEA-3 FACILITY EXPANSION  
LOTS 20/13 & 14/2  
SHATTUCK WAY  
NEWINGTON, NH

STEPHEN HAIGHT  
NO. 7978  
LICENSED PROFESSIONAL ENGINEER

DATE: 12-3-13  
SCALE: 1"=30'  
DRAWN BY: SRD  
DESIGN BY: JFG  
APPROVED BY: SHH  
PROJECT NO: 1322  
FILE: 1322-Soils

NO. REVISION APP'D DATE

HAIGHT ENGINEERING, PLLC  
CIVIL ENGINEERS  
P.O. BOX 1166, 181 WATSON ROAD  
DOVER, NEW HAMPSHIRE  
603.750.4286, FAX 603.749.7348

WS-3



14-17  
U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
61 INTERNATIONAL DRIVE  
PEASE INTERNATIONAL TRADEPORT  
PORTSMOUTH, NH 03803-0157

14-17  
U.S. GOVERNMENT-DEFENSE FUEL SUPPLY  
61 INTERNATIONAL DRIVE  
PEASE INTERNATIONAL TRADEPORT  
PORTSMOUTH, NH 03803-0157

14-16  
SHAGUE OPERATING RESOURCES, LLC  
2 INTERNATIONAL DRIVE SUITE 201  
PORTSMOUTH, NH 03801

14-03 (TAN)  
DEPARTMENT OF DEFENSE  
C/O TOWN OF NEWINGTON  
205 NIMBLE HILL ROAD  
NEWINGTON, NH 03841

20-15  
MATTHEW MEYER  
124 SHATTUCK WAY  
NEWINGTON, NH 03801  
4388/2235



**POST-DEVELOPMENT WATERSHED CHARACTERISTICS**

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.108	53	7.2
2	0.177	76	5.0
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D	0.425	190	2.0

**SOILS DATA**

HISS MAPPING SOIL/SOIL GROUP:

HYDROLOGIC DRAINAGE CLASS B:

299 - UDORTMENTS, SMOOTHED, EXCAVATED REGRADED FILL

HYDROLOGIC DRAINAGE CLASS C:

32 - BOXFORD, SILT AND CLAY DEPOSITS  
33/P - SCITICQ, POORLY DRAINED, SILT AND CLAY DEPOSITS

HYDROLOGIC DRAINAGE CLASS D:

397VP - IPSWICH, VERY POORLY DRAINED, TIDAL FLAT

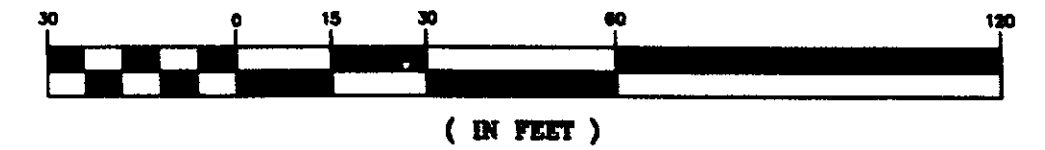
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**LEGEND:**

- SOIL DESIGNATION "TYPE B"
- SOIL DESIGNATION "TYPE C"
- SOIL DESIGNATION "TYPE D"
- WATER SURFACE DESIGNATION
- IMPERVIOUS SURFACE DESIGNATION
- EDGE OF WETLAND
- PROPOSED CONTOUR
- HIGH INTENSITY SOIL SURVEY BOUNDARY
- HIGH INTENSITY SOIL SURVEY UNIT SYMBOL
- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT DESIGNATION
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- CHAIN LINK FENCE
- HYDRANT
- CEMENT CONCRETE PAD
- STEEL GUARD RAIL
- WOOD FENCE
- TREE LINE (DRIP)
- ABOVE GROUND PIPING
- RIP-RAP

**GRAPHIC SCALE**



HAIGHT ENGINEERING, PLLC  
CIVIL ENGINEERS  
P.O. BOX 1166, 181 WATSON ROAD  
DOVER, NEW HAMPSHIRE  
603.750.4286, FAX 603.749.7348

DATE: 12-3-13  
SCALE: 1"=30'  
DRAWN BY: SRD  
DESIGN BY: JFG  
APPROVED BY: SH  
PROJECT NO: 1322  
FILE: 1322-Soils

NO.  
REVISION  
APPD  
DATE

**POST-DEVELOPMENT COLOR CODED SOILS PLAN**  
  
**SEA-3 INC.**  
**190 SHATTUCK WAY**  
**NEWINGTON, NH**  
  
**SEA-3 FACILITY EXPANSION**  
**LOTS 20/13 & 14/2**  
**SHATTUCK WAY**  
**NEWINGTON, NH**

**WS-4**

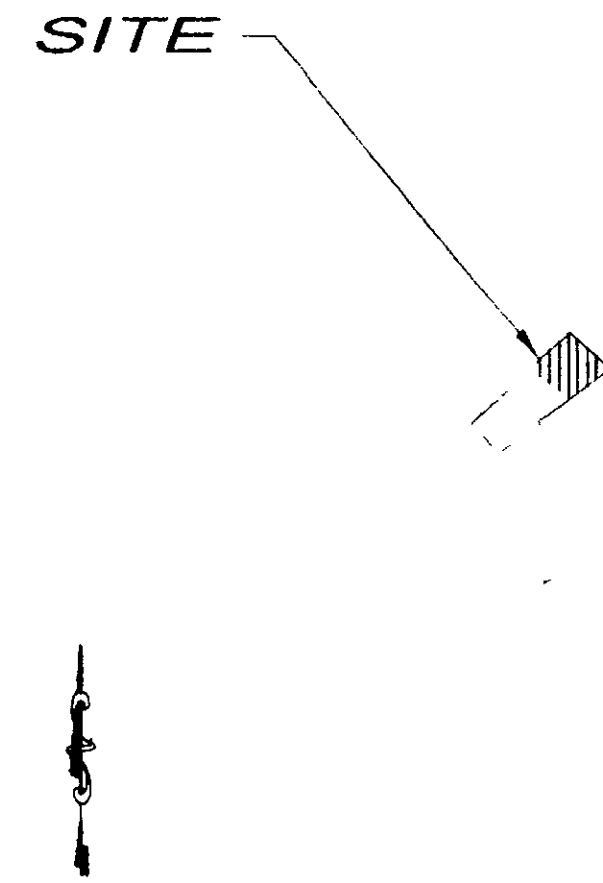


# SITE PLAN

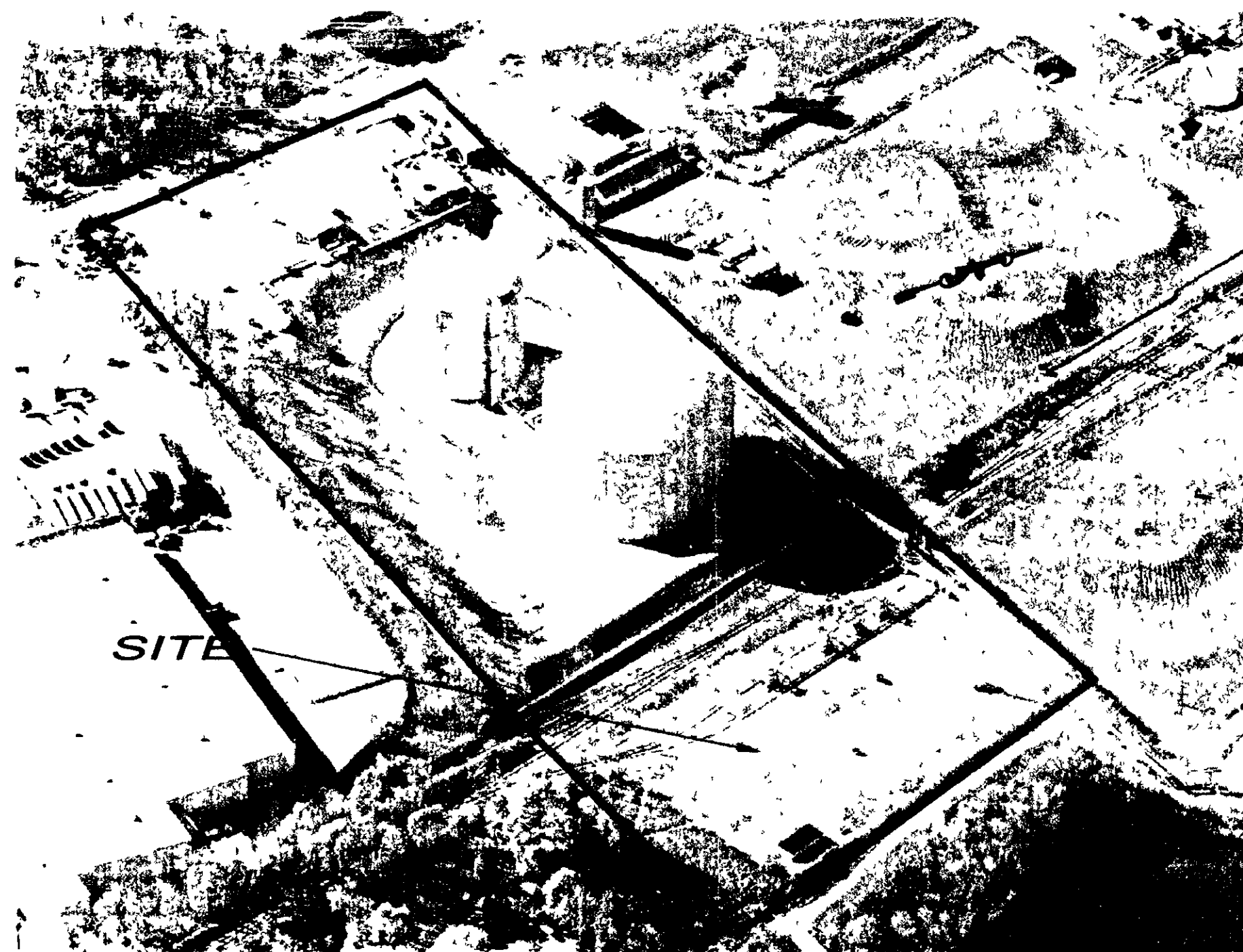
## SEA-3 FACILITY EXPANSION

LOTS 20/13 & 14/2  
**190 SHATTUCK WAY**  
**NEWINGTON, NH**  
**NOVEMBER 4, 2013**

REVISED: MARCH 6, 2014  
REVISED: MARCH 12, 2014



LOCUS MAP  
NOT TO SCALE



AERIAL MAP  
NOT TO SCALE

OWNER SEA-3, INC.  
190 SHATTUCK WAY  
NEWINGTON, NH 03801

SITE CIVIL ENGINEER HAIGHT ENGINEERING, PLLC  
181 WATSON ROAD  
DOVER, NH 03820

LAND SURVEYOR JAMES VERRA AND ASSOCIATES, INC  
101 SHATTUCK WAY  
SUITE 8  
NEWINGTON, NH 03801

SOIL SCIENTIST GOVE ENVIRONMENTAL SERVICES, INC.  
8 CONTINENTAL DRIVE  
UNITS H  
EXETER, NH 03833

<u>SHEET INDEX</u>	<u>SHEET</u>
EXISTING CONDITIONS PLAN	EX-1
EXISTING CONDITIONS PLAN	EX-2
OVERALL SITE PLAN	C-1
SITE PLAN	C-2
GRADING AND DRAINAGE PLAN	C-3
UTILITY PLAN	C-4
EROSION CONTROL NOTES & DETAILS	C-5
DETAILS	C-6