

# Greystone Industrial Park

February 2026

LEGEND	
	PROJECT BOUNDARY
	ZONING DISTRICT BOUNDARY
	EXISTING ROADWAY
	TAXMAP BOUNDARY
	RAIL ROAD TRACK
	STREAM OR WATERCOURSE
	EXISTING BUILDING

## Project Description

The project is a 57.8 acre parcel located at 123 Old Colchester Road owned by A&C Realty c/o Al Senecal. The parcel is in the Industrial (I1) and Agriculture Residential (AR) zoning districts. The project will include the construction of three (3) 20,000 SF warehouse buildings (Buildings "A", "B", and "C"), a 26,250 SF warehouse building (Building "D") and two (2) 16,250 SF warehouse buildings (Buildings "E" and "F") and associated access roads. The new buildings are proposed within the Industrial (I1) zoning district and will be served by municipal water and sewer services. A pump station is being proposed to serve the development at full build-out based on the 26 EUs allocated to the parcel.

The removal of an estimated 150,000 cubic yards of rock will be needed to construct the three (3) additional buildings associated with the project amendment. All of the rock will be crushed and stockpiled onsite until it can be used for construction applications. The project will be accessed by the existing haul road until the permanent access road has been completed.

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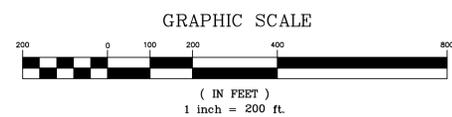
Sheet 1	Overall Plan
Sheet 2	Site Plan
Sheet 3	Landscaping Plan
Sheet 4	Lighting Plan
Sheet 5	Roadway Details
Sheet 6	Water Details
Sheet 7	Sewer Details
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Sheet E1	EPSC Plan - Pre-Construction
Sheet E2	EPSC Plan - Construction Phase I - Extraction
Sheet E3	EPSC Plan - Construction Phase II
Sheet E4	EPSC Plan - Construction Phase III
Sheet E5	EPSC Plan - Post Construction
Sheet E6	EPSC Plan - Details

Sheet ST1	Stormwater Management Plan
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## Abutters Table

Address	Abutter
81 Old Colchester Rd	Town of Essex
167 Colchester Rd	McClure Real Estate, LLC
146 Colchester Rd	Handys Hotels & Rentals, LLC
181 Colchester Rd	Franklin South, LLC
183 Colchester Rd	Mathieu Investments, LLC
189 Colchester Rd	Stevens IR Trust
193 Colchester Rd	State of Vermont
48 Upper Main Street	A&C Realty, LLC
30 Turnberry Ridge	Thad McCuin, Shawn & Tine Rev Trust
	New England Central Railroad



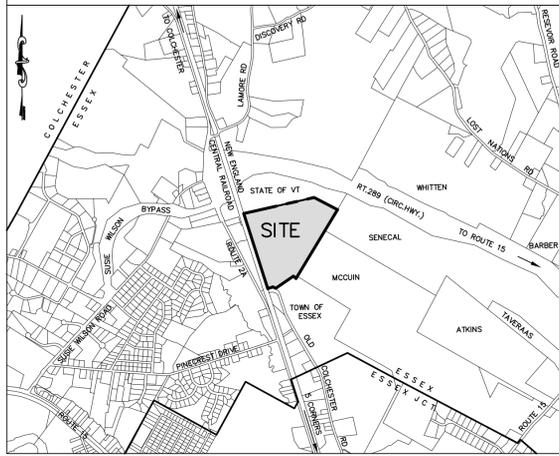
**Owner & Applicant:** A & C REALTY  
c/o AL SENECAL  
31 COMMERCE AVE  
SOUTH BURLINGTON, VT 05403

Notes:  
1. This plan should not be used for property conveyance.  
2. The Ortho photo was captured by the Vermont Center for Geographical Information in 2023.



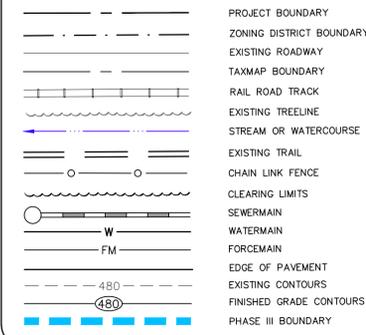
2/25/26	SITE PLAN AMENDMENT -- PHASE III	GR
1/20/21	UPDATED FOR SITE PLAN AMENDMENT APPLICATION	BWC
6/21/16	TOWN FINAL APPROVAL CONDITIONS	BWC
DATE 5/24/16	REVISION ADDED ARCHEOLOGICAL BUFFER	BY BWC
SURVEY	RECORD DRAWING	DATE 9/18/2014
OBCA	PRELIMINARY	BY BWC
DESIGN BWC/GRT	FINAL	DATE 10/09/2009
DRAWN GRT/BWC	SKETCH	FILE 1009
CHECKED BWC		FILE S9
SCALE 1"=200'		PLAN SHEET # 1
<b>O'LEARY-BURKE CIVIL ASSOCIATES, PLC</b> 13 CORPORATE DRIVE ESSEX, VT 05730 PHONE: 878-9593 FAX: 878-9599 EMAIL: OBCA@OLEARYBURKE.COM		GREYSTONE INDUSTRIAL PARK 123 OLD COLCHESTER ROAD ESSEX, VERMONT  A & C REALTY SITE PLAN

LOCATION PLAN



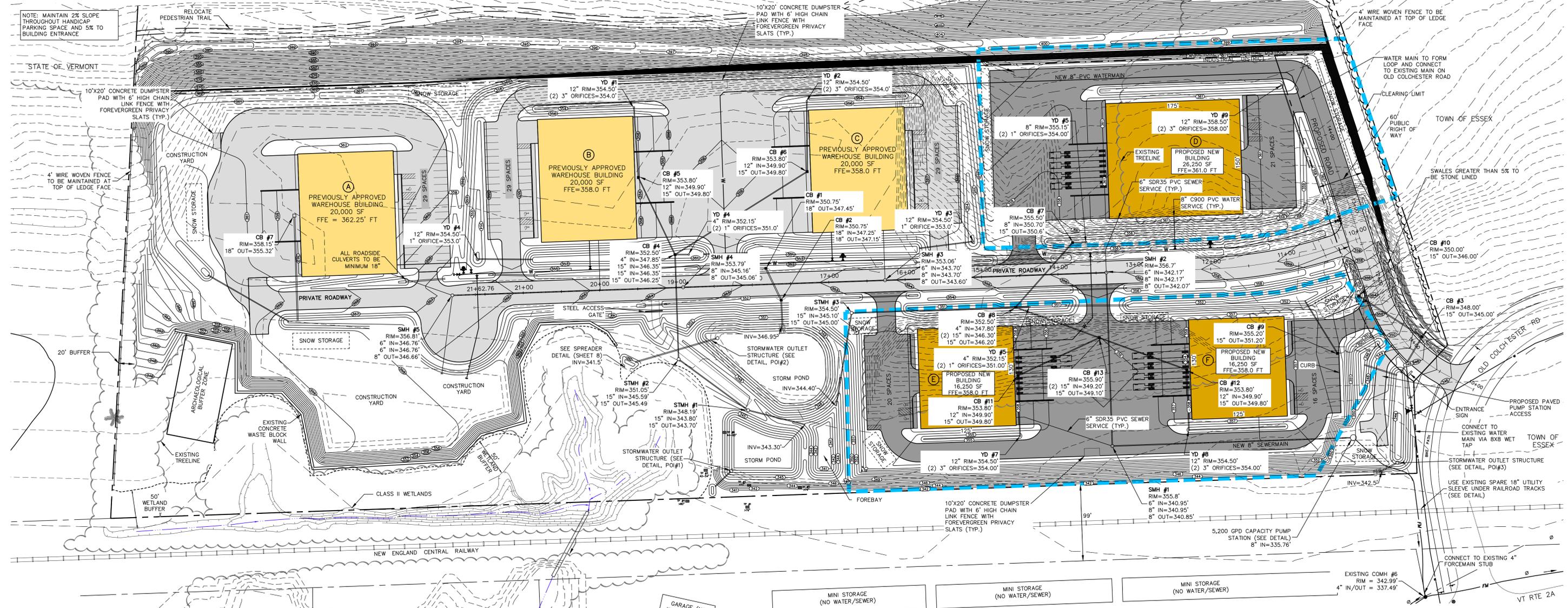
A & C REALTY  
RECORD DEED: 369:445  
TAX MAP: 6-21

LEGEND



PROJECT STATISTICS

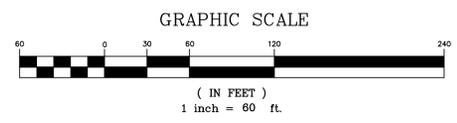
PARCEL AREA	57.80 ACRES TOTAL (I1 = 21.23 AC) (AR = 36.57 AC)		
ZONING DISTRICT	INDUSTRIAL (I1), AGRICULTURE & RESIDENTIAL (AR)		
MIN. LOT SIZE	3 ACRES (AR), 40,000 SF (I1)		
<b>PROPOSED PROJECT</b>			
NO SUBDIVISION PROPOSED / MUNICIPAL WATER AND WASTEWATER / STORMWATER TREATMENT ON-SITE			
<b>PROPOSED SITE PLAN</b>			
SIX (6) WAREHOUSE BUILDINGS, HEIGHT: ± 30 FT	I1 DISTRICT (%)	AR DISTRICT (%)	OVERALL (%)
APPROVED BUILDING COVERAGE (60,000 SF)	6.49%	0.00%	2.38%
PROPOSED BUILDING COVERAGE (58,750 SF)	6.35%	0.00%	2.33%
TOTAL BUILDING COVERAGE (118,750 SF)	12.84%	0.00%	4.71%
APPROVED IMPERVIOUS COVERAGE (5.32 AC)	25.06%	0.00%	9.20%
PROPOSED IMPERVIOUS COVERAGE (4.23 AC)	19.92%	0.00%	7.32%
TOTAL IMPERVIOUS COVERAGE (9.55 AC)	44.98%	0.00%	16.52%
WAREHOUSE PARKING = 145 PROPOSED SPACES (INCLUDING 12 HANDICAP) 2 SPACES FOR EVERY 3 EMPLOYEES (100 EMPLOYEES TOTAL) = 67 REQUIRED SPACES OR 1 SPACE FOR EVERY 400 SF = 297 REQUIRED SPACES			



NOTES:  
1. THIS PLAN SHOULD NOT BE USED FOR PROPERTY CONVEYANCE.  
2. THE EXISTING CONTOURS SHOWN WITHIN THE CURRENT LIMITS OF DISTURBANCE ARE BASED ON GPS TOPO SHOTS BY OMEGA EXCAVATION ON 05-29-2025 and, DUE TO THE CONTINUED ACTIVITY ON THE SITE, ARE MEANT TO BE AN APPROXIMATE REPRESENTATION OF EXISTING GRADE.

Owner & Applicant: **A & C REALTY**  
c/o AL SENECA  
31 COMMERCE AVE  
SOUTH BURLINGTON, VT 05403

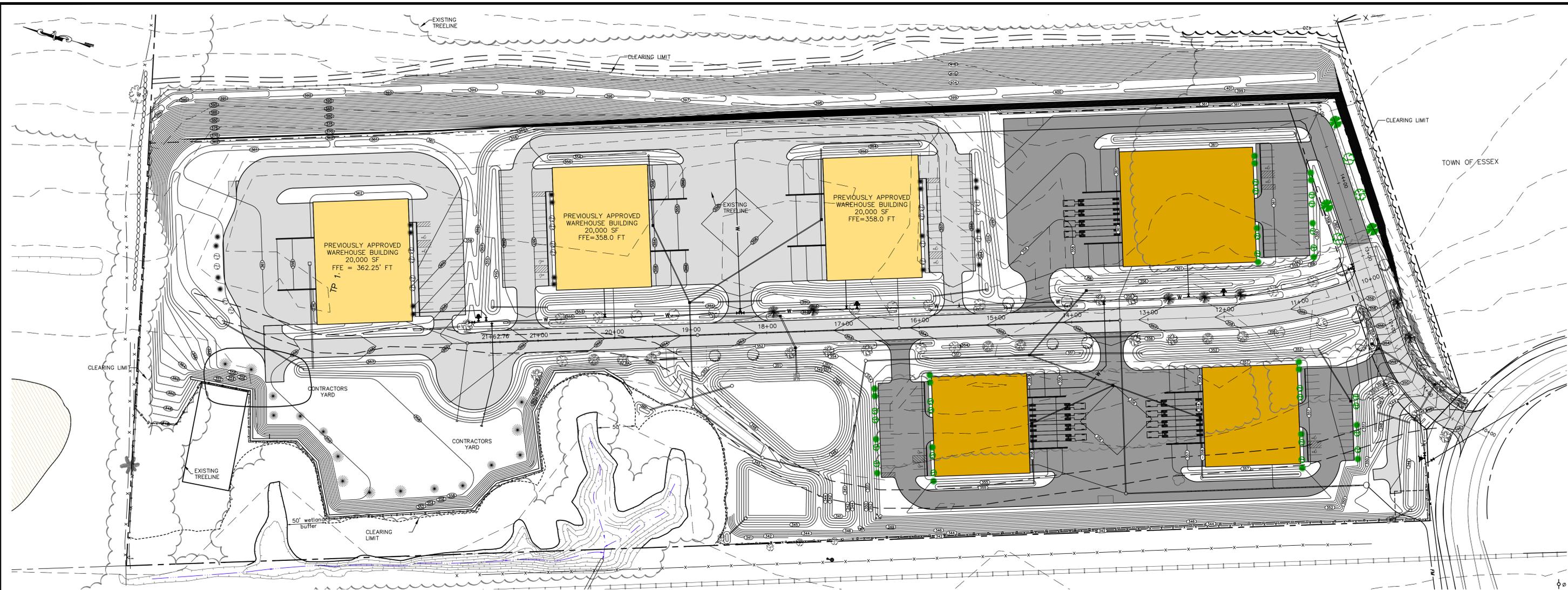
MCCLURE REAL ESTATE, LLC  
N/F



2/25/26	SITE PLAN AMENDMENT - PHASE III	GRT
9/13/21	UPDATED ACCORDING TO TOWN APPROVAL CONDITIONS	BWC
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SURVEY	RECORD DRAWING	DATE 9/18/2014
OBCA	PRELIMINARY	DATE 10/09
DESIGN BWC/GRT	SKETCH	FILE 1009
DRAWN GRT/BWC		FILE 59
CHECKED BWC		PLAN SHEET #
SCALE 1"=60'		2

**O'LEARY-BURKE**  
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**GREYSTONE INDUSTRIAL PARK**  
123 OLD COLCHESTER ROAD  
ESSEX, VERMONT  
**A & C REALTY**  
SITE PLAN



Proposed Landscape Schedule

Symbol	Quantity	Common Name	Botanic Name	Size
	2	'Red Oak'	Querus rubra	2-2 1/2" Caliper
	3	'Hophornbeam'	Ostrya virginiana	2-2 1/2" Caliper
	1	'Chanticleer Pear Tree'	Pyrus calleryana 'Chanticleer'	2-2 1/2" Caliper
	24	'Ghost Weigela'	Weigela florida 'Ghost'	3 gallon
	22	'Nanus Ninebark'	Physocarpus opulifolius 'Nanus'	3 gallon

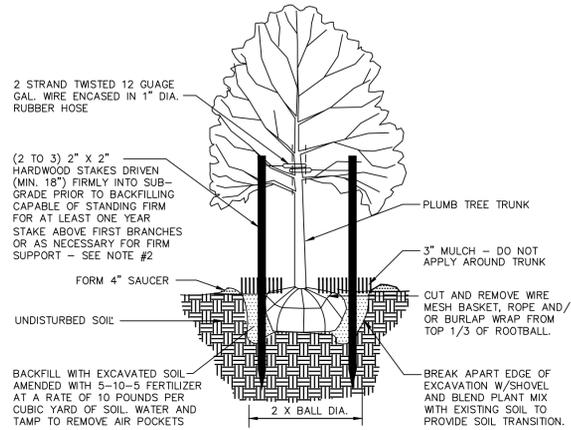
\*\*Note: Planting species may be substituted by an approved equal

LANDSCAPING SPECIFICATIONS

ALL DISTURBED AREAS SHALL BE STABILIZED WITH SEEDING AND MULCHING PRIOR TO NOVEMBER 1 OF EACH YEAR. ANY DISTURBED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED WITHIN 15 DAYS. ANY WORK PERFORMED AFTER NOVEMBER 1 OF EACH YEAR SHALL BE STABILIZED WITH MULCH OR NETTING SUFFICIENT TO PREVENT EROSION AND SHALL BE IMMEDIATELY SEEDED AND REMULCHED AS SOON AS WEATHER PERMITS IN THE SPRING. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 4" OF TOPSOIL AND BE SEEDED, FERTILIZED, LIMED, AND MULCHED IN ACCORDANCE WITH THE FOLLOWING:

- SEED MIXTURE IN ALL AREAS SHALL BE URBAN MIX CONFORMING TO THE TABLE SHOWN ON THE PLANS. FOR SEEDING BETWEEN SEPTEMBER 1 AND NOVEMBER 1, WINTER RYE SHALL BE USED AT AN APPLICATION RATE OF 100 POUNDS PER ACRE.
- FERTILIZER SHALL BE STANDARD COMMERCIAL GRADE CONFORMING TO THE STATE FERTILIZER LAW AND TO THE STANDARDS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS. DRY FERTILIZER, IF USED, SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE. LIQUID FERTILIZER, IF USED, SHALL BE APPLIED IN A 1-2-1 RATIO WITH THE MINIMUM RATE TO INCLUDE 100 POUNDS OF NITROGEN, 200 POUNDS OF PHOSPHATE, AND 100 POUNDS OF POTASH PER ACRE.
- LIMESTONE SHALL CONFORM TO ALL STATE AND FEDERAL REGULATIONS AND TO THE STANDARDS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS. THE LIMESTONE SHALL BE APPLIED AT A RATE OF TWO TONS PER ACRE OR AS DIRECTED.
- WITHIN 24 HOURS OF APPLICATION OF FERTILIZER, LIME, AND SEED, THE SURFACE SHALL BE MULCHED WITH A HAY MULCH. MULCH SHALL BE SPREAD UNIFORMLY OVER THE AREA AT A RATE OF TWO TONS PER ACRE OR AS ORDERED BY THE ENGINEER.

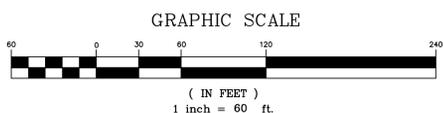
URBAN MIX GRASS SEED		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
37.5	45	CREeping RED FESCUE
31.25	37.5	KENTUCKY BLUEGRASS
31.25	37.5	WINTER HARDY, PERENNIAL RYE
100	120 # LIVE SEED PER ACRE	



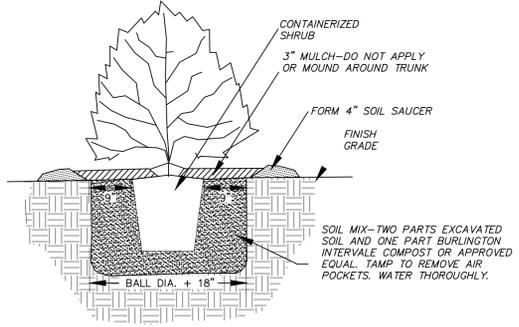
- NOTE:
- PLANT TREE SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISHED GRADE.
  - STAKING AS REQUIRED ONLY IN SITUATIONS WHERE TREES WILL BE SUBJECTED TO WINDY CONDITIONS AS DETERMINED BY THE PROJECT LANDSCAPE ARCHITECT.
  - TREES SHALL BE GUARANTEED FOR A PERIOD OF THREE YEARS AFTER PLANTING.
  - EXAMINE ENTIRE TREE AND REMOVE ALL NURSERY TAGS, ROPE, STRING AND SURVEYORS TAPE PRIOR TO PLANTING TO PREVENT GIRDLING.

TREE PLANTING

NTS



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	EXISTING TREELINE
	STREAM OR WATERCOURSE
	EXISTING TRAIL
	CHAIN LINK FENCE
	CLEARING LIMITS
	SEWERMAIN
	WATERMAIN
	FORCEMAIN
	EDGE OF PAVEMENT
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS



- NOTES:
- REMOVE ALL NURSERY TAGS, ROPE, STRING, AND FLAGGING PRIOR TO PLANTING TO PREVENT GIRDLING.
  - PLANT SHRUB SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISHED GRADE.
  - SHRUBS SHALL BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER PLANTING.

SHRUB PLANTING DETAIL

NTS

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DESIGN	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH/CONCEPT	1009
DRAWN		FILE S9
SCALE		PLAN SHEET #
1"=60'		3

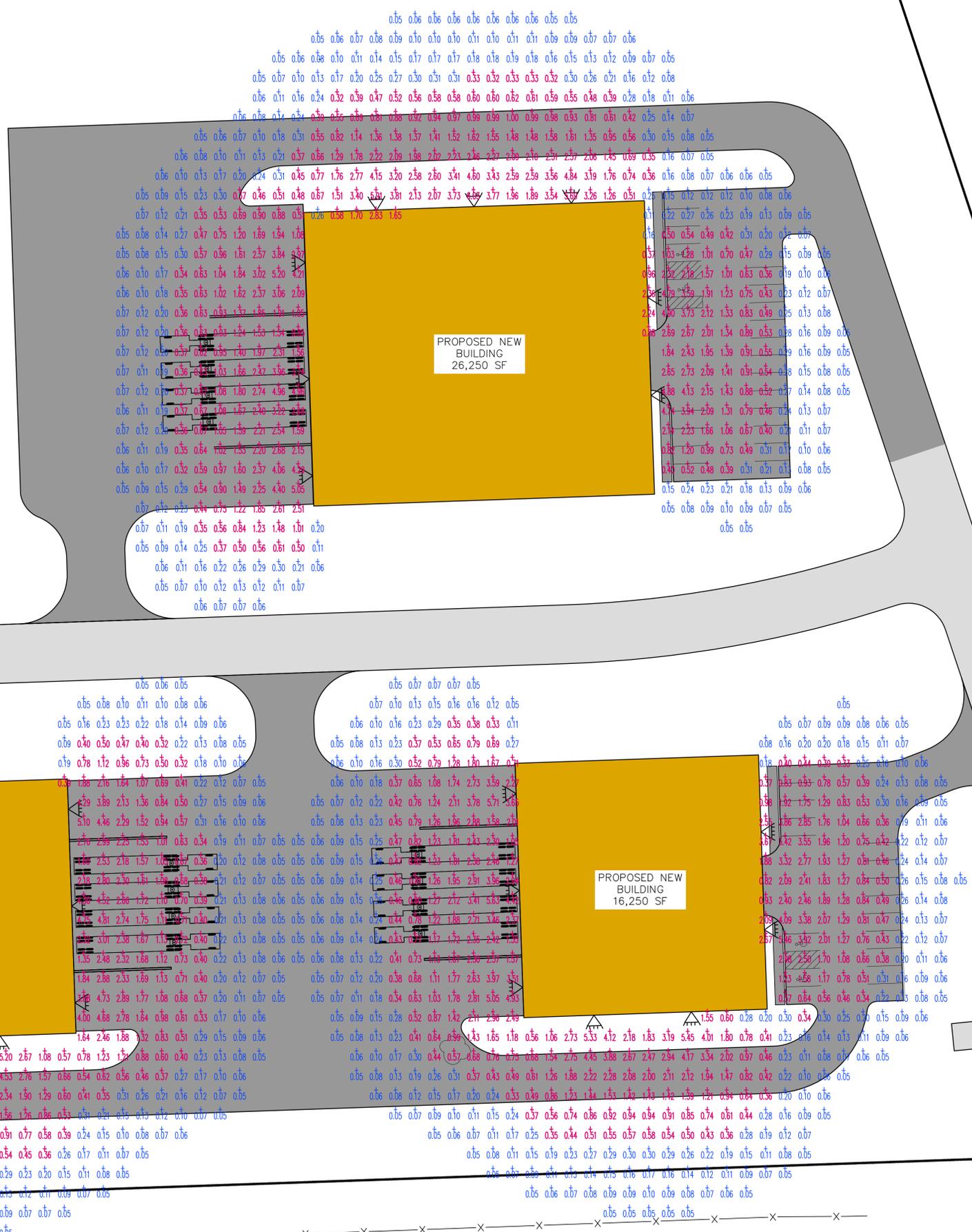
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**GREYSTONE INDUSTRIAL PARK**  
123 OLD COLCHESTER ROAD  
ESSEX, VERMONT

**A & C REALTY**  
LANDSCAPING PLAN

### LEGEND

- PROJECT BOUNDARY
- ZONING DISTRICT BOUNDARY
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- TAXMAP BOUNDARY
- RAIL ROAD TRACK
- EXISTING TREELINE
- STREAM OR WATERCOURSE
- EXISTING TRAIL
- CHAIN LINK FENCE
- CLEARING LIMITS
- SEWERMAIN
- FORCEMAIN
- EDGE OF PAVEMENT
- EXISTING CONTOURS
- FINISHED GRADE CONTOURS



CALCULATION SUMMARY-							
AREA NAME	DIMENSIONS	GRID NAME	AVE	MAX	MIN	MAX/MIN	AVE/MIN
PHASE III		PHASE III	<+> 1.56	6.03	0.32	19.09	4.94

LUMINAIRE SCHEDULE							
TYP	SYMB.	DESCRIPTION	LAMP	LUMENS	MOUNTING	LLF	QTY
BLDG	◀	*RAB ALED4T50N - RWLED4T50FN - RWLED4T50SFN - RWLED4T50FN - RWLED4T50FN	50W	10,504	20' BUILDING MOUNT	1.00	22

\*Note: Lighting values shown in BLUE illustrate the lighting coverage, while lighting value shown in RED have been used to calculate the uniformity ratio (avg./min.)

\*Note: All lights will only turn on via motion detectors after business hours except the light above the front entrance

#### ALED4T50NK/D10/WS4

Color: Black      Weight: 32.0 lbs

#### RAB

Project: _____	Type: _____
Prepared By: _____	Date: _____

Driver Info		LED Info	
Type	Constant Current	Watts	50W
120V	0.46A	Color Temp	4000K (Neutral)
208V	0.27A	Color Accuracy	72 CRI
240V	0.23A	L70 lifespan	100,000 Hours
277V	0.20A	Lumens	7,256lm
Input Watts	54.7W	Efficacy	132.6lm/W

**Technical Specifications**

**Compliance:** UL Listed: Suitable for use in wet locations as a downlight

**IP Rating:** Ingress protection rating of IP66 for dust and water

**ESNA LM-79 & LM-80 Testing:** RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with ESNA LM-79 and LM-80.

**Performance:** Lifespan: 100,000-hour LED lifespan based on ES LM-80 results and TM-21 calculations

**Wattage Equivalence:** Equivalent to 150W Metal Halide

**Construction:** IES Classification: The Type IV distribution luminaire known as a Forward Throw is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semi-circular distribution with essentially the same candlepower at lateral angles from 90° to 210°.

**Ambient Temperature:** Suitable for use up to 104°F (40°C)

**Cold Weather Starting:** The minimum starting temperature is -40°F (-40°C)

**Thermal Management:** Superior thermal management design with external Air-Flow fins provides maximum operational life, even in high ambient temperature environments

**Housing:** Die-cast aluminum housing, lens frame and mounting arm

**Reflector:** Special vacuum-metallized polycarbonate

**Castets:** High-temperature silicone gaskets

**EPA:** 1 Fixture @ 7.5  
2 Fixtures @ 90° 1.2  
2 Fixtures @ 180° 1.4  
3 Fixtures @ 90° 2.4  
4 Fixtures @ 90° 1.8

**Green Technology:** Mercury and UV free, RoHS-compliant components

**LED Characteristics:** LEDs: Multi-chip, high-output, long-life LEDs

**Color Consistency:** 3-Step MacAdam Ellipse binning to achieve consistent colors to fixture color

**Color Stability:** LED color temperature is warranted to shift no more than 200K in color temperature over a 5-year period

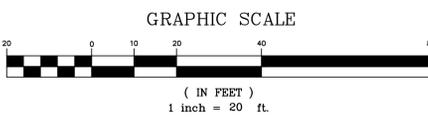
**Color Uniformity:** RAB range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (ANSI C78.377-2011)

**Electrical:** THD: 6.1% at 120V, 9.4% at 277V

**Power Factor:** 99.6% at 120V, 96% at 277V

**Finish:** Formulated for high durability and long-lasting color

Headlight Tech Inc. 888-723-1000 (Email: techsupport@lighting.com Website: www.rablighting.com)  
Copyright © 2020 RAB Lighting All Rights Reserved. Note: Specifications are subject to change at any time without notice.



DATE 2/25/26	REVISION SITE PLAN AMENDMENT - PHASE III	BY GR
DATE 6/21/16	REVISION TOWN FINAL APPROVAL CONDITIONS	BY BWC
DATE 9/30/15	REVISION ADDED ARCHEOLOGICAL BUFFER	DATE 9/18/2014
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY	BY 1009
DESIGN	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH/CONCEPT	FILE S9
DRY		PLAN SHEET # 4
DESIGN BWC/GR		
DRY GRT/BWC		
CHECKED BWC		
SCALE 1"=20'		

**O'LEARY-BURKE CIVIL ASSOCIATES, PLC**

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**GREYSTONE**

123 OLD COLCHESTER ROAD  
ESSEX, VERMONT

**A & C REALTY**

LIGHTING PLAN

1009

S9

4



# GENERAL WATER SPECIFICATIONS

## 1.1 GENERAL:

This item shall consist of the labor, equipment, and material required for the complete construction of the watermain and services which shall include excavation, backfilling, pipe, valves, tees, hydrants, elbows, reducers, and all other appurtenances necessary for a complete watermain system as indicated on the accepted drawings. All materials and installations shall be approved by the local municipal water authority.

## 1.2 WATER PIPE MATERIALS:

### PVC PIPE

Pipe shall be a minimum diameter of eight inches (8") and conform to current AWWA C10 or ANSI Specification A21.10. Push-on joint pipe shall be minimum thickness Class 52. Push-on joint accessories shall conform to applicable requirements of AWWA C111 or ANSI Specification A21.11.

Pipe shall be cement mortar-lined on the inside in accordance with AWWA C104 or ANSI Specification A21.4 except that the cement-lining thickness shall not be less than three-sixteenths inch (3/16"). A plus tolerance of one-eighths inch (1/8") will be permitted.

### 1.2 FITTINGS:

Ductile iron fittings shall be cement-lined, have 350 pounds working pressure, and be in accordance with AWWA C-104, C-111, and C-110 or C-153 for compact fittings. Mechanical joint nuts and bolts shall be high strength, low alloy steel per ANSI A-21.11. Ductile iron fittings larger than twelve inches (12") shall have a standard body length equal to Class 250 cast iron fittings. Cast iron Class 250 fittings will be allowed in lieu of ductile iron fittings in sizes larger than twelve inches (12").

Megalug retainer glands or an approved equal shall be used on all vertical bend and as shown on the plans.

### 1.4 GATE VALVE RESILIENT SEAT:

VALVES SHALL BE MANUFACTURED IN NORTH AMERICA TO MEET ALL REQUIREMENTS OF AWWA SPECIFICATIONS C-509. VALVES TWELVE INCHES (12") AND SMALLER SHALL BE BUBBLE-TIGHT, ZERO LEAKAGE AT 250 PSI WORKING PRESSURE. VALVES SHALL HAVE NON-RISING STEMS, OPEN COUNTERCLOCKWISE, AND BE PROVIDED WITH A TWO INCH (2") SQUARE OPERATING NUT WITH ARROW CAST IN METAL TO INDICATE DIRECTION OF OPENING.

Each valve shall have maker's name, pressure rating, and year in which manufactured cast on the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to twice the specified working pressure. Buried valves shall be installed with a valve box.

### 1.5 VALVE BOXES:

Cast iron three-piece slide-type; five and one-fourths inch (5 1/4") shaft; six foot (6') trench depth.

Cast iron cover marked "WATER" and indicating direction of opening.

### 1.6 FIRE HYDRANTS:

All hydrants are to be 3-way, 5" minimum diameter and limited to the following make: Kennedy Guardian K-81A.

Main Valve Opening: 5 1/4 inches  
 Nozzle Arrangement: Two 2 1/2 inch hose nozzles with (6) threads per inch. One 4 1/2 inch pumper nozzle with (4) threads per inch. 5" Storz connection  
 Inlet Connection: 6 inch mechanical joint  
 Operating Nut: Standard 1 inch pentagon  
 Direction of Opening: Counterclockwise  
 Color: Enameled hydrant yellow body, top color as determined by Town.  
 Depth of Bury: Hydrant shall be installed to the manufacturer's instructions with nozzles about 18" above finish grade.

### 1.7 HYDRANT BRANCHES:

Hydrant assemblies shall consist of a six inch (6") mechanical joint gate valve conforming to AWWA C-509; a four foot (4') length of six inch (6") Class 52 ductile iron pipe with a cement-lining; and the fire hydrant.

The hydrant shall have (18"-21") clearance between the center of the steamer cap and the ground. For single-family house subdivisions, there will be at least one hydrant at each intersection and a maximum of 500 feet (500') between hydrants with a minimum water flow of 500 gallons per minute with a 20 psi residual pressure from each hydrant.

### 1.8 WATER SERVICE CONNECTION:

#### A. GENERAL REQUIREMENTS

The Contractor shall install six inch (6") ductile iron water services as indicated on the Contract Drawings or as directed by the Engineer. Each service shall include a 6 inch (6") gate valve located at the property line.

#### 1.9 CONSTRUCTION METHODS

##### A. INSPECTION AND TESTING

All pipe and fittings shall be inspected and tested in accordance with the manufacturer's specifications and the aforementioned AWWA Specifications. The Contractor shall furnish for approval certification from the pipe manufacturer that all tests have been performed with satisfactory results. Pipe shall not be installed without the Engineer's or Water Authority's approval. All testing of water infrastructure shall be witnessed by the Town of Essex. This will include but not be limited to the following: wet taps, service connections, pressure testing, chlorination, bacteria test sampling, etc.

##### B. INSTALLATION

Pipes, fittings, and accessories shall be carefully handled to avoid damage. Prior to the date of acceptance of the project work by the Owner, the Contractor shall replace any new pipe or accessory found to be defective at any time, including after installation, at no expense to the Owner. All installation and testing shall be done in accordance with AWWA Standard C-600 and ANSI Specification A21.11.

All pipes showing cracks shall be rejected. If cracks occur in the pipe, the Contractor may, at his own expense and with the approval of the Engineer, cut off the cracked portions at a point at least twelve inches (12") from the visible limits of the crack and use the sound portion of the pipe. All pipes and fittings shall be cleared of all foreign matter and debris prior to installation and shall be kept clean until the time of acceptance by the Owner.

At all times, when the pipe laying is not actually in progress, the open ends of the pipe shall be closed by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed. The pipe shall be installed in trenches and at the line and grade shown on the Contract Drawings.

Any deflection joints shall be within the limits specified by the manufacturer. All piping and appurtenances connected to the equipment shall be supported so that no strain will be imposed on the equipment. If the equipment manufacturer's specifications include that piping loads are not to be transferred, the Contractor shall submit certification of compliance.

Concrete thrust blocks shall be installed on all plugs, tees, and bends deflecting 1/4 degrees or more. Care shall be taken to ensure that concrete will not come in contact with flanges, joints, or bolts. The required area of thrust blocks are indicated on the plans or shall be as approved by the Engineer.

Whenever sewers cross under watermain, the watermain shall be laid out such an elevation that the bottom of the watermain is at least 18 inches above the top of the sewer. This vertical separation shall be maintained for that portion of the watermain located within ten feet (10') horizontally of any sewer it crosses.

There shall be no physical connection between the distribution system and any pipes, pumps, hydrants, or tanks which are supplied or may be supplied with a water that is, or may be, contaminated. In instances where the use of different types of pipe require joining, the Contractor shall furnish and install all necessary adapters.

All trenching safety standards shall be in conformance with all applicable State and Federal Guidelines and as specified on the Plans.

The Contractor shall, at all times, keep the trenches entirely free of water until all work is finished and ready for backfilling. After the various pipelines have been installed, the trenches and other areas to be filled shall be backfilled to subgrade with, wherever possible, material excavated from the trench. No backfilling will be allowed until any concrete masonry has set sufficiently, as determined by the Engineer.

All material for backfilling shall be free of roots, stumps, and frost. Materials used for backfilling trenches shall be free of stones weighing over 30 pounds. No stones measuring over one and one-half inches (1 1/2") in the longest dimension shall be placed within one foot (1') of the pipeline being backfilled.

Backfill for all pipelines shall be placed in six inch (6") layers, each layer being thoroughly compacted to not less than 95 percent of maximum dry density as determined by the AASHTO-T-99 Standard Proctor. Particular precautions shall be taken in the placement and compaction of the backfill material in order not to damage the pipe or structure. The backfill shall be brought up evenly. All watermain shall be installed with a minimum cover depth of six (6').

Surplus excavated materials not used for backfill shall be disposed of in a manner satisfactory to the Engineer. All surplus material or spoil shall be removed promptly and disposed of so as not to be objectionable to abutters or to the general public.

Valve boxes are to be installed on all buried valves. The boxes shall be cast iron with a minimum five and one-fourths inch (5 1/4") diameter and long enough to extend from the valve to finished grade. The boxes shall enclose the operating nut and stuffing box of the valve. Valve boxes shall not transfer loads into the valve. Covers shall be close fitting and dirt-tight with the top of the cover flush with the top of the box rim. Covers shall be marked "Water" with an arrow indicating the direction of opening. Valve boxes shall be three piece slip-type.

The contractor shall provide a stable, temporary PVC marker approved by the Engineer at all gate valves, curb stops, and at the end of waterlines to a point six inches (6") above finish grade. The marker shall be seated securely into the ground.

The contractor shall contact the Town of Essex prior to backfilling any new water infrastructure for inspection and approval.

#### C. FIELD TESTING

Except as otherwise directed, all pipelines shall be tested. Pipelines laid in excavation or bedded in concrete shall be tested prior to backfilling or the placing of concrete, and any exposed piping shall be tested prior to field painting. The Contractor shall furnish all gauges, testing plugs, caps, and all other necessary equipment and labor to perform leakage and pressure test in sections of an approved length. Each valued section or a maximum of one thousand feet (1,000') of the pipe shall be tested. All water required for testing shall be potable. All testing shall be conducted in the presence of the Engineer.

For the pressure test, the Contractor shall develop and maintain 200 pounds per square inch for two hours. Failure to hold the designated pressure for the two-hour period constitutes a failure of the section tested. The leakage test shall be performed concurrently with the pressure test. During the test, the Contractor shall measure the quantity of water required to maintain the test pressure. Leakage shall not exceed the quantity given by:

$$L = SD \text{ (Square root of } P) / 148,000$$

where:  
 L = Leakage in gallons/hour  
 S = Length of pipeline tested  
 D = Diameter of pipe in inches  
 P = Average test pressure in psi

All testing shall be conducted in accordance with AWWA C-600 latest revision. Should any section of the pipe fail either the pressure or leakage tests, the Contractor shall do everything necessary to locate and repair or replace the defective pipe, fittings, or joints at no expense to the Owner.

#### D. DISINFECTION:

Chlorination of the watermain shall be conducted only after the main has been flushed and a clear stream is obtained as determined by the Engineer.

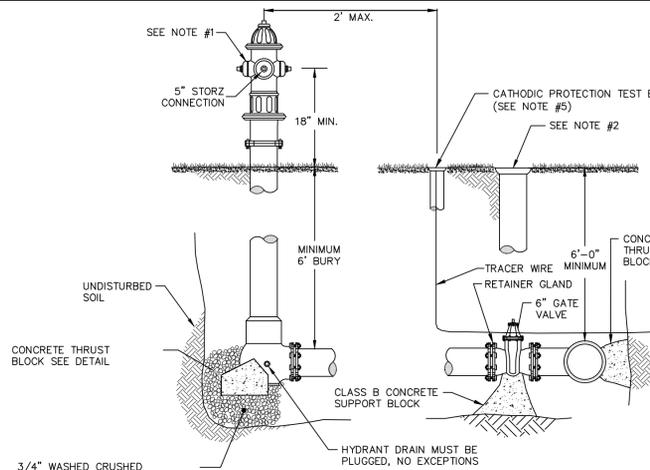
The Contractor shall furnish all labor, equipment, materials, and tools necessary to disinfect the pipe and appurtenances in accordance with the AWWA Standard for Disinfecting Watermain, C-651, with the exception of the tablet method.

The method of disinfection shall be by the continuous feed method unless otherwise approved by the Engineer. After filling, flushing, and the addition of chlorine solution, the free chlorine concentration within the pipe shall be at least 25 mg/l. The chlorinated water shall remain in the main for a period of at least 24 hours. At the end of this period, the treated water in all portions of the main shall not have a residual of less than 10 mg/l of free chlorine. All disinfection shall be performed under the supervision of the Engineer. The disinfection process shall be deemed acceptable only after (2) samples of water from the flushed, disinfected main taken by the Engineer and tested at an approved laboratory show no evidence of bacteriological contamination. Disinfection shall conform to the latest AWWA C-651 revision.

The pipeline and appurtenances shall be maintained in an uncontaminated condition until final acceptance. Disinfection shall be repeated when and where required at no expense to the Owner until final acceptance by the Owner.

#### E. FROST PROTECTION OF SHALLOW WATERLINES

Waterlines with less than six feet (6') of cover over the crown, or where indicated on the plans, shall be protected against freezing by installation of four inch (4") thick Styrofoam SM insulating sheets with a total width of four feet (4') or twice the pipe diameter, whichever is greater. The sheets shall be placed six inches (6") above the crown of the main after compaction of the six inch (6") lift immediately above the crown. Care shall be exercised by the Contractor during backfill and compaction over the styrofoam sheets to prevent damage to the sheets. Styrofoam SM sheets shall meet the compressive strength requirements of ASTM D1621-73 and shall be as manufactured by Dow Chemical Company, Midland, Michigan, or equivalent. In no case shall the waterlines have less than five feet (5') of cover over the top of the pipe, as approved by the Town of Essex.



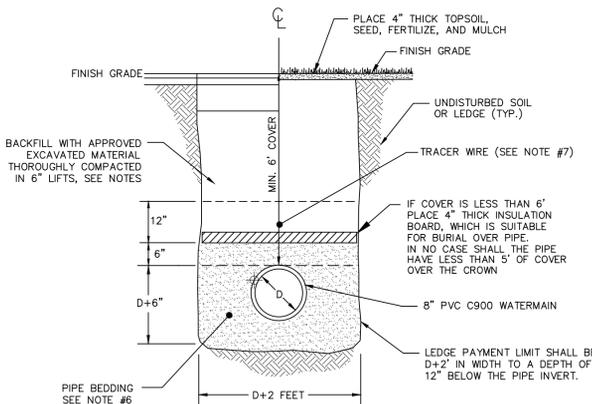
3/4" WASHED CRUSHED STONE BEDDING

#### NOTES:

- NEW HYDRANT SHALL BE KENNEDY GUARDIAN K-81D. NO SUBSTITUTIONS WILL BE APPROVED UNLESS NOTED.
- VALVE BOXES SHALL BE CAST IRON TWO PIECE SLIDE TYPE WITH 5 1/4" SHAFT AND A CAST IRON COVER MARKED "WATER".
- ALL HYDRANT PIPING OFF OF MAIN SHALL BE 6" AND MATCH THE EXISTING WATERMAIN PIPE MATERIAL. EITHER CLASS 52 DUCTILE IRON OR C900 PVC. ALL MECHANICAL JOINT FITTINGS AND RETAINER GLANDS SHALL CONFORM TO CURRENT AWWA STANDARDS. SEE SPECIFICATIONS FOR REQUIREMENTS.
- ALL WORK SHALL CONFORM TO THE WRITTEN SPECIFICATIONS AND PLANS UNLESS OTHERWISE SPECIFIED.
- INSTALL A CATHODIC PROTECTION TEST BOX (BINGHAM & TAYLOR MODEL P200NFG OR APPROVED EQUAL) WITHIN 2' OF ALL NEW HYDRANTS FOR TERMINATING THE TRACER WIRES IN.

## HYDRANT

NTS

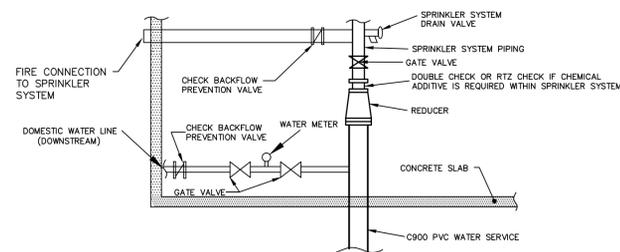


#### NOTES:

- THE CONTRACTOR SHALL KEEP THE TRENCH ENTIRELY FREE OF WATER AT ALL TIMES UNTIL THE WORK IS COMPLETE AND READY FOR BACKFILLING.
- THE SIDES OF THE TRENCHES SHALL BE SHEETED OR SLOPED TO THE ANGLE OF REPOSE IF THE TRENCH IS 4' OR MORE IN DEPTH.
- BACKFILL TRENCH IN 6" LIFTS AND COMPACT EACH LIFT TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR.
- BACKFILL SHALL HAVE NO STONES LARGER THAN 1.5-INCHES IN DIAMETER.
- ALL WORK SHALL CONFORM TO THESE SPECIFICATIONS AND PLANS UNLESS OTHERWISE SPECIFIED.
- THE PIPE BEDDING FOR DUCTILE IRON PIPE SHALL BE THOROUGHLY COMPACTED SAND OR GRAVEL. 3/4" STONE BEDDING SHALL BE USED AS PIPE BEDDING FOR PVC OR PE PIPE.
- INSTALL A CONTINUOUS SHEATHED SOLID CONDUCTOR COPPER TRACER WIRE OVER PIPE. THE WIRE SHALL BEGIN IN A TEST BOX ADJACENT TO ONE HYDRANT AND RUN TO A TEST BOX ADJACENT TO THE NEXT HYDRANT.

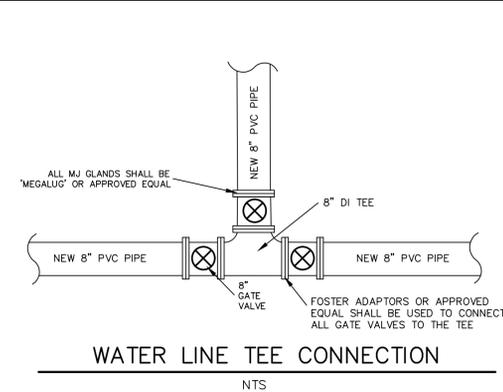
## WATER TRENCH

NTS



## WATER / SPRINKLER CONNECTION

NTS



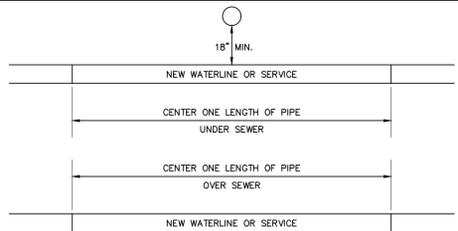
## WATER LINE TEE CONNECTION

NTS

SOIL TYPE - CLAY/SILT			
FITTING SIZE	6"	8"	12"
1 1/4" & 2 1/2"	3	4	9
4 5"	4	8	17
9 0"	9	16	35
TEES OR END CAPS	6	11	25
VALVES	3	3	3

SQ FT BEARING AREA

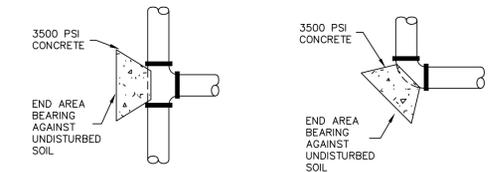
BASED ON 100 PSI WORKING PRESSURE PLUS 100 PSI SURGE ALLOWANCE AND BEARING CAPACITY OF 1000 LBS/SQ FT



## SEWER/WATER SEPARATION FOR CROSSINGS

NTS

IF 18" OF VERTICAL SEPARATION CAN NOT BE MAINTAINED, THE SEWER LINE SHALL BE CONSTRUCTED TO WATERLINE STANDARDS. A MINIMUM OF 20 FEET BEYOND EACH SIDE OF 20 FEET BEYOND EACH SIDE OF THE CROSSING.



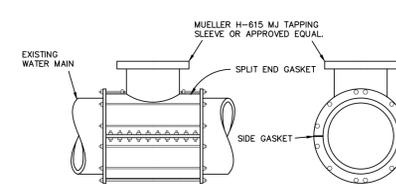
#### TYPICAL TEES-DEADENDS-CAPS

NOTE: PLACE 4 mil POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK

NOTE: ALL THRUST BLOCKS SHALL BE POURED IN PLACE. NO PRECAST BLOCKS OR BAGS OR CONCRETE WILL BE ALLOWED

## THRUST BLOCK END AREA

NTS



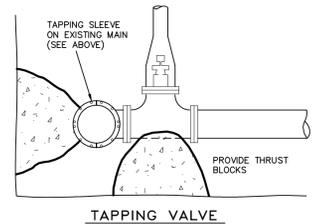
#### TAPPING SLEEVE

#### NOTES:

- TAPPING SLEEVES SHALL BE OF THE SPLIT SLEEVE DESIGN CONSTRUCTED WITH TWO SOLID HALF-SLEEVES BOLTED TOGETHER. SLEEVES SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, SHALL HAVE A WORKING PRESSURE OF AT LEAST 150 PSI, AND SHALL HAVE MECHANICAL JOINT ENDS AND SIDE GASKET SEALS.
- ALL IRON BODY TAPPING SLEEVES SHALL BE PROVIDED WITH A 3/4" NPT TEST PLUG, OR OTHER PROVISIONS MUST BE MADE FOR AIR TESTING THE VALVE AND SLEEVE AT MAXIMUM WORKING PRESSURE, PRIOR TO TAPPING.
- ALL BOLTS AND NUTS FOR MECHANICAL JOINTS OF TAPPING SLEEVES SHALL BE OF HIGH-STRENGTH CAST IRON OR HIGH-STRENGTH, LOW-ALLOY STEEL CONFORMING TO ANSI/AWWA C111/A21.11-90.
- ALL BOLTS AND NUTS FOR FLANGED JOINTS OF TAPPING SLEEVES SHALL BE OF HIGH-STRENGTH, LOW-CARBON STEEL CONFORMING TO ANSI/AWWA C110/A21.10, APPENDIX A.
- ALL BOLTS AND NUTS SHALL BE SOUND, CLEAN, AND COATED WITH A RUST RESISTANT-LUBRICANT; THEIR SURFACES SHALL BE FREE OF OBJECTIONABLE PROTRUSIONS THAT WOULD INTERFERE WITH THEIR FIT IN THE MADE-UP MECHANICAL OR FLANGED JOINT.
- ALL BOLTS AND NUTS USED WITH ALL PIPE SLEEVES SHALL, UPON FINAL TIGHTENING AND TESTING, BE BRUSH COATED HEAVILY WITH BITUMASTIC COLORED-APPLIED MATERIAL TO THOROUGHLY COVER ALL EXPOSED SURFACES OF THE BOLTS AND NUTS.
- THE CONTRACTOR SHALL NOTIFY THE CHAMPLAIN WATER DISTRICT, TOWN OF ESSEX PUBLIC WORKS, AND THE PROJECT ENGINEER PRIOR TO TAPPING.
- ALL TAPPING SLEEVES AND TAPPING VALVES SHALL COMPLY WITH THE CHAMPLAIN WATER DISTRICT SPECIFICATIONS FOR DETAILS. FOR THE INSTALLATION OF WATER LINES AND APPURTENANCES, SECTION 19.00. IF ANY SPECIFICATIONS IN THIS DETAIL (BASED ON TOWN OF ESSEX STANDARD DETAIL) ARE CONFLICTING WITH CWD SPECIFICATIONS, CWD SPECIFICATIONS SHALL GOVERN.

#### NOTES:

- TAPPING VALVE SHALL CONFORM TO ANSI/AWWA 0509-87 STANDARD FOR RESILIENT-SEALED GATE VALVES FOR WATER AND SEWAGE SYSTEMS. EXCEPT AS MODIFIED HEREIN, VALVES SHALL OPEN COUNTERCLOCKWISE AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI. INLET FLANGES SHALL BE CLASS 125 CONFORMING TO ANSI SPECIFICATION B16.1 OR ANSI/AWWA C110/A21.10, AND OUTLET CONNECTIONS SHALL BE STANDARDIZED MECHANICAL JOINTS.
- BURIED TAPPING VALVES SHALL BE PROVIDED WITH A 2" SQUARE WRENCH NUT AND SHALL BE INSTALLED WITH A CAST IRON VALVE BOX AS REQUIRED TO ALLOW POSITIVE ACCESS TO THE VALVE OPERATING NUT AT ALL TIMES. IN INSTALLATIONS WHERE THE DEPTH FROM GRADE TO TOP OF VALVE IS GREATER THAN 6' 0", A VALVE STEM RISER SHALL BE PROVIDED AND INSTALLED SUCH THAT THE DEPTH FROM VALVE STEM RISER NUT TO GRADE IS FROM 4'-0" TO 6'-0" (MINIMUM LENGTH OF VALVE STEM RISER IS 2'-0"). VALVE STEM RISER SHALL BE OF HIGH-STRENGTH STEEL AND OF WELDED CONSTRUCTION.



## TAPPING VALVE AND SLEEVE

NTS

2/10/26	SITE PLAN AMENDMENT - PHASE III	GR1
3/19/21	UPDATED FOR TOWN PUBLIC WORKS AND STAFF COMMENTS	BWC
1/20/21	UPDATED FOR SITE PLAN AMENDMENT APPLICATION	BWC
6/21/16	TOWN FINAL APPROVAL CONDITIONS	BWC
DATE	REVISION	BY
9/30/15	ADDED ARCHEOLOGICAL BUFFER	BWC
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY	DATE
OBCA	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH/CONCEPT	9/18/2014
DESIGN	BWC/GR1	1009
DRAWN	GR1/BWC	FILE
CHECKED	BWC	S9
SCALE	1"=20'	PLAN SHEET #
13 CORPORATE DRIVE ESSEX, VT PHONE: 878-9589 FAX: 878-9589 E-MAIL: obca@olearyburke.com		GREYSTONE INDUSTRIAL PARK 123 OLD COLCHESTER ROAD ESSEX, VERMONT A & C REALTY WATER DETAILS



# GENERAL SEWER SPECIFICATIONS

## GENERAL:

THIS ITEM SHALL CONSIST OF THE EXCAVATION AND BACKFILLING REQUIRED FOR THE COMPLETE CONSTRUCTION OF GRAVITY SANITARY SEWERS, FORCE MAINS, AND ALL APPURTENANT CONSTRUCTION RELATED THERETO, INCLUDING CHIMNEYS, SERVICE CONNECTIONS, THROST BLOCKS, AND OTHER ITEMS NECESSARY FOR A COMPLETE SANITARY SEWER SYSTEM AS SHOWN ON THE DRAWINGS. ALL SEWER INFRASTRUCTURE SHALL MEET OR EXCEED THE TOWN OF ESSEX STANDARDS FOR CONSTRUCTION, THE TESTING OF TAPS, SERVICE CONNECTIONS, AIR TESTING, ETC., SHALL BE WITNESSED BY THE TOWN OF ESSEX.

## A. TYPES OF PIPE

TYPES OF PIPE WHICH SHALL BE USED FOR THE VARIOUS PARTS OF WORK ARE AS FOLLOWS: GRAVITY SEWERS SHALL BE PVC SDR 35 WALL PIPE MEETING ASTM SPECIFICATIONS D-3034 OR F679.

## B. PVC SEWER PIPE

PVC SEWER PIPE SHALL CONFORM IN ALL RESPECTS TO THE LATEST REVISION OF ASTM SPECIFICATIONS D-3034 OR F679, TYPE FPM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, SDR35. WALL THICKNESS OF ALL PVC SHALL MEET ASTM SPECIFICATIONS FOR SDR35 FITTINGS. ALL PIPE AND FITTINGS SHALL BE CLEARLY MARKED AS FOLLOWS:

MANUFACTURER'S NAME AND TRADEMARK  
NOMINAL PIPE SIZE  
MATERIAL DESIGNATION 12454C PVC  
LEGEND "TYPE FPM SDR35 PVC SEWER PIPE" OR "PS 48 PVC SEWER PIPE"  
DESIGNATION ASTM D-3034 OR F679

JOINTS SHALL BE PUSH-ON TYPE USING ELASTOMERIC GASKETS AND SHALL CONFORM TO ASTM D-3212. THE GASKETS SHALL BE FACTORY INSTALLED.

THE PIPE SHALL BE FURNISHED IN NOMINAL 13 FOOT LENGTHS. SUFFICIENT NUMBERS OF SHORT LENGTHS AND FULL MACHINE FITTINGS SHALL BE PROVIDED FOR USE AT MANHOLES, CHIMNEYS, AND CONNECTIONS. ALL CONNECTIONS WILL REQUIRE THE USE OF MANUFACTURED FITTINGS. FIELD FABRICATED, SADDLE-TYPE CONNECTIONS WILL NOT BE CONSIDERED ACCEPTABLE.

ANY PIPE OR FITTING HAVING A CRACK OR OTHER DEFECT OR WHICH HAS RECEIVED A SEVERE BLOW SHALL BE MARKED REJECTED AND REMOVED AT ONCE FROM THE WORK SITE. ALL FIELD CUTS ARE TO BE MADE WITH SAW AND 90 DEGREE MITRE BOX. REVEL THE CUT END TO THE SAME AS THE FACTORY BEVEL AND REMOVE ALL INTERIOR BURRS. MEASURE AND PLACE A HOMING MARK ON THE PIPE BEFORE ASSEMBLING.

THE PIPE INSTALLED UNDER THIS SPECIFICATION SHALL BE INSTALLED SO THAT THE INITIAL DEFLECTION, MEASURED AS DESCRIBED BELOW, SHALL BE LESS THAN FIVE PERCENT (5%).

DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. THE DEFLECTION TEST SHALL BE RUN USING A RIGID BALL OR MANDREL HAVING A DIAMETER EQUAL TO 95 PERCENT OF THE INSIDE DIAMETER OF THE PIPE. NO MECHANICAL PULLING DEVICES SHALL BE USED DURING THE DEFLECTION TESTS. ALL PIPE NOT MEETING THE DEFLECTION TEST SHALL BE REEXCAVATED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

THE MANHOLE WATER STOP GASKET AND STAINLESS STEEL CLAMP ASSEMBLY MUST BE PROVIDED BY THE ENGINEER PRIOR TO THE INSTALLATION OF ANY PIPE.

THE CONTRACTOR WILL SUBMIT CERTIFICATION THAT THE MATERIALS OF CONSTRUCTION HAVE BEEN SAMPLED, TESTED, AND INSPECTED, AND THAT THEY MEET THE REQUIREMENTS OF THE SPECIFICATIONS—IN ACCORDANCE WITH ASTM C-3034 OR ASTM F679 FOR ALL PIPE AND FITTINGS TO BE INCLUDED IN THE PROJECT WORK.

PVC PIPE SHALL NOT BE INSTALLED WHEN THE TEMPERATURE DROPS BELOW 32 DEGREES FAHRENHEIT OR GOES ABOVE 100 DEGREES FAHRENHEIT. DURING COLD WEATHER, THE FLEXIBILITY AND IMPACT RESISTANCE OF PVC PIPE IS REDUCED.

EXTRA CARE IS REQUIRED WHEN HANDLING PVC PIPE DURING COLD WEATHER. PVC PIPE SHALL NOT BE STORED OUTSIDE AND EXPOSED TO PROLONGED PERIODS OF UNLIGHT AS PIPE DISCOLORATION AND REDUCTION IN PIPE IMPACT STRENGTH WILL OCCUR. CANVAS OR OTHER OPAQUE MATERIAL SHALL BE USED TO COVER PVC PIPE STORED ON SITE.

## C. MANHOLES

THE CONTRACTOR SHALL CONSTRUCT REINFORCED CONCRETE MANHOLES AND DROP MANHOLES TO THE DIMENSIONS AT THE LOCATIONS SHOWN ON THE CONTRACT DRAWINGS. ALL PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST VERSION OF THE ASTM SPECIFICATIONS C478. THE EXTERIOR OF THE MANHOLE SHALL BE COATED WITH A WATERPROOF SEALANT.

THE FOOTING SHALL BE CLASS B PRECAST CONCRETE AND SHALL CONFORM TO THE DIMENSIONS INDICATED ON THE PLANS.

SHELVES SHALL BE CONSTRUCTED WITH HARDENED RED SEWER BRICK. ALL BRICK SHALL BE TYPE SS MEETING THE STANDARDS IN ASTM C32. INVERTS FOR SEWER MANHOLES SHALL BE AS SHOWN ON THE PLANS AND DETAILS. INVERTS SHALL HAVE THE EXACT SHAPE OF THE SEWER TO WHICH THEY ARE CONNECTED, AND ANY CHANGE IN SIZE OR DIRECTION SHALL BE GRADUAL AND EVEN.

ALL CONSTRUCTION OF SEWER MANHOLES MUST BE CARRIED OUT TO ENSURE WATER TIGHT WORK. ANY LEAKS IN MANHOLES SHALL BE CAULKED AND COMPLETELY REPAIRED TO THE SATISFACTION OF THE ENGINEER OR THE ENTIRE STRUCTURE SHALL BE REMOVED AND REBUILT. REPAIRS SHALL ONLY BE ALLOWED TO THE EXTERIOR OF THE MANHOLE.

ALL MANHOLES ARE TO BE PROVIDED WITH COPOLYMER POLYPROPYLENE PLASTIC RUNGS WITH STEEL REINFORCEMENT TWELVE INCHES (12") ON CENTER. ALL MANHOLES SHALL BE PROVIDED WITH TOUGH, GRAY, CAST IRON MANHOLE FRAMES AND COVERS. ALL IRON CASTINGS SHALL BE THOROUGHLY CLEANED AND THEN COATED WITH HOT TAR BEFORE BEING DELIVERED. FRAMES AND COVERS SHALL BE LEABROK L266 TYPE C, OR AN APPROVED EQUAL, AND HAVE A MINIMUM HEIGHT OF 400 POUNDS. MANHOLE COVERS SHALL HAVE THE WORD SEWER PRINTED ON THEM.

PRECAST RISERS AND BASES FOR MANHOLES SHALL CONFORM TO ASTM SPECIFICATIONS C-361. THE PIPE OPENING IN THE PRECAST MANHOLE RISER SHALL HAVE A CAST-IN-PLACE FLEXIBLE GASKET OR AN EQUIVALENT SYSTEM FOR PIPE INSTALLATION AS APPROVED BY THE ENGINEER. JOINTS BETWEEN MANHOLE RISERS SHALL BE RUBBER "O" RING SEALS OR SOFT BUTYL JOINT SEALER (ROPE FORM).

THE MANHOLE COVER FRAMES SHALL BE SET TO FINAL GRADE ONLY AFTER THE BASE COURSE PAVING HAS BEEN COMPLETED. MANHOLES SHALL BE CONSTRUCTED TO GRADE WITH AT LEAST TWO, AND NOT MORE THAN FIVE, COURSES OF BRICK, WITH THE EXCEPTION OF INVERTS. ALL SURFACES OF MANHOLE BRICKWORK SHALL BE PLASTERED WITH GEMENT MORTAR. THE PLASTER WORK SHALL BE AS THE BRICKWORK PROGRESSES, AND ALL MANHOLE LIFT HOLES SHALL BE GROUTED INSIDE AND OUT WITH EXPANDABLE GROUT.

MANHOLES SHALL BE PLACED AT ALL CHANGES IN SLOPE, SIZE, ALIGNMENT OF PIPE, AT THE ENDS OF EACH LINE, AND AT LEAST EVERY 300 FEET.

## F. MASONRY

EACH BRICK SHALL BE WETTED AND COMPLETELY BEDDED IN MORTAR AT ITS BOTTOM, SIDES, AND ENDS IN ONE OPERATION WITH CARE BEING TAKEN TO FILL EVERY JOINT. BRICKWORK SHALL BE WELL-BONDED, AND JOINTS SHALL BE AS CLOSE AS PRACTICALLY. NO BRICK MASONRY SHALL BE LAID IN WATER NOR SHALL ANY WATER BE ALLOWED TO RISE ON OR AROUND ANY BRICK MASONRY UNTIL IT HAS SET AT LEAST 24 HOURS. NO MASONRY SHALL BE LAID IN FREEZING WEATHER.

THE BRICK FOR ORDINARY BRICKWORK SHALL BE COMMON HARD-BURNED CLAY BRICK. ALL BRICK SHALL BE REGULAR AND UNIFORM IN SHAPE AND SIZE WITH FLANGE, PARALLEL BEDS, AND FACED. ORDINARY BRICK SHALL CONFORM TO ASTM SPECIFICATION C-32, LATEST VERSION, AND SHALL BE GRADE SS.

BRICK MASONRY SHALL BE LAID IN PORTLAND CEMENT MORTAR COMPOSED OF ONE PART PORTLAND CEMENT AND TWO PARTS OF SAND, MEASURED BY VOLUME, TO WHICH NOT MORE THAN 10 POUNDS OF LIME SHALL BE ADDED FOR EACH BAG OF CEMENT. WATER FOR MORTAR SHALL BE CLEAN AND ONLY AN AMOUNT SUFFICIENT TO PRODUCE A WORKABLE MORTAR SHALL BE USED. MORTAR SHALL BE USED WITHIN ONE HOUR FROM THE TIME THE CEMENT WAS ADDED TO THE MIX.

THE SAND FOR MORTAR FOR BRICK MASONRY SHALL BE UNIFORMLY GRADED, CLEAN, SHARP, AND CONTAIN NO GRADES LARGER THAN WILL PASS A ONE-EIGHTH INCH (1/8") MESH SCREEN.

## CONSTRUCTION METHODS:

### A. EXCAVATION:

EXCAVATIONS SHALL BE MADE TO A POINT AT LEAST SIX INCHES (6") BELOW THE PIPE INVERT TO ACCOMMODATE THE BEDDING MATERIAL. ALL EXCAVATIONS ARE TO BE KEPT DRY WHILE PIPE IS BEING LAID AND UNTIL EACH JOINT AND PIPE HAS BEEN INSPECTED BY THE ENGINEER AND APPROVAL GIVEN TO COMMENCE BACKFILLING OPERATIONS.

### B. LAYING SEWER PIPE:

THE BELL END OF THE PIPE SHALL FACE UPWARD AT ALL TIMES AND BE PLACED IN SUCH A POSITION AS TO MAKE THE INVERT EVEN WHEN THE SUCCEEDING SECTION IS INSERTED. WHERE REQUIRED BY ADVERSE GRADING CONDITIONS, THE CONTRACTOR SHALL FILL ANY GULLY TO MAKE A SUITABLE BEDDING FOR THE SEWER PIPE. THE FILL SHALL COMPACT TO A 95 PERCENT DRY DENSITY BY THE MASH-TO-99 METHOD.

ANY PIPE WHICH IS NOT LAID TO GRADE AND ALIGNMENT SHALL BE RELIED TO THE SATISFACTION OF THE ENGINEER. THE BEDDING MATERIAL SHALL BE PLACED AND COMPACTED ON EACH SIDE OF THE PIPE TO A HEIGHT EQUAL TO ONE-HALF THE PIPE DIAMETER AND FOR THE FULL WIDTH OF THE EXCAVATED TRENCH AND AS SHOWN ON THE ACCEPTED PLANS.

### C. BACKFILL:

BACKFILL SHALL CONSIST OF APPROVED MATERIAL PLACED IN SIX INCH (6") LAYERS WITH EACH LAYER BEING THOROUGHLY COMPACTED TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY THE MASH-TO-99 STANDARD PROCTOR BY MEANS APPROVED BY THE ENGINEER.

THE BACKFILL SHALL BE BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE FOR ITS FULL LENGTH, WALKING OR WORKING ON THE COMPLETED PIPELINE, EXCEPT AS MAY BE NECESSARY IN TAMING OR BACKFILLING, SHALL NOT BE PERMITTED UNTIL THE TRENCH HAS BEEN BACKFILLED TO A HEIGHT OF AT LEAST TWO FEET (2") ON THE TOP OF THE PIPES. DURING CONSTRUCTION, ALL OPENINGS TO THE PIPELINES SHALL BE PROTECTED FROM THE ENTERING OF EARTH OR OTHER MATERIALS.

THE CONTRACTOR SHALL CONTACT THE TOWN OF ESSEX PRIOR TO BACKFILLING ANY NEW SEWER INFRASTRUCTURE FOR INSPECTION AND APPROVAL.

### D. CONCRETE CRADLE AND ENCASMENT FOR PIPE:

WHERE REQUIRED ON THE PLANS OR AS DIRECTED BY THE ENGINEER, A CONCRETE CRADLE SHALL BE USED TO BOLSTER AND STRENGTHEN THE PIPE. WHERE REQUIRED ON THE PLANS OR AS DIRECTED BY THE ENGINEER, CONCRETE ENCASMENT OR SEWER WILL BE MADE TO PROTECT NEARBY WELLS OR WATERLINES FOR STRUCTURE CROSSINGS OR FOR SIMILAR PURPOSES. ALL CONCRETE WILL BE CLASS B AS DEFINED IN THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 501, AND WILL MEET THE REQUIREMENTS OF THAT SECTION.

## E. FROST PROTECTION FOR SHALLOW SEWERS:

SEWERS WITH LESS THAN FIVE AND ONE-HALF FEET (5 1/2') OF COVER OVER THE CROWN OR WHERE INDICATED ON THE PLANS SHALL BE PROTECTED AGAINST FREEZING BY INSTALLATION OF TWO, 2" THICK (4" TOTAL) STYROFOAM SM INSULATING SHEETS WITH A TOTAL WIDTH OF FOUR FEET (4') OR TWICE THE PIPE DIAMETER, WHICHEVER IS GREATER. THE SHEETS SHALL BE PLACED SIX INCHES (6") ABOVE THE CROWN OF THE SEWER AFTER COMPACTION OF THE SIX INCH LIFT IMMEDIATELY ABOVE THE CROWN. CARE SHALL BE EXERCISED BY THE CONTRACTOR DURING BACKFILL, AND COMPACTION OVER THE STYROFOAM SM SHEETS SHALL MEET THE COMPRESSIVE STRENGTH REQUIREMENTS OF ASTM D1621-73 AND SHALL BE, AS MANUFACTURED BY DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN, OR EQUAL. IN NO CASE SHALL THE SEWER LINES HAVE LESS THAN FOUR (4') FEET OF COVER OVER THE TOP OF THE PIPE.

## F. LEAKAGE TESTS AND ALLOWANCES FOR GRAVITY SEWERS:

THE LOW PRESSURE AIR TEST WILL BE USED TO SIMULATE INFILTRATION OR EXFILTRATION RATES INTO OR OUT OF ALL GRAVITY SEWERS. THE CONTRACTOR WILL FURNISH ALL FACILITIES AND PERSONNEL FOR CONDUCTING THE TEST.

FINAL ACCEPTANCE OF THE SEWER SHALL DEPEND UPON THE SATISFACTORY PERFORMANCE OF THE SEWER UNDER TEST CONDITIONS. THE TEST SHALL BE PERFORMED ON PIPE BETWEEN ADJACENT MANHOLES AFTER BACKFILLING HAS BEEN COMPLETED AND COMPACTED.

ALL WYES, TEES, LATERALS, OR END-OF-SIDE SEWER STUBS SHALL BE PLUGGED WITH FLEXIBLE-JOINT CAPS, OR AN ACCEPTABLE ALTERNATE, SECURELY FASTENED TO WITHSTAND THE INTERNAL TEST PRESSURE. SUCH PLUGS OR CAPS SHALL BE READILY REMOVABLE, AND THEIR REMOVAL SHALL PROVIDE A SOCKET SUITABLE FOR MAKING A FLEXIBLE-JOINTED LATERAL CONNECTION OR EXTENSION.

PRIOR TO TESTING FOR ACCEPTANCE, THE PIPE SHOULD BE CLEANED BY PASSING THROUGH THE PIPE A FULL GAUGE SQUEEZE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THE PIPE CLEANED IMMEDIATELY FOLLOWING THE PIPE CLEANING, THE PIPE INSTALLATION SHALL BE TESTED WITH LOW-PRESSURE AIR.

AIR SHALL BE SLOWLY SUPPLIED TO THE PLUGGED AIR INSTALLATION UNTIL THE INTERNAL AIR PRESSURE REACHES FOUR POUNDS PER SQUARE INCH (4.0 PSI) GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY SUBMERGE THE PIPE. AT LEAST TWO MINUTES SHALL BE ALLOWED FOR TEMPERATURE STABILIZATION BEFORE PROCEEDING FURTHER.

THE PIPELINE SHALL BE CONSIDERED ACCEPTABLE WHEN TESTED AT AN AVERAGE PRESSURE OF THREE POUNDS PER SQUARE INCH (3.0 PSI) GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY SUBMERGE THE PIPE IF:

1. THE TOTAL RATE OF AIR LOSS FROM ANY SECTION TESTED IN ITS ENTIRETY BETWEEN MANHOLE AND CLEANOUT STRUCTURES DOES NOT EXCEED 2.0 CUBIC FEET PER MINUTE; OR
2. THE SECTION UNDER TEST DOES NOT LOSE AIR AT A RATE GREATER THAN 0.0030 CUBIC FEET PER MINUTE PER SQUARE FOOT OF INTERNAL PIPE SURFACE.

THE REQUIREMENTS OF THIS SPECIFICATION SHALL BE CONSIDERED SATISFIED IF THE TIME REQUIRED IN SECONDS FOR THE PRESSURE TO DECREASE FROM 3.5 OR 2.5 PSI GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY SUBMERGE THE PIPE IS NOT LESS THAN THAT COMPUTED ACCORDING TO THE FOLLOWING TABLE:

DIAMETER (INCHES)	TIME (SEC./100 FT.)
3	10
4	18
6	40
8	110
10	110
12	248
14	248
18	356
21	485
24	634
27	765
30	851
36	935
39	1,020
42	1,105

THE TABLE GIVES THE REQUIRED TEST TIME IN SECONDS PER 100 FOOT LENGTHS OF PIPE FOR A GIVEN DIAMETER. IF THERE IS MORE THAN ONE PIPE SIZE IN THE SECTION OF LINE BEING TESTED, COMPUTE THE TIME FOR EACH DIAMETER; AND SUM THE TIMES TO FIND THE TOTAL REQUIRED TEST TIME.

IF THE PIPE INSTALLATION FAILS TO MEET THESE REQUIREMENTS, THE CONTRACTOR SHALL DETERMINE AT HIS OR HER OWN EXPENSE THE SOURCE OR SOURCES OF LEAKAGE AND SHALL REPAIR (IF THE EXTENT AND TYPE OF REPAIRS PROPOSED BY THE CONTRACTOR APPEAR REASONABLE TO THE ENGINEER) OR REPLACE ALL DEFECTIVE MATERIALS OR WORKMANSHIP. THE COMPLETED PIPE INSTALLATION SHALL MEET THE REQUIREMENTS OF THIS TEST BEFORE BEING CONSIDERED ACCEPTABLE.

SINCE THIS TEST DOES NOT DETERMINE THE TIGHTNESS OF MANHOLES, THEY SHALL BE TESTED SEPARATELY. THE EXFILTRATION LEAKAGE ALLOWANCE OUT OF MANHOLES SHALL BE NO GREATER THAN ONE GALLON PER DAY PER VERTICAL FOOT TO DEPTH. THE MANHOLE SHALL BE FILLED WITH WATER TO A POINT ONE FOOT (1') ABOVE THE HIGHEST POINT BETWEEN MANHOLE SECTIONS. IN AREAS OF HIGH GROUNDWATER, THERE SHALL BE NO VISIBLE LEAKAGE DUE TO INFILTRATION. IF A VACUUM TEST IS DESIRED, THE FOLLOWING PROCEDURE SHALL BE FOLLOWED: (THIS PREFERRED METHOD OF TESTING MANHOLES FOR LEAKAGE INVOLVES THE USE OF A DEVICE FOR SEALING THE TOP OF THE MANHOLE CONC SECTION AND PUMPING AIR OUT OF THE MANHOLE, CREATING A VACUUM AND HOLDING THIS VACUUM FOR A PRESCRIBED PERIOD OF TIME.)

ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. THE COMPLETED MANHOLE SHALL NOT BE BACKFILLED PRIOR TO TESTING. MANHOLES WHICH HAVE BEEN BACKFILLED SHALL BE EXCAVATED TO EXPOSE THE ENTIRE EXTERIOR PRIOR TO VACUUM TESTING OR THE MANHOLE SHALL BE TESTED FOR LEAKAGE BY MEANS OF A HYDROSTATIC TEST. REPAIRS SHALL ONLY BE MADE TO THE EXTERIOR OF THE MANHOLE.

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2. ALL PIPE AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED IN A MANNER TO PREVENT DISPLACEMENT.

3. A PLATE WITH AN INFLATABLE RUBBER RING THE SIZE OF THE TOP OF THE MANHOLE SHALL BE INSTALLED BY INFLATING THE RING WITH AIR OR PRESSURE ADEQUATE TO PREVENT LEAKAGE OF AIR BETWEEN THE RUBBER RING AND MANHOLE WALL.

4. AIR SHALL THEN BE PUMPED OUT OF THE MANHOLE THROUGH AN OPENING IN THE PLATE UNTIL A VACUUM IS CREATED INSIDE OF THE MANHOLE EQUAL TO TEN INCHES (10") OF MERCURY ON AN APPROVED VACUUM GAUGE. THE REMOVAL OF AIR SHALL THEN BE STOPPED AND THE TEST TIME BEGUN.

5. THE VACUUM MUST NOT DROP TO BELOW NINE INCHES (9") OF MERCURY WITH A TWO MINUTE TEST PERIOD. IF MORE THAN A ONE INCH (1") DROP IN VACUUM OCCURS WITHIN THE TWO MINUTE TEST PERIOD, THE MANHOLE HAS FAILED AND SHALL BE REPAIRED OR RECONSTRUCTED AND THEN RETESTED.

6. FOLLOWING SATISFACTORY TEST RESULTS, THE MANHOLE MAY BE BACKFILLED.

IT IS NOTED THAT ALL EXISTING SANITARY SEWERS SHALL BE KEPT OPERATIONAL UNTIL NEW WORK HAS BEEN TESTED AND APPROVED BY THE ENGINEER. AT SUCH TIME, EXISTING SEWERS AND SEWER SERVICES SHALL BE CONNECTED TO THE NEW SEWERS.

G. LEAKAGE AND PRESSURE TESTING FOR FORCE MAIN

ALL PIPELINES SHALL BE TESTED IN ACCORDANCE WITH THE VERMONT DEPARTMENT OF WATER RESOURCES ENVIRONMENTAL PROTECTION RULES, LATEST EDITION. A LEAKAGE AND PRESSURE TEST SHALL BE PERFORMED CONCURRENTLY.

THE HYDROSTATIC TEST PRESSURE SHALL BE A MINIMUM OF 50 PSI AT THE HIGHEST POINT ALONG THE TEST SECTION AND SHALL NOT VARY BY MORE THAN FIVE PSI DURING THE ENTIRE TWO HOUR TEST. IF AND WHEN DURING THE TEST THE PRESSURE DROPS BY FIVE PSI, THE QUANTITY OF WATER REQUIRED TO RESTORE THE TEST PRESSURE SHALL BE MEASURED.

AT THE END OF THE TWO HOUR TEST, THE PRESSURE SHALL BE RETURNED TO THE TEST PRESSURE AND THE ADDITIONAL VOLUME OF WATER MEASURED. THE TOTAL AMOUNT OF WATER USED DURING AND AT THE END OF THE TEST SHALL CONSTITUTE THE ACTUAL LEAKAGE. THE MAXIMUM ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:

$$L = 50(P)^5 / 133,200$$

WHERE: L = LEAKAGE IN GALLONS PER HOUR  
D = DIAMETER OF PIPE IN INCHES  
P = AVERAGE TEST PRESSURE IN PSI  
S = LENGTH OF PIPE BEING TESTED

## H. CLEANING PIPELINES AND APPURTENANCES:

UPON COMPLETION OF CONSTRUCTION, ALL DIRT AND OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM PIPELINES AND THEIR APPURTENANT CONSTRUCTIONS. NO MATERIALS SHALL BE LEFT IN THE PIPELINES TO IMPED E NORMAL FLOW THROUGH THEM.

## I. SEWER SERVICE CONNECTIONS:

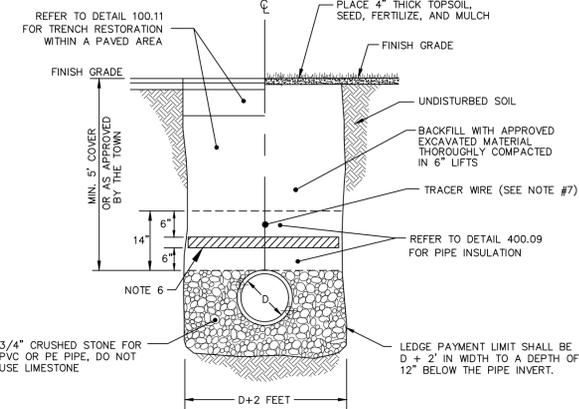
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OPEN ENDS OF PIPES SHALL BE PROPERLY SEALED TO PREVENT DAMAGE AND INTRUSION OF FOREIGN MATTER WHERE HOOKUP TO THE BUILDING SEWER IS NOT CONSIDERED WITH SEWER MAIN CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR WILL PROVIDE A PVC PIPE TEMPORARY MARKER APPROVED BY THE ENGINEER FROM THE SEWER SERVICE INVERT UP TO TWENTY-FOUR INCHES (24") ABOVE THE FINISHED GRADE. THE MARKER SHALL BE SEATED SECURELY INTO GROUND FOR EASE IN RELOCATING THE END OF SEWER SERVICE CONNECTION FOR HOOKUP TO THE BUILDING SEWER.

IN THE CASE OF RECONNECTION OF EXISTING SERVICES, SUCH RECONNECTIONS WILL BE MADE ONLY AFTER THE NEW SEWER MAIN HAS BEEN COMPLETED, TESTED, AND ACCEPTED. THE EXCAVATION, BEDDING MATERIAL, INSTALLATION, AND BACKFILL FOR SERVICE CONNECTIONS SHALL BE THE SAME AS FOR SEWER MAINS.

## J. CLEANOUTS FOR SEWERS:

CLEANOUTS FOR GRAVITY SEWERS AND FORCE MAINS SHALL BE PROVIDED EVERY 100 FT OR WHERE THE SUM OF BENDS = 45 DEGREES. CLEANOUTS FOR SEWER MAINS SHALL BE PROVIDED EVERY 100 FT. THE BEARING SURFACE OF CLEANOUT FRAMES AND COVERS AGAINST EACH OTHER SHALL BE MACHINED TO GIVE CONTINUOUS CONTACT THROUGHOUT THEIR ENTIRE LENGTH. ALL IRON CASTINGS SHALL BE THOROUGHLY CLEANED AND THEN COATED WITH HOT COAL TAR BEFORE BEING DELIVERED.



SEWER/FORCEMAIN TRENCH NTS

- NOTES:
1. THE CONTRACTOR SHALL KEEP THE TRENCH ENTIRELY FREE OF WATER AT ALL TIMES UNTIL THE WORK IS COMPLETE AND READY FOR BACKFILLING.
  2. THE SIDES OF THE TRENCHES SHALL BE SHEETED OR SLOPED TO THE ANGLE OF REPOSE IF THE TRENCH IS 4' OR MORE IN DEPTH.
  3. BACKFILL TRENCH IN 6" LIFTS AND COMPACT EACH LIFT TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR.
  4. BACKFILL ABOVE THE CROWN OF THE PIPE SHALL BE COMMON FILL.
  5. ALL WORK SHALL CONFORM TO THE WRITTEN SPECIFICATIONS AND PLANS UNLESS OTHERWISE SPECIFIED.
  6. IF COVER OVER PIPE IS LESS THAN 5', PLACE 2" THICK INSULATION BOARD OVER PIPE FOR EVERY FOOT OF COVER LESS THAN 5'. IN NO CASE SHALL THERE BE LESS THAN 3.5' OF COVER OVER THE TOP OF PIPE.
  7. INSTALL A CONTINUOUS SHEATHED SOLID CONDUCTOR COPPER TRACER WIRE OVER PIPE. THE WIRE SHALL BEGIN INSIDE ONE MANHOLE AND RUN TO THE NEXT MANHOLE. INSIDE THE MANHOLES, A COIL OF WIRE LONG ENOUGH TO REACH THE COVER SHALL BE ATTACHED TO THE INSIDE OF THE STRUCTURE. SEE DETAILS 300.01 AND 300.03

## SEWER/FORCEMAIN TRENCH

NTS

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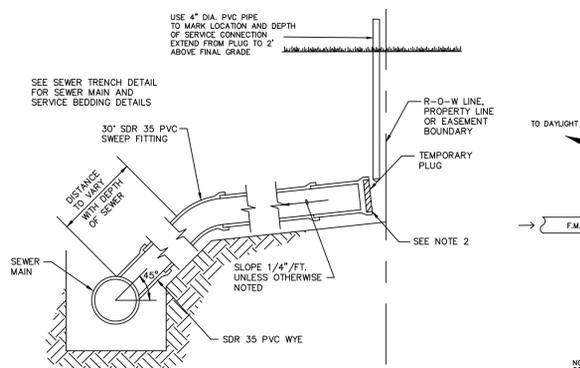
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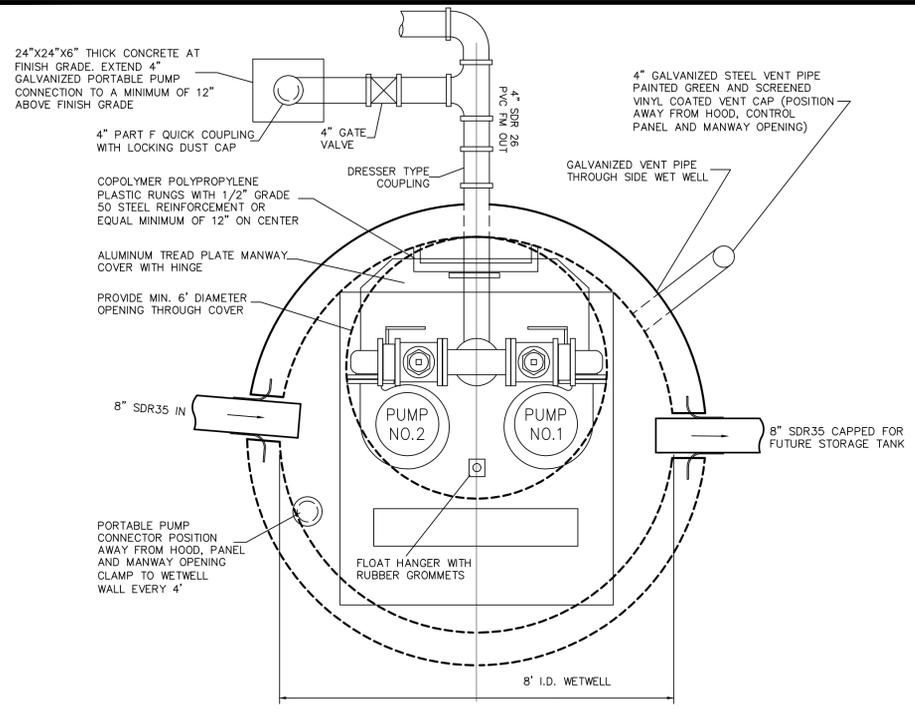


SANITARY SEWER SERVICE CONNECTION NTS

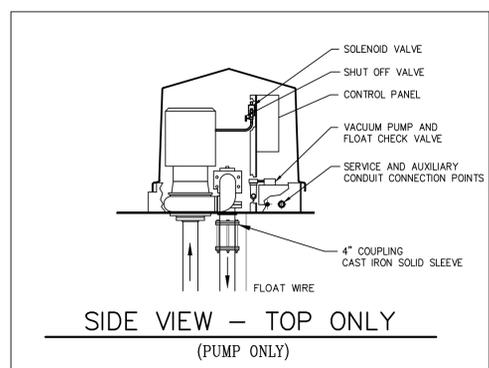
- NOTES:
1. ALL SANITARY SEWER SERVICE PIPING WITHIN THE TOWN RIGHT OF WAY SHALL BE 6" SDR 35 PVC.
  2. ALL CONNECTIONS TO THE NEW SERVICE SHALL BE WITH SDR 35 PVC FITTINGS OR APPROVED EQUAL. FERROCEMENT STYLE FLEXIBLE COUPLINGS SHALL NOT BE USED.
  3. ALL WORK SHALL CONFORM TO THESE SPECIFICATIONS AND DETAIL 300.04, SANITARY SEWER TRENCH (GRAVITY).

## SANITARY SEWER SERVICE CONNECTION

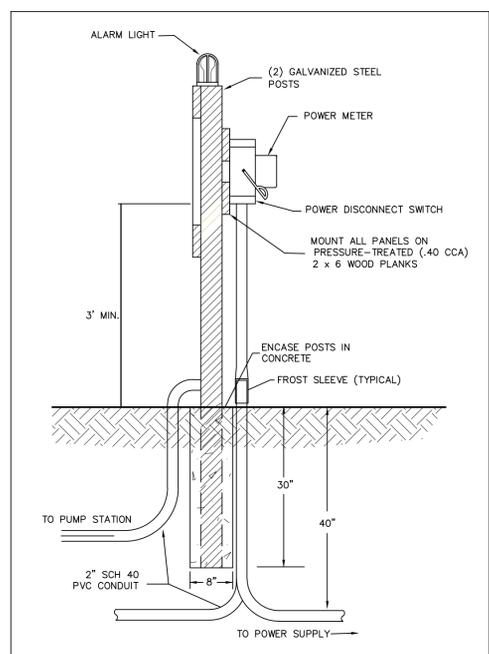
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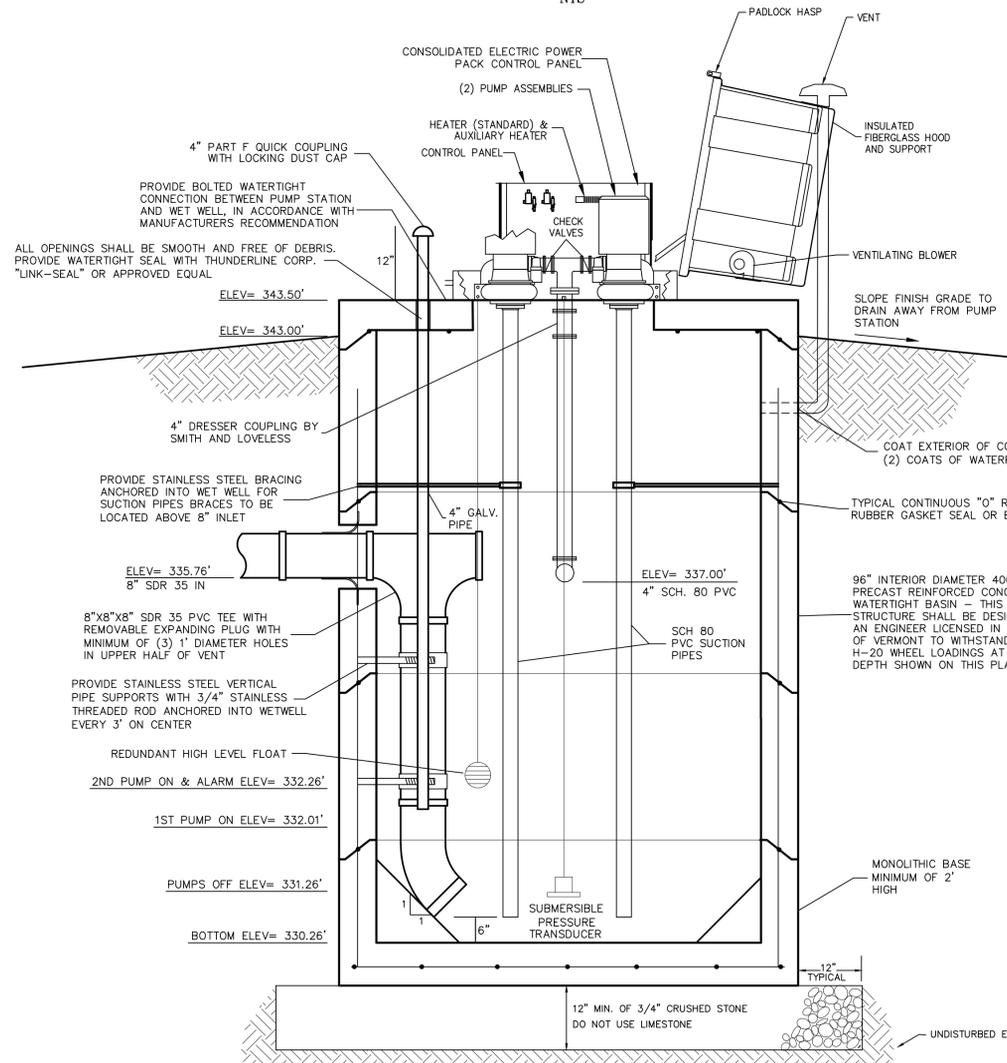
PUMP STATION PLAN VIEW DETAIL



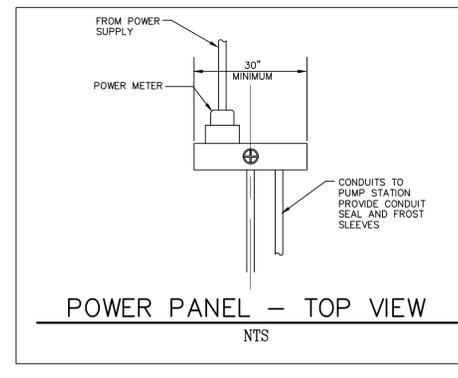
SIDE VIEW - TOP ONLY (PUMP ONLY)



POWER PANEL - SIDE VIEW



PUMP STATION SIDE VIEW DETAIL



POWER PANEL - TOP VIEW

**GENERAL SPECIFICATIONS:**

- CONSTRUCTION**  
THE STATION SHALL BE CONSTRUCTED IN ONE COMPLETE FACTORY-BUILT ASSEMBLY. IT SHALL BE SIZED TO REST ON TOP OF THE WET WELL AS DETAILLED IN THE CONSTRUCTION DRAWINGS. THE SUPPORTING FLOOR PLATE SHALL BE A MINIMUM 3/8" THICK STEEL WITH REINFORCING, AS REQUIRED, TO PREVENT DEFLECTION AND INSURE AN ABSOLUTELY RIGID SUPPORT.  
THE PUMP STATION SHALL BE ENCLOSED BY A HINGED FIBERGLASS COVER. THE COVER SHALL HAVE A SUITABLE DRIP-LIP AROUND THE EDGE AND SHALL BE PROVIDED WITH A HASP AND STAPLE CONNECTION TO THE FLOOR PLATE TO ALLOW THE PUMP CHAMBER TO BE LOCKED WITH A PADLOCK. THE FIBERGLASS COVER SHALL BE INSULATED WITH A MINIMUM OF 2" RIGID INSULATION.  
THE COVER SHALL HAVE A LATCH MECHANISM TO KEEP THE COVER OPEN UNDER LOAD. ADJUSTABLE VENTILATING LOUVERS SHALL BE PROVIDED ON EACH END OF THE FIBERGLASS COVER WHICH ARE CAPABLE OF BEING CLOSED DURING COLD WEATHER OPERATION.  
A 1/4" THICK SLIDING ALUMINUM MANWAY COVER LOCATED EXTERIOR TO THE FIBERGLASS PUMP CHAMBER SHALL BE PROVIDED, COMPLETE WITH PADLOCK PROVISIONS. THE MANWAY SHALL BE AN INTEGRAL PART OF THE STATION FLOOR PLATE AND PROVIDE ACCESS TO THE WET WELL.
- PROTECTION AGAINST CORROSION**  
AFTER WELDING, ALL INSIDE AND OUTSIDE SURFACES OF THE STRUCTURE SHALL BE BLASTED WITH STEEL GRIT TO REMOVE RUST, MILL SCALE, WELD SLAG, ETC. ALL WELD SPATTER AND SURFACE ROUGHNESS SHALL BE REMOVED BY GRINDING. IMMEDIATELY FOLLOWING THE CLEANING, AN EPOXY COATING SHALL BE FACTORY-APPLIED TO ALL INSIDE AND OUTSIDE SURFACES PRIOR TO SHIPMENT.
- MAIN PUMPS**  
ALL PUMP STATION EQUIPMENT SHALL BE MANUFACTURED BY SMITH AND LOVELESS  
THE PUMPS SHALL BE 4" VERTICAL, RECESSED IMPELLER TYPE WITH IMPELLER MOUNTED COMPLETELY OUT OF THE FLOW PATH BETWEEN THE PUMP INLET AND DISCHARGE CONNECTION SO THAT SOLIDS PUMPED ARE NOT REQUIRED TO FLOW THROUGH THE IMPELLER. ALL INTERNAL CLEARANCES SHALL BE EQUAL TO THE DISCHARGE DIAMETER SO THAT ALL MATERIAL WHICH WILL PASS THROUGH THE DISCHARGE WILL PASS THROUGH THE PUMP.  
THE PUMPS SHALL BE OF HEAVY CAST IRON CONSTRUCTION, ESPECIALLY DESIGNED FOR THE USE OF MECHANICAL SEALS AND VACUUM PRIMING.  
THE SHAFT SHALL BE SOLID STAINLESS STEEL THROUGH THE PUMP AND BOTTOM BEARING TO ELIMINATE CORROSION WITHIN THE PUMP OR THE MECHANICAL SEAL. REMOVABLE SHAFT SLEEVES WILL NOT BE ACCEPTABLE.  
THE IMPELLER SHALL NOT BE SCREWED OR PINNED TO THE MOTOR PUMP SHAFT AND SHALL BE READILY REMOVABLE WITHOUT THE USE OF SPECIAL TOOLS.  
THE PUMP SHALL BE SO CONSTRUCTED SO AS TO PERMIT PRIMING FROM THE LOW PRESSURE AREA BEHIND THE IMPELLER, THE PRIMING BOWL SHALL BE TRANSPARENT TO ENABLE THE OPERATOR TO MONITOR THE PRIMING LEVEL.  
THE PUMP SHALL BE ARRANGED SO THAT THE COMPLETE ROTATING ELEMENT CAN EASILY BE REMOVED FROM THE CASING WITHOUT DISCONNECTING THE ELECTRICAL WIRING OR DISASSEMBLING THE MOTOR, IMPELLER, BOLT HEAD OR SEAL, SO THAT ANY FOREIGN OBJECT MAY BE REMOVED FROM THE PUMP OR SUCTION LINE.  
THE PUMP SHAFT SHALL BE SEALED AGAINST LEAKAGE BY A SINGLE MECHANICAL SEAL CONSTRUCTED SO AS TO BE AUTOMATICALLY DRAINED AND PRIMED EACH TIME THE PUMP IS DRAINED AND PRIMED. WATER WHICH LUBRICATES THE MECHANICAL SEAL SHALL BE AUTOMATICALLY DRAINED FROM AROUND THE SEAL IF THE PUMP LOSTS PRIME, IN ORDER TO ALLOW BOTH THE PUMP AND THE SEAL TO BE DRAINED, THEREBY PREVENTING FREEZING AND BREAKAGE OF THE SEAL DURING POWER OUTAGES IN SUB-FREEZING TEMPERATURES.  
THE PUMP CASING SHALL BE FURNISHED WITH MOUNTING LUGS AND BE THE PUMP MOTORS SHALL BE VERTICAL, SOLID SHAFT, NEMA P-BASE, WITH VARIABLE BOLTED TO THE STATION FLOOR PLATE, FORMING A GAS-TIGHT SEAL.
- MOTOR**  
FREQUENCY CONTROLLER SUITABLE TO ALLOW OPERATION WITH A SINGLE PHASE POWER SOURCE. THEY SHALL HAVE CLASS F INSULATION, SUITABLE FOR TEMPERATURES UP TO 105°C. INSULATION TEMPERATURE SHALL, HOWEVER, BE MAINTAINED BELOW 80°C. THE MOTORS SHALL HAVE NORMAL STARTING TORQUE AND LOW STARTING CURRENT AS SPECIFIED BY NEMA DESIGN B CHARACTERISTICS. THEY SHALL BE OPEN DRIP-PROOF DESIGN WITH FORCED AIR CIRCULATION BY INTEGRAL FAN. OPENINGS FOR VENTILATION SHALL BE UNIFORMLY SPACED AROUND THE MOTOR FRAME. LEADS SHALL BE TERMINATED IN A CAST CONNECTION BOX AND SHALL BE CLEARLY IDENTIFIED.  
THE MOTORS SHALL HAVE 1.15 SERVICE FACTOR. THE MOTORS SHALL NOT BE OVERLOADED BEYOND THEIR NAMEPLATE RATING, AT THE DESIGN CONDITION, NOR AT ANY HEAD IN THE OPERATING RANGE AS SPECIFIED UNDER OPERATING CONDITIONS.  
THE MOTOR SHALL BE FITTED WITH HEAVY LIFTING EYES EACH CAPABLE OF SUPPORTING THE ENTIRE HEIGHT OF THE PUMP AND MOTOR.
- CONTROLS**  
THE CONTROL PANEL SHALL BE CONSOLIDATED ELECTRIC POWERPACK ELECTRICAL PANEL. THE PANEL SHALL BE SIZED AND DESIGNED TO BE MOUNTED COMPLETELY INSIDE THE FIBERGLASS HOOD OVER THE PUMP STATION. THE CONTROL PANEL ASSEMBLY SHALL INCLUDE A BULLETIN D152 BASIC DUPLEX POWERPACK CONTROL PANEL FOR OPERATION ON 230 VOLTS, 1 PHASE, 60 HZ INCOMING SERVICE. THE EQUIPMENT SHALL PROVIDE CONTROL FOR TWO (2) PUMPS IN A PUMP-DOWN MODE OF OPERATION, AS SENSED BY THE SUBMERSIBLE LEVEL TRANSDUCER OR REDUNDANT FLOAT CONTROL LOGIC. THE PANEL ENCLOSURE SHALL BE A NEMA 4X (FIBERGLASS), SHINGLE DOOR, WALL MOUNTED TYPE, APPROX. 118" HIGH, 16" WIDE, 9" DEEP WITH ALUMINUM DEAD FRONT, INNER DOOR FOR OPERATOR RELATED COMPONENTS AND OUTER DOOR PADLOCKING PROVISIONS. THE PANEL SHALL INCLUDE THE FOLLOWING COMPONENTS:  
A) DISTRIBUTION BLOCK  
B) INCOMING POWER LIGHTING ARRESTER  
C) CONDENSATION PROTECTIVE HEATER (25 WATT) AND HIGH TEMPERATURE CUTOFF THERMOSTAT  
D) BULLETIN B300, MODEL CB1T REDUNDANT FLOAT CONTROLLER WITH INTEGRAL HIGH LEVEL ALARM CONTROL INDICATING LED'S AND ADJUSTABLE PUMP OFF TIME DELAY  
E) MODEL IS6 IS6 (6) CIRCUIT INTRINSICALLY SAFE FLOAT CONTROL MODULE  
F) INNER DOOR MOUNTED, MODEL D152 DUPLEX CONTROLLER/ALTERNATOR (0-10" RANGE) WITH INTEGRAL ABNORMAL LEVEL ALARM, ON/OFF STAGE PROGRAMMING RECEPTACLES, STAGE INDICATING LED'S, 40 SEGMENT LEVEL INDICATING BAR GRAPH, MANUAL SIMULATION SWITCH, AND ALTERNATOR OVERRIDE SELECTOR SWITCH (1-2, AUTO, 2-1)  
G) MODEL IS1-3 INTRINSICALLY SAFE TRANSDUCER CONTROL MODULE  
H) MODEL OXW19/24, 4-20 MA CURRENT LOOP TRANSMITTER TO PROVIDE A LOOP POWERED, ISOLATED 4-20 MA OUTPUT SIGNAL (IN DIRECT PROPORTION TO THE WET WELL LEVEL) FOR CUSTOMER'S USE  
I) UNPOWERED TRANSDUCER ABNORMAL LEVEL AND REDUNDANT FLOAT SWITCH HIGH LEVEL ALARM CONTACTS WIRED TO TERMINALS FOR CUSTOMER'S USE  
J) ENCLOSED UL-913 SERIALIZED LABEL  
K) 115 VAC DUPLEX OUTLET

- INCLUDED WITH THE CONTROL PANEL SHALL BE:
- A BULLETIN A1000, MODEL 157GSC1-1.0-5.0-10-30 SUBMERSIBLE LEVEL TRANSDUCER WITH 30' OF ELECTRONICS/BREATHER CABLE FOR DIRECT CONNECTION TO THE ITEM D JUNCTION BOX, TO INCLUDE A TRANSDUCER SUB-ASSEMBLY (5 PSI), P/N 601295-02, AND A CABLE SUB-ASSEMBLY (30'), P/N 601264-03.
  - A BULLETIN A1000, MODEL 157SSC1 LOWER UNIT CABLE SUSPENSION MOUNTING KIT WITH 20' OF STAINLESS STEEL CABLE, TO INCLUDE A SUSPENSION KIT, P/N 601414-01, AND A CABLE KIT, P/N 601440-20.
  - A BULLETIN A1000 MODEL, MODEL TCB TERMINAL CONNECTION BOX WITH TERMINAL BLOCK, SEALS AND CABLE STRAIN RELIEF CONNECTOR. THE TCB IS VENTED AND MADE FROM A NEMA TYPE 4X, FIBERGLASS, SINGLE DOOR, WALL MOUNTED ENCLOSURE. THE INSTALLING ELECTRICIAN SHALL MAKE THE CONNECTION FROM THE TCB BOX TO THE MODEL D152/IS1-3 (PROVIDED IN ITEM A CONTROL PANEL) WITH 3-WIRE, SHIELDED CABLE, P/N 601291-02.
  - A BULLETIN B100, MODEL LS (POLYETHYLENE) FLOAT SWITCH (NORMALLY OPEN) WITH 40' OF CABLE, P/N 601136-40.
  - BULLETIN B100, MODEL LSW WEIGHT KIT, P/N 601141-01.
  - 5 SETS OF "AS BUILT" DRAWINGS WITH SHIPMENT.

THE ENTIRE CONTROL PANEL ASSEMBLY SHALL MEET ALL APPLICABLE ELECTRICAL CODES AND SHALL BE UL RATED.

**6. VACUUM PRIMING SYSTEM**  
A SEPARATE AND INDEPENDENT PRIMING SYSTEM SHALL BE FURNISHED FOR EACH SEWAGE PUMP, PROVIDING COMPLETE STANDBY OPERATION. EACH PRIMING SYSTEM SHALL INCLUDE A SEPARATE VACUUM PUMP. VACUUM PUMPS SHALL HAVE CORROSION RESISTANT INTERNAL COMPONENTS. THEY SHALL EACH BE CAPABLE OF PRIMING THE SEWAGE PUMP AND SUCTION PIPING IN NOT GREATER THAN 60 SECONDS, UNDER RATED STATIC SUCTION LIFT CONDITIONS OF 20' AT MEAN SEA LEVEL.

EACH PRIMING SYSTEM SHALL BE COMPLETE WITH VACUUM PUMP, VACUUM CONTROL SOLENOID VALVE, PRIME LEVEL SENSING PROBE, AND A FLOAT OPERATED CHECK VALVE INSTALLED IN THE SYSTEM AHEAD OF THE VACUUM PUMP TO PREVENT LIQUID FROM ENTERING THE VACUUM PUMP. THE FLOAT-OPERATED CHECK VALVE SHALL HAVE A TRANSPARENT BODY FOR VISUAL INSPECTION OF THE LIQUID LEVEL AND SHALL BE AUTOMATICALLY DRAINED WHEN THE VACUUM PUMP SHUTS OFF.  
THE PRIMING SYSTEM SHALL AUTOMATICALLY PROVIDE POSITIVE LUBRICATION OF THE MECHANICAL SEAL EACH TIME THE SEWAGE PUMP IS PRIMED. TO PREVENT EXCESSIVE STOPPAGE DUE TO GREASE ACCUMULATION, NO PASSAGEWAY IN THE PRIMING SYSTEM THROUGH WHICH SEWAGE MUST PASS SHALL BE SMALLER THAN THE EQUIVALENT OF A 2-1/2" OPENING.

**7. ENVIRONMENTAL EQUIPMENT**  
A VENTILATING BLOWER SHALL BE PROVIDED, CAPABLE OF DELIVERING 250 CFM AT 0.1" STATIC WATER PRESSURE, IN ORDER TO REMOVE THE HEAT GENERATED BY CONTINUOUS MOTOR OPERATION. THE VENTILATING BLOWER SHALL BE TURNED ON AND OFF AUTOMATICALLY BY A PRE-SET THERMOSTAT. THE VENTILATING BLOWER SHALL BE RIGIDLY MOUNTED FROM THE STATION FLOOR.  
AN ELECTRIC HEATER CONTROLLED BY A PRESET THERMOSTAT SHALL BE FURNISHED. THE HEATER SHALL BE RIGIDLY MOUNTED IN THE STATION TO PERMIT REMOVAL. THE HEATER SHALL BE SIZED FOR OPERATION IN COLD WEATHER TO -30°.

**8. SEWAGE PIPING**  
THE DISCHARGE LINE FROM EACH PUMP SHALL BE FITTED WITH A CLAPPER-TYPE CHECK VALVE AND ELECTRIC PLUG VALVE. THE CHECK VALVE SHALL BE OF THE SPRING-LOADED TYPE WITH EXTERNAL LEVER ARM AND AN EASILY REPLACED RESILIENT SEAT FOR ADDED ASSURANCE AGAINST VACUUM LEAKS. CHECK VALVES SHALL HAVE STAINLESS STEEL SHAFT WITH REPLACEABLE BRONZE SHAFT BUSHINGS AND SHALL BE SEALED THROUGH THE BEARINGS WITH O-RINGS. AN OPERATING WRENCH SHALL BE PROVIDED FOR THE PLUG VALVES.  
PROTRUSIONS THROUGH THE FLOOR PLATE SHALL BE GAS-TIGHT WHERE NECESSARY TO EFFECT SEALING BETWEEN THE EQUIPMENT CHAMBER AND THE WET WELL. BOLTED AND SEALED JOINTS SHALL BE PROVIDED AT THE CASINGS FROM SUCTION PIPES IN ORDER TO PREVENT CORROSION. JOINTS FROM ENTERING THE STATION, THE LIFT STATION MANUFACTURER SHALL EXTEND THE SUCTION AND DISCHARGE CONNECTION BELOW THE FLOOR PLATE AT THE FACTORY, SO THAT FIELD CONNECTIONS CAN BE MADE WITHOUT DISTURBING THE GAS-TIGHT SEALS.

**9. FACTORY TESTS**  
ALL COMPONENTS OF THE PUMP STATION SHALL BE GIVEN AN OPERATIONAL TEST OF ALL EQUIPMENT AT THE FACTORY TO CHECK FOR EXCESSIVE VIBRATION, FOR LEAKS IN ALL PIPING SEALS, FOR CORRECT OPERATION OF THE VACUUM PRIMING AND CONTROL SYSTEMS AND ALL AUXILIARY EQUIPMENT. PUMPS SHALL TAKE SUCTION FROM A DEEP WELL SIMULATING ACTUAL SERVICE CONDITIONS.

**10. SPARE PARTS**  
A COMPLETE REPLACEMENT PUMP SHAFT SEAL ASSEMBLY SHALL BE FURNISHED WITH EACH LIFT STATION. THE SPARE SEAL SHALL BE PACKED IN A SUITABLE CONTAINER AND SHALL INCLUDE COMPLETE INSTRUCTIONS. THE INSTRUCTIONS, A SPARE CASING AND STEEL GASKET SHALL BE PROVIDED.

**11. INSTALLATION AND OPERATING INSTRUCTIONS**  
INSTALLATION OF THE PUMP CHAMBER SHALL BE DONE IN ACCORDANCE WITH THE WRITTEN INSTRUCTIONS PROVIDED BY THE MANUFACTURER.

OPERATION AND MAINTENANCE MANUALS SHALL BE FURNISHED WHICH WILL INCLUDE PARTS LISTS OF COMPONENTS AND COMPLETE SERVICE PROCEDURES AND TROUBLESHOOTING GUIDE.  
**12. GUARANTEE**  
THE MANUFACTURER OF THE LIFT STATION SHALL HAVE A MINIMUM OF FIVE YEARS' EXPERIENCE IN THE DESIGN AND MANUFACTURE OF VACUUM-PRIMING TYPE FACTORY-BUILT AUTOMATIC PUMPING STATIONS AND SHALL GUARANTEE THE STRUCTURE AND ALL EQUIPMENT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF UP TO ONE YEAR FROM THE DATE OF START-UP, NOT TO EXCEED 18 MONTHS FROM THE DATE OF SHIPMENT.  
WARRANTIES AND GUARANTEES BY THE SUPPLIERS OF VARIOUS COMPONENTS IN LEU OF A SINGLE-SOURCE RESPONSIBILITY BY THE MANUFACTURER WILL NOT BE ACCEPTED. THE MANUFACTURER SHALL BE SOLELY RESPONSIBLE FOR THE GUARANTEE OF THE STATION AND ALL COMPONENTS.

IN THE EVENT A COMPONENT FAILS TO PERFORM AS SPECIFIED OR IS PROVEN DEFECTIVE IN SERVICE DURING THE GUARANTEE PERIOD, THE MANUFACTURER SHALL PROVIDE A REPLACEMENT PART WITHOUT COST TO THE OWNER. HE OR SHE SHALL PROVIDE, WITHOUT COST, SUCH LABOR AS MAY BE REQUIRED TO REPLACE, REPAIR OR MODIFY MAJOR COMPONENTS SUCH AS THE PUMPS, PUMP MOTORS AND SEWAGE PIPING MANIFOLD.

**13. NOTES**  
A. CONSTRUCTION OF THIS PUMP STATION MAY REQUIRE TEMPORARY SHEETING AND OR DEWATERING. NECESSARY DEWATERING TECHNIQUES SHALL BE UTILIZED THROUGHOUT CONSTRUCTION TO INSURE DRY SITE CONDITIONS.  
B. THE COMPLETE OPERATION OF THE PUMP STATION AND FOREMAN SHALL BE TESTED IN THE PRESENCE OF THE ENGINEER IN ACCORDANCE WITH THE TESTING SPECIFICATIONS. THE SYSTEM SHALL MEET THE REQUIREMENTS OF ENGINEER, VILLAGE, MANUFACTURERS, AND THE STATE ENVIRONMENTAL PROTECTION RULES.  
C. ALL ELECTRICAL WORK SHALL MEET THE NATIONAL ELECTRICAL CODE AND UNDERWRITERS LABORATORIES. CONDUIT SHALL BE PROVIDED AS NECESSARY TO INSURE COMPLIANCE.  
D. ALL CONCRETE SHALL BE 4000 P.S.I. UNLESS OTHERWISE SPECIFIED. ALL CONCRETE STRUCTURES SHALL RECEIVE (2) COATS OF A WATERPROOF SEALANT. TESTING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS ON SHEET 27.  
E. ALL BACKFILL SHALL BE IN ACCORDANCE WITH VERMONT STATE SPECIFICATION 703.04 FOR GRANULAR BACKFILL.

- F. ALL OPENINGS FOR PIPES AND CONDUIT IN THE PUMP STATION AND WET WELL SHALL BE COMPLETELY SEALED AND WATERTIGHT.  
G. ALL MATERIALS LOCATED WITHIN THE WETWELL SHALL BE CORROSION RESISTANT.  
H. THE ENTIRE PUMP STATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STATE ENVIRONMENTAL PROTECTION RULES - CHAPTER 1.  
**14. ALARMS**  
A. THE POWER FAIL ALARM SHALL BE BATTERY OPERATED AND CONTROLLED BY A POWER FAIL RELAY OR EQUIVALENT. THE BATTERY SHALL BE EQUIPPED WITH A TRICKLE CHARGE.  
B. THE HIGH LEVEL ALARM SHALL HAVE A LOCAL SILENCE SWITCH.

**PUMP STATION DATA**

THE ANTICIPATED SEWAGE FLOWS ARE BASED ON THE TOWN OF ESSEX SEWER CORE MAP, WHICH HAS THE PARCEL ALLOCATED FOR 28 EQUIVALENT UNITS OR 5,200 GPD OF SEWER ALLOCATION

BUILDINGS A-D: 20 EMPLOYEES EACH, BUILDINGS E & F: 10 EMPLOYEES EACH  
100 EMPLOYEES TOTAL X 15 GPD PER EMPLOYEE = **1,500 GPD**  
INFILTRATION: 300 gal/inch/mile/day x (8" pipe x (1500 ft/5,280'/mile) = **682 GPD**  
TOTAL: **2,182 GPD** (5,200 GPD > 2,000 GPD; DUAL PUMP STATION IS REQUIRED)

A. TOTAL DESIGN FLOW (USING EPR RULES):  
FULL BUILDOUT = 26 EU OR 5,200 GPD = 5,200 GPD

B. AVERAGE DAILY FLOW (ADF):  
5,200 GPD / 24 HR/DAY x 60 MIN/HR = 3.62 GPM  
MINIMUM PUMPING RATE = 5 TIMES THE ADF FOR SYSTEMS < 10,000 GPD (18 GPM) OR 85 GPM TO MAINTAIN 2 FT/SEC IN A 4" FORCE MAIN  
USE A MINIMUM PUMPING RATE OF 85 GPM

C. HEAD LOSSES:  
STATIC LIFT 15.0 FT  
FRICTION LOSSES 10.0 FT (2,700 LF FORCE MAIN)  
MISC. LOSSES 4.0 FT  
TOTAL HEAD LOSS 29.0 FT

D. PUMP REQUIREMENTS - 2 PUMPS EACH CAPABLE OF PUMPING A MINIMUM OF 85 GPM AT 29' TDH SINGLE PHASE, MINIMUM 4" DISCHARGE, CAPABLE OF PASSING MINIMUM 3" SOLIDS.

D. EMERGENCY STORAGE  
PROVIDE FOUR (4) HOUR STORAGE, BASED ON A 16 HR DELIVERY RATE  
5,200 GPD x 4 HR/DAY = 1,300 GALLONS REQUIRED  
16 HR/DAY

STORAGE: WET WELL (376 GAL/VF); 1,300/376 = 3.50'

E. PUMPING VOLUME  
USE MINIMUM PUMP RUN TIME OF 3 MINUTES @ 85 GPM = 255 GALLONS  
FOR A 6" DIAMETER WETWELL, VOLUME = 376 GAL/VF  
255 GAL. MIN DOSE / 376 GAL/VF STORAGE = 0.75' PUMP ON/PUMP OFF

**TESTING DATA**

- A. FORCE MAIN PRESSURE TEST: THE FORCE MAIN SHALL BE PRESSURE TESTED TO NOT LESS THAN 50 PSI AT THE HIGHEST POINT OF THE TEST SECTION. THE TEST SHALL BE OF A TWO HOUR DURATION AND THE TEST PRESSURE SHALL NOT VARY BY MORE THAN +/- 5 PSI. A LEAKAGE TEST SHALL BE PERFORMED CONCURRENTLY WITH THE PRESSURE TEST. THE ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:  
 $L = NDI/P$   
WHERE L = THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR, N IS THE NUMBER OF JOINTS, D IS THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND P IS THE AVERAGE TEST PRESSURE IN PSI.
- B. STRUCTURE TEST: THE STRUCTURE SHALL BE TESTED IN THE PRESENCE OF THE ENGINEER FOR THE EXFILTRATION BY FILLING THE STRUCTURE TO 1' BELOW THE ACCESS LID. A STABILIZATION PERIOD OF 1 HR. SHALL BE PROVIDED TO ALLOW FOR ABSORPTION. AT THE END OF THE STABILIZATION PERIOD THE STRUCTURE SHALL BE REFILLED IF NECESSARY AND THE TEST PERIOD OF 48 HOURS SHALL BEGIN. AT THE END OF THE TEST PERIOD, THE VOLUME OF WATER CHANGE SHALL BE MEASURED. THERE SHALL BE NO VISIBLE OR MEASURABLE EXFILTRATION OR INFILTRATION OR TEST FAILS. IF THE TEST FAILS, THE CONTRACTOR SHALL REPAIR OR WATERPROOF AND RETEST.
- C. PUMP STATION: AN AUTHORIZED REPRESENTATIVE OF THE PUMP MANUFACTURER OR AN ELECTRICIAN FAMILIAR WITH THE OPERATION AND SETTING OF THE PUMP STATION SHALL BE PRESENT DURING STARTUP. AMPERAGE READINGS ON EACH MOTOR LEAD SHALL BE MEASURED AND RECORDED. THE CONTRACTOR SHALL PROVIDE A WATER SOURCE TO PERFORM A FULL OPERATIONAL CHECK OF THE STATION INCLUDING ALL FLOAT FUNCTIONS, ALARM TESTING, INDICATOR LIGHTS, H-O-A SWITCHES, PUMP ALTERNATOR, AND PHASE MONITOR IF THREE-PHASE PUMPS ARE USED. THE CONTROL SYSTEM SHALL BE CYCLED THROUGH MORE THAN ONCE TO INSURE PROPER SEQUENCING AND OPERATION OF THE PUMPS. EACH PUMP SHALL BE FIELD TESTED TO INSURE THE PUMPING CAPACITY MEETS THE PROJECT REQUIREMENTS.

- NOTES:  
1) A MISSION 850 CONTROLLER SHALL BE PROVIDED FOR COMMUNICATIONS.  
2) AN OUTSIDE EMERGENCY GENERATOR CONNECTION WITH ATS SWITCH SHALL BE PROVIDED FOR EMERGENCY STAND BY POWER.

2/10/26	SITE PLAN AMENDMENT - PHASE III	GR
DATE 3/19/21	REVISION UPDATED FOR TOWN PUBLIC WORKS AND STAFF COMMENTS	BY BWC
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY	DATE 1/20/21
OBCA	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH/CONCEPT	DATE 10/9
DESIGN BWC/GR		FILE 1009
DRAWN BY BWC		FILE S9
CHECKED BWC		PLAN SHEET #
SCALE NTS		

GREYSTONE INDUSTRIAL PARK  
123 OLD COLCHESTER ROAD  
ESSEX, VERMONT

**O'LEARY-BURKE CIVIL ASSOCIATES, PLC**  
13 CORPORATE DRIVE  
ESSEX, VT 05732-9989  
PHONE: 878-9989  
FAX: 878-9989  
E-MAIL: ocb@olearyburke.com

**A & C REALTY**  
PUMP STATION DETAILS

**8**



**PRE-CONSTRUCTION SEQUENCING FOR EROSION PREVENTION & SEDIMENT CONTROL**

**CONSTRUCTION PHASE 1: BLASTING AND REMOVAL OF ROCK**

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. CONDUCT A PRE-CONSTRUCTION VISUAL SURVEY OF OVERFLOW DISCHARGE POINT AS SHOWN TO BE WITNESSED BY CONTRACTOR AND ENGINEER. IT IS THE RESPONSIBILITY OF THE CHOSEN CONTRACTOR TO NOTIFY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.	INSPECT OVERFLOW DISCHARGE POINT DURING ANY STORM EVENT THAT DISCHARGES STORMWATER FROM THE SITE AND COMPARE TO THE PRE-CONSTRUCTION CONDITION. ANY DISCOLORATION OR APPARENT SEDIMENT LEAVING THE SITE SHALL BE REPORTED TO THE ON-SITE ENGINEER IMMEDIATELY AND MEASURES SHALL BE TAKEN TO REMEDY THE SITUATION BEFORE ANY CONSTRUCTION CAN CONTINUE.	ALL INSPECTIONS OF THE DISCHARGE POINT INCLUDING PHOTOS OF THE PRE-CONSTRUCTION CONDITIONS SHALL BE KEPT ON SITE AT ALL TIMES FOR COMPARISON PURPOSES BY THE STATE OF VERMONT AND ON-SITE ENGINEER UNTIL SITE IS FULLY STABILIZED.
2. MARK LIMITS OF AREA TO BE DISTURBED.	INSTALL CONSTRUCTION FENCING AT LOCATIONS SHOWN ON PLAN.	MAINTAIN UNTIL CONSTRUCTION WITHIN ANY GIVEN PHASE IS COMPLETED OR STABILIZED.
3. INSTALL SILT FENCING AND STABILIZED CONSTRUCTION ENTRANCE	INSTALL SILT FENCING AND STABILIZED CONSTRUCTION ENTRANCE AT LOCATIONS SHOWN ON PLAN.	MAINTAIN SILT FENCE AND REMOVE DEPOSITS OF SILT. REMOVE AND REPLACE STONE AT ENTRANCE AS ORDERED BY THE ON-SITE COORDINATOR.

NOTE: IF WINTER CONSTRUCTION WILL OCCUR BETWEEN OCTOBER 15 AND APRIL 15 REFER TO THE WINTER EROSION CONTROL GUIDELINES FOR ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIREMENTS APPLYING TO ANY COMPONENT OF PROJECT AS OUTLINED ABOVE.

ON-SITE COORDINATOR:  
OMEGA EXCAVATION  
PHONE - (802) 862-0517

**EXCAVATION NARRATIVE**

AS PART OF THE DEVELOPMENT OF THE GREYSTONE INDUSTRIAL PARK APPROXIMATELY 150,000 CY OF LEDGE WILL NEED TO BE REMOVED TO FOR ALLOW FOR CONSTRUCTION OF BUILDINGS D, E, AND F. THE CONTRACTOR PLANS THE FOLLOWING PHASED EXTRACTION OPERATION:

THE PROJECT WILL BEGIN WITH THE CLEARING OF APPROXIMATELY 8.7 ACRES (IN TWO PHASES OF > 5 ACRES) OF WOODED LAND WHERE THE EXCAVATION WILL OCCUR. SEE DASHED BOUNDARIES BELOW. THE SITE WILL BE TEMPORARILY ACCESSED FROM AN EXISTING HAUL ROAD ON THE PARCEL. THE EROSION CONTROL MEASURES WILL BE PUT INTO PLACE BEFORE ANY EXCAVATION BEGINS. THESE MEASURES INCLUDE SILT FENCE, CONSTRUCTION FENCE, CONSTRUCTION ENTRANCE, AND TEMPORARY DIVERSION SWALES. TEMPORARY SWALES WILL BE CUT TO DRAIN ALL UPLAND AREA TOWARDS THE FUTURE STORMWATER PONDS. ANY EXISTING EPSC MEASURES REMAINING FROM THE PREVIOUS PHASE WILL BE REPAIRED AS NECESSARY FOR THE NEXT PHASE OF CONSTRUCTION.

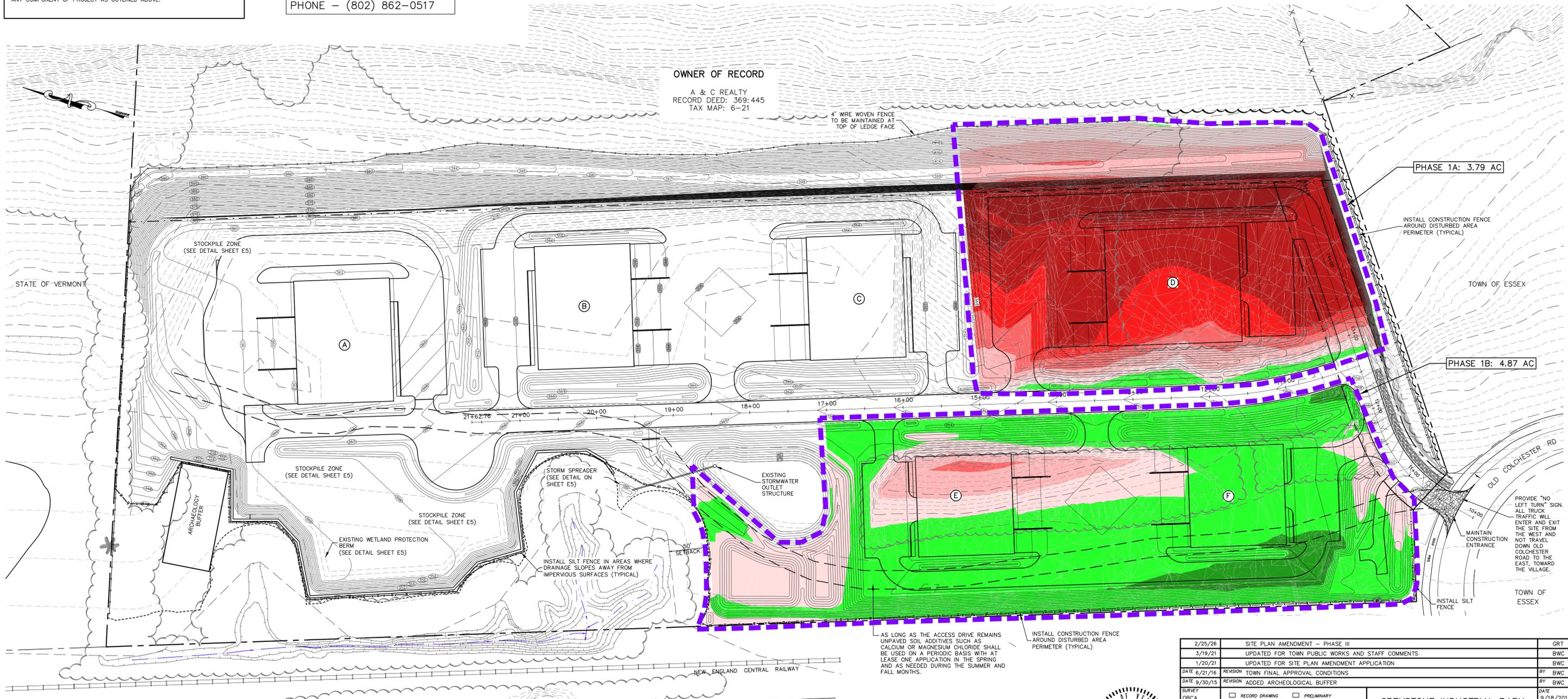
THE EARTHWORK ASSOCIATED WITH THE STORMWATER POND, BUILDING A, B, AND C SITES, ROADWAY AND CONTRACTOR'S YARD WHICH WERE PART OF THE ORIGINAL APPROVAL HAS BEEN COMPLETED. DURING CONSTRUCTION THESE AREAS WILL BE USED AS STAGING AREAS AND TEMPORARY STOCKPILE LOCATIONS FOR THE ROCK PROCESSING ACTIVITIES ASSOCIATED WITH THIS NEXT PHASE OF CONSTRUCTION.

DURING CONSTRUCTION, ACCESS TO THE SITE WILL BE VIA THE EXISTING CONSTRUCTION ENTRANCE OFF OF OLD COLCHESTER ROAD AND SIGNAGE HAS BEEN INSTALLED DIRECTING ALL CONSTRUCTION TRAFFIC TO ENTER AND EXIT FROM VT RT 2A.

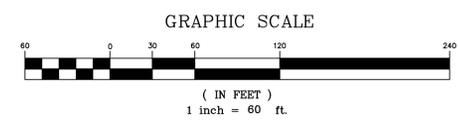
THE CONTRACTOR WILL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR ENSURING THAT THE DUST CREATED AS A RESULT OF CONSTRUCTION DOES NOT CREATE A NUISANCE OR A SAFETY HAZARD WHERE AND WHEN DEEMED NECESSARY BY THE ENGINEER OR THE TOWN OF ESSEX PUBLIC WORKS DEPT. THE CONTRACTOR WILL BE REQUIRED TO WET SECTIONS OF THE CONSTRUCTION AREA WITH WATER, APPLY CALCIUM CHLORIDE OR SWEEP ASPHALT ROADS WITH A POWER BROOM AS DUST CONTROL.

INSPECTION SCHEDULE	WEEKLY	AFTER EACH RAINFALL THAT GENERATES STORMWATER FROM SITE
INSPECT SILT FENCING	X	X
INSPECT CONSTRUCTION FENCE	X	X
INSPECT AREAS TEMPORARILY MULCHED	X	X
INSPECT TEMPORARY SOIL STOCKPILE	X	X
INSPECT STABILIZED CONSTRUCTION ENTRANCES	X	X
INSPECT AREAS THAT HAVE BEEN TOPSOILED & MULCHED	X	X
INSPECT STORMWATER PONDS AND SEDIMENT TRAPS	X	X

LEGEND	
	PROJECT BOUNDARY
	ZONING DISTRICT BOUNDARY
	EXISTING ROADWAY
	RAIL ROAD TRACK
	STREAM OR WATERCOURSE
	EXISTING ACCESS DRIVE
	SOIL TYPE BOUNDARY
	SOIL TYPE
	CLEARING LIMITS
	EDGE OF PAVEMENT
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS
	SILT FENCE
	CONSTRUCTION FENCE



OWNER OF RECORD  
A & C REALTY  
RECORD DEED: 369,445  
TAX MAP: 6-21



2/25/26	SITE PLAN AMENDMENT - PHASE III	GRT
3/19/21	UPDATED FOR TOWN PUBLIC WORKS AND STAFF COMMENTS	BWC
1/20/21	UPDATED FOR SITE PLAN AMENDMENT APPLICATION	BWC
DATE 6/21/16	REVISION TOWN FINAL APPROVAL CONDITIONS	BY BWC
DATE 9/30/15	REVISION ADDED ARCHEOLOGICAL BUFFER	BY BWC
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY	DATE 9/18/2014
OBCA	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH	BY BWC
DESIGN BWC/GRT	GREYSTONE INDUSTRIAL PARK 123 OLD COLCHESTER ROAD ESSEX, VERMONT	
DRAWN GRT/BWC	A & C REALTY	
CHECKED BWC	EPSC - PHASE I - EXTRACTION	
SCALE 1"=60'	PLAN SHEET # <b>E2</b>	

# CONSTRUCTION SEQUENCING FOR EROSION PREVENTION & SEDIMENT CONTROL

THE ON-SITE COORDINATOR SHALL INSPECT THE SITE AND THE SEDIMENT CONTROL MEASURES A MINIMUM OF ONCE EVERY SEVEN DAYS, PRIOR TO PREDICTED STORM EVENTS AND WITHIN 24 HOURS FOLLOWING ANY PRECIPITATION WITH A VOLUME LARGE ENOUGH TO DISCHARGE RUN-OFF FROM THE SITE. THE WEEKLY REPORT AND EROSION CONTROL PLAN WILL BE KEPT ON-SITE.

## CONSTRUCTION PHASE 2: CONSTRUCTION OF ROADWAYS, INSTALLATION OF UTILITIES, AND SITE GRADING

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. MARK LIMITS OF AREA TO BE DISTURBED.	INSTALL CONSTRUCTION FENCING AT LOCATIONS SHOWN ON PLAN.	MAINTAIN UNTIL CONSTRUCTION WITHIN PHASE 1 IS COMPLETED.
2. INSTALL SILT FENCING AND STABILIZED CONSTRUCTION ENTRANCE	INSTALL SILT FENCING AND STABILIZED CONSTRUCTION ENTRANCE AT LOCATIONS SHOWN ON PLAN.	MAINTAIN SILT FENCE AND REMOVE DEPOSITS OF SILT. REMOVE AND REPLACE STONE AT ENTRANCE AS ORDERED BY THE ON-SITE COORDINATOR.
3. GRUBBING AND TOPSOIL STOCKPILING	ANY STUMPS ARE TO BE DISPOSED OF AT AN APPROVED DISPOSAL SITE. A SILT FENCE IS TO BE INSTALLED AROUND THE BASE OF THE STOCKPILE. THE STOCKPILE IS TO BE SEEDED AND MULCHED WITHIN 48 HOURS OF PLACEMENT. NO MORE THAN 5 ACRES SHALL BE DISTURBED AT ONE TIME WITHOUT SITE STABILIZATION	THE SILT FENCE IS TO BE MAINTAINED UNTIL THE STOCKPILE HAS BEEN REMOVED. IN-USE AREAS OF THE STOCKPILE ARE TO BE RESEDED AND REMULCHED IF OPEN AND UNUSED FOR MORE THAN A WEEK.
4. CONSTRUCTION OF STORM SYSTEM, EARTH DIKES, ROAD/PARKING BASE, INSTALLATION OF UTILITIES AND FINISH SITE GRADING	DISTURBED AREAS ARE TO BE SEEDED AND MULCHED WITHIN 7 DAYS OF DISTURBANCE	ROADWAY SIDESLOPES ARE TO BE INSPECTED WEEKLY OR IMMEDIATELY FOLLOWING A RUN-OFF PRODUCING STORM.
5. SEEDING AND MULCHING OF COMPLETED AREAS	AREAS THAT ARE FINISH GRADED ARE TO BE SEEDED AND MULCHED WITHIN 48 HOURS.	REMOVE SEDIMENT AND REPLACE STONE AS NECESSARY.

### WINTER GUIDELINES FOR EROSION PREVENTION & SEDIMENT CONTROL

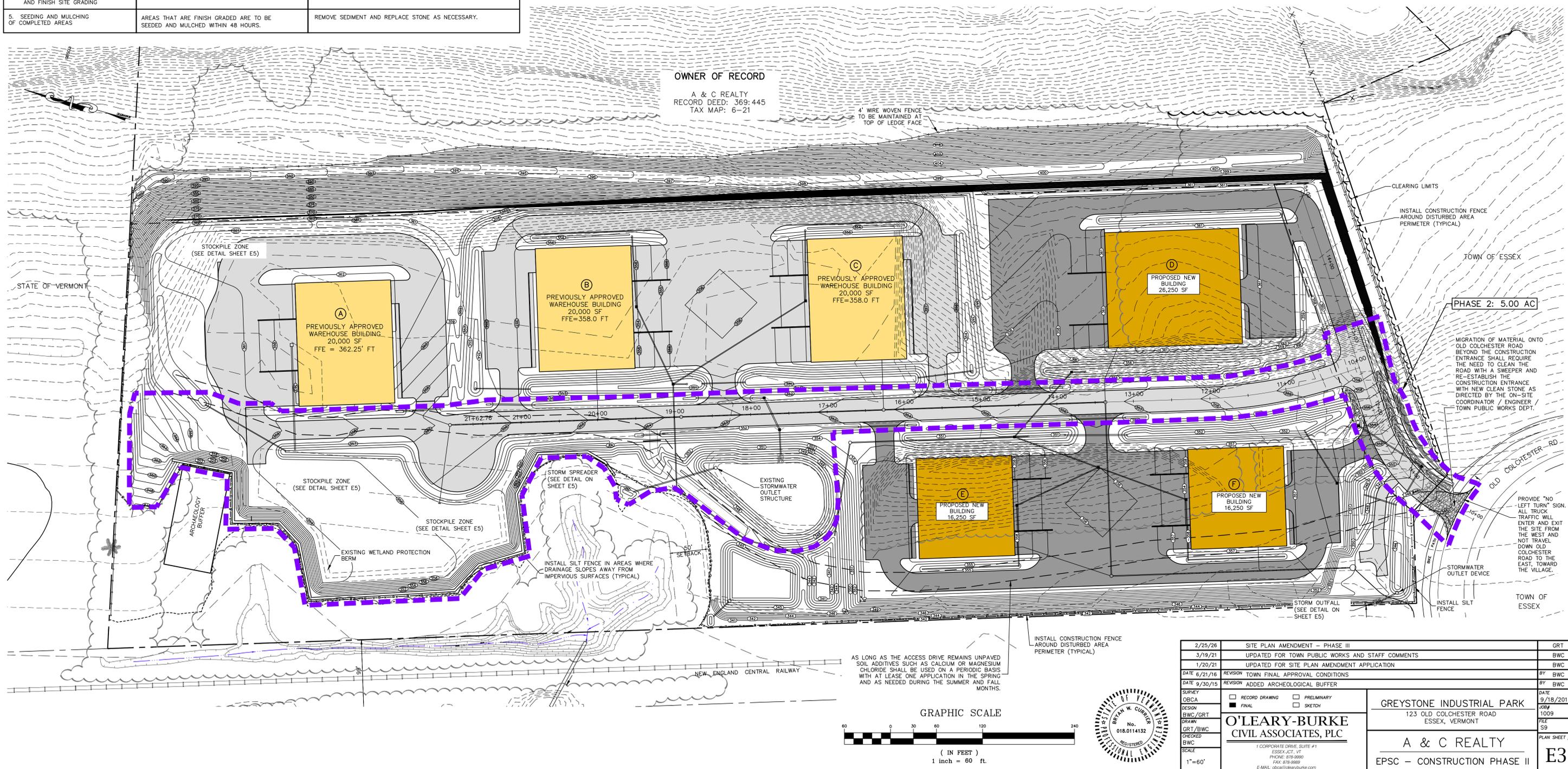
- ALL DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
- ALL SILT FENCE OR OTHER PRACTICES REQUIRING EARTH DISTURBANCE SHALL BE IN PLACE PRIOR TO GROUND FREEZING.
- WHEN MULCH IS REQUIRED FOR STABILIZATION DOUBLE THE STANDARD RATE SHALL BE APPLIED.
- TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
  - IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
  - DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
  - PERFORMING DRILLING AND BLASTING WHERE SITE IS IN A DEPRESSION AND STORMWATER IS TRAPPED.
- PRIOR TO STABILIZATION SNOW AND ICE MUST BE REMOVED TO DEPTH OF NO LESS THAN 1 IN.
- ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED WITHIN 48 HOURS OF BEING BROUGHT TO FINISH GRADE.
- DURING WINTER EROSION, MULCH SHALL BE APPLIED AT DOUBLE THE RATE OR NETTING OR OTHER APPROACH SHALL BE USED TO PREVENT REMOVAL BY WIND.
- ON SITE COORDINATOR MUST INSPECT THE SITE DAILY DURING ACTIVE EARTH WORK

NOTE: IF WINTER CONSTRUCTION WILL OCCUR BETWEEN OCTOBER 15 AND APRIL 15 REFER TO THE WINTER EROSION CONTROL GUIDELINES FOR ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIREMENTS APPLYING TO ANY COMPONENT OF PROJECT AS OUTLINED ABOVE.

ON-SITE COORDINATOR:  
OMEGA EXCAVATION  
PHONE - (802) 862-0517

INSPECTION SCHEDULE	WEEKLY	AFTER EACH RAINFALL THAT GENERATES STORMWATER FROM SITE
INSPECT SILT FENCING	X	X
INSPECT CONSTRUCTION FENCE	X	X
INSPECT AREAS TEMPORARILY MULCHED	X	X
INSPECT TEMPORARY SOIL STOCKPILE	X	X
INSPECT STABILIZED CONSTRUCTION ENTRANCES	X	X
INSPECT AREAS THAT HAVE BEEN TOPSOILED & MULCHED	X	X
INSPECT STORMWATER PONDS AND SEDIMENT TRAPS	X	X

LEGEND	
	PROJECT BOUNDARY
	ZONING DISTRICT BOUNDARY
	EXISTING ROADWAY
	RAIL ROAD TRACK
	STREAM OR WATERCOURSE
	EXISTING ACCESS DRIVE
	SOIL TYPE BOUNDARY
	SOIL TYPE
	CLEARING LIMITS
	EDGE OF PAVEMENT
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS
	SILT FENCE
	CONSTRUCTION FENCE



OWNER OF RECORD

A & C REALTY  
RECORD DEED: 369,445  
TAX MAP: 6-21

4" WIRE WOVEN FENCE TO BE MAINTAINED AT TOP OF LEDGE FACE

CLEARING LIMITS

INSTALL CONSTRUCTION FENCE AROUND DISTURBED AREA PERIMETER (TYPICAL)

PHASE 2: 5.00 AC

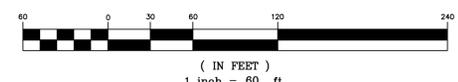
MIGRATION OF MATERIAL ONTO OLD COLCHESTER ROAD BEYOND THE CONSTRUCTION ENTRANCE SHALL REQUIRE THE NEED TO CLEAN THE ROAD WITH A SWEEPER AND RE-ESTABLISH THE CONSTRUCTION ENTRANCE WITH NEW CLEAN STONE AS DIRECTED BY THE ON-SITE COORDINATOR / ENGINEER / TOWN PUBLIC WORKS DEPT.

PROVIDE "NO LEFT TURN" SIGN. ALL TRUCK TRAFFIC WILL ENTER AND EXIT THE SITE FROM THE WEST AND NOT TRAVEL DOWN OLD COLCHESTER ROAD TO THE EAST, TOWARD THE VILLAGE.

INSTALL CONSTRUCTION FENCE AROUND DISTURBED AREA PERIMETER (TYPICAL)

AS LONG AS THE ACCESS DRIVE REMAINS UNPAVED SOIL ADDITIVES SUCH AS CALCIUM OR MAGNESIUM CHLORIDE SHALL BE USED ON A PERIODIC BASIS WITH AT LEAST ONE APPLICATION IN THE SPRING AND AS NEEDED DURING THE SUMMER AND FALL MONTHS.

GRAPHIC SCALE



2/25/26	SITE PLAN AMENDMENT - PHASE III	GR
3/19/21	UPDATED FOR TOWN PUBLIC WORKS AND STAFF COMMENTS	BWC
1/20/21	UPDATED FOR SITE PLAN AMENDMENT APPLICATION	BWC
DATE 6/21/16	REVISION TOWN FINAL APPROVAL CONDITIONS	BY BWC
DATE 9/30/15	REVISION ADDED ARCHEOLOGICAL BUFFER	BY BWC
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY	DATE 9/18/2014
OBCA	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH	1009
DESIGN BWC/GR	GREYSTONE INDUSTRIAL PARK	
DRAWN GRT/BWC	123 OLD COLCHESTER ROAD	
GRT/BWC	ESSEX, VERMONT	
CHECKED BWC	A & C REALTY	
SCALE 1"=60'	EPSC - CONSTRUCTION PHASE II	
1 CORPORATE DRIVE, SUITE #1 ESSEX, VT PHONE: 878-9589 FAX: 878-9589 E-MAIL: obca@olearyburke.com		PLAN SHEET # <b>E3</b>

**CONSTRUCTION SEQUENCING FOR EROSION PREVENTION & SEDIMENT CONTROL**

**CONSTRUCTION PHASE 3:** CONSTRUCTION OF BUILDINGS, UTILITY CONNECTIONS AND FINISH SITE GRADING

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. MARK LIMITS OF AREA TO BE DISTURBED.	INSTALL CONSTRUCTION FENCING AROUND AREAS TO BE EXCAVATED.	MAINTAIN UNTIL CONSTRUCTION IS COMPLETED. (FENCE LOCATIONS WILL BE ADJUSTED AS BUILDINGS ARE FINISHED).
2. INSTALL SILT FENCING	INSTALL SILT FENCING AROUND AREAS TO BE EXCAVATED.	MAINTAIN SILT FENCE AND REMOVE DEPOSITS OF SILT.
3. EXCAVATION FOR BUILDING, INSTALLATION OF UTILITIES AND FINISH GRADING.	DISTURBED AREAS ARE TO BE SEEDED AND MULCHED WITHIN 7 DAYS AREAS THAT ARE FINISH GRADED ARE TO BE SEEDED AND MULCHED WITHIN 48 HOURS.	DISTURBED AREAS ARE TO BE MAINTAINED UNTIL GRASS IS ESTABLISHED. (FENCE LOCATIONS TO BE MINIMIZED AS AREAS ARE COMPLETED AND GRASS IS ESTABLISHED)
4. BUILDING FOUNDATION EXCAVATION AND RE-GRADING IN CONSERVATION ZONES AND WETLAND BUFFERS	STOCKPILES SHALL BE LIMITED TO AREAS NOT INSIDE THE CONSERVATION ZONES OR WETLAND BUFFERS	DISTURBED AREAS ARE TO BE MAINTAINED UNTIL GRASS IS ESTABLISHED.

**WINTER GUIDELINES FOR EROSION PREVENTION & SEDIMENT CONTROL**

- ALL DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
- ALL SILT-FENCE OR OTHER PRACTICES REQUIRING EARTH DISTURBANCE SHALL BE IN PLACE PRIOR TO GROUND-FREEZING.
- WHEN MULCH IS REQUIRED FOR STABILIZATION DOUBLE THE STANDARD RATE SHALL BE APPLIED.
- TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
  - IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
  - DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
  - PERFORMING DRILLING AND BLASTING WHERE SITE IS IN A DEPRESSION AND STORMWATER IS TRAPPED.
- PRIOR TO STABILIZATION SNOW AND ICE MUST BE REMOVED TO DEPTH OF NO LESS THAN 1 IN.
- ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED WITHIN 48 HOURS OF BEING BROUGHT TO FINISH GRADE.
- DURING WINTER EROSION, MULCH SHALL BE APPLIED AT DOUBLE THE RATE OR NETTING OR OTHER APPROACH SHALL BE USED TO PREVENT REMOVAL BY WIND.
- ON SITE COORDINATOR MUST INSPECT THE SITE DAILY DURING ACTIVE EARTH WORK

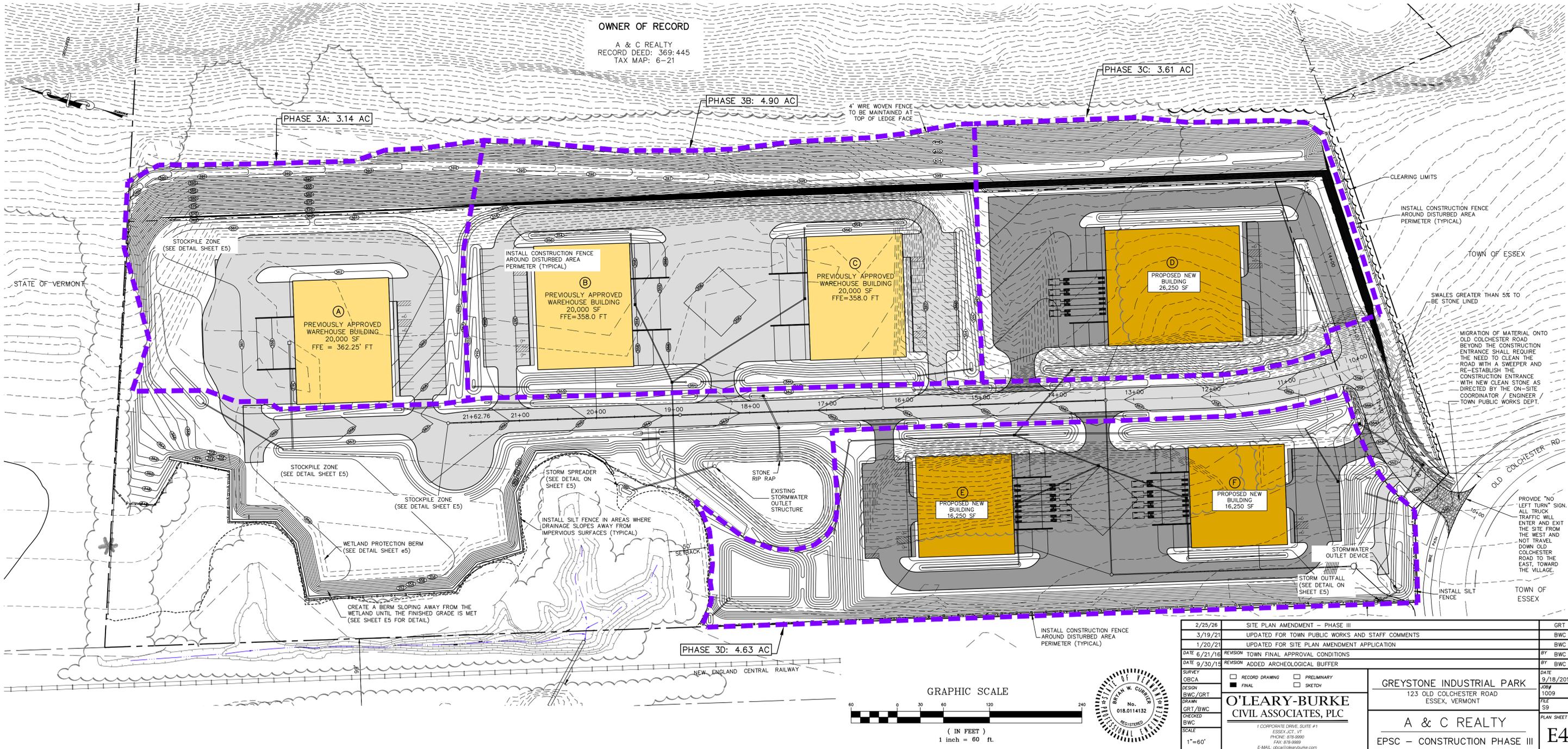
INSPECTION SCHEDULE	WEEKLY	AFTER EACH RAINFALL THAT GENERATES STORMWATER FROM SITE
INSPECT SILT FENCING	X	X
INSPECT CONSTRUCTION FENCE	X	X
INSPECT AREAS TEMPORARILY MULCHED	X	X
INSPECT TEMPORARY SOIL STOCKPILE	X	X
INSPECT STABILIZED CONSTRUCTION ENTRANCES	X	X
INSPECT AREAS THAT HAVE BEEN TOPSOILED & MULCHED	X	X
INSPECT STORMWATER PONDS AND SEDIMENT TRAPS	X	X

ON-SITE COORDINATOR:  
OMEGA EXCAVATION  
PHONE - (802) 862-0517

LEGEND	
	PROJECT BOUNDARY
	ZONING DISTRICT BOUNDARY
	EXISTING ROADWAY
	RAIL ROAD TRACK
	STREAM OR WATERCOURSE
	EXISTING TRAIL
	SOIL TYPE BOUNDARY
	SOIL TYPE
	CLEARING LIMITS
	EDGE OF PAVEMENT
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS
	SILT FENCE
	CONSTRUCTION FENCE

NOTE: IF WINTER CONSTRUCTION WILL OCCUR BETWEEN OCTOBER 15 AND APRIL 15 REFER TO THE WINTER EROSION CONTROL GUIDELINES FOR ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIREMENTS APPLYING TO ANY COMPONENT OF PROJECT AS OUTLINED ABOVE.

NOTE: PHASES 3A, 3B, 3C, AND 3D MAY BE CONSTRUCTED IN ANY ORDER PROVIDED NO MORE THAN 5.0 ACRES OF DISTURBANCE OCCURS AT ANY ONE TIME.



# POST-CONSTRUCTION SEQUENCING FOR EROSION PREVENTION & SEDIMENT CONTROL

## POST-CONSTRUCTION PHASE

FINAL INSPECTION OF THE EROSION CONTROL DEVICES TO BE REMOVED AFTER AREAS ARE STABILIZED

MAJOR CONSTRUCTION ITEM	EROSION CONTROL	MAINTENANCE
1. CHECK PERIMETER WHERE DELINEATION CONSTRUCTION LIMITS WERE PLACED.	IF PERIMETER IS STABILIZED AND GRASS IS ESTABLISHED, REMOVE FENCES	
2. DURING CONSTRUCTION, INFILTRATION BASINS AND SWALES WERE CONSTRUCTED FIRST AND SHOULD BE COMPLETELY STABILIZED BY NOW.	CHECK STORM SYSTEMS AND GRASSED SWALES BY ROADS TO MAKE SURE EVERYTHING IS STABILIZED. CHECK OVERALL SITE FOR ANY PROBLEM AREAS ENCOUNTERED DURING CONSTRUCTION AND OVERALL SITE.	SEED AND MULCH ANY DISTURBED AREAS.
3. CONDUCT A POST CONSTRUCTION INSPECTION OF THE DISCHARGE LOCATION LEADING TO THE WATERS OF THE STATE OF VERMONT.	TAKE PHOTOS AND NOTE FINAL INSPECTION IN EROSION CONTROL CONSTRUCTION BOOK	IF EVERYTHING IS STABLE, ALL DEMARCATION AND SILT FENCES SHALL BE REMOVED. THE CONSTRUCTION ENTRANCES SHALL BE TAKEN OUT IN PREPARATION FOR PAVING.
4. PERMANENT SEDIMENT BASINS	CLEAN OUT BASINS PRIOR TO STABILIZED AND PERMANENT USE	SEDIMENT BASINS SHOULD BE INSPECTED ANNUALLY AND CLEANED OUT IF NECESSARY

### GENERAL NOTES :

- THE PURPOSE OF THESE PLANS IS TO :
  - MINIMIZE THE AREA OF DISTURBED SOILS AND TO MINIMIZE THE DURATION THAT ANY AREAS ARE LEFT OPEN.
  - ISOLATE THE AREAS OF DISTURBANCE TO PREVENT AND CONTROL EROSION CAUSED BY RUN-OFF.
  - CONTROL THE AMOUNTS OF SEDIMENT THAT MAY RESULT FROM ANY SITE EROSION.
- A COPY OF THE CONSTRUCTION GENERAL PERMIT AND A SET OF THE PLANS WILL BE AVAILABLE ON-SITE.
- THE ON-SITE PLAN COORDINATOR IS AS SHOWN ON THIS PLAN.
- THE ON-SITE COORDINATOR SHALL INSPECT AND KEEP A WRITTEN RECORD OF THE EROSION AND SEDIMENT CONTROL STRUCTURES AND MEASURES AT A MINIMUM OF ONCE A WEEK AND ALSO WITHIN 24 HOURS OF ANY STORM EVENT THAT DISCHARGES RUN-OFF FROM THE SITE.
- THE ON-SITE COORDINATOR SHALL KEEP A WRITTEN RECORD OF EROSION CONTROL INSPECTIONS AND ANY MONITORING DATA FOR A MINIMUM OF THREE (3) YEARS FOLLOWING COMPLETION OF CONSTRUCTION.
- REFER TO PLAN SHEETS EC1 THROUGH EC3 FOR ALL EROSION CONTROL PLANS AND SPECIFICATIONS.

INSPECTION SCHEDULE	WEEKLY	AFTER EACH RAINFALL THAT GENERATES STORMWATER FROM SITE
INSPECT SILT FENCING	X	X
INSPECT CONSTRUCTION FENCE	X	X
INSPECT AREAS TEMPORARILY MULCHED	X	X
INSPECT TEMPORARY SOIL STOCKPILE	X	X
INSPECT STABILIZED CONSTRUCTION ENTRANCES	X	X
INSPECT AREAS THAT HAVE BEEN TOPSOILED & MULCHED	X	X
INSPECT STORMWATER PONDS AND SEDIMENT TRAPS	X	X

NOTE: IF WINTER CONSTRUCTION WILL OCCUR BETWEEN OCTOBER 15 AND APRIL 15 REFER TO THE WINTER EROSION CONTROL GUIDELINES FOR ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIREMENTS APPLYING TO ANY COMPONENT OF PROJECT AS OUTLINED ABOVE.

ON-SITE COORDINATOR:  
OMEGA EXCAVATION  
PHONE - (802) 862-0517

### LEGEND

	PROJECT BOUNDARY
	ZONING DISTRICT BOUNDARY
	EXISTING ROADWAY
	RAIL ROAD TRACK
	STREAM OR WATERCOURSE
	EXISTING TRAIL
	SOIL TYPE BOUNDARY
	SOIL TYPE
	CLEARING LIMITS
	EDGE OF PAVEMENT
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS
	SILT FENCE
	CONSTRUCTION FENCE

## STABILIZATION PLAN

THE PURPOSE OF THE EROSION AND SEDIMENT STABILIZATION PLAN IS TO COMPLY WITH STATE & FEDERAL REGULATIONS DEALING WITH THE CONTROL OF NONPOINT SOURCE (NPS) POLLUTION. THE PLAN CONTAINS A SERIES OF BEST MANAGEMENT PRACTICES (BMPs) DESIGNED TO MINIMIZE POLLUTION RESULTING OF STORMWATER RUNOFF AND OFF-SITE SEDIMENT DEPOSITION DURING LAND DISTURBANCE ACTIVITIES.

TO MINIMIZE THE POTENTIAL FOR EROSION CONSTRUCTION HAS BEEN BROKEN DOWN INTO FOUR PHASES. THE PROPOSED PLAN SEEKS TO MINIMIZE THE AREA DISTURBED AT ANY ONE TIME AND LIMIT THE AMOUNT OF TIME THE DISTURBED PORTIONS REMAIN EXPOSED BY REQUIRING FREQUENT (WEEKLY) TEMPORARY SEEDING AND/OR MULCHING AND BY REQUIRING THAT SURFACES BROUGHT TO FINISH GRADE BE TOPSOILED AND SEEDED WITHIN 48 HOURS.

AN URBAN TYPE GRASS MIXTURE SHALL BE USED FOR ALL PERMANENT SEEDING & MULCHING CONSISTING OF 38% KENTUCKY BLUEGRASS, 38% CREEPING RED FESCUE, AND 26% ANNUAL RYEGRASS. FOR WINTER CONSTRUCTION THE GRASS MIXTURE SHALL BE PLACED AT A RATE OF 240# PER ACRE.

FERTILIZER SHALL BE PLACED AT A RATE OF 1 TO 2 TONS PER ACRE. WHERE SPECIFIED, AN EROSION CONTROL BLANKET SHALL BE USED. THE CONTRACTOR SHALL FOLLOW THE MANUFACTURERS RECOMMENDATION FOR PROPER OVERLAP AND FASTENER PLACEMENT. IN ADDITION, THE CONTRACTOR SHALL REPLACE ANY MULCH LOST TO WINDTHROW ON A WEEKLY BASIS.

ALL NON-IMPERVIOUS SURFACES SHALL BE TOPSOILED, SEEDED AND MULCHED WITHIN 48 HOURS OF ESTABLISHING FINISH GRADE. THE CONTRACTOR SHALL INSPECT ALL SILT FENCING, STONE CHECK DAMS, STABILIZED CONSTRUCTION ENTRANCES AND STORM POND DETENTION AREAS ON A DAILY BASIS AND IMMEDIATELY FOLLOWING ANY RAINSTORM EVENT THAT GENERATES STORMWATER LEAVING THE SITE.

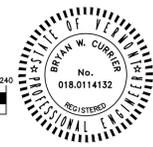
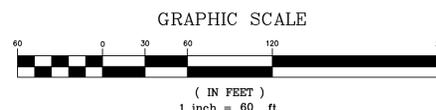
CONSTRUCTION ON THE NEXT SUBSEQUENT PHASE SHALL NOT OCCUR UNTIL THE PREVIOUS PHASE HAS BEEN COMPLETED WITH ALL STORMWATER AND EROSION AND SEDIMENT CONTROL DEVICES IN PLACE HAVING BEEN PERMANENTLY SEEDED AND MULCHED.

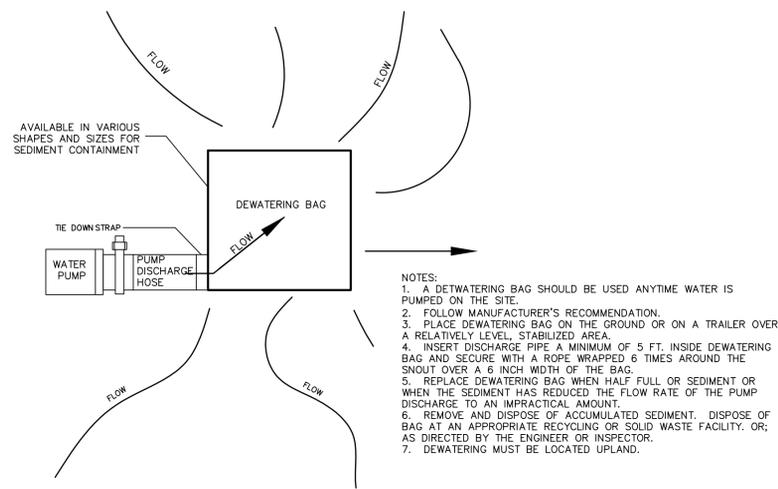


DATE 2/25/26	REVISION SITE PLAN AMENDMENT - PHASE III	BY GR
DATE 6/21/16	REVISION TOWN FINAL APPROVAL CONDITIONS	BY BWC
DATE 9/30/15	REVISION ADDED ARCHEOLOGICAL BUFFER	DATE 9/18/2014
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY	DATE 10/09
OBCA	<input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH	FILE S9
DESIGN BWC/GR		PLAN SHEET #
DRAWN BWC		<b>E5</b>
CHECKED BWC		
SCALE 1"=60'		

GREYSTONE INDUSTRIAL PARK  
123 OLD COLCHESTER ROAD  
ESSEX, VERMONT

A & C REALTY  
EPSC - POST CONSTRUCTION

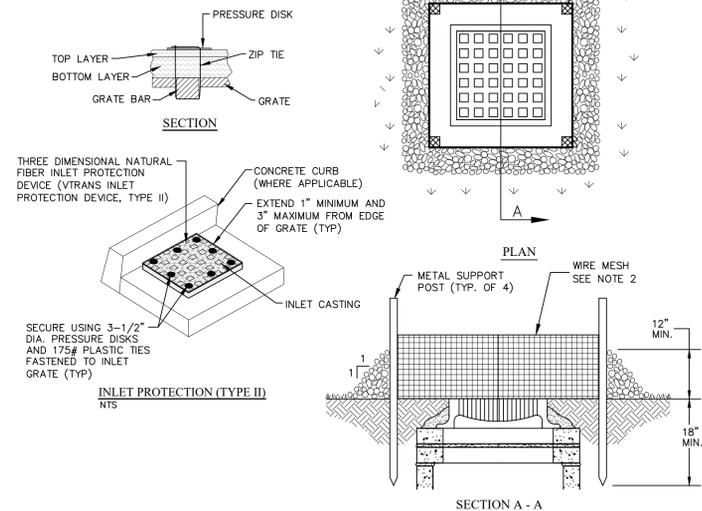




### DEWATERING BAG DETAIL

NTS

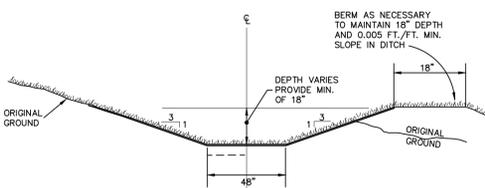
- NOTES:
1. A DEWATERING BAG SHOULD BE USED ANYTIME WATER IS PUMPED ON THE SITE.
  2. FOLLOW MANUFACTURER'S RECOMMENDATION.
  3. PLACE DEWATERING BAG ON THE GROUND OR ON A TRAILER OVER A RELATIVELY LEVEL, STABILIZED AREA.
  4. INSERT DISCHARGE PIPE A MINIMUM OF 5 FT. INSIDE DEWATERING BAG AND SECURE WITH A ROPE WRAPPED 6 TIMES AROUND THE SNOUT OVER A 6 INCH WIDTH OF THE BAG.
  5. REPLACE DEWATERING BAG WHEN HALF FULL OR SEDIMENT OR WHEN THE SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL AMOUNT.
  6. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT. DISPOSE OF BAG AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY, OR, AS DIRECTED BY THE ENGINEER OR INSPECTOR.
  7. DEWATERING MUST BE LOCATED UPLAND.



- NOTES:
1. THE CONTRACTOR SHALL MAINTAIN THE ROCK BARRIER INLET PROTECTION THROUGHOUT CONSTRUCTION. THE ROCK BARRIERS SHALL BE MAINTAINED AFTER EACH STORM EVENT. ANY DAMAGE OR EROSION SHALL BE REPAIRED IMMEDIATELY.
  2. WIRE MESH WITH 1/2" MAXIMUM OPENINGS. SECURE MESH TIGHTLY TO METAL POSTS BEFORE PLACEMENT OF CRUSHED STONE.
  3. CONCRETE CINDER BLOCKS SHALL BE PLACED AROUND THE DRAIN AREA SUCH THAT OPEN AREAS OF BLOCKS ALLOW FLOW TO GRATE. WIRE MESH WITH 1/2" MAXIMUM OPENINGS SHALL BE PLACED AROUND THE CONCRETE BLOCKS TO PREVENT CRUSHED STONE FROM WASHING INTO STRUCTURE.
  4. THE CONTRACTOR SHALL MAINTAIN ALL INLET PROTECTION DEVICES THROUGH THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT AND CONSTRUCTION DEBRIS FROM ALL CATCH BASINS WITHIN THE AREAS OF CONSTRUCTION.

### DRAINAGE INLET PROTECTION DETAIL

NTS



### TEMPORARY PERIMETER SWALE

NTS

1. ALL TEMPORARY PERIMETER SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPED EROSION.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE FLOW CHANNEL STABILIZATION CHART BELOW.

TYPE OF TREATMENT	CHANNEL GRADE (A IS AC OR LESS)	B (5 AC-10AC)
1	0.5-3.0%	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH
3	5.1-8.0%	SEED AND COVER WITH RECP LINED W/ 4-8" RIP-RAP OR GEOTEXTILE
4	8.1-20%	LINED W/ 4-8" RIP-RAP ENGINEERED DESIGN

DOZER TRENDS TO CREATE GROOVES PERPENDICULAR TO SLOPE DIRECTION TO MINIMIZE RUNOFF VELOCITIES.

### SLOPE STABILIZATION

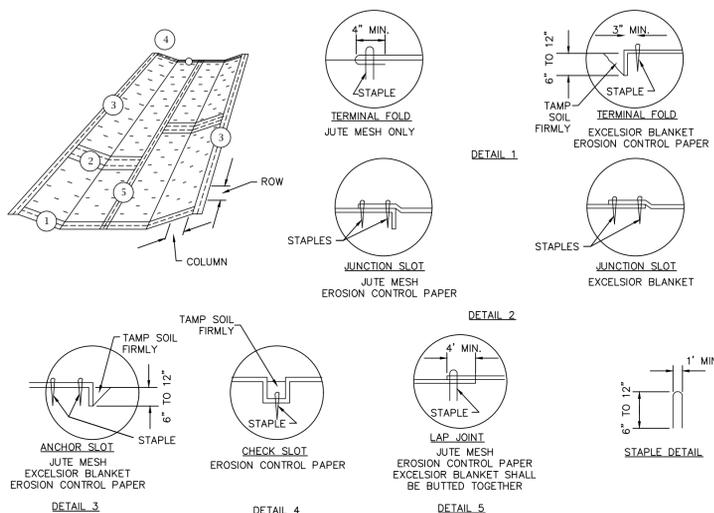
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### LANDSCAPING SPECIFICATIONS

FINISHED AREAS ARE TO BE SEEDED AND MULCHED WITHIN 48 HOURS OF TOPSOILING. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 4" OF TOPSOIL AND BE SEEDED, FERTILIZED, LIMED, AND MULCHED IN ACCORDANCE WITH THE FOLLOWING:

1. A SOIL TEST SHALL BE TAKEN BEFORE SOIL ADDITIVES ARE USED.
2. SEED MIXTURE IN ALL AREAS SHALL BE URBAN MIX CONFORMING TO THE TABLE SHOWN ON THE PLANS. IF PLANTED IN LATE FALL OR EARLY WINTER, THEN SEED CERTIFIED 'AROSTOOK' WINTER RYE OR APPROVED EQUAL SHOULD BE USED AT 90 LBS PER ACRE.
3. FERTILIZER SHALL BE STANDARD COMMERCIAL GRADE CONFORMING TO THE STATE FERTILIZER LAW AND TO THE STANDARDS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS. DRY FERTILIZER, IF USED, SHALL BE APPLIED AT THE RATE RECOMMENDED BY THE SOIL TEST. LIQUID FERTILIZER, IF USED, SHALL BE APPLIED AT A RATE RECOMMENDED BY THE SOIL TEST.
4. LIMESTONE SHALL CONFORM TO ALL STATE AND FEDERAL REGULATIONS AND TO THE STANDARDS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS. THE LIMESTONE SHALL BE APPLIED AT A RATE CONSISTANT WITH THE RECOMMENDATIONS OF THE SOIL TEST.
5. WITHIN 24 HOURS OF APPLICATION OF FERTILIZER, LIME, AND SEED, THE SURFACE SHALL BE MULCHED WITH A HAY MULCH. MULCH SHALL BE SPREAD UNIFORMLY OVER THE AREA AT A RATE OF TWO TONS PER ACRE OR AT A RATE THAT IS SUFFICIENT TO ENSURE ADEQUATE COVERAGE.

URBAN MIX GRASS SEED		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
37.5	45	CREeping RED FESCUE
31.25	37.5	KENTUCKY BLUEGRASS
31.25	37.5	WINTER HARDY, PERENNIAL RYE
100	120 # LIVE SEED PER ACRE	

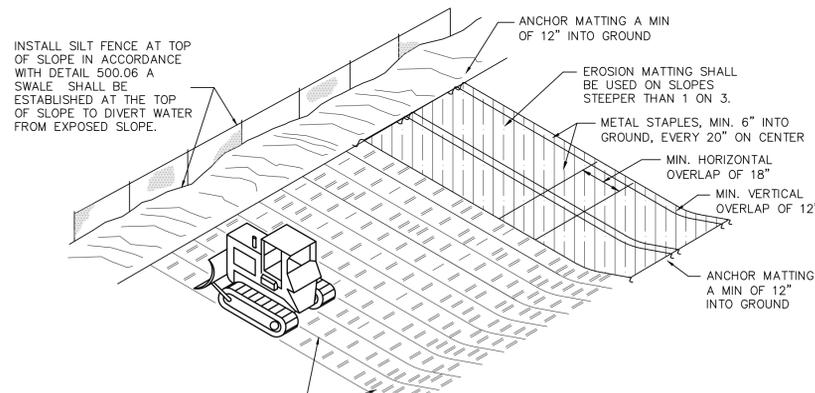


### CONSTRUCTION SPECIFICATIONS

1. SPACING: INSTALL RECP EVERY 50' ON SLOPES MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. STAPLES ARE TO BE PLACED ALTERNATELY IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
3. DISTURBED AREA SHALL BE SMOOTHLY GRADED TO ENSURE CLOSE CONTACT BETWEEN RECP AND GROUND.
4. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

### SWALE EROSION CONTROL DETAIL

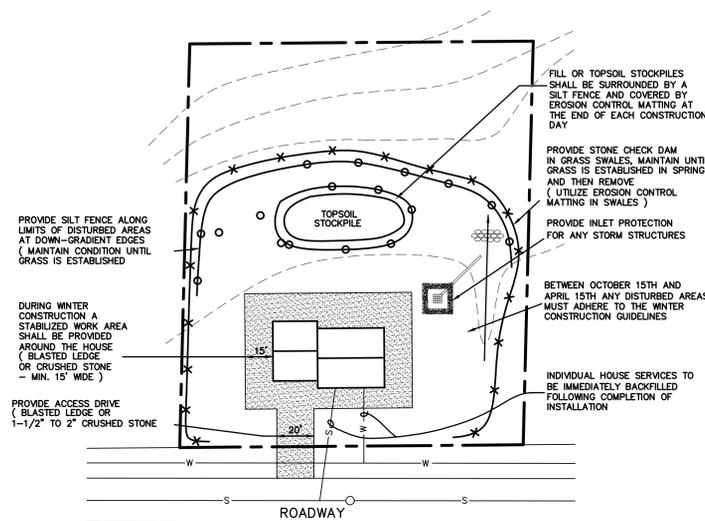
NTS



ON-SITE COORDINATOR:  
OMEGA EXCAVATION  
PHONE - (802) 862-0517

### INDIVIDUAL LOT EROSION AND SEDIMENT CONTROL (FOR WINTER CONSTRUCTION)

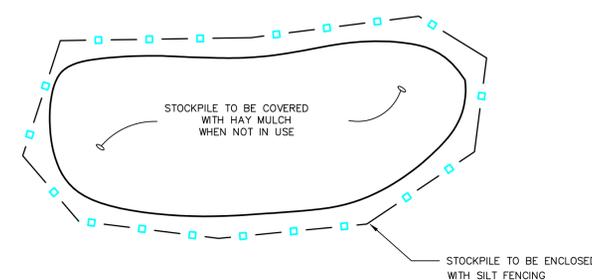
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- PROVIDE SILT FENCE ALONG LIMITS OF DISTURBED AREAS AT DOWN-GRADE EDGES ( MAINTAIN CONDITION UNTIL GRASS IS ESTABLISHED )
- DURING WINTER CONSTRUCTION A STABILIZED WORK AREA SHALL BE PROVIDED AROUND THE HOUSE ( BLASTED LEDGE OR CRUSHED STONE - MIN. 15' WIDE )
- PROVIDE ACCESS DRIVE ( BLASTED LEDGE OR 1-1/2" TO 2" CRUSHED STONE )
- FILL OR TOPSOIL STOCKPILES SHALL BE SURROUNDED BY A SILT FENCE AND COVERED BY EROSION CONTROL MATTING AT THE END OF EACH CONSTRUCTION DAY
- PROVIDE STONE CHECK DAM IN GRASS SWALES. MAINTAIN UNTIL GRASS IS ESTABLISHED IN SPRING AND THEN REMOVE ( UTILIZE EROSION CONTROL MATTING IN SWALES )
- PROVIDE INLET PROTECTION FOR ANY STORM STRUCTURES
- BETWEEN OCTOBER 15TH AND APRIL 15TH ANY DISTURBED AREAS MUST ADHERE TO THE WINTER CONSTRUCTION GUIDELINES
- INDIVIDUAL HOUSE SERVICES TO BE IMMEDIATELY BACKFILLED FOLLOWING COMPLETION OF INSTALLATION

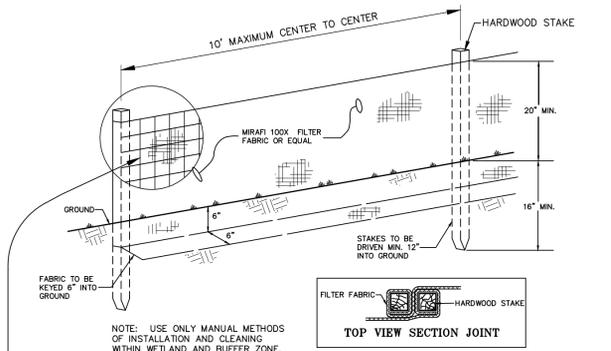
### STABILIZED CONSTRUCTION ENTRANCE

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### TEMPORARY FILL MATERIAL STOCKPILE

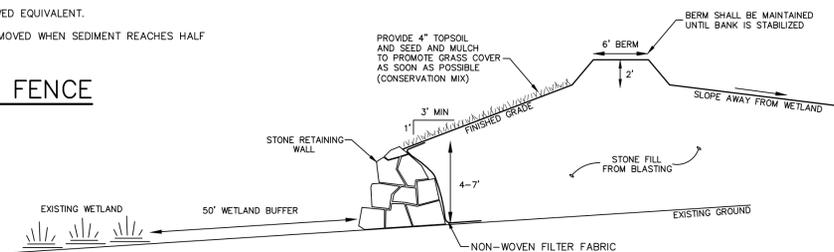
NTS



- NOTE: USE ONLY MANUAL METHODS OF INSTALLATION AND CLEANING WITHIN WETLAND AND BUFFER ZONE.
1. WHERE SILT FENCE IS WITHIN 100' UPSLOPE OF RECEIVING WATERS, ADDITIONAL WOVEN WIRE FENCE SHALL BE SECURELY FASTENED TO FENCE POSTS WITH WIRE TIES.
  2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
  3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
  4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVROFENCE OR APPROVED EQUIVALENT.
  5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

### TEMPORARY SILT FENCE

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### WETLAND PROTECTION BERM

NTS

SEE ALSO FLOW CHART FIGURES 3.1, 3.2, AND 3.3 OF VT STANDARDS AND SPECS FOR EPSC SELECTIONS FOR RUNOFF CONTROL, SOIL STABILIZATION, AND SEDIMENT CONTROL

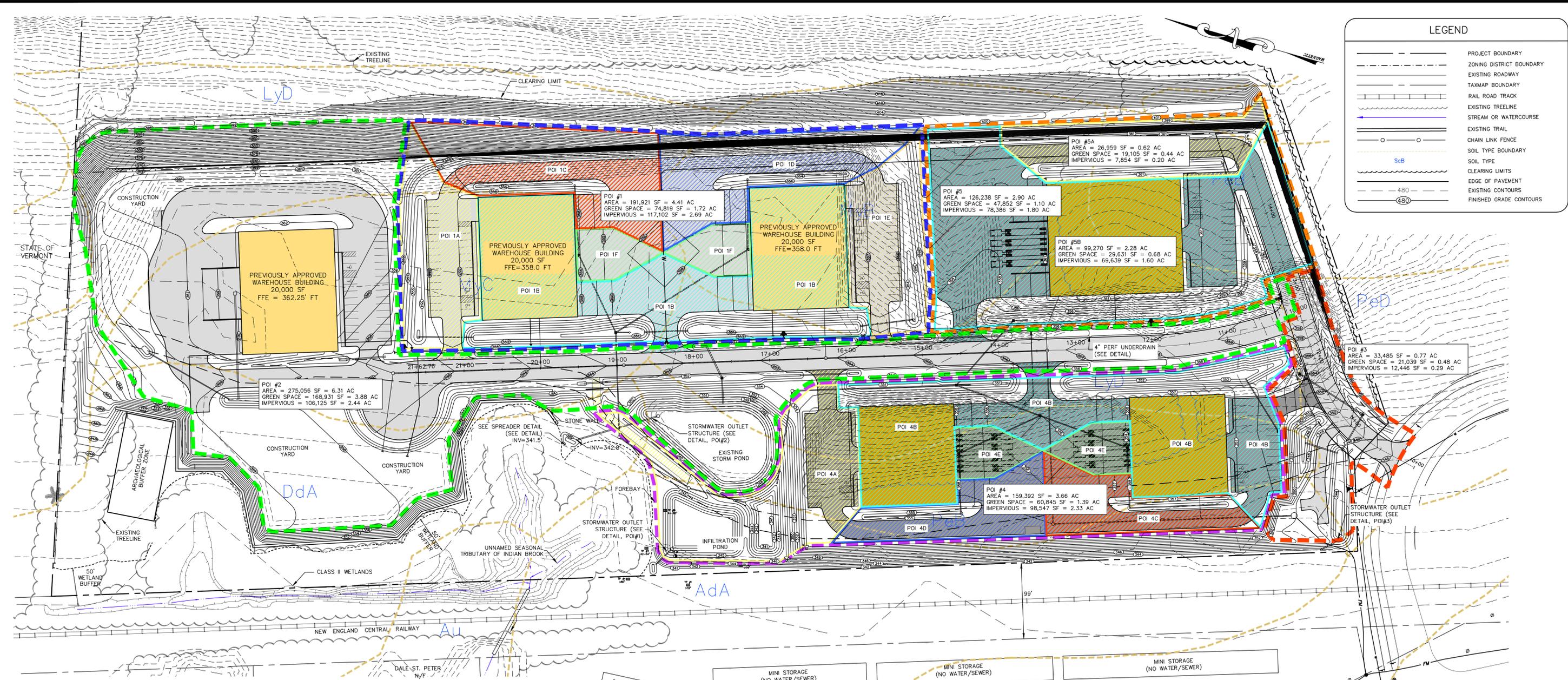


DATE 2/10/26	REVISION SITE PLAN AMENDMENT - PHASE III	BY GR
DATE 6/21/16	REVISION TOWN FINAL APPROVAL CONDITIONS	BY BWC
DATE 9/30/15	REVISION ADDED ARCHEOLOGICAL BUFFER	DATE 9/18/2014
SURVEY	RECORD DRAWING	BY BWC
DESIGN	PRELIMINARY	DATE 10/9
DRAWN	SKETCH	FILE 1009
GRT/BWC		FILE 59
CHECKED		PLAN SHEET #
BWC		E6
SCALE 1"=60'		

O'LEARY-BURKE  
CIVIL ASSOCIATES, PLC

GREYSTONE INDUSTRIAL PARK  
123 OLD COLCHESTER ROAD  
ESSEX, VERMONT

A & C REALTY  
EPSC DETAILS



LEGEND	
	PROJECT BOUNDARY
	ZONING DISTRICT BOUNDARY
	EXISTING ROADWAY
	TAXMAP BOUNDARY
	RAIL ROAD TRACK
	EXISTING TREELINE
	STREAM OR WATERCOURSE
	EXISTING TRAIL
	CHAIN LINK FENCE
	SOIL TYPE BOUNDARY
	SOIL TYPE
	CLEARING LIMITS
	EDGE OF PAVEMENT
	EXISTING CONTOURS
	FINISHED GRADE CONTOURS

POI #1 Coverage Area	
TOTAL POI #1 COVERAGE:	
DRAINAGE AREA = 4.43 ACRES (192,754 SF)	PROPOSED COVERAGE = 2.68 ACRES (116,884 SF)
DRAINAGE AREA 'POI 1A'	
AREA = 22,863 SF (0.52 ACRES)	GREEN SPACE = 11,724 SF (HSG C)
PROPOSED COVERAGE - 11,139 SF (0.26 ACRES)	
DRAINAGE AREA 'POI 1B'	
AREA = 72,063 SF (1.65 ACRES)	GREEN SPACE = 17,347 SF (HSG C)
PROPOSED COVERAGE - 54,716 SF (1.26 ACRES)	
DRAINAGE AREA 'POI 1C'	
AREA = 32,244 SF (0.74 ACRES)	GREEN SPACE = 11,724 SF (HSG D)
PROPOSED COVERAGE - 14,417 SF (0.33 ACRES)	
DRAINAGE AREA 'POI 1D'	
AREA = 27,698 SF (0.64 ACRES)	HSG = C
PROPOSED COVERAGE - 14,416 SF (0.33 ACRES)	
DRAINAGE AREA 'POI 1E'	
AREA = 26,657 SF (0.61 ACRES)	HSG = C
PROPOSED COVERAGE - 11,140 SF (0.26 ACRES)	
DRAINAGE AREA 'POI 1F'	
AREA = 11,055 SF (0.25 ACRES)	HSG = C
PROPOSED COVERAGE - 11,055 SF (0.25 ACRES)	

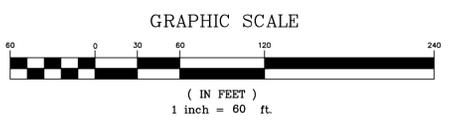
POI #4 Coverage Area	
TOTAL POI #4 COVERAGE:	
DRAINAGE AREA = 3.66 ACRES (159,392 SF)	PROPOSED COVERAGE = 2.33 ACRES (98,547 SF)
DRAINAGE AREA 'POI 4A'	
AREA = 39,377 SF (0.90 ACRES)	GREEN SPACE = 27,006 SF (HSG C)
PROPOSED COVERAGE - 12,690 SF (0.29 ACRES)	
DRAINAGE AREA 'POI 4B'	
AREA = 72,694 SF (1.67 ACRES)	GREEN SPACE = 21,524 SF (HSG D)
PROPOSED COVERAGE - 51,489 SF (1.18 ACRES)	
DRAINAGE AREA 'POI 4C'	
AREA = 18,308 SF (0.42 ACRES)	GREEN SPACE = 6,202 SF (HSG A)
PROPOSED COVERAGE - 12,425 SF (0.29 ACRES)	
DRAINAGE AREA 'POI 4D'	
AREA = 18,243 SF (0.42 ACRES)	GREEN SPACE = 6,112 SF (HSG C)
PROPOSED COVERAGE - 12,450 SF (0.29 ACRES)	
DRAINAGE AREA 'POI 4E'	
AREA = 10,955 SF (0.25 ACRES)	HSG = C
PROPOSED COVERAGE - 10,955 SF (0.25 ACRES)	

Point-of-Interests	
DRAINAGE AREA 'POI 1'	
AREA = 194,265 SF (4.46 ACRES)	GREEN SPACE = 76,979 SF (1.77 ACRES)
PROPOSED COVERAGE - 116,884 SF (2.69 ACRES)	
DRAINAGE AREA 'POI 2'	
AREA = 275,056 SF (6.31 ACRES)	GREEN SPACE = 168,931 SF (3.88 ACRES)
PROPOSED COVERAGE - 106,125 SF (2.44 ACRES)	
DRAINAGE AREA 'POI 3'	
AREA = 33,485 SF (0.77 ACRES)	GREEN SPACE = 21,039 SF (0.48 ACRES)
PROPOSED COVERAGE - 12,446 SF (0.29 ACRES)	
DRAINAGE AREA 'POI 4'	
AREA = 159,392 SF (3.66 ACRES)	GREEN SPACE = 60,845 SF (1.39 ACRES)
PROPOSED COVERAGE - 98,547 SF (2.33 ACRES)	
DRAINAGE AREA 'POI 5'	
AREA = 124,058 SF (2.85 ACRES)	GREEN SPACE = 45,672 SF (1.05 ACRES)
PROPOSED COVERAGE - 78,386 SF (1.80 ACRES)	

SOIL TEST PIT DESCRIPTIONS		
TEST PIT NUMBER	DEPTH (DEPTH IN INCHES)	SOIL TYPE
TEST PIT #1	0 - 15' 15 - 37' 37 - 49' 49 - 79'	DARK BROWN LOAM (FROZEN) REDDISH BROWN LOAMY SAND LIGHT BROWN FINE SAND LIGHT BROWN SINGLE GRAIN SAND NO LEDGE, WATER OR REDDIMORPHIC FEATURES TO DEPTH.
TEST PIT #2	0 - 10' 10 - 21' 21 - 42' 42 - 49' 49 - 79'	DARK BROWN LOAM (FROZEN) REDDISH BROWN LOAMY SAND LIGHT BROWN FINE SAND LIGHT BROWN VERY FINE SAND LIGHT BROWN SINGLE GRAIN SAND NO LEDGE, WATER OR REDDIMORPHIC FEATURES TO DEPTH.
TEST PIT #3	0 - 9' 9 - 26' 26 - 42' 42 - 54' 54 - 84'	DARK BROWN LOAM (FROZEN) REDDISH BROWN LOAMY SAND BROWN SAND GRAY VERY FINE SAND, REDOX (TEXTURAL) BROWN SINGLE GRAIN SAND, NO REDOX. NO LEDGE OR WATER, REDDIMORPHIC FEATURES (FE+) WITHIN 42 - 54' TEXTURAL CHANGE.
TEST PIT #4	0 - 11' 11 - 19' 19 - 45' 45 - 60'	DARK BROWN LOAM (FROZEN) REDDISH BROWN LOAMY SAND LIGHT BROWN SAND LIGHT BROWN SINGLE GRAIN SAND NO LEDGE, WATER OR REDDIMORPHIC FEATURES TO DEPTH.
TEST PIT #5	0 - 9' 9 - 19' 19 - 30' 30 - 74'	DARK BROWN LOAM (FROZEN) REDDISH BROWN LOAMY SAND BROWN FINE SAND LIGHT BROWN SINGLE GRAIN SAND NO LEDGE, WATER OR REDDIMORPHIC FEATURES TO DEPTH.
TEST PIT #6	0 - 5' 5 - 21' 21 - 44' 44 - 65' 65 - 79'	DARK BROWN LOAM REDDISH BROWN LOAMY SAND BROWN FINE SAND BROWN SINGLE GRAIN FINE SAND OLIVE GRAY SILT NO LEDGE, WATER AT 60'; REDDIMORPHIC FEATURES AT 44' +.
TEST PIT #7	0 - 11' 11 - 40' 40 - 49'	REDDISH BROWN LOAMY SAND BROWN SINGLE GRAIN SAND OLIVE GRAY SILT NO LEDGE, WATER AT 62'; REDDIMORPHIC FEATURES AT 40' +.

SUMMARY OF SOIL TEST PIT LOGS			
BACKHOE TEST PITS 1-7 LOGGED BY DAVID W. BURKE ON 1/31/14 WITH BILL ZABLOSKI (1-4 ONLY)			
TEST PIT NUMBER	EXISTING GROUNDWATER (DEPTH IN INCHES)	REDDIMORPHIC FEATURES (DEPTH IN INCHES)	EXISTING LEDGE (DEPTH IN INCHES)
1	> 79	> 79	> 79
2	> 70	> 70	> 70
3	> 84	42-54	> 84
4	> 80	> 80	> 80
5	> 74	> 74	> 74
6	60	44-62	> 79
7	62	40-62	> 62

INFILTRATION TEST RESULTS		
TEST PERFORMED ON 11/24/20 BY GRT		
TEST NUMBER	TEST DEPTH (INCHES)	INFILTRATION RATE (INCH/HOUR)
PT 1	36	6.06



DATE: 2/25/26	REVISION: SITE PLAN AMENDMENT - PHASE III	BY: GRT
DATE: 6/18/21	REVISION: REVISED BASED ON STATE STORMWATER REVIEW	BY: BWC
DATE: 3/19/21	REVISION: UPDATED FOR TOWN PUBLIC WORKS AND STAFF COMMENTS	DATE: 1/20/21
SURVEY: OBCA	DESIGN: GRT/BWC	DRAWN: GRT/BWC
CHECKED: BWC	SCALE: 1"=60'	FILE: S9
		<b>O'LEARY-BURKE CIVIL ASSOCIATES, PLC</b> 13 CORPORATE DRIVE ESSEX, VT 05730 PHONE: 878-9589 FAX: 878-9589 E-MAIL: ocbca@olearyburke.com
<b>GREYSTONE INDUSTRIAL PARK</b> 123 OLD COLCHESTER ROAD ESSEX, VERMONT		<b>A &amp; C REALTY</b> <b>STORM MANAGEMENT</b> <b>ST1</b>

# STORM SYSTEM MAINTENANCE

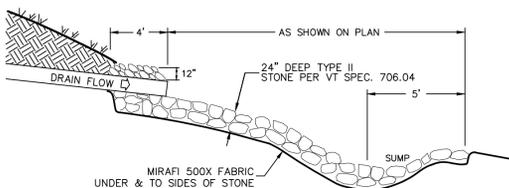
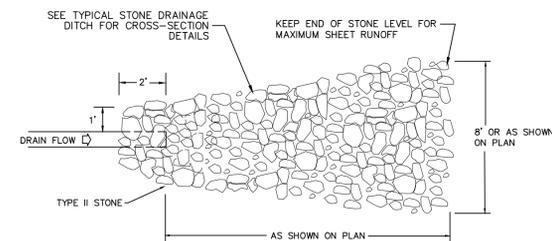
## MAINTENANCE PLAN

SYSTEM MAINTENANCE IS IMPORTANT FOR TREATMENT AND CONTROL OF STORM RUNOFF FROM THE IMPERVIOUS SURFACES (ROAD, PARKING, AND WALKWAY). THE FOLLOWING ELEMENTS FORM THE MINIMUM REQUIREMENTS:

1. THE OWNER (OR REPRESENTATIVE) SHALL PERFORM INSPECTIONS BI-ANNUALLY AND FOLLOWING SIGNIFICANT (LARGE) STORM EVENTS. THE FOLLOWING ITEMS SHALL BE REVIEWED: CONDITION OF THE VEGETATION, CONDITION OF THE DITCH SURFACES, DEPTH OF ACCUMULATED SEDIMENT (IF ANY), THE PRESENCE OF EROSION (IF ANY), CONDITION OF THE STORM PIPES, AND THE CONDITION OF THE PIPE INLETS AND OUTLETS. ANY OBSERVABLE DEGRADATION OF THE STORM SYSTEM SHALL BE NOTED.

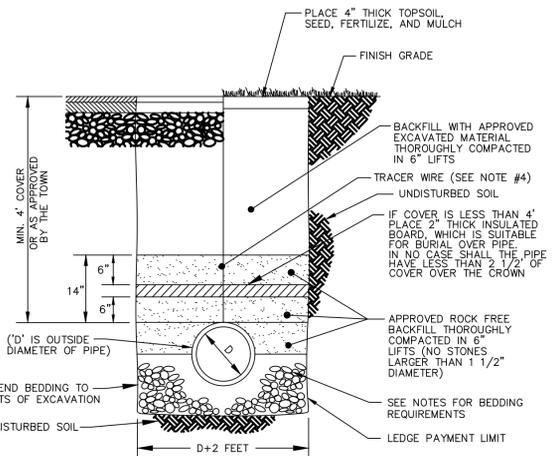
2. THE OWNER (OR REPRESENTATIVE) SHALL COMPLETE REPAIR OF ANY ITEMS, AS REQUIRED TO MAINTAIN OPTIMAL SYSTEM OPERATION. AT A MINIMUM, THE FOLLOWING ITEMS SHALL BE INCLUDED:

- A. ANY EROSION GULLIES 6 INCHES OR DEEPER SHALL BE FILLED AND VEGETATION ESTABLISHED IN THE DISTURBED AREA.
- B. SEDIMENT ACCUMULATED TO A DEPTH OF MORE THAN 6 INCHES IN THE ROAD DITCHES SHALL BE REMOVED AND DISPOSED OF IN AN UPLAND AREA THAT IS NOT WITHIN 100 FEET OF WATERS OF THE STATE. VEGETATION SHALL BE ESTABLISHED IN ALL DISTURBED AREAS.
- C. VEGETATION SHALL BE ESTABLISHED AS NEEDED, IN AREAS OF BARE SOIL. THIS IS PARTICULARLY IMPORTANT IN FLOW AREAS WHERE VEGETATION PROVIDES SEDIMENT REMOVAL.
- D. SILT FENCES SHALL BE USED IF NEEDED TO PREVENT EROSION AND AID IN THE ESTABLISHMENT OF VEGETATION. THESE TEMPORARY MEASURES SHALL BE REMOVED AFTER THE SITE IS STABILIZED AND THE RISK OF EROSION IS REDUCED.
- E. THE GRASSED AREAS SHALL BE MOWED AS NEEDED TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION.



## STORM OUTFALL DETAIL

NTS



1. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE TRENCHES ENTIRELY FREE OF WATER UNTIL ALL WORK IS FINISHED AND READY FOR BACKFILLING.
2. THE SIDES OF THE TRENCHES 4 FEET OR MORE IN DEPTH TO BE ENTERED BY PERSONNEL SHALL BE SHEETED, SLOPED, OR PROPERLY SUPPORTED, CONFORMING TO VOSHA REQUIREMENTS.
3. PIPE BEDDING SHALL BE CRUSHED STONE, FROM 6" BELOW THE INVERT, TO THE HALF THE DIAMETER OF THE PIPE.
4. ALONG ACCESS ROADWAY, INSTALL A CONTINUOUS SHEATHED SOLID CONDUCTOR COPPER TRACER WIRE OVER PIPE. THE WIRE SHALL BEGIN INSIDE ONE CATCH BASIN OR MANHOLE AND RUN TO THE NEXT CATCH BASIN OR MANHOLE. INSIDE THE BASINS AND/OR MANHOLES, A COIL OF WIRE LONG ENOUGH TO REACH THE COVER SHALL BE ATTACHED TO THE INSIDE OF THE STRUCTURE. SEE DETAILS 200.01 - 200.03.

## STORM DRAIN TRENCH

NTS

