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www.kas-consulting.com

802 383.0486 p 802 383.0490 f February 15, 2018

Mr. Matt Becker Waste Management Division Vermont Department of Environmental Conservation 1 National Life Drive - Davis 1 Montpelier, VT 05620-3704

RE: Corrective Action Plan Addendum – Northern Waterfront Parcel, Penny Lane, Burlington, Vermont, SMS #2005-3357 & 90-0540

Dear Mr. Becker:

The following has been prepared as an addendum to the approved Corrective Action Plan (CAP) dated August 24, 2011 for the Waterfront North property located near Penny Lane in Burlington, Vermont. This addendum addresses lands located within Tax Map parcel #043-4-004 and lot #043-4-004 along the northern waterfront in the City of Burlington, Vermont (property; see attached Site Location Map). The property consists of areas of land within parcel #043-4-004 and the areas are positioned between buildings and portions of Penny Lane (See attached Site Plan).

Final redevelopment plans are in place for the property. These plans consist of replacing two existing parking lot areas and installing permeable asphalt/surfaces, removing trees and re-landscaping green space along the waterfront, installing subsurface utilities between the City of Burlington Water Department and US Coast Guard buildings, removing the existing pavilion located to the west of the City of Burlington Water Department and installing an electric transformer and underground storage tank in the vicinity of the removed pavilion. The planned depths of excavation to conduct these redevelopment activities range from surface grade up to approximately 10 feet below grade (fbg).

The planned redevelopment is scheduled to begin in early spring 2018. Based on the soil testing results from the Phase II Environmental Site Assessment completed by KAS, Inc. in February 2016 which showed concentrations of polycyclic aromatic hydrocarbons (PAHs) and metals in soils planned to be disturbed as part of the redevelopment to be below urban background levels, the soils beneath the property will be managed as Class A or B (PID readings < 10 parts per million by volume (ppmv)) and Class C or D (PID readings > 10 ppmv) soils in accordance with the soil management procedures outlined in Section 6.4 of the approved CAP and



Mr. Matt Becker February 15, 2018 Page 2

Addendum #1 dated March 27, 2014. More specifically, all soils handled and stockpiled as part of the construction activities will be screened on site by an environmental professional using a properly calibrated photoionization detector (PID) during the development and construction activities. anticipated soils excavated and graded within the waterfront north park area shown on the attached Sheet C2.3 will remain within this area and not be stockpiled. Soils generated from the other project areas will be temporarily staged on plastic sheeting so as to not mix with the underlying material and placed north of the eastern parking lot area (see attached Sheet C3.0) for later use. It is anticipated all soils will be reused on-site. Any soils staged overnight will be covered with plastic sheeting. A permanent soil pile/berm will be constructed along the western side of the eastern parking lot which will be covered with topsoil and seeded with grass (see Sheet C3.0). The planned redevelopment activities will disturb portions of the recently installed 6" soil cap near the eastern parking lot. This area will be replaced in kind following completion of the work anywhere a new hardscape surface is not installed. Any excess topsoil from this area will be stockpiled separately on plastic sheeting so as to not mix with the underlying material and will be reused elsewhere as applicable.

KAS will provide periodic oversight during the construction project. Details of the proposed construction are outlined on the attached plans.

Please contact me should you have any questions.

Sincerely,

Jeremy Roberts, P.G.

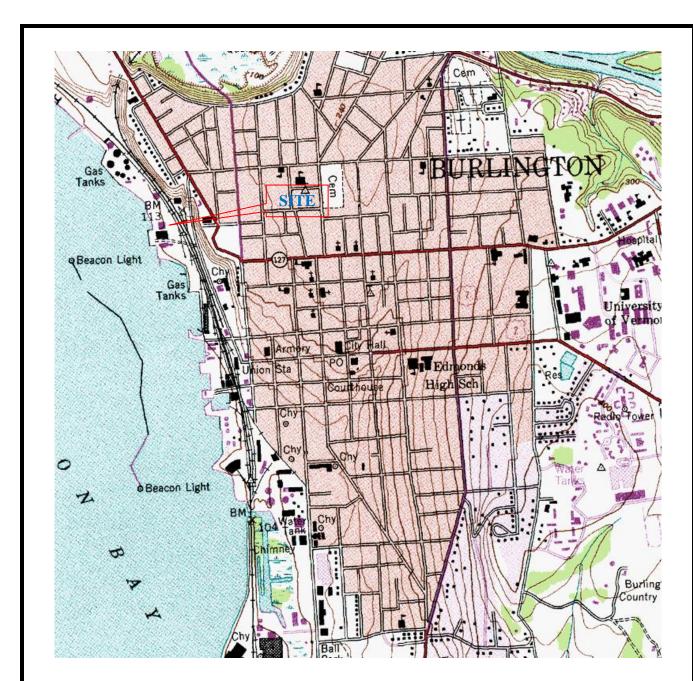
Environmental Programs Manager

cc- Mr. Jack Wallace, Burlington Harbor Marina, LLC

Ms. Kirsten Merriman Shapiro, CEDO

KAS #512150387

Enclosure: Proposed Redevelopment Plans



JOB # 511150384



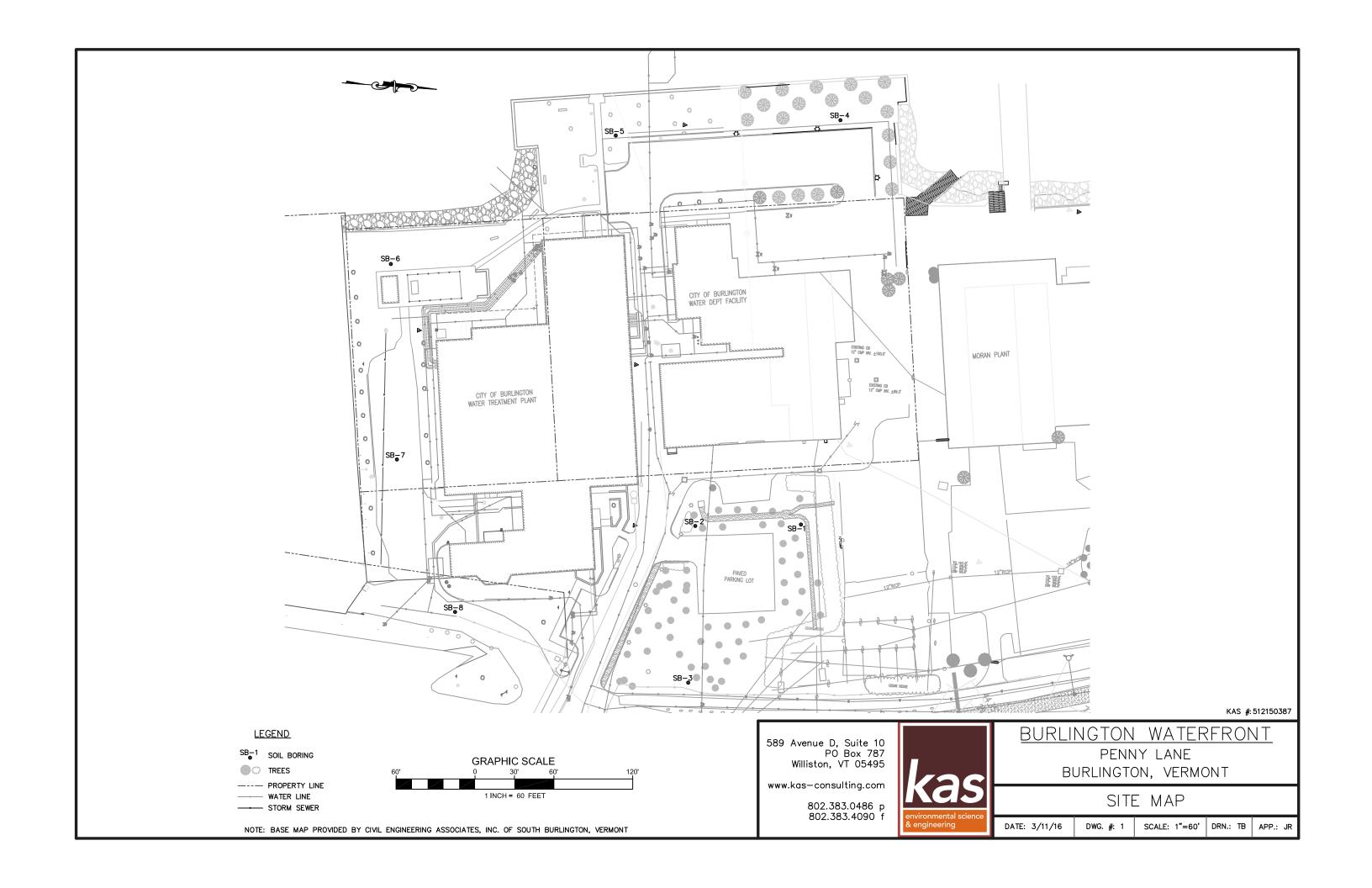
Northern Waterfront

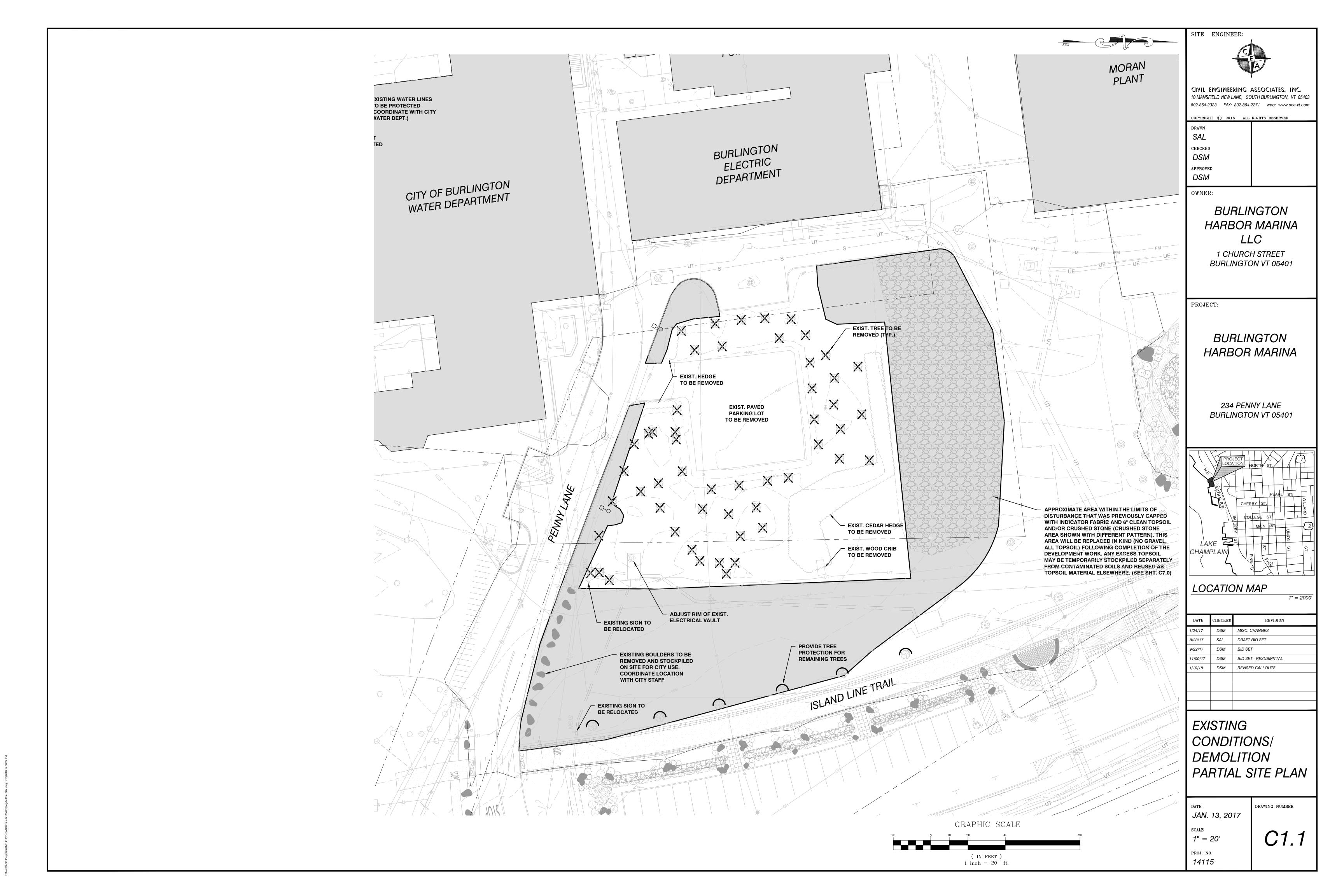
Penny Lane Burlington, Vermont

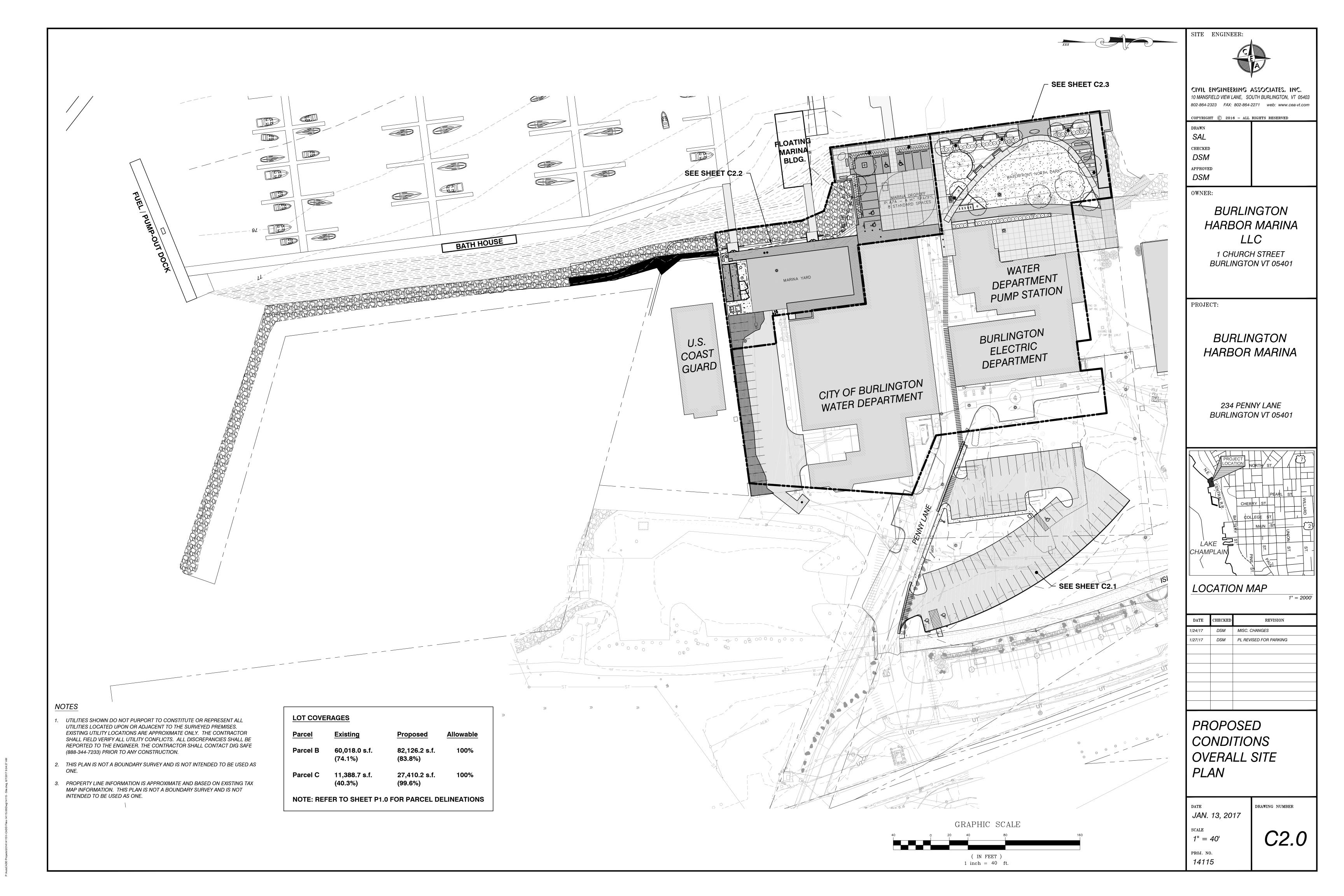
Site Location Map

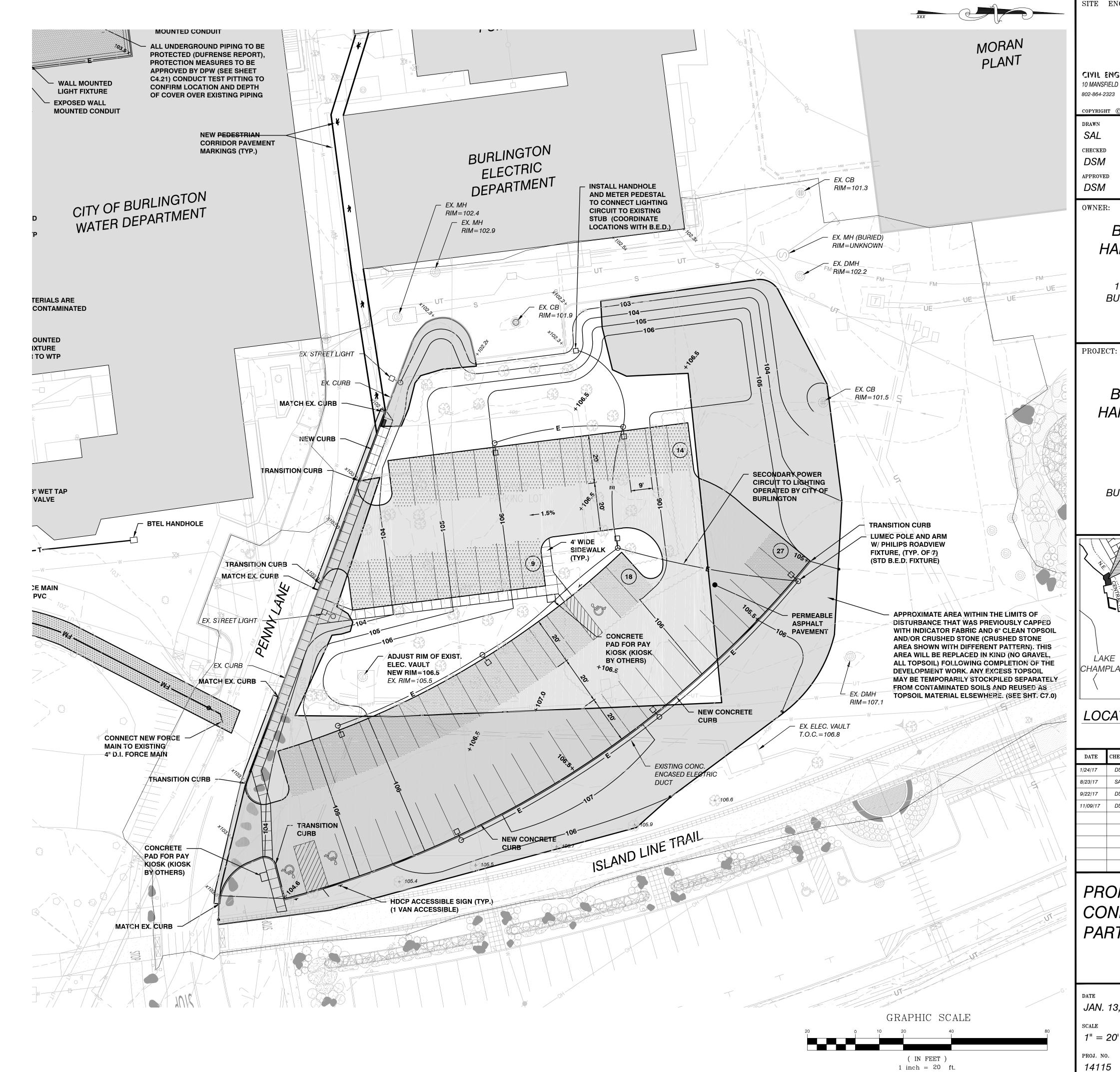
Source: topoquest.com

Date: 12/21/15 | Drawing: #1 | Scale: 1:24,000" | By: JR









OFF STREET PARKING REQUIREMENTS

48 SPACES

42 SPACES

4 SPACES

2 SPACES

48 SPACES

10 SPACES

1 SPACES

11 SPACES

11 SPACES

96 SEASONAL SLIPS (0.5 / SLIP)

SOUTH LOT (EMPLOYEE)

PLAZA LOT (HDCP ACCESS.)

SHORT TERM (100 USERS x 0.1)

LONG TERM (1/10) (EMPLOYEE)

MIN. REQUIRED SPACES

68 REQUIRED SPACES

68 PROPOSED SPACES

WFN (EAST LOT) PARKING SUMMARY

26 COMMUNITY SAILING CENTER

73 PREVIOUSLY PERMITTED SPACES

3 ACCESSIBLE SPACES REQUIRED (TOTAL) **3 ACCESSIBLE SPACES PROVIDED (TOTAL)**

23 SPACES FOR EXCLUSIVE MARINA USE

19 SPACES FOR EXCLUSIVE MARINA USE

WEEKENDS AND HOLIDAYS - MAY TO OCT.

1 VAN ACCESSIBLE SPACE REQUIRED

EAST LOT PARKING RESERVED SPACES

MAY TO OCT.

1 VAN ACCESSIBLE SPACES PROVIDED

MARINA

MARINA EAST LOT

(PER WAIVER)

BIKE PARKING

TOTAL REQUIRED

TOTAL PROVIDED

42 MARINA

SITE ENGINEER:

CIVIL ENGINEERING ASSOCIATES, INC. 10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403 802-864-2323 FAX: 802-864-2271 web: www.cea-vt.com

DRAWN CHECKED DSM APPROVED DSM

OWNER:

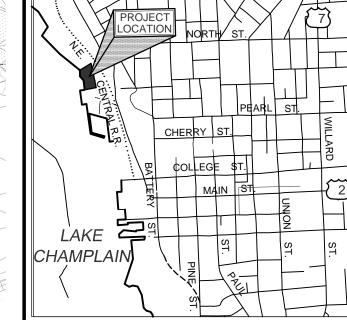
BURLINGTON HARBOR MARINA LLC

1 CHURCH STREET **BURLINGTON VT 05401**

PROJECT:

BURLINGTON HARBOR MARINA

234 PENNY LANE **BURLINGTON VT 05401**



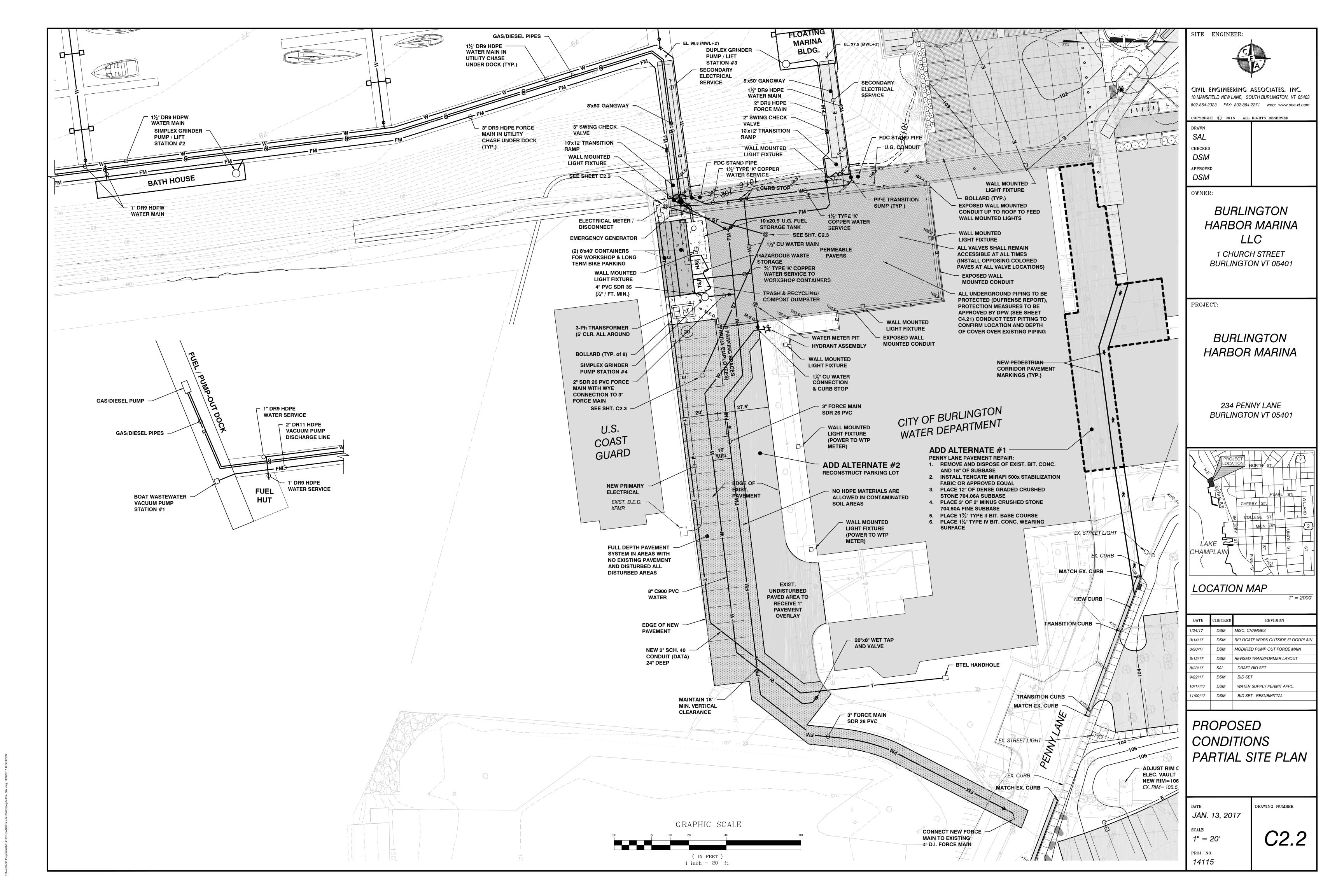
LOCATION MAP

1" = 2000'

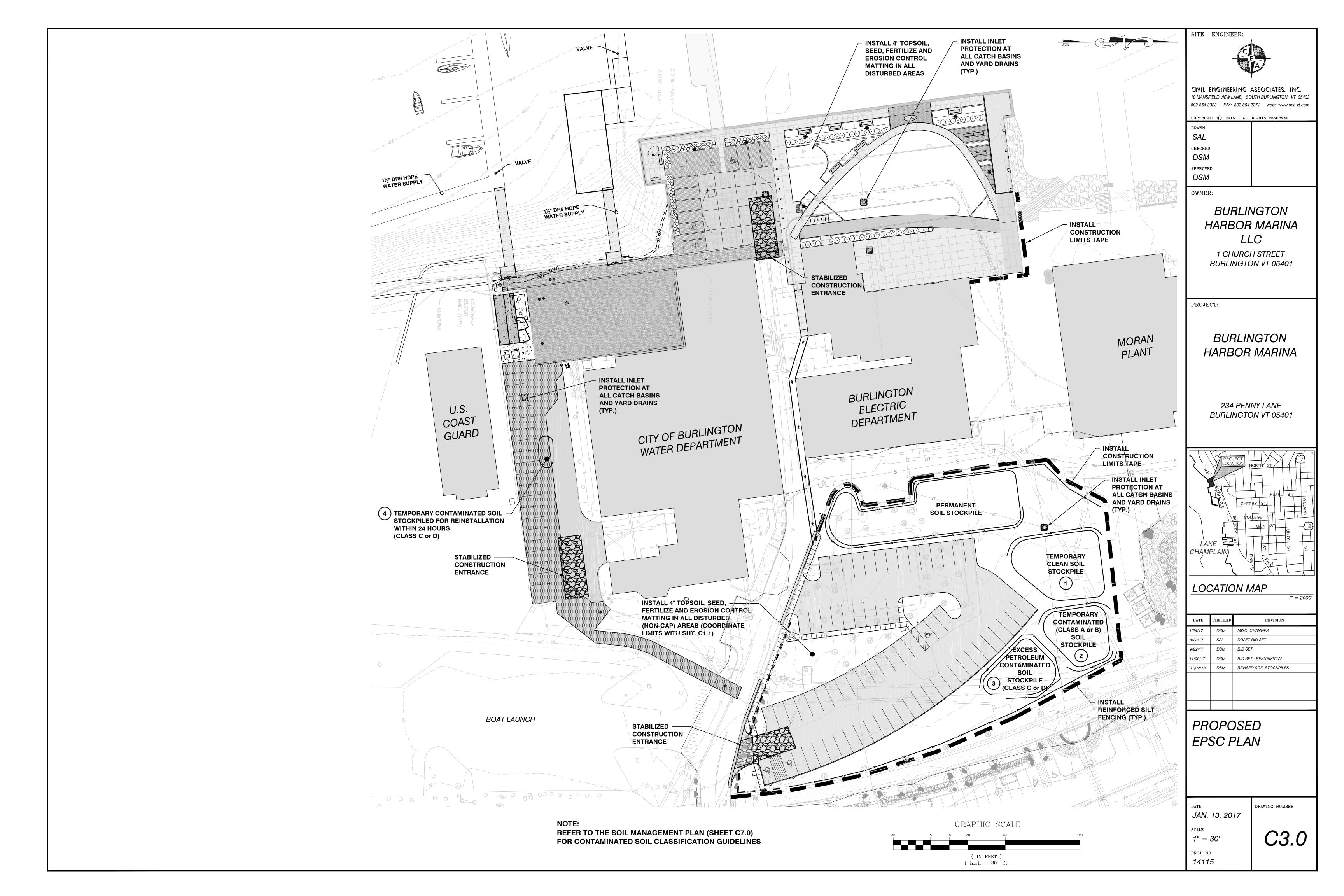
DATE	CHECKED	REVISION
1/24/17	DSM	MISC. CHANGES
8/23/17	SAL	DRAFT BID SET
9/22/17	DSM	BID SET
11/09/17	DSM	BID SET - RESUBMITTAL

PROPOSED CONDITIONS PARTIAL SITE PLAN

DRAWING NUMBER JAN. 13, 2017







6.4 Soil Management Plan

Soil management at the Site will consist of onsite management and reuse. No offsite management is planned. If offsite management is required, all contaminated soils will be disposed of at the Coventry landfill or E.M.S.I. The principal contaminants of concern are metals and PAHs, which are predominant across the Site but have been shown to be below the State of Vermont urban background levels as established in the Investigation of Contaminated Properties Rule (IRule) dated July 27, 2017. These contaminants tend to stay adsorbed to soil particles and do not dissolve and create groundwater contamination. The metals are not amendable to commonly used treatment methods and levels are not anticipated to change with time, while the PAH contamination may degrade slowly with time. Secondary contaminants of concern are petroleum and PCBs which are limited to smaller areas. The objective is to properly manage and stockpile soils during construction to reduce the potential for direct contact and exposure to the impacted soils.

The basic components of the Soil Management Plan at the Site are as follows:

1. All pre-existing soils that are removed for construction shall be reused onsite.

- 2. All pre-existing areas covered by a continuous cap of filter fabric as a marker layer followed by either Clean Topsoil and cover material (grass, plantings, or mulched beds) shall be replaced in kind where not covered by newly installed hardscape surface (see Isolation Barrier Detail (this sheet) and Sheet C1.1 'Existing Conditions Plan') for the existing WAN cap limits.
- 3. Field screening with a PID will be required for classifying all soil to be stockpiled and reused during the entire project. Since no offsite soil management is anticipated, no Ex Situ soil sampling will occur. The contractor shall coordinate with the designated Environmental Professional (KAS, Inc.) in executing the field screening efforts. The Contractor shall notify KAS, Inc. of any planned excavation and/or soil stockpiling activities at least 24 hours in advance of work commencement so that the proper field screening activities can take place.
- 4. Strict record keeping of soil types, stockpile volumes and reuse volumes will be required. This requirement shall be completed by the Contractor on a daily basis and shared with the Environmental Professional (KAS, Inc.) for reporting purposes.
- 5. Continuous observation of soil conditions by the Contractor will be required during excavation and trenching to flag any unanticipated contaminant conditions (buried objects, drums, tanks, strong odors, free phase petroleum product). If unanticipated conditions are encountered, then analytical testing may be required for the contaminants of concern to document soil conditions. Should such conditions come to light while the designated Environmental Professional (KAS, Inc.) is not present, the Contractor should stop work and coordinate with KAS, Inc. before activities resume in the area of concern.

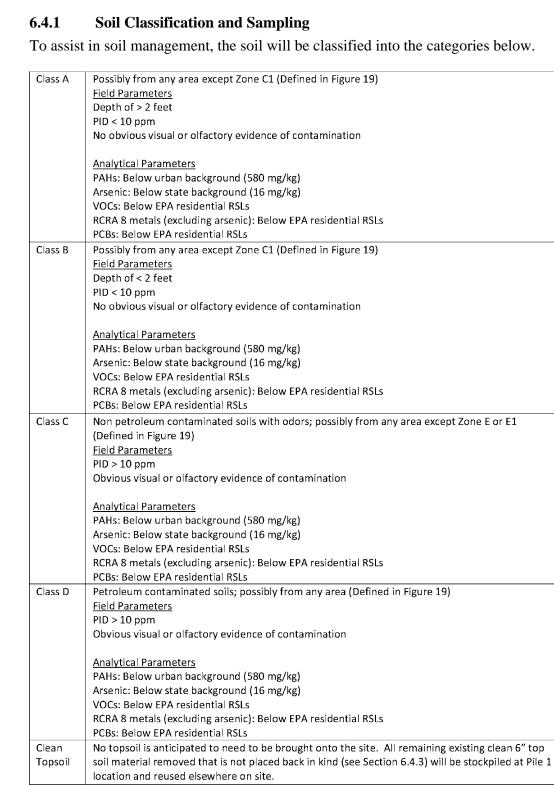


Table 6-1 - Proposed Soil Classification System

Soil Screening

Soil screening with be conducted using a PID (10.6 eV lamp) throughout the excavation process by the designated Environmental Professional (KAS, Inc). The Contractor shall notify KAS, Inc. of any planned excavation and/or soil stockpiling activities at least 24 hours in advance of work commencement so that the proper field screening activities can take place.

Continuous observation and screening of soil will be required for excavation activities that involve excavation into/through previously undisturbed soil, including general grade reduction, road and parking lot construction, utility trenching, etc. Screening will not be required for excavation activities that involve moving or transferring previously excavated soil, re-grading of soil, backfilling of soil, compacting of soil, loading of soil, etc.

PID readings will be utilized to confirm safe working conditions, and to classify the soil as described in Table 6-1.

6.4.2 Soil Stockpiling and Reuse

Soil stockpiling will occur onsite in temporary piles within several excavation zones (see Figure 19 (this sheet) and EPSC Plan) for short-term duration. Erosion control measures will be utilized, discussed below.

The soil stockpiling are will contain four separate soil stockpiles. Soil will be managed throughout the duration of the project. Each pile will be clearly marked so as to ensure that soil types will not be mixed. The four piles are described below.

Pile 1 - This pile is for the stockpiling of the existing 6" inches of clean topsoil which will be removed during the construction process. The clean topsoil pile shall be placed on poly sheeting to prevent mixture with the underlying materials.

Pile 2 - This pile is for the stockpiling of Class A or B soils removed during the construction process. This material shall be placed on poly sheeting to prevent mixture with the underlying materials and shall be covered with poly sheeting while stored overnight or during non-working hours.

Pile 3 - This pile is for the stockpiling of Class C or D soils removed during non-trenching work or soils removed during trenching work which cannot be reused withing 24 hours. This material will require polyencapsulation at all times and shall be placed on poly sheeting to prevent mixture with the underlying materials.

Pile 4 - This type of pile is for the temporary (< 24 hours) stockpiling of Class C or D soils removed during subsurface utility trenching work. This material shall be placed 6.4.7 Soil Management Zone E - Existing Parking (Figure 19) near the trench to the extent possible following VOSHA guidelines and reinstalled in the trench within 24 hours. If this cannot be accomplished, these Class D soils shall be moved to the Pile 3 location as outlined above.

Erosion control plans have been developed for the project. Erosion control measures to be used include stabilizing all soil piles with either poly or seed/mulch, using a stabilized construction entrance, marking limits of disturbance, using a sediment trap at downgradient end of stockpiling area, and making contractor responsible for preventing soil tracking on road surfaces.

Reuse of shallow and deep soil in all areas is proposed to the maximum extent possible. All stockpiled soils need to be placed on poly sheeting so as not to mix with the underlying material. Should the stockpiled soils become mixed with underlying material, the Contractor will be responsible to replace the underlying material in kind.

6.4.3 Clean Topsoil Cap and Gravel Cover

The existing Waterfront Access North (WAN) project created 6" of clean cap over the underlying contaminated soils (see Sheet C1.1). Additionally, gravel was placed down as part of the WAN project beneath the Pile 1 and Pile 2 areas as shown on Sheet C3.0.

The project will disturb some of the existing 6" clean soil cap and may disturb some of the recently placed gravel cover. The Contractor will be required to re-establish this capped area either with pavement or the re-installation of a 6" clean soil cap over a filter fabric as a marker layer. Additionally, the Contractor shall be required to replace the gravel cover in kind should it become disturbed or mixed with contaminated stockpiled

The Contractor shall strip and stockpile the existing 6" clean cap topsoil for re-use. Cover material (grass, plantings, or mulched beds) shall be replaced in kind where not covered by newly installed surface (see Sheet C1.1). The Contractor shall use extreme caution within these areas as to not disturb and/or damage the underlying indicator fabric or pull the fabric from other areas. The fabric shall be cut at the edges of site disturbance to limit damage and pulling of the fabric from other areas.

Any unused stockpiled Clean Topsoil shall be reused elsewhere onsite as topsoil material

6.4.4 Top Soil Testing

No new topsoil is anticipated to be needed to be brought in to the Site. Should new topsoil be needed to be brought in it must be tested for PAHs by EPA Method 8270D and for arsenic by EPA Method 6020A to confirm that concentrations of PAHs and arsenic are below soil guidance levels by the Contractor. Specifically, for PAHs the concentration expressed as Benzo(a)Pyrene Toxicity Equivalence (B(a)P-TE) must be below 580 ug/kg urban background level and for arsenic the concentration must be below 16 mg/kg urban background level. If different sources of topsoil are to be used, samples must be collected from each source in the same manner.

The topsoil testing can be done by an environmental contractor, but all testing results must be reviewed and approved by the Environmental Engineer. The testing results will be provided to the VTDEC before the final grading process begins and in the As-Built Report.

6.4.5 Soil Management Zone C - East Parking (Figure 19)

Note: These soils are anticipated to be Class A, B or C.

This 70,000 ft2 Zone will have 68 parking spaces of raised permeable pavement with associated transition grading into the surrounding tie-in points. New utilities for this Zone will be new light pole bases and secondary underground electrical lines are present for the new light poles.

granular materials, this Zone is anticipated to have a cut of 800 CY. The excavation for the parking lot and access drives will be less than 2 ft deep, so soil from this component is anticipated to be Class A, Class B or Class C. An additional cut of 20 CY is anticipated for utility trenching and utility structures below the existing grade. Since the utility cut will not be deeper than 2 ft deep, most of this soil is anticipated to be Class A significantly reduce the volume of imported materials required. and can be used as common backfill.

This zone is outside the Penny Lane contaminated soil area (Area C1). Any soil excavated from this area that has field evidence of petroleum contamination will be classified and stockpiled as Class D soils and must be reused and placed back at the same depth and location of where it came. Soils excavated from this area are not anticipated to be stockpiled.

6.4.6 Soil Management Zone C1 - Penny Lane Zone (Figure 19)

Note: These soils are anticipated to be Class C or D.

This 18,700 ft₂ Zone, established as the Penny Lane petroleum contamination zone, vill have the access drives to the east parking lot and utility lines underneath. New utilities for this Zone will be secondary underground electric for some light poles.

This Zone is anticipated to have a moderate amount of grade cut to facilitate the

connection of the New East Parking Lot into the existing edge of pavement of Penny Lane. The estimated depth of cut is 2 feet. A trench cut of approximately 3 feet is anticipated for underground utility lines. There is also a trench cut of approximately 5 feet for installation of the force main connection. Any soil excavated from this area that has field evidence of petroleum contamination will be classified and stockpiled as Class D soils and must be reused and placed back at the same depth and location of where it

Any Class D soils displaced during trenching by imported bedding materials shall be temporarily stockpiled near the trench to the extent possible following VOSHA guidelines and reinstalled in the trench within 24 hours. If this cannot be accomplished, these Class D soils shall be moved to the Pile 3 location as outlined in 6.4.2 above.

Note: These soils are anticipated to be Class A or B.

This 16,890 ft₂ Zone will retain the existing parking spaces for the BED facility, a small portion of the New Eastern Parking Lot, and pavement on the north side of the BDPW pumping facility. The only new utilities are underground secondary electric trench as this is primarily a fill site associated with the earth berming and tie-in of the East Parking Lot.

Since the utility cut will only be 3 feet deep, most of this soil is anticipated to be Class A or Class B.

This area encompasses the Transformer Yard where a zone of PCBs contaminated soil has been identified, shown as **Zone E2**. This 4,100 ft2 area will not be disturbed as this is a fill area for landscape berming and the grading tie-in for the East parking

6.4.8 Soil Management Zone E1 - North Park (Figure 19)

Note: These soils are anticipated to be Class A or B.

This 27,600 ft2 Zone will have the existing parking lot removed in favor of the construction of the North Park and turn-around area with 12 parking spaces. This zone also includes the alley between the BDPW/BED building and the Water Department building, which will have a small portion of the existing bituminous. concrete surface converted into a concrete surface. New utilities for this Zone includes new street light and area light conduit. The plans do call out for the potential replacement of existing drainage structures in coordination with the City of Burlington DPW. This work, if requested, will need to be coordinated with the remaining construction activities.

The site has a net fill volume of 200 CY, but the import of granular materials for the proposed improvements will displace nearly 800 CY of materials. Some of this, i.e. the granular fill under the existing parking lot, can be reused and the character of the native fill will determine if it can be reused as bedding for the utilities (preferred). There is no significant grade cut for this area, as the new park will be constructed on top of the existing parking lot. The existing gravel under the parking lot surfaces will be removed for re-use as a clean granular fill in other area of the project site. 60 CY of soil will need to be excavated for utility trenching. The excavation for the drainage structure replacements will require, in addition to the structure, approximately 6 CY of material of which most will be below the 2' contamination/gravel zone and therefore is anticipated to be Class B soils. The utility trenching will avoid the known area of petroleum contamination associated with VT DEC Site #90-0540. This soil is anticipated to be Class C and D. Any soil excavated from this area that has field evidence of petroleum contamination will be classified as Class D soils. This area is currently capped with asphalt which is to be removed in favor of the placement of a new concrete surface.

6.4.9 Soil Management Zone M - Operations Area (Figure 19)

Note: These soils are anticipated to be Class A, B, C or D.

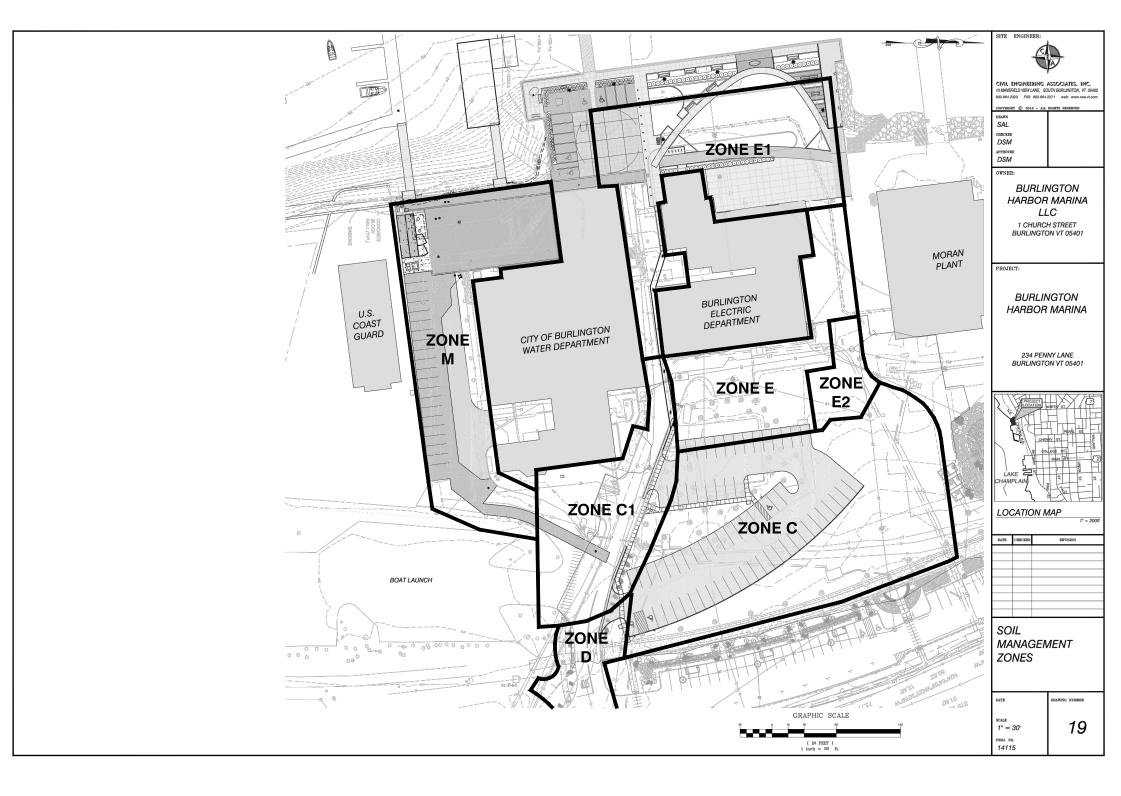
The Operations area located in Soil Management Zone M, will experience the greatest level of subsurface excavation in support of the installation of the supporting utility lines and subsurface storage structures.

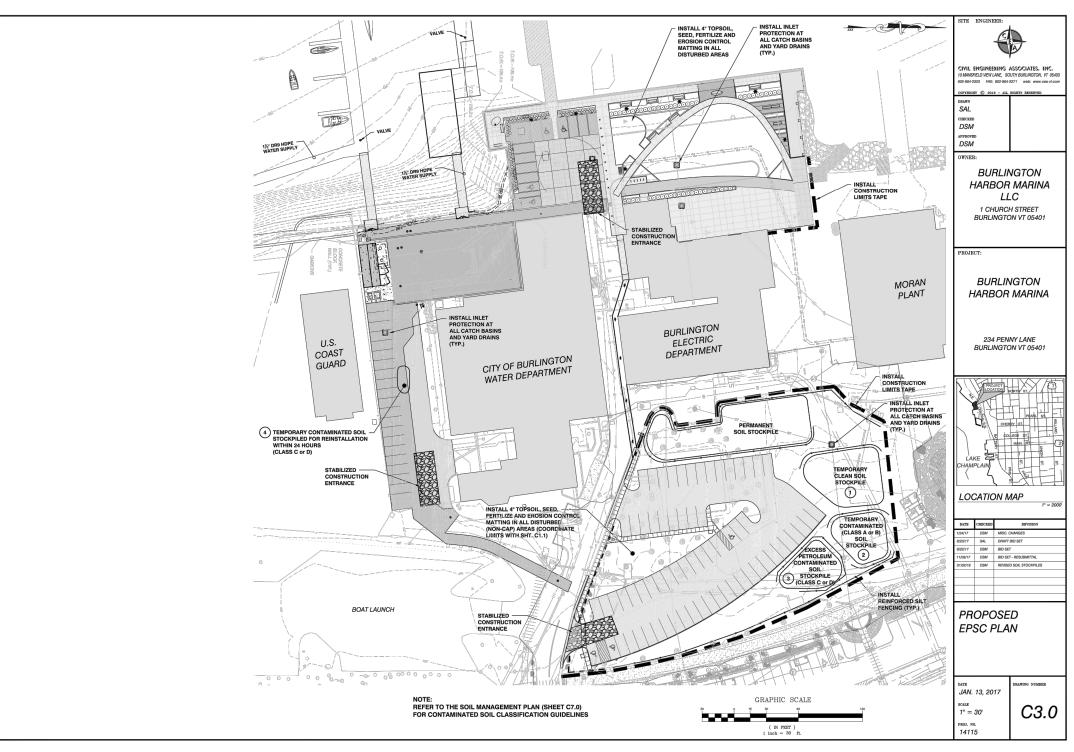
The area will displace 160 CY of shallow (2-foot deep) native material for the expansion of the existing parking lot and permeable paver installation at the west end of the site. The installation of the subsurface fuel storage tank will displace 320 CY of materials at a depth of up to 13 feet. It will also displace 130 CY of native material for the placement of the water main and bedding at a depth of 6 feet below the surface. Water main nitrile rubber (NBR) gaskets shall be used in place of styrene butadiene rubber (SBR) gaskets wherever gasoline saturated groundwater is present. Approximately 40 CY of material will be displaced for the force main pipe and bedding at a depth of 5-feet. 50 CY of material will be displaced for the storm drain line installation and bedding at a depth of 4 The East Parking Lot is a net fill site, but when including the existing parking lot feet. Approximately 50 CY of material will be displaced for the electrical and communications conduit and bedding at a depth of 3 feet.

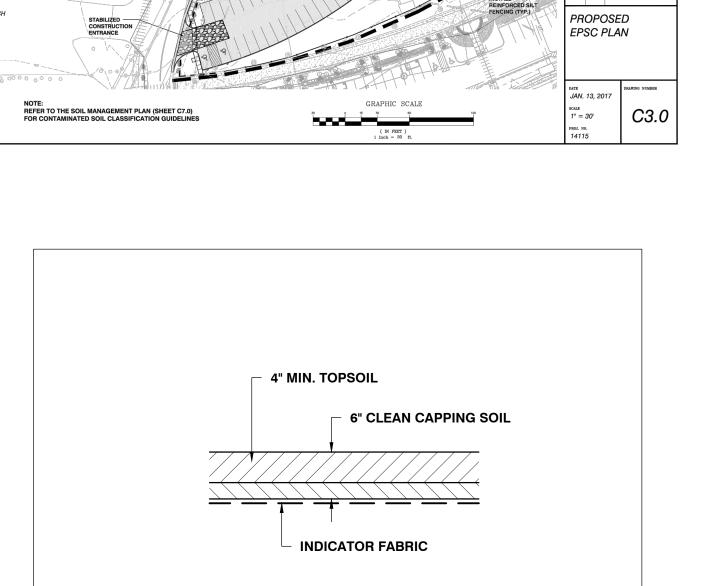
Much of the native material may be suitable for re-use for bedding which will

Zone M will utilize Pile Type 4 which temporarily (<24 hrs) allows for the stockpiling of Class C or D soils for re-installation. The upper portions of soils within this zone have been shown to be Class A and B soils and therefore it is anticipated the upper horizon soils will be relocated to other fill portions of the project so as to enable any Class C or D soils encountered to remain within Zone M.

Note: The soil management plan to be implemented during the construction project has been developed following the 2011 Corrective Action Plan (CAP), 2014 amended CAP and July 27, 2017 I Rule document.







6" ISOLATION BARRIER DETAIL

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC. 10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403 802-864-2323 FAX: 802-864-2271 web: www.cea-vt.com

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APPROVED DSM

OWNER:

BURLINGTON HARBOR MARINA LLC

1 CHURCH STREET **BURLINGTON VT 05401**

PROJECT:

BURLINGTON HARBOR MARINA

234 PENNY LANE **BURLINGTON VT 05401**

DATE	CHECKED	REVISION
8/23/17	SAL	DRAFT BID SET
9/22/17	DSM	BID SET
11/09/17	DSM	BID SET - RESUBMITTAL
12/4/17	DSM	REVISED SPECIFICATIONS
01/10/18	DSM	REVISED SPECIFICATIONS
02/2/18	DSM	REVISED SPECIFICATIONS

SOIL **MANAGEMENT** PLAN

JAN. 13, 2017 SCALE AS SHOWN

PROJ. NO. 14115 RAWING NUMBER