NANGLE CONSULTING ASSOCIATES, INC.
Environmental Engineering and Land Use Planning
960 Turnpike Street, Canton, Massachusetts 02021

August 19, 2011

Mr. George Proakis
Acting Executive Director
Office of Strategic Planning & Community Development
City of Somerville
93 Highland Avenue
Somerville, MA 02143

RE: Peer Review Comments
343-351 Summer Street
Somerville, MA 02143

Dear Mr. Proakis;

In accordance with the requirements outlined within your correspondence to this office dated 8 August 2011, Nangle Consulting Associates, Inc. (NCA) has completed a peer review of the environmental documentation provided for the properties referred to as 343-349 and 351 Summer Street, located in the City of Somerville, Massachusetts. The specific focus of this submittal is directed towards Tasks 1 through 3 within the above referenced correspondence, a copy of which is enclosed as Attachment A. A summary of the database reviewed and a description of the corresponding properties that are the subject of this correspondence is presented in Section 1.0, while a summary of our peer review comments and corresponding recommendations at this time are presented in Sections 2.0 and 3.0 respectively.

Please be advised that the database which serves as the basis for the environmental opinions rendered herein are contained within the documents listed below and that the recommendations provided within this correspondence are subject to the accuracy and extent of the available information provided therein. Further, our peer review comments are intended to assist the Zoning Board of Appeals (ZBA) in the current understanding of environmental conditions at the property, together with any corresponding issues that may exist with respect to the redevelopment of the subject property to accommodate a future residential land use condition.

1.0 SUMMARY OF ENVIRONMENTAL DOCUMENTATION

The following is a summary of the environmental assessment documents pertaining to the 343-351 Summer Street properties that were provided to this office for review:

Doc. 1. ASTM Screen / Limited Assessment for 343-349 Summer Street for Emerald Development dated March 20, 2002

Doc. 2. Preliminary Site Assessment for 343-349 Summer Street for Emerald Development dated April 19, 2002

Doc. 3. Subsurface Exploration Program for 343-349 Summer Street for Emerald Development dated September 23, 2002

Doc. 4. ASTM Screen / Limited Assessment for 343-349 Summer Street for Dakota Partners dated July 26, 2007

Doc. 5. Phase I Environmental Site Assessment for 343-349 Summer Street for Dakota Partners dated June 30, 2009

Doc. 6. Phase I Environmental Site Assessment for 351 Summer Street for Dakota Partners dated July 13, 2009

Doc. 7. Subsurface Investigation for 351 Summer Street for Maggiore Companies dated July 15, 2010

As evidenced from a review of the above referenced documentation, environmental studies have been performed at 343-349 Summer Street over the period of March 2002 through June 2009, by the firm IES Inc. (IES). IES had also more recently completed an evaluation of the 351 Summer Street property between July 2009 and July 2010. Documents 3 and 7 are particularly important to the objectives of this peer review in that they provide documentation pertaining to the direct testing of soil and groundwater that has been performed at the site. The remaining documents represent a qualitative review of available local, state, and federal file information for the study environs, which is restated in several instances within the various documents. For discussion purposes, the parcels under evaluation are described in the following excerpts from IES:

343-349 Summer Street – Doc. 5

> **"The subject site contains an area of 16,799 square feet, and is mostly vacant land covered with overgrown vegetation, with the exception of a concrete foundation capped with steel grates, which are used as an underground venting system for the MBTA Red Line, which runs beneath the southwestern portion of the property. The site has been vacant since 1979, prior to which time it was occupied by three dwellings, a garage, a wagon house, and a bottling facility."**

351 Summer Street – Doc. 6

> **"The subject site contains an area of 23,594 square feet, and is comprised of a paved parking lot utilized buy an abutting function hall (George Dilboy VFW Post #529). Prior to the current usage, the site has been vacant since 1979, prior to which time it was occupied by sheds and stables in the late 1800's, and by a gasoline filling station and for "dead auto storage" in the early 1900's."**

Initially, it is to be noted that the results of groundwater testing reported by IES within the documents cited above do not exceed applicable regulatory notification threshold values.

However, it must be acknowledged that scope of site characterization activities that has been undertaken is directly related to any conclusions and/or opinions that may be formed with respect to the nature of environmental quality at the site. Further, the requested scope of prior studies is likely to have varied, at least in part, from the current project objectives and our peer comments are to be taken in this context accordingly. In this regard, it is our professional opinion that further assessment activities, particularly with respect to local hydrology and fill characterization at the subject property are warranted, as summarized in further detail below:

2.0 SUMMARY OF PEER REVIEW COMMENTS

While documents 1, 2, 4, 5, 6 and 8 referenced in Section 1.0 are generally considered to be qualitative screening studies, they do provide a summary of environmental land use information for the subject property and immediate study environs that is consistent with general industry standards and identifies the following potential issues of environmental concern:

343-349 Summer Street – Doc. 5

"Potential on-site "Recognized Environmental Conditions" (REC's) include the historical use of the site for automotive repair activities and the presence of a gasoline UST on the northern portion of 349 Summer Street, as depicted on Sanborn Atlases dated 1933-1934 and 1934-1950. However, it should be noted that this UST was removed in 1979. In addition, permits on file with City of Somerville Municipal Departments indicate a 500-gallon UST existed at the subject site, for which there are no records documenting that tank's removal."

"Potential off-site threats of contamination include the former use of the westerly abutting property at 351 Summer Street as a gasoline filling station with three associated gasoline USTs, as depicted on Sanborn Atlases dated 1933-1934 and 1934-1950. Potential off-site threats of contamination also include the DEP listed spill at 371 Summer Street (N85-0866), which is located approximately 150 feet to the west of the subject site. In addition, the documented underground storage of gasoline at 339 and 355 Summer Street, both located within 100 feet of the subject site, is also considered to pose a potential environmental threat to the subject site at this time. The Disposal Site documented at 201-203 Elm Street (RTN 3-0149) and the UST-related releases documented at 363 Highland Avenue (N89-1434 and N90-1418), which are situated approximately 150 feet southwest and 175 feet northeast of the site, respectively, may pose potential environmental threats to the site."

351 Summer Street – Doc. 6

"Potential on-site "Recognized Environmental Conditions" (REC's) include the historic use of site as a gasoline filling station, and the presence of three gasoline UST's on the southeastern portion of the property, as depicted on Sanborn Atlases dated 1933-1934 and 1934-1950. There was no documentation available regarding the removal of these tanks;

> **however, it is likely that these UST's and any associated contaminated soil were removed during excavation activities associated with the MBTA Red Line directly beneath the site in the 1980's."**

The offsite conditions cited for 343 – 349 Summer Street above were similarly identified for the 351 Summer Street parcel and the potential raised by these onsite and offsite land use practices is reflected in the following IES opinion contained within Doc. 5:

> **"Due to the presence of the former 4,000-gallon UST at the site and the historic use of the site for automotive repair, coupled with the off-site potential sources of contamination, a subsurface investigation was considered warranted."**

Integral to meeting the above stated objective is the understanding of local hydrology through the installation of an adequate monitoring well network to define prevailing local groundwater flow convention. This typically involves the placement of a minimum of three (3) monitoring wells in an orientation that allows for the triangulation, or development of flow contours across the study area. While three (3) wells were installed upon each parcel by IES, the following constraints were identified:

343-349 Summer Street – Doc. 3

> **"At the time of the sampling, monitoring well MW-1 was dry and therefore, no groundwater sample was collected from that well. It should be noted that the groundwater was encountered during boring advancement in that well, as well as in the remaining two wells installed at the site. Therefore, it appears that the lack of groundwater recharge to that well may be the result of incorrect construction during the completion of that well."**

351 Summer Street – Doc. 7

> **"An attempt at sampling monitoring well B-2/MW indicated that it was dry, and as such groundwater samples could not be collected from this location."**

In addition to the above, the uncertainty of prevailing groundwater transport mechanism across the study area has been expressed by IES, as reflected by the following statements rendered below.

343-349 Summer Street – Doc. 2

> **"The site is located in the Mystic River Drainage Basin. No surface water was noted on the site, and nearby surface water consists of the Mystic River, which is located approximately 1.2 miles to the northeast of the subject site. Based on the topography of the surrounding area, groundwater flow in the area of the site appears to flow to the northeast.**

> **However, actual groundwater elevations and potential flow directions have not been determined at this time, and local variations may exist."**

351 Summer Street – Doc. 6

> **"The site is located in the Mystic River Drainage Basin, and the groundwater flow direction at the site is anticipated to be to the northwest, toward the nearby Alewife Brook, which is located approximately one mile to the northwest of the site. However, a groundwater flow survey was not performed by IES, and therefore, this could not be determined"**

Based upon the above, it is seen that there has been no determination of groundwater flow direction, or transport pathways, for either of the parcels under consideration. Accordingly, in the absence of this, the orientation of remaining wells to provide an appropriate assessment of both onsite, as well as offsite historic land use practices is uncertain. Further, the influence of the MBTA line that passes beneath the study area upon site hydrology is not addressed within the available database. This corridor may act as a sink for local groundwater and as such, the installation of a suitable monitoring well network upon each individual parcel is recommended. Following the restoration of steady state conditions, depths to groundwater may then be corrected to a common benchmark elevation to enable the determination of groundwater flow convention.

The September of 2002 subsurface investigatory program performed by IES upon 343-349 Summer Street included the placement of nine (9) soil test borings, three (3) of which were completed as groundwater monitoring wells, as described previously. A copy of the contractor's soil boring logs pertaining to this scope of work may be referenced as Attachment B. Through a request for additional information from IES, it was learned that multiple attempts were necessary to reach the desired depths of penetration at several locations. This resulted in the letter series designations for nearby borings i.e. B-1A, B-2A, B-2B, B-4A. IES also stated that test boring B-5 was to be placed "for structural purposes" and appears to have not been drilled. A copy of the email request for further information and corresponding responses from IES may be referenced from Attachment C.

From a review of Attachment B, it is seen that a fill layer generally ranging between 5 (B-4, B-5) to 18 feet from surface grade (B-1A) extends across 343-349 Summer Street. This fill unit is characterized as being comprised of sands, concrete, asphalt and/or brick and was underlain by medium sands, followed by native yellow and blue clays. A variable sand layer was identified between 15-18 feet at B-3 and refusal atop probable bedrock was reported at 36 feet from surface grade at B-4A. Split-spoon refusal was also encountered at varying depth intervals, alluding to the heterogeneity of the fill unit. B-6 was also advanced to 47 feet; however, the location of this test boring is unknown.

As indicated from a review of the following excerpts from documents 3 and 7, the characterization of the fill/soil samples collected by IES at each of the subject parcels was limited to the field screening of total headspace concentrations of volatile organic compounds (VOCs);

343-349 Summer Street – Doc. 3

"The soil samples obtained from the site were screened with a Thermo Environmental Model 580B Organic Vapor Meter (OVM) to detect the presence of Volatile Organic Compounds (VOC's) in soil headspace. As a result, of soil samples were submitted for laboratory analysis.

351 Summer Street – Doc. 7

"The soil samples obtained from the test-boring program were screened with a Thermo Environmental Organic Vapor Meter (OVM) to detect the presence of Volatile Organic Compounds (VOC's) in soil headspace. The results of this screening program did not reveal any elevated headspace readings above background (0.0 ppm) in any of the soil samples obtained from the site, as shown in the following Table 1:"

"Due to the absence of any elevated headspace screening results above background, as well as the absence of any visual or olfactory evidence of contamination, no soil samples were submitted for laboratory analysis."

From a regulatory compliance perspective, the general fill description provided from the contractors boring logs suggests the probability for additional constituents, such as metals and Polynuclear Aromatic Hydrocarbons (PAHs) to be present. Accordingly, in the absence of additional information, it is our professional opinion that quantitative characterization of the variable fill unit is warranted, to determine whether or not conditions are present that would necessitate the implementation of risk reduction measures in compliance with the Massachusetts Contingency Plan (MCP). During future construction activities for the redevelopment plan under consideration, soil and fill management requirements, including dust control and offsite disposal/recycling alternatives are of particular importance. It is recognized that this scope of work may not have been consistent with the objectives of the work plans implemented by IES during their prior studies.

As indicated from a review of Attachment C, no boring logs for 351 Summer Street were reportedly provided to IES and no specific description of site soils encountered during boring placement is provided within available documentation provided for this site. This data gap precludes further evaluation of probable fill conditions and it is recommended that inquires be made with the project proponents to obtain this information to assist in the development of a sampling plan for this portion of the site. Copies of any available field notes depicting all the boring locations for 343-349 Summer Street should also be requested.

As described above, test borings having common number designations were reportedly placed in close proximity to each other to achieve the required depths of boring advancement. A review of available boring logs reveal a wide variation in both depths of fill and static water elevations recorded between what has been expressed as being nearby. Specifically, a review of the log for test boring B-1 reveals that groundwater was encountered within a stiff blue clay formation at 15 feet from grade, with approximately five (5) feet of fill present at this location. Conversely, groundwater was encountered at 10 feet from grade during the advancement of B-

1A, within a fill unit that extended over the entire length of the bore hole (18 feet). Similarly, a five (5) foot difference in depths to groundwater was encountered during the advancement of B-4 and B-4A. This variation in site stratigraphy and depths to groundwater also supports the recommendation for further evaluation of site hydrology.

The existence of abandoned underground storage remains an uncertainty that is of particular importance to proposed construction activities, in addition to overall environmental conditions at the site. Often, a magnetometer survey may be suitable to address this issue; however, given the anticipated presence of urban fill, the presence of split spoon refusal at several locations and the ambiguity often associated with this method, it is recommended that the placement of shallow exploratory test pits be considered to resolve this issue. As the actual location of historic underground storage may vary from that depicted on compiled plans, it is further recommended that this task be completed following the further characterization of site conditions.

3.0 SUMMARY OF RECOMMENDED WORK PLAN TASKS

Based upon our review of the documents provided, it is our opinion that further assessment should be performed to resolve the data gaps that have been identified that may contribute to environmental conditions that could potentially impact site development. The following is a summary of our recommended scope of supplemental assessment for your consideration at this time.

1. Inventory existing monitoring well locations and evaluate suitability to provide representative and repeatable water quality information.

2. Placement of standard 2-inch diameter monitoring wells at appropriate locations to enable the evaluation of site hydrology and perform additional site characterization to support proposed site development activities.

3. Evaluation of representative split-spoon samples collected during boring placement for standard field parameters (i.e. visual inspection, total VOC headspace & geotechnical characterization).

4. Laboratory analysis of representative fill/soil samples for appropriate constituents, subject to the results of Task 3 above. At a minimum, a representative number of samples should be analyzed for MCP Metals, Polynuclear Aromatic Hydrocarbons (PAHs) and Asbestos.

5. Development of all monitoring wells and confirmation of steady state aquifer characteristics.

6. Completion of an instrument survey and correction of static water elevations to a common benchmark to determine local groundwater flow convention.

7. Laboratory analysis of groundwater quality at appropriate sampling locations determined through the completion of Task 6 above. The scope of applicable parameters should be determined through the results of field screening of representative groundwater samples, review of historic groundwater analytical results, the results of soil sampling and overall site characterization activities.

   At a minimum of one (1) sample from each parcel should be analyzed for Extractable Petroleum Hydrocarbons (EPH) and target compounds together with MCP Metals. However, based upon the proposed redevelopment plan and prior site history, it is our understanding that this analytical program has been requested to include at least three (3) monitoring wells for each parcel. Groundwater samples from each well should be screened for total VOC headspace concentrations, with the quantification of typical background water quality parameters performed to evaluate the need for additional analyses.

8. Placement of shallow exploratory test pits to a depth of at least six (6) feet from grade in areas of historic underground storage, supported by the results of Tasks 1-7 above.

In addition to the need of further site characterization activities, project requirements to support the future redevelopment of the subject property may also include the development of a Soil Management Plan (SMP) and a contractor's Health and Safety Work Plan (HSAP). These documents should address dust control, trucking issues, construction methods, and both pedestrian and worker health and safety. Should a Reportable Condition (RC), as defined within the MCP, be identified during the completion of supplemental assessment activities, additional requirements will also be necessary.

We appreciate this opportunity to be of service to you on this matter. Upon your review, please feel free to contact me at your convenience.

Sincerely,

NANGLE CONSULTING ASSOCIATES, INC.

Jeffrey A. Nangle, P.E., L.S.P.

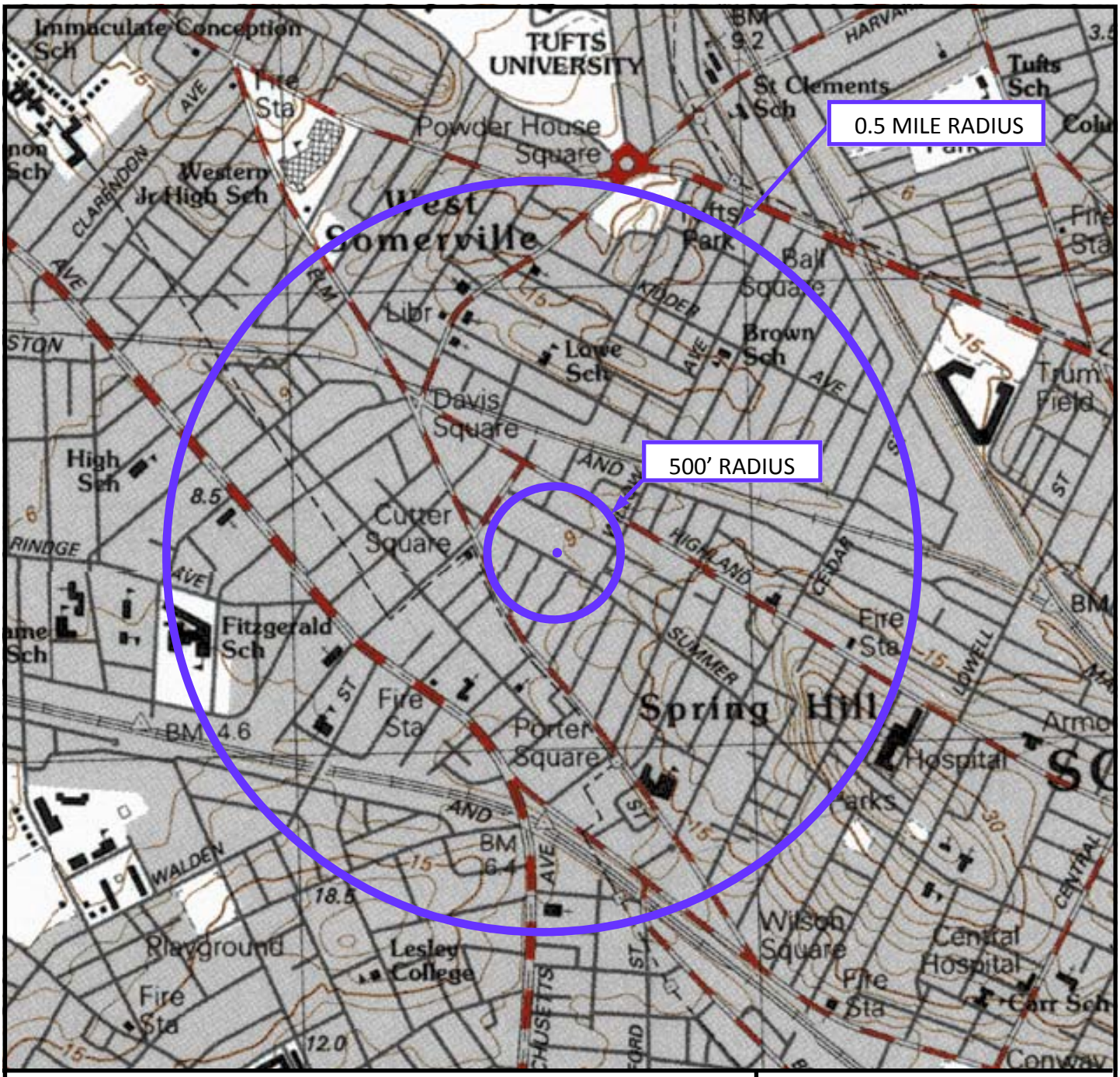
Enclosure(s): Agreement Letter (Attachment A); Test Boring Logs (Attachment B); E-mail Correspondence dated August 12, 2011 (Attachment C)

NANGLE CONSULTING ASSOCIATES, INC

FIGURES

Environmental Engineering and Land Use Planning

960 Turnpike Street, Canton, MA 02021 Telephone (781) 821-0521 email: nangle@ncaenv.com Facsimile (781) 821-4182



U.S.G.S TOPOGRAPHIC LOCUS
343-349 & 351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

U.S.G.S QUADRANGLE
BOSTON-NORTH

CONTOUR INTERVAL–3 METERS

0 0.5
KILOMETERS

0 0.5
MILES

LATITUDE/LONGITUDE
N 42°–23'–37" W 71°–07'–10"

UTM
N 4695.449 KM E 325.542 KM

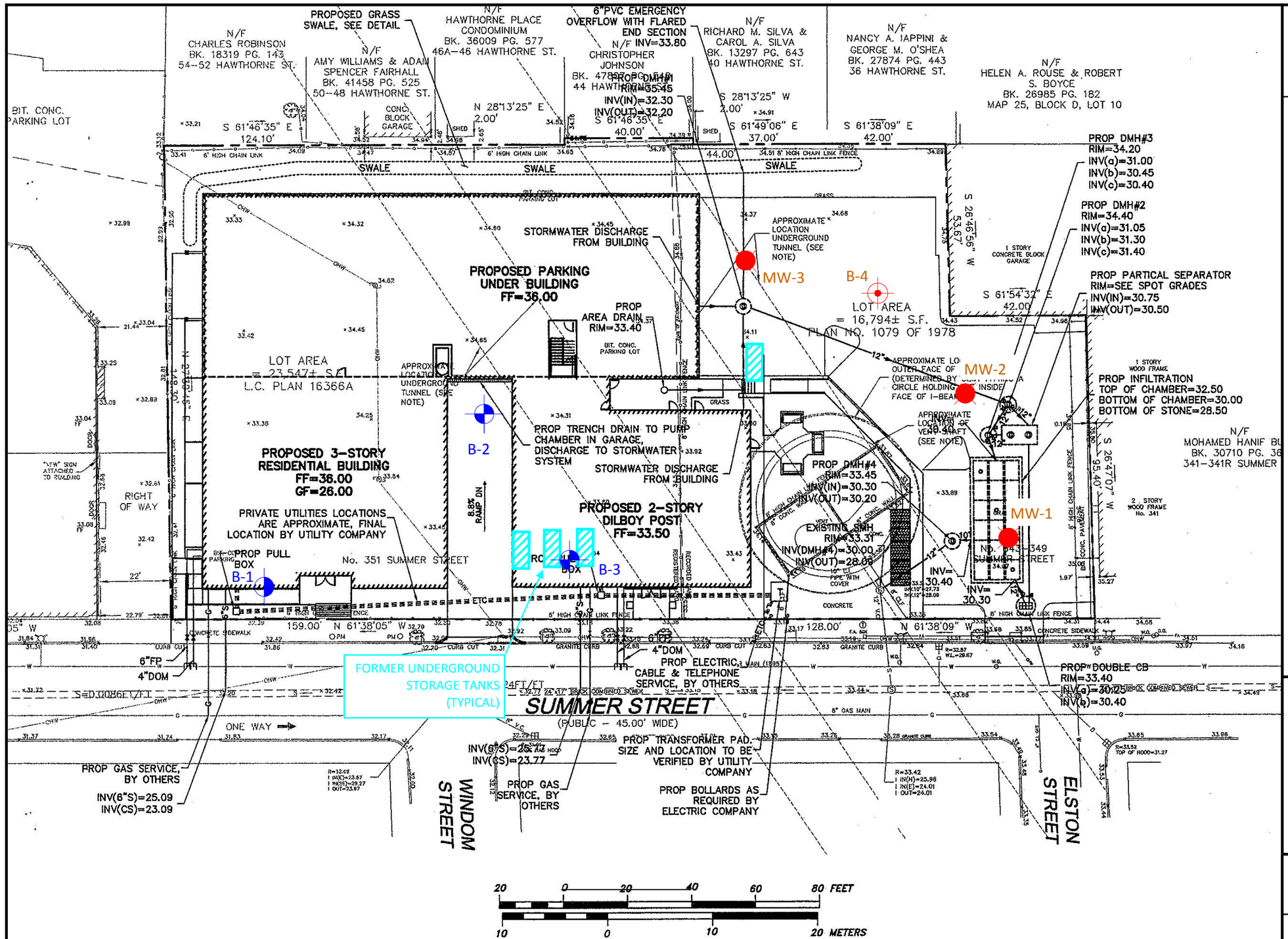
NCA

Nangle Consulting Associates, Inc.
960 Turnpike Street Canton, Massachusetts

Date: AUG 2011
Job No: 746.01

-N-

Figure
1



NCA

Nangle Consulting Associates, Inc.
960 Turnpike Street Canton, Massachusetts

BORING PLACED BY IES SEPTEMBER 2002 343-349 SUMMER ST

MONITORING WELL INSTALLED BY IES SEPTEMBER 2002 343-349 SUMMER ST

BORING PLACED BY IES JULY 2010 351 SUMMER ST

MONITORING WELL INSTALLED BY IES JULY 2010 351 SUMMER ST

343-349 & 351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS

APPROXIMATE SAMPLE LOCATIONS

REFERENCE: Design Consultants Inc: Permit Utility Plan: 6-24-11

Date: AUG 2011

Job No: 746.01

Figure 2

NANGLE CONSULTING ASSOCIATES, INC

ATTACHMENT A

Environmental Engineering and Land Use Planning

960 Turnpike Street, Canton, MA 02021 Telephone (781) 821-0521 email: nangle@ncaenv.com Facsimile (781) 821-4182

CITY OF SOMERVILLE, MASSACHUSETTS

STRATEGIC PLANNING AND COMMUNITY DEVELOPMENT
JOSEPH A. CURTATONE, MAYOR

August 8, 2011

Jeffrey A. Nangle
Nangle Consulting Associates, Inc.
960 Turnpike Street, Suite 1D
Canton, Massachusetts 02021

Dear Mr. Nangle:

The City of Somerville is pleased to contract you as our Peer Review Consultant, pursuant to Mass. Gen. Laws Chapter 44, Section 53G, for the review of plans and environmental reports provided for the proposed project at 343-349 and 351 Summer Street in Somerville, Massachusetts and to recommend steps for ensuring that the provisions of the Massachusetts Contingency Plan are followed and that environmental concerns are addressed appropriately.

As the City's consultant, you will:

1. Review all data submitted by Applicant in support of proposal, including the following documents:
    a. ASTM Screen / Limited Assessment for 343-349 Summer Street for Emerald Development dated March 20, 2002
    b. Preliminary Site Assessment for 343-349 Summer Street for Emerald Development dated April 19, 2002
    c. Subsurface Exploration Program for 343-349 Summer Street for Emerald Development dated September 23, 2002
    d. ASTM Screen / Limited Assessment for 343-349 Summer Street for Dakota Partners dated July 26, 2007
    e. Phase I Environmental Site Assessment for 343-349 Summer Street for Dakota Partners dated June 30, 2009
    f. Phase I Environmental Site Assessment for 351 Summer Street for Dakota Partners dated July 13, 2009
    g. Subsurface Investigation for 351 Summer Street for Maggiore Companies dated July 15, 2010
    h. Any other environmental reports submitted to date

2. Based upon this data, address the following issues:
    a. Does it appear that the data is based upon proper investigation procedure?
    b. Is sufficient information available in the Phase I investigations to create a strategy for a Phase II environmental testing program?
    c. Are the conclusions of each report reasonable based upon the investigative procedure and its results?

d. What additional testing will be necessary to determine that the site is clean or to determine a process to ensure that the site becomes clean? What elements should be in the scope of work for a Phase II testing program, if necessary?
e. What conditions should the ZBA place on the Special Permit to ensure that public health and safety are protected should this project be constructed?

3. Write a technical memorandum to the ZBA evaluating the current environmental reviews, and providing recommendations based upon the issues listed above. Allow for the review of this report by City of Somerville and DEP staff, and anticipate completing an update of this review after receiving feedback.

4. Attend one hearing of the ZBA to review the findings of this study with the Board.

5. Review and assess the future Phase II scope of work for the site when it is submitted by the developer's environmental consultant to ensure that it meets the expectations of the Board and is designed to establish if the site includes any reportable concentrations and addresses appropriate further assessment and/or remediation.

You will be compensated at the fee rates listed in your submitted qualifications packet, not to exceed [redacted] to produce this report. To ensure that sufficient funds are available, you agree to notify the City if any work outside of this scope and cost will be required. The Applicant has only agreed to provide up to [redacted] and additional fees will require a return to the ZBA to secure additional funds. Also, should the cost of the work exceed $5,000.00, a separate contracting procedure will be required.

You will work under the supervision of George Proakis, Acting Executive Director. Please note that you will be working as an independent contractor, which means that the City will not be deducting taxes from your compensation and that you will be responsible for payment of your own taxes and social security.

Should you have any questions concerning this project, please contact George Proakis (617.625.6600 x2504) or Dan Federico, Director of Finance & Administration (617.625.6600 x2539).

Sincerely,

George Proakis
Acting Executive Director

ACCEPTED: _____
Jeffrey A. Nangle

NANGLE CONSULTING ASSOCIATES, INC

ATTACHMENT B

Environmental Engineering and Land Use Planning

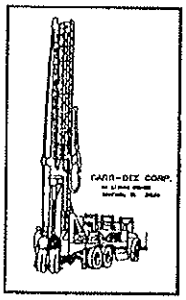
960 Turnpike Street, Canton, MA 02021 Telephone (781) 821-0521 email: nangle@ncaenv.com Facsimile (781) 821-4182

Since 1951

CDC **CARR-DEE CORP.**
Complete Soil Investigation Service

37 Linden Street • P.O. Box 67 • Medford, MA 02155-0001 • Telephone (781) 391-4500 • Fax (781) 395-3231

September 18, 2002



Emerald Development Group, Inc.
103 Morse Street
Watertown, MA 02472

Attention: Mr. Rick Perini

Enclosed are the results of subsurface investigation and installation of monitoring wells, remainder of soil samples accompanying, made at the site of 343-345-349 Summer Street, Somerville, MA.

We shall this date mail copies of reports to the following:

McPhail Associates, Inc.
30 Norfolk street
Cambridge, MA 02139

Attention: Mr. Robert C. Hoyler P.E.

LeMessurier Consultants
675 Massachusetts Avenue
Cambridge, MA 02139

Attention: Mr. William D. Lovallo, P.E.

IES, Inc.
265 Medford Street
Somerville, MA 02143

Attention: Mr. Dave Brincherio

In making inquiries, please make reference to our Job No. 200-138.

Very truly yours,

CARR-DEE CORP.

Henry J. De Simone

Henry J. De Simone
Principal

HJD/mlt

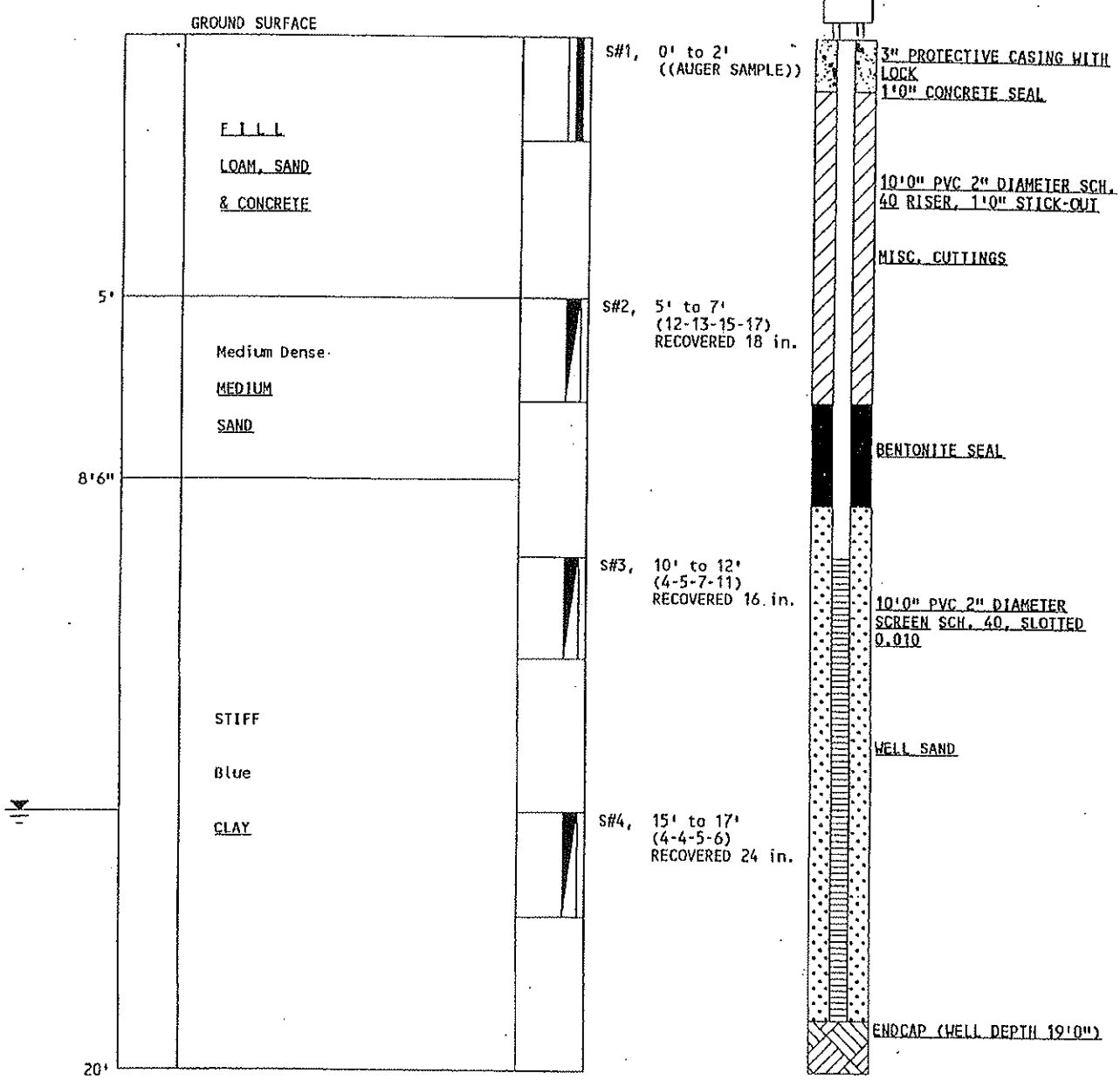
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 3 ft.

BORING B-1



WATER LEVEL 15'
SIZE OF AUGERS 3-3/4" I.D., LENGTH 20'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-9-2002

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

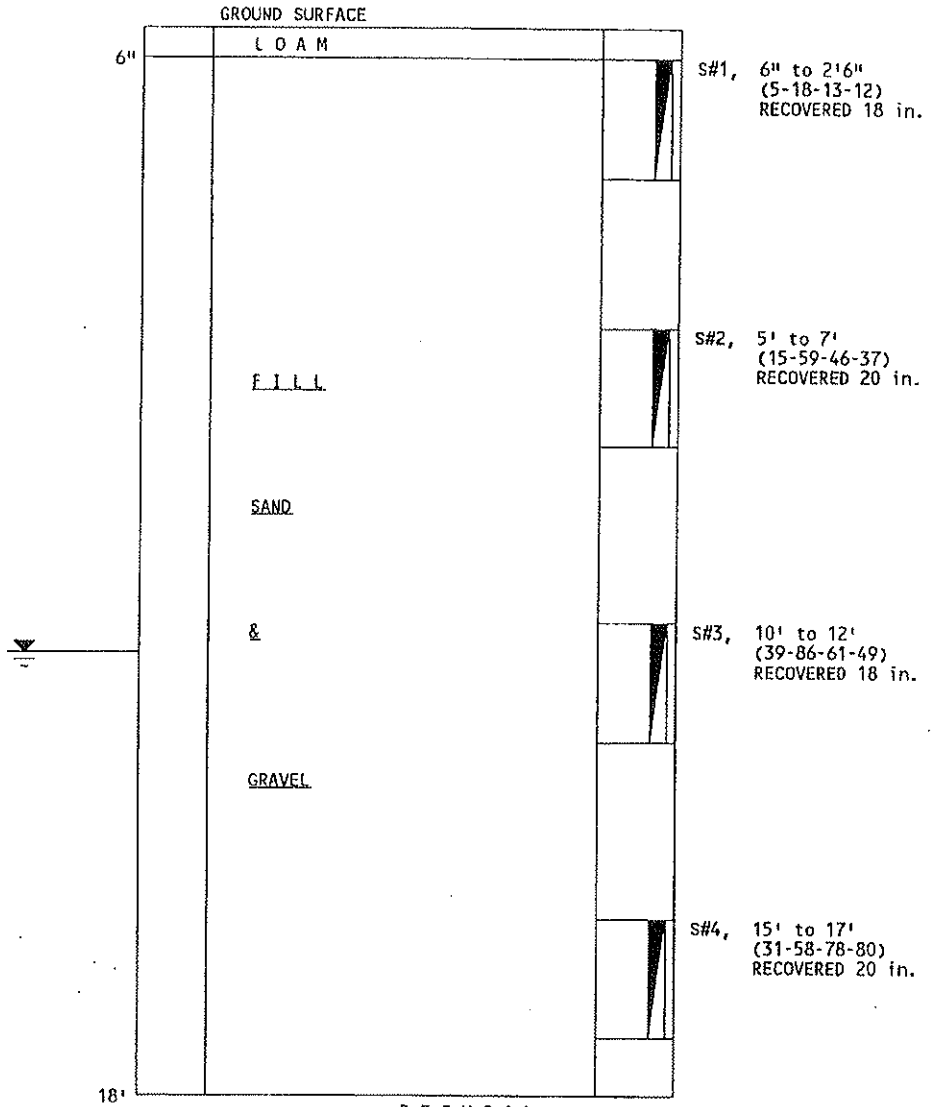
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 3 ft.

BORING B-1A



- R E F U S A L -
(100 BLOWS, S.S., 140-LB. WGT., NO PENETRATION)

WATER LEVEL 10'6"
SIZE OF CASING BW,LENGTH 15'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-10-2002

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

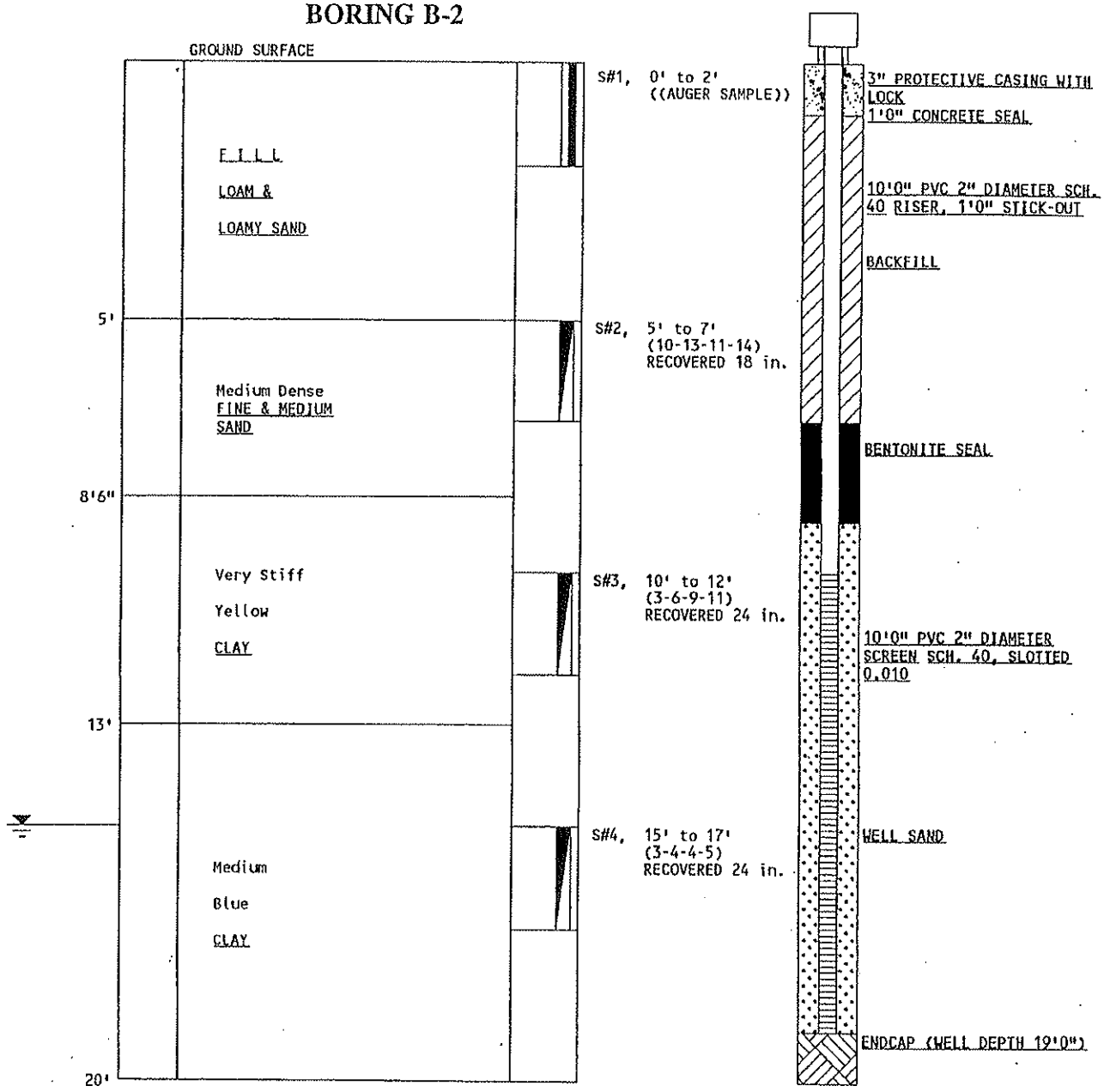
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 3 ft.

BORING B-2



WATER LEVEL 15'
SIZE OF AUGERS 3-3/4" I.D., LENGTH 20'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-9-2002

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

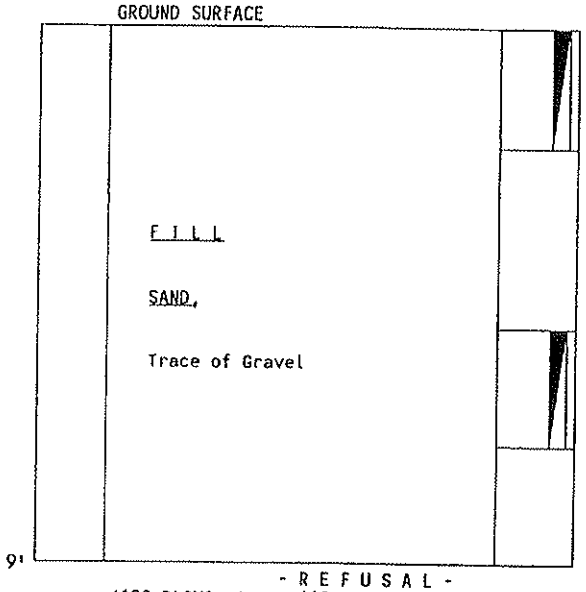
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 3 ft.

BORING B-2A



NO WATER ENCOUNTERED
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-10-2002

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

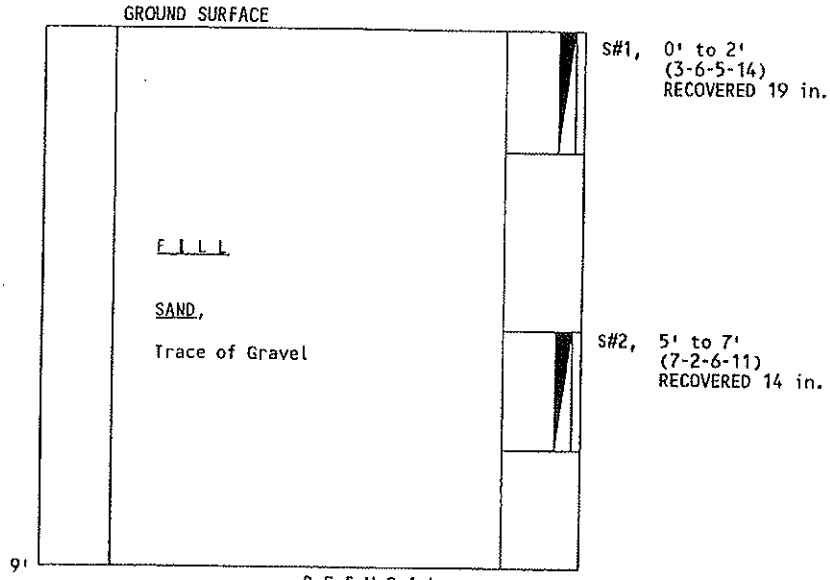
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 3 ft.

BORING B-2B



NO WATER ENCOUNTERED
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-10-2002

NOTE: THIS BORING WAS MADE 1'0" CLOSER TOWARDS VENT SHAFT FROM ORIGINAL LOCATION NO. 2A.

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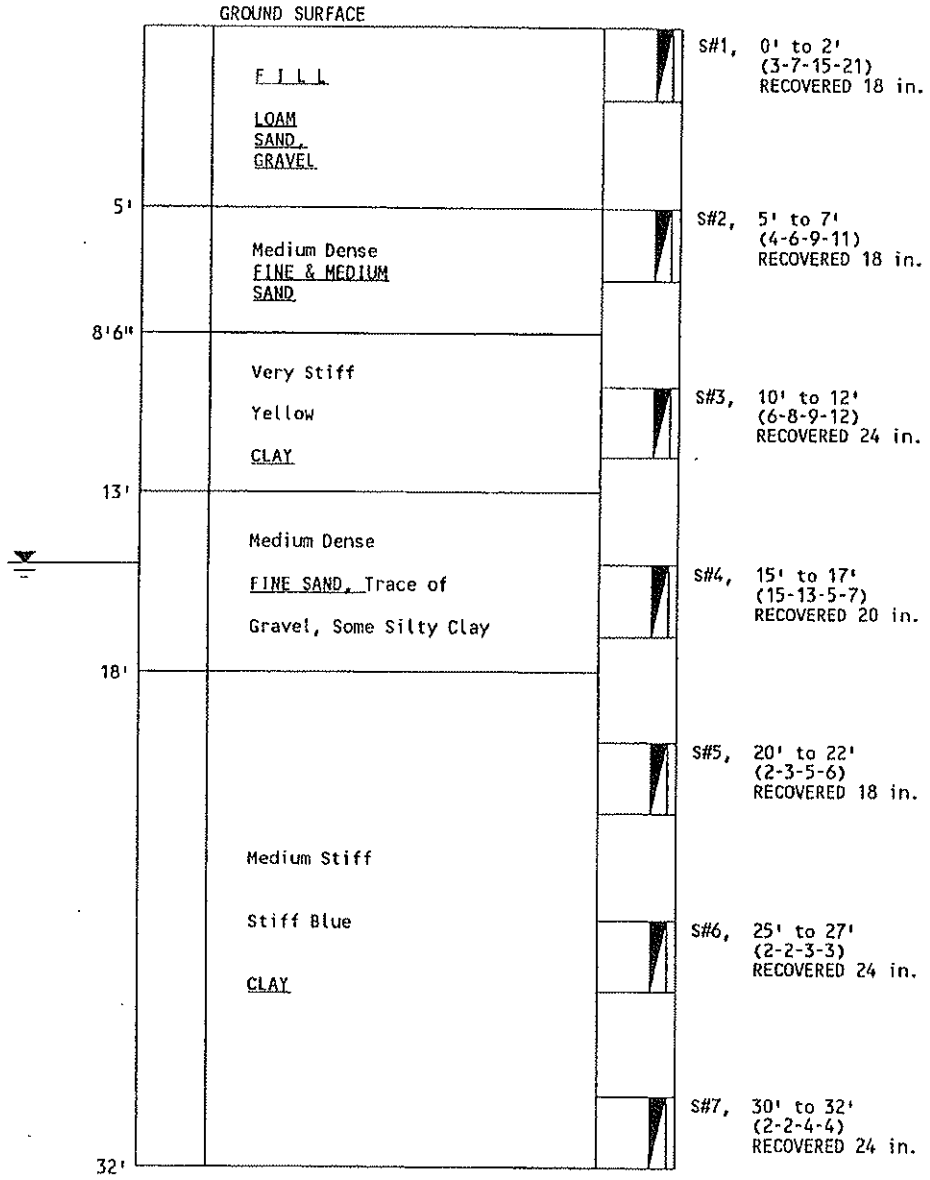
To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 5 ft.

BORING B-3



WATER LEVEL 15'
SIZE OF AUGERS 3-3/4" I.D., LENGTH 5'0"
SIZE OF CASING NW, LENGTH 20'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: JOHN SCHROEDER
DATE STARTED & COMPLETED: 9-9-2002, 9-10-2002

2A.

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

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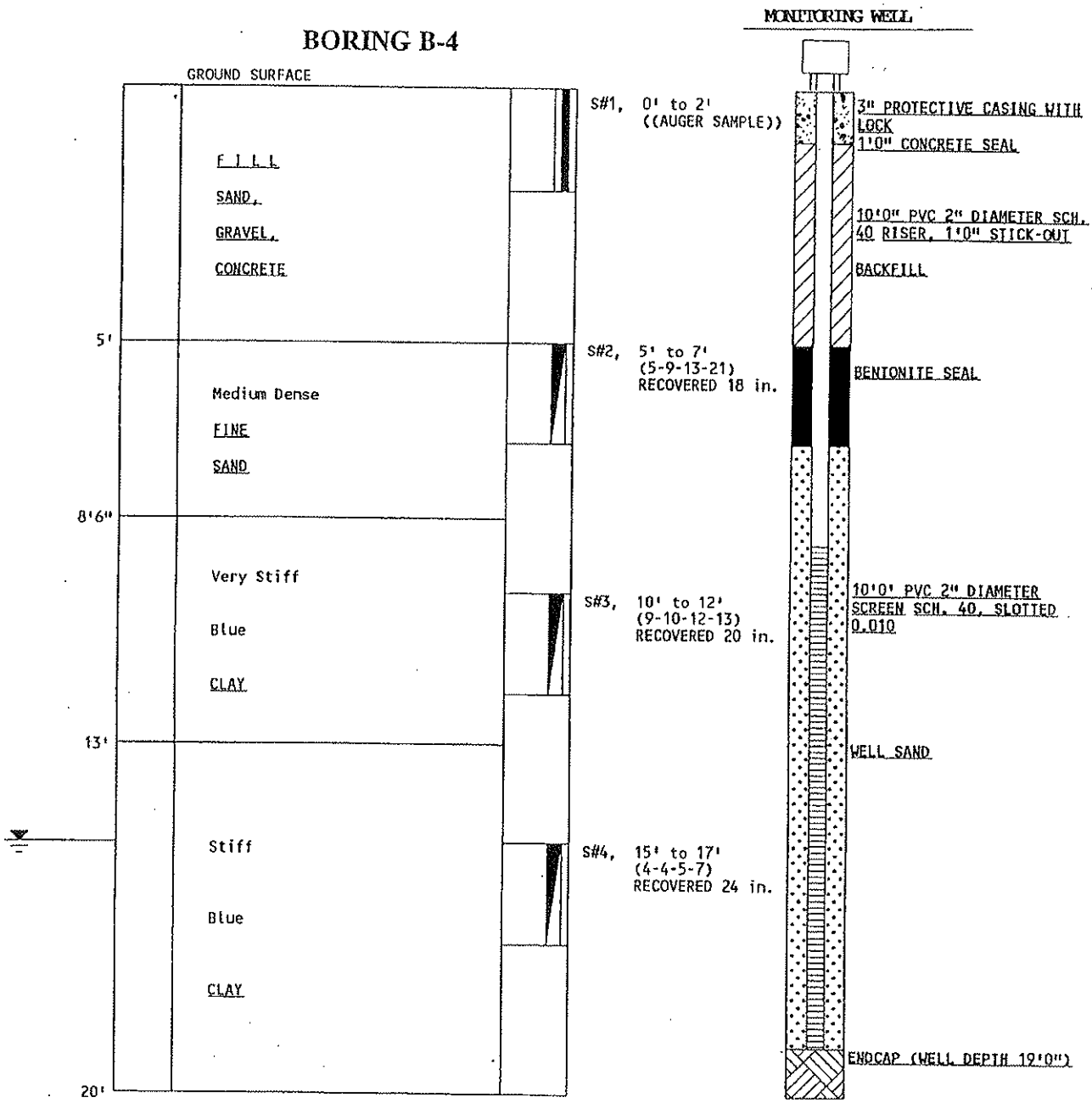
To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 3 ft.

BORING B-4



WATER LEVEL 15'
SIZE OF AUGERS 3-3/4" I.D., LENGTH 20'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-9-2002

2A.

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

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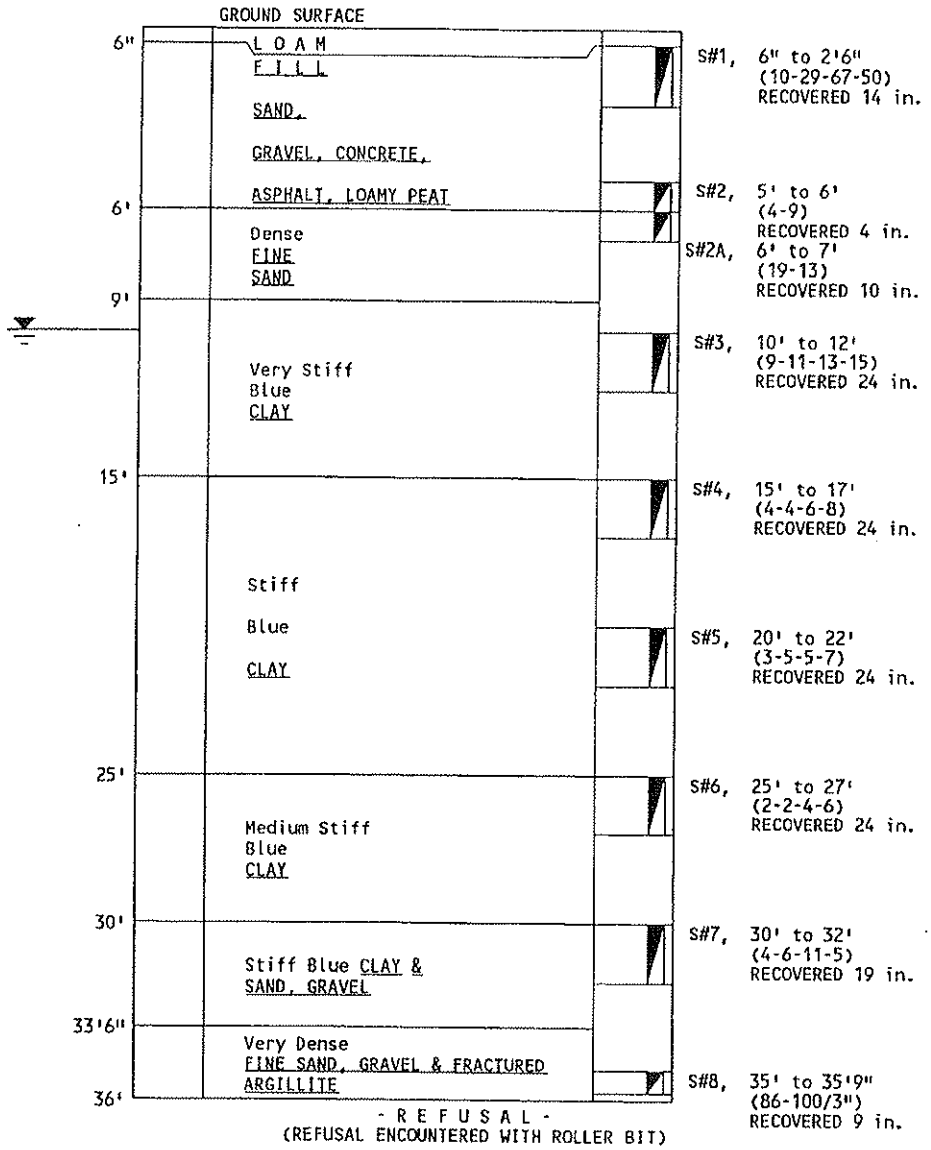
To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 6 ft.

BORING B-4A



WATER LEVEL 10'
SIZE OF CASING NW, LENGTH 15'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-11-2002

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

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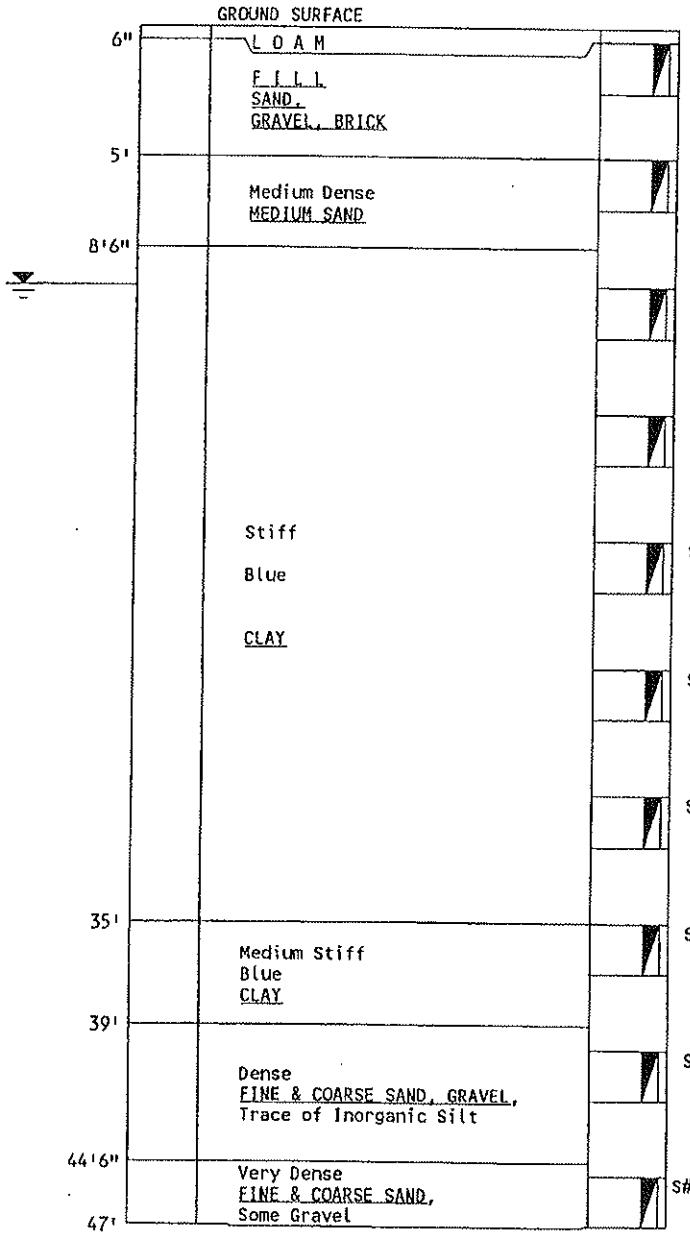
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: EMERALD DEVELOPMENT GROUP, INC., WATERTOWN, MA Date: 9-16-2002 Job No.: 2002-138

Location: 343-345-349 SUMMER STREET, SOMERVILLE, MA Scale: 1 in.=. 7 ft.

BORING B-6



S#1, 6" to 2'6" (3-7-6-8) RECOVERED 15 in.

S#2, 5' to 7' (5-10-12-13) RECOVERED 14 in.

S#3, 10' to 12' (2-4-5-6) RECOVERED 24 in.

S#4, 15' to 17' (2-4-4-5) RECOVERED 24 in.

S#5, 20' to 22' (3-3-5-6) RECOVERED 224 in.

S#6, 25' to 27' (3-4-5-6) RECOVERED 20 in.

S#7, 30' to 32' (3-4-4-5) RECOVERED 24 in.

S#8, 35' to 37' (2-3-3-4) RECOVERED 24 in.

S#9, 40' to 42' (19-14-18-13) RECOVERED 13 in.

S#10, 45' to 47' (31-28-35-38) RECOVERED 12 in.

WATER LEVEL 10'
SIZE OF CASING NW, LENGTH 15'0"
DRILLER: JOSEPH DE SIMONE, INSPECTOR: KERRY ASETTA
DATE STARTED & COMPLETED: 9-10-2002, 9-11-2002

2A.

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

NANGLE CONSULTING ASSOCIATES, INC

ATTACHMENT C

Environmental Engineering and Land Use Planning

960 Turnpike Street, Canton, MA 02021 Telephone (781) 821-0521 email: nangle@ncaenv.com Facsimile (781) 821-4182

From: Dan Jaffe [mailto:DJaffe@iesinc-environmental.com]
Sent: Friday, August 12, 2011 9:42 AM
To: Adam Duchesneau
Subject: RE: Env. Studies: 343-349 & 351 Summer Street (Somerville)

1. Test boring logs for the 3 borings/monitoring wells installed in July of 2010: The drilling contractor was contracted by others (and not by IES), and we were never given any test boring logs for this project.

2. The locations of test borings B1A, B2A, B2B, B4A and B6, which were installed in September of 2002: Boring B1A was attempted in the area of B-1; B2A and B2B were attempted in the area of B-2; B4A was attempted in the area of B-4. These borings encountered refusal prior to being able to install monitoring wells and therefore, were not utilized by IES, but instead additional attempts in their vicinity (i.e. B-1, B-2, and B-4) were utilized as part of the investigation. With regard to B-6, based on the depth of the boring (47 feet), the fact that a monitoring well was not installed, and the fact that the drilling contractor was hired separately (i.e. not by IES), this boring may have been advanced for structural purposes (or some other purpose beyond IES's investigation), and as such was not used in the environmental assessment by IES.

3. Is there a boring B5, for the 2002 sampling event? If so, could they please provide the boring log and location of placement on the property: Looking at the field notes, it appears that boring B-5 was never drilled. I believe that a boring "B5" was proposed for structural purposes, but was not drilled – I would speculate that drilling was not possible in the proposed location, but I can't be sure of the exact reason.

Daniel G. Jaffe
President

IES, Inc.
5 Middlesex Avenue
Suite 307
Somerville, MA 02145
(617) 776-2715 (Direct)
(617) 623-8880 (Main #)
(617) 629-2920 (fax)

From: Adam Duchesneau [mailto:aduchesneau@somervillema.gov]
Sent: Friday, August 12, 2011 9:09 AM
To: Dan Jaffe
Subject: Env. Studies: 343-349 & 351 Summer Street (Somerville)

Hi Dan,
The consultant performing the peer review of the environmental reports for the special permit application 343, 345, 349 and 351 Summer Street has asked if the following information is available:

"To assist in our peer review, could you inquire with IES as to whether or not the following information is available?
1. Test boring logs for the 3 borings/monitoring wells installed in July of 2010.
2. The locations of test borings B1A, B2A, B2B, B4A and B6, which were installed in September of 2002.
3. Is there a boring B5, for the 2002 sampling event? If so, could they please provide the boring log and location of placement on the property."

If you could please send along this information to me or let me know the status for each of these information requests, that would be great. Thanks.

Adam

Adam Duchesneau
Planner
Mayor's Office of Strategic Planning & Community Development
City of Somerville
93 Highland Avenue
Somerville, MA 02143

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F: 617-625-0722
aduchesneau@somervillema.gov