ADDENDUM NUMBER 1:
CITY OF PORTSMOUTH, NEW HAMPSHIRE
RYE LINE WASTEWATER PUMPING STATION IMPROVEMENTS
CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS

Issued: August 21, 2008
For Bids Due: August 28, 2008

A. Technical Specifications

1. Appendix A: Geotechnical Report with Boring Log

The Geotechnical Report was originally not included in the Appendix. The report was emailed to all pre-bid conference attendees previously. Please find it attached.

B. Construction Drawings

1. Sheet C-1

Sheet C-1 is modified as follows: The note describing how much material to excavate around the north and west sides of the station were modified. Please see the attached 8½ x 11 sheet showing this change, labeled C-1a.

2. Sheet D-1

Sheet D-1 is modified as follows: Three (3) existing windows that were originally not proposed to be replaced now are. Please see the attached 8½ x 11 sheets showing this change, labeled D-1a and D-1b.

3. Sheet M-1

Sheet M-1 is modified as follows: A window schedule was added and (3) existing windows that were originally not proposed to be replaced now are. Please see the attached 8½ x 11 sheets showing this change, labeled M-1a, M-1b, and M-1c.

4. Sheet M-2, M-3

Sheets M-2 and M-3 are modified as follows: All water pipes that were ¾" were changed to 1". Please see the attached 8½ x 11 sheets showing this change, labeled M-2a and M-3a.

5. Sheet E-1

Sheet E-1 is modified as follows: There was an addition added to the Legend. Please see the attached 8½ x 11 sheet showing this change, labeled E-1a.

6. Sheet E-2

Sheet E-2 is modified as follows: The note describing where to locate the proposed Float Switch and Radar Level Transducer was revised. Please see the attached 8½ x 11 sheet showing this change, labeled E-2a.

C. Questions and Answers at Pre-Bid Meeting

1. Are the bypass pumping requirements in the spec book?

They are located in Technical Specification Section 02402 By-Pass Pumping in part 3.01C.

2. What type of doors/windows does the design call for? Is there a Section 8?

There is no specific Specification Section 8. There is a door schedule on Sheet M-1 in the Construction Drawings under notes.

3. Who is required to pay for power to the by-pass pumps?

The Contractor is required to pay for temporary power including for by-pass pumping as shown in Technical Section 02402, By-Pass Pumping, Part 1.01: Requirements Included and Section 16402, Electrical Work, Part 1.09: Temporary Power.

4. The intent of section 10 on S2 is unclear. Is the slope from the top of the footing on which we're placing the granular material made of impervious material? Where does this slope drain to?

The line represents the top of the common borrow backfill and is to be extended to the limits of the excavation.

D. Pre-Bid Attendance Sheet

Please find attached the sign-in sheet for the pre-bid conference.

END OF ADDENDUM NO. 1

FILE

CMA ENGINEERS, INC.
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819

Phone: 603/431-6196
Fax: 603/431-5376
E-mail: info@cmaengineers.com
Web Site: www.cmaengineers.com

CMA
ENGINEERS

April 23, 2008

Mr. Peter Rice, P.E.
Portsmouth Department of Public Works
680 Peverly Hill Road
Portsmouth, New Hampshire 03801

RE: Rye Line Pump Station
Revised Geotechnical Evaluation
CMA #578-I

Dear Mr. Rice,

CMA Engineers has completed a revision to the geotechnical evaluation for the planned improvements to the Rye Line Wastewater Pump Station. The original report dated February 14, 2006 has been revised to incorporate certain features of the final design into the geotechnical evaluation. This letter report describes the results of our findings.

Project Description

The project involves construction of a 15 foot by 30 foot addition to an existing pump station built in 1971. A portion of the addition will be constructed on a floor slab elevated about three feet above existing grade, with the remainder having a lower level about 8 to 9 feet below grade. Both the above- and below-grade portions of the addition will abut and be structurally attached to the existing structure. The existing structure extends to a depth of about 14 to 19 feet below grade. Force main piping will extend from the pump station and into and through the addition. Final finished grade around the pump station will be raised approximately one foot to improve site access. The site is located in a low-lying area abutting wetlands.

Field Explorations

Previous Soil Borings

The design plans for the original pump station included logs for three soil borings, drilled some time before the July 1970 date of the plans. The boring locations are shown on Figure 1 as symbols identified as B-1 through B-3. The boring logs only provide a general description of soil stratigraphy. Information on groundwater levels or soil sampling is not provided. Further, the field or laboratory data needed to characterize the soil and to determine soil strength and compressibility are not provided. Each boring was terminated at an undefined "refusal."

These boring logs provide the following description of soil stratigraphy. Underlying surface deposits of topsoil, subsurface conditions consisted of silt or silty clay deposits containing some peat to a depth of 10 feet. These deposits are underlain by 5 to 10 feet of silt, which is in turn underlain by about 10 feet of fine sand and silt, and refusal. At one location, three feet of sand and gravel was encountered above refusal. Refusal depths ranged from 25 to 33 feet below ground surface.

Recent Soil Boring

CMA Engineers drilled one soil boring at the site on February 10, 2006. The boring location is shown on Figure 1 and identified as symbol RLPS-1. Due to numerous underground utilities (gas, water, electric, forcemain) it was not possible to drill closer to the building without risking damage to existing facilities. The boring was drilled using rotary wash drilling techniques and 4-inch diameter casing. Split-spoon samples were obtained and the Standard Penetration Test was conducted near continuously for the first twelve feet of drilling, and at 5-foot intervals thereafter. Cohesive samples were field-evaluated for unconfined compressive strength using a Soiltest penetrometer. Great Works Test Boring drilled the boring under the full-time observation of CMA Engineers. The soil boring log is attached.

Subsurface conditions differ from those described by the previous boring logs. This boring encountered a thin layer of fill at the ground surface, underlain by a natural silty clay deposit, which in turn was underlain by a thin layer of granular soil or weathered rock overlying refusal at a depth of 31 feet. The fill materials at the ground surface consisted of crushed stone underlain by sand and gravel fill. These fill materials had apparently been placed to serve as a gravel drive/parking area for the pump station.

The silty clay deposits extend from a depth of 2 feet to 28.5 feet below ground surface. Other than a trace of organic material at a depth of about 6 feet, peat or other organic materials were not encountered. The clay is gray in color, with brown or rust mottling to a depth of 9 feet. Blow count and pocket penetrometer data indicate the clay deposit is very stiff to hard to a depth of about 14 feet, and medium stiff to stiff below that depth. The blow counts and strength data indicate the clay deposits are over-consolidated. Groundwater was encountered at a depth of about 5 feet in the silty clay deposit.

A granular soil with rock fragments was encountered from a depth of 28.5 feet to 31 feet. Refusal to the split-spoon sampler and the drilling tools was encountered at a depth of 31 feet. The circulating drilling water was lost into the formation as the drilling tools advanced into this granular layer. Groundwater was measured at a depth of 3.5 feet after drilling was completed.

The building addition abuts the existing pump station structure. The addition area, therefore, may be situated, in part, over backfill materials placed in the relatively deep excavation required to construct the pump station. In addition, three utility lines cross the building addition footprint.

Portions of the building addition therefore also may be founded, in part, on utility trench backfill materials.

Conclusions and Recommendations

Subsurface conditions are suitable for use of shallow footing foundations. The foundations should be sized for maximum allowable soil contact pressure of 3,000 pounds per square foot. In addition, all continuous wall footings should be at least two feet wide, and all spread footings should be at least three feet wide in each plan direction. All exterior footings and frost walls should be founded at least four feet below final finish exterior grade for frost protection. The footings should be founded on undisturbed natural clay subgrade material or compacted structural fill. The clay subgrade should be exposed using a smooth-edge bucket to reduce subgrade disturbance. Where footings are founded on trench or excavation backfill material, the backfill material should be compacted in place to 95 percent of its maximum dry density per ASTM D1557. Any soft or yielding backfill soil should be excavated and replaced with compacted structural fill.

Footing and basement excavations, as well as proposed utility trenches, should be kept in a dry condition during construction through the use of a dewatering system approved by the engineer. The source of any groundwater in the excavations may be from the surface fill materials, the clay deposits, or granular backfill materials that may be in place around the original pump station structure and in utility trenches. Any disturbed or saturated subgrade should be dried/re-compacted to form a firm stable subgrade, or replaced with compacted granular fill.

The floor slab in the proposed above grade addition can be designed as a slab-on-grade. To reduce settlement, backfill material used to raise the grade should be a lightweight geotechnical fill consisting of expanded shale, clay or slate produced by the rotary kiln process and meeting the requirements of ASTM C 330, or an approved alternative. Any new paved areas should be provided with at least 12 inches of compacted sand and gravel base and subbase material. All organic material within building and pavement areas should be removed and replaced with compacted granular fill. The subgrade should be proof-rolled and compacted prior to placing the sand and gravel. The underlying clay subgrade should be sloped to drain any water collected in the pavement subgrade.

Total and differential settlements are expected to be less than ½ inch, considering the use of lightweight fill within the building footprint, and the limited placement of fill around the building. Most of the settlement should occur during or shortly after construction due to the over-consolidated nature of the clay.

The basement excavation should be backfilled with granular fill. The basement walls and basement floor slab should be structurally designed to resist full hydrostatic pressures (62.4 pounds per square foot (psf) per foot of depth below the ground surface) assuming the

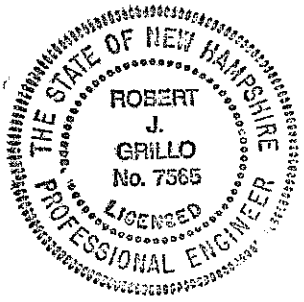
groundwater table is at the ground surface. The basement portion of the building also should be designed to resist a corresponding amount of hydrostatic uplift pressure. In addition, the basement walls should be designed to resist at-rest earth pressures using an earth pressure coefficient of 0.44 and a buoyant soil unit weight of 60 pounds per cubic foot (pcf), resulting in earth pressures of 26.4 psf per foot of depth below ground surface. The total hydrostatic and earth pressures in psf acting at any point on the basement wall therefore equals 89 times the depth in feet.

Should you have any questions, please do not hesitate to call.

Very truly yours,
CMA ENGINEERS, INC.

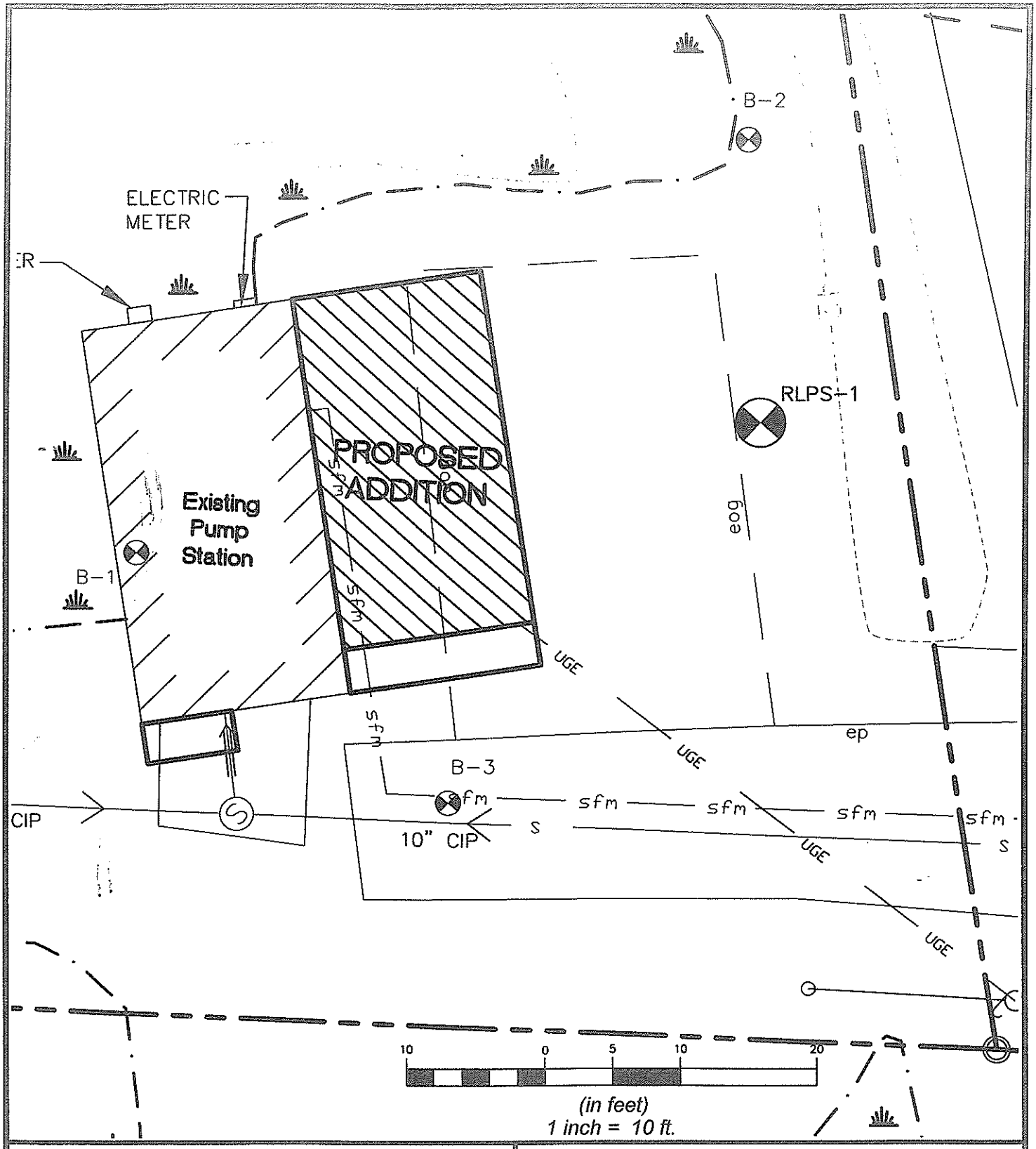
Paul D. Schmidt, P.E.
Project Manager

Robert J. Grillo, P.E.
Geotechnical Engineer



RJG/amh

cc: Matthew Allen, P.E., JSN Associates



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

E-mail: info@cmaengineers.com

City of Portsmouth, NH
Rye Line Wastewater
Pump Station Improvements

Boring Location Plan

Figure 1

TEST BORING LOG

CMA Engineers, Inc.
Civil/Environmental Engineers
35 Bow Street
Portsmouth, NH 03801
Phone: 603.431.6196
Fax: 603.431.5376

PROJECT
Description: Rye Line Pump Station
Location: Portsmouth, NH

Test Boring Number
RL PS-1

Sheet 1 of 2

Contractor: Great Works Test Boring
Date: 02/10/06

CMA Engineer: Robert J. Grillo, P.E.
Equipment: Mobile B-50 Truck - Rotary Wash Drilling w/ 4" Casing
Ground Elevation: 43 +/-

File Number: 578
Operator: Wayne McPherson
Weather: Sun, 15°

Depth	Sample No. Depth (ft)	Blow Count	Sample Descriptions and Classifications	Well Const.	Remarks
1	S-1	7, 7, 15, 13	Brown fine to course sand, little gravel and clay (fill)		
2					
3	S-2	14, 8, 4, 7	Grey silty clay, brown mottled. PP = 3.0 tsf		PP = Pocket Penetrometer reading of shear strength in tons per square foot
4					
5					Groundwater encountered at a depth of about 5'.
6	S-3	6, 7, 12, 18	Same, one fiber in sample. PP = 3.0 tsf		
7					
8	S-4	21, 23, 22, 37	Same, rust mottled, no organics. PP = 4.0 tsf		
9					
10					
11	S-5	15, 20, 24, 26	Grey silty clay PP = +4.5 tsf		
12					
13					
14					
15					
16	S-6	8, 7, 12, 11	Same PP = 2.5 tsf		
17					
18					
19					
20					
21	S-7		Same PP = 1.75 tsf		
22					
23					
24					
25					

TEST BORING LOG

CMA Engineers, Inc.
Civil/Environmental Engineers
35 Bow Street
Portsmouth, NH 03801
Phone: 603.431.6196
Fax: 603.431.5376

PROJECT
Description: Rye Line Pump Station
Location: Portsmouth, NH

Test Boring Number
RL PS-1

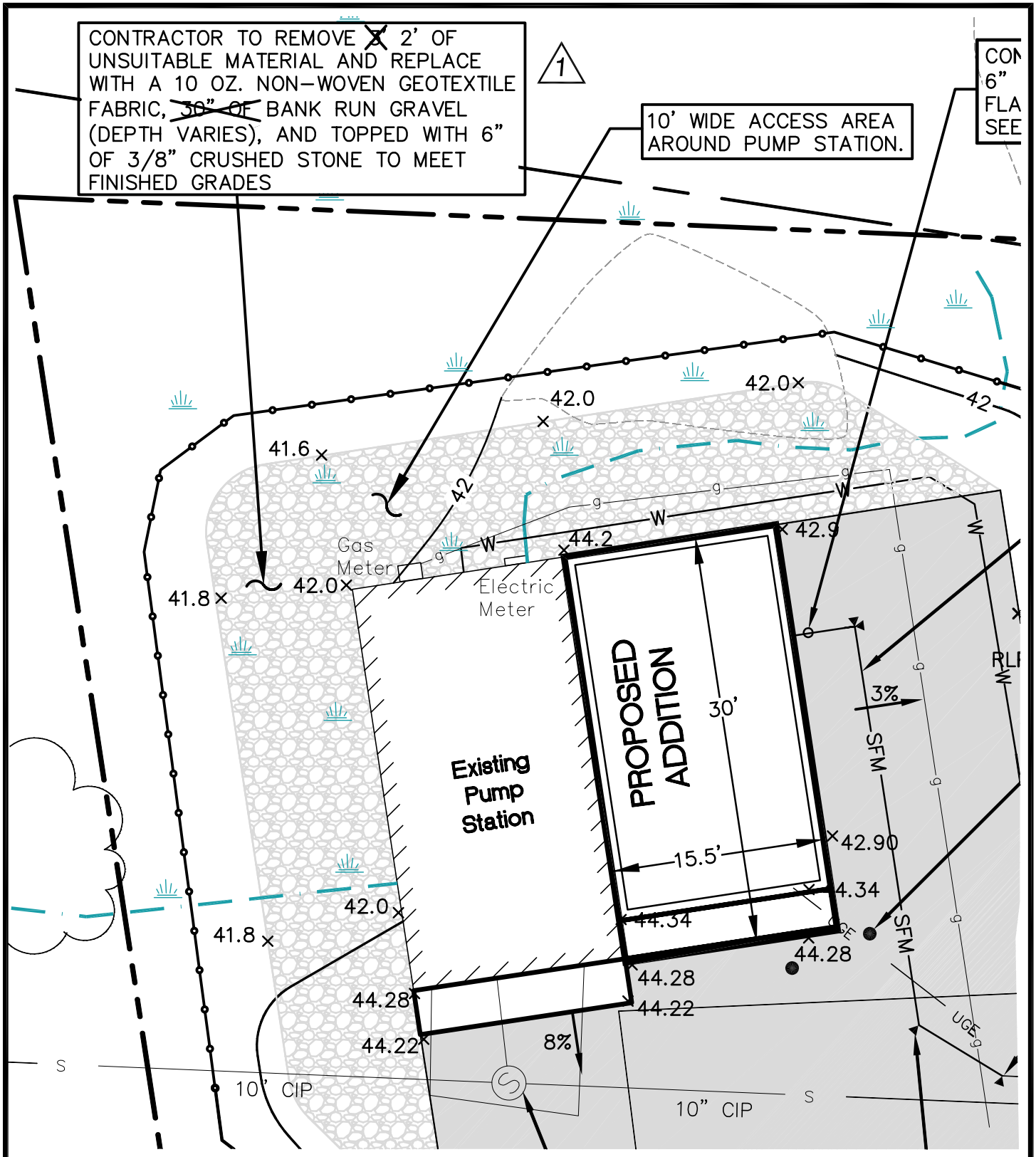
Sheet 2 of 2

Contractor: Great Works Test Boring
Date: 02/10/06

CMA Engineer: Robert J. Grillo, P.E.
Equipment: Mobile B-50 Truck - Rotary Wash Drilling w/ 4" Casing
Ground Elevation: 43 +/-

File Number: 578
Operator: Wayne McPherson
Weather: Sun, 15°

Depth	Sample No. Depth (ft)	Blow Count	Sample Descriptions and Classifications	Well Const.	Remarks
		7	Same.		
26	S-8	9	PP = 2.0 tsf		
		9	Soft seam		
27		9	PP = 0.5 tsf		
28					
					Loosing drilling water in hole in formation materials.
29					
		37			
30		19	Rock fragments.		
	S-9	54	Refusal encountered at a depth of 31'.		Water level at end of drilling at 3.5' below ground surface.
31		50/1"			
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

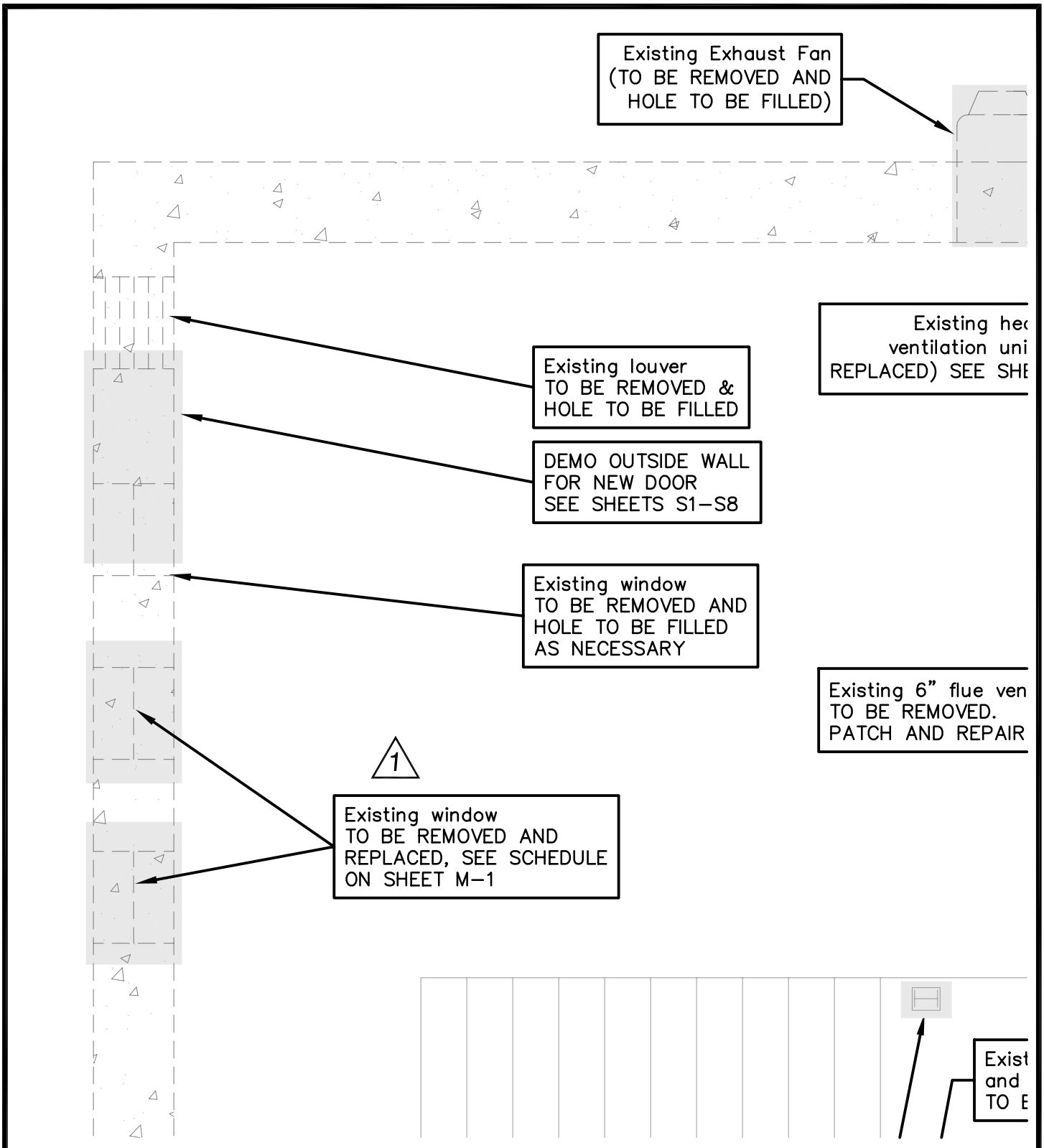
E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet C-1
Proposed Site Plan

Scale: 1" = 10'

C-1a



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

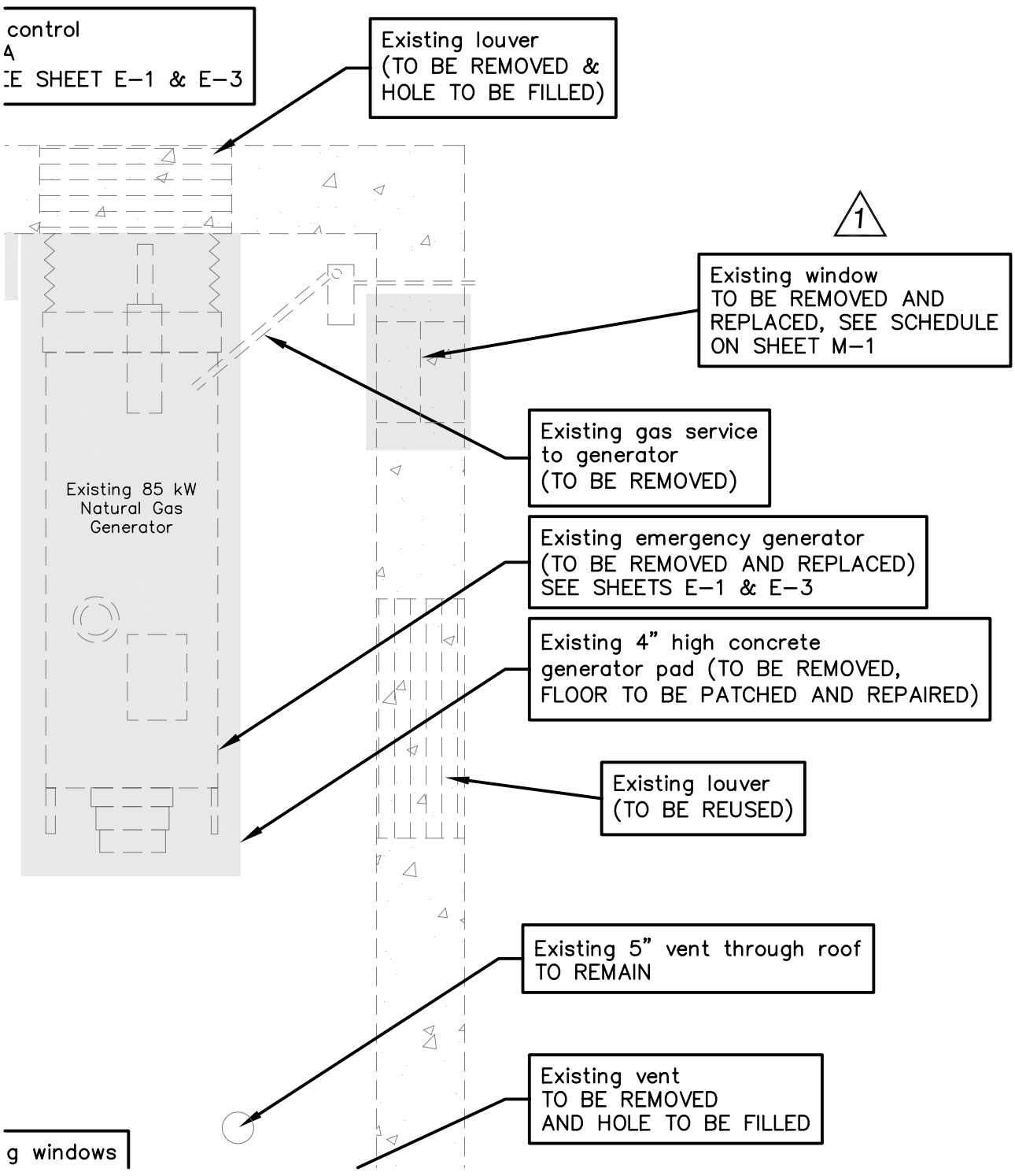
E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet D-1
Existing Upper Floor Plan

Scale: 1/2" = 1'

D-1a



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376
E-mail: info@cmaengineers.com

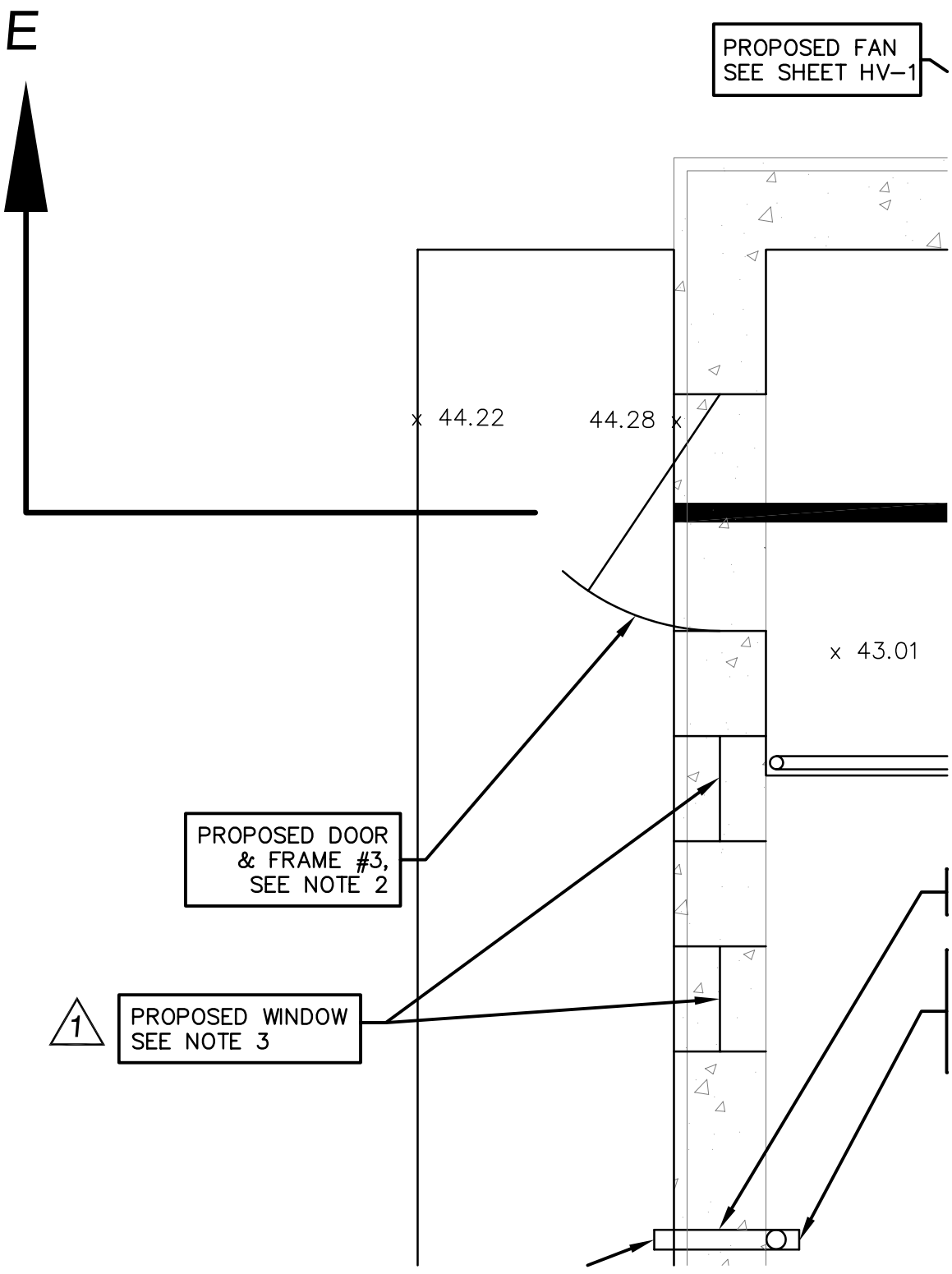
Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet D-1
Existing Upper Floor Plan Layout

Scale: 1/2" = 1'

D-1b



CMA
ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

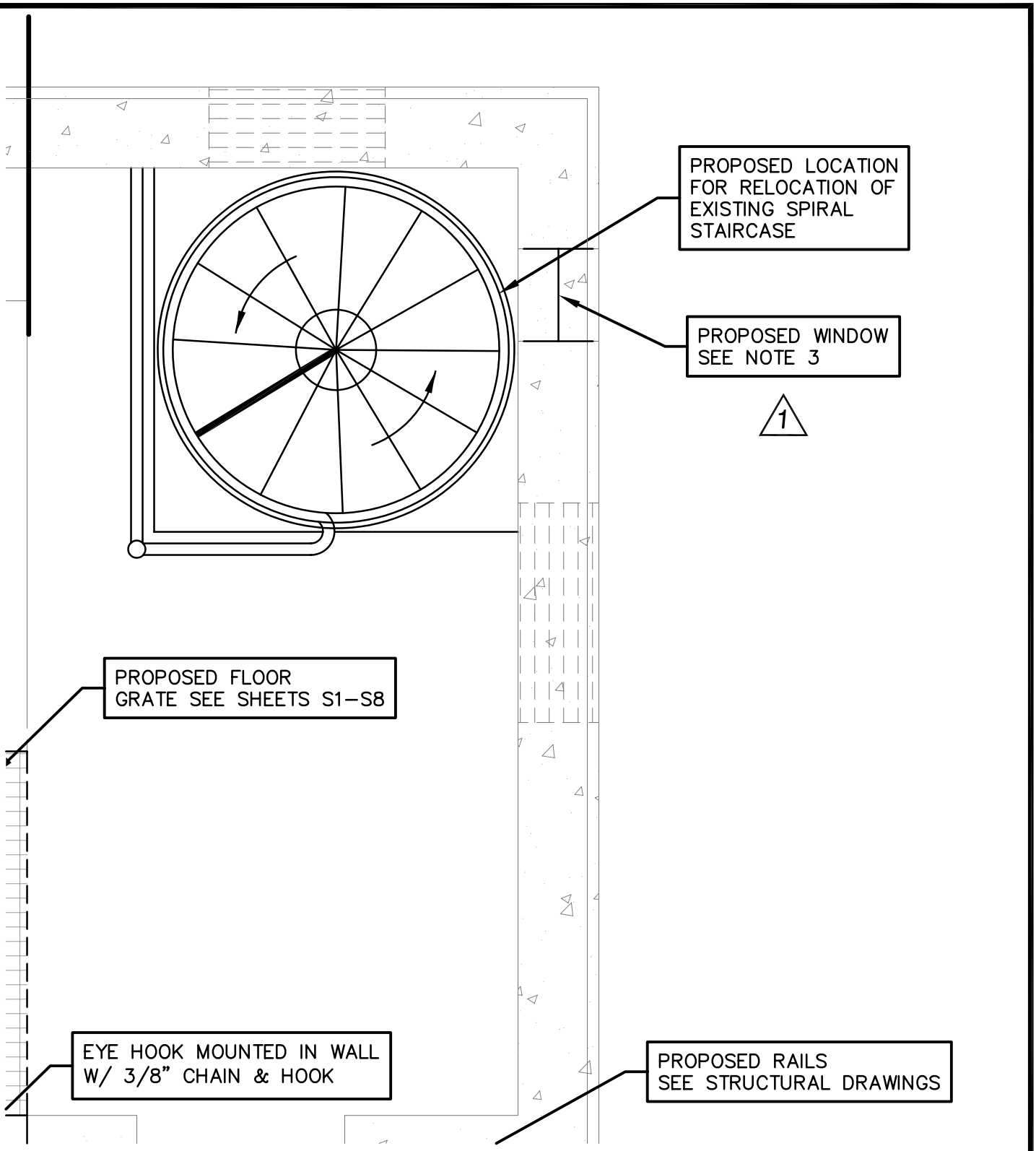
E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet M-1
Proposed Upper Floor Plan Layout

Scale: 1/2" = 1'

M-1a



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376
E-mail: info@cmaengineers.com

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet M-1
Proposed Upper Floor Plan Layout

Scale: 1/2" = 1'

M-1b

1

Notes (continued):

4. Contractor to fit replacement windows to existing dimensions, approximate opening shown below.

Window #:	1–5, typ.
Approximate Opening:	1'–3" wide x 3'–10" high
Nominal Wall Thickness:	7 1/2" (CMU wall with brick veneer)
Type:	Industrial windows with impact resistant, obscure glass

CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

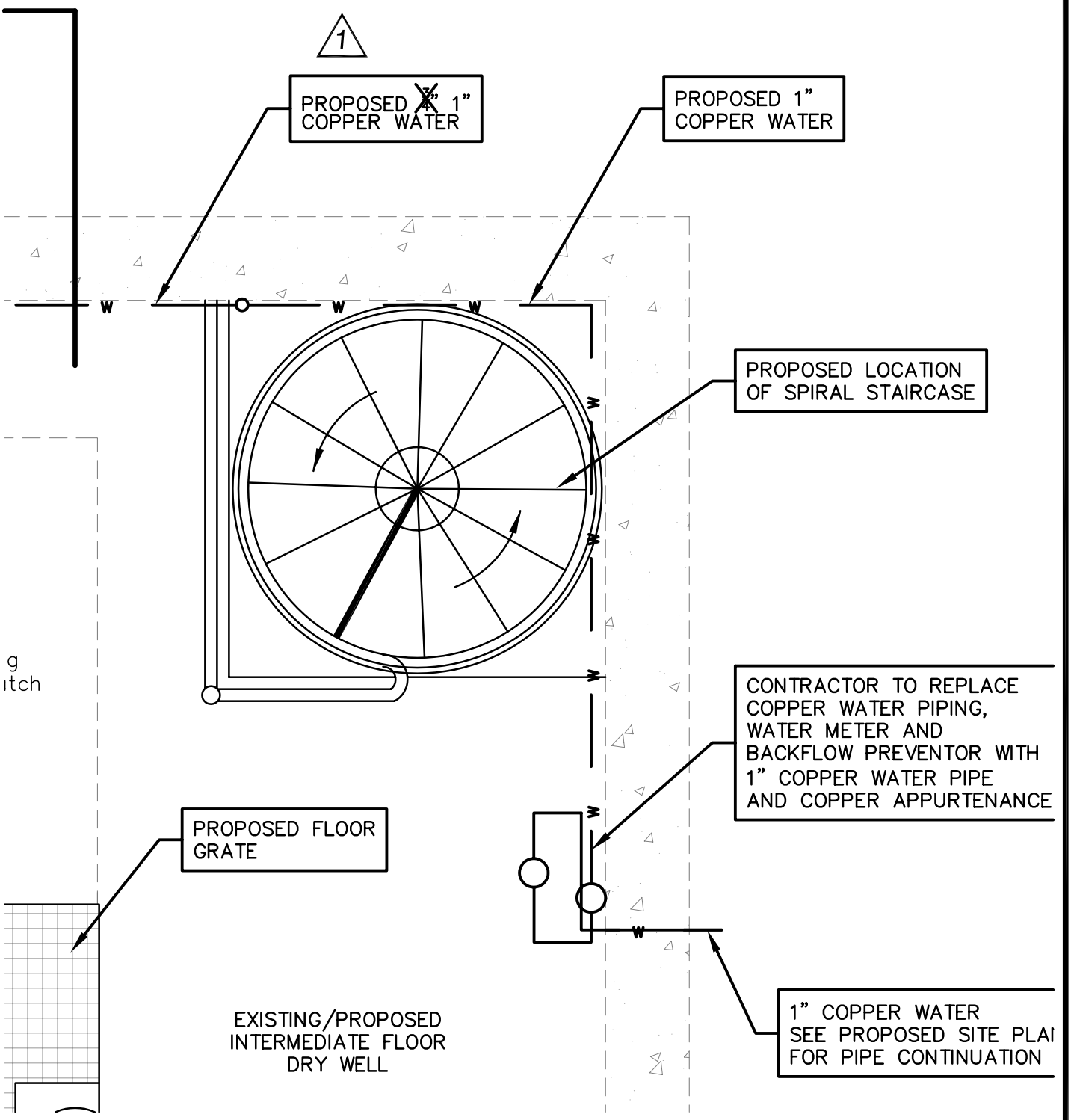
35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376
E-mail: info@cmaengineers.com

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet M-1
Notes

Scale: M-1c



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

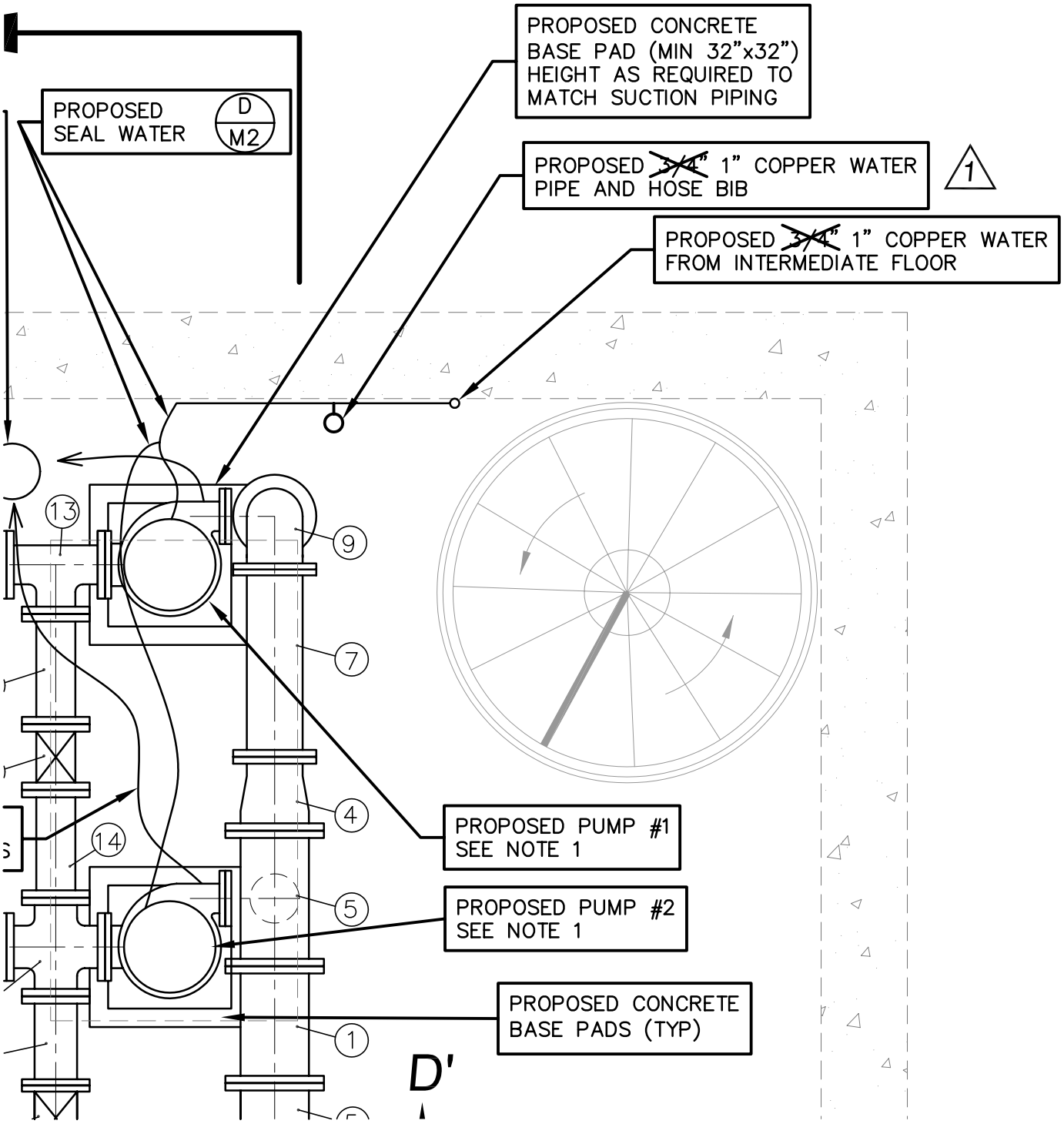
E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet M-2
Proposed Intermediate Floor Plan Layout

Scale: 1/2" = 1'

M-2a



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

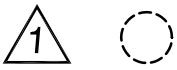
E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet M-3
Proposed Dry Well Floor Layout

Scale: 1/2" = 1'

M-3a

	MOTOR
(J)	JUNCTION BOX
(CR)	CONTROL RELAY
	DOOR SWITCH
SP	SWITCH WITH RED PILOT LIGHT–48" AFF
(T)	THERMOSTAT (PROVIDED BY DIV. 15)
AFF	ABOVE FINISHED FLOOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
WP	WATERPROOF
VFD	VARIABLE FREQUENCY DRIVE
WW	WET WELL
DW	DRY WELL
EF	EXHAUST FAN
ATS	AUTOMATIC TRANSFER SWITCH
UH	UNIT HEATER
MCB	MAIN CIRCUIT BREAKER
FM/FT	FLOW METER / FLOW TRANSMITTER
TS	TWISTED SHIELDED
DN	DOWN
HOA	HAND–OFF–AUTO SELECTOR SWITCH
X	(SUBSCRIPT X) CLASS 1, DIVISON 1, GROUP C,D
SWS	SEAL WATER SOLENOID
	CLASS 1, DIVISION 1, GROUP C,D CONDUIT SEAL FITTING
	LIGHT FIXTURE FOR REFERENCE FROM DIFFERENT LAYOUT

CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

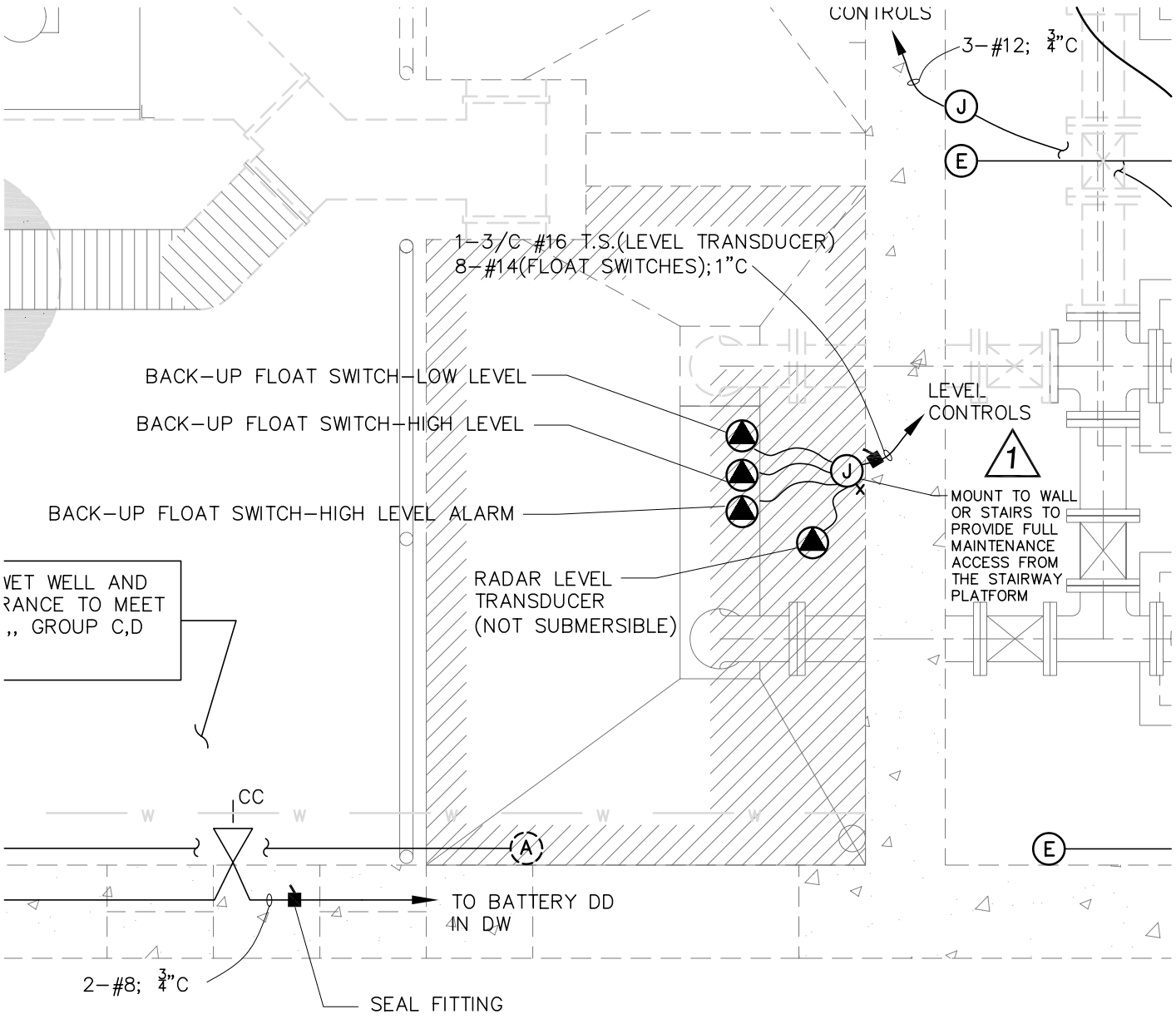
E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet E-1
Proposed Lower Floor Plan Layout

Scale: 1/2" = 1'

E-1a



CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

35 Bow Street
Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

E-mail: info@cmaengineers.com

Addendum #1
City of Portsmouth, NH
Rye Line Pump Station Improvements

Reference Construction Drawing Sheet E-2
Proposed Lower Floor Plan Layout

Scale: 1/2" = 1'

E-2a

Mandatory Pre-Bid Meeting
RYE LINE PUMPING STATION UPGRADE

SIGN-UP SHEET

NAME & COMPANY	ADDRESS	PHONE #	E-MAIL
RVan Steinhoff - Ewing Electric	3 North Rd, Deerfield, NH	(603) 463-8852	Ewingerec2@
FRANZ VAIL	NH DES		
John Sykora - Weston & Sampson, CMR	5 Centennial Drive Peabody, MA	(978)532-1900	Sykora.J@wse
Heath Todd - Apex	83 Amarosa Dr. Rochester, NH	(603)330-3600	heath@apex-Constructionine.Co
Tom Rousseau	Penta Corp PO Box 390 Moultonboro NH	603-476-5525	
Elmer Barron	Barron Bros. Dev. Inc Rte 11, Farmington N.H.	603-755-9071	
Steve Pacsey	Barron Bros. Dev Inc	755-9071	
Cal's Electric LLC	Cal Erickson 43 Spur Rd., Dover NH	603-343-1329	CalsElectrica@Comcast.Net
Dana Coy RTH Mechanical	99 Pine Rd Brentwood, NH	603-772-9779	Danac@rthe world path.net
Chuck Fritz	Electrical Installations 397 Whittier Hwy Moultonboro, NH	603-253-4525	CLFJr@Comcast.net
PAUL SCHMIDT	CMA ENGINEERS 55 SOUTH COMMERCIAL ST MANCHESTER NH	603-627-0708	pschmidt@cmaengineering.com
Matt Mears	CMA Engineers 35 Bow St. Portsmouth, NH	603-431-6196	MMears@CMAengineers.com

Mandatory Pre-Bid Meeting
RYE LINE PUMPING STATION UPGRADE

SIGN-UP SHEET

NAME & COMPANY	ADDRESS	PHONE #	E-MAIL
MARK MCPHETERS T.BUCK CONST.	249 MERROWIRD AUBURN ME. 04210	207-783-6223	MARK@TBUCK CON.NET
PEET TUTHILL, KEYMONT	116 HOUGHTON AVE, #7, LACONIA, NH 03246	603 524 3103	ptkci@worldpath.net
RICH SLINGSBY KINSMEN	35 LONDONDERRY TPKE HOOKSETT NH	603.490.5825	BALGER@KINSMEN CORP.NET
Scott W. Scherbon Sr, Scherbon Consolidated Inc	40 Haverhill Rd Amesbury 01913 MA	978-388-3132	Scottsr@Scherbon.com
Robert Vallance	Scherbon Consolidated 40 haverhill rd Amesbury ma	978 388 3132	R Vallance@Scherbon.c
Pete McKenney	Godwin Pumps, Inc. 99 Stockhouse Rd, Bozrah CT 06334	860-889-2343	Pete.McKenney@Godwin-pumps.c
Alicia Donnell	Lumus Construction 175 Lancaster St. Portland ME 04101	207-780-8300	alicia@lumusinc.com
Don Desilets	Lumus Construction "	"	ddesilets@lumusinc.com