COUNTY OF WESTCHESTER
NEW YORK

DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION

DIVISION OF ENGINEERING

ADDENDUM NO. 3

CONTRACT NO. 17-529

FOR

PUMPING STATION REHABILITATION
CROTONVILLE PUMPING STATION
OSSINING SANITARY SEWER DISTRICT
OSSINING, NEW YORK

The attention of the bidders is directed to the following changes, additions, and/or substitutions affecting the above-referenced contract(s).

A. RE: GENERAL CONTRACT INFORMATION:

ITEM A. Bidders Questions and Responses

Attached hereto.

ITEM B. Table of Contents

After Section 03 30 00 ADD Section 04 25 16 Thin Brick System dated October 29, 2021

At the beginning of SECTION 8-OPENINGS ADD Section 08 39 21 Pedestrian Flood Doors and Frames, dated November 2, 2021.

After Division 40, ADD the following:
Section 41 22 00 Cranes and Hoists 41 22 00 1-10

At the end of the Technical Specifications heading, after 01 52 00, Environmental Requirements for Construction, **ADD** the following attachment:

"Hazardous Materials Investigation Report Crotonville Pump Station Project Westchester County, New York dated September 15, 2017, Pages 1-85."

In the Contract Drawing Index After Sheet E-605 **ADD**
H-001 DEMOLITION 208-03-H-75A-0

B. RE: THE TECHNICAL SPECIFICATIONS:

ITEM A. Table of Contents

After Section 03 30 00 **ADD** Section 04 25 16 Thin Brick System dated October 29, 2021

At the beginning of SECTION 8-OPENINGS **ADD** Section 08 39 21 Pedestrian Flood Doors and Frames, dated November 2, 2021.

After Division 40, **ADD** the following:

Section 41 22 00 Cranes and Hoists 41 22 00 1-10

At the end of the Technical Specifications heading, after 01 52 00, Environmental Requirements for Construction, **ADD** the following attachment:

"Hazardous Materials Investigation Report Crotonville Pump Station Project Westchester County, New York dated September 15, 2017, Pages 1-85."

ITEM B. In Section 01 10 00 Summary, Part 1.10 BID ITEM DESCRIPTIONS **ADD**

"52) Demolition of the existing monorail hoist and replacement in kind as specified in Section 41 22 00.

53) HVAC demolition"

ITEM C. After Section 03 30 00 **ADD** Section 04 25 16 Thin Brick System dated October 29, 2021

ITEM D. At the beginning of SECTION 8-OPENINGS **ADD** Section 08 39 21 Pedestrian Flood Doors and Frames, dated November 2, 2021.

ITEM E. In Section 26 05 33, Raceways and Boxes for Electrical Systems, in Article 2.4, **ADD** the following paragraph:

"B. Manufacturers:

1. Appleton EXGJH or EXLK Series
2. Cooper Crouse-Hinds ECGJH or ECLK Series
3. Hubbell, Inc./Killark Electric Manufacturing Co. EKG Series
4. Robroy Industries EC Series
5. Equal"

ITEM F. In Section 26 32 13, Diesel Engine Driven Generator Set, in paragraph 2.8.A., **ADD** the following:

"Batteries shall be mounted within the generator weatherproof sound attenuated enclosure."

ITEM G. In Section 46 21 16 Flexible Rake Bar Screen and Washer Compactor. Part 2.5.B.1 Performance Requirements DELETE "Average capacity (continuous operation) 6 cf/hour." And SUBSTITUTE THEREFOR "Average capacity (continuous operation) 0.5 cf/day."

ITEM H. In Section 46 21 16 Flexible Rake Bar Screen and Washer Compactor. Part 2.5.5.a **DELETE** the sentence:

"Discharge chute shall be tapered outward toward discharge end." And **SUBSTITUTE THEREFOR** "Discharge chute shall be round and tapered outward toward discharge end."

ITEM I. In Section 46 21 16 Flexible Rake Bar Screen and Washer Compactor. Part 2.5.5 **ADD**

Provide intermediate supports as recommended by manufacturer.

ITEM J. In Section 46 21 16 Flexible Rake Bar Screen and Washer Compactor. Part 2.6.3 **DELETE**

"¾ Horsepower maximum" and **SUBSTITUTE THERFOR** "1 hp Maximum"

ITEM K. In Section 46 21 16 Flexible Rake Bar Screen and Washer Compactor. Part 2.9.A. **DELETE 2. Washer Compactor a. – g. and SUBSTITITE THERFOR**

a. Side Auger Supports (2)
b. Upper/Lower Auger Supports (2)
c. FHSCS: ¼-20 x 1.00 LG (24)
d. Washer: ¼ Flat SAE (24)
e. Nut: ¼-20 Nylock (24)
f. Grease Tube (14 oz. (1)
g. Anti-Seize Lubricant (1 oz.) (1)

ITEM L. **ADD** Specification Section "04 25 16 THIN BRICK PANEL SYSTEM dated October 29, 2021 Pages 1- 12"

ITEM M. **ADD** Specification Section "08 39 21 PEDESTRIAN FLOOD DOORS AND FRAMES dated October 29, 2021 Pages 1- 6"

ITEM N. In Section 01 51 00, Temporary Facilities and Controls, in Article 3.2, **DELETE** paragraph H in its entirety, and **SUBSTITUTE THEREFOR** the following:

"H. Provide temporary electrical service at the pumping station site required for the Work, including continuous power for bypass pumping, and construction equipment. Provide temporary electric service at the Croton Point Landfill for temporary field offices and sheds.

Make all arrangements with utility service companies for temporary services and obtain required permits and approvals for temporary utilities. Contractor to include all costs for establishing temporary electrical services at the Croton Point Landfill in contract bid price. The Owner will pay all utility charges related to the installation of a temporary incoming service at the Crotonville Pumping Station.

Owner will pay monthly utility bill for usage. Exercise measures to conserve energy."

ITEM O. Attachment at the end of the Technical Specifications:

ADD The following attachment at the end of the Technical Specifications:

Hazardous Materials Investigation Report Crotonville Pump Station Project Westchester County, New York dated September 15, 2017, for your information only. Attached hereto.

C. RE: THE DRAWINGS:

ITEM A. On the Cover Sheet T-001, Index of Drawings. After Sheet E-605 **ADD** SHEET NO. H-001, SHEET TITLE DEMOLITION, DPW FILE NO. 208-03-H-75A-0.

ITEM B. On Sheet C-501, Typical Bollard Detail **DELETE** Detail Note 1 and **SUBSTITUTE THEREFOR** the following:

"Field locate with Consultant. Provide 12."

ITEM C. On Sheet M-101, Lower Level Demolition Plan, **DELETE** Note "Existing Sump Pump and 2" discharge piping to remain" and **SUBSTITUTE THEREFOR**: " Remove existing sump pump and 2" discharge piping"

ITEM D. On Sheet E-103, Site Plan, **DELETE** conduit P-5 and **SUBSTITUTE THEREFOR** "LP-13".

ITEM E. On Sheet E-103, Main Level Power Plan, **ADD** a WP/GFI receptacle with homerun circuit LP-21 located on the Pumping Station east exterior wall adjacent to the WP/GFI receptacle with homerun circuit LP-9.

ITEM F. On Sheet E-605, Conduit Schedule, **DELETE** conduit P-5.

ITEM G. On Sheet H-101 and Sheet H-102 under general Notes: **ADD** the following notes:

"All ductwork associated with SAF-101 and EF-101 shall be aluminum. Refer to Specification 23 31 00 for information regarding duct construction.

All ductwork associated with HRU-101 shall be galvanized steel. Refer to Specification 23 31 00 for information regarding duct construction."

ITEM H. On Sheet A-101, Installation Plan, **ADD** Key Note 3 to the opening on the East Wall of STAIR 2.

ITEM I. On Sheet A-101, Installation Plan, **DELETE** note in Electric Room 3 "Floor Infill See Structural" and ADD replace with "Aluminum Grating Refer to Structural Drawing S-101".

ITEM J. On Sheet A-102, Roof Plan, **ADD** the following note to Installation Keyed Note D, "OSHA Compliant Pre-Manufactured Ballasted Guardrail System. Basis of Design: Garlock Railguard 200 Fit-Rite Safety Rail or Approved Equal"

ITEM K. On Sheet S-304, Section 2, **DELETE** callout saying "REPLACE DEMOLISHED 6" PRECAST PLANK WITH EXTERIOR CONCRETE, TYP."

ITEM L. On Sheet S-501, **ADD** attached Pipe Penetration Through Existing Wall Detail dated November 2, 2021

ITEM M. After Sheet E-605 **ADD** Sheet H-001 Demolition dated November 2, 2021

Attachments

- Technical Specification Section 04 25 16 Thin Brick Panel System dated October 29, 2021
- Technical Specification Section 08 39 21 Pedestrian Flood Doors and Frames dated November 2, 2021
- Technical Specification Section 41 22 00 CRANES and HOISTS dated October 25, 2021
- Hazardous Materials Investigation Report Crotonville Pump Station Project Westchester County, New York dated September 15, 2017
- Pipe Penetration Through Existing Wall Detail dated November 2, 2021
- Contract Drawing H-001 Demolition dated November 2, 2021

ALL PROVISIONS OF THE CONTRACT NOT AFFECTED BY THE FOREGOING SHALL REMAIN IN FULL FORCE AND EFFECT.

COUNTY OF WESTCHESTER
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION

By: Vincent F. Kopicki, P.E.
Commissioner of Public Works
and Transportation

Dated: November 2, 2021
WHITE PLAINS, NEW YORK

Bidders Questions and Responses

- **Question 27:** There is no specification for the Hollow Metal Doors shown on the plans. Please issue a specification for this item.

  Response: See amendment to Technical Specifications

- **Question 28:** There is no specification for the Door Hardware shown on the plans. Please issue a specification for this item.

  Response: See amendment to Technical Specifications

- **Question 29:** There is no specification for the Flood Proof Doors shown on the plans. Please issue a specification for this item.

  Response: See amendment to Technical Specifications

- **Question 30:** *Specification Section 23 31 00 – HVAC Ducts and Castings*
  Specification Section 23 31 00, Paragraph 2.1 A. discusses two different materials for the ductwork: galvanized steel and aluminum. Please advise whether the ductwork should be galvanized steel or aluminum.

  Response: See amendment to Contract Drawings

- **Question 31: 2.** *Specification Section 09 90 00 – Field Painting*
  There is no job-specific painting spec provided. Based on the generic painting Specification Section 09 90 00 and the architectural drawings, we believed the following items are to be painted:

  a. CMU wall infills at seven (7) locations, as shown on Drawing A-101

  b. Precast aggregate panels on the building exterior, at the roof parapet

  c. All new process piping and valves, as shown on the mechanical drawings

  d. All galvanized structural steel (per paint system M-14) for the Generator Platform exterior steel, the Switchgear/Transformer structural steel, and the RTU support steel on the roof.

  Please confirm that all of these items must be painted and that this is the full extent of the field painting required for this project.

  Response: a .Yes, b. Yes, c. Yes, d. No.

- **Question 32:** ***Drawing A-101 – Main Floor Installation***
  Installation Keyed Note No. 3 for Detail 2 – *Main Floor Installation* on Drawing A-101 refers to locations where CMU infill needs to be installed below the new translucent wall panels. In Room 2 titled "Stair", however, there is no infill shown on the East wall. Is this correct or is CMU infill required at this location?

  Response: A CMU infill is required at this location.

- **Question 33:** ***Thin Brick System***
  Please provide a formal specification for the thin brick veneer system called for on the architectural drawings.

  Response: See amendment to Technical Specifications

- **Question 34:** ***Drawings S-101 and A-101***
  Drawing S-101 requires the removal of the existing hatch on the Main Floor, enlarging the opening, and installing aluminum grating. Plan Number 2 – *Main Floor Installation* on Drawing A-101, however, shows the same area to be infilled. We assume the opening is needed for equipment access to the lower levels. Please confirm that infill is not required at this location.

  Response: Enlarge openings and install aluminum grating per requirements shown on S-101.

- **Question 35:** ***Drawings S-303 and A-102 – RTU Frame Support Detail***
  Sections 1, 2 & 3 on Drawing S-303 show the 1'-3" x 1'-8" baseplate of the 4" x 4" x ¼" RTU galvanized posts to be placed directly on the concrete roof planks and bolted through the planks to a 8" x 1'-2" plate. The note on Section 2 refers to the Architectural drawings for more detail. Architectural Drawing A-102, however, shows the RTU support posts sitting directly on the existing W12 beams, not on the roof planks.
  Both drawings also require replacement of demolished roof planks. It does not appear that the roof planks need to be replaced if the post is sitting directly on top of the plank, as shown on Drawing S-303. Please advise which detail should be followed and whether any of the roof planks need to be replaced.

  Response: Install RTU frame per Sheet S-303. RTU frame posts should sit directly on existing roof plank and installation does not require replacing any concrete. See amendment to Contract Drawings.

- **Question 36:** ***Specification Section 05 52 13 – Pipe & Tube Railings***
  Drawing S-501 refers to steel railings for the Generator and Switch Gear Platforms while Section 1.1 A. of Specification Section 05 52 13 – *Pipe & Tube Railings* calls for aluminum railing. Please advise if pipe & tube railings for the Generator and Switch Gear Platforms are steel or aluminum.

  Response: Pipe and tube railing for the Generator and Switch Gear Platforms shall be galvanized steel.

- **Question 37:** ***Ballasted Guardrail Fall Protection System***
  Please provide a specification for the ballasted guardrail fall protection system for the roof, as shown on Drawings A-102 and A-201.

Response: See amendment to Technical Specifications -Addendum No. 3

- **Question 38:** Please provide a specification for the Flood Doors, as shown on the architectural drawings (see Drawing A-601 for reference).

  Response: See amendment to Technical Specifications

- **Question 39:** Is this project subject to Federal Iron and Steel requirements?

  Response: See Addendum No. 2

- **Question 40:** Specification 260533 – 3.1.B calls for Interior Below Grade Non-Hazardous Areas: RAC. Please confirm that rigid aluminum conduit shall be installed in the middle and lower levels in the Non-Hazardous Areas

  Response: Confirmed

- **Question 41:** Specification 260533 – 2.4 and 260533 – 3.1.J call for Explosion-Proof Flexible Couplings to be installed in Hazardous Locations. Please provide a manufacture and part number for this type of fitting.

  Response: See amendment to Technical Specifications

- **Question 42:** DWG E-101 shows the Existing Hoist being demolished and DWG E-103 shows a New Hoist being installed. Please provide information/specification on the New type of Hoist that needs to be installed.

  Response: See amendments to Technical Specifications and Drawings

- **Question 43:** Refer to contract drawing S-101. Please provide a specification and approved manufacturers for the aluminum vault door shown on the drawing.

  Response: Aluminum access hatch shall be a dual-leaf aluminum floor hatch, custom size to fit as-built wall perimeter. Size will be approximately 4'-7" x 8'-7" (VIF). Aluminum hatch shall have a fully enclosed aluminum curb and stainless steel hardware. Manufacturer shall be BILCO or approved equal.

- **Question 44:** Refer to contract drawing C-102. There are two bollards shown in front of the 16" temporary bypass connection pipe with a leader note indicating twelve total. It appears that there are an additional five bollards in front of the switchgear/transformer platform, and three more in front of the generator platform, for a total of ten bollards. Please confirm the quantity of bollards required.

  Response: A total of 12 bollards shall be provided. As noted on Drawing C-501, locations will be coordinated with Consultant.

- **Question 45:** Contract drawing A-101 indicates to infill the existing floor opening on the main floor. Contract drawing S-101 indicates to provide new aluminum grating. Please confirm the scope of work at this location.

  Response: See Amendment to Contract Drawings.

- **Question 46:** There is a Typical Base Elbow Detail provided on contract drawing M-501. Contract drawing M-301 indicates a standard 12" 90 deg elbow on the pump discharge lines. Please clarify if these elbows should be base elbows with concrete supports per the detail on M-501.

  Response: Standard 90 deg elbow on the pump discharge lines. See technical specifications for pipe support requirements.

- **Question 47:** Specification 02 41 13, section 1.5.C, paragraph 3 indicates that a hazardous material survey was performed to identify the presence of asbestos, lead paint and PCB's, and that the report is included for the contractor's reference but are not part of the contract documents. This report was not included in the Bidnet list of documents available for download. Please provide this report for review. If there are hazardous materials present and they are scheduled for removal, please provide corresponding specifications for each hazard.

  Response: See attached hazardous materials report.

- **Question 48:** The contract drawings do not show any demolition of the existing HVAC systems. Please confirm that there is no HVAC demolition, or provide drawings and limits of work if HVAC demo is required.

  Response: See Amendment to Contract Drawings.

- **Question 49:** Contract drawings M-101 and M-102 show demolishing the existing (4) 12" dia wall pipes between the wet well and pump room. Contract drawings M-103 and M-301 show (4) new 12" dia FLxFL wall pipes at the same locations. However, the drawings do not provide any details on how the existing wall pipes are to be removed (i.e., square sawcut, circular core drill) and what the installation details are for the new wall pipes encasements.

Response: See Amendment to Contract Drawings.

- **Question 50:** Contract drawings M-103 and M-301 show (2) new 8" dia FLxFL wall pipes for the Surge Relief discharge. The drawings do not provide an installation detail for these wall pipes.

  Response: See Amendment to Contract Drawings.

- **Question 51:** Are there any requirements for photo and/or video documentation on this project? If so, please provide a specification.

  Response: See Technical Specification 01 78 40 Part 2.1.A.e and technical Specification 07 01 50 part 1.4.C.

- **Question 52:** In order to provide the most cost-effective estimate, we request a two-week postponement of the bid opening.

  Response: See Bid date change to November 17, 2021 in Addendum No. 2.

- **Question 53:** The Process Interconnections section of the Specification makes several references to Section 40 90 00 INSTRUMENTATION AND CONTROL FOR PROCESS

SYSTEMS**.** However, that section is not providing in the Specifications. Please provide the missing section.

Response: The spec referenced should be 40 71 00 Instrumentation and Control for Process Systems.

- **Question 54:** There are also no hardware specs either. If you could provide both so our vendors can price them out, we'd greatly appreciate it.

  Response: See amendment to Technical Specifications

- **Question 55:** Sheet number A-101 shows that the doors on the main floor of the building are to be replaced, however no specifications are provided.

  Response: See amendment to Technical Specifications

- **Question 56:** The local representatives for the listed manufacturers of the Electric Water Heater, found in Specification **22 33 00**, will not provide a price for the item; they have said that we must put in a request via a plumbing supply house to receive a quote. However the plumbing supply houses have also said they cannot quote the item unless we give them the exact model number so that they can put in a request, just the manufacturer name will not suffice.

  Response: The following makes/models for the water heater match our scheduled and specified information:
  - A.O. Smith Dura-Power DEL-10
  - State Water Heaters Proline Compact 10-gal Electric Water Heater, Model # ES6-10-SOMS-K

- **Question 57: Specification 02 41 13**, Selective Demolition, **Section 1.5** states that a hazardous material survey and tank inspection were performed to identify the presence of ACM, LBP and PCB-containing materials. It also states that the survey results are included, however that is not the case online. Please provide the survey results so that we can estimate the cost of lead/asbestos abatement.

  Response: See attachment to this Addendum.

  Question 58: Not Used

- **Question 59:** DWG E-101 shows the Existing Hoist being demolished and DWG E-103 shows a New Hoist being installed. Please provide information/specification on the New type of Hoist that needs to be installed.

  Response: See amendments to Technical Specifications and Drawings

- **Question 60:** Drawing S-303, Section 2 shows the RTU supports as bolted through the precast planks with out demolishing or replacing the planks. Drawing A-102, Section 4 shows the same RTU supports as being founded on existing structural steel and removing a section of the precast planks and placing concrete in-fill. Please clarify which detail is intended for this project.

Response: Install RTU frame per Sheet S-303. RTU frame posts should sit directly on existing roof plank and installation does not require replacing any concrete. See amendment to Contract Drawings

- **Question 61:** Please clarify which concrete walls on S-101 will receive architectural wall pattern finish shown in wall section 1 on S-301 vs smooth finish shown on section 5 on S-301.

  Response: Walls with inside face against masonry and outside face exposed to exterior shall receive architectural wall pattern.

- **Question 62:** In Flood Wall Section on S-301, it shows the CIP Concrete Wall going above the Insulation and butting up against masonry wall. On the two wall sections shown on A-301 it shows the insulation running up continuously behind the new CIP Concrete wall and the new brick veneer. Please provide clarification as to where to use each wall section.
  Response: Use the Section on Sheet A-301 where new insulation is being installed.

- **Question 63:** Valve Table appears to be missing 3 each 8" gate valves- please verify.

  Response: See Addendum No. 2

- **Question 64:** Specification 40 05 25 section 2.3.D references a sump pump. Drawing M-101 States Existing sump pump and 2" diameter discharge to remain. Please verify that no new sump pump is required.

  Response: See Amendment to Contract Drawing M-101 A new sump pump and discharge are shown on P-103. The sump pump is scheduled on P-701 (Bell & Gossett SS0711). The specifications for the sump pump can be found in section 22 13 19.

- **Question 65:** Please verify PG-133, PG-132, PG-131 are dial gauges as specified in Section 40 05 25-2.3 D and not Gauge Pressure transmitters as described in Specification 40 73 26.

  Response: Instruments PG-131, PG-132 and PG-133 shown on I-002 are dial pressure gauges as specified in Section 40 05 25, not pressure transmitters.

- **Question 66:** Please provide the specification sections and product data as required for the new doors and frames to be installed.

  Response: See amendment to the Technical Specifications

- **Question 67:** Please provide the specification sections and product data as required for the new Glen-Gery Veneer System**.**

  Response: See amendment to the Technical Specifications

- **Question 68:** On drawing M-104 Section 1 shows 2x1-1/2" reducer at approx. elevation 8'-10". Tee at elevation 12'6' shows 1x1x1 Tee Please confirm if 2x 1-1/2" reducer should be 2 x 1 " reducer or should be 1-1/2" reducer is to be added to the vertical spool. Drawing I-003 shows a 2x 1 reducer.

Response: Provide 2 x 1" reducer.

- **Question 69:** Drawing C-502 shows (in plan view) what appears to be a tank port located at 270 °. However no fittings are called out. Please advise if any pipe connections are required and their configuration.

  Response: There is no port at 270 °.

- **Question 70:** Drawing C-502 calls out (in the elevation view) a 6"∅ vent nozzle. However no fittings are called out Please advise if any pipe connections are required and their configuration.

  Response: See Technical Specification 43 41 43 Part 2.4.D

- **Question 71:** Contract drawing S-102 Plan view for steel framing includes a drawing note " removal of grating section over stop plate. Coordinate size/location with equipment manufacturer (TYP of 5). Contract drawing M-103 Middle Level plan – appears to indicate a qty of 5 however drawing note regarding stop plate with embedded frames (TYP of 6). Contract drawing M-302 notes stop plate with embedded channel fram (TYP x 4). Please clarify.

  Response: There are a total of 5 removable grating sections and a total of 6 stop plates. Two of the stop plates are not visible in the sections cut on Contract Drawing M-302.

- **Question 72:** Contract documents do not appear to include any specific specifications associated to the embedded frame stop plates. Please provide.

  Response: See Addendum No. 2.

- **Question 73:** Specification section 43 41 43 for the chemical storage tank – part 2.2.c indicates an operating temperature range of 0 to 100 f. Please advise if this tank will require any insulation/jacketing or heat requirements associated to an outdoor installation.

  Response: Tank will be used seasonally and will be empty when temperatures are near or below freezing. No insulation, jacketing, or heating is included in the specification.

- **Question 74:** Please advise if the existing tank is currently being utilized. If so, please provide the anticipated quantity of chemical that would need to be removed prior to demo of the tank or if the tank contents will be removed by Owner.

  Response: The tank is still used seasonally. The Owner will evacuate the contents of the tank and remove the pump and control panel prior to turnover to the contractor for demolition.

- **Question 75:** Please advise if it is anticipated that the existing wet well cleaning will include grit/solids residuals. If so please quantify the amount of material to be removed and disposed of for an equal basis of bid: purposes. If this cannot be quantified pre-bid- please consider an allowance or unit price bid item associated to cleaning of the wet wells.

Response: Cleaning the existing wetwell will include removal of grit and solids removal. Contractors may base bids on a removal of 18" of grit and solids.

- **Question 76:** Contract drawing G-001 General demolition notes -item 8 indicates owner will identify equipment to be salvaged. Please identify what equipment owner may salvage and where the final owner storage location would be pre-bid.

  Response: The Owner wants to salvage the existing hoist and will mark any equipment that we think is salvageable. Storage location will be revealed at a later date.

- **Question 77:** Contract drawing C-101 for existing site and demolition plan – incudes note to remove 2,000 gallon underground fuel storage tank. Please verify if this tank is active and provide the anticipated amount of fuel that would need to be removed prior to tank demo.

  Response: See Addendum No. 2. Bidders may assume tank will be full of diesel fuel at time of decommissioning.

- **Question 78:** Contract drawing M-104 plan 7 section includes general notes to provide a weatherized/FRP enclosure for the chemical feed pump. Please provide specification associated with this enclosure.

  Response: See Addendum No. 2.

- **Question 79:** Contract drawing C-101 for the existing site- shows that from the influent sewer chamber to the pump station has a 15" sewer main, while contract drawing M-101 middle level demo plan shows 24" influent. Please verify.

  Response: See Addendum No. 2.

- **Question 80:** Contract drawing C-101 general note 1.2 C -states for the bypass pumping to commence when the influent gate is closed. Contract drawing M-101 & M-103 has replacement of the 24 x 24" influent gate. What additional bypass considerations are intended for the gate replacement?

  Response: Provide temporary plug in influent pipe during gate replacement. Maintain bypass pumping operations during gate replacement.

- **Question 81:** Bypass pumping indicates average and peak GPM hydraulic flow conditions. Please provide low flow conditions.

  Response: Low flow conditions are estimated to be approximately 350 GPM.

- **Question 82:** Specification Section 26 05 26 section 3.3. E-1 indicates that a single grounding electrode can be brought through building to connect the equipment in the electrical room to the grounding ring. Does the grounding electrode that passes trough the building have to be installed in conduit?

  Response: Per Section 26 05 26, paragraph 3.3 C., exposed surface mounted grounding electrode conductors shall be installed in 1" conduit.

- **Question 83:** Reference drawing E-103, please specify the location of the generator batteries.

  Response: See amendment to Technical Specifications

- **Question 84:** Please provide the number of conductors for termination purposes of the vendor furnished cable for CC-131A, 132A, 133A.

  Response: 12 conductors per cable. See Pump Elementary on Sheet E-602.

- **Question 85:** The panel schedule for panel LP (E-604), circuit 21 indicates that it is for the Mobile Gen. Accessory Receptacle but this receptacle is not shown on the drawings or one lines. Please provide the location.

  Response: See amendment to Drawings

- **Question 86:** Referencing drawing E-602, please provide the location of SSRV131.

  Response: SSRV131 shall be located in the MCC. See One-Line Diagram Sheet E-601.

- **Question 87:** Please provide a manufacturer or model number for the 4'7-1/4" by 8'7" double leaf water-tight access hatch. Also please provide details on how hatch is to be installed into /onto the proposed concrete walls.

  Response: Aluminum access hatch shall be a dual-leaf aluminum floor hatch, custom size to fit as-built wall perimeter. Size will be approximately 4'-7" x 8'-7" (VIF). Aluminum hatch shall have a fully enclosed aluminum curb and stainless steel hardware. Manufacturer shall be BILCO or approved equal. Install per manufacturer's written instructions.

- **Question 88:** Are there any know hazardous materials on the site? Since nothing is shown on the drawings if found will this be covered on the allowance work.

  Response: The hazardous material survey is being provided as an attachment to Addendum 3. No additional payment will be made for addressing the materials identified in this report.

- **Question 89:** Please amend Information for Bidders Article 7 to recognize insurance industry practices.

  Response: No changes will be made to the County standard documents.

- **Question 90:** Please amend Information for Bidders Article 7 to allow insurance from companies authorized or licensed in the State of New York.

  Response: No changes will be made to the County standard documents.

- **Question 91:** Please advise if an Owners Protective Liability Policy is required.

  Response: No changes will be made to the County standard documents.

- **Question 92:** Please amend Information for Bidders Article 7.f.

  Response: No changes will be made to the County standard documents.

- **Question 93:** Please amend General Clauses Article 20.

  Response: No changes will be made to the County standard documents.

- **Question 94:** Please amend the Builders Risk Special Notice

  Response: No changes will be made to the County standard documents.

- **Question 95: Specification Section O8 45 00 Insulated Translucent Panels:** Section 1.4 Performance Requirements, A Thermal Performance # 2 lists 2 ¾" thick panels .23 "U" while #3 lists 4" panels .08 "U". **Question: What is required? Kalwall suggests .23 "U" 2 ¾".**

  Response: 2-3/4" with 0.23 U-value is acceptable**.**

- **Question 96: Specification Section O8 45 00 Insulated Translucent Panels:** Section 1.4 "C" Structural Performance #1 Windborne debris region large missile test is noted. Project is not located in an unprotected coastal region where this is required. Further to the point the desired light transmission of 30% listed #3 Light transmission of 30% cannot be supplied with the needed face sheet for large missile requirements. HI Impact face sheets are only available in white and will significantly reduce light transmission. **Question: Is the standard .070" crystal face sheet listed under section 2.2 Panel construction, B face sheets, 2 Thickness a. .070" thick crystal acceptable as specified in this area of the spec**?

  Response: Hi- impact face sheet is not required.).070 thick crystal is acceptable.

- **Question 97: Specification Section O8 45 00 Insulated Translucent Panels:** Section 2.2 Panel Construction, Frame Finish – 70% PVDF, #1 Comply with AAMA 2605, #2 Color – Aluminum #79. **Question: Kalwall's Finish Aluminum #79 and all other standard colors comply with AAMA 2604. Is AAMA 2604 acceptable?**

  Response: Yes, AAMA 2604 is acceptable.

- **Question 98: Specification Section O8 45 00 Insulated Translucent Panels:** The next area "D" of section 2.2 is not in agreement with other areas of the specification such as Section 1.4 Performance requirements. U value of .05 listed under section 2.2 requires "aero-gel" or "nano-gel" insulation which triples material cost. This type of panel is not indicated for industrial applications and cannot be provided with an extended warranty as noted. Under 6 h of the same section. **Question: Is the .23 U 2 ¾" panel with 30 % Light Transmission the required panel type or is the .05 U required? Please note if .05 U is required the maximum warranty period is one year from date of delivery.**

  Response: Yes, the 0.23 U 2-34" panel with 30% light Transmission is the required panel type.

- **Question 99:** Please provide details regarding the rebar reinforcement required for new concrete structures. Several structures, such as the suction pipe wall and chemical motor pad, are not provided with details that display rebar.

  Response: For suction pipe wall, refer to “” detail added to Addendum 3. For chemical motor pad, refer to EQUIPMENT PAD DETAIL ON CONC. SLAB on sheet S-501

- **Question 100:** What is the average volume of screening? **Drawing C-102** shows that we are to pull the wastewater from the manhole; we assume that we are responsible for screening during the entire sequence that the bypass pumps are operating.

  Response: Screenings are removed daily. The volume on a normal day is approximately ten gallons, a bit more on rainy days. The Contractor is responsible for all operation and maintenance of the bypass system including screening during the entire sequence that the bypass pumps are in service. See Technical Specification 33 29 60.

- **Question 101:** Please provide the size of the underground fuel storage tank so that we can accurately estimate excavation and backfill.

  Response: 2,000 gallons

- **Question 102:** There is an inconsistency regarding the aluminum bar grating shown on the main floor in **Drawing S-101**. Drawing A-101 states that we are to remove the existing hatch doors and provide a structural infill, but Drawing S-101 states that we are to install an aluminum bar grating after saw cutting a larger hole. Is the aluminum bar grating supposed be temporary until construction is completed, at which point we then infill the hole? Please advise.

  Response: Enlarge openings and install aluminum grating per requirements shown on S-101. Infill is not required in this location

- **Question 103:** General Demolition Note # 10 on Contract Plan 2 of 60, Index to Drawings, Notes, Symbols and Abbreviations states *“Contractor shall coordinate all work affecting utilities with respective utility owners. All details of construction and/or relocation of affected utilities shall be approved by utility owner approving agencies”*

  Addendum No. 2 B. Technical Specifications revised Section 01 51 00 Temporary facilities and Controls, in article 3.2 Paragraph H - states that the contractor must *“Make all arrangements with the utility service companies for temporary electrical services and obtain required permits and approvals for temporary utilities”.*

  Please furnish contact details for someone at Con Edison that can provide the bidder with a clear understanding of what, if any permits will be needed to perform the required relocation of the Con Edison owned utilities and the cost associated with any required permits.

  The Con Edison contact will also need to provide the bidders with the details of an approvable plan to raise their existing electrical infrastructure and will need to provide an acceptable plan to construct the required temporary electrical service to power the required bypass pumping system, construction equipment and any power needed within the Existing Pump Station to construct the New Pump Station.

Response: Contractors Bids for the permanent modifications to the electrical service entrance should be based on work shown on the Contract Drawings and as specified in Technical Section 26 21 00. The Issued for Bid drawings shall serve as the design and permitting basis to raise the existing electrical infrastructure. The Owner will pay all utility charges related to the installation of the permanent incoming service. The contractor shall coordinate all work related to the installation of temporary utility services**.** See amendment to Technical Specification 01 51 00 regarding payment for temporary service at Crotonville Pumping Station.

The Con Ed representative the Engineer worked with was:

Barry Decker
Consolidated Edison Company of New York, Inc
Westchester Energy Services
511 Theodore Fremd Avenue, 2nd Floor
Rye, NY 10580-1432
Deckerb@coned.com
Phone: Unavailable
Original Con Ed Case No.: MC-394366 (Closed)

- **Question 104:** Please confirm (definitively) that, while the Contractor is responsible for establishing temporary electrical services (for bypass pumping, etc.), the Owner will pay for **all** electrical usage (for bypass pumping, etc.).

  Response: Confirmed, The Owner will pay monthly bills for electrical usage.

- **Question 105:** Spec Sec 40 61 00 – 1.1E, states *"Programming of the PLC, OIT and SCADA systems shall be completed by the Owner or the Owner's programmer"*. Please provide the name of the Owner's programmer.

  Response: Ramboll Americas Engineering Solutions, Inc.

SECTION 04 25 16
THIN BRICK PANEL SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 general requirements apply to this section.

1.2 SUMMARY

A. Section Includes:

1. Thin Tech® Thin Masonry Support System comprised of:
    a. Thin Tech® Thin Masonry Support Panel
    b. Glen-Gery Construction Adhesive
    c. Silicone Adhesive and Primer
    d. Thin Tech® Air Vent
    e. Thin Tech® Starter Angle
    f. Thin Tech® Shim
    g. Thin Tech® Universal Corner Support
    h. Thin Tech® Fasteners
    i. Thin Tech® spacers
    j. Transition Tape
    k. Glen-Gery Mortar
        1) Color Mortar Blend (Portland cement lime mortar)
        2) Type N or Type S Preblended Mortar
2. Related Materials and Procedures:
    a. Thin Brick
    b. Cleaning
    c. Embedded Flashing
    d. Weepholes/Vents
    e. Movement Joints
    f. Fasteners
    g. Silicone Sealant
    h. Silicone Sealant Primer

1.3 REFERENCES

A. ASTM A 653 – Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process

B. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile

C. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness

D. ASTM C 1088 – Standard Specification for Thin Veneer Brick Units Made From Clay or Shale

E. ASTM E 2925 - Standard Specification for Manufactured Polymeric Drainage and Ventilation Materials Used to Provide a Rainscreen Function

F. ASTM D 4716 – Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head

G. TMS 602 (ACI 530.1/ASCE 6) – Specifications for Masonry Structures.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product description, indicating material types and thicknesses and storage and handling requirements.

B. Samples: Submit samples of each product type proposed for use.

C. Material Certificates: Prior to delivery, submit to Engineer certificates indicating compliance with the applicable codes, specifications and criteria herein forThin Brick, including Grade and Typelisted in this Section.

D. Thin Brick Test Reports: Submit test reports substantiating compliance with requirements of ASTM C216 for thin brick cut from facing brick. Sample and test in accordance with ASTM C 67.

1. Testing and reports shall be completed by an independent laboratory.
    a. Test reports for each type of brick shall be submitted to the Architect/Engineer for review.
    b. Thin Brick Test reports shall indicate:
        1) 5-hour boiling water absorption
        2) Saturation coefficient
        3) Initial rate of absorption
        4) Efflorescence Rating

1.5 CLOSEOUT SUBMITTALS

A. Warranty Documentation:

1. Product warranty documentation specified under Section 3.12 shall be supplied to contractor (for subsequent provision to building owner) upon completion of building

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Maintenance:

1. Installer shall supply to contractor (for subsequent provision to building owner) copy of manufacturer's pertinent documentation relating to typical repair of thin veneer system once occupancy commences.

1.7 QUALITY ASSURANCE

A. Masonry Standard: Comply with TMS 602 (ACI 530.1/ASCE 6) unless modified by requirements in the Contract Documents.

B. Comply with all applicable codes, regulations, and standards. Where provisions of applicable codes, regulations and standards conflict with requirements of this section, the more demanding shall govern.

C. Manufacturer Qualifications:

1. Obtain materials from one manufacturer to ensure compatibility.

2. Thin Masonry Support Panel:

a. Documented qualifications and capabilities that fully describe the ability to provide the required metal panel system and technical support to the Owner.

b. At least five (5) completed projects over the last two years, illustrating system performance equal to or exceeding the criteria listed in this specification.

1) Include the project location, award date, the completion date, the contract value, and the name and telephone number of a person employed by the Owner who has personal knowledge of the manufacturer's contractual and technical performance.

D. Installer Qualifications:

1. All products listed in this Section shall be installed by a Glen-Gery trained Thin Tech® installer or installer providing proof of a minimum of five years' experience with a related thin masonry support system.

2. At least one supervisory journeyman, who has completed Glen-Gery Thin Tech® training, shall be present at all times during execution of work, who shall be thoroughly familiar with design requirements, types of materials being installed, reference standards and other requirements, and who shall direct all Thin Tech® related work performed at jobsite.

3. Upon request, installer shall furnish proof of training/experience documentation that may include the following to Contractor prior to commencement of work under this Section:

a. Glen-Gery training certificate.

b. Lists of completed projects with project names, addresses, and contact information of architects and owners.

c. Specialty certification held by [company] [installer] that are relevant to this project, including the name of the certification, certifying body, and date certified.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's unopened packaging.

B. Inspect all materials upon arrival and notify supplier if any damage is observed. Store products in manufacturer's packaging or according to manufacturer's recommendations until ready for installation.

C. Store Glen-Gery Thin Tech® Panels, masonry units, mortar, and accessories off the ground to prevent contamination by mud, dust or other materials likely to cause staining or other defects.

D. Protect materials from contamination, moisture, freezing, overheating or other damage in accordance with manufacturer's instructions. Cover all materials with a non-staining waterproof membrane material when necessary to protect from elements.

E. Store different types of materials separately.

F. Store adhesive and mortar additive above 32° Fahrenheit and below 86° Fahrenheit temperatures.

G. Store and dispose of solvent-based materials and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

H. Panels must be stored to prevent permanent distortion and kept dry before installation. Panels and accessories should be covered at all times prior to installation.

I. Dry panels exposed to water or condensation prior to installation or application of thin brick. The presence of moisture on the brick or metal panels may adversely affect adhesive performance.

1.9 PROJECT CONDITIONS

A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during and after installation.

B. Protection of Work:

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's limits.

2. Stain Prevention:

a. Prevent adhesive and mortar from staining the face of masonry.

b. To avoid smearing of adhesive or mortar on the face of masonry, allow adhesive and mortar on face of installed masonry to become firm before trying to remove.

c. Protect all sills, ledges and projections from droppings of adhesive or mortar.

d. Protect the wall from rain-splashed mud and mortar splatter.

C. Cold Weather Requirements:

1. Do not use frozen masonry materials or materials mixed or coated with ice or frost.

2. Do not build on frozen substrates.

3. Comply with cold-weather construction requirements contained in TMS 602 (ACI 530.1/ASCE 6).

D. Hot Weather Requirements:

1. Comply with hot-weather construction requirements contained in TMS 602 (ACI 530.1/ASCE 6).

2. Protect mortar from uneven and excessive evaporation.

a. The face of the installed thin brick may be dampened with water prior to mortar installation to reduce the absorption of moisture from the mortar joint and increase bond.

b. Veneer may be fogged with water to prevent drying prior to proper hydration of mortar. Apply only enough moisture to consistently dampen the wall without allowing water to run down the face of the masonry.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design Manufacturer: Glen-Gery Corporation located at 1166 Spring Street, P.O. Box 7001, Wyomissing, PA 19610; Tel: 610-562-3076; Email: info@glengery.com; Web: www.glengery.com

B. Substitutions: Or approved equal.

2.2 THIN MASONRY VENEER SUPPORT SYSTEM

A. Thin Masonry Veneer Support Panel: Metal support panel consisting of 26 gauge (16 mil) , stucco embossed, textured steel with angled ties providing structural mechanical support for exterior thin masonry veneer, installed by fastening to concrete, masonry, metal or wood frame construction.

1. All Metal Panels for thin brick support specified and shown on drawings shall be Elite Thin Tech® Panels as manufactured by the Glen-Gery Corporation or approved equal
2. Exterior Finish:G90 Galvanized with thermal set coating
3. Support ties: 5/8 in. (16 mm)
4. Support Panels: 4 ft. x 4 ft. nominal (16 sq. ft, 1.44 m2 - actual dimensions except as noted: 48 in. [W] 47-7/8 in. x [H] 48 in. x [T] 3/8 in. masonry support panels for flat wall areas, shall be for unit heights as follows:
    a. 2-5/8 in. (2.667 in., 68 mm) spacing for Modular, Standard, Norman, and other 2-1/4 in. (57 mm) high units. Three (3) courses equal 8 in. (203 mm).

B. Fasteners (For Masonry Support Panel)

1. Screw fasteners as supplied by Glen-Gery: Pan head fasteners with a minimum #10, (0.190 in., 4.8 mm) thread diameter and corrosion resistance provided by tri-layered ceramic surface coating with a minimum protection of 1000 hrs. when tested according to ASTM B117.
    a. Fasteners for attachment to wood studs, concrete and masonry: Self-tapping, point type 17.
    b. Fasteners for attachment to light gauge steel studs: Self-drilling, with a drilling capacity of 0.035 to 0.176 in. and minimum torsional strength of 75 lb/in.
2. Fastener Length:
    a. Metal framing/support member fasteners: 1-½ in. . Fasteners shall penetrate not less than member thickness plus three threads (3/16 in., 5 mm).
    b. Masonry fasteners:2-¼ in. . Screw fasteners shall penetrate the substrate a minimum of 1 in. (25 mm).

C. Starter Angle Flashing:

1. Glen-Gery Thin Tech® Starter Angle:
    a. Stainless steel conforming to ASTM A240/A240M, Type 304, 0.018 in. (0.45 mm) (26 gauge) pre-bent in 10 ft. (3.05 m) lengths.
    b. Depth: 4-1/4 in. Verify in field
    c. Profile: Match profile of cast in place flood wall below.

D. Water-Resistive Barrier

1. Provide water resistive barriers as designated in Division 07.

E. Drainage Mat/Rainscreen shall be:

1. Glen-Gery Drainage Mat
2. Filter fabric laminated to spun and heat welded entangled geomatrix, 0.25 in. (6 mm) two-ply polypropylene core mesh with cornrow configuration
3. Permits moisture drainage and creates airspace
4. Hydraulic Transmissivity, Machine Direction, ASTM D 4716:
   a. Flow Rate: 3.70 GPM/ft. width.
   b. Transmissivity: 7.65E-03 m2/s.
5. Air Transmissivity, ASTM D 4716, Modified:
   a. Estimated Flow Rate: 15.8 cu ft./min/ft. width.
   b. Incremental Transmissivity: 6.97E-04 m2/s

F. Shims: 1-¼ in. wide by [H] 48 in. (1,219 mm) by [T] 3/8 in. (10 mm), manufactured from G90 hot dipped galvanized, 26 gauge (16 mil) steel with thermal set coating, stucco embossed texture and centered channel.

G. Adhesives and Primer

1. Adhesive for thin brick units more than ¾ in. thick when not otherwise mechanically attached (e.g. with Glen-Gery Thin Tech® support channels or clips) as supplied by Glen-Gery:
   a. Silicone meeting or exceeding the following: TT-S-00230C, Class A, ASTM C-920, Class 50, Type S, Grade NS, Use G,A,M,O; Type I & II, ASTM C1184-05, AAMA 805.2, AAMA 802.3 & 808.3, ASTM C1248.
2. Primer for cast/natural stone as supplied by Glen-Gery:
   a. One-component, colorless, non-yellowing polyisocyanate compatible with silicone sealants, porous and non-porous substrates.

H. Installation Hardware

1. Support Channels: 8 ft. (2.44 m) long, manufactured from 26 gauge (18 mil) [stainless steel] with ½ in. (13 mm) support leg, ¾ in. (19 mm) wide by ½ in. (13 mm) high clip
   a. 2-⅜ in. (60 mm) Type 5 Classic Channel for 2-¼ in. (57 mm) high units

I. Universal Corner Support: 6 in. (152 mm) x 6 in. (152 mm) x 4 ft. (1.22 m) long, pre-bent 90 degrees, manufactured from 26 gauge (16 mil) , stucco embossed, textured steel

1. Exterior Finish: G90 Galvanized with thermal set coating

J. Thin Tech® Spacer: 1-1/4” in. (31 mm) [H] x 1 in. (25 mm) [W] x 3/4 in. (19 mm) [T] injection molded plastic with height-setting panel clip, reusable.

K. Weepholes/Vents:

1. Glen-Gery Thin Tech® Air Vent: Impact resistant polypropylene copolymer. Density 2,000 grams/sq. meter. Size: ⅜ in. (10 mm) x ½ in. (13 mm) x 48 in. (1.22 m).

2.3 MASONRY UNITS, GENERAL

A. Masonry unit weight may not exceed 15 psf.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other imperfections exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed work.

2.4 CLAY UNIT MASONRY

A. Manufacturer: Glen-Gery Corporation located at 1166 Spring Street, P.O. Box 7001, Wyomissing, PA 19610; Tel: 610-562-3076; e-mail: info@glengery.com; Web: www.glengery.com

B. Substitutions: Or equally approved.

C. General: Provide shapes indicated and as follows:

1. Provide special shapes for applications where flats (stretcher units) cannot accommodate special conditions, including those at corners and openings.

2. Provide special shapes for applications requiring thin brick of size, form, color and texture on exposed surfaces that cannot be produced by sawing.

3. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

D. Provide brick similar in texture, color and physical properties to those available for inspection at the Architect/Engineer's office and/or as supplied on the approved sample panel.

E. The Contractor shall submit the manufacturers full color range of thin brick as manufactured by the Glen-Gery Corporation to the Owner / Engineer for review and selection.

1. Thin Brick: Comply with ASTM C 1088, Grade Exterior.

a. Type TBS, TBXorTBA

b. Size (2-3/4" height, length 7-5/8"– actual dimensions listed)

1) Engineer Modular: 2-3/4 in. (70 mm) high, 7-5/8 in. (193 mm) long

c. Thickness: 1/2 in.

2.5 MORTAR

A. Cold Weather Additives (including accelerators) shall not be used in mortar.

B. Mortar for thin brick:

1. Mortar shall conform to ASTM C 270, Standard Specification for Mortar for Unit Masonry.

a. Glen-Gery Color Mortar Blend: Color - G (___) Type [N] [or] [S]

2. Mortar modified with polymer additives and conforming to ANSI A118.4 or ANSI A118.15 specifications for modified or improved modified dry-set cement mortar.

2.6 ANCILLARY MATERIALS

A. Flashing

1. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy as follows:

a. Monolithic Sheet: Elastomeric thermoplastic flashing, 0.040 in. (1.0 mm) thick.

b. Self-Adhesive Sheet: Elastomeric thermoplastic flashing, 0.025 in. (0.6 mm) thick, with a 0.015 in. (0.4 mm) thick non-asphaltic adhesive.

2. Adhesives, Primers, and Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for joints or connections to or between water-resistive barrier or air barrier system components.

a. Transition Tape:

3. Asphalt free self-adhering membrane, 3 in. (76 mm) wide, consisting of woven polyethylene/polypropylene film bonded to heavy duty synthetic rubber adhesive.

4. Self-adhering tape, 3 in. (76 mm) wide, consisting of a polyolefin film with an acrylic adhesive.

a. Primer: As recommended by the manufacturer of the specified product

B. Control and Expansion Joints

1. Bond Breaker Tape: Polyethylene tape, width to match width of movement joint.

2. Backer Rod: Non-gassing polyethylene or flexible polyurethane foam rod 25% wider than width of joint to be filled and depth exceeds requirements in as indicated in Division 07 Section "Joint Sealants".

3. Sealant: As specified in Division 07 Section "Joint Sealants" and complying with ASTM C920.

2.7 RIGID INSULATION

A. Provide rigid insulation as designated in Division 07.

B. Maximum flame spread and smoke development when tested in accordance with ASTM E 84 shall not exceed 25 and 450 respectively.

C. Thickness shall not exceed 3 in. (76 mm).

2.8 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Diedrich Technologies, Inc.

a. 202 New Masonry Detergent

b. 202V Vana-Stop®

c. Green Clean 250 Manufactured Stone Cleaner

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin Thin Tech® installation until substrates, water-resistive barrier, drainage mat, foundations, rough-ins and built-in construction have been installed according to project specifications and building code requirements.

1. Walls must be structurally sound and the substrate system designed with a wall deflection not greater than L/360.
    a. Maximum wall frame spacing for stud walls = 24 in. (610 mm) O.C.
    b. Maximum wall frame spacing for girts = 24 in. (610 mm) O.C.
    c. Minimum 0.043 in. (18 gauge; 1.09 mm) metal framing for exterior walls.
2. Substrate shall provide continuous support and be flat, with surface variation not exceeding 1/8 in. (3 mm) within any 4 ft. (1.2 m) square area and have no planar irregularities greater than 1/4 in. (6 mm) in 10 ft. (3.05 m).
3. Substrate shall be concrete, masonry or one of the following as deemed suitable for specific project conditions:
    a. Cement board not less than 1/2 in. (13 mm) in thickness.
    b. Closed-cell insulating rigid foam not less than 1/2 in. (13 mm) thick conforming to ASTM C578 (min. 15 psi compressive strength and minimum 1.30 lb./cu. ft. [21 kg/cu. m] density) or ASTM C1289.
    c. Oriented strand board (OSB) not less than 7/16 in. (11 mm) in thickness.
    d. Exterior grade plywood not less than 3/8 in. (10 mm) in thickness.

B. Verify walls are plumb and corners are braced to specifications.

C. If substrate (including insulation), water-resistive barrier, drainage mat, foundations or flashings (including roof and kickout flashing when applicable) are the responsibility of another installer, notify Architect and General contractor of unsatisfactory preparation before proceeding.

D. Do not begin installation of Thin Tech panels until unacceptable conditions have been corrected. Installation constitutes acceptance of existing conditions.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation. All surfaces including, but not limited to metal panel and back face of thin brick must be free of water, snow, dirt, mud, oil and other foreign materials prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Trim or flash in place per manufacturer's details and/or BIA Technical Note 28C on Thin Brick Veneer.

D. Protect the tops of all uncompleted walls to prevent water entry.

3.3 INSTALLATION, GENERAL

A. Install materials in accordance with manufacturer’s instructions.

B. Select and arrange exposed masonry units to produce a uniform blend of color and texture.
    1. Install masonry units from several pallets or cubes as they are placed.

C. Comply with tolerance requirements in TMS 602 (ACI 530.1/ASCE 6).

3.4 FLASHING

A. Prior to metal panel installation, install starter angle and flashing in accordance with Glen-Gery Thin Tech® installation instructions or ASTM E2112. Prime substrate prior to installation when required by flashing manufacturer.

B. Seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.

C. Extend horizontal through wall flashing vertically up the backing a minimum of 3 in. (76 mm).

D. Lap flashing ends a minimum of 3 in. (76 mm).

E. Seal vertical and horizontal legs of all flashing laps with compatible lap [cement] [sealant].

F. Lap water-resistive barrier over top of flashing.

G. Turn up the ends of discontinuous (e.g., head, sill and stepped) flashings to form end dams or extend not less than 4" (102 mm) beyond edges of openings.

H. Extend flashing through wall with at least 1/4 in. (6 mm) exposed to form a drip.

3.5 THIN MASONRY SUPPORT PANEL

A. Install in accordance with manufacturer's written instructions as applicable to each type of substrate required.

B. Trim, starter angle and flashing shall be installed prior to panel installation.

C. Panels shall be clean, dry and free of dirt, oil or any other foreign contaminant.

D. Attach panels flat to the substrate in true and level rows with support ties aligned and level to each other, including at corners.

E. Stagger vertical support panel joints over sheathing joints and at least 16 in. (406 mm) horizontally from panels in rows above or below.

F. Install full-size uncut panels when possible. Cut panels using a method resulting in clean, unbent edges when necessary to provide vertical staggered panel joints, to ensure panels are fastened to studs, or to fit specific conditions.

G. Install panels with 1/16 in. to 1/8 in. (2 to 3 mm) space between the vertical edges of panels.

H. Do not allow panels to bridge vertical or horizontal movement joints in substrate. The space between metal panels at substrate movement joint locations shall be equal to the thickness of the substrate movement joint.

I. Stop panel at least 3/8 in. (10 mm) from inside corners, openings and other materials to allow for movement.

3.6 FASTENERS (FOR THIN MASONRY SUPPORT PANEL)

A. Attach fasteners to framing/support members for framed applications. Do not attach Thin Tech® panel to the sheathing alone.

B. Fasteners for steel studs or other steel supports shall penetrate a minimum of three threads beyond steel member thickness.

C. Fastener Installation: Mechanically attach metal panels with a minimum of one fastener per sq. ft. (929 cm2), reducing fastener spacing along the top and bottom of the wall and around openings, as indicated below.

1. Spacing of pre-punched fastener holes results in the typical recommended fastener spacing of 8 in. (203 mm) vertically and 16 in. (406 mm) horizontally.
2. Horizontal fastener spacing shall not exceed 24 in. (610 mm); vertical fastener spacing shall not exceed 16 in. (406 mm).
3. Fasteners should not be installed behind masonry units, except where they are placed within the channels of Elite Panels.
4. Provide additional fasteners around the perimeter of walls and around openings larger than 24 in. (610 mm) in either dimension, as well as building corners not utilizing corner panels as follows:
    a. Fasteners shall be placed within 8 in. (203 mm) of the top and bottom of the building walls, at a maximum spacing of 12 in. (305 mm) horizontally.
    b. At vertical ends of walls and openings, fasteners shall be spaced a maximum of 8 in. (203 mm) vertically within 4 in. (102 mm) of the vertical edge of the panel.
    c. Where the vertical edge of Thin Tech® Elite Panel is more than 2 in. (51 mm) from a channel, install Thin Tech® Shim and fasten for additional support.

3.7 MORTAR INSTALLATION AND JOINTING

A. After adhesive has set a minimum of 6 hours, completely fill head and bed joints intended to receive mortar.

B. Discard mortar after two hours or when too stiff to work. Retempering within two hours is permitted, but may contribute to mortar color variation.

C. Do not fill movement joints to receive sealant.

D. Do not fill joints to receive Glen-Gery Thin Tech® Air vent.

E. Form weep holes (head joints free of mortar) as required in Section 3.9, immediately above starter angles and flashings.

F. Tool exposed joints when thumbprint hard to joint concave profile.

G. Flush cut all joints not tooled.

H. When repointing, completely remove mortar, and refill solidly with mortar and tool joints.

3.8 WEEPHOLES/VENTS

A. Vents for Elite Panels: Omit mortar from head joints and install vents cut to 2-1/4 in. vertically in head joints.

1. Spacing of weep vents shall not exceed a maximum of 24 in. (610 mm) on center horizontally for units 12 in. (304.8 mm) or less in length and a maximum of 32 in. (813 mm) on center for larger units, in the joint between the flashing and masonry units above or in the lower third of the head joints immediately above the starter angles and flashings, including the base of the wall, at horizontal expansion joints and above all openings.
2. Keep vents free of mortar or other obstructions.

3.9 MOVEMENT JOINTS

A. Locate movement joints where indicated on drawings.

B. Provide vertical and horizontal movement joints where indicated by leaving a continuous space no less than 3/8 in. (10 mm) wide between Thin Tech® panels, installing bond breaker tape or backer rod as specified and installing sealant as specified in Division 07 Section "Joint Sealants."

1. Provide and install bond breaker tape at movement joints prior to installing masonry units 1 in. (25 mm) or less in thickness. Install backer rod where thickness of masonry unit exceeds 1 in. (25 mm).

C. Keep entire length of movement joint clear of mortar, Thin Tech® adhesive and debris.

D. Install movement joints between Thin Tech® wall assemblies and other materials, including around windows and doors.

E. Install movement joints at changes in substrate and where movement joints occur in substrate or foundation.

F. Install movement joints at changes in wall height or thickness.

G. Spacing of vertical movement joints must not exceed 24 ft. (7.3 m) on center in walls without openings.

H. Install movement joints at inside corners and within 2 to 4 ft. (0.6 to 1.2 m) of outside corners where intersecting walls (with Thin Tech® applied to each) are longer than 4 ft. (1.2 m).

I. Install no less than one horizontal movement joint per story, with height between horizontal movement joints not exceeding 20 ft. (6.1 m).

J. Install horizontal movement joints below all starter angles above the base of the wall.

3.10 CLEANING

A. In-Progress Cleaning: Clean unit masonry as work progresses with a dry, non-metallic brush to remove adhesive as well as mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is set and cured, clean exposed masonry as follows:

1. Cut out all defective mortar joints and holes in exposed masonry and fill with new mortar.

2. Clean preselected sample wall area with specified cleaning product as per brick manufacturer's recommendations. Do not use muriatic or hydrofluoric acid. Do not proceed with cleaning until approved by Architect/Owner.

3. Clean thin brick in accordance with cleaning product manufacturer's written instructions.

4. Protect adjacent stone and non-masonry surfaces from contact with cleaner.

3.11 WARRANTY

A. Provide manufacturer's 25 year warranty against material defects in Thin Tech® Elite panels and accessories.

B. Warranty provides for the original purchaser. See warranty for detailed information on terms, conditions and limitations.

END OF SECTION

SECTION 08 39 21
PEDESTRIAN FLOOD DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Single Swing Pedestrian Flood Doors with Frames.
2. Paired Swing with removable mullion Pedestrian Flood Doors with Frames.
3. Door Hardware.

1.2 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation instructions.

B. Shop Drawings: Provide shop drawings showing layout, profiles, and product components, including anchorage, hardware, and finishes. Include dimensional plans, applicable material specifications, elevations and sections detailing mounting and connections, and load diagrams.

C. Calculations: Upon signed finalization and approval of dimensions, mounting location material and configuration, and load requirements;

1. Submit stamped calculations by a registered professional engineer from within the state or territory where the project will be constructed or substantially improved, to verify the flood door's ability to withstand the design loading.

1.3 CLOSEOUT SUBMITTALS

A. Provide Operation and Maintenance data to include methods for maintaining installed products, precautions against cleaning materials and methods detrimental to finishes and performance.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer must demonstrate a minimum of five (5) years successful experience in design and manufacture of similar flood related closures. Upon request, provide supporting evidence including list of installations, descriptions, name and method of contact.

B. Minimum Qualifications: Manufacturer must demonstrate compliance and certification of a Quality Management System administered by the International Organization for Standardization (ISO). Documentation of current certification status to be provided upon request.

C. Welder Qualifications: Welders Certified in accordance with American Welding Society Procedures for applicable material used in production of specified product.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging container with identification markings intact until ready for installation.

B. Protect materials from exposure to moisture during storage.

C. Store materials in a dry, warm, ventilated weathertight location. If outdoor storage is required, block materials to store at an incline, to prevent pooling of any moisture and promote runoff. Tarp materials in a tent-like arrangement, elevated above the product with open sides to allow airflow. Store loose or high value components in a dry, controlled environment.

D. Use caution when unloading and handling product to avoid bending, denting, crushing, or other damage to the product.

E. When using forklifts, use forks of proper length to fully support product being moved. Consult "Approved for Construction" drawings or consult with factory for proper lift points.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's indicated limits.

1.7 COORDINATION

A. Conduct site survey and provide to flood door manufacturer, prior to manufacturer's commencement of shop drawings, the actual site conditions of the mounting location, to include material type, dimensions and configuration, interferences with mounting surface, or any other condition that may impact the ability of the flood door to be properly installed.

B. Coordinate work with other operations and installation of adjacent materials to avoid damage.

1.8 WARRANTY

A. Manufacturer's Standard Warranty: Product to be free from defects in material and workmanship for a period of one (1) year from date of shipment.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Design flood resistance doors to support, solely or in combinations of, temporary super-imposed live loads as indicated below. All applied types of flood related loadings are transferred from the flood product barriers, solely or in combinations of, by mullion anchorage to structural floor slabs and/or jamb anchorage and direct pressure contact to structural walls or other structural elements.

1. Hydrostatic Loading
2. Hydrodynamic Loading
3. Debris Impact Loading
4. Wave Loading (Dynamic/ Non-Breaking or Broken Wave)
5. Wave Loading (Impact/ Breaking Wave – Below & Above DFE)
6. Wind Loading

B. Engineer Code Practices: Engineer flood products to conform to the design requirements that are based on the latest adopted edition of the International Building Code (IBC). LFRD and/or ASD methodologies are applied as appropriate to align with specific project specifications and/or limited published material data.

C. Water Density: 64 pcf, unless otherwise noted on drawings.

2.2 PEDESTRIAN FLOOD DOOR WITH FRAME

A. Description: Hinged, Pedestrian Flood Door including door frame, door panel, threshold, and door hardware.

1. Basis of Design Manufacturer: PS Flood BarriersTM, which is located at: 1150 S. 48th Street, Grand Forks, ND 58201; Toll Free Tel: 877.446.1519; Email: 4info@psdoors.com; Web: www.psfloodbarriers.com or www.psdoors.com

   a. Basis of Design Product: Model: PD 520.

2. Or approved equal by one of the following manufacturers

   a. Sak Enterprise Inc.

   b. Floodcontrol International

   c. Or approved equal.

B. Single Source Responsibilities: Obtain all watertight doors and flood protection barriers from single manufacturer.

2.3 EQUIPMENT

A. Products Details:

1. Sealing Requirements: Flood Door and compression gasket design shall provide an effective barrier against short-term high water situations, to the protection level indicated on drawings.

2. Operation: Provide with latching operable from both sides.

3. Mounting/Load Transfer: Anchor to existing structure. Flood Door designed for specified hydrostatic pressure (and other loads as specified) and will transfer loads to adjacent structure.

4. Frames to be anchored utilizing mechanical, chemical or other framing methods as designed. Manufacturer to include all anchors, water-stop, and sealants, as designed.

5. Loading Direction:

   a. Positive Pressure Loading, (direction of loading against flood door so as to further compress gaskets against flood door frame - "seating").

6. Provide rectangular door opening with square corners to facilitate easy passage.

7. Provide compression gasket which do not require air inflation.

2.4 MATERIALS

A. Flood Door to be fabricated from the following type of material;

1. Steel: Commercial Quality-Low Carbon structural or formed shapes, tubing, and bars of appropriate size and strength with welded construction.

B. Door Panel to be sheeted with sheeting or plate of the following type;

1. Steel: Commercial Quality-Low Carbon steel of appropriate size and strength, structurally bonded.

C. Gaskets: Factory mounted, compressible rubber type, field replaceable. Gasket does not require air inflation.

1. Material: UV resistant EPDM, neoprene and rubber unless otherwise noted.

D. Door Frame to be manufactured of the same material type and finish as door panel. Frame to include jambs, header jamb, and threshold members for field locating and installation on structure. Jamb members to be designed and fabricated with appropriate material as required for the loading.

E. Thresholds to be PS Flood BarriersTM proprietary threshold:

1. Aluminum: 6000 Series Alloy.

a. 1-1/8 inch raised threshold (required for greater than 8 feet water protection height).

F. Frame Mounting Hard ware: Provide anchors, sealant, and water stop, as required.

G. Operating Hardware: Provide hardware appropriate for the size and weight of the flood door and loads. Hardware to be factory located on jambs and door panels, as practical. Latching hardware to be as indicated on drawings. Flood door panel to be factory prepared for applicable latching devices.

1. Aluminum (AL689 finish) Hinge to be continuous type.

2. Standard Latching/Locking Hardware: Interior: Von Duprin 98/99 series Rim exit device. Exterior: Von Duprin 996L Lever, classroom function. (Note: this hardware has been specifically chosen and tested on the PD-520, substitutions require manufacturer's engineering review.)

a. Deadbolt latch (Elevation above max design water height only).

b. Closer; Retrolock RDC4000 H-CUSH, Heavy Duty Grade 1 (AL689 finish)

H. Finish:

1. Steel Shop Finish: Apply the following paint system in accordance with manufacturer recommendations and instructions;

a. Primer: One shop coat of manufacturer's standard shop primer (S-W Kemflash Primer E61-R-26).

b. Finish: Two shop coats of Standard Industrial Enamel (S-W Industrial and Marine Coatings B54 Series)

I. Labeling: Each watertight door and frame will be individually identified for matched installation.

2.5 FABRICATION

A. Fit and factory assemble items in largest practical sections, for shipment to site.

B. Fabricate items with joints tightly fitted and secured.

C. Supply components required for anchorage of fabrications, unless otherwise noted.

D. Conduct shop operational test with factory installed gaskets to verify flood door assembly components operate as designed and flood protective gasket alignment and contact surfaces interact as intended.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until mounting substrates have been properly prepared.

B. If substrate preparation is the responsibility of another subcontractor, notify Architect of uncompleted preparation before proceeding.

C. Inspect opening for compliance with door manufacturer requirements. Verify open conditions are within required tolerances.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's installation instructions, "Approved for Construction" drawings, shipping, handling, and storage instructions, and product carton instructions for installation.

B. Frames must be installed level, square, plumb, and rigid.

C. Perform light or chalk test for gasket alignment, continuity contact and pre-compression prior to field grouting.

D. Sealants, water-stop, and grouting to be applied per product application directions and in accordance with manufacturer's instructions, and "Approved for Construction" drawings.

E. Field Grouting to be completed by appropriate personnel, and in accordance with product application directions, manufacturer's instructions, and "Approved for Construction" drawings.

F. Tolerances: All dimensional requirements must be in accordance with manufacturer's installation instructions and "Approved for Construction" drawings.

G. Products to be operated and field verified that sealing surfaces maintain contact at the correct sealing points.

H. Inspect gaskets for damage, wear, and adhesion. Replace compromised gaskets immediately.

I. Verify that latching assemblies operate freely and correctly.

J. Verify all anchorage is in accordance with manufacture's installation instructions and applicable data sheets.

K. Inspect installation sealants to ensure a watertight juncture.

3.4 FIELD QUALITY CONTROL

A. Field Testing:

1. Installer to construct temporary water barrier and test installed flood barrier under hydrostatic conditions.

3.5 CLEANING

A. Touch-up, repair or replace damaged products or components before Substantial Completion.

B. Clean all sealing surfaces.

3.6 PROTECTION

A. Protect installed products until completion of project.

END OF SECTION

SECTION 41 22 00

CRANES AND HOISTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for providing hoisting equipment, complete with all accessories and appurtenances as indicated in accordance with the Contract Documents.

1.2 RELATED SECTIONS

A. Related Sections include the following:

1. Division 26
   a. Section 26 00 20 COMMON MOTOR REQUIREMENTS with the following exceptions:
      1) short-time duty rated motors are acceptable
      2) standard efficient motors are acceptable

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Institute of Steel Construction (AISC)
1. American National Standards Institute (ANSI)
2. B30.11 Monorails and Underhung Cranes
3. American Society for Testing and Materials (ASTM)
4. American Welding Society (AWS)
5. Hoist Manufacturers Institute (HMI)
6. Monorail Manufacturers Association (MMA)
7. Occupational Safety and Health Act (OSHA)
8. 1910.179 – Overhead and Gantry Cranes

1.4 SUBMITTALS

A. Submit the following in accordance with the General Conditions/General Requirements.

B. Product Data

1. Motor catalog data.
2. Catalog data for all hoisting equipment components.

C. Shop Drawings

1. General arrangement drawings, showing plan, elevation and sectional views along with member sizes and all other pertinent data. Include rail layout and support locations for monorails.

D. Design Data

1. Calculations for sizing load bearing hoisting equipment components, including monorails and load chains/wire ropes.

E. Test Reports

1. Test Reports
2. Investigation reports
3. Daily checklists
4. Final acceptance test and operational test procedure

F. Certificates

1. Copy of warranty.
2. Submit Manufacturer's Certificates of proper installation for the hoisting equipment.

G. Manufacturer's Instructions

1. Manufacturer's Installation Recommendations and Instructions for each type of hoisting equipment assembly.

H. Operation and Maintenance Data

1. Submit Operation and Maintenance Manuals in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

I. Closeout Submittals

1. As-built Drawings

1.5 QUALITY ASSURANCE

A. Manufacturer: Company specializing in designing and manufacturing cranes with 5 years' successful experience.

B. Installer: Company experienced in assembly and installation of cranes with 5 years' successful experience and acceptable to crane manufacturer.

C. Crane shall be designed, fabricated, and installed in accordance with ANSI B30.11 and OSHA 1910-179.

D. Perform welding by certified operators in accordance with AWS D14.1.

E. Bolted connections shall be in accordance with torque tightening procedures specified in AISC Manual, Part 5.

F. Clearly label crane with rated load capacity. Place label at height and location easily read from floor level and loading position.

1.6 EQUIPMENT IDENTIFICATION

A. Equipment covered in this specification is identified as follows:

1. Monorails
   a. Crotonville Pumping Station Monorail

1.7 WARRANTY

A. Provided with manufacturer's warranty of not less than one (1) year from date of substantial completion of the location the equipment is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS AND SYSTEM SUPPLIERS

A. Acceptable Suppliers

1. DR Cordell
2. American Crane & Equipment Corporation
3. Gorbel, Inc.
4. Yale
5. R&M Materials Handling Inc.
6. Shepard Niles/Cleveland Tramrail Corp
7. Twin City Monorail
8. Chester hoists
9. Thern, Inc.
10. Or equal

2.2 DESIGN CRITERIA

A. The cranes and hoisting equipment shall be completely assembled, painted, tested, and adjusted in the shop as far as practical before shipment.

B. All load-bearing parts shall be designed with a safety factor of at least five at rated capacity loads, based on the ultimate strength of the materials used. Hoisting equipment shall be able to safely handle a load equal to 125% of the rated capacity.

C. The equipment shall operate within the space shown with the minimum clearance to the nearest obstruction no less than three inches vertical and two inches horizontal.

D. Bearings

1. Bearings shall be of the precision ball, roller, or washer type, and shall meet the requirements of the Anti-Friction Bearing Manufacturers Association (AFBMA). Bearings shall be designed for a minimum B-10 bearing life of 5,000 hours.

2. Bearing housings shall be split or designed to permit easy removal of the shafts. Bearings shall be pre-lubricated and sealed for the life of the bearings, or have accessible grease fittings for proper means of lubrication.

E. Brakes

1. All hoisting equipment shall be provided with brakes for constant load control in lifting operations.

2. Manually powered hoists shall have a ratchet and pawl, automatic load brake, or other mechanism to hold the load at any height.

3. Ratchet and pawl mechanisms for hoist winch drums shall be clearly visible and accessible to the operator.

F. Hoisting equipment shall be designed for weather-resistance and corrosion-resistance suitable for all locations indicated.

2.3 MONORAILS

A. Design Criteria / Schedule

Equipment Name	Minimum Rated Load Capacity (ton)	Minimum Lift (ft)	Minimum Track Length (ft)	Trolley Type	Hoist Type	Notes
Crotonville Pumping Station Monorail	3	40	33	Manual hand geared trolley drive	Electric Wire Rope	-
Notes: Exiting monorail to remain						

B. Manual Trolley Drive

1. Trolley hoist assemblies shall be hand chain-driven.

2. Trolley wheels shall be designed to operate on the bottom flange of the monorail track and shall be of rolled, forged or cast high strength steel. Trolley wheels shall be machined accurately to assure matched diameters and concentricity of axles and treads. Wheel treads shall be tapered and hardened, designed to carry the maximum wheel load under normal conditions.

C. Electric Hoists

1. General

a. Hoists shall be of low headroom construction where specified.

b. Hoists shall be designed with an overload limit device to prevent damage to the equipment and structure if loads in excess of the specified capacity of the

hoist are applied. The load limiting device for the electric wire rope hoists shall be load sensing type that interrupts the power to the hoisting motion only, is field adjustable, and shall allow the load to be lowered to the floor only. The use of slip clutches in the train drive or similar device shall not be acceptable in electric wire rope hoists. Hoists shall be single speed.

c. All hoisting blocks shall be of enclosed steel construction with forged steel hooks and spring-operated safety latches. The blocks shall be supported on ball or roller bearings.

d. All hoisting blocks shall be permanently marked with hoist unit lifting capacity. Markings shall be legible from the operating floor, minimum 2 inches character height.

e. The hooks shall be forged steel and shall be equipped with a spring type latch. The hooks shall rotate freely 360 degrees on the bearing supports.

2. Hoisting Drums
   a. The hoisting drums shall be of high-grade cast iron or steel with machined grooves of proper diameter and length so that not less than two complete wraps of hoisting rope shall remain in the grooves when the hook is in the lowest position. There shall be no overlapping when the hook is in the highest position. The drum shall have shrouded flanges or the equivalent to prevent cable override.

3. Limit Switches
   a. An adjustable geared limit switch shall be provided at the upper and lower limits of the hook travel.

4. Hoisting Cables
   a. The hoisting cables shall be of the best quality steel cable made for hoisting service.

5. Brakes
   a. Each motor-operated hoist shall be equipped with a Weston or multiple disc mechanical brake which shall automatically hold the load indefinitely in any position and shall permit it to be lowered without acceleration and under full control when the motor is operated in the lowering direction.

   b. Each motor-operated hoist shall also be provided with a dc magnetic brake, spring set and magnetically released or solenoid-operated shoe motor brake acting directly on the motor pinion shaft the instant power is shut off. The brake shall be equally effective in both directions. The brakes shall be adequate to sustain the capacity load, be capable of at least 15 operations per minute, and permit smooth operation for inching.

6. Motors, Controls and Electrification
   a. The hoisting equipment manufacturer shall provide and assemble all electrical appurtenances, including motors, motor starters, pendant controls and conduit. Junction boxes for connection of power shall be provided complete with ground pads. All components shall meet the requirements of the NEMA

Standards for Industrial Control for Cranes and Hoists, NEC, ANSI B30.11 and ANSI B30.16. Hoisting equipment shall be provided with all electrical components and controls, and shall only require field connection of power to the festoon power cable system for power. Power supply for hoisting equipment shall be 480 VAC, 3 phase, 60 hertz.

b. Each motor shall be provided with integral combination reversing starters, complete with thermal motor protection, control relays, and all other necessary appurtenances. Starters and controllers shall be housed in a NEMA 12 enclosure to be installed on a wall near the equipment. All components shall be arranged for positive starting in each direction.

c. Motors shall be horizontal shaft, totally enclosed non-ventilated (TENV) or totally enclosed fan cooled (TEFC), 30 minute duty rated, high torque, high slip, induction type motors, 1800 rpm maximum speed, suitable for operation at 460 volts, 3-phase, 60 hertz. Motors shall have lifetime lubricated ball bearings.

d. The maximum motor noise level measured five feet from each motor shall not exceed 90 decibels.

e. Hoisting controls shall include an adjustable limit switch to limit the normal up and down travel of the hook with a second factory set fixed switch operated by the hook or block to stop the hoist when the highest safe point is reached. Adjustable limit switches shall be the heavy duty control circuit type. Factory set fixed switches shall be connected to open the motor circuit and apply the brake, but not to prevent lowering by operation of the appropriate push button. The switches shall be in enclosures of the same NEMA rating as the associated motor starter, and shall be designed and installed so that the switches shall not be damaged by swinging of the hook.

f. Pendant Push Button Controllers
    1) Each pendant push button control station shall be equipped with a stainless steel safety chain or cable paralleling the control cable, sized to withstand any effort to pull the hoist with the cable.
    2) Control power transformers with primary and secondary fusing shall be provided for control power.
    3) Each control cable shall be NEC Type S0 and shall include the required number of flexible No. 16 AWG copper conductors, all cabled with necessary fillers and tape, and a tough polyvinyl chloride sheath of at least 45 mils thickness.
    4) Control stations shall be provided in boxes of one piece construction, without flaws, and shall be supported by a Kellem type safety grip.
    5) Each pendant push button controller shall be approximately located three feet six inches above the operating room floor.
    6) Control stations shall be provided with “Up-Down” pushbuttons for the hoistand “Stop-Start” pushbuttons for disconnecting all motors in the system.
    7) All push buttons shall be of the momentary contact maintained pressure type, automatically de-energizing when the contact pressure is relieved.

8) Pendant control stations shall be provided with NEMA type 12 enclosures.

g. Festoon Power Cable System

1) Power for the hoists shall be conveyed by means of an adequately supported festoon cable system provided by the manufacturer for each installation. The system shall consist of required length of cables, end clamp, lead car, and required number of intermediate cars. Festoon power and cable system shall be rated for medium-duty, long-life application and shall be capable of accommodating an active travel length as required for each application. Festoon cable run shall include number and size of conductors as required by the hoist and trolley manufacturers for proper operation of the equipment.

D. Gears

1. All gearing shall be designed to meet the requirements of AGMA Standards. Gears shall be helical or spur constructed of heat treated steel. Worm gears shall be bronze and shall have precision-machined cut teeth. All pinions shall be alloy steel and heat-treated. Gearing shall be enclosed or guarded and shall be either oil bath or splash lubricated.

2. Gear reducers Shall be specially designed for hoist service with a minimum classification of moderate shock service and with minimum service factor of one.

G. Bearings

1. Bearings shall be of the ball, roller, or washer type, and shall meet the requirements of the Antifriction Bearing Manufacturers Association. Bearings shall be designed for a minimum B-10 bearing life of 5,000 hours.

2. Bearing housings shall be split or designed to permit easy removal of the shafts. Bearings shall be pre-lubricated and sealed for the life of the bearings, or have grease fittings for proper means of lubrication.

2.4 SOURCE QUALITY CONTROL

A. All hoisting equipment provided shall be new material.

B. Hoisting equipment shall be the products of manufacturers regularly engaged in the production of such equipment.

C. All hoists shall be factory tested per applicable ANSI requirements and three (3) certified copies of the test results shall be submitted to the Engineer for approval.

2.5 SPARE PARTS

A. Furnish one (1) complete set of replacement parts for each hoisting equipment installation.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hoisting equipment shall be installed complete and operational in accordance with manufacturer’s recommendations and the Contract Documents.

B. The hoisting equipment manufacturer’s representative shall instruct the Contractor on the required adjustments, test all components, and furnish the manufacturer's certificates.

3.2 FIELD TESTING

A. Following installation, all hoisting equipment shall be field tested.

B. Demonstrate for each installation that equipment:

1. Is in full compliance with the Contract Documents;

2. Is properly installed, adjusted, and ready for service;

3. Is free of defects;

4. Performs satisfactorily under normal operating conditions, as directed by the Engineer.

C. Load Testing

1. Test function of each hoist or crane under loads of 100% and 125% of the rated capacity.

2. Test function of hoisting equipment brakes at 100 % of the rated load capacity.

3. Measure structural deflections of monorail tracks with trolley hoist loads of 100% and 125% of the rated capacity and shall not exceed the allowable deflections specified.

4. Trolley hoists shall travel over the full length of the track during the 100% and 125% load tests.

D. Any defects that become apparent or develop during the testing shall be corrected at no additional expense to the Owner.

3.3 PAINTING

A. With the exception of those parts and components customarily furnished unpainted, all metal surfaces shall be shop prepared and coated with rust-inhibitive shop paint. Machined surfaces shall be protected against damage and corrosion by other means. Trolley hoist wheel treads shall be furnished with electroplate finish, black oxide, or equal treatment, in lieu of paint.

B. Load capacity shall be permanently marked using minimum 2-inch high lettering on each

trolley hoist, and on monorail track at 30-foot maximum intervals. Legible load capacity charts shall be marked or permanently affixed on portable hoists, showing rated capacity in all permitted working positions and configurations of use.

* * * * *

THIS PAGE INTENTIONALLY LEFT BLANK

HAZARDOUS MATERIALS INVESTIGATION REPORT
CROTONVILLE PUMP STATION PROJECT
WESTCHESTER COUNTY, NEW YORK

MATRIXNEWORLD

Engineering Progress

Prepared for:
Mark A. Randazzo
O'Brien & Gere
163 North Wellwood Avenue
Lindenhurst, NY 11757

Prepared by:
Matrix New World Engineering,
Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932

September 15, 2017

Matrix No. 17-487

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

This Hazardous Material Investigation Report for the Crotonville Pump Station Project has been prepared by Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C. (Matrix) under a sub-consultant agreement with O'Brien & Gere (OBG). The scope of the investigation activity was targeted at the identification, delineation and characterization of suspect asbestos-containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyl (PCB) containing caulking/sealant materials, and/or other potentially hazardous materials/conditions present within the existing Crotonville Pump Station limits.

Specifically, areas included in the hazardous materials investigation performed on site include the following:

- Main Level;
- Main Level Restroom;
- Middle Level;
- Lower Level;
- Storage Room E;
- Exterior Façade; and
- Roof Area.

2.0 REVIEW OF PREVIOUS SURVEYS AND DOCUMENTS

Prior to conducting the field activities at the Site, Matrix requested access to available information related to the construction of the existing facility structure as well as available information related to asbestos, LBP, lead-containing paint (LCP) and other hazardous materials previously identified within the areas expected to be impacted by the proposed Project. To date no previous environmental documents have been provided for review.

In addition, Matrix reviewed a previous set of site/architectural plans (Construction Documents Phase - dated March 1975) provided by the County of Westchester Department of Environmental Facilities to better identify and delineate the anticipated SOW limits.

3.0 ASBESTOS SURVEY AND SAMPLING

3.1 General Building and Site Description

The Crotonville Pump Station is located at 49 Croton River Road, Ossining, NY. It provides sanitation services to the County of Westchester, New York. The interior of the building consists of three stories (main, middle, and lower level). The main level is constructed of concrete floors and ceilings as well as concrete masonry unit (CMU) walls with multiple semi-luminant windows. This main level also has a generator and multiple electrical panels in addition to an attached restroom at the north end of the building. The restroom consists of vinyl floor tiles (VFT), CMU walls, and a concrete ceiling. The middle and lower levels consist of concrete floors, walls, and ceilings. The middle level houses multiple electrical panels as well as four pump motors which protrude through the floor. The lower level consists of four pumps and related equipment. Storage Room E is accessed through the west end of the building and is a continuation of the main level. The roof, accessed by ship ladder, found in Storage Room E, and hatch is constructed of built up roofing materials with a heat recovery unit and multiple vents throughout the area. The exterior façade walls are red brick with a decorative cementitious paneling that reaches the top of the roof parapet walls. The scope of work (SOW) area consists of the entire interior and exterior of the standalone Pump Station.

3.2 Survey of Suspect Asbestos Containing Materials (ACM)

The limited asbestos survey was conducted on August 18, 2017 by Tyler Gilmore and Mike Sweetser both New York State Department of Labor (NYSDOL) Asbestos Inspectors. The asbestos survey and sampling program was conducted in accordance with the United States Environmental Protection Agency (USEPA) publication, "Asbestos in Buildings," survey and sampling protocol, the Asbestos Hazard Emergency Response Act (AHERA) asbestos inspection protocol, and the NYSDOL Industrial Code Rule (ICR) Part 56 of Title 12.

The asbestos survey included an inspection of accessible areas expected to be impacted by the proposed Project. As part of the survey, Matrix collected information on the physical condition and location of suspect ACM and other characteristics of the subject building that may affect the likelihood of ACM being disturbed. Site photographs are included as Appendix A. Asbestos survey forms are included in Appendix B. A description of the survey methodology is contained in Section 3.3, the results of this survey are presented in Section 3.4, and the analytical results are discussed in Section 3.5. Asbestos bulk sample locations are shown on Figures 2 through 5.

3.3 Survey Methods and Limitations

The inspection process consisted of the following steps:

- Inspection of accessible areas for friable materials and non-friable materials or products which are likely to contain asbestos.
- Delineation of homogeneous areas (HA) and determination of the locations for the collection of bulk samples.
- Collection of information on the physical condition and location of all ACM and on other characteristics of the building which may increase the likelihood that ACM may be disturbed and that fibers could be released and distributed.

- Preparation of a tabulated inventory of suspect ACM and bulk samples collected from suspect HAs. The table includes the location, quantity, condition, determination as to whether the material is friable or non-friable and the analytical results from bulk samples.

Samples were collected from HAs to determine the presence/absence of asbestos. The asbestos survey and sampling program was performed in general accordance with the guidelines established by AHERA as set forth in 40 Code of Federal Regulation (CFR) Part 763; 29 CFR Part 1926 Occupational Safety and Health Administration (OSHA), Occupational Exposures to Asbestos; and NYSDOL Industrial Code Rule (ICR) Part 56.

Samples were submitted to EMSL Analytical Inc., located at 307 West 38th Street, Manhattan, NY (NVLAP Certification No. 101048-9 and ELAP Certification No. 11506) for analysis of asbestos content by polarized light microscopy (PLM) analysis, NYS Stratified Point Count 198.1 (ELAP Method 198.1) (friable). Representative samples of Non-Friable Organically Bound (NOB) samples that were negative for asbestos by PLM analysis (ELAP Method 198.6) were further analyzed by Transmission Electron Microscopy (TEM) (ELAP Method 198.4). All samples collected were properly bagged, sealed, and cataloged under chain of custody. The analytical results are summarized in Table 1, and copies of the analytical data reports are included as Appendix C.

3.4 Asbestos Survey Findings

The findings of the asbestos survey conducted on August 18, 2017 are described in this section. The location, quantity, condition, description of whether the material is friable or non-friable, and specific notes related to suspect ACM identified in the impacted areas are included on the asbestos survey forms included within Appendix B.

3.4.1 Thermal System Insulation

Thermal System Insulation (TSI) is defined in 29 CFR 1910.1101 OSHA, Occupational Exposures to Asbestos) as material "applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain." TSI materials are characterized by their form or composition.

Pipe fitting insulation (i.e., pipe joints, elbows, valves, tees, etc.) may contain asbestos and is usually hand molded mud-applied to the fitting and may have a canvas wrapping over the material. The newer non-asbestos pipe fitting insulation is typically fiberglass covered with a PVC or paper jacket or rubber. The number of samples to be collected from each friable HA is as follows:

- 3 samples from each HA;
- 1 sample from each HA of patched TSI if < 6 square feet; and
- In a matter sufficient to determine whether the material is ACM for other TSI (elbows).

Suspect TSI materials identified within the SOW limits of the proposed Project:

- All Service Jacket (ASJ) to Fiberglass Insulated Ring (HA-11) – Main Level Restroom.

3.4.2 Surfacing Material

29 CFR 1910.1101 defines surfacing material as "sprayed, troweled-on or otherwise applied to surfaces (such as plaster on ceilings and walls or other materials on surfaces for acoustical, fireproofing, and other purposes)." The anticipated number of samples of each friable HA was determined in the field by volume of material, as follows:

- 3 samples from HAs up to 1,000 square feet;
- 5 samples for HAs of 1,000-5,000 square feet; and
- 7 samples for HAs greater than 5,000 square feet.

Suspect surfacing materials identified within the SOW limits of the proposed Project included the following:

- Leveling Compound (HA-02) – Main Level Entry Door Threshold; and
- Cementitious Panels (with Decorative Aggregate) (HA-21) – Exterior South Elevation

3.4.3 Miscellaneous Material

40 CFR 763.83 defines miscellaneous material as building material on "structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation." A minimum of two samples were collected from each miscellaneous HA (as required by AHERA and NYSDOL ICR Part 56).

Suspect miscellaneous materials identified by Matrix within the SOW limits of the proposed Project included the following:

- Interior (white) Door Frame Caulk (HA-01) – Main Level at Entry Door;
- CMU Mortar (HA-03) – Main Level Main Area;
- Interior (grey) Window Frame Caulk (HA-04) – Main Level;
- Pipe Dope to Drain Pipe (HA-05) – Main Level Restroom;
- Pipe Dope to Diesel Fuel Line (HA-06) – Main Level Main Area (Generator Fuel Cell);
- (black) Duct Vibration Cloth (HA-07) – Main Level Generator Intake Duct Work Dampener;
- (white) Braided Electrical Wire Insulation Wrap (HA-08) – Main Level Generator Battery Feed;
- Flange Gasket (HA-09) – Main Level Generator Battery Exhaust Flange;
- 12"x12" (beige) Vinyl Floor Tile & Associated Mastic (HA-10/10M) – Main Level Restroom;
- 2.5" (black) Vinyl Cove Base - & Associated Glue (HA-12/12G) – Main Level Restroom;
- Fibrous Wall Receptacle Backing (HA-13) – Main Level Main Area Adjacent to Entry;
- (black) Duct Vibration Cloth (HA-14) – Main Level Bathroom Diffuser Dampener;
- (yellow) Transformer Wrap (HA-15) – Middle Level Decommissioned Electrical Cabinet at North Wall;
- Braided Arc Tape (HA-16) – Middle Level Decommissioned Electrical Cabinet at North Wall;
- Braided Electrical Wire Insulation (HA-17) – Middle Level Decommissioned Electrical Cabinet at North Wall;
- Flange Gasket (HA-18) – Lower Level Blower Unit Plumbing;
- Backer Rod (Fibrous) (HA-19) – Exterior East Elevation Louver;
- (white) Caulk to Decorative Cementitious Paneling (HA-20) – Exterior South Elevation;

- Multi-layer Base Flashing (Layer 1: Tar to Parapet Wall, Layer 2: Base Flashing Roofing Membrane) (HA- 22 – L1/L2) – Roof Southeast Parapet Wall;
- Vent Stack Pitch Pocket (HA-23) – Roof at North End;
- Built- Up Roofing Material (Layer 1: Hot Tar, Layer 2: Fiberboard, Layer 3: Cold Tar, and Layer 4: Roofing Membrane) (HA- 24- L1/L2/L3/L3) – Roof at Northeast; and
- (grey) Caulk to Metal Cap Flashing (HA-25) – Roof at East Corner.

3.5 Analytical Results

This section discusses the analytical results of bulk samples collected as part of this survey. The results of the survey are summarized in Table 1 and the laboratory data packages are included as Appendix C.

3.5.1 Thermal System Insulation

A total of 3 samples of TSI material were collected during the survey. None were found to be ACM (>1%asbestos).

3.5.2 Surfacing Material

A total of 8 samples of surfacing material were collected during the survey. None were found to be ACM (>1% asbestos).

3.5.3 Miscellaneous Material

A total of 56 samples of miscellaneous material were collected during the survey. The following suspect miscellaneous material samples were found to be ACM (>1% asbestos):

- Flange Gasket (HA-09) – Main Level Generator Exhaust Flange;
- 12”x12” (beige) Vinyl Floor Tile & Associated Mastic (HA-10/10M) – Main Level Restroom;
- Multi-layer Base Flashing (Layer 1: Tar to Parapet Wall, Layer 2: Base Flashing Roofing Membrane) (HA- 22 – L1/L2) – Roof Southeast Parapet Wall; and
- Built- Up Roofing Material (Layer 1: Hot Tar, Layer 2: Fiberboard, Layer 3: Cold Tar, and Layer 4: Roofing Membrane) (HA- 24- L1/L2/L3/L3) – Roof at Northeast.

3.5.4 Assumed Material

Matrix inspected and documented materials, which were observable and accessible within the proposed project limits. It is possible that additional suspect ACM may exist in concealed spaces, which were not observable or accessible at the time of the survey. Therefore, any suspect materials that may be encountered during the anticipated construction activities must be assumed to contain asbestos and treated as ACM, until supplemental sampling proves otherwise.

4.0 LEAD-BASED PAINT SURVEY AND INVESTIGATION

4.1 Introduction

A Site survey and LBP inspection within the SOW limits of the proposed Project was conducted by Matrix on August 18, 2017. Specifically, the survey addressed proposed impacted areas associated with the proposed construction activities. The inspection was conducted by Mr. Tyler Gilmore (NY/EPA licensed Lead Inspector/Risk Assessor - No. LBP-R-I173481-1) of Matrix. The LBP inspection was conducted in general accordance with the Revised 1997 U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing. The survey consisted of a visual inspection of the various areas of the structure that would likely be impacted by the proposed Project, as well as the performance of X-Ray Fluorescence (XRF) testing to detect the presence of lead in the painted surfaces. The XRF instrument used during the survey was an RMD LPA-1 (Serial #2522R). A description of the inspection methodology is contained in Section 4.2, and the results of the inspection are contained in Section 4.3.

4.2 LBP Survey Methodology and Limitations

The LBP inspection performed by Matrix on August 18, 2017 consisted of the following steps:

- A visual walk through of the affected areas was conducted (noting the areas to be potentially tested). XRF testing of representative painted surfaces was completed on the same day.
- Testing locations were randomly selected in order to facilitate proper testing.
- A total of 27 measurements of painted building components were taken by XRF.
- A tabulated inventory of the testing locations was prepared identifying the testing identification number, component and location, condition of painted surface, substrate material and lead concentration reading.

The testing was accomplished in a manner representative of a cross section of various impacted areas, components, and substrates in sections of the facility that may be impacted by the proposed Project. The results of the XRF testing determined the presence or absence of lead in those various painted surfaces of the Site. The results of the LBP testing are summarized in Table 3 and are discussed in Section 4.3 of this report.

4.3 LBP Survey Findings

The findings of the LBP inspection conducted within the SOW limits of the proposed Project on April 18, 2017 are described in this section. A tabulated inventory of the testing locations is provided as Table 3. The table includes the testing identification number, component, location, condition of painted surface, substrate material and lead concentration reading of each testing location.

HUD and the USEPA define LBP as paint or other surface coating with a lead content of 1.0 mg/cm^2 or greater, or more than 0.5% by weight. During the investigation, the following components were identified as LBP according to the HUD/USEPA guidelines (≥1.0 mg/cm^2 lead concentration):

- Stair Tread (XRF Reading# 11) – Main Level; and
- Diesel Pipe (XRF Reading# 26) – Throughout Building Limits.

5.0 PCB CAULK SURVEY AND INVESTIGATION

5.1 Introduction

In addition to the ACM and LBP investigations; Matrix conducted a supplemental sampling program specific to suspect PCB in caulking material present within the SOW limits that has the potential for impact during the proposed Project. PCBs were used in a wide range of industrial and commercial applications from 1929 to 1979 including hydraulic and dielectric fluids, lubricants, and additives to plastics, paints, and pesticides. Most recently, PCBs have been detected in caulking materials that were manufactured during that period. Matrix collected samples of caulking materials identified as having a potential for impact during the Project, and analyzed these materials for PCB content. PCB manufacturing, processing, distribution, and disposal are currently regulated by the Toxic Substances Control Act (TSCA) and EPA regulation 40 CFR Part 761. TSCA classifies PCB-containing materials into the following categories:

- PCB Free = <2 parts per million (ppm) or milligrams per kilograms (mg/kg) PCBs
- PCB Regulated = 2 to <50 ppm or mg/kg PCBs
- PCB Contaminated = 50 to <500 ppm or mg/kg PCBs
- PCB Material = >500 ppm or mg/kg PCBs

Disposal of caulking materials that are characterized as PCB Contaminated or PCB Material are an EPA-regulated PCB Bulk Waste under TSCA.

5.2 PCB Caulk Investigation Methodology and Limitations

The PCB caulk sampling was performed by Matrix on August 18. 2017 Matrix collected samples from four (4) types of caulking material identified during the inspection on interior and exterior components with the potential to be impacted by the proposed Project. The samples of caulking material were analyzed by EMSL Analytical, Inc., an independent laboratory certified by NVLAP, and analyzed for PCB content using EPA Method 3540C/8082A. A copy of the laboratory analytical report for the PCB samples is included in Appendix C. Based on the total PCB concentration of each caulk sample, the material is characterized as PCB Free, PCB Regulated, PCB Contaminated, or a PCB Material. PCB sample locations are shown on Figures 2 and 5. Suspect PCB containing caulking material identified within the SOW limits of the proposed Project includes the following:

- Interior (white) Door Frame Caulk (PCB-01) – Main Level at Entry Door;
- Interior (grey) Window Frame Caulk (PCB-04) – Main Level Main Area/Bathroom;
- (white) Caulk to Decorative Cementitious Paneling (PCB-20) – Exterior South Elevation; and
- (grey) Caulk to Metal Cap Flashing (PCB-25) – Roof at East Corner.

5.3 PCB Caulk Investigation Findings

The findings of Matrix's PCB caulk sampling program conducted at Crotonville Pump Station are described in this section. The PCB analytical results for the caulking material are shown in the following table.

Sample No.	Material Description	Material Location	Total PCB Concentration by Weight (mg/kg)	EPA Classification
PCB-01	Interior (white) Door Frame Caulk	Main Level at Entry Door	< 0.94	PCB Free
PCB-04	Exterior Caulk to Window Saddle	Main Level Main Area/Bathroom	< 0.77	PCB Free
PCB.20	Caulk to Wall Joints	Exterior South Elevation	< 0.99	PCB Free
PCB-25	Exterior Louver Caulk	Roof at East Corner	< 0.97	PCB Free

Table Notes
mg/kg = milligrams per kilograms mg/kg
Bold = PCB Regulated, PCB Contaminated or PCB Material

6.0 OTHER HAZARDOUS MATERIALS

6.1 Introduction

As part of the Hazardous Materials Investigation, Matrix inspected areas of the Project Site for the presence of additional suspect hazardous materials with the potential to be impacted during the proposed construction activities. These materials include fluorescent light bulbs and assumed PCB containing light fixture ballasts.

6.2 Other Hazardous Materials Findings

Other hazardous materials including fluorescent light bulbs and assumed PCB containing ballasts were observed and noted during the survey. Some of these materials have the potential to be impacted by the proposed construction. A summary of identified and assumed suspect hazardous materials and associated quantities is shown in Table 5.

7.0 FINDINGS AND CONCLUSIONS

The following is a summary of the findings of the limited ACM, LBP, and PCB-caulk surveys conducted by Matrix within the SOW limits on August 18, 2017.

7.1 Summary of ACM Findings

A summary of ACM identified during the survey, including location and quantity is included in Table 1. ACM identified within the project limits must be properly removed prior to start of construction and/or renovation activities that may disturb them. Any asbestos removal/disturbance will need to be completed in accordance with applicable Federal, state and local regulations. Any additional suspect materials that may be encountered during proposed construction activities must be assumed to contain asbestos and treated as ACM, unless further sampling and lab analysis proves otherwise.

7.2 Summary of LBP Findings

The LBP Survey results are summarized in Section 4.3. LBP should be managed properly when construction activities are expected to disturb these surfaces. All disturbances of LBP must be conducted in accordance with the OSHA Lead in Construction Standard, (29 CFR 1926.62).

7.3 Summary of PCB Caulk Findings

The PCB Caulk sampling results are summarized in Section 5.3. A total of 4 suspect PCB containing caulking materials were collected during Matrix's survey. Based upon the analytical results, each of the 4 sampled materials are identified as a "PCB Free" based on the TSCA PCB-containing materials classification criteria.

7.4 Summary of Hazardous Materials Findings

Potentially hazardous materials were identified within the Project limit during the investigation conducted by Matrix. Hazardous materials identified by Matrix during the survey are summarized in Table 5. Removal and disposal of these items shall be conducted in accordance with applicable federal, state and local rules and regulations.

TABLES

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM AND TEM TESTING
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	TEM Results
HA-01	01-01	031726632-0001	Interior (White) Door Frame Caulk	Main Level at Entry Door	ND	ND
	01-02	031726632-0002			ND	ND
HA-02	02-01	031726632-0003	Leveling Compound	Main Level Entry Door Threshold	ND	NA
	02-02	031726632-0004			ND	NA
	02-03	031628502-0005			ND	NA
HA-03	03-01	031628502-0006	CMU Mortar	Main Level Main Area at SE	ND	NA
	03-02	031628502-0007		Main Level Main Area at SW	ND	NA
HA-04	04-01	031628502-0008	Interior (Grey) Window Frame Caulk	Main Level Main Area at NE Window Unit	ND	ND
	04-02	031628502-0009		Main Level Bathroom Window Unit	ND	ND
HA-05	05-01	031628502-0010	Pipe Dope to Drain Pipe	Main Level Restroom	ND	ND
	05-02	031628502-0011			ND	ND
HA-06	06-01	031628502-0012	Pipe Dope to Diesel Fuel Line	Main Level Main Area to Generator Fuel Cell	ND	ND
	06-02	031628502-0013			ND	ND

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM AND TEM TESTING
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	TEM Results
HA-07	07-01	031628502-0014	(Black) Duct Vibration Cloth	Main Level Generator Intake Ductwork Dampener	ND	ND
	07-02	031628502-0015			ND	ND
HA-08	08-01	031628502-0016	(White) Braided Electrical Wire Insulation Wrap	Main Level Generator Battery Feed	ND	NA
	08-02	031628502-0017			ND	NA
HA-09	**09-01**	**031628502-0018**	**Flange Gasket**	**Main Level Generator Exhaust Flange**	**17.70% Chrysotile**	**Positive Stop**
	09-02	**031628502-0019**			**Positive Stop**	**Positive Stop**
HA-10	**10-01**	**031628502-0020**	**12" x 12" (beige) Vinyl Floor Tile**	**Main Level Restroom**	**1.4% Chrysotile**	**Positive Stop**
	10-02	**031628502-0021**			**Positive Stop**	**Positive Stop**
	10M-01	**031628502-0022**	**12"x12" (beige)Vinyl Floor Tile Associated Mastic**		**Positive Stop**	**Positive Stop**
	10M-02	**031628502-0023**			**Positive Stop**	**Positive Stop**
HA-11	11-01	031628502-0024	All Service Jacket to Fiberglass Insulated Ring	Main Level Restroom Domestic Cold Water Line Beneath Sink	ND	NA
	11-02	031628502-0025			ND	NA
	11-03	031628502-0026			ND	NA

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM AND TEM TESTING
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	TEM Results
HA-12	12-01	031628502-0027	(black) 2.5" Vinyl Cove Base	Main Level Restroom	ND	ND
	12-02	031628502-0028			ND	ND
HA-12G	12G-01	031628502-0029	(black) 2.5" Vinyl Cove Base Associated Glue		ND	ND
	12G-02	031628502-0030			ND	ND
HA-13	13-01	031628502-0031	Fibrous Wall Recepticle Backing	Main Level Main Area Adjacent to Entry	ND	NA
	13-02	031628502-0032			ND	NA
HA-14	14-01	031628502-0033	(Black) Duct Vibration Cloth	Main Level Bathroom Diffuser Dampner	ND	ND
	14-02	031628502-0034			ND	ND
HA-15	15-01	031628502-0035	Transformer Wrap (Yellow)	Middle Level Decommissioned Electrical Cabinet at N Wall	ND	ND
	15-02	031628502-0036			ND	ND
HA-16	16-01	031628502-0037	Braided Arc Tape	Middle Level Decommissioned Electrical Cabinet at N Wall	ND	NA
	16-02	031628502-0038			ND	NA

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM AND TEM TESTING
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	TEM Results
HA-17	17-01	031628502-0039	Braided Electrical Wire Insulation	Middle Level Decommissioned Electrical Cabinet at N Wall	ND	NA
	17-02	031628502-0040			ND	NA
HA-18	18-01	031628502-0041	Flange Gasket	Lower Level Blower Unit Plumbing	ND	ND
	18-02	031628502-0042			ND	ND
HA-19	19-01	031628502-0043	Backer Rod (Fiberous)	Exterior East Elevation Louver	ND	NA
	19-02	031628502-0044			ND	NA
HA-20	20-01	031628502-0045	(White) Caulk to Decorative Cementitious Paneling	Exterior South Elevation	ND	ND
	20-02	031628502-0046			ND	ND
HA-21	21-01	031628502-0047	Cementitious Panels (with Decorative Aggregate)		ND	NA
	21-02	031628502-0048			ND	NA
	21-03	031628502-0049			ND	NA
	21-04	031628502-0050			ND	NA
	21-05	031628502-0051			ND	NA

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM AND TEM TESTING
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	TEM Results
HA-22	22-01-L1	031628502-0052	Tar to Parapet Wall	Roof SE Parapet Wall	ND	Positive Stop
	22-02-L1	031628502-0053			10.5 % Chrysotile	Positive Stop
	22-01-L2	031628502-0054	Base Flashing Roofing Membrane		Positive Stop	Positive Stop
	22-02-L2	031628502-0055			Positive Stop	Positive Stop
HA-23	23-01	031628502-0056	Vent Stack Pitch Pocket	Roof at N End	ND	ND
	23-02	031628502-0057			ND	ND
HA-24	24-01-L1	031628502-0058	Hot Tar	Roof at NE (High Spot)	1.3% Chrysotile	Positive Stop
	24-02-L1	031628502-0059			Positive Stop	Positive Stop
	24-01-L2	031628502-0060	Fiberboard		Positive Stop	Positive Stop
	24-02-L2	031628502-0061			Positive Stop	Positive Stop
	24-01-L3	031628502-0062	Cold Tar		Positive Stop	Positive Stop
	24-02-L3	031628502-0063			Positive Stop	Positive Stop

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM AND TEM TESTING
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	TEM Results
HA-24	**24-01-L4**	**031628502-0064**	**Roof Membrane**	**Roof at NE (High Spot)**	**Positive Stop**	**Positive Stop**
	24-02-L4	**031628502-0065**			**Positive Stop**	**Positive Stop**
HA-25	25-01	031628502-0066	(Grey) Caulk to Metal Cap Flashing	Roof at E Corner	ND	<1.00% Chrysotile
	25-02	031628502-0067			ND	<1.00% Chrysotile

NOTES:
NA = Sample Not Analyzed by This Method
ND = No Asbestos Detected
PLM = Polarized Light Microscopy
TEM = Transmission Electron Microscopy
Results shown in bold type indicate an Asbestos-Containing Material (ACM)

TABLE 2
SUMMARY OF POSITIVE ASBESTOS BULK SAMPLE RESULTS
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

MATRIX Sample No.	Homogenous Area	Material Description	Location	Friability	Condition	Approximate Quantity	Notes
Materials Tested Positive for ACM							
09-01	HA-09	Flange Gasket	Main Level Generator Exhaust Flange	Non-Friable	Good	9 Units	
10-01	HA-10	12"x12" (Beige) Vinyl Floor Tile	Main Level Restroom	Non-Friable	Good	30 SF	Remove mastic associated with floor tile due to positive ACM floor tile
22-02-L1	HA-22	Tar to Parapet Wall	Roof SE Parapet Wall	Non-Friable	Good	144 LF	
24-01-L1	HA-24	Hot Tar	Roof at NE (High Spot)	Non-Friable	Good	1040 SF	

LF = Linear Feet
SF = Square Feet

TABLE 3
SUMMARY OF LEAD BASED PAINT XRF INSTRUMENT READINGS
CROTONVILLE PUMP STATION
17-487

XRF Reading No.	Floor	Location (Wall & Room #)	Component	Location on Component	Substrate	Cond.	Color	Lead (mg/cm3)
Calibration 1					Paint			0.9
Calibration 2					Paint			0.9
Calibration 3					Paint			0.7
Calibration 4					Wood			-0.3
Calibration 5					Wood			-0.3
Calibration 6					Wood			-0.3
7	Main Level	Elevation A	Door	Right	Metal	I	Grey	-0.4
8	Main Level	Elevation A	Door Frame	Left	Metal	I	Grey	-0.3
9	Main Level	Elevation A	Door Jamb	Left	Metal	I	Grey	-0.3
10	Main Level	Elevation D	Window Frame	Right	Metal	I	Clear	-0.7
11	Main Level	Stairs	Tread	Left	Metal	P	Yellow	3.1
12	Main Level	Elevation D	Electrical Panel	Center	Metal	I	Grey	-0.3
13	Main Level	Bathroom at Elevation D	Door	Right	Metal	I	Red	-0.4
14	Main Level	Bathroom at Elevation D	Door Frame	Right	Metal	I	Red	-0.3
15	Main Level	Bathroom at Elevation D	Door Jamb	Right	Metal	I	Red	-0.4
16	Main Level	Elevation C	Door	Center	Metal	I	Grey	-0.4
17	Main Level	Elevation C	Door Frame	Right	Metal	I	Grey	-0.3
18	Main Level	Elevation C	Door Jamb	Right	Metal	I	Grey	-0.4
19	Main Level	Elevation B	Window Frame	Center	Metal	I	Red	-0.1
20	Main Level	MCC-1 at Elevation B	Elecrical Panel	Center	Metal	I	Light Grey	-0.4

I - Intact = No Damage
F - Fair < or = 10% Damage or < 2 SF for interiors < 10 SF for exteriors
P - Poor = > or = 10% Damage or > 2 SF for interiors > 10 SF for exteriors

TABLE 3
SUMMARY OF LEAD BASED PAINT XRF INSTRUMENT READINGS
CROTONVILLE PUMP STATION
17-487

XRF Reading No.	Floor	Location (Wall & Room #)	Component	Location on Component	Substrate	Cond.	Color	Lead (mg/cm3)
21	Main Level	MCC-1 at Elevation B	Elecrical Panel	Right	Metal	I	Dark Grey	-0.4
22	Main Level	Louver at Elevation A	Louver Frame	Right	Metal	I	Black	-0.9
23	Main Level	Building Limits	Beam	Center	Metal	I	Red	-0.1
24	Main Level	Building Limits	Dunnage	Left	Metal	I	Grey	-0.5
25	Main Level	Building Limits	Fuel Tank	Center	Metal	I	Black	-0.3
26	Main Level	Building Limits	Diesel Pipe	Left	Metal	F	Orange	1.1
27	Main Level	Building Limits	Generator	Center	Metal	I	Silver	-0.2
28	Main Level	Building Limits	Tank	Left	Metal	F	Silver	-0.2
29	Main Level	Building Limits	Roof Drain	Center	Metal	I	Black	-0.3
30	Main Level	Building Limits	Winch	Center	Metal	P	Yellow	0.0
31	Middle Level	Building Limits	Motor	Center	Metal	I	Grey	-0.5
32	Lower Level	Building Limits	Pipe	Center	Metal	P	Red	-0.5
33	Lower Level	Building Limits	Pipe	Center	Metal	P	Grey	-0.4
Calibration 34					Paint			0.7
Calibration 35					Paint			0.7
Calibration 36					Paint			0.8
Calibration 37					Wood			-0.4
Calibration 37					Wood			-0.2
Calibration 38					Wood			-0.1

I - Intact = No Damage
F - Fair < or = 10% Damage or < 2 SF for interiors < 10 SF for exteriors
P - Poor = > or = 10% Damage or > 2 SF for interiors > 10 SF for exteriors

TABLE 4
SUMMARY OF POSITIVE XRF INSTRUMENT READINGS
CROTONVILLE PUMP STATION
17-487

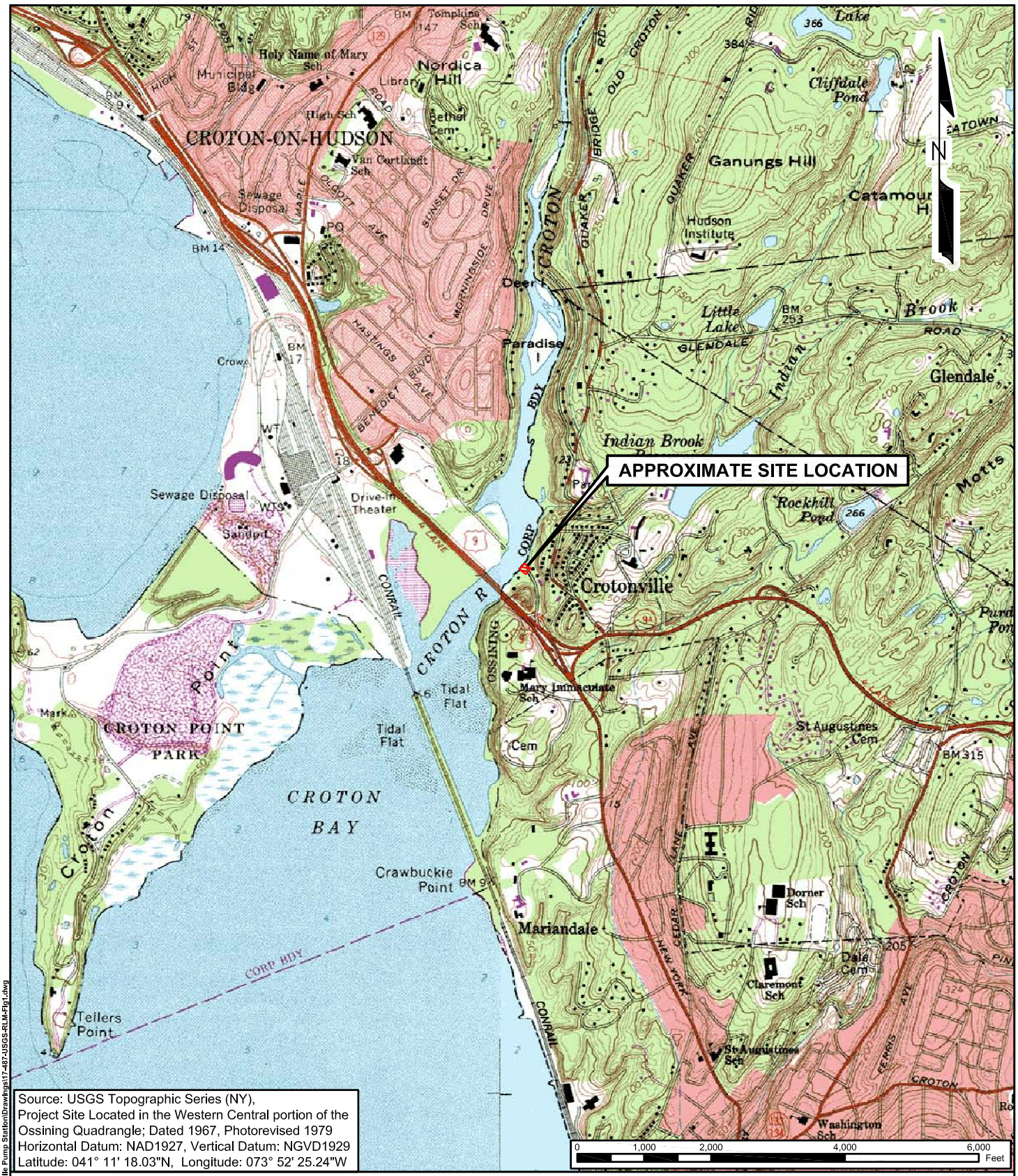
XRF Reading No.	Floor	Location	Component	Condition	Color	Quantity
11	Main Level	Stairs	Metal Tread	Poor	Yellow	2 SF per Tread
26	Main Level	Building Limits	Metal Diesel Pipe	Fair	Orange	26 LF

Notes:
SF = Square Feet
LF = Linear Feat

TABLE 5
SUMMARY OF HAZARDOUS MATERIALS SURVEY
CROTONVILLE PUMP STATION
OSSINING, NEW JERSEY

Location	Hazardous Material	Description	Quantity
Main Level	Fire Extinguisher	Carbon Dioxide	1
Main Level	Winch Electrical Motor	Possible Oil	1
Main Level	Batteries	Sulfuric Acid	2
Main Level	Diesel Fuel	25 Gallon Tank	1
Main Level	Generator Motor	Possible Oil	1
Main Level	Heater Motor	Possible Oil	1
Main Level	Lead Acid Battery	Within Panel	1
Main Level	Light Ballasts	Advance Transformer Co. (REL-2P32-RH-TP) - No PCBs	10
Main Level	Light Bulbs	3' in Length, 2 Bulbs per Ballast	20
Middle Level	Flood Light	2 Bulbs, Wall Mounted	2
Middle Level	Light Ballasts	Advance Transformer Co. (REL-2P32-RH-TP) - No PCBs	9
Middle Level	Light Bulbs	3' in Length, 2 Bulbs per Ballast	18
Middle Level	Motor	Possible Oil	4
Middle Level	Diesel pump	Possible Oil	1
Middle Level	Mercury Bulb	Within Wall Mounted transformer	1
Lower Level	Motor	Possible Oil	1
Lower Level	Light Ballasts	Advance Transformer Co. (REL-2P32-RH-TP) - No PCBs	8
Lower Level	Light Bulbs	3' in Length, 2 Bulbs per Ballast	16
Storage E	Light Bulbs		4
Storage E	NRP 10-1055		1
Storage E	SuperChlor		4
Storage E	Unknown Chemicals		1

FIGURES



Source: USGS Topographic Series (NY),
Project Site Located in the Western Central portion of the Ossining Quadrangle; Dated 1967, Photorevised 1979
Horizontal Datum: NAD1927, Vertical Datum: NGVD1929
Latitude: 041° 11' 18.03"N, Longitude: 073° 52' 25.24"W

REGIONAL LOCATION MAP

MATRIXNEWORLD
Engineering Progress

Matrix New World Engineering, Land Surveying
and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE

Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com

CROTONVILLE PUMP STATION
49 CROTON RIVER ROAD
OSSINING
WESTCHESTER COUNTY, NEW YORK

SCALE:	PROJECT NO.:	DATE:	FIGURE NO.:
1 : 24,000	17-487	SEPTEMBER 2017	1

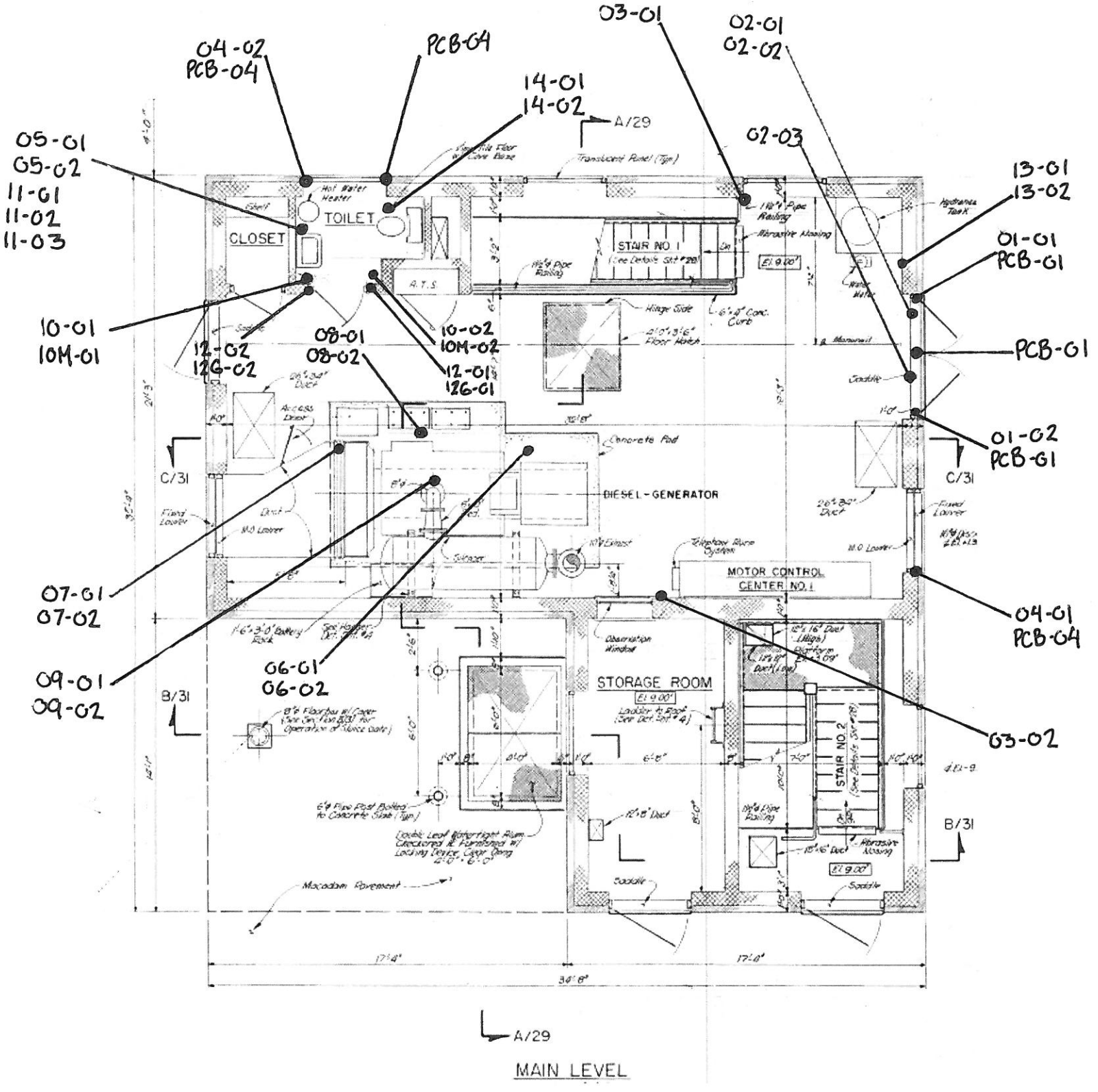

03-01
02-01
02-02
04-02
PCB-04
PCB-04
14-01
14-02
A/29
02-03
05-01
05-02
11-01
11-02
11-03
13-01
13-02
01-01
PCB-01
PCB-01
10-01
10M-01
12-02
12G-02
08-01
08-02
10-02
10M-02
12-01
12G-01
01-02
PCB-01
07-01
07-02
09-01
09-02
06-01
06-02
04-01
PCB-04
03-02
TOILET
CLOSET
STAIR NO. 1
DIESEL-GENERATOR
MOTOR CONTROL CENTER NO. 1
STORAGE ROOM
STAIR NO. 2
C/31
B/31
A/29
MAIN LEVEL

Figure 2

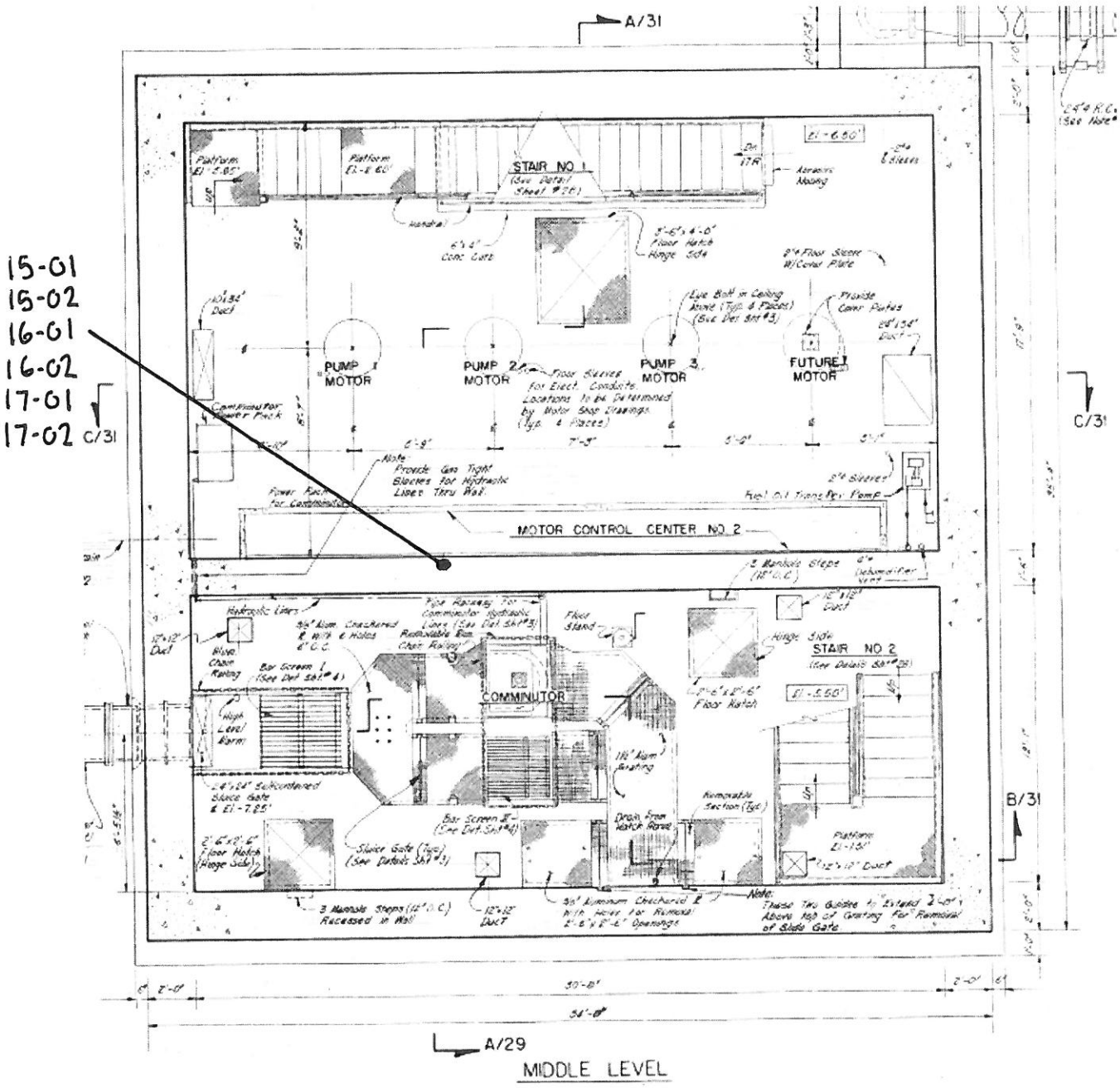

15-01
15-02
16-01
16-02
17-01
17-02
C/31
A/31
C/31
B/31
A/29
STAIR NO 1
PUMP 1 MOTOR
PUMP 2 MOTOR
PUMP 3 MOTOR
FUTURE MOTOR
MOTOR CONTROL CENTER NO 2
COMMINUTOR
STAIR NO 2
MIDDLE LEVEL

Figure 3

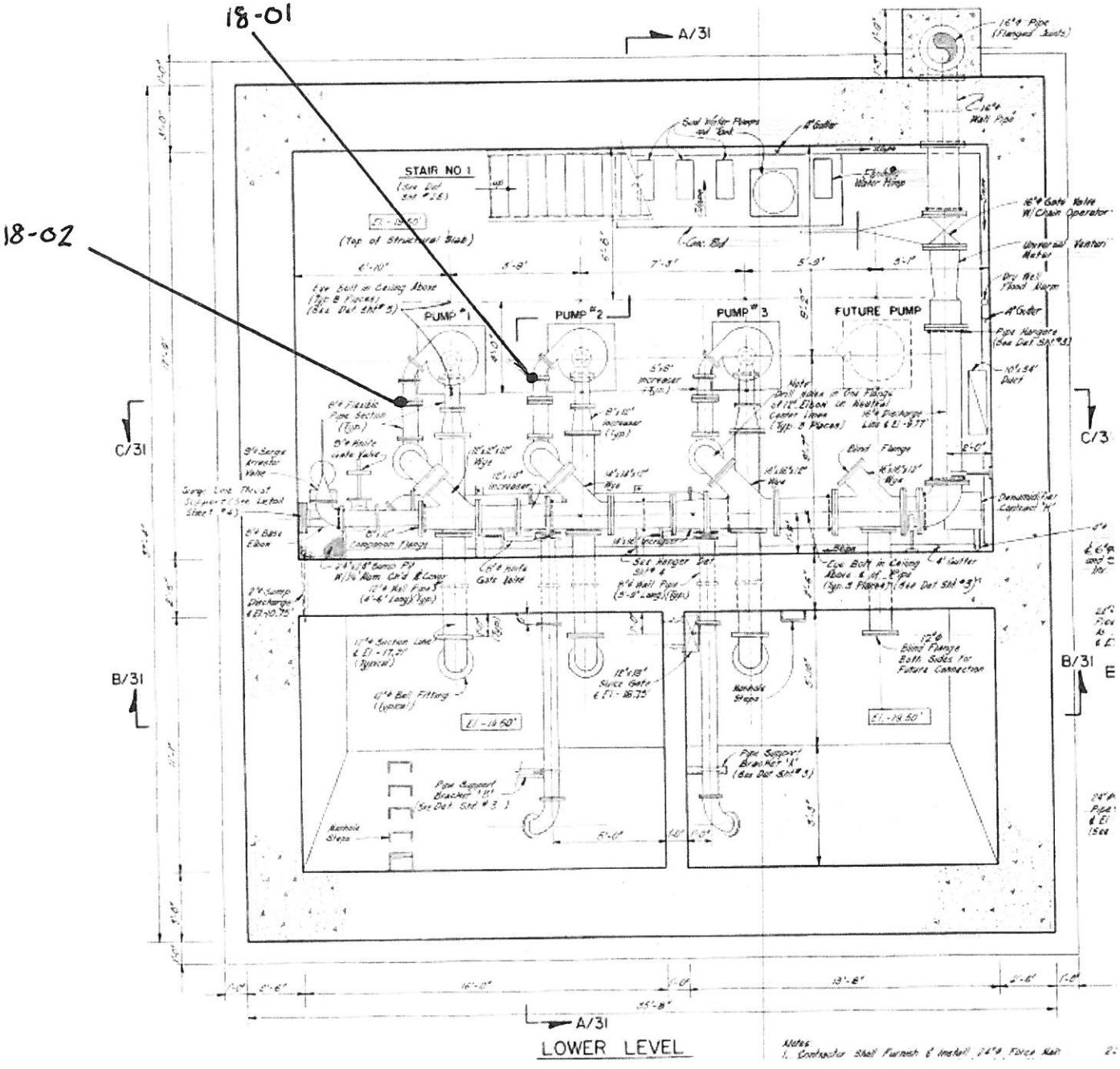

18-01
18-02
A/31
STAIR NO 1
(Top of Structural Slab)
PUMP #1
PUMP #2
PUMP #3
FUTURE PUMP
C/31
C/3
B/31
B/31
A/31
LOWER LEVEL

Figure 4

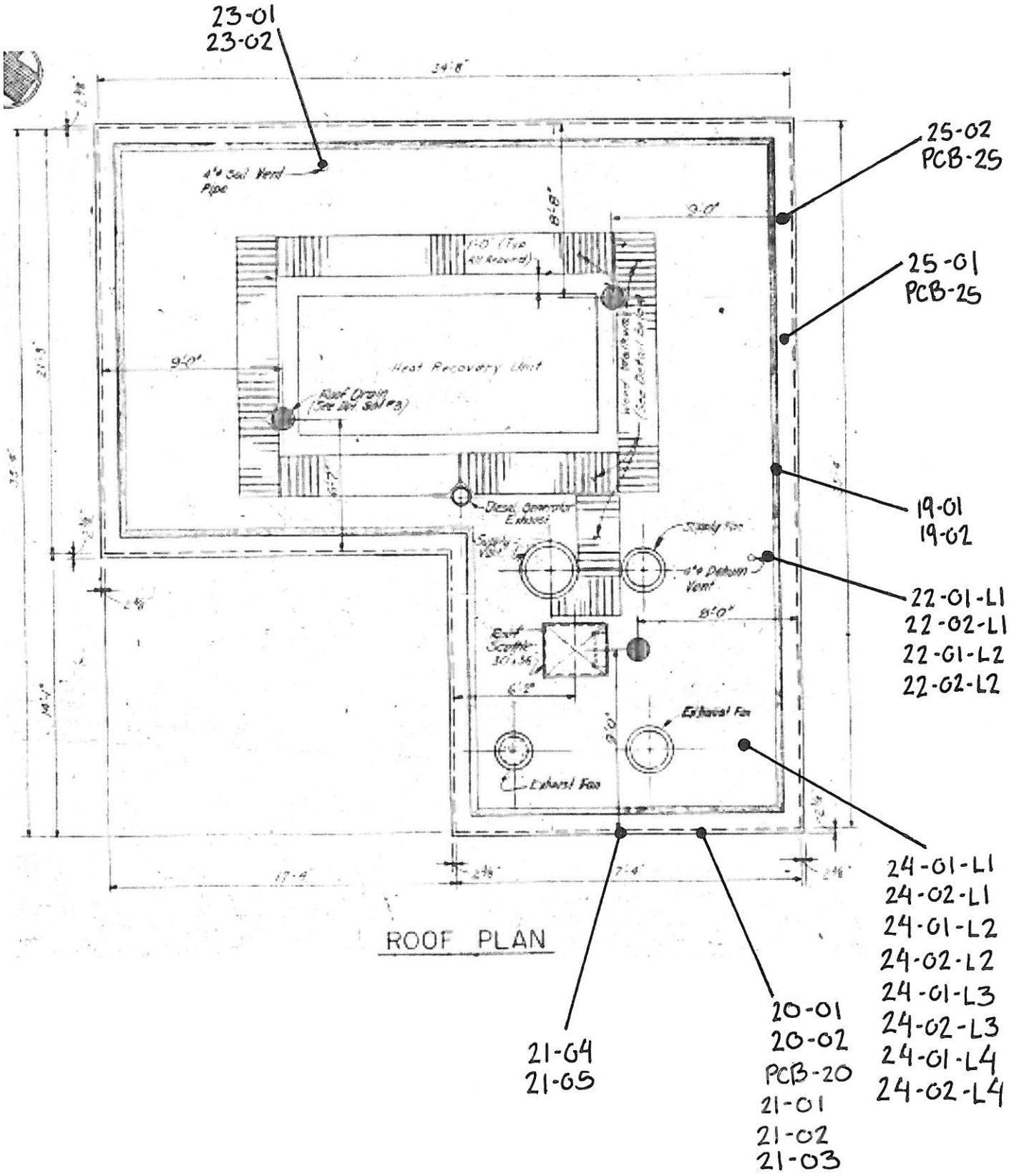

23-01
23-02
25-02
PCB-25
25-01
PCB-25
19-01
19-02
22-01-L1
22-02-L1
22-01-L2
22-02-L2
24-01-L1
24-02-L1
24-01-L2
24-02-L2
24-01-L3
24-02-L3
24-01-L4
24-02-L4
20-01
20-02
PCB-20
21-01
21-02
21-03
21-04
21-05
Heat Recovery Unit
ROOF PLAN

Figure 5

APPENDIX A
SITE PHOTOGRAPHIC LOG

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

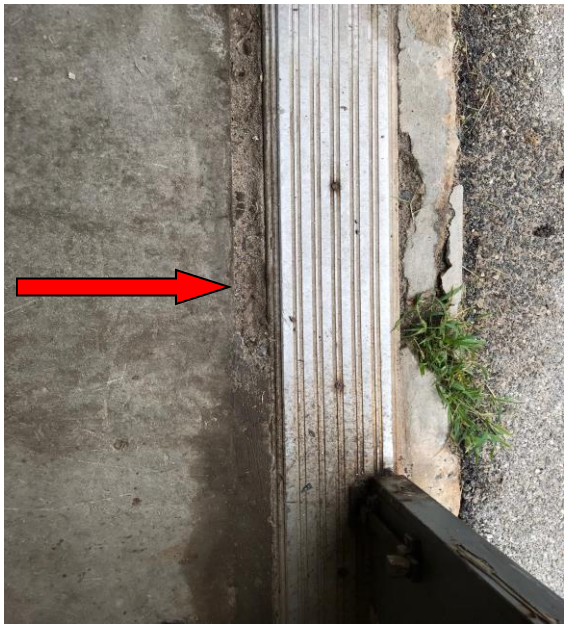
Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 1: Interior (white) Door Frame Caulk (HA-01) – Main Level at Entry Door

PHOTO 2: Leveling Compound (HA-02) – Main Level Entry Door Threshold



MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 3: CMU Mortar (HA-03) – Main Level Wall

PHOTO 4: Interior (grey) Window Frame Caulk (HA-04) – Main Level at Northeast Window Unit

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 5: Pipe Dope to Drain Pipe (HA-05) – Main Level Restroom

PHOTO 6: Pipe Dope to Diesel Fuel Line (HA-06) – Main Level Main Area to Generator Fuel Cell

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

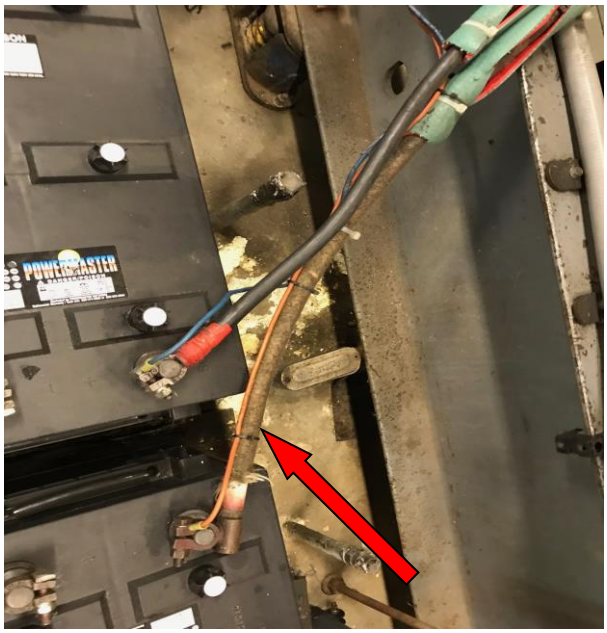
Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 7: (black) Duct Vibration Cloth (HA-07) – Main Level Generator Intake Ductwork Dampener

PHOTO 8: (white) Braided Electrical Wire Insulation Wrap (HA-08) – Main Level Generator Battery Feed



MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 9: Flange Gasket (HA-09) – Main Level Generator Exhaust Flange

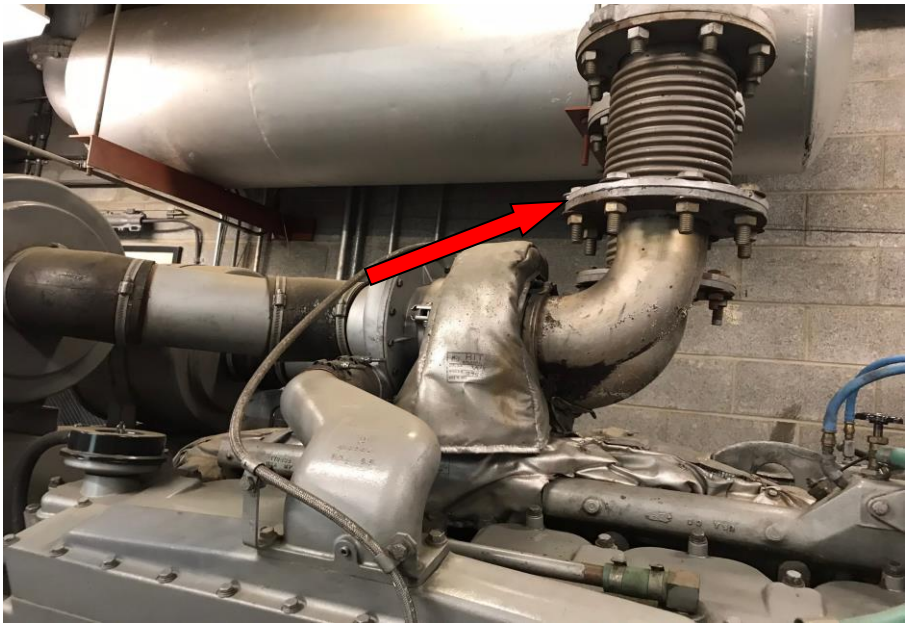


PHOTO 10: 12" x 12" (beige) Vinyl Floor Tile and Associated Mastic (HA-10/10M) – Main Level Restroom

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 11: All Service Jacket to Fiberglass Insulated Ring (HA-11) – Main Level Restroom Domestic Cold Water Line Beneath Sink

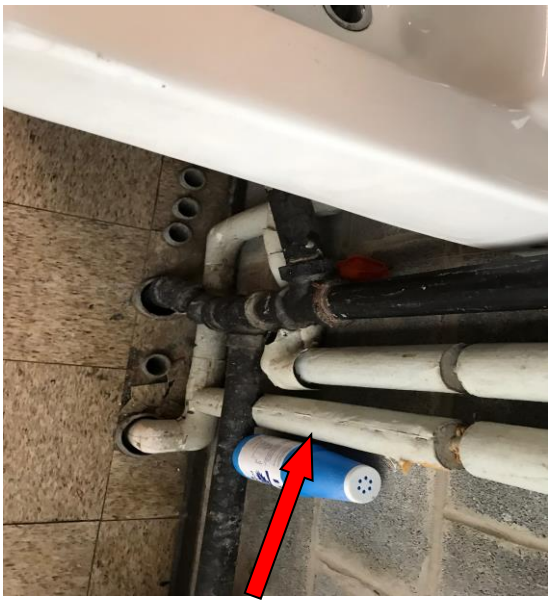


PHOTO 12: (black) 2.5" Vinyl Cove Base and Associated Glue (HA-12/12G) – Main Level Restroom

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 13: Fibrous Wall Receptacle Backing (HA-13) – Main Level Main Area Adjacent to Entry

PHOTO 14: (black) Duct Vibration Cloth (HA-14) – Main Level Bathroom Diffuser Dampner

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 15: Transformer Wrap (yellow) (HA-15) – Middle Level Decommissioned Electrical Cabinet at North Wall

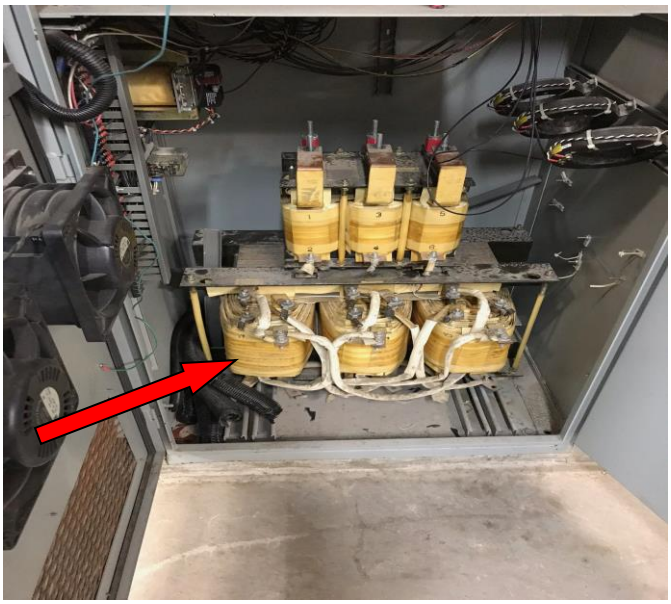
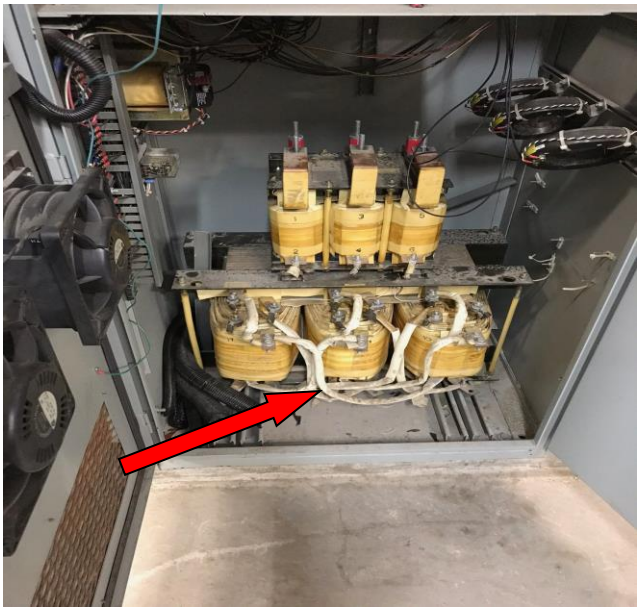


PHOTO 16: Braided Arc Tape (HA-16) – Middle Level Decommissioned Electrical Cabinet at North Wall



MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 17: Braided Electrical Wire Insulation (HA-17) – Middle Level Decommissioned Electrical Cabinet at North Wall

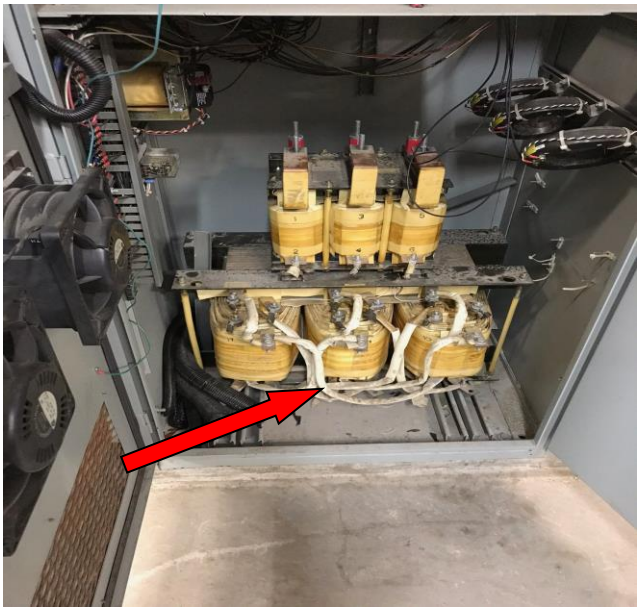
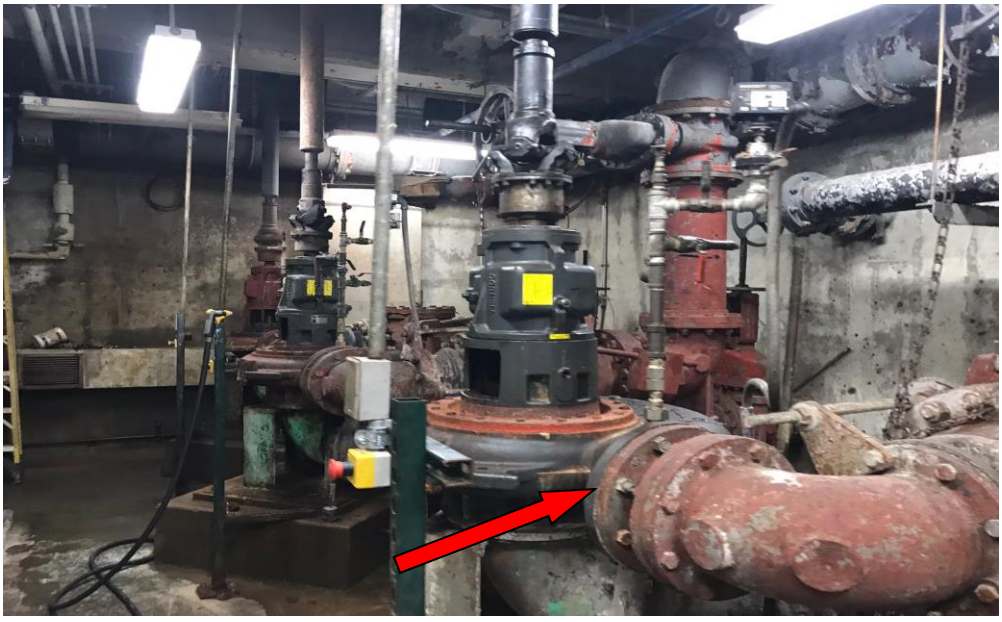


PHOTO 18: Flange Gasket (HA-18) – Lower Level Blower Unit Plumbing



MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 19: Backer Rod (fibrous) (HA-19) – Exterior East Elevation Louver

PHOTO 20: Caulk (white) to Decorative Cementitious Paneling (HA-20) – Exterior South Elevation

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 21: Cementitious Panels (with Decorative Aggregate) (HA-21) – Exterior South Elevation

PHOTO 22: Tar to Parapet Wall and Base Flashing Roofing Membrane (HA-22-L1/L2) – Roof Perimeter

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 23: Vent Stack Pitch Pocket (HA-23) – Roof Area at North End

PHOTO 24: Built Up Roofing Composite (HA-24-L1/L2/L3/L4) – Roof at Northeast Corner (High Point)

MATRIXNEWORLD
Engineering Progress

26 Columbia Turnpike
Florham Park, NJ 07932
973-240-1800 Phone
973-240-1818 Fax

Photo Log

SITE: Crotonville Pump Station
PROJECT #: 17-487

DATE OF PHOTOS: August 18, 2017
PHOTOGRAPHER: T. Gilmore / M. Sweetser

PHOTO 25: Caulking (grey) to Metal Cap Flashing (HA-25) – Roof at East Corner

APPENDIX B
ASBESTOS SURVEY FORMS

ASBESTOS SURVEY FORM

(1)

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- ☐ Thermal System Insulation
- ☐ Floor Tile / Mastic
- ☐ Ceiling Plaster (Multi-Layers)
- ☐ Ceiling Tile
- ☐ Wall Plaster (Multi-Layers)
- ☐ Wall Board
- ☐ Joint Compound
- ☐ Ext. Caulk
- ☐ Window Caulk
- ☐ Window Putty
- ☐ Transite Panels
- ☐ Gaskets / Brakes
- ☐ Fire Brick & Mortar
- ☐ Elevator Brake Pads
- ☐ Ext. Masonry
- ☐ Roof Materials
- ☐ Roof Flashing
- ☐ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
TOP FLOOR	DOOR FRAME CAULK	30 LF	G	NF	S	01		INTERIOR, WHITE TO ENTRY DOORS
	FIRE DOORS	2	G	NF	NS	-		FIBERGLASS ENTRY
	LEVELING COMPOUND	6LF	D	F	S	02		TO ENTRY DOOR THRESH-HOLD 2"x6'
	CMU MORTAR	TAKE OFF	G	F	S	03		THROUGHOUT 12' HIGH
	WINDOW FRAME CAULK	60LF	G	NF	S	04		GREY, INTERIOR 30LF PER
	ARC SHIELD	1 UNIT	G	F	A	-		45"x20" PANEL B RECESSED
	DOOR FRAME CAULK	19 LF	G	NF	S	01		
	WINDOW FRAME CAULK	14 LF	G	NF	S	04		
@ W.	ELECTRICAL BOXES	-	G	-	NS	-		SURFACE MOUNT W. ROMEX WIRE
	FIBERGLASS INSULATION	-	G	F	NS	-		TO DOMESTIC COLD WATER PVC JOINTS
	WINDOW CAULK	-	G	NF	NS	-		BLACK SILICONE TO OFFICE WINDOW
	GENERATOR TANK	-	G	-	NS	-		BARE
	METAL DUCT SLEEVE		-	-	NS	-		CONDUIT FLOOR PENETRATION

ASBESTOS SURVEY FORM

(2)

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- □ Thermal System Insulation
- □ Floor Tile / Mastic
- □ Ceiling Plaster (Multi-Layers)
- □ Ceiling Tile
- □ Wall Plaster (Multi-Layers)
- □ Wall Board
- □ Joint Compound
- □ Ext. Caulk
- □ Window Caulk
- □ Window Putty
- □ Transite Panels
- □ Gaskets / Brakes
- □ Fire Brick & Mortar
- □ Elevator Brake Pads
- □ Ext. Masonry
- □ Roof Materials
- □ Roof Flashing
- □ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
TOP FL.	MAIN ELECT. PANEL	70SF	G	NF	A	-		MAIN BREAKER @ S.W. CORNER 7'x10"
	LOUVER CAULK	19LF	G	NF	S	~~04~~ ~~05~~		WHITE TO ~~FRAME~~ 7.5'x4' (HA TO WINDOW)
	METAL CONDUIT	-	-	-	NS	-		SURFACE MOUNTED OVER HEAD
	CONCRETE SLAB	-	-	-	NS	-		THROUGHOUT
	↓ DECK	-	-	-	NS	-		THROUGHOUT
	METAL STAIR SYST.	-	-	-	NS	-		TO LOWER LEVELS.
	MAIN SWITCH	17SF	-	-	A	A		7.5'x2.5' NO ACCESS
	GENERATOR SWITCH	10 SF	-	-	A	-		NO ACCESS 2'x5'
	PIPE DOPE	16 UN.	G	NF	S	06		DIESEL FUEL (ORANGE PIPE)
	DUCT VIBRATION CLOTH	18 LF	D	NF	S	07		18' x 3" BLACK TO GEN. DUCT WORK
	BRAIDED WIRE	3.5 LF	D	F	S	08		TO BATTERY ~~FEED~~.
	TURBO MANIFOLD JACKET	10 FT	G	NF	A	-		THERMAL JACKET SILVER
	FLANGE GASKETS	9 UN.	G	NF	S	09		TO ~~GE~~ GENERATOR EXHAUST

Condition - Good, Damaged or Significantly Damaged

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- ☐ Thermal System Insulation
- ☐ Floor Tile / Mastic
- ☐ Ceiling Plaster (Multi-Layers)
- ☐ Ceiling Tile
- ☐ Wall Plaster (Multi-Layers)
- ☐ Wall Board
- ☐ Joint Compound
- ☐ Ext. Caulk
- ☐ Window Caulk
- ☐ Window Putty
- ☐ Transite Panels
- ☐ Gaskets / Brakes
- ☐ Fire Brick & Mortar
- ☐ Elevator Brake Pads
- ☐ Ext. Masonry
- ☐ Roof Materials
- ☐ Roof Flashing
- ☐ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
TOP FL	METAL DUCTWORK	-	G	NF	NS	-		
	STRUCTURAL STEEL	-	G	NF	NS	-		
RESTROOM	CERAMIC FL. TILE	30SF	G	F	S	[redacted] 10/10M		BEIGE SPEC 12"x12"
	FIBERGLASS INS.	-	G	F	NS	-		TO WATER HEATER
	ASJ TO F.G	10LF	G	F	S	11		WHITE PVC JOINTS
	METAL CONDUIT	-	G	NF	NS	-		WITH ROMEX
	PORCELIN SINK	1 UN.	-	-	NS	-		
	↓ TOILET	1 UN.	-	-	NS	-		
	WATER HEATER	1 UN.	G	NF	NS	-		FIBERGLASS INSULATION
	CMU MORTAR	145 SF	G	F	S	03		
	WINDOW FRAME CAULK	30 LF	G	NF	S	04		
	DUCT VIBRATION CLOTH	3 LF	G	NF	S	#14		TO LOUVER DAMPENER
↓	VINYL COVE BASE	12.5 LF	G	NF	S	12/G		BLACK 2.5"

(4)

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- □ Thermal System Insulation
- □ Floor Tile / Mastic
- □ Ceiling Plaster (Multi-Layers)
- □ Ceiling Tile
- □ Wall Plaster (Multi-Layers)
- □ Wall Board
- □ Joint Compound
- □ Ext. Caulk
- □ Window Caulk
- □ Window Putty
- □ Transite Panels
- □ Gaskets / Brakes
- □ Fire Brick & Mortar
- □ Elevator Brake Pads
- □ Ext. Masonry
- □ Roof Materials
- □ Roof Flashing
- □ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
RESTROOM	PIPE DOPE	6 UNITS	G	NF	S	05		TO DRAIN PIPE (BLACK PIPE)
TOP	RECEPTICLE INS.	3UN.	G	F	S	13		PAPER BACKING BEHIND RECESSED
	VINYL WIRE	-	G	NF	NS	-		THROUGHOUT
	HEATER UNIT	1 UN.	G	NF	NS	-		ELECTRIC
MIDDLE FL.	CONCRETE CEILING	THROUGHOUT	G	F	NS	-		
	DECK	↓	G	F	NS	-		
	METAL STAIRS SYST	-	G	NF	NS	-		
	AST TO F.G INS	50 LF	D	F	S	11		
	WATER TANK INS.	-	G	F	NS	-		FIBERGLASS STRANDS
	FLANGE GASKETS	8 UNITS	G	NF	~~S~~ A	~~05~~ -		TO ELECTRICAL MOTOR DRIVETRAINS
	METAL DUCTWORK	-	-	-	NS	-		
	SILICONE CAULK	-	-	-	NS	-		TO PVC PENETRATION
	PIPE DOPE TO DIESEL LINE	15UN	G	NF	S	06		100 LF CLOSE

Condition - Good, Damaged or Significantly Damaged

ASBESTOS SURVEY FORM

(5)

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- □ Thermal System Insulation
- □ Floor Tile / Mastic
- □ Ceiling Plaster (Multi-Layers)
- □ Ceiling Tile
- □ Wall Plaster (Multi-Layers)
- □ Wall Board
- □ Joint Compound
- □ Ext. Caulk
- □ Window Caulk
- □ Window Putty
- □ Transite Panels
- □ Gaskets / Brakes
- □ Fire Brick & Mortar
- □ Elevator Brake Pads
- □ Ext. Masonry
- □ Roof Materials
- □ Roof Flashing
- □ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
	VARIABLE FREQUENCY PAN	8 UN	G	-	NS			
	TRANSFORMER WRAP	9 UN.	G	NF	S	15		9 PER UNIT
	BRAIDED ARC TAPE	↓	G	NF	S	16		
	↓ WIRE INS	↓	G	NF	S	17		
	ARC SHIELD	-	G	NF	NS	-		METAL
BOTTOM	CONCRETE WALLS / SLAB / DECK	-	-	-	NS	-		
	METAL DUCTS	-	-	-	NS	-		
	FLANGE GASKETS	116 UNITS	G	NF	S	18		
	AST TO F.G. INS	50 LF	G	F	S	11		
EXT.	EXT. DOOR FRAME CAULK	30 LF	G	NF	S	01		
	EXT LOUVER CAULK	19 LF	G	NF				LIMITED
	BRICK MORTAR	TAKE OFF						
	BALLAST ROD (LOUVER)	19	G	F	S	19		

Condition - Good, Damaged or Significantly Damaged

ASBESTOS SURVEY FORM

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- ☐ Thermal System Insulation
- ☐ Floor Tile / Mastic
- ☐ Ceiling Plaster (Multi-Layers)
- ☐ Ceiling Tile
- ☐ Wall Plaster (Multi-Layers)
- ☐ Wall Board
- ☐ Joint Compound
- ☐ Ext. Caulk
- ☐ Window Caulk
- ☐ Window Putty
- ☐ Transite Panels
- ☐ Gaskets / Brakes
- ☐ Fire Brick & Mortar
- ☐ Elevator Brake Pads
- ☐ Ext. Masonry
- ☐ Roof Materials
- ☐ Roof Flashing
- ☐ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
N	F.G PANEL	-	-	-	NS	-		
	↓ CAULK	30LF	G	NF	S	~~#8~~		HA TO INT
W	DOOR CAULK	60LF	G	NF	S			& DOORS
EXT THROUGHOUT	TAKE OFF QUANTITIES							
STORAGE	HEATER	1 UNIT	G	NF	NS	-		ELECTRIC
	VINYL WIRE		-	-	NS	-		
	ALL MATERIAL HA							CMU WINDOWS
	WHITE CAULK TO PANELS		G	NF	S	20		TO CEMENTITIOUS PANEL JOINTS
	CEMENTITIOUS PANELS		G	F	S	21		3' HIGH
ROOF	BASE FLASHING	TAKE OFF	G	NF	S	~~22~~		TO PERIMETER & EQUIPMENT
	CAP FLASHING							
	PITCH POCKET TOP	1				~~23~~		VENT STACK MULTI-LAYER COMPOSITE
	CAP FLASH CAULK		G	NF	S	24		

Condition - Good, Damaged or Significantly Damaged

ASBESTOS SURVEY FORM

Site: Crotonville Pump Station - 17-487
Location: 49 Croton River Road
Ossining, New York
Date: 8/18/2017
Inspectors: M. Sweetser & T. Gilmore

- □ Thermal System Insulation
- □ Floor Tile / Mastic
- □ Ceiling Plaster (Multi-Layers)
- □ Ceiling Tile
- □ Wall Plaster (Multi-Layers)
- □ Wall Board
- □ Joint Compound
- □ Ext. Caulk
- □ Window Caulk
- □ Window Putty
- □ Transite Panels
- □ Gaskets / Brakes
- □ Fire Brick & Mortar
- □ Elevator Brake Pads
- □ Ext. Masonry
- □ Roof Materials
- □ Roof Flashing
- □ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
	L1 ~~FOUNDATION MEMBRANE~~ HOT TAR					24		
	L2 FIBERBOARD							
	L3 COAL TAR							
	L4 HIGH DENSITY FOAM							
	L5 MEMBRANE							

Condition - Good, Damaged or Significantly Damaged

APPENDIX C
LABORATORY DATA PACKAGE(S)

EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Attention: Gavin Gilmore
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (908) 596-1082
Fax: (973) 240-1818
Received Date: 08/22/2017 2:46 AM
Analysis Date: 08/25/2017
Collected Date: 08/18/2017

Project: 17-487/ O'BRIEN & GERE/ CROTONVILLE PUMP STATION/ 49 CROTON RIVER ROAD, NY

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 01-01 *031726632-0001*		**Description**	MAIN LEVEL AT ENTRY DOOR - INTERIOR (WHITE) DOOR FRAME CAULK		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	White		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	White		100.00% Other	**None Detected**
Sample ID 01-02 *031726632-0002*		**Description**	MAIN LEVEL AT ENTRY DOOR - INTERIOR (WHITE) DOOR FRAME CAULK		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	White		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	White		100.00% Other	**None Detected**
Sample ID 02-01 *031726632-0003*		**Description**	MAIN LEVEL TO ENTRY DOOR THRESHOLD - LEVELING COMPOUND		
		Homogeneity	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray/ Tan		44.00% Non-fibrous (other) 56.00% Quartz	**None Detected**
Inseparable paint / coating layer included in analysis					
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 02-02 *031726632-0004*		**Description**	MAIN LEVEL TO ENTRY DOOR THRESHOLD - LEVELING COMPOUND		
		Homogeneity	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray/ Tan		55.00% Non-fibrous (other) 45.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 02-03 *031726632-0005*		**Description**	MAIN LEVEL TO ENTRY DOOR THRESHOLD - LEVELING COMPOUND		
		Homogeneity	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray		22.00% Ca Carbonate 24.00% Non-fibrous (other) 54.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 03-01 *031726632-0006*		**Description** MAIN LEVEL MAIN AREA AT SOUTH EAST - CMU MORTAR **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable	08/25/2017	Gray		15.00% Ca Carbonate 43.00% Non-fibrous (other) 42.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 03-02 *031726632-0007*		**Description** MAIN LEVEL MAIN AREA AT SOUTH WEST - CMU MORTAR **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable	08/25/2017	Gray		25.00% Ca Carbonate 30.00% Non-fibrous (other) 45.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 04-01 *031726632-0008*		**Description** MAIN LEVEL MAIN AREA AT NORTH EAST WINDOW UNIT - INTERIOR (GREY) WINDOW FRAME CAULK **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Gray		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Gray		100.00% Other	**None Detected**
Sample ID 04-02 *031726632-0009*		**Description** MAIN LEVEL BATHROOM WINDO UNIT - INTERIOR (GREY) WINDOW FRAME CAULK **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Gray		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Gray		100.00% Other	**None Detected**
Sample ID 05-01 *031726632-0010*		**Description** MAIN LEVEL RESTROOM - PIPE DOPE TO DRAIN PIPE **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Red		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Red		100.00% Other	**None Detected**
Sample ID 05-02 *031726632-0011*		**Description** MAIN LEVEL RESTROOM - PIPE DOPE TO DRAIN PIPE **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Red		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Red		100.00% Other	**None Detected**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 06-01		**Description**	MAIN LEVEL MAIN AREA TO GENERATOR FUEL CELL - PIPE DOPE TO DIESEL FUEL LINE		
031726632-0012		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Red		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Red		100.00% Other	**None Detected**
Sample ID 06-02		**Description**	MAIN LEVEL MAIN AREA TO GENERATOR FUEL CELL - PIPE DOPE TO DIESEL FUEL LINE		
031726632-0013		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Red		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Red		100.00% Other	**None Detected**
Sample ID 07-01		**Description**	MAIN LEVEL GENERATOR INTAKE DUCTWORK DAMPENER - (BLACK) DUCT VIBRATION CLOTH		
031726632-0014		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	11.70% Glass	88.30% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black		100.00% Other	**None Detected**
Sample ID 07-02		**Description**	MAIN LEVEL GENERATOR INTAKE DUCTWORK DAMPENER - (BLACK) DUCT VIBRATION CLOTH		
031726632-0015		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	8.20% Glass	91.80% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black		100.00% Other	**None Detected**
Sample ID 08-01		**Description**	MAIN LEVEL TO GENERATOR BATTERY FEED - (WHITE) BRAIDED ELECTRICAL WIRE INSULATION WRAP		
031726632-0016		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray/ Tan	62.00% Glass 32.00% Hair	6.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 08-02		**Description**	MAIN LEVEL TO GENERATOR BATTERY FEED - (WHITE) BRAIDED ELECTRICAL WIRE INSULATION WRAP		
031726632-0017		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray	60.00% Glass 15.00% Hair	25.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 09-01 *031726632-0018*		**Description**	MAIN LEVEL TO GENERATOR EXHAUST FLANGE - FLANGE GASKET		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	None	82.30% Other	**17.70% Chrysotile**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 09-02 *031726632-0019*		**Description**	MAIN LEVEL TO GENERATOR EXHAUST FLANGE - FLANGE GASKET		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 10-01 *031726632-0020*		**Description**	MAIN LEVEL RESTROOM - 12" X 12" (BEIGE) VINYL FLOOR TILE		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Beige	None	98.60% Other	**1.40% Chrysotile**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 10-02 *031726632-0021*		**Description**	MAIN LEVEL RESTROOM - 12" X 12" (BEIGE) VINYL FLOOR TILE		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 10M-01 *031726632-0022*		**Description**	MAIN LEVEL RESTROOM - ASSOCIATED MASTIC		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 10M-02 *031726632-0023*		**Description**	MAIN LEVEL RESTROOM - ASSOCIATED MASTIC		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 11-01		**Description**	MAIN LEVEL RESTROOM DOMESTIC COLD WATER LINE BENEATH SINK - AIR SERVICE JACKET TO FIBERGLASS INSULATED RING		
031726632-0024		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Tan/ Silver/ Green	48.00% Cellulose 22.00% Glass	30.00% Non-fibrous (other)	**None Detected**
Inseparable paint / coating layer included in analysis					
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 11-02		**Description**	MAIN LEVEL RESTROOM DOMESTIC COLD WATER LINE BENEATH SINK - AIR SERVICE JACKET TO FIBERGLASS INSULATED RING		
031726632-0025		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Tan/ Silver/ Green	40.00% Cellulose 28.00% Glass	32.00% Non-fibrous (other)	**None Detected**
Inseparable paint / coating layer included in analysis					
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 11-03		**Description**	MAIN LEVEL RESTROOM DOMESTIC COLD WATER LINE BENEATH SINK - AIR SERVICE JACKET TO FIBERGLASS INSULATED RING		
031726632-0026		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Tan/ Silver	43.00% Cellulose 22.00% Glass	35.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 12-01		**Description**	MAIN LEVEL RESTROOM - (BLACK) 2.5" VINYL COVE BASE		
031726632-0027		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black		100.00% Other	**Inconclusive: None Detected**
Final residue mass <1%					
TEM NYS 198.4 NOB	08/25/2017	Black		100.00% Other	**None Detected**
Sample ID 12-02		**Description**	MAIN LEVEL RESTROOM - (BLACK) 2.5" VINYL COVE BASE		
031726632-0028		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black		100.00% Other	**None Detected**
Sample ID 12G-01		**Description**	MAIN LEVEL RESTROOM - ASSOCIATED GLUE		
031726632-0029		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Brown		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Brown		100.00% Other	**None Detected**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color		Non-Asbestos Fibrous		Non-Fibrous	Asbestos
Sample ID 12G-02 *031726632-0030*		**Description**	MAIN LEVEL RESTROOM - ASSOCIATED GLUE				
		Homogeneity	Heterogeneous				
PLM NYS 198.1 Friable							**Not Analyzed**
PLM NYS 198.6 VCM							**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Brown			100.00% Other		**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Brown			100.00% Other		**None Detected**
Sample ID 13-01 *031726632-0031*		**Description**	MAIN LEVEL MAIN AREA ADJACENT TO ENTRY - FIBROUS WALL RECEPTICLE BACKING				
		Homogeneity	Homogeneous				
PLM NYS 198.1 Friable	08/25/2017	Gray/ Black	55.00%	Cellulose	45.00% Non-fibrous (other)		**None Detected**
PLM NYS 198.6 VCM							**Not Analyzed**
PLM NYS 198.6 NOB							**Not Analyzed**
TEM NYS 198.4 NOB							**Not Analyzed**
Sample ID 13-02 *031726632-0032*		**Description**	MAIN LEVEL MAIN AREA ADJACENT TO ENTRY - FIBROUS WALL RECEPTICLE BACKING				
		Homogeneity	Homogeneous				
PLM NYS 198.1 Friable	08/25/2017	Black	54.00%	Cellulose	46.00% Non-fibrous (other)		**None Detected**
PLM NYS 198.6 VCM							**Not Analyzed**
PLM NYS 198.6 NOB							**Not Analyzed**
TEM NYS 198.4 NOB							**Not Analyzed**
Sample ID 14-01 *031726632-0033*		**Description**	MAIN LEVEL BATHROOM DIFFUSER DAMPNER - (BLACK) DUCT VIBRATION CLOTH				
		Homogeneity	Heterogeneous				
PLM NYS 198.1 Friable							**Not Analyzed**
PLM NYS 198.6 VCM							**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	14.40%	Glass	85.60% Other		**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black			100.00% Other		**None Detected**
Sample ID 14-02 *031726632-0034*		**Description**	MAIN LEVEL BATHROOM DIFFUSER DAMPNER - (BLACK) DUCT VIBRATION CLOTH				
		Homogeneity	Heterogeneous				
PLM NYS 198.1 Friable							**Not Analyzed**
PLM NYS 198.6 VCM							**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	13.20%	Glass	86.80% Other		**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black			100.00% Other		**None Detected**
Sample ID 15-01 *031726632-0035*		**Description**	MIDDLE LEVEL DECOMISSIONED ELECTRICAL CABINET AT NORTH WALL - TRANSFORMER WRAP (YELLOW)				
		Homogeneity	Heterogeneous				
PLM NYS 198.1 Friable							**Not Analyzed**
PLM NYS 198.6 VCM							**Not Analyzed**
PLM NYS 198.6 NOB Final residue mass <1%	08/25/2017	Yellow			100.00% Other		**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Yellow			100.00% Other		**None Detected**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 15-02		**Description**	MIDDLE LEVEL DECOMISSIONED ELECTRICAL CABINET AT NORTH WALL - TRANSFORMER WRAP (YELLOW)		
031726632-0036		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Yellow		100.00% Other	**Inconclusive: None Detected**
Final residue mass <1%					
TEM NYS 198.4 NOB	08/25/2017	Yellow		100.00% Other	**None Detected**
Sample ID 16-01		**Description**	MIDDLE LEVEL DECOMISSIONED ELECTRICAL CABINET AT NORTH WALL - BRAIDED ARC TAPE		
031726632-0037		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	White	88.00% Glass	12.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 16-02		**Description**	MIDDLE LEVEL DECOMISSIONED ELECTRICAL CABINET AT NORTH WALL - BRAIDED ARC TAPE		
031726632-0038		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	White	87.00% Glass	13.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 17-01		**Description**	MIDDLE LEVEL DECOMISSIONED ELECTRICAL CABINET AT NORTH WALL - BRAIDED ELECTRICAL WIRE INSULATION		
031726632-0039		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray/ Tan	92.00% Glass	8.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 17-02		**Description**	MIDDLE LEVEL DECOMISSIONED ELECTRICAL CABINET AT NORTH WALL - BRAIDED ELECTRICAL WIRE INSULATION		
031726632-0040		**Homogeneity**	Homogeneous		
PLM NYS 198.1 Friable	08/25/2017	Gray/ White	90.00% Glass	10.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 18-01		**Description**	LOWER LEVEL BLOWER UNIT PLUMBING - FLANGE GASKET		
031726632-0041		**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Red		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Red		100.00% Other	**None Detected**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 18-02 *031726632-0042*		**Description** LOWER LEVEL BLOWER UNIT PLUMBING - FLANGE GASKET **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Red		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Red		100.00% Other	**None Detected**
Sample ID 19-01 *031726632-0043*		**Description** EXT EAST ELEVATION LOUVER - BACKER ROD (FIBEROUS) **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable	08/25/2017	Brown/ Gray	74.00% Cellulose	16.00% Non-fibrous (other) 10.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 19-02 *031726632-0044*		**Description** EXT EAST ELEVATION LOUVER - BACKER ROD (FIBEROUS) **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable	08/25/2017	Brown/ Gray	67.00% Cellulose	18.00% Non-fibrous (other) 15.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 20-01 *031726632-0045*		**Description** EXT SOUTH ELEVATION - (WHITE) CAULK TO DECORATIVE CEMENTITIOUS PANELING **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	White		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	White		100.00% Other	**None Detected**
Sample ID 20-02 *031726632-0046*		**Description** EXT SOUTH ELEVATION - (WHITE) CAULK TO DECORATIVE CEMENTITIOUS PANELING **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	White		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	White		100.00% Other	**None Detected**
Sample ID 21-01 *031726632-0047*		**Description** EXT SOUTH ELEVATION - CEMENTITIOUS PANELS (WITH DECORATIVE AGGREGATE) **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable	08/25/2017	Gray		47.00% Non-fibrous (other) 53.00% Quartz	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color		Non-Asbestos Fibrous	Non-Fibrous	Asbestos
Sample ID 21-02 *031726632-0048*		**Description** EXT SOUTH ELEVATION - CEMENTITIOUS PANELS (WITH DECORATIVE AGGREGATE) **Homogeneity** Homogeneous				
PLM NYS 198.1 Friable	08/25/2017	Gray			28.00% Non-fibrous (other) 72.00% Quartz	**None Detected**
PLM NYS 198.6 VCM						**Not Analyzed**
PLM NYS 198.6 NOB						**Not Analyzed**
TEM NYS 198.4 NOB						**Not Analyzed**
Sample ID 21-03 *031726632-0049*		**Description** EXT EAST ELEVATION - CEMENTITIOUS PANELS (WITH DECORATIVE AGGREGATE) **Homogeneity** Homogeneous				
PLM NYS 198.1 Friable	08/25/2017	Gray			33.00% Non-fibrous (other) 67.00% Quartz	**None Detected**
Result includes a small amount of inseparable attached material						
PLM NYS 198.6 VCM						**Not Analyzed**
PLM NYS 198.6 NOB						**Not Analyzed**
TEM NYS 198.4 NOB						**Not Analyzed**
Sample ID 21-04 *031726632-0050*		**Description** EXT EAST ELEVATION - CEMENTITIOUS PANELS (WITH DECORATIVE AGGREGATE) **Homogeneity** Homogeneous				
PLM NYS 198.1 Friable	08/25/2017	Gray/ White	12.00% Glass		26.00% Non-fibrous (other) 62.00% Quartz	**None Detected**
PLM NYS 198.6 VCM						**Not Analyzed**
PLM NYS 198.6 NOB						**Not Analyzed**
TEM NYS 198.4 NOB						**Not Analyzed**
Sample ID 21-05 *031726632-0051*		**Description** EXT EAST ELEVATION - CEMENTITIOUS PANELS (WITH DECORATIVE AGGREGATE) **Homogeneity** Homogeneous				
PLM NYS 198.1 Friable	08/25/2017	Gray	12.00% Glass		34.00% Non-fibrous (other) 54.00% Quartz	**None Detected**
PLM NYS 198.6 VCM						**Not Analyzed**
PLM NYS 198.6 NOB						**Not Analyzed**
TEM NYS 198.4 NOB						**Not Analyzed**
Sample ID 22-01-L1 *031726632-0052*		**Description** ROOF SOUTH EAST PARAPET WALL - TAR TO PARAPET WALL **Homogeneity** Heterogeneous				
PLM NYS 198.1 Friable						**Not Analyzed**
PLM NYS 198.6 VCM						**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	4.50% Glass		95.50% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017					**Positive Stop (Not Analyzed)**
Sample ID 22-02-L1 *031726632-0053*		**Description** ROOF SOUTH EAST PARAPET WALL - TAR TO PARAPET WALL **Homogeneity** Heterogeneous				
PLM NYS 198.1 Friable						**Not Analyzed**
PLM NYS 198.6 VCM						**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black		None	89.50% Other	**10.50% Chrysotile**
TEM NYS 198.4 NOB	08/25/2017					**Positive Stop (Not Analyzed)**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 22-01-L2 *031726632-0054*		**Description**	ROOF SOUTH EAST PARAPET WALL - BASE FLASHING ROOFING MEMBRANE		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 22-02-L2 *031726632-0055*		**Description**	ROOF SOUTH EAST PARAPET WALL - BASE FLASHING ROOFING MEMBRANE		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 23-01 *031726632-0056*		**Description**	ROOF AT NORTH END - VENT STACK PITCH POCKET		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black		100.00% Other	**None Detected**
Sample ID 23-02 *031726632-0057*		**Description**	ROOF AT NORTH END - VENT STACK PITCH POCKET		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Black		100.00% Other	**None Detected**
Sample ID 24-01-L1 *031726632-0058*		**Description**	ROOF AT NORTH EAST (HIGHT SPOT) - HOT TAR		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Black	None	98.70% Other	**1.30% Chrysotile**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 24-02-L1 *031726632-0059*		**Description**	ROOF AT NORTH EAST (HIGHT SPOT) - HOT TAR		
		Homogeneity			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 031726632
Customer ID: MATX53
Customer PO:
Project ID:

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 24-01-L2 *031726632-0060*		**Description** **Homogeneity**	ROOF AT NORTH EAST (HIGHT SPOT) - FIBERBOARD		
PLM NYS 198.1 Friable	08/25/2017				**Positive Stop (Not Analyzed)**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 24-02-L2 *031726632-0061*		**Description** **Homogeneity**	ROOF AT NORTH EAST (HIGHT SPOT) - FIBERBOARD		
PLM NYS 198.1 Friable	08/25/2017				**Positive Stop (Not Analyzed)**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 24-01-L3 *031726632-0062*		**Description** **Homogeneity**	ROOF AT NORTH EAST (HIGHT SPOT) - COLD TAR		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 24-02-L3 *031726632-0063*		**Description** **Homogeneity**	ROOF AT NORTH EAST (HIGHT SPOT) - COLD TAR		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 24-01-L4 *031726632-0064*		**Description** **Homogeneity**	ROOF AT NORTH EAST (HIGHT SPOT) - ROOF MEMBRANE		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
Sample ID 24-02-L4 *031726632-0065*		**Description** **Homogeneity**	ROOF AT NORTH EAST (HIGHT SPOT) - ROOF MEMBRANE		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	08/25/2017				**Positive Stop (Not Analyzed)**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order:	031726632
Customer ID:	MATX53
Customer PO:	
Project ID:	

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos
Sample ID 25-01 *031726632-0066*		**Description**	ROOF AT EAST CORNER - (GREY) CAULKING TO METAL CAP FLASHING		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Gray		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Gray	None	100.00% Other	**<1.00% Chrysotile**
Sample ID 25-02 *031726632-0067*		**Description**	ROOF AT EAST CORNER - (GREY) CAULKING TO METAL CAP FLASHING		
		Homogeneity	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	08/25/2017	Gray		100.00% Other	**Inconclusive: None Detected**
TEM NYS 198.4 NOB	08/25/2017	Gray	None	100.00% Other	**<1.00% Chrysotile**

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order:	031726632
Customer ID:	MATX53
Customer PO:	
Project ID:	

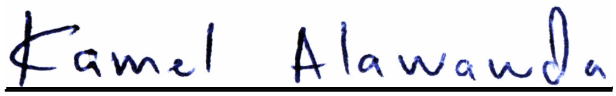
Test Report:Asbestos Analysis of Bulk Material

The samples in this report were submitted to EMSL for analysis by Asbestos Analysis of Bulk Materials via NYS ELAP Approved Methods . The reference number for these samples is the EMSL Order ID above. Please use this reference number when calling about these samples.

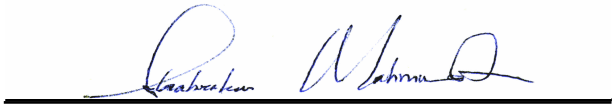
Report Comments:

Sample Receipt Date:	8/22/2017	Sample Receipt Time:	2:46 AM
Analysis Completed Date:	8/25/2017	Analysis Completed Time:	4:01 AM

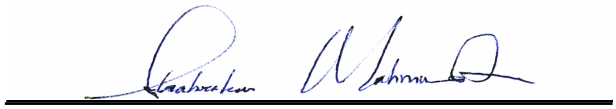
Analyst(s):



Kamel Alawawda PLM NYS 198.1 Friable (9)



Shahrakur Mahmud PLM NYS 198.1 Friable (14)



Shahrakur Mahmud PLM NYS 198.6 NOB (31)

Venisha Lazarus-Barnes TEM NYS 198.4 NOB (26)

Samples reviewed and approved by:

James Hall, Laboratory Manager
or Other Approved Signatory

NOB = Non Friable Organically Bound N/A = Not Applicable VCM = Vermiculite Containing Material

-In New York State, TEM is currently the only method that can be used to determine if NOB materials can be considered or treated as non -asbestos containing.
All samples examined for the presence of vermiculite when analyzed via NYS 198.1.
-NYS Guidelines for Vermiculite containing samples are available at http ://www.wadsworth.org/labcert/elapcert/forms/ VermiculiteInterimGuidance_Rev070913.pdf EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations . Interpretation and use of test results are the responsibility of the client. Samples were received in good condition unless otherwise noted.
This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government . This report may contain data that is not covered by the NVLAP accreditation.

Samples analyzed by EMSL Analytical, Inc. New York, NY NYS ELAP 11506

Report amended: 09/13/2017 08:15:25 Replaces initial report from: 08/25/2017 12:44:39 Reason Code: Client-Change to Location

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn: **Gavin Gilmore**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

9/7/2017

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 8/23/2017. The results are tabulated on the attached data pages for the following client designated project:

Crotonville Pump Station

The reference number for these samples is EMSL Order #011706832. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry
Laboratory Director

The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 011706832
CustomerID: MATX53
CustomerPO:
ProjectID:

Attn: **Gavin Gilmore**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 08/23/17 8:00 AM

Project: **Crotonville Pump Station**

Analytical Results

Client Sample Description PCB-01 ***Collected:*** 8/18/2017 ***Lab ID:*** *011706832-0001*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
3540C/8082A	Aroclor-1016	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1221	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1232	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1242	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1248	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1254	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1260	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1262	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1268	ND	0.94	mg/Kg	9/5/2017	SD	9/6/2017	EH

Client Sample Description PCB-04 ***Collected:*** 8/18/2017 ***Lab ID:*** *011706832-0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
3540C/8082A	Aroclor-1016	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1221	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1232	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1242	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1248	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1254	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1260	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1262	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1268	ND	0.77	mg/Kg	9/5/2017	SD	9/6/2017	EH

Client Sample Description PCB-20 ***Collected:*** 8/18/2017 ***Lab ID:*** *011706832-0003*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
3540C/8082A	Aroclor-1016	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1221	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1232	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1242	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1248	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1254	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1260	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1262	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1268	ND	0.99	mg/Kg	9/5/2017	SD	9/6/2017	EH

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 011706832
CustomerID: MATX53
CustomerPO:
ProjectID:

Attn: **Gavin Gilmore**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 08/23/17 8:00 AM

Project: **Crotonville Pump Station**

Analytical Results

Client Sample Description PCB-25 ***Collected:*** 8/18/2017 ***Lab ID:*** *011706832-0004*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
3540C/8082A	Aroclor-1016	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1221	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1232	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1242	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1248	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1254	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1260	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1262	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH
3540C/8082A	Aroclor-1268	ND	0.97	mg/Kg	9/5/2017	SD	9/6/2017	EH

Definitions:

ND - indicates that the analyte was not detected at the reporting limit
RL - Reporting Limit (Analytical)

OrderID: 031726632

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 031726632

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

PHONE:
FAX:

Company Name : Matrix New World Engineering		**EMSL Customer ID:**	
Street: 26 Columbia Turnpike		**City:** Florham Park	**State/Province:** NJ
Zip/Postal Code: 07932	**Country:**	**Telephone #:** 973-240-1800	**Fax #:**
Report To (Name): Gavin Gilmore		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: ggilmore@matrixneworld.com		**Purchase Order:**	
Project Name/Number: 17-487		**EMSL Project ID** *(Internal Use Only)*:	
U.S. State Samples Taken: NY		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ☑ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☑ NYS 198.1 (friable in NY)
- ☑ NYS 198.6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☑ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite*
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ TEM Qual. via Filtration Technique
- ☐ TEM Qual. via Drop-Mount Technique

**Can not accept New York State Loose Fill Vermiculite Samples*

Other:
- ☐

☑ **Check For Positive Stop – Clearly Identify Homogenous Group** | **Filter Pore Size (Air Samples):** ☑ 0.8µm ☐ 0.45µm

Samplers Name: Tyler Gilmore | **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See Attached COC		
	cc tgilmore@matrixneworld.com for results		

Client Sample # (s): 01-01 - 25-02 **Total # of Samples:** 67

Relinquished (Client): **Date:** 8/22/17 **Time:** 1430

Received (Lab): David Holbrook **Date:** 8/22/17 **Time:** 2:46 PM

Comments/Special Instructions:

2017 AUG 22 PM 2:43

Controlled Document – Asbestos COC – R9 – 10/30/2014

8/25/17

8/25/17 2:22 pm

OrderID: 031726632

Matrix New World
26 Columbia Turnpike
Florham Park, NJ, 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

031726632

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	O'Brien & Gere	Job # 17-487	Project Manager: Gavin Gilmore	
Project Name:	Crotonville Pump Station		Inspector: Tyler Gilmore & Michael Sweetser	
Location:	49 Croton River Road	Analysis Requested:	Turnaround Time:	
	New York	■ Asbestos	☐ Normal ☐ STAT ☐ 6 Hours	
Date:	8/18/17	☐ Lead	☐ 12 Hours ☐ 24 Hours ☐ 48 Hours	
			■ 72 Hours ☐ 120 Hours ☐ Other	

Main Level (MS)

BULK SAMPLE LOCATION

Homogeneous Area No.	Floor	Bulk Sample ID. No.	Homogeneous Material	System Type	Sample Location	Total Qty. (LF,SF,EA.)	Asbestos / Lead Content (Type &%)	Analysis PLM	Analysis PLM-NOB	Analysis TEM
01	~~Top~~	01-01	Interior (white) Door Frame Caulk	Misc.	At Entry Door				x	x
↓		01-02	↓	↓	↓				x	x
02		02-01	Leveling Compound	Surf.	To Entry Door Threshold			x		
↓		02-02	↓	↓	↓			x		
↓		02-03	↓	↓	↓			x		
03		03-01	CMU Mortar	Misc.	Main Area at South East			x		
↓		03-02	↓	↓	Main Area at South West			x		
04		04-01	Interior (grey) Window Frame Caulk		Main Area at North East Window Unit				x	x
↓		04-02	↓		Bathroom Window Unit				x	x
05		05-01	Pipe Dope to Drain Pipe		Restroom				x	x
↓		05-02	↓		↓				x	x
06	↓	06-01	Pipe Dope to Diesel Fuel Line	↓	Main Area to Generator Fuel Cell				x	x

(JLB) (KP)

*** Stop at first positive for each homogeneous area analyzed. Analyze By Layer.**
If PLM-NOB is negative, reanalyze by TEM

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time	Delivered By:
I. (Signature)	8/22/17	1430	(Signature)	8/22/17	2:46 PM	U. S Mail
Tyler Gilmore (Print)	----------	----------	David Holowka (Print)	----------	----------	U.P.S.
II. (Signature)			(Signature)			Fed-X
(Print)	----------	----------	(Print)	----------	----------	Other Walk In

LAB INFORMATION

Lab Name:
Address:

Please Email Results to ggilmore@matrixneworld.com cc. tgilmore@matrixneworld.com

2017 AUG 22 PM 2:43

U:\cpierce\chain of custody's

@ 11:57

8/25/17

OrderID: 031726632

Matrix New World
26 Columbia Turnpike
Florham Park, NJ, 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

031726632

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	O'Brien & Gere	Job # 17-487	Project Manager: Gavin Gilmore
Project Name:	Crotonville Pump Station		Inspector: Tyler Gilmore & Michael Sweetser
Location:	49 Croton River Road	Analysis Requested: ■ Asbestos ☐ Lead	Turnaround Time: ☐ Normal ☐ STAT ☐ 6 Hours ☐ 12 Hours ☐ 24 Hours ☐ 48 Hours ■ 72 Hours ☐ 120 Hours ☐ Other
	New York		
Date:	8/18/17		

BULK SAMPLE LOCATION

Main Level (MS)

Homogeneous Area No.	Floor	Bulk Sample ID. No.	Homogeneous Material	System Type	Sample Location	Total Qty. (LF,SF,EA,)	Asbestos / Lead Content (Type &%)	Analysis PLM	Analysis PLM-NOB	Analysis TEM
06	~~Tub~~	06-02	Pipe Dope to Diesel Fuel Line	Misc.	Main Area to Generator Fuel Cell				x	x
07		07-01	(black) Duct Vibration Cloth		Generator Intake Ductwork Dampener				x	x
↓		07-02	↓		↓				x	x
08		08-01	(White) Braided Electrical Wire Insulating Wrap		To Generator Battery Feed			x		
↓		08-02	↓		↓			x		
09		09-01	Flange Gasket		To Generator Exhaust Flange				x	x
↓		09-02	↓		↓				x	x
10		10-01	12"x12" (beige) Vinyl Floor Tile		Restroom				x	x
↓		10-02	↓		↓				x	x
↓		10M-01	Associated Mastic		↓				x	x
↓		10M-02	↓		↓				x	x
11		11-01	All Service Jacket to Fiberglass Insulated Pipe	TSI	Restroom Domestic Cold Water Line Beneath Sink			x		

VG

JB

(MB) * Stop at first positive for each homogeneous area analyzed. Analyze By Layer.
If PLM-NOB is negative, reanalyze by TEM

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time	Delivered By:
I. (Signature)	8/22/17	1430	(Signature)	8/22/17	2:46 PM	U. S Mail
TYLER Gilmore (Print)	----------	----------	David Holowitz (Print)	----------	----------	U.P.S.
II. (Signature)			(Signature)			Fed-X
(Print)	----------	----------	(Print)	----------	----------	Other

LAB INFORMATION

Lab Name:
Address:

2017 AUG 22 PM 2:46

Please Email Results to ggilmore@matrixneworld.com cc. tgilmore@matrixneworld.com

U:\cpierce\chain of custody's

8/25/17

OrderID: 031726632

Matrix New World
26 Columbia Turnpike
Florham Park, NJ, 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

031726632

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	O'Brien & Gere	Job # 17-487	Project Manager: Gavin Gilmore	
Project Name:	Crotonville Pump Station		Inspector: Tyler Gilmore & Michael Sweetser	
Location:	49 Croton River Road	Analysis Requested: ■ (NB) Asbestos	Turnaround Time: ☐ Normal ☐ STAT ☐ 6 Hours	
	New York		☐ 12 Hours ■ 24 Hours ☐ 48 Hours	
Date:	8/18/17	☐ Lead	■ 72 Hours ☐ 120 Hours ☐ Other	

BULK SAMPLE LOCATION

Main Level (MS)

Middle Level (MS)

Homogeneous Area No.	Floor	Bulk Sample ID. No.	Homogeneous Material	System Type	Sample Location	Total Qty. (LF,SF,EA.)	Asbestos / Lead Content (Type &%)	Analysis PLM	PLM-NOB	TEM
11	~~1st~~	11-02	All Service Jacket to Fiberglass Insulated Pipe	TSI	Restroom Domestic Cold Water Line Beneath Sink			x		
↓		11-03	↓	↓	↓			x		
12		12-01	(black) 2.5" Vinyl Cove Base	Misc.	Restroom				x	x
		12-02	↓		↓				x	x
		12G-01	Associated Glue						x	x
		12G-02	↓		↓				x	x
13		13-01	Fiberous Wall Recepticle Backing		Main Area Adjacent to Entry			x		
		13-02	↓		↓			x		
14		14-01	(black) Duct Vibration Cloth		Restroom Diffuser Dampener				x	x
		14-02	↓		↓				x	x
15	~~Mid~~	15-01	Transformer Wrap (yellow)		Decomissioned Electrical Cabinet at North Wall				x	x
↓		15-02	↓		↓				x	x

(NB) (NB)

*** Stop at first positive for each homogeneous area analyzed. Analyze By Layer.**
If PLM-NOB is negative, reanalyze by TEM

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time	Delivered By:
I. T. Gilmore (Signature)	8/22/17	1430	(Signature)	8/22/17	2:46PM	U. S Mail
Tyler Gilmore (Print)	----------	----------	David Holdsworth (Print)	---------	---------	U.P.S.
II. (Signature)			(Signature)			Fed-X
(Print)	----------	----------	(Print)	---------	---------	Other

LAB INFORMATION Lab Name:
Address:

Please Email Results to ggilmore@matrixneworld.com cc. tgilmore@matrixneworld.com

2017 AUG 22 PM 2:46

U:\cpierce\chain of custody's

8/25/17

OrderID: 031726632

Matrix New World
26 Columbia Turnpike
Florham Park, NJ, 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

031726632

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	O'Brien & Gere	Job # 17-487	Project Manager: Gavin Gilmore
Project Name:	Crotonville Pump Station		Inspector: Tyler Gilmore & Michael Sweetser
Location:	49 Croton River Road	Analysis Requested: ■ Asbestos ☐ Lead	Turnaround Time: ☐ Normal ☐ STAT ☐ 6 Hours ☐ 12 Hours ■ 24 Hours ☐ 48 Hours ■ 72 Hours ☐ 120 Hours ☐ Other
	New York		
Date:	8/18/17		

BULK SAMPLE LOCATION

Middle Level (MS)

Lower Level (MS)

Homogeneous Area No.	Floor	Bulk Sample ID. No.	Homogeneous Material	System Type	Sample Location	Total Qty. (LF,SF,EA.)	Asbestos / Lead Content (Type &%)	Analysis PLM	PLM-NOB	TEM
16	~~Mid~~	16-01	Braided Arc Tape	Misc.	Decomissioned Electrical Cabinet at North Wall			x		
↓		16-02	↓		↓			x		
17		17-01	Braided Electrical Wire Insulation					x		
↓		17-02	↓		↓			x		
18	~~Ext~~	18-01	Flange Gasket		Blower Unit Plumbing				x	x
↓	↓	18-02	↓		↓				x	x
19	Ext	19-01	Backer Rod (fiberous)		East Elevstion Louver				x	x
↓	↓	19-02	↓		↓				x	x
20	↓	20-01	(white) Caulk to Decorative Cementitious Paneling	↓	South Elevation				x	x
↓	↓	20-02	↓	↓	↓				x	x
21	↓	21-01	Cementitious Panels (with decorative aggregate)	Surf.	↓			x		
↓	↓	21-02	↓	↓	↓			x		

*** Stop at first positive for each homogeneous area analyzed. Analyze By Layer.**
If PLM-NOB is negative, reanalyze by TEM

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time	Delivered By:
I. (Signature)	8/22/17	1430	(Signature)	8/22/17	2:46p.m.	U. S Mail
Tyler Gilmore (Print)	----------	----------	David Holowitz (Print)	----------	----------	U.P.S.
II. (Signature)			(Signature)			Fed-X
(Print)	----------	----------	(Print)	----------	----------	Other

LAB INFORMATION Lab Name:
Address:

Please Email Results to ggilmore@matrixneworld.com cc. tgilmore@matrixneworld.com

2017 AUG 22 PM 2:16

U:\cpierce\chain of custody's

8/25/17

OrderID: 031726632

Matrix New World
26 Columbia Turnpike
Florham Park, NJ, 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

031726632

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	O'Brien & Gere	Job # 17-487	Project Manager: Gavin Gilmore	
Project Name:	Crotonville Pump Station		Inspector: Tyler Gilmore & Michael Sweetser	
Location:	49 Croton River Road	Analysis Requested:	Turnaround Time:	
	New York	■ Asbestos	☐ Normal ☐ STAT ☐ 6 Hours	
Date:	8/18/17	☐ Lead	☐ 12 Hours ■ 24 Hours ☐ 48 Hours	
			■ 72 Hours ☐ 120 Hours ☐ Other	

BULK SAMPLE LOCATION

Homogeneous Area No.	Floor	Bulk Sample ID. No.	Homogeneous Material	System Type	Sample Location	Total Qty. (LF,SF,EA.)	Asbestos / Lead Content (Type &%)	Analysis PLM	PLM-NOB	TEM
21	Ext.	21-03	Cementitious Panels (with decorative aggregate)	Surf.	East Elevation			x		
↓	↓	21-04	↓	↓	↓			x		
↓	↓	21-05	↓	↓	↓			x		
22	Roof	22-01-L1	Tar to Parapet Wall	Misc.	South East Parapet Wall				x	x
↓	↓	22-02-L1	↓	↓	↓				x	x
↓	↓	22-01-L2	Base Flashing Roofing Membrane	↓	↓				x	x
↓	↓	22-02-L2	↓	↓	↓				x	x
23	↓	23-01	Vent Stack Pitch Pocket	↓	Roof at North End				x	x
↓	↓	23-02	↓	↓	↓				x	x
24	↓	24-01-L1	Hot Tar	↓	Roof at North East (high spot)				x	x
↓	↓	24-02-L1	↓	↓	↓				x	x
↓	↓	24-01-L2	Fiberboard	↓	↓			x		

*** Stop at first positive for each homogeneous area analyzed. Analyze By Layer.**
If PLM-NOB is negative, reanalyze by TEM

CHAIN OF CUSTODY

Relinquished By:	Date	Time	Received By:	Date	Time	Delivered By:
I. (Signature)	8/22/17	1430	David Holowitz (Signature)	8/22/17	2:46 pm	U. S Mail
Tyler Gilmore (Print)	----------	----------	David Holowitz (Print)	----------	----------	U.P.S.
II. (Signature)			(Signature)			Fed-X
(Print)	----------	----------	(Print)	----------	----------	Other

LAB INFORMATION Lab Name:
Address:

Please Email Results to ggilmore@matrixneworld.com cc. tgilmore@matrixneworld.com

2017 AUG 22 PM 2:46

U:\cpierce\chain of custody's

8/25/17

OrderID: 031726632

Matrix New World
26 Columbia Turnpike
Florham Park, NJ, 07932
Phone: (973) 240-1800
Fax: (973) 240-1818

031726632

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

PROJECT INFORMATION

Client:	O'Brien & Gere	Job # 17-487	Project Manager: Gavin Gilmore
Project Name:	Crotonville Pump Station		Inspector: Tyler Gilmore & Michael Sweetser
Location:	49 Croton River Road	Analysis Requested: ■ Asbestos ☐ Lead	Turnaround Time: ☐ Normal ☐ STAT ☐ 6 Hours ☐ 12 Hours ☐ 24 Hours ☐ 48 Hours ■ 72 Hours ☐ 120 Hours ☐ Other
	New York		
Date:	8/18/17		

BULK SAMPLE LOCATION

Homogeneous Area No.	Floor	Bulk Sample ID. No.	Homogeneous Material	System Type	Sample Location	Total Qty. (LF,SF,EA,)	Asbestos / Lead Content (Type &%)	Analysis PLM	PLM-NOB	TEM
24	Roof	24-02-L2	Fiberboard	Misc.	Roof at North East (high spot)			x		
		24-01-L3	Cold Tar						x	x
		24-02-L3	↓						x	x
		24-01-L4	Roof Membrane						x	x
		24-02-L4	↓		↓				x	x
25		25-01	(grey) Caulking to Metal Cap Flashing		Roof at East Corner				x	x
		25-02	↓	↓	↓				x	x

*** Stop at first positive for each homogeneous area analyzed. Analyze By Layer.**
If PLM-NOB is negative, reanalyze by TEM

CHAIN OF CUSTODY

Relinquished By:		Date	Time	Received By:		Date	Time	Delivered By:
I.	(Signature)	8/22/17	1430	David Holowaty	(Signature)	8/22/17	2:46PM	U. S Mail
Tyler Gilmore	(Print)	----------	----------	David Holowaty	(Print)	----------	----------	U.P.S.
II.	(Signature)				(Signature)			Fed-X
	(Print)	----------	----------		(Print)	----------	----------	Other

LAB INFORMATION Lab Name:
Address:

Please Email Results to ggilmore@matrixneworld.com cc. tgilmore@matrixneworld.com

2017 AUG 22 PM 2:46

U:\cpierce\chain of custody's

8/25/17

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Environmental Chemistry
Chain of Custody

EMSL Order Number (*Lab Use Only*): 011706832

Report To Contact Name: Gavin Gilmore			**Bill To Company:** Matrix New World Engineering, P.C.		
Company Name: Matrix New World Engineering, P.C.			**Attention To:** Gavin Gilmore		
Street: 26 Columbia Turnpike			**Street:** 26 Columbia Turnpike		
City: Florham Park	**State/Province:** NJ	**Zip Code:** 07932	**City:** Florham Park	**State/Province:** NJ	**Zip Code:** 07932
Phone : 973-240-1800	**Fax :** 973-240-1818		**Phone:** 973-240-1800	**Fax:** 973-240-1818	
Project Name: Crotonville Pump Station				**U.S. State where Samples Collected:** NJ	
Number of Samples in Shipment: 4	**Date of Shipment:**		**Purchase Order:**	**Sampled By (Signature):**	
Please Provide results: ☐ FAX ☑ E-mail ☐ Mail			**Email Results To:** ggilmore@matrixneworld.com (cc tgilmore@matrixneworld.com)		
Standard Turnaround Time: ☑ 2 Weeks			**The following TAT's are subject to lab approval:** ☐ 1 Week ☐ 4 Days ☐ 3 Days ☐ 2 Days ☐ 1 Day		

Failure to complete will hinder processing of samples

Client Sample ID	Comp	Grab	Date/Time	Matrix (W=Water, S=Soil, A=Air, SL=Sludge, O= Other)	Preservative (1=HCL, 2=HNO3, 3=H2SO4, 4=ICE, 5=Other)	List Test(s) Needed: PCB	Comments
(1) PCB-01			8/18/17	O	4	x	
(2) PCB-04			8/18/17	O	4	x	
(3) PCB-20			8/18/17	O	4	x	
(4) PCB-25			8/18/17	O	4	x	

Released By (Signature)	Date & Time	Received By	Date & Time
			8/22/17 2:47PM
		4°C courier	8/22/17 8:00am
			8/22/17 8:00

Please indicate reporting requirements: ☒ Results Only ☐ Results and QC ☐ Reduced Deliverables ☐ Disk Deliverable ☐ Other ____

Instructions or Comments:
Email results to ggilmore@matrixneworld.com (cc. tgilmore@matrixneworld.com)

PLEASE PUT ON ICE BEFORE SHIPPING

Page 1 of 1 pages

Keep it in plastic (afj)

2017 AUG 22 PM 2:

APPENDIX D
LICENSES AND CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Matrix New World Engineering, Inc.

26 Columbia Turnpike

Florham Park, NJ 07932

FILE NUMBER: 99-0332
LICENSE NUMBER: 29689
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 06/08/2017
EXPIRATION DATE: 06/30/2018

Duly Authorized Representative – Jayne Warne:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko, Director
For the Commissioner of Labor

SH 432 (8/12)

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S

TYLER W GILMORE
CLASS(EXPIRES)
C ATEC(02/18) D INSP(02/18)
H PM (02/18)

CERT# 14-13711
DMV# 318242075

MUST BE CARRIED ON ASBESTOS PROJECTS

EYES BRO
HAIR BRO
HGT 5' 09"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S

MICHAEL E SWEETSER
CLASS(EXPIRES)
D INSP(10/17)

CERT# 16-15785
DMV# 652404118

MUST BE CARRIED ON ASBESTOS PROJECTS

01213 0040037356 61

EYES BRO
HAIR BRO
HGT 6' 00"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-9

EMSL Analytical, Inc.

New York, NY

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2016-07-01 through 2017-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
307 W. 38th Street
New York, NY 10018
Mr. Jim Hall
Phone: 212-290-0051 Fax: 212-290-0058
Email: jhall@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 101048-9**

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2017
Issued April 01, 2016

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JAMES HALL
EMSL ANALYTICAL, INC
307 WEST 38TH STREET
NEW YORK, NY 10018

NY Lab Id No: 11506

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

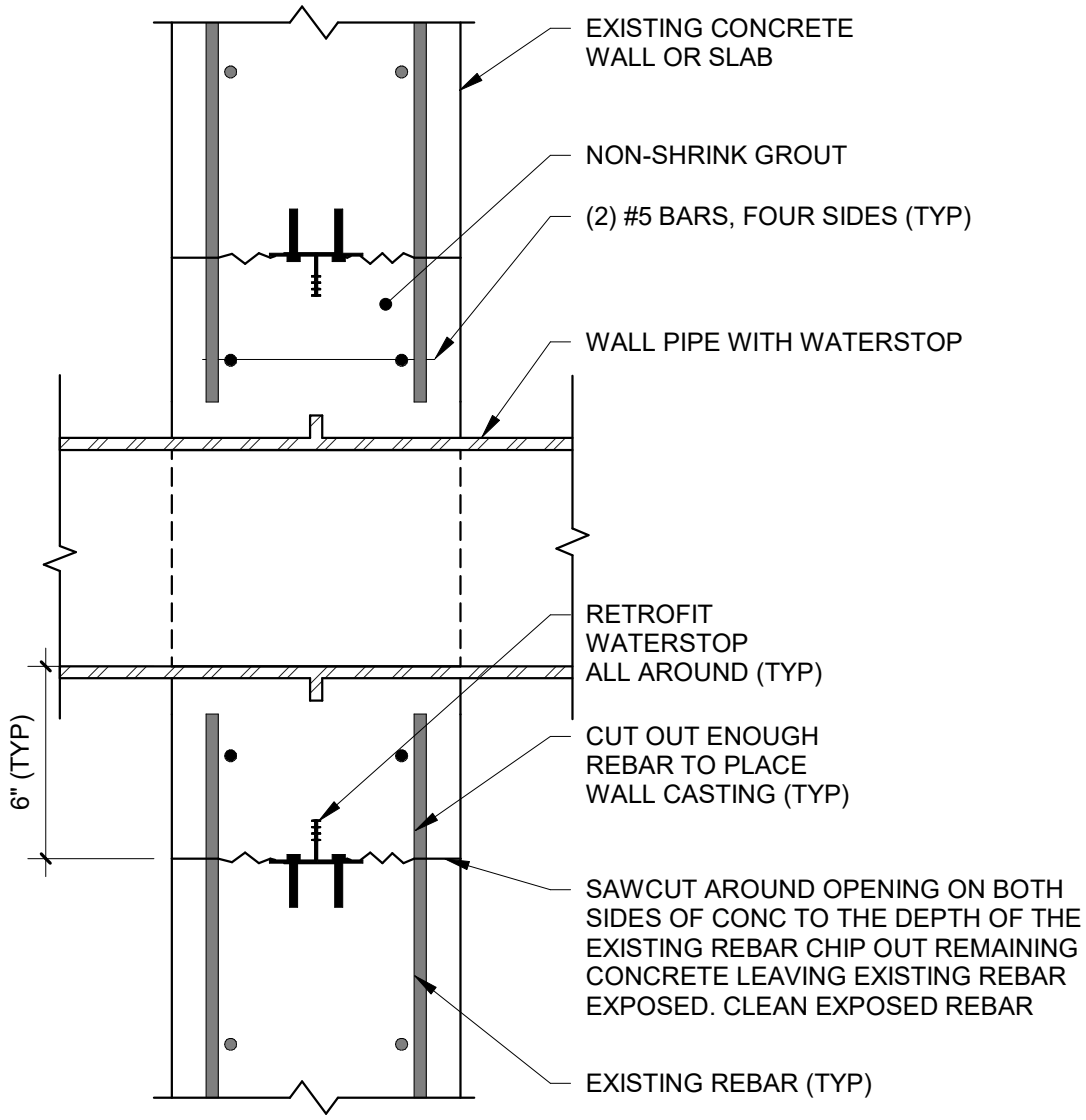
Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Lead in Dust Wipes	EPA 7000B
Lead in Paint	EPA 7000B

Sample Preparation Methods

EPA 3050B

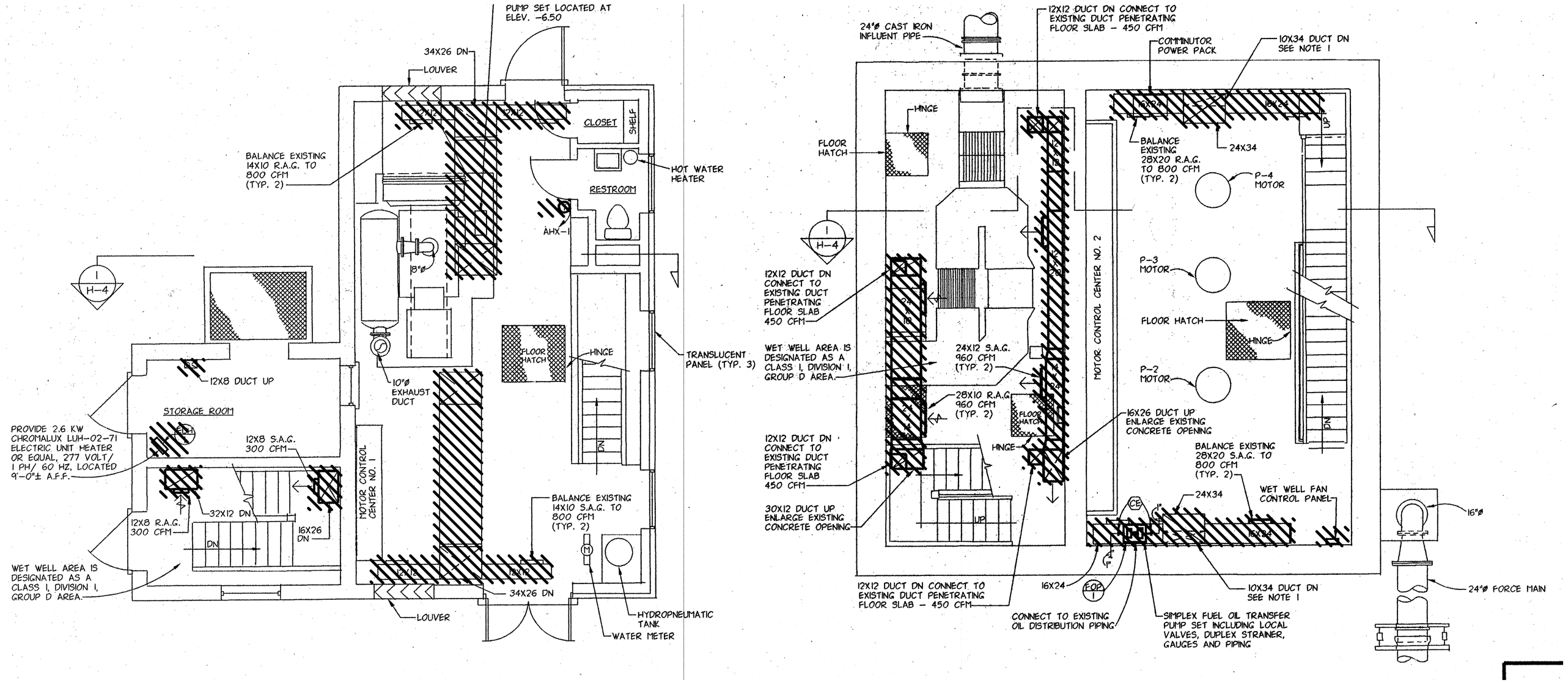
NEW YORK STATE | Department of Health

Serial No.: 54297



Pipe Penetration Through Existing Wall Detail

NOT TO SCALE

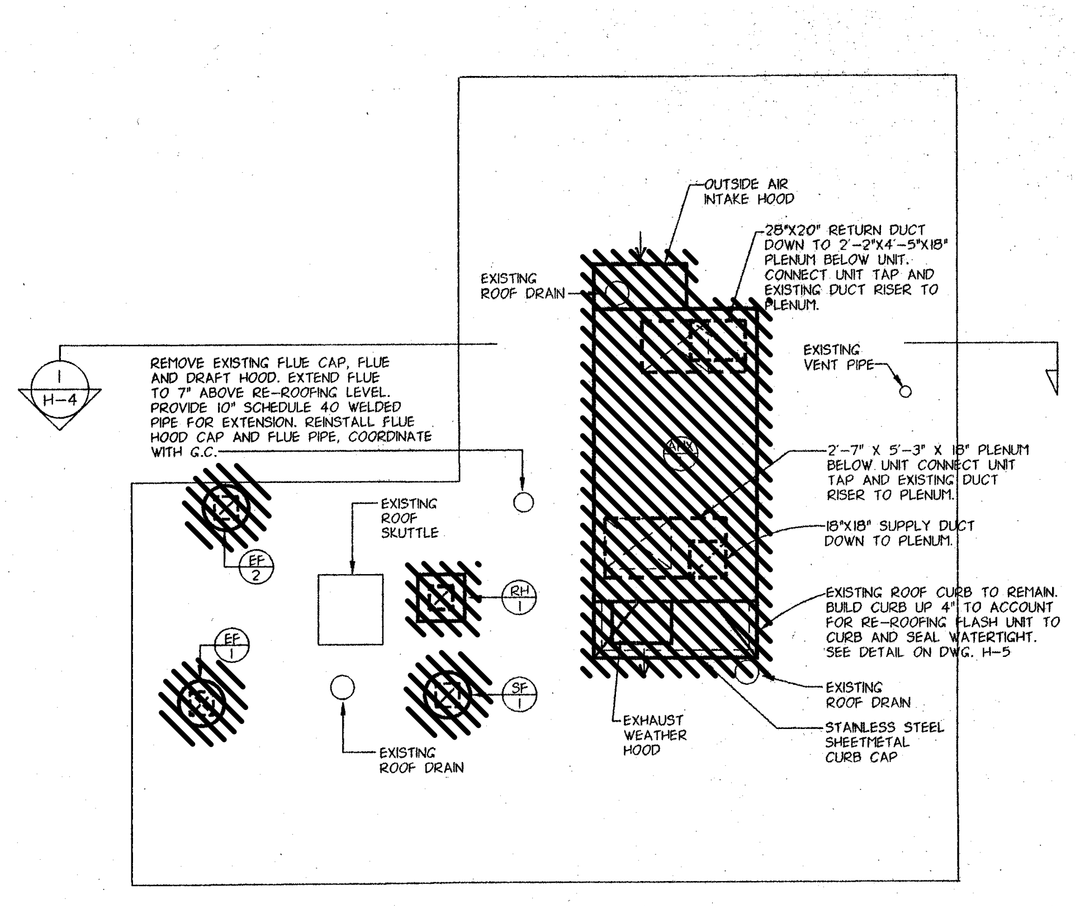


Mech Demolition Ground and Middle Levels

NOT TO SCALE

GENERAL NOTES:

1. DEMOLISH PRE-EXISTING HVAC EQUIPMENT, DUCTWORK, HANGERS, AND APPURTENANCES. PLAN IS FOR REFERENCE ONLY. DRAWING MAY NOT INCLUDE ALL EXISTING DUCTWORK TO BE REMOVED. EXISTING PENETRATION THAT ARE NOT BEING REUSED SHALL BE INFILLED. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR DETAILS.
2. DEMOLISH DUCTWORK, HANGERS, AND APPURTENANCES, LOCATED IN LOWER LEVEL (NOT SHOWN) ASSOCIATED WITH EXISTING RTU.



Mech Demolition Upper Level

NOT TO SCALE

Nov 1 2021 4:24 PM

IN CHARGE OF T. ERWIN
CHECKED BY A. POPOV
MADE BY E. HOOK

O'BRIEN & GERE ENGINEERS, INC.

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT - CHANGES AS NOTED
☐ AS BUILT - NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 17-534 | SHEET NUMBER H-001

SHEET NO. 51A OF 60

CROTONVILLE PUMPING STATION REHABILITATION

OSSINING, NEW YORK
DEMOLITION

SCALE: NTS
DATE: 11/02/2021

DPW FILE NO. 208-03-H-75A-0 | REV. NO. 0