

# Letter of Transmittal

To: Mr. David J. Chiusano  
 Remedial Bureau E, Section A  
 Div. Environmental Remediation  
 NYSDEC  
 625 Broadway, 12th Floor, Albany, NY 12233-7013

Re: Station 24 Addendum #1

- We are sending you:  Enclosed  Under separate cover via  Mail  Messenger, the following items:
- shop drawings  prints  data sheets  \_\_\_\_\_
- specifications  sketches  brochures  \_\_\_\_\_

Our action relative to items submitted for approval has been noted on the drawings.

COPIES	PREPARED BY	REFERENCE NO.	DESCRIPTION
1			Contracts SYSOPS-13G and -13E Addendum No. 1

THESE ARE TRANSMITTED AS CHECKED BELOW:

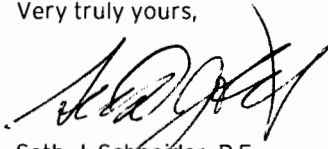
- As requested  Approved  Resubmit \_\_\_\_\_ copies for approval
- For your use  Approved as corrected  Submit \_\_\_\_\_ copies for distribution
- For review & comment  Revise and resubmit  Return \_\_\_\_\_ corrected prints
- For your information  Not approved  \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

104 Corporate Park Dr., Box 751  
 White Plains, NY 10604  
 P: 914.641.2954  
 F: 914.641.2404

Very truly yours,  
  
 Seth J. Schneider, P.E.

Copies: J. Dydland- NYCDEP\*  
 File- 3175032/3.1.5d\*  
 \* Letter only



## CONSTRUCTION CONTRACT

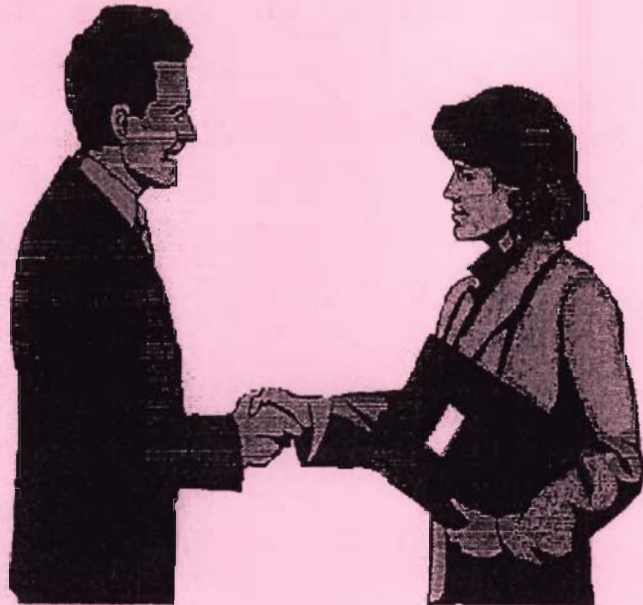
New York City  
Department of  
Environmental Protection

59-17 Junction Boulevard  
Elmhurst, New York 11373

Emily Lloyd  
Commissioner

Steven W. Lawitts  
First Deputy Commissioner

Carol Fenves  
Agency Chief Contracting Officer



## ADDENDUM TO CONTRACT DOCUMENTS NUMBER 1

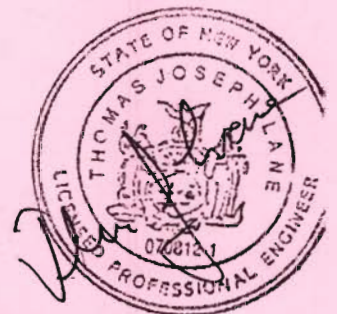
FOR  
FURNISHING ALL LABOR AND MATERIAL  
NECESSARY AND REQUIRED FOR:

**Contract:** SYSOPS-13G STRUCTURES AND EQUIPMENT, AND  
SYSOPS-13E ELECTRICAL

**Description:** STATION 24 GROUNDWATER REMEDIATION PROJECT

MARCH 2007  
Volume 1 of 1

Malcolm Pirnie, Inc.



**CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS**

TO ALL BIDDERS FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

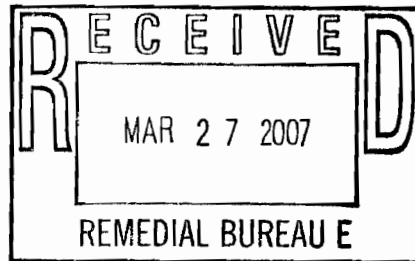
Station 24 Groundwater Remediation Project  
Contract SYSOPS-13G – Structures and Equipment  
Contract SYSOPS-13E - Electrical

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

The pages of this Addendum are numbered sequentially. All bidders should check this book carefully to verify that all pages are included. Should any pages be missing, notify the Department of Environmental Protection in writing as soon as possible.

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DRAWINGS .....	Following Attachments



This signature page must be signed, dated, and detached from the book and submitted by the bidder with his/her bid as an acknowledgement of receipt of, having read, and inclusion of same in his/her bid.

Emily Lloyd  
Commissioner

\_\_\_\_\_  
NAME OF BIDDER

Station 24 Groundwater  
Remediation Project

By \_\_\_\_\_

Date \_\_\_\_\_

Addendum to Contract Documents No. 1

**CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS**

Station 24 Groundwater Remediation Project  
Contract SYSOPS-13G Structures & Equipment  
Contract SYSOPS-13E - Electrical

This addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

**BID POSTPONEMENT**

The bid opening for Contracts SYSOPS-13G & 13E has been postponed. Sealed bids for this Contract will be received by the New York City Department of Environmental Protection (DEP) Contract Management Division, 59-17 Junction Boulevard, 17<sup>th</sup> Floor, Elmhurst, New York 11373, telephone (718) 595-3265 until **Wednesday, April 11, 2007, 11:30 A.M.** at which time and place, bids will be publicly opened and read.

The final date for questions has been postponed to Monday, March 26, 2007. Please submit all questions in writing via email or fax, to:

Mr. John Dydland  
Project Manager  
Bureau of Water & Sewer Operations  
New York City Department of Environmental Protection  
96-05 Horace Harding Expwy, Third Floor  
Corona, New York 11368  
Email: [jdydland@dep.nyc.gov](mailto:jdydland@dep.nyc.gov)  
Fax number: (718) 595-5342

**and**

Mr. Seth J. Schneider, P.E.  
Sr. Project Engineer  
Malcolm Pirnie, Inc.  
Box 751  
White Plains, NY 10602  
Fax: (914) 641-2404  
Email: [SSchneider@Pirnie.com](mailto:SSchneider@Pirnie.com)

## SPECIFICATIONS

1. Pages 119 to 130. Delete these pages in their entirety and replace with Attachment #1 (pages 119 to 130).
2. Page 144. After "E-4 BLOCK DIAGRAM AND MISCELLANEOUS DETAILS" insert the words "E-5 HEAT TRACING STAION 22 AND 52"
3. Page 183, Section 01120, Article 1.04. Add the following after 1.04.B.11.:
  12. Furnish and install complete heat tracing systems at Station 22 and Station 52.
4. Page 183, Section 1120 Article 1.05, paragraph B. Add the following after 1.05.B.1.:
  2. Furnish and install conduit and wiring for heat tracing systems at Station 22 and Station 52.
5. Page 195, Section 01270, Article 1.05. Add the following after 1.05.C.11.a.1.:
  - 2) Meetings with the NYSDEC will take place at the Station 24 site.
6. Page 221, Section 01355, Article 1.04, paragraph A.2. Add the following sentence:

"Contractors shall notify Engineer immediately of any discovery of asbestos or potentially asbestos-containing material, or material that is suspected of being asbestos or potentially asbestos-containing material."
7. Page 239, Section 01410 Article 1.04, paragraph A. Add the following sentence to the end of paragraph A:

"Building Permit shall be obtained by NYCDEP prior to the Notice to Commence Work."
8. Page 240, Section 01410 Article 1,04, Article C. Add the following sentence to the end of paragraph C:

"The SPDES Permit Equivalent for the Station 24 Remediation Project is attached at the end of Specification 13530G."
9. Page 264. Section 01550 Article 1.06. Add the following after 1.06 :

1.07 LIQUIDATED DAMAGES (VEHICLE PROTOCOLS)

- A. The work to be performed by the Contractor hereunder must be performed in compliance with federal and state laws, regulations and court orders.
- B. Accordingly, it is hereby agreed by the Contractor and the City that proper performance of all trucking operations related to this Contract in strict accordance with the provisions set forth herein concerning truck routes and truck identification is material, and in view of the difficulty of adequately ascertaining the losses or damages which the City would suffer by reason of the Contractor's inadequacy or failure to comply strictly with such provisions, it is further agreed that liquidated damages shall be due and payable to the City by the Contractor as set forth herein. Such liquidated damages shall not be deemed a penalty. Such liquidated damages may be assessed by the City for such inadequacy or failure even in the event of any ensuing termination by the City or of abandonment by the Contractor. Liquidated damages received by the City hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the City's right to indemnification or of the Contractor's obligation to indemnify the City, or to any other remedy provided for by the contract or by law.
- C. The Comptroller will deduct and retain out of the moneys which may become due to the Contractor hereunder, the amount of such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages assessed by the City, the Contractor shall be liable to pay the difference upon demand by the Comptroller.
- D. Such liquidated damages in the amount(s) set forth in Schedule "A" may be assessed by the City with respect to each vehicle for each instance or calendar day where:
  - 1. A truck or tractor-trailer utilized by the Contractor or any subcontractor or material man is found to have deviated from the approved route(s) to and from the site, unless Contractor shall show good cause for such variation to the Residents Engineer's satisfaction; or
  - 2. A truck or tractor-trailer utilized by the Contractor or any subcontractor or material man which does not bear approved truck identification arrives to enter the site (except on such vehicle's initial visit, and then only with the approval of the Resident

Engineer and provided that such vehicle shall hereupon be supplied with such signage by the Contractor); or

3. A truck or tractor-trailer utilized by the Contractor or any subcontractor or material man which does not bear approved truck identification is found at or upon the site at any time, or such vehicle lacking approved truck identification is found to have traversed or parked upon local streets or routes within two miles of the sites (except on such vehicle's initial visit); or
  4. A truck or tractor-trailer utilized by the Contractor or any subcontractor or material man which switches identifications signs with another vehicle.
10. Page 718, Section 13530G, Article 2.06, paragraph C.3. In the second sentence delete the symbol "∇" and replace with "±".
  11. Page 719, Section 13530G, Article 2.07, paragraph C. Revise the third sentence to "The Contractor shall exhaust the supply of GAC available at the sites listed above for the initial fill of the vessels at Station 24 and for the first three months of operation before purchasing new GAC."
  12. Page 737, Section 13900G, Article 1.05. Add the following after 1.05.:
    - 1.06 PAYMENT
      - A. Payment for the differential of the actual well depth to the well depth shown on the Contract Drawings shall be included under Contract Item G-UP-1 in accordance with Specification 01270.
  13. Page 861-862, Section 15120G. Delete these pages in their entirety and replace with new pages 861-862 in Attachment #2.
  14. Page 898, Section 15771G, Article 2.03, paragraph C.10. Delete "10." in the first sentence.
  15. Page 901-902, Section 15771G. Delete these pages in their entirety and replace with new pages 901-902 in Attachment #3.



## CONTRACT DRAWINGS

### CONTRACT SYSOPS-13G – STRUCTURES & EQUIPMENT

1. Drawing C-01. Remove existing drawing and replace with new Drawing C-01.
2. Drawing C-02. Remove existing drawing and replace with new Drawing C-02.
3. Drawing C-02, GENERAL UTILITY NOTES. Add the following after note 4:
  5. The 12” water line will remain in service for the duration of the project.”
4. Drawing C-04. Remove existing drawing and replace with new Drawing C-04.
5. Drawing M-02, PARTIAL PLAN. The revise the symbol for section 1, sheet M01 to section 1 sheet M02.
6. Drawing M-02, PARTIAL PLAN. The revise the symbol for section 2, sheet M01 to section 2 sheet M02.
7. Drawing M-02, SECTION 2. The revise the note “BAFFLE (SEE DETAIL ON SHEET C-02)” to “BAFFLE (SEE DETAIL ON SHEET C-04).”
8. Drawing M-02, SECTION 2. The revise the note “BLOW-OFF SUMP SEE SHEET C-02” to “BLOW-OFF SUMP SEE SHEET C-04”.
9. Drawing M-05, Note 10. Add the words “AND INSULATED” after the word “TRACED”.
10. Drawing M-06. Add the following note after NOTE 5:
  6. DEPTH OF WELL PUMP SHALL BE AS DIRECTED BY ENGINEER. FOR BIDDING PURPOSES, CONTRACTOR SHALL ASSUME WELL PUMP IS SET TO THE BOTTOM OF THE SCREENED WELL SECTION.
11. Drawing M-07, TYPICAL GAC SYSTEM PROCESS SCHEMATIC, NOTE 1. Add the words “AND INSULATED” after the word “TRACED”
12. Drawing M-07, TYPICAL GAC SYSTEM PROCESS SCHEMATIC. Revise the note “REMAINING PIPING TO BE BURIED – END HEAT TRACING” to read the following “REMAINING PIPING TO BE BURIED – END HEAT TRACING AND INSULATION”
13. Drawing S-01. Remove existing drawing and replace with new Drawing S-01.

14. Drawing S-02. Add the Following after NOTE 5:

6. CONTRACTOR SHALL PROVIDE HEAVY DUTY CONCRETE TOPPING FOR THE ENTIRE BOOSTER PUMP BUILDING FLOOR. CONCRETE TOPPING SHALL BE STONCLAD HT WITH CLEAR STONKOTE HT4 TOPCOAT BY STONHARD, INCORPORATED, PART OF THE STONCOR GROUP OR APPROVED EQUAL. CONCRETE TOPPING SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.

15. Drawing S-03. The 8'-0" dimension in the near the existing bollard in the PLAN – TRUCK CONTAINMENT AREA should be labeled "EXISTING RAMP".

16. Drawing S-05. Remove existing drawing and replace with new Drawing S-05.

#### **CONTRACT SYSOPS-13E – ELECTRICAL**

1. Cover Sheet and Index of Drawings. Remove existing drawing and replace with new Cover Sheet ad Index of Drawings.
2. Drawing E-04. After drawing E-04, insert Drawing E-05.

**ATTACHMENT 1**

**NO TEXT ON THIS PAGE**

**SCHEDULE A**

**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**

**(GENERAL CONDITIONS OTHER THAN ARTICLE 22)**

**Contract SYSOPS-13G**

<b>Reference</b>	<b>Item</b>	<b>Requirements</b>
Section 28 of Information for Bidders & Article 19 of Contract	Bid Security (Bond or Certified Check)	<u> 5 </u> % of Bid
Section 28 of Information for Bidders	Performance Bond	<u> 100 </u> % of Bid
	Payment (Completion/Labor & Material) Bond	<u> 100 </u> % of Bid
Articles 8 and 14 of Contract	Period of Performance	<u> 370 </u> Consecutive Calendar Days (CCDs)
Article 15 of Contract	Liquidated Damages	None
Detailed Specifications - Section 01550: Vehicular Access and Parking	Liquidated Damages (Vehicle Protocols)	\$ <u> 100 </u> per day or instance, per vehicle, where: (1) a truck deviates from approved route(s); or, (2) a truck without approved truck identification enters the site; or, (3) a truck without approved truck identification is found upon the site, or parks upon or traverses local streets near the site; or (4) truck identification signs are switched between vehicles.  <u>DETAILS: SEE SPECIFICATION 01550-1.07 "LIQUIDATED DAMAGES (Vehicle Protocols)"</u>
Detailed Specifications Section 01334	Liquidated Damages (Microfilm Requirements)	See Article 1.8 of Detailed Specification 01334
Article 17 of Contract	Subcontracting	Not to exceed <u> 40 </u> % of Bid
Article 21 of Contract	Retained Percentage	<u> 5 </u> % of Voucher
Article 24 of Contract	Maintenance and Guaranty Security	<u> 2 </u> % of Adjusted Contract Price
Article 24 of Contract	Guaranty Period	<u> 1 </u> Year Longer periods for components of the work as set forth in specifications.
Article 42 of Contract	Partial Payment	<u> X </u> will be allowed <u>     </u> will not be allowed

**SCHEDULE A**  
**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**  
**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**

**Contract SYSOPS-13G**

Insurance indicated by a blackened box (■) or by X in a □ to left will be required under this contract

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<input checked="" type="checkbox"/> Commercial General Liability      Art. 22.1.1	\$ <u>2,000,000</u> per occurrence  \$ <u>4,000,000</u> aggregate (applicable separately to this <b>Project</b> )  Additional Insureds: 1. City of New York, including its officials and employees.
<input checked="" type="checkbox"/> Workers' Compensation      Art. 22.1.2 <input checked="" type="checkbox"/> Disability Benefits Insurance      Art. 22.1.2 <input checked="" type="checkbox"/> Employers' Liability      Art. 22.1.3 <input type="checkbox"/> Jones Act      Art. 22.1.4 <input type="checkbox"/> U.S. Longshoremen's and Harbor Workers Compensation Act      Art. 22.1.4	Workers' Compensation: Statutory per New York State law without regard to jurisdiction  Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction  Employers' Liability: \$1,000,000 each accident
<input checked="" type="checkbox"/> Builders' Risk      Art. 22.1.5	100 % of total value of <b>Work</b>  City of New York and the <b>Contractor</b> named as Loss Payee for the <b>Work</b> in order of precedence, as their interests may appear

**SCHEDULE A**  
**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**  
**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**

**Contract SYSOPS-13G**

**(PART I CONTINUED)**

**Insurance indicated by a blackened box (■) or by (X) in  to left will be required under this contract**

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<input checked="" type="checkbox"/> Comprehensive Business Auto Coverage Art. 22.1.6	\$2,000,000 per accident  If vehicles are used for transporting hazardous materials, the <b>Contractor</b> shall provide pollution liability broadened coverage for covered autos (endorsement CA 99 48) as well as proof of MCS 90
<input checked="" type="checkbox"/> Pollution/Environmental Liability Art. 22.1.7	\$ 1,000,000 per occurrence  \$ 2,000,000 aggregate  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
<input type="checkbox"/> Marine Protection and Indemnity Art. 22.1.8(a)	\$ _____ per occurrence  \$ _____ aggregate  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

**SCHEDULE A**  
**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**  
**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**

Contract SYSOPS-13G

(PART I CONTINUED)

Insurance indicated by a blackened box (■) or by (X) in  to left will be required under this contract

<input type="checkbox"/> Ship Repairers Legal Liability	Art. 22.1.8(b)	\$_____ each occurrence [Contracting agency to fill in total value of City vessels involved]
<input type="checkbox"/> Collision Liability/Towers Liability	Art. 22.1.8(c)	\$_____ per occurrence \$_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
<input type="checkbox"/> Marine Pollution Liability	Art. 22.1.8(d)	\$_____ each occurrence Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
[OTHER] <input type="checkbox"/> Railroad Protective Liability policy - ISO Form CG 00 35 11 85 or equivalent	Art. 22.1.9	\$_____ per occurrence \$_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____



**SCHEDULE A**  
**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**  
**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**

Contract SYSOPS-13G

**PART II. BROKER'S CERTIFICATION**

[Pursuant to Article 22.3.1(a) of the **Contract**, every Certificate of Insurance must be accompanied by either the following certification by the broker setting forth the following text and required information and signatures or complete copies of all policies referenced in the Certificate of Insurance. In the absence of completed policies, binders are acceptable.]

**CERTIFICATION BY BROKER**

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects, and that the described insurance is effective as of the date of this Certification.

\_\_\_\_\_  
[Name of broker (typewritten)]

\_\_\_\_\_  
[Address of broker (typewritten)]

\_\_\_\_\_  
[Signature of authorized official or broker]

\_\_\_\_\_  
[Name and title of authorized official (typewritten)]

Sworn to before me this  
\_\_\_\_ day of \_\_\_\_\_, 200\_

\_\_\_\_\_  
NOTARY PUBLIC

**SCHEDULE A**  
**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**  
**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**  
**Contract SYSOPS-13G**

**PART III. ADDRESS OF COMMISSIONER**

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

**Department of Environmental Protection**  
**Agency Chief Contracting Officer**  
**ATTN: CONTRACT MANAGEMENT OFFICE (Insurance), 17TH FLOOR**  
**59-17 Junction Boulevard**  
Flushing, New York 11373

**SCHEDULE A**

**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**

**(GENERAL CONDITIONS OTHER THAN ARTICLE 22)**

**Contract SYSOPS-13E**

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**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**

**Contract SYSOPS-13E**

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Contract SYSOPS-13E

(PART I CONTINUED)

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■ Comprehensive Business Auto Coverage Art. 22.1.6	\$2,000,000 per accident  If vehicles are used for transporting hazardous materials, the <b>Contractor</b> shall provide pollution liability broadened coverage for covered autos (endorsement CA 99 48) as well as proof of MCS 90
■ Pollution/Environmental Liability Art. 22.1.7	\$ 1,000,000 per occurrence  \$ 2,000,000 aggregate  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
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Contract SYSOPS-13E

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<input type="checkbox"/> Marine Pollution Liability      Art. 22.1.8(d)	\$_____ each occurrence Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
[OTHER]      Art. 22.1.9 <input type="checkbox"/> Railroad Protective Liability policy - ISO Form CG 00 35 11 85 or equivalent	\$_____ per occurrence \$_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

**SCHEDULE A**  
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**Contract SYSOPS-13E**

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**CERTIFICATION BY BROKER**

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects, and that the described insurance is effective as of the date of this Certification.

\_\_\_\_\_  
[Name of broker (typewritten)]

\_\_\_\_\_  
[Address of broker (typewritten)]

\_\_\_\_\_  
[Signature of authorized official or broker]

\_\_\_\_\_  
[Name and title of authorized official (typewritten)]

Sworn to before me this  
\_\_\_\_ day of \_\_\_\_\_, 200\_

\_\_\_\_\_  
NOTARY PUBLIC

**SCHEDULE A**  
**(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)**  
**(GENERAL CONDITIONS RELATING TO ARTICLE 22 -- INSURANCE)**  
**Contract SYSOPS-13E**

**PART III. ADDRESS OF COMMISSIONER**

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

**Department of Environmental Protection**  
**Agency Chief Contracting Officer**  
**ATTN: CONTRACT MANAGEMENT OFFICE (Insurance), 17TH FLOOR**  
**59-17 Junction Boulevard**  
**Flushing, New York 11373**



**ATTACHMENT 2**

**NO TEXT ON THIS PAGE**

**SPECIFICATION 15120G – PIPING AND VALVE SCHEDULES**  
**SYSOPS-13G**

**INTERIOR AND EXPOSED PIPING**  
**SCHEDULE 15120G-2**

Service		Material	Wall Thickness / Schedule / Class	Type of Joint / Fitting	Lining	Design Pressure (psig)	Test Pressure (psig)	Remarks
Name / Location	Code							
Raw Water	RW	DI	CL 56	FLG	CL	150	300	See Notes 4,5
City Water	CW	DI	CL 56	FLG	CL	70	100	See Note 4
Backwash Supply	BWS	DI	CL 56	FLG	CL	150	300	See Note 4
Backwash Waste	BWW	DI	CL 56	FLG	CL	150	300	See Note 4
Treated Water	TW	DI	CL 56	FLG	CL	150	300	See Note 4,5
Service Water	SVW	DI	CL 56	FLG	CL	150	300	See Note 4
Chemical Tank Fill	SA	PVC	SCH 80	SW	--	60	125	
Condensate Drain	CD	PVC	SCH 80	SW	--	60	125	
Metering Pump Suction	SA	PVC	SCH 80	SW	--	60	125	
Stilling Wells	STW	PVC	SCH 80	SW	--	60	125	
Sequestering Agent Containment Pipe	SAC	PVC	SCH 80 / DW	SW	--	60	125	
Metering Pump Discharge	SA	PET	STD	ITF	--	60	--	
Recovery Well Chemical Lines	SA	PET	STD	ITF	--	60	--	
Refrigerant Suction	RS	CU	0.042	BZ	--	300	600	
Refrigerant Liquid	RL	CU	0.032	BZ	--	300	600	

**General Notes:**

1. The Contractor shall submit a complete pipe schedule for all piping included under this Contract with similar information for approval. All pumped systems shall be tested at a minimum of 10 psig above the maximum shut-off head unless otherwise specified above. Maximum shut-off head shall be indicated on the schedules submitted by the Contractor.
2. All connections to valves and equipment shall be made with flanged joints.
3. For modifications to existing piping not identified above, provide materials in-kind.
4. Finish with epoxy primer coat.
5. All PVC connections to DI pipe shall be the Flanged type.

**SPECIFICATION 15120G – PIPING AND VALVE SCHEDULES  
SYSOPS-13G**

**VALVES - SMALLER THAN 4 INCHES  
SCHEDULE 15120G-3**

Service		Location	Body	Type of Joint	Rated Pressure (psig)	Operator	Remarks
Name	Code						
GAC Air Release Valve	ARV	GAC Vessel Piping Highpoints	CI	THD	150	Float Actuated	
Tank Fill Isolation Valve	BLV	Truck Containment Area	PVC	SW	150	Manual	
Truck Delivery Drain Valve	BLV	Truck Containment Area	PVC	SW	150	Manual	
Tank Fill Drain Valve	BLV	Truck Containment Area	PVC	SW	150	Manual	
Metering Pump Isolation	BLV	Garage No. 2	PVC	SW	150	Manual	
Recovery Well Chemical Selector	BLV	Recovery Well Pump Enclosures	PVC	SW	150	Manual	
Well Pump Discharge	BLV	Recovery Well Pump Enclosures	BR	FLG	600 <sup>(2)</sup>	Manual	
Hose Bibb	BLV	Booster Pump Bldg	BR	THD	600 <sup>(2)</sup>	Manual	
Emer. Eyewash/Shower	BLV	Chemical Storage	BR	THD	600 <sup>(2)</sup>	Manual	
City Water Air Valve	CAV	Booster Pump Bldg	CI	FLG	150	Float Actuated	
Tank Fill Check Valve	TCV	Truck Containment Area	PVC	SW	150	--	

**General Notes:**

1. SWP = Steam Working Pressure.
2. WOG = Water, Oil, Gas.
3. Valves shall be tested to 1.5 x the rated pressure.

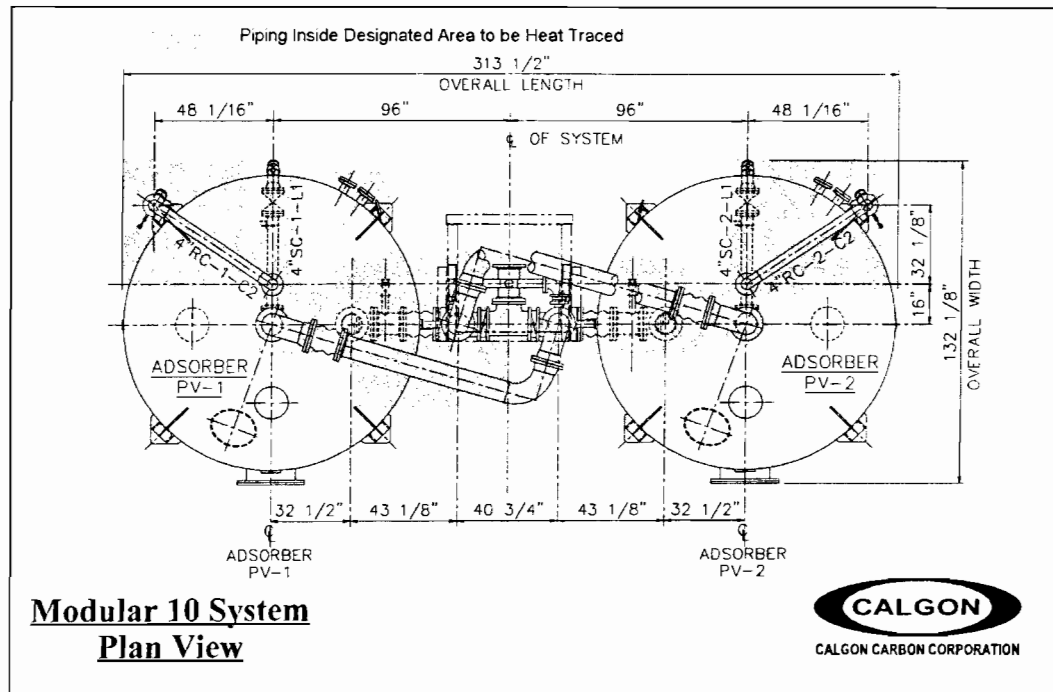
**ATTACHMENT 3**

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**SPECIFICATION 15771G – ELECTRIC HEAT TRACING SYSTEM**  
**SYSOPS-13G**

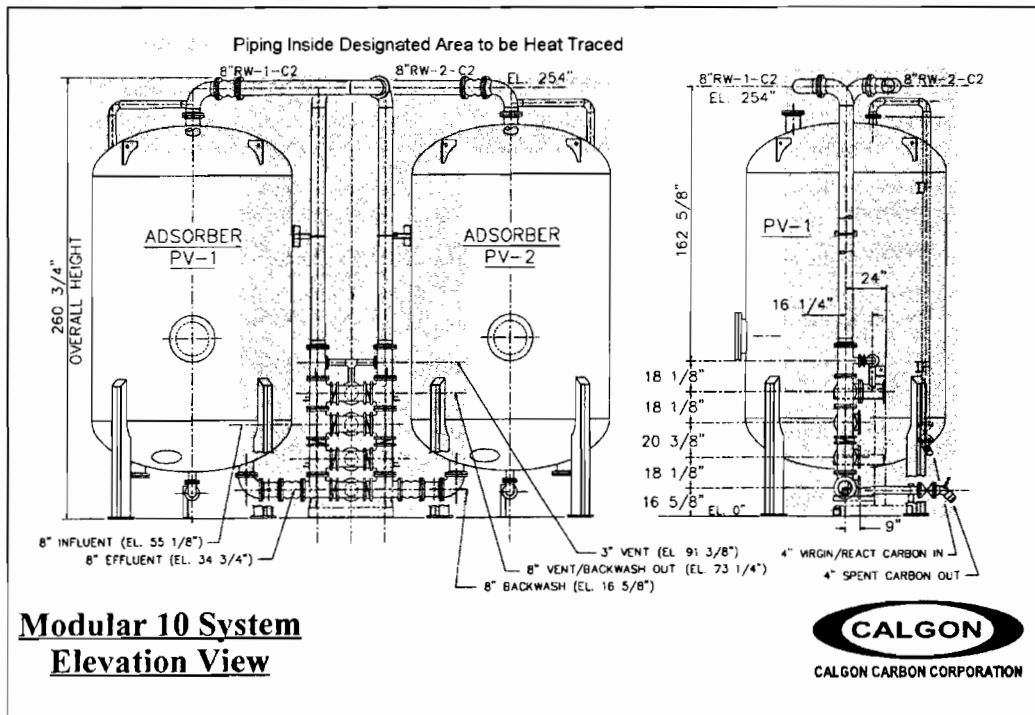
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- c. 4" containment pipe
  - d. 1" metering pump suction lines
  - e. 1/2" chemical piping
- D. Potable Water Piping in Station 24 Garage No. 2
- 1. Heat trace cable shall be 5-watts per linear foot.
  - 2. The following piping systems shall be heat traced:
    - a. 1 1/4" cold water piping
- E. GAC Systems at Station 22 and Station 52
- 1. The Contractor is advised that one (1) system of two (2) GAC vessels exists at both Station 22 and Station 52. As indicated in Specification 01120, the Contractor shall provide heat tracing of all exterior GAC system piping at Stations 22 and 52. The extents of the heat tracing and approximate dimensions are given in Figures 1 and 2, below. Shading indicates piping to be heat traced. All heat tracing equipment and procedures shall be in accordance with this Specification. Heat trace cable shall be 8-watts per linear foot.



**Figure 1: GAC System Piping Typical for Stations 22 and 52 - Plan View**

**SPECIFICATION 15771G – ELECTRIC HEAT TRACING SYSTEM  
SYSOPS-13G**



**Figure 2: GAC System Piping Typical for Stations 22 and 52 - Elevations**

3.04      **CLEANING**

- A.      Clean tar, cement or other dirt from the heat trace cable.
- B.      Remove debris and other waste material resulting from installation.

3.05      **ADJUSTMENTS**

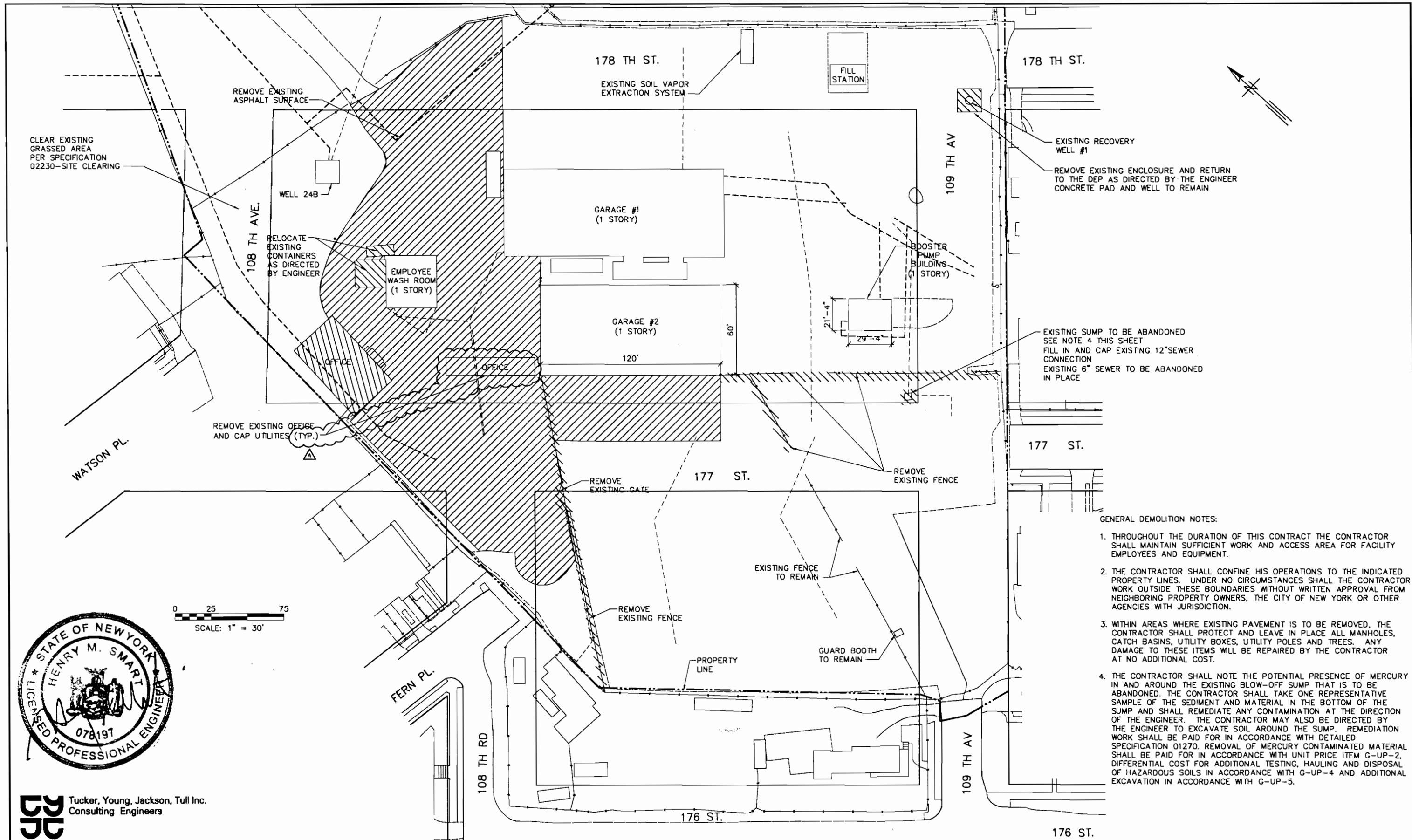
- A.      Check control module functions.
- B.      Check thermostat and wiring connections to heater cable.

\* \* \* \* \*

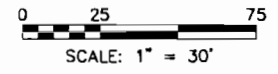


**DRAWINGS**

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- GENERAL DEMOLITION NOTES:
1. THROUGHOUT THE DURATION OF THIS CONTRACT THE CONTRACTOR SHALL MAINTAIN SUFFICIENT WORK AND ACCESS AREA FOR FACILITY EMPLOYEES AND EQUIPMENT.
  2. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE INDICATED PROPERTY LINES. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR WORK OUTSIDE THESE BOUNDARIES WITHOUT WRITTEN APPROVAL FROM NEIGHBORING PROPERTY OWNERS, THE CITY OF NEW YORK OR OTHER AGENCIES WITH JURISDICTION.
  3. WITHIN AREAS WHERE EXISTING PAVEMENT IS TO BE REMOVED, THE CONTRACTOR SHALL PROTECT AND LEAVE IN PLACE ALL MANHOLES, CATCH BASINS, UTILITY BOXES, UTILITY POLES AND TREES. ANY DAMAGE TO THESE ITEMS WILL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST.
  4. THE CONTRACTOR SHALL NOTE THE POTENTIAL PRESENCE OF MERCURY IN AND AROUND THE EXISTING BLOW-OFF SUMP THAT IS TO BE ABANDONED. THE CONTRACTOR SHALL TAKE ONE REPRESENTATIVE SAMPLE OF THE SEDIMENT AND MATERIAL IN THE BOTTOM OF THE SUMP AND SHALL REMEDIATE ANY CONTAMINATION AT THE DIRECTION OF THE ENGINEER. THE CONTRACTOR MAY ALSO BE DIRECTED BY THE ENGINEER TO EXCAVATE SOIL AROUND THE SUMP. REMEDIATION WORK SHALL BE PAID FOR IN ACCORDANCE WITH DETAILED SPECIFICATION 01270. REMOVAL OF MERCURY CONTAMINATED MATERIAL SHALL BE PAID FOR IN ACCORDANCE WITH UNIT PRICE ITEM G-UP-2. DIFFERENTIAL COST FOR ADDITIONAL TESTING, HAULING AND DISPOSAL OF HAZARDOUS SOILS IN ACCORDANCE WITH G-UP-4 AND ADDITIONAL EXCAVATION IN ACCORDANCE WITH G-UP-5.

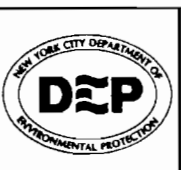


**TJ** Tucker, Young, Jackson, Tull Inc.  
Consulting Engineers

REVISIONS			
NO.	BY	DATE	REMARKS
1	JM	3/16/07	ADDENDUM NO.1

DES	HMS
DWN	ZK
CKD	HMS

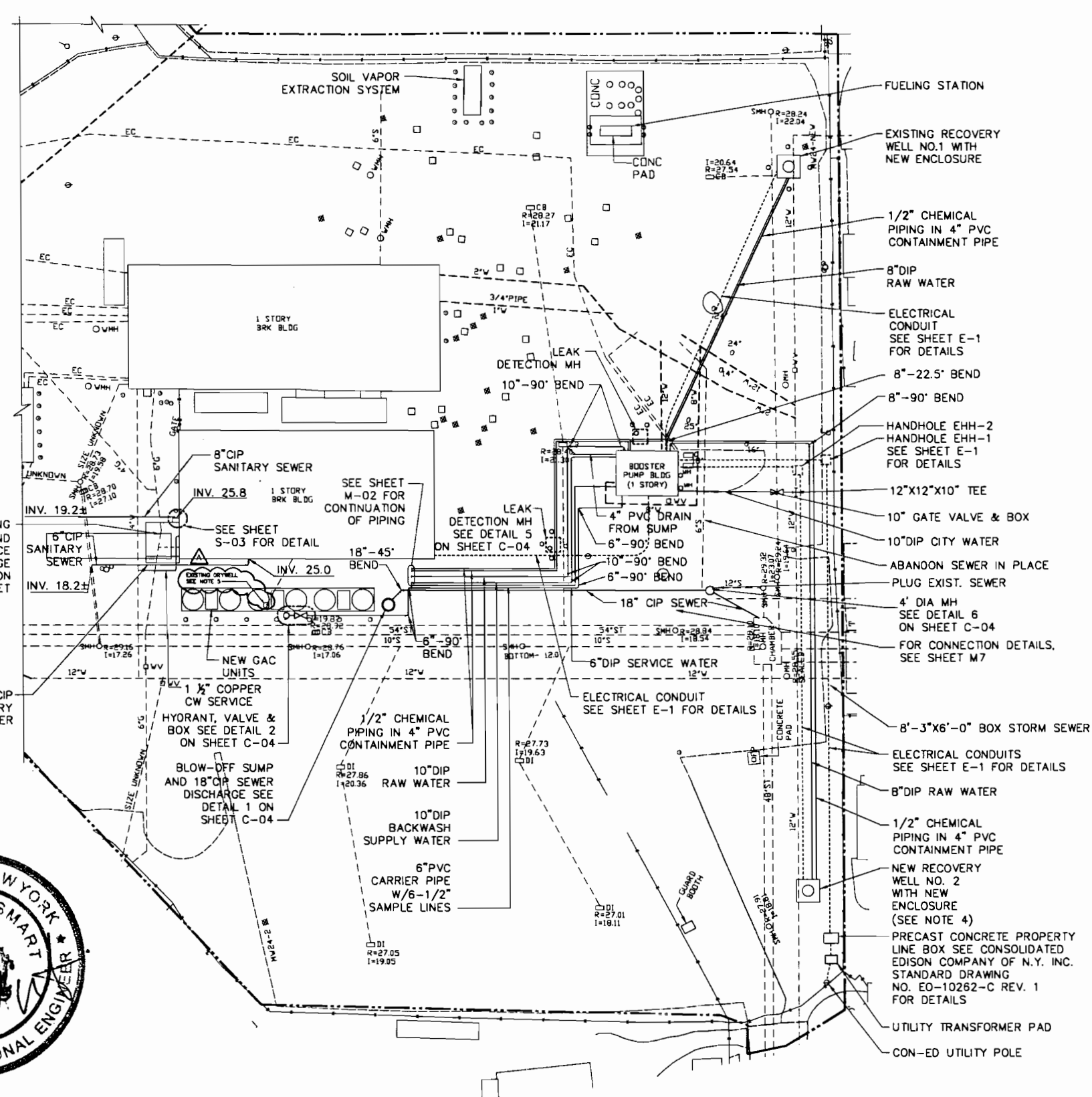
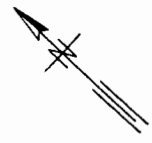
APPROVED FOR THE CITY OF NEW YORK  
**MALCOLM PIRNIE**  
EDWARD J. COLEMAN, P.E.  
DIRECTOR OF DISTRIBUTION OPERATIONS  
BUREAU OF WATER AND SEWER OPERATIONS



CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS  
STATION 24 GROUNDWATER REMEDIATION PROJECT  
SYSOPS-13G

STATION 24  
CIVIL  
SITE DEMOLITION  
SCALE: 1"=30'

DATE: FEBRUARY 2007  
DWG. NO.: C-01



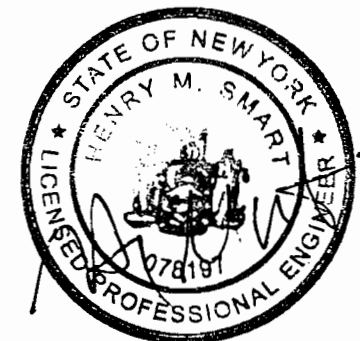
**GAS RELOCATION NOTES:**

1. PRIOR TO START OF WORK, KEYSpan ENERGY (KE) WILL CONFIRM SIZE, LOCATION, AND TYPE OF GAS SERVICE TO THE BUILDING BASED ON INFORMATION PROVIDED AT A SITE VISIT BY KE.
2. ALL GAS WORK SHALL CONFORM TO THE LATEST REQUIREMENTS OF KE.
3. ALL EXCAVATION TO BE DONE BY THE CONTRACTOR AS DIRECTED BY KE.
4. A MINIMUM OF TWO TEST PITS SHALL BE DUG IN ORDER TO ASCERTAIN EXACT LOCATIONS, COVER AND INVERT ELEVATIONS, CLEARANCE, ALIGNMENT AND OPERATING STATUS OF EXISTING GAS FACILITIES. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN THE VICINITY OF ANY GAS FACILITY. HAND EXCAVATION SHALL BE PERFORMED TO LOCATE ALL GAS FACILITIES.
5. DEPTH OF EXCAVATION TO BE AT LEAST 18" BELOW THE BOTTOM OF THE GAS FACILITY.
6. ALL PERMANENT PIPE FITTINGS, AND TE-IN PIECES, ANODES AND ACCOMPANYING BOXES SHALL BE SUPPLIED BY KE AND PICKED UP BY THE CONTRACTOR AT A KE STORAGE YARD. CONTRACTOR SHALL DELIVER ALL MATERIAL TO JOB SITE. CONTRACTOR SHALL CONTACT KE TO DETERMINE LOCATION OF KE STORAGE YARD.
7. ALL COATING OF PIPE, FITTINGS ETC., SHALL BE DONE BY KE.
8. ALL LIVE GAS WORK TO BE PERFORMED BY KE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL PERMANENT GAS FACILITIES PER KE APPROVAL.
10. ALL PITS SHALL BE EXCAVATED PER STANDARDS OF KE WITH SHEETING, DECKING OR PLATING FOR INSTALLATION OF BAG HOLES WHICH SHALL BE ACCESSIBLE AT ALL TIMES. LOCATION AND SIZE TO BE DETERMINED BY KE.
11. KE SHALL PERFORM A PIPE TO SOIL VOLTAGE CHECK, A COATING RESISTANCE TEST OF ALL PIPES, AND CHECK INSULATION BEFORE BACKFILLING. SHOULD ANY TEST FAIL KE OR THE CONTRACTOR UNDER DIRECTION FROM KE CAN MAKE NECESSARY CORRECTIONS.
12. ONLY WELDERS CERTIFIED BY KE OR SUPPLIED BY KE ARE ALLOWED TO WELD ON KE GAS FACILITIES.
13. UNDER SPECIAL CONDITIONS, TYPES OF CONSTRUCTION SHOWN ON THIS DWG. MAY BE MODIFIED UPON WRITTEN APPROVAL BY KE.
14. CONTRACTOR SHALL NOTIFY KE A MINIMUM OF FIVE BUSINESS DAYS BEFORE EXPOSING ANY GAS FACILITY. ALL GAS FACILITIES THAT ARE EXPOSED ARE TO BE EXAMINED BY KE.
15. THE NOMINAL MINIMUM PIPE COVER FOR GAS FACILITIES SHALL BE 36 INCHES. WHERE COVER IS LESS THAN 24 INCHES THE PIPE SHALL BE PROTECTED BY 3/8" INCH STEEL PLATES ACROSS THE FULL WIDTH OF THE TRENCH SET 4 INCHES MINIMUM ABOVE THE PIPE WITH 2 INCHES OVERLAP OF PLATE SECTIONS.
16. DAMAGE TO ANY GAS HARDWARE OR OTHER GAS RELATED MATERIAL SHALL BE INSPECTED BY KE.
17. IF APPLICABLE CONTRACTOR SHALL REMOVE AND REINSTALL EXISTING OR INSTALL NEW GAS HARDWARE TO PROPOSED GRADE AS PER KE SPECIFICATIONS.
18. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ABANDONED CAST IRON AND OR STEEL GAS PIPE.
19. CONTRACTOR SHALL NOTIFY KE TO REMOVE ALL COAL TAR WRAPPED PIPE TO APPROVED DISPOSAL SITE.

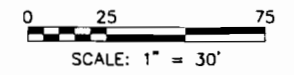
**GENERAL UTILITY NOTES:**

1. EXISTING UTILITY LOCATIONS, SIZES AND ELEVATIONS ARE INTENDED ONLY TO INDICATE THE EXISTENCE OF SUCH UTILITIES IN THE AREAS SHOWN. BEFORE PROCEEDING WITH THE WORK, THE CONTRACTOR SHALL VERIFY UTILITY LOCATIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES
2. ALL UTILITY INVERT ELEVATIONS SHOWN ARE REFERENCED TO NAVD 88 VERTICAL DATUM
3. ALL WATER SERVICE CONNECTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH RULES AND REGULATIONS AS STIPULATED UNDER SECTION 150 OF NYC BUREAU OF WATER AND SEWER OPERATIONS, GOVERNING THE USE AND SUPPLY OF WATER, CITY OF NEW YORK.
4. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF THE EXISTING 12 INCH WATER LINE PRIOR TO CONSTRUCTING THE NEW RECOVERY WELL.
5. CONTRACTOR SHALL REMOVE MATERIAL FROM EXISTING DRYWELL, BACKFILL WITH CLEAN FILL AND COVER. MATERIAL TO BE REMOVED FROM DRYWELL SHALL BE TESTED IN ACCORDANCE WITH SPECIFICATION 02106.

RELOCATE EXISTING 6" GAS LINE AND EXISTING GAS SERVICE TO GARAGE SEE GAS RELOCATION NOTES THIS SHEET



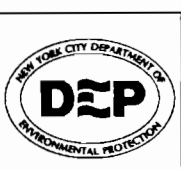
**Tucker, Young, Jackson, Tull Inc.**  
Consulting Engineers



REVISIONS			
NO.	BY	DATE	REMARKS
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DES	HMS
DWN	ZK
CHK	HMS

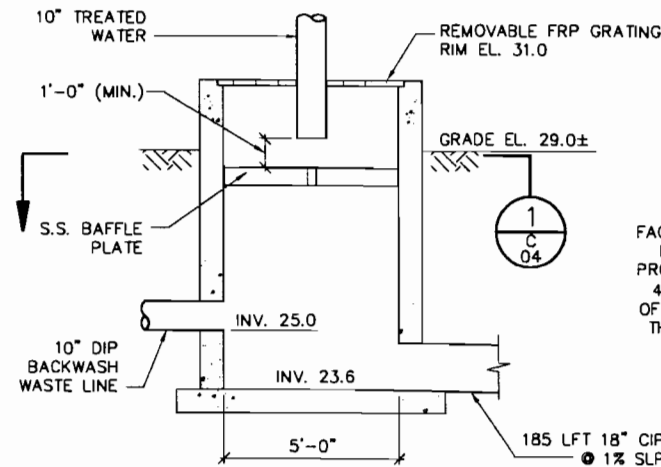
APPROVED FOR THE CITY OF NEW YORK  
**MALCOLM PIRNIE**  
EDWARD J. COLEMAN, P.E.  
DIRECTOR OF DISTRIBUTION OPERATIONS  
BUREAU OF WATER AND SEWER OPERATIONS



CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS  
STATION 24 GROUNDWATER REMEDIATION PROJECT  
SYSOPS-13G

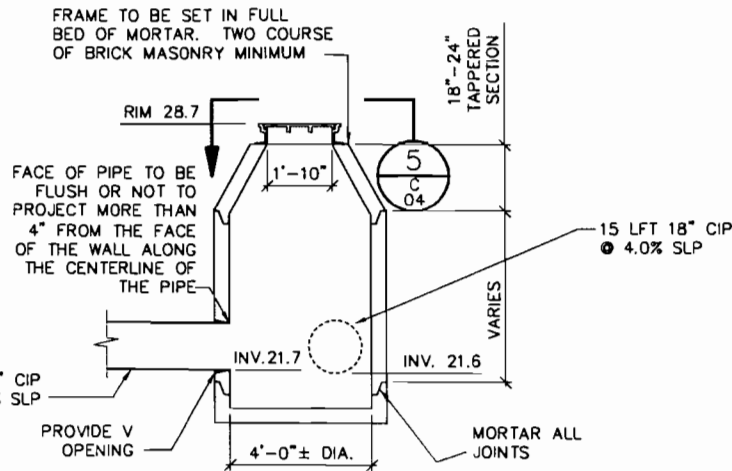
STATION 24  
CIVIL UTILITIES PLAN  
SCALE: 1"=30'

DATE: FEBRUARY 2007  
DWG. NO.: C-02



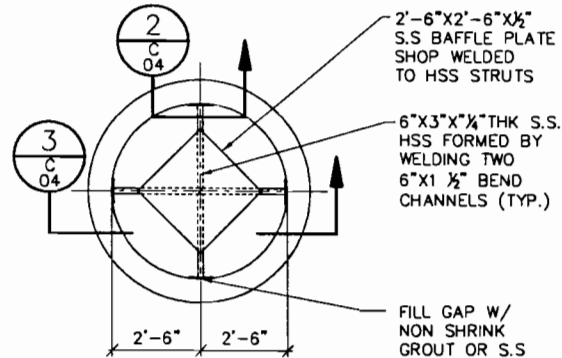
BLOW-OFF SUMP DETAIL

DETAIL	1
NTS	C 02

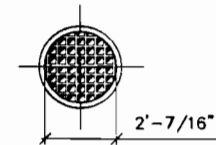


PRECAST CONCRETE MANHOLE DETAIL

DETAIL	6
NTS	C 02

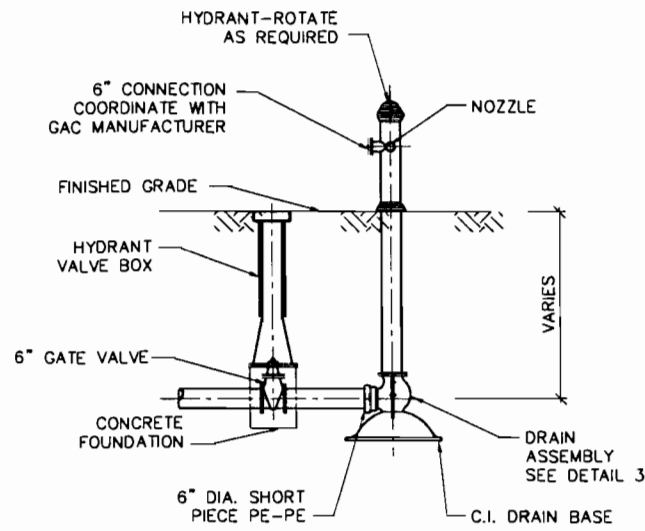


SECTION	1
NTS	C 04



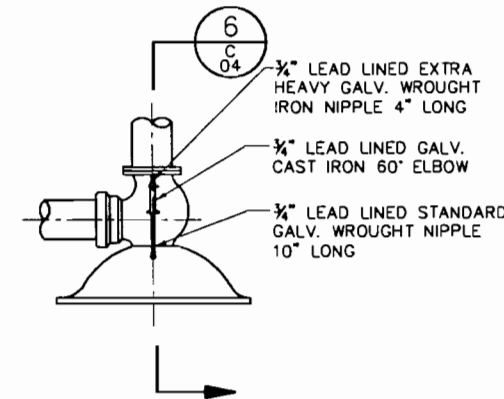
SECTION	5
NTS	C 04

NOTE  
MANHOLE FRAME AND CASTING  
REFERENCE R-1718A SERIES BY  
NEENAH FOUNDRY.



HYDRANT DETAIL

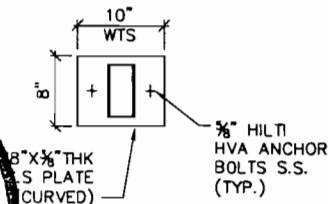
DETAIL	2
NTS	C 02



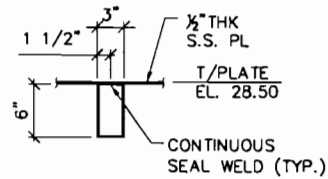
HYDRANT ON DRAIN-BASE

DETAIL	3
NTS	C 04

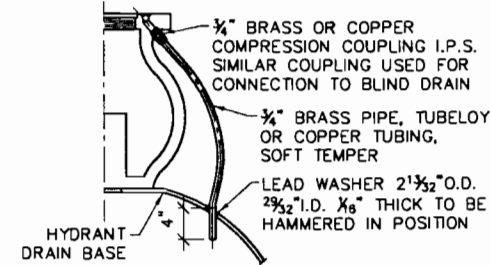
SECTION SCALE



SECTION	2
NTS	C 04

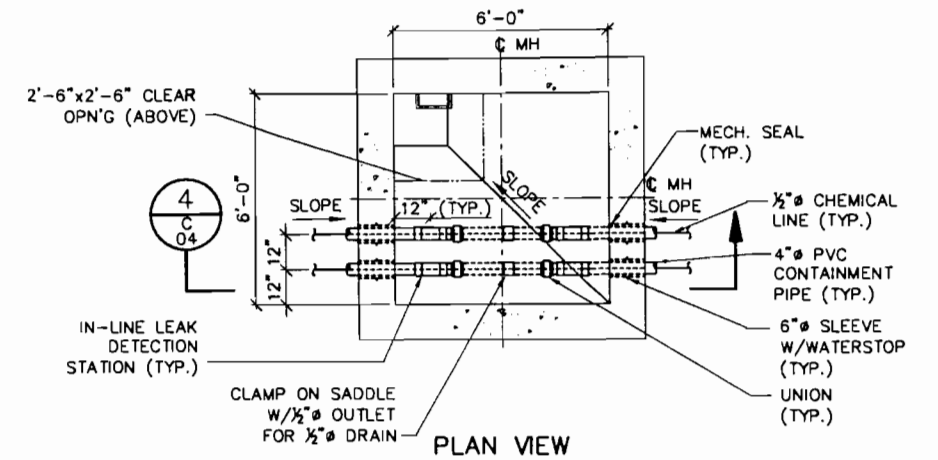


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NTS	C 04



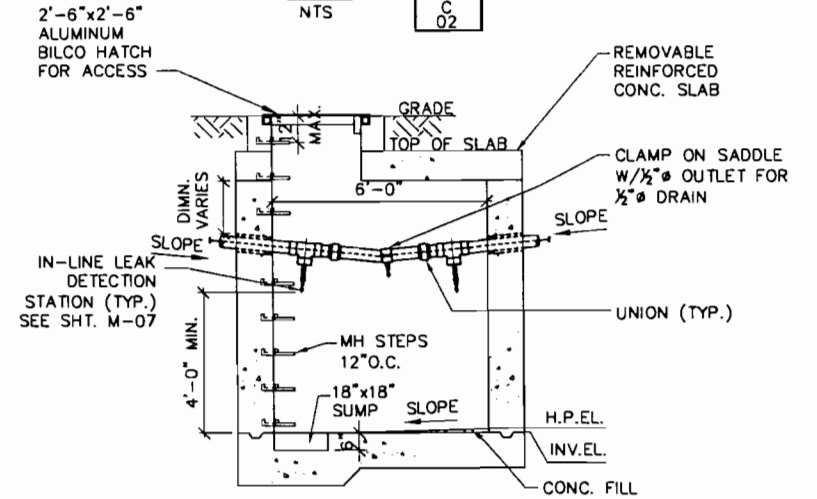
DRAIN ASSEMBLY

SECTION	6
NTS	C 04

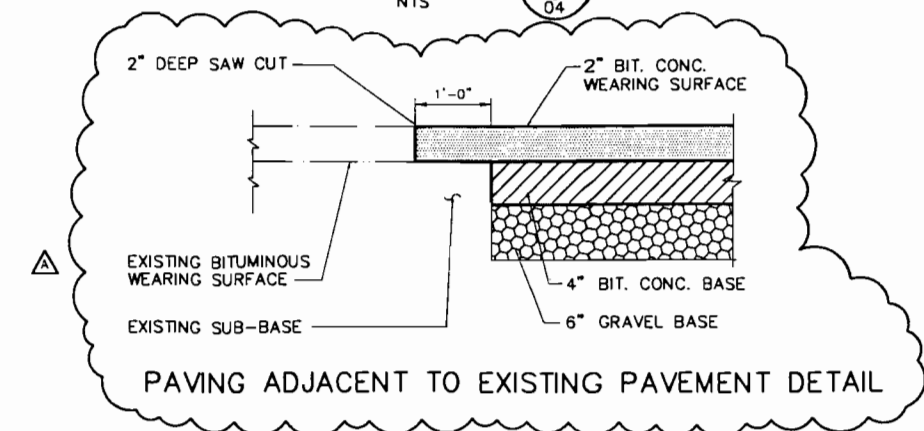


PRECAST LEAK DETECTION MANHOLE

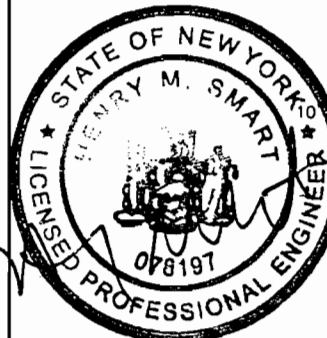
DETAIL	5
NTS	C 02



SECTION	4
NTS	C 04



PAVING ADJACENT TO EXISTING PAVEMENT DETAIL



Tucker, Young, Jackson, Tull Inc.  
Consulting Engineers

REVISIONS			
NO.	BY	DATE	REMARKS
1	JM	3/16/07	ADDENDUM NO.1

DES	HMS
DWN	ZK
CKD	HMS

**MALCOLM PIRNIE**

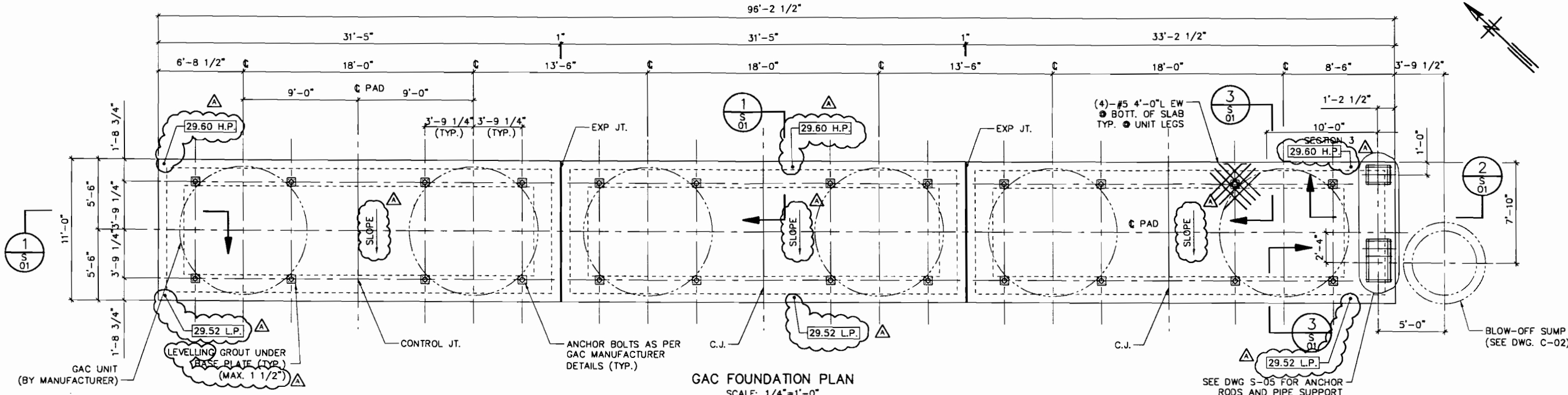
APPROVED FOR THE CITY OF NEW YORK  
*Edward J. Coleman*  
EDWARD J. COLEMAN, P.E.  
DIRECTOR OF DISTRIBUTION  
OPERATIONS  
BUREAU OF  
WATER AND SEWER OPERATIONS



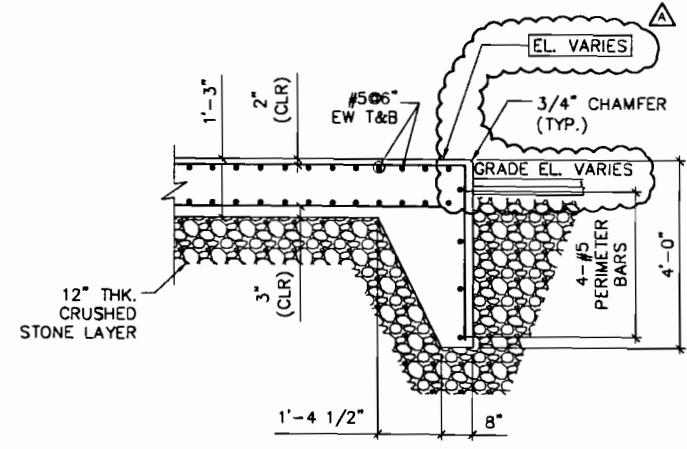
CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS  
STATION 24 GROUNDWATER REMEDIATION PROJECT  
SYSOPS-13G

STATION 24  
CIVIL  
UTILITIES PLAN  
DETAILS

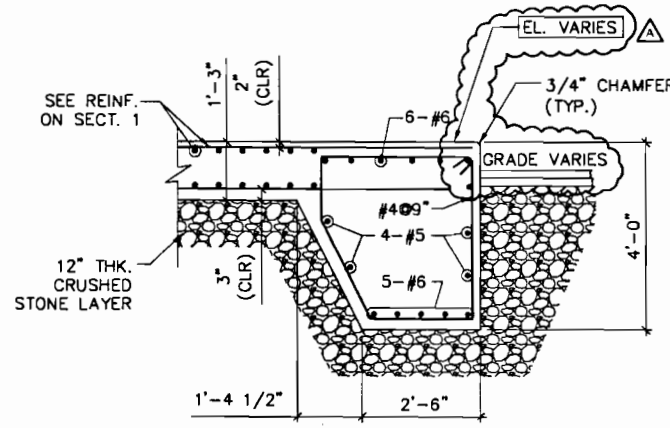
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DWG. NO.: C-04



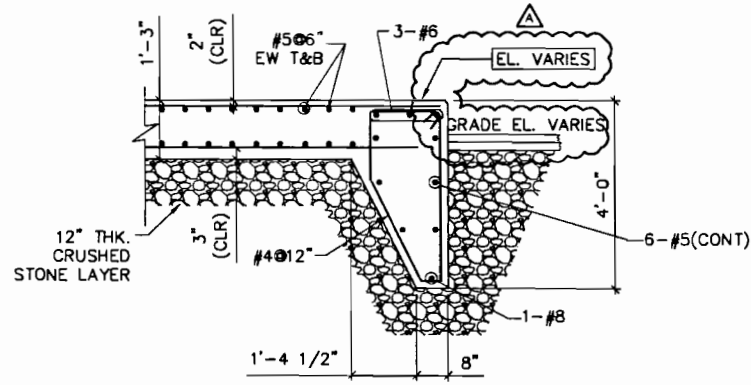
GAC FOUNDATION PLAN  
SCALE: 1/4"=1'-0"



SECTION 1  
1/2"=1'-0"

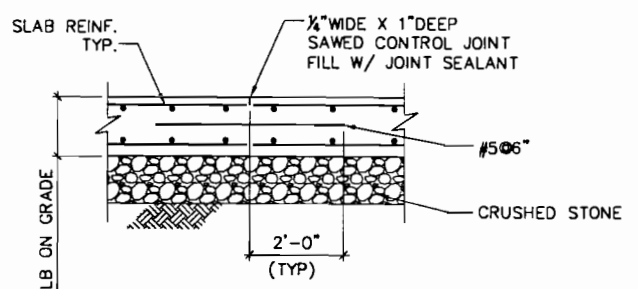


SECTION 2  
1/2"=1'-0"

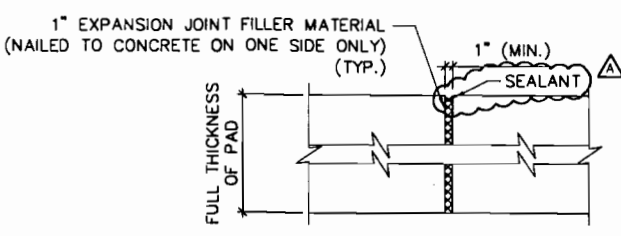


SECTION 3 (TYP.)  
1/2"=1'-0"

- NOTES:
1. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES BEFORE EXCAVATION. UNRECORDED BURIED UTILITIES SHALL BE BROUGHT TO THE ATTENTION OF OWNER'S ENGINEER.
  2. TOP OF PAD SHALL BE 1" ABOVE EXISTING GRADE. SEE SHEET C-03 FOR TOP OF PAD GRADES AND PAD LOCATION.
  3. THE CONCRETE SURFACE SHALL RECEIVE BROOM FINISH.
  4. THE ALLOWABLE SOIL BEARING PRESSURE IS 2,500 PSF.
  5. GAC UNITS SHALL BE PROVIDED BY UNIT MANUFACTURER. CONTRACTOR SHALL PROVIDE AND LOCATE CAST IN PLACE ANCHORS AS SPECIFIED ON CERTIFIED DRAWINGS FROM GAC MANUFACTURER, PROVIDING ENOUGH PAD CLEARANCES AROUND THE VESSELS AS SHOWN ON DRAWINGS.
  6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH GAC UNIT MANUFACTURER PRIOR TO CONSTRUCTION.



TYPICAL CONTROL JOINT DETAIL  
SCALE: 1/2"=1'-0"



TYPICAL EXPANSION JOINT DETAIL  
FOR ADJOINING TANK PADS  
NOT TO SCALE



Tucker, Young, Jackson, Tull Inc.  
Consulting Engineers

REVISIONS	
NO.	DATE
1	3/15/07
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DES	LB
DWN	ZK
CHK	HMS

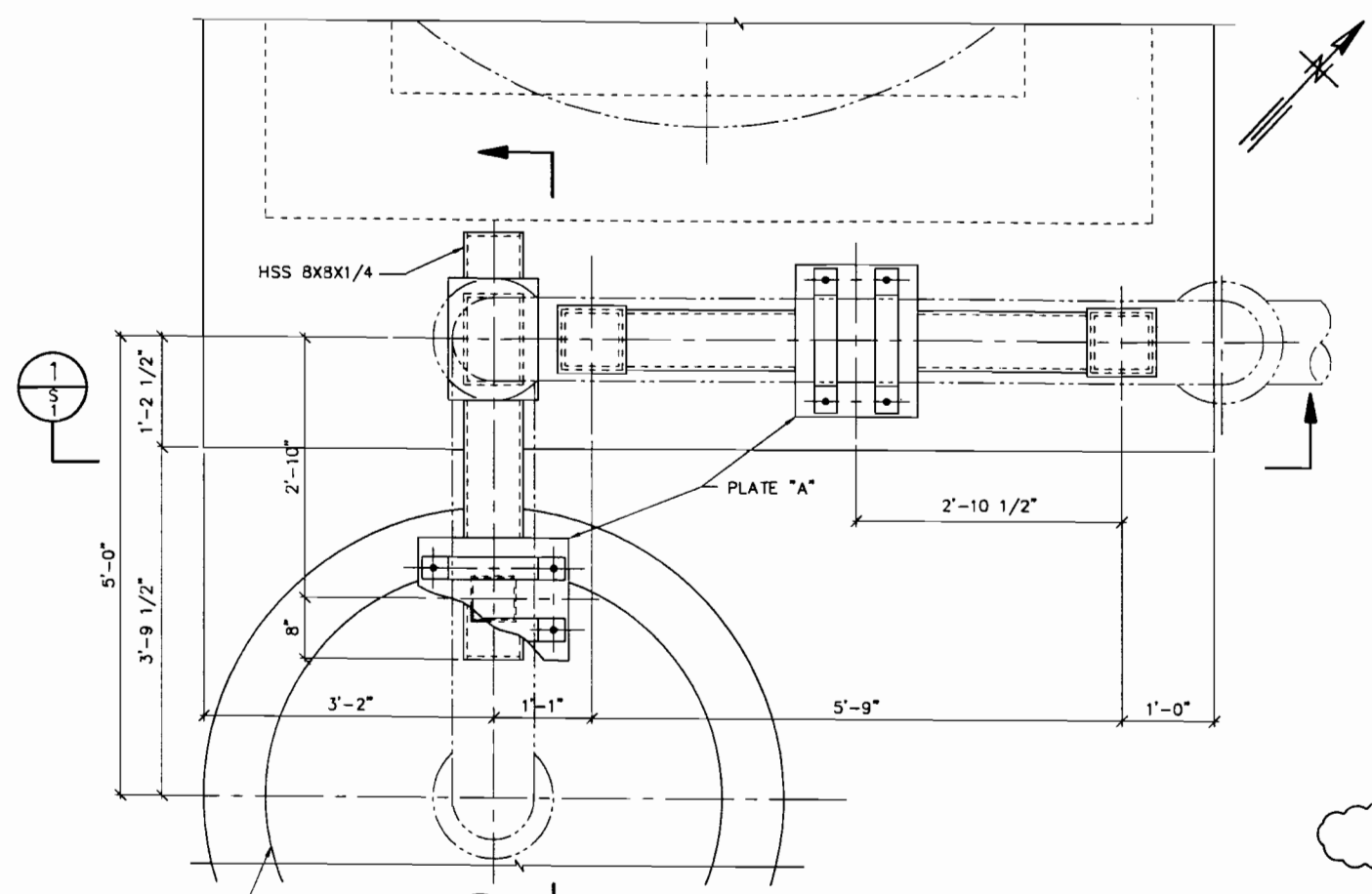
APPROVED FOR THE CITY OF NEW YORK  
**MALCOLM PIRNIE**  
EDWARD J. COLEMAN, P.E.  
DIRECTOR OF DISTRIBUTION OPERATIONS  
BUREAU OF WATER AND SEWER OPERATIONS



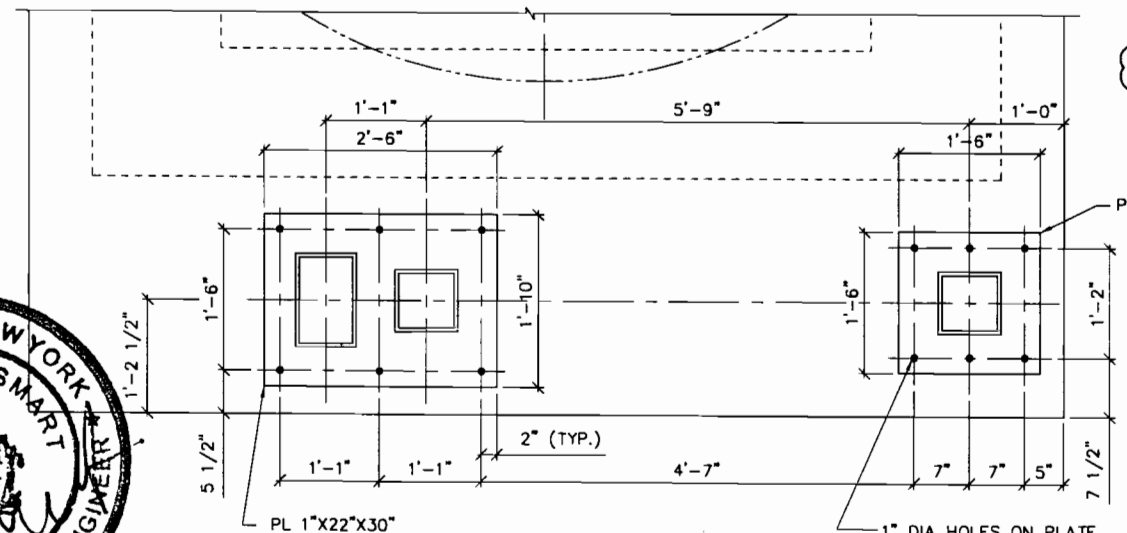
CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS  
STATION 24 GROUNDWATER REMEDIATION PROJECT  
SYSOPS-13G

STATION 24  
STRUCTURAL  
GAC UNIT FOUNDATION PAD  
PLAN, SECTIONS AND DETAILS  
SCALE AS SHOWN

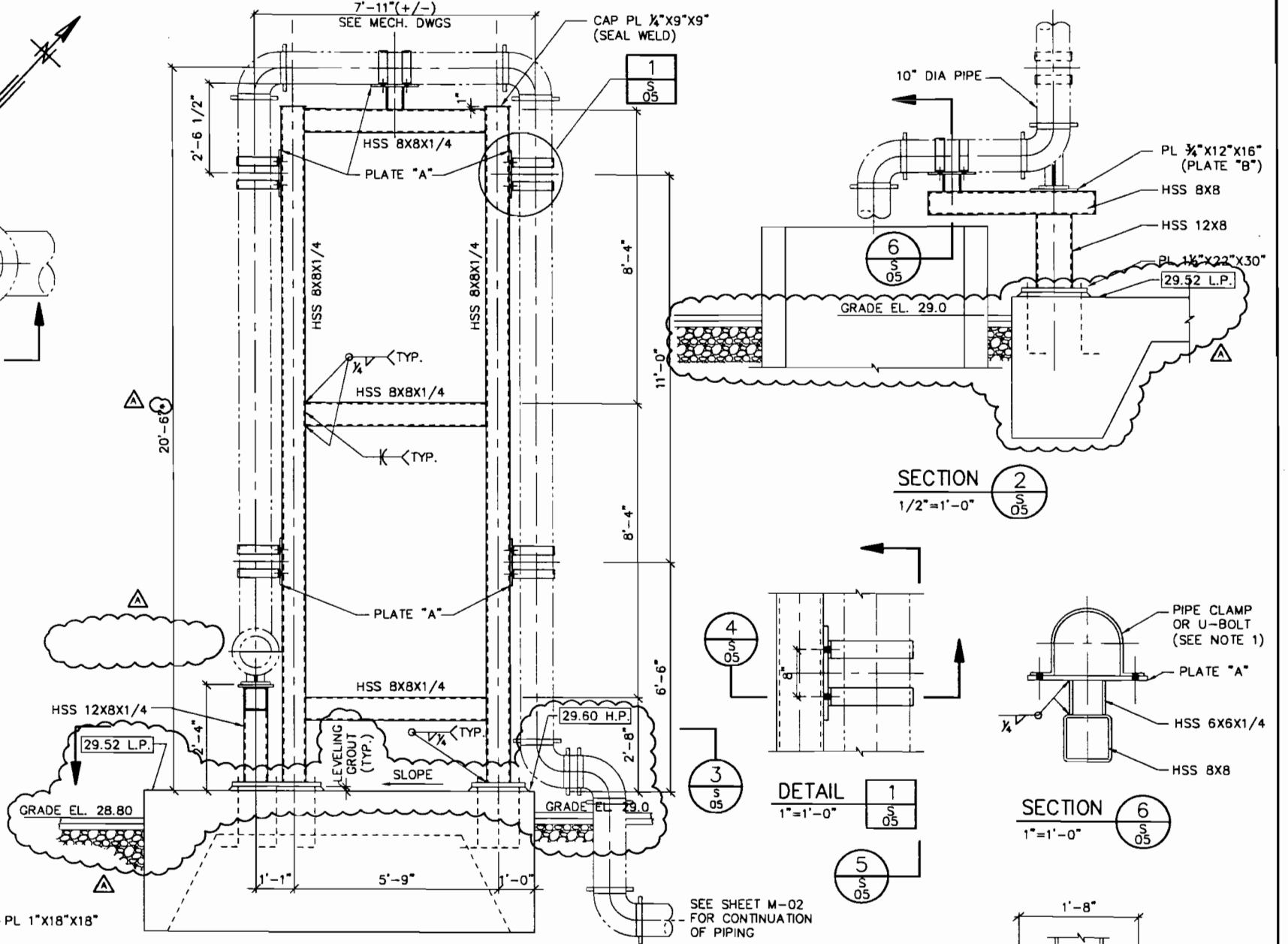
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DWG. NO.: S-01



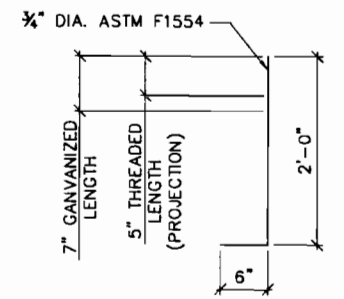
PARTIAL TOP PLAN  
SCALE: 1"=1'-0"



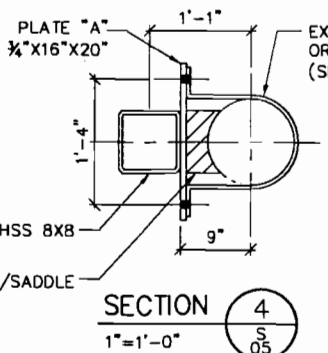
SECTION 3  
1"=1'-0"



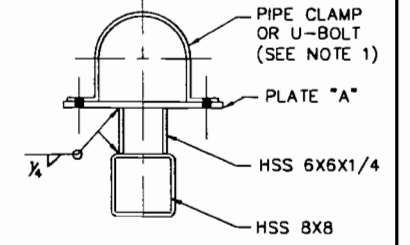
SECTION 1  
1/2"=1'-0"



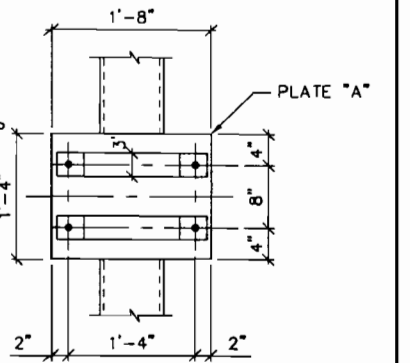
TYPICAL ANCHOR ROD (12 REQ'D)  
SCALE: 1"=1'-0"



SECTION 4  
1"=1'-0"



SECTION 6  
1"=1'-0"



SECTION 5  
1"=1'-0"

NOTE:  
1. PIPE CLAMPS SHOWN ARE FOR REFERENCE ONLY U-BOLTS CAN ALSO BE USED PROVIDED HOLE DISTANCES AT PLATE "A" ARE SET TO MATCH U-BOLT SEPARATION.  
2. DIMENSION MAY VARY DEPENDING ON EQUIPMENT MANUFACTURER.



Tucker, Young, Jackson, Tull Inc.  
Consulting Engineers

REVISIONS			
NO.	BY	DATE	REMARKS
1	KP	3/16/07	ADDENDUM NO.1

DES	LB
DWN	ZK
CKD	HMS

**MALCOLM PIRNIE**

APPROVED FOR THE CITY OF NEW YORK  
*Edward J. Coleman*  
EDWARD J. COLEMAN, P.E.  
DIRECTOR OF DISTRIBUTION OPERATIONS  
BUREAU OF WATER AND SEWER OPERATIONS



CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS  
STATION 24 GROUNDWATER REMEDIATION PROJECT  
SYSOPS-13G

STATION 24  
STRUCTURAL  
TREATED WATER PIPE SUPPORT  
PLAN, ELEVATION & SECTIONS  
SCALE AS SHOWN

DATE: FEBRUARY 2007  
DWG. NO.: S-05

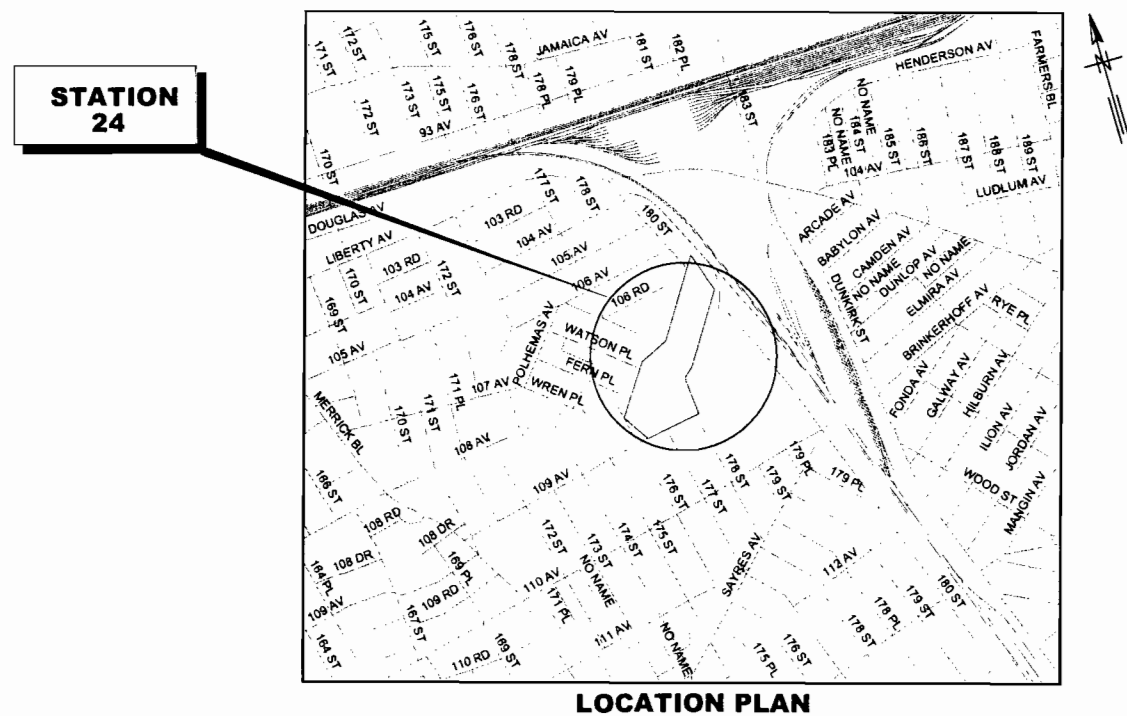
**CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER AND SEWER OPERATIONS**

**IN THE  
BOROUGH OF QUEENS, NEW YORK**

**SYSOPS - 13E - ELECTRICAL**

**STATION 24 GROUNDWATER REMEDIATION PROJECT**

**FEBRUARY 2007**

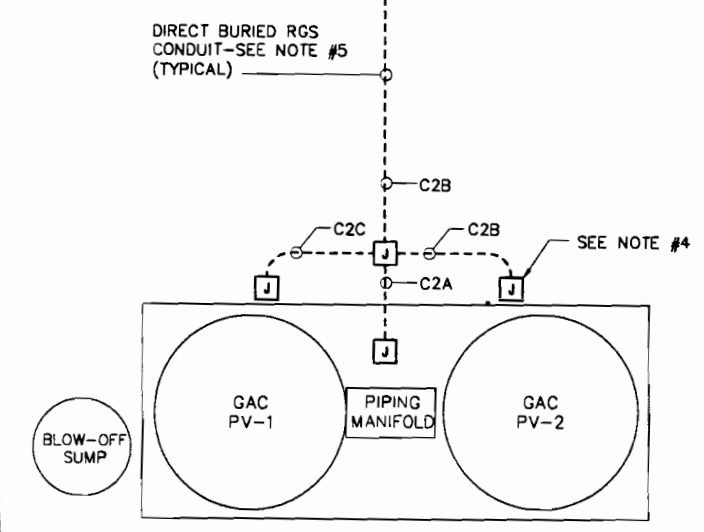
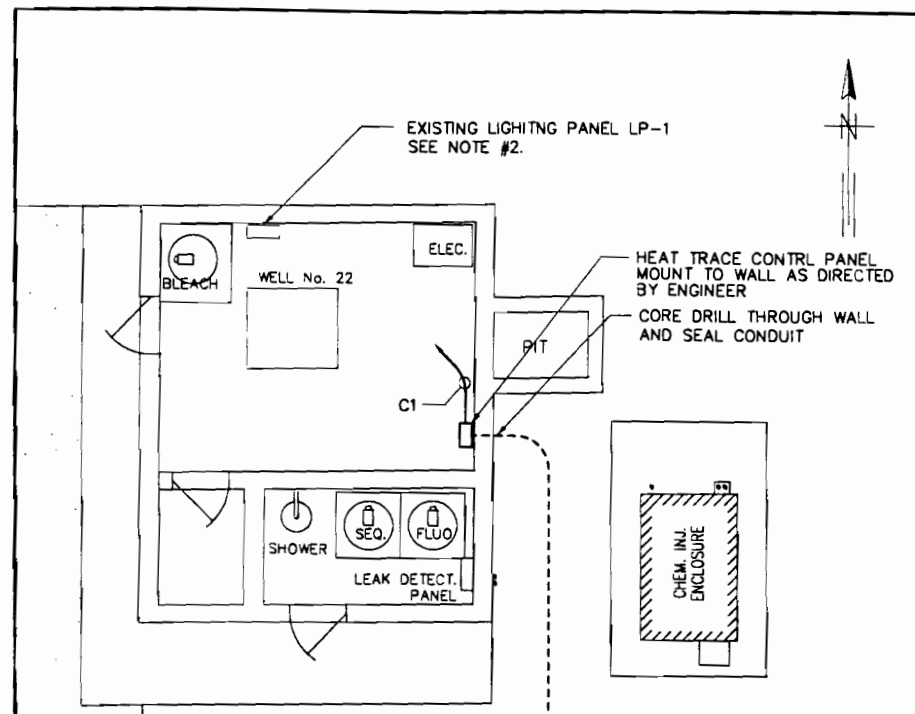


INDEX OF DRAWINGS	
SHEET NO.	DRAWING TITLE
	ELECTRICAL
E-01	SITE PLAN
E-02	ONE LINE DIAGRAM AND FRONT VIEW
E-03	PARTIAL PLANS
E-04	BLOCK DIAGRAMS AND MISCELLANEOUS DETAILS
E-05	HEAT TRACING STAION 22 AND 52

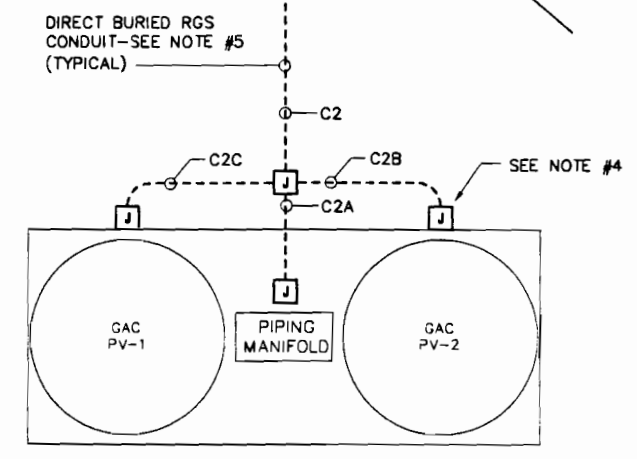
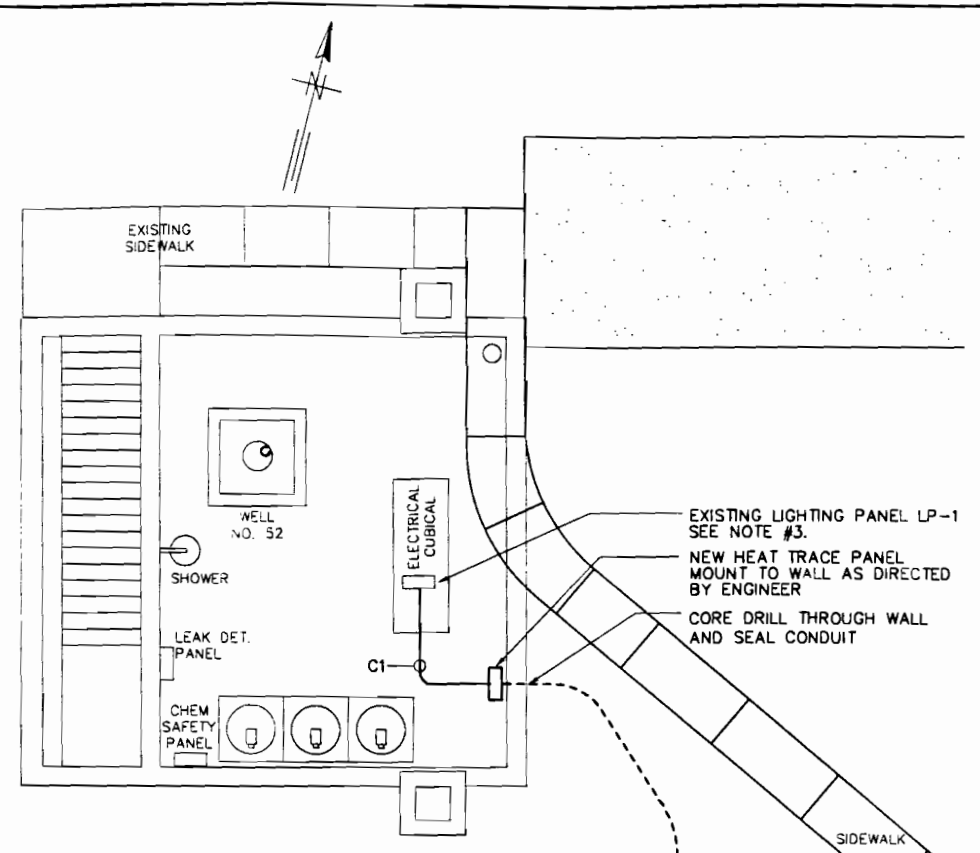
**MALCOLM PIRNIE, INC.  
CONSULTING ENGINEERS  
WHITE PLAINS, N.Y.**



ARJETS: IMAGES: None  
 User: MurphyJD, Spec: PIRNIE STANDARDP, File: L:\CAD\PROJ\3175032\WEHSED\Plan\524E05.DWG, Scale: 1:1, Date: 03/14/2007, Time: 10:31, Layout: Layout1

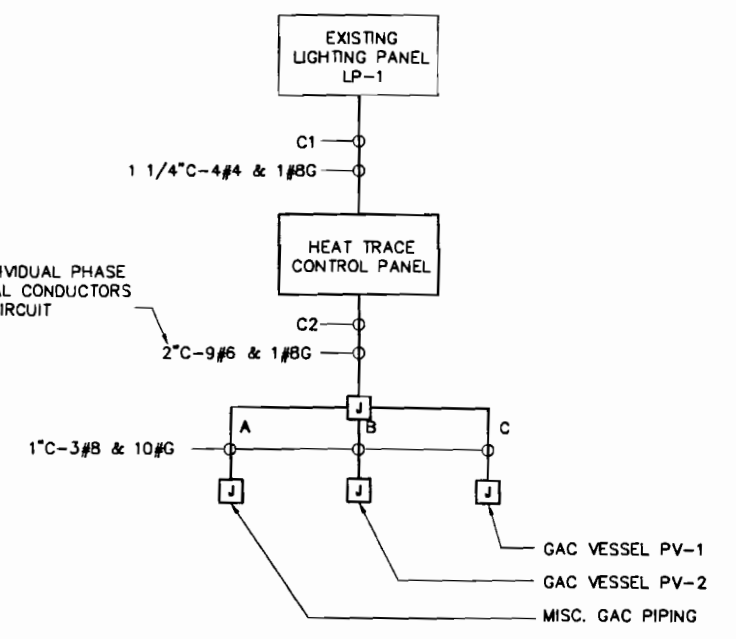


**SITE PLAN - STATION 22**  
 0 5 15  
 SCALE: 1"=6'-0"



**SITE PLAN - STATION 52**  
 0 5 15  
 SCALE: 1"=6'-0"

- NOTES:
1. THE INFORMATION CONTAINED ON THIS DRAWING IS TAKEN FROM AS-BUILT DRAWINGS PRODUCED FOR CONTRACT SYSOPS-08 DATED 05/04. CONTRACTOR SHALL FIELD VERIFY INFORMATION.
  2. PROVIDE A THREE POLE, 50 AMP GFCI BREAKER IN BLANK SPACES (CKTS #26, 28 & 30) FOR FEEDER BREAKER TO THE NEW HEAT TRACE PANEL.
  3. PROVIDE A THREE POLE, 50 AMP GFCI BREAKER IN BLANK SPACES (CKTS #19, 21 & 23) FOR FEEDER BREAKER TO THE NEW HEAT TRACE PANEL.
  4. PROVIDE INDEPENDENT STANCHION SUPPORT FOR HEAT TRACE JUNCTION BOXES.
  5. COORDINATE THE INSTALLATION OF THE DIRECT BURIED CONDUITS WITH EXISTING PIPING AND OTHER OBSTRUCTIONS.



**HEAT TRACING BLOCK DIAGRAM**  
 (TYPICAL FOR STATIONS 22 & 52)  
 SCALE: NONE

REVISIONS	
NO.	DATE

DES: GJM  
 DWN: GJM  
 CKD: PLD



**MALCOLM PIRNIE**  
 LICENSED PROFESSIONAL ENGINEER

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 EDWARD J. COLEMAN, P.E.  
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 BUREAU OF WATER AND SEWER OPERATIONS



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 BUREAU OF WATER AND SEWER OPERATIONS  
 STATION 24 GROUNDWATER REMEDIATION PROJECT  
 SYSOPS-13E

STATION 24  
 ELECTRICAL  
 HEAT TRACING  
 STATION 22 AND 52  
 SCALE: 1"=6'-0"

DATE: MARCH 2007  
 DWG. NO.: E-05



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**THE CITY OF NEW YORK**  
**DEPARTMENT OF**  
**ENVIRONMENTAL PROTECTION**

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CONTRACT FOR FURNISHING ALL  
LABOR AND MATERIAL NECESSARY  
AND REQUIRED FOR:

**SYSOPS-13G STRUCTURES AND EQUIPMENT, AND**  
**SYSOPS13E ELECTRICAL**

**STATION 24 GROUNDWATER REMEDIATION PROJECT**

**MARCH 2007**