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Transmitted Via Federal Express

November 13, 2002

Mr. Brian D'Amour
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action
MGP Remedial Section
625 Broadway
Albany, New York 12233-7017

Re: 66-Inch Sewer IRM Remedial Design
New York State Electric & Gas Corporation
Court Street Site
Binghamton, New York
BBL Project #: 0130.13041 #2

Dear Mr. D'Amour:

This letter has been prepared on behalf of New York State Electric & Gas Corporation (NYSEG) in response to your October 4, 2002 comment letter on the Draft Work Plan for Conducting an Interim Remedial Measure (Work Plan) at the Court Street Site located in Binghamton, New York (BBL, September 2002). This letter has also been prepared based on the New York State Department of Environmental Conservation's (NYSDEC's) November 5, 2002 telephone conversations with NYSEG. Presented below are NYSDEC's comments on the Work Plan followed by NYSEG's responses to the NYSDEC's comments. For ease of review, the NYSDEC's comments are presented in italic font.

Comment 1:

The work plan is very generic and does not provide sufficient detail to allow for an appropriate review. The work plan notes the submittal of a remedial design following this submittal. To avoid delays in the project, NYSEG should complete the remedial design within three weeks of receipt of this letter, as outlined in the schedule in Section 4. The revised work plan, addressing the following comments can be finalized in the meantime.

Response 1:

The intent of the Work Plan was to establish the NYSDEC's concurrence with the fundamental components/requirements, objectives of the proposed Interim Remedial Measure (IRM) activities (i.e.,

objectives, overall scope, etc). In addition, as discussed previously, the Work Plan allows for NYSEG to consider various storm sewer lining technologies during the bidding process. Evaluation and selection of a particular lining technology can than depend on the technology's ability to meet the IRM objectives (specified in Section 2 of the Work Plan), short- and long-term performance, and overall cost (which can take advantage of the overall market for a particular technology at the time of bidding). In light of these considerations, the Work Plan was intended to be somewhat "generic" in nature.

Pursuant to your November 5, 2002 telephone conversation with NYSEG, the Work Plan report has been renamed the Remedial Design. A copy of the Remedial Design (formerly the Work Plan) which addresses the NYSDEC's comments is enclosed for the NYSDEC's review/approval.

Comment 2:

The work plan indicates that several important aspects of the construction will be designed and detailed by the selected contractor, including but not limited to, procedures to clean the storm sewer, type of lining and method of installation, and water and waste management. This type of design will make the contractor submittals very important for Department review and we should require sufficient time to review the submittals.

Response 2:

Following the NYSDEC's approval of the Remedial Design (enclosed) and following NYSEG's Contractor evaluation and procurement activities, the selected Contractor(s) will prepare a Work Plan for the IRM activities. The Contractor's Work Plan will present details related to implementation of the IRM including, but not limited to, the following: procedures to be used to clean the storm sewer, the type of lining system(s) being proposed (note: different technology may be used for different pipe sections), the methods for installing the liner system(s), and procedures for managing the storm water and waste generated during the IRM activities. The Work Plan will be reviewed by NYSEG and submitted to the NYSDEC for review.

Comment 3:

The IRM work plan must be stamped by a professional engineer licensed to practice engineering in the state of New York.

Response 3:

The Contractor's Work Plan will be stamped by a professional engineer licensed to practice engineering in the State of New York.

Comment 4:

There must be some citizen participation activities to coincide with the IRM. At a minimum, NYSEG should revise the existing Citizen Participation Plan, develop a site contact list, and release a fact sheet. If extensive public concern is anticipated, an availability session should be considered.

Response 4:

As discussed during your November 5, 2002 telephone conversation with NYSEG, NYSEG will prepare a fact sheet pertaining to the 66-inch storm sewer IRM activities and will release the fact sheet to residents and businesses located in the immediate vicinity of the site.

The public meeting that was held previously for the Remedial Investigation (RI) conducted at this site resulted in minimal public participation (i.e., less than five people participated). As such, NYSEG does not intend to conduct any public meetings/availability sessions.

Comment 5:

Section 1.1:
When in the future is NYSEG planning to evaluate the need to and ability to implement measures to address infiltration of NAPL into the portion of the storm sewer located downstream of MH-1?

Response 5:

NYSEG is currently evaluating the existing site data to determine the potential (if any) for NAPL to infiltrate into the downstream portion of the sewer (located downstream of MH-1). Following completion of this evaluation, NYSEG will inform the NYSDEC of the evaluation results.

Comment 6:

Section 1.3:
Please rename the Phase II Supplemental Remedial Investigation (SRI) to Remedial Investigation (RI).

Response 6:

The SRI has been renamed to RI, as requested.

Comment 7:

Section 1.3, Page 1-3, 5th bulleted item.
Please provide to the DEC, copies of the City of Binghamton Engineering Drawings for the Tompkins Street Storm Pumping Station.

Response 7:

A copy of the Engineering Drawings provided by the City of Binghamton for the Tompkins Street Pump Station is attached.

Comment 8:

Section 1.5:
The work plan does mention the development of a health and safety plan. A HASP will be required and must include a community health and safety component. The Health and Safety Plan must be certified by a health and safety professional.

Response 8:

Following award of the Contract, a project-specific Health and Safety Plan (HASP) will be prepared by the selected Contractor. At a minimum, the Contractor-prepared HASP shall meet the requirements of 29 CFR 1910 and 29 CFR 1926. The Contractor's HASP will be certified by a health and safety professional and shall include provisions for conducting personal air monitoring and air monitoring activities at the work area boundary, as appropriate based on the activities being performed.

Comment 9:

Section 3.4:
Prior to plugging any laterals, NYSEG should coordinate with appropriate City Officials on the findings of the evaluation.

Response 9:

Prior to implementation of the IRM activities, NYSEG will prepare a letter to the City of Binghamton. The letter will include a brief description of the proposed IRM activities and will request the City to confirm that lateral pipes located between manholes MH-1 and MH-2 are not owned by the City or if they are owned by the City are not active and can be plugged to accommodate implementation of the IRM activities.

Comment 10:

Section 3.4:
In addition to being chemically compatible with site-related constituents and NAPL, the lining system must not create discharge of solvents/curing agents. Regulation of such agents has been required on similar projects to protect groundwater.

Response 10:

The potential for discharging liner-related solvents and/or curing agents will largely be dependant on the lining technology selected. However, as discussed during our October 31, 2002 telephone conversation, the Contractor will be required to mitigate potential discharge of liner-related constituents to the extent consistent with previous NYSDEC-led sewer lining projects that BBL conducted design and oversight for. As discussed, if the cured in-place pipe technology (e.g., as provided by Insituform, etc.) is used to line the interior of the sewer, water used for curing the liner shall be collected by the Contractor for subsequent disposition and/or treatment.

Comment 11:

Section 3.4:
Soils may be stored on-site, under the following conditions.
The soils do not generate any odors and do not contain any visual impacts. The soils must be covered with a minimum two feet of clean soil and lined with plastic sheeting.

Response 11:

Pursuant to your November 5, 2002 discussion with NYSEG soils excavated during implementation of the IRM (if any) will be placed into lined temporary staging areas or loaded directly into transportation containers (i.e., roll-off containers, etc.). The soils will then be characterized and disposed of off-site by NYSEG in accordance with applicable, rules and regulations. If temporary staging area(s) are used, the staging area(s) will be bermed and lined with a low-permeability liner (at a minimum, 10 mil polyethylene sheeting or equivalent). When the staging area is not in use, staged soil will be covered with a low-permeability material (i.e., 10 mil polyethylene sheeting). No excavated soil will remain on-site following completion of the IRM activities.

Comment 12:

The work plan should include development of a monitoring plan to determine the effectiveness of the IRM.

Response 12:

An IRM monitoring plan will be developed independent of the Contractor's Work Plan following selection of the Contractor. We anticipate that the monitoring plan may include periodic visual observation of the lined portion of the storm sewer to confirm NAPL is not infiltrating into the sewer through the lining system and/or comparing periodic discrete water column samples collected at MH-1 and MH-2 to each other. The frequency, extent, and duration of such monitoring events will, however, be dependant on the lining technology used. Following development, NYSEG will submit the monitoring plan to the NYSDEC for review.

Comment 13:

At the conclusion of the IRM, there must be an Engineering Certification Report which outlines the IRM activities, documents any changes to the accepted work plan, reports final disposal of both solid and hazardous waste and is certified and stamped by an engineer licensed to practice engineering in the State of New York.

Response 13:

Following completion of the IRM activities and receipt of certificates of disposal from disposal facilities, an Engineering Certification Report will be prepared. The IRM Engineering Certification Report will outline the IRM activities conducted and will be certified and stamped by a professional engineer licensed to practice in the state of New York. The preparation and submittal of the IRM Engineering Certification Report shall be in accordance with the IRM schedule presented in Section 4 of the Remedial Design (attached).

As requested by NYSEG, please copy me on any future correspondence with NYSEG regarding the IRM activities at the site. Feel free to contact Mr. Bert Finch of NYSEG or myself if you have any questions or comments regarding this letter.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

Terry W. Young, P.E.
Associate

TWY/lmd
Enclosures: Remedial Design
66-Inch Storm Drain Liner Associated with
Binghamton Court Street Former Manufactured Gas Plant Site
City of Binghamton, Broome County, New York

A copy of the City of Binghamton Engineering Drawings showing the Tompkins Street Pump Station

cc: Mr. Bert W. Finch, New York State Electric & Gas Corporation
Mr. Tracy L. Blazicek, CHMM, New York State Electric & Gas Corporation
Mr. Frederick J. Kirschenheiter, P.E., Blasland, Bouck & Lee, Inc.
Mr. Keith A. White, C.P.G, Blasland, Bouck & Lee, Inc.

Remedial Design for 66-Inch Storm Sewer IRM

REPORT

Remedial Design 66-inch Storm Drain Liner Associated with Binghamton Court Street Former Manufactured Gas Plant Site City of Binghamton, Broome County, New York

New York State Electric & Gas Corporation
Binghamton, New York

November 2002

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

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1. Introduction

1.1 General

This document presents a Remedial Design for conducting an Interim Remedial Measure (IRM) to mitigate infiltration of non-aqueous phase liquid (NAPL) from New York State Electric & Gas Corporation's (NYSEG's) Court Street Former Manufactured Gas Plant (MGP) site (the site) into the existing 66-inch storm sewer which traverses the site. In addition, this Remedial Design addresses debris accumulated in the on-site and downstream portion of the storm sewer system that has been impacted by NAPL. This IRM Remedial Design has been prepared pursuant to the New York State Department of Environmental Conservation's (NYSDEC's) request as outlined in the NYSDEC's previous correspondence to NYSEG dated January 9 and June 21, 2002, and revised to address the NYSDEC's comments presented in their October 4, 2002 comment letter, as appropriate. The intent of this IRM Remedial Design is to identify and describe the final remedy to mitigate infiltration of NAPL into the on-site portion of the 66-inch storm sewer. As such, the IRM described in this Remedial Design will be incorporated into the final remedy for the site in the Feasibility Study and in the NYSDEC's subsequent Record of Decision for the site.

Please note that this Remedial Design addresses infiltration of NAPL into the portion of the storm sewer located between manholes MH-1 and MH-2. NYSEG is currently evaluating the need to and ability to implement measures (if necessary) to address infiltration of NAPL into the portion of the storm sewer located downstream of MH-1. As such, additional IRM activities may or may not be implemented for this (downstream) portion of the sewer in the future, based on the results of the additional evaluation activities (currently underway). If future IRM activities are determined to be necessary for this portion of the sewer, they will be addressed in the future.

1.2 Site Setting, Description, and Background

The site is located in an industrial section of Binghamton, New York and occupies approximately 4.3 acres of land identified as 271-291, and 293 Court Street. Formerly, the site housed an MGP that manufactured gas from 1888 to about 1939, during which time operations gradually expanded westward from the eastern portion of the site, eventually covering the entire site. By about 1969, all aboveground structures associated with the MGP had been dismantled.

Currently, the eastern third of the property (Parcel 293) is used as a natural gas service center by Columbia Gas Transmission Corporation. The remainder of the site is now a gravel lot and is used as an equipment storage and parking area by the NYSEG Service Center which is located west of the site, across Brandywine Avenue. To the south, the site borders Court Street, which runs parallel to the Susquehanna River. East of the site is the 295 Court Street property, which contains a warehouse owned by the 295 Court Street Associates, L.L.C. Immediately north of the site is the Norfolk and Southern Railroad line (formerly CSX), asphalt plant, and a scrap yard.

An active storm sewer that collects runoff from a large portion of the city crosses the northern border of the site, runs north to south, and discharges into the Susquehanna River. Historical drawings indicate that the on-site portion of the sewer was apparently constructed between 1885 and 1924 within the former Brandywine Creek bed. Currently, the sewer is owned and maintained by the City of Binghamton. A general description of the storm sewer located at and in the immediate vicinity of the site (as it progresses from upstream to downstream) is presented below. The description of the storm sewer presented below is based on previous investigation

activities performed by Blasland, Bouck & Lee, Inc. (BBL), information provided to date by the City of Binghamton, and BBL's August 16, 2002 site visit.

66-Inch Storm Sewer Description

- Approximately 50 feet north of the site (upstream of the site) the sewer changes from a 3½- by 7-foot concrete box culvert to a 66-inch diameter concrete pipe;

- The 66-inch diameter concrete pipe continues from that junction south to manhole MH-2 located near the northern boundary of the site. The pipe then extends downstream of MH-2 through one intermediate manhole (MH-1B) and beneath former gas holder No. 4 where the sewer bends slightly to the south before entering MH-1 at the southern end of the site near Court Street. At the upstream pipe inlet into MH-1, the City of Binghamton installed a mechanical sluice gate to cutoff storm water flow upstream of the pump station which is located at the downstream end of the storm sewer, south of Court Street;

- Downstream of MH-1 the sewer enters a 72-inch wide stone culvert which extends approximately 50 feet south under Court Street. The stone culvert includes an arch-shaped ceiling and has a wood plank floor;

- At the downstream end of the stone culvert is a stone chamber. The stone chamber is located beneath Court Street, is approximately 15 feet tall and includes a manhole cover that has been paved over; and

- At the downstream end of the stone chamber the sewer enters an approximately 6- by 8-foot concrete box culvert that leads to Tompkins Street Pump Station (the pump station), which in turn discharges to the Susquehanna River.

The site location is presented on Figure 1. A site plan which depicts approximate location of the storm sewer is presented on Figure 2 and a cross-section of the sewer is depicted on Figure 3.

1.3 Summary of Previous Investigations and Results

On behalf of NYSEG, BBL and others conducted several investigations to characterize environmental conditions at the site. The results of these investigations are presented in the following reports:

- *Prioritization of Former MGP Site*, Engineering Science, Inc., 1992;

- *Task II Remedial Investigation* (Task II RI), BBL, 1996;

- *Remedial Investigation* (RI), BBL, 2002; and

- A June 4, 2002 letter from BBL to the NYSDEC that summarized the results of the Pre-Design Investigation Activities.

Based on the findings of the *Task II RI,* the NYSDEC and NYSEG entered into an Order of Consent (Index # D7-001-96-03), dated November 8, 1996, which specifies goals of, administrative requirements, and procedures for implementing investigative activities at the site.

In general, information pertaining to the storm sewer at the site and downstream of the site was obtained during the previous investigation activities and BBL's August 2002 visual review of the storm sewer. Specifically, the relevant information that pertains to the storm sewer consists of the following:

- Geological and hydrogeological data collected at test pit locations (TP-204 through 208), test boring/monitoring well location (TB-13/MW97-8S), and piezometer locations (PZ01-03 through PZ01-06) as part of the RI, as well as data from previous investigation activities;

- Observations made during visual reviews of the storm sewer. The interior of the sewer was visually observed by BBL on two separate occasions: in October 1997 and August 2002. In October 1997, BBL observed the portion of the sewer located from MH-1 and approximately to 50 feet north of MH-2. In August 2002 BBL observed the portion of the sewer located from the pump station to MH-1B. On both occasions tar seeps, oil weeps, and NAPL were observed at select locations in the sewer upstream of MH-1. In addition, during the August 2002 entry, the sediment in the stone chamber was observed to exhibit an odor;

- Analytical data for sediment and surface water collected from the storm sewer during the October 1997 investigation of the sewer (described above);

- Analytical results for the sample of accumulated material collected in the pump house as part of the RI in November 2001; and

- Review of available drawings provided by the City of Binghamton (City of Binghamton Engineering Drawings for the Tompkins Street Storm Pumping Station dated January 1999).

The following findings, as they pertain to the on-site portion of the storm sewer, were presented in the June 4, 2002 letter to the NYSDEC that summarized the Pre-Design Investigation results. These conclusions were drawn based on the data collected at the test pit locations TP-204 through TP-208 (installed along the length of the sewer); test boring/monitoring well location TB-13/MW97-8S; a series of soil borings completed to install piezometers PZ01-03 through PZ01-06 (adjacent to the sewer); and piezometers PZ01-03 through PZ01-06. The June 4, 2002 letter (along with the conclusions summarized below) was approved by the NYSDEC in their June 21, 2002 letter to NYSEG.

- There are no highly conductive, engineered bedding materials surrounding the on-site portion of the sewer that would allow DNAPL to preferentially migrate along the length of the pipe; and

- There is no evidence that DNAPL is pooled (i.e., it does not exist above residual saturation) along the outside portion of the sewer that was investigated, as no DNAPL consistently enters the piezometers (PZ01-04, PZ01-05, and PZ01-06) which were installed and screened adjacent to the sewer. DNAPL must exist above residual saturation to potentially be mobile.

In addition, the following findings were made based on the analytical data for sediment and water samples collected from the sewer and the pump station, and the visual review of the sewer, respectively:

- Sediment samples collected from the sewer and the pump station did not contain benzene, toluene, ethylbenzene, and xylenes (BTEX) at concentration above 1 ppm total. Total polycyclic aromatic hydrocarbons were identified in sediment samples at concentrations ranging from 12.5 parts per million (ppm) in sample collected at MH-1 to 126 ppm in sample collected from the pump station sump.

- Although several volatile organic compounds (VOCs) were detected in water samples, BTEX was detected only in one water sample collected at MH-1 at concentration of 5 parts per billion (ppb). The primary VOCs detected were the chlorinated hydrocarbons 1,1,1-trichloroethane (TCA) and 1,1-dichloroethane (DCA) which are not associated with MGP sources and are believed to be from upstream, off-site source. No semivolatile organic compounds (SVOCs) were detected above laboratory detection limits in the water samples.

- Puddled DNAPL and locations where NAPL infiltrated the sewer (NAPL deposits on the walls) were observed inside of the 66-inch concrete pipe.

1.4 Project Responsibilities

This subsection identifies the minimum responsibilities of NYSEG, the Engineer, and the IRM Contractor for implementation of the IRM described in this Remedial Design.

NYSEG's Responsibilities

NYSEG will be responsible for the following:

- Coordinating implementation of the IRM with the NYSDEC;

- Coordinating with the Engineer and the Contractor regarding the use of on-site facilities and locating on-site staging and support areas; and

- Acting as the "generator" for establishing waste profiles and executing waste manifests and/or bills of lading.

Engineer's Responsibilities

The Engineer shall be responsible for the following:

- Preparing a Contractor scope of work for the storm sewer IRM activities;

- Reviewing Contractor submittals;

- Providing full-time on-site construction observation services for the duration of the IRM activities;

- Documenting daily activities, including material quantities, on-site manpower, and equipment utilization;

- Preparing an IRM Engineering Certification Report to document the work completed during the IRM. The IRM Engineering Certification Report will outline the IRM activities conducted and will be certified and stamped by an engineer licensed to practice in the state of New York; and

- Evaluating the need to implement IRM activities to address the portion of the storm sewer located downstream of MH-1.

Contractor's Responsibilities

The IRM Contractor's responsibilities shall include, but may not be limited to, the following:

- Preparing the Contractor's Work Plan for the IRM activities for submission to the NYSDEC. The Work Plan will be signed and sealed by a professional engineer licensed to practice in the state of New York;
- Preparing a site-specific health and safety plan (HASP) for the Contractor's on-site personnel and to address air monitoring at the work area boundary (as appropriate). The HASP will be prepared by a safety professional;
- Securing permits and providing notifications necessary for implementation of the IRM;
- Providing labor, equipment and materials required to complete the IRM;
- Verifying the existing site conditions;
- Protecting aboveground and underground utilities, equipment and structures;
- Implementing the IRM described in this Remedial Design in a safe manner and in accordance with applicable federal, state, and local laws, rules and regulations;
- Completing the IRM activities in a timely manner;
- Handling, staging, and containerizing wastes generated as a result of the IRM activities;
- Preparing waste profiles for wastes generated during the IRM activities;
- Characterizing, transporting and disposing of waste streams generated during the IRM activities at an off-site disposal facility(s) permitted to accept the wastes; and
- Coordinating with NYSEG and the Engineer, as necessary, to complete the IRM work activities.

1.5 Regulatory Requirements

In general, the following regulatory requirements have been identified as potentially applicable to the IRM:

Regulation	Topic	IRM Compliance Methods
Title 40 of Code of Federal Regulations (40 CFR), Parts 260 - 266 and 268 Title 6 of New York Code of Rules and Regulations (6NYCRR), Parts 370 - 376	Identification, listing, and management of hazardous waste. Universal treatment standards for hazardous waste.	Waste materials generated during implementation of the IRM that are regulated as a hazardous waste (if any) will be managed, handled, transported, and disposed of in accordance with the Resource Conservation and Recovery Act (RCRA) and New York State hazardous waste regulations. Waste materials that exhibit hazardous waste characteristic due to benzene toxicity only (D018) may be managed, at the NYSEG's discretion, in accordance with TAGM 4061 (see below).

Regulation	Topic	IRM Compliance Methods
40 CFR, Parts 264.30 - 264.31	Outline requirements for safety equipment and spill control	Safety equipment will be provided at the site, as necessary. Local authorities will be notified of site activities.
49 CFR, Parts 170 – 179	Specifies requirements for transporting hazardous waste.	These requirements will be applicable to any company contracted to transport hazardous waste (if any) from the site.
6 NYCRR, Part 364	Waste transporter permits. Governs the collection, transport, and delivery of regulated waste within the New York State.	Properly permitted haulers will be used to transport waste materials off-site.
29 CFR Parts 1910 and 1926 (Occupational Safety and Health Act [OSHA])	Specifies occupational and health standards; and safety and health regulations for construction.	BBL's Health and Safety Plan (HASP) will address the health and safety procedures to be followed by BBL's personnel during implementation of the IRM. Prior to mobilizing to the site, the Contractor shall prepare a project-specific HASP that complies with applicable OSHA requirements.
NYSDEC Technical and Administrative Memorandum (TAGM) 4061 – Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants ("MGPs")	This TAGM provides the NYSDEC's guidance to facilitate permanent treatment of soil and sediment contaminated with coal tar waste from MGP sites.	This TAGM will be considered if removed debris is going to be remediated off-site via thermal destruction.

2. IRM Objectives

The objectives of the IRM activities are as follows:

- Mitigating infiltration of NAPL into the portion of the 66-inch storm sewer pipe located on-site;
- Removing accumulated debris from the portion of the storm sewer located downstream of MH-1; and
- Removing accumulated debris from the pump house to address the presence of PAHs.

It should be noted that although the portion of the storm sewer located downstream of MH-1 will be cleaned, additional IRM activities (i.e., lining the inside of the sewer components, etc.) within this portion of the sewer may not be implemented. In part, this is because the intent of the IRM is to address the on-site 66-inch storm sewer pipe which has previously been observed to provide a pathway for NAPL from the site to enter the storm sewer. Furthermore, based on the visual reviews conducted to date for the portion of the storm sewer located downstream of MH-1, it is not clear if the interior of the downstream portion is acting as a preferential pathway for introduction of NAPL from the site into the sewer. Based on this, the downstream portion of the sewer will be further evaluated to determine the implementability and appropriateness of further IRM activities. If further IRM activities are determined to be necessary, these activities will be performed separately from the activities being performed under this Remedial Design and will be submitted under separate cover to the NYSDEC.

3. IRM Activities

3.1 General

This section presents a description of the IRM work activities to be implemented at NYSEG's Court Street site to accomplish the objectives presented in Section 2 of this Remedial Design. In general, it is anticipated that the IRM activities will include the following work tasks:

- Work Task 1 - Mobilization/Site Preparation;
- Work Task 2 - Cleaning the Storm Sewer Interior;
- Work Task 3 - Lining the 66-Inch Storm Sewer Pipe;
- Work Task 4 - Transportation and Off-Site Disposal of Waste Material; and
- Work Task 5 - Site Restoration/Demobilization.

The activities to be completed under each of the above-listed work tasks are described in more detail below.

3.2 Work Task 1 - Mobilization/Site Preparation

This work task will include conducting the following activities:

- Verifying the existing site conditions including, but not limited to, the presence and location of underground and aboveground utilities and structures, and other site features, as necessary to implement the IRM activities;
- Identifying a water source to accommodate implementation of the IRM activities;
- Securing all permits and performing notifications necessary to implement the IRM. It should be noted, that no permits have been identified for implementation of the IRM, however, coordination with the City of Binghamton to implemented the IRM activities in the City-owned sewer will be necessary;
- Mobilizing all labor, equipment and materials necessary to implement the IRM activities;
- Establishing on-site remedial support area(s) and constructing decontamination area(s). The remedial support area(s) shall be used for the storage of Contractor's tools, materials, and supplies. The decontamination area(s) shall be used to contain/collect washwater and other waste generated during decontamination of project-related equipment that has come in contact with impacted site media. The decontamination area(s) will be bermed and lined with a low-permeability liner (e.g., rubber, polyethylene, polyvinyl chloride, etc) and will be sloped to a lined collection sump if the decontamination activities will be accomplished by washing the equipment (i.e., pressure washing). As an alternative (or in conjunction with the use of pressure washing) the equipment may be decontaminated using hand tools to remove accumulated material followed by wiping with water and/or detergent soaked rags to remove residual material; and

- Providing containers and/or constructing temporary on-site staging areas for staging waste materials generated during the IRM activities. Temporary staging areas will be constructed unless the Contractor elects to use roll-off waste containers, a vacuum truck, or drums to containerize the debris removed from the sewer. If constructed, the temporary staging area(s) will be bermed and lined with a low-permeability liner (at a minimum, 10 mil polyethylene sheeting or equivalent). When the staging area(s) is not in use, bulk waste materials placed in the temporary staging area(s) (if any) shall be covered using a low-permeability material (at a minimum, 10 mil polyethylene sheeting or equivalent) or containerized (e.g., into 55-gallon drums, frac tanks, etc.).

3.3 Work Task 2 - Cleaning the Storm Sewer Interior

Following mobilization and site preparation activities, the Contractor will clean the interior of the storm sewer system located between MH-2 (at the upstream end) and the pump station (at the downstream end) to the extent practical. Specific cleaning procedures will be determined by the Contractor based on field conditions (i.e., the quantity of debris present, storm water flow rate, etc.) at the time of the cleaning and the type of sewer lining system to be installed (for the on-site portion of the sewer). Based on the visual review of the sewer in October 1997 and August 2002, it is anticipated that the cleaning procedures will likely consist of, but may not be limited to, the following:

- Removing the debris accumulated within the storm sewer portion located between MH-2 and the pump station using hand tools (e.g., shovels, buckets, etc.) or other appropriate methods;

- Cleaning stained surfaces using a detergent or other means (if necessary to accommodate the sewer lining activities);

- Washing the interior surface of the 66-inch pipe using a pressure washer or hose to remove residual debris that remains inside the pipe following the hand cleaning activities (if necessary to accommodate the lining system). Water collected from the storm sewer, upstream of the IRM activities, may be utilized as a source of water to accommodate the washing activities (if practicable).

Liquids and debris generated during the cleaning activities will be collected, and containerized for subsequent characterization and off-site disposal in accordance with applicable regulations. In order to accommodate the cleaning activities, storm water flow within the pipe may be by-pass pumped or temporarily blocked from entering the portion of the sewer being cleaned (if necessary). Storm water that is by-pass pumped will be discharged downstream of the IRM activities.

3.4 Work Task 3 - Lining the 66-Inch Storm Sewer Pipe

Upon completion of the sewer cleaning activities, the portion of the storm sewer pipe located between MH-1 and MH-2 will be lined with a low-permeability material to mitigate infiltration of NAPL from the site into the pipe. Prior to initiating the lining activities, inactive lateral pipes (if any remain) that enter the storm sewer between MH-1 and MH-2 may need to be plugged to accommodate lining the 66-inch sewer pipe. Lateral pipe plugging activities (if necessary) may include, but may not be limited to the following methods:

- Installing a mechanical seal in the lateral pipe;

- Installing a bladder-type pipe seal in the lateral pipe;
- Using non-shrink grout to plug the end of the lateral pipe;
- Using concrete to plug the end of the lateral pipe; and/or
- Using the pipe lining system to plug the lateral pipe.

The actual means of plugging the inactive lateral pipes will depend on the lining technology used to line the 66-inch sewer pipe and will be determined (and incorporated, if needed) prior to installation of the liner. Active lateral pipes (if any) will not be plugged and their connection into the 66-inch sewer pipe would remain.

In order to accommodate lining the storm sewer, storm water flow entering the system upstream of MH-2 may be temporarily diverted (e.g., using by-pass pumps and hoses, etc.) and discharged downstream of the lining activities (i.e., downstream of MH-1) or the upstream pipe entering MH-2 temporarily blocked depending on the flow conditions at the time of implementation of the IRM and time needed to complete the cleaning and/or lining activities.

The storm sewer lining system may include, but may not be limited to, the use of the following:

- Sealing the interior surface of the pipe using a cured-in-place, self-locking system (e.g., Insituform, etc);
- Sealing the interior surface of the pipe using custom pre-manufactured pipe liner (e.g., Channeline system);
- Applying an engineered coating system to the interior surface of the pipe; and/or
- Installing a pipe (i.e., made of high density polyethylene, etc) inside the storm sewer pipe to mitigate direct contact between site constituents and the storm water.

The lining system utilized will be chemically compatible with the site-related constituents and NAPL. In addition, the system will be appropriate for use in storm sewer systems (i.e., will be able to withstand the forces associated with the storm water flow and can be left submerged in water).

Depending on the lining system(s) utilized, additional access into the 66-inch pipe (beyond the access provided by the current manholes) may be necessary to accommodate installation of the lining system(s). Additional access may be accomplished by excavating soil to remove portions of the manhole structures, the sluice gate located upstream of MH-1, and/or to access the sewer pipe. Soil excavated during the IRM activities (if any) will be placed in a bermed and lined temporary staging area(s) or directly loaded into transportation containers (e.g., roll-off containers, etc.), and subsequently characterized and disposed of off-site in accordance with applicable regulations. Excavations will be backfilled with clean, imported backfill material that is similar in physical characteristics to the material removed.

3.5 Work Task 4 - Transportation and Off-Site Disposal of Waste Material

Waste materials generated as a result of the IRM activities will be characterized, containerized, and transported for off-site disposal/treatment at a facility(s) permitted to accept these materials in accordance with applicable laws, rules and regulations. The waste streams to be generated during implementation of the IRM may include, but may not be limited to, the following:

- Debris removed from the storm sewer system;
- Wash water generated during the sewer washing activities;
- Excavated soil (if any is generated);
- Materials used to construct material staging area(s);
- Decontamination waste (including, but not limited to, decontamination liquids, disposable decontamination equipment/materials, and low permeability sheeting);
- Disposable personal protective equipment (PPE);
- Rubbish and debris resulting from the Contractor's operations; and
- Other miscellaneous waste materials that may be generated as a result of implementing the IRM.

Debris removed from the storm sewer may require stabilization prior to off-site disposition. Stabilization methods may include, but may not be limited to the following:

- Dewatering the debris in a lined staging area or roll-off container to remove free liquids;
- Chemically stabilizing the residual liquid using quick lime or a cement mix;
- Absorbing the free liquids using a inert materials; and/or
- Using other approved absorbent/stabilization techniques, as necessary, to accommodate disposition.

3.6 Work Task 5 - Site Restoration/Demobilization

The Contractor shall be responsible for restoring the on-site and off-site areas disturbed during the performance of the IRM activities described in this Remedial Design to their pre-construction condition, to the extent practicable. Restoration activities may include, but may be not limited to, restoring the manholes (if altered during implementation of the IRM), site grading, and other miscellaneous activities that may be required to restore the site and adjacent properties to pre-construction condition.

Following restoration of disturbed areas, the Contractor shall demobilize all labor, materials and equipment from the site.

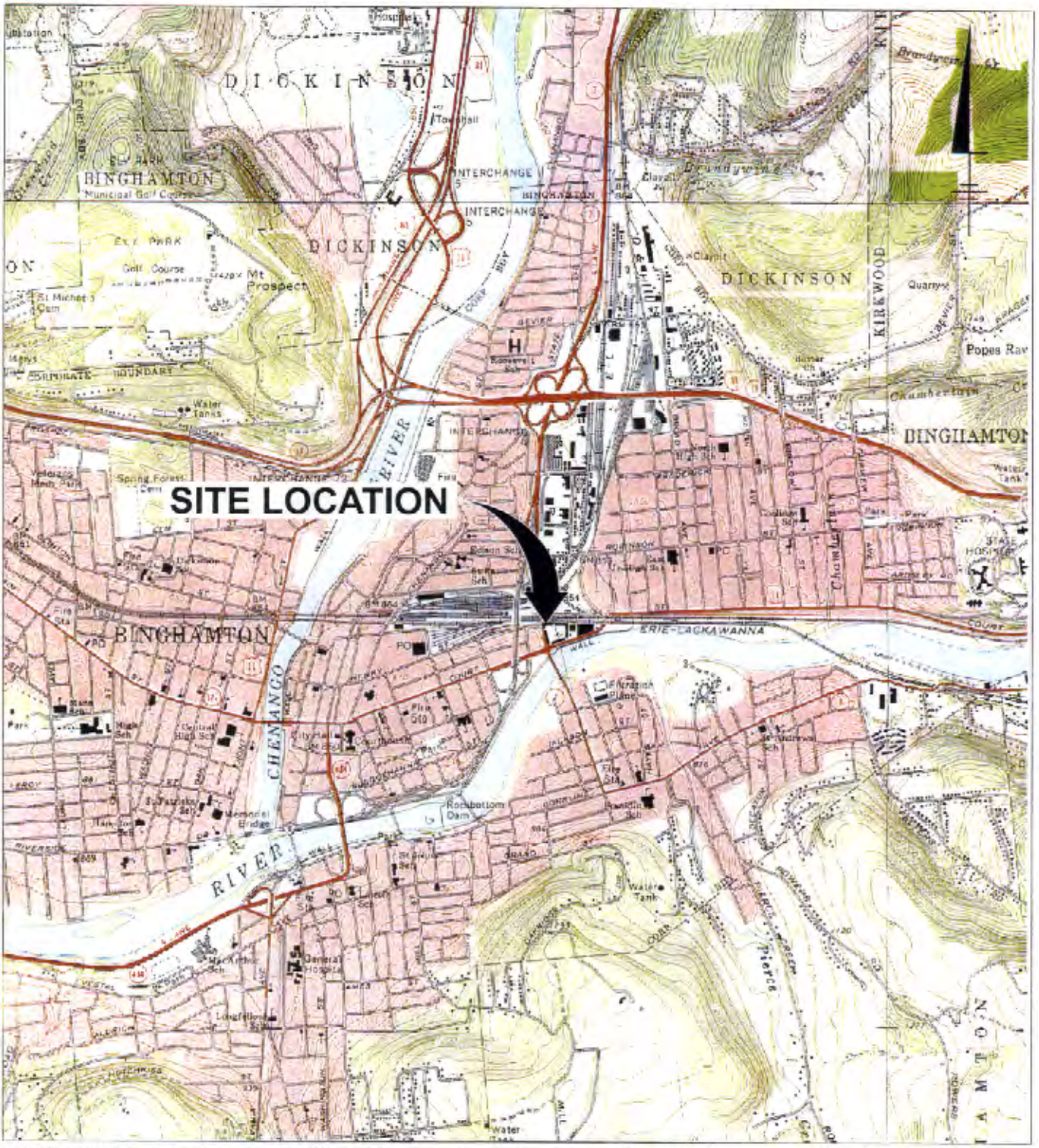
4. Schedule

This section presents an overview of the schedule for implementation of the IRM described in this Remedial Design. In general, the IRM schedule will consist of the following milestones:

IRM Activity	Approximate Duration/Anticipated Milestone
Remedial Design	
Submit Final Remedial Design to the NYSDEC	Completed
NYSDEC Remedial Design Approval	To be determined
Contractor Procurement	
Prepare Request for Proposal (RFP)	3 weeks following the NYSDEC's approval of this Remedial Design
Mandatory RFP Pre-Bid Meeting	To be determined
Proposals Due	3 weeks following the mandatory pre-bid meeting
Proposals Evaluation	2 weeks
Meeting with the NYSDEC	To be determined
Award Contract	To be determined
Contractor's Work Plan and Health and Safety Plan (HASP)	
Contractor to Submit Work Plan and HASP to NYSEG	3 weeks following contract award
NYSEG to Submit Draft Work Plan and HASP to the NYSDEC	2 weeks following receipt of Contractor's Work Plan and HASP
Response to the NYSDEC's Comments	2 weeks following receipt of the NYSDEC's comments
NYSDEC Contractor's Work Plan Approval	To be determined
Implementation	
Contractor's Work Plan Implementation	Summer 2003
IRM Engineering Certification Report	
Submit IRM Engineering Certification Report to the NYSDEC	Fall 2003

Implementation and completion of the IRM activities in accordance with the above schedule is dependent upon the NYSDEC's review time, the scope of the NYSDEC's comments on items submitted, and weather conditions. As such, NYSEG reserves the right to postpone implementation of the IRM activities if conditions warrant doing so. The NYSDEC would be notified in writing by NYSEG if this becomes necessary.

Figures



REFERENCE: Base map source: USGS 7.5 Min. Topo. Quad., Binghamton East, NY., Binghamtom West, NY., Castle Creek, NY., Chenango Forks, NY. (1968, Photorevised 1976).

2,000 ft 0 2,000 ft

GRAPHIC SCALE

QUADRANGLE LOCATION

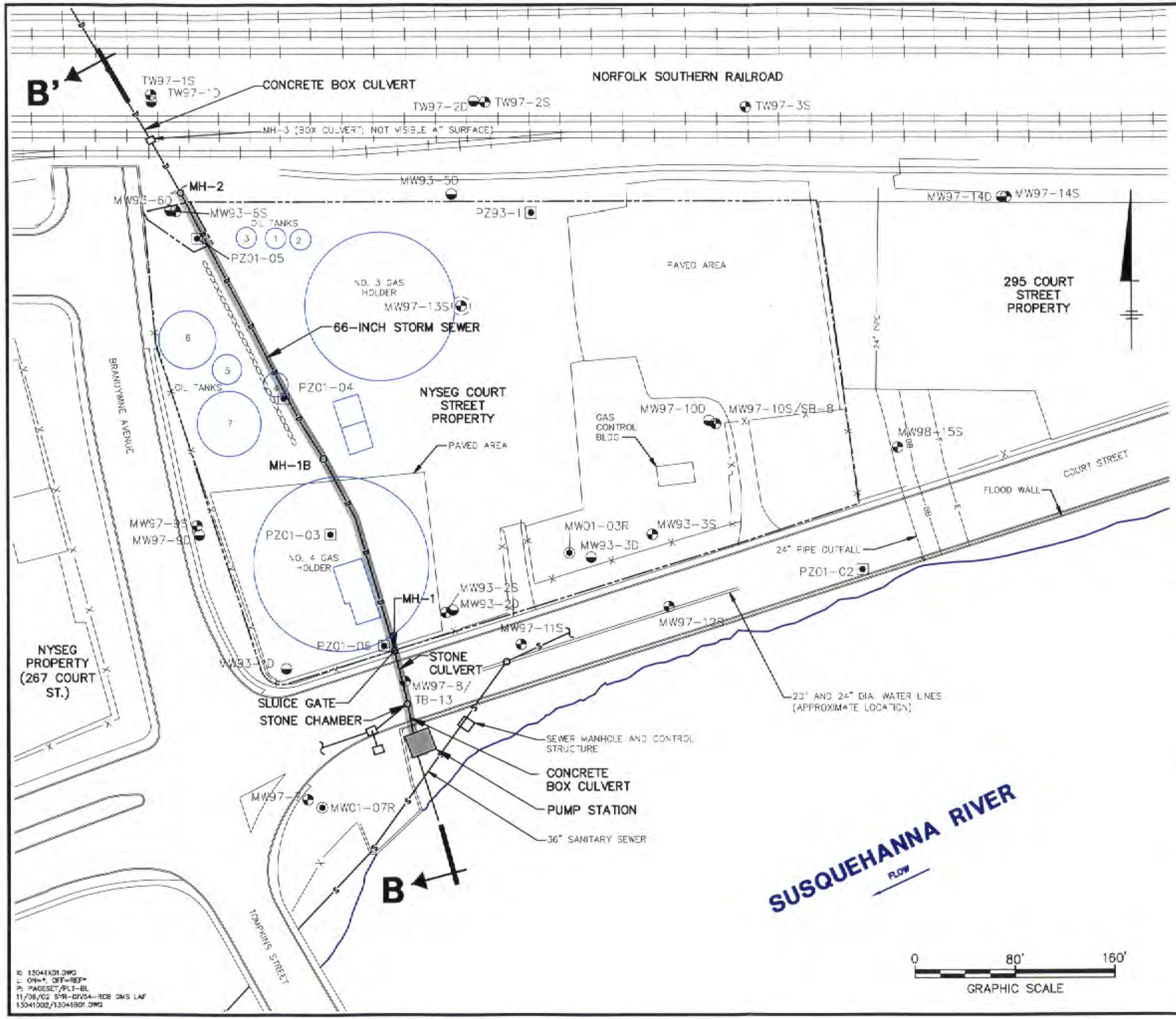
11/07/02 SYR-D54-DJH LAS
13041002/13041n02.CDR

NYSEG COURT STREET SITE
BINGHAMTON, NEW YORK
66-INCH STORM SEWER IRM REMEDIAL DESIGN

SITE LOCATION MAP

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE 1



LEGEND:

- RAILROAD TRACK
- FENCE
- SITE PROPERTY LINES (APPROXIMATE)
- PORTION OF STORM SEWER SUBJECT TO IRM
- STORM SEWER LINE (APPROXIMATE)
- SANITARY SEWER LINE (APPROXIMATE)
- HISTORICAL FEATURE
- BURIED CONCRETE WALL
- MONITORING WELL (SHALLOW)
- MONITORING WELL (DEEP)
- MONITORING WELL (BEDROCK)
- PIEZOMETER
- DECOMMISSIONED MONITORING WELL
- CATCH BASIN

NOTES:

1. BASE MAP PROVIDED BY NYSEG (JUNE 12, 1997).
2. ALL INVESTIGATION LOCATIONS SHOWN SURVEYED BY HAWK ENGINEERING, P.C. BINGHAMTON, N.Y.
3. STORM SEWER LOCATION DIGITIZED FROM CITY OF BINGHAMTON MAP, SHEET 303, ENTITLED: PRELIMINARY REPORT, COMPREHENSIVE STORM DRAINAGE, EXISTING FACILITIES. PREPARED BY VERNON O. SHUMAKER, CONSULTING ENGINEER, VESTAL, NEW YORK, DATE NOT PROVIDED.
4. APPROXIMATE LOCATION OF THE TWO UNMARKED CATCH BASINS AND ASSOCIATED PIPING LOCATED NORTHEAST AND EAST OF THE PUMP STATION BASED ON VISUAL OBSERVATIONS MADE BY BBL ON AUGUST 16, 2002.
5. SELECT HISTORICAL FEATURES NOT SHOWN FOR CLARITY.

X: 13041X01.DWG
E: ON=*, OFF=REF*
P: PAGESET/PLT-BL
11/08/02 SYR-DIV54-RCB DMS LAF
13041002/13041B01.DWG

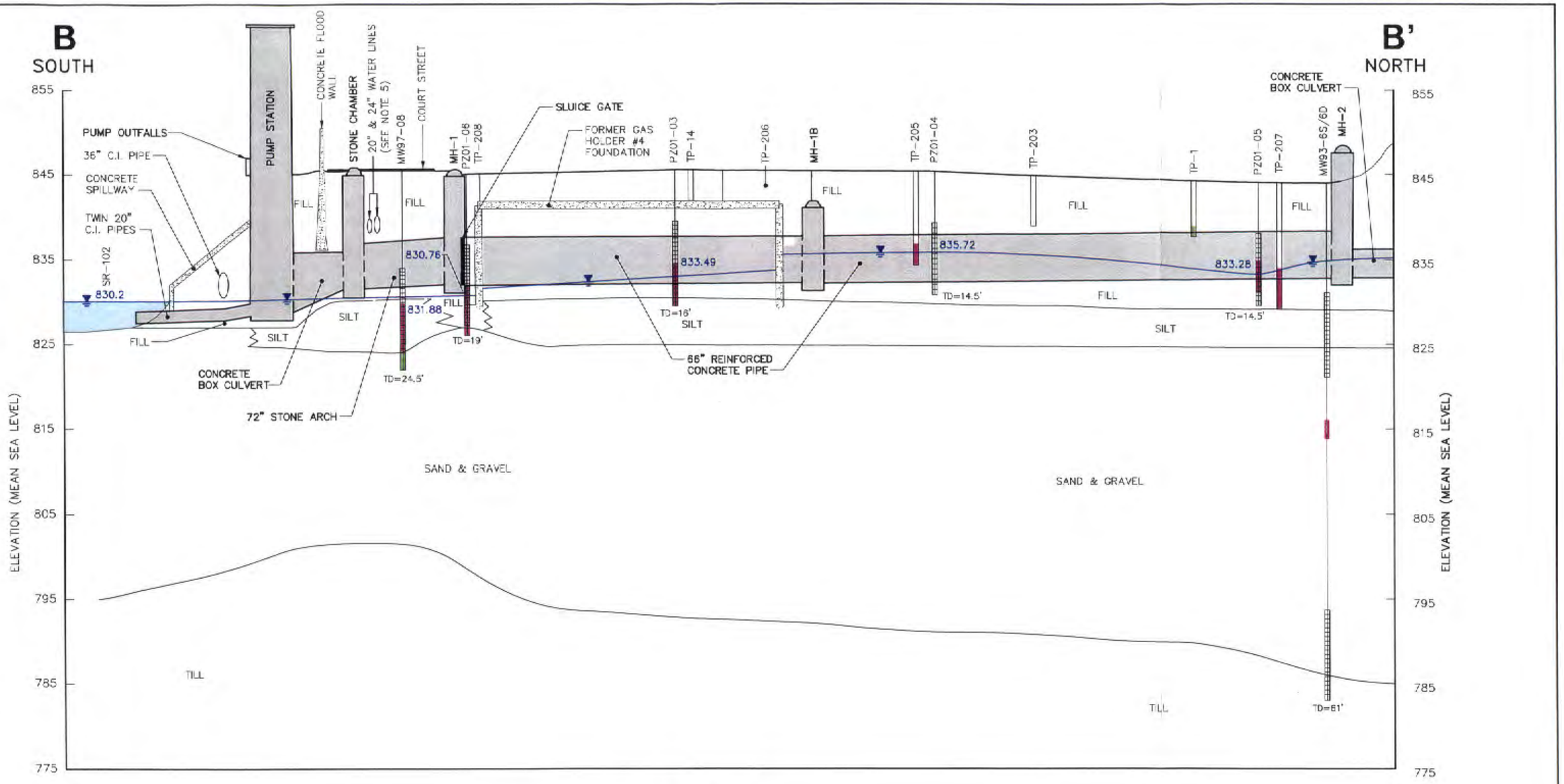
NYSEG COURT STREET SITE
BINGHAMTON, NEW YORK

66-INCH STORM SEWER IRM REMEDIAL DESIGN

SITE PLAN

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2

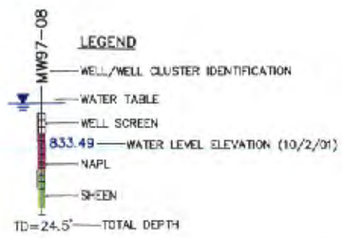


CROSS-SECTION

NOT TO SCALE

NOTES:

1. GROUND SURFACE ELEVATIONS BASED ON CITY OF BINGHAMTON MAP, SHEET 303, 1974 AND USGS 7.5 MINUTE TOPOGRAPHIC MAP, BINGHAMTON WEST QUADRANGLE, 1968.
2. RIVER STAGE AND WATER TABLE ELEVATIONS MEASURED OCTOBER, 2001.
3. ALL ELEVATIONS ARE REFERENCED TO MEAN SEA LEVEL USING THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. DASHED LINES ARE INFERRED.
5. THE LOCATIONS OF THESE WATER LINES ARE APPROXIMATE. IT IS POSSIBLE THAT THEIR RESPECTIVE LOCATIONS MAY BE REVERSED.
6. ELEVATION OF PUMP OUTFALLS IS BASED ON VISUAL OBSERVATIONS MADE BY BBL ON AUGUST 16, 2002.



DRAFT

NYSEG COURT STREET SITE
BINGHAMTON, NEW YORK

STORM SEWER IRM REMEDIAL DESIGN

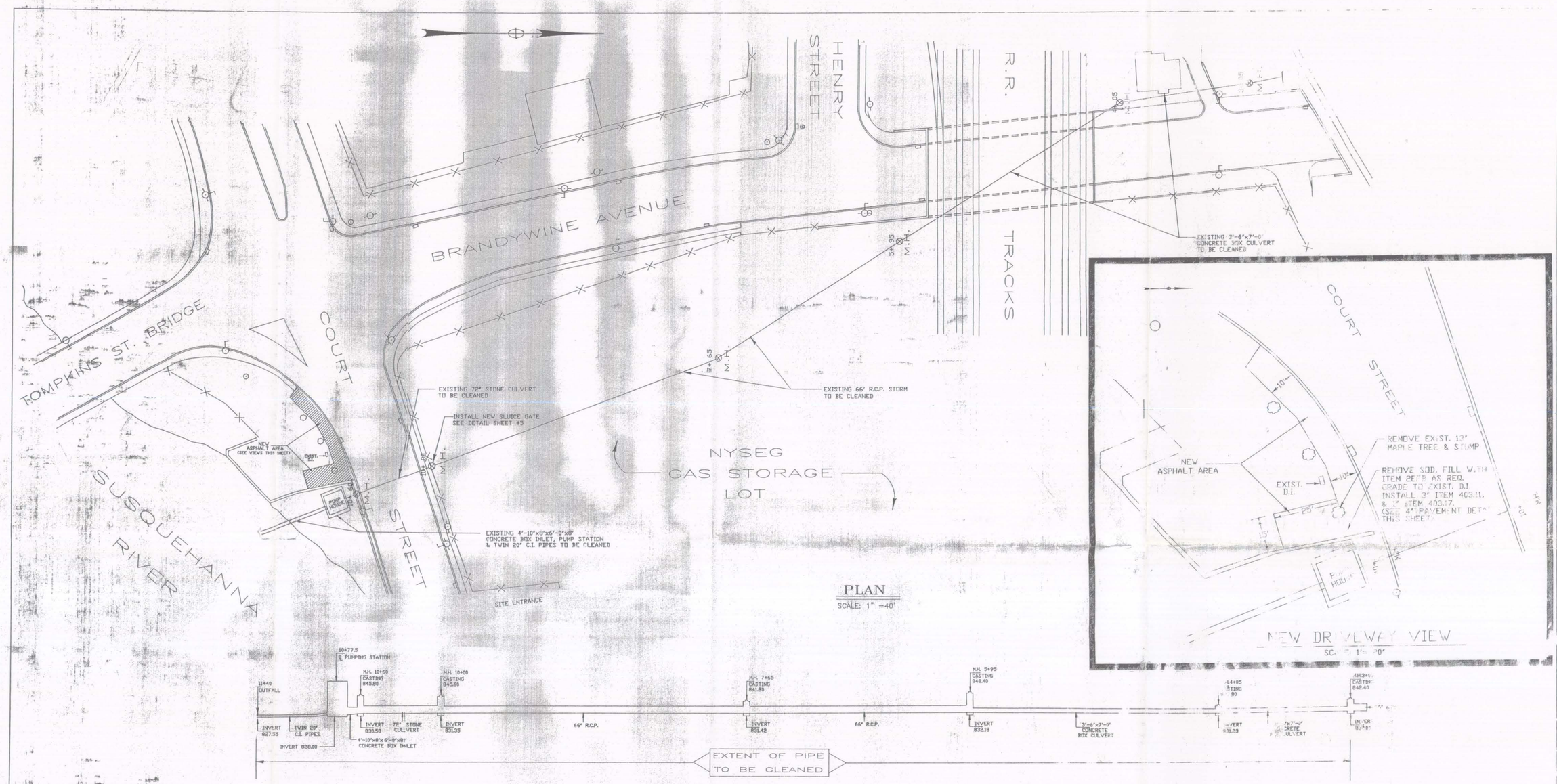
GEOLOGIC CROSS-SECTION B-B'

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 3

L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
11/8/02 SYR-54-SDL LAF JER
13048002/*13041V14.DWG

Engineering Drawings for the Tompkins Street Pump Station



PLAN

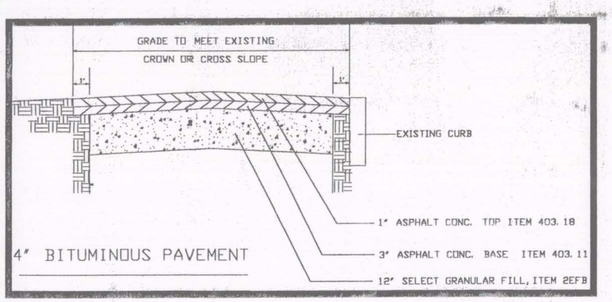
SCALE: 1" =40'

NEW DRIVEWAY VIEW

SCALE: 1"=20'

PROFILE

SCALE: HORZ. – 1"=40'
VERT. – 1"=40'



DATE REVISIO

TOMPKINS STREET STORM PUMPING STATION

PLAN & PROFI

DESIGNED R.L.D

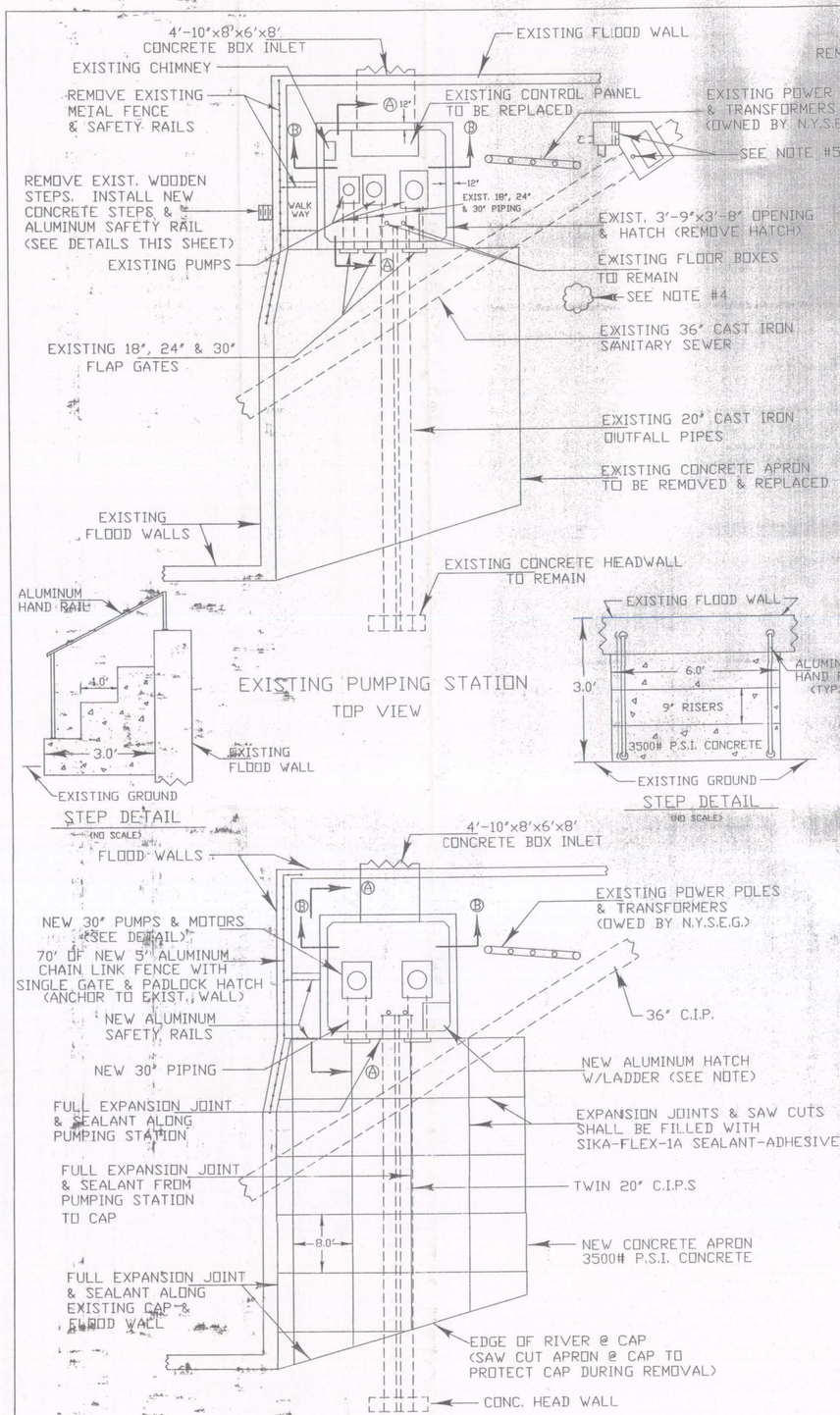
DRAWN R.L.D

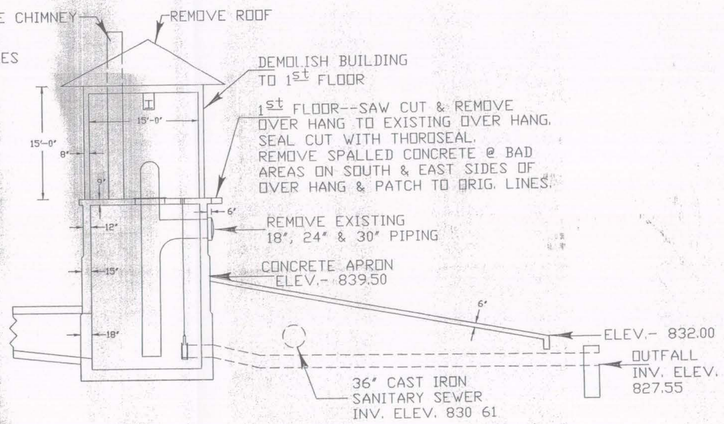
CHECKED J.E.

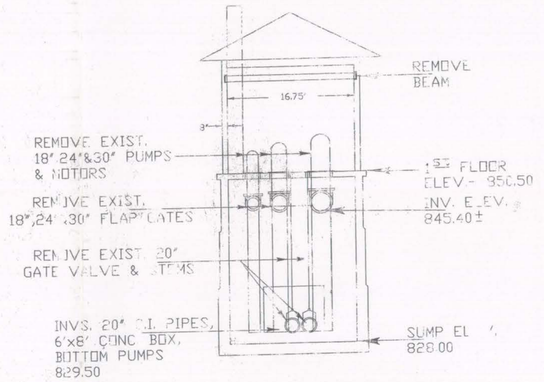
CITY OF BINGHAMTON
NEW YORK
DEPARTMENT OF PUBLIC

CITY ENGINEER

SCALE 1" = 40'

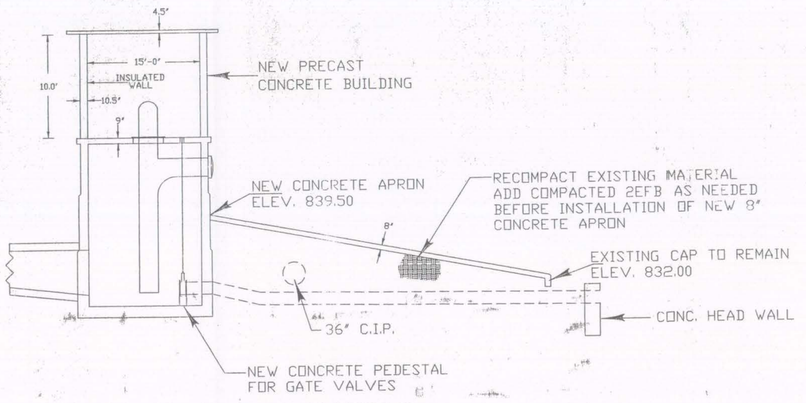






NOTES:

1) ALL EXISTING WOODEN PLATFORMS & METAL BRACING SHALL BE REMOVED FROM WET WELL & DISPOSED OF BY CONTRACTOR.
2) REMOVE EXISTING BAR SCREEN & PLATFORM FROM THE CONCRETE BOX CULVERT @ M.H. 10+60 (SEE SHEET # 2).
3) REMOVE EXISTING METAL RUNG LADDER @ HATCH OPENING & DISPOSE OF. INSTALL A NEW 27' LONG, 24" WIDE ALUMINUM LADDER WITH MEBAC SOLID 1" LADDER RUNGS, INCLUDING STAINLESS STEEL MOUNTING HARDWARE & SAFETY RAIL (OR EQUAL). INSTALL NEW ALUMINUM HATCH. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
4) REMOVE MAPLE TREE EAST OF PUMPING STATION. LEAVE STUMP
5) REMOVE EXISTING 36" SLUICE GATE, STEM & LIFT @ 36" SANITARY SEWER CONTROL BLOCK M.H., EAST OF PUMPING STATION. FILL STEM OPENING IN M.H. WITH CONCRETE. PLUG 24" OVERFLOW. ITEM #207
6) EXISTING CONCRETE APRON CONTAINS #4 BARS 1' ON CENTER, BOTH DIRECTIONS.
7) NEW 8" CONCRETE APRON SHALL HAVE AN EPOXY COATED REBAR MAT OF #5 BARS 1' ON CENTER, BOTH DIRECTIONS, 3" FROM BOTTOM OF APRON. SAW CUT EXPANSION JOINTS SHALL BE 3" IN DEPTH.
8) NEW CONCRETE APRON SHALL BE PLACED WHEN THERE IS NO DANGER OF HIGH WATER IN RIVER. RIVER MUST BE BELOW ELEV.- 832.00 FOR AT LEAST 7 DAYS FOR CURING.



DATE REVISION

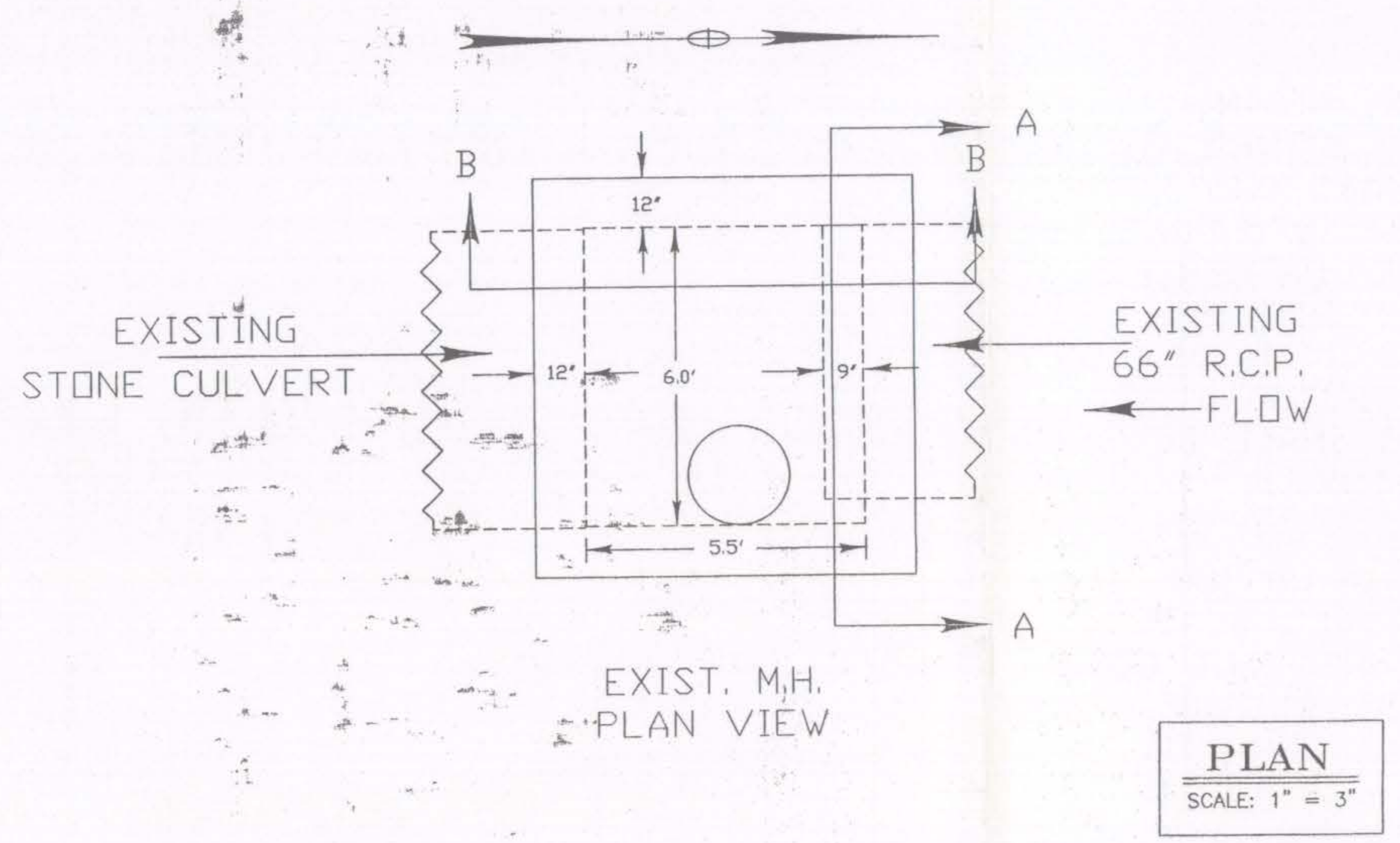
TOMPKINS STREET STORM PUMPING STATION

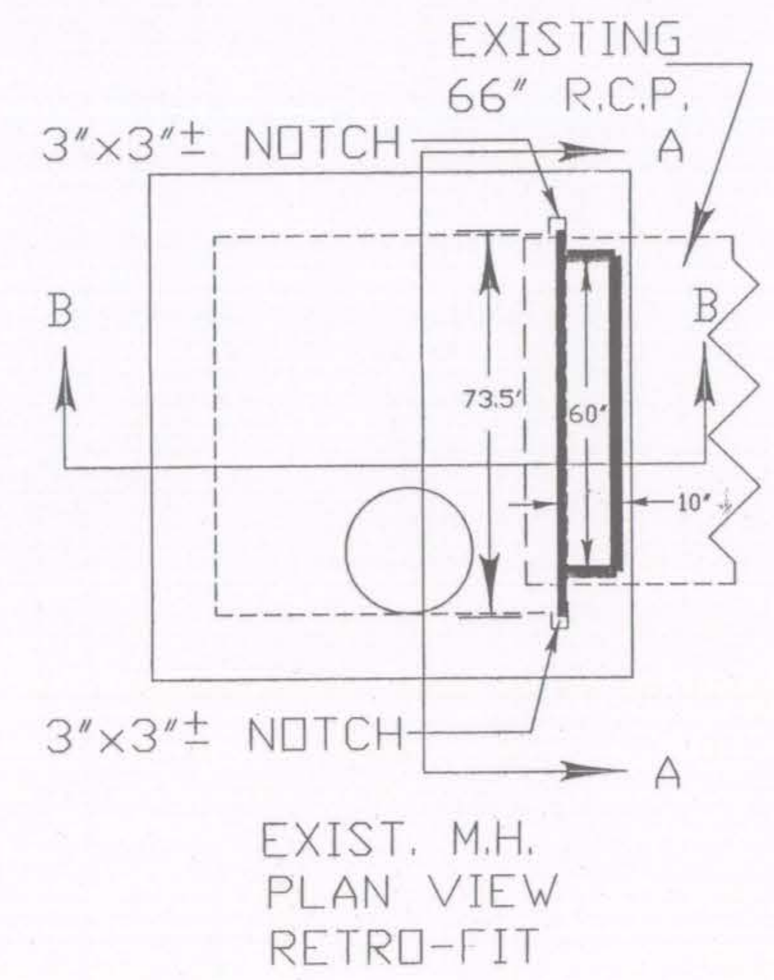
PUMP STATION RENOVATIONS

DESIGNED R.L.D.
DRAWN R.L.D.
CHECKED J.F.L.
DATE 8/99
SCALE 1" = 1'
SHEET 3 OF 9

CITY OF BINGHAMTON
NEW YORK
DEPARTMENT OF ENGINEERING

CITY ENGINEER
N.Y.S. REGISTERED



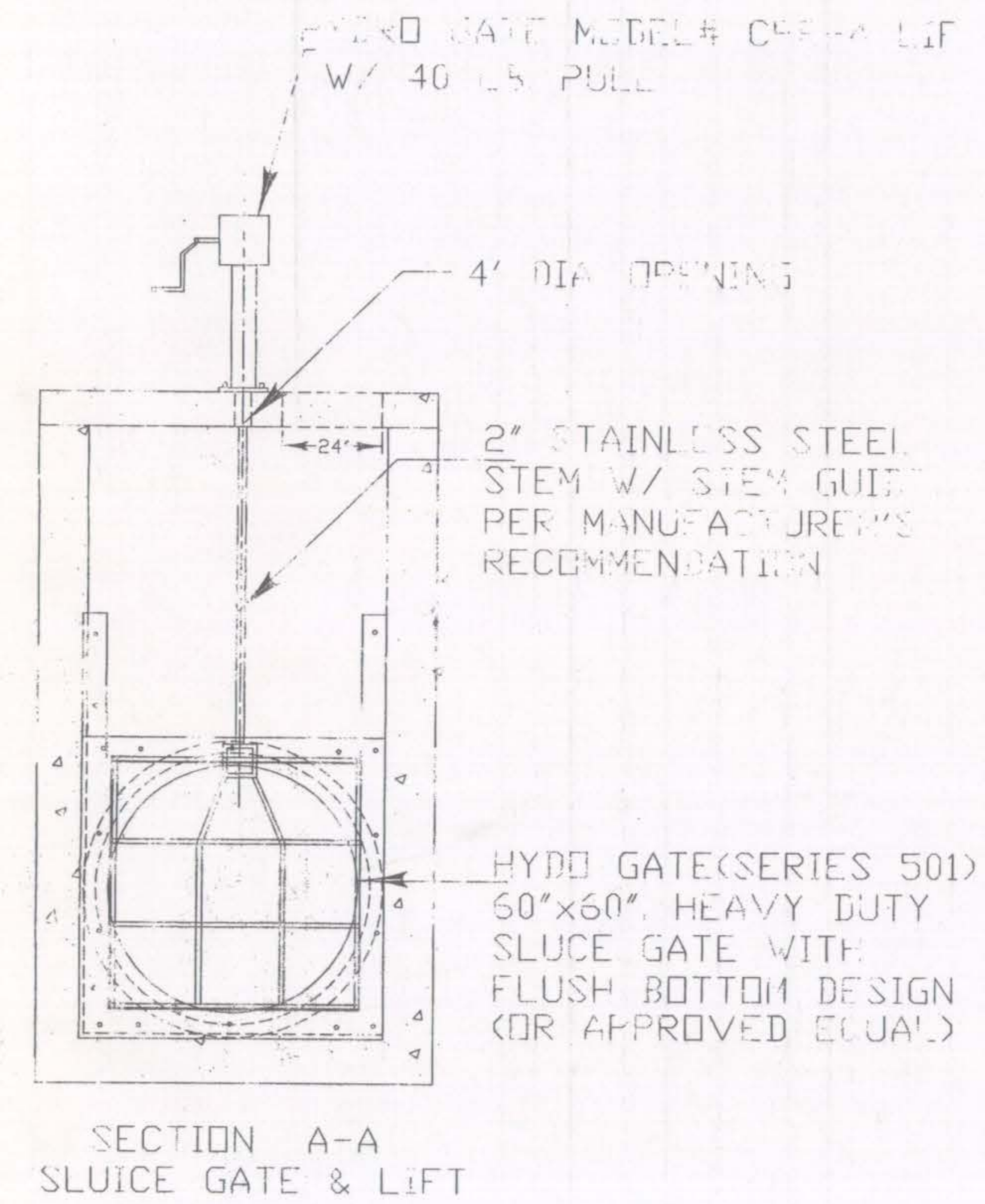


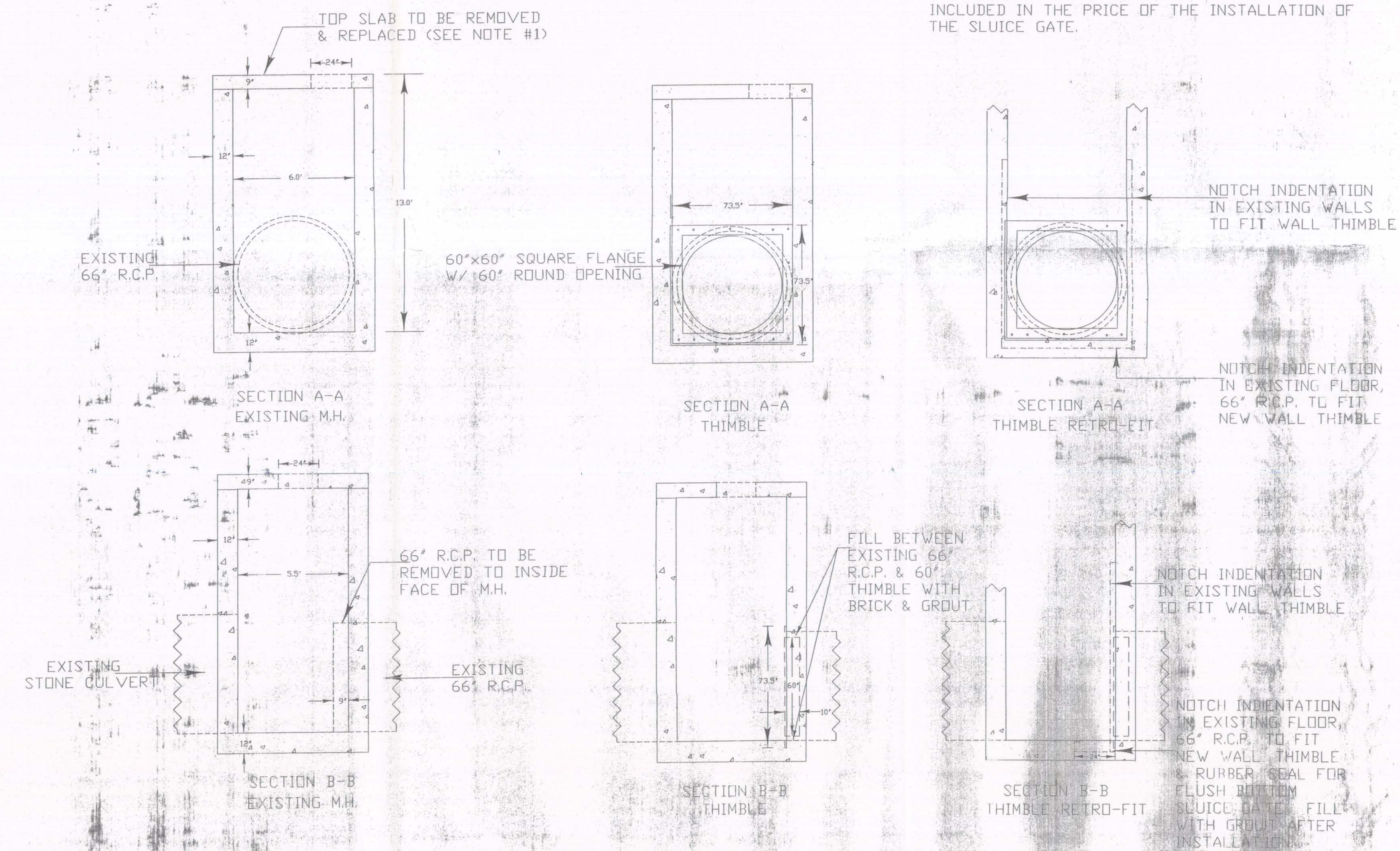
NOTES:

#1. REPLACE THE 9" TOP SLAB BY DOWELING INTO EXISTING MH WALLS 2" FROM INSIDE & OUTSIDE OF WALLS 12" ON CENTER. INSTALL #4 BARS DOWELS TO A DEPTH OF 9" MIN. & EPOXY GROUT INTO PLACE. INSTALL A DOUBLE MAT OF #4 BARS 12" ON CENTER 2" FROM TOP & BOTTOM OF SLAB. TIE HORIZONTAL BARS TO DOWELS BOTTOM TO INSIDE, TOP TO OUTSIDE. AT SLAB OPENING, #4 BARS SHALL BE BOXED IN & CONTINUED FOR EXTRA STRENGTH. SLAB SHALL BE BROOM FINISHED AFTER CONCRETE IS PLACED.

#2. CONTRACTOR WILL BE ALLOWED AS AN OPTION TO INSTALL A PRECAST TOP SLAB. SLAB WILL BE DESIGNED BY PRECAST CEMENT MANUFACTURER AND BE ABLE TO WITHSTAND ALL LOADS. DESIGN MUST BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE OF SLAB.

#3. COST FOR THE TOP SLAB OF MH SHOULD PE IN- INCLUDED IN THE PRICE OF THE INSTALLATION OF THE SLUICE GATE.





DATE | REVISION

TOMPKINS STREET
STORM PUMPING STATION

SLUICE GATE [illegible]
[illegible] S A 10+00

DESIGNED [illegible]
DRAWN [illegible]
CHECKED [illegible]
DATE [illegible]

CITY OF BINGHAMTON
NEW YORK
DEPARTMENT OF ENGINEERING

CITY ENGINEER
N.Y.S. P.E. LIC. NO.
SHEET [illegible] OF [illegible]
DRAWING NO. [illegible]