

PENDING PETITION MEMO

Date: 11/29/2007

TO : G&W
OGC

FROM: CENTRAL OPERATIONS

UTILITY: EMPIRE STATE PIPELINE

SUBJECT: 07-G-1416

Petition of Empire State Pipeline for a Waiver of the Requirements of 16 NYCRR Section 255.611(b) to Reduce the Maximum Allowable Operating Pressure of its Pipeline in the Event of Class Location Changes.



empire pipeline
A National Fuel Gas Company

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Ronald C. Kraemer
Vice President

November 28, 2007

Via UPS

The Honorable Jaclyn A. Brilling
Secretary
New York State Public Service Commission
Empire State Plaza
Agency Building 3
Albany, NY 12223-1350

**RE: Empire State Pipeline – Request for Special Permit
of Class Location Requirements**

Dear Secretary Brilling:

Empire State Pipeline (“Empire”) requests a special permit (waiver) of the requirement set forth in 16 NYCRR § 255.611 (b) to reduce the maximum allowable operating pressure (“MAOP”) of its pipeline in the event of class location changes. This request seeks permission for Empire to perform alternative risk-control activities based on the principles and requirements of Empire’s Integrity Management Program in lieu of pipeline replacement or pressure reduction. We are simultaneously submitting a copy of this waiver request to the U.S. Department of Transportation’s Office of Pipeline Safety to provide advance notification of our application.

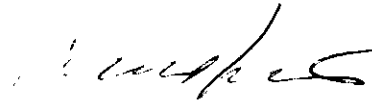
This special permit is requested for two segments on the Empire Pipeline where the class location has changed from Class 1 to Class 3 due to an increase in the number of houses in and around Leisure Acres, The Woodlands subdivision. Each of these segments involves an extension of an existing Class 3 area. The first segment is 2,672’ in length and is located in the Town of Pendleton, Niagara County, New York. The second segment is 1,760’ in length and is located in the Town of Lockport, Niagara County, New York. These two segments are separated by a 7,257’ Class 3 segment.

The Honorable Jaclyn A. Brillling
November 28, 2007
Page Two

The class location determination date for both segments was March 1, 2007, and therefore the 18-month time period, as defined in 16 NYCRR § 255.611 (d), ends on September 1, 2008 for these segments. Pending action on its request, Empire is not planning to replace these segments. Empire requests action on this Request for Special Permit by May 1, 2008, such that if approval is not granted Empire has adequate time to prepare for replacement of the segments.

If you have any questions or concerns regarding this special permit, please contact me at (716) 857-7536, or Jeffrey Morris at (716) 857-7845.

Very truly yours,



Ronald C. Kraemer
Vice President

Enclosures

cc: Gavin S. Nicoletta
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Empire State Plaza
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Albany, NY 12223-1350

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empire pipeline
A National Fuel Gas Company

Empire State Pipeline

**Request for Special Permit
of Class Location Requirements
Set Forth in 16 NYCRR § 255.611 (b)**

November 28, 2007

I. Overview

The Empire Pipeline, completed in November 1993, is a 156 mile, 24 inch O.D., fusion bonded epoxy coated steel natural gas pipeline originating at Grand Island, NY and terminating near Syracuse, NY. Empire Pipeline is an intrastate pipeline within the meaning of the Pipeline Safety Act, and is therefore subject to the requirements set forth in 16 NYCRR Part 255. Empire State Pipeline (“Empire”) was acquired by a subsidiary of National Fuel Gas Company in January 2003.

On October 11, 2005, Empire and Empire Pipeline, Inc. (“EPI”) filed an application with the Federal Energy Regulatory Commission (“FERC”) requesting authorization to construct its Empire Connector Project, which would connect the Empire Pipeline at Victor, NY to the proposed Millennium Pipeline near Corning, NY. If constructed as currently contemplated, Empire would become an interstate pipeline subject to FERC jurisdiction, and its joint venture owners would be merged into a new corporation, EPI. EPI received the FERC certificate for this project in December 2006. With the current project schedule, an in-service date is expected on November 1, 2008. At that time, Empire Pipeline will be subject to the FERC jurisdiction.

Empire has already submitted an application and been granted a waiver for three other class location areas that have changed from Class 1 to Class 3. This waiver is dated August 27, 2004, Case 04-G-0610. Empire respectfully requests that the Commission review and approve this request in a similar fashion. Any new information about Empire and the Empire Pipeline will be documented in this special permit application.

II. Description of Special Permit

Empire requests a special permit (waiver) of the requirement set forth in 16 NYCRR § 255.611 (b) to reduce the maximum allowable operating pressure (“MAOP”) of its pipeline in the event of class location changes. This request seeks permission for Empire to perform alternative risk-control activities based on the principles and requirements of Empire’s Integrity Management Program in lieu of pipeline replacement or pressure reduction.

This special permit is requested for two segments on the Empire Pipeline where the class location has changed from Class 1 to Class 3 due to an increase in the number of houses in and around Leisure Acres, The Woodlands subdivision (“Leisure Acres”). Each of these segments involves an extension of an existing Class 3 area. The first segment is 2,672’ in length and is located in the Town of Pendleton, Niagara County, New York. The second segment is 1,760’ in length and is located in the Town of Lockport, Niagara County, New York. These two segments are separated by a 7,257’ Class 3 segment.

III. Description of the Empire Pipeline and the Special Permit Segments

The Empire Pipeline is a fourteen year old, fusion bonded epoxy coated, cathodically protected steel pipeline. The pipeline wall thickness varies from 0.343 inch wall to 0.625 inch wall and grade varies from X-52 to X-70 on the western 91 miles (operating to a 1440 psig MAOP). The pipeline wall thickness varies from 0.257 inch wall to 0.500 inch wall and grade varies from X-65 to X-70 on the eastern 67 miles (operating to a 1000 psig MAOP). The entire line was 100% x-rayed and hydrotested to 90% of SMYS or greater at the time of construction. The entire line is coated with fusion-bonded epoxy (16 mils). For added protection, a 40-mil abrasion resistant coating or 3" concrete coating was used for state road, railroad, and stream crossings. A Galvanic Anode protected system was installed at the time of construction to cathodically protect the entire pipeline. An internal geometry tool was run through the entire pipeline before it was placed into service. Two anomalies (dents) associated with construction activities were identified, cut out, and replaced on the 1440 psig MAOP western section. Ten anomalies were identified, cut out, and replaced on the 1000 psig MAOP eastern section. In August 1994, the year after construction, the entire pipeline was internally inspected with a metal loss inspection tool to establish its baseline condition. No metal loss anomalies requiring repair were reported on either section of the line as a result of that inspection.

Empire performed a high-resolution and caliper in-line inspection ("ILI") on the entire pipeline in 2004. Reported anomalies were ranked for immediate repair, scheduled repair, or monitored repair, as defined in 16 NYCRR § 255.933 (d). The ILI did not indicate any anomaly with criteria requiring immediate, scheduled, or monitored repairs. Results of this ILI for the two special permit segments are located in Appendix D.

Empire also employed External Corrosion Direct Assessment ("ECDA"), an additional pipeline integrity assessment technique. The four-step ECDA process integrates a pipeline's physical characteristics and operating history with data from multiple field examinations and pipe surface examinations to provide an integrity evaluation with respect to external corrosion. Empire conducted ECDA at the original three waiver segments during 2004 and 2005 and additional examinations in two non-waiver segments during 2006. The results of these excavations are reported in the Annual Reports for the three waiver segments, Case 04-G-0610.

AC corrosion has been identified by Empire and the entire natural gas pipeline industry as a potential integrity threat. Empire discovered signs of AC corrosion on the pipeline during the ECDA excavations, starting in late 2004. Empire continues to evaluate and mitigate AC corrosion at all excavation sites, located in both special permit and non-special permit areas. Empire contracted the services of ARK Engineering & Technical Services to conduct an AC mitigation study of the entire Empire pipeline. The work for this task commenced in July 2006. Field soil resistivity readings were collected at numerous sites, including the original waiver areas. ARK Engineering built a pipeline model and compared results with Empire's existing mitigation to determine where supplemental AC mitigation facilities were required. ARK Engineering supplied a

detailed report on additional mitigation requirements for the Empire Pipeline in January 2007. The recommended mitigation includes the installation of approximately 15 miles of zinc ribbon at 55 sites along the pipeline and 2 deep well anode banks. The installation of approximately 150 test stations will be used to monitor the success of the mitigation installed. The construction work commenced on November 12, 2007 and is scheduled to be complete within 18 months of the start date. The ARK Engineering report includes mitigation recommendations for parts of two of the three original waiver segments. Part of the first segment in this special permit request is also included in the mitigation recommendations from ARK Engineering. This section is of a higher priority and the construction work will be completed by November 30, 2007. To provide additional protection for these special permit/waiver sections, HCA segments, and the remainder of the 15 miles of mitigation sections, Empire will install a single strand of Super Zinc Ribbon parallel to the mainline. This additional amount of zinc ribbon will provide approximately 10 additional years of protection for the pipeline in these areas.

During the 2006 ECDA excavation at Malloch Road, Empire discovered that this road crossing had some abraded coating (no abrasion resistant coating was present), which did not give rise to measurable external corrosion. Empire reviewed company records and determined that all roads were installed according to or exceeding company specifications in the construction bid documents. Malloch Road excavation commenced on November 26, 2007 and is scheduled to be complete by December 7, 2007, with restoration work in 2008. During this excavation, any damaged coating will be repaired.

Empire continues to closely monitor right-of-way encroachments and activity. All occurrences are noted and investigated in a timely manner. Empire continues to use damage prevention programs – the Dig Safely New York One Call System and public education – to reduce exposure to activities from outside contractors, farmers, landowners, public works, or other utilities that could result in pipeline damage. Contractors and excavators working in the area, as well as public officials and responders, such as fire and police departments, are also offered pipeline public awareness training each year through SafetyComm Solutions, a pipeline safety education contractor. The National Fuel Gas Land Department is responsible for ongoing programs to include public service ads promoting safety and awareness. Empire's efforts continue to be effective. There have not been any incidents involving the pipeline.

Special Permit Segment 1

Segment 1 (MP 23.4 to MP 23.9) is located in the Town of Pendleton, Niagara County, New York, west of Transit Road (Route 78). It consists of 2,672 feet of 0.343-inch wall, Grade X-70, 16 mil Scotchkote and Napguard fusion bonded epoxy coated ERW pipe, manufactured by Stupp Corporation, Baton Rouge, Louisiana. This segment operates at pressures up to the MAOP of 1440 psig. Segment 1 was originally classified as Class 1 and designed for this class location. Hoop stress at MAOP is 72% of SMYS. This line was hydrotested to 1813 psig (90.6% SMYS) upon completion of construction. Since that time, Leisure Acres has had additional houses developed, along with other houses,

within 220 yards of the pipeline. Due to this development, Segment 1 became a Class 3 location as of March 1, 2007. It cannot be upgraded under 16 NYCRR § 255.611 (b)(1). A reduction of MAOP to 1201 psig to meet the requirements of 16 NYCRR § 255.611 cannot be undertaken without causing a significant, permanent reduction of the capacity of the Empire Pipeline. Segment 1 continuously operates at pressures at or exceeding 1250 psig, and has been subject to pressures in excess of 1400 psig on numerous occasions. Therefore, absent the requested special permit, Empire would be required to replace Segment 1.

Special Permit Segment 2

Segment 2 (MP 25.2 to MP 25.6) is located in the Town of Lockport, Niagara County, New York, east of Old Beattie Road. It consists of 1,760 feet of 0.343-inch wall, Grade X-70, 16 mil Scotchkote and Napguard fusion bonded epoxy coated ERW pipe, manufactured by Stupp Corporation, Baton Rouge, Louisiana. This segment operates at pressures up to the MAOP of 1440 psig. Segment 2 was originally classified as Class 1 and designed for this class location. Hoop stress at MAOP is 72% of SMYS. This line was hydrotested to 1812 psig (90.6% SMYS) upon completion of construction. Since that time, Leisure Acres has had additional houses developed, along with other houses, within 220 yards of the pipeline. Due to this development, Segment 2 became a Class 3 location as of March 1, 2007. It cannot be upgraded under 16 NYCRR § 255.611 (b)(1). A reduction of MAOP to 1201 psig to meet the requirements of 16 NYCRR § 255.611 cannot be undertaken without causing a significant, permanent reduction of the capacity of the Empire Pipeline. Segment 2 continuously operates at pressures at or exceeding 1250 psig, and has been subject to pressures in excess of 1400 psig on numerous occasions. Therefore, absent the requested special permit, Empire would be required to replace Segment 2.

Note: Segment 2 has a road crossing (Raymond Road) that is designed to Class 2 and Class 3 and splits the segment into two sections. This road crossing is not included in the footage for Special Permit Segment 2. A map of this segment is located in Appendix A.

IV. Special Permit Segments Pipe Specifications

Table 1 – Special Permit Segments Pipe Specifications

Segment		
Length	2,672 ft	1,760 ft
Wall Thickness (nom.)	0.343 in	0.343 in
Class Design	1	1
Diameter	24 in	
Grade	(X-70) 70000 psig	
MAOP (current)	1440 psig	

MOP (current)	1400 psig	
Date of Installation	1993	
Distance Upstream from Nearest Compressor Station	Approximately 23.5 to 25.5 miles	
Pipe Manufacturer	Stupp Corporation	
Seam Type	ERW	
Coating Type	FBE 14-16 mils & Powercrete 40 mils (@ Road Crossings)	
Coating Condition	Good Condition	
Depth of Cover	Minimum of 3 ft, throughout	
Local Geology/Terrain	No Instability Issues Known	
Service	Dry Gas	
Design Stress at MAOP	71.97%	71.97%
Pressure Fluctuation	Light Fluctuations	
Hydrostatic Testing History	1813 psig (1993)	1812 psig (1993)
Max Hydrostatic Test Level	126% MAOP 90.6% SMYS	126% MAOP 90.6% SMYS
Hydrostatic Test Failures	None	None
X-Ray	100% During Installation (1993)	
In-Line Inspection History	1993 - Base Line MFL (Tuboscope-Vetco) 2004 - HRMFL and Caliper (CPIG)	
Length of Pipe Inspected with In-Line Inspection	Entire Empire State Pipeline (156 miles)	
CP History	See Attached - Appendix E	
Limits of HCA(s) within the Special Permit Segment (in pipeline stations)	All sections become Class 3 (due to house count) will be HCA segments	
Reportable Incidents	None	
Leaks	None	
Wrinkle Bends	None	
Repairs	None Needed	
Damage Prevention Activities	Meets or Exceeds Requirements of Part 192 (additional actions taken - more frequent patrols)	
Safety Related Condition Reports	None	
ILI Schedule	In-Line Inspection is Planned for 2011	
Hydrostatic Test Schedule	Not Anticipated	
Close Interval Survey	Entire Empire State Pipeline (156 miles) was completed in 1994	
Nearest Upstream Valve	MLV #5 is approximately 3.8 miles away	
Nearest Downstream Valve	MLV #6 is 0.0 miles away (Located at Special Permit Segment 2)	
Nearest Upstream ASV	MLV #4 is approximately 9.0 miles away	
Nearest Downstream ASV	MLV #7 is approximately 9.4 miles away	

V. Integrity Management Plan of Empire Pipeline

Under the Department of Transportation - Criteria for Considering Class Location Waiver Requests, a pipeline segment could be eligible for a class location special permit only if that segment meets the acceptance criteria for each of the nine threats listed in 16 NYCRR § 255.917 and Section 7 of ASME B31.8S. These two special permit segments meet these requirements. The chart below details the susceptibility (or non-susceptibility) of the Empire Pipeline to each of these nine threats, and the conditions or actions employed to manage risks in each category.

Table 2 – Special Permit Segments Threat Matrix

Threat	16 NYCRR § 255.917	ASME B31.8S	Conditions/Actions
External Corrosion	Y	Y	1994 Internal Line Inspection, 2004 Internal Line Inspection, multiple bell hole inspections, 2007-2008 AC mitigation plan
Internal Corrosion	N	N/A	1994 Internal Line Inspection, 2004 Internal Line Inspection, clean gas, no fluids
Stress Corrosion Cracking	N	N/A	Temperature < 100 F, and FBE coating
Manufacturing	N	N/A	New ERW pipe, hydrotested to a minimum of 125% MAOP and 90% SMYS, adequate material toughness, mill inspection
Construction	Y	Y	100% x-ray, no lateral or axial stresses, 1994 Internal Line Inspection, 2004 Internal Line Inspection
Equipment	N	N/A	No equipment in line, mainline valves are weld end connections
Third Party Damage	Y	Y	Public awareness programs, Dig Safely New York program, 2004 Internal Line Inspection, adequate material toughness, monitor encroachments, aerial patrolling
Incorrect Operations	Y	Y	O&M performed in accordance with existing procedures (16 NYCRR Part 255.604)
Weather & Outside Forces	N	N/A	No fault crossings, road and river crossings bored or buried deep, no severe side slopes, low earthquake and sinkhole potential

VI. Proposed Alternative Actions

In lieu of replacement of the special permit segments or reducing pressure of the pipeline to 1201 psig from 1440 psig, Empire requests approval of the following alternative risk control activities:

- 1) Direct Assessment will be performed on each special permit segment to inspect the condition of the pipeline and coating. Repairs will be made for any condition listed in Part 255.933 d (1) & (2) or Empire's repair criteria. Repairs will be made along the pipeline until adequate pipeline conditions are located.
- 2) Empire will continue to perform flame ionization patrols or LIDAR patrols annually and HCA aerial patrols quarterly for the entire pipeline.
- 3) Empire will continue to perform P/S surveys on an annual basis. Cathodic system anomalies will be investigated and remediated as appropriate.
- 4) A Close Interval Survey will be performed on each special permit segment in 2008.

These alternative risk control activities will not defer any of Empire's assessments for other HCAs under 16 NYCRR § Part 255.

Empire will submit data and results of these actions within three months of an approved special permit and on an annual basis, as part of Empire's annual Integrity Management Program performance reporting to OPS. This report will be incorporated and submitted along with the annual report of the three original waiver segments.

VII. Safety Benefit and Cost Analysis

As stated in the original waiver application, there is a greater risk reduction benefit to the entire pipeline with an internal line inspection, as opposed to pipeline replacement at the special permit segments. There are at least 1,512 buildings intended for human occupancy and 53 gathering areas within 660 feet of the pipeline. The two special permit segments contain 7 of these buildings and none of the gathering areas. Pipe replacement in the two special permit segments does not add any additional margin of safety to the remaining 1,505 residences or 53 gathering areas. The 2004 internal line inspection of the entire pipeline reduced the risk for all residences and gathering areas. The proposed alternative actions, of direct and indirect assessment, will be used to ensure safe operating conditions of the special permit pipeline segments.

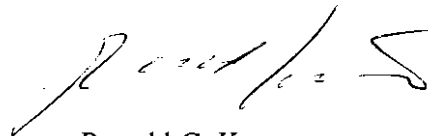
If Empire were required to replace line pipe for these two special permit segments, it would do its best to schedule and perform the pipe replacements with a minimum of disruption to its customers and affected landowners. These line pipe replacements would likely involve one or more interruptions of service ranging from a few hours to a few days. Additional right-of-way may be required for construction purposes. Approval of this requested special permit would avoid these consequences. In addition, the requested special permit would prevent a significant expenditure by Empire, estimated at approximately \$1.786 million.

VIII. Conclusion

For the reasons set forth above, Empire respectfully requests that the Commission grant a special permit of 16 NYCRR § 255.611 (b), approve the alternative risk control activities proposed above in lieu of replacement or pressure reduction of the special permit segments, and submit its approved special permit to USDOT for its approval. The 18-month time period, as defined in 16 NYCRR § 255.611 (d), ends on September 1, 2008 for these segments. Empire requests action on this Request for Special Permit by May 1, 2008, such that if approval is not granted Empire has adequate time to prepare for replacement of the segments.

Respectfully Submitted By:

EMPIRE STATE PIPELINE

Ronald C. Kraemer
Vice President

IX. Appendices**Appendix A – Class Location Map**

Appendix B – Hydrotest Records

EMPIRE PIPE INVENTORY

LINE	MAOP	ALIGN_NO	STATION	STATION	ORDER	LENGTH	M. P.	M. P.	OD	WT	SPEC	GRADE	MANUF	SEAM	YR	MAX TEST	MIN TEST	DATE	HOURS	TOT
507	1440	507-36-9	105600	118800	14	3591	21.1	21.78	24	0.412	API-5L	X70	BS	DSAW	93	2193	2178	10/18-19/93	10	0.80
507	1440	507-36-9	105600	118800	15	122	21.78	21.803	24	0.494	API-5L	X70	BS	DSAW	93	2193	2178	10/18-19/93	10	0.02
507	1440	507-36-9	105600	118800	16	129	21.803	21.828	24	0.412	API-5L	X70	BS	DSAW	93	2193	2178	10/18-19/93	10	0.02
507	1440	507-36-9	105600	118800	17	5	21.828	21.829	24	0.412	API-5L	X70	S	ERW	93	2193	2178	10/18-19/93	10	0.00
507	1440	507-36-9	105600	118800	18	450	21.829	21.914	24	0.494	API-5L	X70	BS	DSAW	93	2191	2182	10/24/93	10	0.80
507	1440	507-36-9	105600	118800	19	223	21.914	21.956	24	0.412	API-5L	X70	BS	DSAW	93	2191	2182	10/24/93	10	0.81
507	1440	507-36-9	105600	118800	20	6	21.956	21.957	24	0.412	API-5L	X70	S	ERW	93	2186	2180	10/13-14/93	12	0.00
507	1440	507-36-9	105600	118800	21	81	21.957	21.973	24	0.494	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.01
507	1440	507-36-9	105600	118800	22	2784	21.973	22.5	24	0.412	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.52
507	1440	507-36-10	118800	132000	1	1284	22.5	22.743	24	0.412	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.24
507	1440	507-36-10	118800	132000	2	120	22.743	22.766	24	0.494	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.02
507	1440	507-36-10	118800	132000	3	1892	22.766	23.124	24	0.412	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.35
507	1440	507-36-10	118800	132000	4	121	23.124	23.147	24	0.494	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.02
507	1440	507-36-10	118800	132000	5	877	23.147	23.313	24	0.412	API-5L	X70	BS	DSAW	93	2186	2180	10/13-14/93	12	0.16
507	1440	507-36-10	118800	132000	6	2672	23.313	23.819	24	0.343	API-5L	X70	S	ERW	93	1821	1813	10/13-14/93	12	0.50
507	1440	507-36-10	118800	132000	7	519	23.819	23.918	24	0.412	API-5L	X70	BS	DSAW	93	2187	2180	10/11/93	12	0.09
507	1440	507-36-10	118800	132000	8	5	23.918	23.919	24	0.412	API-5L	X70	S	ERW	93	2187	2180	10/11/93	12	0.00
507	1440	507-36-10	118800	132000	9	241	23.919	23.964	24	0.494	API-5L	X70	BS	DSAW	93	2187	2180	10/11/93	12	0.04
507	1440	507-36-10	118800	132000	10	1059	23.964	24.165	24	0.412	API-5L	X70	BS	DSAW	93	2187	2180	10/11/93	12	0.20
507	1440	507-36-10	118800	132000	11	3690	24.165	24.864	24	0.494	API-5L	X70	BS	DSAW	98	2187	2180	10/11/93	12	0.69
507	1440	507-36-10	118800	132000	12	61	24.864	24.875	24		MLV 6				93	2232	2186	9/13/93	10	0.01
507	1440	507-36-10	118800	132000	13	659	24.875	25	24	0.494	API-5L	X70	BS	DSAW	93	2187	2180	10/11/93	12	0.12
507	1440	507-36-11	132000	145200	1	200	25	25.038	24	0.494	API-5L	X70	BS	DSAW	93	2187	2180	10/11/93	12	0.03
507	1440	507-36-11	132000	145200	2	881	25.038	25.205	24	0.412	API-5L	X70	BS	DSAW	93	2187	2180	10/11/93	12	0.16
507	1440	507-36-11	132000	145200	3	1128	25.205	25.418	24	0.343	API-5L	X70	S	ERW	93	1825	1812	10/8/93	12	0.21
507	1440	507-36-11	132000	145200	4	6	25.418	25.42	24	0.412	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.00
507	1440	507-36-11	132000	145200	5	81	25.42	25.435	24	0.494	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.01
507	1440	507-36-11	132000	145200	6	2741	25.435	25.954	24	0.343	API-5L	X70	S	ERW	93	1825	1812	10/8/93	12	0.51
507	1440	507-36-11	132000	145200	7	5	25.954	25.955	24	0.412	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.00
507	1440	507-36-11	132000	145200	8	70	25.955	25.968	24	0.494	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.01
507	1440	507-36-11	132000	145200	9	2394	25.968	26.422	24	0.343	API-5L	X70	S	ERW	93	1825	1812	10/8/93	12	0.45
507	1440	507-36-11	132000	145200	10	5	26.422	26.423	24	0.412	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.00
507	1440	507-36-11	132000	145200	11	80	26.423	26.438	24	0.494	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.01
507	1440	507-36-11	132000	145200	12	303	26.438	26.495	24	0.343	API-5L	X70	S	ERW	93	1825	1812	10/8/93	12	0.05
507	1440	507-36-11	132000	145200	13	5	26.495	26.496	24	0.412	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.00
507	1440	507-36-11	132000	145200	14	79	26.496	26.511	24	0.494	API-5L	X70	BS	DSAW	93	1825	1812	10/8/93	12	0.0
507	1440	507-36-11	132000	145200	15	320	26.511	26.572	24	0.343	API-5L	X70	S	ERW	93	1825	1812	10/8/93	12	0.06
507	1440	507-36-11	132000	145200	16	644	26.572	26.694	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.17
507	1440	507-36-11	132000	145200	17	87	26.694	26.71	24	0.494	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.01
507	1440	507-36-11	132000	145200	18	526	26.71	26.81	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.09
507	1440	507-36-11	132000	145200	19	119	26.81	26.832	24	0.494	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.022
507	1440	507-36-11	132000	145200	20	1925	26.832	27.197	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.364
507	1440	507-36-11	132000	145200	21	120	27.197	27.22	24	0.494	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.02
507	1440	507-36-11	132000	145200	22	1481	27.22	27.5	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.28
507	1440	507-36-12	145200	158400	1	635	27.5	27.62	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.12
507	1440	507-36-12	145200	158400	2	86	27.62	27.637	24	0.494	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.01
507	1440	507-36-12	145200	158400	3	12	27.637	27.639	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.002
507	1440	507-36-12	145200	158400	4	354	27.639	27.706	24	0.412	API-5L	X70	S	ERW	93	2185	2173	10/8/93	12	0.06
507	1440	507-36-12	145200	158400	5	21	27.706	27.71	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.00
507	1440	507-36-12	145200	158400	6	74	27.71	27.724	24	0.412	API-5L	X70	S	ERW	93	2185	2173	10/8/93	12	0.01
507	1440	507-36-12	145200	158400	7	103	27.724	27.743	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.01
507	1440	507-36-12	145200	158400	8	209	27.743	27.783	24	0.412	API-5L	X70	S	ERW	93	2185	2173	10/8/93	12	0.03
507	1440	507-36-12	145200	158400	9	18	27.783	27.786	24	0.412	API-5L	X70	BS	DSAW	93	2185	2173	10/8/93	12	0.003
507	1440	507-36-12	145200	158400	10	83	27.786	27.802	24	0.412	API-5L	X70	S	ERW	93	2185	2173	10/8/93	12	0.01
507	1440	507-36-12	145200	158400	11	1905	27.802	28.163	24	0.343	API-5L	X70	S	ERW	93	1853	1817	9/20-21/93	10	0.360

SEGMENT #1
SEGMENT #2

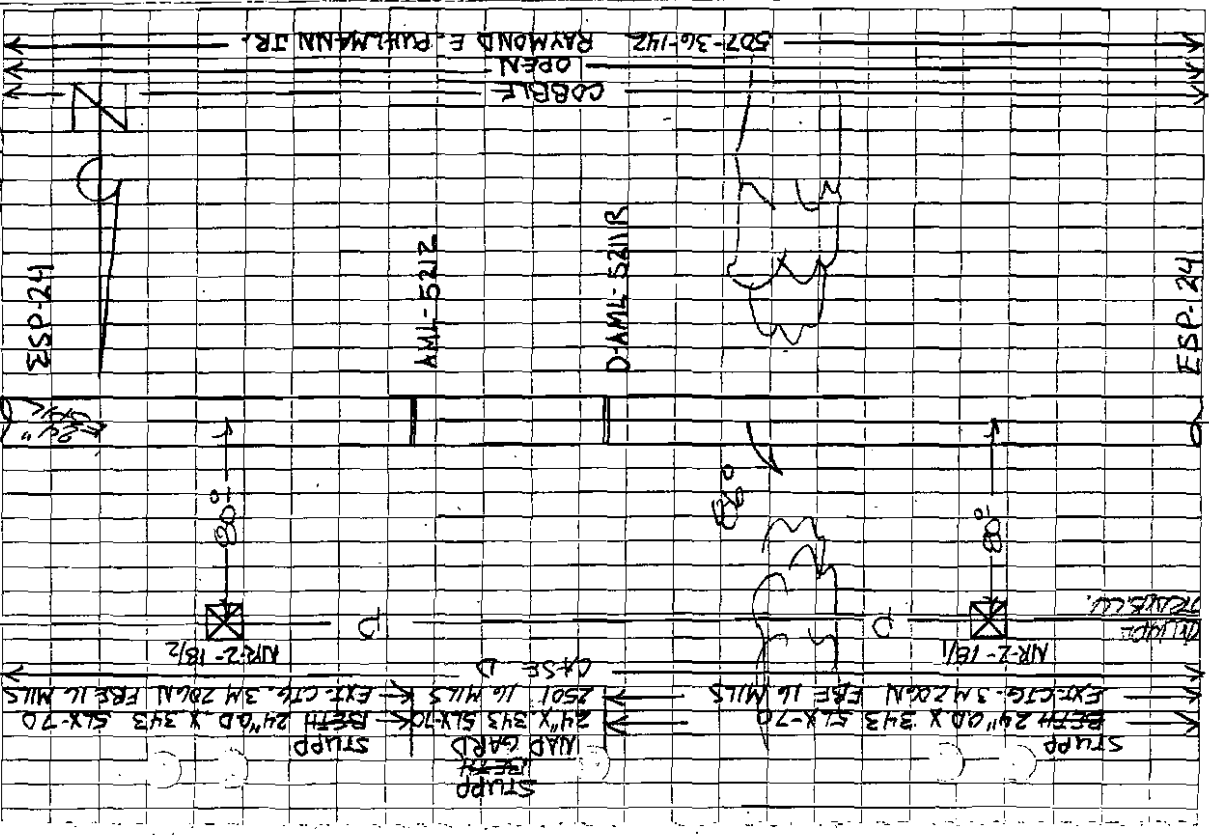
Appendix C – As-Built and Welding Notes

Appendix C – As-Built and Welding Notes

Special Permit Segment #1

15
 24" EMPIRE STATE PL
 SPECIAL
 PIPE EXH
 REMAINS
 COVER
 1240127
 1238182
 1238191
 1238131
 1232105
 1230121

1240127	1238182	1238191	1238131	1232105	1230121
4.41/PA TUR (LR 2-18-2) 80° 00'	AML-5212 BEG. 3M-2064-FBE	D-AML-5212 BEG. LC-2501-FB	HERDGE RD	4.41/PA TUR (LR 2-18-1) 80° 00'	AS-066-1



AS-066-1

16

24" EMPIRE STATE PIPE

SURF NO. 1

STA. PIPE DIA.

REMARKS

COVER

BEG. FIELD

APPROX. R. - HEDGE ROW

10-11-53
0511-1083

BEGIN SHOT ROCK

HEDGE ROW

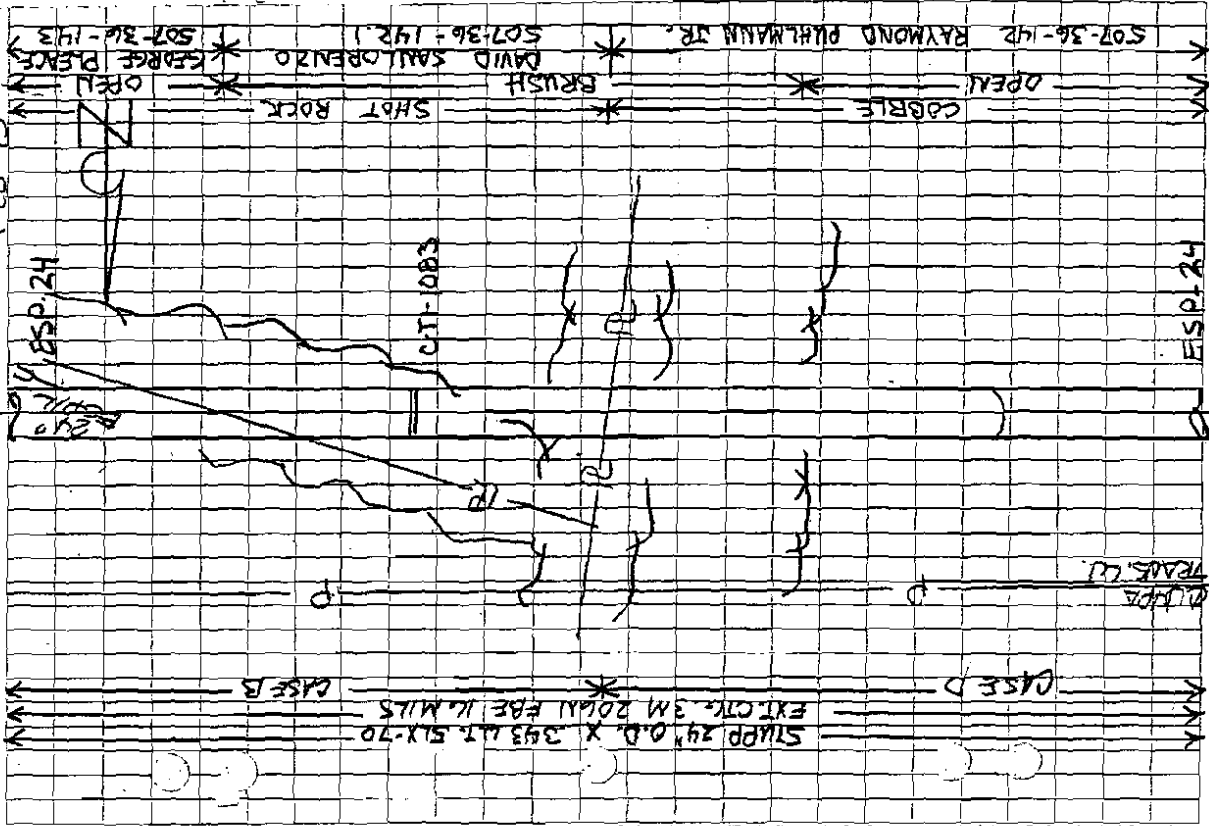
APPROX. R.

BEG. BRUSH

112° 54'

AS-066-1

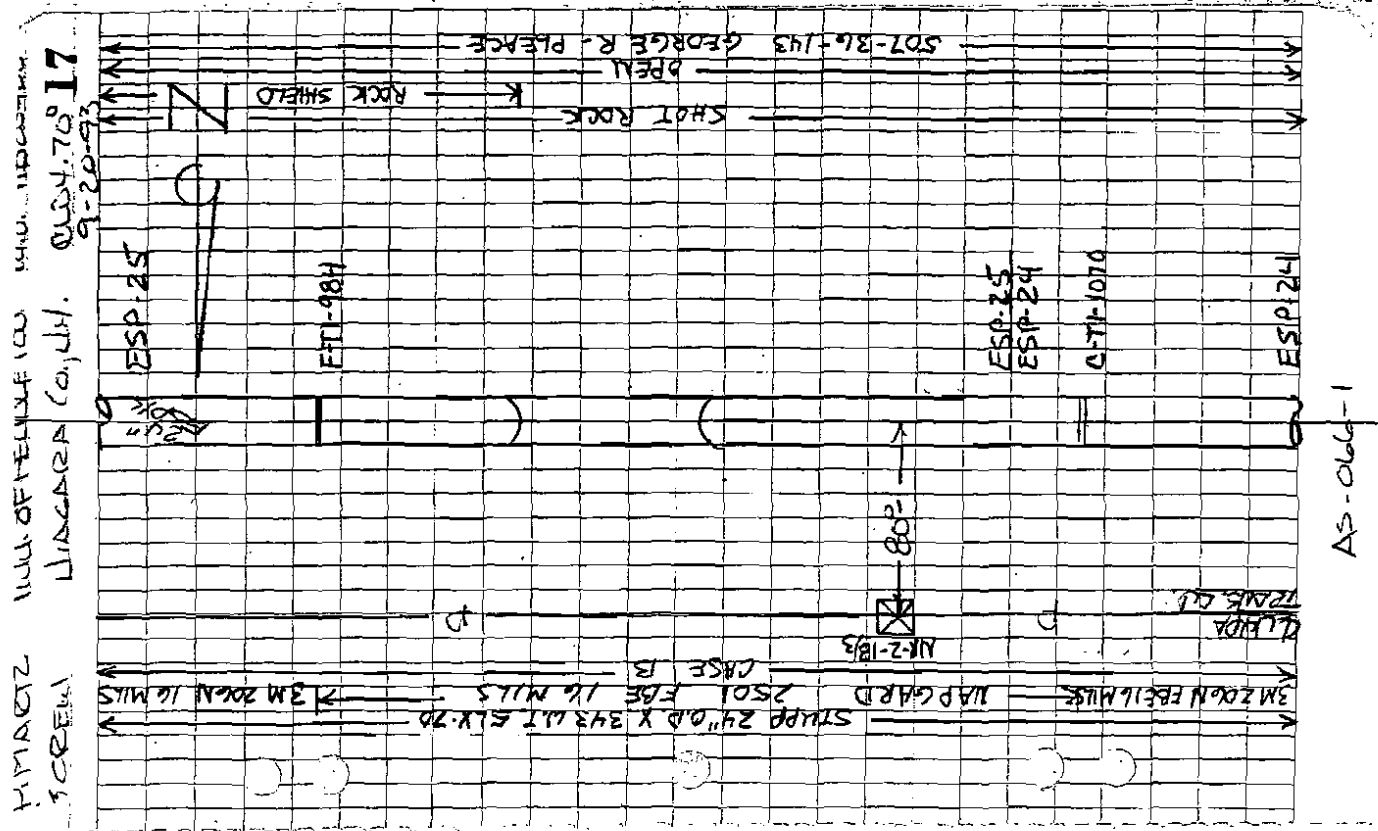
PIVNETZ TUN. OF PEUDETIC L.L.O. # 11825400
1 CREW. UACAPACO, P.V. CUV. 70° 16'
9-20-93



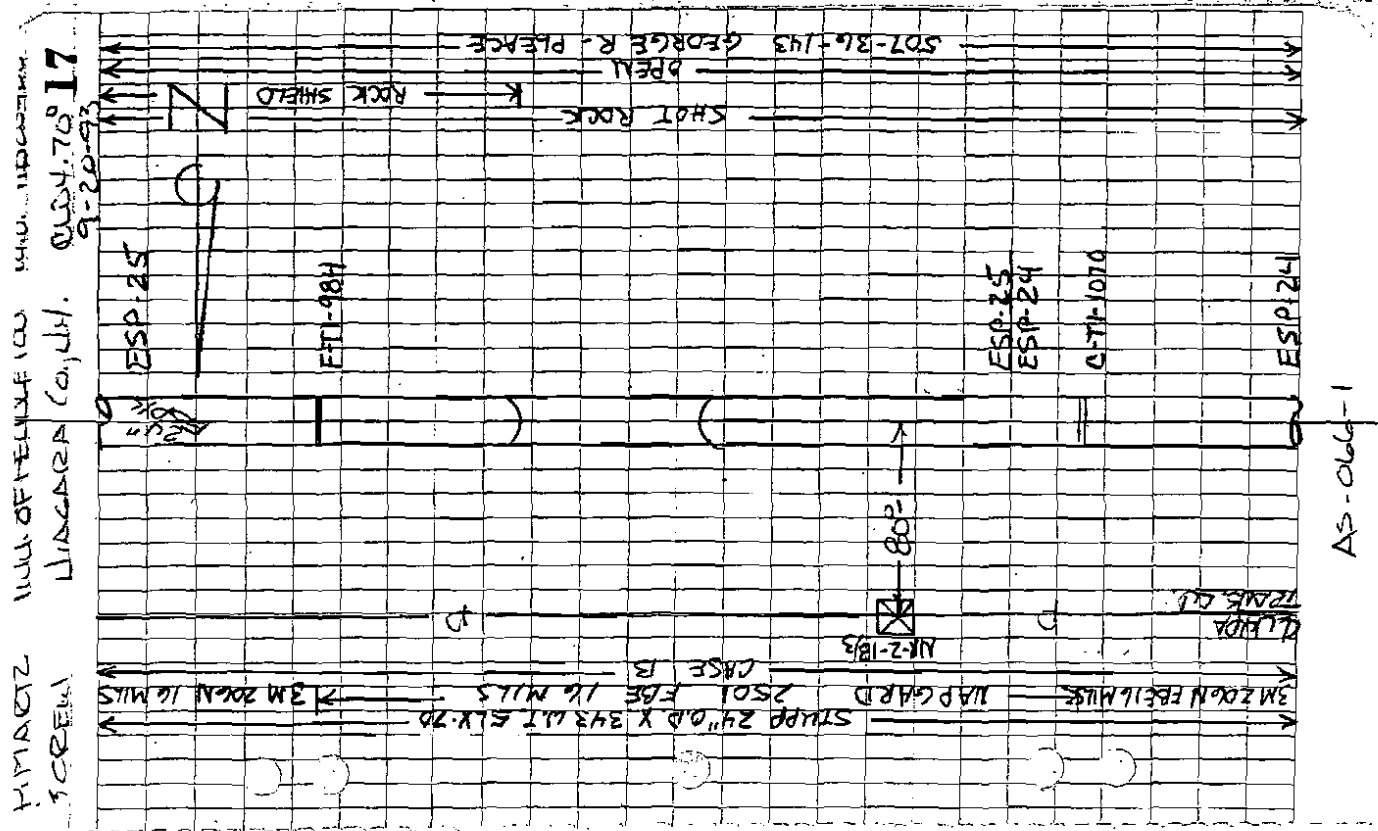
AS-066-1

17

STA.	PIPE DIA.	REMARKS	COVER
124940	125041	F-TI-984 REC. 31-241-F80	
124943	125026	BEGIN ROCK SHIELD 9° SAC	
124947	125010	9° OR	
124952		DELTA PAVING (UR. 2-18-3) 80° LT.	
124955	124933	10-11-93 C-TI-1070 REC. 16-2501-F8E	
124975			AS-066-1



17

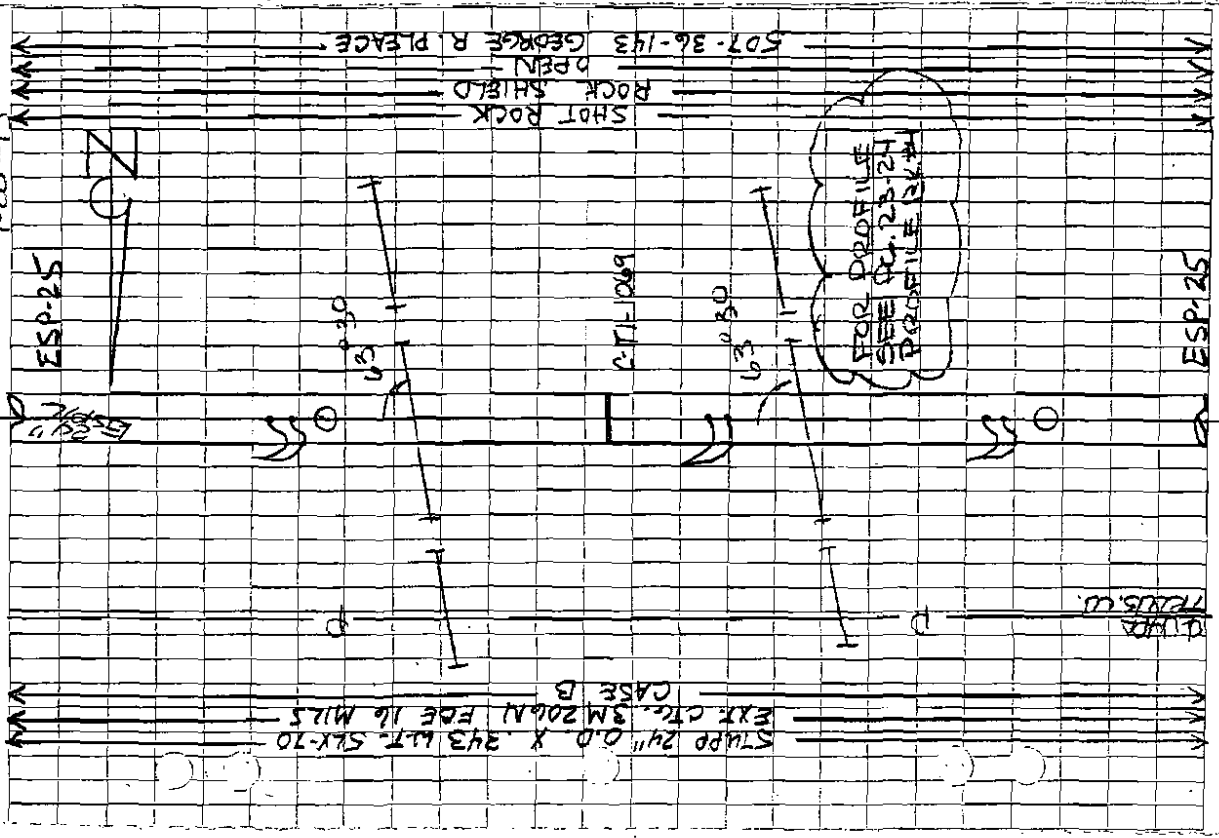


17

STA.	PIPE DIA.	REMARKS	COVER
124940	125041	F-TI-984 REC. 31-241-F80	
124943	125026	BEGIN ROCK SHIELD 9° SAC	
124947	125010	9° OR	
124952		DELTA PAVING (UR. 2-18-3) 80° LT.	
124955	124933	10-11-93 C-TI-1070 REC. 16-2501-F8E	
124975			AS-066-1

PMARIZ TULLOCH PEPPERLOTT (NO. 11825400)
 TORONTO NIAGARA COUNTY, ONT. CAN. 70° 18'
 9-20-93

STA.	PIPE STA.	REMARKS	COVER
1249176		CAD WELD 2 WHITE 1 BLACK #8	
1249195		TEST STA.	
1249192		TEST LEAD POST	
1249190		30" TELJECO PILE	FIGURE
1249176	1250 38 10-11-93 10-11-93		
1249165		CAD WELD 1 WHITE 1 BLACK #8	
1249162		20" STEEL GAS	4" CORR. 3" CON.
1249160		CAD WELD 2 WHITE #8	
1249158		TEST STA.	
1249150		TEST LEAD POST	
		AS-0166-1	



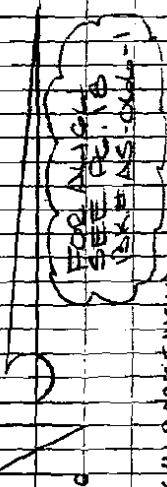
AS-0166-1

23 PROFILE OF 30" 4-20" TENNESSEE GAS CROSSING
 GEORGE R. PLEACE, TRACT # 507-36-143

PC - J. POWELL
 K - M. NAPPER
 R - R. GAADEN

SUNNY-50°
 10-11-93

STA.	H.I.	ELEV.	REMARKS
T.B.M.	6.84	106.84	T.B.M. - TOP OF BRACKET, CONNECTING TO N.E. LEG OF TWR. # NR. 2. 19 1/2' NORTH OF E. OF PIPE AD
1249+61.31	7.60	99.24	NGW F-71-985
"	13.34	93.50	TOP "
1250+00.76	7.70	99.14	NGW 990 B.
"	12.99	93.85	TOP "
1250+26.98	7.50	99.34	NGW 9° SAG, BEGIN ROCK SHIELD
"	16.30	90.54	TOP "
1250+41.04	7.90	98.94	NGW F-71-984 BEGIN SCOTCH KOTE
"	16.64	90.20	TOP "
1250+51.17			CAD WELD, TEST LEAD (2) WHITE # B
1250+53.17	8.00	98.84	NGW 45° 20" TENN. GAS LN. CROSSING, 4 1/2' CLEARANCE
"	10.02	96.82	TOP OF 20" TENN. GAS LN.
"	16.65	90.19	TOP "
1250+67.38	7.80	99.04	NGW C-71-1069
"	16.68	90.16	TOP "
1250+81.58	7.70	99.14	NGW 45° 30" TENN. GAS LN. CROSSING, 1.30' CLEARANCE
"	12.66	94.18	TOP OF 30" TENN. GAS LN.
"	16.71	90.13	TOP "
1250+86.58			CAD WELD, TEST LEAD (2) WHITE # B, (1) BLACK # B



PROFILE BOOK #4

24 PROFILE OF 20" x 30" TENNESSEE GAS CROSSING (CONT.)
 GEORGE R. PLEACE TRACT# 507-36-143

PC. J. POWELL
 SAME CREW

SUNNY-50-
 10-11-93

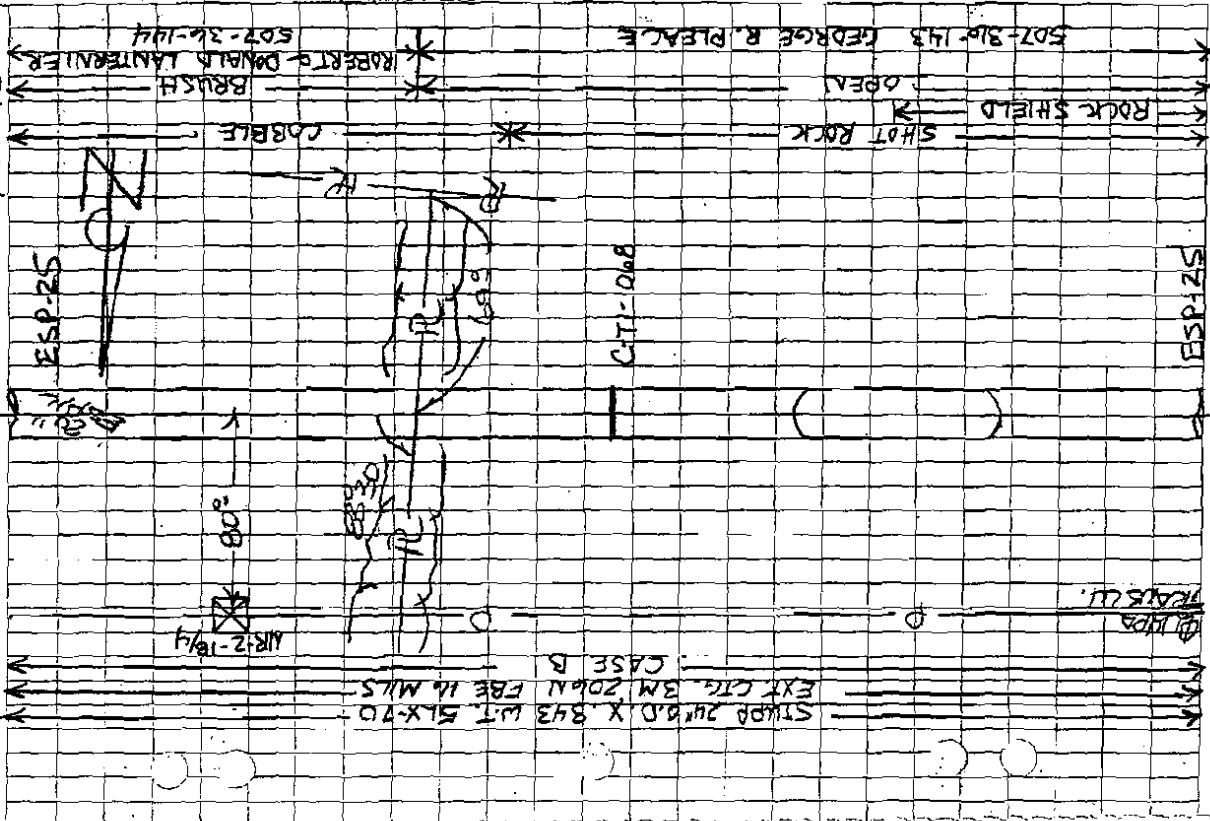
24

STA.	H.I.	ELEV.	REMARKS
1250+86.58	7.60	99.24	CAD WELD TEST LEAD (A) WHITE #8, (D) BLACK #8
1250+95.46	16.75	90.09	NG & AML-5234
1251+07.92	7.40	99.44	TOP "
"	16.71	90.13	NG & 995A6
1251+28.37	7.50	99.84	TOP "
1251+35.37	12.85	93.99	END ROCK SHIELD
"	7.60	99.24	NG & G-DI-1686
1251+41.97	12.25	94.59	TOP "
"	7.40	99.44	NG & 790B
1251+75.26	12.05	94.79	TOP "
J.B.M.	6.84	100.00	NG & AML-5233
			TOP "
			T.B.M. - TOP OF BRACKET CONNECTING TONGUE LEG OF
			TRW # 182-184, 90° NORTH OF FORE PIPE

PROFILE BK #4

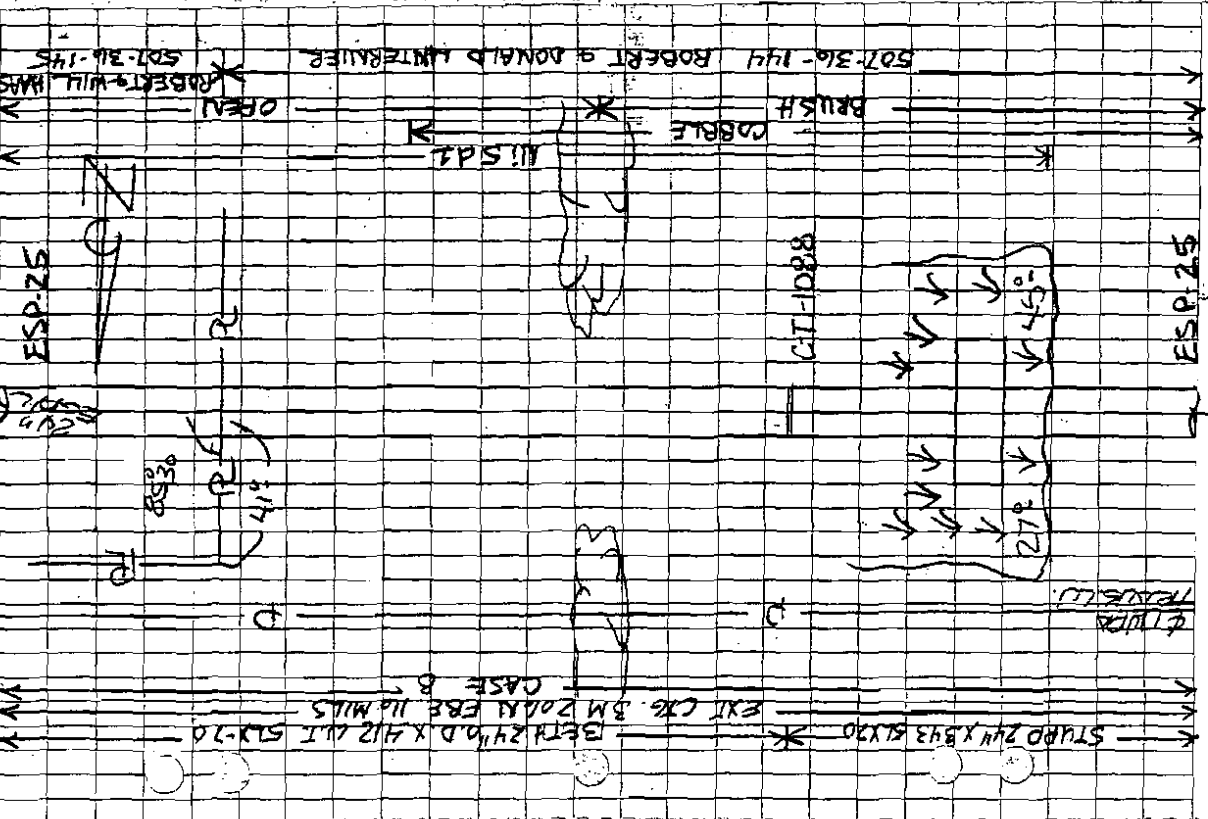
P.M.B. & T. J. OF PEUNETON W.O. 1180010
 SCREW DIACAP Co. J.H., COPY 70 19
 9-20-98

STA.	PIPE STA.	REMARKS	COVER
1251+65		QUICK TURN (118-2-18-4) 80° ST	
1253+29		REG. BRUSH	
1252+29		APPROX. R. - HERGE 2000	
1251+65	1252+57	END SHOT ROCK	
1250+56	1251+41	10-11-93 C-TI-1008	
1250+35		END ROCK SHIELD	
1250+16	1251+07	90° SAG	
1249+95		AS-066-1	



AS-066-1

RMA-ETZ
 CREW
 TURN OF PELICAN (W.D. 11825700)
 NIAGARA CO. (D.I.)
 DAY 70.20
 09-20-93

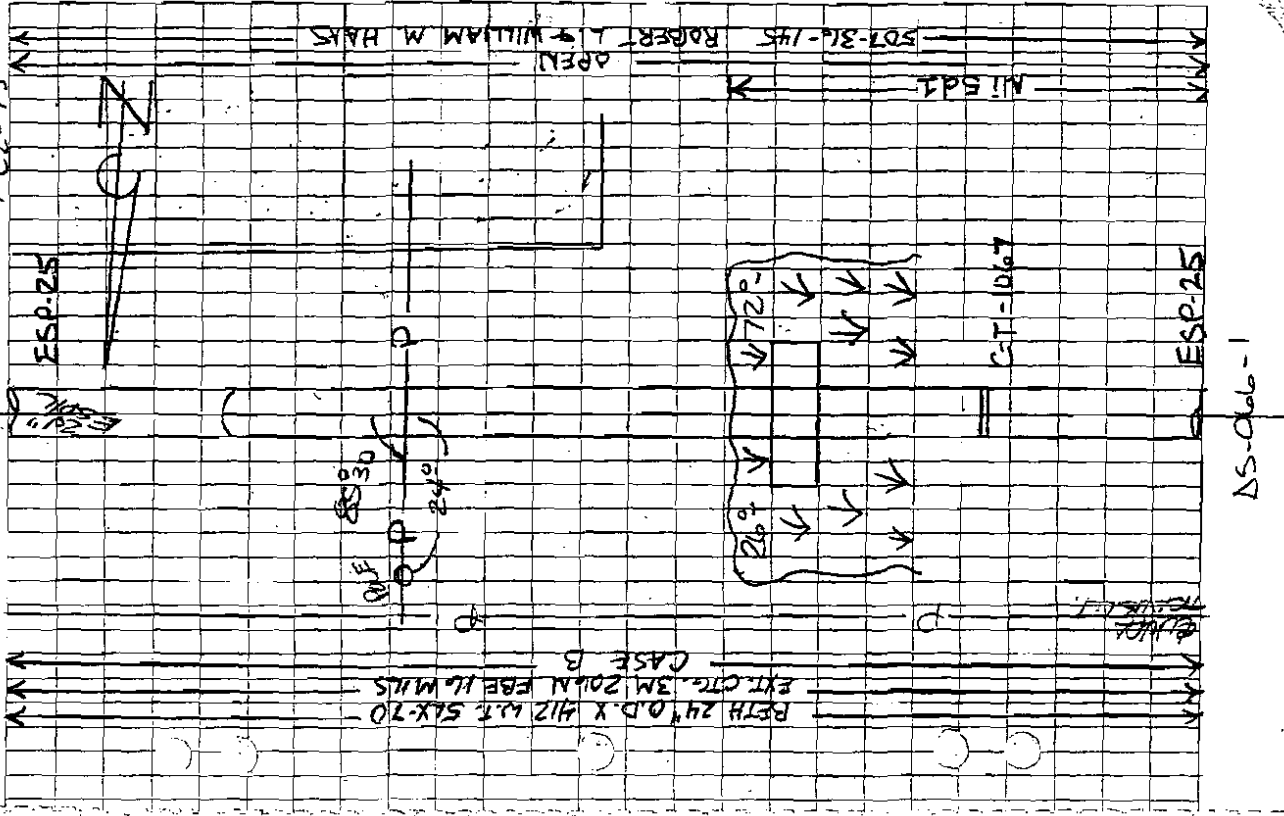


STA.	PIPE STA.	REMARKS	COVER
1258+88		APPROX. R	
1258+67		END COBBLE	
1258+31		END BRUSH HEDGEROW	
1257+87	1758+51	10-15-93 C-71-1088 BEG. BETH AIRWIT.	
1257+82		TRENCH BREAKER REG. LI-Sd1	
1257+65			

AS-046-1

P. MARIZ JULIO DE PERALTA 4107 1825400
 3 CREW WING AREA CO, LLC P. DAY 721
 9-22-93

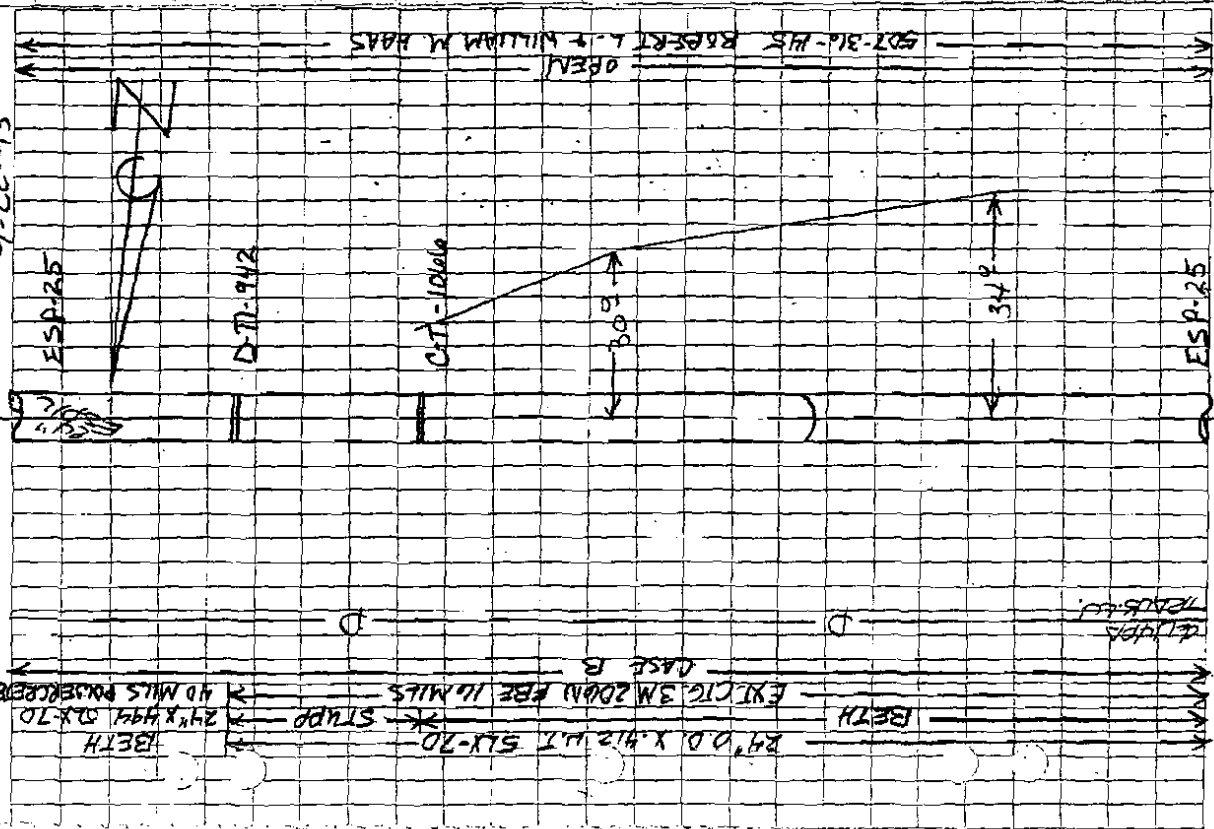
STA.	PIPE STA.	REMARKS	COVER
21		24" EMPIRE STATE PK SPREAD 1	
1262+28	1263+16 ³⁰	16" OP	
1261+84		3 W. 0' HD. PIPE - POLE 24" LT.	
1261+81		EDGE ASPH. PKG. LOT 29 ² R. 10	
1264+50		TRENCH BREAKER END 11'-5d1	
1260+84	1261+72 ⁸⁵	10-9-93 C-TI-1067	
1258+98		AS-066-1	



AS-066-1

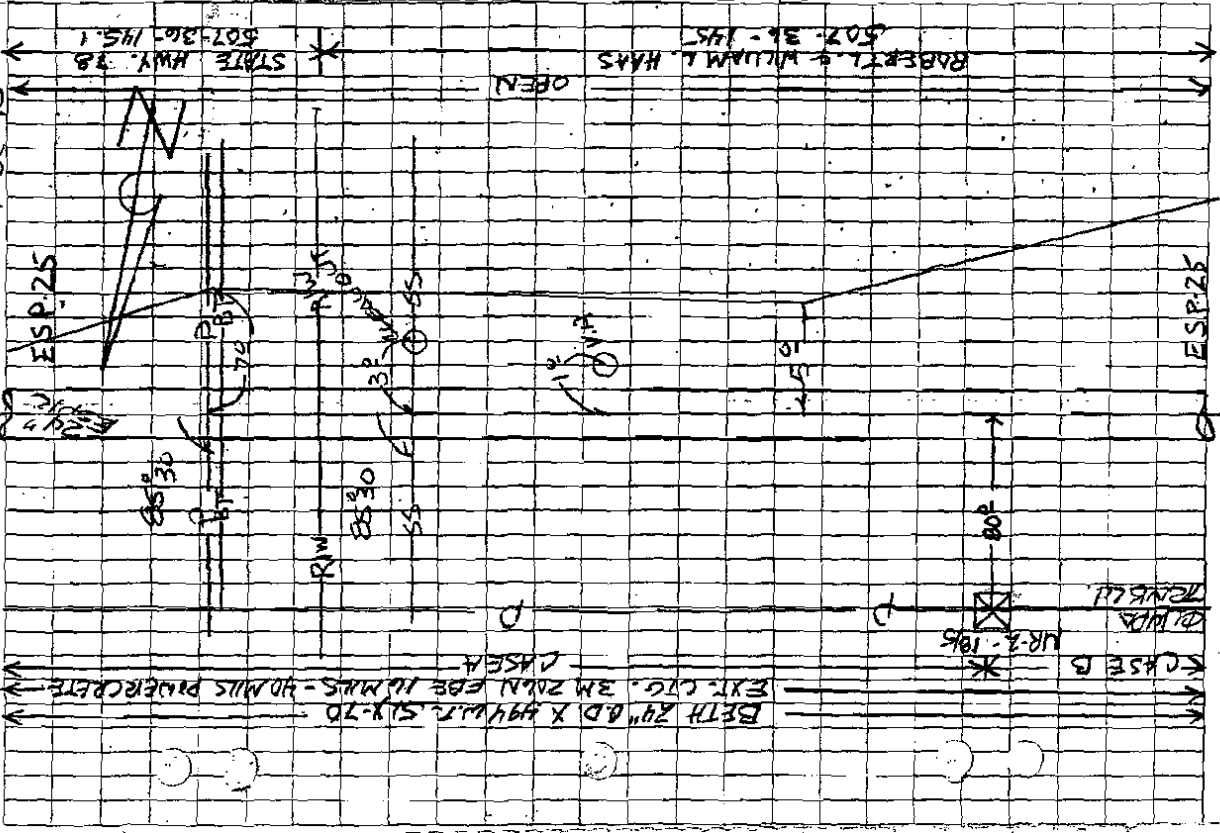
P. MAGRZ TULLOGE HEADLTON L.H.O. - 1168710
 CREW MACARD O.U.Y. P.C.D.Y. 7522
 9-22-93

STA.	PIPE STA.	REMARKS	COVER
1262190	1263176 ⁶⁷	D-71-942	40 MILS POLYESTER
1262194 ²	1263173 ¹²	10-9-93 C-II-10106	BEG. STUPE 412001
1262176		P1. ASFH. PKG. LOT 30° ST.	
1262163	1263156 ⁰¹	16' 12" SAC	
1262154		P1. ASFH. PKG. LOT 34° ST.	
1262123		AS-046-1	



AS-046-1

P. MARIZ TULLOGE PERMITOR W.D. #11585100
 T. CREEL LINDGREN CO., LLC. COUNTY #23
 8-23-95

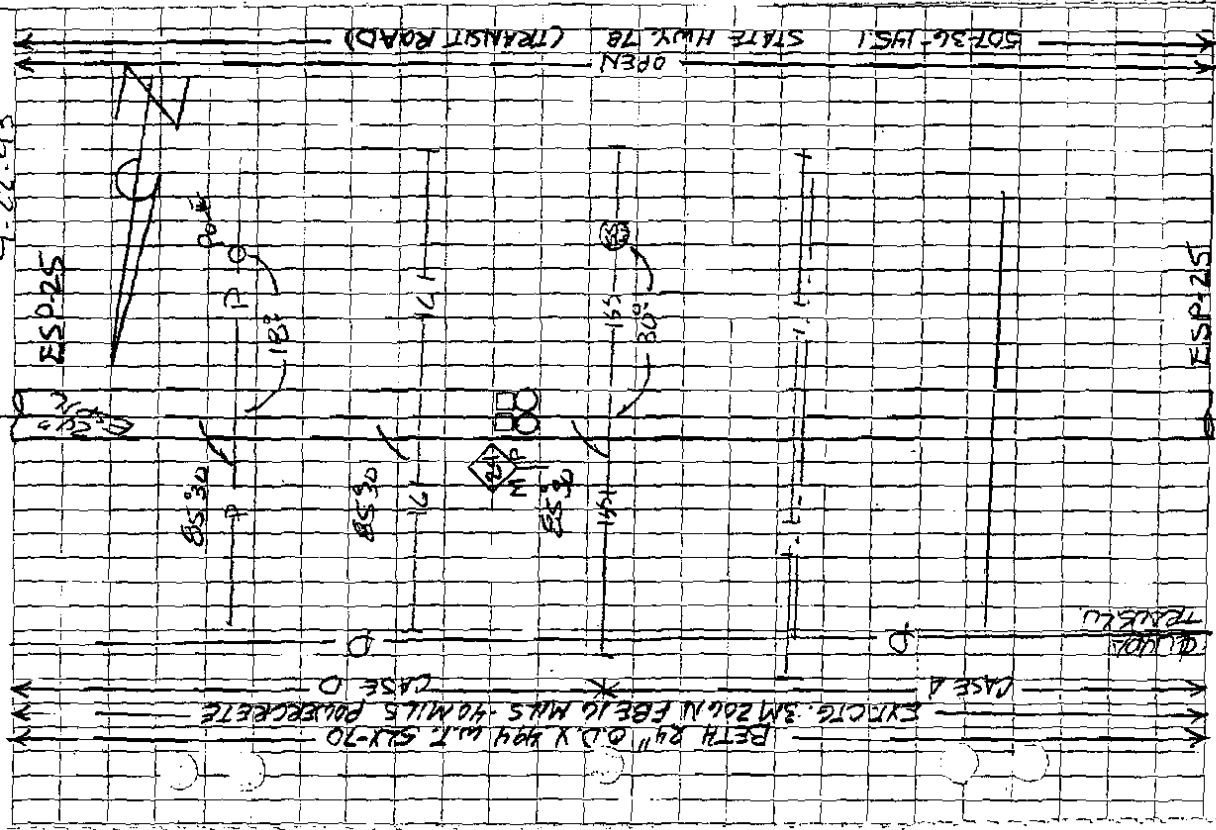


STA.	PIPE STA.	REMARKS	COVER
1263+42		4" ALUM. PIPE U.G. TEL. - RI. PKC. LOT 7° RT.	
1263+38		APPROX. R/W SEWER 2' CLEARANCE 3" RT.	
1263+33	8"	DVC SEWER LL	84" cov.
1263+31		SEWER 2' VENT PIPE 1' RT.	
1263+20		RI. ASPH. PKC. LOT 5° RT.	
1262+92		Φ 14" DA TURN (UR-2-18-5)	80° LT.
1262+90			AS-066-1

23

25
 24" EMPIRE STATE PIPE
 SCREEN

PMARTZ TULLOCH PORT WIND TOWER
 NIAGARA COUNTY P.C.D.V. 75°25'
 7-22-93



STA.	PIPE STA.	REMARKS	COVER
1264450		POLE 10' RT. S.W. CHD. POLE	
1264453		TEST STA. 6" STEEL GAS L.J.	28" cov.
1264452		(2) PILE WARTH. SIGLIS (2) TEST LEAD POSTS M. P# 24	
1264451		S.S. M. H. 30° RT. 8" PVC SEWER	5" cov.
1264449		6" STEEL PIPE & DITCH	31" cov.
1264423		EDGE ASPHALT	
1264418		As-Old-1	

As-Old-1

Appendix C – As-Built and Welding Notes

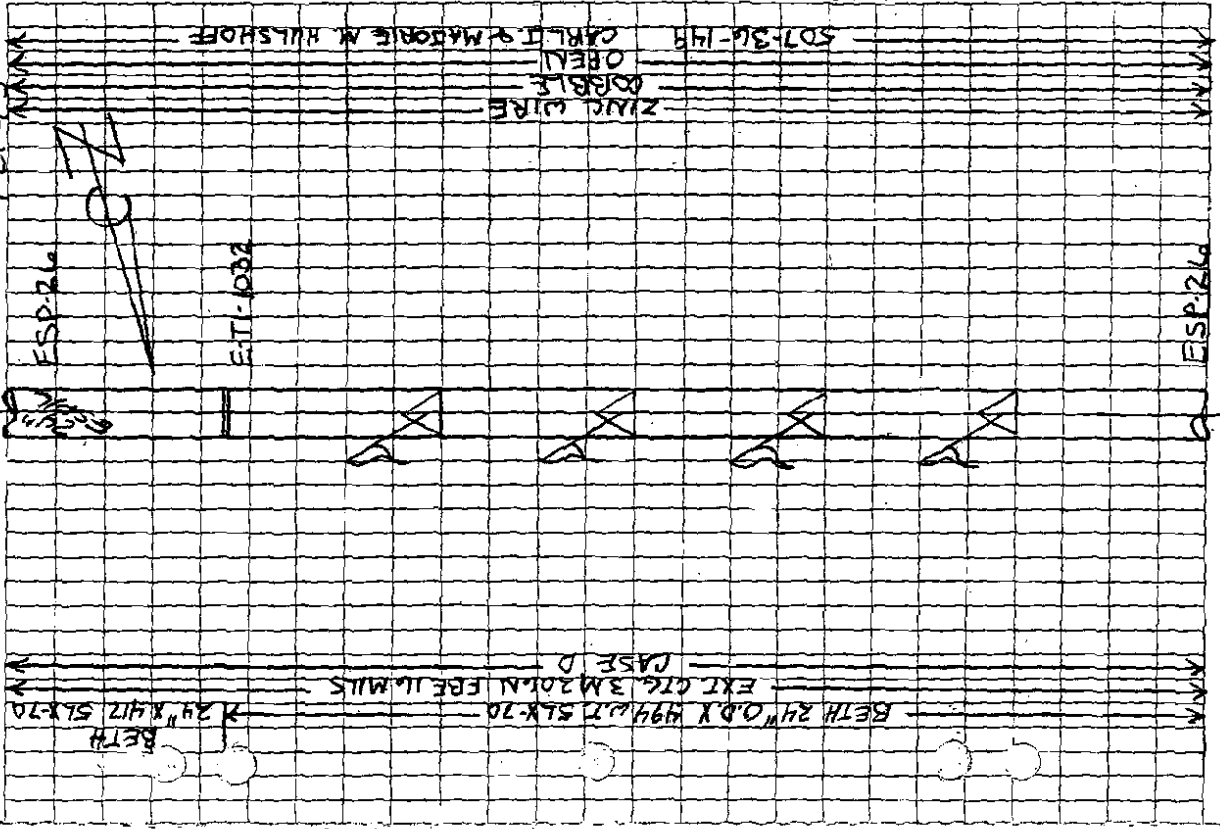
Special Permit Segment #2

12

2 1/2" EMPIRE SUITE DIL
SPREAD

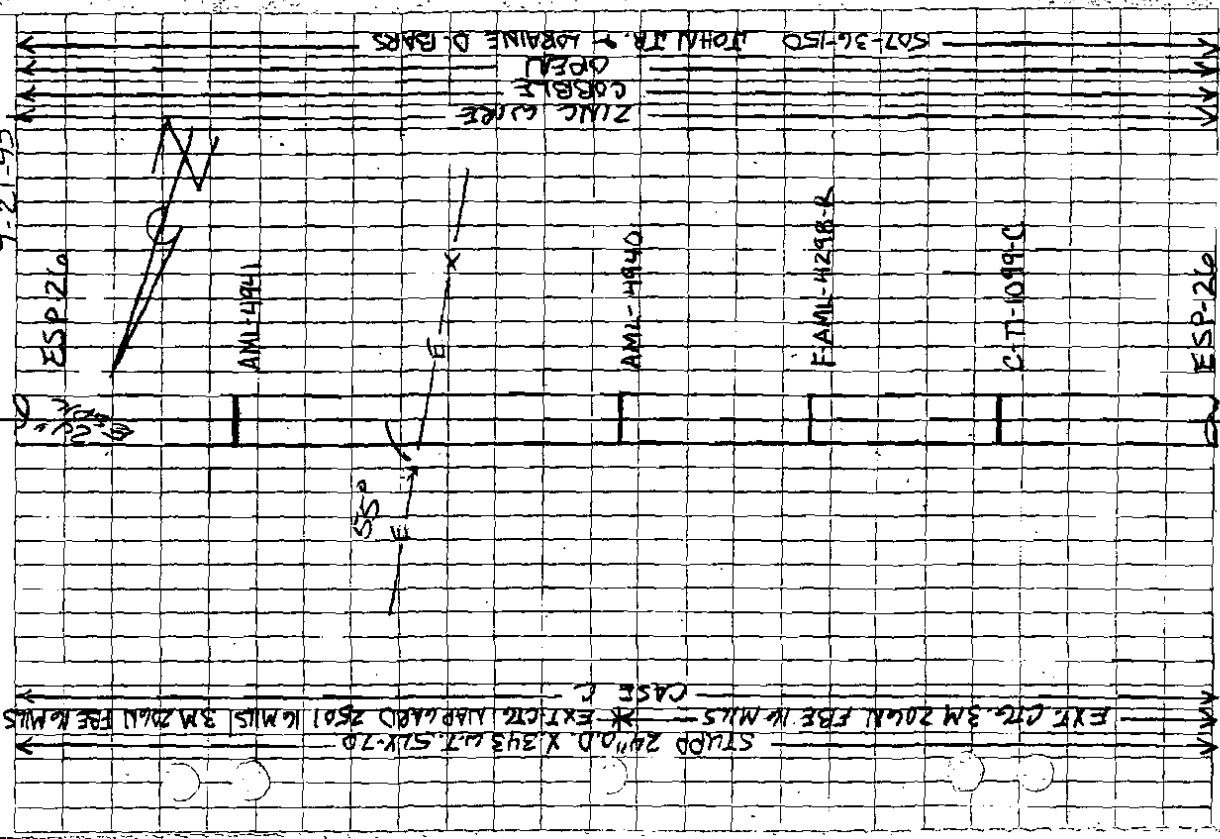
STA.	PIPE STA.	REMARKS	COVER
1322+00	1323+01	9-29-93 E-TI 1082 BEG. BETA	4" cov.
1321+74	1322+34	P. 1. 15° 16' LT. (612° 58' LT.)	4" cov.
1321+34	1322+34	P. 1. 15° 16' LT. (116° 58' LT.)	4" cov.
1320+98	1321+98	P. 1. 15° 16' LT. (131° 58' LT.)	4" cov.
1320+55	1321+55	P. 1. 15° 16' LT. (174° 58' LT.)	4" cov.
1320+16		AS-067-1	

P. MAETZ TULLOCH REPORT W/OE 11/25/52
ICEEW WACARA CO. NY. CUDY 60° 12'
9-21-93



AS-067-1

P. MARTZ
 CREW
 NIAGARA CO. N.Y. CLDY. 60° 14'
 9-21-93

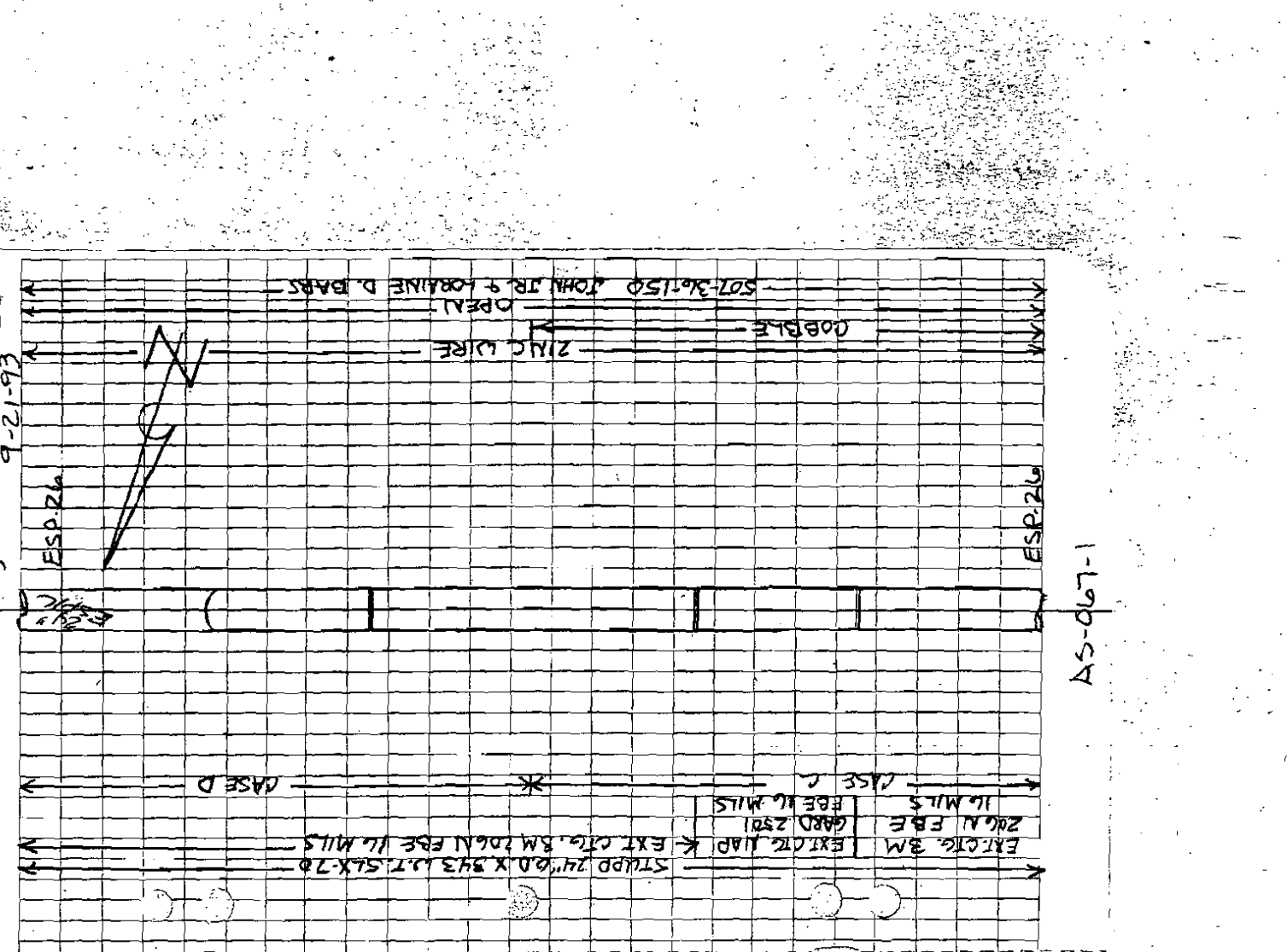


STA.	PIPE STA.	REMARKS	COVER
1330+72	1339+74 ²⁰	AML-4941 BEG. 310-2001-FBI	
1330+99		ELEC FC	
1330+28	1339+30 ⁴⁸	AML-4940 BEG. 116-2501-FBI	4'-CON.
1332+30	1333+33 ⁶²	F-AML-4928-R	4'-CON.
1330+97	1332+01 ⁰⁵	10-27-93 C-TI-1099-C	
1330+81		AS-067-1	

AS-067-1

15
 24" EMPIRE STATE P/L
 SPREAD

15
 24" EMPIRE STATE P/L
 SPREAD



STA.	PIPE STA.	REMARKS	COVER
1341+52	1342+54	4' 0"	
1340+85	1341+67	10-7-93 C-11-1061	
1340+66		END COBBLE	
1339+69	1340+71	AML-4943 BEG. 3M-2041-FBE	
1339+43	1340+45	AML-4942 BEG. 1K-2501-FBE	
1338+72			

AS-067-1

AS-067-1

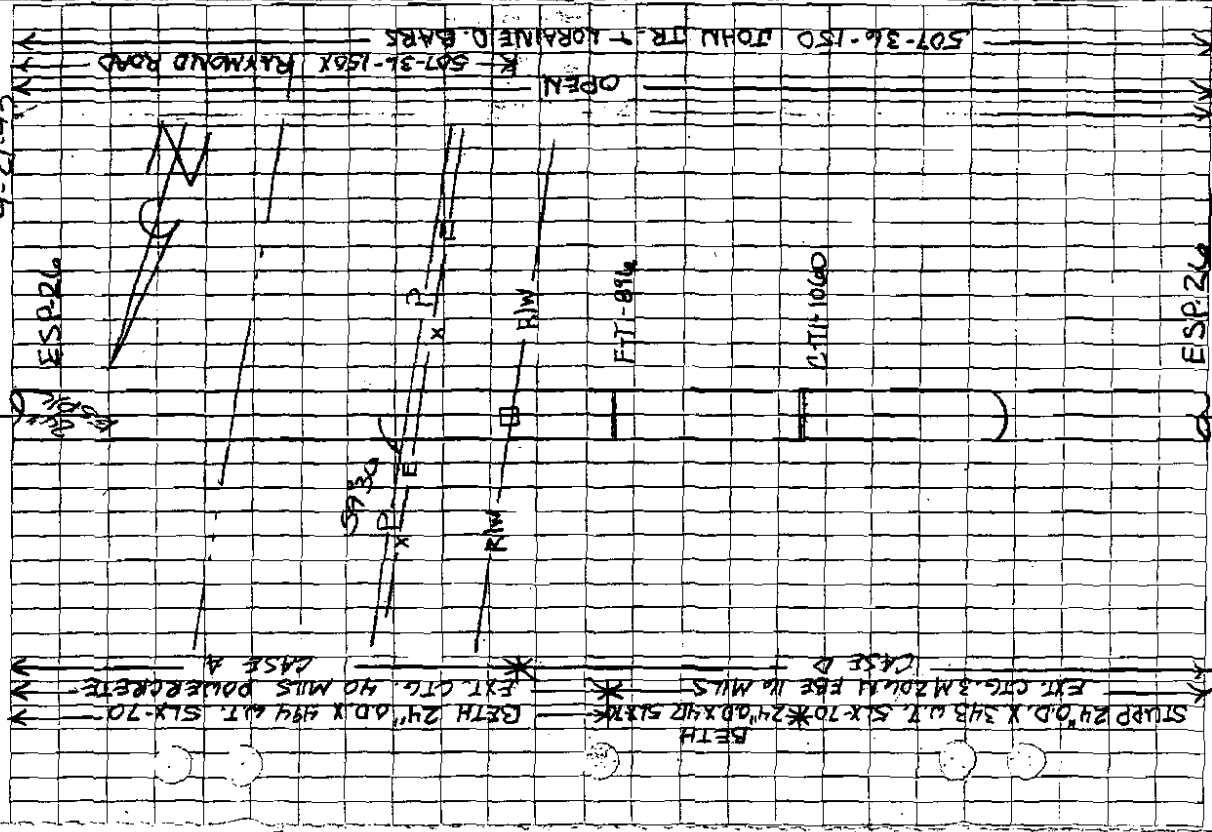
15

15
 24" EMPIRE STATE P/L
 SPREAD

15
 24" EMPIRE STATE P/L
 SPREAD

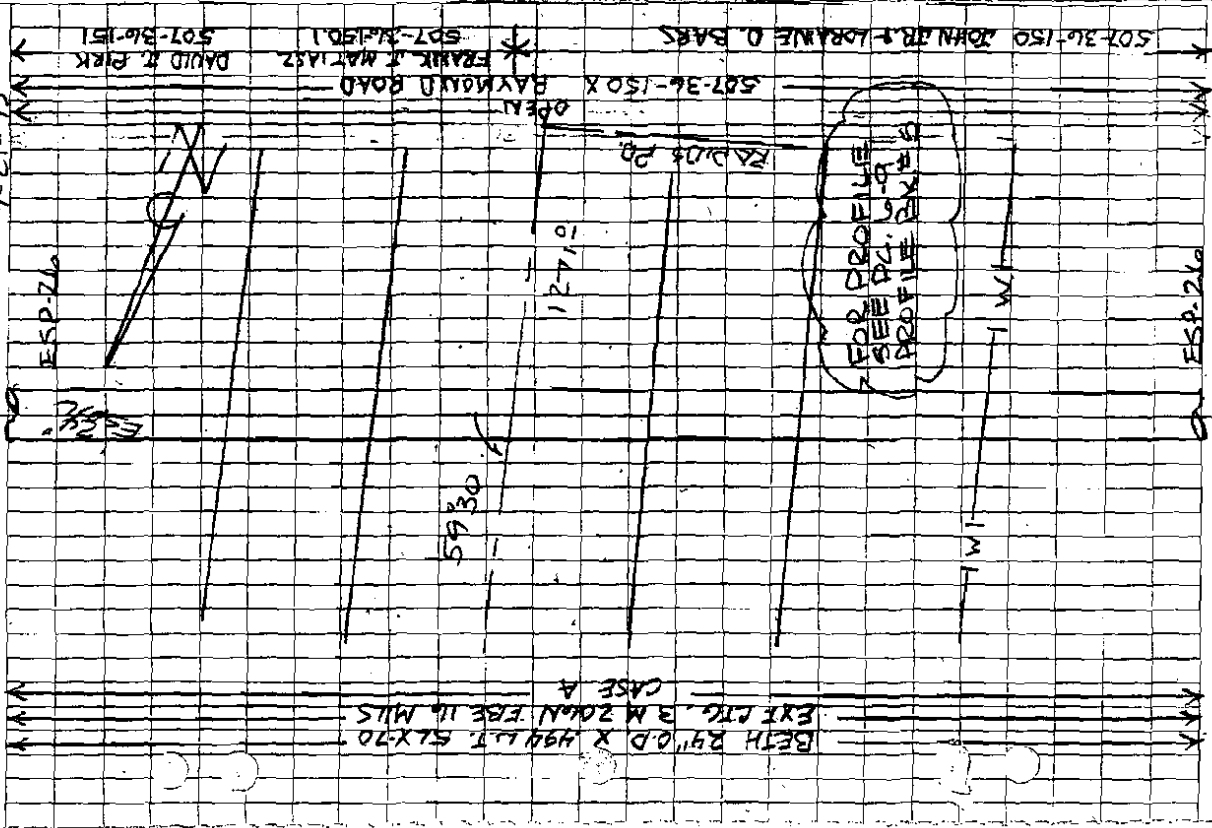
P. MAETZ 1001 OF LOCATIONS
 7 CREW NIAGARA COUNTY CUDY 6016
 9-21-93

STA	PIPE STA	REMARKS	COVER
1342125		Ø DITCH	
1342120		Ø HD PIPE LID	
1342116		ELEC FZ - END ZINC WIRE	
1342115		APPROX B/W - PLUMBER SIGN	
1342109	1343+17	F-TI-896 40 MILS PC REQ. 44' DIST	
1341195	1342+97	C-TI-1060 REG. BETH. 412' DIST	
1341152			



AS-067-1

17 P.M. 2Z FULL OF LOCKPORT W.O.T. 118224
 1 CREW WINGARA CO. JUN. CUDX 60.17
 9-21-93



STA.	PIPE STA.	REMARKS	COVER
1342+75		SHLDR.	
1342+69		EDGE RD.	
1342+54		BRASS MOUND RD.	
1342+43		EDGE RD.	
1342+34		SHLDR.	
1342+28		8" PVC WATER L.I.	40" cov.
1342+25			

AS-067-1

18

24" EMPIRE STATE P/L

SPREAD

STA. PIPE STA.

REMARKS

COVER

1343155 1344157 4' 0" 03

1343120 1344106 4' 5" 106

1343106 1344106 4' 5" 106

1343102 ALLUDE

1342196 1343198 47
APPROX. IN W - TEST LEAD POST
10-7-93 3M. 2000 - TBE
C-11-1062 BEG. 243 W.T.

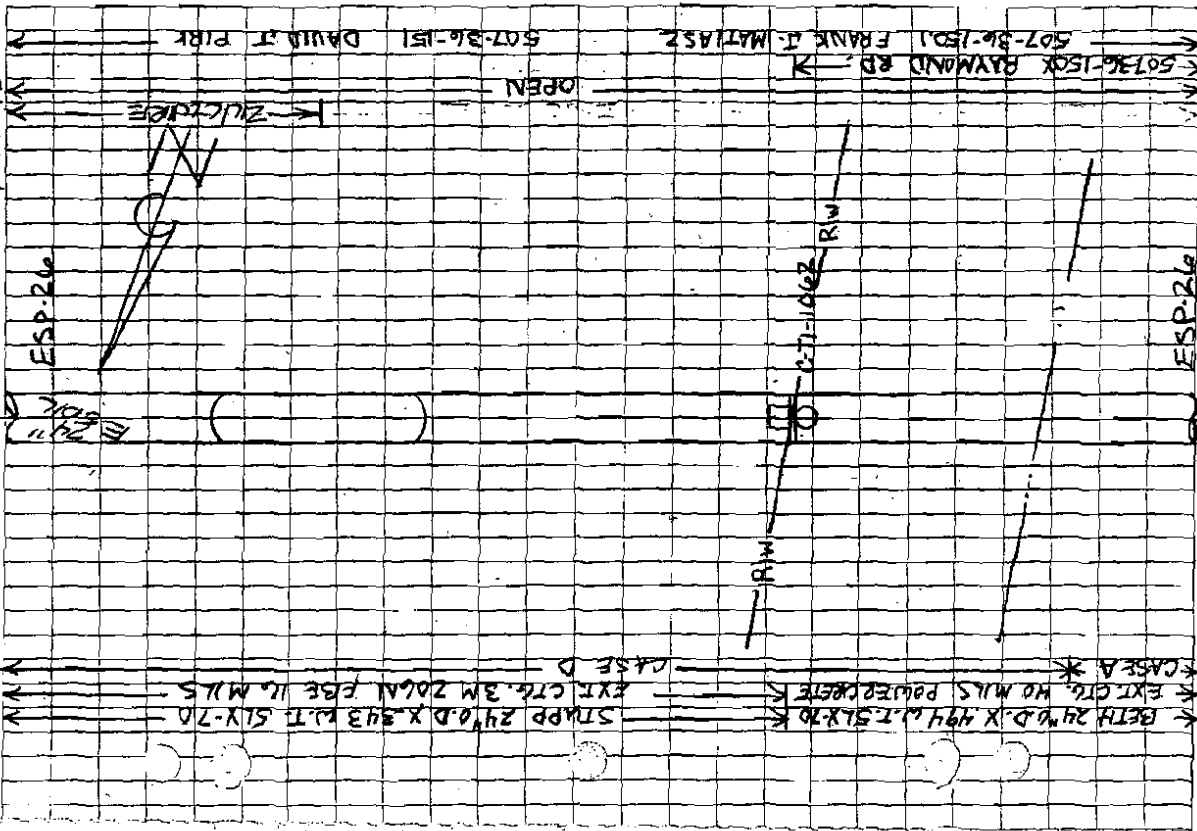
1342191 4' DITCH

1342177 BEGIN CASE D

1342175

AS-067-1

P. M. D. R. T. T. J. J. OF L. O. R. D. K. I. T. U. S. A. U. R. C. A. T. I. O. N.
CREW NIAGARA COUNTY CLOS. 6018
9-21-93



AS-067-1

19

24" EMPIRE STATE P/C
SPREAD 1

134448
134444
134440
134439
134415
134356

STA. PIPE STA.

REMARKS

COVER

EDGE WATER

111/5° SEC ROCK SHLO.

5250# SET-ON CORK CUT

TOP BANK - PILLAR LINKS

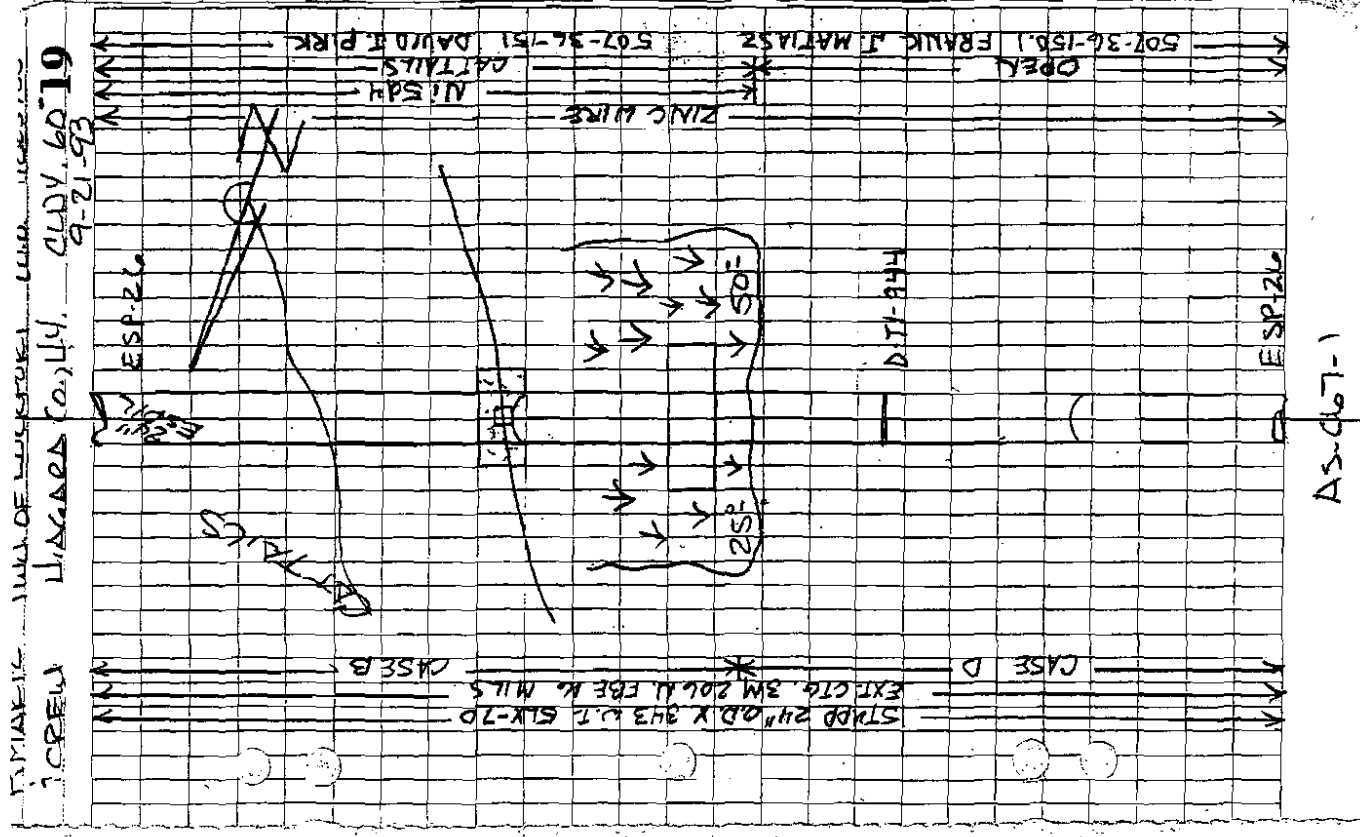
TRENCH BREAKER

REG. LI-544

10-6-93
D-TI-944

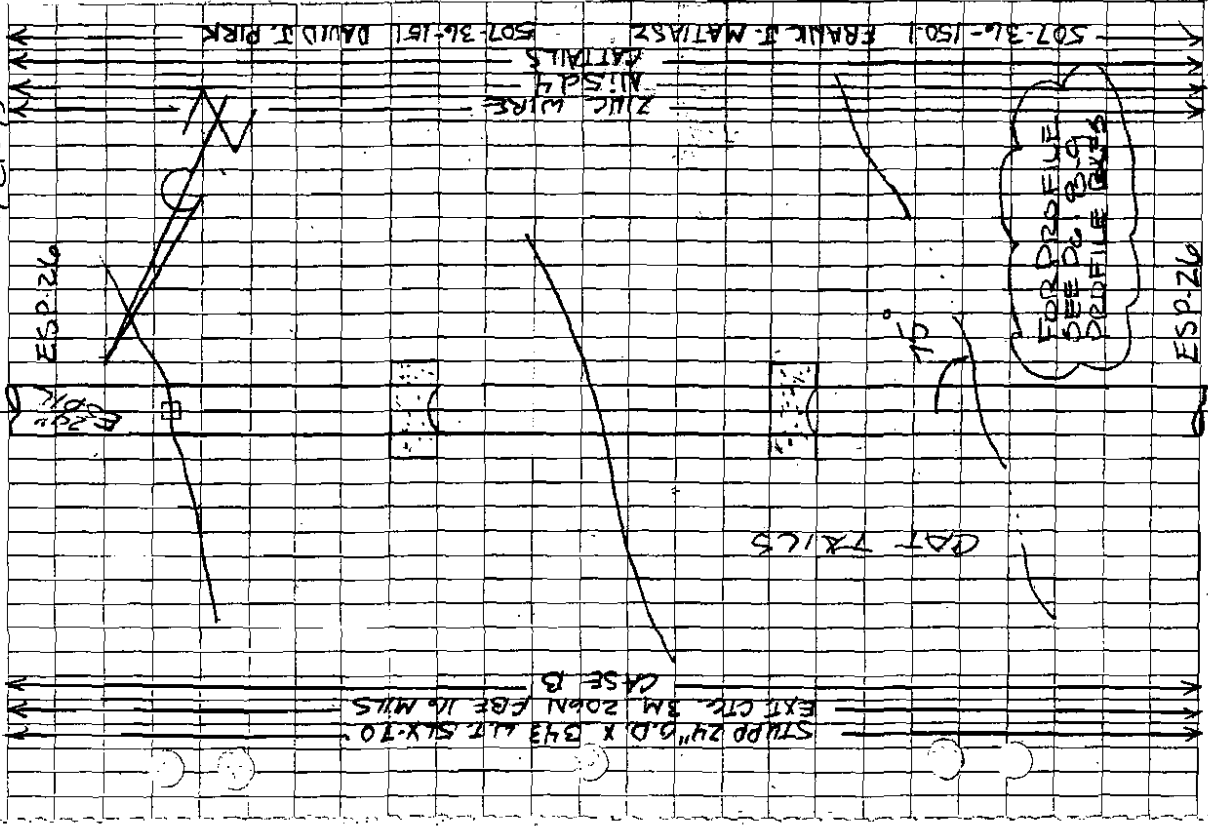
5' 12" ODP

AS-067-1



EMPIRE STATE P/C
CREW
WAGGARD CO., INC.
CLDY. 60-19
9-21-93

P. MARTZ TOWN OF LOCKPORT W.O. #11825400
 CREW NIAGARA COUNTY CUDY 6020
 9-21-93

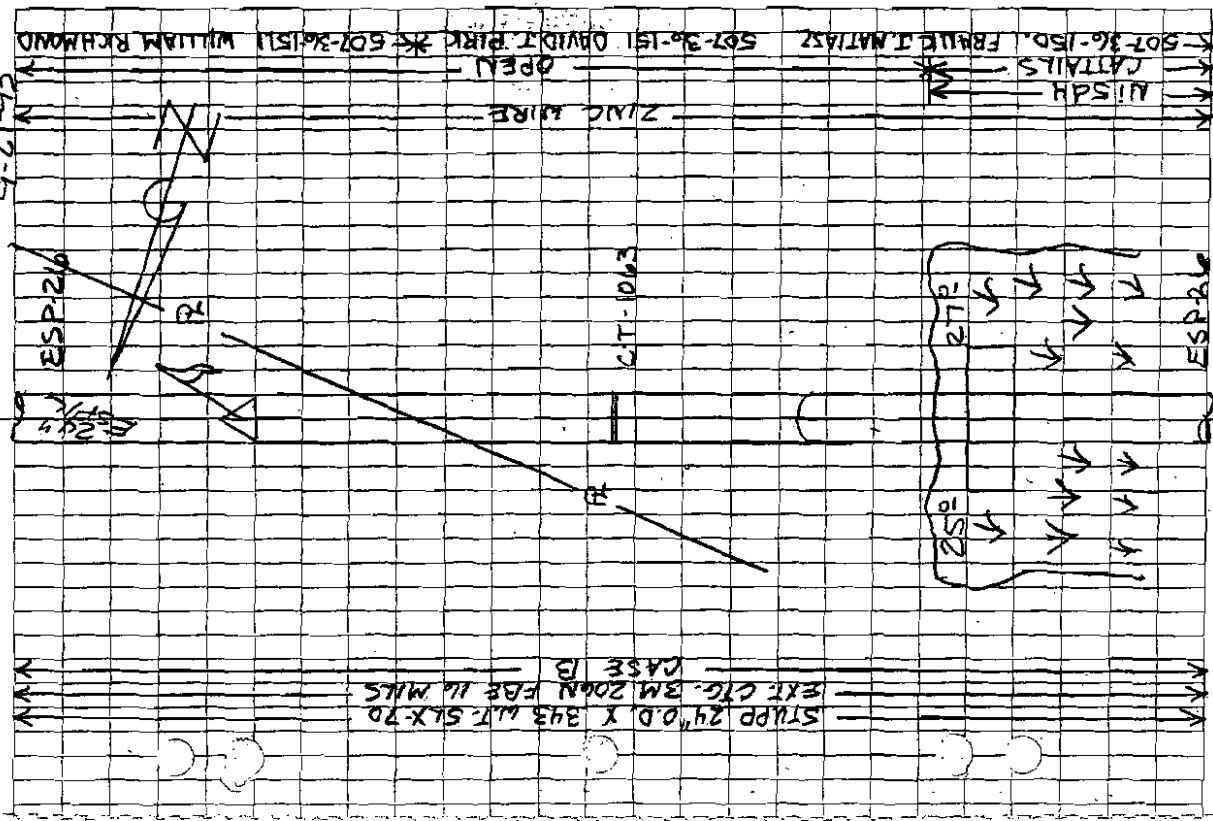


STA	PIPE	REMARKS	COVER
20	24" EMPIRE STATE P/L SPREAD 1		
1344+71		P/L W/ALUM SIGU TOP BANK	
1344+72		W/ 5' SEC. ROCK SHLD. 5250# SET-ON CONC. G. T.	
1344+73		EDGE WATER	
1344+52		W/ 6' SEC. ROCK SHLD. 5250# SET-ON CONC. G. T.	
1344+54	1345+52 ⁶⁰	11" SAC - & DRAIN	
1344+48			AS-067-1

AS-067-1

P. MARETZ TULLOCH REPORT W.D. 11/25/60
 5 CREW WAGGAS Co., 14 C.D.Y. 621
 9-2-63

STA.	PIPE DIA.	REMARKS	COVER
21	24"	EMPIRE STATE PLG SPREAD 1	5' cov.
1344+70	1350 FT. 82	P.I. 23' 48" RT. (23 3/4° BE. RT.)	
1344+30		APPROX R (W. EVID)	5' cov.
1344+52	1347+55	10-7-93 C-51-1063	
1344+96	1345+98	5 1/2° 03	
1344+85		TRENCH BREAKER EVID. - SD 4	
1344+77			AS-067-1



AS-067-1

6
 SPREAD 1/24" ANK-EMPIRE STATE P/C
 PROFILE OF RAYMOND RD. & DRAINAGE DITCH
 JOHN JR. & LORRAINE D. BARS, TRACT # 507-36-150
 RAYMOND RD. TRACT # 507-36-150X
 FRANK J. MATIAS, TRACTS 507-36-150A)

P.C. - T. POWELL
 X - M. NAPIER
 R - R. GLADEN

SUNNY-70°
 10-07-93
 6

STA.	T.B.M.	REMARKS
		TERM - P.K. NAIL IN C/D OF RAYMOND ROAD
		N/G.
		T.O.P.
		N/G. C-TI-1061
		T.O.P. " "
		N/G.
		T.O.P.
		N/G. F-7185
		T.O.P. " "
		N/G. 402.3
		T.O.P. " "
		N/G.
		T.O.P.
		N/G. 405.6
		T.O.P. " "
		N/G. C-TI-1060, BEGIN 412 WT.
		T.O.P. " "
		N/G. F-7189, BEGIN 494 WT, POWER CONCRETE
		T.O.P. " "
		R/W

STA.	T.B.M.	ELEV.
1341+62.50	4.54	97.84
"		93.79
1341+87.50	1340+85	97.74
"		92.97
1342+12.50		98.14
"		92.70
1342+41.36		97.94
"		92.59
1342+54.44		97.84
"		92.59
1342+79.44		97.84
"		91.45
1342+97.96		97.94
"		90.38
1343+11.96		98.24
"		90.50
1343+17.54	1342+15	98.04
"		90.54
1343+20.30		

PROFILE BK. #5

7 SPREAD 124" ANK - EMPIRE STATE P/L
 PROFILE OF RAYMOND RD. & DRAINAGE DITCH (CONT.)
 JOHN JR. & LORAIN D. BARS, TRACT # 507-36-150
 RAYMOND RD, TRACT # 507-36-150X
 FRANK J. MATIASZ, TRACT # 507-36-150Y

P.C. - J. POWELL
 SAME CREW

SUNNY-70°
 10-07-93

7

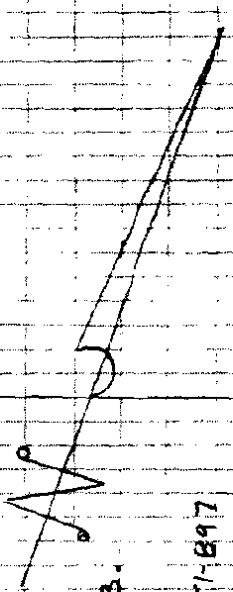
STA.	+	H-I.	-	ELEV.	REMARKS
		104.54			
1343+20.30					
1343+29.60			7.00	97.54	R/W
"			14.01	90.53	NGW 2' OF BAR DITCH, BEGIN BORE
1343+40.30			5.05	99.49	T.O.P. " "
1343+46.80			4.71	99.83	NGW SHOULDER
1343+60.30	1342+56		4.54	100.00	EDGE OF PVMT.
1343+73.80			4.79	99.75	ROE RAYMOND ROAD
1343+80.30			5.30	99.24	EDGE OF PVMT.
1343+92.80			7.00	97.54	NGW SHOULDER
"			14.04	90.50	NGW 2' OF BAR DITCH
1343+98.47			5.60	98.94	T.O.P. " "
"			14.08	90.46	NGW C-TI-106Z, BEGIN 343 WT. SCOTCH KOTE
1344+00.30					T.O.P. " "
1344+08.52			5.80	98.74	R/W
"			14.07	90.47	NGW 4" SAG
1344+33.52			6.40	98.14	T.O.P. " "
"			12.51	92.03	NGW
1344+57.51	1343+55		6.20	98.34	T.O.P.
"			11.25	93.29	NGW 4" O.B. T.O.P. " "

PROFILE EX. # 5

8 SPREAD-1/24" ANR-EMPIRE STATE 1/2
 PROFILE OF RAYMOND RD. 4 DRAINAGE DITCH (CONT.)
 JOHN JR. & LAURINE D. BARS, TRACT# 507-36-150
 RAYMOND RD., TRACT# 507-36-150 X
 FRANK A. MATIASZ, TRACT# 507-36-150

PC: T. POWELL
 SAME CREW
 10-07-93
 8

STA.	H.I.	ELV.	REMARKS
13445751	104.54	98.34	NG. 4' 0" B.
"		93.29	T.O.P. "
13445801		98.04	NG. 2' 7" B-97
"		93.29	T.O.P. "
134517.07	134415	98.04	NG. 2' 5 1/2" B.S.
"		92.94	T.O.P. "
1345132.05		98.14	NG. 2' 0" B-94
"		91.52	T.O.P. "
1345144.05			TRENCH BREAKER
1345146.36			SET ON WEIGHT
1345156.60	134454	96.46	NG. 11" SAG 1/2 OF DRAINAGE DITCH
"		89.44	T.O.P. "
1345160.00			SET ON WEIGHT
1345174.00			SET ON WEIGHT
1345176.74			TRENCH BREAKER
1345181.60		98.24	NG.
"		91.24	T.O.P.
1345198.80	134496	98.34	NG. 2' 5 1/2" B.S.
"		93.05	T.O.P. "



PROFILE P.X.# 5

SPREAD-1-24" ANR-EMPIRE STATE 1/2
 9 PROFILE OF RAYMOND RD. & DRAINAGE DITCH (CONT.)
 JOHN JR. & LOUANE D. BARS, TRACT # 507-36-150
 RAYMOND RD., TRACT # 507-36-150A
 FRANK J. MATIASZ, TRACT # 507-36-150.1

PC - J. POWELL

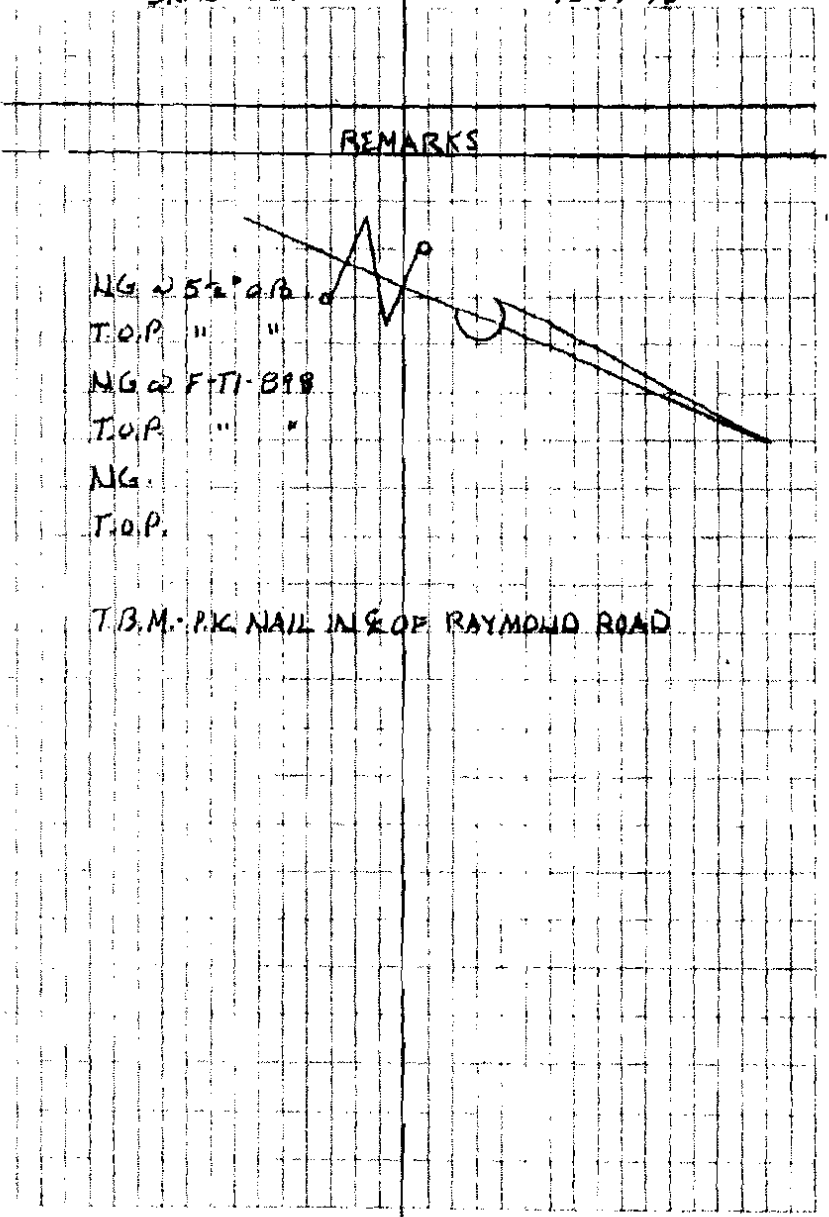
SUNNY-70"

SAME CREW

10-07-93

9

STA.	+	H.I.	-	ELEV.
		104.54		
1345+98.80			6.20	98.34
"			11.49	93.05
1346+14.25			6.70	97.84
"			11.24	93.30
1346+39.25			6.70	97.84
"			11.05	93.44
T.B.M.			4.54	102.00



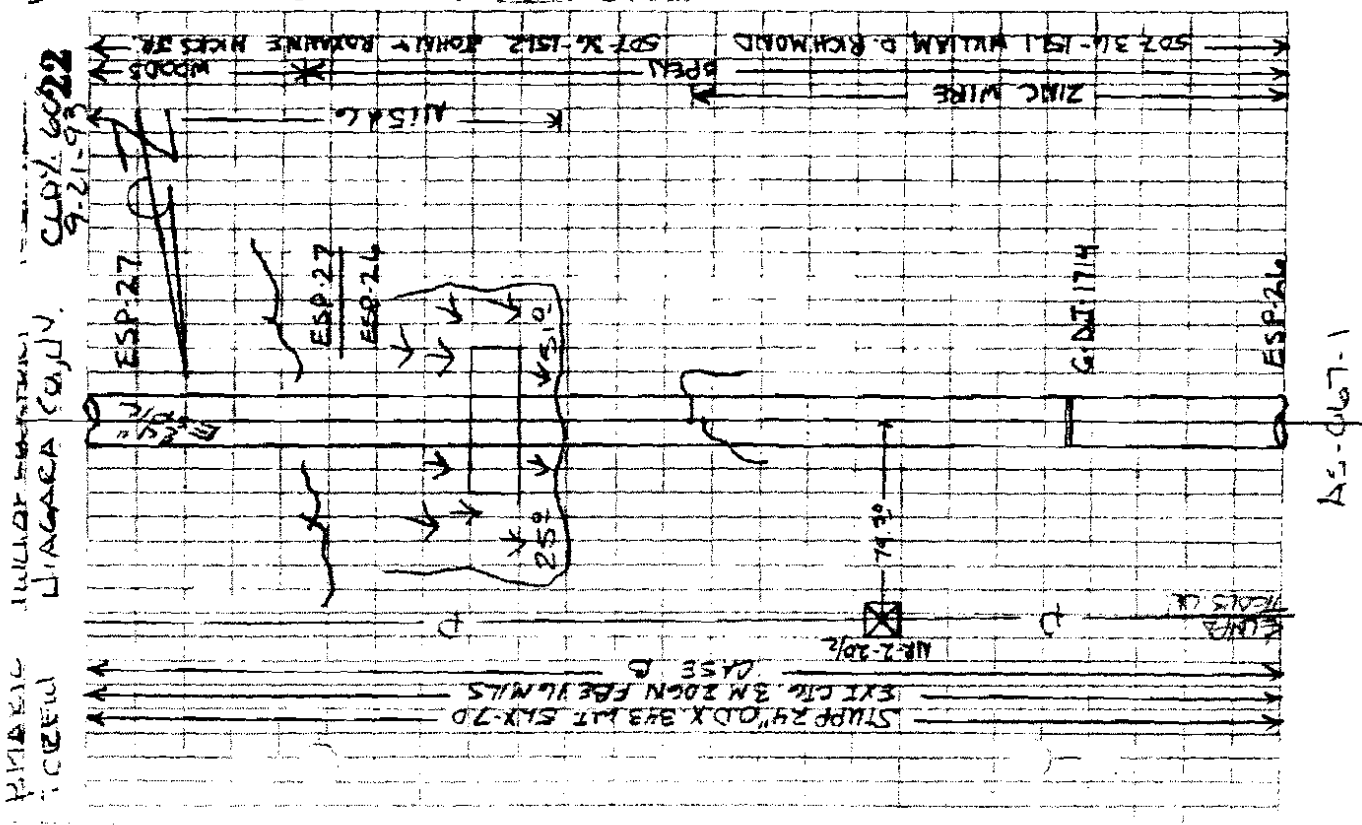
NG w 5 1/2" a/b
 T.O.P. " "
 NG w FTI-898
 T.O.P. " "
 NG
 T.O.P.

T.B.M. - PK NAIL IN & OF RAYMOND ROAD

PROFILE PK # 5

22

STA	PIPE STA	REMARKS	DATE
135746		BEG. DITCH	4/10
135840		TRENCH BEGINS BEG. J. 500	
135937		END ZINC WIRE	
135979		END PA TUBING 4' con. 5' con.	
135985	1353+32 B-DI-1714		4' con.
135970		AS-067-1	



PLANS
DIAGRAMS
CLD% 6022
9-21-93

Appendix D – In-line Inspection Results



National Fuel Gas Supply Corporation
24in Empire State Pipeline Section 1
Canada/USA Border to Mendon Station
 HRMFL Inspection Features List
 Revised

Item No.	Pipe Joint No.	Pipe Joint Length (ft.)	Tool Absolute Odometer (ft.)	U/S Weld Odometer (ft.)	Distance from U/S weld to Item (ft.)	Distance to D/S weld from Item (ft.)	Distance to Next Item (ft.)	Type of Feature	Int/Ext	Information Supplied by Pipeline Company					
										Pipe O.D. (in)	Pipe SMYS (ksi)	Pipe Wall (in.)	Class Loc. Fac.	HCA yes/no	Pipe Design Pressure 2SID*F (psig)
1	29	75.59	1089.63	1124.17	41.05	34.54	50	Touching Metal Object		24	70	0.412	0.60	No	1442
2	31	2.20	1139.39	1140.43	1.11	1.09	17	Flange		24	70	0.532	0.60	No	1862
3	33	2.85	1156.57	1157.06	1.46	1.39	8	Tee		24	70	0.532	0.60	No	1862
4	35	3.53	1164.52	1166.27	1.79	1.74	8	Valve		24	70	0.532	0.60	No	1862
5	37	2.91	1172.62	1173.98	1.55	1.36	6872	Tee		24	70	0.532	0.60	No	1862
6	133	81.56	8044.24	8058.30	67.50	14.06	1516	Manufacturing Indication		24	70	0.412	0.72	No	1730
7	154	75.18	9559.97	9629.67	5.48	69.70	246	Metal Loss	EXT	24	70	0.412	0.72	No	1730
8	157	71.47	9806.35	9839.05	38.76	32.70	259	AGM 1		24	70	0.412	0.72	No	1730
9	160	70.57	10065.61	10068.20	67.99	2.59	4932	Metal Loss	INT	24	70	0.412	0.72	No	1730
10	254	40.57	14897.35	14905.39	32.53	8.04	3833	AGM 2		24	70	0.412	0.72	No	1730
11	344	38.85	18730.36	18766.71	2.49	36.36	879	Metal Loss at Long Seam	EXT	24	70	0.412	0.72	No	1730
12	368	40.11	19609.11	19645.06	4.15	35.95	1029	Casing - Start		24	70	0.494	0.72	No	2075
13	394	40.02	20638.33	20643.40	34.95	5.07	34	Casing - End		24	70	0.494	0.60	Yes	1729
14	395	40.85	20671.99	20684.25	28.59	12.26	57	Touching Metal Object		24	70	0.494	0.60	Yes	1729
15	398	2.88	20728.86	20730.29	1.44	1.43	776	Tee		24	70	0.494	0.60	Yes	1729
16	419	40.69	21504.48	21523.51	21.66	19.03	4624	AGM 3		24	70	0.494	0.50	Yes	1441
17	521	80.59	26128.27	26142.42	66.44	14.16	2219	Metal Loss	EXT	24	70	0.412	0.60	No	1442
18	570	2.90	28346.77	28348.13	1.54	1.36	8	Tee		24	70	0.494	0.50	Yes	1441
19	572	3.51	28354.64	28356.42	1.73	1.78	8	Valve		24	70	0.494	0.50	Yes	1441
20	574	2.87	28362.86	28364.17	1.56	1.31	2966	Tee		24	70	0.494	0.50	Yes	1441
21	652	40.53	31328.68	31348.12	21.09	19.44	6562	AGM 4		24	70	0.494	0.50	Yes	1441
22	316	39.88	37390.88	37917.36	13.40	26.48	10678	AGM 5		24	70	0.412	0.60	No	1442
23	1084	24.72	48668.44	48573.27	19.29	5.42	182	Casing - Start		24	70	0.494	0.60	Yes	1729
24	1090	19.26	48750.60	48751.83	18.03	1.23	2518	Casing - End		24	70	0.494	0.60	Yes	1729
25	1154	40.39	51289.66	51282.14	26.92	13.48	275	Close Metal Object		24	70	0.412	0.72	Yes	1730
26	1161	28.93	51543.23	51553.15	19.66	9.86	125	Close Metal Object		24	70	0.412	0.72	Yes	1730
27	1164	40.10	51668.49	51673.77	34.22	5.28	931	Close Metal Object		24	70	0.412	0.72	Yes	1730
28	1188	40.66	52599.09	52638.41	1.24	39.32	1362	Metal Loss	INT	24	70	0.412	0.72	Yes	1730
29	1221	40.48	53960.76	53961.21	40.03	0.45	1671	Metal Loss	INT	24	70	0.412	0.72	No	1730
30	1265	2.90	55631.83	55633.21	1.52	1.38	24	Tee		24	70	0.494	0.60	No	1729
31	1268	2.89	55656.06	55657.47	1.48	1.41	8	Tee		24	70	0.494	0.60	No	1729
32	1270	3.42	55674.01	55665.66	1.77	1.65	8	Valve		24	70	0.494	0.60	No	1729
33	1272	2.88	55671.96	55673.39	1.47	1.41	2400	Tee		24	70	0.494	0.60	No	1729
34	1334	40.40	58071.49	58071.81	49.01	0.32	13	Metal Loss	INT	24	70	0.412	0.72	No	1730
35	1335	39.87	58084.12	58111.68	13.20	27.57	4126	Close Metal Object		24	70	0.412	0.72	No	1730
36	1420	40.55	62209.80	62234.48	13.67	34.68	3734	AGM 6		24	70	0.494	0.50	Yes	1441
37	1515	40.51	66003.85	66036.18	8.18	32.33	1072	AGM 7		24	70	0.412	0.72	No	1730
38	1540	80.43	87073.75	87111.18	15.00	35.43	910	Close Metal Object		24	65	0.370	0.72	No	1443
39	1552	79.76	87935.82	88023.23	12.15	37.61	2814	Discontinuity		24	65	0.370	0.72	No	1443
40	1589	80.12	70799.67	70815.66	81.13	15.99	3252	Touching Metal Object		24	65	0.370	0.72	No	1443
41	1650	40.52	74031.52	74084.43	7.32	32.94	37	Touching Metal Object		24	70	0.412	0.60	Yes	1202
42	1851	39.67	74023.24	74124.13	1.75	35.91	135	Close Metal Object		24	70	0.412	0.60	Yes	1202
43	1855	40.19	74280.58	74284.13	25.00	14.17	10	Close Metal Object		24	70	0.412	0.50	Yes	1202

Item No.	Pipe Joint No.	Pipe Joint Length (ft.)	Too Absolute Odometer (ft.)	U/S Weld Odometer (ft.)	Distance from U/S weld to Item (ft.)	Distance to D/S weld from Item (ft.)	Distance to Next Item (ft.)	Type of Feature	In/Ext	Pipe O.D. (in.)	Pipe SMYS (ksi)	Pipe Wall (in.)	Class Loc. Fac.	HCA yes/no	Pipe Design Pressure 2S/D*F (psig)
44	1655	40.48	74280.01	74284.15	36.33	4.15	154	Close Metal Object		24	70	0.412	0.50	Yes	1202
45	1659	40.40	74433.82	74445.97	28.25	12.15	267	Close Metal Object		24	70	0.412	0.50	Yes	1202
46	1666	40.54	74700.64	74723.75	17.43	23.11	39	Touching Metal Object		24	70	0.412	0.50	Yes	1202
47	1667	40.23	74739.18	74763.98	15.43	24.80	475	Touching Metal Object		24	70	0.412	0.50	Yes	1202
48	1676	51.40	75213.97	75263.48	1.89	49.50	35	AGM 7A		24	65	0.370	0.72	No	1443
49	1676	51.40	75248.62	75263.48	36.54	14.86	2486	Touching Metal Object		24	65	0.370	0.72	No	1443
50	1709	82.47	77734.92	77774.94	42.45	40.02	1281	Touching Metal Object		24	70	0.343	0.72	No	1441
51	1727	2.83	79016.25	79017.54	1.53	1.29	8	Tee		24	70	0.494	0.60	No	1729
52	1729	3.51	79024.09	79025.85	1.75	1.76	8	Valve		24	70	0.494	0.60	No	1729
53	1731	2.83	79032.15	79033.47	1.51	1.32	257	Tee		24	70	0.494	0.60	No	1729
54	1739	40.57	79288.65	79301.57	27.65	12.92	4397	Touching Metal Object		24	70	0.494	0.72	No	2075
55	1796	79.51	83685.82	83717.26	48.07	31.44	1	Touching Metal Object		24	70	0.343	0.72	No	1441
56	1796	79.51	83686.52	83717.26	48.77	30.74	4067	Touching Metal Object		24	70	0.343	0.72	No	1441
57	1900	40.42	87753.49	87762.37	31.54	8.88	171	Metal Loss	EXT	24	70	0.412	0.72	No	1730
58	1905	40.53	87924.70	87933.10	32.13	8.40	220	AGM 8		24	70	0.412	0.72	No	1730
59	1912	40.13	88144.64	88175.62	9.16	30.97	3196	Deformation		24	70	0.412	0.72	No	1730
60	1993	40.46	91340.24	91368.30	12.39	28.07	6545	AGM 9		24	70	0.412	0.72	Yes	1730
61	2161	40.09	97884.97	97910.75	14.32	25.77	1904	AGM 10		24	52	0.500	0.60	No	1300
62	2210	40.04	99788.47	99825.49	3.01	37.03	6728	Hot Tap		24	52	0.500	0.60	No	1300
63	2367	2.85	106516.36	106517.73	1.47	1.38	8	Tee		24	70	0.494	0.60	Yes	1729
64	2369	3.60	106524.33	106526.10	1.83	1.77	8	Valve		24	70	0.494	0.60	Yes	1729
65	2371	2.89	106532.37	106533.72	1.54	1.35	680	Tee		24	70	0.494	0.60	Yes	1729
66	2390	40.20	107212.06	107247.56	4.69	35.50	926	Metal Loss	INT	24	70	0.412	0.60	Yes	1442
67	2413	39.86	108138.01	108171.56	6.31	33.55	3009	Metal Loss	EXT	24	70	0.412	0.60	No	1442
68	2489	39.44	111146.56	111149.31	36.69	2.75	3595	AGM 11		24	70	0.412	0.60	No	1442
69	2579	40.51	114741.07	114741.85	39.73	0.78	175	Metal Loss	INT	24	70	0.412	0.60	No	1442
70	2585	40.24	114915.62	114950.06	5.80	34.44	157	Metal Loss	EXT	24	70	0.494	0.60	No	1729
71	2589	40.47	115072.94	115079.35	34.06	6.41	3442	AGM 12		24	70	0.412	0.60	No	1442
72	2681	40.44	118514.47	118514.80	40.12	0.33	1710	Metal Loss	EXT	24	70	0.412	0.60	No	1442
73	2727	40.95	120224.47	120236.37	29.05	11.90	216	Close Metal Object		24	70	0.412	0.60	No	1442
74	2733	40.70	120440.64	120473.34	8.00	32.70	2693	Close Metal Object		24	70	0.412	0.60	No	1442
75	2798	82.58	123133.88	123185.05	31.41	51.18	3017	Touching Metal Object		24	70	0.343	0.60	Yes	1201
76	2852	40.42	126150.60	126162.50	23.52	11.89	282	AGM 13		24	70	0.412	0.50	Yes	1202
77	2860	40.57	126432.21	126451.43	21.35	19.22	4837	Close Metal Object		24	70	0.494	0.50	Yes	1441
78	2985	2.85	131269.48	131270.84	1.49	1.36	8	Tee		24	70	0.494	0.50	Yes	1441
79	2987	3.52	131277.36	131279.13	1.75	1.77	8	Valve		24	70	0.494	0.50	Yes	1441
80	2989	2.83	131285.42	131286.73	1.51	1.31	5661	Tee		24	70	0.494	0.50	Yes	1441
81	3115	81.47	136949.38	137095.12	23.73	55.74	3903	AGM 14		24	70	0.343	0.60	No	1201
82	3195	37.45	140852.11	140884.48	5.08	32.37	2320	AGM 15		24	70	0.412	0.60	No	1442
83	3255	38.32	143171.92	143182.55	27.70	10.82	329	Touching Metal Object		24	70	0.412	0.60	No	1442
84	3263	40.06	143500.88	143505.63	35.10	4.96	2237	Metal Loss	EXT	24	70	0.412	0.60	No	1442
85	3320	40.54	145737.93	145761.77	16.70	23.84	6421	AGM 16		24	70	0.412	0.60	No	1442
86	3419	60.51	152158.98	152211.04	28.45	52.06	4471	AGM 17		24	70	0.343	0.72	No	1441
87	3484	74.05	156629.77	156698.39	5.42	53.62	4488	AGM 18		24	70	0.343	0.72	No	1111
88	3544	73.58	161098.16	161133.01	38.72	34.85	3251	Close Metal Object		24	70	0.343	0.72	No	1441
89	3599	79.17	164348.36	164412.14	15.89	33.59	381	AGM 19		24	70	0.343	0.72	No	1441
90	3604	31.03	165229.49	165265.97	4.46	73.57	2119	Metal Loss	INT	24	70	0.343	0.72	No	1441
91	3639	2.83	167348.33	167349.99	1.38	1.34	562	Tee		24	70	0.494	0.60	No	1729
92	3652	79.29	168016.77	168093.46	2.60	78.69	19028	Touching Metal Object		24	70	0.343	0.72	No	1441
93	3797	40.38	173045.25	173064.85	31.07	3.40	3351	AGM 21		24	70	0.412	0.72	No	1730
94	3847	31.03	181398.58	181418.39	59.58	21.71	2700	Metal Loss	EXT	24	70	0.343	0.72	No	1441
95	3888	40.55	184162.22	184192.28	40.52	0.04	??	Weld Indication		24	70	0.343	0.72	No	2075
96	3990	2.75	184124.55	184126.94	1.47	1.23	8	Tee		24	70	0.494	0.60	No	1729

- LOCATED NEAR SPECIAL PERMIT SEGMENTS

Appendix E – C.P. Test Station Records

APPENDIX E

Test Station Records - Empire State Pipeline
 Class Location Change Special Permit (Leisure Acres)

Notes: Empire CP History - MP 22.68 to MP 26.44
 Test Points at Road Crossings & Foreign Line Crossings
 M. Humphrey
 Empire - Road & Foreign Line Crossings - Trans Lines - Valve Sect 5

Date	MP	Station No	P/S ON	F/LS ON	Tech
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Anode Bank In R.O.W.						82267
5/1/2006	22.68	1197+38	-1.498			
4/22/2005	22.68	1197+38	-1.496			
6/1/2004	22.68	1197+38	-1.534		C. Strassburg	
6/23/2003	22.68	1197+38	-1.495		M.T. Humphrey	
7/2/2002	22.68	1197+38	-1.348		M.T. Humphrey	
6/29/2001	22.68	1197+38	-1.153		M.T. Humphrey	
6/19/2000	22.68	1197+38	-1.159		M.T. Humphrey	
6/22/1999	22.68	1197+38	-1.505		M.T. Humphrey	
7/22/1998	22.68	1197+38	-1.499		M.T. Humphrey	
7/10/1997	22.68	1197+38	-1.508		M.T. Humphrey	
6/27/1996	22.68	1197+38	-1.511		M.T. Humphrey	
8/10/1995	22.68	1197+38	-1.5		F.W. Langmesser	
8/27/1994	22.68	1197+38	-1.55		F.W. Langmesser	

Anode Bank In R.O.W.						82268
5/1/2006	23.14	1222+00	-1.504			
4/22/2005	23.14	1222+00	-1.510			
6/1/2004	23.14	1222+00	-1.519		C. Strassburg	
6/6/2003	23.14	1222+00	-1.515		M.T. Humphrey	
7/2/2002	23.14	1222+00	-1.487		M.T. Humphrey	
6/29/2001	23.14	1222+00	-1.509		M.T. Humphrey	
6/19/2000	23.14	1222+00	-1.516		M.T. Humphrey	
6/22/1999	23.14	1222+00	-1.52		M.T. Humphrey	
7/22/1998	23.14	1222+00	-1.506		M.T. Humphrey	
7/10/1997	23.14	1222+00	-1.479		M.T. Humphrey	
6/27/1996	23.14	1222+00	-1.514		M.T. Humphrey	
8/10/1995	23.14	1222+00	-1.529		F.W. Langmesser	
8/27/1994	23.14	1222+00	-1.58		F.W. Langmesser	

Date	M.P.	Station No.	P/S ON	FL/S ON	Tech	NFO Order No.
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30" T.G.Pipeline Crossing						82269
5/1/2006	23.66	1249+58	-1.073			
4/22/2005	23.66	1249+58	-1.100			
6/1/2004	23.66	1249+58	-1.1	-1.609	C. Strassburg	
6/6/2003	23.66	1249+58	-1.108	-1.656	M.T. Humphrey	
7/2/2002	23.66	1249+58	-1.087	-1.506	M.T. Humphrey	
6/29/2001	23.66	1249+58	-1.063	-1.402	M.T. Humphrey	
6/19/2000	23.66	1249+58	-1.059	-1.445	M.T. Humphrey	
6/22/1999	23.66	1249+58	-1.074	-1.37	M.T. Humphrey	
7/22/1998	23.66	1249+58	-1.098	-1.489	M.T. Humphrey	
7/10/1997	23.66	1249+58	-1.077	-1.483	M.T. Humphrey	
6/27/1996	23.66	1249+58	-1.051	-1.461	M.T. Humphrey	
8/10/1995	23.66	1249+58	-1.043	-1.494	F.W. Langmesser	
8/27/1994	23.66	1249+58	-1.12	-1.55	F.W. Langmesser	

30" T.G.Pipeline Crossing						82272
5/1/2006	23.67	1249+92	-1.074			
4/22/2005	23.67	1249+92	-1.100			
6/1/2004	23.67	1249+92	-1.1	-1.691	C. Strassburg	
6/6/2003	23.67	1249+92	-1.111	-1.74	M.T. Humphrey	
7/3/2002	23.67	1249+92	-1.074	-1.478	M.T. Humphrey	
6/29/2001	23.67	1249+92	-1.069	-1.46	M.T. Humphrey	
6/19/2000	23.67	1249+92	-1.057	-1.498	M.T. Humphrey	
6/22/1999	23.67	1249+92	-1.085	-1.442	M.T. Humphrey	
7/22/1998	23.67	1249+92	-1.105	-1.566	M.T. Humphrey	
7/10/1997	23.67	1249+92	-1.066	-1.495	M.T. Humphrey	
6/27/1996	23.67	1249+92	-1.053	-1.535	M.T. Humphrey	
8/10/1995	23.67	1249+92	-1.035	-1.547	F.W. Langmesser	
8/27/1994	23.67	1249+92	-1.14	-1.65	F.W. Langmesser	

Anode Bank Rt.78/Transit Rd						83746
5/1/2006	23.95	1264+52	-1.166			
7/7/2005	23.95	1264+52	-1.402			This is in system but looks awful high
6/15/2004	23.95	1264+52	-1.1		K. McGowen	
5/15/2003	23.95	1264+52	-1.171		M.T. Humphrey	
1/28/2003	23.95	1264+52	-1.164		M.T. Humphrey	
7/3/2002	23.95	1264+52	-1.153		M.T. Humphrey	
2/13/2002	23.95	1264+52	-1.128		M.T. Humphrey	
6/29/2001	23.95	1264+52	-1.15		M.T. Humphrey	
1/22/2001	23.95	1264+52	-1.167		M.T. Humphrey	
6/19/2000	23.95	1264+52	-1.123		M.T. Humphrey	
2/22/2000	23.95	1264+52	-1.16		M.T. Humphrey	
6/22/1999	23.95	1264+52	-1.155		M.T. Humphrey	
1/6/1999	23.95	1264+52	-1.175		M.T. Humphrey	
7/22/1998	23.95	1264+52	-1.171		M.T. Humphrey	
1/26/1998	23.95	1264+52	-1.176		M.T. Humphrey	
7/10/1997	23.95	1264+52	-1.222		M.T. Humphrey	
6/27/1996	23.95	1264+52	-1.211		M.T. Humphrey	
11/14/1995	23.95	1264+52	-1.18		F.W. Langmesser	

Date	M.P.	Station No.	P/S ON	FL/S ON	Tech	NFG Order No.
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6" NYSEG Crossing						83747
5/1/2006	23.96	1265+23	-1.166			
7/7/2005	23.96	1265+23	-1.145			
6/15/2004	23.96	1265+23	-1.405	-1.4	K. McGown	?
5/15/2003	23.96	1265+23	-1.21	-1.209	M.T. Humphrey	
1/28/2003	23.96	1265+23	-1.164	-1.19	M.T. Humphrey	
7/3/2002	23.96	1265+23	-1.153	-1.128	M.T. Humphrey	
2/13/2002	23.96	1265+23	-1.128	-1.503	M.T. Humphrey	
6/29/2001	23.96	1265+23	-1.15	-1.311	M.T. Humphrey	
1/22/2001	23.96	1265+23	-1.167	-1.134	M.T. Humphrey	
6/19/2000	23.96	1265+23	-1.123	-1.403	M.T. Humphrey	
6/22/1999	23.96	1265+23	-1.156	-1.369	M.T. Humphrey	
7/22/1998	23.96	1265+23	-1.169	-1.247	M.T. Humphrey	
1/26/1998	23.96	1265+23	-1.207	-1.018	M.T. Humphrey	
7/10/1997	23.96	1265+23	-1.241	-1.187	M.T. Humphrey	
6/27/1996	23.96	1265+23	-1.213	-1.319	M.T. Humphrey	
11/14/1995	23.96	1265+23	-1.18	-1.009	F.W. Langmesser	
6/14/1994	23.96	1265+23	-1.5	-1.48	F.W. Langmesser	

Test Wires In R.O.W.						83748
5/1/2006	24.29	1282+70	-1.118			
7/11/2005	24.29	1282+70	-1.124			
6/15/2004	24.29	1282+70	-1.082		K. McGowen	
5/15/2003	24.29	1282+70	-1.101		M.T. Humphrey	
7/8/2002	24.29	1282+70	-1.084		M.T. Humphrey	
6/29/2001	24.29	1282+70	-1.095		M.T. Humphrey	
6/19/2000	24.29	1282+70	-1.097		M.T. Humphrey	
6/22/1999	24.29	1282+70	-1.098		M.T. Humphrey	
7/22/1998	24.29	1282+70	-1.105		M.T. Humphrey	
7/11/1997	24.29	1282+70	-1.098		M.T. Humphrey	
6/27/1996	24.29	1282+70	-1.111		M.T. Humphrey	
8/10/1995	24.29	1282+70	-1.116		F.W. Langmesser	
8/28/1994	24.29	1282+70	-1.17		F.W. Langmesser	

Date	M.P.	Station No.	P/S ON	FL/S ON	Tech.	NFO Order No.
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Ref./ Test Wires- Old Beattie Rd						83745
5/1/2006	24.79	1309+00	-1.110			
7/7/2005	24.79	1309+00	-1.077			
6/15/2004	24.79	1309+00	-1.088		K. McGowen	
5/15/2003	24.79	1309+00	-1.09		M.T. Humphrey	
1/28/2003	24.79	1309+00	-1.056		M.T. Humphrey	
7/8/2002	24.79	1309+00	-1.087		M.T. Humphrey	
2/13/2002	24.79	1309+00	-1.199		M.T. Humphrey	
6/29/2001	24.79	1309+00	-1.089		M.T. Humphrey	
1/9/2001	24.79	1309+00	-1.058		M.T. Humphrey	
6/19/2000	24.79	1309+00	-1.096		M.T. Humphrey	
2/22/2000	24.79	1309+00	-1.096		M.T. Humphrey	
6/21/1999	24.79	1309+00	-1.079		M.T. Humphrey	
1/6/1999	24.79	1309+00	-1.034		M.T. Humphrey	
7/22/1998	24.79	1309+00	-1.095		M.T. Humphrey	
1/26/1998	24.79	1309+00	-1.113		M.T. Humphrey	
7/11/1997	24.79	1309+00	-1.099		M.T. Humphrey	
6/27/1996	24.79	1309+00	-1.113		M.T. Humphrey	
8/10/1995	24.79	1309+00	-1.104		F.W. Langmesser	
8/28/1994	24.79	1309+00	-1.2		F.W. Langmesser	

Main Line Valve 6						84548
5/1/2006	24.87	1313+10	-1.087			
7/7/2005	24.87	1313+10	-1.053			
6/15/2004	24.87	1313+10	-1.074		K. McGowen	
5/15/2003	24.87	1313+10	-1.082		M.T. Humphrey	
7/8/2002	24.87	1313+10	-1.058		M.T. Humphrey	
6/29/2001	24.87	1313+10	-1.063		M.T. Humphrey	
6/1/2000	24.87	1313+10	-1.09		M.T. Humphrey	
6/21/1999	24.87	1313+10	-1.058		M.T. Humphrey	
7/22/1998	24.87	1313+10	-1.082		M.T. Humphrey	
7/11/1997	24.87	1313+10	-1.077		M.T. Humphrey	
6/27/1996	24.87	1313+10	-1.085		M.T. Humphrey	
8/10/1995	24.87	1313+10	-1.071		F.W. Langmesser	
8/28/1994	24.87	1313+10	-1.16		F.W. Langmesser	

Date	M.P.	Station No.	P/S ON	FL/S ON	Tech.	NFG Order No.
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Anode Bank/ Ref. Raymond Rd						83749
5/1/2006	25.43	1342+96	-1.352			
7/7/2005	25.43	1342+96	-1.335			
6/15/2004	25.43	1342+96	-1.358		K. McGowan	
5/15/2003	25.43	1342+96	-1.358		M.T. Humphrey	
7/8/2002	25.43	1342+96	-1.342		M.T. Humphrey	
6/29/2001	25.43	1342+96	-1.348		M.T. Humphrey	
6/1/2000	25.43	1342+96	-1.354		M.T. Humphrey	
6/22/1999	25.43	1342+96	-1.345		M.T. Humphrey	
7/27/1998	25.43	1342+96	-1.335		M.T. Humphrey	
7/14/1997	25.43	1342+96	-1.338		M.T. Humphrey	
6/27/1996	25.43	1342+96	-1.377		M.T. Humphrey	
8/10/1995	25.43	1342+96	-1.363		F.W. Langmesser	
8/28/1994	25.43	1342+96	-1.42		F.W. Langmesser	

Test Wires/ Ref. Crosby Rd.						83750
5/1/2006	25.97	1371+02	-1.318			
7/7/2005	25.97	1371+02	-1.316			
6/15/2004	25.97	1371+02	-1.312		M.T. Humphrey	
5/15/2003	25.97	1371+02	-1.341		M.T. Humphrey	
7/8/2002	25.97	1371+02	-1.337		M.T. Humphrey	
6/29/2001	25.97	1371+02	-1.353		M.T. Humphrey	
6/1/2000	25.97	1371+02	-1.339		M.T. Humphrey	
6/22/1999	25.97	1371+02	-1.324		M.T. Humphrey	
7/27/1998	25.97	1371+02	-1.311		M.T. Humphrey	
7/14/1997	25.97	1371+02	-1.321		M.T. Humphrey	
6/27/1996	25.97	1371+02	-1.348		M.T. Humphrey	
8/10/1995	25.97	1371+02	-1.34		F.W. Langmesser	
8/28/1994	25.97	1371+02	-1.42		F.W. Langmesser	

Test Wires/ Ref. Kinne Rd.						83751
5/1/2006	26.44	1395+78	-1.106			
7/7/2005	26.44	1395+78	-1.196			
6/15/2004	26.44	1395+78	-1.09		M.T. Humphrey	
5/15/2003	26.44	1395+78	-1.105		M.T. Humphrey	
7/8/2002	26.44	1395+78	-1.093		M.T. Humphrey	
5/1/2002	26.44	1395+78	-1		M.T. Humphrey	
6/29/2001	26.44	1395+78	-1.077		M.T. Humphrey	
6/1/2000	26.44	1395+78	-1.092		M.T. Humphrey	
6/22/1999	26.44	1395+78	-1.084		M.T. Humphrey	
7/27/1998	26.44	1395+78	-1.063		M.T. Humphrey	
7/14/1997	26.44	1395+78	-1.087		M.T. Humphrey	
6/27/1996	26.44	1395+78	-1.092		M.T. Humphrey	
8/10/1995	26.44	1395+78	-1.087		F.W. Langmesser	
8/28/1994	26.44	1395+78	-1.18		F.W. Langmesser	