Portland General Electric Company
Trojan Nuclear Plant
71760 Columbia River Hwy
Rainier, OR 97048
(503) 556-3713

November 10, 2004

VPN-063-2004

Trojan Nuclear Plant
License NPF-1
Docket 50-344

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Trojan Nuclear Plant Final Survey Report for Embedded Piping

The enclosure to this letter provides Portland General Electric Company's Final Survey Report for Embedded Piping at the Trojan Nuclear Plant. The report is presented in two volumes. The first volume is the main report documenting the results and conclusions of the embedded piping final survey. The second volume is a supplement to the main report that provides scan measurement data and survey maps that consist of isometric pipe drawings marked to indicate locations of scan measurements in each embedded piping survey unit.

Data collection for the final survey of embedded piping at Trojan began in April 2003 and was completed in September 2004. The report documents the results and conclusions of the survey, and was prepared in accordance with guidance and requirements contained in the following:

- Portland General Electric Topical Report PGE 1061, *Trojan Nuclear Plant Defueled Safety Analysis Report and License Termination Plan (PGE-1078)*,
- NUREG 1727, *NMSS Decommissioning Standard Review Plan*, Section 14.5 [Superceded by NUREG 1757 in September 2003],
- NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, Section 8.6, and
- NUREG 1757, Volume 2, *Consolidated NMSS Decommissioning Guidance – Characterization, Survey, and Determination of Radiological Criteria*, Section 4.5

The attachment to this letter indicates where each of the requirements in the documents listed above is addressed.

M MSS01

The data collected during final survey demonstrate that each embedded piping survey unit meets the radiological criteria for unrestricted use specified in 10 CFR 20.1402. On that basis, Portland General Electric Company has concluded that each of these survey units meets regulatory requirements for release to unrestricted use.

To support Portland General Electric Company's plans to have its Trojan Nuclear Plant license terminated in 2005 per 10 CFR 50.82(a)(11), it is requested that the Nuclear Regulatory Commission review this data package for acceptance of this portion of the site final radiological survey.

Should you have any questions concerning this matter, please contact Mr. Jerry D. Reid of my staff at (503) 556-6474.

Sincerely,

Stephen M. Quennoz
Vice President, Generation

Attachment
Enclosure

c: Director, NRC Region IV/DNMS
J. T. Buckley, NMSS/DWM/DCB (3 Copies)
R. J. Evans, NRC Region IV/DNMS/FCDB
D. Stewart-Smith, ODOE
A. Bless, ODOE
M. Dibblee, EFSC

Guidance/Requirement	Source	Where Addressed
... a final survey report will be prepared which summarizes the data and documents the conclusion that the TNP facility and site meet the 10 CFR 20.1402 release criteria and can be released for unrestricted use.	PGE 1061 – Trojan License Termination Plan – Section 4.1.3	Final Survey Report – Section 1.1, Section 5
... and in the final survey report. The final survey report is prepared which summarizes the data and states the conclusions.	PGE 1061 – Trojan License Termination Plan – Section 4.2.5.5	Final Survey Report – Section 1.1, Section 5
The report will provide a summary of the ALARA evaluations.	PGE 1061 – Trojan License Termination Plan – Section 4.7.3	Final Survey Report – Section 4.2.4, Table 4.2
The report will provide a summary of the survey data results.	PGE 1061 – Trojan License Termination Plan – Section 4.7.3	Final Survey Report –Section 3, Table 3-1, Table 3-2
The report will provide a summary of the overall conclusions.	PGE 1061 – Trojan License Termination Plan – Section 4.7.3	Final Survey Report –Section 5, Table 4-2
Information such as the number and type of measurements...will be included in the report.	PGE 1061 – Trojan License Termination Plan – Section 4.7.3	Final Survey Report – Section 2.3.1 & 2.3.2, Table 3-1, Section 4.1.3.3, Appendices B & C
Information such as basic statistical quantities...will be included in the report.	PGE 1061 – Trojan License Termination Plan – Section 4.7.3	Final Survey Report – Section 4.1.3, Table 4-1, Appendices B & C
Information such as statistical test results...will be included in the report.	PGE 1061 – Trojan License Termination Plan – Section 4.7.3	Final Survey Report – Section 4.1.3, Table 4-1, Appendices B & C
The information should include: An overview of the results of the final status survey.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Executive Summary, Section 3, Table 3-1

Guidance/Requirement	Source	Where Addressed
The information should include: A discussion of any changes that were made in the final status survey from what was proposed in the Decommissioning Plan or other prior submittals.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	N/A. Survey performed in accordance with PGE 1061 - Trojan License Termination Plan.
The information should include: A description of the method by which the number of samples was determined for each survey unit.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report –Section 2.3.2.2, Section 4.1.3.3
The information should include: A summary of the values used to determine the number of samples and a justification for these values.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	PGE 1061 - Trojan License Termination Plan – Section 4.4.3.1, Appendix 4-2
The information should include: The survey results for each survey unit including: The number of samples taken for each survey unit.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Table 3-1, Appendices B & C
The information should include: The survey results for each survey unit including: A map or drawing of the survey unit showing the reference system and random start systematic sample locations for Class 1 and Class 2 survey units, and random locations shown for Class 3 survey units and reference areas.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Appendices B & C

Guidance/Requirement	Source	Where Addressed
The information should include: The survey results for each survey unit including: The measured sample concentrations.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Appendices B & C
The information should include: The survey results for each survey unit including: The statistical evaluation of the measured concentrations.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Appendices B & C
The information should include: The survey results for each survey unit including: Judgmental and miscellaneous sample data sets reported separately from those samples collected for performing the statistical evaluation.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Appendices B & C Supplement
The information should include: The survey results for each survey unit including: A discussion of anomalous data including any areas of elevated direct radiation detected during scanning that exceeded the investigation level or measurement locations in excess of the $DCGL_w$.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Section 2.4.1, Table 3-2, Appendices B and C

Guidance/Requirement	Source	Where Addressed
The information should include: The survey results for each survey unit including: A statement that a given survey unit satisfied the $DCGL_w$ and the elevated measurement comparison if any sample points exceeded the $DCGL_w$.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Section 5, Table 4-2
The information should include: A description of any changes in initial survey unit assumptions relative to the extent of residual radioactivity.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Section 3.2, Appendix A
The information should include: If a survey unit fails, a description of the investigation conducted to ascertain the reason for the failure and a discussion of the impact that the failure has on the conclusion that the facility is ready for final radiological surveys.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	Final Survey Report – Section 3.2, Appendix A
The information should include: If a survey unit fails, a discussion of the impact that the reason for the failure has on other survey unit information.	NUREG 1727 – NMSS Decommissioning Standard Review Plan, Rev 0, Section 14.5	N/A
Documentation of the final status survey should provide a complete and unambiguous record of the radiological status of the survey unit relative to the established DCGLs.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Table 4-2

Guidance/Requirement	Source	Where Addressed
Sufficient data and information should be provided to enable an independent evaluation of the results of the survey including repeating measurements at some future time.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Appendices B & C; Supplement
The document should describe the instrumentation or analytical methods used.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Section 2.2
The document should describe how the data were converted into DCGL units.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Section 2.4.2
The document should describe the process of comparing the results to the DCGLs.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Section 4.2
The document should describe the process of determining that the data quality objectives were met.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Section 4.1
The results of actions taken as a consequence of individual measurements or sample concentrations in excess of the investigation levels should be reported together with any additional data, remediation, or re-surveys performed to demonstrate that issues concerning potential areas of elevated activity were resolved.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Section 2.4.1, Table 3-2, Appendices B and C

Guidance/Requirement	Source	Where Addressed
The results of the data evaluation using statistical methods to determine if release criteria were satisfied should be described.	NUREG 1575 MARSSIM – Section 8.6	Final Survey Report – Section 4.1.3
The information should include: An overview of the results of the FSS.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Section 3, Table 3-1
The information should include: A summary of the DCGLs for the facility (if DCGLs are used).	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Section 1.3.2, (Appendices B & C also list the DCGL for each survey unit.)
The information should include: A discussion of any changes that were made in the FSS from what was proposed in the DP or other prior submittals.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	N/A. Survey performed in accordance with PGE 1061 - Trojan License Termination Plan.
The information should include: A description of the method by which the number of samples was determined for each survey unit.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Section 2.3.2.2, Section 4.1.3.3
The information should include: A summary of the values used to determine the number of samples and a justification for these values.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	PGE 1061 – Trojan License Termination Plan – Section 4.4.3.1, Appendix 4-2
The information should include: The survey results for each survey unit including the following: The number of samples taken for each survey unit.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Appendices B & C

Guidance/Requirement	Source	Where Addressed
The information should include: The survey results for each survey unit including the following: a description of the survey unit, including (a) a map or drawing of the survey unit showing the reference system and random start systematic sample locations for Class 1 and Class 2 survey units, and random locations shown for Class 3 survey units and reference areas, (b) discussion of remedial actions and unique features, and (c) areas scanned for Class 2 and 3 survey units.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Section 3.1, 3.2, Appendices B & C; Supplement
The information should include: The survey results for each survey unit including the following: the measured sample concentrations, in units that are comparable to the DCGLs.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Appendices B & C
The information should include: The survey results for each survey unit including the following: the statistical evaluation of the measured concentrations.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Appendices B & C
The information should include: The survey results for each survey unit including the following: judgmental and miscellaneous sample data sets reported separately from those samples collected for performing the statistical evaluation.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Appendices B & C; Supplement

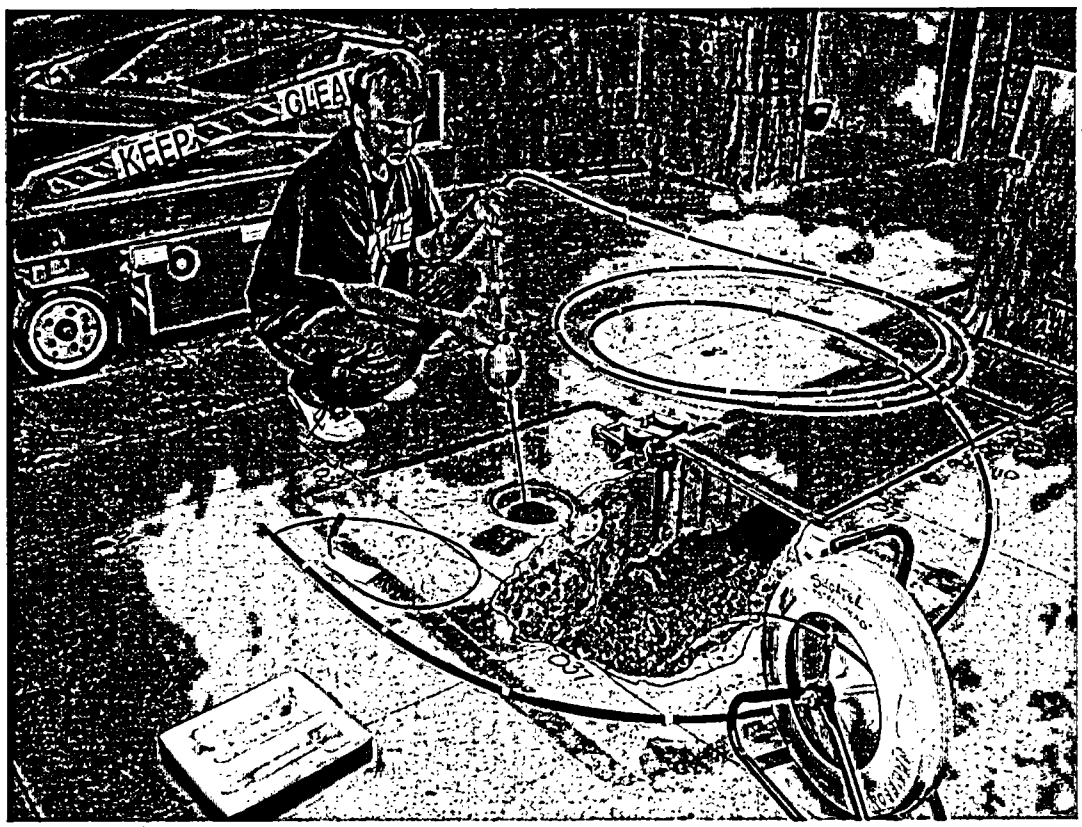
Guidance/Requirement	Source	Where Addressed
The information should include: The survey results for each survey unit including the following: a discussion of anomalous data including any areas of elevated direct radiation detected during scanning that exceeded the investigation level or any measurement locations in excess of $DCGL_W$.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Section 2.4.1, Appendices B and C
The information should include: The survey results for each survey unit including the following: a statement that a given survey unit satisfied the $DCGL_W$ and the elevated measurement comparison if any sample points exceeded the $DCGL_W$.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Table 3-1, Table 4-2
The information should include: A description of any changes in initial survey unit assumptions relative to the extent of residual radioactivity (e.g., material not accounted for during site characterization).	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – N/A
The information should include: A description of how ALARA practices were employed to achieve final activity levels.	NUREG 1757 Volume 2 Consolidated NMSS Decommissioning Guidance – Section 4.5	Final Survey Report – Section 4.2.4, Table 4-2

Enclosure to VPN-063-2004
November 10, 2004

Trojan Nuclear Plant

Final Survey Report
Embedded Piping

Volume 1 of 2



Final Survey Report
Embedded Piping

Portland General Electric

TABLE OF CONTENTS

EXECUTIVE SUMMARY v

1. INTRODUCTION 1-1

1.1 PURPOSE AND SCOPE 1-1

1.2 DESCRIPTION 1-1

1.3 SITE RELEASE CRITERIA 1-1
1.3.1 APPLICATION OF THE SITE RELEASE CRITERIA 1-2
1.3.2 DERIVED CONCENTRATION GUIDELINE LEVELS 1-2

2. FINAL SURVEY DESIGN 2-1

2.1 SURVEY UNITS 2-1
2.1.1 CLASSIFICATION 2-1
2.1.2 SURVEY UNIT SIZE 2-1
2.1.3 IDENTIFICATION NOMENCLATURE 2-2

2.2 INSTRUMENTATION 2-2
2.2.1 CALIBRATION AND MAINTENANCE 2-3
2.2.2 INSTRUMENT RESPONSE 2-3
2.2.3 BACKGROUND SUBTRACTION 2-4
2.2.4 MINIMUM DETECTABLE CONCENTRATION (MDC) 2-4

2.3 SURVEY METHODS 2-4
2.3.1 SCAN MEASUREMENTS 2-4
2.3.2 STATIC MEASUREMENTS 2-5
2.3.3 MEASUREMENT LOCATION IDENTIFICATION 2-6

2.4 SURVEY PERFORMANCE 2-6
2.4.1 DATA INVESTIGATION 2-6
2.4.2 DATA RECORDING 2-6
2.4.3 DATA MANAGEMENT 2-6
2.4.4 QUALITY CONTROL MEASUREMENTS 2-7
2.4.5 PROCEDURES 2-8
2.4.6 TECHNICAL BASIS DOCUMENTS 2-8
2.4.7 CONTROL OF VENDOR SUPPLIED SERVICES 2-8
2.4.8 TRAINING 2-8

3. FINAL SURVEY RESULTS 3-1

3.1 AUXILIARY/FUEL BUILDING EMBEDDED PIPING 3-1

3.2 TURBINE BUILDING EMBEDDED PIPING 3-1

4. DATA ASSESSMENT 4-1

4.1 DATA VERIFICATION AND VALIDATION 4-1
4.1.1 DATA QUALITY 4-1
4.1.2 GRAPHICAL DATA REVIEW 4-2
4.1.3 BASIC STATISTICAL COMPARISONS 4-2

4.2 SATISFACTION OF THE SITE RELEASE CRITERIA 4-3
4.2.1 CONDITION #1 – MEAN TEST 4-3
4.2.2 CONDITION #2 – ELEVATED MEASUREMENT COMPARISON 4-3
4.2.3 CONDITION #3 – SIGN TEST 4-4
4.2.4 CONDITION #4 – ALARA EVALUATION 4-4

5. FINAL SURVEY CONCLUSION 5-1

6. REFERENCES 6-1

APPENDIX A – SURVEY PREPARATION ACTIVITES A-1

APPENDIX B – SURVEY UNIT SUMMARY REPORTS - AUXILIARY/FUEL BUILDING EMBEDDED PIPING B-1

APPENDIX C – SURVEY UNIT SUMMARY REPORTS – TURBINE BUILDING EMBEDDED PIPING C-1

TABLES

Table	Title
Table 2-1	Summary of Operational Survey Data
Table 2-2	Summary of QC Measurement Evaluations
Table 2-3	Final Survey Procedures
Table 2-4	Technical Basis Documents
Table 3-1	Summary of Final Survey Results
Table 3-2	Summary of Data Investigation Results and Actions Taken
Table 4-1	Summary of Statistical Quantity Failures
Table 4-2	Satisfaction of Conditions for Site Release
Table A-1	Turnover List

FIGURES

Figure	Title
Figure 1-1	Trojan Plant Layout
Figure 3-1	Auxiliary Building Radwaste Drains
Figure 3-2	Chemical Radwaste Drains
Figure 3-3	Clean Radwaste Drains
Figure 3-4	Dirty Radwaste Drains
Figure 3-5	Fuel Building Spent Fuel Pool Exhaust
Figure 3-6	Fuel Building Spent Fuel Pool System
Figure 3-7	Turbine Building Oily Waste Drains

EXECUTIVE SUMMARY

This report presents the results and conclusions of the final survey conducted by Portland General Electric Company of the embedded piping. Highly contaminated embedded piping was removed or otherwise remediated as part of the decommissioning process. A final survey of embedded piping which remains was performed. Final survey data collection began in April 2003 and was completed in September 2004.

The final survey was performed in accordance with the final survey process described in PGE-1061, "Trojan Nuclear Plant Defueled Safety Analysis Report and License Termination Plan (PGE-1078)," referred to as the LTP. A total of 4,179 meters of embedded piping (1,597 square meters of surface area) was divided into 42 survey units, each classified according to its potential for containing residual radioactivity. Thirty-four survey units were classified as Class 1 and 8 survey units as Class 2. There were no survey units classified as Class 3. Survey data were collected from each survey unit according to data collection patterns and frequencies established for each classification. Scan measurements were performed over approximately 70 percent of the entire surface area and a total of 3,824 static measurements were collected as final survey data.

The final survey data demonstrate that each survey unit meets the radiological criteria for unrestricted use specified in 10 CFR 20.1402 and in a manner consistent with the LTP. Based on the results of the final survey, Portland General Electric Company concludes the embedded piping meets the regulatory requirements for release to unrestricted use.

1. INTRODUCTION

1.1 PURPOSE AND SCOPE

This report presents the results and conclusions of the final survey of the embedded piping. It provides the information required by 10 CFR 50.82(a)(11), which demonstrates that the embedded piping meets the radiological criteria for unrestricted use specified in 10 CFR 20.1402 and in a manner consistent with PGE-1061, "Trojan Nuclear Plant Defueled Safety Analysis Report and License Termination Plan (PGE-1078)," hereinafter referred to as the LTP. This report also documents the final survey was performed in accordance with the final survey process described in the LTP.

1.2 DESCRIPTION

Embedded piping is found in the Auxiliary/Fuel Building and the Turbine Building. The respective linear lengths and surface areas are shown in the following table.

Embedded Piping

Building	Length (m)	Area (m^2)
Auxiliary/Fuel	2,904	987
Turbine	1,275	610
Total:	**4,179**	**1,597**

Embedded piping was prepared for final survey by a series of decommissioning activities, including radiological characterization, limited removal, remediation, and turnover to final survey. A general description of these activities is given in Appendix A. Detailed decommissioning information as well as a brief radiological history is contained in the LTP, Section 3. Radiological characterization data were gathered and analyzed. The results guided decisions regarding the need for, extent of, and most effective means of remediation. Contaminated piping was removed for disposal or remediated, as needed, and then systematically turned over for final survey. An assessment of the operating and radiological history established the initial classification. In its post-final survey configuration, the embedded piping exists as a series of drains, collection headers, and pipe runs embedded in concrete. Embedded piping in the Auxiliary/Fuel Building is grouted.

1.3 SITE RELEASE CRITERIA

The site release criteria correspond to the radiological criteria for unrestricted use given in 10 CFR 20.1402, which are:

1. Dose Criterion: The residual radioactivity that is distinguishable from background radiation results in a Total Effective Dose Equivalent (TEDE) to an average member of the critical group that does not exceed 25 mrem/yr, including that from groundwater sources of drinking water; and

2. ALARA Criterion: The residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA).

1.3.1 APPLICATION OF THE SITE RELEASE CRITERIA

Levels of residual radioactivity that correspond to the allowable radiation dose and ALARA levels of the site release criteria were derived by analysis of various scenarios and pathways (e.g., direct radiation, inhalation, ingestion) through which exposures could occur. These derived levels, referred to as Derived Concentration Guideline Levels (DCGLs), form the basis for the following four conditions which, when met, satisfy the site release criteria:

1. The average residual radioactivity above background is equal to or below the DCGL;

2. Individual measurements, representing small areas of residual radioactivity which exceed the DCGL, do not exceed the elevated measurement comparison DCGL;

3. Where one or more individual measurements exceed the DCGL, the average residual radioactivity passes the Sign statistical test; and

4. Remediation is performed where it is ALARA to reduce the levels of residual radioactivity to below the concentrations necessary to meet the DCGLs.

The manner in which these conditions were met is described in Section 4.2.

1.3.2 DERIVED CONCENTRATION GUIDELINE LEVELS

The levels of residual radioactivity in embedded piping in the Auxiliary/Fuel Building were compared to a gross activity derived concentration of 100,000 dpm/100 cm^2. The levels of residual radioactivity in embedded piping in the Turbine Building were compared to a gross activity DCGL of 21,000 dpm/100 cm^2. Both the gross activity derived concentration and DCGL values were derived for surface residual radioactivity using the building occupancy scenario and developed using the methodology described in the LTP, Section 4.2.3, based on the radionuclide-specific screening DCGLs given in the LTP, Table 4-1.

1.3.2.1 Auxiliary/Fuel Building Embedded Piping Gross Activity Derived Concentration

The gross activity derived concentration of 100,000 dpm/100 cm^2 was developed for application to embedded piping in the Auxiliary/Fuel Building that would be: (1) remediated using grit blasting techniques to remove loose surface contamination, and (2) filled with a grout/concrete mix to immobilize remaining fixed radioactivity.

1.3.2.2 Turbine Building Embedded Pipe Gross Activity DCGL

The gross activity DCGL of 21,000 dpm/100 cm^2 was developed for application to surfaces where the principal contamination mechanism would have been from primary-to-secondary system leakage. Such was the case for the Turbine Building Oily Waste system, of which the

embedded piping in the Turbine Building is part. Samples were collected from representative structures or components associated with the secondary system where the radioactivity detected would be due to primary system leakage into the secondary system. The samples were used to establish the radionuclide distribution of surface residual radioactivity. The samples were sent to an offsite laboratory for analysis and the laboratory results were used to calculate a gross activity DCGL value for each sample.

Several radionuclides of interest were detected in each of the samples. The single radionuclide detected in all the samples was ^{137}Cs. It accounted for the highest activity concentration, ranging from 83 to 99% of the total activity, in all but one of the samples. In that one sample, ^{63}Ni had the highest activity concentration and ^{137}Cs accounted for only 31% of the total activity. For all samples, alpha emitters were either not detected by sample analysis or were detected at activity concentrations that are insignificant in terms of dose contribution.

For purposes of calculating the DCGL, radionuclides of interest that were not detected were assumed present at their minimum detectable concentration (MDC). At their MDC, none of the radionuclides exceeded 10% of their respective screening DCGLs and therefore were not included in the DCGL calculation. There was some variability in relative radionuclide fractions when one sample was compared to another. Therefore, the most conservative calculated value, 21,000 dpm/100 cm^2, was selected as the gross activity DCGL. The radionuclide distribution assumed for this DCGL is shown in the following table.

Turbine Building Embedded Piping Gross Activity DCGL Radionuclide Distribution

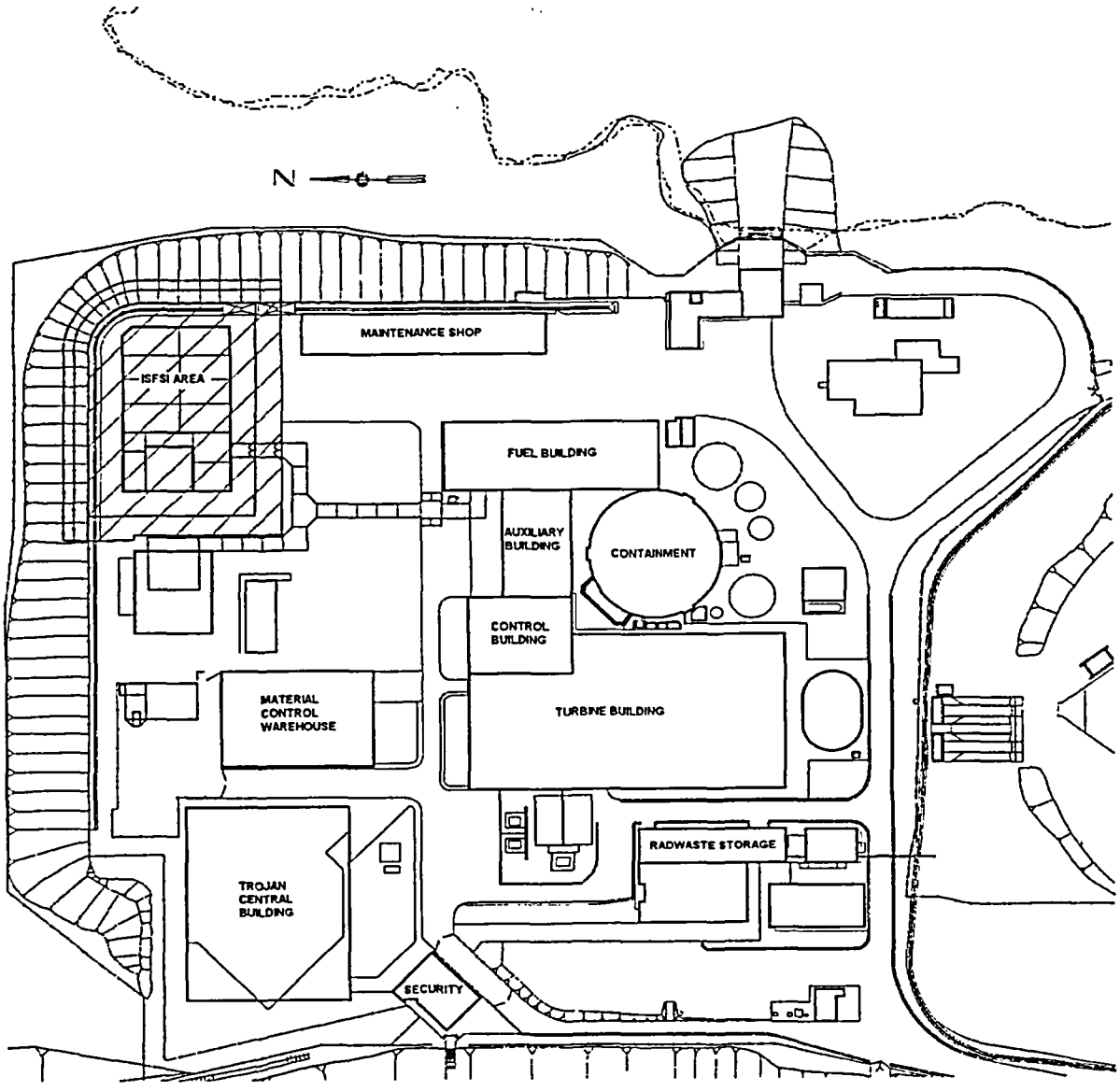
Radionuclide	Activity Fraction	Surface Screening DCGL (dpm/100 cm^2)	Activity Fraction/ DCGL	Fraction of DCGL[a]	DCGL Dose Contribution (mrem/yr)
^{60}Co	1.14E-01	7.1E+03	1.60E-05	0.335	8.4
^{137}Cs	8.86E-01	2.8E+04	3.17E-05	0.665	16.6
Totals:	1.00E+00	---	4.77E-05	1.000	25.0

Notes

[a] This value is calculated by dividing the Activity Fraction/DCGL value for the radionuclide by the sum of the Activity Fraction/DCGL values for all the radionuclides.

Figure 1-1

Trojan Plant Layout



2. FINAL SURVEY DESIGN

The final survey was designed and performed as described in the LTP, Section 4. The Data Quality Objectives (DQO) process was used to ensure that the final survey results were of sufficient quality to support the final decision. The embedded piping was divided into survey units, which were categorized and classified according to the type and potential of residual radioactivity. Instrumentation and survey methods, appropriate to the type of radiation being measured, were used to collect scan and static measurements. The measurements were collected in accordance with administrative and quality controls instituted to provide assurance of accurate results.

2.1 SURVEY UNITS

The embedded piping was divided into 42 survey units based on the physical characteristics, the potential for elevated residual radioactivity, and the size of the area with similar potential for residual radioactivity. The survey units were categorized as plant systems with surface residual radioactivity and the building occupancy dose model was applied.

2.1.1 CLASSIFICATION

Survey units were classified as Class 1 or Class 2 based on the potential for residual radioactivity. Areas with residual radioactivity that exceeded the DCGL prior to remediation were divided into 34 Class 1 survey units. Areas with residual radioactivity detectable above background levels, but that did not exceed the DCGL prior to remediation, were divided into eight Class 2 survey units.

The classification process incorporated the working hypothesis that all areas had a potential for residual radioactivity above the DCGL. This initial assumption meant that a survey unit was initially considered Class 1 unless a basis for classification as Class 2 was identified. Early in the final survey planning process, little or no characterization data were available. Elevated radiation levels from contaminated surfaces, components, and equipment prevented the collection of meaningful radiological data. Some surfaces were physically inaccessible. During the course of decommissioning, the contaminated components and equipment were removed, surfaces were made accessible, and a substantial amount of characterization data was collected. The data, summarized in Table 2-1, showed that these areas could be properly classified as Class 2. This approach was consistent with that described in the LTP, in which areas are initially considered Class 1 areas unless a basis for classification as Class 2 or Class 3 is identified. Both scan and static measurement data collected during final survey confirmed the classification decisions made.

2.1.2 SURVEY UNIT SIZE

The embedded piping was divided into survey units ranging in total length from 20 to 344 m (7 to 190 m^2). Survey units were sized to ensure that survey data points were relatively uniformly distributed among areas of similar potential for residual radioactivity.

2.1.3 IDENTIFICATION NOMENCLATURE

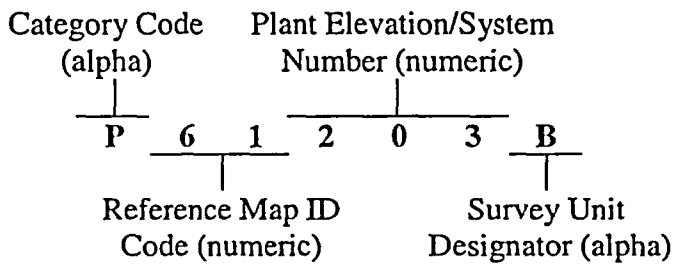
Each survey unit was identified by a seven-digit identification code. The first digit represents the survey unit category. A single category code, P, for plant system, was used. The next two digits represent the reference map identification code. For embedded piping, "61" was used. The next three digits represent the system number. Seven system numbers were used, as shown in the following table.

Embedded Piping Systems

Number	System
200	Auxiliary Building Radwaste
201	Chemical Radwaste
202	Clean Radwaste
203	Dirty Radwaste
205	Oily Waste
208	Spent Fuel Pool Exhaust
209	Spent Fuel Pool System

The last digit is an alpha sequential survey unit designator that was assigned in sequential order of the survey unit being created. The following figure illustrates the survey unit identification code for the 2nd survey unit of Dirty Radwaste embedded piping.

Survey Unit Identification Nomenclature



2.2 INSTRUMENTATION

Portable instrumentation capable of detecting the radiation types and energies of interest were selected, calibrated, and maintained for final survey data collection. Commercially available radiation detection and measurement instrumentation were selected based on reliable operation, detection sensitivity, operating characteristics, and expected performance in the field. Radioactive sources used for calibration purposes are traceable to the National Institute of Standards and Technology (NIST).

Scan and static surface radioactivity measurements were performed using the Ludlum Model 2350-1 data logging survey meter with either a NaI or CsI gamma scintillation detector. The following table gives the model number and a description of the detectors used.

Portable Instrumentation Radiation Detectors

Ludlum Detector Model	44-157	44-159	44-162
Detector Type	Scintillation		
Radiation of Interest	Gamma		
Measurement Type	scan, static		
Detector Size	2" x 2"	1" x 1"	3" x 3"
Crystal Material	NaI(Tl)	CsI(Tl)	NaI(Tl)
Pipe Diameter Application	4" & 6"	<4"	>6"
Background (dpm/100 cm^2)[a,b]	21,000 to 33,000	28,000 to 34,000	34,000
Total Efficiency (cnts/dis)[b]	0.185 to 0.235	0.019 to 0.043	0.386 to 0.562
Count Time (min)	1	1	1
Static MDC (dpm/100 cm^2)[b]	1,590 to 2,100	4,140 to 7,580	1,250
Scan MDC (dpm/100 cm^2)[b,c]	8,930 to 11,820	35,820 to 58,460	5,740

Notes

[a] Background count time is 1 minute.

[b] A range of values is given where multiple detectors were used.

[c] Scan MDC assumes 15 cm/sec scan rate, for an equivalent count time of 0.33, 0.17, and 0.5 seconds, respectively, for the Model 44-157, 44-159, and 44-162 detectors.

2.2.1 CALIBRATION AND MAINTENANCE

Survey instruments were calibrated for the type of radiation (i.e., gamma) and energies of interest. The following table provides typical information on the calibration sources used.

Typical Portable Instrumentation Calibration Sources

Source Description	Source Geometry	Radio-nuclide	Source Activity
Stainless steel-backed metal disk	2.5 cm dia	^{137}Cs	115 nCi
Acrylic disk with button source	5 cm dia	^{137}Cs	101 nCi
Flexible, distributed epoxy matrix	17 x 30 cm	^{60}Co	28 nCi
Flexible, distributed epoxy matrix	32 x 31 cm	^{137}Cs	176 nCi

Radionuclide mixture ratios and varying energies were accounted for during calibration by using a calibration source with a conservative average energy as compared to the weighted average energy of the radionuclide mixture.

2.2.2 INSTRUMENT RESPONSE

Instrument response was checked before and after instrument use each day. A check source was used that emitted the same type of radiation (i.e., gamma) as the radiation being measured and that gave a similar instrument response (see the preceding table). The response check was performed using a specified source-detector alignment that could easily be repeated. If the instrument failed its response check, it was not used until the problem was resolved.

Measurements made between the last acceptable response check and the failed check were evaluated and, if appropriate, discarded.

2.2.3 BACKGROUND SUBTRACTION

Background was subtracted from final survey measurements collected in embedded piping. A background reading was collected as part of each embedded pipe scan or static measurement data set. It was collected in the general vicinity of where the final survey measurements were collected by placing the detector in a piece of clean pipe of similar type and diameter as the embedded piping. The background reading was subtracted from each measurement in the corresponding data set. The net measurement value was then converted from cpm to dpm/100 cm^2 and reported. Where there is little or no residual radioactivity, such as in embedded pipe in the Turbine Building, negative values are common among the net results.

Background was subtracted from embedded pipe measurements because of the relatively high instrument background of the three types of embedded pipe detectors used in the final survey. Instrument background values for those detectors ranged from 21,000 to 34,000 dpm/100 cm^2.

2.2.4 MINIMUM DETECTABLE CONCENTRATION

A minimum detectable concentration (MDC) was determined for each instrument and scan and static measurement method that were used for survey data collection. Instruments used for scan measurements were capable of detecting radiation of interest to an MDC of less than 60% of the DCGL at a scan rate of 15 cm/sec (the Model 44-159 CsI scintillation detector, which was not capable of detecting radiation of interest to an MDC less than the Turbine Building embedded piping gross activity DCGL of 21,000 dpm/100 cm^2, was not used for scan measurements). Instruments used for static measurements were capable of detecting radiation of interest to an MDC of less than 40% of the DCGL with a count time of one minute.

2.3 SURVEY METHODS

Survey methods, as described in the following sections, were applied to collect scan and static measurements of surface residual radioactivity, and removable surface radioactivity measurements from structural surfaces.

2.3.1 SCAN MEASUREMENTS

Scan measurements were performed to locate radiation anomalies that might indicate elevated areas of residual radioactivity that require further investigation. The level of scan coverage was proportional to the potential for finding elevated areas of residual radioactivity based on the history of the survey unit.

2.3.1.1 Scan Coverage

Scan measurements of Class 1 survey units were performed over 100% of the pipe length. Scan measurements of Class 2 survey units were performed over 10 to 30% of the pipe length. In Class 2 survey units, those areas with the highest potential for elevated residual radioactivity,

based on professional judgment, were selected for scanning. The percent of scan coverage was determined based on the number and size of the selected areas.

2.3.1.2 Surface Residual Radioactivity

Embedded piping was scanned for gamma-emitting surface residual radioactivity. Typically, the detector was passed through the pipe at 15 cm/sec. Once the selected area was scanned, the latched value was electronically entered into the data logger memory.

For 4" and 6" diameter pipe, the Ludlum Model 44-157 NaI scintillation detector with the data logger in ratemeter latching mode was used. For piping less than 4" diameter, the Ludlum Model 44-159 CsI scintillation detector was used. For piping greater than 6" diameter, the Ludlum Model 44-162 NaI scintillation detector was used.

2.3.2 STATIC MEASUREMENTS

Static measurements were collected at a frequency and at representative locations throughout the survey unit such that a statistically sound conclusion regarding the radiological condition of the survey unit could be developed.

2.3.2.1 Surface Residual Radioactivity

Static measurements to detect gamma-emitting surface residual radioactivity were collected using, depending on the pipe diameter, either the Ludlum Model 44-157, 44-159, or 44-162 gamma scintillation detector with the data logger in scaler mode. For each discrete measurement, the detector was placed at the location to be measured, a one-minute count was taken, and the value was electronically entered into the data logger memory.

2.3.2.2 Number of Measurements

To simplify the final survey process and to ensure conservatism without an associated unreasonable expenditure of resources, a minimum number of 30 static measurements per survey unit were collected. This number of measurements provided a sample population of sufficient size to assure statistical confidence in the conclusions drawn from the survey data (see Section 4.1.3.3).

2.3.2.3 Measurement Locations

Measurement locations were selected using a systematic spacing method based on the total length of embedded piping in the survey unit. Starting at each access point, measurements were collected at pre-determined intervals through each run of pipe. In all cases, this led to more than the minimum number of 30 static measurements being collected.

2.3.3 MEASUREMENT LOCATION IDENTIFICATION

Measurement locations were marked on survey maps to ensure they could be relocated if necessary. A unique number identifies each measurement location. The number convention, described in Section 2.4.3, allows survey data to be referenced to specific measurement locations identified on the maps of the survey unit.

2.4 SURVEY PERFORMANCE

2.4.1 DATA INVESTIGATION

Locations, identified by scan or static measurements, with residual radioactivity that exceeded the DCGL were investigated. Scan measurements were performed over 100 percent of the area being investigated. Static measurements in the form of scalar or integrated counts were performed at locations with the highest concentration of residual radioactivity.

Twenty-one data investigations were performed. The results of the data investigations are summarized in Table 3-2. The details of the investigations are included in survey unit summary reports (see Appendices B and C). Nineteen investigations were performed of embedded piping in the Auxiliary/Fuel Building; two investigations were performed of areas of elevated residual radioactivity in embedded piping in the Turbine Building.

2.4.2 DATA RECORDING

Measurement data were corrected for instrument efficiency and recorded in units appropriate for comparison to the DCGL. The recording units were dpm/100 cm^2. Measured numerical values were recorded and included values below the MDC. An appropriate background reading was subtracted from each measurement.

Measurement results stored as final survey data constitute the final survey of record and are included in the data set for each survey unit. The data were used for calculations to determine compliance with the site release dose criterion. The affected data were stored as characterization data where a survey unit was remediated and/or reclassified during final survey.

2.4.3 DATA MANAGEMENT

The Survey Data Management System (SDMS) was used to store and process survey data. The SDMS is an electronic database that contains the final survey data and constitutes the quality record. Administrative controls for maintaining data integrity were incorporated into the software design. SDMS applications were tested as part of two separate tests: factory acceptance testing performed by the vendor and site acceptance testing performed by the Final Survey organization. A test plan and procedure were developed and documented for each functional module. Documented test results include the acceptance test objectives, test results, test discrepancies, and corrective actions taken to resolve the discrepancies.

Raw survey data captured in the Ludlum Model 2350-1 data logger were downloaded, electronically converted to recording units, and uploaded to the SDMS. Other data, such as laboratory data, were manually entered into the SDMS for analysis.

For electronic storage and retrieval purposes, each survey measurement is identified by a unique 15-digit code. The first seven digits are the survey unit Identification (ID) code (see Section 2.1.3). The last eight digits are the measurement ID code. The first two digits of the measurement ID code identify the type of measurement, as shown in the following table, and the last six digits are the unique measurement location ID.

Measurement Type Codes

Type Code	Type Description
13	Static surface gamma
19	Surface scanning gamma

Records of survey data include surveyor identification; instrumentation used; and measurement type, location, results, and time and date collected.

2.4.4 QUALITY CONTROL MEASUREMENTS

Quality Control (QC) measurements were performed to identify, assess, and monitor measurement error and uncertainty attributable to measurement methods or analytical procedures used in the survey data collection process. Two types of QC measurements were performed on a regular basis: QC checks and repeat measurements. A third type of QC measurement, duplicate sample analysis, was performed but is unrelated to the final survey of the embedded piping. Duplicate sample analysis is performed for volumetric (not surface) residual radioactivity. Where discrepancies were identified or acceptance criteria were not met, an evaluation was performed to determine the cause and identify any necessary follow-up actions.

2.4.4.1 QC Checks

Six direct observations of survey set-up and close-out activities and scan and static measurements were performed. The observations were reviewed with the surveyors and follow-up actions such as on-the-spot correction, surveyor refresher training, changes in work process, development of good practices, and procedural corrections and improvements were taken.

2.4.4.2 QC Repeat Measurements

A set of fifteen repeat measurements was collected at each of 60 measurement locations. The selected measurement locations represented a range of residual radioactivity from 16,000 to 160,000 dpm/100 cm^2. For each data set, the mean value was calculated and compared to the original measurement value. Measurement accuracy was deemed acceptable where the original measurement fell within ±20% of the mean of the repeat measurement data set. The original measurements for 14 measurement locations selected did not meet the QC acceptance criterion. Evaluations were performed and corrective action, where appropriate, was taken (see Table 2-2).

As an added measure of assurance, an independent static measurement population was also collected and assessed from each survey unit with one or more failed measurement locations.

2.4.5 PROCEDURES

Final survey activities were implemented and controlled using approved plant procedures. A list of those procedures is given in Table 2-3.

2.4.6 TECHNICAL BASIS DOCUMENTS

Calculations and memoranda were prepared to document methods that were used, how the methods were derived, underlying assumptions for decisions that were made, the basis for deviations, and other information that warranted documentation. The technical basis documents developed to support/conduct the final survey are listed in Table 2-4.

2.4.7 CONTROL OF VENDOR SUPPLIED SERVICES

Quality-related services, shown in the following table, were procured from qualified vendors whose internal Quality Assurance (QA) program was subject to approval in accordance with the Trojan QA Program.

Vendor Supplied Services

Service	Vendor
Instrument repair and calibration services	Ludlum Measurements, Inc.
NIST-traceable calibration and check sources	Isotope Products Laboratories
Characterization sample analysis	Thermo Nutech, Duke Engineering

2.4.8 TRAINING

Final survey data collection and technical support staff members were initially trained and qualified in procedures performed by them, and received annual refresher training thereafter. Surveyors completed scan and static survey practical training on a semi-annual basis. The following table lists the lesson modules developed and used to provide the training.

Final Survey Training Program

Module	Title
FS-S-11-LP	Final Survey Plan Overview
FS-S-22-LP	Survey Unit Design
FS-S-33-LP	Survey Instruments/Data Collection
FS-S-55-LP	Scan and Static Survey Practical
FS-S-66-LP	Survey Data Processing
FS-S-77-LP	SDMS Overview
FS-S-88-LP	Annual Refresher Training

Table 2-1

Summary of Operational Survey Data

Survey ID Code[a]	Description	Operational Survey Results[b] (dpm/100 cm^2)			Class		
		Coverage	Total	Removable	1	2	3
Auxiliary/Fuel Building Embedded Piping							
Embedded piping survey units in the Auxiliary/Fuel Building are classified as Class 1 and no pre-remediation data were collected as expected contamination levels required remediation due to history of the respective system.							
Turbine Building Embedded Piping							
P61205C	TB Elev 27', 45', & 63' Oily Waste Drains	100%	≤7,000	<1,000		x	
P61205D	TB Elev 29', 31', 35', & 45' Oily Waste Drains	100%	≤5,000	<1,000		x	
P61205E	TB Elev 45' & 63' Oily Waste Drains	100%	≤8,000	<1,000		x	
P61205F	TB Elev 45' Oily Waste Drains	100%	≤5,000	<1,000		x	
P61205G	TB Elev 27' & 45' Oily Waste Drains	100%	N/A[c]	<1,000		x	
P61205H	TB Elev 45', 63', 93' Oily Waste Drains	100%	N/A[c]	<1,000		x	
P61205J	TB Elev 35' & 45' Oily Waste Drains	100%	N/A[c]	<1,000		x	
P61205K	TB/MSSS Elev 45' Oily Waste Drains	100%	≤15,000	<1,000	x		
P61205L	TB Elev 45' & 93' Oily Waste Drains	100%	N/A[c]	<1,000		x	

Notes:
[a] See Section 2.1.3 for description of survey ID code nomenclature.
[b] Survey results reported to nearest 1,000 dpm/100 cm^2 and represent pre-remediation values.
[c] Survey data not available as part of survey unit release record.

Table 2-2

Summary of QC Measurement Evaluations

Evaluation	Number of Failures	Location of Failures	Source of Error	Preventive/Corrective Actions
2003-02	2	P61203A P61203B	Linear positioning of detector; surface radioactivity less than 3 x bkgrd	Instructed surveyors re: good practices regarding linear positioning of the detector, including zero point orientation and survey map notation where useful; QC repeats > 2 x bkgrd for embedded pipe detectors
2003-05	1	P61202C	Detector positioning at embedded pipe opening relative to small areas of non-uniform activity	Instructed surveyors on actions to assure representative reading is collected where a localized area of elevated radioactivity is suspected to exist
2004-01	3	P61203E P61203F	Calibration of gamma scintillation detectors to areal detection units	Instituted comparison of both gross and converted embedded pipe measurement data to acceptance criteria
2004-02	1	P61203U	Unknown – section of pipe removed	Instituted verification/documentation of post-final survey modifications
2004-03	1	P61200C	Shine from liquid radwaste holding tank which was subsequently removed	None – retained original static measurement values as part of final survey data set as it is conservative and does not impact final survey conclusions regarding site release dose and ALARA criteria
2004-04	3	P61203M	Residual radioactivity, such as a discrete radioactive particle, which is no longer present	None – retained original data as part of final survey data set as it is conservative and does not impact final survey conclusions regarding site release dose and ALARA criteria
2004-06	1	P61203R	Small, localized area of elevated residual radioactivity	None – retained original data as part of final survey data set; slight variations in detector positioning expected
2004-07	1	P61209A	Obstructed detector field of view due to 90° bend in pipe	None – retained original data as part of final survey data set; slight variations in detector positioning expected
2004-08	1	P61202D	Short segment of pipe removed in preparation for pipe grouting	Final configuration of affected embedded pipe survey units verified and post-final survey modifications documented.

Table 2-3

Final Survey Procedures

Number	Title
TPP 14-24	Transfer of Turnover Units
TPP 16-1	Material/Service Procurement and Control Process *(for purchasing final survey materials and services)*
TPP 18-4	Trojan Nuclear Plant Quality Assurance Records Management Program *(for final survey quality records processing)*
TPP 18-9	Trojan Calculations *(for creating technical basis documents)*
TPP 18-10	Control of Quality-Related Computer Programs *(for SDMS revision validations)*
TPP 20-40	Control of Areas Surveyed for Final Site Release
TPP 22-1	Trojan Training Program *(for documenting final survey staff training)*
RP 95	Ludlum M2350-1 Data Logger Calibration Procedure *(for data logger electronic calibrations/checks only)*
RP 159	Conduct of Portable/Semi-Portable Radiation Protection Instrument Program *(for instrument tagging and calibration sticker)*
RP 450	Final Survey Administrative and Quality Controls
RP 451	Final Survey Unit Design
RP 452	Final Survey Data Collection
RP 453	Final Survey Data Processing
RP 454	Final Survey Background Reference Areas
RP 455	Final Survey Quality Control Measurements
RP 456	Control & Operation of Data Logger Survey Instruments
RP 457	Development and Application of Derived Concentration Guideline Levels
RP 458	Final Survey Remediation Levels and ALARA Evaluations
RP 459	Final Survey Instruments Calibration Program
RP 460	Final Survey Data Management
RP 461	Groundwater Sample Collection
RG 20-10	SDMS Applications Instructions
CL 161	LB5100 Planchet Counting System Calibration Procedure
LI 162	LB5100 Planchet Counting System Operation

Table 2-4

Technical Basis Documents

Calculations

Number	Title
FSC 2000-04	Dose Modeling for Embedded Piping
FSC 2002-04	Gross Activity DCGL for Systems, Structures, and Components Impacted Due to Primary to Secondary System Leakage
FSC 2002-08	Remediation Levels for the Primary to Secondary Affected Areas DCGL
FSC 2003-04	Calculation of Embedded Piping Area Factor Equivalents
FSC 2003-05	Remediation Levels for Embedded Piping (Fuel/Aux Building)
FSC 2003-06	Area Factors for Use with the Primary to Secondary Affected Areas DCGL

Memoranda

Number	Title
FS-011-03	Validation of SDMS Data Uploading for Embedded Pipe
FS-012-03	QC Measurement Evaluation 2003-02
FS-013-03	Final Survey of Turbine Building Drain Pipe
FS-020-03	Final Survey Turbine Building Drains
FS-002-04	Application of Elevated Measurement Comparison
FS-005-04	QC Measurement Evaluation 2004-01
FS-006-04	QC Measurement Evaluation 2004-02
FS-007-04	QC Measurement Evaluation 2004-03
FS-008-04	QC Measurement Evaluation 2004-04
FS-009-04	Surveying Difficult to Access Areas
FS-011-04	QC Measurement Evaluation 2004-05
FS-012-04	QC Measurement Evaluation 2004-06
FS-013-04	QC Measurement Evaluation 2004-07
FS-014-04	QC Measurement Evaluation 2004-08
FS-015-04	Embedded Piping Background Subtraction

3. FINAL SURVEY RESULTS

Scan measurements were performed over approximately 3,200 m of embedded piping (1,100 m^2 of surface area) and a total of 3,824 static measurements were collected as final survey data. Table 3-1 summarizes the final survey results. Twenty-one data investigations were performed of 35 locations identified by scan or static measurements. The 35 locations represent a total of approximately 10 m of pipe with residual radioactivity above the DCGL. The data investigation results are summarized in Table 3-2. A detailed summary of final survey data for each survey unit is given in the survey unit summary reports in Appendices B and C. Scan measurement data are provided in the Supplement. Data given below are for surface gamma measurements.

3.1 AUXILIARY/FUEL BUILDING EMBEDDED PIPING

The embedded piping in the Auxiliary/Fuel Building, shown in Figures 3-1 through 3-6, comprises 33 Class 1 survey units. The total embedded piping in each survey unit ranged from 30 to 201 m in length (9 to 107 m^2 in surface area). Scan measurements were performed over 100% of the pipe, with results ranging from background to 540,000 dpm/100 cm^2. Static measurements were collected from 31 to 202 locations in each survey unit, with results ranging from background to 320,000 dpm/100 cm^2. Average measured values ranged from 2,500 to 34,000 dpm/100 cm^2.

Scan and static measurements identified 33 areas with elevated residual radioactivity (11 static measurements fell within previously identified areas). The 33 locations were distributed across 19 survey units. Data investigations revealed approximately 10 m of pipe with residual radioactivity above the DCGL, and radioactivity levels up to 540,000 dpm/100 cm^2. The elevated measurement comparison was applied and the relatively small areas were left as found.

3.2 TURBINE BUILDING EMBEDDED PIPING

The embedded piping in the Turbine Building, shown in Figure 3-7, comprises one Class 1 survey unit and eight Class 2 survey units. The total embedded piping in the Class 1 survey unit is 20 m in length (7 m^2). Scan measurements were performed over 100% of the pipe, with results ranging from 4,100 to 20,000 dpm/100 cm^2. Static measurements were collected from 36 locations with results ranging from background to 15,000 dpm/100 cm^2. The average measured value was 5,800 dpm/100 cm^2.

For the Class 2 survey units, the total embedded piping in each survey unit ranged from 83 to 344 m in length (27 to 190 m^2 of surface area). Scan measurements were performed over 10 to 30% of the pipe, with results ranging from background to 20,000 dpm/100 cm^2. A single area with elevated residual radioactivity above the DCGL was identified, investigated, and separated out to create a Class 1 survey unit (P61205K). Static measurements were collected from 35 to 419 locations in each survey unit. Static measurement results ranged from background to 21,000 dpm/100 cm^2, with average measured values ranging from background to 5,600 dpm/100 cm^2. An investigation was performed on a single static measurement location suspected to have residual radioactivity above the DCGL; however, the investigation confirmed the level of residual radioactivity to be below the DCGL.

Table 3-1

Summary of Final Survey Results

Survey ID Code[a]	Description	Class			Survey Unit Size		Scan Measurements (dpm/100 cm²)			Static Measurements (dpm/100 cm²)			
		1	2	3	Length (m)	Area (m²)	Coverage (%)	Low Value[b]	High Value[b]	Number	Low Value[b]	Mean[b]	High Value[b]
Auxiliary/Fuel Building Embedded Piping[c]													
P61200A	AB Elev 25' Radwaste Drains	x			68	14	100	1,400	540,000[d]	57	-3,300	23,000	320,000[e]
P61200B	AB Elev 45', 61', & 77' Radwaste Drains	x			76	38	100	4,400	61,000	83	630	11,000	47,000
P61200C	AB Elev 45', 61', 72', 77', & 104' Radwaste Drains	x			148	41	100	4,600	180,000[d]	114	3,200	12,000	49,000
P61201A	AB/MSSS Elev 45' Chem Radwaste Drains	x			56	18	100	7,300	47,000	39	7,100	13,000	26,000
P61202A	A/FB Elev 45' Clean Radwaste Drains	x			63	21	100	2,900	55,000	34	3,800	6,800	17,000
P61202B	AB Elev 61' & 77' Clean Radwaste Drains	x			94	25	100	-2,700	150,000[d]	91	-2,300	12,000	110,000[e]
P61202C	AB Elev 61' & 77' Clean Radwaste Drains	x			100	26	100	3,300	290,000[d]	113	-1,800	12,000	69,000
P61202D	AB Elev 61' Clean Radwaste Drains	x			106	24	100	350	81,000	87	920	11,000	73,000
P61203A	AB Elev 5' Dirty Radwaste Drains	x			44	13	100	2,800	150,000[d]	31	3,200	11,000	37,000
P61203B	AB Elev 5' Dirty Radwaste Drains	x			30	9	100	2,300	36,000	33	1,800	6,800	45,000
P61203C	AB Elev 5' Dirty Radwaste Drains	x			92	27	100	2,100	200,000[d]	71	3,400	9,000	84,000
P61203D	AB Elev 25' Dirty Radwaste Drains	x			74	24	100	-130	220,000[d]	68	-1,700	8,100	100,000[e]
P61203E	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			106	36	100	-1,400	120,000[d]	122	-5,400	2,500	24,000
P61203F	A/FB Elev 45', 61', & 104' Dirty Radwaste Drains	x			42	14	100	1,300	54,000	37	1,000	8,900	33,000
P61203G	A/FB Elev 61', 77', & 93' Dirty Radwaste Drains	x			149	43	100	2,500	48,000	131	-1,600	6,900	32,000
P61203J	AB Elev 61', 77', 93', & 104' Dirty Radwaste Drains	x			201	72	100	-640	170,000[d]	202	-6,700	5,600	110,000[e]
P61203K	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			55	18	100	3,900	87,000	32	-190	8,200	81,000
P61203L	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			63	21	100	-1,600	51,000	75	-3,900	5,400	40,000
P61203M	A/FB Elev 54', 63', 75', 93' Dirty Radwaste Drains	x			43	15	100	1,200	110,000[d]	64	1,600	8,000	59,000
P61203N	AB Elev 45' & 61' Dirty Radwaste Drains	x			57	16	100	4,400	59,000	72	-1,500	10,000	43,000
P61203P	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			68	23	100	-2,300	25,000	92	-6,400	4,000	13,000
P61203Q	FB/MSSS Elev 45' & 93' Dirty Radwaste Drains	x			95	31	100	1,900	190,000[d]	64	-280	12,000	160,000[e]
P61203R	AB Elev 45', 61', 77' & 93' Dirty Radwaste Drains	x			174	56	100	-2,700	220,000[d]	146	-2,500	7,900	140,000[e]
P61203S	AB Elev 25' & 45' Dirty Radwaste Drains	x			107	35	100	-1,000	170,000[d]	92	-3,000	7,800	61,000
P61203T	AB Elev 45' Dirty Radwaste Drains	x			56	17	100	2,900	76,000	48	86	10,000	62,000
P61203U	FB Elev 45', 61', 77', & 93' Dirty Radwaste Drains	x			125	41	100	-2,400	33,000	101	-4,500	8,200	150,000[f]
P61203V	AB Elev 61', 77' & 93' Dirty Radwaste Drains	x			55	17	100	4,100	160,000[d]	46	-5,400	12,000	130,000[e]
P61203W	AB Elev 45' Dirty Radwaste Drains	x			144	43	100	360	230,000[d]	121	-4,500	11,000	160,000[e]

Table 3-1

Summary of Final Survey Results

Survey ID Code[a]	Description	Class			Survey Unit Size		Scan Measurements (dpm/100 cm^2)			Static Measurements (dpm/100 cm^2)			
		1	2	3	Length (m)	Area (m^2)	Coverage (%)	Low Value[b]	High Value[b]	Number	Low Value[b]	Mean[b]	High Value[b]
P61203X	AB/CB Elev 45' Dirty Radwaste Drains	x			82	26	100	-3,400	26,000	71	-5,600	4,600	24,000
P61203Y	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			48	16	100	300	80,000	47	-4,500	14,000	73,000
P61203Z	A/FB Elev 45' Dirty Radwaste Drains	x			105	34	100	-4,400	130,000[d]	82	-4,000	3,900	35,000
P61208A	FB Elev 77' & 93' Spent Fuel Pool Exhaust	x			58	107	100	4,300	115,000[d]	81	2,500	11,000	46,000
P61209A	FB Elev 77' & 93' Spent Fuel Pool System	x			120	26	100	12,000	390,000[d]	109	3,900	34,000	86,000
Turbine Building Embedded Piping[g]													
P61205C	TB Elev 27', 45', & 63' Oily Waste Drains		x		92	52	30	-12,000	3,700	82	-10,000	-640	6,000
P61205D	TB Elev 29', 31', 35', & 45' Oily Waste Drains		x		112	56	30	-1,700	16,000	70	-7,400	1,800	11,000
P61205E	TB Elev 45' & 63' Oily Waste Drains		x		258	80	30	-16,000	16,000	212	-14,000	2,800	16,000
P61205F	TB Elev 45' Oily Waste Drains		x		83	50	30	120	7,700	35	-5,500	2,600	7,400
P61205G	TB Elev 27' & 45' Oily Waste Drains		x		86	27	30	-3,600	7,500	86	-4,400	3,600	13,000
P61205H	TB Elev 45', 63', 93' Oily Waste Drains		x		169	85	30	-16,000	7,900	121	-12,000	360	12,000
P61205J	TB Elev 35' & 45' Oily Waste Drains		x		111	63	30	-3,300	7,000	106	-4,500	2,400	11,000
P61205K	TB/MSSS Elev 45' Oily Waste Drains	x			20	7	100	4,100	20,000	36	-2,800	5,800	15,000
P61205L	TB Elev 45' & 93' Oily Waste Drains		x		344	190	10	-8,000	12,000	419	-11,000	5,600	21,000

Notes:

[a] See Section 2.1.3 for description of survey ID code nomenclature.

[b] Survey results reported to two significant digits.

[c] Auxiliary/Fuel Bldg embedded pipe gross activity derived concentration of 100,000 dpm/100 cm^2 applied to these survey units.

[d] Data investigation performed and elevated measurement comparison applied.

[e] Sign statistical test applied to data set.

[f] Data investigation performed, elevated measurement applied to location, and Sign statistical test applied to data set.

[g] Turbine Bldg embedded pipe gross activity DCGL of 21,000 dpm/100 cm^2 applied to these survey units.

Table 3-2

Summary of Data Investigation Results and Actions Taken

Survey Unit	Class	Identified Locations		Length >DCGL (m)	Action(s) Taken	Maximum Value (dpm/100 cm^2)[a]	
		Scan	Static			Before	After
Auxiliary/Fuel Building Embedded Piping[b]							
P61200A	1	4	4	1.0	apply EMC	535,000	N/A
P61200C	1	1	0	0.6	apply EMC	183,000	N/A
P61202B	1	2	1	1.0	apply EMC	146,000	N/A
P61202C	1	1	0	0.5	apply EMC	288,000	N/A
P61203A	1	2	0	0.1	apply EMC	151,000	N/A
P61203C	1	1	0	0.1	apply EMC	199,000	N/A
P61203D	1	2	1	0.5	apply EMC	216,000	N/A
P61203E	1	1	0	0.1	apply EMC	124,000	N/A
P61203J	1	1	1	0.5	apply EMC	166,000	N/A
P61203M	1	1	0	0.2	apply EMC	112,000	N/A
P61203Q	1	1	1	0.1	apply EMC	193,000	N/A
P61203R	1	2	1	0.5	apply EMC	222,000	N/A
P61203S	1	3	0	0.8	apply EMC	174,000	N/A
P61203U	1	0	1	0.2	apply EMC	153,000	N/A
P61203V	1	1	1	0.4	apply EMC	163,000	N/A
P61203W	1	3	1	1.8	apply EMC	232,000	N/A
P61203Z	1	1	0	0.3	apply EMC	131,000	N/A
P61208A	1	1	0	0.2	apply EMC	115,000	N/A
P61209A	1	4	0	1.4	apply EMC	388,000	N/A
Turbine Building Embedded Piping[c]							
P61205H	2	1	0	N/A[d]	subdivide unit[e]	26,000	N/A
P61205L	2	0	1	N/A[f]	none[f]	22,000	20,000[g]

Notes:
[a] Values rounded to nearest 1,000 dpm/100 cm^2.
[b] Investigation level is 100,000 dpm/100 cm^2.
[c] Investigation level is 21,000 dpm/100 cm^2.
[d] Section of pipe with elevated residual radioactivity removed to gain access to formerly inaccessible section.
[e] Investigation resulted in a Class 1 survey unit being created (P61205K).
[f] Investigation determined inappropriate background value used; correct background value resulted in no measurement value above DCGL.
[g] Investigation survey result vs. final survey data set.

Figure 3-1

Auxiliary Building Radwaste Drains
(Survey Units P61200A, B, & C)

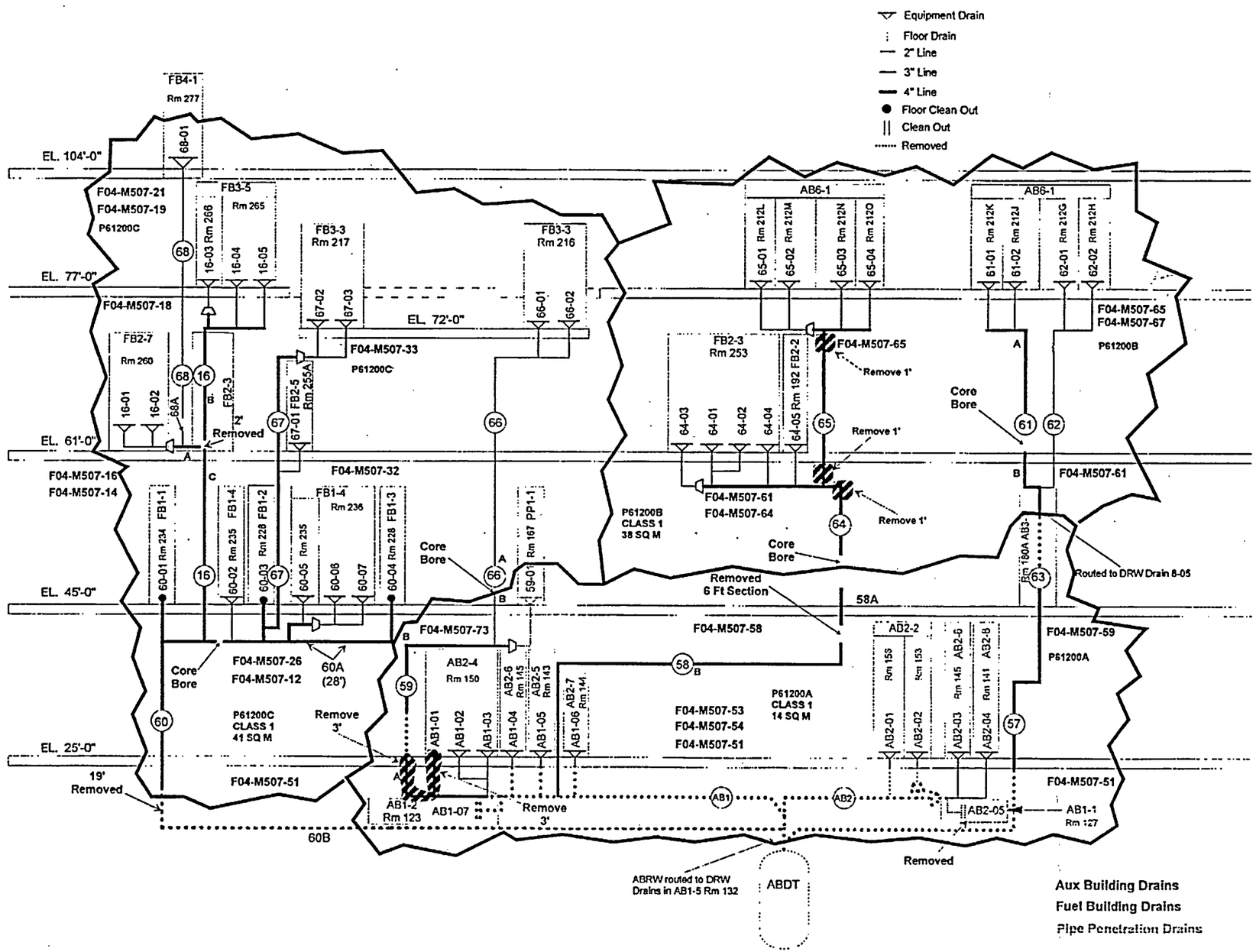


Figure 3-2

Chemical Radwaste Drains
(Survey Unit P61201A)

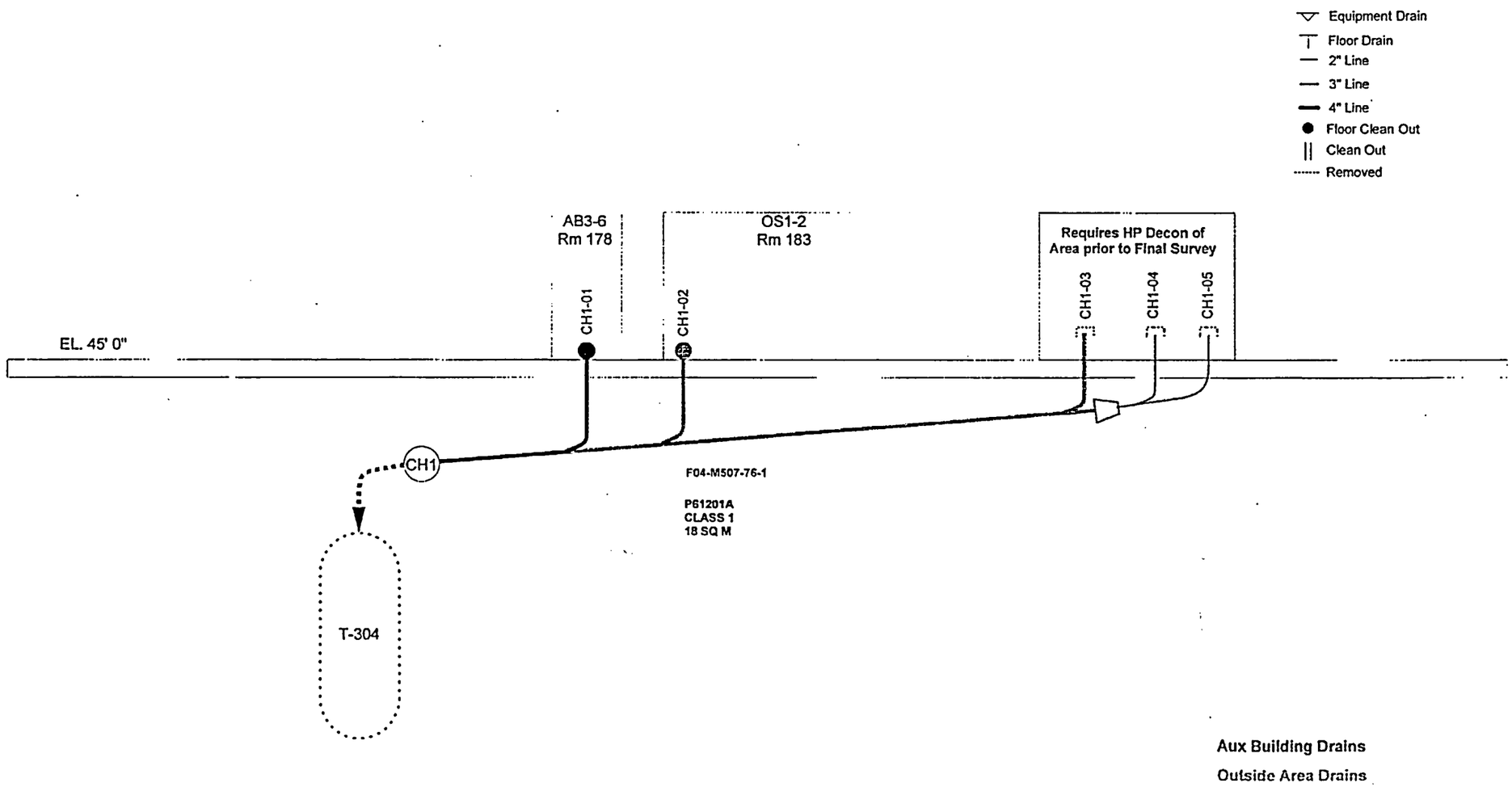


Figure 3-3

Clean Radwaste Drains
(Survey Units P61202A, B, C, & D)

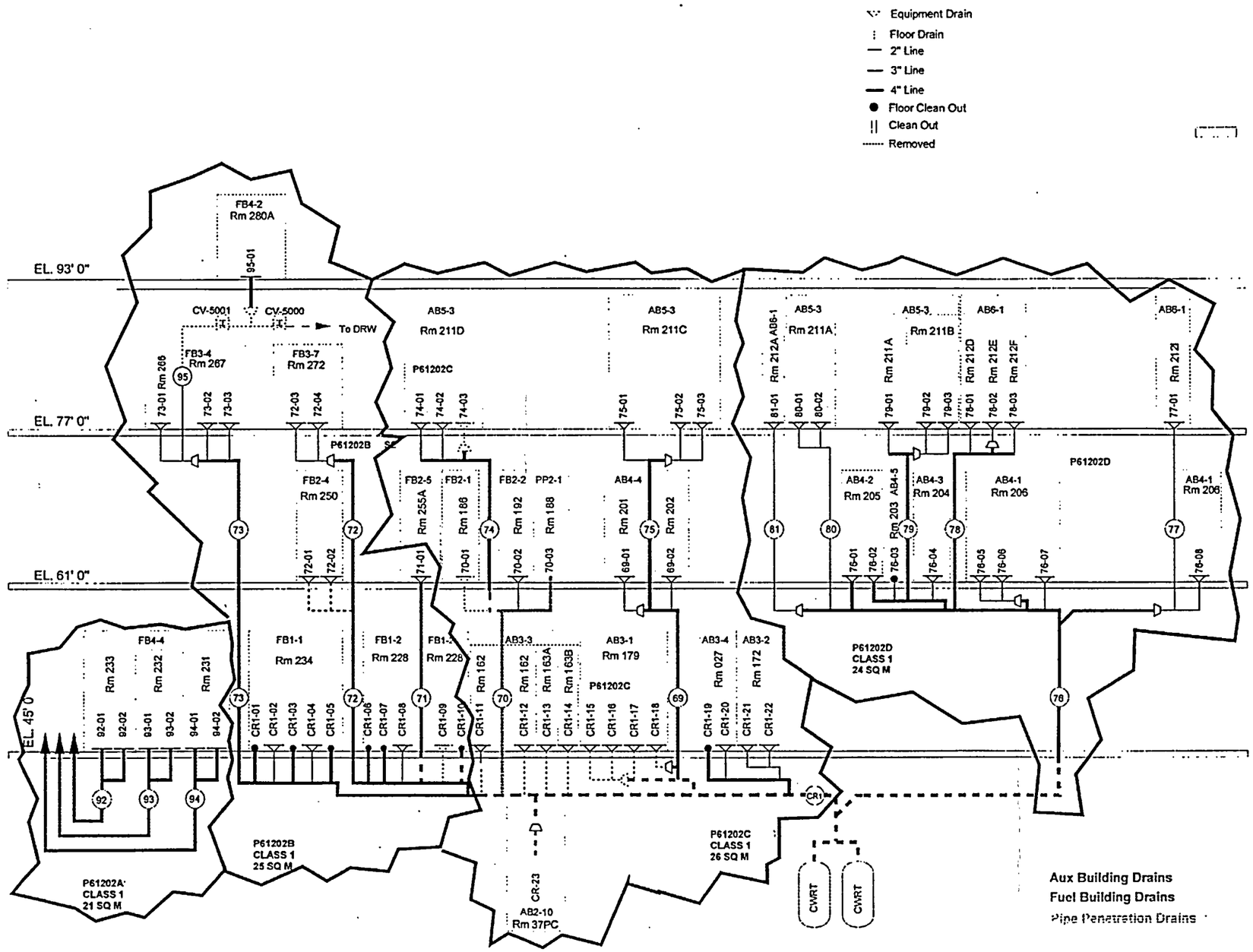


Figure 3-4

Dirty Radwaste Drains
(Survey Units P61203A, B, C, D, E, Q, & X)

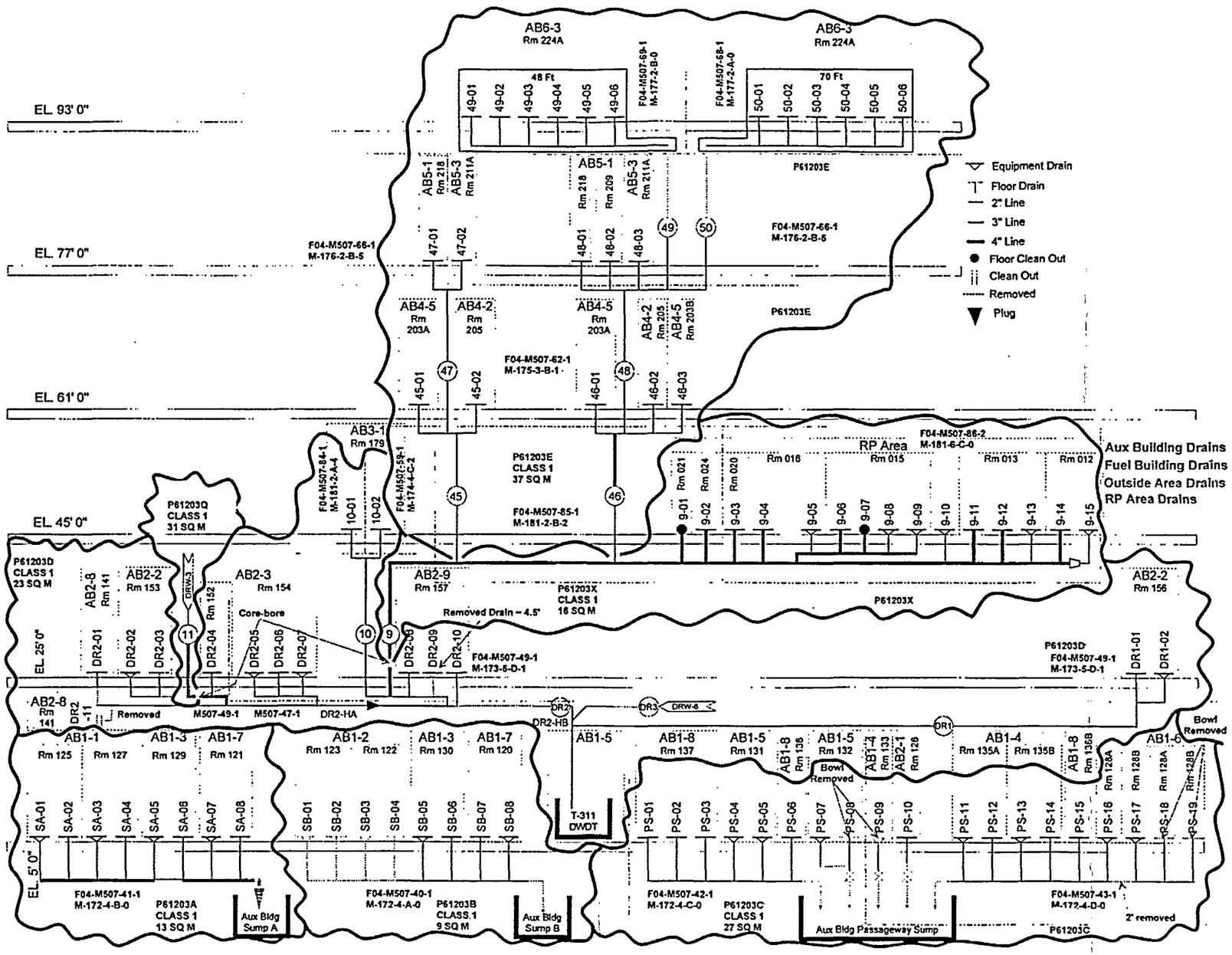


Figure 3-4 (cont.)

Dirty Radwaste Drains
(Survey Units P61203F, G, W, & Z)

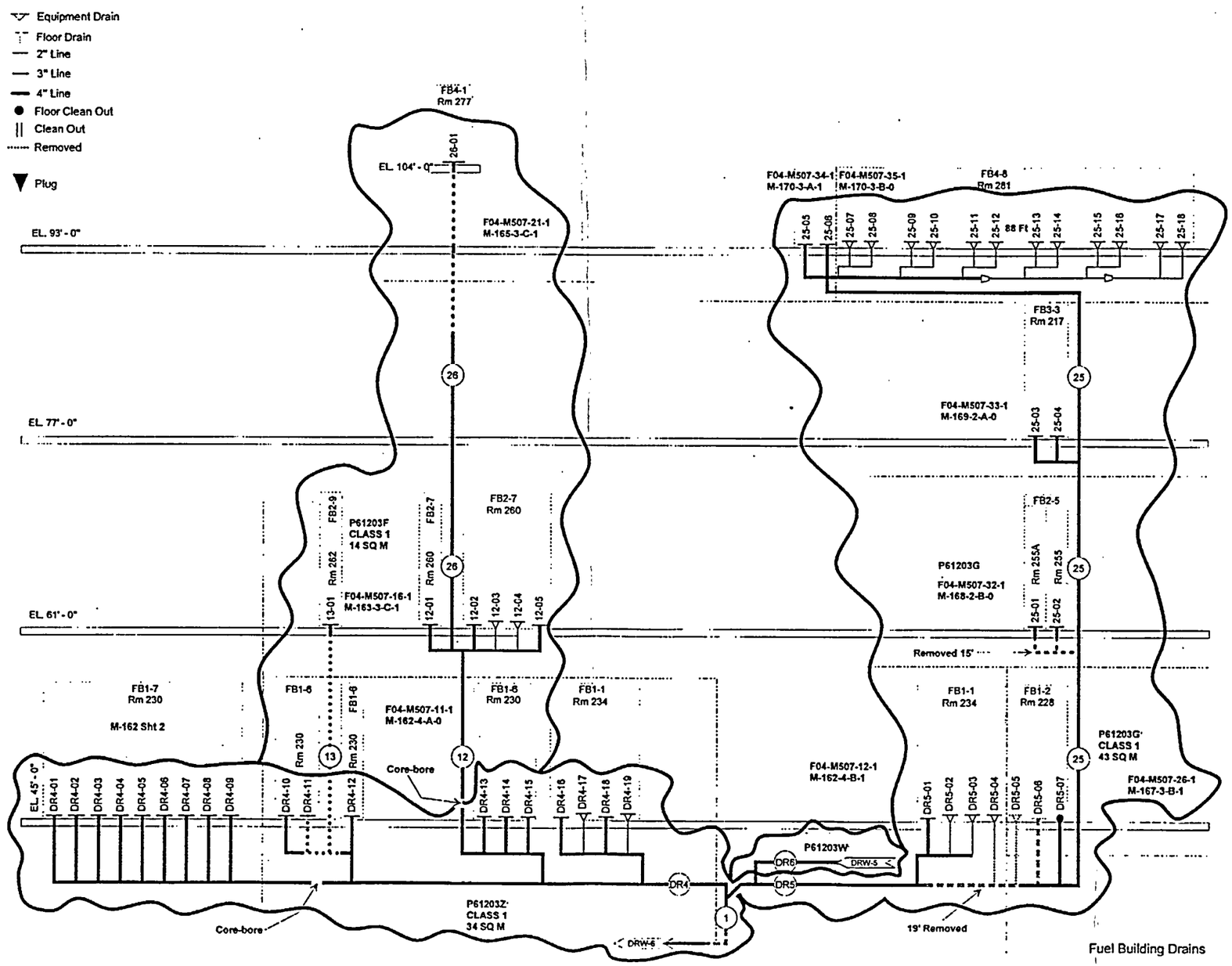


Figure 3-4 (cont.)

Dirty Radwaste Drains
(Survey Units P61203J, K, Q, & T)

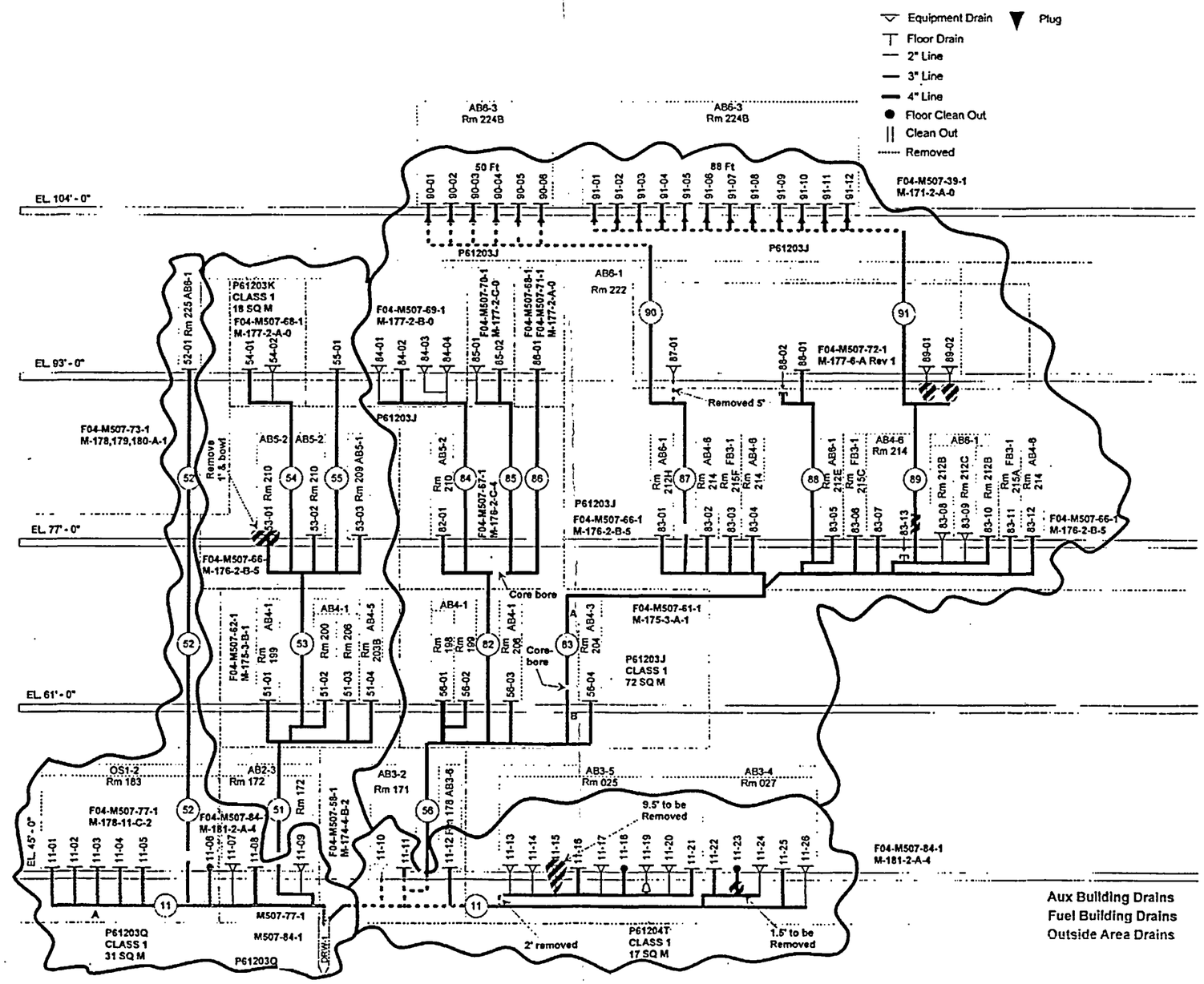


Figure 3-4 (cont.)

Dirty Radwaste Drains
(Survey Units P61203G, L, M, N, & S)

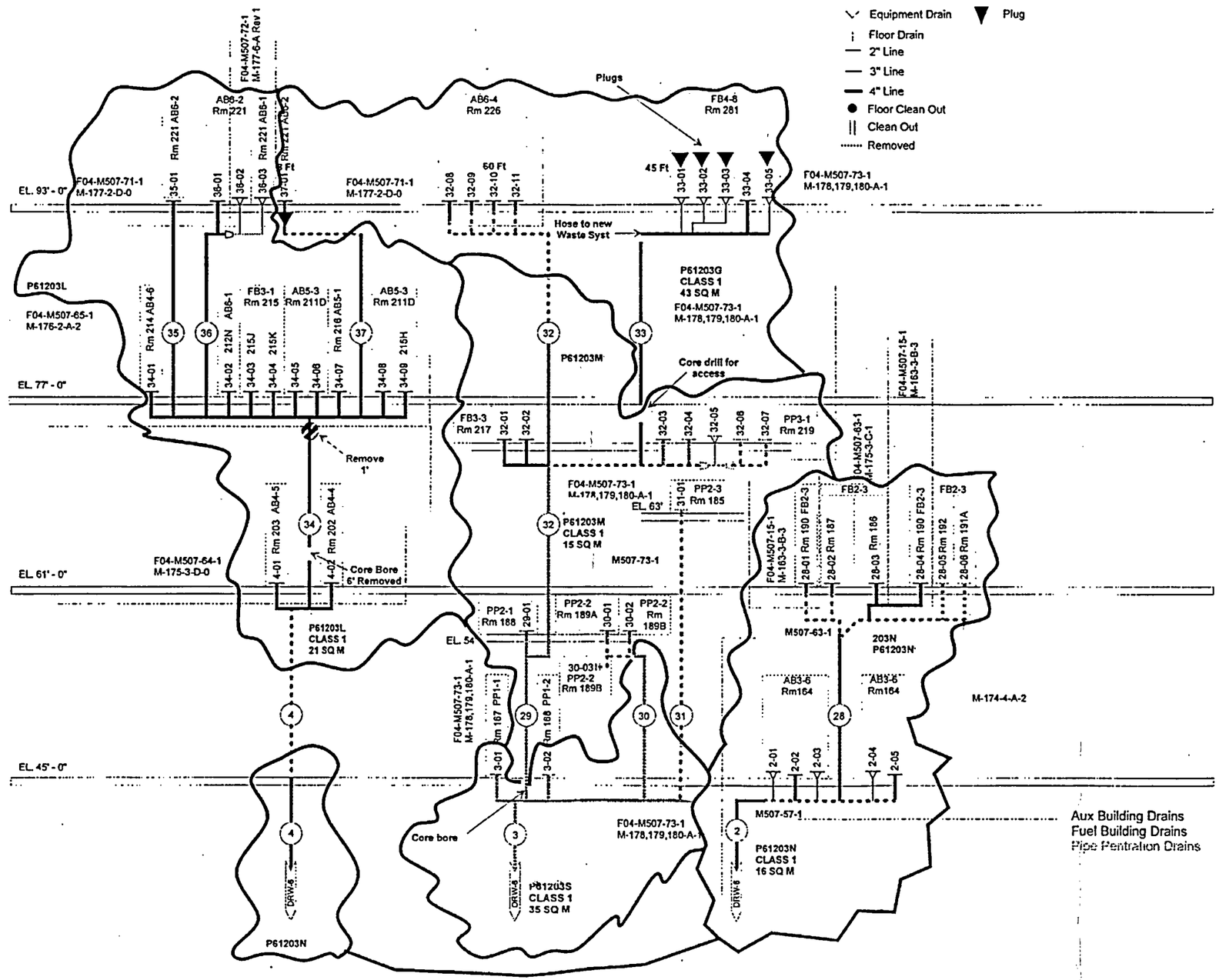


Figure 3-4 (cont.)

Dirty Radwaste Drains
(Survey Units P61203P, U, V, W, & Y)

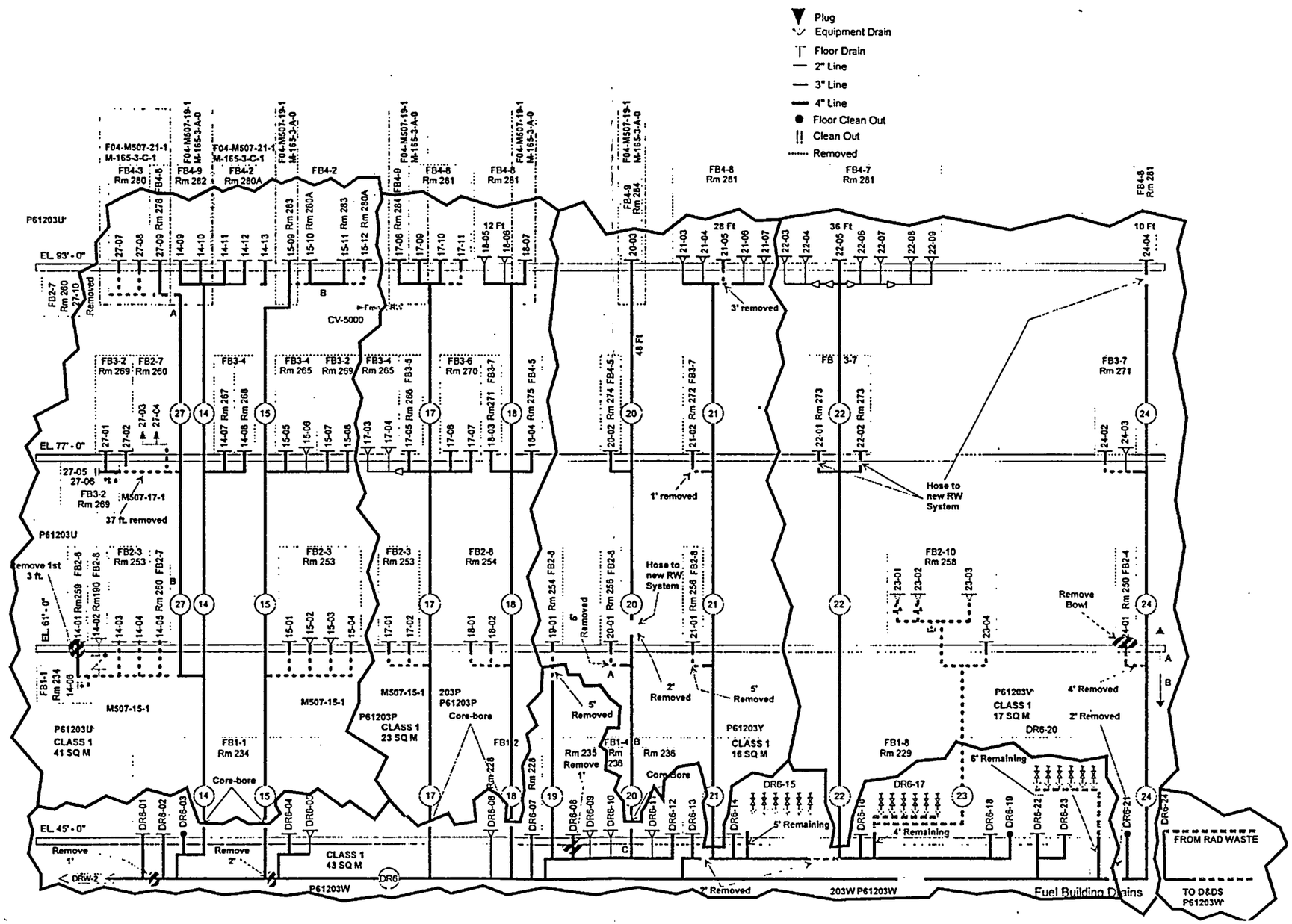


Figure 3-4 (cont.)

Dirty Radwaste Drains
(Survey Units P61203D, N, R, S, & Z)

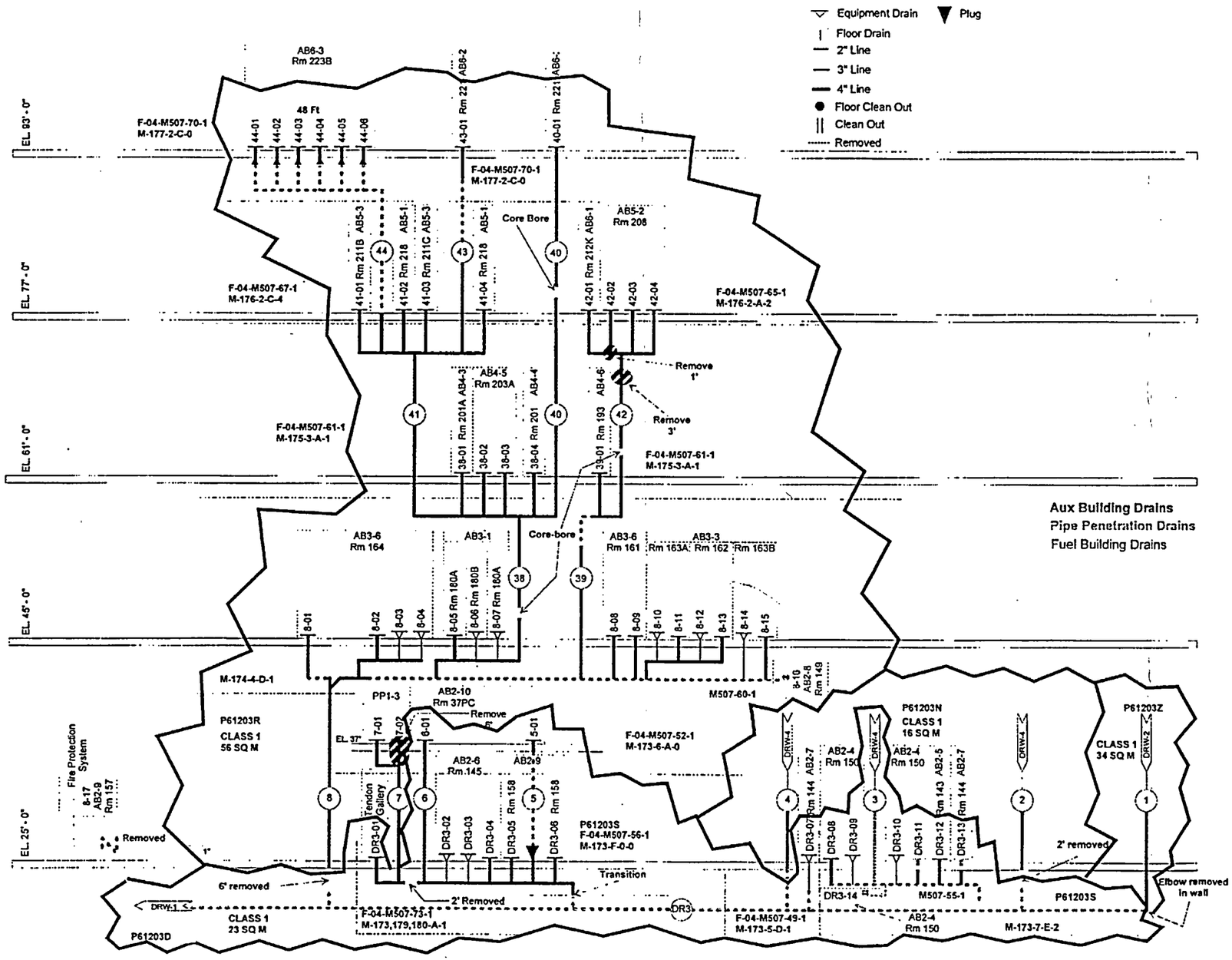


Figure 3-5

Fuel Building Spent Fuel Pool Exhaust
(Survey Unit P61208A)

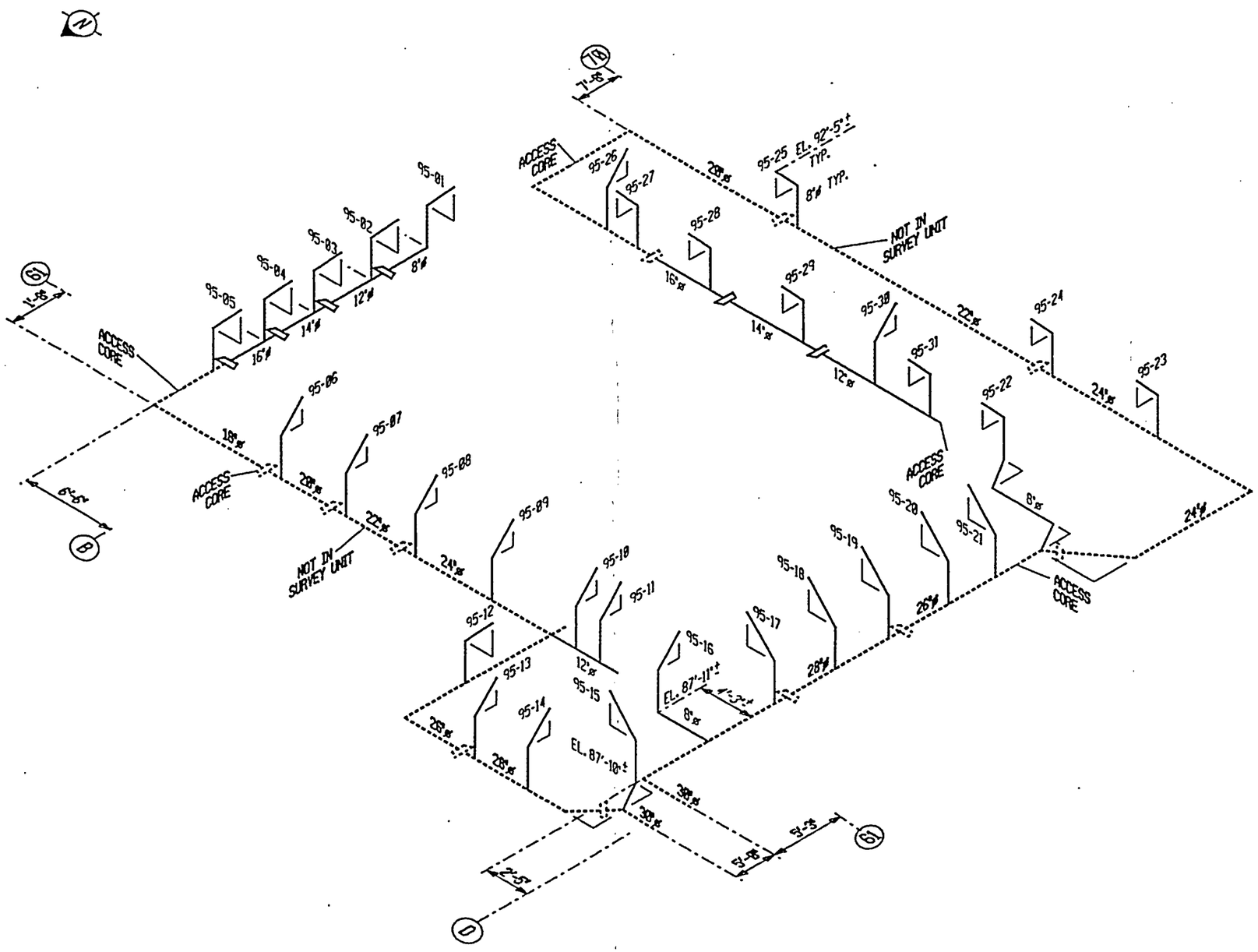


Figure 3-6

Fuel Building Spent Fuel Pool System
(Survey Unit P61209A)

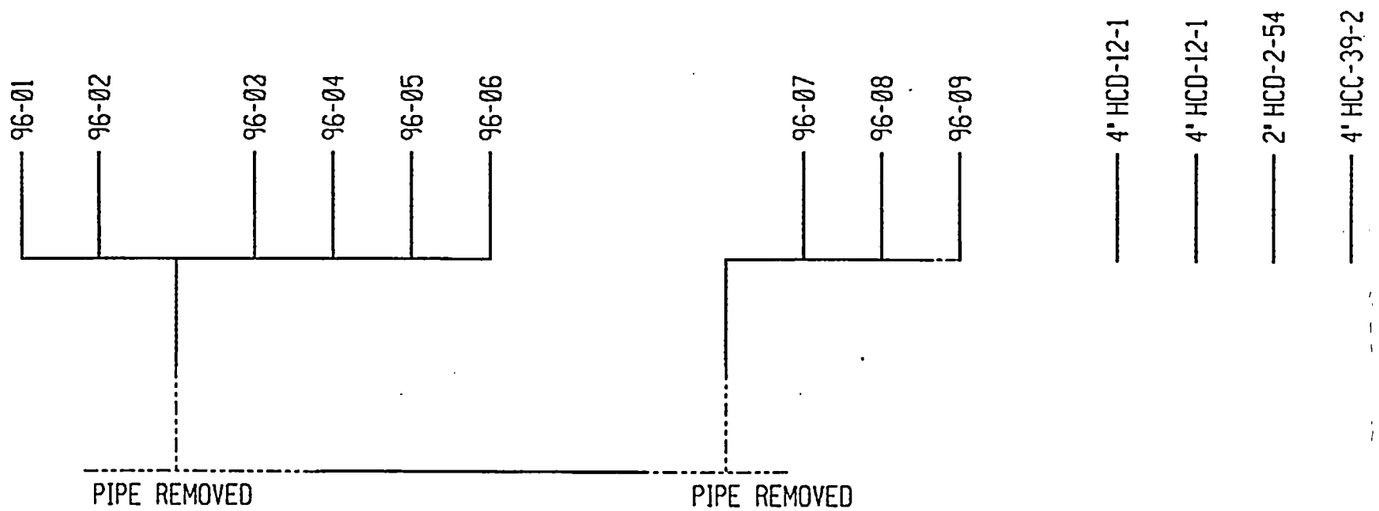


Figure 3-7

Turbine Building Oily Waste Drains
(Survey Unit P61205C)

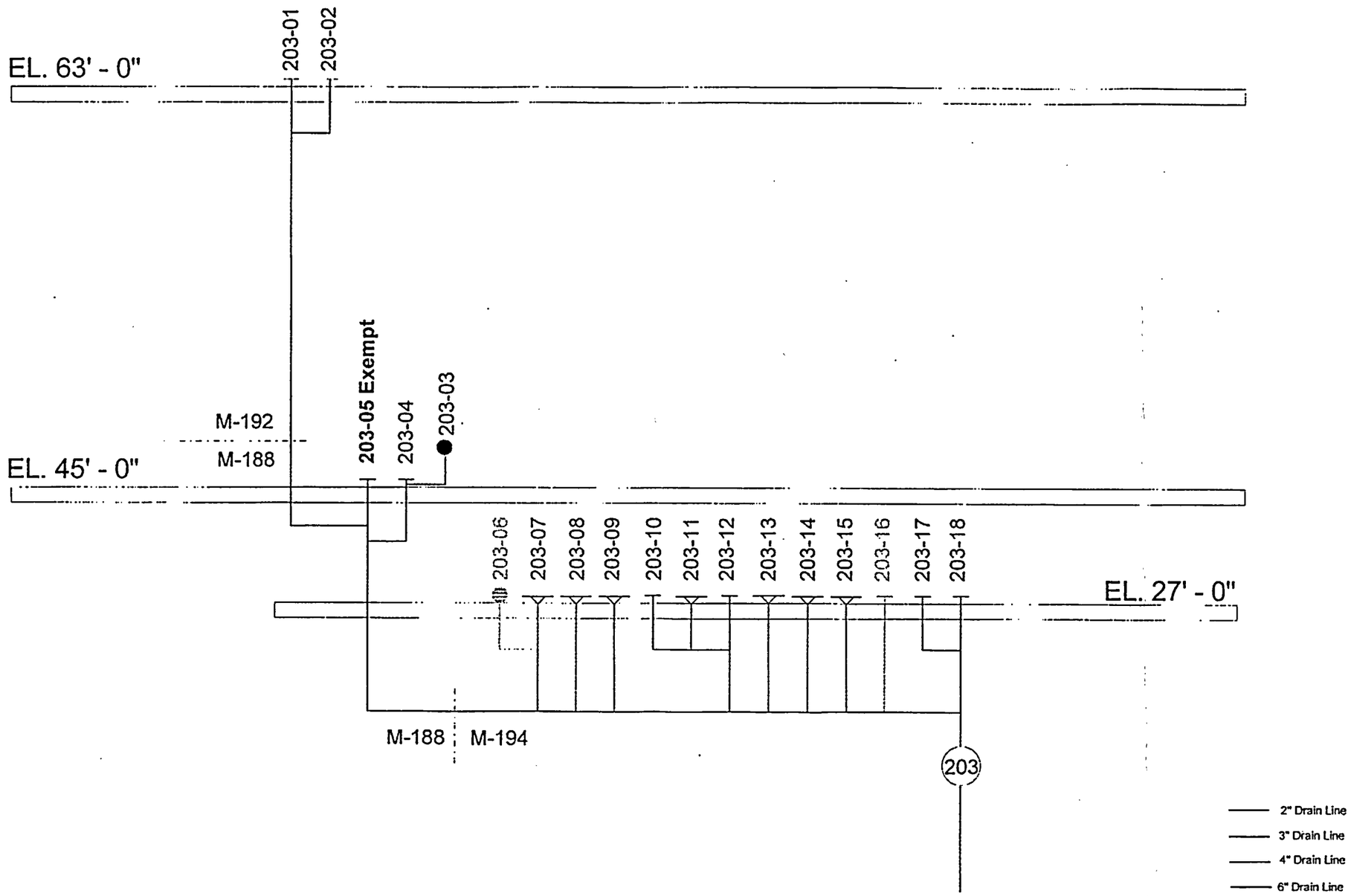


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205D)

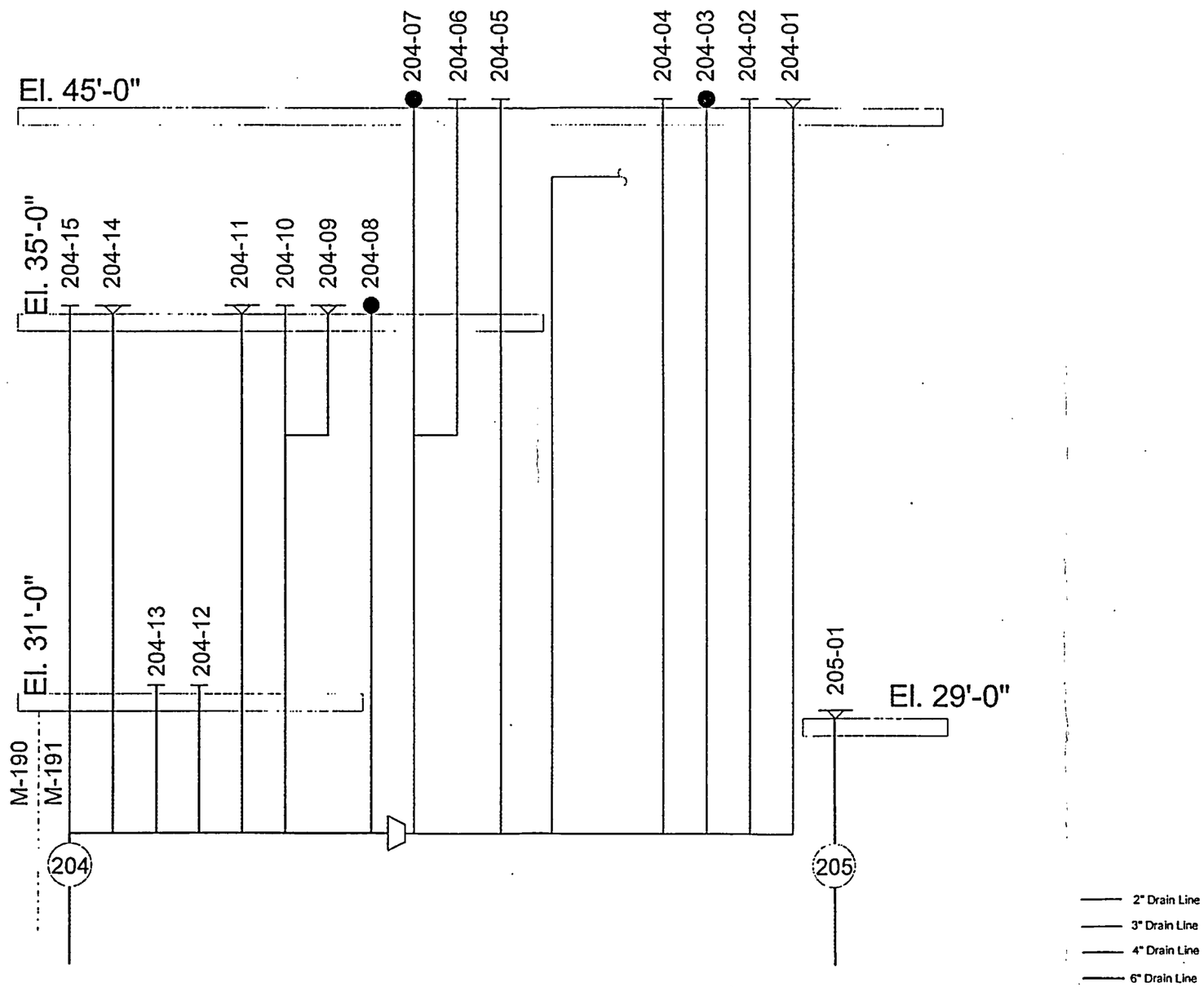


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205E)

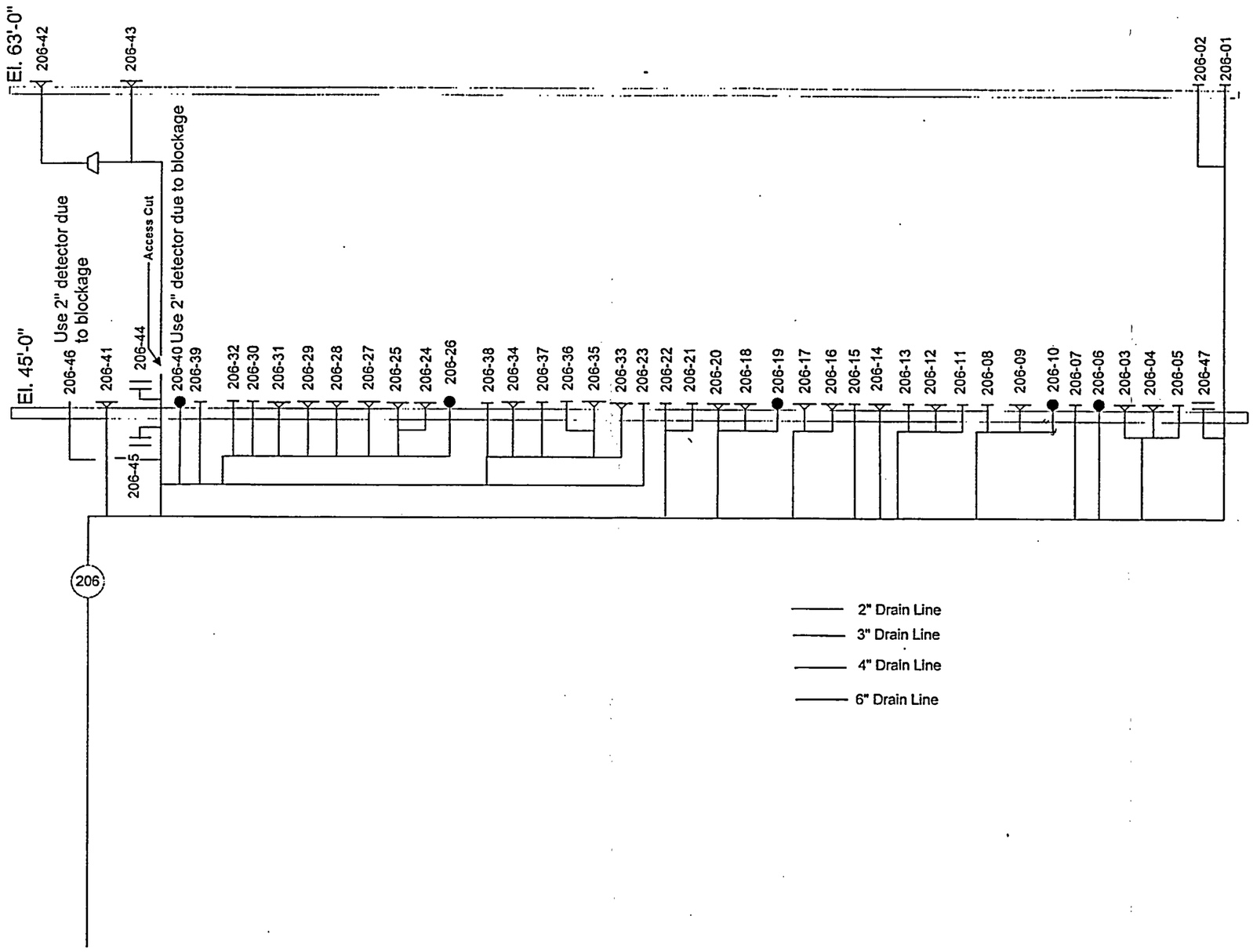


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205F)

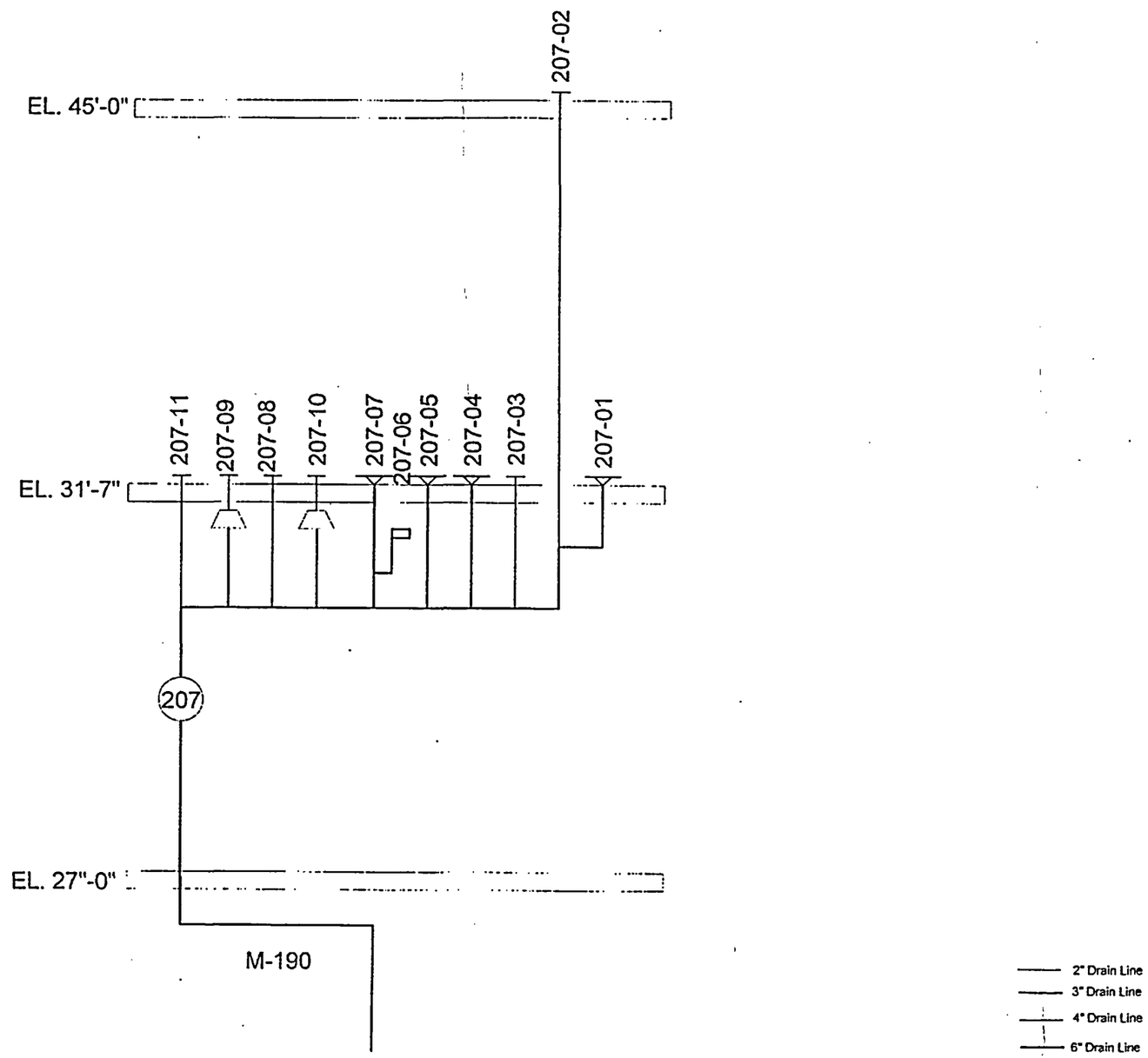


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205G)

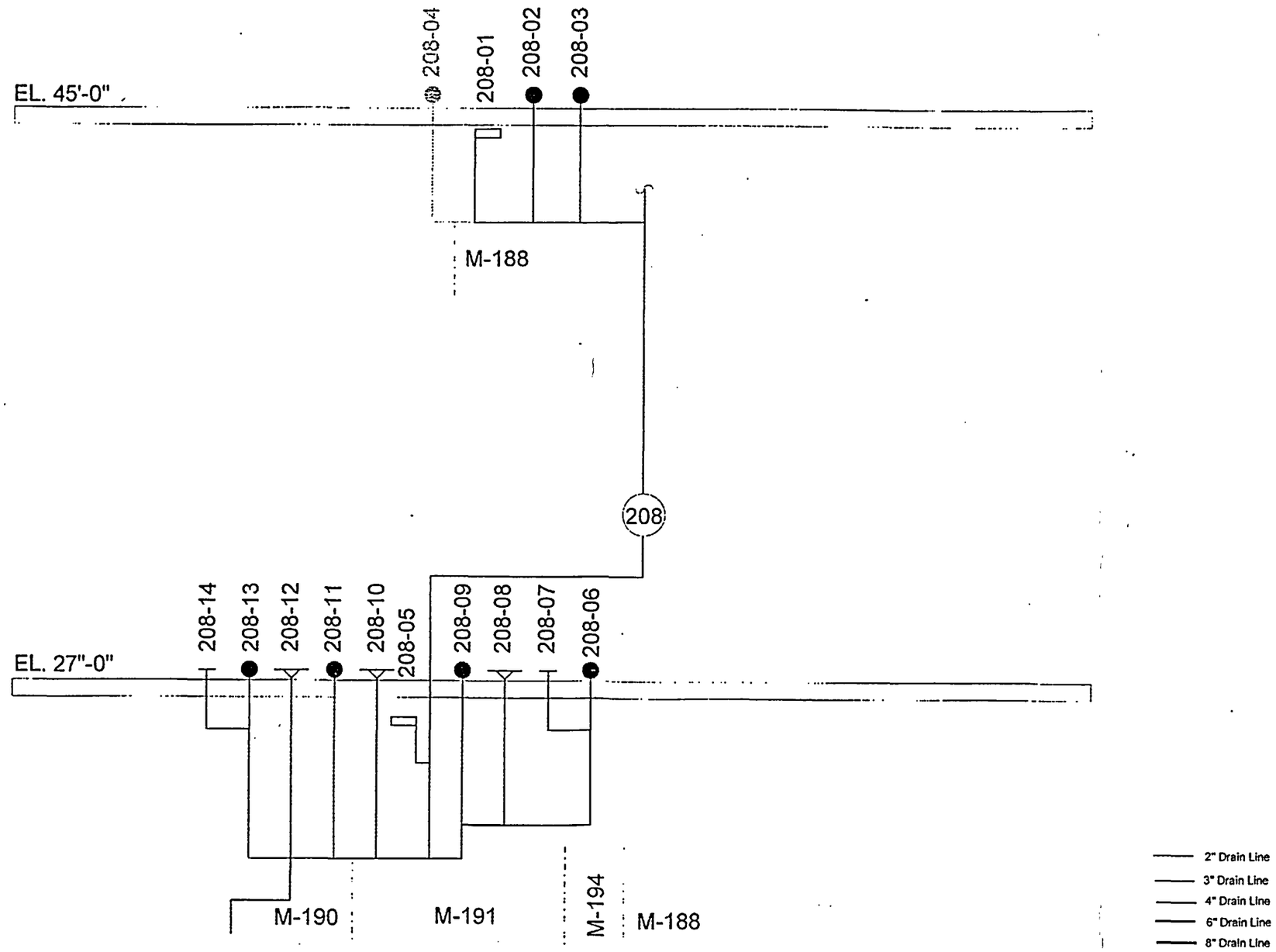


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205H)

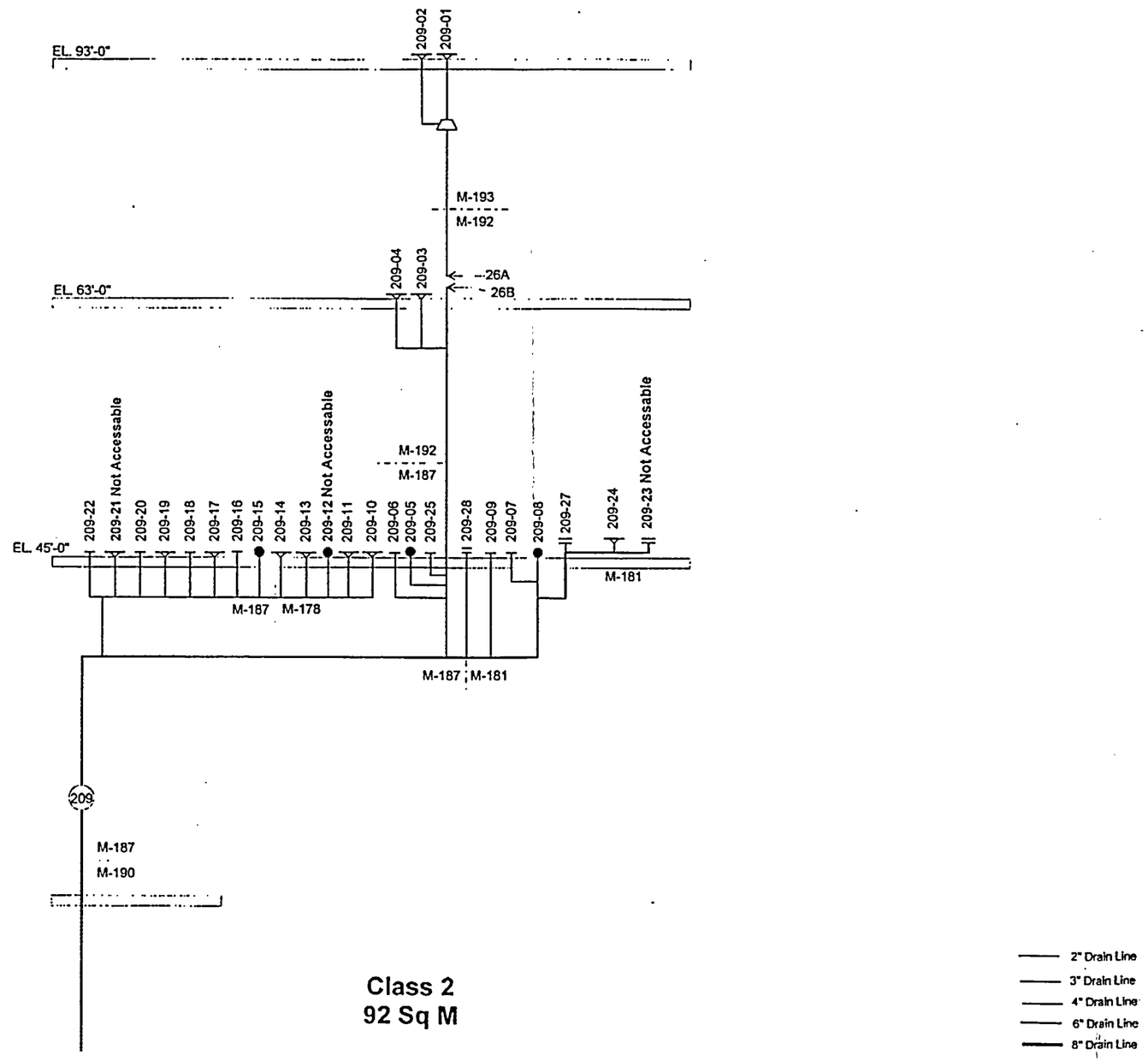


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205J)

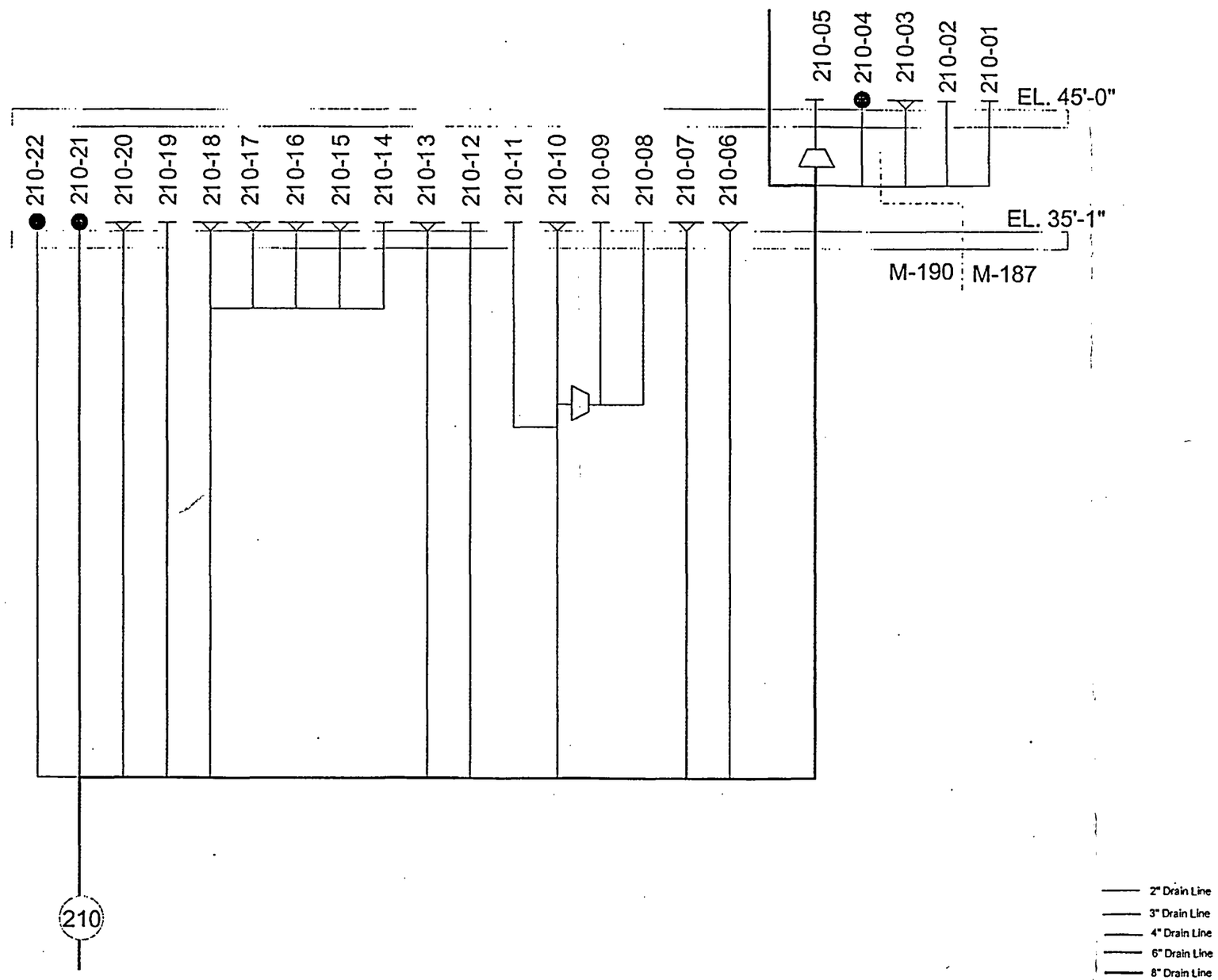


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205K)

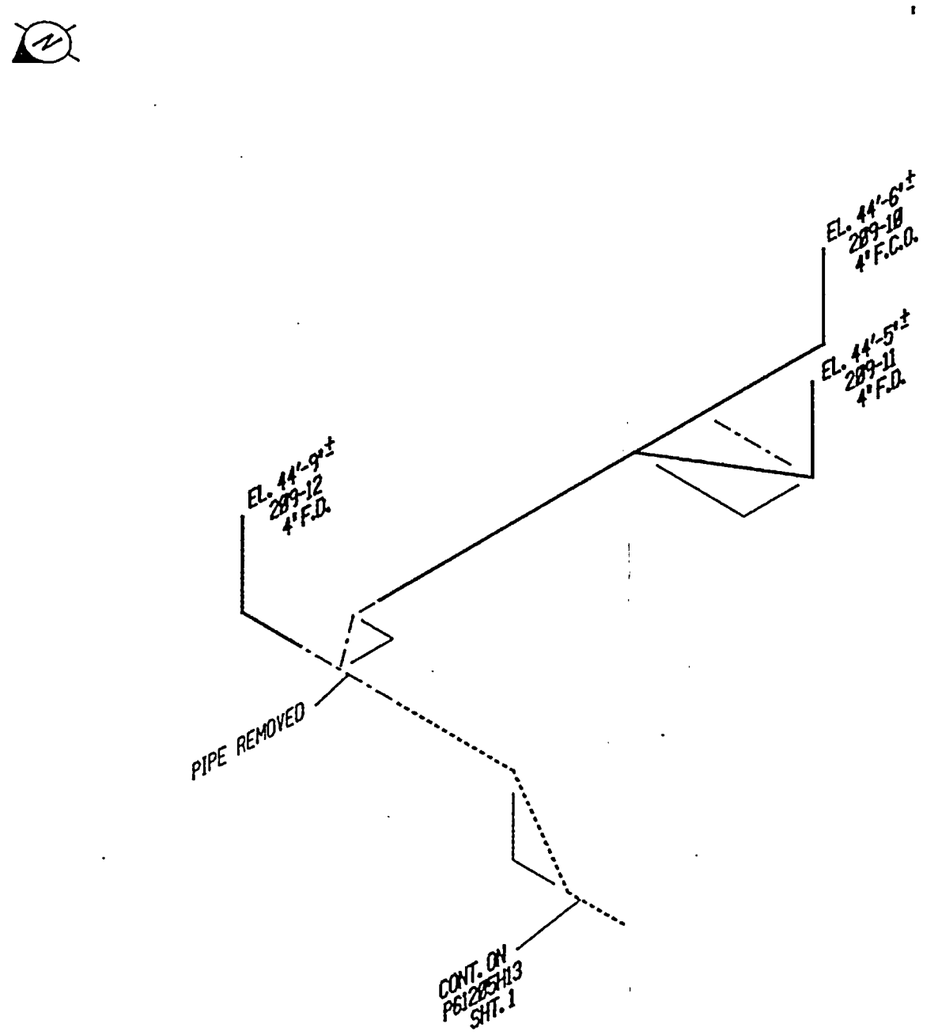
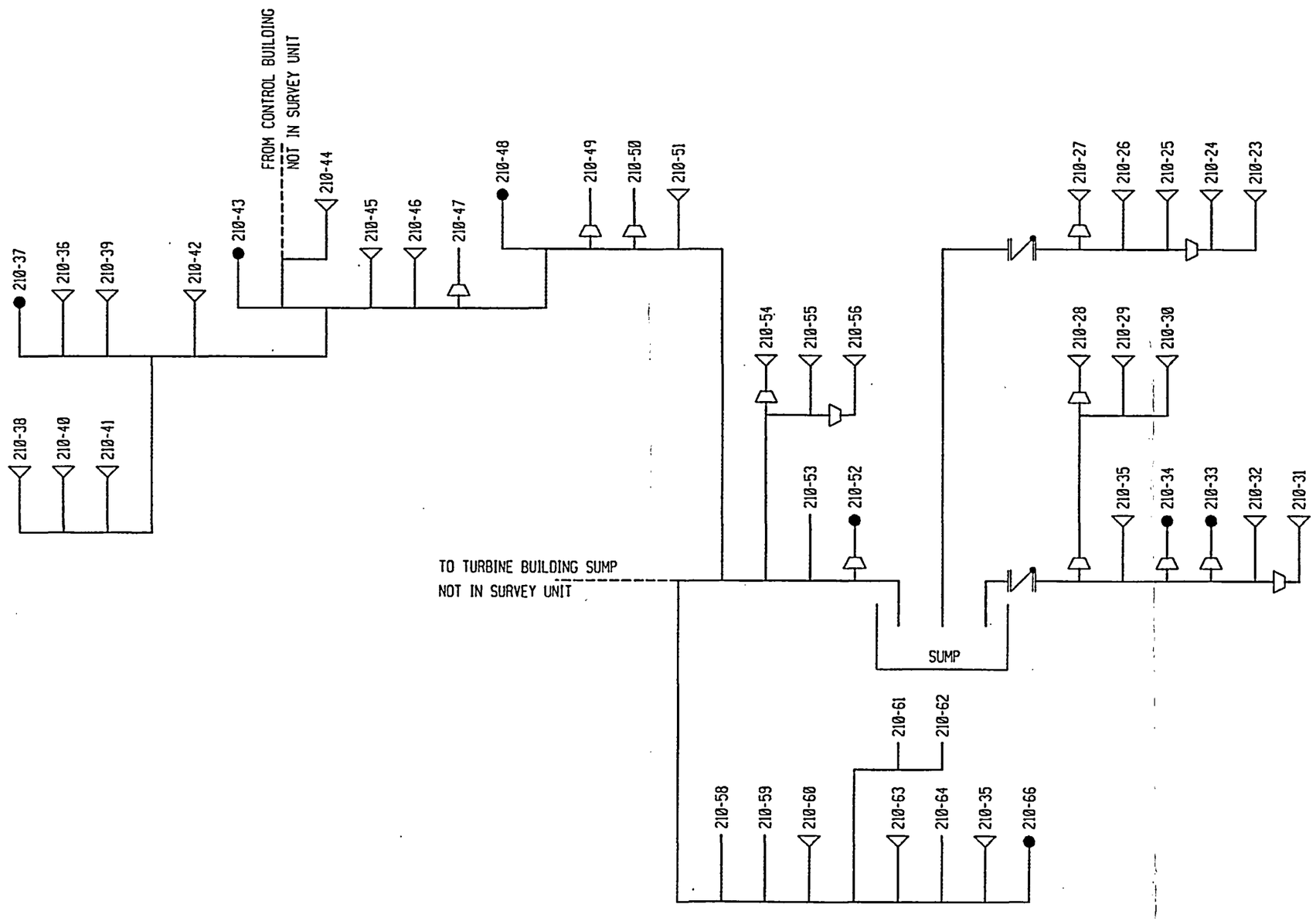


Figure 3-7 (cont.)

Turbine Building Oily Waste Drains
(Survey Unit P61205L)



4. DATA ASSESSMENT

Final survey data were reviewed to ensure that they were of a sufficient type, quantity, and quality such that conclusions could be drawn with confidence regarding the radiological condition of the survey unit. Conclusions were drawn and documented in a separate release record prepared for each survey unit. A summary of the release record for each survey unit is given in Appendices B and C.

4.1 DATA VERIFICATION AND VALIDATION

Data were reviewed to verify Data Quality Objectives (DQOs) established in the final survey design were met. Graphical representations and statistical comparisons of the data were made which provided both qualitative and quantitative information about the data. An assessment was performed to verify the data supported the underlying assumptions necessary for the statistical tests, if applicable.

4.1.1 DATA QUALITY

The final survey data were verified authentic, appropriately documented, and technically defensible. Specifically, the following conclusions were made:

1. The instruments used to collect the data were capable of detecting the radiation of interest at or below the investigation level.

2. The calibration of the instruments used to collect the data was current and radioactive sources used for calibration were NIST traceable.

3. Instrument response was checked before and, where required, after data collection each day.

4. The MDCs and the assumptions used to develop them were appropriate for the instruments and the survey methods used to collect the data.

5. The survey methods used to collect the data were appropriate for the media and types of radiation being measured.

6. Special measurement methods used to collect the data were applied as warranted by survey conditions.

7. The custody of samples collected for laboratory analysis was tracked from the point of collection until final results were obtained.

8. The final survey data set consists of qualified measurement results that are representative of the current facility status and randomly collected as prescribed by the survey design.

4.1.2 GRAPHICAL DATA REVIEW

Survey data were graphed to identify patterns, relationships, or potential anomalies in the data that might go unnoticed using purely numerical methods. A frequency plot was used to examine the general shape of the data distribution.

4.1.3 BASIC STATISTICAL COMPARISONS

Statistical quantities (range, median, and standard deviation) were calculated for the final survey data set for each final survey unit. The calculated quantities were compared to the test values shown in the following table.

Basic Statistical Comparisons

Statistical Quantity	Test Value	Failure Response
Range (R)	$R \leq 5\sigma$	Examine data for outliers
Median ($\tilde{u}$)	$\lvert(\tilde{u} - \text{mean}) / \sigma\rvert \leq 0.5$	Examine data for outliers and anomalies
Standard Deviation (σ)	$\sigma \leq 0.2 \times \text{DCGL}$	Determine if more measurements are necessary

Where the statistical quantity failed the comparison, the data set and/or survey design assumptions were examined. Table 4-1 summarizes the statistical quantity failures.

4.1.3.1 Range Test

Where the range was greater than 5 standard deviations, the data were examined for outliers. Outliers usually represent true extreme values of a distribution, such as areas of elevated residual radioactivity, and indicate more variability in the population than is expected. There were 25 range test failures; however, no data were discarded. The failures were generally caused by one or two outliers with elevated results, as compared to the rest of the data set.

4.1.3.2 Median Test

Failure of the median test indicates large differences between the mean and the median and is an indication of the skewness in the data, warranting an examination of the data for outliers or anomalies. There were no failures of the median test.

4.1.3.3 Standard Deviation Test

Where the value of the calculated standard deviation was larger than that estimated in the survey design (the initial design value was 0.2 x DCGL), an insufficient number of measurements may have been taken and additional measurements may have been necessary. There were three failures of the standard deviation test. The failures were generally caused by a right skewed data set with a relatively long "tail".

To determine if additional measurements were necessary, a retrospective power analysis was performed to verify the power of the Sign test would have been sufficient based on a minimum of 30 measurements collected and an actual standard deviation larger than that estimated in the survey design. The largest standard deviation from actual survey data collected was used (survey unit P61200A) along with survey design values contained in the LTP, Appendix 4-1, to construct the power analysis. The results, shown in the table below, indicate that no more than 23 measurements per survey unit would have been needed to provide a sample population of sufficient size to assure statistical confidence in the conclusions drawn from the survey data. Therefore, the number of measurements collected was adequate in all cases.

Retrospective Power Analysis Data

Parameter	Value
Standard Deviation (σ)	0.5 x DCGL
Lower Bound of Gray Region (LBGR)	0.4 x DCGL
False Positive Decision Error (α)	0.05
False Negative Decision Error (β)	0.05
Minimum Size of Sample Population	23

4.2 SATISFACTION OF THE SITE RELEASE CRITERIA

Four conditions were established that, when met, satisfy the site release criteria (see Section 1.3). These conditions were applied to each survey unit as shown in Table 4-2.

4.2.1 CONDITION #1 - MEAN TEST

Condition #1 requires that the average residual radioactivity above background be less than or equal to the DCGL. To determine if Condition #1 was met, the mean of the final survey unit data set for each survey unit was compared to the DCGL. In all cases, the average residual radioactivity was less than 0.4 x DCGL. Therefore, each survey unit satisfies Condition #1.

4.2.2 CONDITION #2 - ELEVATED MEASUREMENT COMPARISON

Condition #2 requires that individual measurements, representing small areas of residual radioactivity that exceed the DCGL, do not exceed the elevated measurement comparison (EMC) DCGL. To determine if Condition #2 was met, the individual measurements in 19 survey units, shown in Table 4-2, that exceeded the DCGL were compared to the EMC DCGL. In all cases, the individual measurements were less than 1.0 x EMC DCGL. Therefore, each survey unit satisfies Condition #2.

The EMC DCGL was developed using the methodology and the area factors provided in the LTP, Appendix 4-1. The radionuclide-specific area factors given in the LTP could not be used directly to develop the EMC DCGL since the gross activity DCGL was derived based on a

radionuclide distribution and not on a single radionuclide. Instead, a weighting method was applied using the radionuclide distribution and the relative activity fractions used to derive the gross activity DCGL. The radionuclides of interest were those used in the derivation of the gross activity DCGL. Area factors for use with embedded piping were calculated for areas of elevated residual radioactivity of 0.5 to 6 m in length.

4.2.3 CONDITION #3 - SIGN TEST

Condition #3 requires that where one or more static measurements exceed the DCGL, the average residual radioactivity passes the Sign statistical test. To determine if Condition #3 was met, the Sign test was applied to the final survey data set of each survey unit with one or more static measurements above the DCGL. In all cases, the average residual radioactivity passed the Sign statistical test. Therefore, each survey unit satisfies Condition #3.

Where the Sign statistical test was applied, the data provided statistically significant evidence that the level of residual radioactivity in the survey unit does not exceed the site release dose criterion. The decision that the survey unit is acceptable for unrestricted release can be made with sufficient confidence and without further analysis. The Wilcoxon Rank Sum (WRS) statistical test was not used.

If all data measurements in the data set are less than the DCGL, the data set will always pass the Sign test. Therefore, the Sign test is not performed on such a data set.

4.2.4 CONDITION #4 - ALARA EVALUATION

Condition #4 requires that remediation be performed where it is ALARA to reduce the levels of residual radioactivity to below the concentrations necessary to meet the DCGL. The levels of residual radioactivity were considered ALARA once remediation actions, considered to be cost effective, were taken. To determine if Condition #4 was met, an ALARA evaluation was performed for every Class 1 or Class 2 survey unit. In all cases, the ALARA evaluation verified that remediation was performed where it was ALARA to do so. Therefore, each survey unit satisfies Condition #4.

The ALARA evaluation ensured that: (1) residual radioactivity had been reduced to levels that are as low as reasonably achievable, and (2) efforts to remove residual radioactivity were commensurate with the level of risk the residual radioactivity poses. The ALARA evaluation examined various remediation actions to determine which actions, if any, have a net benefit in further reducing the levels of residual radioactivity. The evaluation compared residual radioactivity levels to calculated remediation levels (see Appendix A) for possible remediation actions. The remediation action was taken where the level of residual radioactivity exceeded the remediation level. Conversely, if the concentration was less than the remediation level, the level of residual radioactivity was documented as ALARA and the remediation action was not performed.

Table 4-1

Summary of Statistical Quantity Failures

Survey Unit	Calculated Value	Acceptance Criterion	Reason for Failure		
			Number of Outliers	High/Low Value (dpm/100 cm^2)[a]	Balance of Data (dpm/100 cm^2)[a]
Range Test					
P61200A	319,748	≤ 241,810	1	316,000	< 171,000
P61200B	46,335	≤ 45,863	N/A	N/A	N/A[b]
P61202B	114,163	≤ 63,060	1	112,000	< 40,000
P61202C	70,902	≤ 56,661	2	66,000[c]	< 50,000
P61202D	72,533	≤ 51,135	1	73,000	< 50,000
P61203B	43,299	≤ 36,528	1	45,000	< 17,000
P61203C	80,094	≤ 52,976	1	84,000	< 45,000
P61203D	104,659	≤ 63,045	1	103,000	< 32,000
P61203E	29,482	≤ 23,052	1	24,000	< 18,000
P61203G	33,912	≤ 23,839	2	30,000[c]	< 22,000
P61203J	143,307	≤ 54,005	2	94,000[c]	<50,000
P61203K	81,511	≤ 68,160	1	81,000	< 18,000
P61203L	44,209	≤ 28,310	1	40,000	< 20,000
P61203M	57,426	≤ 51,747	2	59,000[c]	< 40,000
P61203N	44,875	≤ 40,136	2	42,000[c]	< 30,000
P61203Q	155,776	≤ 94,280	1	156,000	< 41,000
P61203R	140,352	≤ 73,930	2	110,000[c]	< 60,000
P61203S	63,657	≤ 53,108	2	58,000[c]	< 40,000
P61203T	62,024	≤ 56,588	1	62,000	< 40,000
P61203U	157,284	≤ 90,425	2	127,000[c]	< 28,000
P61203V	138,894	≤ 101,165	1	134,000	<50,000
P61203W	168,000	≤ 76,120	1	164,000	< 36,000
P61203X	29,165	≤ 21,004	1	24,000	< 16,000
P61203Z	38,960	≤ 30,591	1	35,000	< 25,000
P61208A	43,173	≤ 35,995	2	43,000[c]	< 30,000
Standard Deviation Test					
P61200A	48,362	≤ 20,000	1	316,000	79% < 21,000[b]
P61203V	20,233	≤ 20,000	1	134,000	91% < 20,000[b]
P61209A	22,996	≤ 20,000	N/A	N/A	N/A[b]

Notes:
[a] Values rounded to nearest 1,000 dpm/100 cm^2.
[b] Right-skewed data set with relatively long "tail".
[c] Average value of both outliers.

Table 4-2

Satisfaction of Conditions for Site Release

Survey ID Code	Description	Class			Condition #1 Mean Test		Condition #2 EMC			Condition #3 Sign Test		Condition #4 ALARA		Conclusion: Satisfies Release Criteria?
		1	2	3	Mean	% of DCGL	Length (m)	Max Value	% of EMC	S+ Value	Critical Value	Rad Levels ALARA?	Remediated to ALARA?	
Auxiliary/Fuel Building Embedded Piping														
P61200A	AB Elev 25' Radwaste Drains	x			23,000	23	1.0	540,000	80	53	35	Y	N/A	Y
P61200B	AB Elev 45', 61', & 77' Radwaste Drains	x			11,000	11	---	---	---	---	---	Y	N/A	Y
P61200C	AB Elev 45', 61', 72', 77', & 104' Radwaste Drains	x			12,000	12	0.6	180,000	51	---	---	Y	N/A	Y
P61201A	AB/MSSS Elev 45' Chem Radwaste Drains	x			13,000	13	---	---	---	---	---	Y	N/A	Y
P61202A	A/FB Elev 45' Clean Radwaste Drains	x			6,800	7	---	---	---	---	---	Y	N/A	Y
P61202B	AB Elev 61' & 77' Clean Radwaste Drains	x			12,000	12	1.0	150,000	35	90	53	Y	N/A	Y
P61202C	AB Elev 61' & 77' Clean Radwaste Drains	x			12,000	12	0.5	290,000	43	---	---	Y	N/A	Y
P61202D	AB Elev 61' Clean Radwaste Drains	x			11,000	11	---	---	---	---	---	Y	N/A	Y
P61203A	AB Elev 5' Dirty Radwaste Drains	x			11,000	11	0.1	150,000	23	---	---	Y	N/A	Y
P61203B	AB Elev 5' Dirty Radwaste Drains	x			6,800	7	---	---	---	---	---	Y	N/A	Y
P61203C	AB Elev 5' Dirty Radwaste Drains	x			9,000	9	0.1	200,000	30	---	---	Y	N/A	Y
P61203D	AB Elev 25' Dirty Radwaste Drains	x			8,100	8	0.5	220,000	32	67	41	Y	N/A	Y
P61203E	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			2,500	3	0.1	120,000	19	---	---	Y	N/A	Y
P61203F	A/FB Elev 45', 61', & 104' Dirty Radwaste Drains	x			8,900	9	---	---	---	---	---	Y	N/A	Y
P61203G	A/FB Elev 61', 77', & 93' Dirty Radwaste Drains	x			6,900	7	---	---	---	---	---	Y	N/A	Y
P61203J	AB Elev 61', 77', 93', & 104' Dirty Radwaste Drains	x			5,600	6	0.5	170,000	25	201	113	Y	N/A	Y
P61203K	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			8,200	8	---	---	---	---	---	Y	N/A	Y
P61203L	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			5,400	5	---	---	---	---	---	Y	N/A	Y
P61203M	A/FB Elev 54', 63', 75', 93' Dirty Radwaste Drains	x			8,000	8	0.2	110,000	17	---	---	Y	N/A	Y
P61203N	AB Elev 45' & 61' Dirty Radwaste Drains	x			10,000	10	---	---	---	---	---	Y	N/A	Y
P61203P	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			4,000	4	---	---	---	---	---	Y	N/A	Y
P61203Q	FB/MSSS Elev 45' & 93' Dirty Radwaste Drains	x			12,000	12	0.1	190,000	29	63	39	Y	N/A	Y
P61203R	AB Elev 45', 61', 77' & 93' Dirty Radwaste Drains	x			7,900	8	0.5	220,000	33	145	83	Y	N/A	Y
P61203S	AB Elev 25' & 45' Dirty Radwaste Drains	x			7,800	8	0.8	170,000	49	---	---	Y	N/A	Y
P61203T	AB Elev 45' Dirty Radwaste Drains	x			10,000	10	---	---	---	---	---	Y	N/A	Y
P61203U	FB Elev 45', 61', 77', & 93' Dirty Radwaste Drains	x			8,200	8	0.2	150,000	23	100	59	Y	N/A	Y
P61203V	AB Elev 61', 77' & 93' Dirty Radwaste Drains	x			12,000	12	0.4	160,000	24	45	29	Y	N/A	Y

Table 4-2

Satisfaction of Conditions for Site Release

Survey ID Code	Description	Class			Condition #1 Mean Test		Condition #2 EMC			Condition #3 Sign Test		Condition #4 ALARA		Conclusion: Satisfies Release Criteria?
		1	2	3	Mean	% of DCGL	Length (m)	Max Value	% of EMC	S+ Value	Critical Value	Rad Levels ALARA?	Remediated to ALARA?	
P61203W	AB Elev 45' Dirty Radwaste Drains	x			11,000	11	1.8	230,000	93	120	70	Y	N/A	Y
P61203X	AB/CB Elev 45' Dirty Radwaste Drains	x			4,600	5	---	---	---	---	---	Y	N/A	Y
P61203Y	AB Elev 61', 77', & 93' Dirty Radwaste Drains	x			14,000	14	---	---	---	---	---	Y	N/A	Y
P61203Z	A/FB Elev 45' Dirty Radwaste Drains	x			3,900	4	0.3	130,000	20	---	---	Y	N/A	Y
P61208A	FB Elev 77' & 93' Spent Fuel Pool Exhaust	x			11,000	11	0.2	120,000	17	---	---	Y	N/A	Y
P61209A	FB Elev 77' & 93' Spent Fuel Pool System	x			34,000	34	1.4	390,000	61	---	---	Y	N/A	Y
Turbine Building Embedded Piping														
P61205C	TB Elev 27', 45', & 63' Oily Waste Drains		x		-640	0	---	---	---	---	---	Y	N/A	Y
P61205D	TB Elev 29', 31', 35', & 45' Oily Waste Drains		x		1,800	9	---	---	---	---	---	Y	N/A	Y
P61205E	TB Elev 45' & 63' Oily Waste Drains		x		2,800	13	---	---	---	---	---	Y	N/A	Y
P61205F	TB Elev 45' Oily Waste Drains		x		2,600	12	---	---	---	---	---	Y	N/A	Y
P61205G	TB Elev 27' & 45' Oily Waste Drains		x		3,600	17	---	---	---	---	---	Y	N/A	Y
P61205H	TB Elev 45', 63', 93' Oily Waste Drains		x		360	2	---	---	---	---	---	Y	N/A	Y
P61205J	TB Elev 35' & 45' Oily Waste Drains		x		2,400	11	---	---	---	---	---	Y	N/A	Y
P61205K	TB/MSSS Elev 45' Oily Waste Drains	x			5,800	28	---	---	---	---	---	N	Y	Y
P61205L	TB Elev 45' & 93' Oily Waste Drains		x		5,600	27	---	---	---	---	---	Y	N/A	Y

5. FINAL SURVEY CONCLUSION

The final survey of the embedded piping was performed in accordance with the LTP and its implementing procedures. Final survey data of adequate quantity and quality were collected from each of the 42 survey units. The survey data for each survey unit showed:

1. The average residual radioactivity above background was less than the DCGL.

2. Individual measurements, representing small areas of residual radioactivity that exceeded the DCGL, did not exceed the EMC DCGL.

3. Where one or more individual measurements exceeded the DCGL, the average residual radioactivity passed the Sign statistical test.

4. Remediation was performed where it was ALARA to reduce the levels of residual radioactivity to below the concentrations necessary to meet the DCGLs.

These conditions satisfy the site release criteria established in the LTP and the radiological criteria for unrestricted use given in 10 CFR 20.1402 (see Section 1.3). Therefore, it is concluded that the embedded piping is suitable for release to unrestricted use.

6. REFERENCES

6-1 Code of Federal Regulations, Title 10, Part 20.1402, "Radiological Criteria for Unrestricted Use."

6-2 Portland General Electric Company Topical Report PGE-1061, "Trojan Nuclear Plant Defueled Safety Analysis Report and License Termination Plan (PGE-1078)"

6-3 Portland General Electric Company Topical Report PGE-8010, "Trojan Nuclear Quality Assurance Program."

6-4 Portland General Electric Company, "Trojan Nuclear Plant Radiological Site Characterization Report," Revision 0.1, February 8, 1995.

APPENDIX A

SURVEY PREPARATION ACTIVITIES

This appendix provides a general description of decommissioning activities in the nature of an historical assessment that was used to determine the final survey classification of the remaining embedded piping. Detailed decommissioning information as well as a brief radiological history is found in the LTP, Section 3.

The embedded piping was prepared for final survey by a series of decommissioning activities, including radiological characterization, removal, remediation, and turnover to final survey. Radiological characterization data were gathered and analyzed. The results guided decisions regarding the need for, extent of, and most effective means of remediation. Pipe runs were removed or remediated as needed, and then systematically turned over for final survey. An assessment of the operation and radiological history established the initial classification of the embedded piping.

RADIOLOGICAL CHARACTERIZATION

Radiological characterization of the embedded piping was completed in two phases. The initial radiological characterization was performed as Phase I. It is documented in the "Trojan Nuclear Plant Radiological Site Characterization Report," Revision 0.1, dated February 8, 1995. Phase II involved routine radiological surveys, referred to as operational surveys. These surveys were used to support removal and remediation activities. Pipe runs that were not, or could not be, surveyed during Phase I were surveyed during Phase II. Based on the surveys gathered as part of Phase II characterization, the predominant gamma emitters were found to be ^{60}Co and ^{137}Cs.

REMOVAL

Embedded piping was left in place due to the relatively high cost of removal. Sections that were exposed or otherwise easily accessed were removed. In some cases, sections of embedded pipe were removed to provide access for radiological characterization and remediation. Highly contaminated pipe runs that could not be effectively remediated were also removed.

REMEDIATION ACTIVITIES

Abrasive blasting was used to remove loose and fixed radioactivity from the embedded piping. As a good practice, the embedded piping was wiped down following abrasive blasting. No other remediation actions were used.

Remediation levels were established for various types of remediation actions such as scrubbing, grinding, abrasive blasting, and scabbling. Remediation levels were developed using an unbiased analysis of remediation actions that could both avert future dose (a benefit to society) and cost money (a potential detriment to society). They are based on the methodology and assumptions given in the LTP, Section 2.4.2. Where the level of residual radioactivity exceeded the remediation level, the remediation action was taken. Conversely, if the concentration was

less than the remediation level, the level of residual radioactivity was considered ALARA and the remediation action was not performed.

The remediation levels applied to the embedded piping are given below.

Remediation Levels

Remediation Action	Action Level (dpm/100 cm^2)	
	Auxiliary/Fuel Building Embedded Piping	Turbine Building Embedded Piping
Hand scrubbing	N/A	25,000
Grinding	N/A	30,000
Abrasive blasting	N/A	65,000
Scabbling	N/A	78,000
Material Removal	6,500,000	N/A

TURNOVER

A systematic approach was established for the turnover of the embedded piping from the Decommissioning organization to the Final Survey organization. Removal and remediation activities were completed in areas that could be isolated or controlled in such a manner as to minimize the potential for the reintroduction of contamination from ongoing decommissioning activities in adjacent or nearby areas. Embedded pipe runs in these work areas were then prepared for final survey data collection. The embedded piping was divided into 41 work areas, listed in the following table, each of which was turned over separately.

Prior to turnover, a walkdown was performed when the final configuration was known, usually near or after the completion of dismantlement and remediation activities. The physical state of the embedded piping and the scope of work necessary to prepare it for final survey were assessed during the walkdown. Requirements for access, isolation, and control were also addressed during the walkdown. Support activities necessary to conduct the final survey, such as scaffolding, interference removal, and electrical tag-outs, were identified. Safety concerns such as access to confined spaces, high walls, and ceilings were also identified.

Tools, equipment, and materials not needed for final survey data collection were removed. Housekeeping and clean-up activities were completed. Scaffolding and other temporary equipment needed for final survey data collection were put in place. Administrative and physical controls were instituted to minimize the possibility of introducing radioactive material from ongoing decommissioning activities in adjacent or nearby areas. These measures included personnel training, installation of barriers to control access to the pipe, installation of postings with access/egress requirements, and removing access to the area.

HISTORICAL ASSESSMENT AND INITIAL CLASSIFICATION

Based on an assessment of relevant historical information, an initial classification was assigned to the embedded piping. Information used in the assessment included the operational and radiological history of the system of which the embedded piping is a part, the remediation activities performed, and the radiological characterization data collected during decommissioning prior to turnover. Data given below are for surface gamma measurements.

AUXILIARY/FUEL BUILDING EMBEDDED PIPING

The embedded piping in the Auxiliary/Fuel Building is part of several liquid radwaste and spent fuel pool-related systems and was Class 1. No pre-remediation data were collected, as expected contamination levels required remediation due to history of the respective system.

TURBINE BUILDING EMBEDDED PIPING

The embedded piping in the Turbine Building is part of the Oily Waste system and was generally designated as Class 2. A single area where radioactivity was discovered above the DCGL was designated as Class 1. Operational survey measurement results for the Class 2 areas indicated levels of residual radioactivity less than 8,000 dpm/100 cm^2. For the Class 1 area, operational survey measurement results were less than 15,000 dpm/100 cm^2. Smear results for all areas indicated removable surface radioactivity less than 1,000 dpm/100 cm^2.

Table A-1

Turnover List

Checklist No.	Work Area Description
41	Turbine Bldg Embedded Pipe P61205C
42	Aux Bldg Elev. 5' – P61203A
43	Aux Bldg Elev. 5' – P61203B
44	Aux Bldg Elev. 5' – P61203C
45	Aux Bldg Elev. 25' – P61200A
46	Aux Bldg Elev. 25' – P61200B
47	Aux Bldg Elev. 25' – P61203S
48	Aux Bldg – P61205D
49	Turbine Bldg – P61205E
50	Turbine Bldg – P61205F
51	Aux Bldg Elev. 25' P61203D
66	Aux Bldg Elev. 25' – Addenda to P61200A
72	Aux Bldg Elev. 25' – Addenda to P61203S
73	Turbine Bldg – P61205C
74	Turbine Bldg – P61205D
75	Turbine Bldg – P61205E
76	Turbine Bldg – P61205F
79	Aux Bldg Elev. 25' – Addenda to P61203S
88	Turbine Bldg Elev. 27' & 45' Oily Waste – P61205G
89	Turbine Bldg Elev. 45', 63', & 93' Oily Waste – P61205H
90	Turbine Bldg Elev. 35' & 45' Oily Waste – P61205J
91	Aux/Fuel Bldg – P61200C
93	Aux/Fuel Bldg Chem Radwaste System – P61201A
94	Aux/Fuel Bldg Dirty Radwaste System – P61203N
95	Aux/Fuel Bldg Dirty Radwaste System – P61203Q
98	Aux/Fuel Bldg Clean Radwaste System – P61202A
99	Aux/Fuel Bldg Dirty Radwaste System – P61203K
100	Aux/Fuel Bldg Clean Radwaste System – P61202B, C, & D
101	Aux Bldg Radwaste Drains – P61200A, B, & C (see #45, 66, & 91 above)
102	Aux/Fuel Bldg Dirty Radwaste Drains – P61203A, B, C, E, K, & X
103	Fuel Bldg Dirty Radwaste Drains – P61203F, G, H, & Z
104	Aux Bldg Dirty Radwaste Drains – P61203J & T
110	Fuel Bldg Dirty Radwaste Drains – P61203P & Y
111	Aux/Fuel Bldg Dirty Radwaste Drains – P61203W
114	Aux Bldg Dirty Radwaste Drains – P61203M
117	Aux/Fuel Bldg Dirty Radwaste Drains – P61203U & R
122	Aux/Fuel Bldg Dirty Radwaste Drains – P61203L
129	Spent Fuel Pool Embedded Piping – P61209A
135	Aux/Fuel Bldg Dirty Radwaste Drains – P61203V
145	Aux/Fuel Bldg Dirty Radwaste Drains – P61203W
152	Turbine Bldg Oily Waste Drains – P61205L

APPENDIX B

SURVEY UNIT SUMMARY REPORTS – EMBEDDED PIPING

Survey Unit ID Code	Page(s)
P61200A	B-2 through B-7
P61200B	B-8 through B-13
P61200C	B-14 through B-20
P61201A	B-21 through B-24
P61202A	B-25 through B-29
P61202B	B-30 through B-35
P61202C	B-36 through B-42
P61202D	B-43 through B-48
P61203A	B-49 through B-52
P61203B	B-53 through B-56
P61203C	B-57 through B-62
P61203D	B-63 through B-68
P61203E	B-69 through B-75
P61203F	B-76 through B-79
P61203G	B-80 through B-86
P61203J	B-87 through B-96
P61203K	B-97 through B-100
P61203L	B-101 through B-106
P61203M	B-107 through B-112
P61203N	B-113through B-118
P61203P	B-119 through B-124
P61203Q	B-125 through B-130
P61203R	B-131 through B-137
P61203S	B-138 through B-144
P61203T	B-145 through B-148
P61203U	B-149 through B-154
P61203V	B-155 through B-158
P61203W	B-159 through B-165
P61203X	B-166 through B-171
P61203Y	B-172 through B-175
P61203Z	B-176 through B-181
P61208A	B-182 through B-186
P61209A	B-187 through B-193

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	57	DPM/100 CM²	1.000e+005	5.300e+001	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-3.348e+003
Maximum Value	:	3.164e+005
Range	:	3.197e+005
Median	:	8.724e+003
Std. Deviation	:	4.836e+004
Mean	:	2.263e+004
95% UCL	:	3.334e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	2.198e+004	000018	5.314e+003	000035	1.757e+004
000002	1.117e+004	000019	2.594e+004	000036	7.348e+003
000003	1.609e+004	000020	4.141e+003	000037	4.043e+003
000004	1.088e+005	000021	7.589e+003	000038	6.870e+003
000005	9.189e+002	000022	1.337e+004	000039	3.870e+003
000006	5.508e+003	000023	1.293e+004	000040	1.696e+003
000007	7.881e+003	000024	1.149e+004	000041	5.261e+003
000008	5.968e+003	000025	1.618e+004	000042	9.826e+003
000009	3.424e+004	000026	1.025e+004	000043	4.630e+004
000010	3.164e+005	000027	8.724e+003	000044	7.391e+002
000011	1.022e+005	000028	8.854e+003	000045	4.870e+003
000012	4.859e+003	000029	1.157e+004	000046	-3.348e+003
000013	5.930e+003	000030	4.130e+003	000047	1.922e+004
000014	1.750e+004	000031	2.374e+004	000048	7.217e+003
000015	1.208e+004	000032	5.174e+003	000049	3.370e+004
000016	2.429e+004	000033	1.026e+004	000050	1.065e+004
000017	6.454e+003	000034	3.757e+004	000051	1.606e+005

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Data Quality Values

Location	Value
000052	4.261e+003
000053	5.913e+003
000054	1.870e+003
000055	8.000e+003
000056	6.913e+003
000057	6.870e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Measurement Data Statistical Evaluation

Statistical Comparisons

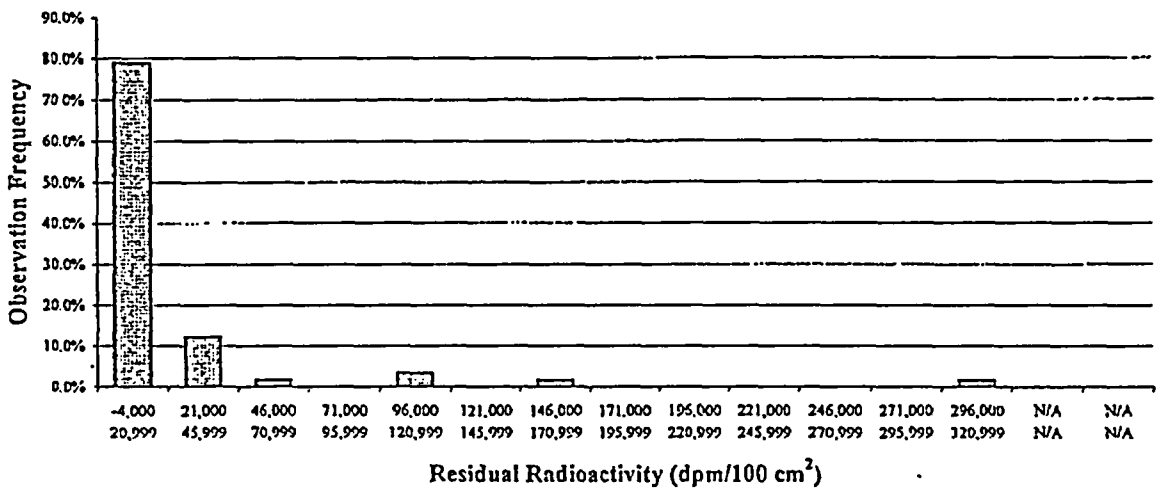
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	319,748	338,534	Pass
Median	0.287	0.500	Pass
Mean	22,627	100,000	Pass
Std Dev	48,362	50,000	Pass

Passed required Sign statistical test
S+ = 53, & 53 is greater than 35, the test value

Statistical Quantities

Range:	319,748
Median:	8,724
Mean:	22,627
Std Dev:	48,362
Minimum:	-3,348
Maximum:	316,400
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	57
# of intervals:	13
Interval increment:	25,000
Minimum:	-4,000
Maximum:	320,999

Comment:

Interval	High End	Low End	Number of Observations	Observation Frequency
1	20,999	-4,000	45	78.9%
2	45,999	21,000	7	12.3%
3	70,999	46,000	1	1.8%
4	95,999	71,000	0	0.0%
5	120,999	96,000	2	3.5%
6	145,999	121,000	0	0.0%
7	170,999	146,000	1	1.8%
8	195,999	171,000	0	0.0%
9	220,999	196,000	0	0.0%
10	245,999	221,000	0	0.0%
11	270,999	246,000	0	0.0%
12	295,999	271,000	0	0.0%
13	320,999	296,000	1	1.8%
14	N/A	N/A	0	0.0%
15	N/A	N/A	0	0.0%
		Total:	57	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	1,427
Maximum Value:	535,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: Four scan measurements (locations 001, 004, 009, & 043) and four corresponding static measurements (locations 04, 10, 11, & 51) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	1
Length of Survey Unit (m):	68
Survey Unit Area >DCGL (%):	1.5
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison; changed statistical quantities test value for range to 7 and for standard deviation to 0.5 for final survey data processing.

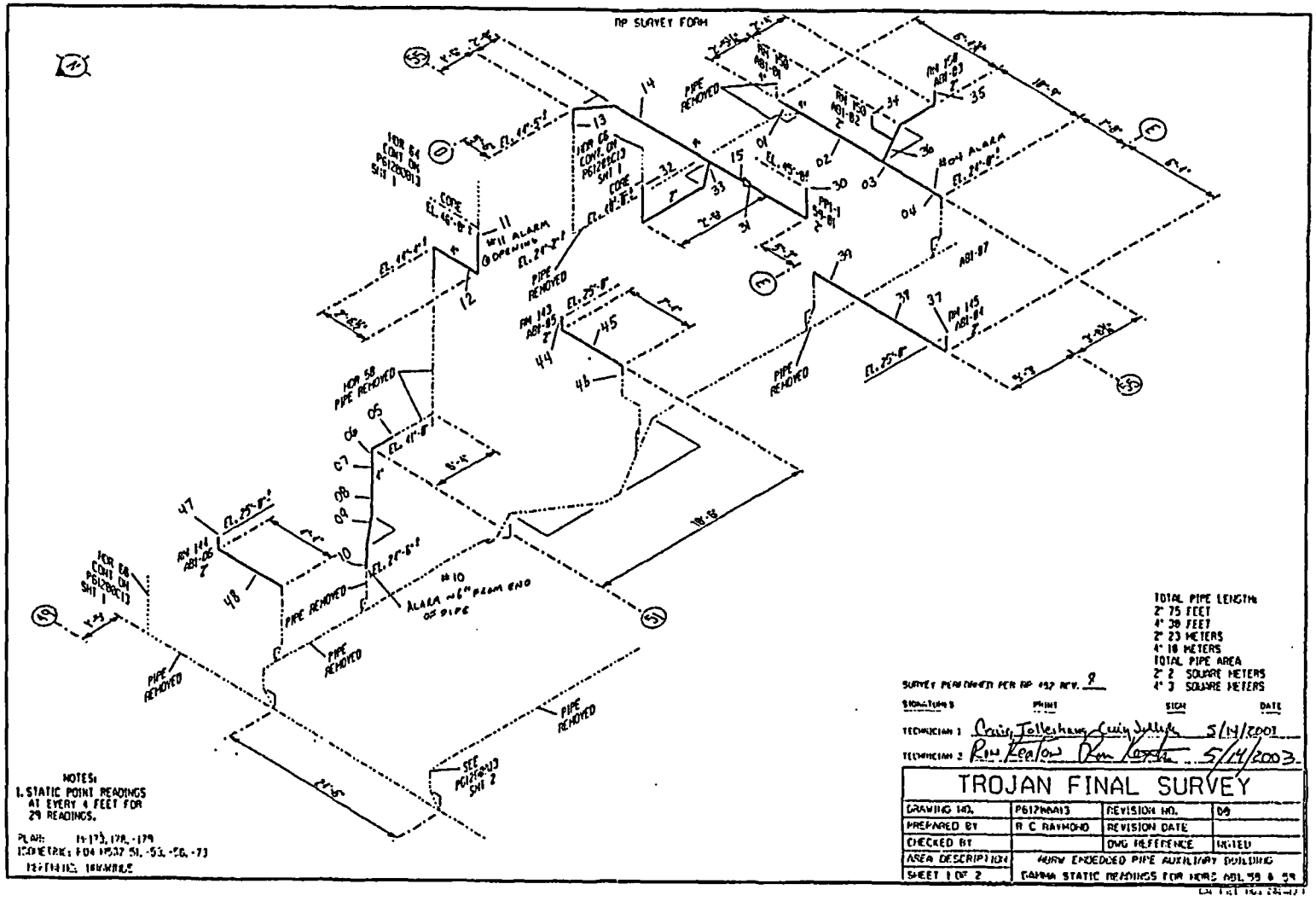
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity identified by both the scan and static measurement surveys represents small, localized areas of fixed radioactivity and has been determined to be ALARA. Retaining the elevated values as final survey data results in the range and standard deviation statistical quantities failing the default acceptance test criteria.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Static Measurement Locations Map

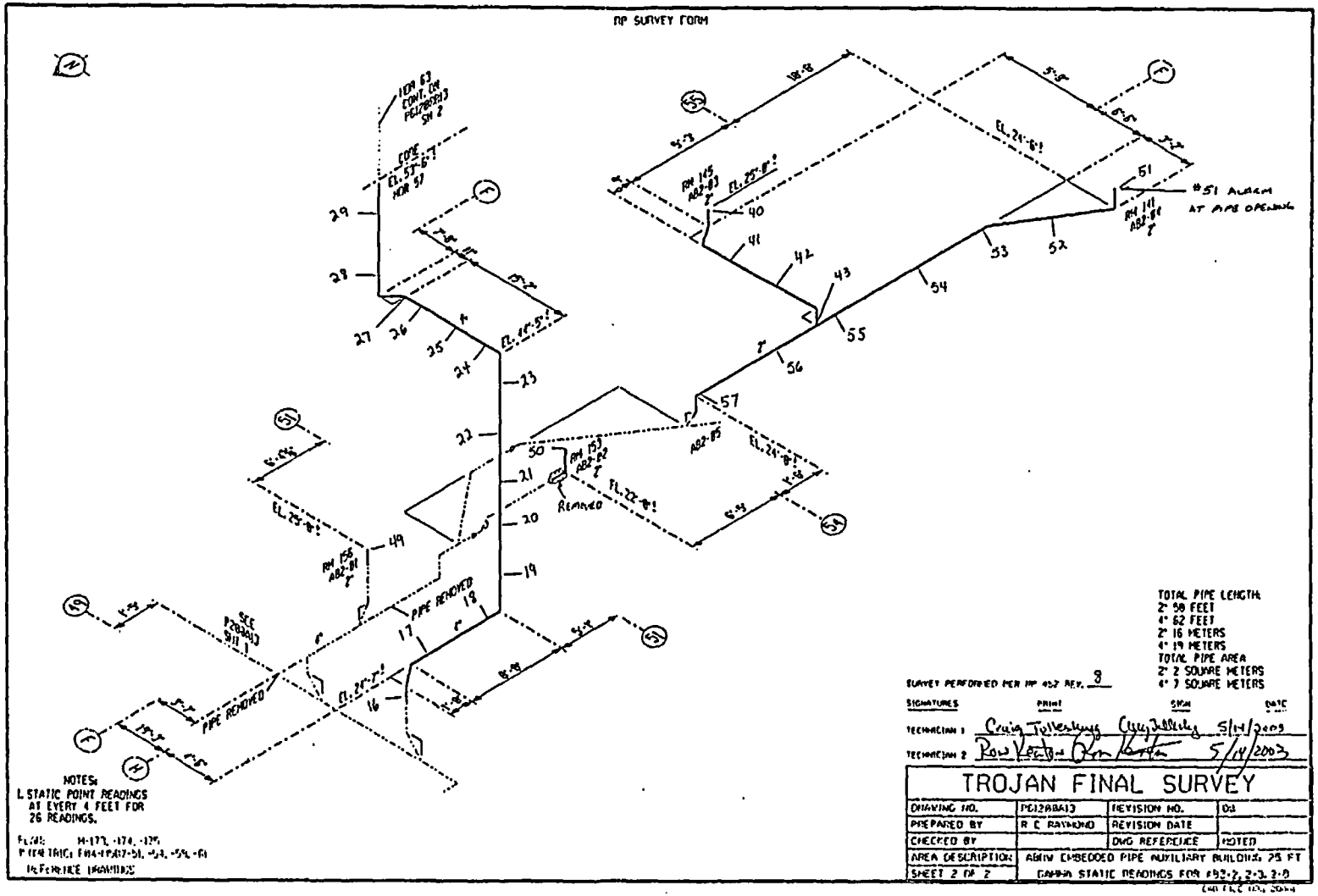


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	83	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	6.250e+002
Maximum Value	:	4.696e+004
Range	:	4.634e+004
Median	:	8.125e+003
Std. Deviation	:	9.173e+003
Mean	:	1.149e+004
95% UCL	:	1.316e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.178e+004	000018	5.779e+003	000035	4.388e+004
000002	7.064e+003	000019	6.603e+003	000036	1.567e+004
000003	9.196e+003	000020	1.357e+004	000037	1.983e+004
000004	6.275e+003	000021	7.314e+003	000038	1.463e+004
000005	1.334e+004	000022	3.490e+003	000039	2.175e+004
000006	1.344e+004	000023	8.652e+003	000040	4.250e+003
000007	2.405e+004	000024	8.377e+003	000041	1.458e+003
000008	2.090e+004	000025	8.784e+003	000042	7.750e+003
000009	1.494e+004	000026	6.569e+003	000043	6.250e+003
000010	1.809e+004	000027	8.534e+003	000044	6.000e+003
000011	1.883e+004	000028	8.113e+003	000045	9.292e+003
000012	7.083e+003	000029	4.853e+003	000046	1.446e+004
000013	5.289e+003	000030	6.853e+003	000047	3.354e+004
000014	5.500e+003	000031	4.941e+003	000048	4.750e+003
000015	5.667e+003	000032	3.969e+004	000049	6.583e+003
000016	5.799e+003	000033	1.321e+004	000050	5.792e+003
000017	2.841e+004	000034	1.897e+003	000051	5.875e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Data Quality Values

Location	Value
000052	6.958e+003
000053	4.696e+004
000054	3.013e+004
000055	9.250e+003
000056	1.496e+004
000057	2.050e+004
000058	7.375e+003
000059	2.638e+004
000060	2.200e+004
000061	1.392e+004
000062	1.050e+004
000063	8.292e+003
000064	9.875e+003
000065	8.292e+003
000066	6.917e+003
000067	1.179e+004
000068	6.958e+003
000069	5.083e+003
000070	5.542e+003
000071	8.125e+003
000072	1.154e+004
000073	3.875e+003
000074	9.417e+003
000075	1.629e+004
000076	6.750e+003
000077	6.917e+003
000078	4.917e+003
000079	4.250e+003
000080	6.250e+002
000081	4.917e+003
000082	2.625e+003
000083	6.875e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Measurement Data Statistical Evaluation

Statistical Comparisons

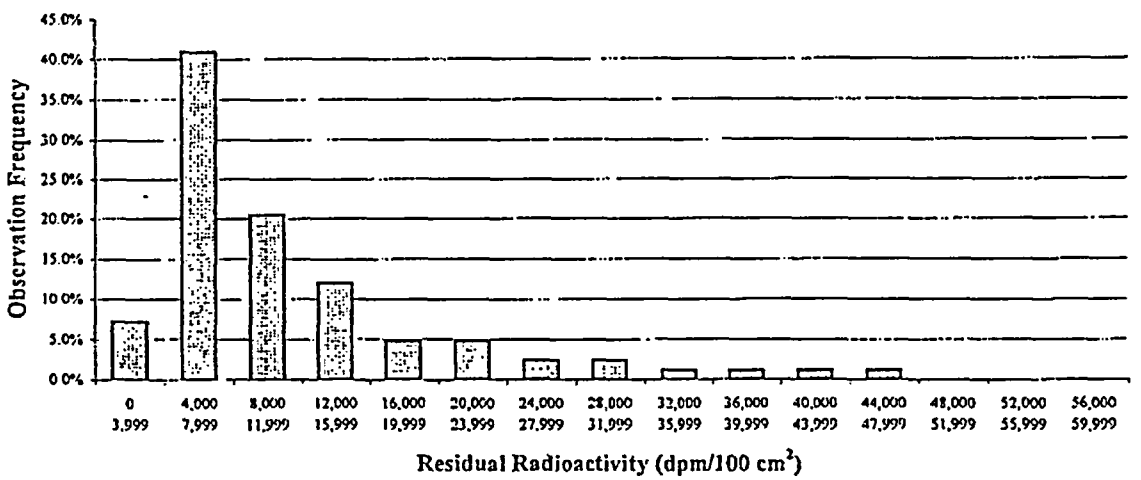
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	46,335	45,863	See comment below
Median	0.367	0.500	Pass
Mean	11,487	100,000	Pass
Std Dev	9,173	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	46,335
Median:	8,125
Mean:	11,487
Std Dev:	9,173
Minimum:	625
Maximum:	46,960
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	83
# of intervals:	15
Interval increment:	4,000
Minimum:	0
Maximum:	59,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	3,999	0	6	7.2%
2	7,999	4,000	34	41.0%
3	11,999	8,000	17	20.5%
4	15,999	12,000	10	12.0%
5	19,999	16,000	4	4.8%
6	23,999	20,000	4	4.8%
7	27,999	24,000	2	2.4%
8	31,999	28,000	2	2.4%
9	35,999	32,000	1	1.2%
10	39,999	36,000	1	1.2%
11	43,999	40,000	1	1.2%
12	47,999	44,000	1	1.2%
13	51,999	48,000	0	0.0%
14	55,999	52,000	0	0.0%
15	59,999	56,000	0	0.0%
		Total:	83	100%

Comment:
Range failure is a test artifact only, due to a data set that is right skewed with a relatively long "tail" (10% of the values >24,000 dpm), and 81% of the measurement values less than 16,000 dpm. All measurement values are valid and accepted as representative of the survey unit.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	4,392
Maximum Value:	60,940
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

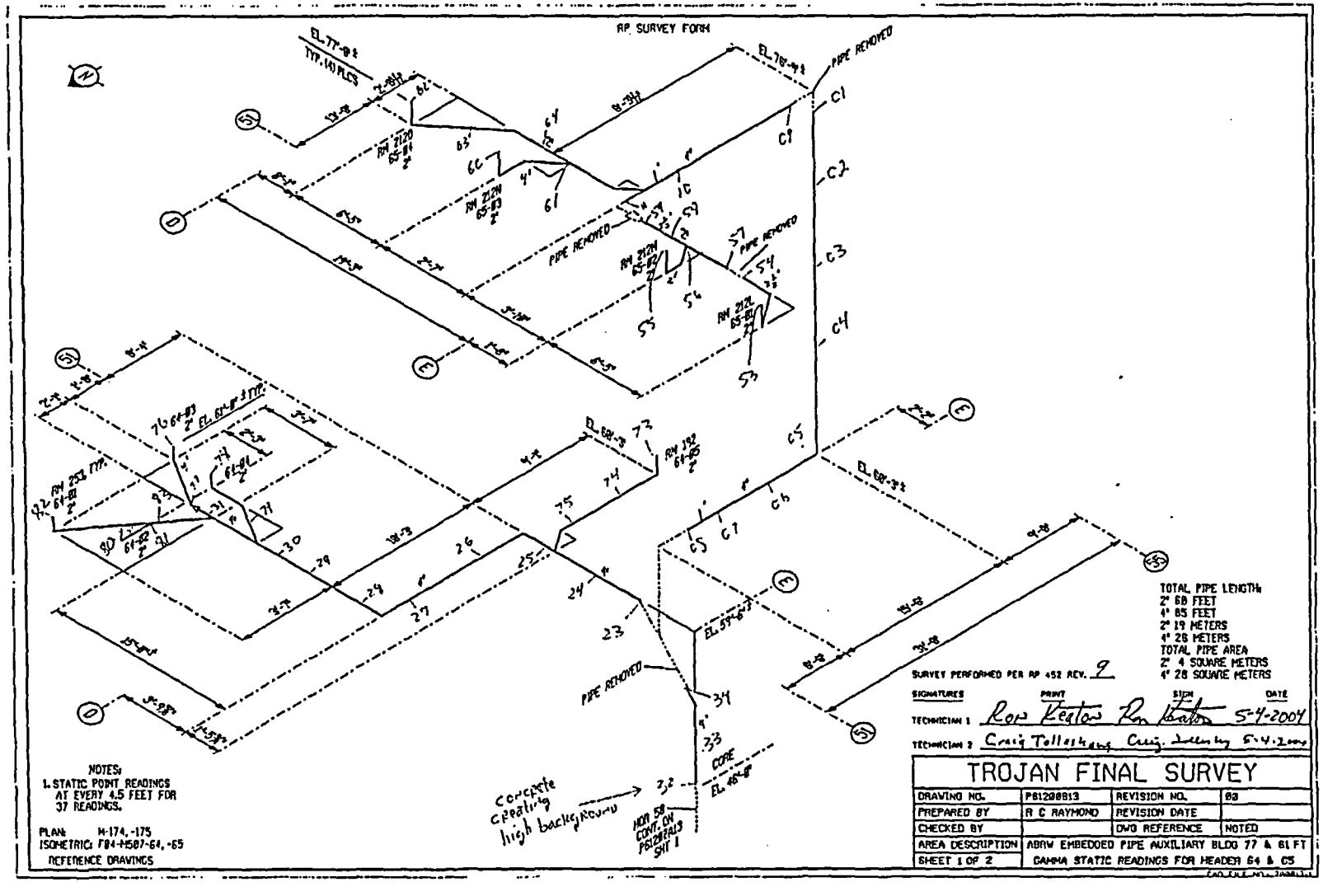
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Draims

Classification: Class 1
Size (m^2): 38

Static Measurement Locations Map

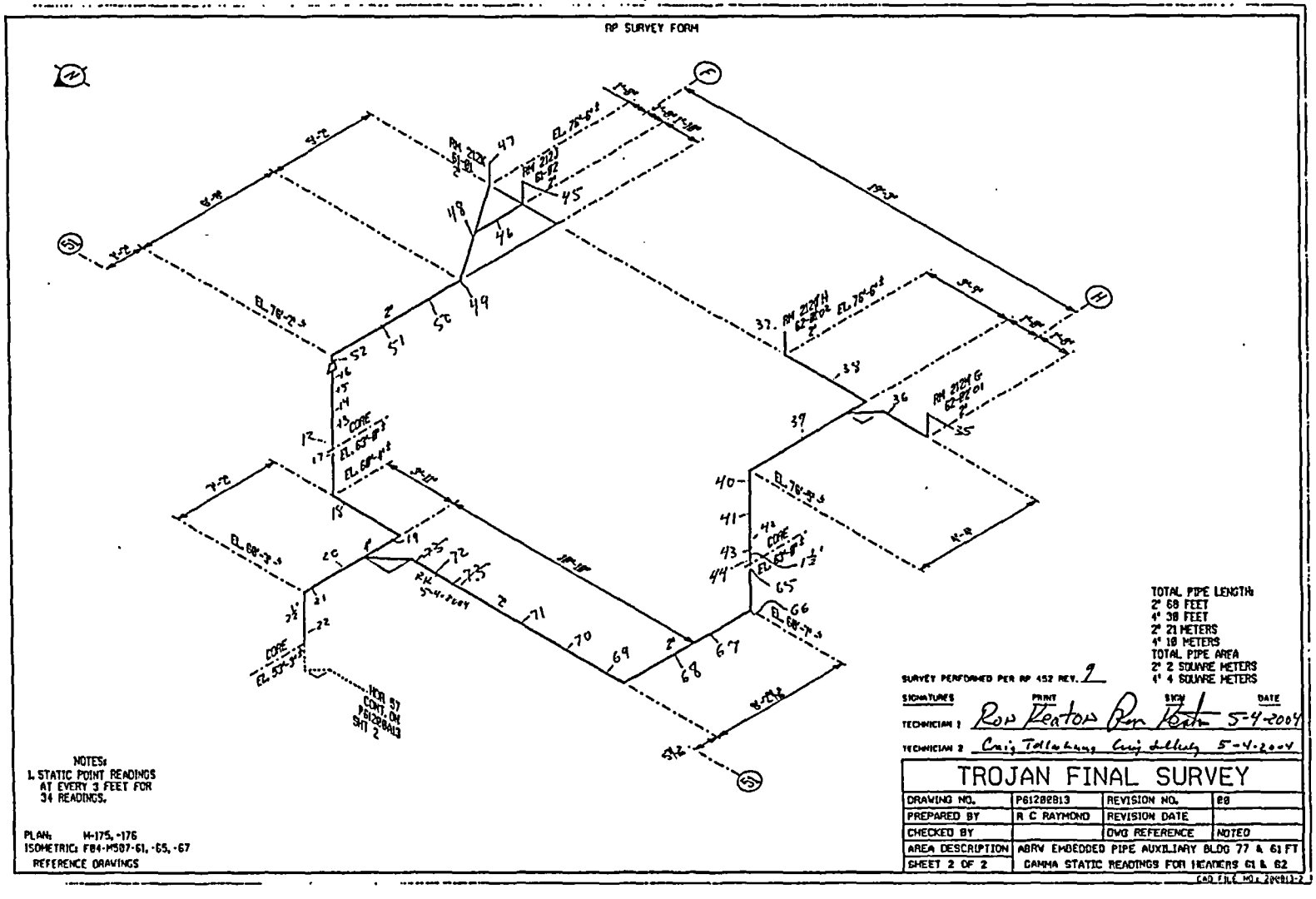


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Draims

Classification: Class 1
Size (m^2): 38

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	114	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	3.156e+003
Maximum Value	:	4.933e+004
Range	:	4.617e+004
Median	:	8.714e+003
Std. Deviation	:	9.357e+003
Mean	:	1.226e+004
95% UCL	:	1.372e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	7.688e+003	000018	6.946e+003	000036	2.097e+004
000002	2.062e+004	000019	6.242e+003	000037	2.257e+004
000003	8.973e+003	000020	5.618e+003	000038	7.573e+003
000004	9.935e+003	000021	7.048e+003	000039	1.622e+004
000005	9.849e+003	000022	1.816e+004	000040	2.957e+004
000006	9.532e+003	000023	5.887e+003	000041	1.864e+004
000007	8.500e+003	000024	6.161e+003	000042	8.186e+003
000008	7.683e+003	000026	6.290e+003	000043	1.319e+004
000009	7.500e+003	000027	6.769e+003	000044	9.859e+003
000010	6.812e+003	000028	9.425e+003	000045	3.156e+003
000011	1.150e+004	000029	1.992e+004	000046	6.241e+003
000012	2.230e+004	000030	2.552e+004	000047	6.281e+003
000013	2.040e+004	000031	9.667e+003	000048	5.668e+003
000014	2.161e+004	000032	8.667e+003	000049	8.894e+003
000015	2.848e+004	000033	4.860e+003	000050	6.910e+003
000016	7.651e+003	000034	6.011e+003	000051	1.011e+004
000017	7.151e+003	000035	4.228e+004	000052	7.381e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Data Quality Values

Location	Value	Location	Value
000053	6.524e+003	000100	8.810e+003
000054	6.476e+003	000101	9.000e+003
000055	4.714e+003	000102	1.562e+004
000056	8.714e+003	000103	7.500e+003
000057	4.033e+004	000104	8.909e+003
000058	5.476e+003	000105	9.715e+003
000059	1.224e+004	000106	7.785e+003
000060	8.476e+003	000107	6.737e+003
000061	3.276e+004	000108	8.156e+003
000062	1.210e+004	000109	6.532e+003
000063	1.619e+004	000110	8.715e+003
000064	6.333e+003	000111	7.161e+003
000065	1.367e+004	000112	1.367e+004
000066	6.524e+003	000113	8.905e+003
000067	1.033e+004	000114	1.043e+004
000068	7.857e+003	000115	9.095e+003
000069	1.067e+004		
000070	6.667e+003		
000071	4.619e+003		
000072	8.857e+003		
000073	8.048e+003		
000074	4.952e+003		
000075	8.238e+003		
000076	2.367e+004		
000077	3.214e+004		
000078	2.190e+004		
000079	4.124e+004		
000080	4.933e+004		
000081	4.914e+004		
000082	1.081e+004		
000083	5.857e+003		
000084	8.333e+003		
000085	1.143e+004		
000086	9.714e+003		
000087	4.286e+003		
000088	8.714e+003		
000089	9.905e+003		
000090	8.571e+003		
000091	2.819e+004		
000092	6.762e+003		
000093	8.952e+003		
000094	7.857e+003		
000095	8.619e+003		
000096	7.714e+003		
000097	7.238e+003		
000098	8.667e+003		
000099	8.238e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Measurement Data Statistical Evaluation

Statistical Comparisons

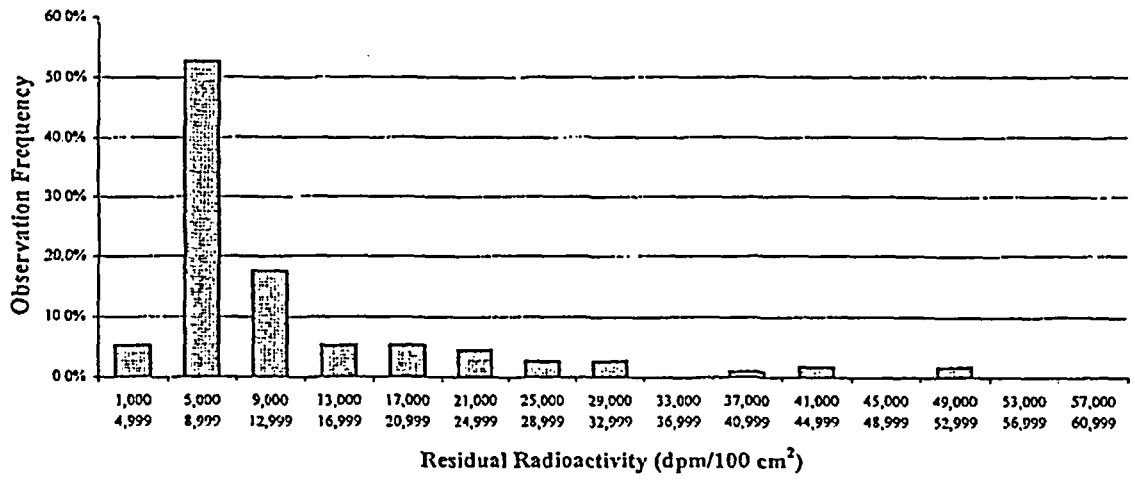
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	46,174	46,787	Pass
Median	0.379	0.500	Pass
Mean	12,262	100,000	Pass
Std Dev	9,357	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	46,174
Median:	8,714
Mean:	12,262
Std Dev:	9,357
Minimum:	3,156
Maximum:	49,330
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	114
# of intervals:	15
Interval increment:	4,000
Minimum:	1,000
Maximum:	60,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	4,999	1,000	6	5.3%
2	8,999	5,000	60	52.6%
3	12,999	9,000	20	17.5%
4	16,999	13,000	6	5.3%
5	20,999	17,000	6	5.3%
6	24,999	21,000	5	4.4%
7	28,999	25,000	3	2.6%
8	32,999	29,000	3	2.6%
9	36,999	33,000	0	0.0%
10	40,999	37,000	1	0.9%
11	44,999	41,000	2	1.8%
12	48,999	45,000	0	0.0%
13	52,999	49,000	2	1.8%
14	56,999	53,000	0	0.0%
15	60,999	57,000	0	0.0%
		Total:	114	100%

Comment:
None.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	4,632
Maximum Value:	182,600
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 039) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.6
Length of Survey Unit (m):	148
Survey Unit Area >DCGL (%):	0.4
EMC Value:	357,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

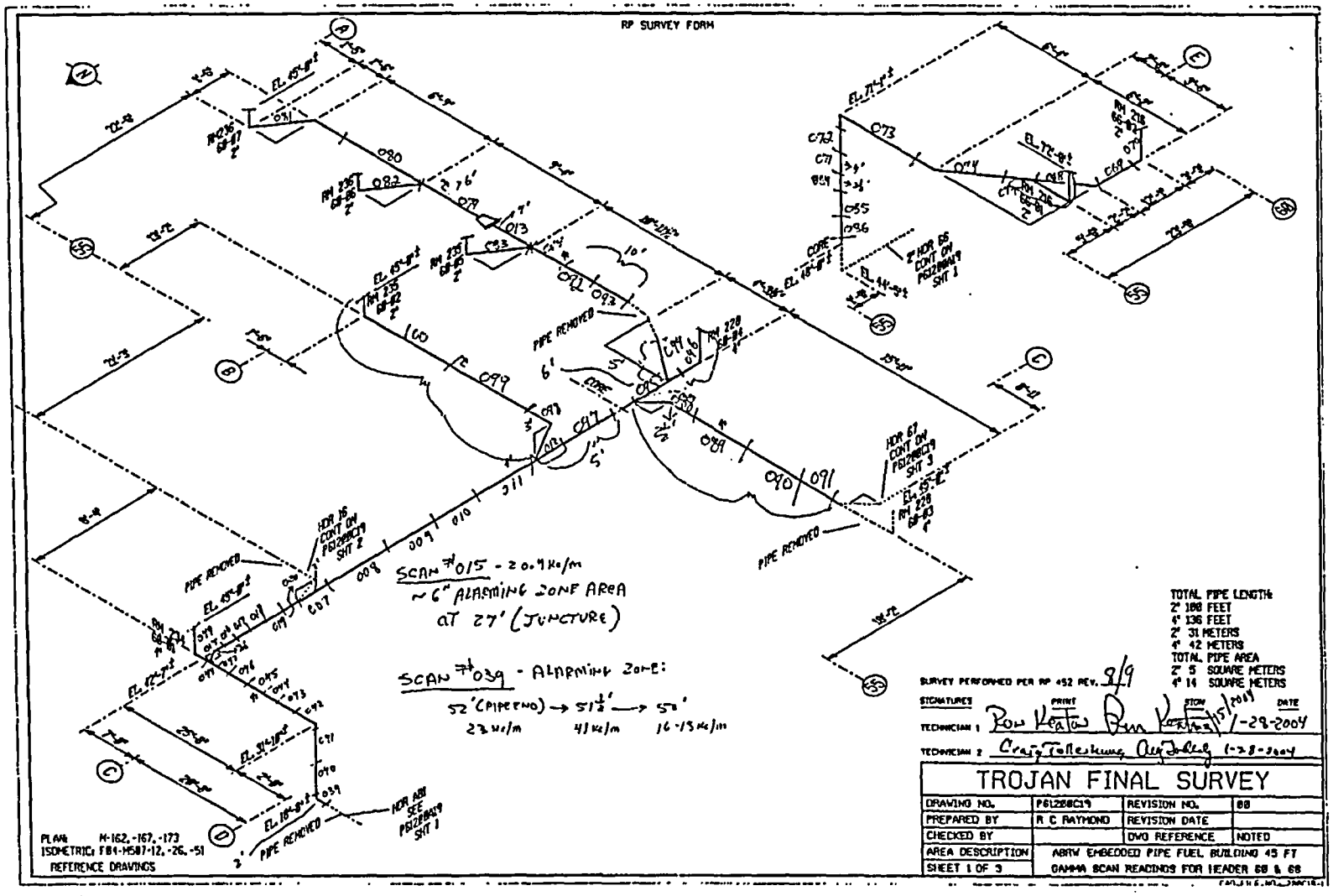
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Static Measurement Locations Map

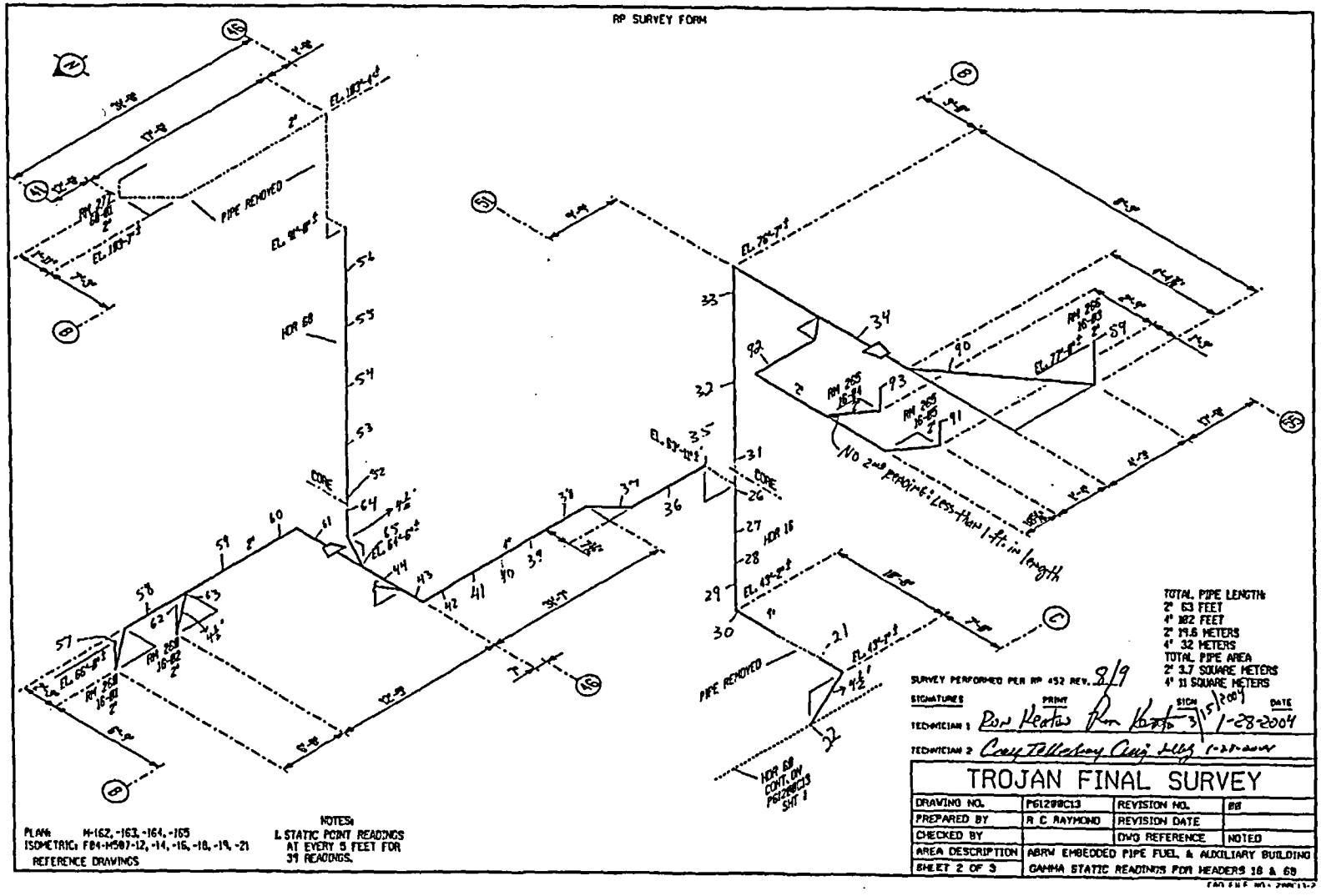


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Static Measurement Locations Map

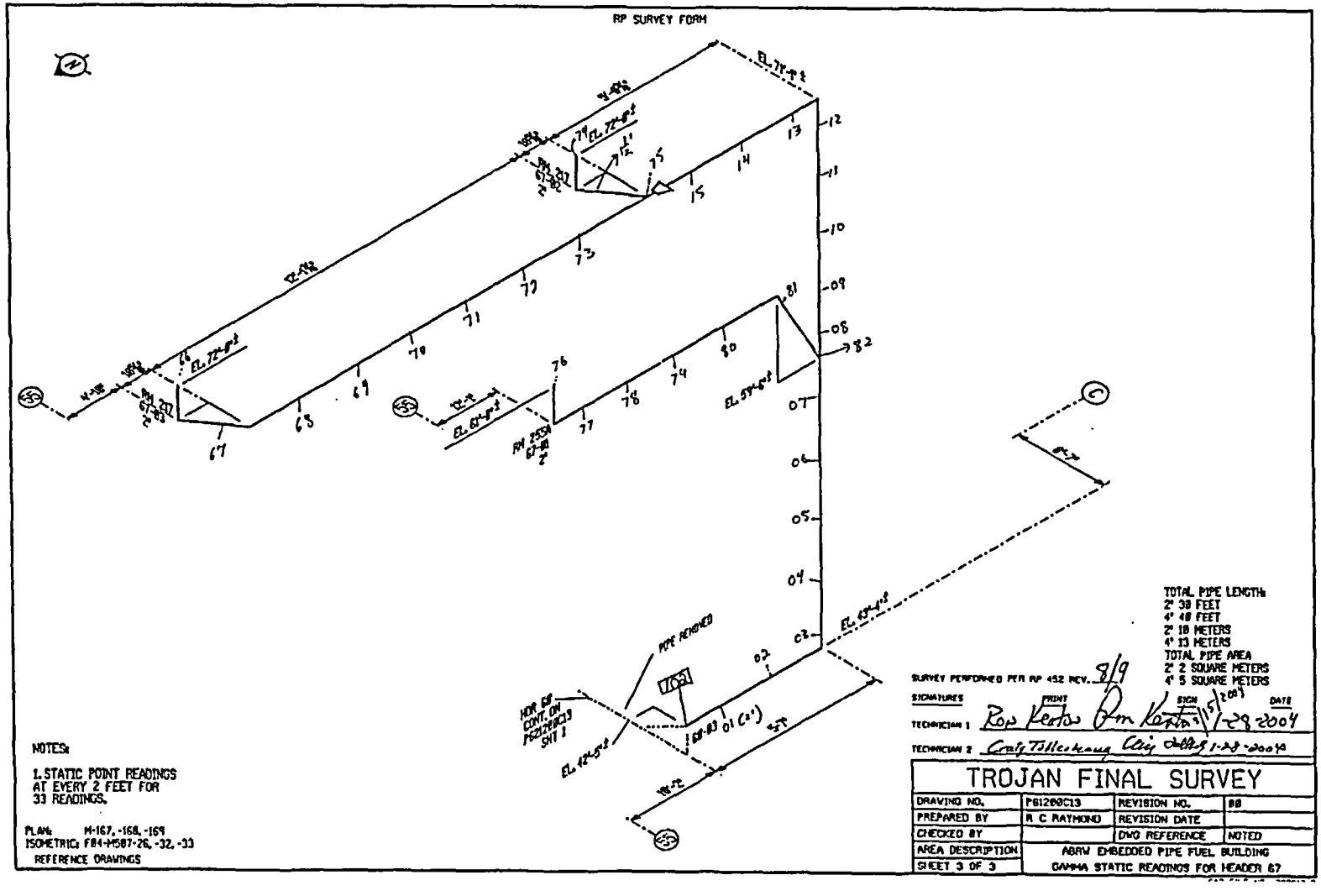


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61201A
Survey Unit Name: AB/MSSS 45' Elevation – Chemical Radwaste Drains

Classification: Class 1
Size (m^2): 18

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	39	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	7.136e+003
Maximum Value	:	2.630e+004
Range	:	1.916e+004
Median	:	1.207e+004
Std. Deviation	:	4.701e+003
Mean	:	1.338e+004
95% UCL	:	1.465e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.329e+004	000018	2.258e+004	000035	1.296e+004
000002	1.335e+004	000019	2.630e+004	000036	1.135e+004
000003	1.377e+004	000020	2.353e+004	000037	1.500e+004
000004	1.187e+004	000021	2.471e+004	000038	1.757e+004
000005	1.033e+004	000022	1.151e+004	000039	1.604e+004
000006	9.090e+003	000023	1.292e+004		
000007	1.092e+004	000024	1.108e+004		
000008	9.608e+003	000025	1.018e+004		
000009	9.070e+003	000026	1.276e+004		
000010	8.407e+003	000027	1.431e+004		
000011	1.020e+004	000028	1.207e+004		
000012	1.013e+004	000029	1.098e+004		
000013	8.040e+003	000030	7.136e+003		
000014	1.110e+004	000031	1.510e+004		
000015	1.066e+004	000032	1.671e+004		
000016	7.739e+003	000033	1.244e+004		
000017	1.983e+004	000034	1.717e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61201A
Survey Unit Name: AB/MSSS 45' Elevation – Chemical Radwaste Drains

Classification: Class 1
Size (m^2): 18

Measurement Data Statistical Evaluation

Statistical Comparisons

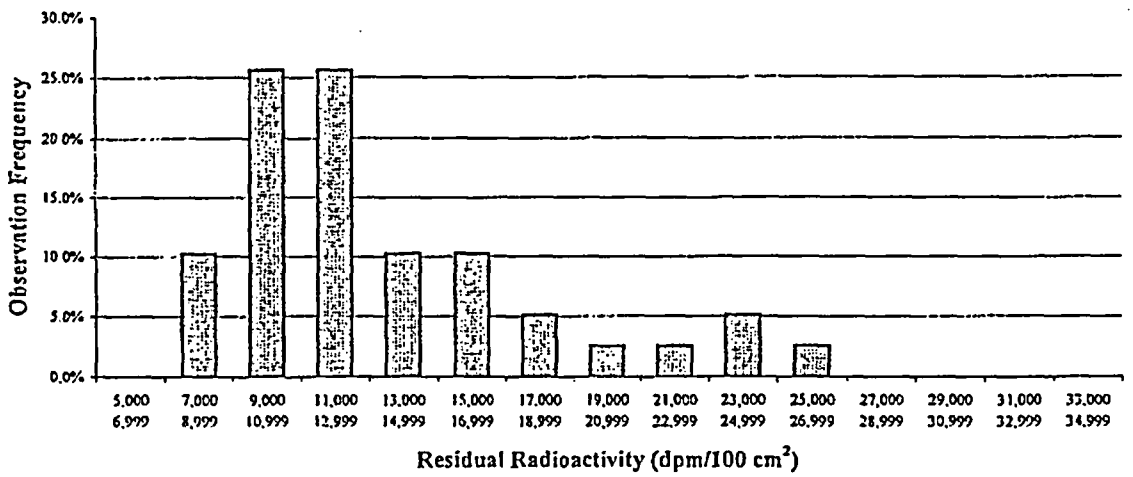
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	19,164	23,504	Pass
Median	0.279	0.500	Pass
Mean	13,380	100,000	Pass
Std Dev	4,701	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	19,164
Median:	12,070
Mean:	13,380
Std Dev:	4,701
Minimum:	7,136
Maximum:	26,300
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	39
# of intervals:	15
Interval increment:	2,000
Minimum:	5,000
Maximum:	34,999

Comment:
None.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	6,999	5,000	0	0.0%
2	8,999	7,000	4	10.3%
3	10,999	9,000	10	25.6%
4	12,999	11,000	10	25.6%
5	14,999	13,000	4	10.3%
6	16,999	15,000	4	10.3%
7	18,999	17,000	2	5.1%
8	20,999	19,000	1	2.6%
9	22,999	21,000	1	2.6%
10	24,999	23,000	2	5.1%
11	26,999	25,000	1	2.6%
12	28,999	27,000	0	0.0%
13	30,999	29,000	0	0.0%
14	32,999	31,000	0	0.0%
15	34,999	33,000	0	0.0%
		Total:	39	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61201A
Survey Unit Name: AB/MSSS 45' Elevation – Chemical Radwaste Drains

Classification: Class 1
Size (m^2): 18

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scamming Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	7,277
Maximum Value:	46,810
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

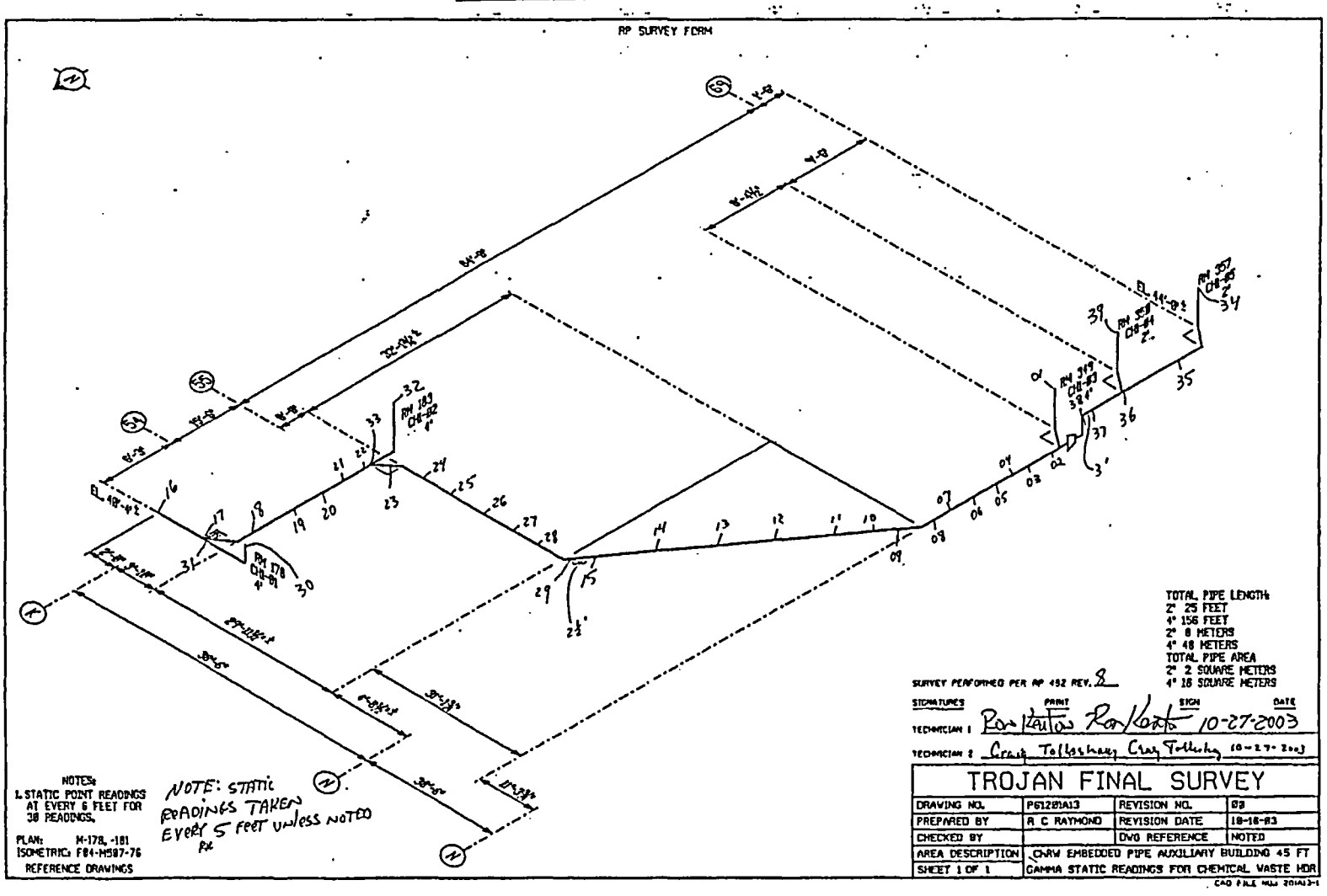
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61201A
Survey Unit Name: AB/MSSS 45' Elevation – Chemical Radwaste Drains

Classification: Class 1
Size (m^2): 18

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains **Size (m^2):** 21

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	34	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	3.789e+003
Maximum Value	:	1.735e+004
Range	:	1.356e+004
Median	:	5.397e+003
Std. Deviation	:	3.934e+003
Mean	:	6.787e+003
95% UCL	:	7.928e+003

Measurement Values

Location	Value	Location	Value
000001	4.151e+003	000018	5.166e+003
000002	4.920e+003	000019	3.789e+003
000003	1.254e+004	000020	5.136e+003
000004	5.764e+003	000021	5.543e+003
000005	7.191e+003	000022	1.608e+004
000006	5.563e+003	000023	6.266e+003
000007	5.543e+003	000024	5.136e+003
000008	4.804e+003	000025	4.719e+003
000009	4.864e+003	000026	4.045e+003
000010	4.598e+003	000027	4.854e+003
000011	4.714e+003	000028	4.849e+003
000012	5.337e+003	000029	5.759e+003
000013	5.166e+003	000030	1.735e+004
000014	5.462e+003	000031	5.457e+003
000015	5.553e+003	000032	6.201e+003
000016	5.829e+003	000033	1.661e+004
000017	5.065e+003	000034	1.672e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains **Size (m^2):** 21

Measurement Data Statistical Evaluation

Statistical Comparisons

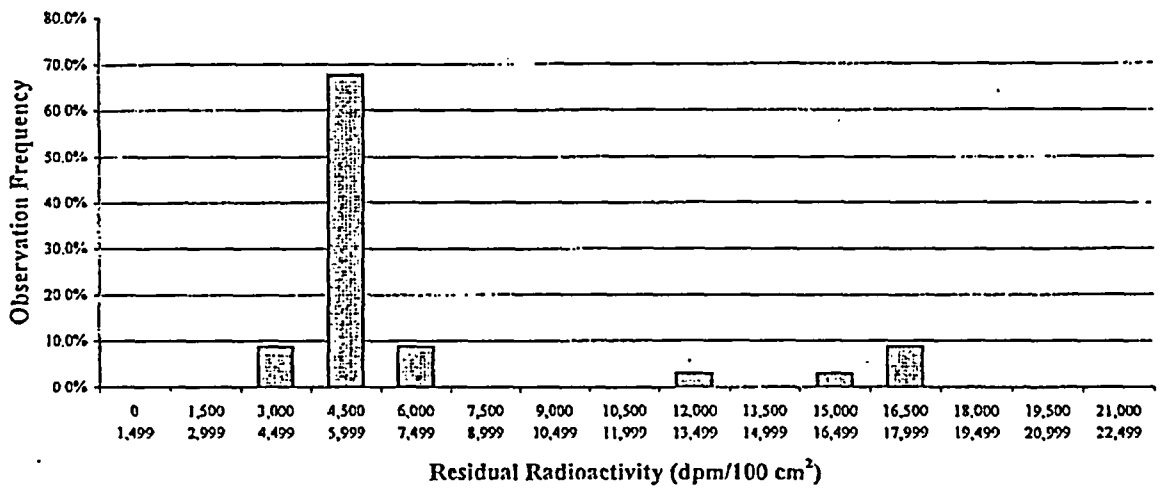
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	13,561	19,672	Pass
Median	0.353	0.500	Pass
Mean	6,787	100,000	Pass
Std Dev	3,934	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	13,561
Median:	5,397
Mean:	6,787
Std Dev:	3,934
Minimum:	3,789
Maximum:	17,350
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	34
# of intervals:	15
Interval increment:	1,500
Minimum:	0
Maximum:	22,499

Comment:

Interval	High End	Low End	Number of Observations	Observation Frequency
1	1,499	0	0	0.0%
2	2,999	1,500	0	0.0%
3	4,499	3,000	3	8.8%
4	5,999	4,500	23	67.6%
5	7,499	6,000	3	8.8%
6	8,999	7,500	0	0.0%
7	10,499	9,000	0	0.0%
8	11,999	10,500	0	0.0%
9	13,499	12,000	1	2.9%
10	14,999	13,500	0	0.0%
11	16,499	15,000	1	2.9%
12	17,999	16,500	3	8.8%
13	19,499	18,000	0	0.0%
14	20,999	19,500	0	0.0%
15	22,499	21,000	0	0.0%
		Total:	34	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains **Size (m^2):** 21

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	2,903
Maximum Value:	55,140
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

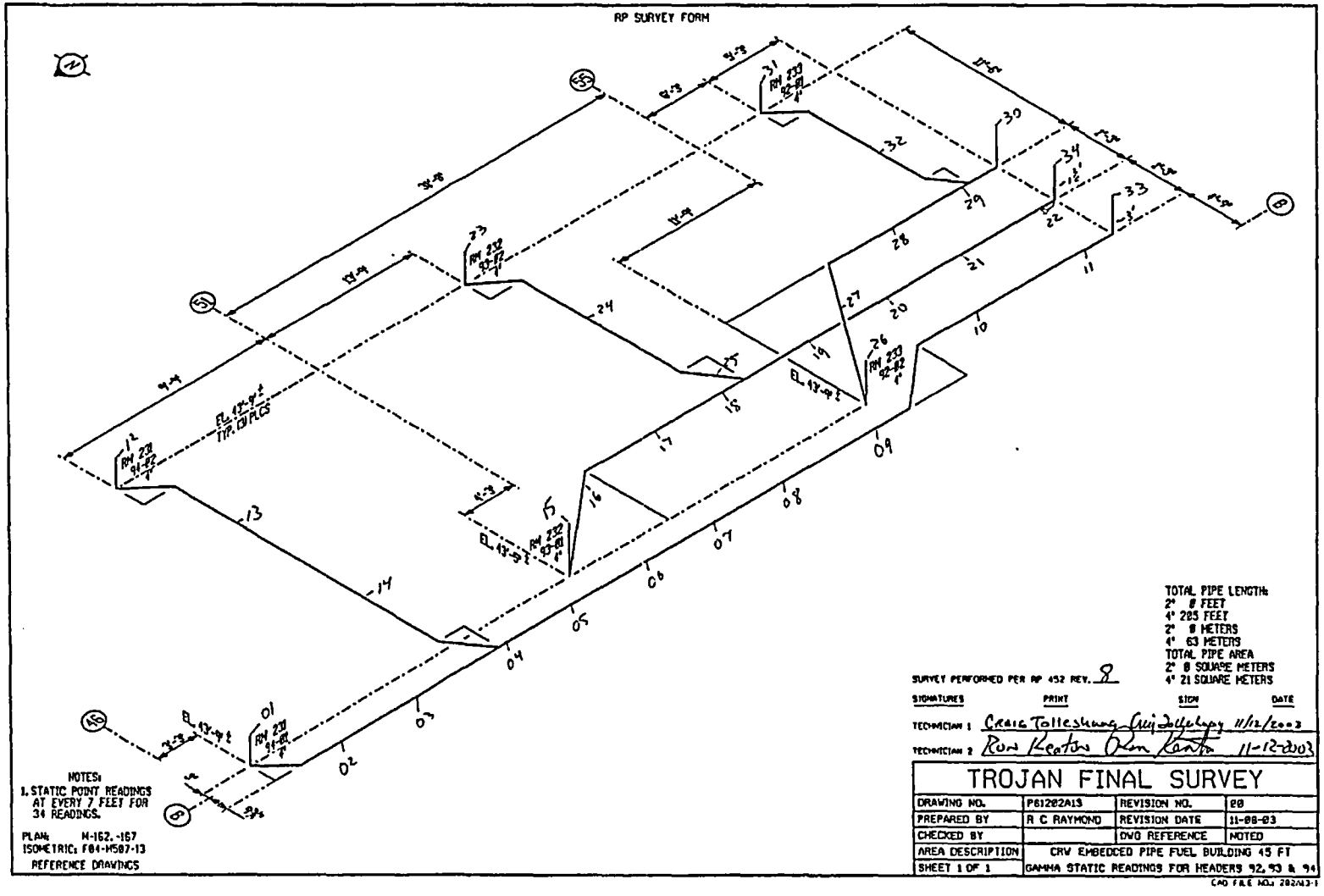
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 21

Static Measurement Locations Map

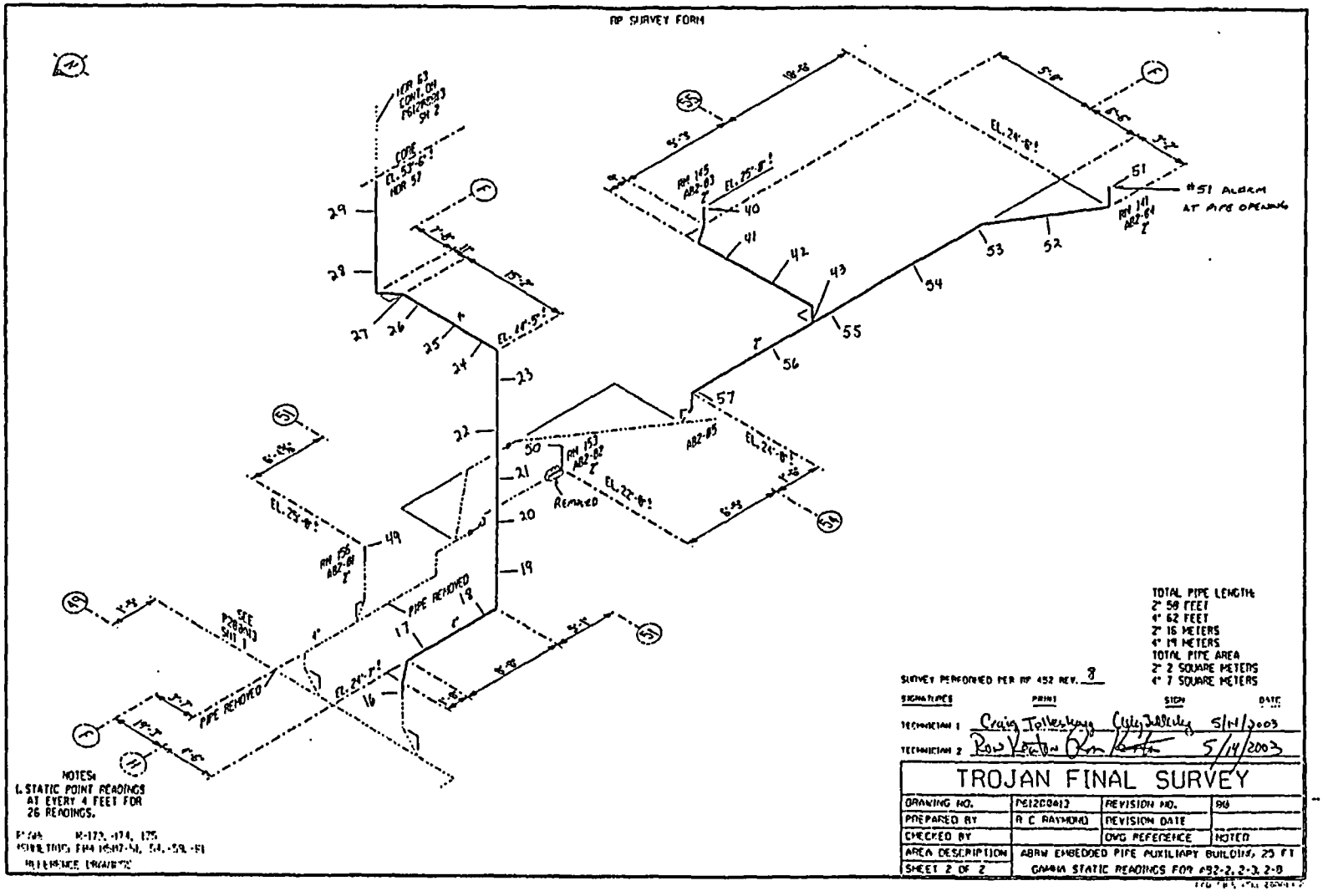


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 21

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	91	DPM/100 CM²	1.000e+005	9.000e+001	-

Statics

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.263e+003
Maximum Value	:	1.119e+005
Range	:	1.142e+005
Median	:	8.947e+003
Std. Deviation	:	1.261e+004
Mean	:	1.186e+004
95% UCL	:	1.406e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.008e+004	000018	1.265e+004	000035	7.319e+003
000002	9.034e+003	000019	8.412e+003	000036	4.368e+003
000003	7.333e+003	000020	7.343e+003	000037	1.532e+004
000004	6.922e+003	000021	3.324e+004	000038	1.793e+004
000005	2.328e+004	000022	5.451e+003	000039	1.660e+004
000006	2.694e+004	000023	5.853e+003	000040	1.361e+004
000007	1.233e+004	000024	7.245e+003	000041	7.451e+003
000008	9.637e+003	000025	7.574e+003	000042	1.158e+004
000009	8.529e+003	000026	8.461e+003	000043	1.089e+004
000010	5.132e+003	000027	1.044e+004	000044	9.579e+003
000011	5.745e+003	000028	1.299e+004	000045	1.068e+004
000012	7.583e+003	000029	4.716e+003	000046	9.737e+003
000013	9.368e+003	000030	3.441e+003	000047	1.216e+004
000014	8.358e+003	000031	3.877e+003	000048	1.458e+004
000015	7.966e+003	000032	8.784e+003	000049	1.579e+004
000016	7.578e+003	000033	1.417e+004	000050	3.411e+004
000017	3.377e+003	000034	1.455e+004	000051	2.253e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Data Quality Values

Location	Value
000052	6.000e+003
000053	4.158e+003
000054	6.737e+003
000055	7.105e+003
000056	3.789e+003
000057	-2.263e+003
000058	1.363e+004
000059	1.916e+004
000060	7.316e+003
000061	4.737e+003
000062	8.789e+003
000063	9.684e+003
000064	1.126e+004
000065	6.526e+003
000066	8.947e+003
000067	7.789e+003
000068	7.737e+003
000069	1.074e+004
000070	2.074e+004
000071	2.142e+004
000072	1.642e+004
000073	1.021e+004
000074	6.789e+003
000075	1.053e+004
000076	3.000e+003
000077	6.368e+003
000078	7.579e+003
000079	3.211e+004
000080	1.011e+004
000081	5.158e+003
000082	5.947e+003
000083	1.119e+005
000084	1.332e+004
000085	6.895e+003
000086	1.374e+004
000087	6.316e+002
000088	1.295e+004
000089	7.579e+003
000090	1.016e+004
000091	3.105e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Measurement Data Statistical Evaluation

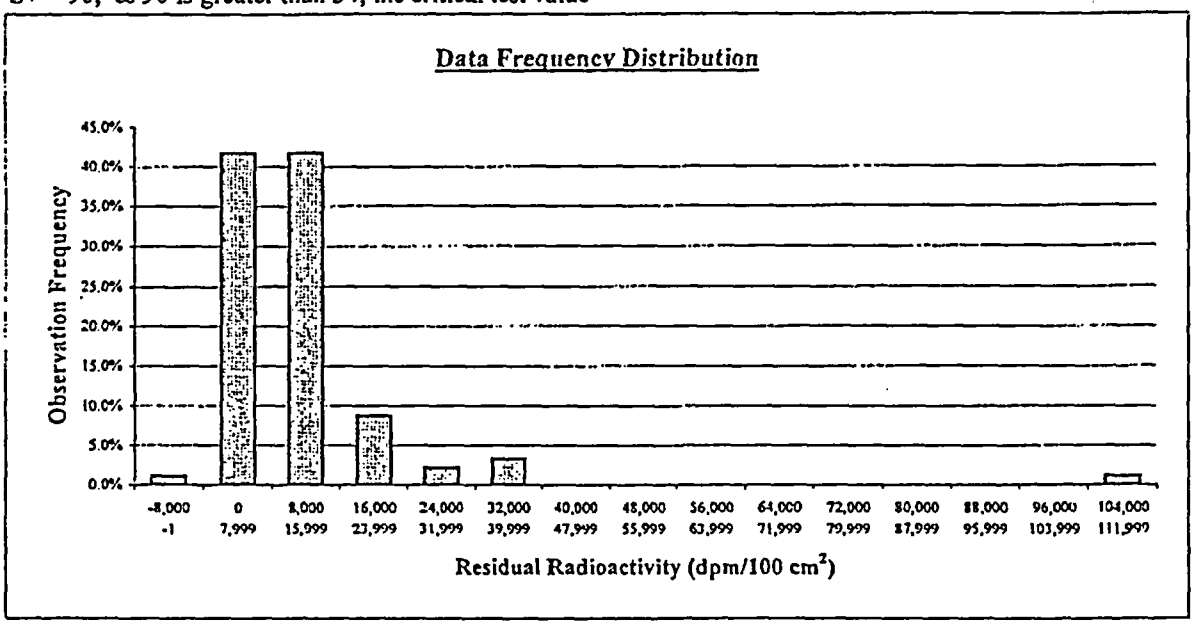
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?	
Range	114,163	114,772	Pass	(see comment)
Median	0.231	0.500	Pass	
Mean	11,858	100,000	Pass	
Std Dev	12,612	20,000	Pass	

Passed required Sign statistical test
S+ = 90, & 90 is greater than 54, the critical test value

Statistical Quantities

Range:	114,163
Median:	8,947
Mean:	11,858
Std Dev:	12,612
Minimum:	-2,263
Maximum:	111,900
DCGL:	100,000



Plot Parameters

# of measurements:	91
# of intervals:	15
Interval increment:	8,000
Minimum:	-8,000
Maximum:	111,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-8,000	1	1.1%
2	7,999	0	38	41.8%
3	15,999	8,000	38	41.8%
4	23,999	16,000	8	8.8%
5	31,999	24,000	2	2.2%
6	39,999	32,000	3	3.3%
7	47,999	40,000	0	0.0%
8	55,999	48,000	0	0.0%
9	63,999	56,000	0	0.0%
10	71,999	64,000	0	0.0%
11	79,999	72,000	0	0.0%
12	87,999	80,000	0	0.0%
13	95,999	88,000	0	0.0%
14	103,999	96,000	0	0.0%
15	111,999	104,000	1	1.1%
		Total:	91	100%

Comment:
Range test acceptance criterion changed to 9.1 times the data set standard deviation in order to successfully process the data set through the Sign Test. Per the completed investigation results form, the elevated static measurement is retained in the data set.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-2,677
Maximum Value:	146,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: Two scan measurements (locations 036 & 066) and one corresponding static measurement (location 83) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	1
Length of Survey Unit (m):	94
Survey Unit Area >DCGL (%):	1.1
EMC Value:	420,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison.

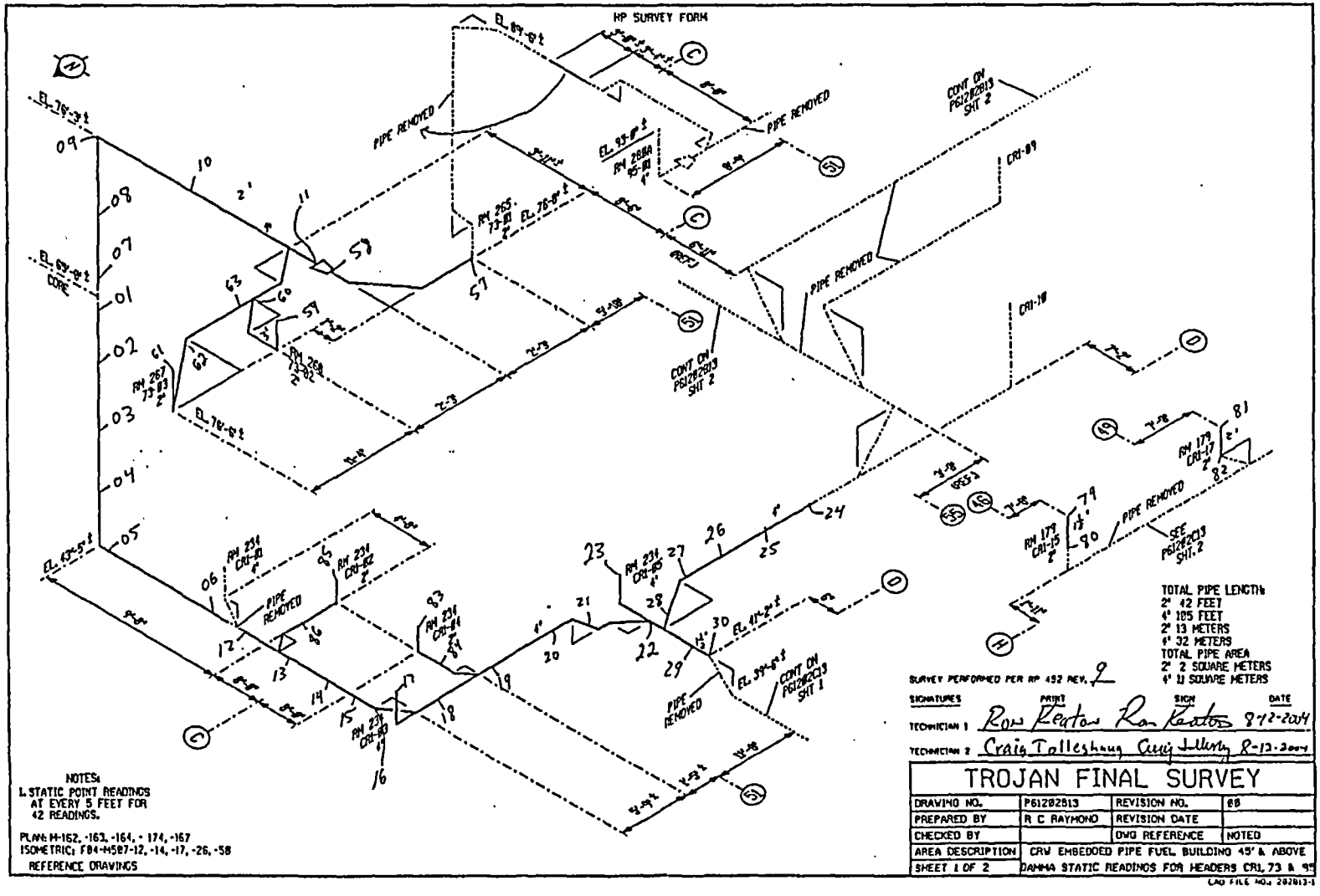
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity identified by both the scan and static measurement surveys represents small, localized areas of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Static Measurement Locations Map

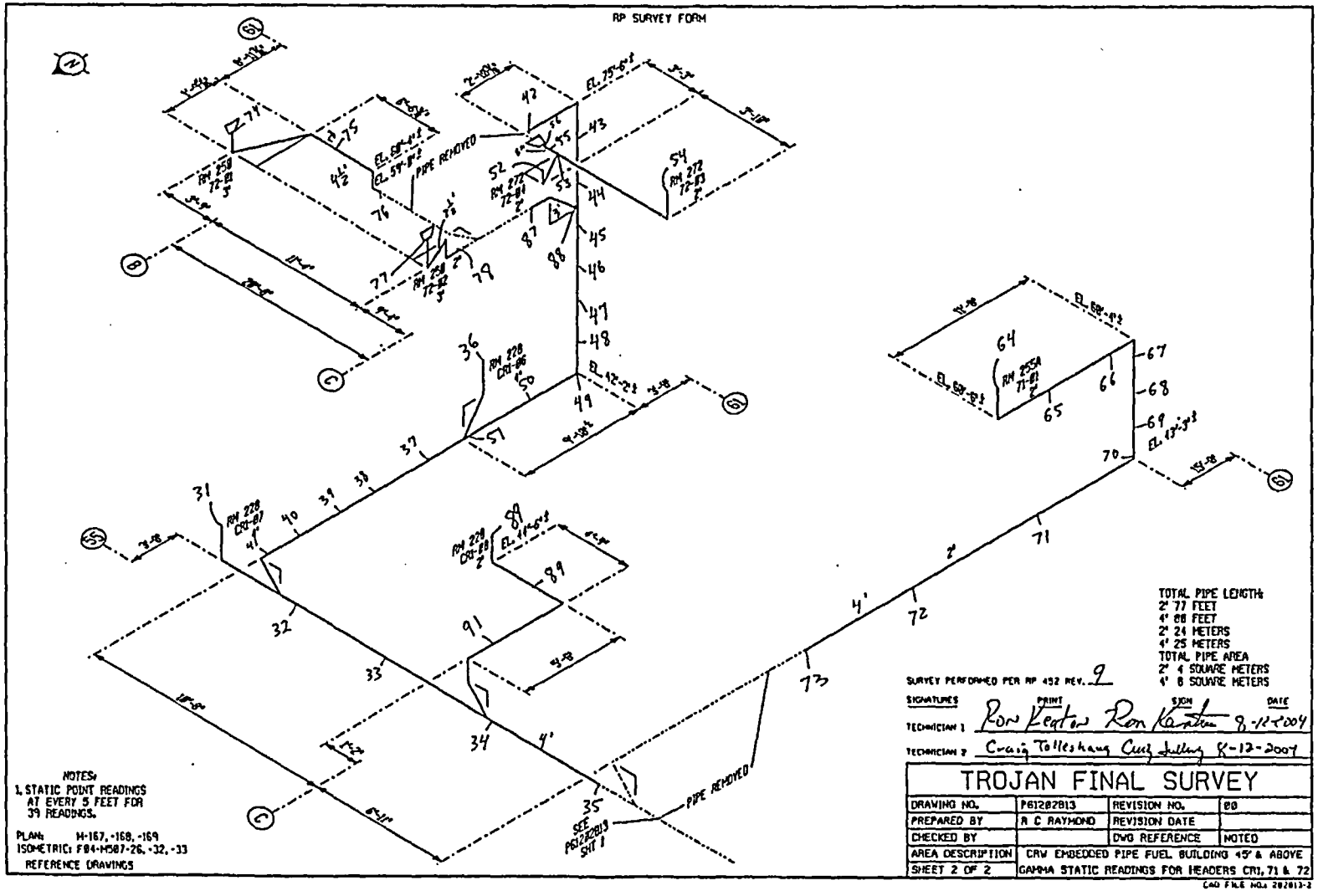


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	113	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-1.762e+003
Maximum Value :	6.914e+004
Range :	7.090e+004
Median :	7.857e+003
Std. Deviation :	1.133e+004
Mean :	1.152e+004
95% UCL :	1.329e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	6.914e+004	000018	4.706e+003	000035	5.495e+003
000002	7.857e+003	000019	9.065e+003	000036	4.063e+004
000003	1.514e+004	000020	5.986e+003	000037	4.957e+003
000004	4.319e+004	000021	5.981e+003	000038	4.146e+003
000005	1.119e+004	000022	7.112e+003	000039	1.905e+003
000006	1.543e+004	000023	2.351e+004	000040	5.667e+003
000007	5.571e+003	000024	1.943e+004	000041	4.905e+003
000008	7.857e+003	000025	7.916e+003	000042	6.857e+003
000009	9.429e+003	000026	8.626e+003	000043	6.524e+003
000010	6.571e+003	000027	7.201e+003	000044	4.714e+003
000011	8.190e+003	000028	6.864e+003	000045	3.190e+003
000012	5.429e+003	000029	2.326e+004	000046	1.371e+004
000013	6.219e+004	000030	6.206e+003	000047	6.600e+003
000014	2.728e+004	000031	4.491e+003	000048	4.092e+003
000015	1.295e+004	000032	4.009e+003	000049	7.686e+003
000016	5.257e+003	000033	6.257e+003	000050	1.016e+004
000017	5.103e+003	000034	4.841e+003	000051	1.518e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Data Quality Values

Location	Value	Location	Value
000052	2.827e+003	000099	7.681e+003
000053	5.627e+003	000100	1.048e+004
000054	5.619e+003	000101	9.822e+003
000055	9.476e+003	000102	1.003e+004
000056	4.714e+003	000103	1.402e+004
000057	6.524e+003	000104	1.477e+004
000058	2.952e+003	000105	2.222e+004
000059	1.248e+004	000106	3.221e+004
000060	8.190e+003	000107	3.108e+004
000061	5.524e+003	000108	3.356e+004
000062	7.905e+003	000109	2.617e+004
000063	-1.762e+003	000110	1.851e+004
000064	1.395e+004	000111	2.305e+004
000065	8.286e+003	000112	1.243e+004
000066	6.381e+003	000113	1.558e+004
000067	1.071e+004		
000068	7.952e+003		
000069	1.571e+003		
000070	5.429e+003		
000071	5.238e+003		
000072	5.429e+003		
000073	9.190e+003		
000074	2.476e+003		
000075	5.190e+003		
000076	4.333e+003		
000077	5.238e+003		
000078	1.376e+004		
000079	1.867e+004		
000080	9.810e+003		
000081	9.048e+003		
000082	9.762e+003		
000083	5.381e+003		
000084	5.762e+003		
000085	4.429e+003		
000086	5.571e+003		
000087	6.095e+003		
000088	6.333e+003		
000089	7.143e+003		
000090	6.333e+003		
000091	5.714e+003		
000092	4.994e+004		
000093	9.843e+003		
000094	8.286e+003		
000095	1.018e+004		
000096	1.070e+004		
000097	1.761e+004		
000098	1.856e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Measurement Data Statistical Evaluation

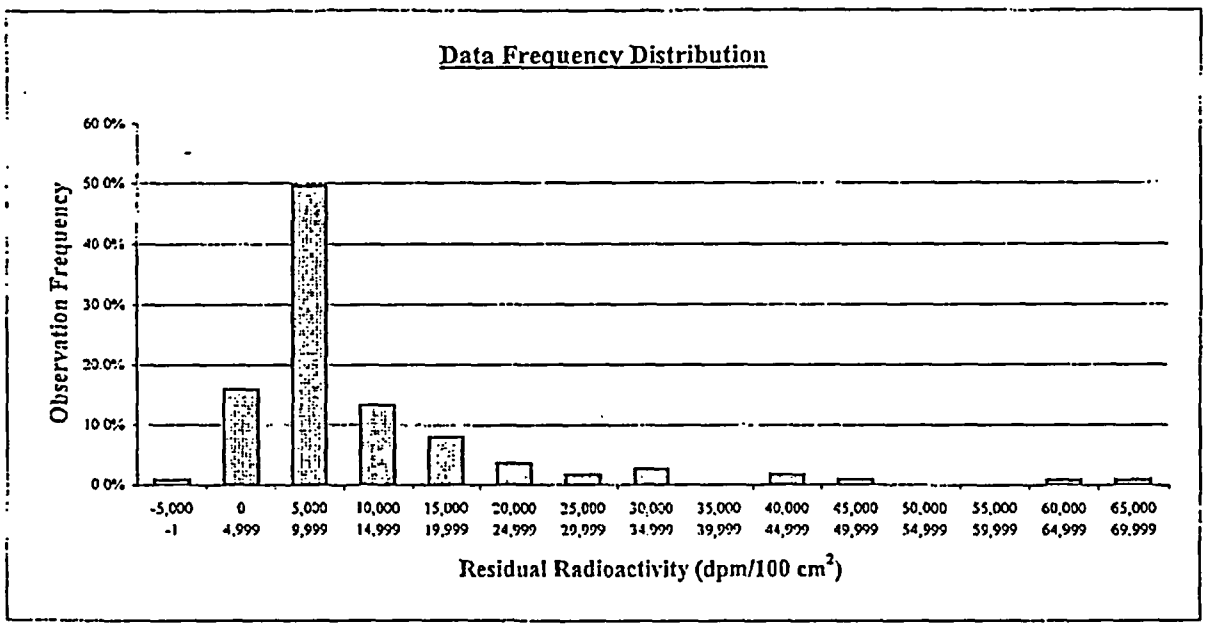
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	70,902	56,661	See comment below
Median	0.323	0.500	Pass
Mean	11,519	100,000	Pass
Std Dev	11,332	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	70,902
Median:	7,857
Mean:	11,519
Std Dev:	11,332
Minimum:	-1,762
Maximum:	69,140
DCGL:	100,000



Plot Parameters

# of measurements:	113
# of intervals:	15
Interval increment:	5,000
Minimum:	-5,000
Maximum:	69,999

Comment:
Range failure is due to five relatively high values compared to the rest of the data set, resulting in a right skewed data set, and a range value that is greater than 5 times the standard deviation. All values are valid and accepted.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-5,000	1	0.9%
2	4,999	0	18	15.9%
3	9,999	5,000	56	49.6%
4	14,999	10,000	15	13.3%
5	19,999	15,000	9	8.0%
6	24,999	20,000	4	3.5%
7	29,999	25,000	2	1.8%
8	34,999	30,000	3	2.7%
9	39,999	35,000	0	0.0%
10	44,999	40,000	2	1.8%
11	49,999	45,000	1	0.9%
12	54,999	50,000	0	0.0%
13	59,999	55,000	0	0.0%
14	64,999	60,000	1	0.9%
15	69,999	65,000	1	0.9%
		Total:	113	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	3,292
Maximum Value:	288,300
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: One scan measurement (location 018) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.5
Length of Survey Unit (m):	100
Survey Unit Area >DCGL (%):	0.5
EMC Value:	669,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

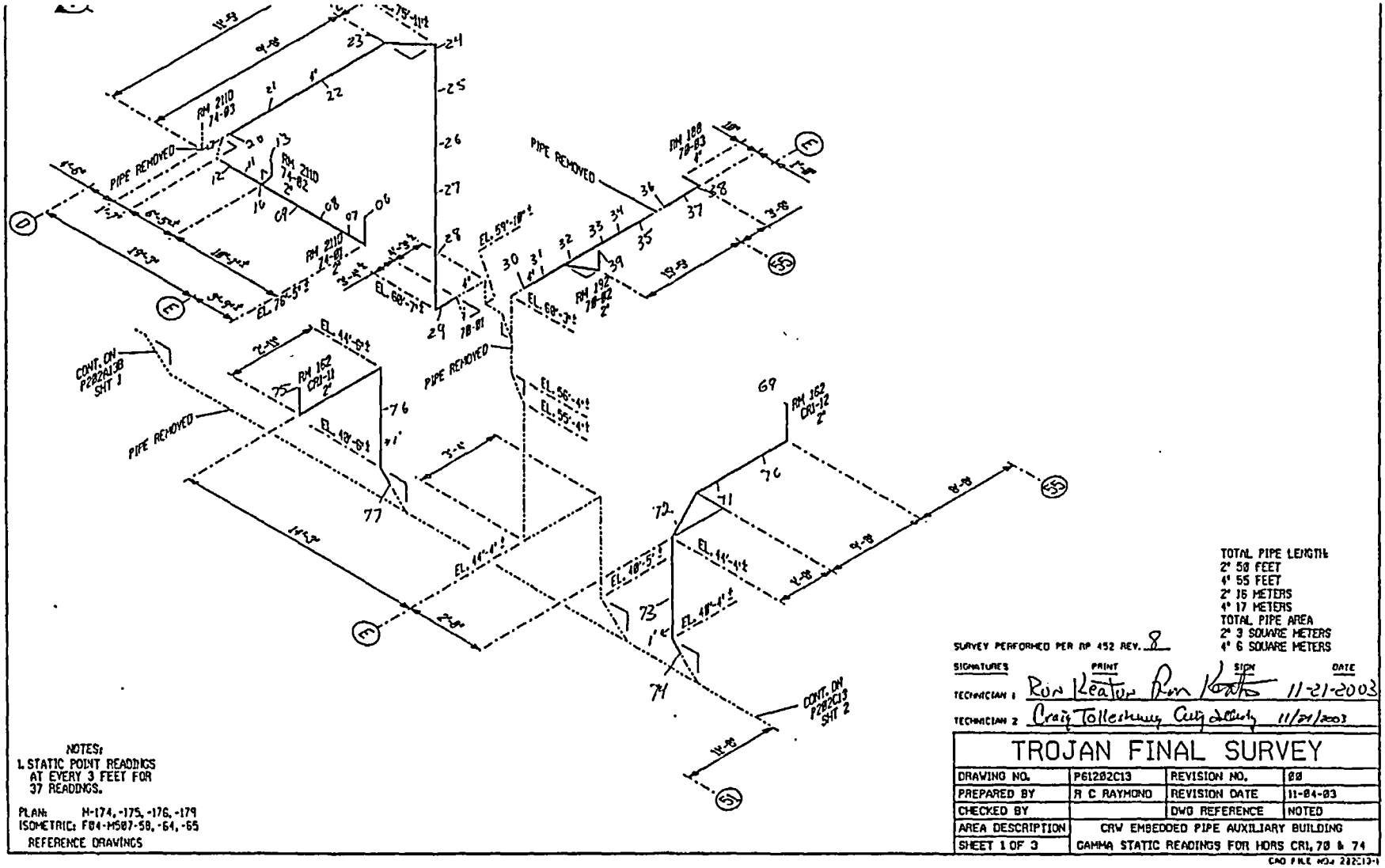
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

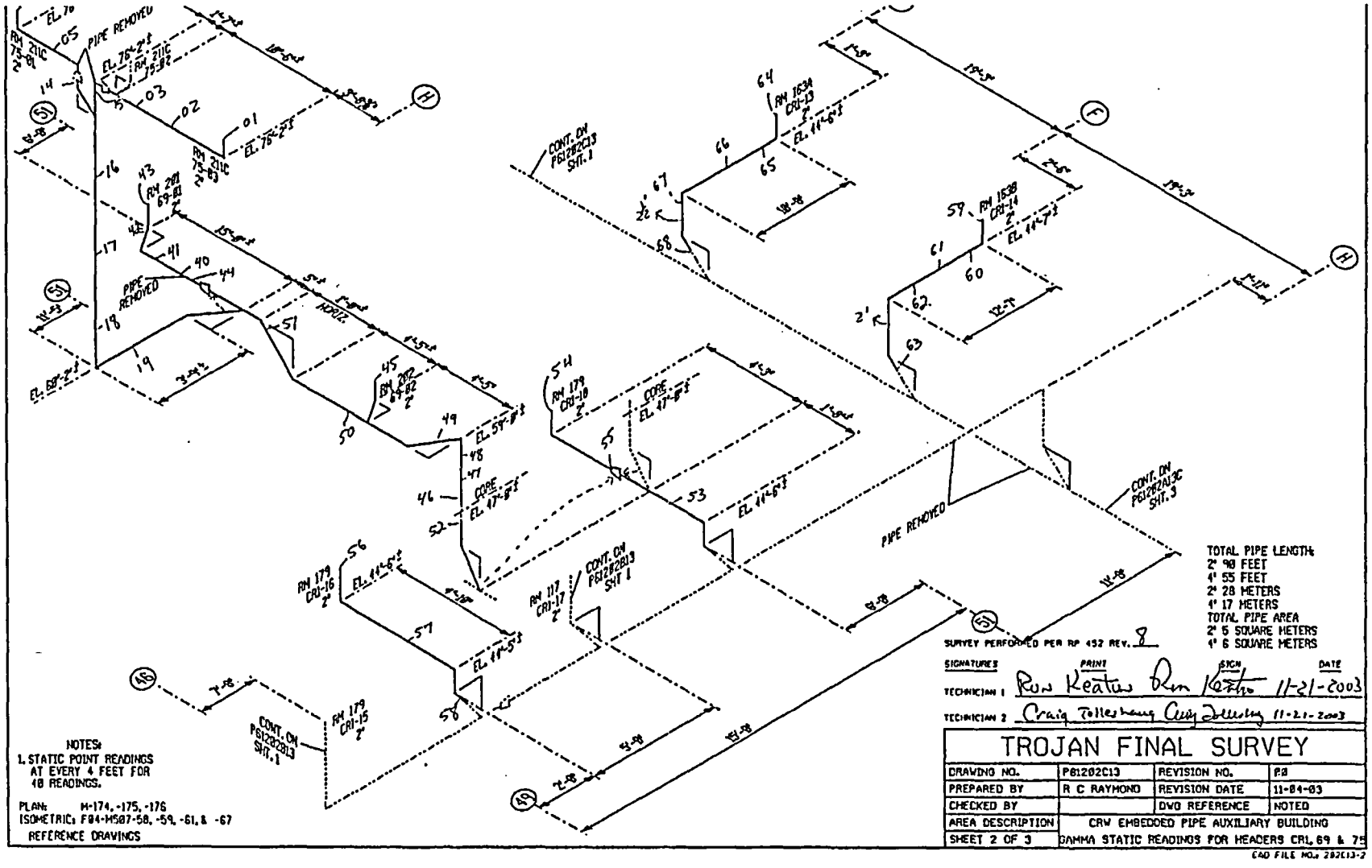
Survey Unit ID Code: P61202C

Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1

Size (m^2): 26

Static Measurement Locations Map

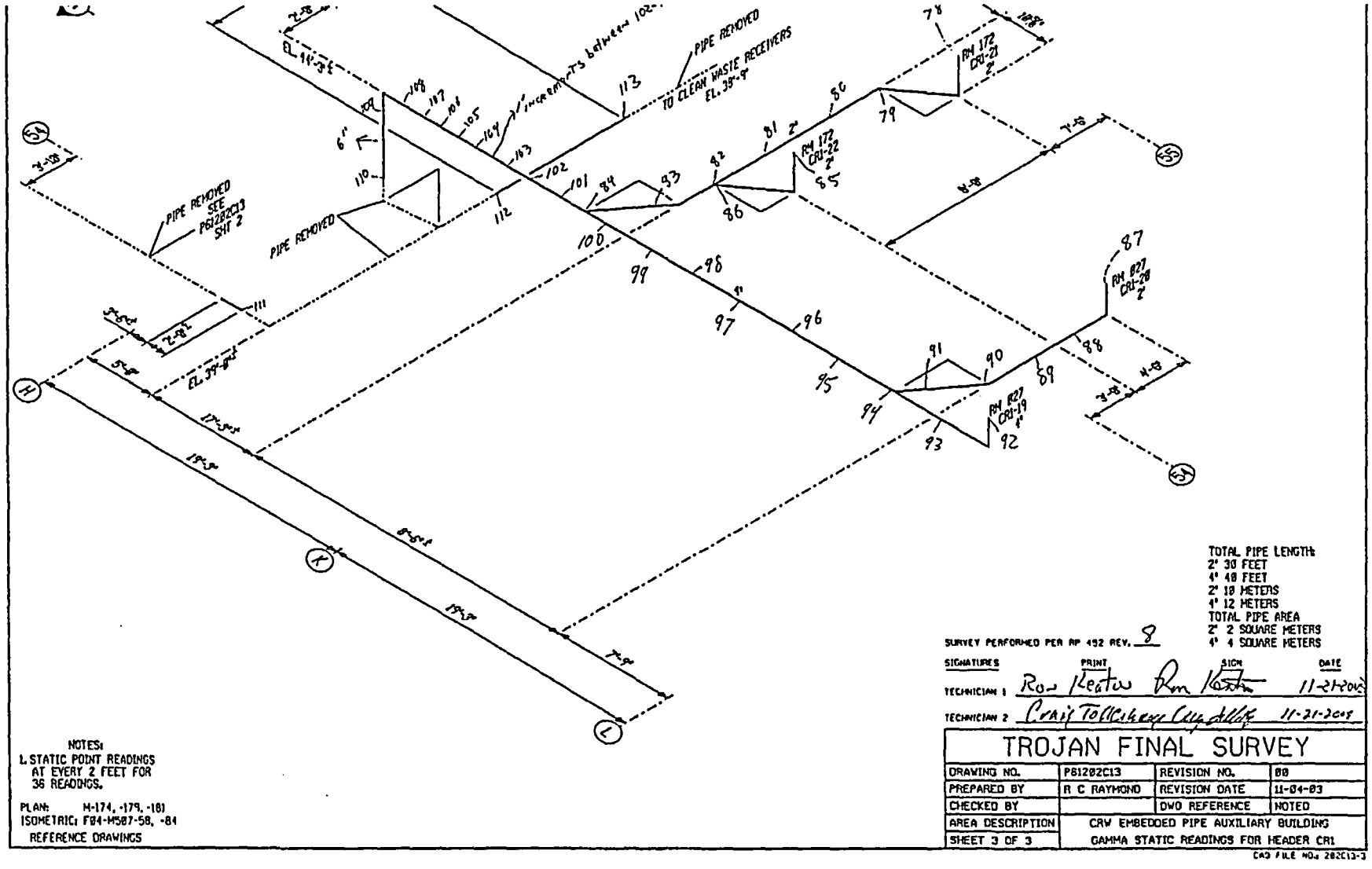


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	87	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	9.167e+002
Maximum Value	:	7.345e+004
Range	:	7.253e+004
Median	:	7.708e+003
Std. Deviation	:	1.023e+004
Mean	:	1.066e+004
95% UCL	:	1.249e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.737e+004	000018	8.042e+003	000035	4.958e+003
000002	4.917e+003	000019	7.750e+003	000036	4.000e+003
000003	9.167e+002	000020	8.083e+003	000037	4.708e+003
000004	7.458e+003	000021	8.333e+003	000038	8.542e+003
000005	7.417e+003	000022	7.625e+003	000039	1.917e+003
000006	2.850e+004	000023	5.833e+003	000040	3.000e+003
000007	2.158e+004	000024	4.667e+003	000041	3.917e+003
000008	2.200e+004	000025	7.917e+003	000042	9.000e+003
000009	7.500e+003	000026	3.125e+003	000043	8.167e+003
000010	1.800e+004	000027	6.167e+003	000044	3.500e+003
000011	7.375e+003	000028	6.917e+003	000045	1.163e+004
000012	1.833e+004	000029	1.200e+004	000046	5.083e+003
000013	1.821e+004	000030	9.875e+003	000047	1.092e+004
000014	7.708e+003	000031	4.000e+003	000048	7.167e+003
000015	1.458e+003	000032	7.417e+003	000049	2.725e+004
000016	8.708e+003	000033	3.500e+003	000050	4.542e+003
000017	3.208e+003	000034	4.750e+003	000051	1.238e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Data Quality Values

Location	Value
000052	1.163e+004
000053	5.402e+003
000054	4.667e+003
000055	7.814e+003
000056	5.623e+003
000057	1.052e+004
000058	8.353e+003
000059	7.345e+004
000060	1.641e+004
000061	1.476e+004
000062	1.546e+004
000063	1.061e+004
000064	5.627e+003
000065	4.593e+003
000066	4.835e+004
000067	2.131e+004
000068	3.995e+003
000069	9.049e+003
000070	7.931e+003
000071	7.417e+003
000072	7.652e+003
000073	7.387e+003
000074	6.304e+003
000075	1.059e+004
000076	3.300e+004
000077	6.167e+003
000078	7.044e+003
000079	2.938e+004
000080	1.320e+004
000081	5.672e+003
000082	4.373e+003
000083	6.005e+003
000084	9.525e+003
000085	1.497e+004
000086	1.083e+004
000087	1.542e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Measurement Data Statistical Evaluation

Statistical Comparisons

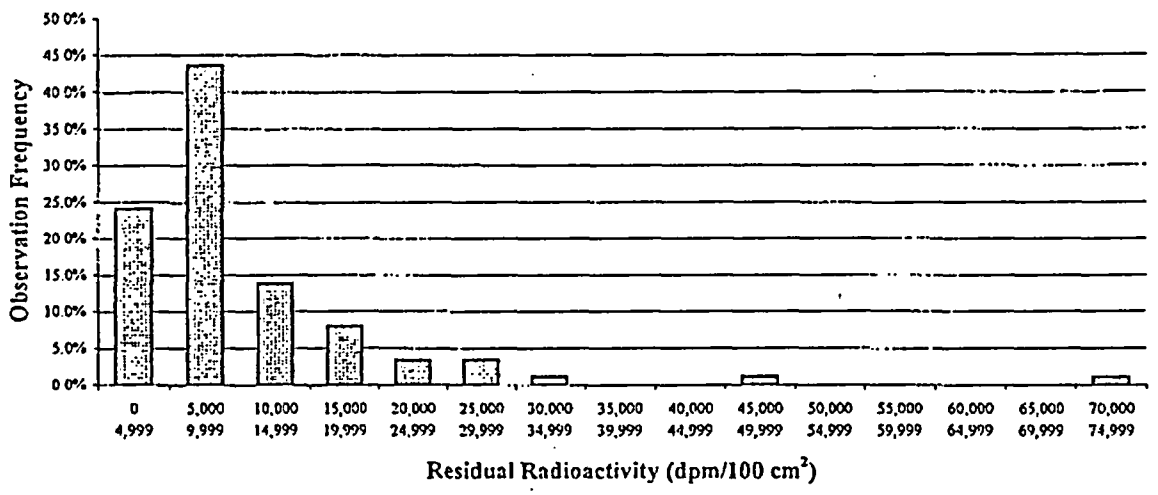
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	72,533	51,135	See comment below
Median	0.289	0.500	Pass
Mean	10,665	100,000	Pass
Std Dev	10,227	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	72,533
Median:	7,708
Mean:	10,665
Std Dev:	10,227
Minimum:	917
Maximum:	73,450
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	87
# of intervals:	15
Interval increment:	5,000
Minimum:	0
Maximum:	74,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	4,999	0	21	24.1%
2	9,999	5,000	38	43.7%
3	14,999	10,000	12	13.8%
4	19,999	15,000	7	8.0%
5	24,999	20,000	3	3.4%
6	29,999	25,000	3	3.4%
7	34,999	30,000	1	1.1%
8	39,999	35,000	0	0.0%
9	44,999	40,000	0	0.0%
10	49,999	45,000	1	1.1%
11	54,999	50,000	0	0.0%
12	59,999	55,000	0	0.0%
13	64,999	60,000	0	0.0%
14	69,999	65,000	0	0.0%
15	74,999	70,000	1	1.1%
		Total:	87	100%

Comment:
Range failure due to two relatively high values compared to the rest of the data set, resulting in a right skewed data set, and a range value that is greater than 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	352
Maximum Value:	80,760
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

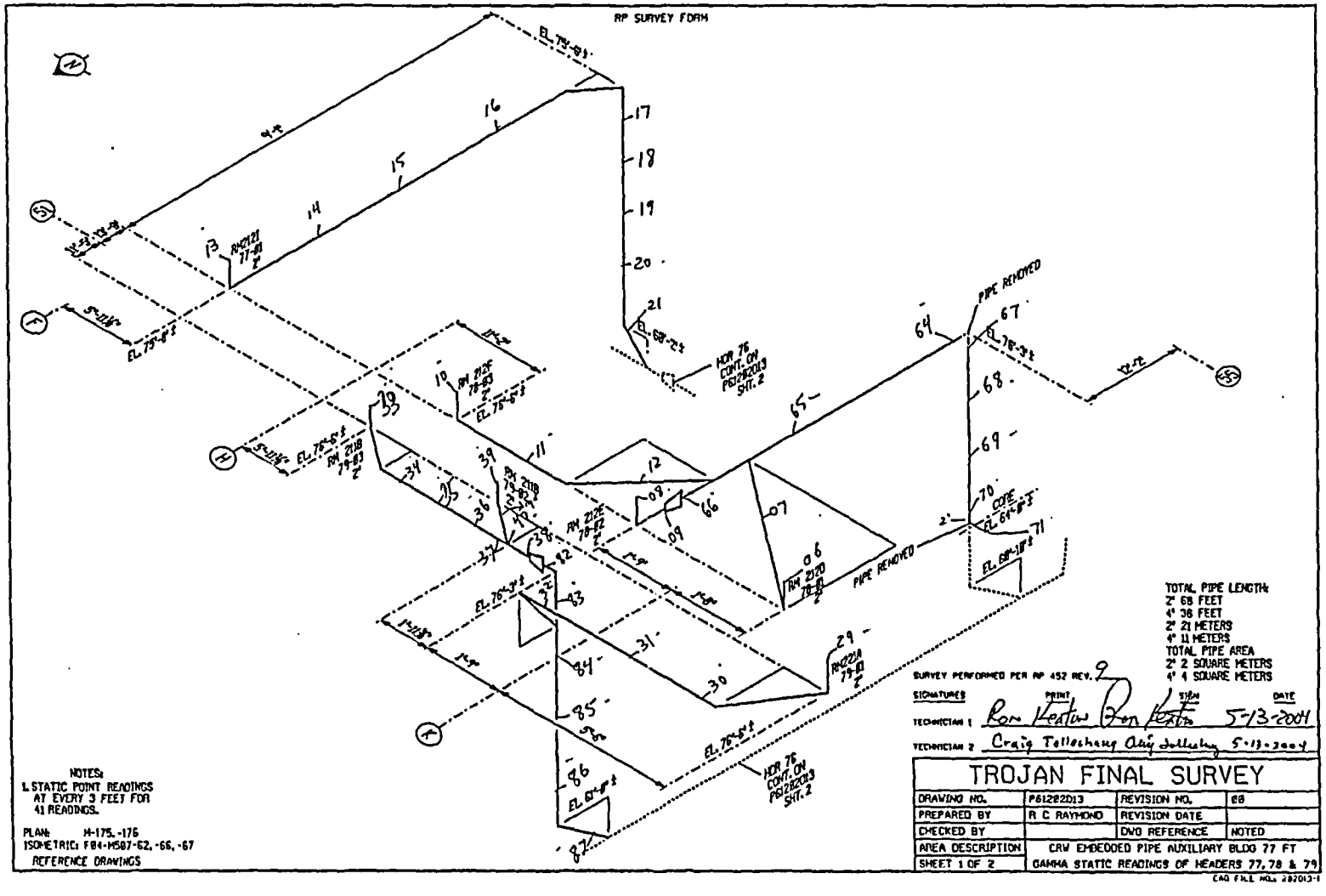
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Static Measurement Locations Map

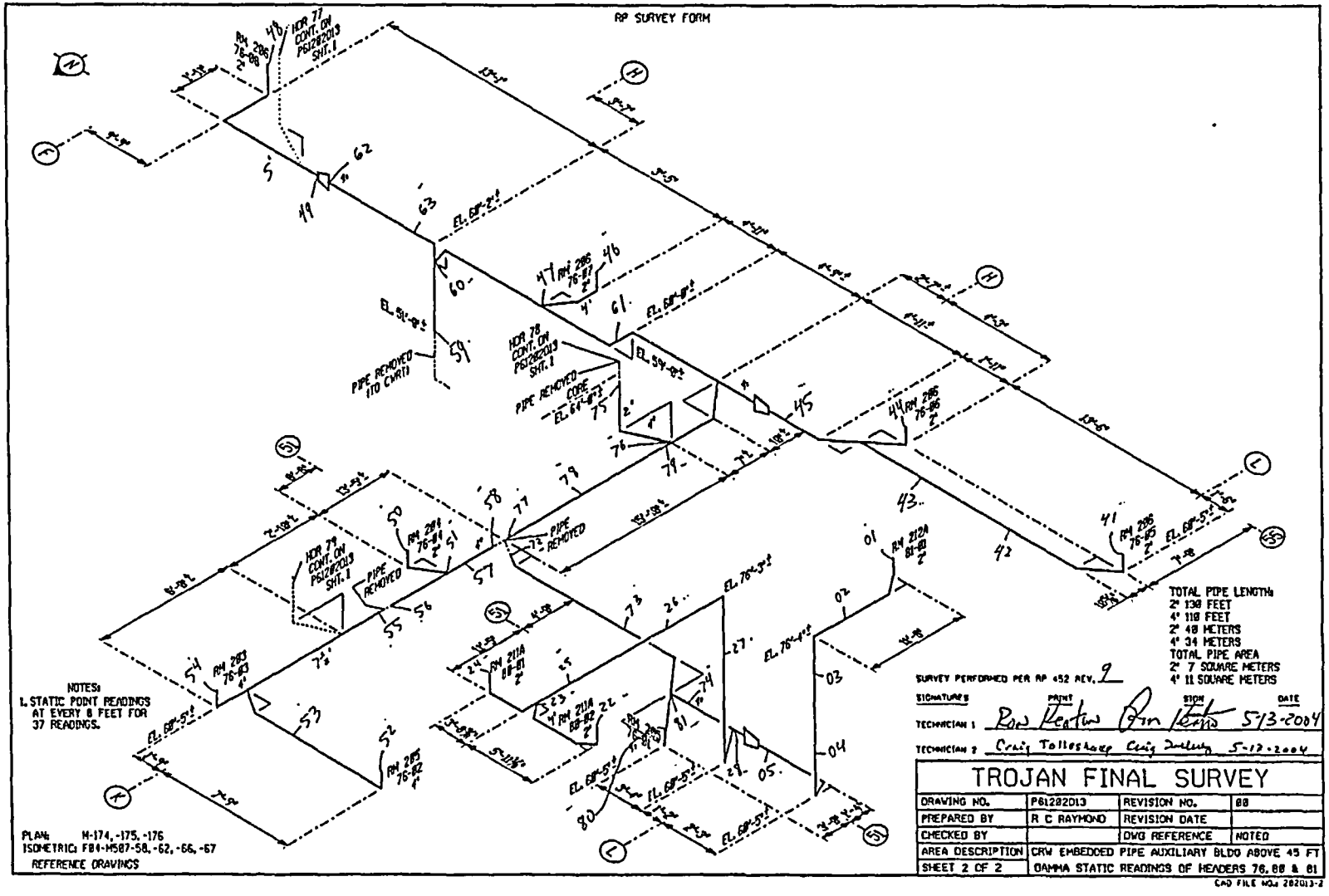


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m²): 24

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203A
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 13

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	31	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	3.200e+003
Maximum Value :	3.703e+004
Range :	3.383e+004
Median :	7.000e+003
Std. Deviation :	8.548e+003
Mean :	1.092e+004
95% UCL :	1.352e+004

Measurement Values

Location	Value	Location	Value
000001	3.374e+003	000018	4.770e+003
000002	1.524e+004	000019	1.282e+004
000003	9.532e+003	000020	5.613e+003
000004	1.822e+004	000021	2.316e+004
000005	6.698e+003	000022	7.868e+003
000006	3.200e+003	000023	1.950e+004
000007	4.298e+003	000024	3.277e+003
000008	4.196e+003	000025	1.022e+004
000009	3.885e+003	000026	7.000e+003
000010	4.051e+003	000027	7.565e+003
000011	3.703e+004	000028	1.374e+004
000012	5.864e+003	000029	2.048e+004
000013	3.770e+003	000030	2.357e+004
000014	6.651e+003	000031	2.896e+004
000015	1.169e+004		
000016	5.349e+003		
000017	6.774e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203A
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 13

Measurement Data Statistical Evaluation

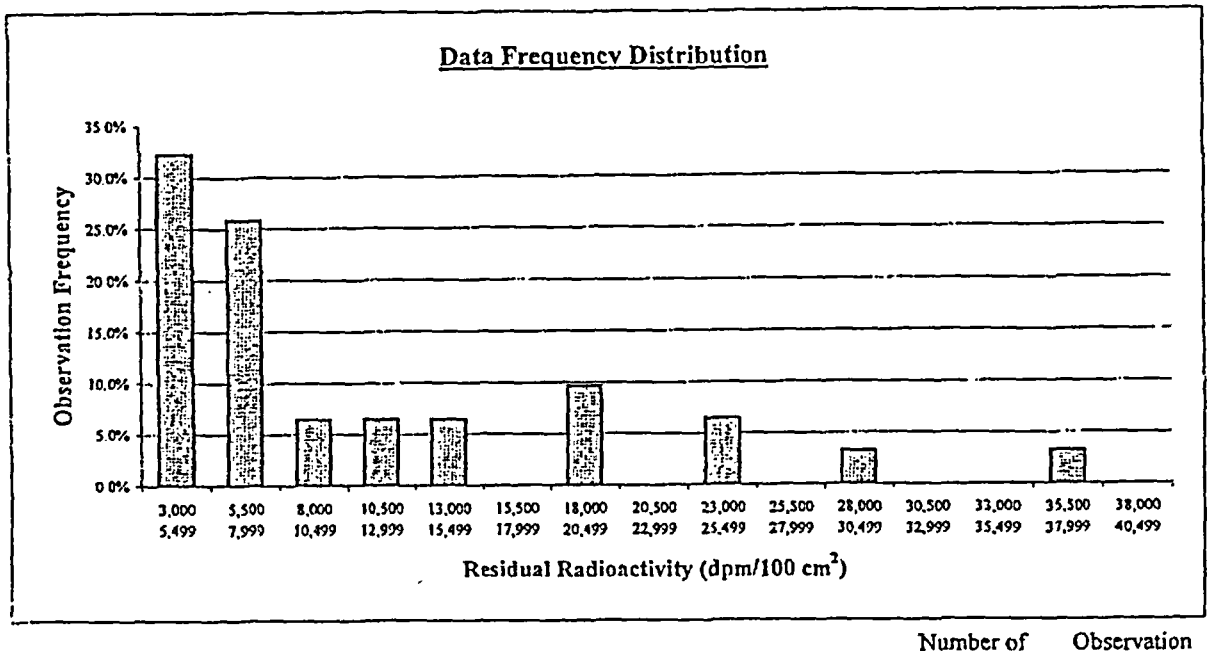
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	33,830	42,741	Pass
Median	0.458	0.500	Pass
Mean	10,915	100,000	Pass
Std Dev	8,548	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	33,830
Median:	7,000
Mean:	10,915
Std Dev:	8,548
Minimum:	3,200
Maximum:	37,030
DCGL:	100,000



Plot Parameters	
# of measurements:	31
# of intervals:	15
Interval increment:	2,500
Minimum:	3,000
Maximum:	40,499

Comment:
None.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	5,499	3,000	10	32.3%
2	7,999	5,500	8	25.8%
3	10,499	8,000	2	6.5%
4	12,999	10,500	2	6.5%
5	15,499	13,000	2	6.5%
6	17,999	15,500	0	0.0%
7	20,499	18,000	3	9.7%
8	22,999	20,500	0	0.0%
9	25,499	23,000	2	6.5%
10	27,999	25,500	0	0.0%
11	30,499	28,000	1	3.2%
12	32,999	30,500	0	0.0%
13	35,499	33,000	0	0.0%
14	37,999	35,500	1	3.2%
15	40,499	38,000	0	0.0%
		Total:	31	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203A
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 13

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	2,780
Maximum Value:	150,900
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: Two scan measurements (locations 001 & 003) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.1
Length of Survey Unit (m):	45
Survey Unit Area >DCGL (%):	0.2
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison.

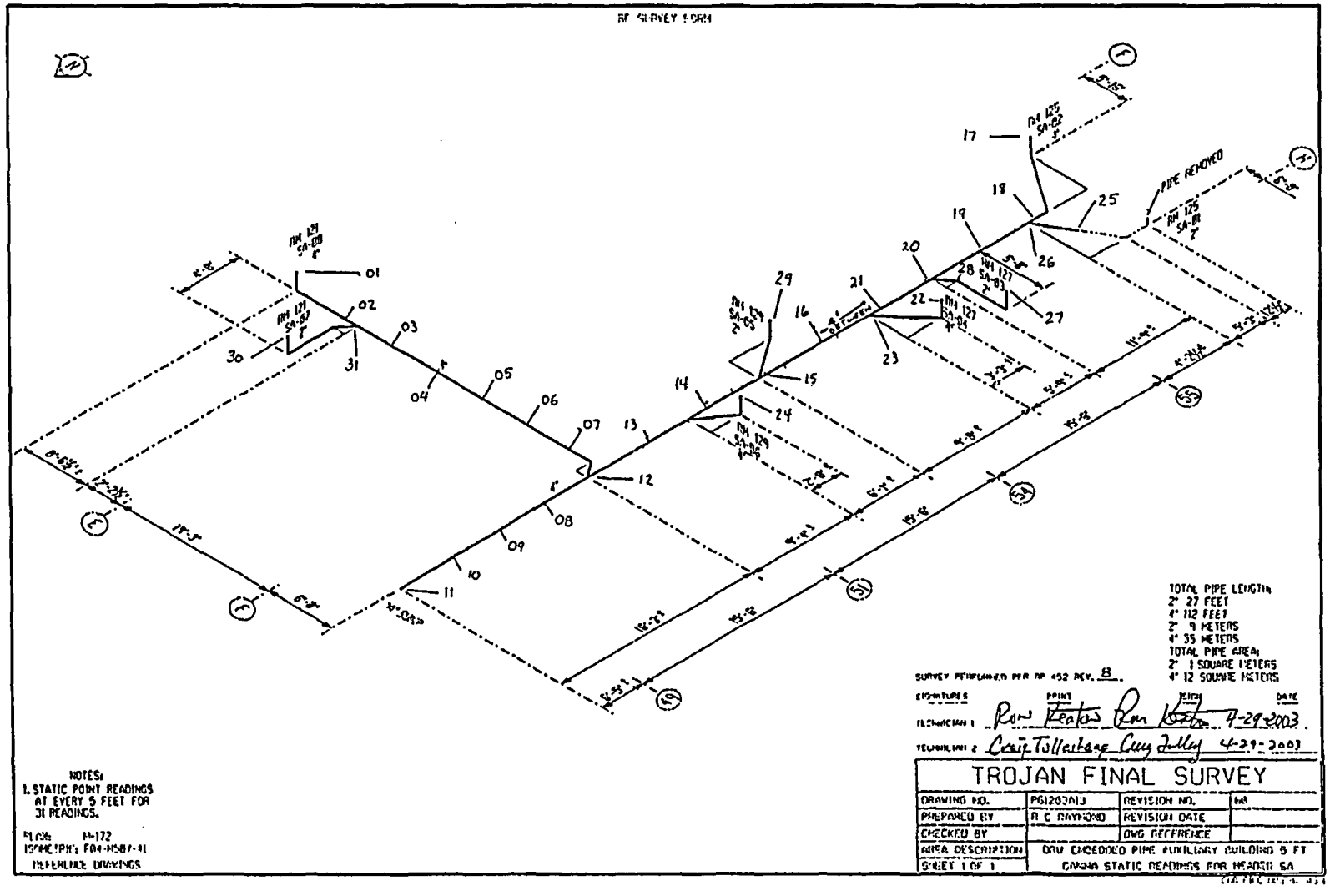
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity represents small, localized areas of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203A
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m²): 13

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203B **Classification:** Class 1
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains **Size (m^2):** 9

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	33	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	1.821e+003
Maximum Value	:	4.512e+004
Range	:	4.330e+004
Median	:	4.898e+003
Std. Deviation	:	7.306e+003
Mean	:	6.792e+003
95% UCL	:	8.945e+003

Measurement Values

Location	Value	Location	Value
000001	9.996e+003	000018	4.519e+003
000002	5.115e+003	000019	1.821e+003
000003	4.817e+003	000020	4.387e+003
000004	4.502e+003	000021	4.498e+003
000005	4.783e+003	000022	4.932e+003
000006	4.357e+003	000023	4.651e+003
000007	6.217e+003	000024	4.379e+003
000008	8.043e+003	000025	4.400e+003
000009	4.340e+003	000026	5.374e+003
000010	3.081e+003	000027	5.319e+003
000011	4.711e+003	000028	4.894e+003
000012	1.021e+004	000029	5.626e+003
000013	5.596e+003	000030	4.512e+004
000014	1.577e+004	000031	6.102e+003
000015	4.898e+003	000032	7.435e+003
000016	4.340e+003	000033	4.957e+003
000017	4.940e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203B
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 9

Measurement Data Statistical Evaluation

Statistical Comparisons

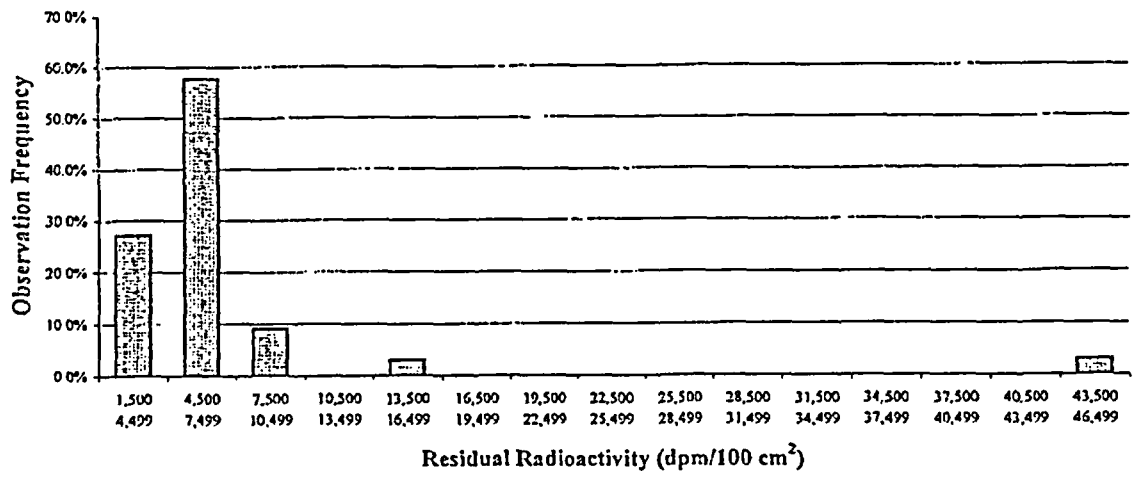
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	43,299	36,528	See comment below
Median	0.259	0.500	Pass
Mean	6,792	100,000	Pass
Std Dev	7,306	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	43,299
Median:	4,898
Mean:	6,792
Std Dev:	7,306
Minimum:	1,821
Maximum:	45,120
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	33
# of intervals:	15
Interval increment:	3,000
Minimum:	1,500
Maximum:	46,499

Interval	High End	Low End	Number of Observations	Observation Frequency
1	4,499	1,500	9	27.3%
2	7,499	4,500	19	57.6%
3	10,499	7,500	3	9.1%
4	13,499	10,500	0	0.0%
5	16,499	13,500	1	3.0%
6	19,499	16,500	0	0.0%
7	22,499	19,500	0	0.0%
8	25,499	22,500	0	0.0%
9	28,499	25,500	0	0.0%
10	31,499	28,500	0	0.0%
11	34,499	31,500	0	0.0%
12	37,499	34,500	0	0.0%
13	40,499	37,500	0	0.0%
14	43,499	40,500	0	0.0%
15	46,499	43,500	1	3.0%
		Total:	33	100%

Comment:
Range failure is a test artifact due to one relatively high value compared to rest of data set, resulting a range value for the data set that is greater than 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203B
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 9

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	2,273
Maximum Value:	35,820
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

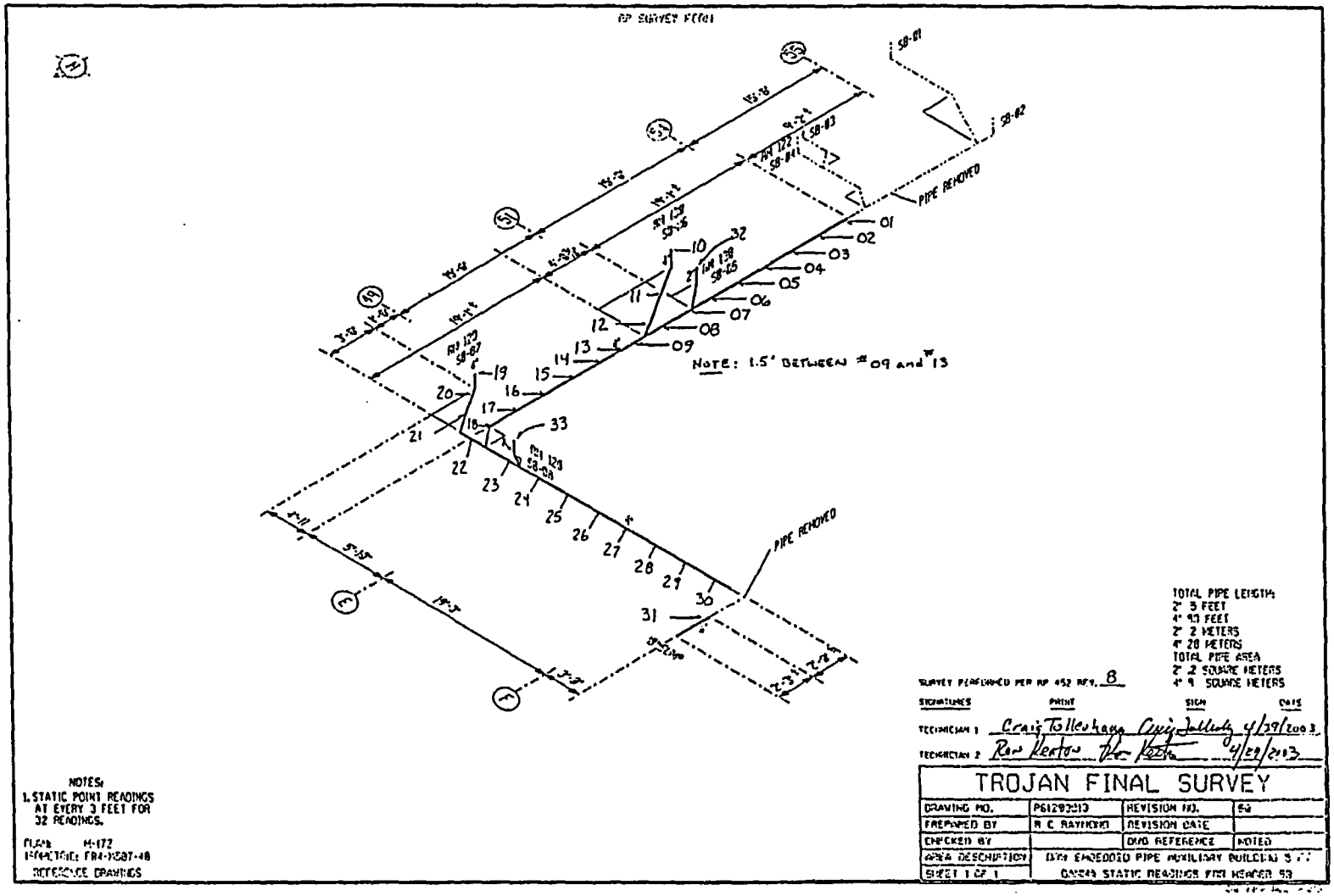
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203B
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 9

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C **Classification:** Class 1
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains **Size (m^2):** 27

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	71	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	3.426e+003
Maximum Value	:	8.352e+004
Range	:	8.009e+004
Median	:	5.991e+003
Std. Deviation	:	1.060e+004
Mean	:	8.966e+003
95% UCL	:	1.106e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.106e+004	000018	7.996e+003	000035	6.068e+003
000002	6.068e+003	000019	4.851e+003	000036	4.004e+003
000003	7.694e+003	000020	4.919e+003	000037	4.434e+003
000004	9.264e+003	000021	5.562e+003	000038	4.034e+003
000005	5.553e+003	000022	5.247e+003	000039	4.170e+003
000006	4.447e+003	000023	6.685e+003	000040	1.057e+004
000007	4.689e+003	000024	6.685e+003	000041	4.872e+003
000008	4.196e+003	000025	8.272e+003	000042	4.098e+003
000009	4.077e+003	000026	3.426e+003	000043	4.353e+003
000010	9.804e+003	000027	7.034e+003	000044	4.843e+003
000011	7.689e+003	000028	5.319e+003	000045	7.323e+003
000012	5.511e+003	000029	5.574e+003	000046	5.336e+003
000013	9.323e+003	000030	5.902e+003	000047	1.116e+004
000014	1.083e+004	000031	9.685e+003	000048	1.269e+004
000015	1.076e+004	000032	5.991e+003	000049	4.119e+003
000016	1.814e+004	000033	1.070e+004	000050	1.121e+004
000017	7.187e+003	000034	7.145e+003	000051	5.298e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Data Quality Values

Location	Value
000052	5.860e+003
000053	1.067e+004
000054	8.545e+003
000055	5.562e+003
000056	4.515e+003
000057	5.855e+003
000058	4.413e+003
000059	5.652e+003
000060	4.826e+003
000061	8.352e+004
000062	1.070e+004
000063	5.478e+003
000064	6.826e+003
000065	1.043e+004
000066	3.939e+004
000067	4.696e+003
000068	4.783e+003
000069	8.783e+003
000070	3.057e+004
000071	1.961e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Measurement Data Statistical Evaluation

Statistical Comparisons

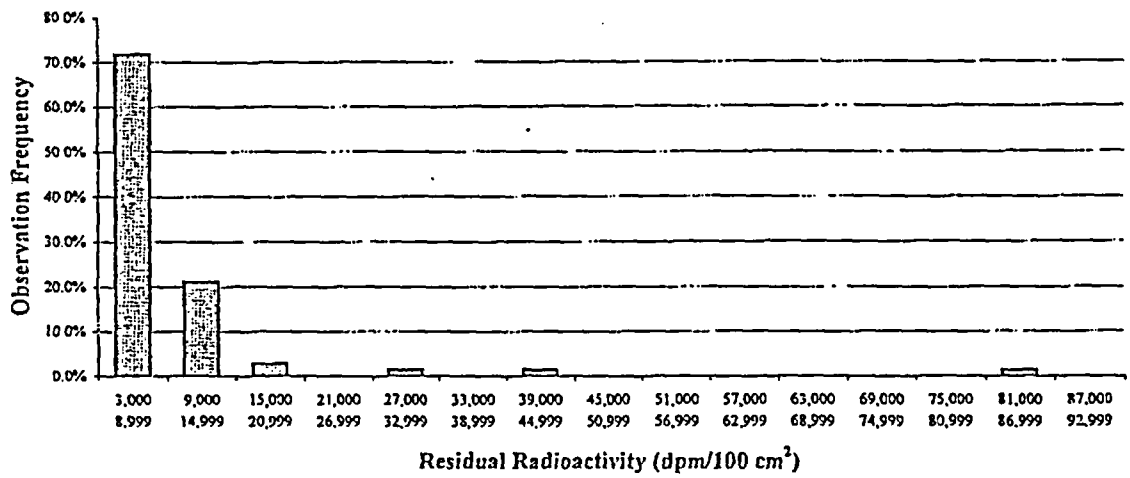
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	80,094	52,976	See comment below
Median	0.281	0.500	Pass
Mean	8,965	100,000	Pass
Std Dev	10,595	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	80,094
Median:	5,991
Mean:	8,965
Std Dev:	10,595
Minimum:	3,426
Maximum:	83,520
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	71
# of intervals:	15
Interval increment:	6,000
Minimum:	3,000
Maximum:	92,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	8,999	3,000	51	71.8%
2	14,999	9,000	15	21.1%
3	20,999	15,000	2	2.8%
4	26,999	21,000	0	0.0%
5	32,999	27,000	1	1.4%
6	38,999	33,000	0	0.0%
7	44,999	39,000	1	1.4%
8	50,999	45,000	0	0.0%
9	56,999	51,000	0	0.0%
10	62,999	57,000	0	0.0%
11	68,999	63,000	0	0.0%
12	74,999	69,000	0	0.0%
13	80,999	75,000	0	0.0%
14	86,999	81,000	1	1.4%
15	92,999	87,000	0	0.0%
		Total:	71	100%

Comment:
Range failure is a test artifact due to three relatively high values compared to rest of data set, resulting a range value for the data set that is greater than 5 times the standard deviation.
All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	2,055
Maximum Value:	199,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: One scan measurement (location 055) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.1
Length of Survey Unit (m):	92
Survey Unit Area >DCGL (%):	0.1
EMC Value:	669,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

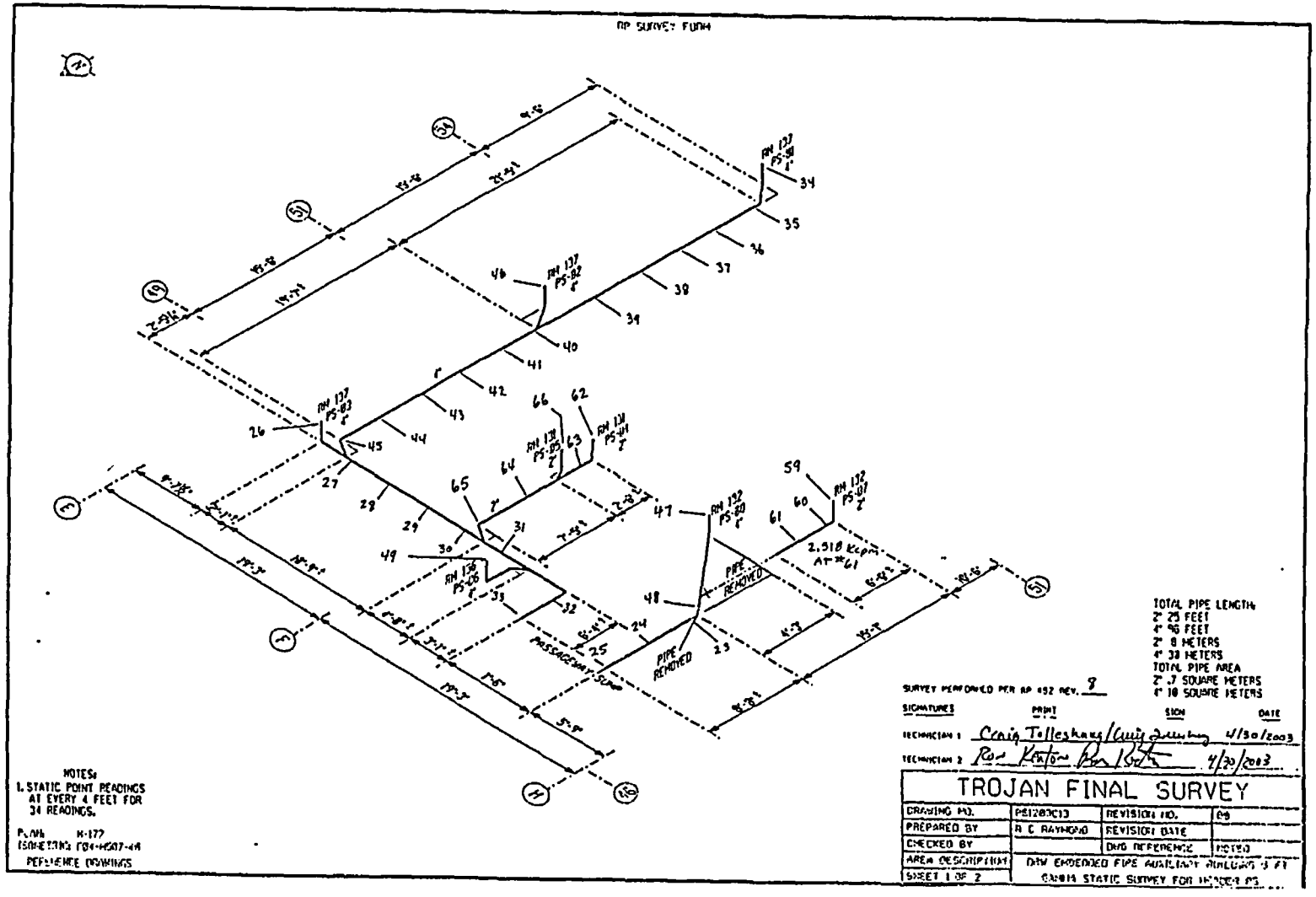
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Static Measurement Locations Map

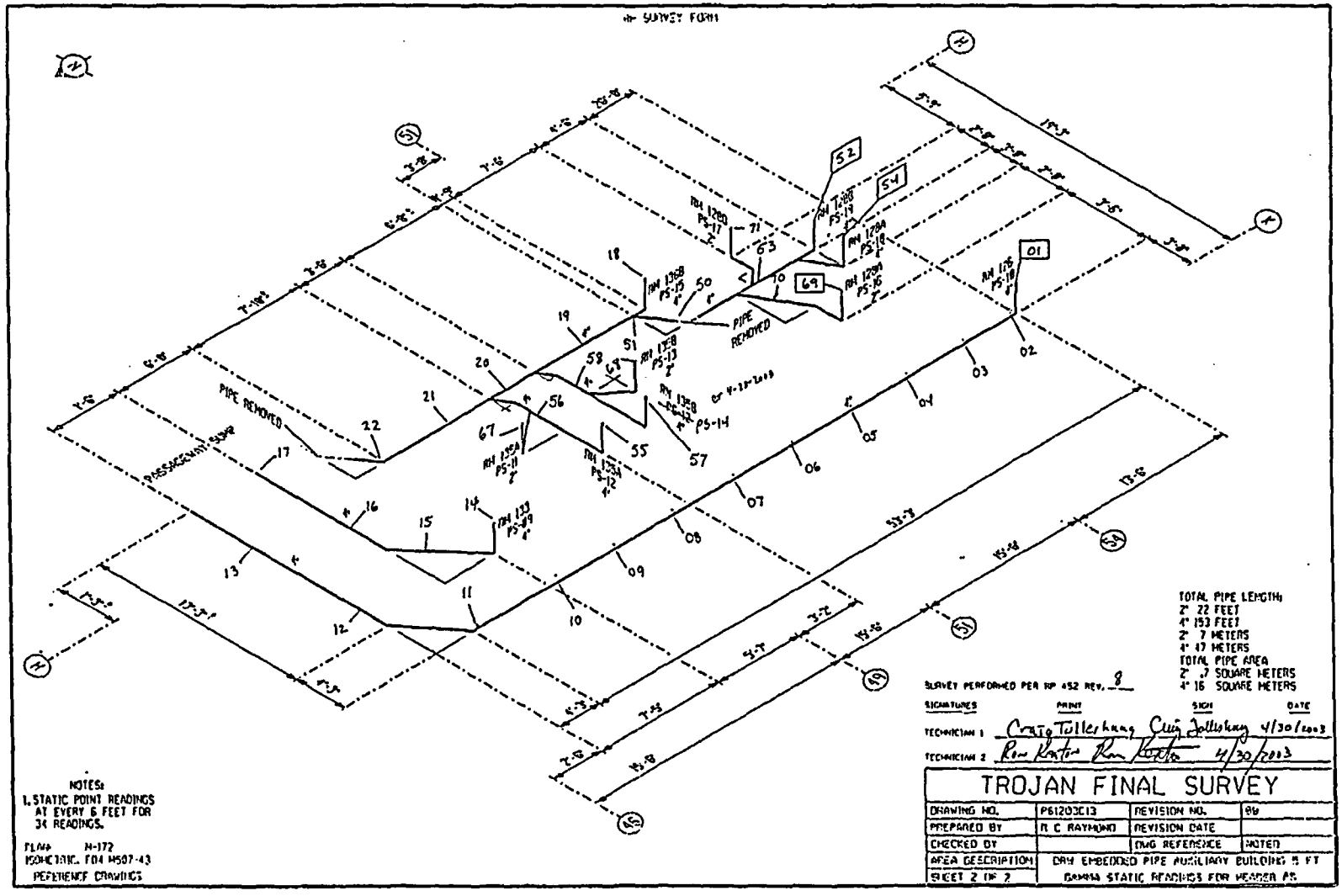


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	68	DPM/100 CM²	1.000e+005	6.700e+001	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.659e+003
Maximum Value	:	1.030e+005
Range	:	1.047e+005
Median	:	6.078e+003
Std. Deviation	:	1.261e+004
Mean	:	8.127e+003
95% UCL	:	1.068e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	9.395e+003	000018	5.605e+003	000035	1.676e+003
000002	5.259e+003	000019	3.411e+003	000036	9.297e+002
000003	5.692e+003	000020	7.497e+003	000037	4.486e+002
000004	9.649e+003	000021	4.157e+003	000038	3.405e+002
000005	6.373e+003	000022	6.649e+002	000039	1.130e+003
000006	5.811e+003	000023	1.744e+004	000040	6.373e+003
000007	6.551e+003	000024	2.384e+003	000041	4.422e+003
000008	5.914e+003	000025	1.854e+003	000042	5.405e+003
000009	5.038e+003	000026	1.330e+003	000043	6.086e+003
000010	8.714e+003	000027	2.384e+003	000044	8.130e+003
000011	7.249e+003	000028	-1.659e+003	000045	4.016e+003
000012	4.951e+003	000029	8.416e+003	000046	4.789e+003
000013	4.600e+003	000030	4.676e+003	000047	8.697e+003
000014	8.800e+003	000031	2.748e+004	000048	7.789e+003
000015	4.897e+003	000032	5.400e+003	000049	7.022e+003
000016	6.070e+003	000033	6.616e+003	000050	9.881e+003
000017	5.751e+003	000034	1.802e+004	000051	1.514e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Data Quality Values

Location	Value
000052	1.381e+004
000053	7.130e+003
000054	1.684e+004
000055	8.665e+003
000056	1.072e+004
000057	1.157e+004
000058	5.522e+003
000059	3.826e+003
000060	4.565e+003
000061	6.130e+003
000062	6.783e+003
000063	1.030e+005
000064	9.130e+003
000065	8.391e+003
000066	1.770e+004
000067	6.391e+003
000068	7.435e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Measurement Data Statistical Evaluation

Statistical Comparisons

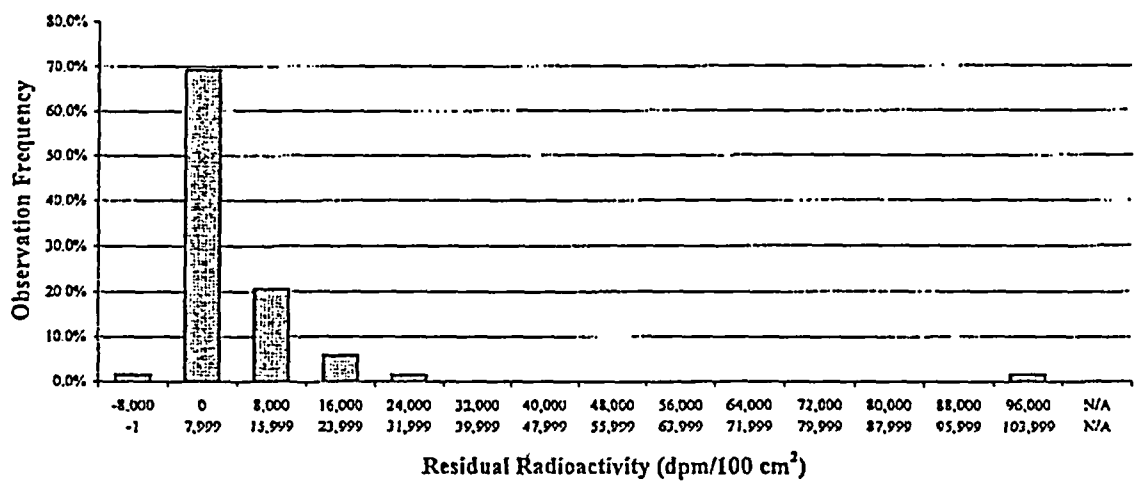
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	104,659	107,177	Pass
Median	0.163	0.500	Pass
Mean	8,127	100,000	Pass
Std Dev	12,609	20,000	Pass

Data set passes required Sign statistical test
S+ = 67, which is greater than 41, the Sign test acceptance criterion

Statistical Quantities

Range:	104,659
Median:	6,078
Mean:	8,127
Std Dev:	12,609
Minimum:	-1,659
Maximum:	103,000
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	68
# of intervals:	14
Interval increment:	8,000
Minimum:	-8,000
Maximum:	103,999

Comment:
Changed range test acceptance criterion to 8.5 times the standard deviation to allow data set to pass to release record status.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-8,000	1	1.5%
2	7,999	0	47	69.1%
3	15,999	8,000	14	20.6%
4	23,999	16,000	4	5.9%
5	31,999	24,000	1	1.5%
6	39,999	32,000	0	0.0%
7	47,999	40,000	0	0.0%
8	55,999	48,000	0	0.0%
9	63,999	56,000	0	0.0%
10	71,999	64,000	0	0.0%
11	79,999	72,000	0	0.0%
12	87,999	80,000	0	0.0%
13	95,999	88,000	0	0.0%
14	103,999	96,000	1	1.5%
15	N/A	N/A	0	0.0%
		Total:	68	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-1,330
Maximum Value:	216,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: Two scan measurements (locations 012 & 052) and one corresponding static measurement (location 63) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.5
Length of Survey Unit (m):	74
Survey Unit Area >DCGL (%):	0.7
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison; changed statistical quantities test value for range to 8 and for final survey data processing.

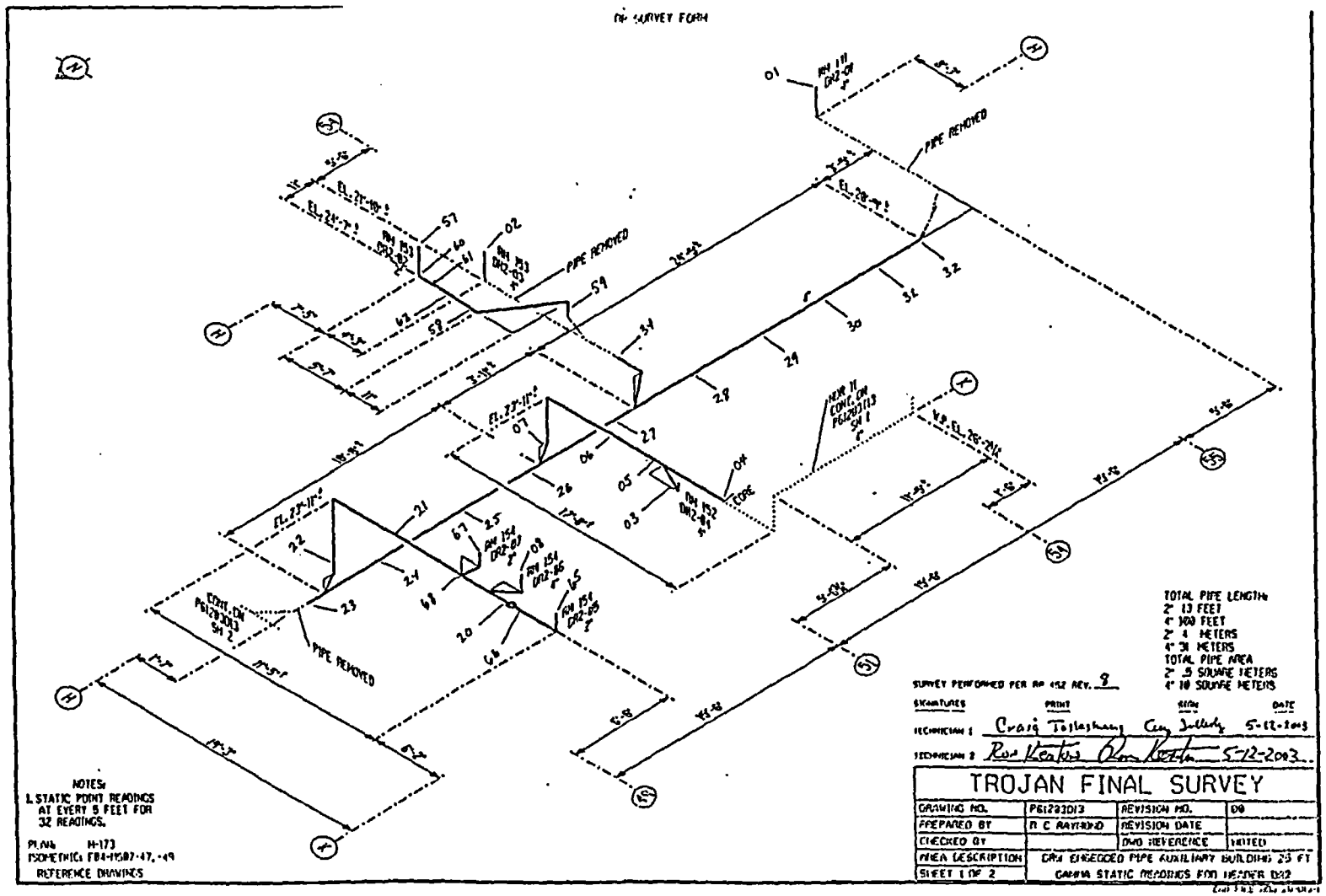
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified by both the scan and static measurement surveys represents small, localized areas of fixed radioactivity and has been determined to be ALARA. Retaining the elevated values as final survey data results in the range statistical quantity failing the default acceptance test criteria.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Static Measurement Locations Map

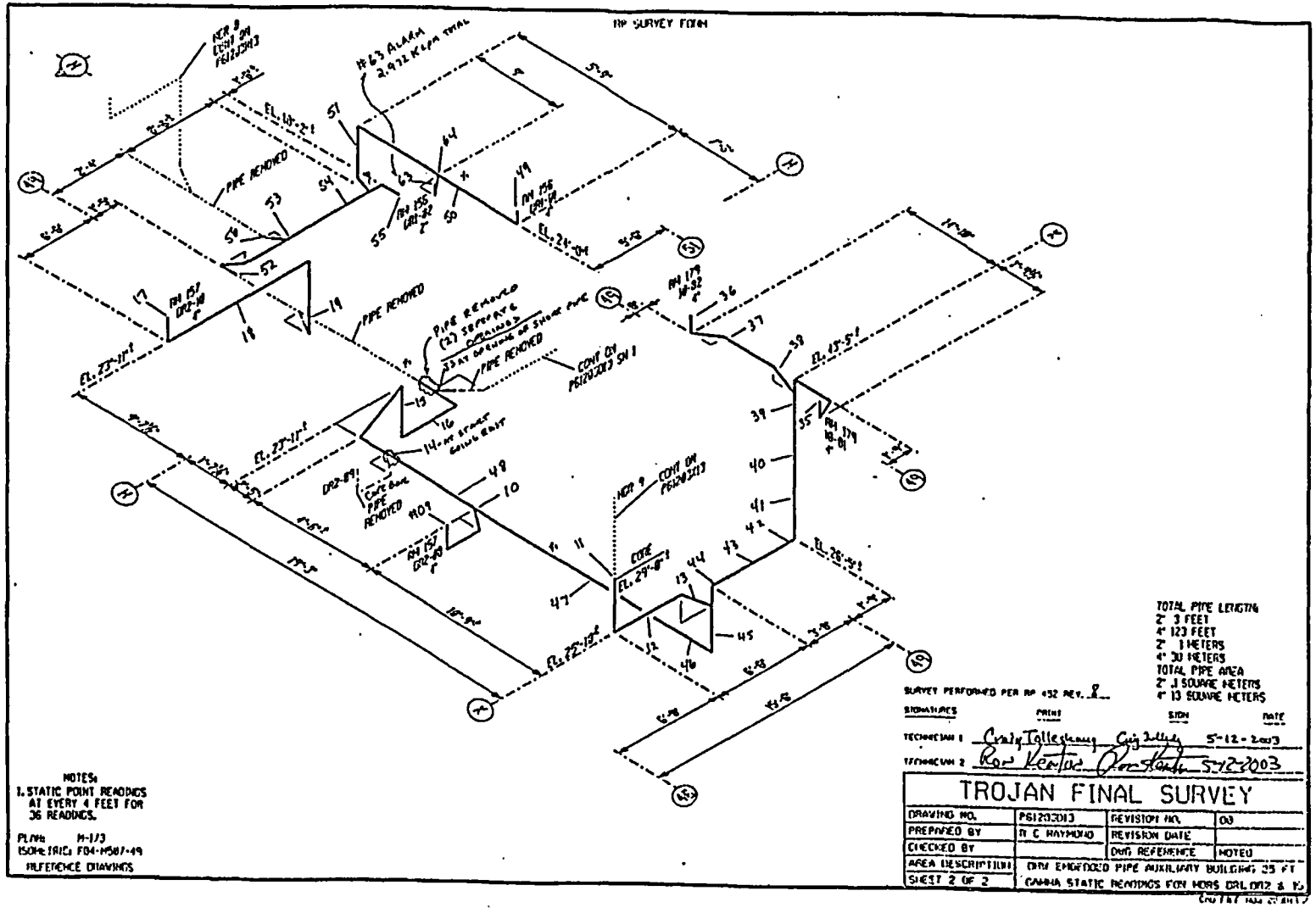


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	122	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-5.362e+003
Maximum Value :	2.412e+004
Range :	2.948e+004
Median :	2.981e+003
Std. Deviation :	4.610e+003
Mean :	2.456e+C03
95% UCL :	3.148e+C03

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-6.595e+002	000018	2.541e+003	000035	-4.351e+003
000002	4.476e+003	000019	-2.865e+003	000036	4.703e+002
000003	4.573e+003	000020	4.876e+003	000037	3.459e+002
000004	3.086e+003	000021	4.432e+003	000038	-1.595e+003
000005	2.141e+003	000022	3.146e+003	000039	-5.362e+003
000006	-2.232e+003	000023	3.557e+003	000040	-5.297e+002
000007	4.443e+003	000024	3.005e+003	000041	3.297e+002
000008	3.184e+003	000025	4.465e+003	000042	1.249e+003
000009	-1.211e+003	000026	4.211e+003	000043	2.486e+002
000010	3.995e+003	000027	3.832e+003	000044	-1.470e+003
000011	-1.968e+003	000028	-3.870e+003	000045	2.412e+004
000012	4.443e+003	000029	-5.351e+002	000046	3.146e+003
000013	4.330e+003	000030	-4.065e+003	000047	3.914e+003
000014	-2.476e+003	000031	-1.908e+003	000048	3.989e+003
000015	3.330e+003	000032	-4.459e+003	000049	4.822e+003
000016	3.654e+003	000033	4.324e+002	000050	5.746e+003
000017	4.481e+003	000034	-1.341e+003	000051	4.957e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Data Quality Values

Location	Value	Location	Value
000052	5.486e+003	000099	1.703e+003
000053	4.141e+003	000100	1.611e+004
000054	6.400e+003	000101	3.059e+003
000055	7.049e+003	000102	-7.081e+002
000056	4.027e+003	000103	-2.016e+003
000057	7.216e+003	000104	-1.892e+003
000058	1.669e+004	000105	-2.341e+003
000059	-1.189e+002	000106	-2.941e+003
000060	-1.676e+002	000107	-3.903e+003
000061	2.357e+003	000108	-2.984e+003
000062	1.881e+003	000109	-2.022e+003
000063	2.503e+003	000110	-4.741e+003
000064	3.222e+003	000111	-3.022e+003
000065	3.914e+003	000112	1.042e+004
000066	2.405e+003	000113	-1.649e+003
000067	-3.632e+003	000114	-6.919e+002
000068	2.962e+003	000115	3.038e+003
000069	3.222e+003	000116	2.589e+003
000070	4.643e+003	000117	2.822e+003
000071	2.519e+003	000118	2.919e+003
000072	3.162e+003	000119	-7.459e+002
000073	-1.476e+003	000120	6.535e+003
000074	-2.951e+003	000121	-1.600e+003
000075	-1.962e+003	000122	4.178e+003
000076	4.854e+003		
000077	5.589e+003		
000078	4.876e+003		
000079	5.703e+003		
000080	-4.162e+002		
000081	3.081e+003		
000082	3.324e+003		
000083	3.000e+003		
000084	5.789e+003		
000085	5.557e+003		
000086	5.773e+003		
000087	5.676e+003		
000088	5.724e+003		
000089	1.654e+003		
000090	2.805e+003		
000091	1.449e+004		
000092	1.416e+004		
000093	-3.735e+003		
000094	-1.405e+003		
000095	5.032e+003		
000096	2.124e+003		
000097	3.530e+003		
000098	1.372e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Measurement Data Statistical Evaluation

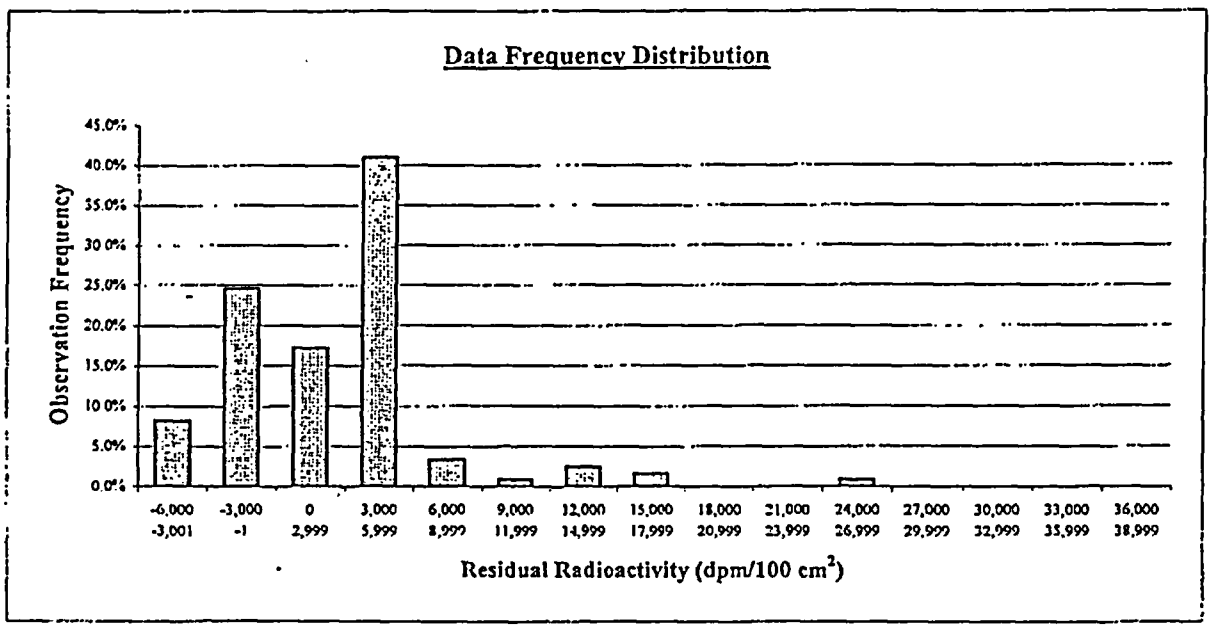
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	29,482	23,052	See comment below
Median	0.114	0.500	Pass
Mean	2,456	100,000	Pass
Std Dev	4,610	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	29,482
Median:	2,981
Mean:	2,456
Std Dev:	4,610
Minimum:	-5,362
Maximum:	24,120
DCGL:	100,000



Plot Parameters	
# of measurements:	122
# of intervals:	15
Interval increment:	3,000
Minimum:	-6,000
Maximum:	38,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-3,001	-6,000	10	8.2%
2	-1	-3,000	30	24.6%
3	2,999	0	21	17.2%
4	5,999	3,000	50	41.0%
5	8,999	6,000	4	3.3%
6	11,999	9,000	1	0.8%
7	14,999	12,000	3	2.5%
8	17,999	15,000	2	1.6%
9	20,999	18,000	0	0.0%
10	23,999	21,000	0	0.0%
11	26,999	24,000	1	0.8%
12	29,999	27,000	0	0.0%
13	32,999	30,000	0	0.0%
14	35,999	33,000	0	0.0%
15	38,999	36,000	0	0.0%
		Total:	122	100%

Comment:
Range failure is a test artifact due to mulitple negative values and one relatively high value, compared to the rest of the data set, resulting in a range value that exceeds 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-1,386
Maximum Value:	123,700
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: One scan measurement (location 056) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.1
Length of Survey Unit (m):	106
Survey Unit Area >DCGL (%):	0.1
EMC Value:	669,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

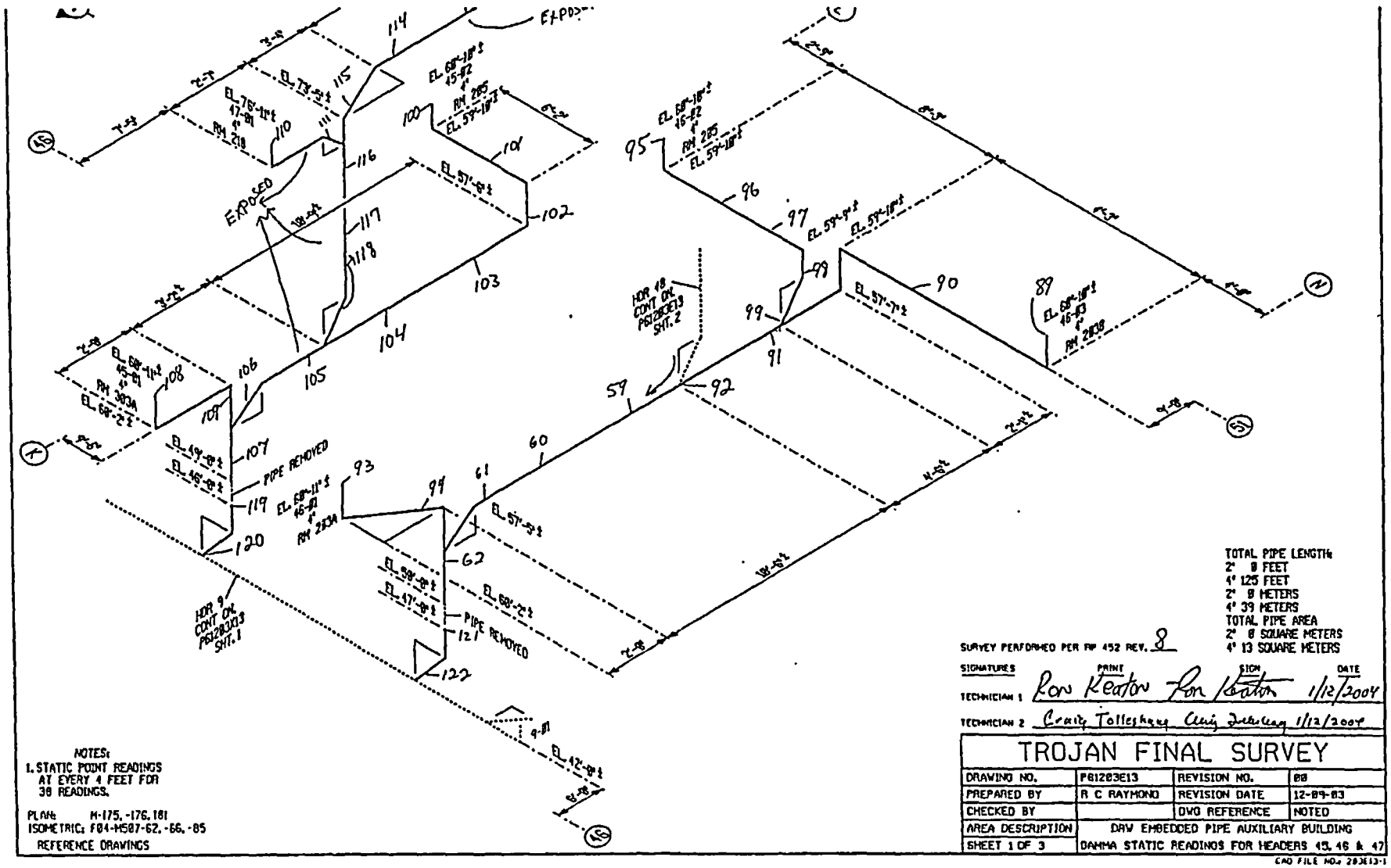
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

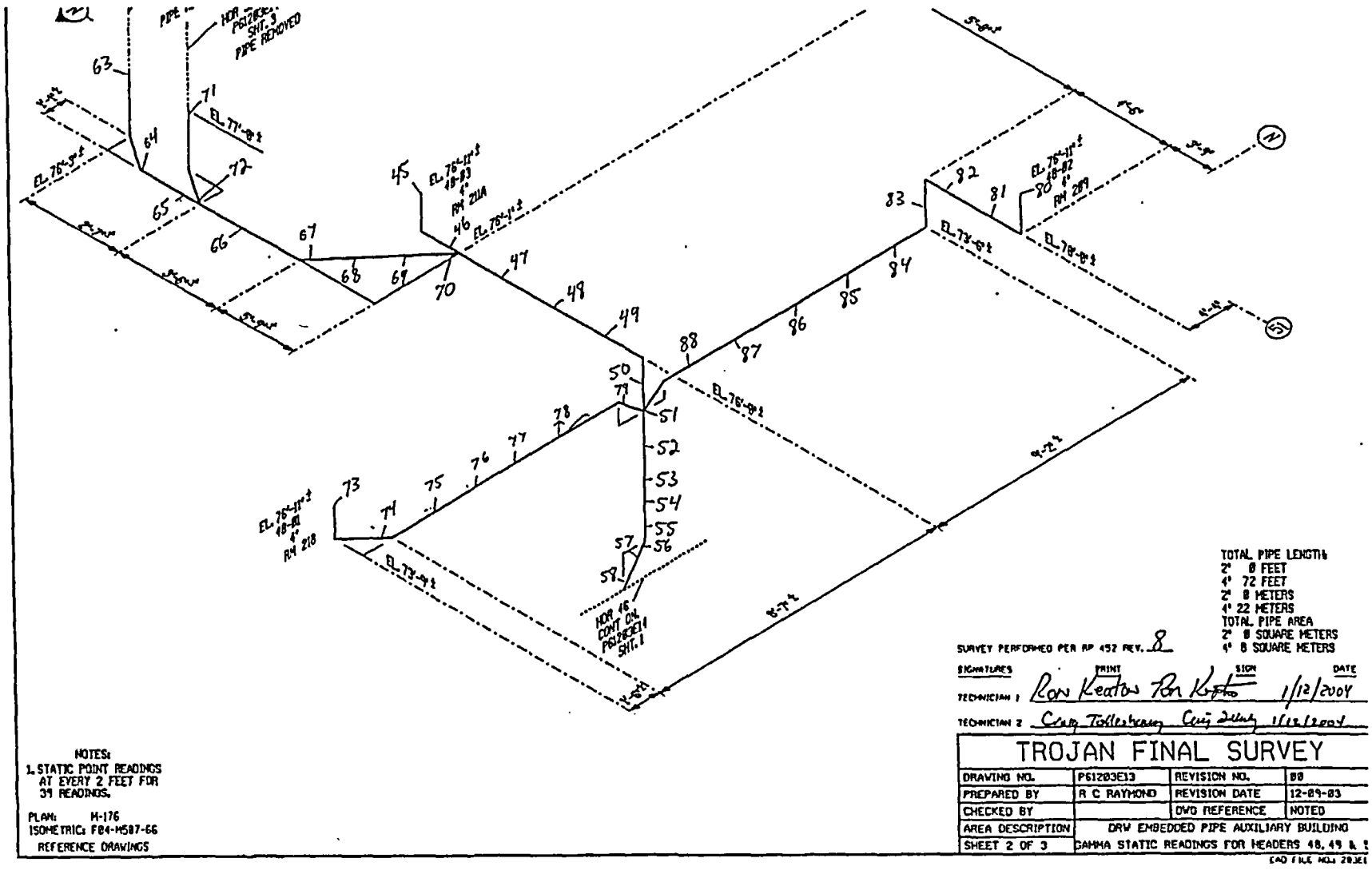
Survey Unit ID Code: P61203E

Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1

Size (m^2): 36

Static Measurement Locations Map

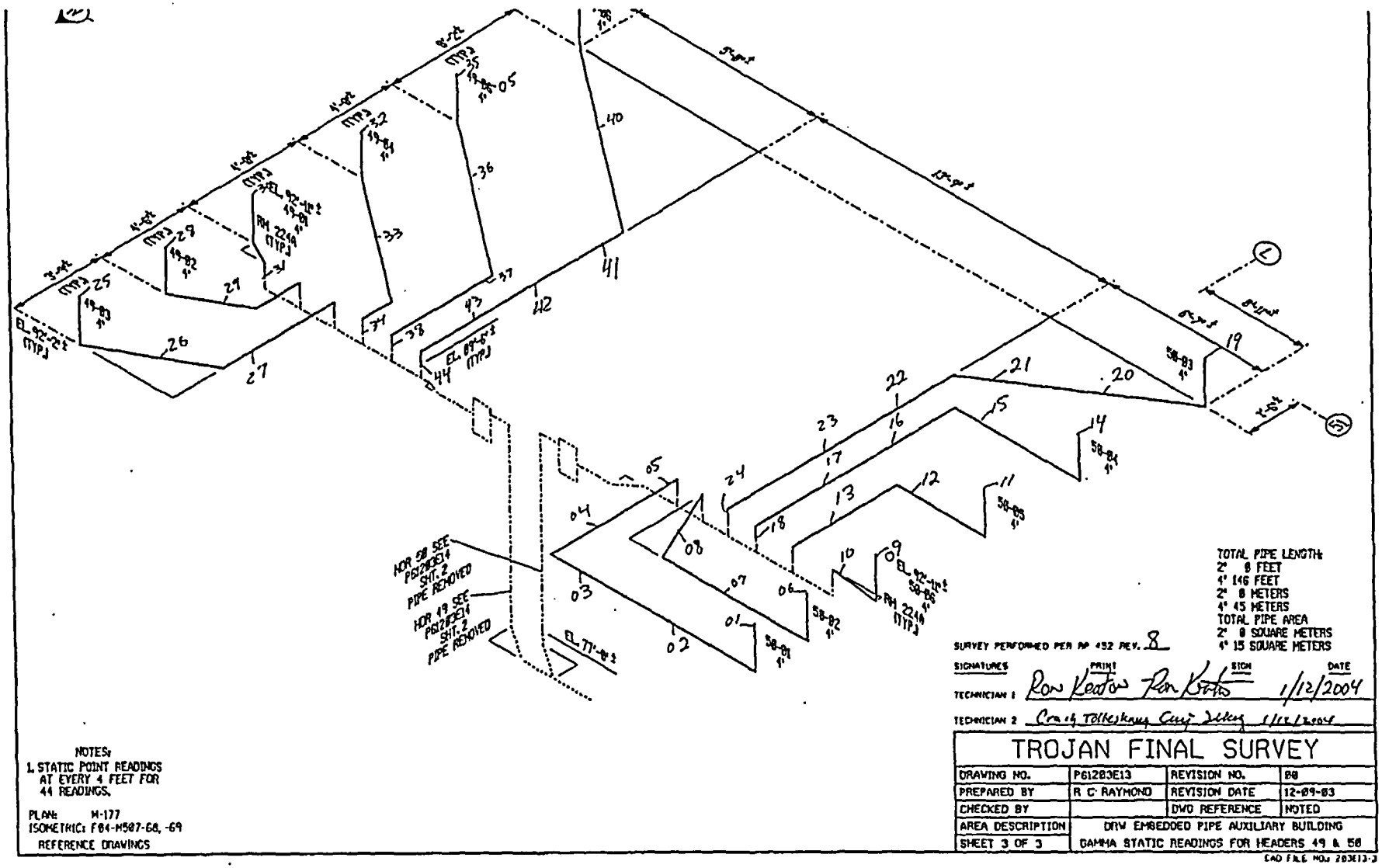


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203F
Survey Unit Name: AB/FB 45', 61', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 14

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	37	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	1.016e+003
Maximum Value	:	3.307e+004
Range	:	3.205e+004
Median	:	6.146e+003
Std. Deviation	:	7.379e+003
Mean	:	8.909e+003
95% UCL	:	1.096e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.096e+004	000018	6.146e+003	000036	6.103e+003
000002	7.600e+003	000019	9.827e+003	000037	5.659e+003
000003	1.439e+004	000020	1.519e+004	000038	1.843e+003
000004	1.006e+004	000021	1.425e+004		
000005	1.471e+004	000022	2.216e+003		
000006	1.603e+004	000024	2.492e+003		
000007	1.695e+004	000025	1.016e+003		
000008	3.262e+004	000026	5.333e+003		
000009	1.100e+004	000027	1.057e+004		
000010	3.859e+003	000028	2.476e+003		
000011	3.307e+004	000029	1.505e+004		
000012	3.443e+003	000030	2.130e+003		
000013	5.876e+003	000031	3.130e+003		
000014	6.308e+003	000032	5.459e+003		
000015	7.205e+003	000033	5.168e+003		
000016	3.541e+003	000034	5.189e+003		
000017	6.935e+003	000035	5.822e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203F
Survey Unit Name: AB/FB 45', 61', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 14

Measurement Data Statistical Evaluation

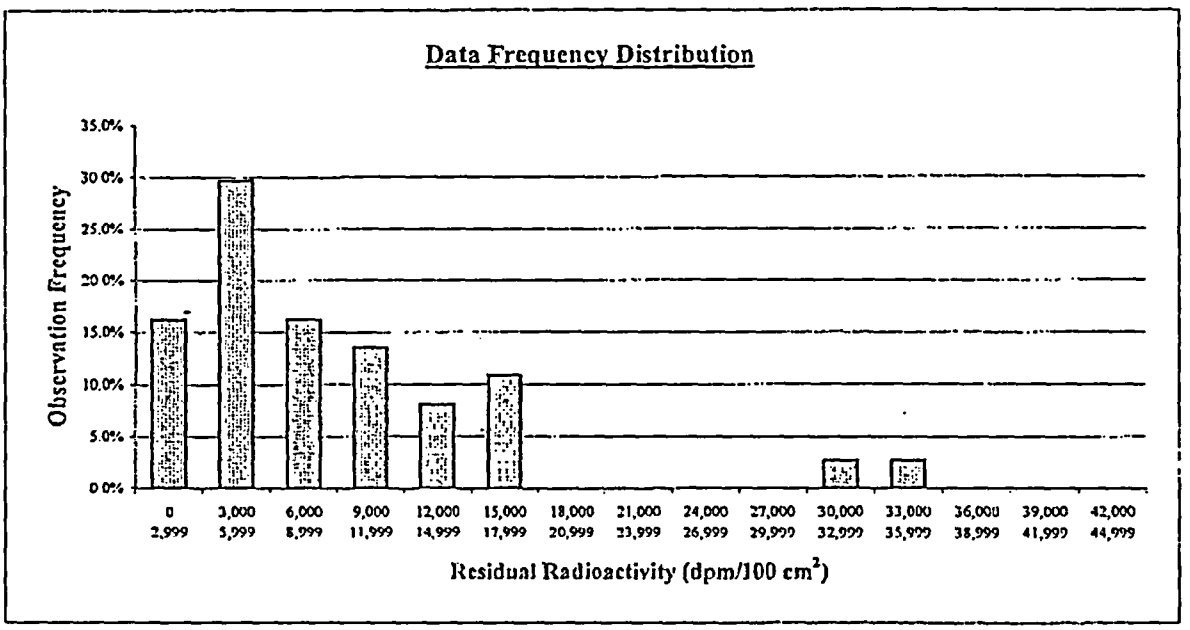
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	32,054	36,893	Pass
Median	0.374	0.500	Pass
Mean	8,909	100,000	Pass
Std Dev	7,379	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	32,054
Median:	6,146
Mean:	8,909
Std Dev:	7,379
Minimum:	1,016
Maximum:	33,070
DCGL:	100,000



Plot Parameters	
# of measurements:	37
# of intervals:	15
Interval increment:	3,000
Minimum:	0
Maximum:	44,999

Comment:
NONE

Interval	High End	Low End	Number of Observations	Observation Frequency
1	2,999	0	6	16.2%
2	5,999	3,000	11	29.7%
3	8,999	6,000	6	16.2%
4	11,999	9,000	5	13.5%
5	14,999	12,000	3	8.1%
6	17,999	15,000	4	10.8%
7	20,999	18,000	0	0.0%
8	23,999	21,000	0	0.0%
9	26,999	24,000	0	0.0%
10	29,999	27,000	0	0.0%
11	32,999	30,000	1	2.7%
12	35,999	33,000	1	2.7%
13	38,999	36,000	0	0.0%
14	41,999	39,000	0	0.0%
15	44,999	42,000	0	0.0%
		Total:	37	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203F
Survey Unit Name: AB/FB 45', 61', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 14

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	1,337
Maximum Value:	53,510
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

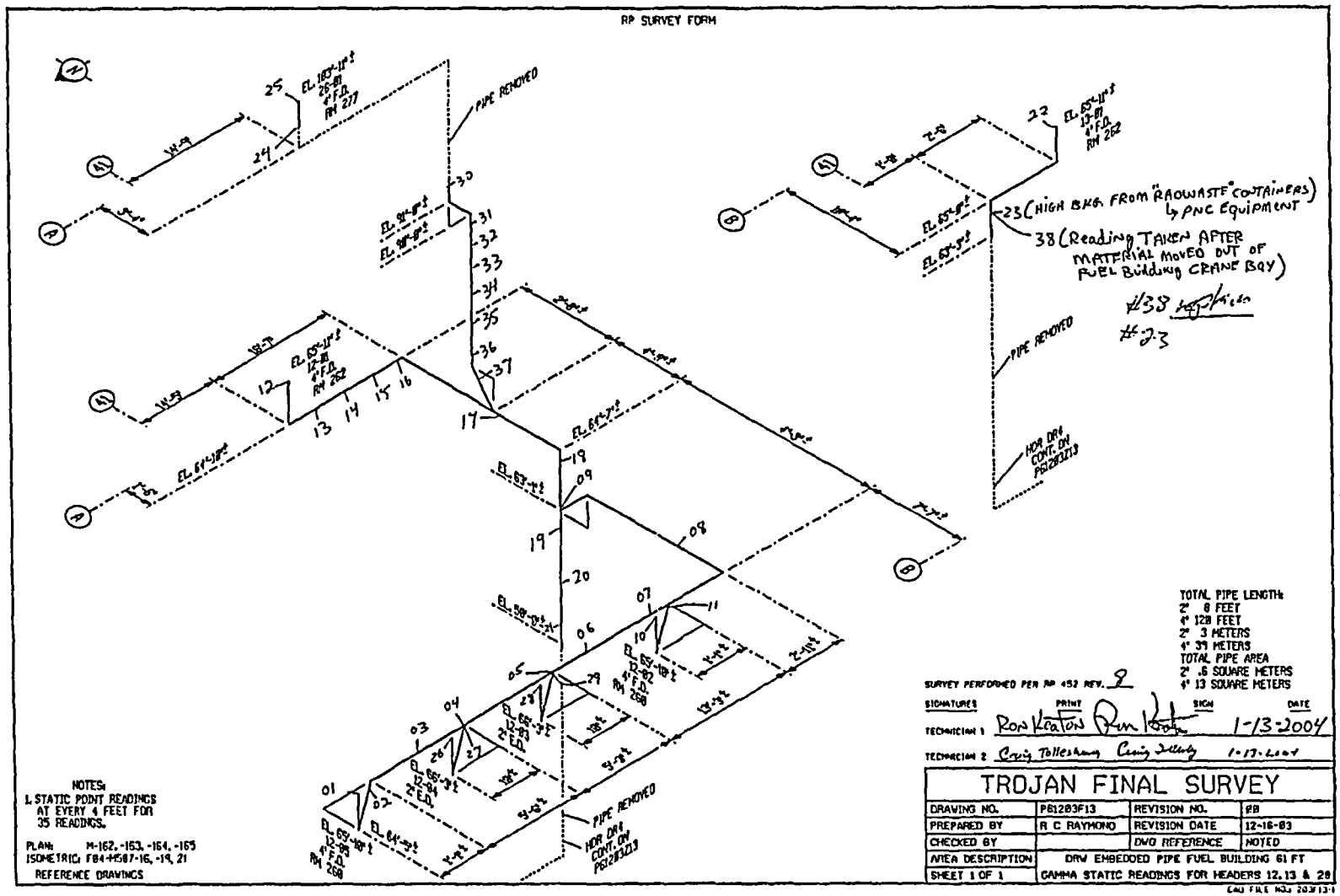
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203F
Survey Unit Name: AB/FB 45', 61', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 14

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	131	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.632e+003
Maximum Value	:	3.228e+004
Range	:	3.391e+004
Median	:	6.721e+003
Std. Deviation	:	4.768e+003
Mean	:	6.888e+003
95% UCL	:	7.578e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	4.461e+003	000018	7.691e+003	000035	3.228e+004
000002	1.127e+004	000019	7.618e+003	000036	4.495e+003
000003	8.250e+003	000020	7.020e+003	000037	5.672e+003
000004	8.289e+003	000021	7.123e+003	000038	7.265e+003
000005	7.574e+003	000022	8.240e+003	000039	8.848e+003
000006	8.642e+003	000023	1.112e+004	000040	1.397e+003
000007	8.176e+003	000024	6.623e+003	000041	6.377e+003
000008	8.402e+003	000025	1.519e+004	000042	7.941e+003
000009	8.471e+003	000026	1.048e+004	000043	6.613e+003
000010	7.583e+003	000027	1.010e+004	000044	5.711e+003
000011	9.127e+003	000028	3.088e+003	000045	2.353e+002
000012	6.755e+003	000029	6.162e+003	000046	1.873e+003
000013	7.809e+003	000030	5.495e+003	000047	1.784e+003
000014	6.123e+003	000031	2.902e+003	000048	2.961e+003
000015	1.060e+004	000032	1.100e+004	000049	1.606e+004
000016	8.015e+003	000033	1.367e+004	000050	4.446e+003
000017	7.711e+003	000034	1.095e+004	000051	6.721e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Data Quality Values

Location	Value	Location	Value
000052	1.463e+004	000099	3.474e+003
000053	5.039e+003	000100	8.000e+003
000054	6.289e+003	000101	4.474e+003
000055	7.338e+003	000102	9.316e+003
000056	8.765e+003	000103	3.158e+003
000057	6.172e+003	000104	3.895e+003
000058	4.819e+003	000105	6.316e+003
000059	7.216e+003	000107	4.842e+003
000060	4.740e+003	000108	4.947e+003
000061	5.789e+003	000109	1.684e+003
000062	5.505e+003	000110	4.947e+003
000063	6.363e+003	000111	1.079e+004
000064	7.127e+003	000112	4.737e+003
000065	-9.265e+002	000113	5.789e+003
000066	3.098e+003	000114	2.737e+004
000067	4.657e+003	000115	8.158e+003
000068	4.824e+003	000116	7.474e+003
000069	3.451e+003	000117	6.105e+003
000070	1.583e+003	000118	9.158e+003
000071	-1.118e+003	000119	4.105e+003
000072	3.711e+003	000120	8.842e+003
000073	3.716e+003	000121	3.947e+003
000074	3.814e+003	000122	1.047e+004
000075	2.299e+003	000123	3.895e+003
000076	-1.632e+003	000124	1.116e+004
000077	3.946e+003	000125	1.132e+004
000078	2.118e+003	000126	9.684e+003
000079	1.770e+003	000127	1.032e+004
000080	2.245e+003	000128	1.168e+004
000081	-1.539e+003	000129	8.316e+003
000082	1.814e+003	000130	8.895e+003
000083	1.181e+003	000131	1.068e+004
000084	-1.176e+003	000132	9.526e+003
000085	1.245e+003		
000086	-8.431e+002		
000087	1.520e+003		
000088	6.838e+003		
000089	9.324e+003		
000090	2.014e+004		
000091	1.379e+004		
000092	7.053e+003		
000093	1.100e+004		
000094	1.384e+004		
000095	8.632e+003		
000096	9.368e+003		
000097	7.684e+003		
000098	5.211e+003		

location #106 not used. KR 9/17/04

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Measurement Data Statistical Evaluation

Statistical Comparisons

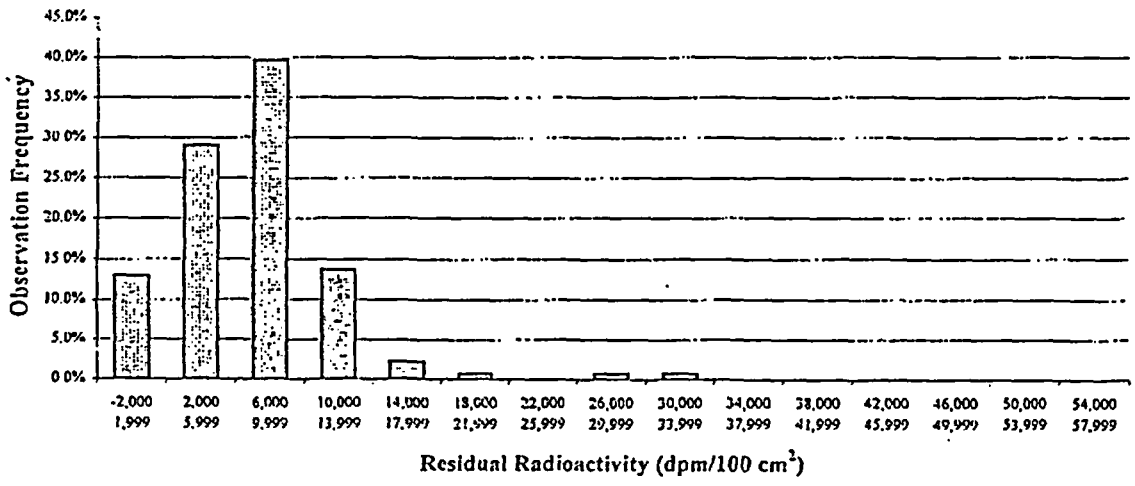
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	33,912	23,839	See comment below
Median	0.035	0.500	Pass
Mean	6,888	100,000	Pass
Std Dev	4,768	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	33,912
Median:	6,721
Mean:	6,888
Std Dev:	4,768
Minimum:	-1,632
Maximum:	32,280
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	131
# of intervals:	15
Interval increment:	4,000
Minimum:	-2,000
Maximum:	57,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	1,999	-2,000	17	13.0%
2	5,999	2,000	38	29.0%
3	9,999	6,000	52	39.7%
4	13,999	10,000	18	13.7%
5	17,999	14,000	3	2.3%
6	21,999	18,000	1	0.8%
7	25,999	22,000	0	0.0%
8	29,999	26,000	1	0.8%
9	33,999	30,000	1	0.8%
10	37,999	34,000	0	0.0%
11	41,999	38,000	0	0.0%
12	45,999	42,000	0	0.0%
13	49,999	46,000	0	0.0%
14	53,999	50,000	0	0.0%
15	57,999	54,000	0	0.0%
		Total:	131	100%

Comment:
Range failure is a test artifact due to multiple negative values and two relatively large values, resulting in a large range that exceeds the test criterion of 5 times the standard deviation. All measurement values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	2,452
Maximum Value:	48,150
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

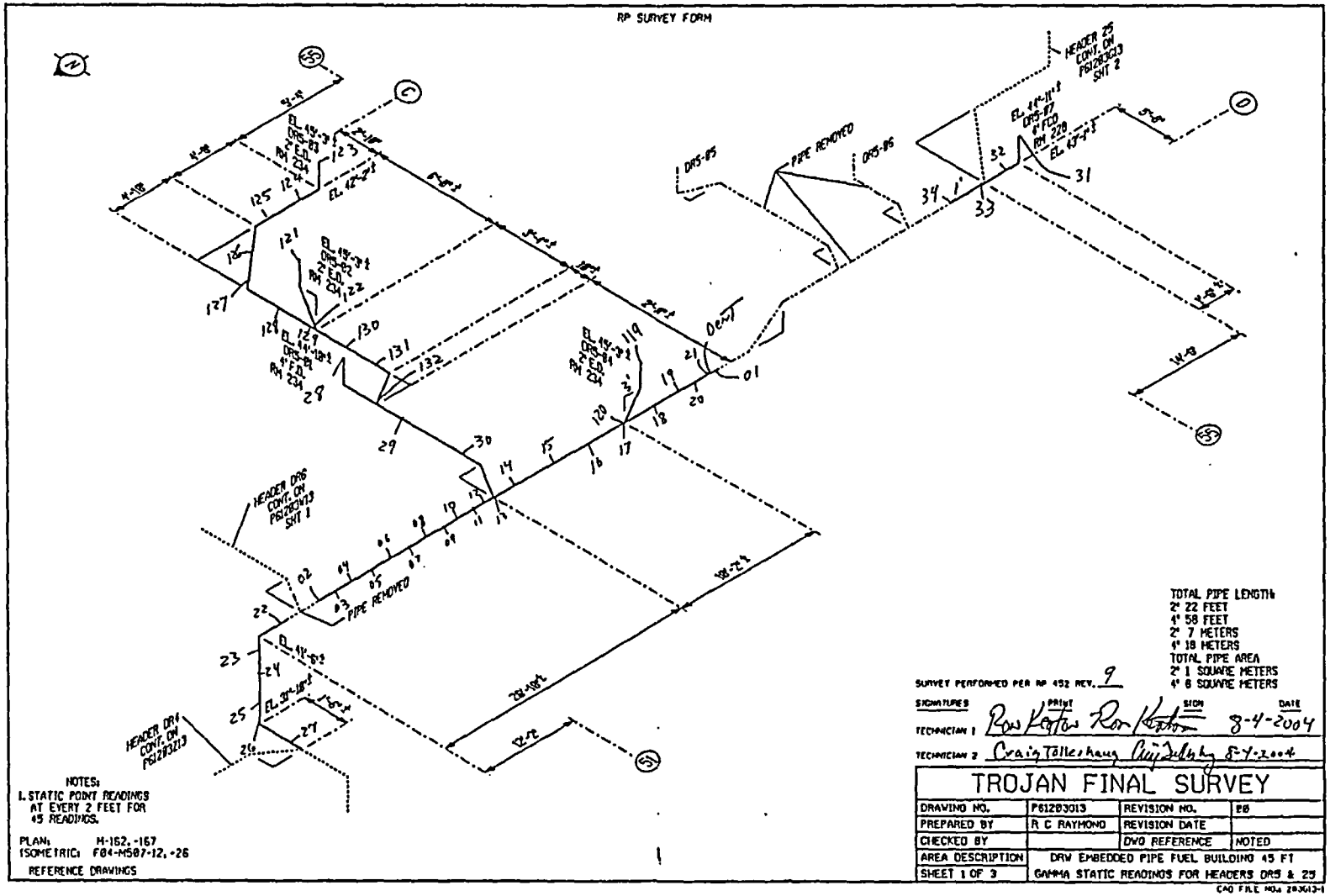
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Static Measurement Locations Map

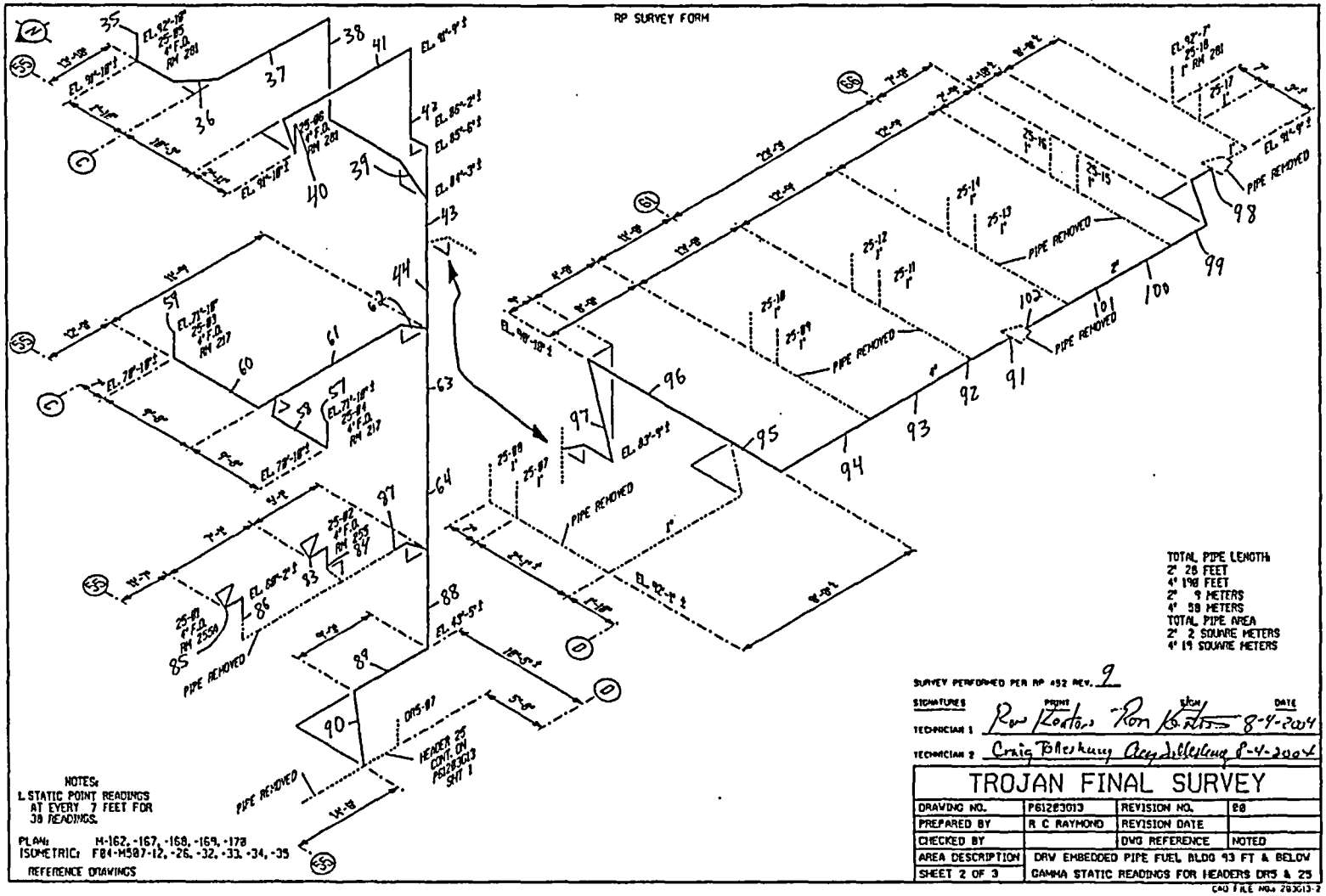


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Static Measurement Locations Map

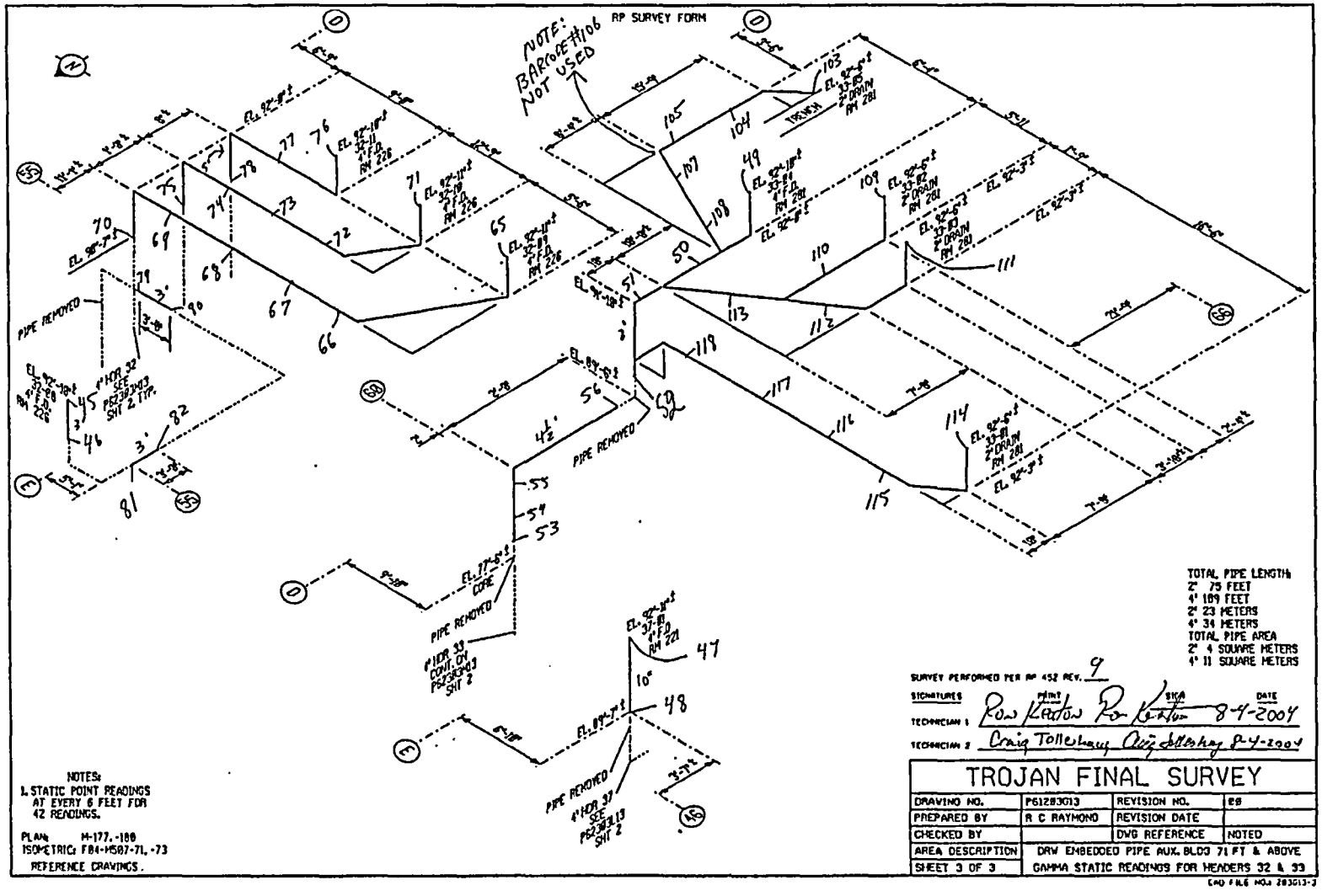


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	202	DPM/100 CM²	1.000e+005	2.010e+002	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-6.707e+003
Maximum Value	:	1.076e+005
Range	:	1.143e+005
Median	:	3.836e+003
Std. Deviation	:	1.080e+004
Mean	:	5.567e+003
95% UCL	:	6.824e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	4.515e+003	000018	9.303e+003	000035	1.889e+003
000002	6.187e+003	000019	4.985e+003	000036	2.217e+003
000003	1.109e+004	000020	1.205e+004	000037	3.217e+003
000004	1.016e+004	000021	5.843e+003	000038	6.192e+003
000005	2.257e+004	000022	5.439e+003	000039	6.328e+003
000006	1.534e+004	000023	7.434e+003	000040	9.490e+003
000007	6.268e+003	000024	2.525e+003	000041	1.191e+004
000008	4.884e+003	000025	4.707e+003	000042	1.827e+004
000009	2.187e+003	000026	9.389e+003	000043	1.361e+004
000010	3.778e+003	000027	5.879e+003	000044	1.583e+004
000011	1.714e+004	000028	6.485e+003	000045	6.253e+003
000012	6.035e+003	000029	5.091e+003	000046	5.859e+003
000013	4.818e+003	000030	8.141e+003	000047	5.566e+003
000014	5.116e+003	000031	8.525e+003	000048	3.813e+003
000015	4.465e+003	000032	3.081e+003	000049	6.157e+003
000016	6.010e+002	000033	6.672e+003	000050	1.626e+004
000017	7.742e+003	000034	5.985e+003	000051	7.652e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Data Quality Values

Location	Value	Location	Value	Location	Value
000052	5.232e+003	000099	-8.889e+002	000146	-4.146e+003
000053	1.076e+005	000100	-1.662e+003	000147	2.424e+003
000054	2.904e+003	000101	3.126e+003	000148	1.298e+003
000055	6.611e+003	000102	3.535e+003	000149	2.010e+003
000056	7.066e+003	000103	-1.975e+003	000150	-2.692e+003
000057	5.247e+003	000104	-2.778e+003	000151	9.091e+002
000058	6.778e+003	000105	2.944e+003	000152	9.091e+002
000059	6.818e+003	000106	2.323e+003	000153	3.071e+003
000060	9.990e+003	000107	-7.424e+002	000154	2.293e+003
000061	7.944e+003	000108	-2.520e+003	000155	2.162e+003
000062	8.662e+003	000109	3.338e+003	000156	-1.187e+003
000063	1.307e+004	000110	2.975e+003	000157	2.848e+003
000064	1.929e+004	000111	-1.475e+003	000158	4.222e+003
000065	5.258e+003	000112	-2.535e+003	000159	4.167e+003
000066	8.035e+003	000113	3.152e+003	000160	-1.747e+003
000067	4.833e+003	000114	3.414e+003	000161	-5.505e+002
000068	3.338e+003	000115	-2.253e+003	000162	1.409e+003
000069	4.212e+003	000116	-3.475e+003	000163	3.232e+002
000070	3.591e+003	000117	3.253e+003	000164	1.803e+003
000071	4.035e+003	000118	3.621e+003	000165	2.924e+003
000072	4.308e+003	000119	-5.606e+003	000166	2.646e+003
000073	-1.581e+003	000120	2.212e+003	000167	4.081e+003
000074	4.242e+003	000121	9.899e+002	000168	4.101e+003
000075	4.066e+003	000122	-6.707e+003	000169	1.525e+003
000076	4.237e+003	000123	3.535e+001	000170	3.414e+003
000077	4.556e+003	000124	-1.909e+003	000171	2.672e+003
000078	3.419e+003	000125	1.404e+003	000172	-3.621e+003
000079	2.753e+003	000126	-3.172e+003	000173	2.571e+003
000080	4.763e+003	000127	2.475e+002	000174	4.008e+004
000081	5.323e+003	000128	-1.354e+003	000175	1.648e+004
000082	2.177e+003	000129	2.576e+002	000176	3.859e+003
000083	5.444e+003	000130	-1.162e+003	000177	4.303e+003
000084	4.843e+003	000131	-3.535e+003	000178	5.121e+003
000085	4.470e+003	000132	2.348e+003	000179	5.061e+003
000086	3.727e+003	000133	2.101e+003	000180	3.894e+003
000087	3.475e+003	000134	2.197e+003	000181	6.045e+003
000088	3.727e+003	000135	-3.051e+003	000182	5.859e+003
000089	3.086e+003	000136	-4.106e+003	000183	6.859e+003
000090	1.485e+003	000137	2.510e+003	000184	5.985e+003
000091	4.646e+003	000138	2.737e+003	000185	8.017e+004
000092	3.131e+003	000139	2.611e+003	000186	1.463e+004
000093	4.101e+003	000140	-3.227e+003	000187	7.708e+003
000094	2.722e+003	000141	-2.061e+003	000188	2.383e+004
000095	4.753e+003	000142	3.162e+003	000189	5.417e+002
000096	-2.742e+003	000143	2.646e+003	000190	6.708e+003
000097	3.162e+003	000144	2.116e+003	000191	-3.250e+003
000098	3.798e+003	000145	-3.020e+003	000192	6.917e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Data Quality Values

Location	Value
000193	2.083e+003
000194	6.125e+003
000195	1.417e+003
000196	7.375e+003
000197	3.245e+004
000198	1.353e+004
000199	1.003e+004
000200	2.358e+004
000201	1.944e+004
000202	1.018e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Measurement Data Statistical Evaluation

Statistical Comparisons

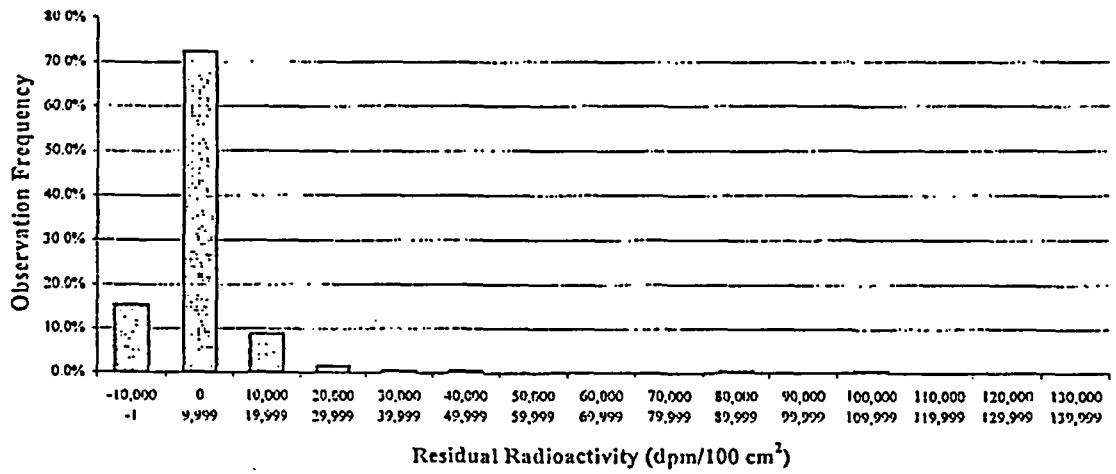
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	114,307	114,487	Pass
Median	0.160	0.500	Pass
Mean	5,567	100,000	Pass
Std Dev	10,801	20,000	Pass

Passed required Sign statistical test
S+ = 201 & 201 is greater than 113, the test value

Statistical Quantities

Range:	114,307
Median:	3,836
Mean:	5,567
Std Dev:	10,801
Minimum:	-6,707
Maximum:	107,600
DCGL:	100,000

Data Frequency Distribution



Plot Parameters

# of measurements:	202
# of intervals:	15
Interval increment:	10,000
Minimum:	-10,000
Maximum:	139,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-10,000	31	15.3%
2	9,999	0	146	72.3%
3	19,999	10,000	18	8.9%
4	29,999	20,000	3	1.5%
5	39,999	30,000	1	0.5%
6	49,999	40,000	1	0.5%
7	59,999	50,000	0	0.0%
8	69,999	60,000	0	0.0%
9	79,999	70,000	0	0.0%
10	89,999	80,000	1	0.5%
11	99,999	90,000	0	0.0%
12	109,999	100,000	1	0.5%
13	119,999	110,000	0	0.0%
14	129,999	120,000	0	0.0%
15	139,999	130,000	0	0.0%
		Total:	202	100%

Comment:
One measurement value just exceeds DCGL; 31 values are less than zero; 146 values are between 0 & 10,000 dpm. This distribution results in a large range, but a relatively small standard deviation. Change in the range test criterion in SDMS, from 5.0 to 10.6 times the standard deviation, in order to successfully perform final data processing through the sign statistical test.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-639
Maximum Value:	166,100
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 045) and one corresponding static measurement (location 53) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.5
Length of Survey Unit (m):	201
Survey Unit Area >DCGL (%):	0.2
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison; changed statistical quantities test value for range to 10.6 for final survey data processing.

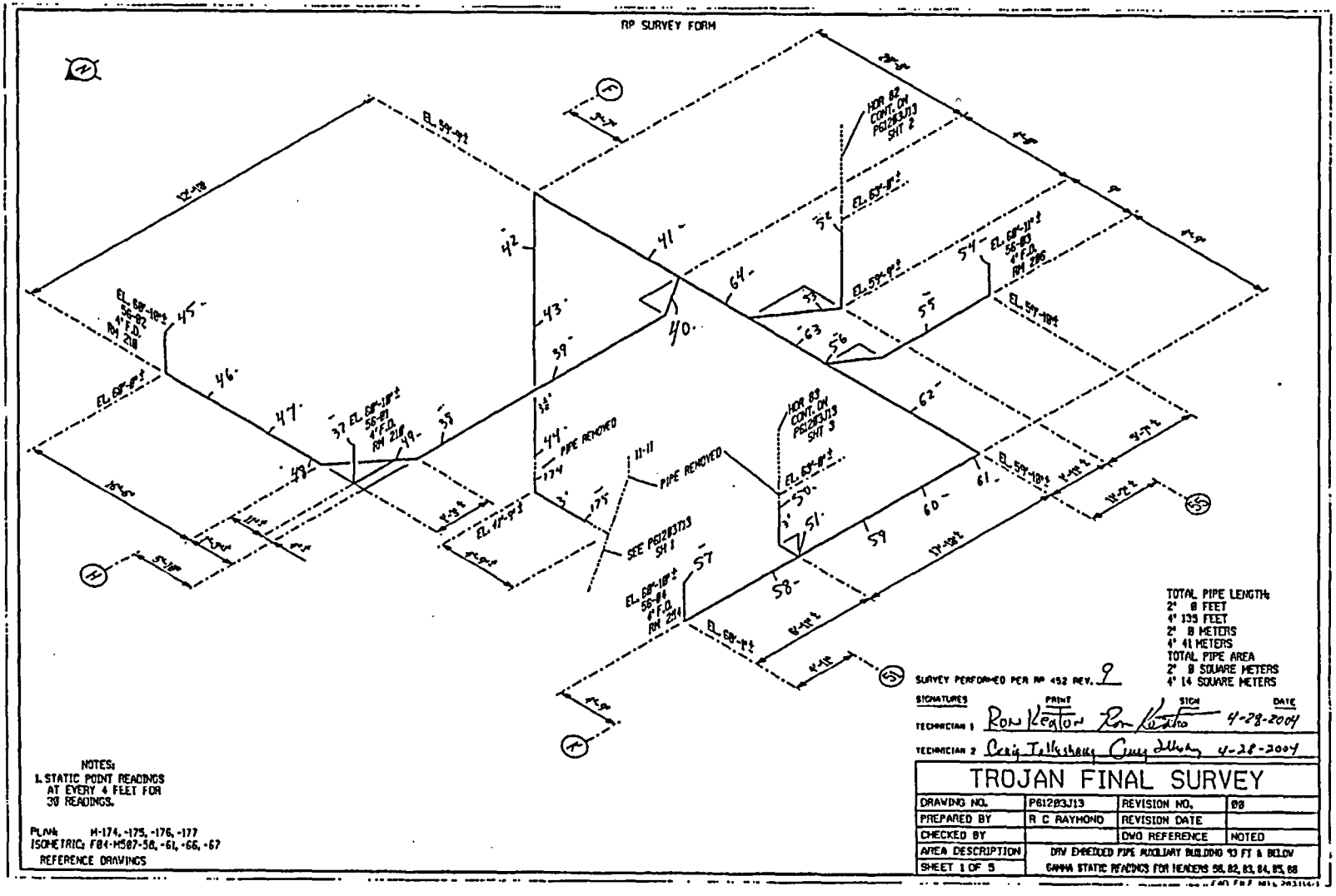
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified by both the scan and static measurement surveys represents a small, localized area of fixed radioactivity and has been determined to be ALARA. Retaining the elevated value as final survey data results in the range statistical quantity failing the default acceptance test criteria.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Static Measurement Locations Map

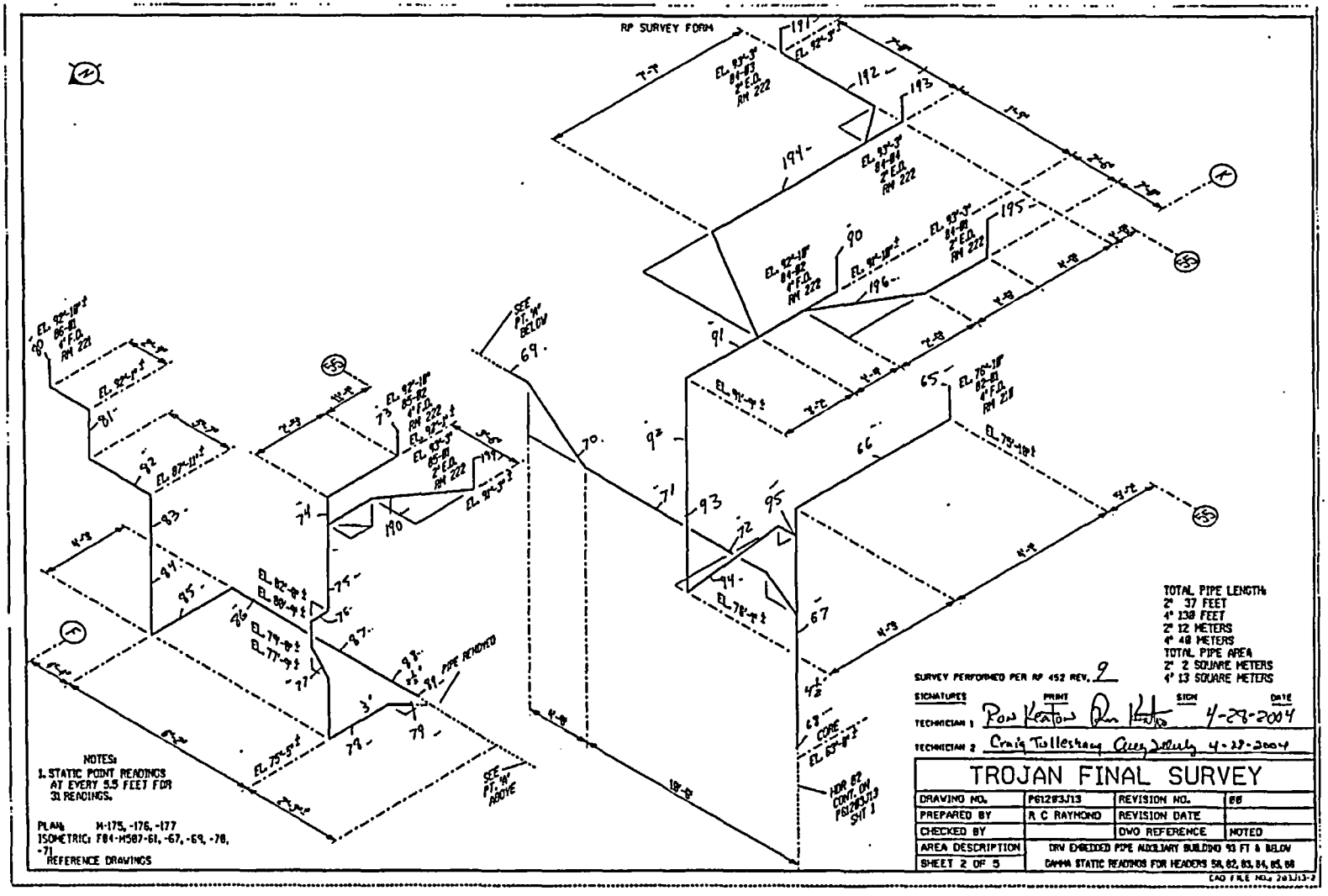


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Static Measurement Locations Map

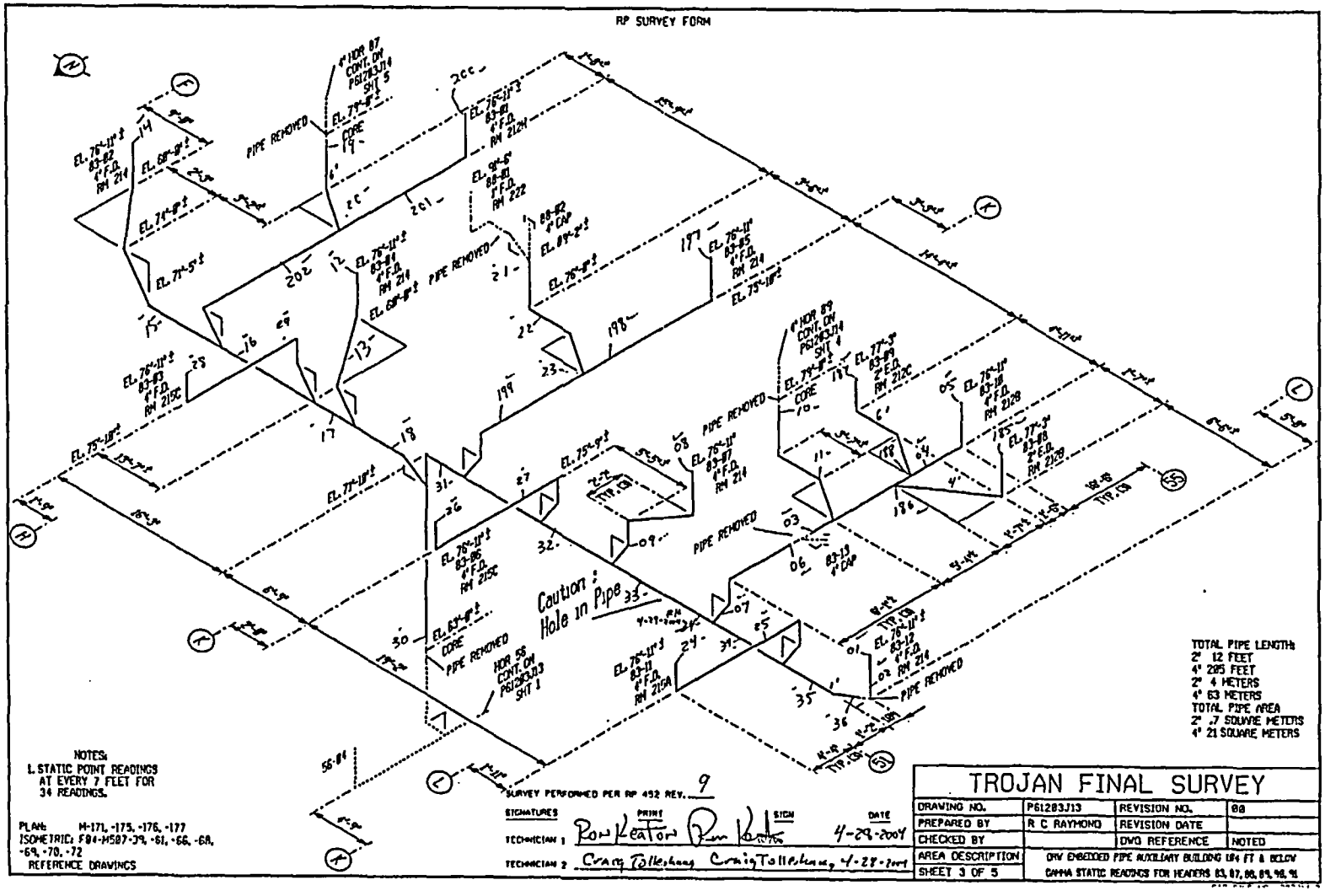


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Static Measurement Locations Map

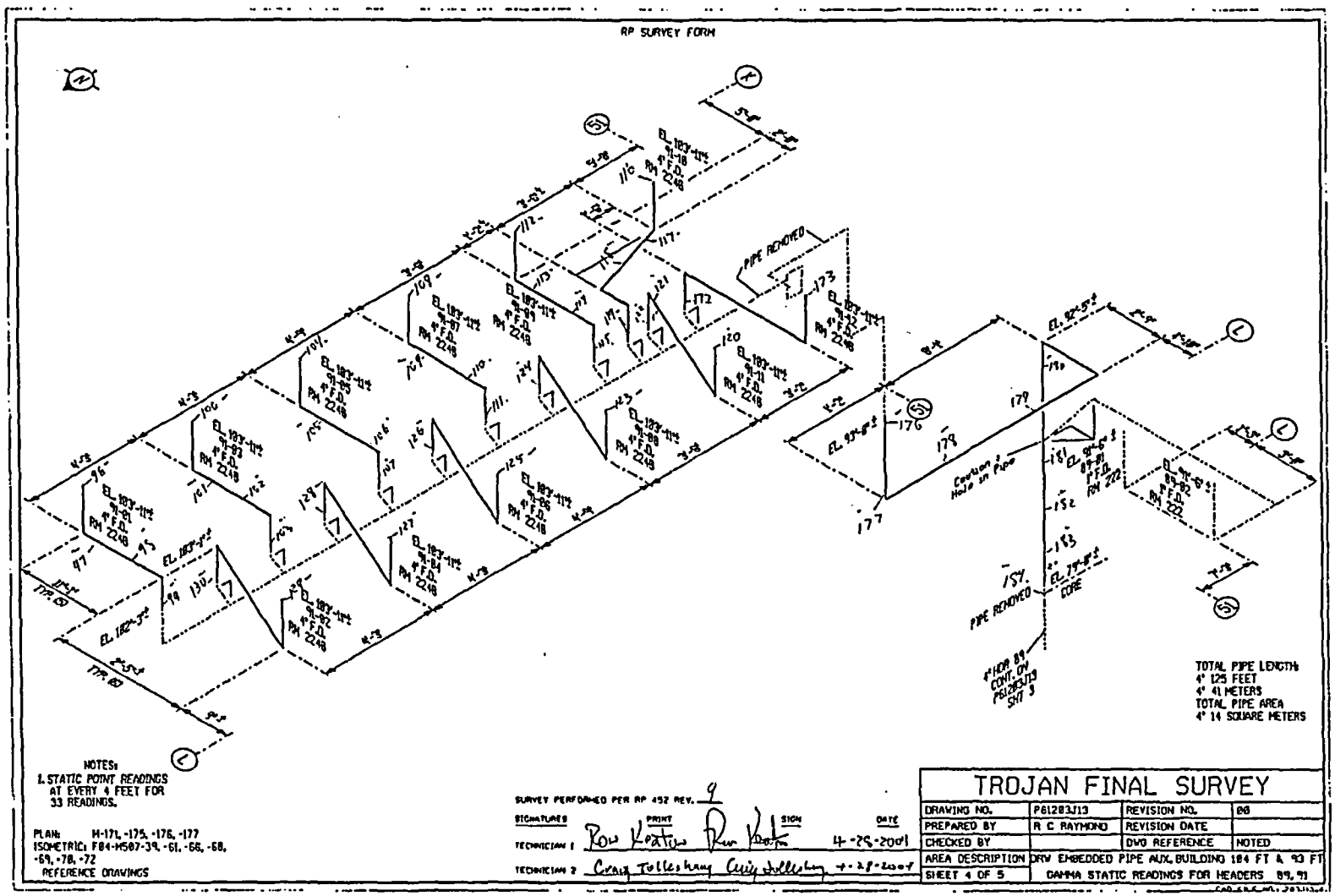


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Static Measurement Locations Map

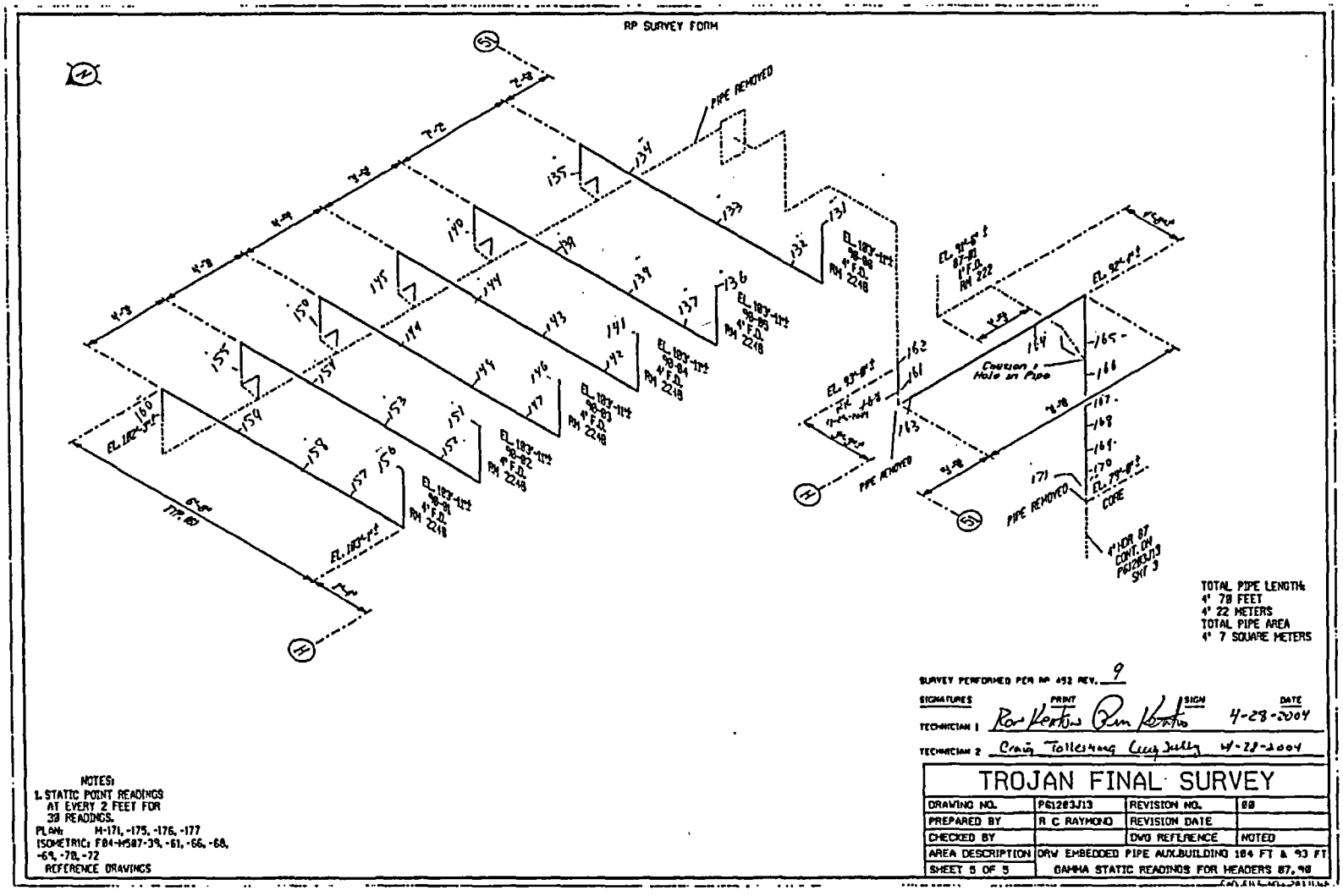


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203K
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 18

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	32	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-1.905e+002
Maximum Value :	8.132e+004
Range :	8.151e+004
Median :	5.478e+003
Std. Deviation :	1.363e+004
Mean :	8.204e+003
95% UCL :	1.229e+004

Measurement Values

Location	Value	Location	Value
000001	-1.905e+002	000018	8.941e+003
000002	5.571e+003	000019	6.438e+003
000003	2.449e+003	000020	4.081e+003
000004	6.259e+003	000021	5.362e+003
000005	5.081e+003	000022	8.314e+003
000006	3.908e+003	000023	4.919e+003
000007	2.314e+003	000024	4.508e+003
000008	1.757e+003	000025	7.227e+003
000009	2.454e+003	000026	1.121e+004
000010	4.384e+003	000027	1.222e+004
000011	3.222e+003	000028	8.876e+003
000012	5.384e+003	000029	7.822e+003
000013	5.330e+003	000030	8.132e+004
000014	6.584e+003	000031	6.876e+003
000015	4.930e+003	000032	7.249e+003
000016	1.114e+004		
000017	6.600e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203K
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 18

Measurement Data Statistical Evaluation

Statistical Comparisons

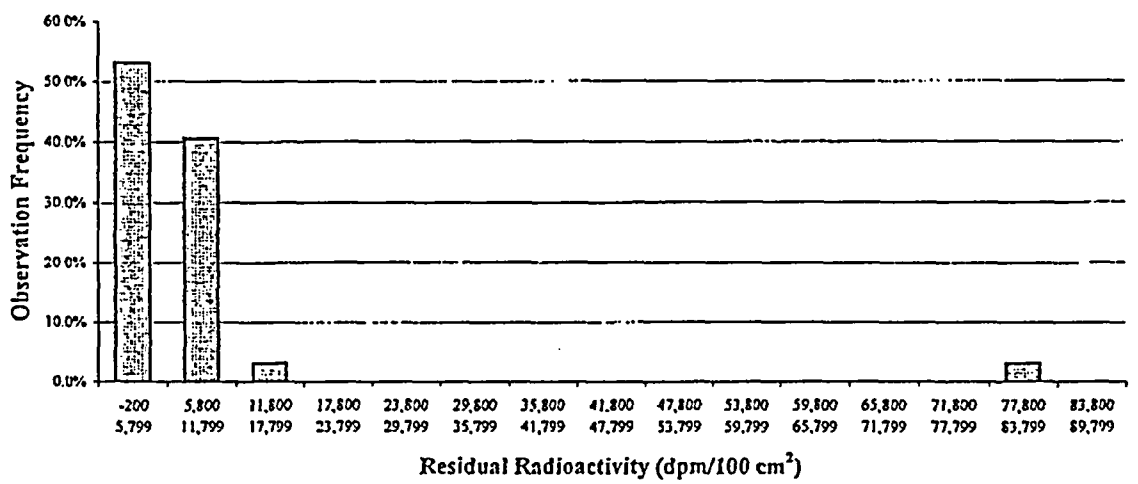
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	81,511	113,143	Pass
Median	0.200	0.500	Pass
Mean	8,204	100,000	Pass
Std Dev	13,632	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	81,511
Median:	5,478
Mean:	8,204
Std Dev:	13,632
Minimum:	-191
Maximum:	81,320
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	32
# of intervals:	15
Interval increment:	6,000
Minimum:	-200
Maximum:	89,799

Interval	High End	Low End	Number of Observations	Observation Frequency
1	5,799	-200	17	53.1%
2	11,799	5,800	13	40.6%
3	17,799	11,800	1	3.1%
4	23,799	17,800	0	0.0%
5	29,799	23,800	0	0.0%
6	35,799	29,800	0	0.0%
7	41,799	35,800	0	0.0%
8	47,799	41,800	0	0.0%
9	53,799	47,800	0	0.0%
10	59,799	53,800	0	0.0%
11	65,799	59,800	0	0.0%
12	71,799	65,800	0	0.0%
13	77,799	71,800	0	0.0%
14	83,799	77,800	1	3.1%
15	89,799	83,800	0	0.0%
		Total:	32	100%

Comment:
A single elevated measurement value results in a right skewed distribution for the data set. The measurement value for location 30 is similar to the scan measurement for this area. Although it looks like an outlier, the value is considered valid and is accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203K
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 18

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	3,912
Maximum Value:	87,490
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

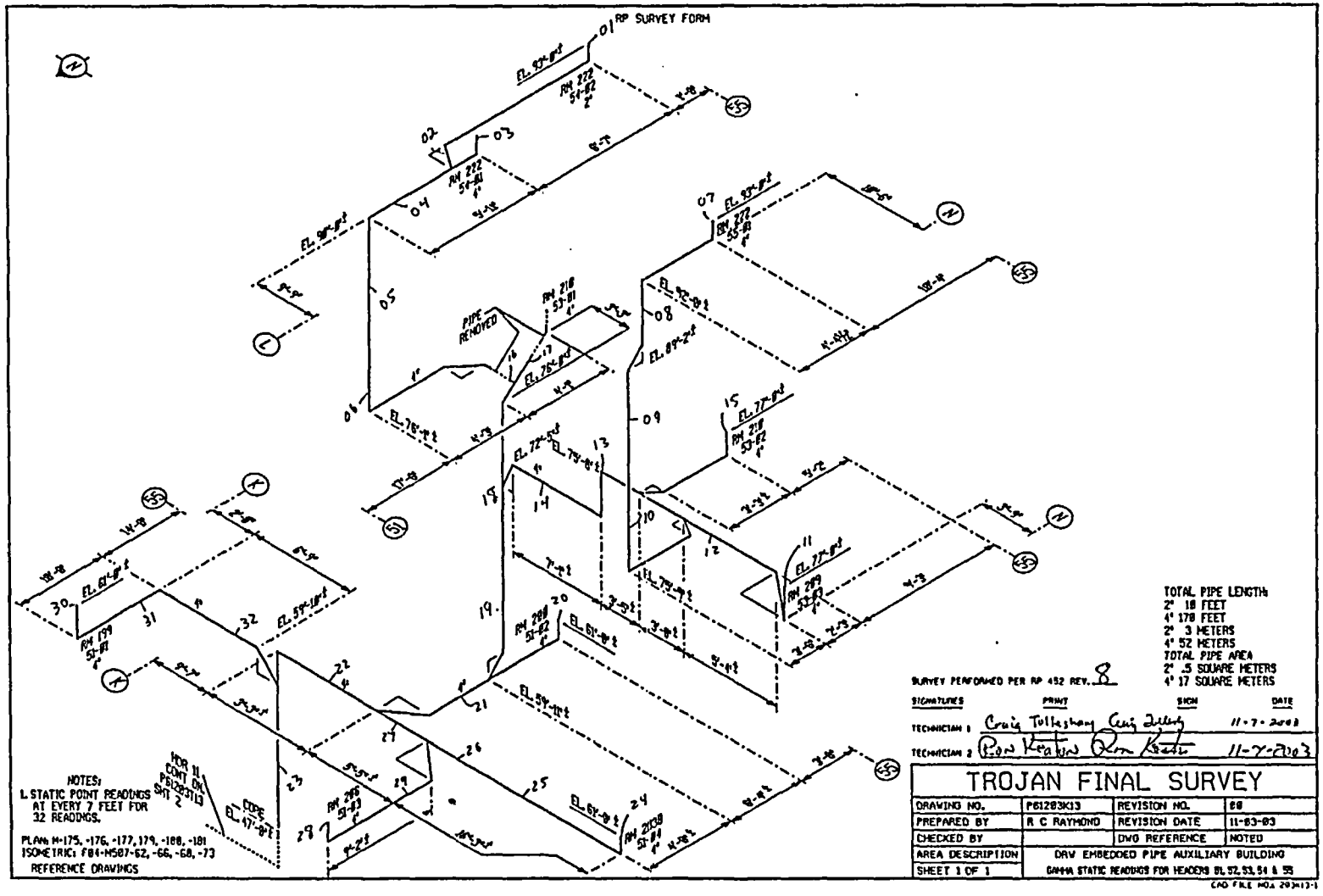
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203K
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 18

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	75	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-3.939e+003
Maximum Value	:	4.027e+004
Range	:	4.421e+004
Median	:	4.843e+003
Std. Deviation	:	5.662e+003
Mean	:	5.403e+003
95% UCL	:	6.493e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	9.056e+003	000018	1.869e+003	000035	5.833e+003
000002	5.333e+003	000019	3.621e+003	000036	-3.591e+003
000003	7.025e+003	000020	3.409e+003	000037	-3.939e+003
000004	4.576e+003	000021	2.081e+003	000038	5.379e+003
000005	5.621e+003	000022	2.076e+003	000039	5.343e+003
000006	7.697e+003	000023	1.288e+003	000040	5.429e+003
000007	9.111e+003	000024	6.606e+003	000041	6.798e+003
000008	7.773e+003	000025	1.175e+004	000042	1.727e+003
000009	4.027e+004	000026	-2.212e+003	000043	2.455e+003
000010	1.881e+004	000027	5.177e+003	000044	4.263e+003
000011	-2.061e+003	000028	2.601e+003	000045	3.848e+003
000012	4.202e+003	000029	6.631e+003	000046	1.939e+003
000013	6.131e+003	000030	6.313e+003	000047	4.576e+003
000014	5.808e+003	000031	6.803e+003	000048	1.014e+004
000015	5.783e+003	000032	6.414e+003	000049	4.217e+003
000016	4.874e+003	000033	7.111e+003	000050	4.828e+003
000017	1.763e+003	000034	3.823e+003	000051	4.359e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Data Quality Values

Location	Value
000052	8.227e+003
000053	5.404e+003
000054	5.616e+003
000055	5.449e+003
000056	4.364e+003
000057	0.000e+000
000058	1.676e+003
000059	5.221e+003
000060	1.242e+004
000061	4.843e+003
000062	1.260e+004
000063	2.069e+003
000064	3.971e+003
000065	1.616e+004
000066	-1.863e+002
000067	6.593e+003
000068	1.382e+003
000069	4.255e+003
000070	4.412e+003
000071	1.083e+003
000072	-1.922e+003
000073	4.328e+003
000074	1.209e+004
000075	4.429e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Measurement Data Statistical Evaluation

Statistical Comparisons

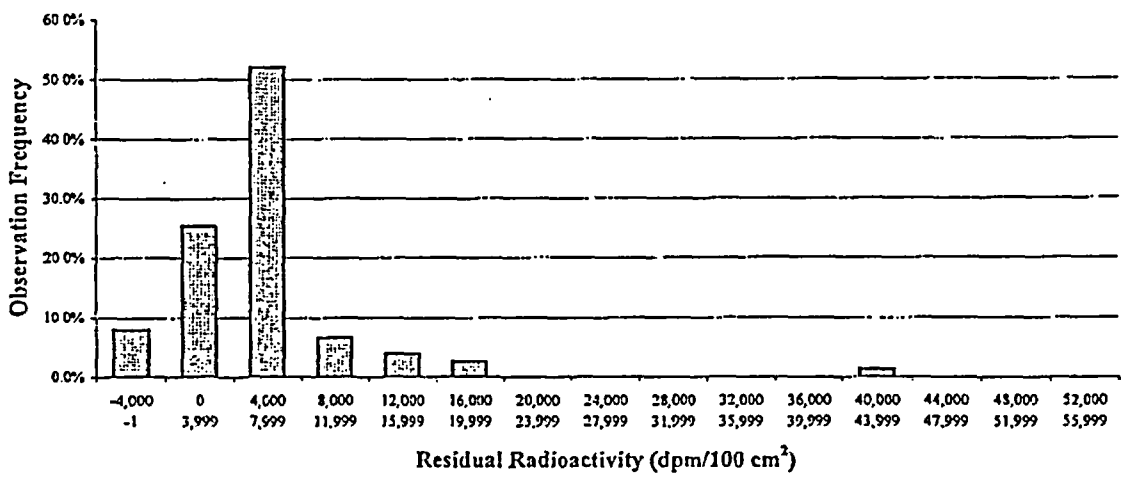
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	44,209	28,310	See comment below
Median	0.099	0.500	Pass
Mean	5,403	100,000	Pass
Std Dev	5,662	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	44,209
Median:	4,843
Mean:	5,403
Std Dev:	5,662
Minimum:	-3,939
Maximum:	40,270
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	75
# of intervals:	15
Interval increment:	4,000
Minimum:	-4,000
Maximum:	55,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-4,000	6	8.0%
2	3,999	0	19	25.3%
3	7,999	4,000	39	52.0%
4	11,999	8,000	5	6.7%
5	15,999	12,000	3	4.0%
6	19,999	16,000	2	2.7%
7	23,999	20,000	0	0.0%
8	27,999	24,000	0	0.0%
9	31,999	28,000	0	0.0%
10	35,999	32,000	0	0.0%
11	39,999	36,000	0	0.0%
12	43,999	40,000	1	1.3%
13	47,999	44,000	0	0.0%
14	51,999	48,000	0	0.0%
15	55,999	52,000	0	0.0%
		Total:	75	100%

Comment:
Range failure is a test artifact due to several negative values, and one relatively high value, compared to the rest of the data set, resulting in a range value that exceeds 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-1,609
Maximum Value:	51,120
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

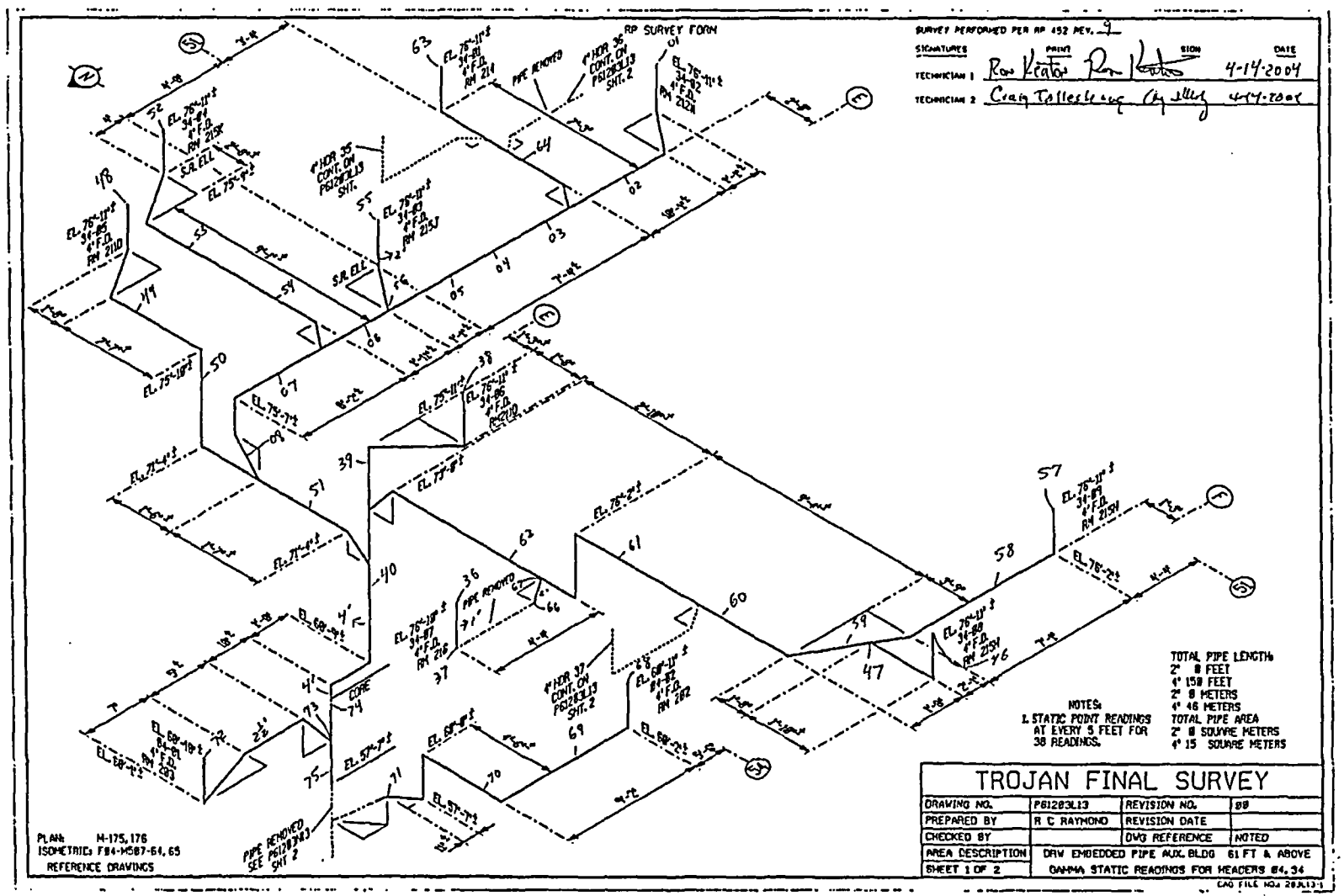
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Static Measurement Locations Map

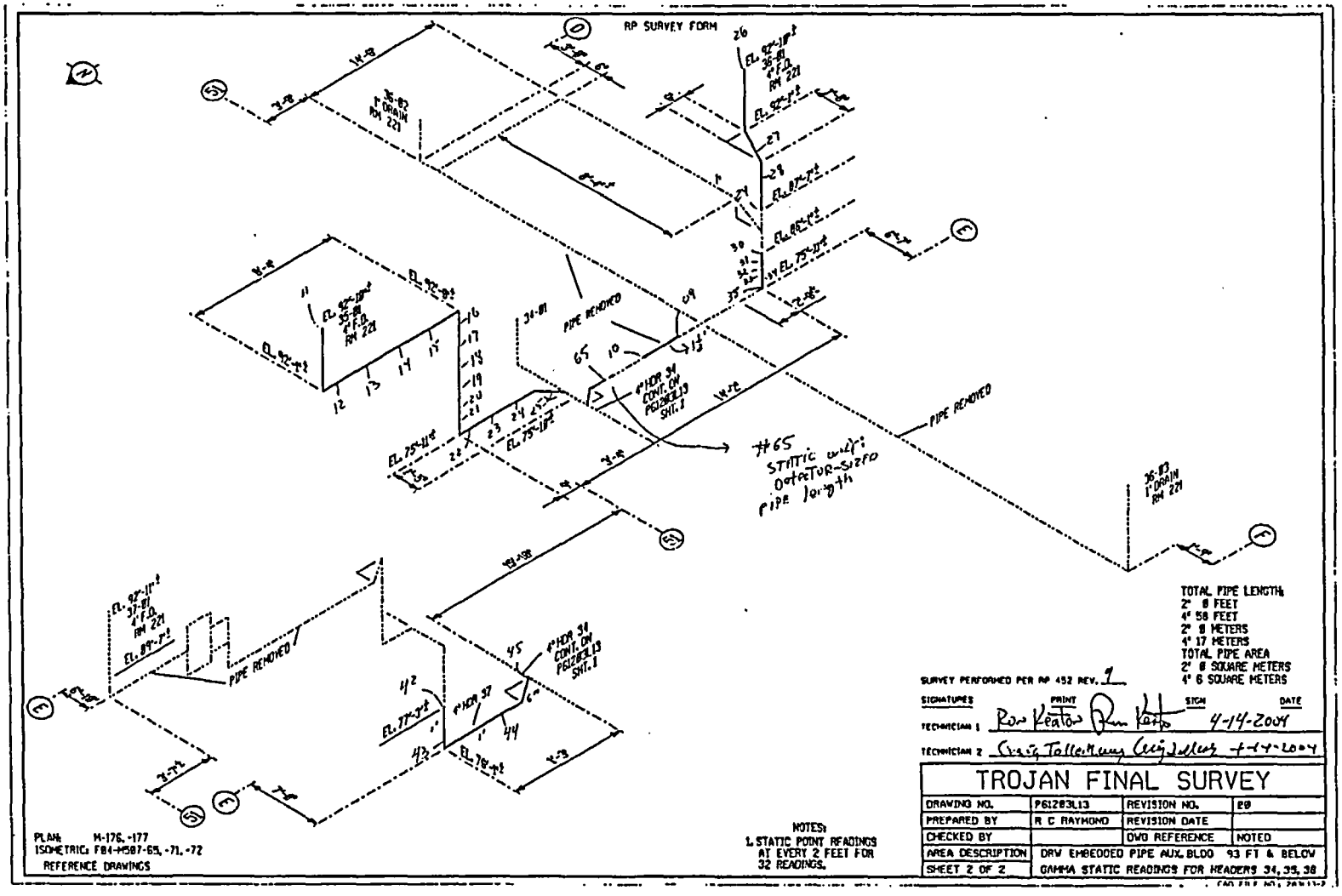


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	64	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	1.624e+003
Maximum Value :	5.905e+004
Range :	5.743e+004
Median :	5.140e+003
Std. Deviation :	1.035e+004
Mean :	8.001e+003
95% UCL :	1.016e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.801e+003	000018	3.258e+003	000035	5.306e+003
000002	4.790e+003	000019	4.151e+003	000036	5.581e+003
000003	4.511e+003	000020	4.312e+003	000037	6.763e+003
000004	6.344e+003	000021	4.167e+003	000038	5.328e+003
000005	6.070e+003	000022	7.823e+003	000039	1.003e+004
000006	5.194e+003	000023	3.583e+004	000040	1.271e+004
000007	5.086e+003	000024	9.145e+003	000041	3.801e+003
000008	5.726e+003	000025	5.905e+004	000042	3.226e+003
000009	3.570e+003	000026	5.835e+004	000043	3.349e+003
000010	2.151e+003	000027	1.570e+004	000044	3.785e+003
000011	5.941e+003	000028	5.978e+003	000045	2.774e+003
000012	3.887e+003	000029	5.957e+003	000046	2.796e+003
000013	3.925e+003	000030	9.774e+003	000047	4.253e+003
000014	4.446e+003	000031	4.914e+003	000048	9.457e+003
000015	5.263e+003	000032	2.930e+003	000049	1.019e+004
000016	4.747e+003	000033	3.978e+003	000050	1.315e+004
000017	4.038e+003	000034	1.624e+003	000051	7.968e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Data Quality Values

Location	Value
000052	7.839e+003
000053	6.914e+003
000054	6.070e+003
000055	8.199e+003
000056	3.962e+003
000057	4.871e+003
000058	3.962e+003
000059	1.351e+004
000060	2.914e+003
000061	1.076e+004
000062	4.095e+003
000063	1.005e+004
000064	1.995e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Measurement Data Statistical Evaluation

Statistical Comparisons

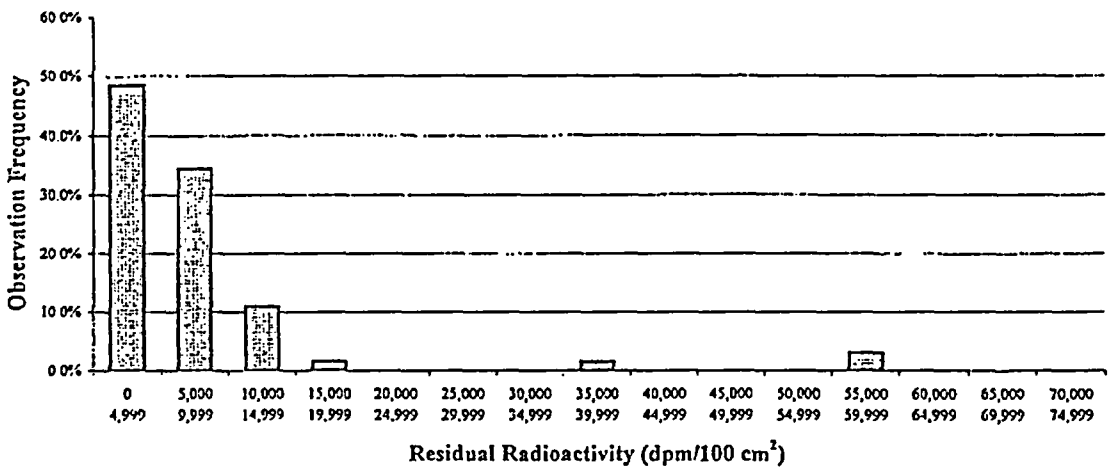
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	57,426	51,747	See comment below
Median	0.276	0.500	Pass
Mean	8,001	100,000	Pass
Std Dev	10,349	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	57,426
Median:	5,140
Mean:	8,001
Std Dev:	10,349
Minimum:	1,624
Maximum:	59,050
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	64
# of intervals:	15
Interval increment:	5,000
Minimum:	0
Maximum:	74,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	4,999	0	31	48.4%
2	9,999	5,000	22	34.4%
3	14,999	10,000	7	10.9%
4	19,999	15,000	1	1.6%
5	24,999	20,000	0	0.0%
6	29,999	25,000	0	0.0%
7	34,999	30,000	0	0.0%
8	39,999	35,000	1	1.6%
9	44,999	40,000	0	0.0%
10	49,999	45,000	0	0.0%
11	54,999	50,000	0	0.0%
12	59,999	55,000	2	3.1%
13	64,999	60,000	0	0.0%
14	69,999	65,000	0	0.0%
15	74,999	70,000	0	0.0%
		Total:	64	100%

Comment:
Range failure is a test artifact due to three relatively high values (right skewed data set) compared to the rest of the data set, resulting in a range value that exceeds 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	1,176
Maximum Value:	111,700
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 014) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.2
Length of Survey Unit (m):	43
Survey Unit Area >DCGL (%):	0.5
EMC Value:	669,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

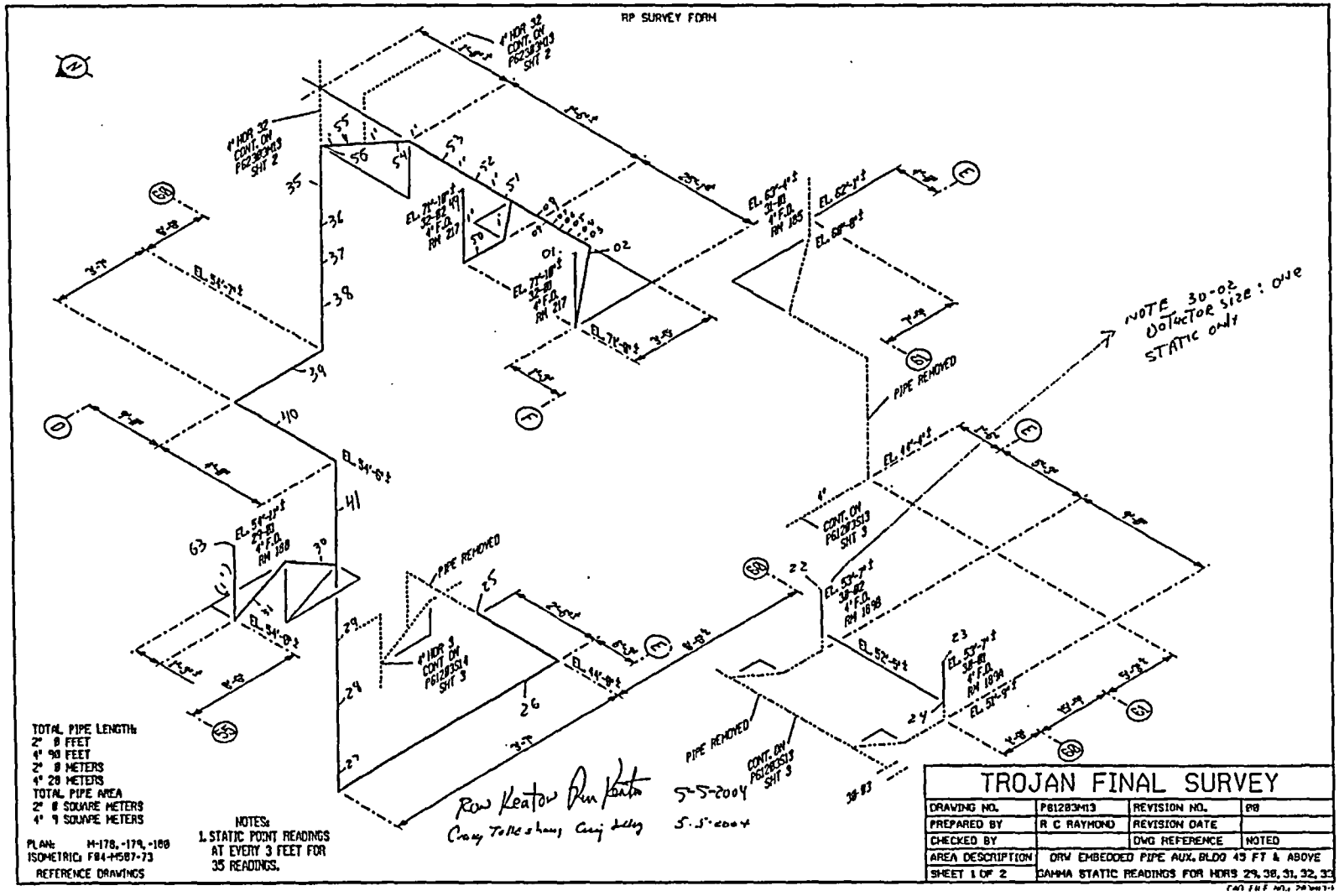
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated residual radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Static Measurement Locations Map

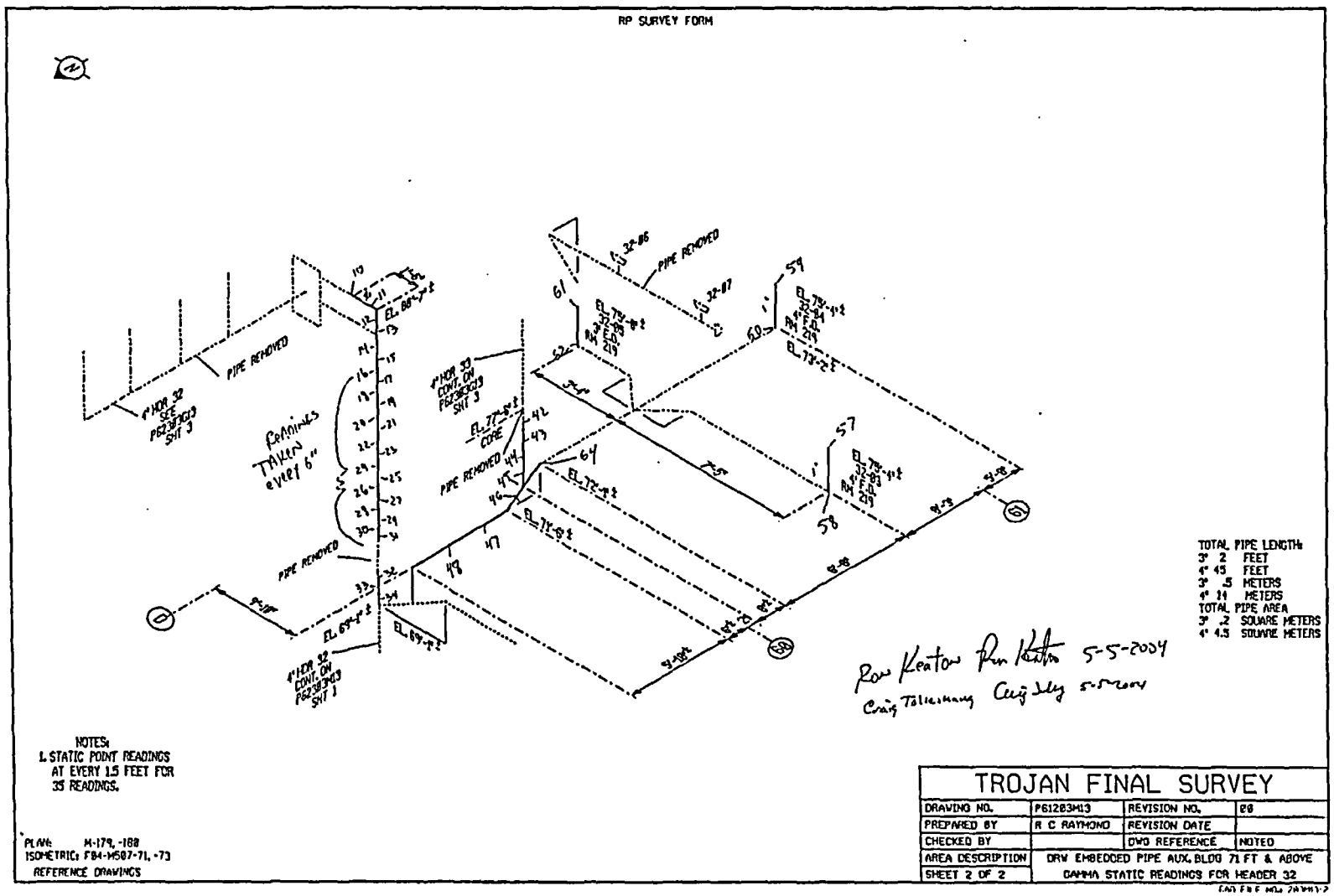


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' and 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	72	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.465e+003
Maximum Value	:	4.341e+004
Range	:	4.488e+004
Median	:	7.926e+003
Std. Deviation	:	8.027e+003
Mean	:	1.007e+004
95% UCL	:	1.165e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-1.015e+003	000020	6.924e+003	000037	1.575e+004
000002	4.854e+003	000021	6.404e+003	000038	1.520e+004
000003	5.530e+003	000022	5.217e+003	000039	9.056e+003
000004	5.742e+003	000023	7.333e+003	000040	2.889e+003
000005	5.672e+003	000024	7.965e+003	000041	8.586e+001
000006	5.682e+003	000025	8.197e+003	000042	9.237e+003
000007	5.566e+003	000026	1.233e+004	000043	1.113e+004
000008	6.379e+003	000027	6.702e+003	000044	1.278e+004
000009	8.197e+003	000028	3.962e+004	000045	1.283e+004
000010	2.238e+004	000029	8.717e+003	000046	9.429e+003
000011	1.413e+004	000030	7.146e+003	000047	4.677e+003
000012	1.064e+004	000031	7.035e+003	000048	8.232e+003
000013	8.434e+003	000032	1.517e+004	000049	7.414e+003
000014	1.588e+004	000033	4.545e+003	000050	1.758e+003
000015	1.982e+004	000034	5.424e+003	000051	5.081e+003
000016	1.073e+004	000035	6.823e+003	000052	4.949e+003
000019	-2.626e+002	000036	2.896e+004	000053	9.005e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' and 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Data Quality Values

Location	Value
000054	1.859e+004
000055	2.720e+004
000056	8.783e+003
000057	7.899e+003
000058	6.439e+003
000059	7.040e+003
000060	7.591e+003
000061	1.829e+004
000062	8.939e+003
000063	4.341e+004
000064	3.682e+003
000065	-1.465e+003
000066	1.748e+004
000067	4.714e+003
000068	6.000e+003
000069	7.571e+003
000070	3.048e+003
000071	2.133e+004
000072	7.952e+003
000073	1.743e+004
000074	1.052e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' and 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Measurement Data Statistical Evaluation

Statistical Comparisons

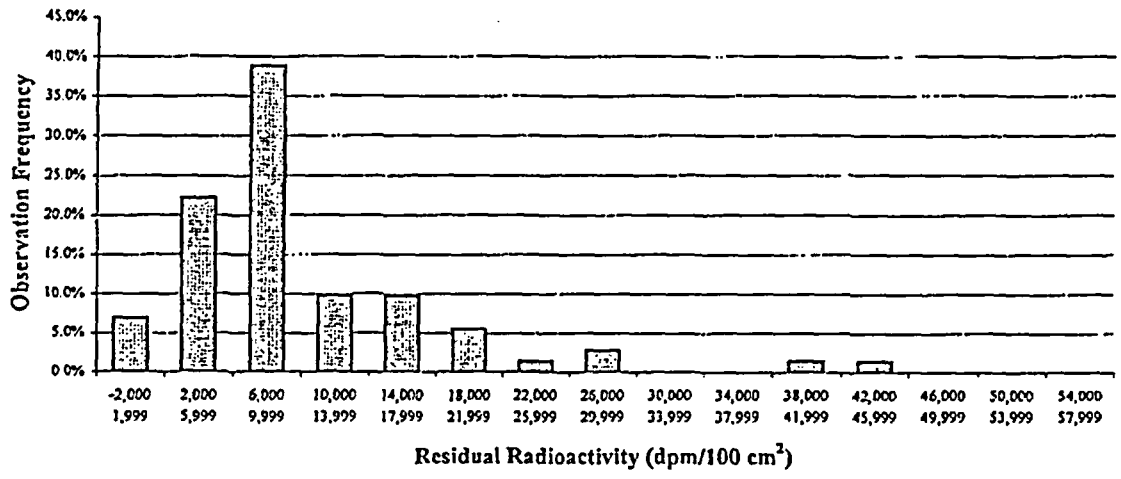
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	44,875	40,136	See comment below
Median	0.267	0.500	Pass
Mean	10,067	100,000	Pass
Std Dev	8,027	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	44,875
Median:	7,926
Mean:	10,067
Std Dev:	8,027
Minimum:	-1,465
Maximum:	43,410
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	72
# of intervals:	15
Interval increment:	4,000
Minimum:	-2,000
Maximum:	57,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	1,999	-2,000	5	6.9%
2	5,999	2,000	16	22.2%
3	9,999	6,000	28	38.9%
4	13,999	10,000	7	9.7%
5	17,999	14,000	7	9.7%
6	21,999	18,000	4	5.6%
7	25,999	22,000	1	1.4%
8	29,999	26,000	2	2.8%
9	33,999	30,000	0	0.0%
10	37,999	34,000	0	0.0%
11	41,999	38,000	1	1.4%
12	45,999	42,000	1	1.4%
13	49,999	46,000	0	0.0%
14	53,999	50,000	0	0.0%
15	57,999	54,000	0	0.0%
		Total:	72	100%

Comment:
Range failure is a test artifact due to a few negative values and two relatively high values, compared to the rest of the data set, resulting in a range value that exceeds 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' and 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	4,369
Maximum Value:	59,050
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

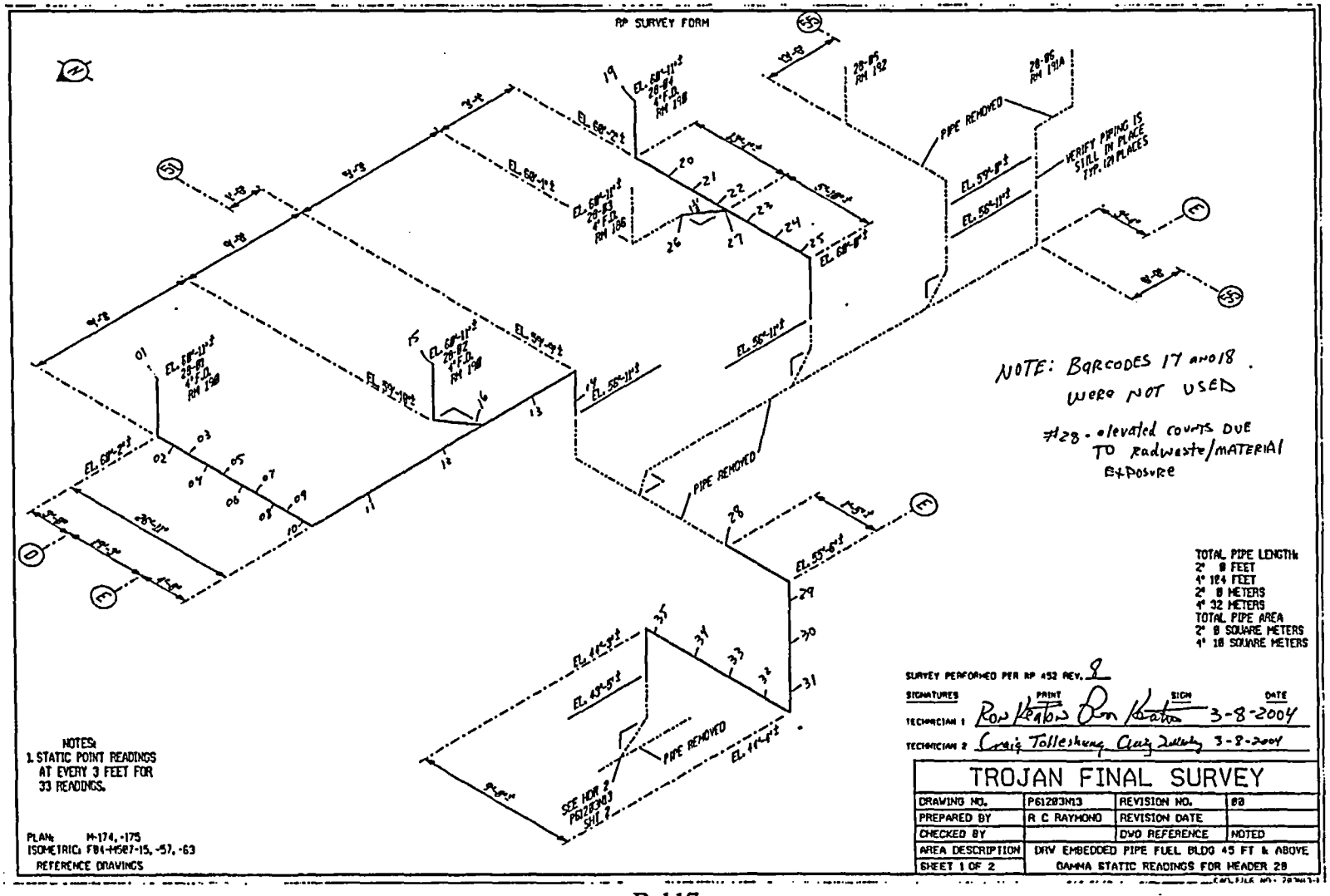
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' and 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Static Measurement Locations Map

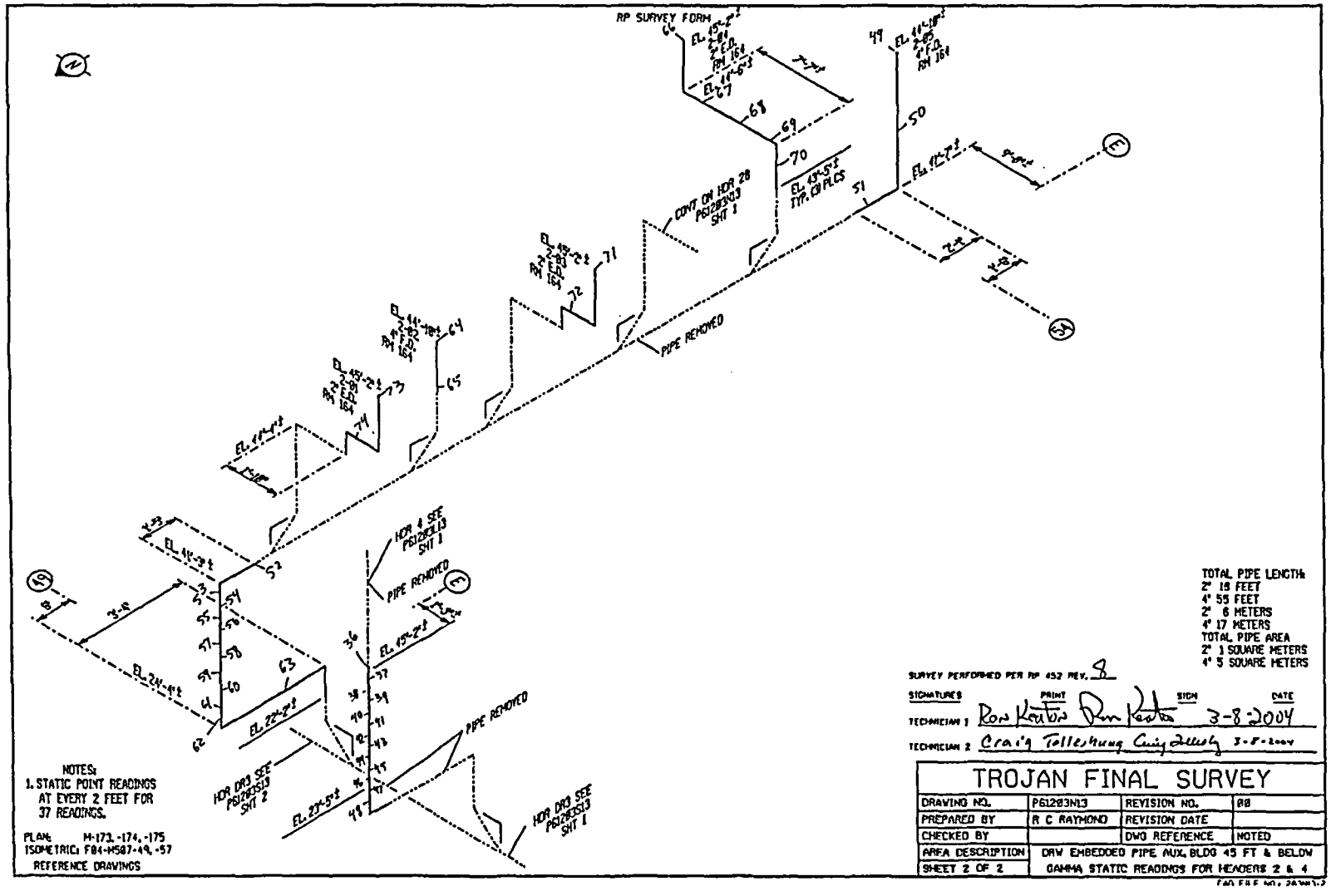


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' and 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m²): 16

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	92	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-6.369e+003
Maximum Value :	1.330e+004
Range :	1.967e+004
Median :	5.455e+003
Std. Deviation :	4.265e+003
Mean :	3.985e+003
95% UCL :	4.725e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	4.096e+003	000018	4.813e+003	000035	7.419e+003
000002	7.379e+003	000019	1.500e+003	000036	7.409e+003
000003	4.652e+003	000020	-9.545e+002	000037	3.586e+003
000004	1.737e+003	000021	3.384e+003	000038	3.389e+003
000005	5.939e+003	000022	-1.439e+003	000039	8.500e+003
000006	2.116e+003	000023	2.495e+003	000040	4.545e+001
000007	5.899e+003	000024	-1.247e+003	000041	8.283e+003
000008	8.682e+003	000025	3.480e+003	000042	6.409e+003
000009	7.505e+003	000026	-3.162e+003	000043	7.182e+003
000010	7.697e+003	000027	8.535e+002	000044	7.207e+003
000011	7.556e+003	000028	4.242e+003	000045	6.556e+003
000012	8.889e+003	000029	5.419e+003	000046	7.540e+003
000013	7.727e+003	000030	7.763e+003	000047	-2.101e+003
000014	8.354e+003	000031	-3.535e+001	000048	-1.596e+003
000015	1.079e+004	000032	3.444e+003	000049	5.343e+003
000016	-2.020e+001	000033	1.288e+003	000050	1.818e+002
000017	3.035e+003	000034	2.985e+003	000051	7.727e+002

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Data Quality Values

Location	Value
000052	1.293e+003
000053	5.955e+003
000054	7.763e+003
000055	6.586e+003
000056	5.919e+003
000057	6.000e+003
000058	5.813e+003
000059	5.687e+003
000060	6.455e+003
000061	2.919e+003
000062	5.490e+003
000063	6.141e+003
000064	7.338e+003
000065	7.732e+003
000066	6.758e+003
000067	6.237e+003
000068	6.556e+003
000069	6.601e+003
000070	7.030e+003
000071	9.566e+003
000072	8.879e+003
000073	1.176e+004
000074	1.330e+004
000075	-1.576e+003
000076	6.434e+003
000077	6.616e+003
000078	-6.369e+003
000079	-2.672e+003
000080	-4.429e+003
000081	-2.111e+003
000082	-4.955e+003
000083	-4.101e+003
000084	-3.535e+003
000085	-3.470e+003
000086	-6.242e+003
000087	-8.333e+002
000088	6.083e+003
000089	3.292e+003
000090	7.750e+003
000091	2.292e+003
000092	3.667e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Measurement Data Statistical Evaluation

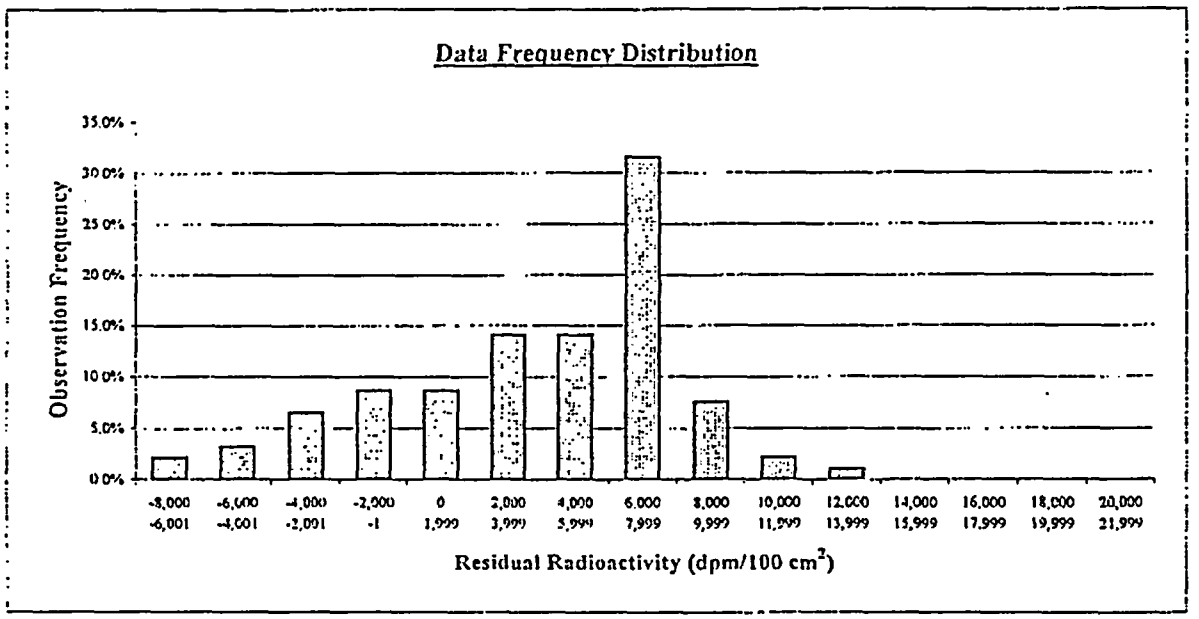
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	19,669	21,325	Pass
Median	0.345	0.500	Pass
Mean	3,985	100,000	Pass
Std Dev	4,265	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	19,669
Median:	5,455
Mean:	3,985
Std Dev:	4,265
Minimum:	-6,369
Maximum:	13,300
DCGL:	100,000



Plot Parameters	
# of measurements:	92
# of intervals:	15
Interval increment:	2,000
Minimum:	-8,000
Maximum:	21,999

Comment:
None.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-6,001	-8,000	2	2.2%
2	-4,001	-6,000	3	3.3%
3	-2,001	-4,000	6	6.5%
4	-1	-2,000	8	8.7%
5	1,999	0	8	8.7%
6	3,999	2,000	13	14.1%
7	5,999	4,000	13	14.1%
8	7,999	6,000	29	31.5%
9	9,999	8,000	7	7.6%
10	11,999	10,000	2	2.2%
11	13,999	12,000	1	1.1%
12	15,999	14,000	0	0.0%
13	17,999	16,000	0	0.0%
14	19,999	18,000	0	0.0%
15	21,999	20,000	0	0.0%
		Total:	92	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-2,319
Maximum Value:	24,520
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

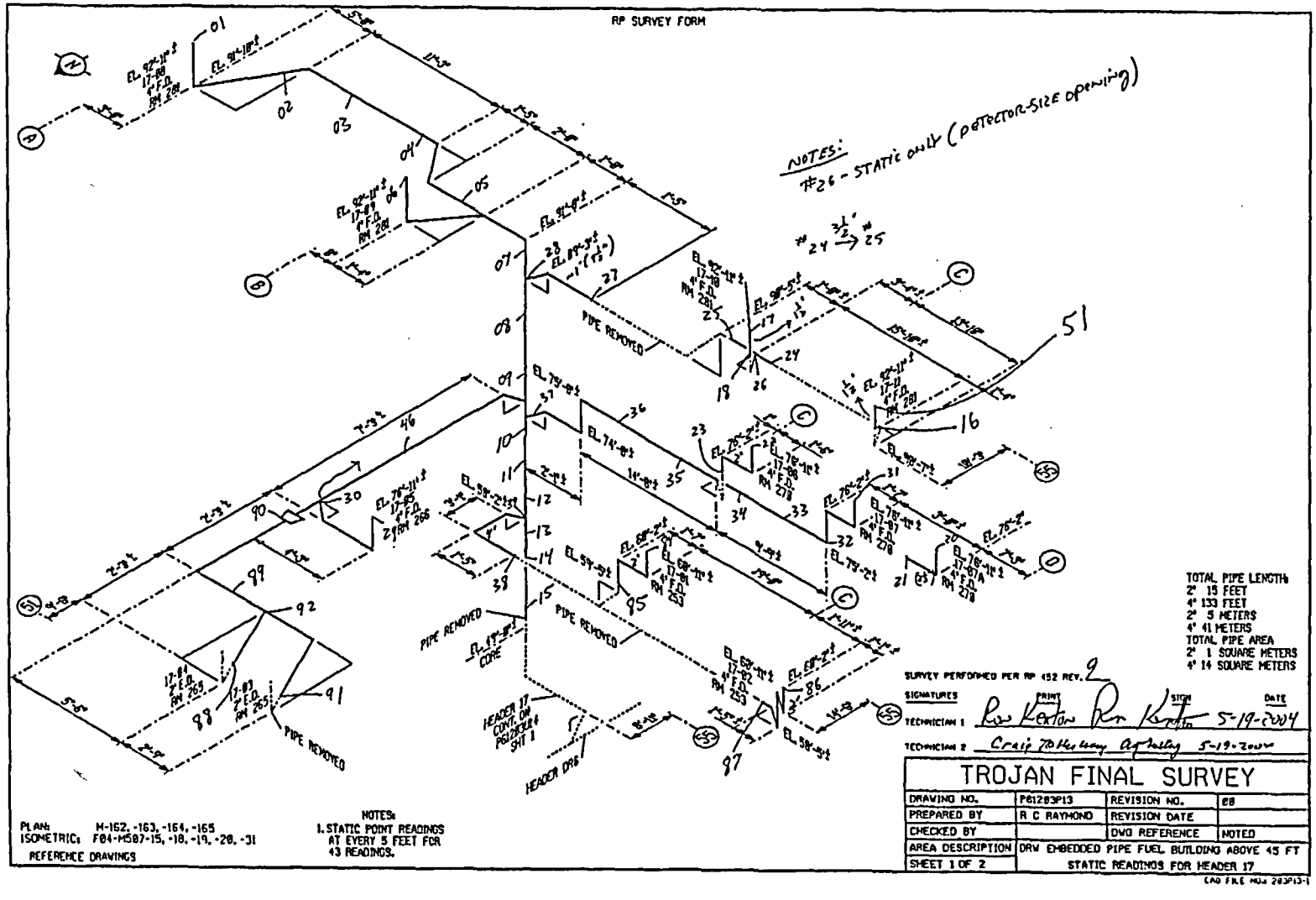
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Static Measurement Locations Map

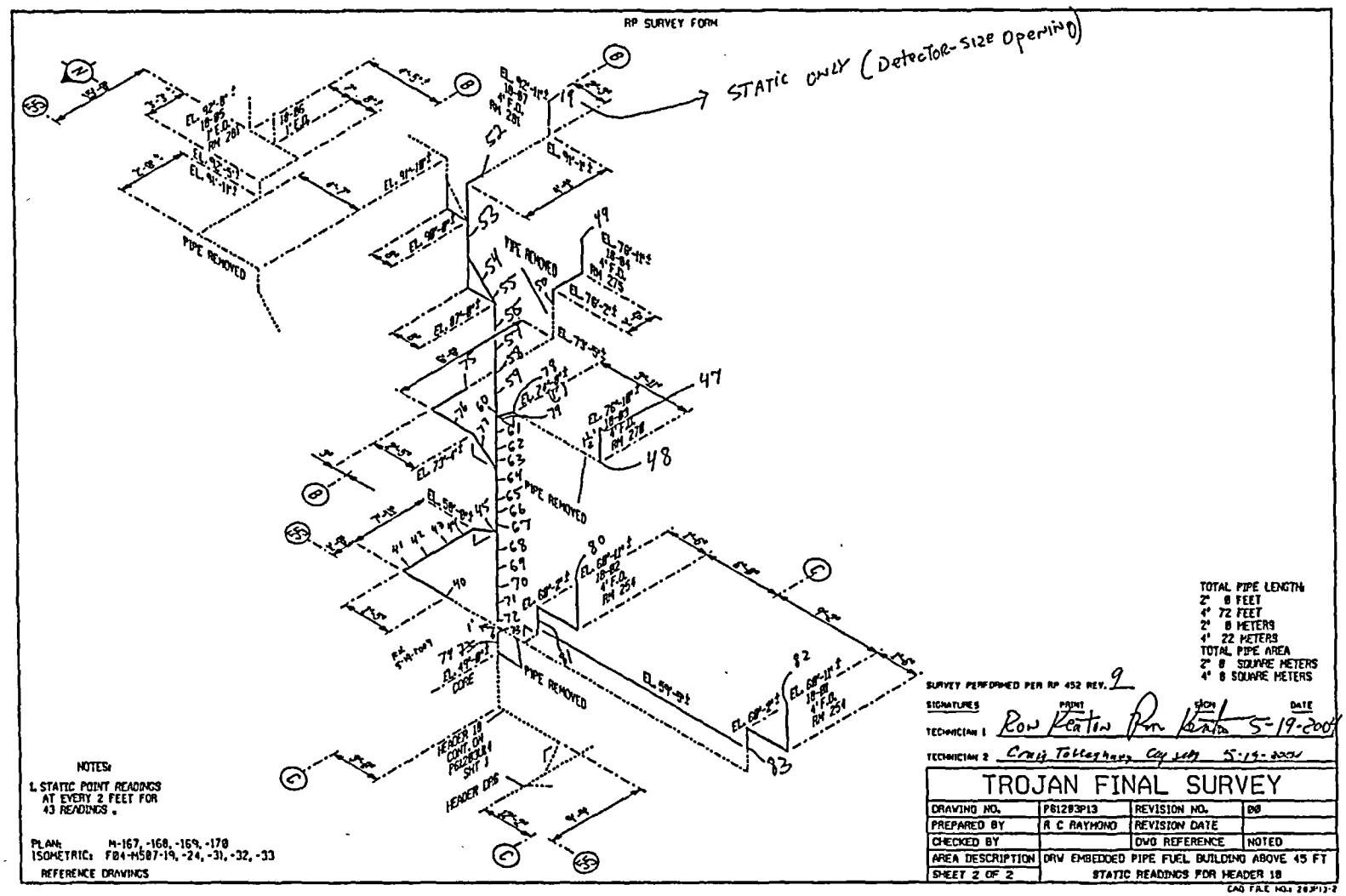


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	64	DPM/100 CM²	1.000e+005	6.300e+001	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.764e+002
Maximum Value	:	1.555e+005
Range	:	1.558e+005
Median	:	9.591e+003
Std. Deviation	:	1.886e+004
Mean	:	1.197e+004
95% UCL	:	1.591e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	7.970e+003	000018	8.955e+003	000035	1.555e+005
000002	8.472e+003	000019	9.216e+003	000036	3.920e+003
000003	8.266e+003	000020	8.553e+003	000037	9.070e+003
000004	8.844e+003	000021	1.018e+004	000038	5.523e+003
000005	7.819e+003	000022	1.023e+004	000039	3.704e+003
000006	9.020e+003	000023	9.960e+003	000040	3.286e+003
000007	1.167e+004	000024	1.002e+004	000041	3.628e+003
000008	8.452e+003	000025	3.709e+003	000042	4.573e+003
000009	8.608e+003	000026	8.839e+003	000043	5.075e+003
000010	8.658e+003	000027	1.013e+004	000044	6.809e+003
000011	9.633e+003	000028	9.558e+003	000045	1.089e+004
000012	8.593e+003	000029	9.789e+003	000046	1.157e+004
000013	6.543e+003	000030	1.146e+004	000047	8.211e+003
000014	1.052e+004	000031	9.623e+003	000048	1.039e+004
000015	7.658e+003	000032	1.030e+004	000049	1.107e+004
000016	-2.764e+002	000033	1.228e+004	000050	1.148e+004
000017	8.246e+003	000034	9.704e+003	000051	9.166e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Data Quality Values

Location	Value
000052	1.117e+004
000053	1.191e+004
000054	8.266e+003
000055	1.521e+004
000056	1.172e+004
000057	1.102e+004
000058	1.295e+004
000059	1.156e+004
000060	2.706e+004
000061	9.638e+003
000062	3.548e+004
000063	1.484e+004
000064	1.013e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Measurement Data Statistical Evaluation

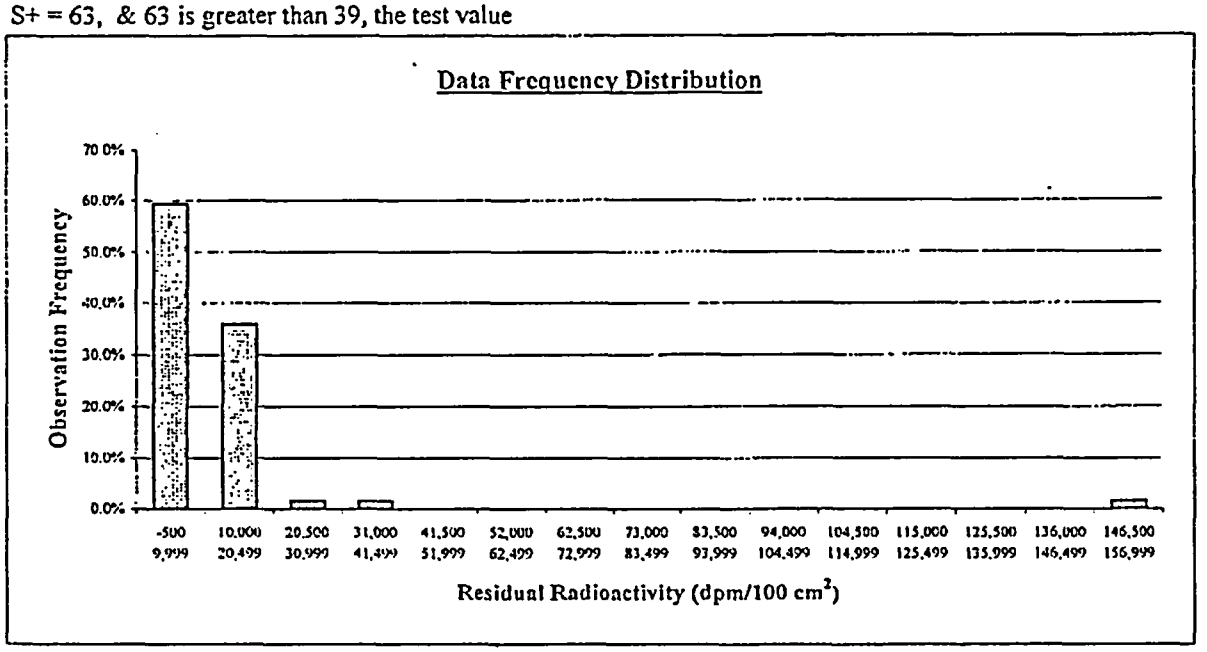
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	155,776	156,509	Pass
Median	0.126	0.500	Pass
Mean	11,969	100,000	Pass
Std Dev	18,856	20,000	Pass

Passed required Sign statistical test
S+ = 63, & 63 is greater than 39, the test value

Statistical Quantities

Range:	155,776
Median:	9,591
Mean:	11,969
Std Dev:	18,856
Minimum:	-276
Maximum:	155,500
DCGL:	100,000



Plot Parameters	
# of measurements:	64
# of intervals:	15
Interval increment:	10,500
Minimum:	-500
Maximum:	156,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	9,999	-500	38	59.4%
2	20,499	10,000	23	35.9%
3	30,999	20,500	1	1.6%
4	41,499	31,000	1	1.6%
5	51,999	41,500	0	0.0%
6	62,499	52,000	0	0.0%
7	72,999	62,500	0	0.0%
8	83,499	73,000	0	0.0%
9	93,999	83,500	0	0.0%
10	104,499	94,000	0	0.0%
11	114,999	104,500	0	0.0%
12	125,499	115,000	0	0.0%
13	135,999	125,500	0	0.0%
14	146,499	136,000	0	0.0%
15	156,999	146,500	1	1.6%
		Total:	64	100%

Comment:
A single elevated measurement value results in a right skewed distribution for the data set. Changed the range test criterion in SDMS from 5.0 to 8.3 in order to successfully perform final data processing through the sign statistical test.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	1,897
Maximum Value:	193,100
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 031) and one corresponding static measurement (location 35) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.1
Length of Survey Unit (m):	31
Survey Unit Area >DCGL (%):	0.3
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison.

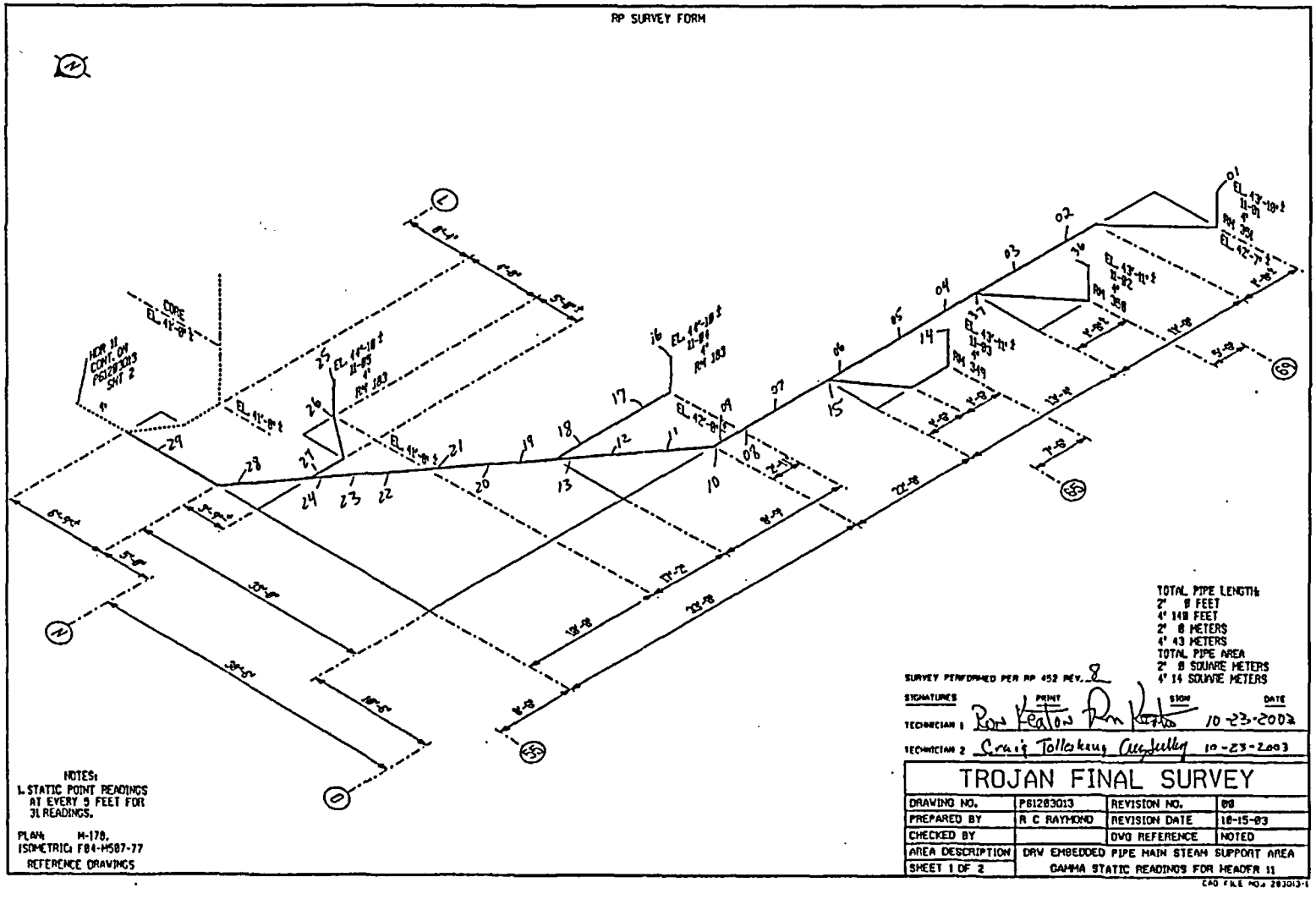
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified by both the scan and static measurement surveys represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Static Measurement Locations Map

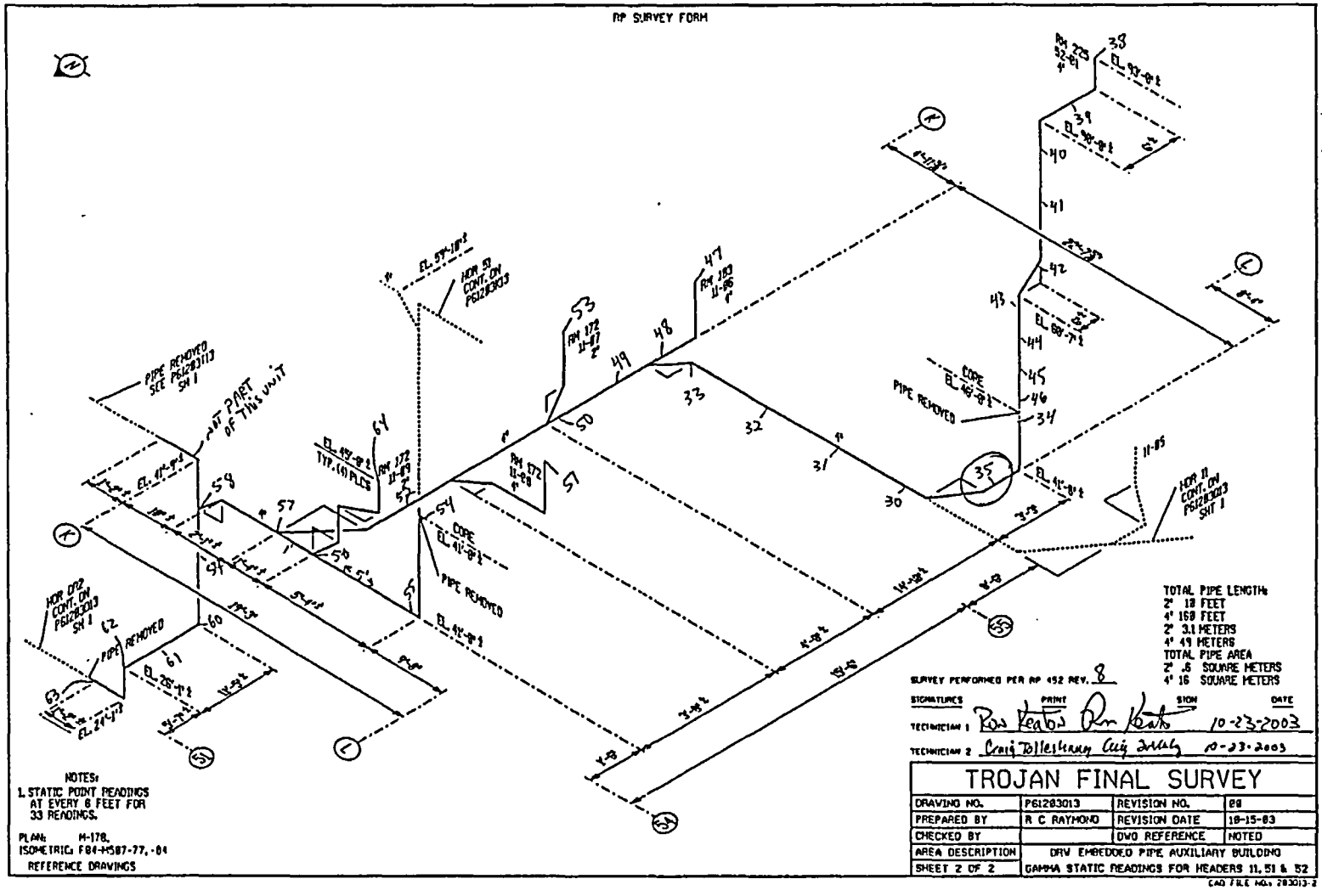


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	146	DPM/100 CM²	1.000e+005	1.450e+002	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.452e+003
Maximum Value	:	1.379e+005
Range	:	1.404e+005
Median	:	4.619e+003
Std. Deviation	:	1.479e+004
Mean	:	7.880e+003
95% UCL	:	9.908e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-1.344e+002	000018	2.355e+003	000035	3.489e+003
000002	3.683e+003	000019	1.903e+003	000036	6.575e+003
000003	-1.505e+002	000020	2.978e+003	000037	6.984e+003
000004	1.274e+003	000021	3.753e+003	000038	3.339e+003
000005	-1.285e+003	000022	2.672e+003	000039	3.500e+003
000006	1.898e+003	000023	4.151e+003	000040	-6.344e+002
000007	-1.038e+003	000024	2.694e+003	000041	1.301e+003
000008	3.898e+003	000025	2.785e+003	000042	5.027e+003
000009	-9.301e+002	000026	4.978e+003	000043	1.446e+003
000010	5.113e+003	000027	4.640e+003	000044	3.946e+003
000011	-4.731e+002	000028	-1.312e+003	000045	-4.785e+002
000012	3.989e+003	000029	1.694e+003	000046	3.156e+003
000013	4.952e+003	000030	2.344e+003	000047	4.425e+003
000014	7.527e+002	000031	4.549e+004	000048	4.919e+003
000015	1.984e+003	000032	7.065e+003	000049	1.365e+004
000016	1.882e+002	000033	1.013e+004	000050	5.238e+004
000017	1.823e+003	000034	5.102e+003	000051	4.538e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Data Quality Values

Location	Value	Location	Value	Location	Value
000052	-2.452e+003	000099	4.075e+003	000146	1.191e+004
000053	7.688e+002	000100	8.984e+003		
000054	4.866e+003	000101	6.387e+003		
000055	2.758e+003	000102	6.651e+003		
000056	1.554e+003	000103	7.091e+003		
000057	3.715e+003	000104	1.572e+004		
000058	2.204e+003	000105	1.495e+004		
000059	1.495e+003	000106	1.462e+003		
000060	1.763e+003	000107	2.226e+003		
000061	5.608e+003	000108	5.167e+003		
000062	4.446e+003	000109	1.344e+003		
000063	8.677e+003	000110	6.645e+003		
000064	5.962e+003	000111	7.484e+003		
000065	5.349e+003	000112	5.183e+003		
000066	3.349e+003	000113	8.441e+003		
000067	2.075e+003	000114	7.457e+003		
000068	-7.957e+002	000115	7.511e+003		
000069	5.468e+003	000116	1.454e+004		
000070	6.516e+003	000117	2.304e+004		
000071	3.645e+003	000118	1.688e+003		
000072	9.457e+003	000119	2.898e+003		
000073	5.758e+003	000120	5.785e+003		
000074	-2.263e+003	000121	1.000e+004		
000075	1.559e+003	000122	1.011e+003		
000076	4.129e+003	000123	8.301e+003		
000077	3.011e+003	000124	2.684e+004		
000078	4.435e+003	000125	2.334e+004		
000079	4.323e+003	000126	1.431e+004		
000080	4.597e+003	000127	1.254e+004		
000081	1.222e+004	000128	5.478e+003		
000082	8.430e+003	000129	9.468e+003		
000083	7.102e+003	000130	2.683e+003		
000084	2.591e+003	000131	2.591e+003		
000085	4.542e+004	000132	6.906e+003		
000086	8.027e+003	000133	1.713e+004		
000087	1.379e+005	000134	6.813e+003		
000088	8.000e+003	000135	1.088e+004		
000089	4.011e+003	000136	1.116e+004		
000090	7.651e+003	000137	4.125e+003		
000091	6.129e+003	000138	8.131e+004		
000092	7.161e+003	000139	7.969e+003		
000093	8.151e+003	000140	1.403e+004		
000094	1.113e+003	000141	1.894e+004		
000095	6.285e+003	000142	1.341e+004		
000096	2.806e+003	000143	4.969e+003		
000097	1.763e+003	000144	2.672e+004		
000098	2.677e+003	000145	7.000e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Measurement Data Statistical Evaluation

Statistical Comparisons

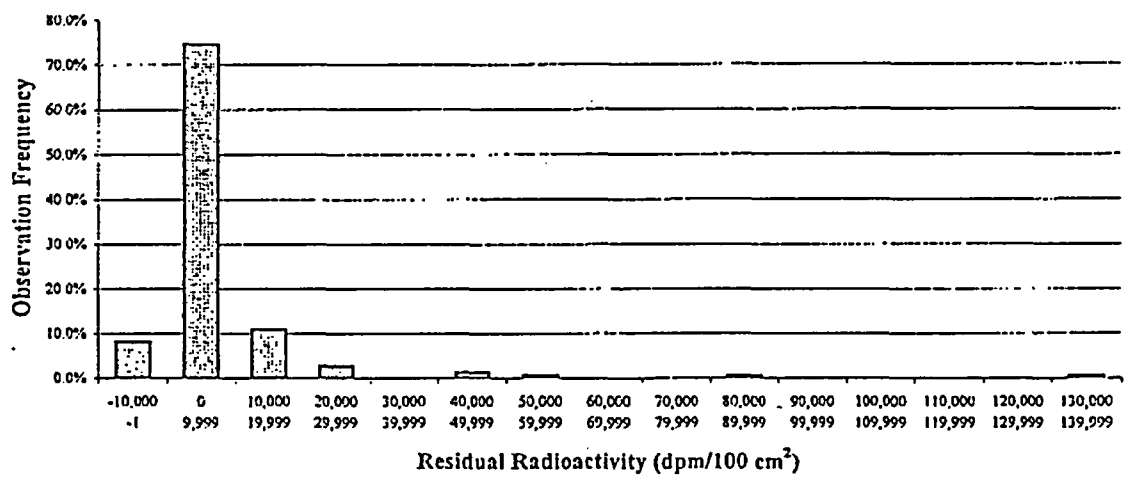
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	140,352	140,465	Pass
Median	0.221	0.500	Pass
Mean	7,880	100,000	Pass
Std Dev	14,786	20,000	Pass

Passed required Sign statistical test
S+ = 145 & 145 is greater than 83, the test value

Statistical Quantities

Range:	140,352
Median:	4,619
Mean:	7,880
Std Dev:	14,786
Minimum:	-2,452
Maximum:	137,900
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	146
# of intervals:	15
Interval increment:	10,000
Minimum:	-10,000
Maximum:	139,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-10,000	12	8.2%
2	9,999	0	109	74.7%
3	19,999	10,000	16	11.0%
4	29,999	20,000	4	2.7%
5	39,999	30,000	0	0.0%
6	49,999	40,000	2	1.4%
7	59,999	50,000	1	0.7%
8	69,999	60,000	0	0.0%
9	79,999	70,000	0	0.0%
10	89,999	80,000	1	0.7%
11	99,999	90,000	0	0.0%
12	109,999	100,000	0	0.0%
13	119,999	110,000	0	0.0%
14	129,999	120,000	0	0.0%
15	139,999	130,000	1	0.7%
		Total:	146	100%

Comment:
A single measurement value exceeds DCGL, and 12 values are less than zero, resulting in a very large range, requiring a change in the range test criterion in SDMS, from 5.0 to 9.5 times the standard deviation, in order to successfully perform final data processing through the sign statistical test.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-2,722
Maximum Value:	222,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: Two scan measurements (locations 077 & 109) and one corresponding static measurement (location 87) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.5
Length of Survey Unit (m):	174
Survey Unit Area >DCGL (%):	0.3
EMC Value:	669,000

Action Taken: Accepted all elevated measurement values as final survey data and applied the elevated measurement comparison; changed statistical quantities test value for range to 9.5 for final survey data processing.

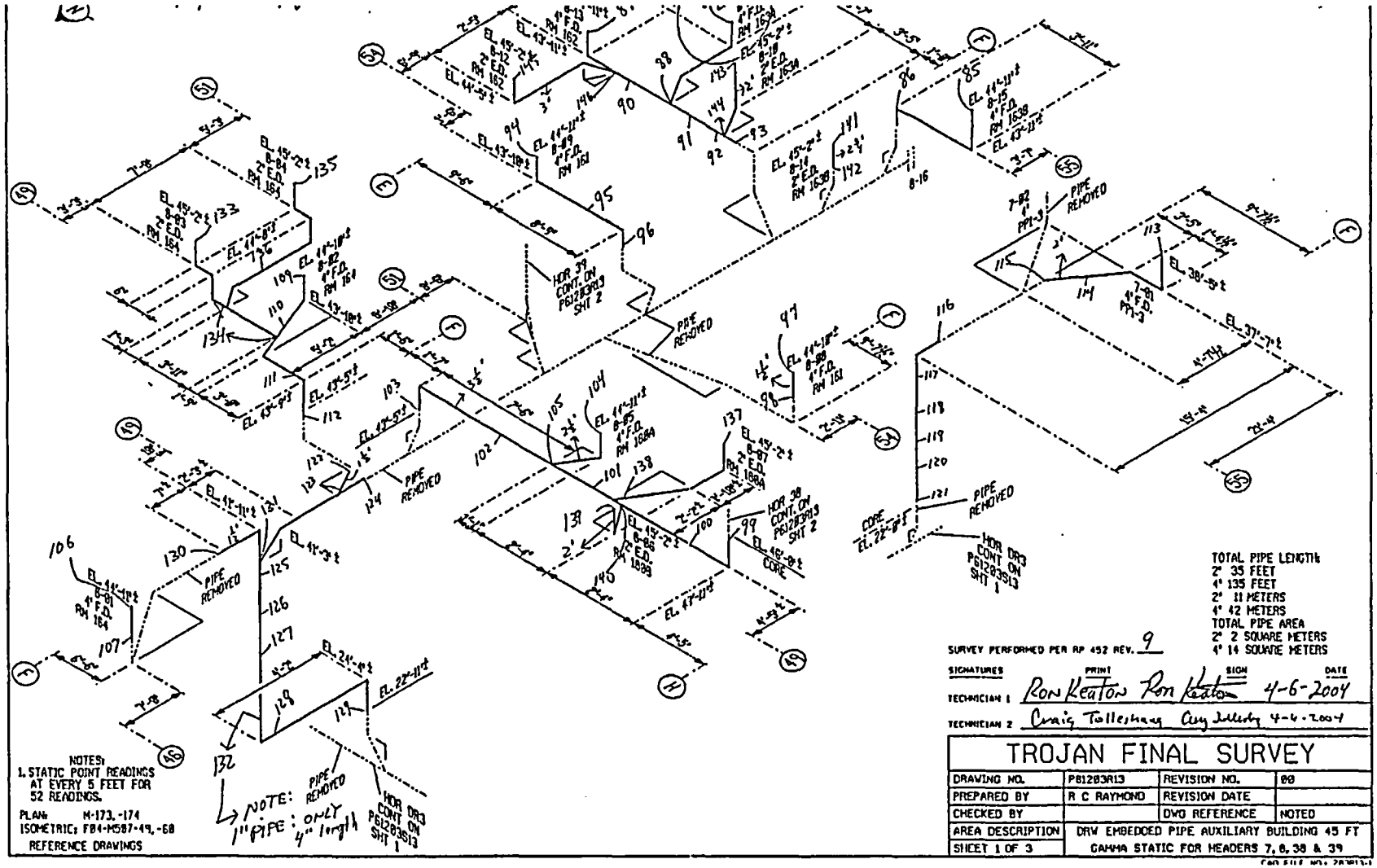
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified by both the scan and static measurement surveys represents small, localized areas of fixed radioactivity and has been determined to be ALARA. Retaining the elevated values as final survey data results in the range statistical quantity failing the default acceptance test criteria.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Static Measurement Locations Map

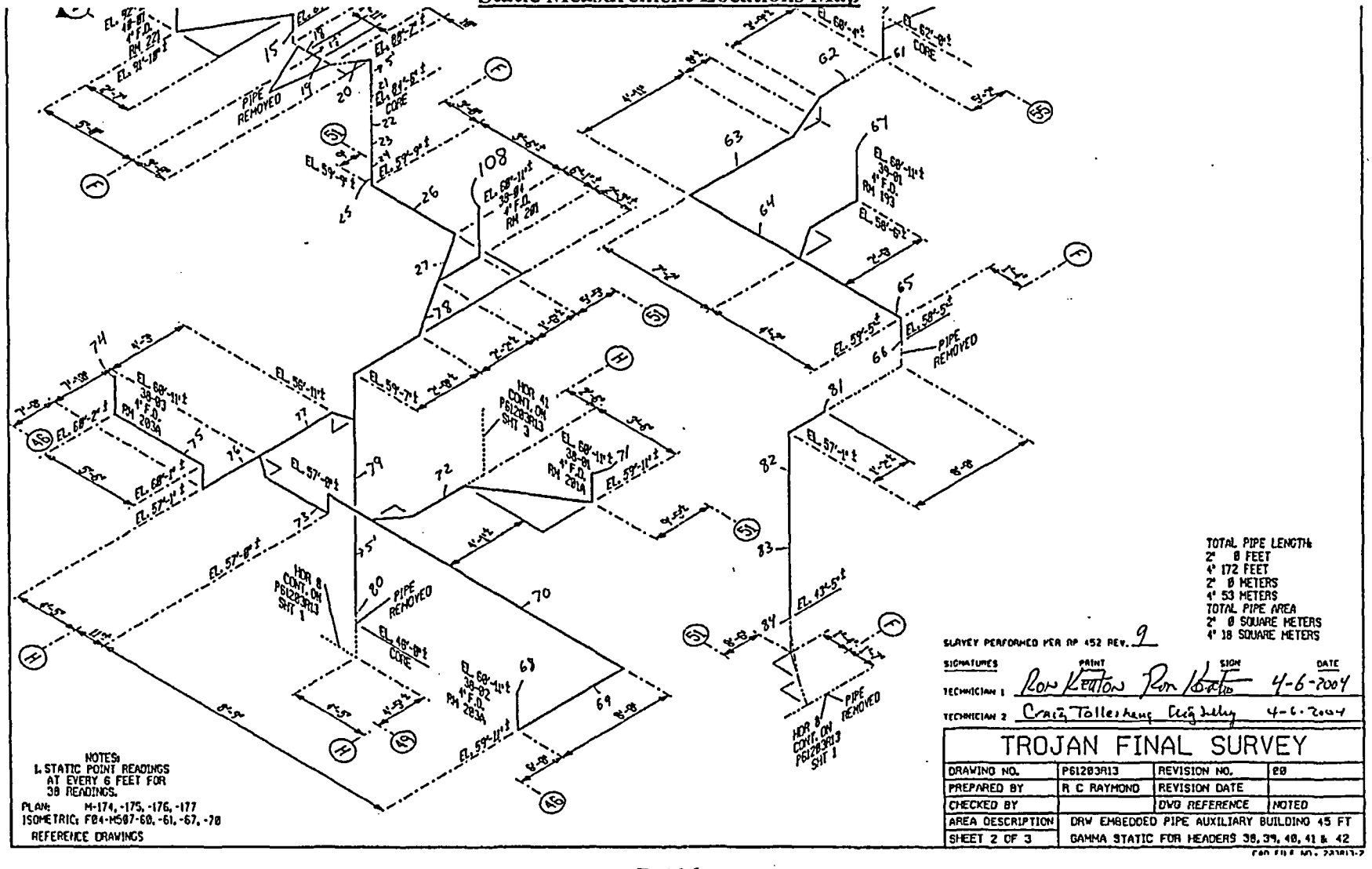


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Static Measurement Locations Map

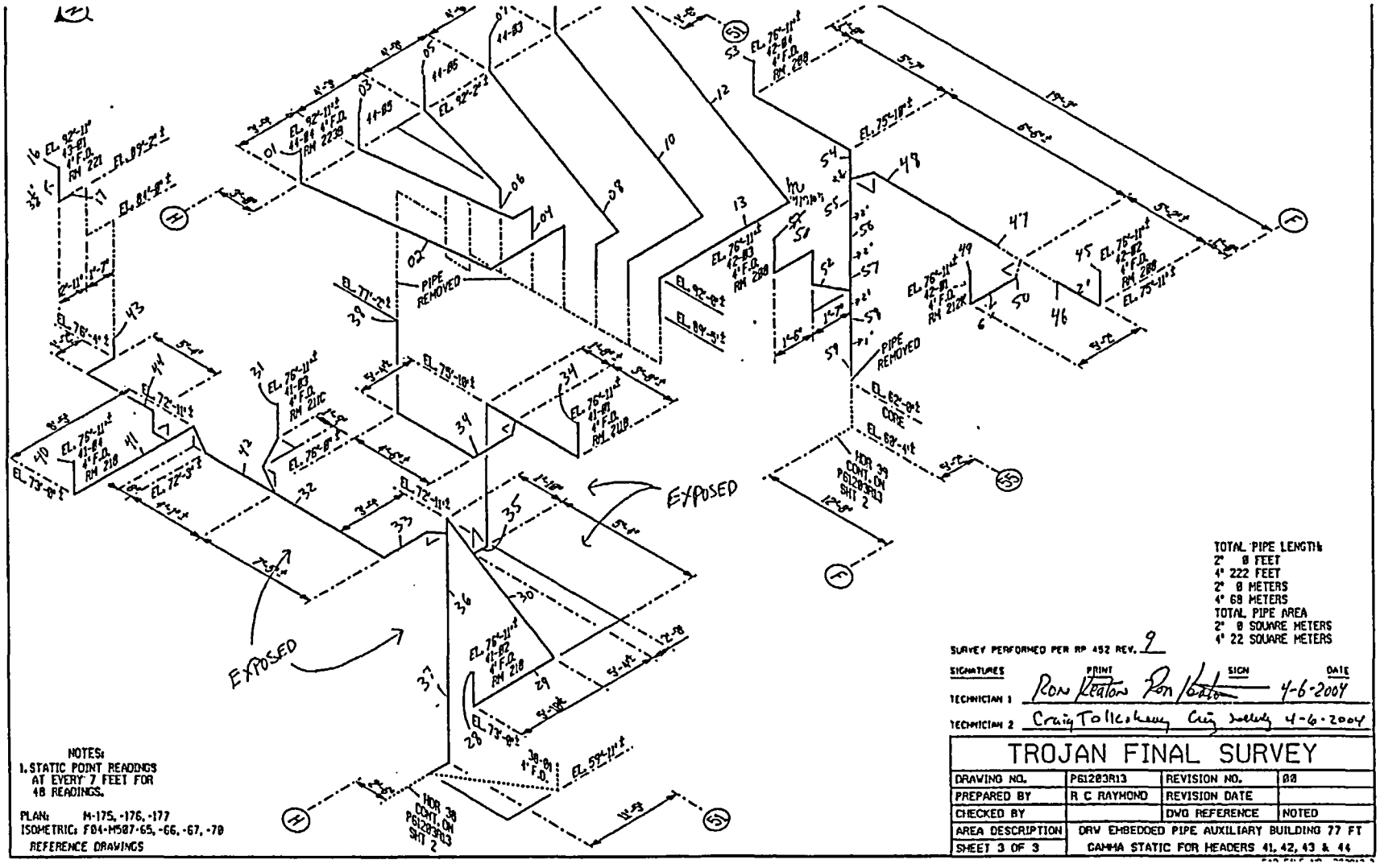


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	92	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.957e+003
Maximum Value	:	6.070e+004
Range	:	6.366e+004
Median	:	4.322e+003
Std. Deviation	:	1.065e+004
Mean	:	7.719e+003
95% UCL	:	9.566e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.519e+003	000018	1.525e+004	000035	3.216e+003
000002	4.578e+003	000019	2.838e+003	000036	2.816e+003
000003	4.059e+003	000020	5.739e+003	000037	3.016e+003
000004	1.665e+003	000021	1.652e+003	000038	2.459e+003
000005	4.865e+003	000022	1.174e+003	000039	3.265e+003
000006	1.079e+004	000023	3.913e+002	000040	-1.259e+003
000007	4.022e+003	000024	5.348e+003	000041	4.324e+003
000008	5.876e+003	000025	5.130e+003	000042	4.319e+003
000009	3.286e+003	000026	1.417e+004	000043	4.324e+003
000010	1.032e+003	000027	6.174e+003	000044	5.054e+003
000011	3.265e+003	000028	4.130e+003	000045	1.632e+003
000012	2.843e+003	000029	1.739e+002	000046	8.703e+002
000013	2.358e+004	000030	5.087e+003	000047	-2.957e+003
000014	4.243e+003	000031	6.826e+003	000048	-5.189e+002
000015	-3.189e+002	000032	1.183e+004	000049	1.032e+004
000016	1.670e+003	000033	3.832e+003	000050	1.105e+004
000017	5.622e+002	000034	3.405e+003	000051	6.189e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Data Quality Values

Location	Value
000052	4.757e+003
000053	8.384e+003
000054	1.332e+004
000055	7.081e+002
000056	3.135e+002
000057	1.200e+003
000058	3.368e+003
000059	1.622e+003
000060	9.243e+002
000061	8.919e+002
000062	2.070e+003
000063	-1.059e+003
000064	5.400e+000
000065	5.903e+003
000066	1.189e+004
000067	1.411e+004
000068	5.167e+004
000069	4.449e+003
000070	3.600e+003
000071	5.546e+003
000072	1.500e+004
000073	6.070e+004
000074	3.297e+002
000075	3.124e+003
000076	4.524e+003
000077	1.077e+004
000078	5.011e+003
000079	6.432e+003
000080	2.584e+004
000081	2.691e+004
000082	1.493e+004
000083	2.924e+004
000084	1.180e+004
000085	6.930e+003
000086	2.176e+004
000087	2.208e+004
000088	3.237e+004
000089	3.854e+004
000090	4.811e+003
000091	2.459e+003
000092	2.119e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Measurement Data Statistical Evaluation

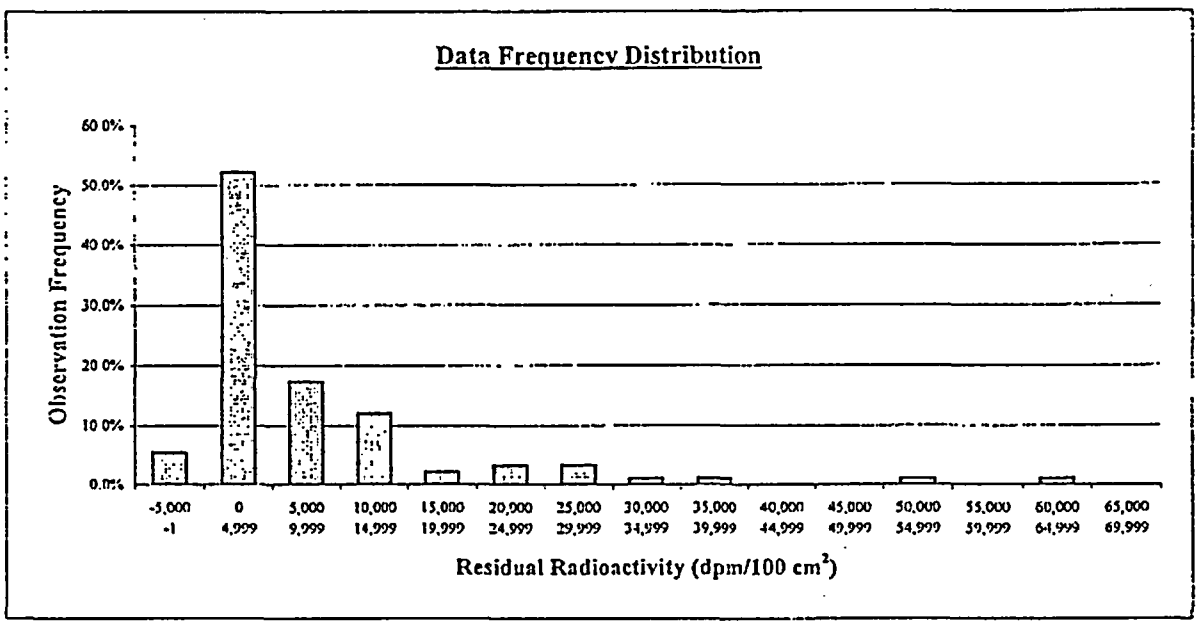
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	63,657	53,108	See comment below
Median	0.325	0.500	Pass
Mean	7,773	100,000	Pass
Std Dev	10,622	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	63,657
Median:	4,324
Mean:	7,773
Std Dev:	10,622
Minimum:	-2,957
Maximum:	60,700
DCGL:	100,000



Plot Parameters	
# of measurements:	92
# of intervals:	15
Interval increment:	5,000
Minimum:	-5,000
Maximum:	69,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-5,000	5	5.4%
2	4,999	0	48	52.2%
3	9,999	5,000	16	17.4%
4	14,999	10,000	11	12.0%
5	19,999	15,000	2	2.2%
6	24,999	20,000	3	3.3%
7	29,999	25,000	3	3.3%
8	34,999	30,000	1	1.1%
9	39,999	35,000	1	1.1%
10	44,999	40,000	0	0.0%
11	49,999	45,000	0	0.0%
12	54,999	50,000	1	1.1%
13	59,999	55,000	0	0.0%
14	64,999	60,000	1	1.1%
15	69,999	65,000	0	0.0%
		Total:	92	100%

Comment:
Range failure is a test artifact due to several negative values and 2 relatively high values, compared to the rest of the data set, resulting in a range value that exceeds 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-1,034
Maximum Value:	173,900
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: Three scan measurements (locations 035, 036, & 054) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.8
Length of Survey Unit (m):	107
Survey Unit Area >DCGL (%):	0.8
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison;.

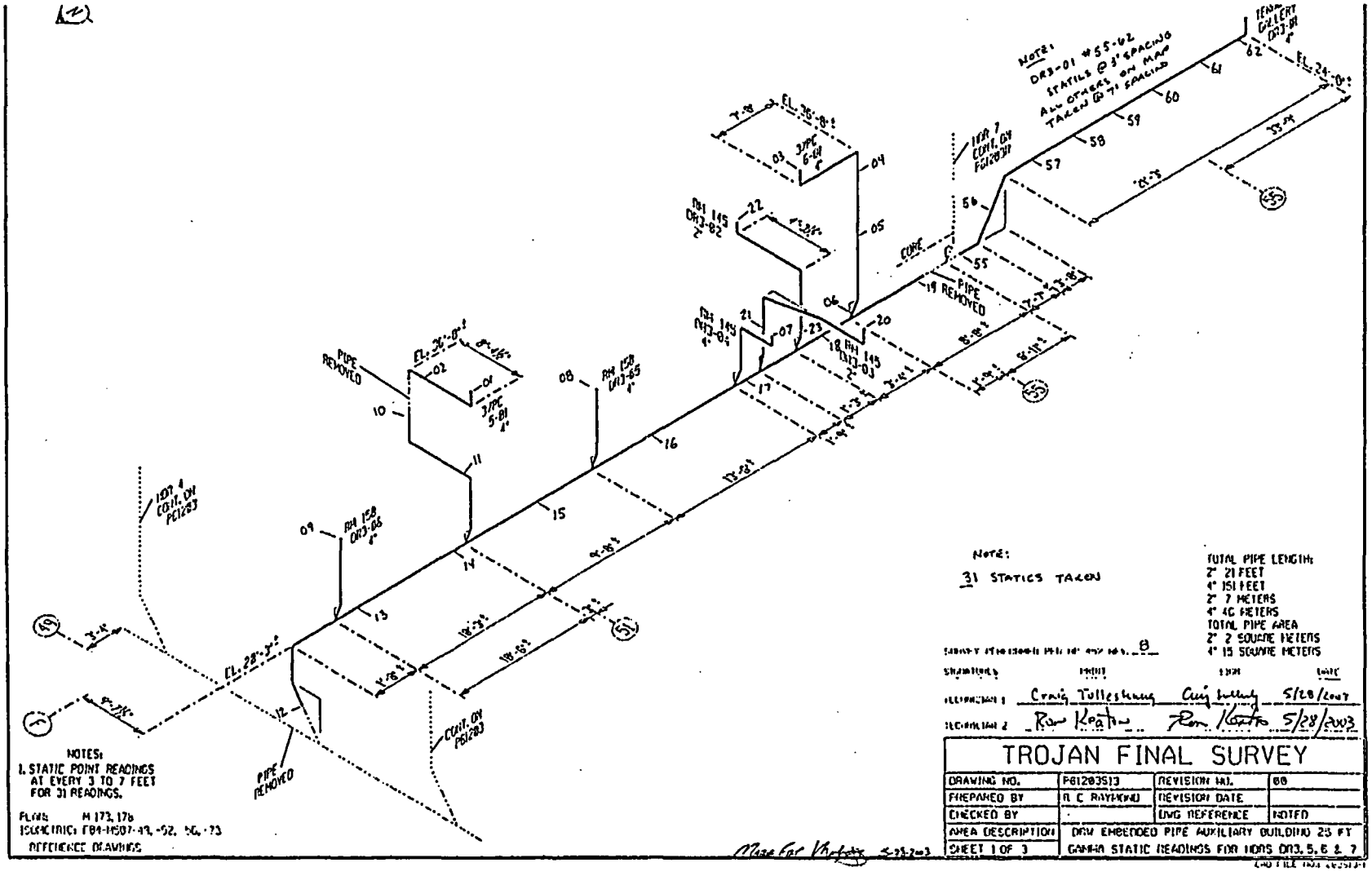
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified represents small, localized areas of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Static Measurement Locations Map

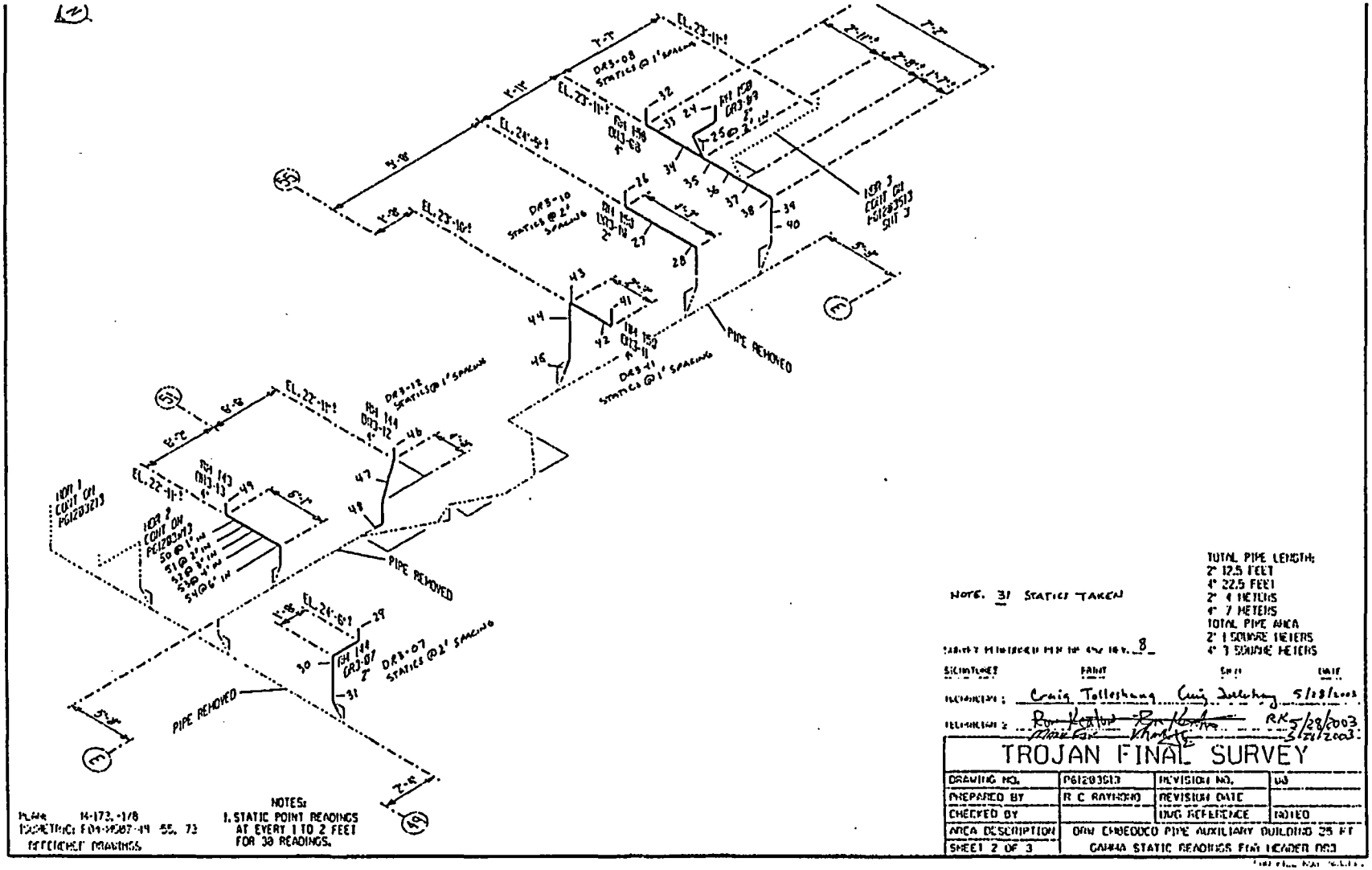


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Static Measurement Locations Map

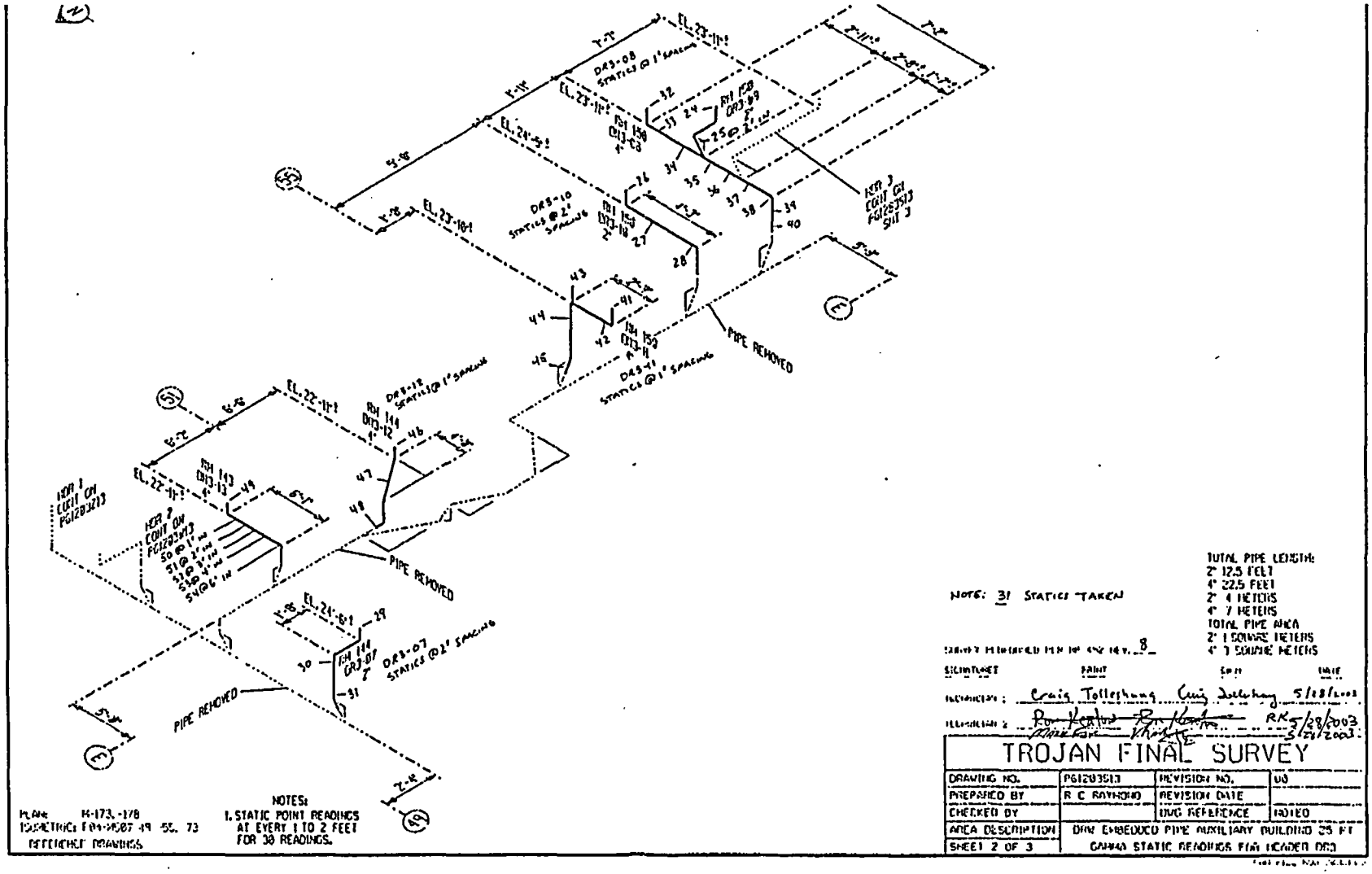


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203T
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	48	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	8.571e+001
Maximum Value	:	6.211e+004
Range	:	6.202e+004
Median	:	6.658e+003
Std. Deviation	:	1.132e+004
Mean	:	1.003e+004
95% UCL	:	1.277e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	4.257e+003	000018	6.010e+003	000035	2.619e+004
000002	4.771e+003	000019	4.672e+003	000036	6.750e+003
000003	6.600e+003	000020	5.941e+003	000037	6.078e+003
000004	3.200e+003	000021	8.564e+003	000038	6.211e+004
000005	8.543e+003	000022	7.652e+003	000039	5.564e+003
000006	5.000e+003	000023	3.829e+004	000040	8.760e+003
000007	8.943e+003	000024	3.050e+004	000041	3.098e+003
000008	2.886e+003	000025	3.525e+003	000042	1.227e+004
000009	8.171e+003	000026	5.975e+003	000043	2.471e+003
000010	8.571e+001	000027	1.868e+003	000044	2.176e+003
000011	8.771e+003	000028	1.693e+004	000045	1.506e+004
000012	2.029e+003	000029	1.156e+004	000046	1.250e+004
000013	1.014e+004	000030	1.610e+004	000047	3.132e+003
000014	3.000e+003	000031	3.692e+004	000048	6.716e+003
000015	8.457e+003	000032	6.961e+003		
000016	4.446e+003	000033	5.142e+003		
000017	5.172e+003	000034	7.279e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203T
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Measurement Data Statistical Evaluation

Statistical Comparisons

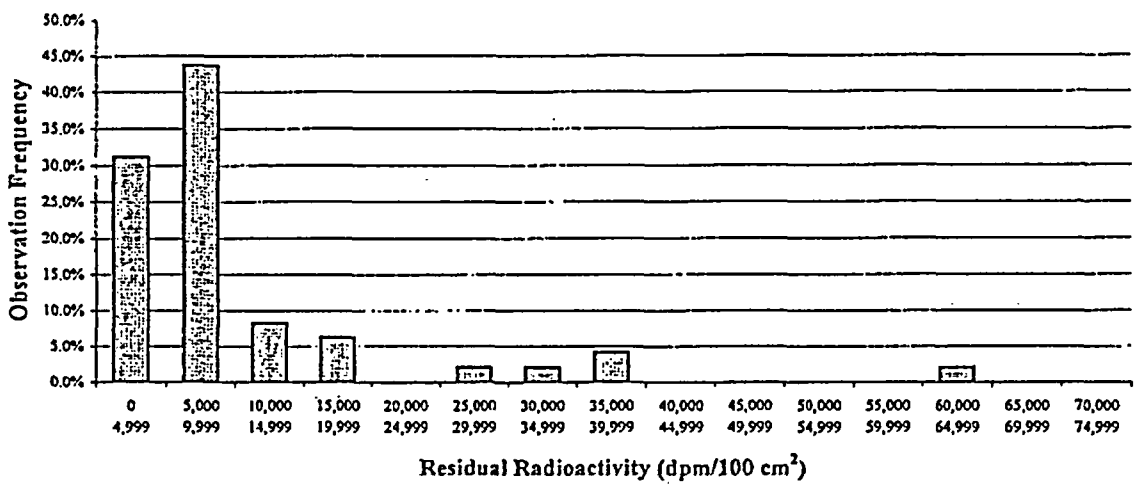
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	62,024	56,588	See comment below
Median	0.298	0.500	Pass
Mean	10,026	100,000	Pass
Std Dev	11,318	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	62,024
Median:	6,658
Mean:	10,026
Std Dev:	11,318
Minimum:	86
Maximum:	62,110
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	48
# of intervals:	15
Interval increment:	5,000
Minimum:	0
Maximum:	74,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	4,999	0	15	31.3%
2	9,999	5,000	21	43.8%
3	14,999	10,000	4	8.3%
4	19,999	15,000	3	6.3%
5	24,999	20,000	0	0.0%
6	29,999	25,000	1	2.1%
7	34,999	30,000	1	2.1%
8	39,999	35,000	2	4.2%
9	44,999	40,000	0	0.0%
10	49,999	45,000	0	0.0%
11	54,999	50,000	0	0.0%
12	59,999	55,000	0	0.0%
13	64,999	60,000	1	2.1%
14	69,999	65,000	0	0.0%
15	74,999	70,000	0	0.0%
		Total:	48	100%

Comment:
Range failure is a test artifact due to a single measurement value exceeding 62,000 dpm, while the other 47 values are less than 40,000 dpm, resulting in a range test value that is greater than 5 times the data set standard deviation. All measurement values are valid & accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203T **Classification:** Class 1
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 17

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	2,914
Maximum Value:	75,600
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

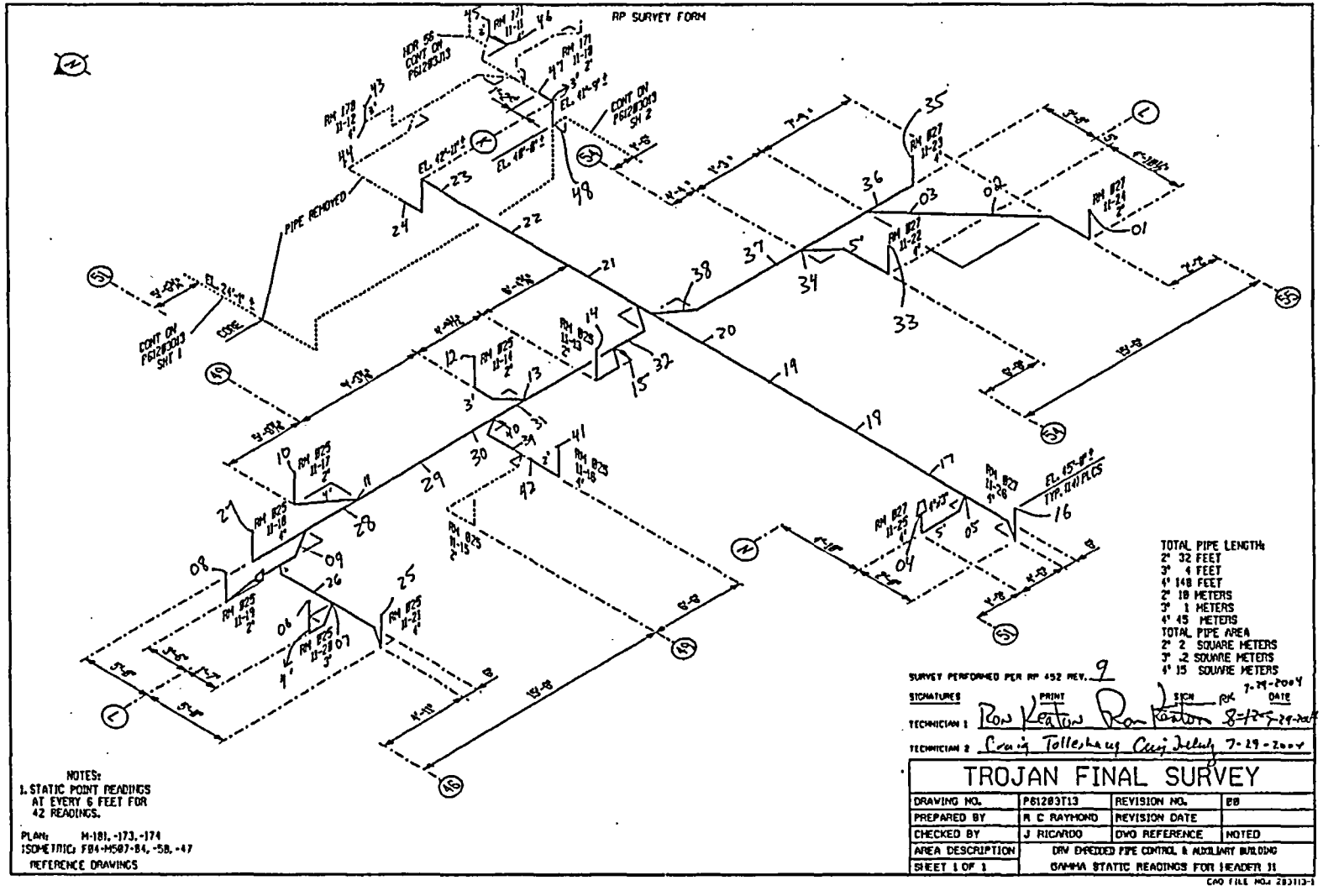
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203T
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	101	DPM/100 CM²	1.000e+005	1.000e+002	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-4.484e+003
Maximum Value	:	1.528e+005
Range	:	1.573e+005
Median	:	4.930e+003
Std. Deviation	:	1.808e+004
Mean	:	8.157e+003
95% UCL	:	1.115e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-2.473e+003	000021	4.210e+003	000038	7.156e+003
000002	6.075e+002	000022	6.774e+002	000039	7.978e+003
000003	5.000e+002	000023	1.677e+003	000040	7.989e+003
000004	-3.731e+003	000024	1.403e+003	000041	7.871e+003
000005	6.559e+002	000025	-2.984e+003	000042	1.071e+004
000006	-4.484e+003	000026	2.106e+004	000043	7.339e+003
000007	-9.140e+001	000027	-2.930e+003	000044	8.495e+002
000008	-3.484e+003	000028	1.349e+004	000045	3.484e+003
000009	7.366e+002	000029	2.833e+003	000046	1.247e+004
000010	9.661e+003	000030	1.677e+003	000047	1.859e+004
000011	6.392e+003	000031	1.473e+003	000048	6.290e+002
000012	1.667e+004	000032	3.263e+003	000049	2.935e+003
000013	9.441e+003	000033	3.285e+003	000050	2.029e+004
000016	1.156e+004	000034	3.602e+003	000051	2.339e+003
000018	-3.194e+003	000035	2.526e+004	000052	7.597e+003
000019	1.044e+004	000036	6.226e+003	000053	1.075e+004
000020	-3.683e+003	000037	8.285e+003	000054	9.667e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Data Quality Values

Location	Value	Location	Value
000055	9.511e+003	000102	1.914e+004
000056	6.586e+003	000103	1.528e+005
000057	1.570e+003	000104	5.131e+003
000058	3.731e+003		
000059	5.156e+003		
000060	4.495e+003		
000061	-4.032e+002		
000062	1.278e+004		
000063	2.892e+003		
000064	-1.527e+003		
000065	9.440e+004		
000066	3.306e+003		
000067	3.306e+003		
000068	9.737e+003		
000069	3.522e+003		
000070	4.183e+003		
000071	3.172e+003		
000072	4.930e+003		
000073	4.790e+003		
000074	7.274e+003		
000075	5.769e+003		
000076	4.989e+003		
000077	4.989e+003		
000078	7.220e+003		
000079	1.866e+003		
000080	4.323e+003		
000081	5.495e+003		
000082	1.121e+004		
000083	1.255e+004		
000084	2.318e+004		
000085	2.333e+003		
000086	4.274e+003		
000087	4.559e+003		
000088	4.694e+003		
000089	4.935e+003		
000090	5.387e+003		
000091	5.156e+003		
000092	5.317e+003		
000093	6.086e+003		
000094	2.281e+004		
000095	9.554e+003		
000096	5.714e+002		
000097	1.757e+004		
000098	2.143e+003		
000099	-8.095e+002		
000100	1.024e+004		
000101	3.333e+002		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Measurement Data Statistical Evaluation

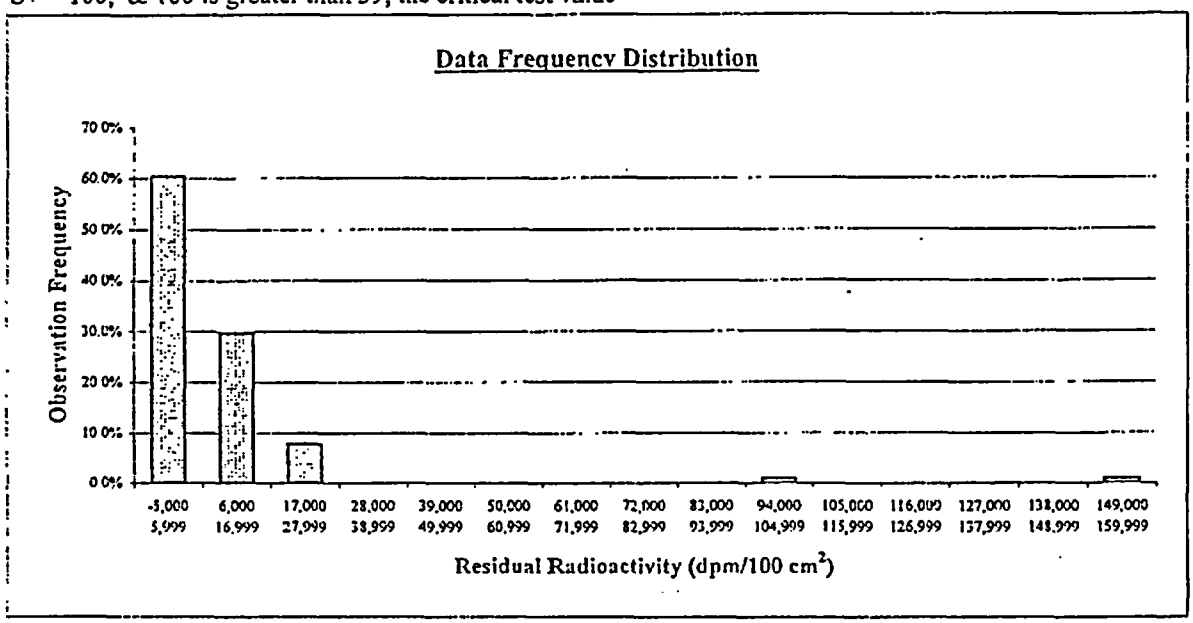
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?	
Range	157,284	162,763	Pass	*
Median	0.178	0.500	Pass	
Mean	8,157	100,000	Pass	
Std Dev	18,085	20,000	Pass	

Passed required Sign statistical test
S+ = 100, & 100 is greater than 59, the critical test value

Statistical Quantities

Range:	157,284
Median:	4,930
Mean:	8,157
Std Dev:	18,085
Minimum:	-4,484
Maximum:	152,800
DCGL:	100,000



Plot Parameters

# of measurements:	101
# of intervals:	15
Interval increment:	11,000
Minimum:	-5,000
Maximum:	159,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	5,999	-5,000	61	60.4%
2	16,999	6,000	30	29.7%
3	27,999	17,000	8	7.9%
4	38,999	28,000	0	0.0%
5	49,999	39,000	0	0.0%
6	60,999	50,000	0	0.0%
7	71,999	61,000	0	0.0%
8	82,999	72,000	0	0.0%
9	93,999	83,000	0	0.0%
10	104,999	94,000	1	1.0%
11	115,999	105,000	0	0.0%
12	126,999	116,000	0	0.0%
13	137,999	127,000	0	0.0%
14	148,999	138,000	0	0.0%
15	159,999	149,000	1	1.0%
		Total:	101	100%

Comment:
*Range test acceptance criterion changed to 9 times the data set standard deviation. See the investigation results form actions.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-2,437
Maximum Value:	32,740
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One static measurement (location 103) exceeded the investigation level and an obstruction found of radioactive debris.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.2
Length of Survey Unit (m):	106
Survey Unit Area >DCGL (%):	0.2
EMC Value:	669,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison; removed pipe obstruction, deleted survey measurements associated with this obstruction (scans 007, 009, 010 and statics 14, 15, 17), and resurveyed section of pipe (scans 030, 031 and statics 42, 43, 104); changed statistical quantities test value for range to 9 for final survey data processing.

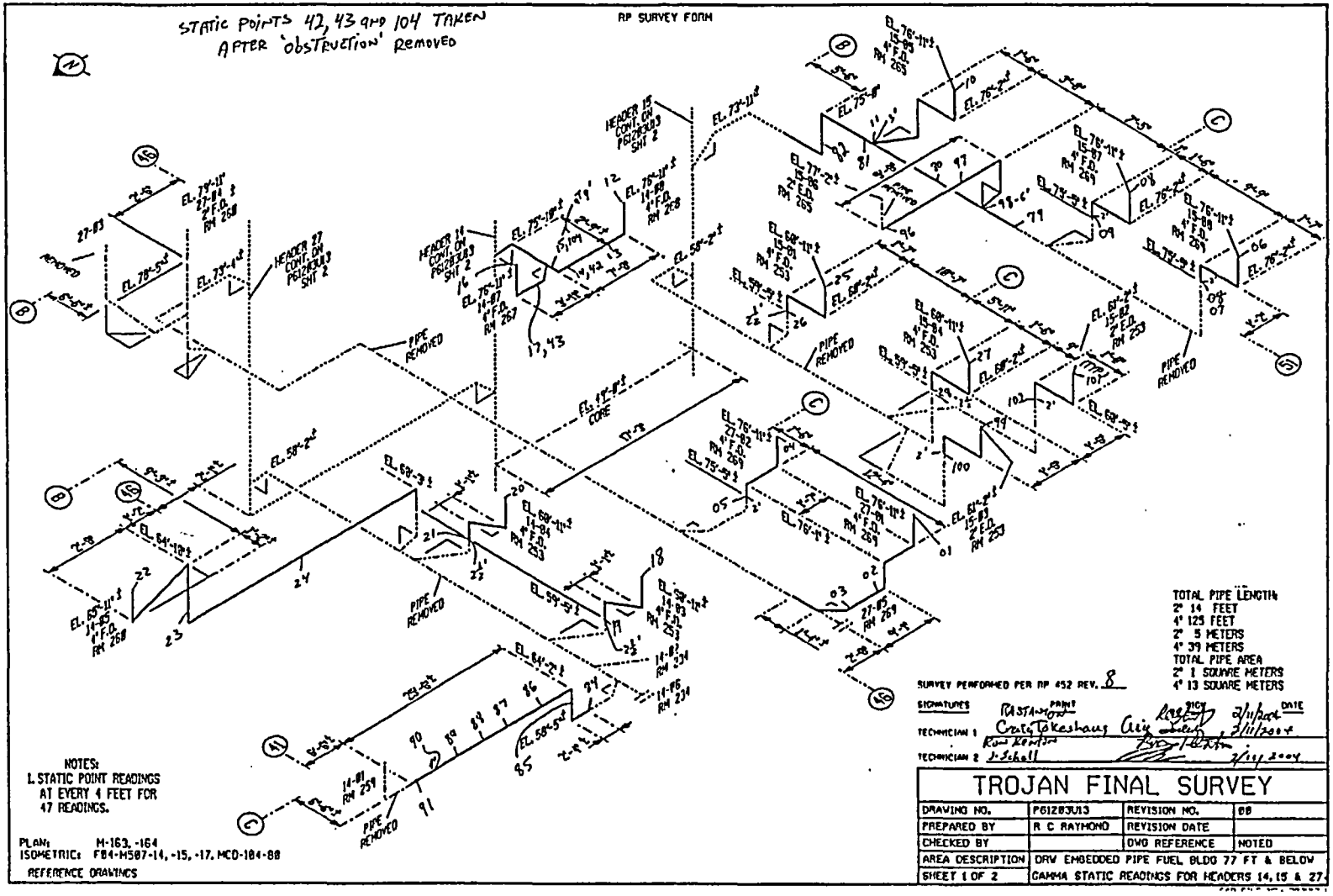
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity represents a small, localized area of fixed radioactivity and has been determined ALARA; however, a thorough survey dictated the obstruction be removed. Retaining the elevated value as final survey data results in the range statistical quantity failing the default acceptance test criteria.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations –Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Static Measurement Locations Map

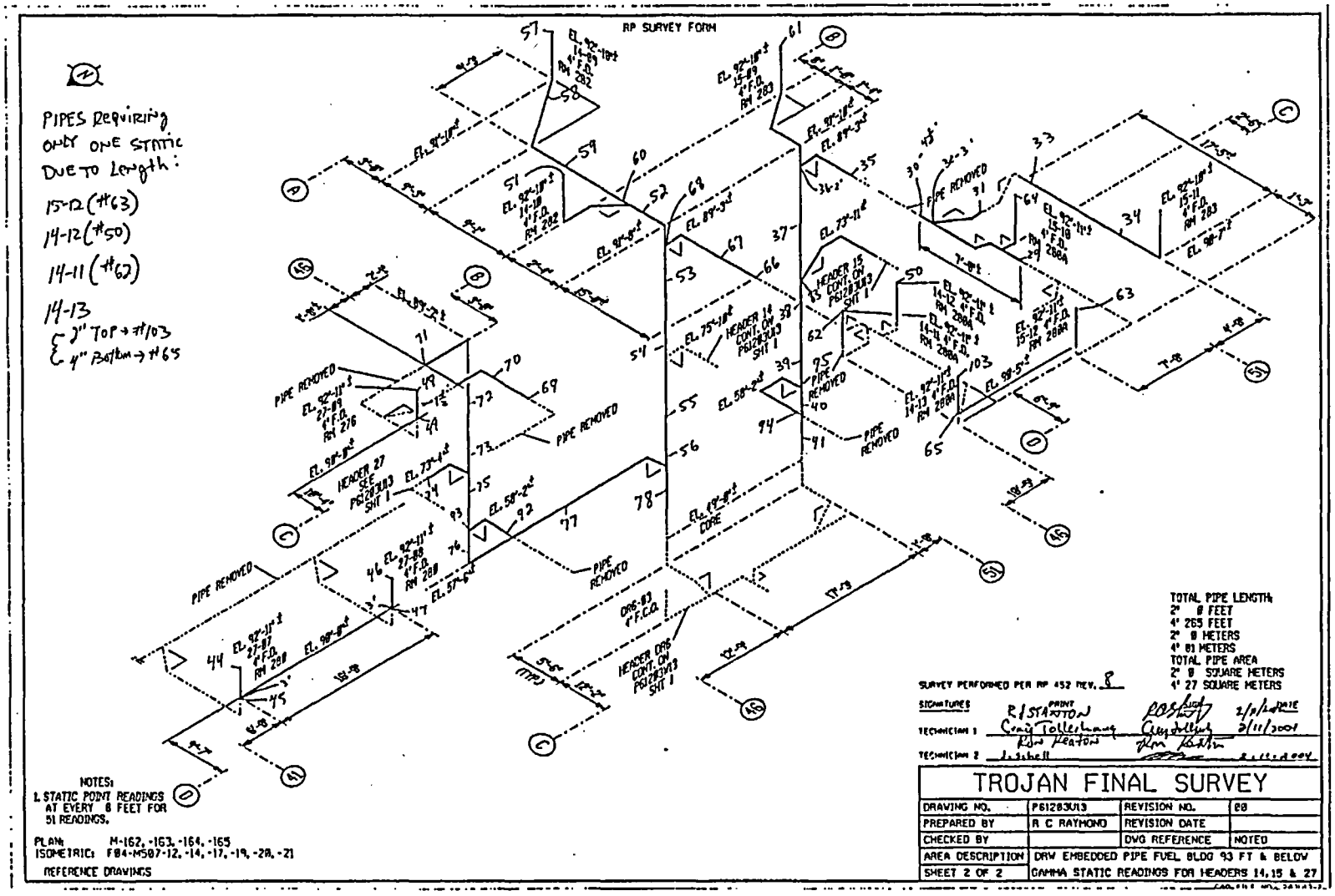


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations –Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203V
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	46	DPM/100 CM²	1.000e+005	4.500e+001	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-5.394e+003
Maximum Value	:	1.335e+005
Range	:	1.389e+005
Median	:	7.355e+003
Std. Deviation	:	2.023e+004
Mean	:	1.180e+004
95% UCL	:	1.681e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	8.182e+002	000018	6.338e+003	000035	1.399e+004
000002	6.904e+003	000019	4.338e+003	000036	-5.394e+003
000003	8.071e+003	000020	3.601e+003	000037	3.268e+003
000004	1.043e+004	000021	5.505e+003	000038	6.965e+003
000005	1.241e+004	000022	4.571e+003	000039	1.196e+004
000006	1.050e+004	000023	3.556e+003	000040	5.208e+003
000007	1.539e+004	000024	1.242e+004	000041	2.042e+003
000008	1.865e+004	000025	-5.354e+002	000042	7.167e+003
000009	3.813e+004	000026	-1.904e+003	000043	7.542e+003
000010	8.293e+003	000027	6.131e+003	000044	9.708e+003
000011	7.712e+003	000028	7.116e+003	000045	1.083e+003
000012	8.232e+003	000029	7.904e+003	000046	7.042e+003
000013	1.662e+004	000030	6.258e+003		
000014	2.054e+004	000031	8.384e+003		
000015	1.061e+004	000032	1.789e+004		
000016	4.859e+003	000033	4.268e+004		
000017	6.131e+003	000034	1.335e+005		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203V
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Measurement Data Statistical Evaluation

Statistical Comparisons

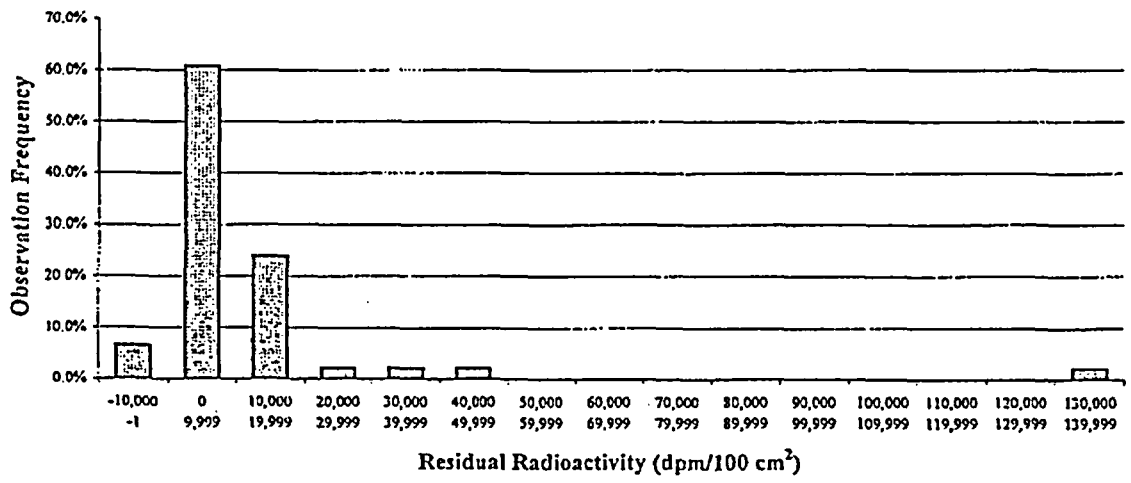
Test	Calculated Value	Acceptance Criteria	Acceptable?	
Range	138,894	139,606	Pass	(see comment)
Median	0.220	0.500	Pass	
Mean	11,796	100,000	Pass	
Std Dev	20,233	21,000	Pass	(see comment)

Passed required Sign statistical test
S+ = 45 & 45 is greater than 29, the test value

Statistical Quantities

Range:	138,894
Median:	7,355
Mean:	11,796
Std Dev:	20,233
Minimum:	-5,394
Maximum:	133,500
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	46
# of intervals:	15
Interval increment:	10,000
Minimum:	-10,000
Maximum:	139,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-10,000	3	6.5%
2	9,999	0	28	60.9%
3	19,999	10,000	11	23.9%
4	29,999	20,000	1	2.2%
5	39,999	30,000	1	2.2%
6	49,999	40,000	1	2.2%
7	59,999	50,000	0	0.0%
8	69,999	60,000	0	0.0%
9	79,999	70,000	0	0.0%
10	89,999	80,000	0	0.0%
11	99,999	90,000	0	0.0%
12	109,999	100,000	0	0.0%
13	119,999	110,000	0	0.0%
14	129,999	120,000	0	0.0%
15	139,999	130,000	1	2.2%
		Total:	46	100%

Comment:
A single measurement value exceeds DCGL, and 3 values are less than zero, resulting in a very large range and standard deviation. To successfully perform final data processing through the sign statistical test, requires changing the SDMS default range test criterion from 5.0 to 6.9, and the default standard deviation test criterion from 0.20 to 0.21. All measurement data are valid & accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203V
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	4,109
Maximum Value:	163,100
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 032) and one corresponding static measurement (location 34) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.4
Length of Survey Unit (m):	55
Survey Unit Area >DCGL (%):	0.7
EMC Value:	669,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison; changed statistical quantities test value for range to 6.9 and for standard deviation to 0.21 for final survey data processing.

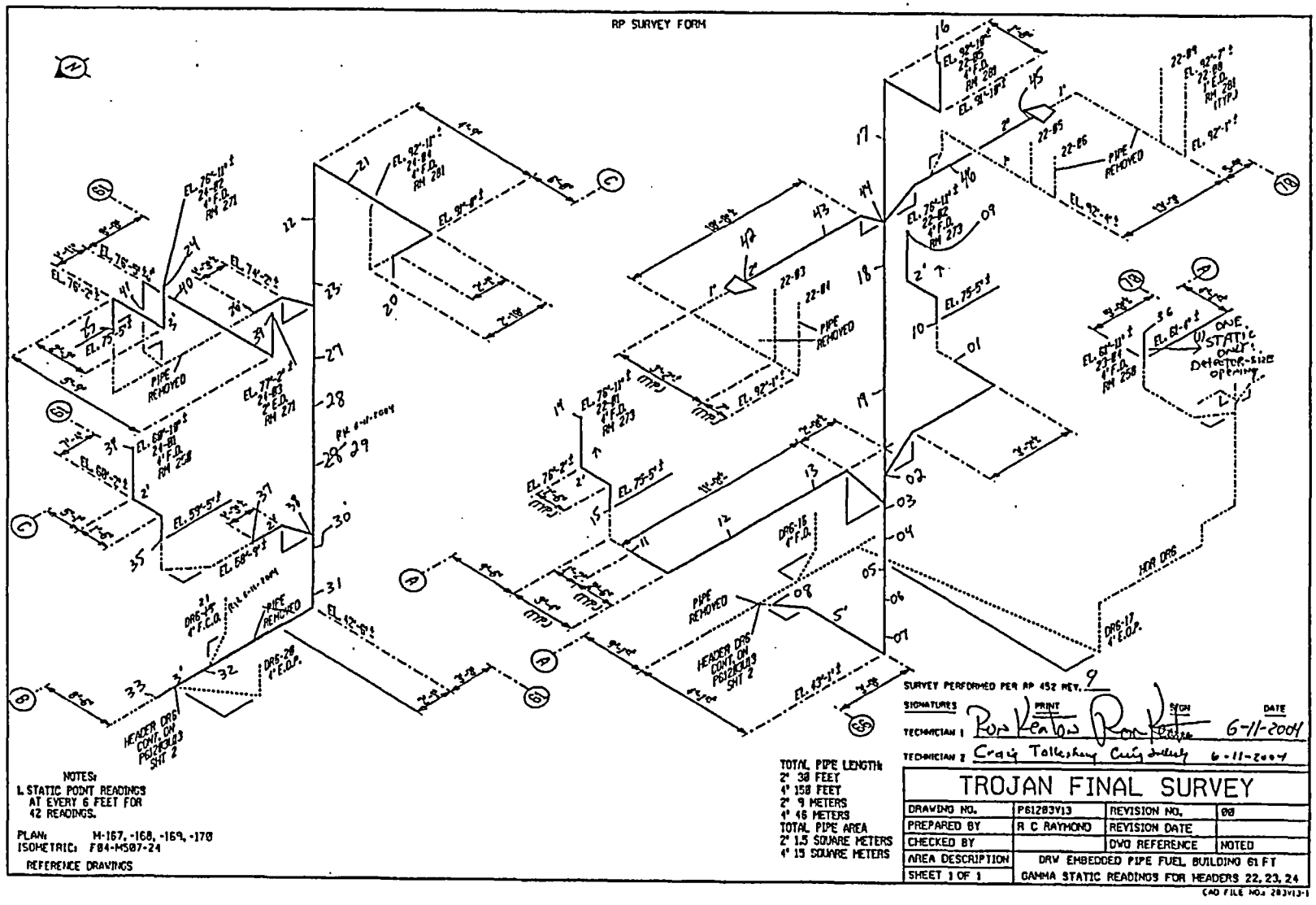
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified by both the scan and static measurement surveys represents a small, localized area of fixed radioactivity and has been determined to be ALARA. Retaining the elevated values as final survey data results in the range and standard deviation statistical quantities failing the default acceptance test criteria.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203V
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	121	DPM/100 CM²	1.000e+005	1.200e+002	-
Statics					

Statistical Quantities

Measurement Name:

Minimum Value	:	-4.500e+003
Maximum Value	:	1.635e+005
Range	:	1.680e+005
Median	:	8.778e+003
Std. Deviation	:	1.522e+004
Mean	:	1.089e+004
95% UCL	:	1.319e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.425e+004	000018	5.375e+003	000035	9.717e+003
000002	1.800e+004	000019	1.013e+004	000036	1.305e+004
000003	1.708e+004	000020	9.292e+003	000037	7.293e+003
000004	1.458e+004	000021	7.792e+003	000038	7.606e+003
000005	1.396e+004	000022	7.833e+003	000039	9.697e+003
000006	1.142e+004	000023	1.029e+004	000040	8.712e+003
000007	1.700e+004	000024	7.958e+003	000041	1.104e+004
000008	1.592e+004	000025	7.208e+003	000042	1.789e+004
000009	1.358e+004	000026	-3.500e+003	000043	6.202e+003
000010	1.121e+004	000027	-4.500e+003	000044	8.263e+003
000011	1.321e+004	000028	-2.542e+003	000045	7.328e+003
000012	1.217e+004	000029	-3.167e+003	000046	1.007e+004
000013	1.396e+004	000030	-2.042e+003	000047	9.783e+003
000014	1.188e+004	000031	-1.250e+003	000048	8.141e+003
000015	1.254e+004	000032	1.333e+003	000049	6.848e+003
000016	1.063e+004	000033	8.232e+003	000050	9.061e+003
000017	8.042e+003	000034	3.758e+003	000051	9.540e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Data Quality Values

Location	Value	Location	Value
000052	1.038e+004	000100	6.838e+003
000053	4.843e+003	000101	4.258e+003
000054	3.139e+004	000102	4.818e+003
000055	4.379e+003	000103	6.273e+003
000056	3.033e+004	000104	1.307e+004
000057	2.410e+004	000105	4.217e+003
000058	6.631e+003	000106	4.758e+003
000059	1.260e+004	000107	3.045e+003
000060	9.965e+003	000108	1.439e+004
000061	1.168e+004	000109	7.208e+003
000062	1.034e+004	000110	1.050e+004
000063	9.338e+003	000111	6.667e+003
000064	7.601e+003	000112	9.708e+003
000065	9.838e+003	000113	6.625e+003
000066	1.561e+004	000114	7.875e+003
000067	6.793e+003	000115	3.958e+003
000068	9.641e+003	000116	1.142e+004
000069	5.753e+003	000117	5.625e+003
000070	6.985e+003	000118	1.071e+004
000071	5.737e+003	000119	5.167e+003
000072	7.096e+003	000120	8.833e+003
000073	1.176e+004	000121	7.583e+003
000074	7.227e+003	000122	1.142e+004
000075	8.152e+003		
000076	7.692e+003		
000077	1.211e+004		
000078	1.447e+004		
000079	1.117e+004		
000080	2.095e+004		
000081	1.635e+005		
000082	8.778e+003		
000083	2.806e+004		
000084	2.275e+004		
000085	5.833e+003		
000086	6.323e+003		
000087	8.111e+003		
000088	1.115e+004		
000089	7.798e+003		
000090	8.086e+003		
000091	3.455e+003		
000092	2.203e+004		
000093	8.394e+003		
000095	2.426e+004		
000096	1.033e+004		
000097	5.384e+003		
000098	7.480e+003		
000099	4.631e+003		

There is no measurement # 000094.

M

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Measurement Data Statistical Evaluation

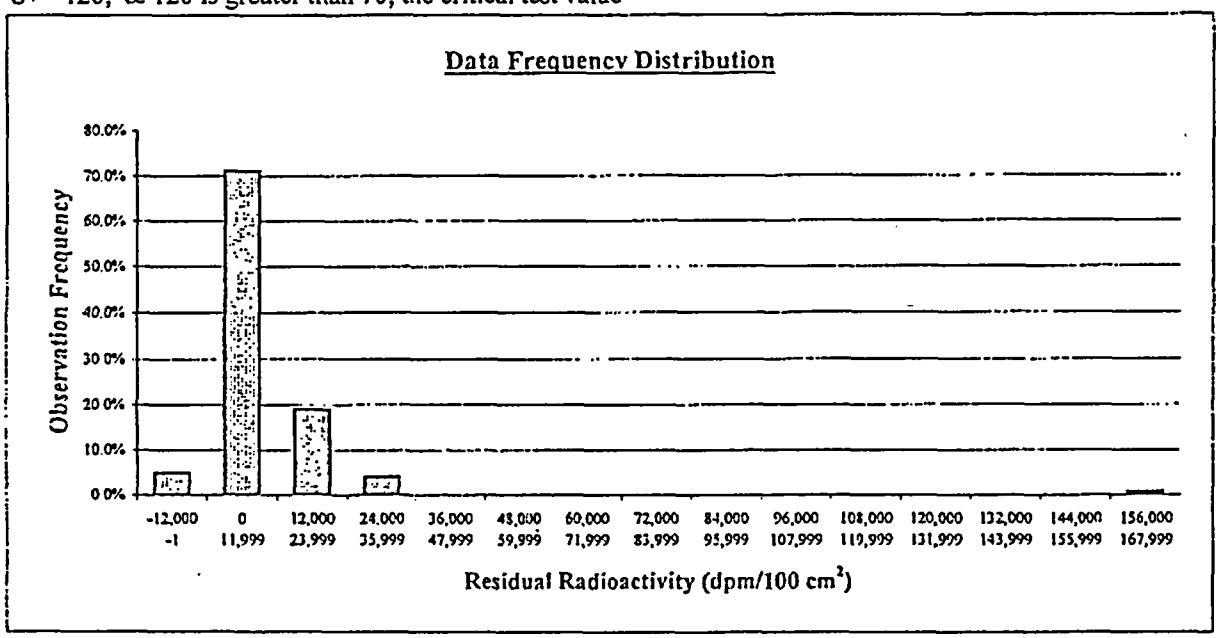
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?	
Range	168,000	168,981	Pass	(see comment)
Median	0.139	0.500	Pass	
Mean	10,891	100,000	Pass	
Std Dev	15,224	20,000	Pass	

Passed required Sign statistical test
S+ =120, & 120 is greater than 70, the critical test value

Statistical Quantities

Range:	168,000
Median:	8,778
Mean:	10,891
Std Dev:	15,224
Minimum:	-4,500
Maximum:	163,500
DCGL:	100,000



Plot Parameters	
# of measurements:	121
# of intervals:	15
Interval increment:	12,000
Minimum:	-12,000
Maximum:	167,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-12,000	6	5.0%
2	11,999	0	86	71.1%
3	23,999	12,000	23	19.0%
4	35,999	24,000	5	4.1%
5	47,999	36,000	0	0.0%
6	59,999	48,000	0	0.0%
7	71,999	60,000	0	0.0%
8	83,999	72,000	0	0.0%
9	95,999	84,000	0	0.0%
10	107,999	96,000	0	0.0%
11	119,999	108,000	0	0.0%
12	131,999	120,000	0	0.0%
13	143,999	132,000	0	0.0%
14	155,999	144,000	0	0.0%
15	167,999	156,000	1	0.8%
		Total:	121	100%

Comment:
Range test acceptance criterion changed to 11.1 times the data set standard deviation in order to successfully process the data set through the Sign Test. Per the completed investigation results form, the elevated static measurement is retained in the data set.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	361
Maximum Value:	231,900
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: Three scan measurements (locations 045, 053, & 070) and one corresponding static measurement (location 81) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	1.8
Length of Survey Unit (m):	144
Survey Unit Area >DCGL (%):	1.2
EMC Value:	250,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison.

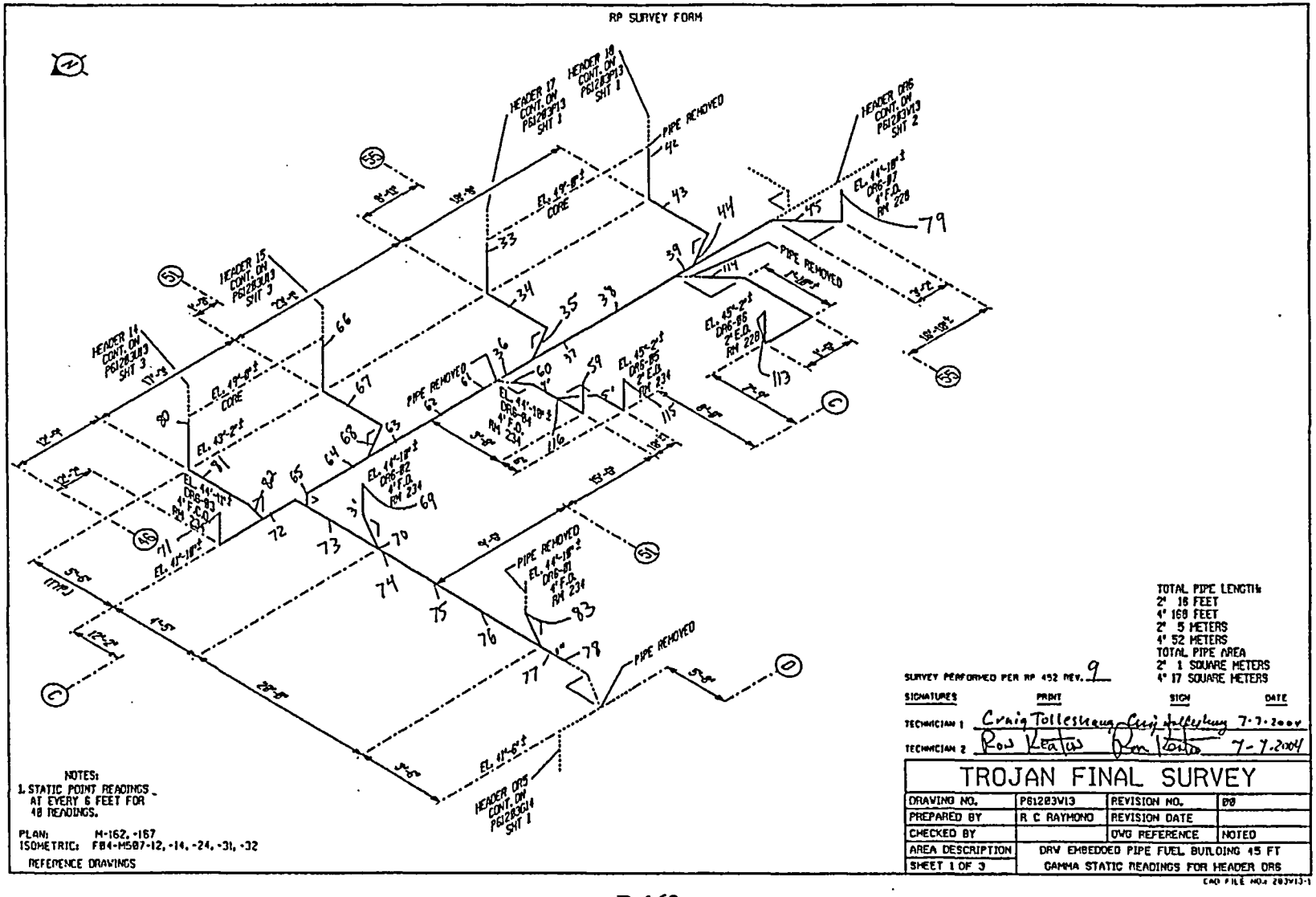
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity identified by both the scan and static measurement surveys represents small, localized areas of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Static Measurement Locations Map

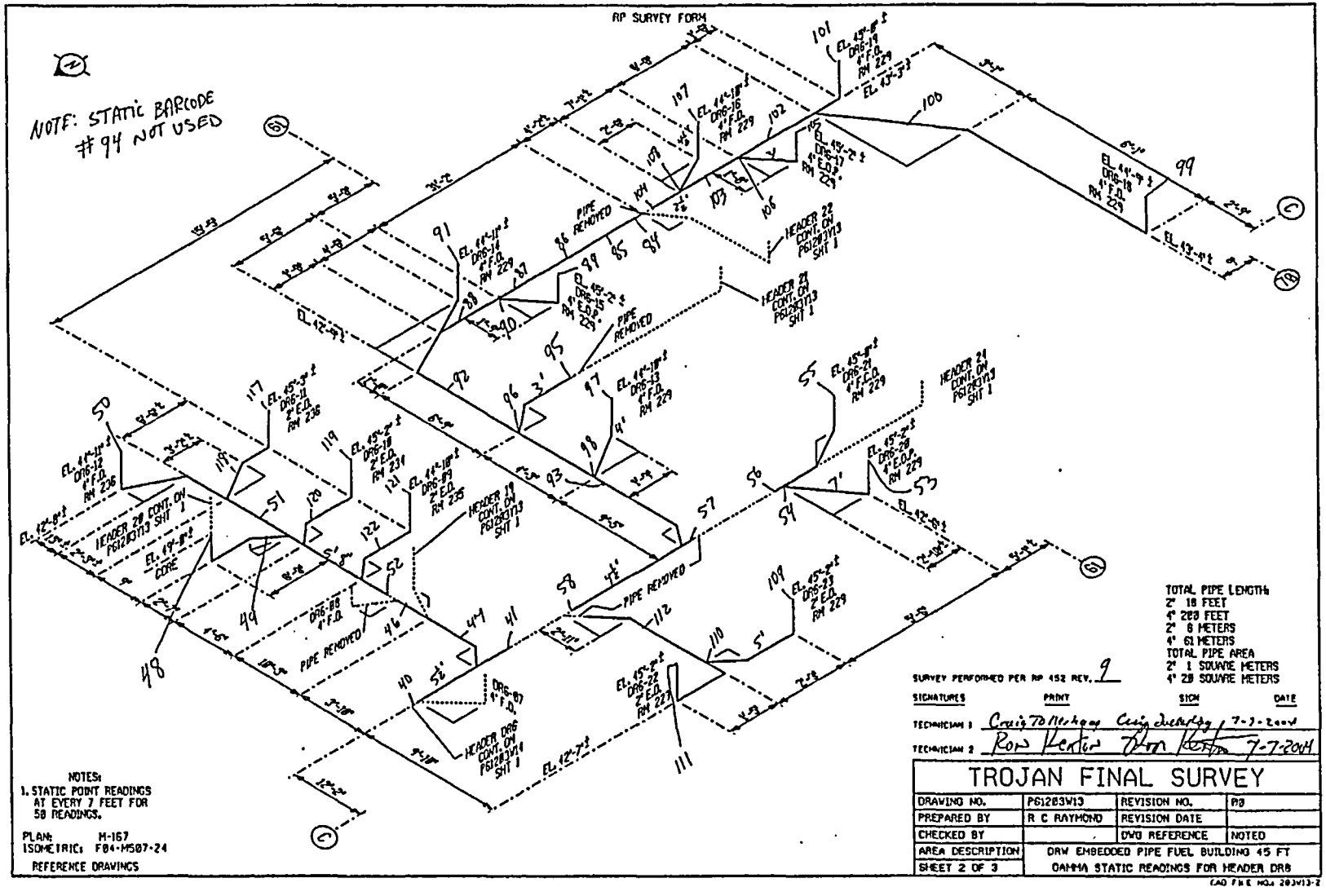


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Static Measurement Locations Map

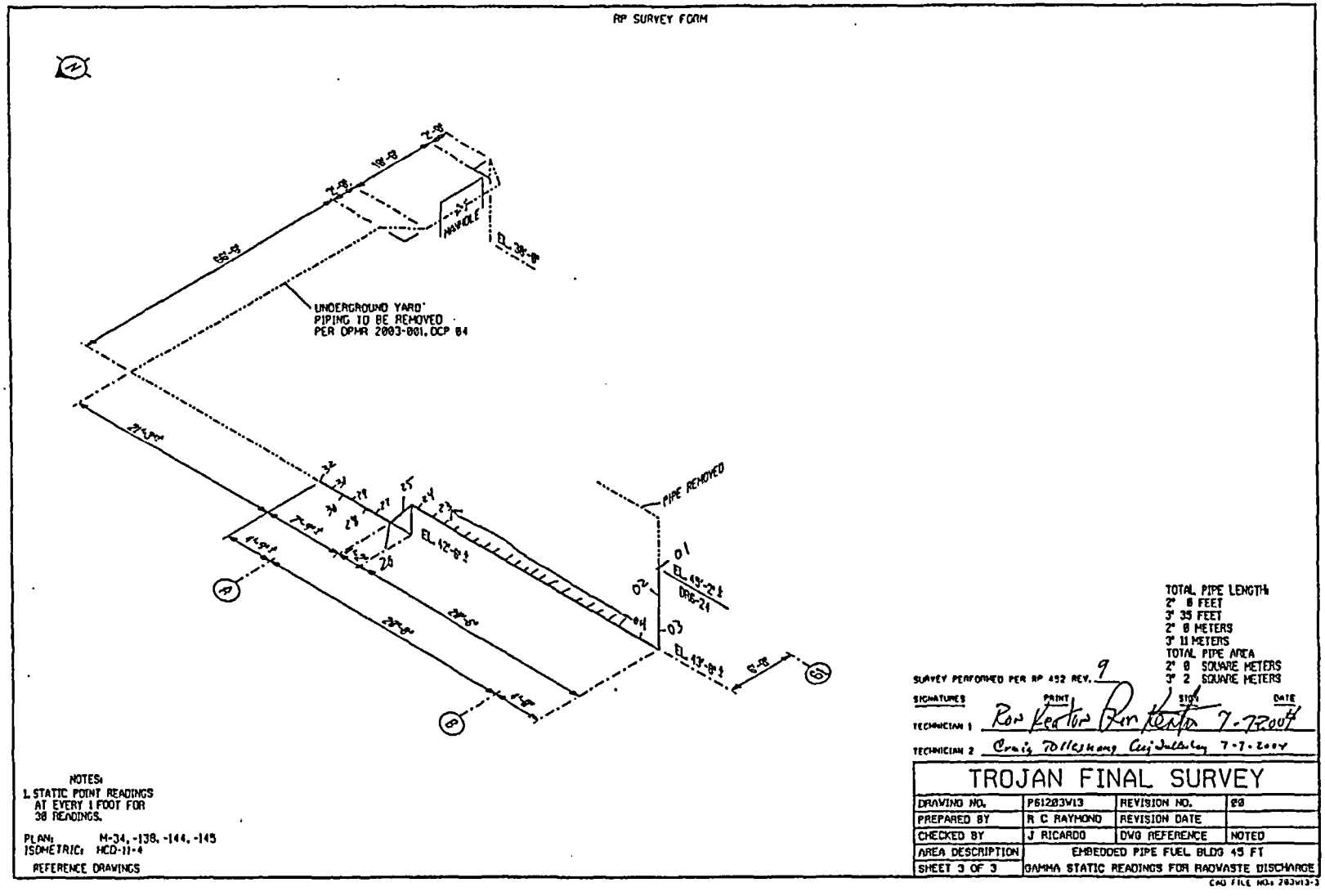


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X **Classification:** Class 1
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 26

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	71	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-5.625e+003
Maximum Value	:	2.354e+004
Range	:	2.917e+004
Median	:	4.429e+003
Std. Deviation	:	4.201e+003
Mean	:	4.580e+003
95% UCL	:	5.412e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	5.096e+003	000018	2.162e+003	000035	2.869e+003
000002	4.803e+003	000019	4.429e+003	000036	5.207e+003
000003	4.722e+003	000020	4.010e+003	000037	2.354e+004
000004	2.833e+003	000021	4.535e+003	000038	8.530e+003
000005	3.273e+003	000022	2.722e+003	000039	5.631e+003
000006	3.323e+003	000023	4.970e+003	000040	6.066e+003
000007	2.909e+003	000024	3.636e+003	000041	6.485e+003
000008	4.919e+003	000025	6.434e+003	000042	1.045e+004
000009	2.960e+003	000026	6.035e+003	000043	1.448e+004
000010	1.919e+003	000027	5.949e+003	000044	1.061e+004
000011	4.343e+003	000028	3.732e+003	000045	8.000e+003
000012	-4.409e+003	000029	4.030e+003	000046	9.162e+003
000013	-3.101e+003	000030	5.177e+003	000047	9.717e+003
000014	-3.066e+003	000031	4.081e+003	000048	8.429e+003
000015	3.424e+003	000032	4.389e+003	000049	3.406e+003
000016	1.869e+003	000033	3.273e+003	000050	6.219e+003
000017	1.646e+003	000034	4.424e+003	000051	9.344e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X **Classification:** Class 1
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 26

Data Quality Values

Location	Value
000052	8.406e+003
000053	1.188e+003
000054	4.500e+003
000055	2.406e+003
000056	2.781e+003
000057	6.406e+003
000058	5.250e+003
000059	-5.438e+003
000060	2.500e+002
000061	-5.625e+003
000062	-1.656e+003
000063	5.219e+003
000064	6.469e+003
000065	3.188e+003
000066	3.031e+003
000067	3.857e+003
000068	5.429e+003
000069	5.571e+003
000070	7.000e+003
000071	7.333e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X **Classification:** Class 1
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 26

Measurement Data Statistical Evaluation

Statistical Comparisons

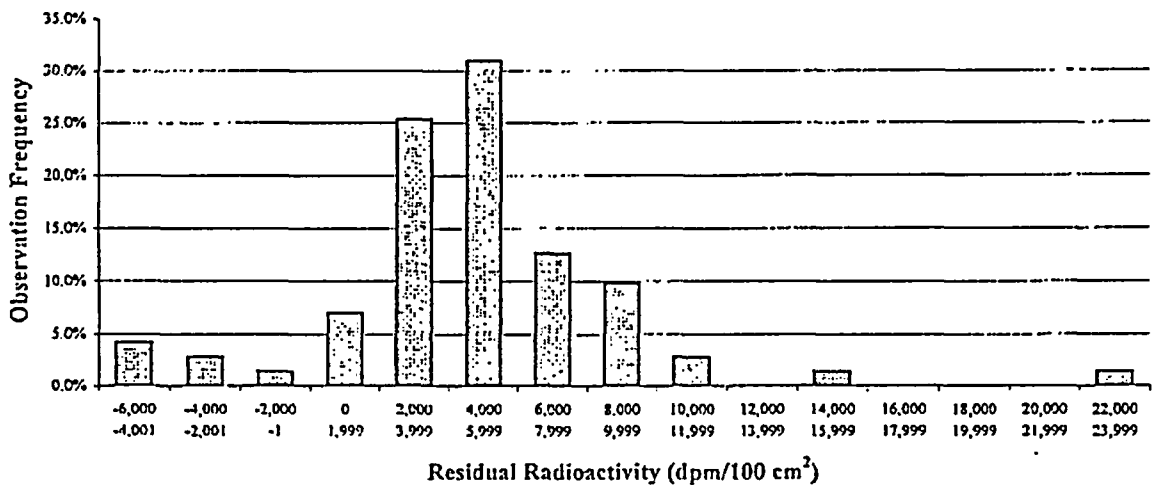
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	29,165	21,004	See comment below
Median	0.036	0.500	Pass
Mean	4,580	100,000	Pass
Std Dev	4,201	20,000	Pass

Passed required Sign statistical test
S+ = 100, & 100 is greater than 59, the critical test value

Statistical Quantities

Range:	29,165
Median:	4,429
Mean:	4,580
Std Dev:	4,201
Minimum:	-5,625
Maximum:	23,540
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	71
# of intervals:	15
Interval increment:	2,000
Minimum:	-6,000
Maximum:	23,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-4,001	-6,000	3	4.2%
2	-2,001	-4,000	2	2.8%
3	-1	-2,000	1	1.4%
4	1,999	0	5	7.0%
5	3,999	2,000	18	25.4%
6	5,999	4,000	22	31.0%
7	7,999	6,000	9	12.7%
8	9,999	8,000	7	9.9%
9	11,999	10,000	2	2.8%
10	13,999	12,000	0	0.0%
11	15,999	14,000	1	1.4%
12	17,999	16,000	0	0.0%
13	19,999	18,000	0	0.0%
14	21,999	20,000	0	0.0%
15	23,999	22,000	1	1.4%
		Total:	71	100%

Comment:
Range failure is a test artifact due to several negative values and one relatively high value, compared to the rest of the data set, resulting in a range value that exceeds 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X **Classification:** Class 1
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 26

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-3,369
Maximum Value:	26,100
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

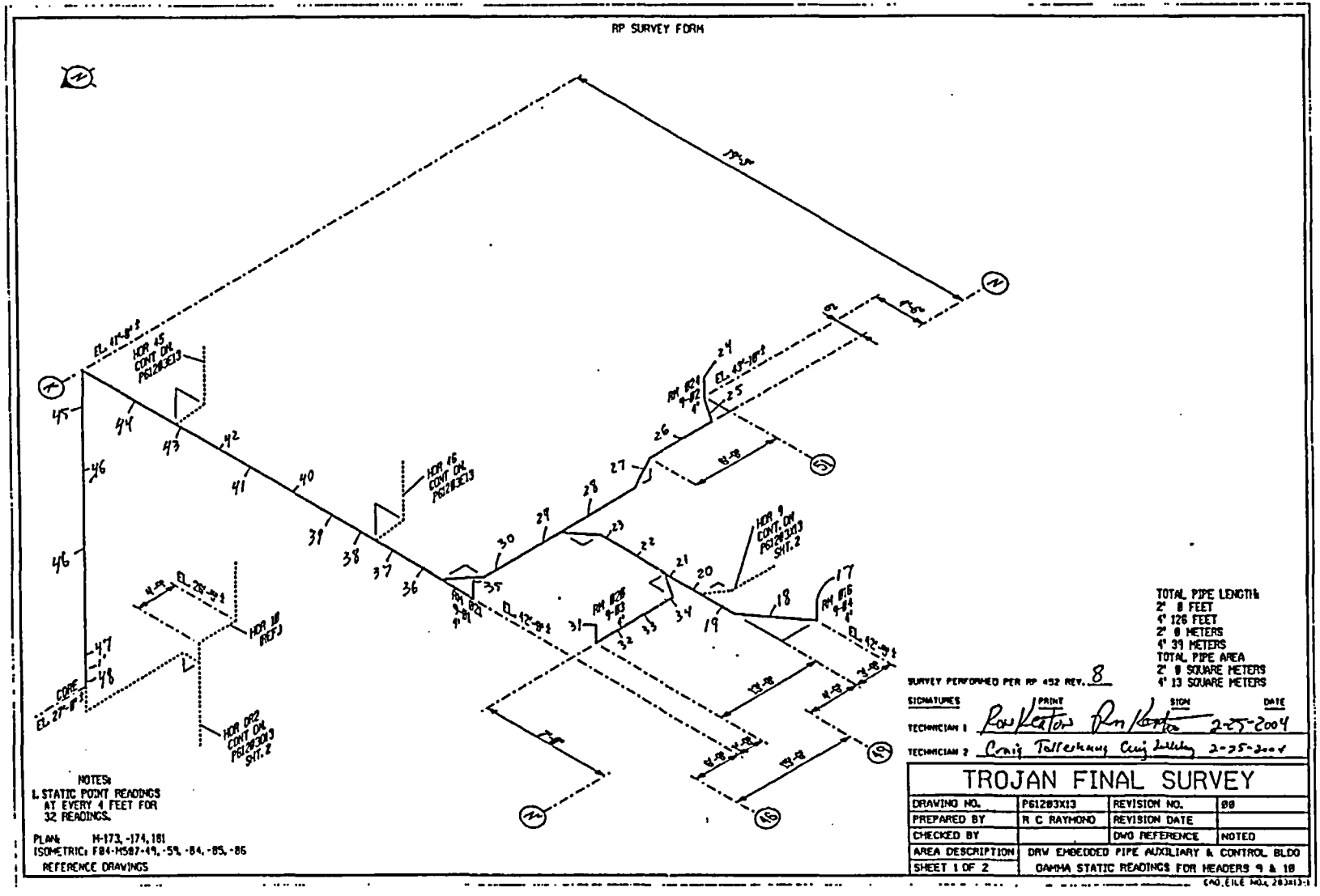
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map

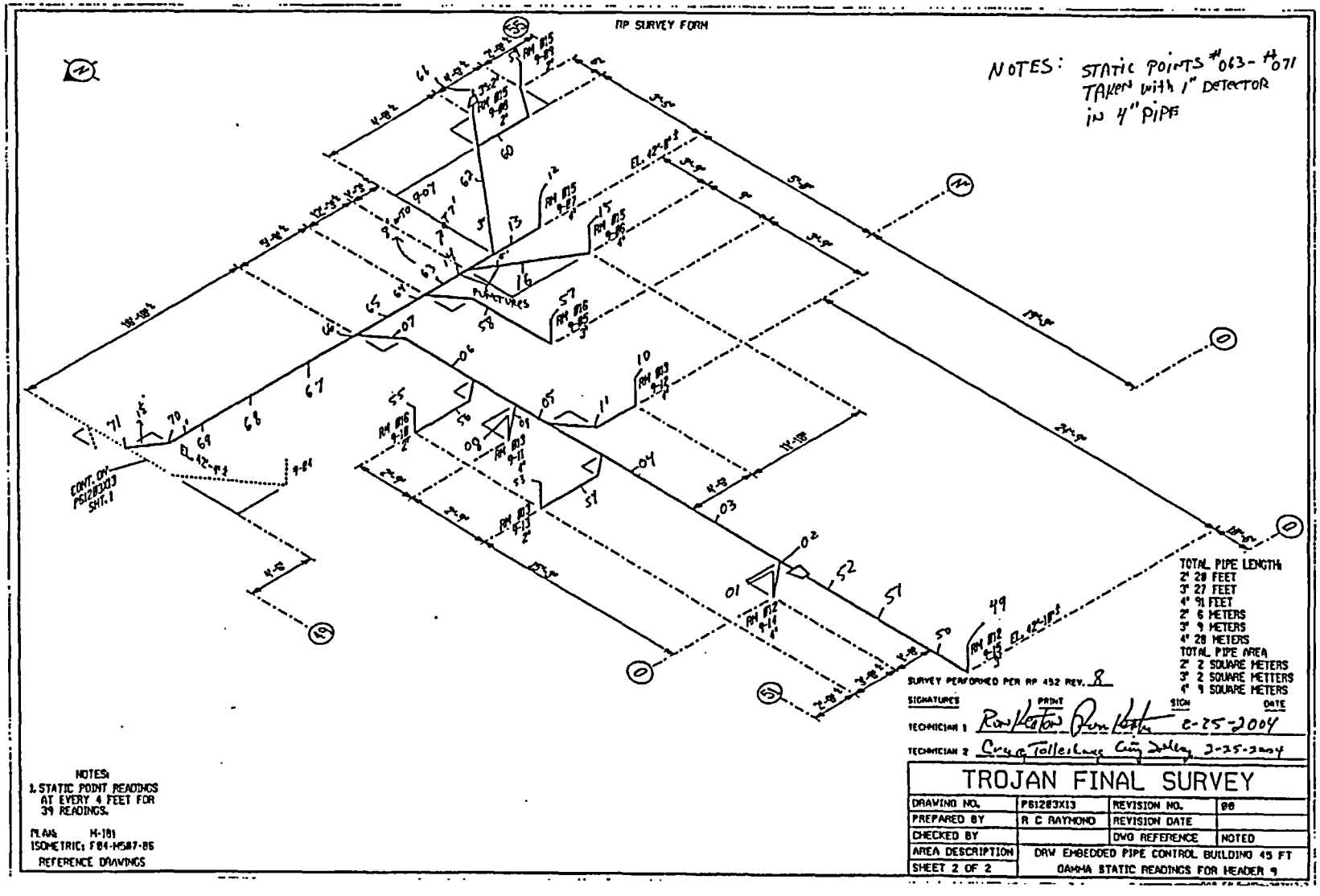


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Y
Survey Unit Name: AB 61', 77', and 93' Elevations - Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	47	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-4.495e+003
Maximum Value	:	7.272e+004
Range	:	7.722e+004
Median	:	7.374e+003
Std. Deviation	:	1.789e+004
Mean	:	1.372e+004
95% UCL	:	1.811e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.110e+004	000018	6.677e+003	000035	7.192e+003
000002	2.499e+004	000019	5.803e+003	000036	7.439e+003
000003	2.282e+004	000020	3.975e+003	000037	7.374e+003
000004	7.272e+004	000021	4.747e+003	000038	8.672e+003
000005	5.019e+004	000022	3.348e+004	000039	-2.843e+003
000006	4.772e+004	000023	1.145e+004	000040	6.687e+003
000007	3.065e+004	000024	1.082e+004	000041	1.591e+003
000008	5.797e+004	000025	1.217e+004	000042	7.924e+003
000009	4.277e+004	000026	-2.460e+003	000043	7.485e+003
000010	-6.465e+002	000027	2.944e+003	000044	7.722e+003
000011	-1.172e+003	000028	-2.389e+003	000045	4.561e+003
000012	2.928e+004	000029	2.707e+003	000046	4.263e+003
000013	5.029e+004	000030	1.485e+003	000047	1.267e+004
000014	-2.258e+003	000031	8.990e+002		
000015	-4.495e+003	000032	1.204e+004		
000016	6.859e+003	000033	9.071e+003		
000017	5.000e+003	000034	7.066e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Y
Survey Unit Name: AB 61', 77', and 93' Elevations - Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Measurement Data Statistical Evaluation

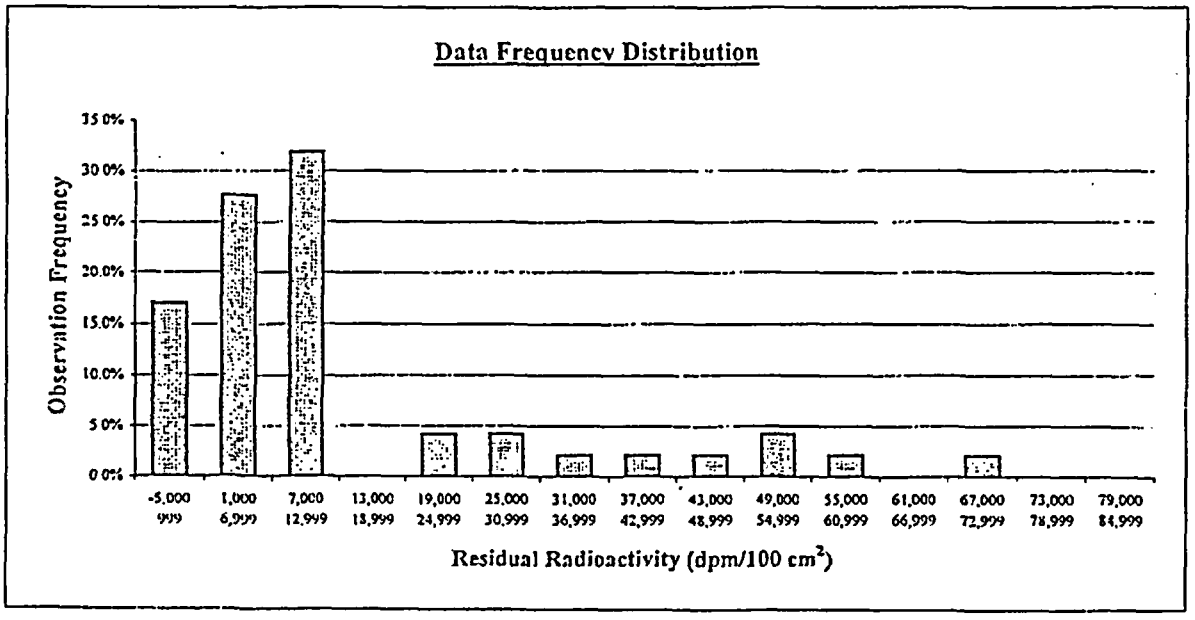
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	77,215	89,465	Pass
Median	0.355	0.500	Pass
Mean	13,724	100,000	Pass
Std Dev	17,893	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	77,215
Median:	7,374
Mean:	13,724
Std Dev:	17,893
Minimum:	-4,495
Maximum:	72,720
DCGL:	100,000



Plot Parameters

# of measurements:	47
# of intervals:	15
Interval increment:	6,000
Minimum:	-5,000
Maximum:	84,999

Comment:
None.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	999	-5,000	8	17.0%
2	6,999	1,000	13	27.7%
3	12,999	7,000	15	31.9%
4	18,999	13,000	0	0.0%
5	24,999	19,000	2	4.3%
6	30,999	25,000	2	4.3%
7	36,999	31,000	1	2.1%
8	42,999	37,000	1	2.1%
9	48,999	43,000	1	2.1%
10	54,999	49,000	2	4.3%
11	60,999	55,000	1	2.1%
12	66,999	61,000	0	0.0%
13	72,999	67,000	1	2.1%
14	78,999	73,000	0	0.0%
15	84,999	79,000	0	0.0%
		Total:	47	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Y
Survey Unit Name: AB 61', 77', and 93' Elevations - Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	297
Maximum Value:	79,720
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

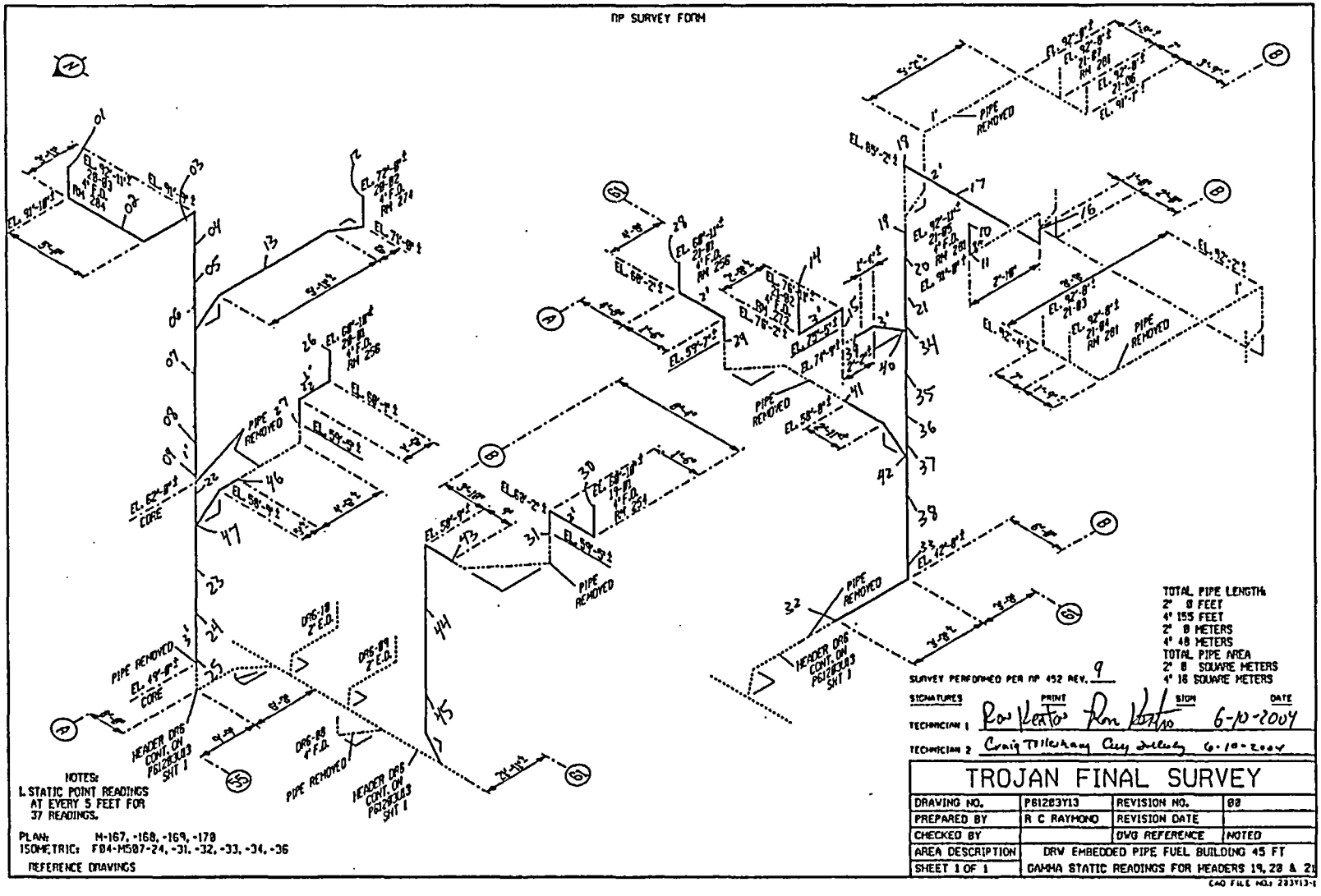
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Y
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 34

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	82	DPM/100 CM²	1.000e+005	-	-

Statics

Statistical Quantities

Measurement Name:

Minimum Value	:	-4.010e+003
Maximum Value	:	3.495e+004
Range	:	3.896e+004
Median	:	2.222e+003
Std. Deviation	:	6.118e+003
Mean	:	3.857e+003
95% UCL	:	4.983e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	7.020e+002	000018	2.125e+003	000035	-8.081e+001
000002	1.818e+002	000019	1.667e+002	000036	2.375e+003
000003	2.576e+002	000020	-2.083e+003	000037	7.542e+003
000004	8.333e+002	000021	4.583e+002	000038	4.042e+003
000005	2.475e+002	000022	1.458e+003	000039	5.000e+003
000006	-1.465e+002	000023	3.042e+003	000040	2.015e+003
000007	-7.121e+002	000024	-2.333e+003	000041	6.359e+003
000008	-1.288e+003	000025	3.333e+002	000042	6.091e+003
000009	-4.091e+002	000026	-3.917e+003	000043	9.591e+003
000010	-1.051e+003	000027	0.000e+000	000044	6.621e+003
000011	-1.227e+003	000028	-2.250e+003	000046	-4.804e+002
000012	1.162e+002	000029	1.417e+003	000047	5.539e+003
000013	5.606e+002	000030	7.864e+003	000048	6.353e+003
000014	-7.071e+002	000031	-7.576e+001	000049	1.208e+004
000015	-4.167e+001	000032	-9.697e+002	000050	8.515e+003
000016	9.583e+002	000033	-1.384e+003	000051	9.706e+003
000017	-8.750e+002	000034	-1.162e+002	000052	2.319e+003

No location # 000045
VOL

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 34

Data Quality Values

Location	Value
000053	5.186e+003
000054	4.863e+003
000055	5.730e+003
000056	4.118e+002
000057	-1.946e+003
000058	1.887e+003
000059	-1.775e+003
000060	-4.010e+003
000061	6.358e+003
000062	4.892e+003
000063	4.838e+003
000064	4.471e+003
000065	5.422e+003
000066	4.564e+003
000067	9.152e+003
000068	8.765e+003
000069	9.456e+003
000070	3.495e+004
000071	9.588e+003
000072	5.534e+003
000073	6.819e+003
000074	7.446e+003
000075	7.039e+003
000076	1.676e+003
000077	5.510e+003
000078	6.632e+003
000079	5.417e+003
000080	1.174e+004
000081	2.956e+003
000082	2.413e+004
000083	2.389e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 34

Measurement Data Statistical Evaluation

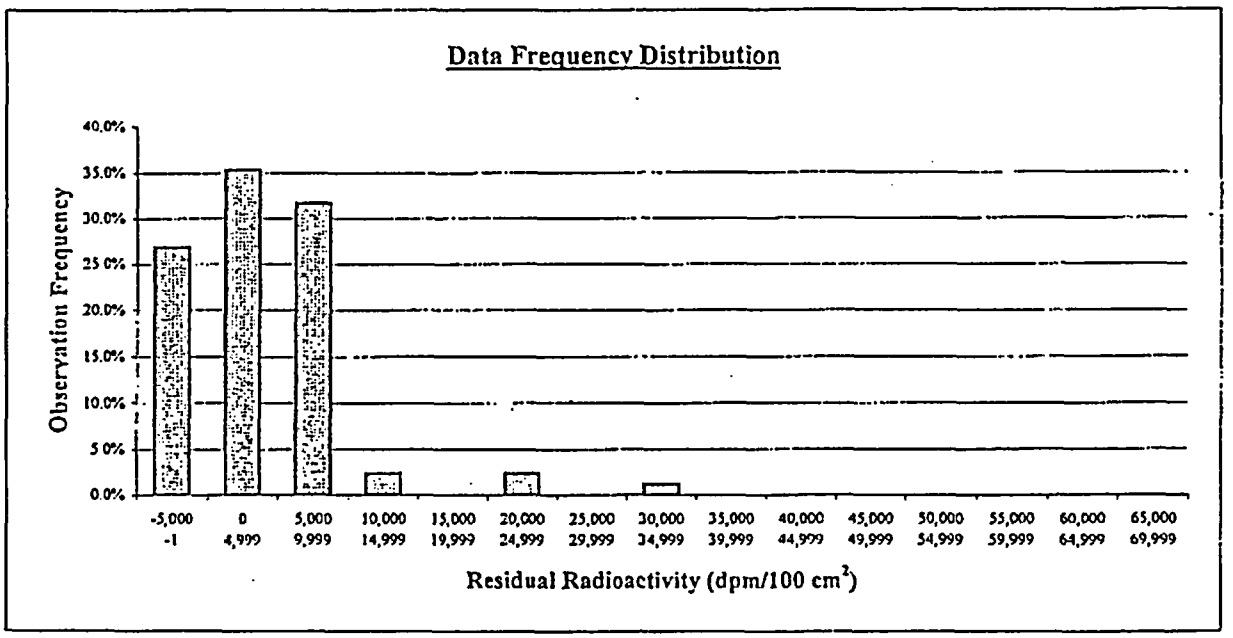
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	38,960	30,591	See comment below
Median	0.267	0.500	Pass
Mean	3,857	100,000	Pass
Std Dev	6,118	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	38,960
Median:	2,222
Mean:	3,857
Std Dev:	6,118
Minimum:	-4,010
Maximum:	34,950
DCGL:	100,000



Plot Parameters	
# of measurements:	82
# of intervals:	15
Interval increment:	5,000
Minimum:	-5,000
Maximum:	69,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1	-5,000	22	26.8%
2	4,999	0	29	35.4%
3	9,999	5,000	26	31.7%
4	14,999	10,000	2	2.4%
5	19,999	15,000	0	0.0%
6	24,999	20,000	2	2.4%
7	29,999	25,000	0	0.0%
8	34,999	30,000	1	1.2%
9	39,999	35,000	0	0.0%
10	44,999	40,000	0	0.0%
11	49,999	45,000	0	0.0%
12	54,999	50,000	0	0.0%
13	59,999	55,000	0	0.0%
14	64,999	60,000	0	0.0%
15	69,999	65,000	0	0.0%
		Total:	82	100%

Comment:
Range failure is a test artifact due to multiple negative values and two relatively large values, resulting in a large range that exceeds the test criterion of 5 times the standard deviation. All measurement values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 34

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-4,395
Maximum Value:	131,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 032) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.3
Length of Survey Unit (m):	105
Survey Unit Area >DCGL (%):	0.3
EMC Value:	670,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

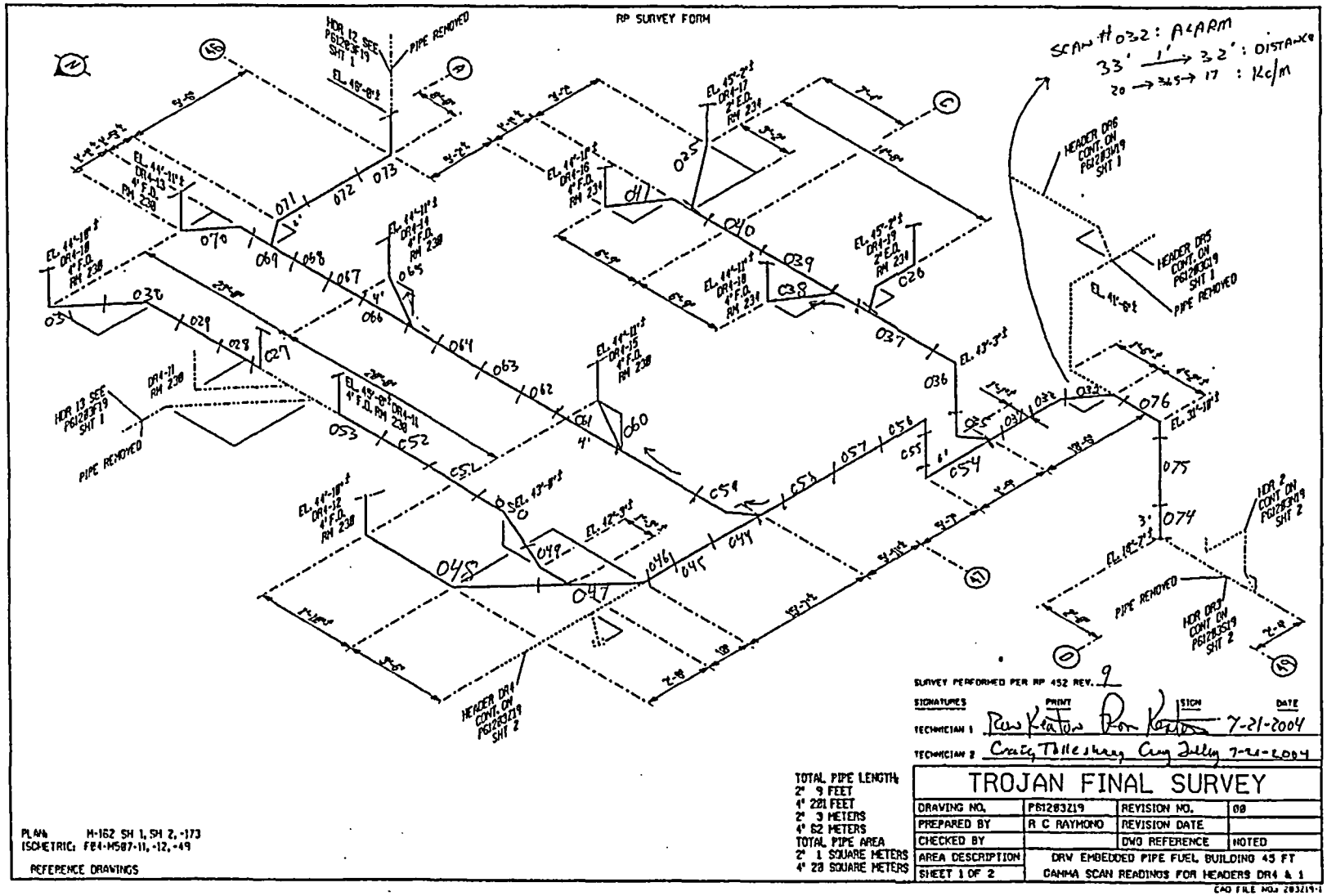
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 34

Static Measurement Locations Map

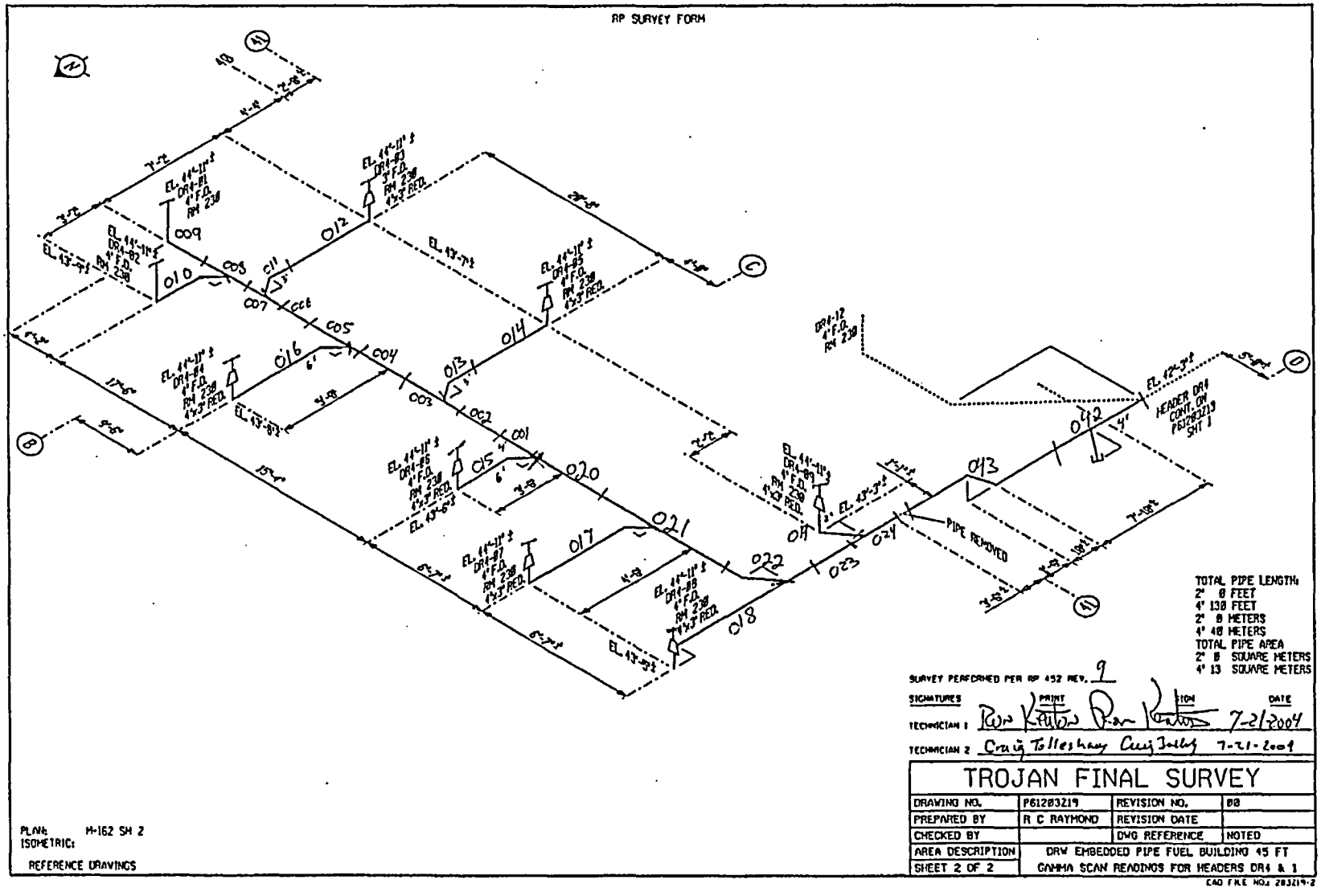


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 34

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	81	DPM/100 CM²	1.000e+005	-	-

Statics

Statistical Quantities

Measurement Name:

Minimum Value	:	2.527e+003
Maximum Value	:	4.570e+004
Range	:	4.317e+004
Median	:	8.528e+003
Std. Deviation	:	7.199e+003
Mean	:	1.101e+004
95% UCL	:	1.234e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.967e+004	000018	1.263e+004	000035	7.452e+003
000002	8.196e+003	000019	9.710e+003	000036	6.811e+003
000003	1.576e+004	000020	2.256e+004	000037	1.801e+004
000004	8.534e+003	000021	1.265e+004	000038	1.550e+004
000005	2.156e+004	000022	1.800e+004	000039	7.797e+003
000006	9.940e+003	000023	9.639e+003	000040	8.751e+003
000007	2.684e+004	000024	3.964e+004	000041	8.311e+003
000008	1.086e+004	000025	9.016e+003	000042	3.591e+003
000009	1.948e+004	000026	7.559e+003	000043	6.669e+003
000010	1.284e+004	000027	6.544e+003	000044	7.185e+003
000011	5.473e+003	000028	7.149e+003	000045	7.221e+003
000012	8.292e+003	000029	5.477e+003	000046	2.843e+003
000013	6.972e+003	000030	8.591e+003	000047	5.530e+003
000014	7.889e+003	000031	9.178e+003	000048	4.391e+003
000015	7.237e+003	000032	7.968e+003	000049	7.078e+003
000016	7.658e+003	000033	5.601e+003	000050	9.463e+003
000017	7.995e+003	000034	1.286e+004	000051	6.456e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Data Quality Values

Location	Value
000052	1.810e+004
000053	4.570e+004
000054	7.621e+003
000055	8.493e+003
000056	9.685e+003
000057	1.547e+004
000058	1.723e+004
000059	2.205e+004
000060	1.378e+004
000061	1.273e+004
000062	9.400e+003
000063	9.792e+003
000064	8.493e+003
000065	6.802e+003
000066	9.507e+003
000067	6.785e+003
000068	1.079e+004
000069	7.247e+003
000070	2.275e+004
000071	1.227e+004
000072	8.351e+003
000073	5.005e+003
000074	1.541e+004
000075	8.528e+003
000076	4.822e+003
000077	6.370e+003
000078	2.527e+003
000079	1.358e+004
000080	4.363e+003
000081	5.283e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Measurement Data Statistical Evaluation

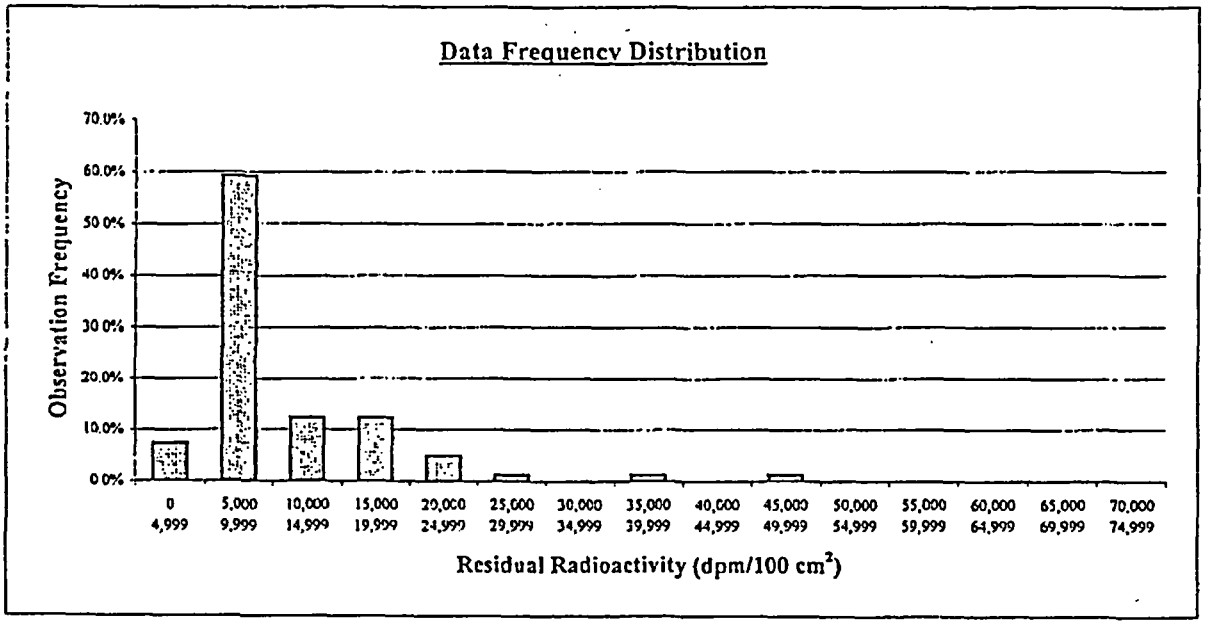
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	43,173	35,995	See comment below
Median	0.345	0.500	Pass
Mean	11,012	100,000	Pass
Std Dev	7,199	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	43,173
Median:	8,528
Mean:	11,012
Std Dev:	7,199
Minimum:	2,527
Maximum:	45,700
DCGL:	100,000



Plot Parameters

# of measurements:	81
# of intervals:	15
Interval increment:	5,000
Minimum:	0
Maximum:	74,999

Comment:
Range failure is a test artifact due to two relatively large values, resulting in a range that exceeds the test criterion of 5 times the standard deviation. All measurement values are valid and accepted.

Interval	High End	Low End	Number of Observations	Observation Frequency
1	4,999	0	6	7.4%
2	9,999	5,000	48	59.3%
3	14,999	10,000	10	12.3%
4	19,999	15,000	10	12.3%
5	24,999	20,000	4	4.9%
6	29,999	25,000	1	1.2%
7	34,999	30,000	0	0.0%
8	39,999	35,000	1	1.2%
9	44,999	40,000	0	0.0%
10	49,999	45,000	1	1.2%
11	54,999	50,000	0	0.0%
12	59,999	55,000	0	0.0%
13	64,999	60,000	0	0.0%
14	69,999	65,000	0	0.0%
15	74,999	70,000	0	0.0%
		Total:	81	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	4,288
Maximum Value:	115,100
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: One scan measurement (location 027) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	0.2
Length of Survey Unit (m):	58
Survey Unit Area >DCGL (%):	0.3
EMC Value:	670,000

Action Taken: Accepted elevated measurement value as final survey data and applied the elevated measurement comparison.

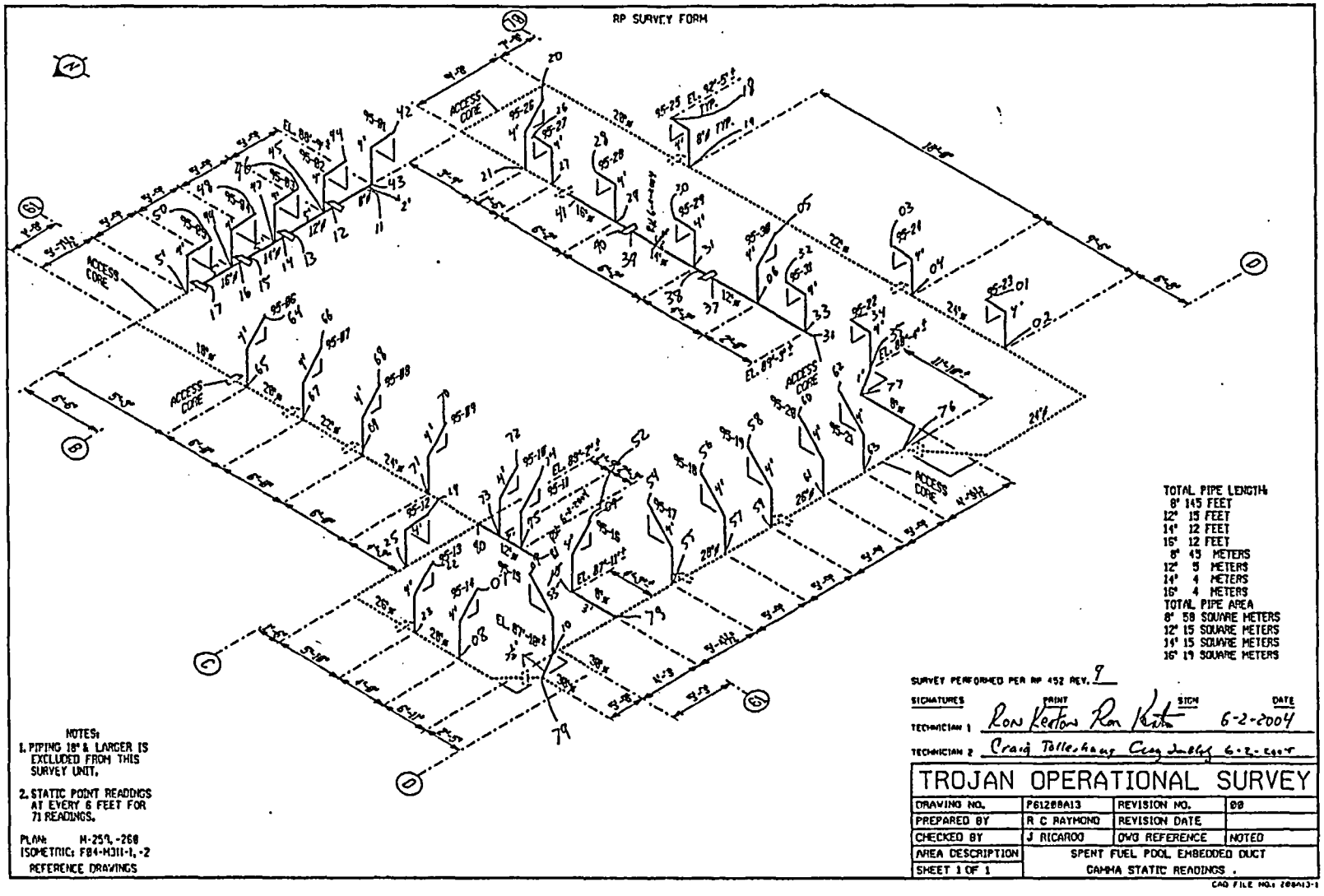
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity represents a small, localized area of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	109	DPM/100 CM²	1.000e+005	-	-

Statics

Statistical Quantities

Measurement Name:

Minimum Value	:	3.884e+003
Maximum Value	:	8.592e+004
Range	:	8.204e+004
Median	:	3.025e+004
Std. Deviation	:	2.300e+004
Mean	:	3.365e+004
95% UCL	:	3.731e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	8.625e+003	000018	1.563e+004	000035	3.133e+004
000002	3.596e+004	000019	1.871e+004	000036	5.471e+004
000003	7.458e+003	000020	2.838e+004	000037	6.330e+004
000004	1.200e+004	000021	3.750e+004	000038	7.204e+004
000005	3.625e+004	000022	2.508e+004	000039	6.582e+004
000006	2.508e+004	000023	1.308e+004	000040	5.870e+004
000007	3.025e+004	000024	1.367e+004	000041	5.148e+004
000008	1.746e+004	000025	1.021e+004	000042	4.769e+004
000009	2.358e+004	000026	2.408e+004	000043	4.456e+004
000010	1.971e+004	000027	4.917e+003	000044	4.017e+004
000011	1.929e+004	000028	4.500e+003	000045	4.012e+004
000012	1.496e+004	000029	8.667e+003	000046	3.729e+004
000013	1.158e+004	000030	1.196e+004	000047	3.370e+004
000014	3.525e+004	000031	1.108e+004	000048	3.269e+004
000015	1.750e+004	000032	7.917e+003	000049	3.057e+004
000016	3.883e+004	000033	1.271e+004	000050	3.532e+004
000017	1.150e+004	000034	2.582e+004	000051	4.224e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Data Quality Values

Location	Value	Location	Value
000052	3.996e+004	000099	1.258e+004
000053	4.739e+004	000100	6.704e+004
000054	4.370e+004	000101	1.754e+004
000055	4.592e+004	000102	3.392e+004
000056	5.729e+004	000103	1.704e+004
000057	6.552e+004	000104	2.446e+004
000058	5.416e+004	000105	3.342e+004
000059	5.244e+004	000106	1.938e+004
000060	5.966e+004	000107	6.000e+004
000061	6.173e+004	000108	4.217e+004
000062	6.219e+004	000109	6.354e+004
000063	7.027e+004		
000064	7.461e+004		
000065	7.496e+004		
000066	8.592e+004		
000067	7.946e+004		
000068	7.481e+004		
000069	8.269e+004		
000070	8.365e+004		
000071	6.582e+004		
000072	5.244e+004		
000073	6.719e+004		
000074	5.885e+004		
000075	3.884e+003		
000076	5.328e+003		
000077	1.152e+004		
000078	1.266e+004		
000079	1.528e+004		
000080	1.189e+004		
000081	2.291e+004		
000082	4.212e+003		
000083	3.919e+003		
000084	7.414e+003		
000085	7.697e+003		
000086	6.576e+003		
000087	5.621e+003		
000088	8.465e+003		
000089	2.749e+004		
000090	4.618e+004		
000091	6.325e+004		
000092	8.042e+003		
000093	1.242e+004		
000094	9.917e+003		
000095	2.608e+004		
000096	1.354e+004		
000097	4.671e+004		
000098	1.454e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Measurement Data Statistical Evaluation

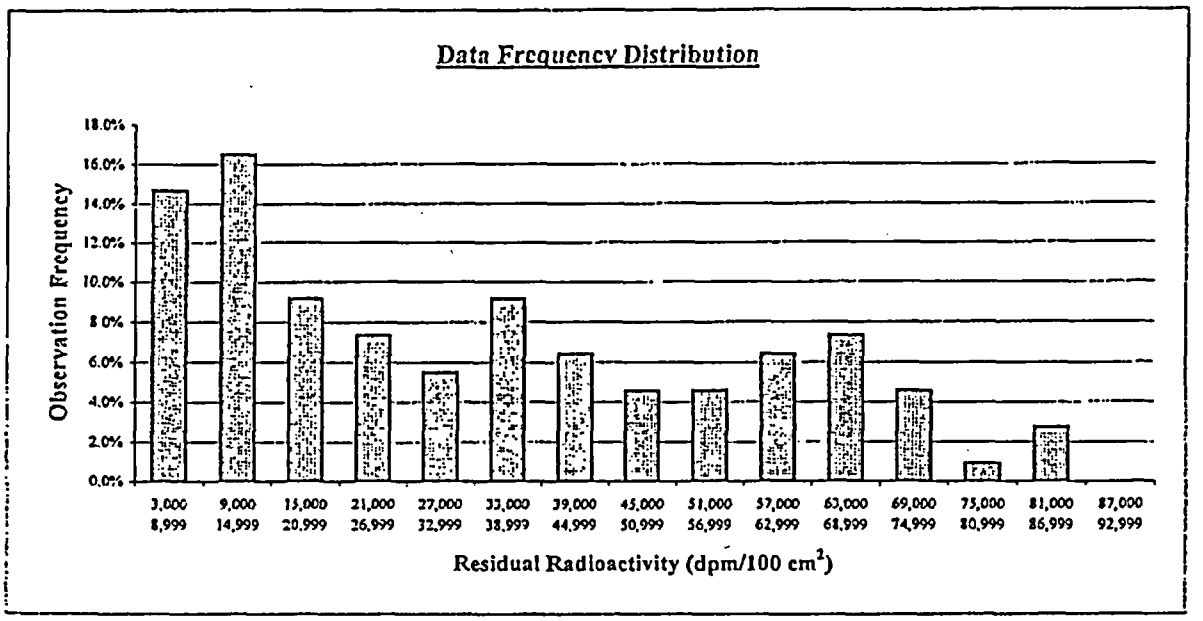
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	82,036	114,981	Pass
Median	0.148	0.500	Pass
Mean	33,653	100,000	Pass
Std Dev	22,996	20,000	See comment below

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	82,036
Median:	30,250
Mean:	33,653
Std Dev:	22,996
Minimum:	3,884
Maximum:	85,920
DCGL:	100,000



Plot Parameters

# of measurements:	109
# of intervals:	15
Interval increment:	6,000
Minimum:	3,000
Maximum:	92,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	8,999	3,000	16	14.7%
2	14,999	9,000	18	16.5%
3	20,999	15,000	10	9.2%
4	26,999	21,000	8	7.3%
5	32,999	27,000	6	5.5%
6	38,999	33,000	10	9.2%
7	44,999	39,000	7	6.4%
8	50,999	45,000	5	4.6%
9	56,999	51,000	5	4.6%
10	62,999	57,000	7	6.4%
11	68,999	63,000	8	7.3%
12	74,999	69,000	5	4.6%
13	80,999	75,000	1	0.9%
14	86,999	81,000	3	2.8%
15	92,999	87,000	0	0.0%
		Total:	109	100%

Comment:
The standard deviation for the data set is just greater than the test criterion (0.23 vs 0.2). The data set distribution is also right skewed, with a relatively large range. All measurement values in the data set are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	100,000
Measurement Units:	dpm/100cm^2
Minimum Value:	11,810
Maximum Value:	388,200
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Reason for Investigation: Four scan measurements (locations 062, 063, 068, & 069) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	1.4
Length of Survey Unit (m):	120
Survey Unit Area >DCGL (%):	1.2
EMC Value:	640,000

Action Taken: Accepted elevated measurement values as final survey data and applied the elevated measurement comparison.

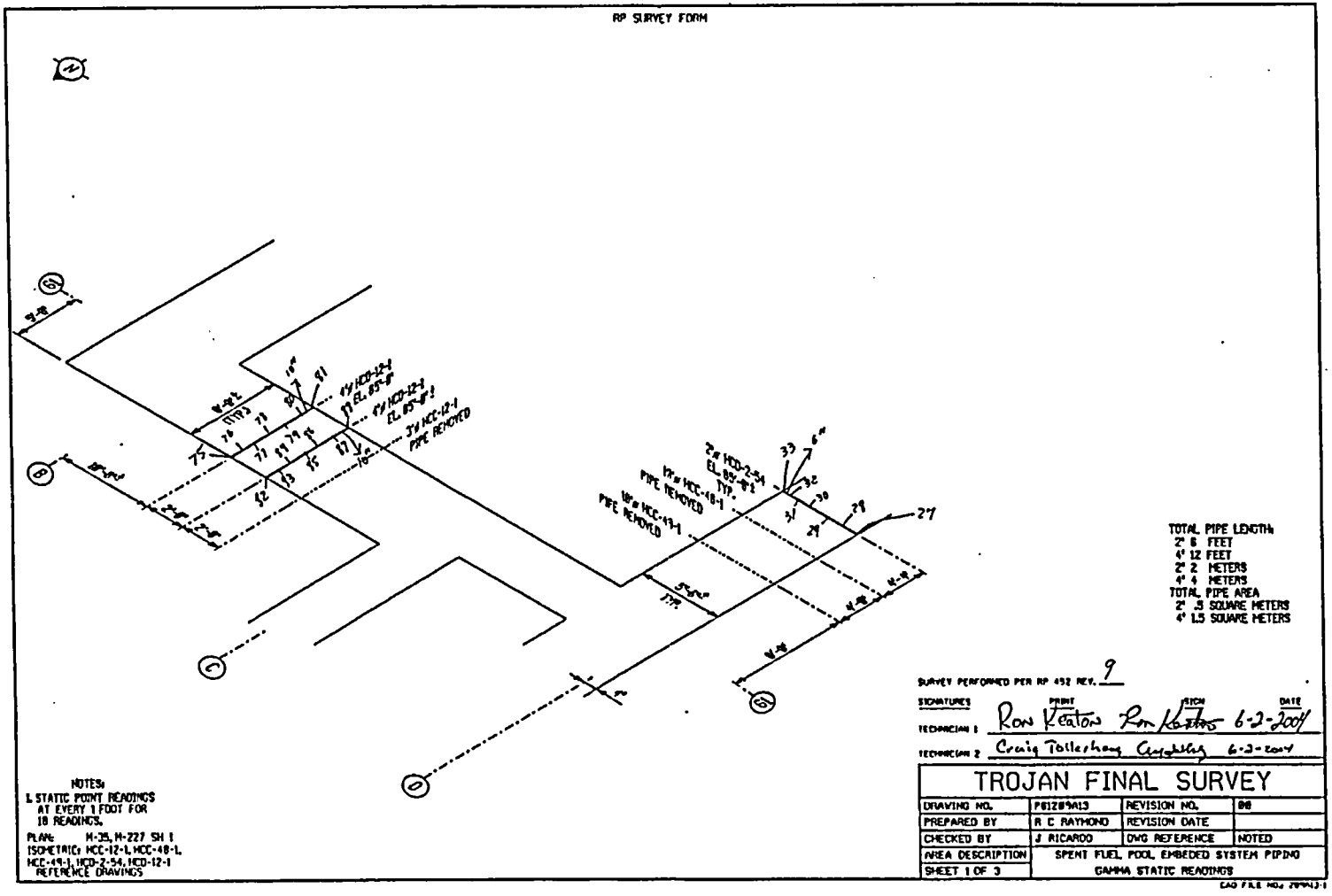
Basis for Action Taken: The survey unit has been previously remediated by grit blasting multiple times. The elevated radioactivity represents small, localized areas of fixed radioactivity and has been determined to be ALARA.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map

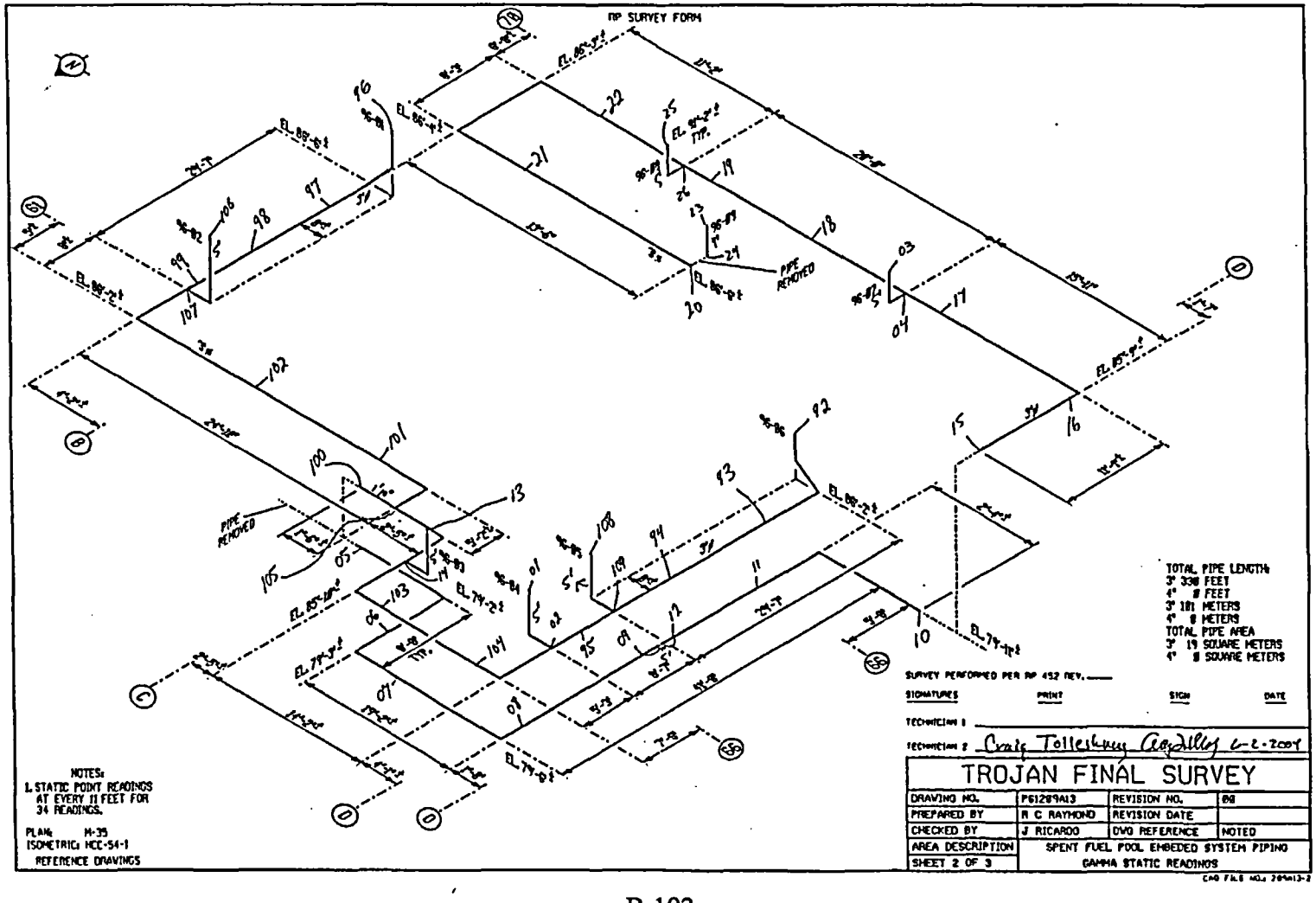


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map

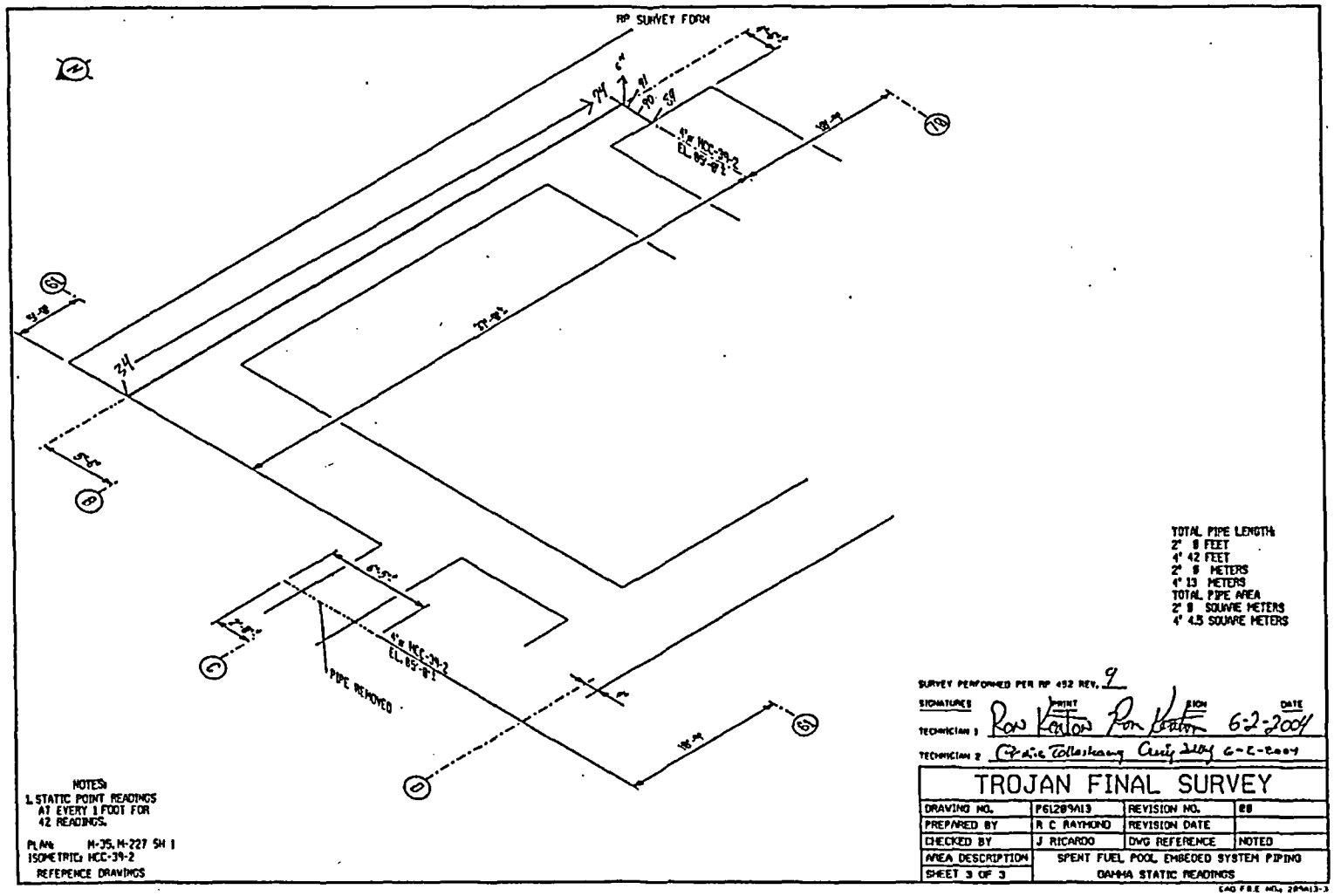


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Static Measurement Locations Map



APPENDIX C

SURVEY UNIT SUMMARY REPORTS – EMBEDDED PIPING

Survey Unit ID Code	Page(s)
P61205C	C-2 through C-7
P61205D	C-8 through C-13
P61205E	C-14 through C-22
P61205F	C-23 through C-26
P61205G	C-27 through C-32
P61205H	C-33 through C-39
P61205J	C-40 through C-45
P61205K	C-46 through C-49
P61205L	C-50 through C-59

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	82	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.043e+004
Maximum Value	:	6.049e+003
Range	:	1.648e+004
Median	:	6.286e+002
Std. Deviation	:	4.370e+003
Mean	:	-6.418e+002
95% UCL	:	1.623e+002

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-6.486e+003	000018	-1.710e+003	000035	-3.523e+003
000002	-7.458e+003	000019	-1.355e+003	000036	2.509e+003
000003	-7.178e+003	000020	8.224e+002	000037	2.369e+003
000004	-7.813e+003	000021	2.192e+003	000038	8.878e+002
000005	-5.369e+003	000022	1.453e+003	000039	-1.215e+002
000006	-5.612e+003	000023	2.150e+003	000040	9.065e+002
000007	-6.533e+003	000024	-2.757e+002	000041	-4.173e+003
000008	-6.916e+003	000025	-1.813e+003	000042	4.346e+002
000009	-7.355e+003	000026	1.215e+003	000043	-5.425e+003
000010	-1.024e+004	000027	3.257e+003	000044	-4.673e-003
000011	-9.593e+003	000028	3.234e+003	000045	2.297e+003
000012	-8.056e+003	000029	3.182e+003	000046	4.881e+003
000013	-9.444e+003	000030	-4.841e+003	000047	6.049e+003
000014	-1.043e+004	000031	2.855e+003	000048	-3.000e+003
000015	-7.748e+003	000032	2.846e+003	000049	2.297e+003
000016	-4.009e+003	000033	-5.514e+002	000050	-2.827e+003
000017	-1.995e+003	000034	1.262e+003	000051	3.211e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Data Quality Values

Location	Value
000052	5.627e+003
000053	4.876e+003
000054	-2.173e+003
000055	-3.189e+002
000056	3.157e+003
000057	2.438e+003
000058	-2.097e+003
000059	4.346e+003
000060	5.151e+003
000061	4.811e+003
000062	5.497e+003
000063	3.859e+003
000064	3.546e+003
000065	2.827e+003
000066	1.135e+003
000067	-4.811e+002
000068	-2.432e+002
000069	-2.174e+002
000070	-1.783e+003
000071	1.652e+003
000072	-5.391e+003
000073	1.174e+003
000074	-6.826e+003
000075	1.783e+003
000076	4.348e+002
000077	1.130e+003
000078	2.130e+003
000079	3.087e+003
000080	3.478e+003
000081	5.348e+003
000082	9.565e+002

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

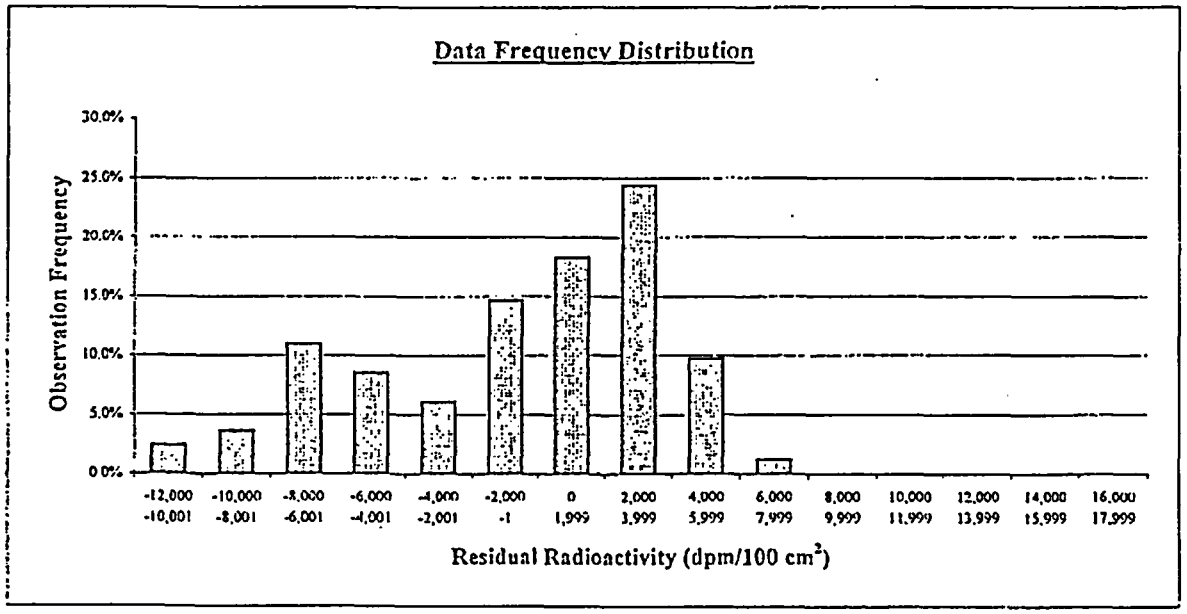
Classification: Class 2
Size (m^2): 52

Measurement Data Statistical Evaluation

Statistical Comparisons			
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	16,479	21,850	Pass
Median	0.291	0.500	Pass
Mean	-642	21,000	Pass
Std Dev	4,370	4,200	See comment below

All data less than DCGL; Sign statistical test not required.

Statistical Quantities	
Range:	16,479
Median:	629
Mean:	-642
Std Dev:	4,370
Minimum:	-10,430
Maximum:	6,049
DCGL:	21,000



Plot Parameters	
# of measurements:	82
# of intervals:	15
Interval increment:	2,000
Minimum:	-12,000
Maximum:	17,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-10,001	-12,000	2	2.4%
2	-8,001	-10,000	3	3.7%
3	-6,001	-8,000	9	11.0%
4	-4,001	-6,000	7	8.5%
5	-2,001	-4,000	5	6.1%
6	-1	-2,000	12	14.6%
7	1,999	0	15	18.3%
8	3,999	2,000	20	24.4%
9	5,999	4,000	8	9.8%
10	7,999	6,000	1	1.2%
11	9,999	8,000	0	0.0%
12	11,999	10,000	0	0.0%
13	13,999	12,000	0	0.0%
14	15,999	14,000	0	0.0%
15	17,999	16,000	0	0.0%
		Total:	82	100%

Comment:
Standard deviation failure is a test artifact, resulting from 48% of the measurement values being negative numbers. The standard deviation test result is slightly more than the acceptance criteria (0.210 vs 0.200). All values in the data set are valid and accepted. The data set represents the variability of the measurement values when there is essentially no residual radioactivity present.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-12,360
Maximum Value:	3,690
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

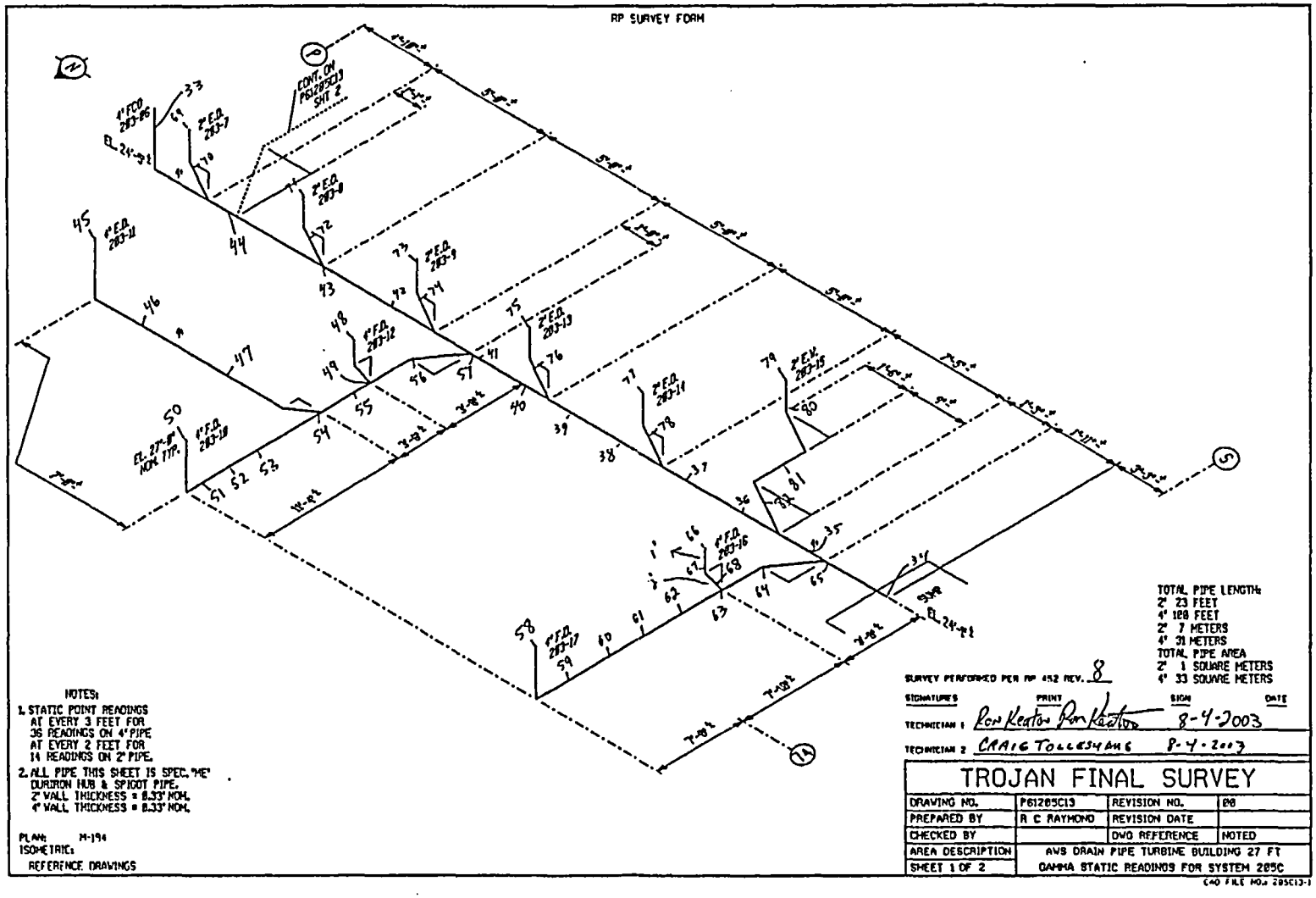
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Static Measurement Locations Map

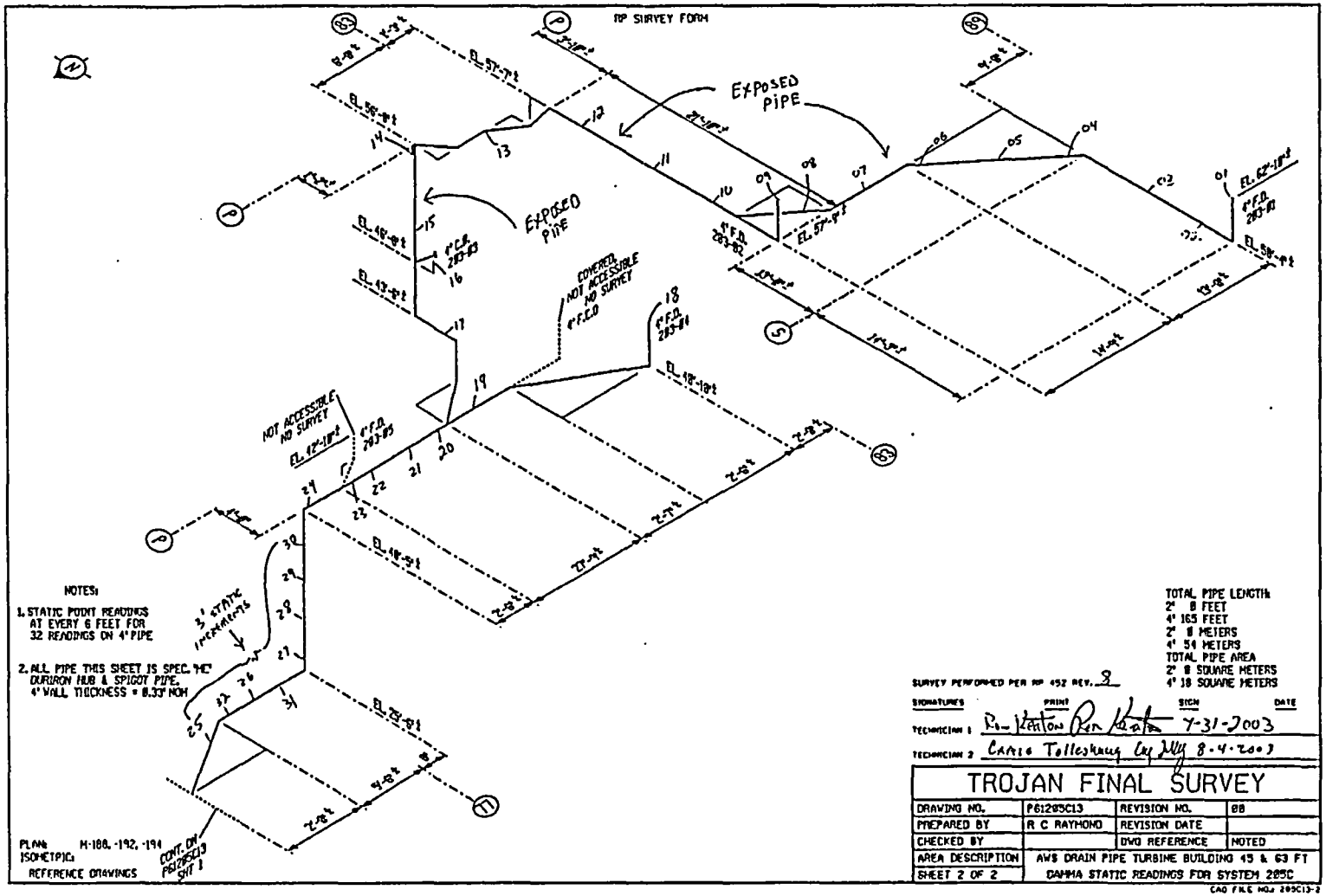


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	70	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-7.378e+003
Maximum Value	:	1.074e+004
Range	:	1.812e+004
Median	:	2.122e+003
Std. Deviation	:	4.291e+003
Mean	:	1.768e+003
95% UCL	:	2.624e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-3.232e+003	000018	2.178e+003	000035	-2.368e+003
000002	4.297e+003	000019	3.205e+003	000036	-6.032e+003
000003	5.616e+003	000020	-2.595e+002	000037	3.676e+003
000004	5.703e+003	000021	1.595e+003	000038	4.022e+003
000005	5.124e+003	000022	1.589e+003	000039	5.081e+002
000006	3.405e+002	000023	3.076e+003	000040	-2.703e+003
000007	-5.822e+003	000024	-4.778e+003	000041	-1.935e+003
000008	3.816e+003	000025	-9.189e+001	000042	-2.097e+003
000009	4.092e+003	000026	-9.568e+002	000043	-4.962e+003
000010	-5.005e+003	000027	-1.762e+003	000044	-8.865e+002
000011	4.395e+003	000028	5.730e+003	000045	-7.065e+003
000012	3.914e+003	000029	6.043e+003	000046	5.719e+003
000013	2.757e+003	000030	5.724e+003	000047	4.919e+003
000014	4.065e+003	000031	2.924e+003	000048	5.811e+003
000015	2.065e+003	000032	-1.384e+003	000049	6.270e+003
000016	-1.330e+003	000033	5.049e+003	000050	-1.611e+003
000017	-7.514e+002	000034	3.178e+003	000051	3.784e+001

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Data Quality Values

Location	Value
000052	-7.378e+003
000053	6.622e+003
000054	-6.216e+002
000055	1.043e+003
000056	-4.973e+002
000057	-9.189e+001
000058	1.832e+003
000059	2.730e+003
000060	-2.108e+003
000061	-4.005e+003
000062	2.443e+003
000063	-4.432e+002
000064	1.062e+004
000065	5.435e+003
000066	1.074e+004
000067	1.017e+004
000068	9.696e+003
000069	9.391e+003
000070	5.783e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Measurement Data Statistical Evaluation

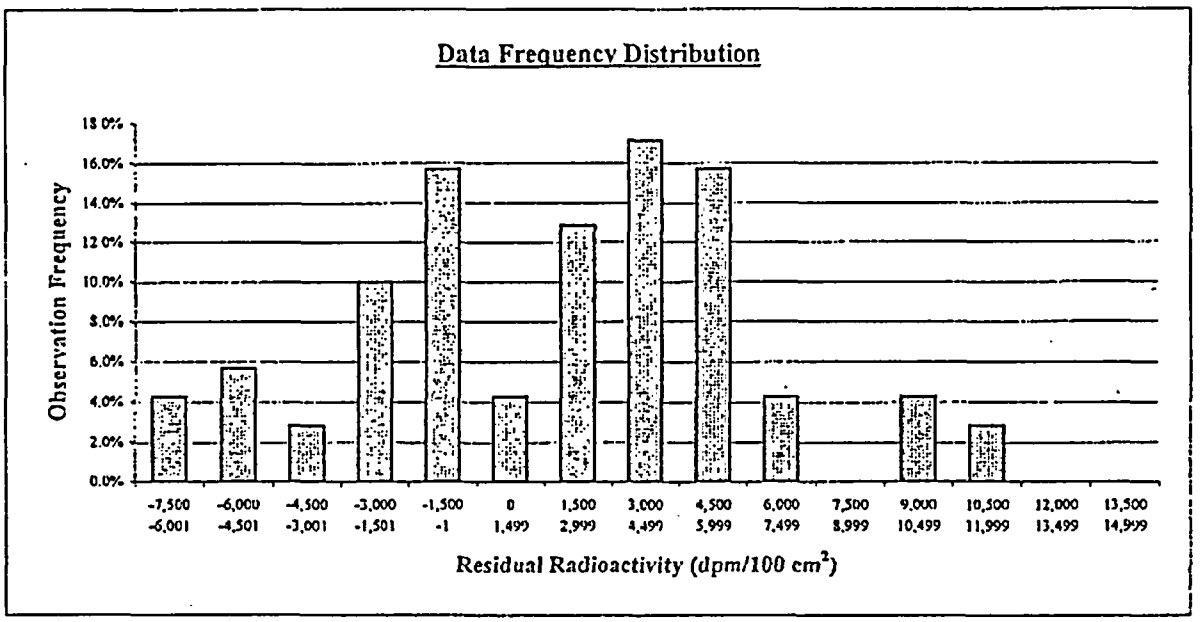
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	18,118	21,458	Pass
Median	0.116	0.500	Pass
Mean	1,812	21,000	Pass
Std Dev	4,292	4,200	See comment below

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	18,118
Median:	2,311
Mean:	1,812
Std Dev:	4,292
Minimum:	-7,378
Maximum:	10,740
DCGL:	21,000



Plot Parameters	
# of measurements:	70
# of intervals:	15
Interval increment:	1,500
Minimum:	-7,500
Maximum:	14,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-6,001	-7,500	3	4.3%
2	-4,501	-6,000	4	5.7%
3	-3,001	-4,500	2	2.9%
4	-1,501	-3,000	7	10.0%
5	-1	-1,500	11	15.7%
6	1,499	0	3	4.3%
7	2,999	1,500	9	12.9%
8	4,499	3,000	12	17.1%
9	5,999	4,500	11	15.7%
10	7,499	6,000	3	4.3%
11	8,999	7,500	0	0.0%
12	10,499	9,000	3	4.3%
13	11,999	10,500	2	2.9%
14	13,499	12,000	0	0.0%
15	14,999	13,500	0	0.0%
		Total:	70	100%

Comment:
Standard deviation failure is a test artifact, resulting from 39% of the measurement values being negative numbers. The standard deviation test result is slightly more than the acceptance criteria (0.204 vs 0.200). All values in the data set are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-1,720
Maximum Value:	16,390
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

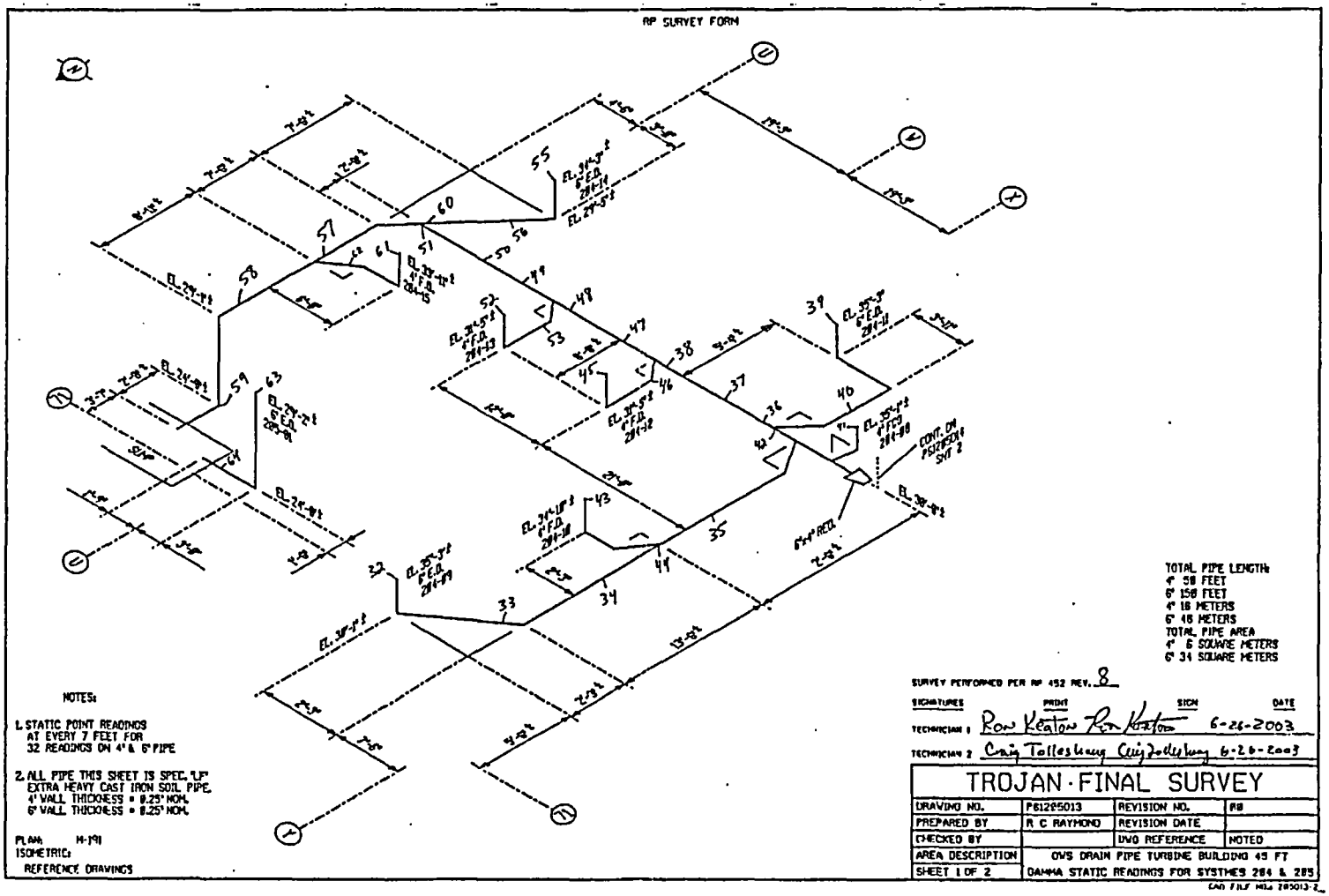
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Static Measurement Locations Map

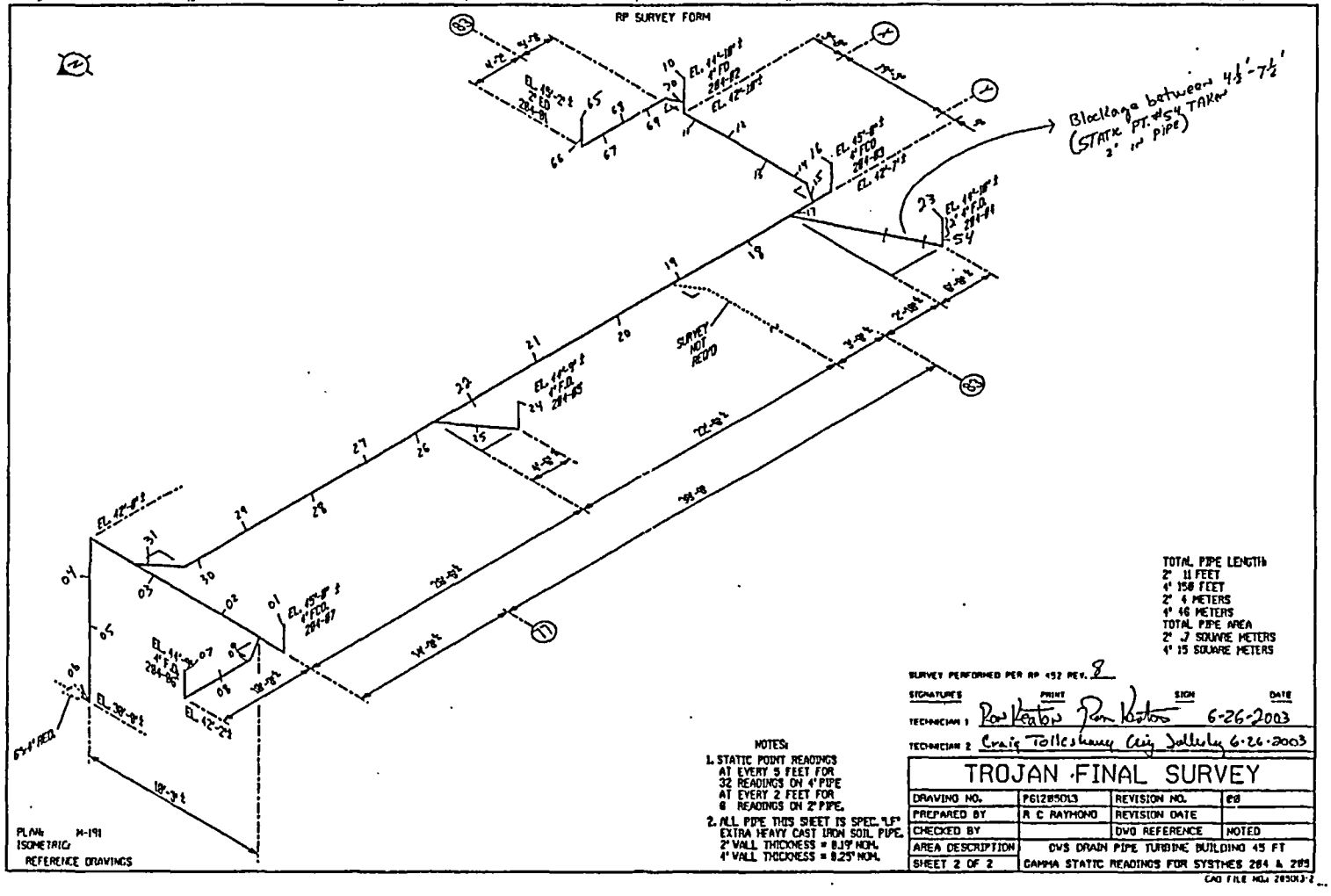


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m²): 56

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	212	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-1.434e+004
Maximum Value :	1.552e+004
Range :	2.986e+004
Median :	4.458e+003
Std. Deviation :	6.255e+003
Mean :	2.797e+003
95% UCL :	3.508e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.692e+003	000018	2.962e+003	000035	3.589e+003
000002	2.108e+003	000019	-1.730e+003	000036	4.195e+003
000003	3.973e+003	000020	6.324e+003	000037	3.870e+003
000004	3.627e+003	000021	5.984e+003	000038	6.652e+003
000005	4.524e+003	000022	5.049e+003	000039	3.522e+003
000006	6.378e+002	000023	4.438e+003	000040	7.696e+003
000007	3.741e+003	000024	4.211e+003	000041	-2.609e+002
000008	5.286e+003	000025	6.481e+003	000042	6.696e+003
000009	1.103e+003	000026	2.059e+003	000043	1.443e+003
000010	1.589e+003	000027	-5.470e+003	000044	5.449e+003
000011	6.659e+003	000028	5.016e+003	000045	2.330e+003
000012	6.481e+003	000029	5.514e+003	000046	1.638e+003
000013	5.595e+003	000030	6.622e+003	000047	2.914e+003
000014	-3.070e+003	000031	2.530e+003	000048	7.135e+002
000015	5.778e+003	000032	5.838e+003	000049	3.609e+003
000016	6.297e+003	000033	-3.714e+003	000050	2.130e+003
000017	7.124e+003	000034	4.697e+003	000051	9.565e+002

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Data Quality Values

Location	Value	Location	Value	Location	Value
000052	3.652e+003	000099	8.270e+003	000146	-5.304e+003
000053	5.348e+003	000100	-1.216e+004	000147	-7.304e+003
000054	-7.838e+003	000101	-1.242e+004	000148	-7.826e+003
000055	-1.751e+003	000102	-9.903e+003	000149	-7.087e+003
000056	-5.714e+003	000103	-1.108e+004	000150	9.870e+003
000057	-9.822e+003	000104	-1.226e+004	000151	7.478e+003
000058	-9.005e+003	000105	-1.068e+004	000152	5.261e+003
000059	-7.838e+003	000106	-1.082e+004	000153	3.261e+003
000060	-5.741e+003	000107	-1.434e+004	000154	7.000e+003
000061	-9.141e+003	000108	-1.201e+004	000155	8.957e+003
000062	-7.805e+003	000109	-9.141e+003	000156	8.174e+003
000063	-8.935e+003	000110	-7.946e+003	000157	5.826e+003
000064	-9.476e+003	000111	-8.189e+003	000158	1.143e+004
000065	3.822e+003	000112	2.416e+003	000159	7.609e+003
000066	5.800e+003	000113	9.065e+003	000160	8.609e+003
000067	1.217e+003	000114	8.092e+003	000161	3.826e+003
000068	6.261e+003	000115	5.557e+003	000162	7.261e+003
000069	9.087e+003	000116	9.000e+003	000163	3.174e+003
000070	1.017e+004	000117	8.800e+003	000164	4.304e+003
000071	1.091e+004	000118	8.973e+003	000165	7.174e+003
000072	8.391e+003	000119	6.589e+003	000166	1.552e+004
000073	1.043e+004	000120	8.178e+003	000167	8.913e+003
000074	7.957e+003	000121	7.886e+003	000168	3.696e+003
000075	2.565e+003	000122	3.065e+003	000169	2.870e+003
000076	2.609e+003	000123	-8.832e+003	000170	4.304e+003
000077	1.957e+003	000124	-9.205e+003	000171	3.870e+003
000078	1.174e+003	000125	-7.751e+003	000172	3.261e+003
000079	1.239e+004	000126	-4.849e+003	000173	4.478e+003
000080	3.524e+003	000127	1.568e+003	000174	1.443e+004
000081	4.919e+003	000128	5.351e+003	000175	5.348e+003
000082	-1.346e+003	000129	4.557e+003	000176	4.603e+003
000083	5.497e+003	000130	4.827e+003	000177	6.567e+003
000084	5.897e+003	000131	2.076e+003	000178	7.010e+003
000085	1.130e+003	000132	7.170e+003	000179	3.005e+003
000086	4.486e+003	000133	8.675e+003	000180	8.160e+003
000087	9.086e+003	000134	7.505e+003	000181	5.907e+003
000088	7.005e+003	000135	7.856e+003	000182	6.639e+003
000089	5.292e+003	000136	1.247e+003	000183	3.216e+003
000090	5.951e+003	000137	-5.087e+003	000184	6.391e+003
000091	5.503e+003	000138	-8.522e+003	000185	8.391e+003
000092	4.941e+003	000139	-6.609e+003	000186	9.304e+003
000093	6.114e+003	000140	1.130e+003	000187	1.239e+004
000094	-1.611e+003	000141	-8.739e+003	000188	8.957e+003
000095	1.459e+003	000142	-1.017e+004	000189	6.652e+003
000096	2.319e+003	000143	-8.087e+003	000190	2.696e+003
000097	3.114e+003	000144	-7.435e+003	000191	3.913e+003
000098	8.784e+003	000145	-7.783e+003	000192	1.122e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Data Quality Values

Location	Value
000193	8.435e+003
000194	5.435e+003
000195	9.913e+003
000196	1.113e+004
000197	8.000e+003
000198	1.061e+004
000199	1.070e+004
000200	5.783e+003
000201	5.015e+003
000202	6.990e+003
000203	8.577e+003
000204	3.175e+003
000205	6.325e+003
000206	4.196e+003
000207	8.216e+003
000208	4.392e+003
000209	7.103e+003
000210	2.124e+003
000211	5.062e+003
000212	4.753e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Measurement Data Statistical Evaluation

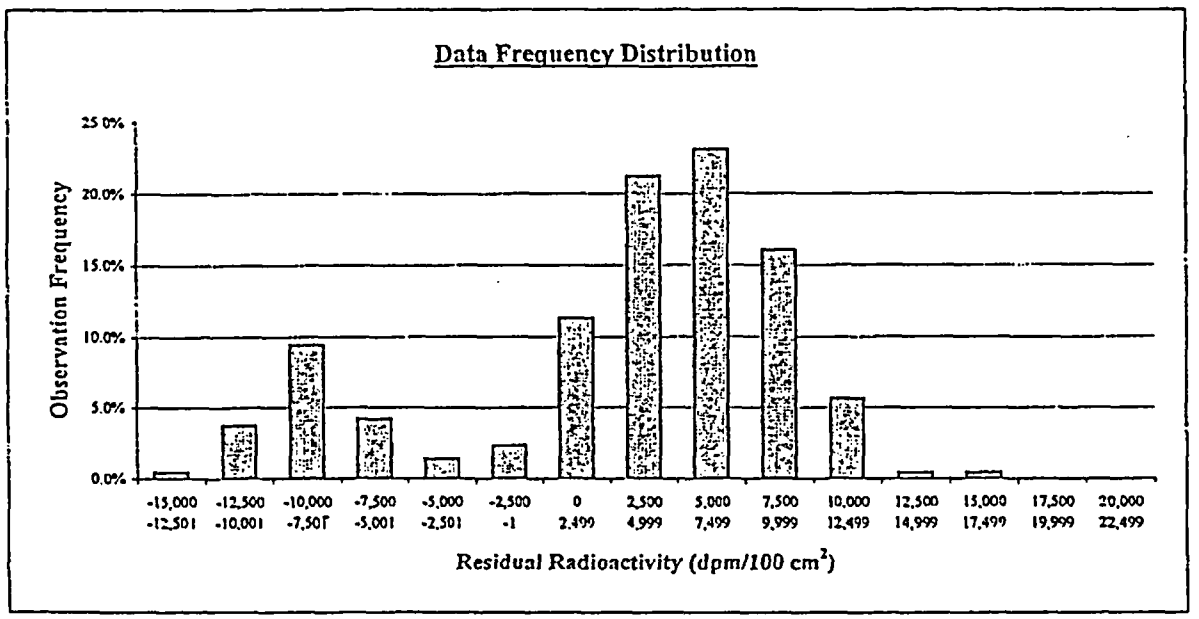
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	29,860	31,274	Pass
Median	0.266	0.500	Pass
Mean	2,797	21,000	Pass
Std Dev	6,255	4,200	See comment below

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	29,860
Median:	4,458
Mean:	2,797
Std Dev:	6,255
Minimum:	-14,340
Maximum:	15,520
DCGL:	21,000



Plot Parameters	
# of measurements:	212
# of intervals:	15
Interval increment:	2,500
Minimum:	-15,000
Maximum:	22,499

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-12,501	-15,000	1	0.5%
2	-10,001	-12,500	8	3.8%
3	-7,501	-10,000	20	9.4%
4	-5,001	-7,500	9	4.2%
5	-2,501	-5,000	3	1.4%
6	-1	-2,500	5	2.4%
7	2,499	0	24	11.3%
8	4,999	2,500	45	21.2%
9	7,499	5,000	49	23.1%
10	9,999	7,500	34	16.0%
11	12,499	10,000	12	5.7%
12	14,999	12,500	1	0.5%
13	17,499	15,000	1	0.5%
14	19,999	17,500	0	0.0%
15	22,499	20,000	0	0.0%
		Total:	212	100%

Comment:
Standard deviation failure is a test artifact, resulting from 22% of the measurement values being negative numbers, & a very large range. The std. dev. result is greater than the test's acceptance criteria (0.297 vs 0.200). All values in the data set are valid and accepted. The data set represents the variability of the measurement values when there is essentially no residual radioactivity present.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-15,600
Maximum Value:	16,450
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

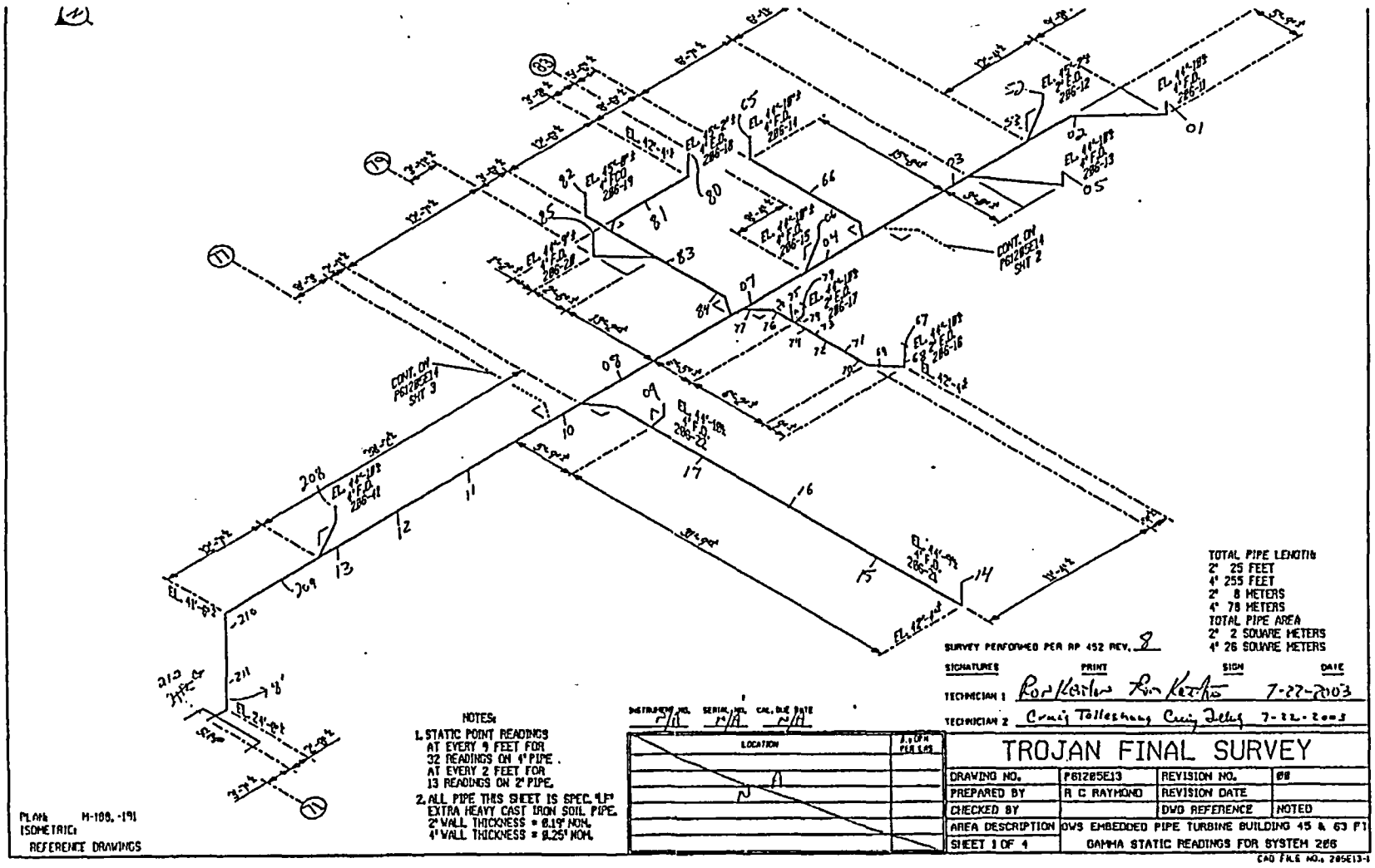
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Static Measurement Locations Map

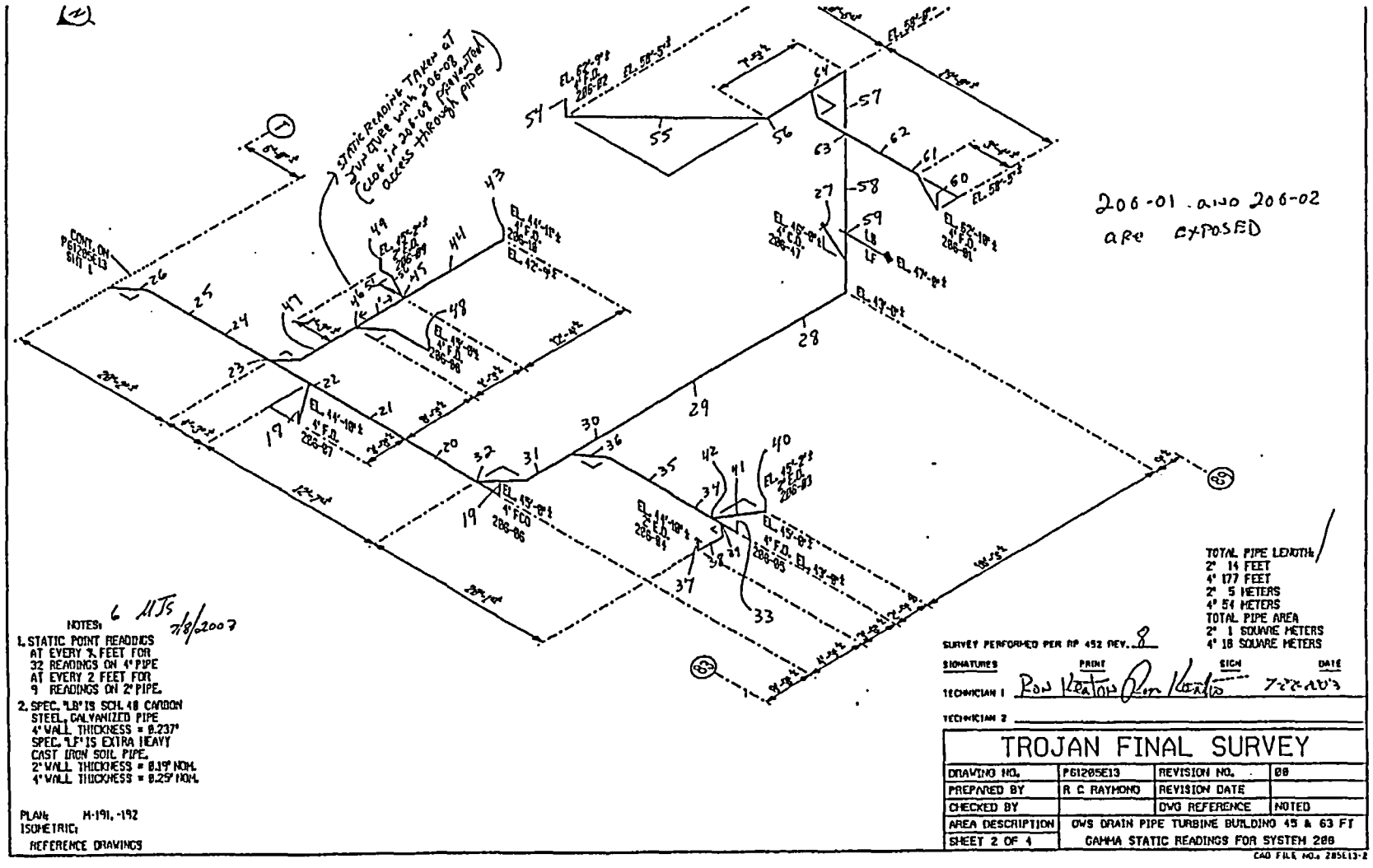


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Static Measurement Locations Map

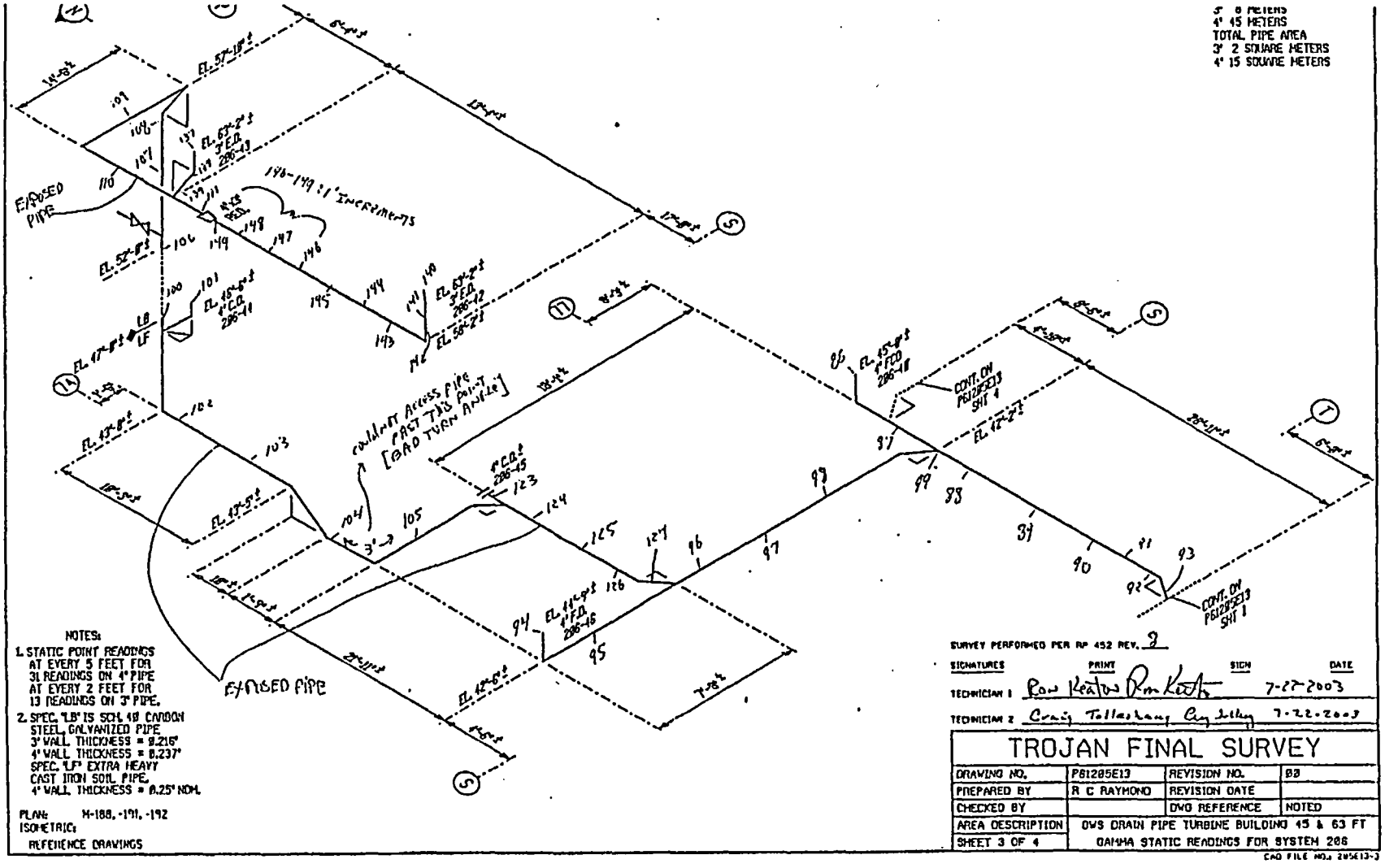


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Static Measurement Locations Map

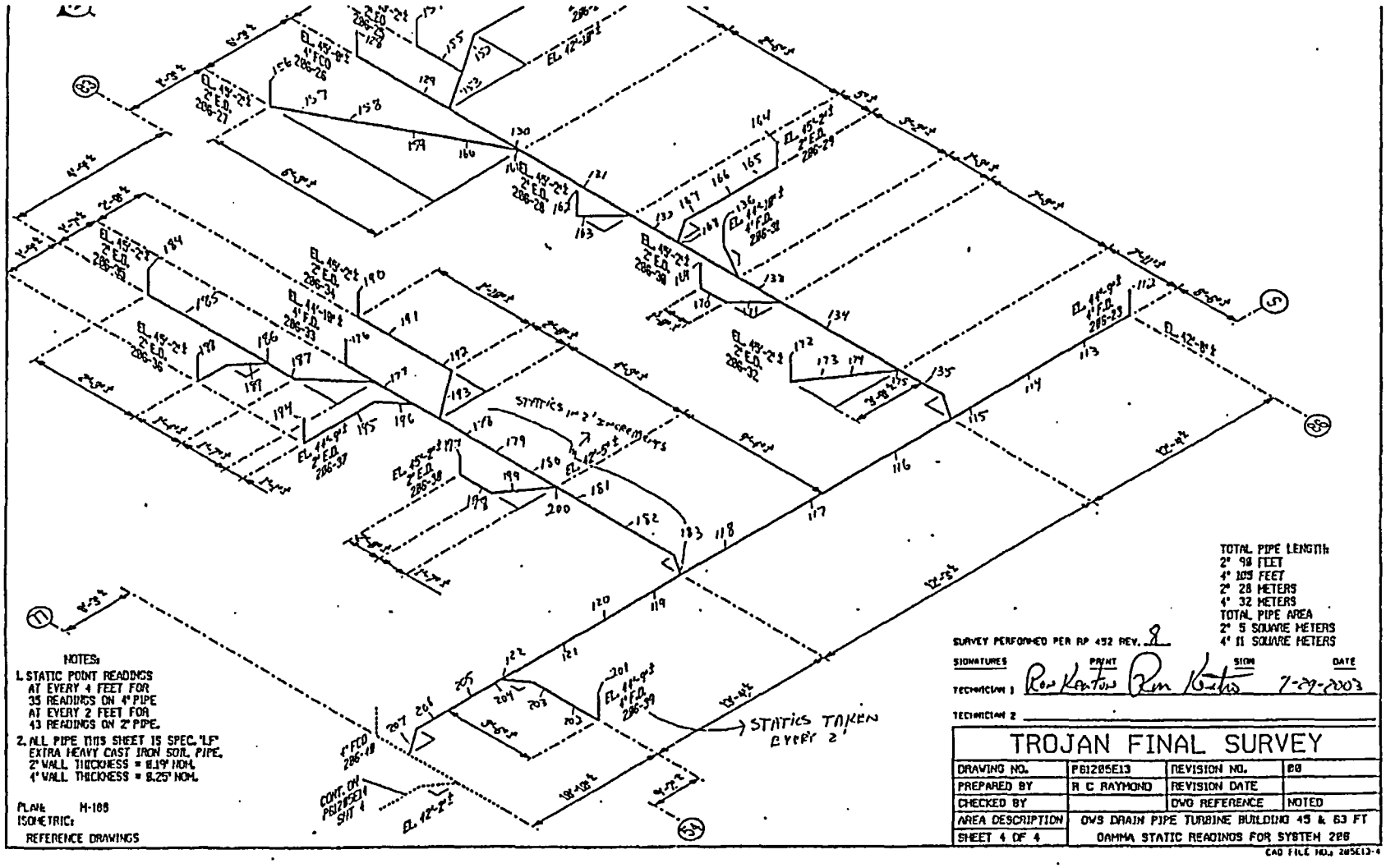


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205F
Survey Unit Name: TB 45' Elevation – Oily Waste Drains

Classification: Class 2
Size (m^2): 50

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	35	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-5.546e+003
Maximum Value	:	7.389e+003
Range	:	1.294e+004
Median	:	3.930e+003
Std. Deviation	:	4.059e+003
Mean	:	2.558e+003
95% UCL	:	3.718e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-2.962e+003	000018	7.378e+003	000035	2.616e+003
000002	4.292e+003	000019	-2.676e+003		
000003	-3.005e+003	000020	5.286e+003		
000004	5.643e+003	000021	4.805e+003		
000005	3.930e+003	000022	-5.546e+003		
000006	4.557e+003	000023	5.276e+003		
000007	6.092e+003	000024	3.514e+002		
000008	6.941e+003	000025	7.162e+003		
000009	-4.011e+003	000026	-5.281e+003		
000010	7.135e+002	000027	6.692e+003		
000011	-1.703e+003	000028	6.330e+003		
000012	3.097e+003	000029	-8.703e+002		
000013	-1.389e+003	000030	7.389e+003		
000014	-2.454e+003	000031	2.811e+003		
000015	1.027e+003	000032	5.459e+003		
000016	6.476e+003	000033	6.422e+003		
000017	2.724e+003	000034	5.973e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205F
Survey Unit Name: TB 45' Elevation – Oily Waste Drains

Classification: Class 2
Size (m^2): 50

Measurement Data Statistical Evaluation

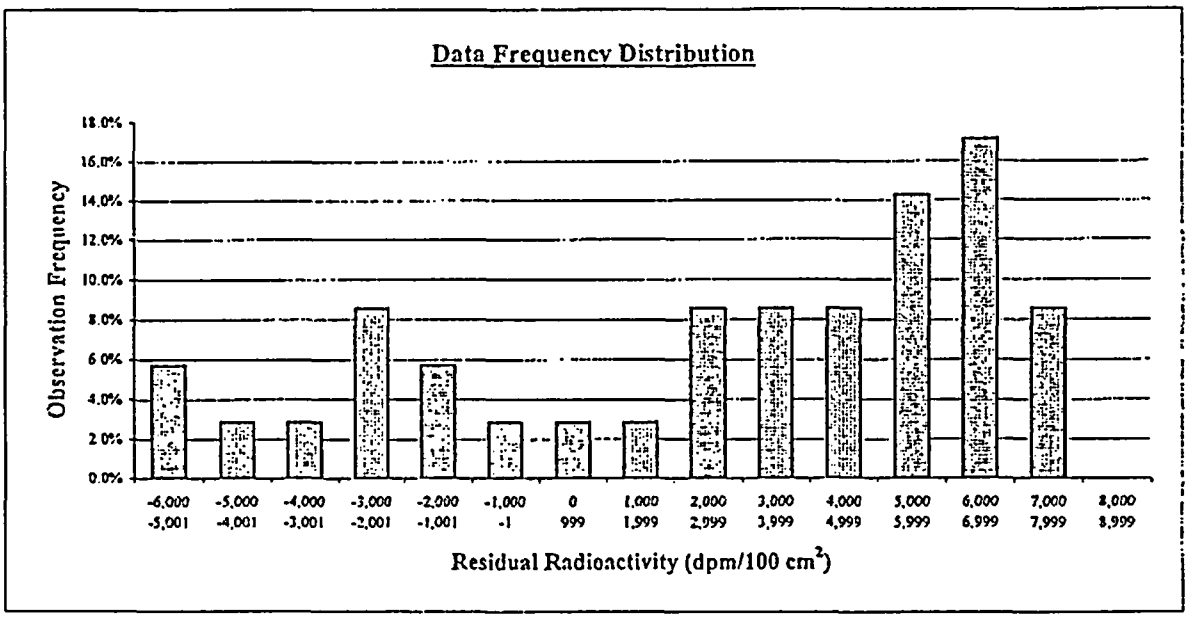
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	12,935	20,217	Pass
Median	0.317	0.500	Pass
Mean	2,649	21,000	Pass
Std Dev	4,043	4,200	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	12,935
Median:	3,930
Mean:	2,649
Std Dev:	4,043
Minimum:	-5,546
Maximum:	7,389
DCGL:	21,000



Plot Parameters

# of measurements:	35
# of intervals:	15
Interval increment:	1,000
Minimum:	-6,000
Maximum:	8,999

Comment:

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-5,001	-6,000	2	5.7%
2	-4,001	-5,000	1	2.9%
3	-3,001	-4,000	1	2.9%
4	-2,001	-3,000	3	8.6%
5	-1,001	-2,000	2	5.7%
6	-1	-1,000	1	2.9%
7	999	0	1	2.9%
8	1,999	1,000	1	2.9%
9	2,999	2,000	3	8.6%
10	3,999	3,000	3	8.6%
11	4,999	4,000	3	8.6%
12	5,999	5,000	5	14.3%
13	6,999	6,000	6	17.1%
14	7,999	7,000	3	8.6%
15	8,999	8,000	0	0.0%
		Total:	35	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205F
Survey Unit Name: TB 45' Elevation – Oily Waste Drains

Classification: Class 2
Size (m^2): 50

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	118
Maximum Value:	7,709
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

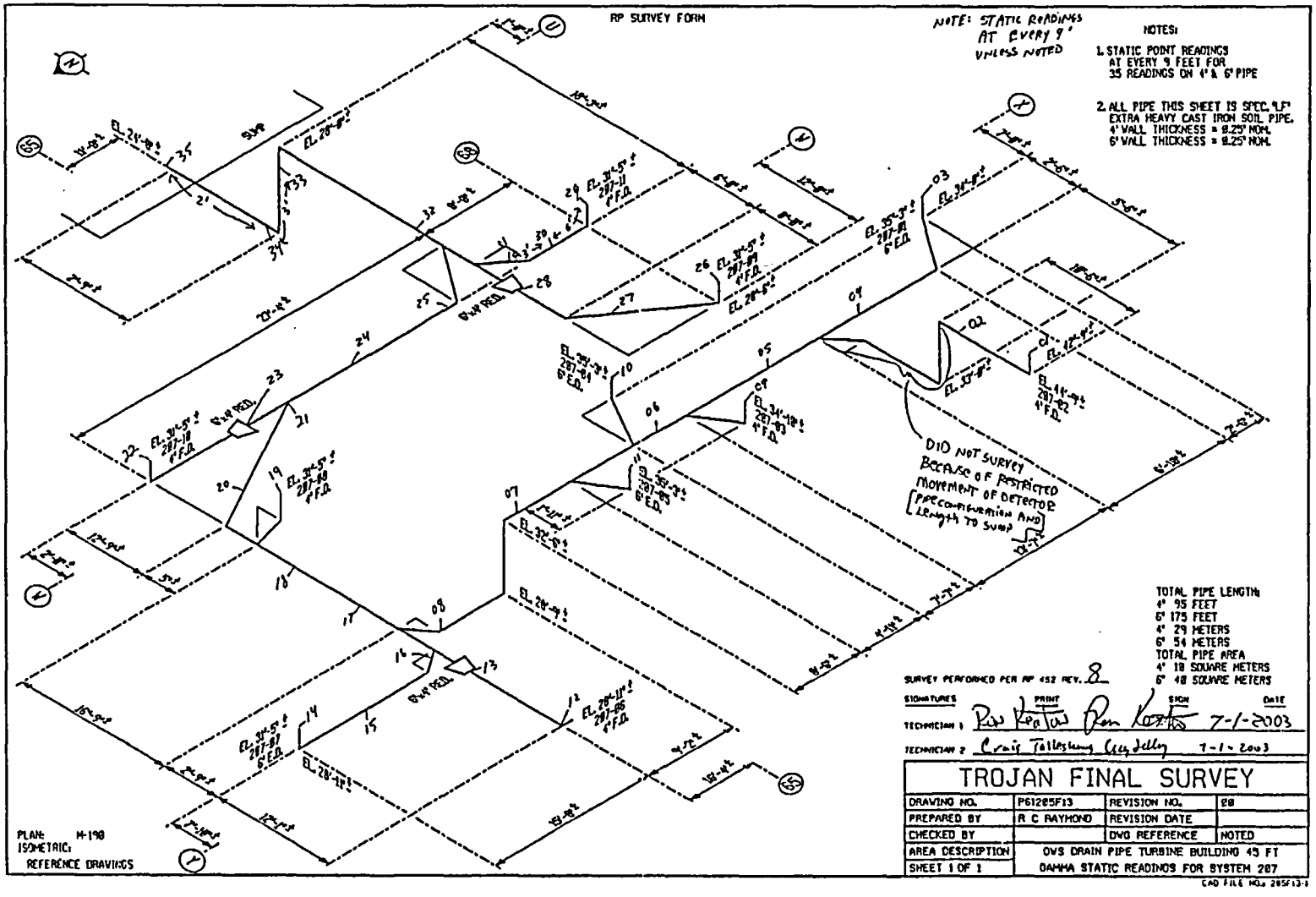
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205F
Survey Unit Name: TB 45' Elevation – Oily Waste Drains

Classification: Class 2
Size (m^2): 50

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	86	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-4.417e+003
Maximum Value :	1.311e+004
Range :	1.753e+004
Median :	3.750e+003
Std. Deviation :	3.273e+003
Mean :	3.599e+003
95% UCL :	4.187e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-4.417e+003	000018	-2.884e+003	000035	1.050e+003
000002	1.704e+003	000019	-2.643e+003	000036	4.397e+003
000003	-2.281e+003	000020	-2.558e+003	000037	6.000e+003
000004	1.010e+003	000021	2.307e+003	000038	5.588e+003
000005	1.889e+003	000022	4.422e+002	000039	7.060e+003
000006	1.578e+003	000023	4.513e+003	000040	5.920e+003
000007	2.809e+003	000024	4.477e+003	000041	6.302e+003
000008	3.286e+003	000025	8.477e+003	000042	2.663e+003
000009	1.744e+003	000026	5.196e+003	000043	2.543e+003
000010	1.307e+003	000027	3.729e+003	000044	2.769e+003
000011	1.176e+003	000028	4.302e+003	000045	6.442e+003
000012	7.035e+002	000029	3.965e+003	000046	6.005e+003
000013	2.382e+003	000030	4.090e+003	000047	6.518e+003
000014	2.442e+003	000031	4.181e+003	000048	7.291e+003
000015	5.442e+003	000032	3.352e+003	000049	6.332e+003
000016	-3.075e+003	000033	2.930e+003	000050	6.005e+003
000017	3.407e+003	000034	3.910e+003	000051	4.065e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Data Quality Values

Location	Value
000052	7.724e+003
000053	6.814e+003
000054	7.347e+003
000055	6.683e+003
000056	7.442e+003
000057	-1.141e+003
000058	1.141e+003
000059	5.151e+003
000060	5.176e+003
000061	6.281e+003
000062	2.799e+003
000063	5.638e+003
000064	3.915e+003
000065	8.065e+003
000066	3.015e+001
000067	1.060e+004
000068	7.548e+003
000069	1.343e+003
000070	3.771e+003
000071	8.429e+003
000072	2.771e+003
000073	2.714e+003
000074	5.000e+003
000075	2.714e+003
000076	2.600e+003
000077	9.143e+002
000078	-6.286e+002
000079	8.286e+002
000080	7.286e+003
000081	-2.029e+003
000082	-2.657e+003
000083	3.429e+003
000084	6.029e+003
000085	1.311e+004
000086	6.829e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Measurement Data Statistical Evaluation

Statistical Comparisons

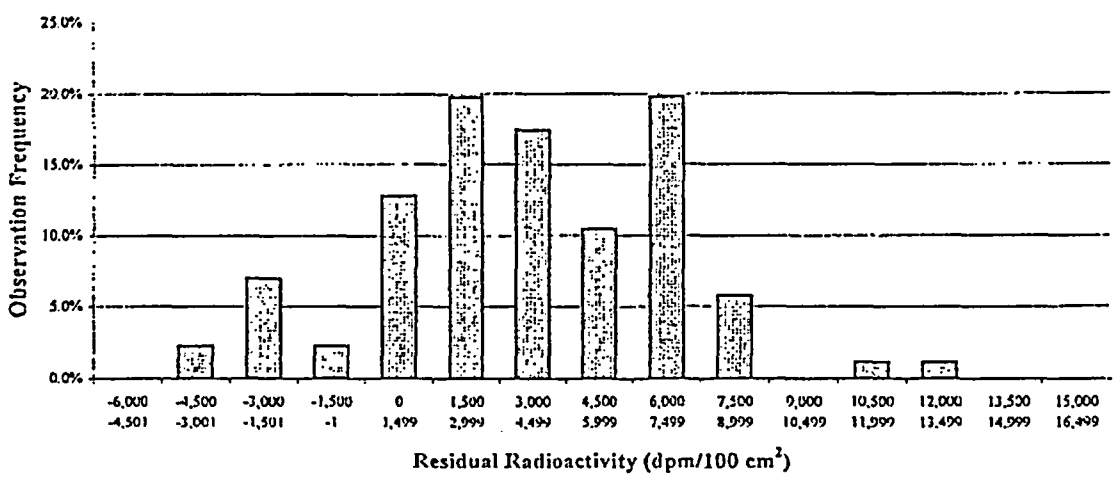
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	17,527	16,367	See comment below
Median	0.046	0.500	Pass
Mean	3,599	21,000	Pass
Std Dev	3,273	4,200	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	17,527
Median:	3,750
Mean:	3,599
Std Dev:	3,273
Minimum:	-4,417
Maximum:	13,110
DCGL:	21,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	86
# of intervals:	15
Interval increment:	1,500
Minimum:	-6,000
Maximum:	16,499

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-4,501	-6,000	0	0.0%
2	-3,001	-4,500	2	2.3%
3	-1,501	-3,000	6	7.0%
4	-1	-1,500	2	2.3%
5	1,499	0	11	12.8%
6	2,999	1,500	17	19.8%
7	4,499	3,000	15	17.4%
8	5,999	4,500	9	10.5%
9	7,499	6,000	17	19.8%
10	8,999	7,500	5	5.8%
11	10,499	9,000	0	0.0%
12	11,999	10,500	1	1.2%
13	13,499	12,000	1	1.2%
14	14,999	13,500	0	0.0%
15	16,499	15,000	0	0.0%
		Total:	86	100%

Comment:
Range failure is a test artifact, resulting from one measurement value of 13,110 dpm. All values in the data set are valid and accepted. The data set represents the variability of the measurement values when there is essentially no residual radioactivity present.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-3,613
Maximum Value:	7,482
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

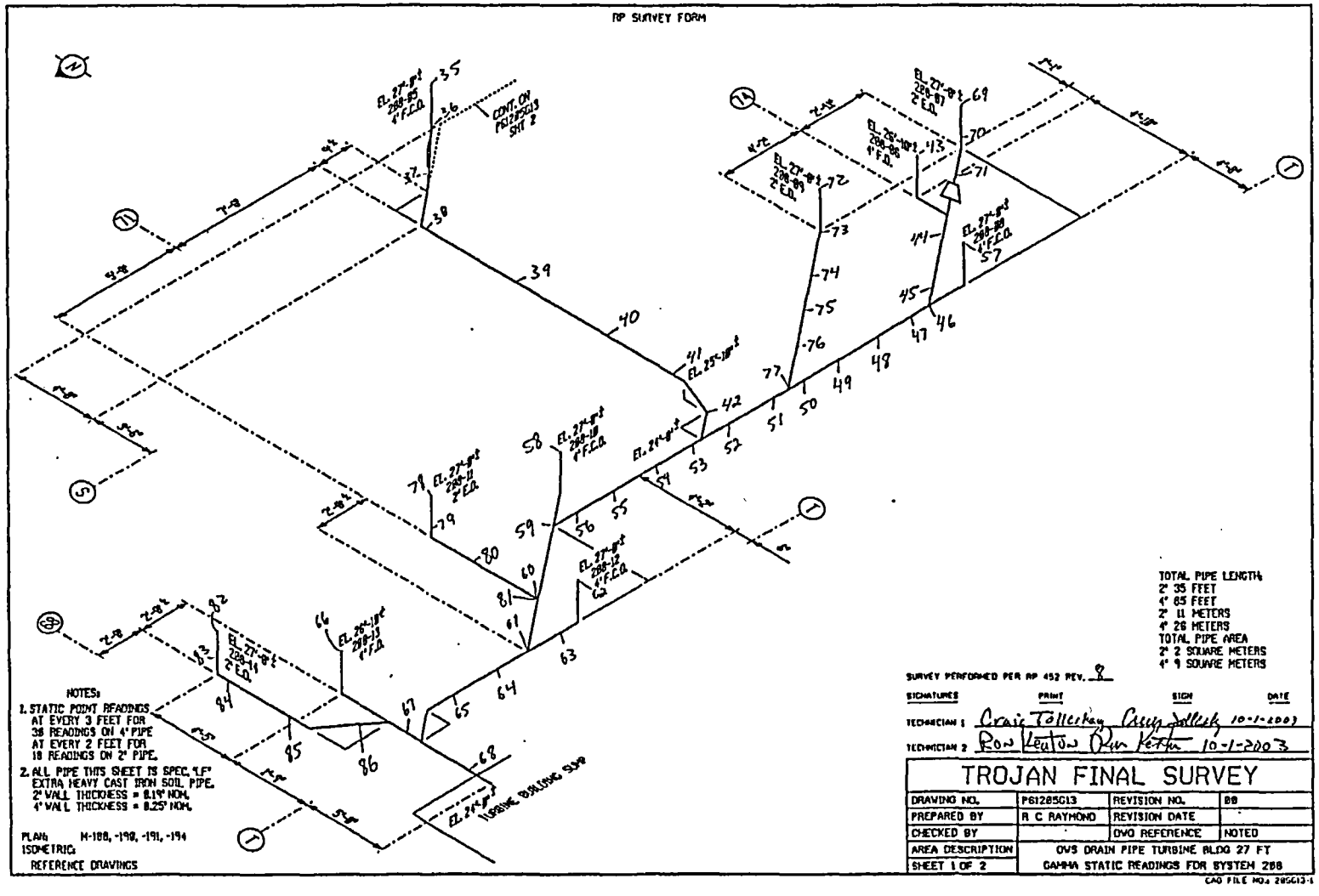
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations –Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Static Measurement Locations Map

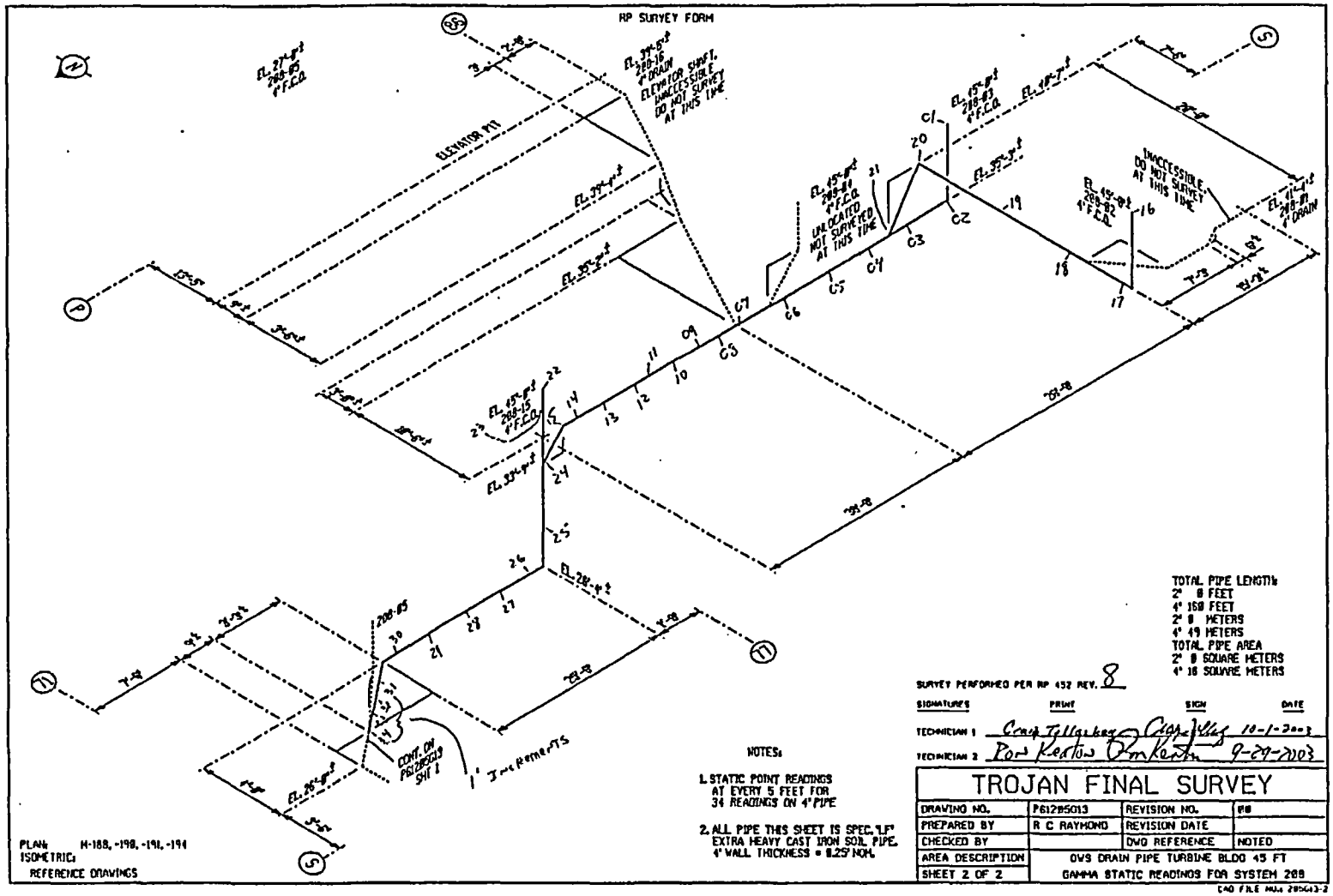


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations –Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	121	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.227e+004
Maximum Value	:	1.222e+004
Range	:	2.449e+004
Median	:	1.784e+003
Std. Deviation	:	6.319e+003
Mean	:	3.584e+002
95% UCL	:	1.311e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-7.136e+002	000018	3.467e+003	000035	2.739e+003
000002	3.709e+003	000019	5.905e+003	000036	-1.139e+004
000003	5.121e+003	000020	4.874e+003	000037	-1.117e+004
000004	5.121e+003	000021	4.824e+003	000038	-1.187e+004
000005	4.769e+003	000022	7.673e+003	000039	-1.188e+004
000006	5.357e+003	000023	-1.422e+003	000040	-1.227e+004
000007	1.548e+003	000024	-3.043e+003	000041	-9.467e+003
000008	1.548e+003	000025	-9.739e+003	000042	-3.783e+003
000009	5.276e+002	000026	-1.061e+004	000043	-8.870e+003
000010	1.673e+003	000027	-8.609e+003	000044	-9.609e+003
000011	-9.096e+002	000028	-9.130e+003	000045	-6.739e+003
000012	-5.025e-003	000029	-1.161e+004	000046	-6.217e+003
000013	-7.940e+002	000030	-1.065e+004	000047	-5.391e+003
000014	-1.688e+003	000031	-9.391e+003	000048	-3.870e+003
000015	3.196e+003	000032	-9.739e+003	000049	-4.565e+003
000016	3.779e+003	000033	-9.565e+003	000050	-4.522e+003
000017	4.271e+002	000034	-1.043e+004	000051	-5.652e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Data Quality Values

Location	Value	Location	Value
000052	-5.870e+003	000099	6.957e+003
000053	2.174e+002	000100	-3.397e+003
000054	-8.478e+003	000101	4.779e+003
000055	-6.913e+003	000102	5.729e+003
000056	-9.025e+003	000103	5.608e+003
000057	-8.869e+003	000104	3.457e+003
000058	-5.769e+003	000105	1.271e+003
000059	6.844e+003	000106	3.221e+003
000060	5.553e+003	000107	1.779e+003
000061	6.186e+003	000108	3.693e+003
000062	6.176e+003	000109	3.312e+003
000063	5.217e+003	000110	5.467e+003
000064	5.652e+003	000111	4.729e+003
000065	-7.744e+003	000112	1.045e+004
000066	-7.744e+003	000113	6.492e+003
000067	4.613e+003	000114	4.111e+003
000068	7.513e+003	000115	5.889e+003
000069	7.081e+002	000116	6.437e+003
000070	6.178e+003	000117	7.106e+003
000071	1.676e+003	000140	5.729e+003
000072	1.676e+003	000141	4.834e+003
000073	2.616e+003	000142	2.874e+003
000074	3.897e+003	000143	3.744e+003
000075	5.000e+003		
000076	-2.427e+003		
000077	1.189e+003		
000078	1.784e+003		
000079	3.465e+003		
000080	1.378e+003		
000081	7.892e+003		
000082	8.703e+003		
000083	-5.189e+002		
000084	-2.038e+003		
000085	3.632e+003		
000086	-5.217e+002		
000087	1.204e+004		
000088	7.913e+003		
000089	2.304e+003		
000090	9.522e+003		
000091	5.870e+003		
000092	-3.478e+002		
000093	2.000e+003		
000094	7.522e+003		
000095	6.304e+003		
000096	1.222e+004		
000097	8.565e+003		
000098	2.391e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Measurement Data Statistical Evaluation

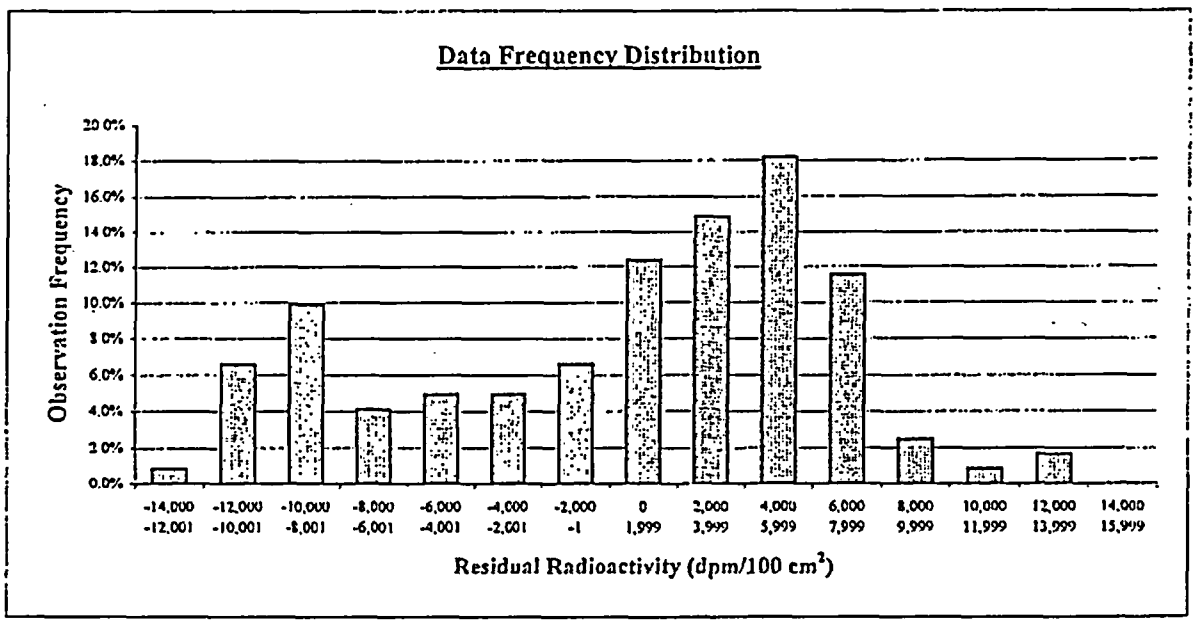
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	24,490	31,597	Pass
Median	0.226	0.500	Pass
Mean	358	21,000	Pass
Std Dev	6,319	4,200	See comment below

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	24,490
Median:	1,784
Mean:	358
Std Dev:	6,319
Minimum:	-12,270
Maximum:	12,220
DCGL:	21,000



Plot Parameters

# of measurements:	121
# of intervals:	15
Interval increment:	2,000
Minimum:	-14,000
Maximum:	15,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-12,001	-14,000	1	0.8%
2	-10,001	-12,000	8	6.6%
3	-8,001	-10,000	12	9.9%
4	-6,001	-8,000	5	4.1%
5	-4,001	-6,000	6	5.0%
6	-2,001	-4,000	6	5.0%
7	-1	-2,000	8	6.6%
8	1,999	0	15	12.4%
9	3,999	2,000	18	14.9%
10	5,999	4,000	22	18.2%
11	7,999	6,000	14	11.6%
12	9,999	8,000	3	2.5%
13	11,999	10,000	1	0.8%
14	13,999	12,000	2	1.7%
15	15,999	14,000	0	0.0%
		Total:	121	100%

Comment:
Standard deviation fails the test criterion of 0.2 time DCGL. It is 0.3 times DCGL, due to 38% of the measurement values being negative values (less than zero). The data set also has a left skewed distribution with the median value being about 5 times the mean value. However, the data set represents the survey unit and all measurement values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-16,190
Maximum Value:	7,905
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: One scan measurement exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	N/A
Length of Survey Unit (m):	N/A
Survey Unit Area >DCGL (%):	N/A
EMC Value:	N/A

Action Taken: Made accessible suspect section of pipe that was not accessible during data collection and performed 100% scan coverage (section of pipe with elevated residual radioactivity had to be removed to gain access to inaccessible section); created new Class 1 survey unit (P61205K) and deleted survey measurements located in new survey unit (scans 037-039 and statics 118-139).

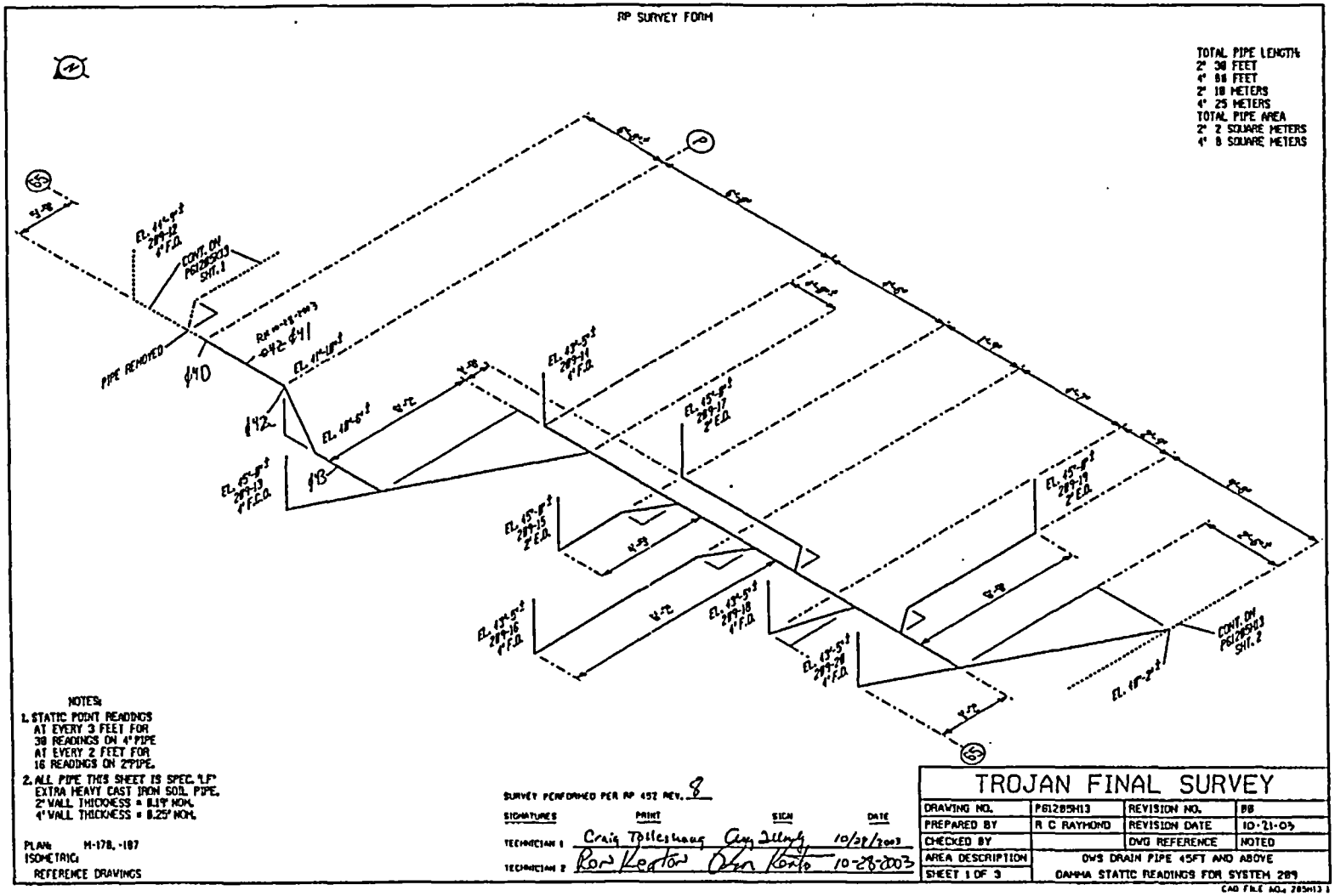
Basis for Action Taken: The new survey unit was created to include the upstream section of pipe where the elevated residual radioactivity was identified. The downstream section was accessible, surveyed, and remains as part of this survey unit.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Static Measurement Locations Map

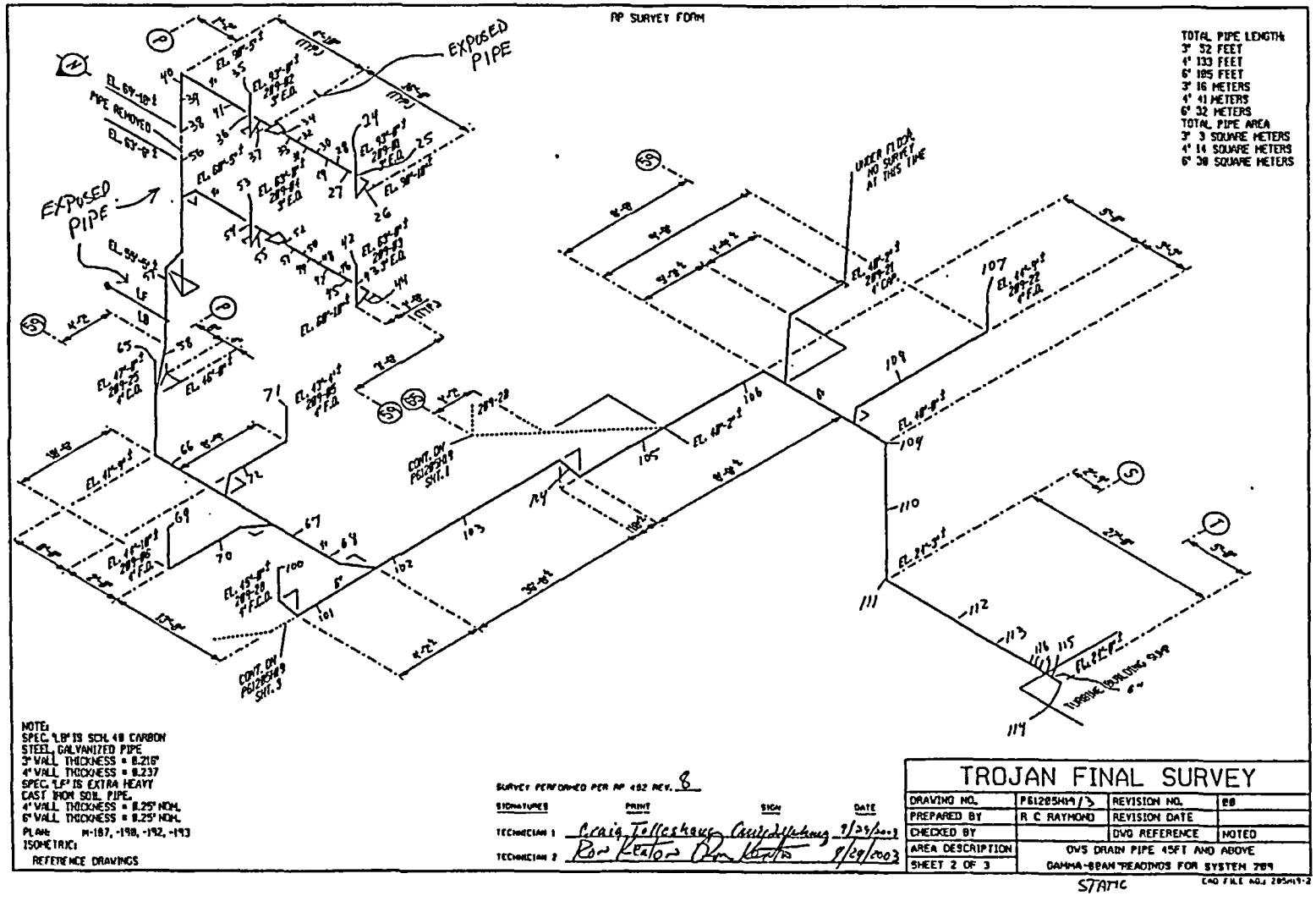


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Static Measurement Locations Map

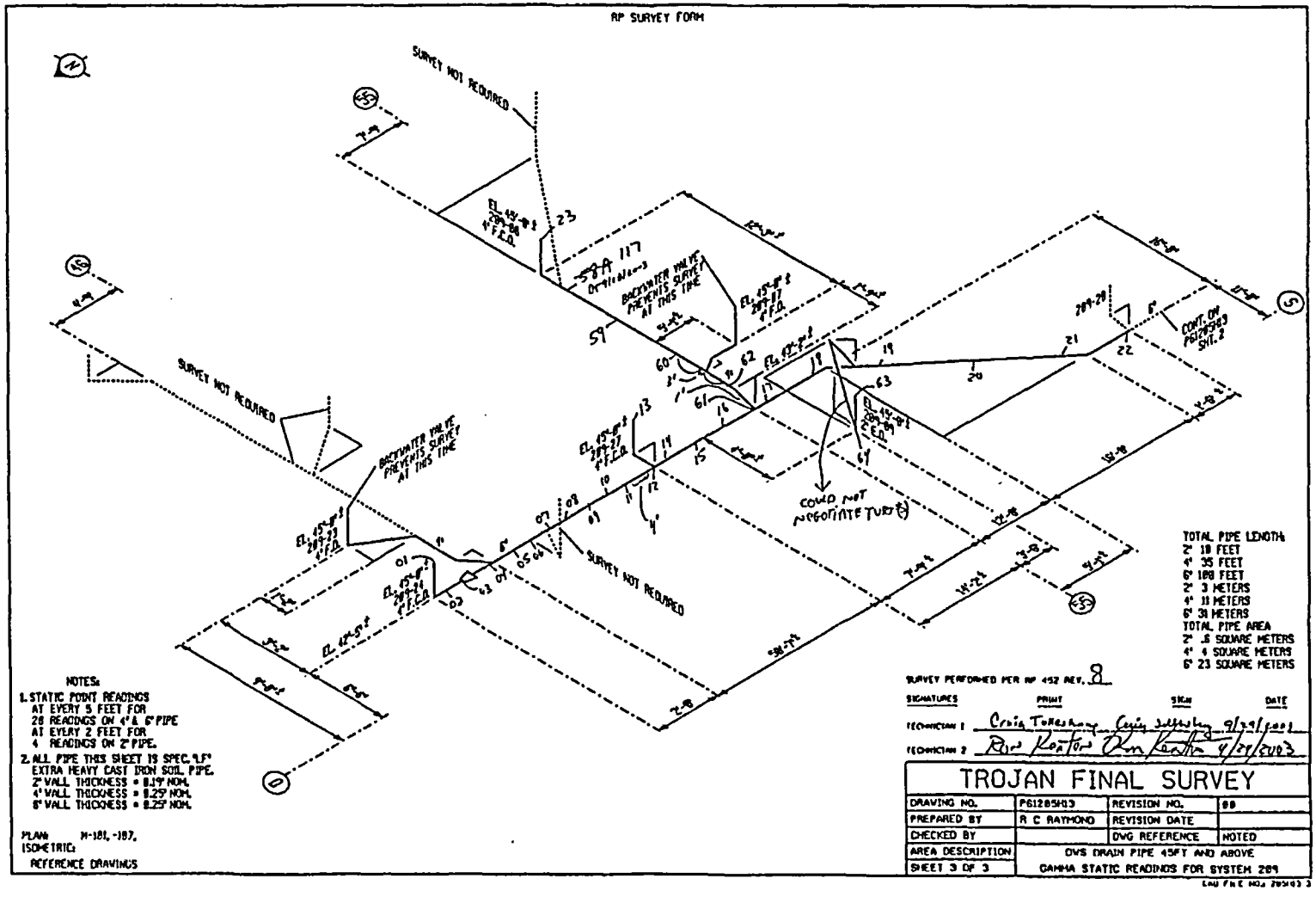


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	106	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	-4.476e+003
Maximum Value :	1.094e+004
Range :	1.542e+004
Median :	1.553e+003
Std. Deviation :	3.793e+003
Mean :	2.401e+003
95% UCL :	3.013e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.584e+003	000018	-5.892e+002	000035	3.892e+003
000002	3.492e+003	000019	2.622e+003	000036	2.308e+003
000003	4.924e+003	000020	-1.497e+003	000037	8.703e+002
000004	4.822e+003	000021	-3.627e+003	000038	1.535e+003
000005	4.541e+003	000022	1.124e+003	000039	-2.303e+003
000006	5.919e+003	000023	-2.232e+003	000040	-1.843e+003
000007	1.378e+003	000024	-1.514e+002	000041	-1.135e+002
000008	1.822e+003	000025	1.108e+003	000042	-2.886e+003
000009	2.616e+003	000026	5.838e+002	000043	4.865e+002
000010	4.092e+003	000027	-1.778e+003	000044	3.081e+002
000011	6.389e+003	000028	1.022e+003	000045	3.730e+002
000012	6.881e+003	000029	1.432e+003	000046	-8.216e+002
000013	-3.459e+002	000030	-4.054e+002	000047	-1.357e+003
000014	7.119e+003	000031	1.043e+003	000048	-5.838e+002
000015	6.146e+003	000032	2.995e+003	000049	-3.643e+003
000016	4.865e+002	000033	3.065e+003	000050	-4.124e+003
000017	4.314e+003	000034	2.854e+003	000051	-1.649e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Data Quality Values

Location	Value	Location	Value
000052	-3.919e+003	000100	1.571e+003
000054	-5.243e+002	000101	5.429e+002
000055	-3.032e+003	000102	7.086e+003
000056	-2.324e+002	000103	-1.886e+003
000057	-2.454e+003	000104	1.971e+003
000058	-4.476e+003	000105	8.086e+003
000059	-6.973e+002	000106	9.886e+003
000060	1.297e+002	000107	8.771e+003
000061	3.405e+002		
000062	-1.259e+003		
000063	3.314e+003		
000064	1.094e+004		
000065	7.257e+003		
000066	7.886e+003		
000067	6.457e+003		
000068	7.000e+003		
000069	7.600e+003		
000070	6.514e+003		
000071	5.257e+003		
000072	9.629e+003		
000073	9.029e+003		
000074	4.286e+002		
000075	8.314e+003		
000076	5.714e+002		
000077	4.200e+003		
000078	6.943e+003		
000079	7.743e+003		
000080	3.886e+003		
000081	1.486e+003		
000082	6.000e+002		
000083	-1.714e+002		
000084	1.143e+002		
000085	3.686e+003		
000086	9.714e+003		
000087	1.371e+003		
000088	7.171e+003		
000089	4.143e+003		
000090	4.771e+003		
000091	4.543e+003		
000092	6.000e+003		
000093	4.114e+003		
000094	-4.143e+003		
000095	-3.600e+003		
000096	9.229e+003		
000097	-1.343e+003		
000098	4.571e+003		
000099	3.200e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Measurement Data Statistical Evaluation

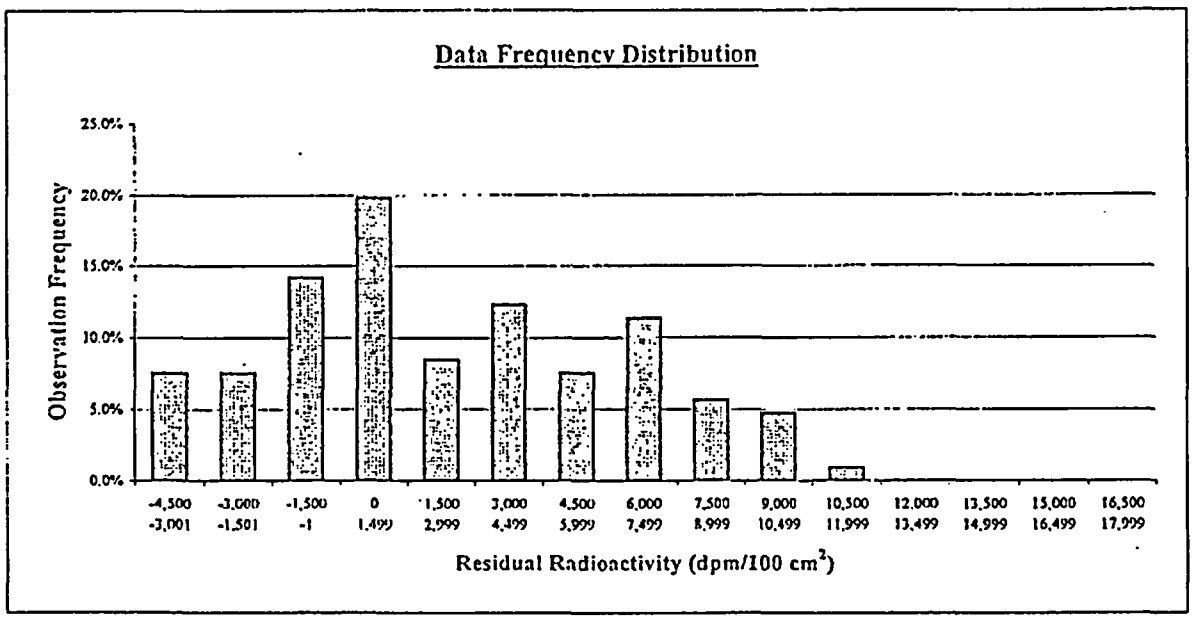
Statistical Comparisons

Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	15,416	18,966	Pass
Median	0.224	0.500	Pass
Mean	2,401	21,000	Pass
Std Dev	3,793	4,200	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	15,416
Median:	1,553
Mean:	2,401
Std Dev:	3,793
Minimum:	-4,476
Maximum:	10,940
DCGL:	21,000



Plot Parameters

# of measurements:	106
# of intervals:	15
Interval increment:	1,500
Minimum:	-4,500
Maximum:	17,999

Comment:
NONE

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-3,001	-4,500	8	7.5%
2	-1,501	-3,000	8	7.5%
3	-1	-1,500	15	14.2%
4	1,499	0	21	19.8%
5	2,999	1,500	9	8.5%
6	4,499	3,000	13	12.3%
7	5,999	4,500	8	7.5%
8	7,499	6,000	12	11.3%
9	8,999	7,500	6	5.7%
10	10,499	9,000	5	4.7%
11	11,999	10,500	1	0.9%
12	13,499	12,000	0	0.0%
13	14,999	13,500	0	0.0%
14	16,499	15,000	0	0.0%
15	17,999	16,500	0	0.0%
		Total:	106	100%

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-3,338
Maximum Value:	7,024
Scan Coverage (%):	30

Discussion of Anomalous Measurement Data

Investigation Summary

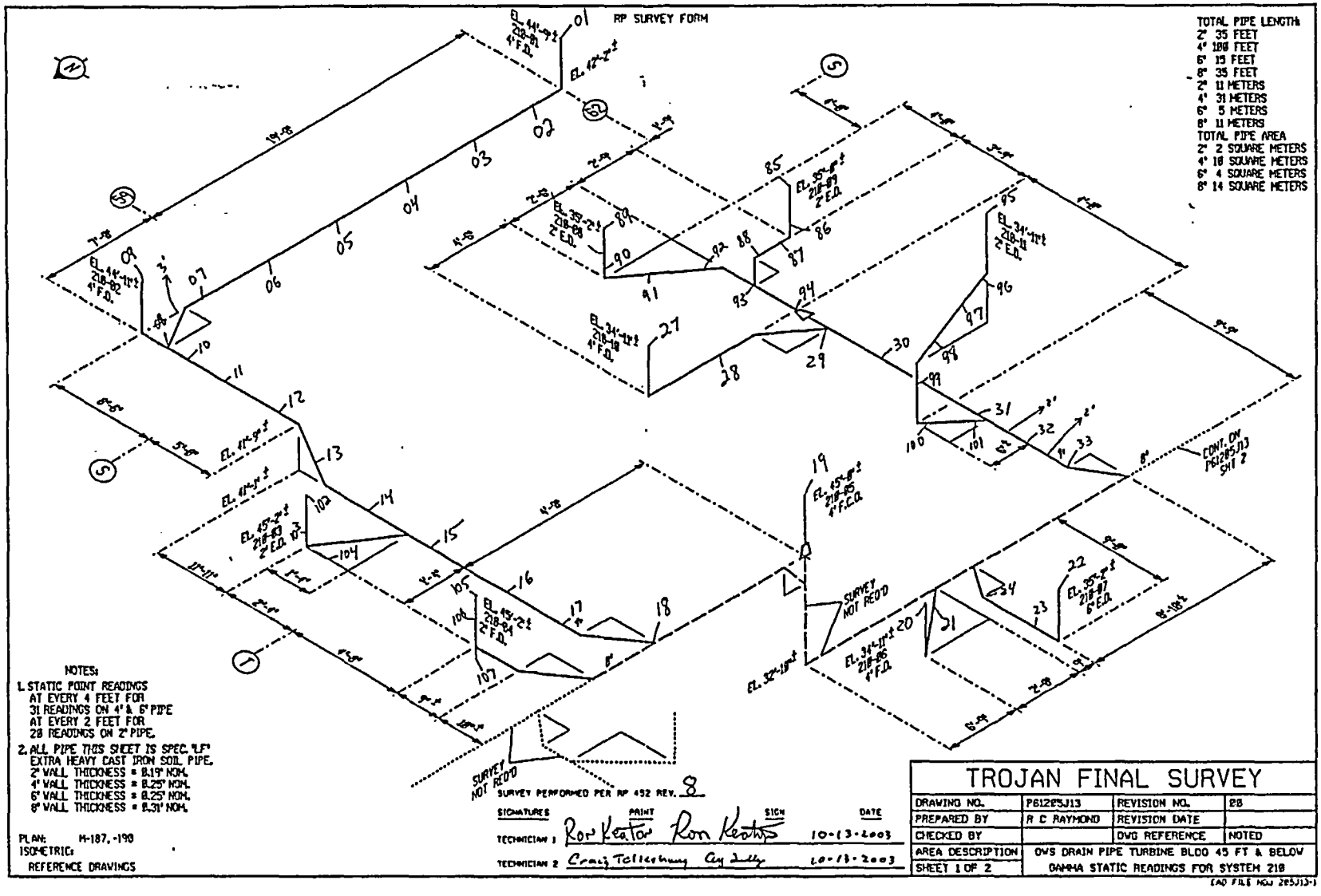
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Static Measurement Locations Map

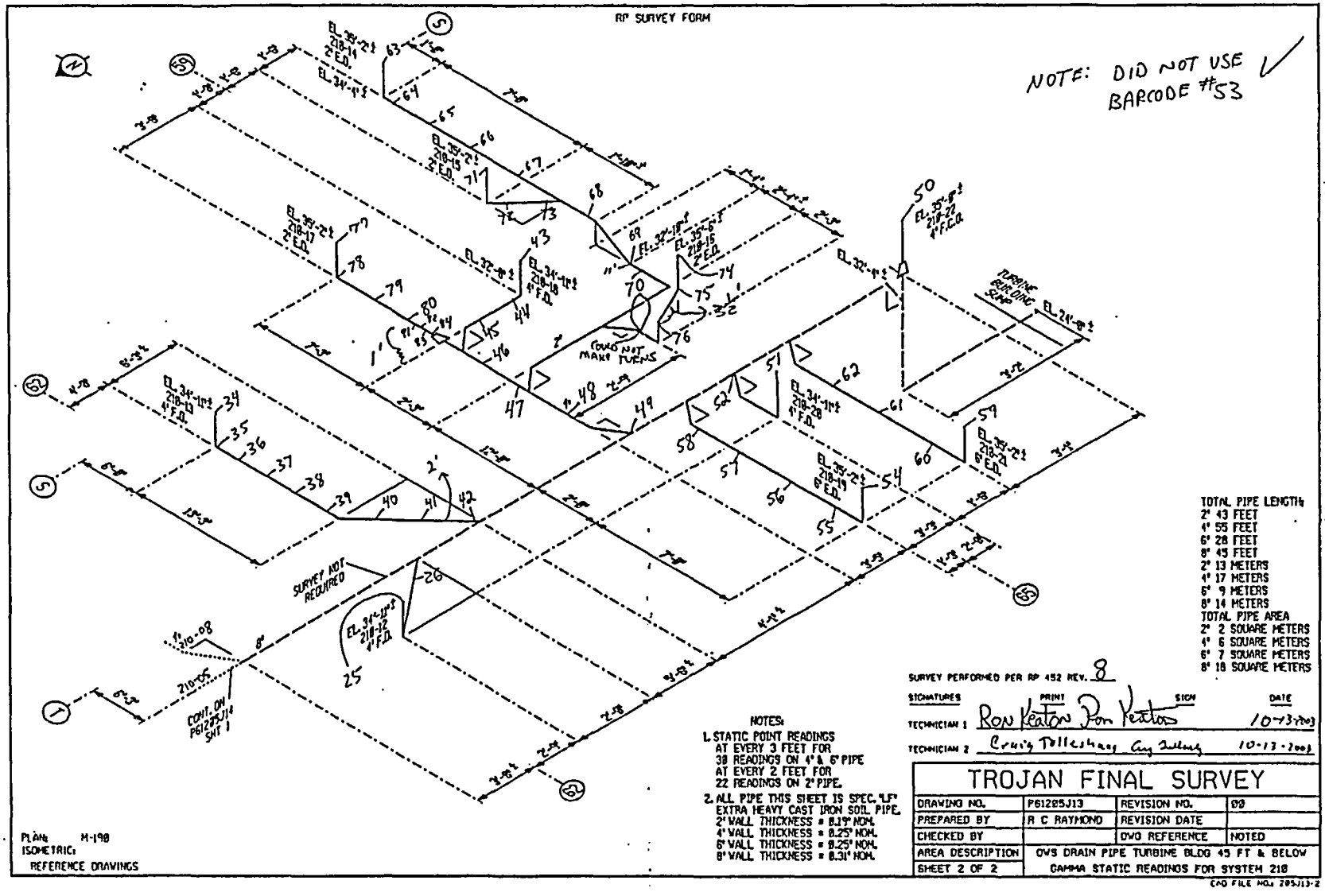


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205K **Classification:** Class 1
Survey Unit Name: TB/MSSS 45' Elevation – Oily Waste Drains **Size (m^2):** 7

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	36	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.769e+003
Maximum Value	:	1.545e+004
Range	:	1.822e+004
Median	:	6.063e+003
Std. Deviation	:	2.813e+003
Mean	:	5.828e+003
95% UCL	:	6.620e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-2.769e+003	000018	4.749e+003	000035	1.281e+003
000002	2.251e+003	000019	6.563e+003	000036	5.648e+003
000003	3.990e+003	000020	7.005e+003		
000004	3.915e+003	000021	6.970e+003		
000005	5.211e+003	000022	5.161e+003		
000006	2.869e+003	000023	3.528e+003		
000007	6.166e+003	000024	4.643e+003		
000008	6.764e+003	000025	4.302e+003		
000009	8.251e+003	000026	5.111e+003		
000010	5.296e+003	000027	6.236e+003		
000011	5.065e+003	000028	5.960e+003		
000012	6.774e+003	000029	6.513e+003		
000013	6.879e+003	000030	6.709e+003		
000014	8.095e+003	000031	1.545e+004		
000015	7.523e+003	000032	9.638e+003		
000016	4.824e+003	000033	7.915e+003		
000017	8.216e+003	000034	7.121e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205K
Survey Unit Name: TB/MSSS 45' Elevation – Oily Waste Drains

Classification: Class 1
Size (m^2): 7

Measurement Data Statistical Evaluation

Statistical Comparisons

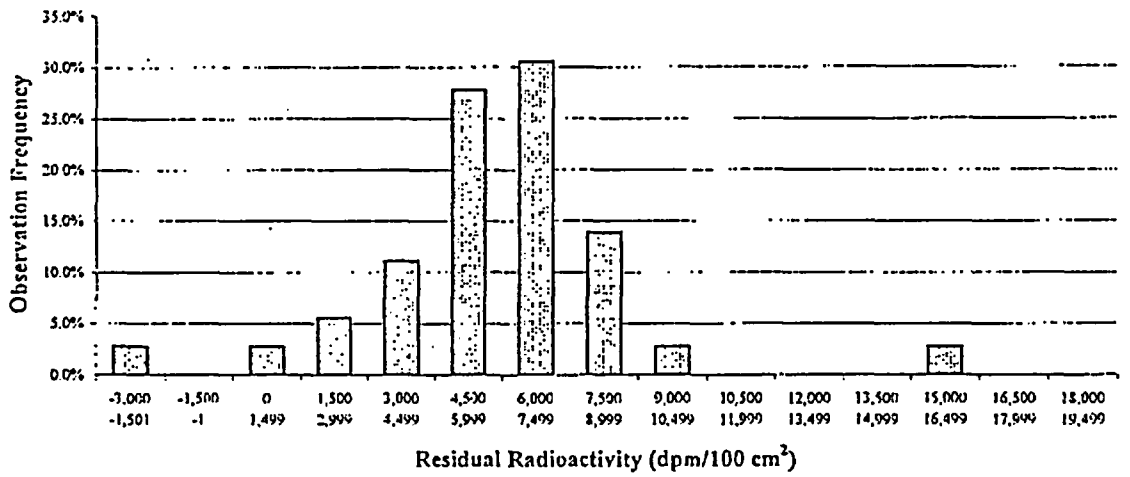
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	18,219	14,065	See comment below
Median	0.083	0.500	Pass
Mean	5,828	100,000	Pass
Std Dev	2,813	20,000	Pass

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	18,219
Median:	6,063
Mean:	5,828
Std Dev:	2,813
Minimum:	-2,769
Maximum:	15,450
DCGL:	100,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	36
# of intervals:	15
Interval increment:	1,500
Minimum:	-3,000
Maximum:	19,499

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-1,501	-3,000	1	2.8%
2	-1	-1,500	0	0.0%
3	1,499	0	1	2.8%
4	2,999	1,500	2	5.6%
5	4,499	3,000	4	11.1%
6	5,999	4,500	10	27.8%
7	7,499	6,000	11	30.6%
8	8,999	7,500	5	13.9%
9	10,499	9,000	1	2.8%
10	11,999	10,500	0	0.0%
11	13,499	12,000	0	0.0%
12	14,999	13,500	0	0.0%
13	16,499	15,000	1	2.8%
14	17,999	16,500	0	0.0%
15	19,499	18,000	0	0.0%
		Total:	36	100%

Comment:
Range failure is a test artifact due to one relatively low (negative) value, and one relatively high value compared to rest of data set, resulting a range value for the data set. that is greater than 5 times the standard deviation. All values are valid and accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205K
Survey Unit Name: TB/MSSS 45' Elevation – Oily Waste Drains

Classification: Class 1
Size (m^2): 7

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	4,130
Maximum Value:	20,060
Scan Coverage (%):	100

Discussion of Anomalous Measurement Data

Investigation Summary

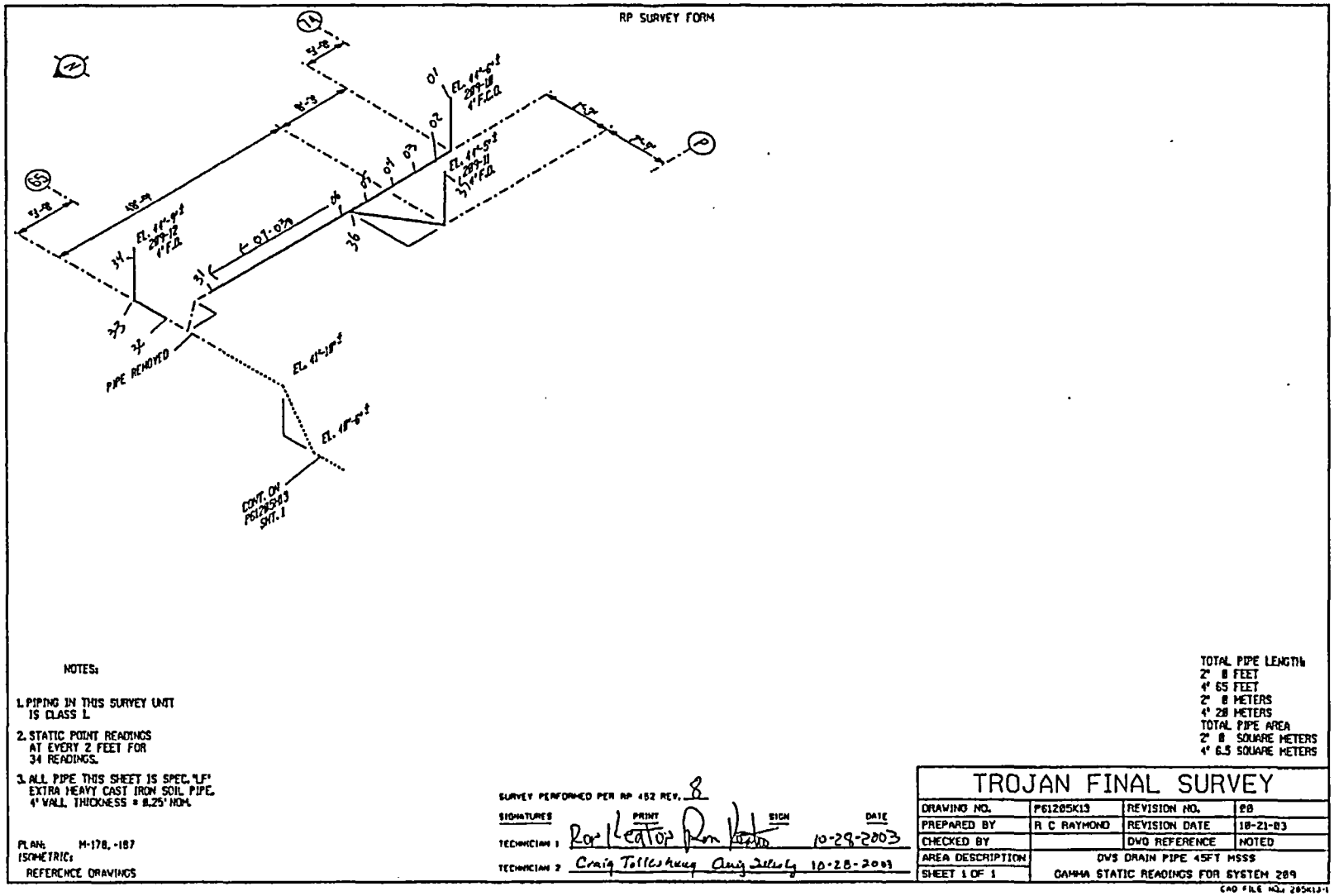
No investigation required for this survey unit. No anomalous measurement data.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205K
Survey Unit Name: TB/MSSS 45' Elevation – Oily Waste Drains

Classification: Class 1
Size (m^2): 7

Static Measurement Locations Map



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Data Quality Values

Type 1 Error : 5.000e-002 Type 2 Error : 5.000e-002
Relative Shift : 3.000e+000

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
13	419	DPM/100 CM²	2.100e+004	-	-

Statics

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.060e+004
Maximum Value	:	2.089e+004
Range	:	3.149e+004
Median	:	6.316e+003
Std. Deviation	:	6.932e+003
Mean	:	5.610e+003
95% UCL	:	6.169e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	5.263e+002	000018	-6.684e+003	000035	-6.105e+003
000002	-3.158e+003	000019	-5.421e+003	000036	-2.684e+003
000003	-8.316e+003	000020	-6.947e+003	000037	-1.421e+003
000004	-5.158e+003	000021	-5.895e+003	000038	-1.789e+003
000005	-6.211e+003	000022	-7.579e+003	000039	-1.789e+003
000006	-6.263e+003	000023	-6.737e+003	000040	-1.789e+003
000007	-5.105e+003	000024	-5.474e+003	000041	-6.368e+003
000008	-3.211e+003	000025	-4.947e+003	000042	-6.316e+003
000009	-5.421e+003	000026	-5.632e+003	000043	-7.895e+003
000010	-6.211e+003	000027	-3.737e+003	000044	1.032e+004
000011	-3.895e+003	000028	-3.158e+002	000045	-4.316e+003
000012	-9.474e+002	000029	-4.211e+002	000046	-5.000e+003
000013	-1.421e+003	000030	-7.211e+003	000047	-7.737e+003
000014	-6.842e+003	000031	-8.895e+003	000048	-7.526e+003
000015	-5.947e+003	000032	1.116e+004	000049	-4.158e+003
000016	-8.105e+003	000033	-4.053e+003	000050	-2.895e+003
000017	-7.158e+003	000034	-5.316e+003	000051	-5.263e+002

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Data Quality Values

Location	Value	Location	Value	Location	Value
000052	-5.000e+003	000099	1.179e+004	000146	1.132e+004
000053	-8.526e+003	000100	1.184e+004	000147	1.047e+004
000054	-4.737e+003	000101	1.368e+004	000148	3.053e+003
000055	-6.474e+003	000102	1.305e+004	000149	3.053e+003
000056	-5.526e+003	000103	1.105e+004	000150	3.158e+002
000057	-5.474e+003	000104	1.068e+004	000151	4.632e+003
000058	-4.421e+003	000105	9.421e+003	000152	3.737e+003
000059	-3.842e+003	000106	8.421e+003	000153	6.105e+003
000060	-4.684e+003	000107	6.526e+003	000154	5.263e+003
000061	-4.000e+003	000108	4.579e+003	000155	1.058e+004
000062	-4.105e+003	000109	7.737e+003	000156	1.305e+004
000063	-5.263e+003	000110	4.316e+003	000157	6.474e+003
000064	-3.947e+003	000111	9.474e+003	000158	6.211e+003
000065	-4.368e+003	000112	1.174e+004	000159	6.421e+003
000066	-8.895e+003	000113	9.368e+003	000160	7.316e+003
000067	-7.211e+003	000114	1.053e+004	000161	6.263e+003
000068	-7.316e+003	000115	1.437e+004	000162	6.474e+003
000069	4.737e+003	000116	1.316e+004	000163	8.053e+003
000070	6.737e+003	000117	7.895e+003	000164	2.632e+003
000071	9.474e+003	000118	1.216e+004	000165	5.316e+003
000072	1.158e+004	000119	9.474e+003	000166	5.789e+002
000073	1.242e+004	000120	8.579e+003	000167	1.053e+003
000074	1.479e+004	000121	1.268e+004	000168	5.211e+003
000075	1.353e+004	000122	1.137e+004	000169	7.316e+003
000076	1.368e+004	000123	1.042e+004	000170	5.474e+003
000077	1.458e+004	000124	5.368e+003	000171	2.684e+003
000078	1.532e+004	000125	6.316e+003	000172	-1.579e+002
000079	1.705e+004	000126	6.368e+003	000173	-2.632e+002
000080	1.584e+004	000127	4.474e+003	000174	1.579e+002
000081	1.589e+004	000128	1.063e+004	000175	4.211e+003
000082	1.337e+004	000129	1.279e+004	000176	6.105e+003
000083	1.558e+004	000130	1.105e+004	000177	3.579e+003
000084	1.753e+004	000131	1.226e+004	000178	8.105e+003
000085	1.358e+004	000132	7.316e+003	000179	6.421e+003
000086	1.437e+004	000133	1.068e+004	000180	6.263e+003
000087	9.737e+003	000134	1.026e+004	000181	8.895e+003
000088	9.947e+003	000135	1.079e+004	000182	1.189e+004
000089	4.684e+003	000136	1.021e+004	000183	1.179e+004
000090	7.895e+003	000137	7.842e+003	000184	6.421e+003
000091	6.158e+003	000138	8.158e+003	000185	7.421e+003
000092	1.826e+004	000139	9.105e+003	000186	6.526e+003
000093	1.447e+004	000140	4.789e+003	000187	7.842e+003
000094	9.842e+003	000141	9.947e+003	000188	7.158e+003
000095	1.347e+004	000142	6.895e+003	000189	5.947e+003
000096	1.221e+004	000143	6.789e+003	000190	3.632e+003
000097	1.321e+004	000144	6.579e+003	000191	1.111e+004
000098	1.258e+004	000145	4.474e+003	000192	8.947e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Data Quality Values

Location	Value	Location	Value	Location	Value
000193	9.579e+003	000240	1.479e+004	000287	7.750e+003
000194	1.679e+004	000241	1.205e+004	000288	2.400e+003
000195	8.316e+003	000242	7.000e+003	000289	8.850e+003
000196	1.068e+004	000243	1.563e+004	000290	1.192e+004
000197	5.737e+003	000244	1.411e+004	000291	6.200e+003
000198	9.632e+003	000245	1.200e+004	000292	9.800e+003
000199	1.037e+004	000246	1.158e+004	000293	7.750e+003
000200	1.079e+004	000247	1.226e+004	000294	1.395e+004
000201	4.579e+003	000248	8.368e+003	000295	1.885e+004
000202	1.005e+004	000249	7.895e+003	000296	8.450e+003
000203	1.168e+004	000250	8.158e+003	000297	8.300e+003
000204	1.384e+004	000251	7.053e+003	000298	6.600e+003
000205	7.053e+003	000252	1.163e+004	000299	3.200e+003
000206	7.000e+003	000253	4.947e+003	000300	7.850e+003
000207	1.658e+004	000254	1.458e+004	000301	9.300e+003
000208	1.416e+004	000255	6.526e+003	000302	1.050e+004
000209	9.263e+003	000256	6.842e+003	000303	5.700e+003
000210	4.211e+003	000257	1.879e+004	000304	4.850e+003
000211	8.737e+003	000258	1.363e+004	000305	5.800e+003
000212	5.474e+003	000259	1.342e+004	000306	7.950e+003
000213	1.300e+004	000260	1.458e+004	000307	8.650e+003
000214	9.895e+003	000261	1.468e+004	000308	9.100e+003
000215	7.895e+003	000262	1.437e+004	000309	5.000e+002
000216	1.363e+004	000263	1.489e+004	000310	1.115e+004
000217	1.132e+004	000264	1.342e+004	000311	1.960e+004
000218	1.147e+004	000265	1.179e+004	000312	4.700e+003
000219	1.621e+004	000266	8.526e+003	000313	4.300e+003
000220	1.332e+004	000267	6.684e+003	000314	8.450e+003
000221	1.626e+004	000268	9.053e+003	000315	1.300e+003
000222	1.726e+004	000269	9.368e+003	000316	-6.500e+003
000223	1.732e+004	000270	8.789e+003	000317	9.250e+003
000224	1.568e+004	000271	1.395e+004	000318	8.800e+003
000225	2.089e+004	000272	1.784e+004	000319	1.160e+004
000226	1.816e+004	000273	1.311e+004	000320	5.400e+003
000227	1.416e+004	000274	1.632e+004	000321	8.350e+003
000228	1.642e+004	000275	1.037e+004	000322	1.105e+004
000229	1.684e+004	000276	6.316e+003	000323	8.200e+003
000230	1.589e+004	000277	3.900e+003	000324	8.550e+003
000231	1.363e+004	000278	1.495e+004	000325	1.090e+004
000232	1.900e+004	000279	5.550e+003	000326	3.950e+003
000233	5.211e+003	000280	8.350e+003	000327	2.950e+003
000234	1.526e+004	000281	5.800e+003	000328	7.050e+003
000235	1.416e+004	000282	4.950e+003	000329	1.550e+003
000236	8.000e+003	000283	7.800e+003	000330	1.665e+004
000237	1.521e+004	000284	9.850e+003	000331	7.850e+003
000238	1.332e+004	000285	2.700e+003	000332	1.160e+004
000239	5.105e+003	000286	6.150e+003	000333	1.585e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Data Quality Values

Location	Value	Location	Value
000334	7.900e+003	000381	-1.120e+003
000335	1.500e+004	000382	3.080e+003
000336	-6.320e+003	000383	-3.680e+003
000337	2.960e+003	000384	-6.320e+003
000338	1.280e+003	000385	3.600e+003
000339	7.600e+002	000386	-1.800e+003
000340	5.160e+003	000387	-4.800e+003
000341	3.600e+002	000388	4.400e+003
000342	3.640e+003	000389	-5.800e+003
000343	3.120e+003	000390	-2.040e+003
000344	-1.200e+002	000391	-1.060e+004
000345	2.800e+003	000392	5.360e+003
000346	1.400e+003	000393	3.360e+003
000347	1.440e+003	000394	4.360e+003
000348	3.360e+003	000395	5.120e+003
000349	-4.280e+003	000396	4.400e+003
000350	3.000e+003	000397	2.480e+003
000351	1.600e+003	000398	5.200e+003
000352	6.400e+002	000399	-2.160e+003
000353	4.040e+003	000400	-4.400e+002
000354	3.560e+003	000401	-5.640e+003
000355	3.840e+003	000402	-4.400e+002
000356	3.680e+003	000403	4.880e+003
000357	-3.600e+002	000404	-8.160e+003
000358	2.760e+003	000405	-7.040e+003
000359	-1.080e+003	000406	-2.800e+002
000360	2.360e+003	000407	-2.800e+003
000361	2.560e+003	000408	1.480e+003
000362	-7.080e+003	000409	7.600e+002
000363	2.320e+003	000410	4.000e+001
000364	4.520e+003	000411	4.400e+002
000365	7.600e+002	000412	-2.080e+003
000366	2.880e+003	000413	2.880e+003
000367	1.760e+003	000414	5.040e+003
000368	4.440e+003	000415	1.052e+004
000369	2.720e+003	000416	8.760e+003
000370	2.040e+003	000417	8.160e+003
000371	5.200e+003	000418	6.880e+003
000372	4.400e+003	000419	2.120e+003
000373	2.840e+003		
000374	-4.920e+003		
000375	8.000e+001		
000376	8.000e+001		
000377	2.360e+003		
000378	5.440e+003		
000379	1.440e+003		
000380	2.880e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Measurement Data Statistical Evaluation

Statistical Comparisons

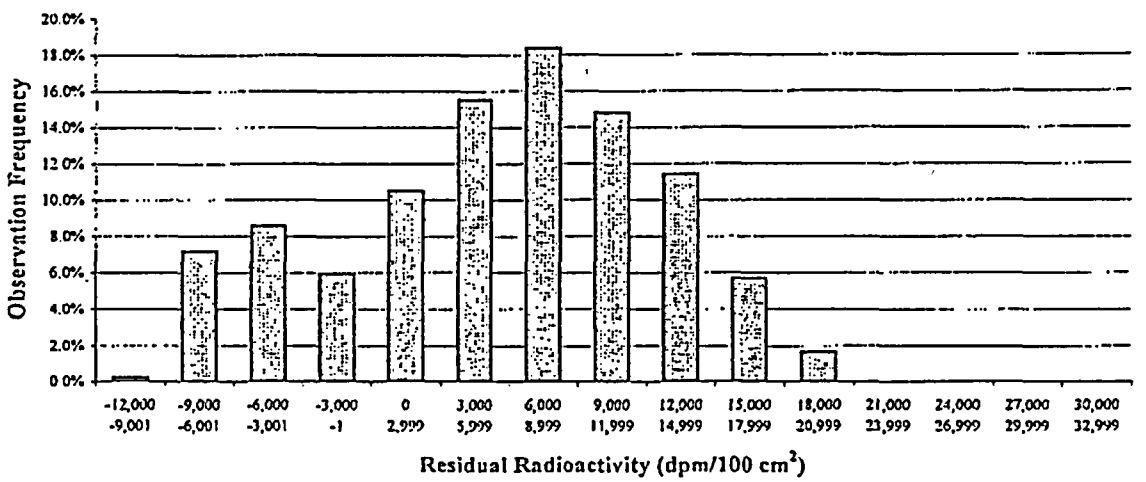
Test	Calculated Value	Acceptance Criteria	Acceptable?
Range	31,490	34,660	Pass
Median	0.102	0.500	Pass
Mean	5,610	21,000	Pass
Std Dev	6,932	4,200	See comment below

All data less than DCGL; Sign statistical test not required.

Statistical Quantities

Range:	31,490
Median:	6,316
Mean:	5,610
Std Dev:	6,932
Minimum:	-10,600
Maximum:	20,890
DCGL:	21,000

Data Frequency Distribution



Plot Parameters	
# of measurements:	419
# of intervals:	15
Interval increment:	3,000
Minimum:	-12,000
Maximum:	32,999

Interval	High End	Low End	Number of Observations	Observation Frequency
1	-9,001	-12,000	1	0.2%
2	-6,001	-9,000	30	7.2%
3	-3,001	-6,000	36	8.6%
4	-1	-3,000	25	6.0%
5	2,999	0	44	10.5%
6	5,999	3,000	65	15.5%
7	8,999	6,000	77	18.4%
8	11,999	9,000	62	14.8%
9	14,999	12,000	48	11.5%
10	17,999	15,000	24	5.7%
11	20,999	18,000	7	1.7%
12	23,999	21,000	0	0.0%
13	26,999	24,000	0	0.0%
14	29,999	27,000	0	0.0%
15	32,999	30,000	0	0.0%
		Total:	419	100%

Comment:
The Standard Deviation test failure is due to 22% of the measurement values being negative numbers, resulting in a large varience for the data set. The standard deviation is larger than the mean and median. The negative values are valid, as many are in pipe that is not embedded, giving readings that are less than the instrument background reading. All measurement values are accepted.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Judgmental and Miscellaneous Measurement Data

Measurement Type:	Surface Scanning Gamma
DCGL (Investigation Level):	21,000
Measurement Units:	dpm/100cm^2
Minimum Value:	-7,960
Maximum Value:	11,970
Scan Coverage (%):	10

Discussion of Anomalous Measurement Data

Investigation Summary

Reason for Investigation: One static measurement (location 225) exceeded the investigation level.

Elevated Measurement Comparison (EMC):

Length of Area Exceeding DCGL (m):	N/A
Length of Survey Unit (m):	N/A
Survey Unit Area >DCGL (%):	N/A
EMC Value:	N/A

Action Taken: Investigated area of elevated residual radioactivity and determined it to be less than investigation level; replaced original static measurement result with result determined by investigation survey.

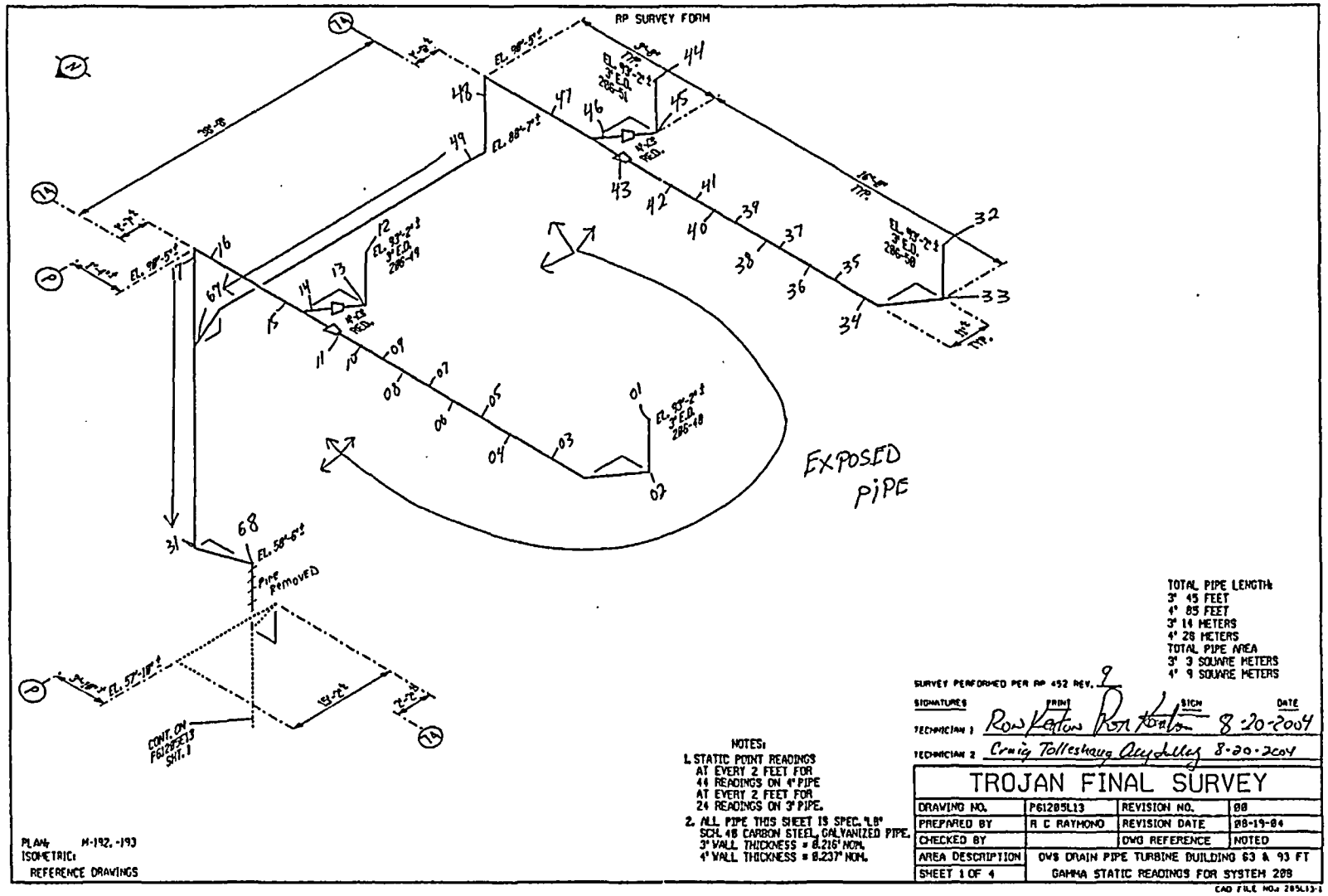
Basis for Action Taken: The SDMS determined value exceeded the DCGL by 1,000 dpm/100 cm^2, which could be due solely to the instrument background used to process the static measurement. The initial background was acquired in the Auxiliary Building, which is usually higher than in the Turbine Building. The investigation survey was performed to determine the instrument value in the Turbine Building, and that value was used to process the data set.

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Static Measurement Locations Map

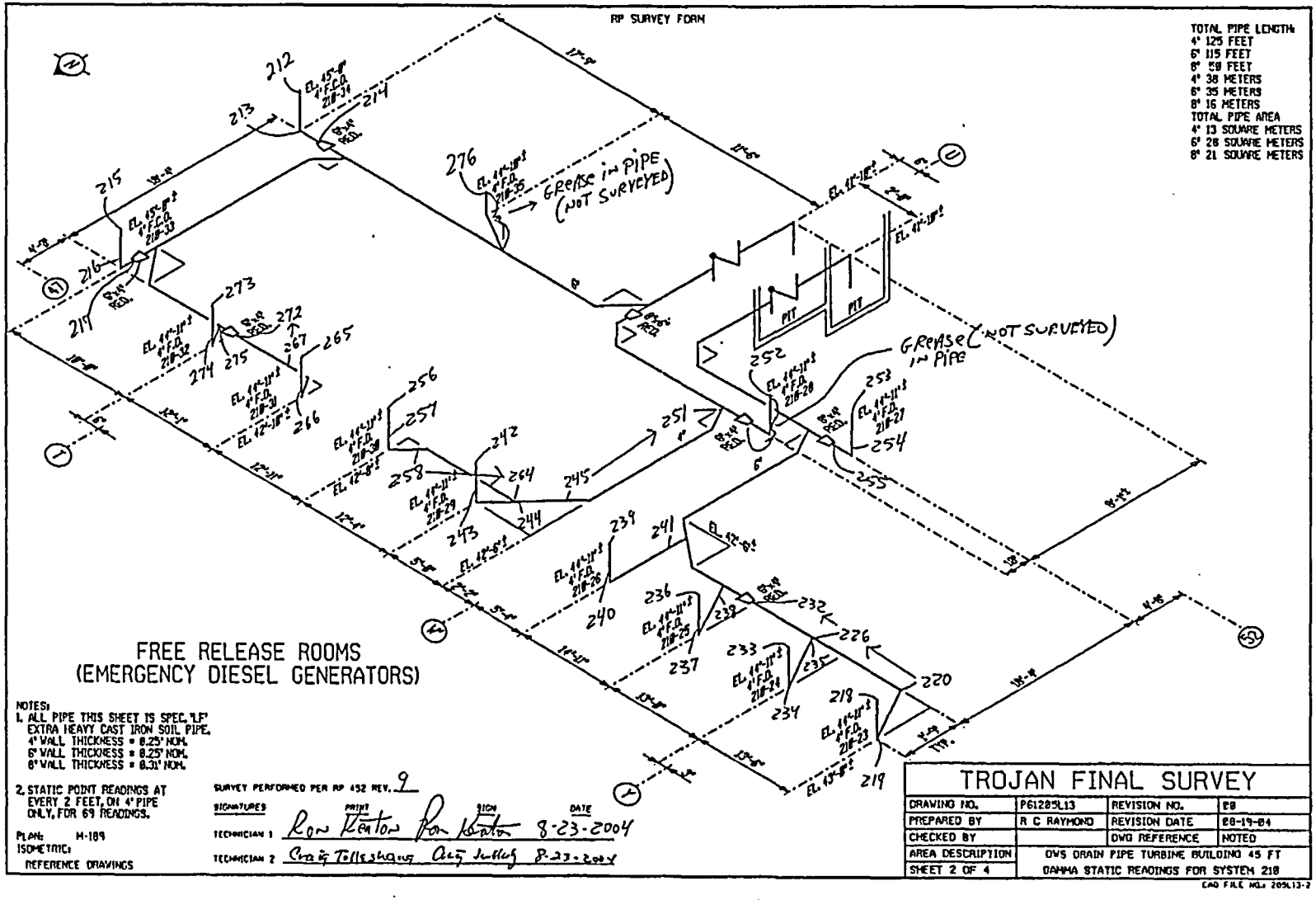


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Static Measurement Locations Map

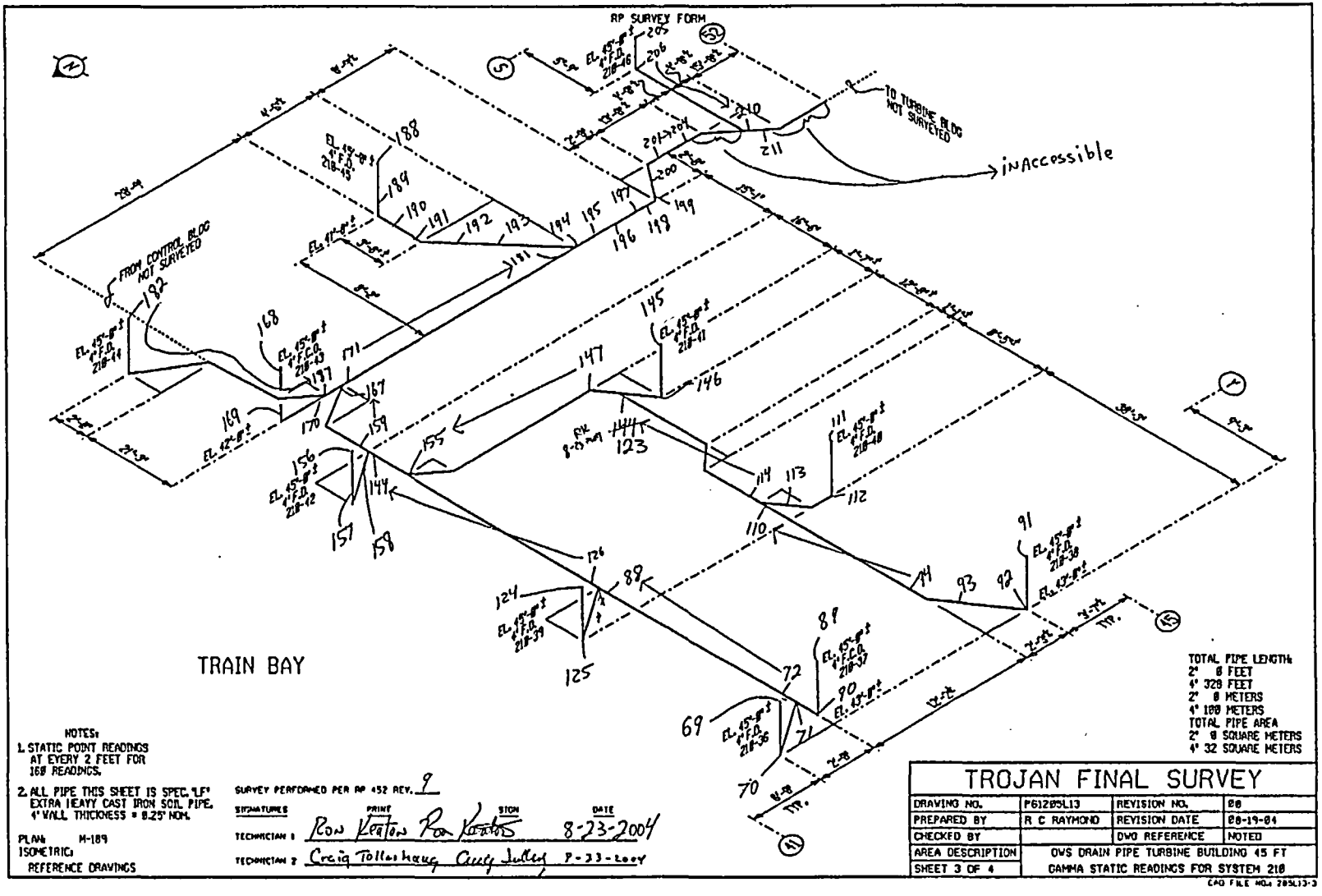


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Static Measurement Locations Map

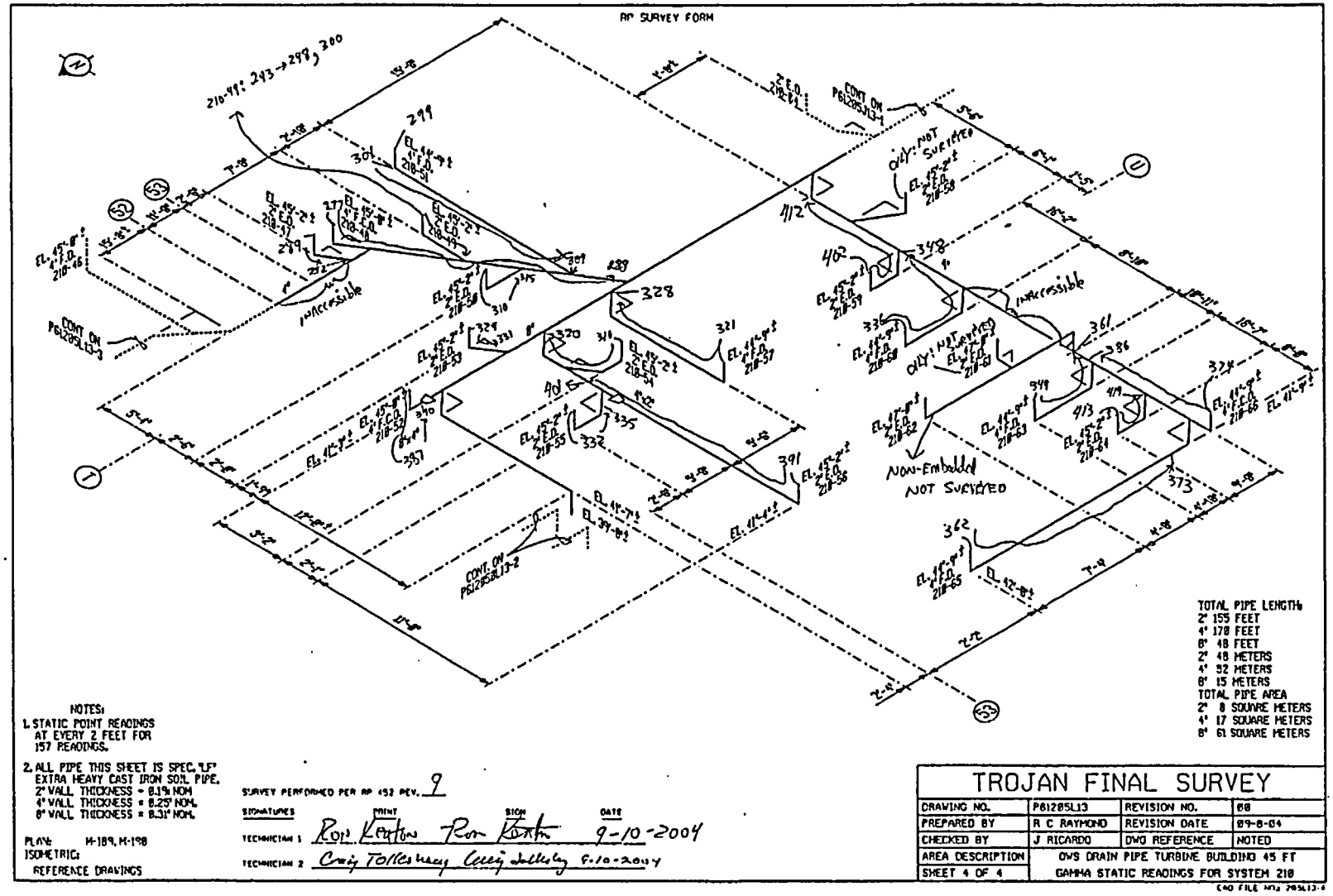


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

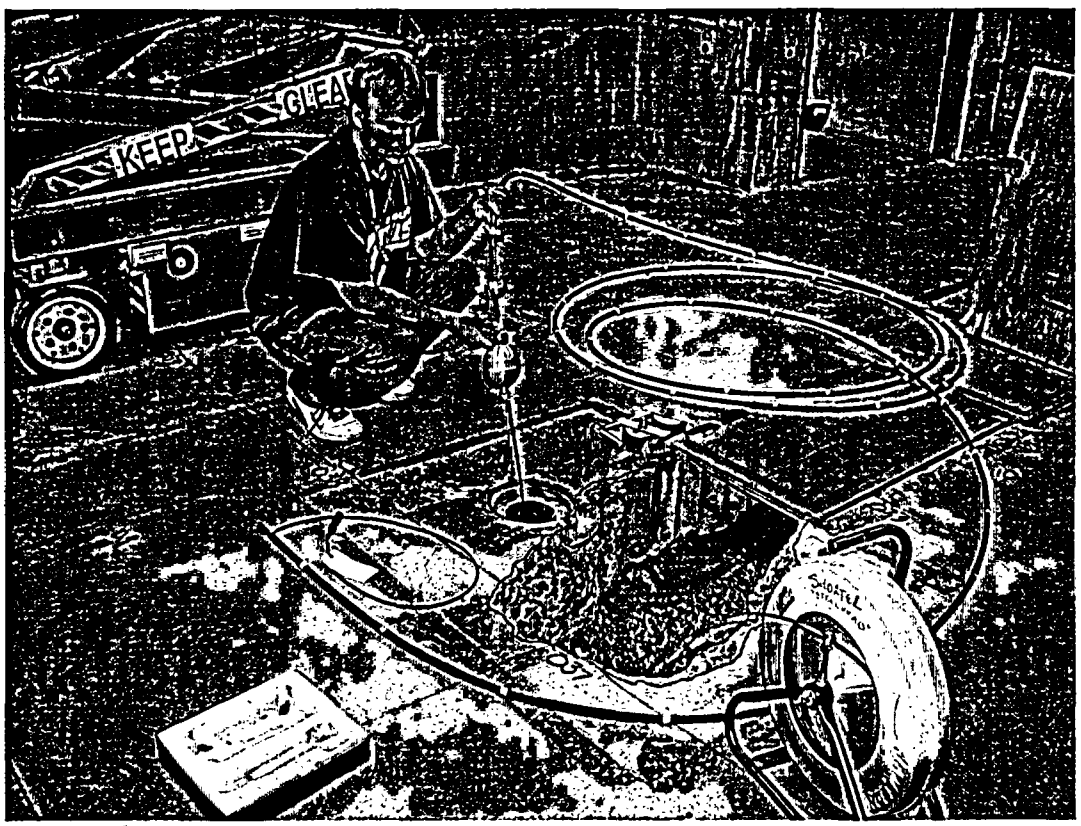
Static Measurement Locations Map



Trojan Nuclear Plant

Supplement to Final Survey Report
Embedded Piping

Volume 2 of 2



Final Survey Report

Supplement to Embedded Piping

Portland General Electric

INTRODUCTION

This document is a supplement to the Trojan Final Survey Report – Embedded Piping. This supplement contains the scan measurement data values and the survey maps that document the locations in each survey unit where scan measurements were performed. Scan measurements were typically performed over pipe lengths of 1m or more. For each area scanned, the peak integrated count rate value experienced by the detector over the scan interval was captured. Once the area was scanned, the captured or "latched" value was electronically entered into the data logger memory. The data were downloaded and electronically converted to recording units. The Measurement Type code "19" identifies the measurements as surface gamma scan measurements. A three-digit number on the survey map identifies each scanned area and corresponds to the last three digits of the 6-digit code that identifies each survey measurement.

SUPPLEMENT TO APPENDIX B

SURVEY UNIT SUMMARY REPORTS – EMBEDDED PIPING

Survey Unit ID Code	Page(s)
P61200A	B-2 through B-4
P61200B	B-5 through B-7
P61200C	B-8 through B-12
P61201A	B-13 and B-14
P61202A	B-15 through B-17
P61202B	B-18 through B-21
P61202C	B-22 through B-26
P61202D	B-27 through B-30
P61203A	B-31 and B-32
P61203B	B-33 and B-34
P61203C	B-35 through B-38
P61203D	B-39 through B-42
P61203E	B-43 through B-47
P61203F	B-48 and B-49
P61203G	B-50 through B-54
P61203J	B-55 through B-61
P61203K	B-62 and B-63
P61203L	B-64 through B-66
P61203M	B-67 through B-69
P61203N	B-70 through B-72
P61203P	B-73 through B-76
P61203Q	B-77 through B-80
P61203R	B-81 through B-85
P61203S	B-86 through B-90
P61203T	B-91 and B-92
P61203U	B-93 through B-96
P61203V	B-97 and B-98
P61203W	B-99 through B-103
P61203X	B-104 through B-107
P61203Y	B-108 and B-109
P61203Z	B-110 through B-113
P61208A	B-114 and B-115
P61209A	B-116 through B-120

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	44	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:		
Minimum Value	:	1.427e+003
Maximum Value	:	5.352e+005
Range	:	5.338e+005
Median	:	1.751e+004
Std. Deviation	:	8.514e+004
Mean	:	3.785e+004
95% UCL	:	5.943e+004

Measurement Values

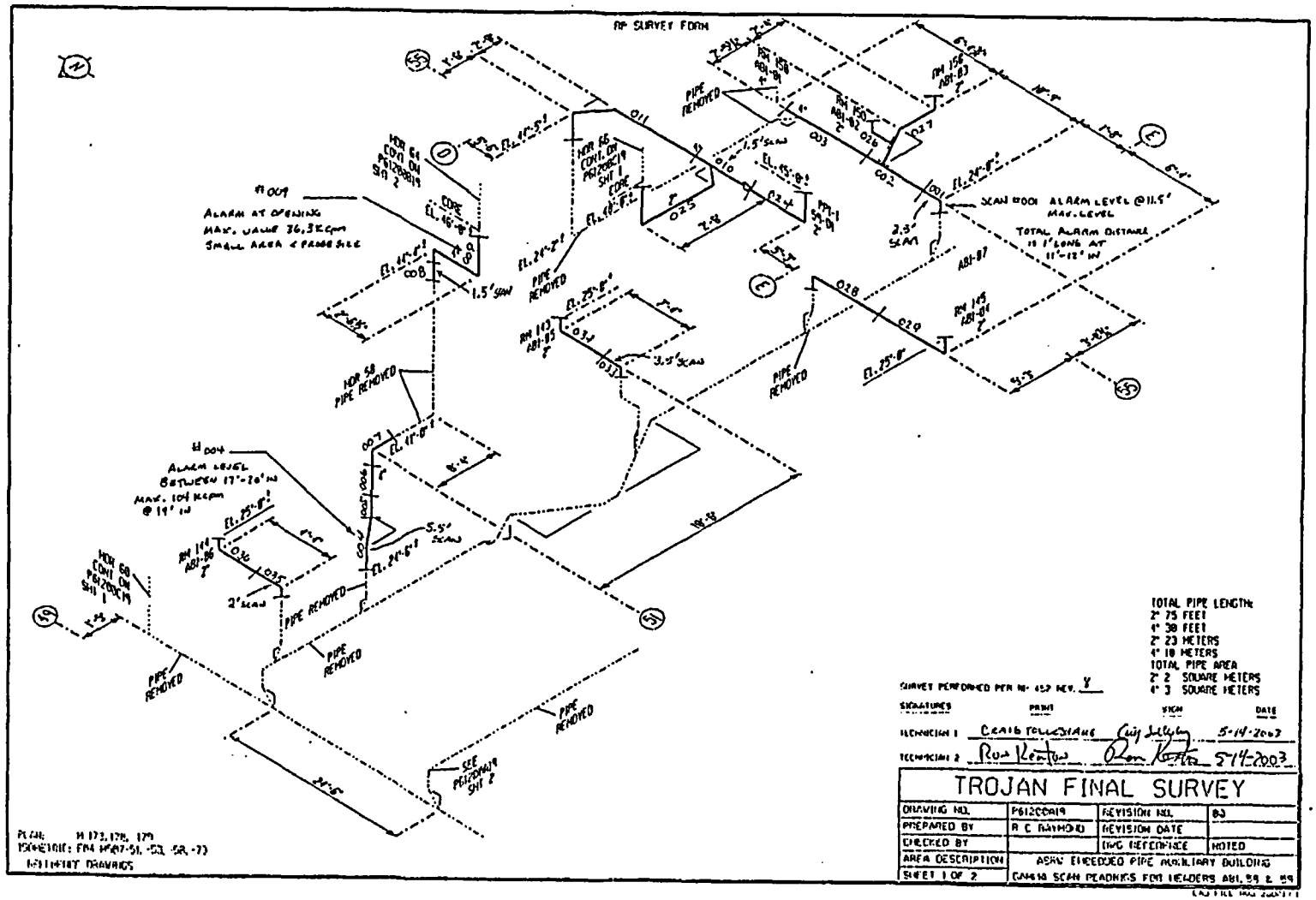
Location	Value	Location	Value	Location	Value
000001	1.261e+005	000018	2.778e+004	000035	1.873e+004
000002	2.528e+004	000019	2.043e+004	000036	9.314e+003
000003	2.248e+004	000020	1.199e+004	000037	2.789e+004
000004	5.352e+005	000021	1.795e+004	000038	7.724e+003
000005	1.931e+004	000022	2.271e+004	000039	8.020e+003
000006	1.118e+004	000023	1.356e+004	000040	6.624e+003
000007	9.622e+003	000024	2.319e+004	000041	4.647e+003
000008	2.522e+003	000025	6.817e+003	000042	3.108e+003
000009	1.672e+005	000026	3.940e+004	000043	1.596e+005
000010	5.295e+004	000027	2.080e+004	000044	5.309e+003
000011	6.384e+004	000028	7.286e+003		
000012	2.489e+004	000029	4.963e+003		
000013	1.975e+004	000030	4.210e+004		
000014	1.706e+004	000031	1.248e+004		
000015	9.432e+003	000032	3.067e+003		
000016	2.226e+004	000033	1.427e+003		
000017	4.853e+003	000034	4.524e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Scan Measurement Data

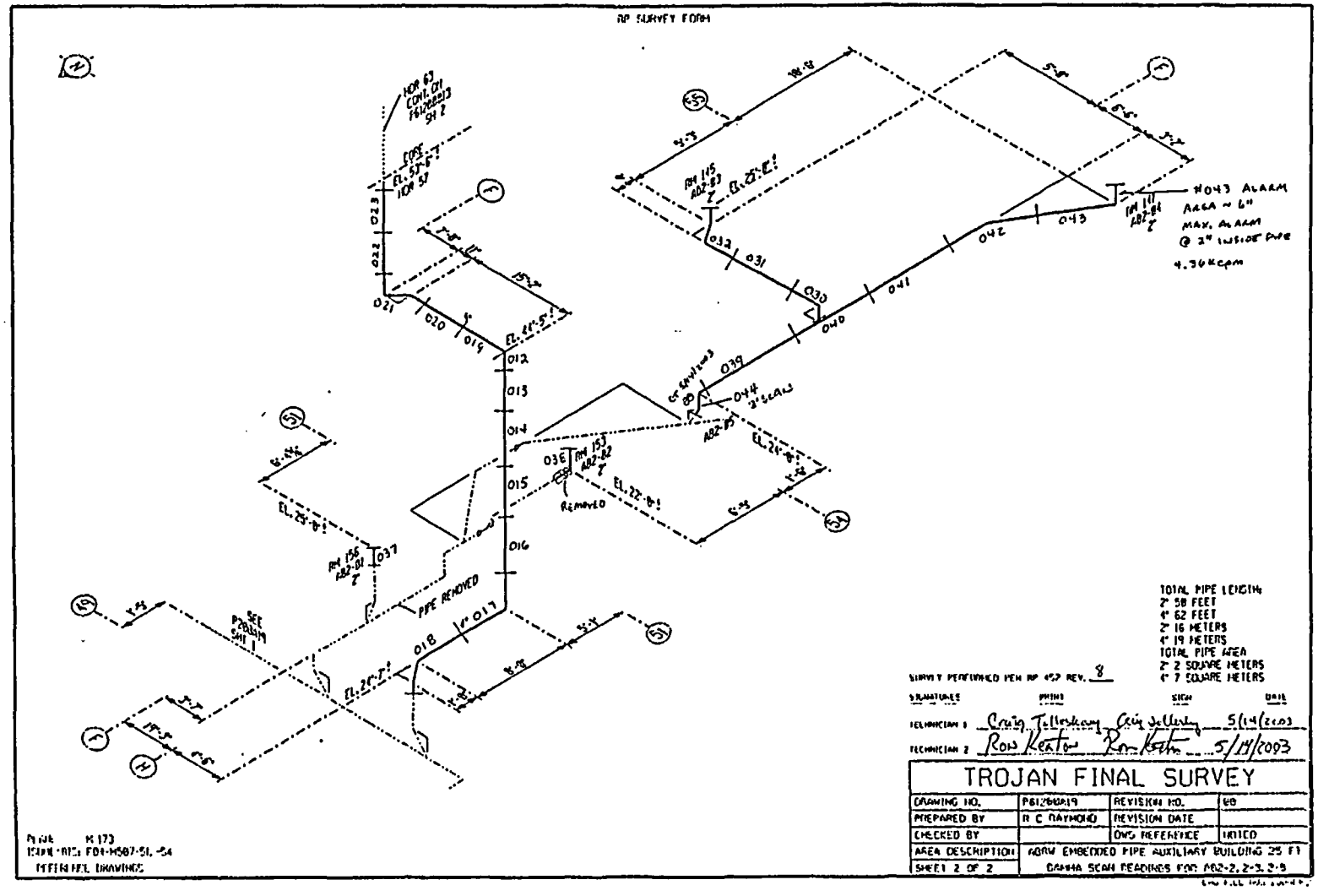


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200A
Survey Unit Name: AB 25' Elevation – Radwaste Drains

Classification: Class 1
Size (m^2): 14

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	50	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:		
Minimum Value	:	4.392e+003
Maximum Value	:	6.094e+004
Range	:	5.655e+004
Median	:	1.323e+004
Std. Deviation	:	1.393e+004
Mean	:	1.831e+004
95% UCL	:	2.162e+004

Measurement Values

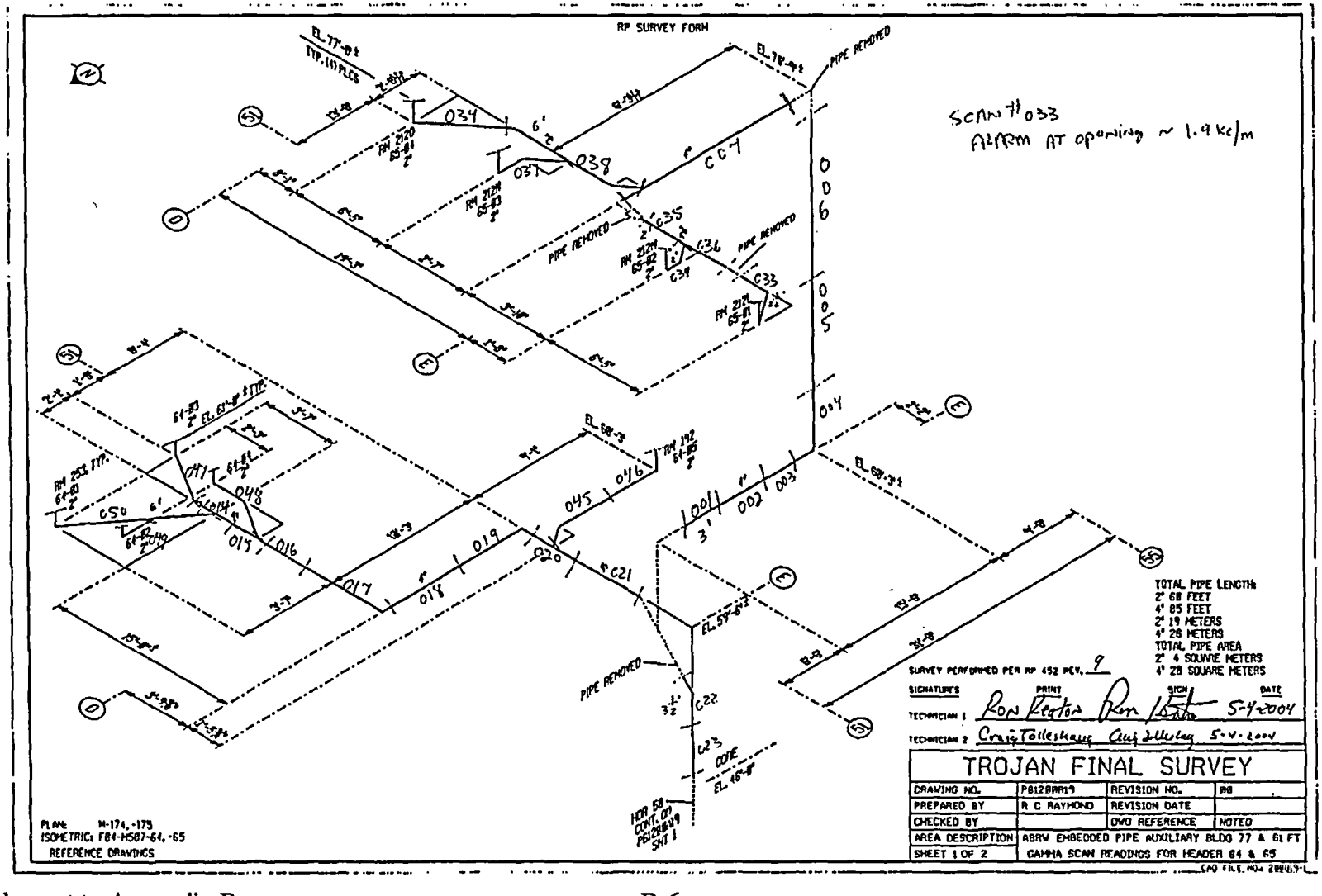
Location	Value	Location	Value	Location	Value
000001	2.487e+004	000018	8.127e+003	000035	2.831e+004
000002	1.519e+004	000019	1.017e+004	000036	1.001e+004
000003	1.628e+004	000020	1.002e+004	000037	3.236e+004
000004	8.457e+003	000021	8.618e+003	000038	2.330e+004
000005	8.742e+003	000022	6.001e+004	000039	1.303e+004
000006	1.056e+004	000023	4.386e+004	000040	1.169e+004
000007	1.932e+004	000024	3.313e+004	000041	1.085e+004
000008	1.842e+004	000025	8.496e+003	000042	8.818e+003
000009	5.875e+003	000026	9.756e+003	000043	1.443e+004
000010	6.390e+003	000027	6.094e+004	000044	1.342e+004
000011	1.658e+004	000028	3.960e+004	000045	1.831e+004
000012	1.700e+004	000029	1.682e+004	000046	9.697e+003
000013	2.905e+004	000030	3.239e+004	000047	7.256e+003
000014	4.912e+003	000031	8.291e+003	000048	1.075e+004
000015	5.353e+003	000032	2.661e+004	000049	8.828e+003
000016	4.392e+003	000033	5.379e+004	000050	8.711e+003
000017	1.406e+004	000034	2.978e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Scan Measurement Data

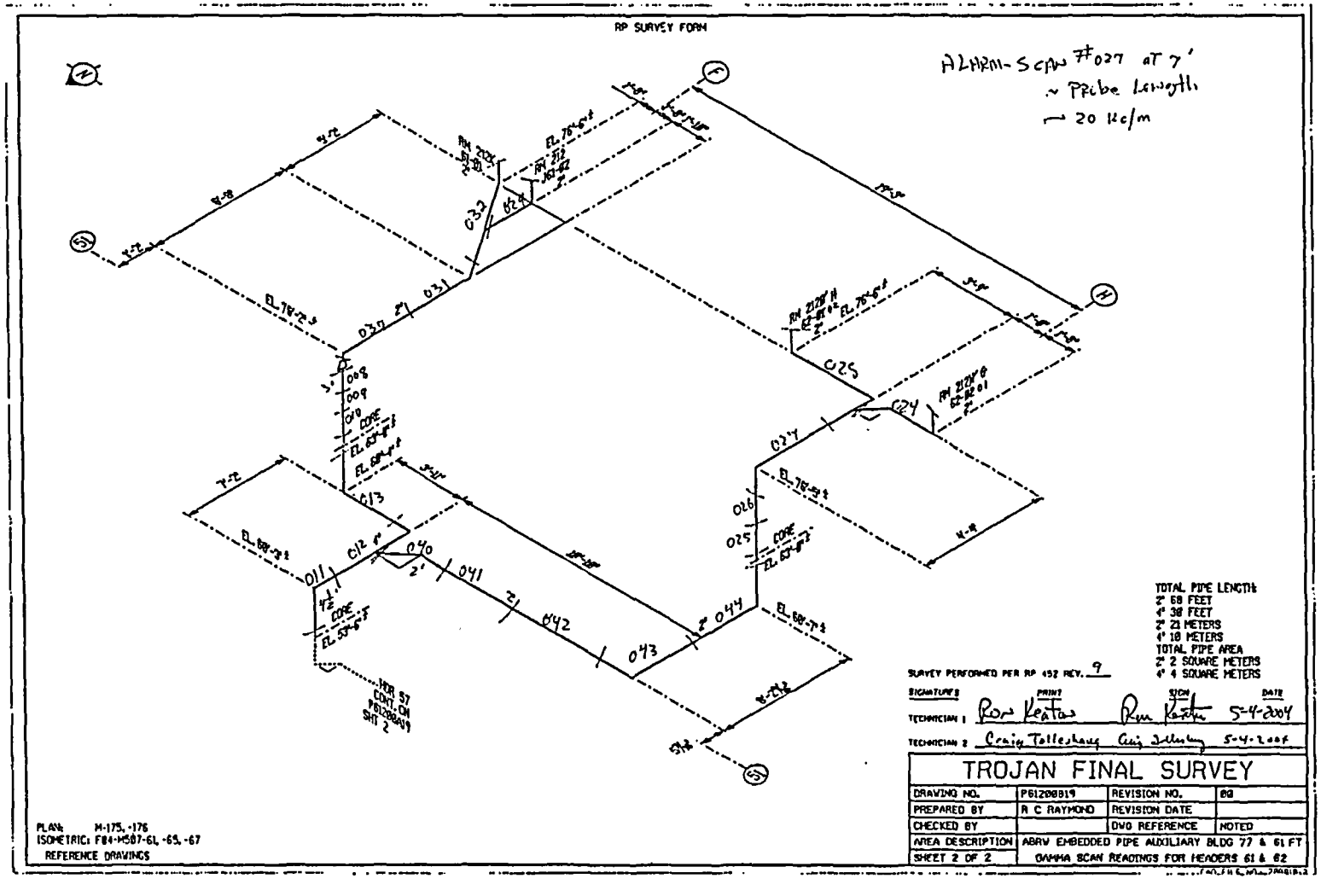


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200B
Survey Unit Name: AB 45', 61', and 77' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 38

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	100	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	4.632e+003
Maximum Value	:	1.826e+005
Range	:	1.780e+005
Median	:	1.044e+004
Std. Deviation	:	2.286e+004
Mean	:	1.954e+004
95% UCL	:	2.334e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.468e+004	000018	7.528e+003	000035	2.770e+004
000002	2.329e+004	000019	9.273e+003	000036	2.813e+004
000003	1.108e+004	000020	6.639e+004	000037	2.619e+004
000004	1.044e+004	000021	3.191e+004	000038	4.250e+004
000005	3.477e+004	000022	3.661e+004	000039	1.826e+005
000006	3.952e+004	000023	2.080e+004	000040	2.346e+004
000007	8.485e+003	000024	1.456e+004	000041	9.582e+003
000008	8.454e+003	000025	1.099e+004	000042	7.423e+003
000009	8.206e+003	000026	3.344e+004	000043	7.432e+003
000010	8.497e+003	000027	8.368e+003	000044	1.097e+004
000011	1.441e+004	000028	1.275e+004	000045	1.003e+004
000012	8.275e+003	000029	2.091e+004	000046	6.809e+003
000013	7.859e+003	000030	1.842e+004	000047	6.074e+003
000014	7.729e+003	000031	1.685e+004	000048	6.187e+003
000015	8.644e+004	000032	4.812e+004	000049	5.753e+003
000016	5.253e+003	000033	5.506e+004	000050	4.900e+003
000017	5.793e+003	000034	3.787e+004	000051	8.292e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data

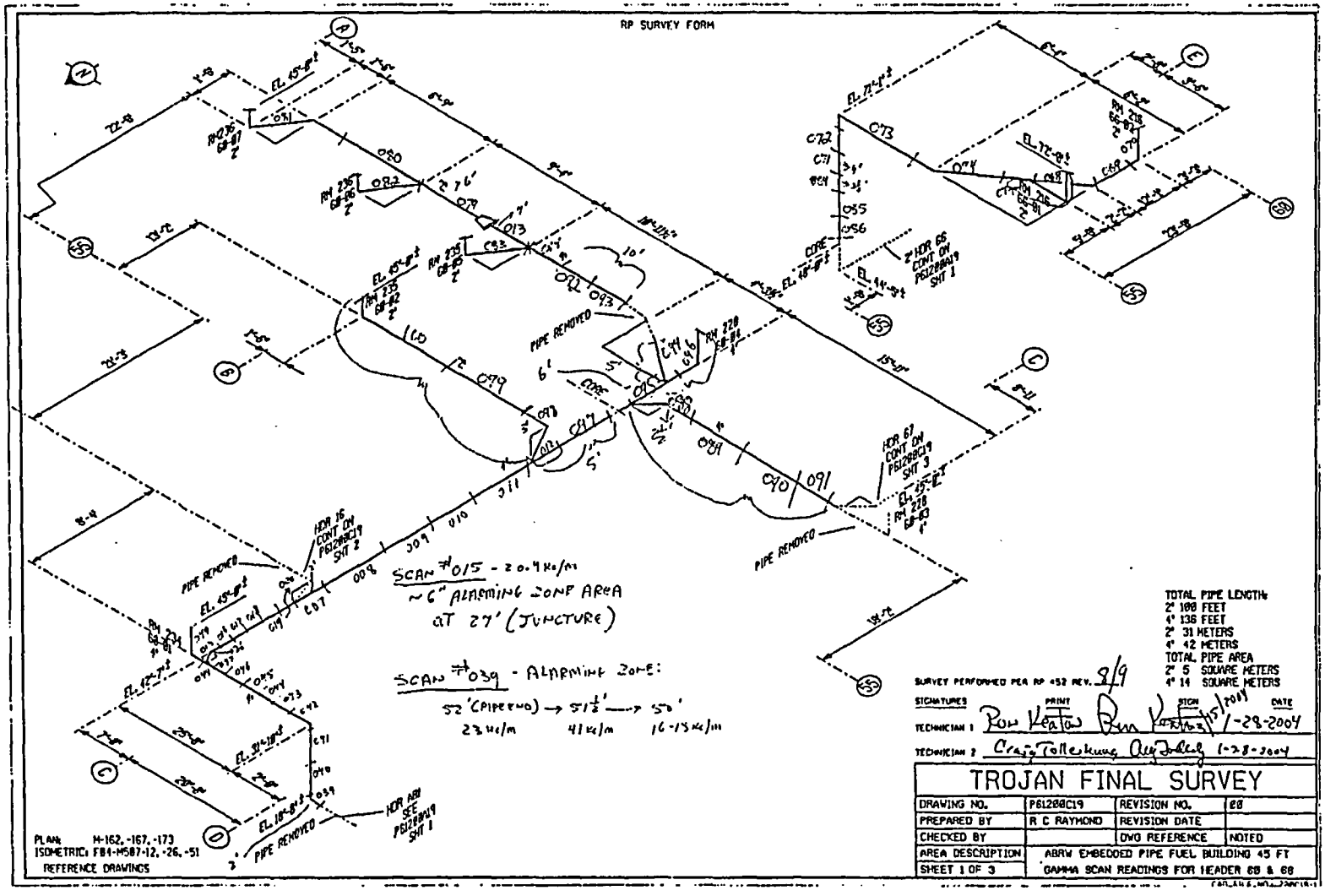
Location	Value	Location	Value
000052	4.632e+003	000099	8.326e+003
000053	6.283e+003	000100	1.017e+004
000054	1.296e+004		
000055	7.075e+004		
000056	3.503e+004		
000057	3.507e+004		
000058	4.355e+004		
000059	2.550e+004		
000060	1.435e+004		
000061	7.946e+003		
000062	6.942e+003		
000063	1.339e+004		
000064	1.117e+004		
000065	3.751e+004		
000066	5.944e+004		
000067	3.876e+004		
000068	1.282e+004		
000069	7.846e+003		
000070	6.830e+003		
000071	8.917e+003		
000072	8.214e+003		
000073	1.175e+004		
000074	9.833e+003		
000075	1.762e+004		
000076	8.940e+003		
000077	2.644e+004		
000078	7.879e+003		
000079	8.047e+003		
000080	6.161e+003		
000081	9.643e+003		
000082	1.728e+004		
000083	1.044e+004		
000084	7.489e+003		
000085	8.125e+003		
000086	5.045e+003		
000087	1.490e+004		
000088	1.027e+004		
000089	1.842e+004		
000090	9.653e+003		
000091	1.108e+004		
000092	7.918e+003		
000093	8.385e+003		
000094	8.851e+003		
000095	8.280e+003		
000096	1.296e+004		
000097	7.291e+003		
000098	7.612e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data

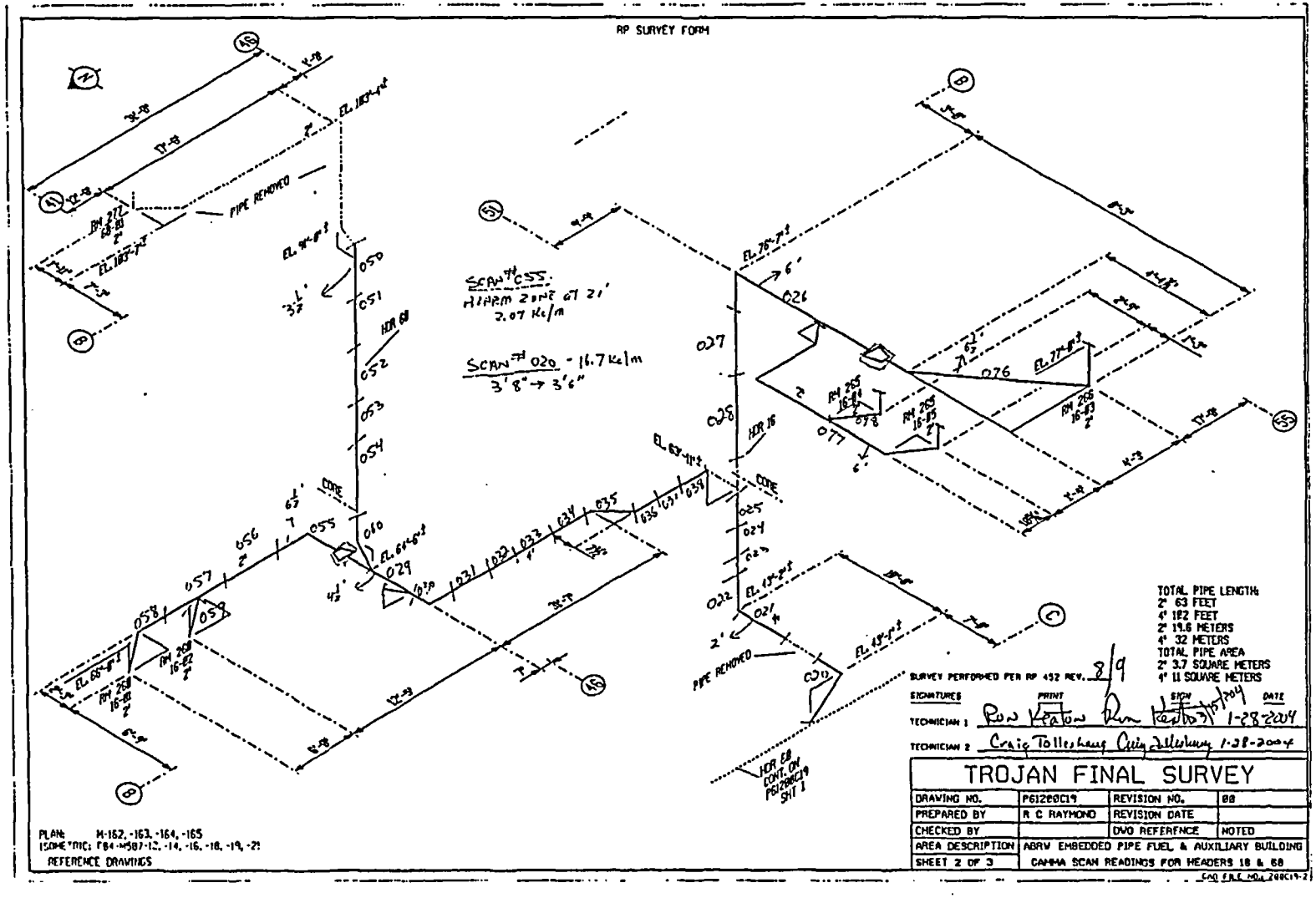


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data

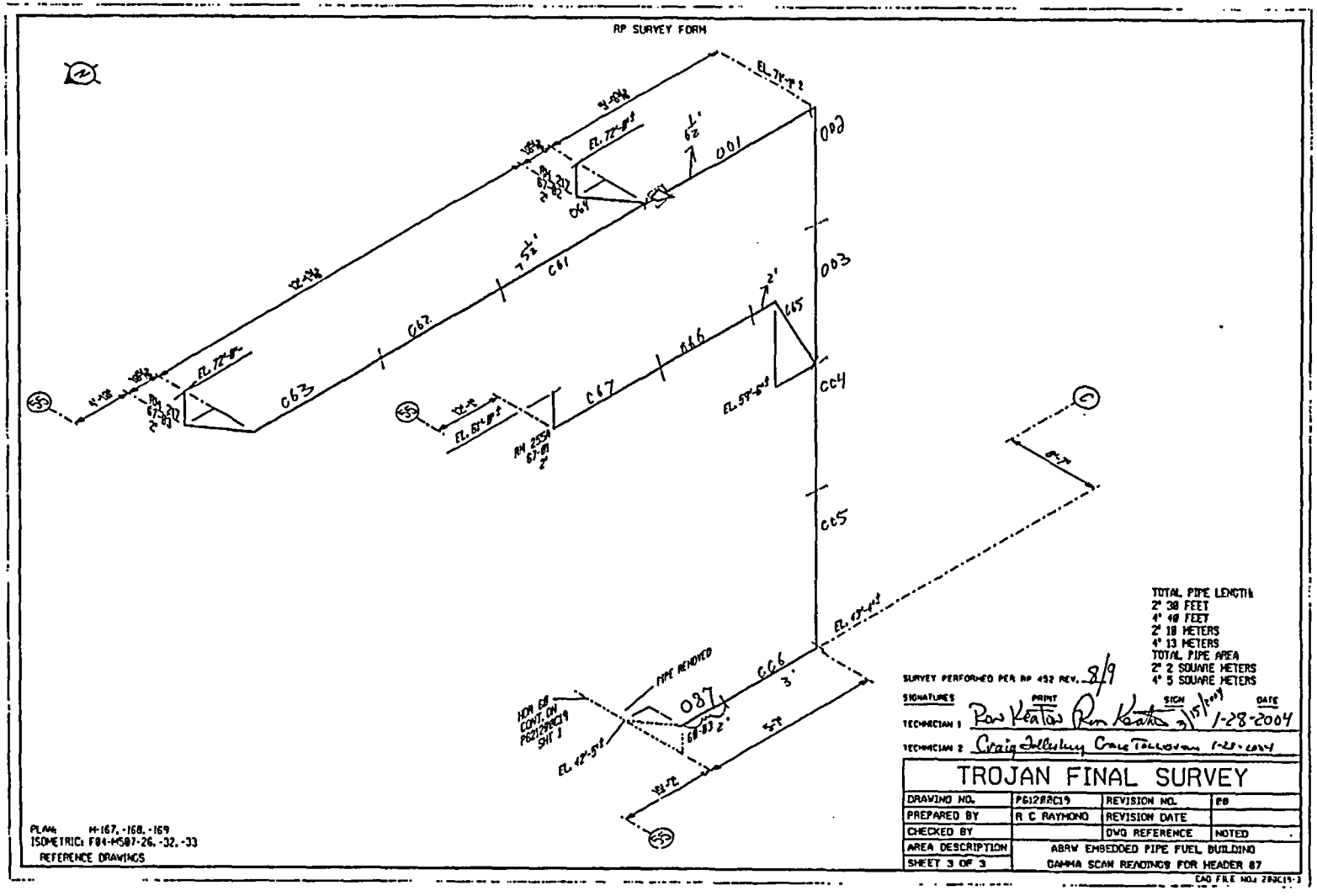


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61200C
Survey Unit Name: AB 45', 61', 72', 77', and 104' Elevations – Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61201A
Survey Unit Name: AB/MSSS 45' Elevation – Chemical Radwaste Drains

Classification: Class 1
Size (m^2): 18

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	35	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	7.277e+003
Maximum Value	:	4.681e+004
Range	:	3.953e+004
Median	:	1.274e+004
Std. Deviation	:	8.016e+003
Mean	:	1.585e+004
95% UCL	:	1.814e+004

Measurement Values

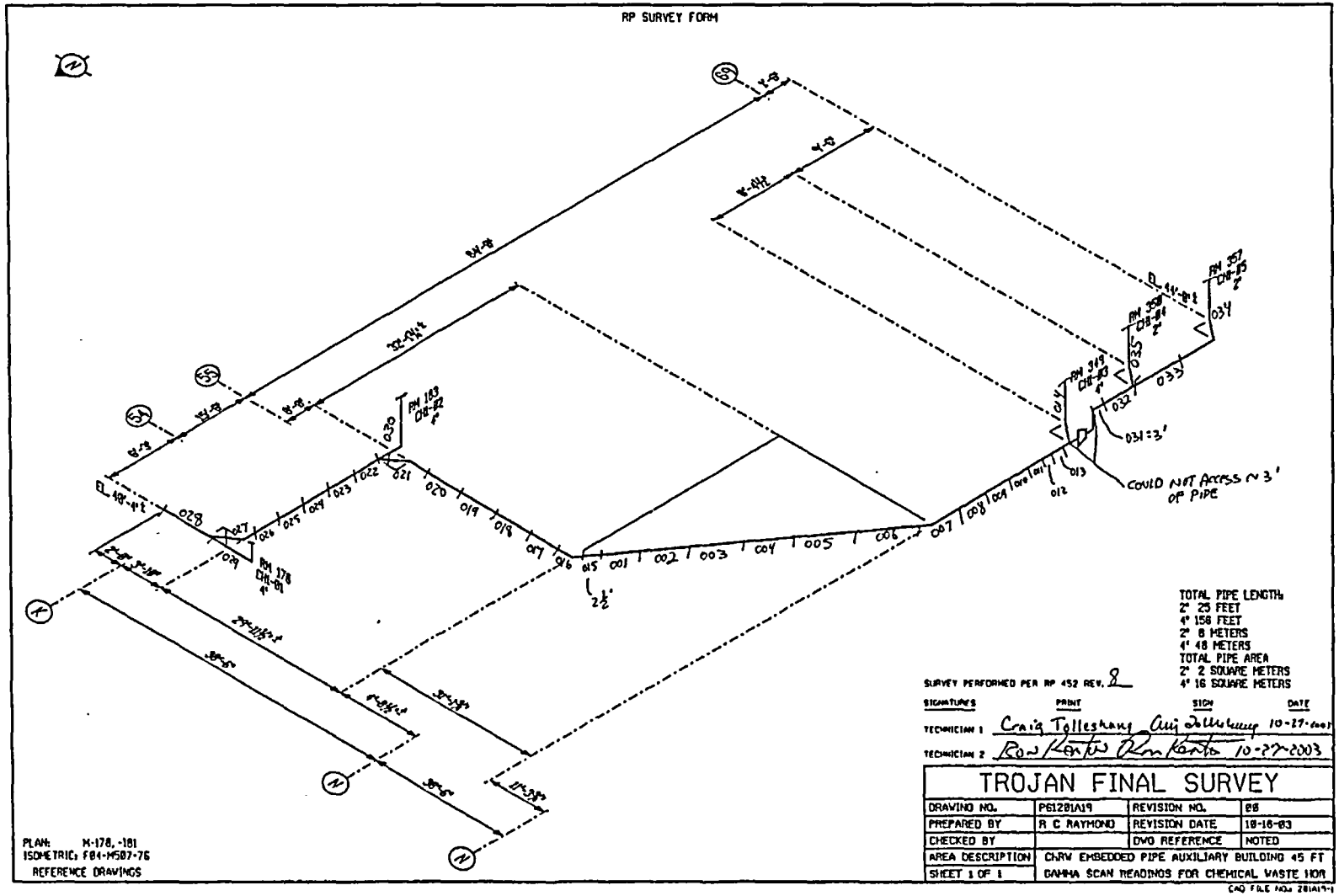
Location	Value	Location	Value	Location	Value
000001	1.480e+004	000018	4.681e+004	000035	1.081e+004
000002	1.417e+004	000019	1.768e+004		
000003	7.326e+003	000020	1.274e+004		
000004	1.194e+004	000021	1.071e+004		
000005	1.123e+004	000022	1.214e+004		
000006	7.277e+003	000023	2.411e+004		
000007	8.322e+003	000024	2.649e+004		
000008	1.471e+004	000025	3.096e+004		
000009	1.120e+004	000026	2.941e+004		
000010	7.461e+003	000027	2.531e+004		
000011	1.169e+004	000028	1.832e+004		
000012	1.223e+004	000029	1.623e+004		
000013	1.754e+004	000030	1.775e+004		
000014	1.262e+004	000031	1.558e+004		
000015	1.145e+004	000032	1.161e+004		
000016	1.330e+004	000033	1.235e+004		
000017	1.663e+004	000034	1.167e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61201A
Survey Unit Name: AB/MSSS 45' Elevation – Chemical Radwaste Drains

Classification: Class 1
Size (m^2): 18

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains **Size (m^2):** 21

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	42	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value :	2.903e+003
Maximum Value :	5.514e+004
Range :	5.224e+004
Median :	5.994e+003
Std. Deviation :	9.087e+003
Mean :	9.052e+003
95% UCL :	1.141e+004

Measurement Values

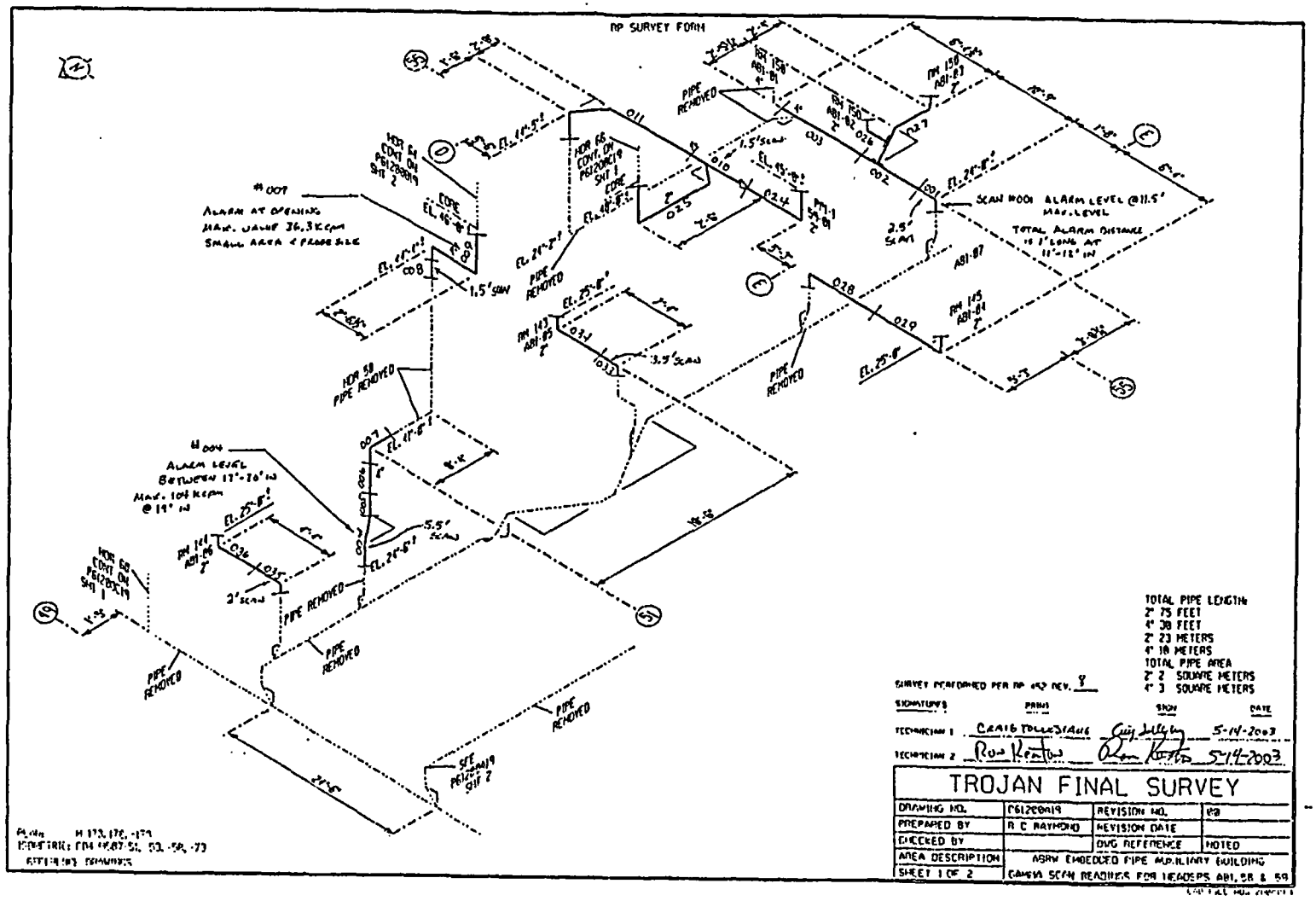
Location	Value	Location	Value	Location	Value
000001	6.111e+003	000018	4.028e+003	000035	7.691e+003
000002	3.957e+003	000019	1.615e+004	000036	1.071e+004
000003	7.460e+003	000020	3.957e+003	000037	2.903e+003
000004	5.017e+003	000021	4.984e+003	000038	5.082e+003
000005	5.378e+003	000022	6.306e+003	000039	4.570e+003
000006	4.082e+003	000023	3.195e+003	000040	7.168e+003
000007	4.789e+003	000024	4.630e+003	000041	1.487e+004
000008	2.857e+004	000025	3.809e+003	000042	1.680e+004
000009	5.514e+004	000026	8.132e+003		
000010	1.357e+004	000027	6.572e+003		
000011	8.326e+003	000028	9.936e+003		
000012	1.800e+004	000029	5.279e+003		
000013	4.262e+003	000030	5.318e+003		
000014	4.082e+003	000031	4.962e+003		
000015	8.344e+003	000032	2.129e+004		
000016	7.083e+003	000033	4.764e+003		
000017	5.877e+003	000034	7.042e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 21

Scan Measurement Data

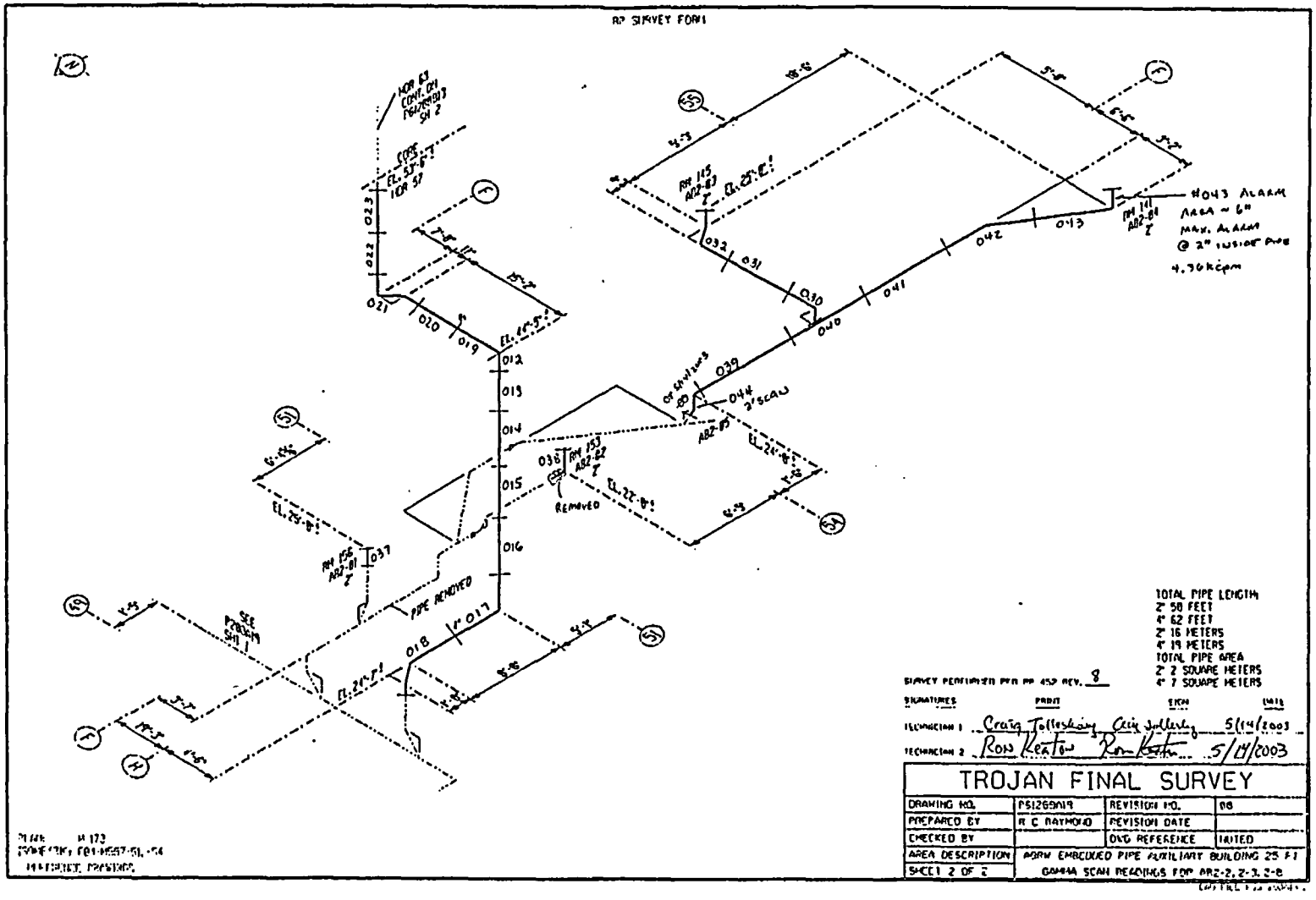


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202A
Survey Unit Name: AB/FB 45' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 21

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	72	DPM/100 CM²	1.000e+005	-	-

Scans

Statistical Quantities

Measurement Name:		
Minimum Value	:	-2.677e+003
Maximum Value	:	1.462e+005
Range	:	1.489e+005
Median	:	1.171e+004
Std. Deviation	:	2.342e+004
Mean	:	1.688e+004
95% UCL	:	2.149e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	5.351e+004	000018	2.262e+004	000035	1.707e+004
000002	2.739e+004	000019	1.670e+004	000036	1.317e+005
000003	6.209e+003	000020	1.721e+004	000037	2.468e+004
000004	7.669e+003	000021	1.622e+004	000038	2.479e+003
000005	1.403e+004	000022	1.636e+004	000039	1.369e+003
000006	5.578e+003	000023	7.838e+003	000040	1.049e+003
000007	3.192e+004	000024	7.297e+003	000041	-2.233e+003
000008	1.335e+004	000025	9.746e+003	000042	1.382e+003
000009	1.334e+004	000026	1.839e+004	000043	4.564e+002
000010	3.352e+004	000027	1.824e+004	000044	2.689e+003
000011	7.160e+003	000028	1.783e+004	000045	2.899e+003
000012	7.390e+003	000029	1.135e+004	000046	-2.677e+003
000013	1.206e+004	000030	6.089e+003	000047	6.291e+003
000014	1.439e+004	000031	1.331e+004	000048	4.885e+003
000015	4.372e+004	000032	1.540e+004	000049	7.278e+003
000016	3.071e+004	000033	2.138e+004	000050	5.822e+003
000017	1.076e+004	000034	1.929e+004	000051	4.589e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Scan Measurement Data

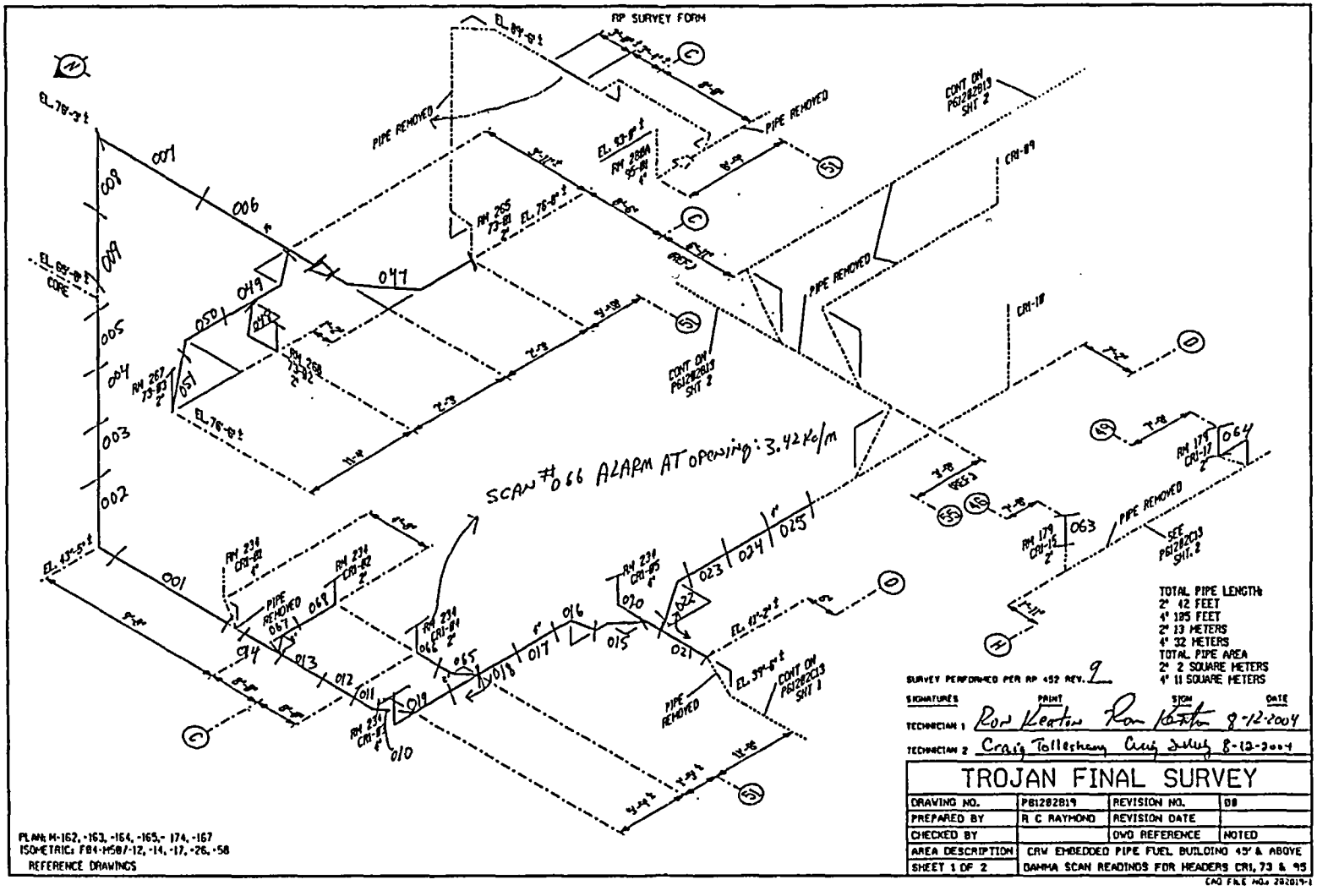
Location	Value
000052	1.301e+004
000053	1.819e+004
000054	1.687e+004
000055	6.427e+003
000056	5.576e+003
000057	5.440e+003
000058	3.405e+003
000059	1.111e+004
000060	6.081e+003
000061	1.012e+004
000062	7.710e+003
000063	2.815e+004
000064	3.194e+004
000065	1.306e+004
000066	1.462e+005
000067	8.919e+003
000068	9.572e+003
000069	1.407e+004
000070	4.135e+004
000071	6.402e+003
000072	1.424e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Scan Measurement Data

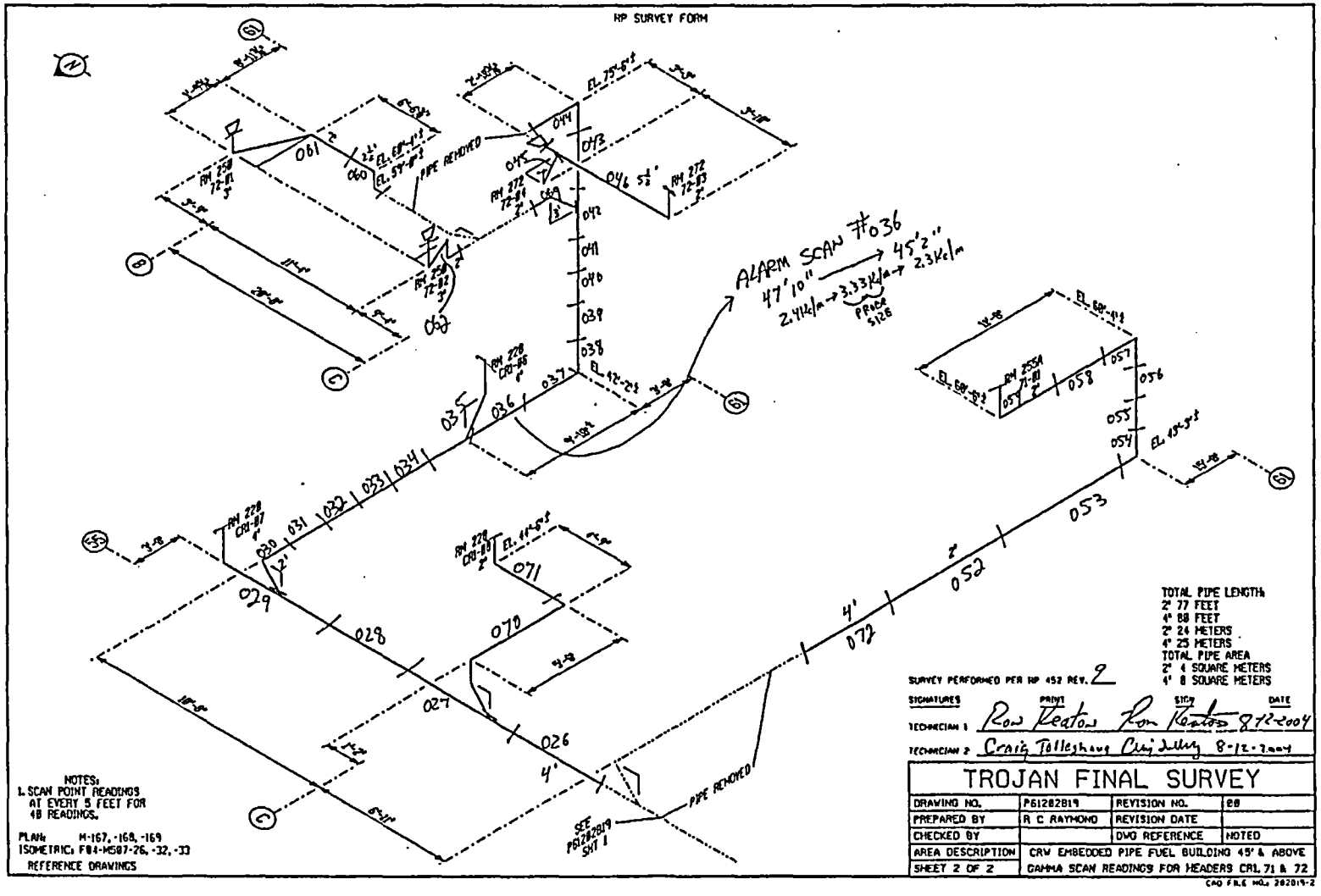


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202B
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 25

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	64	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	3.292e+003
Maximum Value :	2.883e+005
Range :	2.850e+005
Median :	1.157e+004
Std. Deviation :	3.840e+004
Mean :	2.306e+004
95% UCL :	3.107e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	4.290e+004	000018	2.883e+005	000035	2.267e+004
000002	8.175e+004	000019	5.958e+003	000036	1.625e+004
000003	2.507e+004	000020	1.697e+004	000037	1.432e+004
000004	1.578e+004	000021	7.557e+003	000038	1.151e+004
000005	1.819e+004	000022	8.316e+003	000039	7.065e+003
000006	1.818e+004	000023	7.985e+003	000040	7.266e+003
000007	1.699e+004	000024	5.310e+003	000041	7.310e+003
000008	8.661e+004	000025	3.328e+004	000042	8.404e+003
000009	3.734e+004	000026	4.185e+003	000043	7.109e+003
000010	8.704e+003	000027	3.292e+003	000044	1.080e+004
000011	3.437e+003	000028	7.031e+003	000045	8.382e+003
000012	7.081e+003	000029	8.739e+003	000046	9.230e+003
000013	1.431e+004	000030	1.785e+004	000047	7.746e+003
000014	6.587e+004	000031	1.118e+004	000048	5.547e+003
000015	1.057e+004	000032	1.261e+004	000049	4.900e+003
000016	1.081e+004	000033	1.092e+004	000050	5.078e+003
000017	4.218e+004	000034	1.801e+004	000051	1.162e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

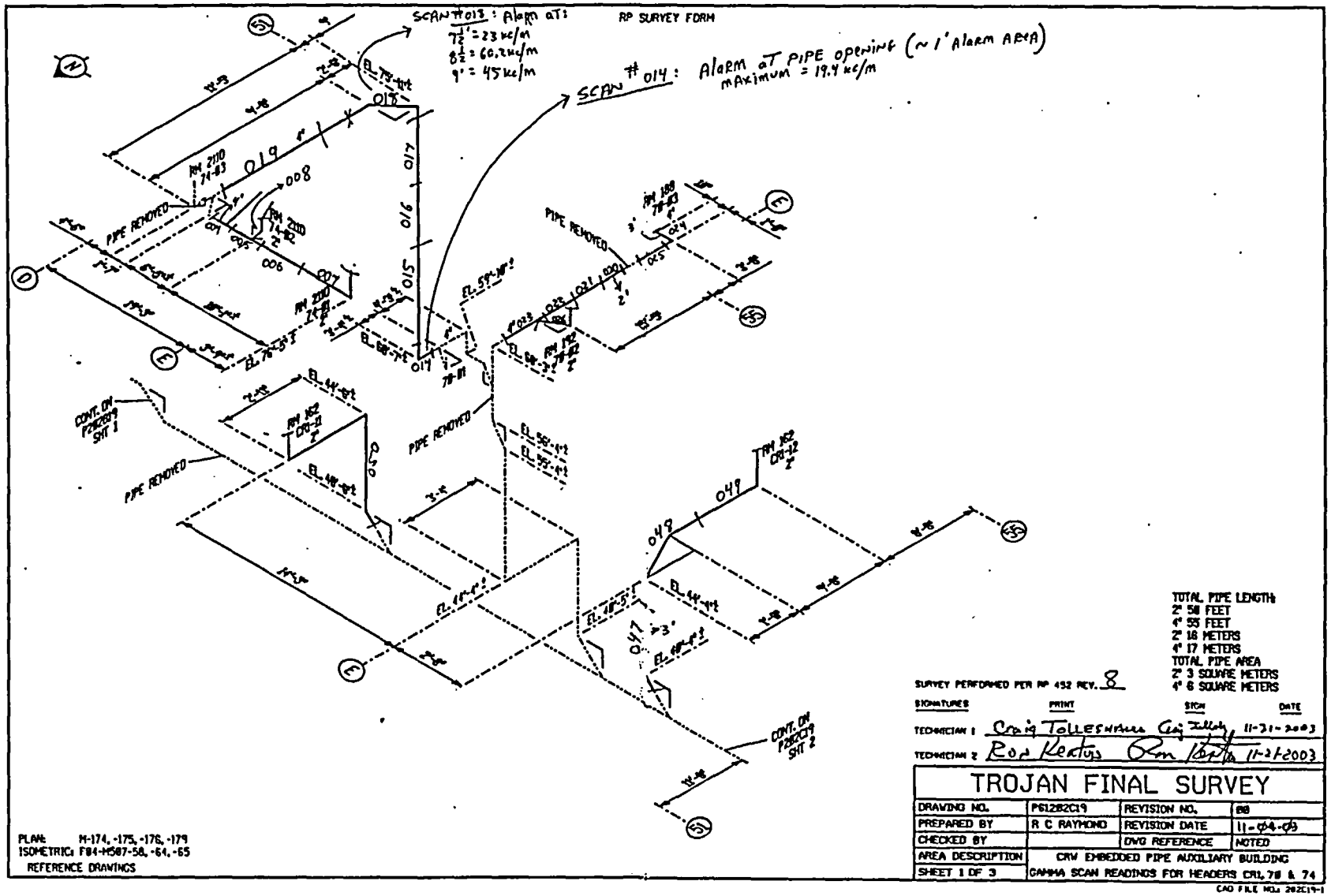
Location	Value
000052	1.366e+004
000053	1.180e+004
000054	1.032e+004
000055	1.244e+004
000056	1.114e+004
000057	3.486e+004
000058	2.198e+004
000059	6.983e+004
000060	4.262e+004
000061	1.106e+004
000062	2.425e+004
000063	1.946e+004
000064	5.365e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

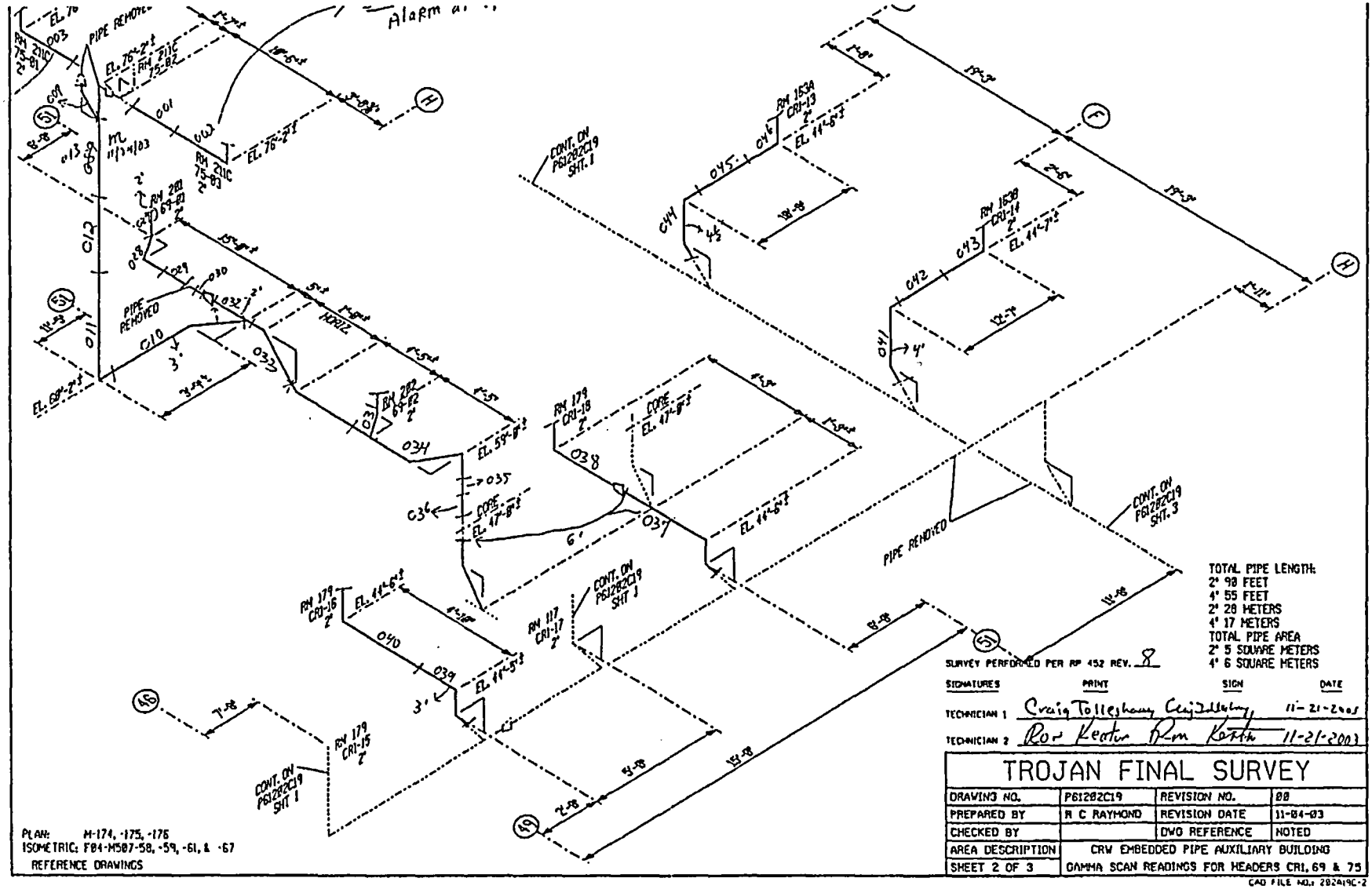


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m²): 26

Scan Measurement Data

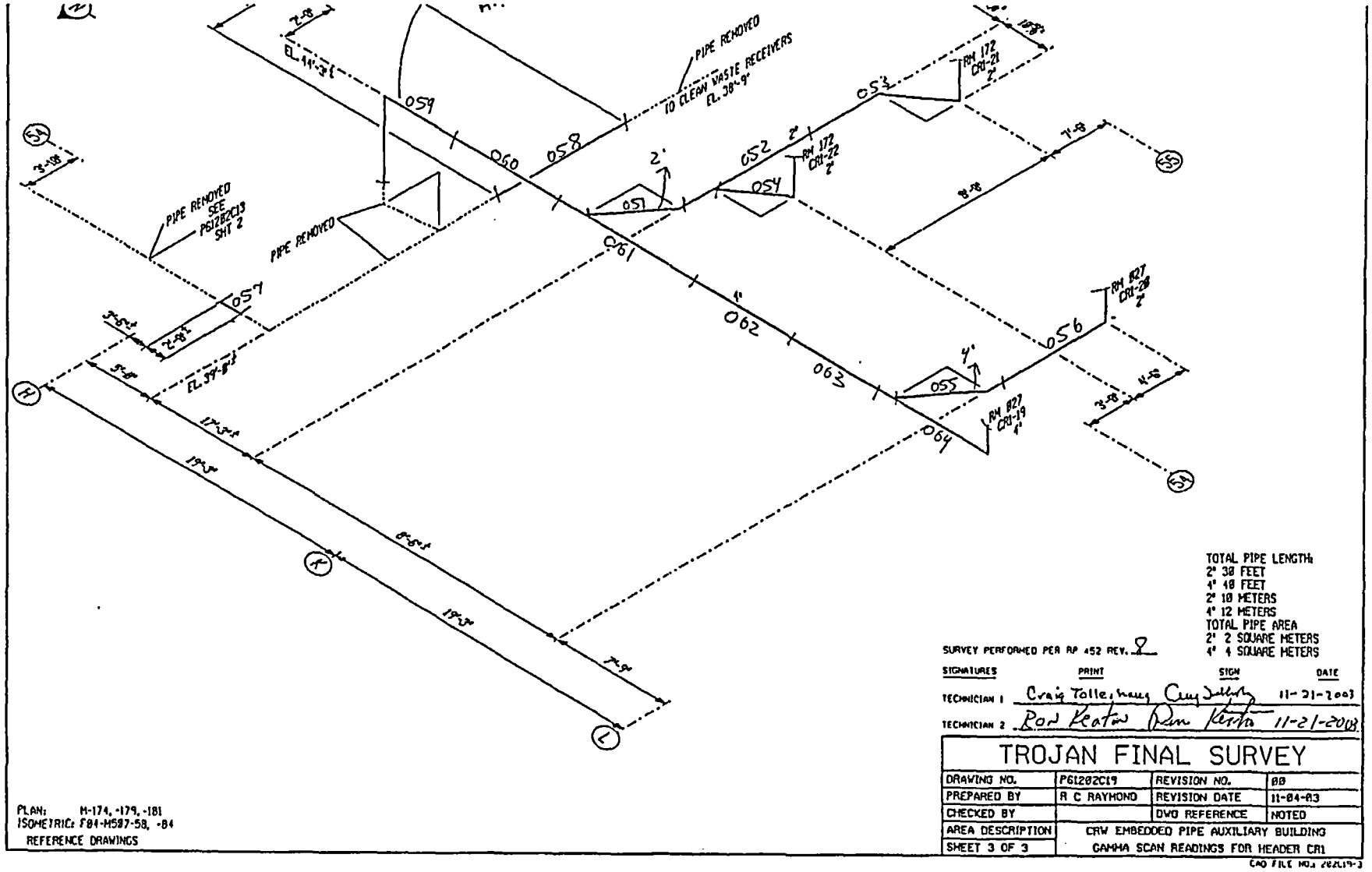


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202C
Survey Unit Name: AB 61' and 77' Elevations – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 26

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	68	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	3.516e+002
Maximum Value	:	8.076e+004
Range	:	8.041e+004
Median	:	9.162e+003
Std. Deviation	:	1.469e+004
Mean	:	1.368e+004
95% UCL	:	1.665e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	8.330e+003	000018	4.512e+003	000035	9.697e+003
000002	4.355e+003	000019	8.545e+003	000036	1.469e+004
000003	2.939e+003	000020	3.516e+002	000037	2.525e+004
000004	4.873e+003	000021	2.021e+003	000038	1.137e+004
000005	6.709e+003	000022	3.906e+003	000039	3.756e+003
000006	5.967e+003	000023	4.434e+003	000040	1.916e+004
000007	7.178e+003	000024	4.287e+003	000041	8.524e+003
000008	9.912e+003	000025	6.299e+003	000042	9.401e+003
000009	7.716e+004	000026	8.799e+003	000043	1.725e+004
000010	2.071e+004	000027	5.996e+003	000044	1.563e+004
000011	1.022e+004	000028	4.229e+003	000045	1.713e+004
000012	1.848e+004	000029	5.459e+003	000046	2.193e+004
000013	5.684e+003	000030	1.047e+004	000047	1.020e+004
000014	3.799e+003	000031	9.531e+003	000048	4.218e+004
000015	1.982e+003	000032	6.768e+003	000049	8.076e+004
000016	7.471e+003	000033	7.129e+003	000050	1.982e+004
000017	3.291e+003	000034	1.793e+004	000051	2.047e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data

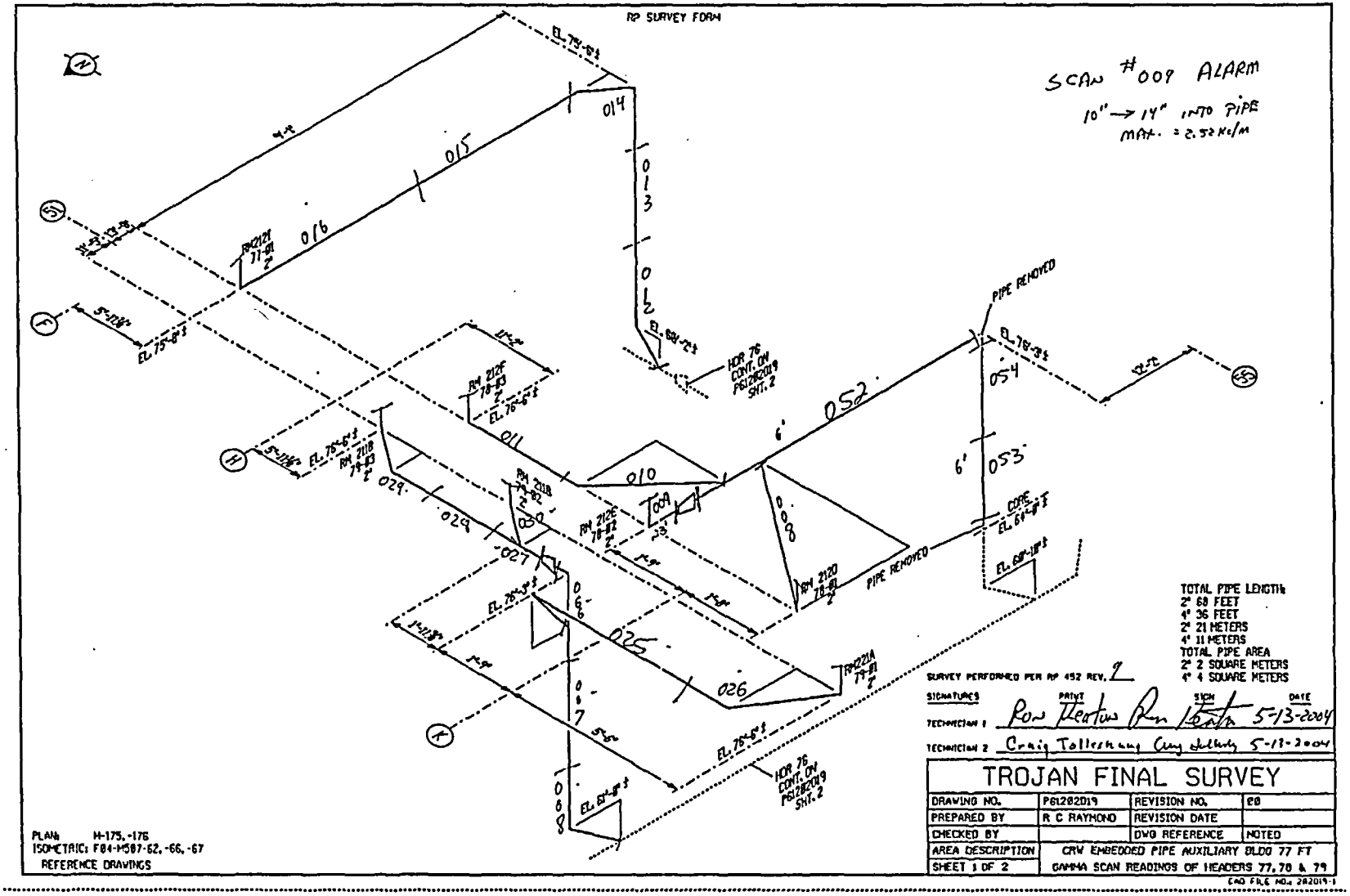
Location	Value
000052	4.988e+004
000053	1.257e+004
000054	1.512e+004
000055	1.055e+004
000056	8.923e+003
000057	8.832e+003
000058	9.484e+003
000059	3.720e+004
000060	3.085e+004
000061	1.678e+004
000062	7.229e+003
000063	8.737e+003
000064	6.118e+003
000065	1.201e+004
000066	6.691e+003
000067	1.164e+004
000068	2.035e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data

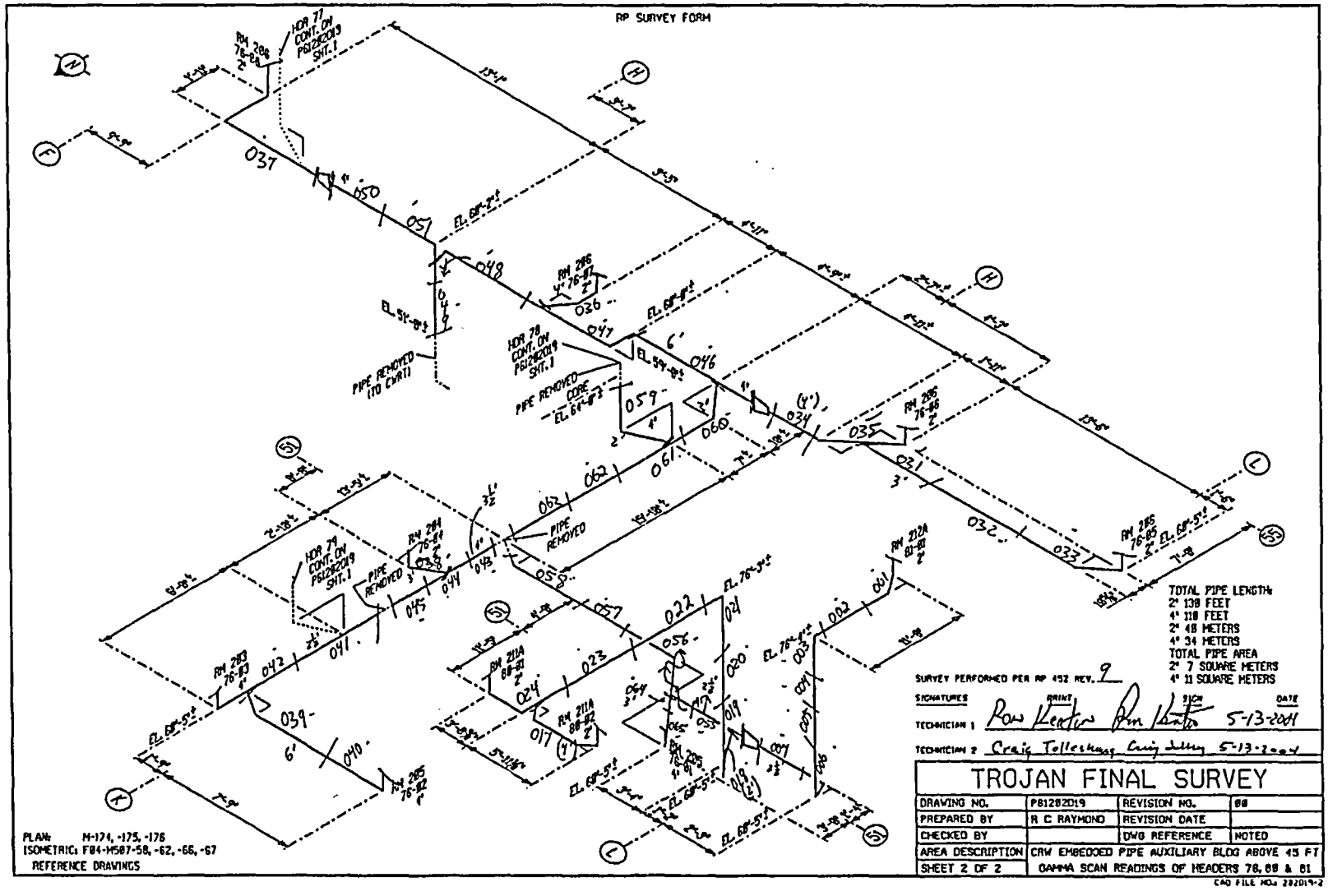


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61202D
Survey Unit Name: AB 61' Elevation – Clean Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203A
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 13

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	28	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	2.780e+003
Maximum Value	:	1.509e+005
Range	:	1.481e+005
Median	:	1.312e+004
Std. Deviation	:	3.168e+004
Mean	:	2.221e+004
95% UCL	:	3.240e+004

Measurement Values

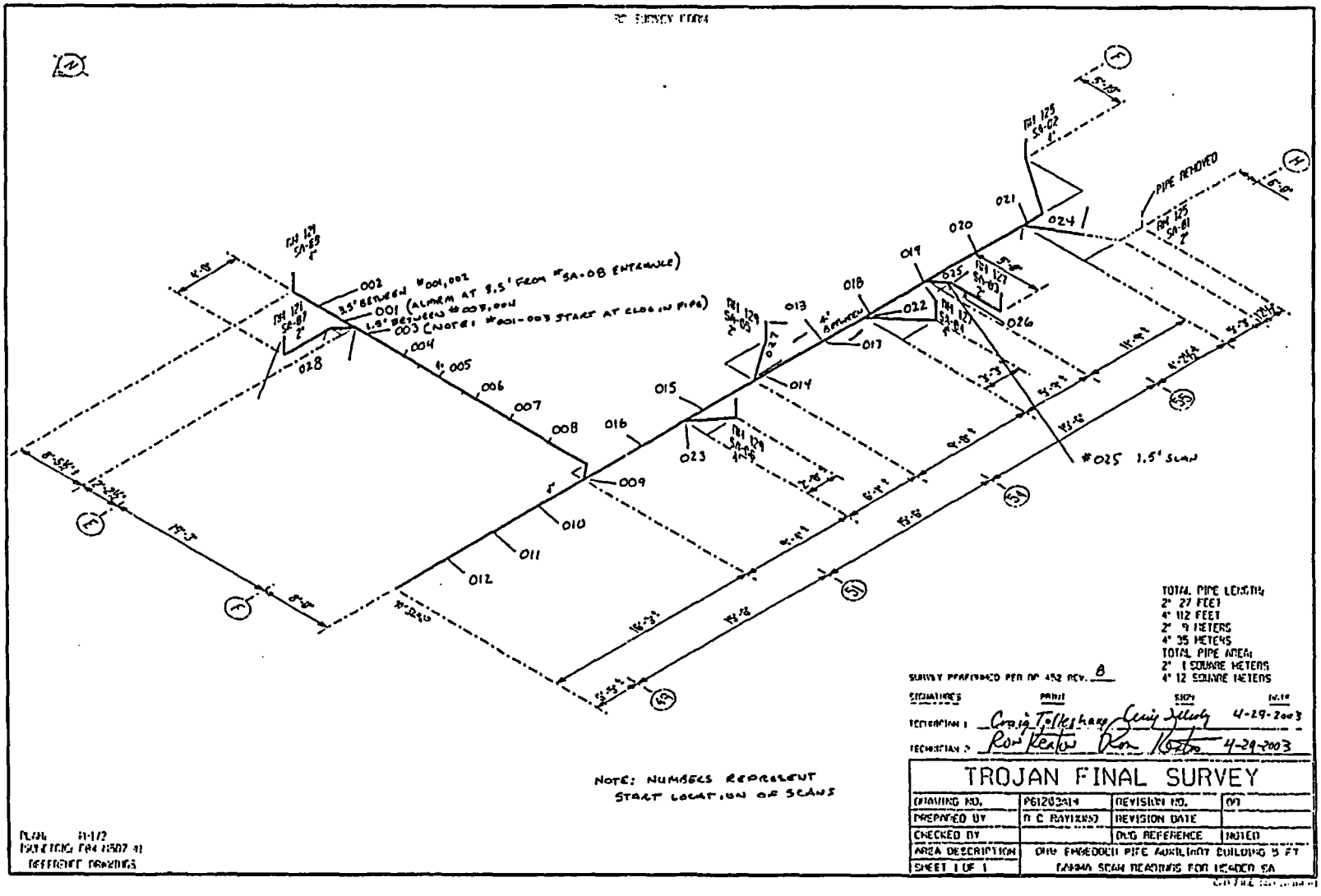
Location	Value	Location	Value
000001	1.509e+005	000018	2.626e+004
000002	1.507e+004	000019	1.316e+004
000003	1.030e+005	000020	1.235e+004
000004	1.874e+004	000021	5.956e+003
000005	2.441e+004	000022	1.876e+004
000006	8.895e+003	000023	2.780e+003
000007	9.890e+003	000024	8.193e+003
000008	3.989e+004	000025	1.531e+004
000009	1.401e+004	000026	9.854e+003
000010	4.738e+003	000027	1.308e+004
000011	5.972e+003	000028	3.076e+004
000012	3.229e+004		
000013	8.036e+003		
000014	1.540e+004		
000015	3.663e+003		
000016	4.583e+003		
000017	6.038e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203A
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 13

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203B
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 9

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	21	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	2.273e+003
Maximum Value	:	3.582e+004
Range	:	3.355e+004
Median	:	6.491e+003
Std. Deviation	:	9.135e+003
Mean	:	1.054e+004
95% UCL	:	1.397e+004

Measurement Values

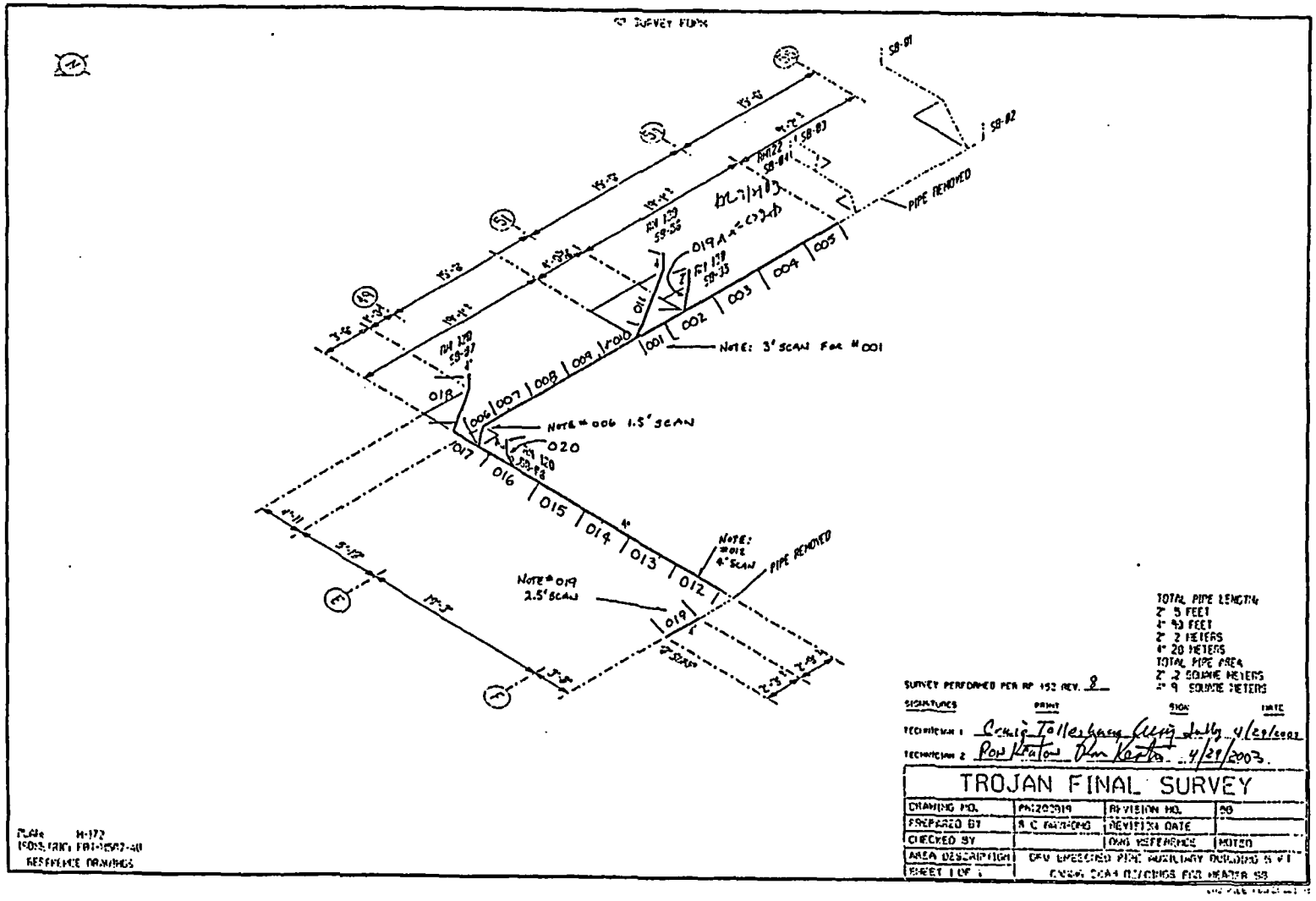
Location	Value	Location	Value
000001	2.198e+004	000018	3.096e+003
000002	2.279e+004	000019	4.008e+003
000003	3.601e+003	000020	4.219e+003
000004	2.273e+003	000021	2.439e+004
000005	8.702e+003		
000006	3.582e+004		
000007	4.205e+003		
000008	4.317e+003		
000009	9.706e+003		
000010	1.113e+004		
000011	1.166e+004		
000012	1.972e+004		
000013	4.186e+003		
000014	6.491e+003		
000015	5.551e+003		
000016	3.315e+003		
000017	1.023e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203B
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 9

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	65	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	2.055e+003
Maximum Value	:	1.992e+005
Range	:	1.971e+005
Median	:	6.796e+003
Std. Deviation	:	2.784e+004
Mean	:	1.618e+004
95% UCL	:	2.195e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	2.574e+003	000018	7.794e+004	000035	6.236e+003
000002	4.428e+003	000019	8.055e+004	000036	3.631e+003
000003	2.902e+003	000020	4.280e+003	000037	2.564e+003
000004	2.768e+003	000021	5.322e+003	000038	3.132e+004
000005	4.772e+003	000022	6.796e+003	000039	4.246e+003
000006	8.290e+003	000023	3.104e+003	000040	3.230e+003
000007	2.396e+004	000024	5.764e+003	000041	5.379e+003
000008	3.707e+003	000025	2.768e+003	000042	2.799e+003
000009	8.512e+003	000026	5.034e+003	000043	2.578e+004
000010	3.189e+003	000027	3.346e+004	000044	1.042e+004
000011	8.617e+003	000028	4.393e+003	000045	4.040e+004
000012	6.406e+003	000029	5.742e+003	000046	5.428e+003
000013	3.803e+003	000030	2.578e+004	000047	1.151e+004
000014	6.118e+003	000031	3.666e+004	000048	1.913e+004
000015	1.733e+004	000032	4.280e+003	000049	1.406e+004
000016	2.134e+004	000033	1.512e+004	000050	1.399e+004
000017	2.801e+004	000034	6.249e+003	000051	8.029e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Scan Measurement Data

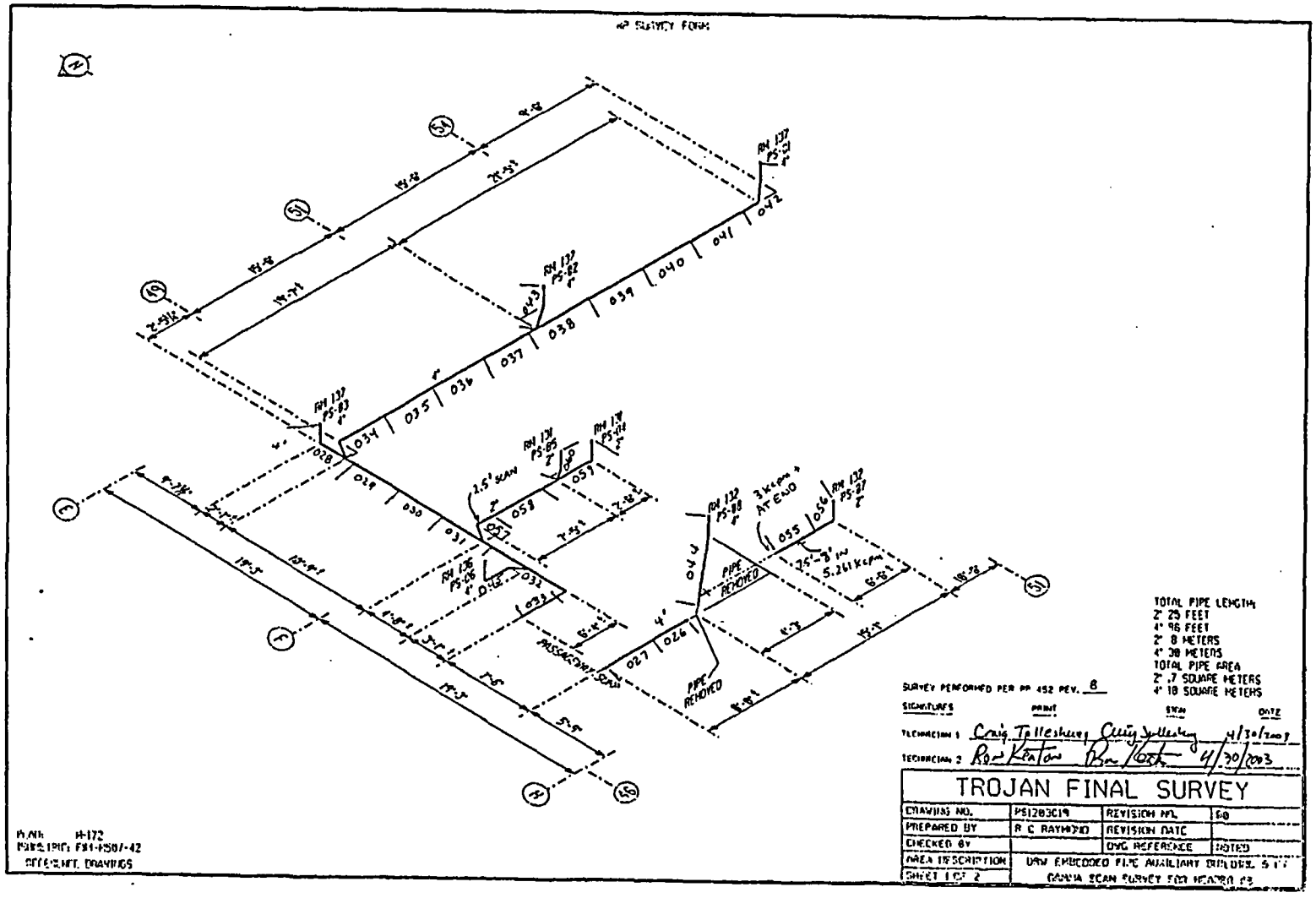
Location	Value
000052	2.645e+003
000053	2.581e+003
000054	2.055e+003
000055	1.992e+005
000056	9.569e+003
000057	1.095e+004
000058	9.844e+003
000059	1.430e+004
000060	2.322e+004
000061	1.042e+004
000062	1.159e+004
000063	4.706e+004
000064	6.715e+003
000065	1.374e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Scan Measurement Data

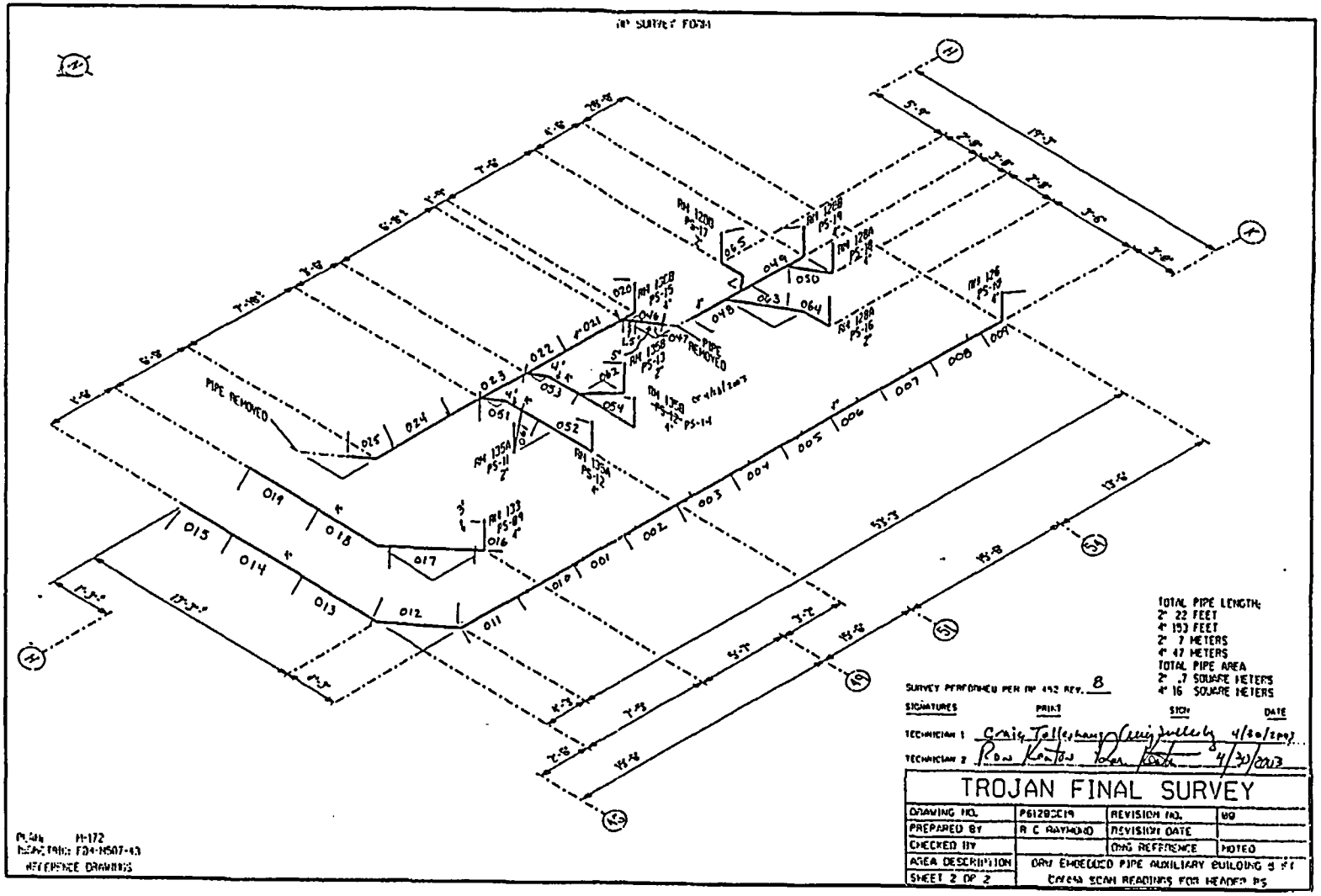


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203C
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 27

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	54	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:		
Minimum Value	:	-1.330e+002
Maximum Value	:	2.162e+005
Range	:	2.163e+005
Median	:	8.602e+003
Std. Deviation	:	3.207e+004
Mean	:	1.603e+004
95% UCL	:	2.334e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	1.181e+004	000018	8.601e+003	000035	4.728e+003
000002	6.284e+003	000019	5.720e+003	000036	6.846e+003
000003	1.507e+004	000020	3.271e+004	000037	-1.330e+002
000004	8.388e+003	000021	3.046e+004	000038	1.166e+003
000005	8.602e+003	000022	1.360e+004	000039	1.356e+002
000006	6.687e+003	000023	8.810e+003	000040	2.285e+003
000007	1.250e+004	000024	9.780e+002	000041	9.949e+003
000008	1.040e+004	000025	2.296e+003	000042	8.159e+003
000009	1.487e+004	000026	4.713e+002	000043	3.350e+003
000010	5.698e+003	000027	3.111e+003	000044	7.129e+003
000011	6.887e+003	000028	1.626e+004	000045	1.340e+004
000012	2.162e+005	000029	3.096e+004	000046	8.030e+003
000013	1.173e+004	000030	1.834e+004	000047	1.786e+004
000014	4.944e+004	000031	2.835e+003	000048	1.311e+004
000015	7.840e+003	000032	2.247e+003	000049	1.116e+004
000016	1.091e+004	000033	4.359e+003	000050	1.156e+004
000017	1.525e+004	000034	5.035e+003	000051	9.151e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 25' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data

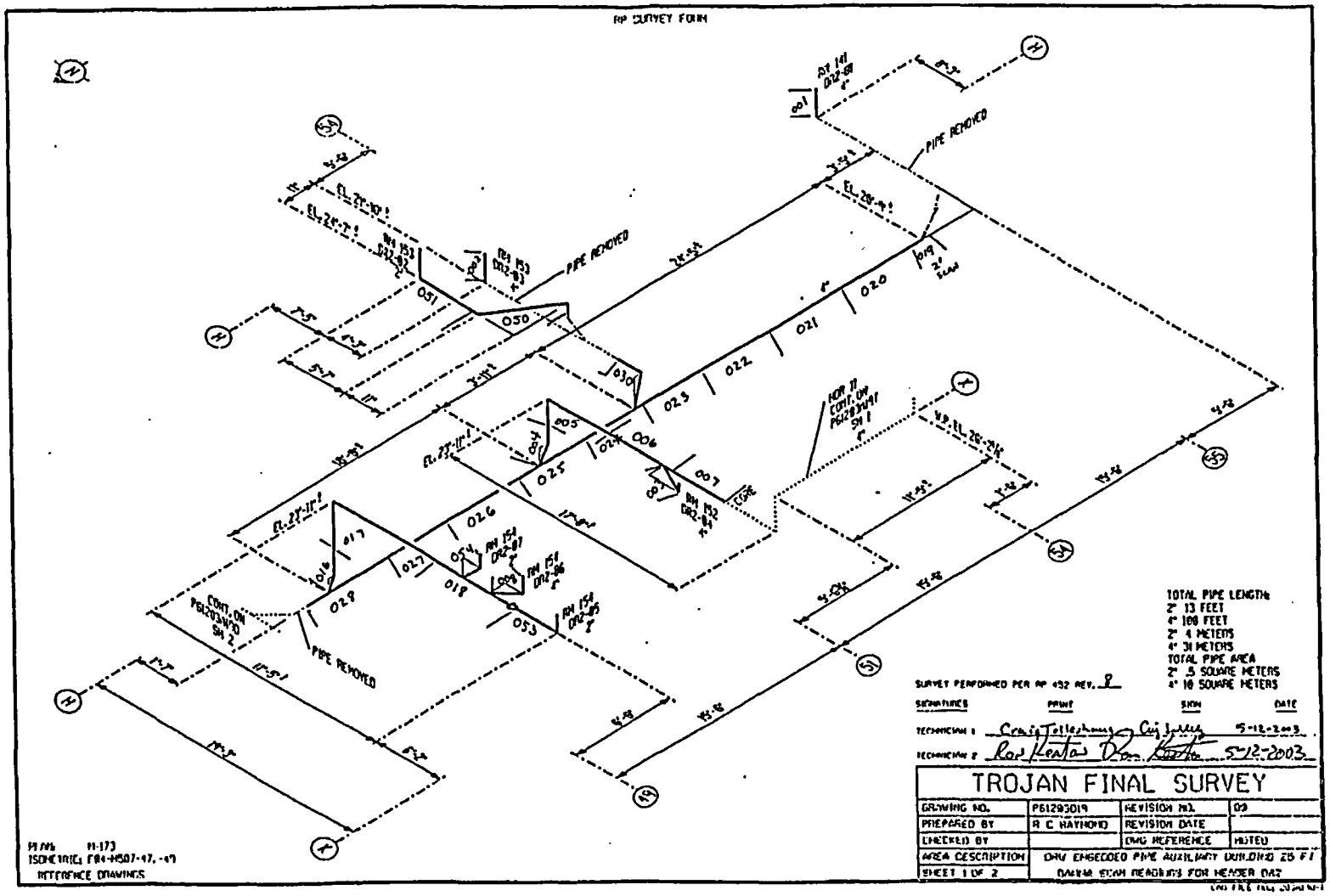
Location	Value
000052	1.082e+005
000053	1.979e+004
000054	4.443e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data

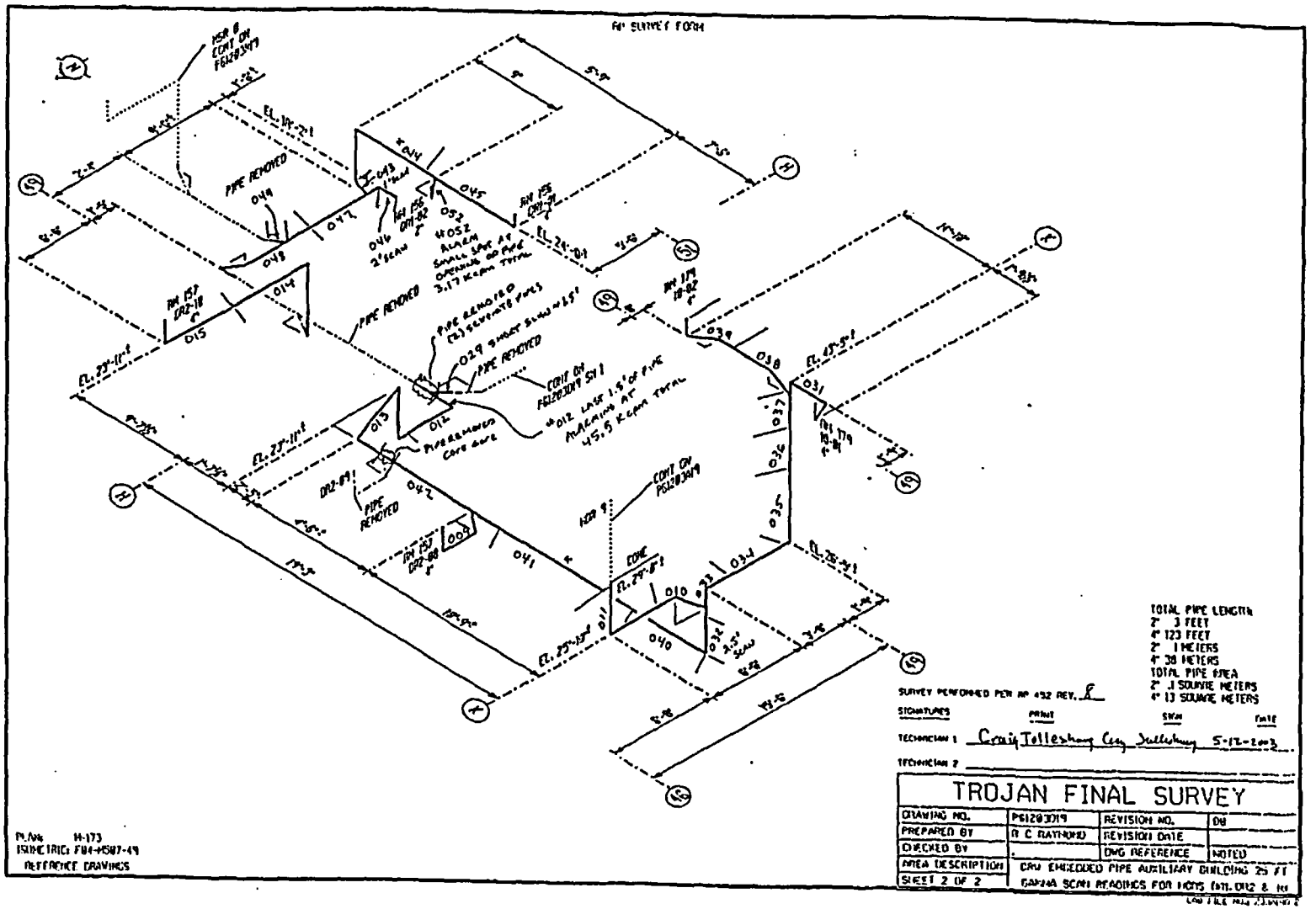


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203D
Survey Unit Name: AB 5' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 24

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	74	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:		
Minimum Value	:	-1.386e+003
Maximum Value	:	1.237e+005
Range	:	1.251e+005
Median	:	5.438e+003
Std. Deviation	:	1.527e+004
Mean	:	8.778e+003
95% UCL	:	1.174e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	5.274e+003	000018	7.286e+003	000035	1.995e+004
000002	4.795e+003	000019	1.112e+004	000036	1.798e+004
000003	7.889e+003	000020	4.713e+002	000037	5.602e+003
000004	5.762e+003	000021	2.622e+003	000038	7.304e+003
000005	6.350e+003	000022	-1.386e+003	000039	4.695e+003
000006	6.405e+003	000023	2.234e+003	000040	3.528e+004
000007	5.682e+003	000024	1.334e+003	000041	5.127e+003
000008	8.348e+003	000025	3.533e+003	000042	3.322e+003
000009	7.733e+003	000026	1.913e+003	000043	3.736e+003
000010	7.606e+003	000027	3.469e+003	000044	3.668e+003
000011	6.717e+003	000028	2.192e+003	000045	7.874e+003
000012	4.651e+003	000029	2.890e+003	000046	3.749e+003
000013	6.475e+003	000030	3.124e+003	000047	2.939e+003
000014	6.526e+003	000031	2.355e+003	000048	1.000e+004
000015	6.011e+003	000032	3.220e+003	000049	7.052e+003
000016	6.509e+003	000033	4.409e+003	000050	4.397e+003
000017	8.842e+003	000034	-1.013e+002	000051	6.057e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Scan Measurement Data

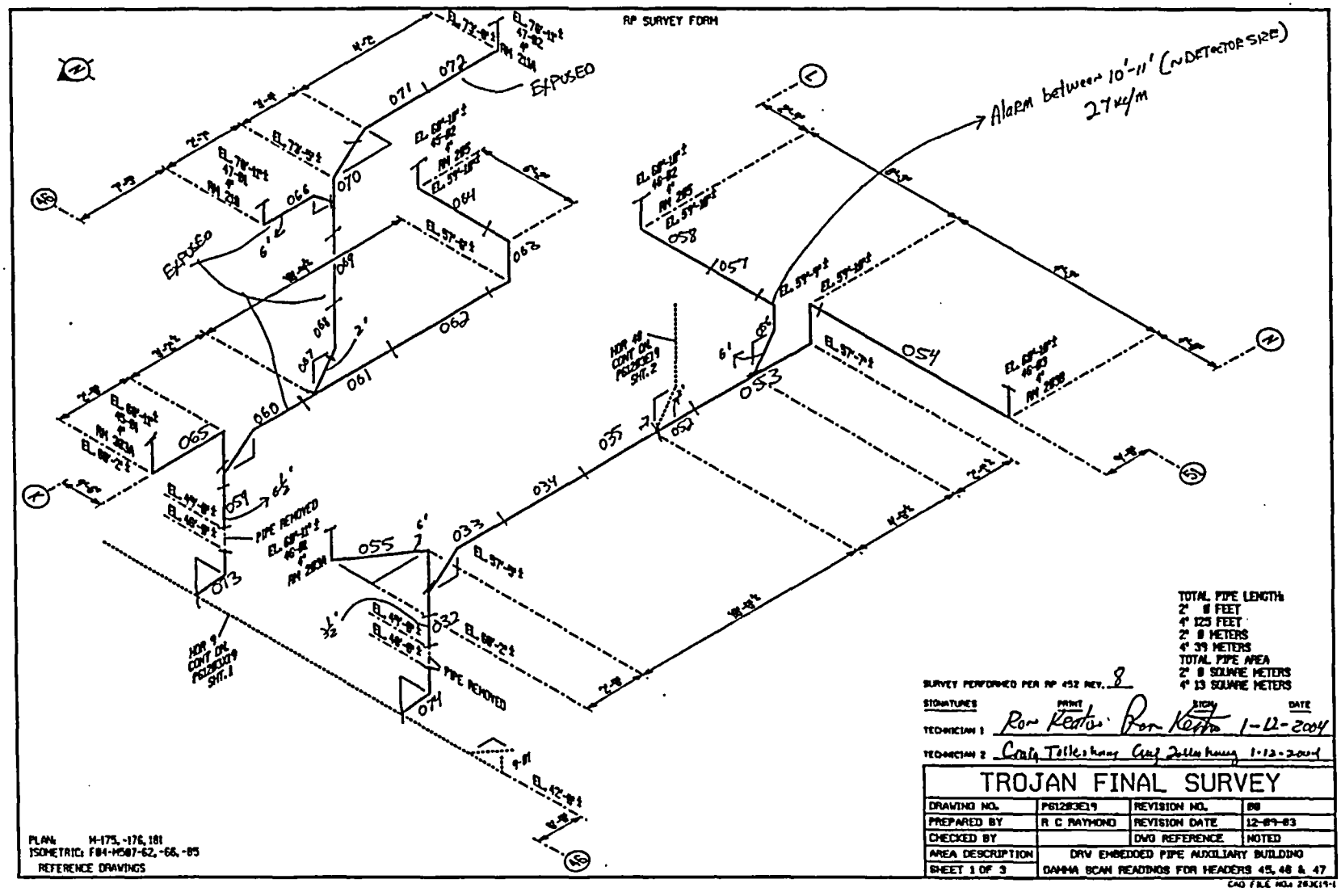
Location	Value
000052	2.254e+004
000053	3.002e+004
000054	5.132e+003
000055	1.727e+003
000056	1.237e+005
000057	1.782e+004
000058	4.905e+003
000059	-1.254e+003
000060	1.623e+003
000061	1.356e+003
000062	4.553e+003
000063	6.830e+003
000064	1.984e+004
000065	2.355e+003
000066	3.837e+003
000067	6.331e+003
000068	6.545e+003
000069	5.140e+003
000070	2.856e+004
000071	2.377e+003
000072	2.288e+004
000073	1.042e+004
000074	1.131e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Scan Measurement Data

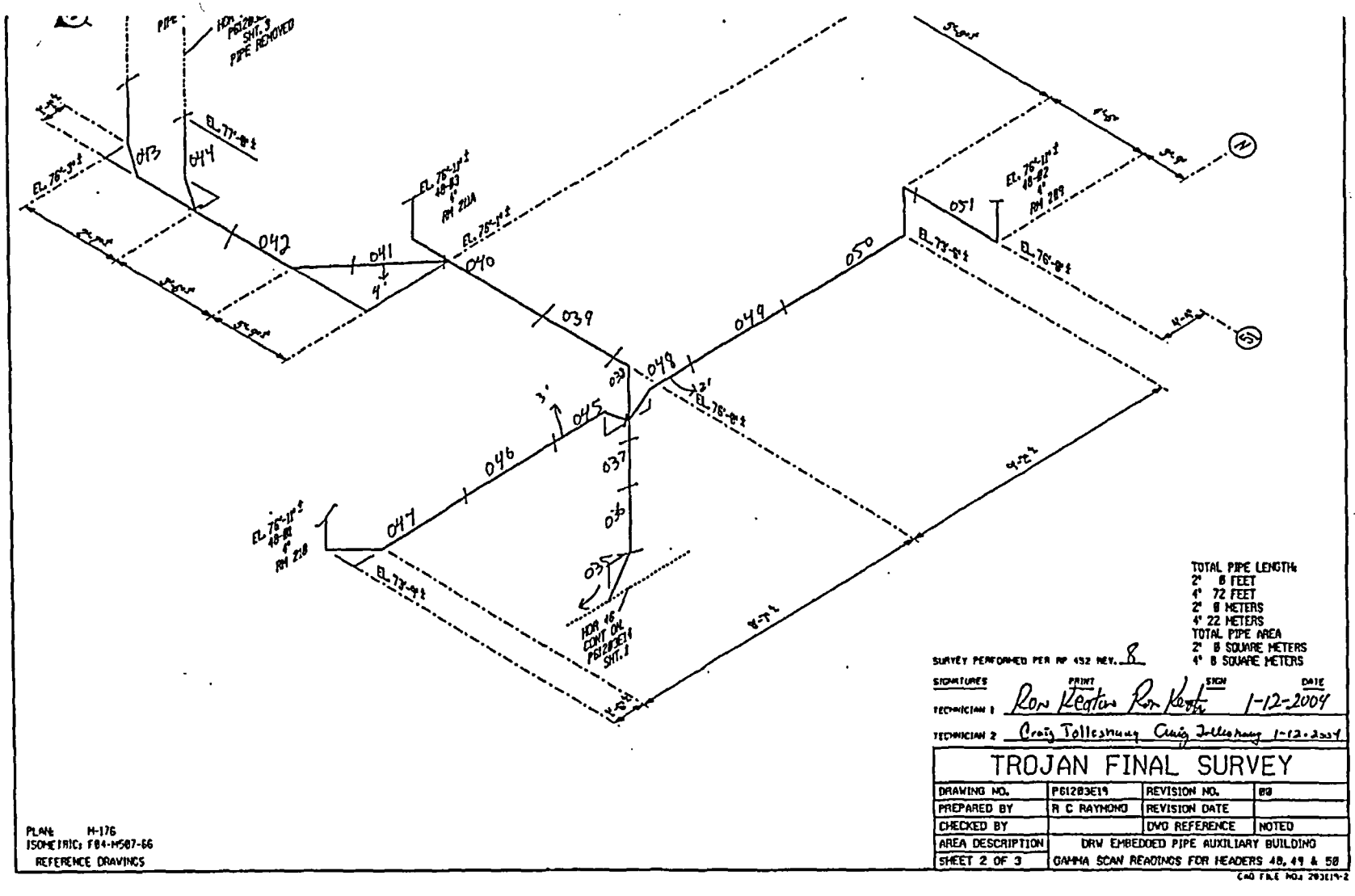


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Scan Measurement Data

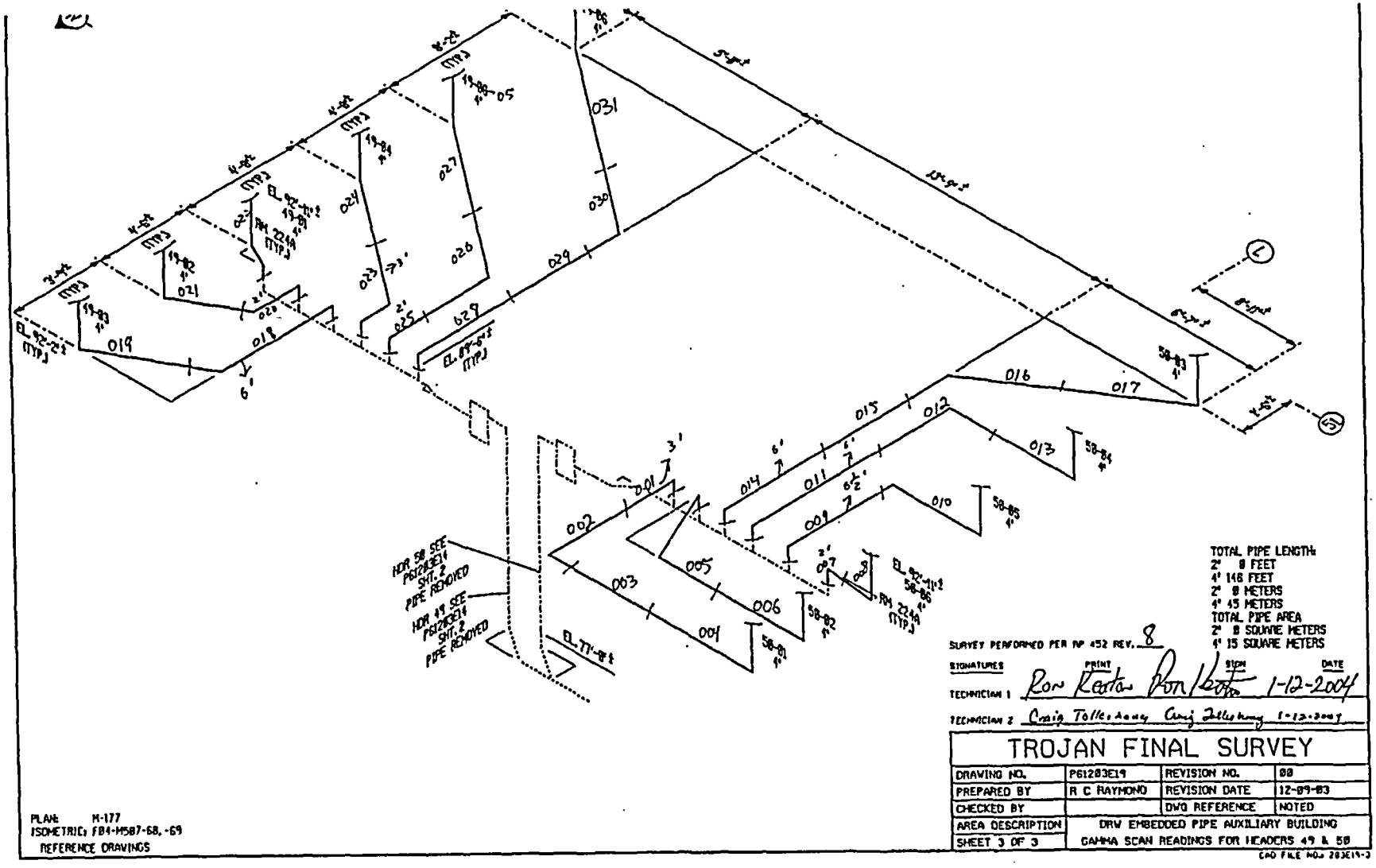


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203E
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 36

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203F
Survey Unit Name: AB/FB 45', 61', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 14

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	.28	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	1.337e+003
Maximum Value :	5.351e+004
Range :	5.217e+004
Median :	9.378e+003
Std. Deviation :	1.272e+004
Mean :	1.365e+004
95% UCL :	1.774e+004

Measurement Values

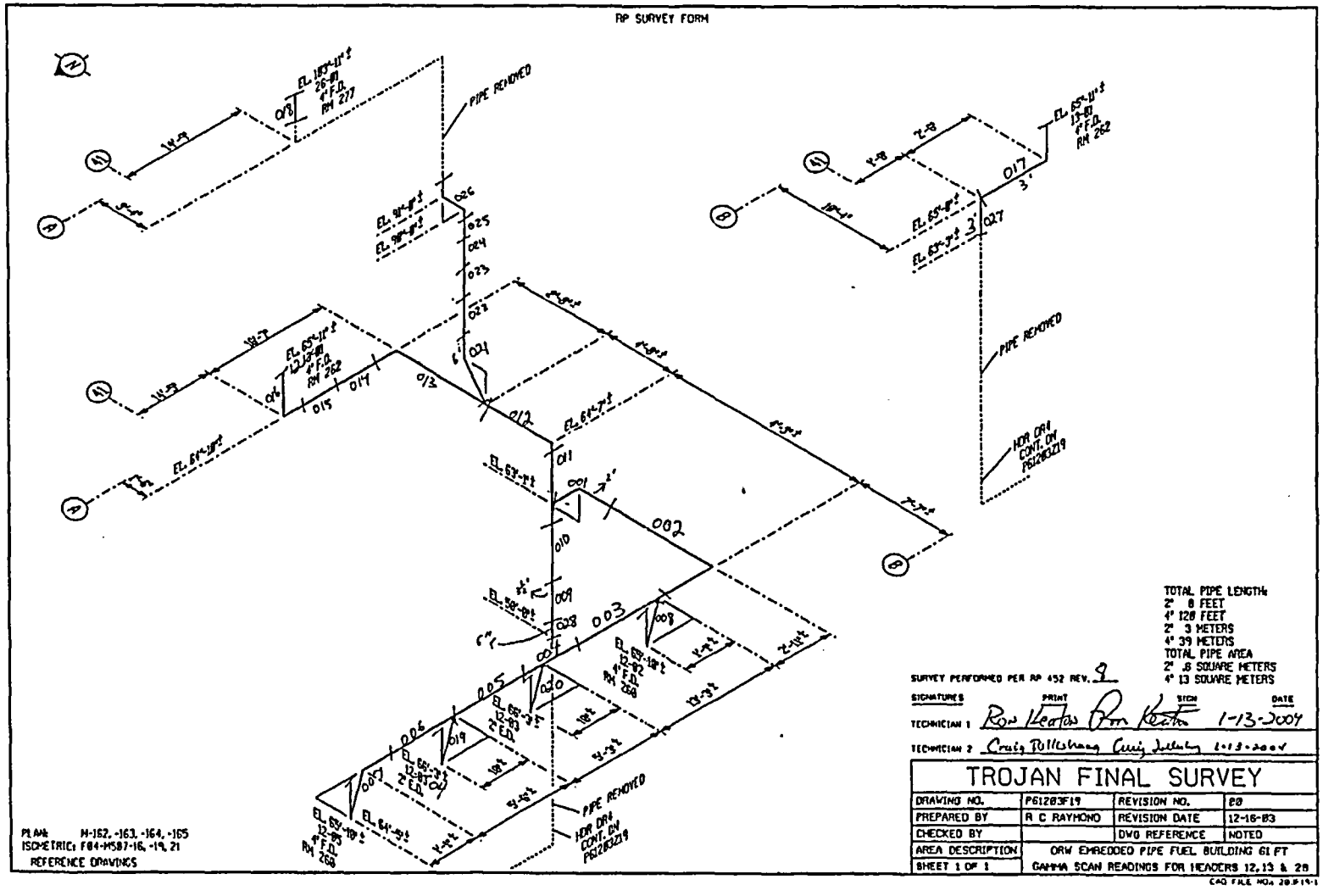
Location	Value	Location	Value
000001	1.625e+004	000018	3.831e+003
000002	4.032e+004	000019	1.037e+004
000003	1.816e+004	000020	1.658e+004
000004	1.925e+004	000021	6.568e+003
000005	1.076e+004	000022	4.628e+003
000006	5.351e+004	000023	3.228e+003
000007	1.475e+004	000024	5.843e+003
000008	3.528e+004	000025	5.202e+003
000009	1.756e+004	000026	1.893e+003
000010	1.398e+004	000027	1.337e+003
000011	1.061e+004	000028	3.388e+004
000012	8.386e+003		
000013	7.385e+003		
000014	5.631e+003		
000015	5.541e+003		
000016	6.049e+003		
000017	5.432e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203F
Survey Unit Name: AB/FB 45', 61', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 14

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	100	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	2.452e+003
Maximum Value	:	4.815e+004
Range	:	4.570e+004
Median	:	7.768e+003
Std. Deviation	:	7.165e+003
Mean	:	9.692e+003
95% UCL	:	1.088e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	6.221e+003	000018	4.815e+004	000035	5.565e+003
000002	7.760e+003	000019	7.900e+003	000036	7.911e+003
000003	7.578e+003	000020	6.446e+003	000037	6.264e+003
000004	8.071e+003	000021	7.062e+003	000038	7.453e+003
000005	6.141e+003	000022	1.920e+004	000039	2.036e+004
000006	9.342e+003	000023	8.074e+003	000040	4.077e+003
000007	1.282e+004	000024	6.984e+003	000041	5.315e+003
000008	9.733e+003	000025	6.312e+003	000042	4.420e+003
000009	3.739e+004	000026	2.706e+003	000043	5.912e+003
000010	1.001e+004	000027	2.452e+003	000044	4.755e+003
000011	7.578e+003	000028	1.823e+004	000045	5.009e+003
000012	2.075e+004	000029	4.716e+003	000046	5.020e+003
000013	1.326e+004	000030	1.841e+004	000047	6.390e+003
000014	1.968e+004	000031	9.678e+003	000048	7.764e+003
000015	7.155e+003	000032	7.312e+003	000049	3.222e+003
000016	5.850e+003	000033	6.777e+003	000050	4.278e+003
000017	7.926e+003	000034	9.532e+003	000051	4.023e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

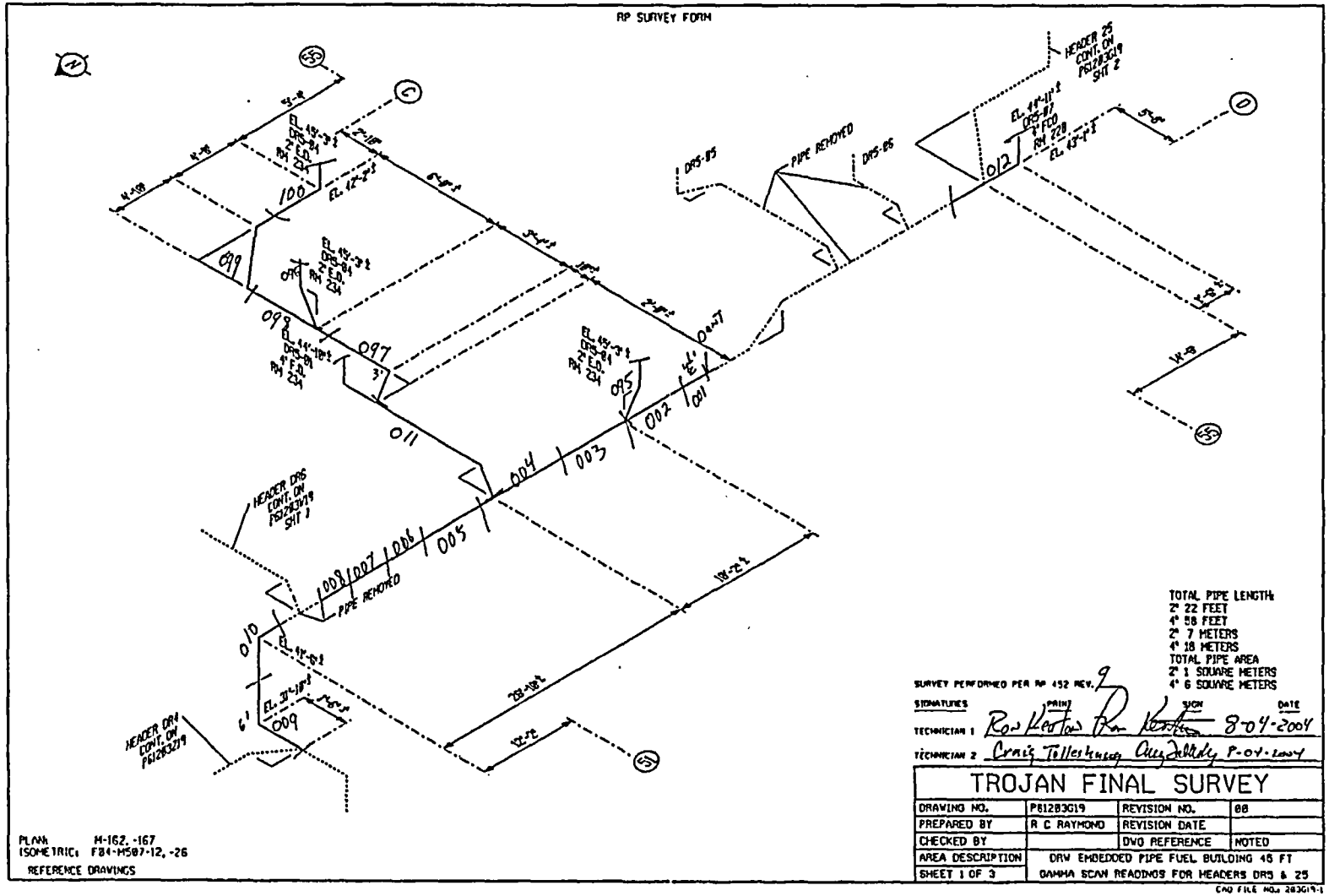
Location	Value	Location	Value
000052	4.982e+003	000099	1.195e+004
000053	3.234e+003	000100	1.194e+004
000054	4.040e+003		
000055	4.484e+003		
000056	4.985e+003		
000057	4.891e+003		
000058	5.020e+003		
000059	2.831e+003		
000060	2.631e+003		
000061	3.354e+004		
000062	2.983e+004		
000063	9.678e+003		
000064	7.729e+003		
000065	1.054e+004		
000066	1.353e+004		
000067	1.468e+004		
000068	9.424e+003		
000069	1.157e+004		
000070	7.771e+003		
000071	1.031e+004		
000072	1.173e+004		
000073	8.647e+003		
000074	1.261e+004		
000075	1.109e+004		
000076	6.785e+003		
000077	8.252e+003		
000078	6.538e+003		
000079	5.354e+003		
000080	9.252e+003		
000081	4.280e+003		
000082	5.822e+003		
000083	6.266e+003		
000084	7.969e+003		
000085	7.105e+003		
000086	6.674e+003		
000087	9.017e+003		
000088	1.148e+004		
000089	7.808e+003		
000090	1.354e+004		
000091	8.314e+003		
000092	6.439e+003		
000093	1.062e+004		
000094	2.240e+004		
000095	1.050e+004		
000096	1.229e+004		
000097	1.399e+004		
000098	9.942e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

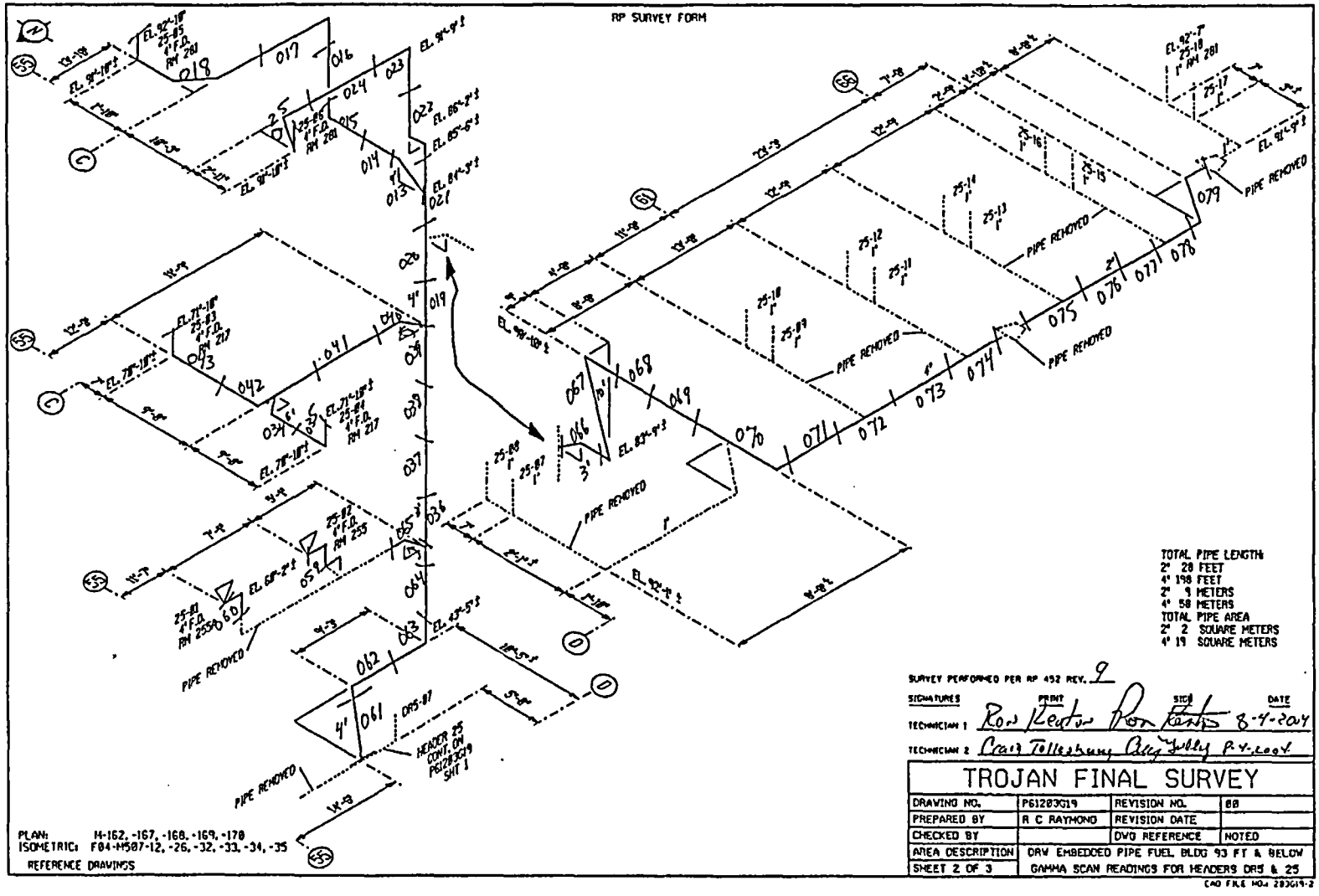


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

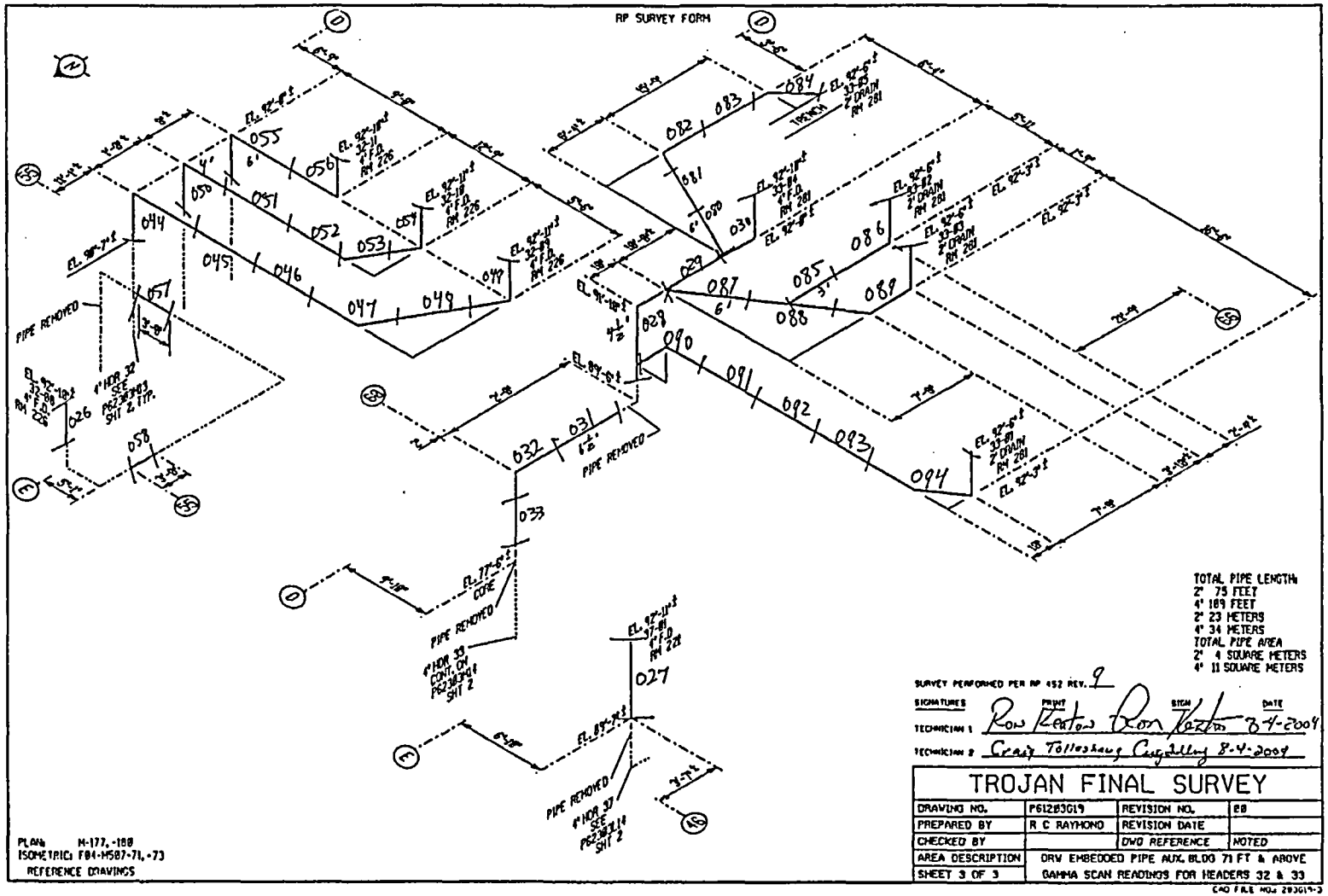


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203G
Survey Unit Name: AB/FB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	142	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-6.392e+002
Maximum Value	:	1.661e+005
Range	:	1.667e+005
Median	:	5.563e+003
Std. Deviation	:	1.858e+004
Mean	:	1.121e+004
95% UCL	:	1.380e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	5.887e+003	000018	1.417e+004	000035	1.969e+004
000002	4.178e+004	000019	6.612e+003	000036	2.066e+004
000003	3.123e+004	000020	4.860e+003	000037	2.252e+004
000004	7.552e+003	000021	7.151e+003	000038	1.730e+004
000005	2.870e+004	000022	3.957e+003	000039	6.682e+003
000006	4.600e+003	000023	4.993e+003	000040	6.230e+003
000007	3.478e+003	000024	5.630e+003	000041	7.595e+003
000008	1.489e+004	000025	4.998e+003	000042	7.808e+003
000009	1.399e+004	000026	9.231e+003	000043	5.455e+003
000010	1.165e+004	000027	8.716e+003	000044	2.096e+004
000011	4.465e+003	000028	4.247e+003	000045	1.661e+005
000012	4.991e+003	000029	4.100e+003	000046	6.201e+003
000013	4.619e+003	000030	2.951e+003	000047	7.618e+003
000014	4.661e+003	000031	1.587e+003	000048	2.166e+004
000015	4.891e+003	000032	4.349e+003	000049	1.400e+004
000016	2.966e+003	000033	1.168e+004	000050	1.140e+004
000017	3.266e+003	000034	6.138e+003	000051	1.152e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Scan Measurement Data

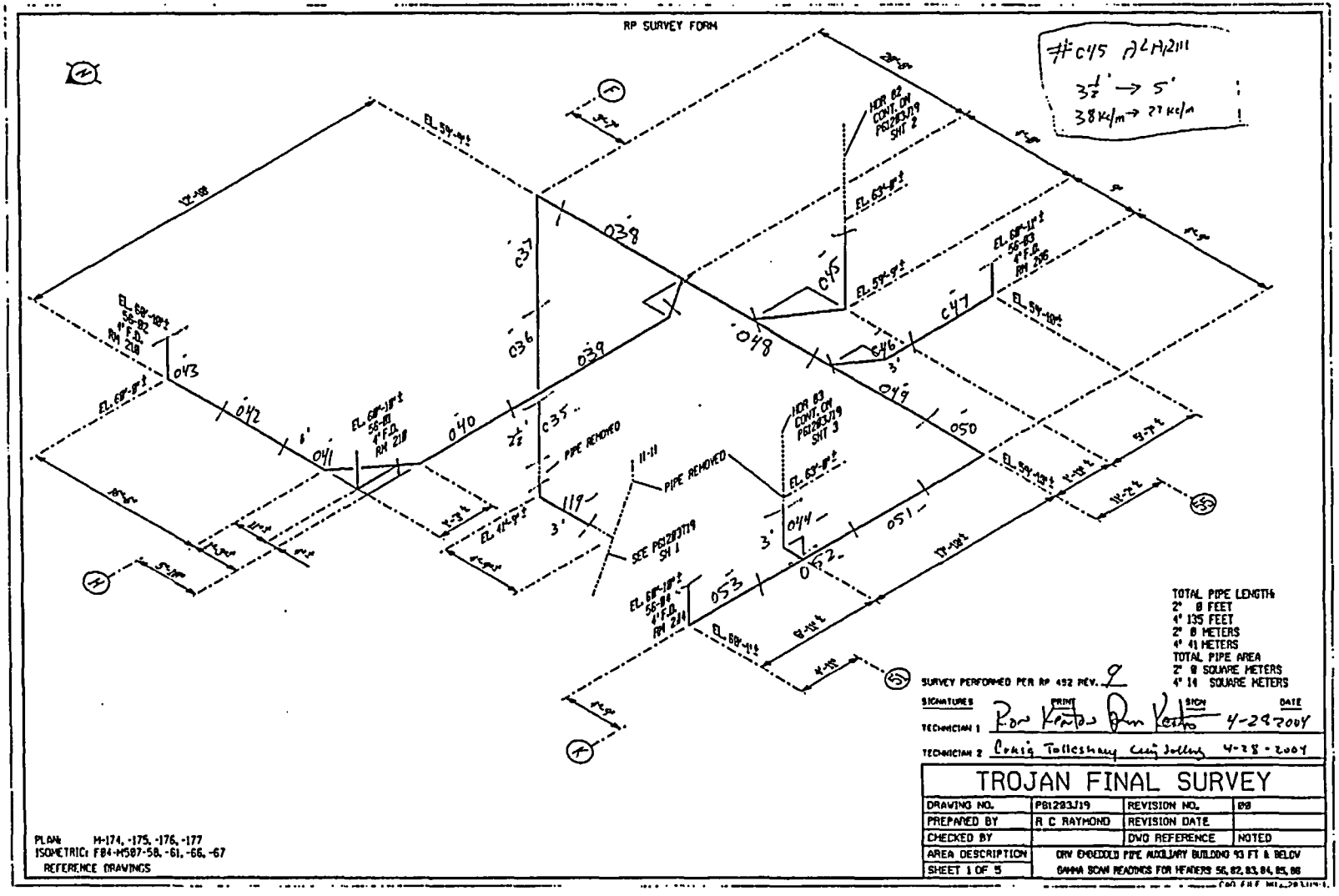
Location	Value	Location	Value
000052	9.938e+003	000099	3.718e+003
000053	5.256e+003	000100	3.452e+003
000054	3.591e+003	000101	3.123e+003
000055	6.518e+003	000102	8.333e+002
000056	1.396e+004	000103	3.993e+003
000057	9.928e+003	000104	7.873e+003
000058	4.490e+003	000105	2.337e+003
000059	3.029e+003	000106	1.587e+003
000060	2.597e+003	000107	3.883e+003
000061	5.062e+003	000108	2.552e+003
000062	3.159e+004	000109	2.296e+003
000063	4.209e+003	000110	5.167e+003
000064	5.227e+003	000111	4.326e+003
000065	3.304e+003	000112	8.305e+003
000066	1.075e+004	000113	9.498e+003
000067	8.590e+003	000114	7.398e+002
000068	6.475e+003	000115	7.805e+003
000069	6.532e+003	000116	5.030e+003
000070	9.023e+003	000117	4.806e+003
000071	3.143e+003	000118	1.991e+003
000072	5.709e+003	000119	3.722e+004
000073	5.631e+003	000120	8.110e+003
000074	3.375e+003	000121	4.753e+003
000075	7.647e+003	000122	3.735e+003
000076	3.054e+003	000123	4.051e+003
000077	3.443e+003	000124	8.685e+003
000078	3.965e+003	000125	5.326e+003
000079	4.740e+003	000126	7.963e+004
000080	4.032e+003	000127	2.509e+004
000081	1.907e+003	000128	5.703e+003
000082	7.752e+003	000129	7.695e+003
000083	5.085e+003	000130	3.174e+003
000084	6.278e+003	000131	6.211e+003
000085	7.759e+003	000132	8.135e+003
000086	3.000e+003	000133	6.191e+003
000087	2.010e+003	000134	7.734e+003
000088	4.525e+003	000135	3.639e+004
000089	3.858e+003	000136	4.729e+004
000090	3.832e+003	000137	4.665e+004
000091	1.001e+003	000138	7.853e+004
000092	4.880e+003	000139	1.001e+004
000093	5.496e+003	000140	4.789e+004
000094	2.058e+003	000141	5.713e+004
000095	2.663e+003	000142	3.248e+004
000096	2.002e+003		
000097	-6.392e+002		
000098	5.729e+002		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Scan Measurement Data

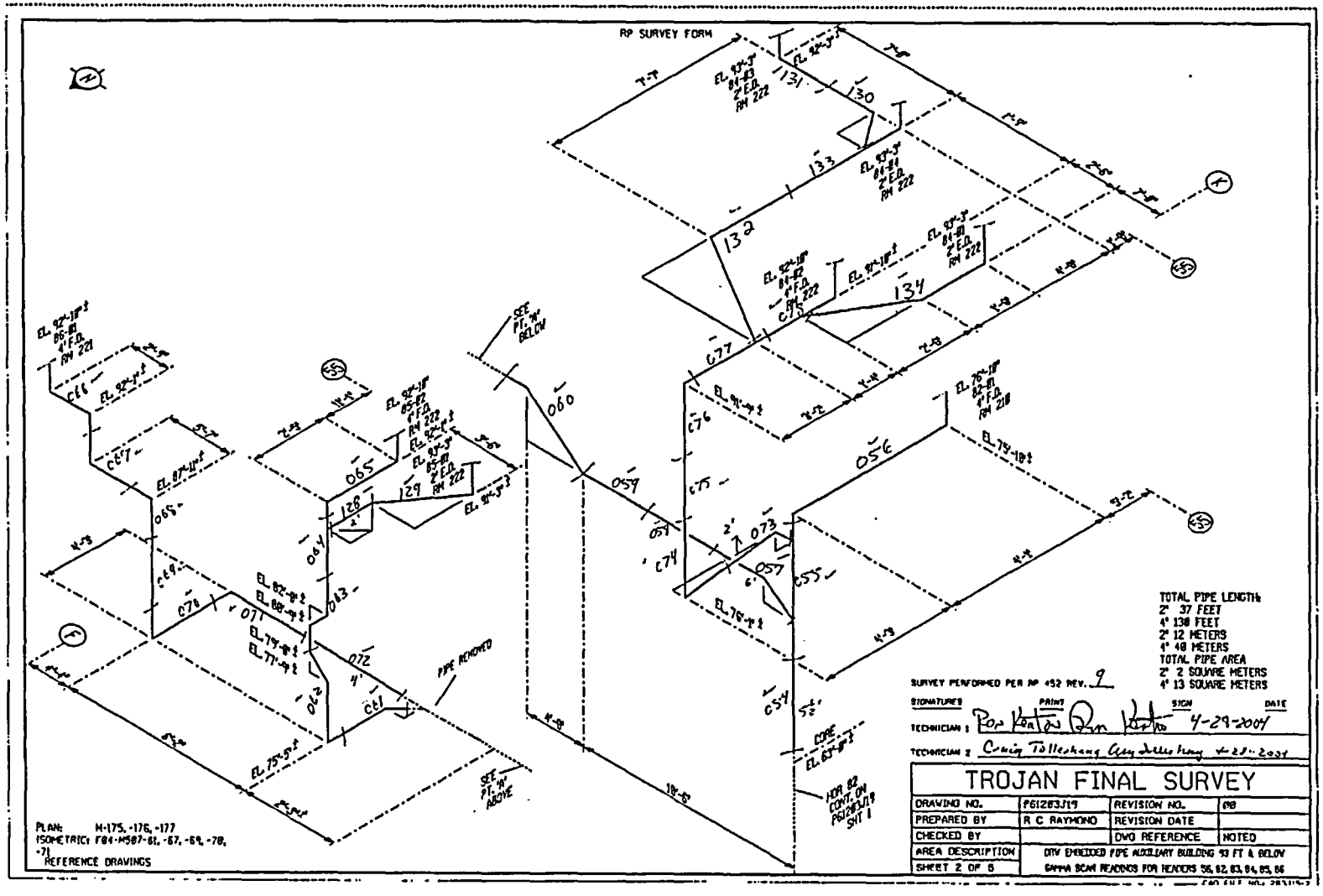


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Scan Measurement Data

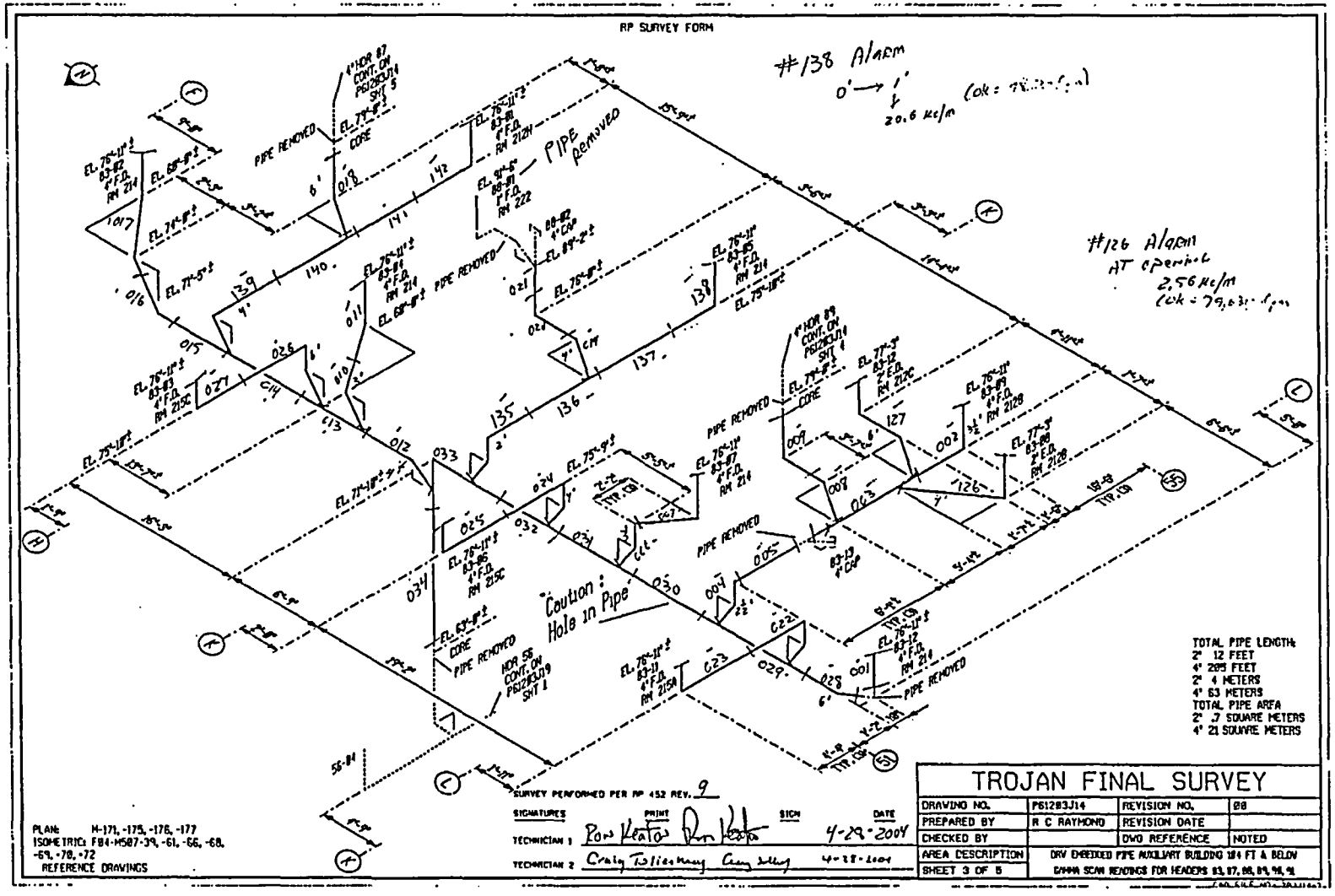


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m²): 72

Scan Measurement Data

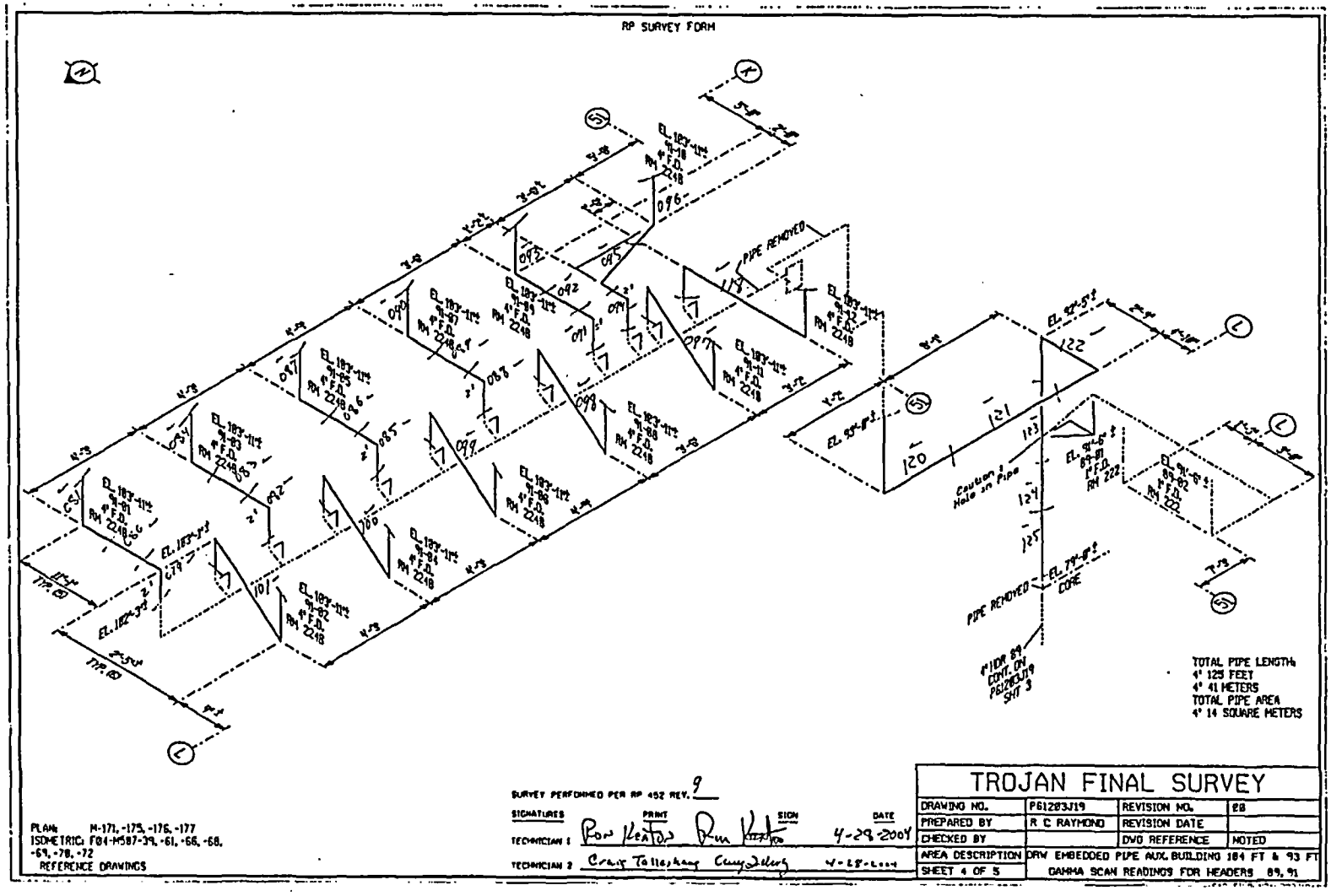


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Scan Measurement Data

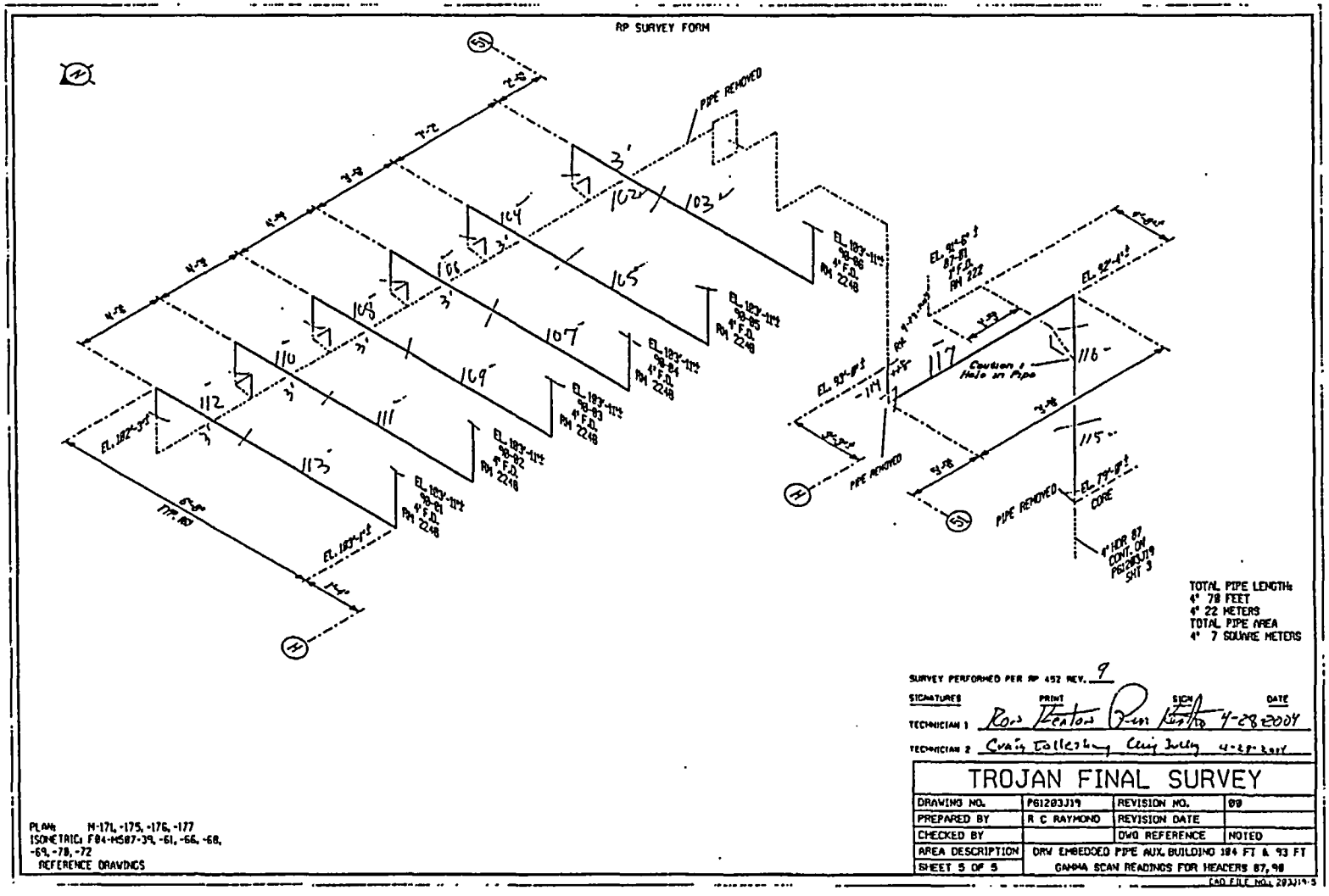


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203J
Survey Unit Name: AB 61', 77', 93', and 104' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 72

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203K
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 18

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	38	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	3.912e+003
Maximum Value	:	8.749e+004
Range	:	8.358e+004
Median	:	8.541e+003
Std. Deviation	:	1.313e+004
Mean	:	1.048e+004
95% UCL	:	1.407e+004

Measurement Values

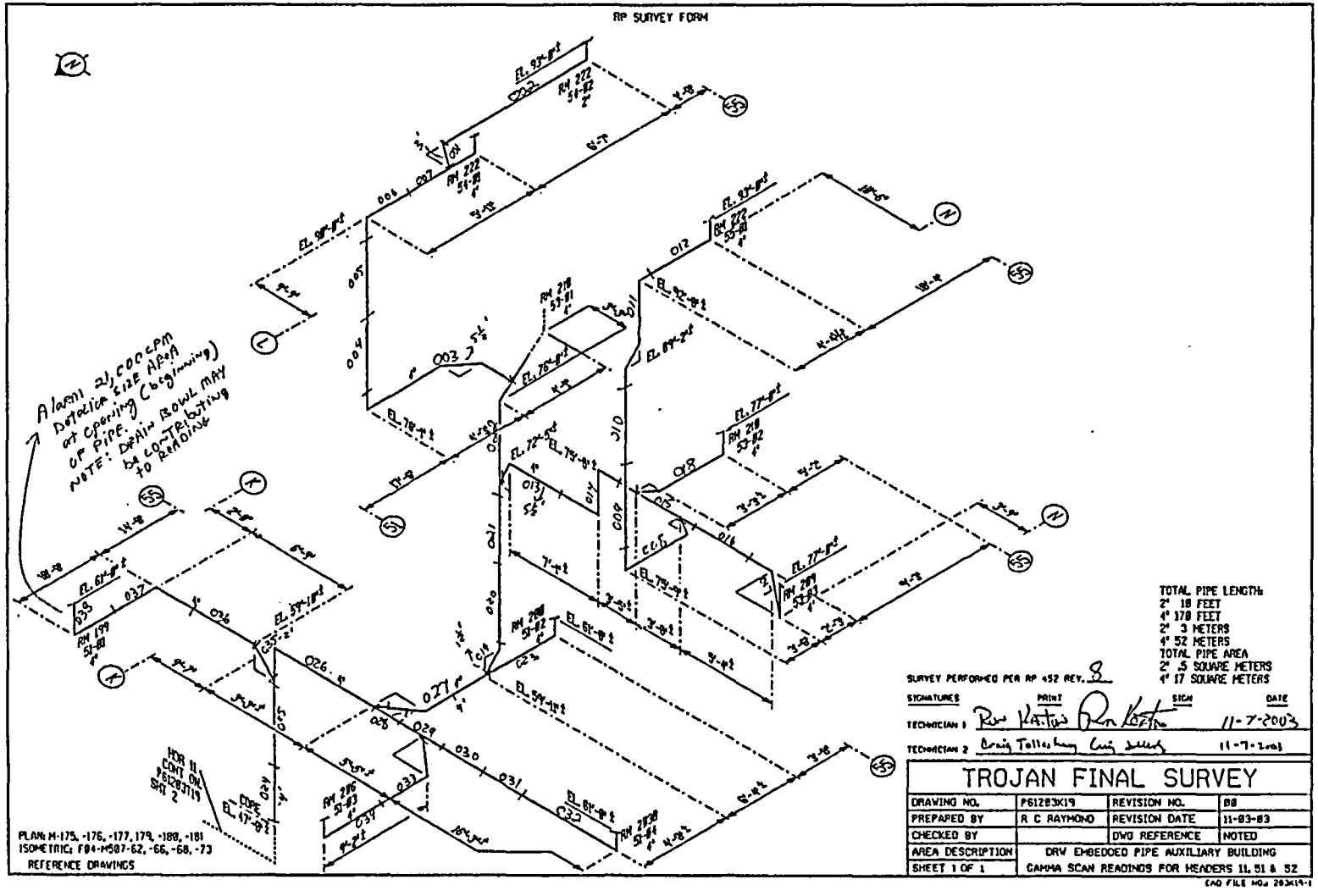
Location	Value	Location	Value	Location	Value
000001	6.763e+003	000018	8.577e+003	000035	6.474e+003
000002	6.395e+003	000019	1.549e+004	000036	9.238e+003
000003	8.103e+003	000020	1.131e+004	000037	8.683e+003
000004	6.034e+003	000021	1.041e+004	000038	8.749e+004
000005	4.980e+003	000022	1.103e+004		
000006	7.079e+003	000023	9.043e+003		
000007	4.549e+003	000024	8.697e+003		
000008	5.963e+003	000025	8.877e+003		
000009	3.912e+003	000026	1.168e+004		
000010	5.454e+003	000027	6.791e+003		
000011	6.958e+003	000028	8.712e+003		
000012	4.516e+003	000029	1.422e+004		
000013	1.409e+004	000030	9.647e+003		
000014	5.351e+003	000031	9.722e+003		
000015	8.008e+003	000032	7.553e+003		
000016	8.505e+003	000033	1.183e+004		
000017	5.678e+003	000034	1.055e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203K
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 18

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	45	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.609e+003
Maximum Value	:	5.112e+004
Range	:	5.273e+004
Median	:	7.045e+003
Std. Deviation	:	9.110e+003
Mean	:	9.971e+003
95% UCL	:	1.225e+004

Measurement Values

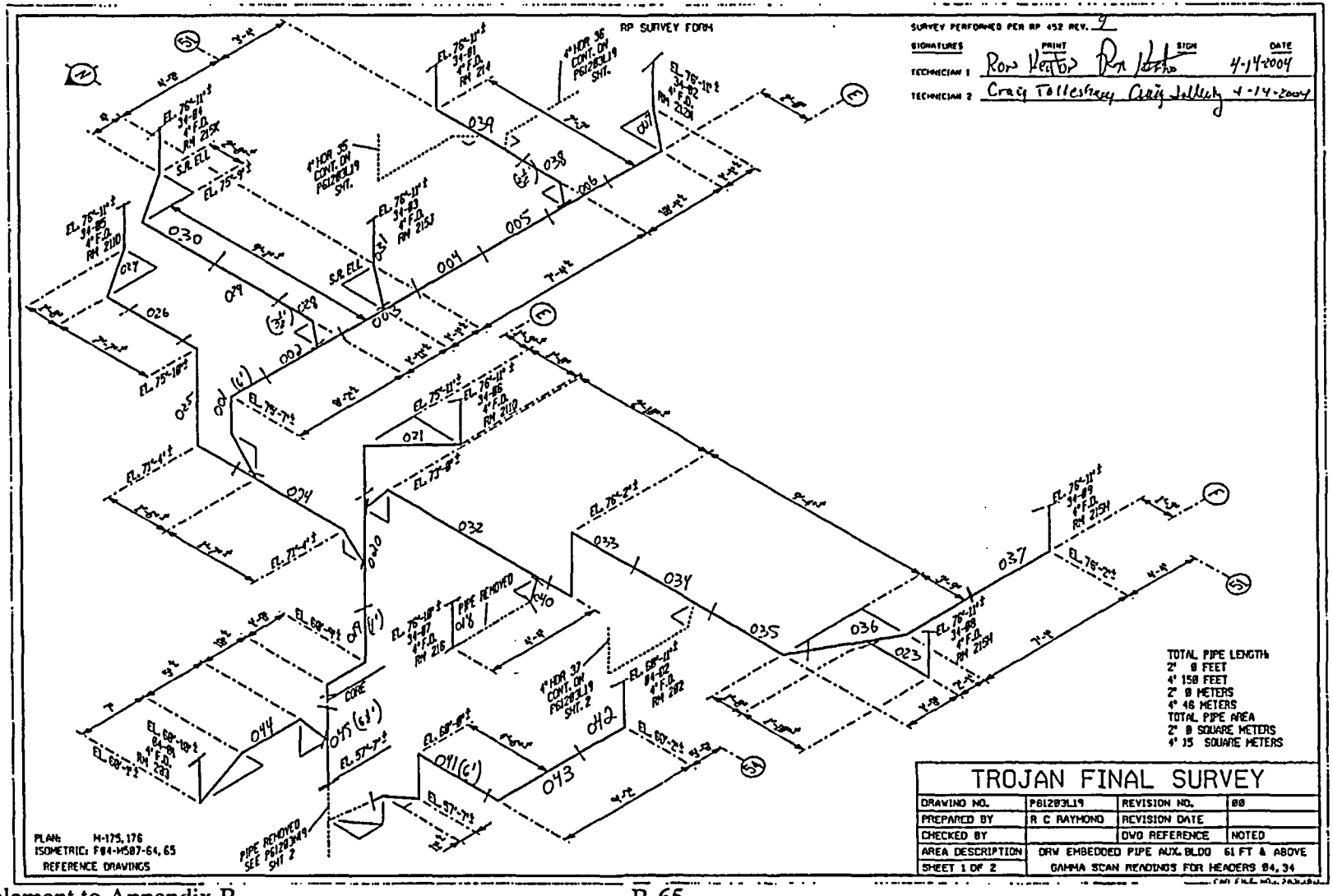
Location	Value	Location	Value	Location	Value
000001	2.015e+004	000018	-1.609e+003	000035	1.462e+004
000002	7.406e+003	000019	5.791e+003	000036	1.469e+004
000003	7.100e+003	000020	6.024e+003	000037	2.578e+003
000004	4.563e+003	000021	1.078e+004	000038	5.407e+003
000005	4.431e+003	000022	5.438e+003	000039	1.368e+004
000006	7.045e+003	000023	6.193e+003	000040	5.489e+003
000007	1.755e+004	000024	3.684e+003	000041	5.110e+003
000008	5.112e+004	000025	3.218e+004	000042	4.791e+003
000009	1.670e+004	000026	7.507e+003	000043	6.255e+003
000010	7.377e+003	000027	7.884e+003	000044	5.225e+003
000011	4.137e+003	000028	4.342e+003	000045	1.154e+004
000012	2.434e+003	000029	7.911e+003		
000013	5.511e+003	000030	5.456e+003		
000014	4.983e+003	000031	4.669e+003		
000015	9.257e+003	000032	2.848e+004		
000016	9.445e+003	000033	1.759e+004		
000017	1.062e+004	000034	1.718e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Scan Measurement Data

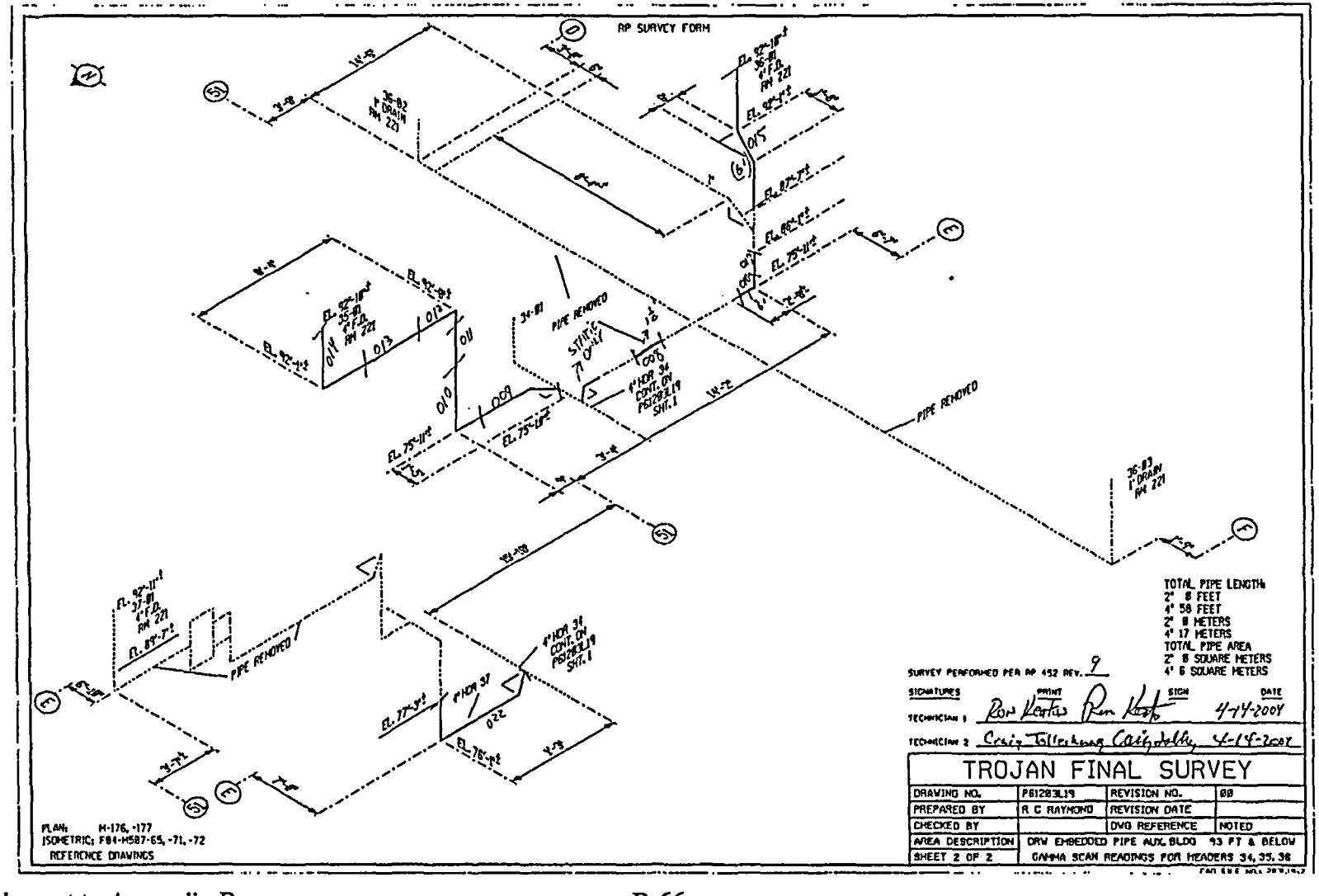


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203L
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 21

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	28	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	1.176e+003
Maximum Value :	1.117e+005
Range :	1.105e+005
Median :	5.780e+003
Std. Deviation :	2.140e+004
Mean :	1.271e+004
95% UCL :	1.959e+004

Measurement Values

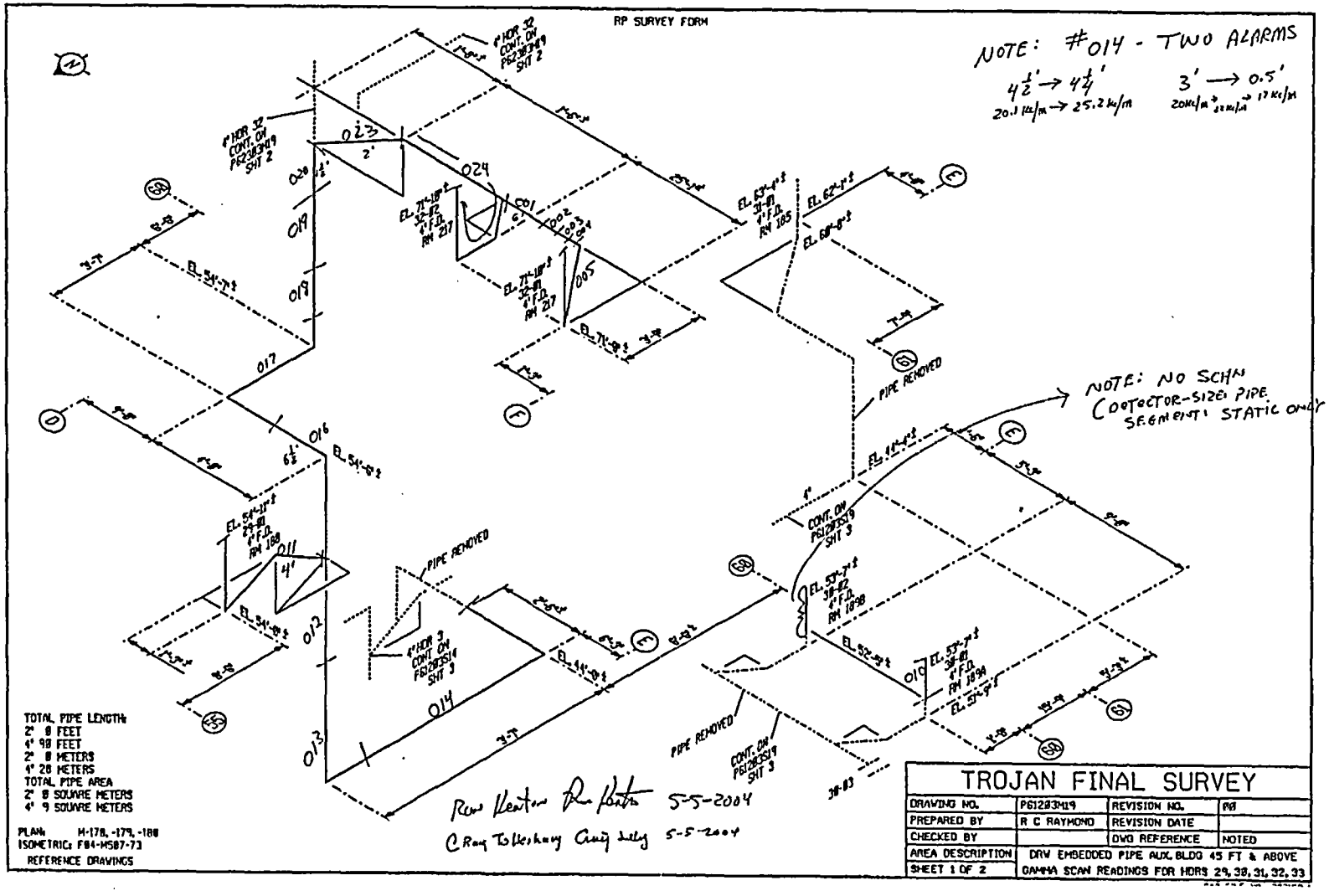
Location	Value	Location	Value
000001	6.716e+003	000018	9.994e+003
000002	5.071e+003	000019	4.601e+003
000003	4.962e+003	000020	3.348e+003
000004	5.906e+003	000021	1.337e+004
000005	5.435e+003	000022	1.928e+003
000006	3.722e+003	000023	5.654e+003
000007	4.398e+003	000024	1.044e+004
000008	4.543e+003	000025	2.917e+003
000009	5.457e+003	000026	1.004e+004
000010	4.054e+004	000027	4.252e+003
000011	1.861e+004	000028	1.176e+003
000012	1.012e+004		
000013	3.548e+004		
000014	1.117e+005		
000015	7.249e+003		
000016	1.142e+004		
000017	6.946e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m²): 15

Scan Measurement Data

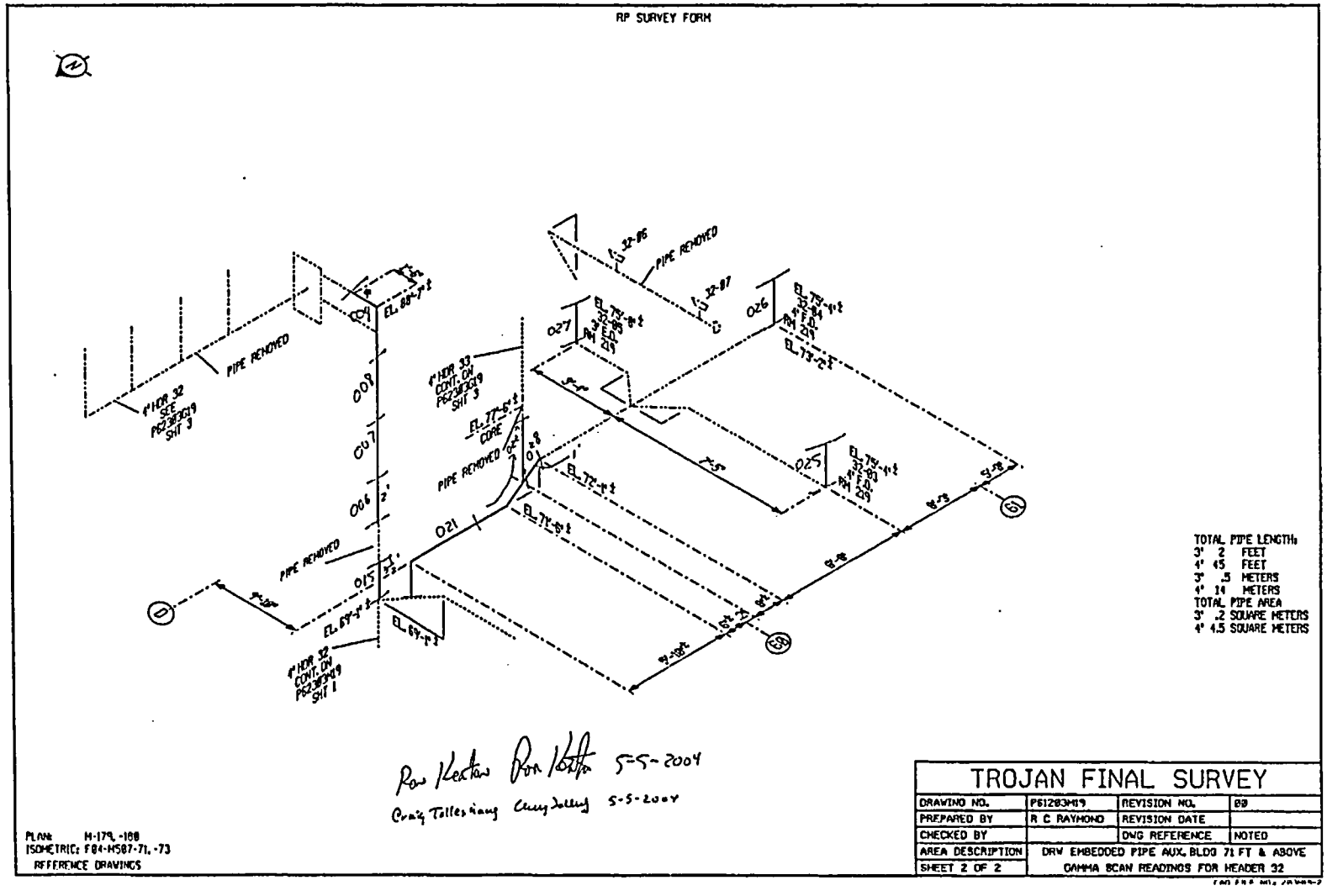


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203M
Survey Unit Name: AB/FB 54', 63', 75', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 15

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' - 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	34	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	4.369e+003
Maximum Value	:	5.905e+004
Range	:	5.468e+004
Median	:	1.310e+004
Std. Deviation	:	1.163e+004
Mean	:	1.645e+004
95% UCL	:	1.983e+004

Measurement Values

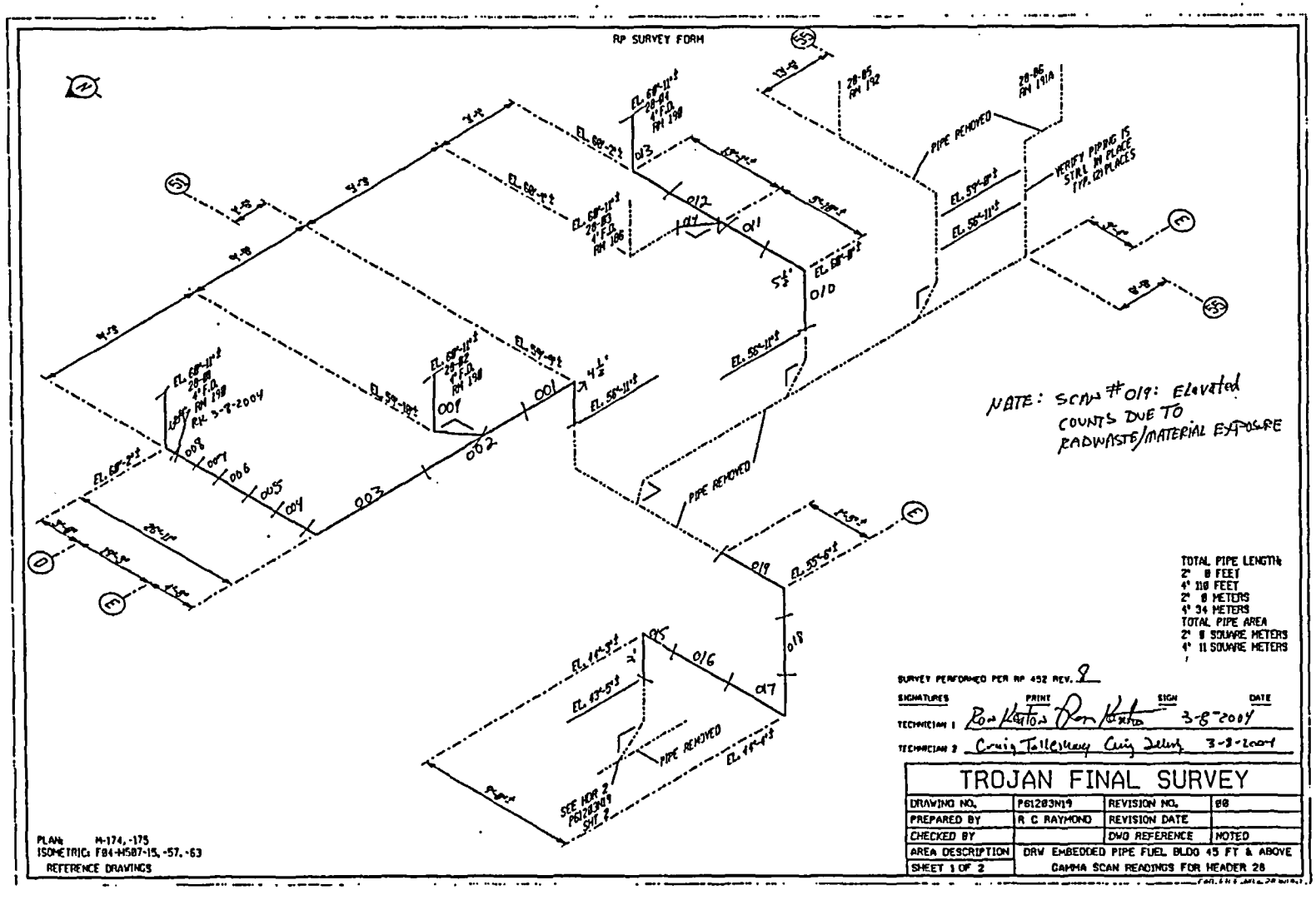
Location	Value	Location	Value
000001	3.486e+004	000018	9.106e+003
000002	1.251e+004	000019	2.349e+004
000003	2.363e+004	000020	2.021e+004
000004	9.865e+003	000021	1.252e+004
000005	8.192e+003	000022	1.480e+004
000006	8.987e+003	000023	1.368e+004
000007	8.351e+003	000024	2.686e+004
000008	8.042e+003	000025	5.328e+003
000009	2.207e+004	000026	4.049e+004
000010	1.638e+004	000027	1.548e+004
000011	6.811e+003	000028	3.088e+004
000012	5.545e+003	000029	2.482e+004
000013	6.377e+003	000030	4.369e+003
000014	9.532e+003	000031	8.404e+003
000015	5.905e+004	000032	1.443e+004
000016	1.932e+004	000033	1.515e+004
000017	8.332e+003	000034	1.146e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' - 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Scan Measurement Data

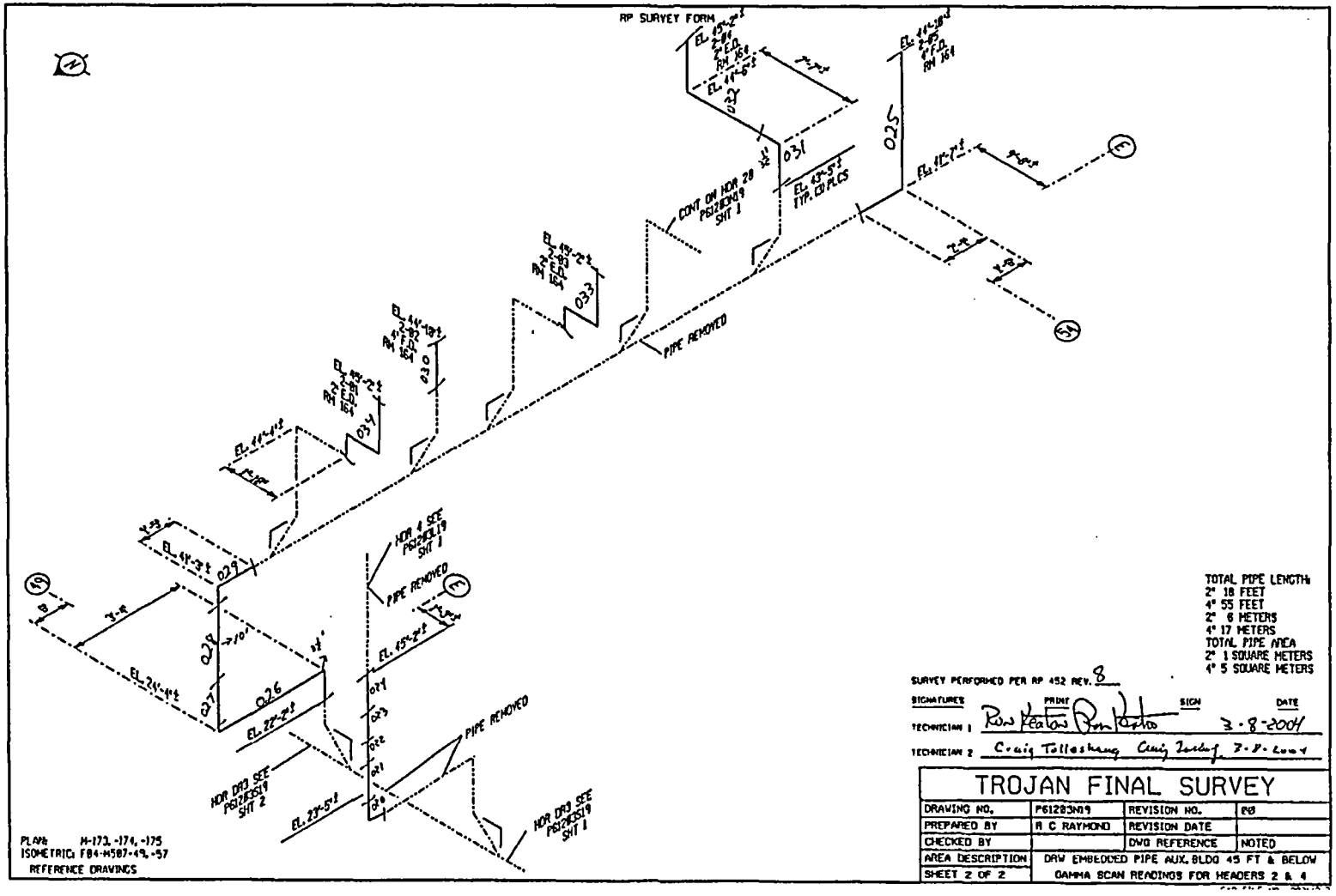


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203N
Survey Unit Name: AB 45' - 61' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	52	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.319e+003
Maximum Value	:	2.452e+004
Range	:	2.684e+004
Median	:	5.874e+003
Std. Deviation	:	4.875e+003
Mean	:	6.544e+003
95% UCL	:	7.677e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	5.445e+003	000019	2.322e+003	000036	1.425e+00
000002	3.903e+003	000020	5.163e+003	000037	1.132e+00
000003	2.807e+003	000021	3.429e+003	000038	1.161e+00
000004	3.314e+003	000022	8.247e+003	000039	1.307e+00
000005	5.928e+003	000023	9.920e+003	000040	1.072e+00
000006	1.211e+004	000024	5.819e+003	000041	6.022e+00
000007	1.234e+004	000025	6.642e+003	000042	9.599e+00
000008	7.326e+003	000026	1.629e+004	000043	7.074e+00
000009	4.769e+003	000027	8.790e+003	000044	1.013e+00
000010	9.258e+003	000028	3.456e+002	000045	2.452e+00
000011	1.107e+004	000029	8.475e+002	000046	-2.319e+00
000012	8.313e+003	000030	8.239e+002	000047	1.314e+00
000013	2.232e+003	000031	5.356e+003	000048	1.638e+00
000014	8.326e+003	000032	4.205e+003	000049	2.249e+00
000016	7.682e+002	000033	4.808e+003	000050	5.763e+00
000017	2.901e+003	000034	5.587e+002	000051	1.009e+00
000018	3.219e+003	000035	2.455e+003	000052	7.520e+00

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Scan Measurement Data

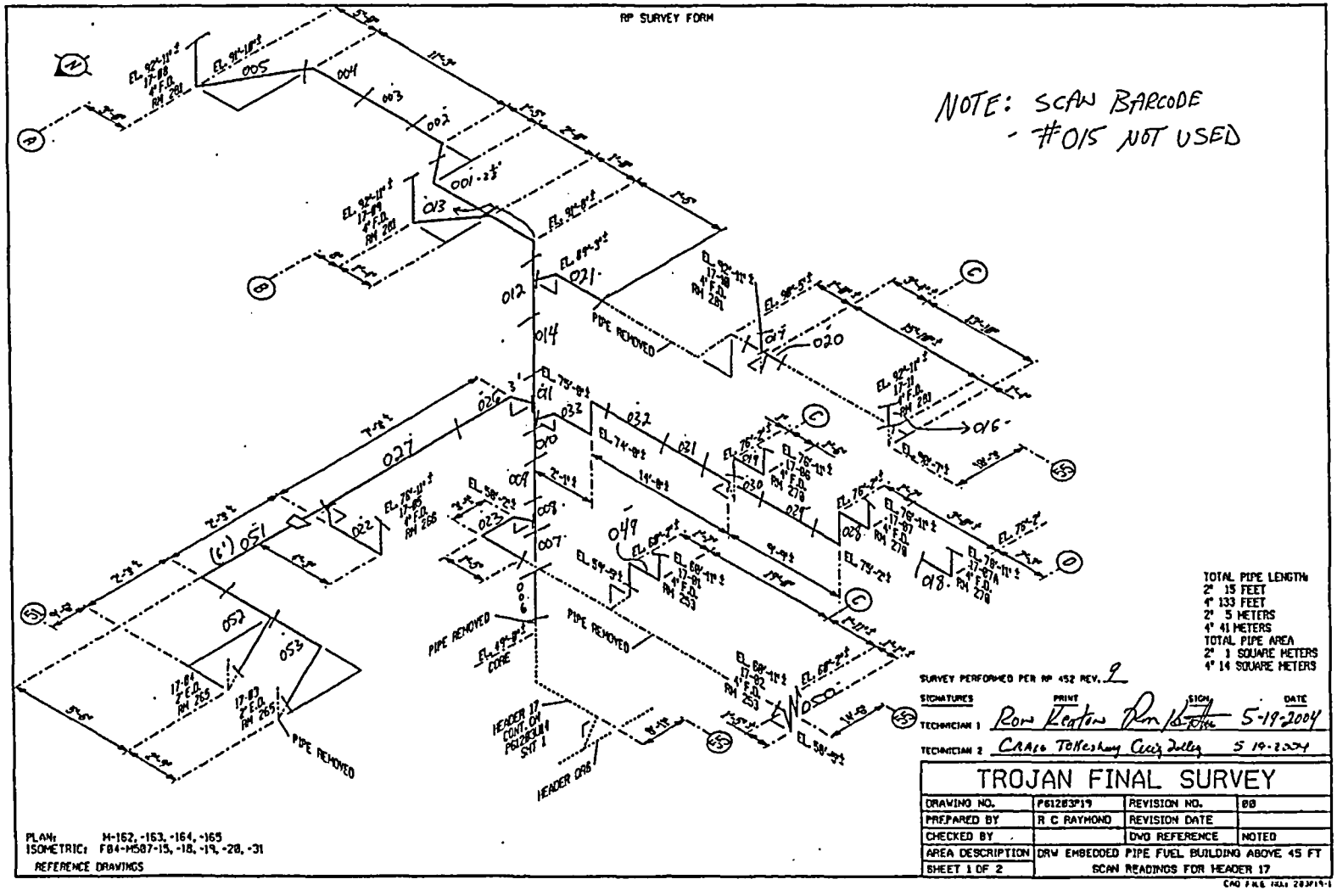
Location	Value
000053	6.846e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Scan Measurement Data

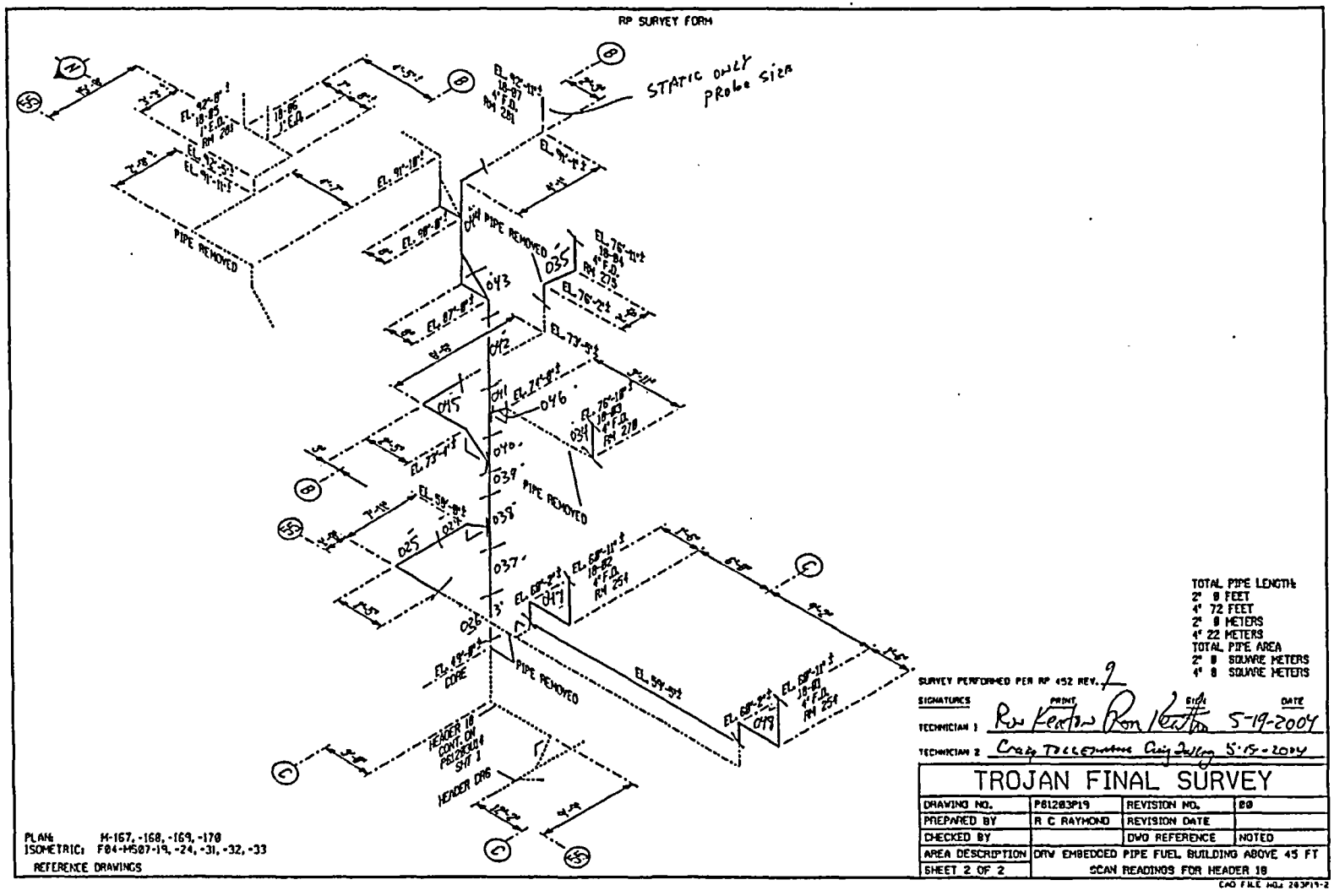


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203P
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 23

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	61	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	1.897e+003
Maximum Value	:	1.931e+005
Range	:	1.912e+005
Median	:	8.738e+003
Std. Deviation	:	2.456e+004
Mean	:	1.422e+004
95% UCL	:	1.947e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	7.845e+003	000018	8.261e+003	000035	8.304e+003
000002	1.184e+004	000019	7.908e+003	000036	5.037e+003
000003	7.958e+003	000020	8.067e+003	000037	5.300e+003
000004	8.017e+003	000021	6.422e+003	000038	3.191e+003
000005	8.137e+003	000022	1.217e+004	000039	2.417e+003
000006	1.386e+004	000023	8.984e+003	000040	1.897e+003
000007	1.143e+004	000024	9.910e+003	000041	1.999e+003
000008	1.028e+004	000025	7.343e+003	000042	4.319e+003
000009	7.247e+003	000026	1.423e+004	000043	3.811e+003
000010	7.871e+003	000027	1.191e+004	000044	7.334e+003
000011	7.435e+003	000028	1.048e+004	000045	8.738e+003
000012	9.697e+003	000029	8.036e+003	000046	8.084e+003
000013	1.181e+004	000030	8.280e+003	000047	8.071e+003
000014	9.050e+003	000031	1.931e+005	000048	1.851e+004
000015	8.596e+003	000032	2.984e+004	000049	1.861e+004
000016	8.579e+003	000033	8.255e+003	000050	1.396e+004
000017	6.681e+003	000034	1.198e+004	000051	1.576e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Scan Measurement Data

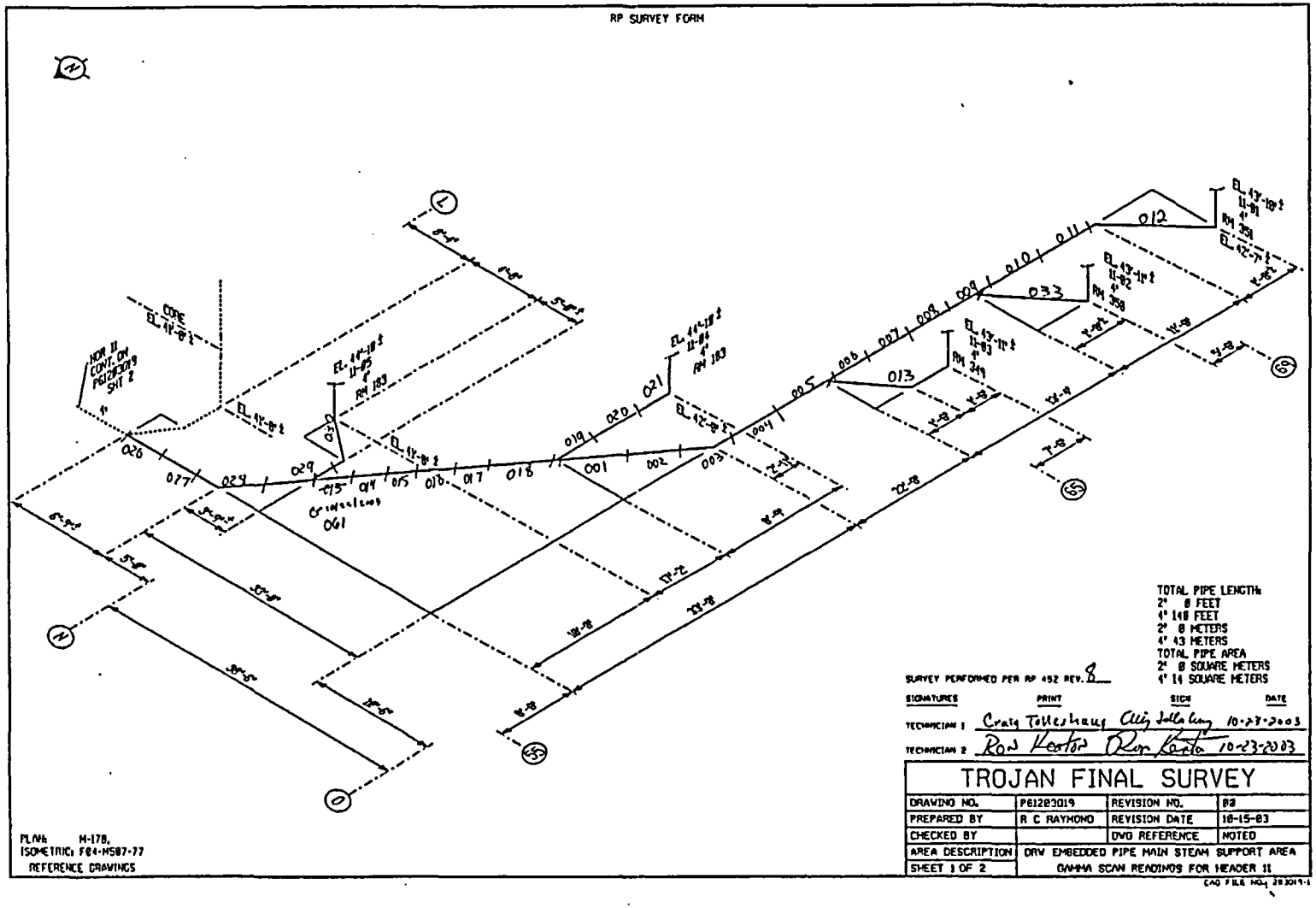
Location	Value
000052	5.191e+004
000053	9.289e+003
000054	2.596e+004
000055	2.877e+004
000056	1.892e+004
000057	2.139e+004
000058	1.245e+004
000059	1.614e+004
000060	1.602e+004
000061	9.660e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Scan Measurement Data

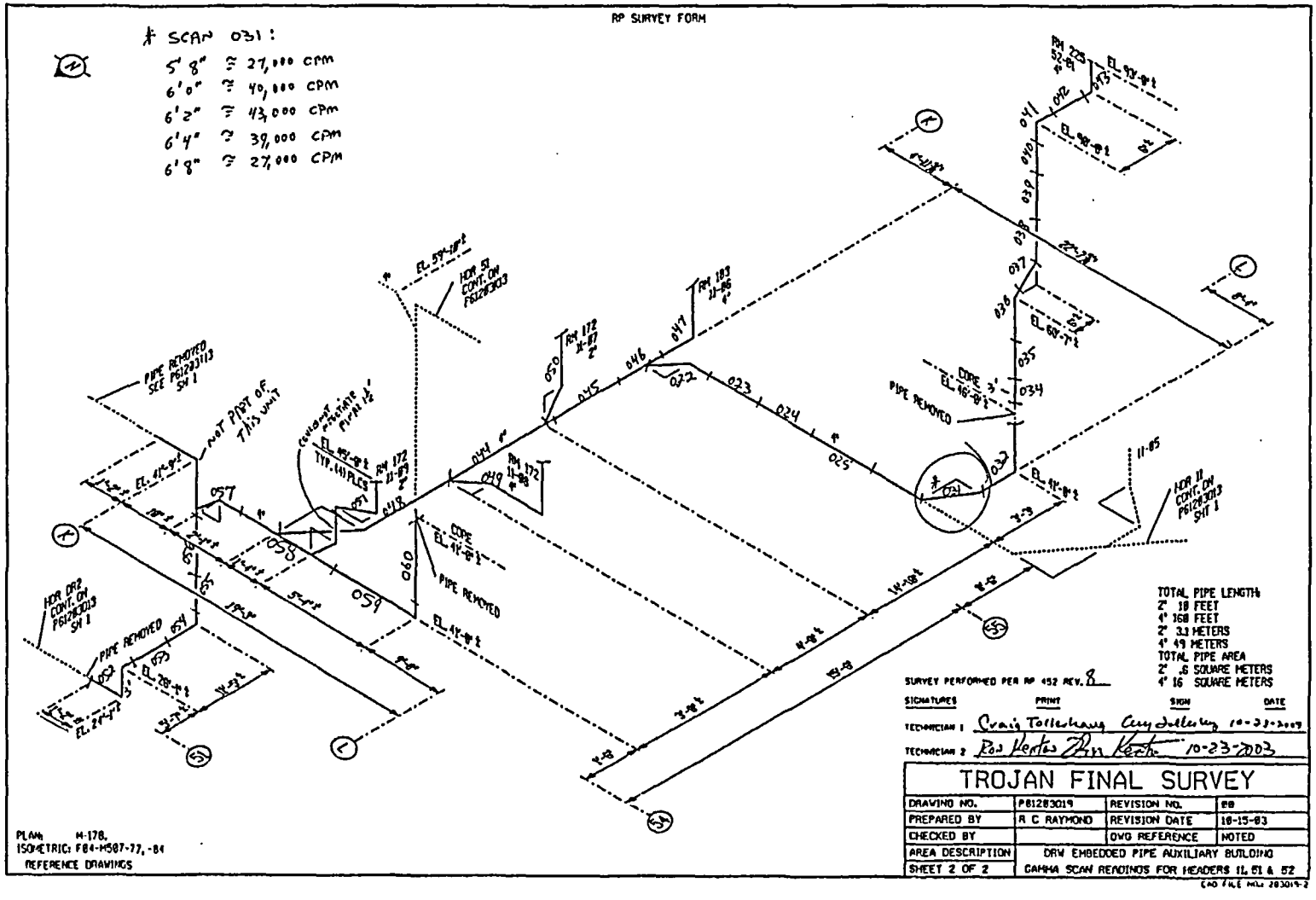


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Q
Survey Unit Name: FB/MSSS 45' and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 31

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	113	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.722e+003
Maximum Value	:	2.222e+005
Range	:	2.249e+005
Median	:	5.597e+003
Std. Deviation	:	2.701e+004
Mean	:	1.197e+004
95% UCL	:	1.619e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	6.342e+003	000018	6.983e+003	000035	9.727e+003
000002	5.338e+003	000019	4.478e+003	000036	6.620e+003
000003	7.368e+003	000020	2.119e+003	000037	4.825e+003
000004	4.012e+003	000021	3.335e+003	000038	3.822e+003
000005	3.758e+003	000022	5.462e+003	000039	6.539e+003
000006	5.903e+003	000023	1.237e+003	000040	9.199e+002
000007	3.538e+003	000024	3.523e+003	000041	-2.722e+003
000008	4.448e+003	000025	-9.438e+002	000042	2.616e+003
000009	3.642e+003	000026	3.415e+002	000043	4.774e+003
000010	6.148e+003	000027	-1.774e+003	000044	4.772e+003
000011	2.138e+003	000028	1.187e+004	000045	7.093e+003
000012	2.983e+003	000029	7.121e+003	000046	4.403e+003
000013	4.379e+003	000030	1.034e+004	000047	7.539e+004
000014	5.188e+003	000031	4.076e+004	000048	5.478e+003
000015	4.366e+003	000032	2.608e+002	000049	6.294e+003
000016	1.752e+002	000033	4.016e+003	000050	1.767e+003
000017	2.562e+003	000034	2.450e+004	000051	2.991e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Scan Measurement Data

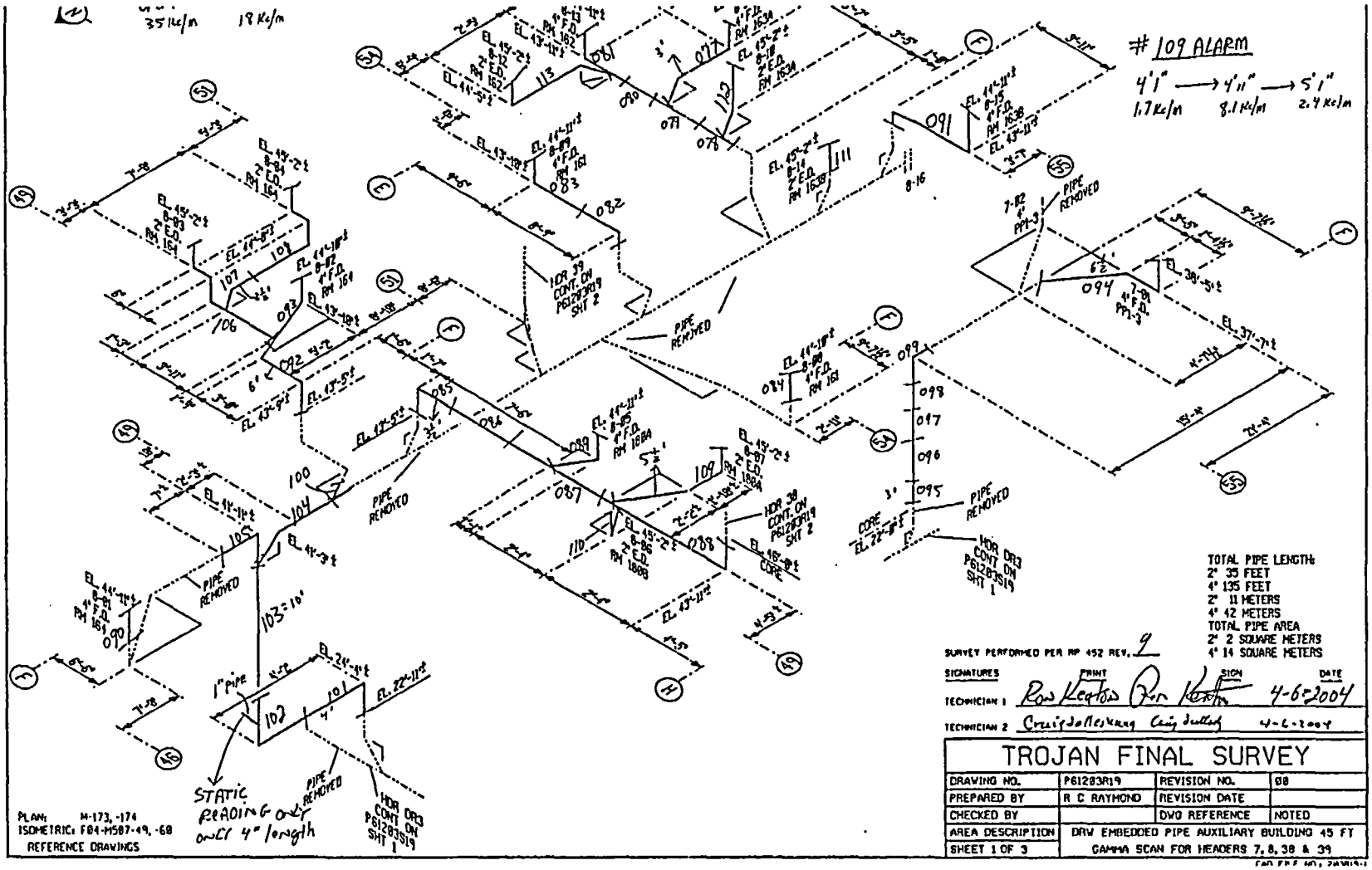
Location	Value	Location	Value
000052	3.817e+003	000099	3.097e+004
000053	2.848e+003	000100	7.128e+003
000054	4.889e+003	000101	1.091e+004
000055	1.707e+004	000102	1.565e+004
000056	2.878e+004	000103	2.305e+004
000057	8.659e+003	000104	2.736e+004
000058	6.768e+003	000105	1.297e+003
000059	9.630e+003	000106	1.427e+004
000060	3.742e+003	000107	1.172e+004
000061	3.527e+003	000108	1.181e+004
000062	1.817e+004	000109	2.222e+005
000063	4.972e+003	000110	1.222e+004
000064	3.494e+003	000111	2.408e+004
000065	1.082e+004	000112	4.438e+004
000066	5.372e+003	000113	1.207e+004
000067	5.722e+003		
000068	1.520e+003		
000069	1.826e+003		
000070	6.028e+003		
000071	4.657e+003		
000072	4.892e+003		
000073	5.788e+003		
000074	5.091e+003		
000075	7.150e+003		
000076	1.001e+004		
000077	1.662e+005		
000078	8.014e+003		
000079	6.089e+003		
000080	4.981e+003		
000081	6.729e+003		
000082	7.331e+003		
000083	5.597e+003		
000084	1.647e+003		
000085	7.433e+003		
000086	1.041e+004		
000087	2.954e+004		
000088	7.377e+003		
000089	1.414e+004		
000090	-1.147e+003		
000091	3.442e+004		
000092	5.024e+003		
000093	6.104e+003		
000094	7.092e+003		
000095	5.470e+003		
000096	5.796e+002		
000097	-5.154e+002		
000098	2.495e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Scan Measurement Data

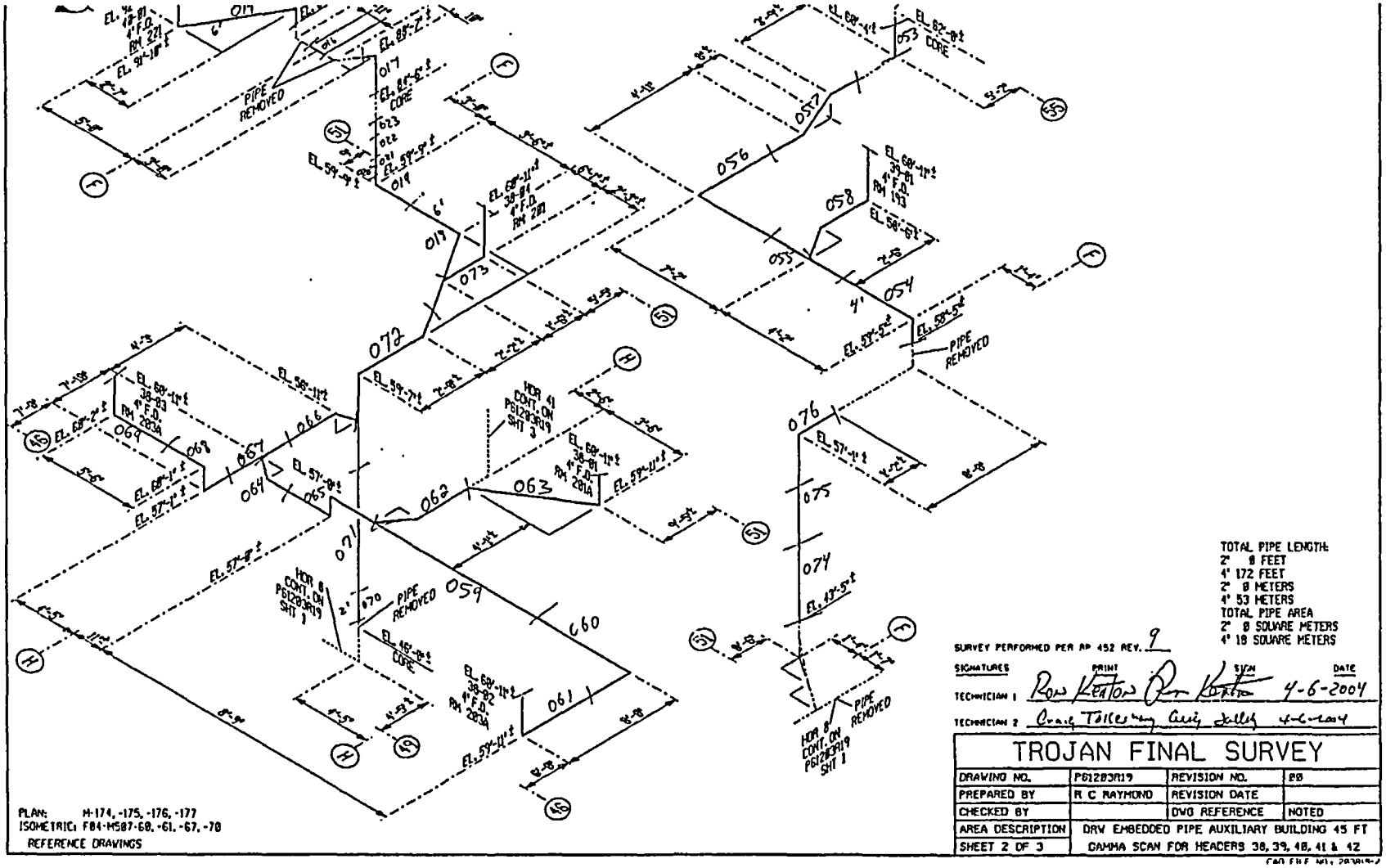


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Scan Measurement Data

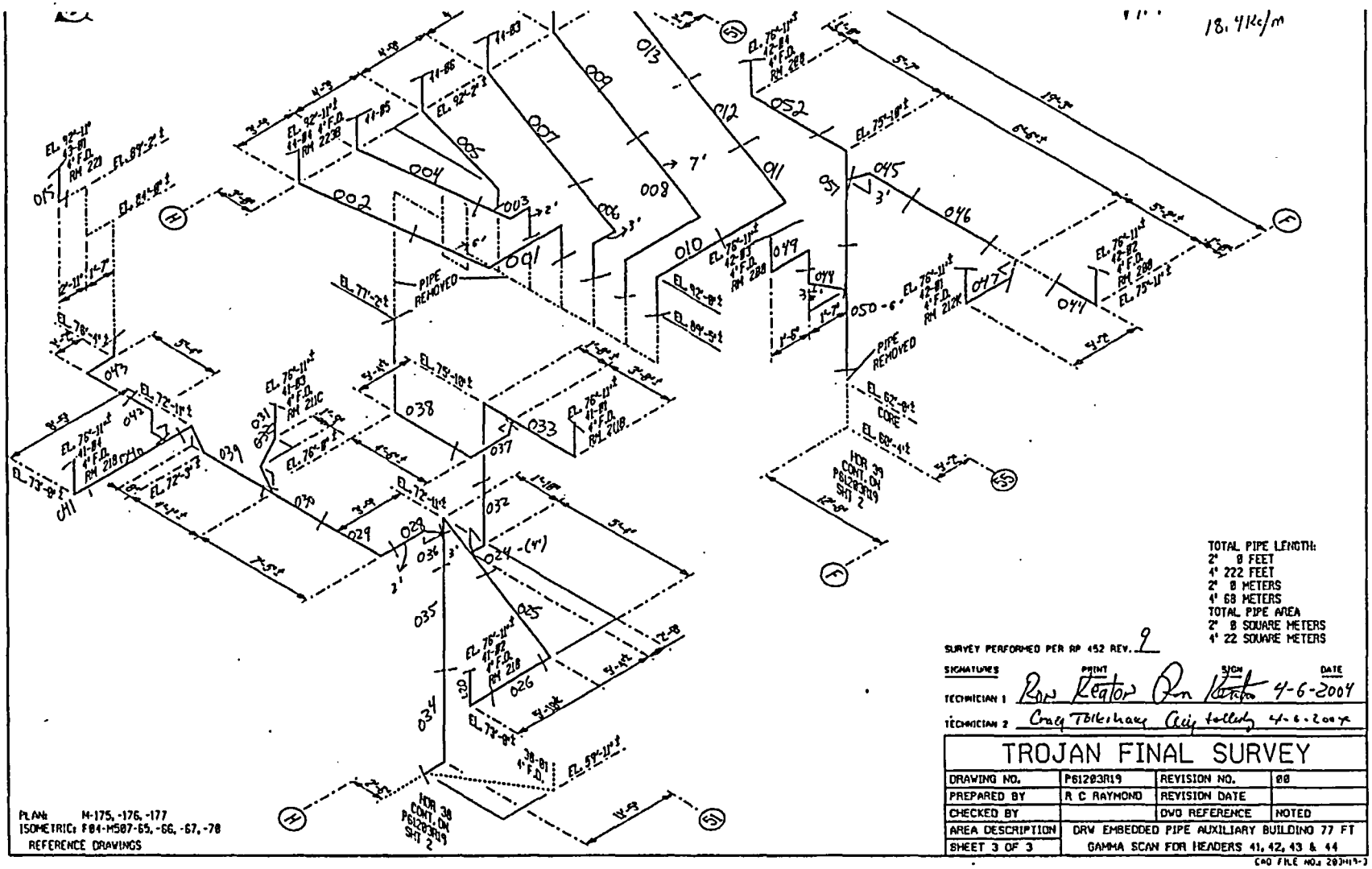


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203R
Survey Unit Name: AB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 56

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	62	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.034e+003
Maximum Value	:	1.739e+005
Range	:	1.749e+005
Median	:	7.804e+003
Std. Deviation	:	3.128e+004
Mean	:	1.952e+004
95% UCL	:	2.615e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	4.760e+003	000018	1.907e+003	000035	1.739e+005
000002	4.535e+003	000019	4.722e+003	000036	1.058e+005
000003	1.357e+004	000020	7.147e+003	000037	2.287e+003
000004	6.645e+003	000021	3.486e+004	000038	1.686e+003
000005	7.328e+003	000022	2.779e+004	000039	2.060e+003
000006	1.050e+004	000023	6.233e+003	000040	1.421e+003
000007	7.148e+003	000024	5.573e+003	000041	9.122e+002
000008	6.405e+003	000025	6.236e+003	000042	1.998e+004
000009	4.235e+003	000026	8.712e+003	000043	1.596e+004
000010	7.965e+003	000027	7.092e+003	000044	8.473e+003
000011	8.830e+002	000028	3.311e+003	000045	-1.034e+003
000012	3.963e+003	000029	1.453e+004	000046	2.087e+004
000013	2.054e+003	000030	7.642e+003	000047	1.180e+004
000014	4.946e+004	000031	5.805e+003	000048	5.818e+003
000015	1.197e+004	000032	1.440e+004	000049	4.118e+004
000016	2.810e+003	000033	5.861e+003	000050	1.773e+004
000017	7.867e+002	000034	1.266e+003	000051	1.142e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Scan Measurement Data

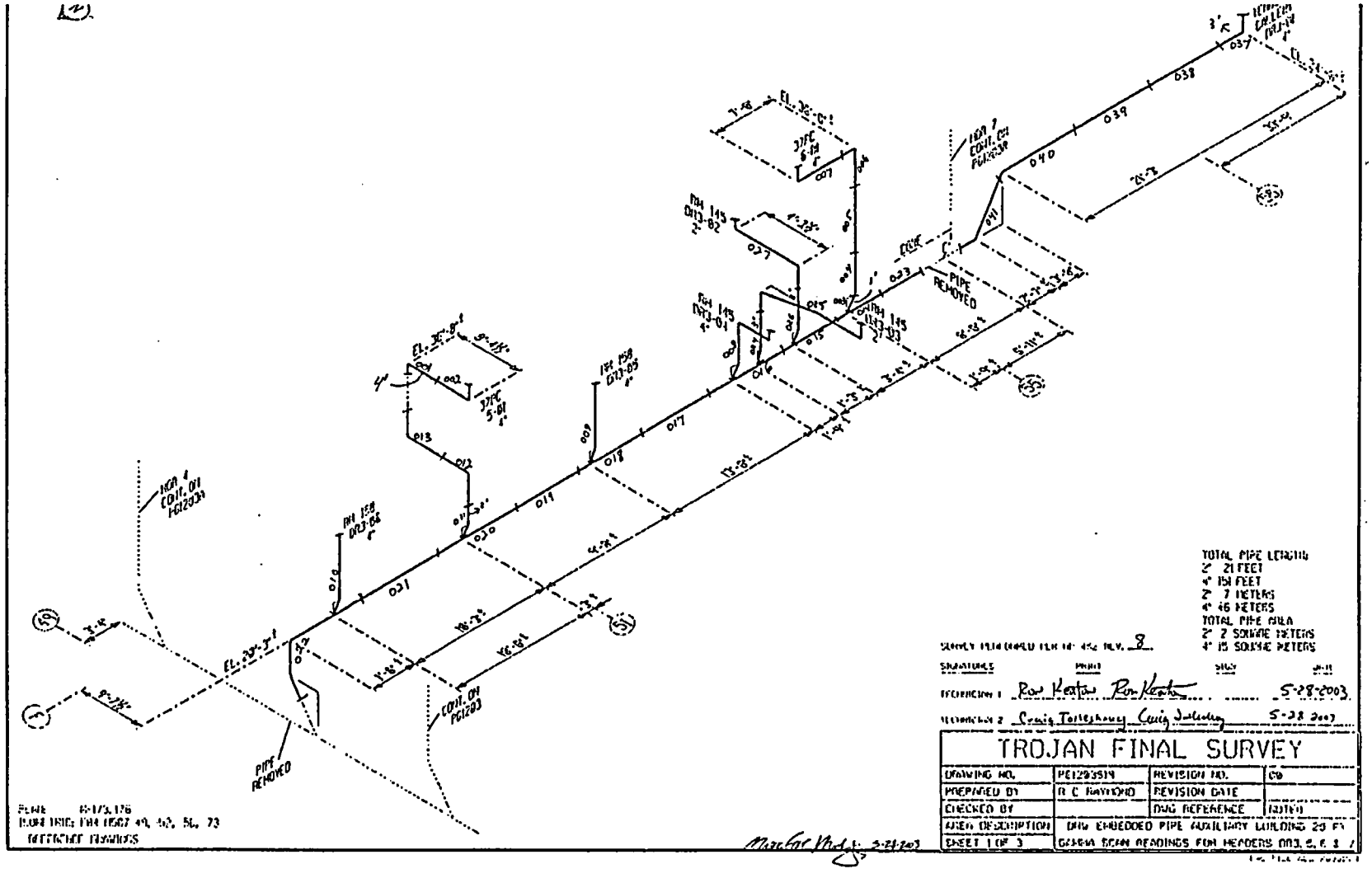
Location	Value
000052	8.393e+003
000053	9.295e+003
000054	1.187e+005
000055	5.386e+004
000056	9.751e+004
000057	9.298e+003
000058	3.623e+004
000059	3.014e+004
000060	2.439e+004
000061	3.702e+004
000062	3.674e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Scan Measurement Data

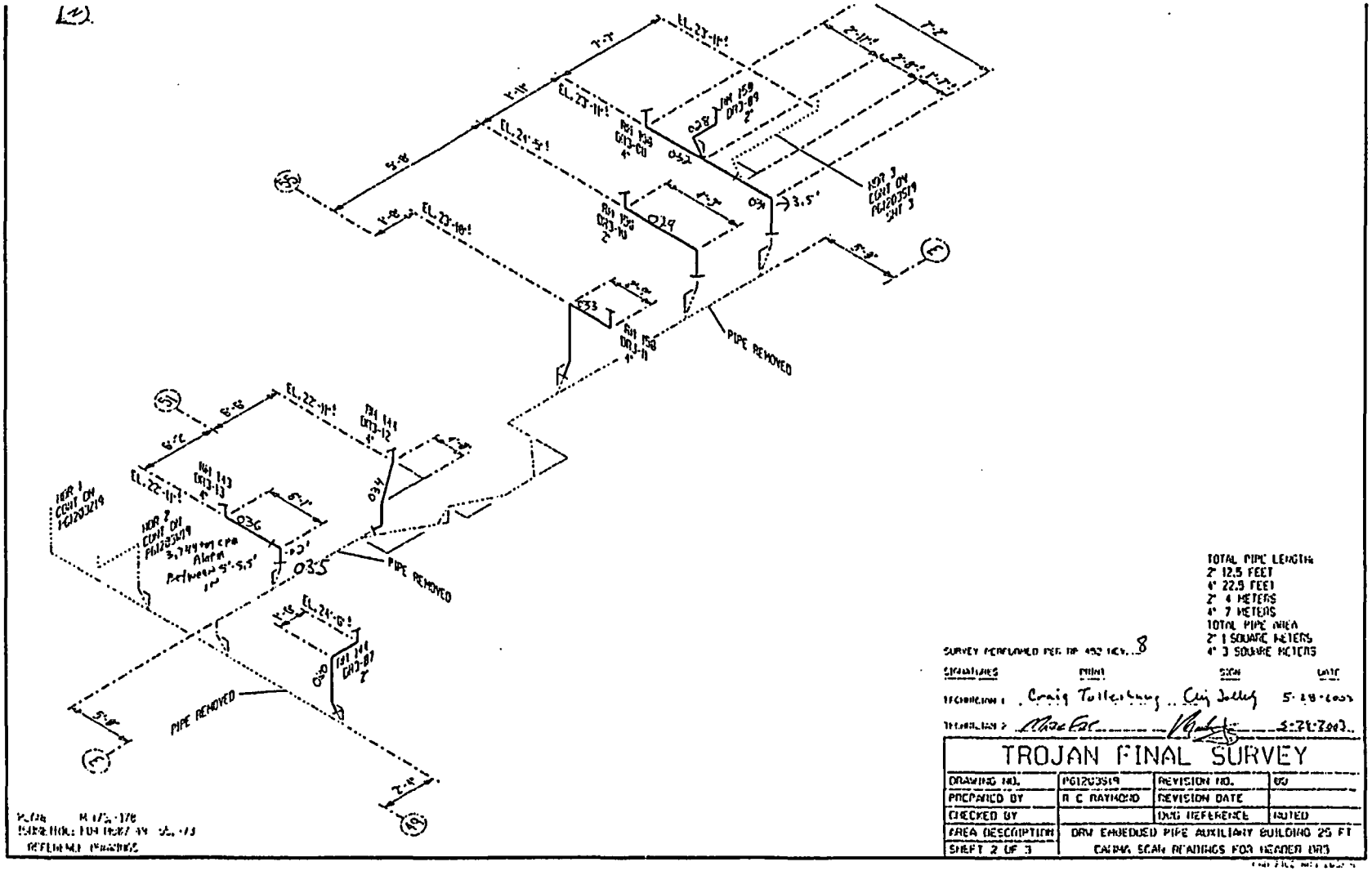


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Scan Measurement Data

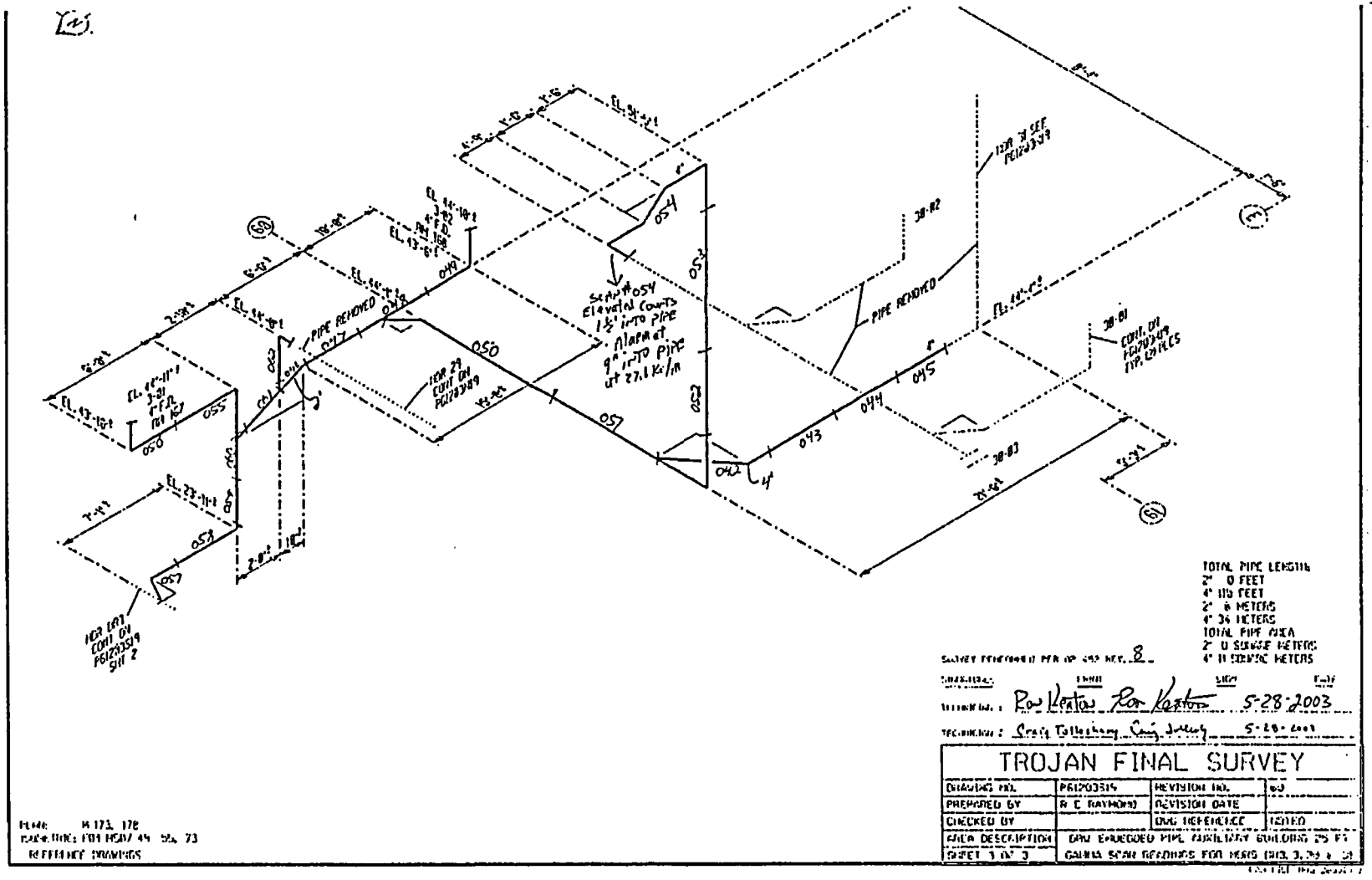


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203S
Survey Unit Name: AB 25' and 45' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 35

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203T
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	39	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	2.914e+003
Maximum Value	:	7.560e+004
Range	:	7.269e+004
Median	:	1.200e+004
Std. Deviation	:	1.471e+004
Mean	:	1.633e+004
95% UCL	:	2.030e+004

Measurement Values

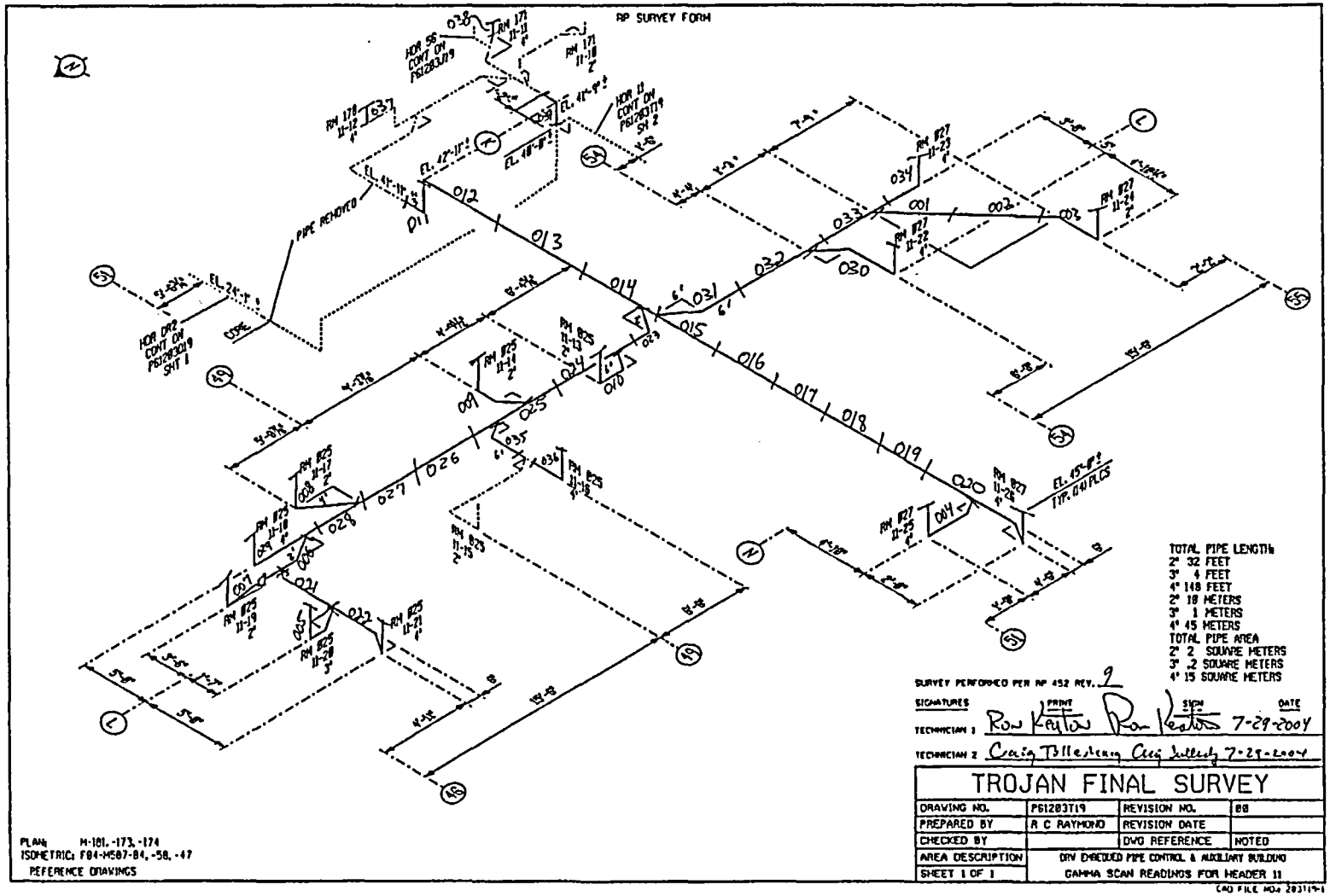
Location	Value	Location	Value	Location	Value
000001	8.638e+003	000018	5.664e+003	000035	9.409e+003
000002	8.638e+003	000019	6.136e+003	000036	1.200e+004
000003	9.569e+003	000020	6.157e+003	000037	2.914e+003
000004	8.518e+003	000021	7.869e+003	000038	1.732e+004
000005	1.370e+004	000022	5.890e+003	000039	8.232e+003
000006	1.917e+004	000023	1.521e+004		
000007	2.249e+004	000024	3.269e+004		
000008	1.611e+004	000025	4.206e+004		
000009	1.628e+004	000026	1.642e+004		
000010	1.146e+004	000027	1.527e+004		
000011	5.559e+004	000028	1.374e+004		
000012	3.695e+004	000029	1.423e+004		
000013	2.037e+004	000030	8.586e+003		
000014	1.439e+004	000031	7.560e+004		
000015	8.282e+003	000032	5.603e+003		
000016	6.983e+003	000033	7.495e+003		
000017	4.375e+003	000034	2.699e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203T
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	79	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-2.437e+003
Maximum Value	:	3.274e+004
Range	:	3.518e+004
Median	:	3.558e+003
Std. Deviation	:	8.463e+003
Mean	:	6.976e+003
95% UCL	:	8.563e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.558e+003	000021	3.274e+004	000038	2.884e+003
000002	2.277e+003	000022	1.492e+004	000039	5.844e+003
000003	3.211e+003	000023	7.243e+003	000040	1.396e+004
000004	4.471e+003	000024	8.880e+003	000041	5.299e+003
000005	1.947e+003	000025	1.142e+004	000042	1.444e+003
000006	9.511e+003	000026	1.160e+004	000043	4.108e+002
000008	3.024e+004	000027	5.998e+003	000044	-6.011e+002
000011	1.064e+004	000028	7.743e+003	000045	1.620e+003
000012	7.167e+003	000029	1.099e+004	000046	2.016e+002
000013	6.213e+003	000030	1.771e+004	000047	1.033e+002
000014	5.292e+003	000031	2.609e+004	000048	2.882e+003
000015	2.506e+004	000032	-1.777e+002	000049	1.327e+003
000016	1.824e+004	000033	2.095e+004	000050	1.446e+004
000017	3.867e+003	000034	4.284e+001	000051	-1.232e+003
000018	3.116e+003	000035	4.115e+003	000052	6.155e+003
000019	2.634e+003	000036	4.345e+003	000053	1.634e+004
000020	1.741e+003	000037	4.181e+003	000054	-3.075e+002

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data

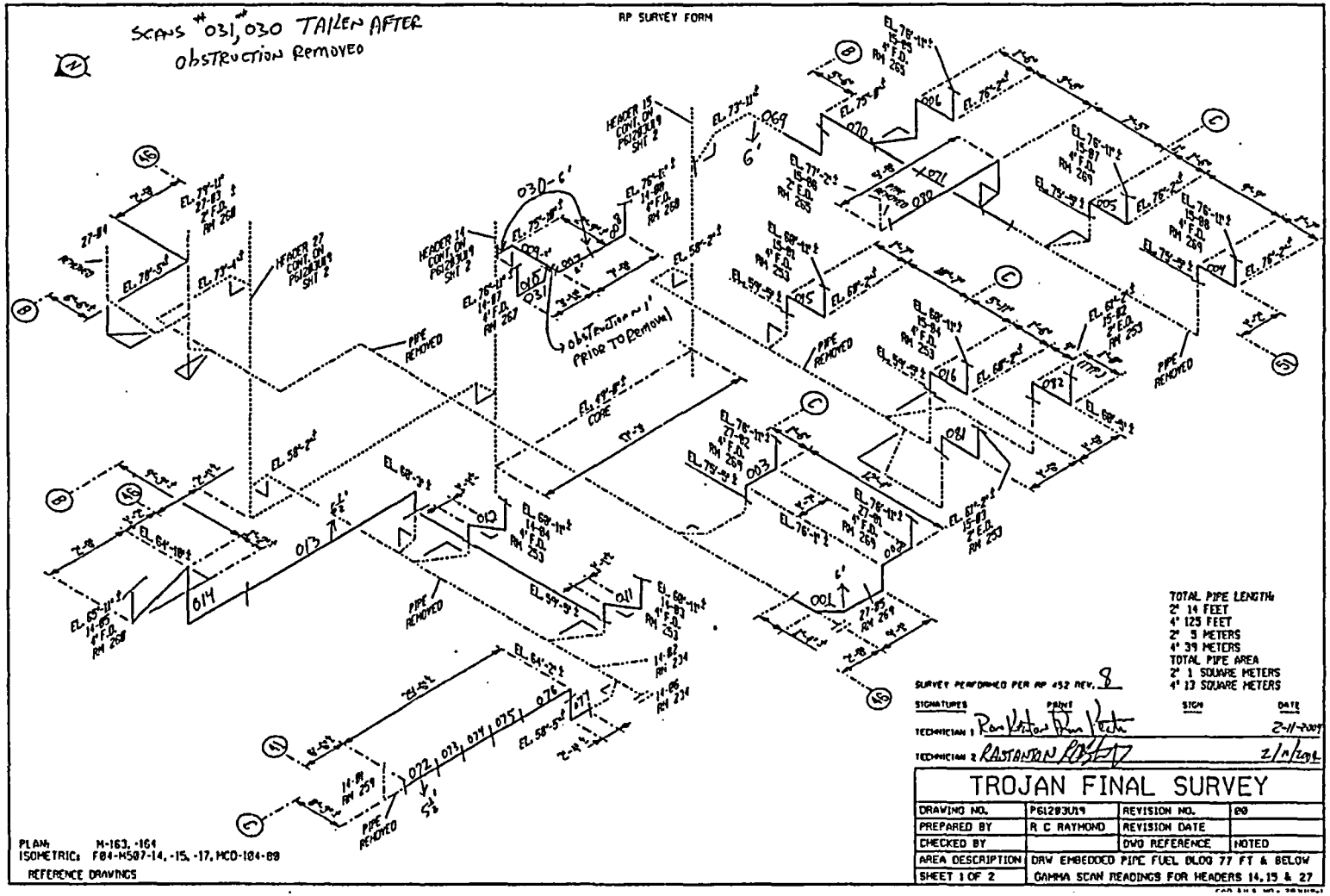
Location	Value
000055	-2.044e+003
000056	-2.437e+003
000057	-1.066e+003
000058	5.267e+002
000059	-3.654e+001
000060	1.329e+003
000061	1.085e+003
000062	2.195e+004
000063	2.474e+003
000064	-3.856e+002
000065	9.766e+002
000066	7.939e+001
000067	6.754e+002
000068	3.327e+003
000069	2.437e+004
000070	1.357e+003
000071	-4.826e+002
000072	2.865e+003
000073	8.190e+001
000074	9.274e+002
000075	1.550e+002
000076	1.143e+003
000077	1.282e+004
000078	1.538e+004
000079	1.599e+004
000080	3.119e+004
000081	8.460e+003
000082	1.164e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m²): 41

Scan Measurement Data

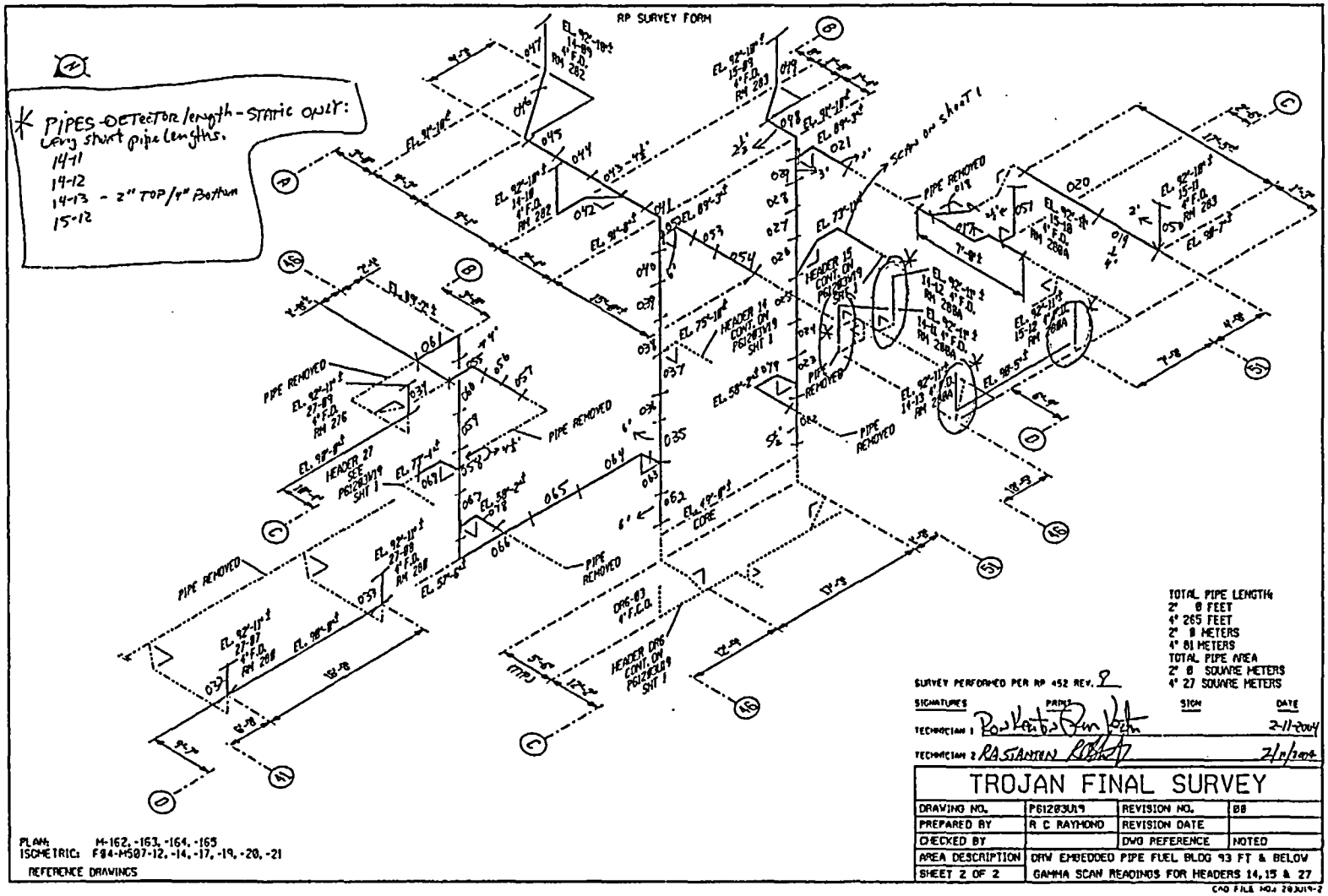


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203U
Survey Unit Name: FB 45', 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 41

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203V
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	39	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	4.109e+003
Maximum Value	:	1.631e+005
Range	:	1.590e+005
Median	:	9.009e+003
Std. Deviation	:	2.953e+004
Mean	:	1.814e+004
95% UCL	:	2.611e+004

Measurement Values

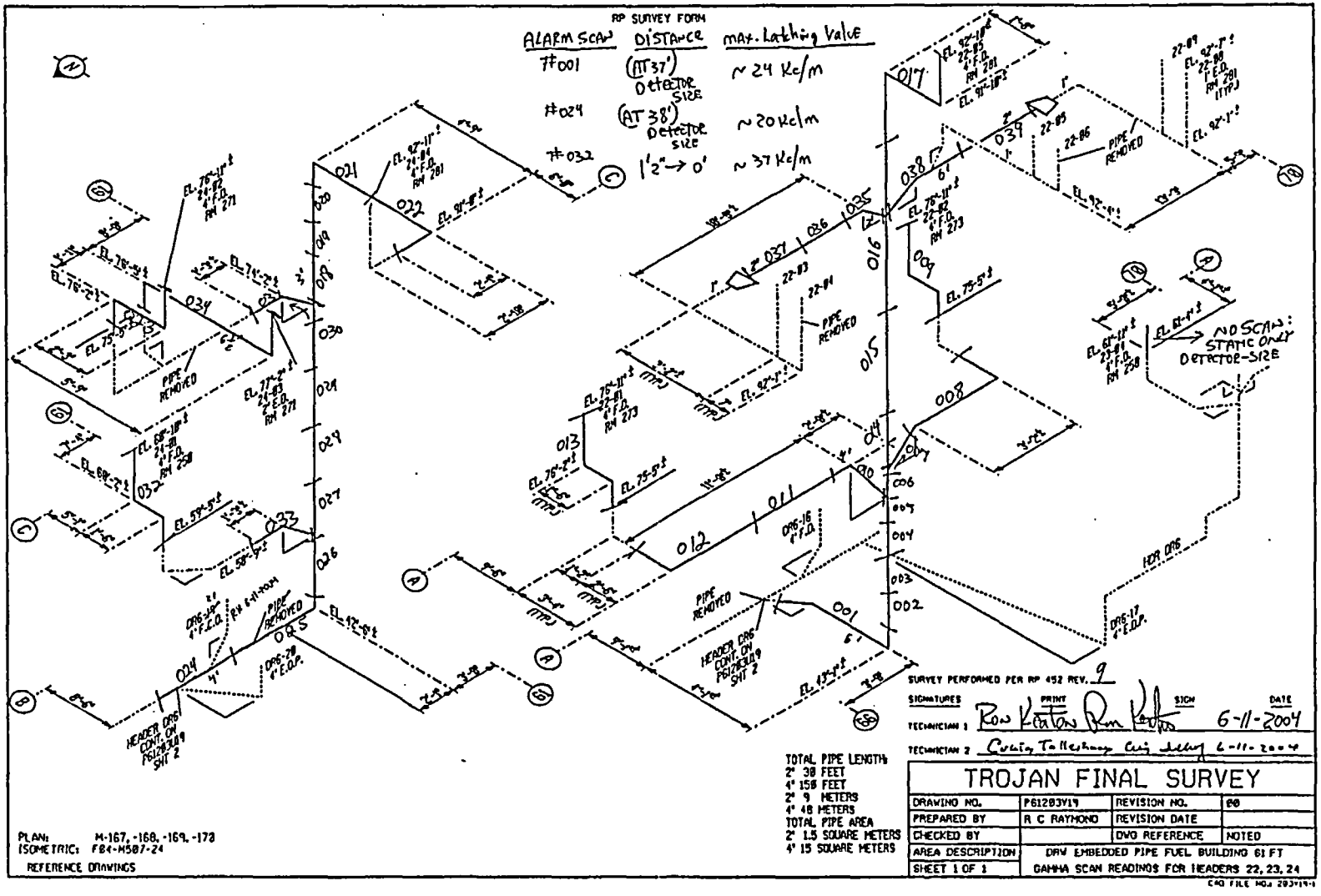
Location	Value	Location	Value	Location	Value
000001	9.208e+004	000018	6.839e+003	000035	6.914e+003
000002	1.168e+004	000019	4.109e+003	000036	7.363e+003
000003	1.336e+004	000020	7.157e+003	000037	4.736e+003
000004	1.251e+004	000021	6.355e+003	000038	9.922e+003
000005	1.251e+004	000022	6.214e+003	000039	8.838e+003
000006	1.078e+004	000023	7.447e+003		
000007	9.362e+003	000024	7.164e+004		
000008	5.708e+003	000025	1.141e+004		
000009	4.036e+004	000026	9.200e+003		
000010	1.320e+004	000027	1.043e+004		
000011	1.940e+004	000028	1.015e+004		
000012	2.871e+004	000029	8.432e+003		
000013	2.094e+004	000030	7.763e+003		
000014	5.624e+003	000031	5.125e+003		
000015	8.074e+003	000032	1.631e+005		
000016	5.719e+003	000033	7.738e+003		
000017	9.009e+003	000034	7.627e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203V
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 17

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W **Classification:** Class 1
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 43

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	91	DPM/100 CM²	1.000e+005	-	-

Scans

Statistical Quantities

Measurement Name:

Minimum Value	:	3.613e+002
Maximum Value	:	2.319e+005
Range	:	2.315e+005
Median	:	1.314e+004
Std. Deviation	:	3.047e+004
Mean	:	2.156e+004
95% UCL	:	2.688e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.613e+002	000018	1.071e+004	000035	1.455e+004
000002	1.086e+004	000019	2.161e+004	000036	1.136e+004
000003	1.038e+004	000020	9.853e+003	000037	1.144e+004
000004	1.318e+004	000021	1.449e+004	000038	1.538e+004
000005	2.274e+004	000022	1.393e+004	000039	1.336e+004
000006	2.240e+004	000023	1.420e+004	000040	1.437e+004
000007	1.538e+004	000024	1.026e+004	000041	2.031e+004
000008	1.325e+004	000025	3.341e+004	000042	1.418e+004
000009	1.087e+004	000026	1.886e+004	000043	1.402e+004
000010	3.150e+004	000027	1.744e+004	000044	9.838e+003
000011	1.279e+004	000028	1.314e+004	000045	1.280e+005
000012	1.543e+004	000029	1.673e+004	000046	8.273e+003
000013	1.127e+004	000030	2.720e+004	000047	9.930e+003
000014	1.149e+004	000031	4.118e+004	000048	1.134e+004
000015	9.053e+003	000032	4.938e+004	000049	1.935e+004
000016	2.342e+004	000033	7.435e+004	000050	1.265e+004
000017	1.523e+004	000034	2.356e+004	000051	9.479e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

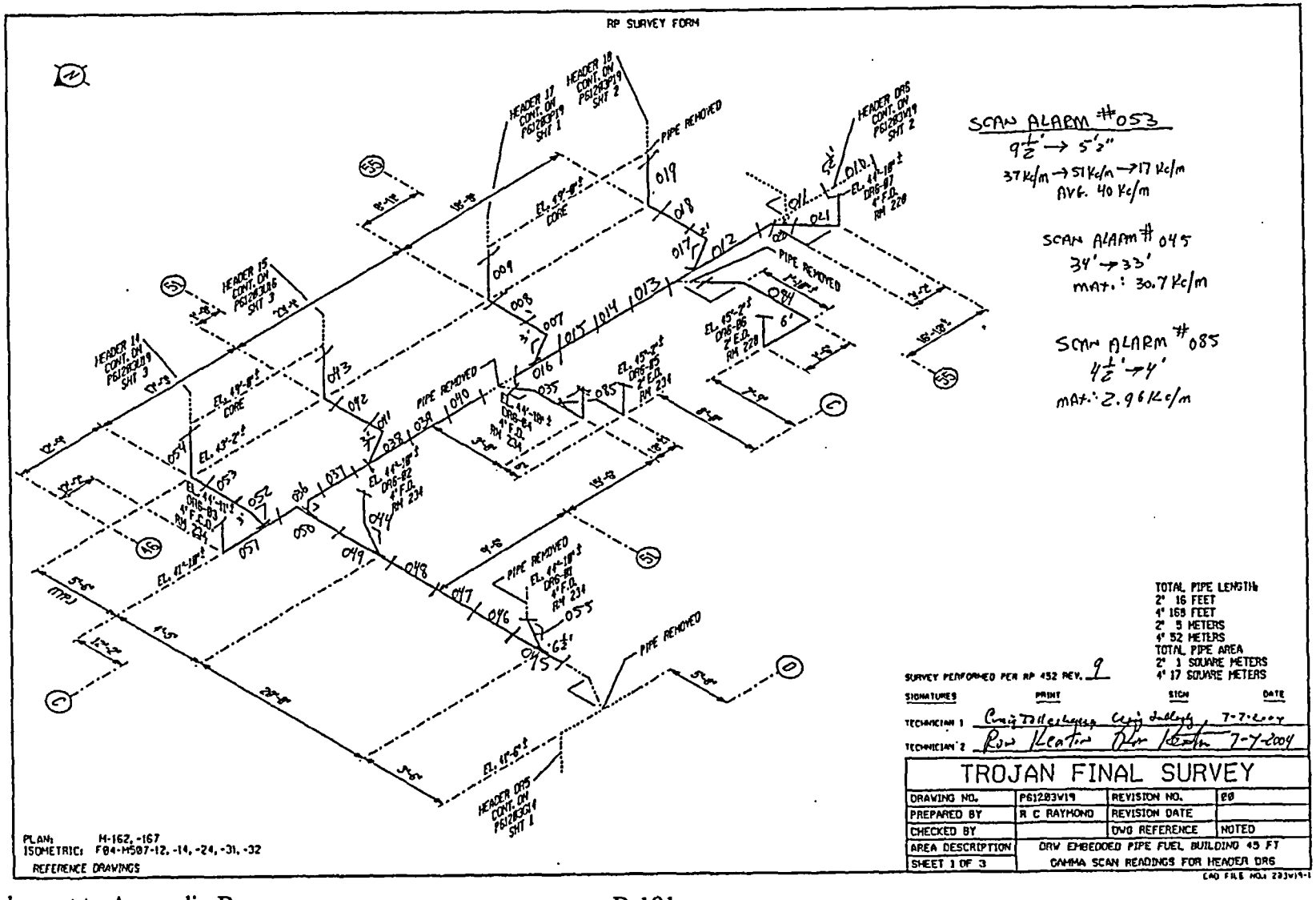
Location	Value
000052	3.032e+004
000053	2.319e+005
000054	5.145e+004
000055	3.308e+004
000056	3.098e+004
000057	9.821e+003
000058	7.537e+003
000059	9.341e+003
000060	1.062e+004
000061	7.283e+003
000062	2.476e+004
000063	1.211e+004
000064	2.880e+004
000065	1.064e+004
000066	2.177e+004
000067	2.274e+004
000068	1.723e+004
000069	6.745e+003
000070	1.147e+005
000071	1.184e+004
000072	3.735e+003
000073	8.139e+003
000074	5.927e+003
000075	1.191e+004
000076	9.197e+003
000077	4.658e+003
000078	6.622e+003
000079	6.482e+003
000080	1.428e+004
000081	1.068e+004
000082	1.731e+004
000083	6.436e+003
000084	1.264e+004
000085	9.804e+004
000086	9.316e+003
000087	8.359e+003
000088	1.157e+004
000089	9.883e+003
000090	7.217e+003
000091	8.555e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

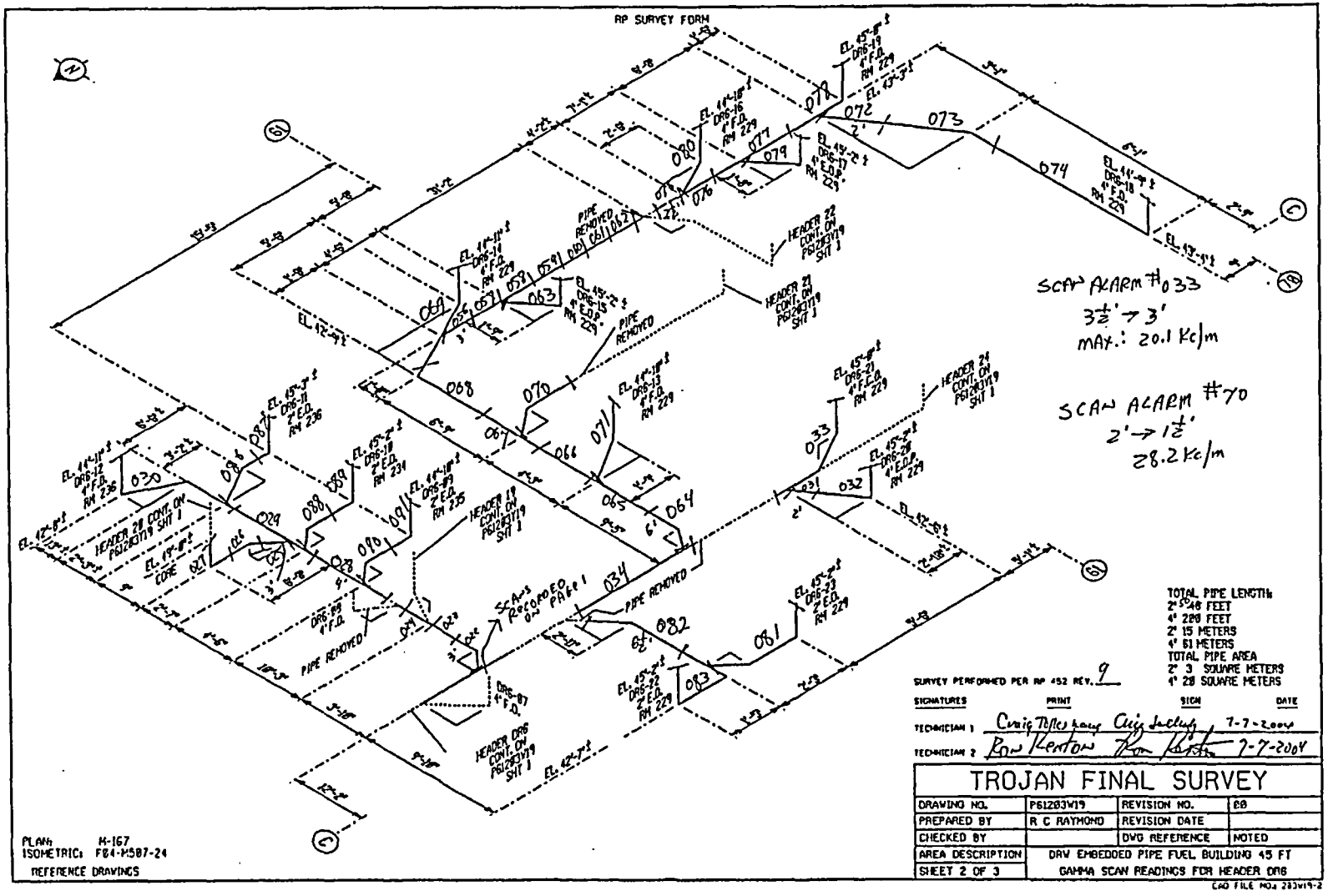


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data

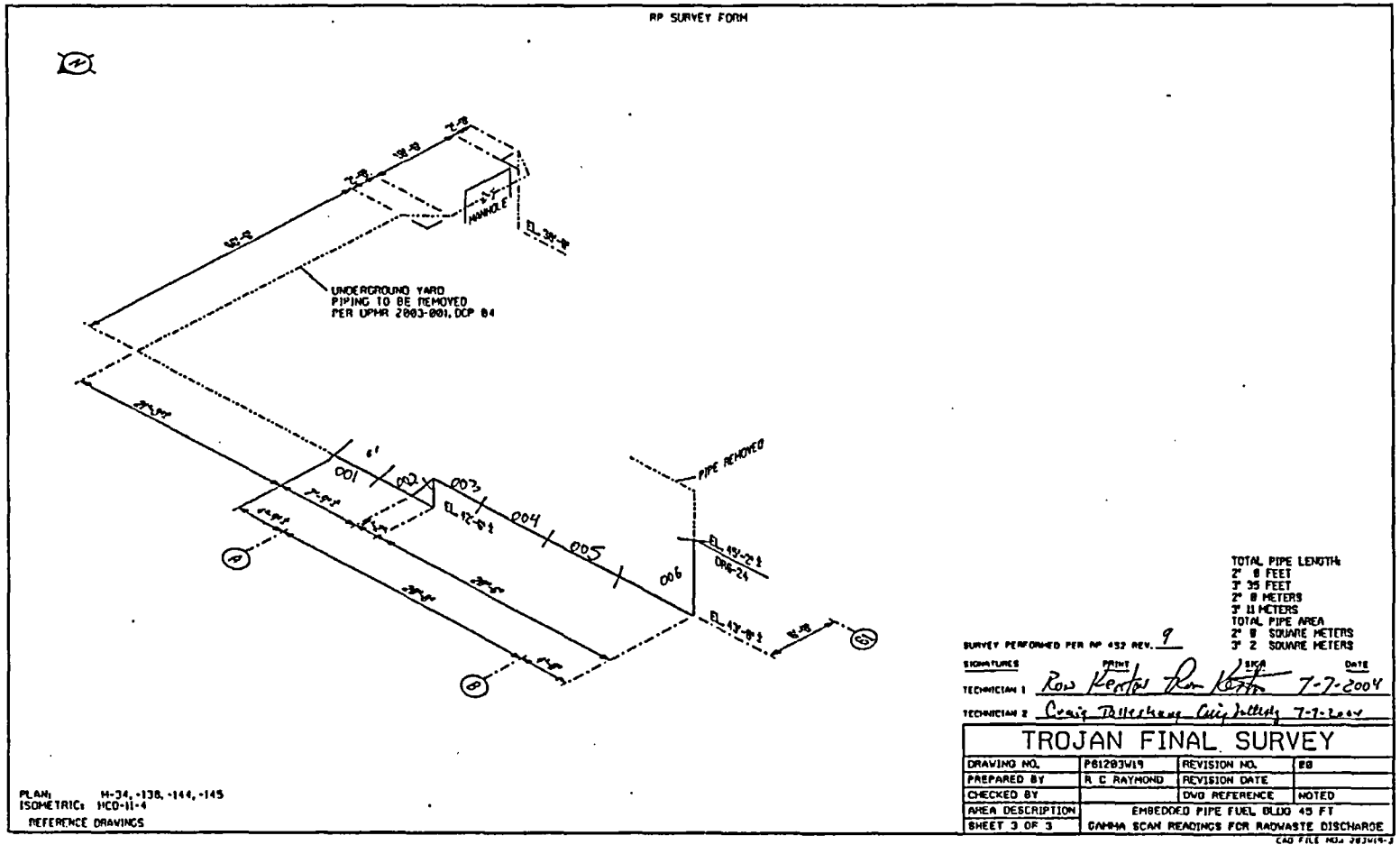


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203W
Survey Unit Name: AB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 43

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X **Classification:** Class 1
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 26

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	54	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	-3.369e+003
Maximum Value :	2.610e+004
Range :	2.947e+004
Median :	6.945e+003
Std. Deviation :	5.546e+003
Mean :	7.288e+003
95% UCL :	8.552e+003

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.464e+003	000018	7.455e+003	000035	6.467e+003
000002	4.611e+003	000019	8.252e+003	000036	8.511e+003
000003	7.053e+003	000020	8.287e+003	000037	6.863e+003
000004	6.183e+003	000021	7.496e+003	000038	8.892e+003
000005	6.180e+003	000022	3.822e+003	000039	6.006e+003
000006	4.794e+003	000023	5.134e+003	000040	7.295e+003
000007	7.805e+003	000024	1.108e+004	000041	1.080e+004
000008	-2.921e+003	000025	1.220e+004	000042	9.258e+003
000009	-2.569e+003	000026	2.235e+004	000043	2.739e+003
000010	2.418e+003	000027	2.390e+004	000044	8.130e+002
000011	4.980e+003	000028	1.584e+004	000045	7.617e+002
000012	5.739e+003	000029	1.096e+004	000046	-3.369e+003
000013	5.315e+003	000030	8.303e+003	000047	-4.028e+002
000014	5.286e+003	000031	2.610e+004	000048	8.555e+003
000015	3.086e+003	000032	5.313e+003	000049	6.775e+003
000016	8.801e+003	000033	1.160e+004	000050	9.031e+003
000017	7.027e+003	000034	6.204e+003	000051	7.891e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X **Classification:** Class 1
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 26

Scan Measurement Data

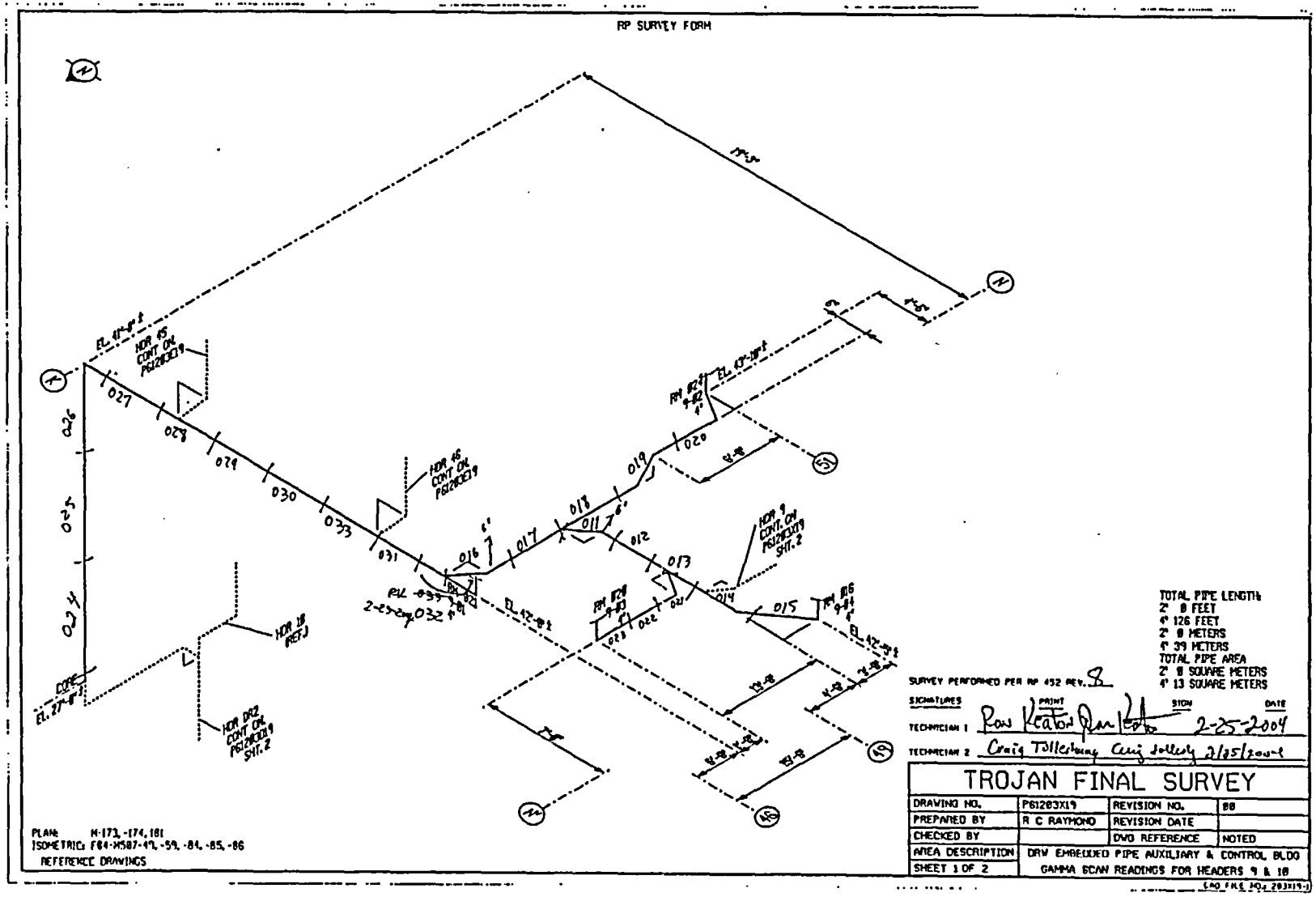
Location	Value
000052	9.408e+003
000053	6.786e+003
000054	8.906e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

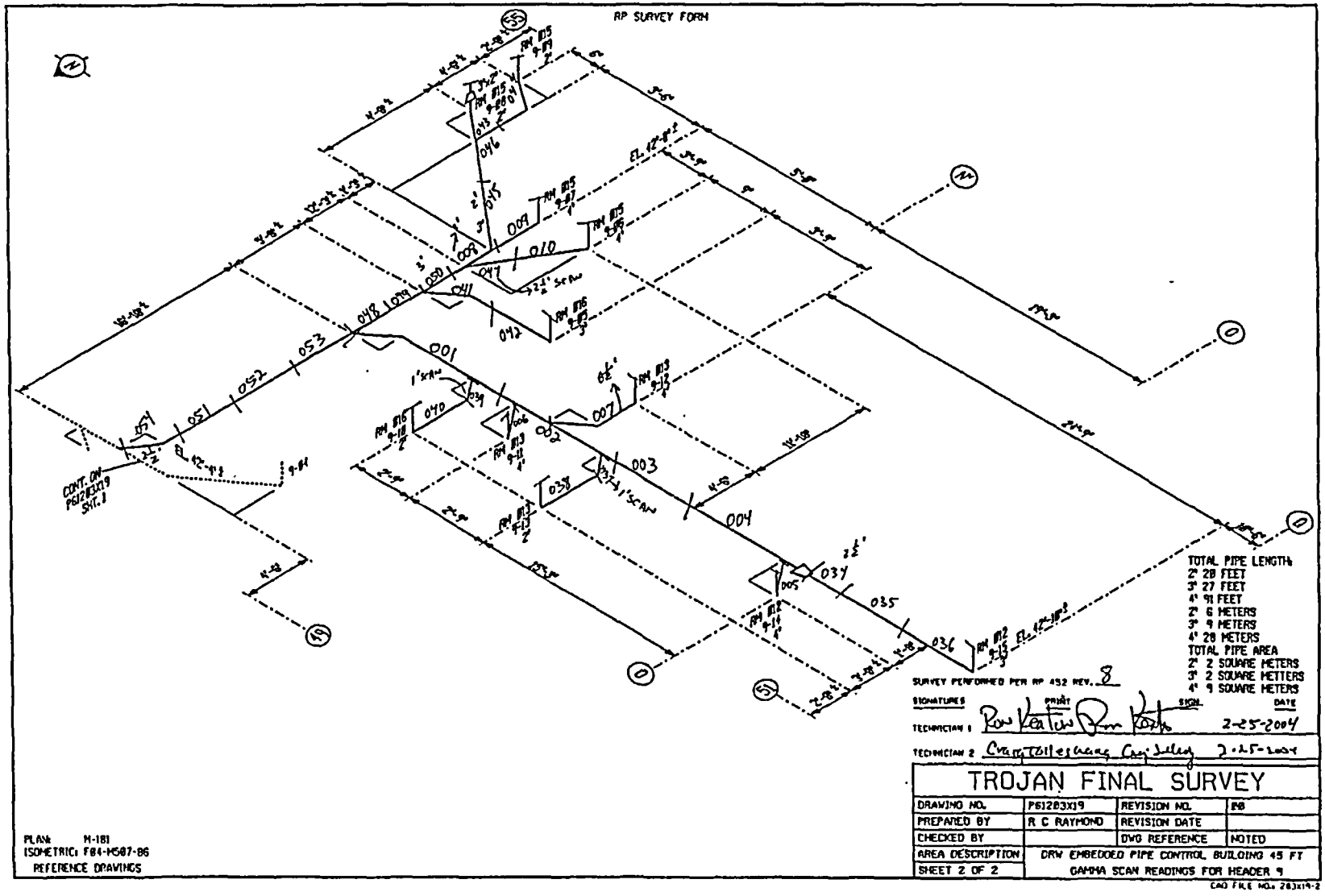


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203X
Survey Unit Name: AB/CB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 26

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Y
Survey Unit Name: AB 61', 77', and 93' Elevations - Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	34	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	2.971e+002
Maximum Value	:	7.972e+004
Range	:	7.942e+004
Median	:	1.000e+004
Std. Deviation	:	2.633e+004
Mean	:	2.309e+004
95% UCL	:	3.073e+004

Measurement Values

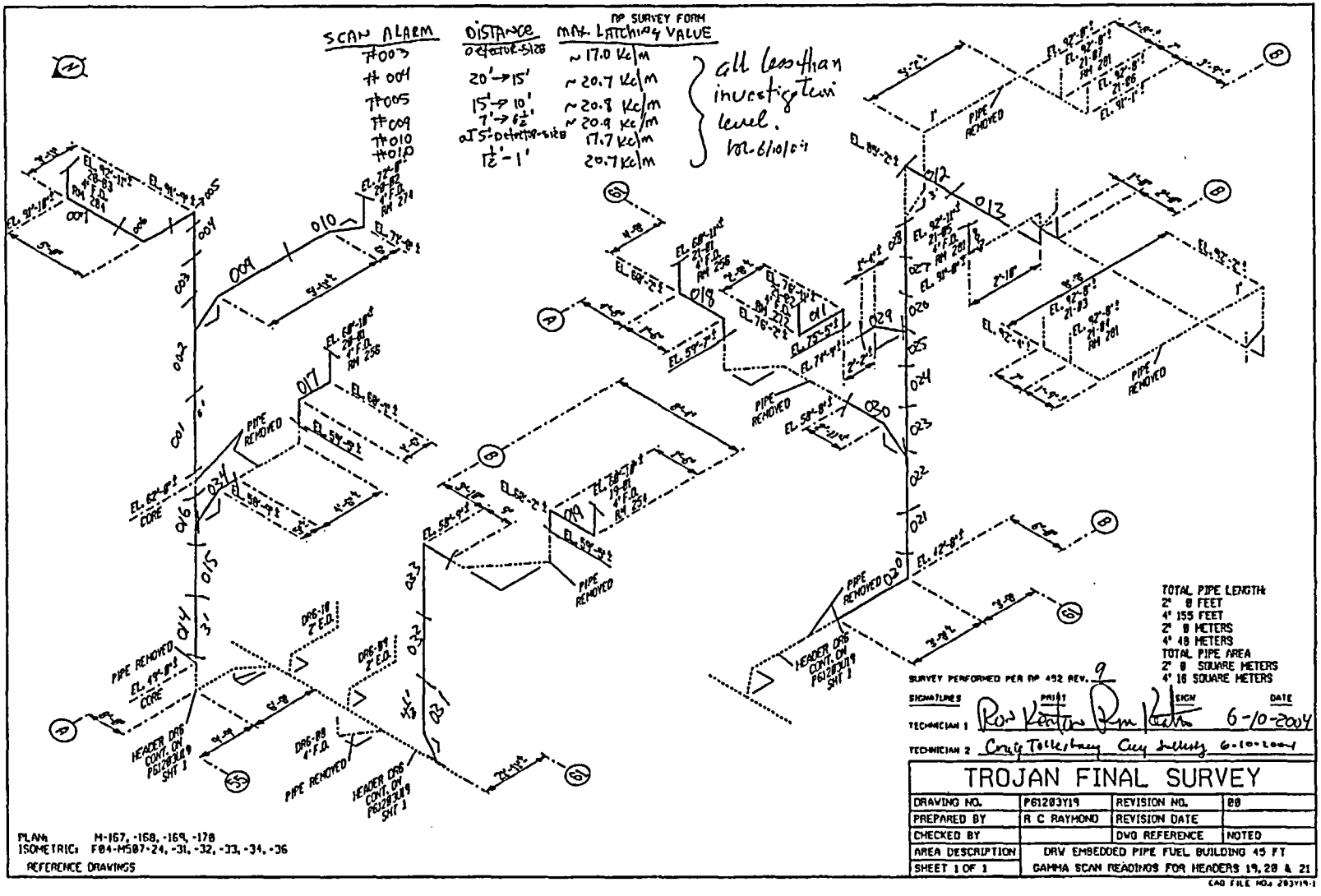
Location	Value	Location	Value	Location	Value
000001	5.811e+004	000018	1.377e+003		
000002	5.264e+004	000019	4.007e+003		
000003	6.024e+004	000020	1.300e+004		
000004	7.897e+004	000021	1.092e+004		
000005	7.916e+004	000022	1.058e+004		
000006	4.434e+004	000023	8.834e+003		
000007	2.607e+004	000024	4.245e+003		
000008	2.372e+003	000025	8.260e+003		
000009	7.972e+004	000026	7.931e+003		
000010	7.881e+004	000027	4.029e+003		
000011	4.256e+003	000028	6.578e+003		
000012	1.486e+004	000029	8.311e+003		
000013	8.551e+003	000030	8.507e+003		
000014	1.402e+004	000031	1.259e+004		
000015	9.425e+003	000032	2.076e+003		
000016	4.090e+004	000033	8.292e+003		
000017	2.971e+002	000034	1.263e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Y
Survey Unit Name: AB 61', 77', and 93' Elevations – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 16

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 34

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	76	DPM/100 CM²	1.000e+005	-	-

Scans

Statistical Quantities

Measurement Name:

Minimum Value	:	-4.395e+003
Maximum Value	:	1.312e+005
Range	:	1.356e+005
Median	:	5.944e+003
Std. Deviation	:	1.621e+004
Mean	:	9.049e+003
95% UCL	:	1.215e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	-1.385e+003	000018	4.766e+003	000035	6.000e+003
000002	-3.196e+002	000019	2.861e+003	000036	6.062e+003
000003	-4.830e+002	000020	9.091e+002	000037	5.129e+003
000004	-1.660e+003	000021	-1.521e+003	000038	1.357e+004
000005	-1.190e+003	000022	-2.856e+003	000039	5.417e+003
000006	1.456e+002	000023	-1.441e+003	000040	5.704e+003
000007	-5.374e+002	000024	1.031e+004	000041	6.954e+003
000008	-5.303e+002	000025	6.719e+003	000042	4.193e+002
000009	1.409e+002	000026	8.760e+003	000043	4.035e+003
000010	1.202e+004	000027	9.158e+003	000044	6.966e+003
000011	1.260e+003	000028	5.483e+003	000045	5.887e+003
000012	2.207e+003	000029	8.287e+003	000046	-4.395e+003
000013	1.426e+003	000030	1.143e+004	000047	2.343e+003
000014	7.813e+001	000031	7.875e+003	000048	1.282e+004
000015	1.641e+003	000032	1.312e+005	000049	2.883e+003
000016	1.729e+003	000033	1.371e+004	000050	4.165e+003
000017	2.764e+003	000034	1.382e+004	000051	3.597e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z **Classification:** Class 1
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains **Size (m^2):** 34

Scan Measurement Data

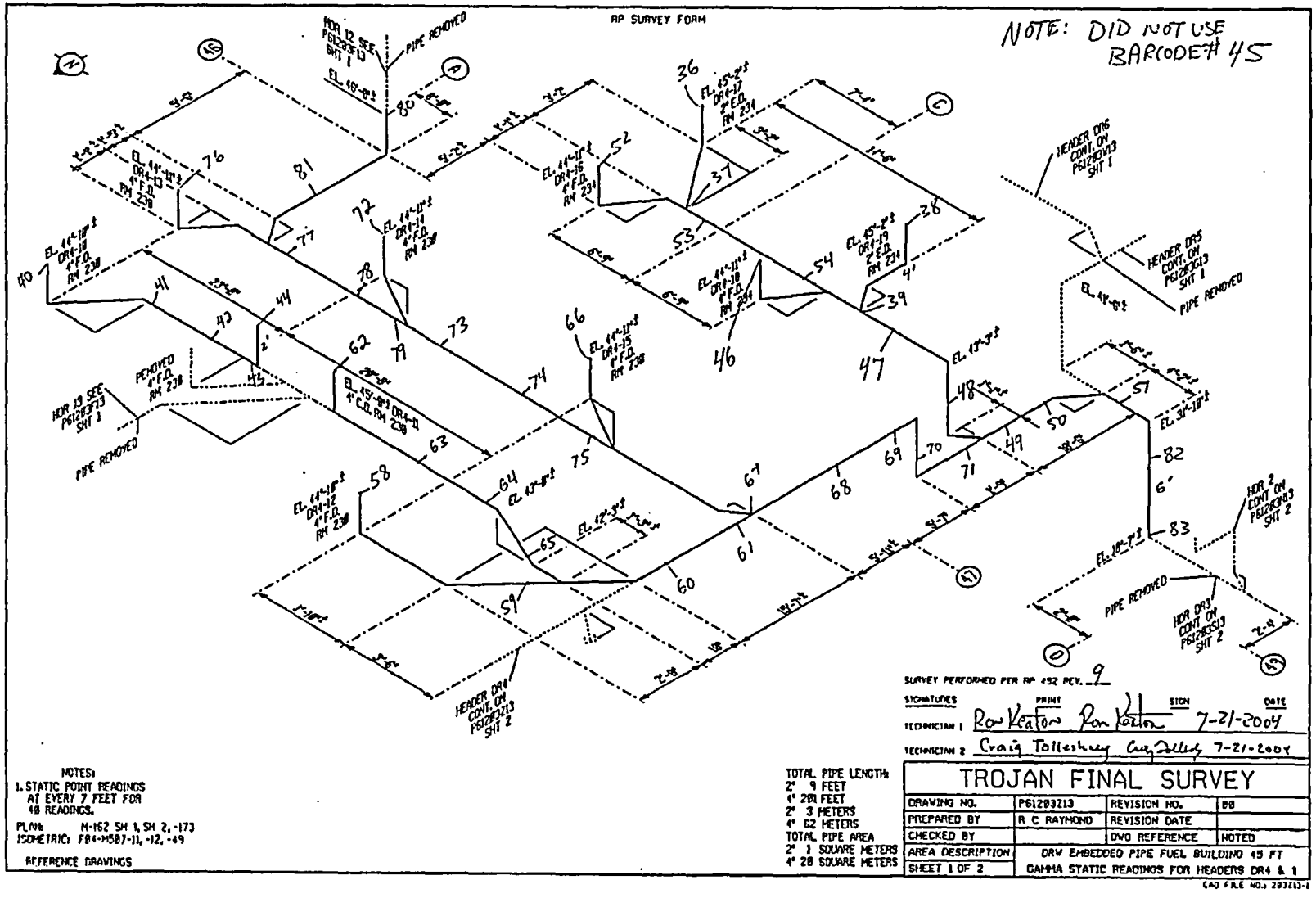
Location	Value
000052	3.521e+003
000053	6.961e+003
000054	1.113e+004
000055	3.725e+004
000056	1.617e+004
000057	2.234e+004
000058	1.325e+004
000059	1.312e+004
000060	1.868e+004
000061	1.072e+004
000062	5.608e+003
000063	1.812e+004
000064	7.968e+003
000065	1.058e+004
000066	4.956e+003
000067	4.805e+003
000068	6.278e+003
000069	8.042e+003
000070	7.287e+003
000071	1.569e+004
000072	1.726e+004
000073	1.203e+004
000074	2.918e+004
000075	2.438e+004
000076	2.805e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 34

Scan Measurement Data

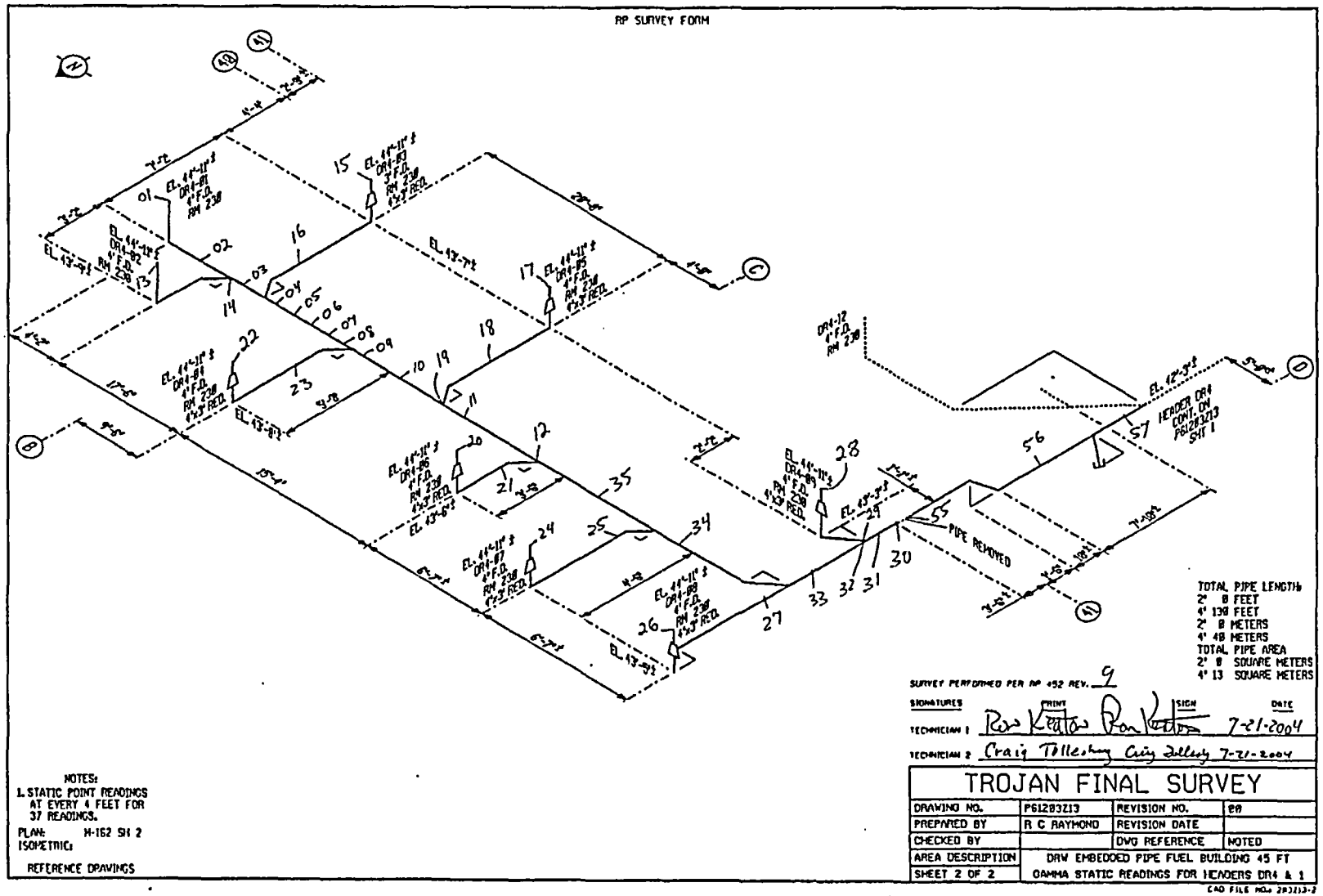


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61203Z
Survey Unit Name: AB/FB 45' Elevation – Dirty Radwaste Drains

Classification: Class 1
Size (m^2): 34

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	43	DPM/100 CM²	1.000e+005	-	-

Scans

Statistical Quantities

Measurement Name:

Minimum Value	:	4.288e+003
Maximum Value	:	1.151e+005
Range	:	1.108e+005
Median	:	1.287e+004
Std. Deviation	:	1.802e+004
Mean	:	1.732e+004
95% UCL	:	2.195e+004

Measurement Values

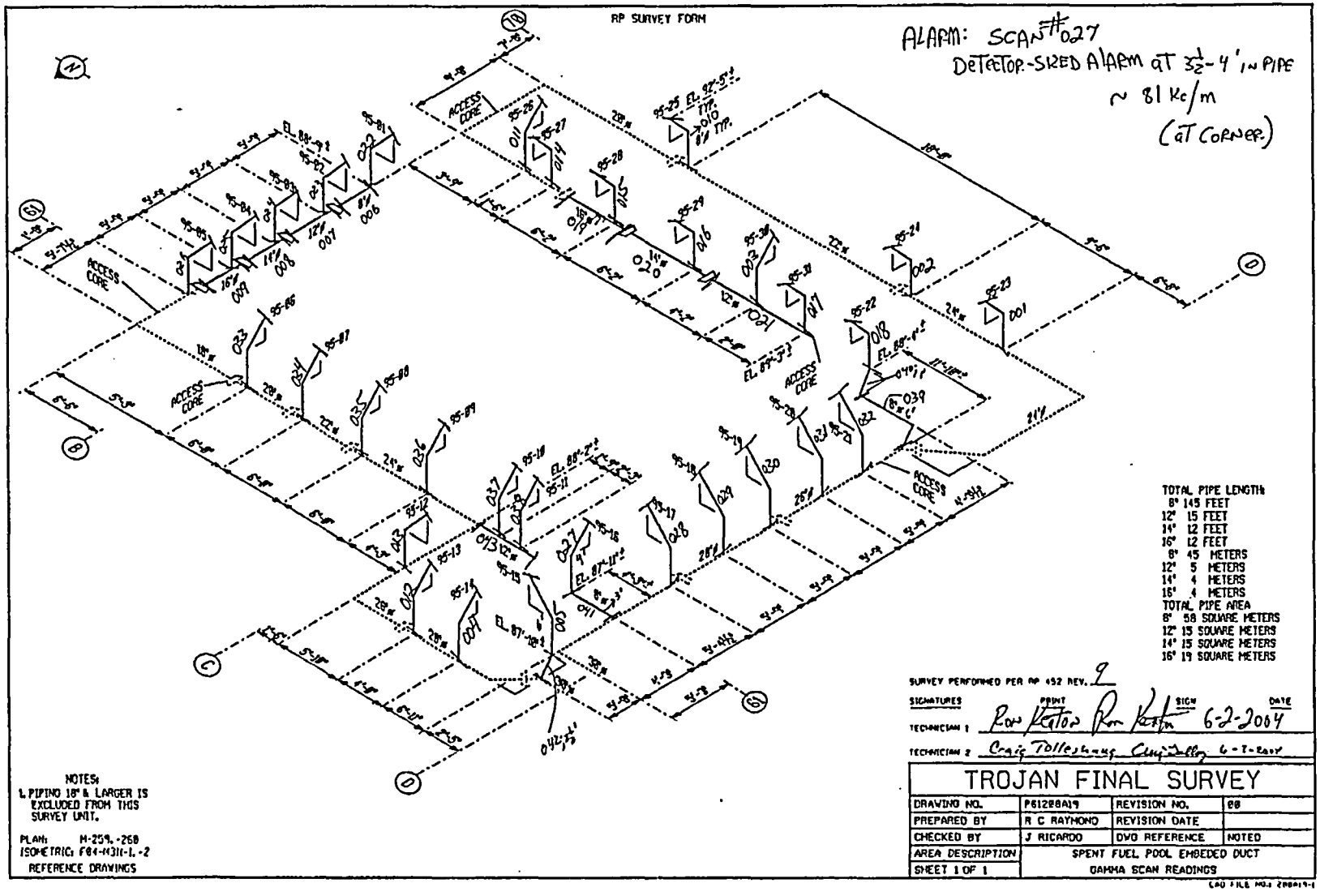
Location	Value	Location	Value	Location	Value
000001	1.651e+004	000018	1.483e+004	000035	8.960e+003
000002	1.523e+004	000019	9.056e+003	000036	2.302e+004
000003	2.388e+004	000020	8.160e+003	000037	6.556e+003
000004	3.562e+004	000021	1.287e+004	000038	1.313e+004
000005	3.078e+004	000022	9.757e+003	000039	4.288e+003
000006	1.557e+004	000023	5.103e+003	000040	8.867e+003
000007	7.273e+003	000024	6.162e+003	000041	1.420e+004
000008	3.461e+004	000025	7.166e+003	000042	1.377e+004
000009	6.487e+003	000026	1.012e+004	000043	5.156e+003
000010	2.585e+004	000027	1.151e+005		
000011	2.147e+004	000028	1.521e+004		
000012	3.899e+004	000029	2.750e+004		
000013	3.854e+004	000030	1.977e+004		
000014	7.768e+003	000031	1.437e+004		
000015	5.656e+003	000032	1.160e+004		
000016	1.076e+004	000033	8.377e+003		
000017	7.915e+003	000034	8.948e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61208A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool Exhaust

Classification: Class 1
Size (m^2): 107

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	78	DPM/100 CM²	1.000e+005	-	-

Scans

Statistical Quantities

Measurement Name:

Minimum Value	:	1.181e+004
Maximum Value	:	3.882e+005
Range	:	3.764e+005
Median	:	2.705e+004
Std. Deviation	:	5.295e+004
Mean	:	4.379e+004
95% UCL	:	5.379e+004

Measurement Values

Location	Value	Location	Value	Location	Value
000001	3.417e+004	000018	3.636e+004	000035	1.255e+004
000002	1.181e+004	000019	2.266e+004	000036	2.192e+004
000003	2.595e+004	000020	2.280e+004	000037	1.241e+004
000004	1.795e+004	000021	1.941e+004	000038	8.666e+004
000005	2.033e+004	000022	2.396e+004	000039	8.740e+004
000006	2.191e+004	000023	1.735e+004	000040	8.118e+004
000007	2.872e+004	000024	1.787e+004	000041	6.539e+004
000008	2.562e+004	000025	2.729e+004	000042	4.905e+004
000009	3.064e+004	000026	2.674e+004	000043	4.413e+004
000010	4.022e+004	000027	2.438e+004	000044	6.112e+004
000011	3.810e+004	000028	2.638e+004	000045	7.704e+004
000012	4.421e+004	000029	3.601e+004	000046	2.319e+004
000013	2.306e+004	000030	2.707e+004	000047	1.362e+004
000014	2.059e+004	000031	2.763e+004	000048	6.641e+004
000015	1.849e+004	000032	3.277e+004	000049	3.325e+004
000016	2.186e+004	000033	3.577e+004	000050	2.077e+004
000017	2.520e+004	000034	2.071e+004	000051	2.099e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

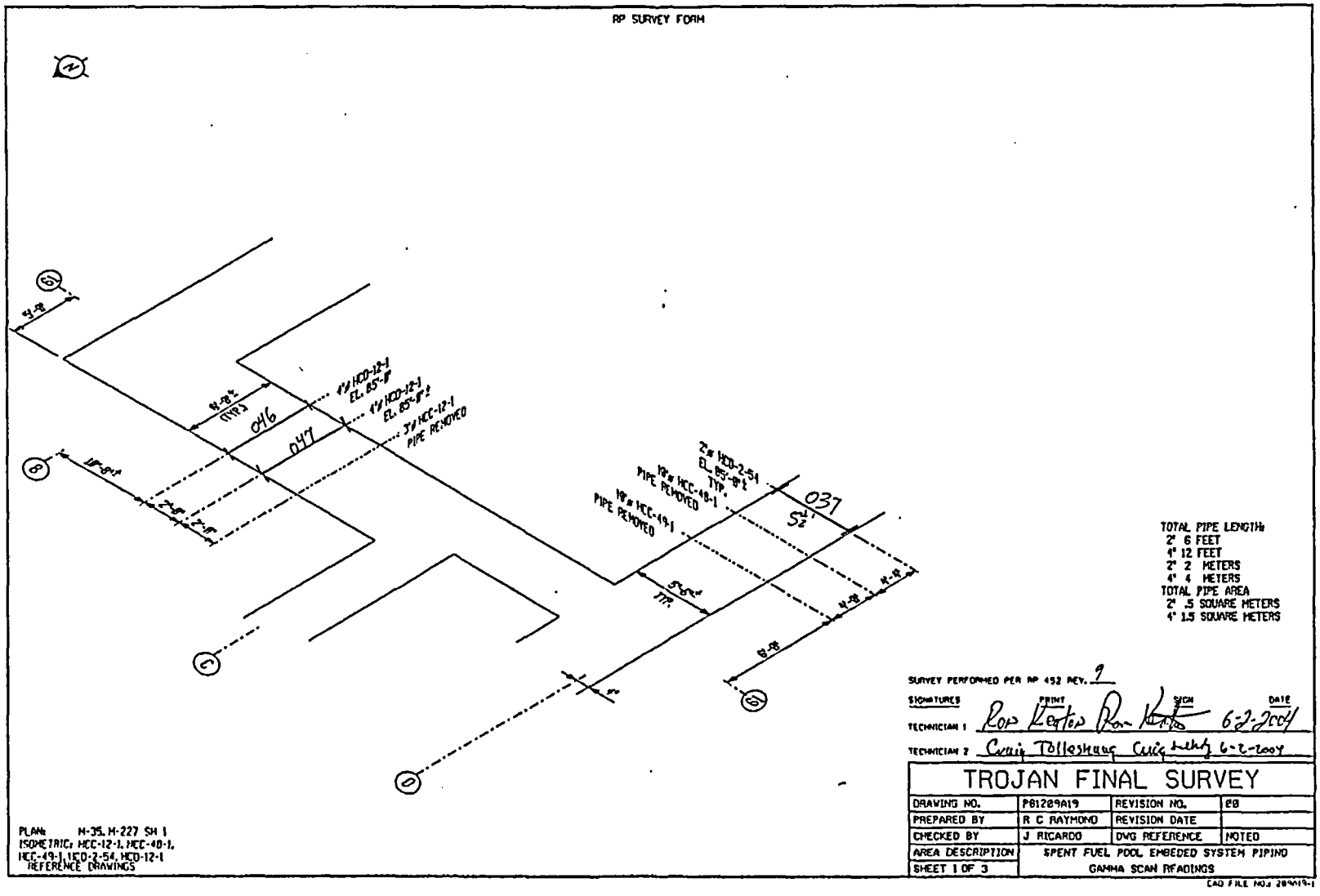
Location	Value
000052	2.003e+004
000053	1.986e+004
000054	1.982e+004
000055	1.522e+004
000056	1.878e+004
000057	2.017e+004
000058	2.135e+004
000059	4.827e+004
000060	6.431e+004
000061	7.289e+004
000062	1.399e+005
000063	3.882e+005
000064	2.140e+004
000065	3.867e+004
000066	3.809e+004
000067	2.935e+004
000068	1.163e+005
000069	2.658e+005
000070	4.719e+004
000071	3.307e+004
000072	3.832e+004
000073	2.702e+004
000074	2.455e+004
000075	2.527e+004
000076	5.402e+004
000077	6.510e+004
000078	7.169e+004

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

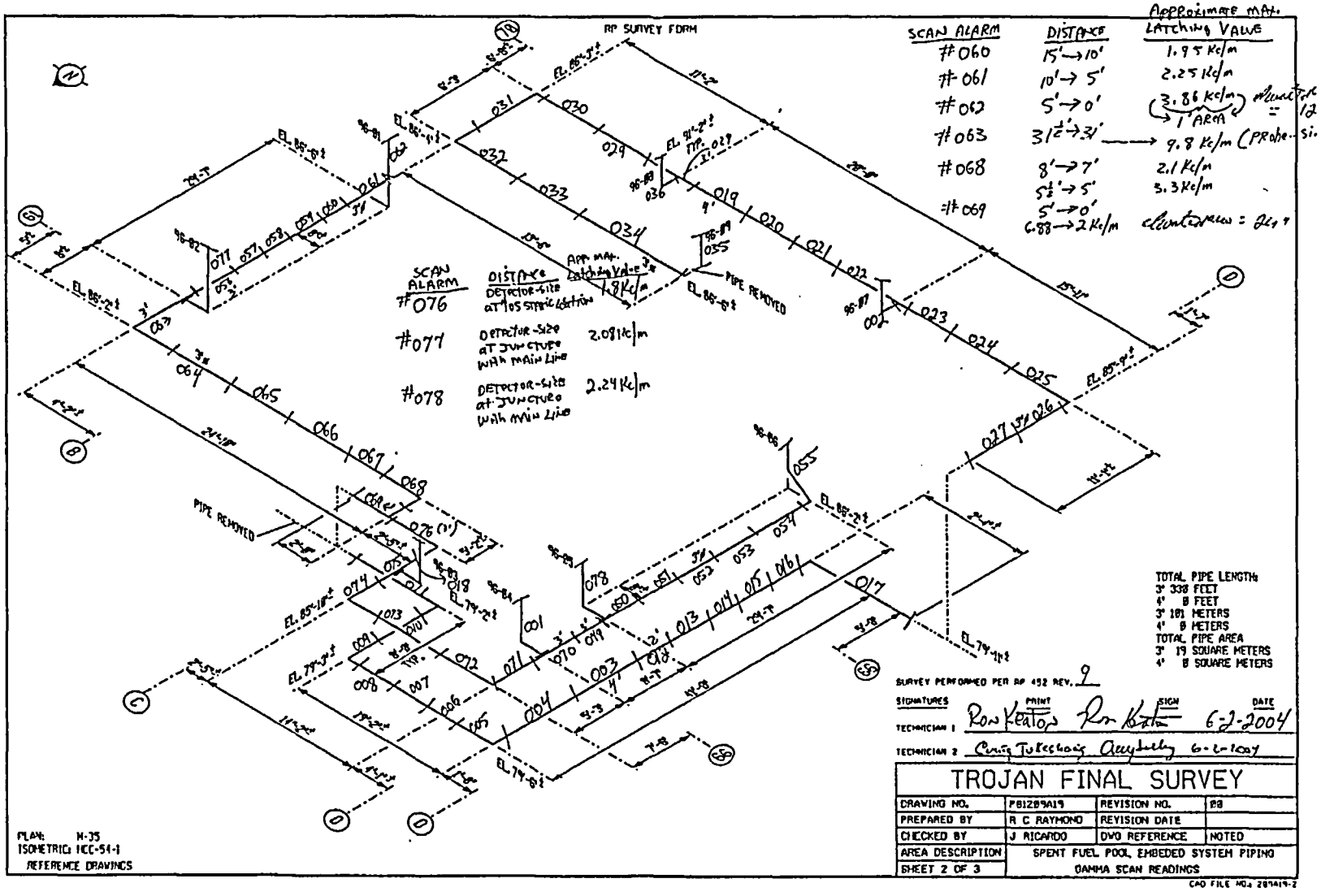


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Scan Measurement Data

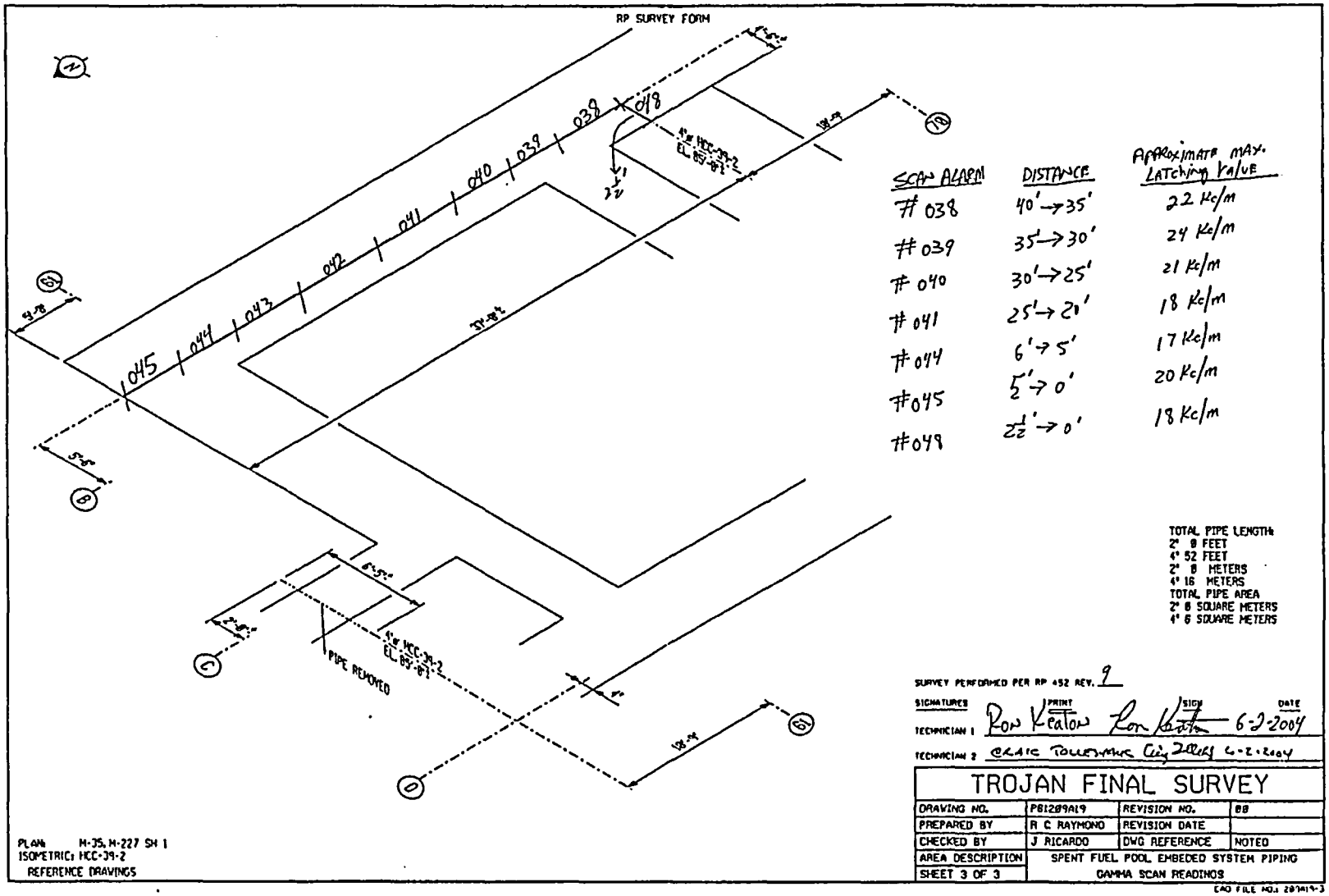


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61209A
Survey Unit Name: FB 77' and 93' Elevations – Spent Fuel Pool System

Classification: Class 1
Size (m^2): 26

Scan Measurement Data



SCAN ALARM	DISTANCE	APPROXIMATE MAX. LATCHING VALUE
# 038	40' → 35'	22 Kc/m
# 039	35' → 30'	24 Kc/m
# 040	30' → 25'	21 Kc/m
# 041	25' → 20'	18 Kc/m
# 044	6' → 5'	17 Kc/m
# 045	5' → 0'	20 Kc/m
# 048	2½' → 0'	18 Kc/m

SUPPLEMENT TO APPENDIX C

SURVEY UNIT SUMMARY REPORTS – EMBEDDED PIPING

Survey Unit ID Code	Page(s)
P61205C	C-2 through C-4
P61205D	C-5 through C-7
P61205E	C-8 through C-12
P61205F	C-13 and C-14
P61205G	C-15 through C-17
P61205H	C-18 through C-21
P61205J	C-22 through C-24
P61205K	C-25 and C-26
P61205L	C-27 through C-31

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Data Quality Values

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	17	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.236e+004
Maximum Value	:	3.690e+003
Range	:	1.605e+004
Median	:	-2.071e+003
Std. Deviation	:	5.212e+003
Mean	:	-3.249e+003
95% UCL	:	-1.050e+003

Measurement Values

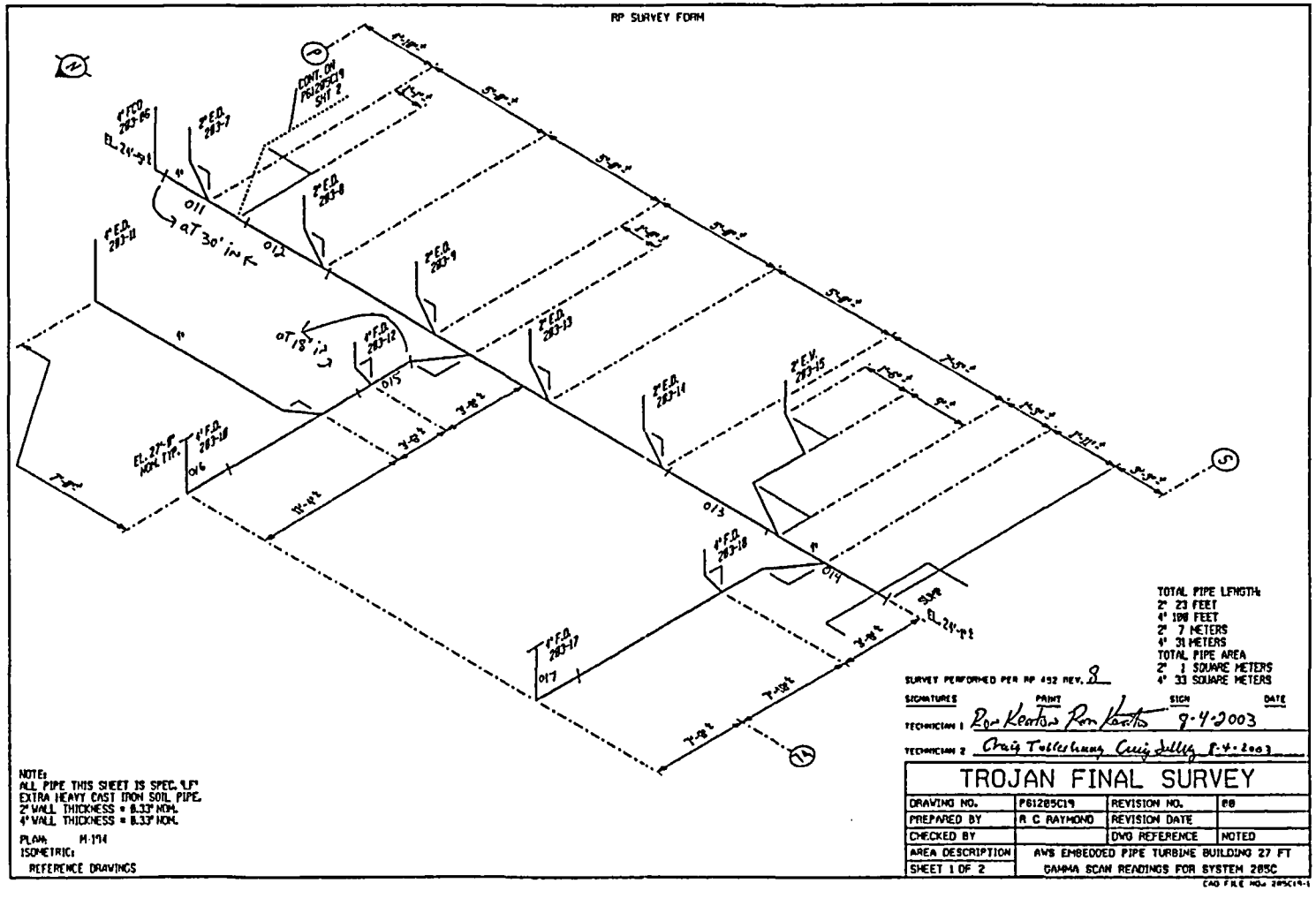
Location	Value
000001	-9.906e+003
000002	-8.962e+003
000003	-9.896e+003
000004	-1.236e+004
000005	-1.175e+004
000006	-2.256e+003
000007	-5.651e+002
000008	1.654e+003
000009	-3.264e+002
000010	-2.706e+003
000011	-3.090e+003
000012	1.030e+002
000013	5.991e+002
000014	-2.071e+003
000015	1.050e+003
000016	1.556e+003
000017	3.690e+003

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Scan Measurement Data

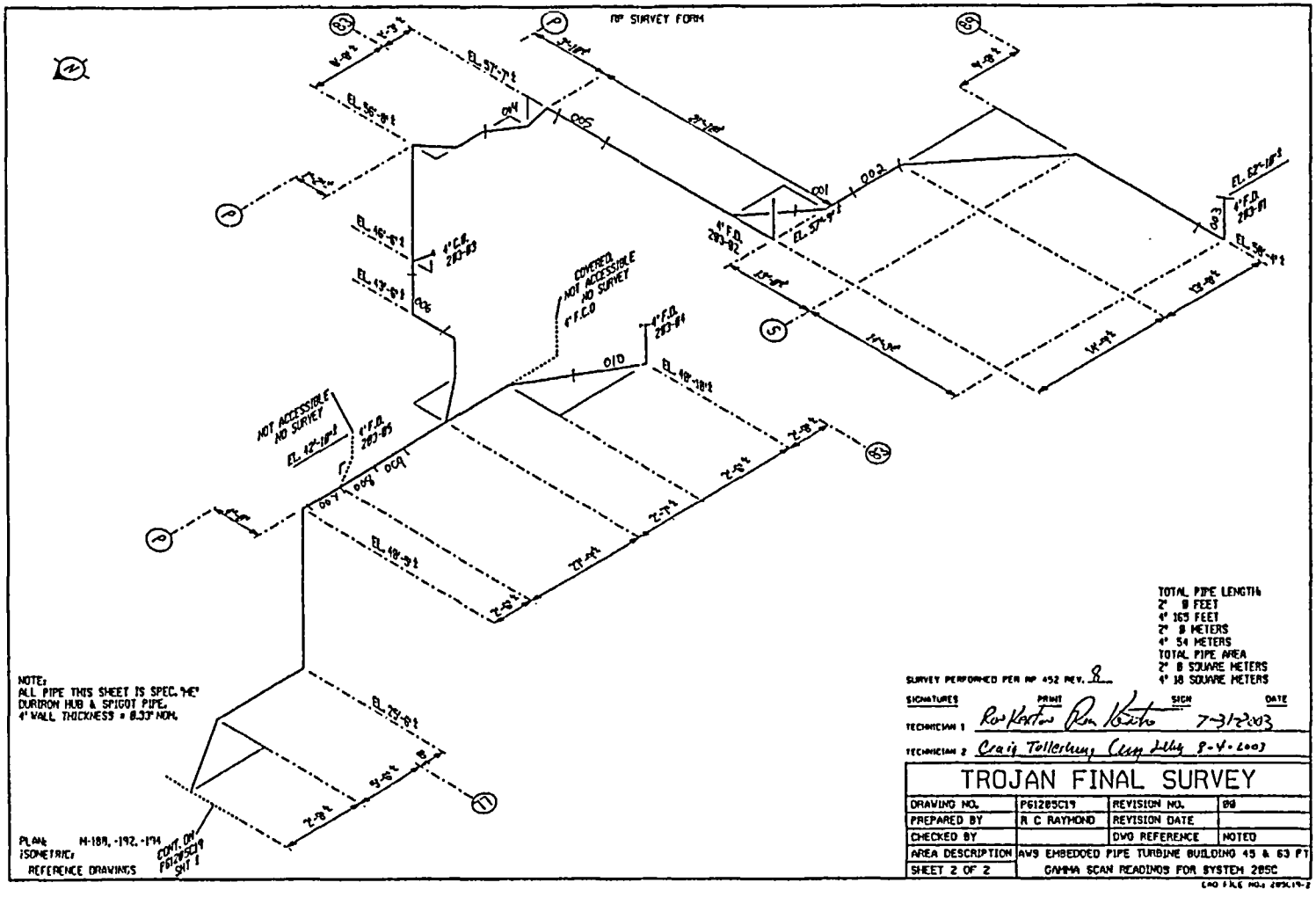


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205C
Survey Unit Name: TB 27', 45', and 63' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 52

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	21	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-1.720e+003
Maximum Value	:	1.639e+004
Range	:	1.811e+004
Median	:	3.644e+003
Std. Deviation	:	3.833e+003
Mean	:	3.917e+003
95% UCL	:	5.356e+003

Measurement Values

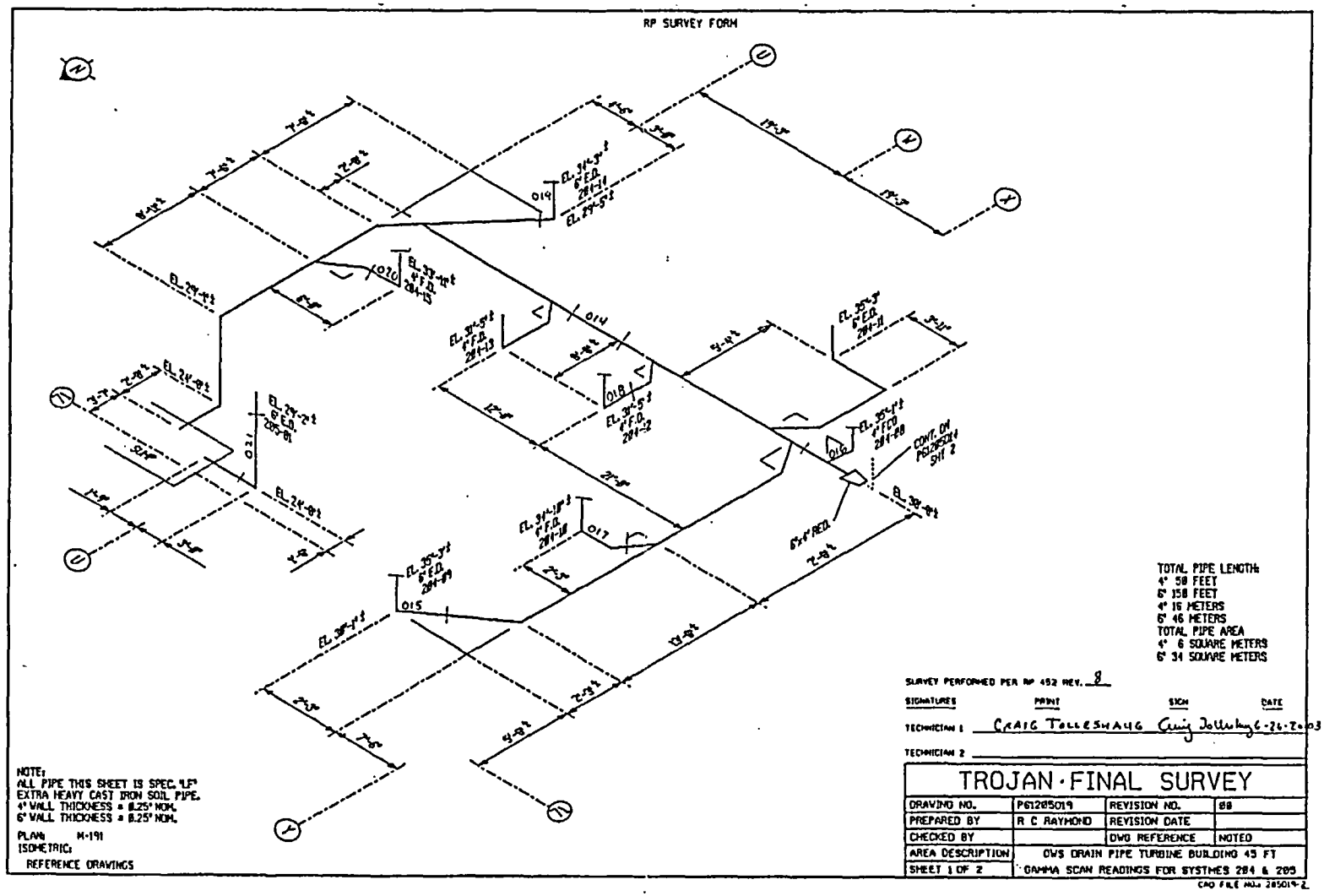
Location	Value	Location	Value
000001	7.154e+003	000018	4.052e+003
000002	7.570e+003	000019	3.189e+003
000003	7.848e+003	000020	2.610e+002
000004	5.445e+003	000021	1.639e+004
000005	3.926e+003		
000006	3.698e+003		
000007	1.319e+003		
000008	3.644e+003		
000009	1.785e+003		
000010	2.027e+003		
000011	-1.799e+002		
000012	4.468e+003		
000013	-2.584e+002		
000014	3.383e+003		
000015	3.391e+003		
000016	-1.720e+003		
000017	4.862e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Scan Measurement Data

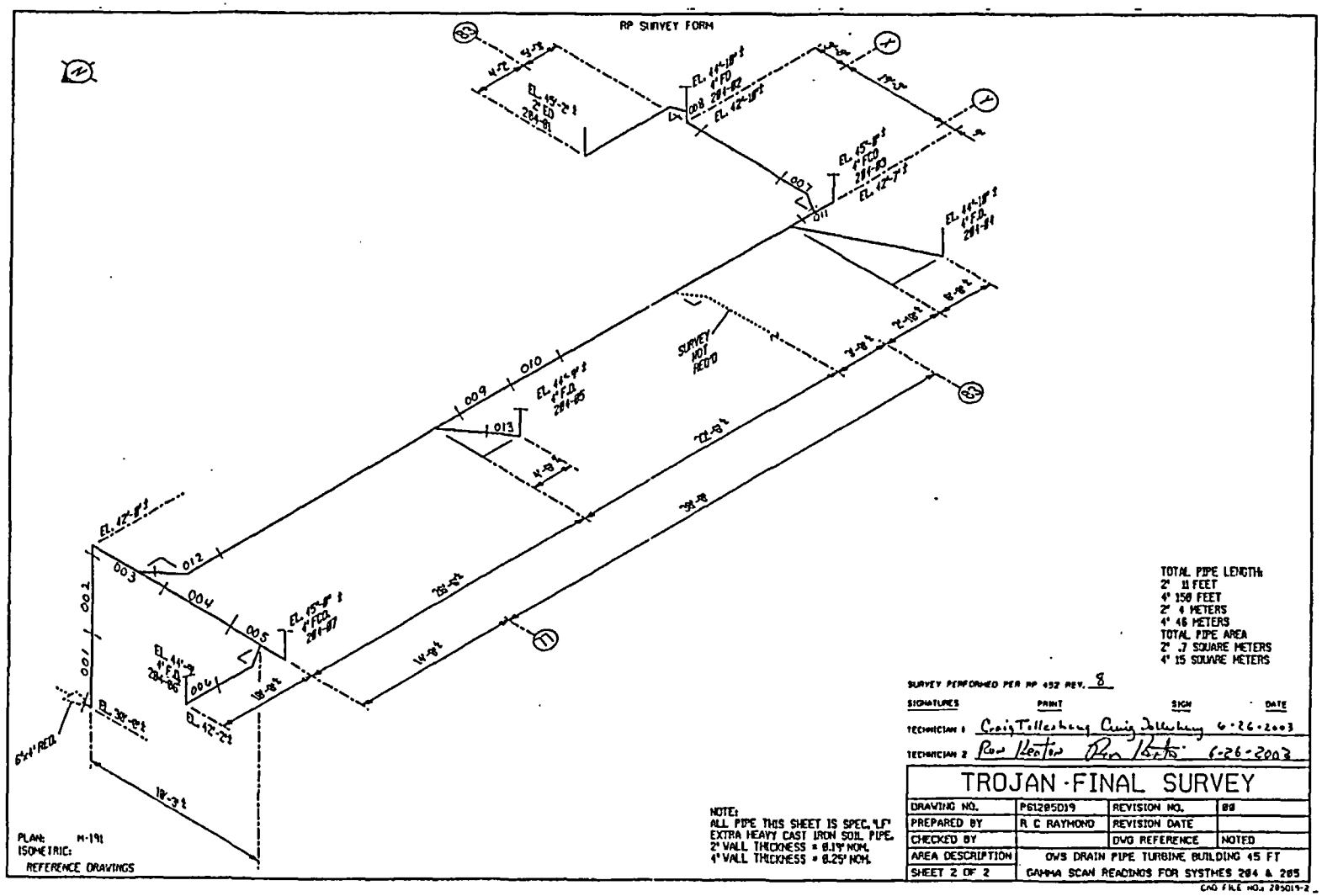


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205D
Survey Unit Name: TB 29', 31', 35', and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 56

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	43	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	-1.560e+004
Maximum Value :	1.645e+004
Range :	3.205e+004
Median :	3.946e+003
Std. Deviation :	7.425e+003
Mean :	1.305e+003
95% UCL :	3.210e+003

Measurement Values

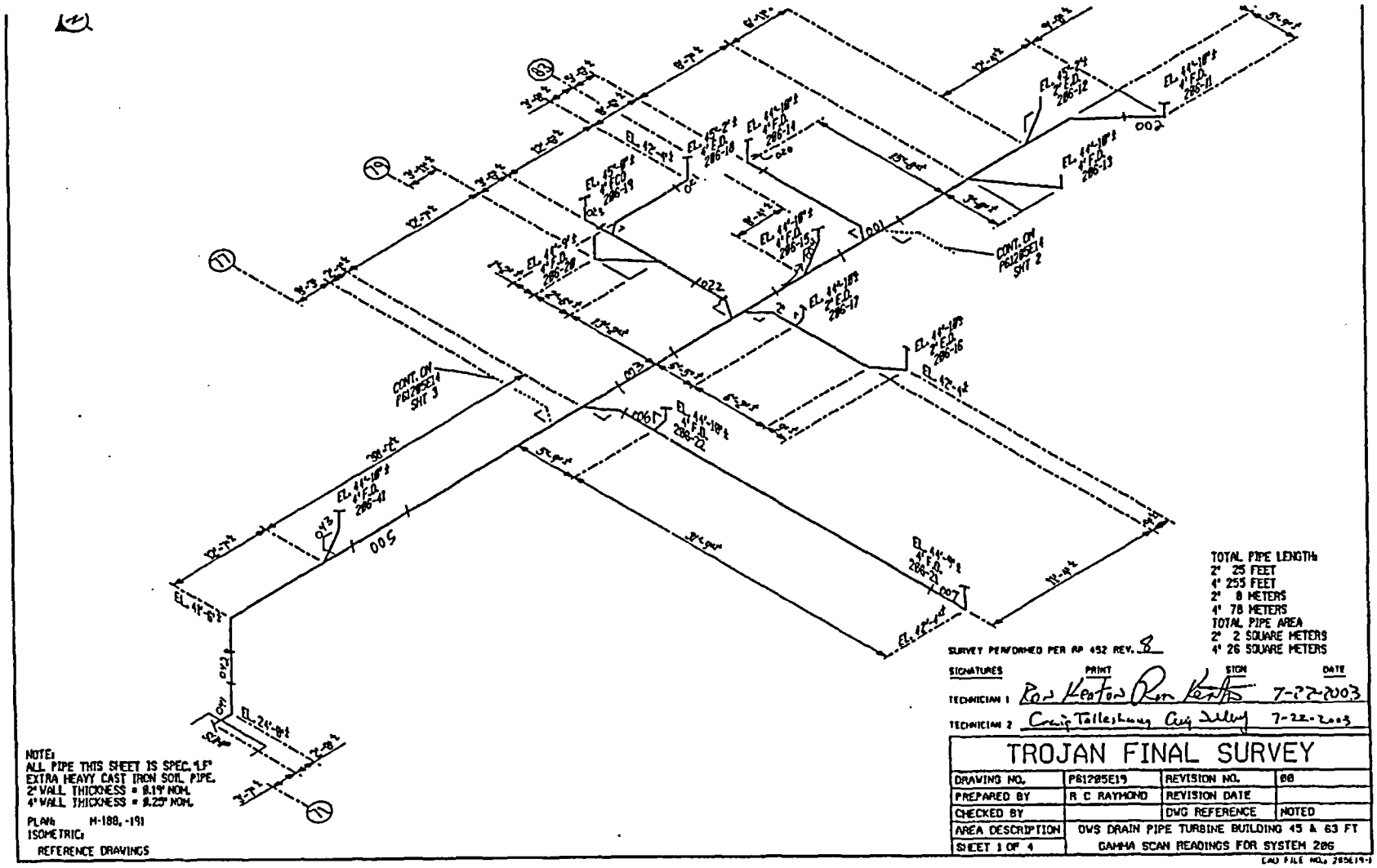
Location	Value	Location	Value	Location	Value
000001	2.375e+003	000018	-9.414e+003	000035	-6.018e+002
000002	1.486e+003	000019	-1.001e+004	000036	1.046e+004
000003	5.278e+003	000020	4.330e+003	000037	6.639e+003
000004	1.941e+003	000021	1.533e+003	000038	4.480e+003
000005	4.191e+003	000022	6.741e+003	000039	5.632e+003
000006	3.905e+003	000023	5.331e+003	000040	1.645e+004
000007	2.169e+003	000024	6.066e+003	000041	6.091e+003
000008	3.946e+003	000025	6.728e+003	000042	6.009e+003
000009	1.605e+003	000026	7.671e+003	000043	3.180e+003
000010	4.076e+003	000027	5.394e+003		
000011	5.283e+002	000028	-1.332e+004		
000012	3.701e+003	000029	-1.359e+004		
000013	7.677e+003	000030	-1.155e+004		
000014	-9.123e+003	000031	-1.560e+004		
000015	-1.027e+004	000032	7.288e+003		
000016	-3.798e+003	000033	5.687e+003		
000017	-1.124e+004	000034	6.062e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Scan Measurement Data

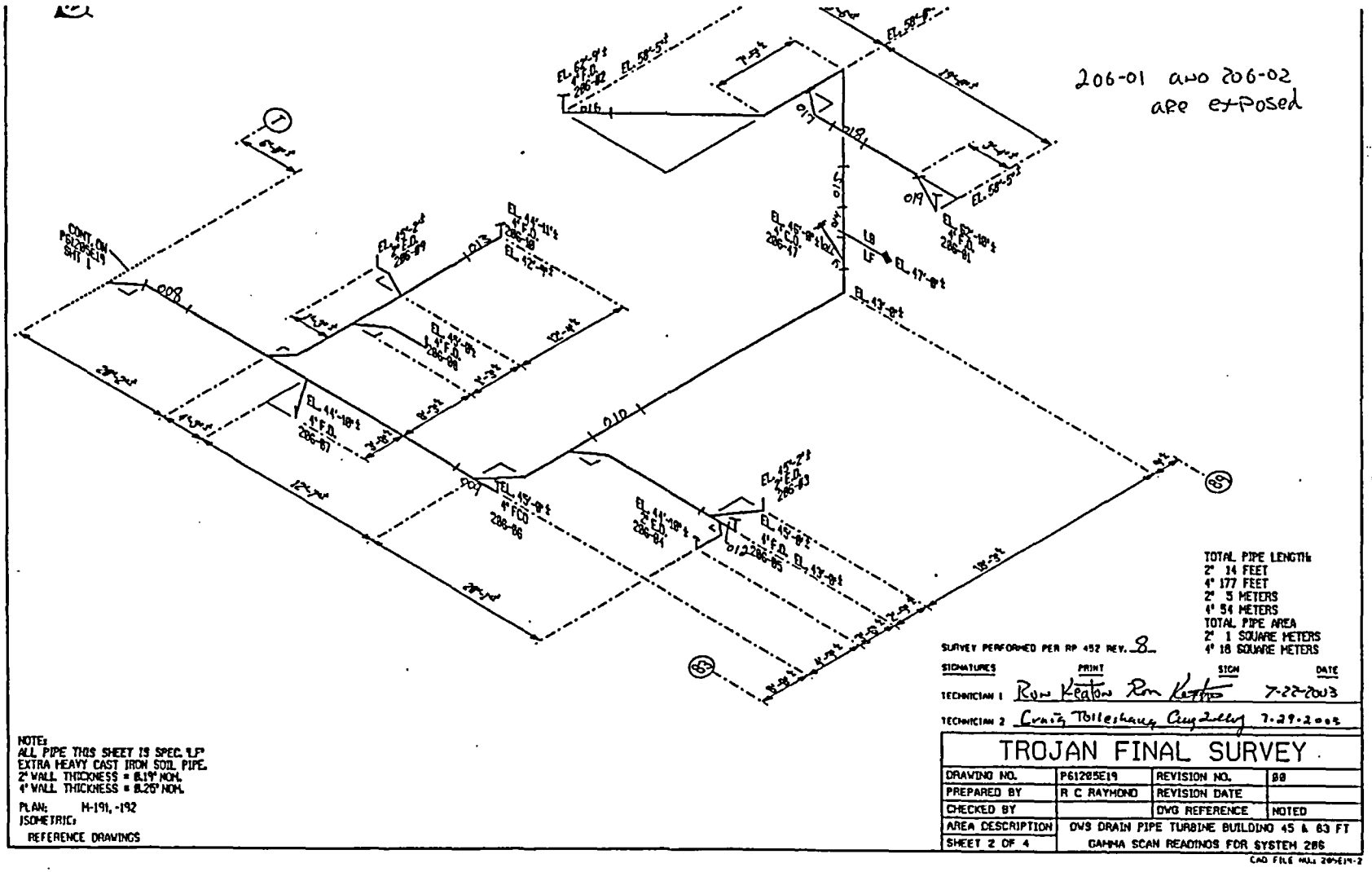


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Scan Measurement Data

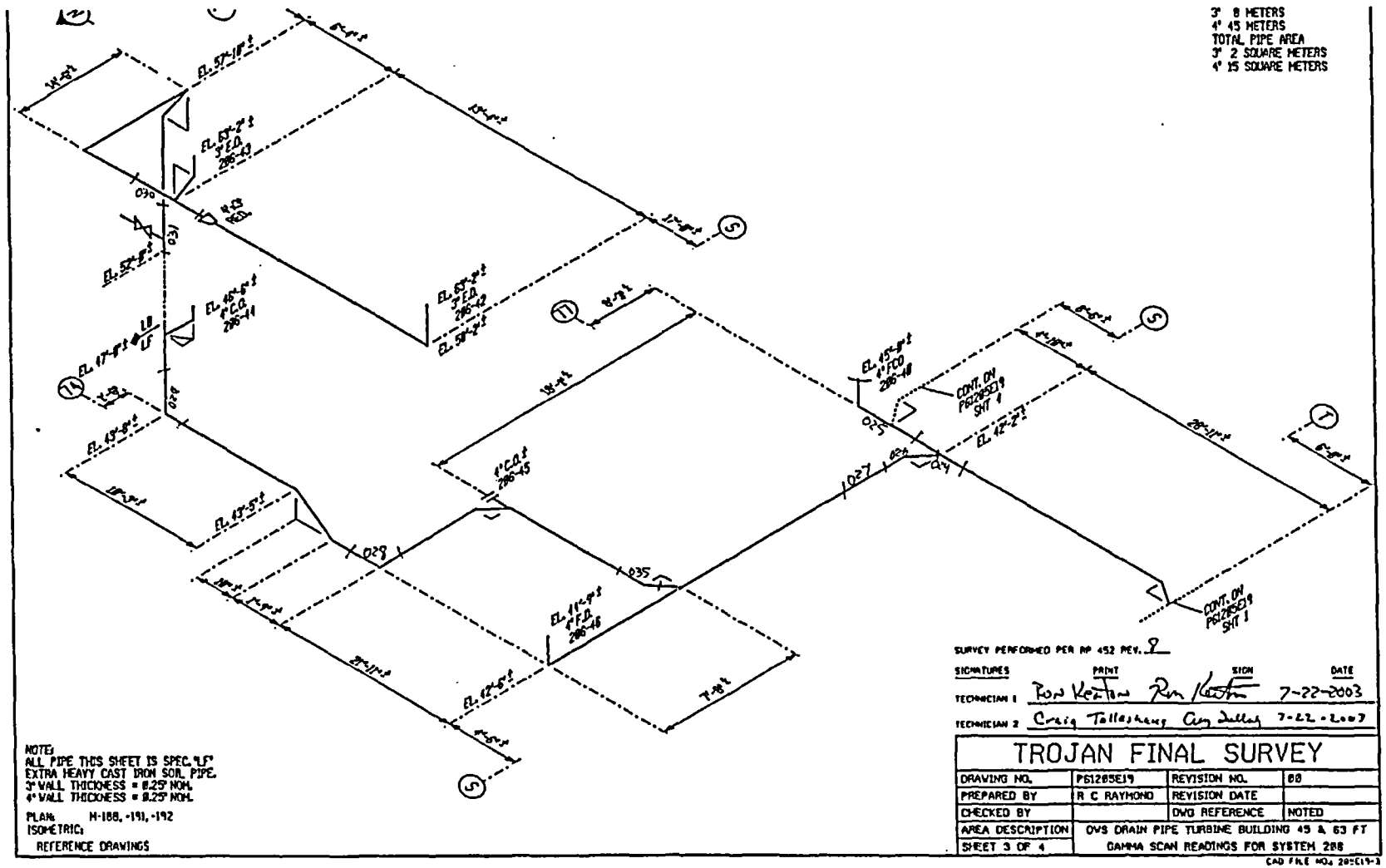


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Scan Measurement Data

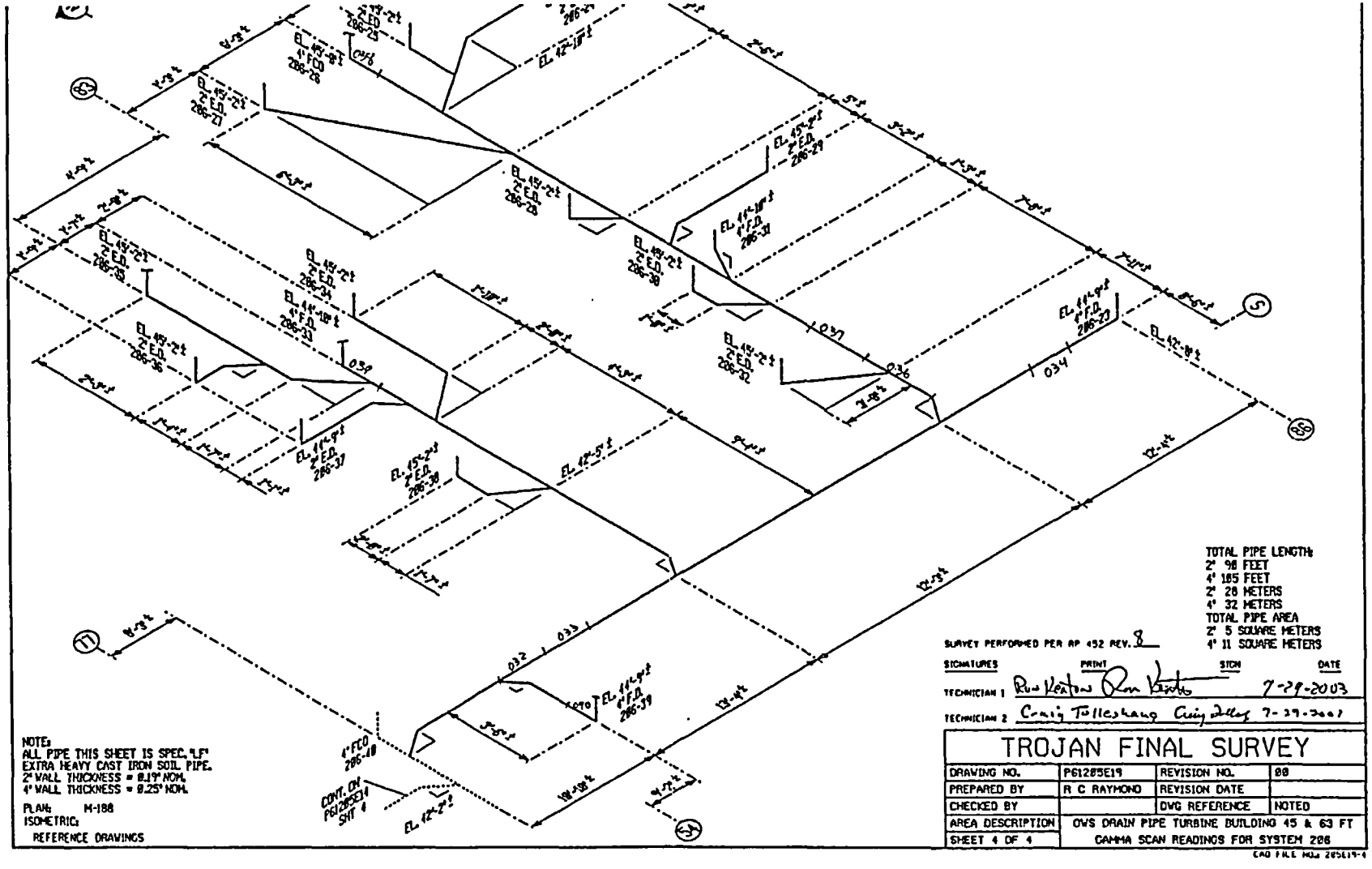


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205E
Survey Unit Name: TB 45' and 63' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 80

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205F
Survey Unit Name: TB 45' Elevation – Oily Waste Drains

Classification: Class 2
Size (m^2): 50

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	17	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:		
Minimum Value	:	1.178e+002
Maximum Value	:	7.709e+003
Range	:	7.591e+003
Median	:	4.337e+003
Std. Deviation	:	2.065e+003
Mean	:	4.549e+003
95% UCL	:	5.421e+003

Measurement Values

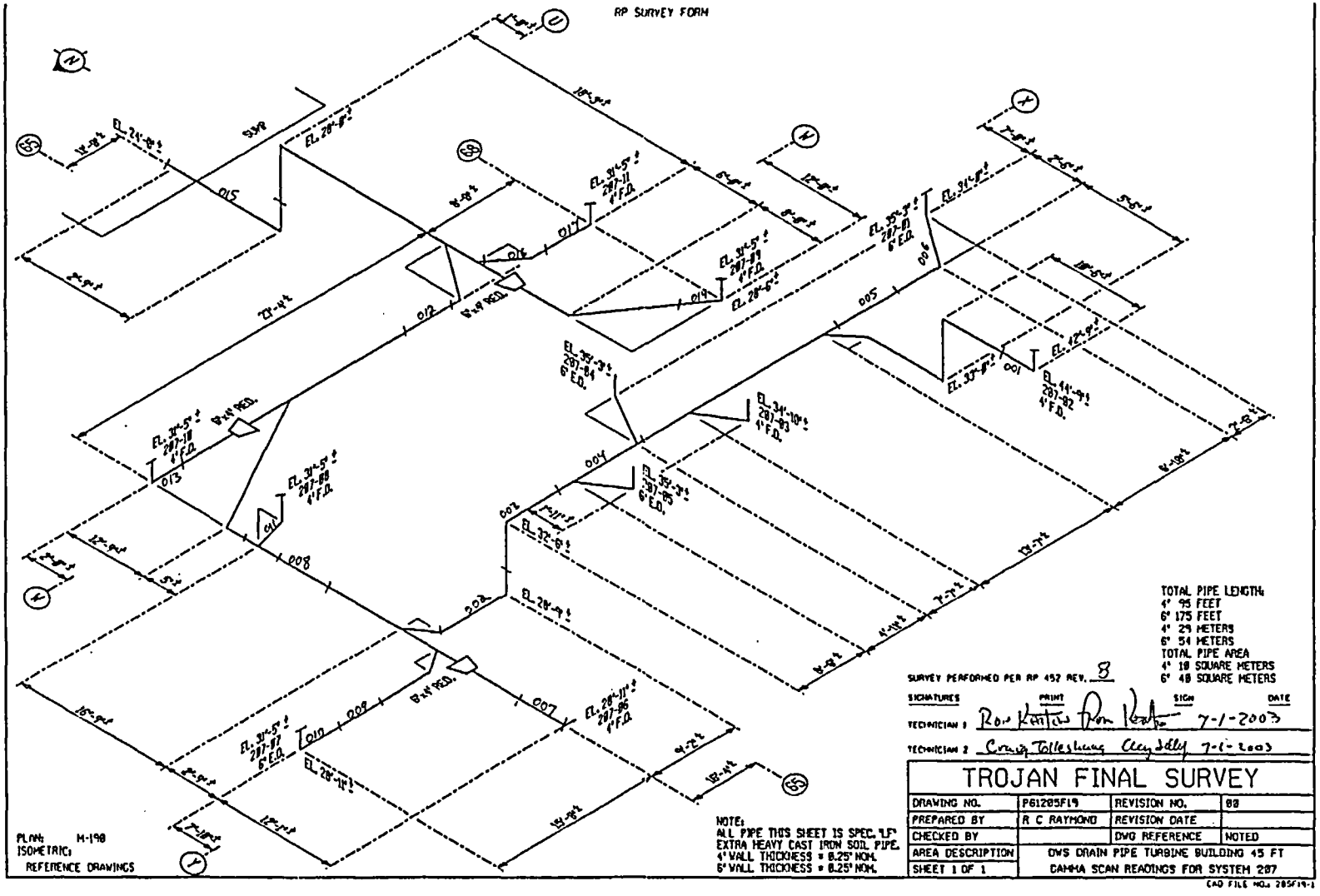
Location	Value	Location	Value	Location	Value
000001	4.641e+003				
000002	6.856e+003				
000003	6.222e+003				
000004	5.117e+003				
000005	4.229e+003				
000006	2.797e+003				
000007	6.264e+003				
000008	5.947e+003				
000009	2.326e+003				
000010	1.178e+002				
000011	3.189e+003				
000012	7.709e+003				
000013	7.530e+003				
000014	3.899e+003				
000015	4.337e+003				
000016	3.981e+003				
000017	2.175e+003				

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205F
Survey Unit Name: TB 45' Elevation – Oily Waste Drains

Classification: Class 2
Size (m^2): 50

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	22	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	-3.613e+003
Maximum Value :	7.482e+003
Range :	1.110e+004
Median :	3.599e+003
Std. Deviation :	2.900e+003
Mean :	3.117e+003
95% UCL :	4.179e+003

Measurement Values

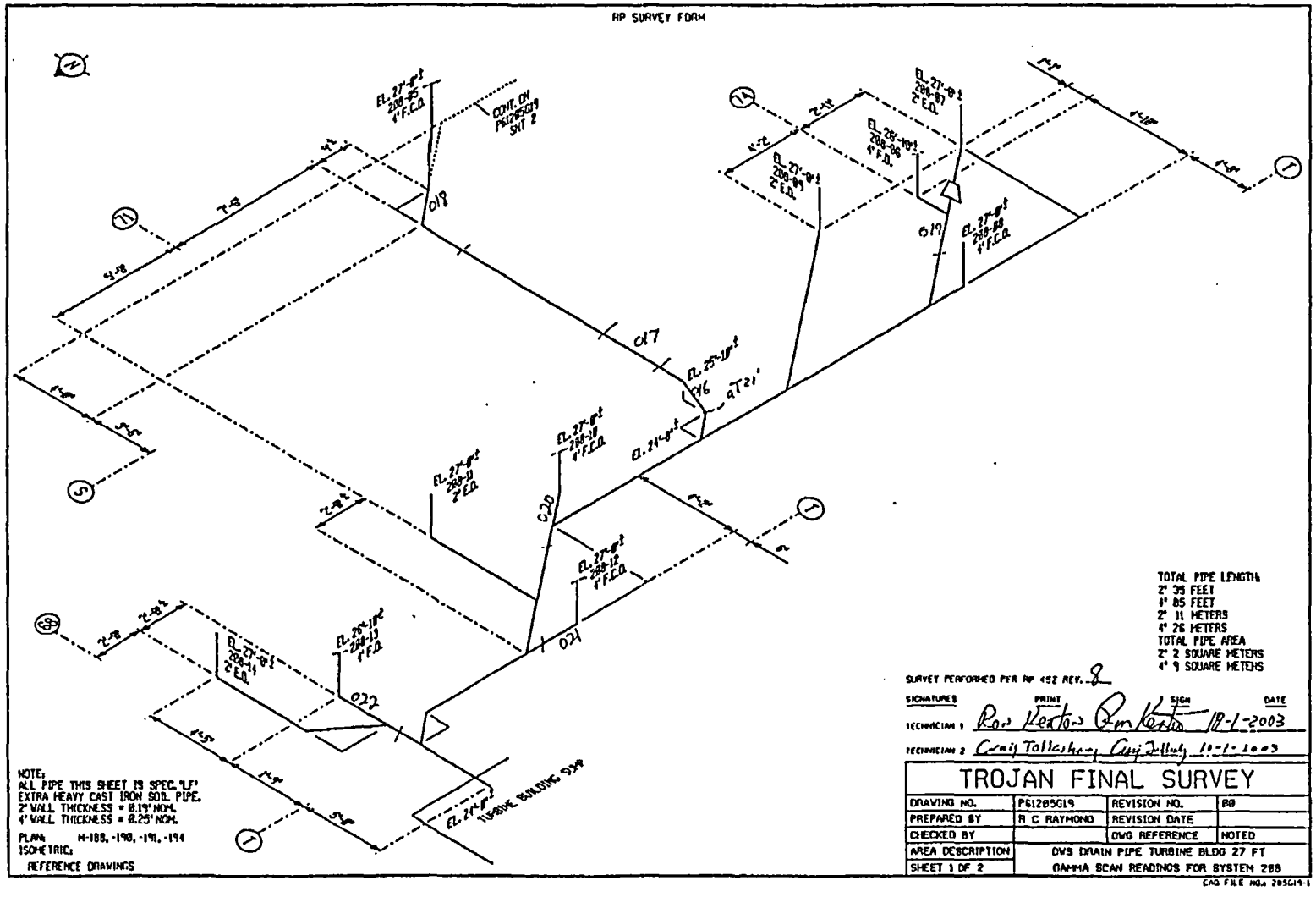
Location	Value	Location	Value
000001	4.538e+003	000018	4.578e+003
000002	3.460e+003	000019	5.239e+003
000003	3.221e+003	000020	6.614e+003
000004	-2.037e+002	000021	6.087e+003
000005	7.667e+002	000022	6.305e+003
000006	2.119e+003		
000007	1.955e+003		
000008	-1.296e+002		
000009	7.482e+003		
000010	2.072e+003		
000011	-2.438e+003		
000012	-3.613e+003		
000013	2.445e+003		
000014	3.737e+003		
000015	5.122e+003		
000016	5.477e+003		
000017	3.749e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations –Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Scan Measurement Data

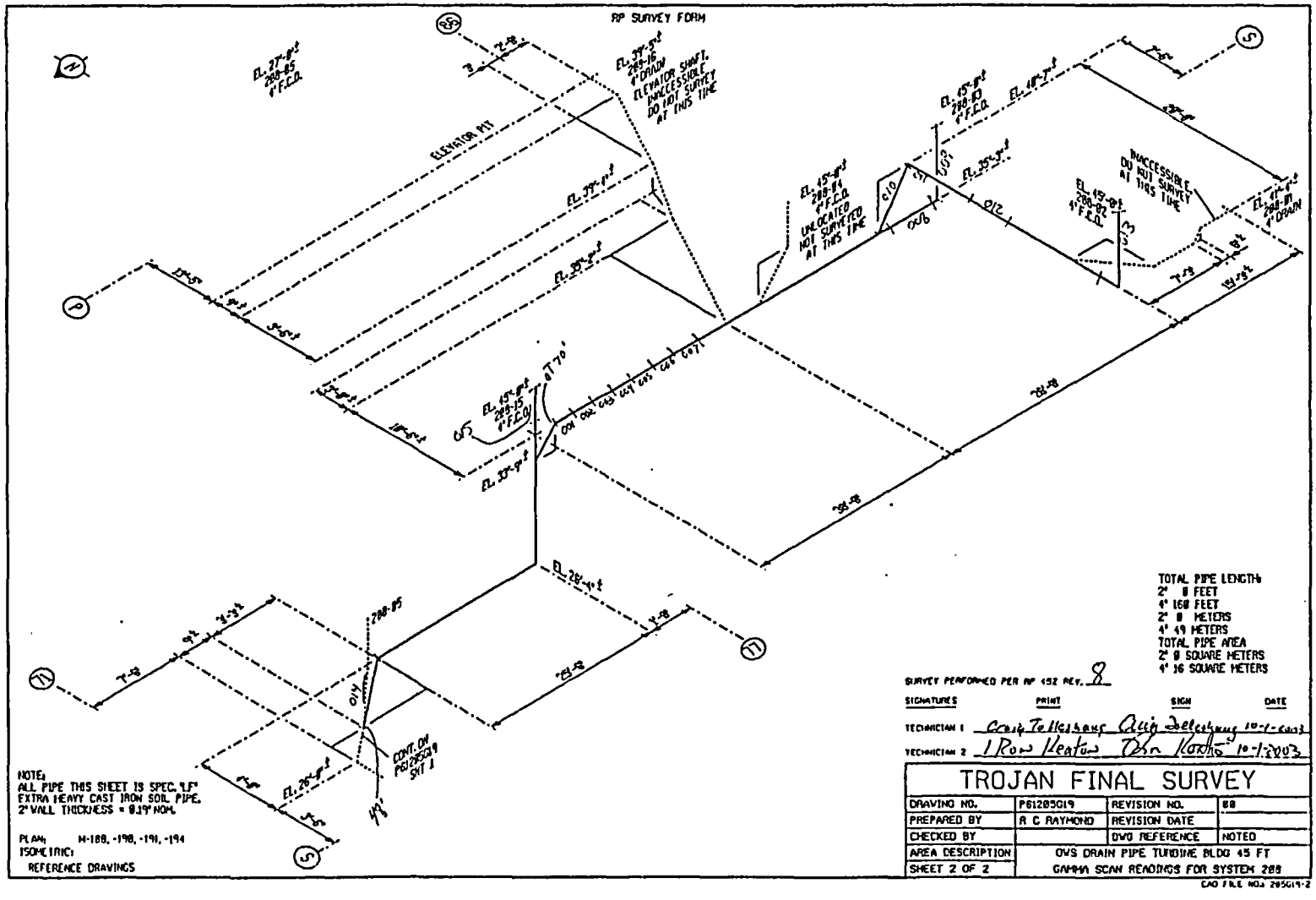


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205G
Survey Unit Name: TB 27' and 45' Elevations –Oily Waste Drains

Classification: Class 2
Size (m^2): 27

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	38	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	-1.619e+004
Maximum Value :	7.905e+003
Range :	2.410e+004
Median :	3.485e+003
Std. Deviation :	6.072e+003
Mean :	1.793e+003
95% UCL :	3.454e+003

Measurement Values

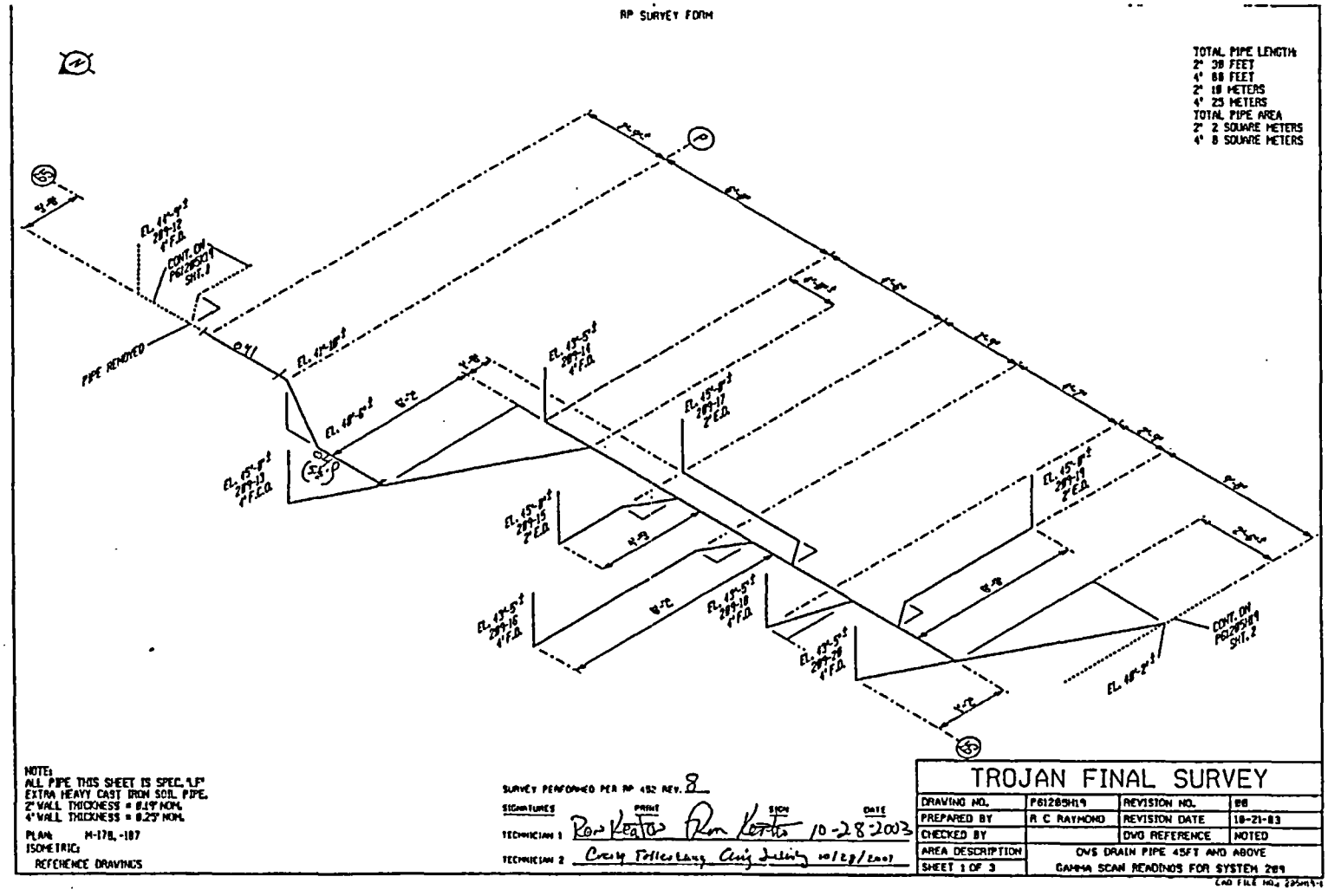
Location	Value	Location	Value	Location	Value
000001	-2.061e+003	000018	2.869e+003	000035	3.403e+003
000002	-1.725e+003	000019	2.363e+003	000036	5.674e+003
000003	-2.314e+003	000020	3.407e+003	000040	5.248e+003
000004	2.867e+003	000021	3.033e+003	000041	5.102e+003
000005	6.774e+003	000022	1.330e+003		
000006	5.448e+003	000023	7.691e+003		
000007	5.356e+003	000024	7.905e+003		
000008	-3.454e+003	000025	7.829e+003		
000009	-1.367e+004	000026	2.643e+003		
000010	-1.619e+004	000027	1.105e+003		
000011	-9.300e+003	000028	3.655e+003		
000012	-1.464e+004	000029	4.868e+003		
000013	6.901e+003	000030	3.563e+003		
000014	3.999e+003	000031	4.931e+003		
000015	5.261e+003	000032	7.484e+003		
000016	4.782e+002	000033	6.252e+003		
000017	3.569e+002	000034	3.690e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Scan Measurement Data

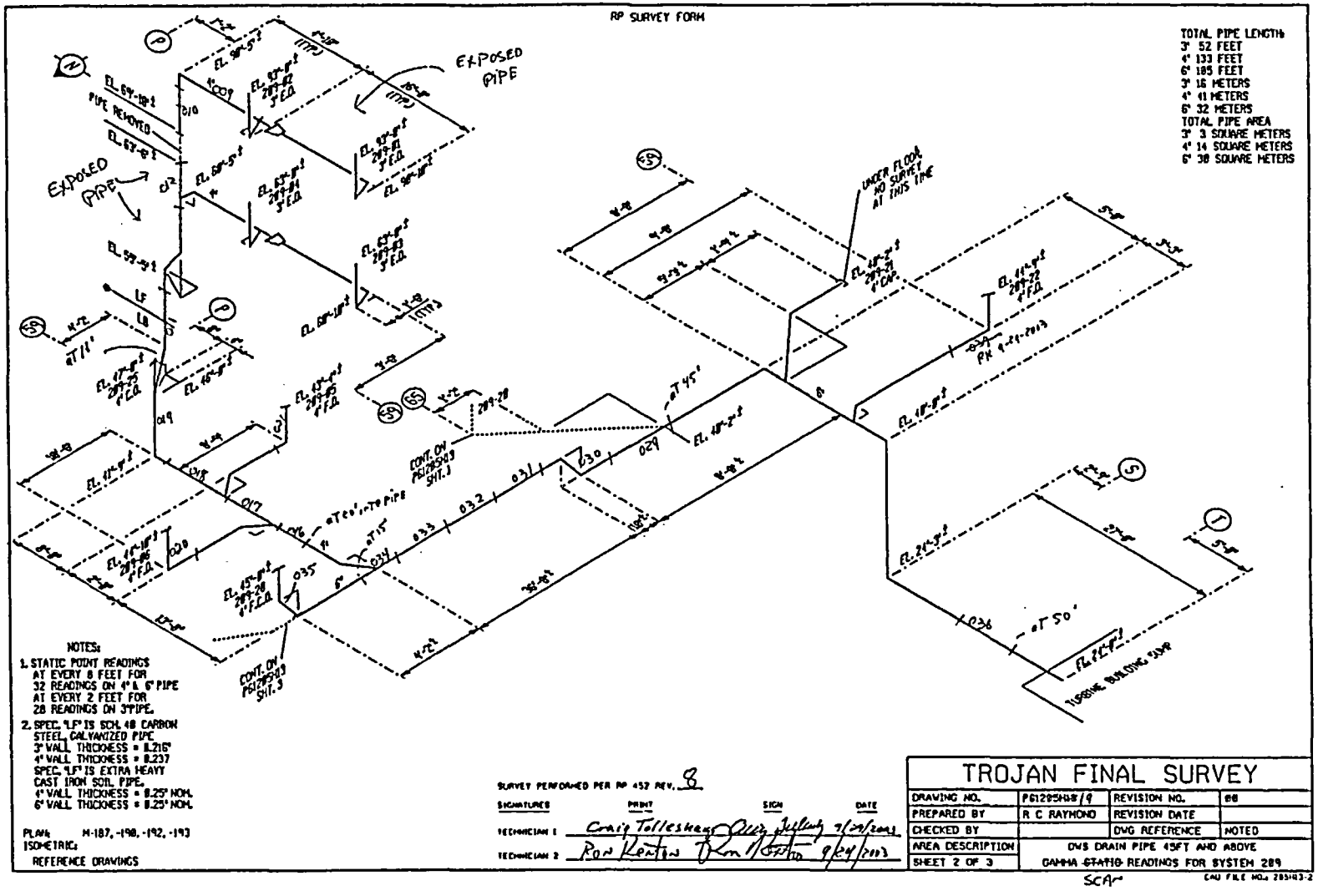


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Scan Measurement Data

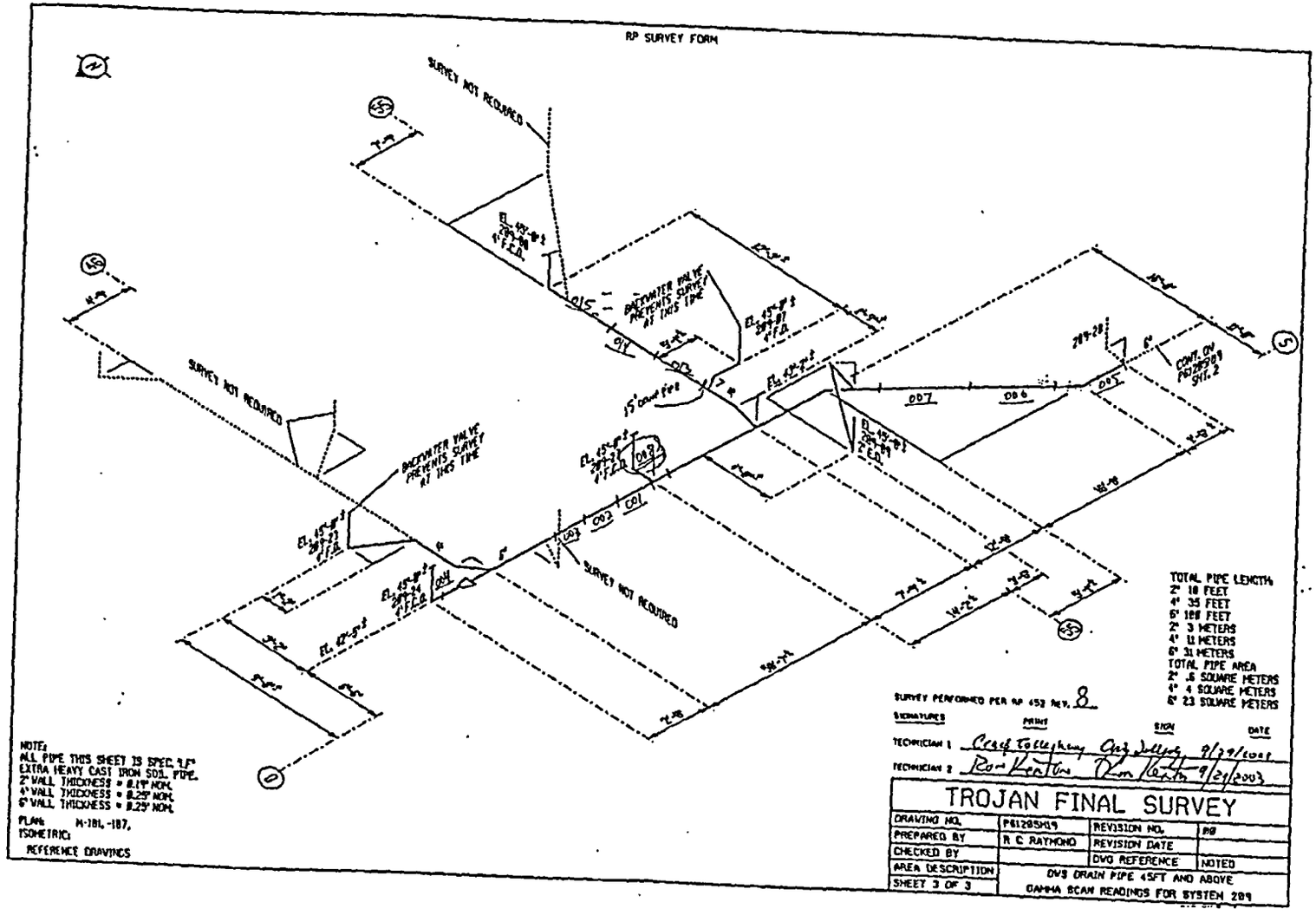


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205H
Survey Unit Name: TB 45', 63', and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 85

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	21	DPM/100 CM²	2.100e+004	-	-

Statistical Quantities

Measurement Name:

Minimum Value	:	-3.338e+003
Maximum Value	:	7.024e+003
Range	:	1.036e+004
Median	:	3.901e+003
Std. Deviation	:	3.480e+003
Mean	:	2.702e+003
95% UCL	:	4.008e+003

Measurement Values

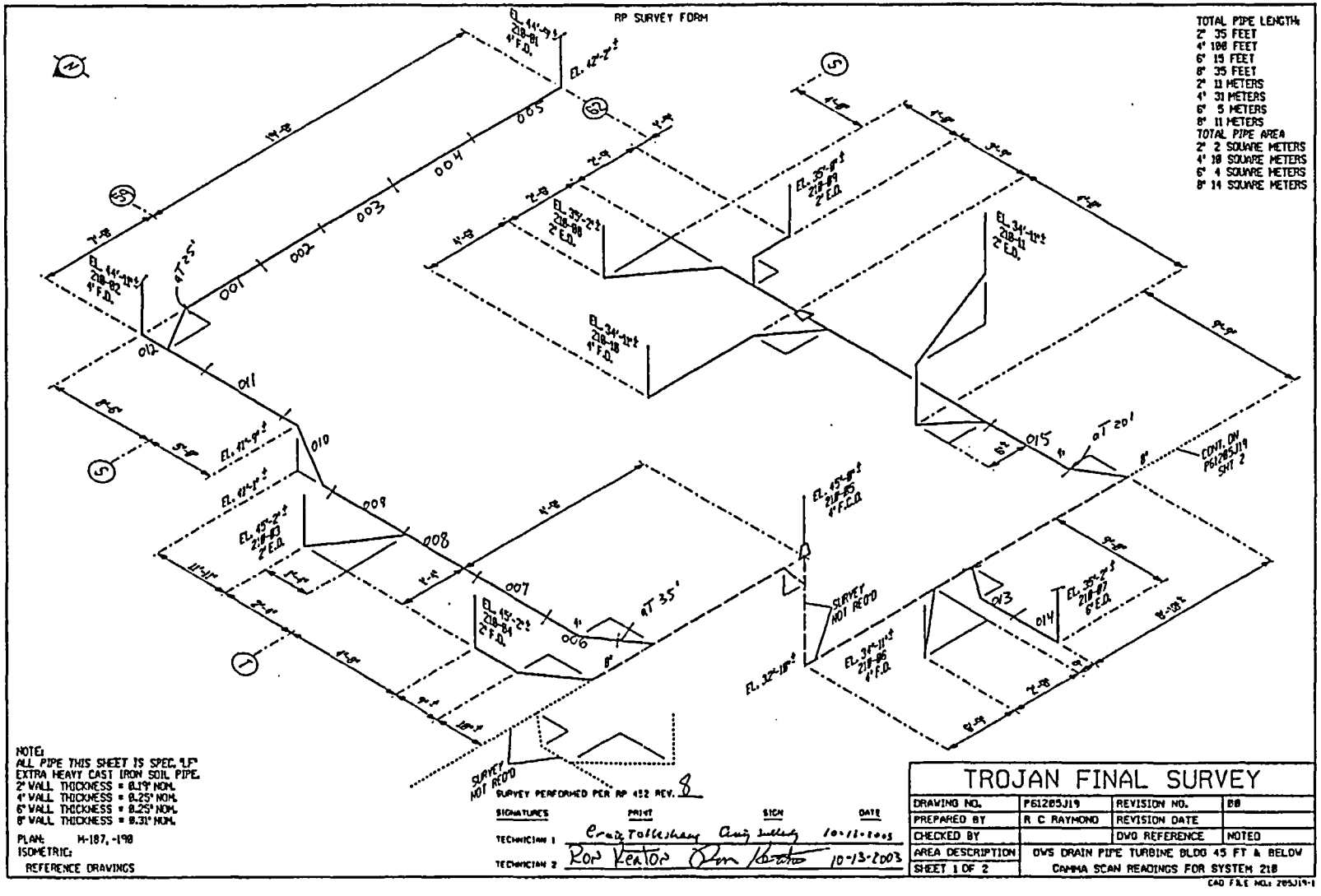
Location	Value	Location	Value
000001	5.951e+003	000018	-5.878e+002
000002	5.149e+003	000019	-3.338e+003
000003	4.523e+003	000020	-1.764e+003
000004	4.527e+003	000021	-6.588e+002
000005	1.248e+003		
000006	6.337e+003		
000007	6.267e+003		
000008	7.024e+003		
000009	3.901e+003		
000010	6.257e+003		
000011	5.818e+003		
000012	6.106e+003		
000013	-1.965e+003		
000014	-1.728e+003		
000015	2.231e+003		
000016	-1.383e+003		
000017	2.821e+003		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Scan Measurement Data

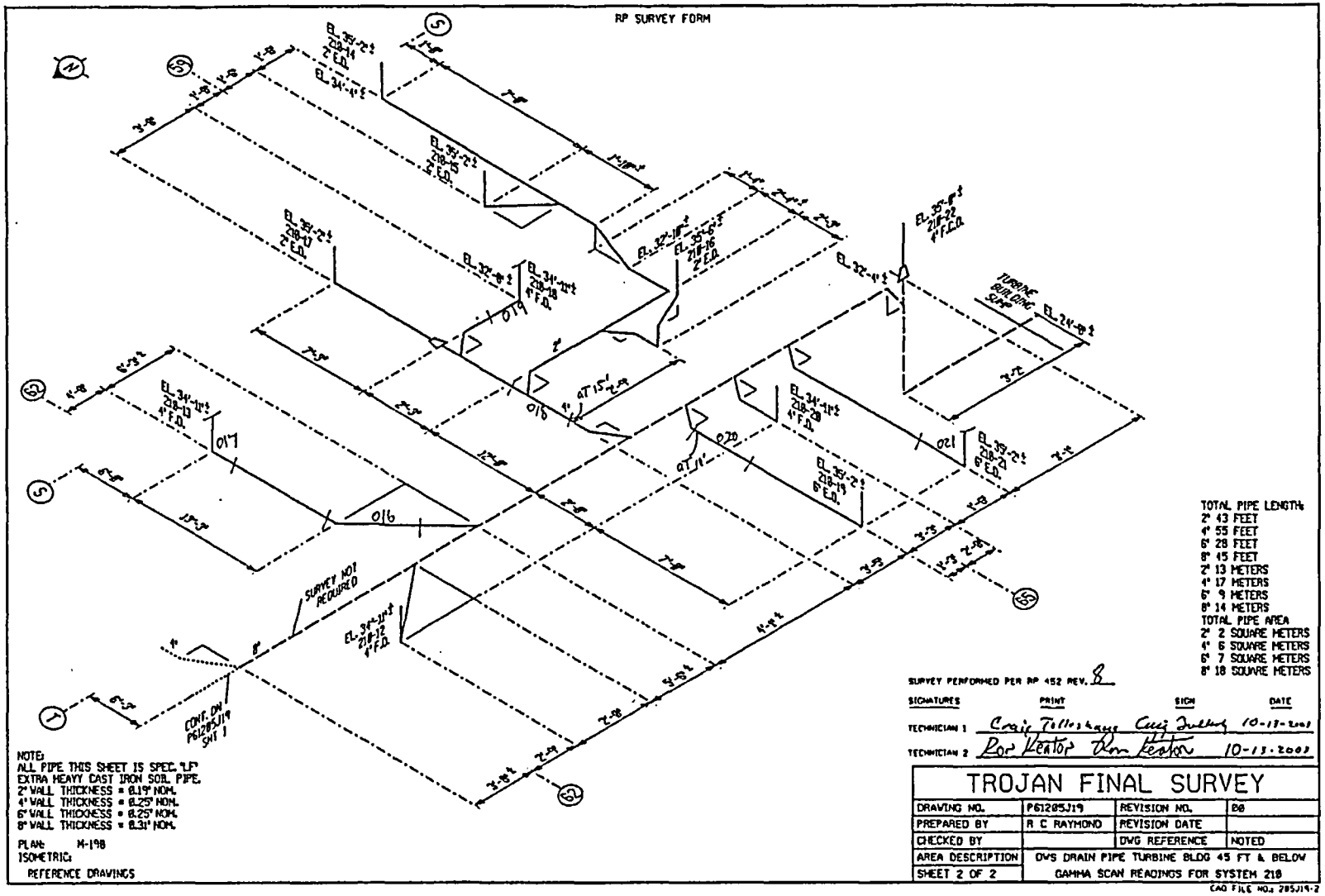


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205J
Survey Unit Name: TB 35' and 45' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 63

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205K
Survey Unit Name: TB/MSSS 45' Elevation – Oily Waste Drains

Classification: Class 1
Size (m^2): 7

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	14	DPM/100 CM²	1.000e+005	-	-

Statistical Quantities

Measurement Name:	
Minimum Value :	4.130e+003
Maximum Value :	2.006e+004
Range :	1.593e+004
Median :	6.136e+003
Std. Deviation :	4.364e+003
Mean :	7.475e+003
95% UCL :	9.529e+003

Measurement Values

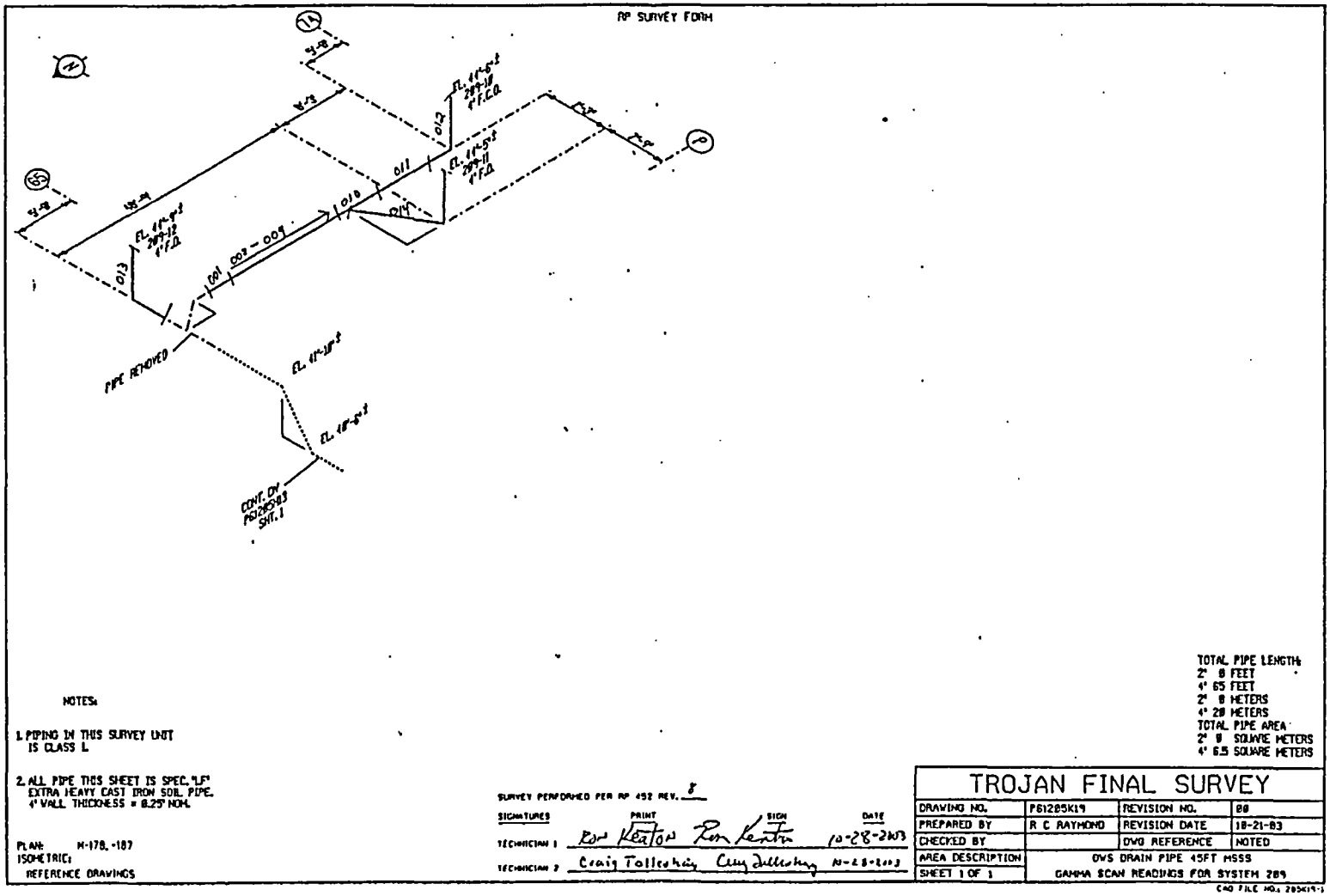
Location	Value	Location	Value	Location	Value
000001	2.006e+004				
000002	5.813e+003				
000003	4.730e+003				
000004	4.662e+003				
000005	5.698e+003				
000006	6.574e+003				
000007	5.851e+003				
000008	6.864e+003				
000009	7.081e+003				
000010	6.421e+003				
000011	4.956e+003				
000012	4.130e+003				
000013	1.420e+004				
000014	7.604e+003				

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205K
Survey Unit Name: TB/MSSS 45' Elevation – Oily Waste Drains

Classification: Class 1
Size (m^2): 7

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations– Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Scan Measurement Data

Measurement Type Code	# Of Meas.	Measurement Unit	DCGL	SGN	WRS
19	36	DPM/100 CM²	2.100e+004	-	-

Scans

Statistical Quantities

Measurement Name:		
Minimum Value	:	-7.960e+003
Maximum Value	:	1.197e+004
Range	:	1.993e+004
Median	:	5.547e+003
Std. Deviation	:	5.646e+003
Mean	:	5.000e+003
95% UCL	:	6.589e+003

Measurement Values

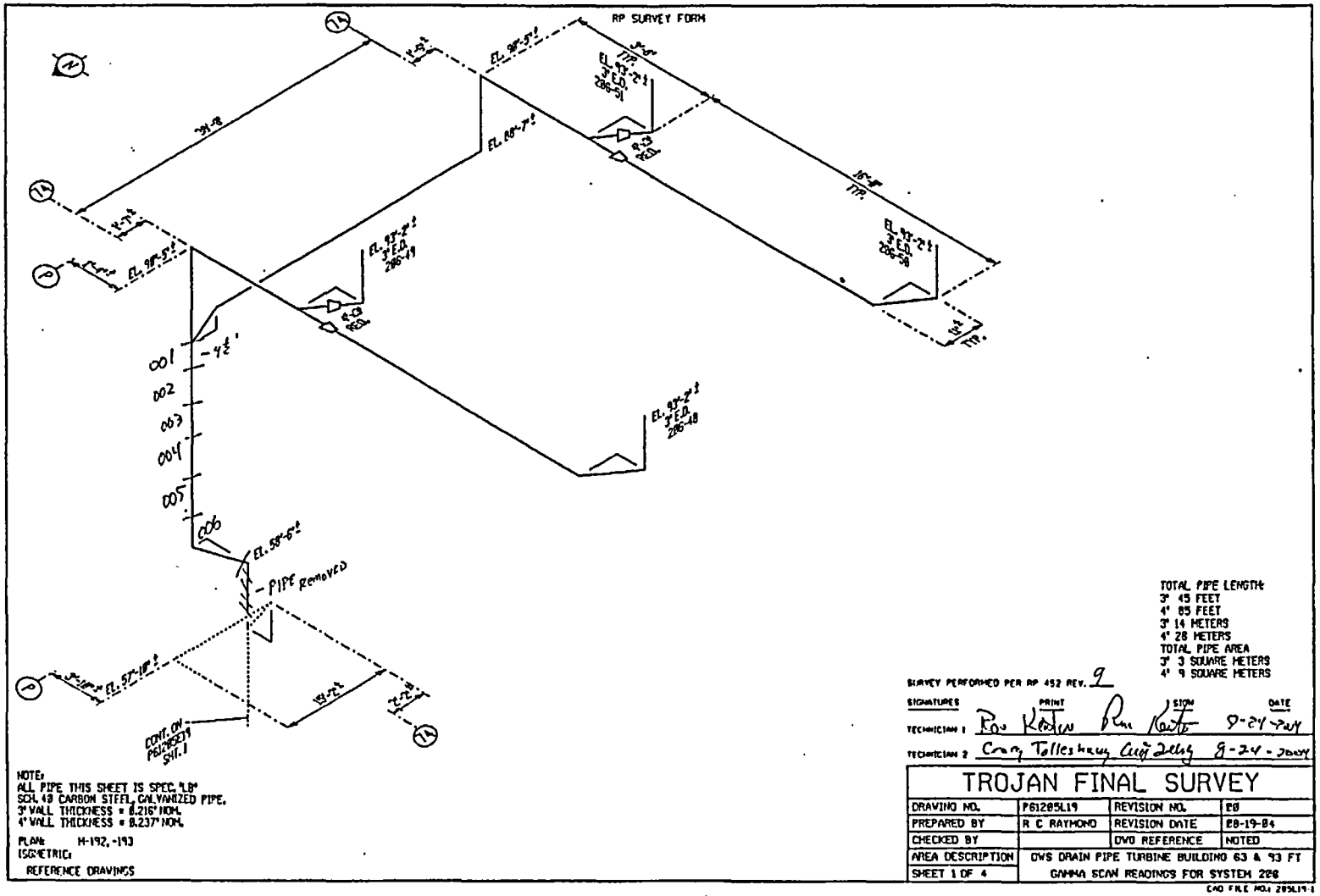
Location	Value	Location	Value	Location	Value
000001	-7.960e+003	000018	1.068e+004	000035	1.130e+004
000002	-7.425e+003	000019	3.992e+003	000036	1.197e+004
000003	-6.903e+003	000020	3.819e+003		
000004	-5.897e+003	000021	5.861e+003		
000005	-1.929e+003	000022	5.511e+003		
000006	-2.219e+003	000023	4.162e+003		
000007	3.497e+003	000024	4.848e+003		
000008	4.593e+003	000025	3.251e+003		
000009	9.959e+003	000026	5.583e+003		
000010	1.496e+003	000027	3.502e+003		
000011	4.806e+003	000028	3.574e+003		
000012	6.147e+003	000029	1.144e+004		
000013	5.714e+003	000030	1.136e+004		
000014	8.996e+003	000031	1.183e+004		
000015	8.804e+003	000032	9.724e+003		
000016	8.937e+003	000033	1.012e+004		
000017	5.882e+003	000034	1.096e+004		

FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Scan Measurement Data

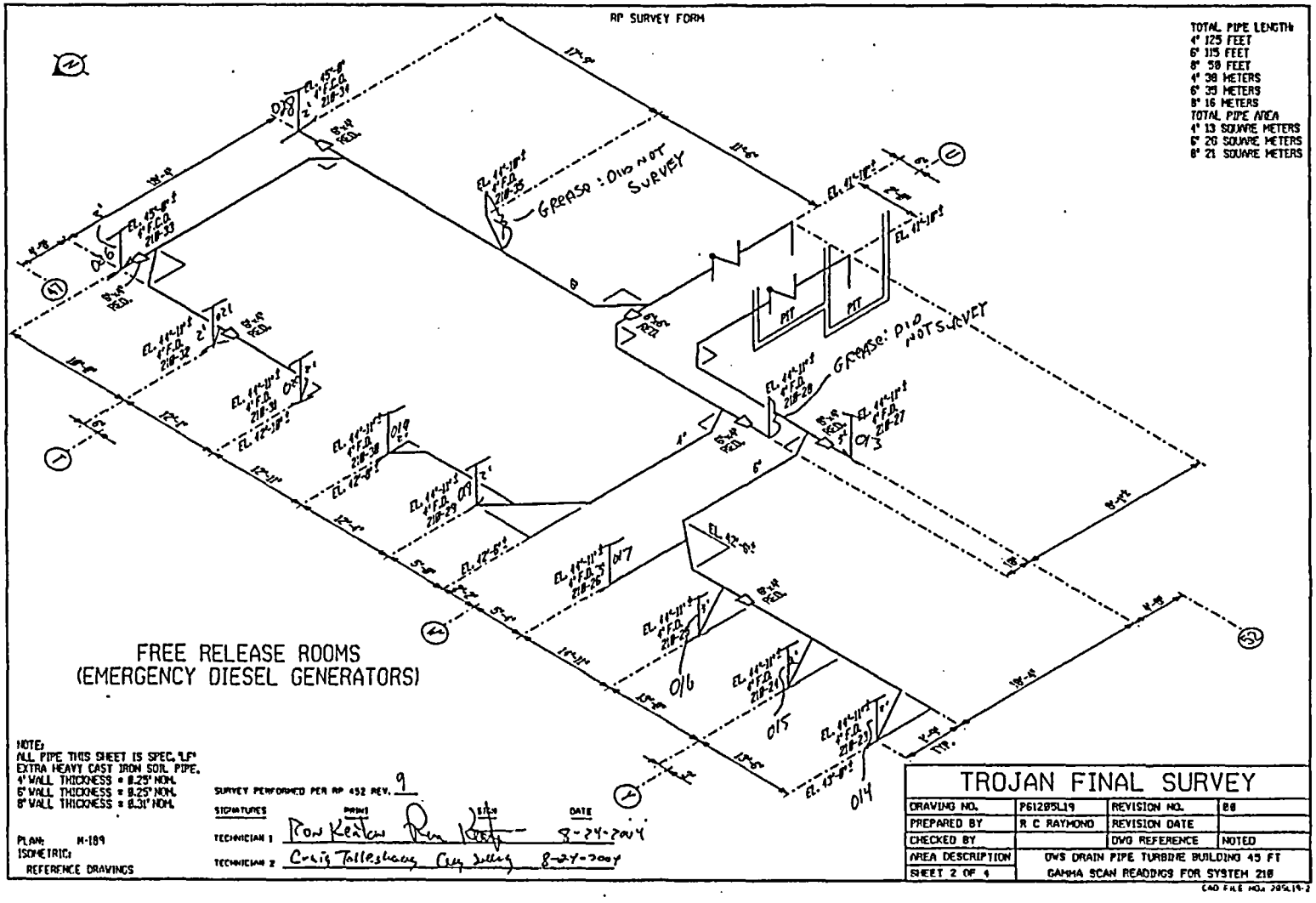


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Scan Measurement Data

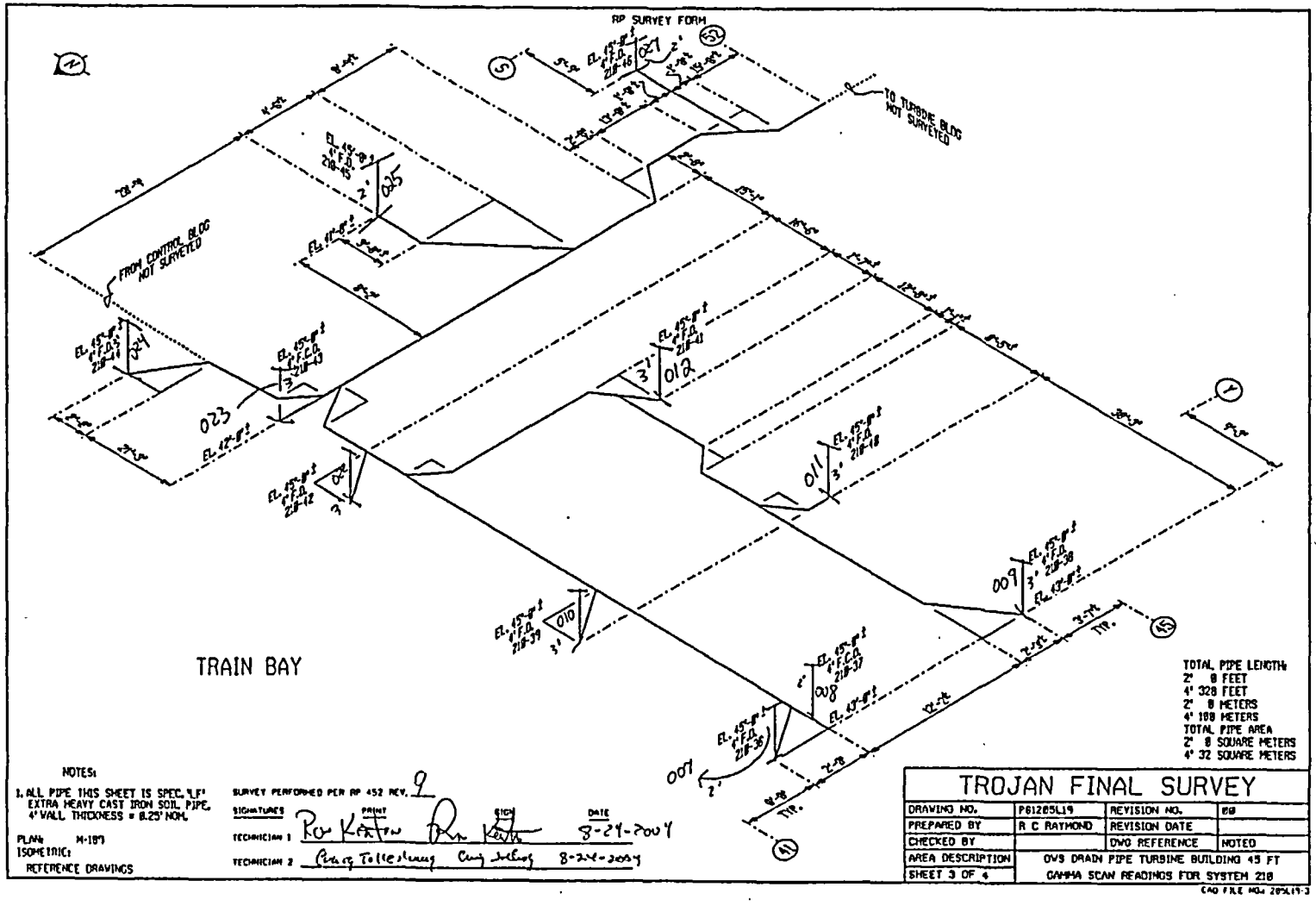


FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

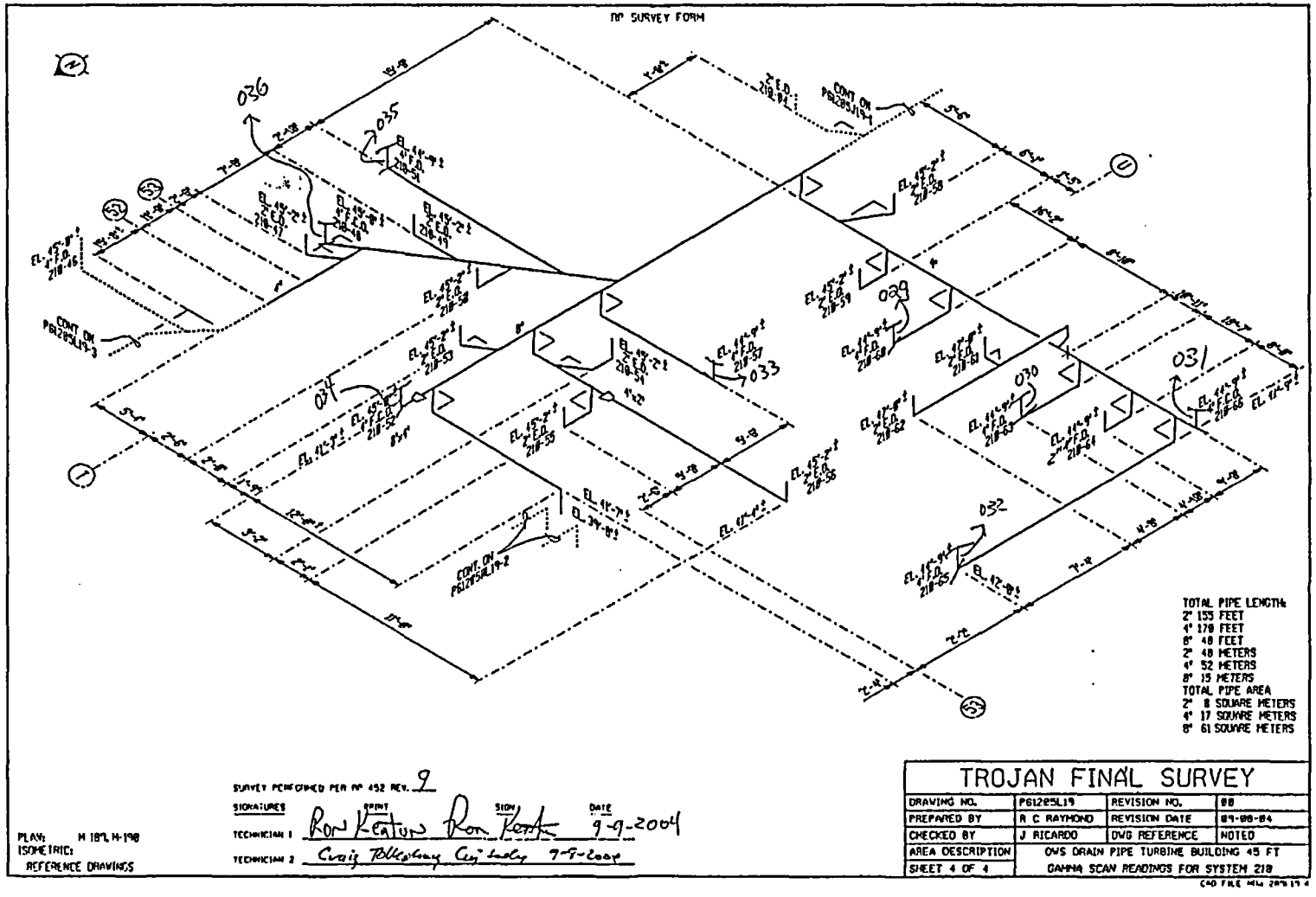
Classification: Class 2
Size (m^2): 190

Scan Measurement Data



FINAL SURVEY RESULTS SUMMARY

Survey Unit ID Code: P61205L
Survey Unit Name: TB 45' and 93' Elevations – Oily Waste Drains

Classification: Class 2
Size (m^2): 190

Scan Measurement Data