WASTEWATER STREAM CHARACTERIZATION FOR TA 3-440, 466, 468, 470, 1520, 1537, 1593, 1615, 1763, 1764, 1957, 2146 AND 2147

at
Los Alamos National Laboratory

ENVIRONMENTAL STUDY

CHARACTERIZATION REPORT # 43

15244

ENVIRONMENTAL MANAGEMENT DIVISION
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Los Alamos National Laboratory is operated by the University of California for the United States Department of Energy

WASTEWATER STREAM CHARACTERIZATION FOR TA-3-440, 466, 468, 470, 1520, 1537, 1593, 1615, 1763, 1764, 1957, 2146, and 2147

ENVIRONMENTAL STUDY

prepared for:
THE LOS ALAMOS NATIONAL LABORATORY
Los Alamos, New Mexico

under subcontract 9-XG8-2874P-1

by:
Santa Fe Engineering, Ltd.
1429 Second Street
Santa Fe, New Mexico 87501
(505) 988-7438

August, 1992

UPDATED PER ESH-8 COMMENTS FEBRUARY, 1994

EXECUTIVE SUMMARY

Buildings TA-3-440, 466, 468, 470, 1520, 1537, 1593, 1615, 1763, 1764, 1957, 2146, and 2147 were visited to document all drain piping and building outflows and to make permitting recommendations. Thirty-six pipes were found exiting the buildings, as follows:

1. from TA-3-440, two sanitary sewer connections, six roof drains, three fire protection drains, one water heater relief valve drain, one air compressor exhaust vent and generator breather vent;

2. from TA-3-468, one sanitary sewer connection, one water heater relief valve drain and two condensed water drains from evaporative coolers;

3. from TA-3-470, one sanitary sewer connection, one water heater relief valve drain and one condensed water drain from evaporative cooler;

4. from TA-3-1520, one sanitary sewer connection, one water heater relief valve drain and one condensed water drain;

5. from TA-3-1537, one sanitary sewer connection, one water heater relief valve drain and one condensed water drain;

6. from TA-3-1593, one sanitary sewer connection, one water heater relief valve drain and one condensed water drain;

7. from TA-3-1763, one sanitary sewer connection, one water heater relief valve drain and one condensed water drain and

8. from TA-3-1764, one sanitary sewer connection, one water heater relief valve drain and one condensed water drain.

Buildings TA-3-1615, 1957, 2146 and 2147 do not have any water supplies or drains.

Building TA-3-466 could not be located and may have been relocated or salvaged.

Recommendations for repiping are provided to allow outfall consolidation to minimize permit maintenance requirements and to bring the facility into compliance with the Laboratory's NPDES Permit. Floor drain plugging is recommended where the potential for discharge of pollutants exists.

A Waste Stream Database has been prepared listing the wastewater type and flow rate for each outfall.

TABLE OF CONTENTS

1.0	**INTRODUCTION**	1
2.0	**FIELD INVESTIGATION**	3
3.0	**RECOMMENDATIONS FOR BUILDING WITH NO SOURCE OF WATER AND NO DRAINS**	4
4.0	**RECOMMENDATIONS FOR BUILDING 3-440**	4
4.1	Outfalls 3-440-OPN-1 and 3-440-OPN-2	4
4.2	Outfalls 3-440-OPN-3, 3-440-OPN-5, 3-440-OPN-6, 3-440-OPN-7, 3-440-OPN-11 and 3-440-OPN-12	5
4.3	Outfalls 3-440-OPN-4, 3-440-OPN-9 and 3-440-OPN-10	5
4.4	Outfall 3-440-OPN-8	5
4.5	Outfall 3-440-OPN-13	5
4.6	Outfall 3-440-OPN-14	5
5.0	**RECOMMENDATIONS FOR BUILDING 3-466**	6
6.0	**RECOMMENDATIONS FOR BUILDING 3-468**	6
6.1	Outfall 3-468-OPN-1	6
6.2	Outfall 3-468-OPN-2	7
6.3	Outfalls 3-468-OPN-3 and 3-468-OPN-4	7
7.0	**RECOMMENDATIONS FOR BUILDING 3-470**	7
7.1	Outfall 3-470-OPN-1	7
7.2	Outfall 3-470-OPN-2	7
7.3	Outfall 3-470-OPN-3	8
8.0	**RECOMMENDATIONS FOR BUILDING 3-1520**	8
8.1	Outfall 3-1520-OPN-1	8
8.2	Outfall 3-1520-OPN-2	8
8.3	Outfall 3-1520-OPN-3	8
9.0	**RECOMMENDATIONS FOR BUILDING 3-1537**	9
9.1	Outfall 3-1537-OPN-1	9
9.2	Outfall 3-1537-OPN-2	9
9.3	Outfall 3-1537-OPN-3	9
10.0	**RECOMMENDATIONS FOR BUILDING 3-1593**	9
10.1	Outfall 3-1593-OPN-1	10
10.2	Outfall 3-1593-OPN-2	10
10.3	Outfall 3-1593-OPN-3	10

11.0 RECOMMENDATIONS FOR BUILDING 3-1763 10

11.1 Outfall 3-1763-OPN-1 10
11.2 Outfall 3-1763-OPN-2 11
11.3 Outfall 3-1763-OPN-3 11

12.0 RECOMMENDATIONS FOR BUILDING 3-1764 11

12.1 Outfall 3-1764-OPN-1 11
12.2 Outfall 3-1764-OPN-2 11
12.3 Outfall 3-1764-OPN-3 12

13.0 CONCLUSION 13

APPENDICES

APPENDIX 1 - DRAIN SUMMARY TABLE
APPENDIX 2 - WASTE STREAM CHARACTERIZATION DATABASE
APPENDIX 3 - EPA FORMS
APPENDIX 4 - DYE STUDY INFORMATION
APPENDIX 5 - DRAIN SCHEMATICS

LIST OF FIGURES

1. TA-3 PARTIAL SITE PLAN
2. TA-3-440 BUILDING DRAIN SCHEMATIC
3. TA-3-468 BUILDING DRAIN SCHEMATIC
4. TA-3-470 BUILDING DRAIN SCHEMATIC
5. TA-3-1520 BUILDING DRAIN SCHEMATIC
6. TA-3-1537 BUILDING DRAIN SCHEMATIC
7. TA-3-1593 BUILDING DRAIN SCHEMATIC
8. TA-3-1763 BUILDING DRAIN SCHEMATIC
9. TA-3-1764 BUILDING DRAIN SCHEMATIC

LIST OF TABLES

1. TA-3-440 DRAIN SUMMARY
2. TA-3-468 DRAIN SUMMARY
3. TA-3-470 DRAIN SUMMARY
4. TA-3-1520 DRAIN SUMMARY
5. TA-3-1537 DRAIN SUMMARY
6. TA-3-1593 DRAIN SUMMARY
7. TA-3-1763 DRAIN SUMMARY
8. TA-3-1764 DRAIN SUMMARY
9. NON-DRAIN RECOMMENDATIONS
10. ABBREVIATIONS

1.0 INTRODUCTION

During July, 1992, Mark E. Wendt of Santa Fe Engineering (SFE) toured buildings 440, 466, 468, 470, 1520, 1537, 1593, 1615, 1763, 1764, 1957, 2146 and 2147 in TA-3. The purpose of this study is to identify building drain piping, locate outfalls which discharge into the environment and to characterize the wastewater flows and sources existing at the time of the visit. This report will not reflect any subsequent changes in piping or operations. The Waste Stream Characterization Policy dated September 10, 1992 was followed for this study. The following tasks were performed for this purpose:

1. Building drains and all piping exiting the building were identified and laid out in schematic form;

2. Wastewater sources were identified as each drain and the wastewater was characterized according to the flow rate and quality. The location of outfalls and their potential sources of discharges were determined. Potential pollutants were also noted.

3. Permit applications for discharges of clean water were not prepared since these discharges do not require permitting at this time and

4. Potential problems were identified and recommendations were made for repiping, floor drain plugging and spill containment, where deemed appropriate.

The field investigation proceed by verifying drain schematic drawings prepared by SFE for the appropriate buildings (Figures 1 through 9) from drawings provided by Los Alamos National Laboratory (LANL) Facilities Engineering Division. The other buildings were visited to insure that no drains exist for the

buildings. The following process was used to define drain piping and characterize the wastewater streams:

1. Laboratory engineering drawings were used to prepare the SFE drain piping schematic. The Solid Waste Stream Characterization conducted by IT Corporation was reviewed. The National Pollutant Discharge Elimination System Permit (NPDES), the 1990 NPDES Permit Application submitted by Los Alamos National Laboratory (LANL) in September, 1990, the latest Federal Facilities Compliance Agreement (FFCA) between the Department of Energy (DOE) and the Environmental Protection Agency (EPA) and the Administrative Order (AO) Docket Number V1-92-1306 issued by EPA to the University of California were used for reference;

2. A site visit was performed to verify the SFE drain schematics and to identify potential outfall pipes exiting the building. The visit entailed a room by room inspection of wastewater sources and drains. Interviews with site personnel were conducted to assist in wastewater characterization and

3. SFE verified drain piping by dye checking.

2.0 FIELD INVESTIGATION

The pipes exiting the building have been assigned an Outlet Piping Number. The four part number, sequentially, identified the Technical Area where the pipe is located, the building from which the pipe discharges, the letters OPN to indicate that it is an outlet piping number and the unique number for the pipe. The piping exiting the building will be labeled for easy identification in the future.

Each drain has a unique identification number. Each number consists of three parts. The first part is the floor the drain is on. The second part has letters that indicate the drain type (abbreviations used are summarized in Table 9). The final part is a unique number for each drain. For example, the floor drain numbering on the first floor would start with 1FD1. The roof drains do not have the number identifying the floor such as RD1 for Roof Drain 1.

The function of each pipe exiting from the buildings are listed in Appendix 1, Tables 1 through 8, with an abbreviations list in Table 9. Appendix 2 contains the wastestream characterization database output, listing wastewater source, flow rates and periodicity information for each outfall drain. No EPA forms were prepared. Appendix 4 provides information about the dye study of building drains. Flow schematics of the drains from each building and the Sewage Treatment Plant are attached in Appendix 5 as Figures 2 through 9. A Site Plan is included in Appendix 5 as Figure 1 illustrating the locations of buildings included in this report.

3.0 RECOMMENDATIONS FOR BUILDING WITH NO SOURCE OF WATER AND NO DRAINS.

Buildings 3-1615, 1957, 2146 and 2147 do not have drains or any source of water. No changes or permitting are recommended. No EPA forms were prepared.

4.0 RECOMMENDATIONS FOR BUILDING 3-440

Table 1 is a list of the drains to the building outfalls and Figure 2 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendation.

4.1 Outfalls 3-440-OPN-1 and 3-440-OPN-2

These outfalls are from sanitary facilities and flow into a sewer manhole which drains into the site sanitary sewer system. No chemicals are drained into any of the drains or fixtures. The air compressor located in mechanical room C-101 has a bleed-off line which currently drains on to the floor. It is recommended that this bleed-off be containerized at the air compressor unit.

Two small fuel pumps located in mechanical room C-101 are leaking an oily fluid onto the floor. There is a secondary containment pan located below these pumps which is apparently inadequate. It is recommended secondary containment be provided for these two pumps of adequate size to contain the leak and that the pump leaks be repaired.

Room C-103 is currently being utilized for battery storage. It is recommended that secondary containment be provided for all batteries in this room. No permitting is required for this outfall and no EPA forms have been prepared.

4.2 Outfalls 3-440-OPN-3, 3-440-OPN-5, 3-440-OPN-6, 3-440-OPN-7, 3-440-OPN-11 and 3-440-OPN-12

These outfalls are from roof drains on the building. The downspouts drain to daylight next to the building. No permitting is needed for these outfalls and no EPA forms have been prepared.

4.3 Outfalls 3-440-OPN-4, 3-440-OPN-9 and 3-440-OPN-10

These outfalls are fire water system drains which discharge to daylight next to the building. These outfalls should be covered by a Notice of Intent to Discharge (NOI). No piping changes are recommended. No EPA forms were prepared.

4.4 Outfall 3-440-OPN-8

This outfall discharges from a water heater pressure relief valve to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

4.5 Outfall 3-440-OPN-13

This outfall exhausts fumes from an air compressor unit to atmosphere. No permitting is needed for this outfall and no EPA forms have been prepared.

4.6 Outfall 3-440-OPN-14

This outfall is a breather vent pipe from an electric generator which discharges to atmosphere. No permitting is needed for this outfall and no EPA forms have been prepared.

5.0 RECOMMENDATIONS FOR BUILDING 3-466

According to Joyce Martinez of the ENG-7 As-Built Program and Jim Mork of the JCI As-Built Program, this structure is listed as guard station number 303 and belongs to OS Division. According to their information, this structure should be located immediately south of trailer 3-1537. This structure was not located in the vacinity of this report, as discovered during our site investigation, and is believed to have been relocated to another area or salvaged. It is recommended that the responsible user group verify the location of this building and report their findings to Joyce Martinez for entry into her records. No permitting or piping changes are recommended and no EPA forms were prepared.

6.0 RECOMMENDATIONS FOR BUILDING 3-468

Table 2 is a list of the drains to the building outfalls and Figure 3 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

6.1 Outfall 3-468-OPN-1

This outfall is from sanitary facilities and flows into a sewer manhole which drains into the site sanitary sewer system. No chemicals drained into any of the drains or fixtures. No permitting is required for this outfall and no EPA forms have been prepared.

6.2 Outfall 3-468-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

6.3 Outfalls 3-468-OPN-3 and 3-468-OPN-4

These outfalls drain untreated water from two evaporative coolers to daylight next to the building. These outfalls should each be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

7.0 RECOMMENDATIONS FOR BUILDING 3-470

Table 3 is a list of the drains to the building outfalls and Figure 4 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendation.

7.1 Outfall 3-470-OPN-1

This outfall is from sanitary facilities and flows into a sewer manhole which drains into the site sanitary sewer system. No chemicals are drained into any of the drains or fixtures. No permitting is required for this outfall and no EPA forms have been prepared.

7.2 Outfall 3-470-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

7.3 Outfall 3-470-OPN-3

This outfall drains untreated water from an evaporative cooler to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

8.0 RECOMMENDATIONS FOR BUILDING 3-1520

Table 4 is a list of the drains to the building outfalls and Figure 5 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendation.

8.1 Outfall 3-1520-OPN-1

This outfall receives flow from one lavatory, one toilet and one drinking fountain and flows to the site sanitary sewer system. No permitting or piping changes are recommended. No EPA forms were prepared.

8.2 Outfall 3-1520-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight in the crawl space of the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

8.3 Outfall 3-1520-OPN-3

This outfall drains condensed water from a mechanical cooling unit to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

9.0 RECOMMENDATIONS FOR BUILDING 3-1537

Table 5 is a list of the drains to the building outfalls and Figure 6 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

9.1 Outfall 3-1537-OPN-1

This outfall receives flow from one lavatory, one toilet and one drinking fountain and flows to the site sanitary sewer system. No permitting or piping changes are recommended. No EPA forms were prepared.

9.2 Outfall 3-1537-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight in the crawl space of the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

9.3 Outfall 3-1537-OPN-3

This outfall drains condensed water from a mechanical cooling unit to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

10.0 RECOMMENDATIONS FOR BUILDING 3-1593

Table 6 is a list of the drains to the building outfalls and Figure 7 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain. The discussion below gives the reasoning for the recommendation.

10.1 Outfall 3-1593-OPN-1

This outfall receives flow from one lavatory and one toilet and flows to the TA-3 Sewage Treatment Plant. No permitting or piping changes are recommended. No EPA forms were prepared.

10.2 Outfall 3-1593-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight in the crawl space of the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

10.3 Outfall 3-1593-OPN-3

This outfall drains condensed water from a mechanical cooling unit to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

11.0 RECOMMENDATIONS FOR BUILDING 3-1763

Table 7 is a list of the drains to the building outfalls and Figure 8 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain. The discussion below gives the reasoning for the recommendation.

11.1 Outfall 3-1763-OPN-1

This outfall receives flow from one lavatory and one toilet and flows to the site sanitary sewer system. No permitting or piping changes are recommended. No EPA forms were prepared.

11.2 Outfall 3-1763-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight in the crawl space of the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

11.3 Outfall 3-1763-OPN-3

This outfall drains condensed water from a mechanical cooling unit to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

12.0 RECOMMENDATIONS FOR BUILDING 3-1764

Table 8 is a list of the drains to the building outfalls and Figure 9 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain. The discussion below gives the reasoning for the recommendation.

12.1 Outfall 3-1764-OPN-1

This outfall receives flow from one lavatory and one toilet and flows to the site sanitary sewer system. No permitting or piping changes are recommended. No EPA forms were prepared.

12.2 Outfall 3-1764-OPN-2

This outfall discharges from a water heater pressure relief valve to daylight in the crawl space of the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms have been prepared.

12.3 Outfall 3-1764-OPN-3

This outfall drains condensed water from a mechanical cooling unit to daylight next to the building. This outfall should be covered by an NOI. No piping changes are recommended. No EPA forms were completed.

13.0 CONCLUSION

This document provides the information to characterize buildings 440, 466, 468, 470, 1520, 1537, 1593, 1615, 1763, 1764, 1957, 2146 and 2147 of TA-3.

Permitting is not recommended for the following outfalls, as itemized below.

Areas that do not have any drains:

1. 3-1615 2. 3-1957 3. 3-2146 4. 3-2147

Areas that were not located and may have been salvaged:

1. 3-466

Discharges to the site sanitary sewer system:

1. 3-440-OPN-1	2. 3-440-OPN-2	3. 3-468-OPN-1
4. 3-470-OPN-1	5. 3-1520-OPN-1	6. 3-1537-OPN-1
7. 3-1593-OPN-1	8. 3-1763-OPN-1	9. 3-1764-OPN-1

Discharges from the fire water system:

1. 3-440-OPN-4 2. 3-440-OPN-9 3. 3-440-OPN-10

Storm Water Discharges:

1. 3-440-OPN-3	2. 3-440-OPN-5	3. 3-440-OPN-6
4. 3-440-OPN-7	5. 3-440-OPN-11	6. 3-440-OPN-12

Discharges from water heaters:

1. 3-440-OPN-8 2. 3-468-OPN-2 3. 3-470-OPN-2
4. 3-1520-OPN-2 5. 3-1537-OPN-2 6. 3-1593-OPN-2
7. 3-1763-OPN-2 8. 3-1764-OPN-2

Discharges of untreated water from evaporative coolers:

1. 3-468-OPN-3 2. 3-468-OPN-4 3. 3-470-OPN-3

Discharges of condensed water from mechanical cooling units:

1. 3-1520-OPN-3 2. 3-1537-OPN-3 3. 3-1593-OPN-3
4. 3-1763-OPN-3 5. 3-1764-OPN-3

Discharges from air compressors:

1. 3-440-OPN-13

Miscellaneous discharges:

1. 3-440-OPN-14

Recommended corrective actions are outlined in Tables 1 through 8 as well as in the above text. Corrective action should be performed as soon as practicable to minimize the chance of unpermitted discharge of pollutants.

TABLE 1: TA3-440 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-440-OPN-1 SANITARY	1FD1	MECHANICAL RM.	B-107	NO CHANGE	NO
	1LV1	RESTROOM	A-104	NO CHANGE	
	1LV2	RESTROOM	A-106	NO CHANGE	
	1SD1	BREAKROOM	A-105	NO CHANGE	
	1SD2	JANITOR'S CLOSET	A-108	NO CHANGE	
	1TL1	RESTROOM	A-104	NO CHANGE	
	1TL2	RESTROOM	A-106	NO CHANGE	
	1WF1	CORRIDOR	A-100	NO CHANGE	
3-440-OPN-2 SANITARY	1FD2	MECHANICAL RM.	C-102	NO CHANGE	NO
	1FD3	MECHANICAL RM.	C-102	NO CHANGE	
	1FD4	MECHANICAL RM.	C-101	CONTAIN	
3-440-OPN-3	RD1	ROOF	EXTER.	NO CHANGE	NO
3-440-OPN-4	N/A	FIRE LINE DRAIN	A-100	NOI	NO
3-440-OPN-5	RD2	ROOF	EXTER.	NO CHANGE	NO
	RD3	ROOF	EXTER.	NO CHANGE	
3-440-OPN-6	RD4	ROOF	EXTER.	NO CHANGE	NO
3-440-OPN-7	RD5	ROOF	EXTER.	NO CHANGE	NO
3-440-OPN-8	N/A	WATER HTR. DRAIN	B-107	NOI	NO
3-440-OPN-9	N/A	FIRE LINE DRAIN	B-107	NOI	NO
3-440-OPN-10	N/A	FIRE LINE DRAIN	B-107	NOI	NO
3-440-OPN-11	RD6	ROOF	EXTER.	NO CHANGE	NO
3-440-OPN-12	RD7	ROOF	EXTER.	NO CHANGE	NO
3-440-OPN-13	VENT	MECHANICAL RM.	C-101	NO CHANGE	NO
3-440-OPN-14	VENT	MECHANICAL RM.	C-101	NO CHANGE	NO

TABLE 2: TA3-468 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-468-OPN-1 SANITARY	1LV1	RESTROOM	112	NO CHANGE	NO
	1LV2	RESTROOM	108	NO CHANGE	
	1SD1	JANITOR'S CLOSET	110	NO CHANGE	
	1SD2	BREAK AREA	100-C	NO CHANGE	
	1TL1	RESTROOM	112	NO CHANGE	
	1TL2	RESTROOM	108	NO CHANGE	
	1UR1	RESTROOM	112	NO CHANGE	
	1WF1	CORRIDOR	100-A	NO CHANGE	
3-468-OPN-2	N/A	WATER HTR. DRAIN	109	NOI	NO
3-468-OPN-3	N/A	EC WATER	ROOF	NOI	NO
3-468-OPN-4	N/A	EC WATER	ROOF	NOI	NO

TABLE 3: TA3-470 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-470-OPN-1 SANITARY	1LV1	RESTROOM	108	NO CHANGE	NO
	1LV2	RESTROOM	110	NO CHANGE	
	1LV3	RESTROOM	110	NO CHANGE	
	1SD1	JANITOR'S CLOSET	112	NO CHANGE	
	1SD2	BREAKROOM	116	NO CHANGE	
	1TL1	RESTROOM	108	NO CHANGE	
	1TL2	RESTROOM	110	NO CHANGE	
	1UR1	RESTROOM	108	NO CHANGE	
	1UR2	RESTROOM	108	NO CHANGE	
	1WF1	CORRIDOR	100B	NO CHANGE	
3-470-OPN-2	N/A	WATER HTR. DRAIN	108	NOI	NO
3-470-OPN-3	N/A	CONDENS. WATER	ROOF	NOI	NO

TABLE 4: TA3-1520 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1520-OPN-1 SANTIARY	1LV1	RESTROOM	101C	NO CHANGE	NO
	1TL1	RESTROOM	101C	NO CHANGE	
	1WF1	CORRIDOR	100	NO CHANGE	
3-1520-OPN-2	WH	WATER HTR. DRAIN	101C	NOI	NO
3-1520-OPN-3	N/A	CONDENS. WATER	EXTER.	NOI	NO

TABLE 5: TA3-1537 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1537-OPN-1 SANITARY	1LV1	RESTROOM	102A	NO CHANGE	NO
	1TL1	RESTROOM	102A	NO CHANGE	
	1WF1	CORRIDOR	102	NO CHANGE	
3-1537-OPN-2	WH	WATER HTR. DRAIN	102A	NOI	NO
3-1537-OPN-3	N/A	CONDENS. WATER	EXTER.	NOI	NO

TABLE 6: TA3-1593 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1593-OPN-1 SANITARY	1LV1	RESTROOM	102A	NO CHANGE	NO
	1TL1	RESTROOM	102A	NO CHANGE	
3-1593-OPN-2	WH	WATER HTR. DRAIN	102A	NOI	NO
3-1593-OPN-3	N/A	CONDENS. WATER	EXTER.	NOI	NO

TABLE 7: TA3-1763 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1763-OPN-1	1LV1	RESTROOM	102A	NO CHANGE	NO
SANITARY	1TL1	RESTROOM	102A	NO CHANGE	
3-1763-OPN-2	WH	WATER HTR. DRAIN	102A	NOI	NO
3-1763-OPN-3	N/A	CONDENS. WATER	EXTER.	NOI	NO

TABLE 8: TA3-1764 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1764-OPN-1	1LV1	RESTROOM	102A	NO CHANGE	NO
SANITARY	1TL1	RESTROOM	102A	NO CHANGE	
3-1764-OPN-2	WH	WATER HTR. DRAIN	102A	NOI	NO
3-1764-OPN-3	N/A	CONDENS. WATER	EXTER.	NOI	NO

TABLE 9: NON-DRAIN RECOMMENDATIONS

TA #	BLDG. #	ROOM/AREA	RECOMMENDATION
3	440	C101	CONTAINERIZE CA TANK DRAIN
3	440	C101	UPGRADE SEC CONT @ FUEL PUMPS
3	440	C103	SEC CONTAIN @ BATTERIES

TABLE 10
SUMMARY OF ABBREVIATIONS

ABBREVIATION	MEANING
EC	Evaporative Cooler
FD	Floor Drain
LV	Lavatory
RD	Roof Drain
RDL	Roof Drain Leader
SD	Sink
---SS---	Sanitary Sewer Pipe
TL	Toilet
UR	Urinal
WF	Water Fountain
WH	Water Heater

REPORT # 43

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
3	440	3-440-OPN-01	01S/SWSC	1FD1	B-107	MECHANICAL ROOM			FLOW IS NIL	No	MECHANICAL CHILLER DRAIN
3	440	3-440-OPN-01	01S/SWSC	1LV1	A-104	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	440	3-440-OPN-01	01S/SWSC	1LV2	A-106	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	440	3-440-OPN-01	01S/SWSC	1SD1	A-105	BREAKROOM			5 DAYS PER WEEK	No	COUNTERTOP SINK
3	440	3-440-OPN-01	01S/SWSC	1SD2	A-108	JANITOR'S CLOSET			5 DAYS PER WEEK	No	SERVICE SINK
3	440	3-440-OPN-01	01S/SWSC	1TL1	A-104	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	440	3-440-OPN-01	01S/SWSC	1TL2	A-106	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	440	3-440-OPN-01	01S/SWSC	1WF1	A-100	CORRIDOR			5 DAYS PER WEEK	No	DRINKING WATER
3	440	3-440-OPN-01	01S/SWSC	N/A	C-103	BATTERY STORAGE			5 DAYS PER WEEK	No	BATTERY LEAKAGE
3	440	3-440-OPN-02	01S/SWSC	1FD2	C-102	MECHANICAL ROOM			FLOW IS NIL	No	STEAM TRAP/P.R.V. DISCH. DRAIN
3	440	3-440-OPN-02	01S/SWSC	1FD3	C-102	MECHANICAL ROOM			FLOW IS NIL	No	CONDENS. WATER/FIRE LINE DRAIN
3	440	3-440-OPN-02	01S/SWSC	1FD4	C-101	MECHANICAL ROOM			FLOW IS NIL	No	FUEL PUMPS
3	440	3-440-OPN-02	01S/SWSC	1FD4	C-101	MECHANICAL ROOM			FLOW IS NIL	No	EXPANSION TANK/STRAINER DRAIN
3	440	3-440-OPN-02	01S/SWSC	1FD4	C-101	MECHANICAL ROOM			FLOW IS NIL	No	AIR COMPRESSOR BLOWDOWN
3	440	3-440-OPN-02	01S/SWSC	N/A	C-103	BATTERY STORAGE			FLOW IS NIL	No	BATTERY LEAKAGE
3	440	3-440-OPN-03	DAYLIGHT	RD1	N/A	ROOF			5 DAYS PER WEEK	No	STORM WATER
3	440	3-440-OPN-04	DAYLIGHT	N/A	A-100	ENTRY AREA			FLOW IS NIL	No	FIRE LINE DRAIN
3	440	3-440-OPN-05	DAYLIGHT	RD2	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	440	3-440-OPN-05	DAYLIGHT	RD3	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	440	3-440-OPN-06	DAYLIGHT	RD4	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	440	3-440-OPN-07	DAYLIGHT	RD5	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	440	3-440-OPN-08	DAYLIGHT	N/A	B-107	MECHANICAL ROOM			FLOW IS NIL	No	PRESSURE RELIEF VALVE DRAIN
3	440	3-440-OPN-09	DAYLIGHT	N/A	B-107	MECHANICAL ROOM			FLOW IS NIL	No	FIRE LINE DRAIN
3	440	3-440-OPN-10	DAYLIGHT	N/A	B-107	MECHANICAL ROOM			FLOW IS NIL	No	FIRE LINE DRAIN
3	440	3-440-OPN-11	DAYLIGHT	RD6	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	440	3-440-OPN-12	DAYLIGHT	RD7	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	440	3-440-OPN-13	TMOSPHER	N/A	C-101	MECHANICAL ROOM			NO FLOW	No	AIR COMPRESSOR EXHAUST
3	440	3-440-OPN-14	TMOSPHER	N/A	C-101	MECHANICAL ROOM			NO FLOW	No	ELECT. GENERATOR BREATHER PIPE
3	468	3-468-OPN-1	01S/SWSC	1LV1	N/A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	468	3-468-OPN-1	01S/SWSC	1LV2	N/A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	468	3-468-OPN-1	01S/SWSC	1SD1	N/A	JANITOR'S CLOSET			5 DAYS PER WEEK	No	SERVICE SINK
3	468	3-468-OPN-1	01S/SWSC	1SD2	100-C	BREAK AREA			5 DAYS PER WEEK	No	COUNTERTOP SINK
3	468	3-468-OPN-1	01S/SWSC	1TL1	N/A	RESTROOM			5 DAYS PER WEEK	No	TOILET

REPORT # 43

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
3	468	3-468-OPN-1	01S/SWSC	1TL2	N/A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	468	3-468-OPN-1	01S/SWSC	1UR1	N/A	RESTROOM			5 DAYS PER WEEK	No	URINAL
3	468	3-468-OPN-1	01S/SWSC	1WF1	100-A	CORRIDOR			5 DAYS PER WEEK	No	DRINKING WATER
3	468	3-468-OPN-2	DAYLIGHT	N/A	N/A	OFFICE			FLOW IS NIL	No	PRESSURE RELIEF VALVE DRAIN
3	468	3-468-OPN-3	DAYLIGHT	N/A	N/A	ROOF			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	468	3-468-OPN-4	DAYLIGHT	N/A	N/A	ROOF			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	470	3-470-OPN-1	01S/SWSC	1LV1	N/A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	470	3-470-OPN-1	01S/SWSC	1LV2	N/A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	470	3-470-OPN-1	01S/SWSC	1LV3	N/A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	470	3-470-OPN-1	01S/SWSC	1SD1	N/A	JANITOR'S CLOSET			5 DAYS PER WEEK	No	SERVICE SINK
3	470	3-470-OPN-1	01S/SWSC	1SD2	N/A	BREAKROOM			5 DAYS PER WEEK	No	COUNTERTOP SINK
3	470	3-470-OPN-1	01S/SWSC	1TL1	N/A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	470	3-470-OPN-1	01S/SWSC	1TL2	N/A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	470	3-470-OPN-1	01S/SWSC	1UR1	N/A	RESTROOM			5 DAYS PER WEEK	No	URINAL
3	470	3-470-OPN-1	01S/SWSC	1UR2	N/A	RESTROOM			5 DAYS PER WEEK	No	URINAL
3	470	3-470-OPN-1	01S/SWSC	1WF1	100B	CORRIDOR			5 DAYS PER WEEK	No	DRINKING WATER
3	470	3-470-OPN-2	DAYLIGHT	N/A	N/A	RESTROOM			FLOW IS NIL	No	PRESSURE RELIEF VALVE DRAIN
3	470	3-470-OPN-3	DAYLIGHT	N/A	N/A	ROOF			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	1520	3-1520-OPN-1	01S/SWSC	1LV1	101C	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	1520	3-1520-OPN-1	01S/SWSC	1TL1	101C	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	1520	3-1520-OPN-1	01S/SWSC	1WF1	N/A	CORRIDOR			5 DAYS PER WEEK	No	DRINKING WATER
3	1520	3-1520-OPN-2	DAYLIGHT	N/A	101C	RESTROOM			FLOW IS NIL	No	PRESSURE RELIEF VALVE DRAIN
3	1520	3-1520-OPN-3	DAYLIGHT	N/A	N/A	EXTERIOR			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	1537	3-1537-OPN-1	01S/SWSC	1LV1	102A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	1537	3-1537-OPN-1	01S/SWSC	1TL1	102A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	1537	3-1537-OPN-1	01S/SWSC	1WF1	N/A	CORRIDOR			5 DAYS PER WEEK	No	DRINKING WATER
3	1537	3-1537-OPN-2	DAYLIGHT	N/A	102A	RESTROOM			FLOW IS NIL	No	PRESSURE RELIEF VALVE DRAIN
3	1537	3-1537-OPN-3	DAYLIGHT	N/A	N/A	EXTERIOR			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	1593	3-1593-OPN-1	01S/SWSC	1LV1	102A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	1593	3-1593-OPN-1	01S/SWSC	1TL1	102A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	1593	3-1593-OPN-2	DAYLIGHT	N/A	102A	RESTROOM			FLOW IS NIL	No	PRESSURE RELIEFVALVE DRAIN
3	1593	3-1593-OPN-3	DAYLIGHT	N/A	N/A	EXTERIOR			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	1615	3-1615	ND	N/A	N/A	GUARD STATION			NO FLOW	No	NONE

REPORT # 43

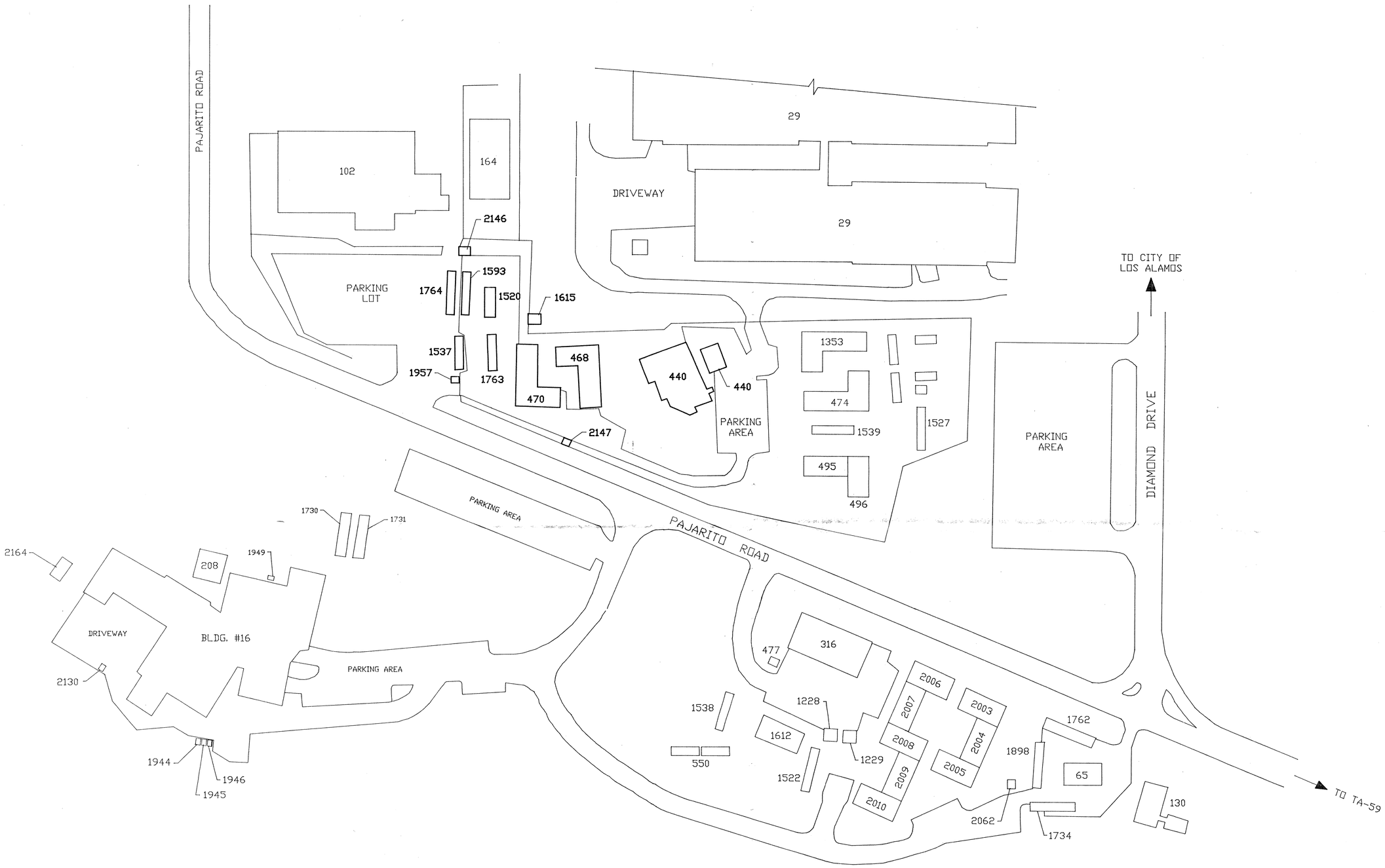
TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
3	1763	3-1763-OPN-1	01S/SWSC	1LV1	102A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	1763	3-1763-OPN-1	01S/SWSC	1TL1	102A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	1763	3-1763-OPN-2	DAYLIGHT	N/A	102A	RESTROOM			FLOW IS NIL	No	PRESSURE RELIEF VALVE DRAIN
3	1763	3-1763-OPN-3	DAYLIGHT	N/A	N/A	EXTERIOR			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	1764	3-1764-OPN-1	01S/SWSC	1LV1	102A	RESTROOM			5 DAYS PER WEEK	No	LAVATORY
3	1764	3-1764-OPN-1	01S/SWSC	1TL1	102A	RESTROOM			5 DAYS PER WEEK	No	TOILET
3	1764	3-1764-OPN-2	DAYLIGHT	N/A	102A	RESTROOM			FLOW IS NIL	No	PRESSURE RELIEFVALVE DRAIN
3	1764	3-1764-OPN-3	DAYLIGHT	N/A	N/A	EXTERIOR			MOSTLY SUMMER	Yes	EQUIP. CONDENSED WATER DRAIN
3	1957	3-1957	ND	N/A	N/A	TRANSPORTAINER			NO FLOW	No	NONE
3	2146	3-2146	ND	N/A	N/A	GUARD STATION			NO FLOW	No	NONE
3	2147	3-2147	ND	N/A	N/A	GUARD STATION			NO FLOW	No	NONE

NO

EPA FORMS

DYE STUDY INFORMATION

BUILDING NUMBER	DRAIN NUMBER	DID DYE REACH EXPECTED DESTINATION?	COMMENTS
3-440	1FD1	YES	NONE
3-440	1FD4	YES	NONE
3-440	1TL1	YES	NONE
3-468	1SD1	YES	NONE
3-468	1TL1	YES	NONE
3-470	1TL1	YES	NONE
3-1520	1TL1	YES	NONE
3-1537	1TL1	YES	NONE
3-1593	1TL1	YES	NONE
3-1763	1TL1	YES	NONE
3-1764	1TL1	YES	NONE



NOTE:

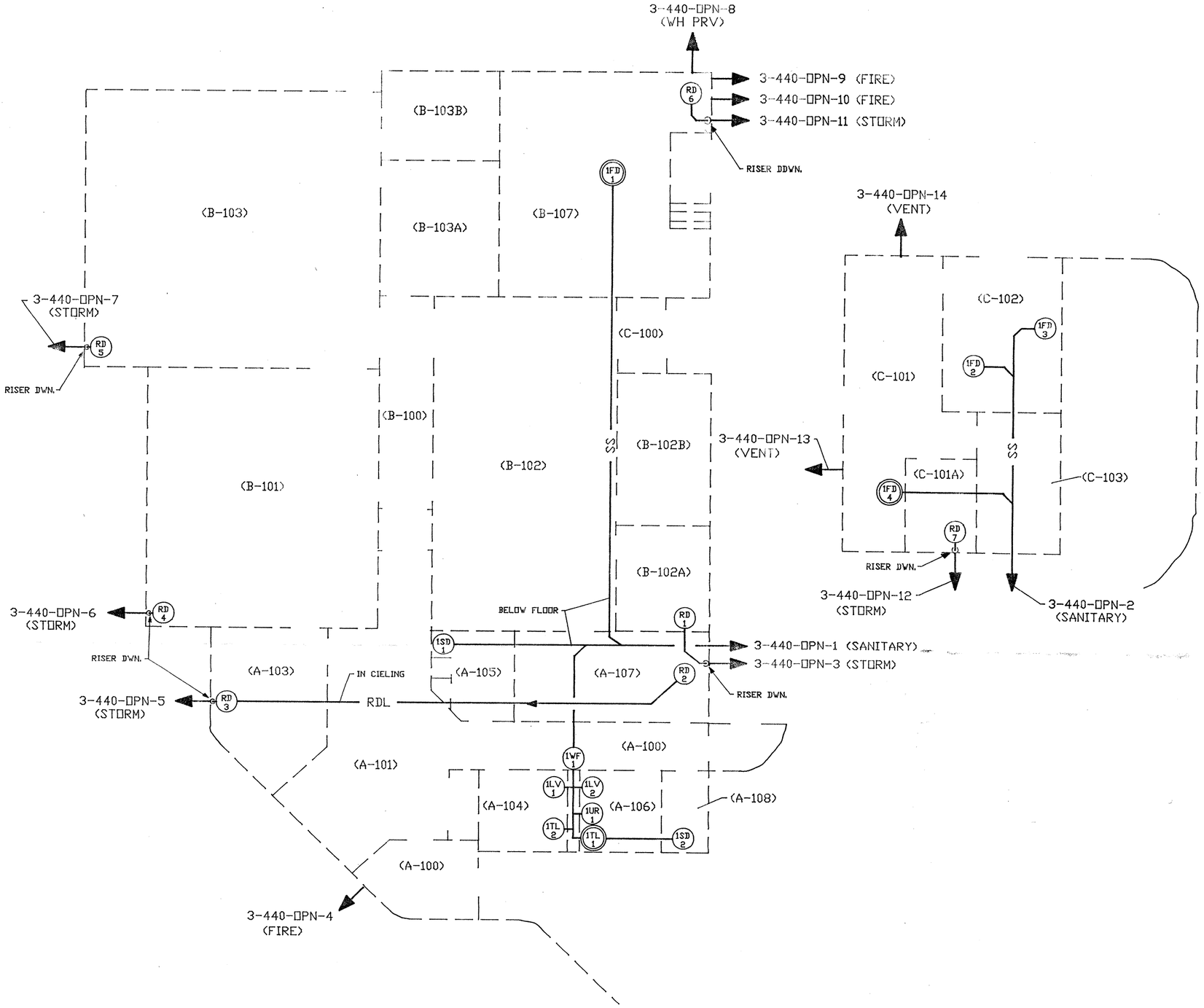
THIS DRAWING WAS DERIVED FROM L.A.N.L. DRAWING R-5134 AND SITE VISIT.

TA-3 PARTIAL SITE PLAN

NOT TO SCALE

15244-A

SANTA FE ENGINEERING, LTD.			
TA-3 PARTIAL SITE PLAN		DRAWN	M.E.W.
		DESIGN	M.E.W.
		CHECKED	P.E.B.
		DATE	7-31-92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos	Los Alamos National Laboratory Los Alamos, New Mexico 87545	SHEET	1 OF 1
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-43	FIGURE 1	



SYMBOL LEGEND	
FD	FLOOR DRAIN
LV	LAVATORY
PRV	PRESS. REDUCING VALVE
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
SD	SINK DRAIN
SS	SANITARY SEWER
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN

◎ DYE TESTED DRAIN

NOTE:

THIS DRAIN SCHEMATIC WAS DERIVED FROM L.A.N.L. DRAWING C-43745 AND SITE VISITS.

15244-B

SANTA FE ENGINEERING, LTD.

TA3-440 DRAIN SCHEMATIC

DRAWN	G.S.
DESIGN	M.E.W.
CHECKED	P.E.B.
DATE	7-31-92

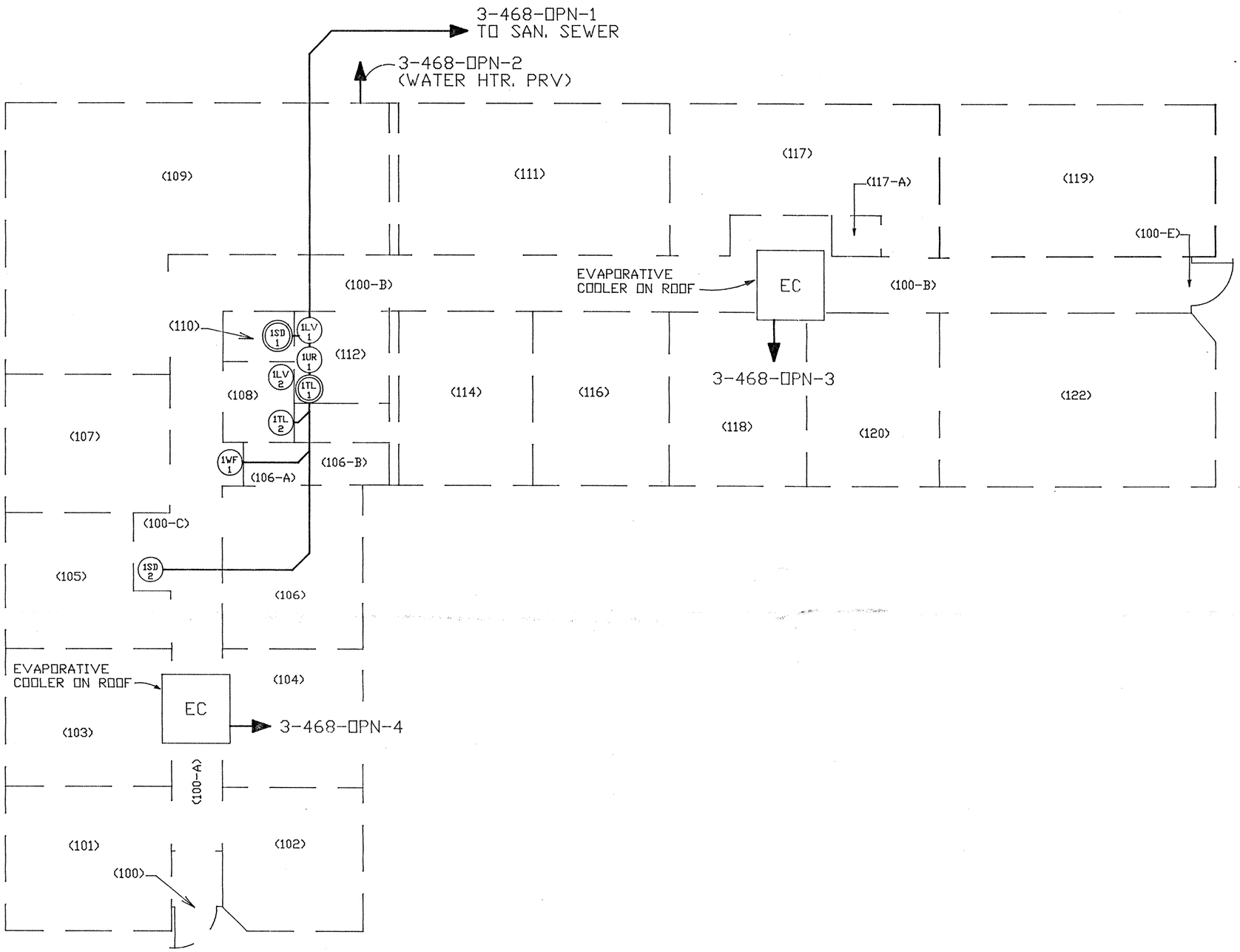
SUBMITTED | RECOMMENDED | APPROVED

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 1 OF 1

CLASSIFICATION | REVIEWER | DATE

REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP	11056-43	FIGURE 2	



SYMBOL LEGEND	
LV	LAVATORY
PRV	PRESS. REDUCING VALVE
SD	SINK DRAIN
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN

◯ DYE TESTED DRAIN

NOTE:

THIS DRAIN SCHEMATIC WAS DERIVED FROM L.A.N.L. DRAWING R-5283 AND SITE VISTS.

SANTA FE ENGINEERING, LTD.

TA3-468 DRAIN SCHEMATIC

DRAWN	G.S.
DESIGN	M.E.W.
CHECKED	P.E.B.
DATE	7-31-92

SUBMITTED | RECOMMENDED | APPROVED

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

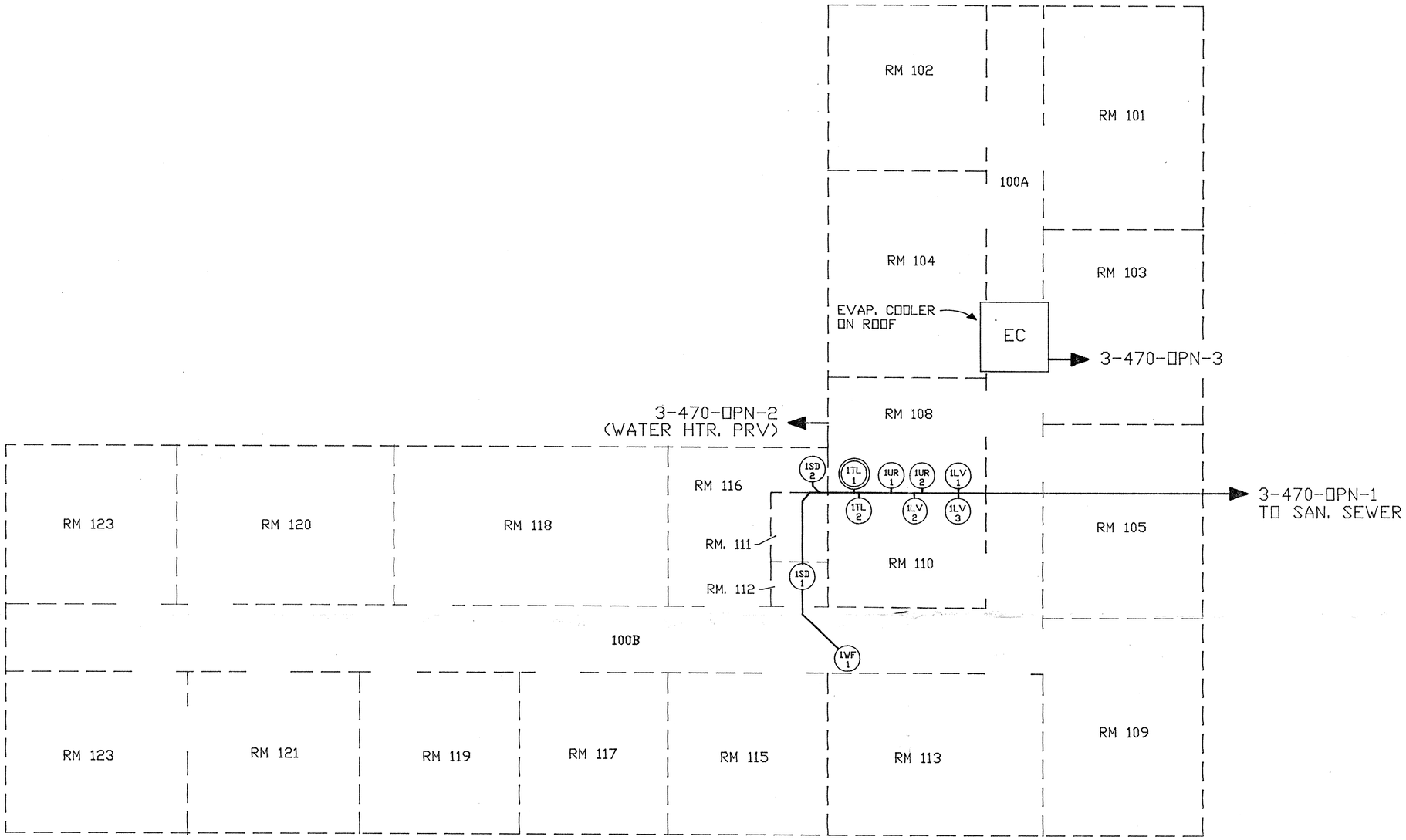
SHEET 1 OF 1

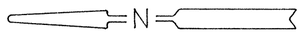
CLASSIFICATION | REVIEWER | DATE

REQUESTING DIVISION | LAB JOB NO. | DRAWING NO. | REV.

REQUESTING GROUP: ESH-8 | 11056-43 | FIGURE 3

15244-C





NOTE:

THIS DRAIN SCHEMATIC WAS DERIVED FROM L.A.N.L. DRAWING R-5305 AND SITE VISITS.

SYMBOL LEGEND	
LV	LAVATORY
PRV	PRESS. REDUCING VALVE
SD	SINK DRAIN
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN

◯ DYE TESTED DRAIN

15244-D

SANTA FE ENGINEERING, LTD.

TA3-470
DRAIN SCHEMATIC

DRAWN	D.A.H.
DESIGN	M.E.W.
CHECKED	P.E.B.
DATE	7-31-92

SUBMITTED | RECOMMENDED | APPROVED

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 1 OF 1

CLASSIFICATION | REVIEWER | DATE

REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP ESH-8	11056-43	FIGURE 4	