WASTEWATER STREAM CHARACTERIZATION FOR TA 3-474, 495, 496, 512, 513, 514, 1353, 1527, 1539, 1769, 1770, 1812, 1813 & 1913

at

Los Alamos National Laboratory

ENVIRONMENTAL STUDY

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WASTEWATER STREAM CHARACTERIZATION FOR TA-3-474, 495, 496, 512, 513, 514, 1353, 1527, 1539, 1769, 1770, 1812, 1813 and 1913

ENVIRONMENTAL STUDY

Prepared for:
THE LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO

under subcontract 9-XG8-2874P-1

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EXECUTIVE SUMMARY

Buildings 474, 495, 496, 512, 513, 514, 1353, 1527, 1539, 1769, 1770, 1812, 1813 and 1913 in TA-3 were visited to verify existing drain systems and to characterize existing and/or potential waste streams. The pipes exiting the buildings are as follows:

1) from building 3-474: one (1) outfall to the site sanitary sewer system, one (1) outfall to daylight from a water heater pressure relief valve and two (2) outfalls to daylight from evaporative air cooler drains,

2) from building 3-495: one (1) outfall to the site sanitary sewer system and one (1) outfall to daylight from an evaporative air cooler drain,

3) from building 3-496: one (1) outfall to the site sanitary sewer system, one (1) outfall to daylight from an evaporative air cooler drain and one (1) outfall to daylight from a water heater pressure relief valve,

4) from building 3-512: one (1) outfall to the site sanitary sewer system, one (1) outfall to daylight from a water heater PRV and one (1) outfall to daylight from a cooling coil condensate drain,

5) from building 3-513: one (1) outfall to the site sanitary sewer system and one (1) outfall to daylight from an A/C cooling coil condensate drain,

6) from building 3-514: one (1) outfall to the site sanitary sewer system, one (1) outfall to daylight from a cooling coil condensate drain, one (1) outfall to daylight from a water heater pressure relief valve and one (1) potable water system drain to daylight,

7) from building 3-1353: one (1) outfall to the site sanitary sewer system, one (1) outfall to daylight from a water heater pressure relief valve, one (1) outfall to daylight from a potable water system drain, two (2) outfalls to daylight from evaporative air coolers and one (1) outfall to daylight from an A/C cooling coil condensate drain,

8) from building 3-1527: one (1) outfall to daylight from a cooling coil condensate drain,

9) from building 3-1539: one (1) outfall to the site sanitary sewer system, one (1) outfall to daylight from a water heater pressure relief valve and two (2) outfalls to daylight from fire suppression system (sprinkler) drains and

10) From building 3-1769, 1770, 1812, 1813 and 1913 no drains.

As noted in Tables 1 through 9 of Appendix 1, no EPA permits were recommended for the subject buildings and no EPA forms are included in this report.

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.

A waste stream database has been prepared listing wastewater type and flow rate for each outfall.

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1.0 INTRODUCTION

During August and September, 1992, Stephen C. Diamond, P.E. of Santa Fe Engineering (SFE) toured the buildings 474, 495, 496, 512, 513, 514, 1353, 1527, 1539, 1769, 1770, 1812, 1813 and 1913 of TA-3 with Benturo Martinez (OS-8) and Walt Carlson (ENG-5). 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 operation. The Waste Stream Characterization policy of 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 at 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 proceeded by verifying drain schematic drawings prepared by SFE for the appropriate buildings (Figures 1 through 6) from drawings provided by Los Alamos National Laboratory (LANL) Facilities Engineering Division (ENG-7). 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 (NPDES) Permit, the 1990 NPDES Permit Application submitted by 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 wastestream 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, identifies 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 10). 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 9. Appendix 2 contains the wastestream characterization database output, listing wastewater source, flow rates and periodicity information for each outfall drain. Appendix 3 contains a statement indicating no EPA forms were required for this group of buildings. Appendix 4 provides information about the dye study of building drains. Flow schematics of the drains from each building are attached in Appendix 5 as Figures 1 through 6.

3.0 RECOMMENDATIONS FOR BUILDING 3-474

Building 3-474 is a modular building structure housing offices and electronic shops for one of the OS groups. Table 1 of Appendix 1 lists the four (4) outfalls from the building and Figure 1 of Appendix 5 is a schematic representation of these outfalls.

3.1 Outfall 3-474-OPN-1

This outfall discharges to the site sanitary sewer system at TA-3. Drains contributing to this outfall include toilets (2), lavatories (2), urinals (2), sink drain (1) and one (1) water fountain. No changes or permitting are recommended for this outfall. No EPA forms have been prepared.

3.2 Outfall 3-474-OPN-2

This outfall to daylight is the piped discharge of a water heater pressure relief valve (PRV). It is recommended that this occasional discharge be included in the Notice of Intent (NOI) to Discharge. No permitting is recommended and no EPA forms have been prepared.

3.3 Outfalls 3-474-OPN-3 and 3-474-OPN-4

These outfalls to daylight are overflow drains from two (2) evaporative coolers (EC) located on the roof of the building. It is recommended that these occasional discharges be included in an NOI. No changes are recommended. No EPA forms have been prepared.

4.0 RECOMMENDATIONS FOR BUILDING 3-495

Building 3-495 is a modular office structure for OS-8 connected to building 3-496. It contains office, storage

rooms (originally restrooms) and a hallway. Table 2 of Appendix 1 describes the two (2) outfalls from the building and Figure 2 of Appendix 5 is a schematic of the drain systems.

4.1 Outfall 3-495-OPN-1

This outfall discharges to the site sanitary sewer system at TA-3. Drains contributing to this outfall include two (2) sink drains and one (1) water fountain sink drain. 1SD1 receives discharge from a water heater PRV located in the same closet. According to record plans, this outfall also had one (1) lavatory, two (2) toilets and a urinal contributing to it. The drains have been removed or were possibly never installed. No piping changes or permitting are recommended. No EPA forms have been prepared.

4.2 Outfall 3-495-OPN-2

This outfall is an evaporative air cooler drain discharge to daylight located on the roof of the structure. It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

5.0 RECOMMENDATIONS FOR BUILDING 3-496

Building 3-496 is a modular office structure connected to building 3-495. It contains offices, restrooms and a hallway. Table 3 of Appendix 1 lists the three (3) outfalls for the building and Figure 2 is a schematic of the drain systems.

5.1 Outfalls 3-496-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include toilets (2), lavatories (2), sink drain (1), shower (1), urinal (1) and one (1) water fountain. Sink drain 1SD1 receives discharge from a water heater PRV located in the same janitorial closet. No changes or permitting are recommended and no EPA forms have been prepared.

5.2 Outfall 3-496-OPN-2

This outfall is the discharge to daylight from a rooftop evaporative air cooler drain. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

5.3 Outfall 3-496-OPN-3

This outfall is the discharge to daylight (below floor) of a water heater PRV. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

6.0 RECOMMENDATIONS FOR BUILDING 3-512

Building 3-512 is a modular office building that is part of a three-building U-shaped structure (512, 513 & 514). It contains offices, a conference room and a hallway. Table 4 of Appendix 1 describes the three (3) outfalls from the building and Figure 3 of Appendix 5 is a schematic presentation of these drains.

6.1 Outfalls 3-512-OPN-1

This outfall discharges to the site sanitary sewer system via connection to building 3-513 outfall 3-513-OPN-1. There is a single sink drain contributing to this outfall. No changes or permitting are recommended. No EPA forms have been prepared.

6.2 Outfall 3-512-OPN-2

This outfall is the piped discharge to daylight of a water heater PRV. It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

6.3 Outfall 3-512-OPN-3

This outfall to daylight is the discharge of an air conditioning (A/C) cooling coil condensate drain. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

7.0 RECOMMENDATIONS FOR BUILDING 3-513

Building 3-513 is a modular office building that is part of a three-building structure. Table 5 of Appendix 1 lists the two (2) outfalls from the building and Figure 3 of Appendix 5 is a schematic of the outfalls.

7.1 Outfall 3-513-OPN-1

This outfall discharges to the site sanitary sewer system via connection to building 3-514 outfall 3-514-OPN-1. A single water fountain that has been removed (stub outs remain) contributed to this outfall. No changes or

permitting are recommended. No EPA forms have been prepared.

7.2 Outfall 3-513-OPN-2

This outfall is the discharge to daylight of an A/C cooling coil condensate drain. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

8.0 RECOMMENDATIONS FOR BUILDING 3-514

Building 3-514 is a modular office building that is part of a three-building structure (512, 513 and 514). Table 6 of Appendix 1 lists these four (4) outfalls from the building and Figure 3 of Appendix 5 is a schematic representation of these drains.

8.1 Outfall 3-514-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include toilets (4), lavatories (4), sink drains (2), non-emergency showers (2) and one (1) urinal. This outfall also includes the combined flows of 3-512-OPN-1 and 3-513-OPN-1. No changes or permitting are recommended. No EPA forms have been prepared.

8.2 Outfall 3-514-OPN-2

This outfall to daylight is the piped discharge of an A/C cooling coil condensate drain. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

8.3 Outfall 3-514-OPN-3

This outfall is the discharge to daylight of a water heater PRV. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

8.4 Outfall 3-514-OPN-4

This outfall is the discharge to daylight of a potable water system drain line. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

9.0 RECOMMENDATIONS FOR BUILDING 3-1353

This building is a modular office structure occupied by Group OS-4. It includes offices, restrooms, a hallway and an RF shielded chamber. Table 7 of Appendix 1 lists the six (6) outfalls for the building. Figure 4 of Appendix 5 is a schematic of the drain systems.

9.1 Outfall 3-1353-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include toilets (2), urinals (2), lavatories (2), sink drains (2) and one (1) water fountain. No changes or permitting are recommended. No EPA forms have been prepared.

9.2 Outfall 3-1353-OPN-2

This outfall is the discharge to daylight of a water heater PRV located in the furnace room. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and EPA forms have been prepared.

9.3 Outfall 3-1353-OPN-3

This outfall is the discharge to daylight of a water system drain line. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

9.4 Outfalls 3-1353-OPN-4 and 3-1353-OPN-5

These two (2) outfalls are the discharge to daylight of two (2) evaporative air cooler drains for units located on the roof. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

9.5 Outfall 3-1353-OPN-6

This outfall is the discharge to daylight of an A/C unit condensate drain. The unit is ground-mounted at the rear of the building. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

10.0 RECOMMENDATIONS FOR BUILDING 3-1527

Building 3-1527 is a small trailer utilized by OS as a machine shop. It has no drains or water supply to the building. However, it does have a single outfall to daylight from an A/C unit cooling coil condensate drain. Table 8 of Appendix 1 lists this single outfall and Figure 5 of Appendix 5 is a schematic of this outfall. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

11.0 RECOMMENDATIONS FOR BUILDING 3-1539

Building 3-1539 is a trailer used as an electronic component (security systems) storage facility by OS-8. Table 9 of Appendix 1 lists the four (4) outfalls from the structure and Figure 6 is a schematic of the outfalls.

11.1 Outfall 3-1539-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include one (1) toilet and one (1) lavatory. No changes or permitting are recommended. No EPA forms have been prepared.

11.2 Outfall 3-1539-OPN-2

This outfall is the discharge to daylight of a water heater PRV (below floor). It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

11.3 Outfalls 3-1539-OPN-3 and 3-1539-OPN-4

These outfalls are fire suppression system (sprinkler) drains that discharge to daylight. It is recommended that this occasional discharge be included in an NOI. No changes are recommended and no EPA forms have been prepared.

12.0 RECOMMENDATIONS FOR BUILDINGS 1769, 1770, 1812, 1813 and 1913

Buildings TA-3-1769, 1770, 1812, 1813 and 1913 do not have drains. All of these buildings are either semi-trailers, portable metal sheds or shop trailers. No changes or permitting are recommended. No EPA forms were completed.

13.0 CONCLUSION

This document provides the information to characterize buildings 474, 495, 496, 512, 513, 514, 1353, 1527, 1539, 1769, 1770, 1812, 1813 and 1913 at TA-3. None of the outfalls associated with the listed buildings require EPA permits. No EPA forms have been prepared. The outfalls are listed below:

Buildings without drains:

1. 3-1769 2. 3-1770 3. 3-1812 4. 3-1813
5. 3-1913

Discharges to the Site Sanitary Sewer System:

1. 3-474-OPN-1 2. 3-495-OPN-1 3. 3-496-OPN-1
4. 3-512-OPN-1 5. 3-513-OPN-1 6. 3-514-OPN-1
7. 3-1353-OPN-1 8. 3-1537-OPN-1

Discharges from fire water drains:

1. 3-1537-OPN-3 2. 3-1537-OPN-4

Discharges from evaporative air cooler drains:

1. 3-474-OPN-3 2. 3-474-OPN-4 3. 3-495-OPN-2
4. 3-496-OPN-2 5. 3-1353-OPN-3 6. 3-1353-OPN-4

Miscellaneous discharges:

1. 3-474-OPN-2 2. 3-496-OPN-3 3. 3-512-OPN-12
4. 3-512-OPN-3 5. 3-513-OPN-2 6. 3-514-OPN-2
7. 3-514-OPN-3 8. 3-514-OPN-4 9. 3-1353-OPN-2
10. 3-1353-OPN-5 11. 3-1527-OPN-1 12. 3-1539-OPN-2

Recommended permitting and corrective actions are outlined in Tables 1 through 9 as well as in the above text. Corrective actions should be performed as soon as practical to minimize the chance of unpermitted discharge of pollutants.

TABLE 1 : TA 3-474 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-474-OPN-1 SANITARY	1LV1	RESTROOM	101	NO CHANGE	NO
	1LV2	RESTROOM	103	NO CHANGE	
	1SD1	JANITOR CLOSET	101C	NO CHANGE	
	1TL1	RESTROOM	101	NO CHANGE	
	1TL2	RESTROOM	103	NO CHANGE	
	1UR1	RESTROOM	103	NO CHANGE	
	1UR2	RESTROOM	103	NO CHANGE	
	1WF1	HALLWAY	100A	NO CHANGE	
3-474-OPN-2	WH	WTR HTR PRV	104	NOI	NO
3-474-OPN-3	EC	EVAP COOL DR	ROOF	NOI	NO
3-474-OPN-4	E C	EVAP COOL DR	ROOF	NOI	NO

TABLE 2 : TA 3-495 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-495-OPN-1 SANITARY	1LV1	COFFEE BAR	107A	REMOVED	NO
	1SD1	JANITOR CLOSET	109A	NO CHANGE	
	1SD2	COFFEE BAR	115	NO CHANGE	
	1TL1	COFFEE BAR	107A	REMOVED	
	1TL2	COFFEE BAR	115	REMOVED	
	1UR1	COFFEE BAR	115	REMOVED	
	1WF1	HALLWAY	100	NO CHANGE	
3-495-OPN-2	EC	EVAP COOL DR	ROOF	NOI	NO

TABLE 3 : TA 3-496 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-496-OPN-1 SANITARY	1LV1	RESTROOM	103B	NO CHANGE	NO
	1LV2	RESTROOM	109B	NO CHANGE	
	1SD1	JANITOR CLOSET	107B	NO CHANGE	
	1SH1	RESTROOM	109B	NO CHANGE	
	1TL1	RESTROOM	103B	NO CHANGE	
	1TL2	RESTROOM	109B	NO CHANGE	
	1UR1	RESTROOM	109B	NO CHANGE	
	1WF1	HALLWAY	100	NO CHANGE	
3-496-OPN-2	EC	EVAP COOL DR	ROOF	NOI	NO
3-496-OPN-3	WH	WTR HTR PRV	109B	NOI	NO

TABLE 4 : TA 3-512 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-512-OPN-1 SANITARY	1SD1	CONF ROOM	137	NO CHANGE	NO
3-512-OPN-2	WH	CLOSET	137A	NOI	NO
3-512-OPN-3	A/C	FURNACE RM	150	NOI	NO

TABLE 5 : TA 3-513 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-513-OPN-1	1WF1	HALLWAY	100B	REMOVED	NO
3-513-OPN-2	A/C	FURNACE RM	147	NOI	NO

TABLE 6 : TA 3-514 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-514-OPN-1 SANITARY	1LV1	RESTROOM	118	NO CHANGE	NO
	1LV2	RESTROOM	118	NO CHANGE	
	1LV3	RESTROOM	116	NO CHANGE	
	1LV4	RESTROOM	116	NO CHANGE	
	1SD1	JANITOR CLOSET	114	NO CHANGE	
	1SD2	COFFEE BAR	N/A	NO CHANGE	
	1SH1	RESTROOM	118	NO CHANGE	
	1SH2	RESTROOM	116	NO CHANGE	
	1TL1	RESTROOM	118	NO CHANGE	
	1TL2	RESTROOM	118	NO CHANGE	
	1TL3	RESTROOM	116	NO CHANGE	
	1TL4	RESTROOM	116	NO CHANGE	
	1UR1	RESTROOM	116	NO CHANGE	
3-514-OPN-2	N/A	FURNACE RM	152	NOI	NO
3-514-OPN-3	WH	WTR HTR PRV	152	NOI	NO
3-514-OPN-4	N/A	WTR SYS DR	152	NOI	NO

TABLE 7 : TA 3-1353 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1353-OPN-1 SANITARY	1LV1	RESTROOM	103	NO CHANGE	NO
	1LV2	RESTROOM	114	NO CHANGE	
	1SD1	COFFEE BAR	100B	NO CHANGE	
	1SD2	JANITOR CLOSET	105	NO CHANGE	
	1TL1	RESTROOM	103	NO CHANGE	
	1TL2	RESTROOM	114	NO CHANGE	
	1UR1	RESTROOM	114	NO CHANGE	
	1UR2	RESTROOM	114	NO CHANGE	
	1WF1	HALLWAY	100B	NO CHANGE	
3-1353-OPN-2	WH	WTR HTR PRV	111A	NOI	NO
3-1353-OPN-3	N/A	WTR SYS DR	111A	NOI	NO
3-1353-OPN-4	EC	EVAP COOL DR	ROOF	NOI	NO
3-1353-OPN-5	EC	EVAP COOL DR	ROOF	NOI	NO
3-1353-OPN-6	N/A	A/C CONDENSATE	EXT	NOI	NO

TABLE 8 : TA 3-1527 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1527-OPN-1	N/A	A/C CONDENSATE	EXT	NOI	NO

TABLE 9 : TA 3-1539 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1539-OPN-1	1LV1	RESTROOM	101A	NO CHANGE	NO
	1TL1	RESTROOM	101A	NO CHANGE	
3-1539-OPN-2	WH	WTR HTR PRV	101A	NOI	NO
3-1539-OPN-3	N/A	FIRE SYS DR	101	NOI	NO
3-1539-OPN-4	N/A	FIRE TEST DR	102	NOI	NO

TABLE 10
SUMMARY OF ABBREVIATIONS

ABBREVIATION	MEANING
A/C	AIR CONDITIONER
EC	EVAP COOLER
LV	LAVATORY
MH	MANHOLE
NOI	NOTICE OF INTENT
PRV	PRESS RELIEF VALVE
SD	SINK DRAIN
SH	NON-EMER SHOWER
SS	SANITARY SEWER
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN
WH	WATER HEATER

REPORT # 48

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
3	474	3-474-OPN-01	01S/SWSC	1LV01	101	RESTROOM			5 DAYS/WK	No	HAND WASH
3	474	3-474-OPN-01	01S/SWSC	1LV02	103	RESTROOM			5 DAYS/WK	No	HAND WASH
3	474	3-474-OPN-01	01S/SWSC	1SD01	101C	JANITOR CLOSET			5 DAYS/WK	No	GENERAL CLEANING
3	474	3-474-OPN-01	01S/SWSC	1TL01	101	RESTROOM			5 DAYS/WK	No	TOILET
3	474	3-474-OPN-01	01S/SWSC	1TL02	103	RESTROOM			5 DAYS/WK	No	TOILET
3	474	3-474-OPN-01	01S/SWSC	1UR01	103	RESTROOM			5 DAYS/WK	No	URINAL
3	474	3-474-OPN-01	01S/SWSC	1UR02	103	RESTROOM			5 DAYS/WK	No	URINAL
3	474	3-474-OPN-01	01S/SWSC	1WF01	100A	HALLWAY			5 DAYS/WK	No	WATER FOUNTAINNG
3	474	3-474-OPN-02	DAYLIGHT	N/A	104	JANITOR CLOSET			7 DAYS/WK	No	WTR HTR PRV DRAIN
3	474	3-474-OPN-03	DAYLIGHT	N/A	EXT	ROOF			COOLING SEASON	Yes	EVAP AIR COOLER DRAIN
3	474	3-474-OPN-04	DAYLIGHT	N/A	EXT	ROOF			COOLING SEASON	Yes	EVAP AIR COOLER DRAIN
3	495	3-495-OPN-01	01S/SWSC	1LV01	107A	COFFEE BAR/SUPPLIES			REMOVED	No	NO SOURCES (REMOVED)
3	495	3-495-OPN-01	01S/SWSC	1SD01	109A	JANITOR CLOSET			FLOW IS NIL	No	(1) WTR HTR PRV DRAIN
3	495	3-495-OPN-01	01S/SWSC	1SD02	115	COFFEE BAR/SUPPLIES			5 DAYS/WK	No	GENERAL CLEANING
3	495	3-495-OPN-01	01S/SWSC	1TL01	107A	COFFEE BAR/SUPPLIES			REMOVED	No	NO SOURCES (REMOVED)
3	495	3-495-OPN-01	01S/SWSC	1TL02	115	COFFEE BAR/SUPPLIES			REMOVED	No	NO SOURCES (REMOVED)
3	495	3-495-OPN-01	01S/SWSC	1UR01	115	COFFEE BAR/SUPPLIES			REMOVED	No	NO SOURCES (REMOVED)
3	495	3-495-OPN-01	01S/SWSC	1WF01	100	HALLWAY			5 DAYS/WK	No	WATER FOUNTAIN
3	495	3-495-OPN-02	DAYLIGHT	N/A	EXT	ROOF			COOLING SEASON	Yes	EVAP AIR COOLER DRAIN
3	496	3-496-OPN-01	01S/SWSC	1LV01	109B	RESTROOM			5 DAYS/WK	No	HAND WASH
3	496	3-496-OPN-01	01S/SWSC	1LV01	103B	RESTROOM			5 DAYS/WK	No	HAND WASH
3	496	3-496-OPN-01	01S/SWSC	1SD01	107B	JANITOR CLOSET			FLOW IS NIL	No	WTR HTR PRV DRAIN
3	496	3-496-OPN-01	01S/SWSC	1SH01	109B	RESTROOM			5 DAYS/WK	No	NON-EMER SHOWER
3	496	3-496-OPN-01	01S/SWSC	1TL01	103B	RESTROOM			5 DAYS/WK	No	TOILET
3	496	3-496-OPN-01	01S/SWSC	1TL02	109B	RESTROOM			5 DAYS/WK	No	TOILET
3	496	3-496-OPN-01	01S/SWSC	1UR01	109B	RESTROOM			5 DAYS/WK	No	URINAL
3	496	3-496-OPN-01	01S/SWSC	1WF01	100	HALLWAY			5 DAYS/WK	No	WATER FOUNTAIN
3	496	3-496-OPN-02	DAYLIGHT	N/A	EXT	ROOF			COOLING SEASON	Yes	EVAP AIR COOLER DRAIN
3	496	3-496-OPN-03	DAYLIGHT	N/A	109B	JANITOR CLOSET			FLOW IS NIL	No	WTR HTR PRV DRAIN
3	512	3-512-OPN-01	01S/SWSC	1SD01	137	CONFERENCE ROOM/COFF			5 DAYS/WK	No	GENERAL CLEANING
3	512	3-512-OPN-02	DAYLIGHT	N/A	137A	CLOSET			FLOW IS NIL	No	WTR HTR PRV DRAIN
3	512	3-512-OPN-03	DAYLIGHT	N/A	150	FURNACE RM			COOLING SEASON	Yes	A/C COIL CONDENSATE DRAIN
3	513	3-513-OPN-01	01S/SWSC	1WF01	100B	HALLWAY			5 DAYS/WK	No	WATER FOUNTAIN

REPORT # 48

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
3	513	3-513-OPN-02	DAYLIGHT	N/A	147	FURNACE RM			COOLING SEASON	Yes	A/C COIL CONDENSATE DRAIN
3	514	3-514-OPN-01	01S/SWSC	1LV01	118	RESTROOM			5 DAYS/WK	No	HAND WASH
3	514	3-514-OPN-01	01S/SWSC	1LV02	118	RESTROOM			5 DAYS/WK	No	HAND WASH
3	514	3-514-OPN-01	01S/SWSC	1LV03	116	RESTROOM			5 DAYS/WK	No	HAND WASH
3	514	3-514-OPN-01	01S/SWSC	1LV04	116	RESTROOM			5 DAYS/WK	No	HAND WASH
3	514	3-514-OPN-01	01S/SWSC	1SD01	114	JANITOR CLOSET			5 DAYS/WK	No	GENERAL CLEANING
3	514	3-514-OPN-01	01S/SWSC	1SD02	N/A	COFFEE BAR			5 DAYS/WK	No	GENERAL CLEANING
3	514	3-514-OPN-01	01S/SWSC	1SH01	118	RESTROOM			5 DAYS/WK	No	NON-EMER SHOWER
3	514	3-514-OPN-01	01S/SWSC	1SH02	116	RESTROOM			5 DAYS/WK	No	NON-EMER SHOWER
3	514	3-514-OPN-01	01S/SWSC	1TL01	118	RESTROOM			5 DAYS/WK	No	TOILET
3	514	3-514-OPN-01	01S/SWSC	1TL02	118	RESTROOM			5 DAYS/WK	No	TOILET
3	514	3-514-OPN-01	01S/SWSC	1TL03	116	RESTROOM			5 DAYS/WK	No	TOILET
3	514	3-514-OPN-01	01S/SWSC	1TL04	116	RESTROOM			5 DAYS/WK	No	TOILET
3	514	3-514-OPN-01	01S/SWSC	1UR01	116	RESTROOM			5 DAYS/WK	No	URINAL
3	514	3-514-OPN-02	DAYLIGHT	N/A	152	FURNACE RM			COOLING SEASON	Yes	A/C COIL CONDENSATE DRAIN
3	514	3-514-OPN-03	DAYLIGHT	N/A	152	FURNACE RM			FLOW IS NIL	No	WTR HTR PRV DRAIN
3	514	3-514-OPN-04	DAYLIGHT	N/A	152	FURNACE RM			FLOW IS NIL	No	WTR SYS DRAIN
3	1353	3-1353-OPN-01	01S/SWSC	1LV01	103	RESTROOM			5 DAYS/WK	No	HAND WASH
3	1353	3-1353-OPN-01	01S/SWSC	1LV02	114	RESTROOM			5 DAYS/WK	No	HAND WASH
3	1353	3-1353-OPN-01	01S/SWSC	1SD01	100B	COFFEE BAR			5 DAYS/WK	No	GENERAL CLEANING
3	1353	3-1353-OPN-01	01S/SWSC	1SD02	105	JANITOR CLOSET			5 DAYS/WK	No	GENERAL CLEANING
3	1353	3-1353-OPN-01	01S/SWSC	1TL01	114	RESTROOM			5 DAYS/WK	No	TOILET
3	1353	3-1353-OPN-01	01S/SWSC	1TL02	114	RESTROOM			5 DAYS/WK	No	TOILET
3	1353	3-1353-OPN-01	01S/SWSC	1UR01	114	RESTROOM			5 DAYS/WK	No	URINAL
3	1353	3-1353-OPN-01	01S/SWSC	1UR02	114	RESTROOM			5 DAYS/WK	No	URINAL
3	1353	3-1353-OPN-01	01S/SWSC	1WF01	100B	HALLWAY CLOSET			5 DAYS/WK	No	WATER FOUNTAIN
3	1353	3-1353-OPN-02	DAYLIGHT	N/A	111A	MECH CLOSET			FLOW IS NIL	No	WTR HTR PRV DRAIN
3	1353	3-1353-OPN-03	DAYLIGHT	N/A	111A	MECH CLOSET			FLOW IS NIL	No	WTR SYS DRAIN
3	1353	3-1353-OPN-04	DAYLIGHT	N/A	EXT	ROOF			COOLING SEASON	Yes	EVAP AIR COOLER DRAIN
3	1353	3-1353-OPN-05	DAYLIGHT	N/A	EXT	ROOF			COOLING SEASON	Yes	EVAP AIR COOLER DRAIN
3	1353	3-1353-OPN-06	DAYLIGHT	N/A	EXT	EXT GND MOUNT			COOLING SEASON	Yes	A/C COIL CONDENSATE DRAIN
3	1527	3-1527-OPN-01	DAYLIGHT	N/A	EXT	EXT WALL MOUNT			COOLING SEASON	Yes	A/C COIL CONDENSATE DRAIN
3	1539	3-1539-OPN-01	01S/SWSC	1LV01	101A	RESTROOM			SELDOM USED	No	HAND WASH

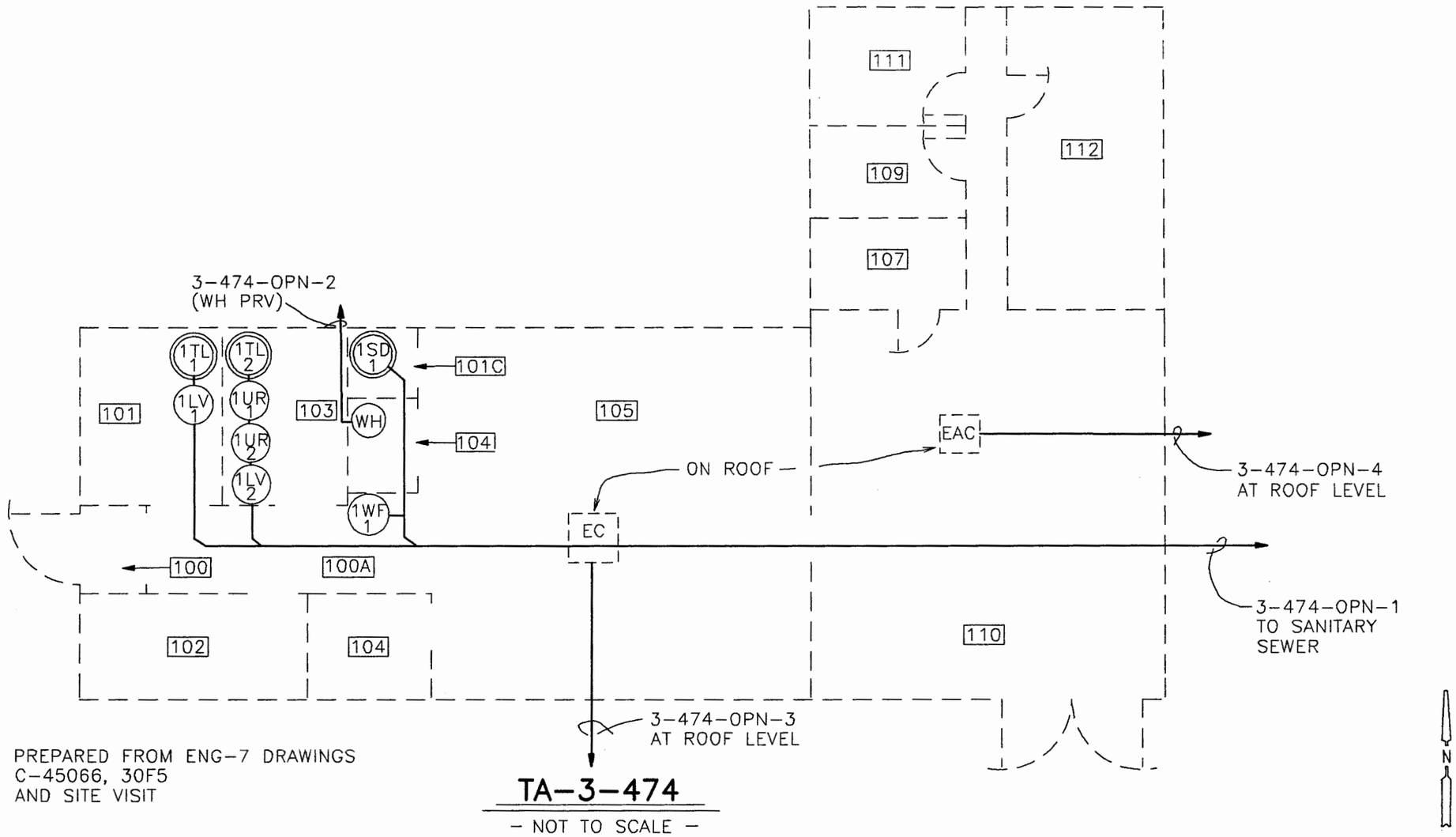
REPORT # 48

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
3	1539	3-1539-OPN-01	01S/SWSC	1TL01	101A	RESTROOM			SELDOM USED	No	TOILET
3	1539	3-1539-OPN-02	DAYLIGHT	N/A	101A	RESTROOM			FLOW IS NIL	No	WTR HTR PRV DRAIN
3	1539	3-1539-OPN-03	DAYLIGHT	N/A	101	ELECTRONIC PTS STORAGE			ANNUAL TESTING	No	FIRE SPRINKLER DRAIN
3	1539	3-1539-OPN-04	DAYLIGHT	N/A	102	ELECTRONIC PTS STORAGE			ANNUAL TESTING	No	FIRE SPRINKLER DRAIN
3	1769	3-1769	ND	N/A	N/A	BUILDING W/OUT DRAINS			NO FLOW	No	NONE
3	1770	3-1770	ND	N/A	N/A	BUILDING W/OUT DRAINS			NO FLOW	No	NONE
3	1812	3-1812	ND	N/A	N/A	BUILDING W/OUT DRAINS			NO FLOW	No	NONE
3	1813	3-1813	ND	N/A	N/A	BUILDING W/OUT DRAINS			NO FLOW	No	NONE
3	1913	3-1913	ND	N/A	N/A	BUILDING W/OUT DRAINS			NO FLOW	No	NONE

NO EPA FORMS WERE PREPARED.

DYE STUDY INFORMATION

BUILDING NUMBER	DRAIN NUMBER	DID DYE REACH EXPECTED	COMMENTS
3-474	1SD1	YES	OPN-1 (SANITARY)
3-474	1TL2	YES	OPN-1 (SANITARY)
3-495	1SD1	YES	OPN-1 (SANITARY)
3-495	1SD2	YES	OPN-1 (SANITARY)
3-496	1SD1	YES	OPN-1 (SANITARY)
3-496	1TL1	YES	OPN-1 (SANITARY)
3-496	1TL2	YES	OPN-1 (SANITARY)
3-512	1SD1	YES	OPN-1 (SANITARY)
3-514	1SD1	YES	OPN-1 (SANITARY)
3-514	1SD2	YES	OPN-1 (SANITARY)
3-514	1TL1	YES	OPN-1 (SANITARY)
3-514	1TL3	YES	OPN-1 (SANITARY)
3-1353	1SD1	YES	OPN-1 (SANITARY)
3-1353	1SD2	YES	OPN-1 (SANITARY)
3-1353	1TL1	YES	OPN-1 (SANITARY)
3-1353	1TL2	YES	OPN-1 (SANITARY)
3-1539	1TL1	YES	OPN-1 (SANITARY)



PREPARED FROM ENG-7 DRAWINGS
C-45066, 30F5
AND SITE VISIT

TA-3-474

– NOT TO SCALE –

SYMBOL LEGEND	
EC	EVAP AIR COOLER
LV	LAVATORY
SD	SINK DRAIN
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN
WH	WATER HEATER

DYE TESTED DRAIN

SANTA FE ENGINEERING, LTD.

TA-3-474
DRAIN SCHEMATIC

DRAWN	G.S.
DESIGN	S.C.D.
CHECKED	P.E.B.
DATE	7-16-92

SUBMITTED | RECOMMENDED | APPROVED

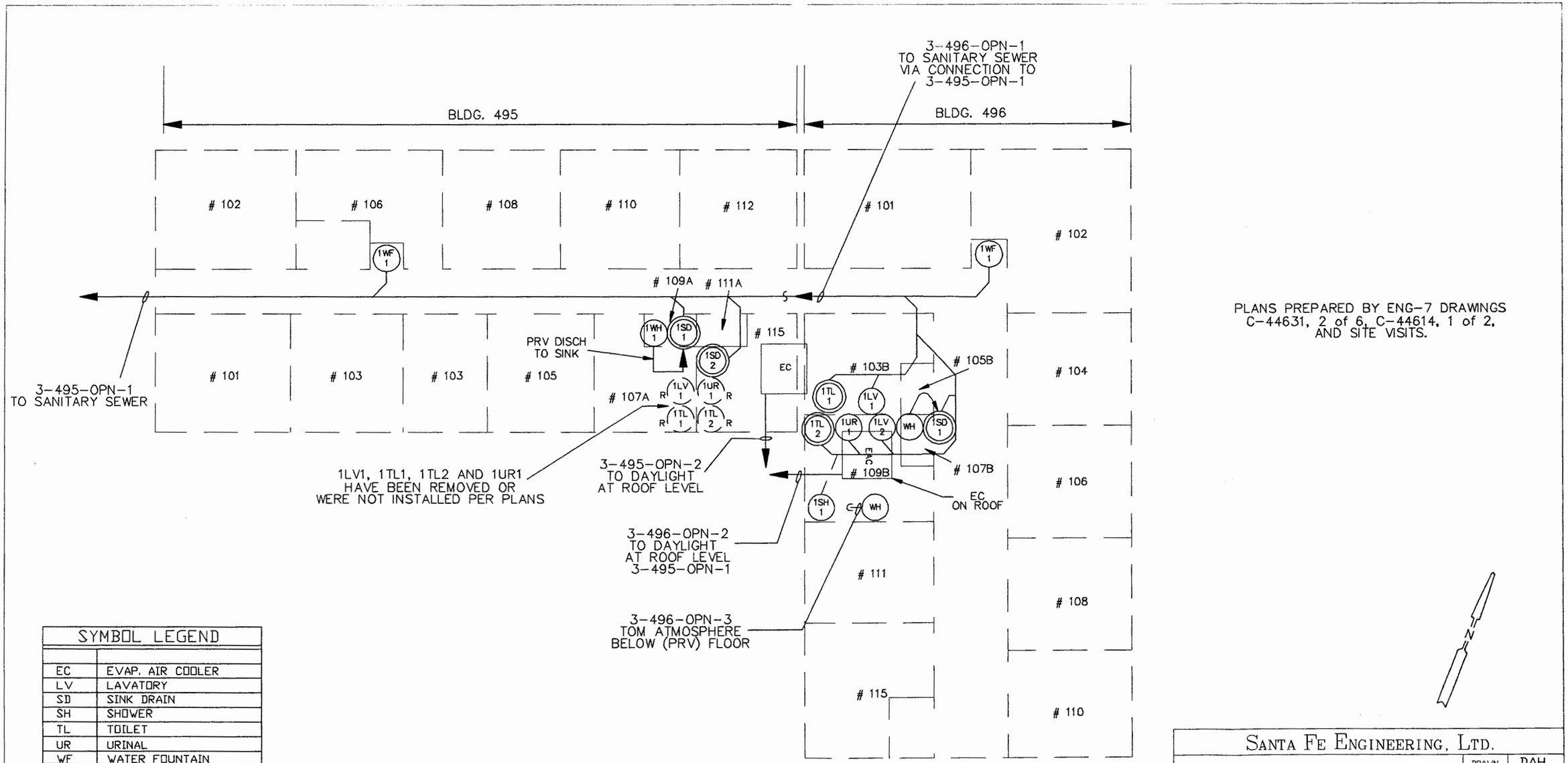
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

SHEET OF

CLASSIFICATION | REVIEWER | DATE

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

REQUESTING GROUP EM-8 | 11056-48 | FIGURE 1



PLANS PREPARED BY ENG-7 DRAWINGS C-44631, 2 of 6, C-44614, 1 of 2, AND SITE VISITS.

SYMBOL LEGEND	
EC	EVAP. AIR COOLER
LV	LAVATORY
SD	SINK DRAIN
SH	SHOWER
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN
WH	WATER HEATER
◯	DYE TESTED DRAIN

TA-3-495 + 496 OS-1 PORTABLES DRAIN SCHEMATIC

NOT TO SCALE

SANTA FE ENGINEERING, LTD.

TA-3-495 + 496 OS-1 PORTABLES DRAIN SCHEMATIC	DRAWN: DAH
	DESIGN: SCD
	CHECKED: PEB
	RELEASED:
	DATE: 9/30/92

SUBMITTED | RECOMMENDED | APPROVED

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545 — SHEET / OF

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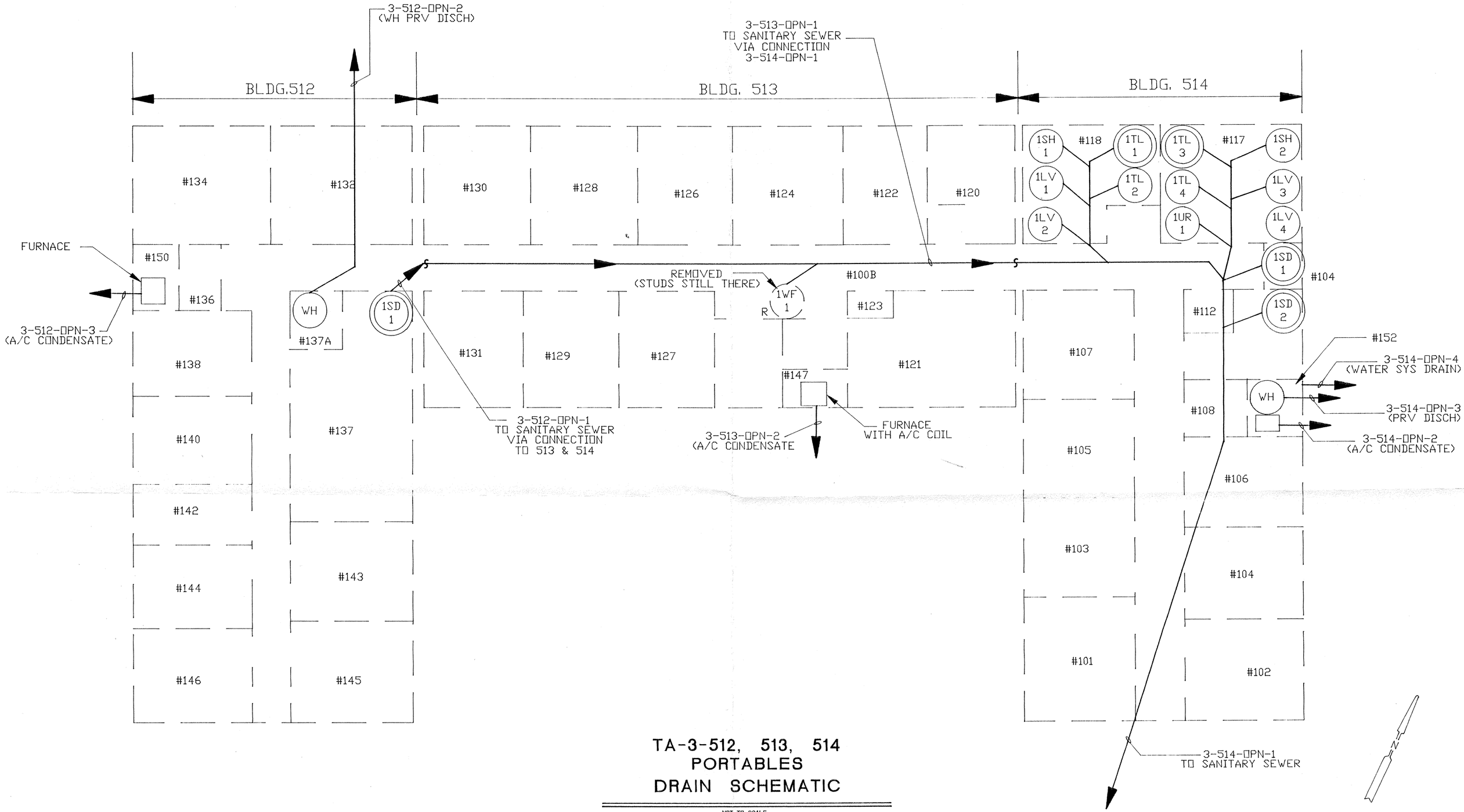
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP	11056-48	FIGURE 2	



TA-3-512, 513, 514 PORTABLES DRAIN SCHEMATIC

NOT TO SCALE

SYMBOL LEGEND	
A/C	AIR CONDITIONING
LV	LAVATORY
PRV	PRESS RELIEF VALVE
SD	SINK DRAIN
SH	SHOWER , (NON-EMERGERCY
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN
WH	WATER HEATER
◯	DYE TESTED DRAIN

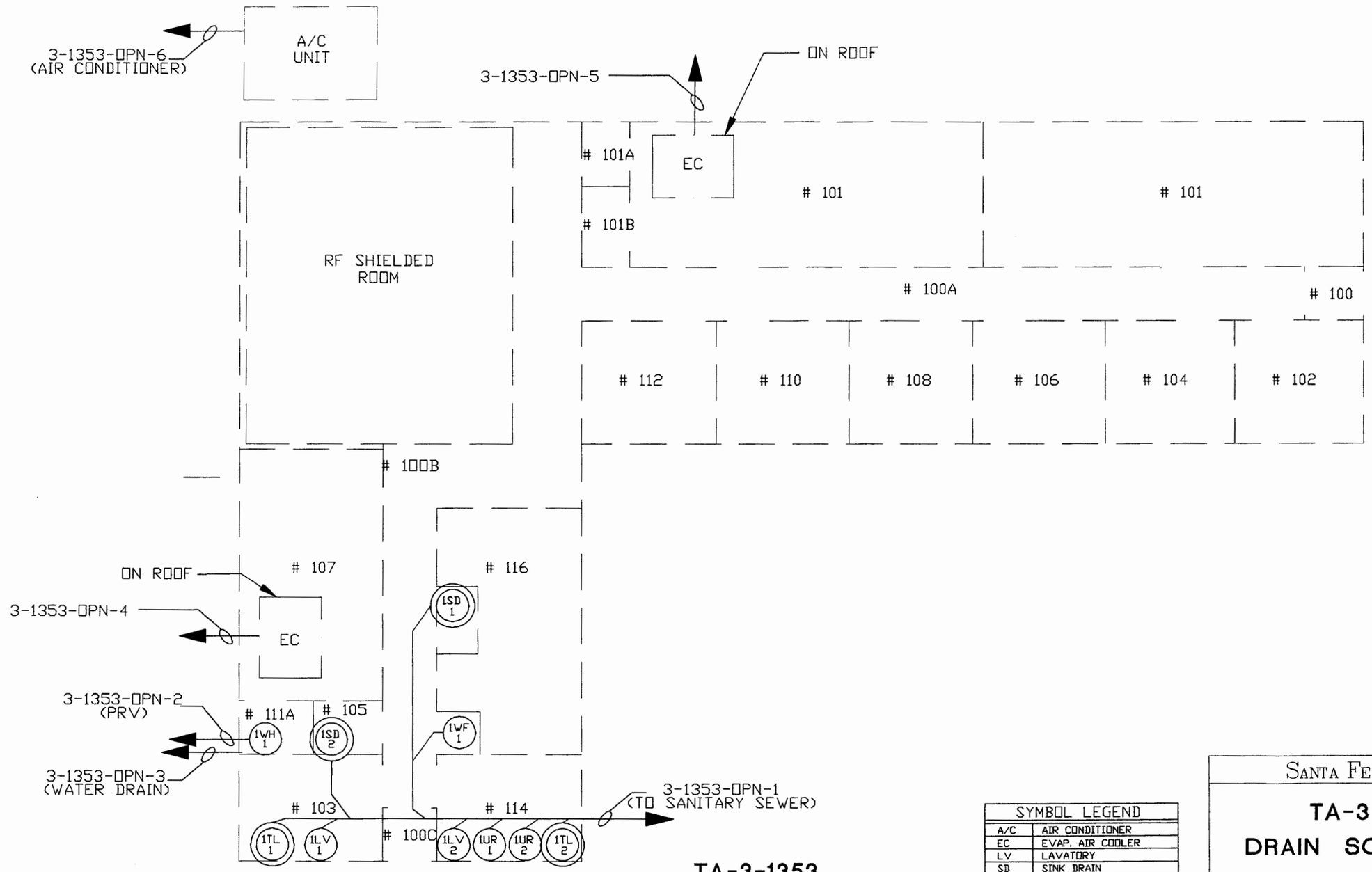
PLAN PREPARED BY ENG-7 DRAWINGS:
C-44631, 206, C-45725, 5 & 7 OF 10
C-45766, 2,3,6,7,8 & 9 OF 13
AND SITE VISITS.

15264

SANTA FE ENGINEERING, LTD.

TA-3-512, 513 + 514 DRAIN SCHEMATIC	DRAWN	D.A.H.
	DESIGN	SCD
	CHECKED	PEB
	RELEASED	
	DATE	10/31/92

SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545		SHEET	OF
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-48	FIGURE 3	



TA-3-1353
DRAIN SCHEMATIC

NOT TO SCALE

PLAN PREPARED FROM ENG-7 DRAWINGS
CI45066, 2,4 of 5 AND C-44631, 2 of 6

SYMBOL LEGEND	
A/C	AIR CONDITIONER
EC	EVAP. AIR COOLER
LV	LAVATORY
SD	SINK DRAIN
SH	SHOWER
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN
WH	WATER HEATER
◯	DYE TESTED DRAIN

SANTA FE ENGINEERING, LTD.

TA-3-1353 DRAIN SCHEMATIC		
DRAWN	D.A.H.	
DESIGN	S.C.D.	
CHECKED	P.E.B.	
RELEASED		
DATE	7/16/92	

SUBMITTED | RECOMMENDED | APPROVED

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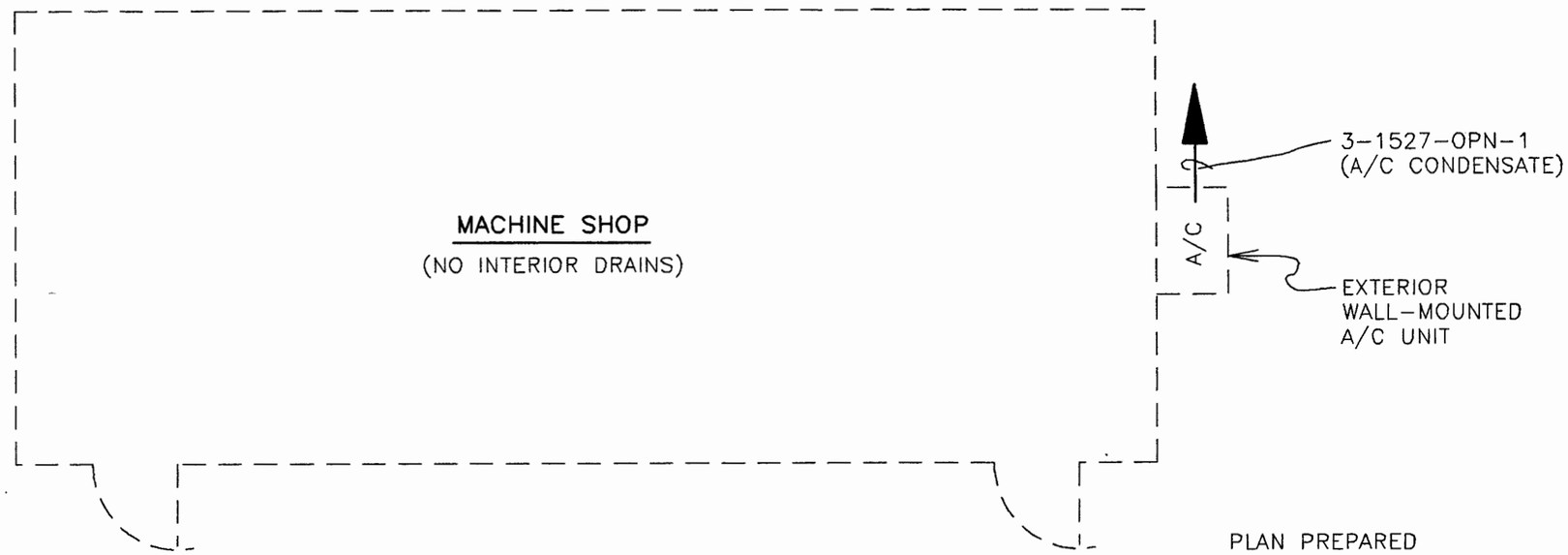
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-48	FIGURE 4	



PLAN PREPARED
FROM SITE VISIT
ONLY.

TA-3-1527
DRAIN SCHEMATIC

– NOT TO SCALE –

SYMBOL LEGEND	
A/C	AIR CONDITIONER

SANTA FE ENGINEERING, LTD.

TA-3-1527
DRAIN SCHEMATIC

DRAWN	G.S.
DESIGN	S.C.D.
CHECKED	P.E.B.
RELEASED	
DATE	9-23-92

SUBMITTED | RECOMMENDED | APPROVED

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Los Alamos National Laboratory
Los Alamos, New Mexico 87545

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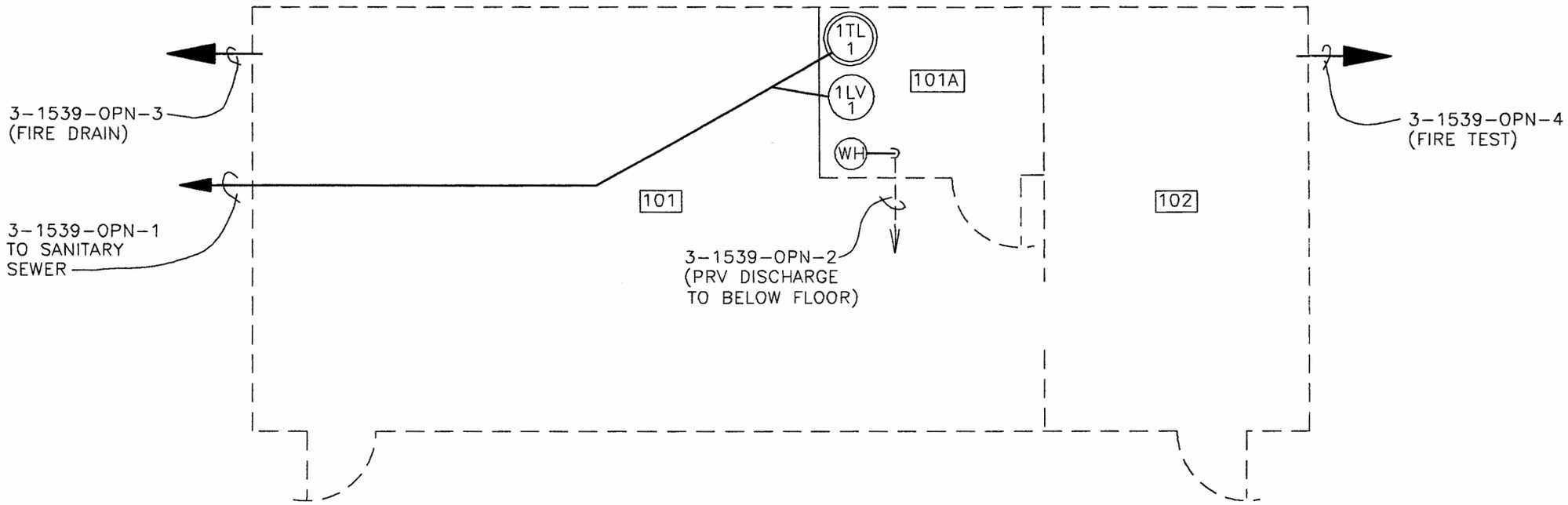
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-48	FIGURE 5	



TA-3-1539
DRAIN SCHEMATIC

– NOT TO SCALE –

N

PLAN PREPARED
FROM SITE VISIT
ONLY.

SYMBOL LEGEND	
LV	LAVATORY
TL	TOILET
WH	WATER HEATER
PRV	PRES. RELIEF

DYE TESTED DRAIN

SANTA FE ENGINEERING, LTD.

TA-3-1539
DRAIN SCHEMATIC

DRAWN	G.S.
DESIGN	S.C.D.
CHECKED	P.E.B.
RELEASED	
DATE	9-23-92

SUBMITTED | RECOMMENDED | APPROVED

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

SHEET / OF

CLASSIFICATION | REVIEWER | DATE

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

REQUESTING GROUP EM-8 | 11056-48 | FIGURE 6