

**WASTEWATER STREAM
CHARACTERIZATION FOR
TA 53-20, 21, 380, 381, 394, 395,
396, 397, 398, 399, 406, 407, 613,
616, 633, 682, 684, 685, 687, 696,
697, 698, 699, 718, 724, 784, 836,
846, 847, 848, 865, 882 AND 1030**

at
Los Alamos National Laboratory

**ENVIRONMENTAL STUDY
CHARACTERIZATION REPORT #34**



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Los Alamos National Laboratory
Los Alamos, New Mexico 87545

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**WASTEWATER STREAM
CHARACTERIZATION FOR
TA-53-20, 21, 380, 381, 394, 395, 396, 397,
398, 399, 406, 407, 613, 616, 633, 682, 684,
685, 687, 696, 697, 698, 699, 718, 724, 784,
836, 846, 847, 848, 865, 882 AND 1030**

ENVIRONMENTAL STUDY

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

under subcontract 9-XG8-2874P-1

**by:
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EXECUTIVE SUMMARY

This report is one in a series of reports for the TA-53 area. It addresses buildings TA-53-20, 21, 380, 381, 394, 395, 396, 397, 398, 399, 406, 407, 613, 616, 633, 682, 684, 685, 687, 696, 697, 698, 699, 718, 724, 784, 836, 846, 847, 848, 865, 882 and 1030.

All buildings noted above were visited to verify existing drain systems and to characterize existing and/or potential waste streams.

Verified piping systems exiting the buildings are as follows:

- 1) The following building has been removed from the site (salvaged): TA-53-633,
- 2) The following structures have no drains or drain systems: TA-53-380, 381, 613, 616, 682, 684, 685, 687, 696, 697, 698, 699, 718, 724, 784, 836, 846, 847, 848, 865 and 1030. All of these structures are either instrument trailers, transportainers or detector sheds,
- 3) From building 53-20: one (1) outfall to the site sanitary sewer system,
- 4) From 53-21: one (1) outfall to the site sanitary sewer system and one (1) pressure relief valve (PRV) vent to atmosphere,
- 5) From 53-21: one (1) outfall to the atmosphere from a rooftop evaporative cooler drain (non-treated),
- 6) From 53-395: one (1) outfall to the site sanitary sewer, one (1) water heater PRV drain to atmosphere and one (1) rooftop evaporative cooler drain to atmosphere,
- 7) From 53-396: one (1) outfall to atmosphere from a rooftop evaporative cooler and one (1) air-conditioning (A/C) condensate discharge to atmosphere,
- 8) From building 53-397: one (1) outfall to the site sanitary sewer system, one (1) water heater PRV outfall to atmosphere and one (1) rooftop evaporative cooler discharge to atmosphere,
- 9) From 53-406: one (1) outfall to the site sanitary sewer system, one (1) water heater PRV to atmosphere and one (1) rooftop evaporative cooler discharge to daylight,
- 10) From 53-407: one (1) discharge to the site sanitary sewer system, two (2) water heater PRV discharges to

daylight, one (1) rooftop evaporative cooler drain to daylight and one (1) abandoned water heater PRV discharge.

- 11) From 53-882: one (1) discharge to the site sanitary sewer system and one (1) rooftop evaporative cooler drain to atmosphere.

As noted in Tables 1 through 11 of Appendix 1, no EPA permits are required 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.

It should be noted that as of approximately March 1993, the sanitary sewer system at TA-53 was connected to the new Sanitary Wastewater System Consolidation plant at TA-46 (13S).

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2.0 FIELD INVESTIGATION

Pipes exiting each 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 each 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 located on. The second part has letters that indicate the drain type (abbreviations used are summarized in Table 12, Appendix 1). The final part is a unique number for each drain. For example, floor drain numbering on the first floor would start with 1FD1. Roof drains do not have the number identifying the floor location, such as RD1 for Roof Drain 1.

The function of each pipe exiting from buildings are listed in Tables 1 through 11 in Appendix 1. 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 7.

3.0 RECOMMENDATIONS FOR BUILDING REMOVED FROM THE SITE (SALVAGED)

Building 53-633 and has been removed from the site and sent to salvage according to the building manager. No changes or permitting are recommended. No EPA forms were prepared.

4.0 RECOMMENDATIONS FOR BUILDINGS WITH NO DRAINS

Buildings TA-53-380, 381, 613, 616, 682, 684, 685, 687, 696, 697, 698, 699, 718, 724, 784, 836, 846, 847, 848, 865 and 1030 do not have drains. All of these buildings are either transportainers, portable metal sheds or office/instrument trailers. No changes or permitting are recommended. No EPA forms were completed. Although building 53-380 does not have any drains, it should be noted that it is used for storage of hazardous liquid wastes. It is recommended that secondary containment be installed to avoid possible ground surface contamination.

5.0 RECOMMENDATIONS FOR BUILDING 53-20

Building 53-20 is a modular office structure occupied by HS Division. The building includes offices, closets, a hallway and a janitor's room, there are no restrooms. Outfall 53-20-OPN-1 to the sanitary sewer is the only outfall from the building and receives flow from a single sink drain in the janitorial closet. Table 1 of Appendix 1 addresses the single drain. Figure 1 of Appendix 5 is a schematic of the drain system. This drain should be clearly labeled as sanitary sewer only. No EPA permit is required and no EPA forms have been completed.

6.0 RECOMMENDATIONS FOR BUILDING 53-21

Building 53-21 is a modular office structure occupied by HS-11. It includes offices, restrooms, a hallway and a

janitor's closet. Table 2 of Appendix 1 list the two outfalls for this building and the contributing drains. Figure 2 of Appendix 5 is a building drain schematic.

6.1 Outfall 53-21-OPN-1

This outfall drains to the site sanitary sewer. Drains contributing to this discharge include toilets (2), urinals (1), lavatories (2) and one water fountain. No changes are recommended. No EPA permit is required and no EPA forms have been prepared.

6.2 Outfall 53-21-OPN-2

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

7.0 RECOMMENDATIONS FOR BUILDING 53-394

Building 53-394 is one of three buildings in an office "triplex" structure. The other two buildings are 53-395 and 53-399. These three buildings are interconnected by common hallways. Table 3 of Appendix 1 lists the single outfall for the building. Figure 3 of Appendix 5 provides a building drain schematic for building 53-394 as well as connected structures 53-395 and 53-399. The single outfall from 53-394, 53-394-OPN-1, is a drain to daylight from a rooftop evaporative cooling unit. It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

8.0 RECOMMENDATIONS FOR BUILDING 53-395

Building 53-395 is one of three buildings in an office "triplex" structure. The other two buildings are 53-394 and 53-399. Table 4 of Appendix 1 lists the three outfalls for this building and the contributing drains. Figure 3 of Appendix 5 provides a building drain schematic for building 53-395 in conjunction with connected buildings 53-394 and 53-399.

8.1 Outfall 53-395-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include toilets (2), lavatories (2) and one water fountain. No changes are recommended. No EPA permit is required and no EPA forms have been prepared.

8.2 Outfall 53-395-OPN-2

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

8.3 Outfall 53-395-OPN-3

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in an NOI. No EPA changes are recommended. No EPA forms have been prepared.

9.0 RECOMMENDATIONS FOR BUILDING 53-396

This building is one of three buildings in an office "triplex" structure. The other two buildings are 53-397 and 53-398. Table 5 of Appendix 1 lists the two outfalls for this building. Figure 4 of Appendix 5 provides a building drain schematic for 53-396 in conjunction with attached buildings 53-397 and 53-398.

9.1 Outfall 53-396-OPN-1

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in an NOI. No EPA changes are recommended. No EPA forms have been prepared.

9.2 Outfall 53-396-OPN-2

This outfall is the condensate discharge to atmosphere of an exterior, ground-mounted air conditioning (A/C) unit. It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

10.0 RECOMMENDATIONS FOR BUILDING 53-397

This building is one of three buildings in an office "triplex" structure. The other two buildings are 53-396 and 53-398. Table 6 of Appendix 1 lists the three outfalls and their contributing drains. Figure 4 of Appendix 5 provides a building drain schematic for 53-397 in conjunction with attached buildings 53-396 and 53-398.

10.1 Outfall 53-397-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include lavatories (2), sink drains (2), non-emergency showers (2) and toilets (2). No changes are recommended for this outfall. No EPA permit is required and no EPA forms have been completed.

10.2 Outfall 53-397-OPN-2

This outfall is the piped discharge to atmosphere from a water heater PRV located in a janitor's closet. It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been completed.

10.3 Outfall 53-397-OPN-3

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in the general Laboratory NOI. No changes are recommended. No EPA forms have been prepared.

11.0 RECOMMENDATIONS FOR BUILDING 53-398

This building is one of three buildings in an office "triplex" structure; the other two buildings are 53-396 and 53-397. Table 7 of Appendix 1 lists the two outfalls and their contributing drains. Figure 4 of Appendix 5 provides a building drain schematic in conjunction with buildings 53-396 and 53-397.

11.1 Outfall 53-398-OPN-1

This outfall discharges to the site sanitary sewer system. One sink drain and one water fountain contribute to this outfall. No changes are recommended to this outfall. No EPA permit is required and no EPA forms have been completed.

11.2 Outfall 53-398-OPN-2

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

12.0 RECOMMENDATIONS FOR BUILDING 53-399

Building 53-399 is one of three buildings in an office "triplex" structure. The other two buildings are 53-394 and 53-395. Table 8 of Appendix 1 lists the single outfall from this building. Figure 3 of Appendix 5 provide a building drain schematic for this building as well as interconnected buildings 53-394 and 53-395. The single outfall from 53-399, 53-399-OPN-1, is a drain to daylight from a rooftop evaporative cooling unit. It is recommended that this occasional discharge be included in an NOI. No other changes are recommended. No EPA forms have been prepared.

13.0 RECOMMENDATIONS FOR BUILDING 53-406

This building is a small office structure occupied by P-Division. Table 9 of Appendix 1 lists the five outfalls for this building and the contributing drains. Figure 5 of Appendix 5 provides a building drain schematic.

13.1 Outfall 53-406-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this discharge include lavatories (2), toilets (2) and one urinal. No changes are recommended to this outfall. No EPA permit is required and no EPA forms have been prepared.

13.2 Outfall 53-406-OPN-2

This outfall is the abandoned piping to atmosphere from two water heater PRV's located in the restrooms. It is recommended that this abandoned outfall be removed to avoid confusion. No EPA permit is required and no EPA forms have been prepared.

13.3 Outfalls 53-406-OPN-3 and 53-406-OPN-4

These two outfalls are new water heater PRV vents to atmosphere. New 3/4" lines have been run from the PRV of each water heater (one per restroom) to the outside. These two separate PRV discharges replace the single, common 1/2" line previous used now designated as 53-406-OPN-2. It is recommended that these occasional discharges be included in an NOI. No changes are recommended. No EPA forms have been prepared.

13.4 Outfall 53-406-OPN-5

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

14.0 RECOMMENDATIONS FOR BUILDING 53-407

This building is a small office structure occupied by P-Division. Table 10 lists the three outfalls for this building and the contributing drains. Figure 6 of Appendix 5 is a building drain schematic.

14.1 Outfall 53-407-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this discharge include lavatories (2), toilets (2) and one urinal. No changes are recommended to this outfall. No EPA permit is required and no EPA forms have been prepared.

14.2 Outfall 53-407-OPN-2

This outfall is the abandoned piping to atmosphere from two water heater PRV's located in the restrooms. It is recommended that this abandoned pipe be removed to avoid confusion. No EPA permit is required and no EPA forms have been prepared.

14.3 Outfalls 53-407-OPN-3 and 53-407-OPN-4

These two outfalls are new water heater PRV vents to atmosphere. New 3/4" lines have been run from the PRV of each water heater (one per restroom) to the outside. These two separate PRV discharges replace the single, common discharge (53-407-OPN-2). It is recommended that these occasional discharges be included in an NOI. No changes are recommended. No EPA forms have been prepared.

14.4 Outfall 53-407-OPN-5

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

15.0 RECOMMENDATIONS FOR BUILDING 53-882

This building is a small office structure for P-Division. Table 11 of Appendix 1 lists the two outfalls and the contributing drains for this building. Figure 7 of Appendix 5 provides a building drain schematic.

15.1 Outfall 53-882-OPN-1

This outfall discharges to the site sanitary sewer system. Drains contributing to this outfall include lavatories (2), sink drains (2), non-emergency showers (2) and toilets (2). Sink drain 1SD2, located in the janitor's closet (Rm 100F), receives discharge from a water heater PRV located in the same room. No changes are recommended for this outfall. No EPA permit is required and no EPA forms have been prepared.

15.2 Outfall 53-882-OPN-2

This outfall is the drain to atmosphere from a rooftop evaporative cooling unit (untreated). It is recommended that this occasional discharge be included in an NOI. No changes are recommended. No EPA forms have been prepared.

16.0 CONCLUSION

This document provides the information to characterize the following buildings at TA-53:

TA-53-20, 21, 380, 381, 394, 395, 396, 397, 398, 399, 406, 407, 613, 616, 633, 682, 684, 685, 687, 696, 697, 698, 699, 718, 724, 784, 836, 846, 847, 848, 865, 822 and 1030

None of the outfalls associated with the buildings listed above require EPA permits. No EPA forms have been prepared.

Building removed from site (salvaged):

1. 53-633

Buildings without drains or water sources:

- | | | | |
|-------------|------------|------------|------------|
| 1. 53-380 | 2. 53-381 | 3. 53-613 | 4. 53-616 |
| 5. 53-682 | 6. 53-684 | 7. 53-685 | 8. 53-687 |
| 9. 53-696 | 10. 53-697 | 11. 53-698 | 12. 53-699 |
| 13. 53-718 | 14. 53-724 | 15. 53-784 | 16. 53-836 |
| 17. 53-846 | 18. 53-847 | 19. 53-848 | 20. 53-865 |
| 21. 53-1030 | | | |

Discharges to the TA-53 Sanitary Sewer System (now connected to the SWSC):

- | | | |
|-----------------|-----------------|-----------------|
| 1. 53-20-OPN-1 | 2. 53-21-OPN-1 | 3. 53-395-OPN-1 |
| 4. 53-397-OPN-1 | 5. 53-398-OPN-1 | 6. 53-406-OPN-1 |
| 7. 53-407-OPN-1 | 8. 53-882-OPN-1 | |

Discharges from air-conditioning or evaporative cooler equipment to daylight to be listed in Laboratory NOI:

- | | | |
|-----------------|-----------------|-----------------|
| 1. 53-394-OPN-1 | 2. 53-395-OPN-3 | 3. 53-396-OPN-1 |
| 4. 53-396-OPN-2 | 5. 53-397-OPN-3 | 6. 53-398-OPN-2 |
| 7. 53-399-OPN-1 | 8. 53-406-OPN-3 | 9. 53-407-OPN-3 |

Discharge to daylight from pressure relief valves (PRV):

- | | | |
|-----------------|-----------------|-----------------|
| 1. 53-21-OPN-2 | 2. 53-395-OPN-2 | 3. 53-397-OPN-2 |
| 4. 53-406-OPN-2 | 5. 53-407-OPN-2 | |

Recommended permitting and corrective actions are outlines in Tables 1 through 11 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 53-20 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-20-OPN-1 SANITARY	1SD1	JANITOR CLOSET	100A	NO CHANGE	NO

TABLE 2 : TA 53-21 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-21-OPN-1 SANITARY	1LV1	RESTROOM	110	NO CHANGE	NO
	1LV2	RESTROOM	111	NO CHANGE	
	1TL1	RESTROOM	110	NO CHANGE	
	1TL2	RESTROOM	111	NO CHANGE	
	1UR1	RESTROOM	110	NO CHANGE	
	1WF1	CORRIDOR		NO CHANGE	
53-21-OPN-2	WH	WH PRV DISCH	112	NOI	NO

TABLE 3 : TA 53-394 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-394-OPN-1 SANITARY	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 4 : TA 53-395 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-395-OPN-1 SANITARY	1LV1	RESTROOM	110	NO CHANGE	NO
	1LV2	RESTROOM	112	NO CHANGE	
	1TL1	RESTROOM	110	NO CHANGE	
	1TL2	RESTROOM	112	NO CHANGE	
	1WF1	CORRIDOR	100A	NO CHANGE	
53-395-OPN-2	WH	RESTROOM	112	NOI	NO
53-395-OPN-3	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 5 : TA 53-396 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-396-OPN-1	EC	ROOF EC DRAIN	ROOF	NOI	NO
53-396-OPN-2	A/C	EXT A/C UNIT	EXT	NOI	NO

TABLE 6 : TA 53-397 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-397-OPN-1 SANITARY	1LV1	RESTROOM	104	NO CHANGE	NO
	1LV2	RESTROOM	108	NO CHANGE	
	1SD1	KITCHEN	102	NO CHANGE	
	1SD2	JANITOR CLOSET	106	NO CHANGE	
	1SH1	RESTROOM	104	NO CHANGE	
	1SH2	RESTROOM	108	NO CHANGE	
	1TL1	RESTROOM	104	NO CHANGE	
	1TL2	RESTROOM	108	NO CHANGE	
53-397-OPN-2	WH	WH PRV VENT	106	NOI	NO
53-397-OPN-3	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 7 : TA 53-398 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-398-OPN-1 SANITARY	1SD1	COFFEE BAR	100	NO CHANGE	NO
	1WF1	COFFEE BAR	100	NO CHANGE	
53-398-OPN-2	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 8 : TA 53-399 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-399-OPN-1	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 9 : TA 53-406 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-406-OPN-1 SANITARY	1LV1	RESTROOM	103	NO CHANGE	NO
	1LV2	RESTROOM	104	NO CHANGE	
	1TL1	RESTROOM	103	NO CHANGE	
	1TL2	RESTROOM	104	NO CHANGE	
	1UR1	RESTROOM	104	NO CHANGE	
53-406-OPN-2	WH	"OLD" PRV VENT	103/4	REMOVE	NO
53-406-OPN-3	WH	PRV VENT	103	NOI	
53-406-OPN-4	WH	PRV VENT	104	NOI	
53-406-OPN-5	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 10 : TA 53-407 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-407-OPN-1 SANITARY	1LV1	RESTROOM	101	NO CHANGE	NO
	1LV2	RESTROOM	103	NO CHANGE	
	1TL1	RESTROOM	101	NO CHANGE	
	1TL2	RESTROOM	103	NO CHANGE	
	1UR1	RESTROOM	101	NO CHANGE	
53-407-OPN-2	WH	"OLD" PRV VENT	101/3	REMOVE	NO
53-407-OPN-3	WH	PRV VENT	101	NOI	NO
53-407-OPN-4	WH	PRV VENT	103	NOI	NO
53-407-OPN-5	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 11 : TA 53-882 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
53-882-OPN-1 SANITARY	1LV1	RESTROOM	108B	NO CHANGE	NO
	1LV2	RESTROOM	108A	NO CHANGE	
	1SD1	CORRIDOR	100B	NO CHANGE	
	1SD2	JANITOR CLOSET	100F	NO CHANGE	
	1SH1	RESTROOM	108B	NO CHANGE	
	1SH2	RESTROOM	108A	NO CHANGE	
	1TL1	RESTROOM	108B	NO CHANGE	
	1TL2	RESTROOM	108A	NO CHANGE	
53-882-OPN-2	EC	ROOF EC DRAIN	ROOF	NOI	NO

TABLE 12 - NON-DRAIN RECOMMENDATIONS

TA #	BLDG. #	ROOM/AREA	RECOMMENDATION
53	380	ALL	PROVIDE SECONDARY CONTAINMENT

TABLE 13
SUMMARY OF ABBREVIATIONS

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

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TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	DESCRIPTION	ROOM	RATE	FLOW	PERIODICITY	SEASONAL	SOURCE TYPES
53	20	53-20-OPN-1	09S	1SD01	100A	JANITOR CLOSET				5 DAYS/WEEK	no	GENERAL CLEANING
53	21	53-21-OPN-1	09S	1LV01		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	21	53-21-OPN-1	09S	1LV02		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	21	53-21-OPN-1	09S	1TL01		RESTROOM				5 DAYS/WEEK	no	TOILET
53	21	53-21-OPN-1	09S	1TL02		RESTROOM				5 DAYS/WEEK	no	TOILET
53	21	53-21-OPN-1	09S	1UR01		RESTROOM				5 DAYS/WEEK	no	URINAL
53	21	53-21-OPN-1	09S	1WF01		CORRIDOR				5 DAYS/WEEK	no	WATER FOUNTAIN
53	21	53-21-OPN-2	DAYLIGHT	N/A		JANITOR CLOSET				FLOW IS NIL	no	WATER HTR PRV DISCH
53	380	53-380	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	381	53-381	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	394	53-394-OPN-1	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	395	53-395-OPN-1	09S	1LV01		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	395	53-395-OPN-1	09S	1LV02		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	395	53-395-OPN-1	09S	1TL01		RESTROOM				5 DAYS/WEEK	no	TOILET
53	395	53-395-OPN-1	09S	1TL02		RESTROOM				5 DAYS/WEEK	no	TOILET
53	395	53-395-OPN-1	09S	1WF01	100A	CORRIDOR				5 DAYS/WEEK	no	WATER FOUNTAIN
53	395	53-395-OPN-2	DAYLIGHT	N/A		RESTROOM				FLOW IS NIL	no	WATER HTR PRV DISCH
53	395	53-395-OPN-3	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	396	53-396-OPN-1	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	396	53-396-OPN-2	DAYLIGHT	N/A		EXTERIOR A/C UNIT				COOLING SEASON	yes	A/C CONDENSATE
53	397	53-397-OPN-1	09S	1LV01		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	397	53-397-OPN-1	09S	1LV02		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	397	53-397-OPN-1	09S	1SD01		KITCHEN				5 DAYS/WEEK	no	CLEAN UP
53	397	53-397-OPN-1	09S	1SD02		JANITOR CLOSET				5 DAYS/WEEK	no	GENERAL CLEANING
53	397	53-397-OPN-1	09S	1SH01		RESTROOM				5 DAYS/WEEK	no	NON-EMER SHOWER
53	397	53-397-OPN-1	09S	1SH02		RESTROOM				5 DAYS/WEEK	no	NON-EMER SHOWER
53	397	53-397-OPN-1	09S	1TL01		RESTROOM				5 DAYS/WEEK	no	TOILET
53	397	53-397-OPN-1	09S	1TL02		RESTROOM				5 DAYS/WEEK	no	TOILET
53	397	53-397-OPN-2	DAYLIGHT	N/A		JANITOR CLOSET				FLOW IS NIL	no	WATER HTR PRV DISCH
53	397	53-397-OPN-3	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	398	53-398-OPN-1	09S	1SD01		COFFEE BAR				5 DAYS/WEEK	no	CLEAN UP
53	398	53-398-OPN-1	09S	1WF01		COFFEE BAR				5 DAYS/WEEK	no	WATER FOUNTAIN
53	398	53-398-OPN-2	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	DESCRIPTION	ROOM	RATE	FLOW	PERIODICITY	SEASONAL	SOURCE TYPES
53	399	53-399-OPN-1	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	406	53-406-OPN-1	09S	1LV01		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	406	53-406-OPN-1	09S	1LV02		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	406	53-406-OPN-1	09S	1TL01		RESTROOM				5 DAYS/WEEK	no	TOILET
53	406	53-406-OPN-1	09S	1TL02		RESTROOM				5 DAYS/WEEK	no	TOILET
53	406	53-406-OPN-1	09S	1UR01		RESTROOM				5 DAYS/WEEK	no	URINAL
53	406	53-406-OPN-2	DAYLIGHT	N/A		RESTROOM				FLOW IS NIL	no	WTR HTR PRV DISCH(ABANDON
53	406	53-406-OPN-3	DAYLIGHT	N/A		RESTROOM				FLOW IS NIL	no	WTR HTR PRV DISCH(NEW)
53	406	53-406-OPN-4	DAYLIGHT	N/A		RESTROOM				FLOW IS NIL	no	WTR HTR PRV DISCH(NEW)
53	406	53-406-OPN-5	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	407	53-407-OPN-1	09S	1LV01		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	407	53-407-OPN-1	09S	1LV02		RESTROOM				5 DAYS/WEEK	no	HAND WASH
53	407	53-407-OPN-1	09S	1TL01		RESTROOM				5 DAYS/WEEK	no	TOILET
53	407	53-407-OPN-1	09S	1TL02		RESTROOM				5 DAYS/WEEK	no	TOILET
53	407	53-407-OPN-1	09S	1UR01		RESTROOM				5 DAYS/WEEK	no	URINAL
53	407	53-407-OPN-2	DAYLIGHT	N/A		RESTROOM				NO FLOW	no	WTR HTR PRV DISCH(ABANDON
53	407	53-407-OPN-3	DAYLIGHT	N/A		RESTROOM				FLOW IS NIL	no	WTR HTR PRV DISCH(NEW)
53	407	53-407-OPN-4	DAYLIGHT	N/A		RESTROOM				FLOW IS NIL	no	WTR HTR PRV DISCH(NEW)
53	407	53-407-OPN-5	DAYLIGHT	N/A		ROOFTOP EVAP COOLER				COOLING SEASON	yes	NON TREATED EVAP DRAIN
53	613	53-613	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	616	53-616	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	633	53-633	N/A	N/A		NO SOURCES				COOLING SEASON	no	NO SOURCES
53	682	53-682	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	684	53-684	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	685	53-685	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	687	53-687	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	696	53-696	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	697	53-697	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	698	53-698	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	699	53-699	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	718	53-718	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	724	53-724	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE
53	784	53-784	N/A	N/A	N/A	NO SOURCES				NO FLOW	no	NONE

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TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	DESCRIPTION	ROOM	RATE	FLOW	PERIODICITY	SEASONAL	SOURCE TYPES
53	836	53-836	N/A	N/A	N/A	NO SOURCES			NO FLOW		no	NONE
53	846	53-846	N/A	N/A	N/A	NO SOURCES			NO FLOW		no	NONE
53	847	53-847	N/A	N/A	N/A	NO SOURCES			NO FLOW		no	NONE
53	848	53-848	N/A	N/A	N/A	NO SOURCES			NO FLOW		no	NONE
53	865	53-865	N/A	N/A	N/A	NO SOURCES			NO FLOW		no	NONE
53	882	53-882-OPN-1	09S	1LVO1	108B	RESTROOM			5 DAYS/WEEK		no	HAND WASH
53	882	53-882-OPN-1	09S	1LVO2	108A	RESTROOM			5 DAYS/WEEK		no	HAND WASH
53	882	53-882-OPN-1	09S	1SD01	100B	CORRIDOR			5 DAYS/WEEK		no	CLEAN UP
53	882	53-882-OPN-1	09S	1SD02	100F	JANITOR CLOSET			FLOW IS NIL		no	(1) WATER HTR PRV DISCH
53	882	53-882-OPN-1	09S	1SD02	100F	JANITOR CLOSET			5 DAYS/WEEK		no	GENERAL CLEANING
53	882	53-882-OPN-1	09S	1SH01	108B	RESTROOM			5 DAYS/WEEK		no	NON-EMER SHOWER
53	882	53-882-OPN-1	09S	1SH02	108A	RESTROOM			5 DAYS/WEEK		no	NON-EMER SHOWER
53	882	53-882-OPN-1	09S	1TL01	108B	RESTROOM			5 DAYS/WEEK		no	TOILET
53	882	53-882-OPN-1	09S	1TL02	108A	RESTROOM			5 DAYS/WEEK		no	TOILET
53	882	53-882-OPN-2	DAYLIGHT	N/A		ROOFTOP EVAP COOLER			COOLING SEASON		yes	NON TREATED EVAP DRAIN
53	1030	53-1030	N/A	N/A	N/A	NO SOURCES			NO FLOW		no	NONE

NO EPA PERMITS ARE REQUIRED
FOR THE SUBJECT OUTFALLS
OF THIS REPORT.

NO FORMS HAVE BEEN COMPLETED

1.0 INTRODUCTION

During April and May, 1992, Stephen C. Diamond, P.E. of Santa Fe Engineering (SFE) toured the subject buildings of TA-53 with Darryl Shadel (MP-5) and Joe King (P-17). 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 April, 14, 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 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 discharges 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 7) from drawings provided by

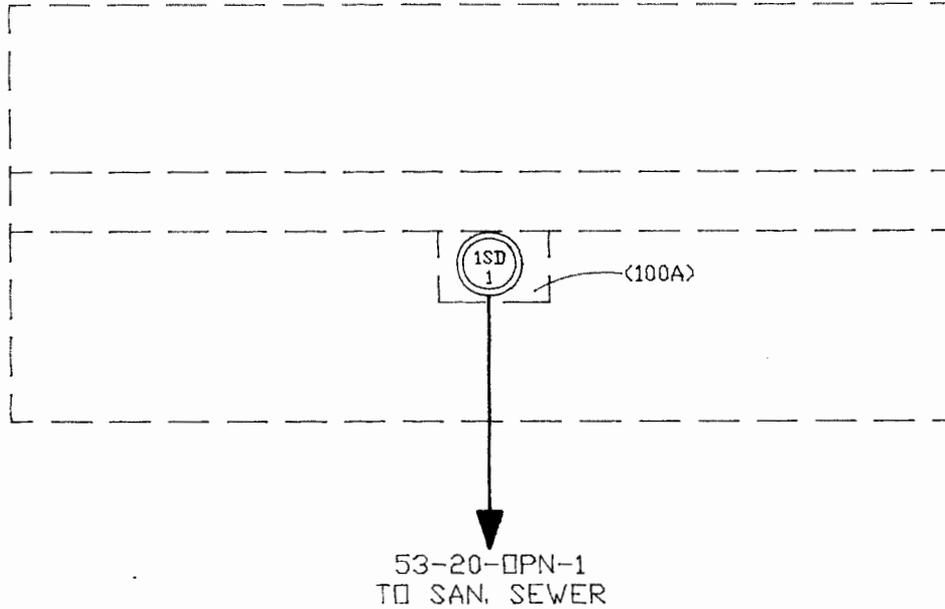
Los Alamos National Laboratory (LANL) Facilities Engineering Division (ENG-7). The other buildings were visited to insure that no drains exist in the buildings.

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

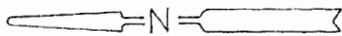
1. Laboratory engineering drawings were used to prepare the SFE drain piping schematics. The Solid Waste Stream Characterization conducted by IT Corporation was reviewed. The National Pollutant Discharge Elimination System (NPDES) Permit, the 1990 NPDES Permit Application submitted by Los Alamos National 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 VI-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 schematic 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 waste stream characterization and
3. SFE verified drain piping by dye checking.

DYE STUDY INFORMATION

BUILDING NUMBER	DRAIN NUMBER	DID DYE REACH EXPECTED DESTINATION?	COMMENTS
53-20	1SD1	YES	OPN-1 (SANITARY)
53-21	1TL1	YES	OPN-1 (SANITARY)
53-395	1TL2	YES	OPN-1 (SANITARY)
53-397	1SD1	YES	OPN-1 (SANITARY)
53-397	1SD2	YES	OPN-1 (SANITARY)
53-398	1SD1	YES	OPN-1 (SANITARY)
53-406	1TL2	YES	OPN-1 (SANITARY)
53-407	1TL1	YES	OPN-1 (SANITARY)
53-882	1SD1	YES	OPN-1 (SANITARY)
53-882	1SD2	YES	OPN-1 (SANITARY)



SYMBOL LEGEND	
SD	SINK DRAIN

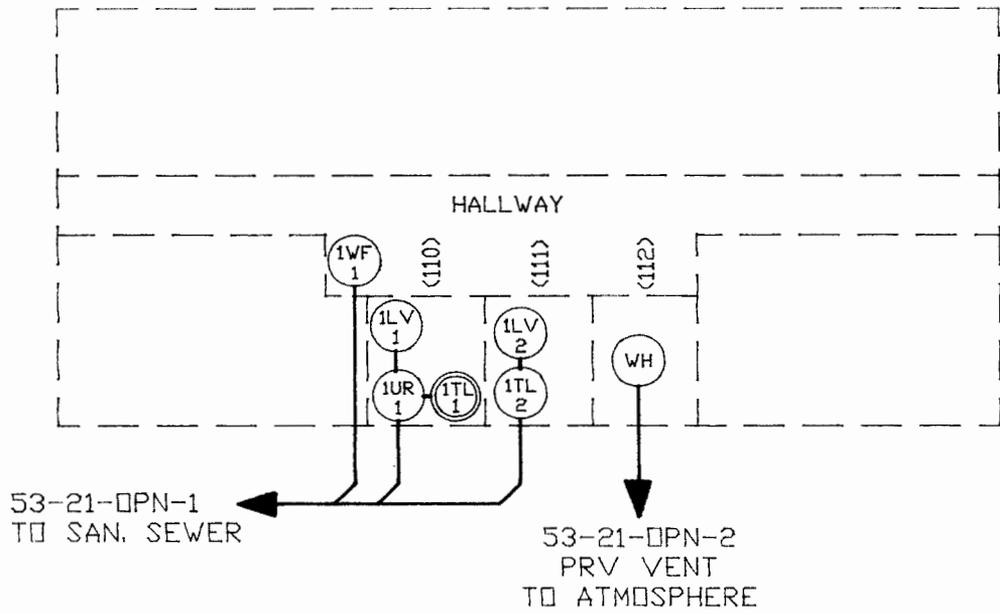


DYE TESTED DRAIN

NOTE:

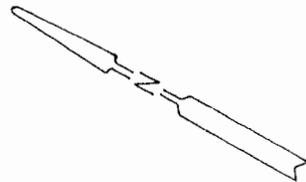
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TA53-20 DRAIN SCHEMATIC		DRAWN	M.E.W.
		DESIGN	S.C.D.
		CHECKED	P.E.B.
		DATE	5-28-92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos Los Alamos National Laboratory Los Alamos, New Mexico 87545		SHEET	1 OF 1
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-34	FIGURE 1	



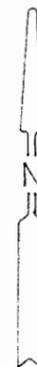
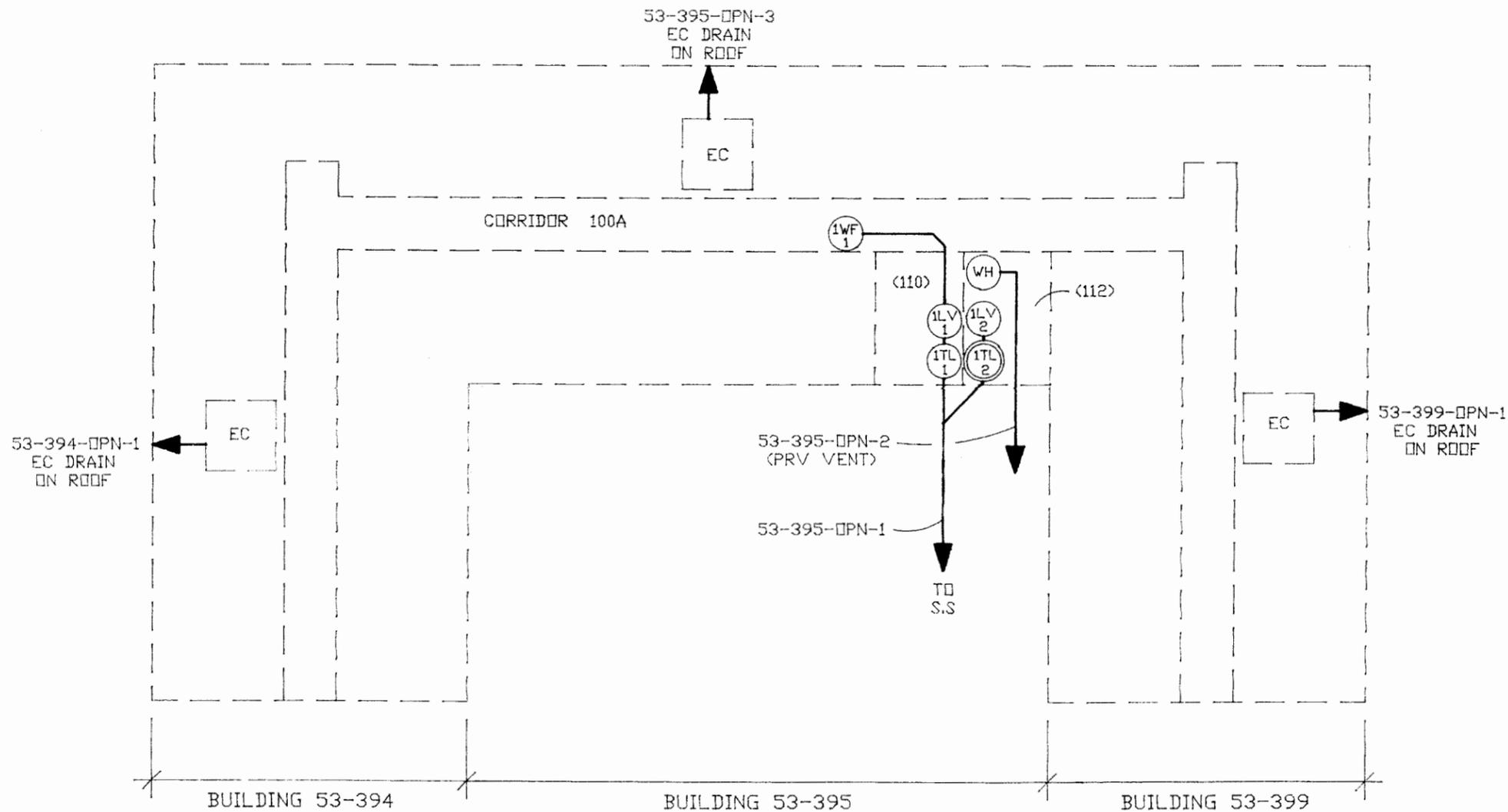
SYMBOL LEGEND	
LV	LAVATORY
SD	SINK DRAIN
TL	TOILET
UR	URINAL
WF	WATER FOUNTAIN
WH	WATER HEATER

 DYE TESTED DRAIN



NOTE:
THIS DRAIN SCHEMATIC WAS DERIVED FROM SITE VISITS.

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	DATE	5-28-92	
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	11056-34	FIGURE 2	



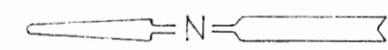
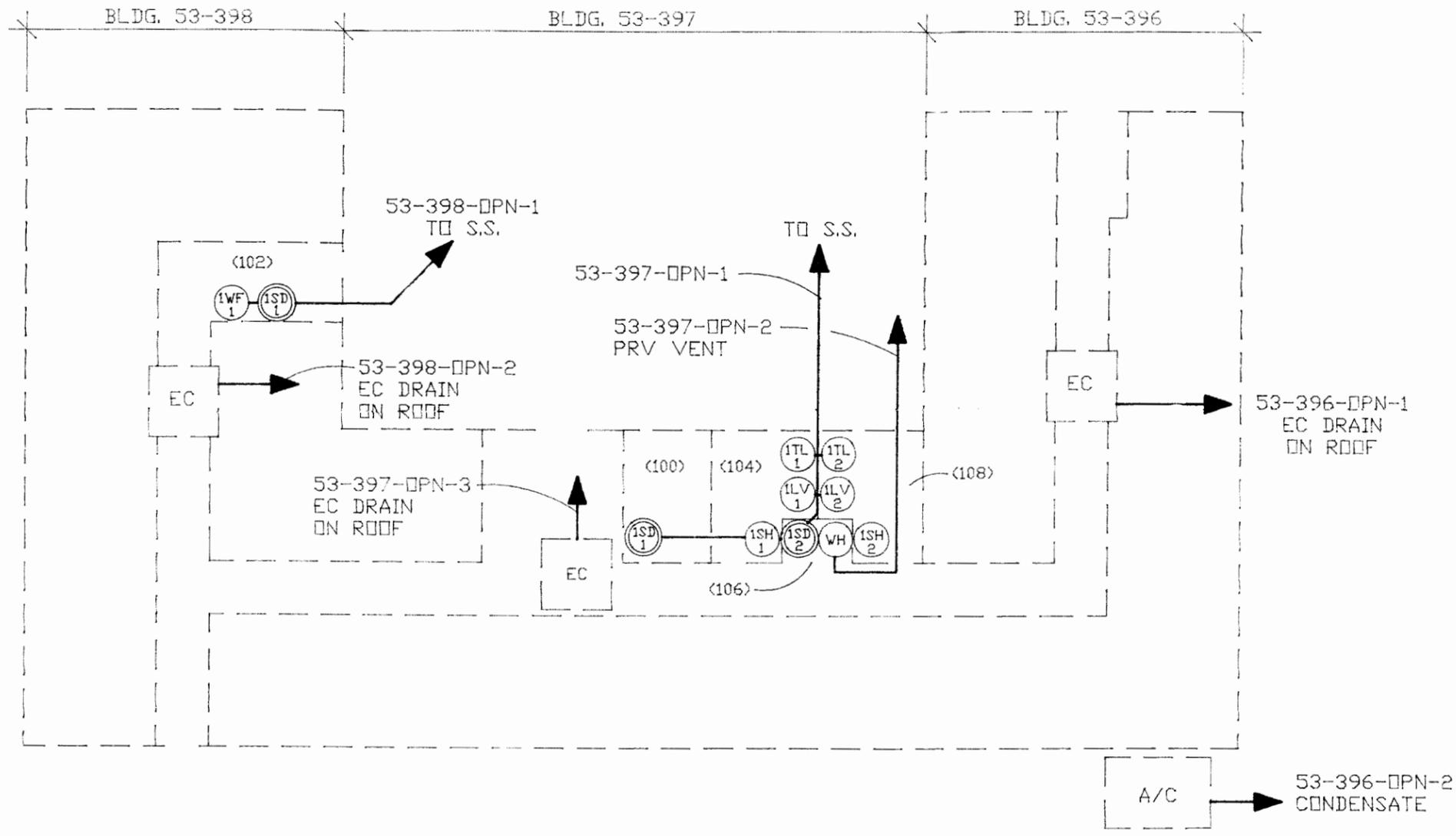
SYMBOL LEGEND	
LV	LAVATORY
TL	TOILET
WF	WATER FOUNTAIN
WH	WATER HEATER

 DYE TESTED DRAIN

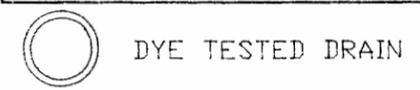
NOTE:

THIS DRAIN SCHEMATIC WAS DERIVED FROM L.A.N.L. DRAWINGS C-45043, C-51360, C-51361, C-51362, C-51364 AND SITE VISITS.

SANTA FE ENGINEERING, LTD.			
TA53-394,395,399 DRAIN SCHEMATIC	DRAWN	M.E.W.	
	DESIGN	S.C.D.	
	CHECKED	P.E.B.	
	DATE	5-28-92	
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CLASSIFICATION	REVIEWER	DATE	SHEET 1 OF 1
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-34	FIGURE 3	

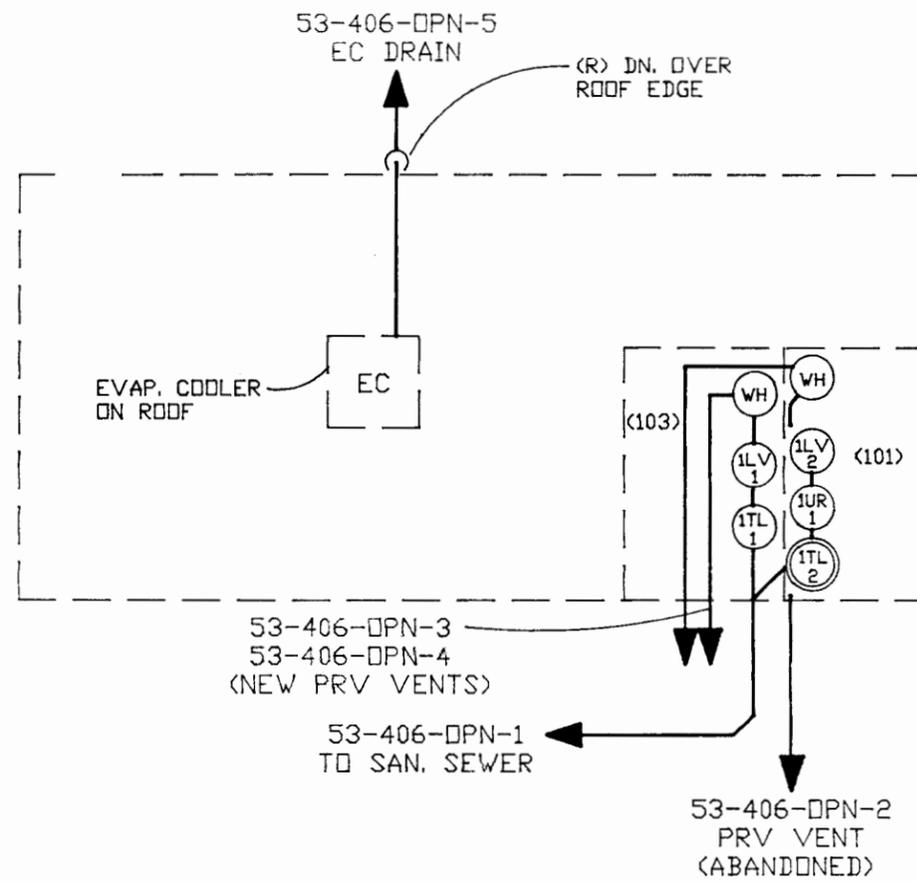


SYMBOL LEGEND	
A/C	MECH. AIR CONDITIONER
EC	EVAPORATIVE COOLER
LV	LAVATORY
SD	SINK DRAIN
SH	SHOWER
TL	TOILET
WF	WATER FOUNTAIN
WH	WATER HEATER



NOTE:
 THIS DRAIN SCHEMATIC WAS DERIVED FROM L.A.N.L. DRAWINGS R-7021, C-45043 AND SITE VISITS.

SANTA FE ENGINEERING, LTD.			
TA53-396,397,398 DRAIN SCHEMATIC	DRAWN	M.E.W.	
	DESIGN	S.C.D.	
	CHECKED	P.E.B.	
	DATE	5-28-92	
SUBMITTED	RECOMMENDED	APPROVED	
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CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-34	FIGURE 4	

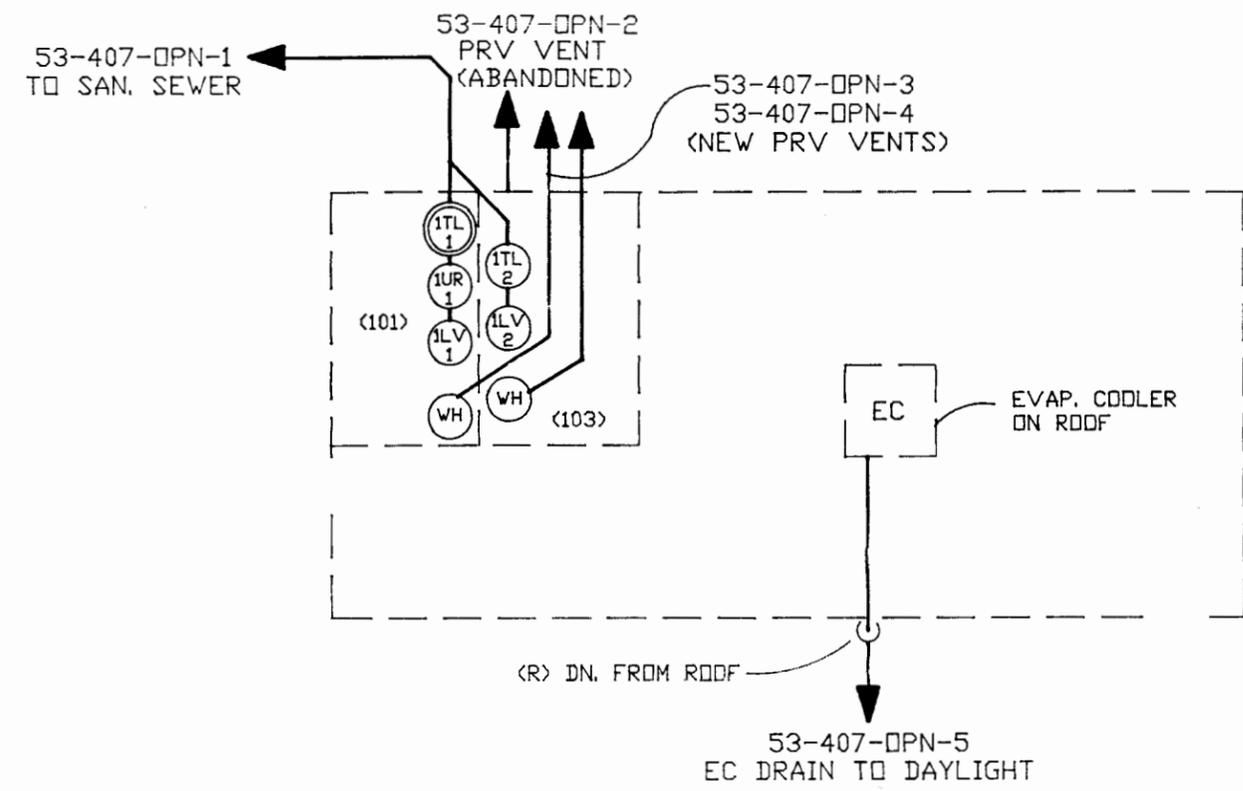


SYMBOL LEGEND	
EC	EVAPORATIVE COOLER
LV	LAVATORY
SD	SINK DRAIN
TL	TOILET
UR	URINAL
WH	WATER HEATER

○ DYE TESTED DRAIN

NOTE:
THIS DRAIN SCHEMATIC WAS
DERIVED FROM SITE VISIT.

SANTA FE ENGINEERING, LTD.			
TA53-406 DRAIN SCHEMATIC		DRAWN	M.E.W.
		DESIGN	S.C.D.
		CHECKED	P.E.B.
		RELEASED	
		DATE	5-28-92
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	11056-34	FIGURE 5	

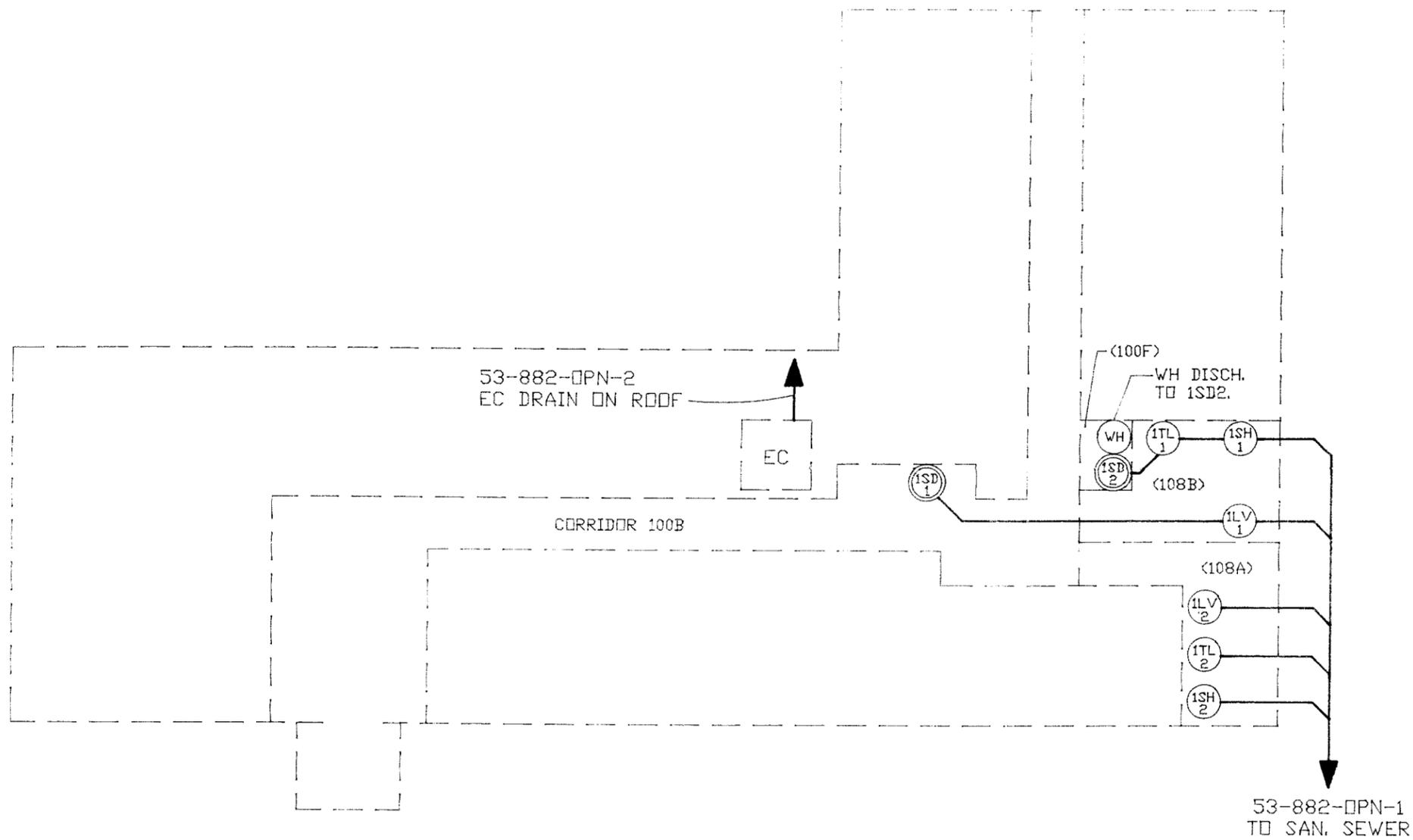


SYMBOL LEGEND	
EC	EVAPORATIVE COOLER
LV	LAVATORY
SD	SINK DRAIN
TL	TOILET
UR	URINAL
WH	WATER HEATER
○	DYE TESTED DRAIN

NOTE:
 THIS DRAIN SCHEMATIC WAS DERIVED FROM L.A.N.L. DRAWING R-5201 AND SITE VISIT.

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TA53-407 DRAIN SCHEMATIC		DRAWN	M.E.W.
		DESIGN	S.C.D.
		CHECKED	P.E.B.
		RELEASED	
		DATE	5-28-92
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	11056-34	FIGURE 6	



SYMBOL LEGEND	
EC	EVAPORATIVE COOLER
LV	LAVATORY
SD	SINK DRAIN
SH	SHOWER
TL	TOILET
WH	WATER HEATER

○ DYE TESTED DRAIN

NOTE:
THIS DRAIN SCHEMATIC WAS DERIVED
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R-5399 AND SITE VISITS.

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TA53-882 DRAIN SCHEMATIC	DRAWN	M.E.W.	
	DESIGN	S.C.D.	
	CHECKED	P.E.B.	
	DATE	5-28-92	
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	11056-34	FIGURE 7	

