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WASTEWATER STREAM CHARACTERIZATION FOR BUILDINGS TA 16-101, 410, 411, 413, 414, 415, 416, 418, 419, 435, 437, 442, 443, 444, 1364, 1366 and 1384

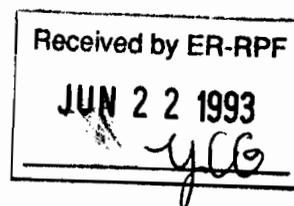
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ENVIRONMENTAL STUDY CHARACTERIZATION REPORT # 16



Los Alamos

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

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WASTEWATER STREAM
CHARACTERIZATION FOR
BUILDINGS TA 16-101, 410,
411, 413, 414, 415, 416, 418,
419, 435, 437, 442, 443, 444,
1364, 1366 and 1384

an
ENVIRONMENTAL STUDY

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

under subcontract 9-XG8-2874P-1

by:
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May, 1992

EXECUTIVE SUMMARY

Buildings 101, 410, 411, 413, 414, 415, 416, 418, 419, 435, 437, 442, 443, 444, 1364, 1366 and 1384 in TA-16 were visited to document all drain piping and to make permitting recommendations. The outfall pipes exiting the buildings are as follows:

- 1) from 101: abandoned guard house that should be removed or have the drains plugged.
- 2) from 410: one outfall of rain and floor drains, one outfall to the sanitary sewer, one steam relief valve, three steam condensate drains and one water tank vent.
- 3) from 411: one discharge of rain and floor drains, two vapor vents and one discharge from a valve pit.
- 4) from 413: one discharge of rain and floor drains, three steam relief valves and one discharge from a valve pit.
- 5) from 414: a storage building with no drains.
- 6) from 415: one discharge of rain and floor drains, two vapor vents and one discharge from a valve pit.
- 7) from 416, 418, 419, 442, 443 and 444: passageways with no drains.
- 8) from 435: one discharge of rain and floor drains and one discharge from a valve pit.
- 9) from 437: one discharge of rain and floor drains and one discharge from a valve pit.
- 10) from 1364, 1366 and 1384: transportainer with no drains.

No application forms have been prepared. Recommendations for repiping are provided to allow outfall consolidation to minimize permit maintenance 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 for listing wastewater type and flow rate for each outfall.

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1.0 INTRODUCTION

On July 31, 1991, John Sisneros of Santa Fe Engineering (SFE) toured buildings 101, 410, 411, 413, 414, 415, 416, 418, 419, 435, 437, 442, 443, 444, 1364, 1366 and 1384 in TA-16 with Loren Abercrombie of WX-12. The purpose of this study is to identify building drain piping and to characterize the wastewater flows and sources at the time of the visit. This report will not reflect any subsequent changes in piping or operation. The Wastewater 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 discharge 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 using the WX-12 drawings during a site visit to verify the SFE schematics and to insure that all pipes exiting the building were documented. The following information was used to define drain piping and characterize the wastewater streams:

1. Laboratory engineering drawings were used to prepare both WX-12 drawings and the SFE drain piping schematic. The Solid Waste Stream Characterization conducted by IT Corporation was also 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-91-1329 issued by EPA to the University of California were used for reference;
2. WX-12 verified drain piping by dye checking and
3. A site visit was performed to verify both WX-12 drawings and 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.

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 7). 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 buildings are listed in Appendix 1, Tables 1 through 6, with an abbreviations list in Table 7. Appendix 2 contains the waste stream characterization database output, listing wastewater source, flow rates and periodicity information for each outfall drain. No EPA forms were prepared to include in Appendix 3. Appendix 4 provides a copy of the WX-12 drawings and dye study information. Flow schematics of the drains from each building are attached in Appendix 5 as Figures 1 through 6.

3.0 RECOMMENDATIONS FOR BUILDING 101

This building is an abandoned guard house. The drains in the building should be plugged or the building removed. No permitting is recommended and no EPA forms were prepared.

4.0 RECOMMENDATIONS FOR BUILDING 410

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

4.1 Outfall 16-410-OPN-1

This outfall to daylight receives flow from roof drains, a water fountain, HVAC equipment, steam condensate, an air compressor, a freezer drain and fire water blowdown. This outfall is presently permitted as 05A053. Plugging of 1FD1 and BFD1 is recommended. More investigation by WX-12 is needed to determine if floor drains 1FD2, 1FD3 and 1FD4 can be plugged. The water fountain should be removed and replaced with bottled water. The tempered air equipment drain (1TAE1) and floor drains 2FD1 and 2FD2 should be repiped to the sanitary sewer. Plugging the outlet of the sump and installing a high level alarm is recommended. When all of the piping changes are made, the only sources to the outfall will be rain water from the roof drains. The permit for this outfall should then be deleted. No EPA forms were prepared.

4.2 Outfall 16-410-OPN-2

This outfall to the sanitary sewer system receives flow from sanitary facilities, a janitor's service sink and steam condensate. No permitting is recommended and no EPA forms were prepared.

4.3 Outfalls 16-410-OPN-3, 16-410-OPN-4, 16-410-OPN-5, 16-410-OPN-6 and 16-410-OPN-7

These outfalls to atmosphere include a steam relief valve, three steam condensate drains and a tempered water tank vent. These outfalls should be included in a Notice of Intent to Discharge (NOI). No piping changes are recommended. No EPA forms were prepared.

5.0 **RECOMMENDATIONS FOR BUILDING 411**

Table 2 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 pipes and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

5.1 Outfall 16-411-OPN-1

This outfall receives liquid discharge from a sink, roof drains, an equipment room floor drain, a water fountain and an eyewash and discharges to the canyon. The flow rate is estimated at less than 50 gpy. The roof drains should be should be piped as a separate outfall. The other drains should be piped to a holding tank for disposal. Permitting is not recommended and no EPA forms were prepared.

5.2 Outfalls 16-411-OPN-2 and 16-411-OPN-3

These two outfalls to atmosphere are vents from a vacuum pump and from a steam relief valve. These outfalls should be included in an NOI. No changes are recommended and no EPA forms were prepared.

5.3 Outfall 16-411-OPN-4

This outfall is from a valve pit and probably leaches into the ground. This outfall should be included in an NOI. No piping changes are recommended and no EPA forms were prepared.

6.0 RECOMMENDATIONS FOR BUILDING 413

Table 3 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 pipes and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

6.1 Outfall 16-413-OPN-1

This outfall discharges to the canyon and receives flow from roof drains and from a floor drain. Steam condensate and air compressor condensate drains are piped to the floor drain. The flow rate is estimated at less than 50 gpy. The roof drains should be piped as a separate outfall. The air compressor drains should be contained for proper disposal. The steam condensate should be included in an NOI. No EPA forms were prepared.

6.2 Outfalls 16-413-OPN-2, 16-413-OPN-3 and 16-413-OPN-4

These three outfalls to atmosphere are from steam relief valves. These outfalls should be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

6.3 Outfall 16-413-OPN-5

This outfall is from a valve pit and probably leaches into the ground. This outfall should be included in an NOI. No piping changes are recommended and no EPA forms were prepared.

7.0 RECOMMENDATIONS FOR BUILDING 414

This is a storage building with no water supply or drains. No piping changes or permitting are recommended. No EPA forms were prepared.

8.0 RECOMMENDATIONS FOR BUILDING 415

Table 4 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 pipes and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

8.1 Outfall 16-415-OPN-1

This outfall to the canyon receives flow from roof drains and from a floor drain. Steam condensate and air compressor condensate drains are piped to the floor drain. The flow rate is estimated at less than 50 gpy. The air compressor drains should be contained for proper disposal. The steam condensate should be included in an NOI. No EPA Forms were prepared.

8.2 Outfalls 16-415-OPN-2, 16-415-OPN-3 and 16-415-OPN-4

These three outfalls to atmosphere are from steam relief valves. These outfalls should be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

8.3 Outfall 16-415-OPN-5

This outfall is from a valve pit and probably leaches into the ground. This outfall should be included in an NOI. No piping changes are recommended and no EPA forms were prepared.

9.0 RECOMMENDATIONS FOR BUILDINGS 416, 418, 419, 442, 443 AND 444

These buildings are passageways that have no water sources or drains. No piping changes or permitting are recommended. No EPA forms were prepared.

10.0 RECOMMENDATIONS FOR BUILDING 435

Table 5 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 pipes and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

10.1 Outfall 16-435-OPN-1

This outfall to the canyon receives flow from roof drains and from a floor drain. Steam condensate, air compressor condensate and chiller condensate are piped to the floor drain. The flow rate is estimated at less than 250 gpy. The roof drains should be piped as a separate outfall. The air compressor condensate should be contained for proper disposal. The other two discharges should be included with an NOI. No EPA forms were prepared.

10.2 Outfall 16-435-OPN-2

This outfall is from a valve pit and probably leaches into the ground. This outfall should be included in an NOI. No piping changes are recommended and no EPA forms were prepared.

11.0 RECOMMENDATIONS FOR BUILDING 16-437

Table 6 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.

11.1 Outfall 16-437-OPN-1

This outfall to the canyon receives flow from roof drains and from a floor drain. Air compressor condensate and chiller water drains are piped to the floor drain. The flow rate is estimated at less than 250 gpy. The roof drains should be piped as a separate outfall. The air compressor drain should be contained for proper storage. The other discharge should be included with an NOI. No EPA Forms were prepared.

11.2 Outfall 16-437-OPN-2

This outfall is from a valve pit and probably leaches into the ground. This outfall should be included in an NOI. No piping changes are recommended and no EPA forms were prepared.

12.0 RECOMMENDATIONS FOR BUILDINGS 1364, 1366 AND 1384

These buildings are transportainers that have no water sources or drains. No piping changes or permitting are recommended. No EPA forms were prepared.

13.0 CONCLUSION

This document provides the information to characterize buildings 101, 410, 411, 413, 414, 415, 416, 418, 419, 435, 437, 442, 443, 444, 1364, 1366 and 1384 in TA-16. Permit application forms have been prepared for the following outfalls:

None

The remaining outfalls do not require permitting, as itemized below:

Areas that have no drains:

- | | | |
|-------------|------------|------------|
| 1. 16-414 | 2. 16-416 | 3. 16-418 |
| 4. 16-419 | 5. 16-442 | 6. 16-443 |
| 7. 16-444 | 8. 16-1364 | 9. 16-1366 |
| 10. 16-1384 | | |

Areas that have drains but no water supply:

1. 16-101

Storm water discharges:

- | | | |
|-----------------|-----------------|-----------------|
| 1. 16-410-OPN-1 | 2. 16-411-OPN-1 | 3. 16-413-OPN-1 |
|-----------------|-----------------|-----------------|

Discharges to TA-16 sanitary treatment plant:

1. 16-410-OPN-2

Discharges of potable water:

1. 16-410-OPN-7

Discharges from valve pits:

- | | | |
|-----------------|-----------------|-----------------|
| 1. 16-411-OPN-4 | 2. 16-413-OPN-5 | 3. 16-415-OPN-5 |
| 4. 16-435-OPN-2 | 5. 16-437-OPN-2 | |

Steam relief vents:

- | | | |
|-----------------|-----------------|-----------------|
| 1. 16-410-OPN-3 | 2. 16-411-OPN-3 | 3. 16-413-OPN-2 |
| 4. 16-413-OPN-3 | 5. 16-413-OPN-4 | 6. 16-415-OPN-2 |
| 7. 16-415-OPN-3 | 8. 16-415-OPN-4 | |

Discharges of steam condensate:

- | | | |
|-----------------|-----------------|-----------------|
| 1. 16-410-OPN-4 | 2. 16-410-OPN-5 | 3. 16-410-OPN-6 |
| 4. 16-413-OPN-1 | 5. 16-415-OPN-1 | 6. 16-435-OPN-1 |
| 7. 16-437-OPN-1 | | |

Vapor Vents:

1. 16-411-OPN-2

Recommended permitting and corrective actions are outlined in Tables 1 through 6 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: TA 16-410 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
16-410-OPN-1 05A053	BFD1	STAIR WELL DRAIN	PLUG	NO
	1FD1	BATTERY ROOM	PLUG	
	1FD2	EQUIPMENT ROOM	PLUG OR REPIPE	
	1FD3	EQUIPMENT ROOM	PLUG OR REPIPE	
	1FD4	EQUIPMENT ROOM	PLUG OR REPIPE	
	1FZD1	FREEZER DRAIN	REPIPE	
	RD1	ROOF	NO CHANGE	
	RD2	ROOF	NO CHANGE	
	RD3	ROOF	NO CHANGE	
	RD4	ROOF	NO CHANGE	
	RD5	ROOF	NO CHANGE	
	RD6	ROOF	NO CHANGE	
	RD7	ROOF	NO CHANGE	
	SUMP	OUTSIDE	PLUG & ALARM	
	1TAE1	HVAC EQUIP. DRAIN	REPIPE	
	1WF1	ASSEMBLY ROOM	REMOVE	
	2FD1	EQUIPMENT ROOM	REPIPE	
2FD2	EQUIPMENT ROOM	REPIPE		
16-410-OPN-2 SAN SEWER	1FD6	WOMEN'S REST ROOM	NO CHANGE	NO
	1LV2	WOMEN'S REST ROOM	NO CHANGE	
	1T2	WOMEN'S REST ROOM	NO CHANGE	
	1FD5	MEN'S REST ROOM	NO CHANGE	
	1LV1	MEN'S REST ROOM	NO CHANGE	
	1T1	MEN'S REST ROOM	NO CHANGE	
	1SD1	MEN'S REST ROOM	NO CHANGE	
	1UR1	MEN'S REST ROOM	NO CHANGE	
16-410-OPN-3		STEAM COND. VENT	NOI	NO
16-410-OPN-4		FIRE WATER BLOWDOW	NOI	NO
16-410-OPN-5		FIRE WATER BLOWDOW	NOI	NO
16-410-OPN-6		FIRE WATER BLOWDOW	NOI	NO
16-410-OPN-7		VENT (WATER TANK)	NOI	NO

RECOMMENDATIONS HAVE BEEN REVIEWED WITH PERSONNEL FROM WX-12, EM-8 & ENG-6

TABLE 2: TA 16-411 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
16-411-OPN-1	1EWD1	ASSEMBLY ROOM	CONTAINERIZE	NO
	1FD1	EQUIPMENT ROOM	CONTAINERIZE	
	1SD1	ASSEMBLY ROOM	CONTAINERIZE	
	RD1	ROOF	NO CHANGE	
	RD2	ROOF	NO CHANGE	
16-411-OPN-2		VACUUM PUMP VEN	NOI	NO
16-411-OPN-3		STEAM COND. VENT	NOI	NO
16-411-OPN-4	1PD1	VALVE PIT	NOI	NO

TABLE 3: TA 16-413 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
16-413-OPN-1	1FD1	EQUIPMENT ROOM	PLUG	NO
	RD1	ROOF	REPIPE NEW AS OUTFALL	
	RD2	ROOF	REPIPE NEW AS OUTFALL	
16-413-OPN-2		STEAM VENT	NOI	NO
16-413-OPN-3		STEAM VENT	NOI	NO
16-413-OPN-4		STEAM VENT	NOI	NO
16-413-OPN-5	1PD1	VALVE PIT	NOI	NO

TABLE 4: TA 16-415 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
16-415-OPN-1	1FD1	EQUIPMENT ROOM	PLUG	NO
	RD1	ROOF	NO CHANGE	
	RD2	ROOF	NO CHANGE	
16-415-OPN-2		STEAM PIPE VENT	NOI	NO
16-415-OPN-3		STEAM PIPE VENT	NOI	NO
16-415-OPN-4		STEAM PIPE VENT	NOI	NO
16-415-OPN-5	1PD1	VALVE PIT	NOI	NO

TABLE 5: TA-16-435 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
16-435-OPN-1	1FD1	EQUIPMENT ROOM	CONTAINERIZE	NO
	RD1	ROOF	REPIPE AS NEW OUTFALL	
	RD2	ROOF	REPIPE AS NEW OUTFALL	
16-435-OPN-2	1PD1	VALVE PIT	NOI	NO

TABLE 6: TA-16-437 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
16-437-OPN-1	1FD1	EQUIPMENT ROOM	CONTAINERIZE	NO
	RD1	ROOF	REPIPE AS NEW OUTFALL	
	RD2	ROOF	REPIPE AS NEW OUTFALL	
16-437-OPN-2	1PD1	VALVE PIT	NOI	NO

RECOMMENDATIONS HAVE BEEN REVIEWED WITH PERSONNEL FROM WX-12, EM-8 & ENG-6

TABLE 7
SUMMARY OF ABBREVIATIONS

ABBREVIATION	MEANING
EWD	Eye Wash
FD	Floor Drain
FZD	Freezer Drain
LV	Lavatory
PD	Pit Drain
RD	Roof Drain
SD	Sink Drain
T	Toilet
TAE	Tempered Air Equip.
UR	Urinal
WF	Water Fountain

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TA BLDG	OUTLET PIPING NUMBER	EPA OUTFALL #	DRAIN #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	ROOM #	SOURCE TYPES
16	101 16-101			GUARD HOUSE			no		NONE
16	410 16-410-OPN-1	05A053	1FD1	FLOOR DRAIN (BATTERY ROOM)		4 DAYS PER WEEK	no	15	BATTERY ACID POTENTIAL
16	410 16-410-OPN-1	05A053	1FD2	EQUIPMENT ROOM DRAIN	100	GPY 4 DAYS PER WEEK	no	12	FLOOR WASHINGS
16	410 16-410-OPN-1	05A053	1FD3	EQUIPMENT ROOM DRAIN	100	GPY 4 DAYS PER WEEK	no	12	FLOOR WASHINGS
16	410 16-410-OPN-1	05A053	1FD4	EQUIPMENT ROOM DRAIN	4100	GPD 4 DAYS PER WEEK	no	12	FLOOR WASHINGS
16	410 16-410-OPN-1	05A053	1FZD1	FREEZER DRAIN	25	GPY	no	11A	CONDENSED WATER
16	410 16-410-OPN-1	05A053	1TAE1	HVAC EQUIPMENT DRAIN	1000	GPY	no	4	CONDENSED WATER
16	410 16-410-OPN-1	05A053	1WF1	WATER FOUNTAIN DRAIN	25	GPD 4 DAYS PER WEEK	no	2	DRINKING WATER
16	410 16-410-OPN-1	05A053	2FD1	EQUIPMENT ROOM	1000	GPY	no	13	HVAC DRAIN
16	410 16-410-OPN-1	05A053	2FD2	EQUIPMENT ROOM	100	GPY	no	13	CHILLER WATER
16	410 16-410-OPN-1	05A053	BFD1	STAIR WELL DRAIN		4 DAYS PER WEEK	no	14	FLOOR WASHINGS
16	410 16-410-OPN-1	05A053	RD1	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-1	05A053	RD2	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-1	05A053	RD3	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-1	05A053	RD4	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-1	05A053	RD5	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-1	05A053	RD6	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-1	05A053	RD7	ROOF	2000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	410 16-410-OPN-2		1FD5	BATHROOM	50	GPY 4 DAYS PER WEEK	no	7	FLOOR WASHINGS
16	410 16-410-OPN-2		1FD6	BATHROOM	50	GPY 4 DAYS PER WEEK	no	8	FLOOR WASHINGS
16	410 16-410-OPN-2		1LV1	REST ROOM	100	GPD 4 DAYS PER WEEK	no	7	HAND WASHINGS
16	410 16-410-OPN-2		1LV2	BATH ROOM	75	GPD 4 DAYS PER WEEK	no	8	HAND WASHINGS
16	410 16-410-OPN-2		1SD1	JANITOR'S CLOSET	30	GPD 4 DAYS PER WEEK	no	7	MOP WATER
16	410 16-410-OPN-2		1T1	BATHROOM	75	GPD 4 DAYS PER WEEK	no	7	SANITARY WASTE
16	410 16-410-OPN-2		1T2	BATHROOM	50	GPD 4 DAYS PER WEEK	no	8	SANITARY WASTE
16	410 16-410-OPN-2		1UR1	BATHROOM	100	GPD 4 DAYS PER WEEK	no	7	SANITARY WASTE
16	410 16-410-OPN-3			EQUIPMENT ROOM			no	18	STEAM CONDENSATE
16	410 16-410-OPN-4			EQUIPMENT ROOM		1 OR 2 TIMES PER YEAR	no	12	FIRE WATER
16	410 16-410-OPN-5			EQUIPMENT ROOM		1 OR 2 TIMES PER YEAR	no	12	FIRE WATER
16	410 16-410-OPN-6			EQUIPMENT ROOM		1 OR 2 TIMES PER YEAR	no	12	FIRE WATER
16	410 16-410-OPN-7			EQUIPMENT ROOM			no	12	WATER TANK VENT
16	411 16-411-OPN-1		1EWD1	REST HOUSE	150	GPY	no	101	EYE WASH
16	411 16-411-OPN-1		1FD1	EQUIPMENT ROOM DRAIN	250	GPY 4 DAYS PER WEEK	no	102	FLOOR WASHINGS
16	411 16-411-OPN-1		1SD1	REST HOUSE	25	GPD 4 DAYS PER WEEK	no	101	HAND WASHINGS
16	411 16-411-OPN-1		RD1	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	411 16-411-OPN-1		RD2	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	411 16-411-OPN-2			REST HOUSE		4 DAYS PER WEEK	no	102	VACUUM PUMP VENT
16	411 16-411-OPN-3			REST HOUSE			no	102	STEAM CONDENSATE

REPORT 16

TA	BLDG	OUTLET PIPING NUMBER	EPA OUTFALL #	DRAIN #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	ROOM #	SOURCE TYPES
16	411	16-411-OPN-4		1PD1	REST HOUSE			no		VALVE PIT
16	413	16-413-OPN-1		1FD1	EQUIPMENT ROOM DRAIN	250	GPY	no	102	FLOOR WASHINGS
16	413	16-413-OPN-1		RD1	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	413	16-413-OPN-1		RD2	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	413	16-413-OPN-2			REST HOUSE			no	102	STEAM CONDENSATE
16	413	16-413-OPN-3			REST HOUSE			no	102	STEAM CONDENSATE
16	413	16-413-OPN-4			REST HOUSE			no	102	STEAM CONDENSATE
16	413	16-413-OPN-5		1PD1	REST HOUSE			no		VALVE PIT
16	414	16-414			STORAGE BUILDING			no		NONE
16	415	16-415-OPN-1		1FD1	EQUIPMENT ROOM DRAIN	250	GPD 4 DAYS PER WEEK	no	102	FLOOR WASHINGS
16	415	16-415-OPN-1		RD1	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	415	16-415-OPN-1		RD2	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	415	16-415-OPN-2			REST HOUSE			no	102	STEAM CONDENSATE
16	415	16-415-OPN-3			REST HOUSE			no	102	STEAM CONDENSATE
16	415	16-415-OPN-4			REST HOUSE			no	102	STEAM CONDENSATE
16	415	16-415-OPN-5		1PD1	REST HOUSE			no		VALVE PIT
16	416	16-416			PASSAGEWAY			no		NONE
16	418	16-418			PASSAGEWAY			no		NONE
16	419	16-419			PASSAGEWAY			no		NONE
16	435	16-435-OPN-1		1FD1	EQUIPMENT ROOM DRAIN	250	GPY 4 DAYS PER WEEK	no	102	FLOOR WASHINGS
16	435	16-435-OPN-1		RD1	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	435	16-435-OPN-1		RD2	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	435	16-435-OPN-2		1PD1	REST HOUSE			no		VALVE PIT
16	437	16-437-OPN-1		1FD1	EQUIPMENT ROOM DRAIN	250	GPY 4 DAYS PER WEEK	no	102	FLOOR WASHING
16	437	16-437-OPN-1		RD1	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	437	16-437-OPN-1		RD2	ROOF	3000	GPY MAINLY SUMMER	yes	ROOF	RAIN
16	437	16-437-OPN-2		1PD1	REST HOUSE			no		VALVE PIT
16	442	16-442			PASSAGEWAY			no		NONE
16	443	16-443			PASSAGEWAY			no		NONE
16	444	16-444			PASSAGEWAY			no		NONE
16	1,364	16-1364			TRANSPORTAINER			no		NONE
16	1,366	16-1366			TRANSPORTAINER			no		NONE
16	1,384	16-1384			TRANSPORTAINER			no		NONE



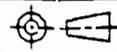
NO EPA FORMS WERE PREPARED.

PART OR CONTROL NUMBER	REVISIONS	
	ISS.	CLASS. REVIEW
N/A	A	LS
		DESCRIPTION
		DRAWN BY - ABERCROMBIE
		CHECKER - BARR
		ENGINEER - PALMER
		APPROVED - BARR
BUILDING WAS DYE TESTED IN JULY 1990		

TA - 16 - 410

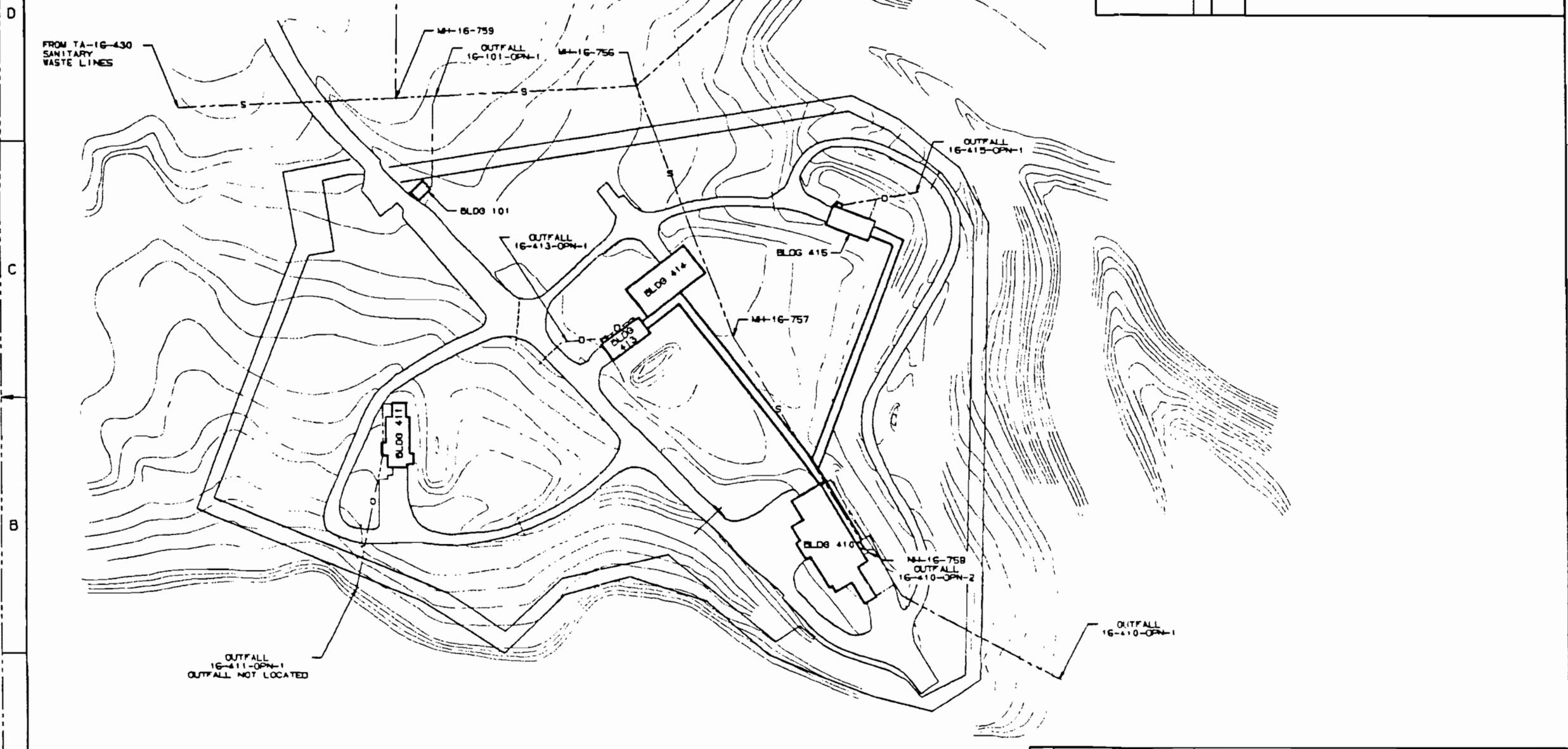
INDEX SHEET

- 13Y-192114 SHT 1----SITE DRAINAGE PLAN
- 13Y-192114 SHT 2----FIRST FLOOR PLUMBING DRAIN PLAN
- 13Y-192114 SHT 3----ROOF PLAN
- 13Y-192114 SHT 4----POTENTIAL EFFLUENTS
- 13Y-192114 SHT 5----FIRST FLOOR ELECTRICAL HAZARD PLAN
- 13Y-192114 SHT 6----FIRST FLOOR EVAC PLAN

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	0	TITLE (U) TITLE CLASSIFICATION	
ISSUE	A	INDEX SHEET TA-16-410	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		0	13Y-192114
ENGLISH (F./IN)		89-12-91 18196	
THIRD ANGLE PROJECTION 		PSDN 88516	SCALE 1/1 SHEET 0 OF -
STATUS		ORIGIN LA-1CEMPLUS-V2.03	

4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

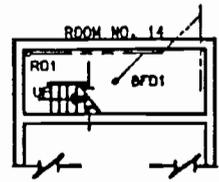
PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED
			- ABERCROMBIE 6-18-91
			- PALMER 6-18-91



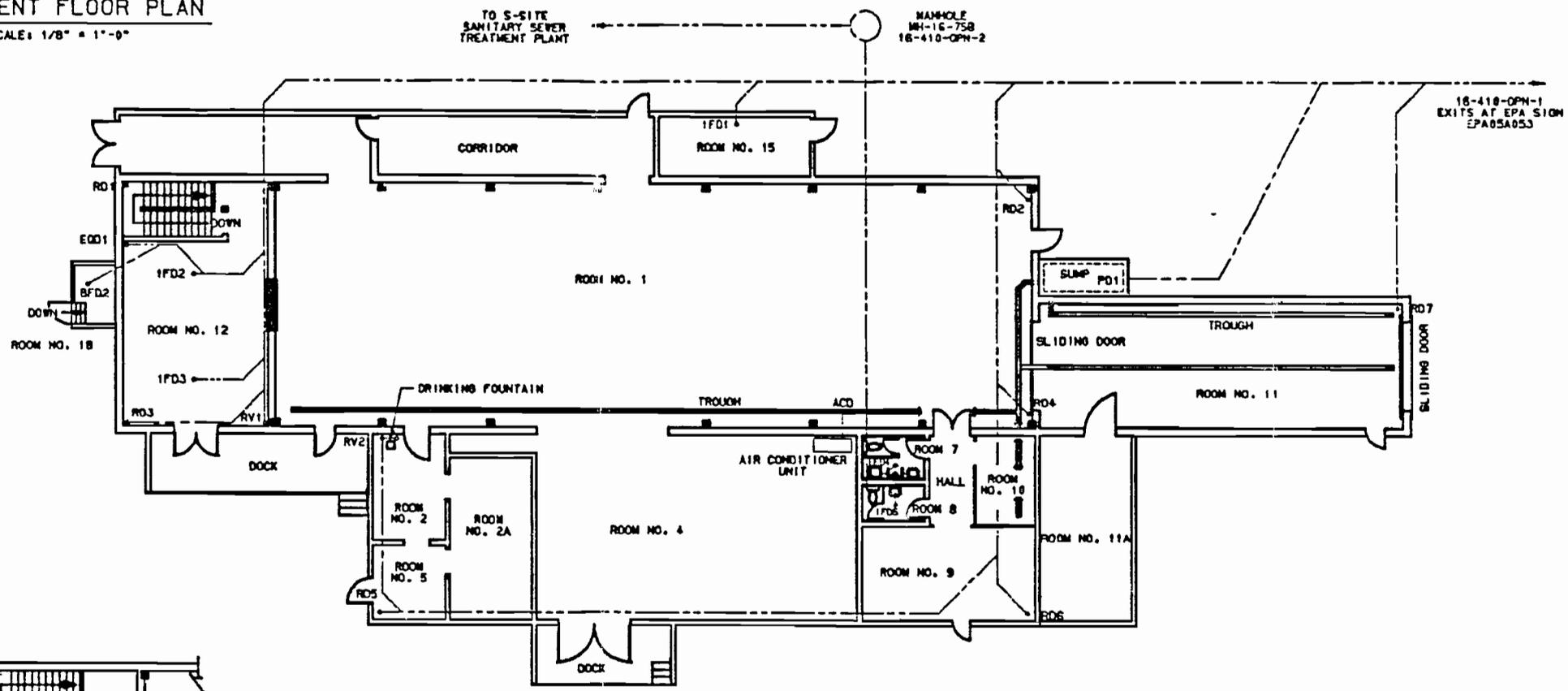
PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	1	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	SITE DRAINAGE PLAN TA-16-410	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192114
ENGLISH (FT/IN)		DATE	
THIRD ANGLE PROJECTION		00-12-91 15:06	FROM 88516 SCALE
		SHEET 1 OF	
		ORIGIN LA-1CEPLUS-V2.03	
		STATUS	

4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

PART OR CONTROL NUMBER	CLASS REVIEW		REVISIONS	
	ISS	CLASS	BY	DATE
N/A	A	LS	DRAWN BY CHECKER	- ABERCROMBIE 7-10-91
			ENGINEER	- L. ABERCROMBIE
			APPROVED	- D. PALMER
				- PALMER 9-12-91



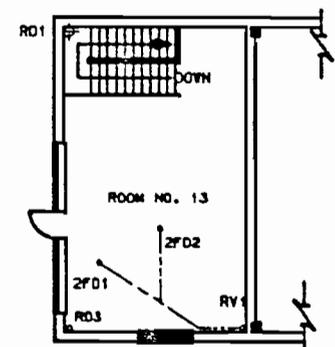
BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"



TO S-SITE
SANITARY SEWER
TREATMENT PLANT

MANHOLE
MH-16-75B
16-410-OPN-2

16-410-OPN-1
EXITS AT EPA SIGN
EPA05A053



SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

- LEGEND**
- 1FD1-----FIRST FLOOR DRAIN
 - 2FD1-----SECOND FLOOR DRAIN
 - EOD1-----EQUIPMENT DRAIN
 - BFD1-----BASEMENT FLOOR DRAIN
 - RD1-----RAIN DRAIN
 - RV1-----ROOF VENT
 - ACD-----AIR CONDITIONER DRAIN



PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	2	TITLE	(U) TITLE CLASSIFICATION
ISSUE	F	PLUMBING AND DRAIN PLAN TA-16-410	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		0	13Y-192114
THIRD ANGLE PROJECTION		93-12-91 15143	FROM 88516 SCALE NOTE SHEET 2 OF -
STATUS		ORIGIN LA-1CEMPLUS-V2.02	

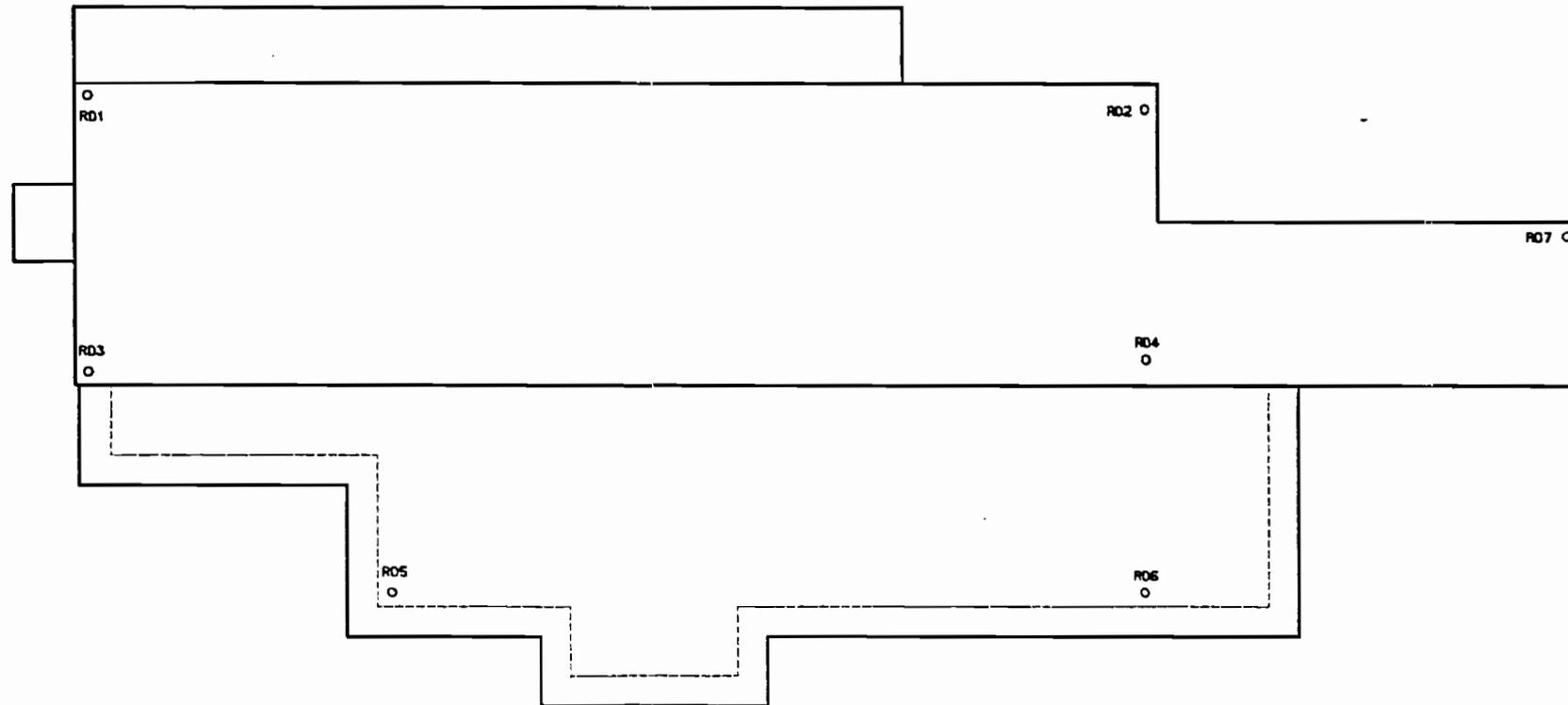
4 UNCLASSIFIED

3 UNCLASSIFIED

2 UNCLASSIFIED

1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED - L. SANCHEZ - L. ABERCROMBLIE - D. PALMER



ROOF PLAN
 SCALE: 1/8" = 1'-0"

LEGEND
 RD --- ROOF DRAIN



PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	3	TITLE (U) TITLE CLASSIFICATION	
ISSUE	A	ROOF DRAIN PLAN TA-16-410	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192114
ENGLISH (FT/IN)		FROM 88516 SCALE NOTE SHEET 3 OF -	
THIRD ANGLE PROJECTION		ORIGIN LA-1CEPLUS-V2.02	
STATUS		UNCLASSIFIED	

4 UNCLASSIFIED

3 UNCLASSIFIED

2 UNCLASSIFIED

1 UNCLASSIFIED

PART OR CONTROL NUMBER	CLASS		REVISIONS	
	ISS	REVISED	DESCRIPTION	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED	- ABERCROMBIE 7-2-91 - ABERCROMBIE - PALMER - PALMER 9-12-91

BLDG OUTFALL NO	BLDG ROOM NO	DRAIN NO	POTENTIAL EFFLUENT
16-410-OPW-1	SUMP	SPO1	CHEMICALS, H2O-1, GRAPHITE, RADIOACTIVE WASTE, OIL
16-410-OPW-1	1	ACD	H2O-1
16-410-OPW-1	2	OF	H2O-2
16-410-OPW-1	12	1FD3	PV-1 & PV-2, OIL, H2O-1; TY-1, H2O-1; CA-1, OIL, H2O-1; TR-1, OIL
16-410-OPW-1	12	1FD2	TCA-1 & TCA-2, OIL, H2O-1; CA-2, OIL, H2O-1
16-410-OPW-1	12	EOD1	CONDENSATE
16-410-OPW-1	13	2FD1	CR-1, OIL, H2O-1; CRE-1, H2O-1; PWS-1, H2O-1; TRC-1, H2O-1; TCA-4, H2O-1
16-410-OPW-1	13	2FD2	CR-1, OIL, H2O-1; CRE-1, H2O-1; PWS-1, H2O-1; TRC-1, H2O-1; TCA-4, H2O-1
16-410-OPW-1	14	BFD2	ASBESTOS, CONDENSATE, H2O-1
16-410-OPW-1	15	1FD1	H2O-1, SULPHURIC ACID
16-410-OPW-1	18	BFD2	OIL, H2O-1
16-410-OPW-1	1	OFD	H2O-1
16-410-OPW-1	ROOF	RD1	H2O-R
16-410-OPW-1	ROOF	RD2	H2O-R
16-410-OPW-1	ROOF	RD3	H2O-R
16-410-OPW-1	ROOF	RD4	H2O-R
16-410-OPW-1	ROOF	RD5	H2O-R
16-410-OPW-1	ROOF	RD6	H2O-R
16-410-OPW-2	7	T/S/U	TOILET, SINK, URINAL
16-410-OPW-2	7	1FD4	DETERGENTS, H2O-2
16-410-OPW-2	8	T/S	TOILETS, SINK
16-410-OPW-2	8	1FD5	DETERGENTS, H2O-2

LEGEND
 1FD#----FIRST FLOOR DRAIN
 2FD#----SECOND FLOOR DRAIN
 EOD#----EQUIPMENT DRAIN
 BFD#----BASEMENT FLOOR DRAIN
 RD#----RAIN DRAIN
 SPO#----SUMP PIT DRAIN
 ACD#----AIR CONDITIONER DRAIN

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	4	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	DRAIN SCHEDULE TA-16-410	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192114
THIRD ANGLE PROJECTION		DATE	12-91 15133
		PROJECT	88516 SCALE 1/1 SHEET 4 OF -
		STATUS	ORIGIN LA-1CEPLUS-V2.03

PART OR CONTROL NUMBER	ISSUE		REVISIONS	
	CLASS	REVIEW	DESCRIPTION	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED	- ABERCROMBIE - PALMER - PALMER

TA - 16 - 411

INDEX SHEET

- 13Y-192114 SHT 1----SITE DRAINAGE PLAN
- 13Y-192137 SHT 2----FIRST FLOOR PLUMBING DRAIN PLAN
- 13Y-192137 SHT 3----ROOF PLAN
- 13Y-192137 SHT 4----POTENTIAL EFFLUENTS
- 13Y-192137 SHT 5----FIRST FLOOR ELECTRICAL HAZARD PLAN
- 13Y-192137 SHT 6----FIRST FLOOR EVAC PLAN

PART CODE				LOS ALAMOS NATIONAL LABORATORY			
SHEET	0			TITLE	(U) TITLE CLASSIFICATION		
ISSUE	A			INDEX SHEET TA-16-411			
PART CLASSIFICATION				UNCLASSIFIED			
ENGLISH (FT/IN)		DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER		
		UNCLASSIFIED		0	13Y-192137		
THIRD ANGLE PROJECTION		89-12-91 10118		FORM 88516		SCALE 1/1	SHEET 0 OF -
STATUS				ORIGIN LA-1CEPLUS-V2.03			

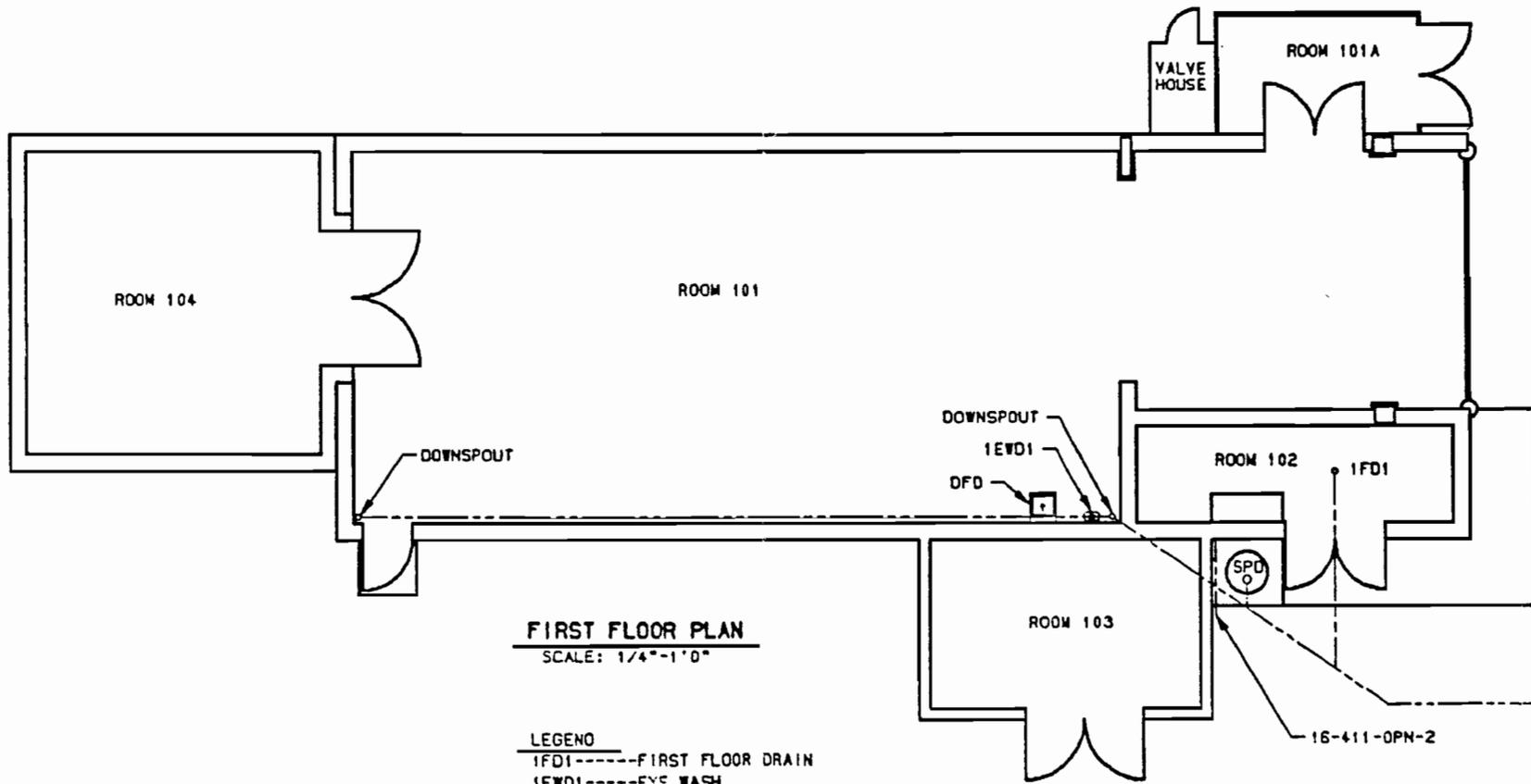
4 UNCLASSIFIED

3 UNCLASSIFIED

2 UNCLASSIFIED

1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS	
	ISS	CLASS REVIEW
N/A	A	J.H.
DRAWN BY		- ABERCROMBIE 7-17-91
CHECKER		- ABERCROMBIE
ENGINEER		- PALMER
APPROVED		-



FIRST FLOOR PLAN
SCALE: 1/4"=1'0"

- LEGEND**
- 1FD1-----FIRST FLOOR DRAIN
 - 1EWD1-----EYE WASH
 - SPD-----STEAM PIT DRAIN
 - DFD-----DRINKING FOUNTAIN

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	2	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	FIRST FLOOR PLUMBING AND DRAIN PLAN TA-16-411	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192137
THIRD ANGLE PROJECTION		DATE	SCALE
		08-12-91 18112	PSOM 88516
STATUS		ORIGIN LA-ICEMPLUS-V2.03	

4 UNCLASSIFIED

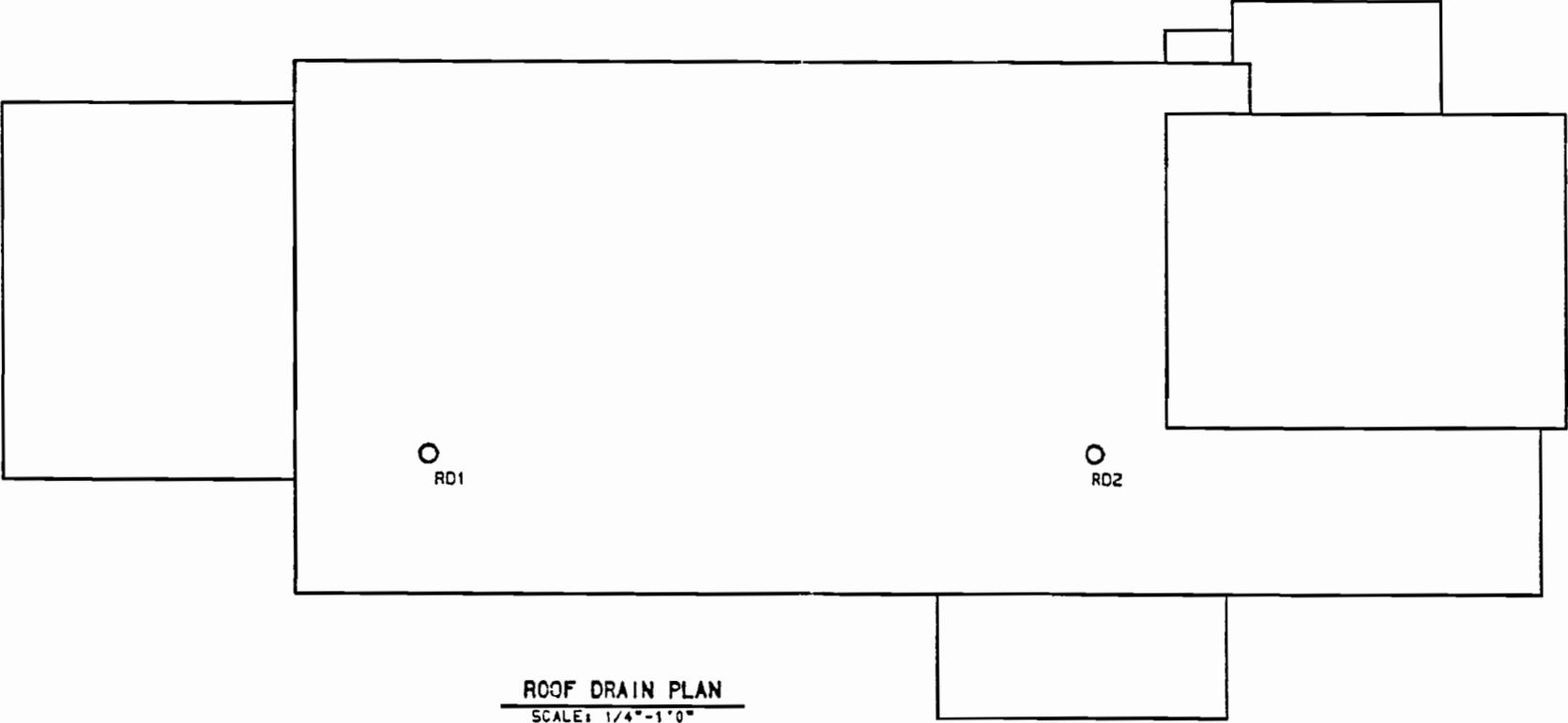
3 UNCLASSIFIED

2 UNCLASSIFIED

1 UNCLASSIFIED

4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS	
	ISS	CLASS REVIEW
N/A	A	J.H.
		DRAWN BY CHECKER ENGINEER APPROVED - ABERCROMBIE 7-17-91 - ABERCROMBIE - PALMER



ROOF DRAIN PLAN
SCALE: 1/4"=1'-0"

LEGEND
RD-----RAINDRAIN

D
C
B
A

D
C
B
A

4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

PART CODE		LOS ALAMOS NATIONAL LABORATORY			
SHEET	3	TITLE		(UNC) TITLE CLASSIFICATION	
ISSUE	A	ROOF DRAIN PLAN		TA-16-411	
PART CLASSIFICATION		DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		UNCLASSIFIED		D	13Y-192137
ENGLISH (FT/IN)		THIRD ANGLE PROJECTION		88-12-91 10115	FORM 88516 SCALE SHEET 3 OF -
		STATUS		ORIGIN LA-1CEMPLUS-V2.03	

PART OR CONTROL NUMBER	CLASS REVIEW		REVISIONS
	ISS	CLASS REVIEW	DESCRIPTION
N/A	A	LS	DRAWN BY - ABERCROMBIE 10-15-90 CHECKER - ENGINEER - APPROVED - PALMER 10-15-90

OUTFALL COULD NOT BE VERIFIED.
OUTFALL WERE NOT VISUALLY LOCATED.

BLDG OUTFALL NO	BLDG ROOM NO	DRAIN NO	POTENTIAL EFFLUENT
16-411-OPN-1	101	EW01	H2O-1
16-411-OPN-1	101	DFD	H2O-1
16-411-OPN-1	102	1FD1	CA-1, H2O-1; PC-2, H2O-1, OIL; PV-1, H2O-1, OIL
16-411-OPN-1	SPD	PD1	CONDENSATE
16-411-OPN-1	ROOF	RD1	RAIN WATER
16-411-OPN-1	ROOF	RD1	RAIN WATER

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	4	TITLE (UNC) TITLE CLASSIFICATION	
ISSUE	A	DRAIN SCHEDULE TA-16-411	
PART CLASSIFICATION		DRAWING NUMBER	
UNCLASSIFIED		C	13Y-192137
DRAWING CLASSIFICATION		SCALE 1/1 SHEET 4 OF -	
UNCLASSIFIED		ORIGIN LA-1CEMPLUS-V2.03	
ENGLISH (FT/IN)		STATUS	
THIRD ANGLE PROJECTION			

4 UNCLASSIFIED

3 UNCLASSIFIED

2 UNCLASSIFIED

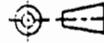
1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED - ABERCROMBIE - PALMER

TA - 16 - 413

INDEX SHEET

- 13Y-192114 SHT 1----SITE DRAINAGE PLAN
- 13Y-192138 SHT 2----FIRST FLOOR PLUMBING DRAIN PLAN
- 13Y-192138 SHT 3----POTENTIAL EFFLUENTS
- 13Y-192138 SHT 4----FIRST FLOOR ELECTRICAL HAZARD PLAN
- 13Y-192138 SHT 5----FIRST FLOOR EVAC PLAN

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	0	TITLE	(U) TITLE CLASSIFICATION
ISSUE	A	INDEX SHEET TA-16-413	
PART CLASSIFICATION		DRAWING NUMBER	
UNCLASSIFIED		13Y-192138	
DRAWING CLASSIFICATION		SCALE	PSOM 88516 SCALE 1/1 SHEET 2 OF 2
UNCLASSIFIED		ORIGIN LA-1CEMPLUS-V2	
ENGLISH (FT/IN)		STATUS	
THIRD ANGLE PROJECTION 		UNCLASSIFIED	

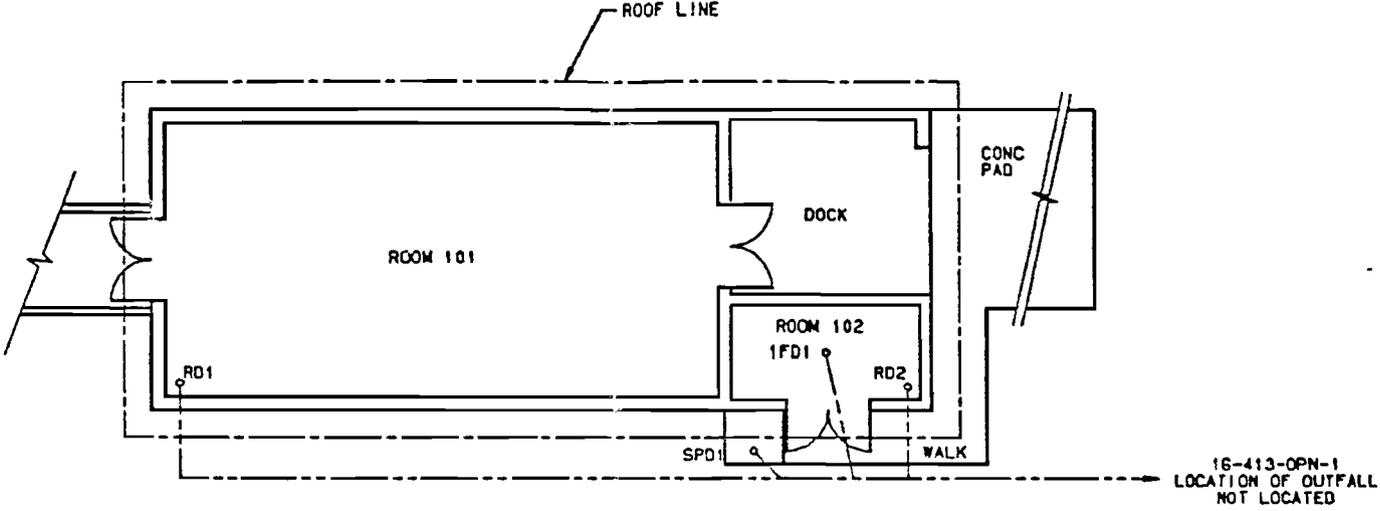
4 UNCLASSIFIED

3 UNCLASSIFIED

2 UNCLASSIFIED

1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED - ABERCROMBIE 7-17-91 - HYDE - HYDE - PALMER



FIRST FLOOR PLAN
3/16"=1'-0"

LEGEND
 1FD1----FIRST FLOOR DRAIN
 RD#-----RAIN DRAIN
 SPD1----STEAM PIT DRAIN

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	2	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	FIRST FLOOR PLUMBING AND DRAIN PLAN TA-16-413	
PART CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192138
DRAWING CLASSIFICATION		STATUS	ORIGIN LA-ICEMPLUS-V2.03
UNCLASSIFIED		99-10-91 14:00	PSOM 885161 SCALE SHEET 2 OF -
THIRD ANGLE PROJECTION			

PART OR CONTROL NUMBER	REVISIONS	
	ISS	CLASS REVIEW
N/A	A	LS
DRAWN BY CHECKER ENGINEER APPROVED		
- ABERCROMBIE 10-15-90		
- PALMER 10-15-90		

OUTFALL COULD NOT BE VERIFIED.
OUTFALL WERE NOT VISUALLY LOCATED.
DRAINS COULD NOT BE TESTED SINCE THERE
IS NOT ANY WATER AVAILABLE.

BLDG OUTFALL NO	BLDG ROOM NO	DRAIN NO	POTENTIAL EFFLUENT
16-413-OPN-1	102	1FD1	PC-2, H2O-1, OIL; TCA-1, H2O-1, OIL
16-413-OPN-1	STEAM PIT	STD1	CONDENSATE
16-413-OPN-1	ROOF	RD1	RAIN WATER
16-413-OPN-1	ROOF	RD2	RAIN WATER

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	3	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	DRAIN SCHEDULE TA-16-413	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		C	13Y-192138
THIRD ANGLE PROJECTION		09-18-91 14:20	FROM 88516 SCALE 1/1 SHEET 3 OF -
STATUS		ORIGIN LA-ICEMPLUS-V2.03	

PART OR CONTROL NUMBER	REVISIONS	
	ISS	CLASS REVIEW
N/A	A	LS
		DESCRIPTION
		DRAWN BY - ABERCROMBIE
		CHECKER - PALMER
		ENGINEER -
		APPROVED -

TA - 16 - 414

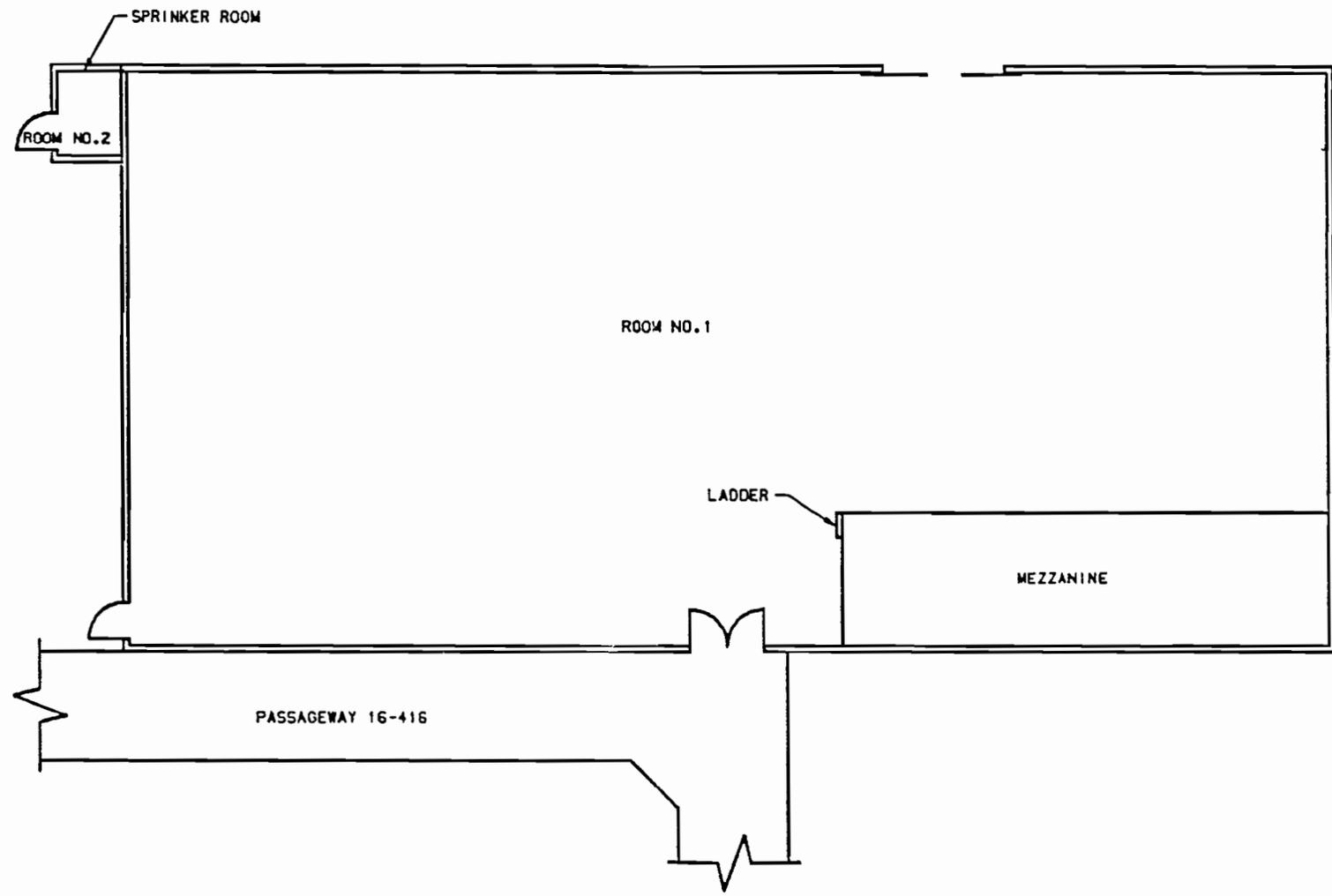
INDEX SHEET

- 13Y-192114 SHT 1----SITE DRAINAGE PLAN
- 13Y-192139 SHT 2----FIRST FLOOR PLUMBING DRAIN PLAN
- 13Y-192139 SHT 3----FIRST FLOOR ELECTRICAL HAZARD PLAN
- 14Y-192139 SHT 4----FIRST FLOOR EVAC PLAN

PART CODE		LOS ALAMOS NATIONAL LABORATORY			
SHEET	0	TITLE		(U) TITLE CLASSIFICATION	
ISSUE	A	INDEX SHEET		TA-16-414	
PART CLASSIFICATION		UNCLASSIFIED			
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER		
UNCLASSIFIED		0	13Y-192139		
THIRD ANGLE PROJECTION		93-10-91 14124	PSCH 88516	SCALE 1:1	SHEET 0 OF -
		STATUS		ORIGIN LA-ICEWPLUS-Y2.03	

4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVISED	
N/A	A	LS	DRAWN BY - ABERCROMBIE 7-17-91 CHECKER - ENGINEER - APPROVED -



NOTE:
THERE ARE NO FLOOR DRAINS OR ROOF DRAINS
LOCATED IN THIS STRUCTURE.

FIRST FLOOR PLAN
3/16"=1'-0"

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	2	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	FIRST FLOOR PLAN TA-16-414	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192139
THIRD ANGLE PROJECTION		DATE	PSOM 88516 SCALE SHEET 2 OF -
		STATUS	ORIGIN LA-ICEMPLUS-V2.03

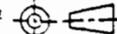
4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY - ABERCROMBIE CHECKER - PALMER ENGINEER - APPROVED -

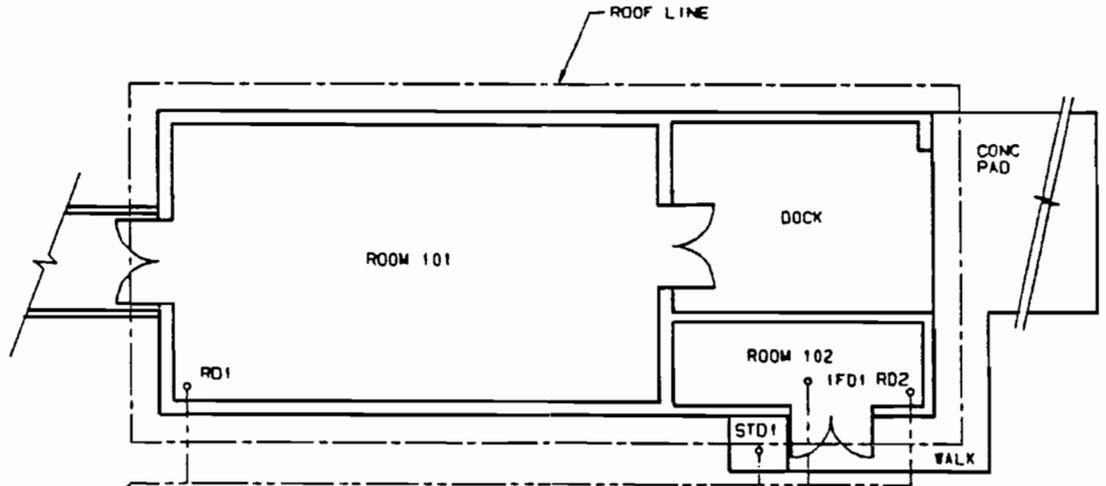
TA-16-415

INDEX SHEET

- 13Y-192114 SHT 1----SITE DRAINAGE PLAN
- 13Y-192140 SHT 2----FIRST FLOOR PLUMBING DRAIN PLAN
- 13Y-192140 SHT 3----POTENTIAL EFFLUENTS
- 13Y-192140 SHT 4----FIRST FLOOR ELECTRICAL HAZARD PLAN
- 13Y-192140 SHT 5----FIRST FLOOR EVAC PLAN

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	0	TITLE	(U) TITLE CLASSIFICATION
ISSUE	A	INDEX SHEET TA-16-415	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192140
THIRD ANGLE PROJECTION 		FROM 88516 SCALE 1/1 SHEET 0 OF -	
STATUS		ORIGIN LA-1CEMPLUS-V2.03	

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY - ABERCROMBIE 7-17-91
			CHECKER -
			ENGINEER -
			APPROVED -



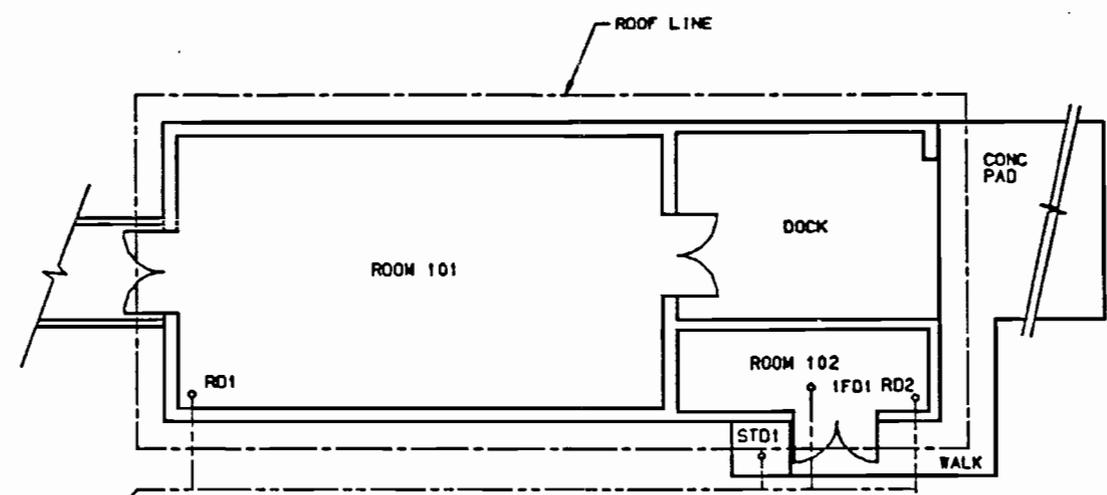
16-415-OPN-1
 OUTFALL LOCATION IDENTIFIED
 UNABLE TO DYE TEST-NO WATER SOURCE

D
C
B
A

D
C
B
A

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	2	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	FIRST FLOOR PLUMBING AND DRAIN PLAN TA-16-415	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		D	13Y-192140
THIRD ANGLE PROJECTION		DATE	FROM 88516 SCALE SHEET 2 OF -
99-28-91 11:29		STATUS ORIGIN LA-1CEMPLUS-V2.03	

PART OR CONTROL NUMBER	CLASS		REVISIONS
	ISS	CLASS REVIEW	DESCRIPTION
N/A	A	LS	DRAWN BY - ABERCROMBIE 7-17-91 CHECKER - ENGINEER - APPROVED -



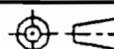
16-415-OPN-1
OUTFALL LOCATION IDENTIFIED
UNABLE TO DYE TEST-NO WATER SOURCE

LOS ALAMOS NATIONAL LABORATORY			
PART CODE	SHEET 2	TITLE (UNC) TITLE CLASSIFICATION	
ISSUE A		FIRST FLOOR PLUMBING AND DRAIN PLAN TA-16-415	
PART CLASSIFICATION UNCLASSIFIED		SIZE D	DRAWING NUMBER 13Y-192140
DRAWING CLASSIFICATION UNCLASSIFIED		STATUS	ORIGIN LA-ICEMPLUS-V2.03
ENGLISH (FT/IN)		DATE 09-28-91 11:06	PSCH 88516 SCALE SHEET 2 OF -
THIRD ANGLE PROJECTION			

PART OR CONTROL NUMBER	REVISIONS		DESCRIPTION
	ISS	CLASS REVIEW	
N/A	A	LS	DRAWN BY CHECKER ENGINEER APPROVED
			- ABERCROMBIE 10-15-90
			- PALMER 10-15-90

OUTFALL WERE VISUALLY LOCATED. DRAINS COULD NOT BE TESTED SINCE THERE IS NOT ANY WATER AVAILABLE.

BLDG OUTFALL NO	BLDG ROOM NO	DRAIN NO	POTENTIAL EFFLUENT
16-415-OPN-1	102	1FD1	PC-1, H2O-1, OIL; TCA-1, H2O-1, OIL
16-415-OPN-1	STEAM PIT	STD1	CONDENSATE
16-415-OPN-1	ROOF	RD1	RAIN WATER
16-415-OPN-1	ROOF	RD2	RAIN WATER

PART CODE		LOS ALAMOS NATIONAL LABORATORY	
SHEET	3	TITLE	(UNC) TITLE CLASSIFICATION
ISSUE	A	DRAIN SCHEDULE TA-16-415	
PART CLASSIFICATION		UNCLASSIFIED	
DRAWING CLASSIFICATION		SIZE	DRAWING NUMBER
UNCLASSIFIED		C	13Y-192140
ENGLISH (FT/IN)		09-25-91 11:39	FSCW 88516 SCALE 1/1 SHEET 3 OF -
THIRD ANGLE PROJECTION 		ORIGIN LA-ICEMPLUS-V2.03	

DYE STUDY REPORT FOR BUILDINGS
16-101, 16-410, 16-411, 16-413, 16-414, 16-415, 16-416,
16-418, 16-419, 16-435, 16-437, 16-442, 16-443, 16-444,
16-1364, 16-1666, AND 16-1384
COMPILED BY ENGINEERING AND INFORMATION RESOURCES (WX-12)

BUILDINGS 101

This building was not dye tested.

BUILDING 410--Field investigated August 13, 1990.

DRAIN No	DRAIN LOCATION	END OF PIPE
1FD1	RM 15	16-410-OPN-1 EPA outlet 05A053
1FD2	RM 12	16-410-OPN-1 EPA outlet 05A053
1FD3	RM 12	16-410-OPN-1 EPA outlet 05A053
1FD4	RM 7	16-410-OPN-2 sanitary sewer
1FD5	RM 8	16-410-OPN-2 sanitary sewer
PD1	SUMP	16-410-OPN-1 EPA outlet 05A053
2FD1	RM 13	16-410-OPN-1 EPA outlet 05A053

BUILDING 411--Field investigated August 13, 1990.

DRAIN No	DRAIN LOCATION	END OF PIPE
1FD1	RM 102	16-411-OPN-1

Note: The outfall location was not identified. Water was allowed run for approximately 1 hr and no flow appeared.

BUILDING 413--Field investigated August 13, 1990.

Note: This building was not dye tested. The outfall location was not identified during the field investigation.

BUILDING 414--Field investigated August 13, 1990.

This building is a storage shed and does not have any floor drains.

BUILDINGS 415--Field investigated August 13, 1990.

Note: This building was not dye tested. The outfall location was identified during the field investigation.

BUILDING 416, 418, 419, 442, 443, and 444--Field investigated August 13, 1990.

These buildings are passageways and have no drains.

BUILDING 435--Field investigated September 28, 1990.

This building was not dye tested. The outfall location was not identified during the field investigation.

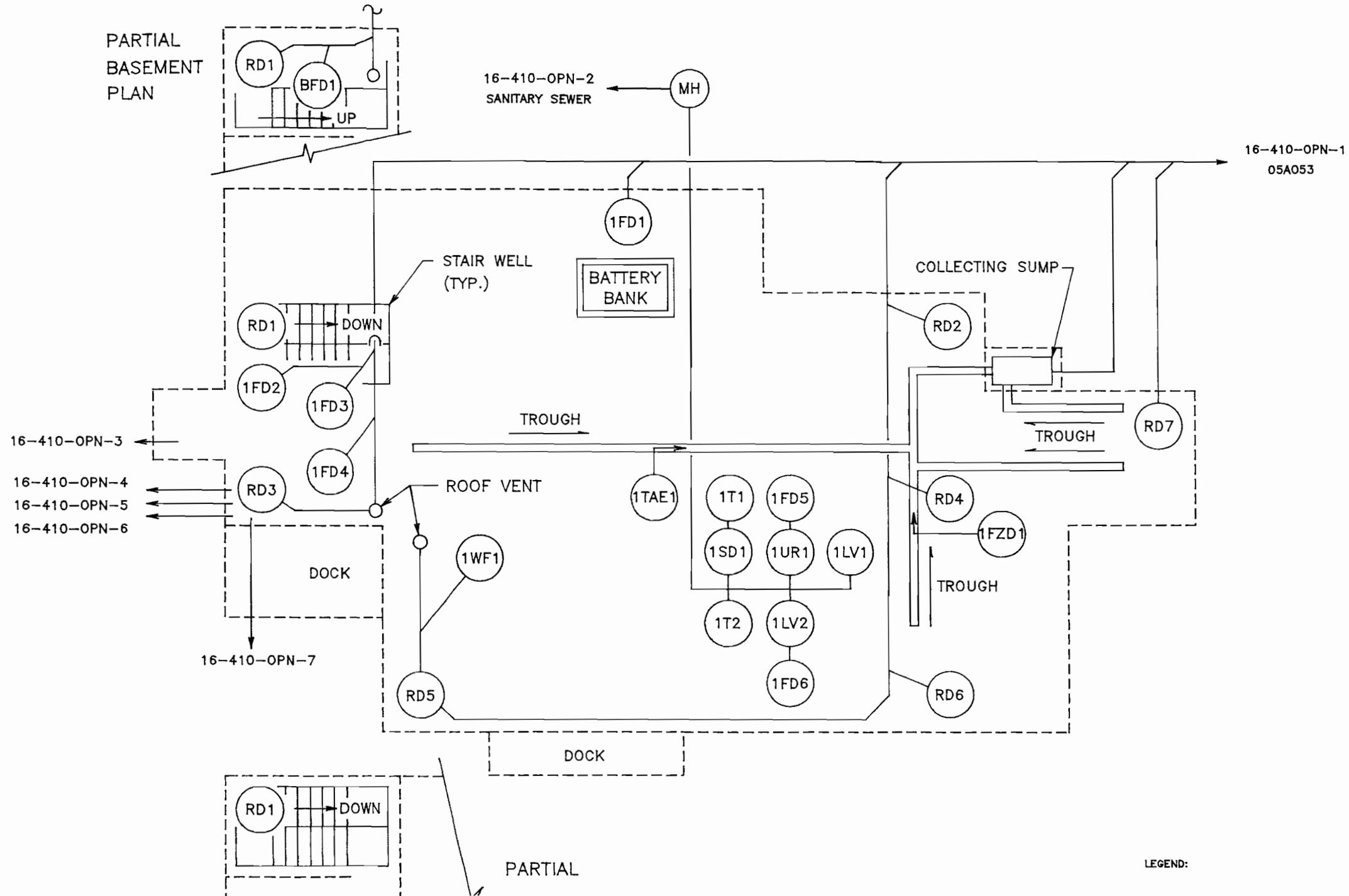
BUILDING 437--Field investigated September 28, 1990.

This building was not dye tested. The outfall location was identified during the field investigation.

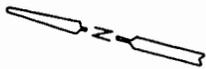
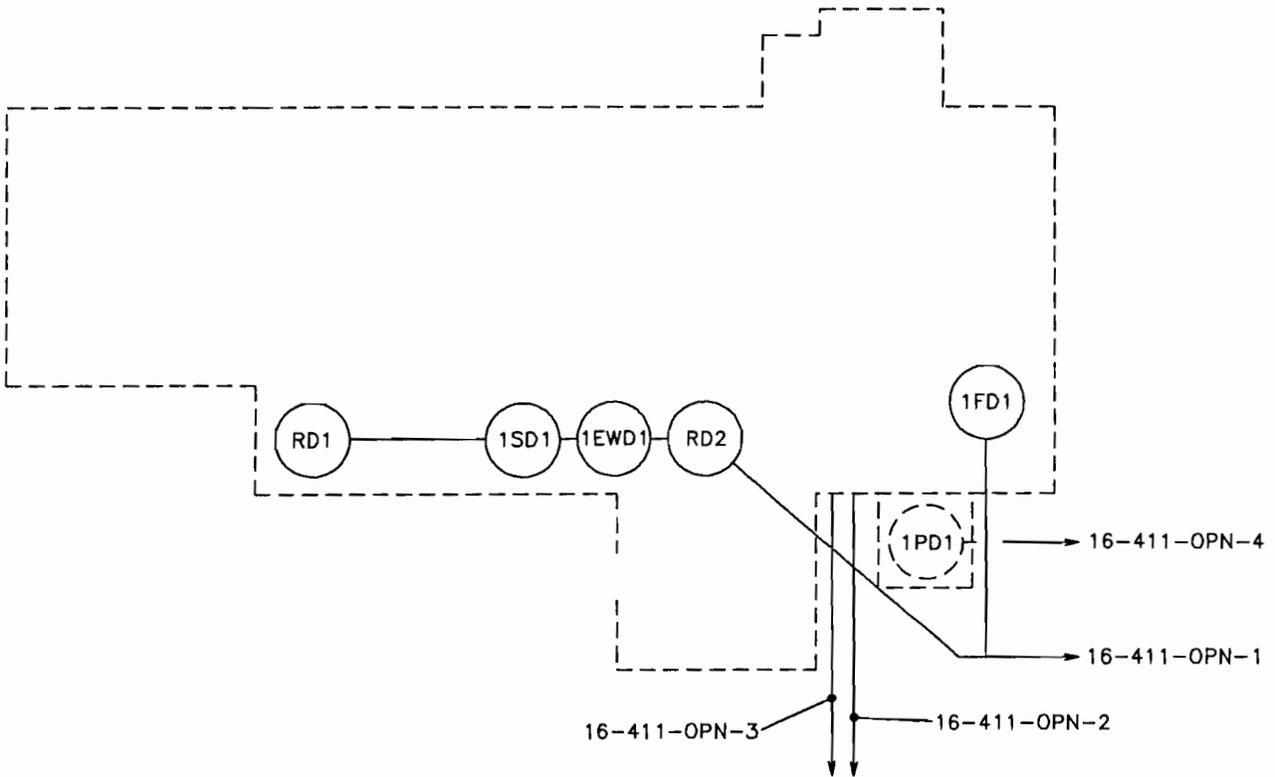
BUILDING 1364, 1366, AND 1384

These buldings are transportainers.

PARTIAL
BASEMENT
PLAN



LEGEND:



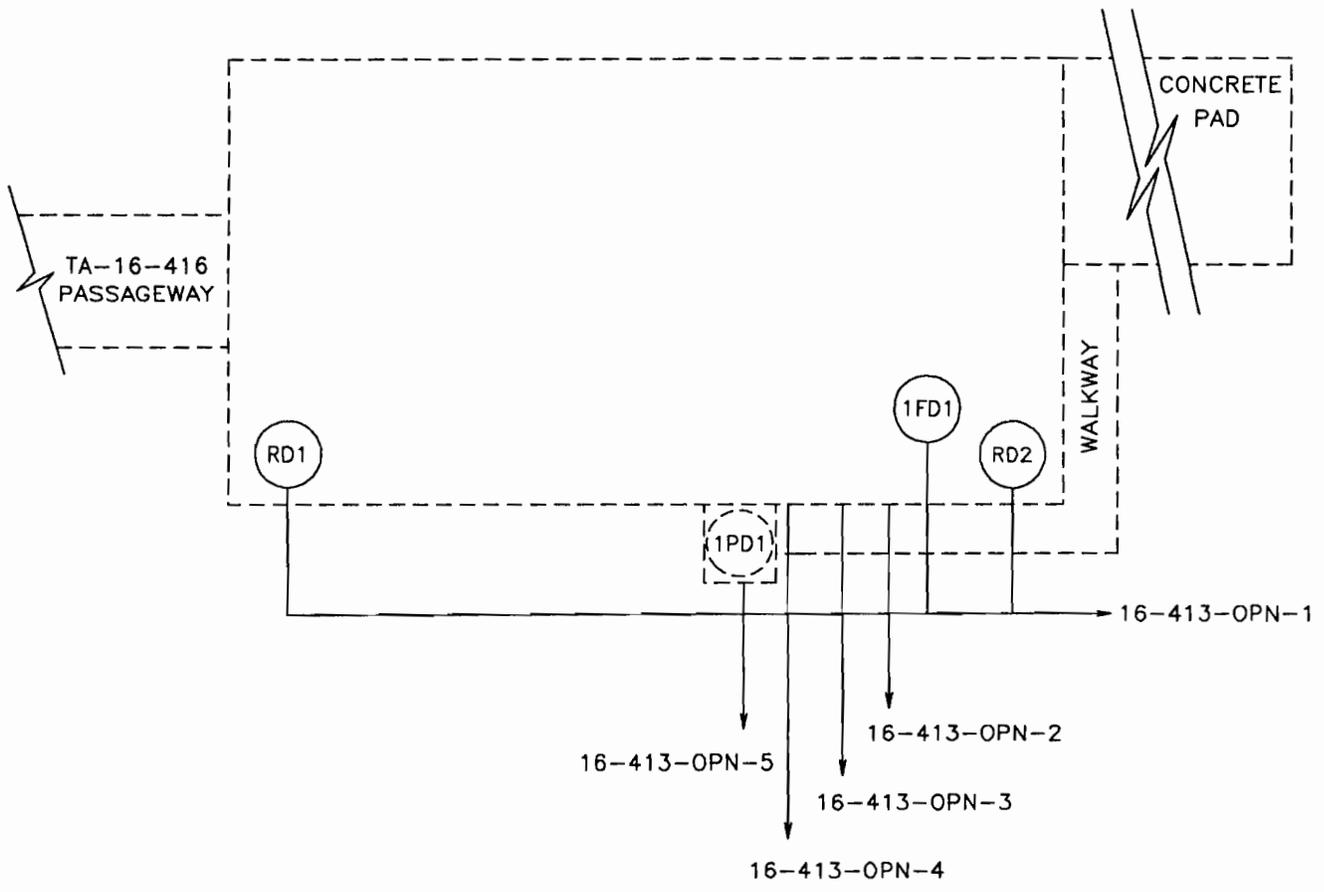
NOTES:

- 1) PIPING LAYOUT REFERENCE FROM L.A.N.L. DRAWING NO's: ENG-C1996 and ENG-R2666
- 2) THIS PIPING LAYOUT BASED UPON DRAWINGS AS NOTED, WX-12 DYE STUDY VERIFICATION, AND SITE INSPECTION.

LEGEND:

- FD FLOOR DRAIN
- RD ROOF DRAIN
- PD PIT DRAIN (STEAM)
- SD SINK DRAIN
- EWD EYE WASH DRAIN

SANTA FE ENGINEERING, LTD.											
TA 16-411 BUILDING DRAIN SCHEMATIC			<table border="1" style="width: 100%;"> <tr><td style="font-size: small;">DRAWN</td><td>JAS</td></tr> <tr><td style="font-size: small;">DESIGN</td><td>JAS</td></tr> <tr><td style="font-size: small;">CHECKED</td><td>PEB</td></tr> <tr><td style="font-size: small;">DATE</td><td>5/27/92</td></tr> </table>	DRAWN	JAS	DESIGN	JAS	CHECKED	PEB	DATE	5/27/92
DRAWN	JAS										
DESIGN	JAS										
CHECKED	PEB										
DATE	5/27/92										
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	11056-16	FIGURE 2									



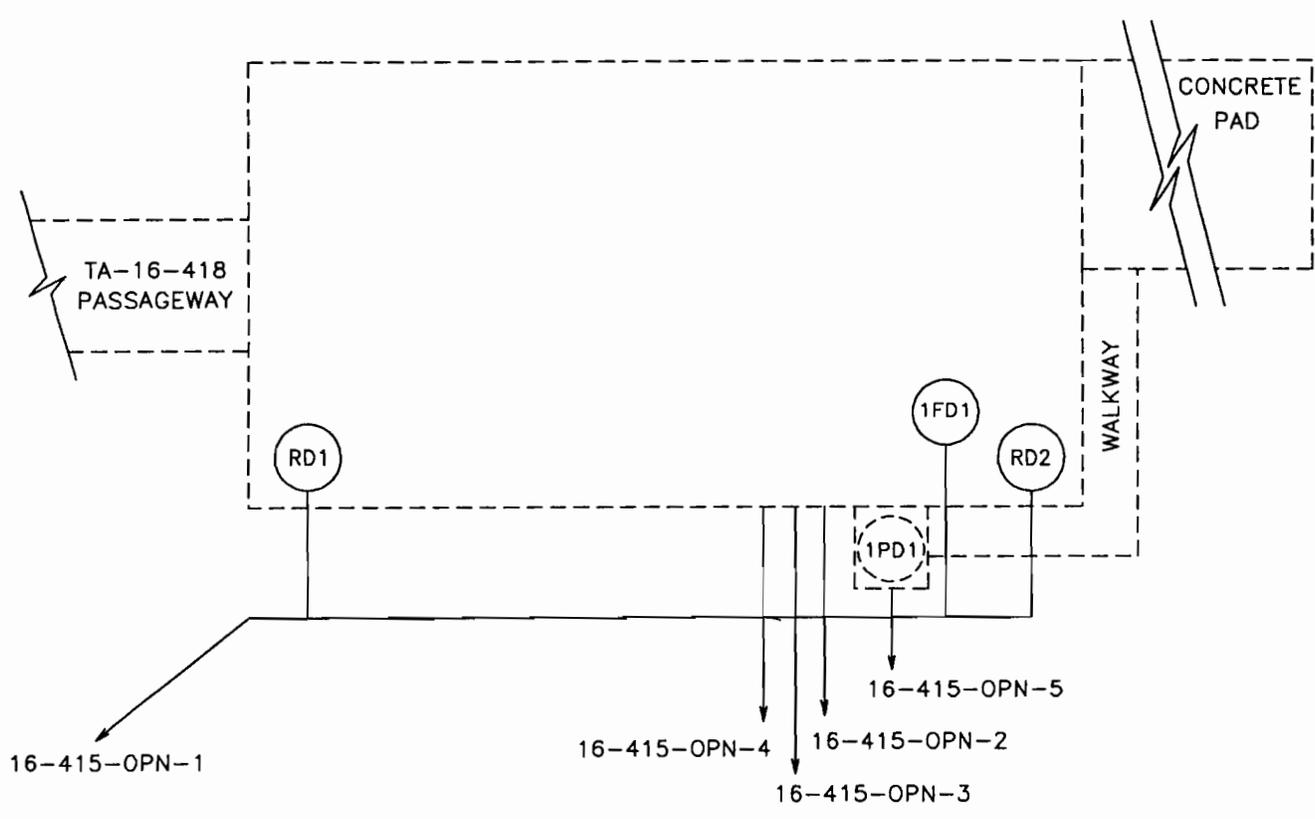
NOTES:

- 1) PIPING LAYOUT REFERENCE FROM L.A.N.L. DRAWING NO's: ENG-C1998 and ENG-R2867
- 2) THIS PIPING LAYOUT BASED UPON DRAWINGS AS NOTED, WX-12 DRAWINGS AND SITE INSPECTION.

LEGEND:

- FD FLOOR DRAIN
- RD ROOF DRAIN
- PD PIT DRAIN (STEAM)

SANTA FE ENGINEERING, LTD.			
TA 16-413 BUILDING DRAIN SCHEMATIC		DRAWN JAS	DESIGN JAS
		CHECKED PEB	DATE 5/27/92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos		Los Alamos National Laboratory Los Alamos, New Mexico 87545	
		SHEET	OF
CLASSIFICATION		REVIEWER	
REQUESTING DIVISION	LAB JOB NO.	DATE	
REQUESTING GROUP	11056-16	DRAWING NO. FIGURE 3	
		REV.	



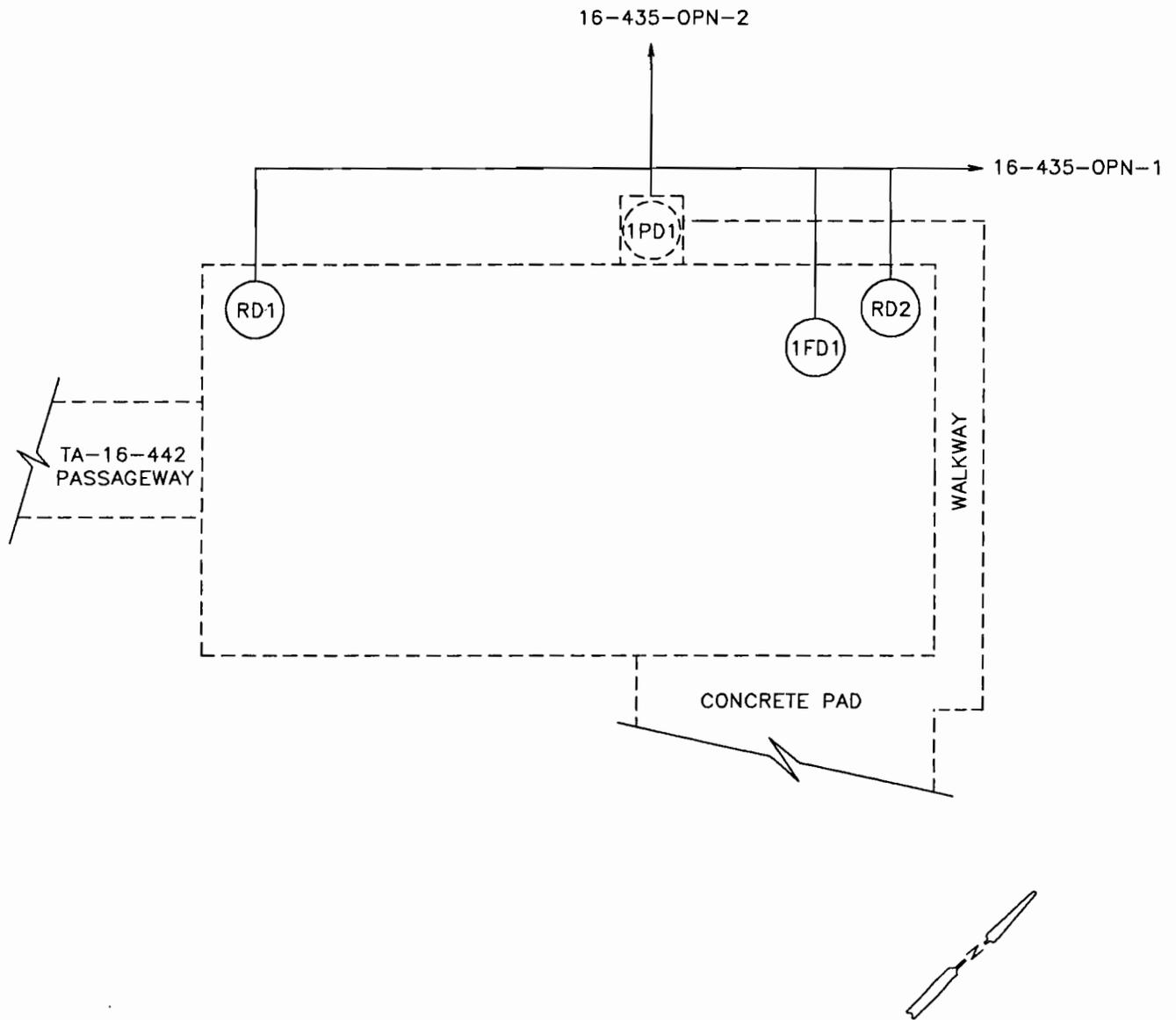
NOTES:

- 1) PIPING LAYOUT REFERENCE FROM L.A.N.L. DRAWING NO's: ENG-C1998 and ENG-R2869
- 2) THIS PIPING LAYOUT BASED UPON DRAWINGS AS NOTED, WX-12 DRAWINGS AND SITE INSPECTION.

LEGEND:

- FD FLOOR DRAIN
- RD ROOF DRAIN
- PD PIT DRAIN (STEAM)

SANTA FE ENGINEERING, LTD.			
TA 16-415 BUILDING DRAIN SCHEMATIC			DRAWN JAS DESIGN JAS CHECKED PEB DATE 5/27/92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos Los Alamos National Laboratory Los Alamos, New Mexico 87545			SHEET OF
CLASSIFICATION		REVIEWER	
REQUESTING DIVISION	LAB JOB NO.	DATE	
REQUESTING GROUP	11056-16	DRAWING NO. FIGURE 4	
			REV.



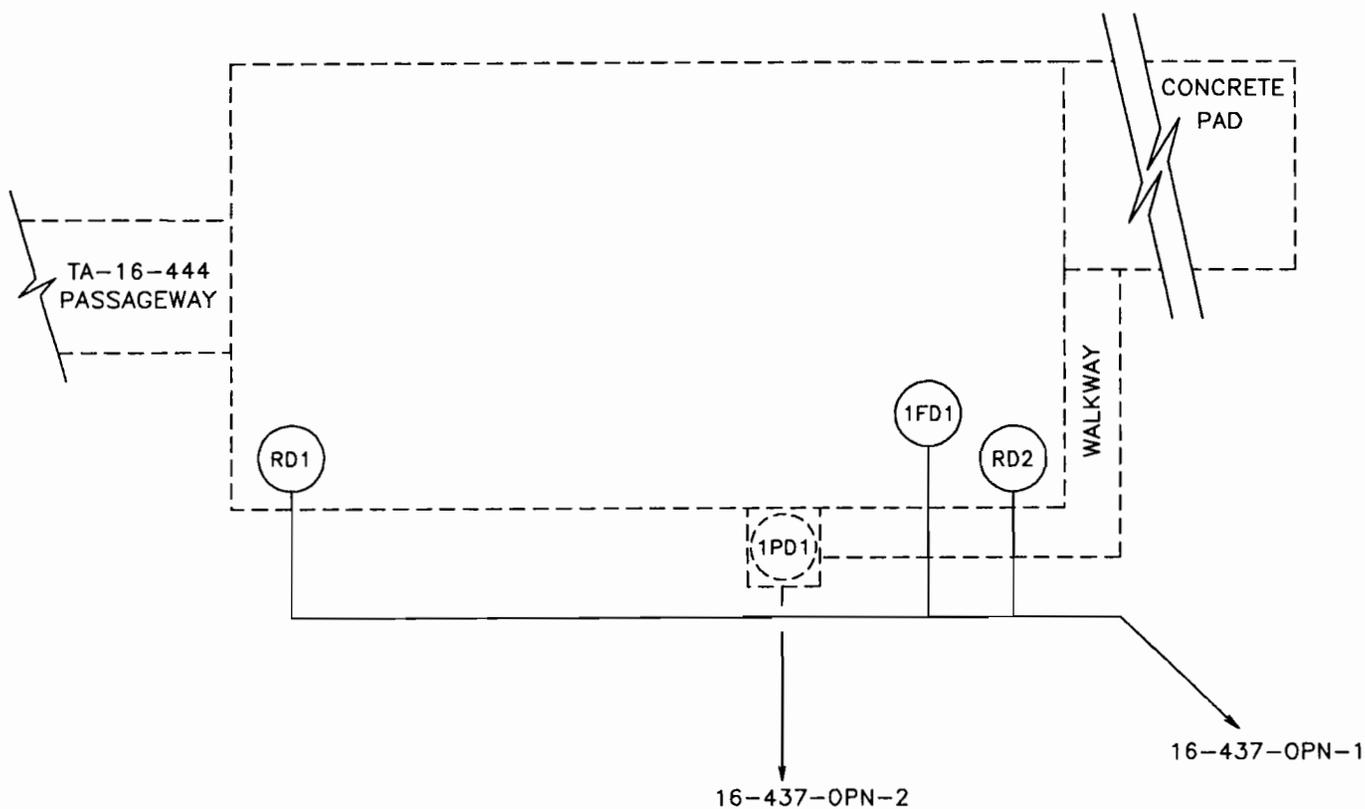
NOTES:

- 1) PIPING LAYOUT REFERENCE FROM L.A.N.L. DRAWING NO's: ENG-C8288 and ENG-R2874
- 2) THIS PIPING LAYOUT BASED UPON DRAWINGS AS NOTED AND A SITE INSPECTION.

LEGEND:

- FD FLOOR DRAIN
- RD ROOF DRAIN
- PD PIT DRAIN (STEAM)

SANTA FE ENGINEERING, LTD.			
TA 16-435 BUILDING DRAIN SCHEMATIC		DRAWN JAS	DESIGN JAS
		CHECKED PEB	
		DATE 5/27/92	
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos		Los Alamos National Laboratory Los Alamos, New Mexico 87545	
		SHEET	OF
CLASSIFICATION		REVIEWER	
REQUESTING DIVISION	LAB JOB NO.	DATE	
REQUESTING GROUP	11056-16	DRAWING NO. FIGURE 5	
		REV.	



NOTES:

- 1) PIPING LAYOUT REFERENCE FROM L.A.N.L. DRAWING NO's: ENG-C8286 and ENG-R2875
- 2) THIS PIPING LAYOUT BASED UPON DRAWINGS AS NOTED AND A SITE INSPECTION.

LEGEND:

- FD FLOOR DRAIN
- RD ROOF DRAIN
- PD PIT DRAIN (STEAM)

SANTA FE ENGINEERING, LTD.			
TA 16-437 BUILDING DRAIN SCHEMATIC		DRAWN JAS	DESIGN JAS
		CHECKED PEB	
		DATE 5/27/92	
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos Los Alamos National Laboratory Los Alamos, New Mexico 87545		SHEET	OF
CLASSIFICATION		REVIEWER	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	
REQUESTING GROUP	11056-16	FIGURE 6	
		DATE	
		REV.	