

**WASTEWATER STREAM  
CHARACTERIZATION FOR  
TA 3-216, 1531, 1546, 1579,  
1648, 1774, 1775, 1776, 1778,  
1782, 1784, 1855, 1937, 1938,  
1939, 1940, 1941, 1943, 1948,  
2031, 2036, 2037, 2056, 2058,  
2063, 2064 AND 2065**

**at  
Los Alamos National Laboratory**

**ENVIRONMENTAL STUDY**

**CHARACTERIZATION REPORT #50**

**Los Alamos**

Los Alamos National Laboratory is operated by the Uni

EN  
Lo  
Lo



**ENVIRONMENTAL DIVISION  
Los Alamos National Laboratory  
Los Alamos, NM 87545**

Los Alamos National Laboratory for the United States Department of Energy

WASTEWATER STREAM  
CHARACTERIZATION  
FOR TA-3-216, 1531, 1546, 1579, 1648, 1774,  
1775, 1776, 1778, 1782, 1784, 1855, 1937,  
1938, 1939, 1940, 1941, 1943, 1940, 1941,  
1943, 2031, 2036, 2056, 2058, 2063, 2064 AND  
2065

an  
ENVIRONMENTAL STUDY

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

under subcontract 9-XG8-2874P-1

by:  
Santa Fe Engineering, Ltd.  
1429 Second Street  
Santa Fe, New Mexico 87505  
(505) 988-7438

November, 1992

Updated Per ESH-8 Comments February 1994

## EXECUTIVE SUMMARY

Buildings TA-3-216, 531, 1546, 1579, 1648, 1774, 1775, 1776, 1778, 1782, 1784, 1855, 1937, 1938, 1939, 1940, 1941, 1943, 1940, 1941, 1943, 2031, 2036, 2056, 2058, 2063, 2064 and 2065 were visited to document all drain piping and building outfalls and to make permitting recommendations. The pipes exiting the buildings are as follows:

- 1) from TA-3-216: eight discharges from the fire water protection system, seven discharges of storm water from the building's roof drains, one sanitary outfall to the TA-3 Sanitary Sewer Collection System, one outfall to the TA-50 Radioactive Liquid Waste Treatment Plant, thirteen discharges to daylight from pressure relief valves, six discharges of condensed water to daylight, two discharges to daylight from backflow preventers, one discharge from a steam vent line drain and one discharge of potable water from an air cooler,
- 2) from TA-3-1546: one outfall connected to the TA-3 Sanitary Sewer Collection System and two discharges to daylight from hot water heater pressure relief valves and
- 3) from TA-3-1579: one outfall connected to the TA-3 Sanitary Sewer Collection System.

Buildings TA-3-216, 1531, 1546, 1579, 1648, 1774, 1775, 1776, 1778, 1782, 1784, 1855, 1937, 1938, 1939, 1940, 1941, 1943, 1940, 1941, 1943, 2031, 2036, 2056, 2058, 2063, 2064 and 2065 do not have any water supplies and no drains.

Recommendations for repiping are provided to permit outfall consolidation to minimize permit maintenance requirements.

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

## TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	FIELD INVESTIGATION	3
3.0	RECOMMENDATIONS FOR BUILDING 3-216	4
3.1	Outfalls 3-216-OPN-1, 3-216-OPN-2, 3-216-OPN-3, 3-216-OPN-4, 3-216-OPN-5, 3-216-OPN-22 and 3-216-OPN-23	4
3.2	Outfall 3-216-OPN-6	4
3.3	Outfall 3-216-OPN-7	5
3.4	Outfall 3-216-OPN-8	5
3.5	Outfalls 3-216-OPN-9, 3-216-OPN-10, 3-216-OPN-11, 3-216-OPN-12, 3-216-OPN-13, 3-216-OPN-14, 3-216-OPN-15, 3-216-OPN-16, 3-216-OPN-18, 3-216-OPN-24, 3-216-OPN-25, 3-216-OPN-27 and 3-216-OPN-36	6
3.6	Outfalls 3-216-OPN-17, 3-216-OPN-19, 3-216-OPN-20 and 3-216-OPN-29	6
3.7	Outfalls 3-216-OPN-21, 3-216-OPN-30, 3-216-OPN-31, 3-216-OPN-32, 3-216-OPN-33, 3-216-OPN-35, 3-216-OPN-38 and 3-216-OPN-40	6
3.8	Outfalls 3-216-OPN-26 and 3-216-OPN-34	6
3.9	Outfalls 3-216-OPN-37 and 3-216-OPN-39	6
4.0	RECOMMENDATIONS FOR BUILDINGS 3-1531, 1648, 1774, 1775, 1776, 1778, 1782, 1784, 1855, 1937, 1938, 1939, 1940, 1941, 1943, 1940, 1941, 1943, 2031, 2036, 2056, 2058, 2063, 2064 AND 2065	7
5.0	RECOMMENDATIONS FOR BUILDING 3-1546	7
5.1	Outfalls 3-1546-OPN-1 and 3-1546-OPN-3	7
5.2	Outfall 3-1546-OPN-2	7
6.0	RECOMMENDATIONS FOR BUILDING 3-1579	7
7.0	CONCLUSION	8

## APPENDICES

- Appendix 1 - DRAIN SUMMARY TABLES
- Appendix 2 - WASTE STREAM CHARACTERIZATION DATABASE
- Appendix 3 - EPA FORMS
- Appendix 4 - DYE STUDY INFORMATION
- Appendix 5 - BUILDING DRAIN SCHEMATICS

### LIST OF TABLES

1. SUMMARY OF ABBREVIATIONS
2. TA 3-216 DRAIN SUMMARY
3. TA 3-1546 DRAIN SUMMARY
4. TA 3-1579 DRAIN SUMMARY
5. NON-DRAIN RECOMMENDATIONS

### LIST OF FIGURES

1. TA 3 PARTIAL SITE PLAN
2. TA 3-216 FIRST FLOOR AND ROOF DRAIN SCHEMATIC
3. TA 3-216 BASEMENT DRAIN SCHEMATIC
4. TA 3-1546 DRAIN SCHEMATIC
5. TA 3-1579 DRAIN SCHEMATIC

## 1.0 INTRODUCTION

On October 21, 1992, Ed Hepworth and Lauren Ames of Santa Fe Engineering (SFE) toured buildings 216, 1531, 1546, 1579, 1648, 1774, 1775, 1776, 1778, 1782, 1784, 1855, 1937, 1938, 1939, 1940, 1941, 1943, 1940, 1941, 1943, 2031, 2036, 2056, 2058, 2063, 2064 and 2065 of TA-3. The purpose of this study is to identify building drain piping and to characterize the wastewater flows at the time of the visit. This report will not reflect any subsequent changes in piping or operation. The Wastewater 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 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 drain schematic drawings prepared by SFE to aid in the field investigation 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 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-92-1306 issued by EPA to the University of California were used for reference;
2. SFE verified drain piping by dye checking and
3. 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 wastestream characterization.

## 2.0 FIELD INVESTIGATION

The pipes exiting the building have been assigned Outlet Piping Numbers. 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 pipe 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 indicates the floor on which the drain is located. The second part has letters that indicate the type of drain (see Table 1). The final part is the unique number for the drain. For example, the first floor drain in the sequence on the basement floor of a building would be labeled BFD1. Similarly, the first Roof Drain in a sequence would be identified as RD1.

The functions of each pipe exiting from the buildings are listed in Appendix 1, Tables 2 through 4, with non-drain recommendations in Table 5 and an abbreviations list in Table 1. Appendix 2 contains the wastestream characterization database output, listing wastewater source, flow rates and periodicity information for each outfall drain. No EPA forms were required or prepared. Appendix 4 provides dye study information. Flow schematics of the drains from each building are attached in Appendix 5 as Figures 1 through 5.

### 3.0 RECOMMENDATIONS FOR BUILDING 3-216

Table 2 is a list of the forty building outfalls. The table lists the drains that connect to each outfall pipe and includes recommendations for changes to the drain piping (see Figures 2 and 3). The discussion below gives the reasoning for the recommendations.

#### 3.1 Outfalls 3-216-OPN-1, 3-216-OPN-2, 3-216-OPN-3, 3-216-OPN-4, 3-216-OPN-5, 3-216-OPN-22 and 3-216-OPN-23

These outfalls receive storm water from the building roof drains during rain and snowstorms. No piping changes or permitting are recommended. No EPA forms were prepared.

#### 3.2 Outfall 3-216-OPN-6

This outfall discharges from sink and floor drains in the building to the Radioactive Liquid Waste (RLW) Treatment Plant at TA-50. Industrial Waste is no longer generated in this building, therefore repiping portions of this outfall to the Sanitary Sewer Collection System at TA-3 is recommended. Sink drains 1SD5, 1SD7, 1SD8, 1SD9 and 1SD10 are all located in non-laboratory areas and receive significant amounts of sanitary waste that must be treated at TA-50. It is recommended that these sinks be repiped to the sanitary sewer and labeled "SANITARY WASTE ONLY - NO CHEMICAL DISPOSAL". Sink drain 1SD8 also receives some flow from Heliarc equipment once-through cooling water. It is recommended that this be replaced with a closed-loop, recirculating cooling system in keeping with current Laboratory policy. Sink drains 1SD1, 1SD12, 1SD13, 1SD14, 1SD17 and BSD5 should remain plumbed to the RLW system and be labeled as RLW drains (no sanitary waste). Sinks BSD2, BSD3 and BSD4 are already scheduled for removal. This should be accomplished. Administrative control, which includes proper labeling, over usage of the building's drains is recommended following repiping to prevent the discharge of contaminated waste into the sanitary

sewer system. 1FD13 and 1SD16 in Room 160 are situated in areas where solvents and oils may drain into them. Plugging these drains is recommended. BFD08 in Room 3 currently has oil and water from vacuum and air compressor pumps piped into it. Removing the piping and containerizing these pumps are recommended. BFD02, BFD03 and BFD04 have pump oil drip pans draining into them. Containerizing these pumps is recommended. No permitting is recommended. No EPA forms were prepared.

### 3.3 Outfall 3-216-OPN-7

This outfall is piped to the Sanitary Sewer Collection System at TA-3. It receives flow from sanitary and restroom facilities on the first floor and in the basement and penthouse of the building. 1FD06, 1FD07, 1FD08 and 1FD09 are in areas where equipment oil may discharge into them and plugging them is recommended. BFD06, BFD11 and BFD18 have oil sources piped to them including air compressor drain lines and vacuum pump drains. These sources should be containerized. Floor drain BFD7 receives blowdown from the building cooling tower at an average rate of 50 gallons per day (GPD). Because it discharges to the sanitary system there is no existing permit (EPA for 2C). Flow is small and seasonal (not more than 6 months/year) and no change is recommended. Floor drain BFD15 receives once-through cooling water. In keeping with current Laboratory policy, it is recommended that this once-through system be replaced with a closed-loop, recirculating cooling system. No permitting is recommended and no EPA forms were prepared.

### 3.4 Outfall 3-216-OPN-8

This outfall drains condensate water from an office air conditioner in Room 116. It should be included in a Notice of Intent to Discharge (NOI). No piping changes are recommended. No EPA forms were prepared.

3.5 Outfalls 3-216-OPN-9, 3-216-OPN-10, 3-216-OPN-11, 3-216-OPN-12, 3-216-OPN-13, 3-216-OPN-14, 3-216-OPN-15, 3-216-OPN-16, 3-216-OPN-18, 3-216-OPN-24, 3-216-OPN-25, 3-216-OPN-27 and 3-216-OPN-36

These outfalls drain water from pressure relief valves. They should each be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

3.6 Outfalls 3-216-OPN-17, 3-216-OPN-19, 3-216-OPN-20, 3-216-OPN-28 and 3-216-OPN-29

These outfalls drain condensed water from the building's HVAC systems. They should be each included in an NOI. No piping changes are recommended. No EPA forms were prepared.

3.7 Outfalls 3-216-OPN-21, 3-216-OPN-30, 3-216-OPN-31, 3-216-OPN-32, 3-216-OPN-33, 3-216-OPN-35, 3-216-OPN-38 and 3-216-OPN-40

These outfalls drain water from the building's fire water protection system. They should each be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

3.8 Outfalls 3-216-OPN-26 and 3-216-OPN-34

These outfalls drain water from backflow preventers from potable water lines. They should each be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

3.9 Outfalls 3-216-OPN-37 and 3-216-OPN-39

These outfall drain water from a steam vent line and an HVAC cooler. They should each be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

**4.0 RECOMMENDATIONS FOR BUILDINGS 3-1531, 1648, 1774, 1775, 1776, 1778, 1782, 1784, 1855, 1937, 1938, 1939, 1940, 1941, 1943, 1940, 1941, 1943, 2031, 2036, 2056, 2058, 2063, 2064 AND 2065**

These buildings have no drains. No permitting or piping changes are recommended. No EPA forms were completed.

**5.0 RECOMMENDATIONS FOR BUILDING 3-1546**

Table 3 is a list of the building's three outfalls. The table lists the drains that connect to each outfall pipe and includes recommendations for changes to the drain piping (see Figure 4). The discussion below gives the reasoning for the recommendations.

**5.1 Outfalls 3-1546-OPN-1 and 3-1546-OPN-3**

These outfalls drain water from pressure relief valves. They should each be included in an NOI. No piping changes are recommended. No EPA forms were prepared.

**5.2 Outfall 3-1546-OPN-2**

This outfall collects flow from the building's sanitary facilities and is piped to the Sanitary Sewer Collection System at TA-3. No piping changes or permitting are recommended. No EPA forms were prepared.

**6.0 RECOMMENDATIONS FOR BUILDING 3-1579**

Table 4 is a description of the building's single outfall and Figure 5 is a schematic of this system. This outfall discharges to the sanitary sewer system at TA-3 and receives flow from a toilet and a lavatory. No piping changes or permitting are recommended. No EPA forms were prepared.

## 7.0 CONCLUSION

This document provides the information to characterize buildings 216, 531, 1546, 1579, 1648, 1774, 1775, 1776, 1778, 1782, 1784, 1855, 1937, 1938, 1939, 1940, 1941, 1943, 1940, 1941, 1943, 2031, 2036, 2056, 2058, 2063, 2064 and 2065 in TA-3. No NPDES application forms have been completed, as the facility's outfalls do not require permitting. The drains in the technical area are itemized below:

### Storm water drainage:

- |    |              |    |             |    |              |
|----|--------------|----|-------------|----|--------------|
| 1. | 3-216-OPN-1  | 2. | 3-216-OPN-2 | 3. | 3-216-OPN-3  |
| 4. | 3-216-OPN-4  | 5. | 3-216-OPN-5 | 6. | 3-216-OPN-22 |
| 7. | 3-216-OPN-23 |    |             |    |              |

### Discharges that are fire water system blowdowns:

- |    |              |    |              |    |              |
|----|--------------|----|--------------|----|--------------|
| 1. | 3-216-OPN-21 | 2. | 3-216-OPN-30 | 3. | 3-216-OPN-31 |
| 4. | 3-216-OPN-32 | 5. | 3-216-OPN-33 | 6. | 3-216-OPN-35 |
| 7. | 3-216-OPN-38 | 8. | 3-216-OPN-40 |    |              |

### Discharges to the TA-3 Sanitary Sewer Collection System:

- |    |              |    |              |
|----|--------------|----|--------------|
| 1. | 3-216-OPN-7  | 2. | 3-1546-OPN-2 |
| 3. | 3-1579-OPN-1 |    |              |

### Discharges to the TA-50 Radioactive Liquid Waste Treatment Plant:

1. 3-216-OPN-6

### Discharges to daylight from office air conditioners:

1. 3-216-OPN-8

### Discharges to daylight from Pressure Relief Valves:

- |     |              |     |              |
|-----|--------------|-----|--------------|
| 1.  | 3-216-OPN-9  | 2.  | 3-216-OPN-10 |
| 3.  | 3-216-OPN-11 | 4.  | 3-216-OPN-12 |
| 5.  | 3-216-OPN-13 | 6.  | 3-216-OPN-14 |
| 7.  | 3-216-OPN-15 | 8.  | 3-216-OPN-16 |
| 9.  | 3-216-OPN-18 | 10. | 3-216-OPN-24 |
| 11. | 3-216-OPN-25 | 12. | 3-216-OPN-27 |
| 13. | 3-216-OPN-36 | 14. | 3-1546-OPN-1 |
| 15. | 3-1546-OPN-3 |     |              |

Discharges of condensed water:

- |                 |                 |
|-----------------|-----------------|
| 1. 3-216-OPN-17 | 2. 3-216-OPN-19 |
| 3. 3-216-OPN-20 | 4. 3-216-OPN-28 |
| 5. 3-216-OPN-29 |                 |

Discharges of backflow preventer water:

- |                 |                 |
|-----------------|-----------------|
| 1. 3-216-OPN-26 | 2. 3-216-OPN-34 |
|-----------------|-----------------|

Discharges from steam vent lines:

1. 3-216-OPN-37

Discharges from air coolers:

1. 3-216-OPN-39

Recommended permitting and corrective action items are outlined in Tables 2 through 4 as well as in the above text. Corrective actions should be performed as soon as practicable to minimize the chance of unpermitted discharge of pollutants.

**TABLE 1**  
**SUMMARY OF ABBREVIATIONS**

ABBREVIATION	MEANING
FD	Floor Drain
LV	Lavatory
PD	Pipe Drain
RD	Roof Drain
SD	Sink Drain
TL	Toilet
UR	Urinal
WF	Water Fountain

## TABLE 2: TA 3-216 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-216-OPN-01 DOWNSPOUT	N/A	ROOF	ROOF	NO CHANGE	NO
3-216-OPN-02 TO DAYLIGHT	RD01	ROOF	ROOF	NO CHANGE	NO
	RD02	ROOF	ROOF	NO CHANGE	
	RD03	ROOF	ROOF	NO CHANGE	
3-216-OPN-03 TO DAYLIGHT	RD09	ROOF	ROOF	NO CHANGE	NO
	RD10	ROOF	ROOF	NO CHANGE	
	RD11	ROOF	ROOF	NO CHANGE	
3-216-OPN-04 TO DAYLIGHT	RD08	ROOF	ROOF	NO CHANGE	NO
	RD15	ROOF	ROOF	NO CHANGE	
	RD16	ROOF	ROOF	NO CHANGE	
	RD17	ROOF	ROOF	NO CHANGE	
3-216-OPN-05 TO DAYLIGHT	RD12	ROOF	ROOF	NO CHANGE	NO
	RD13	ROOF	ROOF	NO CHANGE	
	RD14	ROOF	ROOF	NO CHANGE	
3-216-OPN-06 RLW	1FD01	EQUIPMENT ROOM	102	PLUGGED	NO
	1FD02	OFFICE	102B	PLUGGED	
	1FD13	EQUIPMENT ROOM	160	PLUG	
	1FD14	EQUIPMENT ROOM	145A	LABEL	
	1SD01	EQUIPMENT ROOM	106	PIPE TO S.S.	
	1SD05	CONFERENCE ROOM	134	PIPE TO S.S.	
	1SD06	OFFICE	133	PLUGGED	
	1SD07	OFFICE	135	PIPE TO S.S.	
	1SD08	LOUNGE	140A	PIPE TO S.S./RECIRC	
	1SD09	LOUNGE	140A	PIPE TO S.S.	
	1SD10	LOUNGE	140A	PIPE TO S.S.	
	1SD12	LABORATORY	143	LABEL	
	1SD13	EQUIPMENT ROOM	152	LABEL	
	1SD14	EQUIPMENT ROOM	158	LABEL	
	1SD15	EQUIPMENT ROOM	158	PLUGGED	
	1SD16	EQUIPMENT ROOM	160	PLUG	
	1SD17	EQUIPMENT ROOM	145	LABEL	
	1SD18	EQUIPMENT ROOM	161	PLUGGED	
	BFD04	EQUIPMENT ROOM	17	LABEL	
	BFD08	EQUIPMENT ROOM	3	CONTAINERIZE	
	BFD17	REST ROOM	4	PLUG	
	BSD02	EQUIPMENT AREA	10	REMOVE	
	BSD03	EQUIPMENT AREA	10	REMOVE	
	BSD04	EQUIPMENT AREA	10	REMOVE	
	BSD05	EQUIPMENT AREA	8	LABEL	

## TABLE 2: TA 3-216 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-216-OPN-06 RLW CONT.	BSD06	EQUIPMENT ROOM	6	PLUGGED	NO
3-216-OPN-07 SAN. SEWER	1FD03	REST ROOM	128	NO CHANGE	NO
	1FD04	REST ROOM	132A	NO CHANGE	
	1FD05	EQUIPMENT ROOM	140	NO CHANGE	
	1FD06	EQUIPMENT ROOM	152	PLUG	
	1FD07	EQUIPMENT ROOM	156	PLUG	
	1FD08	EQUIPMENT ROOM	156	PLUG	
	1FD09	EQUIPMENT ROOM	158	PLUG	
	1FD10	HALLWAY	100D	PLUG	
	1FD11	EQUIPMENT ROOM	158	PLUG	
	1FD15	OFFICE	166	PLUGGED	
	1FD16	JANITOR'S CLOSET	162	LABEL	
	1LV1	REST ROOM	128	NO CHANGE	
	1LV2	REST ROOM	132A	NO CHANGE	
	1LV3	REST ROOM	132A	NO CHANGE	
	1LV4	REST ROOM	132A	NO CHANGE	
	1SD02	OFFICE	118	LABEL	
	1SD03	LOUNGE	118	LABEL	
	1SD04	OFFICE	131	PLUGGED	
	1SD11	LABORATORY	141	LABEL	
	1SD19	JANITOR'S CLOSET	162	LABEL	
	1SD20	CONFERENCE ROOM	178	LABEL	
	1SD21	HALLWAY	100E	LABEL	
	1TL1	REST ROOM	128	NO CHANGE	
	1TL2	REST ROOM	128	NO CHANGE	
	1TL3	REST ROOM	132A	NO CHANGE	
	1TL4	REST ROOM	132A	NO CHANGE	
	1TL5	REST ROOM	132A	NO CHANGE	
	1UR1	REST ROOM	132A	NO CHANGE	
	1UR2	REST ROOM	132A	NO CHANGE	
	1UR3	REST ROOM	132A	NO CHANGE	
	1WF1	HALLWAY	100A	NO CHANGE	
	1WF2	HALLWAY	100E	NO CHANGE	
	BFD01	EQUIPMENT ROOM	17	NO CHANGE	
	BFD01	EQUIPMENT ROOM	17	NO CHANGE	
	BFD02	EQUIPMENT ROOM	17	NO CHANGE	
	BFD03	EQUIPMENT ROOM	17	NO CHANGE	
	BFD05	EQUIPMENT ROOM	17	PLUGGED	
	BFD06	EQUIPMENT ROOM	17	CONTAINERIZE	

TABLE 2: TA 3-216 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED		
3-216-OPN-07 SAN. SEWER CONT.	BFD07	EQUIPMENT ROOM	3	NO CHANGE	NO		
	BFD09	EQUIPMENT ROOM	3	NO CHANGE			
	BFD10	EQUIPMENT ROOM	3	NO CHANGE			
	BFD11	EQUIPMENT ROOM	3	CONTAINERIZE			
	BFD12	HALLWAY	1B	NO CHANGE			
	BFD13	EQUIPMENT AREA	10	CONTAINERIZE			
	BFD14	REST ROOM	4	NO CHANGE			
	BFD15	EQUIPMENT ROOM	23	RECIRC			
	BFD16	EQUIPMENT ROOM	22	NO CHANGE			
	BFD18	EQUIPMENT AREA	10	CONTAINERIZE			
	BLV1	REST ROOM	4	NO CHANGE			
	BPD1	PIPE ALLEY	6A	NO CHANGE			
	BPD2	PIPE ALLEY	6A	NO CHANGE			
	BPD3	PIPE ALLEY	6A	NO CHANGE			
	BPD4	STORAGE ROOM	21A	NO CHANGE			
	BPD5	STORAGE ROOM	21	NO CHANGE			
	BSD01	LABORATORY	36	NO CHANGE			
	BSD07	REST ROOM	2	NO CHANGE			
	BSD07	EQUIPMENT AREA	6	NO CHANGE			
	BSD08	EQUIPMENT ROOM	21	NO CHANGE			
	BSD09	EQUIPMENT ROOM	23	NO CHANGE			
	BSD10	LABORATORY	25	NO CHANGE			
	BSD11	LABORATORY	36	NO CHANGE			
	BTL1	REST ROOM	4	NO CHANGE			
	BTL2	REST ROOM	2	NO CHANGE			
	BUR1	REST ROOM	4	NO CHANGE			
	BWF1	HALLWAY	1B	NO CHANGE			
	PFD1	PENTHOUSE	P.H.	NO CHANGE			
	3-216-OPN-08 TO DAYLIGHT	N/A	OFFICE AIR CONDITIONER	116		NOI	NO
	3-216-OPN-09 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE			NOI	NO
3-216-OPN-10 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO		

## TABLE 2: TA 3-216 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-216-OPN-11 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-12 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-13 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-14 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-15 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-16 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-17 TO DAYLIGHT	N/A	EQUIPMENT ROOM CONDENSATE		NOI	NO
3-216-OPN-18 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE		NOI	NO
3-216-OPN-19 TO DAYLIGHT	N/A	EQUIPMENT ROOM CONDENSATE	160	NOI	NO
3-216-OPN-20 TO DAYLIGHT	N/A	EQUIPMENT ROOM CONDENSATE	160	NOI	NO
3-216-OPN-21 TO DAYLIGHT	N/A	FIRE PROTECTION SYSTEM	102	NOI	NO
3-216-OPN-22 TO DAYLIGHT	RD04	ROOF DRAIN	ROOF	NO CHANGE	NO
	RD05	ROOF DRAIN	ROOF	NO CHANGE	
	RD06	ROOF DRAIN	ROOF	NO CHANGE	
	RD07	ROOF DRAIN	ROOF	NO CHANGE	
3-216-OPN-23 TO DAYLIGHT	RD18	ROOF DRAIN	ROOF	NO CHANGE	NO
	RD19	ROOF DRAIN	ROOF	NO CHANGE	
3-216-OPN-24 TO DAYLIGHT	N/A	HOT WATER TANK PRESSURE RELIEF VALVE	9A	NOI	NO
3-216-OPN-25 TO DAYLIGHT	N/A	BOILER ROOM PRESSURE RELIEF VALVE	9A	NOI	NO
3-216-OPN-26 TO DAYLIGHT	N/A	EQUIPMENT ROOM BFP	3	NOI	NO

## TABLE 2: TA 3-216 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-216-OPN-27 TO DAYLIGHT	N/A	EQUIPMENT ROOM PRESSURE RELIEF VALVE	3	NOI	NO
3-216-OPN-28 TO DAYLIGHT	N/A	EQUIPMENT ROOM CONDENSATE	3	NOI	NO
3-216-OPN-29 TO DAYLIGHT	N/A	EQUIPMENT ROOM CONDENSATE	3	NOI	NO
3-216-OPN-30 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	3	NOI	NO
3-216-OPN-31 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	3	NOI	NO
3-216-OPN-32 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	3	NOI	NO
3-216-OPN-33 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	3	NOI	NO
3-216-OPN-34 TO DAYLIGHT	N/A	EQUIPMENT ROOM BACKFLOW PREVENTER	3	NOI	NO
3-216-OPN-35 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	N/A	NOI	NO
3-216-OPN-36 TO DAYLIGHT	N/A	PRESSURE RELIEF VALVE	N/A	NOI	NO
3-216-OPN-37 TO DAYLIGHT	N/A	STEAM VENT LINE DRAIN	N/A	NOI	NO
3-216-OPN-38 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	46A	NOI	NO
3-216-OPN-39 TO DAYLIGHT	N/A	EQUIPMENT ROOM CONDENSATE	46A	NOI	NO
3-216-OPN-40 TO DAYLIGHT	N/A	FIRE SYSTEM DRAIN	46B	NOI	NO

TABLE 3: TA 3-1546 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1546-OPN-1 TO DAYLIGHT	N/A	HALLWAY	N/A	NOI	NO
3-1546-OPN-2 SAN. SEWER	1SD1	HALLWAY	N/A	NO CHANGE	NO
	1SD2	HALLWAY	N/A	NO CHANGE	
3-1546-OPN-3 TO DAYLIGHT	N/A	HALLWAY	N/A	NOI	NO

TABLE 4: TA 3-1579 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
3-1579-OPN-1 SAN. SEWER	1SD1	REST ROOM	N/A	NO CHANGE	NO
	ITL1	REST ROOM	N/A	NO CHANGE	

## TABLE 5

### NON-DRAIN RECOMMENDATIONS

TECHNICAL AREA	BUILDING NUMBER	ROOM OR LOCATION	RECOMMENDATION
3	216	ALL	PROVIDE LABELING FOR RLW DRAINS

REPORT #

50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES	
3	216	3-216-OPN-01	DAYLIGHT	N/A	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-02	DAYLIGHT	RD01	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-02	DAYLIGHT	RD02	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-02	DAYLIGHT	RD03	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-03	DAYLIGHT	RD09	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-03	DAYLIGHT	RD10	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-03	DAYLIGHT	RD11	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-04	DAYLIGHT	RD08	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-04	DAYLIGHT	RD15	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-04	DAYLIGHT	RD16	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-04	DAYLIGHT	RD17	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-05	DAYLIGHT	RD12	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-05	DAYLIGHT	RD13	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-05	DAYLIGHT	RD14	N/A	ROOF			MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-06	RLW	1FD01	102	EQUIPMENT ROOM			NO FLOW	No	PLUGGED
3	216	3-216-OPN-06	RLW	1FD02	102B	OFFICE			NO FLOW	No	PLUGGED
3	216	3-216-OPN-06	RLW	1FD13	160	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-06	RLW	1FD13	160	EQUIPMENT ROOM			FLOW IS NIL	No	STEAM TRAP DRAIN
3	216	3-216-OPN-06	RLW	1FD14	145A	EQUIPMENT ROOM			NO FLOW	No	PLUGGED
3	216	3-216-OPN-06	RLW	1SD01	106	EQUIPMENT ROOM			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD05	134	CONFERENCE ROOM			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD06	133	OFFICE			NO FLOW	No	PLUGGED
3	216	3-216-OPN-06	RLW	1SD07	135	OFFICE			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD08	140A	LOUNGE			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD08	140A	LOUNGE			5 DAYS PER WEEK	No	HELIARC COOLING WATER
3	216	3-216-OPN-06	RLW	1SD09	140A	LOUNGE			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD10	140A	LOUNGE			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD12	143	LABORATORY			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD13	152	EQUIPMENT ROOM			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD14	158	EQUIPMENT ROOM			5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-06	RLW	1SD15	158	EQUIPMENT ROOM			NO FLOW	No	DISCONNECTED
3	216	3-216-OPN-06	RLW	1SD16	160	EQUIPMENT ROOM			FLOW IS NIL	No	HOOD CUP SINK
3	216	3-216-OPN-06	RLW	1SD17	145	EQUIPMENT ROOM			FLOW IS NIL	No	HAND WASHING

REPORT # 50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES	
3	216	3-216-OPN-06	RLW	1SD18	161	EQUIPMENT ROOM			NO FLOW	No	PLUGGED
3	216	3-216-OPN-06	RLW	BFD04	17	EQUIPMENT ROOM			FLOW IS NIL	No	WATER CHILLER DRAIN (2)
3	216	3-216-OPN-06	RLW	BFD04	17	EQUIPMENT ROOM			FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-06	RLW	BFD04	17	EQUIPMENT ROOM			FLOW IS NIL	No	STEAM TRAP DRAIN
3	216	3-216-OPN-06	RLW	BFD04	17	EQUIPMENT ROOM			FLOW IS NIL	No	WATER CHILLER DRAIN
3	216	3-216-OPN-06	RLW	BFD08	3	EQUIPMENT ROOM			FLOW IS NIL	No	VACUUM PUMP DRAIN
3	216	3-216-OPN-06	RLW	BFD08	3	EQUIPMENT ROOM			FLOW IS NIL	No	VACUUM PUMP DRAIN (3)
3	216	3-216-OPN-06	RLW	BFD08	3	EQUIPMENT ROOM			FLOW IS NIL	No	VACUUM PUMP DRAIN (2)
3	216	3-216-OPN-06	RLW	BFD17	4	REST ROOM			5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-06	RLW	BSD02	10	EQUIPMENT AREA			NO FLOW	No	SCHEDULED/TAGGED FOR REMOVAL
3	216	3-216-OPN-06	RLW	BSD03	10	EQUIPMENT AREA			NO FLOW	No	SCHEDULED/TAGGED FOR REMOVAL
3	216	3-216-OPN-06	RLW	BSD04	10	EQUIPMENT AREA			NO FLOW	No	SCHEDULED/TAGGED FOR REMOVAL
3	216	3-216-OPN-06	RLW	BSD05	8	EQUIPMENT AREA			5 DAYS PER WEEK	No	LABORATORY SINK
3	216	3-216-OPN-06	RLW	BSD06	8	EQUIPMENT AREA			NO FLOW	No	PLUGGED
3	216	3-216-OPN-07	01S/SWSC	1FD03	128	REST ROOM			5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD04	132A	REST ROOM			5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD05	140	EQUIPMENT ROOM			NO FLOW	No	PLUGGED
3	216	3-216-OPN-07	01S/SWSC	1FD06	152	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD07	156	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD08	156	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD09	158	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD10	100D	HALLWAY			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD11	158	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD12	158	EQUIPMENT ROOM			FLOW IS NIL	No	BACK FLOW PREVENTER
3	216	3-216-OPN-07	01S/SWSC	1FD12	158	EQUIPMENT ROOM			FLOW IS NIL	No	COMPRESSED AIR FILTER DRAIN
3	216	3-216-OPN-07	01S/SWSC	1FD12	158	EQUIPMENT ROOM			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1FD15	166	OFFICE			NO FLOW	No	PLUGGED
3	216	3-216-OPN-07	01S/SWSC	1FD16	162	JANITOR'S CLOSET			FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1LV1	128	REST ROOM			5 DAYS PER WEEK	No	HAND WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1LV2	132A	REST ROOM			5 DAYS PER WEEK	No	HAND WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1LV3	132A	REST ROOM			5 DAYS PER WEEK	No	HAND WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1LV4	132A	REST ROOM			5 DAYS PER WEEK	No	HAND WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1SD02	118	OFFICE			5 DAYS PER WEEK	No	HAND WASHING

REPORT # 50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES
3	216	3-216-OPN-07	01S/SWSC	1SD03	118	LOUNGE		5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-07	01S/SWSC	1SD04	131	OFFICE		5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-07	01S/SWSC	1SD11	141	LABORATORY		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	1SD19	162	JANITOR'S CLOSET		5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	1SD20	178	CONFERENCE ROOM		5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-07	01S/SWSC	1SD21	100E	HALLWAY		5 DAYS PER WEEK	No	HAND WASHING
3	216	3-216-OPN-07	01S/SWSC	1TL1	128	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	1TL2	128	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	1TL3	132A	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	1TL4	132A	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	1TL5	132A	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	1UR1	132A	REST ROOM		5 DAYS PER WEEK	No	URINAL
3	216	3-216-OPN-07	01S/SWSC	1UR2	132A	REST ROOM		5 DAYS PER WEEK	No	URINAL
3	216	3-216-OPN-07	01S/SWSC	1UR3	132A	REST ROOM		5 DAYS PER WEEK	No	URINAL
3	216	3-216-OPN-07	01S/SWSC	1WF1	100A	HALLWAY		5 DAYS PER WEEK	No	WATER FOUNTAIN
3	216	3-216-OPN-07	01S/SWSC	1WF2	100E	HALLWAY		5 DAYS PER WEEK	No	WATER FOUNTAIN
3	216	3-216-OPN-07	01S/SWSC	BFD01	17	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BFD01	17	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER TANK DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD02	17	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BFD03	17	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BFD05	17	EQUIPMENT ROOM		NO FLOW	No	PLUGGED
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	AIR COMPRESSOR DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	VACUUM SYSTEM DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	AIR COMPRESSOR DRAIN (2)
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	COMPRESSED AIR FILTER DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	COMPRESSED AIR LINE DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	VACUUM SYSTEM DRAIN (2)
3	216	3-216-OPN-07	01S/SWSC	BFD06	17	EQUIPMENT ROOM		FLOW IS NIL	No	COMPRESSED AIR LINE DRAIN (2)
3	216	3-216-OPN-07	01S/SWSC	BFD07	3	EQUIPMENT ROOM	50 GPD	MOSTLY SUMMER	Yes	COOLING TOWER BLOWDOWN
3	216	3-216-OPN-07	01S/SWSC	BFD07	3	EQUIPMENT ROOM		FLOW IS NIL	No	COOLING TOWER DRAIN WATER
3	216	3-216-OPN-07	01S/SWSC	BFD07	3	EQUIPMENT ROOM		FLOW IS NIL	No	STEAM LINE PRESSURE RELIEF
3	216	3-216-OPN-07	01S/SWSC	BFD07	3	EQUIPMENT ROOM		FLOW IS NIL	No	COLD WATER BACK FLOW PREVENTER
3	216	3-216-OPN-07	01S/SWSC	BFD09	3	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED COOLING WATER

REPORT # 50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES
3	216	3-216-OPN-07	01S/SWSC	BFD09	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER TANK DRAIN (2)
3	216	3-216-OPN-07	01S/SWSC	BFD09	3	EQUIPMENT ROOM		FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BFD09	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER TANK DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD10	3	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	VACUUM PUMP DRAIN (3)
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER VENT
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER TANK DRAIN (3)
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	VACUUM PUMP DRAIN (2)
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER TANK DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER PRESSURE RELIEF (2)
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER PRESSURE RELIEF
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	HOT WATER TANK DRAIN (2)
3	216	3-216-OPN-07	01S/SWSC	BFD11	3	EQUIPMENT ROOM		FLOW IS NIL	No	VACUUM PUMP DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD12	1B	HALLWAY	100 GPY	ANNUAL TESTING	No	FIRE WATER DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD12	1B	HALLWAY		5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BFD12	1B	HALLWAY	100 GPY	ANNUAL TESTING	No	HOT WATER VENT DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD12	1B	HALLWAY		FLOW IS NIL	No	SAFETY SHOWER DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD13	8	EQUIPMENT AREA		FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BFD13	10	EQUIPMENT AREA		FLOW IS NIL	No	COMPRESSED AIR LINE DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD14	4	REST ROOM		5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BFD15	23	EQUIPMENT ROOM		5 DAYS PER WEEK	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BFD15	23	EQUIPMENT ROOM	10 GPD	5 DAYS PER WEEK	No	ONCE THROUGH COOLING WATER
3	216	3-216-OPN-07	01S/SWSC	BFD15	23	EQUIPMENT ROOM		FLOW IS NIL	No	EQUIPMENT DRAIN WATER
3	216	3-216-OPN-07	01S/SWSC	BFD16	22	EQUIPMENT ROOM		FLOW IS NIL	No	FLOOR WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BFD18	10	EQUIPMENT AREA		5 DAYS PER WEEK	No	STEAM PRESSURE RELIEF VALVE
3	216	3-216-OPN-07	01S/SWSC	BFD18	10	EQUIPMENT AREA		5 DAYS PER WEEK	No	COMPRESSED AIR DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD18	10	EQUIPMENT AREA		FLOW IS NIL	No	EYE WASH DRAIN
3	216	3-216-OPN-07	01S/SWSC	BFD18	10	EQUIPMENT AREA		FLOW IS NIL	No	STEAM CONDENSATE TRAP
3	216	3-216-OPN-07	01S/SWSC	BLV1	4	REST ROOM		5 DAYS PER WEEK	No	HAND WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BPD1	6A	PIPE ALLEY		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BPD2	6A	PIPE ALLEY		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BPD3	6A	PIPE ALLEY		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-07	01S/SWSC	BPD4	21A	STORAGE ROOM		NO FLOW	No	PLUGGED

REPORT # 50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES
3	216	3-216-OPN-07	01S/SWSC	BPD5	21	STORAGE ROOM		FLOW IS NIL	No	COOLER DRAIN WATER
3	216	3-216-OPN-07	01S/SWSC	BSD01	36	LABORATORY		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	BSD07	2	REST ROOM		5 DAYS PER WEEK	No	HAND WASHINGS
3	216	3-216-OPN-07	01S/SWSC	BSD07	6	EQUIPMENT AREA		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	BSD08	21	EQUIPMENT ROOM		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	BSD09	23	EQUIPMENT ROOM		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	BSD10	25	LABORATORY		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	BSD11	36	LABORATORY		5 DAYS PER WEEK	No	CLEAN UP
3	216	3-216-OPN-07	01S/SWSC	BTL1	4	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	BTL2	2	REST ROOM		5 DAYS PER WEEK	No	TOILET
3	216	3-216-OPN-07	01S/SWSC	BUR1	4	REST ROOM		5 DAYS PER WEEK	No	URINAL
3	216	3-216-OPN-07	01S/SWSC	BWF1	1B	HALLWAY		5 DAYS PER WEEK	No	DRINKING FOUNTAIN
3	216	3-216-OPN-07	01S/SWSC	PFD1	PENT.	PENTHOUSE		5 DAYS PER WEEK	No	CONDENSED WATER
3	216	3-216-OPN-08	DAYLIGHT	N/A	116	OFFICE COOLER		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-09	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-10	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-11	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-12	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-13	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-14	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-15	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-16	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-17	DAYLIGHT	N/A	N/A	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-18	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE		FLOW IS NIL	No	COLD WATER
3	216	3-216-OPN-19	DAYLIGHT	N/A	160	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-20	DAYLIGHT	N/A	160	EQUIPMENT ROOM		FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-21	DAYLIGHT	N/A	102	FIRE PROTECTION SYSTEM	100 GPY	ANNUAL TESTING	No	FIRE PROTECTION DRAIN WATER
3	216	3-216-OPN-22	DAYLIGHT	RD04	N/A	ROOF		MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-22	DAYLIGHT	RD05	N/A	ROOF		MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-22	DAYLIGHT	RD06	N/A	ROOF		MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-22	DAYLIGHT	RD07	N/A	ROOF		MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-23	DAYLIGHT	RD18	N/A	ROOF		MOSTLY SUMMER	Yes	STORM WATER
3	216	3-216-OPN-23	DAYLIGHT	RD19	N/A	ROOF		MOSTLY SUMMER	Yes	STORM WATER

REPORT #

50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES	
3	216	3-216-OPN-24	DAYLIGHT	N/A	9A	HOT WATER HOLDING TAN			FLOW IS NIL	No	HOT WATER PRESSURE RELIEF
3	216	3-216-OPN-25	DAYLIGHT	N/A	9A	BOILER ROOM			FLOW IS NIL	No	STEAM PRESSURE RELIEF
3	216	3-216-OPN-26	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	BACK FLOW PREVENTER
3	216	3-216-OPN-27	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	HOT WATER PRESSURE RELIEF
3	216	3-216-OPN-28	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-29	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	CONDENSED WATER
3	216	3-216-OPN-30	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	FIRE WATER DRAIN
3	216	3-216-OPN-31	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	FIRE WATER BLOWDOWN
3	216	3-216-OPN-32	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	FIRE WATER DRAIN
3	216	3-216-OPN-33	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	FIRE WATER DRAIN
3	216	3-216-OPN-34	DAYLIGHT	N/A	3	EQUIPMENT ROOM			FLOW IS NIL	No	COLD WATER BACK FLOW PREVENTER
3	216	3-216-OPN-35	DAYLIGHT	N/A	N/A	FIRE PROTECTION SYSTEM	100	GPY	ANNUAL TESTING	No	FIRE SYSTEM DRAIN WATER
3	216	3-216-OPN-36	DAYLIGHT	N/A	N/A	PRESSURE RELIEF VALVE			FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-37	DAYLIGHT	N/A	N/A	STEAM VENT LINE DRAIN			FLOW IS NIL	No	HOT WATER
3	216	3-216-OPN-38	DAYLIGHT	N/A	46A	EQUIPMENT ROOM	100	GPY	ANNUAL TESTING	No	FIRE PROTECTION SYSTEM WATER
3	216	3-216-OPN-39	DAYLIGHT	N/A	46A	EQUIPMENT ROOM			FLOW IS NIL	No	COOLER DRAIN WATER
3	216	3-216-OPN-40	DAYLIGHT	N/A	46B	FIRE PROTECTION SYSTEM	100	GPY	ANNUAL TESTING	No	FIRE PROTECTION SYSTEM WATER
3	1531	1531	ND	N/A	N/A	TRANSPORTAINER			NO DRAINS	No	NO DRAINS
3	1546	3-1546-OPN-1	DAYLIGHT	N/A	N/A	HALLWAY			FLOW IS NIL	No	HOT WATER PRESSURE RELIEF
3	1546	3-1546-OPN-2	01S/SWSC	1SD1	N/A	HALLWAY			5 DAYS PER WEEK	No	HAND WASHING
3	1546	3-1546-OPN-2	01S/SWSC	1SD2	N/A	HALLWAY			5 DAYS PER WEEK	No	HAND WASHING
3	1546	3-1546-OPN-3	DAYLIGHT	N/A	N/A	HALLWAY			FLOW IS NIL	No	HOT WATER PRESSURE RELIEF
3	1579	3-1579-OPN-1	01S/SWSC	1SD1	N/A	REST ROOM			5 DAYS PER WEEK	No	HAND WASHING
3	1579	3-1579-OPN-1	01S/SWSC	1TL1	N/A	REST ROOM			5 DAYS PER WEEK	No	TOILET
3	1648	1648	ND	N/A	N/A	TRANSPORTAINER			NO DRAINS	No	NO DRAINS
3	1774	1774	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1775	1775	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1776	1776	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1778	1778	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1782	1782	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1784	1784	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1855	1855	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS
3	1937	1937	ND	N/A	N/A	TRAILER			NO DRAINS	No	NO DRAINS

REPORT #

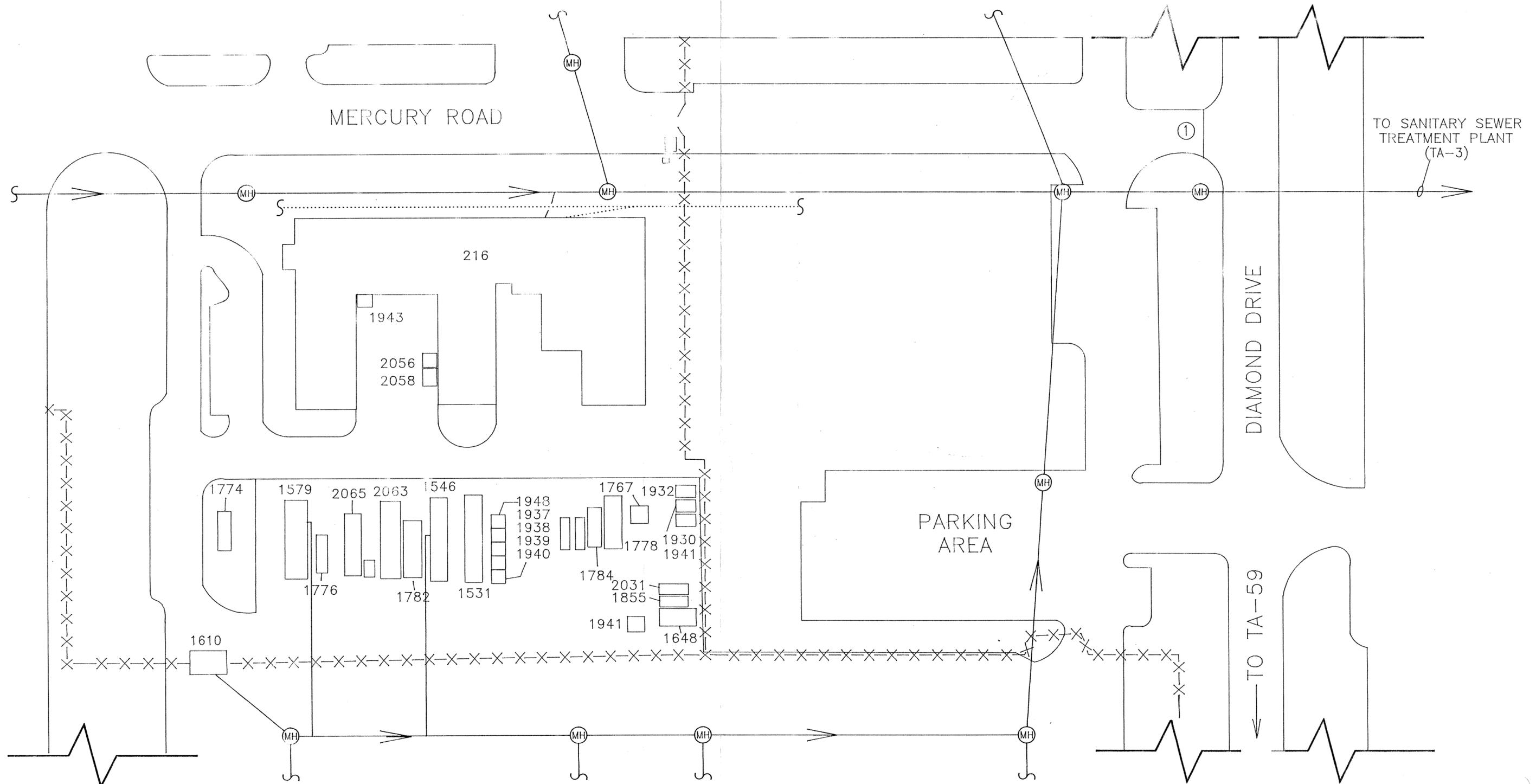
50

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE	PERIODICITY	SEASONAL	SOURCE TYPES
3	1938	1938	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	1939	1939	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	1940	1940	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	1941	1941	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	1943	1943	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	1948	1948	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2031	2031	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2036	2036	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2037	2037	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2056	2056	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2058	2058	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2063	2063	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2064	2064	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS
3	2065	2065	ND	N/A	N/A	TRAILER		NO DRAINS	No	NO DRAINS

**NO EPA FORMS WERE PREPARED.**

## DYE STUDY INFORMATION

BUILDING NUMBER	DRAIN NUMBER	DID DYE REACH EXPECTED DESTINATION?	COMMENTS
3-216	BFD3	YES	NONE
3-216	BFD4	YES	NONE
3-216	BFD6	YES	NONE
3-216	BFD7	YES	NONE
3-216	BFD8	YES	NONE
3-216	BFD11	YES	NONE
3-216	BFD12	YES	NONE
3-216	BFD17	YES	NONE
3-216	BTL2	YES	NONE
3-216	BSD8	YES	NONE
3-216	BSD10	YES	NONE
3-216	BSD11	YES	NONE
3-216	1SD1	YES	NONE
3-216	1SD2	YES	NONE
3-216	1TL3	YES	NONE
3-216	1SD9	YES	NONE
3-216	1SD11	YES	NONE
3-216	1SD13	YES	NONE
3-216	1SD16	YES	NONE
3-216	1FD10	YES	NONE
3-216	1SD19	YES	NONE



15277-A

TA-3  
PARTIAL SITE PLAN

NOT TO SCALE

LEGEND

- (MH) - SANITARY SEWER MANHOLE
- - - - - EXISTING SANITARY SEWER LINES
- - - - - EXISTING ACID SEWER SECTION
- X-X- EXISTING FENCE



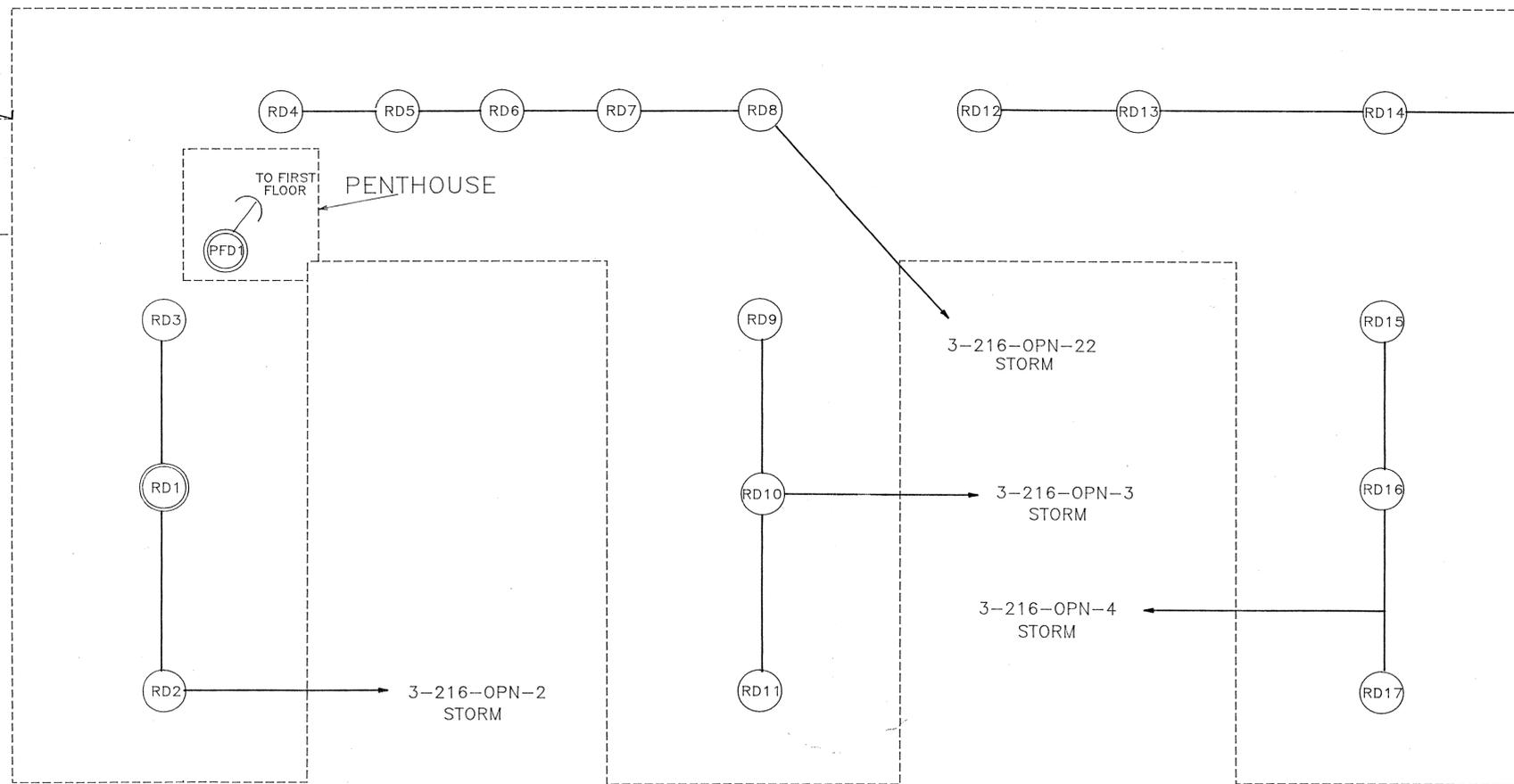
NOTES:

- 1) NO ACCESS
- 2) ACTUAL PIPING DETERMINED FROM  
ENGINEERING DRAWING C51441, SHEET 9 OF 39  
AND LA-IX-203, 4 OF 28

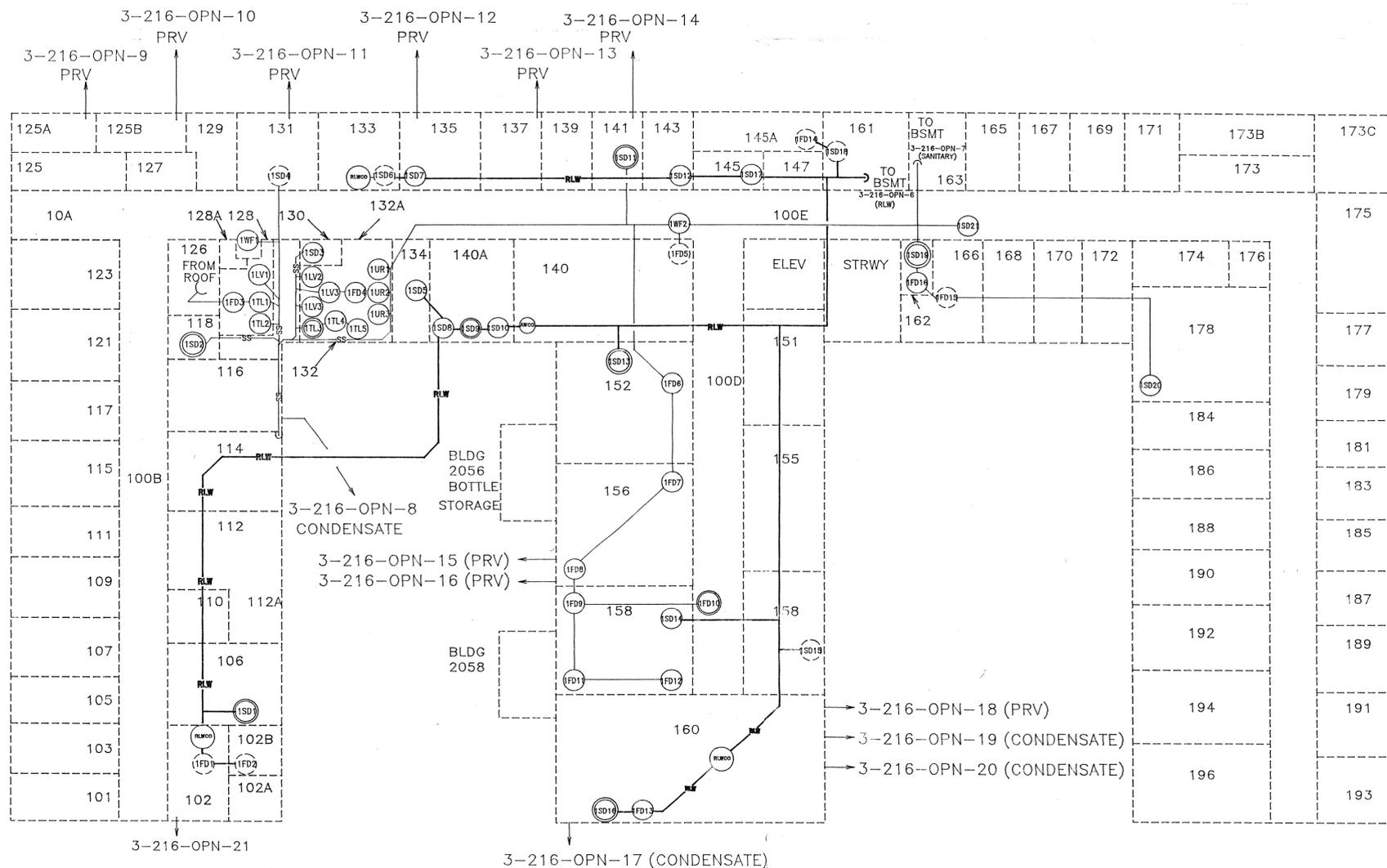
SANTA FE ENGINEERING, LTD.			
TA-3 PARTIAL SITE PLAN		DRAWN D.A.H.	DESIGN E.J.H.
		CHECKED P.E.B.	RELEASED
		DATE 10/7/92	
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos		Los Alamos National Laboratory Los Alamos, New Mexico 87545	SHEET 1 OF 1
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-50	FIGURE 1	

3-216-OPN-1  
STORM

3-216-OPN-5  
STORM



**TA-3 BUILDING 216  
ROOF  
DRAIN SCHEMATIC**  
NOT TO SCALE



**TA-3 BUILDING 216  
FIRST FLOOR  
DRAIN SCHEMATIC**  
NOT TO SCALE

**NOTES**

1) ACTUAL PIPING DETERMINED FROM ENGINEERING DRAWINGS C35931 THRU 35937 AND ON-SITE INSPECTION.

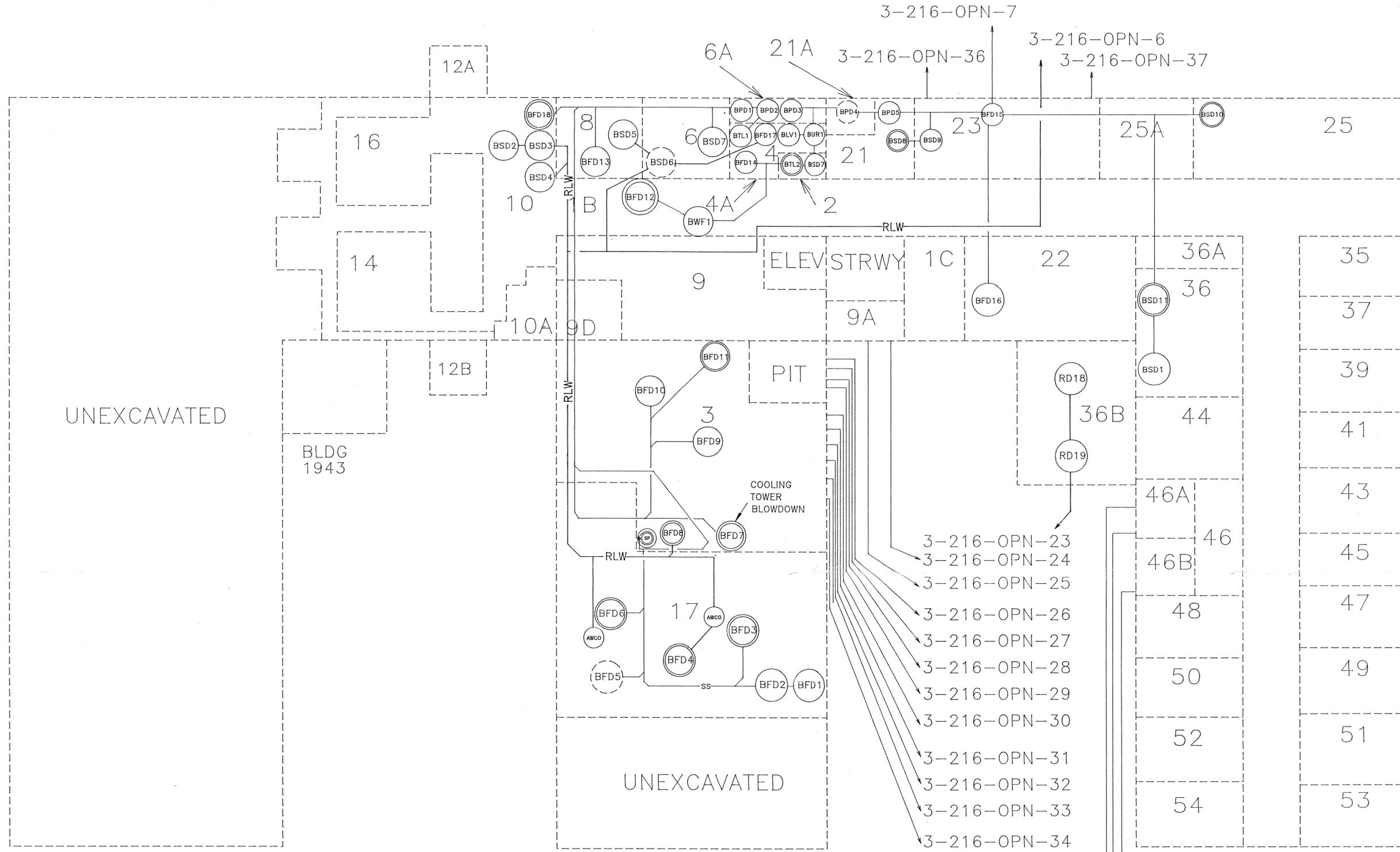
**LEGEND**

- FD - FLOOR DRAIN
- SD - SINK DRAIN
- TL - TOILET
- UR - URNIAL
- WF - WATER FOUNTAIN
- RLW - EXISTING RADIOACTIVE LIQUID WASTE LINE
- SS - SANITARY SEWER LINE
- - PLUGGED OR CAPPED DRAIN
- - DYE TESTED DRAIN
- - RLW SEWER CLEAN OUT



**15277-B**

SANTA FE ENGINEERING, LTD.			
<b>TA-3 BUILDING 216 FIRST FLOOR AND ROOF DRAIN SCHEMATIC</b>		DRAWN E.J.H.	DESIGN E.J.H.
		CHECKED P.E.B.	DATE 10/15/92
SUBMITTED	RECOMMENDED	APPROVED	
Los Alamos		Los Alamos National Laboratory Los Alamos, New Mexico 87545	SHEET 1 OF 1
CLASSIFICATION	REVIEWER	DATE	REV.
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	
REQUESTING GROUP EM-8	11056-50	FIGURE 2	



TA-3 BUILDING 216  
LOWER LEVEL OF BASEMENT  
DRAIN SCHEMATIC  
NOT TO SCALE

**LEGEND**

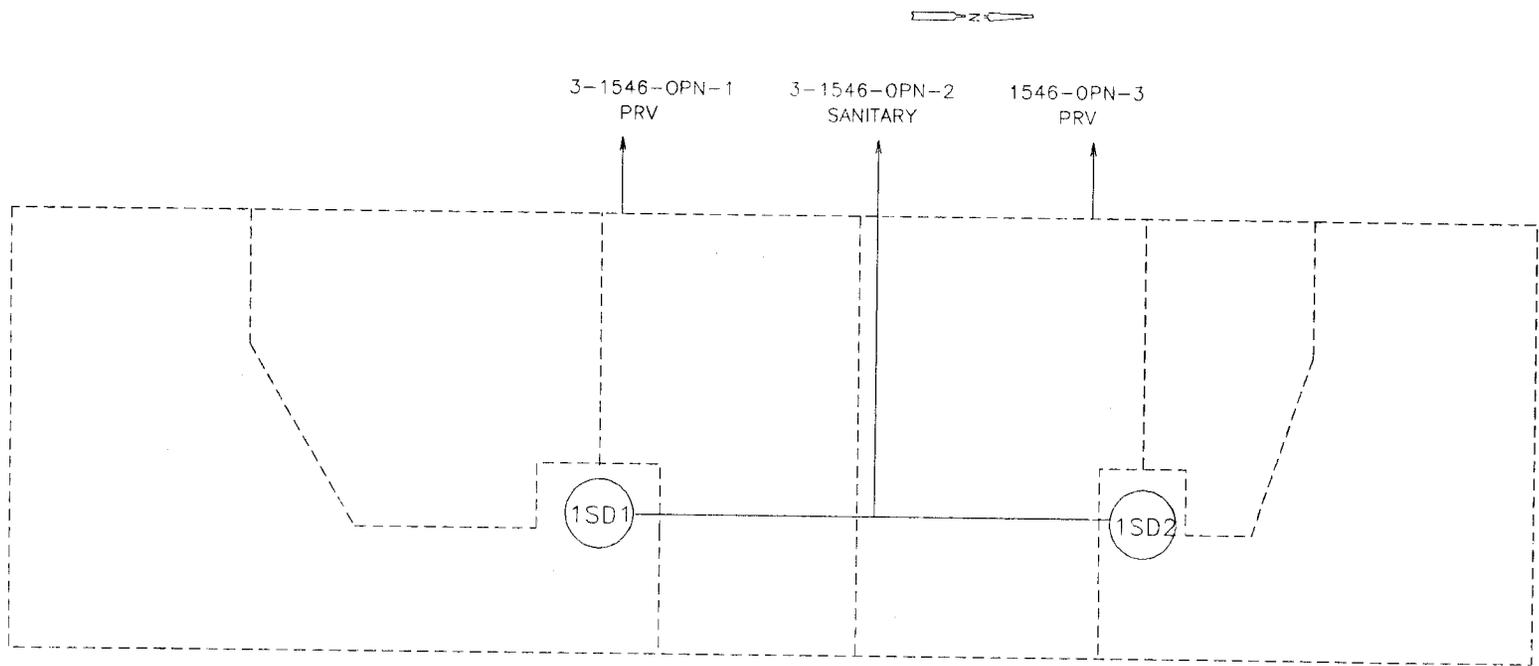
- BFP - BACK FLOW PREVENTOR
- FD - FLOOR DRAIN
- FS - FLOOR SINK
- PRV - PRESSURE RELIEF VALVE
- SD - SINK DRAIN
- SP - SUMP PUMP
- TL - TOILET
- UR - URINAL
- WF - WATER FOUNTAIN
- RLW - EXISTING RADIOACTIVE LIQUID WASTE LINE
- SS - SANITARY SEWER LINE
- - DYE TESTED DRAIN OR SUMP
- - PLUGGED DRAIN

**NOTES**

- 1) ACTUAL PIPING DETERMINED FROM ENGINEERING DRAWINGS C35931 THRU 35937 AND ON-SITE INSPECTION.
- 2) BASEMENT SINK DRAINS 2, 3 AND 4 ARE SCHEDULED FOR REMOVAL

15277-C

SANTA FE ENGINEERING, LTD.			
TA-3 BUILDING 216 BASEMENT DRAIN SCHEMATIC		DRAWN	DAH
		DESIGN	EJII
		CHECKED	PEB
		DATE	11/6/92
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	11056-50	FIGURE 3	



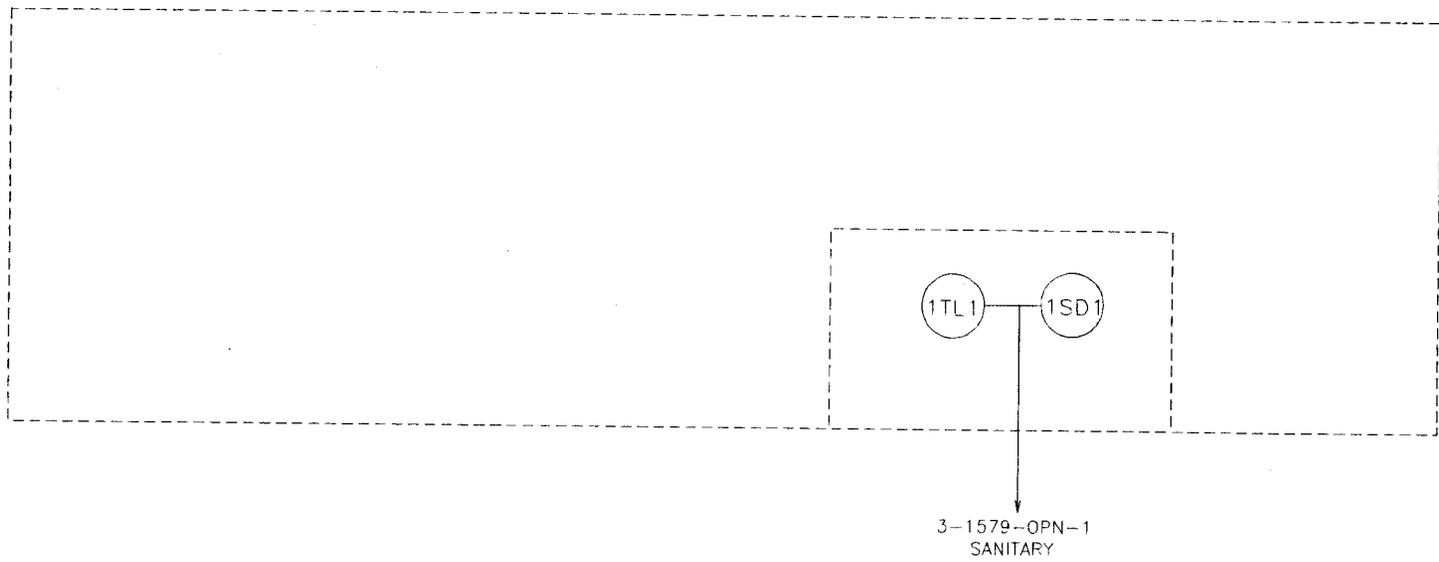
LEGEND

SD – SINK DRAIN  
 PRV – PRESSURE RELIEF VALVE

NOTES

1) ACTUAL PIPING DETERMINED FROM ON-SITE INSPECTION

<b>SANTA FE ENGINEERING, LTD.</b>			
TA 3-1546 DRAIN SCHEMATIC		DRAWN	EJH
		DESIGN	EJH
		CHECKED	PEB
		DATE	11/10/92
SUBMITTED	RECOMMENDED	APPROVED	
<b>Los Alamos</b>		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	11056-50	FIGURE 4	



LEGEND

SD - SINK DRAIN  
 TL - TOILET

NOTES

1) ACTUAL PIPING DETERMINED FROM ON-SITE INSPECTION

<b>SANTA FE ENGINEERING, LTD.</b>			
TA 3-1579 DRAIN SCHEMATIC		DRAWN EJH	DESIGN EJH
		CHECKED PEB	
		DATE 11/10/92	
SUBMITTED	RECOMMENDED	APPROVED	
<b>Los Alamos</b>		Los Alamos National Laboratory Los Alamos, New Mexico 87545	
		SHEET 1	OF 1
CLASSIFICATION	REVIEWER	DATE	
REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	
REQUESTING GROUP EM-8	11056-50	FIGURE 5	
		REV.	