

**WASTEWATER STREAM  
CHARACTERIZATION FOR  
TA 16-7, 10, 13, 16, 21, 27, 54, 58,  
59, 61, 63, 73, 75, 76, 77, 78, 79,  
80, 88, 99, 164, 171, 180, 210, 243,  
245, 246, 247, 332, 404, 412, 421,  
445, 515, 516, 517, 518, 519, 520,  
560, 599, 1371, 1373, 1407, 1413,  
1414, 1415, 1416 & 1421**

**at  
Los Alamos National Laboratory**

**ENVIRONMENTAL STUDY**

**CHARACTERIZATION REPORT # 12**



15208

**Los Alamos**

ENVIRONMENTAL MANAGEMENT DIVISION

Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

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ENVIRONMENTAL STUDY

prepared for:  
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## EXECUTIVE SUMMARY

Buildings 7, 10, 13, 16, 21, 27, 54, 58, 59, 61, 63, 73, 75, 76, 77, 78, 79, 80, 88, 99, 164, 171, 180, 210, 243, 245, 246, 247, 332, 404, 412, 421, 445, 515, 516, 517, 518, 519, 520, 560, 599, 1371, 1373, 1407, 1413, 1414, 1415, 1416 and 1421 in TA-16 were visited to document all drain piping and to make permitting recommendations. The outfall pipes exiting the building are as follows:

- 1) from 16-10, 13, 21, 58, 59, 61, 63, 73, 75, 76, 77, 78, 79, 80, 164, 171, 247, 412, 421, 445, 516, 517, 518, 519, 560, 599, 1371, 1373, 1413, 1414, 1415, 1416 and 1421: no drains,
- 2) from 16-27, 88, 99, 332, 404, 515 and 520: no water supply to drains,
- 3) from 16-7: one discharge to the sanitary sewer and one discharge of steam condensate,
- 4) from 16-16: one discharge to the sanitary sewer, one fire water system drain and one hot water heater vent,
- 5) from 16-54: one discharge to the sanitary sewer, one steam pressure relief valve vent and three steam condensate vents,
- 6) from 16-180: one discharge to the sanitary sewer,
- 7) from 16-210: one discharge to the sanitary sewer, one storm water discharge and one hot water heater vent,
- 8) from 16-243, 245, 246 and 1407: one discharge each to the sanitary sewer,

No permitting is recommended for any of the outfalls. A waste stream database has been prepared listing wastewater type and flow rate for each outfall.

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## 1.0 INTRODUCTION

On July 12, 1991, Patrick E. Binkley of Santa Fe Engineering (SFE) toured buildings 7, 10, 13, 16, 21, 27, 54, 58, 59, 61, 63, 73, 75, 76, 77, 78, 79, 80, 88, 99, 164, 171, 180, 210, 243, 245, 246, 247, 332, 404, 412, 421, 445, 515, 516, 517, 518, 519, 520, 560, 599, 1371, 1373, 1407, 1413, 1414, 1415, 1416 and 1421 in TA-16 with Loren Abercrombie of Engineering and Information Resources (WX-12). Figure 1 is a plot plan of the buildings visited. 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 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, except for building 180 which was verified by SFE 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 wastestream 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 1). 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 functions of each pipe exiting from the buildings are listed in Appendix 1, Tables 1 through 8, with an abbreviations list in Table 9. Appendix 2 contains the waste stream characterization database output, listing wastewater source, flow rates and periodicity information for each outfall drain. Completed EPA forms are in Appendix 3 for the appropriate outfalls. 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 2 through 8.

**3.0 RECOMMENDATIONS FOR BUILDINGS 10, 13, 21, 58, 59, 61, 63, 73, 75, 76, 77, 78, 79, 80, 164, 171, 247, 412, 421, 445, 516, 517, 518, 519, 560, 599, 1371, 1373, 1413, 1414, 1415, 1416 AND 1421**

These 33 buildings have no drains or sources of water. No permitting or changes are recommended for these buildings.

**4.0 RECOMMENDATIONS FOR BUILDINGS 27, 88, 99, 332, 515 AND 520**

Table 1 lists the recommendations for these buildings. These abandoned buildings have no water supply. The drains in the basement of building 27 appear to receive rain water that flows in through entrance ramps. The destination of the drains could not be determined during the site visit. A room in the southeast end of the building contains backup power supply batteries. These should be removed to eliminate the chance of an acid spill. Building 88 contains hazardous waste and should have the floor drain plugged to eliminate any chance of a spill. Building 332 is storage shed that has two floor drains that flow outside the building on the northeast side. The building has no water supply and no chemicals stored inside. The only flow that is possible for these drains would be rain water if the roof leaked. No changes are recommended. Buildings 515 and 520 are both abandoned with floor drains that have unknown destinations. A high explosives (HE) sump would receive any flow from 515. Covering the floor drains is recommended. Plugging or removing the sump is recommended to insure that any residual HE is not discharged. No EPA forms were prepared.

**5.0 RECOMMENDATIONS FOR BUILDING 7**

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

### 5.1 Outfall 16-7-OPN-1

This outfall discharges to the TA-16 sanitary treatment plant which discharges as 03S. All of the drains except 1TD1 in the equipment room are appropriate for the sanitary sewer. This drain receives no regular flow, but steam condensate from a heat exchanger is possible. No permitting or changes are recommended. No EPA forms were prepared.

### 5.2 Outfall 16-7-OPN-2

This outfall is a steam condensate drain to daylight. This outfall should be included in a Notice of Intent to Discharge (NOI). No changes are recommended and no EPA forms were prepared.

## 6.0 RECOMMENDATIONS FOR BUILDING 16

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 pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

### 6.1 Outfall 16-16-OPN-1

This outfall receives flow from sanitary facilities and a floor drain in an equipment room. The outfall flows to the TA-16 sanitary treatment plant. All of the flows are appropriate for this outfall. The equipment room contains no equipment. No changes or permitting are recommended. No EPA forms were prepared.

## 6.2 Outfall 16-16-OPN-2

This outfall is a drain to daylight from the fire water system. This outfall should be included in a Notice of Intent (NOI) to Discharge. No changes are recommended. No EPA forms were prepared.

## 6.3 Outfall 16-16-OPN-3

This outfall is a vent to atmosphere from a hot water heater. This outfall should be included in an NOI. No changes are recommended. No EPA forms were prepared.

## 7.0 RECOMMENDATIONS FOR BUILDING 54

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 pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

### 7.1 Outfall 16-54-OPN-1

This outfall receives flow from floor drains and from sanitary facilities. The discharge is through a septic tank. Seven of the floor drains on the second floor and fourteen on the first floor are covered with carpet and do not receive any flow. None of the floor drains in the equipment room receive any flow. No changes or permitting are recommended for this outfall. No EPA forms were prepared.

### 7.2 Outfall 16-54-OPN-2

This outfall is a vent to atmosphere from the steam pressure relief valve. This outfall should be covered by an NOI. No

changes are recommended for this outfall. No EPA forms were prepared.

### 7.3 Outfalls 16-54-OPN-3, 16-54-OPN-4 and 16-54-OPN-5

These three outfalls are steam condensate drains to daylight. This outfalls should be covered by an NOI. No changes are recommended. No EPA forms were prepared.

## 8.0 RECOMMENDATIONS FOR BUILDING 180

This building is Fire Station # 5 and has only one outfall which discharges to the TA-16 sanitary treatment plant. Table 5 is a list of the drains to the outfall and Figure 5 is a schematic of the piping. The outfall receives flow from sanitary facilities, four roof drains, one floor drain in a shop and six floor drains in the truck bays. The floor drains in the truck bays could receive oil from the fire trucks. An oil interceptor should be installed on floor drains 1FD1 and 1FD7. The roof drains should be repiped as separate outfalls to daylight. No permitting is recommended. No EPA forms were prepared.

## 9.0 RECOMMENDATIONS FOR BUILDING 210

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.

### 9.1 Outfall 16-210-OPN-1

This outfall receives flow from a lavatory, a toilet and a water fountain. The outfall discharges through a septic tank. No changes or permitting are recommended for this outfall. No EPA forms were prepared.

## 9.2 Outfall 16-210-OPN-2

This outfall to daylight receives flow from the roof drain. No changes or permitting are recommended. No EPA forms were prepared.

## 9.3 Outfall 16-210-OPN-3

This outfall receives flow from a hot water vent. This outfall should be included in an NOI. No changes are recommended. No EPA forms were prepared.

## 10.0 RECOMMENDATIONS FOR BUILDINGS 243, 245 and 246

These three buildings each have an outfall that combine prior to flowing to the TA-16 sanitary treatment plant. The drains to each outfall are described in Table 7 and Figure 7 is a schematic of the piping. All of the sources are from sanitary facilities. No changes or permitting are recommended. No EPA forms were prepared.

## 11.0 RECOMMENDATIONS FOR BUILDING 404

Building 404 contains a strainer for the potable water system. The building is currently bypassed and no water flows through the building. The building does have two outfalls that could be active if the strainer was put back in service. The outfalls both discharge to daylight on the south side of the building. One outfall is an overflow for the suction sump of the strainer feed pump. The other outfall is from four floor drains. Both discharges would be potable water. These outfalls should be included in an NOI. No EPA forms were prepared.

## 12.0 RECOMMENDATIONS FOR BUILDING 1407

This building has one outfall that flows to the TA-16 sanitary treatment plant. The drains to this outfall are described in Table 8 and Figure 8 is a schematic of the piping. All of the sources are from sanitary facilities. No changes or permitting are recommended. No EPA forms were prepared.

### 13.0 CONCLUSION

This document provides the information to characterize the buildings 7, 10, 13, 16, 21, 27, 54, 58, 59, 61, 63, 73, 75, 76, 77, 78, 79, 80, 88, 99, 164, 171, 180, 210, 243, 245, 246, 247, 332, 404, 412, 421, 445, 515, 516, 517, 518, 519, 520, 560, 599, 1371, 1373, 1407, 1413, 1414, 1415, 1416 and 1421 in TA-16. NPDES permit application forms have been completed for the following outfalls (Appendix 3):

Forms 2C and 2D:

None

Permitting is not recommended for the remaining outfalls, as itemized below:

Hot water heater vent:

1. 16-16-OPN-3
2. 16-210-OPN-3

Areas that do not have any drains:

- |                |                |                |
|----------------|----------------|----------------|
| 1. TA 16-10    | 2. TA 16-13    | 3. TA 16-21    |
| 4. TA 16-58    | 5. TA 16-59    | 6. TA 16-61    |
| 7. TA 16-63    | 8. TA 16-73    | 9. TA 16-75    |
| 10. TA 16-76   | 11. TA 16-77   | 12. TA 16-78   |
| 13. TA 16-79   | 14. TA 16-80   | 15. TA 16-164  |
| 16. TA 16-171  | 17. TA 16-247  | 18. TA 16-412  |
| 19. TA 16-421  | 20. TA 16-445  | 21. TA 16-516  |
| 22. TA 16-517  | 23. TA 16-518  | 24. TA 16-519  |
| 25. TA 16-560  | 26. TA 16-599  | 27. TA 16-1371 |
| 28. TA 16-1373 | 29. TA 16-1413 | 30. TA 16-1414 |
| 31. TA 16-1415 | 32. TA 16-1416 | 33. TA 16-1421 |

Areas that have drains but no water supply:

- |              |              |              |
|--------------|--------------|--------------|
| 1. TA 16-27  | 2. TA 16-88  | 3. TA 16-99  |
| 4. TA 16-332 | 5. TA 16-404 | 6. TA 16-515 |
| 7. TA 16-520 |              |              |

Discharges that are only storm water:

1. 16-210-OPN-1

Discharges that are fire water:

1. 16-16-OPN-2

Discharges to TA-16 sanitary treatment system (03S):

- |                  |                 |                 |
|------------------|-----------------|-----------------|
| 1. 16-7-OPN-1    | 2. 16-16-OPN-1  | 3. 16-180-OPN-1 |
| 4. 16-243-OPN-1  | 5. 16-245-OPN-1 | 6. 16-246-OPN-1 |
| 7. 16-1407-OPN-1 |                 |                 |

Discharges to septic tanks:

- |                |                 |
|----------------|-----------------|
| 1. 16-54-OPN-1 | 2. 16-210-OPN-1 |
|----------------|-----------------|

Discharges that are steam condensate only:

- |                |                |                |
|----------------|----------------|----------------|
| 1. 16-7-OPN-2  | 2. 16-54-OPN-2 | 3. 16-54-OPN-3 |
| 4. 16-54-OPN-4 | 4. 16-54-OPN-5 |                |

The following outfalls have storm water combined with non-storm water discharges, as defined in Forms 2D, Appendix 3:

1. 16-180-OPN-1

Recommended permitting and corrective actions are outlined in Tables 2 through 8 as well as in the above text. Corrective action should be performed as soon as practicable to minimize the chance of unpermitted discharge of pollutants.

TABLE 1: TA 16-27, 88, 99, 332, 515 & 520 SUMMARY

| BUILDING NUMBER | BUILDING ACTIVITY | STATUS OR RECOMMENDATIONS        | EPA FORM PREPARED |
|-----------------|-------------------|----------------------------------|-------------------|
| 16-27           | Storage building  | Remove batteries                 | No                |
| 16-88           | Rest house        | Plug drains                      | No                |
| 16-99           | Storage building  | No change                        | No                |
| 16-332          | Storage building  | No change                        | No                |
| 16-515          | Process building  | Remove sump & cover floor drains | No                |
| 16-520          | Test building     | Remove sump & cover floor drains | No                |

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

**TABLE 2: TA 16-7 DRAIN SUMMARY**

| OUTFALL NUMBER          | ID NUMBER | ROOM ACTIVITY    | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|-------------------------|-----------|------------------|---------------------------|-------------------|
| 16-7-OPN-1<br>San Sewer | 1EQ1      | Hot water heater | No change                 | No                |
|                         | 1EW1      | Metal shop       | No change                 |                   |
|                         | 1LV1      | Rest room        | No change                 |                   |
|                         | 1S1       | Rest room        | No change                 |                   |
|                         | 1T1       | Rest room        | No change                 |                   |
|                         | 1TD1      | Equipment room   | No change                 |                   |
|                         | 1UR1      | Rest room        | No change                 |                   |
| 16-7-OPN-2              |           | Steam condensate | NOI                       | No                |

**TABLE 3: TA 16-16 DRAIN SUMMARY**

| OUTFALL NUMBER           | ID NUMBER | ROOM ACTIVITY    | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|--------------------------|-----------|------------------|---------------------------|-------------------|
| 16-16-OPN-1<br>San Sewer | 1FD1      | Equipment room   | No change                 |                   |
|                          | 1LV1      | Rest room        | No change                 |                   |
|                          | 1LV2      | Rest room        | No change                 |                   |
|                          | 1LV3      | Rest room        | No change                 |                   |
|                          | 1LV4      | Rest room        | No change                 |                   |
|                          | 1T1       | Rest room        | No change                 |                   |
|                          | 1T2       | Rest room        | No change                 |                   |
|                          | 1T3       | Rest room        | No change                 |                   |
|                          | 1T4       | Rest room        | No change                 |                   |
|                          | 1UR1      | Rest room        | No change                 |                   |
| 1UR2                     | Rest room | No change        |                           |                   |
| 16-16-OPN-2              |           | Fire water       | NOI                       | No                |
| 16-16-OPN-3              |           | Hot water heater | NOI                       | No                |

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

TABLE 4: TA 16-54 DRAIN SUMMARY

| OUTFALL NUMBER             | ID NUMBER | ROOM ACTIVITY      | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|----------------------------|-----------|--------------------|---------------------------|-------------------|
| 16-54-OPN-1<br>Septic Tank | 1FD1      | Office             | Covered                   | No                |
|                            | 1FD2      | Office             | Covered                   |                   |
|                            | 1FD3      | Office             | Covered                   |                   |
|                            | 1FD4      | Office             | Covered                   |                   |
|                            | 1FD5      | Office             | Covered                   |                   |
|                            | 1FD6      | Office             | Covered                   |                   |
|                            | 1FD7      | Office             | Covered                   |                   |
|                            | 1FD8      | Office             | Covered                   |                   |
|                            | 1FD9      | Office             | Covered                   |                   |
|                            | 1FD10     | Office             | Covered                   |                   |
|                            | 1FD11     | Office             | Covered                   |                   |
|                            | 1FD12     | Office             | No change                 |                   |
|                            | 1FD13     | Office             | Covered                   |                   |
|                            | 1FD14     | Office             | Covered                   |                   |
|                            | 1FD15     | Office             | Covered                   |                   |
|                            | 1FD17     | Equipment room     | No change                 |                   |
|                            | 2FD1      | Office             | Covered                   |                   |
|                            | 2FD2      | Office             | Covered                   |                   |
|                            | 2FD3      | Office             | Covered                   |                   |
|                            | 2FD4      | Office             | Covered                   |                   |
|                            | 2FD5      | Office             | Covered                   |                   |
|                            | 2FD6      | Office             | Covered                   |                   |
|                            | 2FD7      | Office             | Covered                   |                   |
|                            | 2FD8      | Rest room          | No change                 |                   |
|                            | 2FD9      | Rest room          | No change                 |                   |
|                            | 2S1       | Rest room          | No change                 |                   |
| 2T1                        | Rest room | No change          |                           |                   |
| 2UR1                       | Rest room | No change          |                           |                   |
| 16-54-OPN-2                |           | Steam relief valve | NOI                       | No                |
| 16-54-OPN-3                |           | Condensate         | NOI                       | No                |
| 16-54-OPN-4                |           | Condensate         | NOI                       | No                |
| 16-54-OPN-5                | 1FD16     | Condensate         | NOI                       | No                |

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

**TABLE 5: TA 16-180 DRAIN SUMMARY**

| OUTFALL NUMBER            | ID NUMBER   | ROOM ACTIVITY    | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|---------------------------|-------------|------------------|---------------------------|-------------------|
| 16-180-OPN-1<br>San Sewer | RD1         | Roof             | Repipe as new outfall     | No                |
|                           | RD2         | Roof             | Repipe as new outfall     |                   |
|                           | RD3         | Roof             | Repipe as new outfall     |                   |
|                           | RD4         | Roof             | Repipe as new outfall     |                   |
|                           | 1FD1        | Truck bay        | Add oil interceptor       |                   |
|                           | 1FD2        | Shop             | No change                 |                   |
|                           | 1FD3        | Truck bay        | No change                 |                   |
|                           | 1FD4        | Truck bay        | No change                 |                   |
|                           | 1FD5        | Rest room        | No change                 |                   |
|                           | 1FD6        | Truck bay        | No change                 |                   |
|                           | 1FD7        | Truck bay        | Add oil interceptor       |                   |
|                           | 1LV1        | Rest room        | No change                 |                   |
|                           | 1S1         | Janitor's closet | No change                 |                   |
|                           | 1T1         | Rest room        | No change                 |                   |
|                           | 1UR1        | Rest room        | No change                 |                   |
|                           | 1WF1        | Truck bay        | No change                 |                   |
|                           | 2DW1        | Kitchen          | No change                 |                   |
|                           | 2FD1        | Locker room      | No change                 |                   |
|                           | 2LV1        | Locker room      | No change                 |                   |
|                           | 2LV2        | Locker room      | No change                 |                   |
|                           | 2LV3        | Locker room      | No change                 |                   |
|                           | 2LV4        | Locker room      | No change                 |                   |
|                           | 2LV5        | Locker room      | No change                 |                   |
|                           | 2LV6        | Locker room      | No change                 |                   |
|                           | 2S1         | Kitchen          | No change                 |                   |
|                           | 2S2         | Locker room      | No change                 |                   |
|                           | 2SH1        | Locker room      | No change                 |                   |
|                           | 2SH2        | Locker room      | No change                 |                   |
|                           | 2SH3        | Locker room      | No change                 |                   |
|                           | 2T1         | Locker room      | No change                 |                   |
|                           | 2T2         | Locker room      | No change                 |                   |
|                           | 2T3         | Locker room      | No change                 |                   |
|                           | 2UR1        | Locker room      | No change                 |                   |
| 2UR2                      | Locker room | No change        |                           |                   |
| 2WF1                      | Hallway     | No change        |                           |                   |

RECOMMENDATION REVIEWED WITH PERSONNEL FROM WX-12, EM-8 & ENG-6

TABLE 6: TA 16-210 DRAIN SUMMARY

| OUTFALL NUMBER              | ID NUMBER | ROOM ACTIVITY     | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|-----------------------------|-----------|-------------------|---------------------------|-------------------|
| 16-210-OPN-1<br>Septic Tank | 1LV1      | Rest room         | No change                 | No                |
|                             | 1T1       | Rest room         | No change                 |                   |
|                             | 1WF1      | Office            | No change                 |                   |
| 16-210-OPN-2                | RD1       | Roof              | No change                 | No                |
| 16-210-OPN-3                |           | Water heater vent | NOI                       | No                |

TABLE 7: TA 16-243, 245 AND 246 DRAIN SUMMARY

| OUTFALL NUMBER            | ID NUMBER | ROOM ACTIVITY | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|---------------------------|-----------|---------------|---------------------------|-------------------|
| 16-243-OPN-1<br>San sewer | 1LV1      | Rest room     | No change                 | No                |
|                           | 1LV2      | Rest room     | No change                 |                   |
|                           | 1S1       | Rest room     | No change                 |                   |
|                           | 1T1       | Rest room     | No change                 |                   |
|                           | 1T2       | Rest room     | No change                 |                   |
|                           | 1UR1      | Rest room     | No change                 |                   |
| 16-245-OPN-1<br>San sewer | 1LV1      | Rest room     | No change                 | No                |
|                           | 1T1       | Rest room     | No change                 |                   |
|                           | 1WF1      | Hall way      | No change                 |                   |
| 16-246-OPN-1<br>San sewer | 1LV1      | Rest room     | No change                 | No                |
|                           | 1S1       | Rest room     | No change                 |                   |
|                           | 1T1       | Rest room     | No change                 |                   |
|                           | 1UR1      | Rest room     | No change                 |                   |

TABLE 8: TA 16-1407 DRAIN SUMMARY

| OUTFALL NUMBER             | ID NUMBER | ROOM ACTIVITY | STATUS OR RECOMMENDATIONS | EPA FORM PREPARED |
|----------------------------|-----------|---------------|---------------------------|-------------------|
| 16-1407-OPN-1<br>San sewer | 1S1       | Rest room     | No change                 | No                |
|                            | 1T1       | Rest room     | No change                 |                   |

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

**TABLE 9**  
**SUMMARY OF ABBREVIATIONS**

| ABBREVIATION | MEANING         |
|--------------|-----------------|
| EQ           | Equipment Drain |
| EW           | Eye Wash        |
| FD           | Floor Drain     |
| LV           | Lavatory        |
| RD           | Roof Drain      |
| S            | Sink            |
| SH           | Shower          |
| T            | Toilet          |
| TD           | Trough Drain    |
| UR           | Urinal          |
| WF           | Water Fountain  |

REPORT 12

| TA BLDG | OUTLET PIPING NUMBER | EPA OUTFALL # | DRAIN # | ROOM DESCRIPTION | FLOW RATE | PERIODICITY          | SEASONAL | ROOM # | SOURCE TYPES              |
|---------|----------------------|---------------|---------|------------------|-----------|----------------------|----------|--------|---------------------------|
| 16      | 7 16-7-OPN-1         | 03S           | 1EQ1    | HOT WATER HEATER | GPM       | 4 DAYS PER WEEK      | no       |        | POTABLE WATER             |
| 16      | 7 16-7-OPN-1         | 03S           | 1EW1    | EYE WASH         | GPM       | 4 DAYS PER WEEK      | no       |        | POTABLE WATER             |
| 16      | 7 16-7-OPN-1         | 03S           | 1LV1    | REST ROOM        | GPM       | 4 DAYS PER WEEK      | no       |        | HAND WASHING              |
| 16      | 7 16-7-OPN-1         | 03S           | 1S1     | REST ROOM        | GPM       | 4 DAYS PER WEEK      | no       |        | HAND WASHING              |
| 16      | 7 16-7-OPN-1         | 03S           | 1T1     | REST ROOM        | GPM       | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 7 16-7-OPN-1         | 03S           | 1TD1    | EQUIPMENT ROOM   | GPM       | 4 DAYS PER WEEK      | no       |        | FLOOR WASHINGS            |
| 16      | 7 16-7-OPN-1         | 03S           | 1UR1    | REST ROOM        | GPM       | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 7 16-7-OPN-2         |               |         | HEATING SYSTEM   | GPM       | 1 TIME PER YEAR      | no       |        | WATER FROM HEATING SYSTEM |
| 16      | 10 TA 16-10          |               |         | WAREHOUSE        |           | NO DISCHARGE         | no       |        | NO SOURCES                |
| 16      | 13 TA 16-13          |               |         | DOCK             |           | NO DISCHARGE         | no       |        | NO SOURCES                |
| 16      | 16 16-16-OPN-1       | 03S           | 1FD1    | EQUIPMENT ROOM   |           | 4 DAYS PER WEEK      | no       |        | FLOOR WASHINGS            |
| 16      | 16 16-16-OPN-1       | 03S           | 1LV1    | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | FLOOR WASHINGS            |
| 16      | 16 16-16-OPN-1       | 03S           | 1LV2    | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | HAND WASHINGS             |
| 16      | 16 16-16-OPN-1       | 03S           | 1LV3    | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | HAND WASHINGS             |
| 16      | 16 16-16-OPN-1       | 03S           | 1LV4    | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | HAND WASHINGS             |
| 16      | 16 16-16-OPN-1       | 03S           | 1T1     | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 16 16-16-OPN-1       | 03S           | 1T2     | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 16 16-16-OPN-1       | 03S           | 1T3     | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 16 16-16-OPN-1       | 03S           | 1T4     | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 16 16-16-OPN-1       | 03S           | 1UR1    | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 16 16-16-OPN-1       | 03S           | 1UR2    | REST ROOM        |           | 4 DAYS PER WEEK      | no       |        | SANITARY WASTE            |
| 16      | 16 16-16-OPN-2       |               |         | EQUIPMENT ROOM   |           | 1 OR 2 TIMES PER YEA | no       |        | FIRE WATER                |
| 16      | 16 16-16-OPN-3       |               |         | EQUIPMENT ROOM   |           | FLOW IS NI;          | no       |        | HOT WATER HEATER          |
| 16      | 21 TA 16-21          |               |         | PUMPING STATION  |           | NO DISCHARGE         | no       |        | NO SOURCES                |
| 16      | 27 TA 16-27          |               |         | STORAGE BUILDING |           | NO DISCHARGE         | no       |        | NO SOURCES                |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD01   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD02   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD03   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD04   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD05   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD06   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD07   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD08   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD09   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD10   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD11   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD12   | OFFICE           |           | 4 DAYS PER WEEK      | no       |        | FLOOR WASHINGS            |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD13   | OFFICE           |           | NO FLOW              | no       |        | COVERED                   |

REPORT 12

| TA BLDG | OUTLET PIPING NUMBER | EPA OUTFALL # | DRAIN # | ROOM DESCRIPTION   | FLOW RATE | PERIODICITY     | SEASONAL | ROOM # | SOURCE TYPES     |
|---------|----------------------|---------------|---------|--------------------|-----------|-----------------|----------|--------|------------------|
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD14   | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD15   | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 1FD17   | EQUIPMENT ROOM     |           | 4 DAYS PER WEEK | no       |        | POTABLE WATER    |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD1    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD2    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD3    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD4    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD5    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD6    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD7    | OFFICE             |           | NO FLOW         | no       |        | COVERED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD8    | REST ROOM          |           | NO FLOW         | no       |        | PLUGGED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2FD9    | REST ROOM          |           | NO FLOW         | no       |        | PLUGGED          |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2S1     | REST ROOM          |           | 4 DAYS PER WEEK | no       |        | HAND WASHINGS    |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2T1     | REST ROOM          |           | 4 DAYS PER WEEK | no       |        | SANITARY WASTE   |
| 16      | 54 16-54-OPN-1       | SEPTIC TANK   | 2UR1    | REST ROOM          |           | 4 DAYS PER WEEK | no       |        | SANITARY WASTE   |
| 16      | 54 16-54-OPN-2       |               |         | EQUIPMENT ROOM     |           | FLOW IS NIL     | no       |        | STEAM CONDENSATE |
| 16      | 54 16-54-OPN-3       |               |         | EQUIPMENT ROOM     |           | FLOW IS NIL     | no       |        | STEAM CONDENSATE |
| 16      | 54 16-54-OPN-4       |               |         | EQUIPMENT ROOM     |           | FLOW IS NIL     | no       |        | STEAM CONDENSATE |
| 16      | 54 16-54-OPN-5       |               | 1FD16   | EQUIPMENT ROOM     |           | FLOW IS NIL     | no       |        | STEAM CONDENSATE |
| 16      | 58 TA 16-58          |               |         | MAGAZINE           |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 59 TA 16-59          |               |         | MAGAZINE           |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 61 TA 16-61          |               |         | MAGAZINE           |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 63 TA 16-63          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 73 TA 16-73          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 75 TA 16-75          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 76 TA 16-76          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 77 TA 16-77          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 78 TA 16-78          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 79 TA 16-79          |               |         | PERSONNEL SHELTER  |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 80 TA 16-80          |               |         | STORAGE            |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 88 TA 16-88          |               |         | CASTING REST HOUSE |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 99 TA 16-99          |               |         | STORAGE BUILDING   |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 164 TA 16-164        |               |         | STORAGE BUILDING   |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 171 TA 16-171        |               |         | WATER TANK         |           | NO DISCHARGE    | no       |        | NO SOURCES       |
| 16      | 180 16-180-OPN-1     | 03S           | 1FD1    | TRUCK BAY          |           | 7 DAYS PER WEEK | no       |        | FLOOR WASHINGS   |
| 16      | 180 16-180-OPN-1     | 03S           | 1FD2    | SHOP               |           | 7 DAYS PER WEEK | no       |        | FLOOR WASHINGS   |
| 16      | 180 16-180-OPN-1     | 03S           | 1FD3    | TRUCK BAY          |           | 7 DAYS PER WEEK | no       |        | FLOOR WASHINGS   |
| 16      | 180 16-180-OPN-1     | 03S           | 1FD4    | TRUCK BAY          |           | 7 DAYS PER WEEK | no       |        | FLOOR WASHINGS   |

REPORT 12

| TA | BLDG | OUTLET PIPING<br>NUMBER | EPA OUTFALL<br># | DRAIN<br># | ROOM DESCRIPTION | FLOW RATE | PERIODICITY     | SEASONAL | ROOM<br># | SOURCE<br>TYPES |
|----|------|-------------------------|------------------|------------|------------------|-----------|-----------------|----------|-----------|-----------------|
| 16 | 180  | 16-180-OPN-1            | 03S              | 1FD5       | REST ROOM        |           | 7 DAYS PER WEEK | no       |           | FLOOR WASHINGS  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1FD6       | TRUCK BAY        |           | 7 DAYS PER WEEK | no       |           | FLOOR WASHINGS  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1FD7       | TRUCK BAY        |           | 7 DAYS PER WEEK | no       |           | FLOOR WASHINGS  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1LV1       | REST ROOM        |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1S1        | JANITOR'S CLOSET |           | 7 DAYS PER WEEK | no       |           | MOP WATER       |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1T1        | REST ROOM        |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1UR1       | REST ROOM        |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 1WF1       | TRUCK BAY        |           | 7 DAYS PER WEEK | no       |           | DRINKING WATER  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2DW1       | KITCHEN          |           | 7 DAYS PER WEEK | no       |           | DISH WASHER     |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2FD1       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | FLOOR WASHINGS  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2LV1       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2LV2       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2LV3       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2LV4       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2LV5       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2LV6       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2S1        | KITCHEN          |           | 7 DAYS PER WEEK | no       |           | KITCHEN WASTE   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2S2        | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2SH1       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SOAPY WATER     |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2SH2       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SOAPY WATER     |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2SH3       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SOAPY WATER     |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2T1        | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2T2        | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2T3        | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2UR1       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2UR2       | LOCKER ROOM      |           | 7 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 180  | 16-180-OPN-1            | 03S              | 2WF1       | HALLWAY          |           | 7 DAYS PER WEEK | no       |           | DRINKING WATER  |
| 16 | 180  | 16-180-OPN-1            | 03S              | RD1        | ROOF             |           | MOSTLY SUMMER   | no       | ROOF      | RAIN            |
| 16 | 180  | 16-180-OPN-1            | 03S              | RD2        | ROOF             |           | MOSTLY SUMMER   | no       | ROOF      | RAIN            |
| 16 | 180  | 16-180-OPN-1            | 03S              | RD3        | ROOF             |           | MOSTLY SUMMER   | no       | ROOF      | RAIN            |
| 16 | 180  | 16-180-OPN-1            | 03S              | RD4        | ROOF             |           | MOSTLY SUMMER   | no       | ROOF      | RAIN            |
| 16 | 210  | 16-210-OPN-1            | SEPTIC TANK      | 1LV1       | REST ROOM        |           | 5 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 210  | 16-210-OPN-1            | SEPTIC TANK      | 1T1        | REST ROOM        |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE  |
| 16 | 210  | 16-210-OPN-1            | SEPTIC TANK      | 1WF1       | OFFICE           |           | 5 DAYS PER WEEK | no       |           | DRINKING WATER  |
| 16 | 210  | 16-210-OPN-2            |                  | RD1        | ROOF             |           | MOSTLY SUMMER   | no       |           | RAIN            |
| 16 | 210  | 16-210-OPN-3            |                  |            | HOT WATER HEATER |           | FLOW IS NIL     | no       |           | POTABLE WATER   |
| 16 | 243  | 16-243-OPN-1            | 03S              | 1LV1       | REST ROOM        |           | 5 DAYS PER WEEK | no       |           | HAND WASHINGS   |
| 16 | 243  | 16-243-OPN-1            | 03S              | 1LV2       | REST ROOM        |           | 5 DAY PER WEEK  | no       |           | HAND WASHINGS   |

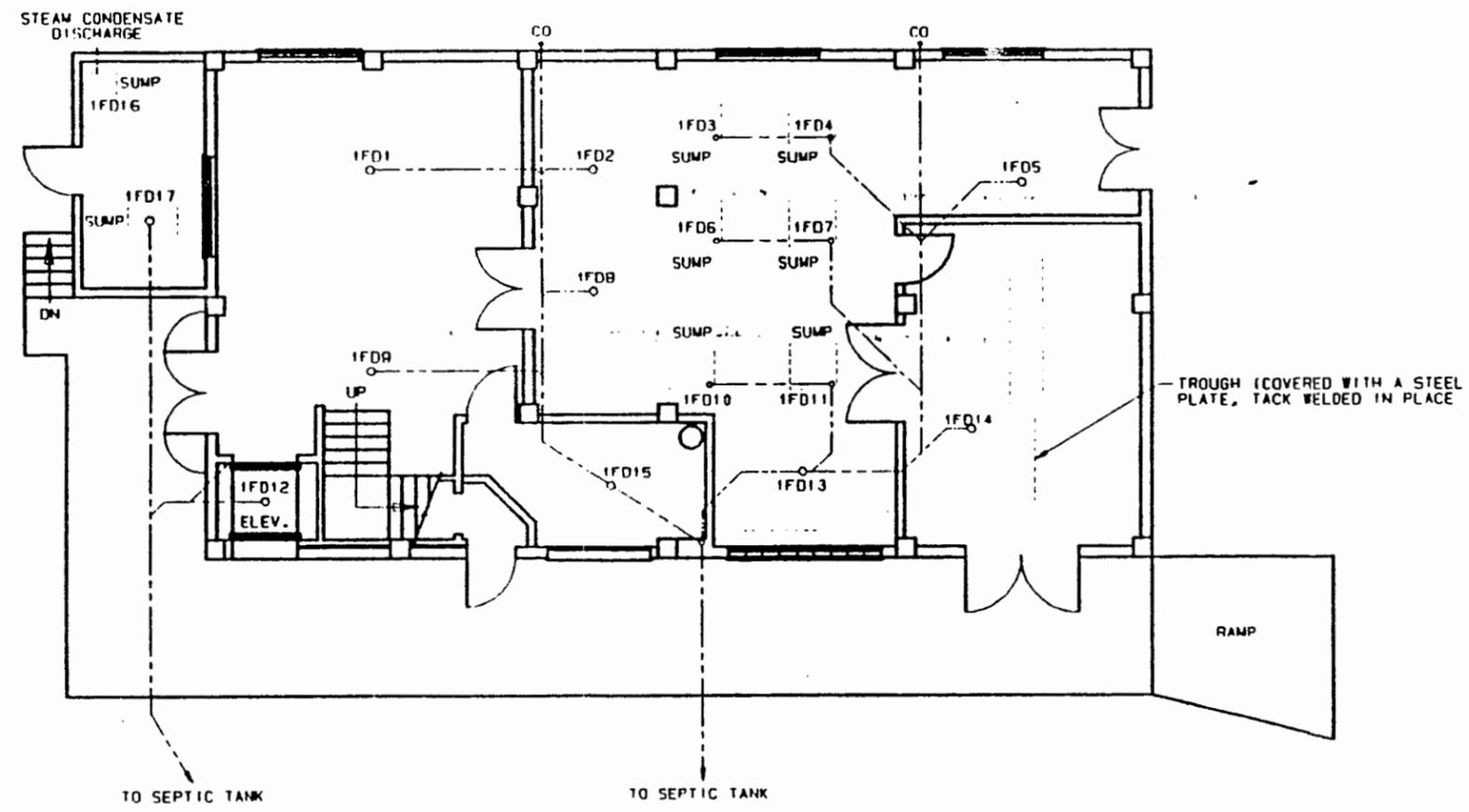
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| TA | BLDG  | OUTLET PIPING<br>NUMBER | EPA OUTFALL<br># | DRAIN<br># | ROOM DESCRIPTION       | FLOW RATE | PERIODICITY     | SEASONAL | ROOM<br># | SOURCE<br>TYPES   |
|----|-------|-------------------------|------------------|------------|------------------------|-----------|-----------------|----------|-----------|-------------------|
| 16 | 243   | 16-243-OPN-1            | 03S              | 1S1        | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | HAND WASHINGS     |
| 16 | 243   | 16-243-OPN-1            | 03S              | 1T1        | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 243   | 16-243-OPN-1            | 03S              | 1T2        | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 243   | 16-243-OPN-1            | 03S              | 1UR1       | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 245   | 16-245-OPN-1            | 03S              | 1LV1       | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | HAND WASHINGS     |
| 16 | 245   | 16-245-OPN-1            | 03S              | 1T1        | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 245   | 16-245-OPN-1            | 03S              | 1WF1       | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | DRINKING WATER    |
| 16 | 246   | 16-246-OPN-1            | 03S              | 1LV1       | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | HAND WASHINGS     |
| 16 | 246   | 16-246-OPN-1            | 03S              | 1S1        | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | HAND WASHINGS     |
| 16 | 246   | 16-246-OPN-1            | 03S              | 1T1        | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 246   | 16-246-OPN-1            | 03S              | 1UR1       | REST ROOM              |           | 5 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 247   | TA 16-247               |                  |            | WATER TANK             |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 332   | TA 16-332               |                  |            | STORAGE BUILDING       |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 404   | TA 16-404               |                  |            | MICROSTRAINER BUILDING |           | NO DISCHARGE    | no       |           | SOURCES NO IN USE |
| 16 | 412   | TA 16-412               |                  |            | INCINERATOR            |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 421   | TA 16-421               |                  |            | FD TRAINING FACILITY   |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 445   | TA 16-445               |                  |            | DIESEL TANK            |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 515   | TA 16-515               |                  |            | PROCESS BUILDING       |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 516   | TA 16-516               |                  |            | PROCESS BUILDING       |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 517   | TA 16-517               |                  |            | EQUIPMENT BUILDING     |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 518   | TA 16-518               |                  |            | STORAGE BUILDING       |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 519   | TA 16-519               |                  |            | STORAGE BUILDING       |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 520   | TA 16-520               |                  |            | TEST BUILDING          |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 560   | TA 16-560               |                  |            | CHLORINATOR BUILDING   |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 599   | TA 16-599               |                  |            | SWITCH GEAR STATION    |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,371 | TA 16-1371              |                  |            | TRANSPORTAINER         |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,373 | TA 16-1373              |                  |            | SATELLITE DISH         |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,407 | 16-1407-OPN-1           | 03S              | 1S1        | REST ROOM              |           | 4 DAYS PER WEEK | no       |           | HAND WASHINGS     |
| 16 | 1,407 | 16-1407-OPN-1           | 03S              | 1T1        | REST ROOM              |           | 4 DAYS PER WEEK | no       |           | SANITARY WASTE    |
| 16 | 1,413 | TA 16-1413              |                  |            | TRANSPORTAINER         |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,414 | TA 16-1414              |                  |            | TRANSPORTAINER         |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,415 | TA 16-1415              |                  |            | TRANSPORTAINER         |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,416 | TA 16-1416              |                  |            | TRANSPORTAINER         |           | NO DISCHARGE    | no       |           | NO SOURCES        |
| 16 | 1,421 | TA 16-1421              |                  |            | TRANSPORTAINER         |           | NO DISCHARGE    | no       |           | NO SOURCES        |

**NO EPA FORMS WERE PREPARED.**

4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

| PART OR CONTROL NUMBER | ISSUE | CLASS REVIEWED | REVISIONS                                   |   |
|------------------------|-------|----------------|---|---|
|                        |       |                | DESCRIPTION                                 |   |
| NA                     | A     | J-1            | DRAWN BY<br>CHECKER<br>ENGINEER<br>APPROVED | - L. SANCHEZ 5-21-91<br>- L. ABERCROMBIE<br>- D. PALMER |



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

LEGEND  
1FD ---- FLOOR DRAIN

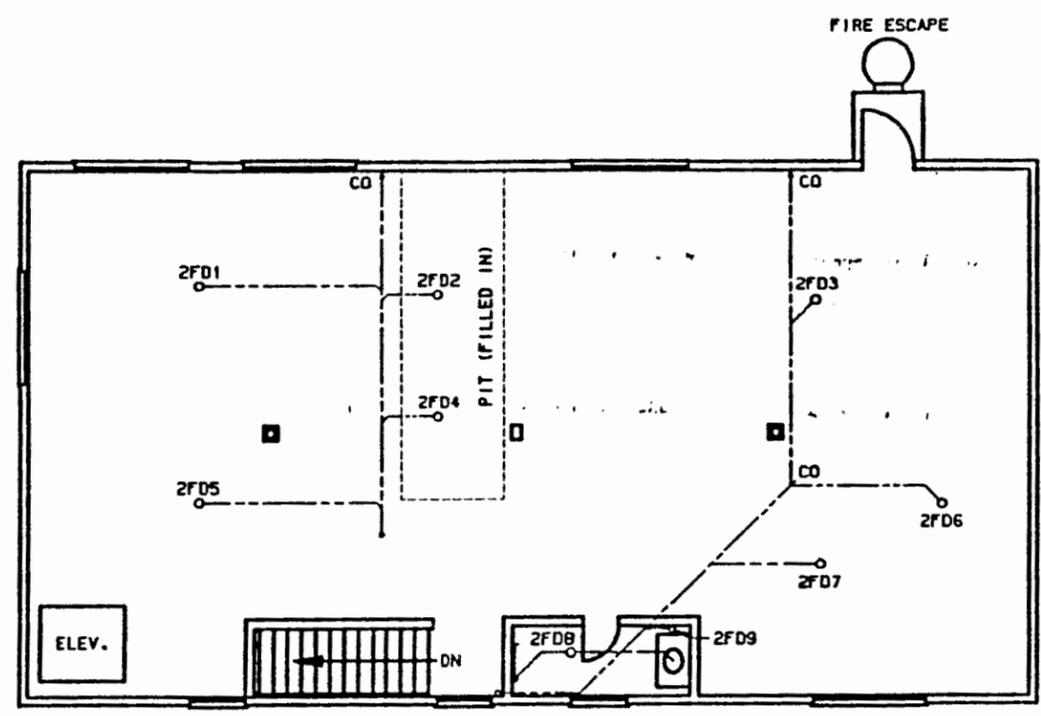
4 UNCLASSIFIED 3 UNCLASSIFIED 2 UNCLASSIFIED 1 UNCLASSIFIED

|   |                                  |                                     |                       |
|---|----------------------------------|-------------------------------------|-----------------------|
| ENGLISH (FT/IN)<br>THIRD ANGLE PROJECTION | PART CODE                        | TITLE (LRIC) TITLE CLASSIFICATION   |                       |
|   | SHEET -                          | FIRST FLOOR PLUMBING AND DRAIN PLAN |                       |
|   | ISSUE A                          | TA-16-54                            |                       |
|   | PART CLASSIFICATION UNCLASSIFIED | SIZE D                              | DRAWING NUMBER BLDG54 |
| DRAWING CLASSIFICATION UNCLASSIFIED       | DATE 09-25-91 18244              | PSOM 88516 SCALE                    | SHEET - OF            |
| STATION                                   | ORIGIN LA-1CEMPLUS-V2.03         |                                     |                       |

**NOTES:**

1. FLOOR IS COMPLETELY COVERED WITH CARPET, MAKING A DEFINITE LOCATION OF DRAINS IMPOSSIBLE.

| PART OR CONTROL NUMBER | REVISIONS |  |
|------------------------|-----------|--|
|                        | ISS       | CLASS REVISED  |
| X.                     | A         | DRAWN BY - VISEL 10-31-90<br>CHECKER - ABERNATHIE<br>ENGINEER - PALMER<br>APPROVED - |



**SECOND FLOOR**  
SCALE  
1/4" = 1'-0"

|                                  |  |                                     |  |                                  |  |
|----------------------------------|--|-------------------------------------|--|----------------------------------|--|
| PART CODE                        |  | SHEET 2                             |  | TITLE (UNC) TITLE CLASSIFICATION |  |
| ISSUE A                          |  |                                     |  | SECOND FLOOR PLAN BLDG. 54       |  |
| PART CLASSIFICATION UNCLASSIFIED |  | DRAWING CLASSIFICATION UNCLASSIFIED |  | DRAWING NUMBER D                 |  |
| ENGLISH (FT/IN)                  |  | THIRD ANGLE PROJECTION              |  | STATUS                           |  |
| 10-25-91 10:29                   |  | PSGN 88516 SCALE                    |  | SHEET 2 OF                       |  |
|                                  |  | ORIGIN LA-1CEMPLUS-V2.03            |  | 1 UNCLASSIFIED                   |  |

GEOMETRIC PRECISION XXX.XXXXXXXXX

DYE STUDY REPORT FOR BUILDINGS

16-7, 16-10, 16-13, 16-16, 16-21, 16-27, 16-54, 16-58, 16-59,  
16-61, 16-63, 16-73, 16-75, 16-76, 16-78, 16-79, 16-80, 16-88,  
16-99, 16-164, 16-171, 16-180, 16-210, 16-243, 16-245,  
16-246, 16-247, 16-332, 16-404, 16-412, 16-421, 16-445,  
16-515, 16-516, 16-517, 16-518, 16-519, 16-520, 16-560,  
16-599, 16-1371, 16-1373, 16-1407, 16-1413,  
16-1414, 16-1415, 16-1416, AND 16-1421

COMPILED BY ENGINEERING AND INFORMATION RESOURCES (WX-12)

BUILDINGS 10, 13, 21, 27, 58, 59, 61, 63, 73, 75, 76, 77, 78, 79 80, 164,  
171, 247, 412, 421, 445, 560, 599, 1371, 1373, 1413, 1414, 1415, 1416, AND  
1421--Field investigated July 12, 1991.

These buildings are abandoned and do not have drains

BUILDING 7--Field investigated July 12, 1991.

This building was not dye tested. The drains discharge to the  
sanitary sewer system.

BUILDING 16--Field investigated July 12, 1991.

This building was not dye tested. The drains discharge to the  
sanitary sewer system.

BUILDING 54--Field investigated July 12, 1991.

| DRAIN No | DRAIN LOCATION | END OF PIPE             |
|----------|----------------|-------------------------|
| 1FD17    | RM 101         | 16-54-OPN-1 septic tank |

BUILDING 88--Field investigated July 12, 1991.

This building was not dye tested. This building does not have utility  
connections.

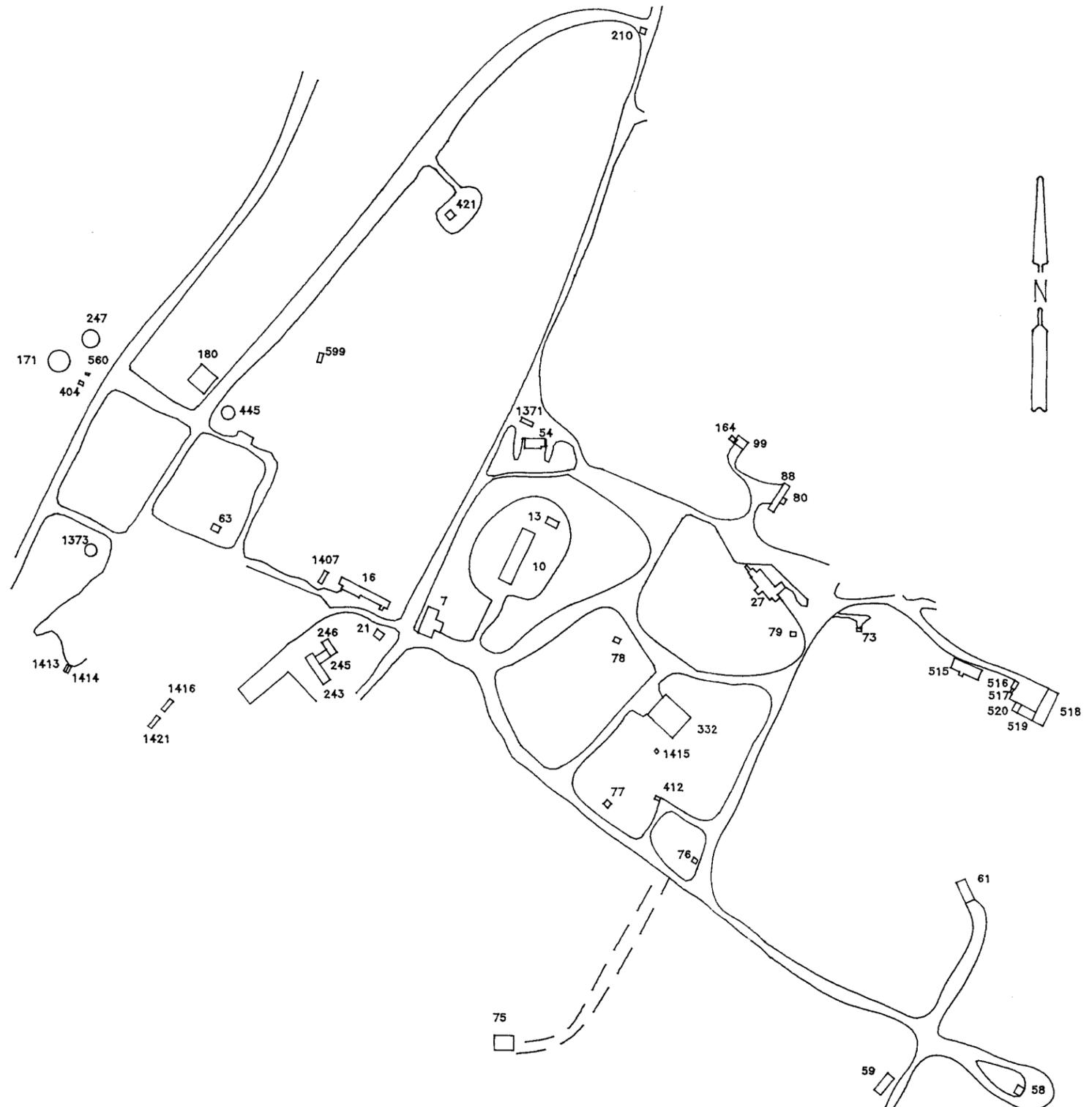
BUILDING 180--Field investigated by Santa Fe Engineering

BUILDING 210--Field investigated by Santa Fe Engineering

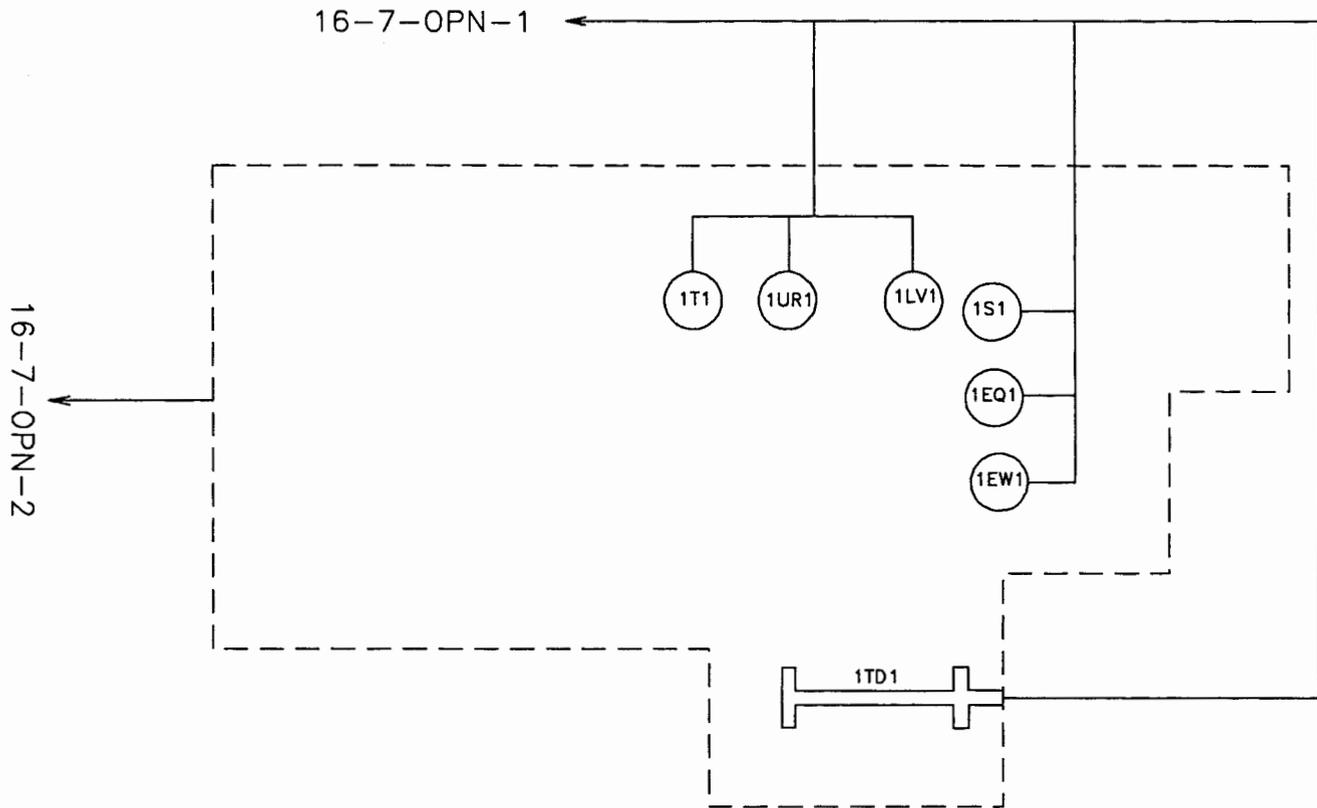
BUILDING 243, 245, and 246--Field investigated by Santa Fe Engineering

BUILDING 515, 516, 517, 518, 519, and 520--Field investigated July 12,  
1991.

These buildings were not dye tested. These buildings do not have  
utility connections.

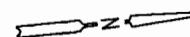


|                                   |             |  |         |
|-----------------------------------|-------------|--|---------|
| <b>SANTA FE ENGINEERING, LTD.</b> |             |  |         |
| TA 16-7 AREA<br>PLOT PLAN         |             | DRAWN  | PEB     |
|                                   |             | DESIGN   | PEB     |
|                                   |             | CHECKED  | LBA     |
|                                   |             | DATE   | 5/15/92 |
| SUBMITTED                         | RECOMMENDED | APPROVED   |         |
| <b>Los Alamos</b>                 |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |         |
| CLASSIFICATION                    |             | REVIEWER   | DATE    |
| REQUESTING DIVISION               | LAB JOB NO. | DRAWING NO.  | REV.    |
| REQUESTING GROUP                  | 11056-12    | FIGURE 1   |         |
|                                   |             | SHEET  | OF      |



LEGEND

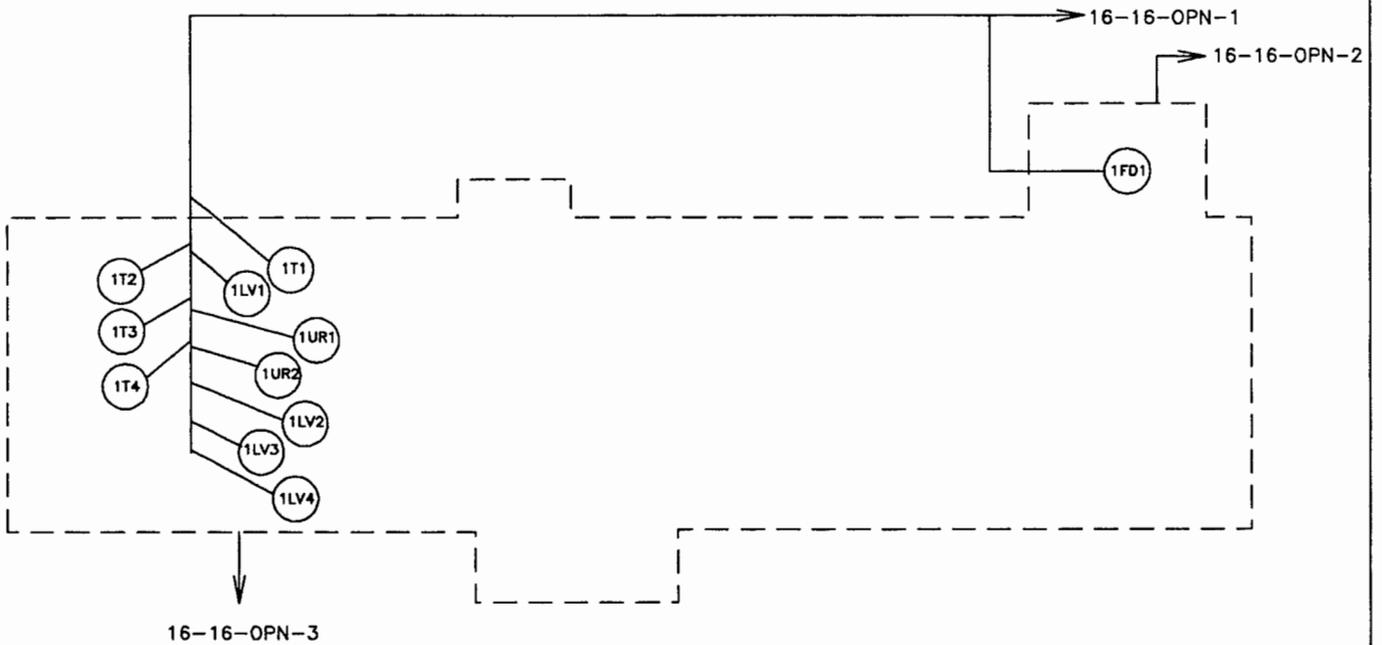
- EQ - EQUIPMENT DRAIN
- EW - EYE WASH
- LV - LAVATORY
- S - SINK
- T - TOILET
- TD - TRENCH DRAIN
- UR - URINAL



NOTES

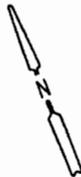
NOTE 1: SCHEMATIC BASED ON ENGINEERING DRAWINGS C-5535, C-37478, C-40971 & R-2742 AND SITE VISIT

|                                     |             |  |         |
|-------------------------------------|-------------|--|---------|
| <b>SANTA FE ENGINEERING, LTD.</b>   |             |  |         |
| TA 16-7 BUILDING<br>DRAIN SCHEMATIC |             | DRAWN  | PEB     |
|                                     |             | DESIGN   | PEB     |
|                                     |             | CHECKED  | LBA     |
|                                     |             | DATE   | 5/18/92 |
| SUBMITTED                           | RECOMMENDED | APPROVED   |         |
| <b>Los Alamos</b>                   |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |         |
|                                     |             | SHEET  | OF      |
| CLASSIFICATION                      |             | REVIEWER   |         |
| REQUESTING DIVISION                 | LAB JOB NO. | DRAWING NO.  |         |
| REQUESTING GROUP                    | 11056-12    | FIGURE 2   |         |
|                                     |             | DATE   | REV.    |



LEGEND

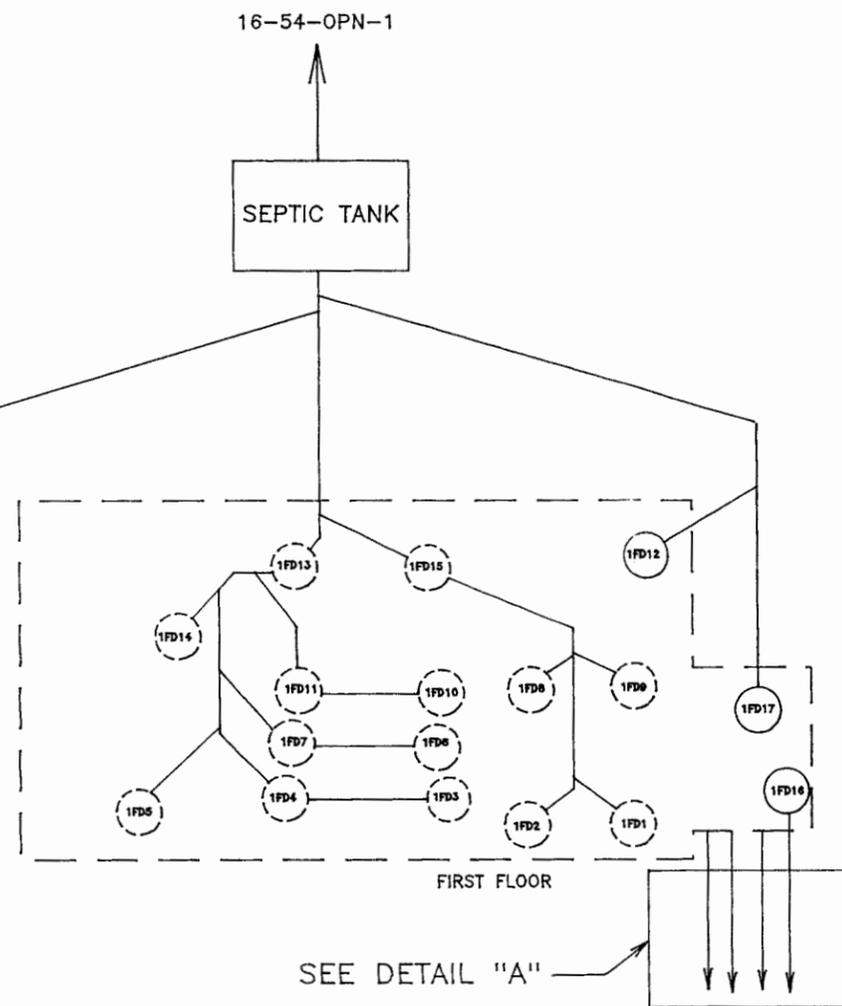
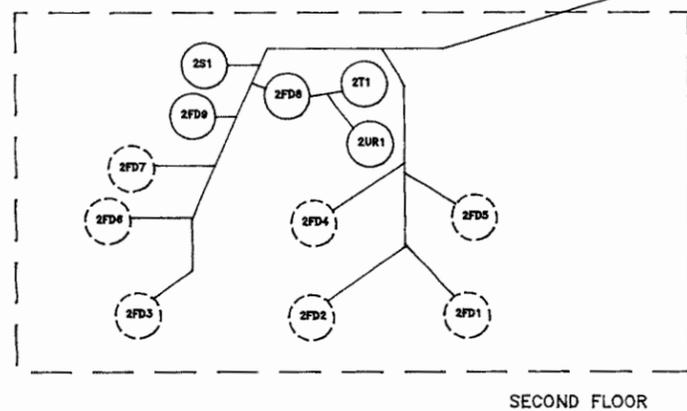
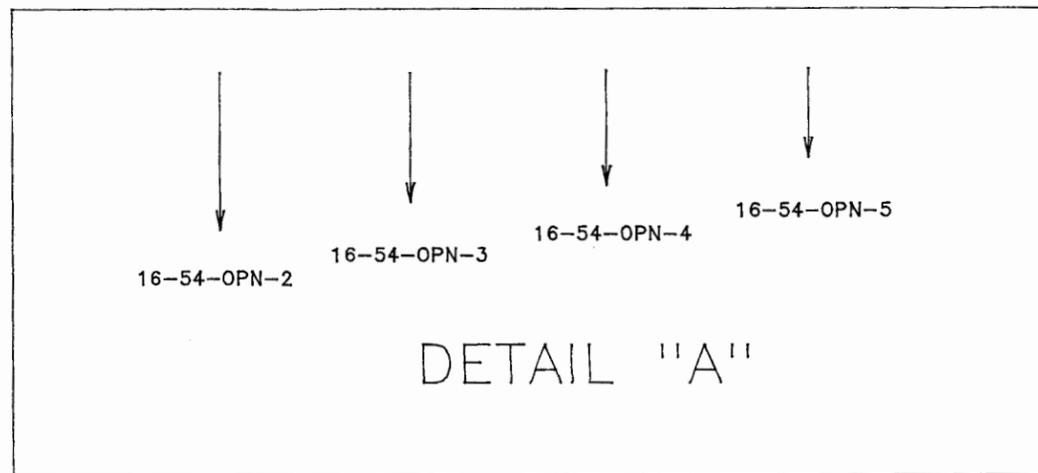
- LV - LAVATORY
- T - TOILET
- UR - URINAL



NOTES

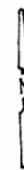
NOTE 1: SCHEMATIC BASED ON ENGINEERING DRAWINGS C-43343 & R-2744 AND SITE VISIT

|                                      |             |  |             |
|--------------------------------------|-------------|--|-------------|
| <b>SANTA FE ENGINEERING, LTD.</b>    |             |  |             |
| TA 16-16 BUILDING<br>DRAIN SCHEMATIC |             | DRAWN  | PEB         |
|                                      |             | DESIGN   | PEB         |
|                                      |             | CHECKED  | LBA         |
|                                      |             | DATE   | 5/18/92     |
| SUBMITTED                            | RECOMMENDED | APPROVED   |             |
| <b>Los Alamos</b>                    |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |             |
| CLASSIFICATION                       |             | REVIEWER   | DATE        |
| REQUESTING DIVISION                  | LAB JOB NO. | DRAWING NO.  |             |
| REQUESTING GROUP                     | 11056-12    | FIGURE 3   |             |
|                                      |             |  | SHEET<br>OF |
|                                      |             |  | REV.        |



LEGEND

- FD - FLOOR DRAIN
- S - SINK
- T - TOILET
- UR - URINAL



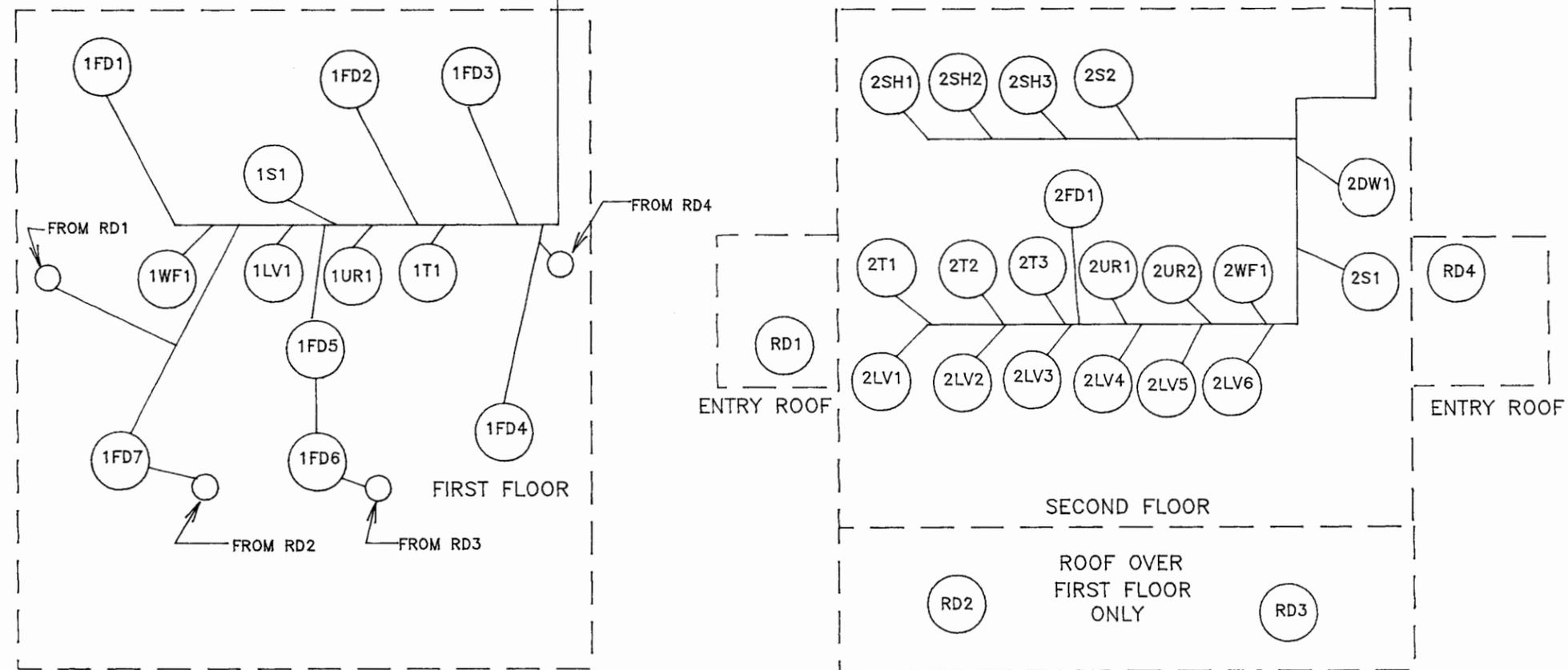
NOTES

NOTE 1: SCHEMATIC BASED ON ENGINEERING DRAWINGS C-5716, C-31343, C-43701, C-45515, SHEETS 1 & 2 and R-2749 AND SITE VISIT

NOTE 2: DASHED CIRCLES INDICATE COVERED DRAINS

| SANTA FE ENGINEERING, LTD.           |             |  |         |
|--------------------------------------|-------------|--|---------|
| TA 16-54 BUILDING<br>DRAIN SCHEMATIC |             | DRAWN  | PEB     |
|                                      |             | DESIGN   | PEB     |
|                                      |             | CHECKED  | LBA     |
|                                      |             | DATE   | 5/15/92 |
| SUBMITTED                            | RECOMMENDED | APPROVED   |         |
| <b>Los Alamos</b>                    |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |         |
| CLASSIFICATION                       | REVIEWER    | DATE   |         |
| REQUESTING DIVISION                  | LAB JOB NO. | DRAWING NO.  | SHEET   |
| REQUESTING GROUP                     | 11056-12    | FIGURE 4   | OF      |
|                                      |             | REV.   |         |

16-180-OPN-1 ←



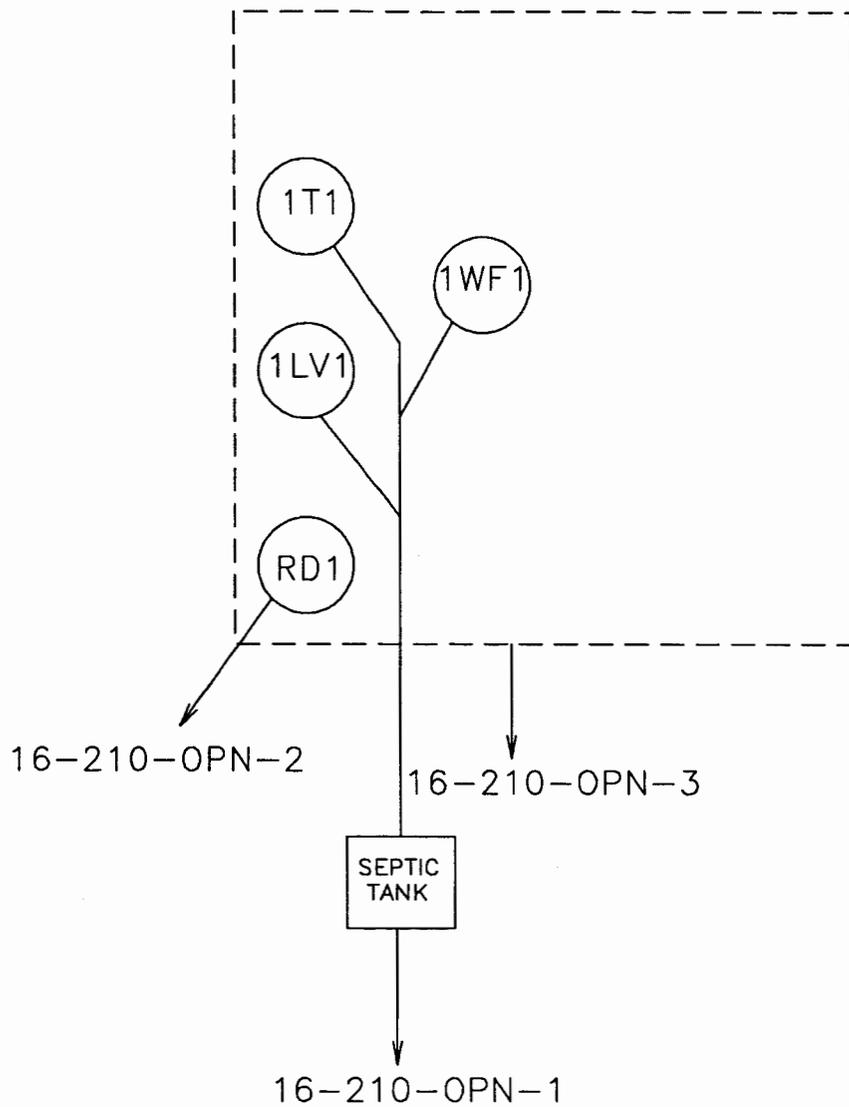
NOTES

NOTE 1: SCHEMATIC BASED ON ENGINEERING DRAWINGS C-7121 & C-7137 AND SITE VISIT

LEGEND

- FD - FLOOR DRAIN
- DW - DISH WASHER
- LV - LAVATORY
- S - SINK
- SH - SHOWER
- T - TOILET
- UR - URINAL
- WF - WATER FOUNTAIN

|                                       |             |  |             |
|---------------------------------------|-------------|--|-------------|
| <b>SANTA FE ENGINEERING, LTD.</b>     |             |  |             |
| TA 16-180 BUILDING<br>DRAIN SCHEMATIC |             | DRAWN  | PEB         |
|                                       |             | DESIGN   | PEB         |
|                                       |             | CHECKED  | LBA         |
|                                       |             | DATE   | 5/18/92     |
| SUBMITTED                             | RECOMMENDED | APPROVED   |             |
| <b>Los Alamos</b>                     |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |             |
| CLASSIFICATION                        | REVIEWER    | DATE   | SHEET<br>OF |
| REQUESTING DIVISION                   | LAB JOB NO. | DRAWING NO.  | REV.        |
| REQUESTING GROUP                      | 11056-12    | FIGURE 5   |             |



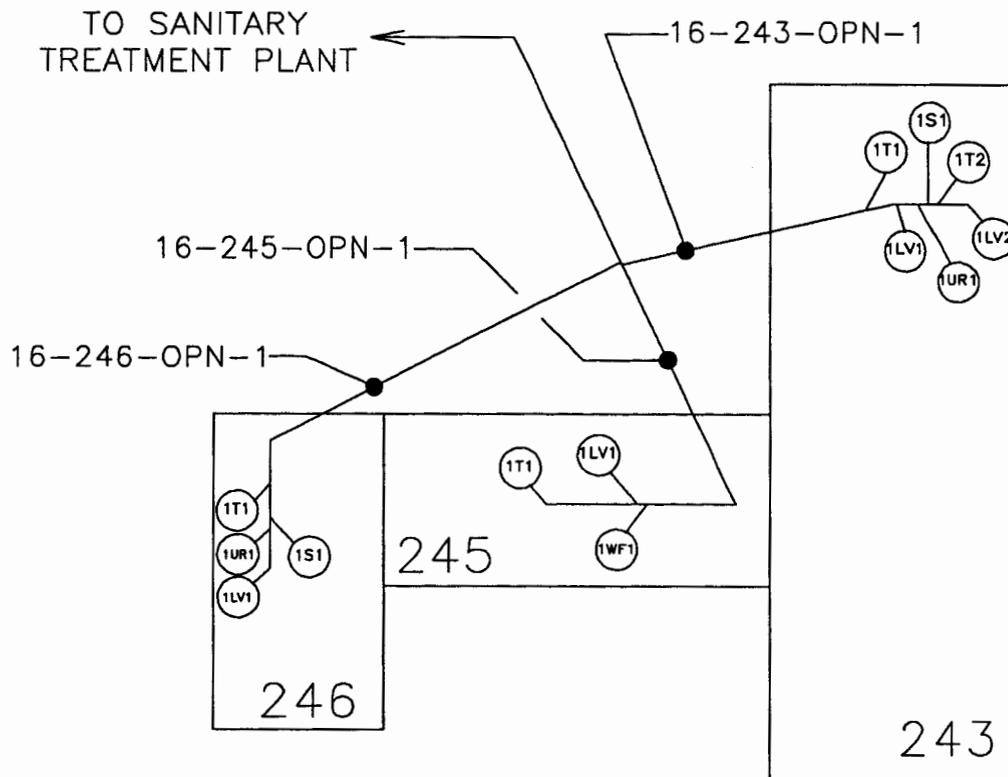
LEGEND

- LV - LAVATORY
- RD - ROOF DRAIN
- T - TOILET
- WF - WATER FOUNTAIN

NOTES

NOTE 1: SCHEMATIC BASED ON ENGINEERING DRAWINGS C-7128, C-7164 & R-2789 AND SITE VISIT

|                                       |             |  |         |
|---------------------------------------|-------------|--|---------|
| <b>SANTA FE ENGINEERING, LTD.</b>     |             |  |         |
| TA 16-210 BUILDING<br>DRAIN SCHEMATIC |             | DRAWN  | PEB     |
|                                       |             | DESIGN   | PEB     |
|                                       |             | CHECKED  | LBA     |
|                                       |             | DATE   | 5/18/92 |
| SUBMITTED                             | RECOMMENDED | APPROVED   |         |
| <b>Los Alamos</b>                     |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |         |
|                                       |             | SHEET  | OF      |
| CLASSIFICATION                        |             | REVIEWER   |         |
| REQUESTING DIVISION                   | LAB JOB NO. | DATE   |         |
| REQUESTING GROUP                      | 11056-12    | FIGURE 6   |         |
|                                       |             | DRAWING NO.  | REV.    |



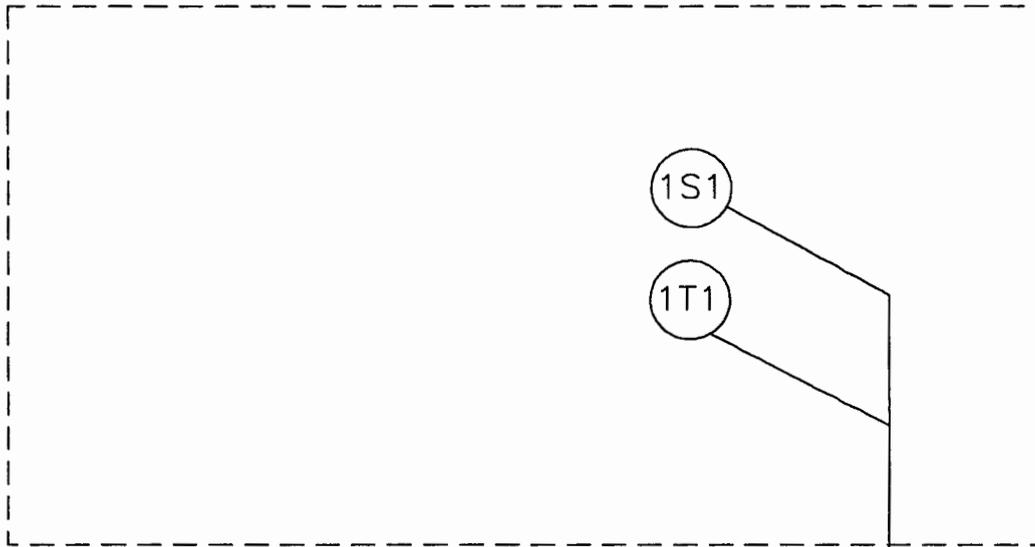
LEGEND

- LV - LAVATORY
- S - SINK
- T - TOILET
- UR - URINAL
- WF - WATER FOUNTAIN

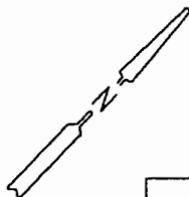
NOTES

NOTE 1: SCHEMATIC BASED ON ENGINEERING DRAWINGS C-44690, C-44691, R-5276 & R-5584 AND SITE VISIT

|  |             |                         |               |
|--|-------------|-------------------------|---------------|
| <b>SANTA FE ENGINEERING, LTD.</b>  |             |                         |               |
| TA 16-243, 245 & 246<br>DRAIN SCHEMATIC  |             | DRAWN<br>PEB            | DESIGN<br>PEB |
|  |             | CHECKED<br>LBA          |               |
|  |             | DATE<br>5/18/92         |               |
| SUBMITTED  | RECOMMENDED | APPROVED                |               |
| <b>Los Alamos</b> Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |             |                         | SHEET<br>OF   |
| CLASSIFICATION   |             | REVIEWER                |               |
| REQUESTING DIVISION  | LAB JOB NO. | DATE                    |               |
| REQUESTING GROUP   | 11056-12    | DRAWING NO.<br>FIGURE 7 |               |
|  |             |                         | REV.          |



16-1407-OPN-1



LEGEND

S - SINK

T - TOILET

NOTES

NOTE 1: SCHEMATIC BASED ON SITE VISIT

|  |             |  |          |
|--|-------------|--|----------|
| <b>SANTA FE ENGINEERING, LTD.</b>      |             |  |          |
| TA 16-1407 BUILDING<br>DRAIN SCHEMATIC |             | DRAWN  | PEB      |
|  |             | DESIGN   | PEB      |
|  |             | CHECKED  | LBA      |
|  |             | DATE   | 5/18/92  |
| SUBMITTED                              |             | RECOMMENDED  | APPROVED |
| <b>Los Alamos</b>                      |             | Los Alamos National Laboratory<br>Los Alamos, New Mexico 87545 |          |
|  |             | SHEET  | OF       |
| CLASSIFICATION                         |             | REVIEWER   | DATE     |
| REQUESTING DIVISION                    | LAB JOB NO. | DRAWING NO.  | REV.     |
| REQUESTING GROUP                       | 11056-12    | FIGURE 8   |          |