Minor

OPERATION AND MAINTENANCE

Activity Plan

Grout Manhole P34 Near 281-5F

Prepared by: KIMBERLY PRICE (Affiliate) Digitally signed by KIMBERLY PRICE (Affiliate) Date: 2023.11.01 06:19:28 -04'00' _____ _____

Kimberly A. Price, F Area Complex ECA Date

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Ryan McDaniel, Operational Compliance Manager Date

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Donald Parkman, FAC Ops Support Manager Date

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Claudia Mora Bermudez, RPD FLM Date

1. INTRODUCTION

This Operation and Maintenance (O&M) Plan is being written to support work activities planned to grout manhole P34. This activity will isolate the discharge pathway of industrial wastewater generated in F-Area Complex (FAC) from the 281-5F basin to the storm sewer that eventually discharges to the FM-3 outfall. Although most O&M plans include excavation, no excavation is required for this action. The work meets the definition of an O&M activity because it is required to maintain or support the operations of a facility. This work will be within Site Index (SI) 563 as shown in Attachment 1 with the Site Evaluation Areas (SE Areas) identified in red (Ref. 1) and Attachment 2. This O&M Plan is characterized as "minor intrusive" because the activity will impact less than 10% of the surface area of the SE Areas.

The current flow rate measurement method (i.e., staff gauge and chart conversion) at the F-08 outfall has been determined to be an opportunity for improvement to the National Pollutant Discharge Elimination System (NPDES) Industrial Wastewater flow reporting for this outfall. A pilot study, evaluating Teledyne LaserFlow® Velocity Sensor flow rate measurement equipment, identified the trial equipment as inappropriate for the application. In addition to equipment issues, safety concerns surrounding the culvert and road at the current outfall location were also identified. Relocation of the F-08 outfall may be the best option to achieve continued NPDES compliance for FAC (Ref. 2).

It has been determined by FAC Engineering that the only industrial wastewater discharge that FAC currently discharges to F-08 outfall is from the F/H Lab Service Floor sumps. This consists primarily of condensate from the air handling units, steam condensate, domestic water that is used for cooling Instrument Air Compressor 3, and stormwater. It is currently discharged through the F-Canyon Segregated Cooling water system toward 281-5F delaying basin. The process sewer line configuration currently allows wastewater to travel in one of three pathways to its final discharge location, the F-08 outfall. Through the first pathway, wastewater travels in the process sewer from 772-F to the 241-97F retention basin. The second pathway allows the wastewater to feed from 772-F into the 281-5F basin, then to the 241-97F basin. Wastewater from the 241-97F basin is routinely pumped by SRMC to the F-13 outfall that feeds into a ditch that ultimately discharges through the F-08 outfall. The third pathway allows the wastewater to flow from 772-F to the 281-5F basin, then through the storm sewer line to manhole P34, then to the liquid surveillance outfall, FM-3. FM-3 flows into the same ditch as F-13 and is ultimately discharged via the F-08 outfall. A flow diagram of these current possible pathways can be found in Attachment 3. Two tracer dyes studies were performed to confirm this flow path. The first study (Ref. 3) confirmed that FAC contributes process water from F/H Lab sumps to both the F-13 and FM-3 Outfalls. The second study (Ref. 4) confirmed that wastewater flows from Manhole P34 to the FM-3 Outfall and does not flow from this manhole to the process sewer system that leads to F-13. Regardless of flow path, all F/H Lab sump wastewater currently flows to the F-08 Outfall that ultimately discharges directly into Fourmile Branch.

Radiological liquid effluent sample results for the sampling period of June and August 2022 indicated elevated levels of U-234, U-235, U-238, Gross Alpha, and Gross Beta. These elevated levels are likely due to legacy contamination in the sludge of the basin that may be occasionally stirred up and discharged with process and rain waters from 281-5F. The

1. INTRODUCTION (cont.)

resolution includes the isolation of the discharge pathway from the 281-5F basin to the storm sewer that eventually discharges to the FM-3 outfall (Attachment 4, Ref. 5). This isolation will result in all future water travelling through the 281-5F basin (i.e., process and rainwater) to be directed to the segregated water line, then the 241-97F basin, and ultimately the F-13 outfall. Once all process water from FAC is directed to the segregated water line, the location of the F-08 outfall will be moved to the F-13 outfall location. This change will require a modification to either the SCDHEC NPDES Industrial Wastewater Permit (Ref. 6) or the SCDHEC 2C NPDES Industrial Wastewater Permit Application. This requirement is dependent upon SCDHEC personnel staffing and the status of the current application and/or permit at the time of the modification.

2. AREA DESCRIPTION AND CONDITIONS

Contaminants of interest near the work area include:

The following Site Evaluation Areas exist within 200 feet of this work location:

1) Waste Unit ID 283, F-Area Tank Farm, 241-F
   Location: F-Area
   Contaminants: Unknown alpha, beta, gamma, and metals

2) Waste Unit ID 504, Fourmile Branch Integrator Operable Unit (Including the Un-named Tributary of Fourmile Branch South of C Area)
   Location: F-Area
   Contaminants: Unknown alpha, beta, gamma, and metals

3) Waste Unit ID 563, F-Area Process Sewer Lines as Abandoned, NBN
   Location: F-Area
   Contaminants: Unknown alpha, beta, gamma, and metals

A site evaluation has not been performed and impacts to the IOU have not been determined.

3. O & M ACTIVITY

A. O & M Activity Description

The scope of this activity is to configure the flow of water so that wastewater leaving the 281-5F delaying basin is diverted to the process line (see Attachments 3-4, Ref. 5). There are two (2) 2 storm sewer pipes located within manhole P34 that route wastewater to the FM-3 outfall that will be plugged per the guidance in Design Change Form No. M-DCF-F-05070. Only one storm sewer pipe was able to be confirmed during physical walkdowns due to water being present in the manhole (see Attachment 5). Manhole P34 will be grouted using a grout mix design designation ZB-FF-8-D-B to permanently isolate the storm sewer connection at manhole P34.

B. O&M Activity Sampling and Monitoring for Health and Safety

The identified units are in the FFA because of possible radiological contamination from past releases from Site operations.

Radiological surveys will be required during construction within the buffer zone. If radiological contamination is encountered, Radiological Protection Department (RPD) will determine if protective equipment and/or personnel access restrictions are required.

The work area will be barricaded with rope or rigid handrail to ensure that access is controlled for personnel safety around the work area. Worker health and safety will be directed and controlled as required in the work package and Assisted Hazard Analysis (AHA).

C. Health and Safety Plan

The health and safety concerns involve worker exposure to contaminants of interest listed in Section 2 above.

The Work Order and/or AHA for these activities will contain instructions to comply with this plan.

The safety requirements and personal protective equipment described in these documents is appropriate for the potential hazards of the waste units.

D. Characterization and Sampling Plan for the Affected Area within the Unit

No material will be removed under this scope of work. If any unknown waste material is generated as a result of this activity, it will be managed and disposed of following the guidance of the F-Area Environmental Compliance Authority (ECA), Generation Certification Official (GCO) and RPD.

E. Contaminated Materials Management and/or Disposal

Radiological contamination could be present within manhole P34. All waste will be disposed of in accordance with guidance from RPD, GCO, and the ECA.

F. Environmental Plans and Permit Modification Requests

This change will require a modification to either the South Carolina Department of Health and Environmental Control (SCDHEC) National Pollutant Discharge and Elimination System (NPDES) Industrial Wastewater Permit (Ref. 5) or the SCDHEC 2C NPDES Industrial Wastewater Permit Application. This requirement is dependent upon SCDHEC personnel staffing and the status of the current application and/or permit at the time of the modification.

4. CONTINGENCY PLAN

If at any time during the implementation of the activity, the conditions change such that the activity is no longer considered "minor" (as defined in Reference 1) or any other unanticipated event occurs, the Project Manager or ECA shall:

- Immediately notify the SRNS-OSC. The SRNS-OSC will notify the DOE-OSC.
- Contain and stabilize the area, investigate as necessary to determine the necessary change in the activity plan, secure the area, and stop work.
- Update the SRNS-OSC as to the findings and the requested path forward. The SRNS-OSC will communicate the information to the DOE-OSC and obtain concurrence on the path forward.

5. DOCUMENTATION AND REPORTING

The Project Manager or ECA will transmit the following documentation to the SRNS-OSC by the 31st day of the month the activity was completed:

- The signed O&M plan,
- Any sampling and characterization data collected,

The following information is not expected to be generated by this activity, but, if generated, will be forwarded to the SRNS-OSC:

- Quantity of contaminated materials generated, and
- Treatment, storage, and disposal location of contaminated material.

6. ATTACHMENTS

Attachment 1. Potentially Impacted Site Evaluation Areas and O&M Activity Locations Drawing

Attachment 2. Map of O&M Activity Locations

Attachment 3. Flow Diagram

Attachment 4. Excerpt from Drawing SM5-2-106 Displaying Location of Manhole P34

Attachment 5. Excerpt of Area Specific Map – F-Area

Attachment 6. Photo of the Interior of Manhole P34

7. REFERENCES

1. WSRC-RP-96-45, *Savannah River Site Plan for Performing Maintenance in Federal Facility Agreement Area (O&M) Plan (U)*, December 15, 1996.

2. SRNS-J2600-2022-00021, *Isolation of Storm Sewer Line at Manhole #P34*, September 26, 2022.

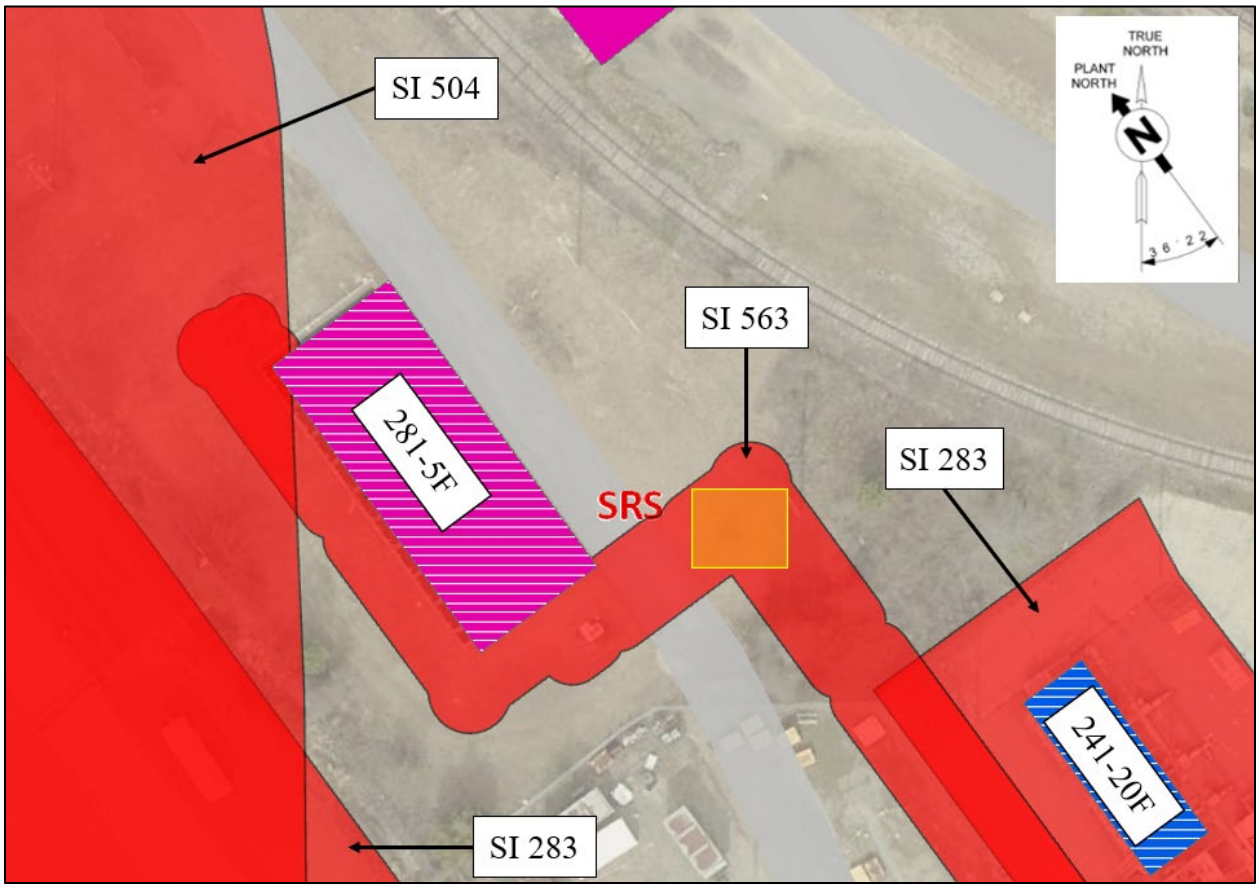
3. SRNS-TR-2022-00688, *Report on the 2022 Tracer Dye Study to Evaluate Inputs from F-Area Complex to the F-13 and FM-3 Outfalls*, December 7, 2022.

4. Q-RPT-F-00016, *Report on the 2023 Tracer Dye Study to Confirm Flow Path of Wastewater from Manhole P34 to the FM-3 Outfall*, October 4, 2023.

5. SM5-2-106, *Process Sanitary and Storm Sewer Manhole Location Inside Area Fence*, May 2, 1962.

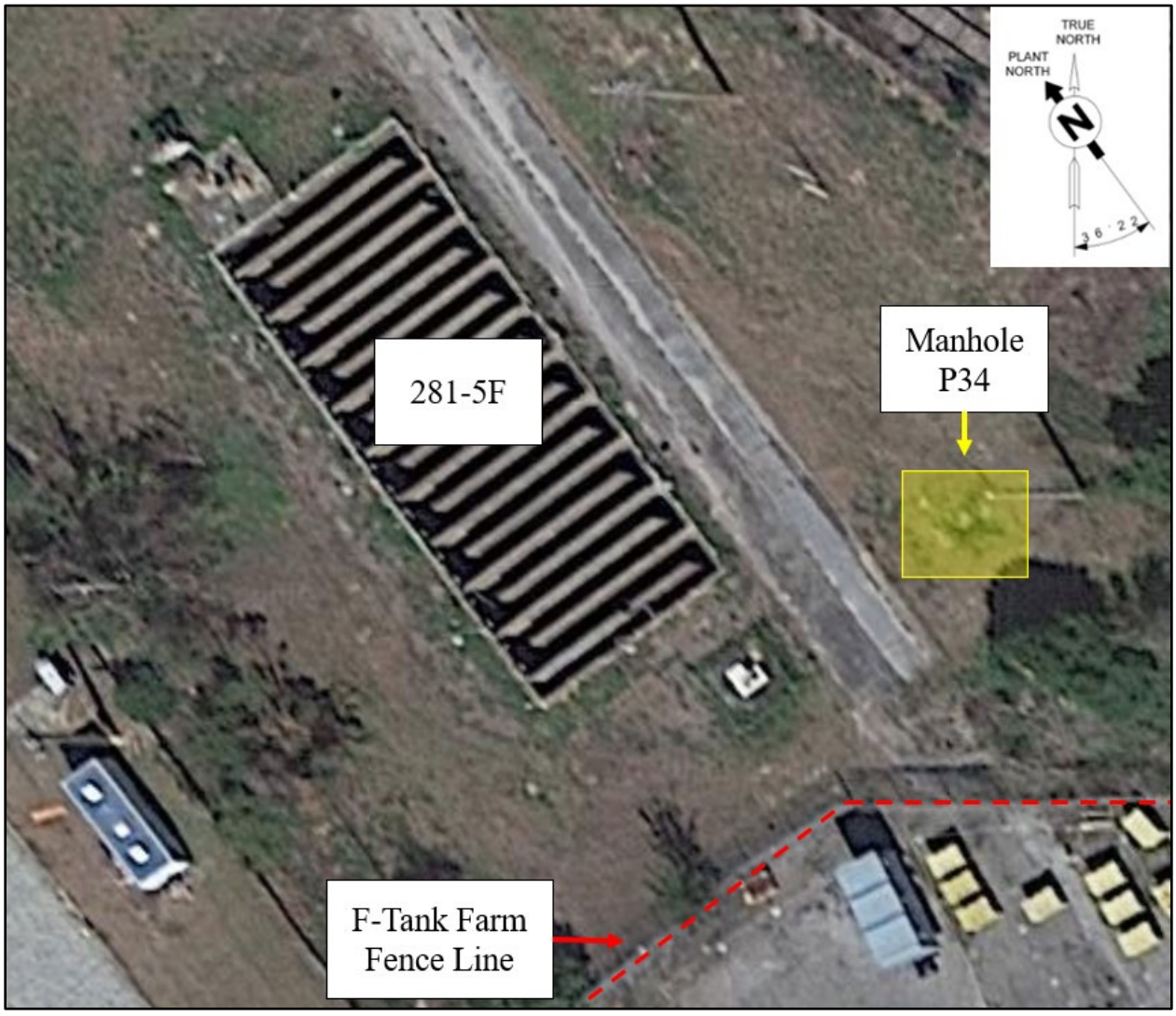
6. SC0000175, *South Carolina Department of Health and Environmental Control National Pollutant Discharge Elimination System Permit for Discharge to Surface Waters*, November 30, 2008.

ATTACHMENT 1
Potentially Impacted Site Evaluation Areas and O&M Activity Locations Drawing
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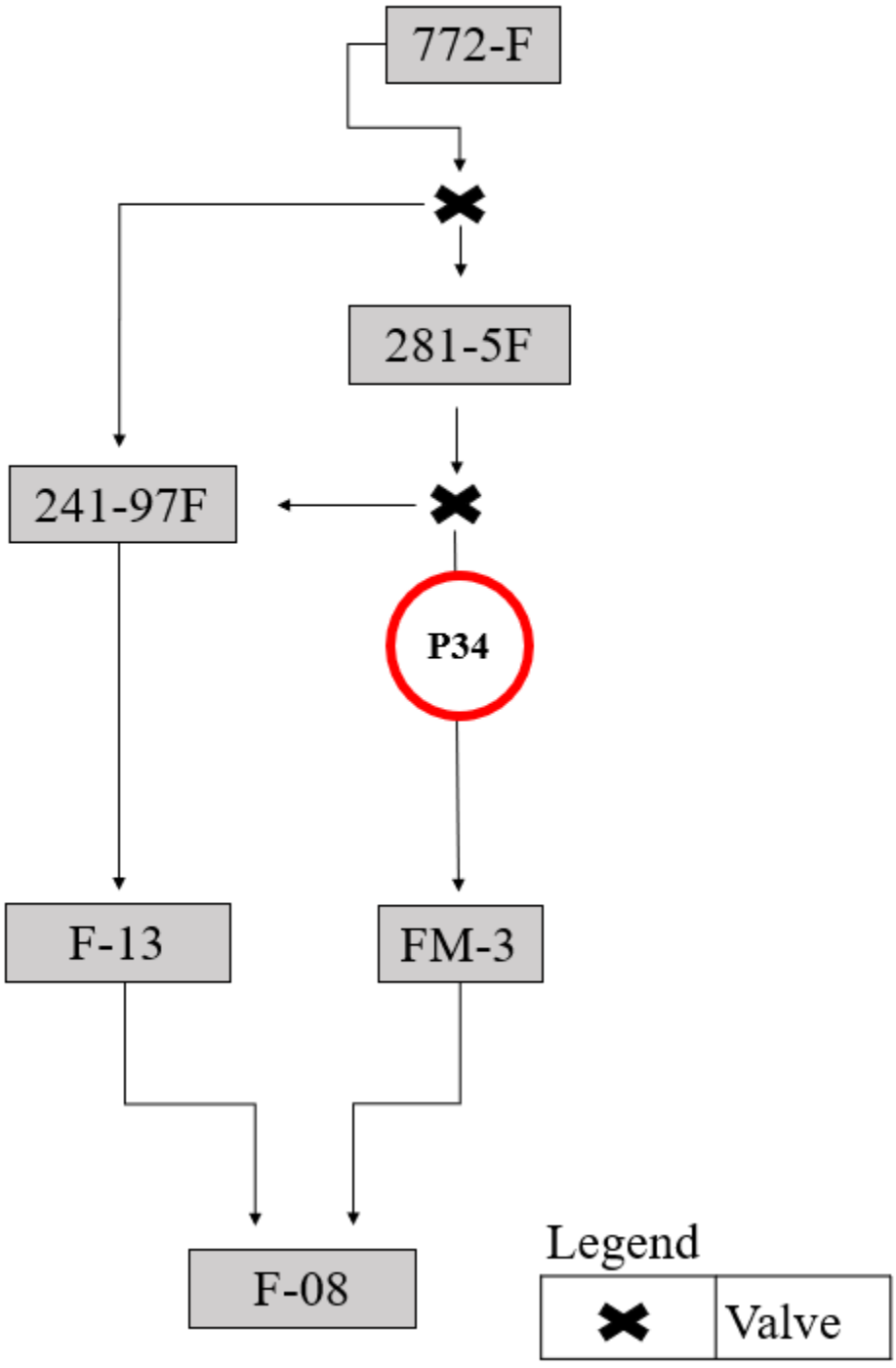
Site Evaluation Areas are identified in red. Location of O&M activities have been denoted with a yellow square.

ATTACHMENT 2
Map of O&M Activity Locations
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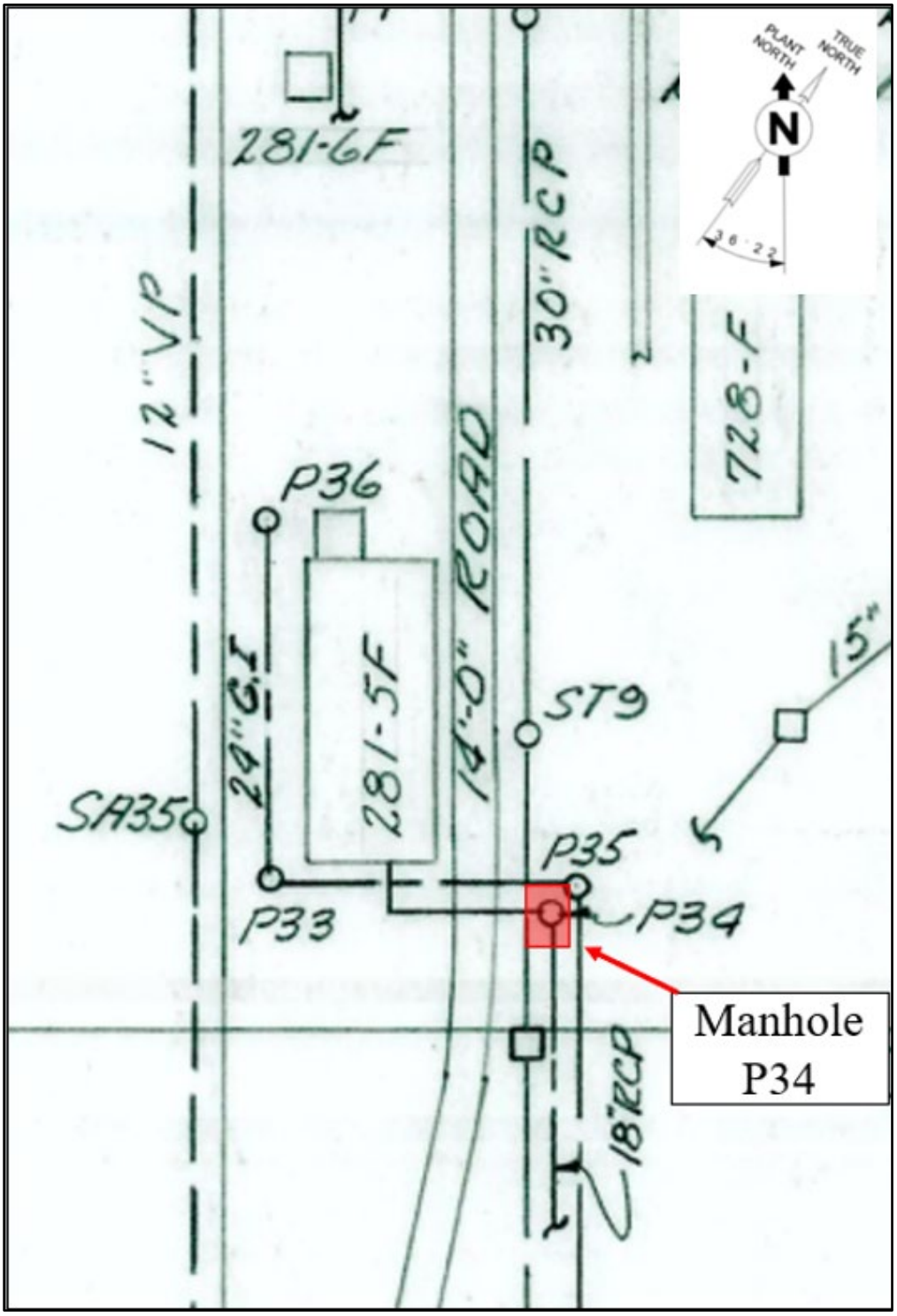


Site of manhole P34 to be grouted is indicated by the yellow rectangle.

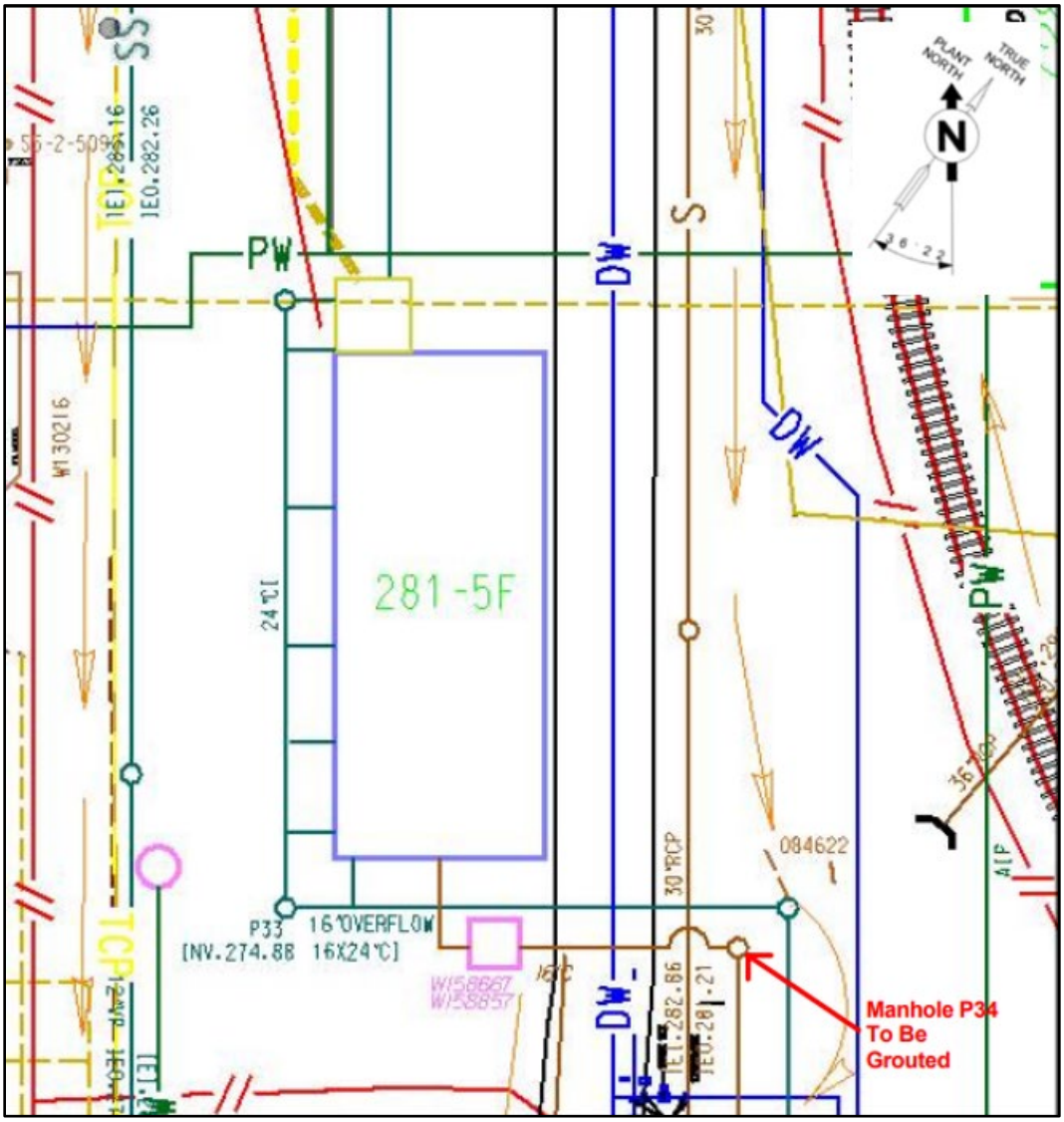
ATTACHMENT 3
Flow Diagram
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ATTACHMENT 4
Excerpt from Drawing SM5-2-106 Displaying Location of Manhole P34
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ATTACHMENT 5
Excerpt of Area Specific Map – F-Area
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ATTACHMENT 6
Photo of the Interior of Manhole P34
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