

Contract Drawings

CHEMICAL FEED EQUIPMENT CONVERSIONS FOR SODIUM HYPOCHLORITE DISINFECTION

Project #587346

Contract No. 5 - General

General Notes:

1. The Contractor shall provide all labor, materials and equipment required to complete the work specified in these contract documents.
2. All work shall be completed in accordance with all applicable local, state, and federal regulations, including the most recent addendum to these regulations.
3. All work shall be completed in accordance with the requirements of these project documents. Any discrepancies or errors in the contract documents shall be resolved by this Department's representative prior to proceeding with the work in question.
4. All work is to be completed in a first class manner by qualified and skilled tradespersons.
5. The Contractor shall be responsible for familiarizing him and/or herself with each project location, and coordinating all work necessary to complete the work scheduled in these documents in a timely manner. All work scheduled as part of this project shall be scheduled so as to minimize the interference with the normal operations of the facilities. The Contractor shall notify this Department a minimum of 48 hours prior to performing any work which may affect or disrupt the operations of the existing facilities.
6. The contract drawings herein are to provide information regarding existing conditions and the configuration for the new work. For sake of clarity, these drawings may not include all existing conditions. The contractor is responsible for verifying all dimensions and existing conditions in the field.
7. The Contractor shall be responsible for protecting and securing the site of the work from trespass, unauthorized entry, malicious mischief and vandalism. The Contractor shall maintain the site in a safe, neat and orderly condition, and shall promptly remove on a regular basis all dirt, rubbish and debris resulting from their work.
8. All materials and equipment removed as part of this contract shall become the property of the Contractor and removed immediately from the project site unless otherwise notified by this Department. All material removed from site shall be disposed of in accordance with all applicable local, state, and federal regulations at the Contractor's expense.
9. All materials, equipment and workmanship shall be subject to inspection and testing by this Department's representative, including work already completed but not finally accepted. No work shall be covered or otherwise concealed without this Department's representative being afforded the opportunity to inspect same.
10. The Contractor shall, at their own expense, sustain in their places and permanently protect from direct or indirect injury any and all utilities, structures and property in the vicinity of their work, whether over or underground, or which appear within the trench or excavations. The Contractor shall assume all costs and expenses for direct or indirect damage which may be occasioned by injury to any of them.

Project Locations:

1. **Brewerton Water Pollution Control Plant (WPCP)**
2. **Baldwinsville - Seneca Knolls Water Pollution Control Plant**
3. **Wetzel Road Sewage Treatment Plant (STP)**
4. **Oak Orchard Water Pollution Control Plant**

June 1999

**County of Onondaga
Department of Drainage and Sanitation
Syracuse, New York**

Drawing Index:

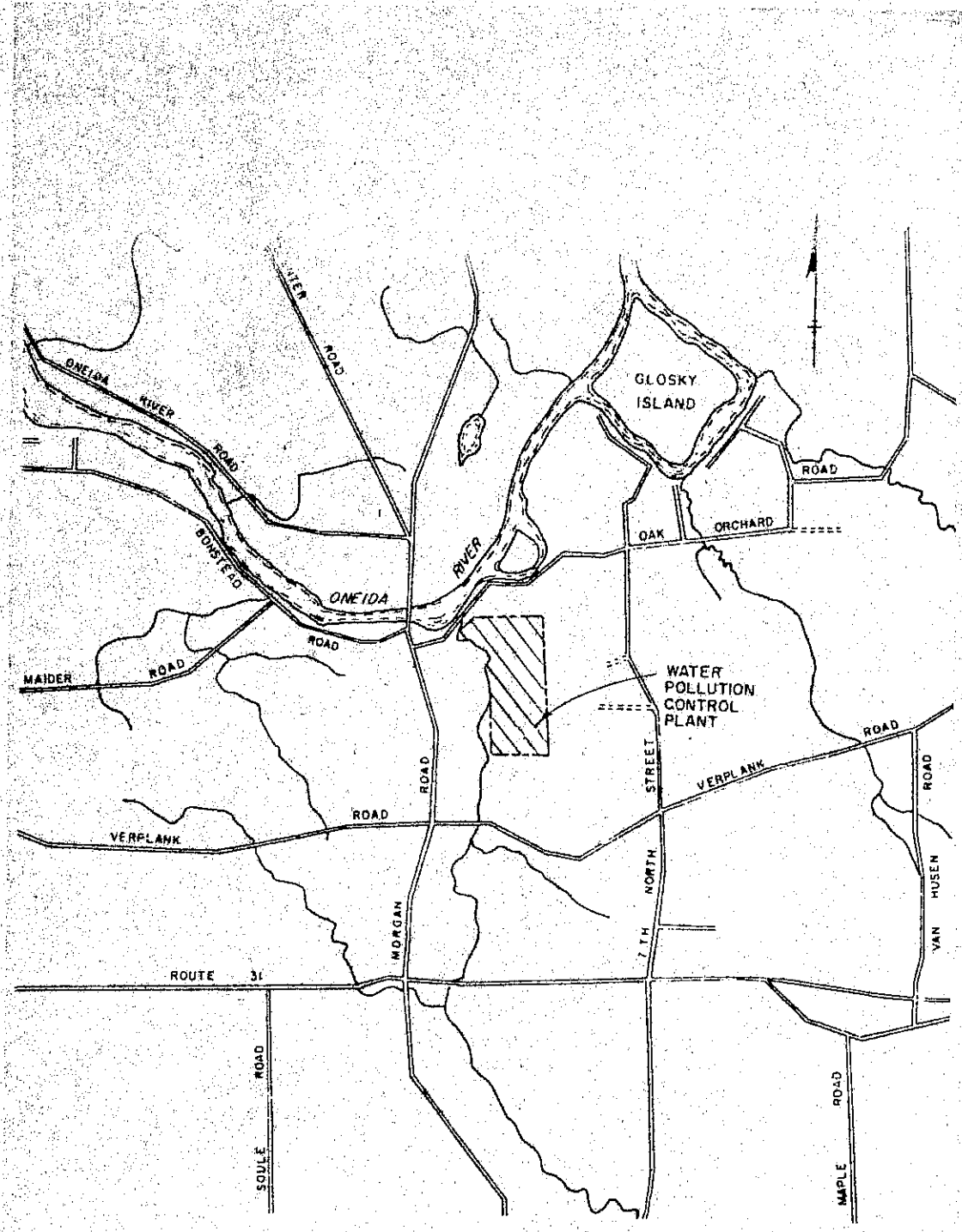
Cover Sheet

1. Chemical Feed Equipment Conversions: Brewerton WPCP
2. Chemical Feed Equipment Conversions: Brewerton WPCP - New Chemical Feed and Water Lines
3. Chemical Feed Equipment Conversions: Baldwinsville-Seneca Knolls WPCP
4. Chemical Feed Equipment Conversions: Wetzel Road STP
5. Chemical Feed Equipment Conversions: Baldwinsville-Seneca Knolls and Wetzel Road
6. Chemical Feed Equipment Conversions: Oak Orchard WPCP
7. Chemical Feed Equipment Conversions: Oak Orchard WPCP
8. Chemical Feed Equipment Conversions: Details
9. Chemical Feed Equipment Conversions: Electrical
10. Chemical Feed Equipment Conversions: Electrical

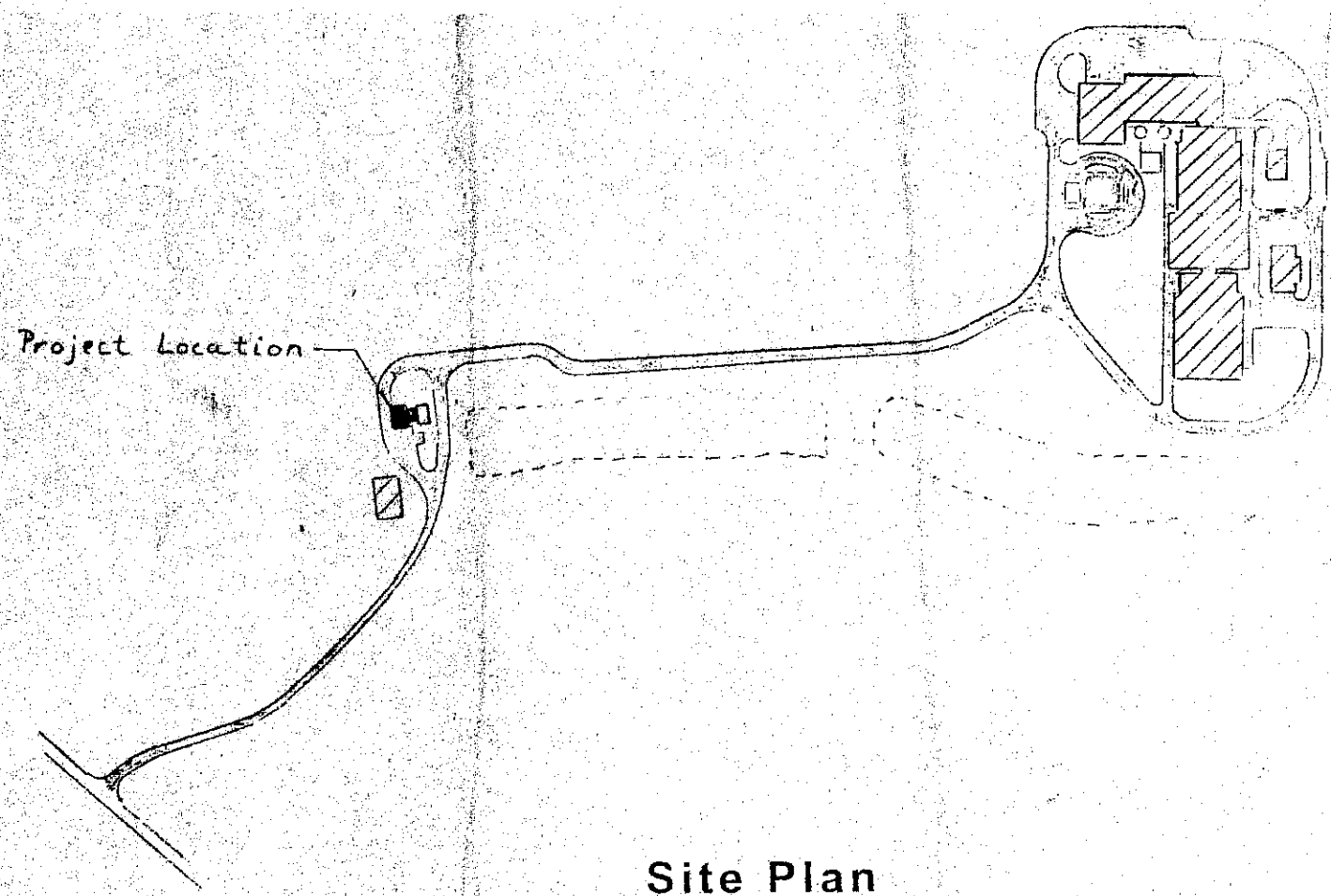


K. Karanik
John M. Karanik
Commissioner

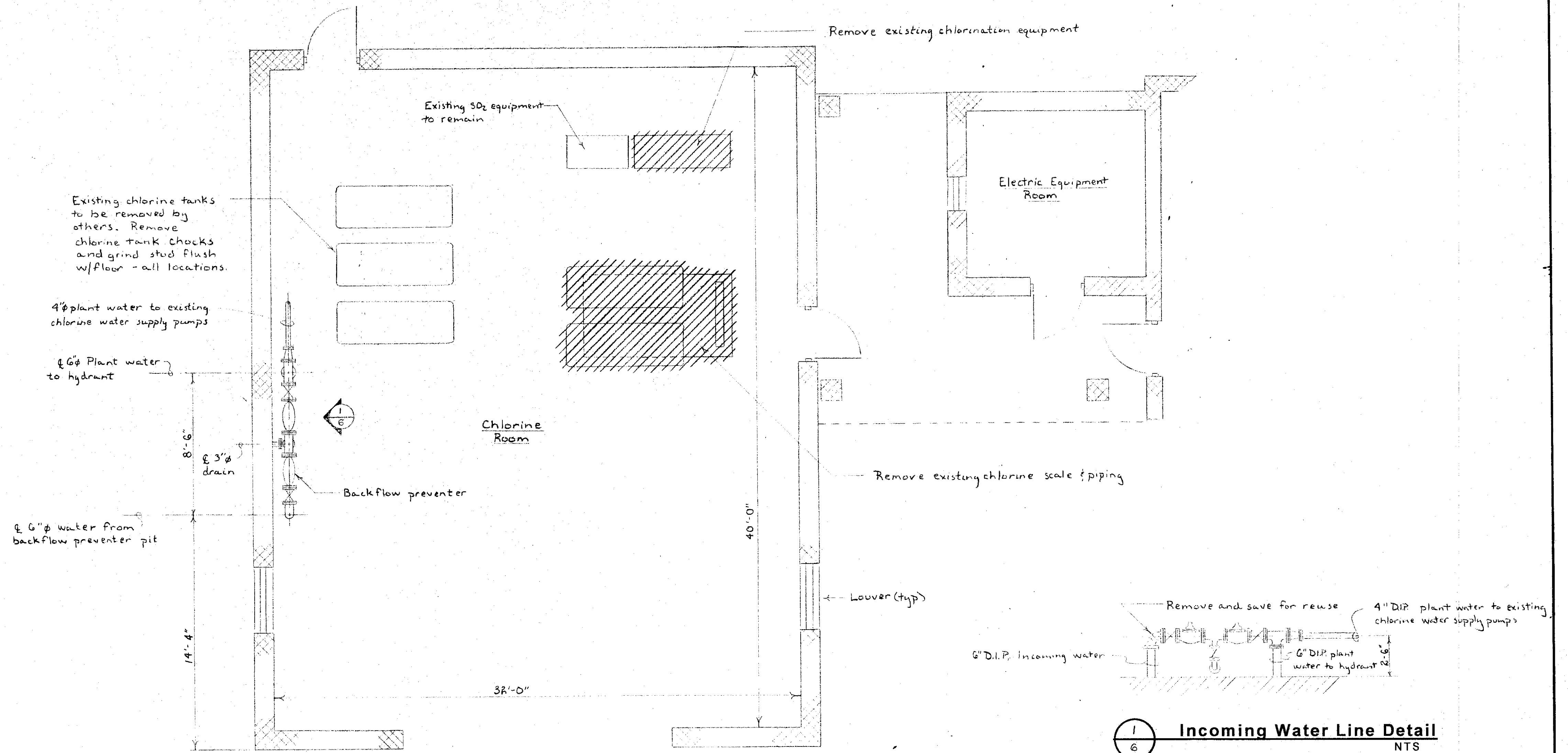
Date



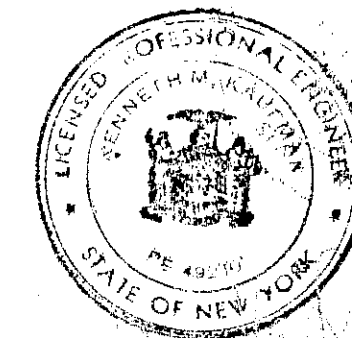
LOCATION MAP



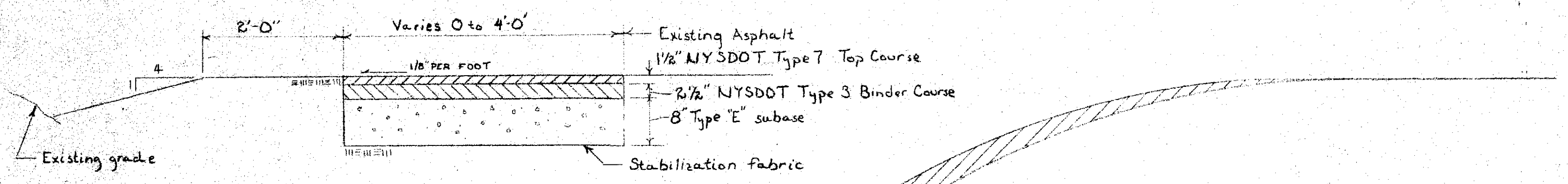
Site Plan
N.T.S.



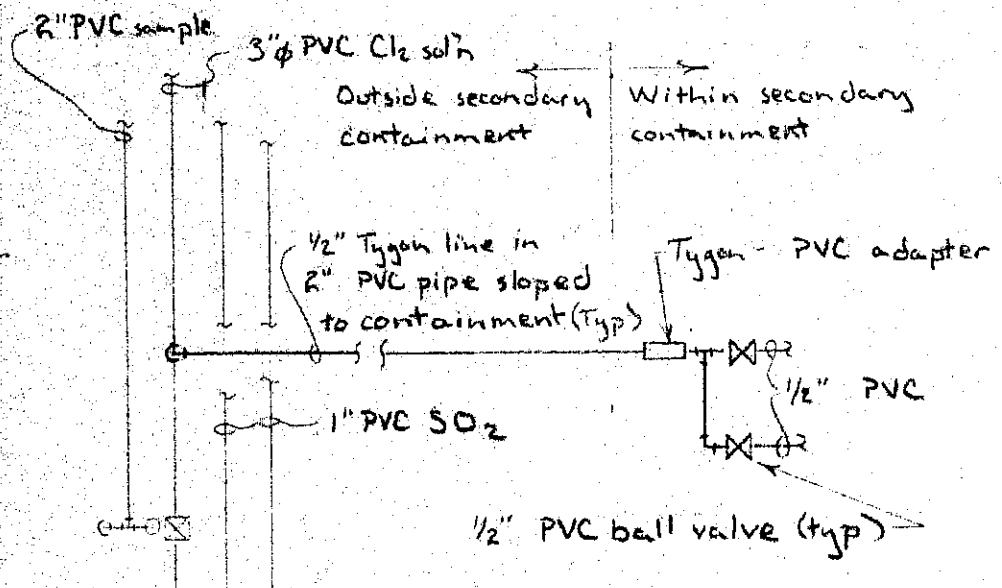
Existing Chlorine Feed System
N.T.S.



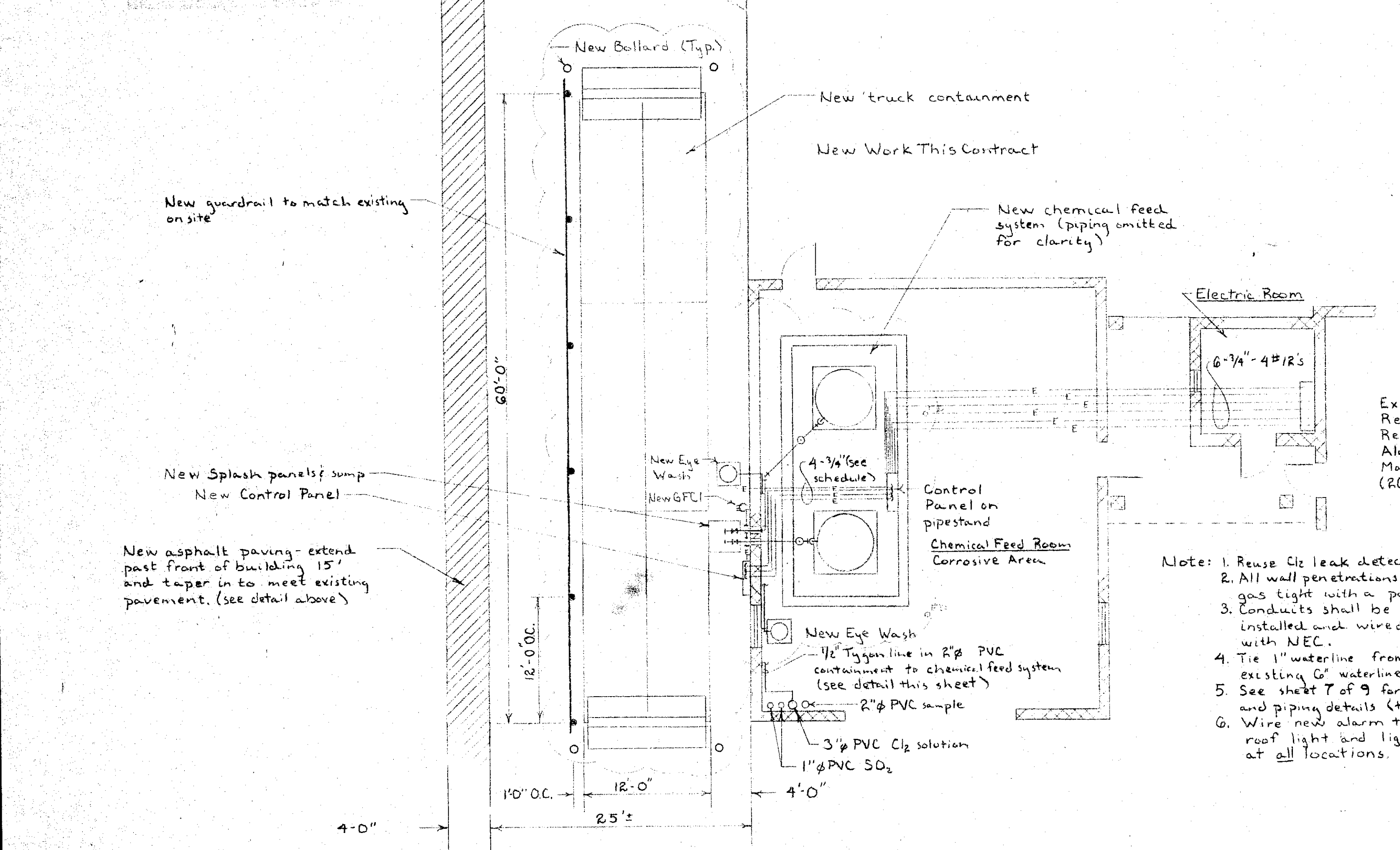
Onondaga County Department of Drainage and Sanitation		
SCALE: N.T.S.	APPROVED BY	DRAWN BY RP
DATE: 11-6-78		
Chemical Feed Equipment Conversion Oak Orchard WPCP		
		DRAWING NUMBER 6 of 10



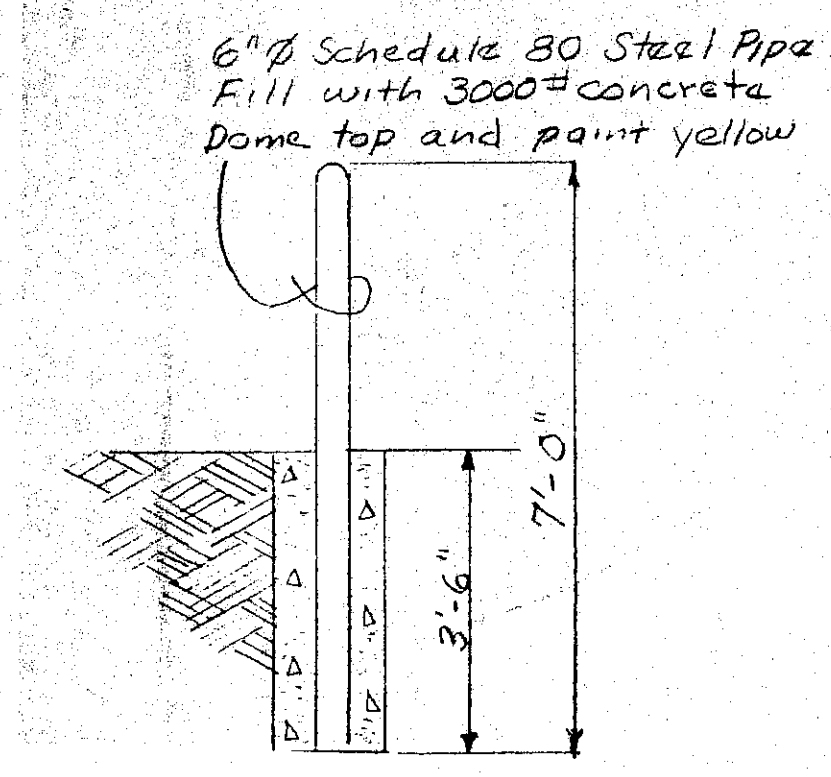
New Pavement Detail
N.T.S.



New Chemical Feed Connection Detail
N.T.S.

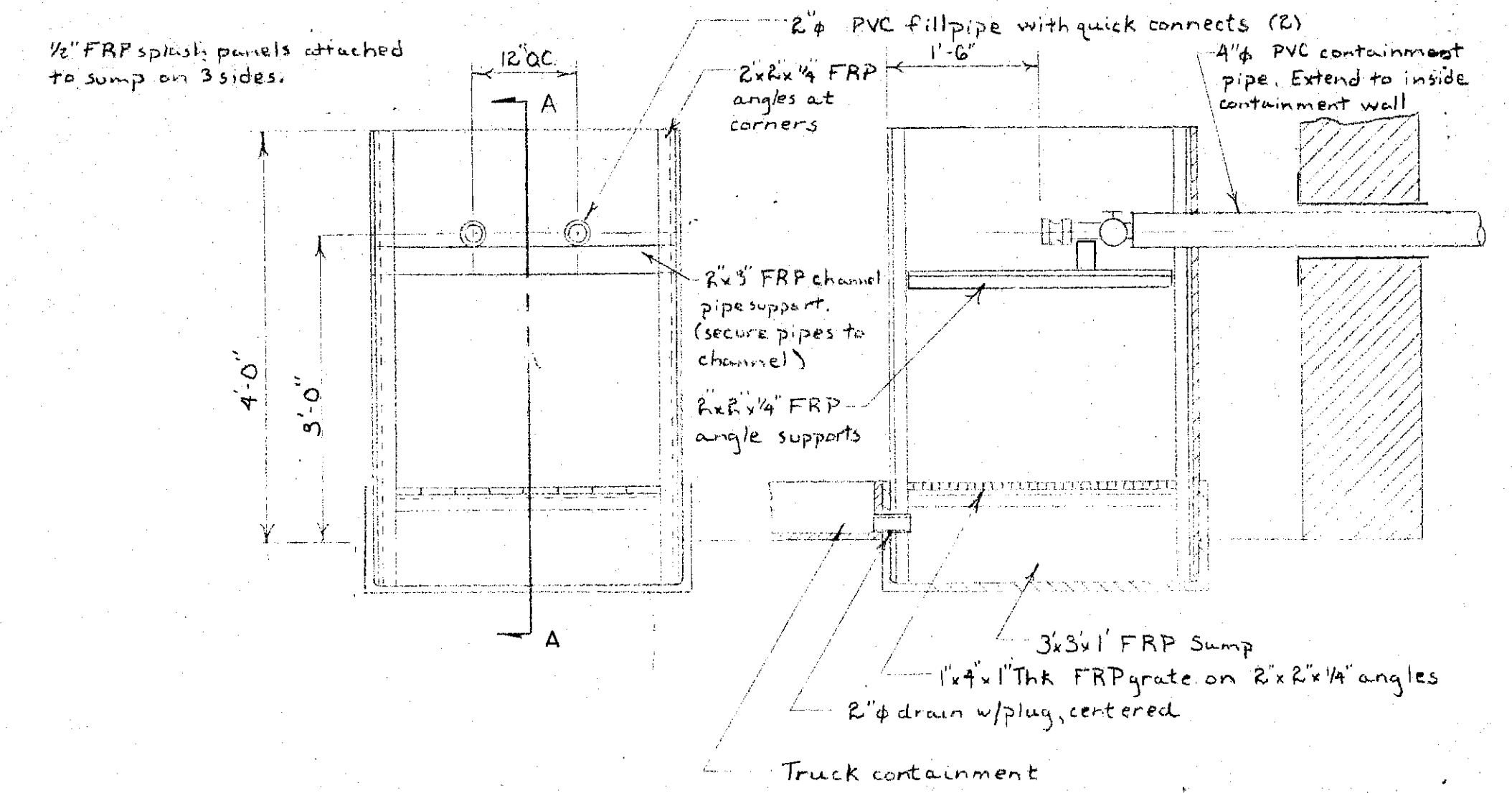


Proposed Sodium Hypochlorite Feed System
N.T.S.



Bollard Detail
N.T.S.

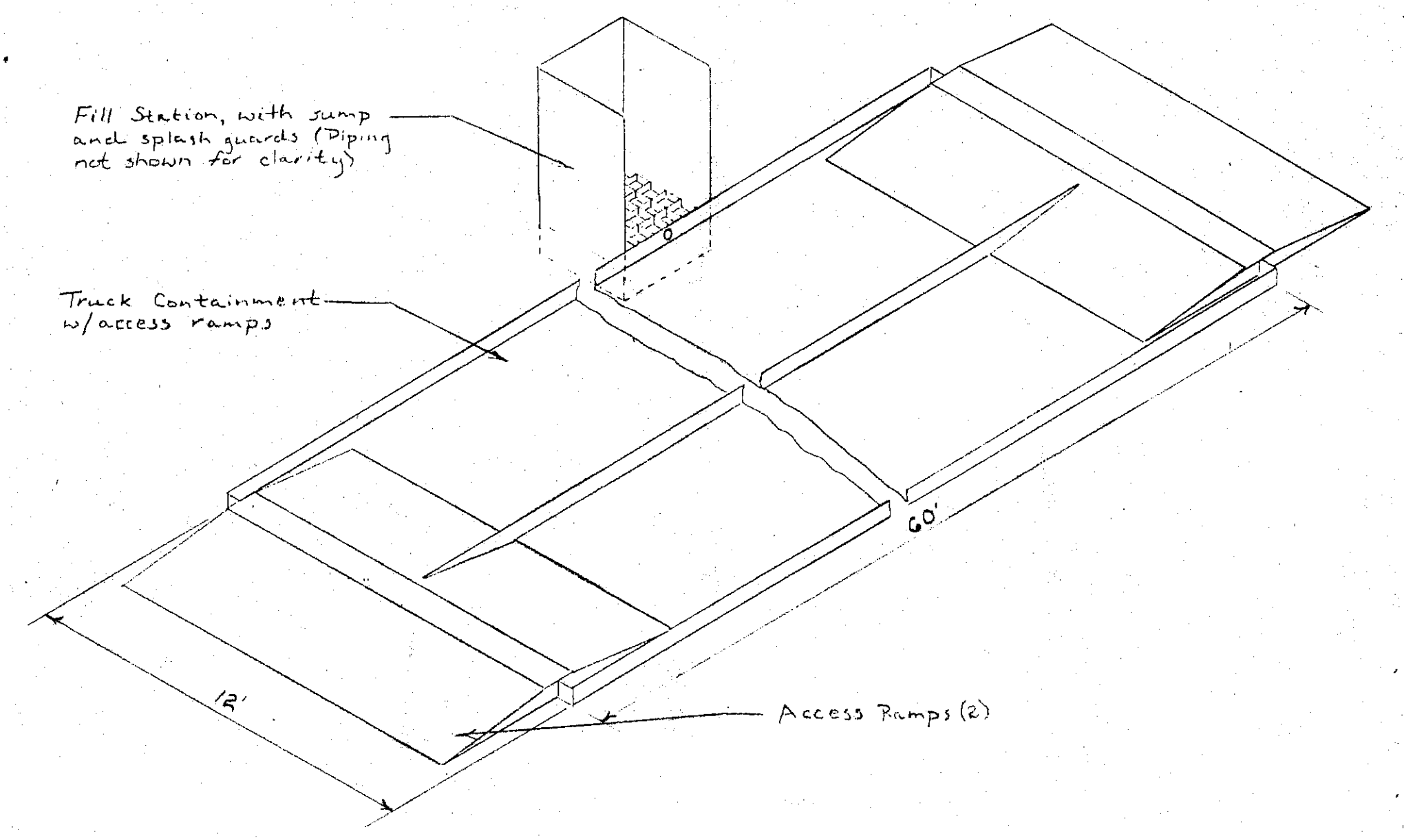
Note: Contractor is to provide fiberglass sleeve, painted safety yellow, for each bollard.



Front View Section A-A

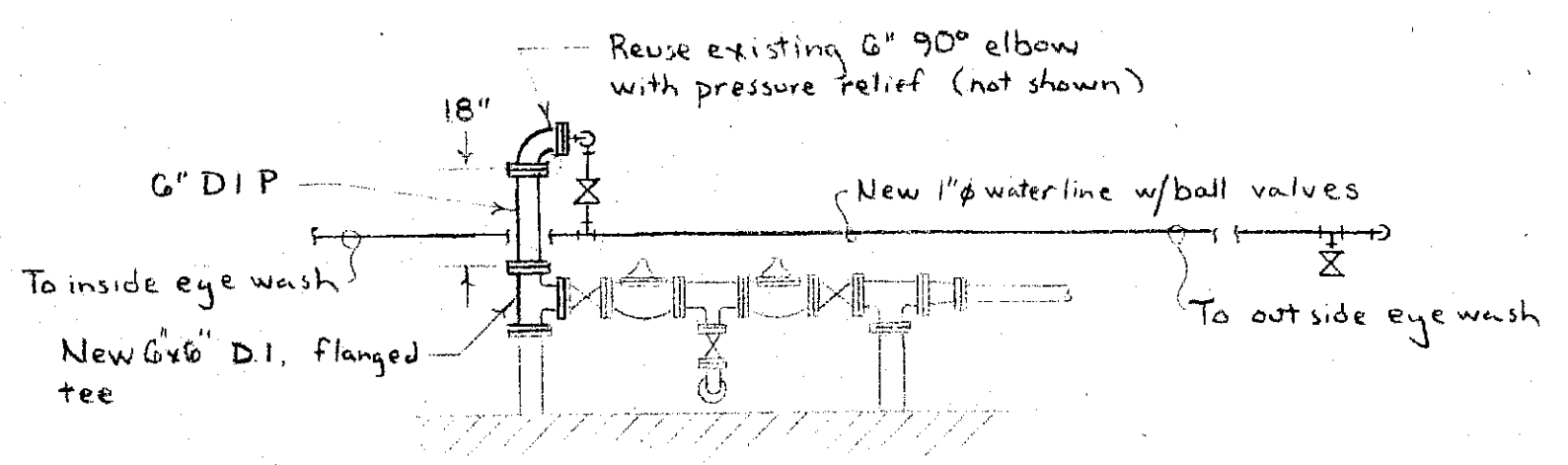
Fill Station, Sump & Splash Shields
N.T.S.

- OAK ORCHARD ONLY
Note: 1. This detail is for the Oak Orchard chemical feed project only.
2. Truck containment and front of sump omitted from front view for clarity.
3. See Sht. B0110 for wall penetration detail.

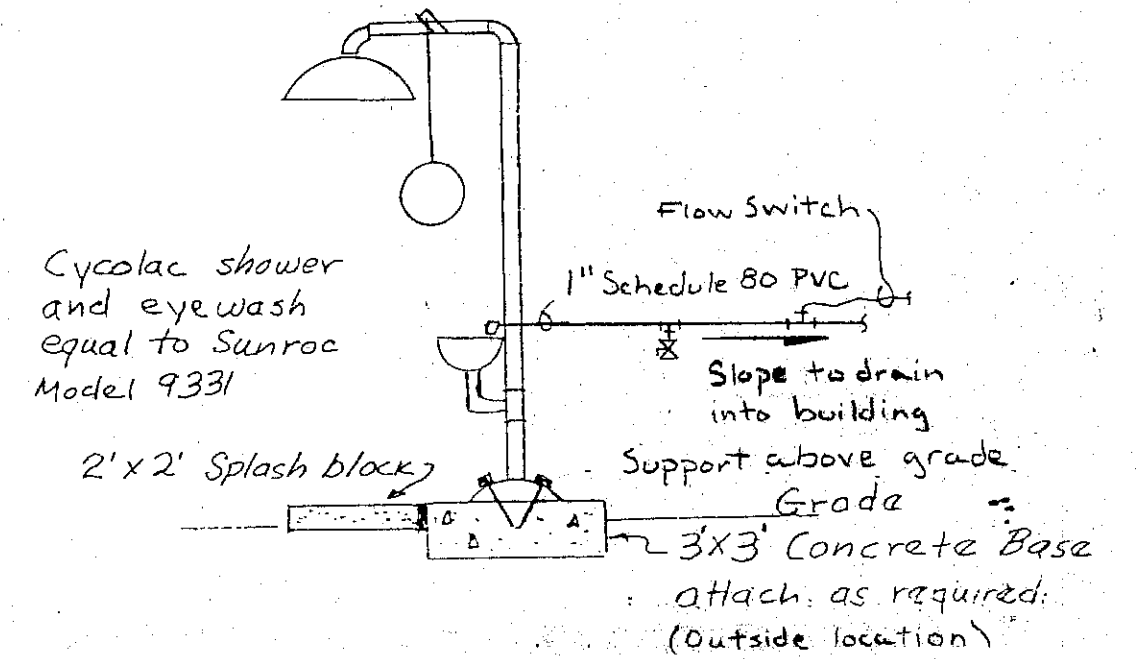


Truck Containment System
N.T.S.

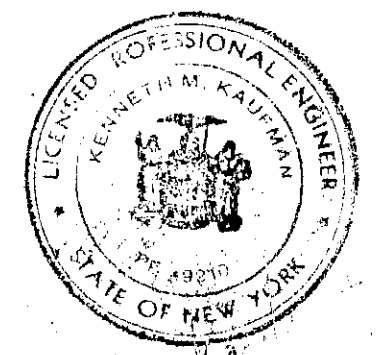
- Note: 1. Reuse Cl2 leak detector alarm wiring.
2. All wall penetrations shall be caulked gas tight with a polysulfide caulk.
3. Conducts shall be schedule 80 PVC installed and wired in accordance with NEC.
4. Tie 1 inch waterline from eye wash stations into existing 6 inch waterline (see detail this sht.)
5. See sheet 7 of 9 for secondary containment and piping details (typical all locations).
6. Wire new alarm to activate existing roof light and light at main computer at all locations.



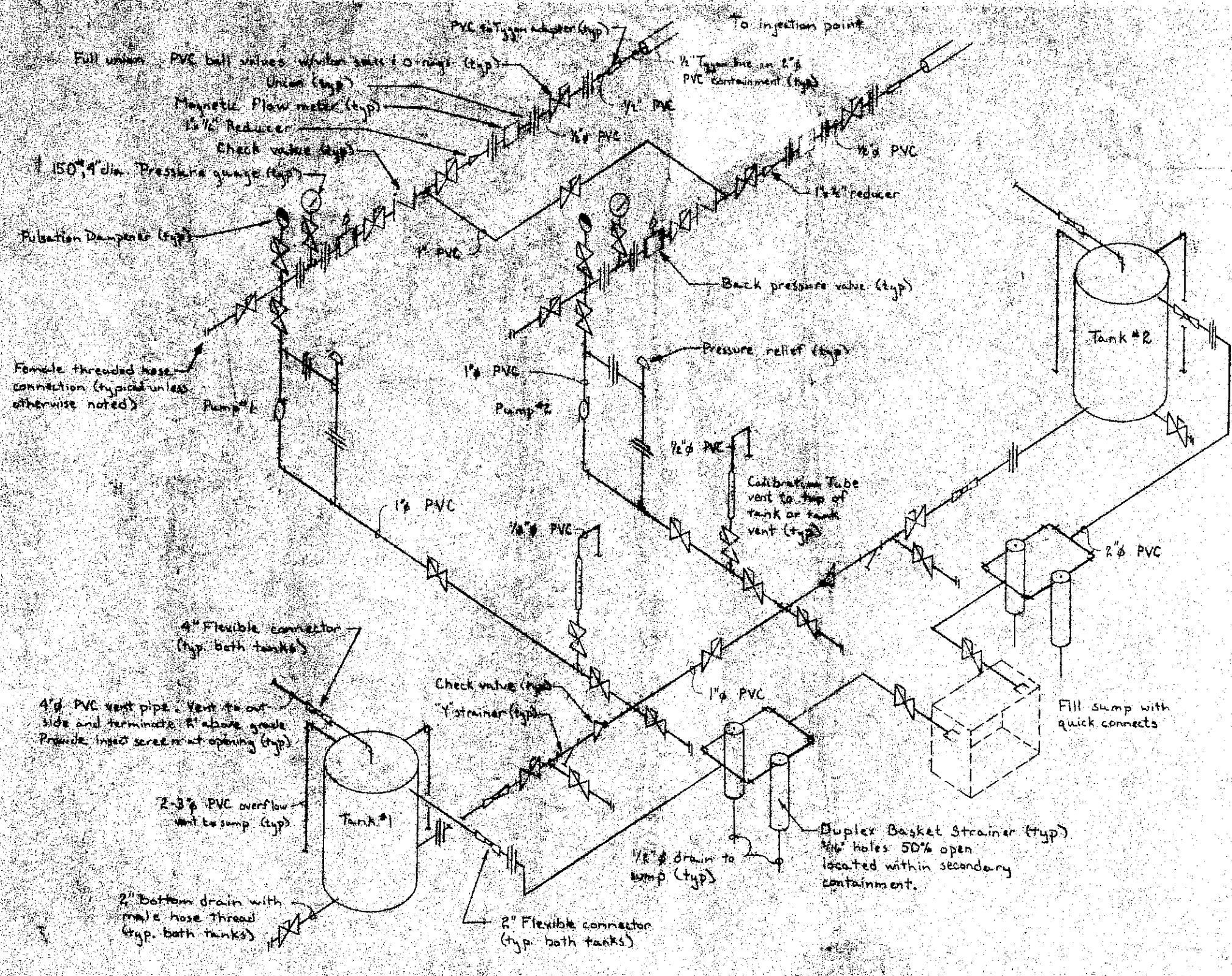
Water Connection Detail
N.T.S.



Eye Wash & Shower Detail
N.T.S.

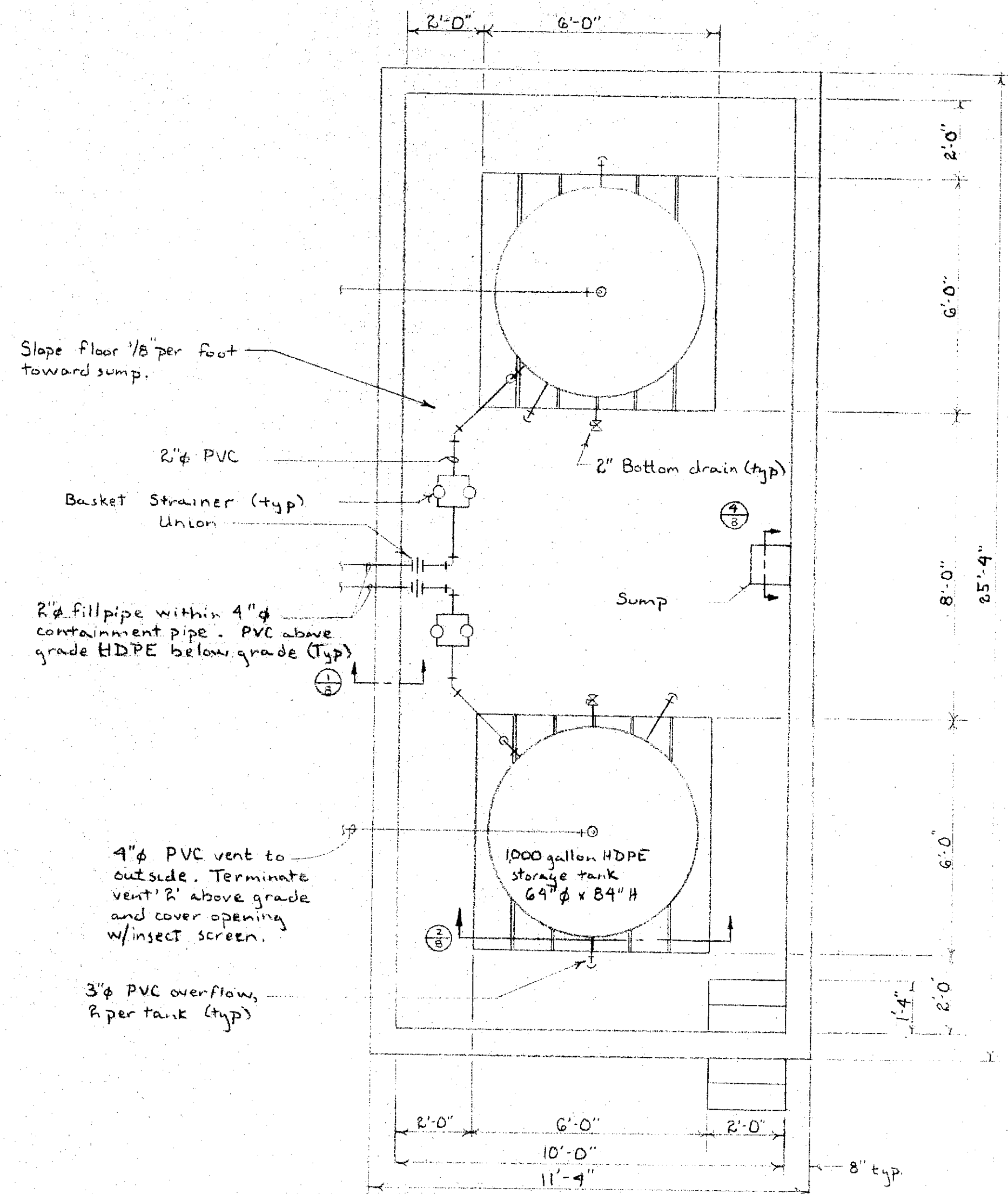


Onondaga County Department of Drainage and Sanitation		
SCALE: N.T.S.	APPROVED BY:	DRAWN BY: RP
DATE: 11-2-98		
Chemical Feed Equipment Conversion Oak Orchard WPCP		
DRAWING NUMBER		7 of 10



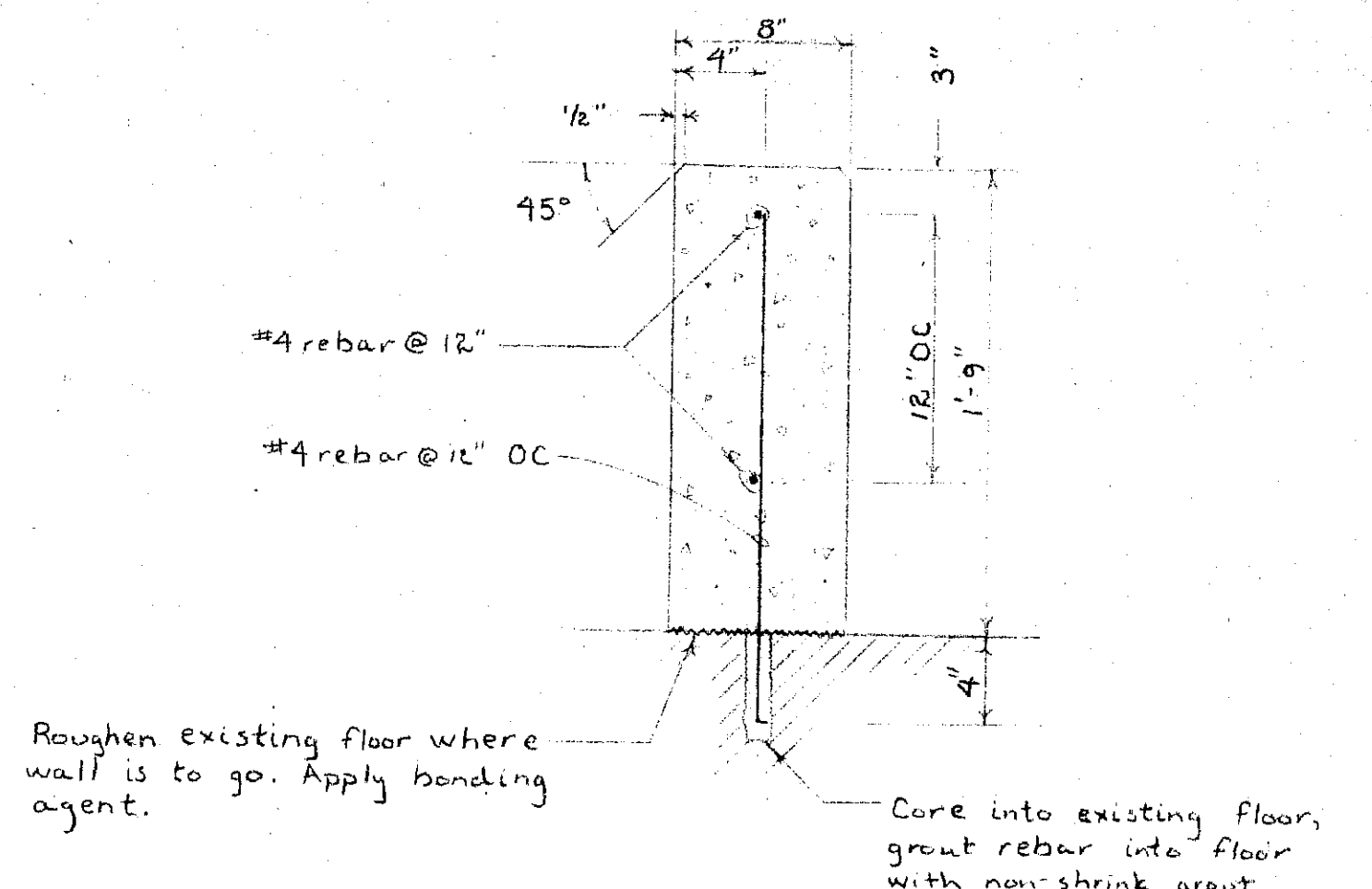
Chemical Feed System Schematic
N.T.S.

- Notes:
1. Provide double wall piping outside of containment in accordance with NYCRR Part 599. Buried piping is to be HDPE, above grade is to be PVC.
 2. Provide a ball valve and check valve where product lines connect to solution lines.
 3. All ball valves shall be PVC with Viton seats and Viton O-rings.
 4. All hardware shall be HDPE, PVC, FRP, or nylon. This includes, but is not limited to, nuts, bolts, washers, straps, and hangers.
 5. Tanks shall be HDPE, 1,000 gallon with a 950 gallon working capacity (Top side fill).
 6. Coordinate location of Fill Panel and Control Panel with Site Plans.
 7. Basket strainers shall be Hayward Simplex or equal with 3/16" openings 50% open.
 8. All electrical conduits and fittings shall be Schedule 80 PVC installed in accordance with the National Electric Code.
 9. Vent pipe shall terminate two feet above grade with a plastic insect screen.
 10. All piping shall be braced and secured every 3 feet. All devices shall be braced and strapped on both ends.
 11. Product lines shall be Tygon, nylon, or polyethylene within a two inch PVC containment pipe. Containment pipe shall slope as indicated.
 12. PVC containment shall begin within the chemical containment area and shall extend to chemical injection point. Slope containment pipe, 1/8 inch per foot, to containment area when possible.



Secondary Containment Plan
Scale: 3/8" = 1' - 0"

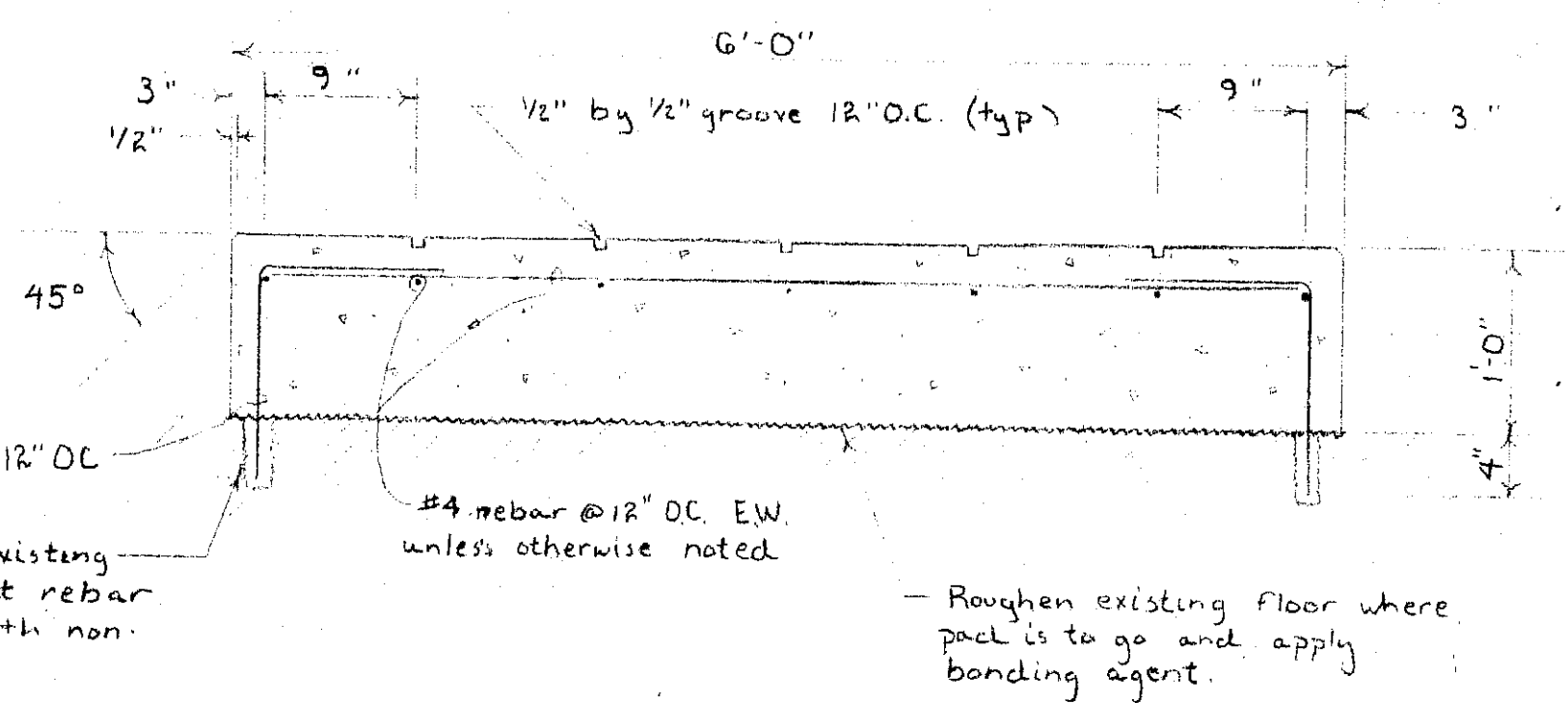
- Notes:
1. All chemical piping and secondary piping outside of the containment wall shall be PVC or HDPE unless otherwise noted.
 2. Exact piping, step, and sump locations to be determined in the field.
 3. All piping not shown for clarity. See "Chemical Feed System Schematic".



1 Containment Wall Section
Scale: 1 1/2" = 1' - 0"

Roughen existing floor where wall is to go. Apply bonding agent.

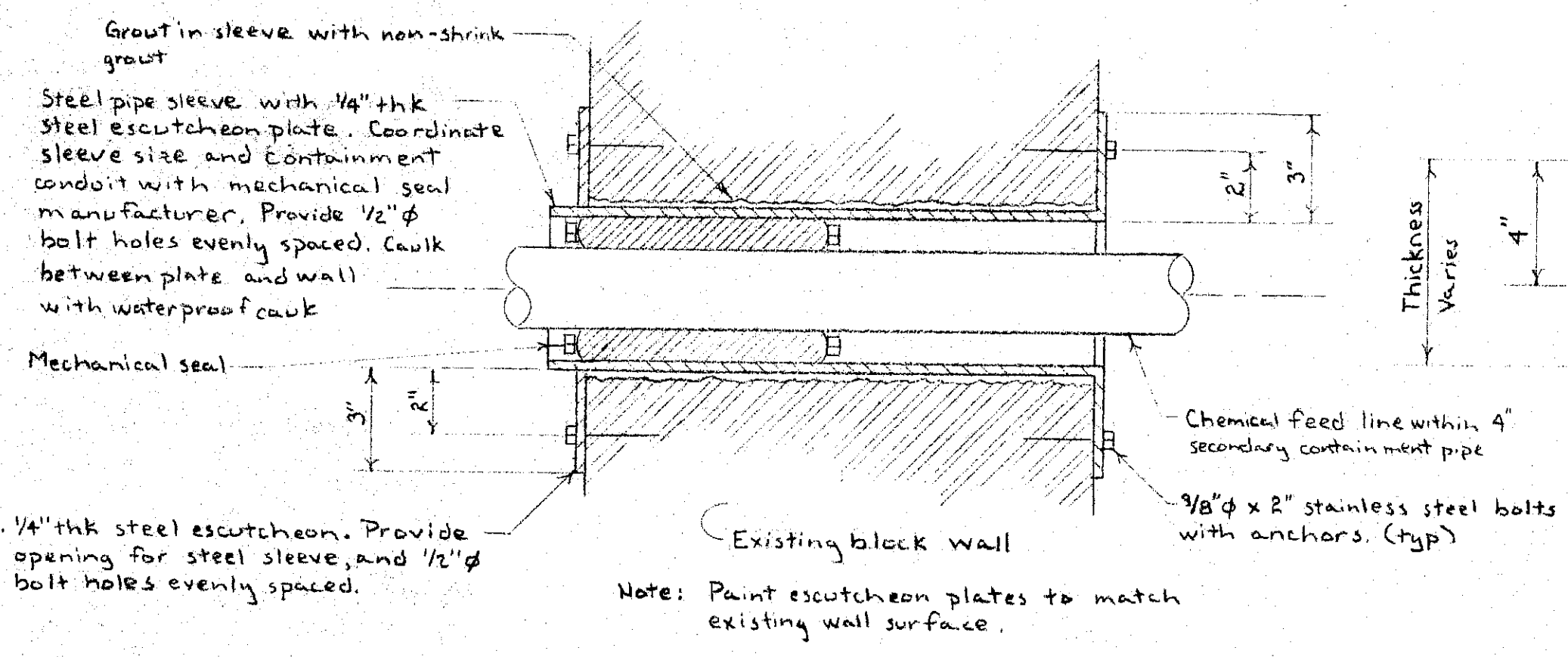
Core into existing floor, grout rebar into floor with non-shrink grout.



2 Concrete Tank Pad Section
Scale: 1" = 1' - 0"

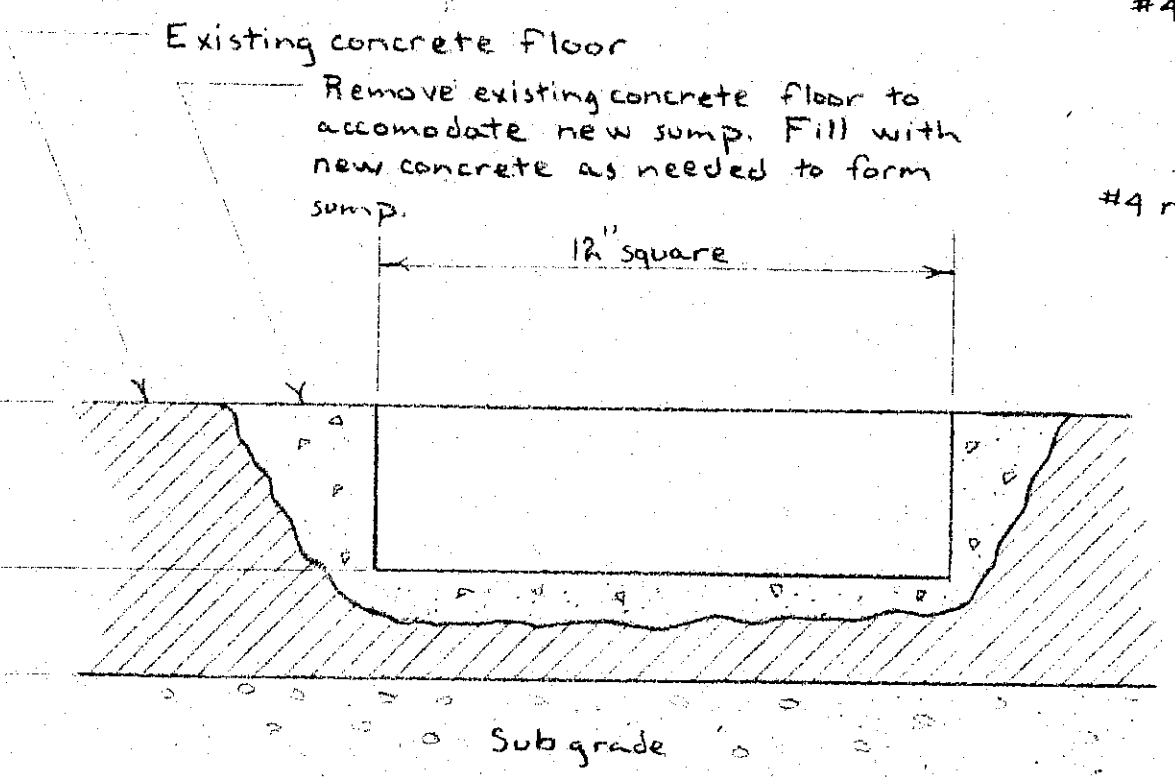
Core into existing floor & grout rebar into floor with non-shrink grout.

Roughen existing floor where pad is to go and apply bonding agent.

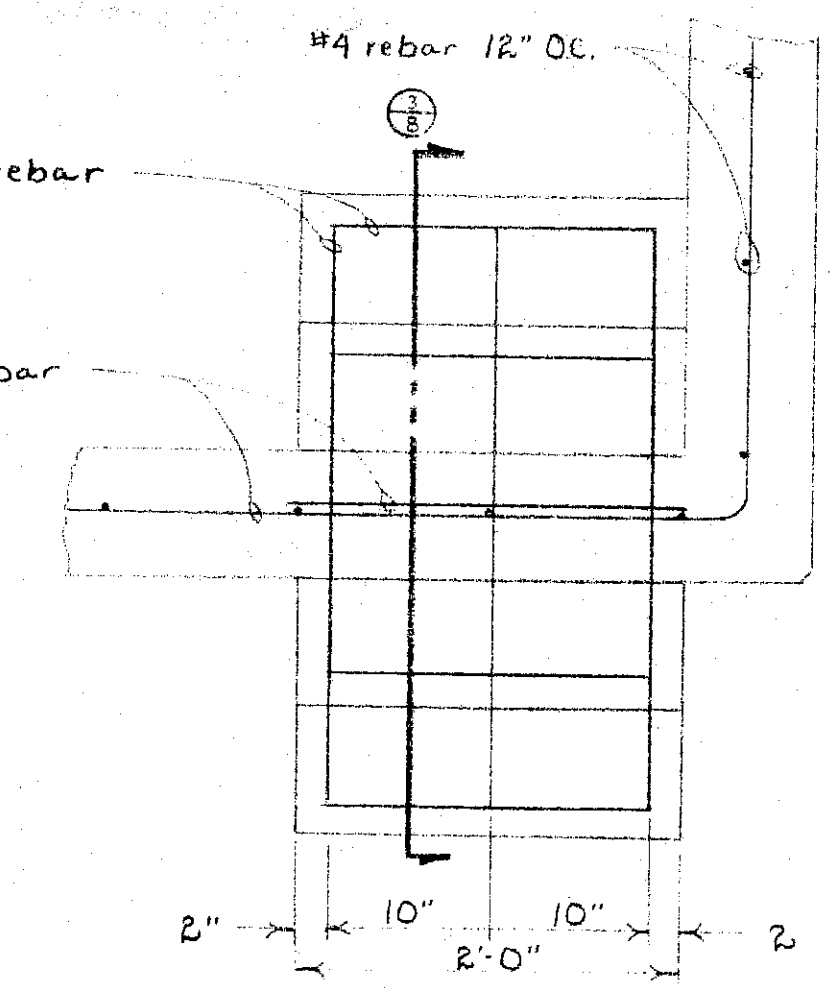


Typical Wall Penetration
NTS

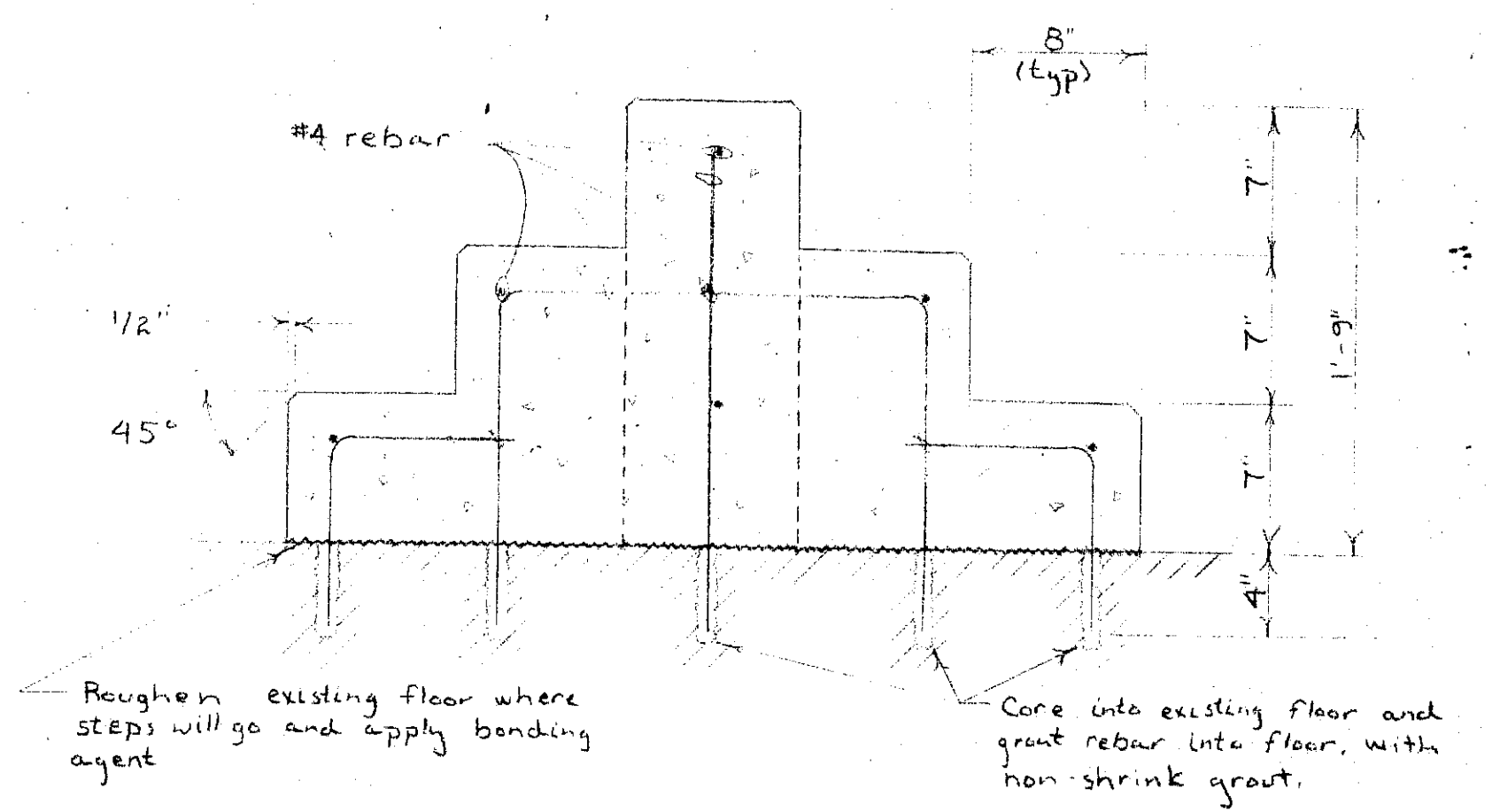
Note: For penetrations in new or existing concrete core a smooth hole for new pipe. Pipes less than 2" diameter caulk around pipe gas tight with a polysulfide caulk. Pipes greater than or equal to 2" diameter seal around pipe with an elastic-mechanical seal. Coordinate hole size with seal manufacturer.



4 Containment Sump Section
NTS



Concrete Step and Wall Detail
Scale: 1" = 1' - 0"



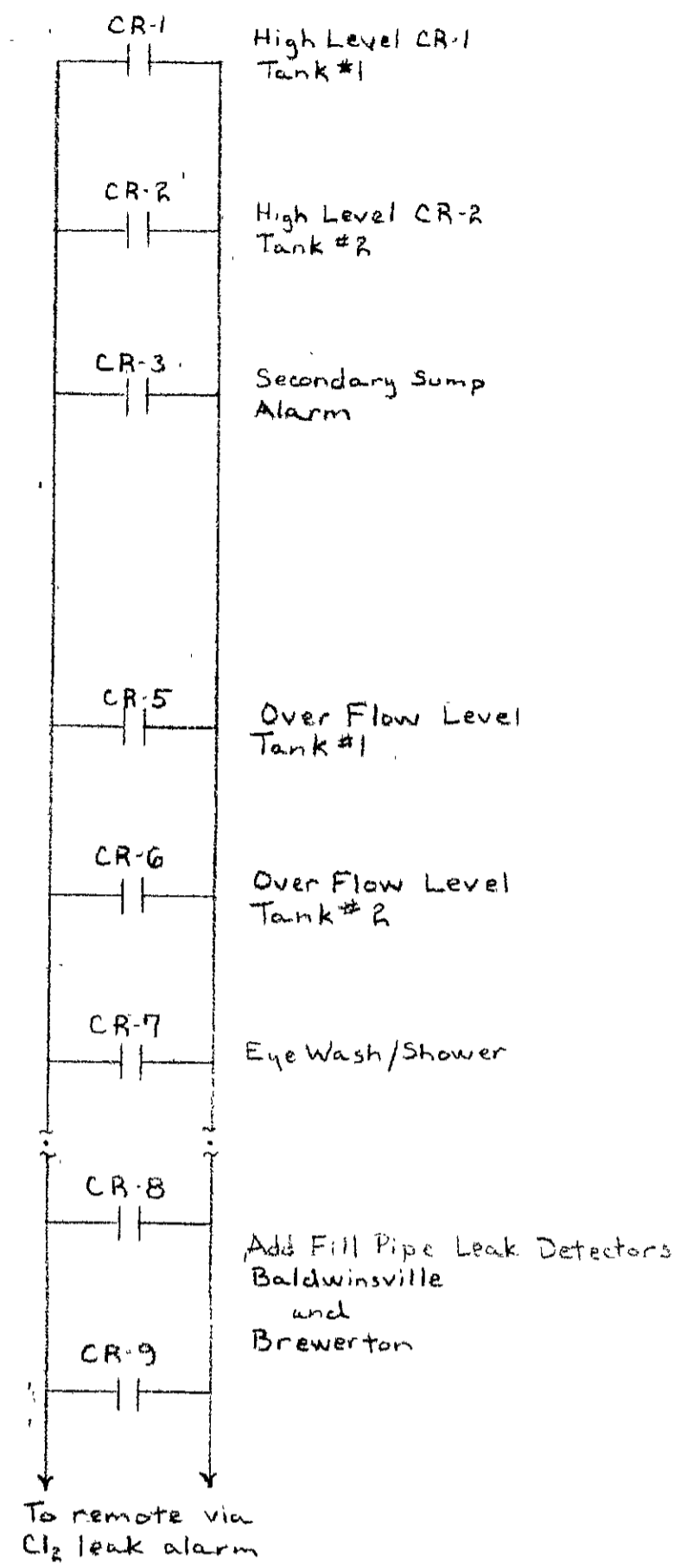
3 Concrete Step Section
Scale: 1 1/2" = 1' - 0"

Roughen existing floor where steps will go and apply bonding agent.

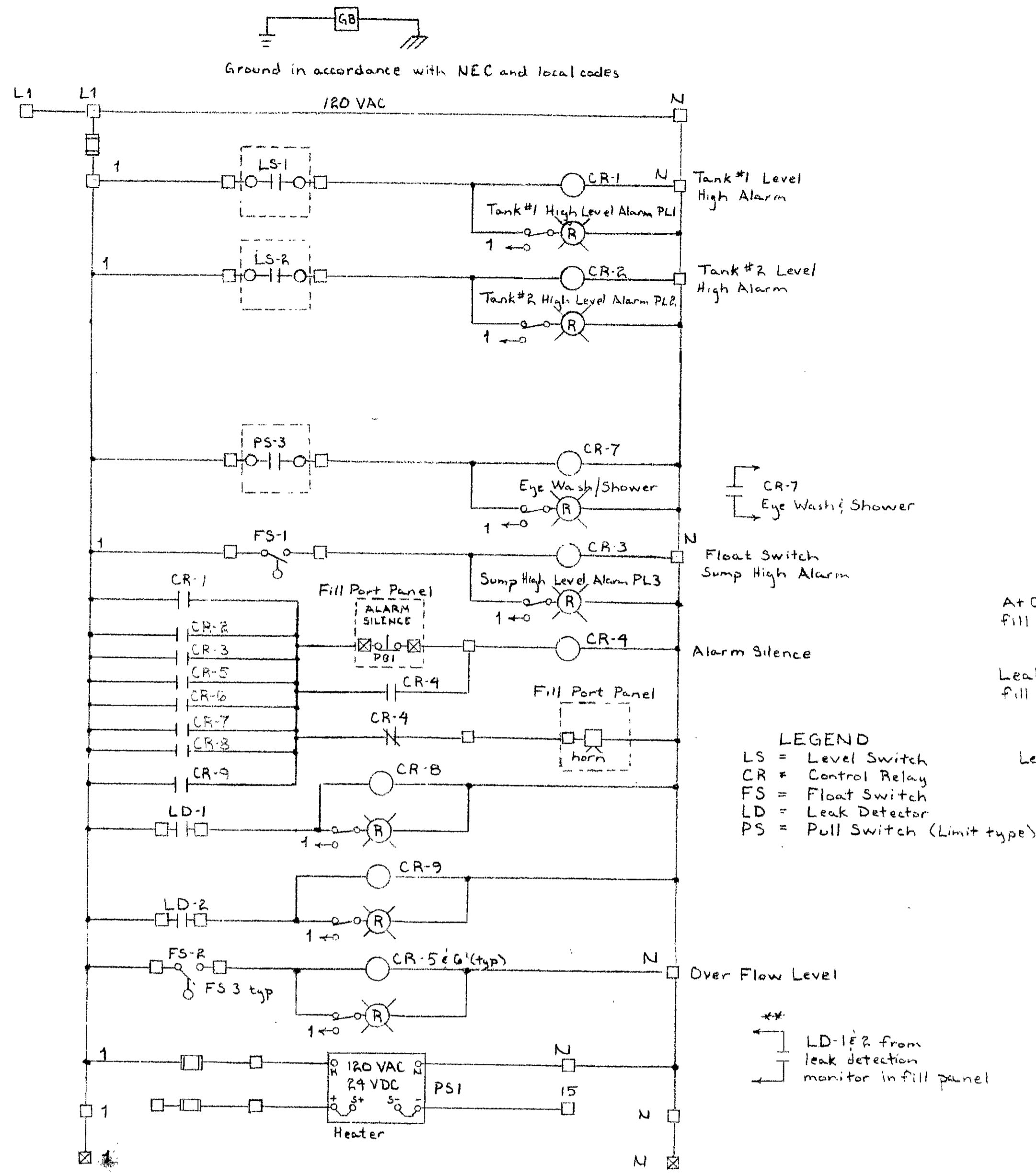
Core into existing floor and grout rebar into floor, with non-shrink grout.



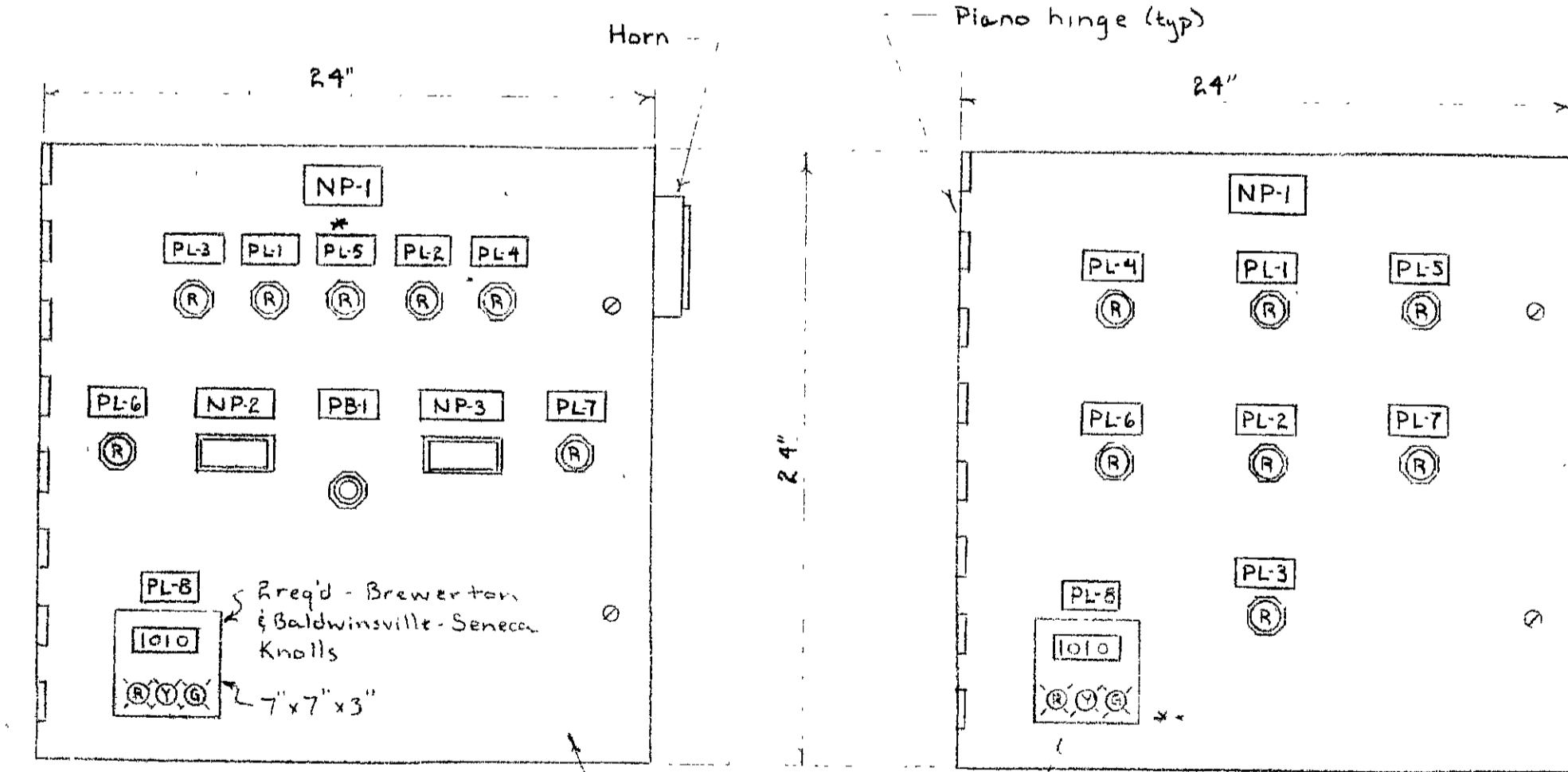
Onondaga County Department of Drainage and Sanitation		
SCALE: As shown	APPROVED BY:	DRAWN BY: RP
DATE: 10-21-98		
Chemical Feed Equipment Conversion Details		
		DRAWING NUMBER: 8 of 10



Alarm Contacts
N.T.S.



Chemical Control Elementary
N.T.S.



Chemical Feed And Fill Panels
N.T.S.

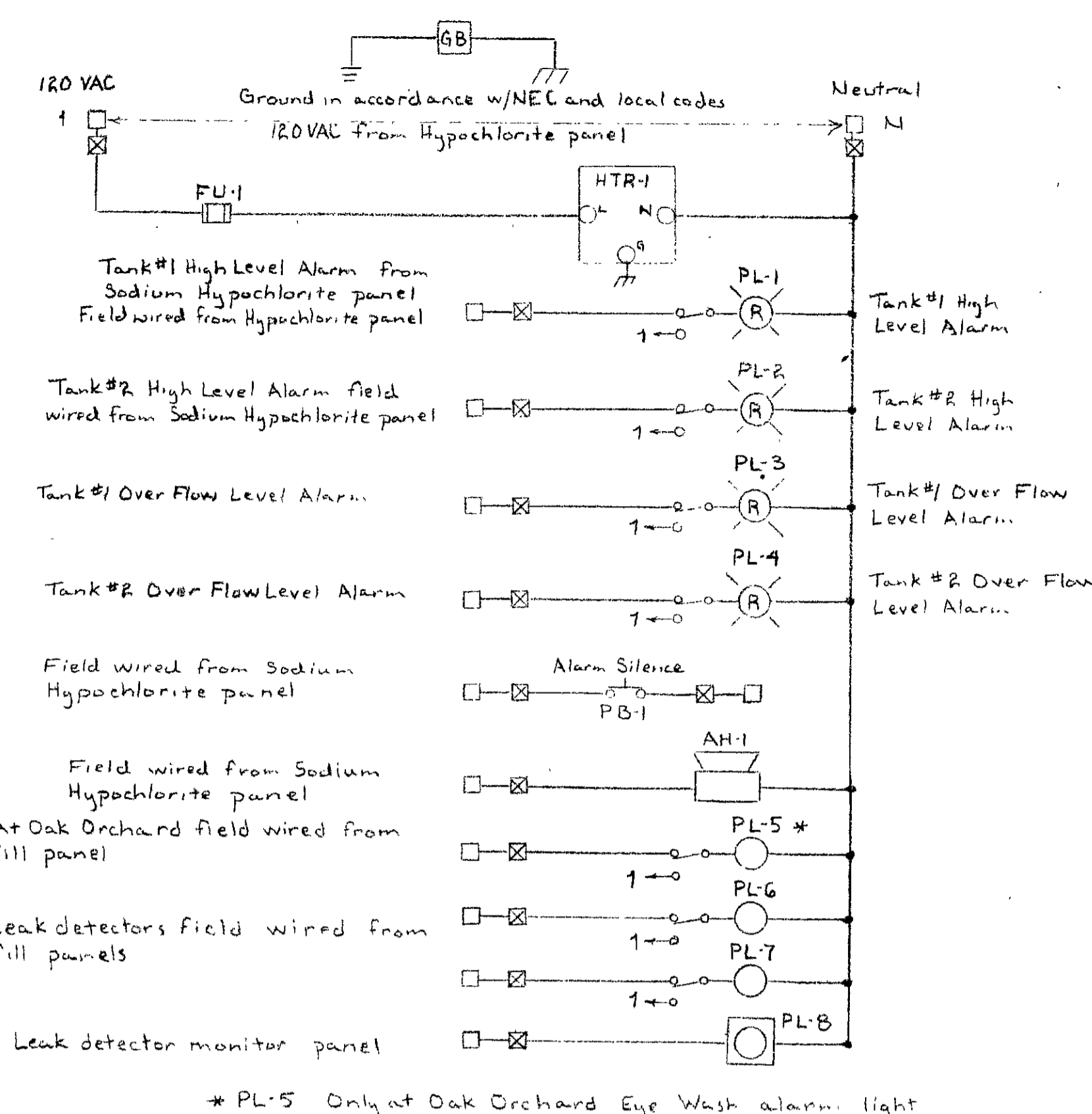
Note: Above panels shall be strap mounted on pipe stands of 4" cast iron pipe, concrete filled and painted with the exception of Wetzel Road which shall be wall mounted on 3/4" Marine Plywood painted with 2 coats gray oil based enamel.

FILL PANEL NAMEPLATE SCHEDULE		
ITEM	LINE 1	LINE 2
NP-1	FILL PANEL	ALARM PANEL
PB-1	ALARM SILENCE	ALARM PANEL
NP-2	CHEMICAL TANK 1	LEVEL (IN GALLONS)
PL-1	TANK 1	HIGH LEVEL
NP-3	CHEMICAL TANK 2	LEVEL (IN GALLONS)
PL-2	TANK 2	HIGH LEVEL
PL-3	TANK 1	OVERFLOW LEVEL
PL-4	TANK 2	OVERFLOW LEVEL
PL-5*	EYE WASH	
PL-6	FILL PIPE LEAK	
PL-7	FILL PIPE LEAK	
PL-8**	LEAK DETECTION	MONITOR

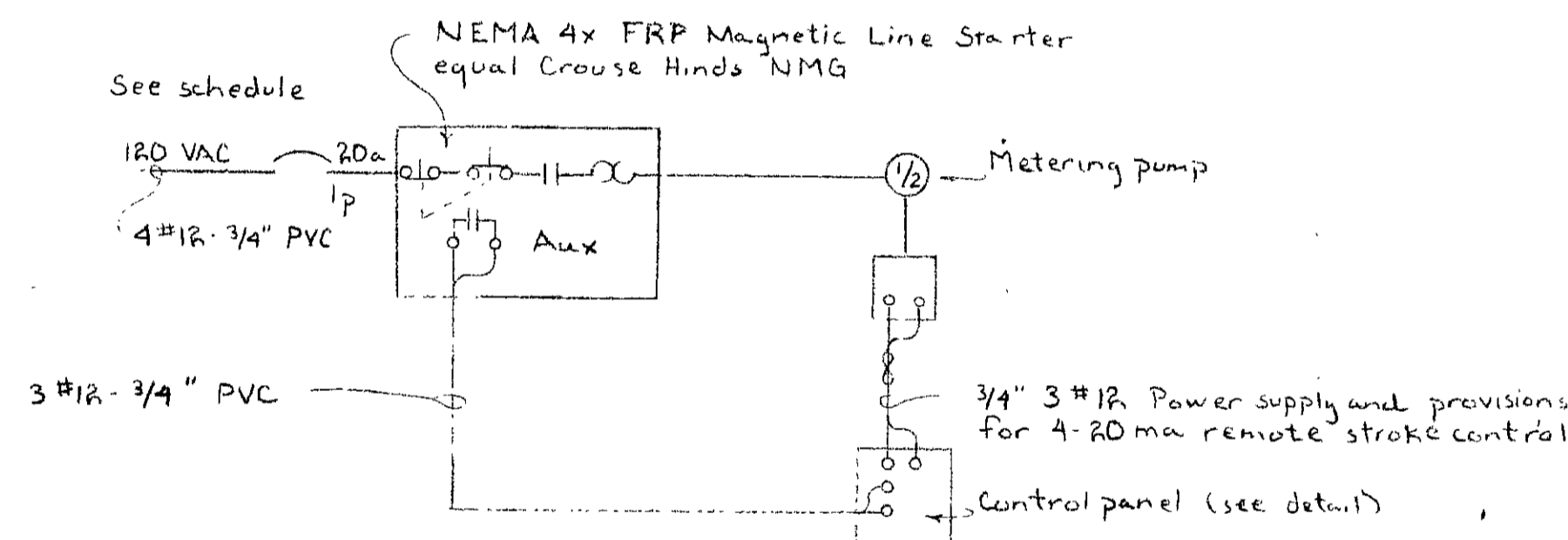
Oak Orchard only, PL-5 at Brewerton to read Settling Tank Chemical Feed Line Leak - PL-5 not used at Wetzel Road or Baldwinsville - Seneca Knolls
Baldwinsville - Seneca Knolls & Brewerton Fill Pipe Leak Detectors

CHEMICAL FEED PANEL NAMEPLATE SCHEDULE		
ITEM	LINE 1	LINE 2
NP-1	SODIUM HYPOCHLORITE	CONTROL PANEL
PL-1	TANK 1	HIGH LEVEL
PL-2	TANK 2	HIGH LEVEL
PL-3	SUMP	HIGH LEVEL
PL-4	TANK 1	OVERFLOW LEVEL
PL-5	TANK 2	OVERFLOW LEVEL
PL-6	FILL PIPE LEAK	
PL-7	FILL PIPE LEAK	
PL-8	MONITOR PANEL	

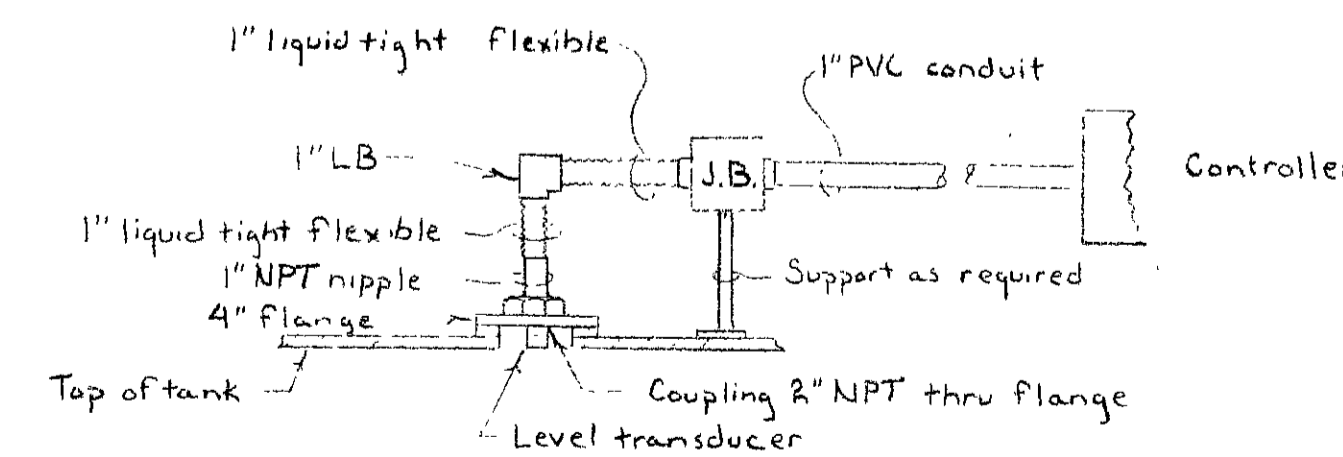
Note: Leak detection fill pipes only required at Baldwinsville - Seneca Knolls and Brewerton wastewater treatment facility locations. At Brewerton also chemical feed line leak detection.



Fill Port Elementary
N.T.S.

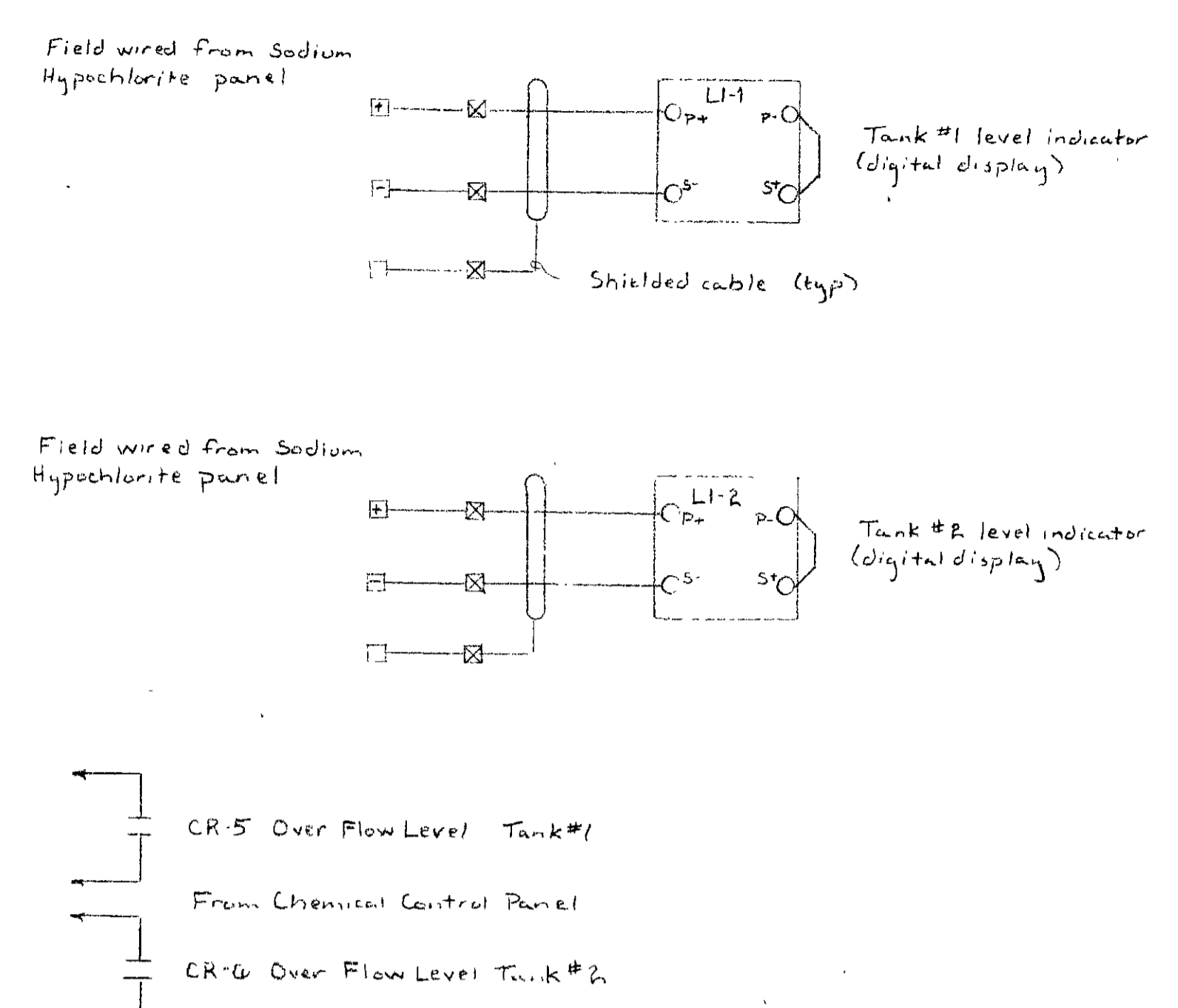


Metering Pump One Line Diagram
N.T.S.



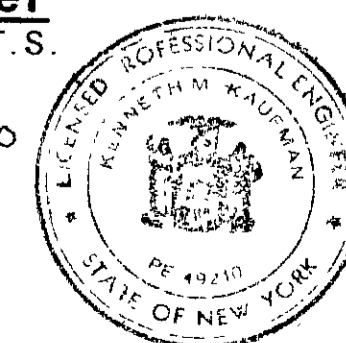
Chemical Storage Tank Level Transmitter
N.T.S.

Note: All conduits and fittings shall be Schedule 80 PVC with ground which may not be scheduled. Install per latest NEC.



CR-5 Over Flow Level Tank #1
From Chemical Control Panel
CR-6 Over Flow Level Tank #2

- GENERAL NOTES**
- Level and Flow signal cables shall be equal to Belden twisted pair shielded, and be furnished by transmitter manufacturer to the contractor for installation.
 - This contract includes 4 locations. Panels shown are typical, slight variations are shown.
- Locations: Baldwinsville Seneca Knolls
Brewerton
Oak Orchard
Wetzel Road



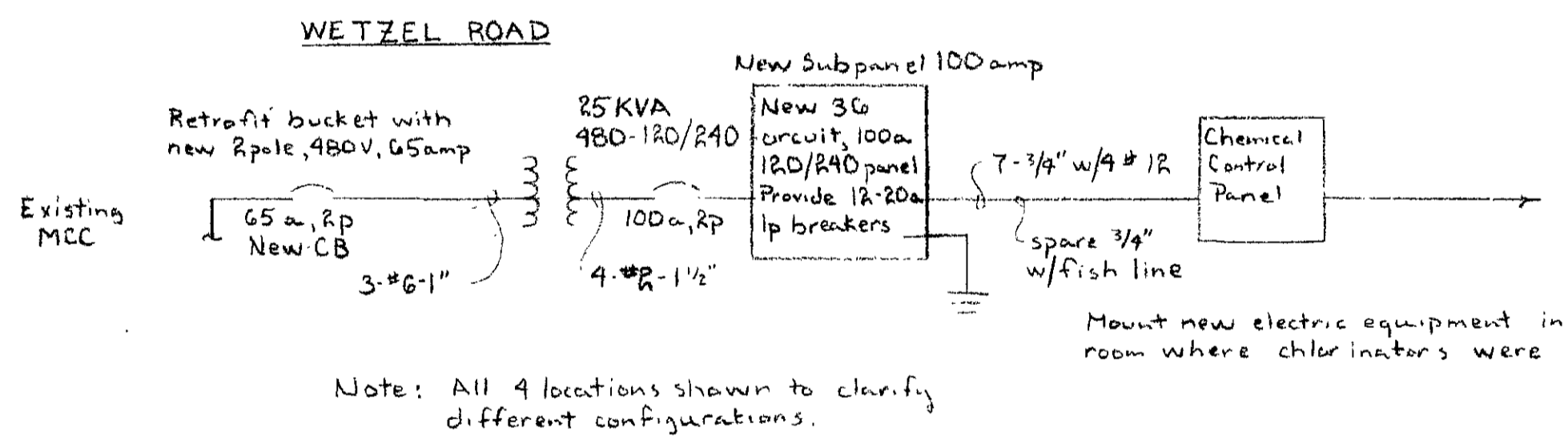
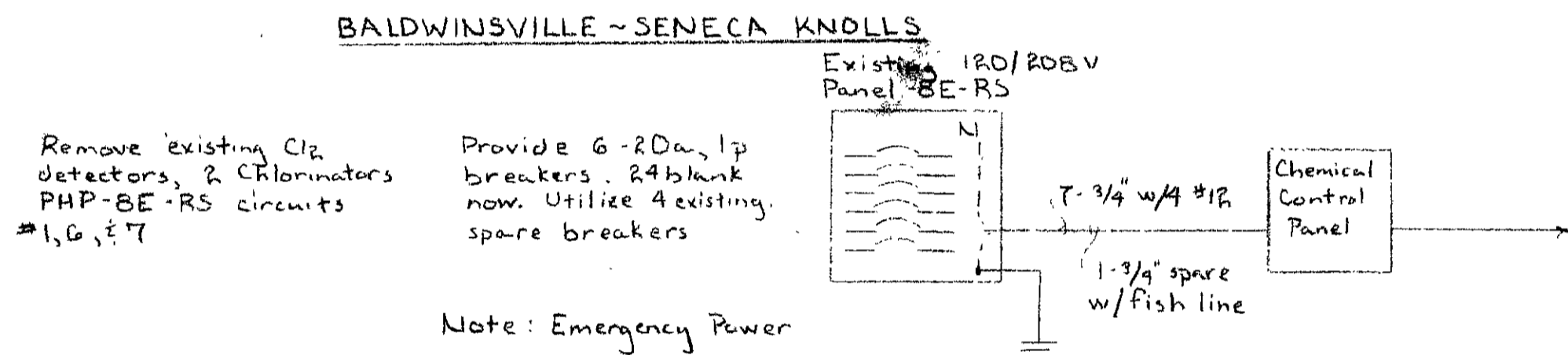
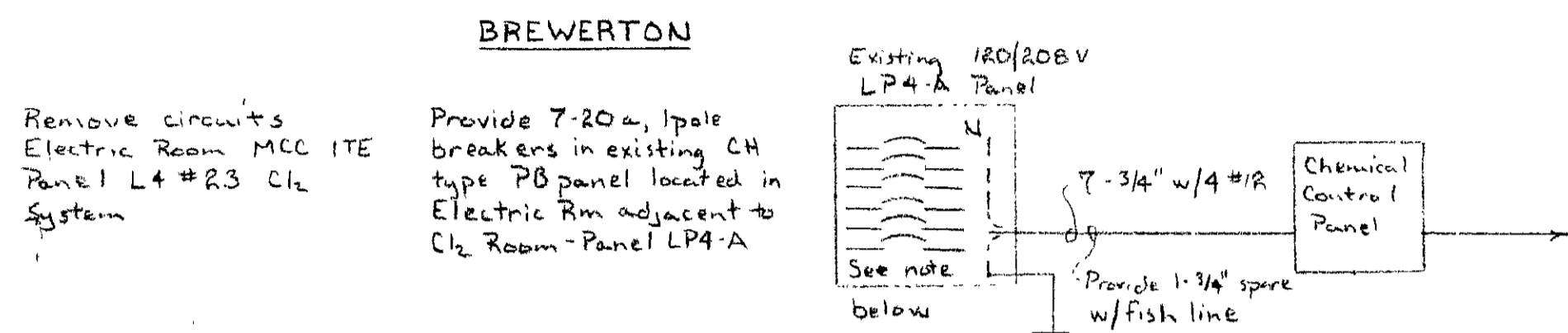
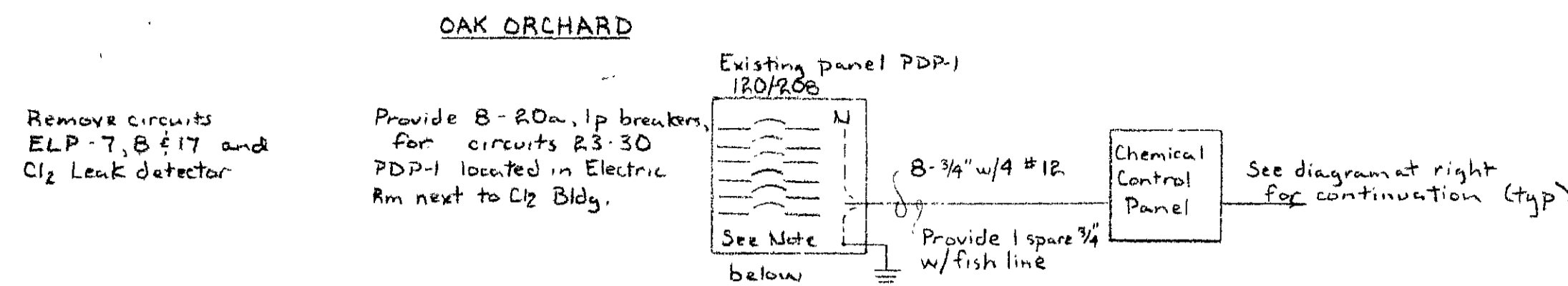
**Onondaga County
Drainage and Sewerage**

SCALE: N.T.S. APPROVED BY: _____ DRAWN BY: RP

DATE: 11-4-98

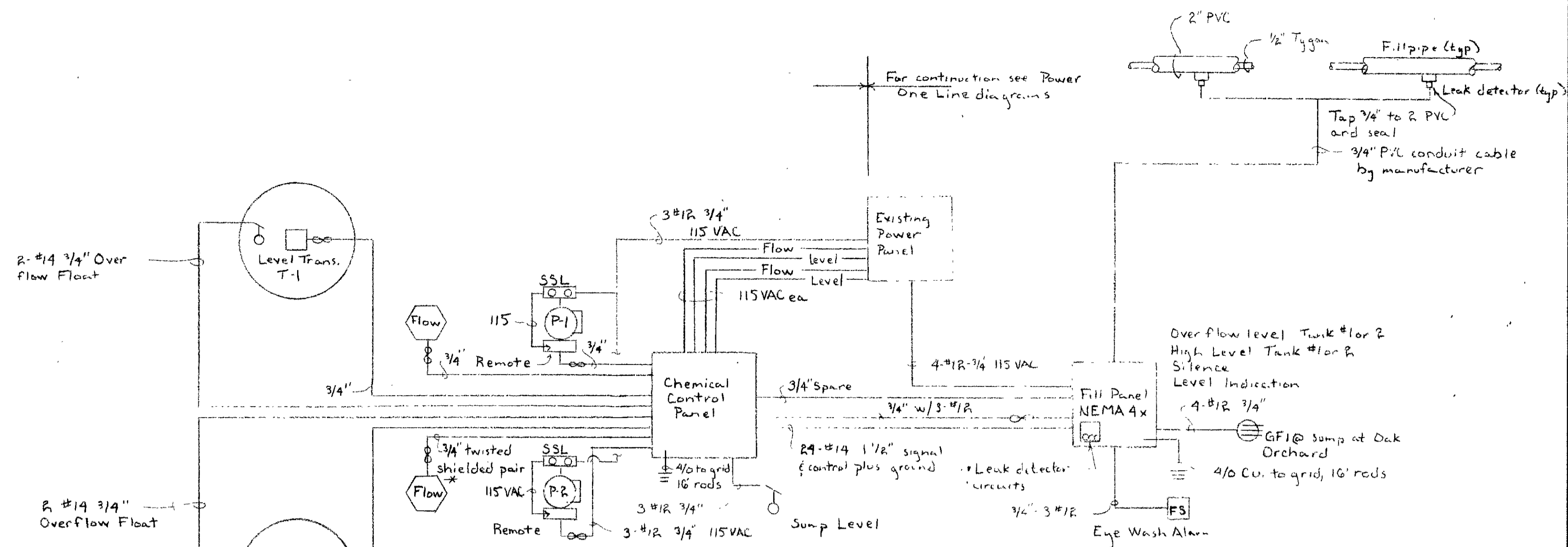
**Chemical Feed Equipment Conversion
Electrical**

DRAWING NUMBER: 9 of 10



Power One Line Diagram
N.T.S.

TYPICAL PANELBOARD SCHEDULE NEW OR EXISTING		
CIRCUIT	FUNCTION	BREAKER
1	Pump #1 and Remote Positioner	20a, 1p
2	Pump #2 and Remote Positioner	20a, 1p
3	Tank #1 Level	20a, 1p
4	Tank #2 Level	20a, 1p
5	Tank #1 Flow	20a, 1p
6	Tank #2 Flow	20a, 1p
7	Chemical Control Panel & Fill Panel	20a, 1p
8-12	Spare	
Except @ Wetzel Road		
8	PRE-1, 1/4 Hp	20a, 1p
9	PRE-2, 1/3 Hp	20a, 1p
10	Spare	
11	Spare	
12	Spare	
13-36	Spaces Only	

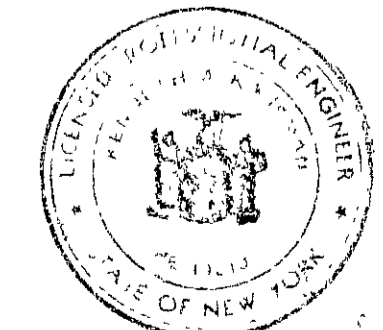


* Level and flow system cables by manufacturer
 ** Leak detection - Fill pipes underground - coaxial cable by mfg

Note: 1. Provide spare alarm contacts for future scanner transmission
 2. All plants disconnect Cl₂ leak detection and reconnect to obvious chain new alarms
 3. Leak detectors for Baldwinsville and Brewerton only

Instrumentation And Control Conduit And Cable
N.T.S.

SYMBOLS					
	M - MOTOR STARTER		COIL - SOLENOID		FLLOAT SWITCH N.O. CONTACT
	CR - CONTROL RELAY		CONTACT - NORMALLY OPEN		FLLOAT SWITCH N.C. CONTACT
	TR - TIMING RELAY		CONTACT - NORMALLY CLOSED		FUSE
	UNIT SWITCH - NORM. OPEN		PUSH BUTTON - NORM. OPEN		RESISTOR
	UNIT SWITCH - NORM. CLOSED		PUSH BUTTON - NORM. CLOSED		DIODE
	UNIT SW - N.O. HELD CLOSED		VACUUM SWITCH - HELD OPERATED WITHOUT VACUUM		CAPACITOR
	UNIT SW - N.C. HELD OPEN		FLOW SWITCH - NO FLOW		CONNECTOR - PLUG & SOCKET
	TIMER CONT. NORM. OPEN		INDICATOR LIGHT - COLOR		MOV - METAL OXIDE VARISTOR
	TIMER CONT. NORM. CLOSED		1 CIRCUIT WIRES NOT CONNECTED		
	TIMER CONT. NORM. CLOSED TIMED TO OPEN ON ENERG.		2 CIRCUIT WIRES ARE CONNECTED		
	TIMER CONT. NORM. OPEN TIMED TO OPEN ON DE-ENERG.				
	TIMER CONT. NORM. CLOSED TIMED TO CLOSE ON DE-ENERG.				
	CONTINUES ON LINE XXX				
	MULT. POS. SELECTOR SWITCH				
	X INDICATES CLOSED CONTACT POSITION				
	SURGE ARRESTOR				



Onondaga County Department of Drainage and Sanitation			
SCALE: N.T.S.	APPROVED BY:	DRAWN BY: R.P.	
DATE: 11-1-98			
Chemical Feed Equipment Conversion Electrical			
			DRAWING NUMBER: 10 of 10