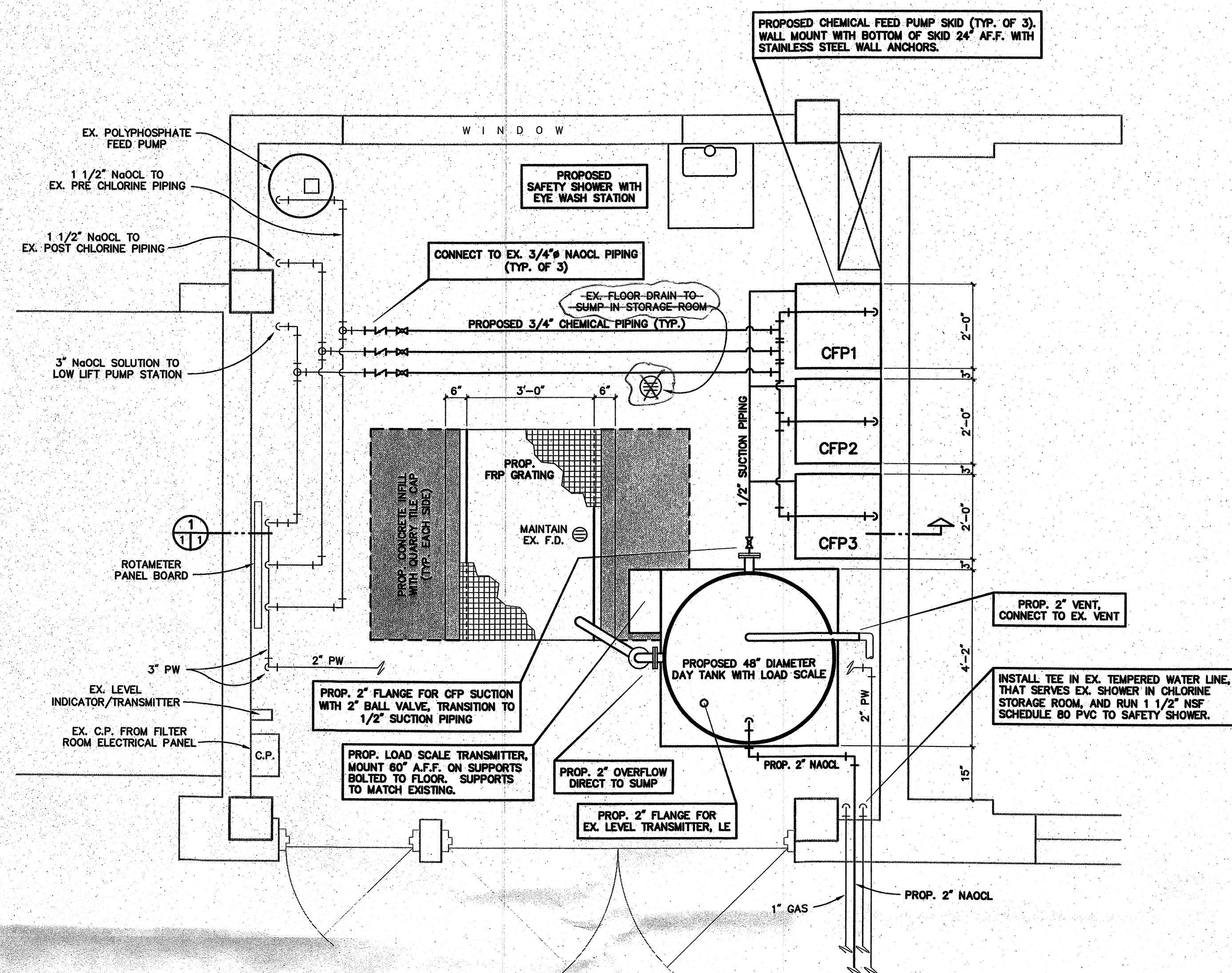
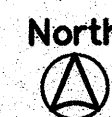


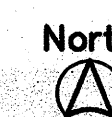
CHLORINE FEED ROOM - EXISTING

SCALE: 1/2" = 1'-0"



CHLORINE FEED ROOM - PROPOSED

SCALE: 1/2" = 1'-0"



## NOTES

### GENERAL

THE EX. WATER TREATMENT PLANT MUST REMAIN IN OPERATION. SERVICE INTERRUPTIONS FOR SPECIFIC PIECES OF EQUIPMENT OR TANKS SHALL BE COORDINATED WITH THE OWNER AND A MINIMUM OF ONE WEEKS NOTICE SHALL BE GIVEN. SOME OF THE NEW CONSTRUCTION WILL BE USED BEFORE THE CONTRACTOR'S WORK IS COMPLETE. THE OWNER WILL ONLY BE RESPONSIBLE FOR MALFUNCTIONS DUE TO HIS OPERATION. THE CONTRACTOR SHALL NOT ENCUMBER THE SITE WITH MATERIAL AND EQUIPMENT THAT WOULD INTERFERE WITH OPERATION.

### OPERATION REQUIREMENTS

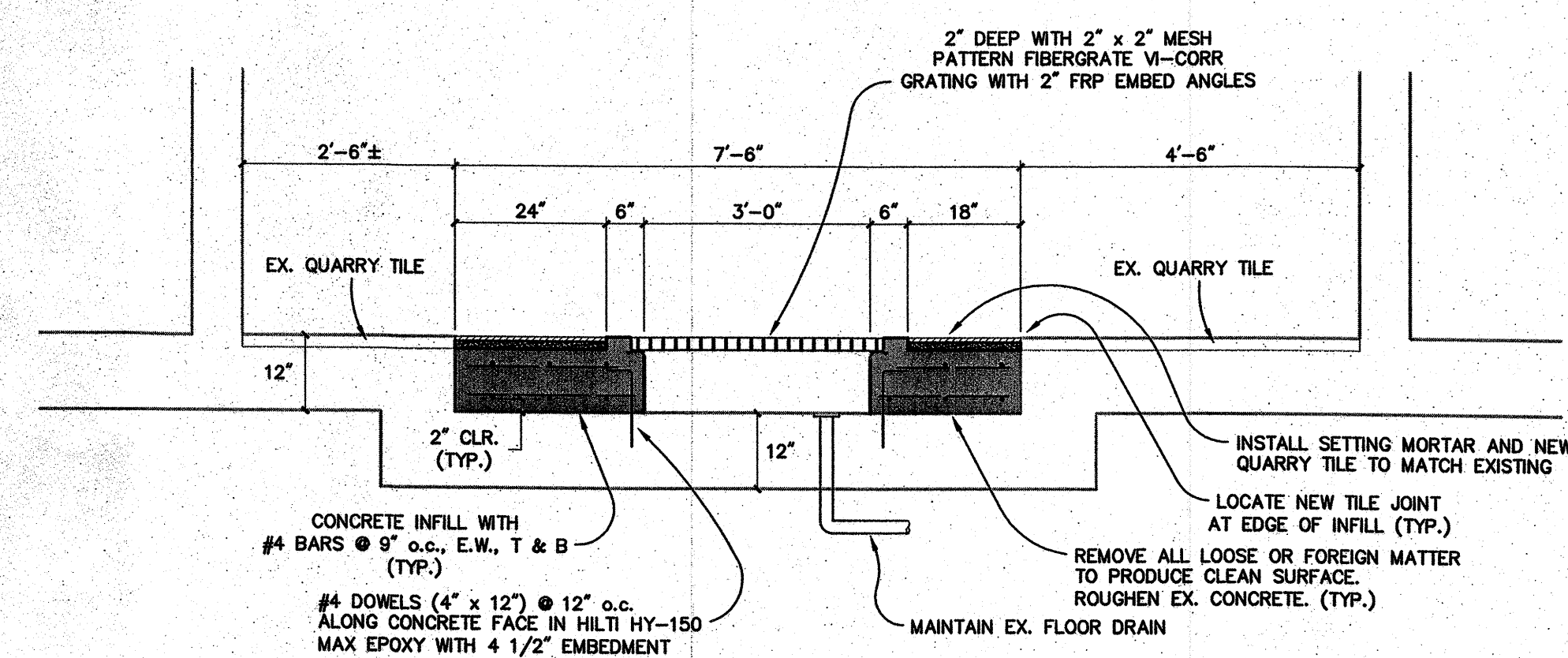
ALL WORK MUST BE SCHEDULED AND COMPLETED TO ALLOW PLANT OPERATORS TO TRANSFER SODIUM HYPOCHLORITE SOLUTION AS NEEDED. TRANSFER IS TYPICALLY CONDUCTED AT LEAST ONCE PER DAY. EACH PUMP HAS A DIFFERENT TYPICAL DISCHARGE POINT. ALL WORK SHALL BE COMPLETED WHILE MAINTAINING USE OF AT LEAST TWO OF THE EX. THREE CHEMICAL FEED PUMPS UNTIL THE NEW CHEMICAL FEED PUMPS ARE PLACED IN OPERATION. TEMPORARY STORAGE FOR THE SODIUM HYPOCHLORITE SOLUTION SHALL BE PROVIDED TO ALLOW FOR CONTINUAL USAGE OF THE EX. CHEMICAL FEED PUMPS DURING INSTALLATION OF THE NEW CHEMICAL FEED PUMPS AND THE NEW SODIUM HYPOCHLORITE DAY TANK AND SCALE. TEMPORARY STORAGE SHALL HAVE CLEAR INDICATION OF VOLUME WITHIN THE STORAGE TANKS WITH GRADATIONS SHOWING GALLONS OF SOLUTION. TOTAL VOLUME OF TEMPORARY STORAGE SHALL BE AT LEAST 150 GALLONS IN A MAXIMUM OF TWO CONTAINERS. TEMPORARY SUCTION PIPING SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR TO ALLOW USAGE OF THE EX. CHEMICAL FEED PUMPS DURING THE TRANSITION.

## ELECTRICAL

CONDUIT SHALL BE SCHEDULE 80 PVC HEAVY WALL RATED FOR 90 DEGREES C CONDUCTORS CONFORMING TO UL 651 AND FEDERAL SPECIFICATION W-C-1094A. USE ONLY COUPLINGS AND FITTINGS DESIGNED SPECIFICALLY FOR THE TYPE OF CONDUIT SPECIFIED. FOLLOW MANUFACTURER'S RECOMMENDATIONS REGARDING THE HANDLING, BENDING, COUPLING, AND INSTALLATION. CONDUCTORS SHALL MATCH EXISTING.

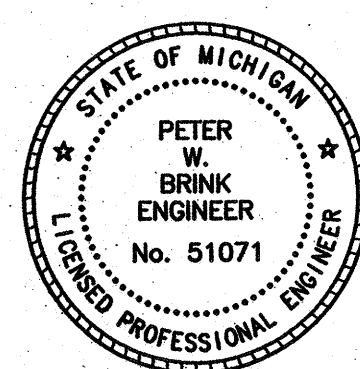
## SEQUENCE OF EVENTS

- AFTER THE DEMOLITION OF THE EX. SCALE AND FLOOR REPAIR ACTIVITIES ARE COMPLETED, THE NEW SCALE AND DAY TANK SHALL BE INSTALLED. ALL TANK AND SCALE INSTALLATION AND TESTING SHALL BE COMPLETED AND THE PIPING FROM THE EXTERIOR WALL OF THE DAY TANK SHALL BE REPLACED. PIPING FROM THE DAY TANK TO THE NEW CHEMICAL FEED PUMPS SHALL THEN BE COMPLETED.
- THE POWER FEEDS FOR THE EX. HYPOCHLORITE FEED PUMPS SHALL BE REUSED FOR THE PROPOSED HYPOCHLORITE FEED PUMPS. EX. POWER IS FED TO THE HYPOCHLORITE FEED PUMPS THROUGH THE PANEL LABELED "FROM FILTER FLOOR ELECTRIC PANEL". POWER SHALL BE SUPPLIED TO THE NEW CHEMICAL FEED PUMPS THROUGH NEW CONDUCTORS IN OVERHEAD PVC CONDUIT FROM THIS PANEL TO THE NEW FEED PUMPS. THE EX. OVERHEAD PVC CONDUIT MAY BE REUSED PROVIDED SERVICE TO THE EX. PUMPS IS NOT INTERRUPTED.
- THE POWER FEEDS TO EACH CHEMICAL FEED PUMP MUST BE COORDINATED WITH PIPING WORK AND EACH POWER FEED MUST BE TRANSITIONED TO THE FEED PUMP THAT HAS THE SAME DISCHARGE POINT AS THE EX. CHEMICAL FEED PUMP THE POWER FEED IS TAKEN FROM. THE EX. POWER AND CONTROL SYSTEM ENERGIZES A FEED PUMP BASED ON FLOW IN THE WATER LINE TO WHICH THE FEED PUMP IS APPLYING CHLORINE SOLUTION. THIS EX. POWER/CONTROL SYSTEM MUST BE TESTED IMMEDIATELY AFTER CONNECTING A NEW CHEMICAL FEED PUMP TO VERIFY CORRECT OPERATION.
- AFTER THE PROPOSED CHEMICAL METERING PUMPS HAVE BEEN INSTALLED, TESTED, AND PLACED IN OPERATION, THE EX. CHEMICAL FEED PUMPS, ALL ASSOCIATED SUPPORTS AND ENCLOSURES, AND THE EX. CONCRETE PAD SHALL BE REMOVED. THE FLOOR SHALL BE PROPERLY PREPARED AND QUARRY TILE TO MATCH THE EX. SHALL BE INSTALLED IN THIS AREA.
- AFTER ALL NEW FEED PUMPS ARE OPERATIONAL AND STARTUP AND TESTING HAS BEEN COMPLETED, EX. CONDUIT AND WIRE THAT DROPS FROM THE CEILING TO THE EX. FEED PUMPS SHALL BE COMPLETELY REMOVED. IN ADDITION, THE EX. CONTROL WIRE AND CONDUIT PENETRATING THE FLOOR JUST WEST OF THE EX. FEED PUMPS SHALL BE REMOVED AND THE FLOOR PENETRATION SHALL BE FILLED WITH NON-SHRINK GROUT. THIS EX. CONDUIT AND WIRES SHALL BE EXTENDED BELOW THE FLOOR TO A NEW LOCATION NEAR THE NORTHEAST CORNER OF THE ROOM. A NEW CORE SHALL BE DRILLED THROUGH THE FLOOR AND THE CONDUIT AND WIRE EXTENDED INTO THE CHLORINE FEED ROOM TO A JUNCTION BOX AND THEN ON TO EACH CHEMICAL FEED PUMP TO SUPPLY THE EX. 4-20 MA FLOW SIGNAL FOR AUTOMATIC PAGING OF THE FEED PUMPS.
- THE REPLACEMENT OF PIPING, VALVES, FITTINGS, AND APPURTENANCES IN THE CHLORINE STORAGE ROOM CAN BE COMPLETED AT ANY TIME AS LONG AS OPERATOR USAGE OF THE TRANSFER PUMPS TO TRANSFER HYPOCHLORITE TO THE CHLORINE FEED ROOM IS NOT INTERRUPTED. IN GENERAL, PIPING SHALL BE COMPLETED AT ONE STORAGE TANK AT A TIME TO ALLOW USAGE OF AT LEAST ONE STORAGE TANK AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER BEFORE BEGINNING ANY WORK IN THE CHLORINE STORAGE ROOM.
- THE EX. LEVEL TRANSMITTER MOUNTED ON THE EX. DAY TANK SHALL BE REMOVED AND REINSTALLED AT THE DESIGNATED FLANGE ON TOP OF THE NEW DAY TANK. NEW WIRES AND CONDUIT MATCHING THE EX. CONTROL WIRES AND CONDUIT SHALL BE RUN, AS NECESSARY TO RECONNECT THE LEVEL TRANSMITTER AT THE TOP OF THE TANK TO THE LEVEL TRANSMITTER/INDICATOR MOUNTED NEAR THE SOUTHWEST CORNER OF THE ROOM.



SECTION 1

SCALE: 1/2" = 1'-0"



NO.	REVISIONS	BY	DATE	DRAWN
1	AS BUILT	ATK	1/24/12	SMYTH
2				DATE NOV. '11
3				CHECKED P.W.B.
4				DATE NOV. '11

**Prein & Newhof**  
Engineers • Surveyors • Environmental • Laboratory

CITY OF TRAVERSE CITY  
GRAND TRAVERSE COUNTY, MICHIGAN  
WATER TREATMENT PLANT  
CHLORINE FEED SYSTEM IMPROVEMENTS  
CHEMICAL FEED ROOM

PROJECT NO.  
2110441

SHEET NO.

5 OF 6